



ADDENDUM TO SAFE VIEW, INC. TEST REPORT FC05-082

FOR THE

SECURITY PORTAL, SCOUT 100

FCC PART 15 SUBPART C SECTION 15.209

COMPLIANCE

DATE OF ISSUE: AUGUST 17, 2006

PREPARED FOR:

Safe View, Inc.
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Santa Clara, CA 95050

P.O. No.: 4203 E
W.O. No.: 85484

PREPARED BY:

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Date of test: August 10-11, 2006

Report No.: FC05-082A

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ADMINISTRATIVE INFORMATION

DATE OF TEST: August 10-11, 2006

DATE OF RECEIPT: August 10, 2006

MANUFACTURER: Safe View, Inc.
469 El Camio Real, Suite 110
Santa Clara, CA 95050

REPRESENTATIVE: Scott Trosper

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

TEST METHOD: ANSI C63.4 (2003), FCC-MP5

PURPOSE OF TEST: To demonstrate the compliance of the Security Portal, Scout 100 with the requirements for FCC Part 15 Subpart C Sections 15.207 & 15.209 devices.
Addendum A is to measure the peak power and average RMS power of the Scout 100 according to the parameters outlined in the FCC Waiver DA 06-1589 with new testing.

CONDITIONS FOR COMPLIANCE

No modifications to the EUT were necessary to comply.

APPROVALS

QUALITY ASSURANCE:



Steve Behm, Director of Engineering Services
and Quality Assurance



Joyce Walker, Quality Assurance Administrative
Manager



Amrinder Brar, Lab Manager

TEST PERSONNEL:



Art Rice, EMC Test Engineer

EQUIPMENT UNDER TEST (EUT) DESCRIPTION

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

EQUIPMENT UNDER TEST

Mast Included in Scout 100

Manuf: Safe View, Inc.
Model: Scout 100
Serial: 0623007
Part No: 635-6760-1406

PERIPHERAL DEVICES

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

Image Sampling Unit

Manuf: Safe View Inc.
Part No.: 660-21333 Rev G
Serial: 0615099

48 VDC Power Supply for ISU

Manuf: Agilent
Model: E3634A
Serial: NA

Laptop PC

Manuf: MPC
Model: Transport T2200
Serial: 389-1689

System Control Unit (Server)

Manuf: Xeon
Model: 3.4G/800/2M/1U/Box
Part No.: 690-26111
Serial: C812S0445A00173

REPORT OF MEASUREMENTS

FCC 15.209 Carrier Power Levels

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 #: **84413**

Date: 8/11/2006

Test Type: **Carrier Power**

Time: 14:41:35

Equipment: **Mast**

Sequence#: 101

Manufacturer: Safe View

Tested By: Art Rice

Model: P/N 635-6760-1406

S/N: 0623007

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Mast*	Safe View	P/N 635-6760-1406	0623007

Support Devices:

Function	Manufacturer	Model #	S/N
Image Sampling Unit	Safe View	PN: 660-21333 Rev G	0615099
48 VDC Power supply for ISU	Agilent	E3634A	n/a
System Control Unit (Server)	Xeon	3.4G/800/2M/1U/Box, PN: 690-26111	C812S0445A00173
Laptop PC	MPC	Transport T2200	389-1689

Test Conditions / Notes:

The Scout 100 Switch Security Portal antenna mast is mounted vertically in F-C3.

Low channel=24.5 GHz.

Mid channel=27 GHz.

Hi channel=29.8 GHz.

Low mast position = antenna 320.

Mid mast position = antenna 192.

Hi mast position = antenna 33.

Measuring Peak Carrier Power per DA 06-1589 paragraph 8b.

RBW=100 kHz, VBW=3 MHz, Atten= 20 dB, Ref level=117 dBuV, Span=1 GHz. Sweep time=auto.

Measuring Average RMS Power per DA 06-1589 paragraph 8a.

RBW=1 MHz, VBW=3 MHz, Atten=20 dB, Ref level=117 dBuV. Span=0 Hz. Sweep time=1 sec.

Test data corrected for test distance using 20 dB per decade correction factor for comparison to the limit at 3 meters. 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.

SUMMARY OF MEASUREMENTS

Frequency MHz	Antenna	Corrected Average Measurement dB μ V/m	Average Spec Limit dB μ V/m	Average Pass/Fail	Corrected Peak Measurement dB μ V/m	Peak Spec Limit dB μ V/m	Peak Pass/Fail
24620	320	50.9	54.0	Pass	90.1	91.9	Pass
26986	320	49.3	54.0	Pass	87.7	90.3	Pass
29813	320	51.1	54.0	Pass	87.4	92.1	Pass
24620	192	49.6	54.0	Pass	87.6	90.6	Pass
26986	192	48.0	54.0	Pass	84.5	89.0	Pass
29813	192	47.6	54.0	Pass	84.2	88.6	Pass
24620	33	51.1	54.0	Pass	85.8	92.1	Pass
26986	33	50.4	54.0	Pass	88.0	91.4	Pass
29813	33	52.5	54.0	Pass	87.1	93.5	Pass

DETAIL OF MEASUREMENTS

Transducer Legend:

T1=ANP05200 1-40GHz	T2=Horn AN02695 Miteq Active 26-40GHz
T3=ANT 18-26GHz Active Horn	T4=Cable AN2715 40 GHz

Measurement Data:		Reading listed by frequency.					Test Distance: 1 Meter				
#	Freq MHz	Rdng dB μ V	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dB μ V/m	Spec dB μ V/m	Margin dB	Polar Ant
1	24620.000 M	112.9	+4.2	+0.0	-17.0		-10.0	90.1	91.9	-1.8	Vert
									Peak power at LOW channel, antenna 320.		
2	24620.000 M Ave	73.7	+4.2	+0.0	-17.0		-10.0	50.9	54.0	-3.1	Vert
									Average RMS power at LOW channel, antenna 320.		
3	24620.000 M	98.0	+0.0	+0.0	-17.0	+14.8	-10.0	85.8	92.1	-6.3	Vert
									Peak power at LO channel, antenna 33.		
4	24620.000 M Ave	63.3	+0.0	+0.0	-17.0	+14.8	-10.0	51.1	54.0	-2.9	Vert
									Average RMS power at LO channel, antenna 33.		

5	24620.000 M	99.8	+0.0	+0.0	-17.0	+14.8	-10.0	87.6	90.6	-3.0	Vert	Peak power at LOW channel, antenna 192.
6	24620.000 M Ave	61.8	+0.0	+0.0	-17.0	+14.8	-10.0	49.6	54.0	-4.4	Vert	Average RMS power at LOW channel, antenna 192.
7	26986.000 M	91.4	+4.4	+1.9	+0.0		-10.0	87.7	90.3	-2.6	Vert	Peak power at MID channel, antenna 320.
8	26986.000 M Ave	53.0	+4.4	+1.9	+0.0		-10.0	49.3	54.0	-4.7	Vert	Average RMS power at MID channel, antenna 320.
9	26986.000 M	81.6	+0.0	+1.9	+0.0	+14.5	-10.0	88.0	91.4	-3.4	Vert	Peak power at MID channel, antenna 33.
10	26986.000 M Ave	44.0	+0.0	+1.9	+0.0	+14.5	-10.0	50.4	54.0	-3.6	Vert	Average RMS power at MID channel, antenna 33.
11	26986.000 M	78.1	+0.0	+1.9	+0.0	+14.5	-10.0	84.5	89.0	-4.5	Vert	Peak power at MID channel, antenna 192.
12	26986.000 M Ave	41.6	+0.0	+1.9	+0.0	+14.5	-10.0	48.0	54.0	-6.0	Vert	Average RMS power at MID channel, antenna 192.
13	29813.000 M	89.2	+4.6	+3.6	+0.0		-10.0	87.4	92.1	-4.7	Vert	Peak power at HI channel, antenna 320.

14	29813.000 M Ave	52.9	+4.6	+3.6	+0.0		-10.0	51.1	54.0	-2.9	Vert	Average RMS power at HI channel, antenna 320.
15	29813.000 M Ave	43.9	+0.0	+3.6	+0.0	+15.0	-10.0	52.5	54.0	-1.5	Vert	Average RMS power at HI channel, antenna 33.
16	29813.000 M	78.5	+0.0	+3.6	+0.0	+15.0	-10.0	87.1	93.5	-6.4	Vert	Peak power at HI channel, antenna 33.
17	29813.000 M	75.6	+0.0	+3.6	+0.0	+15.0	-10.0	84.2	88.6	-4.4	Vert	Peak power at HI channel, antenna 192.
18	29813.000 M Ave	39.0	+0.0	+3.6	+0.0	+15.0	-10.0	47.6	54.0	-6.4	Vert	Average RMS power at HI channel, antenna 192.

PURPOSE OF TEST

Measure the peak power and average RMS power of the Scout 100 imaging device according to the parameters outlined in the FCC Waiver DA 06-1589.

DESCRIPTION OF TEST:

The mast assembly of the Scout 100 incorporates the transceivers and antennas. In accordance with DA06-1589(8)(d), this mast assembly was mounted in its normal vertical position in a fixed position inside the semi-anechoic chamber (F-C3) at the CKC Laboratories Fremont (California) location. The controller unit was placed on a table behind the mast. A PC was used to command the transmitter frequency, antenna, and mode of operation (CW or sweeping).

An active horn antenna for the proper frequency range was placed on a tripod 1 meter away from the transmit antenna on the mast assembly. An active horn antenna is a standard horn antenna with a preamplifier mounted directly to the waveguide flange. This active horn antenna was connected through a short coaxial cable to an Agilent E4446A Spectrum Analyzer. The data from the spectrum analyzer was collected through the GPIB by CKC "EMITest" software resident on a PC. This software corrected the readings by the calibrated transducer factors and test distance correction factors.

The mast was initially placed in the CW transmit mode either the low channel at approximately 24.65 GHz, using the bottom antenna of the mast (#320). The signal frequency was located by using a wide span on the spectrum analyzer, and then was centered and the span reduced until the signal could be accurately measured. The horn antenna position was then varied in height and angle to maximize the observed signal level. Overload conditions for the active horn and the spectrum analyzer were checked using standard engineering techniques. The peak power was then measured according to the parameters defined in DA 06-1589. (These parameters are excerpted below.) Next the Scout 100 mast was put into the sweeping mode. The average RMS power was then measured according to the test procedures defined in DA 06-1589.

This procedure was repeated at the middle and high channels at the bottom antenna of the mast. The Scout 100 was then set to transmit on an antenna near the top of the mast (#33). The procedure described above was used to maximize the signal. The peak and average RMS powers were measured on the low, middle, and high channels. Then the center antenna was chosen (#192) and the peak and average RMS powers were measured on the low, middle, and high channels.

The average RMS powers were all below the FCC 15.209 limit. The peak powers were all less than 41 dB higher than the average RMS powers for each channel.

Excerpt from **FCC WAIVER DA 06-1589**:

8). Compliance measurements of the SafeScout imaging devices should incorporate the following procedures:

a) *Measurement procedures for determining the average radiated power.* With the SafeScout imaging device transmitter frequency sweep active and the antenna array rotation and element scan suspended, measure the radiated average power from a specific antenna array element using a measurement system consisting of a spectrum analyzer with a root mean squared (rms) power averaging detector, and appropriately rated receive antenna, pre-amplifier and coaxial cable and connectors. Select the power average (rms) detector and set the resolution bandwidth (RBW) to 1-MHz and the video bandwidth (VBW) to 3-MHz or greater. Perform the measurement with the analyzer in zero-span mode at three discrete frequencies associated with the lower, middle and upper regions of the occupied band over a 1-second sweep time with the maximum hold function enabled. Allow the trace to build until there is no longer any observable increase in the amplitude level. The maximum amplitude associated with this data should then be adjusted for antenna/pre-amplifier gain and cable/connector loss to determine the actual received average power level, which can then be used to calculate the maximum average field strength at the specified distance, or alternatively, the equivalent isotropic radiated power (EIRP) assuming a propagation path equivalent to the appropriate measurement distance. The resultant average radiated field strength shall be less than or equal to a field strength level of 500 μ V/m at a distance of 3-meters.

b) *Measurement procedures for determining the peak radiated power.* The total peak radiated power is to be measured with the same measurement set-up as specified for the average measurement, but with the transmitter frequency sweep disabled. For this measurement, the peak detector of the analyzer is to be used with a RBW of 100-kHz and a VBW of 1-MHz or greater, and with the maximum-hold function enabled. This measurement is to be performed with the frequency sweep stopped at each of the same three discrete frequencies where the average measurements were made, using the analyzer's default sweep time and a span of 1000 MHz. Allow the measurement trace to build until there is no longer any detectable increase. The maximum amplitude associated with the fundamental (highest level) spectral line should then be adjusted for antenna/pre-amplifier gain and cable/connector loss to determine the actual received power level, which can then be used to calculate the maximum field strength at the specified distance, or alternatively, the EIRP assuming a propagation path equivalent to the appropriate measurement distance. The level associated with the fundamental spectral line shall not exceed the average level, as measured on the same frequency, by more than 41 dB.

c) The peak and average power are to be measured for three elements (low, mid, and high) of the array at each of the three discrete frequencies identified in a).

d) Since the dimensions associated with a complete SafeScout imaging device may preclude the performance of compliance measurements on the entire system within a laboratory setting, we are permitting these measurements to be performed on a single isolated antenna array.

e) When compliance measurements are performed at a distance less than what is stipulated in § 15.209, the data shall be extrapolated to a measurement distance consistent with § 15.31(f) when assessing conformance to the applicable emissions limit.

APPENDIX A

TEST SETUP PHOTOGRAPHS

SCOUT 100 MAST & CONTROLLER



Scout 100 Mast & Controller

RECEIVE HORN & SCOUT 100 MAST



Receive Horn & Scout 100 Mast - Side View

APPENDIX B

TEST EQUIPMENT LIST

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
E4446A Spectrum Analyzer	US44300408	01/13/2005	01/13/2007	02668
Cable, HF 36"	n/a	02/08/2005	02/08/2007	P05200
Active Horn 18-26GHz	1087835	10/25/2005	10/25/2007	02694
Active Horn 26-40GHz	1097854	10/25/2005	10/25/2007	02695