

# TEST RESULT SUMMARY

**FCC Part 15 Subpart C Section 15.231**

**FCC Part 15 Subpart C Section 15.207**

**Industry Canada RSS-210 Issue 7 Section A1.1**

**Industry Canada RSS-Gen Issue 2 Section 7.2.2**

MANUFACTURER'S NAME	GE Security Incorporated
MANUFACTURER'S ADDRESS	1275 Red Fox Road Arden Hills MN 55112
NAME OF EQUIPMENT	Simon XT
MODEL NUMBER(S) TESTED	55-910-C
TEST REPORT NUMBER	WC707511 Rev A
TEST DATE(S)	05 October 2007 - 05 March 2008

TÜV SÜD America Inc, as an independent testing laboratory, declares that the equipment tested as specified above conforms to the applicable electromagnetic compatibility requirements of FCC Part 15 Subpart C Sections 15.231 "Periodic operation in the band 40.66-40.70 MHz and above 70 MHz" and 15.207 "Conducted limits" and Industry Canada RSS-210 Issue 7 "Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment" and Industry Canada RSS-Gen Issue 2 "General Requirements and Information for the Certification of Radiocommunication Equipment".


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: 26 March 2008

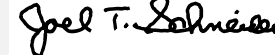
Tested by:

Approved by:

Location: Taylors Falls MN  
USA



Tom K Swanson  
Senior EMC Technician



Joel T Schneider  
Senior EMC Engineer

Not Transferable

# EMC TEST REPORT

Test Report No. WC707511 Rev A Date of issue: 26 March 2008

Model / Serial No(s) Tested 55-910-C / ---

Product Type Simon XT

Manufacturer GE Security Incorporated

Address 1275 Red Fox Road  
Arden Hills MN 55112

Test Result ☒ **Positive** ☐ **Negative**

Total pages including Appendices 35

*TÜV SÜD America Inc reports apply only to the specific samples tested under stated test conditions. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. TÜV SÜD America Inc shall have no liability for any deductions, inferences or generalizations drawn by the client or others from TÜV SÜD America Inc issued reports.*

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## REVISION RECORD

REVISION	TOTAL NUMBER OF PAGES	DATE	DESCRIPTION
	35	06 March 2008	Initial Release
A	35	26 March 2008	Revisions Include: <ul style="list-style-type: none"><li>• Pages 16 – 20: Corrected test method to reference FCC.</li></ul>



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## STATEMENT OF MEASUREMENT UNCERTAINTY

The data and results referenced in this document are accurate. The reader is cautioned that there is some measurement variability due to the tolerances of the test equipment that can contribute to a nominal product measurement uncertainty. Furthermore, component differences and manufacturing process variability of production units similar to that tested may result in additional product uncertainty. If necessary, refer to the test lab for the actual measurement uncertainty for specific tests.

## TEST EQUIPMENT

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

**EMC TEST REGULATIONS:**

The tests were performed according to the following regulations:

FCC Part 15 Subpart C Section 15.231  
FCC Part 15 Subpart C Section 15.207  
Industry Canada RSS-210 Issue 7  
Industry Canada RSS-Gen Issue 2

**ENVIRONMENTAL CONDITIONS IN THE LAB**

	<u>Actual</u>
Temperature:	: 23 °C
Relative Humidity	: 58 %
Atmospheric pressure	: 99 kPa

**POWER SUPPLY UTILIZED**

Power supply system : 120 V / 60 Hz / 1 $\phi$

**SIGN EXPLANATIONS**

- ☐ - not applicable
- ☒ - applicable

## Momentary operation

FCC 15.231(a), RSS-210 A1.1.1

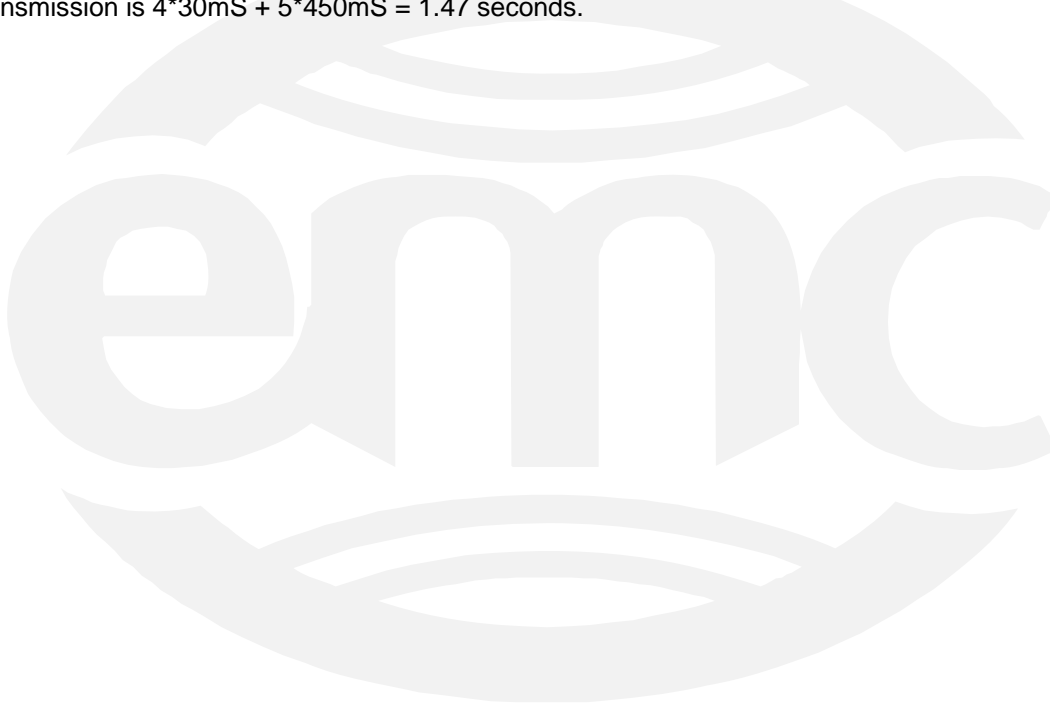
### Manufacturer's declaration

The requirements are: ☒ - MET ☐ - NOT MET

The transmitter;

- Is activated automatically
- Will cease transmission within 5 seconds after activation
- Will not invoke periodic transmissions at regular predetermined intervals
- Will not operate during the interval of the alarm condition.

In the event of an alarm, 4 packets are sent. The packet duration is, at most, 30 mS, see Duty Cycle Correction Factor [§15.231(b)(2) and §15.35(c)]. The time between packets is random between 100 mS and 450 mS so that the length of the longest transmission is  $4 \cdot 30\text{mS} + 5 \cdot 450\text{mS} = 1.47$  seconds.



## Radiated emissions

### FCC 15.231(b), RSS-210 A1.1.2

#### Test summary

The requirements are: ☒ - MET ☐ - NOT MET

Testing was performed in accordance with the test procedure of ANSI C63.4 2003, clause 8.3

Duty Cycle Correction Factor (Manufacturer's declaration)

The transmitter employs amplitude modulation and transmits 80 bits. Each bit, except for one, has an "ON" time of 122  $\mu$ S. One bit has an on time of 366  $\mu$ S. The total on time of a single packet is  $79 * 122 \mu\text{S} + 366 \mu\text{S} = 10.00 \text{ mS}$ . Only one packet is sent in any given 100 mS window for a duty cycle correction factor of  $20 * \text{LOG}(10.00 / 100) = -20.00 \text{ dB}$ . The maximum allowed correction factor is 20 dB.

Fundamental;

Transmit frequency = 319.5 MHz

Maximum field strength, corrected for duty cycle = 5495.4  $\mu\text{V/m}$  or 74.8 dB $\mu\text{V/m}$  at 3 meters

Minimum margin of compliance = 1.0 dB

Spurious;

Minimum margin of compliance = 36 dB at 2.236 GHz

#### Test location

☒ - Wild River Lab Large Test Site (Open Area Test Site)

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

#### Test distance

☒ - 3 meters

☐ - 10 meters

#### Test equipment

TUV ID	Model	Manufacturer	Description	Serial	Cal Due
3202	EM-6917B	Electro-Metrics	Biconicallog Periodic	101	10-May-08
2075	3115	EMCO	Ridge Guide Ant. 1-18 GHz	9001-3275	16-Jan-09
3847	ZHL-1042J	Mini-Circuits	Preamplifier 10 - 3000 MHz	0607	Code B 08 May 08
3895	NHP-600	Mini-Circuits	30-600 MHz Stopband Filter	3	Code B 02-Oct-08
3294	8566B	Hewlett-Packard	Spectrum Analyzer	2349A03098	16-May-08

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

#### Test limit

Fundamental, 6229.2  $\mu\text{V/m}$  or 75.8 dB $\mu\text{V/m}$  at 3 meters

Spurious;  
Within the restricted bands of section 15.205

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009–0.490 .....	2400/F(kHz)	300
0.490–1.705 .....	24000/F(kHz)	30
1.705–30.0 .....	30	30
30–88 .....	100 **	3
88–216 .....	150 **	3
216–960 .....	200 **	3
Above 960 .....	500	3

In addition to the provisions of 15.205, the field strength of emissions from intentional radiators operated under 15.231 shall not exceed the following

Fundamental frequency (MHz)	Field strength of fundamental (microvolts/meter)	Field strength of spurious emissions (microvolts/meter)
40.66–40.70.	2,250 .....	225
70–130 .....	1,250 .....	125
130–174 ....	<sup>1</sup> 1,250 to 3,750 .....	<sup>1</sup> 125 to 375
174–260 ....	3,750 .....	375
260–470 ....	<sup>1</sup> 3,750 to 12,500 .....	<sup>1</sup> 375 to 1,250
Above 470	12,500 .....	1,250

#### Test data

See following pages



# RADIATED EMISSIONS



Test Report #: WC707511 Run 2 Test Area: LTS

EUT Model #: Simon XT with Transmitter Date: 10/5/2007

EUT Serial #: \_\_\_\_\_ EUT Power: 60 Hz 120 V Temperature: 23.0 °C

Test Method: FCC Air Pressure: 99.0 kPa

Customer: GE Security Rel. Humidity: 58.0 %

EUT Description: Control Panel HWC4

Notes: 20 dB duty cycle correction used to determine final field strength.

Data File Name: 7511 TR.dat

Page: 1 of 5

## List of measurements for run #: 2

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 319.5MHz Fundamental	DELTA2 319.5MHz Spurious
Left Antenna						
Maximized						
319.5 MHz	79.05 Pk	1.8 / 13.95 / 0.0 / -20.0	74.8	H / 1.00 / 230	-1.0*	n/a
319.5 MHz	75.75 Pk	1.8 / 13.95 / 0.0 / -20.0	71.5	V / 1.60 / 90	-4.3*	n/a
638.976 MHz	40.45 Pk	2.55 / 19.78 / 29.99 / -20.0	12.79	V / 1.60 / 230	n/a	-43.01*
638.976 MHz	40.85 Pk	2.55 / 19.78 / 29.99 / -20.0	13.19	H / 1.00 / 110	n/a	-42.61*
958.476 MHz	32.65 Pk	3.04 / 23.02 / 29.4 / -20.0	9.3	H / 1.30 / 240	n/a	-46.5*
958.476 MHz	37.35 Pk	3.04 / 23.02 / 29.4 / -20.0	14.0	V / 1.30 / 240	n/a	-41.8*
1.278 GHz	36.9 Pk	3.64 / 25.09 / 28.8 / -20.0	16.83	V / 1.60 / 240	n/a	-38.97*
1.278 GHz	33.75 Pk	3.64 / 25.09 / 28.8 / -20.0	13.68	H / 1.30 / 240	n/a	-42.12*
1.597 GHz	29.25 Pk	4.03 / 25.6 / 29.23 / -20.0	9.65	V / 1.30 / 240	n/a	-46.15*
1.597 GHz	30.65 Pk	4.03 / 25.6 / 29.23 / -20.0	11.05	H / 1.50 / 240	n/a	-44.75*
1.917 GHz	28.55 Pk	4.38 / 27.59 / 29.5 / -20.0	11.02	H / 1.50 / 110	n/a	-44.78*
1.917 GHz	29.2 Pk	4.38 / 27.59 / 29.5 / -20.0	11.67	V / 1.30 / 110	n/a	-44.13*
2.236 GHz	31.6 Pk	4.81 / 28.6 / 29.36 / -20.0	15.65	V / 1.30 / 110	n/a	-40.15*
2.236 GHz	34.95 Pk	4.81 / 28.6 / 29.36 / -20.0	19.0	H / 1.30 / 110	n/a	-36.8*
2.556 GHz	30.85 Pk	5.1 / 29.27 / 28.89 / -20.0	16.33	H / 1.30 / 110	n/a	-39.47*
2.556 GHz	30.5 Pk	5.1 / 29.27 / 28.89 / -20.0	15.98	V / 1.30 / 240	n/a	-39.82*

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*Thomas K. Swanson*

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Reviewed by: J. T. Schneider

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*Joel T. Schneider*

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# RADIATED EMISSIONS



Test Report #: WC707511 Run 2 Test Area: LTS

EUT Model #: Simon XT with Transmitter Date: 10/5/2007

EUT Serial #: \_\_\_\_\_ EUT Power: 60 Hz 120 V Temperature: 23.0 °C

Test Method: FCC Air Pressure: 99.0 kPa

Customer: GE Security Rel. Humidity: 58.0 %

EUT Description: Control Panel HWC4

Notes: 20 dB duty cycle correction used to determine final field strength.

Data File Name: 7511 TR.dat

Page: 2 of 5

## List of measurements for run #: 2

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 319.5MHz Fundamental	DELTA2 319.5MHz Spurious
* Peak measurement against an average limit						
2.875 GHz	30.95 Pk	5.5 / 29.94 / 28.8 / -20.0	17.59	V / 1.30 / 240	n/a	-38.21*
2.875 GHz	32.1 Pk	5.5 / 29.94 / 28.8 / -20.0	18.74	H / 1.30 / 110	n/a	-37.06*
3.195 GHz	29.4 Pk	5.86 / 30.61 / 29.0 / -20.0	16.87	H / 1.30 / 240	n/a	-38.93*
3.195 GHz	29.2 Pk	5.86 / 30.61 / 29.0 / -20.0	16.67	V / 1.30 / 110	n/a	-39.13*
Right Antenna						
319.5 MHz	77.2 Pk	1.8 / 13.95 / 0.0 / -20.0	72.95	H / 1.30 / 110	-2.85*	n/a
319.5 MHz	74.85 Pk	1.8 / 13.95 / 0.0 / -20.0	70.6	V / 1.10 / 110	-5.2*	n/a
638.982 MHz	38.7 Pk	2.55 / 19.78 / 29.99 / -20.0	11.04	V / 1.40 / 240	n/a	-44.76*
638.982 MHz	37.85 Pk	2.55 / 19.78 / 29.99 / -20.0	10.19	H / 1.20 / 240	n/a	-45.61*
958.482 MHz	33.05 Pk	3.04 / 23.02 / 29.4 / -20.0	9.7	H / 1.40 / 240	n/a	-46.1*
958.482 MHz	36.65 Pk	3.04 / 23.02 / 29.4 / -20.0	13.3	V / 1.30 / 240	n/a	-42.5*
1.278 GHz	36.5 Pk	3.64 / 25.09 / 28.8 / -20.0	16.43	V / 1.60 / 240	n/a	-39.37*
1.278 GHz	33.95 Pk	3.64 / 25.09 / 28.8 / -20.0	13.88	H / 1.20 / 110	n/a	-41.92*
1.597 GHz	30.2 Pk	4.03 / 25.6 / 29.23 / -20.0	10.6	H / 1.60 / 110	n/a	-45.2*
1.597 GHz	29.25 Pk	4.03 / 25.6 / 29.23 / -20.0	9.65	V / 1.50 / 110	n/a	-46.15*
1.917 GHz	31.4 Pk	4.38 / 27.59 / 29.5 / -20.0	13.87	V / 1.30 / 110	n/a	-41.93*
1.917 GHz	30.55 Pk	4.38 / 27.59 / 29.5 / -20.0	13.02	H / 1.30 / 240	n/a	-42.78*

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Reviewed by: J. T. Schneider

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*Joel T. Schneider*

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# RADIATED EMISSIONS



Test Report #: WC707511 Run 2 Test Area: LTS

EUT Model #: Simon XT with Transmitter Date: 10/5/2007

EUT Serial #: \_\_\_\_\_ EUT Power: 60 Hz 120 V Temperature: 23.0 °C

Test Method: FCC Air Pressure: 99.0 kPa

Customer: GE Security Rel. Humidity: 58.0 %

EUT Description: Control Panel HWC4

Notes: 20 dB duty cycle correction used to determine final field strength.

Data File Name: 7511 TR.dat

Page: 3 of 5

## List of measurements for run #: 2

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 319.5MHz Fundamental	DELTA2 319.5MHz Spurious
2.236 GHz	32.9 Pk	4.81 / 28.6 / 29.36 / -20.0	16.95	H / 1.30 / 110	n/a	-38.85*
2.236 GHz	31.8 Pk	4.81 / 28.6 / 29.36 / -20.0	15.85	V / 1.30 / 110	n/a	-39.95*
2.556 GHz	30.5 Pk	5.1 / 29.27 / 28.89 / -20.0	15.98	V / 1.30 / 110	n/a	-39.82*
2.556 GHz	32.0 Pk	5.1 / 29.27 / 28.89 / -20.0	17.48	H / 1.30 / 240	n/a	-38.32*
2.875 GHz	32.55 Pk	5.5 / 29.94 / 28.8 / -20.0	19.19	H / 1.30 / 240	n/a	-36.61*
2.875 GHz	31.8 Pk	5.5 / 29.94 / 28.8 / -20.0	18.44	V / 1.30 / 240	n/a	-37.36*
3.195 GHz	29.45 Pk	5.86 / 30.61 / 29.0 / -20.0	16.92	V / 1.30 / 240	n/a	-38.88*
3.195 GHz	29.65 Pk	5.86 / 30.61 / 29.0 / -20.0	17.12	H / 1.30 / 240	n/a	-38.68*
End of scan						

\* Peak measurement against an average limit

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# RADIATED EMISSIONS



Test Report #: WC707511 Run 2 Test Area: LTS

EUT Model #: Simon XT with Transmitter Date: 10/5/2007

EUT Serial #: \_\_\_\_\_ EUT Power: 60 Hz 120 V Temperature: 23.0 °C

Test Method: FCC Air Pressure: 99.0 kPa

Customer: GE Security Rel. Humidity: 58.0 %

EUT Description: Control Panel HWC4

Notes: 20 dB duty cycle correction used to determine final field strength.

Data File Name: 7511 TR.dat

Page: 4 of 5

## Measurement summary for limit1: 319.5MHz-Fundamental (Av)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 319.5MHz- Fundamental
319.5 MHz	79.05 Pk	1.8 / 13.95 / 0.0 / -20.0	74.8	H / 1.00 / 230	-1.0*

## Measurement summary for limit2: GE-319.5MHz-Spurious (Av)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA2 GE-319.5MHz- Spurious
638.976 MHz	40.85 Pk	2.55 / 19.78 / 29.99 / -20.0	13.19	H / 1.00 / 110	-42.61*
958.476 MHz	37.35 Pk	3.04 / 23.02 / 29.4 / -20.0	14.0	V / 1.30 / 240	-41.8*
1.278 GHz	36.9 Pk	3.64 / 25.09 / 28.8 / -20.0	16.83	V / 1.60 / 240	-38.97*
1.597 GHz	30.65 Pk	4.03 / 25.6 / 29.23 / -20.0	11.05	H / 1.50 / 240	-44.75*
1.917 GHz	31.4 Pk	4.38 / 27.59 / 29.5 / -20.0	13.87	V / 1.30 / 110	-41.93*
2.236 GHz	34.95 Pk	4.81 / 28.6 / 29.36 / -20.0	19.0	H / 1.30 / 110	-36.8*
2.556 GHz	32.0 Pk	5.1 / 29.27 / 28.89 / -20.0	17.48	H / 1.30 / 240	-38.32*
2.875 GHz	32.55 Pk	5.5 / 29.94 / 28.8 / -20.0	19.19	H / 1.30 / 240	-36.61*
3.195 GHz	29.65 Pk	5.86 / 30.61 / 29.0 / -20.0	17.12	H / 1.30 / 240	-38.68*

\* Peak measurement against an average limit

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# RADIATED EMISSIONS



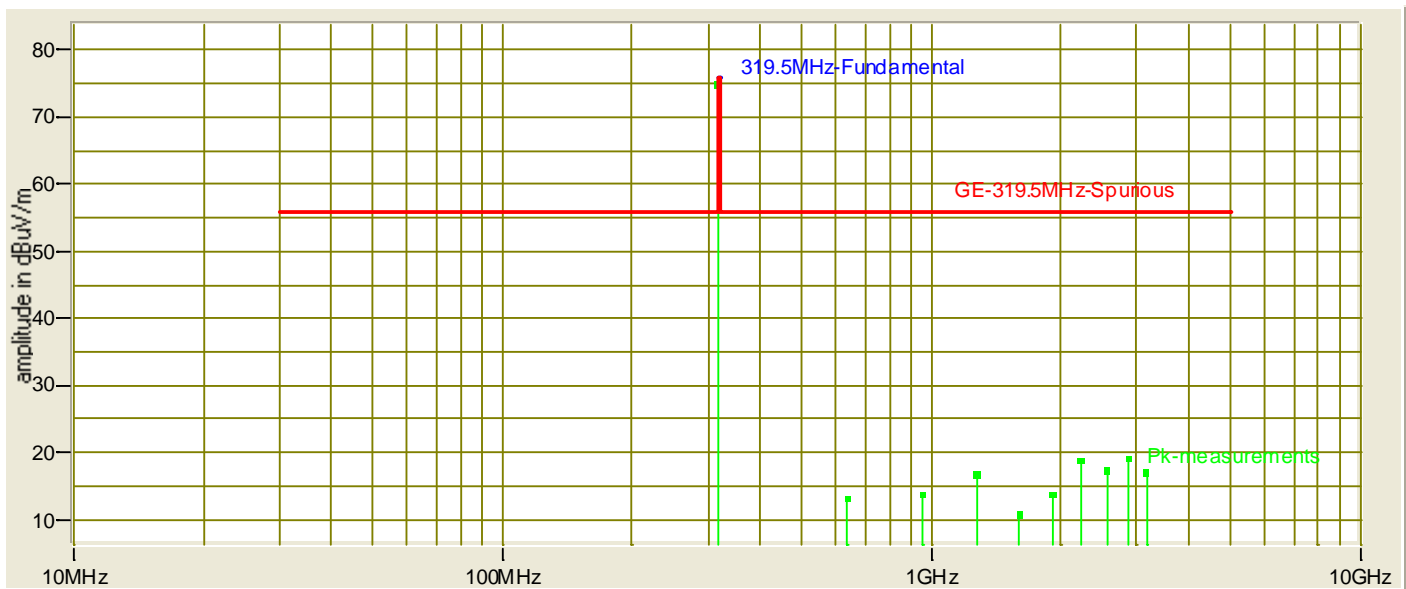
Test Report #: WC707511 Run 2 Test Area: LTS  
EUT Model #: Simon XT with Transmitter Date: 10/5/2007  
EUT Serial #: \_\_\_\_\_ EUT Power: 60 Hz 120 V Temperature: 23.0 °C  
Test Method: FCC Air Pressure: 99.0 kPa  
Customer: GE Security Rel. Humidity: 58.0 %  
EUT Description: Control Panel HWC4

Notes: 20 dB duty cycle correction used to determine final field strength.

Data File Name: 7511 TR.dat

Page: 5 of 5

## Graph:



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## Bandwidth

FCC 15.231[c], RSS-210 A1.1.3

### Test summary

The requirements are: ■ - MET □ - NOT MET

For FCC, testing was performed in accordance with the test procedure of ANSI C63.4 2003, clause 13.1.7

For IC, testing was performed in accordance with an article titled; " A Discussion on the Measurement of Occupied Bandwidth", by Brian Kasper.

[http://strategis.ic.gc.ca/epic/site/ceb-bhst.nsf/vwapj/occupied-bandwidth.pdf/\\$FILE/occupied-bandwidth.pdf](http://strategis.ic.gc.ca/epic/site/ceb-bhst.nsf/vwapj/occupied-bandwidth.pdf/$FILE/occupied-bandwidth.pdf)

The 20 dB bandwidth = 559 kHz

The 99% occupied bandwidth = 210 kHz

### Test location

GE Security

### Test equipment

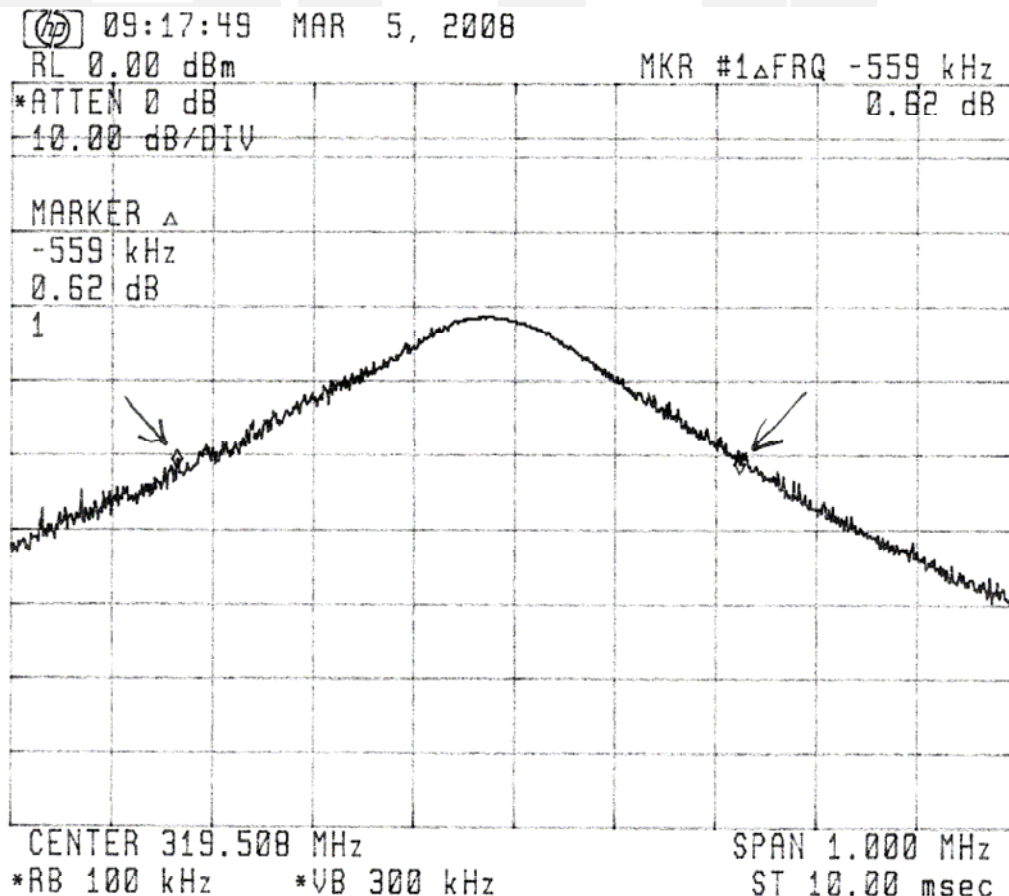
Model	Manufacturer	Description	Serial	Cal Due
70004A	hp	Spectrum analyzer	2946A00876	24 July 08

### Test limit

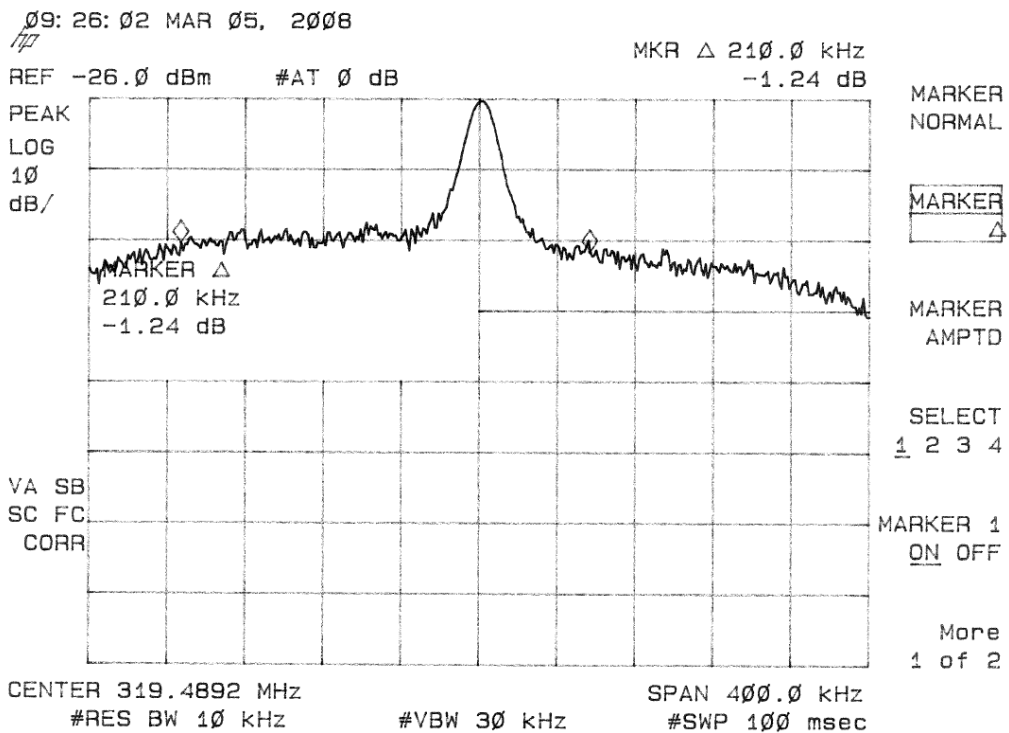
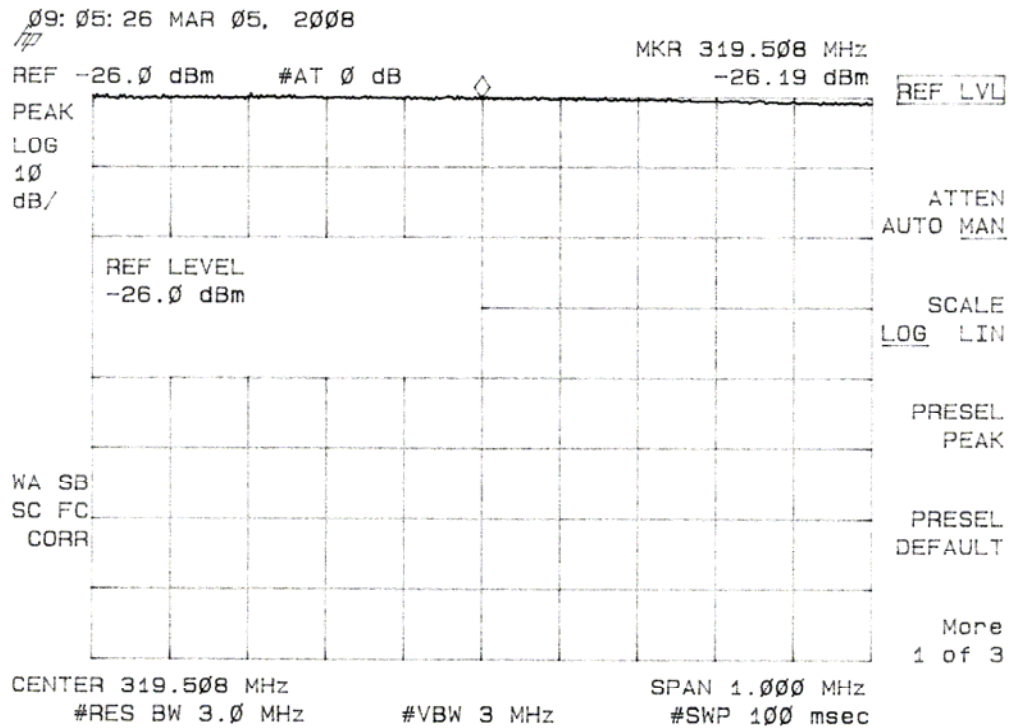
No wider than 0.25% of the center frequency or 798 kHz

### Test data

20 dB bandwidth per FCC



99% occupied bandwidth per IC



## AC Power Lines Conducted Emission

### FCC 15.207(a), RSS-Gen 7.2.2

#### Test summary

The requirements are: ☒ - MET ☐ - NOT MET

Testing was performed in accordance with the test procedure of ANSI C63.4 2003, clause 7.2

Testing performed under project number WC707949

Minimum margin of compliance = 28 dB at 1.475 MHz

#### Test location

☒ - Wild River Lab Large Test Site (Open Area Test Site)

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

#### Test equipment

TUV ID	Model	Manufacturer	Description	Serial	Cal Due
2689	8566B	Hewlett-Packard	Spectrum Analyzer	2416A00321	16-Aug-08
2534	ESHS-20	Rhode & Schwarz	EMI Receiver	837055/003	22-Mar-08

#### Test limit

Frequency range (MHz)	Conducted limit (dBμV)	
	Quasi-peak	Average
0.15 – 0.5	66 to 56*	56 to 46*
0.5 – 5	56	46
5 – 30	60	50

#### Test data

See following pages



# CONDUCTED EMISSIONS



Test Report #: WC707949 Run 5 Test Area: LTS

EUT Model #: SIMON XT SP08 Date: 11/15/2007

EUT Serial #: N/A EUT Power: 60Hz/120VAC Temperature: 21.0 °C

Test Method: FCC B Air Pressure: 98.0 kPa

Customer: GE SECURITY Rel. Humidity: 35.0 %

EUT Description: SECURITY PANEL

Notes: NON-X10 TRANSFORMER - MODEL TUV1

Data File Name: 7949.dat

Page: 1 of 5

## List of measurements for run #: 5

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	EUT Lead	DELTA1 15.207 Qp	DELTA2 15.207 Avg
165.0 kHz	26.91 Qp	0.12 / 0.26 / 0.0 / 0.0	27.29	L1	-37.91	n/a
210.0 kHz	25.57 Qp	0.13 / 0.14 / 0.0 / 0.0	25.84	L1	-37.36	n/a
1.08 MHz	18.69 Qp	0.26 / 0.04 / 0.0 / 0.0	18.99	L1	-37.01	n/a
1.32 MHz	20.71 Qp	0.28 / 0.0 / 0.0 / 0.0	20.99	L1	-35.01	n/a
1.475 MHz	23.27 Qp	0.3 / 0.0 / 0.0 / 0.0	23.57	L1	-32.43	n/a
6.315 MHz	7.99 Qp	0.6 / 0.0 / 0.0 / 0.0	8.59	L1	-51.41	n/a
165.0 kHz	5.6 Av	0.12 / 0.26 / 0.0 / 0.0	5.98	L1	n/a	-49.22
210.0 kHz	4.07 Av	0.13 / 0.14 / 0.0 / 0.0	4.34	L1	n/a	-48.86
1.08 MHz	8.71 Av	0.26 / 0.04 / 0.0 / 0.0	9.01	L1	n/a	-36.99
1.32 MHz	1.94 Av	0.28 / 0.0 / 0.0 / 0.0	2.22	L1	n/a	-43.78
1.475 MHz	-2.46 Av	0.3 / 0.0 / 0.0 / 0.0	-2.16	L1	n/a	-48.16
6.315 MHz	-7.69 Av	0.6 / 0.0 / 0.0 / 0.0	-7.09	L1	n/a	-57.09
165.0 kHz	26.83 Qp	0.12 / 0.26 / 0.0 / 0.0	27.21	N	-37.99	n/a
210.0 kHz	25.43 Qp	0.13 / 0.14 / 0.0 / 0.0	25.7	N	-37.5	n/a
1.08 MHz	23.95 Qp	0.26 / 0.04 / 0.0 / 0.0	24.25	N	-31.75	n/a
1.32 MHz	25.21 Qp	0.28 / 0.0 / 0.0 / 0.0	25.49	N	-30.51	n/a
1.475 MHz	27.13 Qp	0.3 / 0.0 / 0.0 / 0.0	27.43	N	-28.57	n/a
6.315 MHz	16.87 Qp	0.6 / 0.0 / 0.0 / 0.0	17.47	N	-42.53	n/a
165.0 kHz	5.65 Av	0.12 / 0.26 / 0.0 / 0.0	6.03	N	n/a	-49.17
210.0 kHz	4.07 Av	0.13 / 0.14 / 0.0 / 0.0	4.34	N	n/a	-48.86
1.08 MHz	13.91 Av	0.26 / 0.04 / 0.0 / 0.0	14.21	N	n/a	-31.79
1.32 MHz	6.65 Av	0.28 / 0.0 / 0.0 / 0.0	6.93	N	n/a	-39.07
1.475 MHz	0.04 Av	0.3 / 0.0 / 0.0 / 0.0	0.34	N	n/a	-45.66
6.315 MHz	-5.9 Av	0.6 / 0.0 / 0.0 / 0.0	-5.3	N	n/a	-55.3

Tested by: R. M. Johnson

Printed

Signature

Reviewed by: J. T. Schneider

Printed

Signature

# CONDUCTED EMISSIONS



Test Report #: WC707949 Run 5 Test Area: LTS  
EUT Model #: SIMON XT SP08 Date: 11/15/2007  
EUT Serial #: N/A EUT Power: 60Hz/120VAC Temperature: 21.0 °C  
Test Method: FCC B Air Pressure: 98.0 kPa  
Customer: GE SECURITY Rel. Humidity: 35.0 %

EUT Description: SECURITY PANEL

Notes: NON-X10 TRANSFORMER - MODEL TUV1

Data File Name: 7949.dat Page: 2 of 5

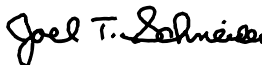
## List of measurements for run #: 5

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	EUT Lead	DELTA1 15.207 Qp	DELTA2 15.207 Avg
END OF SCAN.						

Tested by: R. M. Johnson  
Printed

  
Signature

Reviewed by: J. T. Schneider  
Printed

  
Signature

# CONDUCTED EMISSIONS



Test Report #: WC707949 Run 5 Test Area: LTS

EUT Model #: SIMON XT SP08 Date: 11/15/2007

EUT Serial #: N/A EUT Power: 60Hz/120VAC Temperature: 21.0 °C

Test Method: FCC B Air Pressure: 98.0 kPa

Customer: GE SECURITY Rel. Humidity: 35.0 %

EUT Description: SECURITY PANEL

Notes: NON-X10 TRANSFORMER - MODEL TUV1

Data File Name: 7949.dat Page: 3 of 5

## Measurement summary for limit1: 15.207 (Qp)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	EUT Lead	DELTA1 15.207 Qp
1.475 MHz	27.13 Qp	0.3 / 0.0 / 0.0 / 0.0	27.43	N	-28.57
1.32 MHz	25.21 Qp	0.28 / 0.0 / 0.0 / 0.0	25.49	N	-30.51
1.08 MHz	23.95 Qp	0.26 / 0.04 / 0.0 / 0.0	24.25	N	-31.75
210.0 kHz	25.57 Qp	0.13 / 0.14 / 0.0 / 0.0	25.84	L1	-37.36
165.0 kHz	26.91 Qp	0.12 / 0.26 / 0.0 / 0.0	27.29	L1	-37.91
6.315 MHz	16.87 Qp	0.6 / 0.0 / 0.0 / 0.0	17.47	N	-42.53

Tested by: R. M. Johnson

Printed

*R. M. Johnson*

Signature

Reviewed by: J. T. Schneider

Printed

*Joel T. Schneider*

Signature

# CONDUCTED EMISSIONS



Test Report #: WC707949 Run 5 Test Area: LTS

EUT Model #: SIMON XT SP08 Date: 11/15/2007

EUT Serial #: N/A EUT Power: 60Hz/120VAC Temperature: 21.0 °C

Test Method: FCC B Air Pressure: 98.0 kPa

Customer: GE SECURITY Rel. Humidity: 35.0 %

EUT Description: SECURITY PANEL

Notes: NON-X10 TRANSFORMER - MODEL TUV1

Data File Name: 7949.dat Page: 4 of 5

## Measurement summary for limit2: 15.207 (Av)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	EUT Lead	DELTA2 15.207 Avg
1.08 MHz	13.91 Av	0.26 / 0.04 / 0.0 / 0.0	14.21	N	-31.79
1.32 MHz	6.65 Av	0.28 / 0.0 / 0.0 / 0.0	6.93	N	-39.07
1.475 MHz	0.04 Av	0.3 / 0.0 / 0.0 / 0.0	0.34	N	-45.66
210.0 kHz	4.07 Av	0.13 / 0.14 / 0.0 / 0.0	4.34	L1	-48.86
165.0 kHz	5.65 Av	0.12 / 0.26 / 0.0 / 0.0	6.03	N	-49.17
6.315 MHz	-5.9 Av	0.6 / 0.0 / 0.0 / 0.0	-5.3	N	-55.3

Tested by: R. M. Johnson

Printed

Signature

Reviewed by: J. T. Schneider

Printed

Signature

# CONDUCTED EMISSIONS



Test Report #: WC707949 Run 5 Test Area: LTS

EUT Model #: SIMON XT SP08 Date: 11/15/2007

EUT Serial #: N/A EUT Power: 60Hz/120VAC Temperature: 21.0 °C

Test Method: FCC B Air Pressure: 98.0 kPa

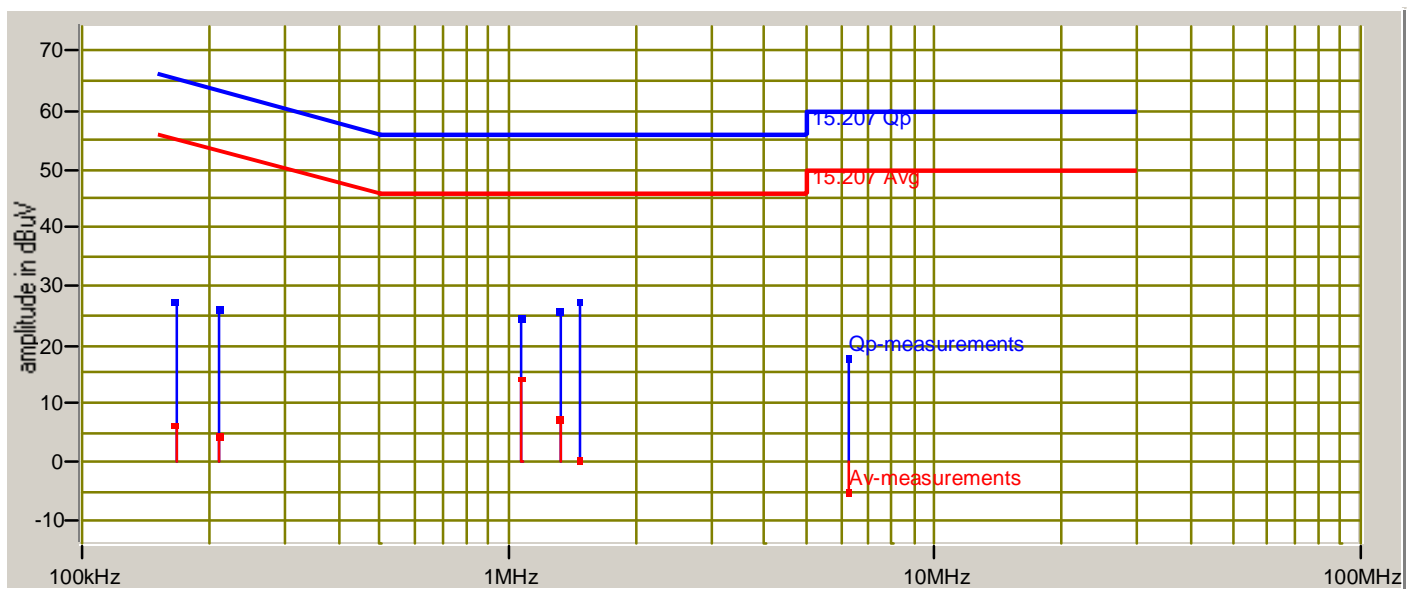
Customer: GE SECURITY Rel. Humidity: 35.0 %

EUT Description: SECURITY PANEL

Notes: NON-X10 TRANSFORMER - MODEL TUV1

Data File Name: 7949.dat Page: 5 of 5

## Graph:



Tested by: R. M. Johnson

Printed

*R. M. Johnson*

Signature

Reviewed by: J. T. Schneider

Printed

*Joel T. Schneider*

Signature

## Equipment Under Test (EUT) Test Operation Mode:

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

- ☐ - Standby
- ☐ - Test program (H - Pattern)
- ☐ - Test program (color bar)
- ☐ - Test program (customer specific)
- ☐ - Practice operation
- ☐ - Normal operating mode
- ☒ - EUT in normal standby condition, with transmitter turned on. EUT in normal standby condition, with transmitter turned off.

## Configuration of the device under test:

- ☒ - See Constructional Data Form in Appendix B
- ☐ - See Product Information Form(s) in Appendix B

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

- |   |                |
|---|----------------|
| <input type="checkbox"/> - _____                    | Type : _____   |
| <input type="checkbox"/> - _____                    | Type : _____   |
| <input type="checkbox"/> - _____                    | Type : _____   |
| <input type="checkbox"/> - _____                    | Type : _____   |
| <input type="checkbox"/> - _____                    | Type : _____   |
| <input type="checkbox"/> - _____                    | Type : _____   |
| <input type="checkbox"/> - _____                    | Type : _____   |
| <input type="checkbox"/> - _____                    | Type : _____   |
| <input type="checkbox"/> - unshielded power cable   |                |
| <input type="checkbox"/> - unshielded cables        |                |
| <input type="checkbox"/> - shielded cables          | MPS.No.: _____ |
| <input type="checkbox"/> - customer specific cables |                |
| <input type="checkbox"/> - _____                    |                |
| <input type="checkbox"/> - _____                    |                |

## GENERAL REMARKS:

AC Power Lines Conducted Emission data is from previous project WC707949

### Modifications required to pass:

- ☒ None
- ☐ As indicated on the data sheet(s)

### Test Specification Deviations: Additions to or Exclusions from:

- ☒ None
- ☐ As indicated in the Test Plan

## 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:	<u>05 October 2007</u>
Condition of EUT:	<u>Normal</u>
Testing Start Date:	<u>05 October 2007</u>
Testing End Date:	<u>05 March 2008</u>

## TÜV SÜD AMERICA INC

Tested by:

*Thomas K. Swanson*

Tom K Swanson  
Senior EMC Technician

Approved by:

*Joel T. Schneider*

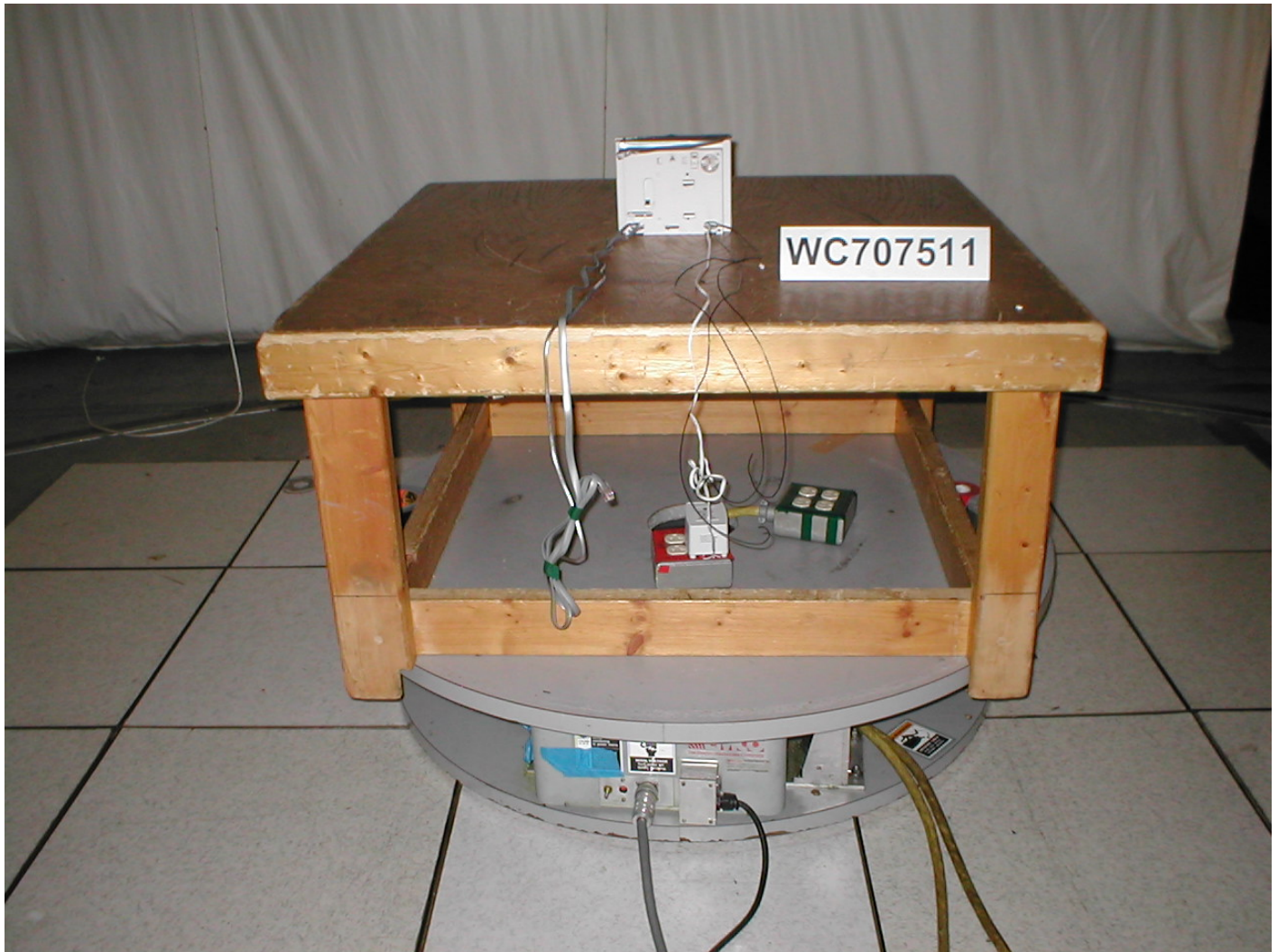
Joel T Schneider  
Senior EMC Engineer

Test-setup photo(s):  
Radiated emissions





Test-setup photo(s):  
Radiated emissions



Test-setup photo(s):  
AC line conducted emissions

(no photo available)



## Appendix A

### Constructional Data Form





## EMC Test Plan and Constructional Data Form

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.**

Company: GE Security  
 Address: 1275 Red Fox Road  
Ardin Hills, MN 55112  
 Contact: Ken Nelson Position: DEG Technician  
 Phone: 651-779-4825 Fax: 651-779-4884  
 E-mail Address: Kenl.Nelson@GE.com

### General Equipment Description -- NOTE: This information will be input into your test report as shown below.

EUT Description Control Panel  
 EUT Name Simon XT  
 Model No.: 55-910-C Serial No.: NA  
 Product Options: NA  
 Configurations to be tested: Intentional Radiator, Unintentional Radiator

### 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: NA  
 Modifications made during test: NA

### Test Objective(s): Please indicate the tests to be performed, entering the applicable standard(s) where noted.

- |   |  |
|---|--|
| <input type="checkbox"/> EMC Directive 2004/108/EC (EMC)<br>Std: _____  | <input checked="" type="checkbox"/> FCC: Class <input type="checkbox"/> A <input checked="" type="checkbox"/> B Part <u>15</u> |
| <input type="checkbox"/> Machinery Directive 89/392/EEC (EMC)<br>Std: _____   | <input type="checkbox"/> VCCI: Class <input type="checkbox"/> A <input type="checkbox"/> B                                     |
| <input type="checkbox"/> Medical Device Directive 93/42/EEC (EMC)<br>Std: _____   | <input type="checkbox"/> BSMI: Class <input type="checkbox"/> A <input type="checkbox"/> B                                     |
| <input type="checkbox"/> Vehicle Directive: <input type="checkbox"/> 2001/3/EC (EMC) <input type="checkbox"/> 2004/104/EC (EMC) | <input checked="" type="checkbox"/> Canada: Class <input type="checkbox"/> A <input checked="" type="checkbox"/> B             |
| <input type="checkbox"/> Other Vehicle Std: _____   | <input type="checkbox"/> Australia: Class <input type="checkbox"/> A <input type="checkbox"/> B                                |
| <input type="checkbox"/> FDA Reviewers Guidance for Premarket Notification Submissions (EMC)                                    | <input type="checkbox"/> Other: _____  |

### Third Party Certification, if applicable (\*Signature on Page 6 Required)

- |   |   |
|---|---|
| <input type="checkbox"/> Attestation of Conformity (AoC)*                             | <input type="checkbox"/> EMC Certification (used with Octagon Mark)*                                  |
| <input type="checkbox"/> Certificate of Conformity (CoC)*                             | <input type="checkbox"/> Compliance Document*   |
| Protection Class (N/A for vehicles)   | <input type="checkbox"/> Class I <input type="checkbox"/> Class II <input type="checkbox"/> Class III |
| (Press F1 when field is selected to show additional information on Protection Class.) |   |
| <input checked="" type="checkbox"/> FCC / TCB Certification                           | <input checked="" type="checkbox"/> Industry Canada / FCB Certification                               |
| <input type="checkbox"/> E-Mark Certification   | <input type="checkbox"/> Taiwan Certification   |

**EMC Test Plan and Constructional Data Form****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 America should:

- ☐ Call contact listed above, if not available then stop testing. (After hrs phone): \_\_\_\_\_
- ☒ Continue testing to complete test series.
- ☐ Continue testing to define corrective action.
- ☐ Stop testing.

**EUT Specifications and Requirements**Length: 7" Width: 2.25" Height: 5.5" Weight: \_\_\_\_\_**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: 120VAC (If battery powered, make sure battery life is sufficient to complete testing.)# of Phases: Single

Current (Amps/phase(max)): \_\_\_\_\_ Current (Amps/phase(nominal)): \_\_\_\_\_

Other \_\_\_\_\_

**Other Special Requirements****Typical Installation and/or Operating Environment**(ie. Hospital, Small Business, Industrial/Factory, etc.)  
Residential, Small Business**EUT Power Cable**

☐ Permanent OR ☒ Removable Length (in meters): \_\_\_\_\_

☐ Shielded OR ☒ Unshielded

☐ Not Applicable

## EMC Test Plan and Constructional Data Form

EUT Interface Ports and Cables														
Type	Analog	Digital	During Test		Qty	Shielding		Termination	Connector Type	Port Termination	Length tested (in meters)	Removable	Permanent	
			Active	Passive		Yes	No							Type
<b>EXAMPLE:</b> RS232	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Foil over braid	Coaxial	Metallized 9-pin D-Sub	Characteristic Impedance	6	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>						<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>						<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>						<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>						<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>						<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>						<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>						<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>						<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>						<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>						<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>						<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>						<input type="checkbox"/>	<input type="checkbox"/>

**EMC Test Plan and Constructional Data Form****EUT Software.**

Revision Level: NA

Description: NA

**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. EUT in normal standby conditon, with transmitter turned on.
2. EUT in normal standby conditon, with transmitter turned off.
- 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 #
NA			



## 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.

<i>Description</i>	<i>Model #</i>	<i>Serial #</i>	<i>FCC ID #</i>
NA			

### Oscillator Frequencies

<i>Manufacturer</i>	<i>Frequency</i>	<i>Derived Frequency</i>	<i>Component # / Location</i>	<i>Description of Use</i>
	319.5MHz			

### Power Supply

<i>Manufacturer</i>	<i>Model #</i>	<i>Serial #</i>	<i>Type</i>
Leader	A5709334OT	NA	<input type="checkbox"/> Switched-mode: (Frequency) 60Hz <input type="checkbox"/> Linear <input type="checkbox"/> Other: _____
			<input type="checkbox"/> Switched-mode: (Frequency) _____ <input type="checkbox"/> Linear <input type="checkbox"/> Other: _____

### Power Line Filters

<i>Manufacturer</i>	<i>Model #</i>	<i>Location in EUT</i>
NA		





## EMC Test Plan and Constructional Data Form

### Critical EMI Components (Capacitors, ferrites, etc.)

Description	Manufacturer	Part # or Value	Qty	Component # / Location
NA				

**EMC Critical Detail --** Describe other EMC Design details used to reduce high frequency noise.

(PLEASE INSERT "ELECTRONIC SIGNATURE" BELOW IF POSSIBLE)

### Authorization Signatures (Signature Required for Certifications checked on pg 1)

*Ken Nelson*

1/3/08

Customer authorization to perform tests  
according to this test plan.

Date

*Ken Nelson*

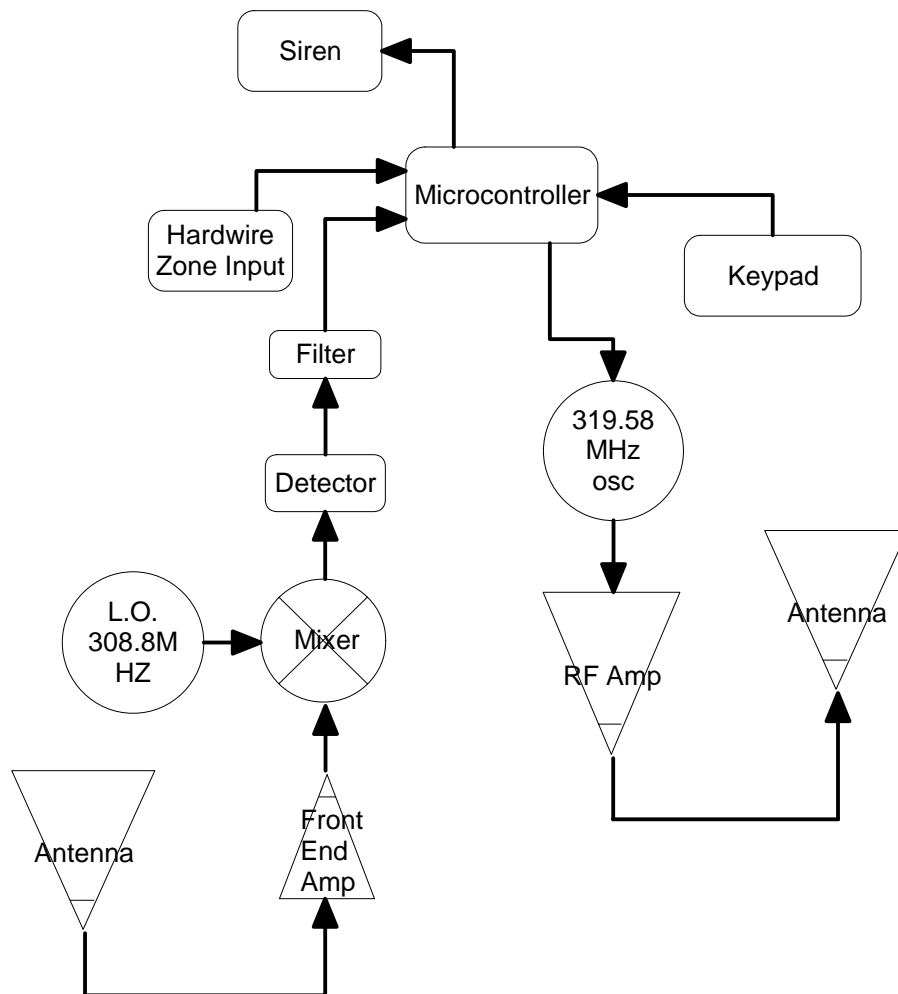
1/3/08

Test Plan/CDF Prepared By (please print)

Date

## 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

*Ken Nelson*

1/3/08

Customer authorization to perform tests according to this test plan.

Date

*Ken Nelson*

1/3/08

Test Plan/CDF Prepared By (please print)

Date

## Appendix B

### Measurement Protocol



# MEASUREMENT PROTOCOL

## GENERAL INFORMATION

### Test Methodology

Emissions testing is performed according to the procedures in ANSI C63.4-2003.

### Measurement Uncertainty

The test system for conducted emissions is defined as the LISN, tuned receiver or spectrum analyzer, and coaxial cable. The test system has a measurement uncertainty of  $\pm 1.8$  dB. The test system for radiated emissions is defined as the antenna, the pre-amplifier, the spectrum analyzer and the coaxial cable. The test system has a measurement uncertainty of  $\pm 4.8$  dB. 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 its 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, in  $\text{dB}\mu\text{V}$ , equals the EMI receiver level plus the cable loss and LISN factor.

### Radiated Emissions

The final level, in  $\text{dB}\mu\text{V}/\text{m}$ , equals the reading from the spectrum analyzer (Level  $\text{dB}\mu\text{V}$ ), adding the antenna correction factor and cable loss factor (Factor dB) to it, and subtracting the preamp gain (and duty cycle correction factor, if applicable). This result then has the limit subtracted from it to provide the Delta, which gives the tabular data as shown in the data sheets in Attachment A. Intentional radiators are rotated through 3 orthogonal axes to determine the test position yielding the maximum emission levels.

Example:

FREQ (MHz)	LEVEL ( $\text{dB}\mu\text{V}$ )	CABLE/ANT/PREAMP (dB)	FINAL ( $\text{dB}\mu\text{V}/\text{m}$ )	POL/HGT/AZ (m) (deg)	DELTA1
60.80	42.5Qp +	1.2 + 10.9 - 25.5 =	29.1	V 1.0 0.0	-10.9

### Test Equipment

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