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Radiation Safety Engineering Assessment of the Rapiscan Secure 1000 in Single Pose Configuration Preliminary Quick-Look Brief

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10 August 2009

TSA Explosives Detection System Tech Support S4705

NSTD -09-0690

Executive Summary

- The subject effective dose is within the requirements of ANSI/HPS N43.17-2002, 5.1
  - Individual effective dose per screening (frontal and rear scan) of a subject is 1.58 urem (0.0158 uSv), less than the 10 urem (0.10 uSv) limit
  - Individual effective dose is below 25 mrem if an individual is subject to fewer than 15,822 screenings in a twelve-month period (equivalent to 43 screenings per day)
  - Individual effective dose is below Negligible Individual Dose (NID) if an individual is subjected to fewer than 632 screenings in a year (based on 1.58 urem/screening)

- **Additional action is recommended** to ensure that the National Council on Radiation Protection and Measurements (NCRP 1993) general public dose recommendation of less than 100 mrem (0.1 rem) per year is being met (ANSI/HPS N43.17-2002, 5.3) Specifically:
  - An area exists above each of the units, due to primary beam overshoot, where the 100 mrem per year general public dose limit could potentially be exceeded. This area extends up to a height of about 14 ft and 4.6 ft behind each of the units. (reference slide 9)
  - It is recommended that a survey of each installation site be conducted or a beam stop be considered to ensure that the dose to any member of the general public is maintained below the 100 mrem (0.1 rem) per year general public limit and to ensure that doses are kept "As Low As Reasonably Achievable" (ALARA).

Executive Summary (continued)

- The dose to bystanders is within the requirements of ANSI/HPS N43.17-2002, 5.4
  - Dose to bystanders is less than 2 mrem in any one hour period, varying from 0.043 to 0.704 mrem at a very conservative 100% duty and 100% occupancy and 0.003 to 0.053 mrem with a 30% duty factor and 25% occupancy factor applied

- The dose to workers is within the requirements of ANSI/HPS N43.17-2002, 5.4
  - Dose to personnel at any Secure 1000 in Single Pose Configuration workstation is below 100 mrem/year when there are fewer than 238 screenings/hour (assuming 50 weeks per year, 40 hours per week, 8 hours per day)

- The system meets the shielding requirements of ANSI/HPS N43.17-2002, 5.5
  - Leakage dose rate at 30 cm from any external surface of the master and slave unit are not distinguishable from background exposure

- The system provides necessary interlocks required by ANSI/HPS N43.17-2002, 6.2 to prevent unauthorized system access and provides emergency stop buttons

Background

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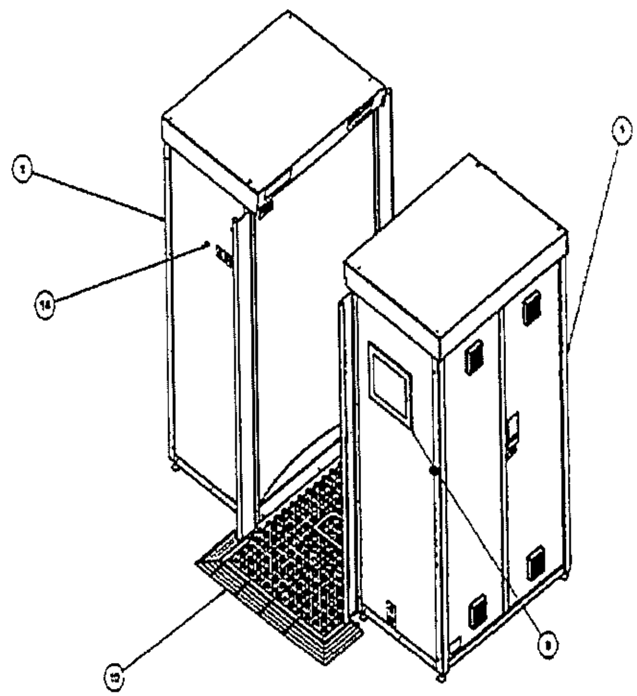
- Radiation and Safety Assessment Objectives: Measure, verify, and report safety performance parameters of the Secure 1000 in Single Pose configuration against TSA requirements and standards ANSI/HPS N43.17-2002 and Draft 2009, C.F.R. Title 21 Chapter I Subchapter J Part 1002



Rapiscan Secure 1000 in Single Pose Configuration

- JHU/APL traveled to Rapiscan Torrance, CA facility and conducted radiation safety assessment from 27 – 29 July, 2009
- (b) (6) [redacted] (b) (6) [redacted] report dated March 21, 2006, June 5, 2008 and October 28, 2008
- Additional assessment includes National Institute of Standards and Technology (NIST) assessment of Radiation Safety and Compliance with ANSI N43.17-2002 report dated July 9, 2008

System Configuration

- Differences between the configuration of the Torrance, CA system evaluated by JHU/APL and the systems undergoing qualification testing at the TSL, as reported by Rapiscan, are as follows:
  - LCD Monitor of the TSL system is older (Rev 2) than the Monitor of the CA System (Rev 4)
  - The TSL system has a monitor for both sides of the system, where the CA system only has a monitor for the master side of the system
  - Power Driver Board of the TSL system is older (Rev 1) than the Power Driver Board of the CA System (Rev 2)
  - The software of the TSL system is older (version 3.03.01) than the software of the CA system (version 3.03.03)
    - There were no software changes that impact x-ray generation or radiation safety
- Prior to the start of the survey, JHU/APL conducted an audit of the system configuration at the test site, additional differences are as follows:
  - The Torrance, CA system is an engineering unit, therefore the
    - Components were not subject to the QC process used for production units
    - Master unit was dated 2007 and the slave unit was dated 2005
    - Slave unit X-ray generator tube was of a previous generation
  - At the beginning of radiation safety testing, the X-ray generator in the master unit was replaced due to a damaged HV power supply
  - Both units (master and slave) were operated for radiation safety testing
    - Performance differences were noted between the master and slave engineering units that may not appear in production systems that are subject to the QC process. Where differences were noted the most conservative measurements were used

Instrumentation Used for Radiation Safety Engineering Assessment

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- Instruments used for the radiation safety engineering assessment conducted 27-29 July are as follows

Instrument	Purpose
Radcal Corp 1800 Ion Chamber coupled to a Radcal Model 9010 Controller Instrument	Used for precise readings of radiation exposure in units of Roentgen (R). Calibration traceable to NIST beam code S60 (soft filtration at 60 keV). Calibration date 7 July 2009
Thermo Electron Corp. Micro Rem Radiation Survey Meter	Used for comparable dose measurement in units of Roentgen Equivalent Man (rem). Calibration date 19 May 2009
Ludlum Measurements Inc. Model 3 Survey Meter coupled either a Ludlum Model 44-9 Pancake Geiger- Mueller (Pan-GM) Probe or a Ludlum Model 44-3 Thin Crystal Sodium Iodide (NaI) Scintillator Probe	Used during the area survey to identify the area with the highest radiation readings in terms of counts per minute (cpm). Calibration date 30 June 2009
Radcal Rapidose	Used for kVp measurement. Calibration date 24 June 2009

Subject Effective Dose

Standard: The effective dose shall not exceed 10 urem (0.10 uSv) per scan of the subject's front. The facility shall be operated to ensure that no individual scanned receives from the facility an effective dose in excess of 25 mrem (0.25 mSv) in any twelve-month period (ANSI/HPS N43.17-2002, 5.1 Subject Dose Limitations)

Preliminary Assessment Results:

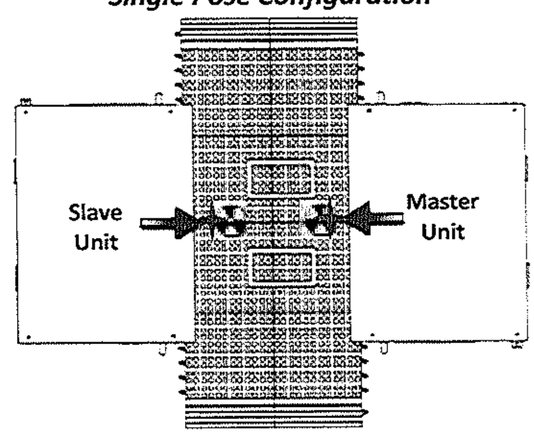
- Effective dose per scan for the front of a subject is 1.10 urem (0.011 uSv)
- Effective dose per screening (frontal and rear scan) of a subject is 1.58 urem (0.0158 uSv)
- Individual effective dose is below 25 mrem if individual is subject to less than 15,822 screenings in a twelve-month period which is equivalent to 43 screenings per day (365 days per year)

	Average Exposure per Scan[3] (uR/scan)[4]	HVL	kVp[5]	Dose Conversion Coeffiecient[6]	Effective Dose per Scan (urem/scan)
Master Unit Frontal Scan[1]	4.77	1.15 mm Al	50	Front 0.23	1.10
Slave Unit Rear Scan[2]	4.80	1.6 mm Al	50	Rear 0.1	0.48

	Average Exposure per Screening[3] (uR/screening)[4]				Effective Dose per Screening (urem/screening)
Slave + Master Unit (Frontal + Rear Scan)	9.57				1.58

1. Master unit scan for total scan time of approximately 3 seconds.
2. Slave unit scan for total scan time of approximately 3 seconds.
3. Background exposure subtracted and energy correction factor of 1.02 applied
4. Results provided above are for the maximum dose derived from a master frontal scan and slave rear scan.
5. Due to the minimum beam hardness (2 mm Al) specified for the Rapidose kVp meter. the measurements of kVp made may not be accurate to within +/-5%. The indicated operating potential on both the master and slave units was 50 kV and the measurements made with the Rapidose (although not verified to required accuracy) indicate that the operating potential of the units do not exceed 50 kV. Therefore. as a conservative measure. the dose conversion coefficients are being selected based on 50 kV.
6. ANSI/HPS N43.17-2002 Dose Conversion Coefficient for frontal and rear exposures.

Secure 1000 in Single Pose Configuration



Indicates locations where exposure readings were taken (30 cm from the exit panel)

Negligible Individual Dose

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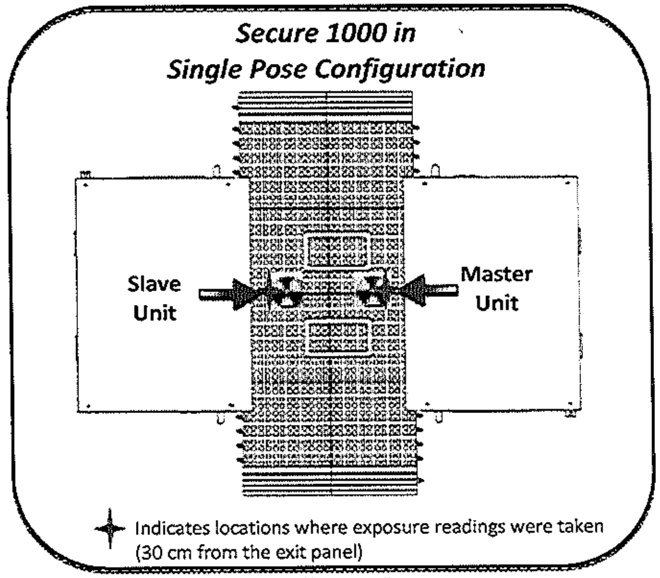
Standard: Negligible Individual Dose (NID) is set at 0.01 mSv (1 mrem) per year. At radiation exposures below the NID, efforts to reduce the dose further are not warranted. When the number of subject examinations results in exposures above NID reasonable efforts should be made to reduce the number of scans, taking into account the nature of the application. (ANSI/HPS N43.17-2002, 5.3 Dose minimization and Negligible Individual Dose)



Preliminary Assessment Results:

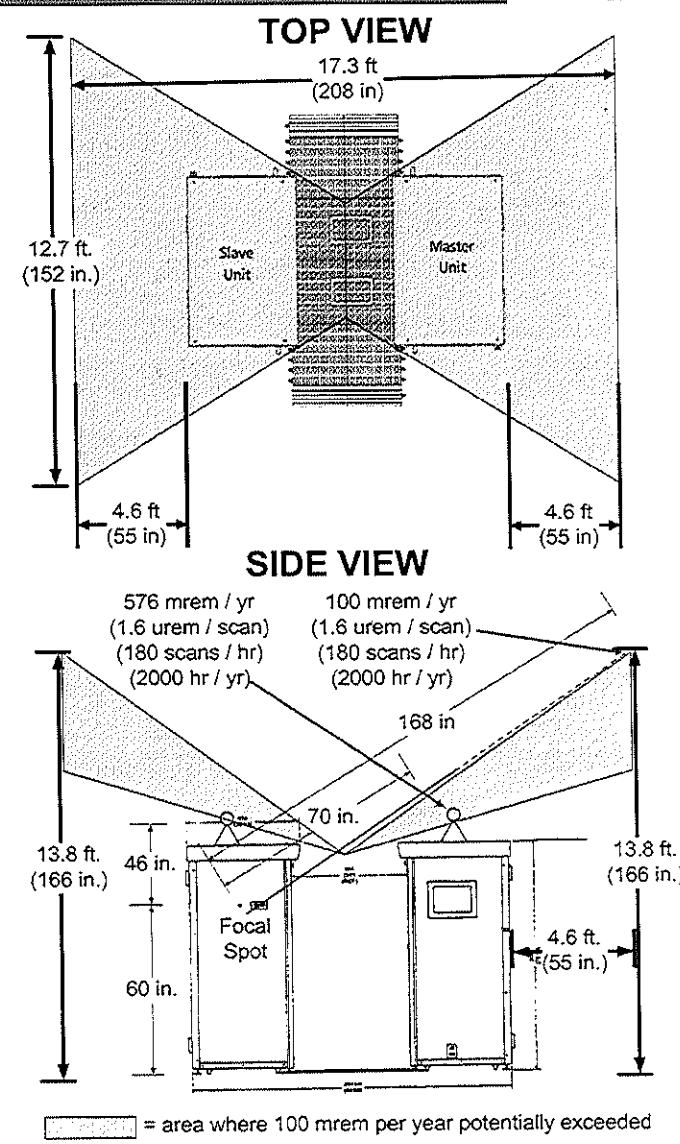
- Based on 1.58 urem/screening for frontal + rear scans (reference slide 7), individual dose is below NID if the individual is subjected to less than 632 screenings in a year

Dose to General Public

- Standard: NCRP 1993 recommends that members of the general public receive less than 1 mSv (0.1 rem) per year. These levels are subject to the radiation safety principle of ALARA. (ANSI/HPS N43.17-2002, 5.3 Dose minimization and Negligible Individual Dose)

Preliminary Assessment Results:

- An area exists above each of the units, due to primary beam overshoot, where the 100 mrem per year general public dose limit could potentially be exceeded. This area extends up to a height of about 14 ft and 4.6 ft behind each of the units.
  - The estimated annual dose and the associated exposed area is based on the maximum exposure readings taken at the time of the survey and from approximate geometric measurements of the x-ray beam path. A more precise measurement of the geometry, which was not possible due to the location of the system being evaluated, would provide a better understanding of the area's boundaries.
- It is recommended that a survey of each installation site be conducted or a beam stop be considered to ensure that the dose to any member of the general public is maintained below the 100 mrem (0.1 rem) per year general public limit and to ensure that doses are kept ALARA.



Dose to Bystanders

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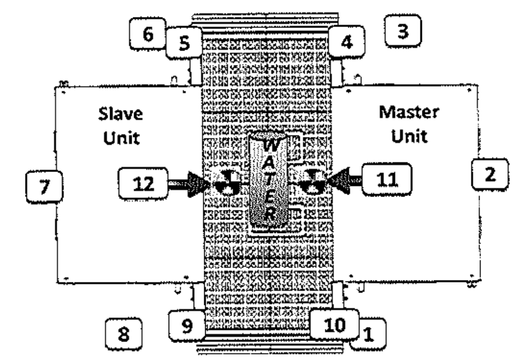
Standard: Dose to bystanders outside of the inspection zone does not exceed 2 mrem in any one hour (ANSI/HPS-2002 N43.17, 5.4)

Preliminary Assessment Results:

- Dose to bystanders varies from 0.043 to 0.704 mrem in any one hour at 100% duty and 100% occupancy
- A more realistic dose to bystanders is from 0.003 to 0.053 mrem in any one hour with 30% duty factor and 25% occupancy factor applied



Location	Average Exposure Reading (uR/screening[1]) Ion Chamber	Average Background Reading (uR[2]) Ion Chamber	Average Exposure with Background Subtracted and Energy Correction Applied (uR/screening[3])	Equivalent Dose for 100% Duty[4] (mrem[5] in any 1 hour)	Duty Factor[6] (D)	Occupancy Factor[7] (T)	Equivalent Dose (mrem/screening x D x T) (mrem[5] in any 1 hour)
4	0.21	0.14	0.071	0.043	0.30	0.25	0.003
5	0.77	0.18	0.602	0.361	0.30	0.25	0.027
9	1.00	0.18	0.840	0.504	0.30	0.25	0.038
10	0.22	0.13	0.100	0.060	0.30	0.25	0.004
11	0.94	0.09	0.865	0.519	0.30	0.25	0.039
12	1.35	0.20	1.174	0.704	0.30	0.25	0.053
1, 2, 3, 6, 7, 8	Exposure reading was not distinguishable from background exposure.						

1. Master unit and slave unit consecutive scans for total scan time of approximately 6 seconds.
2. Background reading represents the average of 5 sequential 6 second background readings for each location.
3. Energy correction 1.02 applied.
4. 100% duty factor based on 600 screenings in one hour for 6 second scan time.
5. Assuming 1mR = 1 mrem.
6. 30% duty factor based on 180 screenings in one hour for 6 second scan time (vendor supplied information).
7. Occupancy factor for partial occupancy based on ANSI N43.3.-1993 Table A1.

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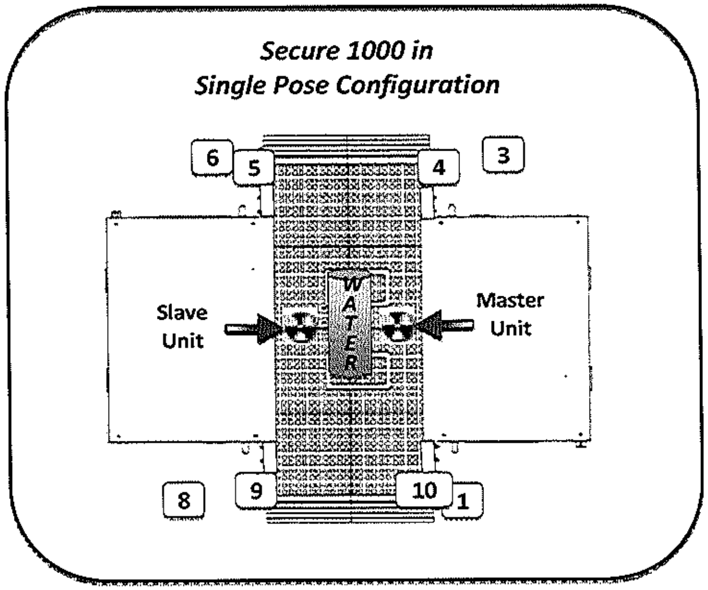
Dose to Workers

Standard: Radiation dose to personnel at any work station does not exceed dose of 100 mrem/year (ANSI/HPS-2002 N43.17, 5.4)

Preliminary Assessment Results:

- Dose to personnel at any work station is below 100 mrem/year when there is less than (assuming 50 weeks per year, 40 hours per week, 8 hours per day)
  - 476,304 screenings/year or
  - 9,526 screenings/week or
  - 1,905 screenings/day or
  - 238 screenings/hour



Location	Average Exposure with Background Subtracted and Energy Correction Applied (uR/screening[1])	Number of Screenings per Hour for 30% Duty (screenings/hr)	Equivalent Dose for 30% Duty[2] (urem/hr)	Occupancy Factor[3] (T)	Number Hours Worked per Year (Based on 40 hours per week, 50 weeks per year) (hrs/year)	Maximum Dose per Year (Based on 2000 hrs worked per year) (mrem/yr)[4]	Number of Screenings per Year to Reach 100 mrem (screenings/yr)	Number of Scans per Week to Reach 100 mrem (Based on 50 weeks per year) (screenings/wk)	Number of Screenings per Day (Based on 5 days per week) (screenings/day)	Number of Screenings per Hour (Based on 8 hours per day) (screenings/hr)
4	0.071	180	12.85	0.25	2000	6	5,602,241	112,045	22,409	2,801
5	0.602	180	108.32	0.25	2000	54	664,673	13,293	2,659	332
9	0.840	180	151.16	0.25	2000	76	476,304	9,526	1,905	238
10	0.100	180	17.99	0.25	2000	9	4,001,601	80,032	16,006	2,001
1, 3, 6, 8	Exposure reading was not distinguishable from background exposure.									

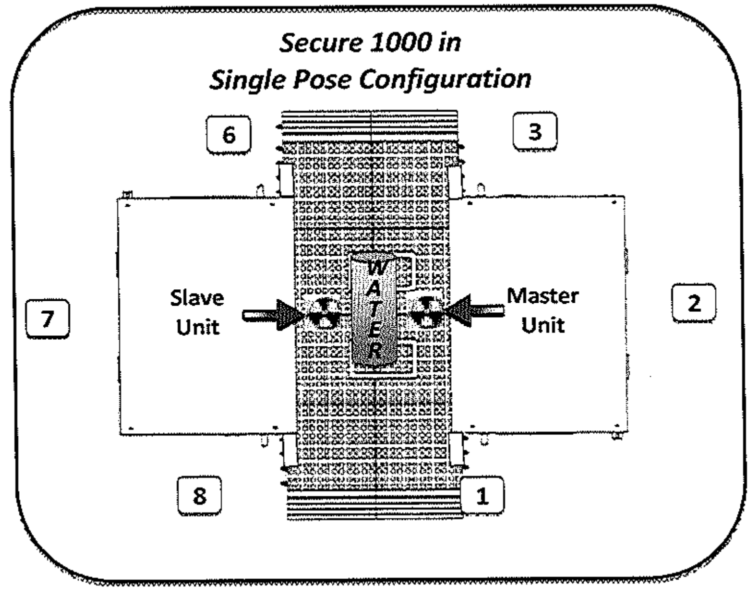
1. Average exposure reading and background reading is provided on slide 8. Energy correction 1.02 applied.
2. Duty factor based on 180 screenings in one hour for 6 second scan time (vendor supplied information).
3. Occupancy factor taken from Table A1 in ANSI N43.3.-1993.
4. Assuming 1 mR = 1 mrem.

Leakage Dose Rate

Standard: Leakage dose rate at any point 30 cm from any external surface, excluding the beam exit surface, shall not exceed 0.25 mrem (2.5uSv) in any one hour (ANSI/HPS N43.17-2002, 5.5 Shielding)

Preliminary Assessment Results:

- Leakage dose rate at 30 cm from any external surface of the master and slave unit are not distinguishable from background exposure using the 1800 cc ion chamber
- The system meets the ANSI/HPS N43.17-2002, 5.5 Shielding requirements for sealed units



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Physical Safety (1 of 2)

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Standard: ANSI/HPS N43.17-2002: Section 4 Federal, state, and local regulations; Section 6 System and Manufacturing Requirements; Section 7 Operating Requirements

Preliminary Assessment Results:

- System provides necessary interlocks to prevent unauthorized system access and provides emergency stop buttons
  - Since an engineering system was evaluated, only one unit had an emergency stop button and it was not wired, therefore functional performance could not be validated
  - The vendor reported that production systems provide an emergency button on each unit (master and slave)
- Depending on the position of the generator, the radiation warning label may not be clearly visible. The label may need to be placed in a more visible location
- The documentation process was reviewed and a draft Operator Manual and Maintenance Manual were provided by the vendor
  - The documents are being updated to reflect the single pose configuration of the Secure 1000. JHU/APL reviewed the draft documents and verified that the information required by ANSI N43.17, 6.6 is provided. The final documents should also be reviewed when they are complete
- The existing Rapiscan FDA filing is for the Secure 1000 system, dated 1992. The Secure 1000 Configured for Single Pose is configured differently, however there is no filing for the new configuration
  - The FDA responded to the 1992 filing stating *"...this product is not actively regulated under the device authorities of the Food Drug and Cosmetic Act (FFDCA). The Performance Standard for Diagnostic X-Ray Systems and Their Major Components does not apply to the Secure 1000."*

Physical Safety (2 of 2)

Standard: ANSI/HPS N43.17-2002: Section **6.2.2 Operational interlocks** In the event of a malfunction, the system shall terminate x-ray production rapidly enough to limit the subject exposure to a "dose times exposed area" of 250 μSv cm2 (25 mrem cm^2). (For example: 25 μrem over a 1000 square centimeter area or 50 μrem over a 500 square centimeter area, etc.) Additionally, no location on the subject's body shall receive a dose exceeding 25 mrem, regardless of the exposed area.

Preliminary Assessment Results:

- Assessment based on a single point failure analysis where the vertical motion of the X-ray tube stops and is undetected. Since the system monitors the exposure time by monitoring the maximum number of scan lines, the maximum exposure time is limited to approximately 3 seconds. The total dose from a 3 second scan has been determined to be much less than the 10 urem per scan limit. However, to be conservative, a maximum dose of 10 urem per scan is being used for this analysis.
- The beam width at subject is approximately [redacted] mm [redacted] cm)
- Assuming a subject width of 60 cm, an exposure of a 24 cm^2 area would result
- Averaging the total dose of 10 urem over a 24 cm^2 area results in a maximum dose per area of 0.42 urem/cm^2. This is significantly less than the 25 mrem cm^2 limit specified by ANSI/HPS N43.17-2002: **6.2.2**

National Institute of Standards and Technology
Assessment of Radiation Safety and Compliance with ANSI N43.17-2002
Rapiscan Dual Secure 1000 Personnel Scanner

Report prepared by Frank Cerra
July 9, 2008

This report is based on a review of the [redacted] report of compliance, dated June 5, 2008; information received by Rapiscan; and measurements made at the FDA/CDRH labs on the single-source version of the Secure 1000 (SN S701201213) in April, 2006.

Summary

The dual Secure 1000 as described by Rapiscan and tested by [redacted] conforms to all the dose limitation requirements of ANSI N43.17-2002. For the screened individual the dual Secure 1000 is at least as safe as the single-source version as tested at FDA/CDRH in 2006. That is, an adult person being scanned with the Dual Smart Check receives an effective dose no higher than a person receiving a front and a back scan using the single-source Smart Check. Some recommendations are provided to keep employee exposures no higher than necessary. The effect of a curved front panel was also considered.

Assessment of effective dose to the screened individual

The [redacted] report indicates a skin entrance exposure of 5.75 μrem per scan at the reference point (i.e. 30 cm from the surface of one, active, unit and about 1 m from the floor). It appears that for the purpose of this measurement the second x-ray unit was deactivated. The measurement is consistent with the previous measurement of 9.6 μrem/scan performed at CDRH on the single-source Secure 1000 and modifications made to the scan mechanics of the dual system to produce a higher throughput (e.g. faster scan). Consequently, the effective dose received from a dual, front and back, scan using the Dual Secure 1000 is lower than the effective dose received from the equivalent two scans using the single-source Smart Check. The HVL measurement by [redacted] indicates an energy spectrum similar to that of the single source version, therefore the following conclusions can be made:

Reported exposure at 30 cm due to only one source: ~ 5.8 μR[1]
Exposure to effective dose conversion, front scan: ~ 0.25 rem/R
Exposure to effective dose conversion, back scan: ~ 0.09 rem/R
Adult effective dose from the front scan alone: ~ 1.5 μrem
Adult effective dose from the back scan alone: ~ 0.5 μrem
Adult effective dose from a dual, front and back, scan: ~ 2 μrem

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[1] Exposure in roentgens, R, is roughly equal to entrance skin dose in rems. Both the roentgen and the rem are considered obsolete units by the international radiation protection community. The S. I. unit of equivalent dose is the sievert, Sv. One Sv is equal to 100 rem.

The 10 μrem dose limit of the ANSI N43.17-2002 standard applies to the effective dose from the front scan alone. The adult effective dose from the front scan alone, as measured by [redacted] is 5.8 μrem, so the dual Secure 1000 easily meets the ANSI requirement. It should be noted that measurements made by [redacted] in 2006 using the same technique on the single–source version were more conservative than the CDRH measurements by about 40% (albeit different production units were tested). This is due to the rate dependence correction applied by [redacted] which may be too conservative.[2] So it is likely that the current estimates may also be conservative.

Cabinet shielding

No data was provided on radiation "leakage" emissions from the two cabinets. These are not expected to be significantly different than the single-source version of the Secure 1000, except for the area opposite the inspection zone, where the primary beam from the opposite unit is transmitted. Even in this area, by virtue of distance alone, the dual Secure 1000 is expected to meet the ANSI shielding requirement of 0.25 mrem in any one hour at 30 cm from any surface (see also <u>Radiation emissions from the cabinet enclosure below</u>).

Inspection Zone

The inspection zone, as defined in ANSI N43.17-2002, is the area where the dose rate is greater than 2 mrem in any one hour. For this case, the entire area between the two units should be considered the inspection zone.

Assessment of effective dose to workers and bystanders

<u>Primary beam</u>

Each of the two units acts as a beam stop for the other unit. However, the geometry is such that the scanning beam emanating from one unit overshoots the cabinet of the other unit by a few inches on each side. The [redacted] measurements just outside the corner of one cabinet, in the area of the overshoot, are consistent with the primary beam intensity at that distance and angle. The overshoot results in four radiation beams each along a line intersecting the focal spot of one x-ray tube and an edge of the opposing cabinet face. The single-source unit tested at CDRH had a 60 inch wide beam stop that was positioned roughly at the location of the second cabinet of the dual system. The beam stop comfortably intercepted the entire scan beam. The Rapiscan drawings of the dual system show each unit to be about 54 inches wide, including the handles

[2] Most of the recombination loss is expected to be from volume recombination, occurring over the ion chamber volume as ions are collected. The ion densities over the IC volume are better described by the exposure rate measured by the chamber than by the instantaneous rate inside the pencil beam. Moreover, a correction using measurements at different distances should not be based on the inverse square law because the law does not hold in this case. The recombination loss of the Radcal 1800cc ion chamber was assessed at CDRH in conjunction with the testing of the single-source Secure 1000. Using a collecting potential technique the ion recombination loss was found to be negligible.

overhanging on each side. If the handles each overhang 2 inches, then a 5 inch wing shield on each side would provide the equivalent coverage of the back plate. The shields can be made narrower if they are rotated perpendicular to the edge of the scanning radiation field.

In the absence of the four shields described, the exposure at the cabinet corners was measured by [redacted] to be 0.68 μR/scan. The width of the overshoot beam is expected to increase linearly with distance from the focal spot of the x-ray tube. The exposure is expected to decrease roughly as the inverse of the distance from the focal spot. That means that the exposure would be about half, or 0.34 μR/scan, at roughly 1.5 m from the corner being overshot by the scanning beam (distance measured along the beam direction). [redacted] also tested a 3 inch steel shield placed at the corner and found it to be effective (however, because of the size of the ion chamber used it is uncertain if the shield intercepted the entire beam, since measurements outside the shield may include a small contribution from the primary beam).

If wing shields are not used, either the occupancy of areas traversed by the four overshoot beams or the scan rate should be controlled to be made consistent with the recommended annual (skin entrance) dose limit of 100 mrem to employees. [redacted] estimate of 0.68 μR/scan applies to a beam about 5 inches wide. For the purpose of calculating whole body skin entrance exposure for people stationed in the zone of interest but with some freedom of movement, it is reasonable to decrease the estimate by a factor of two to 0.34 μR/scan. This means that the scan rate averaged over 2000 full-time hours should not exceed about 150 scans/h. Alternatively, assuming the maximum sustainable scan rate to be 240 scans/h, no employee should be at this location more than about 3/5 of full time. Given these numbers it can be argued that shields are not required. It should be noted, however, that this analysis is based on a measurement that is approximate. A set of four wing shields would provide a sense of security and preclude further analysis.

Scatter radiation

No data was received regarding radiation scattered from the screened individuals into adjacent areas. For the single-source unit previously tested at CDRH the scatter directly to the side of the screened person, at 30 cm from plane of the side of cabinet, was about 0.20 μR/scan. Applying a scaling factor of 1.2 (i.e. [2 x 5.8]/9.6 based on the dual and single units measured reference exposures) this becomes about 0.24 μR/scan. For 180 scans/h and 2000 hours occupancy per year this translates to an integrated exposure of about 86 mR per year, which is below the ANSI recommended 100 mrem. However, consistent with the principle of ALARA (keeping exposures as low as reasonably achievable) it is recommended that employees do not routinely occupy the immediate open area next to the inspection zone.

Radiation emissions from the cabinet enclosure

No data was provided on radiation "leakage" emissions from the two cabinets. These are not expected to be significantly different than the single-source version of the Secure

1000, except for the area opposite the inspection zone, where the primary beam from the opposite unit is transmitted. It is recommended that some measurements be performed in the center of the back of the cabinet, where the beam from the opposite unit is not shielded by the vertical detectors. Particular attention should be given to vent holes and spaces the cracks around the cabinet doors. Note that in the absence of any shielding the exposure in this region would be about 3 μR/scan.

Recommendations

It is recommended that the cost effectiveness of wing shields be assessed in view of the considerations above.

Although it is unlikely that the annual permissible dose be exceeded, it is recommended that full-time employees do not occupy the immediate area next to the inspection zone at each side of the opening between the two cabinets for long periods of time. This also applies to the adjacent areas beside each cabinet if wing shields are not implemented. This is especially important for heavy machine use.

Exposure measurements should be made at the back of each unit while the opposite unit is scanning to verify proper shielding of the primary beam.

Other considerations

There was a design change to the front panel of the Secure 1000 since the [redacted] test. The change consists of replacing the flat front panel with a curved front panel (see attachment 3). Assuming that there is no significant difference in the composition and thickness of the material, this modification is not expected to significantly affect the dose distribution. However, because of the curvature, the reference measurement point is now a few inches closer to the x-ray source (i.e. 30 cm from the surface of the front panel at the center). The effect of this is that the subject dose, for the purpose of the ANSI standard, will increase. The increase is roughly inversely proportional to the distance from the x-ray anode.[3] That is, if the curvature moves the reference point inward by 10% of the distance from the anode, then the subject dose will increase by about 10%. The amount of curvature does not seem enough to affect conformance with the ANSI standard. However, unrestricted access to points extremely close to the x-ray tube is not recommended.

Attachments

1. [redacted] report
2. Rapiscan drawings and specs.
3. Photo of latest version

[3] This is true as an average dose received by the skin surface. Points on the skin will receive different doses, particularly in regions where the sweeps of the x-ray beam do not touch or overlap.

[redacted]

Cell/Voice mail [redacted] e-mail: [redacted] Phone/Fax [redacted]

October 28, 2008, Rev. Supplement to report dated June 5, 2008

Rapiscan Systems
2805 Columbia Street
Torrance, CA 90503
Attn: [redacted]

Dear [redacted]

This report is a supplement for the report to Rapiscan Systems from me dated June 5, 2008 and deals with the exposure to operators of the Rapiscan Systems Secure 1000 that has been modified by the addition of "wing" shields on each side of the scan units[1] (see Figure I). The object was to determine if exposures to individuals operating the Rapiscan Systems Secure 1000 are in compliance with the requirements specified in ANSI/HPS N43.17-2002; 5.4, a & b and 5.5, a (See Attachment I for a summary of requirements) and that exposures through the back of the inactive unit during scans by the active unit were within the specified limits. Findings were as follows:

Section 5.4, Dose limitation for special groups:

a) Radiation exposures outside of the "inspection zone" shall be less than 2 mrem in any one hour (See Table I for data and calclulations).
   i. Exposure behind the inactive unit when x-rays were produced by the active unit:
      - The measured effective dose per scan was not distinguishable from background, therefore is much less than the 2 mrem per hour allowed.

b) Exposures to personnel at any work station do not exceed a dose of 100 mrem per year.
   i. Operator exposure:
      - Operator dose was measured to be approximately 0.02 uR/scan which would allow approximately 600 scans/hr without exceeding the 100 mR/yr exposure limit. (See data and calculations in Table I).

Summary:

The data and information above and the report dated June 5, 2008 demonstrate that the Secure 1000, as described in Attachment II, meets and/or exceeds the requirements specified in sections of ANSI/HPS N43.17-2000, sections 5.1, 5.2, 5.4 and 5.5 and those sections of 29 CFR 1910.109 (b) & (c) related to operator dose.

The findings in this report are based on the measurements made on the unit as tested and specified assumptions. Reported values could change dramatically if specifications were to change; therefore scrupulous QA is required to assure consistency. If specifications were to change, additional testing will be required to assure compliance.

---

[1] Note that the serial numbers were S702351119 for the active unit and S507351311 for the inactive unit.

This concludes the findings of this evaluation. I trust that the information provided is adequate for your needs. However, if you should have questions or comments please contact me.

Sincerely,

(b) (6) [redacted]

(b) (6) [redacted]

Physicist

 (b) (6) [redacted]

ATTACHMENT I

Summary of Requirements in Specified Sections of ANSI/HPS N43.17-2000

Section 5.4, Dose limitation for special groups:

a. Radiation exposures outside of the "inspection zone" shall be less than 2 mrem in any one hour.
b. Exposures to personnel at any work station do not exceed a dose of 100 mrem per year.

Section 5.5, Shielding:

a. The leakage dose rate at any point 30 cm from any external surface of the device, excluding the beam exit surface, shall not exceed 0.25 mrem in any one hour.

(b) (6) [redacted]

ATTACHMENT II

Determination of Operator Dose

I. Description:
  1. General:
    a) The Rapiscan Secure 1000 is an electronic imaging system used to detect weapons and contraband concealed under the clothing of persons entering security areas. The unit functions by scanning a low energy x-ray beam over the surface of a subject and electronically creating an image from the low energy x-rays that scatter from near the skin surface of the subject.

  2. Secure 1000 Identification:
    a) Serial numbers: S507351311 and S702351119

II. Machine Parameters and Assumed Values:

1. Operating kVp	50	5. Scan time (sec)	3.0
2. Operating mA	5		

III. Measurement Instruments Used:
  1. Radcal 9015 with 10x9-1800 chamber[2]

IV. Operator Dose Determination:
  1. Methodology
    a) A Radcal 10x9-1800 ion chamber with 9015 controller was used to measure operator exposure per ANSI/HPS N43.17-2000. To determine operator dose, exposure measurements were taken at areas of interest at approximately 36 inches above the floor.
      i. Determining the energy and rate corrected exposure per scan by multiplying the exposure per scan by appropriate energy and rate correction factors determined previously.
    b) Energy and rate dependence of the Radcal 10x9-1800 Ion Chamber[3]:
      i. Energy correction = 1.34.

[2] Calibrated 7-17-2008
[3] See report from me to Rapiscan dated 3-21-2006

(b) (6) [redacted]

Table I
Radcal Exposure Data[a]

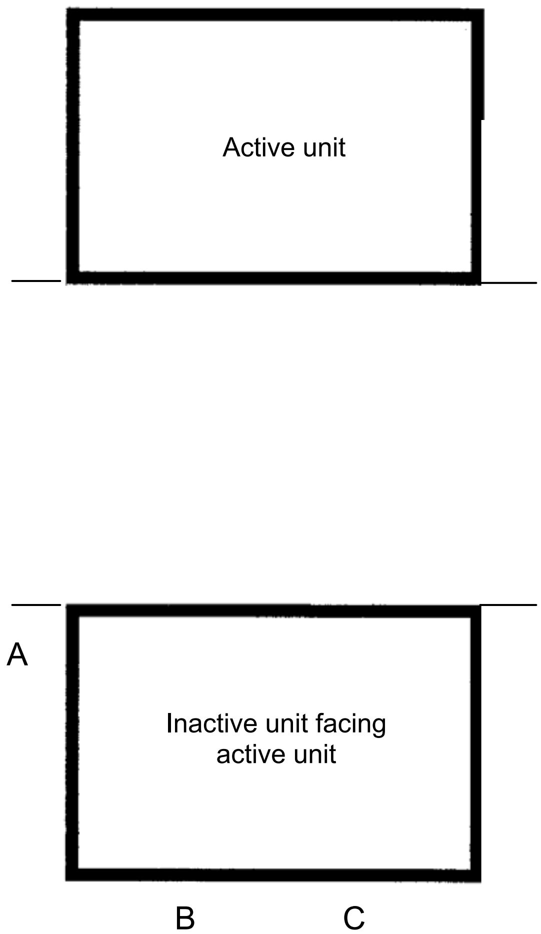
Ref	Measurement Location	Added Shield	Meas. Height (in)	# of Scans	Data collection time (min)	Meas Exp. (uR)	Meas Exp - Bkg (uR)	uR/ scan	Energy Corr	Dose Rate Corr	Corr. Exp. μR/ scan	Scan/ hr	hr/ wk	hr/ yr	mR/ hr	mR/ wk	mR/ yr
1	Away from rad sources	Background	36	NA	1	0.41											
2	A @ surface	without wing	36	10	1	2.86	2.45	0.245	1.34	1.00	0.328	600	40	2000	0.197	7.88	394.0
3	A @ surface	≈ 6" steel wing	36	10	1	0.45	0.04	0.004	1.34	1.00	0.005	600	40	2000	0.003	0.13	6.4
4	A past wing	≈ 6" steel wing	36	10	1	0.55	0.14	0.014	1.34	1.00	0.019	600	40	2000	0.011	0.45	22.5
5	B	NA	36	10	1	0.41	0.00	0.000	1.34	1.00	0.000	600	40	2000	0.000	0.00	0.0
6	C	NA	36	10	1	0.41	0.00	0.000	1.34	1.00	0.000	600	40	2000	0.000	0.00	0.0

a Data collected with RadCal Model 9015 w/1800 chamber, calibrated 7-17-2008

(b) (6) [redacted]

Figure I

Basic Equipment Layout and Measurement Locations



Not to Scale

(b) (6) [redacted]

[redacted]

Cell/Voice mail [redacted] e-mail [redacted] Phone/Fax [redacted]

June 5, 2008

Rapiscan Systems
2805 Columbia Street
Torrance, CA 90503
Attn [redacted]

Dear [redacted]

This report is to determine if the Rapiscan Systems Secure 1000, Serial # S507451313 is in compliance with requirements in ANSI/HPS N43.17-2000; 5.1, a - d; and 5.4, a & b (See Attachment I for a summary of requirements) since the unit has been modified such that two scan units now face one another (See Figure I) such that scans of the front and back of a subject can be performed in quick succession and since a new material is used for the exit panel. Findings were as follows:

Section 5.1, Subject dose limitation:

a) Effective dose shall not exceed 10 µrem per scan of the subject's front (See Table I for data).
   i. The measured effective dose per scan was 1.81 µrem[1]. This effective dose is less than the 10 µrem per scan allowed.

b) kVp should be known with an accuracy of 5%.
   i. For a specified kVp of 50, the measured kVp was 47.3 with COV = 0.001. This variation is 5% from the indicated, so is equal to the 5% limit.

c) Total aluminum-equivalent filtration of the beam exit surface and any other material in the beam path shall be determined.
   i. The half-value layer for the primary beam at the subject location was measured as = 0.79 mm Al without the exit panel and = 1.0 mm Al with the exit panel[2].

d) Operator exposure:
   i. Operator dose was measured to be approximately 0.68 uR/scan which would allow approximately 74 scans/hr without exceeding the 100 mR/yr exposure limit. If throughput is likely to exceed 74 scans/hr, installation of a 3" wing shield (see Figure I) will reduce exposures such that the throughput could be well over 200 scans/hr (See data in Table II).

---

[1] Subject dose was based on radiation exposure measurements using a Radcal 9015 with 10x9-1800 ion chamber to which conservative dose rate and energy dependence correction factors were applied.

[2] Measured with the x-ray collimator system removed using a Victoreen 4000M+ and 99% pure aluminum filters (see Table I for data and and Figure II for graphs).

 [redacted]

Summary:

The data and information above demonstrates that the Secure 1000, as described in Attachment II, meets and/or exceeds the requirements specified in sections of ANSI/HPS N43.17-2000, sections 5.1.

The findings in this report are based on the measurements made on the unit as tested and specified assumptions. Reported values could change dramatically if specifications were to change; therefore scrupulous QA is required to assure consistency. If specifications were to change, additional testing will be required to assure compliance.

This concludes the findings of this evaluation. I trust that the information provided is adequate for your needs. However, if you should have questions or comments please contact me.

Sincerely,

[redacted]

[redacted]
Physicist

ATTACHMENT I

Summary of Requirements in Specified Sections of ANSI/HPS N43.17-2000

Section 5.1, Subject dose limitation:

a. Effective dose shall not exceed 10 μrem per scan of the subject's front.
b. kVp should be known with an accuracy of 5%.
c. Total aluminum-equivalent filtration of the beam exit surface and any other material in the beam path shall be determined.
d. Facility operated to ensure that no individual scanned receives from the facility an effective dose in excess of 25 mrem in any twelve-month period.

Section 5.4, Dose limitation for special groups:

a. Radiation exposures outside of the "inspection zone" shall be less than 2 mrem in any one hour.
b. Exposures to personnel at any work station do not exceed a dose of 100 mrem per year.

ATTACHMENT II

Determination of Subject Dose

I. Description:
  1. General:
    a) The Rapiscan Secure 1000 is an electronic imaging system used to detect weapons and contraband concealed under the clothing of persons entering security areas. The unit functions by scanning a low energy x-ray beam over the surface of a subject and electronically creating an image from the low energy x-rays that scatter from near the skin surface of the subject

  2. Secure 1000 Identification:
    a) Serial number: S507451313

II. Machine Parameters and Assumed Values:

1. Operating kVp	50	5. Scan time (sec)	3.0
2. Operating mA	5		

III. Measurement Instruments Used:
  1. Victoreen 4000M+[3]
  2. Radcal 9015 with 10x9-1800 chamber[4]

IV. Radiation Beam Measurements:
  1. Methodology
    a) The collimator system was removed from the system so as to present a beam size that would cover either of the ion chamber detectors to allow measurement of the radiation output, kVp and HVL of the primary beam using the Victoreen 4000M+.

    b) Radiation output measurement with the Victoreen 4000M+:
      i. Radiation output at a distance of 72.8 without the exit panel in place was calculated (based on single or an average of 5 measured values with no exit panel in place) as follows:
        - = 29.0 mR/ma sec with a coefficient of variation = 0.008. See data in Table I.

    c) HVL measurement with the Victoreen 4000M+:
      i. The HVL was determined for the beam, both with and without the exit panel in the primary beam, by taking multiple measurements with known thicknesses of 99+% aluminum filter placed in the primary beam near the x-ray beam cone on the tube housing. Data is recorded in Table I and graphed in Figure II. Based on measured exposures, the HVL of the x-ray beam was determined to be as follows:
        - For open beam, HVL = 0.79 mm Al
        - For beam with the exit panel in place HVL = 1.0 mm Al

[3] Calibrated 6-9-2006
[4] Calibrated November, 2006

V. Subject Dose Determination:
  1. Methodology
    a) A Radcal 10x9-1800 ion chamber with 9015 controller was used to measure subject exposure per ANSI/HPS N43.17-2000. To determine subject dose, exposure measurements were taken at a distance of 30 cm from the exit panel of the Secure 1000 where the subject dose is maximum (about 36 inches above the floor). Since it was suspected that the ion chamber would be somewhat rate dependent for the exposure rate being measured, additional exposure measurements were taken at greater distances from the exit panel (see Table II for data). Subject dose equivalent per scan was calculated by
      i. Measure the exposure per scan
      ii. Determining the energy and rate corrected exposure per scan by multiplying the exposure per scan by appropriate energy and rate correction factors determined previously.
      iii. Calculating the effective dose/scan by multiplying the energy and rate corrected exposure by using the rem/R conversion from ANSI/HPS N43.17-2000, Tables B.1 or B.2 as appropriate.
    b) Energy and rate dependence of the Radcal 10x9-1800 Ion Chamber[5]:
      i. Energy correction = 1.34.
      ii. Rate dependence correction = 1.41
    c) Conversion rem/R:
      i. From ANSI/HPS N43.17-2000, Tables B.1 and B.2
        - For front scan rem/R = 0.23
        - For rear scan rem/R = 0.085
    d) Effective Dose to Subject:
      i. Exposure:
        - Measured exposure to a subject = 3.05 μR/scan. See Table II for data.
        - Corrected exposure to a subject = 5.75 μR/scan. See Table II for data.
      ii. Effective Dose to Subject:
        - Frontal = 1.32 μrem/scan. See Table II for data.
        - Back = 0.49 μrem/scan. See Table II for data.
        - Total = 1.81 μrem/scan.

[5] See report from me to Rapiscan dated 3-21-2006

Table I
Victoreen 4000M+ kVp, Output and HVL Data

W/O Panel	W/ Panel	Ind. kVp	Ind. mA	Front of Unit to Det. (cm)	Target to Det. Dist. (cm)	Added Filter (mm)	Meas. Peak (kVp)	Meas. Time (sec)	Meas. Exp (mR)	mR/sec	mR/mAs
w/o		50	5	30	72.8	0.00	47.31				
w/o		50	5	30	72.8	0.00	47.27				
w/o		50	5	30	72.8	0.00	47.19				
w/o		50	5	30	72.8	0.00	47.22				
w/o		50	5	30	72.8	0.00		0.93	136.70	146.85	29.37
w/o		50	5	30	72.8	0.00		5.07	730.70	144.04	28.81
w/o		50	5	30	72.8	0.00		4.04	584.10	144.44	28.89
w/o		50	5	30	72.8	0.00		1.93	280.20	144.88	28.98
w/o		50	5	30	72.8	0.46		1.65	147.60	89.24	17.85
w/o		50	5	30	72.8	0.61		1.56	125.30	80.22	16.04
w/o		50	5	30	72.8	0.81		1.38	98.76	71.36	14.27
w/o		50	5	30	72.8	1.00		1.77	114.00	64.30	12.86
w/o		50	5	30	72.8	1.47		1.52	73.16	48.26	9.65
	w	50	5	30	72.8	0.00		1.79	182.90	102.29	20.46
	w	50	5	30	72.8	0.81		1.76	100.30	57.05	11.41
	w	50	5	30	72.8	1.00		2.11	108.20	51.26	10.25
	w	50	5	30	72.8	1.20		1.77	80.77	45.61	9.12

 (b) (6) [redacted]

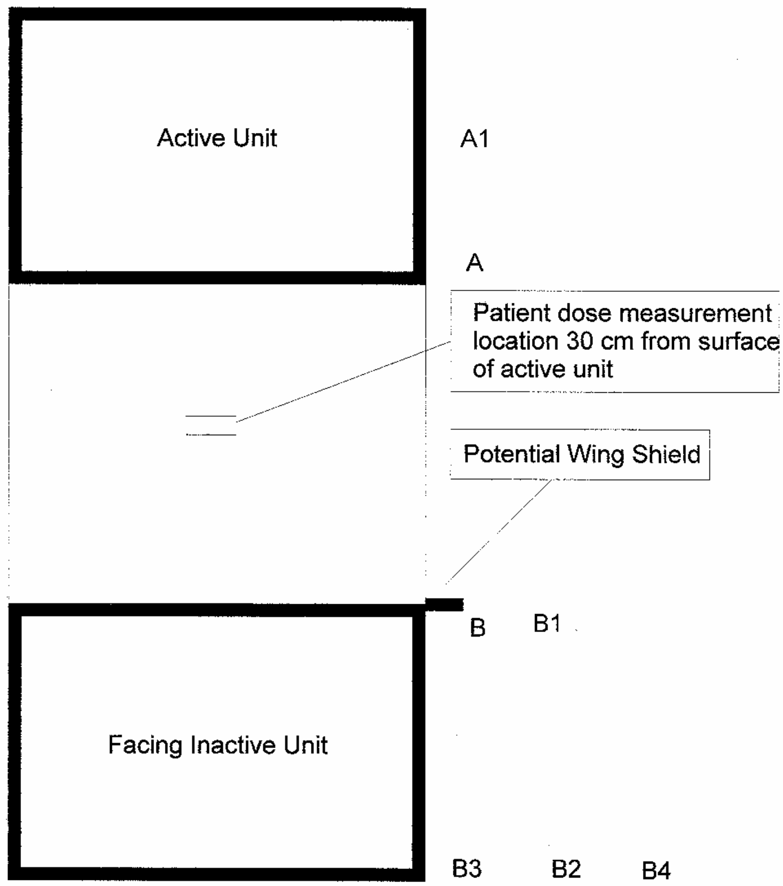
Table II
Radcal Exposure Data

Measurement Location	Added Shield	Meas. Height (in)	# of Scans	Measured Exp.[6] (uR)	uR/slice	Energy Correction	Dose Rate Correction	Corr. Exp. mR/slice
30 cm from front of unit	none	36	1	3.08	3.08	1.34	1.41	5.82
30 cm from front of unit	none	36	1	3.01	3.01	1.34	1.41	5.69
30 cm from front of unit	none	36	1	3.08	3.08	1.34	1.41	5.82
30 cm from front of unit	none	36	1	3.01	3.01	1.34	1.41	5.69
30 cm from front of unit	none	36	1	3.01	3.01	1.34	1.41	5.69
30 cm from front of unit	none	36	5	15.34	3.07	1.34	1.41	5.80
A @ surface	none	36	5	0.00	0.00	1.34	1.41	0.00
A1 @ surface	none	36	5	0.00	0.00	1.34	1.41	0.00
B @ surface	none	36	5	1.80	0.36	1.34	1.41	0.68
B @ surface	none	36	5	1.80	0.36	1.34	1.41	0.68
B @ surface	none	67	5	1.73	0.35	1.34	1.41	0.65
B @ surface	none	67	5	1.73	0.35	1.34	1.41	0.65
B1 @ 30 cm from surface	none	53	5	0.07	0.01	1.34	1.41	0.03
B2 @ 30 cm from surface	none	53	5	0.00	0.00	1.34	1.41	0.00
B3 @ surface	none	53	5	0.00	0.00	1.34	1.41	0.00
B4 @ 60 cm from surface	none	53	5	0.14	0.03	1.34	1.41	0.05
B4 @ 60 cm from surface	none	53	5	0.07	0.01	1.34	1.41	0.03
B @ surface	3" steel wing	53	4	0.00	0.00	1.34	1.41	0.00
B @ surface	3" steel wing	53	5	0.22	0.04	1.34	1.41	0.08
B past wing	3" steel wing	53	5	0.43	0.09	1.34	1.41	0.16

[6] Varies in increments of 0.07 μR.

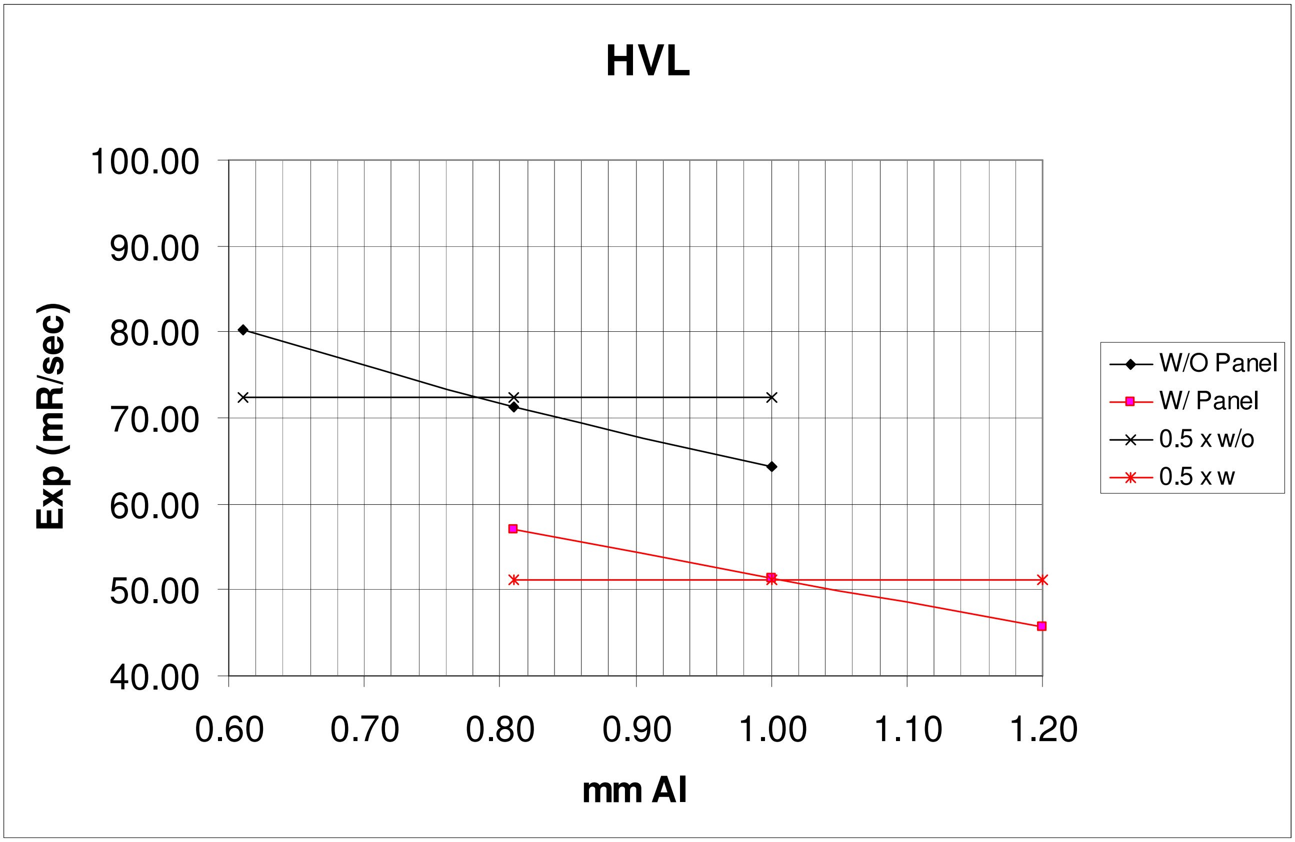
Figure I

Basic Equipment Layout and Measurement Locations



Not to Scale

Figure I


HVL
100.00
90.00
80.00
70.00
60.00
50.00
40.00
Exp (mR/sec)
0.60
0.70
0.80
0.90
1.00
1.10
1.20
mm Al
W/O Panel
W/ Panel
0.5 x w/o
0.5 x w

National Institute of Standards and Technology
Assessment of Radiation Safety and Compliance with ANSI N43.17-2002
Rapiscan Dual Secure 1000 Personnel Scanner

Report prepared by Frank Cerra
July 9, 2008

This report is based on a review of the [redacted] report of compliance, dated June 5, 2008; information received by Rapiscan; and measurements made at the FDA/CDRH labs on the single-source version of the Secure 1000 (SN S701201213) in April, 2006.

Summary

The dual Secure 1000 as described by Rapiscan and tested by [redacted] conforms to all the dose limitation requirements of ANSI N43.17-2002. For the screened individual the dual Secure 1000 is at least as safe as the single-source version as tested at FDA/CDRH in 2006. That is, an adult person being scanned with the Dual Smart Check receives an effective dose no higher than a person receiving a front and a back scan using the single-source Smart Check. Some recommendations are provided to keep employee exposures no higher than necessary. The effect of a curved front panel was also considered.

Assessment of effective dose to the screened individual

The [redacted] report indicates a skin entrance exposure of 5.75 μrem per scan at the reference point (i.e. 30 cm from the surface of one, active, unit and about 1 m from the floor). It appears that for the purpose of this measurement the second x-ray unit was deactivated. The measurement is consistent with the previous measurement of 9.6 μrem/scan performed at CDRH on the single-source Secure 1000 and modifications made to the scan mechanics of the dual system to produce a higher throughput (e.g. faster scan). Consequently, the effective dose received from a dual, front and back, scan using the Dual Secure 1000 is lower than the effective dose received from the equivalent two scans using the single-source Smart Check. The HVL measurement by Don Farley indicates an energy spectrum similar to that of the single source version, therefore the following conclusions can be made:

Reported exposure at 30 cm due to only one source: ~ 5.8 μR[1]
Exposure to effective dose conversion, front scan: ~ 0.25 rem/R
Exposure to effective dose conversion, back scan: ~ 0.09 rem/R
Adult effective dose from the front scan alone: ~ 1.5 μrem
Adult effective dose from the back scan alone: ~ 0.5 μrem
Adult effective dose from a dual, front and back, scan: ~ 2 μrem

[1] Exposure in roentgens, R, is roughly equal to entrance skin dose in rems. Both the roentgen and the rem are considered obsolete units by the international radiation protection community. The S. I. unit of equivalent dose is the sievert, Sv. One Sv is equal to 100 rem.

The 10 µrem dose limit of the ANSI N43.17-2002 standard applies to the effective dose from the front scan alone. The adult effective dose from the front scan alone, as measured by [redacted] is 5.8 µrem, so the dual Secure 1000 easily meets the ANSI requirement. It should be noted that measurements made by [redacted] in 2006 using the same technique on the single–source version were more conservative than the CDRH measurements by about 40% (albeit different production units were tested). This is due to the rate dependence correction applied by [redacted] which may be too conservative.[2] So it is likely that the current estimates may also be conservative.

Cabinet shielding

No data was provided on radiation "leakage" emissions from the two cabinets. These are not expected to be significantly different than the single-source version of the Secure 1000, except for the area opposite the inspection zone, where the primary beam from the opposite unit is transmitted. Even in this area, by virtue of distance alone, the dual Secure 1000 is expected to meet the ANSI shielding requirement of 0.25 mrem in any one hour at 30 cm from any surface (see also <u>Radiation emissions from the cabinet enclosure below</u>).

Inspection Zone

The inspection zone, as defined in ANSI N43.17-2002, is the area where the dose rate is greater than 2 mrem in any one hour. For this case, the entire area between the two units should be considered the inspection zone.

Assessment of effective dose to workers and bystanders

<u>Primary beam</u>

Each of the two units acts as a beam stop for the other unit. However, the geometry is such that the scanning beam emanating from one unit overshoots the cabinet of the other unit by a few inches on each side. The [redacted] measurements just outside the corner of one cabinet, in the area of the overshoot, are consistent with the primary beam intensity at that distance and angle. The overshoot results in four radiation beams each along a line intersecting the focal spot of one x-ray tube and an edge of the opposing cabinet face. The single-source unit tested at CDRH had a 60 inch wide beam stop that was positioned roughly at the location of the second cabinet of the dual system. The beam stop comfortably intercepted the entire scan beam. The Rapiscan drawings of the dual system show each unit to be about 54 inches wide, including the handles

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[2] Most of the recombination loss is expected to be from volume recombination, occurring over the ion chamber volume as ions are collected. The ion densities over the IC volume are better described by the exposure rate measured by the chamber than by the instantaneous rate inside the pencil beam. Moreover, a correction using measurements at different distances should not be based on the inverse square law because the law does not hold in this case. The recombination loss of the Radcal 1800cc ion chamber was assessed at CDRH in conjunction with the testing of the single-source Secure 1000. Using a collecting potential technique the ion recombination loss was found to be negligible.

overhanging on each side. If the handles each overhang 2 inches, then a 5 inch wing shield on each side would provide the equivalent coverage of the back plate. The shields can be made narrower if they are rotated perpendicular to the edge of the scanning radiation field.

In the absence of the four shields described, the exposure at the cabinet corners was measured by [redacted] to be 0.68 µR/scan. The width of the overshoot beam is expected to increase linearly with distance from the focal spot of the x-ray tube. The exposure is expected to decrease roughly as the inverse of the distance from the focal spot. That means that the exposure would be about half, or 0.34 µR/scan, at roughly 1.5 m from the corner being overshot by the scanning beam (distance measured along the beam direction). [redacted] also tested a 3 inch steel shield placed at the corner and found it to be effective (however, because of the size of the ion chamber used it is uncertain if the shield intercepted the entire beam, since measurements outside the shield may include a small contribution from the primary beam).

If wing shields are not used, either the occupancy of areas traversed by the four overshoot beams or the scan rate should be controlled to be made consistent with the recommended annual (skin entrance) dose limit of 100 mrem to employees. [redacted] estimate of 0.68 µR/scan applies to a beam about 5 inches wide. For the purpose of calculating whole body skin entrance exposure for people stationed in the zone of interest but with some freedom of movement, it is reasonable to decrease the estimate by a factor of two to 0.34 µR/scan. This means that the scan rate averaged over 2000 full-time hours should not exceed about 150 scans/h. Alternatively, assuming the maximum sustainable scan rate to be 240 scans/h, no employee should be at this location more than about 3/5 of full time. Given these numbers it can be argued that shields are not required. It should be noted, however, that this analysis is based on a measurement that is approximate. A set of four wing shields would provide a sense of security and preclude further analysis.

<u>Scatter radiation</u>

No data was received regarding radiation scattered from the screened individuals into adjacent areas. For the single-source unit previously tested at CDRH the scatter directly to the side of the screened person, at 30 cm from plane of the side of cabinet, was about 0.20 µR/scan. Applying a scaling factor of 1.2 (i.e. [2 x 5.8]/9.6 based on the dual and single units measured reference exposures) this becomes about 0.24 µR/scan. For 180 scans/h and 2000 hours occupancy per year this translates to an integrated exposure of about 86 mR per year, which is below the ANSI recommended 100 mrem. However, consistent with the principle of ALARA (keeping exposures as low as reasonably achievable) it is recommended that employees do not routinely occupy the immediate open area next to the inspection zone.

<u>Radiation emissions from the cabinet enclosure</u>

No data was provided on radiation "leakage" emissions from the two cabinets. These are not expected to be significantly different than the single-source version of the Secure

1000, except for the area opposite the inspection zone, where the primary beam from the opposite unit is transmitted. It is recommended that some measurements be performed in the center of the back of the cabinet, where the beam from the opposite unit is not shielded by the vertical detectors. Particular attention should be given to vent holes and spaces the cracks around the cabinet doors. Note that in the absence of any shielding the exposure in this region would be about 3 μR/scan.

Recommendations

It is recommended that the cost effectiveness of wing shields be assessed in view of the considerations above.

Although it is unlikely that the annual permissible dose be exceeded, it is recommended that full-time employees do not occupy the immediate area next to the inspection zone at each side of the opening between the two cabinets for long periods of time. This also applies to the adjacent areas beside each cabinet if wing shields are not implemented. This is especially important for heavy machine use.

Exposure measurements should be made at the back of each unit while the opposite unit is scanning to verify proper shielding of the primary beam.

Other considerations

There was a design change to the front panel of the Secure 1000 since the (b) (6) [redacted] test. The change consists of replacing the flat front panel with a curved front panel (see attachment 3). Assuming that there is no significant difference in the composition and thickness of the material, this modification is not expected to significantly affect the dose distribution. However, because of the curvature, the reference measurement point is now a few inches closer to the x-ray source (i.e. 30 cm from the surface of the front panel at the center). The effect of this is that the subject dose, for the purpose of the ANSI standard, will increase. The increase is roughly inversely proportional to the distance from the x-ray anode.[3] That is, if the curvature moves the reference point inward by 10% of the distance from the anode, then the subject dose will increase by about 10%. The amount of curvature does not seem enough to affect conformance with the ANSI standard. However, unrestricted access to points extremely close to the x-ray tube is not recommended.

Attachments

1. (b) (6) [redacted] report
2. Rapiscan drawings and specs.
3. Photo of latest version

[3] This is true as an average dose received by the skin surface. Points on the skin will receive different doses, particularly in regions where the sweeps of the x-ray beam do not touch or overlap.

ADDENDUM TO SAFE VIEW, INC. TEST REPORT FC06-056

FOR THE

SECURITY PORTAL, SCOUT 100 VERSION 2 SWITCH

FCC PART 15 SUBPART C SECTIONS 15.207 & 15.209

COMPLIANCE

DATE OF ISSUE: JANUARY 11, 2007

PREPARED FOR:

Safe View, Inc.
910 East Franklin Road
Meridian, ID 83642

P.O. No.: 4335E
W.O. No.: 85484

PREPARED BY:

[redacted]
CKC Laboratories, Inc.
5046 Sierra Pines Drive
Mariposa, CA 95338

Date of test: July 25 - November 16, 2006

Report No.: FC06-056A

TABLE OF CONTENTS

ADMINISTRATIVE INFORMATION

DATE OF TEST:	July 25 – November 16, 2006
DATE OF RECEIPT:	July 25, 2006
MANUFACTURER:	Safe View, Inc. 910 East Franklin Road Meridian, ID 83642
REPRESENTATIVE:	[redacted]
TEST LOCATION:	CKC Laboratories, Inc. 1120 Fulton Place Fremont, CA 94539
TEST METHOD:	ANSI C63.4 (2003)
PURPOSE OF TEST:	**Original report** is to demonstrate the compliance of the Security Portal, SCOUT 100 Version 2 Switch with the requirements for FCC Part 15 Subpart C Sections 15.207 & 15.209 devices with FCC waiver DA 06-1589 dated August 4, 2006. **Addendum A** is to revise the comments on page 9 with no new testing.

FCC TO CANADA STANDARD CORRELATION MATRIX

Canadian Standard	Canadian Section	FCC Standard	FCC Section	Test Description
RSS GEN	7.1.4	47CFR	15.203	Antenna Connector Requirements
RSS GEN	7.2.1	47CFR	15.35(c)	Pulsed Operation
RSS GEN	7.2.2	47CFR	15.207	AC Mains Conducted Emissions Requirement
RSS 210	2.1	47CFR	15.215(c)	Frequency Stability Recommendation
RSS 210	2.2	47CFR	15.205	Restricted Bands of Operation
RSS 210	2.6	47CFR	15.209	General Radiated Emissions Requirement
	IC 5933		958979	Site File No.

CONDITIONS FOR COMPLIANCE

Modifications: 1) Added a two-turn clamp on ferrite on the SCU serial line.
2) Taped AC line cable down to the chassis and added two clamp-on ferrites on AC line to the motor controller.
3) Added a clamp-on ferrite to each of the DB37 cables at the ISU end of the cables.
4) Changed the encoder cable to a custom made, shielded encoder cable.
5) A 6 dB attenuator was installed on both antenna masts at the FDIV.

These modifications or Safeview's engineering equivalencies of these modifications will ensure the EUT will continue to meet the FCC standards.

APPROVALS

Steve Behm, Director of Engineering Services

QUALITY ASSURANCE:

(b) (6) [redacted]

Quality Assurance Administrative Manager

(b) (6) [redacted]
(b) (6) [redacted]

EMC Engineer/Lab Manager

TEST PERSONNEL:

(b) (6) [redacted]
(b) (6) [redacted]

EMC Engineer

(b) (6) [redacted]
(b) (6) [redacted] Senior EMC Engineer/Consultant

FCC 15.31(e) Voltage Variations
Nominal ACV=120. 85% is 102V. 115% is 138V.

FCC 15.31(m) Number Of Channels
This device was tested on three channels.

FCC 15.33(a) Frequency Ranges Tested
15.207 Conducted Emissions: 150 kHz – 30 MHz
15.209 Radiated Emissions: 130 MHz – 100 GHz

FCC SECTION 15.35:
ANALYZER BANDWIDTH SETTINGS PER FREQUENCY RANGE

TEST	BEGINNING FREQUENCY	ENDING FREQUENCY	BANDWIDTH SETTING
CONDUCTED EMISSIONS	150 kHz	30 MHz	9 kHz
RADIATED EMISSIONS	9 kHz	150 kHz	200 Hz
RADIATED EMISSIONS	30 MHz	1000 MHz	120 kHz
RADIATED EMISSIONS	1000 MHz	100 GHz	1 MHz

FCC 15.203 Antenna Requirements
The Safeview Scout 100 system uses an antenna element permanently attached to a subcomponent in the mast switching array and thereby satisfies the requirements of FCC part 15.203.

EUT Operating Frequency
The EUT was operating at 24.25 GHz – 30 GHz.

Temperature And Humidity During Testing
The temperature during testing was within +15°C and + 35°C.
The relative humidity was between 20% and 75%.

EQUIPMENT UNDER TEST (EUT) DESCRIPTION

The customer declares the EUT tested by CKC Laboratories was representative of a production unit.

EQUIPMENT UNDER TEST

Security Portal

Manuf:	SafeView, Inc.
Model:	SCOUT 100 Version 2 Switch
Serial:	A100062500152 & A100062300146
FCC ID:	pending

PERIPHERAL DEVICES

The EUT was tested with the following peripheral device(s):

Computer/Monitor

Manuf:	MPC
Model:	CLIENTPRO 474
Serial:	4007670-0001

Computer Power Supply

Manuf:	Lite-on Technology Corp.
Model:	PA-1221-03
Serial:	5Y00045302

Keyboard

Manuf:	MPC
Model:	SK-1688
Serial:	C0602086090

Mouse

Manuf:	Microsoft
Model:	Basic Optical Mouse 1.0A
Serial:	NA

REPORT OF MEASUREMENTS

The following tables report the worst case emissions levels recorded during the tests performed on the EUT. All readings taken were peak readings unless otherwise stated. The data sheets from which the emissions tables were compiled are contained in Appendix C.

Table 1: FCC 15.207 Six Highest Conducted Emission Levels

FREQUENCY MHz	METER READING dBµV	CORRECTION FACTORS Lisn dB	HPF dB	Att dB	Cable dB	CORRECTED READING dBµV	SPEC LIMIT dBµV	MARGIN dB	NOTES
0.184906	36.6	0.4	0.1	9.8	0.1	48.1	54.3	-6.2	W
0.293986	33.5	0.3	0.3	9.8	0.1	44.0	50.4	-6.4	W
0.330346	33.2	0.4	0.2	9.8	0.1	43.7	49.4	-5.7	B
0.331073	32.6	0.3	0.2	9.8	0.1	43.0	49.4	-6.4	W
0.364000	31.4	0.3	0.1	9.7	0.2	41.7	48.6	-6.9	WA
0.432881	31.3	0.3	0.0	9.7	0.2	41.5	47.2	-5.7	W

Test Method: ANSI C63.4 (2003)
Spec Limit: FCC Part 15 Subpart C Section 15.207

NOTES:
A - Average Reading
B - Black Lead
W - White Lead

COMMENTS: The SafeScout S-100 Security Portal is operating and running on an auto-cycle pause time of 6 seconds. The SafeScout S-100 is connected to a support PC by an ethernet connection. The support PC triggers the SCU to begin a security scan. The software is setup to repeatedly run scan while the system is under test. Conducted Emissions 0.15 – 30 MHz.

Table 2: FCC 15.209 Six Highest Carrier Radiated Emission Levels

FREQUENCY MHz	METER READING dBµV	CORRECTION FACTORS Ant dB	Amp dB	Cable dB	Dist dB	CORRECTED READING dBµV/m	SPEC LIMIT dBµV/m	MARGIN dB	NOTES
24484.000	91.5	-2.3		0.0	-13.0	76.2	77.9	-1.7	V
24624.000	102.9	-17.0		7.2	-13.0	80.1	82.2	-2.1	V
26973.000	74.7	2.0		7.4	-13.0	71.1	73.0	-1.9	V
26973.000	74.3	2.0		7.4	-13.0	70.7	73.0	-2.3	V
26974.000	74.6	2.0		7.4	-13.0	71.0	73.0	-2.0	V
29802.000	78.3	3.6		7.9	-13.0	76.8	77.9	-1.1	V

Test Method: ANSI C63.4 (2003)
Spec Limit: FCC Part 15 Subpart C Section 15.209
Test Distance: 1 Meter

NOTES: V - Vertical Polarization

COMMENTS: The Scout 100 V2 Switch Security Portal's antenna masts are reversed from their normal scanning position so these antennas are facing to the outside of the EUT. Testing was performed at 1 meter from the EUT's antenna mast. In accordance with ANSI C63.4 a distance correction factor to 3 meters from the periphery of the EUT is required. This results in a 13dB distance correction factor that appears on the data sheets. For this testing the transmitter is transmitting continuously at each of the following frequencies. Low channel 24.65 GHz. Mid channel=27 GHz. Hi channel=29.8 GHz. Measuring Peak Carrier Power per DA 06-1589 paragraph 8b. RBW=100 kHz. VBW=3 MHz, Span=1 GHz. Sweep time=auto. Measuring Average RMS Power per DA 06-1589 paragraph 8a. RBW=1 MHz, VBW=3 MHz, Span=0 Hz. Sweep time =1 sec. Emissions reported represent worst case polarization. Peak limit was derived by adding 41 dB to the average RMS value for that channel and mast antenna number. Data for antenna 320 mid and hi channels was re-measured on 11-16-06. These readings were taken at different AC input voltages to observe the effect on the output power. No effect on output power was noticed by varying the AC input. Nominal ACV=120, 85% is 102V, 115% is 138V.

Table 3: FCC 15.209 Six Highest Radiated Emission Levels: 9 kHz-1000 MHz

FREQUENCY MHz	METER READING dBµV	CORRECTION FACTORS Ant dB	Amp dB	Cable dB	Dist dB	CORRECTED READING dBµV/m	SPEC LIMIT dBµV/m	MARGIN dB	NOTES
293.768	51.1	12.9	-25.4	1.7		40.3	46.0	-5.7	H
295.329	50.6	12.9	-25.4	1.7		39.8	46.0	-6.2	VQ
310.234	51.1	13.2	-25.6	1.7		40.4	46.0	-5.6	H
399.029	48.6	15.5	-25.9	2.0		40.2	46.0	-5.8	V
399.926	48.5	15.5	-25.9	2.0		40.1	46.0	-5.9	V
500.013	47.3	17.5	-26.7	2.2		40.3	46.0	-5.7	HQ

Test Method: ANSI C63.4 (2003)
Spec Limit: FCC Part 15 Subpart C Section 15.209
Test Distance: 3 Meters

NOTES: Q Quasi Peak Reading
V Vertical Polarization

COMMENTS: The Scout 100 Version 2 Switch Security Portal is operating and running on an auto-cycle pause time of 6 seconds. The Scout 100 is connected to a support PC by an ethernet connection. The support PC triggers the SCU to begin a security scan. The software is setup to repeatedly run scan while the system is under test. Radiated Emissions 30 - 1000MHz. Maximized. Modifications:

1) Added a two-turn ferrite on the SCU serial line.
2) Taped AC line cable down to the chassis and added two clamp-on ferrites on AC line to the motor controller.
3) Added a clamp-on ferrite to each of the DB37 cables at the ISU end of the cables.
4) Changed the encoder cable to a custom made, shielded encoder cable.
5) A 6 dB attenuator was installed on both antenna masts at the FDIV.

These modifications or Safeview's engineering equivalencies of these modifications will ensure the EUT will continue to meet the FCC standards.

The reasons for these modifications are to reduce emissions between 30 MHz and 1000 MHz:
1) ferrite on serial line - addresses 60MHz broadband noise
2) AC line with ferrites to motor controller - addresses discrete 60MHz and 80MHz spur
3) DB37 ferrite - addresses 153MHz discrete spur
4) custom shielded encoder cable - multiple discrete frequencies 30-1000MHz
5) 6 dB attenuators addresses the divided down VCO frequencies removing the 700 MHz peaks

No transceiver related emissions were detected within 20dB of the limit below 30 MHz. Loop antenna was positioned in the horizontal and vertical polarity and rotated to maximize emissions in this range.

Table 4: FCC 15.209 Six Highest Radiated Emission Levels: 1-100 GHz									
FREQUENCY MHz	METER READING dBµV	CORRECTION FACTORS Ant dB	Amp dB	Cable dB	Dist dB	CORRECTED READING dBµV/m	SPEC LIMIT dBµV/m	MARGIN dB	NOTES
12349.240	57.7	39.4	-65.5	17.2		48.8	54.0	-5.2	V
9343.941	57.4	37.9	-63.1	14.5		46.8	54.0	-7.2	H
9343.733	57.4	37.9	-63.1	14.5		46.8	54.0	-7.2	V
12348.580	55.2	39.4	-65.6	17.2		46.3	54.0	-7.7	H
3087.833	71.8	30.2	-64.0	8.5		46.0	54.0	-8.0	H
1000.033	88.3	23.8	-68.9	2.3		45.5	54.0	-8.5	V

Test Method: ANSI C63.4 (2003)
Spec Limit: FCC Part 15 Subpart C Section 15.209 and
Test Distance: .1 meters for 40-100 GHz and
3 Meters for < 40 GHz testing

NOTES: H - Horizontal Polarization
V - Vertical Polarization

COMMENTS: The Scout 100 Version 2 Switch Security Portal is operating and running on an auto-cycle pause time of 6 seconds. The Scout 100 is connected to a support PC by an ethernet connection. The support PC triggers the SCU to begin a security scan. The software is setup to repeatedly run scan while the system is under test. Radiated Emissions 1-12.5 GHz. Maximized Emissions. Modifications:
1) Added a two-turn clamp on ferrite on the SCU serial line.
2) Taped AC line cable down to the chassis and added two clamp-on ferrites on AC line to the motor controller.
3) Added a clamp-on ferrite to each of the DB37 cables at the ISU end of the cables.
4) Changed the encoder cable to a custom made, shielded encoder cable.
5) A 6 dB attenuator was installed on both antenna masts at the FDIV.

The reasons for these modifications are:
1) ferrite on serial line - addresses 60MHz broadband noise
2) AC line with ferrites to motor controller - addresses discrete 60MHz and 80MHz spur
3) DB37 ferrite - addresses 153MHz discrete spur
4) custom shielded encoder cable - multiple discrete frequencies 30-1000MHz
5) 6 dB attenuators addresses the divided down VCO frequencies removing the 700 MHz peaks
Signals detected in the range of 40-100 GHz were determined to be noise floor readings, representing no EUT signals detected above this level.

Table 5: Band Edge Emission Levels

FREQUENCY MHz	METER READING dBµV	CORRECTION FACTORS Ant dB	Amp dB	Cable dB	Dist dB	CORRECTED READING dBµV/m	SPEC LIMIT dBµV/m	MARGIN dB	NOTES
24250.000	43.0	-17.2		7.2	-10.0	23.0	54.0	-31.0	V-2
30000.000	25.3	4.1		7.9	-10.0	27.3	54.0	-26.7	VA-1

Test Method: ANSI C63.4 (2003)
Spec Limit: FCC Part 15 Subpart C Section 15.209 and
Test Distance: 1 Meter

NOTES:
A - Average Reading
V - Vertical Polarization
1 - Upper Band
2 - Lower Band

COMMENTS: The Scout 100 V2 Switch Security Portal antenna mast is in normal position so antennas are facing to the inside of the EUT. Low channel=24.65 GHz. Mid channel=27 GHz. Hi channel=29.8 GHz. Measuring Peak Carrier Power per DA 06-1589 paragraph 8b. RBW=100 kHz, VBW=3 MHz, Span=1 GHz, Sweep time=auto. Measuring Average RMS Power per DA 06-1589 paragraph 8a. RBW=1 MHz, VBW=3 MHz, Span=0 Hz, Sweep time=1 sec. Emissions reported represent worst case polarization. Measuring CW peak values at low and high channel. Measuring sweeping average values at lower and upper band edges. Transmitting on antenna 192. Measurements were taken with the EMC antennas inside the EUT with the transmitter on continuously.

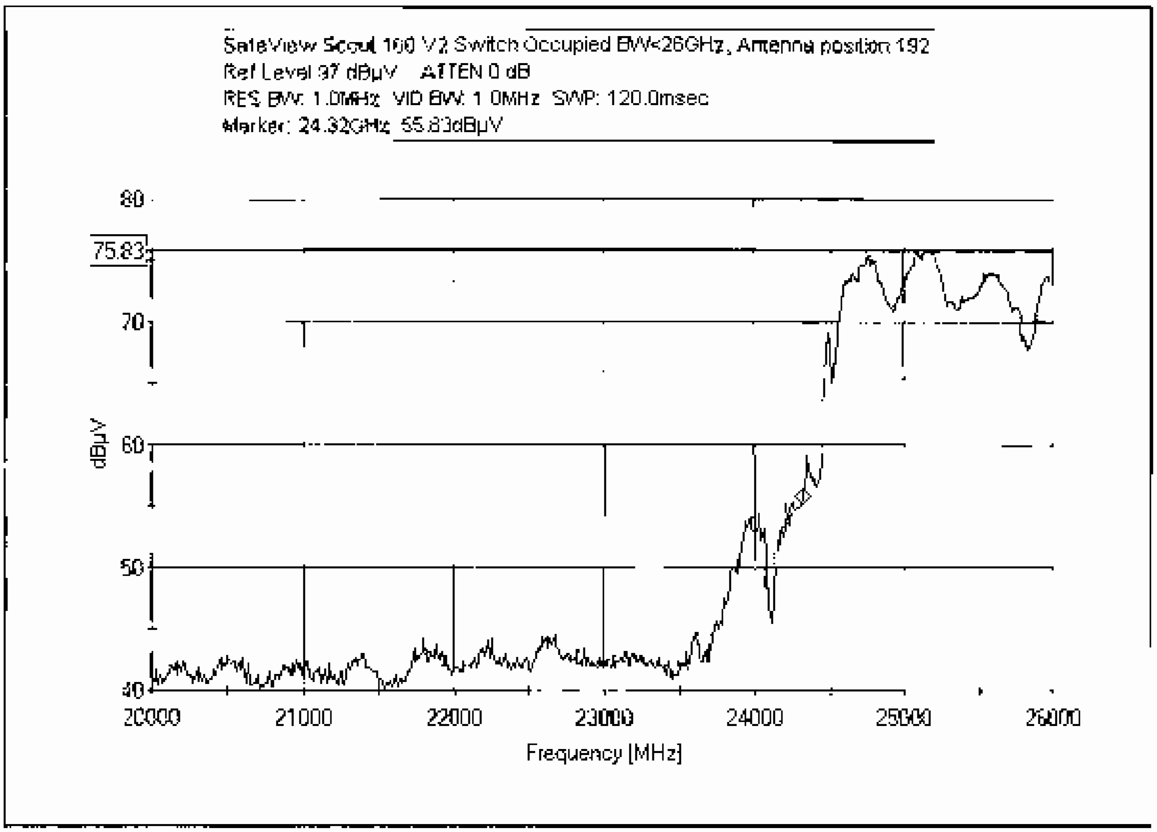
Band Edge Frequency requirements

Measurement	Measured Frequency	Limits	
Lower Band Edge	24.32 GHz (fill in)	24.25GHz	Pass
Upper Band Edge	29.868GHz (fill in)	30.00GHz	Pass

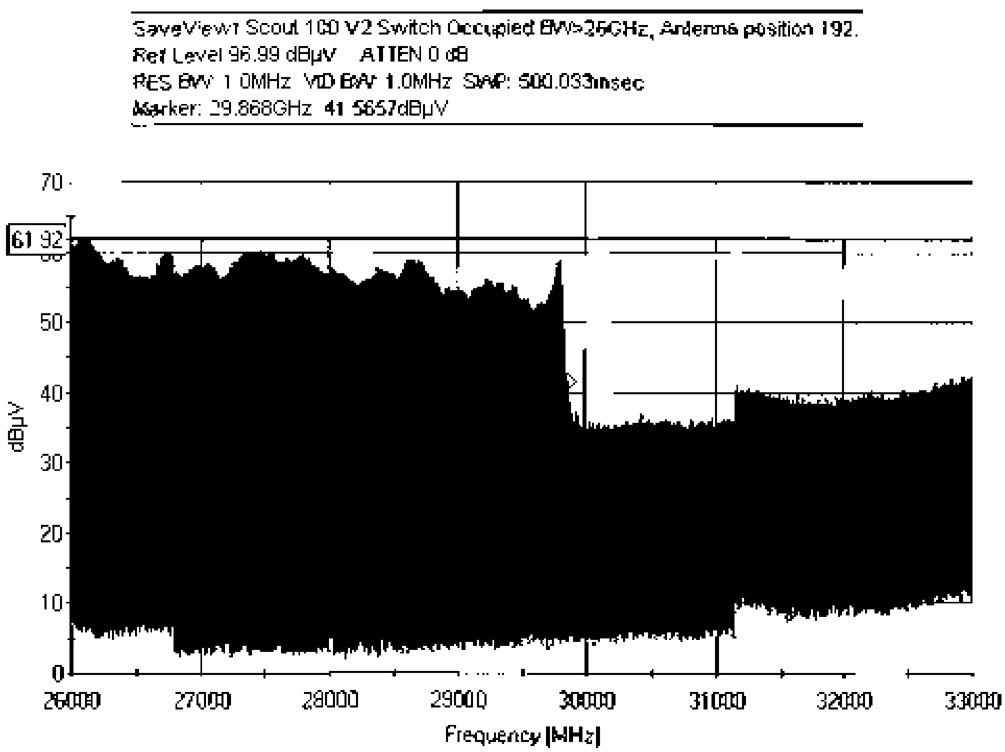
OCCUPIED BANDWIDTH 20-26 GHz

Summary of Occupied Bandwidth

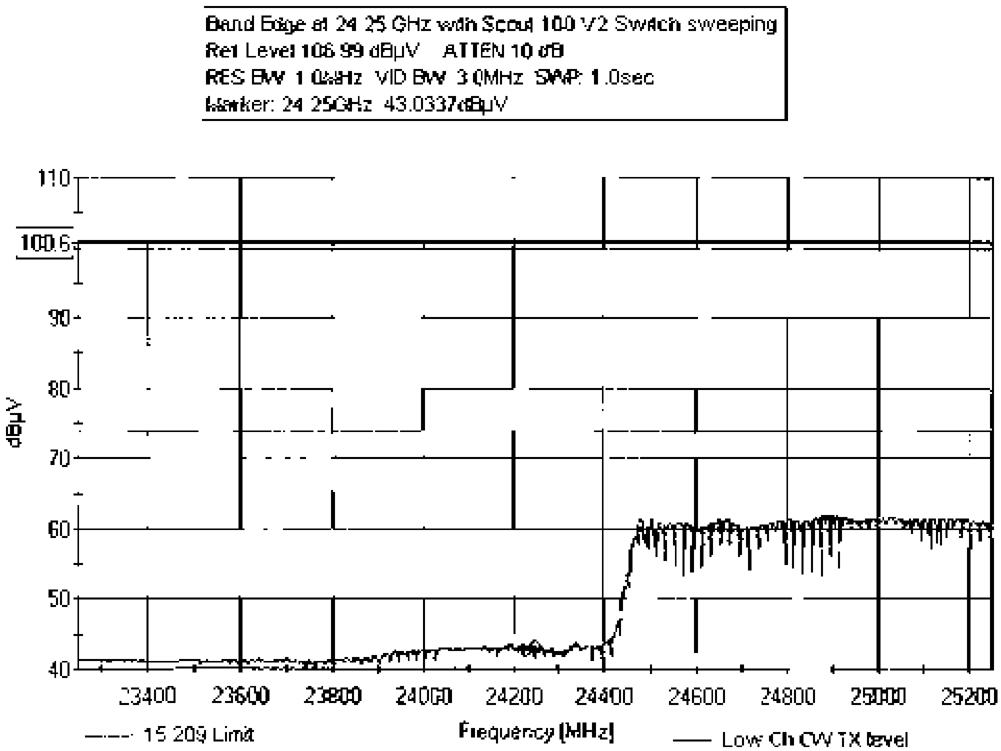
Lower Frequency	Upper Frequency	Measured 20dB Bandwidth
24.32 GHz	29.868GHz	5.548 GHz



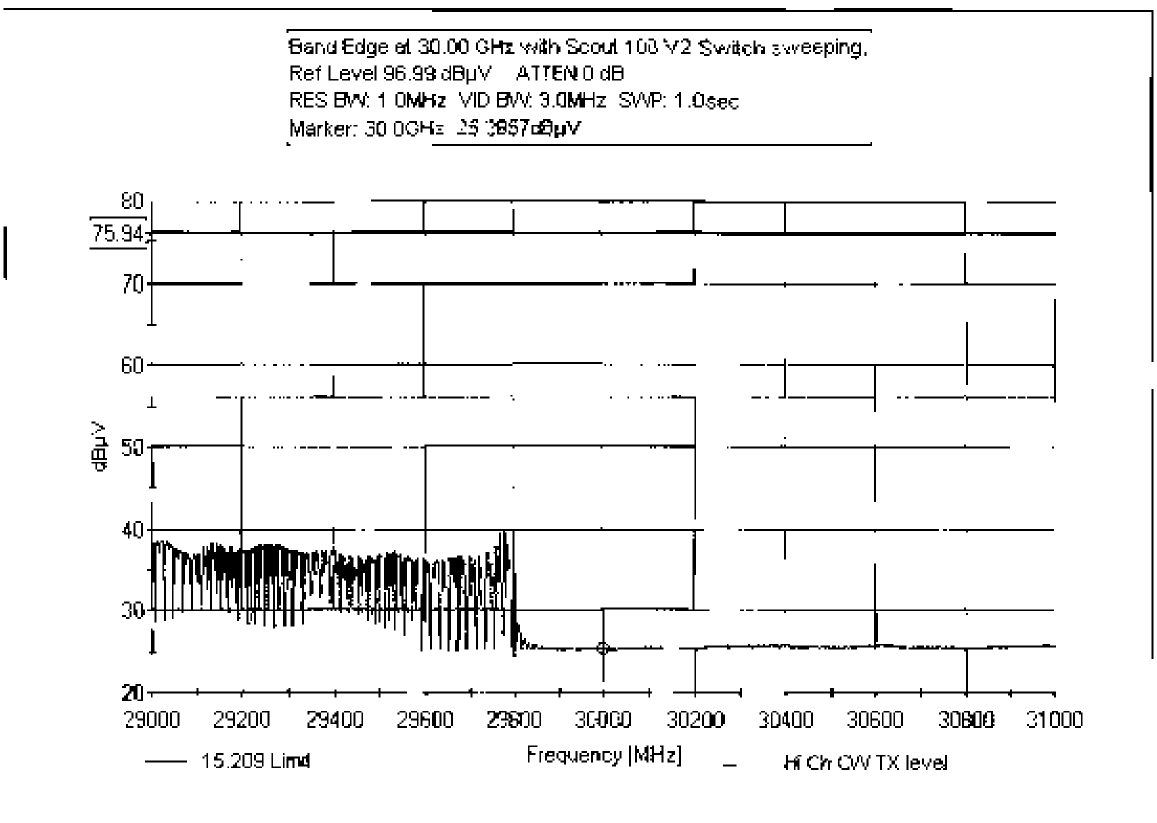
OCCUPIED BANDWIDTH 26-33 GHz



24.25 GHz BAND EDGE AVERAGE



30.0 GHz BAND EDGE AVERAGE



EUT SETUP

The equipment under test (EUT) was set up in a manner that represented its normal use, as shown in the photographs in Appendix A. Any special conditions required for the EUT to operate normally are identified in the comments that accompany the emissions tables. The corrected data was then compared to the applicable emission limits to determine compliance.

The cables were routed consistent with the typical application by varying the configuration of the test sample. Interface cables were connected to the available I/O ports of the test unit. The effect of varying the position of the cables was investigated to find the configuration that produced maximum emissions. I/O cables were of the type and length specified in the individual requirements. The length of cable that produced maximum emissions was selected.

The radiated and conducted emissions data of the EUT was taken with the HP Spectrum Analyzer. Incorporating the applicable correction factors for distance, antenna, cable loss and amplifier gain, the data was reduced as shown in Table A.

Preliminary and final measurements were taken in order to ensure that all emissions from the EUT were found and maximized.

CORRECTION FACTORS

The basic spectrum analyzer reading was converted using correction factors as shown in the highest emissions readings in the tables. For radiated emissions in dBμV/m, the spectrum analyzer reading in dBμV was corrected by using the following formula in Table A. This reading was then compared to the applicable specification limit to determine compliance.

TABLE A: SAMPLE CALCULATIONS		
	Meter reading	(dBμV)
+	Antenna Factor	(dB)
+	Cable Loss	(dB)
-	Distance Correction	(dB)
-	Preamplifier Gain	(dB)
=	Corrected Reading	(dBμV/m)

TEST INSTRUMENTATION AND ANALYZER SETTINGS

The test instrumentation and equipment listed in Appendix B were used to collect both the radiated and conducted emissions data. For radiated measurements from 9 kHz to 30 MHz, the magnetic loop antenna was used. For frequencies from 30 to 1000 MHz, the biconilog antenna was used. The horn antenna was used for frequencies above 1000 MHz. Conducted emissions tests required the use of the FCC type LISNs.

The HP or Agilent spectrum analyzers were used for the measurements under which they are listed. Table B shows the analyzer bandwidth settings that were used in designated frequency bands. For conducted emissions, an appropriate reference level and a vertical scale size of 10 dB per division were used. A 10 dB external attenuator was also used during conducted tests, with internal offset correction in the analyzer. During radiated testing, the measurements were made with 0 dB of attenuation, a reference level of 97 dBμV, and a vertical scale of 10 dB per division.

SPECTRUM ANALYZER DETECTOR FUNCTIONS

The notes that accompany the measurements contained in the Tables indicate the type of detector function used to obtain the given readings. Unless otherwise noted, all readings were made in the "Peak" mode. Whenever a "Quasi-Peak" or "Average" reading is listed as one of the six highest readings, this is indicated as a "Q" or an "A" in the appropriate table. The following paragraphs describe in more detail the detector functions and when they were used to obtain the emissions data.

Peak

In this mode, the Spectrum Analyzer or test engineer recorded all emissions at their peak value as the frequency band selected was scanned. By combining this function with another feature of the analyzer called "peak hold," the analyzer had the ability to measure transients or low duty cycle transient emission peak levels. In this mode the analyzer made a slow scan across the frequency band selected and measured the peak emission value found at each frequency across the band.

Quasi-Peak

When the true peak values exceeded or were within 2 dB of the specification limit, quasi-peak measurements were taken using the HP Quasi-Peak Adapter for the HP Spectrum Analyzer. The detailed procedure for making quasi peak measurements contained in the HP Quasi-Peak Adapter manual were followed.

Average

For certain frequencies, average measurements may be made using the spectrum analyzer. To make these measurements, the test engineer reduces the video bandwidth on the analyzer until the modulation of the signal is filtered out. At this point the analyzer is set into the linear mode and the scan time is reduced. All Average readings listed except the Carrier Peak and Average Emissions Levels were measured using the definition of Average above. The Carrier Peak and Average Emissions Levels were measured using the Average method described in Waiver DA95-1589.

TSL001092

EUT TESTING

Mains Conducted Emissions

During conducted emissions testing, the EUT was located on the turntable in the alternative OATS site. The EUT was a minumum of 80cm from any other conductive surface.

Power to the EUT was provided through a LISN. The LISN was grounded to the ground plane floor of the alternative OATS site. All other objects were kept a minimum of 80 cm away from the EUT during the conducted test.

The LISNs used were 50 µH-/+50 ohms. Automated measurements were used in the frequency band of 150 kHz to 30 MHz in the Manual Measurement mode. The automated software was utilized to set up the proper frequency bands and bandwidths for each frequency band. After each frequency band was properly set up, the test engineer set the spectrum analyzer to MAX Hold, Continuous sweep and allowed the spectrum analyzer to capture the data over at least three full cycles of the EUT. The test engineer then let the software know the data had been captured and the software recorded the data and set up the next frequency range. All readings within a minimum of 10 dB of the limit were recorded, and those within 6 dB of the limit were examined with additional measurements using a slower sweep time.

Radiated Emissions

The EUT was floor standing mounted directly on the rotating table.

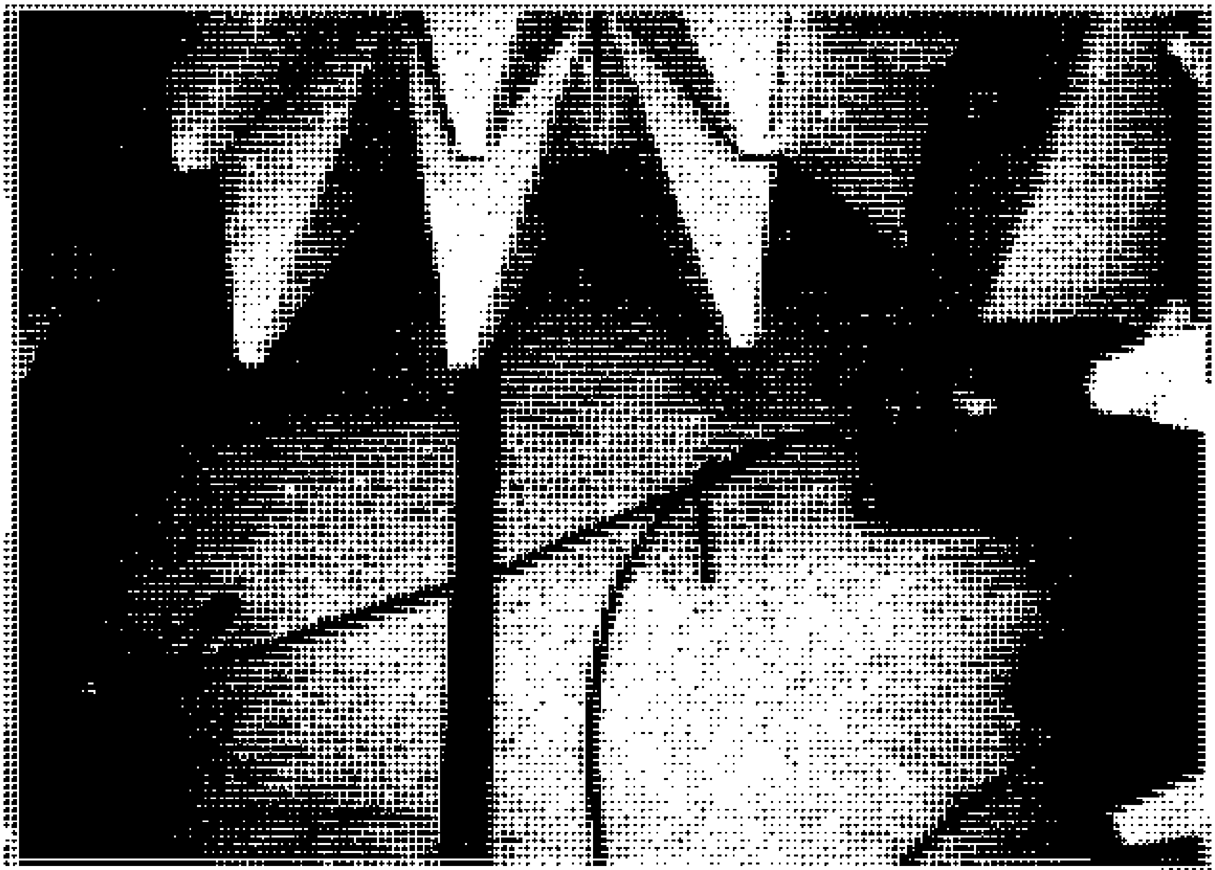
During the preliminary radiated scan, the EUT was powered up and operating in its defined FCC test mode. For radiated measurements from 9 kHz to 30 MHz, the magnetic loop antenna was used. The frequency range of 30 MHz to 1000 MHz was scanned with the biconilog antenna located about 1.5 meter above the ground plane in the vertical polarity. During this scan, the turntable was rotated and all peaks at or near the limit were recorded. A scan of the FM band from 88 to 110 MHz was then made using a reduced resolution bandwidth and frequency span. The biconilog antenna was changed to the horizontal polarity and the above steps were repeated. For frequencies exceeding 1000 MHz, the horn antenna was used. Care was taken to ensure that no frequencies were missed within the FM and TV bands.

A thorough scan of all frequencies was made manually using a small frequency span, rotating the turntable and raising and lowering the antenna from one to four meters as needed. The test engineer maximized the readings with respect to the table rotation, antenna height, and configuration of EUT. Maximizing of the EUT was achieved by monitoring the spectrum analyzer on a closed circuit television monitor.

APPENDIX A

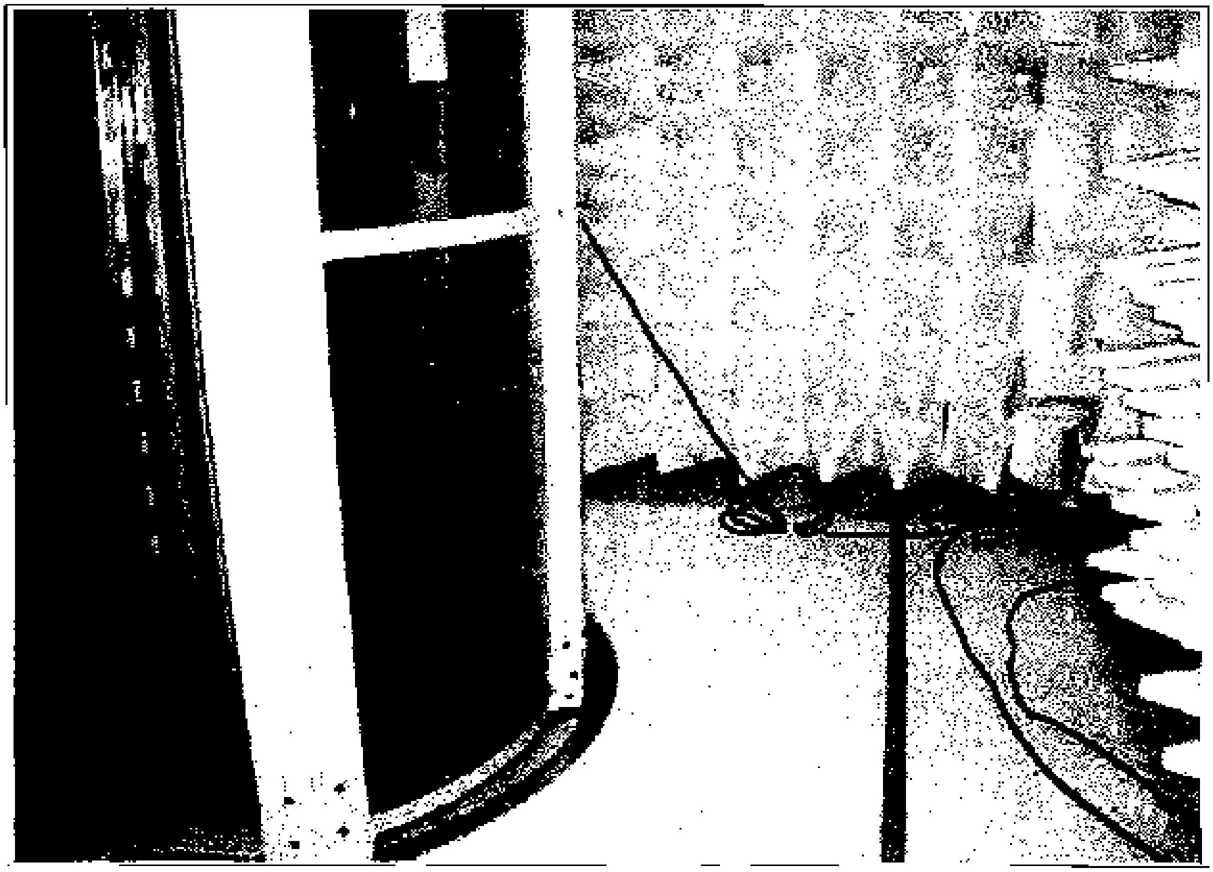
TEST SETUP PHOTOGRAPHS

PHOTOGRAPH SHOWING MAINS CONDUCTED EMISSIONS



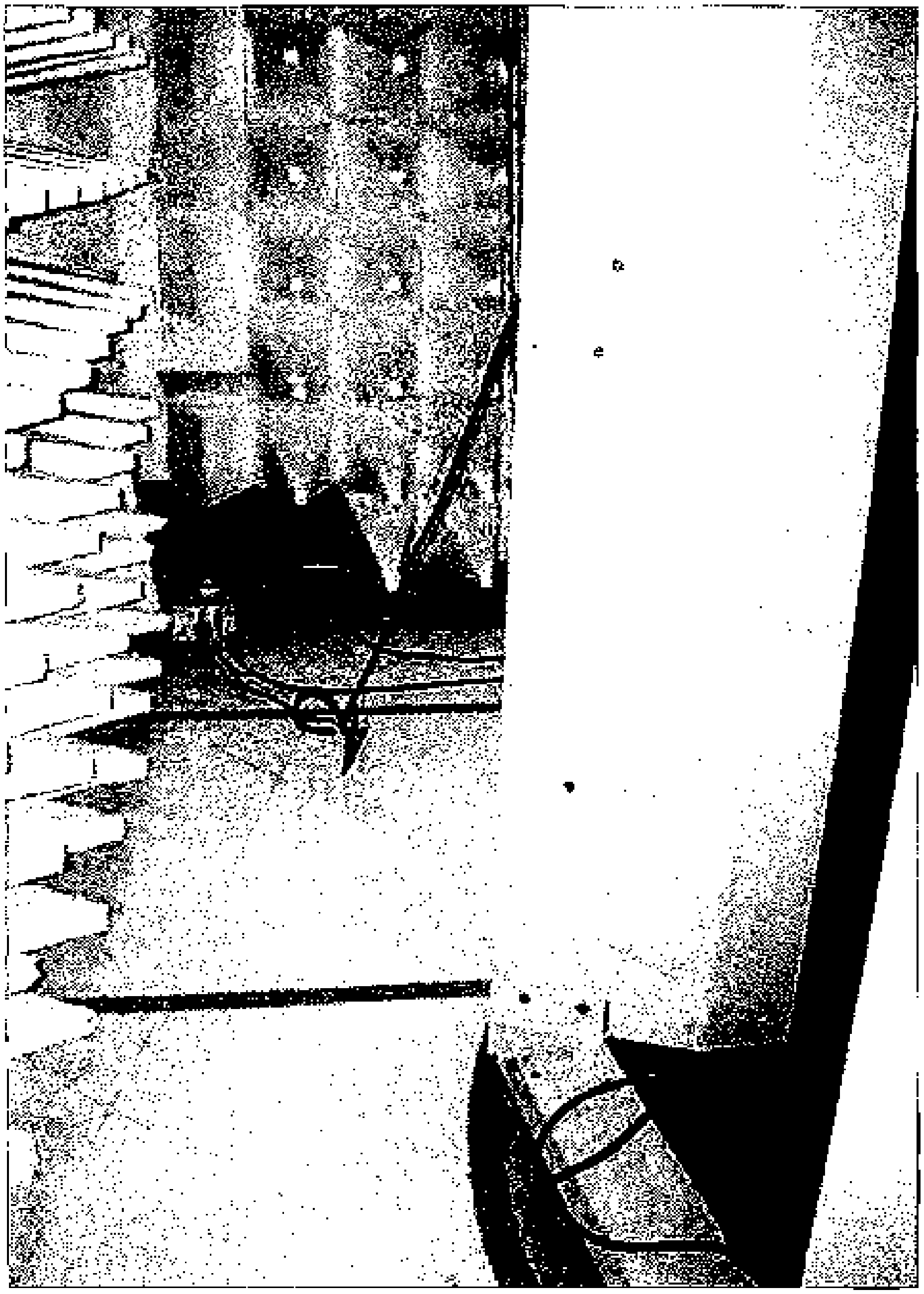
Mains Conducted Emissions

PHOTOGRAPH SHOWING MAINS CONDUCTED EMISSIONS



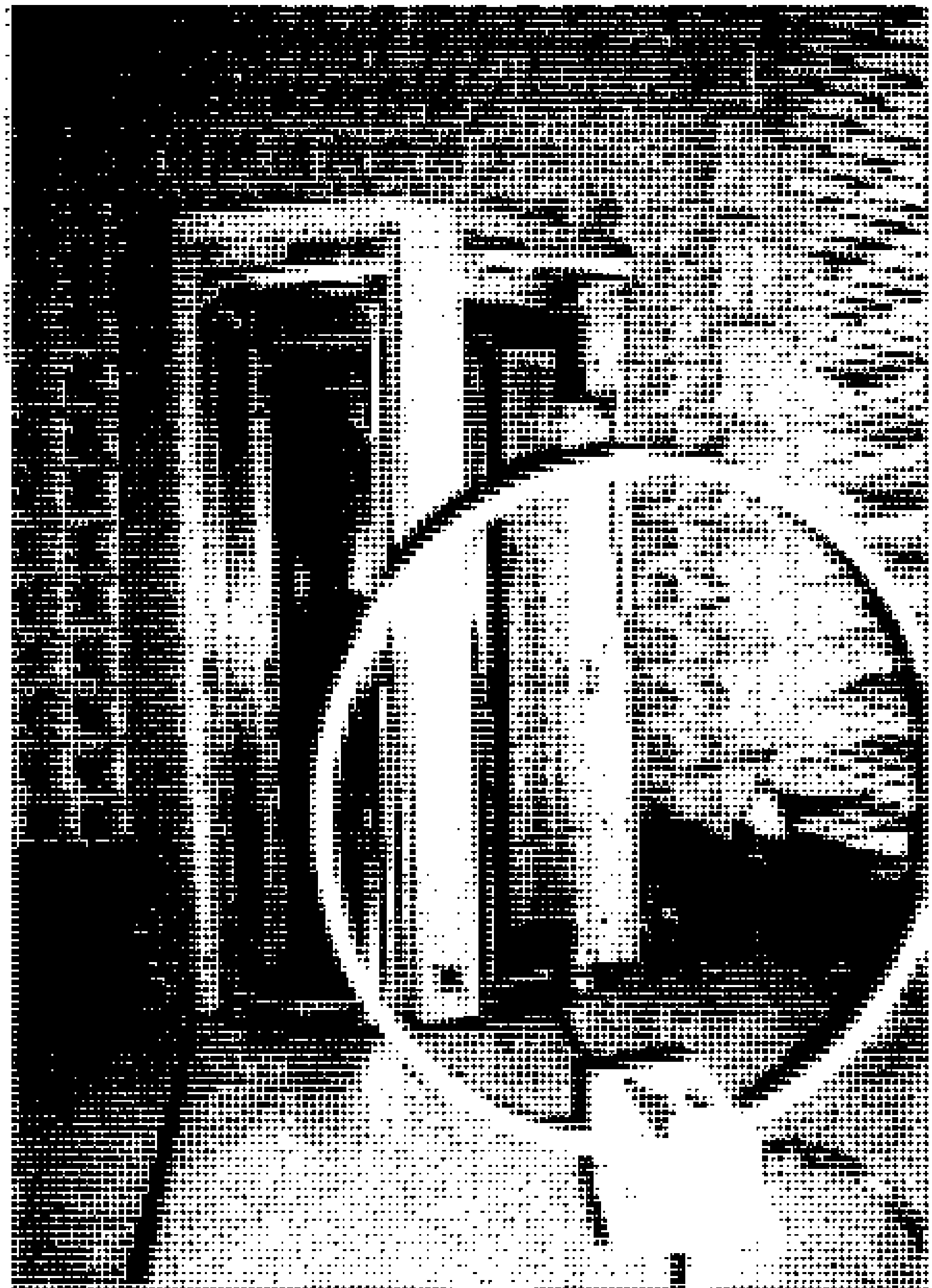
Mains Conducted Emissions - Front View

PHOTOGRAPH SHOWING MAINS CONDUCTED EMISSIONS



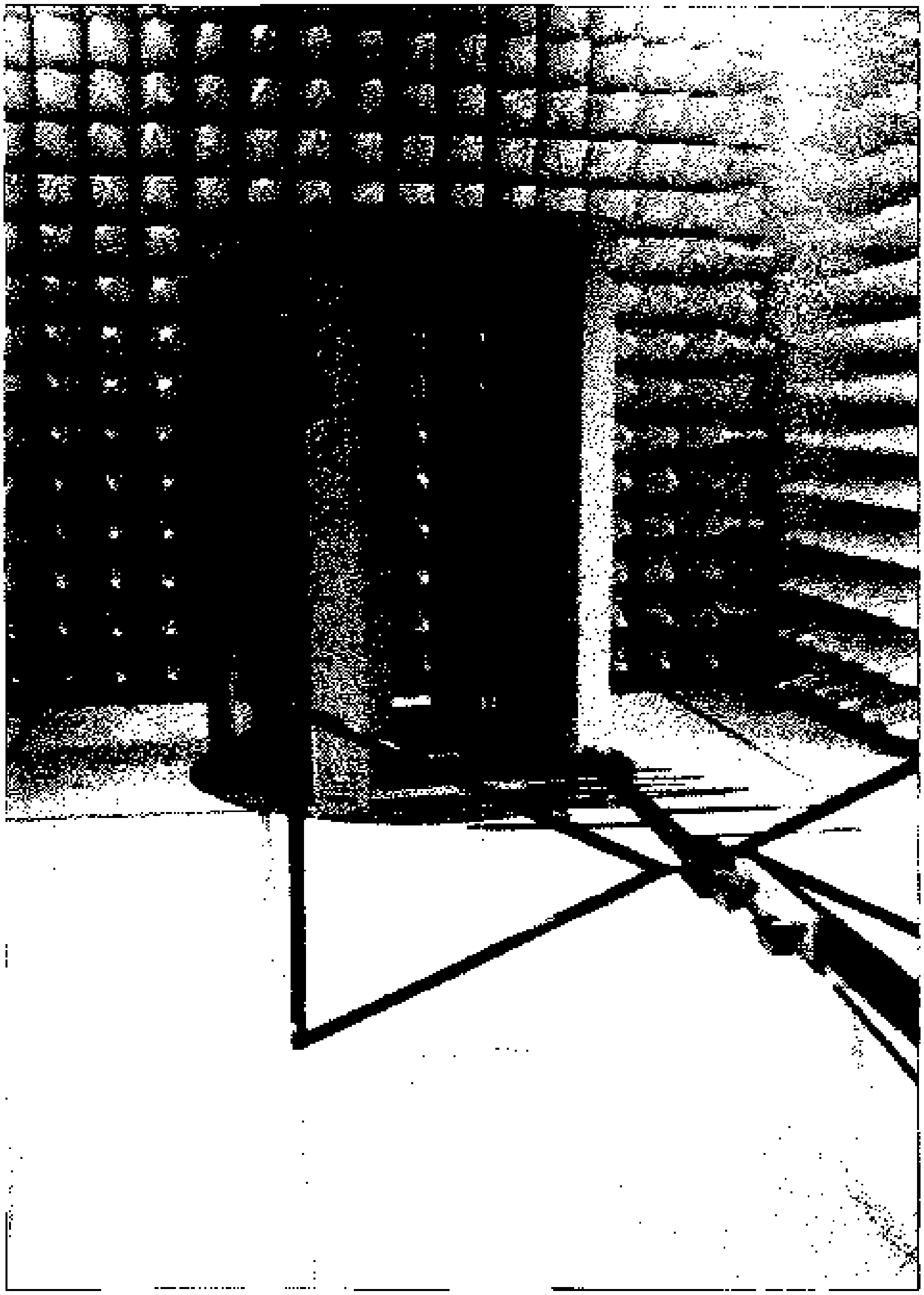
Mains Conducted Emissions - Side View

PHOTOGRAPH SHOWING RADIATED EMISSIONS



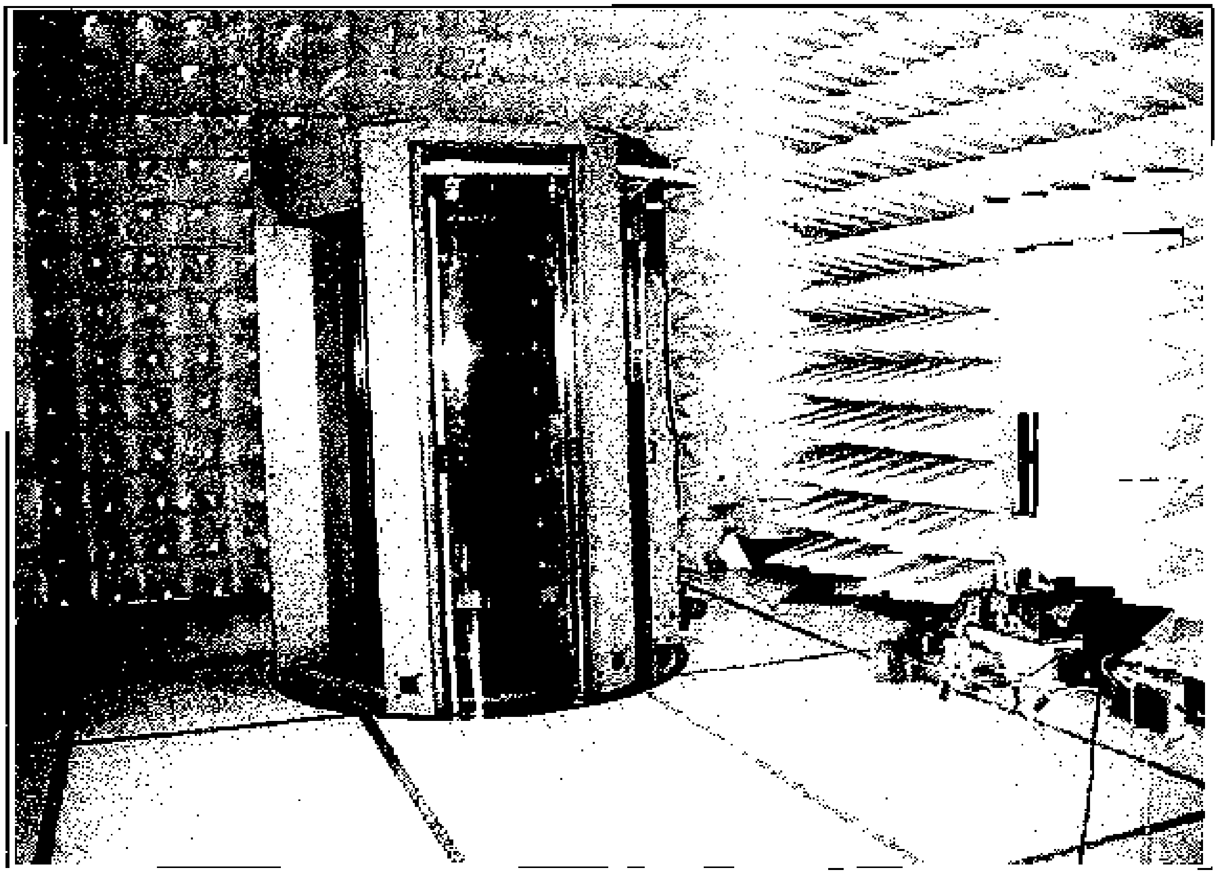
Radiated Emissions - 9 kHz - 30 MHz Parallel

PHOTOGRAPH SHOWING RADIATED EMISSIONS



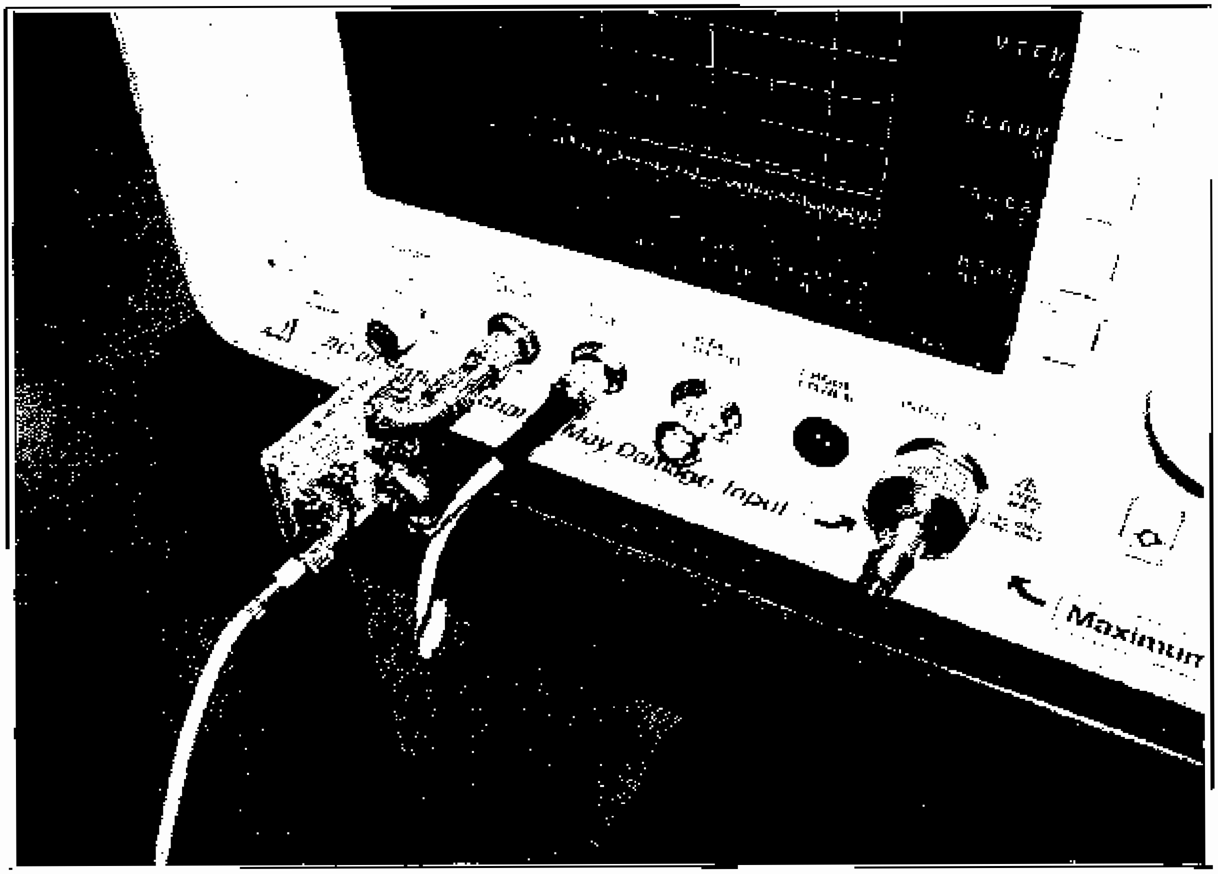
Radiated Emissions - 30-1000 MHz

PHOTOGRAPH SHOWING RADIATED EMISSIONS



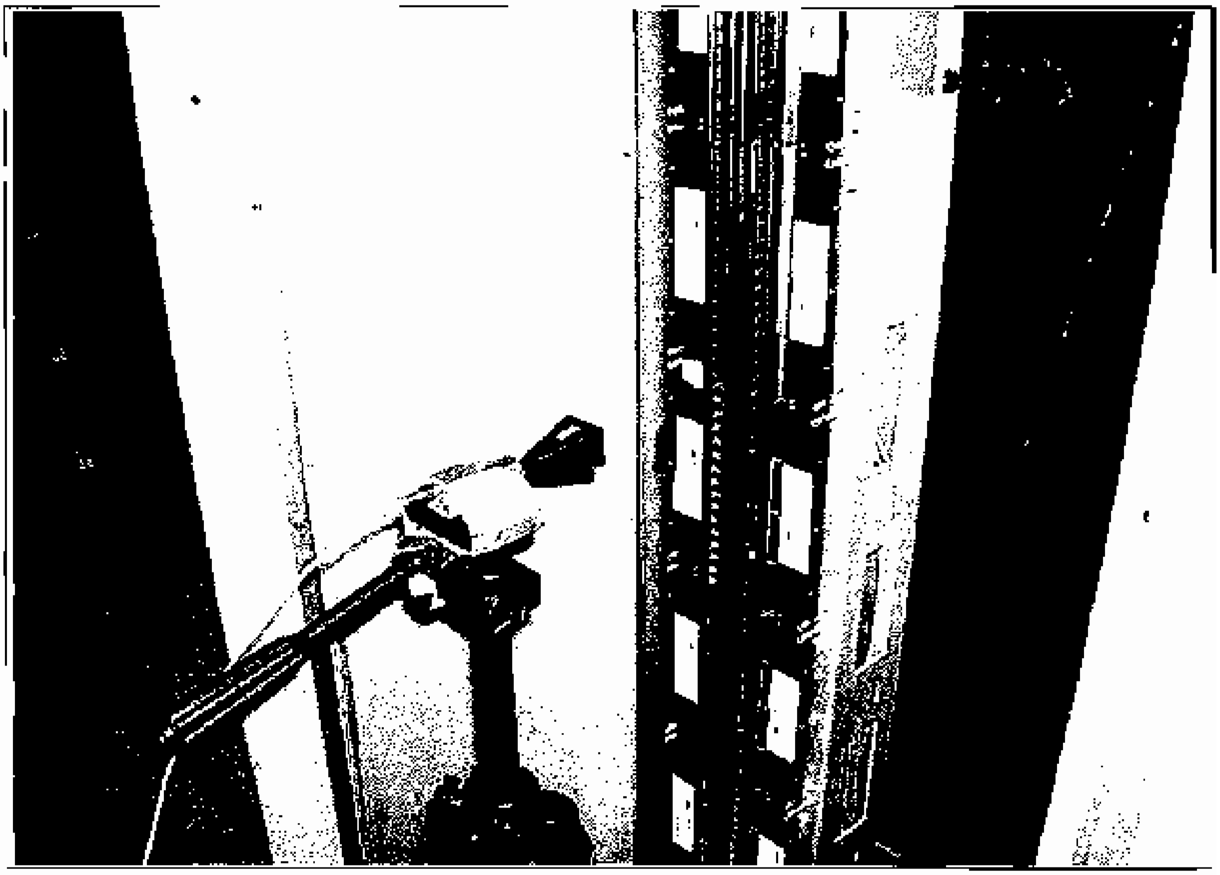
Radiated Emissions – Overall View of Test Setup 18-40 GHz

PHOTOGRAPH SHOWING 40-100 GHz Setup



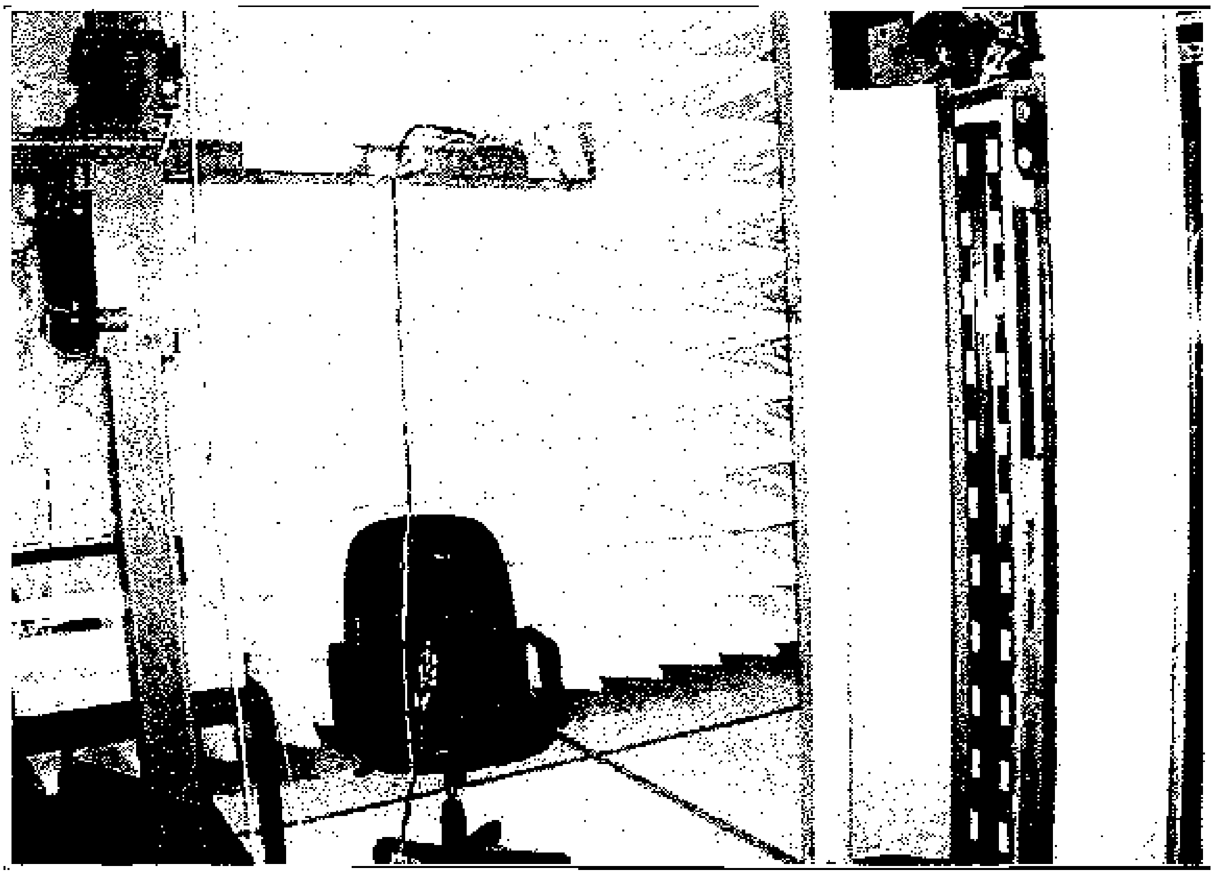
40-100 GHz Setup - Diplexer installed on SA

PHOTOGRAPH SHOWING 40-100 GHz Setup



40-100 GHz Typical Horn & Mixer Location near EUT antenna

PHOTOGRAPH SHOWING CARRIER POWER OF ANTENNA 16



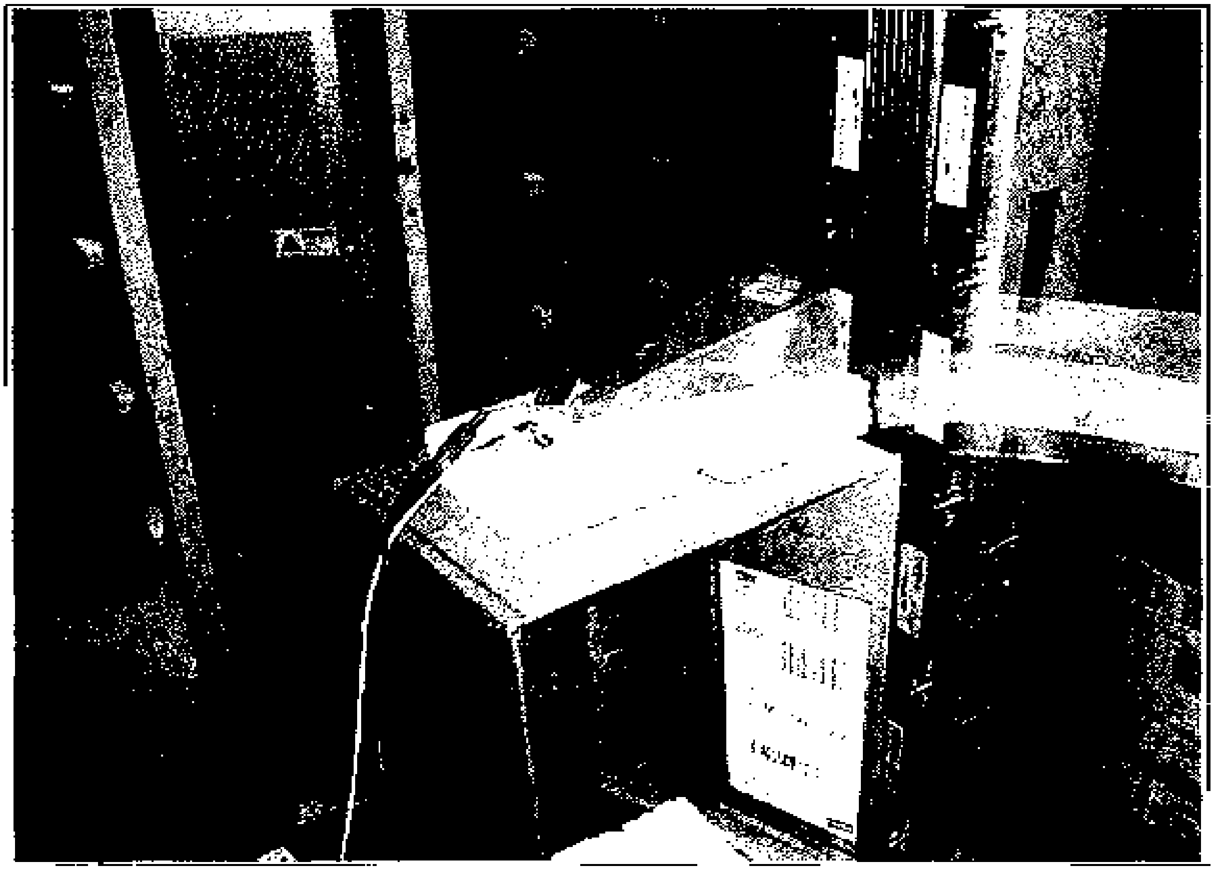
PHOTOGRAPH SHOWING CARRIER POWER RADIATED EMISSIONS

Carrier Power Radiated Emissions - Back View

PHOTOGRAPH SHOWING OCCUPIED BANDWIDTH

18-26 GHz

PHOTOGRAPH SHOWING OCCUPIED BANDWIDTH



26-40 GHz

APPENDIX B

TEST EQUIPMENT LIST

FCC 15.207

Function	S/N	Calibration Date	Cal Due Date	Asset #
S.A., Display HP-85662A	2542A12169	11/28/2005	11/28/2007	02662
S.A., RF Section HP-8568B	2601A02492	11/28/2005	11/28/2007	02663
Attenuator	none	10/20/2005	10/20/2007	02223
LISN	9408-1006	05/23/2005	05/23/2007	00493
TTE High Pass Filter	H4120	04/20/2005	04/20/2007	05258
QP Adapter	2521A00909	07/12/2006	07/12/2008	00683
Cable		06/13/2006	06/13/2008	AN 00880

FCC 15.209 Carrier Power and Band Edge

Function	S/N	Calibration Date	Cal Due Date	Asset #
E4446A Spectrum Analyzer	US44300408	01/13/2005	01/13/2007	02668
Active Horn 18-26GHz	1087835	10/25/2005	10/25/2007	02694
Active Horn 26-40GHz	1097854	10/25/2005	10/25/2007	02695
Cable, HF	n/a	08/09/2005	08/09/2007	P02715
Cable, HF	n/a	07/12/2005	07/12/2007	P05315

FCC 15.209 9 kHz – 30 MHz

Function	S/N	Calibration Date	Cal Due Date	Asset #
S.A., Display HP-85662A	2542A12169	11/28/2005	11/28/2007	02662
S.A., RF Section HP-8568B	2601A02492	11/28/2005	11/28/2007	02663
QP Adapter HP-85650A	2043A00188	10/23/2004	10/23/2006	01508
Mag Loop - 6502	2078	05/13/2005	05/13/2007	00432
Cable	n/a	06/21/2005	06/21/2007	P05296
Cable	n/a	06/21/2005	06/21/2007	P05299
Cable	n/a	06/21/2005	06/21/2007	P05300

FCC 15.209 30-1000 MHz

Function	S/N	Calibration Date	Cal Due Date	Asset #
S.A., Display HP-85662A	2542A12169	11/28/2005	11/28/2007	02662
S.A., RF Section HP-8568B	2601A02492	11/28/2005	11/28/2007	02663
QP Adapter	2521A00909	07/12/2006	07/12/2008	00683
Antenna	2630	01/24/2005	01/24/2007	00852
Cable	None	06/21/2005	06/21/2007	P05299
Cable	None	06/21/2005	06/21/2007	P05300
Cable	None	06/21/2005	06/21/2007	P05296
HP8447F opt H64 preamp	2944A03850	03/05/2005	03/05/2007	00501

FCC 15.209 1-12.5 GHz

Function	S/N	Calibration Date	Cal Due Date	Asset #
Cable, 6'	n/a	06/07/2006	06/07/2008	P04241
Preamp, Agilent 83051A	00323	02/27/2006	02/27/2008	02810
Antenna, Horn 1-18 GHz	1064	03/08/2005	03/08/2007	02061
Preamp, HP83017A	3123A00283	05/09/2005	05/09/2007	00785
Cable HF	n/a	03/08/2005	03/08/2007	P05239
HP8564E SA	3623A00539	10/27/2006	10/27/2008	02410
HF Cable		03/09/2005	03/09/2007	01956

FCC 15.209 1-18 GHz

Function	S/N	Calibration Date	Cal Due Date	Asset #
S.A. HP 8564E	3623A00539	08/01/2006	08/01/2008	01406
Preamp. Agilent 83051A	00323	02/27/2006	02/27/2008	02810
Preamp. HP83017A	3123A00283	05/09/2005	05/09/2007	00785
Antenna, Horn	1064	03/08/2005	03/08/2007	02061
Cable. HF 36"	n/a	02/08/2005	02/08/2007	P05200
Cable, HF 48"	n/a	02/08/2005	02/08/2007	P05201
Cable. HF	n/a	02/20/2006	02/20/2008	P05318
HF-Cable-72" Pasternack	None	07/12/2005	07/12/2007	P05317
Active Horn 12-18GHz	1088714	09/22/2005	09/22/2007	02693
12.4-18GHz WaveGuide	n/a	12/19/2005	12/19/2007	P00928
Cable. HF	n/a	08/09/2005	08/09/2007	P02718

FCC 15.209 18-26.5 GHz

Function	S/N	Calibration Date	Cal Due Date	Asset #
S.A. HP 8564E	3623A00539	08/01/2006	08/01/2008	01406
Cable. HF 36"	n/a	02/08/2005	02/08/2007	P05200
Cable. HF	n/a	08/09/2005	08/09/2007	P02718
Cable. HF	n/a	07/12/2005	07/12/2007	P05314
Cable. HF 48"	n/a	02/08/2005	02/08/2007	P05201
Horn 18-26 GHz HP 84125-80008		04/30/2005	04/30/2007	01413
18-26.5GHz WaveGuide	n/a	12/20/2005	12/20/2007	P00929
Preamp, Agilent 83051A	00323	02/27/2006	02/27/2008	02810
Horn 26-40 GHz HP 84125-80001		11/05/2004	11/05/2006	01414

FCC 15.209 26.5-40 GHz

Function	S/N	Calibration Date	Cal Due Date	Asset #
S.A. HP 8564E	3623A00539	08/01/2006	08/01/2008	01406
Cable, HF 36"	n/a	02/08/2005	02/08/2007	P05200
Cable. HF	n/a	07/12/2005	07/12/2007	P05314
Preamp, Agilent 83051A	00323	02/27/2006	02/27/2008	02810
Horn 26-40 GHz HP 84125-80001		11/05/2004	11/05/2006	01414
Cable. HF	n/a	08/09/2005	08/09/2007	P02715
26.5-40GHz WaveGuide	n/a	12/20/2005	12/20/2007	P00930

FCC 15.209 40-60 GHz

Function	S/N	Calibration Date	Cal Due Date	Asset #
Cable. HF	n/a	07/12/2005	07/12/2007	P05314
S.A. Agilent 8564EC	3946A00232	01/19/2005	01/19/2007	1045025
40-60GHz mixer M19HWA	U91211-1	09/26/2006	09/26/2008	02347
40-60GHz Horn M19RH		09/28/2006	09/28/2008	02347

FCC 15.209 60-90 GHz

Function	S/N	Calibration Date	Cal Due Date	Asset #
Cable, HF	n/a	07/12/2005	07/12/2007	P05314
S.A. Agilent 8564EC	3946A00232	01/19/2005	01/19/2007	1045025
60-90GHz Horn M12RH		09/28/2006	09/28/2008	02348
60-90GHz mixer M12HWA	E91211-1	09/26/2006	09/26/2008	02348

FCC 15.209 90-100 GHz

Function	S/N	Calibration Date	Cal Due Date	Asset #
Cable, HF	n/a	07/12/2005	07/12/2007	P05314
S.A. Agilent 8564EC	3946A00232	01/19/2005	01/19/2007	1045025
90-110GHz Horn M08RH		09/26/2006	09/26/2008	02349
90-110GHz mixer M08HWA	F91211-2	09/26/2006	09/26/2008	02349

APPENDIX C:

MEASUREMENT DATA SHEETS

Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • 510-249-1170

Customer:	SafeView, Inc.		
Specification:	FCC 15.207 COND [AVE]		
Work Order #:	85822	Date:	11/8/2006
Test Type:	Conducted Emissions	Time:	11:32:38
Equipment:	SafeScout Security Portal	Sequence#:	1
Manufacturer:	SafeView, Inc.	Tested By:	[redacted]
Model	S-100		120V 60Hz
S/N:	A100062300146		

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
SafeScout Security Portal*	SafeView, Inc.	S-100	A100062300146

Support Devices:

Function	Manufacturer	Model #	S/N
Computer/Monitor	MPC	CLIENTPRO 474	4007670-0001
Computer Power Supply	Lite-on Technology Corp.	PA-1221-03	5Y00045302
Keyboard	MPC	SK-1688	C0602086090
Mouse	Microsoft	Basic Optical Mouse 1.0A	none

Test Conditions / Notes:

The SafeScout S-100 Security Portal is operating and running on an auto-cycle pause time of 6 seconds. The SafeScout S-100 is connected to a support PC by an ethernet connection. The support PC triggers the SCU to begin a security scan. The software is setup to repeatedly run scan while the system is under test. Conducted Emissions 0.15 - 30 MHz.

Transducer Legend:

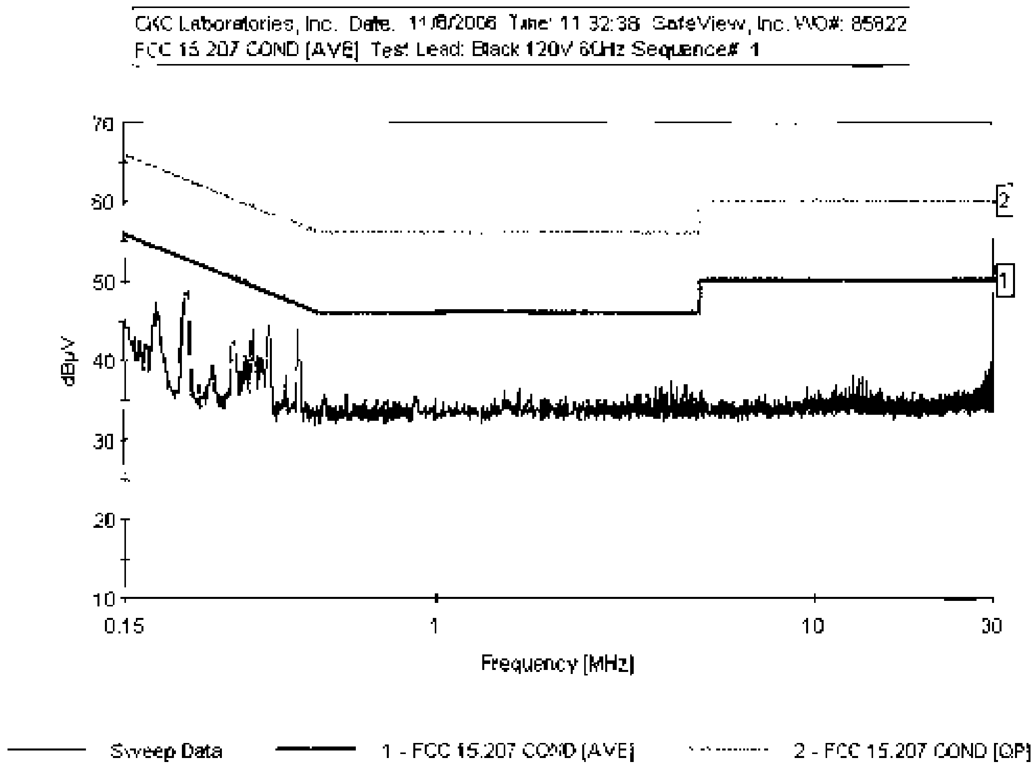
T1 LISN - AN00493 - Black - ELC "OUT"
T2 TTE HP Filter P05258
T3 ANP02223 10dB Attenuator
T4 Cable P00880

Measurement Data: Reading listed by margin. Test Lead: Black

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	330.346k	33.2	+0.4	+0.2	+9.8	+0.1	+0.0	43.7	49.4	-5.7	Black
2	181.270k	35.6	+0.4	+1.4	+9.8	+0.1	+0.0	47.3	54.4	-7.1	Black
3	293.986k	32.1	+0.3	+0.3	+9.8	+0.1	+0.0	42.6	50.4	-7.8	Black
4	183.451k	34.7	+0.4	+1.3	+9.8	+0.1	+0.0	46.3	54.3	-8.0	Black
5	4.190M	27.0	+0.3	+0.1	+9.8	+0.1	+0.0	37.3	46.0	-8.7	Black
6	339.072k	30.0	+0.4	+0.1	+9.8	+0.1	+0.0	40.4	49.2	-8.8	Black
7	344.162k	29.9	+0.4	+0.1	+9.8	+0.1	+0.0	40.3	49.1	-8.8	Black

8	221.000k Ave	33.3	+0.4	−0.2	−9.8	+0.1	+0.0	43.8	52.8	-9.0	Black
^	221.266k	38.4	+0.4	+0.2	-9.8	+0.1	-0.0	48.9	52.8	-3.9	Black
10	4.590M	26.5	+0.4	-0.1	+9.8	+0.2	-0.0	37.0	46.0	-9.0	Black
11	3.790M	26.4	-0.3	+0.1	-9.8	+0.1	+0.0	36.7	46.0	-9.3	Black
12	3.922M	26.3	+0.3	+0.1	+9.8	+0.1	+0.0	36.6	46.0	-9.4	Black
13	4.318M	26.3	+0.3	+0.1	-9.8	-0.1	-0.0	36.6	46.0	-9.4	Black
14	4.454M	26.3	+0.3	+0.1	9.8	+0.1	+0.0	36.6	46.0	-9.4	Black
15	313.620k	30.0	+0.3	+0.2	+9.8	-0.1	+0.0	40.4	49.9	-9.5	Black
16	1.660M	26.1	−0.3	-0.1	+9.7	+0.2	+0.0	36.4	46.0	-9.6	Black
17	400.157k	28.0	+0.3	+0.0	+9.7	+0.2	+0.0	38.2	47.9	-9.7	Black
18	4.990M	25.7	-0.4	+0.1	+9.8	+0.2	-0.0	36.2	46.0	-9.8	Black
19	360.000k Ave	28.4	+0.4	+0.1	+9.7	+0.2	+0.0	38.8	48.7	-9.9	Black
^	360.978k	34.1	+0.4	-0.1	-9.7	-0.2	-0.0	44.5	48.6	-4.1	Black
21	1.523M	25.8	+0.3	+0.1	+9.7	+0.2	+0.0	36.1	46.0	-9.9	Black
22	4.717M	25.5	-0.4	+0.1	+9.8	+0.2	+0.0	36.0	46.0	-10.0	Black
23	318.710k	29.2	−0.3	+0.2	−9.8	-0.1	+0.0	39.6	49.7	-10.1	Black
24	320.165k	29.2	+0.3	+0.2	+9.8	-0.1	+0.0	39.6	49.7	-10.1	Black
25	4.058M	25.6	-0.3	+0.1	-9.8	-0.1	-0.0	35.9	46.0	-10.1	Black
26	506.328k	25.7	+0.3	+0.0	+9.7	+0.1	+0.0	35.8	46.0	-10.2	Black
27	3.450M	25.4	-0.4	−0.1	+9.7	+0.2	-0.0	35.8	46.0	-10.2	Black
28	1.791M	25.4	+0.3	+0.1	−9.7	+0.2	+0.0	35.7	46.0	-10.3	Black
29	29.623M	28.1	+1.0	−0.3	+9.8	-0.5	−0.0	39.7	50.0	-10.3	Black
30	311.438k	29.0	+0.3	+0.3	+9.8	+0.1	−0.0	39.5	49.9	-10.4	Black

31	573.230k	25.5	+0.3	+0.0	+9.7	+0.1	-0.0	35.6	46.0	-10.4	Black
32	3.254M	25.2	+0.4	-0.1	+9.7	+0.2	-0.0	35.6	46.0	-10.4	Black
33	3.650M	25.3	-0.3	+0.1	-9.8	+0.1	-0.0	35.6	46.0	-10.4	Black
34	308.530k	29.0	+0.3	+0.3	+9.8	-0.1	+0.0	39.5	50.0	-10.5	Black
35	2.229M	25.2	-0.3	+0.1	+9.7	+0.2	-0.0	35.5	46.0	-10.5	Black
36	3.522M	25.2	+0.3	+0.1	-9.8	-0.1	-0.0	35.5	46.0	-10.5	Black
37	29.801M	27.9	-1.0	+0.3	-9.8	+0.5	+0.0	39.5	50.0	-10.5	Black
38	881.253k	25.2	+0.3	+0.0	-9.7	+0.2	+0.0	35.4	46.0	-10.6	Black
39	3.990M	25.1	+0.3	-0.1	-9.8	+0.1	+0.0	35.4	46.0	-10.6	Black
40	4.654M	24.9	+0.4	+0.1	-9.8	+0.2	+0.0	35.4	46.0	-10.6	Black
41	4.024M	25.0	+0.3	-0.1	-9.8	+0.1	+0.0	35.3	46.0	-10.7	Black
42	4.858M	24.7	+0.4	+0.1	-9.8	+0.2	-0.0	35.2	46.0	-10.8	Black
43	648.859k	25.0	-0.3	+0.0	+9.7	+0.1	+0.0	35.1	46.0	-10.9	Black
44	1.438M	24.8	-0.3	-0.1	+9.7	+0.2	+0.0	35.1	46.0	-10.9	Black
45	1.923M	24.8	+0.3	-0.1	+9.7	+0.2	+0.0	35.1	46.0	-10.9	Black
46	2.659M	24.7	-0.4	-0.1	+9.7	-0.2	+0.0	35.1	46.0	-10.9	Black
47	2.723M	24.7	-0.4	-0.1	+9.7	-0.2	+0.0	35.1	46.0	-10.9	Black
48	3.871M	24.8	+0.3	+0.1	-9.8	-0.1	-0.0	35.1	46.0	-10.9	Black
49	2.136M	24.7	+0.3	+0.1	+9.7	+0.2	+0.0	35.0	46.0	-11.0	Black
50	2.561M	24.6	-0.4	+0.1	+9.7	+0.2	+0.0	35.0	46.0	-11.0	Black
51	2.816M	24.6	+0.4	-0.1	+9.7	+0.2	+0.0	35.0	46.0	-11.0	Black
52	435.000k	25.6	-0.3	+0.0	-9.7	+0.2	-0.0	35.8	47.2	-11.4	Black
Ave	435.062k	33.8	+0.3	-0.0	+9.7	+0.2	+0.0	44.0	47.2	-3.2	Black


CKC Laboratories, Inc. Date: 11/8/2006 Time: 11:32:38 SafeView, Inc. WO#: 85822
FCC 15.207 COND [AVE] Test Lead: Black 120V 60Hz Sequence# 1
70
60
50
40
30
20
10
dBµV
0.15
1
10
30
Frequency [MHz]
1
2
Sweep Data
1 - FCC 15.207 COND [AVE]
2 - FCC 15.207 COND [QP]

TSL001114

Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • 510-249-1170

Customer: SafeView, Inc.
Specification: FCC 15.207 COND [AVE]
Work Order #: 85822
Test Type: Conducted Emissions
Equipment: SafeScout Security Portal
Manufacturer: SafeView, Inc.
Model: S-100
S/N: A100062300146

Date: 11/8/2006
Time: 11:30:21
Sequence#: 2
Tested By: [redacted]
120V 60Hz

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
SafeScout Security Portal*	SafeView, Inc.	S-100	A100062300146

Support Devices:

Function	Manufacturer	Model #	S/N
Computer/Monitor	MPC	CLIENTPRO 474	4007670-0001
Computer Power Supply	Lite-on Technology Corp.	PA-1221-03	5Y00045302
Keyboard	MPC	SK-1688	C0602086090
Mouse	Microsoft	Basic Optical Mouse 1.0A	none

Test Conditions / Notes:

The SafeScout S-100 Security Portal is operating and running on an auto-cycle pause time of 6 seconds. The SafeScout S-100 is connected to a support PC by an ethernet connection. The support PC triggers the SCU to begin a security scan. The software is setup to repeatedly run scan while the system is under test. Conducted Emissions 0.15 - 30 MHz.

Transducer Legend:

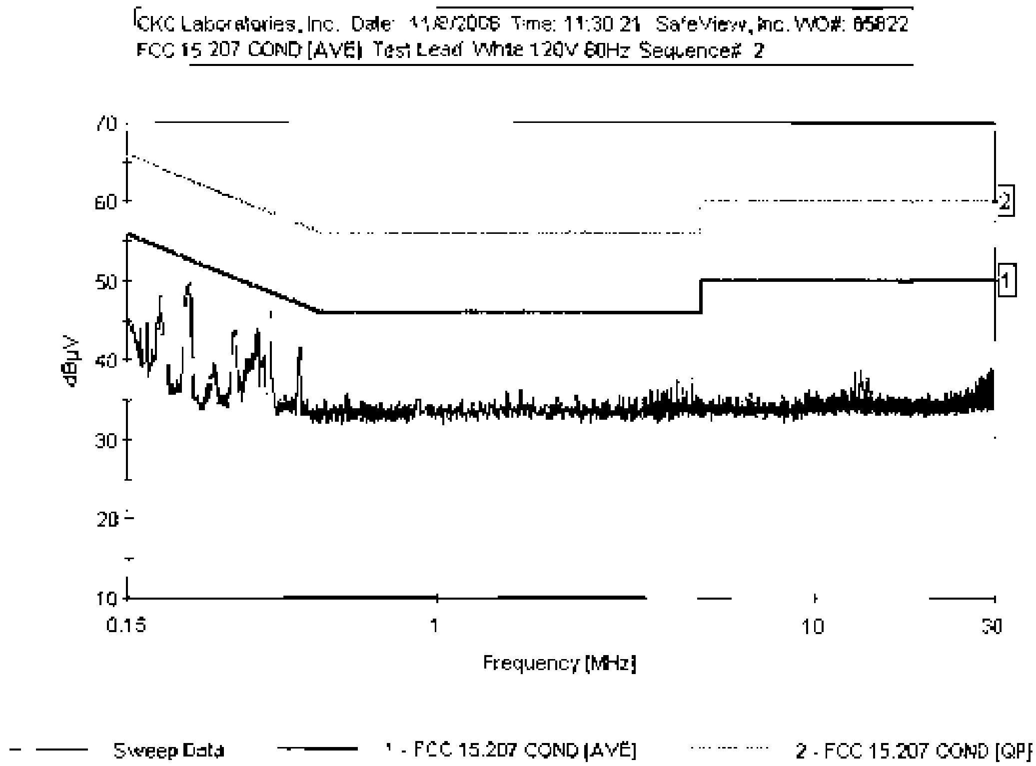
T1 LISN - AN00493 - White - ELC "OUT"	T2 TTE HP Filter P05258
T3 ANP02223 10dB Attenuator	T4 Cable P00880

Measurement Data: Reading listed by margin. Test Lead: White

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	432.881k	31.3	+0.3	+0.0	+9.7	+0.2	+0.0	41.5	47.2	-5.7	White
2	184.906k	36.6	+0.4	+1.2	+9.8	+0.1	+0.0	48.1	54.3	-6.2	White
3	293.986k	33.5	+0.3	+0.3	+9.8	+0.1	+0.0	44.0	50.4	-6.4	White
4	331.073k	32.6	+0.3	+0.2	+9.8	+0.1	+0.0	43.0	49.4	-6.4	White
5	364.000k Ave	31.4	+0.3	+0.1	+9.7	+0.2	+0.0	41.7	48.6	-6.9	White
^	365.978k	36.2	+0.3	+0.1	+9.7	+0.2	+0.0	46.5	48.6	-2.1	White
7	360.000k Ave	30.8	+0.3	+0.1	+9.7	+0.2	+0.0	41.1	48.7	-7.6	White
^	361.630k	33.7	+0.3	+0.2	+9.8	+0.1	+0.0	44.1	49.3	-5.2	White

9	4.726M	27.3	-0.4	+0.1	-9.8	+0.2	+0.0	37.8	46.0	-8.2	White
10	350.707k	30.3	+0.3	+0.1	-9.7	+0.2	+0.0	40.6	48.9	-8.3	White
11	4.322M	26.9	-0.4	-0.1	-9.8	+0.1	+0.0	37.3	46.0	-8.7	White
12	221.000k	33.2	+0.4	+0.2	+9.8	+0.1	+0.0	43.7	52.8	-9.1	White
Ave	220.538k	39.3	-0.4	+0.2	+9.8	-0.1	+0.0	49.8	52.8	-3.0	White
14	4.190M	26.2	+0.4	+0.1	+9.8	+0.1	+0.0	36.6	46.0	-9.4	White
15	4.458M	26.2	+0.4	-0.1	-9.8	-0.1	+0.0	36.6	46.0	-9.4	White
16	3.790M	26.1	-0.4	+0.1	-9.8	-0.1	-0.0	36.5	46.0	-9.5	White
17	1.660M	26.0	-0.3	-0.1	-9.7	+0.2	+0.0	36.3	46.0	-9.7	White
18	3.654M	25.9	-0.4	-0.1	-9.8	+0.1	+0.0	36.3	46.0	-9.7	White
19	3.926M	25.9	+0.4	+0.1	-9.8	+0.1	+0.0	36.3	46.0	-9.7	White
20	4.054M	25.9	+0.4	+0.1	-9.8	+0.1	-0.0	36.3	46.0	-9.7	White
21	4.590M	25.7	+0.4	+0.1	-9.8	+0.2	+0.0	36.2	46.0	-9.8	White
22	1.523M	25.8	+0.3	+0.1	-9.7	+0.2	-0.0	36.1	46.0	-9.9	White
23	170.362k	32.2	+0.4	+2.3	+9.8	+0.1	+0.0	44.8	54.9	-10.1	White
24	2.327M	25.5	-0.3	+0.1	-9.7	-0.2	+0.0	35.8	46.0	-10.2	White
25	4.854M	25.3	-0.4	+0.1	+9.8	+0.2	-0.0	35.8	46.0	-10.2	White
26	3.059M	25.3	+0.4	+0.1	+9.7	+0.2	+0.0	35.7	46.0	-10.3	White
27	576.866k	25.5	-0.3	-0.0	+9.7	-0.1	-0.0	35.6	46.0	-10.4	White
28	3.990M	25.2	+0.4	+0.1	-9.8	+0.1	+0.0	35.6	46.0	-10.4	White
29	2.081M	25.2	-0.3	+0.1	-9.7	-0.2	+0.0	35.5	46.0	-10.5	White
30	4.569M	25.0	+0.4	+0.1	+9.8	+0.2	+0.0	35.5	46.0	-10.5	White
31	3.254M	24.9	-0.4	+0.1	-9.7	-0.2	-0.0	35.3	46.0	-10.7	White

32	3.361M	24.9	-0.4	+0.1	+9.7	+0.2	+0.0	35.3	46.0	-10.7	White
33	3.386M	24.9	+0.4	-0.1	+9.7	-0.2	+0.0	35.3	46.0	-10.7	White
34	3.518M	24.9	+0.4	+0.1	+9.8	-0.1	+0.0	35.3	46.0	-10.7	White
35	3.561M	24.9	-0.4	-0.1	+9.8	-0.1	+0.0	35.3	46.0	-10.7	White
36	3.127M	24.8	+0.4	+0.1	+9.7	+0.2	-0.0	35.2	46.0	-10.8	White
37	877.000k	24.9	-0.3	-0.0	+9.7	+0.2	+0.0	35.1	46.0	-10.9	White
38	1.413M	24.9	+0.3	+0.0	+9.8	+0.1	-0.0	35.1	46.0	-10.9	White
39	29.267M	27.3	+1.2	+0.3	+9.8	+0.5	+0.0	39.1	50.0	-10.9	White
40	2.591M	24.6	+0.4	+0.1	-9.7	-0.2	-0.0	35.0	46.0	-11.0	White
41	4.118M	24.6	+0.4	-0.1	+9.8	+0.1	+0.0	35.0	46.0	-11.0	White
42	155.818k	30.8	+0.4	+3.5	+9.8	-0.1	+0.0	44.6	55.7	-11.1	White
43	1.149M	24.7	+0.3	+0.0	+9.8	-0.1	+0.0	34.9	46.0	-11.1	White
44	1.298M	24.6	-0.3	-0.0	+9.8	+0.1	-0.0	34.8	46.0	-11.2	White
45	29.616M	27.0	+1.2	+0.3	+9.8	+0.5	+0.0	38.8	50.0	-11.2	White
46	163.090k	30.8	-0.4	+2.9	+9.8	-0.1	-0.0	44.0	55.3	-11.3	White
47	4.275M	24.3	+0.4	+0.1	+9.8	-0.1	+0.0	34.7	46.0	-11.3	White
48	29.794M	26.9	+1.2	-0.3	+9.8	+0.5	+0.0	38.7	50.0	-11.3	White
49	1.545M	24.3	+0.3	+0.1	+9.7	+0.2	+0.0	34.6	46.0	-11.4	White
50	13.067M	27.6	-0.6	-0.2	+9.8	+0.4	+0.0	38.6	50.0	-11.4	White
51	1.239M	24.3	+0.3	-0.0	-9.8	+0.1	+0.0	34.5	46.0	-11.5	White
52	28.917M	26.6	+1.2	+0.3	+9.8	+0.5	+0.0	38.4	50.0	-11.6	White
53	4.088M	23.9	+0.4	+0.1	+9.8	+0.1	-0.0	34.3	46.0	-11.7	White


CKC Laboratories, Inc. Date: 11/8/2006 Time: 11:30:21 SafeView, Inc. WO#: 85822
FCC 15.207 COND [AVE] Test Lead: White 120V 60Hz Sequence#: 2
70
60
50
40
30
20
10
dBµV
0.15
1
10
30
Frequency [MHz]
1
2
Sweep Data
1 - FCC 15.207 COND [AVE]
2 - FCC 15.207 COND [QP]

TSL001118

Test Location:	CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • 510-249-1170		
Customer:	**Safe View, Inc.**		
Specification:	**FCC 15.209 30Mhz to 100 GHz**		
Work Order #:	**85484**	Date:	11/16/2006
Test Type:	**Carrier Power**	Time:	18:33:56
Equipment:	**Security Portal**	Sequence#:	45
Manufacturer:	SafeView, Inc.	Tested By:	(b) (6) [redacted]
Model:	SCOUT 100 Version 2 Switch		
S/N:	A100062500152		

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Security Portal*	SafeView, Inc.	SCOUT 100 Version 2 Switch	A100062500152

Support Devices:

Function	Manufacturer	Model #	S/N
Computer/Monitor	MPC	CLIENTPRO 474	4007670-0001
Computer Power Supply	Lite-on Technology Corp.	PA-1221-03	5Y00045302
Keyboard	MPC	SK-1688	C0602086090
Mouse	Microsoft	Basic Optical Mouse 1.0A	none

Test Conditions / Notes:

The Scout 100 V2 Swich Security Portal's antenna mast is reversed in position so the EUT antennas are facing to the outside of the EUT. Low channel 24.65 GHz. Mid channel 27 GHz. Hi channel 29.8 GHz. Measuring Peak Carrier Power per DA 06-1589 paragraph 8b. RBW=100 kHz. VBW=3 MHz. Span=1 GHz. Sweep time=auto. Measuring Average RMS Power per DA 06-1589 paragraph 8a. RBW=1 MHz. VBW=3 MHz. Span=0 Hz. Sweep time=1 sec. Emissions reported represent worst case polarization. Peak limit was derived by adding 41 dB to the average RMS value for that channel and mast antenna number. Data for antenna 320 mid and hi channels was re-measured on 11-16-06. Nominal AC=120V, 85% is 102V, & 115% is 138V. Measurements were made at various input voltage levels from 85% to 115% of nominal voltage and no effect was observed on the output power. Transmitter is transmitting continuously during this testing.

Transducer Legend:

T1=Horn AN02695 Miteq Active 26-40GHz	T2=ANT 18-26GHz Active Horn
T3=Cable AN2715 40 GHz	T4=CAB HF 72" ANP05315 Pasternack

Measurement Data: Reading listed by margin. Test Distance: 1 Meter

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dBμV/m	Spec dBμV/m	Margin dB	Polar Ant
1	29802.000M	78.3	+3.6	+0.0	+0.0	+7.9	-13.0	76.8	77.9	-1.1	Vert
									Peak power at hi channel, antenna 16, 102 VAC, atten 10		188
2	24484.000M	91.5	+0.0	-17.1	+14.8		-13.0	76.2	77.9	-1.7	Vert
									Peak power at low channel, antenna 192, 120 VAC.		100

3	26973.000M	74.7	+2.0	+0.0	+0.0	+7.4	-13.0	71.1	73.0	-1.9	Peak power at mid channel, antenna 320, 102 VAC, atten 0	Vert 51
4	26974.000M	74.6	+2.0	+0.0	+0.0	+7.4	-13.0	71.0	73.0	-2.0	Peak power at mid channel, antenna 320, 138 VAC, atten 0	Vert 51
5	24624.000M	102.9	+0.0	-17.0	+0.0	+7.2	-13.0	80.1	82.2	-2.1	Peak power at low channel, antenna 16, 102VAC, atten 10	Vert 188
6	26973.000M	74.3	+2.0	+0.0	+0.0	+7.4	-13.0	70.7	73.0	-2.3	Peak power at mid channel, antenna 320, 120 VAC, atten 0	Vert 51
7	26974.000M	81.3	+2.0	+0.0	+0.0	+7.4	-13.0	77.7	80.1	-2.4	Peak power at mid channel, antenna 16, 138 VAC, atten 10	Vert 188
8	29802.000M	78.5	+3.6	+0.0	+0.0	+7.9	-13.0	77.0	79.6	-2.6	Peak power at hi channel, antenna 16, 120 VAC, atten 10	Vert 188
9	24632.000M	101.6	+0.0	-17.0	+0.0	+7.2	-13.0	78.8	81.5	-2.7	Peak power at low channel, antenna 320, 102VAC, atten 10	Vert 43
10	24633.000M	101.2	+0.0	-17.0	+0.0	+7.2	-13.0	78.4	81.4	-3.0	Peak power at low channel, antenna 320, 138 VAC, atten 10	Vert 43
11	24633.000M	101.3	+0.0	-17.0	+0.0	+7.2	-13.0	78.5	81.5	-3.0	Peak power at low channel, antenna 320, 120 VAC, atten 10	Vert 43
12	26994.000M	70.6	+1.9	+0.0	+14.5		-13.0	74.0	77.2	-3.2	Peak power at mid channel, antenna 192, 102 VAC,	Vert 100

13	26994.000M	80.5	+1.9	+0.0	+0.0	+7.4	-13.0	76.8	80.2	-3.4	Vert	188
									Peak power at mid channel, antenna 16, 102 VAC, atten 10			
14	26991.000M	70.3	+1.9	+0.0	+14.5		-13.0	73.7	77.4	-3.7	Vert	100
									Peak power at mid channel, antenna 192, 138 VAC.			
15	24481.000M	93.2	+0.0	-17.1	+14.8		-13.0	77.9	81.7	-3.8	Vert	100
									Peak power at low channel, antenna 192, 138 VAC.			
16	24482.000M	92.8	+0.0	-17.1	+14.8		-13.0	77.5	81.5	-4.0	Vert	100
									Peak power at low channel, antenna 192, 102 VAC.			
17	29786.000M	73.2	+3.5	+0.0	+0.0	+7.9	-13.0	71.6	75.7	-4.1	Vert	51
									Peak power at hi channel, antenna 320, 138 VAC, atten 0			
18	29785.000M	73.2	+3.5	+0.0	+0.0	+7.9	-13.0	71.6	75.8	-4.2	Vert	51
									Peak power at hi channel, antenna 320, 120 VAC, atten 0			
19	29785.000M	73.3	+3.5	+0.0	+0.0	+7.9	-13.0	71.7	76.0	-4.3	Vert	51
									Peak power at hi channel, antenna 320, 102 VAC, atten 0			
20	26986.000M	78.1	+1.9	+0.0	+0.0	+7.4	-13.0	74.4	79.5	-5.1	Vert	188
									Peak power at mid channel, antenna 16, 120 VAC, atten 10			
21	24622.970M Ave	64.1	+0.0	-17.0	+0.0	+7.2	-13.0	41.3	54.0	-12.7	Vert	188
									Average RMS power at low channel, sweeping, antenna 16, 120VAC, atten 10			
22	24622.970M Ave	64.0	+0.0	-17.0	+0.0	+7.2	-13.0	41.2	54.0	-12.8	Vert	188
									Average RMS power at low channel, sweeping, antenna 16, 102 VAC, atten 10			

23	24622.970M Ave	64.0	+0.0	-17.0	+0.0	+7.2	-13.0	41.2	54.0 Average RMS power at low channel, sweeping, antenna 16, 138VAC, atten 10	-12.8	Vert 188
24	24483.070M Ave	56.0	+0.0	-17.1	+14.8		-13.0	40.7	54.0 Average RMS power at low channel, sweeping, antenna 192, 138 V	-13.3	Vert 100
25	24622.970M Ave	63.3	+0.0	-17.0	+0.0	+7.2	-13.0	40.5	54.0 Average RMS power at low channel, sweeping, antenna 320, 102 VAC, atten 10	-13.5	Vert 43
[illegible]	24623.000M	103.4	+0.0	-17.0	+0.0	+7.2	-13.0	80.6	82.3 Peak power at low channel, antenna 16, 120VAC, atten 10	-1.7	Vert 188
[illegible]	24623.000M	102.8	+0.0	-17.0	+0.0	+7.2	-13.0	80.0	82.2 Peak power at low channel, antenna 16, 138VAC, atten 10	-2.2	Vert 188
28	24622.970M Ave	63.3	+0.0	-17.0	+0.0	+7.2	-13.0	40.5	54.0 Average RMS power at low channel, sweeping, antenna 320, 120 VAC, atten 10	-13.5	Vert 43
29	24483.070M Ave	55.8	+0.0	-17.1	+14.8		-13.0	40.5	54.0 Average RMS power at low channel, sweeping, antenna 192, 102 V,	-13.5	Vert 100
30	24622.970M Ave	63.2	+0.0	-17.0	+0.0	+7.2	-13.0	40.4	54.0 Average RMS power at low channel, sweeping, antenna 320, 138 VAC, atten 10	-13.6	Vert 43
31	29800.000M Ave	40.1	+3.6	+0.0	+0.0	+7.9	-13.0	38.6	54.0 Average RMS power at hi channel, sweeping, antenna 16, 120 VAC, atten 10	-15.4	Vert 188

32 27000.000M Ave	42.2	+1.9	+0.0	+0.0	+7.4	-13.0	38.5	54.0 Average RMS power at mid channel, sweeping, antenna 16, 120 VAC, atten 10	-15.5	Vert 188
^ 27000.000M	42.9	+1.9	+0.0	+0.0	+7.4	-13.0	39.2	54.0 Average RMS power at mid channel, sweeping, antenna 16, 102 VAC, atten 10	-14.8	Vert 188
^ 27000.000M	42.8	+1.9	+0.0	+0.0	+7.4	-13.0	39.1	54.0 Average RMS power at mid channel, sweeping, antenna 16, 138 VAC, atten 10	-14.9	Vert 188
35 29800.000M Ave	38.4	+3.6	+0.0	+0.0	+7.9	-13.0	36.9	54.0 Average RMS power at hi channel, sweeping, antenna 16, 102 VAC, atten 10	-17.1	Vert 188
36 24483.070M Ave	52.2	+0.0	-17.1	+14.8		-13.0	36.9	54.0 Average RMS power at low channel, sweeping, antenna 192, 120 VAC.	-17.1	Vert 100
37 26992.000M Ave	33.3	+1.9	+0.0	+14.5		-13.0	36.7	54.0 Average RMS power at mid channel, sweeping, antenna 192, 120 V	-17.3	Vert 100
38 26991.490M Ave	33.0	+1.9	+0.0	+14.5		-13.0	36.4	54.0 Average RMS power at mid channel, sweeping, antenna 192, 138 V	-17.6	Vert 100
39 29801.000M Ave	30.7	+3.6	+0.0	+15.0		-13.0	36.3	54.0 Average RMS power at hi channel, sweeping, antenna 16, 138 VAC	-17.7	Vert 188
^ 29801.000M	68.9	+3.6	+0.0	+15.0		-13.0	74.5	77.3 Peak power at hi channel, antenna 16, 138 VAC.	-2.8	Vert 188

^	29801.000M	68.3	+3.6	+0.0	+15.0		-13.0	73.9	77.1 Peak power at hi channel, antenna 192, 120 VAC.	-3.2	Vert 100
42	26992.000M Ave	32.8	+1.9	+0.0	+14.5		-13.0	36.2	54.0 Average RMS power at mid channel, sweeping, antenna 192, 102 VAC	-17.8	Vert 100
^	26992.000M	71.1	+1.9	+0.0	+14.5		-13.0	74.5	77.7 Peak power at mid channel, antenna 192, 120 VAC.	-3.2	Vert 100
44	29799.000M Ave	30.5	+3.6	+0.0	+15.0		-13.0	36.1	54.0 Average RMS power at hi channel, sweeping, antenna 192, 138 VAC	-17.9	Vert 100
^	29799.000M	67.7	+3.6	+0.0	+15.0		-13.0	73.3	76.0 Peak power at hi channel, antenna 192, 138 VAC.	-2.7	Vert 100
^	29799.000M	68.1	+3.6	+0.0	+15.0		-13.0	73.7	77.1 Peak power at hi channel, antenna 192, 102 VAC.	-3.4	Vert 100
47	29800.000M Ave	30.5	+3.6	+0.0	+15.0		-13.0	36.1	54.0 Average RMS power at hi channel, sweeping, antenna 192, 120 VAC	-17.9	Vert 100
48	29800.000M Ave	30.5	+3.6	+0.0	+15.0		-13.0	36.1	54.0 Average RMS power at hi channel, sweeping, antenna 192, 102 VAC	-17.9	Vert 100
49	29786.490M Ave	36.6	+3.5	+0.0	+0.0	+7.9	-13.0	35.0	54.0 Average RMS power at hi channel, antenna 320, 102 VAC, atten 0	-19.0	Vert 51
50	29786.490M Ave	36.4	+3.5	+0.0	+0.0	+7.9	-13.0	34.8	54.0 Average RMS power at hi channel, antenna 320, 120 VAC, atten 0	-19.2	Vert 51

51	29786.490M Ave	36.3	+3.5	+0.0	+0.0	+7.9	-13.0	34.7	54.0 Average RMS power at hi channel, antenna 320, 138 VAC, atten 0	-19.3	Vert 51
52	26974.480M Ave	35.6	+2.0	+0.0	+0.0	+7.4	-13.0	32.0	54.0 Average RMS power at mid channel, antenna 320, 138 VAC, atten 0	-22.0	Vert 51
53	26974.480M Ave	35.6	+2.0	+0.0	+0.0	+7.4	-13.0	32.0	54.0 Average RMS power at mid channel, antenna 320, 120 VAC, atten 0	-22.0	Vert 51
54	26974.480M Ave	35.6	+2.0	+0.0	+0.0	+7.4	-13.0	32.0	54.0 Average RMS power at mid channel, antenna 320, 102 VAC, atten 0	-22.0	Vert 51

Test Location: CKC Laboratories, Inc. •1120 Fulton Place • Fremont, CA 94539 • 510-249-1170

Customer:	SafeView, Inc.		
Specification:	FCC 15.209 30Mhz to 100 GHz		
Work Order #:	85822	Date:	11/14/2006
Test Type:	Maximized Emissions	Time:	19:47:14
Equipment:	SafeScout Security Portal	Sequence#:	14
Manufacturer:	SafeView, Inc.	Tested By:	(b) (6) [redacted]
Model:	S-100		
S/N:	A100062300146		

Equipment Under Test (= EUT):*

Function	Manufacturer	Model #	S/N
SafeScout Security Portal*	SafeView, Inc.	S-100	A100062300146

Support Devices:

Function	Manufacturer	Model #	S/N
Computer/Monitor	MPC	CLIENTPRO 474	4007670-0001
Computer Power Supply	Lite-on Technology Corp.	PA-1221-03	5Y00045302
Keyboard	MPC	SK-1688	C0602086090
Mouse	Microsoft	Basic Optical Mouse 1.0A	none

Test Conditions / Notes:

The SafeScout S-100 Security Portal is operating and running on an auto-cycle pause time of 6 seconds. The SafeScout S-100 is connected to a support PC by an ethernet connection. The support PC triggers the SCU to begin a security scan. The software is setup to repeatedly run scan while the system is under test. 1) Added ferrite, 2 wraps to SCU serial line. 2) Taped AC line cable down, added two ferrites on AC line to motor controller. 3) Add ferrite to each DB37 cable at ISU. 4) Changed to custom made shielded encoder cable. 5) 6 dB attenuator on both masts at FDIV. The reason for each of these 4 modifications is as follows: 1) ferrite on serial line - addresses 60MHz broadband noise. 2) AC line with ferrites to motor controller - addresses discrete 60MHz and 80MHz spur. 3) DB37 ferrite - addresses 153MHz discrete spur. 4) custom Shielded encoder cable - multiple discrete frequencies 30-1000MHz. Radiated Emissions 9kHz-1000 MHz.

Transducer Legend:

T1=0852-Bi-Log Antenna
T2=Amp Cal.HP-8447F OPT H64- AN 00501
T3=Cable P05296 25' RG214 N-N
T4=Cable P05299 2' RG214 N-N
T5=Cable P05300 12' RG214 N-N

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBμV	dB	dB	dB	dB	Table	dBμV/m	dBμV/m	dB	Ant
1	310.234M	51.1	+13.2	-25.6	+1.0	+0.1	+0.0	40.4	46.0	-5.6	Horiz
			+0.6				317				119
2	500.013M	47.3	+17.5	-26.7	+1.3	+0.2	+0.0	40.3	46.0	-5.7	Horiz
	QP		+0.7				298				174
^	500.030M	50.0	+17.5	-26.7	+1.3	+0.2	+0.0	43.0	46.0	-3.0	Horiz
			+0.7				298				174
4	293.768M	51.1	+12.9	-25.4	+1.0	+0.1	+0.0	40.3	46.0	-5.7	Horiz
			+0.6				315				170
5	399.029M	48.6	+15.5	-25.9	+1.1	+0.2	+0.0	40.2	46.0	-5.8	Vert
			+0.7				278				158

6	399.926M	48.5	+15.5 -0.7	-25.9	+1.1	+0.2	+0.0 75	40.1	46.0	-5.9	Vert 202
7	295.329M QP	50.6	+12.9 +0.6	-25.4	+1.0	+0.1	+0.0 242	39.8	46.0	-6.2	Vert 99
^	295.329M	53.6	+12.9 +0.6	-25.4	+1.0	+0.1	+0.0 242	42.8	46.0	-3.2	Vert 99
9	307.687M	49.8	+13.2 +0.6	-25.5	+1.0	+0.1	+0.0 311	39.2	46.0	-6.8	Horiz 119
10	64.882M QP	52.6	+5.7 +0.2	-25.9	+0.4	+0.1	+0.0 105	33.1	40.0	-6.9	Horiz 246
^	64.891M	55.4	+5.7 +0.2	-25.9	+0.4	+0.1	+0.0 104	35.9	40.0	-4.1	Horiz 246
12	398.300M	47.5	+15.5 +0.7	-25.9	+1.1	+0.2	+0.0 239	39.1	46.0	-6.9	Horiz 179
13	307.728M	49.7	+13.2 +0.6	-25.5	+1.0	+0.1	+0.0 241	39.1	46.0	-6.9	Vert 99
14	294.770M	49.6	+12.9 +0.6	-25.4	+1.0	+0.1	+0.0 79	38.8	46.0	-7.2	Horiz 161
15	766.604M	41.7	+21.6 +0.8	-27.0	+1.5	+0.2	+0.0 232	38.8	46.0	-7.2	Horiz 178
16	500.033M QP	45.6	+17.5 +0.7	-26.7	+1.3	+0.2	+0.0 298	38.6	46.0	-7.4	Vert 179
^	500.013M	49.9	+17.5 +0.7	-26.7	+1.3	+0.2	+0.0 299	42.9	46.0	-3.1	Vert 179
18	778.787M	41.3	+21.5 +0.8	-27.0	+1.5	+0.2	+0.0 91	38.3	46.0	-7.7	Horiz 134
19	293.210M	49.0	+12.9 +0.5	-25.4	+1.0	+0.1	+0.0 80	38.1	46.0	-7.9	Vert 177
20	919.234M	38.9	+22.8 +0.9	-26.8	+1.8	+0.2	+0.0 88	37.8	46.0	-8.2	Vert 144
21	778.470M	40.8	+21.5 +0.8	-27.0	+1.5	+0.2	+0.0 258	37.8	46.0 6 dB attenuator on both masts at FDIV.	-8.2	Vert 100
22	35.217M QP	41.4	+15.8 +0.2	-26.1	+0.3	+0.1	+0.0 327	31.7	40.0	-8.3	Vert 114
^	35.217M	47.2	+15.8 +0.2	-26.1	+0.3	+0.1	+0.0 328	37.5	40.0	-2.5	Vert 114
24	204.458M QP	50.0	+9.0 +0.5	-25.6	+0.8	+0.1	+0.0 80	34.8	43.5	-8.8	Vert 98
^	204.441M	51.6	+9.0 +0.5	-25.6	+0.8	+0.1	+0.0 79	36.4	43.5	-7.1	Vert 98
26	60.047M	50.9	+5.4 +0.3	-26.1	+0.5	+0.1	+0.0 198	31.1	40.0	-8.9	Horiz 280
27	765.777M QP	40.0	+21.6 +0.8	-27.0	+1.5	+0.2	+0.0 233	37.1	46.0	-8.9	Horiz 178
^	765.774M	44.2	+21.6 +0.8	-27.0	+1.5	+0.2	+0.0 232	41.3	46.0	-4.7	Horiz 178
29	935.461M	37.4	+23.2 +0.9	-26.5	+1.8	+0.2	+0.0 255	37.0	46.0	-9.0	Horiz 175

30 QP	766.744M	39.4	+21.6 +0.8	-27.0	+1.5	+0.2	+0.0 258	36.5	46.0	-9.5	Vert 106
^	766.715M	43.0	+21.6 +0.8	-27.0	+1.5	+0.2	+0.0 258	40.1	46.0	-5.9	Vert 106
32	766.184M	39.4	+21.6 +0.8	-27.0	+1.5	+0.2	+0.0 95	36.5	46.0 6 dB attenuator on both masts at FDIV.	-9.5	Horiz 143
33 QP	763.924M	39.4	+21.6 +0.8	-27.0	+1.5	+0.2	+0.0 256	36.5	46.0	-9.5	Vert 100
^	763.924M	49.4	+21.6 +0.8	-27.0	+1.5	+0.2	+0.0 256	46.5	46.0	+0.5	Vert 100
35 QP	764.170M	39.3	+21.6 +0.8	-27.0	+1.5	+0.2	+0.0 254	36.4	46.0	-9.6	Vert 101
^	764.195M	46.7	+21.6 +0.8	-27.0	+1.5	+0.2	+0.0 254	43.8	46.0	-2.2	Vert 101
37	334.072M	46.3	+13.8 +0.5	-25.7	+1.0	+0.1	+0.0 250	36.0	46.0	-10.0	Horiz 125
38 QP	763.690M	38.5	+21.6 +0.8	-27.0	+1.5	+0.2	+0.0 254	35.6	46.0	-10.4	Vert 101
^	763.706M	45.8	+21.6 +0.8	-27.0	+1.5	+0.2	+0.0 254	42.9	46.0	-3.1	Vert 101
40 QP	764.933M	38.3	+21.6 +0.8	-27.0	+1.5	+0.2	+0.0 278	35.4	46.0	-10.6	Vert 121
^	764.933M	45.1	+21.6 +0.8	-27.0	+1.5	+0.2	+0.0 278	42.2	46.0	-3.8	Vert 121
42 QP	765.008M	37.9	+21.6 +0.8	-27.0	+1.5	+0.2	+0.0 233	35.0	46.0	-11.0	Horiz 178
^	765.072M	44.5	+21.6 +0.8	-27.0	+1.5	+0.2	+0.0 232	41.6	46.0	-4.4	Horiz 178
44 QP	765.700M	37.8	+21.6 +0.8	-27.0	+1.5	+0.2	+0.0 257	34.9	46.0 6 dB attenuator on both masts at FDIV.	-11.1	Vert 100
^	765.688M	43.7	+21.6 +0.8	-27.0	+1.5	+0.2	+0.0 257	40.8	46.0 6 dB attenuator on both masts at FVIV.	-5.2	Vert 100
46 QP	971.155M	42.8	+23.6 +1.0	-26.7	+1.8	+0.2	+0.0 87	42.7	54.0	-11.3	Horiz 102
^	971.135M	45.9	+23.6 +1.0	-26.7	+1.8	+0.2	+0.0 88	45.8	54.0	-8.2	Horiz 102
48 QP	99.650M	47.5	+9.6 +0.2	-25.7	+0.5	+0.0	+0.0 9	32.1	43.5	-11.4	Horiz 171
^	99.632M	53.9	+9.6 +0.2	-25.7	+0.5	+0.0	+0.0 9	38.5	43.5	-5.0	Horiz 185
50	101.004M	47.1	+9.7 +0.2	-25.7	+0.5	+0.0	+0.0 15	31.8	43.5	-11.7	Horiz 149
51	275.367M	45.5	+12.7 +0.4	-25.4	+0.9	+0.1	+0.0 239	34.2	46.0	-11.8	Vert 189
52 QP	762.953M	37.1	+21.6 +0.8	-27.0	+1.5	+0.2	+0.0 252	34.2	46.0	-11.8	Vert 100
^	762.953M	49.2	+21.6 +0.8	-27.0	+1.5	+0.2	+0.0 252	46.3	46.0	+0.3	Vert 100

54	763.948M QP	35.4	+21.6 +0.8	-27.0	+1.5	+0.2	+0.0 232	32.5	46.0	-13.5	Horiz 178
^	763.948M	44.3	+21.6 +0.8	-27.0	+1.5	+0.2	+0.0 233	41.4	46.0	-4.6	Horiz 178
56	216.408M	46.7	+9.9 +0.4	-25.4	+0.8	+0.1	+0.0 360	32.5	46.0	-13.5	Horiz 103
57	200.003M	45.3	+8.6 +0.5	-25.6	+0.8	+0.1	+0.0 223	29.7	43.5	-13.8	Horiz 229
58	215.956M	42.3	+9.9 +0.4	-25.4	+0.8	+0.1	+0.0 61	28.1	43.5	-15.4	Vert 131
59	215.956M	42.3	+9.9 +0.4	-25.4	+0.8	+0.1	+0.0 61	28.1	43.5	-15.4	Vert 99
60	212.880M	42.5	+9.6 +0.4	-25.5	+0.8	+0.1	+0.0 260	27.9	43.5	-15.6	Vert 106
61	971.049M QP	38.2	+23.6 +1.0	-26.7	+1.8	+0.2	+0.0 235	38.1	54.0	-15.9	Vert 106
^	971.049M	42.9	+23.6 +1.0	-26.7	+1.8	+0.2	+0.0 235	42.8	54.0	-11.2	Vert 106
63	779.506M	32.7	+21.5 +0.8	-27.0	+1.5	+0.2	+0.0 249	29.7	46.0 6 dB attenuator on both masts at FDIV.	-16.3	Vert 100
64	216.105M	43.2	+9.9 +0.4	-25.4	+0.8	+0.1	+0.0 36	29.0	46.0	-17.0	Horiz 188
65	90.825M QP	39.3	+8.5 +0.2	-25.9	+0.4	+0.0	+0.0 358	22.5	43.5	-21.0	Horiz 216
^	90.825M	54.7	+8.5 +0.2	-25.9	+0.4	+0.0	+0.0 -3	37.9	43.5	-5.6	Horiz 216
67	92.781M QP	38.9	+8.7 +0.2	-25.9	+0.4	+0.0	+0.0 361	22.3	43.5	-21.2	Horiz 179
^	92.782M	53.8	+8.7 +0.2	-25.9	+0.4	+0.0	+0.0 361	37.2	43.5	-6.3	Horiz 178
69	94.220M QP	37.5	+8.9 +0.2	-25.9	+0.4	+0.0	+0.0 358	21.1	43.5	-22.4	Horiz 184
^	94.139M	52.1	+8.9 +0.2	-25.9	+0.4	+0.0	+0.0 358	35.7	43.5	-7.8	Horiz 179
71	763.600M QP	23.1	+21.6 +0.8	-27.0	+1.5	+0.2	+0.0 233	20.2	46.0	-25.8	Horiz 178
^	763.572M	43.7	+21.6 +0.8	-27.0	+1.5	+0.2	+0.0 232	40.8	46.0	-5.2	Horiz 178

Test Location: CKC Laboratories, Inc. •1120 Fulton Place • Fremont, CA 94539 • 510-249-1170

Customer:	Safe View, Inc.		
Specification:	FCC 15.209		
Work Order #:	85484	Date:	9/19/2006
Test Type:	Maximized Emissions	Time:	17:49:55
Equipment:	Security Portal	Sequence#:	(b) (6) [redacted]
Manufacturer:	SafeView, Inc.	Tested By:	
Model:	SCOUT 100 Version 2 Switch		
S/N:	A100062500152		

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Security Portal*	SafeView, Inc.	SCOUT 100 Version 2 Switch	A100062500152

Support Devices:

Function	Manufacturer	Model #	S/N
Computer/Monitor	MPC	CLIENTPRO 474	4007670-0001
Computer Power Supply	Lite-on Technology Corp.	PA-1221-03	5Y00045302
Keyboard	MPC	SK-1688	C0602086090
Mouse	Microsoft	Basic Optical Mouse 1.0A	none

Test Conditions / Notes:

The Scout 100 Version 2 Switch Security Portal is transmitting continuously. The Scout 100 is connected to a support PC by an ethernet connection. The support PC triggers the SCU to begin a security scan. Radiated Emissions 1-12.5 GHz. Maximized Emissions.
Modifications in at time of testing were:
1) Added a two-turn ferrite on the SCU serial line.
2) Taped AC line cable down to the chassis and added two clamp-on ferrites on AC line to the motor controller.
3) Added a clamp-on ferrite to each of the DB37 cables at the ISU end of the cables.
4) Changed the encoder cable to a custom made, shielded encoder cable.
5) A 6 dB attenuator was installed on both antenna masts at the FDIV.

The reason for each of these 5 modifications is as follows:
1) ferrite on serial line - addresses 60MHz broadband noise
2) AC line with ferrites to motor controller - addresses discrete 60MHz and 80MHz spur
3) DB37 ferrite - addresses 153MHz discrete spur
4) custom shielded encoder cable - multiple discrete frequencies 30-1000MHz
5) 6 dB attenuators addresses the divided down VCO frequencies removing the 700 MHz peaks

Transducer Legend:

T1=Horn Antenna AN02061 sn1064 (Fremont)	T2=AMP AN02810 50GHz
T3=ANP04241 HF-Heliax Cable	T4=P05138 HF Cable 25ft
T5=ANP5201 1-40GHz	T6=ANP05200 1-40GHz
T7=HP-83017A, A/N 00785	

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
			T5	T6	T7						
	MHz	dBμV	dB	dB	dB	dB	Table	dBμV/m	dBμV/m	dB	Ant
1	1297.067M	86.5	-24.7	-28.2	+0.4	+1.7	+0.0	47.7	54.0	-6.3	Horiz
			-0.9	+1.0	-39.3		63				211

2	1000.010M	88.2	+23.8 +0.8	-28.3 +0.8	+0.4 -40.6	+1.4	+0.0 -2	46.5	54.0	-7.5	Horiz 209
3	3065.100M	73.8	+30.2 +1.5	-26.3 +1.4	+0.5 -37.6	+2.7	+0.0 25	46.2	54.0	-7.8	Horiz 206
4	1686.900M	80.7	+26.8 +1.0	-28.1 +1.1	+0.5 -38.4	+1.9	+0.0 196	45.5	54.0	-8.5	Vert 205
5	1096.800M	85.7	+24.1 +0.8	-28.3 +0.9	+0.4 -40.1	+1.5	+0.0 147	45.0	54.0	-9.0	Vert 204
6	3067.300M	71.5	+30.2 +1.5	-26.3 +1.4	+0.5 -37.6	+2.7	+0.0 25	43.9	54.0	-10.1	Horiz 206
7	1685.200M	79.0	+26.7 +1.0	-28.1 +1.1	+0.5 -38.4	+1.9	+0.0 196	43.7	54.0	-10.3	Vert 205
8	9201.225M Ave	57.3	+37.7 +2.6	-26.6 +2.4	+1.4 -36.7	+4.9	+0.0 244	42.9	54.0	-11.1	Horiz 210
^	9201.225M	65.2	+37.7 +2.6	-26.6 +2.4	+1.4 -36.7	+4.9	+0.0 244	50.9	54.0	-3.1	Horiz 210

Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • 510-249-1170

Customer:	Safe View, Inc.		
Specification:	FCC 15.209		
Work Order #:	85484	Date:	9/20/2006
Test Type:	Maximized Emissions	Time:	14:35:12
Equipment:	Security Portal	Sequence#:	15
Manufacturer:	SafeView, Inc.	Tested By:	(b) (6) [redacted]
Model:	SCOUT 100 Version 2 Switch		
S/N:	A100062500152		

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Security Portal*	SafeView, Inc.	SCOUT 100 Version 2 Switch	A100062500152

Support Devices:

Function	Manufacturer	Model #	S/N
Computer/Monitor	MPC	CLIENTPRO 474	4007670-0001
Computer Power Supply	Lite-on Technology Corp.	PA-1221-03	5Y00045302
Keyboard	MPC	SK-1688	C0602086090
Mouse	Microsoft	Basic Optical Mouse 1.0A	none

Test Conditions / Notes:

The Scout 100 Version 2 Switch Security Portal is transmitting continuously. . Radiated Emissions 1-18 GHz. No signals seen above 12.5 GHz. Notes: 1) Not sweeping, transmitting on LOW channel from antenna 192. Disabled the brake, so we can rotate the mast to the pre-cal position for worst case emissions.

Modifications in at time of testing were:

1) Added a two-turn ferrite on the SCU serial line.
2) Taped AC line cable down to the chassis and added two clamp-on ferrites on AC line to the motor controller.
3) Added a clamp-on ferrite to each of the DB37 cables at the ISU end of the cables.
4) Changed the encoder cable to a custom made, shielded encoder cable.
5) A 6 dB attenuator was installed on both antenna masts at the FDIV.

The reason for each of these 5 modifications is as follows:

1) ferrite on serial line - addresses 60MHz broadband noise
2) AC line with ferrites to motor controller - addresses discrete 60MHz and 80MHz spur
3) DB37 ferrite - addresses 153MHz discrete spur
4) custom shielded encoder cable - multiple discrete frequencies 30-1000MHz
5) 6 dB attenuators addresses the divided down VCO frequencies removing the 700 MHz peaks

Transducer Legend:

T1=Horn Antenna AN02061 sn1064 (Fremont)	T2=AMP AN02810 50GHz
T3=P05138 HF Cable 25ft	T4=ANP5201 1-40GHz
T5=ANP05200 1-40GHz	T6=HP-83017A, A/N 00785
T7=CAB HF 72" ANP05317 Pasternack	

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1 / T5	T2 / T6	T3 / T7	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBμV	dB	dB	dB	dB	Table	dBμV/m	dBμV/m	dB	Ant
1	12349.240M	57.7	+39.4	-29.0	+6.0	+3.2	+0.0	48.8	54.0	-5.2	Vert
			-2.8	-36.5	-5.2						175

2	12348.580M	55.2	+39.4	-29.0	+6.0	+3.2	+0.0	46.3	54.0	-7.7	Horiz
			+2.8	-36.5	+5.2		346				209
3	3087.833M	71.8	+30.2	-26.4	+2.7	+1.5	+0.0	46.0	54.0	-8.0	Horiz
			+1.4	-37.6	+2.4		370				137
4	6175.167M	63.8	+34.5	-27.3	+4.1	+2.1	+0.0	45.4	54.0	-8.6	Horiz
			+1.9	-37.2	+3.5		346				99
5	9262.866M	55.7	+37.8	-26.6	+5.0	+2.6	+0.0	44.7	54.0	-9.3	Horiz
			+2.4	-36.6	+4.4		97				99
6	3087.575M	70.5	+30.2	-26.4	+2.7	+1.5	+0.0	44.7	54.0	-9.3	Vert
			+1.4	-37.6	+2.4		340				100
7	6175.467M	61.7	+34.5	-27.3	+4.1	+2.1	+0.0	43.3	54.0	-10.7	Vert
			+1.9	-37.2	+3.5		352				148
8	12348.780M Ave	50.5	+39.4	-29.0	+6.0	+3.2	+0.0	41.6	54.0	-12.4	Vert
			+2.8	-36.5	+5.2						175
9	9262.764M	51.3	+37.8	-26.6	+5.0	+2.6	+0.0	40.3	54.0	-13.7	Vert
			+2.4	-36.6	+4.4		11				215
10	1096.500M	79.5	+24.1	-28.3	+1.5	+0.8	+0.0	39.9	54.0	-14.1	Vert
			+0.9	-40.1	+1.5		216				219
11	1090.133M	76.7	+24.1	-28.3	+1.5	+0.8	+0.0	37.0	54.0	-17.0	Vert
			+0.9	-40.2	+1.5		216				219

Test Location: CKC Laboratories, Inc. •1120 Fulton Place • Fremont, CA 94539 • 510-249-1170

Customer:	**Safe View, Inc.**		
Specification:	**FCC 15.209**		
Work Order #:	**85484**	Date:	9/20/2006
Test Type:	**Maximized Emissions**	Time:	16:03:48
Equipment:	**Security Portal**	Sequence#:	18
Manufacturer:	SafeView, Inc.	Tested By:	[redacted]
Model:	SCOUT 100 Version 2 Switch		
S/N:	A100062500152		

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Security Portal*	SafeView, Inc.	SCOUT 100 Version 2 Switch	A100062500152

Support Devices:

Function	Manufacturer	Model #	S/N
Computer/Monitor	MPC	CLIENTPRO 474	4007670-0001
Computer Power Supply	Lite-on Technology Corp.	PA-1221-03	5Y00045302
Keyboard	MPC	SK-1688	C0602086090
Mouse	Microsoft	Basic Optical Mouse 1.0A	none

Test Conditions / Notes:

The Scout 100 Version 2 Switch Security Portal is transmitting continuously. Radiated Emissions 1-18 GHz. No signals seen above 12.5 GHz. Notes: 1) Not sweeping, transmitting on MID channel from antenna 192. Disabled the brake, so we can rotate the mast to the pre-cal position for worst case emissions.

Modifications in at time of testing were:

1) Added a two-turn ferrite on the SCU serial line.
2) Taped AC line cable down to the chassis and added two clamp-on ferrites on AC line to the motor controller.
3) Added a clamp-on ferrite to each of the DB37 cables at the ISU end of the cables.
4) Changed the encoder cable to a custom made, shielded encoder cable.
5) A 6 dB attenuator was installed on both antenna masts at the FDIV.

The reason for each of these 5 modifications is as follows:

1) ferrite on serial line - addresses 60MHz broadband noise
2) AC line with ferrites to motor controller - addresses discrete 60MHz and 80MHz spur
3) DB37 ferrite - addresses 153MHz discrete spur
4) custom shielded encoder cable - multiple discrete frequencies 30-1000MHz
5) 6 dB attenuators addresses the divided down VCO frequencies removing the 700 MHz peaks

Transducer Legend:

T1=Horn Antenna AN02061 sn1064 (Fremont)	T2 AMP AN02810 50GHz
T3 P05138 HF Cable 25ft	T4=ANP5201 1-40GHz
T5=ANP05200 1-40GHz	T6=HP-83017A, A/N 00785
T7=CAB HF 72" ANP05317 Pasternack	

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1 / T5	T2 / T6	T3 / T7	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	9343.941M	57.5	+37.9	-26.6	+5.0	+2.7	+0.0	46.8	54.0	-7.2	Horiz
			+2.4	-36.5	-4.4		189				121

2	9343.733M	57.5	+37.9 +2.4	-26.6 -36.5	−5.0 +4.4	+2.7	+0.0 265	46.8	54.0	-7.2	Vert 103
3	11544.790M	55.0	+39.6 −2.8	-28.3 -36.1	+5.5 +5.1	+3.1	+0.0	46.7	54.0 Noise floor	-7.3	Horiz 103
4	11619.310M	53.8	+39.4 +2.8	-28.4 -36.2	+5.5 +5.1	+3.1	+0.0 -11	45.1	54.0 Noise floor	-8.9	Horiz 103
5	11675.500M	53.8	+39.3 +2.8	-28.4 -36.2	+5.5 +5.1	+3.1	+0.0 -11	45.0	54.0 Noise floor	-9.0	Vert 99
6	11889.730M	54.2	+38.8 −2.8	-28.6 -36.3	+5.7 +5.1	+3.2	+0.0	44.9	54.0 Noise floor	-9.1	Vert 99

TSL001135

Test Location: CKC Laboratories, Inc. •1120 Fulton Place • Fremont, CA 94539 • 510-249-1170

Customer:	**Safe View, Inc.**		
Specification:	**FCC 15.209**		
Work Order #:	**85484**	Date:	9/20/2006
Test Type:	**Maximized Emissions**	Time:	17:32:54
Equipment:	**Security Portal**	Sequence#:	21
Manufacturer:	SafeView, Inc.	Tested By:	[redacted]
Model:	SCOUT 100 Version 2 Switch		
S/N:	A100062500152		

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Security Portal*	SafeView, Inc.	SCOUT 100 Version 2 Switch	A100062500152

Support Devices:

Function	Manufacturer	Model #	S/N
Computer/Monitor	MPC	CLIENTPRO 474	4007670-0001
Computer Power Supply	Lite-on Technology Corp.	PA-1221-03	5Y00045302
Keyboard	MPC	SK-1688	C0602086090
Mouse	Microsoft	Basic Optical Mouse 1.0A	none

Test Conditions / Notes:

The Scout 100 Version 2 Switch Security Portal is transmitting continuously. Radiated Emissions 1-18 GHz. No signals seen above 12.5 GHz. Notes: 1) Not sweeping, transmitting on Hi channel from antenna 192. Disabled the brake, so we can rotate the mast to the pre-cal position for worst case emissions.

Modifications in at time of testing were:

1) Added a two-turn ferrite on the SCU serial line.
2) Taped AC line cable down to the chassis and added two clamp-on ferrites on AC line to the motor controller.
3) Added a clamp-on ferrite to each of the DB37 cables at the ISU end of the cables.
4) Changed the encoder cable to a custom made, shielded encoder cable.
5) A 6 dB attenuator was installed on both antenna masts at the FDIV.

The reason for each of these 5 modifications is as follows:

1) ferrite on serial line - addresses 60MHz broadband noise
2) AC line with ferrites to motor controller - addresses discrete 60MHz and 80MHz spur
3) DB37 ferrite - addresses 153MHz discrete spur
4) custom shielded encoder cable - multiple discrete frequencies 30-1000MHz
5) 6 dB attenuators addresses the divided down VCO frequencies removing the 700 MHz peaks

Transducer Legend:

T1=Horn Antenna AN02061 sn1064 (Fremont)	T2=AMP AN02810 50GHz
T3=P05138 HF Cable 25ft	T4=ANP5201 1-40GHz
T5=ANP05200 1-40GHz	T6=HP-83017A, A/N 00785
T7=CAB HF 72" ANP05317 Pasternack	

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2 T6	T3 T7	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBμV	dB	dB	dB	dB	Table	dBμV/m	dBμV/m	dB	Ant
1	11619.480M	55.8	+39.4	-28.4	+5.5	+3.1	+0.0	47.1	54.0	-6.9	Vert
			+2.8	-36.2	+5.1				Noise floor		100

TSL001136

2	12425.710M	55.3	+39.6	-29.1	+6.0	+3.3	+0.0	46.7	54.0	-7.3	Horiz
			+2.9	-36.6	+5.3				Noise floor		100
3	11199.010M	55.3	+39.2	-28.1	+5.3	+3.1	+0.0	46.6	54.0	-7.4	Vert
			-2.7	-35.9	+5.0		-11		Noise floor		100
4	11796.910M	54.8	+39.0	-28.5	+5.6	+3.1	+0.0	45.6	54.0	-8.4	Horiz
			+2.8	-36.3	+5.1		-11		Noise floor		100

Test Location:	CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • 510-249-1170		
Customer:	**Safe View, Inc.**		
Specification:	**FCC 15.209**		
Work Order #:	**85484**	Date:	9/21/2006
Test Type:	**Maximized Emissions**	Time:	16:29:19
Equipment:	**Security Portal**	Sequence#:	37
Manufacturer:	SafeView, Inc.	Tested By:	[redacted] (b) (6)
Model:	SCOUT 100 Version 2 Switch	S/N:	A100062500152

Equipment Under Test **(* = EUT):**

Function	Manufacturer	Model #	S/N
Security Portal*	SafeView, Inc.	SCOUT 100 Version 2 Switch	A100062500152

Support Devices:

Function	Manufacturer	Model #	S/N
Computer/Monitor	MPC	CLIENTPRO 474	4007670-0001
Computer Power Supply	Lite-on Technology Corp.	PA-1221-03	5Y00045302
Keyboard	MPC	SK-1688	C0602086090
Mouse	Microsoft	Basic Optical Mouse 1.0A	none

Test Conditions / Notes:

The Scout 100 Version 2 Switch Security Portal is transmitting continuously. Radiated Emissions 18-26.5 GHz. Notes: 1) Not sweeping, transmitting on LOW, MID, or HI channel (24.65, 27.0, 29.8 GHz) from antenna 192. Disabled the brake, so we can rotate the mast to the pre-cal position for worst case emissions. 2) Did not list signals from the transmitter fundamental.

Modifications in at time of testing were:

1) Added a two-turn ferrite on the SCU serial line.
2) Taped AC line cable down to the chassis and added two clamp-on ferrites on AC line to the motor controller.
3) Added a clamp-on ferrite to each of the DB37 cables at the ISU end of the cables.
4) Changed the encoder cable to a custom made, shielded encoder cable.
5) A 6 dB attenuator was installed on both antenna masts at the FDIV.

The reason for each of these 5 modifications is as follows:

1) ferrite on serial line - addresses 60MHz broadband noise
2) AC line with ferrites to motor controller - addresses discrete 60MHz and 80MHz spur
3) DB37 ferrite - addresses 153MHz discrete spur
4) custom shielded encoder cable - multiple discrete frequencies 30-1000MHz
5) 6 dB attenuators addresses the divided down VCO frequencies removing the 700 MHz peaks

Signals detected in this range were determined to be noise floor readings, representing no EUT signals detected above this level.

Transducer Legend:

T1=AMP AN02810 50GHz	T2=ANP05200 1-40GHz
T3=Cable AN2718 40 GHz	T4=CAB HF 48" ANP05314 Pasternack
T5=18-26.5 WG F-C3	T6=Horn AN02695 Miteq Active 26-40GHz

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2 T6	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBμV	dB	dB	dB	dB	Table	dBμV/m	dBμV/m	dB	Ant
1	26197.830M Ave	27.2	-31.7 +4.0	+4.2 +3.6	+29.7	+5.6	+0.0 9	42.6	54.0 MID, noise floor.	-11.4	Horiz 100
^	26197.830M	32.0	-31.7 +4.0	+4.2 +3.6	+29.7	+5.6	+0.0 9	47.4	54.0 MID, noise floor.	-6.6	Horiz 100

3	26201.170M	27.2	-31.7	+4.2	+29.7	+5.6	+0.0	42.5	54.0	-11.5	Horiz
	Ave		+4.0	+3.6			5		HI, noise floor.		100
^	26201.170M	32.2	-31.7	+4.2	+29.7	+5.6	+0.0	47.6	54.0	-6.4	Horiz
			+4.0	+3.6			5		HI, noise floor.		100
5	26202.840M	27.1	-31.7	+4.2	+29.7	+5.6	+0.0	42.5	54.0	-11.5	Vert
	Ave		+4.0	+3.6			364		MID, noise floor.		100
^	26202.840M	32.3	-31.7	+4.2	+29.7	+5.6	+0.0	47.7	54.0	-6.3	Vert
			+4.0	+3.6			364		MID, noise floor.		100
7	26151.920M	26.7	-31.6	+4.2	+29.7	+5.7	+0.0	42.5	54.0	-11.5	Vert
	Ave		+4.1	+3.7					LOW, noise floor.		100
^	26151.890M	31.3	-31.6	+4.2	+29.7	+5.7	+0.0	47.1	54.0	-6.9	Vert
			+4.1	+3.7					LOW, noise floor.		100
9	26144.410M	26.6	-31.6	+4.2	+29.7	+5.7	+0.0	42.4	54.0	-11.6	Vert
	Ave		+4.1	+3.7			214		MID, noise floor.		100
^	26144.410M	32.0	-31.6	+4.2	+29.7	+5.7	+0.0	47.8	54.0	-6.2	Vert
			+4.1	+3.7			214		MID, noise floor.		100
11	26105.180M	26.2	-31.6	+4.2	+29.7	+5.7	+0.0	42.2	54.0	-11.8	Horiz
	Ave		+4.2	+3.8			361		MID, noise floor.		100
^	26105.160M	31.3	-31.6	+4.2	+29.7	+5.7	+0.0	47.3	54.0	-6.7	Horiz
			+4.2	+3.8			361		MID, noise floor.		100
13	26299.670M	26.6	-31.7	+4.3	+29.8	+5.6	+0.0	42.1	54.0	-11.9	Vert
	Ave		+4.0	+3.5			358		HI, noise floor.		100
^	26299.670M	30.8	-31.7	+4.3	+29.8	+5.6	+0.0	46.3	54.0	-7.7	Vert
			+4.0	+3.5			358		HI, noise floor.		100
15	26280.800M	26.7	-31.7	+4.3	+29.8	+5.6	+0.0	42.0	54.0	-12.0	Horiz
	Ave		+3.9	+3.5			187		LOW, noise floor.		100
^	26280.800M	32.8	-31.7	+4.3	+29.8	+5.6	+0.0	48.2	54.0	-5.8	Horiz
			+3.9	+3.5			187		LOW, noise floor.		100

Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • 510-249-1170

Customer:	**Safe View, Inc.**		
Specification:	**FCC 15.209**		
Work Order #:	**85484**	Date:	9/22/2006
Test Type:	**Maximized Emissions**	Time:	11:15:57
Equipment:	**Security Portal**	Sequence#:	[redacted]
Manufacturer:	SafeView, Inc.	Tested By:	[redacted]
Model:	SCOUT 100 Version 2 Switch		
S/N:	A100062500152		

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Security Portal*	SafeView, Inc.	SCOUT 100 Version 2 Switch	A100062500152

Support Devices:

Function	Manufacturer	Model #	S/N
Computer/Monitor	MPC	CLIENTPRO 474	4007670-0001
Computer Power Supply	Lite-on Technology Corp.	PA-1221-03	5Y00045302
Keyboard	MPC	SK-1688	C0602086090
Mouse	Microsoft	Basic Optical Mouse 1.0A	none

Test Conditions / Notes:

The Scout 100 Version 2 Switch Security Portal is transmitting continuously. Radiated Emissions 26.5-40 GHz. Notes: 1) Not sweeping, transmitting on LOW, MID, or HI channel (24.65, 27.0, 29.8 GHz) from antenna 192. Disabled the brake, so we can rotate the mast to the pre-cal position for worst case emissions. 2) Did not list the transmitter fundamentals or in-band signals (24-30 GHz).

Modifications in at time of testing were:

1) Added a two-turn ferrite on the SCU serial line.
2) Taped AC line cable down to the chassis and added two clamp-on ferrites on AC line to the motor controller.
3) Added a clamp-on ferrite to each of the DB37 cables at the ISU end of the cables.
4) Changed the encoder cable to a custom made, shielded encoder cable.
5) A 6 dB attenuator was installed on both antenna masts at the FDIV.

The reason for each of these 5 modifications is as follows:

1) ferrite on serial line - addresses 60MHz broadband noise
2) AC line with ferrites to motor controller - addresses discrete 60MHz and 80MHz spur
3) DB37 ferrite - addresses 153MHz discrete spur
4) custom shielded encoder cable - multiple discrete frequencies 30-1000MHz
5) 6 dB attenuators addresses the divided down VCO frequencies removing the 700 MHz peaks

Signals detected in this range were determined to be noise floor readings, representing no EUT signals detected above this level.

Transducer Legend:

T1=AMP AN02810 50GHz	T2 ANP05200 1-40GHz
T3=CAB HF 48" ANP05314 Pasternack	T4=Horn AN02695 Miteq Active 26-40GHz
T5=Cable AN2715 40 GHz	T6 26.5-40 WG F-C3

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2 T6	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBμV	dB	dB	dB	dB	Table	dBμV/m	dBμV/m	dB	Ant
1	39972.970M	26.1	-30.3	+5.4	+6.9	+9.0	+0.0	40.2	54.0	-13.8	Horiz
	Ave		+18.1	+5.0			-11		LOW, Noise floor		100
^	39973.040M	31.2	-30.3	+5.4	+6.9	+9.0	+0.0	45.3	54.0	-8.7	Horiz
			+18.1	+5.0			-11		LOW, Noise floor		100
3	39970.720M	26.0	-30.3	+5.4	+6.9	+9.0	+0.0	40.1	54.0	-13.9	Vert
	Ave		+18.1	+5.0			-11		MID, Noise floor		100
^	39970.790M	31.5	-30.3	+5.4	+6.9	+9.0	+0.0	45.6	54.0	-8.4	Vert
			+18.1	+5.0			-11		MID, Noise floor		100
5	39970.820M	26.0	-30.3	+5.4	+6.9	+9.0	+0.0	40.1	54.0	-13.9	Vert
	Ave		+18.1	+5.0					HI, Noise floor		100
^	39970.820M	31.7	-30.3	+5.4	+6.9	+9.0	+0.0	45.8	54.0	-8.2	Vert
			+18.1	+5.0					HI, Noise floor		100
7	39912.160M	26.0	-30.4	+5.4	+6.9	+8.8	+0.0	39.8	54.0	-14.2	Horiz
	Ave		+18.1	+5.0			-11		HI, Noise floor		100
^	39912.180M	31.5	-30.4	+5.4	+6.9	+8.8	+0.0	45.3	54.0	-8.7	Horiz
			+18.1	+5.0			-11		HI, Noise floor		100
9	39754.490M	26.1	-30.4	+5.4	+6.9	+8.3	+0.0	39.4	54.0	-14.6	Vert
	Ave		+18.0	+5.1			370		LOW, Noise floor		100
^	39754.520M	31.7	-30.4	+5.4	+6.9	+8.3	+0.0	45.0	54.0	-9.0	Vert
			+18.0	+5.1			370		LOW, Noise floor		100
11	39709.450M	26.2	-30.5	+5.4	+6.9	+8.2	+0.0	39.3	54.0	-14.7	Horiz
	Ave		+18.0	+5.1			-11		LOW, Noise floor		100
^	39709.450M	31.3	-30.5	+5.4	+6.9	+8.2	+0.0	44.4	54.0	-9.6	Horiz
			+18.0	+5.1			-11		LOW, Noise floor		100
13	39563.040M	26.6	-30.6	+5.4	+6.9	+7.7	+0.0	39.2	54.0	-14.8	Horiz
	Ave		+18.0	+5.2			369		LOW, Noise floor		100
^	39563.110M	31.5	-30.6	+5.4	+6.9	+7.7	+0.0	44.1	54.0	-9.9	Horiz
			+18.0	+5.2			369		LOW, Noise floor		100
15	39650.880M	26.3	-30.5	+5.4	+6.9	+8.0	+0.0	39.2	54.0	-14.8	Horiz
	Ave		+18.0	+5.1			361		MID, Noise floor		100
^	39650.950M	32.7	-30.5	+5.4	+6.9	+8.0	+0.0	45.6	54.0	-8.4	Horiz
			+18.0	+5.1			361		MID, Noise floor		100
17	39466.190M	26.8	-30.6	+5.5	+6.9	+7.4	+0.0	39.1	54.0	-14.9	Horiz
	Ave		+17.9	+5.2			370		LOW, Noise floor		100
^	39466.260M	32.2	-30.6	+5.5	+6.9	+7.4	+0.0	44.5	54.0	-9.5	Horiz
			+17.9	+5.2			370		LOW, Noise floor		100

Test Location:	CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • 510-249-1170		
Customer:	**Safe View, Inc.**		
Specification:	**FCC 15.209**		
Work Order #:	**85484**	Date:	9/28/2006
Test Type:	**Radiated Scan/Maximized**	Time:	13:24:14
Equipment:	**Security Portal**	Sequence#:	49
Manufacturer:	SafeView, Inc.	Tested By:	(b) (6) [redacted]
Model:	SCOUT 100 Version 2 Switch		
S/N:	A100062500152		

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Security Portal*	SafeView, Inc.	SCOUT 100 Version 2 Switch	A100062500152

Support Devices:

Function	Manufacturer	Model #	S/N
Computer/Monitor	MPC	CLIENTPRO 474	4007670-0001
Computer Power Supply	Lite-on Technology Corp.	PA-1221-03	5Y00045302
Keyboard	MPC	SK-1688	C0602086090
Mouse	Microsoft	Basic Optical Mouse 1.0A	none

Test Conditions / Notes:

The Scout 100 Version 2 Switch Security Portal is transmitting continuously. Radiated Emissions 40-60 GHz. Notes: 1) Not sweeping, transmitting on LO, MID, or HI channel (24.65, 27.0, 29.8 GHz) from antenna 192. Disabled the brake, so we can rotate the mast to the pre-cal position for worst case emissions. The mast is reversed so antennas are facing out for easier access. 2) Measurement range is 40-60 GHz. 3) RBW=VBW=30 kHz to reduce noise floor. 4) Antenna placed 0.1 meter directly in front of the antenna that was determined to be the emitter by checking the fundamental.

Modifications in at time of testing were:

1) Added a two-turn ferrite on the SCU serial line.
2) Taped AC line cable down to the chassis and added two clamp-on ferrites on AC line to the motor controller.
3) Added a clamp-on ferrite to each of the DB37 cables at the ISL end of the cables.
4) Changed the encoder cable to a custom made, shielded encoder cable.
5) A 6 dB attenuator was installed on both antenna masts at the FDIV.

The reason for each of these 5 modifications is as follows:

1) ferrite on serial line - addresses 60MHz broadband noise
2) AC line with ferrites to motor controller - addresses discrete 60MHz and 80MHz spur
3) DB37 ferrite - addresses 153MHz discrete spur
4) custom shielded encoder cable - multiple discrete frequencies 30-1000MHz
5) 6 dB attenuators addresses the divided down VCO frequencies removing the 700 MHz peaks

Signals detected in this range were determined to be noise floor readings, representing no EUT signals detected above this level.

Transducer Legend:

T1=P5314 40-120GHz | T2=Horn 40-60GHz 02347 M19RH
T3=Mixer 40-60GHz 02347 M19HWA

Measurement Data: Reading listed by margin. Test Distance: 0.1 Meter

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	T3 dB	dB	Dist Table	Corr dBμV/m	Spec dBμV/m	Margin dB	Polar Ant
1	59600.000M Ave	-6.4	+2.3	+41.7	+35.1		-30.0	42.7	54.0 Hi channel, noise floor.	-11.3	Vert
^	59600.030M	3.2	+2.3	+41.7	+35.1		-30.0	52.3	54.0 Hi channel, noise floor.	-1.7	Vert
3	59600.000M Ave	-6.7	+2.3	+41.7	+35.1		-30.0	42.4	54.0 Hi channel, noise floor.	-11.6	Horiz
^	59600.000M	3.2	+2.3	+41.7	+35.1		-30.0	52.3	54.0 Hi channel, noise floor.	-1.7	Horiz
5	54000.000M Ave	-6.5	+2.2	+40.9	+32.0		-30.0	38.6	54.0 Mid channel, noise floor.	-15.4	Vert
^	54000.000M	4.3	+2.2	+40.9	+32.0		-30.0	49.4	54.0 Mid channel, noise floor.	-4.6	Vert
7	49400.000M Ave	-6.2	+2.1	+40.1	+30.4		-30.0	36.4	54.0 Low channel, noise floor.	-17.6	Vert
^	49400.000M	6.5	+2.1	+40.1	+30.4		-30.0	49.1	54.0 Low channel, noise floor.	-4.9	Vert

Test Location:	CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • 510-249-1170		
Customer:	**Safe View, Inc.**		
Specification:	**FCC 15.209**		
Work Order #:	**85484**	Date:	9/28/2006
Test Type:	**Radiated Scan/Maximized**	Time:	14:16:24
Equipment:	**Security Portal**	Sequence#:	50
Manufacturer:	SafeView, Inc.	Tested By:	[redacted]
Model:	SCOUT 100 Version 2 Switch		
S/N:	A100062500152		

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Security Portal*	SafeView, Inc.	SCOUT 100 Version 2 Switch	A100062500152

Support Devices:

Function	Manufacturer	Model #	S/N
Computer/Monitor	MPC	CLIENTPRO 474	4007670-0001
Computer Power Supply	Lite-on Technology Corp.	PA-1221-03	5Y00045302
Keyboard	MPC	SK-1688	C0602086090
Mouse	Microsoft	Basic Optical Mouse 1.0A	none

Test Conditions / Notes:

The Scout 100 Version 2 Switch Security Portal is transmitting continuously. Radiated Emissions 60-90 GHz. Notes: 1) Not sweeping, transmitting on LO, MID, or HI channel (24.65, 27.0, 29.8 GHz) from antenna 192. Disabled the brake, so we can rotate the mast to the pre-cal position for worst case emissions. The mast is reversed so antennas are facing out for easier access. 2) Measurement range is 60-90 GHz. 3) RBW reduced during measurements to reduce noise floor. 4) Antenna placed 0.1 meter directly in front of the antenna that was determined to be the emitter by checking the fundamental.

Modifications in at time of testing were:
1) Added a two-turn ferrite on the SCU serial line.
2) Taped AC line cable down to the chassis and added two clamp-on ferrites on AC line to the motor controller.
3) Added a clamp-on ferrite to each of the DB37 cables at the ISU end of the cables.
4) Changed the encoder cable to a custom made, shielded encoder cable.
5) A 6 dB attenuator was installed on both antenna masts at the FDIV.

The reason for each of these 5 modifications is as follows:
1) ferrite on serial line - addresses 60MHz broadband noise
2) AC line with ferrites to motor controller - addresses discrete 60MHz and 80MHz spur
3) DB37 ferrite - addresses 153MHz discrete spur
4) custom shielded encoder cable - multiple discrete frequencies 30-1000MHz
5) 6 dB attenuators addresses the divided down VCO frequencies removing the 700 MHz peaks

Signals detected in this range were determined to be noise floor readings, representing no EUT signals detected above this level.

Transducer Legend:

T1=P5314 40-120GHz
T2=Horn 60-90GHz 02348 M12RH
T3=Mixer 60-90GHz 02348 M12HWA

Measurement Data: Reading listed by margin. Test Distance: 0.1 Meter

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	T3 dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	73949.980M	-11.3	+2.1	+43.6	+43.4		-30.0	47.8	54.0	-6.2	Horiz
									Low channel, noise floor.		

2	73949.970M	-11.5	+2.1	+43.6	+43.4	-30.0	47.6	54.0	-6.4	Vert	Low channel, noise floor.
3	89400.300M	-10.7	+2.3	+45.2	+40.6	-30.0	47.4	54.0	-6.6	Vert	Hi channel, noise floor.
4	81000.180M	-10.8	-2.2	-44.4	+40.6	-30.0	46.4	54.0	-7.6	Vert	Mid channel, noise floor.

Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • 510-249-1170

Customer:	**Safe View, Inc.**		
Specification:	**FCC 15.209**		
Work Order #:	**85484**	Date:	9/28/2006
Test Type:	**Radiated Scan/Maximized**	Time:	14:41:37
Equipment:	**Security Portal**	Sequence#:	51
Manufacturer:	SafeView, Inc.	Tested By:	[redacted]
Model:	SCOUT 100 Version 2 Switch		
S/N:	A100062500152		

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Security Portal*	SafeView, Inc.	SCOUT 100 Version 2 Switch	A100062500152

Support Devices:

Function	Manufacturer	Model #	S/N
Computer/Monitor	MPC	CLIENTPRO 474	4007670-0001
Computer Power Supply	Lite-on Technology Corp.	PA-1221-03	5Y00045302
Keyboard	MPC	SK-1688	C0602086090
Mouse	Microsoft	Basic Optical Mouse 1.0A	none

Test Conditions / Notes:

The Scout 100 Version 2 Switch Security Portal is transmitting continuously. Radiated Emissions 90-100 GHz. Notes: 1) Not sweeping, transmitting on LO, MID, or HI channel (24.65, 27.0, 29.8 GHz) from antenna 192. Disabled the brake, so we can rotate the mast to the pre-cal position for worst case emissions. The mast is reversed so antennas are facing out for easier access. 2) Measurement range is 90-100 GHz. 3) RBW reduced during measurements to reduce noise floor. 4) Antenna placed 0.1 meter directly in front of the antenna that was determined to be the emitter by checking the fundamental. Since the Mid and Hi channels were beyond 100 GHz and no signals were observed, these were not reported.

Modifications in at time of testing were:
1) Added a two-turn ferrite on the SCU serial line.
2) Taped AC line cable down to the chassis and added two clamp-on ferrites on AC line to the motor controller.
3) Added a clamp-on ferrite to each of the DB37 cables at the JSU end of the cables.
4) Changed the encoder cable to a custom made, shielded encoder cable.
5) A 6 dB attenuator was installed on both antenna masts at the FDIV.

The reason for each of these 5 modifications is as follows:
1) ferrite on serial line - addresses 60MHz broadband noise
2) AC line with ferrites to motor controller - addresses discrete 60MHz and 80MHz spur
3) DB37 ferrite - addresses 153MHz discrete spur
4) custom shielded encoder cable - multiple discrete frequencies 30-1000MHz
5) 6 dB attenuators addresses the divided down VCO frequencies removing the 700 MHz peaks
Signals detected in this range were determined to be noise floor readings, representing no EUT signals detected above this level.

Transducer Legend:

T1=P5314 40-120GHz

T2=Horn 90-110GHz 02349 M08RH

T3=Mixer 90-110GHz 02349 M08HWA

Measurement Data: Reading listed by margin. Test Distance: 0.1 Meter

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	T3 dB	dB	Dist Table	Corr dBμV/m	Spec dBμV/m	Margin dB	Polar Ant
1	98409.720M	-16.5	+2.0	+46.0	+44.9		-30.0	46.4	54.0	-7.6	Horiz
									Low channel, noise floor.		
2	98399.000M	-16.8	+2.0	+46.0	+44.9		-30.0	46.1	54.0	-7.9	Vert
									Low channel, noise floor.		

Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • 510-249-1170

Customer:	Safe View, Inc.		
Specification:	FCC 15.209		
Work Order #:	85484	Date:	9/27/2006
Test Type:	Band Edge	Time:	17:40:19
Equipment:	Security Portal	Sequence#:	46
Manufacturer:	SafeView, Inc.	Tested By:	[redacted]
Model:	SCOUT 100 Version 2 Switch		
S/N:	A100062500152		

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Security Portal*	SafeView, Inc.	SCOUT 100 Version 2 Switch	A100062500152

Support Devices:

Function	Manufacturer	Model #	S/N
Computer/Monitor	MPC	CLIENTPRO 474	4007670-0001
Computer Power Supply	Lite-on Technology Corp.	PA-1221-03	5Y00045302
Keyboard	MPC	SK-1688	C0602086090
Mouse	Microsoft	Basic Optical Mouse 1.0A	none

Test Conditions / Notes:

The Scout 100 V2 Switch Security Portal antenna mast is in normal position so antennas are facing to the inside of the EUT. Low channel=24.65 GHz. Mid channel=27 GHz. Hi channel=29.8 GHz. Measuring Peak Carrier Power per DA 06-1589 paragraph 8b. RBW=100 kHz. VBW=3 MHz. Span=1 GHz. Sweep time=auto. Measuring Average RMS Power per DA 06-1589 paragraph 8a. RBW=1 MHz, VBW=3 MHz, Span=0 Hz. Sweep time=1 sec. Emissions reported represent worst case polarization. Measuring CW peak values at low and high channel. Measuring sweeping average values at lower and upper band edges. Transmitting on antenna 192. Transmitter is transmitting continuously during this testing. Measurements were taken with the EMC antennas inside of the EUT.

Transducer Legend:

T1=Horn AN02695 Miteq Active 26-40GHz
T2=ANT 18-26GHz Active Horn
T3=CAB HF 72" ANP05315 Pasternack

Measurement Data: Reading listed by margin. Test Distance: 1 Meter

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	T3 dB	dB	Dist Table	Corr dBuV/m	Spec dBuV/m	Margin dB	Polar Ant
1	30000.000M Ave	25.3	-4.1	-0.0	+7.9		-10.0	27.3	54.0 Upper Band Edge	-26.7	Vert
1	24250.000M	43.0	+0.0	-17.2	+7.2		-10.0	23.0	54.0 Lower Band Edge	-31.0	Vert

CKC LABORATORIES, INC. Testing the Future

ACCREDITED
Certificate Numbers
EMC

SAFEVIEW, INC. TEST REPORT

FOR THE

SC-100, T-COP

FCC PART 15 SUBPART B SECTIONS 15.107 AND 15.109 CLASS A

TESTING

DATE OF ISSUE: AUGUST 24, 2007

PREPARED FOR:

SafeView, Inc.
469 El Camino Real Suite 110
Santa Clara, CA 95050

P.O. No.: 5197
W.O. No.: 86967

PREPARED BY:

(b) (6) [redacted]
CKC Laboratories, Inc.
5046 Sierra Pines Drive
Mariposa, CA 95338

Date of test: August 23, 2007

Report No.: FC07-068

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TABLE OF CONTENTS

ADMINISTRATIVE INFORMATION

DATE OF TEST: August 23, 2007

DATE OF RECEIPT: August 23, 2007

REPRESENTATIVE: (b) (6) [redacted]

MANUFACTURER:
SafeView, Inc.
469 El Camino Real Suite 110
Santa Clara, CA 95050

TEST LOCATION:
CKC Laboratories, Inc.
1120 Fulton Place
Fremont, CA 94539

TEST METHOD: ANSI C63.4 (2003)

PURPOSE OF TEST: To perform testing of the SC-100, T-Cop with the requirements for FCC Part 15 Subpart B Sections 15.107 and 15.109 Class A devices.

APPROVALS

QUALITY ASSURANCE:

(b) (6) [redacted]

(b) (6) [redacted] Director of Engineering Services

(b) (6) [redacted]

(b) (6) [redacted] Quality Assurance Administrative Manager

TEST PERSONNEL:

(b) (6) [redacted]

(b) (6) [redacted], EMC Engineer

SITE FILE REGISTRATION NUMBERS

Location	Japan	Canada	FCC
Brea A	R-301 & C-314	IC 3172-A	90473
Brea D	R-1256 & C-1319	IC 3172-D	100638
Fremont	R-2160 & C2332	IC 5933	958979
Mariposa A	R-563 & C-578	IC 3082-A	90477
Mariposa D	R-1827 & C-1960	IC 3082A-1	784962
Bothell	R-2296 & C-2506	IC 4653	318736

SUMMARY OF RESULTS

Test	Specification	Results
Conducted Emissions	FCC Part 15 Subpart B Section 15.107 Class A	Pass
Radiated Emissions	FCC Part 15 Subpart B Section 15.109 Class A	Pass

CONDITIONS DURING TESTING

No modifications to the EUT were necessary during testing. The power supply cable for the touch panel is from the manufacturer, which contains a ferrite.

EQUIPMENT UNDER TEST (EUT) DESCRIPTION

The customer declares the EUT tested by CKC Laboratories was representative of a production unit.

EQUIPMENT UNDER TEST

SC-100
Manuf: SafeView, Inc.
Model: T-Cop
Serial: n/a

Touch Panel
Manuf: elo Touchsystems
Model: ET1229L-7CWA-1
Serial: 726286956C

SCU
Manuf: Dell
Model: Poweredge 860
Serial: 44PPQC1

AC Adapter
Manuf: Li Shin International Enterprise Corp.
Model: LSE9901B1260
Serial:

PERIPHERAL DEVICES

The EUT was not tested with peripheral devices.

REPORT OF EMISSIONS MEASUREMENTS

TESTING PARAMETERS

Interface cables were connected to the available ports of the test unit. The effect of varying the position of the cables was investigated to find the configuration that produced maximum emissions. Cables were of the type and length specified in the individual requirements.

The equipment under test (EUT) was set up in a manner that represented its normal use, as shown in the setup photographs. Any special conditions required for the EUT to operate normally are identified in the comments that accompany the emissions tables.

The emissions data was taken with a spectrum analyzer or receiver. Incorporating the applicable correction factors for distance, antenna, cable loss and amplifier gain, the data was reduced as shown in the table below. The corrected data was then compared to the applicable emission limits. Preliminary and final measurements were taken in order to ensure that all emissions from the EUT were found and maximized.

CORRECTION FACTORS

The basic spectrum analyzer reading was converted using correction factors as shown in the highest emissions readings in the tables. For radiated emissions in dBμV/m, the spectrum analyzer reading in dBμV was corrected by using the following formula. This reading was then compared to the applicable specification limit.

	SAMPLE CALCULATIONS	
	Meter reading	(dBμV)
+	Antenna Factor	(dB)
+	Cable Loss	(dB)
-	Distance Correction	(dB)
-	Preamplifier Gain	(dB)
=	Corrected Reading	(dBμV/m)

TEST INSTRUMENTATION AND ANALYZER SETTINGS

The test instrumentation and equipment listed were used to collect the emissions data. A spectrum analyzer or receiver was used for all measurements. The following table shows the measuring equipment bandwidth settings that were used in designated frequency bands. For testing emissions, an appropriate reference level and a vertical scale size of 10 dB per division were used. When conducted emissions testing was performed, a 10 dB external attenuator was used with internal offset correction in the analyzer.

MEASURING EQUIPMENT BANDWIDTH SETTINGS PER FREQUENCY RANGE			
TEST	BEGINNING FREQUENCY	ENDING FREQUENCY	BANDWIDTH SETTING
CONDUCTED EMISSIONS	150 kHz	30 MHz	9 kHz
RADIATED EMISSIONS	30 MHz	1000 MHz	120 kHz
RADIATED EMISSIONS	1000 MHz	>1 GHz	1 MHz

SPECTRUM ANALYZER/RECEIVER DETECTOR FUNCTIONS

The notes that accompany the measurements contained in the emissions tables indicate the type of detector function used to obtain the given readings. Unless otherwise noted, all readings were made in the "Peak" mode. Whenever a "Quasi-Peak" or "Average" reading is listed as one of the highest readings, this is indicated as a "QP" or an "Ave" on the appropriate rows of the data sheets. The following paragraphs describe in more detail the detector functions and when they were used to obtain the emissions data.

Peak

In this mode, the spectrum analyzer/receiver readings were recorded all emissions at their peak value as the frequency band selected was scanned. By combining this function with another feature of the measuring device called "peak hold," the measuring device had the ability to measure transients or low duty cycle transient emission peak levels. In this mode the measuring device made a slow scan across the frequency band selected and measured the peak emission value found at each frequency across the band.

Quasi-Peak

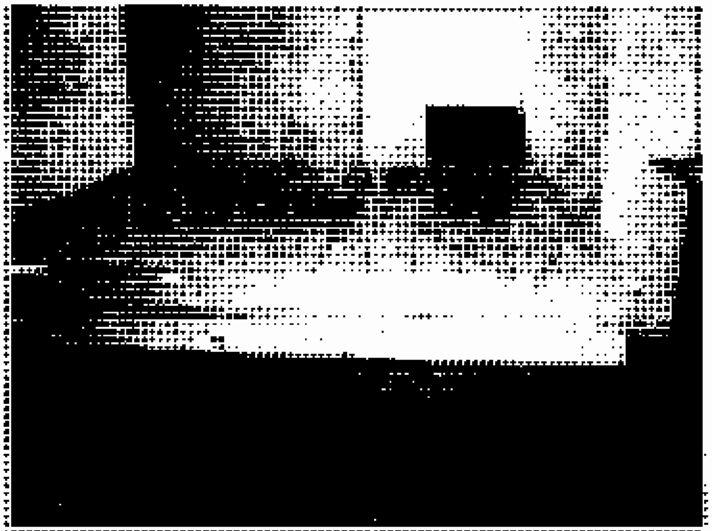
When the true peak values exceeded or were within 2 dB of the specification limit, quasi-peak measurements were taken using the quasi-peak detector.

Average

For certain frequencies, average measurements may be made using the spectrum analyzer/receiver. To make these measurements, the test engineer reduces the video bandwidth on the measuring device until the modulation of the signal is filtered out. At this point the measuring device is set into the linear mode and the scan time is reduced.

CONDUCTED EMISSIONS

Test Setup Photos



[illegible]

Mains Conducted Emissions - Side View

CKC LABORATORIES, INC.

Test Data Sheets

Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • 510-249-1170

Customer:	SafeView, Inc.		
Specification:	FCC 15.107A COND [AVE]		
Work Order #:	86967	Date:	8/23/2007
Test Type:	Conducted Emissions	Time:	1:50:11 PM
Equipment:	SC-100	Sequence#:	7
Manufacturer:	SafeView, Inc.	Tested By:	[redacted]
Model:	T-Cop		120V 60Hz
S/N:	n/a		

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
LISN, Emco 3816/2	9408-1006	04/02/2007	04/02/2009	00493
QP Adaptor	2521A00904	08/22/2006	08/22/2008	02195
S.A., Display HP-85662A	2112A02174	08/22/2006	08/22/2008	02509
S.A., RF Section HP-8568A	2049A01408	08/22/2006	08/22/2008	00313
TTE High Pass Filter	H4120	01/17/2007	01/17/2009	05258
10 dB Pad		10/20/2005	10/20/2007	02223
15' RG214		03/01/2006	03/01/2008	P00875

Equipment Under Test (= EUT):*

Function	Manufacturer	Model #	S/N
SC-100*	SafeView, Inc.	T-Cop	n/a
SCU	Dell	Poweredge 860	44PPQC1
Touch Panel	elo Touchsystems	ET1229L-7CWA-1	726286956C
AC Adapter	Li Shin International Enterprise Corp.	LSE9901B1260	

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

Equipment is on top of wooden table 80 cm above ground. I/O cables are routed up from the Touch Panel to a PVC support pipe, then back down to the SCU. AC adapter is on the table. Current production cables for video and USB, no ferrites. Power supply cable for touch panel is from manufacturer, contains a ferrite. Conducted emissions .15-30 MHz.

Transducer Legend:

T1=LISN - AN00493 - Black - ELC "OUT"	T2=ANP02223 10dB Attenuator
T3=TTE HP Filter	T4=Cable P00875, 15' RG214/U

Measurement Data: Reading listed by margin. Test Lead: Black

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	9.391M	41.7	+0.1	+9.7	+0.1	+0.1	+0.0	51.7	60.0	-8.3	Black
2	9.427M	41.5	+0.1	+9.7	+0.1	+0.1	+0.0	51.5	60.0	-8.5	Black

3	9.580M	40.8	+0.0	+9.8	+0.2	+0.1	+0.0	50.9	60.0	-9.1	Black
4	9.346M	40.7	-0.1	+9.7	+0.1	+0.1	-0.0	50.7	60.0	-9.3	Black
5	28.006M	40.0	+0.1	+9.8	+0.2	+0.2	-0.0	50.3	60.0	-9.7	Black
6	28.499M	40.0	+0.1	+9.8	-0.2	-0.2	-0.0	50.3	60.0	-9.7	Black
7	28.698M	40.0	-0.1	+9.8	+0.2	+0.2	+0.0	50.3	60.0	-9.7	Black
8	28.993M	40.0	+0.1	+9.8	+0.2	+0.2	-0.0	50.3	60.0	-9.7	Black
9	14.409M	40.1	-0.0	+9.8	+0.1	-0.2	+0.0	50.2	60.0	-9.8	Black
10	28.801M	39.6	+0.1	+9.8	+0.2	-0.2	+0.0	49.9	60.0	-10.1	Black
11	9.463M	39.8	+0.1	+9.7	+0.1	+0.1	-0.0	49.8	60.0	-10.2	Black
12	9.544M	39.7	+0.0	+9.8	-0.2	+0.1	+0.0	49.8	60.0	-10.2	Black
13	9.310M	39.7	-0.1	+9.7	+0.1	-0.1	-0.0	49.7	60.0	-10.3	Black
14	14.445M	39.6	+0.0	+9.8	+0.1	-0.2	+0.0	49.7	60.0	-10.3	Black
15	27.513M	39.1	+0.1	+9.8	+0.2	+0.2	-0.0	49.4	60.0	-10.6	Black
16	9.616M	39.2	+0.0	+9.8	+0.2	+0.1	+0.0	49.3	60.0	-10.7	Black
17	28.102M	39.0	-0.1	+9.8	-0.2	-0.2	-0.0	49.3	60.0	-10.7	Black
18	28.424M	39.0	-0.1	+9.8	+0.2	-0.2	-0.0	49.3	60.0	-10.7	Black
19	29.287M	38.8	+0.1	+9.8	-0.2	+0.2	+0.0	49.1	60.0	-10.9	Black
20	203.086k	45.0	-0.0	+9.8	-0.2	-0.0	+0.0	55.0	66.0	-11.0	Black
21	14.481M	38.9	+0.0	+9.8	+0.1	+0.2	+0.0	49.0	60.0	-11.0	Black
22	29.877M	38.6	-0.1	+9.8	-0.2	-0.2	+0.0	48.9	60.0	-11.1	Black
23	27.910M	38.5	+0.1	+9.8	+0.2	+0.2	+0.0	48.8	60.0	-11.2	Black
24	9.662M	38.6	-0.0	+9.8	+0.2	-0.1	+0.0	48.7	60.0	-11.3	Black
25	27.609M	38.4	+0.1	+9.8	+0.2	+0.2	+0.0	48.7	60.0	-11.3	Black
26	28.890M	38.4	-0.1	+9.8	+0.2	-0.2	-0.0	48.7	60.0	-11.3	Black

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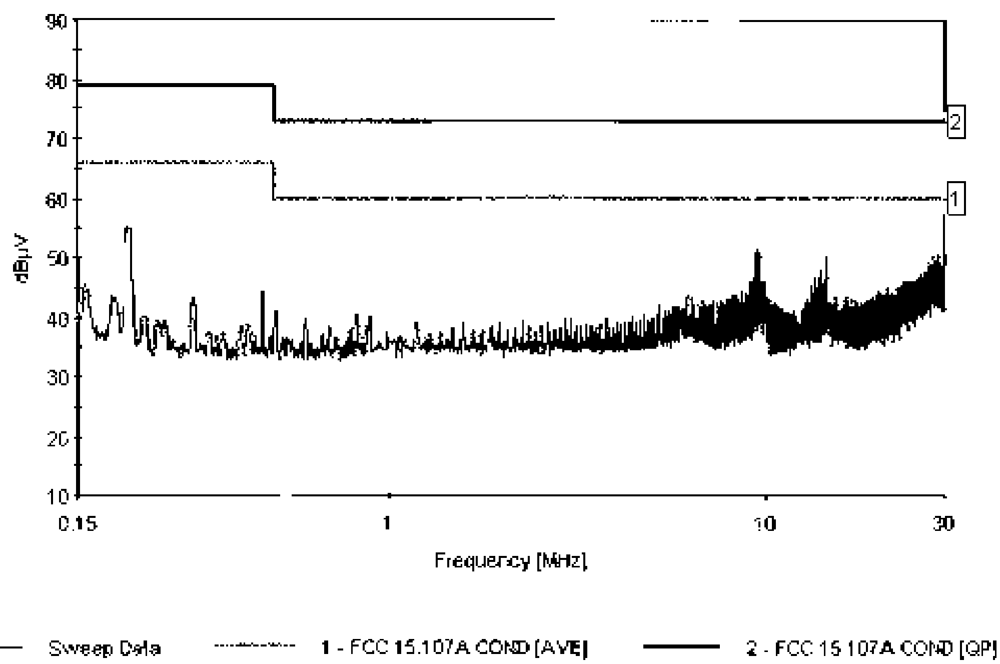
27	9.499M	38.5	+0.0	-9.8	+0.2	+0.1	+0.0	48.6	60.0	-11.4	Black
28	14.517M	38.5	+0.0	-9.8	+0.1	+0.2	+0.0	48.6	60.0	-11.4	Black
29	27.807M	38.3	+0.1	+9.8	+0.2	+0.2	+0.0	48.6	60.0	-11.4	Black
30	29.486M	38.2	+0.1	+9.8	+0.2	+0.2	+0.0	48.5	60.0	-11.5	Black

CKC Laboratories, Inc. Date: 8/23/2007 Time: 1:50:11 PM SafeView Inc WO#: 85987
FCC 15.107A COND [AVE] Test Lead: Black 120V 60Hz Sequence#: 7



CKC LABORATORIES, INC.

Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • 510-249-1170

Customer:	SafeView, Inc.		
Specification:	FCC 15.107A COND [AVE]		
Work Order #:	86967	Date:	8/23/2007
Test Type:	Conducted Emissions	Time:	1:57:06 PM
Equipment:	SC-100	Sequence#:	8
Manufacturer:	SafeView, Inc.	Tested By:	[redacted]
Model:	T-Cop		120V 60Hz
S/N:	n/a		

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
LISN, Emco 3816/2	9408-1006	04/02/2007	04/02/2009	00493
QP Adaptor	2521A00904	08/22/2006	08/22/2008	02495
S.A., Display HP-85662A	2112A02174	08/22/2006	08/22/2008	03509
S.A., RF Section HP-8568A	2049A01408	08/22/2006	08/22/2008	00313
TTE High Pass Filter	H4120	01/17/2007	01/17/2009	05258
10 dB Pad		10/20/2005	10/20/2007	02223
15' RG214		03/01/2006	03/01/2008	P00875

Equipment Under Test (= EUT):*

Function	Manufacturer	Model #	S/N
SC-100*	SafeView, Inc.	T-Cop	n/a
SCU	Dell	Poweredge 860	44PPQC1
Touch Panel	elo Touchsystems	ET1229L-7CWA-1	726286956C
AC Adapter	Li Shin International Enterprise Corp.	LSE9901B1260	

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

Equipment is on top of wooden table 80 cm above ground. I/O cables are routed up from the Touch Panel to a PVC support pipe, then back down to the SCU. AC adapter is on the table. Current production cables for video and USB, no ferrites. Power supply cable for touch panel is from manufacturer, contains a ferrite. Conducted emissions .15-30 MHz.

Transducer Legend:

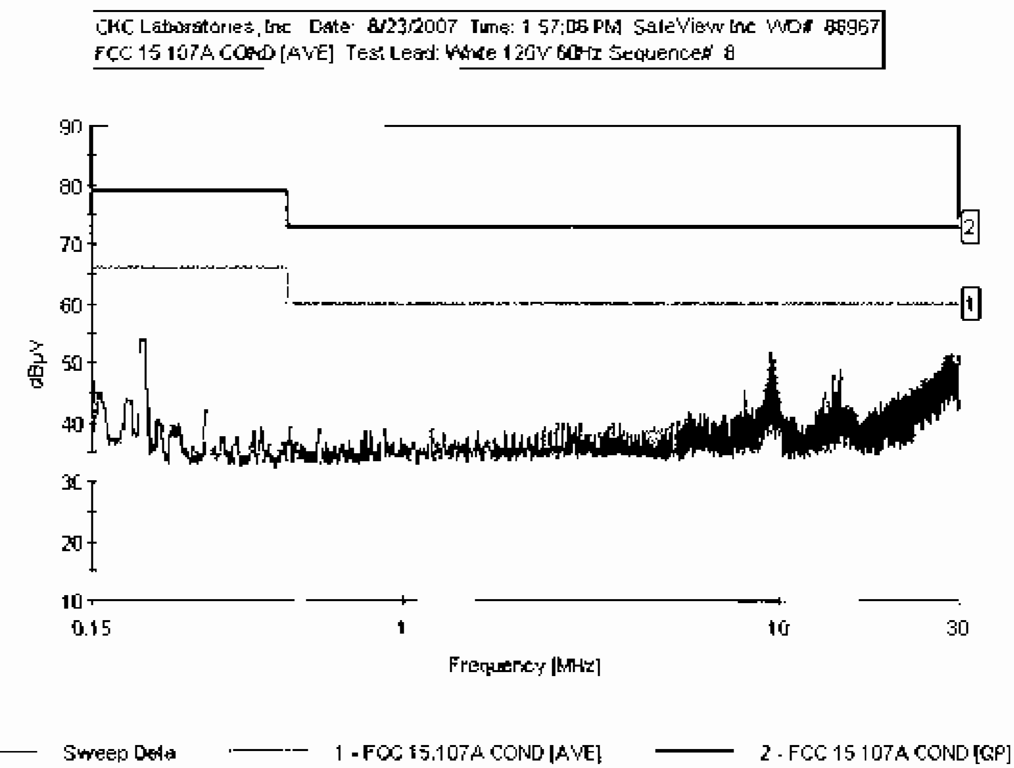
T1=LISN - AN00493 - White - ELC "OUT"	T2=ANP02223 10dB Attenuator
T3=TTE HP Filter	T4=Cable P00875, 15' RG214/U

Measurement Data: Reading listed by margin. Test Lead: White

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	9.427M	41.9	+0.1	+9.7	+0.1	-0.1	+0.0	51.9	60.0	-8.1	White
2	28.499M	40.9	+0.3	+9.8	+0.2	+0.2	+0.0	51.4	60.0	-8.6	White
3	28.109M	40.8	+0.3	+9.8	+0.2	+0.2	+0.0	51.3	60.0	-8.7	White

4	28.301M	40.8	+0.3	+9.8	+0.2	+0.2	+0.0	51.3	60.0	-8.7	White
5	28.403M	40.8	+0.3	+9.8	+0.2	+0.2	+0.0	51.3	60.0	-8.7	White
6	28.993M	40.8	+0.2	-9.8	-0.2	-0.2	+0.0	51.2	60.0	-8.8	White
7	27.711M	40.6	+0.3	+9.8	-0.2	+0.2	+0.0	51.1	60.0	-8.9	White
8	28.595M	40.6	+0.3	+9.8	+0.2	+0.2	+0.0	51.1	60.0	-8.9	White
9	28.698M	40.6	+0.2	+9.8	+0.2	+0.2	+0.0	51.0	60.0	-9.0	White
10	9.463M	40.9	-0.1	+9.7	+0.1	-0.1	+0.0	50.9	60.0	-9.1	White
11	27.807M	40.2	+0.3	+9.8	+0.2	+0.2	+0.0	50.7	60.0	-9.3	White
12	9.616M	40.4	+0.1	+9.8	+0.2	+0.1	+0.0	50.6	60.0	-9.4	White
13	28.013M	40.1	-0.3	+9.8	+0.2	+0.2	+0.0	50.6	60.0	-9.4	White
14	9.544M	40.3	+0.1	+9.8	+0.2	+0.1	+0.0	50.5	60.0	-9.5	White
15	28.801M	40.1	-0.2	+9.8	-0.2	+0.2	+0.0	50.5	60.0	-9.5	White
16	9.391M	40.3	+0.1	+9.7	+0.1	+0.1	+0.0	50.3	60.0	-9.7	White
17	9.499M	40.1	-0.1	+9.8	+0.2	+0.1	+0.0	50.3	60.0	-9.7	White
18	28.212M	39.8	+0.3	+9.8	+0.2	+0.2	+0.0	50.3	60.0	-9.7	White
19	28.424M	39.8	+0.3	+9.8	+0.2	+0.2	-0.0	50.3	60.0	-9.7	White
20	9.580M	40.0	-0.1	+9.8	+0.2	+0.1	+0.0	50.2	60.0	-9.8	White
21	28.897M	39.8	+0.2	+9.8	+0.2	+0.2	+0.0	50.2	60.0	-9.8	White
22	27.520M	39.6	+0.3	+9.8	+0.2	-0.2	+0.0	50.1	60.0	-9.9	White
23	29.089M	39.7	+0.2	+9.8	+0.2	+0.2	+0.0	50.1	60.0	-9.9	White
24	29.287M	39.7	+0.2	+9.8	+0.2	-0.2	+0.0	50.1	60.0	-9.9	White
25	29.390M	39.5	+0.2	+9.8	+0.2	-0.2	+0.0	49.9	60.0	-10.1	White
26	29.191M	39.4	-0.2	-9.8	+0.2	+0.2	+0.0	49.8	60.0	-10.2	White

27	27.321M	39.3	+0.3	+9.7	+0.2	+0.2	+0.0	49.7	60.0	-10.3	White
28	29.486M	39.3	+0.2	+9.8	+0.2	+0.2	+0.0	49.7	60.0	-10.3	White
29	27.417M	39.0	+0.3	+9.8	+0.2	+0.2	+0.0	49.5	60.0	-10.5	White
30	27.910M	39.0	+0.3	+9.8	+0.2	+0.2	+0.0	49.5	60.0	-10.5	White



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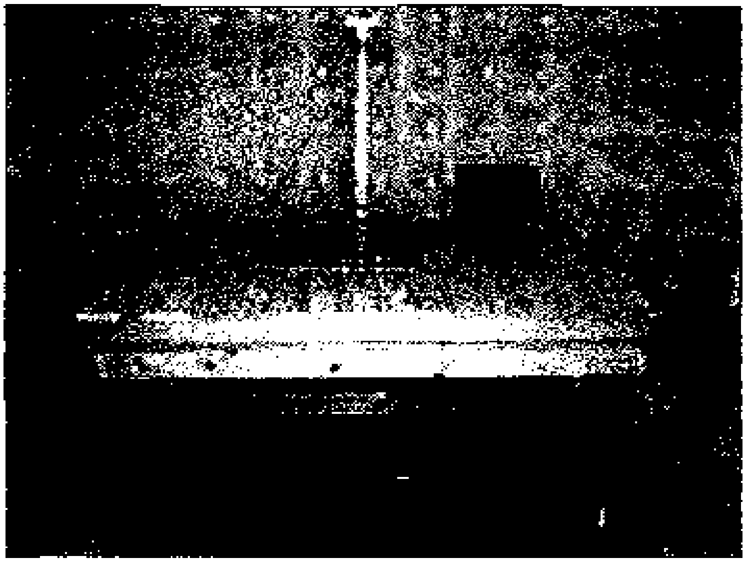
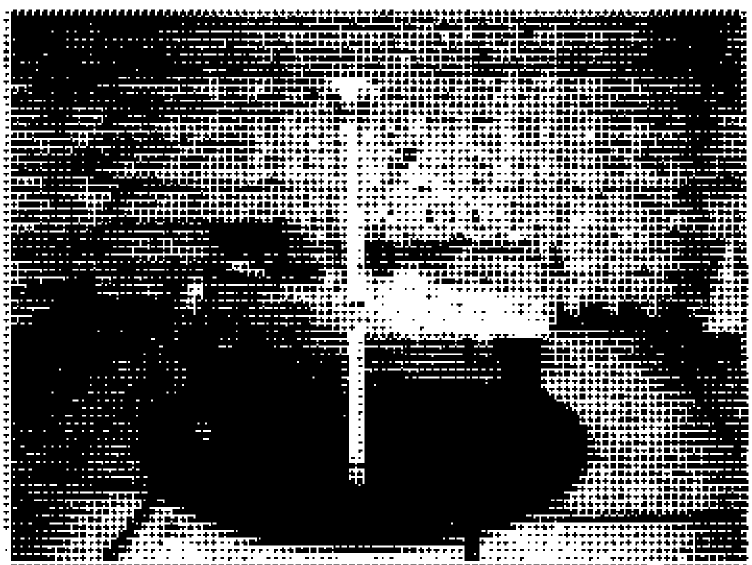
RADIATED EMISSIONS

Test Setup Photos



Radiated Emissions - Front View



Radiated Emissions - Back View

Test Data Sheets

Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • 510-249-1170

Customer:	**SafeView, Inc.**		
Specification:	**FCC 15.109 Class A Radiated**		
Work Order #:	**86967**	Date:	8/23/2007
Test Type:	**Radiated Scan**	Time:	10:53:10
Equipment:	SC-100	Sequence#:	3
Manufacturer:	SafeView, Inc.	Tested By:	(b) (6) [redacted]
Model:	T-Cop		
S/N:	n/a		

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Antenna	2630	12/30/2006	12/30/2008	00852
Pre-amp	2944A03850	01/02/2007	01/02/2009	00501
E4446A Spectrum Analyzer	US44300408	03/05/2007	03/05/2009	02668
Cable	None	04/02/2007	04/02/2009	P05299
Cable	None	04/02/2007	04/02/2009	P05296
Cable	None	04/05/2007	04/05/2009	P05300

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
SC-100*	SafeView, Inc.	T-Cop	n/a
SCU	Dell	Poweredge 860	44PPQC1
Touch Panel	elo Touchsystems	ET1229L-7CWA-1	7262869560
AC Adapter	Li Shin International Enterprise Corp.	LSE9901B1260	

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

Equipment is on top of wooden table 80 cm above ground. I/O cables are routed up from the Touch Panel to a PVC support pipe, then back down to the SCU. AC adapter is on the table. Current production cables for video and USB, no ferrites. Power supply cable for touch panel is from manufacturer, contains a ferrite. Radiated emissions 30-1000 MHz.

Transducer Legend:

T1=ANT AN00852 25-1000MHz	T2=AMP-ANP00501-010207 Top Portion
T3=Cable Calibration ANP05296	T4=Cable Calibration ANP05299
T5=Cable Calibration ANP05300	

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBμV	dB	dB	dB	dB	Table	dBμV/m	dBμV/m	dB	Ant
1	62.942M	62.3	+6.4 +0.2	-26.8	+0.6	+0.1	-10.0 274	32.8	39.1	-6.3	Vert 100
2	53.098M	60.4	+8.1 +0.2	-26.9	+0.5	+0.0	-10.0 200	32.3	39.1	-6.8	Vert 101

3	35.201M	50.3	+17.5 +0.2	-26.9	+0.4	+0.0	-10.0 163	31.5	39.1	-7.6	Vert 101
4	53.707M	59.1	+8.0 +0.2	-26.9	-0.5	+0.0	-10.0 140	30.9	39.1	-8.2	Vert 100
5	62.133M	60.2	+6.4 +0.2	-26.9	+0.5	+0.1	-10.0 249	30.5	39.1	-8.6	Vert 100
6	34.581M	48.8	+17.7 +0.2	-26.9	-0.4	-0.0	-10.0 244	30.2	39.1	-8.9	Vert 100
7	34.197M	47.7	+17.7 +0.2	-26.9	+0.4	+0.0	-10.0 206	29.1	39.1	-10.0	Vert 101
8 QP	62.756M	55.5	+6.4 +0.2	-26.8	+0.6	+0.1	-10.0 275	26.0	39.1	-13.1	Vert 100
[illegible]	62.723M	63.0	+6.4 +0.2	-26.8	+0.6	+0.1	-10.0 274	33.5	39.1	-5.6	Vert 100
10	533.349M	49.6	+19.0 +0.6	-27.8	+1.5	+0.2	-10.0 162	33.1	46.4	-13.3	Horiz 116

CKC LABORATORIES, INC.

Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • 510-249-1170

Customer:	**SafeView, Inc.**		
Specification:	**FCC 15.109 Class A Radiated**		
Work Order #:	**86967**	Date:	8/23/2007
Test Type:	**Maximized Emissions**	Time:	11:55:55
Equipment:	**SC-100**	Sequence#:	6
Manufacturer:	SafeView, Inc.	Tested By:	[redacted]
Model:	T-Cop		
S/N:	n/a		

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
SA - E4440A	MH46186315	02/15/2007	02/15/2009	02870
Preamp, HP83017A	3123A00283	05/16/2007	05/16/2009	00785
HF Cable		03/22/2007	03/22/2009	01956
Cable HF	n/a	02/20/2006	02/20/2008	P05138
Cable, 6'	n/a	06/07/2006	06/07/2008	P04241
Horn Antenna - DRG-118A	1064	03/08/2005	03/08/2007	02061

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
SC-100*	SafeView, Inc.	T-Cop	n/a
SCU	Dell	Poweredge 860	44PPQC1
Touch Panel	elo Touchsystems	ET1229L-7CWA-1	726286956C
AC Adapter	Li Shin International Enterprise Corp.	LSE9901B1260	

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

Equipment is on top of wooden table 80 cm above ground. I/O cables are routed up from the Touch Panel to a PVC support pipe, then back down to the SCU. AC adapter is on the table. Current production cables for video and USB, no ferrites. Power supply cable for touch panel is from manufacturer, contains a ferrite. Radiated emissions 1-15 GHz. RBW 1 MHz, VBW 30 kHz to reduce noise floor.

Transducer Legend:

T1=ANT AN02061 900MHz-18.5GHz	T2=AMP-AN00785-051607
T3=ANP04241 HF-Heliax Cable	T4=P05138 HF Cable 25ft
T5=Cable P01956 2' HF	

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBμV	dB	dB	dB	dB	Table	dBμV/m	dBμV/m	dB	Ant
1	3000.114M	52.4	+30.6 +0.3	-35.9	+0.6	+2.6	-10.0 213	40.6	49.5	-8.9	Vert 102
2	1600.031M	56.2	+25.3 +0.2	-37.2	-0.5	+1.9	-10.0 212	36.9	49.5	-12.6	Vert 165

Test Location: CKC Laboratories, Inc. •1120 Fulton Place • Fremont, CA 94539 • 510-249-1170

Customer:	SafeView, Inc.		
Specification:	FCC 15.109 Class A Radiated		
Work Order #:	86967	Date:	8/23/2007
Test Type:	Maximized Emissions	Time:	17:04:22
Equipment:	SCU	Sequence#:	13
Manufacturer:	Dell	Tested By:	[redacted]
Model:	Poweredge 860		
S/N:	44PPQC1		

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Antenna	2630	12/30/2006	12/30/2008	00852
Pre-amp	2944A03850	01/02/2007	01/02/2009	00501
E4446A Spectrum Analyzer	US44300408	03/05/2007	03/05/2009	02668
Cable	None	04/02/2007	04/02/2009	P05299
Cable	None	04/02/2007	04/02/2009	P05296
Cable	None	04/05/2007	04/05/2009	P05300

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
SCU*	Dell	Poweredge 860	44PPQC1

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

Unshielded CAT 6 Ethernet cable is routed outside the chamber to a remote workstation LCU. Changed the configuration to transfer large files between the SCU and the LCU at 1000BaseT. Radiated emissions 30-1000 MHz.

Transducer Legend:

T1=ANT AN00852 25-1000MHz	T2=AMP-ANP00501-010207 Top Portion
T3=Cable Calibration ANP05296	T4=Cable Calibration ANP05299
T5=Cable Calibration ANP05300	

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBμV	dB	dB	dB	dB	Table	dBμV/m	dBμV/m	dB	Ant
1	44.991M	58.0	+11.5 +0.1	-26.9	+0.5	+0.1	-10.0 224	33.3	39.1	-5.8	Vert 101
2	533.324M	55.3	+19.0 +0.6	-27.8	+1.5	+0.2	-10.0 62	38.8	46.4	-7.6	Vert 100

CKC LABORATORIES, INC. — Testing the Future

L-3COMMUNICATIONS – SAFEVIEW, INC. TEST REPORT

FOR THE

ProVision™, **SC- 100**

TESTING TO CUSTOMER SPECIFICATIONS

DATE OF ISSUE: NOVEMBER 17, 2008

PREPARED FOR:

L-3Communications – Safeview, Inc.
910 East Franklin Road
Meridian, ID 83642

P.O. No.: 5998-R
W.O. No.: 88856

PREPARED BY:

(b) (6) [redacted]
CKC Laboratories, Inc.
5046 Sierra Pines Drive
Mariposa, CA 95338

Date of test: November 10-11, 2008

Report No.: ENG08-045

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ADMINISTRATIVE INFORMATION

DATE OF TEST: November 9-11, 2008

DATE OF RECEIPT: November 9, 2008

REPRESENTATIVE: [redacted]

MANUFACTURER:
L-3Communications, SDS
2005 Gandy Blvd North, Suite 600
St. Petersburg, FL 33702

TEST LOCATION:
L-3Communications – Safeview, Inc.
469 El Camino Real, Suite 110
Santa Clara CA, 95050

TEST METHOD:

PURPOSE OF TEST: To perform the testing of the Safeview Portal, SC-100 with the requirements with customer specifications.

APPROVALS

QUALITY ASSURANCE:

[redacted]

[redacted] Director of Engineering Services

TEST PERSONNEL:

[redacted]

[redacted] Senior EMC Engineer /
Senior EMC Consultant

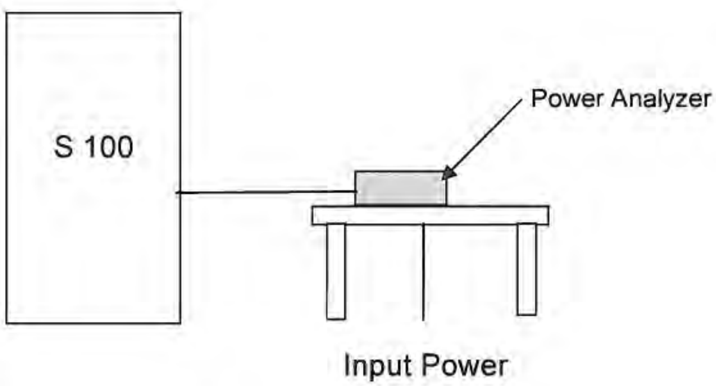
Introduction:

L3-Com/SafeView issued a purchase order to CKC Laboratories, Inc. to perform the following tests of the SC-100: Total Harmonic Distortion and Individual Harmonic Distortion IAW IEEE 519, Power Factor, Maximum Inrush Current Ratio, Steady State Current Imbalance, Leakage Current, and Voltage Sag. CKC Laboratories, Inc. assigned this task to their Sr. EMC Test Engineer, Chuck Kendall under work order 88856.

1. Total Harmonic & Individual Distortion Test Procedure:

The SC-100 was set up and functioning normally while being powered via a power analyzer. The power analyzer was set up to measure the total harmonic distortion of the SC-100 Security Portal. The IEEE 519:92 Recommended Practices and Requirements for Harmonic Control in Electrical Power Systems, recommends a maximum THD of 3%.

Set Up Diagram:



Test Equipment Used:

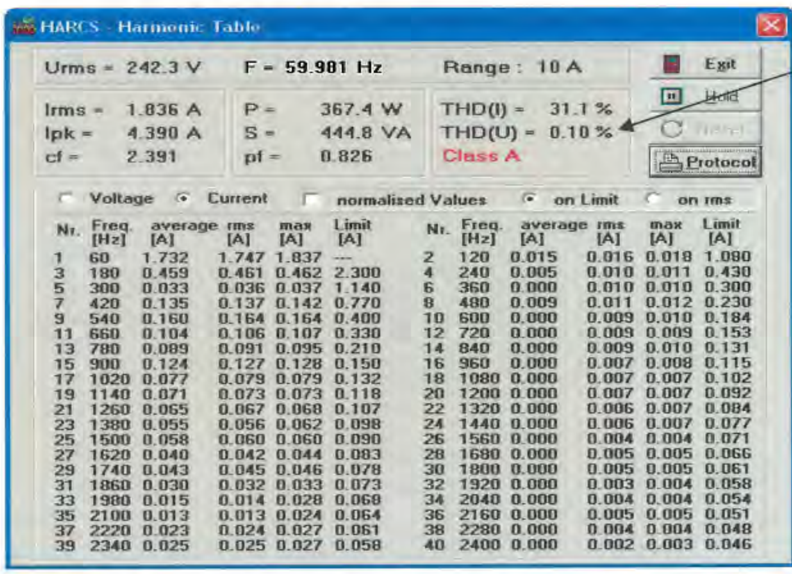
Equipment	Asset #	Manufacturer	Model #	Serial #	Date Cal	Due Cal
Harmonics 1000	02890	EMC-Partner	HAR1000-1P	161	5-10-07	5-10-09

Findings:

Test	Limit	Worst Case Readings	Result	EUT condition
THD (120 VAC)	< 3%	0.2%	PASS	Operating normally
THD (240 VAC)	< 3%	0.1%	PASS	Operating normally

It was obvious that the individual harmonic distortion could not be any higher than 1% to obtain a total distortion of 0.2 %. Thus, both the individual and total harmonic distortion was less than 3%.

SC-100 operating at 240 VAC – 60Hz


HARCS - Harmonic Table

Urms = 242.3 V F = 59.981 Hz Range : 10 A

Exit

Hold

Reset

Protocol

Irms = 1.836 A
Ipk = 4.390 A
cf = 2.391

P = 367.4 W
S = 444.8 VA
pf = 0.826

THD(I) = 31.1 %
THD(U) = 0.10 %
Class A

Voltage Current normalised Values on Limit on rms

Nr.	Freq. [Hz]	average [A]	rms [A]	max [A]	Limit [A]	Nr.	Freq. [Hz]	average [A]	rms [A]	max [A]	Limit [A]
1	60	1.732	1.747	1.837	---	2	120	0.015	0.016	0.018	1.080
3	180	0.459	0.461	0.462	2.300	4	240	0.005	0.010	0.011	0.430
5	300	0.033	0.036	0.037	1.140	6	360	0.000	0.010	0.010	0.300
7	420	0.135	0.137	0.142	0.770	8	480	0.009	0.011	0.012	0.230
9	540	0.160	0.164	0.164	0.400	10	600	0.000	0.009	0.010	0.184
11	660	0.104	0.106	0.107	0.330	12	720	0.000	0.009	0.009	0.153
13	780	0.089	0.091	0.095	0.210	14	840	0.000	0.009	0.010	0.131
15	900	0.124	0.127	0.128	0.150	16	960	0.000	0.007	0.008	0.115
17	1020	0.077	0.079	0.079	0.132	18	1080	0.000	0.007	0.007	0.102
19	1140	0.071	0.073	0.073	0.118	20	1200	0.000	0.007	0.007	0.092
21	1260	0.065	0.067	0.068	0.107	22	1320	0.000	0.006	0.007	0.084
23	1380	0.055	0.056	0.062	0.098	24	1440	0.000	0.006	0.007	0.077
25	1500	0.058	0.060	0.060	0.090	26	1560	0.000	0.004	0.004	0.071
27	1620	0.040	0.042	0.044	0.083	28	1680	0.000	0.005	0.005	0.066
29	1740	0.043	0.045	0.046	0.078	30	1800	0.000	0.005	0.005	0.061
31	1860	0.030	0.032	0.033	0.073	32	1920	0.000	0.003	0.004	0.058
33	1980	0.015	0.014	0.028	0.068	34	2040	0.000	0.004	0.004	0.054
35	2100	0.013	0.013	0.024	0.064	36	2160	0.000	0.005	0.005	0.051
37	2220	0.023	0.024	0.027	0.061	38	2280	0.000	0.004	0.004	0.048
39	2340	0.025	0.025	0.027	0.058	40	2400	0.000	0.002	0.003	0.046

Total Harmonic Distortion (Voltage)

SC-100 operating at 120 VAC – 60 Hz

HARCS - Harmonic Table

Urms = 120.2 V   F = 60.000 Hz   Range : 10 A

Exit | Hold | Protocol

Irms = 3.145 A   P = 366.4 W   THD(I) = 21.1 %

Ipk = 6.538 A   S = 377.8 VA   THD(U) = 0.20 %

cf = 2.079   pf = 0.970   Class A

Total Harmonic Distortion (Voltage)

Voltage   Current   normalised Values   on Limit   on rms

Nr.	Freq. [Hz]	average [A]	rms [A]	max [A]	Limit [A]	Nr.	Freq. [Hz]	average [A]	rms [A]	max [A]	Limit [A]
1	60	3.053	3.079	3.105	---	2	120	0.000	0.015	0.016	1.080
3	180	0.544	0.544	0.544	2.300	4	240	0.000	0.008	0.009	0.430
5	300	0.093	0.093	0.094	1.140	6	360	0.000	0.007	0.008	0.300
7	420	0.236	0.236	0.238	0.770	8	480	0.000	0.009	0.010	0.230
9	540	0.155	0.155	0.159	0.400	10	600	0.000	0.009	0.009	0.184
11	660	0.148	0.148	0.150	0.330	12	720	0.000	0.007	0.007	0.153
13	780	0.096	0.096	0.096	0.210	14	840	0.000	0.008	0.009	0.131
15	900	0.083	0.084	0.084	0.150	16	960	0.000	0.005	0.006	0.115
17	1020	0.061	0.061	0.061	0.132	18	1080	0.000	0.005	0.005	0.102
19	1140	0.038	0.038	0.038	0.118	20	1200	0.000	0.005	0.005	0.092
21	1260	0.069	0.069	0.071	0.107	22	1320	0.000	0.005	0.005	0.084
23	1380	0.041	0.042	0.042	0.098	24	1440	0.000	0.005	0.006	0.077
25	1500	0.052	0.051	0.054	0.090	26	1560	0.000	0.004	0.004	0.071
27	1620	0.032	0.032	0.033	0.083	28	1680	0.000	0.005	0.006	0.066
29	1740	0.038	0.038	0.039	0.078	30	1800	0.000	0.004	0.004	0.061
31	1860	0.021	0.021	0.021	0.073	32	1920	0.000	0.002	0.003	0.058
33	1980	0.000	0.011	0.011	0.068	34	2040	0.000	0.002	0.002	0.054
35	2100	0.000	0.012	0.014	0.064	36	2160	0.000	0.003	0.003	0.051
37	2220	0.000	0.004	0.005	0.061	38	2280	0.000	0.002	0.002	0.048
39	2340	0.000	0.005	0.007	0.058	40	2400	0.000	0.003	0.004	0.046

Harmonic Current results using 120 VAC 60Hz using Class A limits- Normal operation

HARCS - Harmonic Table

Urms = 120.2 V   F = 60.000 Hz   Range : 10 A

Exit | Hold | Reset | Protocol

Irms = 3.145 A
Ipk = 6.538 A
cf = 2.079

P = 366.4 W
S = 377.8 VA
pf = 0.970

THD(I) = 21.1 %
THD(U) = 0.20 %
Class A

Voltage   Current   normalised Values   on Limit   on rms

Nr.	Freq. [Hz]	average [A]	rms [A]	max [A]	Limit [A]	Nr.	Freq. [Hz]	average [A]	rms [A]	max [A]	Limit [A]
1	60	3.053	3.079	3.105	---	2	120	0.000	0.015	0.016	1.080
3	180	0.544	0.544	0.544	2.300	4	240	0.000	0.008	0.009	0.430
5	300	0.093	0.093	0.094	1.140	6	360	0.000	0.007	0.008	0.300
7	420	0.236	0.236	0.238	0.770	8	480	0.000	0.009	0.010	0.230
9	540	0.155	0.155	0.159	0.400	10	600	0.000	0.009	0.009	0.184
11	660	0.148	0.148	0.150	0.330	12	720	0.000	0.007	0.007	0.153
13	780	0.096	0.096	0.096	0.210	14	840	0.000	0.008	0.009	0.131
15	900	0.083	0.084	0.084	0.150	16	960	0.000	0.005	0.006	0.115
17	1020	0.061	0.061	0.061	0.132	18	1080	0.000	0.005	0.005	0.102
19	1140	0.038	0.038	0.038	0.118	20	1200	0.000	0.005	0.005	0.092
21	1260	0.069	0.069	0.071	0.107	22	1320	0.000	0.005	0.005	0.084
23	1380	0.041	0.042	0.042	0.098	24	1440	0.000	0.005	0.006	0.077
25	1500	0.052	0.051	0.054	0.090	26	1560	0.000	0.004	0.004	0.071
27	1620	0.032	0.032	0.033	0.083	28	1680	0.000	0.005	0.006	0.066
29	1740	0.038	0.038	0.039	0.078	30	1800	0.000	0.004	0.004	0.061
31	1860	0.021	0.021	0.021	0.073	32	1920	0.000	0.002	0.003	0.058
33	1980	0.000	0.011	0.011	0.068	34	2040	0.000	0.002	0.002	0.054
35	2100	0.000	0.012	0.014	0.064	36	2160	0.000	0.003	0.003	0.051
37	2220	0.000	0.004	0.005	0.061	38	2280	0.000	0.002	0.002	0.048
39	2340	0.000	0.005	0.007	0.058	40	2400	0.000	0.003	0.004	0.046

Harmonic Current results using 240 VAC 60Hz using Class A limits- Normal operation

HARCS - Harmonic Table

Urms = 242.3 V F = 59.981 Hz Range : 10 A

Exit | Hold | Reset | Protocol

Irms = 1.836 A	P = 367.4 W	THD(I) = 31.1 %
Ipk = 4.390 A	S = 444.8 VA	THD(U) = 0.10 %
cf = 2.391	pf = 0.826	Class A

Voltage ◉ Current ☐ normalised Values ◉ on Limit ○ on rms

Nr.	Freq. [Hz]	average [A]	rms [A]	max [A]	Limit [A]	Nr.	Freq. [Hz]	average [A]	rms [A]	max [A]	Limit [A]
1	60	1.732	1.747	1.837	---	2	120	0.015	0.016	0.018	1.080
3	180	0.459	0.461	0.462	2.300	4	240	0.005	0.010	0.011	0.430
5	300	0.033	0.036	0.037	1.140	6	360	0.000	0.010	0.010	0.300
7	420	0.135	0.137	0.142	0.770	8	480	0.009	0.011	0.012	0.230
9	540	0.160	0.164	0.164	0.400	10	600	0.000	0.009	0.010	0.184
11	660	0.104	0.106	0.107	0.330	12	720	0.000	0.009	0.009	0.153
13	780	0.089	0.091	0.095	0.210	14	840	0.000	0.009	0.010	0.131
15	900	0.124	0.127	0.128	0.150	16	960	0.000	0.007	0.008	0.115
17	1020	0.077	0.079	0.079	0.132	18	1080	0.000	0.007	0.007	0.102
19	1140	0.071	0.073	0.073	0.118	20	1200	0.000	0.007	0.007	0.092
21	1260	0.065	0.067	0.068	0.107	22	1320	0.000	0.006	0.007	0.084
23	1380	0.055	0.056	0.062	0.098	24	1440	0.000	0.006	0.007	0.077
25	1500	0.058	0.060	0.060	0.090	26	1560	0.000	0.004	0.004	0.071
27	1620	0.040	0.042	0.044	0.083	28	1680	0.000	0.005	0.005	0.066
29	1740	0.043	0.045	0.046	0.078	30	1800	0.000	0.005	0.005	0.061
31	1860	0.030	0.032	0.033	0.073	32	1920	0.000	0.003	0.004	0.058
33	1980	0.015	0.014	0.028	0.068	34	2040	0.000	0.004	0.004	0.054
35	2100	0.013	0.013	0.024	0.064	36	2160	0.000	0.005	0.005	0.051
37	2220	0.023	0.024	0.027	0.061	38	2280	0.000	0.004	0.004	0.048
39	2340	0.025	0.025	0.027	0.058	40	2400	0.000	0.002	0.003	0.046

Voltage Flicker Results SC-100 Operating Normally:

PASS

	Pst	dc (%)	dmax (%)	d(t) > 3.3%(ms)
Limit	1.000	3.300	4.000	500
Reading 1	0.405	0.323	0.934	0

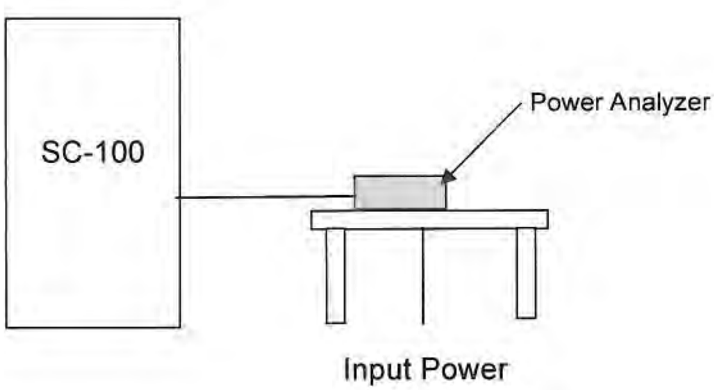
EN61000-3-2 Current Harmonics and EN61000-3-3 Flicker Testing
Tested By: Chuck Kendall

Test	Result	EUT condition
Current Harmonics Class A	PASS	Operating normally
Voltage Flicker	PASS	Operating normally

2. Power Factor Test Procedure:

The SC-100 was set up and functioning normally while being powered via a power analyzer. The power analyzer was set up to measure the Power Factor of the SC-100 Security Portal.

Set Up Diagram:



Test Equipment Used:

Equipment	Asset #	Manufacturer	Model #	Serial #	Date Cal	Due Cal
Harmonics 1000	02890	EMC-Partner	HAR1000-1P	161	5-10-07	5-10-09

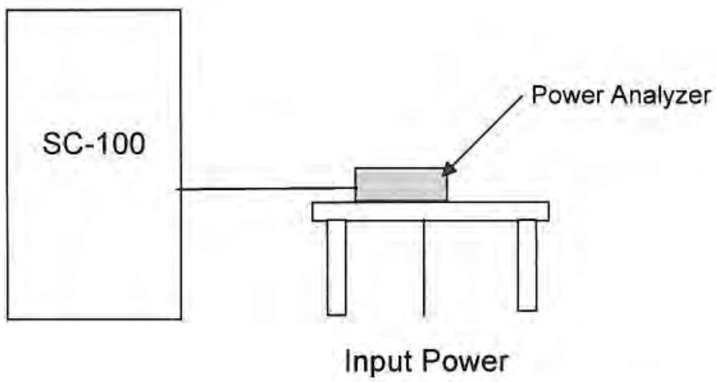
Findings:

Test	Limit	Readings	Result	EUT condition
Power factor (120 VAC)	≥ 0.6	0.826 - 0.839	PASS	Operating normally
Power factor (240 VAC)	≥ 0.6	0.970 – 0.972	PASS	Operating normally

3. Maximum In-rush Test Procedure:

The SC-100 was set up and functioning normally while being powered via a power analyzer. The power analyzer was set up to measure the maximum in-rush of the SC-100 Security Portal.

Set Up Diagram:



Test Equipment Used:

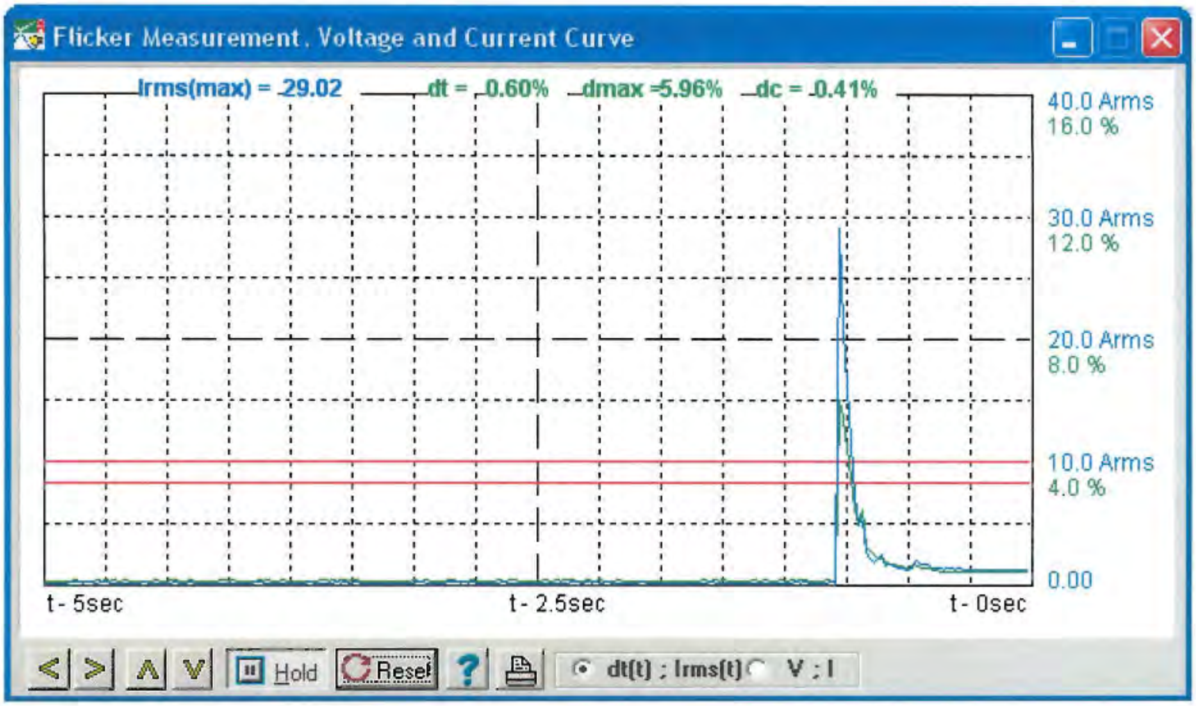
Equipment	Asset #	Manufacturer	Model #	Serial #	Date Cal	Due Cal
Harmonics 1000	02890	EMC-Partner	HAR1000-1P	161	5-10-07	5-10-09

Findings:

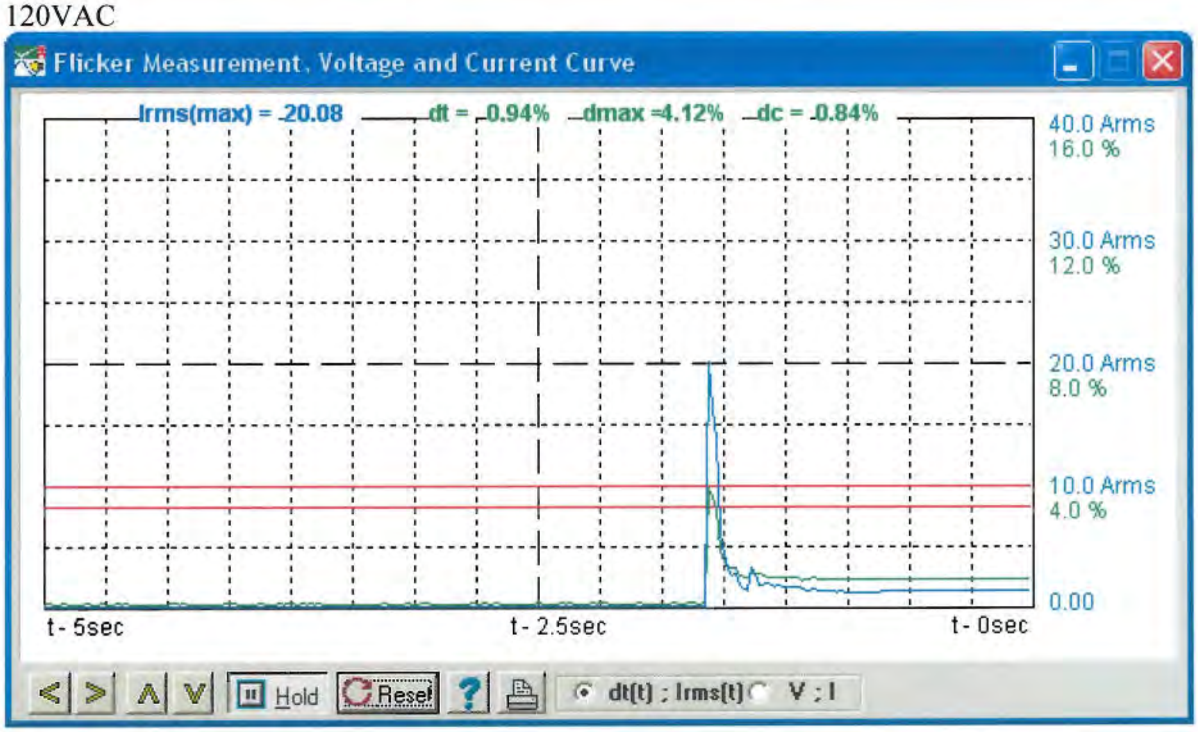
Test	Steady State Current Measured:	Requirements ≤ 20 x Steady State Current	Readings	Results
In-Rush (120 VAC)	3.218 Amps	64.36 Amps	20.08 Amps	PASS
In-Rush (240 VAC)	1.836 Amps	36.72 Amps	29.02 Amps	PASS

Please refer to the following plots made during testing:

240 VAC



120VAC



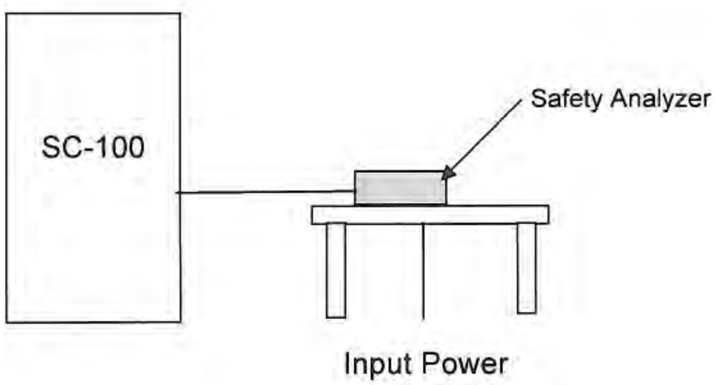
4. **Steady State Current Unbalance Test Procedure:**

Since the SC-100 operates from a single phase source, there is no need to measure the unbalance current. Unbalance current is only possible when multiple phases are used by the device.

5. **Maximum Leakage Current Test Procedure:**

The SC-100 was set up and functioning normally while being powered via a Bapco safety analyzer. The Safety Analyzer measured the maximum leakage current when the SC-100 was placed on an insulating surface and all connection to external equipment was disconnected to prevent stray leakage paths. Leakage currents were measured on both 120 VAC and 240 VAC.

Set Up Diagram:



Test Equipment Used:

Equipment	Asset #	Manufacturer	Model #	Serial #	Cal Date	Cal Due
Safety Analyzer	01310	BAPCO	IEC801L	000209	10-31-08	10-31-09

Findings:

Please see Leakage Tables on next page.

The unit was connected to120 VAC 60 Hz.

Primary Switch Condition	From	TO	Polarity	Leakage Current (mA)
ON	GROUND *Open ground*	CHASSIS	NORMAL	1.999
ON	GROUND *Open ground*	CHASSIS	REVERSE	2.214
OFF	GROUND *Open ground*	CHASSIS	NORMAL	0.120
OFF	GROUND *Open ground*	CHASSIS	REVERSE	0.109
ON	LINE *Open neutral*	CHASSIS	NORMAL	0.000
ON	LINE *Open neutral*	CHASSIS	REVERSE	0.000
OFF	LINE *Open neutral*	CHASSIS	NORMAL	0.000
OFF	LINE *Open neutral*	CHASSIS	REVERSE	0.000

The unit was connected to 240 VAC 60 Hz.

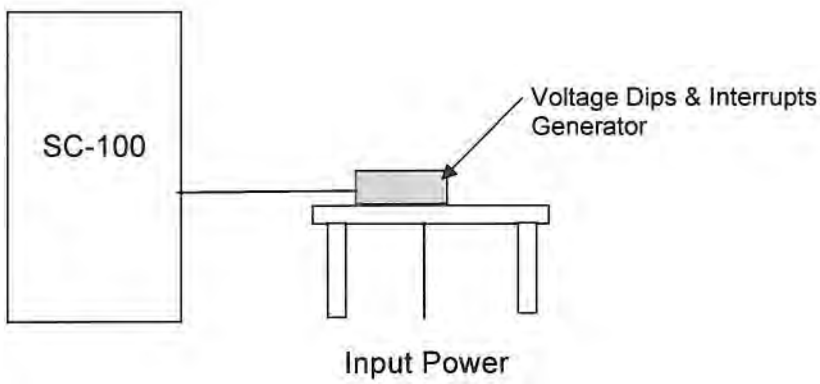
Primary Switch Condition	From	TO	Polarity	Leakage Current (mA)
ON	GROUND *Open ground*	CHASSIS	NORMAL	0.260
ON	GROUND *Open ground*	CHASSIS	REVERSE	0.261
OFF	GROUND *Open ground*	CHASSIS	NORMAL	0.009
OFF	GROUND *Open ground*	CHASSIS	REVERSE	0.022
ON	LINE *Open neutral*	CHASSIS	NORMAL	0.000
ON	LINE *Open neutral*	CHASSIS	REVERSE	0.000
OFF	LINE *Open neutral*	CHASSIS	NORMAL	0.000
OFF	LINE *Open neutral*	CHASSIS	REVERSE	0.000

Test	Limit	Result	EUT condition
Maximum Leakage Current (120 VAC)	3.5 mA	PASS	Operating normally
Maximum Leakage Current (240 VAC)	3.5 mA	PASS	Operating normally

6. Voltage Sag Test Procedure:

The SC-100 Security Portal was set up and functioning normally while being powered via a Voltage Dips & Interrupts Test Generator. The test voltage used for this testing was both 120 VAC & 240 VAC 60 Hz. The Test Generator sag the voltage to zero for 20 ms when the SC-100 was operating normally and no upsets were noticed at all in the portal's functioning.

Set Up Diagram:



Test Equipment Used:

Equipment	Asset #	Manufacturer	Model #	Serial #	Cal Date	Cal Due
Harmonics 1000	02890	EMC-Partner	HAR1000-1P	161	5-10-07	5-10-09

Findings:

EN61000-4-11 Voltage Dips & Interrupts
Tested By: Chuck Kendall

Interrupts %	Duration	Pass/fail	Performance Criterion	Notes
100	(20ms)	PASS	A	3 interrupts

Appendix A: Photos of test equipment used during the testing

Close up of safety analyzer during testing leakage current

Test equipment used during the testing

Safety analyzer test procedure

CAB - Notified Body No.: 0976
5473A Cloud Rest
Mariposa, CA 95338
Phone: +1 (209) 966 5240
Fax: +1 (209) 742 6133

TCB No.: US0103
4933 Sierra Pines Drive
Mariposa, CA 95338
Phone: +1 (209) 966-5240
Fax: +1 (209) 742-6133

Applicant: **L3 Communications SafeView Corp.**
469 El Camino Real Suite 110
Santa Clara CA 95050

Date: **30 March 2007**
Reference No.: **C06-008-84413**

Certificate of Conformity with the essential requirements of Directive 99/5/EC of March 9, 1999

Dear Sir/Madam
Please accept the enclosed Certificate of Conformity with the registration/certificate number:

The Apparatus shall be marked according to Article 12 of the R&TTE Directive 99/5/EC.

Remarks:

1. The manufacturer or the person responsible for placing the apparatus on the market shall provide information for the user on the intended use of the apparatus.

2. The manufacturer or the person responsible for placing the apparatus on the market shall provide the declaration of conformity to the essential requirements.

3. When it concerns radio equipment, such information on the packaging and in the instructions for use shall be sufficient to identify the apparatus, the Member States or the geographical area within a Member State where the equipment is intended to be used.

4. Where applicable, appropriate marking on the apparatus, referred to in Annex VII, paragraph 5, shall alert the user of potential restrictions or requirements for authorization of use of the radio equipment in certain Member States. Such information shall be prominently displayed.

Sincerely
CKC Labs
-CAB-Notified Body-

(b) (6) [redacted]

Enclosures:
1 Certificate/Notified Body letter with annexes

CKC Testing the Future LABORATORIES, INC.

CAB - Notified Body No.: 0976
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Phone: +1 (209) 966-5240
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Notified Body Statement

EC Certificate of Conformity

Registration No / Certificate No.	**C06-008-84413**
Notified Body:	**CKC Laboratories**
Notified Body number:	**0976**
Certificate Holder:	**L3 Communications SafeView Corp. 469 El Camino Real Suite 110 Santa Clara CA 95050**
Product name:	**SafeScout 100**
Model No.:	**SC-100**
Product Description:	**Holographic 3-D imaging portal**
Product Manufacturer:	**SafeView, Inc. 469 El Camino Real Suite 110 Santa Clara CA 95050**
Specifications:	**EN 61010:2001+ Corr 1 & 2 EN 301 489-1 V1.5.1 (2004-11)– EMC & ERM-Emission/Immunity EN 301 489-1 V1.4.1 (2002-08)– EMC & ERM-Emission/Immunity EN 300 440-1 V1.3.1 (2001-09) -- EMC and ERM (SRD) EN 300 440-2 V1.1.2 (2004-07) EMC and ERM (SRD)**
Result of Examination:	**Examination of the technical construction file presented according to Annex IV of Directive 99/5/EC demonstrates that the requirements of the Directive have been met. The product listed above is in conformity with the essential requirements of Article 3 of Directive 99/5/EC. A list of documentation forming the basis for the examination is provided in Annex 1 of this certificate**
Issue Date:	**30 March 2007**

This certificate is issued in accordance with the RTTE Directive 99 5 EC and is valid only in conjunction with Annexes III and IV of the RTTE Directive 99 5 EC

(b) (6) [redacted]

(b) (6) [redacted] EMC Test Engineer

CKC Laboratories is a U.S. Conformity Assessment Body (CAB) for the RTTE Directive 99/5 EC under Annexes III and IV

CKC Testing the Future LABORATORIES, INC.

CAB - Notified Body No.: 0976
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Annex 1of EC Certificate of Conformity
Number C06-008-84413

	Subject	Reference Document	Material Date
1	**Test Report:**	ETS06-041A	3 January 2007
		ETS07-009	27 February 2007
2	**Technical Documentation:**		
	Label Drawing	Label Location	12 December 2005
		CE Label	07 March 2007
	Assembly Drawing	Confidential items.	
		Adapter PCB(PCA660-26151_B)	07 March 2007
		ISU(PCA660-21333_asydwg_D)	10 November 2005
		Fab_Assy_distribution_mill_1515	08 November 2006
	PCB layout	Confidential items:	
		Adapter PCB-560-26151_V2_Gerbers_A	09 November 2006
		ISU-fab_assy_ISU_Phase2[1].0_revC	08 November 2006
	Schematics	Adapter PCB-SCH660-26151_A	09 November 2006
		TxRx-124105-92rD1	26 October 2005
		TxRx-124105-92rD2	26 October 2005
		TxRx-124105-92rD3	26 October 2005
		AntTxSw-124389-92rC1	26 October 2005
		AntTxSw-124389-92rC2	26 October 2005
		AntTxSw-124389-92rC3	26 October 2005
		Tx124105-01rE	07 November 2006
		Tx124105-90rE	07 November 2006
		Tx124105-92rD	07 November 2006
		Tx124244-01rB	07 November 2006
		Tx124244-90rB	07 November 2006
		Tx124244-92rA	07 November 2006
		Tx124389-01rD	07 November 2006
		Tx124389-90rD	07 November 2006
		Tx124389-92rC	07 November 2006
		Tx124716-01rD	07 November 2006
		Tx124716-90rC	07 November 2006
		Tx124716-92rC	07 November 2006
		SafeviewISUPhase2-RevB Schematics.20051208.01	08 December 2006
		SCH660-21333_ISUFCCPhase2-RevB_Schematics	08 December 2006
		ManSw-124244-92rA1	26 October 2006
		ManSw-124244-92rA2	26 October 2006
		ManSw-124244-92rA3	26 October 2006
		Power_Dist_sch_X1	08 November 2006
		Tx121639-92rC	26 October 2006
		Tx121639-92rC21	26 October 2006

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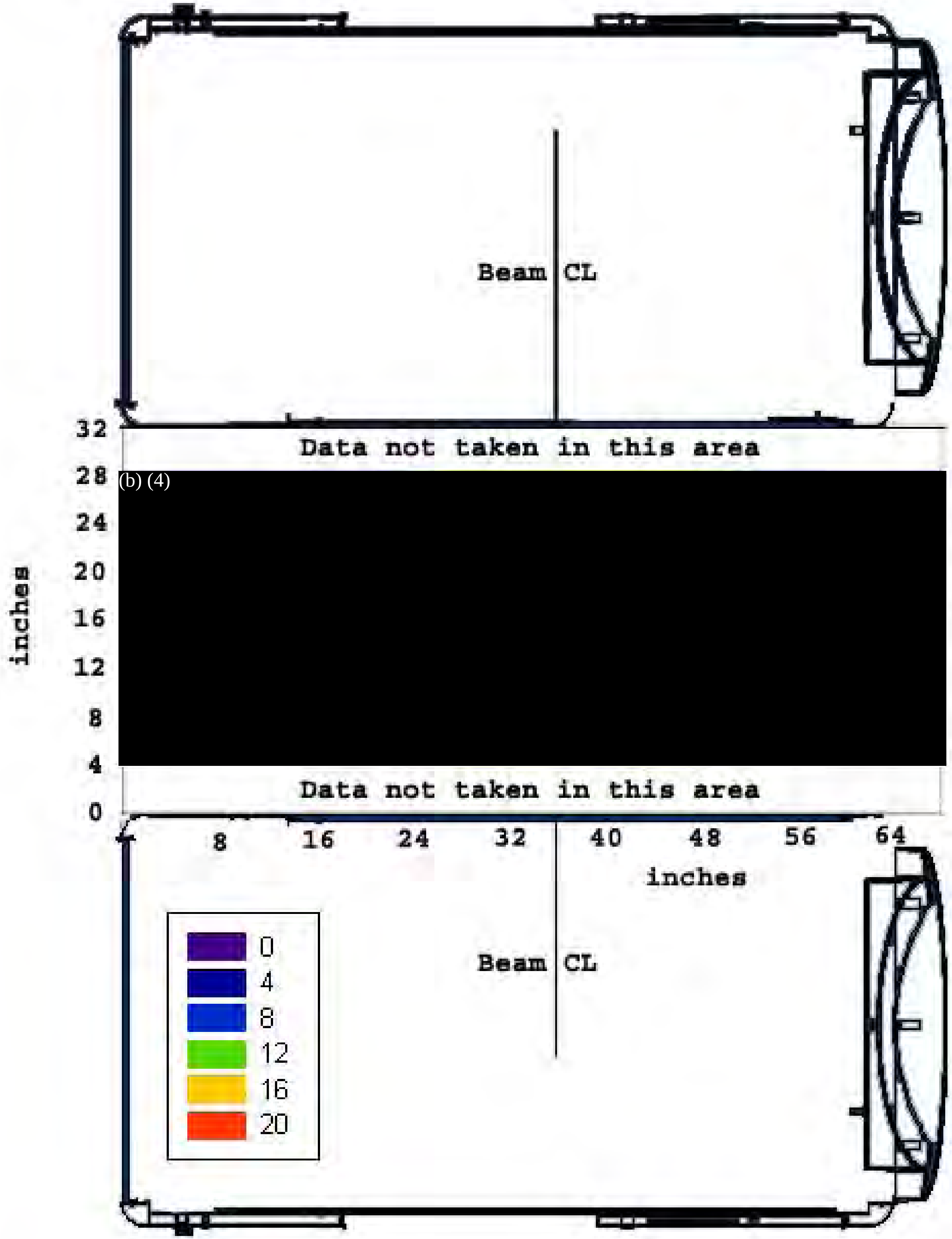
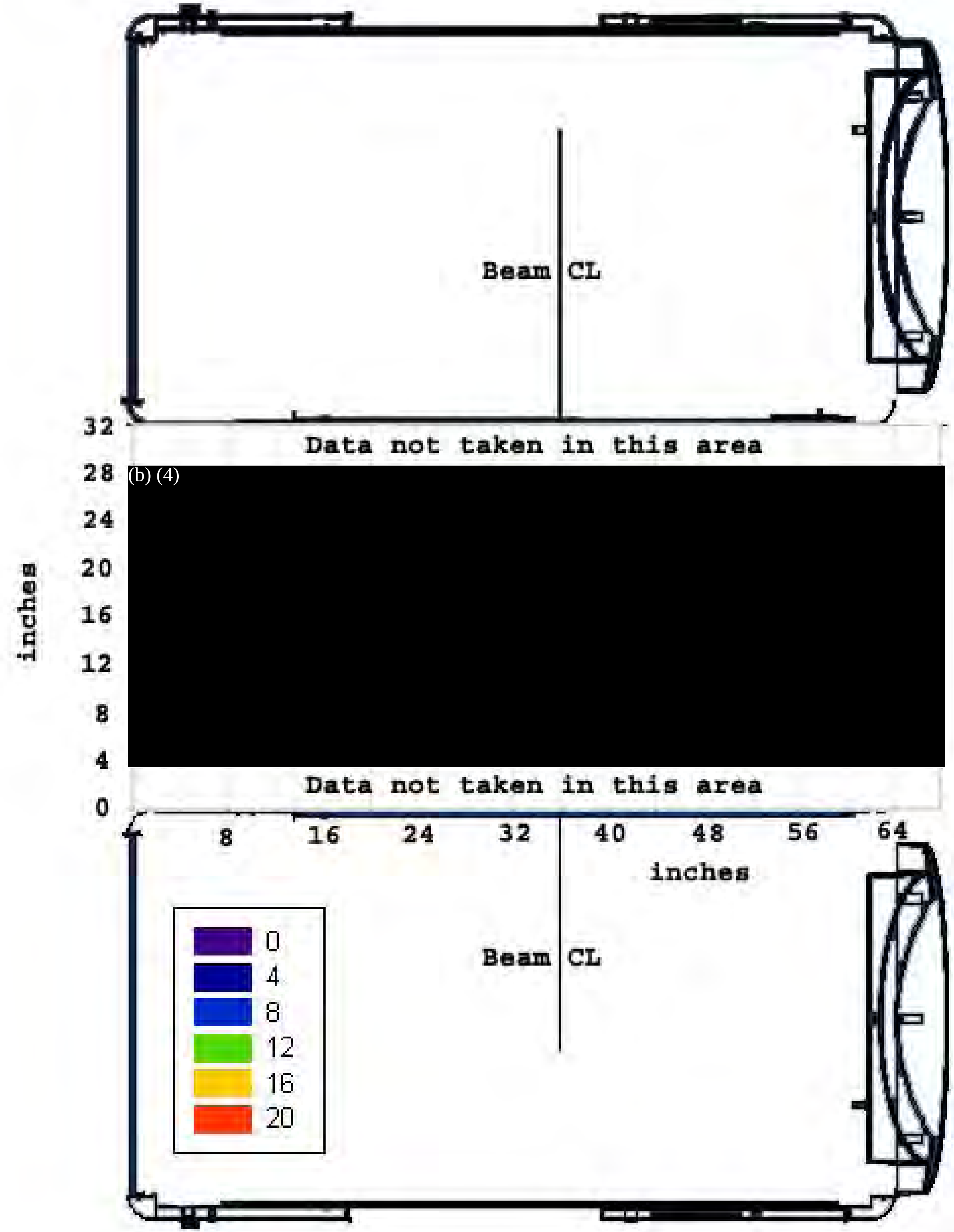
		Tx121639-92rC3	26 October 2006
		Tx121639-92rC4	26 October 2006
		Tx121809-92rB1	26 October 2006
		Tx121809-92rB2	26 October 2006
		Tx121809-92rB3	26 October 2006
		Tx124716-92RC1	26 October 2006
		Tx124716-92RC2	26 October 2006
		Tx124716-92RC3	26 October 2006
		Tx124716-92RC4	26 October 2006
		Above documents all Confidential	
	Block Diagram	System Block Descriptions-Confidential	12 December 2005
		Adapter PCB-660-26151_C	08 November 2006
	Bill of Material	ISU-660-21333 REV O	08 November 2006
		PwrDistrPCB-660-21043 REV H	08 November 2006
		Above documents all Confidential	
	Users Guide	SV_HW 100 manual rev 0.8	22 December 2006
		SV user manual 1.12 rev 1.0	22 December 2006
	Cover Letters	Expository Statement-confidential	08 December 2005
		Operational Description-Confidential	
	Technical reports	TCF06-005	9 March 2007
3	**Conformity Documentation:**		
	Declaration of Conformity	Declaration of Conformity	06 December 2006

Dose (b) (4) [redacted]



Dose [redacted]



From: [redacted]
To: Spanier, Lee
Subject: FW: SmartCheck HT
Date: Friday, March 05, 2010 5:48:41 PM
Attachments: smartcheck 608 signed.pdf

Hi Lee,
In response to some of your recent questions, please find attached the signed ANSI/HPS N43.17 Certificate of Compliance from Frank Masse Associates for our AIT system.
The configuration is the same as that previously tested at the TSL, [redacted].

Also included below is correspondence between AS&E's Radiation Safety officer ([redacted]) and Frank Cerra from NIST. This correspondence shows additional measurements performed to demonstrate the successfu[redacted] with dose well below the required limits.

Please let us know if you require any additional information.

Thank you,

[redacted]
Sr. Program Manager
American Science and Engineering Inc
[redacted]

From: [redacted]
Sent: Tuesday, July 22, 2008 2:32 PM
To: frank.cerra[redacted]
Cc: [redacted]
Subject: SmartCheck HT

Frank,

We just made some measurements on the SmartCheck HT[redacted]

I measured the dose per scan with the RadCal 9010 @ 1800 cc chamber [redacted]

The unattenuated dose was measured at [redacted] at that position.
[redacted]
[we assume a maximum of 240 scans an hour; sc[redacted] * 240 per hour = [redacted] hou[redacted] All of these are entrance dose.

The attenuated dose was measured a[redacted] abou[redacted] times less than the unattenuated dose.
[redacted] * 240 per hour = [redacted] hour]

[redacted]

[redacted] below the requirement of N43.17 for leakage (0.25

mrem in any hour 30 cm from the surface of the system).

Give me a call to discuss this data.

(b) (6) [redacted]

SmartCheck Radiation Survey Form

Mark N/A if not applicable

System S/N	SCMT 1001	Location	TSC
Survey Performed By	(b) (6) [redacted]	Date of Survey	9/17/10
		Date of Last Survey	PRB

Dose Rate Measurement Survey

Mark N/A if not applicable

Survey Meter Model	FLUKE VICTOREEN 451	Survey Meter Serial No.	3554
Survey Meter Probe Type	INTERNAL	Probe SN	NA
Last Calibration Date	02/24/10	Battery Level O.K.	OK
Check Source Strength		Check Source Reading	NA

Table 1: Dose Rate Measurement Survey

Item	Description	Maximum Reading with source at bottom of travel (mRem/hr.)	Radiation Area Limit	Pass/Fail
1	Survey of the region from **A** to **B** to 6 ft height	(b) (4) [redacted]	0.25mRem/hr	P
2	Survey of the region from **B** to **C** to 6 ft height		0.25 mRem/hr	P
3	Survey of the region from **C** to **D** to 6 ft height		0.25 mRem/hr	P

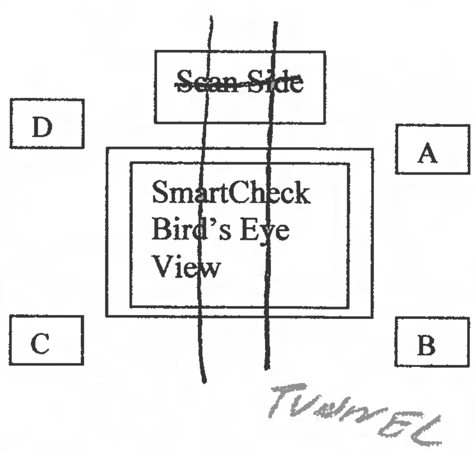


Figure 1: SmartCheck Radiation Survey Locations – Dose Rate Measurements

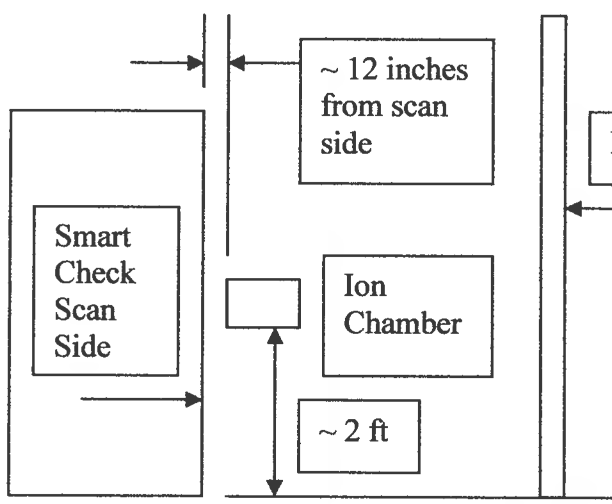
SmartCheck Integrated Dose Survey

Mark N/A if not applicable

Survey Meter Model	FLUKE VICTOREEN 451	Survey Meter Serial No.	3554
Survey Meter Probe Type	INTEGRAL	Probe SN	NA
Last Calibration Date	12/24/08	Battery Level O.K.	✓
Check Source Strength	OK	Check Source Reading	MAX OK

Table 2: Integrated Dose Survey

Description	Sample 1 Reading (uRem)	Sample 2 Reading (uRem)	Sample 3 Reading (uRem)	Average of Samples 1-3 (uRem)	Effective Dose = Ave x 0.48 (uRem)	Effective Dose Radiation Limit	Pass/ Fail
Scan the meter (3 times)	(b) (4) [redacted]					10 uRem	P



CUSTOMER (b) (6) [redacted] ASE (b) (6) [redacted] Date 9/17/10

SmartCheck Radiation Survey Form

Mark N/A if not applicable

System S/N	SCMT 1002	Location	TSC
Survey Performed By	(b) (6) [redacted]	Date of Survey	9/17/10
		Date of Last Survey	FRD

Dose Rate Measurement Survey

Mark N/A if not applicable

Survey Meter Model	451 Fluke Victoreen	Survey Meter Serial No.	*3551
Survey Meter Probe Type	Internal	Probe SN	NA
Last Calibration Date	02/24/10	Battery Level O.K.	OK
Check Source Strength		Check Source Reading	NA

Table 1: Dose Rate Measurement Survey

Item	Description	Maximum Reading with source at bottom of travel (mRem/hr.)	Radiation Area Limit	Pass/Fail
1	Survey of the region from **A** to **B** to 6 ft height	(b) (4) [redacted]	0.25mRem/hr	P
2	Survey of the region from **B** to **C** to 6 ft height		0.25 mRem/hr	P
3	Survey of the region from **C** to **D** to 6 ft height		0.25 mRem/hr	P

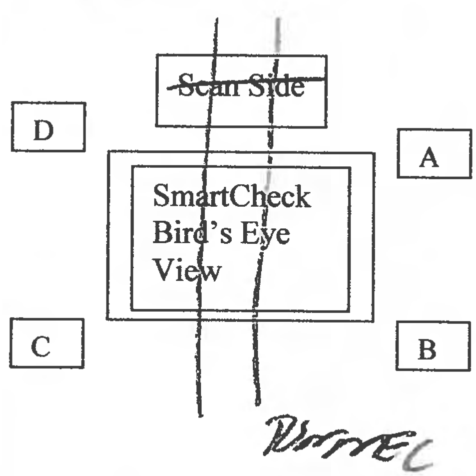


Figure 1: SmartCheck Radiation Survey Locations – Dose Rate Measurements

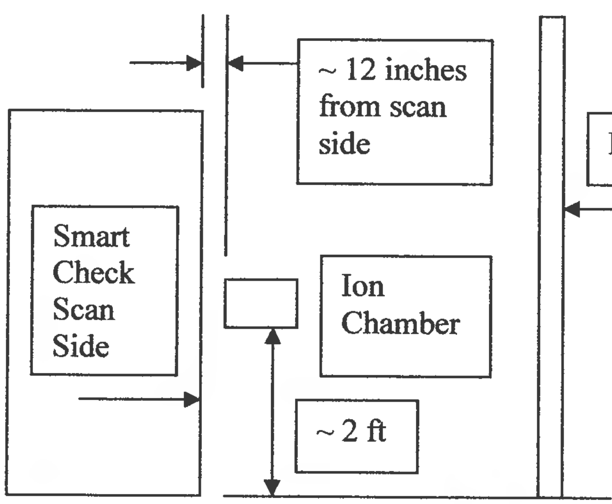
SmartCheck Integrated Dose Survey

Mark N/A if not applicable

Survey Meter Model	FLUKE VICTOREEN 451	Survey Meter Serial No.	3554
Survey Meter Probe Type	INTEGRAL	Probe SN	NA
Last Calibration Date	02/24/10	Battery Level O.K.	OK
Check Source Strength		Check Source Reading	N/A

Table 2: Integrated Dose Survey

Description	Sample 1 Reading (uRem)	Sample 2 Reading (uRem)	Sample 3 Reading (uRem)	Average of Samples 1-3 (uRem)	Effective Dose = Ave x 0.48 (uRem)	Effective Dose Radiation Limit	Pass/ Fail
Scan the meter (3 times)	(b) (4) [redacted]					10 uRem	P



CUSTOMER (b) (6) [redacted] ASE (b) (6) [redacted] Date 9/19/10

ZERTIFIKAT • CERTIFICATE • 認証書 • СЕРТИФИКАТ • CERTIFICADO • CERTIFICAT

Product Service

CERTIFICATE

No. U8 06 12 50706 003

Holder of Certificate: **American Science & Engineering**
829 Middlesex Turnpike
Billerica, MA 01821
USA

Production Facility(ies): 50706

Certification Mark:

Product: **X-Ray Equipment, non-medical**
X-ray inspection station

Model(s): **SmartCheck**

Parameters:

Rated Input Voltage:	120 V AC or 240 V AC
Rated Frequency:	60 Hz or 50 Hz
Rated Input Current:	16 A or 8A
Protection Class:	I

License Condition:
The end installation must be inspected and approved by the local agency having jurisdiction to verify that the X-ray exposure is in compliance with all local codes and requirements and that the final set-up is acceptable to ensure that the operators, other security personnel and oridinary passers-by are not subjected to excessive X-radiation.

Tested according to:
CAN/CSA-C22.2 No. 61010-1-04
UL 61010-1:2004
EN 61010-1:2001

The product was voluntarily tested according to the relevant safety requirements and mentioned properties. It can be marked with the certification mark shown above. The certification mark must not be altered in any way. See also notes overleaf.

Test report no.: 090-602347-000

Date, 2006-12-19

Page 1 of 1

(b) (6)
[redacted]

America

EMC TEST REPORT

Test Report No.	**WC808134**	Date of issue:	06 February 2009

Manufacturer	Rapiscan Systems
Address	2805 Columbia Street
	Torrance CA 90503
Description of Equipment	Secure 1000 in Single Pose Configuration (Dual View) with UPS and Operator Station
Name of Equipment	Secure 1000 WBI
Model / Serial No(s) Tested	Secure 1000 / S507451313-1312 consisting of: Master: 317-6000-00 / S507431312 Slave: 317-6000-110 / S507451313 UPS: PW9120 1500 / RB124A0132 Inspector: 2394913 / N/A
Test Date(s)	26 – 28 January 2009

Test Result ■ **Compliant** ☐ **Non-compliant**

According to testing performed at TÜV SÜD America Inc, an independent testing laboratory, the above equipment is in compliance with the requirements of FCC Part 15, Subpart B, European Standard EN 55022: 2006: "Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment" including A1: 2007 and European Standard EN 61000-6-3: 2007: "Emission Standard for Residential, Commercial and Light-Industrial".

Conducted Telecom testing was only performed at 60Hz – 120VAC which is a deviation from EN 55022 and EN 61000-6-3.

It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical characteristics. Any modifications necessary for compliance made during testing on the above mentioned date(s) must be implemented in all production units for compliance to be maintained.

Date: 06 February 2009 Tested by: Approved by:

(b) (6)

[redacted]

Location: [redacted]

REVISION RECORD

REVISION	TOTAL NUMBER OF PAGES	DATE	DESCRIPTION
	83	06 February 2009	Initial Release

TEST REPORT CONTENTS

EMC TEST REGULATIONS:

The tests were performed according to following regulations:

■ - EN 55022: 2006 + A1: 2007 (CISPR 22:2005/A1:2005)	■ - Class A	☐ - Class B
■ - 47 CFR FCC Part 15, Subpart B	■ - Class A	☐ - Class B
■ - EN 61000-6-3: 2007		

ENVIRONMENTAL CONDITIONS IN THE LAB

	Actual
Temperature:	: 22°C
Relative Humidity	: 15%
Atmospheric pressure	: 100kPa

POWER SUPPLY UTILIZED

Power supply system : 230/120VAC / 50/60Hz / 1ϕ

TEST EQUIPMENT

All measurement instrumentation is traceable to the National Institute of Standards and Technology and is calibrated according to internal procedure.

SIGN EXPLANATIONS

☐ - not applicable
■ - applicable

Emissions Test Conditions: CONDUCTED EMISSIONS (Interference Voltage)

The *CONDUCTED EMISSIONS (INTERFERENCE VOLTAGE)* measurements were performed at the following test location:

☐ - Test not applicable

☐ - Wild River Lab Large Test Site (Open Area Test Site)
☐ - Wild River Lab Small Test Site (Open Area Test Site)
☐ - Wild River Shield Room 1 - Anechoic ferrite-lined shielded room (7.3m x 3.7m x 3.7m) or (24' x 12' x 12')
☐ - Wild River Shield Room 2 - Shielded room (3.7m x 3.5m x 2.4m) or (12' x 11.5' x 8')
■ - Oakwood Lab (Open Area Test Site)
☐ - New Brighton Lab Shielded Room

Test equipment used :

TUV ID	Model	Manufacturer	Description	Serial	Cal Due
OWLE02078	3825/2	Electro-Mechanics (EMCO)	50 Ω LISN	1326	Code B 19-Jun-09
OWLE03989	3816/2	ETS Lindgren	50 Ω LISN	00035358	Code B 25-Jul-09
OWLE02910	11947A	Hewlett-Packard	Transient Limiter (OW)	3107A02363	Code B 04-Feb-09
OWLE02532	ESHS-10	Rhode & Schwarz	EMI Receiver	828178/006	04-Aug-09

Cal Code B = Calibration verification performed internally. Cal Code Y = Calibration not required when used with other calibrated equipment.

Test Results - Conducted emissions 150 kHz - 30 MHz

The requirements are ☐ - N/A ■ - MET ☐ - NOT MET

Scanners Powered through UPS:

Minimum margin of compliance - Average 24.77 dB at 5.85 MHz

Minimum margin of compliance – Quasi-peak 39.36 dB at 150.0 kHz

Dual Scanner Configuration with UPS and remote Workstation. Conducted on Ethernet switch for Remote Workstation:

Minimum margin of compliance - Average 22.78 dB at 150.0 kHz

Minimum margin of compliance – Quasi-peak 7.36 dB at 150.0 kHz

Dual Scanner Configuration with UPS and remote Workstation. Conducted on Remote Workstation:

Minimum margin of compliance - Average 27.75 dB at 1.915 MHz

Minimum margin of compliance – Quasi-peak 33.37 dB at 8.876 MHz

Dual Scanner Configuration with UPS and remote Workstation. Conducted on Remote Workstation Display.

Minimum margin of compliance - Average 26.83 dB at 16.9 MHz

Minimum margin of compliance – Quasi-peak 36.53 dB at 16.9 MHz

Maximum margin of non-compliance ______ dB at ______ MHz

Remarks: ______

Test Results - Conducted common mode disturbance at telecommunication ports – 150 kHz to 30 MHz

The requirements are ☐ - N/A ■ - MET ☐ - NOT MET

Dual Scanner Configuration with UPS and Remote PC. Remote workstation's ethernet.

Minimum margin of compliance - Average	18.92	dB	at	18.303	MHz
Minimum margin of compliance – Quasi-peak	27.94	dB	at	2.1	MHz

High Speed Screening system - Ethernet Switch

Minimum margin of compliance - Average	21.78	dB	at	25.879	MHz
Minimum margin of compliance – Quasi-peak	31.34	dB	at	25.879	MHz

High Speed Screening system - Ethernet (Scanner)

Minimum margin of compliance - Average	21.72	dB	at	2.104	MHz
Minimum margin of compliance – Quasi-peak	29.35	dB	at	2.104	MHz
Maximum margin of non-compliance		dB	at		MHz

Remarks: Conducted Telecom testing was only performed at 60Hz – 120VAC which is a deviation from EN 55022 and EN 61000-6-3.

Emissions Test Conditions: RADIATED EMISSIONS (Electric Field)

The *RADIATED EMISSIONS (ELECTRIC FIELD)* measurements, in the frequency range of 30 MHz-1000 MHz, were tested in a horizontal and vertical polarization at the following test location:

☐ - Test not applicable

☐ - Wild River Lab Large Test Site (Open Area Test Site) - NSA measurements made 01-08, due 01-09.
☐ - Wild River Lab Small Test Site (Open Area Test Site) - NSA measurements made 01-08, due 01-09.
■ - Oakwood Lab (Open Area Test Site) - NSA measurements made 09-08, due 09-09.

at a test distance of :

☐ - 3 meters
■ - 10 meters
☐ - 30 meters

Test equipment used :

TUV ID	Model	Manufacturer	Description	Serial	Cal Due
WRLE02680	85650A	Hewlett-Packard	Quasi-Peak Adapter	2043A00343	27-May-09
WRLE03204	EM-6917B	Electro-Metrics	Biconicalog Periodic	102	17-Dec-09
OWLE02671	8447D	Hewlett-Packard	Preamplifier	2648A04942	Code B 02-Feb-09
WRLE02690	8566B	Hewlett-Packard	Spectrum Analyzer	2430A00930	03-Jul-09
WRLE02674	85662A	Hewlett-Packard	Analyzer Display	2050A02007	16-Oct-09

Cal Code B = Calibration verification performed internally. Cal Code Y = Calibration not required when used with other calibrated equipment.

Test Results - Radiated emissions (electric field) 30 MHz - 1000 MHz

The requirements are **☐ - N/A** **■ - MET** **☐ - NOT MET**

Minimum margin of compliance 0.05 dB at 40.046 MHz

Maximum margin of non-compliance ______ dB at ______ MHz

Remarks: The EUT met the radiated emissions requirements with 6 Steward ribbon style cable Ferrites added to the control board cables.

Emissions Test Conditions: RADIATED EMISSIONS (Electric Field)

The *EQUIVALENT RADIATED EMISSIONS* measurements in the frequency range 1 GHz – 15 GHz were performed in a horizontal and vertical polarization at the following test location:

☐ - Test not applicable

☐ - Wild River Lab Large Test Site (Open Area Test Site)
☐- Wild River Lab Small Test Site (Open Area Test Site)
■ - Oakwood Lab (Open Area Test Site)

at a test distance of:
☐ - 1 meters
■- 3 meters
☐ - 10 meters

Test equipment used :

TUV ID	Model	Manufacturer	Description	Serial	Cal Due
WRLE02075	3115	EMCO	Ridge Guide Ant. 1-18 GHz	9001-3275	13-Jan-10
WRLE03958	SL18B4020	Phase One Microwave	Preamplifier 1 – 18 GHz	0002	Code B 01-Feb-09
WRLE02680	85650A	Hewlett-Packard	Quasi-Peak Adapter	2043A00343	27-May-09
WRLE02690	8566B	Hewlett-Packard	Spectrum Analyzer	2430A00930	03-Jul-09
WRLE02674	85662A	Hewlett-Packard	Analyzer Display	2050A02007	16-Oct-09

Cal Code B = Calibration verification performed internally. Cal Code Y = Calibration not required when used with other calibrated equipment.

CISPR Test Results - Equivalent Radiated emissions 1 GHz – 6 GHz

The requirements are ☐ - N/A ■- MET ☐ - NOT MET

Minimum margin of compliance - Average 16.23 dB from 1404.0 MHz

Minimum margin of compliance - Peak 32.28 dB from 1404.0 MHz

Maximum margin of non-compliance ____ dB at ____ MHz

Remarks: ____________________

FCC Test Results - Equivalent Radiated emissions 1 GHz – 15 GHz

The requirements are ■ - N/A ☐- MET ☐ - NOT MET

Minimum margin of compliance - Average 20.23 dB from 1404.4 MHz

Minimum margin of compliance - Peak 36.28 dB from 1404.4 MHz

Maximum margin of non-compliance ____ dB at ____ MHz

Remarks: ____________________

Equipment Under Test (EUT) Test Operation Mode:

The device under test was operated under the following conditions during emissions testing:

☐ - Standby

☐ - Test program (H - Pattern)

☐ - Test program (color bar)

☐ - Test program (customer specific)

☐ - Practice operation

☐ - Normal Operating Mode

■ - See Software and/or Operating Modes in Appendix B

Configuration of the device under test:

■ - See Constructional Data Form in Appendix B

☐ - See Product Information Form in Appendix B

The following peripheral devices and interface cables were connected during the measurement:

☐ - ______ Type : ______

☐ - ______ Type : ______

☐ - ______ Type : ______

☐ - ______ Type : ______

☐ - ______ Type : ______

☐ - ______ Type : ______

☐ - ______ Type : ______

☐ - ______ Type : ______

☐ - unshielded power cable

☐ - unshielded cables

☐ - shielded cables MPS.No.: ______

☐ - customer specific cables

☐ - ______

☐ - ______

GENERAL REMARKS:

Modifications required to pass:

☐ None

■ The EUT met the radiated emissions requirements with 6 Steward ribbon style cable Ferrites added to the control board cables.

Test Specification Deviations: Additions to or Exclusions from:

☐ None

☐ As indicated in the Test Plan

■ Conducted Telecom testing was only performed at 60Hz – 120VAC which is a deviation from EN 55022 and EN 61000-6-3.

SUMMARY:

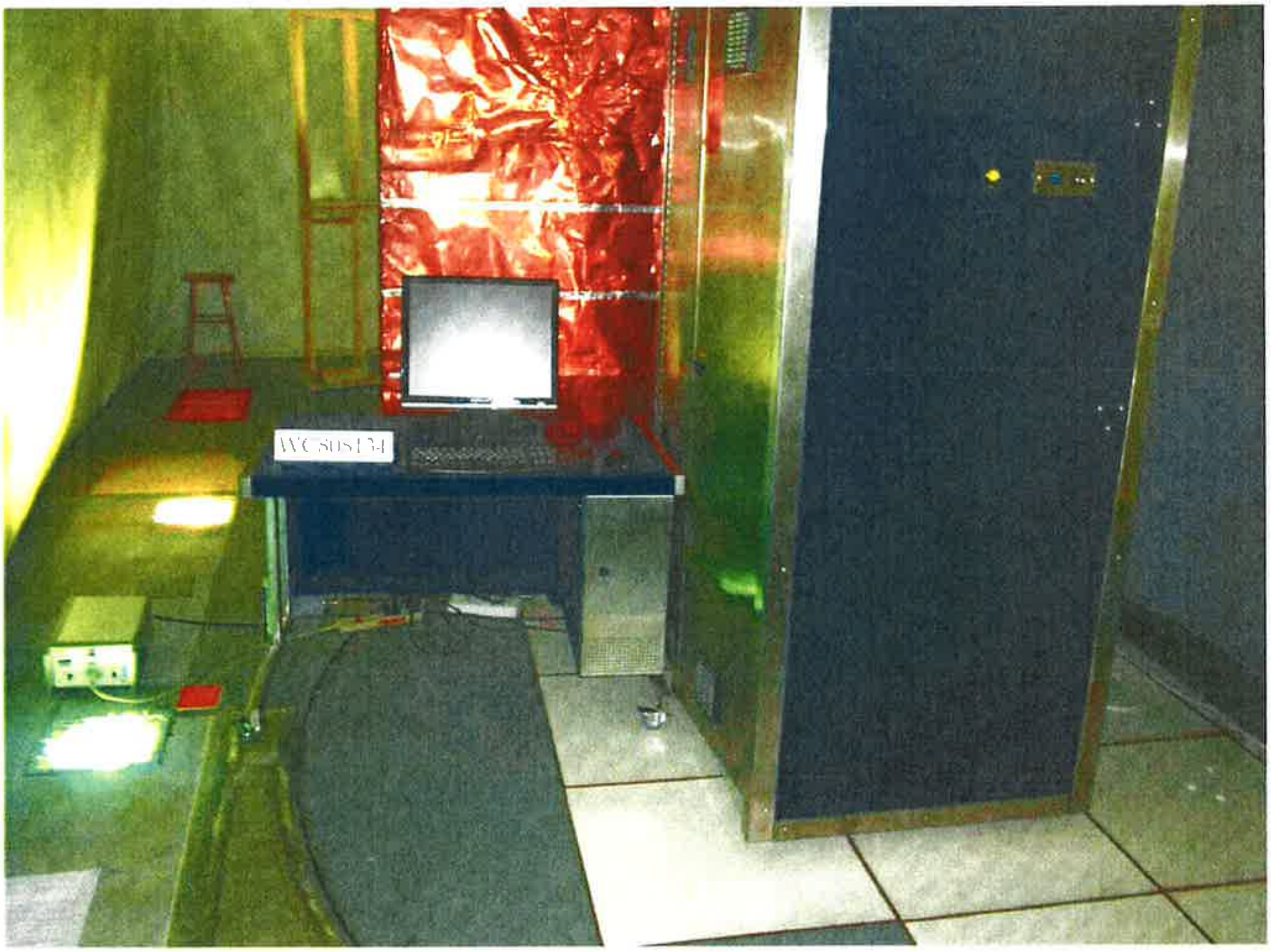
The requirements according to the technical regulations are

■ - met and the equipment under test does fulfill the general approval requirements.

☐ - **not** met and the equipment under test does **not** fulfill the general approval requirements.

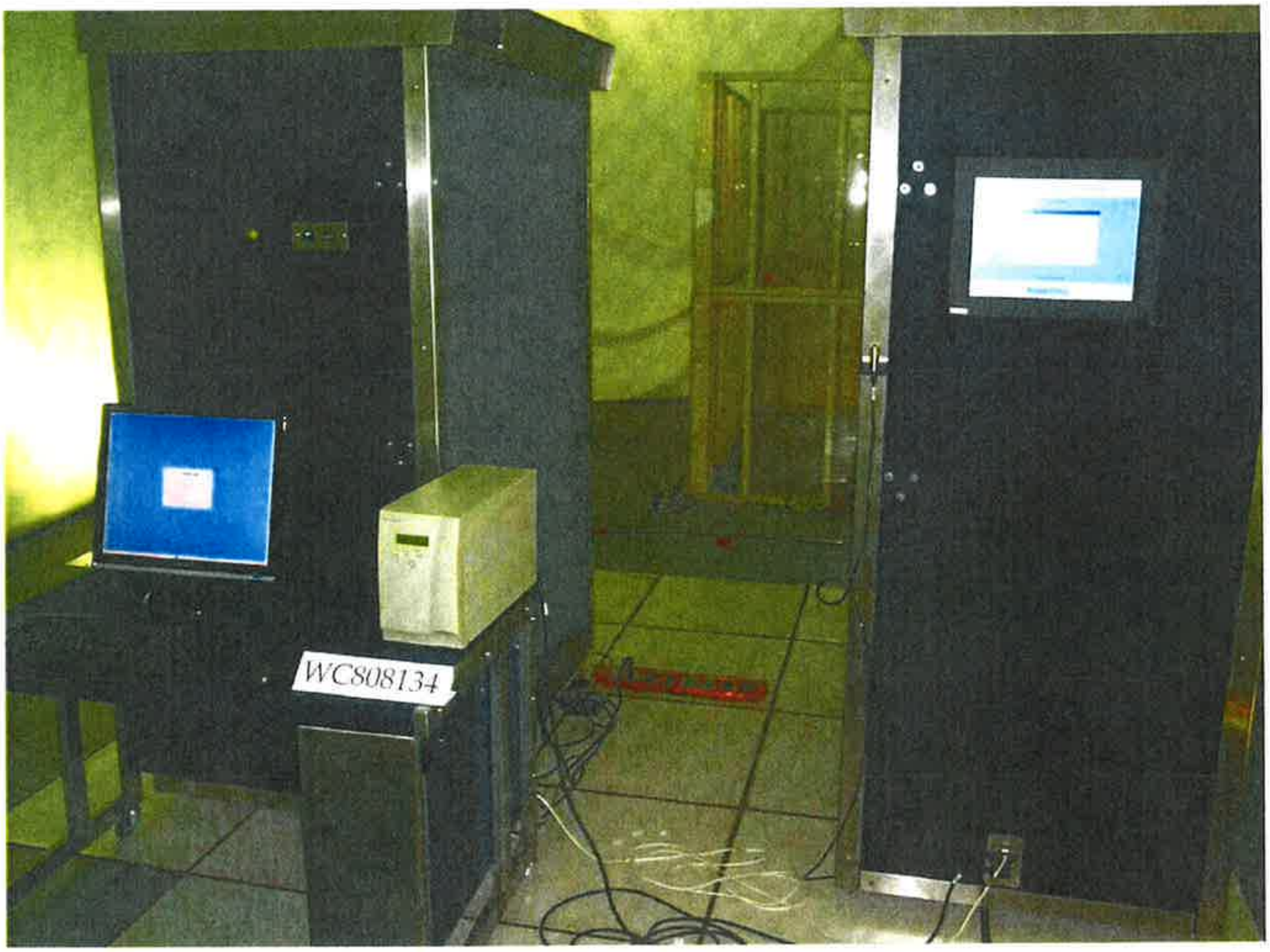
EUT Received Date:	26 January 2009
Condition of EUT:	Normal
Testing Start Date:	26 January 2009
Testing End Date:	28 January 2009

Test-setup photo(s):
Conducted emission 150 kHz - 30 MHz



Test-setup photo(s):
Conducted emission 150 kHz - 30 MHz

Test-setup photo(s):
Radiated emission 30 MHz - 15000 MHz



Test-setup photo(s):
Radiated emission 30 MHz - 15000 MHz

Appendix A

Test Data Sheets

and

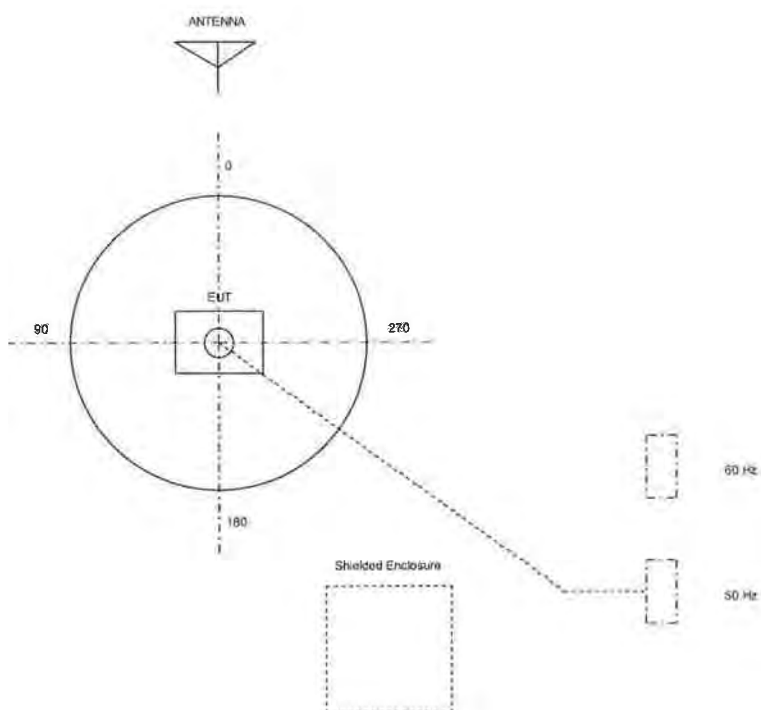
Test Setup Drawing(s)

TEST SETUP FOR EMISSIONS TESTING

TUV PRODUCT SERVICE
Medium Test Site

Notes:

1. Items shown in dotted lines are located on the floor below the test area. It is 5 meters vertically from the ground floor to test area.
2. 50 Hz and 60 Hz are power panels for alternating current.
3. The antenna may be positioned horizontally 3 or 10 meters from the center of the turntable.
4. The circle is a 6.7 meter diameter turntable.
5. A ground plane is in the plane of this sheet.
6. The test sample is shown in the azimuthal position representing zero degrees.



CONDUCTED EMISSIONS

TÜV SÜD America

Test Report #: WC808134 Run 4 | Test Area: OWL

EUT Model #: Secure 1000 | Date: 1/27/2009

EUT Serial #: n/a | EUT Power: 120 V / 60 Hz | Temperature: 22.0 °C

Test Method: FCC A, CISPR22 A | Air Pressure: 100.0 kPa

Customer: Rapiscan | Rel. Humidity: 15.0 %

EUT Description: High Speed Screening system

Notes: Scanners pwrd through UPS

Data File Name: 808134Final.dat | Page: 1 of 6

List of measurements for run #: 4

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV)	EUT Lead	DELTA1 EN55011 A Grp1 Avg	DELTA2 EN55011 A Grp1 Qp
Start of Test (120 V / 60 Hz only)						
150.0 kHz	45.58 Qp	0.12 / 2.9 / 0.0 / 0.0	48.6	L1	n/a	-30.4
150.0 kHz	33.78 Av	0.12 / 2.9 / 0.0 / 0.0	36.8	L1	-29.2	n/a
177.89 kHz	42.23 Qp	0.13 / 2.34 / 0.0 / 0.0	44.71	L1	n/a	-34.29
177.89 kHz	32.46 Av	0.13 / 2.34 / 0.0 / 0.0	34.94	L1	-31.06	n/a
202.75 kHz	40.3 Qp	0.15 / 1.89 / 0.0 / 0.0	42.34	L1	n/a	-36.66
202.75 kHz	32.28 Av	0.15 / 1.89 / 0.0 / 0.0	34.32	L1	-31.68	n/a
228.71 kHz	37.5 Qp	0.16 / 1.81 / 0.0 / 0.0	39.47	L1	n/a	-39.53
228.71 kHz	30.99 Av	0.16 / 1.81 / 0.0 / 0.0	32.96	L1	-33.04	n/a
304.58 kHz	34.88 Qp	0.19 / 1.57 / 0.0 / 0.0	36.64	L1	n/a	-42.36
304.58 kHz	28.98 Av	0.19 / 1.57 / 0.0 / 0.0	30.74	L1	-35.26	n/a
556.22 kHz	34.78 Qp	0.24 / 0.06 / 0.0 / 0.0	35.07	L1	n/a	-37.93
556.22 kHz	28.37 Av	0.24 / 0.06 / 0.0 / 0.0	28.66	L1	-31.34	n/a
633.81 kHz	33.39 Qp	0.25 / 0.02 / 0.0 / 0.0	33.66	L1	n/a	-39.34
633.81 kHz	27.14 Av	0.25 / 0.02 / 0.0 / 0.0	27.41	L1	-32.59	n/a
832.97 kHz	29.02 Qp	0.28 / 0.02 / 0.0 / 0.0	29.31	L1	n/a	-43.69
832.97 kHz	22.73 Av	0.28 / 0.02 / 0.0 / 0.0	23.02	L1	-36.98	n/a
887.12 kHz	22.82 Qp	0.29 / 0.01 / 0.0 / 0.0	23.12	L1	n/a	-49.88
887.12 kHz	22.91 Av	0.29 / 0.01 / 0.0 / 0.0	23.21	L1	-36.79	n/a
1.392 MHz	29.07 Qp	0.35 / 0.01 / 0.0 / 0.0	29.43	L1	n/a	-43.57
1.392 MHz	22.26 Av	0.35 / 0.01 / 0.0 / 0.0	22.62	L1	-37.38	n/a
2.659 MHz	30.27 Qp	0.49 / 0.02 / 0.0 / 0.0	30.77	L1	n/a	-42.23
2.659 MHz	23.05 Av	0.49 / 0.02 / 0.0 / 0.0	23.55	L1	-36.45	n/a
5.85 MHz	37.77 Qp	0.74 / 0.03 / 0.0 / 0.0	38.54	L1	n/a	-34.46
5.85 MHz	33.65 Av	0.74 / 0.03 / 0.0 / 0.0	34.42	L1	-25.58	n/a
14.656 MHz	29.38 Qp	1.16 / 0.08 / 0.0 / 0.0	30.62	L1	n/a	-42.38
14.656 MHz	19.99 Av	1.16 / 0.08 / 0.0 / 0.0	21.23	L1	-38.77	n/a
25.92 MHz	10.63 Qp	1.56 / 0.21 / 0.0 / 0.0	12.39	L1	n/a	-60.61

(b) (6) [redacted]

Tested by: [redacted]

Printed Signature

(b) (6) [redacted]

Reviewed by:

Printed Signature

CONDUCTED EMISSIONS

TÜV SÜD America

Test Report #: WC808134 Run 4 | Test Area: OWL

EUT Model #: Secure 1000 | Date: 1/27/2009

EUT Serial #: n/a | EUT Power: 120 V / 60 Hz | Temperature: 22.0 °C

Test Method: FCC A, CISPR22 A | Air Pressure: 100.0 kPa

Customer: Rapiscan | Rel. Humidity: 15.0 %

EUT Description: High Speed Screening system

Notes: Scanners pwrd through UPS

Data File Name: 808134Final.dat | Page: 2 of 6

List of measurements for run #: 4

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV)	EUT Lead	DELTA1 EN55011 A Grp1 Avg	DELTA2 EN55011 A Grp1 Qp
25.92 MHz	10.5 Av	1.56 / 0.21 / 0.0 / 0.0	12.26	L1	-47.74	n/a
150.0 kHz	46.62 Qp	0.12 / 2.9 / 0.0 / 0.0	49.64	L2	n/a	-29.36
150.0 kHz	32.06 Av	0.12 / 2.9 / 0.0 / 0.0	35.08	L2	-30.92	n/a
177.89 kHz	41.66 Qp	0.13 / 2.34 / 0.0 / 0.0	44.14	L2	n/a	-34.86
177.89 kHz	30.78 Av	0.13 / 2.34 / 0.0 / 0.0	33.26	L2	-32.74	n/a
202.75 kHz	38.76 Qp	0.15 / 1.89 / 0.0 / 0.0	40.8	L2	n/a	-38.2
202.75 kHz	29.24 Av	0.15 / 1.89 / 0.0 / 0.0	31.28	L2	-34.72	n/a
228.71 kHz	35.7 Qp	0.16 / 1.81 / 0.0 / 0.0	37.67	L2	n/a	-41.33
228.71 kHz	28.25 Av	0.16 / 1.81 / 0.0 / 0.0	30.22	L2	-35.78	n/a
304.58 kHz	31.84 Qp	0.19 / 1.57 / 0.0 / 0.0	33.6	L2	n/a	-45.4
304.58 kHz	26.07 Av	0.19 / 1.57 / 0.0 / 0.0	27.83	L2	-38.17	n/a
556.22 kHz	30.97 Qp	0.24 / 0.06 / 0.0 / 0.0	31.26	L2	n/a	-41.74
556.22 kHz	24.59 Av	0.24 / 0.06 / 0.0 / 0.0	24.88	L2	-35.12	n/a
633.81 kHz	29.35 Qp	0.25 / 0.02 / 0.0 / 0.0	29.62	L2	n/a	-43.38
633.81 kHz	23.08 Av	0.25 / 0.02 / 0.0 / 0.0	23.35	L2	-36.65	n/a
832.97 kHz	28.95 Qp	0.28 / 0.02 / 0.0 / 0.0	29.24	L2	n/a	-43.76
832.97 kHz	22.5 Av	0.28 / 0.02 / 0.0 / 0.0	22.79	L2	-37.21	n/a
887.12 kHz	29.11 Qp	0.29 / 0.01 / 0.0 / 0.0	29.41	L2	n/a	-43.59
887.12 kHz	22.58 Av	0.29 / 0.01 / 0.0 / 0.0	22.88	L2	-37.12	n/a
1.392 MHz	28.74 Qp	0.35 / 0.01 / 0.0 / 0.0	29.1	L2	n/a	-43.9
1.392 MHz	21.39 Av	0.35 / 0.01 / 0.0 / 0.0	21.75	L2	-38.25	n/a
2.659 MHz	28.22 Qp	0.49 / 0.02 / 0.0 / 0.0	28.72	L2	n/a	-44.28
2.659 MHz	20.66 Av	0.49 / 0.02 / 0.0 / 0.0	21.16	L2	-38.84	n/a
5.85 MHz	39.68 Qp	0.74 / 0.03 / 0.0 / 0.0	40.45	L2	n/a	-32.55
5.85 MHz	34.46 Av	0.74 / 0.03 / 0.0 / 0.0	35.23	L2	-24.77	n/a
14.656 MHz	22.64 Qp	1.16 / 0.08 / 0.0 / 0.0	23.88	L2	n/a	-49.12
14.656 MHz	15.69 Av	1.16 / 0.08 / 0.0 / 0.0	16.93	L2	-43.07	n/a
25.92 MHz	16.94 Qp	1.56 / 0.21 / 0.0 / 0.0	18.7	L2	n/a	-54.3

(b) (6)

Tested by: [redacted]

Printed Signature

(b) (6)

Reviewed by: [redacted]

Printed Signature

CONDUCTED EMISSIONS

TÜV SÜD America

Test Report #:	WC808134 Run 4	Test Area:	OWL		
EUT Model #:	Secure 1000	Date:	1/27/2009		
EUT Serial #:	n/a	EUT Power:	120 V / 60 Hz	Temperature:	22.0 °C
Test Method:	FCC A, CISPR22 A			Air Pressure:	100.0 kPa
Customer:	Rapiscan			Rel. Humidity:	15.0 %
EUT Description:	High Speed Screening system				
Notes:	Scanners pwrd through UPS				
Data File Name:	808134Final.dat			Page:	3 of 6

List of measurements for run #: 4

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV)	EUT Lead	DELTA1 EN55011 A Grp1 Avg	DELTA2 EN55011 A Grp1 Qp
25.92 MHz	10.12 Av	1.56 / 0.21 / 0.0 / 0.0	11.88	L2	-48.12	n/a

(b) (6)

Tested by: [redacted]
Printed Signature

(b) (6)

Reviewed by: [redacted]
Printed Signature

CONDUCTED EMISSIONS

TÜV SÜD America

Test Report #: WC808134 Run 4

Test Area: OWL

EUT Model #: Secure 1000

Date: 1/27/2009

EUT Serial #: n/a

EUT Power: 120 V / 60 Hz

Temperature: 22.0 °C

Test Method: FCC A, CISPR22 A

Air Pressure: 100.0 kPa

Customer: Rapiscan

Rel. Humidity: 15.0 %

EUT Description: High Speed Screening system

Notes: Scanners pwrd through UPS

Data File Name: 808134Final.dat

Page: 4 of 6

Measurement summary for limit1: EN55011 A Grp1 Avg (Av)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV)	EUT Lead	DELTA1 EN55011 A Grp1 Avg
5.85 MHz	34.46 Av	0.74 / 0.03 / 0.0 / 0.0	35.23	L2	-24.77
150.0 kHz	33.78 Av	0.12 / 2.9 / 0.0 / 0.0	36.8	L1	-29.2
177.89 kHz	32.46 Av	0.13 / 2.34 / 0.0 / 0.0	34.94	L1	-31.06
556.22 kHz	28.37 Av	0.24 / 0.06 / 0.0 / 0.0	28.66	L1	-31.34
202.75 kHz	32.28 Av	0.15 / 1.89 / 0.0 / 0.0	34.32	L1	-31.68
633.81 kHz	27.14 Av	0.25 / 0.02 / 0.0 / 0.0	27.41	L1	-32.59
228.71 kHz	30.99 Av	0.16 / 1.81 / 0.0 / 0.0	32.96	L1	-33.04
304.58 kHz	28.98 Av	0.19 / 1.57 / 0.0 / 0.0	30.74	L1	-35.26
2.659 MHz	23.05 Av	0.49 / 0.02 / 0.0 / 0.0	23.55	L1	-36.45
887.12 kHz	22.91 Av	0.29 / 0.01 / 0.0 / 0.0	23.21	L1	-36.79
832.97 kHz	22.73 Av	0.28 / 0.02 / 0.0 / 0.0	23.02	L1	-36.98
1.392 MHz	22.26 Av	0.35 / 0.01 / 0.0 / 0.0	22.62	L1	-37.38
14.656 MHz	19.99 Av	1.16 / 0.08 / 0.0 / 0.0	21.23	L1	-38.77
25.92 MHz	10.5 Av	1.56 / 0.21 / 0.0 / 0.0	12.26	L1	-47.74

(b) (6)

Tested by: [redacted]

Printed Signature

(b) (6)

Reviewed by: [redacted]

Printed Signature

CONDUCTED EMISSIONS

TÜV SÜD America

Test Report #:	WC808134 Run 4	Test Area:	OWL		
EUT Model #:	Secure 1000	Date:	1/27/2009		
EUT Serial #:	n/a	EUT Power:	120 V / 60 Hz	Temperature:	22.0 °C
Test Method:	FCC A, CISPR22 A			Air Pressure:	100.0 kPa
Customer:	Rapiscan			Rel. Humidity:	15.0 %
EUT Description:	High Speed Screening system				
Notes:	Scanners pwrd through UPS				
Data File Name:	808134Final.dat			Page:	5 of 6

Measurement summary for limit2: EN55011 A Grp1 Qp (Qp)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV)	EUT Lead	DELTA2 EN55011 A Grp1 Qp
150.0 kHz	46.62 Qp	0.12 / 2.9 / 0.0 / 0.0	49.64	L2	-29.36
5.85 MHz	39.68 Qp	0.74 / 0.03 / 0.0 / 0.0	40.45	L2	-32.55
177.89 kHz	42.23 Qp	0.13 / 2.34 / 0.0 / 0.0	44.71	L1	-34.29
202.75 kHz	40.3 Qp	0.15 / 1.89 / 0.0 / 0.0	42.34	L1	-36.66
556.22 kHz	34.78 Qp	0.24 / 0.06 / 0.0 / 0.0	35.07	L1	-37.93
633.81 kHz	33.39 Qp	0.25 / 0.02 / 0.0 / 0.0	33.66	L1	-39.34
228.71 kHz	37.5 Qp	0.16 / 1.81 / 0.0 / 0.0	39.47	L1	-39.53
2.659 MHz	30.27 Qp	0.49 / 0.02 / 0.0 / 0.0	30.77	L1	-42.23
304.58 kHz	34.88 Qp	0.19 / 1.57 / 0.0 / 0.0	36.64	L1	-42.36
14.656 MHz	29.38 Qp	1.16 / 0.08 / 0.0 / 0.0	30.62	L1	-42.38
1.392 MHz	29.07 Qp	0.35 / 0.01 / 0.0 / 0.0	29.43	L1	-43.57
887.12 kHz	29.11 Qp	0.29 / 0.01 / 0.0 / 0.0	29.41	L2	-43.59
832.97 kHz	29.02 Qp	0.28 / 0.02 / 0.0 / 0.0	29.31	L1	-43.69
25.92 MHz	16.94 Qp	1.56 / 0.21 / 0.0 / 0.0	18.7	L2	-54.3

Tested by: (b) (6) [redacted]

Printed Signature

Reviewed by: (b) (6) [redacted]

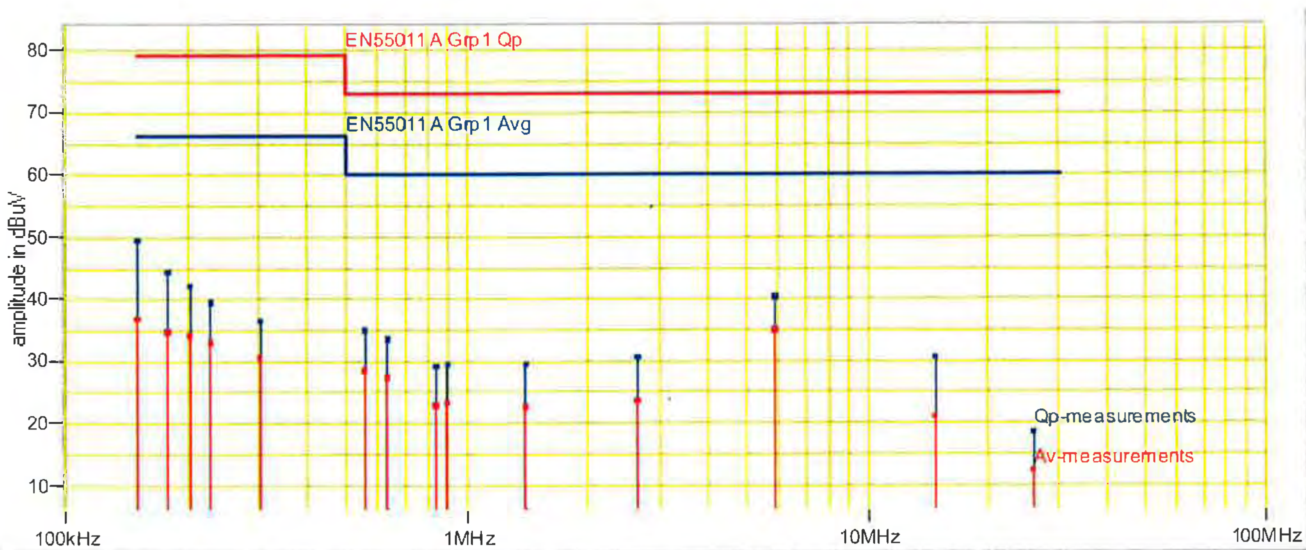
Printed Signature

CONDUCTED EMISSIONS

TÜV SÜD America

Test Report #:	WC808134 Run 4	Test Area:	OWL		
EUT Model #:	Secure 1000	Date:	1/27/2009		
EUT Serial #:	n/a	EUT Power:	120 V / 60 Hz	Temperature:	22.0 °C
Test Method:	FCC A, CISPR22 A			Air Pressure:	100.0 kPa
Customer:	Rapiscan			Rel. Humidity:	15.0 %
EUT Description:	High Speed Screening system				
Notes:	Scanners pwrd through UPS				
Data File Name:	808134Final.dat			Page:	6 of 6

Graph:



Tested by: [redacted]

Printed Signature

Reviewed by: [redacted]

Printed Signature

CONDUCTED EMISSIONS

TÜV SÜD America

Test Report #: WC808134 Run 5
Test Area: OWL
EUT Model #: Secure 1000
Date: 1/27/2009
EUT Serial #: n/a
EUT Power: 120 V / 60 Hz
Temperature: 22.0 °C
Test Method: FCC A, CISPR22 A
Air Pressure: 100.0 kPa
Customer: Rapiscan
Rel. Humidity: 15.0 %
EUT Description: High Speed Screening system
Notes: Dual Scanner Configuration with UPS and Remote PC. Remote workstation's ethernet
Data File Name: 808134Final.dat
Page: 1 of 5

List of measurements for run #: 5

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV)	EUT Lead	DELTA1 22-QP-A-TEL-V	DELTA2 22-AV-A-TEL-V
Start Scan of Operators PC (Inspector)						
153.8 kHz	28.2 Qp	0.12 / 9.9 / 0.0 / 0.0	38.22	Ethernet (Inspector PC)	-58.57	n/a
153.8 kHz	28.29 Av	0.12 / 9.9 / 0.0 / 0.0	38.31	Ethernet (Inspector PC)	n/a	-45.48
247.95 kHz	46.3 Qp	0.17 / 9.9 / 0.0 / 0.0	56.37	Ethernet (Inspector PC)	-36.46	n/a
247.95 kHz	41.85 Av	0.17 / 9.9 / 0.0 / 0.0	51.92	Ethernet (Inspector PC)	n/a	-27.91
2.1 MHz	48.73 Qp	0.43 / 9.9 / 0.0 / 0.0	59.06	Ethernet (Inspector PC)	-27.94	n/a
2.1 MHz	43.09 Av	0.43 / 9.9 / 0.0 / 0.0	53.42	Ethernet (Inspector PC)	n/a	-20.58
4.829 MHz	44.84 Qp	0.68 / 9.94 / 0.0 / 0.0	55.45	Ethernet (Inspector PC)	-31.55	n/a
4.829 MHz	39.28 Av	0.68 / 9.94 / 0.0 / 0.0	49.89	Ethernet (Inspector PC)	n/a	-24.11
20.29 MHz	31.66 Qp	1.38 / 10.21 / 0.0 / 0.0	43.25	Ethernet (Inspector PC)	-43.75	n/a
20.29 MHz	27.52 Av	1.38 / 10.21 / 0.0 / 0.0	39.11	Ethernet (Inspector PC)	n/a	-34.89
21.54 MHz	33.73 Qp	1.43 / 10.23 / 0.0 / 0.0	45.39	Ethernet (Inspector PC)	-41.61	n/a
21.54 MHz	30.37 Av	1.43 / 10.23 / 0.0 / 0.0	42.03	Ethernet (Inspector PC)	n/a	-31.97
26.549 MHz	45.14 Qp	1.58 / 10.33 / 0.0 / 0.0	57.05	Ethernet (Inspector PC)	-29.95	n/a
26.549 MHz	41.46 Av	1.58 / 10.33 / 0.0 / 0.0	53.37	Ethernet (Inspector PC)	n/a	-20.63

(b) (6)

Tested by: [redacted]
Printed Signature

(b) (6)

Reviewed by: [redacted]
Printed Signature

CONDUCTED EMISSIONS

TÜV SÜD America

Test Report #:	WC808134 Run 5	Test Area:	OWL		
EUT Model #:	Secure 1000	Date:	1/27/2009		
EUT Serial #:	n/a	EUT Power:	120 V / 60 Hz	Temperature:	22.0 °C
Test Method:	FCC A, CISPR22 A			Air Pressure:	100.0 kPa
Customer:	Rapiscan			Rel. Humidity:	15.0 %
EUT Description:	High Speed Screening system				
Notes:	Dual Scanner Configuration with UPS and Remote PC. Remote workstation's ethernet				
Data File Name:	808134Final.dat			Page:	2 of 5

List of measurements for run #: 5

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV)	EUT Lead	DELTA1 22-QP-A-TEL-V	DELTA2 22-AV-A-TEL-V
18.303 MHz	46.59 Qp	1.31 / 10.17 / 0.0 / 0.0	58.06	Ethernet (Inspector PC)	-28.94	n/a
18.303 MHz	43.61 Av	1.31 / 10.17 / 0.0 / 0.0	55.08	Ethernet (Inspector PC)	n/a	-18.92

(b) (6)

Tested by: [redacted]

Printed Signature

(b) (6)

Reviewed by: [redacted]

Printed Signature

CONDUCTED EMISSIONS

TÜV SÜD America

Test Report #:	WC808134 Run 5	Test Area:	OWL		
EUT Model #:	Secure 1000	Date:	1/27/2009		
EUT Serial #:	n/a	EUT Power:	120 V / 60 Hz	Temperature:	22.0 °C
Test Method:	FCC A, CISPR22 A			Air Pressure:	100.0 kPa
Customer:	Rapiscan			Rel. Humidity:	15.0 %
EUT Description:	High Speed Screening system				
Notes:	Dual Scanner Configuration with UPS and Remote PC. Remote workstation's ethernet				
Data File Name:	808134Final.dat			Page:	3 of 5

Measurement summary for limit1: 22-QP-A-TEL-V (Qp)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV)	EUT Lead	DELTA1 22-QP-A-TEL-V
2.1 MHz	48.73 Qp	0.43 / 9.9 / 0.0 / 0.0	59.06	Ethernet (Inspector PC)	-27.94
18.303 MHz	46.59 Qp	1.31 / 10.17 / 0.0 / 0.0	58.06	Ethernet (Inspector PC)	-28.94
26.549 MHz	45.14 Qp	1.58 / 10.33 / 0.0 / 0.0	57.05	Ethernet (Inspector PC)	-29.95
4.829 MHz	44.84 Qp	0.68 / 9.94 / 0.0 / 0.0	55.45	Ethernet (Inspector PC)	-31.55
247.95 kHz	46.3 Qp	0.17 / 9.9 / 0.0 / 0.0	56.37	Ethernet (Inspector PC)	-36.46
21.54 MHz	33.73 Qp	1.43 / 10.23 / 0.0 / 0.0	45.39	Ethernet (Inspector PC)	-41.61
20.29 MHz	31.66 Qp	1.38 / 10.21 / 0.0 / 0.0	43.25	Ethernet (Inspector PC)	-43.75
153.8 kHz	28.2 Qp	0.12 / 9.9 / 0.0 / 0.0	38.22	Ethernet (Inspector PC)	-58.57

(b) (6)

Tested by: [redacted]

Printed Signature

(b) (6)

Reviewed by: [redacted]

Printed Signature

CONDUCTED EMISSIONS

TÜV SÜD America

Test Report #:	WC808134 Run 5	Test Area:	OWL
EUT Model #:	Secure 1000	Date:	1/27/2009
EUT Serial #:	n/a	EUT Power:	120 V / 60 Hz
Test Method:	FCC A, CISPR22 A		
Customer:	Rapiscan		

Temperature: 22.0 °C
Air Pressure: 100.0 kPa
Rel. Humidity: 15.0 %

EUT Description: High Speed Screening system

Notes: Dual Scanner Configuration with UPS and Remote PC.
Remote workstation's ethernet

Data File Name: 808134Final.dat

Page: 4 of 5

Measurement summary for limit2: 22-AV-A-TEL-V (Av)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV)	EUT Lead	DELTA2 22-AV-A-TEL-V
18.303 MHz	43.61 Av	1.31 / 10.17 / 0.0 / 0.0	55.08	Ethernet (Inspector PC)	-18.92
2.1 MHz	43.09 Av	0.43 / 9.9 / 0.0 / 0.0	53.42	Ethernet (Inspector PC)	-20.58
26.549 MHz	41.46 Av	1.58 / 10.33 / 0.0 / 0.0	53.37	Ethernet (Inspector PC)	-20.63
4.829 MHz	39.28 Av	0.68 / 9.94 / 0.0 / 0.0	49.89	Ethernet (Inspector PC)	-24.11
247.95 kHz	41.85 Av	0.17 / 9.9 / 0.0 / 0.0	51.92	Ethernet (Inspector PC)	-27.91
21.54 MHz	30.37 Av	1.43 / 10.23 / 0.0 / 0.0	42.03	Ethernet (Inspector PC)	-31.97
20.29 MHz	27.52 Av	1.38 / 10.21 / 0.0 / 0.0	39.11	Ethernet (Inspector PC)	-34.89
153.8 kHz	28.29 Av	0.12 / 9.9 / 0.0 / 0.0	38.31	Ethernet (Inspector PC)	-45.48

(b) (6)

Tested by: [redacted]
Printed Signature

(b) (6)

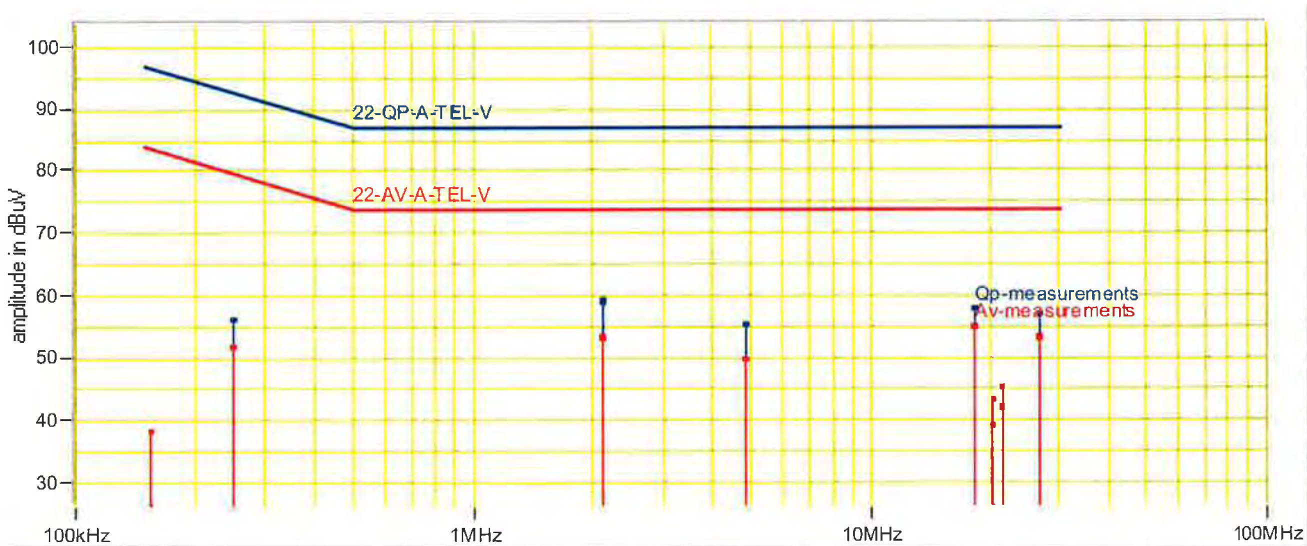
Reviewed by: [redacted]
Printed Signature

CONDUCTED EMISSIONS

TÜV SÜD America

Test Report #:	WC808134 Run 5	Test Area:	OWL		
EUT Model #:	Secure 1000	Date:	1/27/2009		
EUT Serial #:	n/a	EUT Power:	120 V / 60 Hz	Temperature:	22.0 °C
Test Method:	FCC A, CISPR22 A			Air Pressure:	100.0 kPa
Customer:	Rapiscan			Rel. Humidity:	15.0 %
EUT Description:	High Speed Screening system				
Notes:	Dual Scanner Configuration with UPS and Remote PC. Remote workstation's ethernet				
Data File Name:	808134Final.dat			Page:	5 of 5

Graph:



Tested by: [redacted]

Printed Signature

Reviewed by: [redacted]

Printed Signature

CONDUCTED EMISSIONS

TÜV SÜD America

Test Report #: WC808134 Run 7 | Test Area: OWL

EUT Model #: Secure 1000 | Date: 1/28/2009

EUT Serial #: n/a | EUT Power: 120 V / 60 Hz | Temperature: 22.0 °C

Test Method: FCC A, CISPR22 A | Air Pressure: 100.0 kPa

Customer: Rapiscan | Rel. Humidity: 15.0 %

EUT Description: High Speed Screening system

Notes: Dual Scanner Configuration with UPS and remote Workstation. Conducted on Ethernet switch for Remote Workstation.

Data File Name: 808134Final.dat | Page: 1 of 5

List of measurements for run #: 7

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV)	EUT Lead	DELTA1 EN55022 A Qp	DELTA2 EN55022 A Avg
Start of Conducted (120 Volts only)						
150.0 kHz	71.12 Qp	0.12 / 0.4 / 0.0 / 0.0	71.64	L1	-7.36	n/a
150.0 kHz	41.84 Av	0.12 / 0.4 / 0.0 / 0.0	42.36	L1	n/a	-23.64
328.32 kHz	62.17 Qp	0.2 / 0.22 / 0.0 / 0.0	62.59	L1	-16.41	n/a
328.32 kHz	38.57 Av	0.2 / 0.22 / 0.0 / 0.0	38.99	L1	n/a	-27.01
655.09 kHz	50.85 Qp	0.25 / 0.23 / 0.0 / 0.0	51.33	L1	-21.67	n/a
655.09 kHz	32.43 Av	0.25 / 0.23 / 0.0 / 0.0	32.91	L1	n/a	-27.09
2.294 MHz	35.32 Qp	0.45 / 0.2 / 0.0 / 0.0	35.97	L1	-37.03	n/a
2.294 MHz	28.62 Av	0.45 / 0.2 / 0.0 / 0.0	29.27	L1	n/a	-30.73
6.952 MHz	23.04 Qp	0.81 / 0.4 / 0.0 / 0.0	24.24	L1	-48.76	n/a
6.952 MHz	15.73 Av	0.81 / 0.4 / 0.0 / 0.0	16.93	L1	n/a	-43.07
8.353 MHz	26.57 Qp	0.89 / 0.53 / 0.0 / 0.0	27.99	L1	-45.01	n/a
8.353 MHz	20.49 Av	0.89 / 0.53 / 0.0 / 0.0	21.91	L1	n/a	-38.09
16.132 MHz	29.01 Qp	1.22 / 1.11 / 0.0 / 0.0	31.34	L1	-41.66	n/a
16.132 MHz	21.51 Av	1.22 / 1.11 / 0.0 / 0.0	23.84	L1	n/a	-36.16
20.93 MHz	28.45 Qp	1.41 / 1.65 / 0.0 / 0.0	31.51	L1	-41.49	n/a
20.93 MHz	19.28 Av	1.41 / 1.65 / 0.0 / 0.0	22.34	L1	n/a	-37.66
25.665 MHz	24.76 Qp	1.55 / 1.78 / 0.0 / 0.0	28.09	L1	-44.91	n/a
25.665 MHz	15.92 Av	1.55 / 1.78 / 0.0 / 0.0	19.25	L1	n/a	-40.75
150.0 kHz	70.7 Qp	0.12 / 0.4 / 0.0 / 0.0	71.22	L2	-7.78	n/a
150.0 kHz	42.7 Av	0.12 / 0.4 / 0.0 / 0.0	43.22	L2	n/a	-22.78
328.32 kHz	61.59 Qp	0.2 / 0.22 / 0.0 / 0.0	62.01	L2	-16.99	n/a
328.32 kHz	38.03 Av	0.2 / 0.22 / 0.0 / 0.0	38.45	L2	n/a	-27.55
655.09 kHz	49.99 Qp	0.25 / 0.23 / 0.0 / 0.0	50.47	L2	-22.53	n/a
655.09 kHz	31.9 Av	0.25 / 0.23 / 0.0 / 0.0	32.38	L2	n/a	-27.62
2.294 MHz	30.31 Qp	0.45 / 0.2 / 0.0 / 0.0	30.96	L2	-42.04	n/a
2.294 MHz	21.34 Av	0.45 / 0.2 / 0.0 / 0.0	21.99	L2	n/a	-38.01
6.952 MHz	19.47 Qp	0.81 / 0.4 / 0.0 / 0.0	20.67	L2	-52.33	n/a

(b) (6)

Tested by: [redacted]

Printed Signature

(b) (6)

Reviewed by: [redacted]

Printed Signature

CONDUCTED EMISSIONS

TÜV SÜD America

Test Report #: WC808134 Run 7 Test Area: OWL

EUT Model #: Secure 1000 Date: 1/28/2009

EUT Serial #: n/a EUT Power: 120 V / 60 Hz Temperature: 22.0 °C

Test Method: FCC A, CISPR22 A Air Pressure: 100.0 kPa

Customer: Rapiscan Rel. Humidity: 15.0 %

EUT Description: High Speed Screening system

Notes: Dual Scanner Configuration with UPS and remote Workstation.
Conducted on Ethernet switch for Remote Workstation

Data File Name: 808134Final.dat Page: 2 of 5

List of measurements for run #: 7

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV)	EUT Lead	DELTA1 EN55022 A Qp	DELTA2 EN55022 A Avg
6.952 MHz	13.24 Av	0.81 / 0.4 / 0.0 / 0.0	14.44	L2	n/a	-45.56
8.353 MHz	24.49 Qp	0.89 / 0.53 / 0.0 / 0.0	25.91	L2	-47.09	n/a
8.353 MHz	17.86 Av	0.89 / 0.53 / 0.0 / 0.0	19.28	L2	n/a	-40.72
16.132 MHz	27.3 Qp	1.22 / 1.11 / 0.0 / 0.0	29.63	L2	-43.37	n/a
16.132 MHz	19.31 Av	1.22 / 1.11 / 0.0 / 0.0	21.64	L2	n/a	-38.36
20.93 MHz	23.36 Qp	1.41 / 1.65 / 0.0 / 0.0	26.42	L2	-46.58	n/a
20.93 MHz	14.85 Av	1.41 / 1.65 / 0.0 / 0.0	17.91	L2	n/a	-42.09
25.665 MHz	19.62 Qp	1.55 / 1.78 / 0.0 / 0.0	22.95	L2	-50.05	n/a
25.665 MHz	10.93 Av	1.55 / 1.78 / 0.0 / 0.0	14.26	L2	n/a	-45.74

(b) (6) [redacted]

Tested by: ______ Printed ______ Signature

(b) (6) [redacted]

Reviewed by: ______ Printed ______ Signature

CONDUCTED EMISSIONS

TÜV SÜD America

Test Report #: WC808134 Run 7 | Test Area: OWL

EUT Model #: Secure 1000 | Date: 1/28/2009

EUT Serial #: n/a | EUT Power: 120 V / 60 Hz | Temperature: 22.0 °C

Test Method: FCC A, CISPR22 A | Air Pressure: 100.0 kPa

Customer: Rapiscan | Rel. Humidity: 15.0 %

EUT Description: High Speed Screening system

Notes: Dual Scanner Configuration with UPS and remote Workstation.
Conducted on Ethernet switch for Remote Workstation

Data File Name: 808134Final.dat | Page: 3 of 5

Measurement summary for limit1: EN55022 A Qp (Qp)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV)	EUT Lead	DELTA1 EN55022 A Qp
150.0 kHz	71.12 Qp	0.12 / 0.4 / 0.0 / 0.0	71.64	L1	-7.36
328.32 kHz	62.17 Qp	0.2 / 0.22 / 0.0 / 0.0	62.59	L1	-16.41
655.09 kHz	50.85 Qp	0.25 / 0.23 / 0.0 / 0.0	51.33	L1	-21.67
2.294 MHz	35.32 Qp	0.45 / 0.2 / 0.0 / 0.0	35.97	L1	-37.03
20.93 MHz	28.45 Qp	1.41 / 1.65 / 0.0 / 0.0	31.51	L1	-41.49
16.132 MHz	29.01 Qp	1.22 / 1.11 / 0.0 / 0.0	31.34	L1	-41.66
25.665 MHz	24.76 Qp	1.55 / 1.78 / 0.0 / 0.0	28.09	L1	-44.91
8.353 MHz	26.57 Qp	0.89 / 0.53 / 0.0 / 0.0	27.99	L1	-45.01
6.952 MHz	23.04 Qp	0.81 / 0.4 / 0.0 / 0.0	24.24	L1	-48.76

(b) (6) [redacted]

Tested by: ______ Printed ______ Signature

(b) (6) [redacted]

Reviewed by: ______ Printed ______ Signature

CONDUCTED EMISSIONS

TÜV SÜD America

Test Report #:	WC808134 Run 7	Test Area:	OWL		
EUT Model #:	Secure 1000	Date:	1/28/2009		
EUT Serial #:	n/a	EUT Power:	120 V / 60 Hz	Temperature:	22.0 °C
Test Method:	FCC A, CISPR22 A			Air Pressure:	100.0 kPa
Customer:	Rapiscan			Rel. Humidity:	15.0 %
EUT Description:	High Speed Screening system				
Notes:	Dual Scanner Configuration with UPS and remote Workstation. Conducted on Ethernet switch for Remote Workstation				
Data File Name:	808134Final.dat			Page:	4 of 5

Measurement summary for limit2: EN55022 A Avg (Av)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV)	EUT Lead	DELTA2 EN55022 A Avg
150.0 kHz	42.7 Av	0.12 / 0.4 / 0.0 / 0.0	43.22	L2	-22.78
328.32 kHz	38.57 Av	0.2 / 0.22 / 0.0 / 0.0	38.99	L1	-27.01
655.09 kHz	32.43 Av	0.25 / 0.23 / 0.0 / 0.0	32.91	L1	-27.09
2.294 MHz	28.62 Av	0.45 / 0.2 / 0.0 / 0.0	29.27	L1	-30.73
16.132 MHz	21.51 Av	1.22 / 1.11 / 0.0 / 0.0	23.84	L1	-36.16
20.93 MHz	19.28 Av	1.41 / 1.65 / 0.0 / 0.0	22.34	L1	-37.66
8.353 MHz	20.49 Av	0.89 / 0.53 / 0.0 / 0.0	21.91	L1	-38.09
25.665 MHz	15.92 Av	1.55 / 1.78 / 0.0 / 0.0	19.25	L1	-40.75
6.952 MHz	15.73 Av	0.81 / 0.4 / 0.0 / 0.0	16.93	L1	-43.07

(b) (6) [redacted]

Tested by: Printed Signature

(b) (6) [redacted]

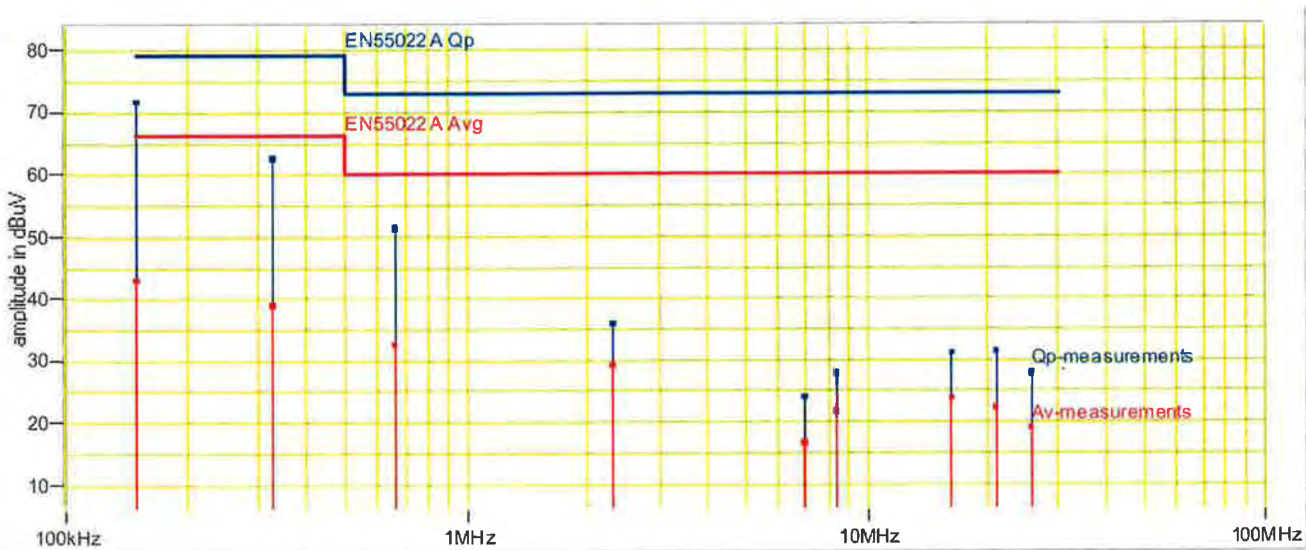
Reviewed by: Printed Signature

CONDUCTED EMISSIONS

TÜV SÜD America

Test Report #:	WC808134 Run 7	Test Area:	OWL		
EUT Model #:	Secure 1000	Date:	1/28/2009		
EUT Serial #:	n/a	EUT Power:	120 V / 60 Hz	Temperature:	22.0 °C
Test Method:	FCC A, CISPR22 A			Air Pressure:	100.0 kPa
Customer:	Rapiscan			Rel. Humidity:	15.0 %
EUT Description:	High Speed Screening system				
Notes:	Dual Scanner Configuration with UPS and remote Workstation. Conducted on Ethernet switch for Remote Workstation				
Data File Name:	808134Final.dat			Page:	5 of 5

Graph:



Tested by: [redacted]
Printed Signature

Reviewed by: [redacted]
Printed Signature

CONDUCTED EMISSIONS

TÜV SÜD America

Test Report #: WC808134 Run 8 Test Area: OWL

EUT Model #: Secure 1000 Date: 1/28/2009

EUT Serial #: n/a EUT Power: 120 V / 60 Hz Temperature: 22.0 °C

Test Method: FCC A, CISPR22 A Air Pressure: 100.0 kPa

Customer: Rapiscan Rel. Humidity: 15.0 %

EUT Description: High Speed Screening system

Notes: Dual Scanner Configuration with UPS and remote Workstation. Conducted on Remote Workstation

Data File Name: 808134Final.dat Page: 1 of 6

List of measurements for run #: 8

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV)	EUT Lead	DELTA1 EN55022 A Qp	DELTA2 EN55022 A Avg
Start of Conducted Test (120 V / 60 Hz)						
150.0 kHz	35.53 Qp	0.12 / 0.4 / 0.0 / 0.0	36.05	L1	-42.95	n/a
150.0 kHz	29.61 Av	0.12 / 0.4 / 0.0 / 0.0	30.13	L1	n/a	-35.87
1.891 MHz	22.79 Qp	0.41 / 0.22 / 0.0 / 0.0	23.42	L1	-49.58	n/a
1.891 MHz	21.49 Av	0.41 / 0.22 / 0.0 / 0.0	22.12	L1	n/a	-37.88
8.876 MHz	38.14 Qp	0.92 / 0.57 / 0.0 / 0.0	39.63	L1	-33.37	n/a
8.876 MHz	29.13 Av	0.92 / 0.57 / 0.0 / 0.0	30.62	L1	n/a	-29.38
25.839 MHz	30.24 Qp	1.56 / 1.75 / 0.0 / 0.0	33.55	L1	-39.45	n/a
25.839 MHz	19.95 Av	1.56 / 1.75 / 0.0 / 0.0	23.26	L1	n/a	-36.74
189.13 kHz	29.72 Qp	0.14 / 0.35 / 0.0 / 0.0	30.21	L1	-48.79	n/a
189.13 kHz	24.46 Av	0.14 / 0.35 / 0.0 / 0.0	24.95	L1	n/a	-41.05
10.298 MHz	29.65 Qp	1.0 / 0.67 / 0.0 / 0.0	31.32	L1	-41.68	n/a
10.298 MHz	23.7 Av	1.0 / 0.67 / 0.0 / 0.0	25.37	L1	n/a	-34.63
17.97 MHz	25.01 Qp	1.29 / 1.32 / 0.0 / 0.0	27.63	L1	-45.37	n/a
17.97 MHz	19.73 Av	1.29 / 1.32 / 0.0 / 0.0	22.35	L1	n/a	-37.65
150.0 kHz	35.32 Qp	0.12 / 0.4 / 0.0 / 0.0	35.84	L2	-43.16	n/a
150.0 kHz	27.99 Av	0.12 / 0.4 / 0.0 / 0.0	28.51	L2	n/a	-37.49
189.13 kHz	23.55 Qp	0.14 / 0.35 / 0.0 / 0.0	24.04	L2	-54.96	n/a
189.13 kHz	15.71 Av	0.14 / 0.35 / 0.0 / 0.0	16.2	L2	n/a	-49.8
1.891 MHz	23.3 Qp	0.41 / 0.22 / 0.0 / 0.0	23.93	L2	-49.07	n/a
1.891 MHz	21.54 Av	0.41 / 0.22 / 0.0 / 0.0	22.17	L2	n/a	-37.83
8.876 MHz	37.43 Qp	0.92 / 0.57 / 0.0 / 0.0	38.92	L2	-34.08	n/a
8.876 MHz	28.28 Av	0.92 / 0.57 / 0.0 / 0.0	29.77	L2	n/a	-30.23
10.298 MHz	28.91 Qp	1.0 / 0.67 / 0.0 / 0.0	30.58	L2	-42.42	n/a
10.298 MHz	22.56 Av	1.0 / 0.67 / 0.0 / 0.0	24.23	L2	n/a	-35.77
17.97 MHz	27.98 Qp	1.29 / 1.32 / 0.0 / 0.0	30.6	L2	-42.4	n/a
17.97 MHz	21.91 Av	1.29 / 1.32 / 0.0 / 0.0	24.53	L2	n/a	-35.47
25.839 MHz	18.36 Qp	1.56 / 1.75 / 0.0 / 0.0	21.67	L2	-51.33	n/a

(b) (6)

Tested by: [redacted]

Printed Signature

(b) (6)

Reviewed by: [redacted]

Printed Signature

CONDUCTED EMISSIONS

TÜV SÜD America

Test Report #: WC808134 Run 8

Test Area: OWL

EUT Model #: Secure 1000

Date: 1/28/2009

EUT Serial #: n/a

EUT Power: 120 V / 60 Hz

Temperature: 22.0 °C

Test Method: FCC A, CISPR22 A

Air Pressure: 100.0 kPa

Customer: Rapiscan

Rel. Humidity: 15.0 %

EUT Description: High Speed Screening system

Notes: Dual Scanner Configuration with UPS and remote Workstation.
Conducted on Remote Workstation

Data File Name: 808134Final.dat

List of measurements for run #: 8

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV)	EUT Lead	DELTA1 EN55022 A Qp	DELTA2 EN55022 A Avg
25.839 MHz	10.28 Av	1.56 / 1.75 / 0.0 / 0.0	13.59	L2	n/a	-46.41
230 V / 50 hz						
150.0 kHz	19.56 Qp	0.12 / 0.4 / 0.0 / 0.0	20.08	L2	-58.92	n/a
150.0 kHz	11.05 Av	0.12 / 0.4 / 0.0 / 0.0	11.57	L2	n/a	-54.43
189.13 kHz	27.69 Qp	0.14 / 0.35 / 0.0 / 0.0	28.18	L2	-50.82	n/a
189.13 kHz	27.08 Av	0.14 / 0.35 / 0.0 / 0.0	27.57	L2	n/a	-38.43
1.915 MHz	31.82 Qp	0.41 / 0.22 / 0.0 / 0.0	32.45	L2	-40.55	n/a
1.915 MHz	31.62 Av	0.41 / 0.22 / 0.0 / 0.0	32.25	L2	n/a	-27.75
8.876 MHz	25.33 Qp	0.92 / 0.57 / 0.0 / 0.0	26.82	L2	-46.18	n/a
8.876 MHz	18.16 Av	0.92 / 0.57 / 0.0 / 0.0	19.65	L2	n/a	-40.35
10.298 MHz	17.39 Qp	1.0 / 0.67 / 0.0 / 0.0	19.06	L2	-53.94	n/a
10.298 MHz	17.43 Av	1.0 / 0.67 / 0.0 / 0.0	19.1	L2	n/a	-40.9
17.97 MHz	24.15 Qp	1.29 / 1.32 / 0.0 / 0.0	26.77	L2	-46.23	n/a
17.97 MHz	19.58 Av	1.29 / 1.32 / 0.0 / 0.0	22.2	L2	n/a	-37.8
25.839 MHz	10.81 Qp	1.56 / 1.75 / 0.0 / 0.0	14.12	L2	-58.88	n/a
25.839 MHz	5.32 Av	1.56 / 1.75 / 0.0 / 0.0	8.63	L2	n/a	-51.37
150.0 kHz	12.38 Qp	0.12 / 0.4 / 0.0 / 0.0	12.9	L1	-66.1	n/a
150.0 kHz	11.6 Av	0.12 / 0.4 / 0.0 / 0.0	12.12	L1	n/a	-53.88
189.13 kHz	23.42 Qp	0.14 / 0.35 / 0.0 / 0.0	23.91	L1	-55.09	n/a
189.13 kHz	22.53 Av	0.14 / 0.35 / 0.0 / 0.0	23.02	L1	n/a	-42.98
1.915 MHz	29.97 Qp	0.41 / 0.22 / 0.0 / 0.0	30.6	L1	-42.4	n/a
1.915 MHz	29.64 Av	0.41 / 0.22 / 0.0 / 0.0	30.27	L1	n/a	-29.73
8.876 MHz	24.88 Qp	0.92 / 0.57 / 0.0 / 0.0	26.37	L1	-46.63	n/a
8.876 MHz	17.17 Av	0.92 / 0.57 / 0.0 / 0.0	18.66	L1	n/a	-41.34
10.298 MHz	25.7 Qp	1.0 / 0.67 / 0.0 / 0.0	27.37	L1	-45.63	n/a
10.298 MHz	17.48 Av	1.0 / 0.67 / 0.0 / 0.0	19.15	L1	n/a	-40.85
17.97 MHz	24.42 Qp	1.29 / 1.32 / 0.0 / 0.0	27.04	L1	-45.96	n/a

(b) (6) [redacted]

Tested by: Printed Signature

(b) (6) [redacted]

Reviewed by: Printed Signature

CONDUCTED EMISSIONS

TÜV SÜD America

Test Report #: WC808134 Run 8

Test Area: OWL

EUT Model #: Secure 1000

Date: 1/28/2009

EUT Serial #: n/a

EUT Power: 120 V / 60 Hz

Temperature: 22.0 °C

Test Method: FCC A, CISPR22 A

Air Pressure: 100.0 kPa

Customer: Rapiscan

Rel. Humidity: 15.0 %

EUT Description: High Speed Screening system

Notes: Dual Scanner Configuration with UPS and remote Workstation.
Conducted on Remote Workstation

Data File Name: 808134Final.dat

Page: 3 of 6

List of measurements for run #: 8

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV)	EUT Lead	DELTA1 EN55022 A Qp	DELTA2 EN55022 A Avg
17.97 MHz	19.5 Av	1.29 / 1.32 / 0.0 / 0.0	22.12	L1	n/a	-37.88
25.839 MHz	20.33 Qp	1.56 / 1.75 / 0.0 / 0.0	23.64	L1	-49.36	n/a
25.839 MHz	15.86 Av	1.56 / 1.75 / 0.0 / 0.0	19.17	L1	n/a	-40.83

(b) (6)
Tested by: [redacted]
Printed Signature

(b) (6)
Reviewed by: [redacted]
Printed Signature

CONDUCTED EMISSIONS

TÜV SÜD America

Test Report #: WC808134 Run 8
Test Area: OWL

EUT Model #: Secure 1000
Date: 1/28/2009

EUT Serial #: n/a
EUT Power: 120 V / 60 Hz
Temperature: 22.0 °C

Test Method: FCC A, CISPR22 A
Air Pressure: 100.0 kPa

Customer: Rapiscan
Rel. Humidity: 15.0 %

EUT Description: High Speed Screening system

Notes: Dual Scanner Configuration with UPS and remote Workstation.
Conducted on Remote Workstation

Data File Name: 808134Final.dat
Page: 4 of 6

Measurement summary for limit1: EN55022 A Qp (Qp)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV)	EUT Lead	DELTA1 EN55022 A Qp
8.876 MHz	38.14 Qp	0.92 / 0.57 / 0.0 / 0.0	39.63	L1	-33.37
25.839 MHz	30.24 Qp	1.56 / 1.75 / 0.0 / 0.0	33.55	L1	-39.45
1.915 MHz	31.82 Qp	0.41 / 0.22 / 0.0 / 0.0	32.45	L2	-40.55
10.298 MHz	29.65 Qp	1.0 / 0.67 / 0.0 / 0.0	31.32	L1	-41.68
17.97 MHz	27.98 Qp	1.29 / 1.32 / 0.0 / 0.0	30.6	L2	-42.4
150.0 kHz	35.53 Qp	0.12 / 0.4 / 0.0 / 0.0	36.05	L1	-42.95
189.13 kHz	29.72 Qp	0.14 / 0.35 / 0.0 / 0.0	30.21	L1	-48.79
1.891 MHz	23.3 Qp	0.41 / 0.22 / 0.0 / 0.0	23.93	L2	-49.07

(b) (6)

Tested by: [redacted]
Printed Signature

(b) (6)

Reviewed by: [redacted]
Printed Signature

CONDUCTED EMISSIONS

TÜV SÜD America

Test Report #: WC808134 Run 8
Test Area: OWL

EUT Model #: Secure 1000
Date: 1/28/2009

EUT Serial #: n/a
EUT Power: 120 V / 60 Hz
Temperature: 22.0 °C

Test Method: FCC A, CISPR22 A
Air Pressure: 100.0 kPa

Customer: Rapiscan
Rel. Humidity: 15.0 %

EUT Description: High Speed Screening system

Notes: Dual Scanner Configuration with UPS and remote Workstation. Conducted on Remote Workstation

Data File Name: 808134Final.dat
Page: 5 of 6

Measurement summary for limit2: EN55022 A Avg (Av)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV)	EUT Lead	DELTA2 EN55022 A Avg
1.915 MHz	31.62 Av	0.41 / 0.22 / 0.0 / 0.0	32.25	L2	-27.75
8.876 MHz	29.13 Av	0.92 / 0.57 / 0.0 / 0.0	30.62	L1	-29.38
10.298 MHz	23.7 Av	1.0 / 0.67 / 0.0 / 0.0	25.37	L1	-34.63
17.97 MHz	21.91 Av	1.29 / 1.32 / 0.0 / 0.0	24.53	L2	-35.47
150.0 kHz	29.61 Av	0.12 / 0.4 / 0.0 / 0.0	30.13	L1	-35.87
25.839 MHz	19.95 Av	1.56 / 1.75 / 0.0 / 0.0	23.26	L1	-36.74
1.891 MHz	21.54 Av	0.41 / 0.22 / 0.0 / 0.0	22.17	L2	-37.83
189.13 kHz	27.08 Av	0.14 / 0.35 / 0.0 / 0.0	27.57	L2	-38.43

(b) (6)

Tested by: [redacted]

(b) (6)

Reviewed by: [redacted]

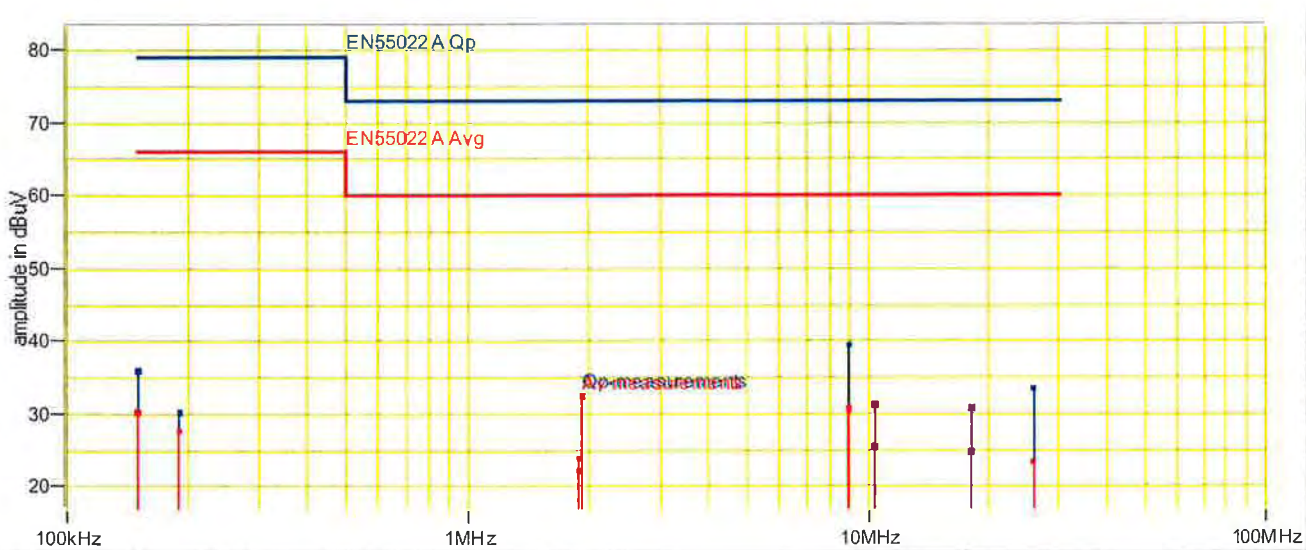
Printed Signature

CONDUCTED EMISSIONS

TÜV SÜD America

Test Report #:	WC808134 Run 8	Test Area:	OWL		
EUT Model #:	Secure 1000	Date:	1/28/2009		
EUT Serial #:	n/a	EUT Power:	120 V / 60 Hz	Temperature:	22.0 °C
Test Method:	FCC A, CISPR22 A			Air Pressure:	100.0 kPa
Customer:	Rapiscan			Rel. Humidity:	15.0 %
EUT Description:	High Speed Screening system				
Notes:	Dual Scanner Configuration with UPS and remote Workstation. Conducted on Remote Workstation				
Data File Name:	808134Final.dat			Page:	6 of 6

Graph:



Tested by: (b) (6) [redacted]

Printed Signature

Reviewed by: (b) (6) [redacted]

Printed Signature

CONDUCTED EMISSIONS

TÜV SÜD America

Test Report #: WC808134 Run 9 — Test Area: OWL

EUT Model #: Secure 1000 — Date: 1/28/2009

EUT Serial #: n/a — EUT Power: 120 V / 60 Hz — Temperature: 22.0 °C

Test Method: FCC A, CISPR22 A — Air Pressure: 100.0 kPa

Customer: Rapiscan — Rel. Humidity: 15.0 %

EUT Description: High Speed Screening system

Notes: Dual Scanner Configuration with UPS and remote Workstation.
Conducted on Remote Workstation Display

Data File Name: 808134Final.dat — Page: 1 of 6

List of measurements for run #: 9

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV)	EUT Lead	DELTA1 EN55022 A Qp	DELTA2 EN55022 A Avg
Start of Test (230 V / 50 Hz)						
150.0 kHz	39.16 Qp	0.12 / 0.4 / 0.0 / 0.0	39.68	L1	-39.32	n/a
150.0 kHz	17.16 Av	0.12 / 0.4 / 0.0 / 0.0	17.68	L1	n/a	-48.32
197.02 kHz	38.64 Qp	0.14 / 0.34 / 0.0 / 0.0	39.12	L1	-39.88	n/a
197.02 kHz	21.81 Av	0.14 / 0.34 / 0.0 / 0.0	22.29	L1	n/a	-43.71
263.8 kHz	38.65 Qp	0.17 / 0.25 / 0.0 / 0.0	39.07	L1	-39.93	n/a
263.8 kHz	21.35 Av	0.17 / 0.25 / 0.0 / 0.0	21.77	L1	n/a	-44.23
6.044 MHz	22.21 Qp	0.75 / 0.3 / 0.0 / 0.0	23.27	L1	-49.73	n/a
6.044 MHz	16.07 Av	0.75 / 0.3 / 0.0 / 0.0	17.13	L1	n/a	-42.87
2.036 MHz	8.26 Qp	0.42 / 0.2 / 0.0 / 0.0	8.88	L1	-64.12	n/a
2.036 MHz	8.35 Av	0.42 / 0.2 / 0.0 / 0.0	8.97	L1	n/a	-51.03
15.556 MHz	29.98 Qp	1.19 / 1.07 / 0.0 / 0.0	32.24	L1	-40.76	n/a
15.556 MHz	26.22 Av	1.19 / 1.07 / 0.0 / 0.0	28.48	L1	n/a	-31.52
16.9 MHz	33.36 Qp	1.25 / 1.2 / 0.0 / 0.0	35.81	L1	-37.19	n/a
16.9 MHz	30.01 Av	1.25 / 1.2 / 0.0 / 0.0	32.46	L1	n/a	-27.54
29.662 MHz	12.81 Qp	1.65 / 1.25 / 0.0 / 0.0	15.71	L1	-57.29	n/a
29.662 MHz	8.12 Av	1.65 / 1.25 / 0.0 / 0.0	11.02	L1	n/a	-48.98
150.0 kHz	39.41 Qp	0.12 / 0.4 / 0.0 / 0.0	39.93	L2	-39.07	n/a
150.0 kHz	16.49 Av	0.12 / 0.4 / 0.0 / 0.0	17.01	L2	n/a	-48.99
197.02 kHz	37.15 Qp	0.14 / 0.34 / 0.0 / 0.0	37.63	L2	-41.37	n/a
197.02 kHz	19.74 Av	0.14 / 0.34 / 0.0 / 0.0	20.22	L2	n/a	-45.78
263.8 kHz	35.19 Qp	0.17 / 0.25 / 0.0 / 0.0	35.61	L2	-43.39	n/a
263.8 kHz	19.29 Av	0.17 / 0.25 / 0.0 / 0.0	19.71	L2	n/a	-46.29
2.036 MHz	20.99 Qp	0.42 / 0.2 / 0.0 / 0.0	21.61	L2	-51.39	n/a
2.036 MHz	9.51 Av	0.42 / 0.2 / 0.0 / 0.0	10.13	L2	n/a	-49.87
6.044 MHz	22.37 Qp	0.75 / 0.3 / 0.0 / 0.0	23.43	L2	-49.57	n/a
6.044 MHz	16.25 Av	0.75 / 0.3 / 0.0 / 0.0	17.31	L2	n/a	-42.69
15.556 MHz	30.41 Qp	1.19 / 1.07 / 0.0 / 0.0	32.67	L2	-40.33	n/a

(b) (6)

Tested by: [redacted]

Printed — Signature

(b) (6)

Reviewed by: [redacted]

Printed — Signature

CONDUCTED EMISSIONS

TÜV SÜD America

Test Report #:	WC808134 Run 9	Test Area:	OWL		
EUT Model #:	Secure 1000	Date:	1/28/2009		
EUT Serial #:	n/a	EUT Power:	120 V / 60 Hz	Temperature:	22.0 °C
Test Method:	FCC A, CISPR22 A			Air Pressure:	100.0 kPa
Customer:	Rapiscan			Rel. Humidity:	15.0 %

EUT Description: High Speed Screening system

Notes: Dual Scanner Configuration with UPS and remote Workstation.
Conducted on Remote Workstation Display

Data File Name: 808134Final.dat — Page: 2 of 6

List of measurements for run #: 9

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV)	EUT Lead	DELTA1 EN55022 A Qp	DELTA2 EN55022 A Avg
15.556 MHz	26.51 Av	1.19 / 1.07 / 0.0 / 0.0	28.77	L2	n/a	-31.23
16.9 MHz	33.82 Qp	1.25 / 1.2 / 0.0 / 0.0	36.27	L2	-36.73	n/a
16.9 MHz	30.43 Av	1.25 / 1.2 / 0.0 / 0.0	32.88	L2	n/a	-27.12
29.662 MHz	12.15 Qp	1.65 / 1.25 / 0.0 / 0.0	15.05	L2	-57.95	n/a
29.662 MHz	6.94 Av	1.65 / 1.25 / 0.0 / 0.0	9.84	L2	n/a	-50.16
Test at 120 V / 60 Hz						
150.0 kHz	41.8 Qp	0.12 / 0.4 / 0.0 / 0.0	42.32	L2	-36.68	n/a
150.0 kHz	18.96 Av	0.12 / 0.4 / 0.0 / 0.0	19.48	L2	n/a	-46.52
197.02 kHz	38.14 Qp	0.14 / 0.34 / 0.0 / 0.0	38.62	L2	-40.38	n/a
197.02 kHz	19.14 Av	0.14 / 0.34 / 0.0 / 0.0	19.62	L2	n/a	-46.38
263.8 kHz	35.88 Qp	0.17 / 0.25 / 0.0 / 0.0	36.3	L2	-42.7	n/a
263.8 kHz	18.44 Av	0.17 / 0.25 / 0.0 / 0.0	18.86	L2	n/a	-47.14
2.036 MHz	19.04 Qp	0.42 / 0.2 / 0.0 / 0.0	19.66	L2	-53.34	n/a
2.036 MHz	8.81 Av	0.42 / 0.2 / 0.0 / 0.0	9.43	L2	n/a	-50.57
6.044 MHz	21.35 Qp	0.75 / 0.3 / 0.0 / 0.0	22.41	L2	-50.59	n/a
6.044 MHz	15.4 Av	0.75 / 0.3 / 0.0 / 0.0	16.46	L2	n/a	-43.54
15.556 MHz	30.11 Qp	1.19 / 1.07 / 0.0 / 0.0	32.37	L2	-40.63	n/a
15.556 MHz	26.18 Av	1.19 / 1.07 / 0.0 / 0.0	28.44	L2	n/a	-31.56
16.9 MHz	34.02 Qp	1.25 / 1.2 / 0.0 / 0.0	36.47	L2	-36.53	n/a
16.9 MHz	30.72 Av	1.25 / 1.2 / 0.0 / 0.0	33.17	L2	n/a	-26.83
29.662 MHz	12.66 Qp	1.65 / 1.25 / 0.0 / 0.0	15.56	L2	-57.44	n/a
29.662 MHz	8.12 Av	1.65 / 1.25 / 0.0 / 0.0	11.02	L2	n/a	-48.98
150.0 kHz	41.35 Qp	0.12 / 0.4 / 0.0 / 0.0	41.87	L1	-37.13	n/a
150.0 kHz	18.85 Av	0.12 / 0.4 / 0.0 / 0.0	19.37	L1	n/a	-46.63
197.02 kHz	38.43 Qp	0.14 / 0.34 / 0.0 / 0.0	38.91	L1	-40.09	n/a
197.02 kHz	21.27 Av	0.14 / 0.34 / 0.0 / 0.0	21.75	L1	n/a	-44.25
263.8 kHz	39.38 Qp	0.17 / 0.25 / 0.0 / 0.0	39.8	L1	-39.2	n/a

(b) (6)

Tested by: [redacted]

Printed Signature

(b) (6)

Reviewed by: [redacted]

Printed Signature

CONDUCTED EMISSIONS

Test Report #:	WC808134 Run 9	Test Area:	OWL		
EUT Model #:	Secure 1000	Date:	1/28/2009		
EUT Serial #:	n/a	EUT Power:	120 V / 60 Hz	Temperature:	22.0 °C
Test Method:	FCC A, CISPR22 A			Air Pressure:	100.0 kPa
Customer:	Rapiscan			Rel. Humidity:	15.0 %
EUT Description:	High Speed Screening system				
Notes:	Dual Scanner Configuration with UPS and remote Workstation. Conducted on Remote Workstation Display				
Data File Name:	808134Final.dat			Page:	3 of 6

List of measurements for run #: 9

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV)	EUT Lead	DELTA1 EN55022 A Qp	DELTA2 EN55022 A Avg
263.8 kHz	21.96 Av	0.17 / 0.25 / 0.0 / 0.0	22.38	L1	n/a	-43.62
2.036 MHz	16.63 Qp	0.42 / 0.2 / 0.0 / 0.0	17.25	L1	-55.75	n/a
2.036 MHz	7.84 Av	0.42 / 0.2 / 0.0 / 0.0	8.46	L1	n/a	-51.54
6.044 MHz	21.06 Qp	0.75 / 0.3 / 0.0 / 0.0	22.12	L1	-50.88	n/a
6.044 MHz	14.09 Av	0.75 / 0.3 / 0.0 / 0.0	15.15	L1	n/a	-44.85
15.556 MHz	30.57 Qp	1.19 / 1.07 / 0.0 / 0.0	32.83	L1	-40.17	n/a
15.556 MHz	26.98 Av	1.19 / 1.07 / 0.0 / 0.0	29.24	L1	n/a	-30.76
16.9 MHz	32.76 Qp	1.25 / 1.2 / 0.0 / 0.0	35.21	L1	-37.79	n/a
16.9 MHz	29.19 Av	1.25 / 1.2 / 0.0 / 0.0	31.64	L1	n/a	-28.36
29.662 MHz	14.98 Qp	1.65 / 1.25 / 0.0 / 0.0	17.88	L1	-55.12	n/a
29.662 MHz	11.19 Av	1.65 / 1.25 / 0.0 / 0.0	14.09	L1	n/a	-45.91

(b) (6)

Tested by: [redacted]

Printed Signature

(b) (6)

Reviewed by: [redacted]

Printed Signature

CONDUCTED EMISSIONS

TÜV SÜD America

Test Report #: WC808134 Run 9 | Test Area: OWL

EUT Model #: Secure 1000 | Date: 1/28/2009

EUT Serial #: n/a | EUT Power: 120 V / 60 Hz | Temperature: 22.0 °C

Test Method: FCC A, CISPR22 A | Air Pressure: 100.0 kPa

Customer: Rapiscan | Rel. Humidity: 15.0 %

EUT Description: High Speed Screening system

Notes: Dual Scanner Configuration with UPS and remote Workstation.
Conducted on Remote Workstation Display

Data File Name: 808134Final.dat | Page: 4 of 6

Measurement summary for limit1: EN55022 A Qp (Qp)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV)	EUT Lead	DELTA1 EN55022 A Qp
16.9 MHz	34.02 Qp	1.25 / 1.2 / 0.0 / 0.0	36.47	L2	-36.53
150.0 kHz	41.8 Qp	0.12 / 0.4 / 0.0 / 0.0	42.32	L2	-36.68
263.8 kHz	39.38 Qp	0.17 / 0.25 / 0.0 / 0.0	39.8	L1	-39.2
197.02 kHz	38.64 Qp	0.14 / 0.34 / 0.0 / 0.0	39.12	L1	-39.88
15.556 MHz	30.57 Qp	1.19 / 1.07 / 0.0 / 0.0	32.83	L1	-40.17
6.044 MHz	22.37 Qp	0.75 / 0.3 / 0.0 / 0.0	23.43	L2	-49.57
2.036 MHz	20.99 Qp	0.42 / 0.2 / 0.0 / 0.0	21.61	L2	-51.39
29.662 MHz	14.98 Qp	1.65 / 1.25 / 0.0 / 0.0	17.88	L1	-55.12

(b) (6) [redacted]

Tested by: Printed Signature

(b) (6) [redacted]

Reviewed by: Printed Signature

CONDUCTED EMISSIONS

TÜV SÜD America

Test Report #:	WC808134 Run 9	Test Area:	OWL		
EUT Model #:	Secure 1000	Date:	1/28/2009		
EUT Serial #:	n/a	EUT Power:	120 V / 60 Hz	Temperature:	22.0 °C
Test Method:	FCC A, CISPR22 A			Air Pressure:	100.0 kPa
Customer:	Rapiscan			Rel. Humidity:	15.0 %
EUT Description:	High Speed Screening system				
Notes:	Dual Scanner Configuration with UPS and remote Workstation. Conducted on Remote Workstation Display				
Data File Name:	808134Final.dat			Page:	5 of 6

Measurement summary for limit2: EN55022 A Avg (Av)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV)	EUT Lead	DELTA2 EN55022 A Avg
16.9 MHz	30.72 Av	1.25 / 1.2 / 0.0 / 0.0	33.17	L2	-26.83
15.556 MHz	26.98 Av	1.19 / 1.07 / 0.0 / 0.0	29.24	L1	-30.76
6.044 MHz	16.25 Av	0.75 / 0.3 / 0.0 / 0.0	17.31	L2	-42.69
263.8 kHz	21.96 Av	0.17 / 0.25 / 0.0 / 0.0	22.38	L1	-43.62
197.02 kHz	21.81 Av	0.14 / 0.34 / 0.0 / 0.0	22.29	L1	-43.71
29.662 MHz	11.19 Av	1.65 / 1.25 / 0.0 / 0.0	14.09	L1	-45.91
150.0 kHz	18.96 Av	0.12 / 0.4 / 0.0 / 0.0	19.48	L2	-46.52
2.036 MHz	9.51 Av	0.42 / 0.2 / 0.0 / 0.0	10.13	L2	-49.87

(b) (6)

Tested by: [redacted]

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(b) (6)

Reviewed by: [redacted]

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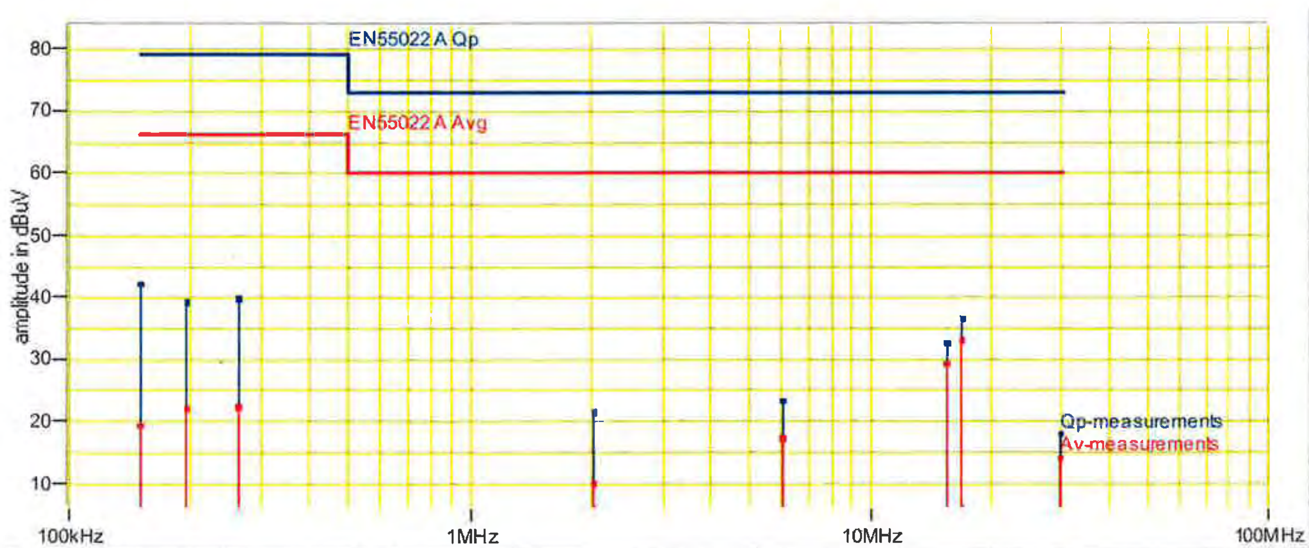
CONDUCTED EMISSIONS

TÜV SÜD America

Test Report #:	WC808134 Run 9	Test Area:	OWL		
EUT Model #:	Secure 1000	Date:	1/28/2009		
EUT Serial #:	n/a	EUT Power:	120 V / 60 Hz	Temperature:	22.0 °C
Test Method:	FCC A, CISPR22 A			Air Pressure:	100.0 kPa
Customer:	Rapiscan			Rel. Humidity:	15.0 %
EUT Description:	High Speed Screening system				
Notes:	Dual Scanner Configuration with UPS and remote Workstation. Conducted on Remote Workstation Display				
Data File Name:	808134Final.dat			Page:	6 of 6

Graph:



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CONDUCTED EMISSIONS

TÜV SÜD America

Test Report #:	WC808134 Run 10	Test Area:	OWL
EUT Model #:	Secure 1000	Date:	1/28/2009
EUT Serial #:	n/a	EUT Power:	120 V / 60 Hz
Test Method:	FCC A, CISPR22 A		
Customer:	Rapiscan		
EUT Description:	High Speed Screening system		
Notes:	Ethernet Switch		
Data File Name:	808134Final.dat	Page:	1 of 4

Temperature: 22.0 °C
Air Pressure: 100.0 kPa
Rel. Humidity: 15.0 %

List of measurements for run #: 10

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV)	EUT Lead	DELTA1 22-QP-A-TEL-V	DELTA2 22-AV-A-TEL-V
Start of Test						
150.0 kHz	13.36 Qp	0.12 / 9.9 / 0.0 / 0.0	23.38	Ethernet (Switch)	-73.62	n/a
150.0 kHz	8.41 Av	0.12 / 9.9 / 0.0 / 0.0	18.43	Ethernet (Switch)	n/a	-65.57
169.71 kHz	23.59 Qp	0.13 / 9.9 / 0.0 / 0.0	33.62	Ethernet (Switch)	-62.35	n/a
169.71 kHz	20.14 Av	0.13 / 9.9 / 0.0 / 0.0	30.17	Ethernet (Switch)	n/a	-52.8
200.12 kHz	27.67 Qp	0.14 / 9.9 / 0.0 / 0.0	37.71	Ethernet (Switch)	-56.89	n/a
200.12 kHz	24.75 Av	0.14 / 9.9 / 0.0 / 0.0	34.79	Ethernet (Switch)	n/a	-46.81
321.36 kHz	30.81 Qp	0.2 / 9.9 / 0.0 / 0.0	40.91	Ethernet (Switch)	-49.76	n/a
321.36 kHz	27.21 Av	0.2 / 9.9 / 0.0 / 0.0	37.31	Ethernet (Switch)	n/a	-40.36
503.4 kHz	29.01 Qp	0.23 / 9.9 / 0.0 / 0.0	39.14	Ethernet (Switch)	-47.86	n/a
503.4 kHz	24.77 Av	0.23 / 9.9 / 0.0 / 0.0	34.9	Ethernet (Switch)	n/a	-39.1
1.054 MHz	29.17 Qp	0.31 / 9.9 / 0.0 / 0.0	39.38	Ethernet (Switch)	-47.62	n/a
1.054 MHz	25.25 Av	0.31 / 9.9 / 0.0 / 0.0	35.46	Ethernet (Switch)	n/a	-38.54
13.674 MHz	42.49 Qp	1.13 / 10.07 / 0.0 / 0.0	53.69	Ethernet (Switch)	-33.31	n/a
13.674 MHz	38.62 Av	1.13 / 10.07 / 0.0 / 0.0	49.82	Ethernet (Switch)	n/a	-24.18
21.48 MHz	39.98 Qp	1.42 / 10.23 / 0.0 / 0.0	51.63	Ethernet (Switch)	-35.37	n/a
21.48 MHz	36.04 Av	1.42 / 10.23 / 0.0 / 0.0	47.69	Ethernet (Switch)	n/a	-26.31
25.879 MHz	43.79 Qp	1.56 / 10.32 / 0.0 / 0.0	55.66	Ethernet (Switch)	-31.34	n/a
25.879 MHz	40.35 Av	1.56 / 10.32 / 0.0 / 0.0	52.22	Ethernet (Switch)	n/a	-21.78

(b) (6)

Tested by: [redacted]
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CONDUCTED EMISSIONS

TÜV SÜD America

Test Report #:	WC808134 Run 10	Test Area:	OWL		
EUT Model #:	Secure 1000	Date:	1/28/2009		
EUT Serial #:	n/a	EUT Power:	120 V / 60 Hz	Temperature:	22.0 °C
Test Method:	FCC A, CISPR22 A			Air Pressure:	100.0 kPa
Customer:	Rapiscan			Rel. Humidity:	15.0 %
EUT Description:	High Speed Screening system				
Notes:	Ethernet Switch				
Data File Name:	808134Final.dat			Page:	3 of 4

Measurement summary for limit2: 22-AV-A-TEL-V (Av)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV)	EUT Lead	DELTA2 22-AV-A-TEL-V
25.879 MHz	40.35 Av	1.56 / 10.32 / 0.0 / 0.0	52.22	Ethernet (Switch)	-21.78
13.674 MHz	38.62 Av	1.13 / 10.07 / 0.0 / 0.0	49.82	Ethernet (Switch)	-24.18
21.48 MHz	36.04 Av	1.42 / 10.23 / 0.0 / 0.0	47.69	Ethernet (Switch)	-26.31
1.054 MHz	25.25 Av	0.31 / 9.9 / 0.0 / 0.0	35.46	Ethernet (Switch)	-38.54
503.4 kHz	24.77 Av	0.23 / 9.9 / 0.0 / 0.0	34.9	Ethernet (Switch)	-39.1
321.36 kHz	27.21 Av	0.2 / 9.9 / 0.0 / 0.0	37.31	Ethernet (Switch)	-40.36
200.12 kHz	24.75 Av	0.14 / 9.9 / 0.0 / 0.0	34.79	Ethernet (Switch)	-46.81
169.71 kHz	20.14 Av	0.13 / 9.9 / 0.0 / 0.0	30.17	Ethernet (Switch)	-52.8
150.0 kHz	8.41 Av	0.12 / 9.9 / 0.0 / 0.0	18.43	Ethernet (Switch)	-65.57

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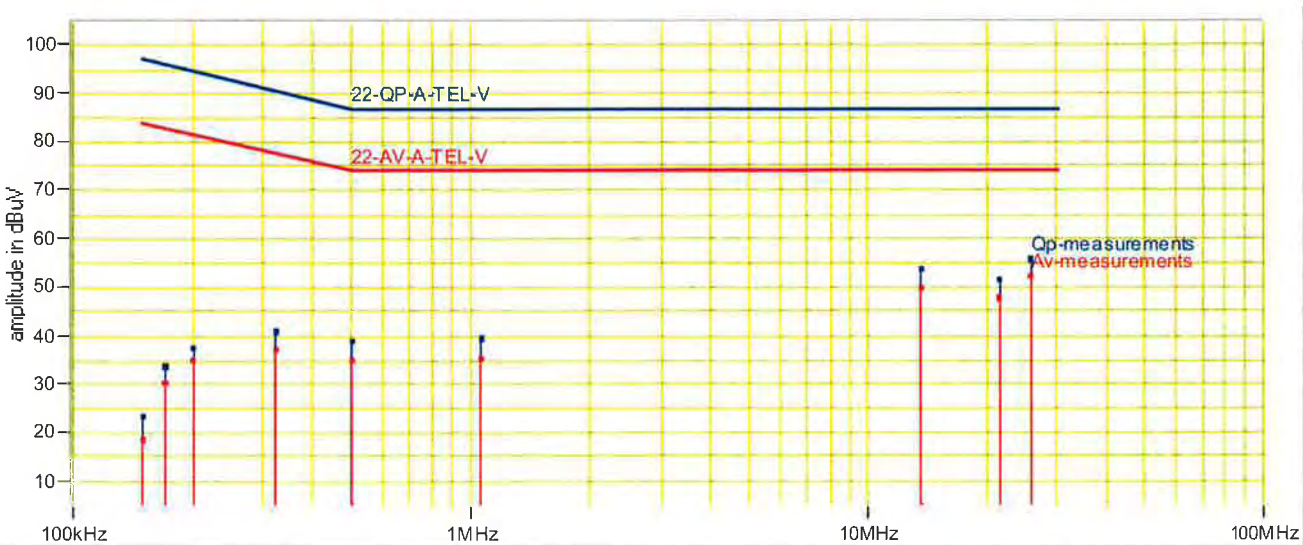
CONDUCTED EMISSIONS

TÜV SÜD America

Test Report #:	WC808134 Run 10	Test Area:	OWL		
EUT Model #:	Secure 1000	Date:	1/28/2009		
EUT Serial #:	n/a	EUT Power:	120 V / 60 Hz	Temperature:	22.0 °C
Test Method:	FCC A, CISPR22 A			Air Pressure:	100.0 kPa
Customer:	Rapiscan			Rel. Humidity:	15.0 %
EUT Description:	High Speed Screening system				
Notes:	Ethernet Switch				
Data File Name:	808134Final.dat			Page:	4 of 4

Graph:



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CONDUCTED EMISSIONS

TÜV SÜD America

Test Report #: WC808134 Run 11 | Test Area: OWL

EUT Model #: Secure 1000 | Date: 1/28/2009

EUT Serial #: n/a | EUT Power: 120 V / 60 Hz | Temperature: 22.0 °C

Test Method: FCC A, CISPR22 A | Air Pressure: 100.0 kPa

Customer: Rapiscan | Rel. Humidity: 15.0 %

EUT Description: High Speed Screening system

Notes: Ethernet (Scanner)

Data File Name: 808134Final.dat | Page: 1 of 4

List of measurements for run #: 11

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV)	EUT Lead	DELTA1 22-QP-A-TEL-V	DELTA2 22-AV-A-TEL-V
Start of test (Ethernet on Scan)						
150.0 kHz	46.18 Qp	0.12 / 9.9 / 0.0 / 0.0	56.2	Ethernet	-40.8	n/a
150.0 kHz	36.93 Av	0.12 / 9.9 / 0.0 / 0.0	46.95	Ethernet	n/a	-37.05
248.64 kHz	45.38 Qp	0.17 / 9.9 / 0.0 / 0.0	55.45	Ethernet	-37.36	n/a
248.64 kHz	37.25 Av	0.17 / 9.9 / 0.0 / 0.0	47.32	Ethernet	n/a	-32.49
319.2 kHz	45.54 Qp	0.2 / 9.9 / 0.0 / 0.0	55.64	Ethernet	-35.09	n/a
319.2 kHz	39.76 Av	0.2 / 9.9 / 0.0 / 0.0	49.86	Ethernet	n/a	-27.87
2.104 MHz	47.32 Qp	0.43 / 9.9 / 0.0 / 0.0	57.65	Ethernet	-29.35	n/a
2.104 MHz	41.95 Av	0.43 / 9.9 / 0.0 / 0.0	52.28	Ethernet	n/a	-21.72
13.602 MHz	41.59 Qp	1.13 / 10.07 / 0.0 / 0.0	52.79	Ethernet	-34.21	n/a
13.602 MHz	39.36 Av	1.13 / 10.07 / 0.0 / 0.0	50.56	Ethernet	n/a	-23.44
18.466 MHz	39.63 Qp	1.31 / 10.17 / 0.0 / 0.0	51.11	Ethernet	-35.89	n/a
18.466 MHz	36.21 Av	1.31 / 10.17 / 0.0 / 0.0	47.69	Ethernet	n/a	-26.31
29.309 MHz	30.45 Qp	1.65 / 10.39 / 0.0 / 0.0	42.48	Ethernet	-44.52	n/a
29.309 MHz	26.35 Av	1.65 / 10.39 / 0.0 / 0.0	38.38	Ethernet	n/a	-35.62

(b) (6)

Tested by: [redacted]

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CONDUCTED EMISSIONS

TÜV SÜD America

Test Report #:	WC808134 Run 11	Test Area:	OWL		
EUT Model #:	Secure 1000	Date:	1/28/2009		
EUT Serial #:	n/a	EUT Power:	120 V / 60 Hz	Temperature:	22.0 °C
Test Method:	FCC A, CISPR22 A			Air Pressure:	100.0 kPa
Customer:	Rapiscan			Rel. Humidity:	15.0 %
EUT Description:	High Speed Screening system				
Notes:	Ethernet (Scanner)				
Data File Name:	808134Final.dat			Page:	2 of 4

Measurement summary for limit1: 22-QP-A-TEL-V (Qp)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV)	EUT Lead	DELTA1 22-QP-A-TEL-V
2.104 MHz	47.32 Qp	0.43 / 9.9 / 0.0 / 0.0	57.65	Ethernet	-29.35
13.602 MHz	41.59 Qp	1.13 / 10.07 / 0.0 / 0.0	52.79	Ethernet	-34.21
319.2 kHz	45.54 Qp	0.2 / 9.9 / 0.0 / 0.0	55.64	Ethernet	-35.09
18.466 MHz	39.63 Qp	1.31 / 10.17 / 0.0 / 0.0	51.11	Ethernet	-35.89
248.64 kHz	45.38 Qp	0.17 / 9.9 / 0.0 / 0.0	55.45	Ethernet	-37.36
150.0 kHz	46.18 Qp	0.12 / 9.9 / 0.0 / 0.0	56.2	Ethernet	-40.8
29.309 MHz	30.45 Qp	1.65 / 10.39 / 0.0 / 0.0	42.48	Ethernet	-44.52

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CONDUCTED EMISSIONS

TÜV SÜD America

Test Report #:	WC808134 Run 11	Test Area:	OWL		
EUT Model #:	Secure 1000	Date:	1/28/2009		
EUT Serial #:	n/a	EUT Power:	120 V / 60 Hz	Temperature:	22.0 °C
Test Method:	FCC A, CISPR22 A			Air Pressure:	100.0 kPa
Customer:	Rapiscan			Rel. Humidity:	15.0 %
EUT Description:	High Speed Screening system				
Notes:	Ethernet (Scanner)				
Data File Name:	808134Final.dat			Page:	3 of 4

Measurement summary for limit2: 22-AV-A-TEL-V (Av)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV)	EUT Lead	DELTA2 22-AV-A-TEL-V
2.104 MHz	41.95 Av	0.43 / 9.9 / 0.0 / 0.0	52.28	Ethernet	-21.72
13.602 MHz	39.36 Av	1.13 / 10.07 / 0.0 / 0.0	50.56	Ethernet	-23.44
18.466 MHz	36.21 Av	1.31 / 10.17 / 0.0 / 0.0	47.69	Ethernet	-26.31
319.2 kHz	39.76 Av	0.2 / 9.9 / 0.0 / 0.0	49.86	Ethernet	-27.87
248.64 kHz	37.25 Av	0.17 / 9.9 / 0.0 / 0.0	47.32	Ethernet	-32.49
29.309 MHz	26.35 Av	1.65 / 10.39 / 0.0 / 0.0	38.38	Ethernet	-35.62
150.0 kHz	36.93 Av	0.12 / 9.9 / 0.0 / 0.0	46.95	Ethernet	-37.05

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Tested by: [redacted]

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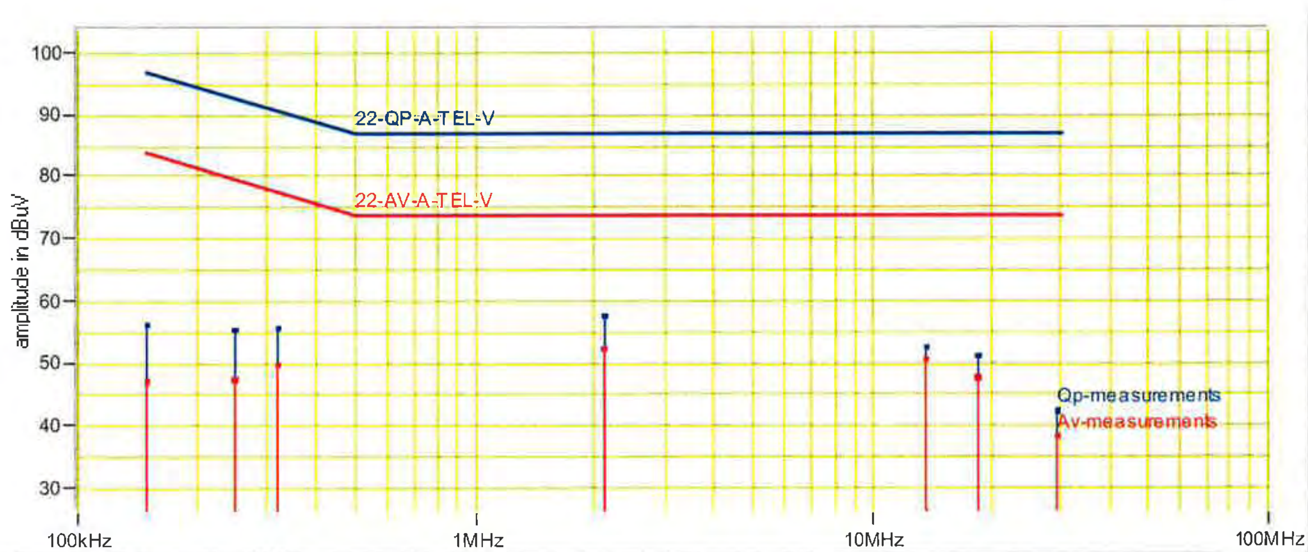
CONDUCTED EMISSIONS

TÜV SÜD America

Test Report #:	WC808134 Run 11	Test Area:	OWL		
EUT Model #:	Secure 1000	Date:	1/28/2009		
EUT Serial #:	n/a	EUT Power:	120 V / 60 Hz	Temperature:	22.0 °C
Test Method:	FCC A, CISPR22 A			Air Pressure:	100.0 kPa
Customer:	Rapiscan			Rel. Humidity:	15.0 %
EUT Description:	High Speed Screening system				
Notes:	Ethernet (Scanner)				
Data File Name:	808134Final.dat			Page:	4 of 4

Graph:



[redacted]

Tested by: [redacted]

Reviewed by: [redacted]

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RADIATED EMISSIONS

TÜV SÜD America

Test Report #:	WC808134 Run 2	Test Area:	OWL
EUT Model #:	Secure 1000	Date:	1/27/2009
EUT Serial #:	n/a	EUT Power:	120 V / 60 Hz
Test Method:	FCC A, CISPR22 A		
Customer:	Rapiscan		
EUT Description:	High Speed Screening system		
Notes:			
Data File Name:	808134Final.dat		

Temperature: 22.0 °C

Air Pressure: 100.0 kPa

Rel. Humidity: 15.0 %

Page: 1 of 10

List of measurements for run #: 2

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 CISPR-22- A <1GHz 10m (2005)	DELTA2
50.012 MHz	46.85 Qp	1.07 / 13.2 / 25.07 / 0.0	36.05	V / 1.00 / 0	-3.95	n/a
30.013 MHz	34.35 Qp	0.8 / 20.29 / 25.1 / 0.0	30.34	V / 1.00 / 0	-9.66	n/a
32.275 MHz	34.0 Qp	0.85 / 19.34 / 25.1 / 0.0	29.1	V / 1.00 / 0	-10.9	n/a
45.0 MHz	34.7 Qp	1.0 / 14.7 / 25.08 / 0.0	25.32	V / 1.00 / 0	-14.68	n/a
40.018 MHz	43.25 Qp	0.95 / 16.44 / 25.08 / 0.0	35.56	V / 1.00 / 0	-4.44	n/a
31.978 MHz	34.3 Qp	0.84 / 19.47 / 25.1 / 0.0	29.52	V / 1.00 / 0	-10.48	n/a
54.118 MHz	40.05 Qp	1.12 / 11.96 / 25.06 / 0.0	28.07	V / 1.00 / 0	-11.93	n/a
60.014 MHz	45.4 Qp	1.16 / 10.93 / 25.05 / 0.0	32.44	V / 1.00 / 0	-7.56	n/a
65.516 MHz	40.85 Qp	1.21 / 10.09 / 25.04 / 0.0	27.11	V / 1.00 / 0	-12.89	n/a
65.0 MHz	45.6 Qp	1.21 / 10.17 / 25.05 / 0.0	31.93	V / 1.00 / 0	-8.07	n/a
80.025 MHz	48.05 Qp	1.34 / 7.86 / 25.02 / 0.0	32.23	V / 1.00 / 0	-7.77	n/a
112.522 MHz	42.65 Qp	1.55 / 8.75 / 24.97 / 0.0	27.98	V / 1.00 / 0	-12.02	n/a
120.022 MHz	39.5 Qp	1.6 / 8.57 / 24.96 / 0.0	24.71	V / 1.00 / 0	-15.29	n/a
140.029 MHz	38.45 Qp	1.72 / 8.25 / 24.93 / 0.0	23.5	V / 1.00 / 0	-16.5	n/a
145.04 MHz	39.25 Qp	1.77 / 8.9 / 24.92 / 0.0	25.0	V / 1.00 / 0	-15.0	n/a
147.56 MHz	40.1 Qp	1.8 / 8.7 / 24.92 / 0.0	25.68	V / 1.00 / 0	-14.32	n/a
150.033 MHz	40.7 Qp	1.81 / 8.5 / 24.91 / 0.0	26.1	V / 1.00 / 0	-13.9	n/a
152.548 MHz	40.35 Qp	1.82 / 8.3 / 24.91 / 0.0	25.56	V / 1.00 / 0	-14.44	n/a
155.033 MHz	44.35 Qp	1.83 / 8.1 / 24.91 / 0.0	29.38	V / 1.00 / 0	-10.62	n/a
157.546 MHz	41.0 Qp	1.84 / 8.25 / 24.9 / 0.0	26.19	V / 1.00 / 0	-13.81	n/a
160.036 MHz	44.75 Qp	1.86 / 8.39 / 24.91 / 0.0	30.09	V / 1.00 / 0	-9.91	n/a
165.036 MHz	42.5 Qp	1.88 / 8.68 / 24.93 / 0.0	28.13	V / 1.00 / 0	-11.87	n/a
166.675 MHz	50.8 Qp	1.89 / 8.77 / 24.94 / 0.0	36.52	V / 1.00 / 0	-3.48	n/a
170.042 MHz	40.55 Qp	1.9 / 8.96 / 24.95 / 0.0	26.47	V / 1.00 / 0	-13.53	n/a
172.069 MHz	46.0 Qp	1.91 / 9.08 / 24.96 / 0.0	32.03	V / 1.00 / 0	-7.97	n/a
180.026 MHz	40.1 Qp	1.94 / 9.54 / 24.99 / 0.0	26.59	V / 1.00 / 0	-13.41	n/a
195.038 MHz	36.8 Qp	2.0 / 10.4 / 24.95 / 0.0	24.25	V / 1.00 / 0	-15.75	n/a
200.013 MHz	42.25 Qp	2.04 / 10.25 / 24.93 / 0.0	29.6	V / 1.00 / 0	-10.4	n/a
221.224 MHz	40.75 Qp	2.18 / 10.7 / 24.94 / 0.0	28.7	V / 1.00 / 0	-11.3	n/a

(b) (6)

Tested by: [redacted]

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Reviewed by: [redacted]

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RADIATED EMISSIONS

TÜV SÜD America

Test Report #:	WC808134 Run 2	Test Area:	OWL		
EUT Model #:	Secure 1000	Date:	1/27/2009		
EUT Serial #:	n/a	EUT Power:	120 V / 60 Hz	Temperature:	22.0 °C
Test Method:	FCC A, CISPR22 A			Air Pressure:	100.0 kPa
Customer:	Rapiscan			Rel. Humidity:	15.0 %
EUT Description:	High Speed Screening system				
Notes:					
Data File Name:	808134Final.dat			Page:	2 of 10

List of measurements for run #: 2

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 CISPR-22- A <1GHz 10m (2005)	DELTA2
232.002 MHz	35.2 Qp	2.25 / 11.1 / 24.97 / 0.0	23.58	V / 1.00 / 0	-23.42	n/a
233.333 MHz	47.3 Qp	2.26 / 11.15 / 24.98 / 0.0	35.73	V / 1.00 / 0	-11.27	n/a
240.018 MHz	34.7 Qp	2.3 / 11.4 / 25.0 / 0.0	23.4	V / 1.00 / 0	-23.6	n/a
245.803 MHz	41.55 Qp	2.33 / 11.62 / 24.97 / 0.0	30.53	V / 1.00 / 0	-16.47	n/a
260.003 MHz	33.75 Qp	2.43 / 12.14 / 24.89 / 0.0	23.43	V / 1.00 / 0	-23.57	n/a
266.682 MHz	36.8 Qp	2.5 / 12.39 / 24.86 / 0.0	26.84	V / 1.00 / 0	-20.16	n/a
270.39 MHz	45.95 Qp	2.54 / 12.53 / 24.84 / 0.0	36.19	V / 1.00 / 0	-10.81	n/a
280.009 MHz	38.65 Qp	2.61 / 12.47 / 24.78 / 0.0	28.94	V / 1.00 / 0	-18.06	n/a
294.962 MHz	38.5 Qp	2.64 / 12.28 / 24.7 / 0.0	28.72	V / 1.00 / 0	-18.28	n/a
300.025 MHz	39.7 Qp	2.66 / 12.56 / 24.72 / 0.0	30.2	V / 1.00 / 0	-16.8	n/a
319.561 MHz	43.45 Qp	2.7 / 13.26 / 24.79 / 0.0	34.63	V / 1.00 / 0	-12.37	n/a
417.87 MHz	31.25 Qp	3.12 / 16.4 / 24.73 / 0.0	26.04	V / 1.00 / 0	-20.96	n/a
433.347 MHz	30.45 Qp	3.19 / 16.62 / 24.75 / 0.0	25.51	V / 1.00 / 0	-21.49	n/a
442.434 MHz	30.75 Qp	3.23 / 16.39 / 24.76 / 0.0	25.61	V / 1.00 / 0	-21.39	n/a
460.009 MHz	28.6 Qp	3.31 / 16.6 / 24.78 / 0.0	23.73	V / 1.00 / 0	-23.27	n/a
491.601 MHz	29.8 Qp	3.44 / 17.27 / 24.77 / 0.0	25.74	V / 1.00 / 0	-21.26	n/a
500.01 MHz	31.8 Qp	3.47 / 17.63 / 24.74 / 0.0	28.16	V / 1.00 / 0	-18.84	n/a
516.198 MHz	33.25 Qp	3.53 / 18.32 / 24.7 / 0.0	30.4	V / 1.00 / 0	-16.6	n/a
533.357 MHz	29.7 Qp	3.59 / 17.53 / 24.75 / 0.0	26.07	V / 1.00 / 0	-20.93	n/a
540.011 MHz	30.85 Qp	3.62 / 17.65 / 24.77 / 0.0	27.35	V / 1.00 / 0	-19.65	n/a
565.35 MHz	35.55 Qp	3.71 / 18.02 / 24.83 / 0.0	32.45	V / 1.00 / 0	-14.55	n/a
566.671 MHz	30.55 Qp	3.71 / 18.1 / 24.84 / 0.0	27.53	V / 1.00 / 0	-19.47	n/a
589.941 MHz	34.9 Qp	3.8 / 18.55 / 24.9 / 0.0	32.35	V / 1.00 / 0	-14.65	n/a
614.508 MHz	32.1 Qp	3.87 / 19.17 / 24.79 / 0.0	30.35	V / 1.00 / 0	-16.65	n/a
636.762 MHz	29.35 Qp	3.93 / 19.04 / 24.71 / 0.0	27.61	V / 1.00 / 0	-19.39	n/a
639.089 MHz	31.35 Qp	3.94 / 19.12 / 24.71 / 0.0	29.7	V / 1.00 / 0	-17.3	n/a
688.254 MHz	28.7 Qp	4.09 / 19.29 / 24.81 / 0.0	27.27	V / 1.00 / 0	-19.73	n/a
700.03 MHz	27.8 Qp	4.12 / 19.6 / 24.84 / 0.0	26.68	V / 1.00 / 0	-20.32	n/a
712.843 MHz	27.65 Qp	4.16 / 19.65 / 24.86 / 0.0	26.6	V / 1.00 / 0	-20.4	n/a

(b) (6)

Tested by: [redacted]

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(b) (6)

Reviewed by: [redacted]

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RADIATED EMISSIONS

TÜV SÜD America

Test Report #: WC808134 Run 2 | Test Area: OWL

EUT Model #: Secure 1000 | Date: 1/27/2009

EUT Serial #: n/a | EUT Power: 120 V / 60 Hz | Temperature: 22.0 °C

Test Method: FCC A, CISPR22 A | Air Pressure: 100.0 kPa

Customer: Rapiscan | Rel. Humidity: 15.0 %

EUT Description: High Speed Screening system

Notes:

Data File Name: 808134Final.dat | Page: 3 of 10

List of measurements for run #: 2

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 CISPR-22- A <1GHz 10m (2005)	DELTA2
737.394 MHz	29.75 Qp	4.24 / 20.99 / 24.91 / 0.0	30.07	V / 1.00 / 0	-16.93	n/a
750.046 MHz	30.65 Qp	4.3 / 21.13 / 24.94 / 0.0	31.14	V / 1.00 / 0	-15.86	n/a
761.981 MHz	29.9 Qp	4.35 / 20.71 / 24.96 / 0.0	29.99	V / 1.00 / 0	-17.01	n/a
786.571 MHz	32.55 Qp	4.46 / 21.28 / 24.99 / 0.0	33.31	V / 1.00 / 0	-13.69	n/a
811.154 MHz	30.65 Qp	4.57 / 21.04 / 24.94 / 0.0	31.31	V / 1.00 / 0	-15.69	n/a
835.736 MHz	32.4 Qp	4.68 / 21.6 / 24.9 / 0.0	33.78	V / 1.00 / 0	-13.22	n/a
840.008 MHz	27.95 Qp	4.7 / 21.3 / 24.89 / 0.0	29.06	V / 1.00 / 0	-17.94	n/a
860.017 MHz	27.45 Qp	4.78 / 21.74 / 24.85 / 0.0	29.12	V / 1.00 / 0	-17.88	n/a
860.329 MHz	28.65 Qp	4.78 / 21.75 / 24.85 / 0.0	30.33	V / 1.00 / 0	-16.67	n/a
881.203 MHz	28.65 Qp	4.88 / 22.22 / 24.82 / 0.0	30.93	V / 1.00 / 0	-16.07	n/a
883.124 MHz	28.6 Qp	4.89 / 22.26 / 24.81 / 0.0	30.93	V / 1.00 / 0	-16.07	n/a
884.906 MHz	30.3 Qp	4.89 / 22.3 / 24.81 / 0.0	32.68	V / 1.00 / 0	-14.32	n/a
909.478 MHz	27.45 Qp	5.0 / 22.25 / 24.76 / 0.0	29.94	V / 1.00 / 0	-17.06	n/a
934.044 MHz	27.9 Qp	5.11 / 22.68 / 24.72 / 0.0	30.97	V / 1.00 / 0	-16.03	n/a
983.226 MHz	28.25 Qp	5.33 / 22.91 / 24.63 / 0.0	31.86	V / 1.00 / 0	-15.14	n/a
999.995 MHz	24.85 Qp	5.4 / 22.81 / 24.6 / 0.0	28.46	V / 1.00 / 0	-18.54	n/a
31.403 MHz	39.0 Qp	0.83 / 19.71 / 25.1 / 0.0	34.44	V / 1.00 / 90	-5.56	n/a
30.045 MHz	41.85 Qp	0.8 / 20.28 / 25.1 / 0.0	37.83	V / 1.00 / 90	-2.17	n/a
40.046 MHz	47.65 Qp	0.95 / 16.43 / 25.08 / 0.0	39.95	V / 1.00 / 90	-0.05	n/a
45.052 MHz	41.3 Qp	1.0 / 14.68 / 25.08 / 0.0	31.9	V / 1.00 / 90	-8.1	n/a
50.052 MHz	42.15 Qp	1.07 / 13.18 / 25.07 / 0.0	31.33	V / 1.00 / 90	-8.67	n/a
120.071 MHz	41.1 Qp	1.6 / 8.57 / 24.96 / 0.0	26.31	V / 1.00 / 90	-13.69	n/a
140.063 MHz	37.2 Qp	1.72 / 8.26 / 24.93 / 0.0	22.25	V / 1.00 / 90	-17.75	n/a
160.053 MHz	36.75 Qp	1.86 / 8.39 / 24.91 / 0.0	22.09	V / 1.00 / 90	-17.91	n/a
166.706 MHz	44.15 Qp	1.89 / 8.77 / 24.94 / 0.0	29.87	V / 1.00 / 90	-10.13	n/a
172.094 MHz	37.05 Qp	1.91 / 9.08 / 24.96 / 0.0	23.08	V / 1.00 / 90	-16.92	n/a
270.427 MHz	40.05 Qp	2.54 / 12.53 / 24.83 / 0.0	30.29	V / 1.00 / 90	-16.71	n/a
280.055 MHz	32.8 Qp	2.61 / 12.46 / 24.78 / 0.0	23.09	V / 1.00 / 90	-23.91	n/a
614.549 MHz	35.0 Qp	3.87 / 19.17 / 24.79 / 0.0	33.25	V / 1.00 / 90	-13.75	n/a

(b) (6)

Tested by: [redacted]

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(b) (6)

Reviewed by: [redacted]

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RADIATED EMISSIONS

TÜV SÜD America

Test Report #: WC808134 Run 2 Test Area: OWL

EUT Model #: Secure 1000 Date: 1/27/2009

EUT Serial #: n/a EUT Power: 120 V / 60 Hz Temperature: 22.0 °C

Test Method: FCC A, CISPR22 A Air Pressure: 100.0 kPa

Customer: Rapiscan Rel. Humidity: 15.0 %

EUT Description: High Speed Screening system

Notes:

Data File Name: 808134Final.dat Page: 4 of 10

List of measurements for run #: 2

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 CISPR-22- A <1GHz 10m (2005)	DELTA2
688.274 MHz	30.15 Qp	4.09 / 19.29 / 24.81 / 0.0	28.71	V / 1.00 / 90	-18.29	n/a
983.226 MHz	29.2 Qp	5.33 / 22.91 / 24.63 / 0.0	32.81	V / 1.00 / 180	-14.19	n/a
737.435 MHz	31.5 Qp	4.24 / 20.99 / 24.91 / 0.0	31.82	V / 1.00 / 180	-15.18	n/a
712.843 MHz	28.5 Qp	4.16 / 19.65 / 24.86 / 0.0	27.45	V / 1.00 / 180	-19.55	n/a
639.121 MHz	31.75 Qp	3.94 / 19.12 / 24.71 / 0.0	30.1	V / 1.00 / 180	-16.9	n/a
589.957 MHz	35.5 Qp	3.8 / 18.55 / 24.9 / 0.0	32.95	V / 1.00 / 180	-14.05	n/a
566.716 MHz	30.9 Qp	3.71 / 18.1 / 24.84 / 0.0	27.88	V / 1.00 / 180	-19.12	n/a
533.382 MHz	35.5 Qp	3.59 / 17.53 / 24.75 / 0.0	31.87	V / 1.00 / 180	-15.13	n/a
516.212 MHz	38.55 Qp	3.53 / 18.32 / 24.7 / 0.0	35.7	V / 1.00 / 180	-11.3	n/a
491.63 MHz	35.9 Qp	3.44 / 17.27 / 24.77 / 0.0	31.85	V / 1.00 / 180	-15.15	n/a
433.367 MHz	34.4 Qp	3.19 / 16.62 / 24.75 / 0.0	29.46	V / 1.00 / 180	-17.54	n/a
294.997 MHz	37.95 Qp	2.64 / 12.28 / 24.7 / 0.0	28.17	V / 1.00 / 180	-18.83	n/a
245.837 MHz	42.85 Qp	2.33 / 11.62 / 24.97 / 0.0	31.83	V / 1.00 / 180	-15.17	n/a
240.047 MHz	36.7 Qp	2.3 / 11.4 / 25.0 / 0.0	25.4	V / 1.00 / 180	-21.6	n/a
221.261 MHz	41.5 Qp	2.18 / 10.7 / 24.94 / 0.0	29.45	V / 1.00 / 180	-10.55	n/a
200.042 MHz	42.75 Qp	2.04 / 10.25 / 24.93 / 0.0	30.1	V / 1.00 / 180	-9.9	n/a
166.699 MHz	52.5 Qp	1.89 / 8.77 / 24.94 / 0.0	38.22	V / 1.00 / 180	-1.78	n/a
50.051 MHz	45.55 Qp	1.07 / 13.18 / 25.07 / 0.0	34.73	V / 1.00 / 180	-5.27	n/a
31.978 MHz	37.45 Qp	0.84 / 19.47 / 25.1 / 0.0	32.67	V / 1.00 / 180	-7.33	n/a
31.978 MHz	40.5 Qp	0.84 / 19.47 / 25.1 / 0.0	35.72	V / 1.00 / 270	-4.28	n/a
32.275 MHz	40.8 Qp	0.85 / 19.34 / 25.1 / 0.0	35.9	V / 1.00 / 270	-4.1	n/a
40.046 MHz	49.15 Qp	0.95 / 16.43 / 25.08 / 0.0	41.45	V / 1.00 / 270	1.45	n/a
45.052 MHz	43.4 Qp	1.0 / 14.68 / 25.08 / 0.0	34.0	V / 1.00 / 270	-6.0	n/a
50.06 MHz	45.7 Qp	1.07 / 13.18 / 25.07 / 0.0	34.88	V / 1.00 / 270	-5.12	n/a
221.261 MHz	43.35 Qp	2.18 / 10.7 / 24.94 / 0.0	31.3	V / 1.00 / 270	-8.7	n/a
636.762 MHz	29.35 Qp	3.93 / 19.04 / 24.71 / 0.0	27.61	V / 4.00 / 270	-19.39	n/a
737.435 MHz	36.1 Qp	4.24 / 20.99 / 24.91 / 0.0	36.42	V / 4.00 / 225	-10.58	n/a
786.571 MHz	36.5 Qp	4.46 / 21.28 / 24.99 / 0.0	37.26	V / 4.00 / 225	-9.74	n/a
712.843 MHz	32.75 Qp	4.16 / 19.65 / 24.86 / 0.0	31.7	V / 4.00 / 225	-15.3	n/a

(b) (6)

Tested by: [redacted]
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(b) (6)

Reviewed by: [redacted]
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RADIATED EMISSIONS

TÜV SÜD America

Test Report #:	WC808134 Run 2	Test Area:	OWL		
EUT Model #:	Secure 1000	Date:	1/27/2009		
EUT Serial #:	n/a	EUT Power:	120 V / 60 Hz	Temperature:	22.0 °C
Test Method:	FCC A, CISPR22 A			Air Pressure:	100.0 kPa
Customer:	Rapiscan			Rel. Humidity:	15.0 %
EUT Description:	High Speed Screening system				
Notes:					
Data File Name:	808134Final.dat			Page:	5 of 10

List of measurements for run #: 2

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 CISPR-22- A <1GHz 10m (2005)	DELTA2
688.274 MHz	36.55 Qp	4.09 / 19.29 / 24.81 / 0.0	35.11	V / 4.00 / 225	-11.89	n/a
639.121 MHz	41.85 Qp	3.94 / 19.12 / 24.71 / 0.0	40.2	V / 4.00 / 225	-6.8	n/a
300.025 MHz	43.9 Qp	2.66 / 12.56 / 24.72 / 0.0	34.4	V / 4.00 / 180	-12.6	n/a
700.03 MHz	29.3 Qp	4.12 / 19.6 / 24.84 / 0.0	28.18	V / 4.00 / 180	-18.82	n/a
614.549 MHz	44.1 Qp	3.87 / 19.17 / 24.79 / 0.0	42.35	V / 4.00 / 45	-4.65	n/a
566.716 MHz	37.0 Qp	3.71 / 18.1 / 24.84 / 0.0	33.98	V / 4.00 / 45	-13.02	n/a
639.121 MHz	43.55 Qp	3.94 / 19.12 / 24.71 / 0.0	41.9	V / 4.00 / 0	-5.1	n/a
712.843 MHz	34.2 Qp	4.16 / 19.65 / 24.86 / 0.0	33.15	V / 4.00 / 0	-13.85	n/a
761.981 MHz	30.95 Qp	4.35 / 20.71 / 24.96 / 0.0	31.04	V / 4.00 / 0	-15.96	n/a
Maximize Vertical Emissions (Maximize Cables and Scan body)						
999.999 MHz	28.1 Qp	5.4 / 22.81 / 24.6 / 0.0	31.71	V / 1.50 / 10	-15.29	n/a
40.046 MHz	50.57 Qp	0.95 / 16.43 / 25.08 / 0.0	42.87	V / 1.00 / 330	2.87	n/a
166.699 MHz	52.99 Qp	1.89 / 8.77 / 24.94 / 0.0	38.71	V / 1.00 / 25	-1.29	n/a
30.045 MHz	43.78 Qp	0.8 / 20.28 / 25.1 / 0.0	39.76	V / 1.00 / 90	-0.24	n/a
50.012 MHz	48.0 Qp	1.07 / 13.2 / 25.07 / 0.0	37.2	V / 1.00 / 250	-2.8	n/a
614.549 MHz	45.99 Qp	3.87 / 19.17 / 24.79 / 0.0	44.24	V / 1.50 / 193	-2.76	n/a
31.978 MHz	40.8 Qp	0.84 / 19.47 / 25.1 / 0.0	36.02	V / 1.00 / 263	-3.98	n/a
32.275 MHz	43.69 Qp	0.85 / 19.34 / 25.1 / 0.0	38.79	V / 1.00 / 250	-1.21	n/a
172.103 MHz	46.7 Qp	1.91 / 9.08 / 24.96 / 0.0	32.73	V / 1.00 / 0	-7.27	n/a
Start Horizontal Scan						
No New or Higher Horizontal Emisions found and 1 and 4 Meters and all Azimuths						
add 6 Steward ribbon style cable Ferrites to Control board cables						
40.046 MHz	47.1 Qp	0.95 / 16.43 / 25.08 / 0.0	39.4	V / 1.00 / 258	-0.6	n/a
30.045 MHz	43.72 Qp	0.8 / 20.28 / 25.1 / 0.0	39.7	V / 1.00 / 99	-0.3	n/a
166.699 MHz	52.16 Qp	1.89 / 8.77 / 24.94 / 0.0	37.88	V / 1.00 / 10	-2.12	n/a
172.103 MHz	46.63 Qp	1.91 / 9.08 / 24.96 / 0.0	32.66	V / 1.00 / 0	-7.34	n/a
32.275 MHz	44.72 Qp	0.85 / 19.34 / 25.1 / 0.0	39.82	V / 1.00 / 250	-0.18	n/a

(b) (6)

Tested by: [redacted]

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(b) (6)

Reviewed by: [redacted]

Printed Signature

RADIATED EMISSIONS

Test Report #:	WC808134 Run 2	Test Area:	OWL		
EUT Model #:	Secure 1000	Date:	1/27/2009		
EUT Serial #:	n/a	EUT Power:	120 V / 60 Hz	Temperature:	22.0 °C
Test Method:	FCC A, CISPR22 A			Air Pressure:	100.0 kPa
Customer:	Rapiscan			Rel. Humidity:	15.0 %
EUT Description:	High Speed Screening system				
Notes:					
Data File Name:	808134Final.dat			Page:	6 of 10

List of measurements for run #: 2

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 CISPR-22- A <1GHz 10m (2005)	DELTA2
31.978 MHz	44.53 Qp	0.84 / 19.47 / 25.1 / 0.0	39.75	V / 1.00 / 263	-0.25	n/a
614.549 MHz	44.35 Qp	3.87 / 19.17 / 24.79 / 0.0	42.6	V / 1.50 / 193	-4.4	n/a
50.061 MHz	48.9 Qp	1.07 / 13.18 / 25.07 / 0.0	38.08	V / 1.00 / 250	-1.92	n/a
999.999 MHz	27.5 Qp	5.4 / 22.81 / 24.6 / 0.0	31.11	V / 1.50 / 10	-15.89	n/a

Tested by: (b) (6) [redacted]

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Reviewed by: (b) (6) [redacted]

Printed Signature

RADIATED EMISSIONS

TÜV SÜD America

Test Report #: WC808134 Run 2
Test Area: OWL
EUT Model #: Secure 1000
Date: 1/27/2009
EUT Serial #: n/a
EUT Power: 120 V / 60 Hz
Temperature: 22.0 °C
Test Method: FCC A, CISPR22 A
Air Pressure: 100.0 kPa
Customer: Rapiscan
Rel. Humidity: 15.0 %
EUT Description: High Speed Screening system
Notes:
Data File Name: 808134Final.dat
Page: 7 of 10

Measurement summary for limit1: CISPR-22- A <1GHz 10m (2005) (Qp)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 CISPR-22- A <1GHz 10m (2005)
40.046 MHz	47.65 Qp	0.95 / 16.43 / 25.08 / 0.0	39.95	V / 1.00 / 90	-0.05
32.275 MHz	44.72 Qp	0.85 / 19.34 / 25.1 / 0.0	39.82	V / 1.00 / 250	-0.18
30.045 MHz	43.78 Qp	0.8 / 20.28 / 25.1 / 0.0	39.76	V / 1.00 / 90	-0.24
31.978 MHz	44.53 Qp	0.84 / 19.47 / 25.1 / 0.0	39.75	V / 1.00 / 263	-0.25
166.699 MHz	52.99 Qp	1.89 / 8.77 / 24.94 / 0.0	38.71	V / 1.00 / 25	-1.29
50.061 MHz	48.9 Qp	1.07 / 13.18 / 25.07 / 0.0	38.08	V / 1.00 / 250	-1.92
614.549 MHz	45.99 Qp	3.87 / 19.17 / 24.79 / 0.0	44.24	V / 1.50 / 193	-2.76
639.121 MHz	43.55 Qp	3.94 / 19.12 / 24.71 / 0.0	41.9	V / 4.00 / 0	-5.1
31.403 MHz	39.0 Qp	0.83 / 19.71 / 25.1 / 0.0	34.44	V / 1.00 / 90	-5.56
45.052 MHz	43.4 Qp	1.0 / 14.68 / 25.08 / 0.0	34.0	V / 1.00 / 270	-6.0
172.103 MHz	46.7 Qp	1.91 / 9.08 / 24.96 / 0.0	32.73	V / 1.00 / 0	-7.27
60.014 MHz	45.4 Qp	1.16 / 10.93 / 25.05 / 0.0	32.44	V / 1.00 / 0	-7.56
80.025 MHz	48.05 Qp	1.34 / 7.86 / 25.02 / 0.0	32.23	V / 1.00 / 0	-7.77
65.0 MHz	45.6 Qp	1.21 / 10.17 / 25.05 / 0.0	31.93	V / 1.00 / 0	-8.07
221.261 MHz	43.35 Qp	2.18 / 10.7 / 24.94 / 0.0	31.3	V / 1.00 / 270	-8.7
786.571 MHz	36.5 Qp	4.46 / 21.28 / 24.99 / 0.0	37.26	V / 4.00 / 225	-9.74
200.042 MHz	42.75 Qp	2.04 / 10.25 / 24.93 / 0.0	30.1	V / 1.00 / 180	-9.9
160.036 MHz	44.75 Qp	1.86 / 8.39 / 24.91 / 0.0	30.09	V / 1.00 / 0	-9.91
737.435 MHz	36.1 Qp	4.24 / 20.99 / 24.91 / 0.0	36.42	V / 4.00 / 225	-10.58
155.033 MHz	44.35 Qp	1.83 / 8.1 / 24.91 / 0.0	29.38	V / 1.00 / 0	-10.62
270.39 MHz	45.95 Qp	2.54 / 12.53 / 24.84 / 0.0	36.19	V / 1.00 / 0	-10.81
233.333 MHz	47.3 Qp	2.26 / 11.15 / 24.98 / 0.0	35.73	V / 1.00 / 0	-11.27
516.212 MHz	38.55 Qp	3.53 / 18.32 / 24.7 / 0.0	35.7	V / 1.00 / 180	-11.3
165.036 MHz	42.5 Qp	1.88 / 8.68 / 24.93 / 0.0	28.13	V / 1.00 / 0	-11.87
688.274 MHz	36.55 Qp	4.09 / 19.29 / 24.81 / 0.0	35.11	V / 4.00 / 225	-11.89
54.118 MHz	40.05 Qp	1.12 / 11.96 / 25.06 / 0.0	28.07	V / 1.00 / 0	-11.93

(b) (6)

Tested by: [redacted]

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(b) (6)

Reviewed by: [redacted]

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RADIATED EMISSIONS

TÜV SÜD America

Test Report #:	WC808134 Run 2	Test Area:	OWL			
EUT Model #:	Secure 1000	Date:	1/27/2009			
EUT Serial #:	n/a	EUT Power:	120 V / 60 Hz	Temperature:	22.0	°C
Test Method:	FCC A, CISPR22 A			Air Pressure:	100.0	kPa
Customer:	Rapiscan			Rel. Humidity:	15.0	%
EUT Description:	High Speed Screening system					
Notes:						
Data File Name:	808134Final.dat			Page:	8 of 10	

Measurement summary for limit1: CISPR-22- A <1GHz 10m (2005) (Qp)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 CISPR-22- A <1GHz 10m (2005)
112.522 MHz	42.65 Qp	1.55 / 8.75 / 24.97 / 0.0	27.98	V / 1.00 / 0	-12.02
319.561 MHz	43.45 Qp	2.7 / 13.26 / 24.79 / 0.0	34.63	V / 1.00 / 0	-12.37
300.025 MHz	43.9 Qp	2.66 / 12.56 / 24.72 / 0.0	34.4	V / 4.00 / 180	-12.6
65.516 MHz	40.85 Qp	1.21 / 10.09 / 25.04 / 0.0	27.11	V / 1.00 / 0	-12.89
566.716 MHz	37.0 Qp	3.71 / 18.1 / 24.84 / 0.0	33.98	V / 4.00 / 45	-13.02
835.736 MHz	32.4 Qp	4.68 / 21.6 / 24.9 / 0.0	33.78	V / 1.00 / 0	-13.22
180.026 MHz	40.1 Qp	1.94 / 9.54 / 24.99 / 0.0	26.59	V / 1.00 / 0	-13.41
170.042 MHz	40.55 Qp	1.9 / 8.96 / 24.95 / 0.0	26.47	V / 1.00 / 0	-13.53
120.071 MHz	41.1 Qp	1.6 / 8.57 / 24.96 / 0.0	26.31	V / 1.00 / 90	-13.69
157.546 MHz	41.0 Qp	1.84 / 8.25 / 24.9 / 0.0	26.19	V / 1.00 / 0	-13.81
712.843 MHz	34.2 Qp	4.16 / 19.65 / 24.86 / 0.0	33.15	V / 4.00 / 0	-13.85
150.033 MHz	40.7 Qp	1.81 / 8.5 / 24.91 / 0.0	26.1	V / 1.00 / 0	-13.9
589.957 MHz	35.5 Qp	3.8 / 18.55 / 24.9 / 0.0	32.95	V / 1.00 / 180	-14.05
983.226 MHz	29.2 Qp	5.33 / 22.91 / 24.63 / 0.0	32.81	V / 1.00 / 180	-14.19
147.56 MHz	40.1 Qp	1.8 / 8.7 / 24.92 / 0.0	25.68	V / 1.00 / 0	-14.32
884.906 MHz	30.3 Qp	4.89 / 22.3 / 24.81 / 0.0	32.68	V / 1.00 / 0	-14.32
152.548 MHz	40.35 Qp	1.82 / 8.3 / 24.91 / 0.0	25.56	V / 1.00 / 0	-14.44
565.35 MHz	35.55 Qp	3.71 / 18.02 / 24.83 / 0.0	32.45	V / 1.00 / 0	-14.55
145.04 MHz	39.25 Qp	1.77 / 8.9 / 24.92 / 0.0	25.0	V / 1.00 / 0	-15.0
533.382 MHz	35.5 Qp	3.59 / 17.53 / 24.75 / 0.0	31.87	V / 1.00 / 180	-15.13
491.63 MHz	35.9 Qp	3.44 / 17.27 / 24.77 / 0.0	31.85	V / 1.00 / 180	-15.15
245.837 MHz	42.85 Qp	2.33 / 11.62 / 24.97 / 0.0	31.83	V / 1.00 / 180	-15.17
999.999 MHz	28.1 Qp	5.4 / 22.81 / 24.6 / 0.0	31.71	V / 1.50 / 10	-15.29
811.154 MHz	30.65 Qp	4.57 / 21.04 / 24.94 / 0.0	31.31	V / 1.00 / 0	-15.69
195.038 MHz	36.8 Qp	2.0 / 10.4 / 24.95 / 0.0	24.25	V / 1.00 / 0	-15.75
750.046 MHz	30.65 Qp	4.3 / 21.13 / 24.94 / 0.0	31.14	V / 1.00 / 0	-15.86
761.981 MHz	30.95 Qp	4.35 / 20.71 / 24.96 / 0.0	31.04	V / 4.00 / 0	-15.96

Tested by: (b) (6) [redacted]

Printed Signature

Reviewed by: (b) (6) [redacted]

Printed Signature

RADIATED EMISSIONS

TÜV SÜD America

Test Report #:	WC808134 Run 2	Test Area:	OWL		
EUT Model #:	Secure 1000	Date:	1/27/2009		
EUT Serial #:	n/a	EUT Power:	120 V / 60 Hz	Temperature:	22.0 °C
Test Method:	FCC A, CISPR22 A			Air Pressure:	100.0 kPa
Customer:	Rapiscan			Rel. Humidity:	15.0 %
EUT Description:	High Speed Screening system				
Notes:					
Data File Name:	808134Final.dat			Page:	9 of 10

Measurement summary for limit1: CISPR-22- A <1GHz 10m (2005) (Qp)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 CISPR-22- A <1GHz 10m (2005)
934.044 MHz	27.9 Qp	5.11 / 22.68 / 24.72 / 0.0	30.97	V / 1.00 / 0	-16.03
881.203 MHz	28.65 Qp	4.88 / 22.22 / 24.82 / 0.0	30.93	V / 1.00 / 0	-16.07
883.124 MHz	28.6 Qp	4.89 / 22.26 / 24.81 / 0.0	30.93	V / 1.00 / 0	-16.07
140.029 MHz	38.45 Qp	1.72 / 8.25 / 24.93 / 0.0	23.5	V / 1.00 / 0	-16.5
860.329 MHz	28.65 Qp	4.78 / 21.75 / 24.85 / 0.0	30.33	V / 1.00 / 0	-16.67
909.478 MHz	27.45 Qp	5.0 / 22.25 / 24.76 / 0.0	29.94	V / 1.00 / 0	-17.06
433.367 MHz	34.4 Qp	3.19 / 16.62 / 24.75 / 0.0	29.46	V / 1.00 / 180	-17.54
860.017 MHz	27.45 Qp	4.78 / 21.74 / 24.85 / 0.0	29.12	V / 1.00 / 0	-17.88
840.008 MHz	27.95 Qp	4.7 / 21.3 / 24.89 / 0.0	29.06	V / 1.00 / 0	-17.94
280.009 MHz	38.65 Qp	2.61 / 12.47 / 24.78 / 0.0	28.94	V / 1.00 / 0	-18.06
294.962 MHz	38.5 Qp	2.64 / 12.28 / 24.7 / 0.0	28.72	V / 1.00 / 0	-18.28
700.03 MHz	29.3 Qp	4.12 / 19.6 / 24.84 / 0.0	28.18	V / 4.00 / 180	-18.82
500.01 MHz	31.8 Qp	3.47 / 17.63 / 24.74 / 0.0	28.16	V / 1.00 / 0	-18.84
636.762 MHz	29.35 Qp	3.93 / 19.04 / 24.71 / 0.0	27.61	V / 1.00 / 0	-19.39
540.011 MHz	30.85 Qp	3.62 / 17.65 / 24.77 / 0.0	27.35	V / 1.00 / 0	-19.65
266.682 MHz	36.8 Qp	2.5 / 12.39 / 24.86 / 0.0	26.84	V / 1.00 / 0	-20.16
417.87 MHz	31.25 Qp	3.12 / 16.4 / 24.73 / 0.0	26.04	V / 1.00 / 0	-20.96
442.434 MHz	30.75 Qp	3.23 / 16.39 / 24.76 / 0.0	25.61	V / 1.00 / 0	-21.39
240.047 MHz	36.7 Qp	2.3 / 11.4 / 25.0 / 0.0	25.4	V / 1.00 / 180	-21.6
460.009 MHz	28.6 Qp	3.31 / 16.6 / 24.78 / 0.0	23.73	V / 1.00 / 0	-23.27
232.002 MHz	35.2 Qp	2.25 / 11.1 / 24.97 / 0.0	23.58	V / 1.00 / 0	-23.42
260.003 MHz	33.75 Qp	2.43 / 12.14 / 24.89 / 0.0	23.43	V / 1.00 / 0	-23.57

(b) (6)

Tested by: [redacted]

Printed Signature

(b) (6)

Reviewed by: [redacted]

Printed Signature

RADIATED EMISSIONS

Test Report #: WC808134 Run 2 | Test Area: OWL

EUT Model #: Secure 1000 | Date: 1/27/2009

EUT Serial #: n/a | EUT Power: 120 V / 60 Hz | Temperature: 22.0 °C

Test Method: FCC A, CISPR22 A | Air Pressure: 100.0 kPa

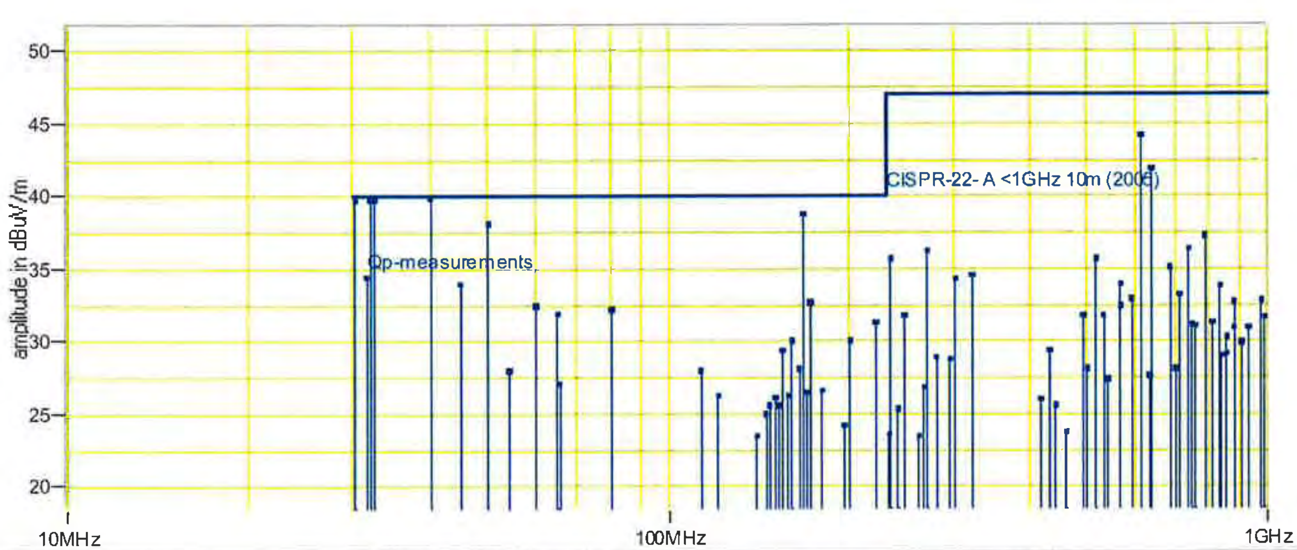
Customer: Rapiscan | Rel. Humidity: 15.0 %

EUT Description: High Speed Screening system

Notes:

Data File Name: 808134Final.dat | Page: 10 of 10

Graph:



Tested by: [redacted]

Printed Signature

Reviewed by: [redacted]

RADIATED EMISSIONS

TÜV SÜD America

Test Report #: WC808134 Run 6 | Test Area: OWL

EUT Model #: Secure 1000 | Date: 1/27/2009

EUT Serial #: n/a | EUT Power: 120 V / 60 Hz | Temperature: 22.0 °C

Test Method: FCC A, CISPR22 A | Air Pressure: 100.0 kPa

Customer: Rapiscan | Rel. Humidity: 15.0 %

EUT Description: High Speed Screening system

Notes: Dual scanner Configuration with UPS and remote PC

Data File Name: 808134Final.dat | Page: 1 of 4

List of measurements for run #: 6

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 CISPR22- A >1GHz 3m ave	DELTA2 FCC-A >1GHz 3m av
Start test 1 to 15 GHz						
3.0 GHz	48.16 Av	6.27 / 29.95 / 49.35 / 0.0	35.03	V / 1.00 / 0	-24.97	-24.97
1.0 GHz	50.6 Av	3.55 / 25.5 / 50.2 / 0.0	29.45	V / 1.00 / 0	-26.55	-30.55
1.032 GHz	51.37 Av	3.62 / 25.47 / 50.3 / 0.0	30.16	V / 1.00 / 0	-25.84	-29.84
1.125 GHz	59.92 Av	3.84 / 25.4 / 50.59 / 0.0	38.57	V / 1.00 / 0	-17.43	-21.43
1.28 GHz	54.15 Av	4.38 / 25.28 / 51.08 / 0.0	32.73	V / 1.00 / 0	-23.27	-27.27
1.375 GHz	53.91 Av	4.7 / 25.2 / 50.96 / 0.0	32.85	V / 1.00 / 0	-23.15	-27.15
1.404 GHz	60.37 Av	4.73 / 25.18 / 50.84 / 0.0	39.44	V / 1.00 / 0	-16.56	-20.56
1.5 GHz	56.17 Av	4.84 / 25.1 / 50.88 / 0.0	35.22	V / 1.00 / 0	-20.78	-24.78
1.75 GHz	55.83 Av	5.1 / 26.35 / 50.89 / 0.0	36.39	V / 1.00 / 0	-19.61	-23.61
2.0 GHz	49.21 Av	5.36 / 27.6 / 50.48 / 0.0	31.69	V / 1.00 / 0	-24.31	-28.31
2.334 GHz	55.12 Av	5.69 / 28.38 / 50.04 / 0.0	39.15	V / 1.00 / 0	-16.85	-20.85
1.0 GHz	47.38 Av	3.55 / 25.5 / 50.2 / 0.0	26.23	V / 1.00 / 270	-29.77	-33.77
2.334 GHz	51.72 Av	5.69 / 28.38 / 50.04 / 0.0	35.75	V / 1.00 / 270	-20.25	-24.25
3.0 GHz	52.18 Av	6.27 / 29.95 / 49.35 / 0.0	39.05	V / 1.00 / 180	-20.95	-20.95
2.0 GHz	54.49 Av	5.36 / 27.6 / 50.48 / 0.0	36.97	V / 1.00 / 180	-19.03	-23.03
1.6 GHz	55.74 Av	4.94 / 25.6 / 50.74 / 0.0	35.54	V / 1.00 / 180	-20.46	-24.46
2.496 GHz	46.86 Av	5.83 / 28.77 / 50.15 / 0.0	31.31	V / 1.00 / 180	-24.69	-28.69
1.032 GHz	56.44 Av	3.62 / 25.47 / 50.3 / 0.0	35.23	V / 4.00 / 225	-20.77	-24.77
1.0 GHz	56.44 Av	3.55 / 25.5 / 50.2 / 0.0	35.29	V / 4.00 / 225	-20.71	-24.71
Start of Horizontal Scan -No new or Higher Horizontal Emissions at 1 and 4 Meters and all azimuths						
Maximize Emissions						
1.404 GHz	60.7 Av	4.73 / 25.18 / 50.84 / 0.0	39.77	V / 1.20 / 18	-16.23	-20.23

Tested by: (b) (6) [redacted]

Reviewed by: (b) (6) [redacted]

TSL001262

RADIATED EMISSIONS

TÜV SÜD America

Test Report #: WC808134 Run 6 | Test Area: OWL

EUT Model #: Secure 1000 | Date: 1/27/2009

EUT Serial #: n/a | EUT Power: 120 V / 60 Hz | Temperature: 22.0 °C

Test Method: FCC A, CISPR22 A | Air Pressure: 100.0 kPa

Customer: Rapiscan | Rel. Humidity: 15.0 %

EUT Description: High Speed Screening system

Notes: Dual scanner Configuration with UPS and remote PC

Data File Name: 808134Final.dat | Page: 2 of 4

Measurement summary for limit1: CISPR22- A >1GHz 3m ave (Av)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 CISPR22- A >1GHz 3m ave
1.404 GHz	60.7 Av	4.73 / 25.18 / 50.84 / 0.0	39.77	V / 1.20 / 18	-16.23
2.334 GHz	55.12 Av	5.69 / 28.38 / 50.04 / 0.0	39.15	V / 1.00 / 0	-16.85
1.125 GHz	59.92 Av	3.84 / 25.4 / 50.59 / 0.0	38.57	V / 1.00 / 0	-17.43
2.0 GHz	54.49 Av	5.36 / 27.6 / 50.48 / 0.0	36.97	V / 1.00 / 180	-19.03
1.75 GHz	55.83 Av	5.1 / 26.35 / 50.89 / 0.0	36.39	V / 1.00 / 0	-19.61
1.6 GHz	55.74 Av	4.94 / 25.6 / 50.74 / 0.0	35.54	V / 1.00 / 180	-20.46
1.0 GHz	56.44 Av	3.55 / 25.5 / 50.2 / 0.0	35.29	V / 4.00 / 225	-20.71
1.032 GHz	56.44 Av	3.62 / 25.47 / 50.3 / 0.0	35.23	V / 4.00 / 225	-20.77
1.5 GHz	56.17 Av	4.84 / 25.1 / 50.88 / 0.0	35.22	V / 1.00 / 0	-20.78
3.0 GHz	52.18 Av	6.27 / 29.95 / 49.35 / 0.0	39.05	V / 1.00 / 180	-20.95
1.375 GHz	53.91 Av	4.7 / 25.2 / 50.96 / 0.0	32.85	V / 1.00 / 0	-23.15
1.28 GHz	54.15 Av	4.38 / 25.28 / 51.08 / 0.0	32.73	V / 1.00 / 0	-23.27
2.496 GHz	46.86 Av	5.83 / 28.77 / 50.15 / 0.0	31.31	V / 1.00 / 180	-24.69

(b) (6)

Tested by: [redacted]

(b) (6)

Reviewed by: [redacted]

Printed Signature

TSL001263

RADIATED EMISSIONS

TÜV SÜD America

Test Report #:	WC808134 Run 6	Test Area:	OWL		
EUT Model #:	Secure 1000	Date:	1/27/2009		
EUT Serial #:	n/a	EUT Power:	120 V / 60 Hz	Temperature:	22.0 °C
Test Method:	FCC A, CISPR22 A			Air Pressure:	100.0 kPa
Customer:	Rapiscan			Rel. Humidity:	15.0 %
EUT Description:	High Speed Screening system				
Notes:	Dual scanner Configuration with UPS and remote PC				
Data File Name:	808134Final.dat			Page:	3 of 4

Measurement summary for limit2: FCC-A >1GHz 3m av (Av)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA2 FCC-A >1GHz 3m av
1.404 GHz	60.7 Av	4.73 / 25.18 / 50.84 / 0.0	39.77	V / 1.20 / 18	-20.23
2.334 GHz	55.12 Av	5.69 / 28.38 / 50.04 / 0.0	39.15	V / 1.00 / 0	-20.85
3.0 GHz	52.18 Av	6.27 / 29.95 / 49.35 / 0.0	39.05	V / 1.00 / 180	-20.95
1.125 GHz	59.92 Av	3.84 / 25.4 / 50.59 / 0.0	38.57	V / 1.00 / 0	-21.43
2.0 GHz	54.49 Av	5.36 / 27.6 / 50.48 / 0.0	36.97	V / 1.00 / 180	-23.03
1.75 GHz	55.83 Av	5.1 / 26.35 / 50.89 / 0.0	36.39	V / 1.00 / 0	-23.61
1.6 GHz	55.74 Av	4.94 / 25.6 / 50.74 / 0.0	35.54	V / 1.00 / 180	-24.46
1.0 GHz	56.44 Av	3.55 / 25.5 / 50.2 / 0.0	35.29	V / 4.00 / 225	-24.71
1.032 GHz	56.44 Av	3.62 / 25.47 / 50.3 / 0.0	35.23	V / 4.00 / 225	-24.77
1.5 GHz	56.17 Av	4.84 / 25.1 / 50.88 / 0.0	35.22	V / 1.00 / 0	-24.78
1.375 GHz	53.91 Av	4.7 / 25.2 / 50.96 / 0.0	32.85	V / 1.00 / 0	-27.15
1.28 GHz	54.15 Av	4.38 / 25.28 / 51.08 / 0.0	32.73	V / 1.00 / 0	-27.27
2.496 GHz	46.86 Av	5.83 / 28.77 / 50.15 / 0.0	31.31	V / 1.00 / 180	-28.69

(b) (6)

Tested by: [redacted]

(b) (6)

Reviewed by: [redacted]

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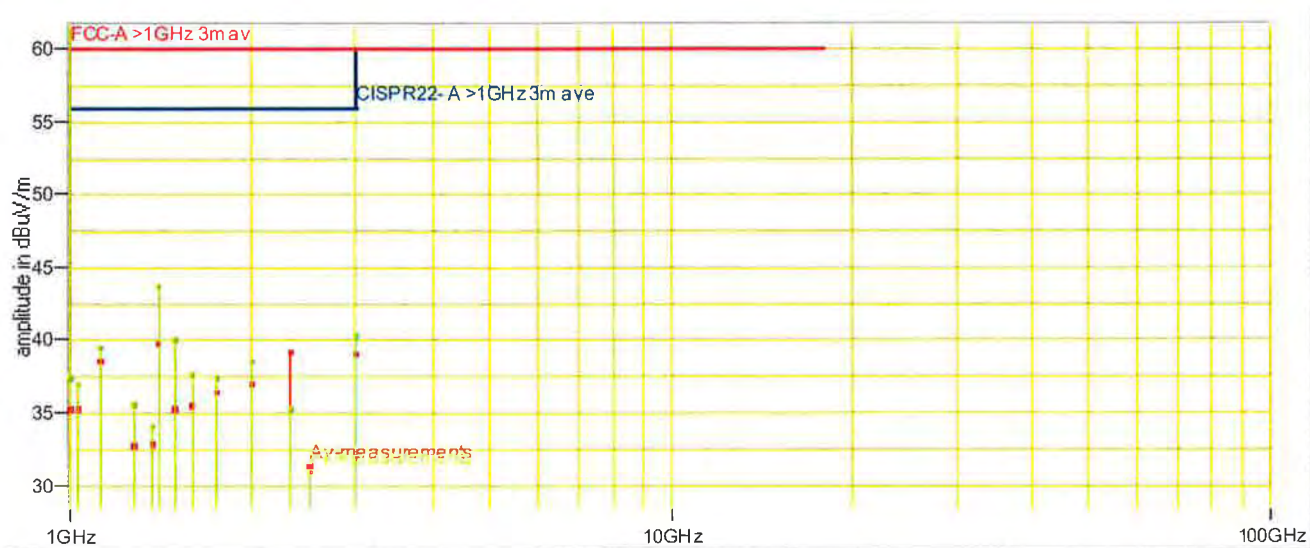
RADIATED EMISSIONS

TÜV SÜD America

Test Report #:	WC808134 Run 6	Test Area:	OWL		
EUT Model #:	Secure 1000	Date:	1/27/2009		
EUT Serial #:	n/a	EUT Power:	120 V / 60 Hz	Temperature:	22.0 °C
Test Method:	FCC A, CISPR22 A			Air Pressure:	100.0 kPa
Customer:	Rapiscan			Rel. Humidity:	15.0 %
EUT Description:	High Speed Screening system				
Notes:	Dual scanner Configuration with UPS and remote PC				
Data File Name:	808134Final.dat			Page:	4 of 4

Graph:



Tested by: (b) (6) [redacted]

Reviewed by: (b) (6) [redacted]

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RADIATED EMISSIONS

TÜV SÜD America

Test Report #:	WC808134 Run 6	Test Area:	OWL		
EUT Model #:	Secure 1000	Date:	1/27/2009		
EUT Serial #:	n/a	EUT Power:	120 V / 60 Hz	Temperature:	22.0 °C
Test Method:	FCC A, CISPR22 A			Air Pressure:	100.0 kPa
Customer:	Rapiscan			Rel. Humidity:	15.0 %
EUT Description:	High Speed Screening system				
Notes:	Dual scanner Configuration with UPS and remote PC				
Data File Name:	808134Final.dat			Page:	1 of 5

List of measurements for run #: 6

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 CISPR22- A >1GHz 3m pk	DELTA2 FCC A >1G 3 M pk
Start test 1 to 15 GHz						
3.0 GHz	48.16 Av	6.27 / 29.95 / 49.35 / 0.0	35.03	V / 1.00 / 0	n/a	n/a
3.0 GHz	50.8 Pk	6.27 / 29.95 / 49.35 / 0.0	37.67	V / 1.00 / 0	-42.33	-42.33
1.0 GHz	50.6 Av	3.55 / 25.5 / 50.2 / 0.0	29.45	V / 1.00 / 0	n/a	n/a
1.0 GHz	51.55 Pk	3.55 / 25.5 / 50.2 / 0.0	30.4	V / 1.00 / 0	-45.6	-49.6
1.032 GHz	51.37 Av	3.62 / 25.47 / 50.3 / 0.0	30.16	V / 1.00 / 0	n/a	n/a
1.032 GHz	54.35 Pk	3.62 / 25.47 / 50.3 / 0.0	33.14	V / 1.00 / 0	-42.86	-46.86
1.125 GHz	59.92 Av	3.84 / 25.4 / 50.59 / 0.0	38.57	V / 1.00 / 0	n/a	n/a
1.125 GHz	60.85 Pk	3.84 / 25.4 / 50.59 / 0.0	39.5	V / 1.00 / 0	-36.5	-40.5
1.28 GHz	54.15 Av	4.38 / 25.28 / 51.08 / 0.0	32.73	V / 1.00 / 0	n/a	n/a
1.28 GHz	57.1 Pk	4.38 / 25.28 / 51.08 / 0.0	35.68	V / 1.00 / 0	-40.32	-44.32
1.375 GHz	53.91 Av	4.7 / 25.2 / 50.96 / 0.0	32.85	V / 1.00 / 0	n/a	n/a
1.375 GHz	55.15 Pk	4.7 / 25.2 / 50.96 / 0.0	34.09	V / 1.00 / 0	-41.91	-45.91
1.404 GHz	60.37 Av	4.73 / 25.18 / 50.84 / 0.0	39.44	V / 1.00 / 0	n/a	n/a
1.404 GHz	64.65 Pk	4.73 / 25.18 / 50.84 / 0.0	43.72	V / 1.00 / 0	-32.28	-36.28
1.5 GHz	56.17 Av	4.84 / 25.1 / 50.88 / 0.0	35.22	V / 1.00 / 0	n/a	n/a
1.5 GHz	61.0 Pk	4.84 / 25.1 / 50.88 / 0.0	40.05	V / 1.00 / 0	-35.95	-39.95
1.75 GHz	55.83 Av	5.1 / 26.35 / 50.89 / 0.0	36.39	V / 1.00 / 0	n/a	n/a
1.75 GHz	56.9 Pk	5.1 / 26.35 / 50.89 / 0.0	37.46	V / 1.00 / 0	-38.54	-42.54
2.0 GHz	49.21 Av	5.36 / 27.6 / 50.48 / 0.0	31.69	V / 1.00 / 0	n/a	n/a
2.0 GHz	50.5 Pk	5.36 / 27.6 / 50.48 / 0.0	32.98	V / 1.00 / 0	-43.02	-47.02
2.334 GHz	55.12 Av	5.69 / 28.38 / 50.04 / 0.0	39.15	V / 1.00 / 0	n/a	n/a
2.334 GHz	51.2 Pk	5.69 / 28.38 / 50.04 / 0.0	35.23	V / 1.00 / 0	-40.77	-44.77
1.0 GHz	47.38 Av	3.55 / 25.5 / 50.2 / 0.0	26.23	V / 1.00 / 270	n/a	n/a
1.0 GHz	46.65 Pk	3.55 / 25.5 / 50.2 / 0.0	25.5	V / 1.00 / 270	-50.5	-54.5
2.334 GHz	51.72 Av	5.69 / 28.38 / 50.04 / 0.0	35.75	V / 1.00 / 270	n/a	n/a
2.334 GHz	49.25 Pk	5.69 / 28.38 / 50.04 / 0.0	33.28	V / 1.00 / 270	-42.72	-46.72
3.0 GHz	52.18 Av	6.27 / 29.95 / 49.35 / 0.0	39.05	V / 1.00 / 180	n/a	n/a
3.0 GHz	53.45 Pk	6.27 / 29.95 / 49.35 / 0.0	40.32	V / 1.00 / 180	-39.68	-39.68
2.0 GHz	54.49 Av	5.36 / 27.6 / 50.48 / 0.0	36.97	V / 1.00 / 180	n/a	n/a

(b) (6)

Tested by: [redacted]

Printed Signature

(b) (6)

Reviewed by: [redacted]

Printed Signature

RADIATED EMISSIONS

TÜV SÜD America

Test Report #:	WC808134 Run 6	Test Area:	OWL
EUT Model #:	Secure 1000	Date:	1/27/2009
EUT Serial #:	n/a	EUT Power:	120 V / 60 Hz
Test Method:	FCC A, CISPR22 A		
Customer:	Rapiscan		
EUT Description:	High Speed Screening system		
Notes:	Dual scanner Configuration with UPS and remote PC		
Data File Name:	808134Final.dat	Page:	2 of 5

Temperature: 22.0 °C
Air Pressure: 100.0 kPa
Rel. Humidity: 15.0 %

List of measurements for run #: 6

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 CISPR22- A >1GHz 3m pk	DELTA2 FCC A >1G 3 M pk
2.0 GHz	56.1 Pk	5.36 / 27.6 / 50.48 / 0.0	38.58	V / 1.00 / 180	-37.42	-41.42
1.6 GHz	55.74 Av	4.94 / 25.6 / 50.74 / 0.0	35.54	V / 1.00 / 180	n/a	n/a
1.6 GHz	57.8 Pk	4.94 / 25.6 / 50.74 / 0.0	37.6	V / 1.00 / 180	-38.4	-42.4
2.496 GHz	46.86 Av	5.83 / 28.77 / 50.15 / 0.0	31.31	V / 1.00 / 180	n/a	n/a
2.496 GHz	46.5 Pk	5.83 / 28.77 / 50.15 / 0.0	30.95	V / 1.00 / 180	-45.05	-49.05
1.032 GHz	56.44 Av	3.62 / 25.47 / 50.3 / 0.0	35.23	V / 4.00 / 225	n/a	n/a
1.032 GHz	58.25 Pk	3.62 / 25.47 / 50.3 / 0.0	37.04	V / 4.00 / 225	-38.96	-42.96
1.0 GHz	56.44 Av	3.55 / 25.5 / 50.2 / 0.0	35.29	V / 4.00 / 225	n/a	n/a
1.0 GHz	58.6 Pk	3.55 / 25.5 / 50.2 / 0.0	37.45	V / 4.00 / 225	-38.55	-42.55
Start of Horizontal Scan -No new or Higher Horizontal Emissions at 1 and 4 Meters and all azimuths						
Maximize Emissions						
1.404 GHz	60.7 Av	4.73 / 25.18 / 50.84 / 0.0	39.77	V / 1.20 / 18	n/a	n/a
1.404 GHz	64.6 Pk	4.73 / 25.18 / 50.84 / 0.0	43.67	V / 1.20 / 18	-32.33	-36.33

Tested by: (b) (6) [redacted]
Printed Signature

Reviewed by: (b) (6) [redacted]
Printed Signature

RADIATED EMISSIONS

TÜV SÜD America

Test Report #: WC808134 Run 6 | Test Area: OWL

EUT Model #: Secure 1000 | Date: 1/27/2009

EUT Serial #: n/a | EUT Power: 120 V / 60 Hz | Temperature: 22.0 °C

Test Method: FCC A, CISPR22 A | Air Pressure: 100.0 kPa

Customer: Rapiscan | Rel. Humidity: 15.0 %

EUT Description: High Speed Screening system

Notes: Dual scanner Configuration with UPS and remote PC

Data File Name: 808134Final.dat | Page: 3 of 5

Measurement summary for limit1: CISPR22- A >1GHz 3m pk (Pk)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 CISPR22- A >1GHz 3m pk
1.404 GHz	64.65 Pk	4.73 / 25.18 / 50.84 / 0.0	43.72	V / 1.00 / 0	-32.28
1.5 GHz	61.0 Pk	4.84 / 25.1 / 50.88 / 0.0	40.05	V / 1.00 / 0	-35.95
1.125 GHz	60.85 Pk	3.84 / 25.4 / 50.59 / 0.0	39.5	V / 1.00 / 0	-36.5
2.0 GHz	56.1 Pk	5.36 / 27.6 / 50.48 / 0.0	38.58	V / 1.00 / 180	-37.42
1.6 GHz	57.8 Pk	4.94 / 25.6 / 50.74 / 0.0	37.6	V / 1.00 / 180	-38.4
1.75 GHz	56.9 Pk	5.1 / 26.35 / 50.89 / 0.0	37.46	V / 1.00 / 0	-38.54
1.0 GHz	58.6 Pk	3.55 / 25.5 / 50.2 / 0.0	37.45	V / 4.00 / 225	-38.55
1.032 GHz	58.25 Pk	3.62 / 25.47 / 50.3 / 0.0	37.04	V / 4.00 / 225	-38.96
3.0 GHz	53.45 Pk	6.27 / 29.95 / 49.35 / 0.0	40.32	V / 1.00 / 180	-39.68
1.28 GHz	57.1 Pk	4.38 / 25.28 / 51.08 / 0.0	35.68	V / 1.00 / 0	-40.32
2.334 GHz	51.2 Pk	5.69 / 28.38 / 50.04 / 0.0	35.23	V / 1.00 / 0	-40.77
1.375 GHz	55.15 Pk	4.7 / 25.2 / 50.96 / 0.0	34.09	V / 1.00 / 0	-41.91
2.496 GHz	46.5 Pk	5.83 / 28.77 / 50.15 / 0.0	30.95	V / 1.00 / 180	-45.05

Tested by: (b) (6) [redacted]

Reviewed by: (b) (6) [redacted]

RADIATED EMISSIONS

TÜV SÜD America

Test Report #:	WC808134 Run 6	Test Area:	OWL		
EUT Model #:	Secure 1000	Date:	1/27/2009		
EUT Serial #:	n/a	EUT Power:	120 V / 60 Hz	Temperature:	22.0 °C
Test Method:	FCC A, CISPR22 A			Air Pressure:	100.0 kPa
Customer:	Rapiscan			Rel. Humidity:	15.0 %
EUT Description:	High Speed Screening system				
Notes:	Dual scanner Configuration with UPS and remote PC				
Data File Name:	808134Final.dat			Page:	4 of 5

Measurement summary for limit2: FCC A >1G 3 M pk (Pk)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA2 FCC A >1G 3 M pk
1.404 GHz	64.65 Pk	4.73 / 25.18 / 50.84 / 0.0	43.72	V / 1.00 / 0	-36.28
3.0 GHz	53.45 Pk	6.27 / 29.95 / 49.35 / 0.0	40.32	V / 1.00 / 180	-39.68
1.5 GHz	61.0 Pk	4.84 / 25.1 / 50.88 / 0.0	40.05	V / 1.00 / 0	-39.95
1.125 GHz	60.85 Pk	3.84 / 25.4 / 50.59 / 0.0	39.5	V / 1.00 / 0	-40.5
2.0 GHz	56.1 Pk	5.36 / 27.6 / 50.48 / 0.0	38.58	V / 1.00 / 180	-41.42
1.6 GHz	57.8 Pk	4.94 / 25.6 / 50.74 / 0.0	37.6	V / 1.00 / 180	-42.4
1.75 GHz	56.9 Pk	5.1 / 26.35 / 50.89 / 0.0	37.46	V / 1.00 / 0	-42.54
1.0 GHz	58.6 Pk	3.55 / 25.5 / 50.2 / 0.0	37.45	V / 4.00 / 225	-42.55
1.032 GHz	58.25 Pk	3.62 / 25.47 / 50.3 / 0.0	37.04	V / 4.00 / 225	-42.96
1.28 GHz	57.1 Pk	4.38 / 25.28 / 51.08 / 0.0	35.68	V / 1.00 / 0	-44.32
2.334 GHz	51.2 Pk	5.69 / 28.38 / 50.04 / 0.0	35.23	V / 1.00 / 0	-44.77
1.375 GHz	55.15 Pk	4.7 / 25.2 / 50.96 / 0.0	34.09	V / 1.00 / 0	-45.91
2.496 GHz	46.5 Pk	5.83 / 28.77 / 50.15 / 0.0	30.95	V / 1.00 / 180	-49.05

Tested by: [redacted]

Printed Signature

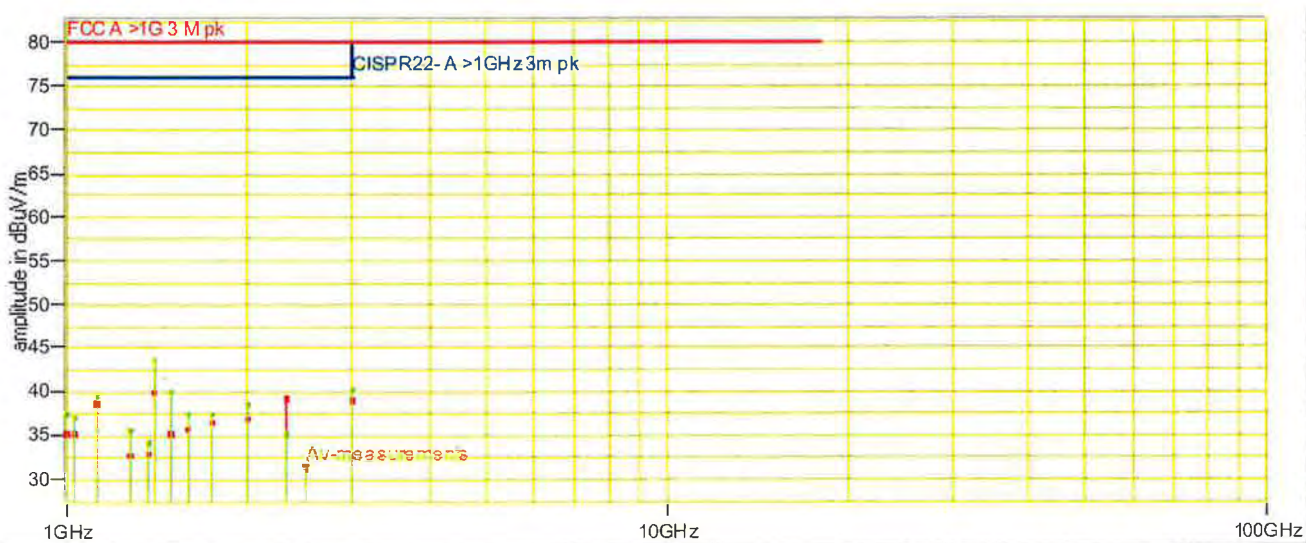
Reviewed by: [redacted]

RADIATED EMISSIONS

TÜV SÜD America

Test Report #:	WC808134 Run 6	Test Area:	OWL		
EUT Model #:	Secure 1000	Date:	1/27/2009		
EUT Serial #:	n/a	EUT Power:	120 V / 60 Hz	Temperature:	22.0 °C
Test Method:	FCC A, CISPR22 A			Air Pressure:	100.0 kPa
Customer:	Rapiscan			Rel. Humidity:	15.0 %
EUT Description:	High Speed Screening system				
Notes:	Dual scanner Configuration with UPS and remote PC				
Data File Name:	808134Final.dat			Page:	5 of 5

Graph:



Tested by: (b) (6) [redacted]

Printed Signature

Reviewed by: (b) (6) [redacted]

TSL001270

Appendix B

Constructional Data Form(s)

and/or

Product Information Form(s)

Form

EMC Test Plan and Constructional Data Form

TÜV SÜD America

PLEASE COMPLETE THIS DOCUMENT IN FULL, ENTERING N/A IF THE FIELD IS NOT APPLICABLE. IF TESTING RESULTS IN MODIFICATIONS TO THE EQUIPMENT, PLEASE SUBMIT A REVISED TP/CDF INDICATING THOSE MODIFICATIONS. ***NOTE: This information will be input into your test report as shown below. Press the F1 key at any time to get HELP for the current field selected.***

(b) (6)

Company: [redacted]

Address:

Contact:

Phone:

E-mail Address:

(b) (6)

Position: [redacted]

Fax:

General Equipment Description -- *NOTE: This information will be input into your test report as shown below.*

EUT Description: Secure 1000 in Single Pose Configuration (Dual View) with UPS and Operator station

EUT Name: Secure 1000 WBI

Model No.: Secure 1000 Serial No.: S507451313-1312

Product Options:

Configurations to be tested: Single Pose Configuration (Dual View)

Equipment Modification (*If applicable, indicate modifications since EUT was last tested. If modifications are made during this testing, submit revised TP/CDF after testing is complete.*)

Modifications since last test: none

Modifications made during test: none

Test Objective(s): *Please indicate the tests to be performed, entering the applicable standard(s) where noted.*

☒ EMC Directive 2004/108/EC (EMC)
Std: EN 55022, EN 61000-6-3

☐ Machinery Directive 89/392/EEC (EMC)
Std:

☐ Medical Device Directive 93/42/EEC (EMC)
Std:

☐ Vehicle Directive: ☐ 2001/3/EC (EMC) ☐ 2004/104/EC (EMC)
☐ Other Vehicle Std:

☐ FDA Reviewers Guidance for Premarket Notification Submissions (EMC)

☒ FCC: Class ☒ A ☐ B Part 15

☐ VCCI: Class ☐ A ☐ B

☐ BSMI: Class ☐ A ☐ B (Separate Report)

☐ Canada: Class ☐ A ☐ B

☐ Australia: Class ☐ A ☐ B

☐ Other:

Third Party Certification, if applicable (*Signature on Page 6 Required)

☐ Attestation of Conformity (AoC)*

☐ Statement of Compliance (previously CoC)*

Protection Class (N/A for vehicles) ☐ Class I ☐ Class II ☐ Class III

(Press **F1** when field is selected to show additional information on Protection Class)

☐ FCC / TCB Certification

☐ E-Mark Certification

☐ EMC Certification (used with Octagon Mark)*

☐ Compliance Document*

☐ Industry Canada / FCB Certification

☐ Taiwan Certification

Form

EMC Test Plan and Constructional Data Form

America

Attendance

Test will be: ☐ Attended by the customer ☒ Unattended by the customer

Failure - *Complete this section if testing will not be attended by the customer.*

If a failure occurs, TÜV SÜD America should:

☒ Call contact listed above, if not available then stop testing. (After hrs phone): [redacted]
☒ Continue testing to complete test series.
☒ Continue testing to define corrective action.
☐ Stop testing.

EUT Specifications and Requirements

Length: 99" Width: 60" Height: 80" Weight: 2200 lbs.

Power Requirements

Regulations require testing to be performed at typical power ratings in the countries of intended use. (i.e., European power is typically 230 VAC 50 Hz or 400 VAC 50 Hz, single and three phase, respectively)

Voltage: 120/240 VAC (If battery powered, make sure battery life is sufficient to complete testing.)

\# of Phases: 1

Current (Amps/phase(max)): (b) (4) [redacted] Current (Amps/phase(nominal)): (b) (4) [redacted]

Other

Other Special Requirements

Typical Installation and/or Operating Environment

(ie. Hospital, Small Business, Industrial/Factory, etc.)

EUT Power Cable

☐ Permanent OR ☒ Removable Length (in meters): 2
☐ Shielded OR ☒ Unshielded
☐ Not Applicable

Form

EMC Test Plan and Constructional Data Form

America

EUT Interface Ports and Cables

Type	Analog	Digital	During Test: Active	Passive	Qty	Shielding: Yes	No	Shielding Type	Termination	Connector Type	Port Termination	Length tested (in meters)	Removable	Permanent
EXAMPLE: *RS232*	☐	☒	☒	☐	2	☒	☐	*Foil over braid*	*Coaxial*	*Metallized 9-pin D-Sub*	*Characteristic Impedance*	6	☒	☐
Ethernet	☐	☒	☒	☐		☐	☒					100	☐	☐
	☐	☐	☐	☐		☐	☐						☐	☐
	☐	☐	☐	☐		☐	☐						☐	☐
	☐	☐	☐	☐		☐	☐						☐	☐
	☐	☐	☐	☐		☐	☐						☐	☐
	☐	☐	☐	☐		☐	☐						☐	☐
	☐	☐	☐	☐		☐	☐						☐	☐
	☐	☐	☐	☐		☐	☐						☐	☐
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	☐	☐	☐	☐		☐	☐						☐	☐
	☐	☐	☐	☐		☐	☐						☐	☐
	☐	☐	☐	☐		☐	☐						☐	☐

EMC Test Plan and Constructional Data Form

EUT Software

Revision Level: 3.00

Description: Secure Single Pose Software

Equipment Under Test (EUT) Operating Modes to be Tested -- list the operating modes to be used during test. It is recommended the equipment be tested while operating in a typical operation mode. FCC testing of personal computers and/or peripherals requires that a simple program generate a complete line of upper case H's. Provide a general description of all software, firmware, and PLD algorithms used in the equipment. List all code modules as described above, with the revision level used during testing. Consult with your TÜV Product Service Representative if additional assistance is required.

1. Scanning
2. Idle
3.

Equipment Under Test (EUT) System Components -- List and describe all components which are part of the EUT. For FCC & Taiwan testing a minimum configuration is required. (ie. Mouse, Printer, Monitor, External Disk Drive, Motherboard, etc)

Description	Model #	Serial #	FCC ID #
Secure 1000 Single Pose System: Consists of….	2394931	S507451313-1312	
- Secure 1000 Scanner Master	2034534 + options (equiv. to 317-6000)	S507431312	
- Secure 1000 Scanner Slave	2034534 + options (equiv. to 317-. 6000)	S507451313	
- UPS (Powerware)	PW-9120 1500	RB124A0132	
- Inspector Station Computer	2394913	n/a	

EMC Test Plan and Constructional Data Form

Support Equipment -- List and describe all support equipment which is not part of the EUT. (i.e. peripherals, simulators, etc) This information is required for FCC & Taiwan testing.

Description	*Model #*	*Serial #*	*FCC ID #*
n/a			

Oscillator Frequencies

Manufacturer	*Frequency*	*Derived Frequency*	*Component # / Location*	*Description of Use*
Premio	2.0 Ghz	2.0 Ghz	2313658 / Scan computer	Clock internal PC
Rapiscan	10 MHz	10 Mhz	337-7510 / System Control Bd	Controls all scanning functions

Power Supply

Manufacturer	*Model #*	*Serial #*	*Type*
			☐ Switched-mode: (Frequency) ______ ☐ Linear ☐ Other: ______
			☐ Switched-mode: (Frequency) ______ ☐ Linear ☐ Other: ______

Power Line Filters

Manufacturer	*Model #*	*Location in EUT*

EMC Test Plan and Constructional Data Form

Critical EMI Components (Capacitors, ferrites, etc.)

Description	*Manufacturer*	*Part # or Value*	*Qty*	*Component # / Location*

EMC Critical Detail -- Describe other EMC Design details used to reduce high frequency noise.

PLEASE ENTER NAMES BELOW (INSERT ELECTRONIC SIGNATURE IF POSSIBLE)

Authorization (Signature Required if a Third Party Certification is checked on pg 1)

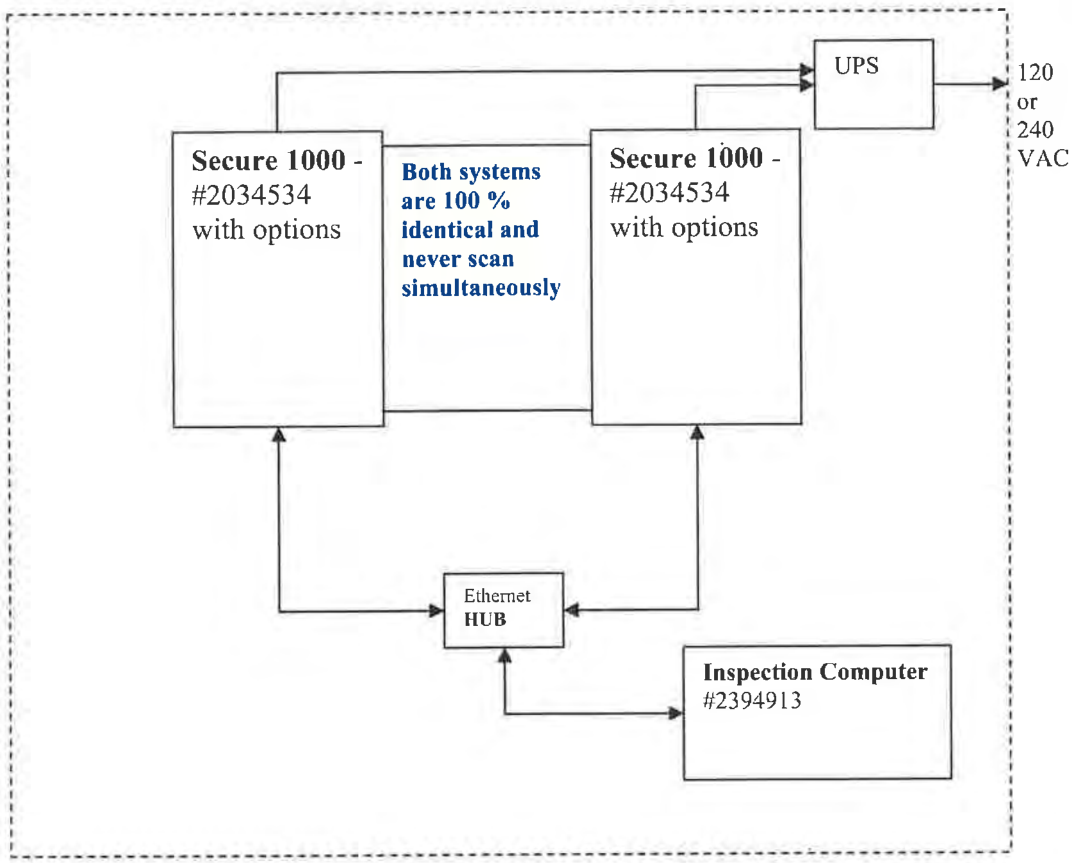
Customer authorization to perform tests according to this test plan. Date

Test Plan/CDF Prepared By (please print) Date

Form

EMC Block Diagram Form

System Configuration Block Diagram -- Provide a line drawing identifying the EUT, simulators, support equipment, I/O cables, power cables, and any other pertinent components to be used during testing. Use a dashed line to separate the equipment in the testing field versus equipment outside testing field.



Authorization Signatures

Customer authorization to perform tests according to this test plan. | Date

Test Plan/CDF Prepared By (please print) | Date

Appendix C

Measurement Protocol

MEASUREMENT PROTOCOL

GENERAL INFORMATION

Test Methodology
Conducted and radiated emission testing is performed according to the procedures in International Special Committee on Radio Interference (CISPR) Publication 22, European Standard EN 55022.

In compliance with FCC Docket 92-152, "Harmonization of Rules for Digital Devices Incorporate International Standards", testing for FCC compliance may be done following the ANSI C63.4-2003 procedures and using the CISPR 22 Limits.

Measurement Uncertainty
The test system for conducted emissions is defined as the LISN, tuned receiver or spectrum analyzer, and coaxial cable. This test system has a measurement uncertainty of ±1.8 dB. The test system for radiated emissions is defined as the antenna, the pre-amplifier, the spectrum analyzer and the coaxial cable. This test system has a measurement uncertainty of ±4.8 dB. The measurement uncertainty values for conducted and radiated emissions meet the requirements as expressed in CISPR 16-4-2. The equipment comprising the test systems is calibrated on an annual basis.

Justification
The Equipment Under Test (EUT) is configured in a typical user arrangement in accordance with the manufacturer's instructions. A cable is connected to each available port and either terminated with a peripheral, into it's characteristic impedance or left unterminated. When appropriate, the cables are manually manipulated with respect to each other to obtain maximum emissions from the unit.

CONDUCTED EMISSIONS

The final level, expressed in dBμV, is arrived at by taking the reading directly from the EMI receiver. This level is compared directly to the CISPR limit.

To convert between dBμV and μV, the following conversions apply:

dBμV = 20(log μV)

μV = Inverse log (dBμV/20)

RADIATED EMISSIONS

The final level, expressed in dBμV/m, is arrived at by taking the reading from the spectrum analyzer (Level dBμV) and adding the antenna correction factor and cable loss factor (Factor dB) to it. This result then has the CISPR limit subtracted from it to provide the Delta, which gives the tabular data as shown in the data sheets in Attachment B. The amplifier gain is automatically accounted for by using an analyzer offset.

Example:

FREQ (MHz)	LEVEL (dBuV)		CABLE/ANT/PREAMP (dB)		(dB/m)		(dB)		FINAL (dBuV/m)	POL/HGT/AZ	(m)	(deg)	DELTA1 EN 55022
60.80	42.5Qp	+	1.2	+	10.9	-	25.5	=	29.1	V	1.0	0.0	-10.9

DETAILS OF TEST PROCEDURES

General Standard Information
The test methods used comply with ANSI C63.4-2003 - "Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz."

Conducted Emissions
Conducted emissions on the 50 Hz and/or 60 Hz power interface of the EUT are measured in the frequency range of 150 kHz to 30 MHz. The measurements are performed using a receiver, which has CISPR characteristic bandwidth and quasi-peak detection, and a Line Impedance Stabilization Network (LISN), with 50 Ω/50 µH (CISPR 16) characteristics. In some cases, a pre-scan using a spectrum analyzer is initially performed on the units comprising the system under test to locate the highest emissions.

Radiated Emissions
Radiated emissions from the EUT are measured in the frequency range of 30 to 15000 MHz using a spectrum analyzer and appropriate broadband linearly polarized antennas. Measurements between 30 MHz and 1000 MHz are made with 120 kHz/6 dB bandwidth and quasi-peak detection and measurements above 1000 MHz are made with a 1 MHz/6 dB bandwidth and peak/average detection. Floor standing equipment is placed directly on the turntable/ground plane. Interface cables that are closer than 40 centimeters to the ground plane are bundled in the center in a serpentine fashion so they are at least 40 centimeters from the ground plane. The antenna is positioned 3 and 10 meters horizontally from the EUT. To locate maximum emissions from the test sample the antenna is varied in height from 1 to 4 meters, measurement scans are made with both horizontal and vertical antenna polarizations and the EUT are rotated 360 degrees.

Product Service

TEST REPORT
IEC 61010-1
Safety requirements for electrical equipment for measurement, control, and laboratory use
Part 1: General requirements

Report Reference No .... :	NI808123
Tested by (name+signature) .... :	(b) (6) [redacted] (b) (6) [redacted] ......
Approved by (name+signature) .... :	......
Date of issue .... :	2009-01-15
Testing Laboratory .... :	TUV America Inc Product Service Division
Address .... :	1775 Old Highway 8 NW, Suite 104, New Brighton, MN 55112 USA
Testing location/ procedure .... :	CCATL ☒ RMT ☐ SMT ☐ WMT ☐ TMP ☐
Testing location/ address .... :	1775 Old Highway 8 NW, Suite 104, New Brighton, MN 55112 USA
Applicant's name .... :	Rapiscan Systems
Address .... :	2805 Columbia St, Torrance, CA 90503
Test specification:	
Standard .... :	IEC 61010 – 1 : 2001 (Second Edition)
Test procedure .... :	CCA
Non-standard test method.............. :	National differences UL 61010-1: 2004 / CAN/CSA C22.2 No. 61010-1:2004
Test Report Form No .... :	IEC61010_D
TRF Originator .... :	VDE
Master TRF .... :	Dated 2005-02-14

Test item description .... :	The 317-6000-110 (Secure 1000) is a computerized personnel x-ray scanner
Trade Mark .... :	Rapiscan Systems
Manufacturer .... :	Rapiscan Systems 2805 Columbia Street, Torrance CA 90503 USA
Model/Type reference .... :	317-6000-110 (Secure 1000)
Ratings .... :	(b) (4) [redacted] 10A, 50/60Hz

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TÜV SÜD Product Service

Copy of marking plate

Summary of testing:

Clause 4.4	Single Fault testing
Clause 5.1.3	Input Current
Clause 5.3	Marking Durability
Clause 6	Leakage Current
Clause 6.5.1	Ground Continuity
Clause 6.8	Dielectric Strength
Clause 6.10.2	CR / CL Distances
Clause 6.10.3	Capacitance Discharge
Clause 7.3	Stability
Clause 8	Mechanical
Clause 10	Heating

National differences: UL 61010-1: 2004 / CAN/CSA C22.2 No. 61010-1:2004
The reviewed component power supplies provided: Model: SPN150-24S manufactured by Volgen / Kaga components co ltd and Model WRDJ23FWX-U manufactured by ETA Electric Industry Co meet the requirements of UL 61010-1 at mains supply voltage of 150 Volts or less.
Determined by a review of the UL reports provided for both supplies.

1. X and Y capacitors used in both supplies are compliant to IEC 60384-14.
2. Transformer insulation Primary / secondary 3 layers/ 0.075 Polyester tape
   Primary / core 0.8 mm Bobbin minimum (rated 94V-0)
3. Creepage and clearance distances, dielectric strength meet the requirements of UL 61010-1

TÜV SÜD Product Service

Test item particulars	
Type of item tested ....:	Laboratory
Description of equipment function ....:	The 317-6000-110 (Secure 1000) is a computerized personnel x-ray scanner.
Measurement (installation) category ....:	N/A
Pollution degree ....:	2
Protection class ....:	I
Environmental rating ....:	standard
Equipment mobility ....:	floorstanding
Connection to mains supply ....:	detachable cord set
Operating conditions ....:	continuous
Overall size of the equipment (W x D x H) ....:	123cm x 92cm x 202cm
Mass of the equipment (kg) ....:	295 kg
Marked degree of protection to IEC 60529 ....:	IPX0
Accessories and detachable parts included in the evaluation ....:	
Options ....:	N/A
- test case does not apply to the test object ....:	N/A
- test object does meet the requirement ....:	P(Pass)
- test object does not meet the requirement ....:	F(Fail)
Testing ....:	
Date of receipt of test item ....:	2008-10-27
Date (s) of performance of tests ....:	2008-10-27 through 2008-12-12

General remarks:

This report is not valid as a CB Test Report unless signed by an approved CB Testing Labpratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

"(see Form A.#)" refers to a table included or appended to the report
"(see Enclosure #)" refers to additional information appended to the report.

Throughout this report a point is used as the decimal separator.
List of test equipment must be included in this report or kept on file and available for review.

General product information:

The 317-6000-110 (Secure 1000) is a computerized personnel x-ray scanner

Product Service

	TABLE: 1 - Test Report Index Page	—
Document No.	Documents included / attached to this report (description)	Page Numbers
TABLE 1	Test Report Index Page	4
TABLE 2	List of test equipment used for measurements	4
TABLE 3	List of safety relevant components	5 - 9
NI808123_ NDEV_Att1	National Differences	12 pages
NI808123_ photo_ Att2	Photo attachment	9 pages

	TABLE: 2 - Test equipment list				P
Item	Type	Equipment No.	Calibration date		Comments
			Last[1]	Due	
To be provided upon request					

1) or interval between calibrations.

Product Service

Clause	Requirement + Test	Result - Remark	Verdict

	TABLE: 3 - List of components and circuits relied on for safety				P
Unique component reference or location	Application/function	Manufacturer trademark (NOTE 1)	Type / model	Technical data (NOTE 2)	Mark(s) of conformity evidence of acceptance (NOTE 3 and 4)
Enclosure rear doors	Back doors	(b) (4) [redacted]			—
Enclosure side panels	Enclosure non-metallic side panels				UL
Enclosure Front panel	Enclosure non-metallic front panel				UL
Power supply	Power supply				Reviewed UL test data to verify compliance to requirements of UL 61010-1
Power supply	Power supply				Reviewed UL test data to verify compliance to requirements of UL 61010-1
Fan 115Vac	Fan				UL, CSA
Power Plug North American	Power Plug				UL, CSA
Power Cord North American	Various				UL, CSA
Appliance inlet	Power inlet				UL, CSA/cUL, VDE

TÜV SÜD Product Service

Clause	Requirement + Test	Result - Remark	Verdict

	TABLE: 3 - List of components and circuits relied on for safety				P
Unique component reference or location	**Application/function**	**Manufacturer trademark (NOTE 1)**	**Type / model**	**Technical data (NOTE 2)**	**Mark(s) of conformity evidence of acceptance (NOTE 3 and 4)**
Circuit Breakers	Circuit breaker	(b) (4) [redacted]			UL, CSA, VDE
Quick connect terminal	Quick connect terminal	[redacted]			UL, CSA,
Quick connect terminal	Quick connect terminal	[redacted]			UL, CSA,
Relay	Relay	[redacted]			UL, CSA, VDE
Fuse holder (F2, F3)	Fuse holder	[redacted]			UL, CSA
Fuse (F2)	Fuse	[redacted]			UL
Fuse (F3)	Fuse	[redacted]			UL
EMI Filter	Mains RFI filter	[redacted]			UL, CSA, VDE
Residual Current circuit breaker	Residual Current circuit breaker	[redacted]			VDE
Surge protection filter	Surge protection filter	[redacted]			UL, cUL
Switch	Standby switch	[redacted]			UL, CSA, VDE

TÜV SÜD Product Service

Clause	Requirement + Test	Result - Remark	Verdict

	TABLE: 3 - List of components and circuits relied on for safety				P
Unique component reference or location	Application/function	Manufacturer trademark (NOTE 1)	Type / model	Technical data (NOTE 2)	Mark(s) of conformity evidence of acceptance (NOTE 3 and 4)
Relay (lamp driver monitor board)	Relay	(b) (4) [redacted]	[redacted]	[redacted]	UL
		[redacted]	[redacted]	[redacted]	
LCD Display	Display panel	[redacted]	[redacted]	[redacted]	Tested in product with Edac power: Model: EA1050C-120
LCD Display Power supply	Power supply	[redacted]	[redacted]	[redacted]	UL, cUL, TUV
Alternate LCD Display Power supply	Power supply	[redacted]	[redacted]	[redacted]	UL, cUL
Servo Motor Controller	Servo Motor Controller	[redacted]	[redacted]	[redacted]	UL
Servo Motor	Servo Motor	[redacted]	[redacted]	[redacted]	Tested in product
High Voltage Generator	High Voltage Generator	[redacted]	[redacted]	[redacted]	Tested in product
High voltage cable	high voltage cable	[redacted]	[redacted]	[redacted]	Tested in product

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Clause	Requirement + Test	Result - Remark	Verdict

TABLE: 3 - List of components and circuits relied on for safety — P

Unique component reference or location	Application/function	Manufacturer trademark (NOTE 1)	Type / model	Technical data (NOTE 2)	Mark(s) of conformity evidence of acceptance (NOTE 3 and 4)
X-Ray Tube	X-Ray Tube	(b) (4) [redacted]	[redacted]	[redacted]	Tested in product
Fan X-ray	Fan	[redacted]	[redacted]	[redacted]	UL
Chopper Motor	Chopper Motor	[redacted]	[redacted]	[redacted]	Tested in product
Chopper Motor Circuit breaker	Circuit breaker	[redacted]	[redacted]	[redacted]	UL
The following components are located on the high voltage power supply assemblies					
Transformer	Step-down transformer	(b) (4) [redacted]	[redacted]	[redacted]	Tested in product
Varistor D3, D4	Varistor	[redacted]	[redacted]	[redacted]	UL, CSA, VDE
Varistor D3, D4 Alternate	Varistor	[redacted]	[redacted]	[redacted]	UL, CSA, VDE
The following components located in the internal computer, Mfr: Axiomtek, Model: AX60530WB					

Product Service

Clause	Requirement + Test	Result - Remark	Verdict

	TABLE: 3 - List of components and circuits relied on for safety				P
Unique component reference or location	Application/function	Manufacturer trademark (NOTE 1)	Type / model	Technical data (NOTE 2)	Mark(s) of conformity evidence of acceptance (NOTE 3 and 4)
Power supply	Power supply	(b) (4) [redacted]	(b) (4) [redacted]	(b) (4) [redacted]	UL.cUL
Hard Drive	Hard drive	Various	Various	[redacted]	UL, CSA, VDE/TUV
CD-R/RW/DVD-ROM	CD-R/RW/DVD-ROM	Various	Various	[redacted]	UL, CSA, VDE/TUV
Battery located on motherboard	Battery Li-ion	Various	CR2032	[redacted]	—
Battery protection	Resistor	Various	—	[redacted]	—

Note → 1 List all different manufacturers of the above components
→ 2 May include electrical, mechanical values
→ 3 List licence no, standard or method of acceptance
4 → asterisk indicates mark assuring agreed level of surveillance

Product Service

Clause	Requirement + Test	Result - Remark	Verdict
4.4	Testing in SINGLE FAULT CONDITIONS		P
4.4.1	Fault tests	(see Form A.1 and A.2)	P
4.4.2	SINGLE FAULT CONDITIONS not covered by 4.4.2.1 to 4.4.2.12	(see Form A.1 and A.2)	P
	Specific faults:		P
4.4.2.1	PROTECTIVE IMPEDANCE	Protective impedance not used	N/A
4.4.2.2	Protective conductor		P
4.4.2.3	Equipment or parts for short-term or intermittent operation		N/A
4.4.2.4	Motors		P
4.4.2.5	Capacitors	No capacitor in motor windings	N/A
4.4.2.6	Mains transformers		P
4.4.2.7	Outputs		P
4.4.2.8	Equipment for more than one supply		N/A
4.4.2.9	Cooling		P
4.4.2.10	Heating devices	None provided	N/A
4.4.2.11	Insulation between circuits and parts	No insulation below basic level	N/A
4.4.2.12	Interlocks		N/A
5	MARKING AND DOCUMENTATION		P
5.1.1	General		P
	Required equipment markings are:		—
	visible:		P
	From the exterior; or		P
	After removing a cover; or		P
	Opening a door		P
	After removal from a rack or panel		N/A
	Not put on parts which can be removed by an OPERATOR		P
	Letter symbols (IEC 60027) used		P
	Graphic symbols (IEC 61010-1: Table 1) used		P
5.1.2	Identification		P
	Equipment is identified by:		—
5.1.2a)	Manufacturer's or supplier's name or trademark	Rapiscan Systems	P

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Clause	Requirement + Test	Result - Remark	Verdict
5.1.2b)	Model number, name or other means	317-6000-110 (Secure 1000)	P
	Manufacturing location identified	Single manufacturing location	N/A
5.1.3	Mains supply		P
	Equipment is marked as follows:		—
5.1.3a)	Nature of supply:		—
	1) a.c. RATED mains frequency or range of frequencies	60Hz	P
	2) d.c. with symbol 1	Not designed for d.c. mains	N/A
5.1.3b)	RATED supply voltage(s) or range ....:	110 VAC	P
5.1.3c)	Max. RATED power (W or VA)or input current.............:	10 A	P
	The measured value not more than 110 %	(see Form A.3)	P
	If more than one voltage range:		—
	Separate values marked; or		P
	Values differ by less than 20 %		N/A
5.1.3d)	OPERATOR-set for different RATED supply voltages:	Operator cannot change supply voltage setting	—
	Indicates the equipment set voltage		N/A
	PORTABLE EQUIPMENT indication is visible from the exterior	Not portable	N/A
	Changing the setting changes the indication	Operator cannot change supply voltage setting	N/A
5.1.3e)	Accessory mains socket-outlets accepting standard mains plugs are marked:	No mains socket outlets provided	—
	With the voltage if it is different from the mains supply voltage ....:	No mains socket outlets provided	N/A
	For use only with specific equipment	No mains socket outlets provided	N/A
	If not marked for specific equipment it is marked with:	No mains socket outlets provided	—
	The maximum RATED current or power; or	No mains socket outlets provided	N/A
	Symbol 14 with full details in the documentation	No mains socket outlets provided	N/A
5.1.4	Fuses		N/A
	OPERATOR replaceable fuse marking (see also 5.4.5) ....:	No operator replaceable fuses	N/A
5.1.5	TERMINALS, connections and operating devices		N/A
	Where necessary for safety, indication of purpose of TERMINALS, connectors, controls and indicators marked		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	If insufficient space, symbol 14 used		N/A
5.1.5.1	TERMINALS	Appliance inlet compliant to IEC 60320 provided	N/A
	Mains supply TERMINALS identified		N/A
	Other TERMINAL marking .... :	Appliance inlet compliant to IEC 60320 provided	N/A
5.1.5.1a)	FUNCTIONAL EARTH TERMINALS (symbol 5 used)	No functional earth terminals	N/A
5.1.5.1b)	PROTECTIVE CONDUCTOR TERMINALS:		P
	Symbol 6 is placed close to or on the TERMINAL; OR		P
	Part of appliance inlet	Connection to protective conductor terminal provided at terminal mounted on metal chassis	N/A
5.1.5.1c)	TERMINALS of measuring and control circuits (symbol 7 used)	No terminals for measuring and control circuits provided	N/A
5.1.5.1d)	HAZARDOUS LIVE TERMINALS supplied from the interior	No hazardous live terminals supplied from interior	N/A
	Standard MAINS socket outlet; or	No mains socket outlet provided	N/A
	RATINGS marked; or	No mains socket outlet provided	N/A
	Symbol 14 used	No mains socket outlet provided	N/A
5.1.5.1e)	ACCESSIBLE FUNCTIONAL EARTH TERMINALS:	No functional earth terminals	N/A
	Self-evident; or	No functional earth terminals	N/A
	Indication (symbol 8 acceptable)	No functional earth terminals	N/A
5.1.5.2	Measuring circuit TERMINALS	No measuring circuit terminals	N/A
	Unless clear indication that below the limits of 50 V a.c. or 120 V d.c. to earth:	No measuring circuit terminals	N/A
	Required markings are adjacent to TERMINALS; OR	No measuring circuit terminals	N/A
	If insufficient space:		—
	On the RATING plate or scale plate; or	No measuring circuit terminals	N/A
	TERMINAL is marked with symbol 14	No measuring circuit terminals	N/A
5.1.5.2a)	For CAT I measurement circuits:		—
	RATED voltage .... :	No measuring circuit terminals	N/A
	Current marked if applicable.................................. :	No measuring circuit terminals	N/A
	Symbol 14 marked		N/A

Product Service

Clause	Requirement + Test	Result - Remark	Verdict
5.1.5.2b)	For CAT II, CAT III or CAT IV measurement circuits:		—
	RATED voltage .... :	No measuring circuit terminals	N/A
	Current marked if applicable.................................. :	No measuring circuit terminals	N/A
	Appropriate measurement category marked (CAT II, CAT III or CAT IV); or.............................. :		N/A
	No marking required for:		N/A
	TERMINALS other than those permanently connected and not ACCESSIBLE with appropriate information in installation manual (see 5.4.3)		N/A
	For specific connection to other equipment TERMINALS only, and means for identifying provided		N/A
5.1.6	Switches and circuit breakers		N/A
	If disconnecting device, on or off position marked	Appliance inlet provided disconnect	N/A
5.1.7	Equipment protected by DOUBLE INSULATION or REINFORCED INSULATION		N/A
	Protected throughout (symbol 11 used)	Not a Class II device	N/A
	Only partially protected (symbol 11 not used)		N/A
5.1.8	Field-wiring TERMINAL boxes	No field wiring boxes provided	N/A
	If TERMINAL or ENCLOSURE exceeds 60 °C:	No field wiring boxes provided	N/A
	Cable temperature RATING marked....................... :		N/A
	Marking visible before and during connection or beside TERMINAL		N/A
5.2	Warning markings		P
	Visible when ready for NORMAL USE	Not accessible or visible during normal use	N/A
	Are near or on applicable parts		P
	Symbols and text correct dimensions and colour		P
	If necessary marked with symbol 14		N/A
	Statement to isolate or disconnect	Statement in maintenance manual	P
5.3	Durability of markings		P
	The required markings remain clear and legible in NORMAL USE	(see Form A.4)	P
5.4	Documentation		P
5.4.1	General		P
	Equipment is accompanied by documentation which includes:		—

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.1a)	Intended use		P
5.4.1b)	Technical specification		P
5.4.1c)	Instructions for use		P
5.4.1d)	Name and address of manufacturer or supplier		P
5.4.1e)	Information specified in 5.4.2 to 5.4.5		P
5.4.1f)	If marking of TERMINALS required, definition of measurement category	No measurement terminals provided	N/A
5.4.1g)	If CAT 1:	No measurement terminals provided	N/A
	Warning not to be used in CAT II, CAT III or CAT IV measurement circuits	No measurement terminals provided	N/A
	RATINGS including RATED transient overvoltages ... :	No measurement terminals provided	N/A
5.4.1	Warning statements and a clear explanation of warning symbols:		—
	Provided in the documentation; or		P
	Information is marked on the equipment	High voltage warning behind locked doors near high voltage source	P
5.4.2	Equipment RATINGS		P
	Documentation includes:		—
5.4.2a)	Supply voltage or voltage range .... :	110 VAC,	P
	Frequency or frequency range.............................. :	60Hz	P
	Power or current RATING .... :	8A	P
5.4.2b)	Description of all input and output connections		P
5.4.2c)	RATING of insulation of external circuits, when such circuits are nowhere ACCESSIBLE		N/A
5.4.2d)	Statement of the range of environmental conditions		P
5.4.2e)	Degree of protection (IEC 60529)	IPX0	N/A
5.4.3	Equipment installation		P
	Documentation includes instructions for:		—
5.4.3a)	Assembly, location and mounting requirements		P
5.4.3b)	Protective earthing		P
5.4.3c)	Connections to supply		P
5.4.3d)	PERMANENTLY CONNECTED EQUIPMENT:	Not permanently connected to mains supply	N/A

Product Service

Clause	Requirement + Test	Result - Remark	Verdict
	1) Supply wiring requirements	Not permanently connected to mains supply	N/A
	2) If external switch or circuit-breaker, requirements and location recommendation	Appliance inlet and cord with plug provided for disconnect	N/A
5.4.3e)	Ventilation requirements	No ventilation requirements provided	N/A
5.4.3f)	Special services (e. g. air, cooling liquid)	None used	N/A
5.4.3g)	Maximum sound power level	59.4dBA	P
5.4.3h)	Instructions about sound pressure		N/A
5.4.3i)	Permanently connected measuring TERMINALS:	No terminals provided for permanent measurement connection	N/A
	Measurement category		N/A
	RATED maximum WORKING VOLTAGE or current		N/A
5.4.4	Equipment operation		P
	Instructions for use include:		—
5.4.4a)	Identification of operating controls		P
5.4.4b)	Positioning for disconnection	Appliance inlet provides disconnect	N/A
5.4.4c)	Interconnection		P
5.4.4d)	Specification of intermittent operation limits		N/A
5.4.4e)	Explanation of symbols used		P
5.4.4f)	Replacement of consumable materials	No consumables used	N/A
5.4.4g)	Cleaning and decontamination (see 11.2)		P
5.4.4h)	Listing of any poisonous or injurious gases and quantities	No poisonous or injurious gases used	N/A
5.4.4i)	Risk-reduction procedures relating to flammable liquids	No flammable liquids used	N/A
	A statement about protection impairment if used in a manner not specified by the manufacturer		P
5.4.5	Equipment maintenance	Maintenance manual provided	P
	Instructions for RESPONSIBLE BODY include:		—
	Sufficient preventive maintenance and inspection information		P
	Replacement of hoses or parts containing liquids, etc.	No hoses or liquids used	N/A
	Specific battery type of user replaceable batteries	No user replaceable batteries	N/A

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Product Service

Clause	Requirement + Test	Result - Remark	Verdict
	Any manufacturer specified parts		N/A
	RATING and characteristics of fuses		N/A
6	PROTECTION AGAINST ELECTRIC SHOCK	(see Form A.5)	P
6.1	General		P
6.1.1	Requirements		—
	ACCESSIBLE parts not HAZADOUS LIVE in NORMAL CONDITION and SINGLE FAULT CONDITION		P
	Conformity is checked by the determination of 6.2 and 6.3 followed by the tests of 6.4 to 6.11		P
6.1.2	Exceptions		P
	Capacitance test	(see Forms A.6 and A.7)	P
	Parts not HAZARDOUS LIVE 10 s after interruption of supply		P
6.2	Determination of ACCESSIBLE parts		P
6.2.1	General examination	(see Form A.6)	P
6.2.2	Openings above parts that are HAZARDOUS LIVE	No openings	N/A
6.2.3	Openings for pre-set controls		N/A
6.3	Permissible limits for ACCESSIBLE parts		P
6.3.1	Values in NORMAL CONDITION	(see Form A.7)	P
6.3.2	Values in SINGLE FAULT CONDITION	(see Form A.8)	P
6.4	Protection in NORMAL CONDITION (see 6.2, 6.3.1, 6.7, 6.8 and 8.1)		P
6.4a)	BASIC INSULATION (see annex D)		P
6.4b)	ENCLOSURES and BARRIERS		P
6.4c)	Impedance		P
6.5	Protection in SINGLE FAULT CONDITION		P
	Additional protection is provided by:		—
	One or more of 6.5.1 to 6.5.3; or		P
	Automatic disconnection of the supply (6.5.4)	Automatic disconnection of the supply was not used	N/A
6.5.1	Protective BONDING		P
	ACCESSIBLE conductive parts:		—
	Separated by DOUBLE INSULATION or REINFORCED INSULATION; or		N/A
	Bonded to the PROTECTIVE CONDUCTOR TERMINAL; or		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Separated by screen or BARRIER bonded to PROTECTIVE CONDUCTOR TERMINAL from parts which are HAZARDOUS LIVE		N/A
6.5.1.1	Integrity of PROTECTIVE BONDING		P
6.5.1.1a)	PROTECTIVE BONDING consists of directly connected structural parts or discrete conductors or both; and withstands thermal and dynamic stresses		P
6.5.1.1b)	Soldered connections:	Solder not used to secure protective bonding connections	N/A
	Independently secured against loosening		N/A
	Not used for other purposes		N/A
	Screw connections are secured		P
6.5.1.1c)	PROTECTIVE BONDING not interrupted		P
6.5.1.1d)	Any moveable connection specifically designed, and meets 6.5.1.3		P
6.5.1.1e)	No external metal braid of cables used		P
6.5.1.1f)	If MAINS supply passes through:	Mains is not passed through	N/A
	Means provided for passing protective conductor;		N/A
	Impedance meets 6.5.1.3.		N/A
6.5.1.1g)	Protective conductors bare or insulated, if insulated, green/yellow		P
	Exceptions:		—
	1) earthing braids;	Green and yellow used	N/A
	2) internal protective conductors etc.;		N/A
	Green/yellow not used for other purposes		P
6.5.1.1h)	TERMINAL suitable, and meets 6.5.1.2		P
6.5.1.2	PROTECTIVE CONDUCTOR TERMINAL		P
6.5.1.2a)	Contact surfaces are metal		P
6.5.1.2b)	Appliance inlet used	Protective conductor provided	P
6.5.1.2c)	For rewireable cords and PERMANENTLY CONNECTED EQUIPMENT, PROTECTIVE CONDUCTOR TERMINAL is close to MAINS supply TERMINALS		P
6.5.1.2d)	If no MAINS supply is required, any PROTECTIVE CONDUCTOR TERMINAL:	Mains connection required	N/A
	Is near TERMINALS of circuit for which protective earthing is necessary		N/A
	External if other TERMINALS external		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
6.5.1.2e)	Equivalent current-carrying capacity to MAINS supply TERMINALS	(see Form A.9)	P
6.5.1.2f)	If plug-in, makes first and breaks last		P
6.5.1.2g)	If also used for other bonding purposes, protective conductor:		P
	Applied first;		P
	Secured independently;		P
	Unlikely to be removed by servicing; or		P
	Warning marking requires replacement of protective conductor		P
6.5.1.2h)	PROTECTIVE CONDUCTOR of measuring circuit:	No measuring circuit provided	N/A
	1) Current RATING equivalent to measuring circuit TERMINAL;		N/A
	2) PROTECTIVE BONDING:		N/A
	Not interrupted; or		N/A
	Indirect bonding used (see 6.5.1.5)		N/A
6.5.1.2i)	FUNCTIONAL EARTH TERMINALS allow independent connection	No measuring earth terminals provided	N/A
6.5.1.2j)	If a binding screw used for PROTECTIVE CONDUCTOR TERMINAL:		P
	Suitable size for bond wire		P
	Not smaller than M 4 (No. 6)		P
	At least 3 turns of screw engaged		P
	Contact pressure not capable of reduction by deformation of materials		P
	Passes tightening torque test	(see Form A.9)	P
6.5.1.3	Impedance of PROTECTIVE BONDING of plug-connected equipment	(see Form A.10)	P
6.5.1.4	Bonding impedance of PERMANENTLY CONNECTED EQUIPMENT	Not permanently connected	N/A
6.5.1.5	Indirect bonding for measuring and test equipment	Indirect bonding not used	N/A
6.5.2	DOUBLE INSULATION and REINFORCED INSULATION (see 6.7, 6.8 and 6.9.2)		P
6.5.3	PROTECTIVE IMPEDANCE	Protective impedance not used	N/A
6.5.3a)	HIGH-INTEGRITY single component used (s. 14.6); or		N/A
6.5.3b)	A combination of components used; or		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
6.5.3c)	A combination of BASIC INSULATION and current- or voltage-limiting device used		N/A
	Components, wires and connections are RATED as required	(see Table 3 and Form A.12)	P
6.5.4	Automatic disconnection of the supply	Automatic disconnection not used	N/A
	If used, it meets :		—
6.5.4a)	Supplied with the equipment; or		N/A
	Specified by installation instruction		N/A
6.5.4b)	RATED disconnecting time within limit specified		N/A
6.5.4c)	RATED for maximum RATED LOAD		N/A
6.6	Connections to external circuits		P
6.6.1	General		P
	Connections do not cause ACCESSIBLE parts of the following to become HAZARDOUS LIVE in NORMAL CONDITION or SINGLE FAULT CONDITION:		—
6.6.1a)	The external circuits		P
6.6.1b)	The equipment		P
	Separation of circuits provided; or		P
	Short circuit of separation does not cause a Hazard		N/A
	Instructions or markings include:		—
	1) RATED conditions for TERMINAL		N/A
	2) Required RATING of external circuit insulation		N/A
6.6.2	TERMINALS for external circuits		P
	TERMINALS which receive a charge from an internal capacitor are not HAZARDOUS LIVE	(see Form A.7)	P
	High voltage TERMINALS energized from the interior are:	No high voltage terminals energized from interior	—
	Not ACCESSIBLE if connected; or	No external circuits with voltages over 1 KV.	N/A
	When unmated HAZARDOUS LIVE TERMINALS not ACCESSIBLE ; or	No hazardous live measuring terminals	N/A
	marked with symbol 12		N/A
6.6.3	Circuits with TERMINALS which are HAZARDOUS LIVE		N/A
	These circuits are:		—

Product Service

Clause	Requirement + Test	Result - Remark	Verdict
	Not connected to ACCESSIBLE conductive parts; or	No hazardous live circuits connected to accessible conductive parts.	N/A
	Connected to ACCESSIBLE conductive parts, but are not MAINS CIRCUITS and have one TERMINAL contact at earth potential		N/A
	No ACCESSIBLE conductive parts are HAZARDOUS LIVE		N/A
6.6.4	ACCESSIBLE TERMINALS for stranded conductors		N/A
6.6.4a)	No risk of accidental contact because:		N/A
	Located or shielded		N/A
	Self-evident or marked whether or not connected to ACCESSIBLE conductive parts		N/A
6.6.4b)	ACCESSIBLE TERMINALS will not work loose		N/A
6.7	CLEARANCES and CREEPAGE DISTANCES	(See Form A.5 and A.13)	P
6.7.2.1	CTI requirements	Material group IIIb assumed	N/A
	CTI tests performed		N/A
6.8	Procedure for dielectric strength tests	(See Form A.5 and A.14)	P
6.9	Constructional requirements for protection against electric shock		P
6.9.1	General		P
	If a failure could cause a HAZARD:		—
6.9.1a)	Security of wiring connections		P
6.9.1b)	Screws securing removable covers	Locked doors provided	N/A
6.9.1c)	Accidental loosening		P
	Material not to be used for safety relevant insulation:		—
	1) Easily damaged materials not used	T4 and T5 bifilar wound transformer provides insulation between mains and voltage deemed not hazardous per Cl 6.3.1	P
	2) Non-impregnated hydroscopic materials not used		P
6.9.2	ENCLOSURES of equipment with DOUBLE INSULATION or REINFORCED INSULATION		N/A
	ENCLOSURE surrounds all metal parts except for small metal parts which are separated	Class I device	N/A
	ENCLOSURES or parts made of insulating material		N/A
	Protection for metal ENCLOSURES or parts by:		—
6.9.2a)	An insulating coating or BARRIER on the inside; or		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
6.9.2b)	CLEARANCES and CREEPAGE DISTANCES cannot be reduced by loosening of parts or wires		P
6.9.3	Over-range indication		N/A
	Unambiguous		N/A
6.10	Connection to MAINS supply source and connections between parts of equipment		P
6.10.1	MAINS supply cords		P
6.10.1a)	RATED for maximum equipment current (see 5.1.3c)		P
	Cable complies with IEC 60227 or IEC 60245	IEC 60320 compliant appliance inlet provides for the attachment of a proper cord	P
6.10.1b)	Heat-resistant if likely to contact hot parts		N/A
6.10.1c)	Temperature RATING (cord and inlet) .... :		P
6.10.1d)	Green/yellow used only for connection to PROTECTIVE CONDUCTOR TERMINALS		P
	Detachable cords with IEC 60320 MAINS connectors:		—
	Conform to IEC 60799; or		N/A
	Have the current RATING of the MAINS connector		P
6.10.2	Fitting of non-detachable MAINS supply cords		N/A
	Non-detachable cord protection:	Detachable cords provided	—
6.10.2a)	Inlet or bushing smoothly rounded; or		N/A
6.10.2b)	Insulated cord guard protruding >5D		N/A
	Protective earth conductor is the last to take the strain		N/A
6.10.2	Cord anchorages:	Detachable cords provided	N/A
6.10.2a)	Cord is not clamped by direct pressure from a screw		N/A
6.10.2b)	Knots are not used		N/A
6.10.2c)	Cannot push the cord into the equipment to cause a hazard		N/A
6.10.2d)	No failure of cord insulation in anchorage with metal parts		N/A
6.10.2e)	Compression bushing:		N/A
	1) Clamps all types and sizes of MAINS cords; and		N/A
	2) Is suitable:		—
	For connection to TERMINALS provided; or		N/A
	It is designed for screened MAINS cord		N/A

Product Service

Clause	Requirement + Test	Result - Remark	Verdict
6.10.2f)	Cord replacement does not cause a HAZARD and method of strain relief is clear		N/A
	Push-pull test	Detachable cords provided	N/A
6.10.3	Plugs and connectors		P
6.10.3a)	MAINS supply plugs, connectors etc., conform with relevant specifications		P
6.10.3b)	If equipment supplied at voltages below 6.3.2.a) or from a sole source:		N/A
	Plugs of supply cords do not fit MAINS sockets above RATED supply voltage		N/A
	MAINS-type plugs used only for connection to MAINS supply		P
610.3c)	Plug pins which receive a charge from an internal capacitor	(See Form A.7)	P
6.10.3d)	Accessory MAINS socket outlets:	None provided	N/A
	1) Marking if accepts a standard MAINS plug (see 5.1.3e)		N/A
	2) Input has a protective earth conductor if outlet has earth TERMINAL contact		N/A
6.11	Disconnection from supply source		P
6.11.1	General	Appliance inlet compliant to IEC 60320 provided	P
	Disconnects all current carrying conductors		P
6.11.1.1	Exceptions		N/A
6.11.1.1a)	Equipment supplied by low energy source; or		N/A
6.11.1.1b)	Equipment connected to impedance protected supply; or		N/A
6.11.1.1c)	Equipment constitues an impedance protected load		N/A
6.11.2	Requirements according to type of equipment		N/A
6.11.2.1	PERMANENTLY CONNECTED EQUIPMENT and multi-phase equipment:	Not permanently connected to mains or multi-phase	N/A
	Employs switch or circuit-breaker		N/A
	If switch or circuit-breaker is not part of the equipment, documentation specifies:		—
6.11.2.1a)	Switch or circuit-breaker to be included in building installation	Not permanently connected to mains	N/A
6.11.2.1b)	Location		N/A
6.11.2.1c)	Marking	Not permanently connected to mains	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
6.11.2.2	Single-phase cord-connected equipment		P
	Equipment is provided with:		—
6.11.2.2a)	Switch or circuit-breaker; or		N/A
6.11.2.2b)	Appliance coupler (disconnectable without TOOL); or		P
6.11.2.2c)	Separable plug (without locking device)		P
6.11.2.3	HAZARDS arising from function		N/A
	Emergency switch	No accessible moving parts	N/A
	Emergency switch ≤ 1 m from the moving part	No accessible moving parts	N/A
6.11.3	Disconnecting devices		N/A
	Electrically close to the supply		N/A
6.11.3.1	Switches and circuit-breakers		N/A
	When used as disconnection device:	Switches or circuit-breakers are not used as a disconnecting device	—
	Meets IEC 60947-1 and IEC 60947-3		N/A
	Marked to indicate function		N/A
	Not incorporated in MAINS cord	No switch incorporated in mains cord	P
	Does not interrupt protective earth conductor		N/A
	If has other contacts meets separation requirements of 6.6 and 6.7		N/A
6.11.3.2	Appliance couplers and plugs		P
	Where an appliance coupler or seperable plug is used as the disconnecting device (see 6.11.2.2):		—
	Readily identifiable and easily reached by the OPERATOR		P
	Single-phase PORTABLE EQUIPMENT cord length not more than 3 m		P
	Protective earth conductor connected first and disconnected last		P
7	PROTECTION AGAINST MECHANICAL HAZARDS		P
7.1	General	No accessible moving parts	N/A
	Conformity is checked by 7.2 to 7.6		P
7.2	Moving parts	No accessible moving parts	N/A
	Moving parts not able to crush, etc. (see also 6.11.2.3)	No accessible moving parts	N/A

Product Service

Clause	Requirement + Test	Result - Remark	Verdict
	If OPERATOR access permitted:	No operator access to moving parts	—
7.2a)	Access requires TOOL	Moving parts located behind a locked door	P
7.2b)	Statement about training		N/A
7.2c)	Warning markings or symbol 14	High voltage marking provided behind locked door	P
7.3	Stability		P
	Marking of non-automatic means	automatic means not used	N/A
	Conformity tests:		—
7.3a)	10° tilt test		P
7.3b)	multi-directional force test		P
7.3c)	downward force test		P
7.4	Provisions for lifting and carrying	No provisions for lifting or carrying	N/A
	Handles or grips withstand four times weight	No handles or grips provided	N/A
	Equipment more than 18 kg :		—
	Has means for lifting or carrying; or		N/A
	Directions in documentation		P
7.5	Wall mounting	Not designed for wall mounting	N/A
	Mounting brackets withstand four times weight		N/A
7.6	Expelled parts	No parts that are likely to be expelled	N/A
	Equipment contains or limits the energy		N/A
	Protection not removable without the aid of a TOOL		N/A
8	MECHANICAL RESISTANCE TO SHOCK AND IMPACT		P
8.1	ENCLOSURE rigidity test		N/A
8.2	Drop test		N/A
	After the tests of 8.1 to 8.2:		—
	Voltage tests	(see Form A.14)	P
	Inspections:		—
8a)	HAZARDOUS LIVE parts not accessible		P
8b)	ENCLOSURE shows no cracks (hazard)		P
8c)	CLEARANCES not less than their permitted values	(see Form A.13)	P
8d)	BARRIERS not damaged or loosened		P

Product Service

Clause	Requirement + Test	Result - Remark	Verdict
8e)	No moving parts exposed, except permitted by 7.2		P
8f)	No damage which could cause spread of fire		P
9	PROTECTION AGAINST THE SPREAD OF FIRE	Metallic enclosure provided	P
	Conformity for each source of HAZARD or area of the equipment is checked by one of the following:	(See Form A.16)	—
9a)	Fault test of 4.4; or	(See Forms A.1 and A.2)	P
9b)	Application of 9.1 (eliminating or reducing the sources of ignition); or		N/A
9c)	Application of 9.2 (containment of fire within the equipment)		P
9.1	Eliminating or reducing the sources of ignition within the equipment		P
9.1a)	1) Limited-energy circuit (see 9.3); or		N/A
	2) BASIC INSULATION provided for parts of different potential; OR	(see Form A.5 and A.14)	P
	Bridging the insulation does not cause ignition	Meet basic requirements	N/A
9.1b)	Surface temperature of liquids and parts (see 9.4.a)	No liquids used	N/A
9.1c)	No ignition in circuits designed to produce heat	No circuits designed to produce heat	N/A
9.2	Containment of the fire within the equipment, should it occur		P
9.2a)	Energizing of the equipment is controlled by an OPERATOR held switch		N/A
9.2b)	Enclosure is conform with constructional requirements of 9.2.1; and		P
	Requirements of 9.4b) or c) are met		P
9.2.1	Constructional requirements		P
9.2.1a)	Insulated wires have flammability classification FV1 or better	(see Table: 3 or Form A.17)	P
	Connectors and insulating material have flammability classification FV2 or better	(see Table: 3 or Form A.17)	P
9.2.1b)	The enclosure is constructed as follows :		P
	1) Bottom constructed with:	Metallic bottom provided	—
	No openings; or		P
	Extent as specified in figure 7; or		N/A
	Baffles as specified in figure 6; or		N/A
	Perforated as specified in Table 12; or		N/A
	Metal screen with a mesh		N/A
	2) Sides have no openings as specified in figure 7		P

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Product Service

Clause	Requirement + Test	Result - Remark	Verdict
	3) Material of ENCLOSURE and any baffle or flame barrier is made of:		—
	Metal (except magnesium); or	Metal and 94V-0 rated material	P
	Non metallic materials have flammability classification FV1 or better	(see Table: 3 or Form A.17)	P
	4) ENCLOSURE and any baffle or flame barrier have adequate rigidity		P
9.3	Limited-energy circuit	No limited energy circuits	N/A
9.3a)	Potential not more than 30 r.m.s. and 42.4 V peak, or 60 V dc	No limited energy circuits	N/A
9.3b)	Current limited by one of following means:		N/A
	1) Inherently or by impedance; or		N/A
	2) Overcurrent protective device; or		N/A
	3) A regulating network limits also in SINGLE FAULT CONDITION		N/A
9.3c)	Is separated by at least BASIC INSULATION		N/A
	If overcurrent protective device used:		—
	Fuse or a non adjustable electromechanical device	No limited energy circuits	N/A
9.4	Requirements for equipment containing or using flammable liquids		N/A
	Flammable liquids contained in or specified for use with equipment do not cause spread of fire	No flammable liquids used	N/A
	Risk is reduced to a tolerable level :	No flammable liquids used	—
9.4a)	The temperature of surface or parts in contact with flammable liquids is 25 °C below fire point		N/A
9.4b)	The quantity of liquid is limited		N/A
9.4c)	Flames are contained within the equipment		N/A
	Detailed instructions for risk-reduction provided		N/A
9.5	Overcurrent protection		N/A
	Devices not in the protective conductor		N/A
	Fuses or single-pole circuit-breakers not fitted in neutral (multi-phase)		N/A
9.5.1	PERMANENTLY CONNECTED EQUIPMENT	Not permanently connected to mains	N/A
	Overcurrent device:		—
	Fitted within the equipment; or		N/A
	Specified in manufacturer's instructions		N/A

Product Service

Clause	Requirement + Test	Result - Remark	Verdict
9.5.2	Other equipment		N/A
	Protection within the equipment		N/A
10	EQUIPMENT TEMPERATURE LIMITS AND RESISTANCE TO HEAT		P
10.1	Surface temperature limits for protection against burns		P
	Easily touched surfaces within the limits	(see Form A.20A)	P
	Heated surfaces necessary for functional reasons exceeding specified values:	No heated surface provided	—
	Are recognizable as such by appearance or function; or	No heated surfaces	N/A
	Are marked with symbol 13		N/A
	Guards are not removable without TOOL		N/A
10.2	Temperatures of windings		P
	Limits not exceeded in:	(see Form A.20B)	—
	NORMAL CONDITION		P
	SINGLE FAULT CONDITION		P
10.3	Other temperature measurements		P
	Following measurements conducted if applicable:	(see Form A.20A)	—
10.3a)	Value of 60 °C of field-wiring TERMINAL box not exceeded	No field wiring boxes provided	N/A
10.3b)	Surface of flammable liquids and parts in contact with this liquids	No flammable liquids used	N/A
10.3c)	Surface of non-metallic ENCLOSURES		P
10.3d)	Parts made of insulating material supporting parts connected to MAINS supply	Provided by certified components	P
10.3e)	TERMINALS carrying a current more than 0.5 A		N/A
10.4	Conduct of temperature test	(see Form A20)	P
10.5	Resistance to heat		P
10.5.1	Integrity of CLEARANCE and CREEPAGE DISTANCES	(See Form A.13)	P
10.5.2	Non-metallic ENCLOSURES	(See Forms A.21)	P
	After treatment:		—
	No HAZARDOUS LIVE parts ACCESSIBLE;		P
	Tests of 8.1 and 8.2	(See Form A.13)	P
	In case of doubt, tests of 6.8 (without humidity preconditioning)	(See Form A.14)	P
10.5.3	Insulating material		P

Product Service

Clause	Requirement + Test	Result - Remark	Verdict
10.5.3a)	Parts supporting parts connected to MAINS supply		P
10.5.3b)	TERMINALS carrying a current more than 0.5 A		P
	Examination of material data; or		P
	in case of doubt::		—
	1) Ball pressure test; or		N/A
	2) Vicat softening testof ISO 306		N/A
11	PROTECTION AGAINST HAZARDS FROM FLUIDS		P
11.1	General	No fluids used or contained in this equipment	N/A
11.2	Cleaning	(See Form A.23)	P
11.3	Spillage	No fluids used or contained in this equipment	N/A
11.4	Overflow	No fluids used or contained in this equipment	N/A
11.5	Battery electrolyte		N/A
	Battery electrolyte leakage presents no hazard	No batteries	N/A
11.6	Specially protected equipment	No special protection	N/A
11.7	Fluid pressure and leakage	No fluids under pressure	N/A
11.7.1	Maximum pressure .... :	No fluids under pressure	N/A
	Maximum pressure of any part does not exceed P_{RATED}		N/A
11.7.2	Leakage and rupture at high pressure	No fluids under pressure	N/A
	Test to IEC 60335 (refrigeration only)		N/A
11.7.3	Leakage from low-pressure parts	No fluids under pressure	N/A
11.7.4	Overpressure safety device		N/A
	Does not operate in NORMAL USE		N/A
	Meets ISO 4126-1; and		N/A
	It is conform with:		—
11.7.4a)	Connected as close as possible to parts intended to be protected	No fluids under pressure	N/A
11.7.4b)	Easy access for inspection, maintenance and repair		N/A
11.7.4c)	Adjustment only with TOOL		N/A
11.7.4d)	No discharge towards person		N/A
11.7.4e)	No HAZARD from deposit of discharged material		N/A
11.7.4f)	Adequate discharge capacity		N/A

Product Service

Clause	Requirement + Test	Result - Remark	Verdict
11.7.4g)	No shut-off valve between overpressure safety device and protected parts		N/A
12	PROTECTION AGAINST RADIATION, INCLUDING LASER SOURCES, AND AGAINST SONIC AND ULTRASONIC PRESSURE		P
12.1	General		P
	Equipment provides protection		P
12.2	Equipment producing ionizing radiation		P
12.2.1	Ionizing radiation	(See Form A.25)	P
12.2.2	Accelerated electrons		P
12.3	Ultra-violet (UV) radiation	No source of UV radiation	N/A
	No unintentional and HAZARDOUS escape of UV radiation		N/A
12.4	Micro-wave radiation	No source of micro-wave radiation	N/A
	Power density does not exceed 10 W/m^2	No source of micro-wave radiation	N/A
12.5	Sonic and ultrasonic pressure		N/A
12.5.1	Sound level	(See Form A.26)	P
12.5.2	Ultrasonic pressure	No source of ultrasonic pressure	N/A
12.6	Laser sources (IEC 60825-1)	No lasers used	N/A
13	PROTECTION AGAINST LIBERATED GASES, EXPLOSION AND IMPLOSION		N/A
13.1	Poisonous and injurious gases	No poisonous or injurious gases used	N/A
	Attached data/test reports demonstrate conformity		N/A
13.2	Explosion and implosion		N/A
13.2.1	Components		P
	Components liable to explode:	No components liable to explode used	—
	Pressure release device provided; or		N/A
	Apparatus incorporates OPERATOR protection (see also 7.6)		N/A
	Pressure release device:		—
	Discharge without danger		N/A
	Cannot be obstructed		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
13.2.2	Batteries and battery charging	Li-Ion battery located within internal computer motherboard.	P
	If explosion or fire hazard could occur:		—
	Protection incorporated in the equipment; or	Resistor and diode combination provided on motherboard.	P
	Instructions specify batteries with built-in protection		N/A
	In case of wrong type of battery used:		—
	No HAZARD; or		N/A
	Warning by marking and within instructions		N/A
	Equipment with means to charge rechargeable batteries:	No means to charge batteries provided	—
	Warning against the charging of non-rechargeable batteries; and		N/A
	Type of rechargeable battery indicated; or		N/A
	Symbol 14 used		N/A
	Battery compartment design	No battery compartment provided	N/A
	Single component failure		N/A
	Polarity reversal test		P
13.2.3	Implosion of cathode ray tubes	No cathode ray tubes used	N/A
	If maximum face dimensions > 160 mm ....:	No cathode ray tubes used	—
	Intrinsically protected and correctly mounted; or		N/A
	ENCLOSURE provides protection:		N/A
	If non-intrinsically protected:		—
	Screen not removable without TOOL		N/A
	If glass screen, not in contact with surface of tube		N/A
13.2.4	Equipment RATED for high pressure (See 11.7)		N/A
14	COMPONENTS		P
14.1	General		P
	Where safety is involved, components meet relevant requirements	(see Table: 3)	P
14.2	Motors		P
14.2.1	Motor temperatures		P
	Does not present a HAZARD when stopped or prevented form starting; or	(See Form A.20)	P

Product Service

Clause	Requirement + Test	Result - Remark	Verdict
	Protected by overtemperature or thermal protection device conform with 14.3		N/A
14.2.2	Series excitation motors	No series excitation motors	N/A
	Connected direct to device, if overspeeding causes a HAZARD		N/A
14.3	Overtemperature protection devices		N/A
	Devices operating in a SINGLE FAULT CONDITION		N/A
14.3a)	Reliable function is ensured		N/A
14.3b)	RATED to interrupt maximum current and voltage		P
14.3c)	Does not operate in NORMAL USE		P
14.4	Fuse holders	No user replaceable fuses provided	N/A
	No access to HAZARDOUS LIVE parts		N/A
14.5	Mains voltage selecting devices	No mains voltage selecting devices provided	N/A
	Accidental change not possible		N/A
14.6	HIGH INTEGRITY components	No high integrity components	N/A
	Used in applicable positions (see Table 3)		N/A
	Conforms with IEC publications		N/A
	Single electronic device not used		N/A
14.7	Mains transformers tested outside equipment	Tested in equipment	N/A
14.8	Printed circuit boards		P
	Data shows conformity with FV-1 of IEC 60707 or better; or		P
	Test shows conformity with FV-1 of IEC 60707 or better; or	Rated 94V-0	N/A
	Thin film flexible PCB with limited-energy circuit used		N/A
14.9	Circuits or components used as transient overvoltage limiting devices	If applicable evaluated during the investigation of the certified power supply	N/A
	After test, no sign of overload or degradation		N/A
15	PROTECTION BY INTERLOCKS		N/A
15.1	General		N/A
	Interlocks are designed to remove a hazard before OPERATOR exposed		N/A
15.2	Prevention of reactivation		N/A

Product Service

Clause	Requirement + Test	Result - Remark	Verdict
15.3	Reliability		N/A
	Single fault unlikely to occur; or		N/A
	Cannot cause a HAZARD		N/A
16	TEST AND MEASUREMENT EQUIPMENT		N/A
16.1	Current measuring circuits	No current measuring circuits provided	N/A
16.2	Multifunction meters and similar equipment	Not a multi-meter or similar equipment	N/A
	No HAZARD from:	Not a multi-meter or similar equipment	—
	RATED input voltage combinations		N/A
	Settings of functions		N/A
	Settings of range controls		N/A
ANNEX F	ROUTINE TESTS		N/A
	Manufacturer's declaration		N/A

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4.4.2	TABLE: Summary of SINGLE FAULT CONDITIONS			Form A.1	P
Subclause	Title	Does not apply	Carried out	Comments	
4.4.2.1	PROTECTIVE IMPEDANCE	X			
4.4.2.2	Protective conductor		X	see Form A.8	
4.4.2.3	Equipment or parts for short-term or intermittent operation	X			
4.4.2.4	Motors		X		
4.4.2.5	Capacitors	X			
4.4.2.6	Mains transformers Attach drawing of MAINS Txs showing all protective devices (see Forms A.29 and A.30)		X		
4.4.2.7	Outputs	X			
4.4.2.8	Equipment for more than one supply	X			
4.4.2.9	Cooling – air holes closed – fans stopped – coolant stopped	 X X X	X		
4.4.2.10	Heating devices – timer overridden – temperature controller overridden – loss of cooling liquid – overfilled or empty or both	X X X X X			
4.4.2.11	Insulation between circuits and parts				
4.4.2.12	Interlocks	X			
List below all SINGLE FAULT CONDITIONS not covered by 4.4.2.1 to 4.4.2.12:					
Supplementary information: (see Form A.2 for details of tests)					

Product Service

4.4	TABLE: Testing in single FAULT CONDITION – Results			Form A.2	P
Test subclause	Fault No.	Fault description	Td 4.4.3 (NOTE)	How was test terminated Comments	Meets 4.4.4
4.4.2.4/4.4.2.9	1	Lock fan Motor	1h, 11min	No faults manifested after 1 hr	P
	2	Lock fan PC	1h, 30min	No faults manifested after 1 hr	P
	3	Lock fan PS Side	1h, 24min	No faults manifested after 1 hr	P

NOTE Td = Test duration in h:min:s
Record dielectric strength test on Form A.14 and temperature tests on Form A.20.
Record in the comments column for each test whether carried out during or after SINGLE FAULT CONDITION.

Supplementary information:

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Product Service

5.1.3c)	TABLE: Mains supply				Form A.3	P
	Marked rating ....:	(b) (4) [redacted]				—
	Phase ....:					—
	Frequency ....:					—
	Current ....:					—
	Power ....:					—
	Power ....:					—
Test No.	Voltage V	Frequency Hz	Current A	Power in W	Power in VA	Comments
	(b) (4) [redacted]				—	During Testing
					—	During Testing
					—	During Testing
Note: Measurements are only required for marked ratings.						
Supplementary information:						

Product Service

5.3	TABLE: Durability of markings	Form A.4	P

Marking method (see NOTE)	Agent
1)Metalized label	A Water
2) polyester	B Isopropyl alcohol
3)	C (specify agent)
4)	D (specify agent)
5)	E (specify agent)

NOTE – Where applicable include print method, label material, ink or paint type, fixing method, adhesive and surface to which marking is fixed.

Marking location	Marking method (see above)
Identification (5.1.2)	1
Mains supply (5.1.3)	1
Fuses (5.1.4)	N/A
TERMINALS and operating devices (5.1.5.1)	2
Measuring circuit TERMINALS (5.1.5.2)	N/A
Switches and cricuit breakers (5.1.6)	N/A
DOUBLE/REINFORCED equipment (5.1.7)	N/A
Field wiring TERMINAL boxes (5.1.8)	N/A
Warning marking (5.2)	2
Battery charging (13.2.2)	N/A

Method	Test agent	Remains legible	Label loose	Curled edges	Comments
		Verdict	Verdict	Verdict	
1	A	Pass	Pass	Pass	
1	B	Pass	Pass	Pass	
2	A	Pass	Pass	Pass	
2	B	Pass	Pass	Pass	

Supplementary information:

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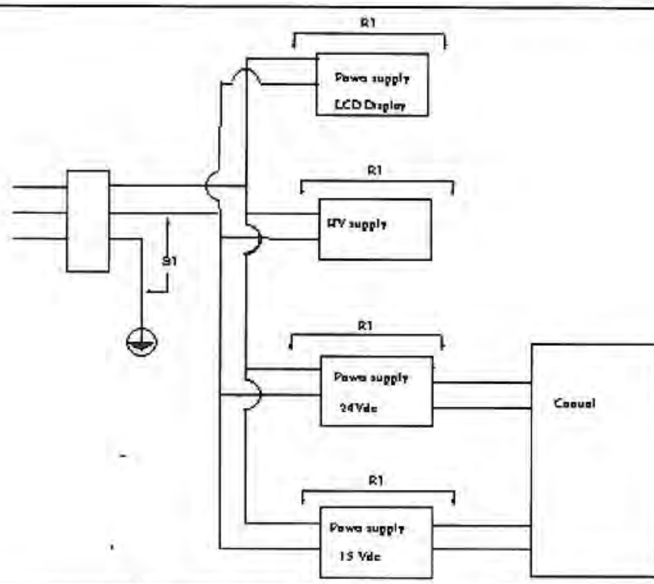
6	TABLE: Protection against electric shock - Block diagram of system Form A.5	P



Pollution degree ...... :	Measurement category (overvoltage category) .. :

Location or description	Insulation type (NOTE 1)	Maximum working voltage (NOTE 2)	CREEPAGE DISTANCE (NOTE 3)				CLEARANCE (NOTE 3)	Test voltage (NOTE 2)	Comments
			PWB mm	CTI	Other mm	CTI	mm	V	
L to gnd	BI	121 rms	3.5	100	—	—	3.5	1200Vdc	

NOTE 1 – Type of insulation:
BI = BASIC INSULATION
DI = DOUBLE INSULATION
PI = PROTECTIVE IMPEDANCE
RI = Reinforced INSULATION
SI = Supplementary INSULATION

NOTE 2 - Types of voltage
Peak impulse test voltage (pulse)
r.m.s.
d.c.
peak

NOTE 3 - INSTALLATION CATEGORIES (OVERVOLTAGE CATEGORIES) or POLLUTION DEGREES which differ from these should be shown under "Comments".

Supplementary Information:

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6.2	**TABLE: List of ACCESSIBLE parts**		**Form A.6**	**P**
6.1.2	Exceptions			—
6.2	Determination of accessible parts			—
Item	Description	Determination method (NOTE 5)	Exception under 6.1.2 (NOTE 4)	
1	Power plug pins line and neutral	Visual	Internal capacitance	
2	Enclosure	Visual		

NOTE 1 – Test fingers and pins are to be applied without force unless a force is specified (see 6.2.1)
NOTE 2 – Special consideration should be given to inadequate insulation and high voltage parts (see 6.2)
NOTE 3 – Parts are considered to be ACCESSIBLE if they could be touched in the absence of any covering which is not considered to provide suitable insulation (see note to paragraph 1 of 6.4).
NOTE 4 – Capacitor test may be required (see Form A.7).
NOTE 5 – The determination methods are:
V = visual; R = rigid test finger; J = jointed test finger; P3 = pin 3 mm diameter; P4 = pin 4 mm diameter.

Supplementary information:

Product Service

6	TABLE: Values in NORMAL CONDITION	Form A.7	P
6.1.1	Exceptions	11.2 Cleaning and decontamination	—
6.3.1	Values in NORMAL CONDITION (see NOTE 1)	11.3 Spillage	—
6.6.2	Terminals for external circuit	11.4 Overflow	—
6.10.3	Plugs and connections		—

Item	Voltage			Current				Capacitance		10 s test (NOTE 2)			Comments
(see Form A.6)	V r.m.s.	V peak	V d.c.	Test circuit A1/A2/A3	mA r.m.s.	mA peak	mA d.c.	µC	mJ	V	µC	mJ	
1	121		—	A1	1.7	—	—	—	—	—	—	—	
1	121	—	—	—	—	—	—	1.9		4 Vpk	—	—	

NOTE 1 – The requirements of 6.3.1 include drying out (if specified). For permanently connected equipment, the current values are 1,5 times the specified values.
NOTE 2 – A 5 s test is specified in 6.10.3c).

Supplementary information:

6.3.2	TABLE: Values in SINGLE FAULT CONDITION										Form A.8	P
Item	Subclause and	Voltage			Transient (see NOTE)		Current				Capacitance	
(See Form A.6)	fault No. (see FormA.2)	V r.m.s.	V peak	V d.c.	V	s	Test circuit A1/A2/A3	mA r.m.s.	mA peak	mA d.c.	µF (NOTE)	Comments
1	4.4.2.2	121	—	—	—	—	A1	—	—	—	1.938	P

NOTE – Transient voltages must be below the limits given from Figure 1 and the capacitance below the limits from figure 2 of IEC 61010-1.

Supplementary information:

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6.5.1.1	TABLE: Cross-sectional area of bonding conductors	Form A.9	P
Conductor location	Cross-sectional area mm^2		Verdict
Bonding conductor at door hinge	0.75		P

6.5.1.2	TABLE: Tighting torque test		
Conductor location	Size of Screw	Tighting torque Nm	Verdict
Door bonding conductor	4mm	2	P
Supplementary information:			

6.5.1.3	TABLE: Bonding impedance of plug connected equipment		Form A.10	P
ACCESSIBLE part under test	Test current A	Voltage attained after 1 min V	Calculated resistance (maximum allowed 0,1 Ω) Ω	Verdict
PE to Back Door	30A	0.63	0.021	P
PE to Front Corner	30A	0.9	0.030	P
Supplementary information:				

6.5.1.4	TABLE: Bonding impedance of PERMANENTLY CONNECTED EQUIPMENT		N/a
ACCESSIBLE part under test	Test current A	Voltage attained after 1 min (maximum 10 V) V	Verdict
Supplementary information: Not permanently connected			

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6.5.1.5	TABLE: Indirect bonding for measuring and test equipment	Form A.11		N/A
ACCESSIBLE part under test	Voltage attained s	Time for voltage to drop to allowable levels s		Verdict
a) Voltage limiting device	—	—		—
Supplementary Information: No voltage limiting devices used Indirect bonding of measuring or test equipment not used				
ACCESSIBLE part under test	Voltage applied V	Time for device to trip s		Verdict
b) Voltage-sensitive tripping device				
Supplementary Information:No voltage sensitive tripping device used				

6.5.3	TABLE: PROTECTIVE IMPEDANCE	Form A.12 N/A
A high INTEGRITY single component		
Component	Location	Comments
A combination of components		
Component	Location	Comments
A combination of BASIC INSULATION and a current or voltage limiting device		
Component	Location	Comments
Supplementary information: protective impedance not used		

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6.7	TABLE: CLEARANCES and CREEPAGE DISTANCES											Form A.13	P
8	Mechanical resistance to shock and impact												P
10.5.1	Integrity of CLEARANCES and CREEPAGE DISTANCES												P
Location	Measured (initial – 6.7)		Verdict	Mechanical tests (note)					Test at max.	Measured after test (if required)		Verdict	
(see Form A.5)	CREEPAGE DISTANCE	CLEARANCE		Applied force	Rigidity (8.1)		Drop (8.2)		RATED ambient	CREEPAGE DISTANCE	CLEARANCE		Comments
	mm	mm		(6.7) N	Static	Dynamic	Normal	Hand-held/ Plug-in	(10.5.1)	mm	mm		
	2	2	P		N/A	P	N/A	N/A		2	2	P	

NOTE – Refer to Form A.14 for dielectric strength tests following the above tests.

Supplementary information:

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6.8	**TABLE: Dielectric strength tests**	**Form A.14**	**P**
4.4.4.1 b)	Conformity after application of fault conditions[1]		P
6.4	Protection in NORMAL CONDITION		P
6.5.2	DOUBLE INSULATION and REINFORCED INSULATION		P
6.6.1	Connections to external circuits		P
6.7.3.1 c)	CLEARANCE values – General: reduced CLEARANCES for homogeneous construction		P
6.10.2.5	Fitting of non-detachable MAINS SUPPLY cords[1]		N/A
8	Mechanical resistance to shock and impact		P
9.1 a) 2)	Eliminating or reducing the sources of ignition within the equipment		P
9.3 c)	Limited-energy circuit		N/A
11.2	Cleaning[1]		P
11.3	Spillage[1]		N/A
11.4	Overflow[1]		N/A
11.6	Specially protected equipment[1] IPX0		N/A
[1] Record the fault, test or treatment applied before the dielectric strength test			
	Test site altitude ....:	m	—
	Test voltage correction factor (see Table 10)....:		—

Location or references from Forms A.2 and A.5	Clause or sub-clause	Humidity Yes/No	Working voltage V	Test voltage r.m.s./peak/d.c V	Comments	Verdict
L & N to Gnd		No	110	1200Vdc	No break down	P
L & N to Gnd		Yes	110	1200Vdc	No break down	P
Supplementary information:						

6.10.2	**TABLE: Cord anchorage**				**Form A.15**	**N/A**
Location	Mass kg	Pull N	Verdict	Torque Nm	Verdict	Comment
Supplementary information: Appliance inlet provided						

Product Service

9	TABLE: Protection against the spread of fire		Form A.16	P
Item	Source of HAZARD or area of the equipment considered (circuit, component, liquid etc.)	Protection Method (9a, 9b or 9c)	Protection details	Verdict
1	Mains connected components	9c	Metal enclosure with side and front panels rated 94V-0	P

Supplementary information:

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9.2.1	**TABLE: Constructional requirements**			**Form A.17**	**P**
14.8	Printed circuit boards		Rated 94V-0		P
Material tested...:		—			—
Generic name ....:		—			—
Material manufacturer ....:		—			—
Type ....:		—			—
Colour...:		—			—
Conditioning details...:		—			—
		Sample 1	Sample 2	Sample 3	
Thickness of specimen	mm				
Duration of flaming after first Application	s				
Duration of flaming plus glowing After second application	s				
Specimen burns to holding clamp	Yes/No				
Cotton ignited	Yes/No				
Sample result	Pass/Fail				
Supplementary information:					

Product Service

9.3	TABLE: Limited-energy circuit						Form A.18	N/A
Item	9.3 a)	9.3 b) Current and power limitation			9.3 c)	Decision		
or Location (see Form A.16)	Maximum potential in circuit voltage r.m.s./d.c. V	Maximum available current A	Maximum available power VA	Overload protection after 120 s A	Circuit separation	Yes/No	Comments	
Supplementary information: No limited energy circuits used								

9.4	TABLE: Requirements for equipment containing or using flammable liquids		Form A.19	N/A
Type of liquid	9.4 Flammable liquids			Verdict
	b) quantity	c) Containment		
Supplementary information: No flammable liquids used or contained in this device				

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Product Service

10.	TABLE : Temperature Measurements	Form A.20A	P
10.1	Surface temperature limits - NORMAL CONDITION ~~and / or SIGNLE FAULT CONDITION~~		P
10.2	Temperature of windings- NORMAL CONDITION ~~and / or SIGNLE FAULT CONDITION~~		P
10.3	Other temperature measurements		

Operating conditions:	1. Normal operating conditions		
Frequency .... :	60 Hz	Test room ambient temperature (t_a) .. :	24.9 °C
Voltage .... :	108 V	Test duration .... :	1 h 30 min

Part / Location	t_m °C	t_c °C	t_{max} °C	Verdict	Comments
(b) (4) [redacted]					

NOTE 1 - t_m = measured temperature t_c = t_m corrected (t_m–t_a+ **40 °C** or max. RATED ambient)
t_{max} = maximum permitted temperature
NOTE 2 - See also 14.1 with reference to component operating conditions
NOTE 3 - Record values for NORMAL CONDITION and / or SINGLE FAULT CONDITION in this Form use additional form if necessary
NOTE 4 - See Form A.20B for details of winding temperature measurements

Supplementary information:

Product Service

10.	**TABLE : Temperature Measurements** **Form A.20A**	P
10.1	Surface temperature limits - NORMAL CONDITION ~~and / or SIGNLE FAULT CONDITION~~	P
10.2	Temperature of windings- NORMAL CONDITION ~~and / or SIGNLE FAULT CONDITION~~	P
10.3	Other temperature measurements	

Operating conditions:	2. Normal operating conditions			
Frequency ....:	60	Hz	Test room ambient temperature (t_a) ..:	26.3 °C
Voltage ....:	132	V	Test duration ....:	2 h 8 min

Part / Location	t_m °C	t_c °C	t_{max} °C	Verdict	Comments
(b) (4) [redacted]					

NOTE 1 - t_m = measured temperature t_c = t_m corrected (t_m–t_a+ **40 °C** or max. RATED ambient)
t_{max} = maximum permitted temperature
NOTE 2 - See also 14.1 with reference to component operating conditions
NOTE 3 - Record values for NORMAL CONDITION and / or SINGLE FAULT CONDITION in this Form use additional form if necessary
NOTE 4 - See Form A.20B for details of winding temperature measurements
Supplementary information:

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10.2	**TABLE: Temperature of windings Resistance method Temperature Measurements**							**Form A.20B**	N/A
4.4.2.6	MAINS Transformers								
14.2.1	Motor temperatures								
Operating conditions:									
Frequency .... :	Hz	Test room ambient temperature (t_{a1}/t_{a2})... :				/ °C (initial / final)			
Voltage .... :	V	Test duration .... :				h min			
Part / Designation	R_{cold} Ω	R_{warm} Ω	Current A	t_r K	t_c °C	t_{max} °C	Verdict	Comments	

NOTE 1- R_{cold} = initial resistance; R_{warm} = final resistance
t_r = temperature rise; t_c = t_r corrected ($t_c = t_r$ - { t_{a2} - t_{a1}} + [40 °C or max RATED ambient])
t_{max} = maximum permitted temperature
NOTE 2 - Indicate insulation class (IEC 85) under comments (optional)
NOTE 3 - Record values for NORMAL CONDITION and / or SINGLE FAULT CONDITION in this Form use additional form if necessary
Supplementary information: resistance method not used

10.5.2	**TABLE: Resistance to heat of non-metallic enclosures**		**Form A.21**	P
	Test method used:	Specification review		—
	Non operative treatment... :	Specification review		N/A
	Empty ENCLOSURE .... :	Specification review		N/A
	Operative treatment.. :	Specification review		N/A
	Temperature during tests .... :	Specification review		—
	ENCLOSURE samples tested were .... :	Specification review		—

Description	Material	Comments	Verdict
front panel	GE/ SABIC Innovative Plastics, Type: Lexan F-6000	Rated 94V-0	P
side panels	Kleerdex, Type: KYDEX T	Rated 94V-0	P
Dielectric strength test (6.8) .... :		V r.m.s./peak/d.c.	
Supplementary information:			

Product Service

10.5.3	**TABLE: Insulating Materials**		**Form A.22**	N/A
10.5.3a)	Ballpressure test			
	Max. allowed impression diameter ....:		2 mm	—

Part	Test temperature °C	Impression Diameter (mm)	Verdict

Supplementary information: Ball pressure test not performed

10.5.3b)	Vicat softening test (ISO 306)	N/A

Part	Vicat softening temperature °C	Thickness of sample (mm)	Verdict

Supplementary information:

Product Service

8	**TABLE: Mechanical resistance to shock and impact**	**Form A.23**	P
11	**Protection against hazards from fluids**		

Voltage tests can be carried out once after performing the tests of clause **8** and clause **11**. However, if voltage tests are carried out separately after each set of tests, two forms can be used.

	Clause 8 tests				Clause 11 tests							
Location (see form A.5)	Static	Dynamic	Normal	Handheld Plug-in	Cleaning (11.2)	Spillage (11.3)	Overflow (11.4)	IEC 60529 (11.6)	Working voltage V	Test voltage V	Verdict	Comments
	P	P	P	N/A	P	N/A	N/A	N/A	110V	1400	P	

NOTE – Use r.m.s., d.c. or peak to indicate the used test voltage.

Supplementary information:

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11.7.2	**TABLE: Leakage and rupture at high pressure**				**Form A.24**	N/A
Part	Maximum permissible working pressure MPa	Test pressure MPa	Leakage YES / NO	Burst YES / NO	Comments	
Supplementary information: No fluids under pressure						

11.7.3	Leakage from low-pressure parts			N/A
Part	Test pressure MPa	Leakage YES / NO	Comments	
Supplementary information: No fluids under pressure				

12.2.1	**TABLE: Ionizing radiation**		**Form A 25**	P
Locations tested	Measured values µSv/h	Verdict	Comments	
100 mm front	0.5	P	Assumed 5 sec exposure	
Supplementary information:				

12.5.1	**TABLE: Sound level**	**Form A.26**	P
Locations tested	Measured values dBA	Calculated maximum sound pressure level	
Ambient	(b) (4) [redacted]		
At operator's normal position and at bystanders' positions	[redacted]		
a) Bystanders Position	[redacted]		
b)			
Supplementary information:			

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12.5.2	Ultrasonic pressure			N/A
Locations tested	Measured values		Comments	
	dB	kHz		
At OPERATOR'S normal position				
At 1 m from the ENCLOSURE				
a)				
NOTE – No limit is specified at present, but a limit of 110 dB above the reference pressure value of 20 μPa is under consideration for applicable frequencies between 20 kHz and 100 kHz.				
Supplementary information: No source of ultrasonic pressure				

13.2.2	TABLE: Batteries		Form A.27	N/A
	Battery load and charging circuit diagram:			
	Battery type.. :			—
	Battery manufacturer/model/catalogue No............ :			—
	Battery ratings .... :			—
	Reverse polarity instalment test			
Single component failures		Verdict		
Component		Open circuit	Short circuit	
Supplementary information: No battery charging circuits provided				

14.3	TABLE: Overtemperature protection devices		Form A.28	N/A
Reliability test				
Component	Type (note)	Verdict	Comments	
NOTE: NSR = non-self-resetting (10 times) NR = non-resetting (1 time) SR = self-resetting (200 times)				
Supplementary information:				

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4.4.2.6	**TABLE: Mains transformer**				**Form A.29**	P
4.4.2.6.1	Short circuit			115 rms input voltage		P
14.7.1	MAINS transformers tested outside equipment					N/A
Type ....:	Step-down, Split bobbin					—
Manufacturer...............:	MCI					—
Test in equipment						P
Test on bench						N/A
Test repeated inside equipment (see 14.7)						N/A
Optional – Insulation class (IEC 60085) of the lowest RATED winding ....:				UL Class F		—
Winding identification		Pri 1-3,2-4;	Sec 5, 6-7,8			
Type of Protector for winding (Note 1)		None	None			
Elapsed time		10 Seconds	10 Seconds			
Current, A	primary	4.1A	—			
	secondary	—	4.0			
Winding temperature, °C	primary	24°C	—			
(see Note 2)	secondary	—	24°C			
Tissue paper / cheesecloth OK ? (Pass / Fail)		Pass	Pass			
Voltage tests (see Note 3)						
primary to secondary	_2300_ V rms	Pass	Pass			
primary to core	_1400_ V rms	Pass	—			
secondary to secondary	______ V ____	—	N/A			
secondary to core	______ V ____	—	N/A			
Verdict		Pass	Pass			

Note 1: Primary fuse - PF / ( ) A
Secondary fuse - SF / ( ) A
Overtemperature protection - OP / ( ) °C
Impedance protection - Z

Note 2: Indicate method of measurement TC = with thermocouple
R = resistance method
If resistance method is used,record resistance in cold and warm condition in FormA.20B!

Note 3: Record the voltage applied and the type of voltage (r.m.s. / d.c. / peak) and for results use NB = no breakdown or B = breakdown

Supplementary information:

4.4.2.6	**TABLE: Mains transformer**	**Form A.30**	P
14.7.2	Overload tests (for mains transformers)		P

4.4.2.6	TABLE: Mains transformer				Form A.30	P
Type ....:		Step-down, Split bobbin				—
Manufacturer...............:		MCI				—
Test in equipment						P
Test on bench						N/A
Test repeated inside equipment (see 14.7)						N/A
Optional – Insulation class (IEC 60085) of the lowest RATED winding ....:						—
Winding identification		Pri 1-3,2-4;		Sec 5, 6-7,8		
Type of Protector for winding (Note 1)		None		None		
Elapsed time		2 hours		2 hours		
Voltage		108Vac	132Vac	30Vac	39Vac	
Current, A primary		0.27A	0.27A			
secondary				0.72A	0.69	
Winding temperature, °C primary		76°C TC	—	—	—	
(see Note 2) secondary		—	—	80°C TC	—	
Tissue paper / cheesecloth OK ? (Pass / Fail)		Pass	—	Pass	—	
Voltage tests (see Note 3)						
primary to secondary	2300__ V rms	Pass	—	Pass	—	
primary to core	2400__ V rms	—	—	—	—	
secondary to secondary	_____ V __	—	—	N/A	—	
secondary to core	_____ V __	—	—	N/A	—	
Verdict						

Note 1: Primary fuse - PF / ( ) A
Secondary fuse - SF / ( ) A
Overtemperature protection - OP / ( ) °C
Impedance protection - Z

Note 2: Indicate method of measurement TC = with thermocouple
R = resistance method
If resistance method is used,record resistance in cold and warm condition in FormA.20B!

Note 3: Record the voltage applied and the type of voltage (r.m.s. / d.c. / peak) and for results use NB = no breakdown or B = breakdown

Supplementary information:

16.1	TABLE: Current measuring circuits	Form A.31	N/A
These tests are performed with all types and models of current transformers without internal protection, and which are specified by the manufacturer for use with the equipment			

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16.1	TABLE: Current measuring circuits			Form A.31	N/A
a) Current transformers					
Type/Model	RATED current A	Test current A	Interrupt Yes / No	Verdict	Comments
Supplementary information: No current measuring circuits porivded					

b) Range changing switches			
Type / Model	Maximum rated current of switch A	Cycling test Verdict	Comments
Supplementary information:			

16.2	TABLE: Multifunctional meters and similar equipment Form A. 32		N/A
	Operating conditions...:	—	—
	Maximum RATED voltage applied (V).......................:	—	—
	Measurement category...:	—	—
	Test source limit (KVA)..:	—	—
Function		Range	Verdict
Supplementary information: Not a Multifunctional meters or similar equipment			

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Attachment No.: 1

Product Service

National Differences to IEC 61010-1 2nd Ed. (2001) for CAN/CSA C22.2 No. 61010-1:2004 / UL 61010-1: 2004

Originated by TÜV Product Service GmbH based on the text of CB Bulletin 109A (2005)

CB Bulletin OC No 109A : 2005

Explanation for Abbreviations:
Possible Verdicts: **P** = Pass, **F**= Fail, **N** = Not Applicable
Remarks:
Throughout this report, a point is used as the decimal separator.

Report reference No ....: NI808123

Date of issue ....: 2009-01-15

COUNTRIES				
COUNTRY	GROUP DIFFER.	NAT'L DIFFER.	NAT'L STANDARD	TESTED
CA Canada			C22.2 No. 61010-1	
US United States			UL 61010-1	

Product Service

NATIONAL DIFFERENCES			
CAN/CSA C22.2 No. 61010-1: 2004 / UL 61010-1 : 2004			
Clause	Requirement –Test	Result - Remark	Verdict
1	**Scope and Object**		—
1.1.1 DV.1	**Addition:** This Part 1 applies to test equipment integrated into manufacturing facilities intended for testing electronic devices, including silicon wafers and other semiconductor devices.	Not used in manufacturing facilities	N
1.1.3 ADV	**Addition:** This standard applies to equipment to be employed in accordance with ANSI/NFPA 70, National Electrical Code (NEC); designed to be install in accordance with the Canadian Electrical Code (CEC), Part 1, CSA C22.1, and CSA C22.2 No.0; or designed to comply with both the NEC and CEC		P
2	**Normative references**		—
2DV DC	**Addition:** Referenced ANSI / NFPA / UL / CSA considered.		P
4	**Tests**		—
4.4.4.1 DV D2	**Modification:** Replace the word" conformity with "humidity"	Replaced	—
5	**Marking and Documentation**		—
5.4.1h) DV D2	**Addition:** for equipment which for safety reasons requires specific probe assemblies, or probe assemblies with specific characteristics, the documentation shall indicate that probe assemblies which meet the manufacturer's specifications shall be used.	Equipment does not use specific probe assemblies for safety	N
5.4.1i) DV D2	**Addition:** for equipment intended to detect the presence of a hazardous voltage, the instructions shall provide guidance on how to determine that the equipment is functioning correctly.	Not used to detect the presence of a hazardous voltage	N

Product Service

NATIONAL DIFFERENCES			
CAN/CSA C22.2 No. 61010-1: 2004 / UL 61010-1 : 2004			
Clause	Requirement –Test	Result - Remark	Verdict
6	**Protection against electrical shock**		—
6.3.1 **DV D2**	**Replacement of item (a) with the following:** Voltage levels are 30 V r.m.s. and 42,4 V peak or 60 V d.c. For equipment RATED for use in WET LOCATIONS, the voltage levels are 16 V r.m.s. and 22,6 V peak or 35 V d.c.	Not rated for use in WET locations	N
6.3.2 **DV D2**	**Replacement of item (a) with the following:** Voltage levels are 50 V r.m.s. and 70 V peak or 120 V d.c. For equipment RATED for use in WET LOCATIONS, the voltage levels are 33 V r.m.s. and 46,7 V peak or 70 V d.c. For temporary voltages, the levels are those of figure 1, measured across a 50 k??resistor.	Not rated for use in WET locations	N
6.5.1.4 **DV D2**	**Modification:** If the equipment contains overcurrent protection devices for all poles of the MAINS supply, and if the wiring on the supply side of the overcurrent protection devices cannot become connected to ACCESSIBLE conductive parts in the case of a single fault, the test current need not be more than twice the RATED current of the internal overcurrent protection devices and shall not exceed 4 V a.c. r.m.s. or d.c for certification to Canadian requirements (in accordance with Clause 3.4.2.1 of CSA C22.2 No. 0.4).	Not permanently connected to mains	N
6.7.1.2 **DV D2**	**Replacement:** For coated printed wiring boards whose coatings meet the requirements of IEC 60664-3 for type A coatings, or of ANSI/UL 746C for conformal coatings, the values for POLLUTION DEGREE 1 apply.	Coated circuit boards not used to reduce distances	N
6.10.1 **DV.1**	**Delete** reference to IEC 60227 or IEC 60245 for Mains supply cord in item (a)	Deleted	—

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Product Service

NATIONAL DIFFERENCES			
CAN/CSA C22.2 No. 61010-1: 2004 / UL 61010-1 : 2004			
Clause	Requirement –Test	Result - Remark	Verdict
6.10.1 DV.2	**Addition:** Green covered conductors (with or without yellow stripes) shall be used only for connection to PROTECTIVE CONDUCTOR TERMINALS.		P
6.10.1 DV.4	**Addition:** Requirements for MAINS cords or cord sets are contained in ANSI/UL 817 and CSA C22.2 No. 21.		P
6.10.1 DV.5	**Addition:** Requirements for general use receptacles, attachment plugs, and similar wiring devices are contained in ANSI/UL 498 and CSA C22.2 No. 42, CSA C22.2 No. 182.1, CSA C22.2 No. 182.2, and CSA C22.2 No. 182.3. NOTE 6.10.1 only applies to cords connected to the external fixed MAINS socket-outlet and to external interconnecting MAINS cords. 6.10.1 does not apply to cords fully contained within the equipment enclosure.		P
6.10.3 DV D2	**Addition:** Requirements for plugs of MAINS cords are contained in ANSI/UL 498 and CSA C22.2 No. 42, CSA C22.2 No. 182.1, CSA C22.2 No. 182.2, and CSA C22.2 No. 182.3.		P
6.10.3 ADV D2	**Additions of 6.10.3ADV.1 through 6.10.3ADV.6.6.1 is for PERMANENTLY CONNECTED EQUIPMENT:**	Not permanently connected to mains	N
6.10.3 ADV.1.1	Equipment intended for permanent connection to the mains shall have provision for connection of a wiring system in accordance with ANSI/NFPA 70, NEC, with CSA C22.1, CEC, Part I or with both as appropriate.	Not permanently connected to mains	N

Product Service

NATIONAL DIFFERENCES			
CAN/CSA C22.2 No. 61010-1: 2004 / UL 61010-1 : 2004			
Clause	Requirement –Test	Result - Remark	Verdict
6.10.3 ADV.1.3	PERMANENTLY CONNECTED EQUIPMENT shall be provided with TERMINALS or leads for the connection of conductors having an ampacity that, in accordance with the National Electrical Code and/or the Canadian Electrical Code, Part I, is acceptable for the equipment.	Not permanently connected to mains	N
6.10.3 ADV.2.1	A TERMINAL or splice compartment shall be complete. The top, all sides, and a complete bottom shall be provided when the equipment is shipped from the factory and shall enclose all FIELD WIRING TERMINALS and splices intended to be made in the field.	Not permanently connected to mains	N
6.10.3 ADV.2.2	Equipment with an ENCLOSURE that is complete need not be provided with a separate compartment.	Not permanently connected to mains	N
6.10.3 ADV.2.3	The TERMINAL or splice compartment in which mains connections to PERMANENTLY CONNECTED EQUIPMENT are made shall be located so that: a) Internal wiring and electrical components are not exposed to mechanical damage or strain while connections are being made, and b) These connections may be readily inspected after the equipment is installed as intended.	Not permanently connected to mains	N
6.10.3 ADV.2.4	A wiring TERMINAL shall be provided in which connection is made by means of screws, nuts or equally effective devices.	Not permanently connected to mains	N
6.10.3 ADV.2.5	Wire binding screws are permitted as follows: a) A No. 6 or M4 screw may be used to connect a 14 AWG (2,1 sq mm) or smaller wire. b) A No. 8 or M4.5 screw may be used to connect a 12 AWG (3,3 sq mm) or smaller wire. c) A No. 10 or M5 screw may be used to connect a 10 AWG (5,3 sq mm) or smaller wire.	Not permanently connected to mains	N

Product Service

NATIONAL DIFFERENCES			
CAN/CSA C22.2 No. 61010-1: 2004 / UL 61010-1 : 2004			
Clause	Requirement –Test	Result - Remark	Verdict
6.10.3 ADV.3.1	The free length of a lead inside a wiring compartment shall be at least 6 inches (150 mm).	Not permanently connected to mains	N
6.10.3 ADV.4.1	TERMINALS and leads shall be identified in a manner that will permit the equipment to be connected as intended by the manufacturer. Equipment containing either a mains-connected polarized convenience receptacle or a mains-connected polarized lamp socket shall have an identified neutral (grounded) conductor.	Not permanently connected to mains	N
6.10.3 ADV.4.2	A wiring TERMINAL that is intended solely for connection of the neutral (grounded) mains conductor shall be readily distinguishable from all other TERMINALS. It shall be constructed of, or plated with, metal that is substantially white in color or shall be clearly identified in some other manner, such as on a wiring diagram permanently attached to the equipment.	Not permanently attached	N
6.10.3 ADV.4.3	A lead intended solely for field wiring connection to the neutral (grounded) mains conductor shall be readily distinguishable from all other leads by means of it being finished to show a white or natural gray color.	No field wiring leads provided	N
6.10.3 ADV.4.4	The protective grounding (earthing) TERMINAL shall be marked in accordance with 5.1.6 (b) or marked "G," "GR," "GND," "GRD," "GROUND," ?or "GROUNDING" ?or provided with a green colored screwhead that is hexagonal, slotted, or both.		P
6.10.3 ADV.4.5	A lead intended for field connection to the protective grounding conductor shall be readily distinguishable from all other leads by being finished to show a green color with or without one or more yellow stripes.	No field wiring leads provided	N
6.10.3 ADV.5.1	An ENCLOSURE shall not pull apart or sustain damage such as cracking and breaking, and knockouts shall remain in place when subjected to the pulling, torque, and bending that is likely to occur.	No conduit connections provided	N

Product Service

NATIONAL DIFFERENCES			
CAN/CSA C22.2 No. 61010-1: 2004 / UL 61010-1 : 2004			
Clause	Requirement –Test	Result - Remark	Verdict
6.10.3 ADV.5.2	ENCLOSURES having sheet metal members with a thickness no less than 0,81 mm if of uncoated sheet steel, no less than 0,86 mm if of galvanized sheet steel, no less than 1,11 mm if of sheet aluminum, and no less than 1,09 mm if of sheet copper or sheet brass are not required to be tested in accordance with 6.10.3ADV.5.1.	No conduit entries provided	N
6.10.3 ADV.6.1.1	**Conduit ENCLOSURE entry tests:** After each of the tests in 6.10.3ADV.6.2 – 6.10.3ADV.6.5, the equipment shall meet the criteria defined in 6.10.3ADV.5. NOTE Enclosures complying with ANSI/UL 50 are deemed to comply with 6.10.3ADV.6.2 and 6.10.3ADV.6.3.	No conduit entries provided	N
6.10.3 ADV.6.2.1	**Conduit pull-out test:** The ENCLOSURE shall be suspended by a length of rigid conduit installed in one wall of the ENCLOSURE or mounted as intended in service, and a pulling force of 200 lbs (890 N) shall be applied for 5 min to a length of conduit installed in the opposite wall (or wall with conduit entry if ENCLOSURE is mounted rather than suspended).	No conduit entries provided	N
6.10.3 ADV.6.3.1	**Conduit torque test:** The ENCLOSURE shall be securely mounted as intended in service. A torque in accordance with table 6.10.3ADV.6.3.1.1 shall be applied to a length of installed conduit in a direction tending to tighten the connection. The lever arm shall be measured from the center of the conduit.	No conduit entries provided	N

Product Service

NATIONAL DIFFERENCES			
CAN/CSA C22.2 No. 61010-1: 2004 / UL 61010-1 : 2004			
Clause	Requirement –Test	Result - Remark	Verdict
6.10.3 ADV.6.4.1	**Bending:** A length of conduit at least 1 ft (300 mm) long of the intended size shall be installed: 1) In the center of the largest unreinforced surface, or 2) In a hub or an opening if provided as part of the ENCLOSURE.	No conduit entries provided	N
6.10.3 ADV.6.4.2	If the ENCLOSURE surface can be installed in either a horizontal or a vertical plane, the vertical bending moment value shall be used.	No conduit entries provided	N
6.10.3 ADV.6.4.4	For an end-of-line ENCLOSURE as defined in the note of Table 6.10.3ADV.6.3.1.1, the bending moment shall be 150 lb-in (17,0 N•m).	No conduit entries provided	N
6.10.3 ADV.6.5.1	**Knockouts:** A knockout shall be subjected to a force of 20 lb (89 N) applied at right angles by means of a mandrel with a 1/4-in (6,4-mm) diameter flat end. The mandrel shall be applied at the point most likely to cause movement of the knockout.	No conduit entries provided	N
6.10.3 ADV.6.6.1	**Continuity of bonding:** An enclosure made of insulating material, either wholly or in part, shall have an acceptable bonding means to provide continuity of bonding between all metallic conduits entering the enclosure.	No conduit entries provided	N
6.11.3ADV	**Addition of requirement for polarity of connections:** Any line-connected single-pole switch, any center contact of a lampholder, and any automatic control with a marked off position shall be connected to a TERMINAL or lead intended for connection to the ungrounded conductor of the supply circuit.		P
8	**Mechanical resistance to shock and impact** **Addition: "and resistance to UV radiation"**		—

Product Service

NATIONAL DIFFERENCES			
CAN/CSA C22.2 No. 61010-1: 2004 / UL 61010-1 : 2004			
Clause	Requirement –Test	Result - Remark	Verdict
8.2 ADV D2	**Addition of nonmetallic enclosure requirement:** Nonmetallic enclosures intended for outdoor use shall meet the UV resistance requirements of ANSI/UL 746C or of C22.2 No. 0.17, or of both as appropriate. NOTE ANSI/UL 746, clause 27, requires a 1000 hour UV/water exposure preconditioning using a xenon-arc or alternatively, a 720 hour UV/water exposure preconditioning using twin carbon-arcs. CSA C22.2 No. 0.17, clause 5.9, only permits the 1000 hour UV/water exposure preconditioning.	Not intended for outdoor use	N
9	**Protection against the spread of fire**		—
9.2.1 DV D2	**Addition of the following to the end of item (a):** Flame RATINGS of ANSI/UL 94 V-0, V-1, and V-2 are equivalent to the flammability classifications of IEC 60707 FV-0, FV-1, and FV-2, respectively. NOTE Flame ratings FT-1 of CSA C22.2 No. 0.3 and VW-1 ANSI/UL 1581 are considered acceptable for insulated wire and cable.		P
9.5 ADV.1	**Addition of the following for connections to overcurrent protective devices:** An overcurrent protective device shall be connected in the ungrounded supply conductor unless the overcurrent protective device or devices are so constructed as to interrupt both the neutral (grounded) and ungrounded conductors of the MAINS supply simultaneously. Where fuses are used as overcurrent protective devices in both the neutral (grounded) and ungrounded supply conductors, the fuseholders should be mounted adjacent to each other and the fuses shall be of the same RATING and characteristics.		P

Product Service

NATIONAL DIFFERENCES			
CAN/CSA C22.2 No. 61010-1: 2004 / UL 61010-1 : 2004			
Clause	Requirement –Test	Result - Remark	Verdict
9.5 ADV.2	**Addition of the following for connections to overcurrent protective devices:** The screw shell of a plug fuseholder and the ACCESSIBLE contact of an extractor fuseholder connected to the ungrounded supply conductor shall be connected towards the load. The ACCESSIBLE contact or screw shell of fuseholders connected in the neutral (grounded) conductor shall be located towards the grounded supply line.	plug fuseholders are not used	N
11	**Protection against HAZARDS from fluids**		—
11.7 DV D2	**Addition:** Annex G is normative and replaces the requirements of 11.7.2 – 11.7.4.	No fluids under pressure	
12	**Protection against radiation, including laser sources, and against sonic and ultrasonic pressure**		—
12.3	**Ultraviolet (UV) radiation**	No source of UV radiation	N
12.3 DV.1	**Modification:** Nonmetallic parts subject to UV radiation shall be tested in accordance with 8.2ADV if failure could result in a HAZARD.		N
12.3 DV.2	Limits in Annex DVC are not exceeded.		N
14	**Components**		—
14.1 DV.1	**Modification of 14.1:** Where safety is involved, components shall comply with applicable safety requirements specified in relevant ANSI, CAN, IEC, ISO, or UL standards, as appropriate. Note: Annex DVA provides applicable safety requirements.		P

Product Service

NATIONAL DIFFERENCES			
CAN/CSA C22.2 No. 61010-1: 2004 / UL 61010-1 : 2004			
Clause	Requirement –Test	Result - Remark	Verdict
14.1 DV.2	**Addition:** Add to and of item (d) "Annex DVA provides applicable safety requirements."		P
14.1 DV.3	**Change:** Reference from Figure 10 in second paragraph to Figure 14.1DV.3.1 used.		P
14.8 DV D2	ADDITION: Flame RATINGS of ANSI/UL 94 and CAN/CSA C22.2 No. 0.17, V-0, V-1, and V-2, are equivalent to the flammability classifications of IEC 60707 FV-0, FV-1, and FV-2, respectively.		P
14.9 ADV.1.1	**Addition of EMC Conductive coatings:** The bond of a conductive (metallic) coating applied to a polymeric part shall be evaluated by evaluating the bond in accordance with the requirements for ? Adhesives ? in ANSI/UL 746C and/or CSA C22.2 No. 0.17	None used	N
14.9 ADV.1.2	Peeling or flaking of the coating would not reduce spacings or bridge live parts so as to introduce a risk of fire or electric shock.	Conductive coatings not used	N
14.9 ADV.2.1	If peeling of the conductive shield or tape may introduce a risk of fire or electric shock, the bond between a conductive shield or tape and any other surface shall be investigated.	Conductive coatings not used	N
14.9 BDV D2	**Addition of the following requirement for direct plug-in transformers:** Direct plug-in transformer units are subject to additional requirements found in ANSI/UL 1310, CAN/CSA C22.2 No. 223, or in both standards.	No direct plug-in transformers used	N
16	**Test and measurement equipment**		—

Product Service

NATIONAL DIFFERENCES			
CAN/CSA C22.2 No. 61010-1: 2004 / UL 61010-1 : 2004			
Clause	Requirement –Test	Result - Remark	Verdict
16.2 DV.1	Multifunction meters and similar equipment shall be tested by changing the function/range selector to all possible settings while connected to the maximum rated source. Note: if test probes are provided with the equipment being tested then they shall be used for the test.	Not a multifunction meter or similar equipment	N
16.2 DV.2	No HAZARDS occurs when switching selector settings	Not a multifunction meter or similar equipment	N

Product Service

Attachment No. 2

Equipment Photographs

Attachment contains

Total:	**8 pages**
Cover page:	**1 page**
DOCUMENTATION:	**7 pages**

Project: NI808123
Manufacture: Rapiscan Systems
Model: Secure 1000
View: Front

Project: NI808123
Manufacture: Rapiscan Systems

Product Service

Model: Secure 1000
View: Right side

Product Service

Project: NI808123
Manufacture: Rapiscan Systems
Model: Secure 1000
View: Left side

Product Service

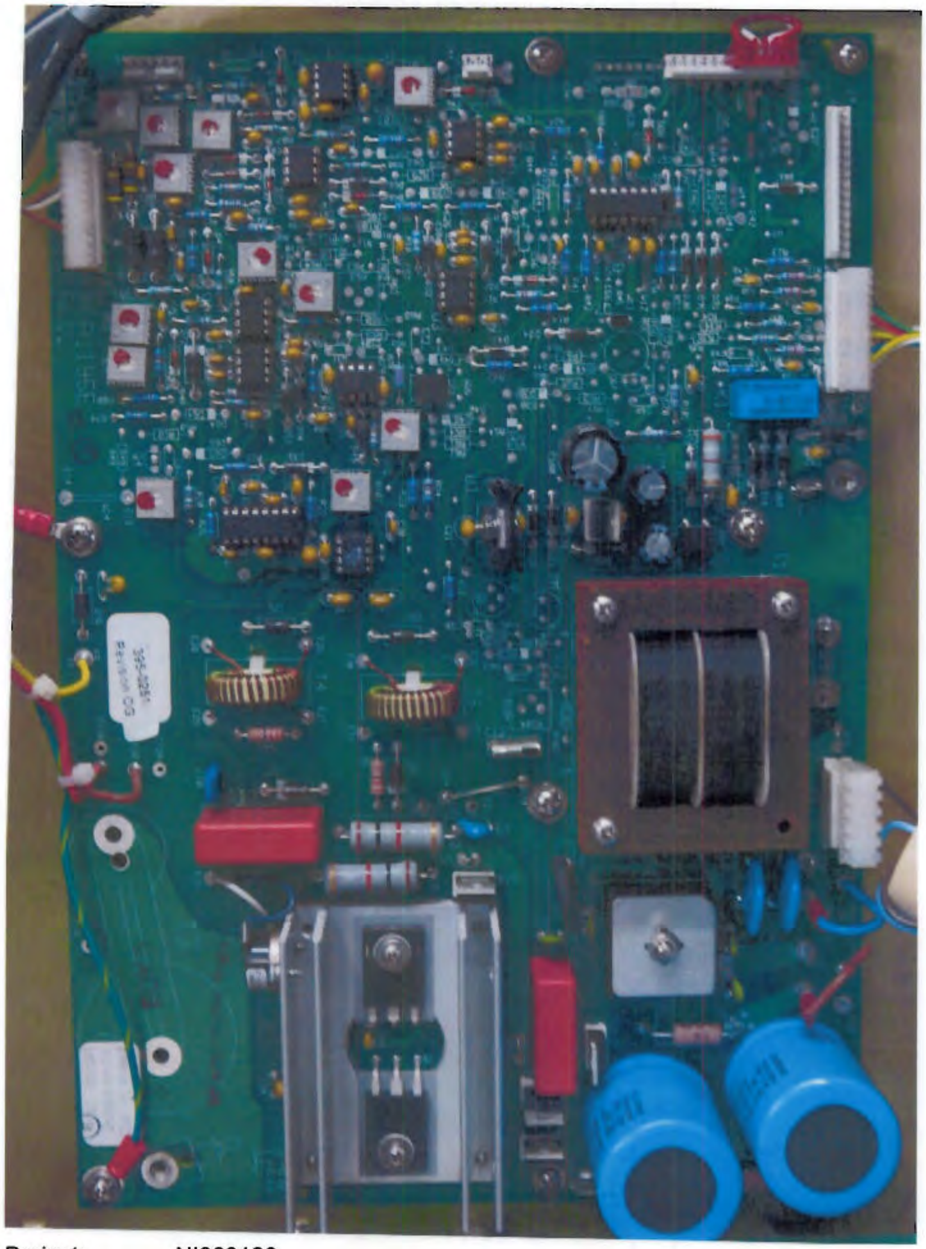
Project: NI808123
Manufacture: Rapiscan Systems

Product Service

Model: Secure 1000
View: Back

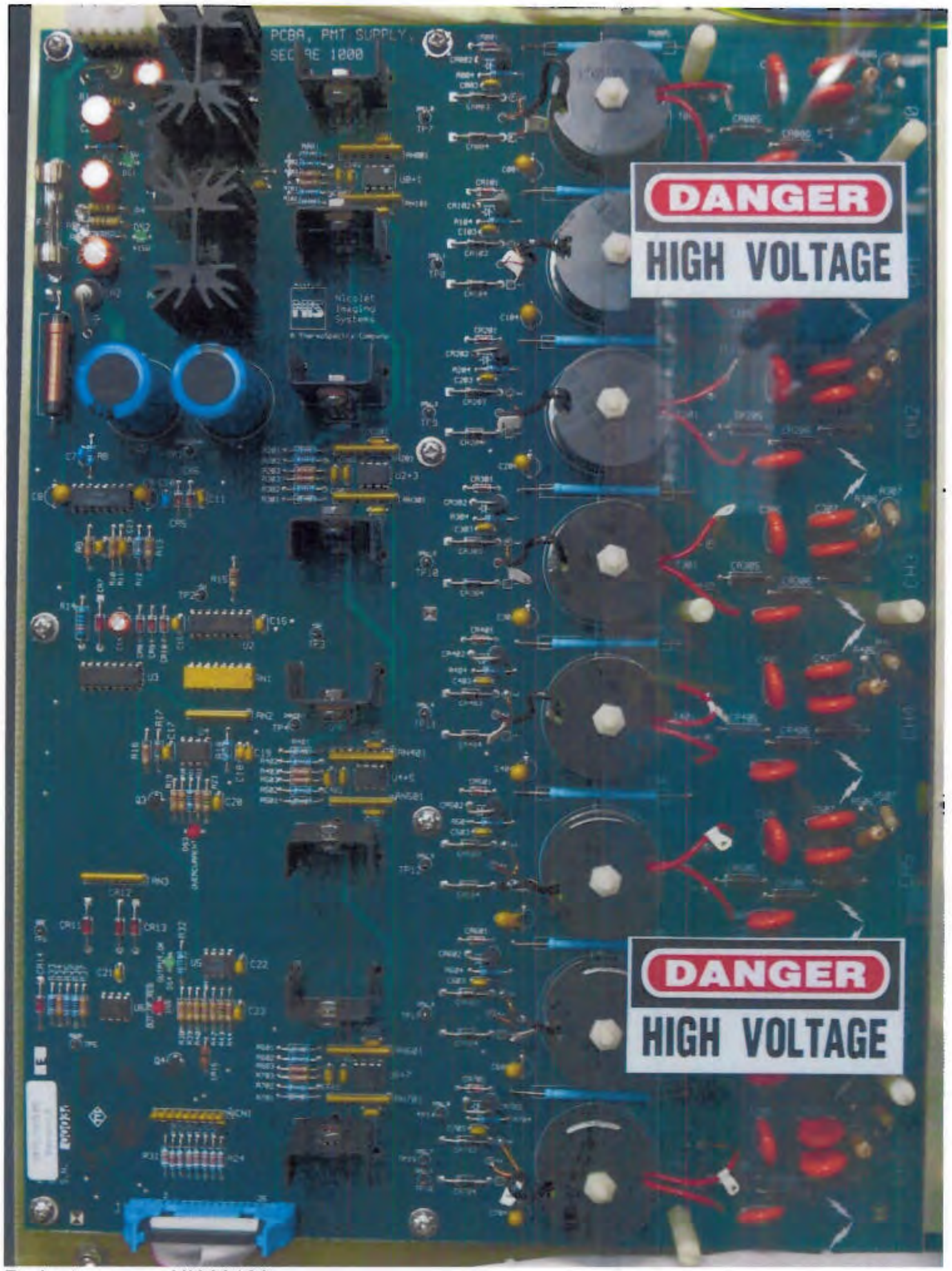
Project: NI808123
Manufacture: Rapiscan Systems
Model: Secure 1000
View: Internal

TÜV SÜD
Product Service



Project: NI808123
Manufacture: Rapiscan Systems
Model: Secure 1000
View: High voltage driver board

Product Service



Project: NI808123
Manufacture: Rapiscan Systems

Product Service

Model: Secure 1000
View: Photo multiplier high voltage supply bd.

SENSITIVE SECURITY INFORMATION

Whole Body Imager (WBI)
Qualification Data Package (QDP) Addendum 1

WBI-QDP-ADDENDUM-1_APPENDIX-C-2
(CEI RADIATION SAFETY REPORT)
[SUPPORTING SHALL(S): 169, 170]

December 11, 2008

Reference Documents:
Management Plan for the Whole Body Imager (WBI) Qualification Test & Evaluation (Report # DHS/STD/TSL-08/22, 08 September 2008, Draft); and Procurement Specification (Report # DHS/TSA/OST/ENG/WBI-001, 5 September 2008, FINAL, Version 1.0)

Submitted by:

Smiths Detection
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P. O. Box 410
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Compliant with:
RFP # HSTS04-08-R-CT2056

Compliance Engineering Ireland Ltd
RAYSTOWN, RATOATH ROAD, ASHBOURNE, CO. MEATH, IRELAND
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Confidential Report

Client:	Test of:
Smiths Detection Irl. Ltd. **Unit 4, Westpoint Buildings,** **Link Road,** **Ballincollig,** **Co. Cork.** **Attention:** [redacted]	**eqo (Millimeter Wave Inspection System)** **To:** **ICNIRP Guidelines: 1998** **IEEE ANSI C95.1 – 2005** **EU EMF Recommendation 1999/519/EC** **EU Directive 2004/40/EC** **EN 50371: 2002**

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REPORT REF: 08E2436-1 **TESTED BY:** [redacted]

DATE RECEIVED: November 2008 **REPORT BY:** [redacted]

ISSUE DATE: November 2008 **AUTHORISED SIGNATORY:** [redacted]

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3.(a) The prices set out in any quotation are based upon current costs and if there is any variation in the said costs between the date of the order or Contract and delivery of the final report CEIL shall be entitled to adjust prices to reflect such variations.

b) In the event of any suspension or variation of work arising from the Customer's instructions or lack of instructions the price set out in any quotation may be increased to cover any extra expense incurred by CEIL.

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11. These Conditions and the Contract to which the document relates shall in all respects be governed by and construed in accordance with the laws of the Republic of Ireland and in accordance with the Republic of Ireland shall have exclusive jurisdiction to determine any disputes arising therefrom unless otherwise agreed.

eqo (Millimeter Wave Inspection System)

To:
ICNIRP Guidelines: 1998
IEEE ANSI C95.1 – 2005
EU EMF Recommendation 1999/519/EC
EU Directive 2004/40/EC
EN 50371: 2002

1 Introduction

At the request of [redacted] of Smiths Detection, Compliance Engineering Ireland Ltd., has conducted a survey of the electromagnetic field strengths from the "eqo" Millimeter Wave Inspection System.

Detailed broadband measurements were made at the system. The measurements were made to determine compliance with international guidelines on electromagnetic radiation to ensure public safety.

Non-ionising radiation such as that emitted by a radio transmitter has a physiological interaction with the body and guideline limits defining allowable levels have been published.

Measurements were made at the Smiths Detection facility at Ballincollig, Co. Cork. [redacted] was present for the duration of the survey. The measurements were carried out on the 10th of November 2008.

2 Discussion of Guideline Safety Levels

2.1 ICNIRP

The International Commission on Non-Ionising Radiation Protection (ICNIRP) guidelines for limiting exposures to electromagnetic fields were published in 1998. These guidelines were developed in co-operation with the Environmental Health Division of the World Health Organisation (WHO) as part of the WHO Environmental Health Criteria Programme.

Frequency Range	E-field strength (V/m)	H-field strength (A/m)	B-field (μT)	Equivalent plane wave power density, S_{eq} (W/m^2)
Up to 1 Hz	-	1.63×10^5	2×10^5	-
1-8 Hz	20000	$1.63 \times 10^5/f^2$	$2 \times 10^5/f^2$	-
8-25 Hz	20000	2×10^4	$2 \times 10^4/f$	-
0.025-0.82 kHz	500/f	20/f	25/f	-
0.82-65 kHz	610	24.4	30.7	-
0.065-1 MHz	610	1.6/f	2.0/f	-
1-10 MHz	610/f	1.6/f	2.0/f	-
10-400 MHz	61	0.16	0.2	10
400-2000 MHz	$3f^{1/2}$	$0.008f^{1/2}$	$0.01f^{1/2}$	f/40
2-300 GHz	137	0.36	0.45	50

Table1: Reference levels for occupational exposure to time-varying electric and magnetic fields.

Frequency Range	E-field strength (V/m)	H-field strength (A/m)	B-field (μT)	Equivalent plane wave power density, S_{eq} (W/m^2)
Up to 1 Hz	-	3.2×10^4	4×10^4	-
1-8 Hz	10000	$3.2 \times 10^4/f^2$	$4 \times 10^4/f^2$	-
8-25 Hz	10000	4000/f	5000/f	-
0.025-0.82 kHz	250/f	4/f	5/f	-
0.8-3 kHz	250/f	5	6.25	-
3-150 kHz	87	5	6.25	
0.15-10 MHz	87	0.73/f	0.92/f	-
1-10 MHz	$87f^{1/2}$	0.73/f	0.92/f	-
10-400 MHz	28	0.073	0.092	2
400-2000 MHz	$1.375f^{1/2}$	$0.0037f^{1/2}$	$0.0046f^{1/2}$	f/200
2-300 GHz	61	0.16	0.20	10

Table 2: Reference levels for general public exposure to time-varying electric and magnetic fields.

The guidelines are expressed in terms of induced electric currents in the body and specific absorption rate (SAR) values. Different levels are set for workers and for members of the public. Considering the frequency of the emissions from the systems under examination only the SAR values need be considered. From the basic restrictions IRPA/INIRC derive limits in terms of the root mean square values for the electric and magnetic field strengths and for the equivalent plane wave power flux density.

2.2 EU EMF Recommendation

The European Commission has published a Recommendation (1999/519/EC) requesting Member States to put in place national legislation setting down maximum limits of non-ionising electromagnetic fields. This Recommendation has closely adopted the ICNIRP 1998 guidelines. It applies to public exposure only.

2.3 EU Directive

Guidelines similar to those adopted by the ICNIRP have been adopted in the EU Directive (2004/40/EC), which is intended to ensure the protection of workers from non-ionising electromagnetic fields. The aim of the Directive is to protect workers only and will not specify levels for public areas.

2.4 IEEE ANSI C95.1 - 2005

ANSI C95.1- 2005, Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.
This standard has exposure limits for electric fields and magnetic fields that are whole-body and time averaged. It has relaxed limits for an appendage and also has exposure limits for induced and contact currents.

2.5 EN 50371: 2002

EN 50371: 2002 is a generic standard to demonstrate the compliance of low power electronic and electrical apparatus with the basic restrictions related to human exposure to electromagnetic fields (10 MHz - 300 GHz) for the general public. If the average power emitted by the apparatus operating in the frequency range 10 MHz to 300 GHz is less than or equal to 20 mW and the transmitting peak power is less than 20 W then the apparatus is deemed to comply with the basic restrictions without testing.

3 Method of Measurement

A series of broadband measurements were made at different locations at the system using a number of different Radiation Hazards Monitors.

Measurements were made at four different heights; 1.1 m. 1.3 m, 1.5 m and 1.7 metres. Measurements were made in dynamic scanning mode. Measurements were also made with the probe held close to the human body at the heights of 1.1 m, 1.3 m, 1.5m and 1.7 metre as requested.

At each location the measuring system was directed to ensure that the maximum component of the field was measured.

The equipment used for this survey is listed in Appendix A.

4 Results

The results obtained on the 10th of November at each individual location can be seen in Table 1, page 7.

At all points 1-4, the levels of electromagnetic fields (b) (4) [redacted]

In addition, the magnetic field emissions (b) (4) [redacted] s defined by ICNIRP.

At point 5, the highest level recorded was [redacted] (b) (4) [redacted]

As the system (b) (4) [redacted] the system complied with the specification of 50371: 2002.

Mmt Points	Description of mmt Points	Height of mmt point	Levels from 100 kHz – 50 GHz 2	% of Public Guideline Exposure limit 2
1	At the entrance of doorway	(b) (4) [redacted]		
2	In the centre of the doorway			
3	In the centre of the flat panel array			
4	In the centre of the mat, indicated by markings with probe close to body			
5	At closest point to transmitter			

Table 1: Levels measured at various heights at the system

5 Conclusions

The highest level o (b) (4) [redacted] outlined by the International Commission on Non Ionising Radiation Protection (ICNIRP).

As the power output of the transmitter (b) (4) [redacted] it complies with the requirements of EN 50371: 2002.

As such, the levels of radio frequency electromagnetic field strengths from the eqo (Millimeter Wave Inspection System) comply with limits outlined by the International Commission on Non Ionising Radiation Protection, the European Union Recommendation on Electromagnetic Fields 1999/519/EC, the European Union Directive 2004/40/EC, IEEE ANSI C95.1 – 2005 and EN 50371: 2002.

Appendix A
Equipment used

Item	Manufacturer	Model Number	Serial Number
Radiation Hazards Monitor	Narda	NBM-550	A-0068
Radiation Isotropic Probe	Narda	EF 0391	A-0119
Radiation Hazards Monitor	Narda	SRM	M-0082
3-Axis Antenna	Narda	SRM	H-0254
Radiation Hazards Monitor	Raham	40	9622429
Radiation Isotropic Probe	Raham	94	9619070
Radiation Hazards Monitor	Narda	ELT-400	M-0109
B Field Probe	Narda	ELT	M-0152

Appendix B
Site Photographs


X12
T4

Appendix C
References

List of References:

ICNIRP, 1998. Guidelines for limiting exposure to Time-Varying Electric Magnetic, and Electromagnetic Fields (Up to 300 GHz), Health Physics, Vol. 74, No. 4, April 1998

ANSI C95.1- 2005, Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.

EN 50371: 2002: Generic standard to demonstrate the compliance of low power electronic and electrical apparatus with the basic restrictions related to human exposure to electromagnetic fields (10 MHz - 300 GHz)

Transportation Security Administration

smiths detection
bringing technology to life

Whole Body Imager (WBI)
Qualification Data Package (QDP) Addendum 1

WBI-QDP-ADDENDUM-1_APPENDIX-C-1
(CEI RADIATION SAFETY CERTIFICATE OF CONFORMITY)
[SUPPORTING SHALL(S): 169, 170]

December 11, 2008

Reference Documents:
Management Plan for the Whole Body Imager (WBI) Qualification Test & Evaluation (Report # DHS/STD/TSL-08/22, 08 September 2008, Draft); and Procurement Specification (Report # DHS/TSA/OST/ENG/WBI-001, 5 September 2008, FINAL, Version 1.0)

Submitted by:

Smiths Detection
30 Hook Mountain Road
P. O. Box 410
Pine Brook, New Jersey

Compliant with:
RFP # HSTS04-08-R-CT2056

COMPLIANCE
ENGINEERING
IRELAND LTD

Certificate of Conformity

Company: Smiths Detection

Product Tested: eqo (Millimeter Wave Inspection System)

Testing Date: 10th November 2008

Report No.: 08E2436-1
Certificate No.: 08E2436-C1

A sample of the EUT has been tested and found to comply with the following standards

ICNIRP Guidelines: 1998
IEEE ANSI C95.1 – 2005
EU EMF Recommendation 1999/519/EC
EU Directive 2004/40/EC
EN 50371: 2002

This certificate is based on a single evaluation of one sample.

Approved by:
Compliance Engineering Ireland Ltd

[redacted] 17 Nov 08
Date
Managing Director

IEC 61010-1			
SubClause	Difference + Test	Result - Remark	Verdict
8.2A	Nonmetallic enclosures intended for outdoor use shall meet the UV resistance requirements of ANSI/UL 746C or of C22.2 No. 0.17, or of both as appropriate.	Not for outdoor use.	N/A
9	Add row for 1,5 mm clearance: 2560 V / 1390 V / 1970 V		N/A
9.2.1	Flame RATINGS of ANSI/UL 94 V-0, V-1, and V-2 are equivalent to the flammability classifications of IEC 60707 FV-0, FV-1, and FV-2, respectively.		Pass
9.2.1	Flame ratings FT-1 of CSA C22.2 No. 0.3 and VW-1 ANSI/UL 1581 are considered acceptable for insulated wire and cable.		Pass
9.5A.1	An overcurrent protective device shall be connected in the ungrounded supply conductor unless the overcurrent protective device or devices are so constructed as to interrupt both the neutral (grounded) and ungrounded conductors of the MAINS supply simultaneously. Where fuses are used as overcurrent protective devices in both the neutral (grounded) and ungrounded supply conductors, the fuseholders should be mounted adjacent to each other and the fuses shall be of the same RATING and characteristics.	20 A circuit breaker provided in equipment.	Pass
9.5A.2	The screw shell of a plug fuseholder and the ACCESSIBLE contact of an extractor fuseholder connected to the ungrounded supply conductor shall be connected towards the load. The ACCESSIBLE contact or screw shell of fuseholders connected in the neutral (grounded) conductor shall be located towards the grounded supply line.		N/A
11.7	Annex G is normative and replaces the requirements of 11.7.2 - 11.7.4.		N/A
12.3.1	Add: "Nonmetallic parts subject to UV radiation shall be tested in accordance with 8.2A if failure could result in a HAZARD."		N/A
12.3.2	Replace the second paragraph with: "Conformity is checked by inspection or by measuring to verify the limits in Annex DVC are not exceeded."		N/A
14.1.1	Add: "Where safety is involved, components shall comply with applicable safety requirements specified in relevant ANSI, CAN, IEC, ISO, or UL standards, as appropriate."		Pass
14.1.2	Add to end of item (d): "Annex DVA provides		Pass

Power Supply Cords and Plugs - For the USA provided with NEMA 5-20R Type B plug (considered equivalent to IEC 60390). For international applications IEC 60390 plug used. All power cords and plug assemblies provided with the unit will be certified and suitable for use in the country for which the product is installed. Due to high leakage current during open ground a high leakage current warning marking is located near the power input connection.

Permissible limits measurement under open ground condition (cl 4.4.2.2) was not considered necessary based on the use of an industrial Type B plug configuration. This plug configuration is similar to the IEC60309 industrial plug which allows the considerations for Pluggable Type B equipment under the following conditions:.

A. The equipment is intended to be installed, maintained and moved by Service Personnel, and the safety instructions state this.

B. The power supply cord set employing the appropriate type plug configuration is provided with the ITE and described in the certification Report.

C. The attachment plug on the cord set is a 20 A configuration.

D. To reduce the risk of replacement of the original power supply cord with a power supply cord the installation instructions indicate that any replacement of the power supply cord should be conducted by a Service Person, and the same type cord and plug configuration should be utilized. Additionally, information on restrictions on intended installation location should be provided.

E. The symbol (ISO 7000-0434, exclamation point in a triangle) is provided as a marking adjacent to the appliance inlet and this marking should be also near the plug type information in the manual.

F. The following marking is to placed on the equipment:

WARNING
HIGH LEAKAGE CURRENT
EARTH CONNECTION ESSENTIAL
BEFORE CONNECTING SUPPLY

The radiated emissions Testing and Power Density Calculations noted in Enclosure 6 were used to determine compliance with IEEE C95.1:2005, Standard for Safety Levels with Respect to Human Exposure to RF Electromagnetic Fields, 3 kHz to 300 GHz, Table 9. According to the report at a distance 2 cm from the radiating antenna(s), the power density was calculated, based on actual field strength measurements, to be 4 x E-6 milliwatts per centimeter squared. Table 9 of IEEE C95.1 references maximum permitted exposures (MPE) for the general public. For the frequency range of 2 - 100 GHz, the MPE for RMS power density (S) would be 10 Watts per meter squared (1 milliwatt per centimeter squared). Based on this information, the incident power density that a person could be exposed to within the imaging device is significantly below the MPE levels specified in the IEEE C95.1 Standard. The SC-100 has also received the Federal Communications Commission Grant of Equipment Authorization Certification to Part 15C. See Radio Telecommunication and Telecom Directive for EMC compliance.

The mast employs a magnesium alloy as part of the construction. Testing was not considered necessary since the masts are located in a Limited Energy Circuit, 9.3.

End Stop Testing was conducted 10 times and considered sufficient due to the following:
(b) (4) [redacted] After every scan the correlation between the [redacted] position feedback sensors must match. (b) (4) [redacted]

IEC 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict

12	**PROTECTION AGAINST RADIATION, INCLUDING LASER SOURCES, AND AGAINST SONIC AND ULTRASONIC PRESSURE**		Pass
12.1	Equipment provides protection	Millimeter waveform technology. See GPI and Enclosure Miscellaneous, Power Density Calculations.	Pass
12.2	Equipment producing ionizing radiation		N/A
12.2.1	Ionizing radiation .... :		N/A
12.2.2	Accelerated electrons		N/A
12.3	Ultra-violet (UV) radiation .... :		-
	No unintentional and HAZARDOUS escape of UV radiation	(test under consideration)	N/A
12.4	Micro-wave radiation		Pass
	Power density does not exceed 10 W/m2 .... :	See Enclosure Miscellaneous, Power Density Calculations.	Pass
12.5	Sonic and ultrasonic pressure		N/A
12.5.1	Sound level... :		N/A
12.5.2	Ultrasonic pressure.. :		N/A
12.6	Laser sources (IEC 60825-1)		N/A

IEC 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict

12.2.1	**TABLE: Ionizing radiation**		N/A
Locations tested	Measured values (µSv/h)	Result / Comments	
supplementary information:			

12.5.1	**TABLE: Sound level**		N/A
Locations tested: at operator's normal position and at bystanders' positions	Measured values (dBA)	Calculated maximum sound pressure level	
supplementary information:			

12.5.2	**TABLE: Ultrasonic pressure**		N/A
Locations tested	Measured values		Comments
	dB	kHz	
At OPERATOR"S normal position			
At 1 m from the ENCLOSURE			
supplementary information: NOTE - No limit is specified at present, but a limit of 110 dB above the reference pressure value of 20 µPa is under consideration for applicable frequencies between 20 kHz and 100 kHz.			

Regards

[redacted]

Director of Imaging Technology
L-3 Security and Detection Systems
10 Commerce Way
Woburn, Ma.

Blackberry [redacted]
Mobile:

From: Bassen, Howard I. [redacted]
Sent: Tuesday, July 06, 2010 11:53 AM
To: [redacted]
Cc: Spanier, Lee; Witters Jr., Donald M.; Umberger, Frank K*
Subject: modifying the mm wave scanner to be delivered to FDA labs

Hello,

Please let me know if the unit that is planned for delivery in 7/16 can be set up as follows.

We would like the ability to disable the mechanical scan of one or both antenna arrays so they are fixed and do not rotate around the center of the scanner where the person being image would stand. This appears to be a simple matter of disabling electrical power or a belt on the outside of the unit.

This will allow us to measure the fields emitted more accurately and to expose medical devices to a more constant field. We also want to use the scanner in its normal manner, with rotating antenna arrays operating normally.

Please contact me if you have questions.

Howard Bassen

Leader, Electromagnetics and Wireless Laboratory

Division of Physics, Office of Science and Engineering Laboratories

Center for Devices and Radiological Health, FDA

10903 New Hampshire Avenue

WO62-(1112)

Silver Spring, MD 20993-0002

Please contact me if you have additional questions.

Best regards;

[redacted]

[redacted]

Director of Imaging Technology
L-3 Security and Detection Systems
10 Commerce Way
Woburn, Ma.
[redacted]

From: Bassen, Howard I. [redacted]
Sent: Tuesday, July 06, 2010 11:53 AM
To: [redacted]
Cc: Spanier, Lee; Witters Jr., Donald M.; Umberger, Frank K*
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Security & Detection Systems

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Woburn, MA 01801 USA
781-939-3800 Fax: 781-939-3996
www.l-3com.com

In order to begin the preliminary assessments under the IAG tasks we need to get information and answers to the following list of questions for the L-3 security system.

Questions

1. Please provide us with an original waveform diagram of the ProVision transmitted signal with a detailed time and amplitude scale.

   L-3 Answer:

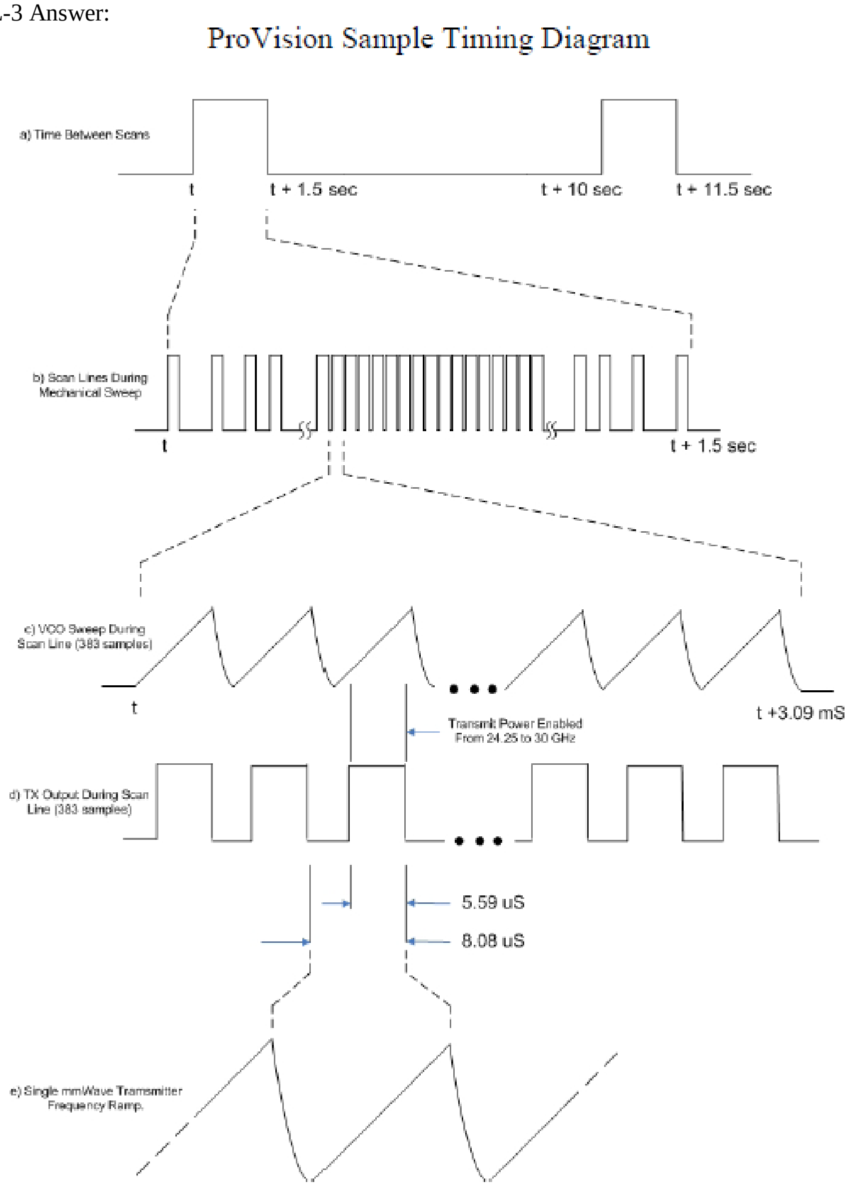

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Figure 1. System Timing and waveforms

a. The timing is simple, a pulsed signal; the active transmitting sweep time is 5.59 uS. The period is 8.08uS. The peak power is 0.068 milliwatts EIRP. The modulation during the pulse is FMCW (Frequency Modulated Continuous Wave).
b. Each mast has a transmitter and they are both transmitting during the sweep. The sweeps are synchronized with a time offset to prevent interference.
c. Two transmitters (one in each mast) are active during the scan or calibration cycles.
d. During the normal operation of the system, the transmitters only operate in a sweeping mode. The transmitters are only turned on when the mast is sampling. Once the scan is complete, the transmitters are turned off.

2. We need emissions field strength maps for locations where subjects and personnel will be located. The information should include the following. Please provide a spatial map of the exposure and emissions field strength for the location of the security scan subject. This should include the full length and height of the person's body and any locations where the emitter might dwell.

   L-3 Answer:

   a. Field emission maps data are not available, however the worst case field intensity occurs if a person was standing next to the radome [redacted] from the face of the antennas.[1]
   b. Arrays have transmitting antennas that cover the entire inner scan area. The entire human body will be illuminated. For a video simulation to illustrate this please reference: http://www.dsxray.com/advancedimaging/ProVision%20Animation.wmv

3. What is the polarization of the exposure from the antenna array?

   L-3 Answer:

   a. Vertical

4. What is the location of the [redacted] transmitting elements in the antenna array? What is the angle of motion of the antenna array? What is the velocity that the antenna array as it moves?

   L-3 Answer:

   a. Antennas are located on two vertical masts, masts are 2 meters in height; only one of the transmit antennas is active at a time. Each vertical scan line takes approximately 3.2 milli-Seconds and the vertical scans are repeated approximately every 0.5 cm of the array's mechanical trajectory.
   b. The masts move in a cylindrical arc, with a [redacted] cm radius, the antennas radiate toward the center of the scanner. Antenna mast located behind a radome. The closest a person can be to the antenna is [redacted] cm. The transmit array is active only during motion; the scan takes approximately [redacted] seconds.
   c. Mast motion is an 'S-curve' for velocity with peak velocity approximately [redacted] meters/ second.

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Figure 2. View of Mast through Doorway

Figure 3. Side View of Mast

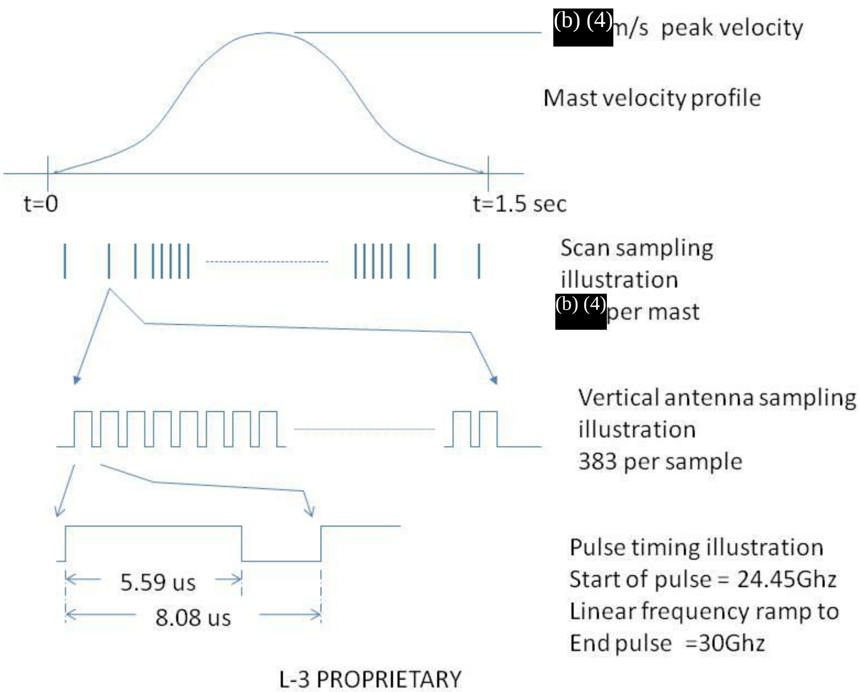

Figure 4. System Parameters Motion, Sampling

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5. What are the beam width, gain, and antenna pattern of the transmitting antenna?

(b) (4)

[redacted]

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5. Have radiated emissions measurements been performed from 1-24 GHz? The information provided so far does not seem to have these details.

   L-3 Answer:

   b. Yes FCC CE radiated measurements have been completed.[2]
   c. FCC ID is TUZ-S-100
   d. Public available test report from FCC Web Site: https://fjallfoss.fcc.gov/prod/oet/forms/blobs/retrieve.cgi?attachment_id=741837&native_or_pdf=pdf

6. Have you taken magnetic field measurements in and around the device from 0-9kHz? If so, please provide the data.

   L-3 Answer:

   i. No.

7. Have any electromagnetic interference (EMI) testing of the security system with medical devices been performed? If so, please provide information about the medical devices tested, how this was set-up and done, the choice of devices, any reference standards or information used, and the results.

   L-3 Answer:

   a. No testing to date.

8. Please provide information about the personnel operating the scanner, including their location and distance from the scanner, time periods at these locations, and any other emitters in the vicinity. What will be the separation distance from other security systems? Provide details about these emitters and the environment.

   L-3 Answer:

   a. Typical scenario is for an officer to be standing near the exit to direct people into the scanner and to operate the machine. A touch panel display is mounted on one leg for controlling the ProVision scanner. The officer stands 0.5 to 1 meter from the scanner and can be at that station for hours.
   b. Addition scanners may be placed side by side.
   c. Other equipment in the vicinity could include X-ray baggage scanners, conveyers, bin return mechanisms, and the standard magnetometers.
   d. Magnetometers may and may not be utilized, and are not included as part of the L-3 Provision as a standard product.

9. Please provide details about the location and typical time periods of subjects waiting in line to be scanned.

   L-3 Answer:

   a. People may be as close as 0.5 to 1 meter from the entrance waiting in line. The typical time to process a person into the scanner, be scanned, and evaluation ranges from 6 to 30 seconds. The actual scan is 1.5 seconds.
   b. Video demo of people going through the scanner can be found here: http://www.dsxray.com/advancedimaging/ProVisionLondon_512k.wmv

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Footnotes:

1. Maximum Permissible Exposure Report Addendum to FCC ID: TUZ-S-100, Security Portal, Provision. CKC laboratory FC06-056A-R2.pdf January 22, 2010
2. FCC report FC06-056 Test Report for the Security Portal, SCOUT 100 VERSION 2 SWITCH, FCC PART 15 SUBPART C SECTIONS 15.207 & 15.209 COMPLIANCE

Please let me know if the unit that is planned for delivery in 7/16 can be set up as follows.

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Please contact me if you have questions.

Howard Bassen

Leader, Electromagnetics and Wireless Laboratory

Division of Physics, Office of Science and Engineering Laboratories

Center for Devices and Radiological Health, FDA

10903 New Hampshire Avenue

WO62-(1112)

Silver Spring, MD 20993-0002

(b) (6)
[redacted]

[redacted]

From: Bassen, Howard I. [redacted]
Sent: Tuesday, July 06, 2010 11:53 AM
To: [redacted]
Cc: Spanier, Lee; Witters Jr., Donald M.; Umberger, Frank K*
Subject: modifying the mm wave scanner to be delivered to FDA labs

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[redacted]

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(b) (6)
[redacted]

that FDA has conducted non-interference tests using the L-3 ProVison and has not encountered adverse effects on the groups and specific types of devices tested during the validation test.

8) Will FDA be testing all Millimeter Wave and X-Ray AIT systems as part of this test procedure?

I will get back to you with an answer on stopping mechanical movement. Having read, the reports there is a lot of detail on what was measured and how the measurements were made, you may want to read the CKC report before completing your own lab test evaluation plan.

Please contact me if you have additional questions.

Best regards;

(b) (6) [redacted]

[redacted]

Director of Imaging Technology
L-3 Security and Detection Systems
10 Commerce Way
Woburn, Ma.

Blackberry: (b) (6) [redacted]
Mobile:

From: Bassen, Howard I. (b) (6) [redacted]
Sent: Tuesday, July 06, 2010 11:53 AM
To: (b) (6) [redacted]
Cc: Spanier, Lee; Witters Jr., Donald M.; Umberger, Frank K*
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Howard Bassen

From: Bassen, Howard I.
To: [redacted]
Cc: Spanier, Lee; Witters Jr., Donald M.; Umberger, Frank K*
Subject: modifying the mm wave scanner to be delivered to FDA labs
Date: Tuesday, July 06, 2010 12:11:33 PM

Hello,

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Leader, Electromagnetics and Wireless Laboratory

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Silver Spring, MD 20993-0002

[redacted]

Best regards;

[redacted]

[redacted]

Director of Imaging Technology
L-3 Security and Detection Systems
10 Commerce Way
Woburn, Ma.

[redacted]

From: Bassen, Howard I. [redacted]
Sent: Tuesday, July 06, 2010 11:53 AM
To: [redacted]
Cc: Spanier, Lee; Witters Jr., Donald M.; Umberger, Frank K*
Subject: modifying the mm wave scanner to be delivered to FDA labs

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Leader, Electromagnetics and Wireless Laboratory

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Center for Devices and Radiological Health, FDA

10903 New Hampshire Avenue

WO62-(1112)

Silver Spring, MD 20993-0002

From: Spanier, Lee
To: Pryor, Robert
Subject: FW: radiation emissions ratings on WBIs units
Date: Tuesday, April 28, 2009 3:46:00 PM
Attachments: ETS07-009B.pdf

Bob, Here is the most recent report from L3 on its emissions. v/r, Lee

-----Original Message-----
From: Carden, Victor [redacted]
Sent: Thursday, April 23, 2009 5:30 PM
To: Spanier, Lee
Cc: jsmith@kasemanllc.com; Freimanis, Adam D
Subject: FW: radiation emissions ratings on WBIs units

Lee

I believe the attached is intended for Justin but I have included you as well. Thank you

Victor

-----Original Message-----
From: [redacted]
Sent: Thu 4/23/2009 4:54 PM
To: Carden, Victor
Cc: Freimanis, Adam D; Justin Smith; Druitt, Kathleen
Subject: RE: radiation emissions ratings on WBIs units

Mr. Carden,

I am sorry for the delay in getting this information to you. Here is the information you requested from L-3 Communications Security & Detection Systems. If you need further information, please do not hesitate to contact me.

- EN55022 test results or equivalence:

The attached test report has the radiated emissions (55022) and immunity test (61000-4-x) results for the ProVision system.

- IEC 61000-4-x test results or equivalence:

The attached test report has the radiated emissions (55022) and immunity test (61000-4-x) results for the ProVision system.

- Details on shielding practices for equipment wiring:

The ProVision system incorporates a variety of shielding techniques to insure electromagnetic emissions and immunity performance. Shielded cabling and/or RF enclosures are employed for critical signals within the system. All RF and mmWave signals are routed in coaxial cables. Schematics, routing instructions and cable specifications can be provided upon request.

From: Masters, Barry
To: Bell, Curtis; Lane, Skip; Spanier, Lee
Cc: "Petracci, William"; Venafro, Thomas <CTR>
Subject: RE: Radiation Safety
Date: Friday, January 23, 2009 11:31:22 AM
Attachments: EMI-100 Letter of Non-Significant Risk (2).doc

Curtis,

The report you are referring to was not submitted with the L3 data package. Appendix G is sited as third party proof of the unit's compliance with the ICNIRP Guidelines Reference document is UL Power Density for the Guardian 100. I'd appreciate your comments on that report.

I have read the email Tom Venafro provided you and I am unable to determine if the work was conducted at a National Recognized Test Laboratory listed by OSHA in 29 CFR 1910.7, which is required in this case unless we can have someone conduct an analysis of the unit in accordance with the above guidelines. Tom Venafro stated the equipment he used last time was not sufficient to obtain measurements.

I've attached requirements associated with the IRB, which I am trying to comply with. Your assistance is appreciated.

Thanks

Barry

Barry C. Masters
General Engineer
DHS/S&T
Transportation Security Laboratory
TSL-200, Building 315
(b) (6) [redacted]

From: Bell, Curtis
Sent: Friday, January 23, 2009 10:25 AM
To: Lane, Skip; Spanier, Lee
Cc: 'Petracci, William'; Venafro, Thomas <CTR>; Masters, Barry
Subject: RE: Radiation Safety

(b) (5) [redacted]

[redacted]