CURTIS-STRAUS

# Test Report

| | |
|---|---|
| Report No | EI1350-2 |
| Client | Revolabs, Inc.<br>Karthik Yogeeswaran |
| Address | 63 Great Road<br>Maynard, MA 01754 |
| Phone | 978-897-5655 |
| Items tested | Fusion |
| | |
| FRN<br>FCC ID<br>IC | 0014898290<br>T5V2FUSION4, T5V2FUSION8<br>6455A-2FUSION4, 6455A-2FUSION8 |
| Standards | FCC 47 CFR Part 15.249, RSS-210, and RSS-GEN |
| Test Dates | November 6 - 20, 2008 |
| Results | As detailed within this report |
| Prepared by | Kyle Neffendorf – Test Engineer |
| Authorized by | Mairaj Hussain – EMC Supervisor |
| Issue Date | 1/8/09 |
| Conditions of Issue | This Test Report is issued subject to the conditions stated in the '*Conditions of Testing*' section on page 23 of this report. |

## *Contents*



Form Final Report REV 8-18-08 (DW)

## *Summary*

This test report supports an application for certification of a transmitter operating pursuant to 47 CFR 15.249. The product is the Fusion, and there are two different models. The only difference between the products is the number of wireless microphones they support. T5V2FUSION4 supports 4 microphones, and T5V2FUSION8 supports 8. It is a transmitter which operates in the range 2424-2454MHz.
The Fusion contains an on board antenna with no external connector.

This report covers the requirements applicable to the 2.4GHz transmitter which is being added to previously approved models. The products are unchanged other than the addition of this radio board. Therefore, the test report used previously will still be applicable to that portion of the product.

## Test Methodology

Testing was performed according to ANSI C63.4-2003. Radiated emissions were maximized by rotating the device around its vertical axis, as well as varying the test antenna's height and polarity.

Frequency range investigated: 30MHz – 25GHz

Measurement distance for Radiated Emissions: 3m and 1m

Release Control Record

| Issue No. | Reason for change | Date Issued |
|---|---|---|
| 1 | Original Release | January 8, 2009 |

## *Product Tested - Configuration Documentation*

**EUT Configuration**

**Work Order:** I1350
**Company:** Revolabs
**Company Address:** 63 Great Rd.
Maynard, MA 01754
**Contact:** Karthik Yogeeswaran

| | MN | PN | SN |
|---|---|---|---|
| **EUT:** | 01-8FUSION-NM-01-01 | -- | 501050064408 |
| Phihong AC power Adapter: | PSC60-240 | -- | P81101458A |

**EUT Description:** Fusion System, DECT Conferencing System
**EUT Max Frequency:** 2454MHz
**EUT Min Frequency:** 1.152MHz

| ***Support Equipment:*** | **MN** | **SN** |
|---|---|---|
| Revolabs TT Dialer | 07-TT-DIAL-01 | Test Sample 1 |

***EUT Ports:***

| Port Label | Port Type | No. of ports | No. Populated | Cable Type | Shielded | Ferrites | Length | Max Length | In/Out NEBS Type | Unpopulated Reason |
|---|---|---|---|---|---|---|---|---|---|---|
| IF Remote | RS232 | 1 | 1 | DB-9 | Yes | None | 3m | 3m | Indoor | |
| Blank | RS232 | 1 | 1 | DB-9 | Yes | None | 1m | 3m | Indoor | |
| Audio Control | ethernet | 1 | 1 | RJ-45 | No | None | 2m | 100m | Indoor | |
| SET-IN | pots | 1 | 1 | RJ-11 | No | None | 2m | 1000' | Outdoor | |
| LINE-IN | pots | 1 | 1 | RJ-11 | No | None | 2m | 1000' | Outdoor | |
| NETWORK | ethernet | 1 | 1 | RJ-45 | No | None | 2m | 100m | Indoor | |
| CONF OUT (MIC) | audio | 1 | 1 | XLR | Yes | None | 2m | - | Indoor | |
| CONF OUT | audio | 1 | 1 | RCA | Yes | None | 2m | - | Indoor | |
| ROOM OUT | audio | 1 | 1 | RCA | Yes | None | 2m | - | Indoor | |
| AUX-OUT | audio | 1 | 1 | RCA | Yes | None | 2m | - | Indoor | |
| CONF IN | audio | 1 | 1 | RCA | Yes | None | 2m | - | Indoor | |
| RECORD OUT | audio | 1 | 1 | RCA | Yes | None | 2m | - | Indoor | |
| AUX-IN | audio | 1 | 1 | RCA | Yes | None | 2m | - | Indoor | |
| POWER | power | 1 | 1 | 2-wire DC | No | Molded | 1m | 1m | Indoor | |

***Software / Operating Mode Description:***

EUT is communicating with Revolabs TT Dialer. EUT and TT Dialer are in both TX and RX Modes.

### *Compliance Statement*

| TEST | RESULT | STANDARD | TEST LEVEL | MARGIN | COMMENTS |
|---|---|---|---|---|---|
| ***Spurious Radiated Emissions*** | PASS | FCC Part 15.209 | Class B | -0.5dB @ 116.48MHz | |
| ***Fundamental Reading*** | Pass | FCC Part 15.249 | Class B | -0.5dB @ 2454.0MHz | |
| ***Band Edge*** | PASS | FCC Part 15.249 | Class B | NA | |
| ***Voltage Variations*** | PASS | FCC Part 15.249 | | NA | |
| ***Line Conducted Emissions*** | PASS | FCC Part 15.207 | Class B | -15.2dB @ 0.53MHz | |
| ***Occupied Bandwidth*** | PASS | FCC Part 15.249 | | NA | |

| RSS-GEN | RSS 210 | Part 15 | Comments |
|---|---|---|---|
| 5.3 | | 15.15(b) | There are no controls accessible to the user that vary the output power. |
| 5.2 | | 15.19 | The label is shown in the label exhibit. |
| 7.1.5 | | 15.21 | Information to the user is shown in the instruction manual exhibit. |
| | | 15.27 | No special accessories are required for compliance. |
| 7.1.4 | | 15.203 | The antenna for this device is hardwired to the PCB. |
| | 2.6 | 15.205<br>15.209 | The fundamental is not in a Restricted band and the spurious and harmonic emissions in the Restricted bands comply with the general emission limits of 15.209. |
| 7.2.2 | | 15.207 | EUT meets the conducted emission limits. |
| | A2.9(a) | 15.249(a) | The fundamental and harmonics meet the limits in 15.249(a) |
| | A2.9(b) | 15.249(d) | Spurious emissions meet the limits in 15.209. |
| 4.6.1 | | | Occupied BW plot is provided. |

## *Test Results*

## Spurious Radiated Emissions

**Limit:** Worst-case limits were used. (15.209(a))

**Measurement:** Quasi-peak readings were taken below 1000MHz, Peak readings were taken above 1000MHz

Adjusted Reading Sample Calculation:

Adjusted Reading = Reading – preamp factor + cable loss + antenna factor

29.7 = 35.0 – 21.9 + 15.9 + 0.7

**Radiated Emissions Table** — *Curtis-Straus LLC*

**Date:** 11-Nov-08 **Company:** Revolabs **Work Order:** I1350

**Engineer:** Kyle Neffendorf **EUT Desc:** Fusion and Table Top Dialer **EUT Operating Voltage/Frequency:** 120V60Hz

**Frequency Range:** 30-1000Mhz **Measurement Distance:** 3 m

**Notes:** full loop ferrite 0443164151 on DC Power Cable Tx Mode **EUT Max Freq:** 2.454GHz
Unshielded ethernet cable with full loop ferrite PN 0443164151 on bottom ethernet.

| Antenna Polarization (H / V) | Frequency (MHz) | Reading (dBµV) | Preamp Factor (dB) | Antenna Factor (dB/m) | Cable Factor (dB) | Adjusted Reading (dBµV/m) | CISPR Class B Limit (dBµV/m) | CISPR Class B Margin (dB) | CISPR Class B Result (Pass/Fail) | FCC Class B Limit (dBµV/m) | FCC Class B Margin (dB) | FCC Class B Result (Pass/Fail) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V | 37.26 | 35.0 | 21.9 | 15.9 | 0.7 | 29.7 | 40.5 | -10.8 | Pass | 40.0 | -10.3 | Pass |
| V | 114.02 | 37.5 | 21.7 | 12.6 | 1.4 | 29.8 | 40.5 | -10.7 | Pass | 43.5 | -13.7 | Pass |
| V | 116.0 | 37.4 | 21.7 | 12.6 | 1.4 | 29.7 | 40.5 | -10.8 | Pass | 43.5 | -13.8 | Pass |
| V | 116.48 | 47.6 | 21.7 | 12.7 | 1.4 | 40.0 | 40.5 | -0.5 | Pass | 43.5 | -3.5 | Pass |
| V | 122.86 | 38.9 | 21.7 | 12.7 | 1.4 | 31.3 | 40.5 | -9.2 | Pass | 43.5 | -12.2 | Pass |
| V | 123.82 | 38.7 | 21.7 | 12.7 | 1.4 | 31.1 | 40.5 | -9.4 | Pass | 43.5 | -12.4 | Pass |
| V | 125.0 | 37.7 | 21.7 | 12.7 | 1.5 | 30.2 | 40.5 | -10.3 | Pass | 43.5 | -13.3 | Pass |
| V | 171.8 | 44.0 | 21.6 | 10.4 | 1.7 | 34.5 | 40.5 | -6.0 | Pass | 43.5 | -9.0 | Pass |
| V | 204.8 | 40.2 | 21.6 | 10.7 | 1.8 | 31.1 | 40.5 | -9.4 | Pass | 43.5 | -12.4 | Pass |
| H | 240.0 | 42.6 | 21.5 | 12.1 | 1.9 | 35.1 | 47.5 | -12.4 | Pass | 46.0 | -10.9 | Pass |
| H | 250.0 | 47.8 | 21.6 | 12.9 | 2.0 | 41.1 | 47.5 | -6.4 | Pass | 46.0 | -4.9 | Pass |
| H | 319.5 | 48.1 | 21.5 | 14.4 | 2.4 | 43.4 | 47.5 | -4.1 | Pass | 46.0 | -2.6 | Pass |
| V | 344.0 | 45.8 | 21.3 | 15.1 | 2.4 | 42.0 | 47.5 | -5.5 | Pass | 46.0 | -4.0 | Pass |
| H | 375.0 | 43.8 | 21.2 | 15.7 | 2.6 | 40.9 | 47.5 | -6.6 | Pass | 46.0 | -5.1 | Pass |
| V | 393.0 | 42.5 | 21.6 | 16.2 | 2.7 | 39.8 | 47.5 | -7.7 | Pass | 46.0 | -6.2 | Pass |

***Table Result:*** Pass by -0.5 dB ***Worst Freq:*** 116.48 MHz

**Test Site:** "M" **Pre-Amp:** Red **Cable:** EMIR-01 **Analyzer:** Red **Antenna:** Grn-Red

**Radiated Emissions Table** — *Curtis-Straus LLC*

**Date:** 11-Nov-08 **Company:** Revolabs **Work Order:** I1350

**Engineer:** Kyle Neffendorf **EUT Desc:** Fusion and Table Top Dialer **EUT Operating Voltage/Frequency:** 120V60Hz

**Frequency Range:** 30-1000MHz **Measurement Distance:** 3 m

**Notes:** full loop ferrite 0443164151 on DC Power Cable Rx Mode **EUT Max Freq:** 2.454GHz
Unshielded ethernet cable with full loop ferrite PN 0443164151 on bottom ethernet.

| Antenna Polarization (H / V) | Frequency (MHz) | Reading (dBµV) | Preamp Factor (dB) | Antenna Factor (dB/m) | Cable Factor (dB) | Adjusted Reading (dBµV/m) | CISPR Class B Limit (dBµV/m) | CISPR Class B Margin (dB) | CISPR Class B Result (Pass/Fail) | FCC Class B Limit (dBµV/m) | FCC Class B Margin (dB) | FCC Class B Result (Pass/Fail) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V | 37.26 | 35.0 | 21.9 | 15.9 | 0.7 | 29.7 | 40.5 | -10.8 | Pass | 40.0 | -10.3 | Pass |
| V | 116.48 | 39.4 | 21.7 | 12.7 | 1.4 | 31.8 | 40.5 | -8.7 | Pass | 43.5 | -11.7 | Pass |
| V | 122.86 | 39.4 | 21.7 | 12.7 | 1.4 | 31.8 | 40.5 | -8.7 | Pass | 43.5 | -11.7 | Pass |
| V | 123.82 | 39.7 | 21.7 | 12.7 | 1.4 | 32.1 | 40.5 | -8.4 | Pass | 43.5 | -11.4 | Pass |
| V | 125.0 | 37.6 | 21.7 | 12.7 | 1.5 | 30.1 | 40.5 | -10.4 | Pass | 43.5 | -13.4 | Pass |
| V | 171.8 | 43.7 | 21.6 | 10.4 | 1.7 | 34.2 | 40.5 | -6.3 | Pass | 43.5 | -9.3 | Pass |
| V | 178.3 | 45.8 | 21.7 | 10.0 | 1.7 | 35.8 | 40.5 | -4.7 | Pass | 43.5 | -7.7 | Pass |
| H | 240.0 | 51.3 | 21.5 | 12.1 | 1.9 | 43.8 | 47.5 | -3.7 | Pass | 46.0 | -2.2 | Pass |
| H | 250.0 | 47.2 | 21.6 | 12.9 | 2.0 | 40.5 | 47.5 | -7.0 | Pass | 46.0 | -5.5 | Pass |
| H | 319.5 | 44.4 | 21.5 | 14.4 | 2.4 | 39.7 | 47.5 | -7.8 | Pass | 46.0 | -6.3 | Pass |
| V | 344.0 | 46.0 | 21.3 | 15.1 | 2.4 | 42.2 | 47.5 | -5.3 | Pass | 46.0 | -3.8 | Pass |

***Table Result:*** Pass by -2.2 dB ***Worst Freq:*** 240.0 MHz

**Test Site:** "M" **Pre-Amp:** Red **Cable:** EMIR-01 **Analyzer:** Red **Antenna:** Grn-Red

**Note**: No spurious emissions were detected above 1000MHz.

## Fundamental Reading

### Limit:

Average: 50mV/m = 94.0dBµV/m @ 3m [15.249]
Peak: 94.0dBµV/m + 20dB = 114.0dBµV/m @ 3m [15.35(b)]

### Measurement:

Peak readings were taken, and compared against the average limit. Average readings are not needed.

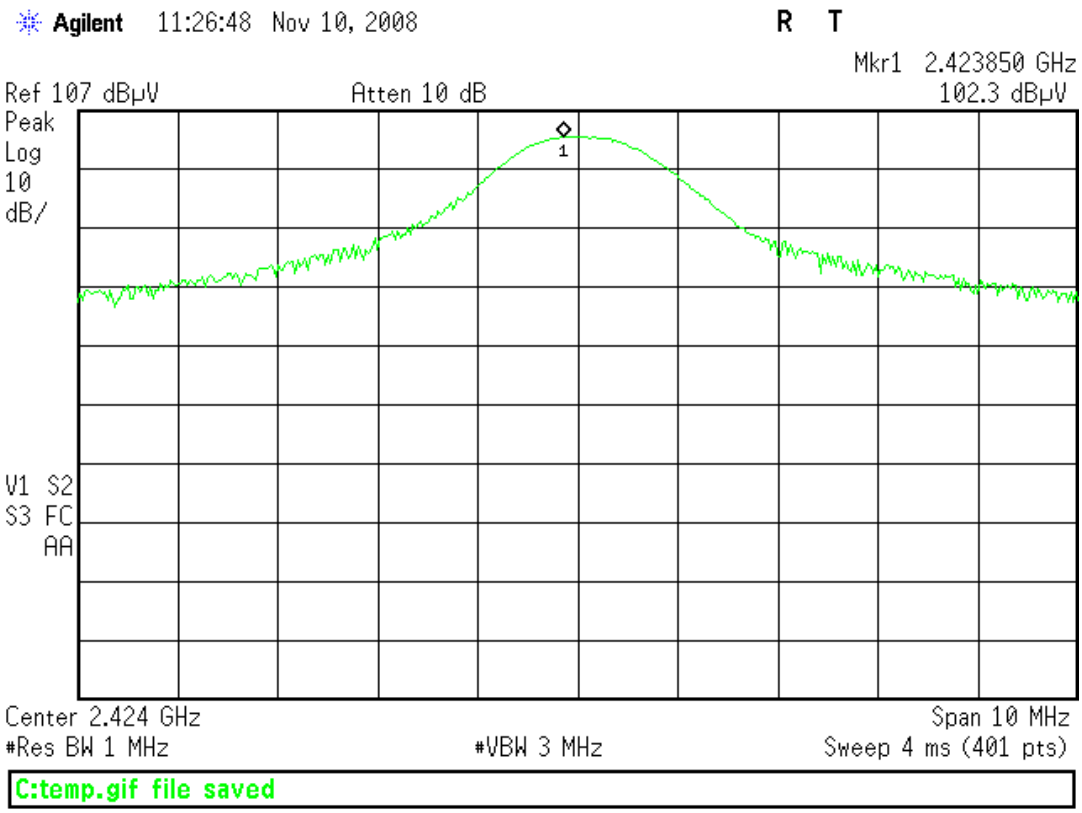
**Radiated Emissions Table** — *Curtis-Straus LLC*

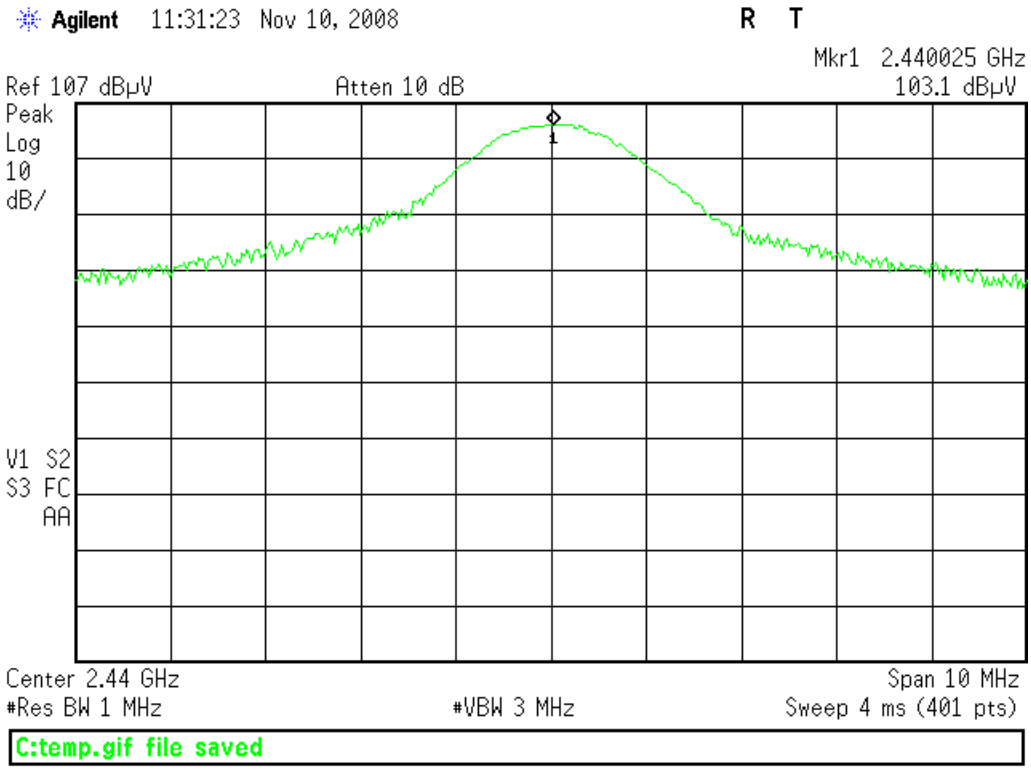
**Date:** 10-Nov-08 **Company:** Revolabs **Work Order:** I1350
**Engineer:** Kyle Neffendorf **EUT Desc:** Fusion **EUT Operating Voltage/Frequency:** 120V60Hz
**Frequency Range:** 2400-2483.5MHz **Measurement Distance:** 3 m
**Notes:** RBW: 1MHz VBW: 3MHz **EUT Max Freq:** 2.454GHz

| Antenna Polarization (H / V) | Frequency (MHz) | Reading (dBµV) | Preamp Factor (dB) | Antenna Factor (dB/m) | Cable Factor (dB) | Adjusted Reading (dBµV/m) | --- Limit (dBµV/m) | --- Margin (dB) | --- Result (Pass/Fail) | FCC 15.249 Limit (dBµV/m) | FCC 15.249 Margin (dB) | FCC 15.249 Result (Pass/Fail) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hpk | 2454.0 | 103.5 | 41.9 | 29.0 | 2.9 | 93.5 | --- | --- | --- | 94.0 | -0.5 | Pass |
| Vpk | 2454.0 | 100.4 | 41.9 | 29.0 | 2.9 | 90.4 | --- | --- | --- | 94.0 | -3.6 | Pass |
| Vpk | 2424.0 | 97.8 | 41.9 | 29.0 | 2.9 | 87.8 | --- | --- | --- | 94.0 | -6.2 | Pass |
| Hpk | 2424.0 | 102.3 | 41.9 | 29.0 | 2.9 | 92.3 | --- | --- | --- | 94.0 | -1.7 | Pass |
| Hpk | 2440.0 | 103.1 | 41.9 | 29.0 | 2.9 | 93.1 | --- | --- | --- | 94.0 | -0.9 | Pass |
| Vpk | 2440.0 | 98.8 | 41.9 | 29.0 | 2.9 | 88.8 | --- | --- | --- | 94.0 | -5.2 | Pass |

***Table Result:*** Pass by -0.5 dB ***Worst Freq:*** 2454.0 MHz

**Test Site:** "M" **Pre-Amp:** Red-Green **Cable:** EMIR-HIGH-22 **Analyzer:** Gold **Antenna:** Black Horn

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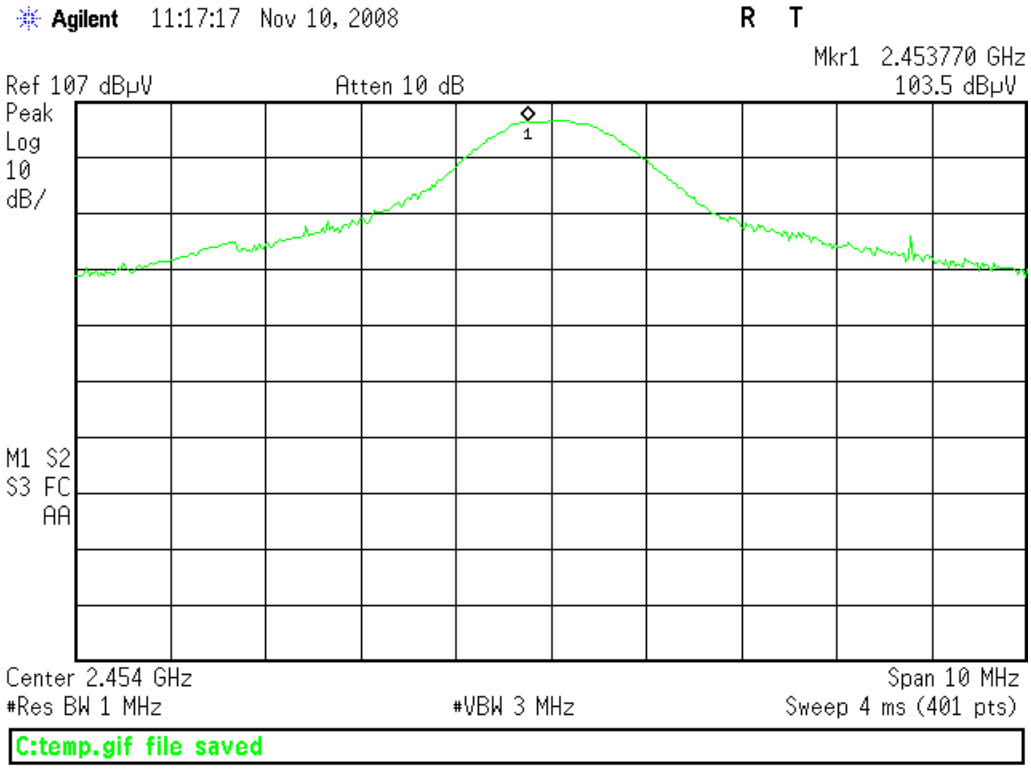
R T
Mkr1 2.440025 GHz
103.1 dBµV
Ref 107 dBµV
Atten 10 dB
Peak
Log
10
dB/
V1 S2
S3 FC
AA
Center 2.44 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 10 MHz
Sweep 4 ms (401 pts)
C:temp.gif file saved


Agilent 11:17:17 Nov 10, 2008
R T
Mkr1 2.453770 GHz
103.5 dBµV
Ref 107 dBµV
Atten 10 dB
Peak
Log
10
dB/
M1 S2
S3 FC
AA
Center 2.454 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 10 MHz
Sweep 4 ms (401 pts)
C:temp.gif file saved

## Band Edge

**Radiated Emissions Table** — Curtis-Straus LLC

**Date:** 10-Nov-08 **Company:** Revolabs **Work Order:** I1350
**Engineer:** Kyle Neffendorf **EUT Desc:** Fusion **EUT Operating Voltage/Frequency:** 120V60Hz
**Frequency Range:** 2400-2483.5MHz **Measurement Distance:** 3 m
**Notes:** Low Channel: 2.424GHz VBW: 1MHz Peak Detector **EUT Max Freq:** 2.454GHz
High Channel: 2.454GHz RBW: 3MHz

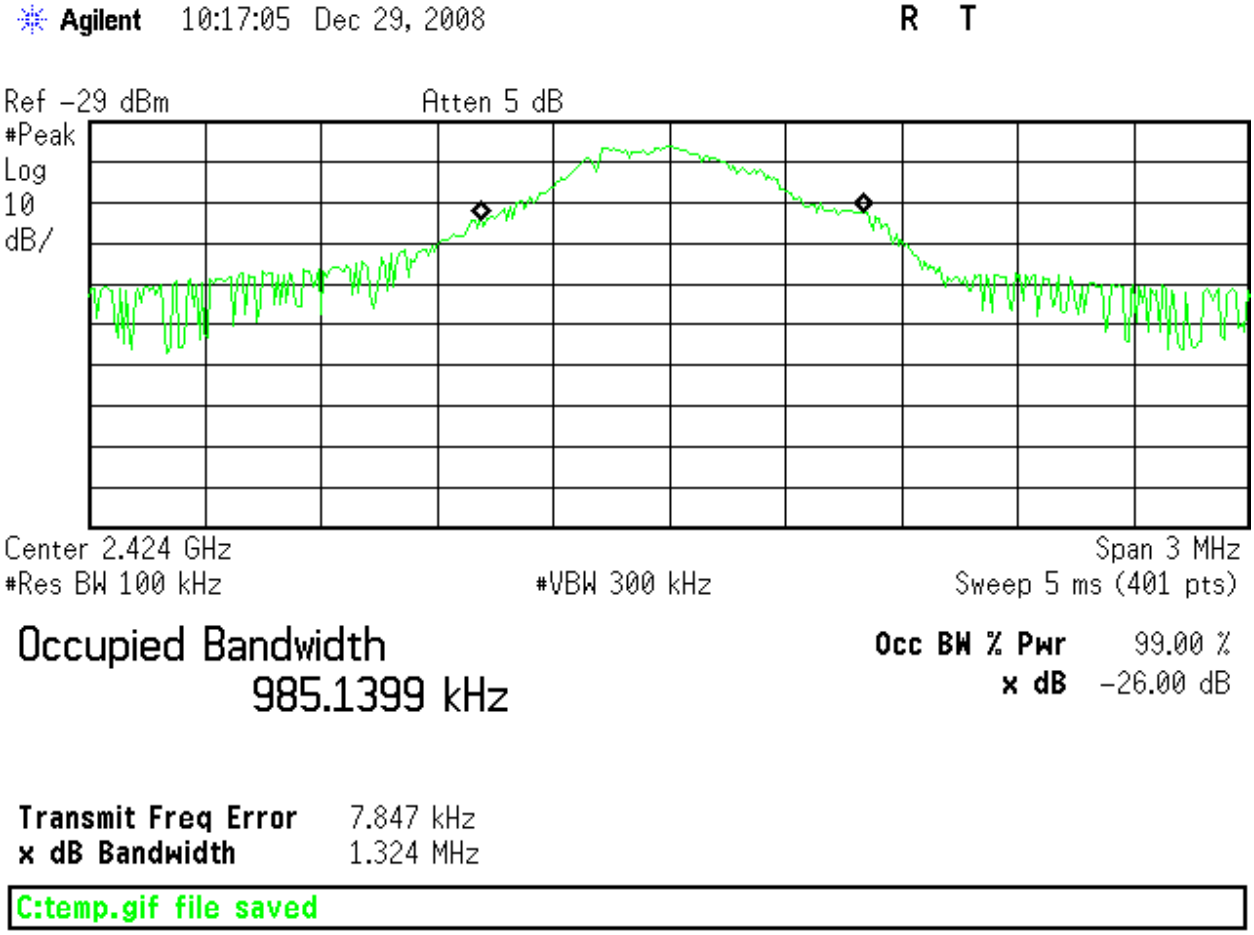
| Antenna Polarization (H / V) | Frequency (MHz) | Reading (dBµV) | Preamp Factor (dB) | Antenna Factor (dB/m) | Cable Factor (dB) | Adjusted Reading (dBµV/m) | --- Limit (dBµV/m) | --- Margin (dB) | --- Result (Pass/Fail) | FCC Class B Limit (dBµV/m) | FCC Class B Margin (dB) | FCC Class B Result (Pass/Fail) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hpk | 2400.0 | 63.1 | 41.9 | 28.9 | 2.9 | 53.0 | --- | --- | --- | 54.0 | -1.0 | Pass |
| Vpk | 2400.0 | 56.4 | 41.9 | 28.9 | 2.9 | 46.3 | --- | --- | --- | 54.0 | -7.7 | Pass |
| Hpk | 2483.5 | 60.5 | 41.9 | 29.1 | 2.9 | 50.6 | --- | --- | --- | 54.0 | -3.4 | Pass |
| Vpk | 2483.5 | 58.7 | 41.9 | 29.1 | 2.9 | 48.8 | --- | --- | --- | 54.0 | -5.2 | Pass |

***Table Result:*** Pass by -1.0 dB ***Worst Freq:*** 2400.0 MHz

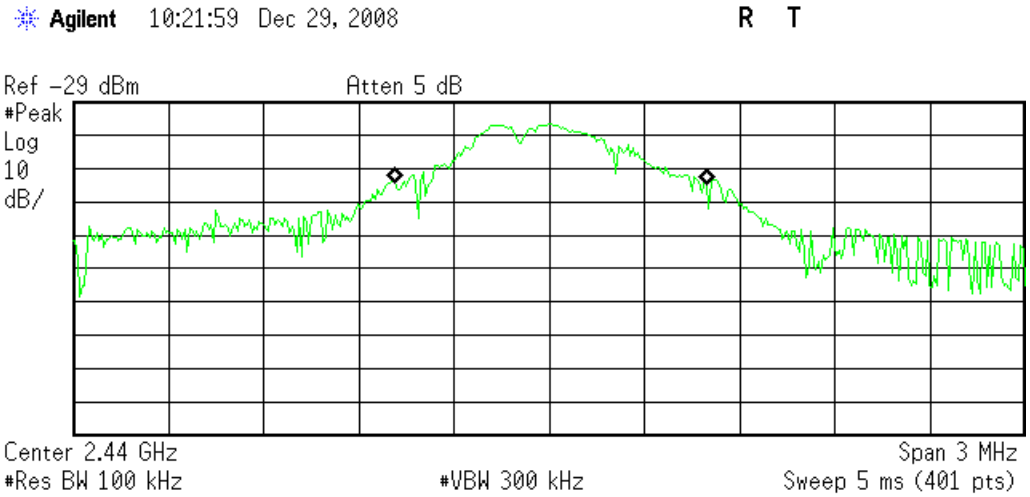
**Test Site:** "M" **Pre-Amp:** Red-Green **Cable:** EMIR-HIGH-22 **Analyzer:** Gold **Antenna:** Black Horn

## Occupied Bandwidth

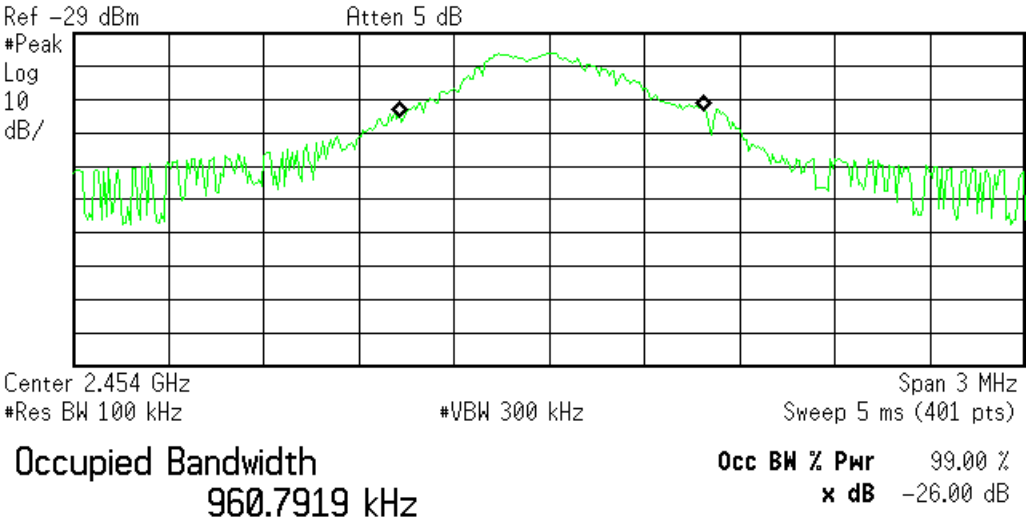
Channel 24



Channel 40




Channel 54



## Line Conducted Emissions

**AC Mains Conducted Emissions** — *Curtis-Straus LLC*

**Date:** 17-Nov-08 **Company:** Revolabs **Work Order:** I1350
**Engineer:** Kyle Neffendorf **EUT Desc:** Fusion **Test Site:** EMI3
**Notes:**
**Measurement Device:** Orange LISN **EUT Operating Voltage/Frequency:** 120V 60Hz
**Range:** 0.15-30MHz **Spectrum Analyzer:** Black

| | Q.P. Readings | | Ave. Readings | | Impedance Factor | FCC/CISPR B | | FCC/CISPR B | | Overall |
|---|---|---|---|---|---|---|---|---|---|---|
| Frequency | QP1 | QP2 | AV1 | AV2 | | qp Limit | qp Margin | AVE Limit | AVE Margin | Result |
| (MHz) | (dBµV) | (dBµV) | (dBµV) | (dBµV) | (dB) | (dBµV) | dB | (dBµV) | dB | (Pass/Fail) |
| 0.20 | 23.4 | 22.1 | 16.3 | 10.0 | 20.2 | 63.8 | -20.2 | 53.8 | -17.3 | Pass |
| 0.33 | 15.3 | 16.1 | 12.4 | 10.6 | 20.1 | 59.5 | -23.3 | 49.5 | -17.0 | Pass |
| 0.40 | 14.0 | 8.0 | 11.5 | 9.5 | 20.1 | 57.9 | -23.8 | 47.9 | -16.3 | Pass |
| 0.53 | 14.2 | 10.8 | 10.7 | 7.0 | 20.1 | 56.0 | -21.7 | 46.0 | -15.2 | Pass |
| 0.93 | 11.5 | 8.9 | 10.1 | 5.0 | 20.1 | 56.0 | -24.4 | 46.0 | -15.8 | Pass |
| 0.73 | 13.6 | 11.7 | 9.5 | 7.1 | 20.1 | 56.0 | -22.3 | 46.0 | -16.4 | Pass |

***Table Result:*** Pass by -15.20 dB ***Worst Freq:*** 0.53 MHz

## *Measurement Uncertainty*

The listed uncertainties are the worst case uncertainty for the entire range of measurement. Please note that the uncertainty values are provided for informational purposes only and are not used in determining the PASS/FAIL results.

| Measurement | Expanded Uncertainty k=2 | Maximum allowable uncertainty (ETSI) |
|---|---|---|
| Radiated Emissions (30-1000MHz) | 5.6dB | N/A |
| Radiated Emissions (1-26.5GHz) | 4.6dB | N/A |
| Radiated Emissions (above 26.5GHz) | 4.9dB | N/A |
| Magnetic Radiated Emissions | 5.6dB | N/A |
| Conducted Emissions | 3.9dB | N/A |
| Telco Conducted Emissions (Current) | 2.9dB | N/A |
| Telco Conducted Emissions (Voltage) | 4.4dB | N/A |
| Electrostatic Discharge | 11.5% | N/A |
| Radiated RF Immunity (Uniform Field) | 1.6dB | N/A |
| Electrical Fast Transients | 23.1% | N/A |
| Surge | 23.1% | N/A |
| Conducted RF Immunity | 3dB | N/A |
| Magnetic Immunity | 12.8% | N/A |
| Dips and Interrupts | 2.3V | N/A |
| Harmonics | 3.5% | N/A |
| Flicker | 3.5% | N/A |
| Radio frequency | $8.2 \times 10^{-8}$ | $1 \times 10^{-7}$ |
| RF power, conducted | 0.7dB | 0.75dB |
| Maximum frequency deviation:<br>• Within 300Hz and 6kHz of audio frequency<br>• Within 6kHz and 25kHz of audio frequency | • 1.2%<br>• 0.1dB | • 5%<br>• 3dB |
| Adjacent channel power | 1.9dB | 3dB |
| Conducted spurious emission of transmitter, valid up to 12.75GHz | 0.7dB | 3dB |
| Conducted emission of receivers | 0.7dB | 1dB |
| Radiated emission of transmitter, valid up to 26.5GHz | 5.6dB | 6dB |
| Radiated emission of transmitter, valid up to 80GHz | 5.6dB | 6dB |
| Radiated emission of receiver, valid up to 26.5GHz | 5.6dB | 6dB |
| Radiated emission of receiver, valid up to 80GHz | 5.6dB | 6dB |
| RF level uncertainty for a given BER | 0.7dB | 1dB |
| Humidity | 2.31% | 5% |
| Temperature | 0.6℃ | 1.0℃ |
| Time | 0.8% | 10% |
| RF Power Density, Conducted | 2.2dB | 3dB |
| DC and low frequency voltages | 1.29% | 3% |
| Voltage (AC, <10kHz) | 1.29% | 2% |
| Voltage (DC) | 0.23% | 1% |
| The above reflects a 95% confidence level | | |

## Test Equipment Used

REV. 10-SEP-2008

| SPECTRUM ANALYZERS / RECEIVERS | RANGE | MN | MFR | SN | ASSET | CAT | CALIBRATION DUE |
|---|---|---|---|---|---|---|---|
| RED | 9kHz-1.8GHz | 8591E | Agilent | 3441A03559 | 00024 | I | 25-FEB-2009 |
| WHITE | 9kHz-22GHz | 8593E | Agilent | 3547U01252 | 00022 | I | 31-OCT-2008 |
| BLUE | 9kHz-1.8GHz | 8591E | Agilent | 3223A00227 | 00070 | I | 01-OCT-2008 |
| YELLOW | 9kHz-2.9GHz | 8594E | Agilent | 3523A01958 | 00100 | I | 19-JUN-2009 |
| GREEN | 9kHz-26.5GHz | 8593E | Agilent | 3829A03618 | 00143 | I | 02-JUN-2009 |
| BLACK | 9kHz-12.8GHz | 8596E | Agilent | 3710A00944 | 00337 | I | 05-SEP-2009 |
| TELECOM 3585A | 20Hz-40.0MHz | 3585A | Agilent | 2504A05219 | 00030 | I | 09-APR-2009 |
| GOLD | 100Hz-26.5 GHz | E4407B | Agilent | MY45113816 | 1284 | I | 06-AUG-2009 |
| REFERENCE EMI TEST RECEIVER | 20-1000MHz | ESVS30 | R&S | 827957/001 | 01098 | I | To be determined |
| RENTAL SA #1 (BROWN) | 9kHz-26.5GHz | E4407B | Agilent | SG44210511 | Rental | I | 29-JAN-2009 |

| LISNs/MEASUREMENT PROBES | RANGE | MN | MFR | SN | ASSET | CAT | CALIBRATION DUE |
|---|---|---|---|---|---|---|---|
| RED LISN | 9kHz-50MHz | 8012-50-R-24-BNC | SOLAR | 956348 | 00753 | I | 16-JUN-2009 |
| BLUE LISN (DC) | 50kHz-50MHz | 8012-50-R-24-BNC | SOLAR | 956349 | 00752 | I | 29-JUL-2009 |
| YELLOW-BLACK LISN | 30kHz-50MHz | 8012-50-R-24-BNC | SOLAR | 0411657 | 00248 | I | 28-MAY-2009 |
| ORANGE LISN | 9kHz-50MHz | 8012-50-R-24-BNC | SOLAR | 903707 | 00754 | I | 02-MAY-2009 |
| GOLD LISN (DC) | 9kHz-50MHz | 8012-50-R-24-BNC | SOLAR | 984734 | 00247 | I | 15-JUL-2009 |
| BROWN LISN | 9kHz-50MHz | 8012-50-R-24-BNC | SOLAR | 0411656 | 00986 | I | 15-JUL-2009 |
| GREEN LISN | 9kHz-50MHz | 8012-50-R-24-BNC | SOLAR | 984735 | 00987 | I | 20-MAR-2009 |
| YELLOW LISN | 9kHz-50MHz | 8012-50-R-24-BNC | SOLAR | 0411658 | 1080 | I | 28-MAY-2009 |
| RENTAL SILVER LISN | 9kHz-34MHz | 8012-50-R-24-BNC | SOLAR | 8379440 | RENTAL | I | 28-JUL-2009 |
| WHITE-BLACK LISN | 10kHz-30MHz | 8610-50-TS-100-N | SOLAR | 972019 | 00678 | I | 14-MAY-2009 |
| BLACK LISN | 10kHz-30MHz | 8610-50-TS-100-N | SOLAR | 972017 | 00675 | I | 30-JUN-2009 |
| RED-BLACK LISN | 10kHz-30MHz | 8610-50-TS-100-N | SOLAR | 972016 | 00677 | I | 30-JUN-2009 |
| BLUE-BLACK LISN | 10kHz-30MHz | 8610-50-TS-100-N | SOLAR | 972018 | 00676 | I | 14-MAY-2009 |
| BLUE MONITORING PROBE | 0.01-150MHz | 91550-2 | TEGAM | 12350 | 00807 | I | 31-MAY-2009 |
| YELLOW MONITORING PROBE | 0.01-150MHz | 91550-2 | ETS | 50972 | 00493 | I | 29-JAN-2010 |
| BROWN MONITORING PROBE | 0.01-250MHz | F-33-1 | FISCHER | 425 | 1110 | I | 23-JAN-2010 |
| WHITE MONITORING PROBE | 0.01-250MHz | CSP-8423-1 | SCHAFFNER | 510 | 1112 | I | 23-JAN-2010 |
| GREEN CURRENT TRANSFORMER | 40Hz-20MHz | 150 | PEARSON | 10226 | 00793 | I | 19-APR-2009 |
| BLUE CISPR LINE PROBE | 10kHz-50MHz | N/A | C-S | N/A | 00805 | II | 08-JUN-2009 |
| BLACK CISPR LINE PROBE | 10kHz-50MHz | N/A | C-S | N/A | 1254 | II | 08-JUN-2009 |
| CISPR TELCO VOLTAGE PROBE | 10kHz-30MHz | CS A/C-10 | C-S | CS01 | 00296 | II | 11-AUG-2009 |
| CISPR 22 TELCO ISN | 9kHz-30MHz | FCC-TLISN-T4 | FISCHER | 20115 | 00746 | I | 15-NOV-2008 |

| OPEN AREA TEST SITES (OATS) | FCC CODE | IC CODE | VCCI CODE | CAT | CALIBRATION DUE |
|---|---|---|---|---|---|
| SITE F | 93448 | 2762A-1 | R-1688 | II | 27-JUL-2010 |
| SITE T | 93448 | 2762A-2 | R-905 | II | 06-DEC-2009 |
| SITE A | 93448 | 2762A-4 | R-903 | II | 04-DEC-2009 |
| SITE M | 93448 | 2762A-5 | R-904 | II | 25-JUN-2010 |
| SITE J | 93448 | 2762A-3 | R-2377 | II | 06-MAY-2010 |

| CONDUCTED TEST SITES (MAINS / TELCO) | FCC CODE | IC CODE | VCCI CODE | CAT | CALIBRATION DUE |
|---|---|---|---|---|---|
| EMI 1 | 93448 | N/A | C-1801, T-268 | III | NA |
| EMI 2 | 93448 | N/A | C-1802, T-269 | III | NA |
| EMI 3 | 93448 | N/A | C-1803, T-270 | III | NA |
| EMI 4 | 93448 | N/A | C-3013, T-391 | III | NA |

| MIXERS/DIPLEXERS | RANGE | MN | MFR | SN | ASSET | CAT | CALIBRATION DUE |
|---|---|---|---|---|---|---|---|
| MIXER / HORN | 26.5-40 GHz | 11970A/28-442-6 | HP/ATM | 2332A01695/A046903-01 | 1087 | I | 01-OCT-2009 |
| MIXER / HORN | 26.5-40 GHz | 11970A/28-442-6 | HP/ATM | 3003A07825/A046903-01 | 1086 | I | 19-SEP-2008 |
| MIXER / HORN | 40-60 GHz | M19HW/A | OML | U30110-1 | 00821 | I | 29-JUN-2009 |
| MIXER | 33-50 GHz | 11970Q | HP | 3003A03155 | 00104 | I | 28-NOV-2009 |
| MIXER / HORN | 50-75 GHz | 11970V /QWH-VPRROO | HP/QUINSTAR | 2521A01197/8794001 | 1179 | I | 28-NOV-2009 |
| MIXER | 75-110 GHz | 11970W | HP | 2521A01334 | 00105 | I | 28-NOV-2009 |
| MIXER / HORN | 60-90 GHz | M12HW/A | OML | E30110-1 | 00822 | I | 29-JUN-2009 |
| MIXER / HORN | 90-140 GHz | MO8HW/A | OML | F21206-1 | 00811 | I | 29-JUN-2009 |
| MIXER / HORN | 140-220 GHz | MO5HW/A | OML | G21206-1 | 00812 | I | 29-JUN-2009 |
| DIPLEXER | 40-220 GHz | DPL.26 | OML | N/A | 00813 | I | 29-JUN-2009 |

| ABSORBING CLAMPS | RANGE | MN | MFR | SN | ASSET | CAT | CALIBRATION DUE |
|---|---|---|---|---|---|---|---|
| FISCHER CLAMP | 30-1000MHZ | F-201-23MM | FISCHER | 10 | 00081 | I | 29-JAN-2010 |

| HARMONIC & FLICKER ANALYZER | MN | MFR | SN | ASSET | CAT | CALIBRATION DUE |
|---|---|---|---|---|---|---|
| 10001I/2 AC POWER SYSTEM | (2) 500I | CALIFORNIA INSTRUMENTS | HK53687/HK53688 | 00376 | II | 04-MAR-2009 |

| PREAMPS /COUPLERS ATTENUATORS / FILTERS | RANGE | MN | MFR | SN | ASSET | CAT | CALIBRATION DUE |
|---|---|---|---|---|---|---|---|
| RED | 0.009-2000MHZ | ZFL-1000-LN | C-S | N/A | 00798 | II | 04-APR-2009 |
| BLUE | 0.009-2000MHZ | ZFL-1000-LN | C-S | N/A | 00759 | II | 04-APR-2009 |
| BLUE-BLACK | 0.009-2000MHZ | ZFL-1000-LN | C-S | N/A | 00800 | II | 30-MAY-2009 |
| GREEN | 0.009-2000MHZ | ZFL-1000-LN | C-S | N/A | 00802 | II | 04-APR-2009 |
| BLACK | 0.009-2000MHZ | ZFL-1000-LN | C-S | N/A | 00799 | II | 14-AUG-2009 |
| ORANGE | 0.009-2000MHZ | ZFL-1000-LN | C-S | N/A | 00765 | II | 30-MAY-2009 |
| RED-WHITE | 0.009-2000MHZ | ZFL-1000-LN | C-S | N/A | 1258 | II | 04-APR-2009 |
| WHITE | 1-18GHZ | SMC-12A | C-S | 426643 | 00760 | II | 08-JUL-2009 |
| BROWN | 1-20GHZ | PM2-38-218-4R5-17-15-SFF | C-S | PL1655 | 1132 | II | 04-JUN-2009 |
| RED-GREEN | 1-20GHZ | PM2-38-218-4R5-17-15-SFF | C-S | N/A | 1256 | II | 18-AUG-2009 |
| RED-BLUE | 1-20GHZ | PE2-38-218-4R5-17-15-SFF | C-S | PL3177 | 1257 | II | 29-APR-2009 |
| HF (YELLOW) | 18-26.5GHZ | AFS4-18002650-60-8P-4 | C-S | 467559 | 1266 | I | 01-OCT-2009 |
| HIGH PASS FILTER | 0.03-20 GHZ | SPA-F-55204 | K&L | 36 | 00817 | II | 08-JAN-2010 |
| LOW PASS FILTER | 0.03-18 GHZ | 11SL10-4100/X4400-O/O | K&L | 4 | 00816 | II | 08-JAN-2010 |
| HIGH PASS FILTER | 0.03-6.5 GHZ | 11SH10-1000/T3000-0/0 | K&L | 1 | 1310 | II | 08-JAN-2010 |
| HIGH PASS FILTER | 0.03-14.5 GHZ | 11SH10-3000/T9000-0/0 | K&L | 1 | 1311 | II | 08-JAN-2010 |
| HIGH PASS FILTER | 0.03-8 GHZ | VHP-19 | MINI-CIRCUITS | NA | 1287 | II | 08-JAN-2010 |
| HIGH PASS FILTER | 0.03-9 GHZ | VHP-16 | MINI-CIRCUITS | NA | 1288 | II | 08-JAN-2010 |
| HF 20DB 50W ATTENUATOR | 0.03-20 GHZ | PE 7019-20 | PASTERNACK | 01 | 00791 | II | 08-MAY-2009 |
| HF 30DB 50W ATTENUATOR | 0.03-20 GHZ | PE 7019-30 | PASTERNACK | 02 | 1168 | II | 08-MAY-2009 |
| 40DB 100W ATTENUATOR | 0.09-2000MHZ | BW-40N100W+ | MINI-CIRCUITS | V N014900638 | 1231 | II | 06-NOV-2008 |
| RFI-LOW 130 KHZ LPF | 10-100KHZ PASS | 130 KHZ LPF | KIWA | NA | 1235 | II | 17-APR-2009 |
| 50W HF DIRECT. COUPLER | 1-20GHZ | DC7420 | AR | 0325960 | 1307 | II | 06-NOV-2008 |
| 500W DIRECT. COUPLER | 0.009-2000MHZ | C6277-10 | WERLATONE | 41911 | 1264 | II | 06-NOV-2008 |
| 200W DIRECT. COUPLER | 0.009-2000MHZ | C5571-10 | WERLATONE | 23098 | 1185 | II | 06-NOV-2008 |

| ANTENNAS | RANGE | MN | MFR | SN | ASSET | CAT | CALIBRATION DUE |
|---|---|---|---|---|---|---|---|
| GREEN BILOG | 30-2000MHZ | CBL6112B | CHASE | 2742 | 00620 | II | 13-FEB-2010 |
| GREEN-BLACK BILOG | 30-2000MHZ | CBL6112B | CHASE | 2412 | 00127 | II | 13-FEB-2010 |
| GREEN-RED BILOG | 30-2000MHZ | CBL6112B | CHASE | 2435 | 00990 | I | 22-APR-2010 |
| BLUE BILOG | 30-1000MHZ | 3143 | EMCO | 1271 | 00803 | II | 06-MAY-2009 |
| GRAY BILOG | 20-2000MHZ | 3141 | EMCO | 9703-1038 | 00066 | II | 07-MAY-2009(EMI) / 07-FEB-2009(RFI2) |
| YELLOW-BLACK BILOG | 20-2000MHZ | CBL6140A | CHASE | 1112 | 00126 | II | 07-MAY-2009(EMI) / 14-AUG-2009(RFI1) |
| RED-WHITE BILOG | 30-2000MHZ | JB1 | SUNOL | A091604-1 | 01105 | I | 07-NOV-2008 |
| RED-BLACK BILOG | 30-2000MHZ | JB1 | SUNOL | A091604-2 | 01106 | I | 20-OCT-2008 |
| RED-BROWN BILOG | 30-2000MHZ | JB1 | SUNOL | A0032406 | 1218 | I | 11-AUG-2010 |
| YELLOW HORN | 1-18GHZ | 3115 | EMCO | 9608-4898 | 00037 | I | 31-MAY-2009(EMI) / 22-MAY-2009 (RFI) |
| BLACK HORN | 1-18GHZ | 3115 | EMCO | 9703-5148 | 00056 | I | 22-JUN-2009(EMI) / 22-MAY-2009 (RFI) |
| ORANGE HORN | 1-18GHZ | 3115 | EMCO | 0004-6123 | 00390 | I | 12-JUN-2009 (EMI) / 16-MAY-2009 (RFI) |
| HF (WHITE) HORN | 18-26.5GHZ | 801-WLM | WAVELINE | 00758 | 00758 | I | 01-OCT-2008 |
| SMALL LOOP | 10KHZ-30MHZ | PLA-130/A | ARA | 1024 | 00755 | I | 05-MAR-2010 |
| LARGE LOOP | 20HZ-5MHZ | 6511 | EMCO | 9704-1154 | 00067 | I | 20-FEB-2010 |
| RENTAL 6509 LOOP | 1KHZ-30MHZ | 6509 | EMCO | 1503 | RENTAL | I | 04-FEB-2010 |
| ACTIVE MONOPOLE | 30HZ-30MHZ | 3301B | EMCO | 3824 | 00068 | II | 06-JUN-2009 |
| INDUCTION COIL | 50-60HZ | 1000-4-8 | C-S | N/A | 00778 | II | 08-MAY-2010 |
| INDUCTION COIL | 50-60HZ | 1000-4-8 | C-S | N/A | 1314 | II | 08-MAY-2010 |
| ADJUSTABLE DIPOLE | 30-1000MHZ | 3121C | EMCO | 1370 | 00757 | I | 26-OCT-2008 |
| ADJUSTABLE DIPOLE | 30-1000MHZ | 3121C | EMCO | 1371 | 00756 | I | 09-NOV-2008 |
| RE101 LOOP SENSOR | 30HZ-100KHZ | RE101-13.3CM | C-S | N/A | 00818 | II | 22-MAR-2009 |
| RS101 RADIATING LOOP | 30HZ-100KHZ | RS101-12CM | C-S | N/A | 00819 | II | 22-MAR-2009 |
| RS101 LOOP SENSOR | 30HZ-100KHZ | RS101-4CM | C-S | N/A | 00820 | II | 22-MAR-2009 |

| EFT | MN | MFR | SN | ASSET | CAT | CALIBRATION DUE |
|---|---|---|---|---|---|---|
| CAS 3025 BURST VERIFICATION ATTENUATORS | INA 265A/266 | SCHAFFNER | 20096 | 00947 | II | 31-JUL-2010 |
| EFT DIRECT COUPLING CAP | N/A | C-S | 01 | 00794 | II | 19-AUG-2008 |
| MODULA6150 | MODULA6150 | TESEQ | 34525 | 1268 | I | OUT FOR CAL |
| RED BESTEMC-2 | 711-1100 | SCHAFFNER | 200122-074SC | 00623 | II | 27-FEB-2009 |

| ESD GENERATORS | MN | MFR | SN | ASSET | CAT | CALIBRATION DUE |
|---|---|---|---|---|---|---|
| GREEN | NSG435 | SCHAFFNER | 000839 | 00763 | I | 12-NOV-2008 |
| RED | NSG435 | SCHAFFNER | 001625 | 00762 | I | 13-MAR-2009 |
| YELLOW | 930D | ETS | 201 | 00673 | I | 27-SEP-2009 |

| DIPS AND INTERRUPTS | MN | MFR | SN | ASSET | CAT | CALIBRATION DUE |
|---|---|---|---|---|---|---|
| MODULA6150 | MODULA6150 | TESEQ | 34525 | 1268 | I | OUT FOR CAL |
| INA 6502 AUTOMATIC STEPTRANSFORMER | INA 6502 | TESEQ | 105 | 1269 | I | OUT FOR CAL |
| RED BESTEMC-2 | 711-1100 | SCHAFFNER | 200122-074SC | 00623 | II | 27-FEB-2009 |
| ECOMPACT4 | ECOMPACT4 | HAEFELY | 155858 | RENTAL | II | 11-FEB-2009 |

| CHAMBERS AND STRIPLINE | MN | MFR | SN | ASSET | CAT | CALIBRATION DUE |
|---|---|---|---|---|---|---|
| RFI 1 CHAMBER | 3 METER COMPACT | PANASHIELD | N/A | 00797 | II | 14-AUG-2009 |
| RFI 2 CHAMBER | 04' X 07' SHIELDING SYSTEM | LINDGREN | 13329 | 00795 | II | 07-FEB-2009 |
| RFI 3 STRIPLINE | N/A | C-S | N/A | 00796 | III | NA |
| ENVIRONMENTAL (SAFETY) | ECL5 | B-M-A INC. | 2041 | 00029 | I | 03-JAN-2009 |
| ENVIRONMENTAL (SAFETY) | SGTH-31S | B-M-A INC. | 2245 | 00321 | I | 03-JAN-2009 |

| AMPLIFIERS | RANGE | MN | MFR | SN | ASSET | CAT | CALIBRATION DUE |
|---|---|---|---|---|---|---|---|
| RED | 0.5-1000MHZ | 10W1000B | AR | 18708 | 00032 | II | OUT OF CAL / FEEDBACK ONLY |
| GREEN | 0.5-1000MHZ | 10W1000B | AR | 23423 | 00123 | II | 07-FEB-2009 (RFI2) |
| BLUE | 0.01-100MHZ | 75A250 | AR | 19165 | 00039 | II | 09-JUN-09 (NEBS CRFI) / 24-JUN-2009 (EU CRFI) |
| BLACK | 0.01-100MHZ | 75A250 | AR | 23411 | 00122 | II | 09-JUN-09 (NEBS CRFI) / 24-JUN-2009 (EU CRFI) |
| ORANGE | 0.01-100MHZ | 75A250 | AR | 26827 | 00367 | II | 09-JUN-09 (NEBS CRFI) / 24-JUN-2009 (EU CRFI) |
| BROWN 150W | 0.1-250MHZ | 150A250 | AR | 313454 | 1255 | II | 07-FEB-2009 (RFI2) |
| YELLOW 150W | 80-1000MHZ | 150W1000 | AR | 0324607 | 1253 | II | 13-AUG-2009 (RFI1) |
| 500W AMP | 0.1-250MHZ | 500A250 | AR | 0326385 | 1297 | II | 14-AUG-2009 (RFI1) |
| GTC 1-2.6 | 1.0-2.6 GHZ | GRF5016A | GTC | 1221 | RENTAL | II | 16-MAY-2009 (ORANGE HORN) / 22-MAY-2009 (BLK AND YELLOW) |
| HUGHES 10W | 2.0-4.0GHZ | 1177H01 | HUGHES | 055 | RENTAL | II | 16-MAY-2009 (ORANGE HORN) / 22-MAY-2009 (BLK AND YELLOW) |
| HUGHES 10W | 4.0-8.0GHZ | 8010H02F | HUGHES | 240 | RENTAL | II | OUT OF SERVICE |
| HUGHES 10W | 4.0-8.0 GHZ | 8010H02F | HUGHES | 197 | RENTAL | II | 11-AUG-2009 (ORANGE, BLACK AND YELLOW HORNS) |
| HUGHES 10W | 8-10.0GHZ | 80108 | HUGHES | 138 | RENTAL | II | 16-MAY-2009 (ORANGE HORN) / 22-MAY-2009 (BLK AND YELLOW) |
| HP495A | 7.0-10.0GHZ | HP495A | HP | 304-00237 | 00086 | II | OUT OF SERVICE (SPARE) |
| AUDIO AMP | AUDIO FREQ | MPA-200 | RADIO SHACK | 700438 | NONE | III | NA |
| AUDIO AMP | AUDIO FREQ | MPA-200 | RADIO SHACK | 708545 | 00862 | III | NA |

| FIELD PROBES | RANGE | MN | MFR | SN | ASSET | CAT | CALIBRATION DUE |
|---|---|---|---|---|---|---|---|
| RED | 0.01-1000MHZ | HI-4422 | HOLADAY | 90369 | 00031 | I | 24-MAR-2009 |
| GREEN | 0.01-1000MHZ | HI-4422 | HOLADAY | 97363 | 00136 | I | 09-NOV-2008 |
| BLUE | 0.01-1000MHZ | HI-4422 | HOLADAY | 95696 | 01100 | I | 01-MAY-2009 |
| Reference Laser Field Probe | 0.1-6000MHZ | FL7006 Star Probe | AR | 321700 | 1252 | I | 31-JAN-2010 |
| MICROWAVE SURVEY METER | 2450MHZ | HI-1501 | HOLADAY | 00075464 | 1244 | \| | Calibrate Before Use |
| GAUSSMETER (ELF METER) | 25Hz–1kHz | 4080 | SYPRIS | 114173 | 1305 | I | 02-MAY-2009 |

| SIGNAL GENERATORS | RANGE | MN | MFR | SN | ASSET | CAT | CALIBRATION DUE |
|---|---|---|---|---|---|---|---|
| RED | 0.09-2000MHZ | HP8648B | Agilent | 3847U02192 | 00366 | I | 07-MAY-2009 |
| BLUE | 0.1-1000MHZ | HP8648A | Agilent | 3426A00548 | 00034 | I | 26-SEP-2008 |
| GREEN | 0.09-2000MHZ | HP8648B | Agilent | 3623A02072 | 00125 | I | 21-OCT-2008 |
| ORANGE | 0.1-1000MHZ | HP8648B | Agilent | 3537A01210 | 00025 | I | 12-JUN-2009 |
| BROWN | 0.01HZ-15MHZ | HP33120A | Agilent | US36016621 | 1211 | I | OUT OF SERVICE |
| WHITE | 0.01HZ-15MHZ | HP33120A | Agilent | US36048143 | 1219 | I | 22-MAY-2009 |
| BROWN-WHITE | 0.01HZ-15MHZ | HP33120A | Agilent | SG40019842 | 1232 | I | 13-NOV-2008 |
| BLUE-WHITE | 0.1HZ-13MHZ | HP3312A | Agilent | 1432A07632 | 00775 | I | 26-MAR-2009 |
| RFI-HIGH SWEEPER | 0.01-20.0GHZ | HP83752A | Agilent | 3610A01133 | 00087 | II | 15-MAY-2009 |
| REFERENCE SWEEPER | 0.01-26.5GHZ | HP8673D | Agilent | 3146A01212 | 1317 | I | 22-MAY-2009 |
| AM/FM STEREO SIG. GEN. | 0.1-170MHZ | LG3236 | LEADER | 3687301 | 00959 | I | To be determined |
| IMPULSE GENERATOR | 1-100HZ | CIG-25 | ELECTRO-METRICS | 290 | 00942 | I | To be determined |

| BULK INJECTION CLAMPS | RANGE | MN | MFR | SN | ASSET | CAT | CALIBRATION DUE |
|---|---|---|---|---|---|---|---|
| GREEN (NEBS CRFI) | 0.01-30MHZ | 95236-1 | ETS | 50215 | 00118 | II | 09-JUN-09 (BLUE, BLACK & ORANGE AMP) |
| GREEN (EU CRFI) | 0.10-100MHZ | 95236-1 | ETS | 50215 | 00118 | II | 24-JUN-09 (BLUE, BLACK & ORANGE AMP) |
| RED (NEBS CRFI) | 0.01-30MHZ | 95236-1 | ETS | 34026 | 1020 | II | 09-JUN-09 (BLUE, BLACK & ORANGE AMP) |
| RED (EU CRFI) | 0.10-100MHZ | 95236-1 | ETS | 34026 | 1020 | II | 24-JUN-09 (BLUE, BLACK & ORANGE AMP) |
| RED (RTCA/DO-160E) | 0.01-2MHZ | 95236-1 | ETS | 34026 | 1020 | II | 10-JAN-2010 (BLACK) |
| BLUE (RTCA/DO-160E) | 2-450MHZ | 9142-1N | SOLAR | 063824 | 1237 | II | 10-JAN-2010 (RED) |

| ANSI T1.315 | MFR | ASSET | CAT | CALIBRATION DUE |
|---|---|---|---|---|
| SBC NOISE CART | C-S | 1285 | III | CALIBRATION NOT REQUIRED |
| SBC TRANSIENT CART | C-S | 1286 | III | WAVESHAPE VERIFIED BEFORE USE |

| OSCILLOSCOPES | MN | MFR | SN | ASSET | CAT | CALIBRATION DUE |
|---|---|---|---|---|---|---|
| EMC 100MHZ | TDS 220 | TEKTRONIX | C036986 | 1166 | I | 15-MAY-2009 |
| ESD REFERENCE 1GHZ | TDS 684B | TEKTRONIX | B011287 | RENTAL | I | 07-MAY-2009 |
| 400MHZ E*SCOPE | TDS 3044B | TEKTRONIX | C010074 | 1275 | I | 11-JUL-2009 |
| PRODUCT SAFETY 100 MHZ | TDS 340 | TEKTRONIX | B012357 | 00737 | I | 17-OCT-2008 |
| TELECOM 100 MHZ | 54645A | HP/AGILENT | US36320452 | 00103 | I | 21-SEP-2008 |
| DIFFERENTIAL PROBE | 4222 | PROBEMASTER | 07-134 | 1296 | I | 10-OCT-2008 |
| 500MHZ 10X PROBE | P6139A | TEKTRONIX | NA | 1280 | I | 19-JUL-2009 |
| 500MHZ 10X PROBE | P6139A | TEKTRONIX | NA | 1281 | I | 19-JUL-2009 |
| REFERENCE 500MHZ 10X PROBE | P6139A | TEKTRONIX | NA | 1282 | I | 11-JUL-2009 |
| REFERENCE 500MHZ 10X PROBE | P6139A | TEKTRONIX | NA | 1319 | I | 11-JUL-2009 |
| 500MHZ 10X PROBE | P6139A | TEKTRONIX | NA | 1283 | I | 19-JUL-2009 |
| REFERENCE HV 1000X PROBE | P6015A | TEKTRONIX | B056555 | 1277 | I | 11-JUL-2009 |
| REFERENCE HV 1000X PROBE | P6015A | TEKTRONIX | B056590 | 1278 | I | 11-JUL-2009 |

| CDN NETWORKS | RANGE | MN | MFR | ASSET | CAT | CALIBRATION DUE |
|---|---|---|---|---|---|---|
| BLUE | 0.10-100MHZ | 20A M-3 | C-S | 00806 | II | 24-JUN-09 (BLUE, BLACK & ORANGE AMP) |
| RED | 0.10-100MHZ | 15A M-3 | C-S | 00780 | II | 24-JUN-09 (BLUE, BLACK & ORANGE AMP) |
| YELLOW-BLACK | 0.10-100MHZ | 15A M-3 | C-S | 00784 | II | 24-JUN-09 (BLUE, BLACK & ORANGE AMP) |
| GREEN | 0.10-100MHZ | 30A M-3 | C-S | 00779 | II | 24-JUN-09 (BLUE, BLACK & ORANGE AMP) |
| YELLOW | 0.10-100MHZ | 30A M-5 | C-S | 00804 | II | 14-AUG-2009 (BLK AMP) 15-AUG-2009 (BLE & ORNGE) |
| BROWN | 0.10-100MHZ | M-3 | C-S | 1169 | II | 24-JUN-09 (BLUE, BLACK & ORANGE AMP) |
| BROWN-WHITE | 0.10-100MHZ | M-3 | C-S | 1170 | II | 24-JUN-09 (BLUE, BLACK & ORANGE AMP) |
| BROWN-BLACK | 0.10-100MHZ | M-2 (DC) | C-S | 1171 | II | 24-JUN-09 (BLUE, BLACK & ORANGE AMP) |
| RED-BLACK | 0.10-100MHZ | M-2 (DC) | C-S | 1177 | II | 24-JUN-09 (BLUE, BLACK & ORANGE AMP) |
| GREEN-WHITE | 0.10-100MHZ | M-2 (DC) | C-S | 1259 | II | 24-JUN-09 (BLUE, BLACK & ORANGE AMP) |
| YELLOW (RES) | 0.10-100MHZ | 100Ω RESISTOR | C-S | 00810 | II | 24-JUN-09 (BLUE, BLACK & ORANGE AMP) |
| GREEN (RES) | 0.10-100MHZ | 100Ω RESISTOR | C-S | 1172 | II | 24-JUN-09 (BLUE, BLACK & ORANGE AMP) |
| ARTIFICIAL HAND | 510Ω / 220PF | CS-AH | C-S | 1262 | II | 26-JUN-2009 |
| ARTIFICIAL HAND | 510Ω / 220PF | CS-AH | C-S | 1263 | II | 26-JUN-2009 |

| RMS VOLTMETERS/CURRENT CLAMP | MN | MNFR | SN | ASSET | CAT | CALIBRATION DUE |
|---|---|---|---|---|---|---|
| TRUE-RMS MULTIMETER | 79III | FLUKE | 71700298 | 00769 | I | 06-FEB-2009 |
| TRUE RMS MULTIMETER | 179 | FLUKE | 89280616 | 1228 | I | 04-SEP-2008 |
| TRUE-RMS MULTIMETER | 177 | FLUKE | 83390024 | 00973 | I | 22-MAR-2009 |
| TRUE-RMS MULTIMETER (REFERENCE) | 177 | FLUKE | 83390025 | 00974 | I | 11-MAR-2009 |
| TRUE-RMS MULTIMETER (D RAND) | 177 | FLUKE | 91320460 | 1226 | 1 | 11-MAR-2009 |
| TRUE-RMS MULTIMETER | 177 | FLUKE | 83430419 | 00975 | I | 31-MAR-2009 |
| AC/DC CURRENT PROBE | A622 | TEKTRONIX | 08DD 6275DV | 1246 | I | 12-MAR-2009 |
| CURRENT SHUNT | 200A50MV | SIMPSON | NA | 1290 | I | 25-AUG-2010 |

| POWER/NOISE METERS | MN | MFR | SN | ASSET | CAT | CALIBRATION DUE |
|---|---|---|---|---|---|---|
| POWER METER | 435B | HP | 2445A11012 | 00773 | I | 07-MAY-2009 |
| POWER METER | 437B | HP | 2912A01367 | 01099 | I | 06-MAY-2009 |
| POWER SENSOR | 8481A | HP | 2702A61351 | 00774 | I | 06-MAY-2009 |
| POWER METER | 4232A | BOONTON | 11000 | 1260 | I | 29-AUG-2009 |
| POWER SENSOR | 51013-4E | BOONTON | 34457 | 1261 | I | 29-AUG-2009 |
| PSOPHOMETER | 2429 | BRUEL & KJAER | 1237642 | 00585 | II | 23-FEB-2009 |
| TRANSMISSION LINE TESTER (DBRNC) | 185T | AMREL | 18507030010 | 1236 | II | 04-APR-2009 |
| TRANSMISSION LINE TESTER (DBRNC) | 185T | AMREL | 998658 | 00823 | II | 04-APR-2009 |
| THD, POWER &HARMONIC ANALYZER | NANOVIP PLUS | ELCONTROL ENERGY | 15925 | 00250 | I | 04-SEP-2009 |
| CURRENT CLAMP FOR NANOVIP | MN 13-EL | ELCONTROL ENERGY | NA | 1293 | I | 04-SEP-2009 |

| OVERVOLTAGE CHAMBERS | MN | MFR | SN | ASSET | CAT | CALIBRATION DUE |
|---|---|---|---|---|---|---|
| 72KW POWER FAULT SIMULATOR | OV1 | C-S | N/A | 00792 | III | N/A |
| POWER FAULT SIMULATOR | OV2 | C-S | N/A | 00116 | III | N/A |

| DIPOLE TAPE MEASURES | MN | MFR | SN | ASSET | CAT | CALIBRATION DUE |
|---|---|---|---|---|---|---|
| 26FT TAPE #1 | 2338CME | LUFKIN | C3166-1 | 00776 | II | 22-MAR-2009 |
| 26FT TAPE #2 | 2338CME | LUFKIN | C3166-2 | 00777 | II | 22-MAR-2009 |

| *SURGE GENERATORS* | MN | MFR | SN | ASSET | CAT | CALIBRATION DUE |
|---|---|---|---|---|---|---|
| TRANSIENT WAVEFORM MONITOR | TWM-5 | CDI | 003982 | 00323 | II | 03-JUN-2009 |
| UNIVERSAL SURGE GENERATOR | M5 | CDI | 003966 | 00324 | II | CAL BEFORE USE |
| THREE PHASE COUPLING NWK | 3CN | CDI | 003455 | 00325 | II | CAL BEFORE USE |
| 1.2X50US PLUGIN MODULE | 1.2X50US PLUGIN | CDI | N/A | 00842 | II | CAL BEFORE USE |
| 10X160US PLUGIN MODULE | 10X160US PLUGIN | C-S | N/A | 00843 | II | CAL BEFORE USE |
| 10X560US PLUGIN MODULE | 10X560US PLUGIN | C-S | N/A | 00841 | II | CAL BEFORE USE |
| PSURGE CONTROLLER MODULE | PSURGE 8000 | HAEFELY | 150267 | 00879 | II | 01-JUL-2009 |
| COUPLING/DECOUPLING MODULE | PCD 900 | HAEFELY | 149213 | 00880 | II | 01-JUL-2009 |
| IMPULSE MODULE | PIM 900 | HAEFELY | 149202 | 00881 | II | 01-JUL-2009 |
| HIGH VOLTAGE CAP NWK 5KVDC, 18µF | CS-HVCC | C-S | 01 | 00772 | II | 16-APR-2009 |
| NEBS SURGE GENERATOR (LIMITED CAL) | N/A | C-S | N/A | 00088 | II | 17-JUN-2009 |
| 2X10US SURGE GENERATOR | 2X10US | C-S | N/A | 00846 | II | CAL BEFORE USE |
| 10X700US SURGE GENERATOR | 10X700US | C-S | N/A | 00847 | II | CAL BEFORE USE |
| 12 PAIR SURGE RESISTOR MODULE | N/A | C-S | N/A | 00768 | II | 17-JUN-2009 |
| VSS 500-M | TSS 500 M12 S2 | EMTEST | V0502100032 | 1155 | II | CAL BEFORE USE |
| TSS 500-M | TSS500 M10 | EMTEST | V0502100031 | 1156 | II | CAL BEFORE USE |
| NSG 2050 SURGE GENERATOR | NSG 2050 | TESEQ | 200720-605LU | 1273 | II | 30-JUL-2009 |
| PNW 2050 1.2X50 IMPULSE NETWORK | PNW 2050 | TESEQ | 200711-604LU | 1279 | II | 30-JUL-2009 |
| CDN 133 3 PHASE COUPLING NETWORK | CDN 133 | TESEQ | 34416 | 1274 | II | 30-JUL-2009 |
| MODULA6150 | MODULA6150 | TESEQ | 34525 | 1268 | I | OUT FOR CAL |
| RED BESTEMC-2 | 711-1100 | SCHAFFNER | 200122-074SC | 00623 | II | 27-FEB-2009 |
| SURGE CURRENT MONITOR | CM-1-L | ION PHYSICS | 896730 | 1276 | II | 26-AUG-2008 |
| ECOMPACT4 | ECOMPACT4 | HAEFELY | 155858 | RENTAL | II | 11-FEB-2009 |

| *METEOROLOGICAL METERS* | MN | MFR | SN | ASSET | CAT | CALIBRATION DUE |
|---|---|---|---|---|---|---|
| TEMP./HUMIDITY/ATM. PRESSURE GAUGE | 7400 PERCEPTION II | DAVIS | N/A | 00965 | II | OUT OF SERVICE |
| TEMPERATURE /HUMIDITY GAUGE | THG-912 | HUGER | 4000562 | 00789 | I | 31-JAN-2009 |
| WEATHER CLOCK (PRESSURE ONLY) | BA928 | OREGON SCIENTIFIC | C3166-1 | 00831 | I | 08-FEB-2009 |
| OFFICE HYGRO/THERMOMETER | 35519-044 | CONTROL COMPANY | 72436083 | 1336 | I | 07-AUG-2009 |
| HYGRO/THERMOMETER (SITE A) | 35519-044 | CONTROL COMPANY | 72457628 | 1337 | I | 14-AUG-2009 |
| HYGRO/THERMOMETER (EMI3) | 35519-044 | CONTROL COMPANY | 72457729 | 1338 | I | 14-AUG-2009 |
| HYGRO/THERMOMETER (EMI4) | 35519-044 | CONTROL COMPANY | 72457728 | 1339 | I | 14-AUG-2009 |
| HYGRO/THERMOMETER (EMI2) | 35519-044 | CONTROL COMPANY | 72457719 | 1340 | I | 14-AUG-2009 |
| HYGRO/THERMOMETER (OV1) | 35519-044 | CONTROL COMPANY | 72457633 | 1341 | I | 14-AUG-2009 |
| HYGRO/THERMOMETER (SITE F) | 35519-044 | CONTROL COMPANY | 72457631 | 1342 | I | 14-AUG-2009 |
| HYGRO/THERMOMETER (SITE M) | 35519-044 | CONTROL COMPANY | 72457758 | 1343 | I | 14-AUG-2009 |
| HYGRO/THERMOMETER (EMI1) | 35519-044 | CONTROL COMPANY | 72457730 | 1344 | I | 14-AUG-2009 |
| HYGRO/THERMOMETER (RFI1) | 35519-044 | CONTROL COMPANY | 72457635 | 1334 | I | 26-NOV-2009 |
| HYGRO/THERMOMETER (RFI2) | 35519-044 | CONTROL COMPANY | 72457738 | 1335 | I | 26-NOV-2009 |
| HYGRO/THERMOMETER (RFI3) | 35519-044 | CONTROL COMPANY | 72457642 | 1345 | I | 14-AUG-2009 |
| HYGRO/THERMOMETER (EMC 1-2) | 35519-044 | CONTROL COMPANY | 72457636 | 1346 | I | 14-AUG-2009 |
| HYGRO/THERMOMETER (SITE T) | 35519-044 | CONTROL COMPANY | 72457639 | 1347 | I | 14-AUG-2009 |
| HYGRO/THERMOMETER (EMC 3-4) | 35519-044 | CONTROL COMPANY | 72457647 | 1348 | I | 14-AUG-2009 |
| THERMOCOUPLE MODULE(FOR DMM) | 80TK | FLUKE | 93410013 | 1308 | I | 20-NOV-2008 |
| THERMOCOUPLE MODULE (FOR DMM) | 80TK | FLUKE | 93410017 | 1309 | I | 20-NOV-2008 |

| *CONSUMABLES* | SPEC. | MFR | STOCK/MN | ASSET | CAT | CALIBRATION DUE |
|---|---|---|---|---|---|---|
| NEBS CHEESECLOTH | 26-28M/KG | ED&D | ACC-01 | N/A | III | N/A |
| NEBS CARBON BLOCK | 3-MIL-GAP 1KV SURGE | RELIABLE | 3AB | N/A | III | N/A |

All equipment is calibrated using standards traceable to NIST or other nationally recognized calibration standard.

## *Jurisdictional Labeling and Required Instruction Manual Inserts*

### FCC Requirements

### Required Equipment Authorization for Device Type

| Type of Device | Equipment Authorization Required |
|---|---|
| TV broadcast receiver | Verification |
| FM broadcast receiver | Verification |
| CB receiver | Declaration of Conformity or Certification |
| Superregenerative receiver | Declaration of Conformity or Certification |
| Scanning receiver | Certification |
| Radar detector | Certification |
| All other receivers subject to part 15 | Declaration of Conformity or Certification |
| TV interface device | Declaration of Conformity or Certification |
| Cable system terminal device | Declaration of Conformity |
| Stand-alone cable input selector switch | Verification |
| Class B personal computers and peripherals | Declaration of Conformity or Certification |
| CPU boards and internal power supplies used with Class B personal computers | Declaration of Conformity or Certification |
| Class B personal computers assembled using authorized CPU boards or power supplies | Declaration of Conformity |
| Class B external switching power supplies | Verification |
| Other Class B digital devices & peripherals | Verification |
| Class A digital devices, peripherals & external switching power supplies | Verification |
| Access Broadband over Power Line (Access BPL) | Certification |
| All other devices | Verification |

### FCC Required labeling for Verified Devices 47 CFR Part 15.19

Verified devices must have the following label permanently affixed in a location accessible to the user:

*This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.*

No distinction is made between Class A or Class B devices on the label.

When the device is so small or for such use that it is not practicable to place label on it, the information shall be placed in a prominent location in the instruction manual supplied to the user or, alternatively, shall be placed on the container in which the device is marketed.

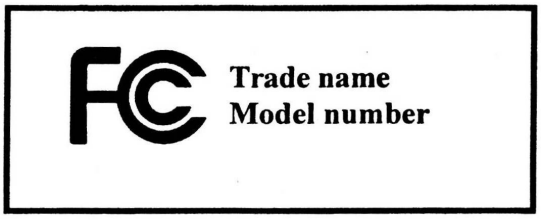
Where a device is constructed in two or more sections connected by wires and marketed together, the label is only required to be affixed to the main control unit.

## FCC Required labeling for Class B Personal Computers and Peripherals Devices 47 CFR Part 15.19 subject to Declaration of Conformity

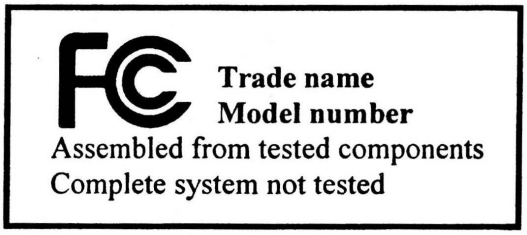
Personal computers and peripherals subject to authorization under a Declaration of Conformity shall be labeled as follows:

(1) The label shall be located in a conspicuous location on the device and shall contain the unique identification described in Section 2.1074 and the following logo:

(i) If the product is authorized based on testing of the product or system:




(ii) If the product is authorized based on assembly using separately authorized components and the resulting product is not separately tested:




(2) When the device is so small or for such use that it is not practicable to place the statement specified under paragraph (b)(1) of this section on it, such as for a CPU board or a plug-in circuit board peripheral device, the text associated with the logo may be placed in a prominent location in the instruction manual or pamphlet supplied to the user. However, the unique identification (trade name and model number) and the logo must be displayed on the device.

(3) The label shall not be a stick-on, paper label. The label on these products shall be permanently affixed to the product and shall be readily visible to the purchaser at the time of purchase, as described in Section 2.925(d). "Permanently affixed" means that the label is etched, engraved, stamped, silk-screened, indelibly printed, or otherwise permanently marked on a permanently attached part of the equipment or on a nameplate of metal, plastic, or other material fastened to the equipment by welding, riveting, or a permanent adhesive. The label must be designed to last the expected lifetime of the equipment in the environment in which the equipment may be operated and must not be readily detachable.

## FCC Required Instruction Manual Inserts CFR 47 Part 15.21 and 15.105

The user's manual must caution the user that changes or modifications not expressly approved by the manufacturer could void the user's FCC granted authority to operate the equipment. In addition the following information should be inserted:

(a) For a Class A digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

*Note: this equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.*

(b) For a Class B digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

*Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:*

- *Reorient or relocate the receiving antenna.*
- *Increase the separation between the equipment and receiver.*
- *Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.*
- *Consult the dealer or an experienced radio/TV technician for help.*

(c ) The provisions of paragraphs (a) and (b) of this section do not apply to digital devices exempted from the technical standards under the provisions of § 15.103.

(d ) For systems incorporating several digital devices, the statement shown in paragraph (a) or (b) of this section needs to be contained only in the instruction manual for the main control unit.

Our facility codes can be found in the *Test Equipment Used* Section starting on page 12.

## Canadian Requirements

Digital products and ISM products must be labeled by a notice in French and English. The notice **must** take the form of a label on the product. As an alternative, where it is not feasible to label the product due to product size or other consideration, the notice must be reproduced in the manual. Note that considerations such as product appearance are not considered to meet the feasibility test. The notice must state that the product is in compliance with Canadian Interference-Causing Equipment regulations and may be in your own words. A suggested text is:

**For ITE products:**

This Class A or B digital apparatus complies with Canadian ICES-003.
Cet appareil numerique de la classe A or B est conforme a la norme NMB-003 du Canada.

**For ISM products:**

This ISM apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.
Ce generateur de frequence radio ISM respecte toutes les exigences du Reglement sur le materiel brouilleur du Canada.

Although the ITE limits are different from the FCC in some minor ways, equipment which complies with the FCC limits is considered by Industry Canada to be compliant with the Canadian rules. For ITE, equipment in compliance with either FCC Part 15 or CISPR 22 is considered to meet ICES-003. ISM equipment limits are the same as the EU EN55011 emission limits. Reports must be kept on file for review by the appropriate Canadian Minister for a period of five years.

Our facility codes can be found in the *Test Equipment Used* Section starting on page 12.

## *Conditions Of Testing*

**[Bureau Veritas Consumer Products Services, Inc., a Massachusetts corporation]**, and/or its affiliates (collectively, the "Company") will conduct, at the request of the Submitter ("**Client**"), the tests specified on the submitted Test Request Form or equivalent in accordance with, and subject to, the following terms and conditions (collectively, "**Conditions**"):

1. All orders for tests are subject to acceptance by the Company, and no order will constitute a binding commitment of the Company unless and until such order is accepted by it, as evidenced by the issuance of a written report ("**Test Report**") by the Company. The Test Report is issued solely by the Company, is intended for the exclusive use of Client and shall not be published, used for advertising purposes, copied or replicated for distribution to any other person or entity or otherwise publicly disclosed without the prior written consent of the Company. By submitting a request for services to the Company, Client consents to the disclosure to accreditation bodies of those records of Client relevant to the accreditation body's assessment of the Company's competence and compliance with relevant accreditation criteria. The Company shall not be liable for any loss or damage whatsoever resulting from the failure of the Company to provide its services within any time period for completion estimated by the Company. If Client anticipates using the Test Report in any legal proceeding, arbitration, dispute resolution forum or other proceeding, it shall so notify the Company prior to submitting the Test Report in such proceeding. The Company has no obligation to provide a fact or expert witness at such proceeding unless the Company agrees in advance to do so for a separate and additional fee.
2. The Test Report will set forth the findings of the Company solely with respect to the test samples identified therein. Unless specifically and expressly indicated in the Test Report, the results set forth in such Test Report are not intended to be indicative or representative of the quality or characteristics of the lot from which a test sample is taken, and Client shall not rely upon the Test Report as being so indicative or representative of the lot or of the tested product in general. The Test Report will reflect the findings of the Company at the time of testing only, and the Company shall have no obligation to update the Test Report after its issuance. The Test Report will set forth the results of the tests performed by the Company based upon the written information provided to the Company. The Test Report will be based solely on the samples and written information submitted to the Company by Client, and the Company shall not be obligated to conduct any independent investigation or inquiry with respect thereto.
3. The Company may, in its sole discretion, destroy samples which have been furnished to the Company for testing and which have not been destroyed in the course of testing. The Company may delegate the performance of all or a portion of the services contemplated hereunder to an affiliate, agent or subcontractor of the Company, and Client consents to such delegation.
4. These Conditions and the Test Report represent the entire understanding of the parties hereto with respect to the subject matter hereof and of the Test Report, and no modification, variance or extrapolation with respect thereto shall be permitted without the prior written consent of the Company.
5. The names, service marks, trademarks and copyrights of the Company and its affiliates, including the names "**BUREAU VERITAS**," "**BUREAU VERITAS CONSUMER PRODUCTS SERVICES**," "**BVCPS**", "**MTL**", "**ACTS**", "**MTL-ACTS**" and **CURTIS-STRAUS** (collectively, the "**Marks**") are and shall remain the sole property of the Company or its affiliates and shall not be used by Client except solely to the extent that Client obtains the prior written approval of the Company and then only in the manner prescribed by the Company. Client shall not contest the validity of the Marks or take any action that might impair the value or goodwill associated with the Marks or the image or reputation of the Company or its affiliates.
6. Payment in full shall be due 30 days after the date of invoice. Interest shall be due on overdue amounts from the due date until paid at an interest rate of 1.5% per month or, if less, the maximum rate permitted by law. The Company reserves the right, at any time and from time to time, to revoke any credit extended to Client. Client shall reimburse the Company for any costs it incurs in collecting past due amounts, including court costs and fees and expenses of attorneys and collection agencies. The Test Report may not be used or relied upon by Client if and for so long as Client fails to pay when due any invoice issued by the Company or any affiliate of it to Client or any affiliate or subsidiary of Client together with interest and penalties, if any, accrued thereon.
7. The Company disclaims any and all responsibility or liability arising out of or in connection with e-mail transmissions of such information.
8. Client understands and agrees that the Company is neither an insurer nor a guarantor, that the Company does not take the place of Client or any designer, manufacturer, agent, buyer, distributor or transportation or shipping company, and that the Company disclaims all liability in such capacities. Client further understands that if it seeks assurance against loss or damage, it should obtain appropriate insurance.
9. Client agrees that the Company, by providing the services, does not take the place of Client nor any third party, nor does the Company release them from any of their obligations, nor does the Company otherwise assume, abridge, abrogate or undertake to discharge any duty of any third party to Client or any duty of Client or any third party to any other third party, and Client will not release any third party from its obligations and duties with respect to the tested goods.
10. Client shall, on a timely basis, (a) provide adequate instructions to the Company in order to enable the Company to perform properly its services, (b) provide, or cause Client's suppliers and contractors to provide, the Company with all documents necessary to enable the Company to perform its services, (c) furnish the Company with all relevant information regarding Client's intended use and purposes of the tested goods, (d) advise the Company of essential dates and deadlines relevant to the tested goods and (e) fully exercise all rights and remedies available to Client against third parties in respect of the tested goods.
11. The Company shall undertake due care and ordinary skill in the performance of its services to Client, and the Company shall accept responsibility only were such skill has not been exercised and, even in such event, only to the extent of the limitation of liability set forth herein.
12. If Client desires to assert a claim arising from or relating to (i) the performance, purported performance or non-performance of any services by the Company or (ii) the sale, resale, manufacture, distribution or use of any tested goods, it must submit that claim to the Company in a writing that sets forth with particularity the basis for such claim within 60 days from discovery of the potential claim and not more than six months after the date of issuance of the Test Report to Client. Client waives any and all such claims including, without limitation, claims that the Test Report is inaccurate, incomplete or misleading or that additional or different testing is required, unless and then only to the extent that Client submits a written claim to the Company within both such time periods.
13. CLIENT SHALL, EXCEPT TO THE EXTENT OF COMPANY'S LIABILITY TO CLIENT HEREUNDER (WHICH IN NO EVENT SHALL EXCEED THE LIMITATION OF LIABILITY HEREIN), HOLD HARMLESS AND INDEMNIFY THE COMPANY, ITS

AFFILIATES AND THEIR RESPECTIVE DIRECTORS, OFFICERS, EMPLOYEES, AGENTS AND SUBCONTRACTORS AGAINST ALL ACTUAL OR ALLEGED THIRD PARTY CLAIMS FOR LOSS, DAMAGE OR EXPENSE OF WHATSOEVER NATURE AND HOWSOEVER ARISING FROM OR RELATING TO (i) THE PERFORMANCE, PURPORTED PERFORMANCE OR NON-PERFORMANCE OF ANY SERVICES BY THE COMPANY OR (ii) THE SALE, RESALE, MANUFACTURE, DISTRIBUTION OR USE OF ANY TESTED GOODS.

14. EXCEPT AS MAY OTHERWISE BE EXPRESSLY AGREED TO IN WRITING BY THE COMPANY AND NOTWITHSTANDING ANY PROVISION TO THE CONTRARY CONTAINED HEREIN OR IN ANY TEST REPORT, NO WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE, IS MADE.

15. (A) IN NO EVENT WHATSOEVER SHALL THE COMPANY BE LIABLE FOR ANY CONSEQUENTIAL, SPECIAL, INCIDENTAL, EXEMPLARY OR PUNITIVE DAMAGES IN CONNECTION WITH, RELATING TO OR ARISING OUT OF THE TEST REPORT OR THE SERVICES PROVIDED BY THE COMPANY HEREUNDER, INCLUDING WITHOUT LIMITATION LOSS OF OR DAMAGE TO PROPERTY; LOSS OF INCOME, PROFIT OR USE; OR ANY CLAIMS OR DEMANDS MADE AGAINST CLIENT OR ANY OTHER PERSON BY ANY THIRD PARTY IN CONNECTION WITH, RELATING TO OR ARISING OUT OF THE SERVICES PROVIDED BY THE COMPANY HEREUNDER.

(B)NOTWITHSTANDING ANY PROVISION TO THE CONTRARY CONTAINED HEREIN, AND IN RECOGNITION OF THE RELATIVE RISKS AND BENEFITS TO CLIENT AND THE COMPANY ASSOCIATED WITH THE TESTING SERVICES CONTEMPLATED HEREBY, THE RISKS HAVE BEEN ALLOCATED SUCH THAT UNDER NO CIRCUMSTANCES WHATSOEVER SHALL THE LIABILITY OF THE COMPANY TO CLIENT OR ANY THIRD PARTY IN RESPECT OF ANY CLAIM FOR LOSS, DAMAGE OR EXPENSE, OF WHATSOEVER NATURE OR MAGNITUDE, AND HOWSOEVER ARISING, EXCEED AN AMOUNT EQUAL TO FIVE (5) TIMES THE AMOUNT OF THE FEES PAID TO THE COMPANY FOR THE SPECIFIC SERVICES WHICH GAVE RISE TO SUCH CLAIM OR U.S.$10,000, WHICHEVER IS THE LESSER AMOUNT.

16. The Company shall not be liable for any loss or damage resulting from any delay or failure in performance of its obligations hereunder resulting directly or indirectly from any event of force majeure or any event outside the control of the Company. If any such event occurs, the Company may immediately cancel or suspend its performance hereunder without incurring any liability whatsoever to Client.

17. Company's services, including these Conditions, shall be governed by, and construed in accordance with, the local laws of the country where the Company performs the tests or, in the case of tests performed in the United States of America, the laws of Massachusetts without regard to conflicts of laws principles. If any aspect(s) of these Conditions is found to be illegal or unenforceable, the validity, legality and enforceability of all remaining aspects of these Conditions shall not in any way be affected or impaired thereby. Any proceeding related to the subject matter hereof shall be brought, if at all, in the courts of the country where the Company performs the tests or, in the case of tests performed in the United States of America, in the courts of Massachusetts. Client waives the right to interpose any counterclaim or setoffs of any nature in any litigation arising hereunder.

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