



# EMC Emission - TEST REPORT

Test Report File No. : **WC705280** Date of issue: 17 August 2007

Model / Serial No. : **RDMi-25100 / 0053 X227 SABX 0093 2385**

Product Name : **WiMax 2.496-2.690 GHz Customer premise Equipment**

Product Type : **BRS/EBS Residential Subscribe Unit (RSU)**

Applicant : **Motorola Incorporated Nextnet Wireless Product Group**

Manufacturer : **Motorola Incorporated Nextnet Wireless Product Group**

License Holder : **Motorola Incorporated Nextnet Wireless Product Group**

Address : **299 Johnson Avenue  
Suite 120  
Waseca MN 56093**

Test Result :  **Positive**  **Negative**

Test Project Number Reference(s) : **WC705280**

Total pages including Appendices **53**

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**Sign Explanations:**  
 - not applicable  
 - applicable

## EMISSIONS TEST REGULATIONS :

The emissions tests were performed according to following regulations:

- |   |   |   |
|---|---|---|
| <input type="checkbox"/> - EN 50081-1 / 1991                | <input type="checkbox"/> - Group 1                          | <input type="checkbox"/> - Group 2            |
| <input type="checkbox"/> - EN 55011 / 1991                  | <input type="checkbox"/> - Class A                          | <input type="checkbox"/> - Class B            |
| <input type="checkbox"/> - EN 55013 / 1990                  |   |   |
| <br>  |   |   |
| <input type="checkbox"/> - EN 55014 / 1987                  | <input type="checkbox"/> - Household appliances and similar |   |
|   | <input type="checkbox"/> - Portable tools                   |   |
|   | <input type="checkbox"/> - Semiconductor devices            |   |
| <br>  |   |   |
| <input type="checkbox"/> - EN 55014 / A2:1990               | <input type="checkbox"/> - Household appliances and similar |   |
| <input type="checkbox"/> - EN 55014 / 1993                  | <input type="checkbox"/> - Portable tools                   |   |
|   | <input type="checkbox"/> - Semiconductor devices            |   |
| <br>  |   |   |
| <input type="checkbox"/> - EN 55015 / 1987                  |   |   |
| <input type="checkbox"/> - EN 55015 / A1:1990               |   |   |
| <input type="checkbox"/> - EN 55015 / 1993                  |   |   |
| <input type="checkbox"/> - EN 55022 / 1987                  | <input type="checkbox"/> - Class A                          | <input type="checkbox"/> - Class B            |
| <input type="checkbox"/> - EN 55022 / 1991                  | <input type="checkbox"/> - Class A                          | <input type="checkbox"/> - Class B            |
| <br>  |   |   |
| <input type="checkbox"/> - BS                               | <input type="checkbox"/> - Class A                          | <input type="checkbox"/> - Class B            |
| <input type="checkbox"/> - VCCI                             | <input type="checkbox"/> - Class A                          | <input type="checkbox"/> - Class B            |
| <br>  |   |   |
| <input checked="" type="checkbox"/> - FCC Part 15 Subpart B | <input type="checkbox"/> - Class A                          | <input checked="" type="checkbox"/> - Class B |
| <input type="checkbox"/> - FCC Part 15 Subpart C            |   |   |
| <input checked="" type="checkbox"/> - FCC Part 27 Subpart C |   |   |
| <br>  |   |   |
| <input type="checkbox"/> - CISPR 11 (1990)                  | <input type="checkbox"/> - Group 1                          | <input type="checkbox"/> - Group 2            |
|   | <input type="checkbox"/> - Class A                          | <input type="checkbox"/> - Class B            |
| <br>  |   |   |
| <input type="checkbox"/> - CISPR 22 (1993)                  | <input type="checkbox"/> - Class A                          | <input type="checkbox"/> - Class B            |
| <br>  |   |   |
| <input checked="" type="checkbox"/> - IC RSS-Gen Issue 1    |   |   |
| <input checked="" type="checkbox"/> - IC RSS-193 Issue 1    |   |   |



## Radiated emission limits - Transmitter, FCC 27.53, IC RSS-193 6.3

### Test summary

The requirements are:  - MET  - NOT MET

Minimum margin of compliance is 15 dB at 4.98 GHz. Substitution measurements are shown for all signals within 20 dB of the limit.

### 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 Number	Manufacturer	Description	Serial Number	Cal Due
3202	EM-6917B	Electro-Metrics	Biconicalog Periodic	101	10-May-08
3294	8566B	Hewlett-Packard	Spectrum Analyzer	2349A03098	16-May-08
3295	85662A	Hewlett-Packard	Analyzer Display	2349A06144	16-May-08
2681	85650A	Hewlett-Packard	Quasi-Peak Adapter	2430A00562	23 March 08
3847	ZHL-1042J	Mini-Circuits	Preamplifier 10 - 4000 MHz	0607	Code B
2478	AWT-18037	Avantek	Preamplifier 8-18 GHz	1001-9226	Code B
2477	AFT-8434	Avantek	Preamplifier 4-8 GHz	2613A92801	Code B
2075	3115	EMCO	Ridge Guide Ant. 1-18 GHz	9001-3275	12-Jan-08
3935	F548B-1	Acronetics	1 - 2 GHz Bandpass Filter	010	Code B
N/A	L2G010G2	Microwave Circuits	Low Pass Filter	85441	Code B
N/A	H04G1862	Acronetics	High Pass Filter	89099	Code B
3236	UHAP-10dB	Schwarzbeck	Dipole Antenna 300-1000	164	N/A
3056	18N20W-10dB	Inmet	Attenuator	1	Code B
3229	3115	Electro-Mechanics (EMCO)	Ridge Guide Antenna	2483	07-Jun-08
2662	11970K	Hewlett-Packard	Harm Mixer - 18-26.5 GHz	2332A01170	04 Sep 08
2919	11970U	Hewlett-Packard	Harm Mixer - 40-60 GHz	3003A01395	04 Sep 09
6717	3116	EMCO	Ridge Guide Ant 18-40 GHz	2005	05 Oct 07
3010	6769B	Wiltron	Signal Generator	159003	30 Aug 08

Cal Code B = Calibration verification performed internally.

### Test limit

-13.0 dBm

### Test Data

Pages 14 - 40

## Radiated emission limits - Receiver, FCC 15.205, FCC 15.209, IC RSS-Gen 6(a)

### Test summary

The requirements are: ■ - MET □ - NOT MET  
 Minimum margin of compliance is 4 dB at 86.0 MHz

### 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 Number	Manufacturer	Description	Serial Number	Cal Due
3203	EM-6917B	Electro-Metrics	Biconicalog Periodic	106	23-May-08
8052	8566B	Hewlett-Packard	Spectrum Analyzer	2115A00853	03-Apr-08
8051	85662A	Hewlett-Packard	Analyzer Display	2112A02220	03-Apr-08
2682	85650A	Hewlett-Packard	Quasi-Peak Adapter	2811A01127	29-Nov-07
2665	ZHL-1042J	Mini-Circuits	Preamplifier 30 - 5000 MHz	32296	Code B
3202	EM-6917B	Electro-Metrics	Biconicalog Periodic	101	10-May-08
3294	8566B	Hewlett-Packard	Spectrum Analyzer	2349A03098	16-May-08
3295	85662A	Hewlett-Packard	Analyzer Display	2349A06144	16-May-08
2681	85650A	Hewlett-Packard	Quasi-Peak Adapter	2430A00562	23 Mar 08
3847	ZHL-1042J	Mini-Circuits	Preamplifier 10 - 4000 MHz	0607	Code B
2478	AWT-18037	Avantek	Preamplifier 8-18 GHz	1001-9226	Code B
2477	AFT-8434	Avantek	Preamplifier 4-8 GHz	2613A92801	Code B
2075	3115	EMCO	Ridge Guide Ant. 1-18 GHz	9001-3275	12-Jan-08

Cal Code B = Calibration verification performed internally.

### Test limit

Spurious Frequency (MHz)	Field Strength (microvolt/m at 3 metres)
30-88	100
88-216	150
216-960	200
Above 960	500

### Test Data

Pages 41 – 61

## Conducted emissions - AC power lines - Class B limits, FCC 15.107, IC RSS-Gen 7.2.2

### Test summary

The requirements are:  - MET  - NOT MET  
 Minimum margin of compliance is 12 dB at 260.0 KHz

### 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 Number	Manufacturer	Description	Serial Number	Cal Due
2416	3825/2	Electro-Mechanics (EMCO)	50 $\Omega$ LISN	8812-1437	Code B
2534	ESHS-20	Rhode & Schwarz	EMI Receiver	837055/003	22-Mar-08

Cal Code B = Calibration verification performed internally.

### Test limit

Frequency of emission (MHz)	Conducted limit (dB $\mu$ V)	
	Quasi-peak	Average
0.15–0.5 .....	66 to 56* .....	56 to 46*
0.5–5 .....	56 .....	46
5–30 .....	60 .....	50

\*Decreases with the logarithm of the frequency.

### Test Data

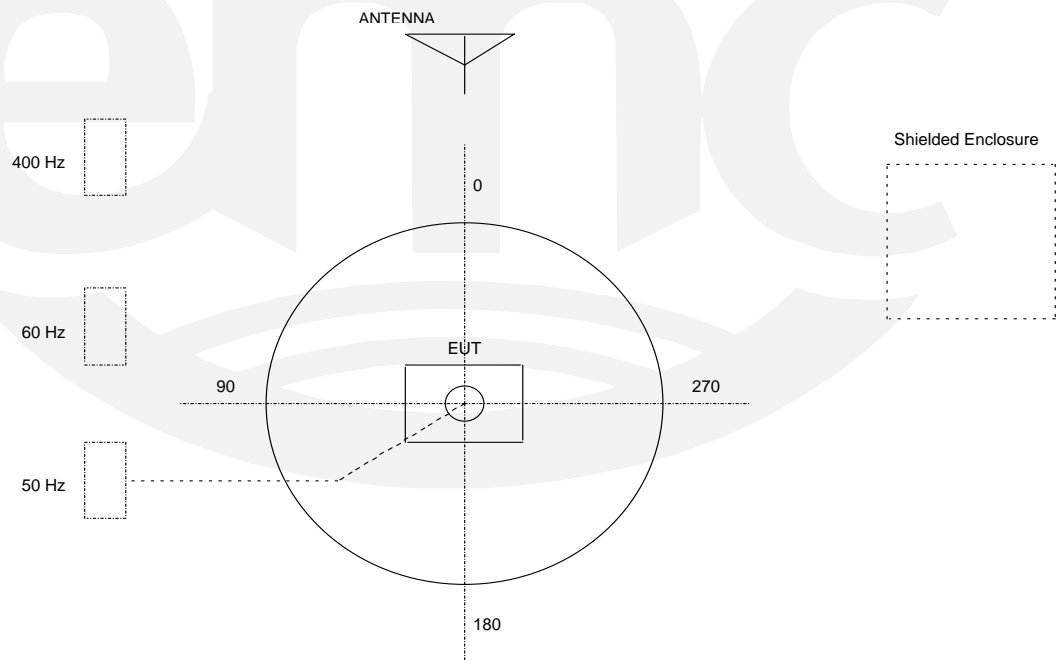
Pages 62 – 67

## TEST SETUP FOR EMISSIONS TESTING

### WILD RIVER LAB Large Test Site

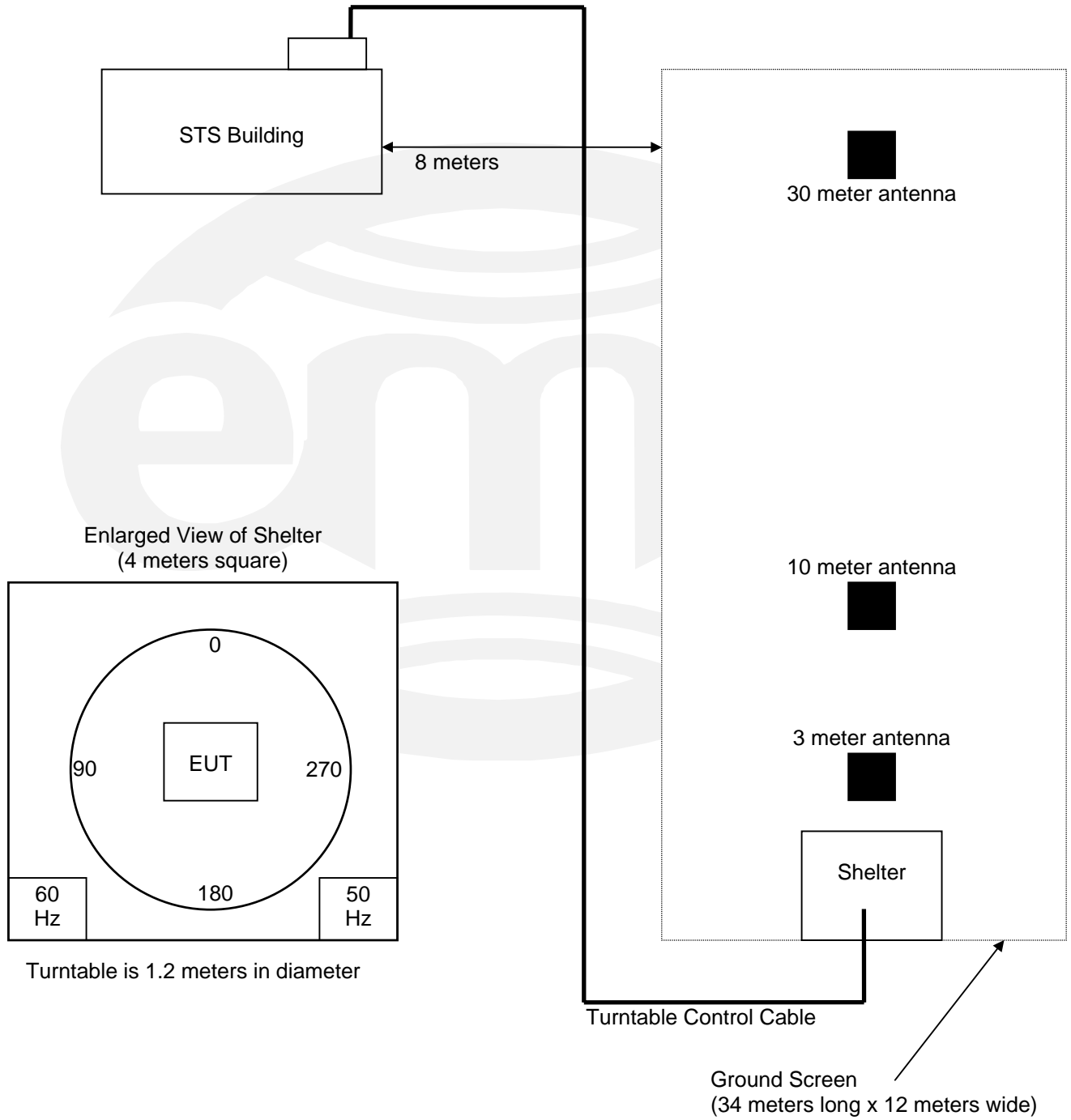
#### Notes:

1. Items shown in dotted lines are located on the floor below the test area. It is 5 meters vertically from the ground floor to the test area.
2. 50 Hz, 60 Hz, and 400 Hz are power panels for alternating current.
3. The antenna may be positioned horizontally 3, 10 or 30 meters from the center of the turntable.
4. The circle is a 6.7 meter diameter turntable.
5. A ground plane is in the plane of this sheet.
6. The test sample is shown in the azimuthal position representing zero degrees.



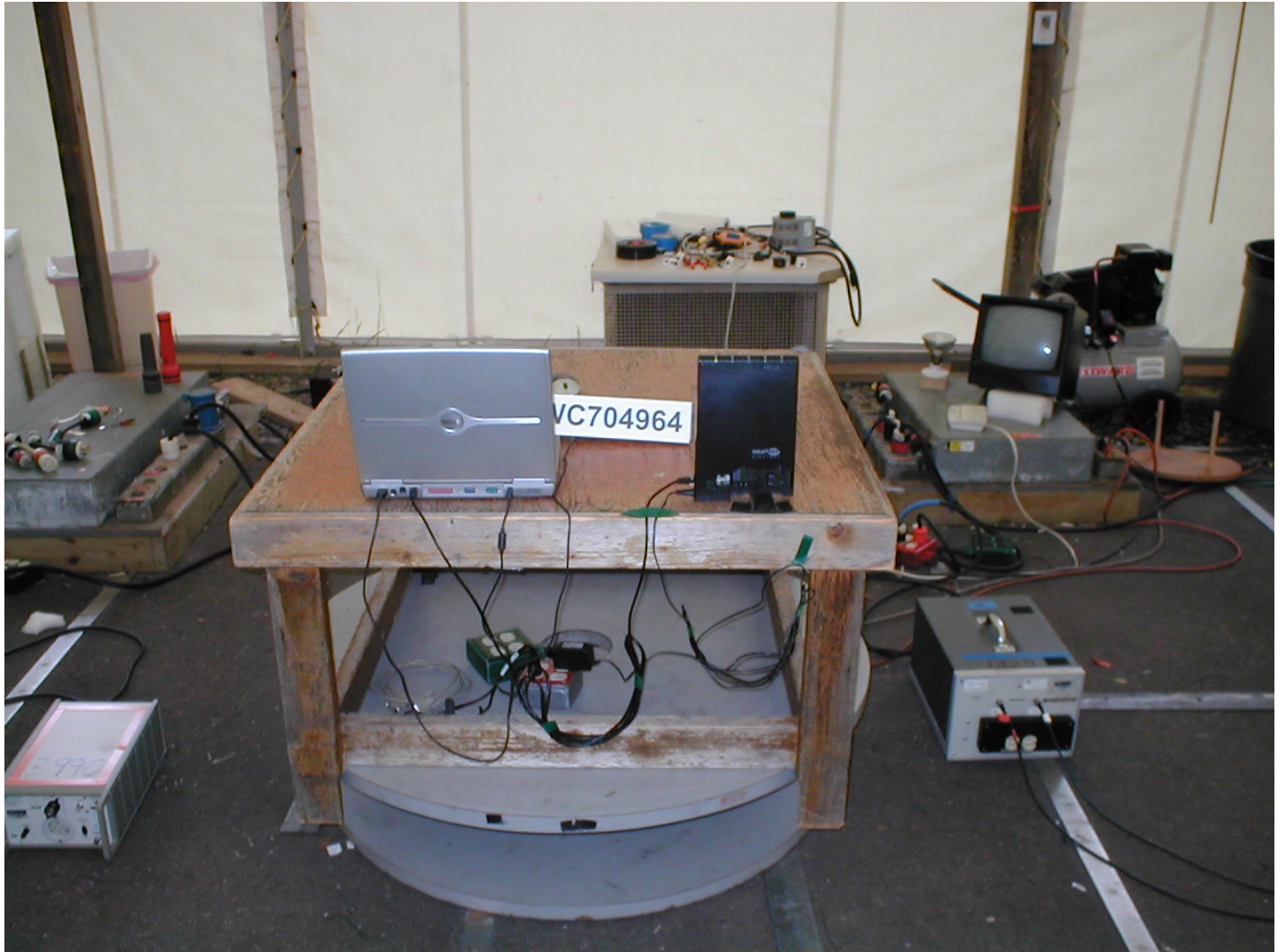
### TEST SETUP FOR EMISSIONS TESTING

WILD RIVER LAB  
Small Test Site (STS)





Test setup photo, radiated emissions - Receiver



Test setup photo, radiated emissions - Receiver





Test setup photo, radiated emissions - Transmitter



Test setup photo, radiated emissions - Transmitter





Test setup photo, conducted emissions on AC mains



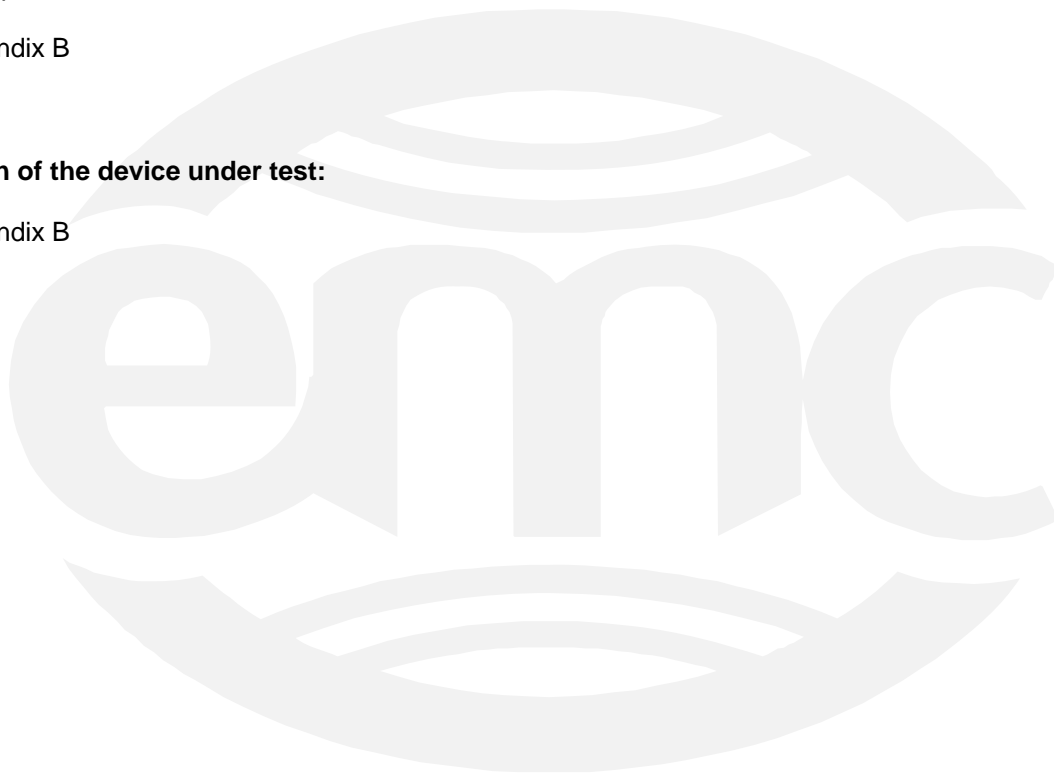
### Test Operation Mode:

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

- Standby
- Test program (H - Pattern)
- Test program (color bar)
- Test program (customer specific)
- Practice operation
- See Appendix B

### Configuration of the device under test:

- See Appendix B



**DEVIATIONS FROM STANDARD:**

None.

**GENERAL REMARKS:**Modifications required to pass:

None

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

- **not** met.

The device under test does

- fulfill the general approval requirements mentioned on page 3.

- **not** fulfill the general approval requirements mentioned on page 3.

EUT Received Date: 02 July 2007

Condition of EUT: Normal

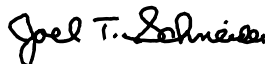
Testing Start Date: 02 July 2007

Testing End Date: 23 July 2007

- TÜV AMERICA INC -

Location: Taylors Falls MN  
USA

  
\_\_\_\_\_  
Thomas K Swanson  
EMC Technician

  
\_\_\_\_\_  
Joel T Schneider  
Senior EMC Engineer

## Appendix A

Test Data





# RADIATED EMISSIONS



Test Report #: WC704964 Run 2                      Test Area: STS  
 EUT Model #: CPEi-25100                              Date: 7/2/2007  
 EUT Serial #: 0093 2385                              EUT Power: 60 Hz 115 VAC                      Temperature: 22.0 °C  
 Test Method: FCC Part 27                              Air Pressure: 98.0 kPa  
 Customer: Motorola Inc                              Rel. Humidity: 40.0 %  
 EUT Description: WiMax 2.5 GHz CPE

Notes: \_\_\_\_\_

Data File Name: 4964.dat

Page: 1 of 6

## List of measurements for run #: 2

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 -13dBm GUIDELINE < 1GHz	DELTA2
Configuration 1						
32.22 MHz	40.35 Qp	0.71 / 20.79 / 27.98 / 0.0	33.87	V / 1.00 / 0	-50.51	n/a
69.707 MHz	48.05 Qp	1.05 / 9.49 / 27.77 / 0.02	30.84	V / 1.00 / 0	-53.54	n/a
81.213 MHz	47.25 Qp	1.13 / 7.99 / 27.89 / 0.02	28.5	V / 1.00 / 0	-55.88	n/a
86.066 MHz	47.6 Qp	1.15 / 7.59 / 27.84 / 0.02	28.52	V / 1.00 / 0	-55.86	n/a
94.117 MHz	48.6 Qp	1.18 / 8.3 / 27.77 / 0.03	30.34	V / 1.00 / 0	-54.04	n/a
115.616 MHz	52.15 Qp	1.34 / 9.33 / 27.63 / 0.04	35.24	V / 1.00 / 0	-49.14	n/a
138.44 MHz	46.35 Qp	1.44 / 9.19 / 27.89 / 0.05	29.14	V / 1.00 / 0	-55.24	n/a
148.138 MHz	47.75 Qp	1.49 / 9.61 / 27.86 / 0.05	31.05	V / 1.00 / 0	-53.33	n/a
200.502 MHz	38.5 Qp	1.71 / 10.75 / 27.78 / 0.08	23.26	V / 1.00 / 0	-61.12	n/a
333.417 MHz	35.5 Qp	2.22 / 14.47 / 27.72 / 0.12	24.58	V / 1.00 / 0	-59.8	n/a
375.02 MHz	38.65 Qp	2.42 / 15.8 / 27.68 / 0.12	29.31	V / 1.00 / 0	-55.07	n/a
625.037 MHz	35.95 Qp	3.56 / 19.9 / 27.68 / 0.17	31.89	V / 1.00 / 0	-52.49	n/a
750.108 MHz	29.65 Qp	4.11 / 21.1 / 27.48 / 0.2	27.57	V / 1.00 / 0	-56.81	n/a
86.066 MHz	48.65 Qp	1.15 / 7.59 / 27.84 / 0.02	29.57	V / 1.00 / 315	-54.81	n/a
81.213 MHz	49.1 Qp	1.13 / 7.99 / 27.89 / 0.02	30.35	V / 1.00 / 315	-54.03	n/a
86.066 MHz	50.1 Qp	1.15 / 7.59 / 27.84 / 0.02	31.02	V / 1.00 / 270	-53.36	n/a
94.117 MHz	49.3 Qp	1.18 / 8.3 / 27.77 / 0.03	31.04	V / 1.00 / 270	-53.34	n/a
200.502 MHz	43.35 Qp	1.71 / 10.75 / 27.78 / 0.08	28.11	V / 1.00 / 270	-56.27	n/a
750.108 MHz	27.6 Pk	4.11 / 21.1 / 27.48 / 0.2	25.52	V / 1.00 / 270	-58.86*	n/a
375.02 MHz	40.3 Qp	2.42 / 15.8 / 27.68 / 0.12	30.96	V / 1.00 / 135	-53.42	n/a

Tested by: Tom K. Swanson

Printed

*Thomas K. Swanson*

Signature

Reviewed by: S. L. Rupp

by:

Printed

*Susan L Rupp*

Signature

# RADIATED EMISSIONS



Test Report #: WC704964 Run 2                      Test Area: STS  
 EUT Model #: CPEi-25100                                      Date: 7/2/2007  
 EUT Serial #: 0093 2385                                      EUT Power: 60 Hz 115 VAC                      Temperature: 22.0 °C  
 Test Method: FCC Part 27                                      Air Pressure: 98.0 kPa  
 Customer: Motorola Inc                                      Rel. Humidity: 40.0 %  
 EUT Description: WiMax 2.5 GHz CPE

Notes: \_\_\_\_\_

Data File Name: 4964.dat

Page: 2 of 6

## List of measurements for run #: 2

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 -13dBm GUIDELINE < 1GHz	DELTA2
<b>115 MHz maxed</b>						
115.616 MHz	54.49 Qp	1.34 / 9.33 / 27.63 / 0.04	37.58	V / 1.00 / 0	-46.8	n/a
<b>32 maxed</b>						
32.22 MHz	41.34 Qp	0.71 / 20.79 / 27.98 / 0.0	34.86	V / 1.00 / 0	-49.52	n/a
<b>86 MHz maxed</b>						
86.066 MHz	52.6 Qp	1.15 / 7.59 / 27.84 / 0.02	33.52	V / 1.20 / 230	-50.86	n/a
133.729 MHz	41.3 Qp	1.42 / 8.75 / 27.84 / 0.05	23.68	H / 3.00 / 0	-60.7	n/a
151.561 MHz	44.75 Qp	1.52 / 9.41 / 27.84 / 0.05	27.89	H / 3.00 / 0	-56.49	n/a
250.033 MHz	38.7 Qp	1.94 / 12.33 / 27.69 / 0.1	25.38	H / 3.00 / 0	-59.0	n/a
<b>151 Maxed</b>						
151.561 MHz	48.56 Qp	1.52 / 9.41 / 27.84 / 0.05	31.7	H / 2.10 / 20	-52.68	n/a
500.066 MHz	31.25 Qp	2.97 / 17.9 / 27.77 / 0.15	24.49	H / 2.10 / 20	-59.89	n/a
<b>200 maxed</b>						
200.502 MHz	49.7 Qp	1.71 / 10.75 / 27.78 / 0.08	34.46	H / 1.20 / 280	-49.92	n/a
<b>Configuration 2</b>						
333.74 MHz	40.4 Qp	2.22 / 14.48 / 27.72 / 0.12	29.5	V / 1.00 / 0	-54.88	n/a
500.066 MHz	34.45 Qp	2.97 / 17.9 / 27.77 / 0.15	27.69	V / 1.00 / 0	-56.69	n/a
800.0 MHz	29.1 Qp	4.26 / 21.8 / 27.39 / 0.21	27.98	V / 1.00 / 0	-56.4	n/a

Tested by: Tom K. Swanson

Printed

*Thomas K. Swanson*

Signature

Reviewed by: S. L. Rupp

by:

Printed

*Susan L Rupp*

Signature

# RADIATED EMISSIONS



Test Report #: WC704964 Run 2                      Test Area: STS  
 EUT Model #: CPEi-25100                              Date: 7/2/2007  
 EUT Serial #: 0093 2385                              EUT Power: 60 Hz 115 VAC                      Temperature: 22.0 °C  
 Test Method: FCC Part 27                              Air Pressure: 98.0 kPa  
 Customer: Motorola Inc                              Rel. Humidity: 40.0 %  
 EUT Description: WiMax 2.5 GHz CPE

Notes: \_\_\_\_\_

Data File Name: 4964.dat

Page: 3 of 6

## List of measurements for run #: 2

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 -13dBm GUIDELINE < 1GHz	DELTA2
900.0 MHz	29.35 Qp	4.58 / 22.5 / 27.39 / 0.22	29.26	V / 1.00 / 0	-55.12	n/a
300.0 MHz	32.5 Qp	2.07 / 13.4 / 27.8 / 0.11	20.27	V / 1.00 / 0	-64.11	n/a
400.0 MHz	31.75 Qp	2.52 / 15.77 / 27.74 / 0.13	22.42	V / 1.00 / 0	-61.96	n/a
600.0 MHz	33.75 Qp	3.42 / 19.37 / 27.65 / 0.17	29.05	V / 1.00 / 0	-55.33	n/a
700.0 MHz	28.85 Qp	3.95 / 20.1 / 27.58 / 0.19	25.5	V / 1.00 / 0	-58.88	n/a
1.0 GHz	27.85 Qp	4.92 / 23.19 / 27.35 / 0.24	28.84	V / 1.00 / 0	-55.54	n/a
250.714 MHz	37.0 Qp	1.95 / 12.35 / 27.68 / 0.1	23.71	V / 1.00 / 0	-60.67	n/a
375.02 MHz	39.95 Qp	2.42 / 15.8 / 27.68 / 0.12	30.61	V / 1.00 / 135	-53.77	n/a
138.44 MHz	47.98 Qp	1.44 / 9.19 / 27.89 / 0.05	30.77	V / 1.00 / 135	-53.61	n/a
86 MHz maxed						
86.066 MHz	51.65 Qp	1.15 / 7.59 / 27.84 / 0.02	32.57	V / 1.00 / 135	-51.81	n/a
32 maxed						
32.22 MHz	41.47 Qp	0.71 / 20.79 / 27.98 / 0.0	34.99	V / 1.00 / 0	-49.39	n/a
115 maxed						
115.616 MHz	52.95 Qp	1.34 / 9.33 / 27.63 / 0.04	36.04	V / 1.00 / 80	-48.34	n/a
200 maxed						
200.502 MHz	43.85 Qp	1.71 / 10.75 / 27.78 / 0.08	28.61	V / 1.00 / 260	-55.77	n/a
200.502 MHz	48.79 Qp	1.71 / 10.75 / 27.78 / 0.08	33.55	H / 1.20 / 50	-50.83	n/a
86 maxed						
86.066 MHz	45.21 Qp	1.15 / 7.59 / 27.84 / 0.02	26.13	H / 3.70 / 320	-58.25	n/a

Tested by: Tom K. Swanson

Printed

*Thomas K. Swanson*

Signature

Reviewed by: S. L. Rupp

Printed

*Susan L Rupp*

Signature

# RADIATED EMISSIONS



Test Report #: WC704964 Run 2                      Test Area: STS  
 EUT Model #: CPEi-25100                                      Date: 7/2/2007  
 EUT Serial #: 0093 2385                                      EUT Power: 60 Hz 115 VAC                      Temperature: 22.0 °C  
 Test Method: FCC Part 27                                      Air Pressure: 98.0 kPa  
 Customer: Motorola Inc                                      Rel. Humidity: 40.0 %  
 EUT Description: WiMax 2.5 GHz CPE

Notes: \_\_\_\_\_

Data File Name: 4964.dat

Page: 4 of 6

## Measurement summary for limit1: -13dBm GUIDELINE < 1GHz (Qp)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 -13dBm GUIDELINE < 1GHz
115.616 MHz	54.49 Qp	1.34 / 9.33 / 27.63 / 0.04	37.58	V / 1.00 / 0	-46.8
32.22 MHz	41.47 Qp	0.71 / 20.79 / 27.98 / 0.0	34.99	V / 1.00 / 0	-49.39
200.502 MHz	49.7 Qp	1.71 / 10.75 / 27.78 / 0.08	34.46	H / 1.20 / 280	-49.92
86.066 MHz	52.6 Qp	1.15 / 7.59 / 27.84 / 0.02	33.52	V / 1.20 / 230	-50.86
625.037 MHz	35.95 Qp	3.56 / 19.9 / 27.68 / 0.17	31.89	V / 1.00 / 0	-52.49
151.561 MHz	48.56 Qp	1.52 / 9.41 / 27.84 / 0.05	31.7	H / 2.10 / 20	-52.68
148.138 MHz	47.75 Qp	1.49 / 9.61 / 27.86 / 0.05	31.05	V / 1.00 / 0	-53.33
94.117 MHz	49.3 Qp	1.18 / 8.3 / 27.77 / 0.03	31.04	V / 1.00 / 270	-53.34
375.02 MHz	40.3 Qp	2.42 / 15.8 / 27.68 / 0.12	30.96	V / 1.00 / 135	-53.42
69.707 MHz	48.05 Qp	1.05 / 9.49 / 27.77 / 0.02	30.84	V / 1.00 / 0	-53.54
138.44 MHz	47.98 Qp	1.44 / 9.19 / 27.89 / 0.05	30.77	V / 1.00 / 135	-53.61
81.213 MHz	49.1 Qp	1.13 / 7.99 / 27.89 / 0.02	30.35	V / 1.00 / 315	-54.03
333.74 MHz	40.4 Qp	2.22 / 14.48 / 27.72 / 0.12	29.5	V / 1.00 / 0	-54.88
900.0 MHz	29.35 Qp	4.58 / 22.5 / 27.39 / 0.22	29.26	V / 1.00 / 0	-55.12
600.0 MHz	33.75 Qp	3.42 / 19.37 / 27.65 / 0.17	29.05	V / 1.00 / 0	-55.33
1.0 GHz	27.85 Qp	4.92 / 23.19 / 27.35 / 0.24	28.84	V / 1.00 / 0	-55.54
800.0 MHz	29.1 Qp	4.26 / 21.8 / 27.39 / 0.21	27.98	V / 1.00 / 0	-56.4
500.066 MHz	34.45 Qp	2.97 / 17.9 / 27.77 / 0.15	27.69	V / 1.00 / 0	-56.69
750.108 MHz	29.65 Qp	4.11 / 21.1 / 27.48 / 0.2	27.57	V / 1.00 / 0	-56.81
700.0 MHz	28.85 Qp	3.95 / 20.1 / 27.58 / 0.19	25.5	V / 1.00 / 0	-58.88
250.033 MHz	38.7 Qp	1.94 / 12.33 / 27.69 / 0.1	25.38	H / 3.00 / 0	-59.0
333.417 MHz	35.5 Qp	2.22 / 14.47 / 27.72 / 0.12	24.58	V / 1.00 / 0	-59.8
250.714 MHz	37.0 Qp	1.95 / 12.35 / 27.68 / 0.1	23.71	V / 1.00 / 0	-60.67
133.729 MHz	41.3 Qp	1.42 / 8.75 / 27.84 / 0.05	23.68	H / 3.00 / 0	-60.7

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# RADIATED EMISSIONS



America

Test Report #: WC704964 Run 2                      Test Area: STS

EUT Model #: CPEi-25100                              Date: 7/2/2007

EUT Serial #: 0093 2385                      EUT Power: 60 Hz 115 VAC                      Temperature: 22.0 °C

Test Method: FCC Part 27                              Air Pressure: 98.0 kPa

Customer: Motorola Inc                              Rel. Humidity: 40.0 %

EUT Description: WiMax 2.5 GHz CPE

Notes: \_\_\_\_\_

Data File Name: 4964.dat

Page: 5 of 6

## Measurement summary for limit1: -13dBm GUIDELINE < 1GHz (Qp)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 -13dBm GUIDELINE < 1GHz
400.0 MHz	31.75 Qp	2.52 / 15.77 / 27.74 / 0.13	22.42	V / 1.00 / 0	-61.96
300.0 MHz	32.5 Qp	2.07 / 13.4 / 27.8 / 0.11	20.27	V / 1.00 / 0	-64.11
750.108 MHz	27.6 Pk	4.11 / 21.1 / 27.48 / 0.2	25.52	V / 1.00 / 270	-58.86*

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# RADIATED EMISSIONS



America

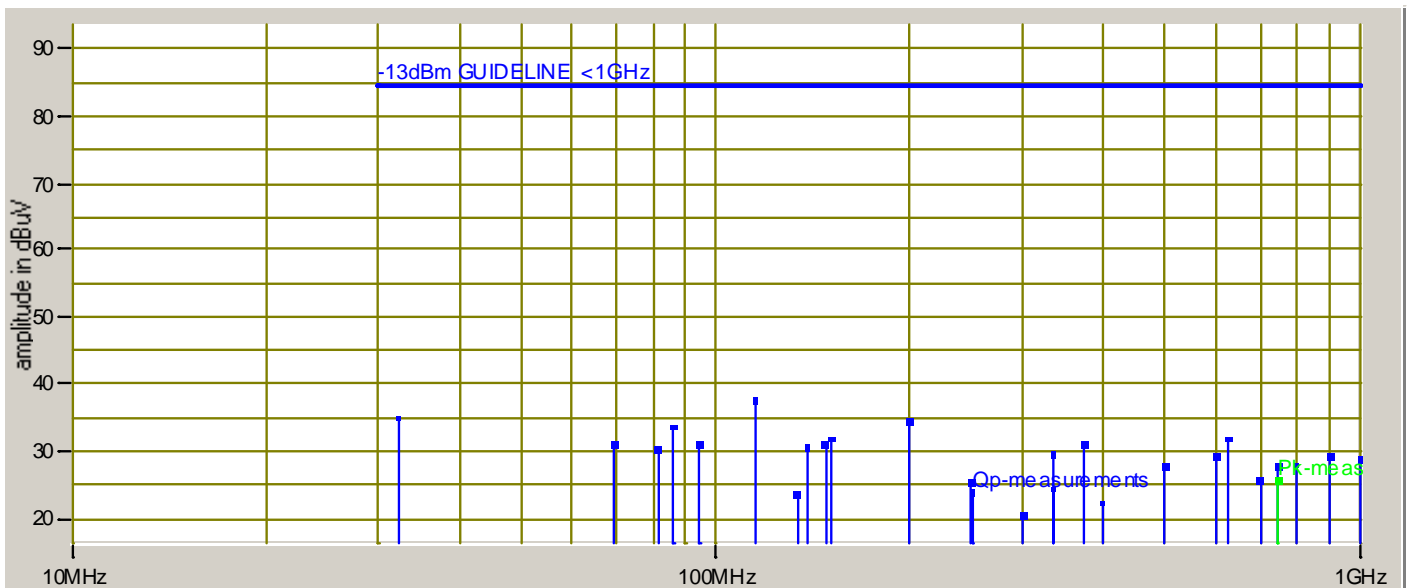
Test Report #: WC704964 Run 2 Test Area: STS  
EUT Model #: CPEi-25100 Date: 7/2/2007  
EUT Serial #: 0093 2385 EUT Power: 60 Hz 115 VAC Temperature: 22.0 °C  
Test Method: FCC Part 27 Air Pressure: 98.0 kPa  
Customer: Motorola Inc Rel. Humidity: 40.0 %

EUT Description: WiMax 2.5 GHz CPE

Notes: \_\_\_\_\_

Data File Name: 4964.dat Page: 6 of 6

## Graph:



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# RADIATED EMISSIONS



America

Test Report #: WC705280 Run 2                      Test Area: LTS

EUT Model #: CPEi-25100                                      Date: 7/23/2007

EUT Serial #: 0053 X227 SABX 0093 2385              EUT Power: 60 Hz 110 VAC                      Temperature: 25.0 °C

Test Method: \_\_\_\_\_                                      Air Pressure: 99.0 kPa

Customer: Motorola Inc., NextNet Wireless Product Group                      Rel. Humidity: 59.0 %

EUT Description: BRS/EBS Residential Subscribe Unit (RSU)

Notes: \_\_\_\_\_

Data File Name: 5280.dat

Page: 1 of 3

## List of measurements for run #: 2

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 -13dBm GUIDELINE > 1GHz	DELTA2
<b>Config 1</b>						
maxed						
4.998 GHz	51.75 Av	7.66 / 33.2 / 39.64 / 0.83	53.8	V / 1.00 / 300	-30.58	n/a
4.998 GHz	50.52 Av	7.66 / 33.2 / 39.64 / 0.83	52.57	H / 1.20 / 300	-31.81	n/a
4.998 GHz	67.45 Pk	7.66 / 33.2 / 39.64 / 0.83	69.5	H / 1.20 / 300	-14.88*	n/a
7.497 GHz	47.49 Av	9.95 / 36.4 / 41.14 / 0.05	52.74	V / 1.20 / 345	-31.64	n/a
7.497 GHz	67.0 Pk	9.95 / 36.4 / 41.14 / 0.05	72.25	V / 1.20 / 345	-12.13*	n/a
7.497 GHz	47.85 Av	9.95 / 36.4 / 41.14 / 0.05	53.1	H / 1.50 / 180	-31.28	n/a
7.497 GHz	68.85 Pk	9.95 / 36.4 / 41.14 / 0.05	74.1	H / 1.50 / 180	-10.28*	n/a
<b>Config 2</b>						
2.079 GHz	44.44 Av	4.6 / 28.27 / 29.39 / 0.22	48.14	V / 1.40 / 345	-36.24	n/a
7.779 GHz	39.48 Av	10.22 / 36.57 / 40.48 / 0.06	45.85	V / 1.20 / 345	-38.53	n/a
7.779 GHz	40.39 Av	10.22 / 36.57 / 40.48 / 0.06	46.76	H / 1.20 / 65	-37.62	n/a
5.186 GHz	31.53 Av	7.77 / 33.44 / 39.68 / 0.73	33.79	H / 1.20 / 65	-50.59	n/a
5.186 GHz	31.81 Av	7.77 / 33.44 / 39.68 / 0.73	34.07	V / 1.00 / 180	-50.31	n/a
<b>Config 3</b>						
End of scan 1 to 27 GHz						

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# RADIATED EMISSIONS



America

Test Report #: WC705280 Run 2 Test Area: LTS

EUT Model #: CPEi-25100 Date: 7/23/2007

EUT Serial #: 0053 X227 SABX 0093 2385 EUT Power: 60 Hz 110 VAC Temperature: 25.0 °C

Test Method: \_\_\_\_\_ Air Pressure: 99.0 kPa

Customer: Motorola Inc., NextNet Wireless Product Group Rel. Humidity: 59.0 %

EUT Description: BRS/EBS Residential Subscribe Unit (RSU)

Notes: \_\_\_\_\_

Data File Name: 5280.dat

Page: 2 of 3

## Measurement summary for limit1: -13dBm GUIDELINE > 1GHz (Av)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 -13dBm GUIDELINE > 1GHz
4.998 GHz	51.75 Av	7.66 / 33.2 / 39.64 / 0.83	53.8	V / 1.00 / 300	-30.58
7.497 GHz	47.85 Av	9.95 / 36.4 / 41.14 / 0.05	53.1	H / 1.50 / 180	-31.28
2.079 GHz	44.44 Av	4.6 / 28.27 / 29.39 / 0.22	48.14	V / 1.40 / 345	-36.24
7.779 GHz	40.39 Av	10.22 / 36.57 / 40.48 / 0.06	46.76	H / 1.20 / 65	-37.62
5.186 GHz	31.81 Av	7.77 / 33.44 / 39.68 / 0.73	34.07	V / 1.00 / 180	-50.31
4.998 GHz	67.45 Pk	7.66 / 33.2 / 39.64 / 0.83	69.5	H / 1.20 / 300	-14.88*
7.497 GHz	68.85 Pk	9.95 / 36.4 / 41.14 / 0.05	74.1	H / 1.50 / 180	-10.28*

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by:

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*Susan L Rupp*

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# RADIATED EMISSIONS



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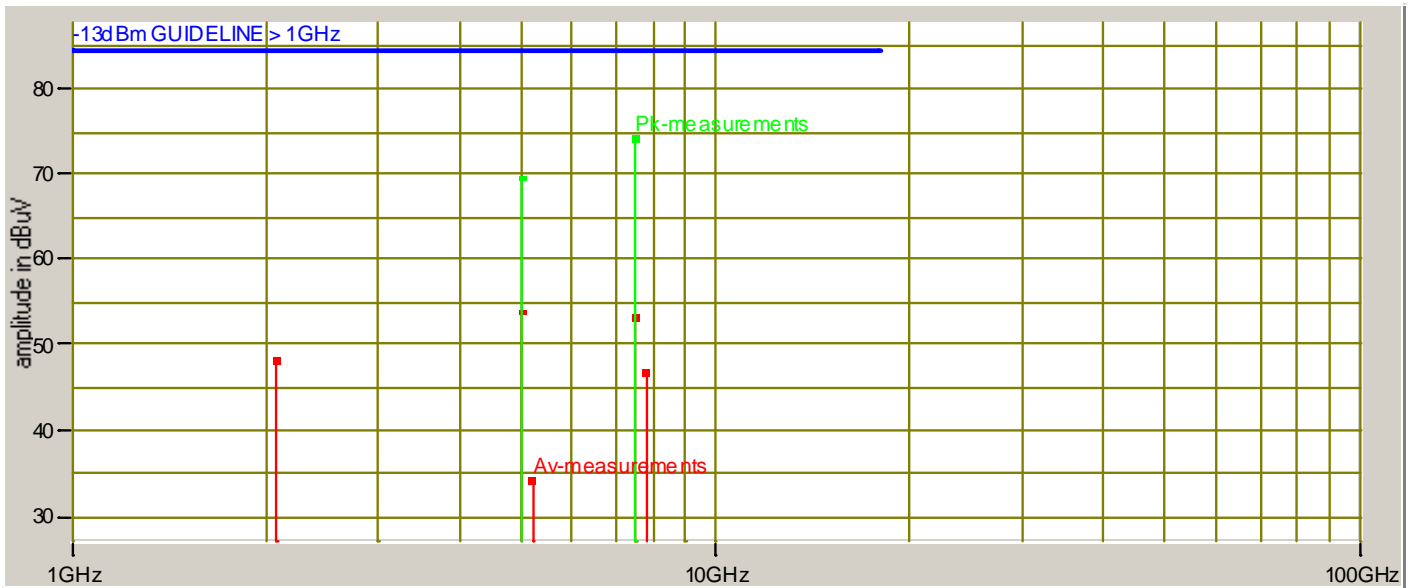
Test Report #: WC705280 Run 2 Test Area: LTS  
 EUT Model #: CPEi-25100 Date: 7/23/2007  
 EUT Serial #: 0053 X227 SABX 0093 2385 EUT Power: 60 Hz 110 VAC Temperature: 25.0 °C  
 Test Method: \_\_\_\_\_ Air Pressure: 99.0 kPa  
 Customer: Motorola Inc., NextNet Wireless Product Group Rel. Humidity: 59.0 %  
 EUT Description: BRS/EBS Residential Subscribe Unit (RSU)

Notes: \_\_\_\_\_

Data File Name: 5280.dat

Page: 3 of 3

## Graph:



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		<b>Matches</b>		<b>Antenna</b>	<b>Matches</b>
	<b>Final</b>	<b>Sig Gen Level</b>	<b>Cable Loss</b>	<b>Gain</b>	<b>Final</b>
<b>Freq. (MHz)</b>	<b>(dBuV/m)</b>	<b>(dBm)</b>	<b>(dB)</b>	<b>(dB)</b>	<b>(dBm)</b>
4998	69.5	-35.7	3.5	10.6	-28.60
7497	65.17	-39.3	4.5	11.3	-32.50
7497	74.1	-29.8	4.5	11.3	-23.00

# RADIATED EMISSIONS



Test Report #: WC704964 Run 1 Test Area: STS

EUT Model #: CPEi-25100 Date: 7/2/2007

EUT Serial #: 0093 2385 EUT Power: 60 Hz 115 VAC Temperature: 22.0 °C

Test Method: FCC B Air Pressure: 98.0 kPa

Customer: Motorola Inc Rel. Humidity: 40.0 %

EUT Description: WiMax 2.5 GHz CPE

Notes: \_\_\_\_\_

Data File Name: 4964.dat

Page: 1 of 8

## List of measurements for run #: 1

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 FCC-B <1GHz 3m	DELTA2 FCC B >1GHz 3m
Configuration 4						
32.214 MHz	38.5 Qp	0.71 / 20.79 / 27.98 / 0.0	32.02	V / 1.00 / 0	-7.98	n/a
41.166 MHz	35.1 Qp	0.75 / 16.88 / 27.73 / 0.0	25.0	V / 1.00 / 0	-15.0	n/a
62.34 MHz	40.4 Qp	0.97 / 10.77 / 27.67 / 0.0	24.47	V / 1.00 / 0	-15.53	n/a
71.431 MHz	42.95 Qp	1.07 / 9.26 / 27.79 / 0.0	25.49	V / 1.00 / 0	-14.51	n/a
73.212 MHz	44.25 Qp	1.09 / 9.03 / 27.81 / 0.0	26.56	V / 1.00 / 0	-13.44	n/a
81.211 MHz	49.3 Qp	1.13 / 7.99 / 27.89 / 0.0	30.53	V / 1.00 / 0	-9.47	n/a
82.051 MHz	48.4 Qp	1.13 / 7.88 / 27.88 / 0.0	29.53	V / 1.00 / 0	-10.47	n/a
86.047 MHz	50.3 Qp	1.15 / 7.59 / 27.84 / 0.0	31.2	V / 1.00 / 0	-8.8	n/a
85.501 MHz	49.7 Qp	1.15 / 7.54 / 27.85 / 0.0	30.54	V / 1.00 / 0	-9.46	n/a
115.025 MHz	50.78 Qp	1.34 / 9.37 / 27.62 / 0.0	33.87	V / 1.00 / 0	-9.63	n/a
148.134 MHz	52.2 Qp	1.49 / 9.61 / 27.86 / 0.0	35.45	V / 1.00 / 0	-8.05	n/a
151.572 MHz	50.6 Qp	1.52 / 9.41 / 27.84 / 0.0	33.68	V / 1.00 / 0	-9.82	n/a
200.01 MHz	35.75 Qp	1.71 / 10.77 / 27.78 / 0.0	20.45	V / 1.00 / 0	-23.05	n/a
250.036 MHz	38.05 Qp	1.94 / 12.33 / 27.69 / 0.0	24.63	V / 1.00 / 0	-21.37	n/a
332.344 MHz	37.4 Qp	2.21 / 14.44 / 27.74 / 0.0	26.31	V / 1.00 / 0	-19.69	n/a
333.766 MHz	38.05 Qp	2.22 / 14.48 / 27.72 / 0.0	27.03	V / 1.00 / 0	-18.97	n/a
375.029 MHz	39.8 Qp	2.42 / 15.8 / 27.68 / 0.0	30.34	V / 1.00 / 0	-15.66	n/a
448.811 MHz	33.65 Qp	2.73 / 16.65 / 27.71 / 0.0	25.32	V / 1.00 / 0	-20.68	n/a
500.075 MHz	33.3 Qp	2.97 / 17.9 / 27.77 / 0.0	26.4	V / 1.00 / 0	-19.6	n/a
400.0 MHz	31.75 Qp	2.52 / 15.77 / 27.74 / 0.0	22.29	V / 1.00 / 0	-23.71	n/a
600.018 MHz	33.65 Qp	3.42 / 19.37 / 27.65 / 0.0	28.78	V / 1.00 / 0	-17.22	n/a
750.102 MHz	30.9 Qp	4.11 / 21.1 / 27.48 / 0.0	28.62	V / 1.00 / 0	-17.38	n/a
800.0 MHz	28.75 Qp	4.26 / 21.8 / 27.39 / 0.0	27.43	V / 1.00 / 0	-18.57	n/a
900.0 MHz	28.5 Qp	4.58 / 22.5 / 27.39 / 0.0	28.19	V / 1.00 / 0	-17.81	n/a

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by:

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# RADIATED EMISSIONS



America

Test Report #: WC704964 Run 1                      Test Area: STS

EUT Model #: CPEi-25100                              Date: 7/2/2007

EUT Serial #: 0093 2385                              EUT Power: 60 Hz 115 VAC                      Temperature: 22.0 °C

Test Method: FCC B    Air Pressure: 98.0 kPa

Customer: Motorola Inc    Rel. Humidity: 40.0 %

EUT Description: WiMax 2.5 GHz CPE

Notes: \_\_\_\_\_

Data File Name: 4964.dat

Page: 2 of 8

## List of measurements for run #: 1

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 FCC-B <1GHz 3m	DELTA2 FCC B >1GHz 3m
1.0 GHz	30.5 Qp	4.92 / 23.19 / 27.35 / 0.0	31.25	V / 1.00 / 0	-22.75	n/a
625.012 MHz	34.9 Qp	3.56 / 19.89 / 27.68 / 0.0	30.67	V / 1.00 / 0	-15.33	n/a
575.073 MHz	30.7 Qp	3.3 / 18.84 / 27.62 / 0.0	25.22	V / 1.00 / 0	-20.78	n/a
62.34 MHz	41.6 Qp	0.97 / 10.77 / 27.67 / 0.0	25.67	V / 1.00 / 90	-14.33	n/a
85.501 MHz	51.15 Qp	1.15 / 7.54 / 27.85 / 0.0	31.99	V / 1.00 / 90	-8.01	n/a
86.047 MHz	51.55 Qp	1.15 / 7.59 / 27.84 / 0.0	32.45	V / 1.00 / 90	-7.55	n/a
375.029 MHz	40.2 Qp	2.42 / 15.8 / 27.68 / 0.0	30.74	V / 1.00 / 90	-15.26	n/a
86.047 MHz	53.3 Qp	1.15 / 7.59 / 27.84 / 0.0	34.2	V / 1.00 / 180	-5.8	n/a
85.501 MHz	52.75 Qp	1.15 / 7.54 / 27.85 / 0.0	33.59	V / 1.00 / 90	-6.41	n/a
82.051 MHz	50.2 Qp	1.13 / 7.88 / 27.88 / 0.0	31.33	V / 1.00 / 90	-8.67	n/a
81.211 MHz	50.55 Qp	1.13 / 7.99 / 27.89 / 0.0	31.78	V / 1.00 / 90	-8.22	n/a
375.029 MHz	43.35 Qp	2.42 / 15.8 / 27.68 / 0.0	33.89	V / 1.00 / 135	-12.11	n/a
86 MHz maxed						
86.047 MHz	54.9 Qp	1.15 / 7.59 / 27.84 / 0.0	35.8	V / 1.00 / 250	-4.2	n/a
85.501 MHz	53.8 Qp	1.15 / 7.54 / 27.85 / 0.0	34.64	V / 1.00 / 250	-5.36	n/a
87.476 MHz	54.16 Qp	1.15 / 7.72 / 27.83 / 0.0	35.2	V / 1.00 / 250	-4.8	n/a
87 MHz maxed above						
85 MHz maxed						
85.501 MHz	54.26 Qp	1.15 / 7.54 / 27.85 / 0.0	35.1	V / 1.00 / 230	-4.9	n/a
148 MHz maxed						

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# RADIATED EMISSIONS



Test Report #: WC704964 Run 1                      Test Area: STS  
 EUT Model #: CPEi-25100                              Date: 7/2/2007  
 EUT Serial #: 0093 2385                              EUT Power: 60 Hz 115 VAC                      Temperature: 22.0 °C  
 Test Method: FCC B    Air Pressure: 98.0 kPa  
 Customer: Motorola Inc    Rel. Humidity: 40.0 %  
 EUT Description: WiMax 2.5 GHz CPE

Notes: \_\_\_\_\_

Data File Name: 4964.dat

Page: 3 of 8

## List of measurements for run #: 1

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 FCC-B <1GHz 3m	DELTA2 FCC B >1GHz 3m
148.134 MHz	53.05 Qp	1.49 / 9.61 / 27.86 / 0.0	36.3	V / 1.00 / 0	-7.2	n/a
32 MHz maxed						
32.214 MHz	40.38 Qp	0.71 / 20.79 / 27.98 / 0.0	33.9	V / 1.00 / 0	-6.1	n/a
250.036 MHz	39.15 Qp	1.94 / 12.33 / 27.69 / 0.0	25.73	H / 3.00 / 0	-20.27	n/a
314.984 MHz	31.95 Qp	2.09 / 13.88 / 27.88 / 0.0	20.05	H / 3.00 / 0	-25.95	n/a
129.188 MHz	41.4 Qp	1.4 / 8.45 / 27.78 / 0.0	23.46	H / 3.00 / 180	-20.04	n/a
250.036 MHz	38.65 Qp	1.94 / 12.33 / 27.69 / 0.0	25.23	H / 3.00 / 315	-20.77	n/a
1.0 GHz	30.75 Qp	4.92 / 23.19 / 27.35 / 0.0	31.5	H / 1.00 / 315	-22.5	n/a
314.984 MHz	37.15 Qp	2.09 / 13.88 / 27.88 / 0.0	25.25	H / 1.00 / 315	-20.75	n/a
86 MHz maxed						
86.047 MHz	47.5 Qp	1.15 / 7.59 / 27.84 / 0.0	28.4	H / 2.50 / 110	-11.6	n/a
900 MHz maxed						
900.0 MHz	28.73 Qp	4.58 / 22.5 / 27.39 / 0.0	28.42	H / 3.00 / 260	-17.58	n/a
300.0 MHz	28.75 Qp	2.07 / 13.4 / 27.8 / 0.0	16.42	H / 3.00 / 260	-29.58	n/a
625 MHz maxed						
625.078 MHz	35.34 Qp	3.56 / 19.9 / 27.68 / 0.0	31.11	H / 1.20 / 260	-14.89	n/a
148 MHz maxed						
148.134 MHz	49.06 Qp	1.49 / 9.61 / 27.86 / 0.0	32.31	H / 1.60 / 35	-11.19	n/a

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# RADIATED EMISSIONS



America

Test Report #: WC704964 Run 1 Test Area: STS  
EUT Model #: CPEi-25100 Date: 7/2/2007  
EUT Serial #: 0093 2385 EUT Power: 60 Hz 115 VAC Temperature: 22.0 °C  
Test Method: FCC B Air Pressure: 98.0 kPa  
Customer: Motorola Inc Rel. Humidity: 40.0 %

EUT Description: WiMax 2.5 GHz CPE

Notes: \_\_\_\_\_

Data File Name: 4964.dat Page: 4 of 8

## List of measurements for run #: 1

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 FCC-B <1GHz 3m	DELTA2 FCC B >1GHz 3m
200.49 MHz	48.39 Qp	1.71 / 10.75 / 27.78 / 0.0	33.07	H / 1.60 / 35	-10.43	n/a
200 MHz maxed						
200.49 MHz	50.15 Qp	1.71 / 10.75 / 27.78 / 0.0	34.83	H / 2.00 / 285	-8.67	n/a
1 GHz maxed						
1.0 GHz	30.9 Qp	4.92 / 23.19 / 27.35 / 0.0	31.65	H / 1.00 / 0	-22.35	n/a
900 MHz maxed						
900.0 MHz	30.95 Qp	4.58 / 22.5 / 27.39 / 0.0	30.64	V / 1.00 / 25	-15.36	n/a
200 MHz maxed						
200.49 MHz	45.82 Qp	1.71 / 10.75 / 27.78 / 0.0	30.5	V / 1.00 / 250	-13.0	n/a
Configuration 5						
129.188 MHz	45.05 Qp	1.4 / 8.45 / 27.78 / 0.0	27.11	V / 1.00 / 0	-16.39	n/a
116.288 MHz	52.2 Qp	1.34 / 9.29 / 27.64 / 0.0	35.2	V / 1.00 / 250	-8.3	n/a
115.025 MHz	50.9 Qp	1.34 / 9.37 / 27.62 / 0.0	33.99	V / 1.00 / 250	-9.51	n/a
625.012 MHz	35.75 Qp	3.56 / 19.89 / 27.68 / 0.0	31.52	V / 1.00 / 250	-14.48	n/a
94.125 MHz	52.1 Qp	1.18 / 8.3 / 27.77 / 0.0	33.81	V / 1.00 / 270	-9.69	n/a
94.125 MHz	53.7 Qp	1.18 / 8.3 / 27.77 / 0.0	35.41	V / 1.00 / 90	-8.09	n/a
86 Mhz maxed						

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# RADIATED EMISSIONS



America

Test Report #: WC704964 Run 1                      Test Area: STS

EUT Model #: CPEi-25100                              Date: 7/2/2007

EUT Serial #: 0093 2385                              EUT Power: 60 Hz 115 VAC                      Temperature: 22.0 °C

Test Method: FCC B    Air Pressure: 98.0 kPa

Customer: Motorola Inc    Rel. Humidity: 40.0 %

EUT Description: WiMax 2.5 GHz CPE

Notes: \_\_\_\_\_

Data File Name: 4964.dat    Page: 5 of 8

## List of measurements for run #: 1

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 FCC-B <1GHz 3m	DELTA2 FCC B >1GHz 3m
86.047 MHz	54.46 Qp	1.15 / 7.59 / 27.84 / 0.0	35.36	V / 1.00 / 160	-4.64	n/a
85.501 MHz	53.63 Qp	1.15 / 7.54 / 27.85 / 0.0	34.47	V / 1.00 / 160	-5.53	n/a
87.476 MHz	53.58 Qp	1.15 / 7.72 / 27.83 / 0.0	34.62	V / 1.00 / 160	-5.38	n/a
94.125 MHz	53.09 Qp	1.18 / 8.3 / 27.77 / 0.0	34.8	V / 1.00 / 160	-8.7	n/a
1.0 GHz	31.35 Qp	4.92 / 23.19 / 27.35 / 0.0	32.1	V / 1.00 / 160	-21.9	n/a
<b>116 MHz maxed</b>						
116.288 MHz	55.2 Qp	1.34 / 9.29 / 27.64 / 0.0	38.2	V / 1.00 / 70	-5.3	n/a
115.025 MHz	52.98 Qp	1.34 / 9.37 / 27.62 / 0.0	36.07	V / 1.00 / 70	-7.43	n/a
<b>148 Maxed</b>						
148.134 MHz	52.13 Qp	1.49 / 9.61 / 27.86 / 0.0	35.38	V / 1.00 / 70	-8.12	n/a
151.572 MHz	51.96 Qp	1.52 / 9.41 / 27.84 / 0.0	35.04	V / 1.00 / 70	-8.46	n/a
<b>625 maxed</b>						
625.012 MHz	37.03 Qp	3.56 / 19.89 / 27.68 / 0.0	32.8	V / 1.00 / 70	-13.2	n/a
<b>200 maxed</b>						
200.49 MHz	46.14 Qp	1.71 / 10.75 / 27.78 / 0.0	30.82	V / 1.00 / 250	-12.68	n/a
<b>116 Maxed</b>						
116.288 MHz	49.53 Qp	1.34 / 9.29 / 27.64 / 0.0	32.53	H / 3.00 / 100	-10.97	n/a
<b>200 Maxed</b>						
200.5 MHz	51.33 Qp	1.71 / 10.75 / 27.78 / 0.0	36.01	H / 1.20 / 50	-7.49	n/a

Tested by: Tom K. Swanson  
 \_\_\_\_\_  
 Printed

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 \_\_\_\_\_  
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Reviewed by: S. L. Rupp  
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 Signature

# RADIATED EMISSIONS



Test Report #: WC704964 Run 1                      Test Area: STS  
 EUT Model #: CPEi-25100                              Date: 7/2/2007  
 EUT Serial #: 0093 2385                              EUT Power: 60 Hz 115 VAC                      Temperature: 22.0 °C  
 Test Method: FCC B    Air Pressure: 98.0 kPa  
 Customer: Motorola Inc    Rel. Humidity: 40.0 %  
 EUT Description: WiMax 2.5 GHz CPE

Notes: \_\_\_\_\_

Data File Name: 4964.dat

Page: 6 of 8

## Measurement summary for limit1: FCC-B <1GHz 3m (Qp)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 FCC-B <1GHz 3m
86.047 MHz	54.9 Qp	1.15 / 7.59 / 27.84 / 0.0	35.8	V / 1.00 / 250	-4.2
87.476 MHz	54.16 Qp	1.15 / 7.72 / 27.83 / 0.0	35.2	V / 1.00 / 250	-4.8
85.501 MHz	54.26 Qp	1.15 / 7.54 / 27.85 / 0.0	35.1	V / 1.00 / 230	-4.9
116.288 MHz	55.2 Qp	1.34 / 9.29 / 27.64 / 0.0	38.2	V / 1.00 / 70	-5.3
32.214 MHz	40.38 Qp	0.71 / 20.79 / 27.98 / 0.0	33.9	V / 1.00 / 0	-6.1
148.134 MHz	53.05 Qp	1.49 / 9.61 / 27.86 / 0.0	36.3	V / 1.00 / 0	-7.2
115.025 MHz	52.98 Qp	1.34 / 9.37 / 27.62 / 0.0	36.07	V / 1.00 / 70	-7.43
200.5 MHz	51.33 Qp	1.71 / 10.75 / 27.78 / 0.0	36.01	H / 1.20 / 50	-7.49
94.125 MHz	53.7 Qp	1.18 / 8.3 / 27.77 / 0.0	35.41	V / 1.00 / 90	-8.09
81.211 MHz	50.55 Qp	1.13 / 7.99 / 27.89 / 0.0	31.78	V / 1.00 / 90	-8.22
151.572 MHz	51.96 Qp	1.52 / 9.41 / 27.84 / 0.0	35.04	V / 1.00 / 70	-8.46
82.051 MHz	50.2 Qp	1.13 / 7.88 / 27.88 / 0.0	31.33	V / 1.00 / 90	-8.67
375.029 MHz	43.35 Qp	2.42 / 15.8 / 27.68 / 0.0	33.89	V / 1.00 / 135	-12.11
625.012 MHz	37.03 Qp	3.56 / 19.89 / 27.68 / 0.0	32.8	V / 1.00 / 70	-13.2
73.212 MHz	44.25 Qp	1.09 / 9.03 / 27.81 / 0.0	26.56	V / 1.00 / 0	-13.44
62.34 MHz	41.6 Qp	0.97 / 10.77 / 27.67 / 0.0	25.67	V / 1.00 / 90	-14.33
71.431 MHz	42.95 Qp	1.07 / 9.26 / 27.79 / 0.0	25.49	V / 1.00 / 0	-14.51
41.166 MHz	35.1 Qp	0.75 / 16.88 / 27.73 / 0.0	25.0	V / 1.00 / 0	-15.0
900.0 MHz	30.95 Qp	4.58 / 22.5 / 27.39 / 0.0	30.64	V / 1.00 / 25	-15.36
129.188 MHz	45.05 Qp	1.4 / 8.45 / 27.78 / 0.0	27.11	V / 1.00 / 0	-16.39
600.018 MHz	33.65 Qp	3.42 / 19.37 / 27.65 / 0.0	28.78	V / 1.00 / 0	-17.22
750.102 MHz	30.9 Qp	4.11 / 21.1 / 27.48 / 0.0	28.62	V / 1.00 / 0	-17.38
800.0 MHz	28.75 Qp	4.26 / 21.8 / 27.39 / 0.0	27.43	V / 1.00 / 0	-18.57
333.766 MHz	38.05 Qp	2.22 / 14.48 / 27.72 / 0.0	27.03	V / 1.00 / 0	-18.97
500.075 MHz	33.3 Qp	2.97 / 17.9 / 27.77 / 0.0	26.4	V / 1.00 / 0	-19.6
332.344 MHz	37.4 Qp	2.21 / 14.44 / 27.74 / 0.0	26.31	V / 1.00 / 0	-19.69

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*Thomas K. Swanson*

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Reviewed by: S. L. Rupp

by:

Printed

*Susan L Rupp*

Signature



# RADIATED EMISSIONS



America

Test Report #: WC704964 Run 1                      Test Area: STS

EUT Model #: CPEi-25100                              Date: 7/2/2007

EUT Serial #: 0093 2385                              EUT Power: 60 Hz 115 VAC                      Temperature: 22.0 °C

Test Method: FCC B    Air Pressure: 98.0 kPa

Customer: Motorola Inc    Rel. Humidity: 40.0 %

EUT Description: WiMax 2.5 GHz CPE

Notes: \_\_\_\_\_

Data File Name: 4964.dat    Page: 7 of 8

<b>Measurement summary for limit1: FCC-B &lt;1GHz 3m (Qp)</b>					
FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 FCC-B <1GHz 3m
250.036 MHz	39.15 Qp	1.94 / 12.33 / 27.69 / 0.0	25.73	H / 3.00 / 0	-20.27
448.811 MHz	33.65 Qp	2.73 / 16.65 / 27.71 / 0.0	25.32	V / 1.00 / 0	-20.68
314.984 MHz	37.15 Qp	2.09 / 13.88 / 27.88 / 0.0	25.25	H / 1.00 / 315	-20.75
575.073 MHz	30.7 Qp	3.3 / 18.84 / 27.62 / 0.0	25.22	V / 1.00 / 0	-20.78
1.0 GHz	31.35 Qp	4.92 / 23.19 / 27.35 / 0.0	32.1	V / 1.00 / 160	-21.9
200.01 MHz	35.75 Qp	1.71 / 10.77 / 27.78 / 0.0	20.45	V / 1.00 / 0	-23.05
400.0 MHz	31.75 Qp	2.52 / 15.77 / 27.74 / 0.0	22.29	V / 1.00 / 0	-23.71
300.0 MHz	28.75 Qp	2.07 / 13.4 / 27.8 / 0.0	16.42	H / 3.00 / 260	-29.58

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*Susan L Rupp*  
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# RADIATED EMISSIONS



America

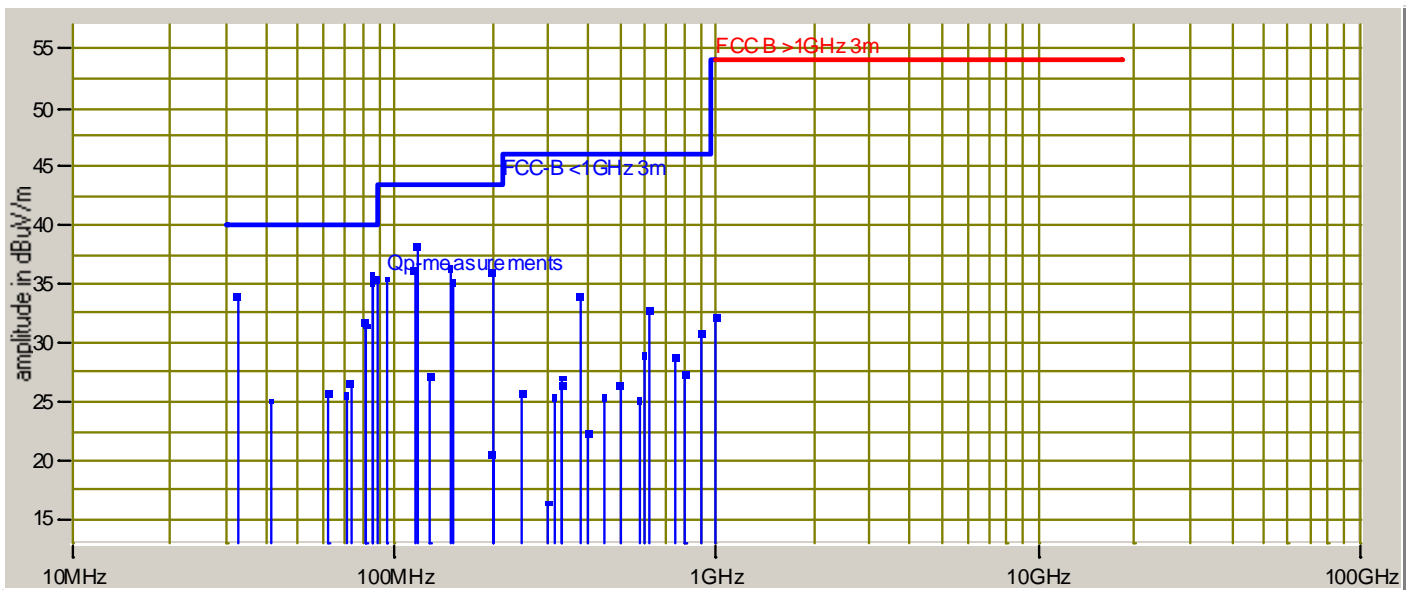
Test Report #: WC704964 Run 1 Test Area: STS  
EUT Model #: CPEi-25100 Date: 7/2/2007  
EUT Serial #: 0093 2385 EUT Power: 60 Hz 115 VAC Temperature: 22.0 °C  
Test Method: FCC B Air Pressure: 98.0 kPa  
Customer: Motorola Inc Rel. Humidity: 40.0 %

EUT Description: WiMax 2.5 GHz CPE

Notes: \_\_\_\_\_

Data File Name: 4964.dat Page: 8 of 8

## Graph:



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Thomas K. Swanson  
Signature

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Signature

# RADIATED EMISSIONS



Test Report #: WC705280 Run 1 Test Area: LTS  
 EUT Model #: CPEi-25100 Date: 7/23/2007  
 EUT Serial #: 0053 X227 SABX 0093 2385 EUT Power: 60 Hz 110 VAC Temperature: 25.0 °C  
 Test Method: FCC B Air Pressure: 99.0 kPa  
 Customer: Motorola Inc., NextNet Wireless Product Group Rel. Humidity: 59.0 %  
 EUT Description: BRS/EBS Residential Subscribe Unit (RSU)

Notes: \_\_\_\_\_

Data File Name: 5280.dat Page: 1 of 2

## List of measurements for run #: 1

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 FCC B >1GHz 3m	DELTA2
Config 4						
Config 5						
Config 6						
No significant emissions detected 1 to 14 GHz - End of scan						

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# RADIATED EMISSIONS



America

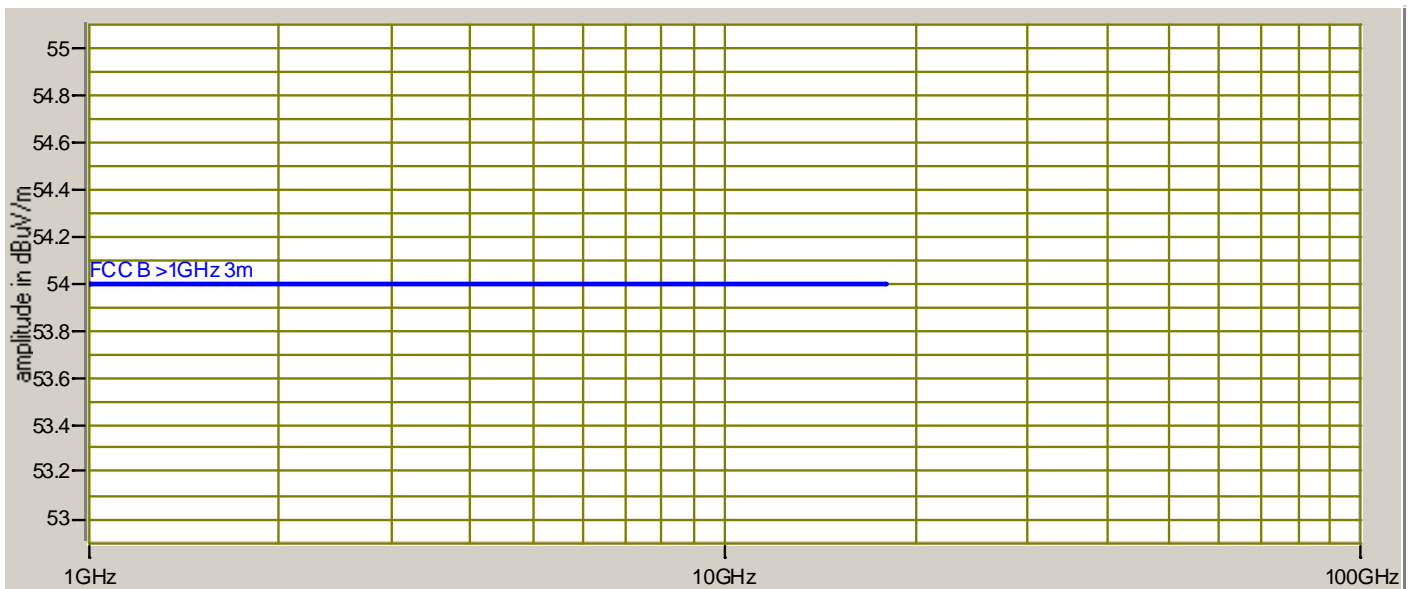
Test Report #: WC705280 Run 1 Test Area: LTS  
EUT Model #: CPEi-25100 Date: 7/23/2007  
EUT Serial #: 0053 X227 SABX 0093 2385 EUT Power: 60 Hz 110 VAC Temperature: 25.0 °C  
Test Method: FCC B Air Pressure: 99.0 kPa  
Customer: Motorola Inc., NextNet Wireless Product Group Rel. Humidity: 59.0 %  
EUT Description: BRS/EBS Residential Subscribe Unit (RSU)

Notes: \_\_\_\_\_

Data File Name: 5280.dat

Page: 2 of 2

## Graph:



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Signature

# CONDUCTED EMISSIONS



America

Test Report #: WC705280 Run 3 Test Area: LTS  
 EUT Model #: CPEi-25100 Date: 7/23/2007  
 EUT Serial #: 0053 X227 SABX 0093 2385 EUT Power: 60 Hz 110 VAC Temperature: 25.0 °C  
 Test Method: \_\_\_\_\_ Air Pressure: 99.0 kPa  
 Customer: Motorola Inc., NextNet Wireless Product Group Rel. Humidity: 59.0 %  
 EUT Description: BRS/EBS Residential Subscribe Unit (RSU)

Notes: \_\_\_\_\_

Data File Name: 5280.dat

Page: 1 of 6

## List of measurements for run #: 3

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	EUT Lead	DELTA1 EN55022 B Qp	DELTA2 EN55022 B Avg
Config 7						
150.0 kHz	41.51 Qp	0.12 / 2.9 / 0.0 / 0.0	44.53	N	-21.47	n/a
150.0 kHz	18.69 Av	0.12 / 2.9 / 0.0 / 0.0	21.71	N	n/a	-34.29
165.0 kHz	45.51 Qp	0.12 / 2.6 / 0.0 / 0.0	48.23	N	-16.98	n/a
165.0 kHz	27.87 Av	0.12 / 2.6 / 0.0 / 0.0	30.59	N	n/a	-24.62
265.0 kHz	35.13 Qp	0.14 / 1.71 / 0.0 / 0.0	36.97	N	-24.3	n/a
265.0 kHz	21.32 Av	0.14 / 1.71 / 0.0 / 0.0	23.16	N	n/a	-28.11
435.0 kHz	33.13 Qp	0.17 / 0.62 / 0.0 / 0.0	33.92	N	-23.24	n/a
435.0 kHz	19.71 Av	0.17 / 0.62 / 0.0 / 0.0	20.5	N	n/a	-26.66
1.25 MHz	29.15 Qp	0.27 / 0.01 / 0.0 / 0.0	29.43	N	-26.57	n/a
1.25 MHz	18.86 Av	0.27 / 0.01 / 0.0 / 0.0	19.14	N	n/a	-26.86
2.93 MHz	26.21 Qp	0.42 / 0.02 / 0.0 / 0.0	26.65	N	-29.35	n/a
2.93 MHz	16.06 Av	0.42 / 0.02 / 0.0 / 0.0	16.5	N	n/a	-29.5
13.81 MHz	23.85 Qp	0.88 / 0.08 / 0.0 / 0.0	24.81	N	-35.19	n/a
13.81 MHz	8.44 Av	0.88 / 0.08 / 0.0 / 0.0	9.4	N	n/a	-40.6
23.13 MHz	30.59 Qp	1.16 / 0.16 / 0.0 / 0.0	31.9	N	-28.1	n/a
23.13 MHz	26.76 Av	1.16 / 0.16 / 0.0 / 0.0	28.07	N	n/a	-21.93
150.0 kHz	41.17 Qp	0.12 / 2.9 / 0.0 / 0.0	44.19	N	-21.81	n/a
150.0 kHz	23.47 Av	0.12 / 2.9 / 0.0 / 0.0	26.49	N	n/a	-29.51
165.0 kHz	45.67 Qp	0.12 / 2.6 / 0.0 / 0.0	48.39	N	-16.82	n/a
165.0 kHz	33.71 Av	0.12 / 2.6 / 0.0 / 0.0	36.43	N	n/a	-18.78
265.0 kHz	41.01 Qp	0.14 / 1.71 / 0.0 / 0.0	42.85	N	-18.42	n/a
265.0 kHz	27.92 Av	0.14 / 1.71 / 0.0 / 0.0	29.76	N	n/a	-21.51
435.0 kHz	37.63 Qp	0.17 / 0.62 / 0.0 / 0.0	38.42	N	-18.74	n/a

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# CONDUCTED EMISSIONS



America

Test Report #: WC705280 Run 3 Test Area: LTS  
 EUT Model #: CPEi-25100 Date: 7/23/2007  
 EUT Serial #: 0053 X227 SABX 0093 2385 EUT Power: 60 Hz 110 VAC Temperature: 25.0 °C  
 Test Method: \_\_\_\_\_ Air Pressure: 99.0 kPa  
 Customer: Motorola Inc., NextNet Wireless Product Group Rel. Humidity: 59.0 %  
 EUT Description: BRS/EBS Residential Subscribe Unit (RSU)

Notes: \_\_\_\_\_

Data File Name: 5280.dat

Page: 2 of 6

## List of measurements for run #: 3

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	EUT Lead	DELTA1 EN55022 B Qp	DELTA2 EN55022 B Avg
435.0 kHz	25.48 Av	0.17 / 0.62 / 0.0 / 0.0	26.27	N	n/a	-20.89
1.25 MHz	36.39 Qp	0.27 / 0.01 / 0.0 / 0.0	36.67	N	-19.33	n/a
1.25 MHz	25.36 Av	0.27 / 0.01 / 0.0 / 0.0	25.64	N	n/a	-20.36
2.93 MHz	30.35 Qp	0.42 / 0.02 / 0.0 / 0.0	30.79	N	-25.21	n/a
2.93 MHz	17.11 Av	0.42 / 0.02 / 0.0 / 0.0	17.55	N	n/a	-28.45
13.81 MHz	22.49 Qp	0.88 / 0.08 / 0.0 / 0.0	23.45	N	-36.55	n/a
13.81 MHz	11.9 Av	0.88 / 0.08 / 0.0 / 0.0	12.86	N	n/a	-37.14
23.13 MHz	28.75 Qp	1.16 / 0.16 / 0.0 / 0.0	30.06	N	-29.94	n/a
23.13 MHz	23.83 Av	1.16 / 0.16 / 0.0 / 0.0	25.14	N	n/a	-24.86
Config 8						
170.0 kHz	37.75 Qp	0.12 / 2.5 / 0.0 / 0.0	40.37	N	-24.59	n/a
170.0 kHz	24.29 Av	0.12 / 2.5 / 0.0 / 0.0	26.91	N	n/a	-28.05
215.0 kHz	39.53 Qp	0.13 / 1.86 / 0.0 / 0.0	41.51	N	-21.5	n/a
215.0 kHz	28.94 Av	0.13 / 1.86 / 0.0 / 0.0	30.92	N	n/a	-22.09
260.0 kHz	39.17 Qp	0.14 / 1.72 / 0.0 / 0.0	41.03	N	-20.4	n/a
260.0 kHz	31.0 Av	0.14 / 1.72 / 0.0 / 0.0	32.86	N	n/a	-18.57
435.0 kHz	31.09 Qp	0.17 / 0.62 / 0.0 / 0.0	31.88	N	-25.28	n/a
435.0 kHz	23.98 Av	0.17 / 0.62 / 0.0 / 0.0	24.77	N	n/a	-22.39
925.0 kHz	25.99 Qp	0.23 / 0.01 / 0.0 / 0.0	26.23	N	-29.77	n/a
925.0 kHz	14.12 Av	0.23 / 0.01 / 0.0 / 0.0	14.36	N	n/a	-31.64
2.675 MHz	22.81 Qp	0.41 / 0.02 / 0.0 / 0.0	23.23	N	-32.77	n/a
2.675 MHz	12.59 Av	0.41 / 0.02 / 0.0 / 0.0	13.01	N	n/a	-32.99
8.31 MHz	23.09 Qp	0.7 / 0.04 / 0.0 / 0.0	23.83	N	-36.17	n/a
8.31 MHz	11.81 Av	0.7 / 0.04 / 0.0 / 0.0	12.55	N	n/a	-37.45
19.71 MHz	27.47 Qp	1.08 / 0.1 / 0.0 / 0.0	28.65	N	-31.35	n/a

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Reviewed by: S. L. Rupp  
 Printed

Susan L Rupp  
 Signature

# CONDUCTED EMISSIONS



America

Test Report #: WC705280 Run 3 Test Area: LTS  
 EUT Model #: CPEi-25100 Date: 7/23/2007  
 EUT Serial #: 0053 X227 SABX 0093 2385 EUT Power: 60 Hz 110 VAC Temperature: 25.0 °C  
 Test Method: \_\_\_\_\_ Air Pressure: 99.0 kPa  
 Customer: Motorola Inc., NextNet Wireless Product Group Rel. Humidity: 59.0 %

EUT Description: BRS/EBS Residential Subscribe Unit (RSU)

Notes: \_\_\_\_\_

Data File Name: 5280.dat Page: 3 of 6

## List of measurements for run #: 3

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	EUT Lead	DELTA1 EN55022 B Qp	DELTA2 EN55022 B Avg
19.71 MHz	22.92 Av	1.08 / 0.1 / 0.0 / 0.0	24.1	N	n/a	-25.9
170.0 kHz	38.17 Qp	0.12 / 2.5 / 0.0 / 0.0	40.79	L1	-24.17	n/a
170.0 kHz	30.62 Av	0.12 / 2.5 / 0.0 / 0.0	33.24	L1	n/a	-21.72
215.0 kHz	41.19 Qp	0.13 / 1.86 / 0.0 / 0.0	43.17	L1	-19.84	n/a
215.0 kHz	35.87 Av	0.13 / 1.86 / 0.0 / 0.0	37.85	L1	n/a	-15.16
260.0 kHz	43.11 Qp	0.14 / 1.72 / 0.0 / 0.0	44.97	L1	-16.46	n/a
260.0 kHz	37.34 Av	0.14 / 1.72 / 0.0 / 0.0	39.2	L1	n/a	-12.23
435.0 kHz	36.29 Qp	0.17 / 0.62 / 0.0 / 0.0	37.08	L1	-20.08	n/a
435.0 kHz	30.28 Av	0.17 / 0.62 / 0.0 / 0.0	31.07	L1	n/a	-16.09
925.0 kHz	33.17 Qp	0.23 / 0.01 / 0.0 / 0.0	33.41	L1	-22.59	n/a
925.0 kHz	21.85 Av	0.23 / 0.01 / 0.0 / 0.0	22.09	L1	n/a	-23.91
2.675 MHz	28.87 Qp	0.41 / 0.02 / 0.0 / 0.0	29.29	L1	-26.71	n/a
2.675 MHz	18.01 Av	0.41 / 0.02 / 0.0 / 0.0	18.43	L1	n/a	-27.57
8.31 MHz	22.09 Qp	0.7 / 0.04 / 0.0 / 0.0	22.83	L1	-37.17	n/a
8.31 MHz	7.74 Av	0.7 / 0.04 / 0.0 / 0.0	8.48	L1	n/a	-41.52
19.71 MHz	26.81 Qp	1.08 / 0.1 / 0.0 / 0.0	27.99	L1	-32.01	n/a
19.71 MHz	21.19 Av	1.08 / 0.1 / 0.0 / 0.0	22.37	L1	n/a	-27.63
End of scan						

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Reviewed by: S. L. Rupp  
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Susan L Rupp  
 Signature

# CONDUCTED EMISSIONS



America

Test Report #: WC705280 Run 3 Test Area: LTS  
 EUT Model #: CPEi-25100 Date: 7/23/2007  
 EUT Serial #: 0053 X227 SABX 0093 2385 EUT Power: 60 Hz 110 VAC Temperature: 25.0 °C  
 Test Method: \_\_\_\_\_ Air Pressure: 99.0 kPa  
 Customer: Motorola Inc., NextNet Wireless Product Group Rel. Humidity: 59.0 %  
 EUT Description: BRS/EBS Residential Subscribe Unit (RSU)

Notes: \_\_\_\_\_

Data File Name: 5280.dat

Page: 4 of 6

## Measurement summary for limit1: EN55022 B Qp (Qp)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	EUT Lead	DELTA1 EN55022 B Qp
260.0 kHz	43.11 Qp	0.14 / 1.72 / 0.0 / 0.0	44.97	L1	-16.46
165.0 kHz	45.67 Qp	0.12 / 2.6 / 0.0 / 0.0	48.39	N	-16.82
435.0 kHz	37.63 Qp	0.17 / 0.62 / 0.0 / 0.0	38.42	N	-18.74
1.25 MHz	36.39 Qp	0.27 / 0.01 / 0.0 / 0.0	36.67	N	-19.33
215.0 kHz	41.19 Qp	0.13 / 1.86 / 0.0 / 0.0	43.17	L1	-19.84
150.0 kHz	41.51 Qp	0.12 / 2.9 / 0.0 / 0.0	44.53	N	-21.47
925.0 kHz	33.17 Qp	0.23 / 0.01 / 0.0 / 0.0	33.41	L1	-22.59
2.93 MHz	30.35 Qp	0.42 / 0.02 / 0.0 / 0.0	30.79	N	-25.21
2.675 MHz	28.87 Qp	0.41 / 0.02 / 0.0 / 0.0	29.29	L1	-26.71
23.13 MHz	30.59 Qp	1.16 / 0.16 / 0.0 / 0.0	31.9	N	-28.1
19.71 MHz	27.47 Qp	1.08 / 0.1 / 0.0 / 0.0	28.65	N	-31.35
13.81 MHz	23.85 Qp	0.88 / 0.08 / 0.0 / 0.0	24.81	N	-35.19
8.31 MHz	23.09 Qp	0.7 / 0.04 / 0.0 / 0.0	23.83	N	-36.17

Tested by: T. K. Swanson

Printed

*Thomas K. Swanson*

Signature

Reviewed by: S. L. Rupp

by:

Printed

*Susan L Rupp*

Signature



# CONDUCTED EMISSIONS



Test Report #: WC705280 Run 3                      Test Area: LTS  
 EUT Model #: CPEi-25100                              Date: 7/23/2007  
 EUT Serial #: 0053 X227 SABX 0093 2385      EUT Power: 60 Hz 110 VAC                      Temperature: 25.0 °C  
 Test Method: \_\_\_\_\_                                      Air Pressure: 99.0 kPa  
 Customer: Motorola Inc., NextNet Wireless Product Group                      Rel. Humidity: 59.0 %  
 EUT Description: BRS/EBS Residential Subscribe Unit (RSU)

Notes: \_\_\_\_\_

Data File Name: 5280.dat

Page: 5 of 6

## Measurement summary for limit2: EN55022 B Avg (Av)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	EUT Lead	DELTA2 EN55022 B Avg
260.0 kHz	37.34 Av	0.14 / 1.72 / 0.0 / 0.0	39.2	L1	-12.23
215.0 kHz	35.87 Av	0.13 / 1.86 / 0.0 / 0.0	37.85	L1	-15.16
435.0 kHz	30.28 Av	0.17 / 0.62 / 0.0 / 0.0	31.07	L1	-16.09
165.0 kHz	33.71 Av	0.12 / 2.6 / 0.0 / 0.0	36.43	N	-18.78
1.25 MHz	25.36 Av	0.27 / 0.01 / 0.0 / 0.0	25.64	N	-20.36
23.13 MHz	26.76 Av	1.16 / 0.16 / 0.0 / 0.0	28.07	N	-21.93
925.0 kHz	21.85 Av	0.23 / 0.01 / 0.0 / 0.0	22.09	L1	-23.91
19.71 MHz	22.92 Av	1.08 / 0.1 / 0.0 / 0.0	24.1	N	-25.9
2.675 MHz	18.01 Av	0.41 / 0.02 / 0.0 / 0.0	18.43	L1	-27.57
2.93 MHz	17.11 Av	0.42 / 0.02 / 0.0 / 0.0	17.55	N	-28.45
150.0 kHz	23.47 Av	0.12 / 2.9 / 0.0 / 0.0	26.49	N	-29.51
13.81 MHz	11.9 Av	0.88 / 0.08 / 0.0 / 0.0	12.86	N	-37.14
8.31 MHz	11.81 Av	0.7 / 0.04 / 0.0 / 0.0	12.55	N	-37.45

Tested by: T. K. Swanson  
 Printed

  
 Signature

Reviewed by: S. L. Rupp  
 Printed

  
 Signature

# CONDUCTED EMISSIONS



America

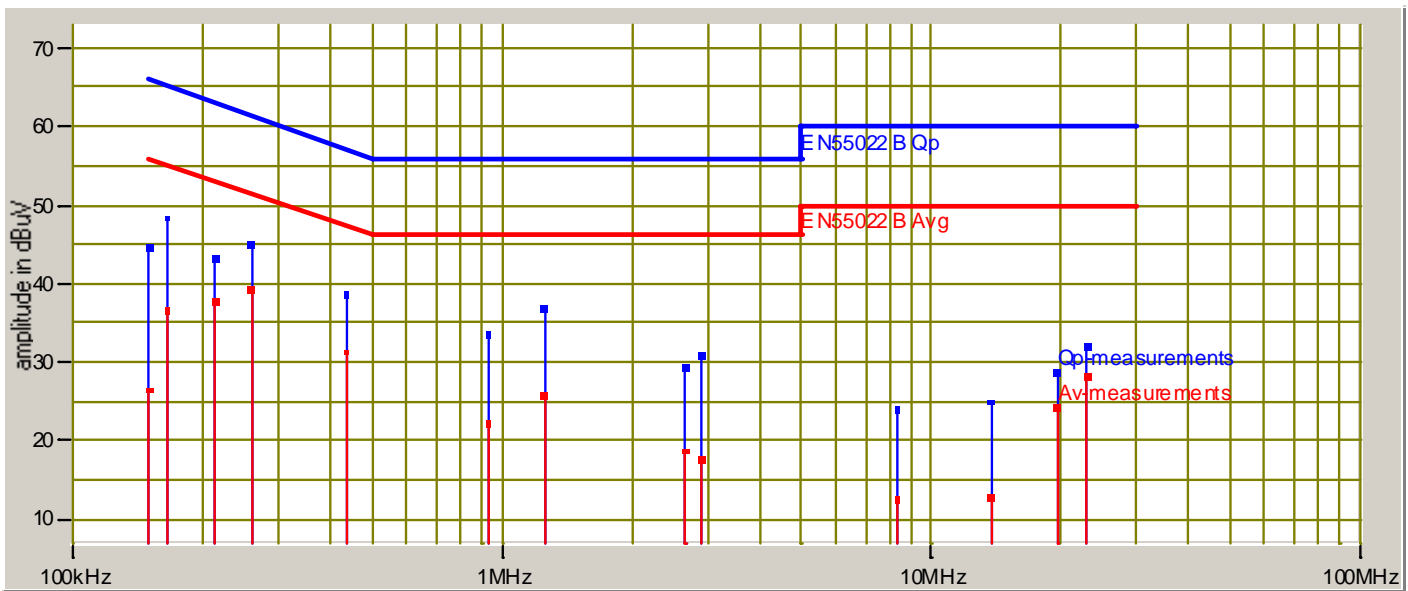
Test Report #: WC705280 Run 3 Test Area: LTS  
 EUT Model #: CPEi-25100 Date: 7/23/2007  
 EUT Serial #: 0053 X227 SABX 0093 2385 EUT Power: 60 Hz 110 VAC Temperature: 25.0 °C  
 Test Method: \_\_\_\_\_ Air Pressure: 99.0 kPa  
 Customer: Motorola Inc., NextNet Wireless Product Group Rel. Humidity: 59.0 %  
 EUT Description: BRS/EBS Residential Subscribe Unit (RSU)

Notes: \_\_\_\_\_

Data File Name: 5280.dat

Page: 6 of 6

## Graph:



Tested by: T. K. Swanson  
 Printed

*Thomas K. Swanson*  
 Signature

Reviewed by: S. L. Rupp  
 Printed

*Susan L Rupp*  
 Signature

## Appendix B

Constructional Data Form

and

Block Diagram





# EMC Test Plan and Constructional Data Form

America

PLEASE COMPLETE THIS DOCUMENT IN FULL, ENTERING N/A IF THE FIELD IS NOT APPLICABLE. IF TESTING RESULTS IN MODIFICATIONS TO THE EQUIPMENT, PLEASE SUBMIT A REVISED TP/CDF INDICATING THOSE MODIFICATIONS.  
**NOTE: This information will be input into your test report as shown below. Press the F1 key at any time to get HELP for the current field selected.**

Company: Motorola Inc., NextNet Wireless Product Group  
 Address: 299 Johnson Ave.  
Suite 120  
Waseca, MN 56093  
 Contact: Tim Blom Position: Engineering Section Manager  
 Phone: 507-837-3672 Fax: 507-837-1059  
 E-mail Address: Tim.Blom@motorola.com

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

EUT Description BRS/EBS Residential Subscribe Unit (RSU)  
 EUT Name WiMax 2.496-2.690 GHz Customer premise Equipment  
 Model No.: CPEi-25100 Serial No.: S/N: 0053 X227 SABX 0093  
2385  
 Product Options: none  
 Configurations to be tested: standard

**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: N/A  
 Modifications made during test: \_\_\_\_\_

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

- |   |  |
|---|--|
| <input type="checkbox"/> EMC Directive 89/336/EEC (EMC)<br>Std: _____                           | <input checked="" type="checkbox"/> FCC: Class <input type="checkbox"/> A <input checked="" type="checkbox"/> B Part <u>27</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 72/245/EEC (EMC)<br>Std: _____                       | <input checked="" type="checkbox"/> Canada: Class <input type="checkbox"/> A <input checked="" type="checkbox"/> B             |
| <input type="checkbox"/> FDA Reviewers Guidance for Premarket<br>Notification Submissions (EMC) | <input type="checkbox"/> Australia: Class <input type="checkbox"/> A <input type="checkbox"/> B                                |
|   | <input checked="" type="checkbox"/> Other: <u>FCC 2, 15, 27, IC RSS-193</u>  |

**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.)



## EMC Test Plan and Constructional Data Form

America

- FCC / TCB Certification  
 E-Mark Certification

- Industry Canada / FCB Certification  
 Taiwan Certification

### 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: 12.75 " Width: 7.75" Height: 1.5 " Weight: 1.8 Lb

### 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: 13 VDC (If battery powered, make sure battery life is sufficient to complete testing.)

# of Phases: 1

Current (Amps/phase(max)): 1.3 Current (Amps/phase(nominal)): .36

Other ---

### Other Special Requirements

Transmitter radiated emissions to be measured per EIA/TIA 603-C procedure for licensed transmitters. Receiver radiated emissions testing to be performed on ANSI C63.4-2003 clause 5.4 compliant site. Receiver radiated emissions measured with a quasi peak detector compliant to CISPR Publication 16.

### Typical Installation and/or Operating Environment

(ie. Hospital, Small Business, Industrial/Factory, etc.)  
 Residential indoor

### EUT Power Cable

- Permanent OR  Removable Length (in meters): 2  
 Shielded OR  Unshielded  
 Not Applicable



# EMC Test Plan and Constructional Data Form

America

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"/>
13 VDC cable	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	twin pair	---	Circular	DC	2	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Ethernet cable	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	CAT-5	differential 100 ohm	RJ-45	100 ohm	2	<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"/>

## EMC Test Plan and Constructional Data Form

### EUT Software.

Revision Level: WiMax Mode "2"  
NextNet Tool/Diagnostics s/w: 0.9.2.0/1.0.0

Description: Test software for RDM product that enables test modes for compliance testing.

**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. Radiated emissions - transmitter - 3 RF channels, 2 channel bandwidths

Requirements per TIA/EIA 603-C-2004 and Industry Canada RSS-193 procedures [absolute power level of -13 dBm and verified using antenna-generator substitution method]

WiMax mode, 49.37% transmitter duty cycle, 16 QAM 3/4 rate coding  
Configuration 1 :: 5.0 MHz channel bandwidth: RF Freq = 2499 MHz  
Configuration 2 :: 10 MHz channel bandwidth: RF freq = 2593 MHz  
Configuration 3 :: 10 MHz channel bandwidth: RF freq = 2687 MHz

Radiated emissions to be measured from 30 MHz to 27 GHz for each configuration.

2. Radiated emissions - receiver - 3 RF channels, 2 channel bandwidths

Requirements per FCC part 15B and Industry Canada RSS-Gen

Configuration 4 :: 5.0 MHz channel bandwidth: RF freq = 2499 MHz  
Configuration 5 :: 10 MHz channel bandwidth: RF freq = 2593 MHz  
Configuration 6 :: 10 MHz channel bandwidth: RF freq = 2687 MHz

Radiated emissions to be measured from 30 MHz to 14 GHz for each configuration.

3. Transmitter and Receiver AC Power Lines Conducted Emissions Limits.

Requirements per FCC part 15B and Industry Canada RSS-Gen

Configuration 7 :: 5.0 MHz channel bandwidth: RF freq = 2499 MHz, transmit 49.37% duty cycle

Configuration 8 :: 10 MHz channel bandwidth: RF freq = 2593 MHz, receive mode



## EMC Test Plan and Constructional Data Form

America

**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 #
Residential Subscribe Unit (RSU)	CPEi-25100	0053 X227 SABX 0093 2385	FCC: PHX-CPE25100 IC: 109AM-CPE25100
RDU Power Supply NN# 420-0060-0010	OTE-17-13	1207HB	N/A
Ethernet Cable NN# 597-6010-0001	N/A	N/A	N/A





## EMC Test Plan and Constructional Data Form

**Support Equipment** -- List and describe all support equipment which is not part of the EUT. (i.e. peripherals, simulators, etc)  
This information is required for FCC & Taiwan testing.

Description	Model #	Serial #	FCC ID #
Dell laptop computer	Precision M65	CRFK3B1	N/A
Lexar Media USB memory stick reader	Part # : RW012 Rev. B	N/A	N/A
Belkin Mouse	F8E814-OPT	057002030	N/A

### Oscillator Frequencies

Frequency	Derived Frequency	Component # / Location	Description of Use
3.25 MHz	N	U1	6V switcher
1.45 MHz	N	U5	4.2V switcher
25 MHz	N	Y201	XTAL - Ethernet
40 MHz	N	Y901	TCXO for main stability
100 MHz	Y	U601	Core clock
200 MHz	Y	U601	Data clock
3748.5- 4030.5 MHz	N	U901	VCO freq range

### Power Supply

Manufacturer	Model #	Serial #	Type
Operating Tech	OTE-17-13	1207HB	<input checked="" type="checkbox"/> Switched-mode: (Frequency) <u>53.9 kHz</u> <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

Manufacturer	Model #	Location in EUT
N/A		



# EMC Test Plan and Constructional Data Form

<b>Critical EMI Components (Capacitors, ferrites, etc.)</b>				
<i>Description</i>	<i>Manufacturer</i>	<i>Part # or Value</i>	<i>Qty</i>	<i>Component # / Location</i>
N/A				

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

N/A

(PLEASE INSERT "ELECTRONIC SIGNATURE" BELOW IF POSSIBLE)

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

/s/ Tim Blom

06/28/2007

\_\_\_\_\_  
Customer authorization to perform tests according to this test plan.

\_\_\_\_\_  
Date

\_\_\_\_\_  
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.

\*\* Part 15 test setup for radiated emissions compliance (DoC). \*\*  
Test setup per ANSI C63.4-2003

\*\* Parts 2 and 27 test setup for BRS and EBS service rules \*\*  
Test setup per TIA-603-C (2004)

### Authorization Signatures

/s/ Tim Blom

06/28/2007

\_\_\_\_\_  
Customer authorization to perform tests  
according to this test plan.

\_\_\_\_\_  
Date

\_\_\_\_\_  
Test Plan/CDF Prepared By (please print)

\_\_\_\_\_  
Date

## Appendix C

### Measurement Protocol





## MEASUREMENT PROTOCOL

### Environmental conditions in the lab, (TUV)

Temperature: 22 - 25° C  
Relative Humidity: 40 - 59 %  
Atmospheric pressure: 98.0 - 99.0 kPa

### Test Methodology

Emission 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 ±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 ±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.

### Radiated Emissions

The final level, in dBµV/m, equals the reading from the spectrum analyzer (Level dBµV), 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.

Example:

FREQ (MHz)	LEVEL (dBuV)	CABLE/ANT/PREAMP (dB)	FINAL (dB)	FINAL (dBuV/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

### Substitution Method

Per TIA/EIA 603-C-2004, a radiated emission scan was also made, at TUV America's Wild River Lab Large Test Site, with the EUT's antenna replaced with a termination to demonstrate case radiation compliance to the -13 dBm requirement. Radiated emissions from the EUT are measured in the frequency range of 30 to 14000 MHz using a spectrum analyzer and appropriate broadband linearly polarized antennas. Table top equipment is placed on a 1.0 X 1.5 meter non-conducting table 80 centimeters above the ground plane. Floor standing equipment is placed directly on the turntable/ground plane. Interface cables that are closer than 40 centimeters to the ground plane are bundled in the center in a serpentine fashion so they are at least 40 centimeters from the ground plane. Cables to simulators/testers (if used in this test) are routed through the center of the table and to a screen room located outside the test area. The antenna is positioned 3 meters horizontally from the EUT. To locate maximum emissions from the test sample the antenna is varied in height from 1 to 4 meters, measurement scans are made with both horizontal and vertical antenna polarizations and the EUT are rotated 360 degrees. The field strength levels were measured per ANSI C63.4. The EUT is then replaced with a tuned dipole antenna (below 1 GHz) or horn antenna (above 1 GHz). The substitute antenna was placed in the same polarization as the test antenna. A signal generator was used to generate a signal level that matched the highest level measured from the EUT. The signal generator level minus the cable loss from the signal generator to the substitute antenna plus the substitute antenna gain equals the spurious power level.

### Test Equipment

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