

# TEST RESULT SUMMARY

**FCC Part 15 Subpart C Section 15.247**  
**FCC Part 15 Subpart C Section 15.207**  
**Industry Canada RSS-210 Issue 7**  
**Industry Canada RSS-Gen Issue 2**

|                        |   |
|------------------------|---|
| MANUFACTURER'S NAME    | Digi International                          |
| MANUFACTURER'S ADDRESS | 11001 Bren Road East<br>Minnetonka MN 55343 |
| NAME OF EQUIPMENT      | Connect WiEM 9210 b/g                       |
| MODEL NUMBER(S) TESTED | 50001538-03                                 |
| TEST REPORT NUMBER     | WC803864 Rev B                              |
| TEST DATE(S)           | 07 May 2008 – 26 June and 20 August 2008    |

TÜV SÜD America Inc, as an independent testing laboratory, declares that the equipment tested as specified above conforms to the applicable electromagnetic compatibility requirements of FCC Part 15 Subpart C Sections 15.247 "Operation within the bands 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz" and 15.207 "Conducted limits" and Industry Canada's RSS-210 Issue 7 "Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category 1 Equipment" and RSS-Gen Issue 2 "General Requirements and Information for the Certification of Radiocommunication Equipment"

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

Date: 25 August 2008

Tested by:

Approved by:



Location: Taylors Falls MN  
USA

Robert J Behringer  
EMC Technician

Greg Jakubowski  
Senior EMC Technician

Not Transferable

# EMC TEST REPORT

Test Report No. WC803864 Rev B Date of issue: 25 August 2008

Model / Serial No(s) Tested 50001538-03 / 00001

Product Type Connect WiEM 9210 b/g

Manufacturer Digi International

Address 11001 Bren Road East  
Minnetonka MN 55343

Test Result  Positive  Negative

Total pages including Appendices 98

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

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## REVISION RECORD

| REVISION | TOTAL NUMBER OF PAGES | DATE           | DESCRIPTION   |
|----------|-----------------------|----------------|---|
|          | 87                    | 11 July 2008   | Initial Release   |
| A        | 87                    | 21 July 2008   | Revisions Include: <ul style="list-style-type: none"> <li>▪ TRS, Page 1 and Appendix B: Updating model number from 50001538-XX to 50001538-03 per correspondence from the manufacturer.</li> <li>▪ Pages 5, 12, 19 and 35: Updated test procedures used.</li> </ul>   |
| B        | 98                    | 25 August 2008 | Revisions Include: <ul style="list-style-type: none"> <li>▪ Radiated spurious average data corrected for duty cycle</li> <li>▪ Added duty cycle plots</li> <li>▪ Typo corrected on heading of conducted spurious plots</li> <li>▪ Added analyzer bandwidths to appendix C</li> <li>▪ Add FCC 15.207 Conducted Emissions Data</li> </ul> |



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## STATEMENT OF MEASUREMENT UNCERTAINTY

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

## TEST EQUIPMENT

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

## EMC TEST REGULATIONS:

The tests were performed according to the following regulations:

- FCC Part 15 Subpart C Section 15.247
- FCC Part 15 Subpart C Section 15.207
- Industry Canada RSS-210 Issue 7
- Industry Canada RSS-Gen Issue 2

## ENVIRONMENTAL CONDITIONS IN THE LAB

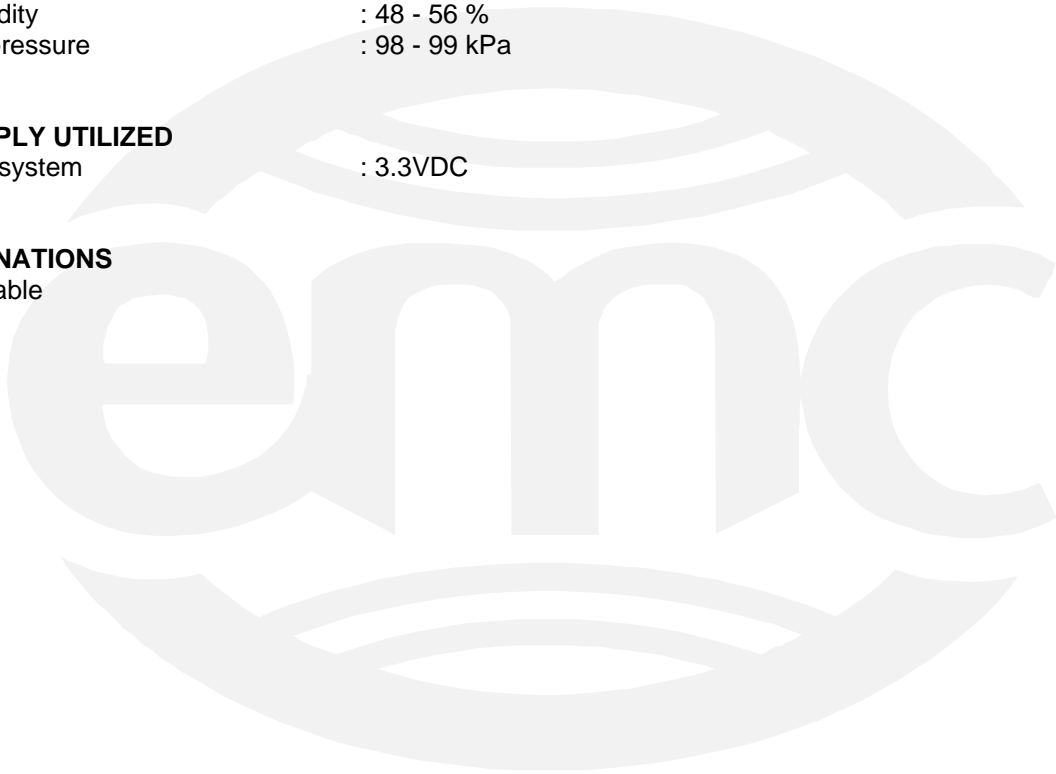
|                      | <u>Actual</u> |
|----------------------|---------------|
| Temperature:         | : 20 - 24 °C  |
| Relative Humidity    | : 48 - 56 %   |
| Atmospheric pressure | : 98 - 99 kPa |

## POWER SUPPLY UTILIZED

Power supply system : 3.3VDC

## SIGN EXPLANATIONS

- not applicable
- applicable



## 6 dB Bandwidth

FCC 15.247(a)(2), IC RSS-210 A8.2(a)

### Test summary

The requirements are:  - MET  - NOT MET

Test was performed in accordance with the test procedure of FCC KDB Publication 558074

The minimum 6 dB bandwidth = 8.48 MHz

### Test location

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

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

- Wild River Lab Tech Area, conducted measurement

### Test equipment

| TUV ID    | Model  | Manufacturer | Description       | Serial     | Cal Due   |
|-----------|--------|--------------|-------------------|------------|-----------|
| WRLE03371 | E4440A | Agilent      | Spectrum Analyzer | MY43362222 | 19-Dec-08 |

### Test limit

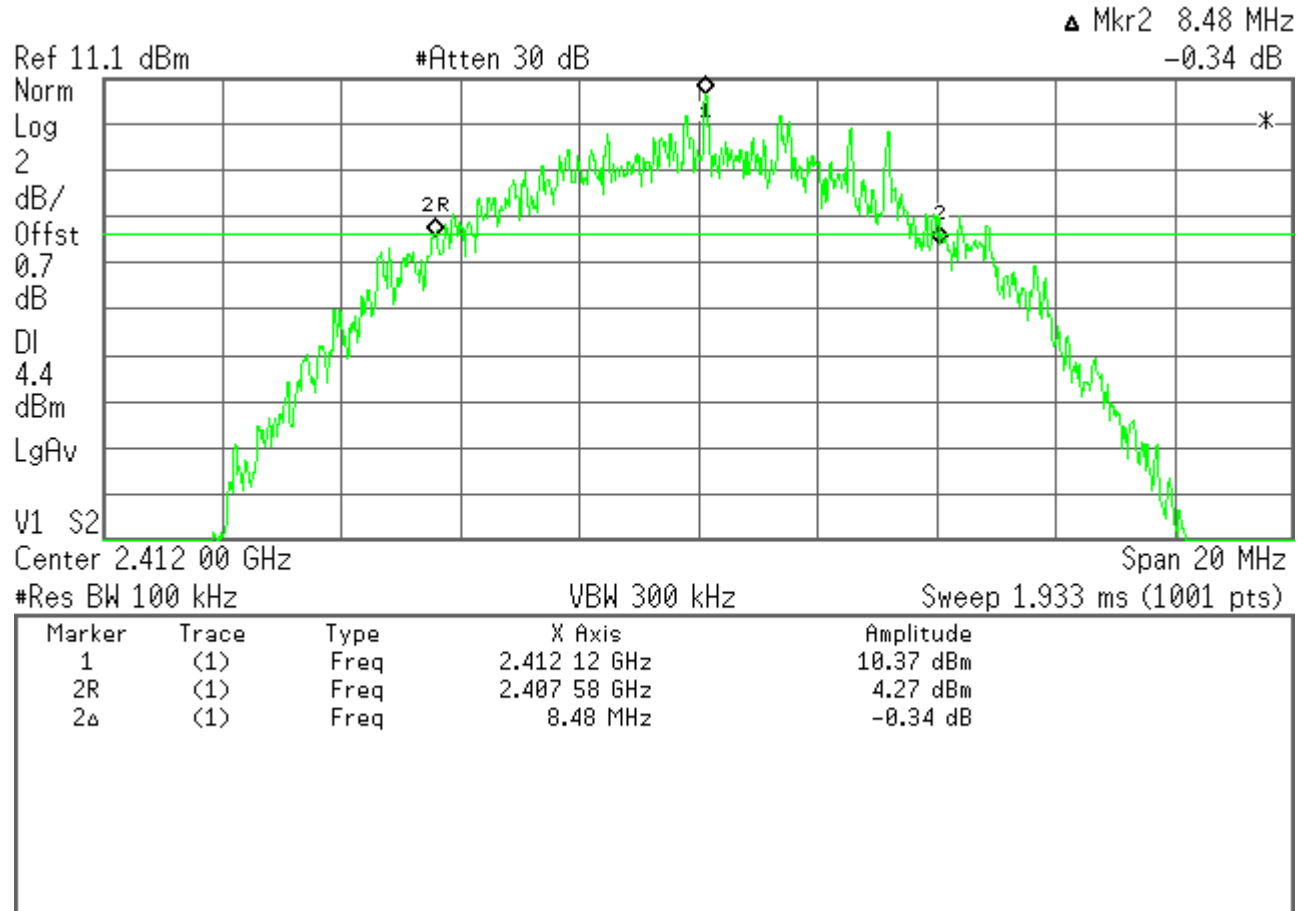
500 kHz minimum

### Test data

See following pages

6 dB Bandwidth  
 Channel 1, 11 MB rate

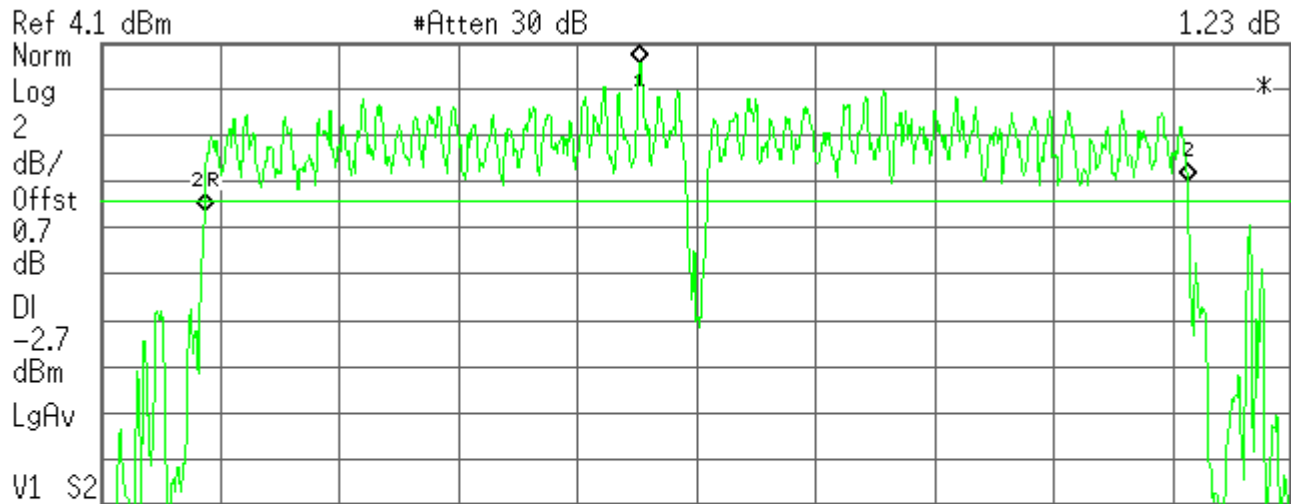
Agilent 12:48:59 Jun 25, 2008



6 dB Bandwidth  
 Channel 1, 54 MB rate

Agilent 12:03:53 Jun 25, 2008

Mkr2 16.50 MHz  
 1.23 dB



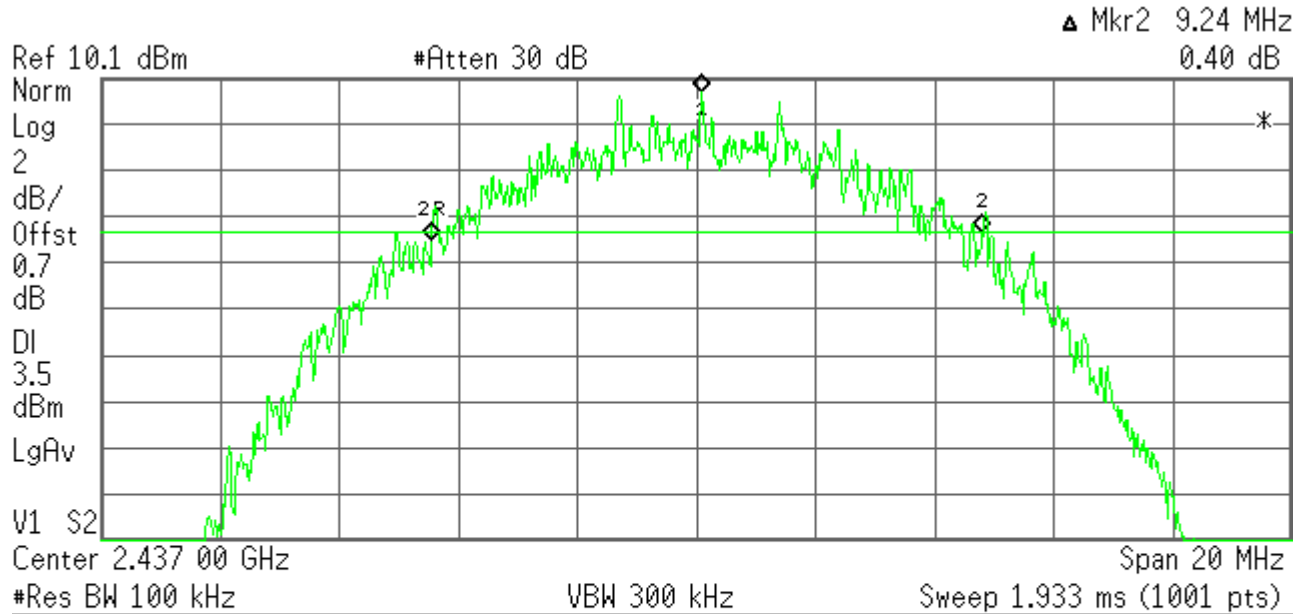
Center 2.412 00 GHz Span 20 MHz  
 #Res BW 100 kHz VBW 300 kHz Sweep 1.933 ms (1001 pts)

| Marker | Trace | Type | X Axis       | Amplitude |
|--------|-------|------|--------------|-----------|
| 1      | (1)   | Freq | 2.411 04 GHz | 3.27 dBm  |
| 2R     | (1)   | Freq | 2.403 74 GHz | -3.13 dBm |
| 2Δ     | (1)   | Freq | 16.50 MHz    | 1.23 dB   |



6 dB Bandwidth  
 Channel 6, 11 MB rate

Agilent 12:45:47 Jun 25, 2008

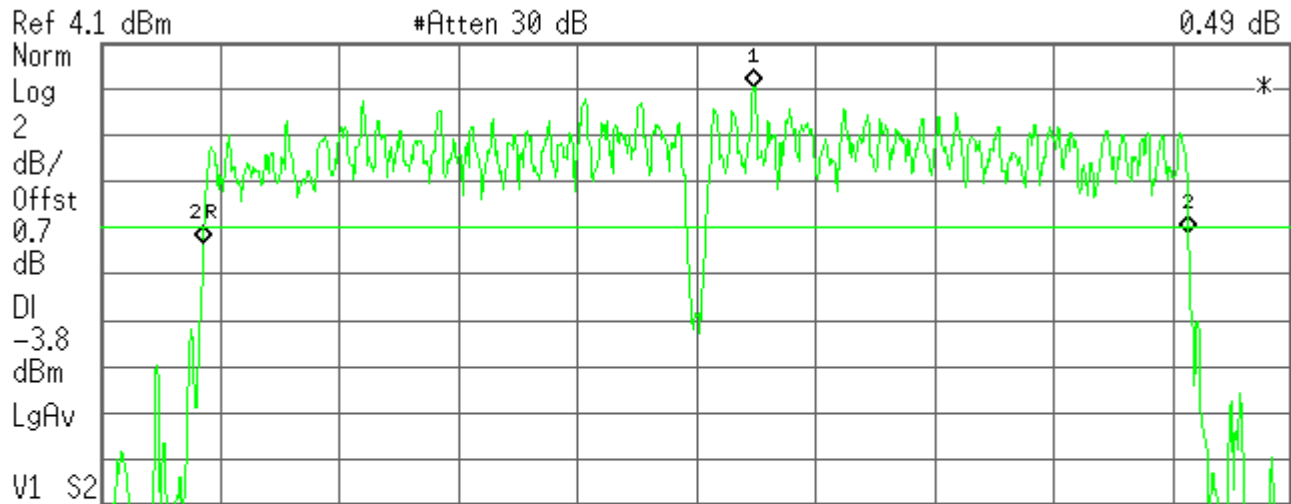


| Marker | Trace | Type | X Axis       | Amplitude |
|--------|-------|------|--------------|-----------|
| 1      | (1)   | Freq | 2.437 10 GHz | 9.46 dBm  |
| 2R     | (1)   | Freq | 2.432 56 GHz | 3.06 dBm  |
| 2Δ     | (1)   | Freq | 9.24 MHz     | 0.40 dB   |

6 dB Bandwidth  
 Channel 6, 54 MB rate

Agilent 12:30:28 Jun 25, 2008

Mkr2 16.54 MHz  
 0.49 dB

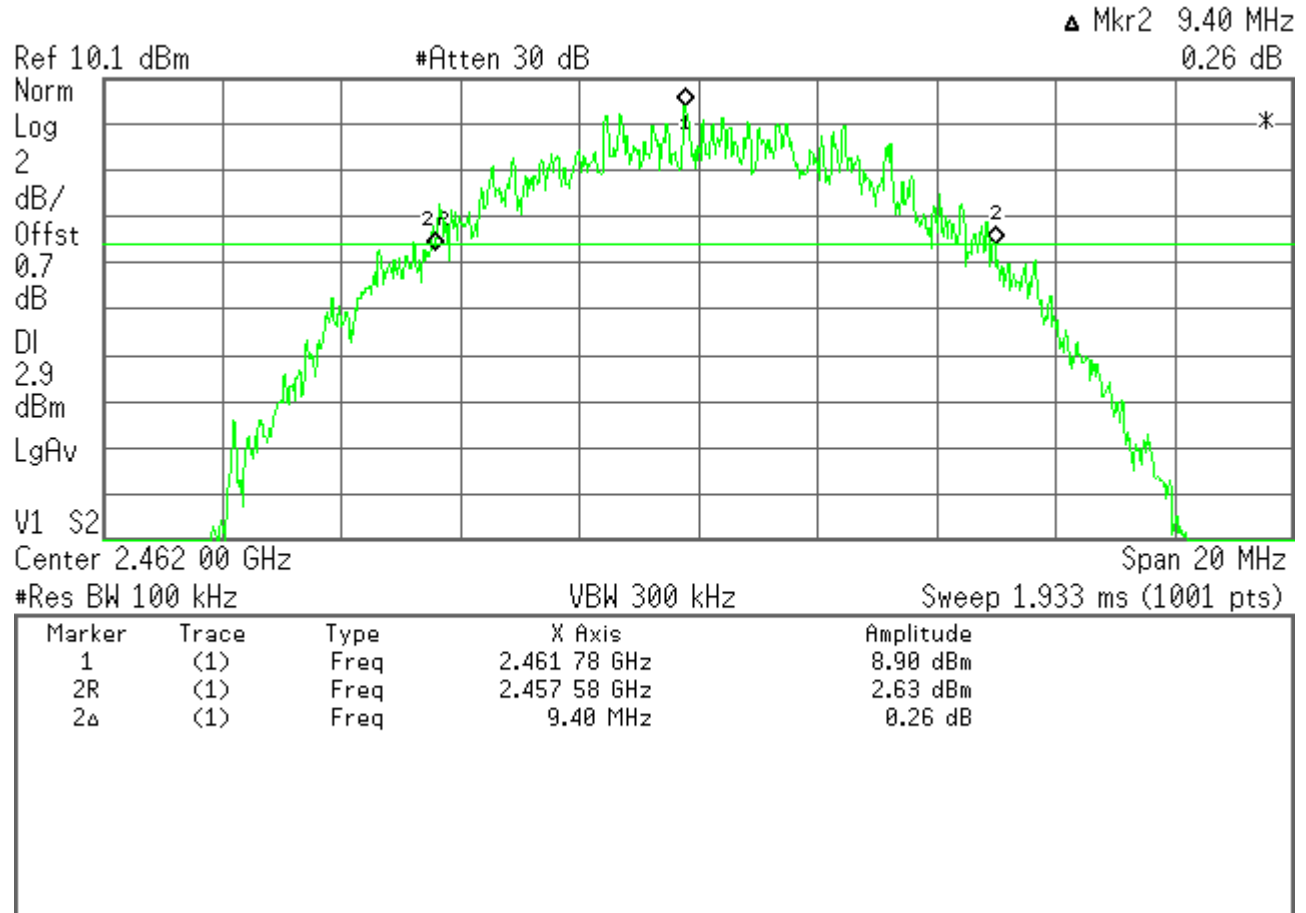


Center 2.437 00 GHz Span 20 MHz  
 #Res BW 100 kHz VBW 300 kHz Sweep 1.933 ms (1001 pts)

| Marker | Trace | Type | X Axis       | Amplitude |
|--------|-------|------|--------------|-----------|
| 1      | (1)   | Freq | 2.437 96 GHz | 2.17 dBm  |
| 2R     | (1)   | Freq | 2.428 72 GHz | -4.58 dBm |
| 2Δ     | (1)   | Freq | 16.54 MHz    | 0.49 dB   |

6 dB Bandwidth  
 Channel 11, 11 MB rate

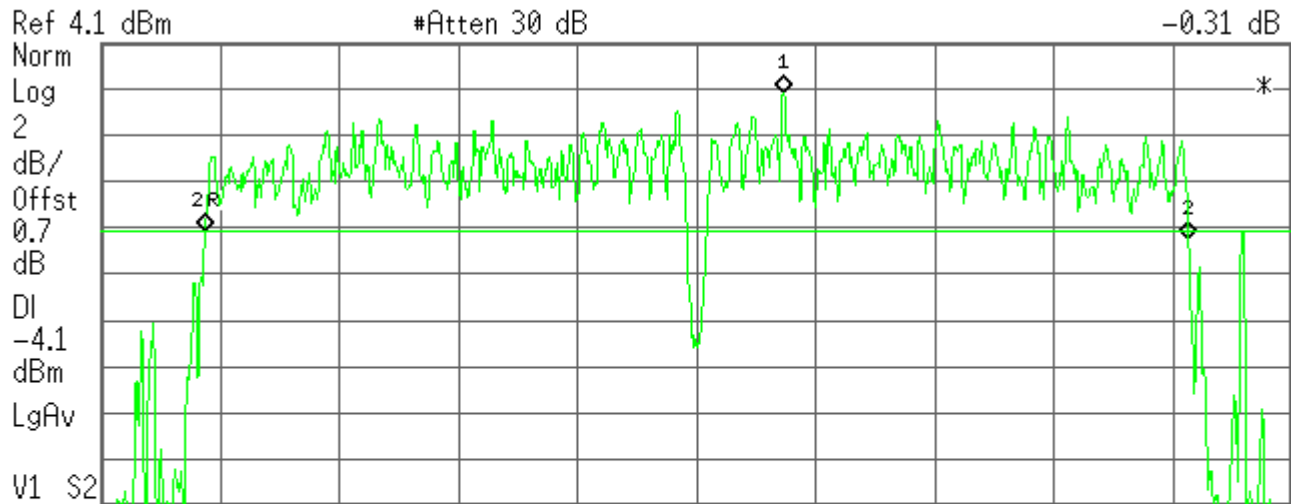
Agilent 12:40:28 Jun 25, 2008



6 dB Bandwidth  
 Channel 11, 54 MB rate

Agilent 12:34:32 Jun 25, 2008

Mkr2 16.50 MHz  
 -0.31 dB



Ref 4.1 dBm #Atten 30 dB  
 Norm Log 2  
 dB/Offst 0.7 dB  
 DI -4.1 dBm  
 LgAv  
 V1 S2  
 Center 2.462 00 GHz Span 20 MHz  
 #Res BW 100 kHz VBW 300 kHz Sweep 1.933 ms (1001 pts)

| Marker | Trace | Type | X Axis       | Amplitude |
|--------|-------|------|--------------|-----------|
| 1      | (1)   | Freq | 2.463 46 GHz | 1.95 dBm  |
| 2R     | (1)   | Freq | 2.453 76 GHz | -4.07 dBm |
| 2Δ     | (1)   | Freq | 16.50 MHz    | -0.31 dB  |

**Maximum peak output power**  
FCC 15.247(b)(3), IC RSS-210 A8.4(4)

**Test summary**

The requirements are:  - MET  - NOT MET

Test was performed in accordance with the test procedure of FCC KDB Publication 558074

Maximum peak output power is 24.23 dBm or 265 mW

**Test location**

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

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

- Wild River Lab Tech Area, conducted measurement

**Test equipment**

| TUV ID    | Model  | Manufacturer | Description       | Serial     | Cal Due   |
|-----------|--------|--------------|-------------------|------------|-----------|
| WRLE03371 | E4440A | Agilent      | Spectrum Analyzer | MY43362222 | 19-Dec-08 |

**Test limit**

1 watt

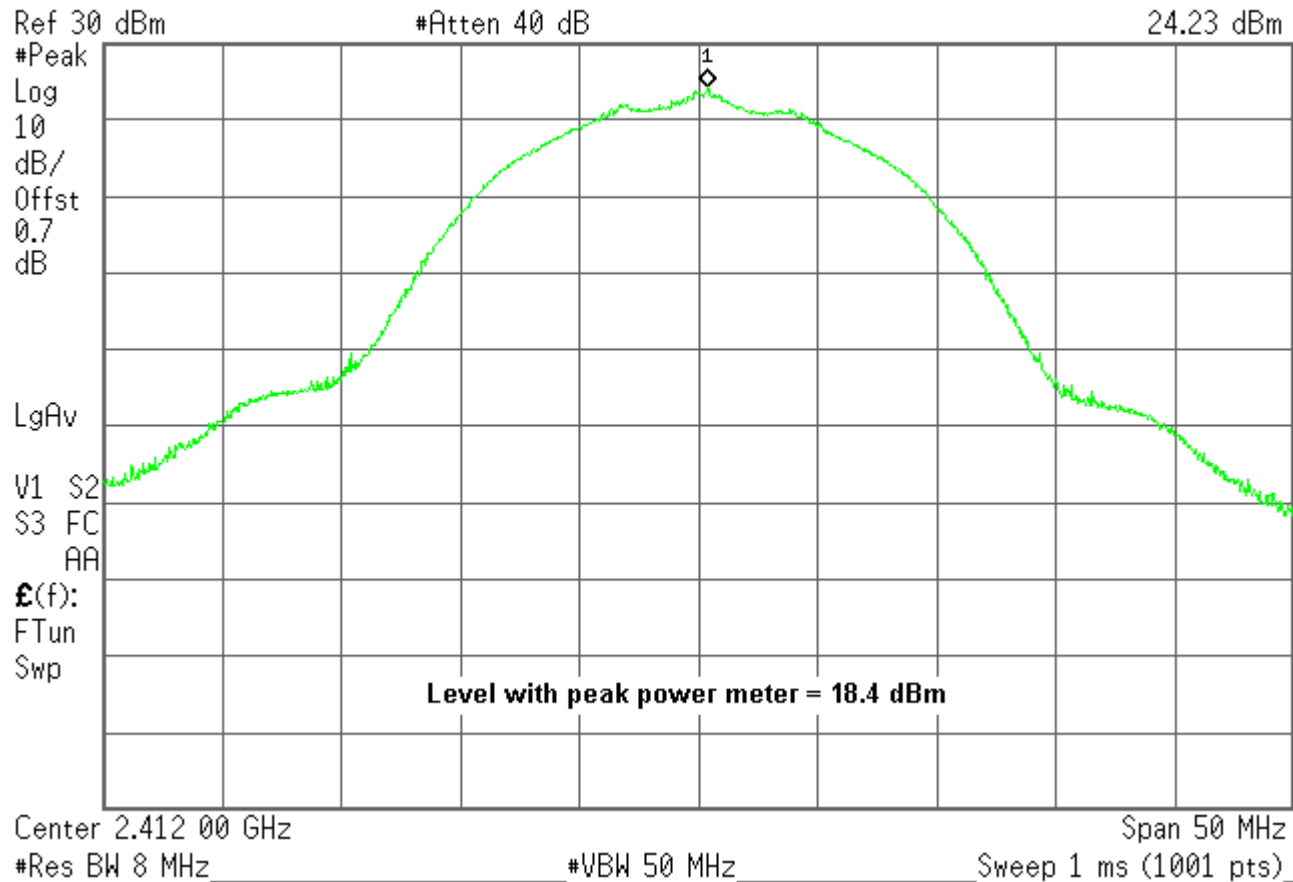
**Test data**

See following pages

Peak output power  
Channel 1, 11 MB rate

Agilent 12:55:40 Jun 25, 2008

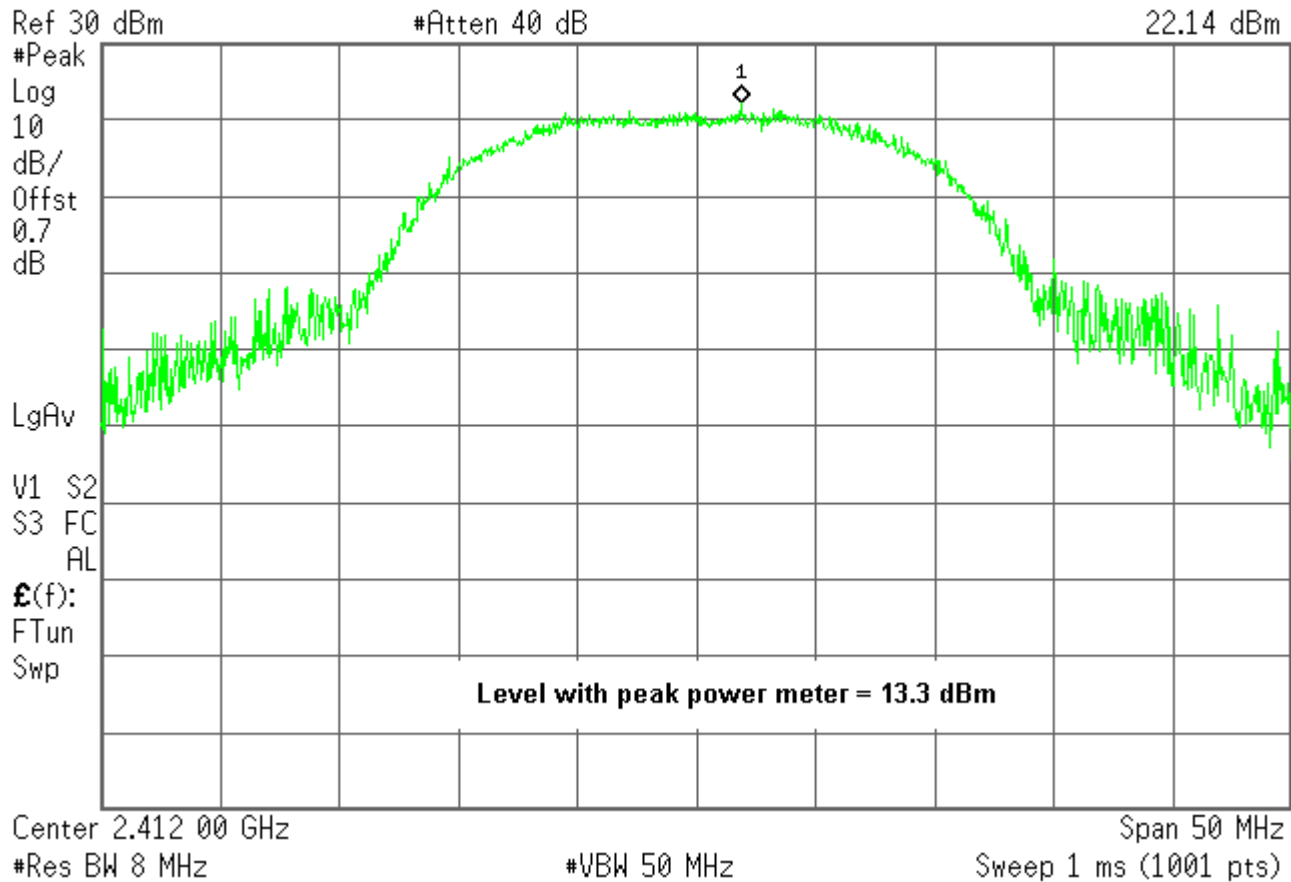
Mkr1 2.412 40 GHz  
24.23 dBm



Peak output power  
Channel 1, 54 MB rate

Agilent 13:52:28 Jun 25, 2008

Mkr1 2.413 85 GHz  
22.14 dBm



Peak output power  
Channel 6, 11 MB rate

Agilent 13:24:53 Jun 25, 2008

Mkr1 2.437 30 GHz  
23.65 dBm





Peak output power  
Channel 6, 54 MB rate

Agilent 13:49:01 Jun 25, 2008

Mkr1 2.437 35 GHz  
21.93 dBm

Ref 30 dBm

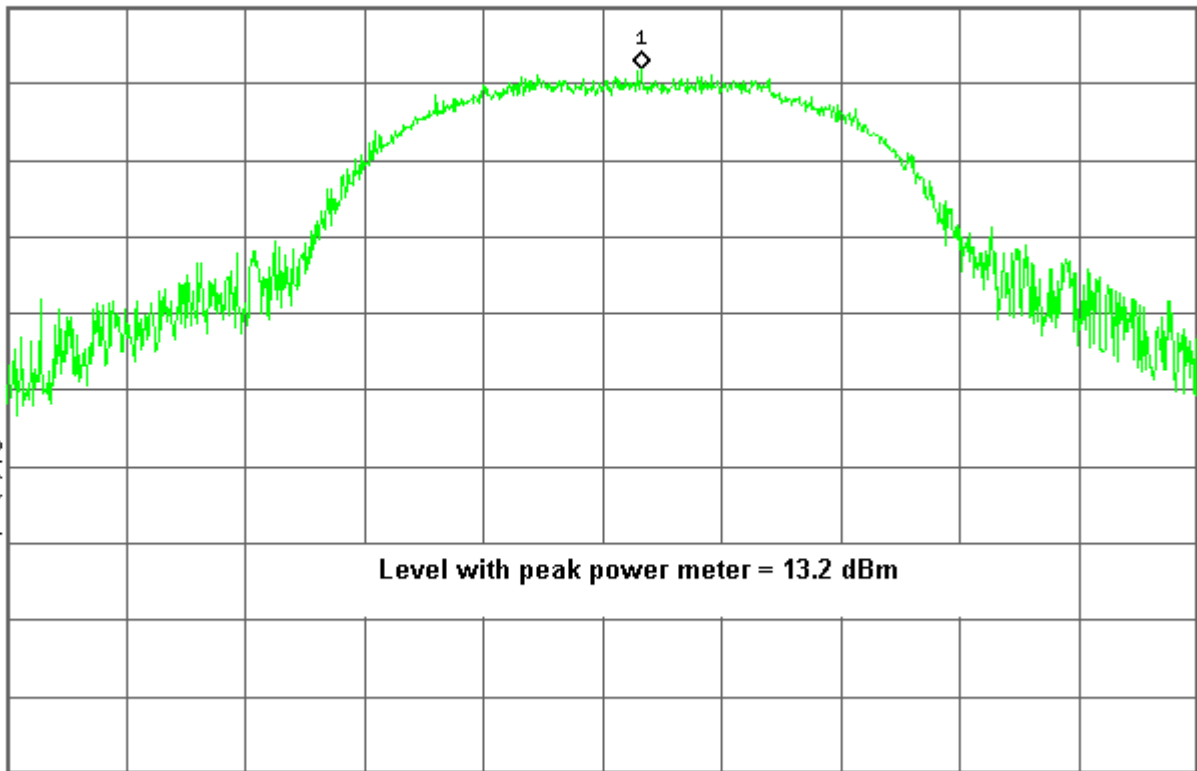
#Atten 40 dB

#Peak  
Log  
10  
dB/  
Offst  
0.7  
dB

LgAv

V1 S2  
S3 FC  
AL

£(f):  
FTun  
Swp



Center 2.435 75 GHz

#Res BW 8 MHz

#VBW 50 MHz

Span 50 MHz

Sweep 1 ms (1001 pts)

Peak output power  
Channel 11, 11 MB rate

Agilent 13:30:50 Jun 25, 2008

Mkr1 2.462 50 GHz  
22.79 dBm

Ref 30 dBm

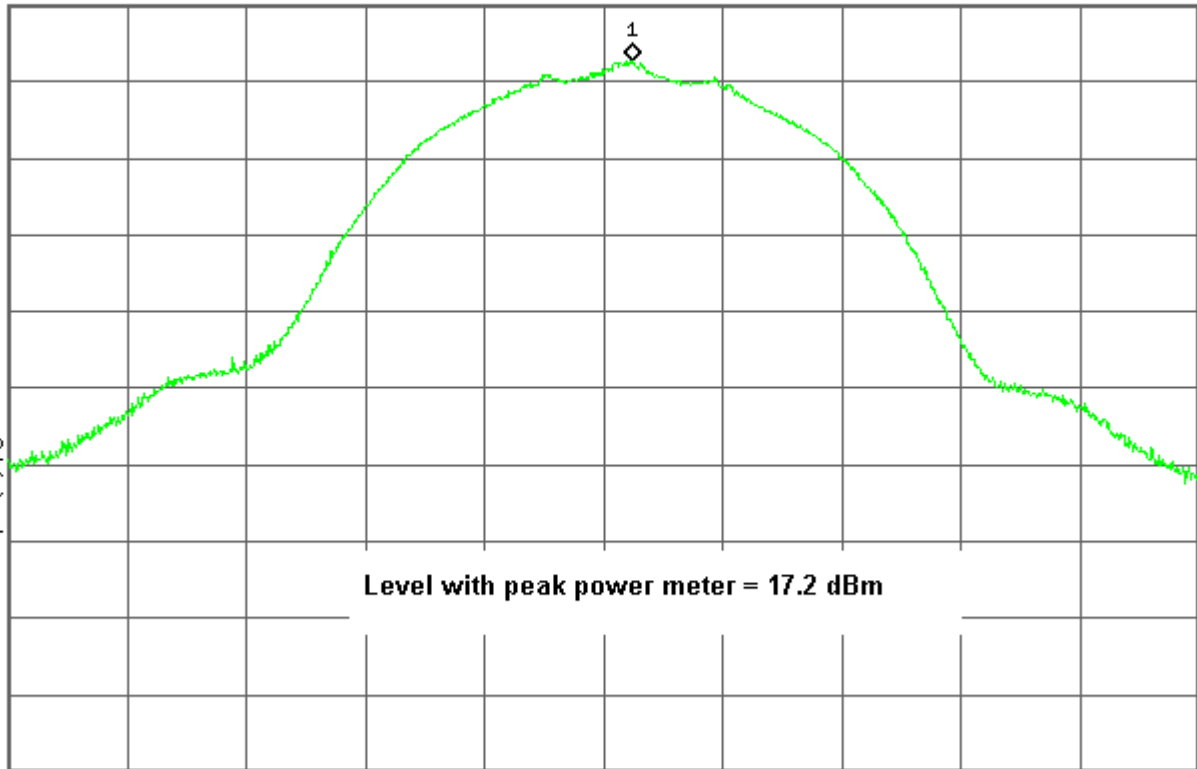
#Atten 40 dB

#Peak  
Log  
10  
dB/  
Offst  
0.7  
dB

LgAv

V1 S2  
S3 FC  
AL

£(f):  
FTun  
Swp



Level with peak power meter = 17.2 dBm

Center 2.461 25 GHz

#Res BW 8 MHz

#VBW 50 MHz

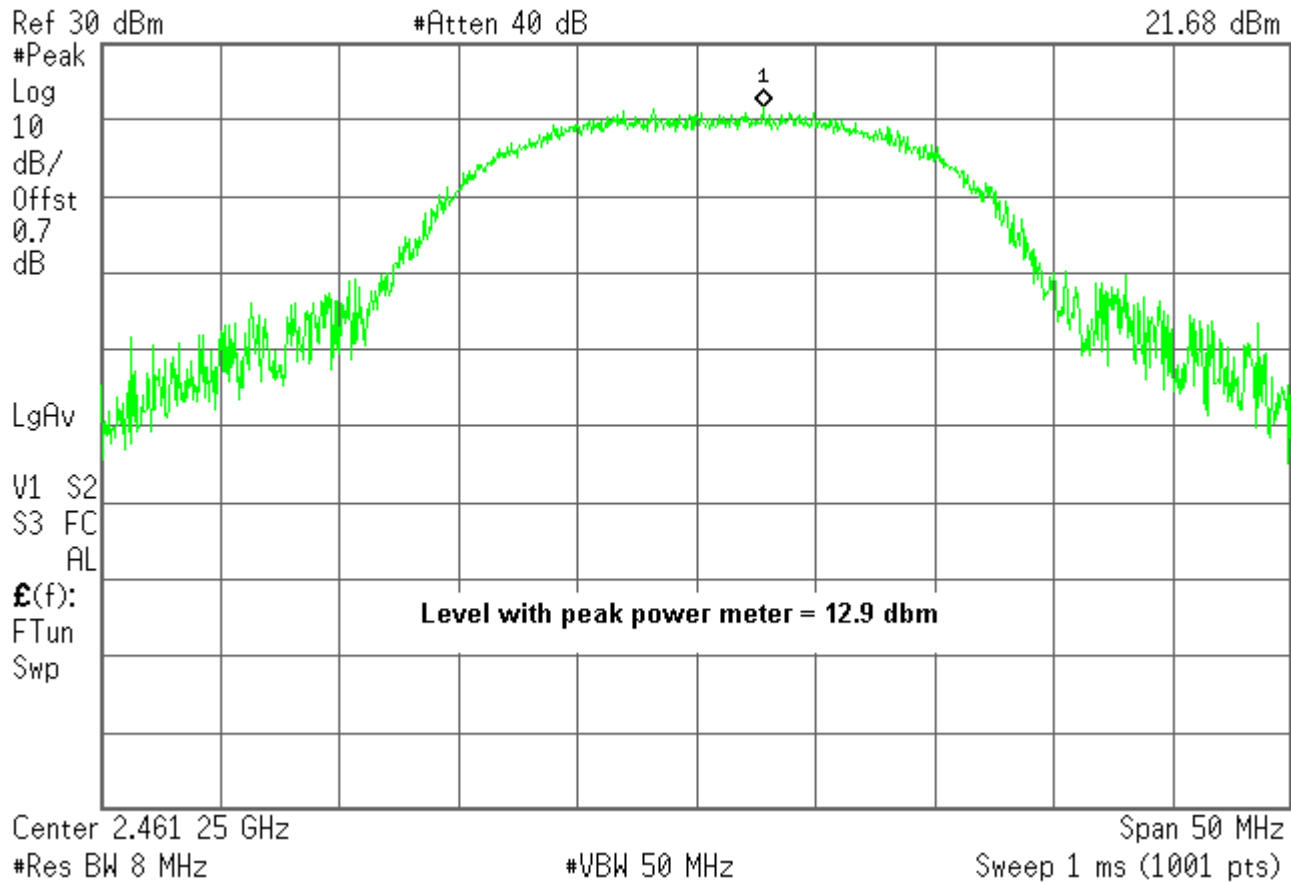
Span 50 MHz

Sweep 1 ms (1001 pts)

Peak output power  
Channel 11, 54 MB rate

Agilent 13:38:11 Jun 25, 2008

Mkr1 2.464 05 GHz  
21.68 dBm



## Spurious emissions

### FCC 15.247(d), IC RSS-210 A8.5

#### Test summary

The requirements are:  - MET  - NOT MET

Test was performed in accordance with ANSI C63.4 2003, clause 8.3 and FCC KDB Publication 558074

Maximum conducted spurious emission is -27.81 dBm at 2.398 GHz, -37.95 dBc

Maximum radiated spurious emission is 50.95 dBµV/m avg or 353 µV/m at 3 meters at 9.648 GHz

Minimum margin of compliance = 3.05 dB

Peak-average duty cycle correction = -20.0 dB

#### Test location

- Wild River Lab Large Test Site (Open Area Test Site)
- Wild River Lab Small Test Site (Open Area Test Site)
- Wild River Lab Tech Area, conducted measurement

#### Test equipment

| TUV ID     | Model       | Manufacturer        | Description                | Serial     | Cal Due   |
|------------|-------------|---------------------|----------------------------|------------|-----------|
| WRLE03371  | E4440A      | Agilent             | Spectrum Analyzer          | MY43362222 | 19-Dec-08 |
| WRLE02682  | 85650A      | Hewlett-Packard     | Quasi-Peak Adapter         | 2811A01127 | 04-Dec-08 |
| WRLE08052  | 8566B       | Hewlett-Packard     | Spectrum Analyzer          | 2115A00853 | 27-Mar-09 |
| WRLE08051  | 85662A      | Hewlett-Packard     | Analyzer Display           | 2112A02220 | 27-Mar-09 |
| WRLE03847  | ZHL-1042J   | Mini-Circuits       | Preamplifier 10 - 3000 MHz | 0607       | Code B    |
| WRLE010527 | SL18B4020   | Phase One Microwave | Preamplifier 1 – 18 GHz    | 0001       | Code B    |
| WRLE03995  | EM-6917B    | Electro-Metrics     | Biconicalog Periodic       | 151        | 23-Apr-09 |
| WRLE02075  | 3115        | EMCO                | Ridge Guide Ant. 1-18 GHz  | 9001-3275  | 16-Jan-09 |
| WRLE03997  | EWT-14-0066 | EWT                 | 2.4 GHz Notch filter       | E2         | Code B    |
| WRLE02003  | F550B1      | Acronetics          | 4 – 8 GHz Bandpass Filter  | 010        | Code B    |
| WRLE03933  | F551B-1     | Acronetics          | 8 – 12 GHz Bandpass Filter | 010        | Code B    |

Cal Code B = Calibration verification performed internally.

#### Test limit - conducted

-20 dBc

#### Test limit within restricted bands per 15.205 - radiated

| Frequency (MHz) | Field strength (µV/meter) | Field strength (dBµV/meter) |
|-----------------|---------------------------|-----------------------------|
| 30 - 88         | 100, QP                   | 40.0                        |
| 88 - 216        | 150, QP                   | 43.5                        |
| 216 - 960       | 200, QP                   | 46.0                        |
| Above 960       | 500, QP                   | 54.0                        |
| > 1000          | 500, AV                   | 54.0                        |
|                 | 5000, PK                  | 74.0                        |

#### Test data

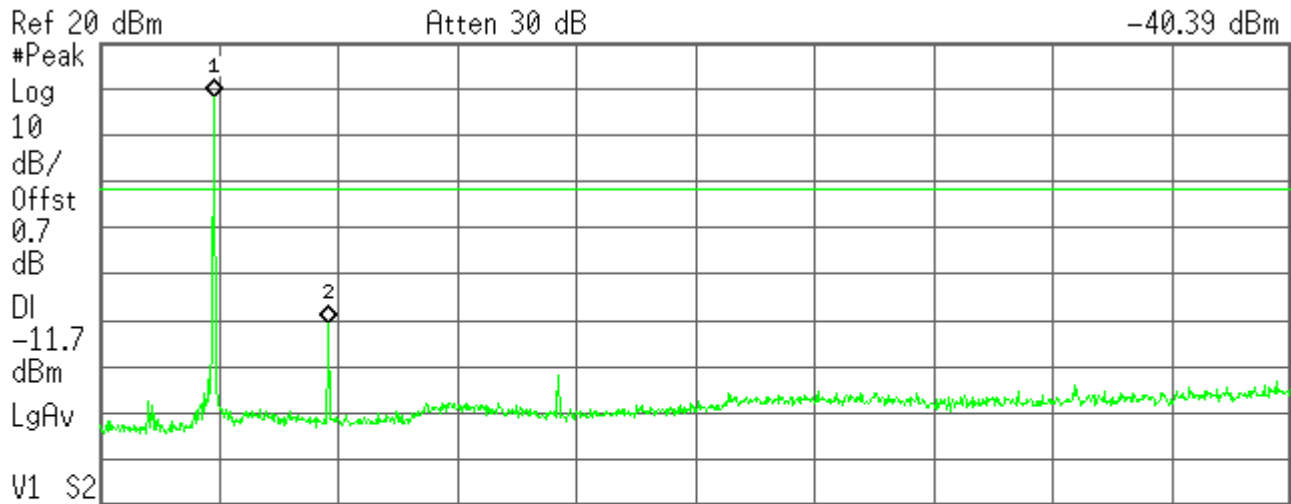
See following pages

Conducted spurious emissions

Channel 1, 11 MB rate

Agilent 14:20:39 Jun 25, 2008

Mkr2 4.83 GHz  
-40.39 dBm



Start 30 MHz Stop 25.03 GHz  
#Res BW 100 kHz #VBW 300 kHz Sweep 2.389 s (1001 pts)

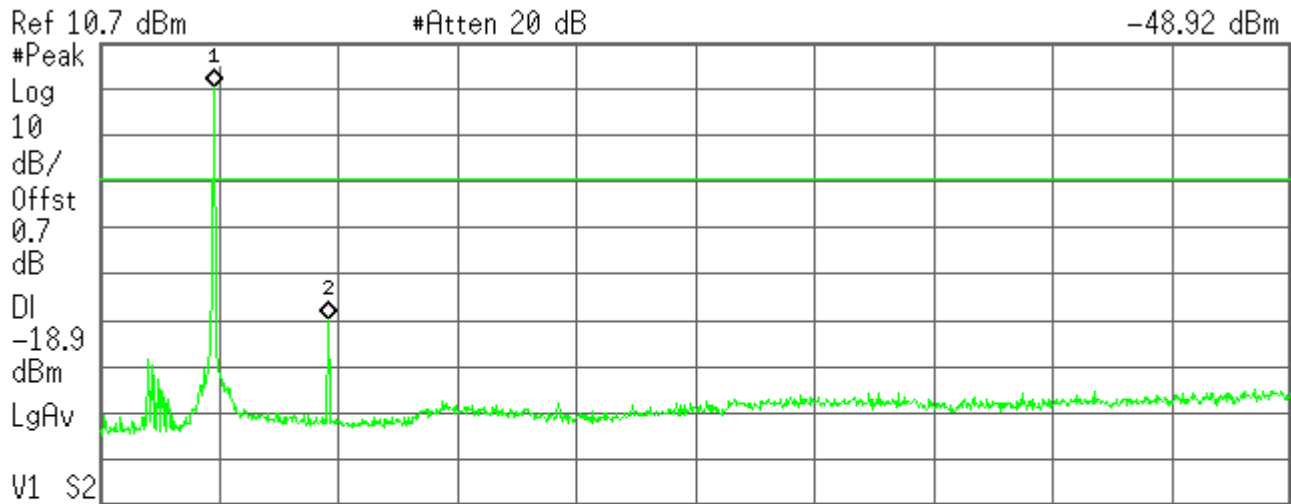
| Marker | Trace | Type | X Axis   | Amplitude  |
|--------|-------|------|----------|------------|
| 1      | (1)   | Freq | 2.40 GHz | 8.32 dBm   |
| 2      | (1)   | Freq | 4.83 GHz | -40.39 dBm |

Conducted spurious emissions

Channel 1, 54 MB rate

Agilent 14:05:31 Jun 25, 2008

Mkr2 4.83 GHz  
-48.92 dBm



Start 30 MHz Stop 25.03 GHz  
#Res BW 100 kHz #VBW 300 kHz Sweep 2.389 s (1001 pts)

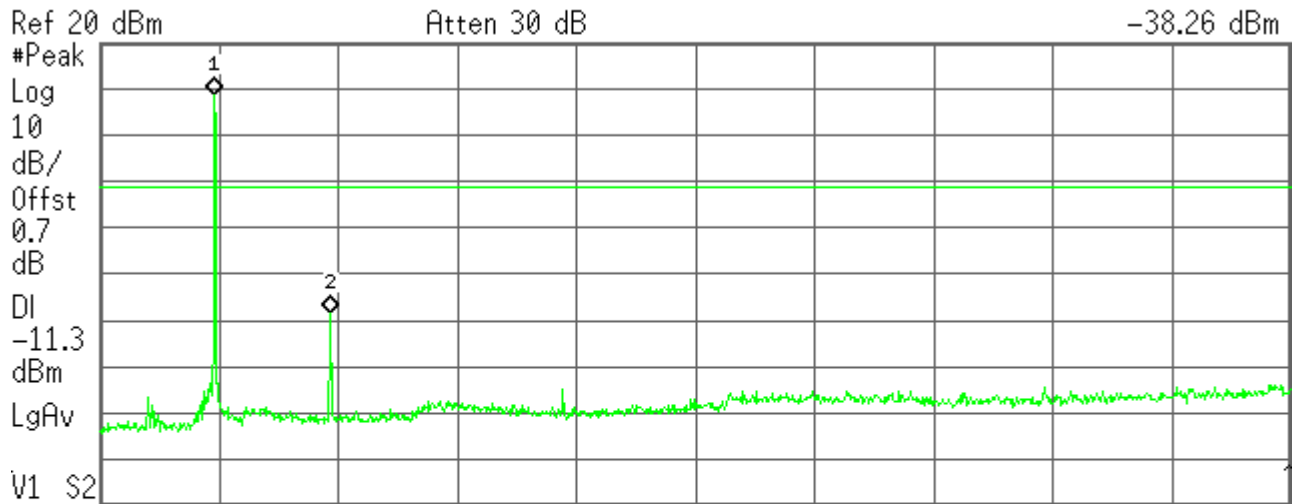
| Marker | Trace | Type | X Axis   | Amplitude  |
|--------|-------|------|----------|------------|
| 1      | (1)   | Freq | 2.40 GHz | 1.12 dBm   |
| 2      | (1)   | Freq | 4.83 GHz | -48.92 dBm |

Conducted spurious emissions

Channel 6, 11 MB rate

Agilent 14:25:00 Jun 25, 2008

Mkr2 4.88 GHz  
-38.26 dBm



Start 30 MHz Stop 25.03 GHz  
#Res BW 100 kHz #VBW 300 kHz Sweep 2.389 s (1001 pts)

| Marker | Trace | Type | X Axis   | Amplitude  |
|--------|-------|------|----------|------------|
| 1      | (1)   | Freq | 2.43 GHz | 8.73 dBm   |
| 2      | (1)   | Freq | 4.88 GHz | -38.26 dBm |

Conducted spurious emissions

Channel 6, 54 MB rate

Agilent 14:10:45 Jun 25, 2008

Mkr2 4.88 GHz  
-47.87 dBm



Start 30 MHz Stop 25.03 GHz  
#Res BW 100 kHz #VBW 300 kHz Sweep 2.389 s (1001 pts)

| Marker | Trace | Type | X Axis   | Amplitude  |
|--------|-------|------|----------|------------|
| 1      | (1)   | Freq | 2.43 GHz | -0.26 dBm  |
| 2      | (1)   | Freq | 4.88 GHz | -47.87 dBm |

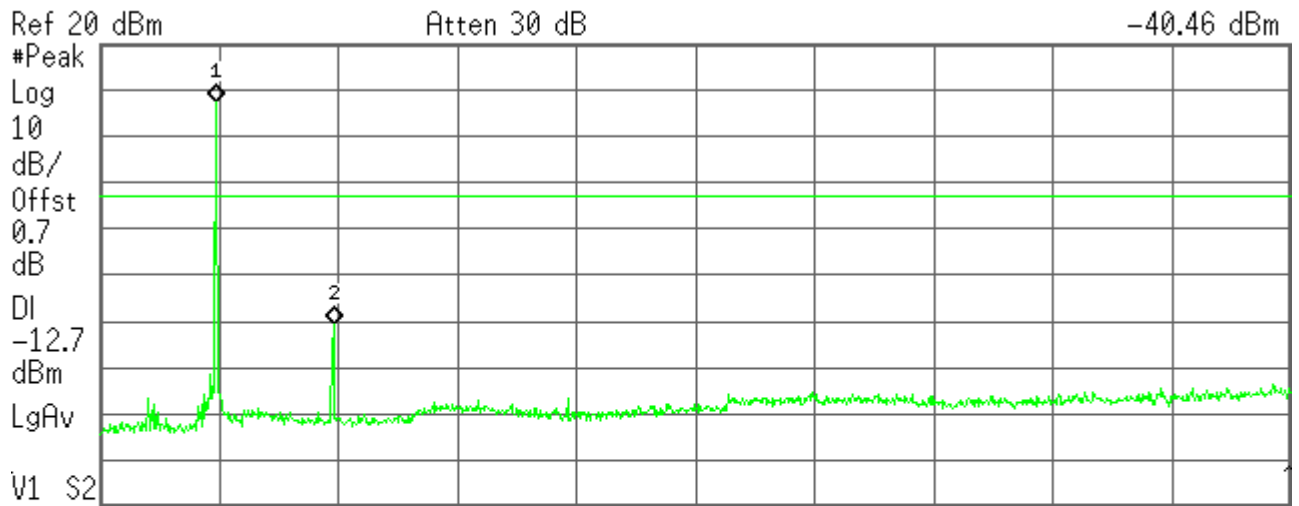


Conducted spurious emissions

Channel 11, 11 MB rate

Agilent 14:28:02 Jun 25, 2008

Mkr2 4.93 GHz  
-40.46 dBm



Start 30 MHz Stop 25.03 GHz  
#Res BW 100 kHz #VBW 300 kHz Sweep 2.389 s (1001 pts)

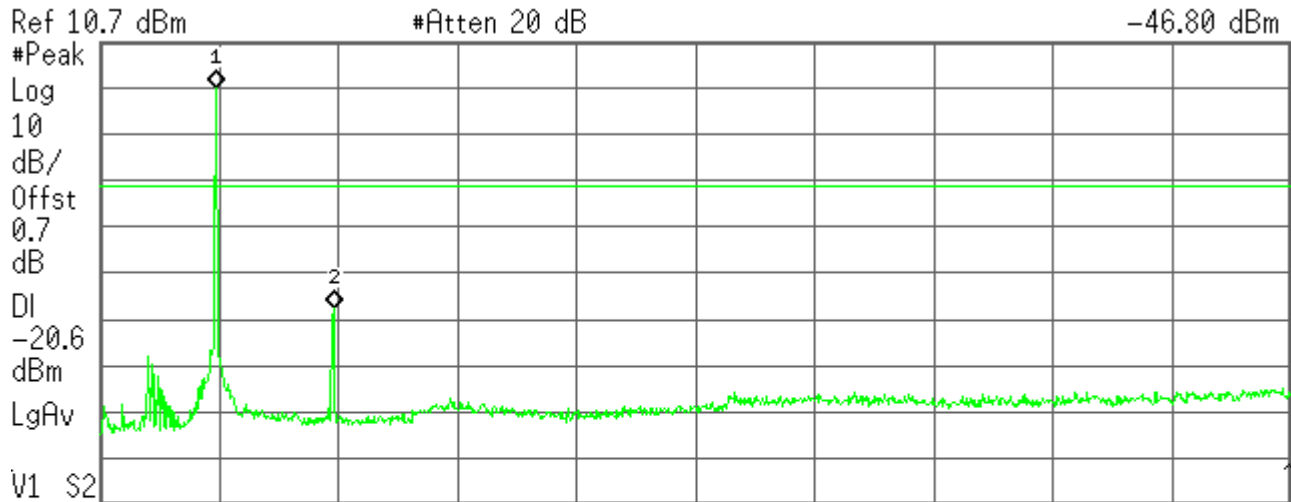
| Marker | Trace | Type | X Axis   | Amplitude  |
|--------|-------|------|----------|------------|
| 1      | (1)   | Freq | 2.46 GHz | 7.30 dBm   |
| 2      | (1)   | Freq | 4.93 GHz | -40.46 dBm |

Conducted spurious emissions

Channel 11, 54 MB rate

Agilent 14:15:07 Jun 25, 2008

Mkr2 4.93 GHz  
-46.80 dBm



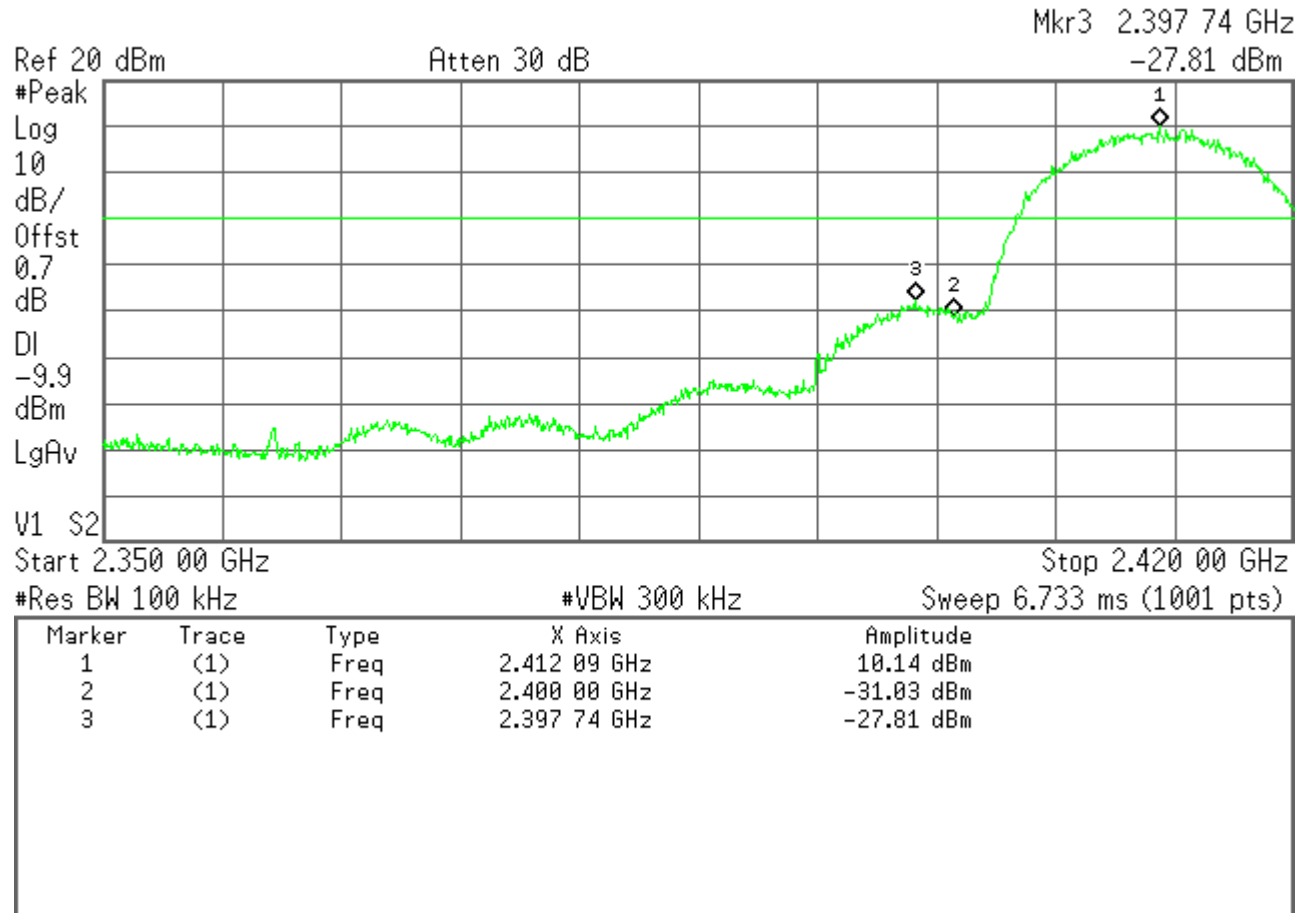
Start 30 MHz Stop 25.03 GHz  
#Res BW 100 kHz #VBW 300 kHz Sweep 2.389 s (1001 pts)

| Marker | Trace | Type | X Axis   | Amplitude  |
|--------|-------|------|----------|------------|
| 1      | (1)   | Freq | 2.46 GHz | 0.59 dBm   |
| 2      | (1)   | Freq | 4.93 GHz | -46.80 dBm |

Conducted band edge

Channel 1, 11 MB rate

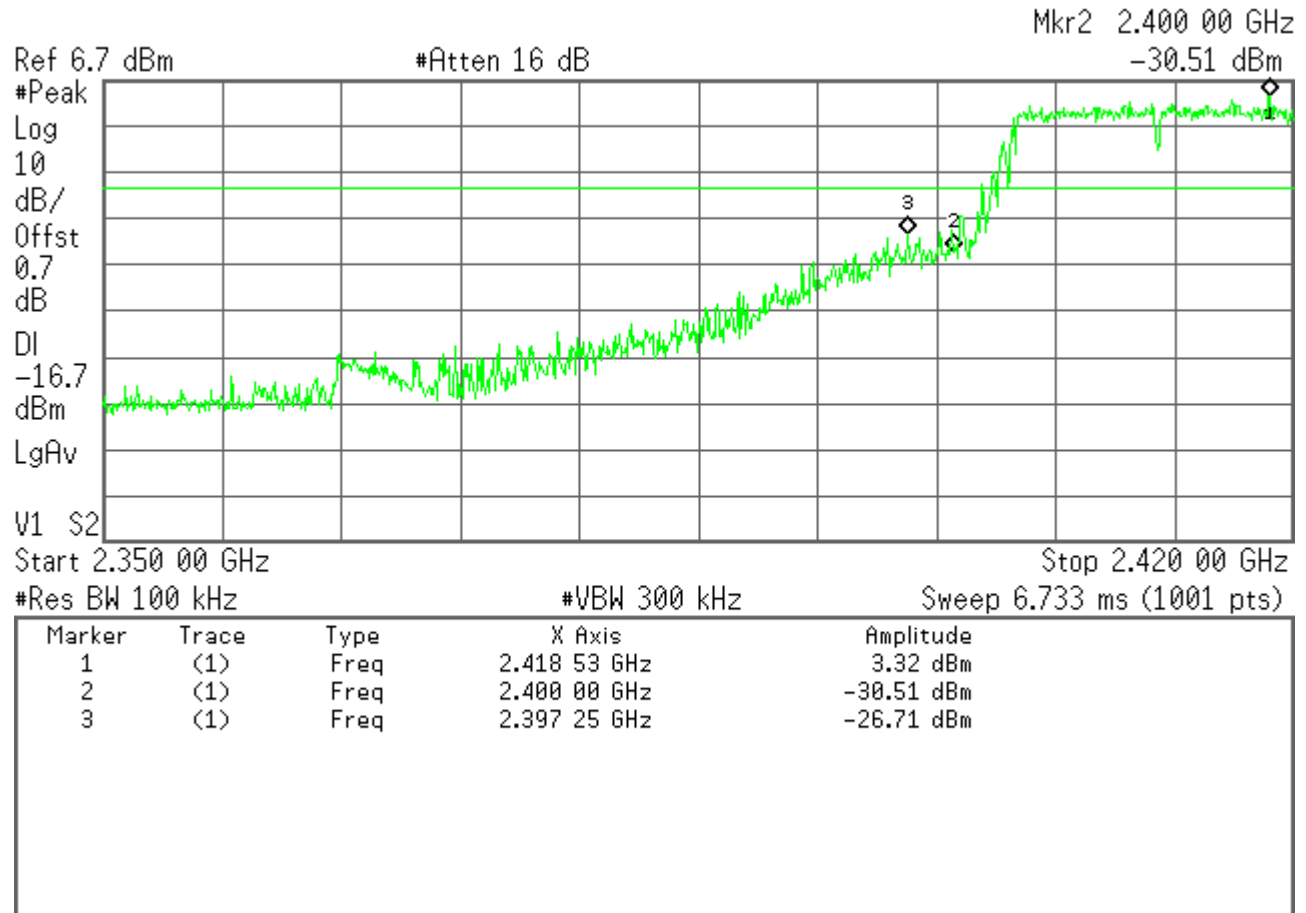
Agilent 14:44:17 Jun 25, 2008



Conducted band edge

Channel 1, 54 MB rate

Agilent 15:02:25 Jun 25, 2008

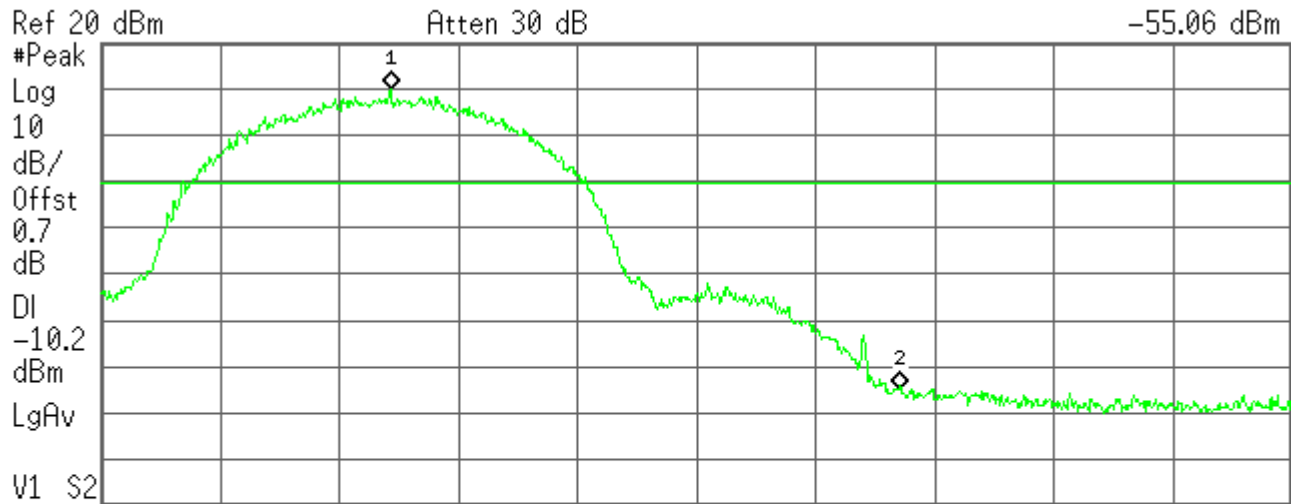


Conducted band edge

Channel 11, 11 MB rate

Agilent 14:35:33 Jun 25, 2008

Mkr2 2.483 50 GHz  
-55.06 dBm



Start 2.450 00 GHz Stop 2.500 00 GHz  
#Res BW 100 kHz #VBW 300 kHz Sweep 4.8 ms (1001 pts)

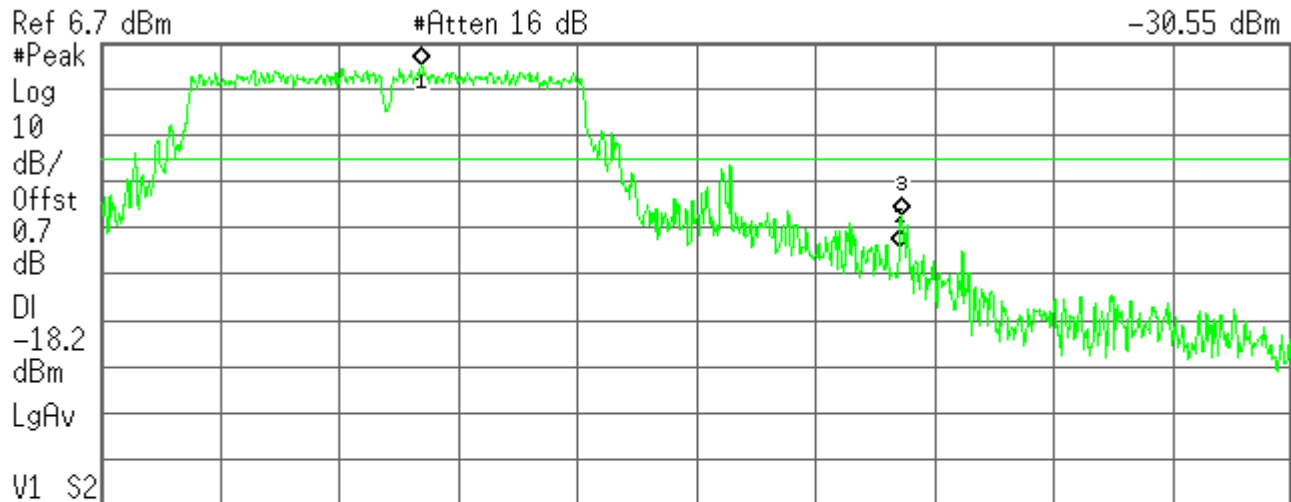
| Marker | Trace | Type | X Axis       | Amplitude  |
|--------|-------|------|--------------|------------|
| 1      | (1)   | Freq | 2.462 15 GHz | 9.84 dBm   |
| 2      | (1)   | Freq | 2.483 50 GHz | -55.06 dBm |

Conducted band edge

Channel 11, 54 MB rate

Agilent 14:56:58 Jun 25, 2008

Mkr3 2.483 60 GHz  
-30.55 dBm



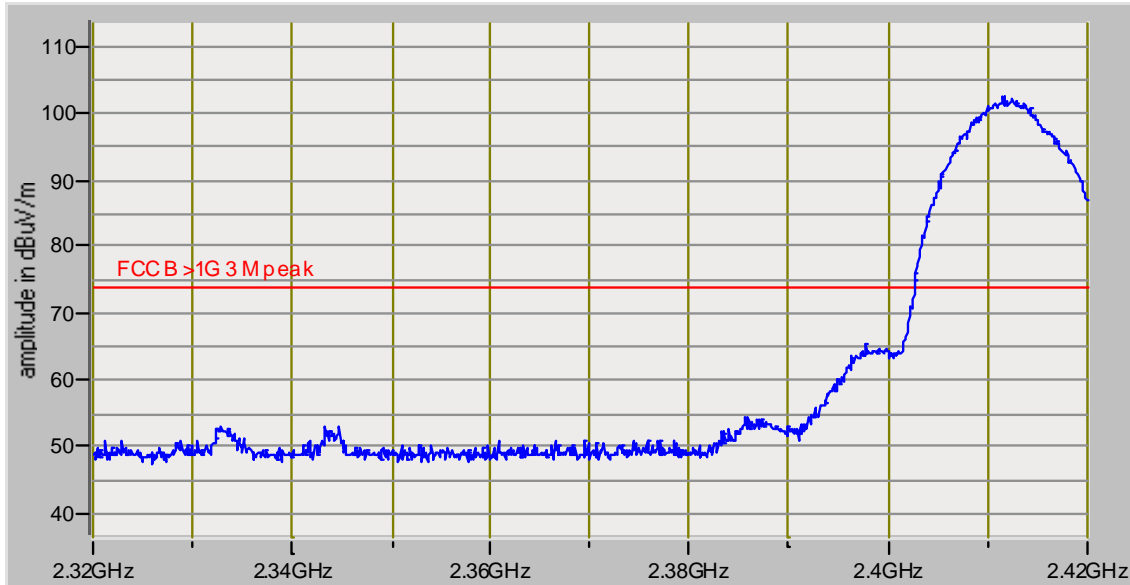
Center 2.475 00 GHz Span 50 MHz  
#Res BW 100 kHz #VBW 300 kHz Sweep 4.8 ms (1001 pts)

| Marker | Trace | Type | X Axis       | Amplitude  |
|--------|-------|------|--------------|------------|
| 1      | (1)   | Freq | 2.463 45 GHz | 1.77 dBm   |
| 2      | (1)   | Freq | 2.483 50 GHz | -37.62 dBm |
| 3      | (1)   | Freq | 2.483 60 GHz | -30.55 dBm |

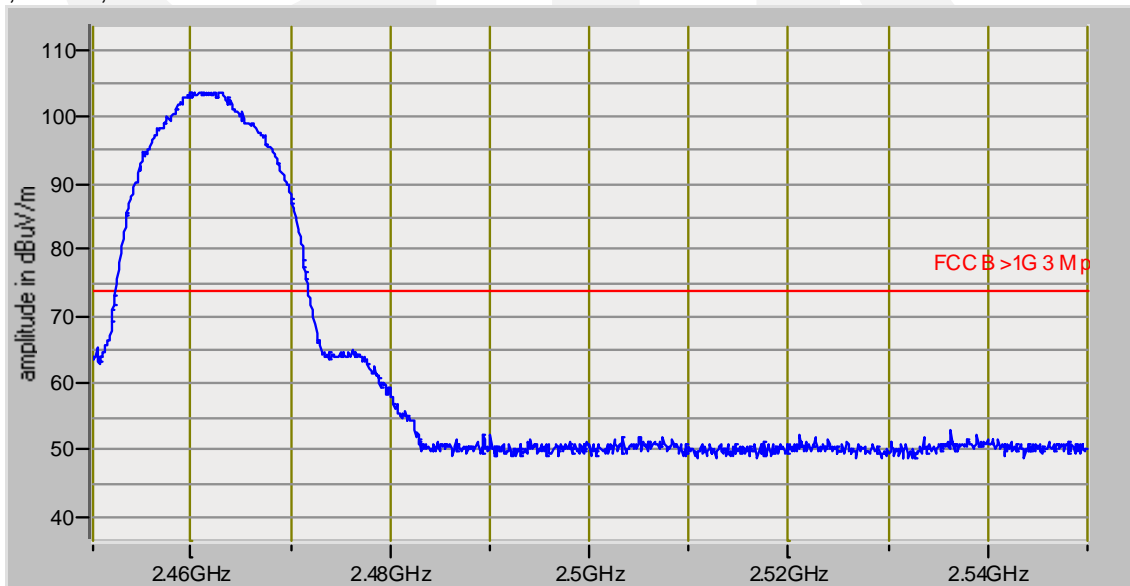
### Radiated band edge

Peak detector max hold scan, peak limit  
Peak-average correction factor = -20 dB

Channel 1, 11 MB, 2 dBi



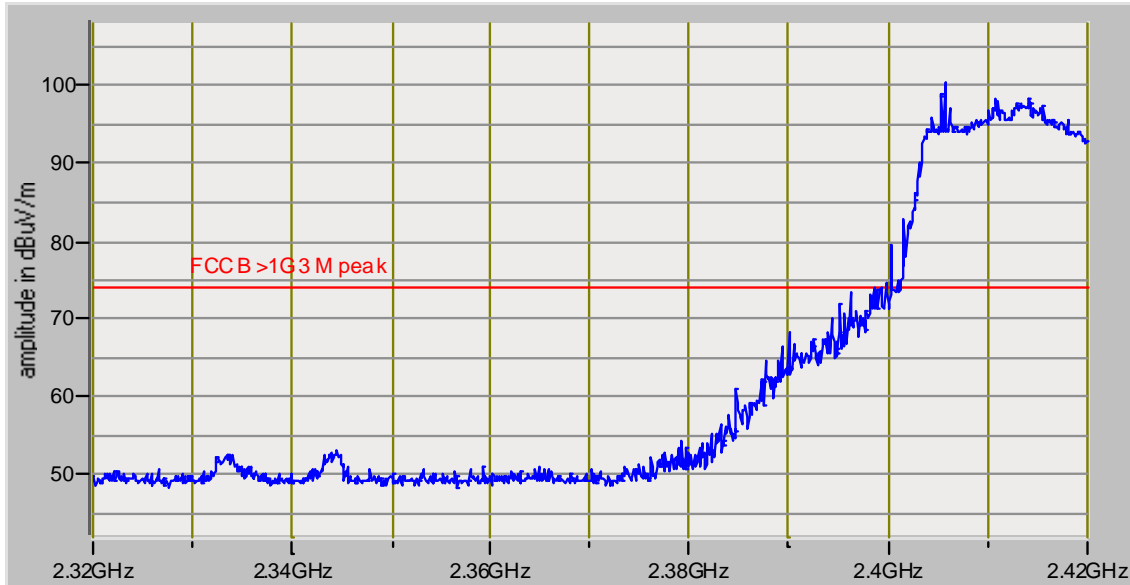
Channel 11, 11 MB, 2 dBi



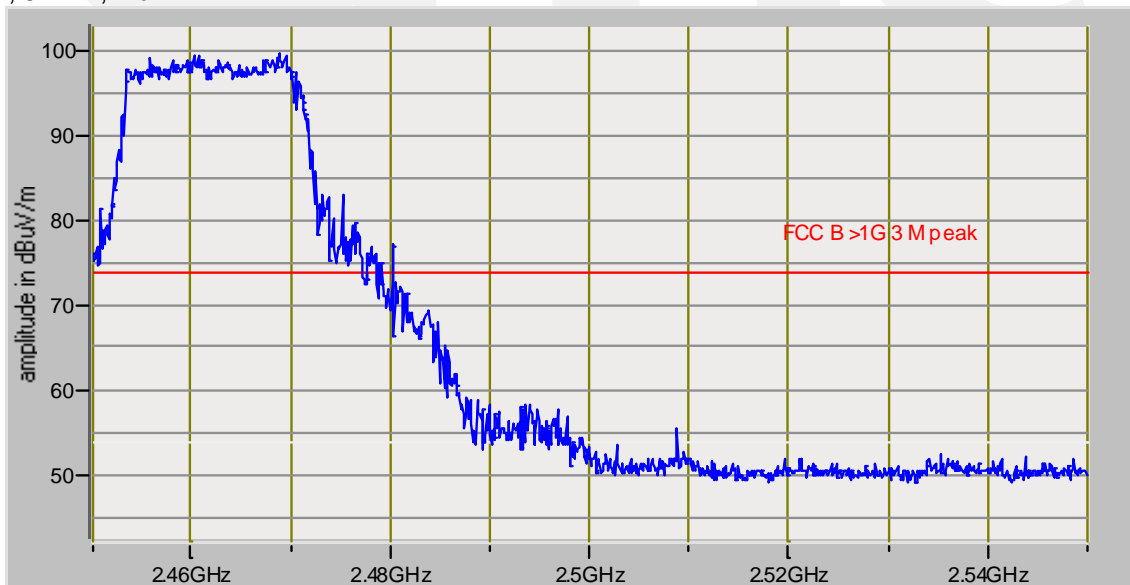
### Radiated band edge

Peak detector max hold scan, peak limit  
Peak-average correction factor = -20 dB

Channel 1, 54 MB, 2 dBi



Channel 11, 54 MB, 2 dBi

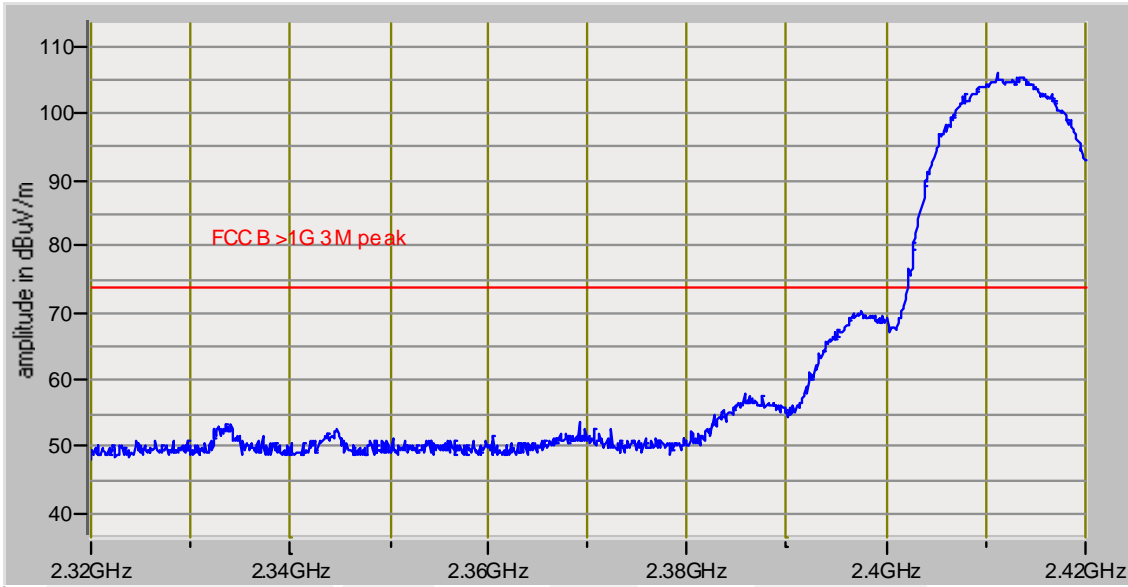




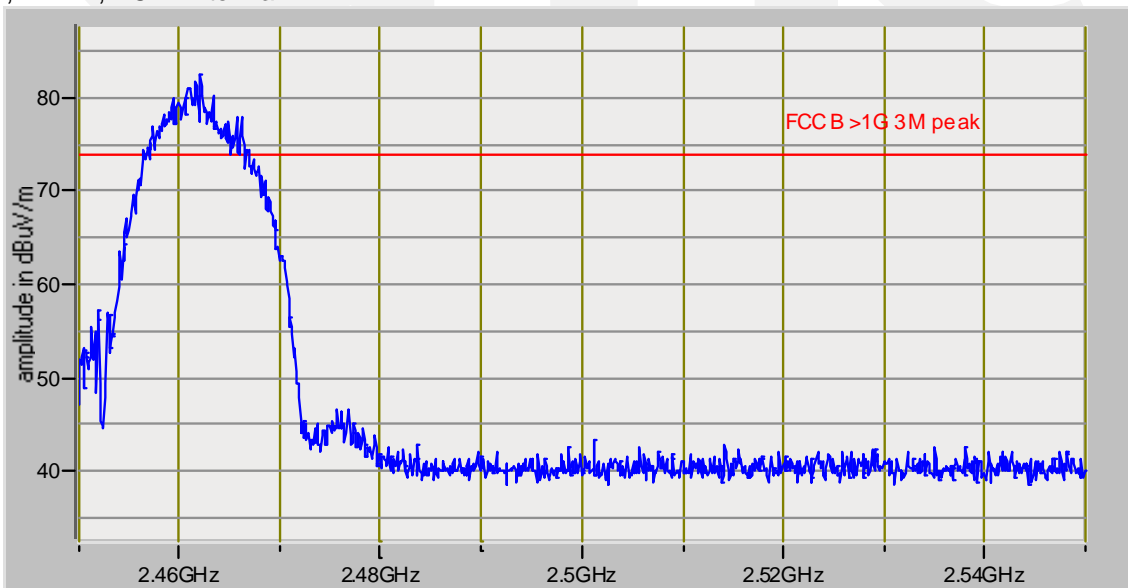
### Radiated band edge

Peak detector max hold scan, peak limit  
Peak-average correction factor = -20 dB

Channel 1, 11 MB, PCB Antenna



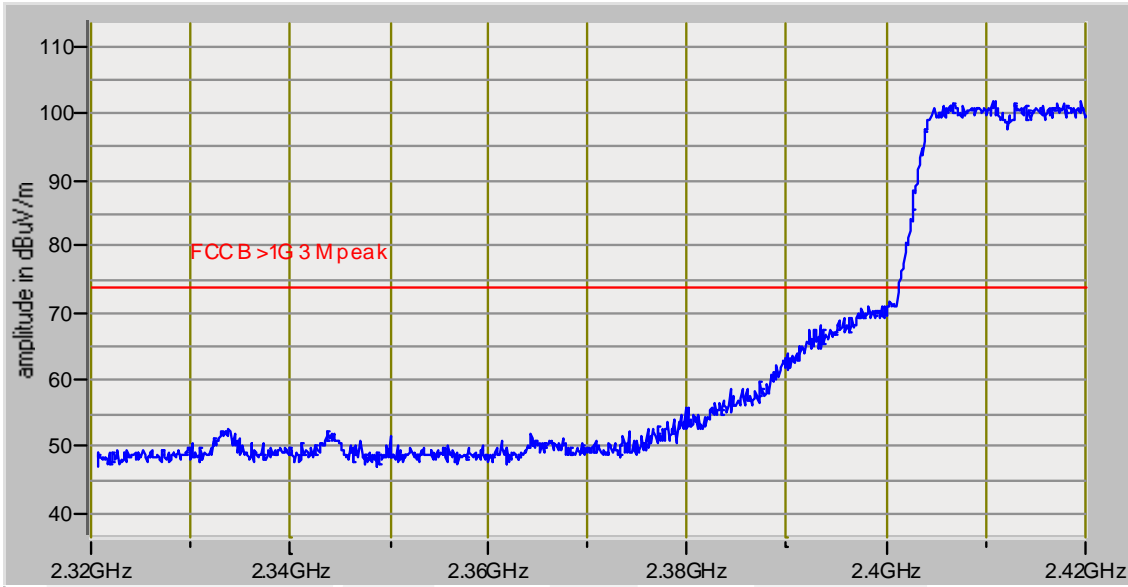
Channel 11, 11 MB, PCB Antenna



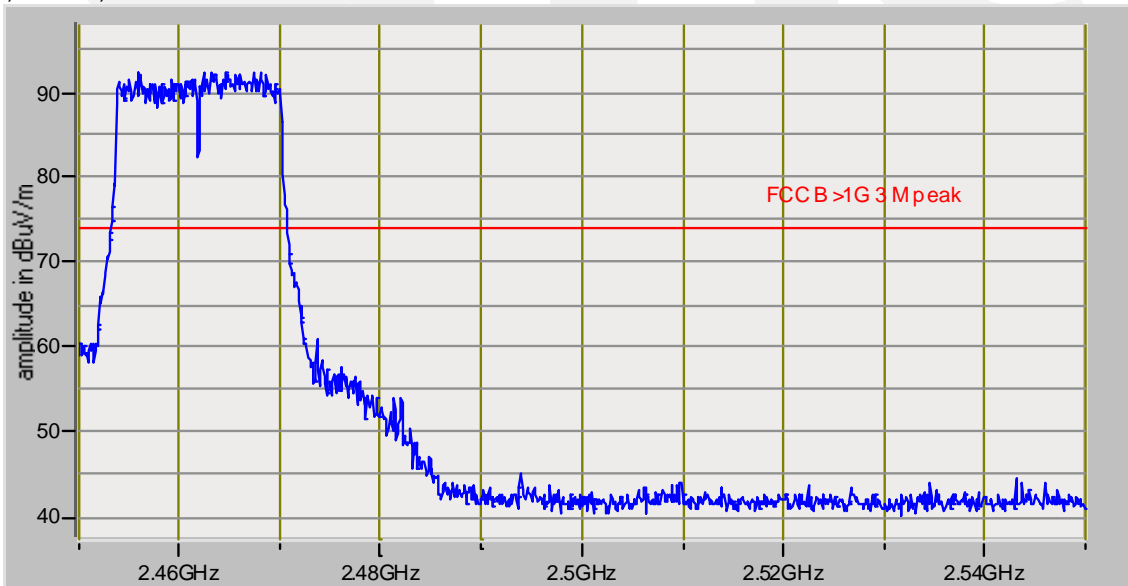
### Radiated band edge

Peak detector max hold scan, peak limit  
Peak-average correction factor = -20 dB

Channel 1, 54 MB, PCB Antenna



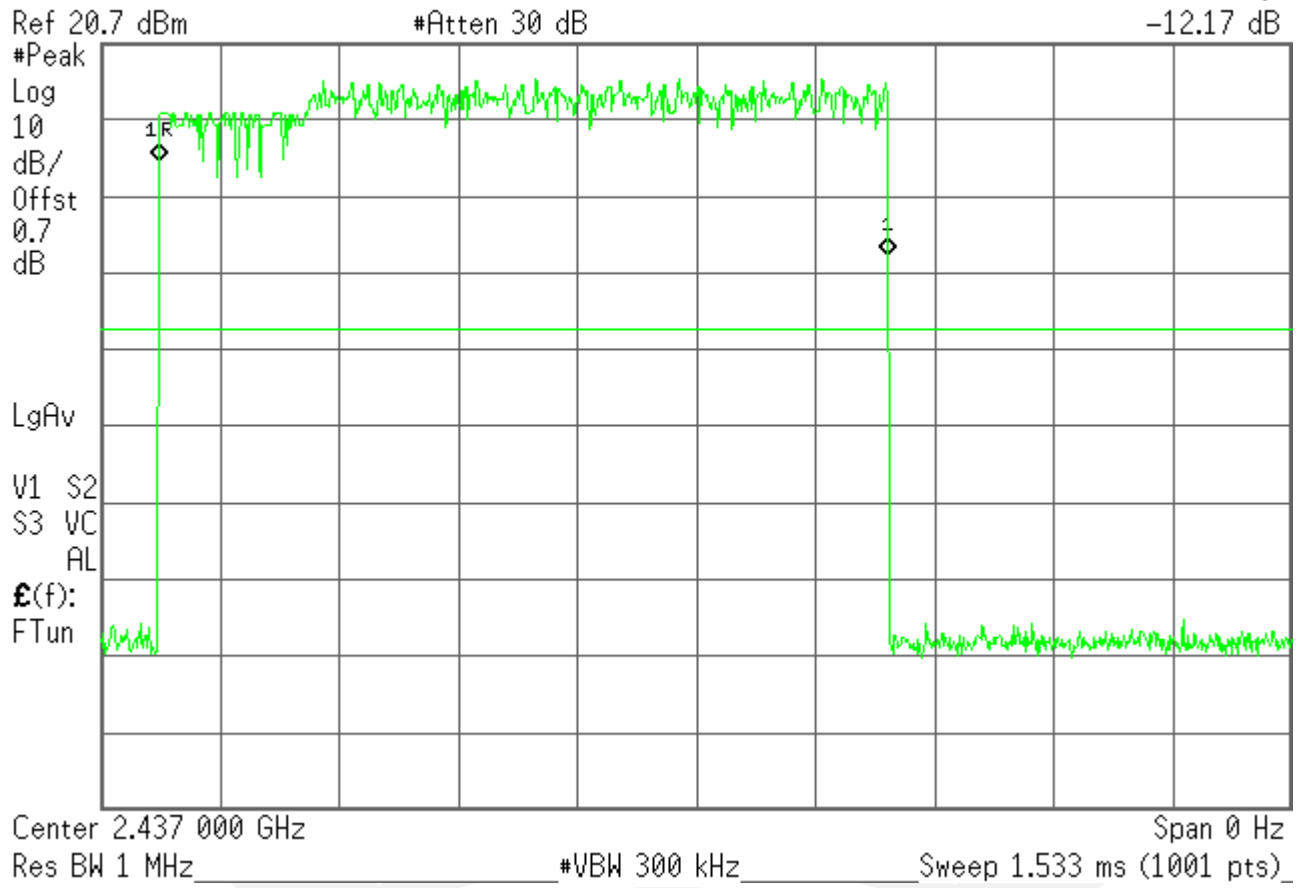
Channel 11, 54 MB, PCB Antenna



Duty cycle, 1 of 3

\* Agilent 15:25:03 Jun 25, 2008

▲ Mkr1 939.9  $\mu$ s  
-12.17 dB



Duty cycle, 2 of 3

Agilent 15:28:41 Jun 25, 2008

▲ Mkr1 10.25 ms  
0.00 dB

Ref 20.7 dBm

#Atten 30 dB

#Peak

Log

10

dB/

Offst

0.7

dB

LgAv

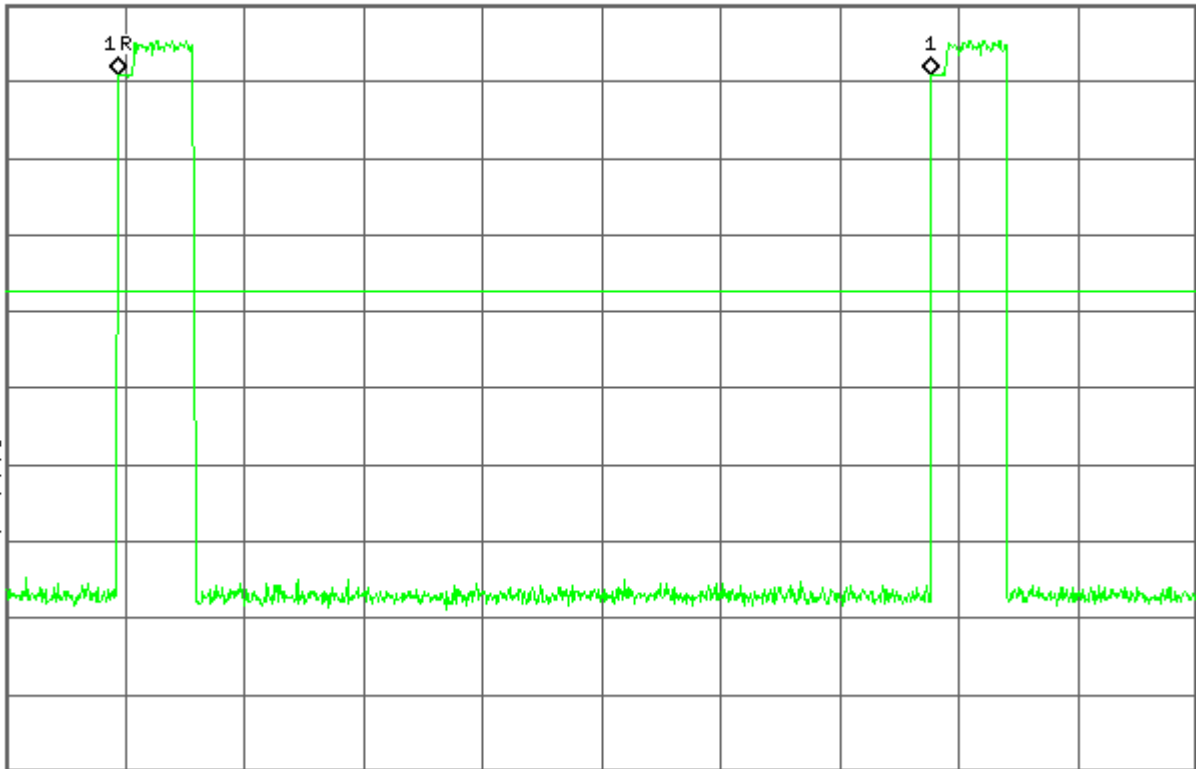
V1 S2

S3 VC

AL

f(f):

FTun



Center 2.437 000 GHz

Span 0 Hz

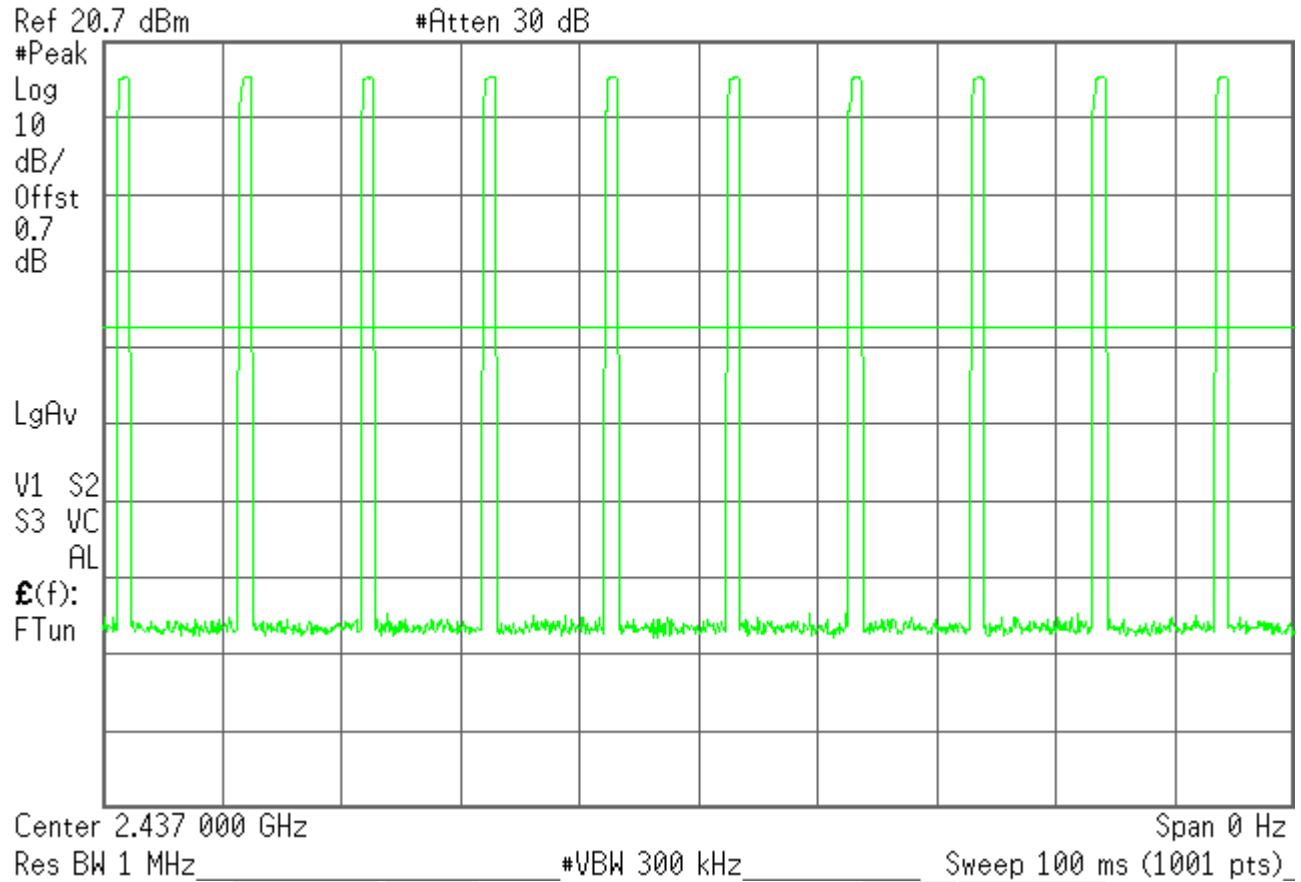
Res BW 1 MHz

#VBW 300 kHz

Sweep 15 ms (1001 pts)

Duty cycle, 3 of 3

\* Agilent 15:29:58 Jun 25, 2008



# RADIATED EMISSIONS



America

Test Report #: WC803864 Run 6                      Test Area: LTS

EUT Model #: 50000878-xx                              Date: 6/24/2008

EUT Serial #: 00001                                      EUT Power: 60Hz/120VAC                      Temperature: 24.0 °C

Test Method: FCC 15.247                                      Air Pressure: 99.0 kPa

Customer: Digi International                                      Rel. Humidity: 48.0 %


EUT Description: Digi Connect ME  
2 dBi antenna


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

Data File Name: 3864.dat                                      Page: 1 of 5

## List of measurements for run #: 6

| FREQ   | LEVEL<br>(dBuV) | CABLE / ANT / PREAMP /<br>ATTEN<br>(dB) | FINAL<br>(dBuV / m) | POL / HGT / AZ<br>(m)(DEG) | DELTA1<br>FCC-B <1GHz<br>3m | DELTA2 |
|--|-----------------|---|---------------------|----------------------------|-----------------------------|--------|
| RE scan > 1 GHz  |                 |   |                     |                            |                             |        |
| With 11 Mbps data rate, output power = 18 dBm conducted, 14 dBm if 54 Mbps |                 |   |                     |                            |                             |        |
| 10% duty cycle.  |                 |   |                     |                            |                             |        |
|  |                 |   |                     |                            |                             |        |
| high channel, 54 Mbps data rate, 2 dBi antenna                             |                 |   |                     |                            |                             |        |
| 120.018 MHz  | 37.0 Qp         | 1.19 / 9.07 / 29.7 / 0.0                | 17.57               | V / 1.00 / 0               | -25.93                      | n/a    |
| 168.66 MHz   | 38.25 Qp        | 1.52 / 9.01 / 29.8 / 0.01               | 18.99               | V / 1.00 / 0               | -24.51                      | n/a    |
| 240.024 MHz  | 34.0 Qp         | 1.78 / 11.73 / 29.7 / 0.01              | 17.82               | V / 1.00 / 0               | -28.18                      | n/a    |
| 250.017 MHz  | 35.3 Qp         | 1.82 / 12.08 / 29.76 / 0.01             | 19.45               | V / 1.00 / 0               | -26.55                      | n/a    |
| 260.018 MHz  | 33.5 Qp         | 1.85 / 12.43 / 29.8 / 0.01              | 17.99               | V / 1.00 / 0               | -28.01                      | n/a    |
| 265.437 MHz  | 34.2 Qp         | 1.86 / 12.59 / 29.8 / 0.01              | 18.87               | V / 1.00 / 0               | -27.13                      | n/a    |
| 280.0 MHz  | 37.8 Qp         | 1.91 / 12.55 / 29.82 / 0.01             | 22.45               | V / 1.00 / 0               | -23.55                      | n/a    |
| 400.002 MHz  | 32.5 Qp         | 2.32 / 15.8 / 30.0 / 0.02               | 20.64               | V / 1.00 / 0               | -25.36                      | n/a    |
|  |                 |   |                     |                            |                             |        |
| 400.002 MHz  | 38.45 Qp        | 2.32 / 15.8 / 30.0 / 0.02               | 26.59               | V / 1.00 / 180             | -19.41                      | n/a    |
| 324.417 MHz  | 34.05 Qp        | 2.11 / 13.92 / 29.93 / 0.01             | 20.16               | V / 1.00 / 180             | -25.84                      | n/a    |
|  |                 |   |                     |                            |                             |        |
| 240.024 MHz  | 36.95 Qp        | 1.78 / 11.73 / 29.7 / 0.01              | 20.77               | V / 1.00 / 315             | -25.23                      | n/a    |
|  |                 |   |                     |                            |                             |        |
| Maximized  |                 |   |                     |                            |                             |        |
| 400.002 MHz  | 38.93 Qp        | 2.32 / 15.8 / 30.0 / 0.02               | 27.07               | V / 1.40 / 130             | -18.93                      | n/a    |
| End of Vertical Scan   |                 |   |                     |                            |                             |        |
|  |                 |   |                     |                            |                             |        |
| Maximized.   |                 |   |                     |                            |                             |        |
| 400.002 MHz  | 41.29 Qp        | 2.32 / 15.8 / 30.0 / 0.02               | 29.43               | H / 2.40 / 206             | -16.57                      | n/a    |
| End of Scan  |                 |   |                     |                            |                             |        |

Tested by: Greg Jakubowski                                        
Printed                                      Signature

Reviewed by: Rob J Behringer                                        
Printed                                      Signature

# RADIATED EMISSIONS



America

Test Report #: WC803864 Run 6                      Test Area: LTS

EUT Model #: 50000878-xx                              Date: 6/24/2008

EUT Serial #: 00001                                      EUT Power: 60Hz/120VAC                      Temperature: 24.0 °C

Test Method: FCC 15.247                                      Air Pressure: 99.0 kPa

Customer: Digi International                                      Rel. Humidity: 48.0 %

EUT Description: Digi Connect ME  
2 dBi antenna

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

Data File Name: 3864.dat                                      Page: 2 of 5

| <b>List of measurements for run #: 6</b>      |              |                                   |                  |                         |                       |        |
|---|--------------|-----------------------------------|------------------|-------------------------|-----------------------|--------|
| FREQ  | LEVEL (dBuV) | CABLE / ANT / PREAMP / ATTEN (dB) | FINAL (dBuV / m) | POL / HGT / AZ (m)(DEG) | DELTA1 FCC-B <1GHz 3m | DELTA2 |
| mid channel, 54 Mbps data rate, 2 dBi antenna |              |                                   |                  |                         |                       |        |
| 280.0 MHz                                     | 38.31 Qp     | 1.91 / 12.55 / 29.82 / 0.01       | 22.96            | V / 1.00 / 0            | -23.04                | n/a    |
| 400.002 MHz                                   | 36.95 Qp     | 2.32 / 15.8 / 30.0 / 0.02         | 25.09            | V / 1.00 / 180          | -20.91                | n/a    |
| 250.017 MHz                                   | 36.65 Qp     | 1.82 / 12.08 / 29.76 / 0.01       | 20.8             | V / 1.00 / 270          | -25.2                 | n/a    |
| Maximized                                     |              |                                   |                  |                         |                       |        |
| 400.002 MHz                                   | 37.41 Qp     | 2.32 / 15.8 / 30.0 / 0.02         | 25.55            | V / 1.00 / 130          | -20.45                | n/a    |
| End of Vertical Scan                          |              |                                   |                  |                         |                       |        |
| Maxed   |              |                                   |                  |                         |                       |        |
| 280.0 MHz                                     | 44.94 Qp     | 1.91 / 12.55 / 29.82 / 0.01       | 29.59            | H / 1.27 / 311          | -16.41                | n/a    |
| low channel, 54 Mbps data rate, 2 dBi antenna |              |                                   |                  |                         |                       |        |
| 280.0 MHz                                     | 33.85 Qp     | 1.91 / 12.55 / 29.82 / 0.01       | 18.5             | V / 1.00 / 90           | -27.5                 | n/a    |
| 400.002 MHz                                   | 37.0 Qp      | 2.32 / 15.8 / 30.0 / 0.02         | 25.14            | V / 1.00 / 180          | -20.86                | n/a    |
| 250.017 MHz                                   | 36.15 Qp     | 1.82 / 12.08 / 29.76 / 0.01       | 20.3             | V / 1.00 / 180          | -25.7                 | n/a    |
| 120.018 MHz                                   | 37.1 Qp      | 1.19 / 9.07 / 29.7 / 0.0          | 17.67            | V / 1.00 / 180          | -25.83                | n/a    |
| Maxed   |              |                                   |                  |                         |                       |        |
| 400.002 MHz                                   | 37.83 Qp     | 2.32 / 15.8 / 30.0 / 0.02         | 25.97            | V / 1.05 / 136          | -20.03                | n/a    |
| End of Vertical Scan                          |              |                                   |                  |                         |                       |        |
| Maxed   |              |                                   |                  |                         |                       |        |
| 280.0 MHz                                     | 45.21 Qp     | 1.91 / 12.55 / 29.82 / 0.01       | 29.86            | H / 1.30 / 308          | -16.14                | n/a    |

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Printed                                      Signature

Reviewed by: Rob J Behringer                                        
Printed                                      Signature







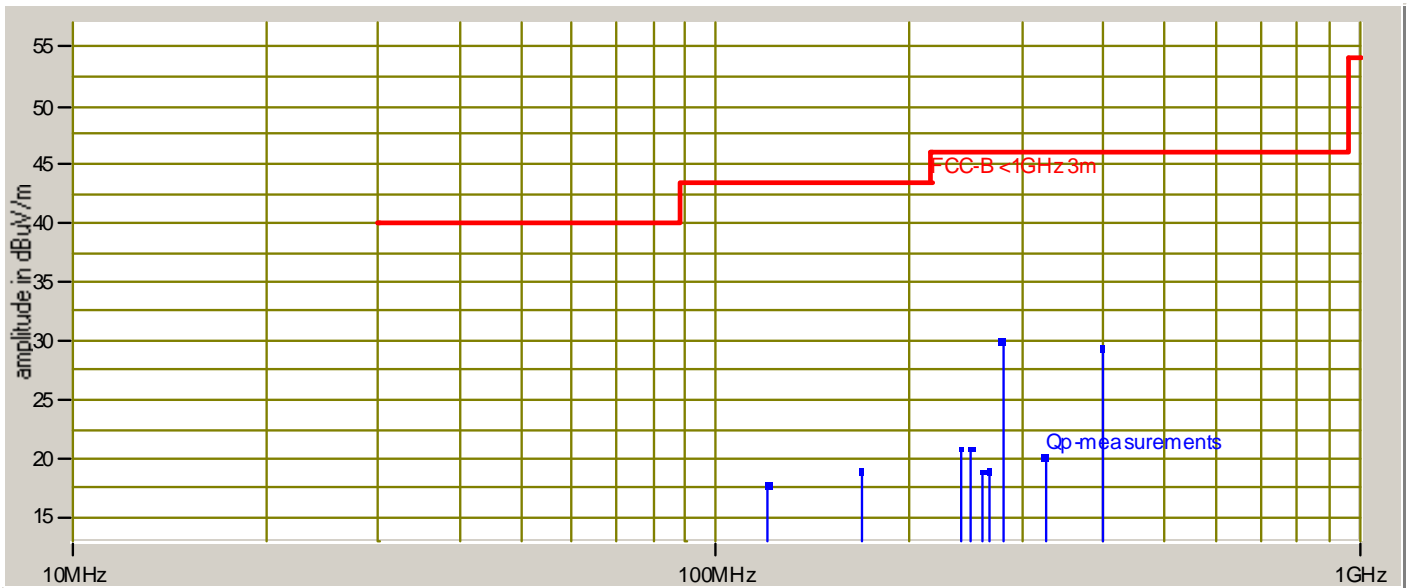
# RADIATED EMISSIONS



America

Test Report #: WC803864 Run 6 Test Area: LTS  
EUT Model #: 50000878-xx Date: 6/24/2008  
EUT Serial #: 00001 EUT Power: 60Hz/120VAC Temperature: 24.0 °C  
Test Method: FCC 15.247 Air Pressure: 99.0 kPa  
Customer: Digi International Rel. Humidity: 48.0 %  
EUT Description: Digi Connect ME  
2 dBi antenna  
Notes:  
Data File Name: 3864.dat Page: 5 of 5

## Graph:



Tested by: Greg Jakubowski  
Printed

Greg Jakubowski  
Signature

Reviewed by: Rob J Behringer  
Printed

Rob J Behringer  
Signature

# RADIATED EMISSIONS



America

Test Report #: WC803864 Run 5                      Test Area: LTS

EUT Model #: 50000878-xx                              Date: 6/24/2008

EUT Serial #: 00001                                      EUT Power: 60Hz/120VAC                      Temperature: 24.0 °C

Test Method: FCC 15.247                                      Air Pressure: 99.0 kPa

Customer: Digi International                                      Rel. Humidity: 48.0 %

EUT Description: Digi Connect ME  
2 dBi antenna

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

Data File Name: 3864.dat                                      Page: 1 of 5


## List of measurements for run #: 5

| FREQ  | LEVEL<br>(dBuV) | CABLE / ANT / PREAMP /<br>ATTEN<br>(dB) | FINAL<br>(dBuV / m) | POL / HGT / AZ<br>(m)(DEG) | DELTA1<br>FCC B >1G 3<br>M peak | DELTA2<br>FCC B >1GHz<br>3m ave |
|---|-----------------|---|---------------------|----------------------------|---------------------------------|---------------------------------|
| RE scan > 1 GHz in restricted bands   |                 |   |                     |                            |                                 |                                 |
| With 11 Mbps data rate, output power = 18 dBm conducted, 14 dBm if 54 Mbps                      |                 |   |                     |                            |                                 |                                 |
| 10% duty cycle.   |                 |   |                     |                            |                                 |                                 |
| 20 log(0.1) = -20 dB duty cycle (peak-average) correction..                                     |                 |   |                     |                            |                                 |                                 |
| For harmonics, peak measurement against peak limit = calculated average msrmt against avg limit |                 |   |                     |                            |                                 |                                 |
| low channel, 11 Mbps data rate, 2 dBi antenna   |                 |   |                     |                            |                                 |                                 |
| 4.824 GHz   | 70.4 Pk         | 9.54 / 32.81 / 43.57 / 0.59             | 69.77               | V / 1.34 / 13              | -4.23                           | 15.77*                          |
| 7.236 GHz   | 50.5 Pk         | 13.1 / 36.06 / 43.13 / 1.26             | 57.79               | V / 1.69 / 109             | -16.21                          | 3.79*                           |
| No other significant emissions detected 1 - 18 GHz  |                 |   |                     |                            |                                 |                                 |
| mid channel, 11 Mbps data rate, 2 dBi antenna   |                 |   |                     |                            |                                 |                                 |
| 4.874 GHz   | 70.7 Pk         | 9.62 / 32.92 / 43.61 / 0.62             | 70.25               | V / 1.17 / 0               | -3.75                           | 16.25*                          |
| 7.311 GHz   | 49.3 Pk         | 13.18 / 36.16 / 43.18 / 1.21            | 56.67               | V / 1.54 / 109             | -17.33                          | 2.67*                           |
| No other significant emissions detected 1 - 18 GHz  |                 |   |                     |                            |                                 |                                 |
| high channel, 11 Mbps data rate, 2 dBi antenna  |                 |   |                     |                            |                                 |                                 |
| 2.363 GHz   | 60.05 Pk        | 6.06 / 28.45 / 43.63 / 3.1              | 54.03               | V / 2.02 / 18              | -19.97                          | 0.03*                           |
| 2.363 GHz   | 52.58 Av        | 6.06 / 28.45 / 43.63 / 3.12             | 46.58               | V / 1.56 / 202             | n/a                             | -7.42                           |
| 4.924 GHz   | 70.25 Pk        | 9.7 / 33.03 / 43.64 / 0.65              | 69.99               | V / 1.31 / 0               | -4.01                           | 15.99*                          |
| 7.386 GHz   | 49.35 Pk        | 13.27 / 36.25 / 43.17 / 1.24            | 56.95               | V / 1.56 / 202             | -17.05                          | 2.95*                           |
| No other significant emissions detected 1 - 18 GHz  |                 |   |                     |                            |                                 |                                 |

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 Signature

# RADIATED EMISSIONS



America

Test Report #: WC803864 Run 5                      Test Area: LTS

EUT Model #: 50000878-xx                              Date: 6/24/2008

EUT Serial #: 00001                                      EUT Power: 60Hz/120VAC                      Temperature: 24.0 °C

Test Method: FCC 15.247                                      Air Pressure: 99.0 kPa

Customer: Digi International                                      Rel. Humidity: 48.0 %

EUT Description: Digi Connect ME  
2 dBi antenna

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

Data File Name: 3864.dat                                      Page: 2 of 5

| <b>List of measurements for run #: 5</b>           |              |                                   |                  |                         |                           |                           |
|--|--------------|-----------------------------------|------------------|-------------------------|---------------------------|---------------------------|
| FREQ   | LEVEL (dBuV) | CABLE / ANT / PREAMP / ATTEN (dB) | FINAL (dBuV / m) | POL / HGT / AZ (m)(DEG) | DELTA1 FCC B >1G 3 M peak | DELTA2 FCC B >1GHz 3m ave |
| low channel, 54 Mbps data rate, 2 dBi antenna      |              |                                   |                  |                         |                           |                           |
| 4.825 GHz  | 61.05 Pk     | 9.54 / 32.82 / 43.57 / 0.59       | 60.43            | V / 1.33 / 6            | -13.57                    | 6.43*                     |
| No other significant emissions detected 1 - 18 GHz |              |                                   |                  |                         |                           |                           |
| mid channel, 54 Mbps data rate, 2 dBi antenna      |              |                                   |                  |                         |                           |                           |
| 4.876 GHz  | 61.05 Pk     | 9.62 / 32.93 / 43.61 / 0.62       | 60.6             | V / 1.20 / 0            | -13.4                     | 6.6*                      |
| No other significant emissions detected 1 - 18 GHz |              |                                   |                  |                         |                           |                           |
| high channel, 54 Mbps data rate, 2 dBi antenna     |              |                                   |                  |                         |                           |                           |
| 4.925 GHz  | 62.1 Pk      | 9.7 / 33.03 / 43.64 / 0.65        | 61.84            | V / 1.30 / 0            | -12.16                    | 7.84*                     |

Scanned 18 – 25 GHz, low, mid, high channels, 11 & 54 Mbps, no significant emissions detected

\* Peak measurement against an average limit

Tested by: Greg Jakubowski  
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 Signature

# RADIATED EMISSIONS



America

Test Report #: WC803864 Run 5 Test Area: LTS  
 EUT Model #: 50000878-xx Date: 6/24/2008  
 EUT Serial #: 00001 EUT Power: 60Hz/120VAC Temperature: 24.0 °C  
 Test Method: FCC 15.247 Air Pressure: 99.0 kPa  
 Customer: Digi International Rel. Humidity: 48.0 %

EUT Description: Digi Connect ME  
2 dBi antenna

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

Data File Name: 3864.dat Page: 3 of 5


### Measurement summary for limit1: FCC B >1G 3 M peak (Pk)

| FREQ      | LEVEL (dBuV) | CABLE / ANT / PREAMP / ATTEN (dB) | FINAL (dBuV / m) | POL / HGT / AZ (m)(DEG) | DELTA1 FCC B >1G 3 M peak |
|-----------|--------------|-----------------------------------|------------------|-------------------------|---------------------------|
| 4.874 GHz | 70.7 Pk      | 9.62 / 32.92 / 43.61 / 0.62       | 70.25            | V / 1.17 / 0            | -3.75                     |
| 4.924 GHz | 70.25 Pk     | 9.7 / 33.03 / 43.64 / 0.65        | 69.99            | V / 1.31 / 0            | -4.01                     |
| 4.824 GHz | 70.4 Pk      | 9.54 / 32.81 / 43.57 / 0.59       | 69.77            | V / 1.34 / 13           | -4.23                     |
| 4.925 GHz | 62.1 Pk      | 9.7 / 33.03 / 43.64 / 0.65        | 61.84            | V / 1.30 / 0            | -12.16                    |
| 4.876 GHz | 61.05 Pk     | 9.62 / 32.93 / 43.61 / 0.62       | 60.6             | V / 1.20 / 0            | -13.4                     |
| 4.825 GHz | 61.05 Pk     | 9.54 / 32.82 / 43.57 / 0.59       | 60.43            | V / 1.33 / 6            | -13.57                    |
| 7.236 GHz | 50.5 Pk      | 13.1 / 36.06 / 43.13 / 1.26       | 57.79            | V / 1.69 / 109          | -16.21                    |
| 7.386 GHz | 49.35 Pk     | 13.27 / 36.25 / 43.17 / 1.24      | 56.95            | V / 1.56 / 202          | -17.05                    |
| 7.311 GHz | 49.3 Pk      | 13.18 / 36.16 / 43.18 / 1.21      | 56.67            | V / 1.54 / 109          | -17.33                    |
| 2.363 GHz | 60.05 Pk     | 6.06 / 28.45 / 43.63 / 3.1        | 54.03            | V / 2.02 / 18           | -19.97                    |

Tested by: Greg Jakubowski  
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 Signature

Reviewed by: Rob J Behringer  
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 Printed

  
 \_\_\_\_\_  
 Signature

# RADIATED EMISSIONS



Test Report #: WC803864 Run 5                      Test Area: LTS  
 EUT Model #: 50000878-xx                              Date: 6/24/2008  
 EUT Serial #: 00001                                      EUT Power: 60Hz/120VAC                      Temperature: 24.0 °C  
 Test Method: FCC 15.247                                      Air Pressure: 99.0 kPa  
 Customer: Digi International                                      Rel. Humidity: 48.0 %

EUT Description: Digi Connect ME  
2 dBi antenna

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

Data File Name: 3864.dat                                      Page: 4 of 5

| Measurement summary for limit2: FCC B >1GHz 3m ave (Av) |              |                                   |                  |                         |                           |
|---|--------------|-----------------------------------|------------------|-------------------------|---------------------------|
| FREQ  | LEVEL (dBuV) | CABLE / ANT / PREAMP / ATTEN (dB) | FINAL (dBuV / m) | POL / HGT / AZ (m)(DEG) | DELTA2 FCC B >1GHz 3m ave |
| 2.363 GHz   | 52.58 Av     | 6.06 / 28.45 / 43.63 / 3.12       | 46.58            | V / 1.56 / 202          | -7.42                     |
| 4.824 GHz   | 70.4 Pk      | 9.54 / 32.81 / 43.57 / 0.59       | 69.77            | V / 1.34 / 13           | 15.77*                    |
| 7.236 GHz   | 50.5 Pk      | 13.1 / 36.06 / 43.13 / 1.26       | 57.79            | V / 1.69 / 109          | 3.79*                     |
| 4.874 GHz   | 70.7 Pk      | 9.62 / 32.92 / 43.61 / 0.62       | 70.25            | V / 1.17 / 0            | 16.25*                    |
| 7.311 GHz   | 49.3 Pk      | 13.18 / 36.16 / 43.18 / 1.21      | 56.67            | V / 1.54 / 109          | 2.67*                     |
| 2.363 GHz   | 60.05 Pk     | 6.06 / 28.45 / 43.63 / 3.1        | 54.03            | V / 2.02 / 18           | 0.03*                     |
| 4.924 GHz   | 70.25 Pk     | 9.7 / 33.03 / 43.64 / 0.65        | 69.99            | V / 1.31 / 0            | 15.99*                    |
| 7.386 GHz   | 49.35 Pk     | 13.27 / 36.25 / 43.17 / 1.24      | 56.95            | V / 1.56 / 202          | 2.95*                     |
| 4.825 GHz   | 61.05 Pk     | 9.54 / 32.82 / 43.57 / 0.59       | 60.43            | V / 1.33 / 6            | 6.43*                     |
| 4.876 GHz   | 61.05 Pk     | 9.62 / 32.93 / 43.61 / 0.62       | 60.6             | V / 1.20 / 0            | 6.6*                      |
| 4.925 GHz   | 62.1 Pk      | 9.7 / 33.03 / 43.64 / 0.65        | 61.84            | V / 1.30 / 0            | 7.84*                     |

\* Peak measurement against an average limit

Tested by: Greg Jakubowski  
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 Printed

  
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 Signature

Reviewed by: Rob J Behringer  
 \_\_\_\_\_  
 Printed

  
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 Signature

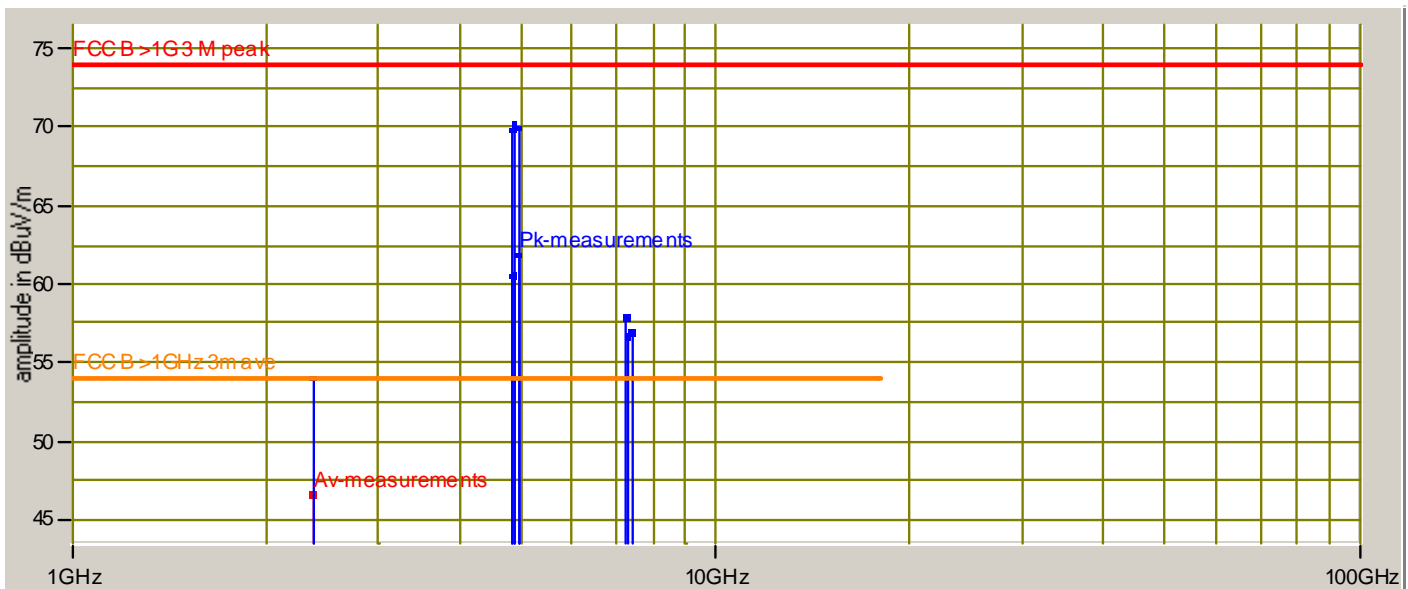
# RADIATED EMISSIONS



America

Test Report #: WC803864 Run 5 Test Area: LTS  
 EUT Model #: 50000878-xx Date: 6/24/2008  
 EUT Serial #: 00001 EUT Power: 60Hz/120VAC Temperature: 24.0 °C  
 Test Method: FCC 15.247 Air Pressure: 99.0 kPa  
 Customer: Digi International Rel. Humidity: 48.0 %  
 EUT Description: Digi Connect ME  
2 dBi antenna  
 Notes: \_\_\_\_\_  
 Data File Name: 3864.dat Page: 5 of 5

## Graph:



Tested by: Greg Jakubowski  
 Printed

*Greg Jakubowski*  
 Signature

Reviewed by: Rob J Behringer  
 Printed

*Rob J Behringer*  
 Signature

# RADIATED EMISSIONS



America

Test Report #: WC803864 Run 9                      Test Area: LTS

EUT Model #: 50000878-xx                              Date: 6/24/2008

EUT Serial #: 00001                                      EUT Power: 60Hz/120VAC                      Temperature: 24.0 °C

Test Method: FCC 15.247                                      Air Pressure: 99.0 kPa

Customer: Digi International                                      Rel. Humidity: 48.0 %

EUT Description: Digi Connect ME

Notes: PCB antenna

Data File Name: 3864.dat                                      Page: 1 of 5

## List of measurements for run #: 9

| FREQ   | LEVEL (dBuV) | CABLE / ANT / PREAMP / ATTEN (dB) | FINAL (dBuV / m) | POL / HGT / AZ (m)(DEG) | DELTA1 FCC-B <1GHz 3m | DELTA2 |
|--|--------------|-----------------------------------|------------------|-------------------------|-----------------------|--------|
| RE scan > 1 GHz  |              |                                   |                  |                         |                       |        |
| With 11 Mbps data rate, output power = 18 dBm conducted, 14 dBm if 54 Mbps 10% duty cycle. |              |                                   |                  |                         |                       |        |
| high channel, 54 Mbps data rate, PCB antenna   |              |                                   |                  |                         |                       |        |
| 114.03 MHz   | 34.75 Qp     | 1.17 / 9.37 / 29.7 / 0.0          | 15.59            | V / 1.00 / 0            | -27.91                | n/a    |
| 120.019 MHz  | 35.9 Qp      | 1.19 / 9.07 / 29.7 / 0.0          | 16.47            | V / 1.00 / 0            | -27.03                | n/a    |
| 125.019 MHz  | 34.8 Qp      | 1.24 / 8.75 / 29.7 / 0.0          | 15.1             | V / 1.00 / 0            | -28.4                 | n/a    |
| 126.147 MHz  | 33.7 Qp      | 1.26 / 8.68 / 29.7 / 0.0          | 13.94            | V / 1.00 / 0            | -29.56                | n/a    |
| 149.994 MHz  | 36.3 Qp      | 1.41 / 9.53 / 29.8 / 0.01         | 17.44            | V / 1.00 / 0            | -26.06                | n/a    |
| 164.018 MHz  | 31.7 Qp      | 1.51 / 8.75 / 29.8 / 0.01         | 12.17            | V / 1.00 / 0            | -31.33                | n/a    |
| 165.95 MHz   | 31.2 Qp      | 1.52 / 8.78 / 29.8 / 0.01         | 11.7             | V / 1.00 / 0            | -31.8                 | n/a    |
| 168.659 MHz  | 38.5 Qp      | 1.52 / 9.01 / 29.8 / 0.01         | 19.24            | V / 1.00 / 0            | -24.26                | n/a    |
| 240.024 MHz  | 35.0 Qp      | 1.78 / 11.73 / 29.7 / 0.01        | 18.82            | V / 1.00 / 0            | -27.18                | n/a    |
| 244.141 MHz  | 34.1 Qp      | 1.8 / 11.87 / 29.72 / 0.01        | 18.06            | V / 1.00 / 0            | -27.94                | n/a    |
| 249.236 MHz  | 31.95 Qp     | 1.82 / 12.05 / 29.75 / 0.01       | 16.07            | V / 1.00 / 0            | -29.93                | n/a    |
| 250.016 MHz  | 34.05 Qp     | 1.82 / 12.08 / 29.76 / 0.01       | 18.2             | V / 1.00 / 0            | -27.8                 | n/a    |
| 253.797 MHz  | 31.9 Qp      | 1.83 / 12.21 / 29.78 / 0.01       | 16.17            | V / 1.00 / 0            | -29.83                | n/a    |
| 260.012 MHz  | 33.65 Qp     | 1.85 / 12.43 / 29.8 / 0.01        | 18.14            | V / 1.00 / 0            | -27.86                | n/a    |
| 265.437 MHz  | 34.0 Qp      | 1.86 / 12.59 / 29.8 / 0.01        | 18.67            | V / 1.00 / 0            | -27.33                | n/a    |
| 280.01 MHz   | 37.05 Qp     | 1.91 / 12.55 / 29.82 / 0.01       | 21.7             | V / 1.00 / 0            | -24.3                 | n/a    |
| 324.422 MHz  | 31.2 Qp      | 2.11 / 13.92 / 29.93 / 0.01       | 17.31            | V / 1.00 / 0            | -28.69                | n/a    |
| 250.016 MHz  | 35.3 Qp      | 1.82 / 12.08 / 29.76 / 0.01       | 19.45            | V / 1.00 / 90           | -26.55                | n/a    |
| 400.0 MHz  | 31.75 Qp     | 2.32 / 15.8 / 30.0 / 0.02         | 19.89            | V / 1.00 / 90           | -26.11                | n/a    |
| 400.0 MHz  | 37.5 Qp      | 2.32 / 15.8 / 30.0 / 0.02         | 25.64            | V / 1.00 / 180          | -20.36                | n/a    |

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# RADIATED EMISSIONS



America

Test Report #: WC803864 Run 9                      Test Area: LTS

EUT Model #: 50000878-xx                              Date: 6/24/2008

EUT Serial #: 00001                                      EUT Power: 60Hz/120VAC                      Temperature: 24.0 °C

Test Method: FCC 15.247                                      Air Pressure: 99.0 kPa

Customer: Digi International                                      Rel. Humidity: 48.0 %

EUT Description: Digi Connect ME

PCB antenna

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

Data File Name: 3864.dat                                      Page: 2 of 5

## List of measurements for run #: 9

| FREQ   | LEVEL (dBuV) | CABLE / ANT / PREAMP / ATTEN (dB) | FINAL (dBuV / m) | POL / HGT / AZ (m)(DEG) | DELTA1 FCC-B <1GHz 3m | DELTA2 |
|--|--------------|-----------------------------------|------------------|-------------------------|-----------------------|--------|
| 324.422 MHz  | 34.45 Qp     | 2.11 / 13.92 / 29.93 / 0.01       | 20.56            | V / 1.00 / 180          | -25.44                | n/a    |
| <b>Maxed</b>                                       |              |                                   |                  |                         |                       |        |
| 400.0 MHz  | 38.86 Qp     | 2.32 / 15.8 / 30.0 / 0.02         | 27.0             | V / 1.17 / 137          | -19.0                 | n/a    |
| <b>End of Vertical Scan</b>                        |              |                                   |                  |                         |                       |        |
| 244.105 MHz  | 36.55 Qp     | 1.8 / 11.87 / 29.72 / 0.01        | 20.51            | H / 3.00 / 0            | -25.49                | n/a    |
| 253.839 MHz  | 34.95 Qp     | 1.83 / 12.21 / 29.78 / 0.01       | 19.22            | H / 3.00 / 0            | -26.78                | n/a    |
| 400.0 MHz  | 38.2 Qp      | 2.32 / 15.8 / 30.0 / 0.02         | 26.34            | H / 3.00 / 0            | -19.66                | n/a    |
| 244.105 MHz  | 37.1 Qp      | 1.8 / 11.87 / 29.72 / 0.01        | 21.06            | H / 3.00 / 270          | -24.94                | n/a    |
| 280.01 MHz   | 36.15 Qp     | 1.91 / 12.55 / 29.82 / 0.01       | 20.8             | H / 3.00 / 270          | -25.2                 | n/a    |
| <b>Maxed</b>                                       |              |                                   |                  |                         |                       |        |
| 400.0 MHz  | 40.49 Qp     | 2.32 / 15.8 / 30.0 / 0.02         | 28.63            | H / 2.36 / 340          | -17.37                | n/a    |
| 280.01 MHz   | 44.2 Qp      | 1.91 / 12.55 / 29.82 / 0.01       | 28.85            | H / 1.30 / 309          | -17.15                | n/a    |
| 249.164 MHz  | 35.6 Qp      | 1.82 / 12.05 / 29.75 / 0.01       | 19.72            | H / 2.36 / 340          | -26.28                | n/a    |
| <b>mid channel, 54 Mbps data rate, PCB antenna</b> |              |                                   |                  |                         |                       |        |
| 168.659 MHz  | 38.85 Qp     | 1.52 / 9.01 / 29.8 / 0.01         | 19.59            | V / 1.00 / 0            | -23.91                | n/a    |
| 120.019 MHz  | 36.2 Qp      | 1.19 / 9.07 / 29.7 / 0.0          | 16.77            | V / 1.00 / 90           | -26.73                | n/a    |
| 250.016 MHz  | 35.95 Qp     | 1.82 / 12.08 / 29.76 / 0.01       | 20.1             | V / 1.00 / 180          | -25.9                 | n/a    |
| <b>Maxed</b>                                       |              |                                   |                  |                         |                       |        |
| 168.659 MHz  | 39.58 Qp     | 1.52 / 9.01 / 29.8 / 0.01         | 20.32            | V / 1.00 / 0            | -23.18                | n/a    |

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# RADIATED EMISSIONS



America

Test Report #: WC803864 Run 9                      Test Area: LTS

EUT Model #: 50000878-xx                              Date: 6/24/2008

EUT Serial #: 00001                                      EUT Power: 60Hz/120VAC                      Temperature: 24.0 °C

Test Method: FCC 15.247                                      Air Pressure: 99.0 kPa

Customer: Digi International                                      Rel. Humidity: 48.0 %

EUT Description: Digi Connect ME

PCB antenna

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

Data File Name: 3864.dat                                      Page: 3 of 5

| <b>List of measurements for run #: 9</b>                    |              |                                   |                  |                         |                       |        |
|---|--------------|-----------------------------------|------------------|-------------------------|-----------------------|--------|
| FREQ  | LEVEL (dBuV) | CABLE / ANT / PREAMP / ATTEN (dB) | FINAL (dBuV / m) | POL / HGT / AZ (m)(DEG) | DELTA1 FCC-B <1GHz 3m | DELTA2 |
| 400.0 MHz   | 38.92 Qp     | 2.32 / 15.8 / 30.0 / 0.02         | 27.06            | V / 1.18 / 137          | -18.94                | n/a    |
| 280.01 MHz  | 47.75 Qp     | 1.91 / 12.55 / 29.82 / 0.01       | 32.4             | H / 1.15 / 231          | -13.6                 | n/a    |
| low channel, 54 Mbps data rate, PCB antenna                 |              |                                   |                  |                         |                       |        |
| 280.01 MHz  | 47.96 Qp     | 1.91 / 12.55 / 29.82 / 0.01       | 32.61            | H / 1.15 / 231          | -13.39                | n/a    |
| 400.0 MHz   | 38.73 Qp     | 2.32 / 15.8 / 30.0 / 0.02         | 26.87            | V / 1.33 / 130          | -19.13                | n/a    |
| low channel, 11 Mbps data rate, PCB antenna                 |              |                                   |                  |                         |                       |        |
| Maxed   |              |                                   |                  |                         |                       |        |
| 400.0 MHz   | 38.52 Qp     | 2.32 / 15.8 / 30.0 / 0.02         | 26.66            | V / 1.13 / 136          | -19.34                | n/a    |
| 280.01 MHz  | 47.96 Qp     | 1.91 / 12.55 / 29.82 / 0.01       | 32.61            | H / 1.13 / 230          | -13.39                | n/a    |
| mid channel, 11 Mbps data rate, PCB antenna                 |              |                                   |                  |                         |                       |        |
| No new or higher emissions detected vertical or horizontal. |              |                                   |                  |                         |                       |        |
|   |              |                                   |                  |                         |                       |        |
| high channel, 11 Mbps data rate, PCB antenna                |              |                                   |                  |                         |                       |        |
| No new or higher emissions detected vertical or horizontal. |              |                                   |                  |                         |                       |        |

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# RADIATED EMISSIONS



America

Test Report #: WC803864 Run 9 Test Area: LTS

EUT Model #: 50000878-xx Date: 6/24/2008

EUT Serial #: 00001 EUT Power: 60Hz/120VAC Temperature: 24.0 °C

Test Method: FCC 15.247 Air Pressure: 99.0 kPa

Customer: Digi International Rel. Humidity: 48.0 %

EUT Description: Digi Connect ME


PCB antenna


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

Data File Name: 3864.dat Page: 4 of 5

### 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 |
|-------------|--------------|-----------------------------------|------------------|-------------------------|-----------------------|
| 280.01 MHz  | 47.96 Qp     | 1.91 / 12.55 / 29.82 / 0.01       | 32.61            | H / 1.15 / 231          | -13.39                |
| 400.0 MHz   | 40.49 Qp     | 2.32 / 15.8 / 30.0 / 0.02         | 28.63            | H / 2.36 / 340          | -17.37                |
| 168.659 MHz | 39.58 Qp     | 1.52 / 9.01 / 29.8 / 0.01         | 20.32            | V / 1.00 / 0            | -23.18                |
| 244.105 MHz | 37.1 Qp      | 1.8 / 11.87 / 29.72 / 0.01        | 21.06            | H / 3.00 / 270          | -24.94                |
| 324.422 MHz | 34.45 Qp     | 2.11 / 13.92 / 29.93 / 0.01       | 20.56            | V / 1.00 / 180          | -25.44                |
| 250.016 MHz | 35.95 Qp     | 1.82 / 12.08 / 29.76 / 0.01       | 20.1             | V / 1.00 / 180          | -25.9                 |
| 149.994 MHz | 36.3 Qp      | 1.41 / 9.53 / 29.8 / 0.01         | 17.44            | V / 1.00 / 0            | -26.06                |
| 249.164 MHz | 35.6 Qp      | 1.82 / 12.05 / 29.75 / 0.01       | 19.72            | H / 2.36 / 340          | -26.28                |
| 120.019 MHz | 36.2 Qp      | 1.19 / 9.07 / 29.7 / 0.0          | 16.77            | V / 1.00 / 90           | -26.73                |
| 253.839 MHz | 34.95 Qp     | 1.83 / 12.21 / 29.78 / 0.01       | 19.22            | H / 3.00 / 0            | -26.78                |
| 240.024 MHz | 35.0 Qp      | 1.78 / 11.73 / 29.7 / 0.01        | 18.82            | V / 1.00 / 0            | -27.18                |
| 265.437 MHz | 34.0 Qp      | 1.86 / 12.59 / 29.8 / 0.01        | 18.67            | V / 1.00 / 0            | -27.33                |
| 260.012 MHz | 33.65 Qp     | 1.85 / 12.43 / 29.8 / 0.01        | 18.14            | V / 1.00 / 0            | -27.86                |
| 114.03 MHz  | 34.75 Qp     | 1.17 / 9.37 / 29.7 / 0.0          | 15.59            | V / 1.00 / 0            | -27.91                |
| 125.019 MHz | 34.8 Qp      | 1.24 / 8.75 / 29.7 / 0.0          | 15.1             | V / 1.00 / 0            | -28.4                 |
| 126.147 MHz | 33.7 Qp      | 1.26 / 8.68 / 29.7 / 0.0          | 13.94            | V / 1.00 / 0            | -29.56                |
| 164.018 MHz | 31.7 Qp      | 1.51 / 8.75 / 29.8 / 0.01         | 12.17            | V / 1.00 / 0            | -31.33                |
| 165.95 MHz  | 31.2 Qp      | 1.52 / 8.78 / 29.8 / 0.01         | 11.7             | V / 1.00 / 0            | -31.8                 |

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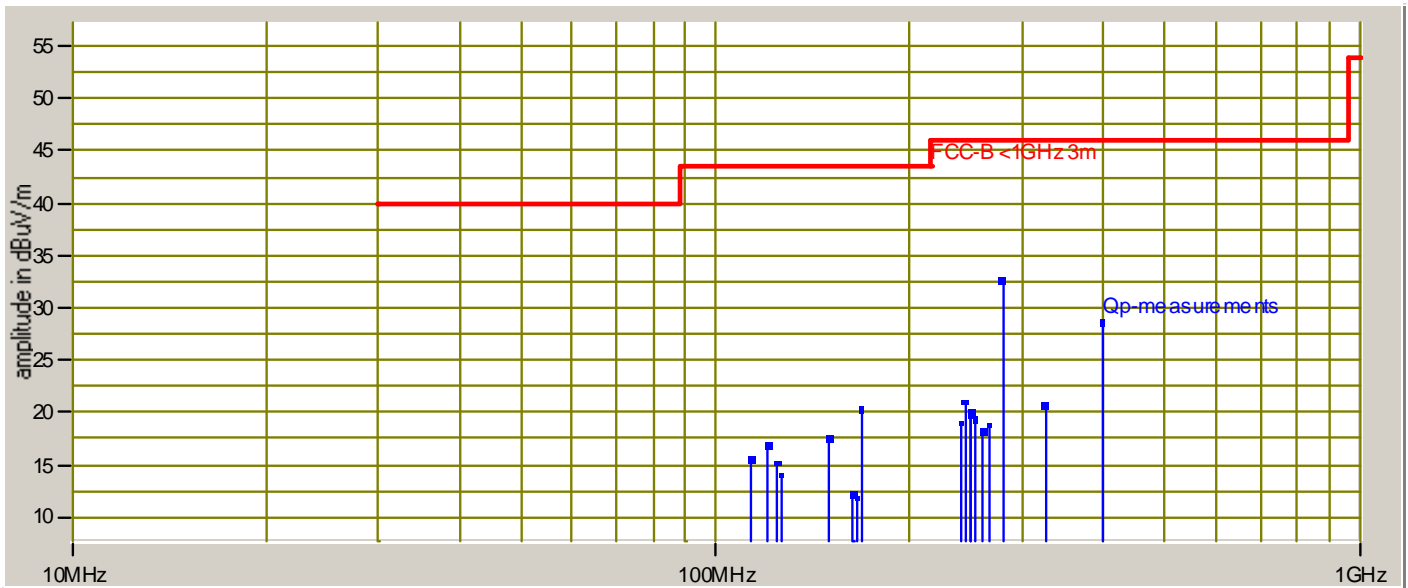
# RADIATED EMISSIONS



America

Test Report #: WC803864 Run 9 Test Area: LTS  
 EUT Model #: 50000878-xx Date: 6/24/2008  
 EUT Serial #: 00001 EUT Power: 60Hz/120VAC Temperature: 24.0 °C  
 Test Method: FCC 15.247 Air Pressure: 99.0 kPa  
 Customer: Digi International Rel. Humidity: 48.0 %  
 EUT Description: Digi Connect ME  
PCB antenna  
 Notes: \_\_\_\_\_  
 Data File Name: 3864.dat Page: 5 of 5

## Graph:



Tested by: Greg Jakubowski

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# RADIATED EMISSIONS



America

Test Report #: WC803864 Run 8 Test Area: LTS  
 EUT Model #: 50000878-xx Date: 6/24/2008  
 EUT Serial #: 00001 EUT Power: 60Hz/120VAC Temperature: 24.0 °C  
 Test Method: FCC 15.247 Air Pressure: 99.0 kPa  
 Customer: Digi International Rel. Humidity: 48.0 %

EUT Description: Digi Connect ME  
PCB antenna.

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

Data File Name: 3864.dat Page: 1 of 5

## List of measurements for run #: 8

| FREQ  | LEVEL (dBuV) | CABLE / ANT / PREAMP / ATTEN (dB) | FINAL (dBuV / m) | POL / HGT / AZ (m)(DEG) | DELTA1 FCC B >1G 3 M peak | DELTA2 FCC B >1GHz 3m ave |
|---|--------------|-----------------------------------|------------------|-------------------------|---------------------------|---------------------------|
| RE scan > 1 GHz in restricted bands   |              |                                   |                  |                         |                           |                           |
| With 11 Mbps data rate, output power = 18 dBm conducted, 14 dBm if 54 Mbps                      |              |                                   |                  |                         |                           |                           |
| 10% duty cycle.   |              |                                   |                  |                         |                           |                           |
| 20 log(0.1) = -20 dB duty cycle (peak-average) correction.                                      |              |                                   |                  |                         |                           |                           |
| For harmonics, peak measurement against peak limit = calculated average msrmt against avg limit |              |                                   |                  |                         |                           |                           |
| low channel, 11 Mbps data rate, PCB antenna   |              |                                   |                  |                         |                           |                           |
| 4.824 GHz   | 66.05 Pk     | 9.54 / 32.81 / 43.57 / 0.59       | 65.42            | V / 1.95 / 131          | -8.58                     | 11.42*                    |
| 4.824 GHz   | 64.55 Pk     | 9.54 / 32.81 / 43.57 / 0.59       | 63.92            | H / 1.92 / 0            | -10.08                    | 9.92*                     |
| 7.237 GHz   | 50.05 Pk     | 13.1 / 36.06 / 43.13 / 1.26       | 57.34            | V / 1.00 / 200          | -16.66                    | 3.34*                     |
| 9.648 GHz   | 58.35 Pk     | 15.9 / 37.74 / 42.12 / 1.08       | 70.95            | V / 1.65 / 298          | -3.05                     | 16.95*                    |
| 9.648 GHz   | 52.7 Pk      | 15.9 / 37.74 / 42.12 / 1.08       | 65.3             | H / 1.58 / 310          | -8.7                      | 11.3*                     |
| No other significant emissions detected 1 - 18 GHz  |              |                                   |                  |                         |                           |                           |
| mid channel, 11 Mbps data rate, PCB antenna   |              |                                   |                  |                         |                           |                           |
| 4.874 GHz   | 67.9 Pk      | 9.62 / 32.92 / 43.61 / 0.62       | 67.45            | V / 2.06 / 59           | -6.55                     | 13.45*                    |
| 7.311 GHz   | 50.6 Pk      | 13.18 / 36.16 / 43.18 / 1.21      | 57.97            | V / 1.00 / 204          | -16.03                    | 3.97*                     |
| 9.748 GHz   | 55.45 Pk     | 16.0 / 37.8 / 42.07 / 1.27        | 68.46            | V / 1.71 / 301          | -5.54                     | 14.46*                    |
| No other significant emissions detected 1 - 18 GHz  |              |                                   |                  |                         |                           |                           |
| high channel, 11 Mbps data rate, PCB antenna  |              |                                   |                  |                         |                           |                           |
| 2.361 GHz   | 55.65 Pk     | 6.06 / 28.45 / 43.64 / 2.54       | 49.06            | V / 1.00 / 18           | -24.94                    | -4.94*                    |
| 2.361 GHz   | 49.39 Av     | 6.06 / 28.45 / 43.64 / 2.56       | 42.82            | V / 1.00 / 18           | n/a                       | -11.18                    |
| 4.924 GHz   | 67.0 Pk      | 9.7 / 33.03 / 43.64 / 0.65        | 66.74            | V / 2.00 / 60           | -7.26                     | 12.74*                    |
| 7.386 GHz   | 50.0 Pk      | 13.27 / 36.25 / 43.17 / 1.24      | 57.6             | V / 2.00 / 207          | -16.4                     | 3.6*                      |

Tested by: Greg Jakubowski  
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# RADIATED EMISSIONS



America

Test Report #: WC803864 Run 8                      Test Area: LTS

EUT Model #: 50000878-xx                              Date: 6/24/2008

EUT Serial #: 00001                                      EUT Power: 60Hz/120VAC                      Temperature: 24.0 °C

Test Method: FCC 15.247                                      Air Pressure: 99.0 kPa

Customer: Digi International                                      Rel. Humidity: 48.0 %

EUT Description: Digi Connect ME

PCB antenna.

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

Data File Name: 3864.dat                                      Page: 2 of 5

| <b>List of measurements for run #: 8</b>  |              |                                   |                  |                         |                           |                           |
|---|--------------|-----------------------------------|------------------|-------------------------|---------------------------|---------------------------|
| FREQ  | LEVEL (dBuV) | CABLE / ANT / PREAMP / ATTEN (dB) | FINAL (dBuV / m) | POL / HGT / AZ (m)(DEG) | DELTA1 FCC B >1G 3 M peak | DELTA2 FCC B >1GHz 3m ave |
| 9.848 GHz   | 54.55 Pk     | 16.11 / 37.86 / 41.99 / 1.18      | 67.7             | V / 1.62 / 297          | -6.3                      | 13.7*                     |
| No other significant emissions detected 1 - 18 GHz  |              |                                   |                  |                         |                           |                           |
| low channel, 54 Mbps data rate, PCB antenna   |              |                                   |                  |                         |                           |                           |
| 4.826 GHz   | 59.75 Pk     | 9.54 / 32.82 / 43.57 / 0.0        | 58.54            | V / 1.96 / 105          | -15.46                    | 4.54*                     |
| 9.648 GHz   | 48.5 Pk      | 15.9 / 37.74 / 42.12 / 0.0        | 60.02            | V / 1.70 / 300          | -13.98                    | 6.02*                     |
| No other significant emissions detected 1 - 18 GHz  |              |                                   |                  |                         |                           |                           |
| mid channel, 54 Mbps data rate, PCB antenna   |              |                                   |                  |                         |                           |                           |
| 4.875 GHz   | 62.95 Pk     | 9.62 / 32.93 / 43.61 / 0.62       | 62.5             | V / 1.49 / 69           | -11.5                     | 8.5*                      |
| 9.746 GHz   | 46.45 Pk     | 16.0 / 37.8 / 42.07 / 1.27        | 59.45            | V / 1.69 / 290          | -14.55                    | 5.45*                     |
| No other significant emissions detected 1 - 18 GHz  |              |                                   |                  |                         |                           |                           |
| high channel, 54 Mbps data rate, PCB antenna  |              |                                   |                  |                         |                           |                           |
| 2.36 GHz  | 54.2 Pk      | 6.06 / 28.45 / 43.64 / 2.16       | 47.22            | V / 1.00 / 0            | -26.78                    | -6.78*                    |
| 2.36 GHz  | 46.48 Av     | 6.06 / 28.45 / 43.64 / 2.16       | 39.5             | V / 1.00 / 0            | n/a                       | -14.5                     |
| 4.924 GHz   | 59.2 Pk      | 9.7 / 33.03 / 43.64 / 0.65        | 58.94            | V / 1.30 / 67           | -15.06                    | 4.94*                     |
| 9.848 GHz   | 46.6 Pk      | 16.11 / 37.86 / 41.99 / 1.18      | 59.75            | V / 1.70 / 290          | -14.25                    | 5.75*                     |
| No other significant emissions detected 1 - 18 GHz  |              |                                   |                  |                         |                           |                           |
| Scanned 18 – 25 GHz, low, mid, high channels, 11 & 54 Mbps, no significant emissions detected |              |                                   |                  |                         |                           |                           |

\* Peak measurement against an average limit

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Reviewed by: Rob J Behringer

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# RADIATED EMISSIONS



Test Report #: WC803864 Run 8                      Test Area: LTS  
 EUT Model #: 50000878-xx                              Date: 6/24/2008  
 EUT Serial #: 00001                                      EUT Power: 60Hz/120VAC                      Temperature: 24.0 °C  
 Test Method: FCC 15.247                                      Air Pressure: 99.0 kPa  
 Customer: Digi International                                      Rel. Humidity: 48.0 %

EUT Description: Digi Connect ME  
PCB antenna.

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

Data File Name: 3864.dat                                      Page: 3 of 5


## Measurement summary for limit1: FCC B >1G 3 M peak (Pk)

| FREQ      | LEVEL (dBuV) | CABLE / ANT / PREAMP / ATTEN (dB) | FINAL (dBuV / m) | POL / HGT / AZ (m)(DEG) | DELTA1 FCC B >1G 3 M peak |
|-----------|--------------|-----------------------------------|------------------|-------------------------|---------------------------|
| 9.648 GHz | 58.35 Pk     | 15.9 / 37.74 / 42.12 / 1.08       | 70.95            | V / 1.65 / 298          | -3.05                     |
| 9.748 GHz | 55.45 Pk     | 16.0 / 37.8 / 42.07 / 1.27        | 68.46            | V / 1.71 / 301          | -5.54                     |
| 9.848 GHz | 54.55 Pk     | 16.11 / 37.86 / 41.99 / 1.18      | 67.7             | V / 1.62 / 297          | -6.3                      |
| 4.874 GHz | 67.9 Pk      | 9.62 / 32.92 / 43.61 / 0.62       | 67.45            | V / 2.06 / 59           | -6.55                     |
| 4.924 GHz | 67.0 Pk      | 9.7 / 33.03 / 43.64 / 0.65        | 66.74            | V / 2.00 / 60           | -7.26                     |
| 4.824 GHz | 66.05 Pk     | 9.54 / 32.81 / 43.57 / 0.59       | 65.42            | V / 1.95 / 131          | -8.58                     |
| 4.875 GHz | 62.95 Pk     | 9.62 / 32.93 / 43.61 / 0.62       | 62.5             | V / 1.49 / 69           | -11.5                     |
| 9.648 GHz | 48.5 Pk      | 15.9 / 37.74 / 42.12 / 0.0        | 60.02            | V / 1.70 / 300          | -13.98                    |
| 9.746 GHz | 46.45 Pk     | 16.0 / 37.8 / 42.07 / 1.27        | 59.45            | V / 1.69 / 290          | -14.55                    |
| 4.924 GHz | 59.2 Pk      | 9.7 / 33.03 / 43.64 / 0.65        | 58.94            | V / 1.30 / 67           | -15.06                    |
| 4.826 GHz | 59.75 Pk     | 9.54 / 32.82 / 43.57 / 0.0        | 58.54            | V / 1.96 / 105          | -15.46                    |
| 7.311 GHz | 50.6 Pk      | 13.18 / 36.16 / 43.18 / 1.21      | 57.97            | V / 1.00 / 204          | -16.03                    |
| 7.386 GHz | 50.0 Pk      | 13.27 / 36.25 / 43.17 / 1.24      | 57.6             | V / 2.00 / 207          | -16.4                     |
| 7.237 GHz | 50.05 Pk     | 13.1 / 36.06 / 43.13 / 1.26       | 57.34            | V / 1.00 / 200          | -16.66                    |
| 2.361 GHz | 55.65 Pk     | 6.06 / 28.45 / 43.64 / 2.54       | 49.06            | V / 1.00 / 18           | -24.94                    |
| 2.36 GHz  | 54.2 Pk      | 6.06 / 28.45 / 43.64 / 2.16       | 47.22            | V / 1.00 / 0            | -26.78                    |

Tested by: Greg Jakubowski  
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Reviewed by: Rob J Behringer  
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 \_\_\_\_\_  
 Signature

# RADIATED EMISSIONS



Test Report #: WC803864 Run 8 Test Area: LTS  
 EUT Model #: 50000878-xx Date: 6/24/2008  
 EUT Serial #: 00001 EUT Power: 60Hz/120VAC Temperature: 24.0 °C  
 Test Method: FCC 15.247 Air Pressure: 99.0 kPa  
 Customer: Digi International Rel. Humidity: 48.0 %

EUT Description: Digi Connect ME  
PCB antenna.

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

Data File Name: 3864.dat Page: 4 of 5

## Measurement summary for limit2: FCC B >1GHz 3m ave (Av)

| FREQ      | LEVEL (dBuV) | CABLE / ANT / PREAMP / ATTEN (dB) | FINAL (dBuV / m) | POL / HGT / AZ (m)(DEG) | DELTA2 FCC B >1GHz 3m ave |
|-----------|--------------|-----------------------------------|------------------|-------------------------|---------------------------|
| 2.361 GHz | 49.39 Av     | 6.06 / 28.45 / 43.64 / 2.56       | 42.82            | V / 1.00 / 18           | -11.18                    |
| 2.36 GHz  | 46.48 Av     | 6.06 / 28.45 / 43.64 / 2.16       | 39.5             | V / 1.00 / 0            | -14.5                     |
| 4.824 GHz | 66.05 Pk     | 9.54 / 32.81 / 43.57 / 0.59       | 65.42            | V / 1.95 / 131          | 11.42*                    |
| 7.237 GHz | 50.05 Pk     | 13.1 / 36.06 / 43.13 / 1.26       | 57.34            | V / 1.00 / 200          | 3.34*                     |
| 9.648 GHz | 58.35 Pk     | 15.9 / 37.74 / 42.12 / 1.08       | 70.95            | V / 1.65 / 298          | 16.95*                    |
| 4.874 GHz | 67.9 Pk      | 9.62 / 32.92 / 43.61 / 0.62       | 67.45            | V / 2.06 / 59           | 13.45*                    |
| 7.311 GHz | 50.6 Pk      | 13.18 / 36.16 / 43.18 / 1.21      | 57.97            | V / 1.00 / 204          | 3.97*                     |
| 9.748 GHz | 55.45 Pk     | 16.0 / 37.8 / 42.07 / 1.27        | 68.46            | V / 1.71 / 301          | 14.46*                    |
| 2.361 GHz | 55.65 Pk     | 6.06 / 28.45 / 43.64 / 2.54       | 49.06            | V / 1.00 / 18           | -4.94*                    |
| 4.924 GHz | 67.0 Pk      | 9.7 / 33.03 / 43.64 / 0.65        | 66.74            | V / 2.00 / 60           | 12.74*                    |
| 7.386 GHz | 50.0 Pk      | 13.27 / 36.25 / 43.17 / 1.24      | 57.6             | V / 2.00 / 207          | 3.6*                      |
| 9.848 GHz | 54.55 Pk     | 16.11 / 37.86 / 41.99 / 1.18      | 67.7             | V / 1.62 / 297          | 13.7*                     |
| 4.826 GHz | 59.75 Pk     | 9.54 / 32.82 / 43.57 / 0.0        | 58.54            | V / 1.96 / 105          | 4.54*                     |
| 9.648 GHz | 48.5 Pk      | 15.9 / 37.74 / 42.12 / 0.0        | 60.02            | V / 1.70 / 300          | 6.02*                     |
| 4.875 GHz | 62.95 Pk     | 9.62 / 32.93 / 43.61 / 0.62       | 62.5             | V / 1.49 / 69           | 8.5*                      |
| 9.746 GHz | 46.45 Pk     | 16.0 / 37.8 / 42.07 / 1.27        | 59.45            | V / 1.69 / 290          | 5.45*                     |
| 2.36 GHz  | 54.2 Pk      | 6.06 / 28.45 / 43.64 / 2.16       | 47.22            | V / 1.00 / 0            | -6.78*                    |
| 4.924 GHz | 59.2 Pk      | 9.7 / 33.03 / 43.64 / 0.65        | 58.94            | V / 1.30 / 67           | 4.94*                     |

\* Peak measurement against an average limit

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by:

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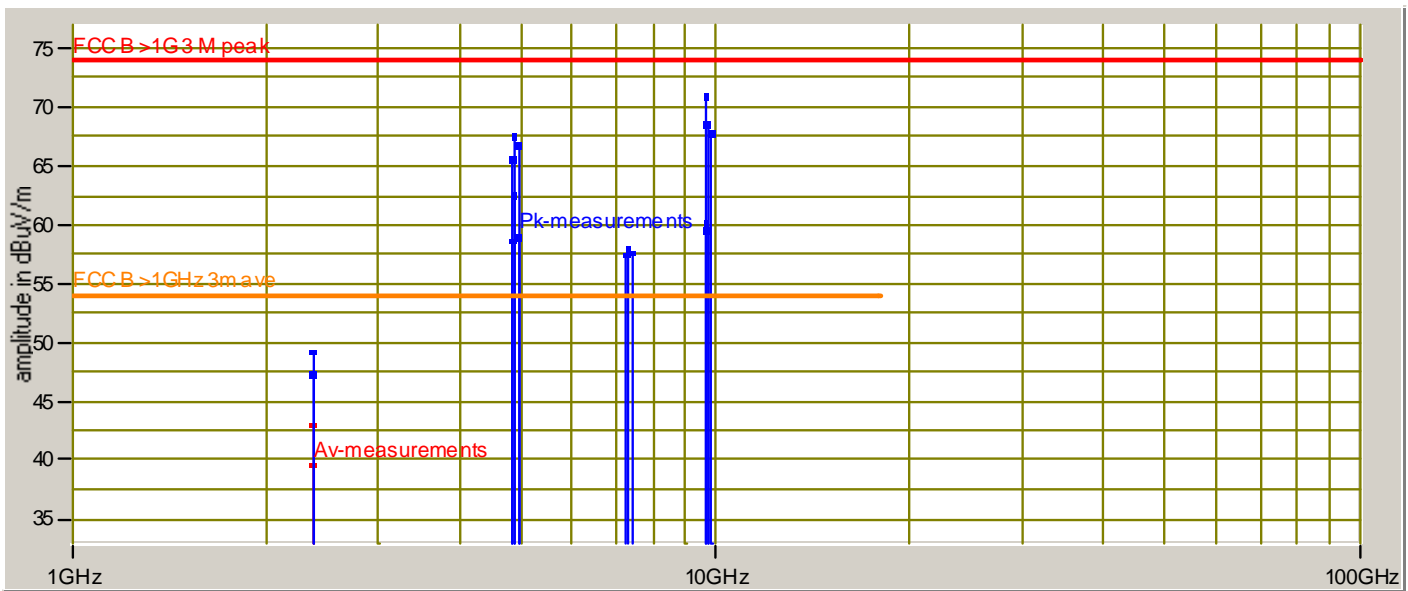
# RADIATED EMISSIONS



America

Test Report #: WC803864 Run 8 Test Area: LTS  
 EUT Model #: 50000878-xx Date: 6/24/2008  
 EUT Serial #: 00001 EUT Power: 60Hz/120VAC Temperature: 24.0 °C  
 Test Method: FCC 15.247 Air Pressure: 99.0 kPa  
 Customer: Digi International Rel. Humidity: 48.0 %  
 EUT Description: Digi Connect ME  
PCB antenna.  
 Notes: \_\_\_\_\_  
 Data File Name: 3864.dat Page: 5 of 5

## Graph:



Tested by: Greg Jakubowski

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Reviewed by: Rob J Behringer

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Signature

**Power spectral density**  
FCC 15.247(e), IC RSS-210 A8.2(b)

**Test summary**

The requirements are:  - MET  - NOT MET

Test was performed in accordance with the test procedure of FCC KDB Publication 558074

Maximum power spectral density is  $-3.22$  dBm / 3 kHz

**Test location**

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

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

- Wild River Lab Tech Area, conducted measurement

**Test equipment**

| TUV ID    | Model  | Manufacturer | Description       | Serial     | Cal Due   |
|-----------|--------|--------------|-------------------|------------|-----------|
| WRLE03371 | E4440A | Agilent      | Spectrum Analyzer | MY43362222 | 19-Dec-08 |

**Test limit**

No greater than 8 dBm in any 3 kHz band

**Test data**

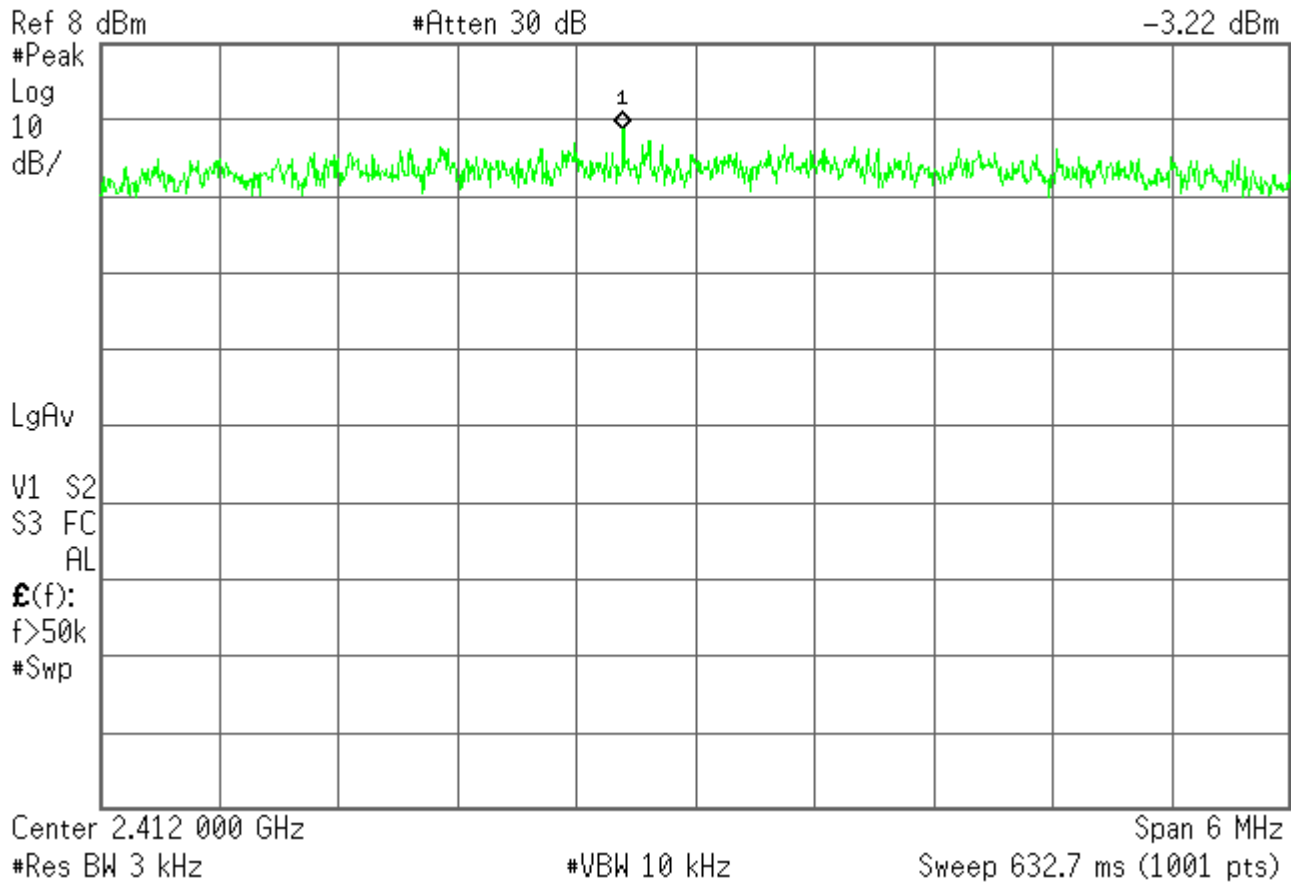
See following pages.

Power spectral density

Channel 1, 11 MB rate

Agilent 11:01:19 Jun 26, 2008

Mkr1 2.411 634 GHz  
-3.22 dBm



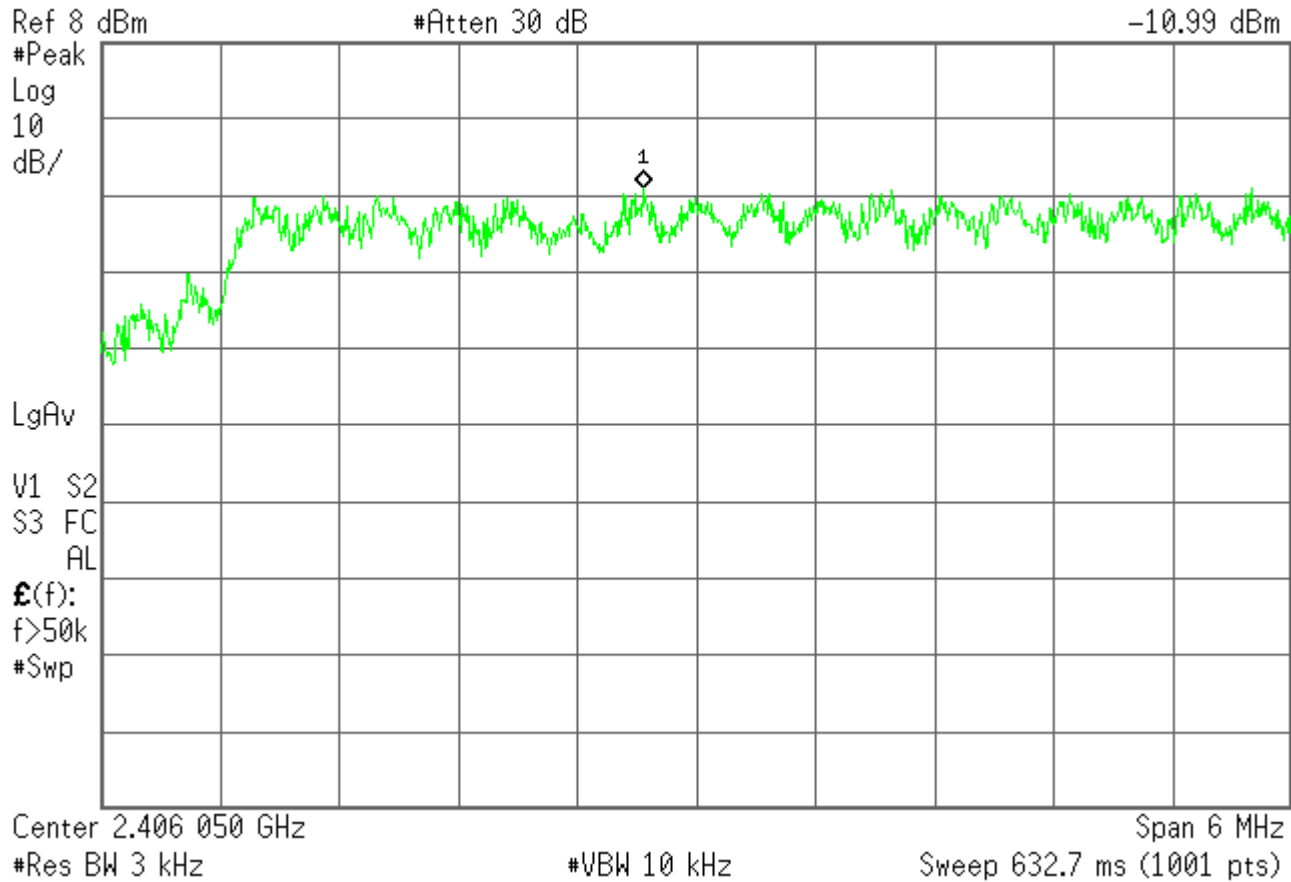
Sweep time reduced, max hold function used for several minutes, trace is similar to ch 6 data using 2000 second sweep time, peak is > 10 dB below the limit.

Power spectral density

Channel 1, 54 MB rate, 1 of 3

\* Agilent 10:44:28 Jun 26, 2008

Mkr1 2.405 786 GHz  
-10.99 dBm



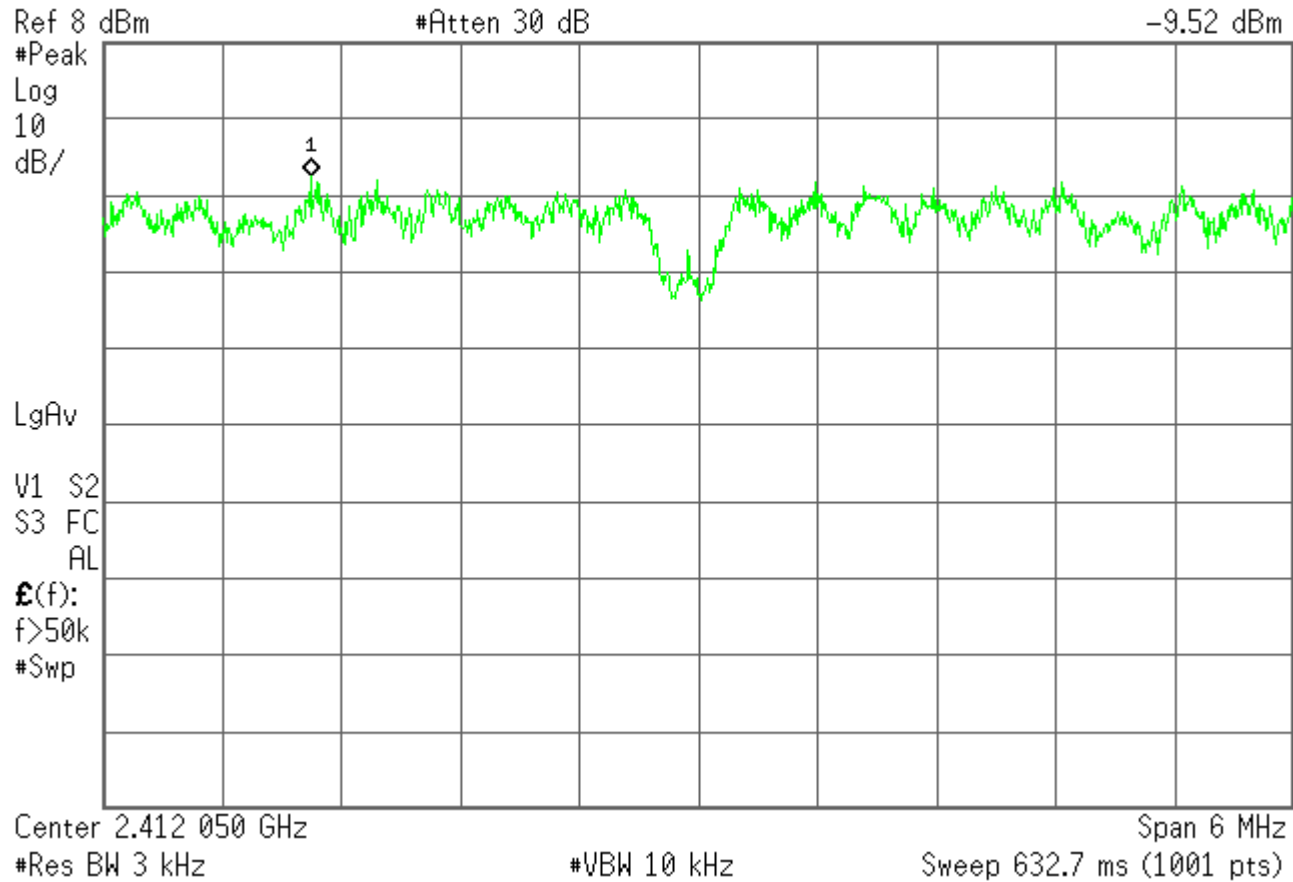
Sweep time reduced, max hold function used for several minutes, trace is similar to ch 6 data using 2000 second sweep time, peak is > 15 dB below the limit.

Power spectral density

Channel 1, 54 MB rate, 2 of 3

Agilent 10:41:59 Jun 26, 2008

Mkr1 2.410 094 GHz  
-9.52 dBm



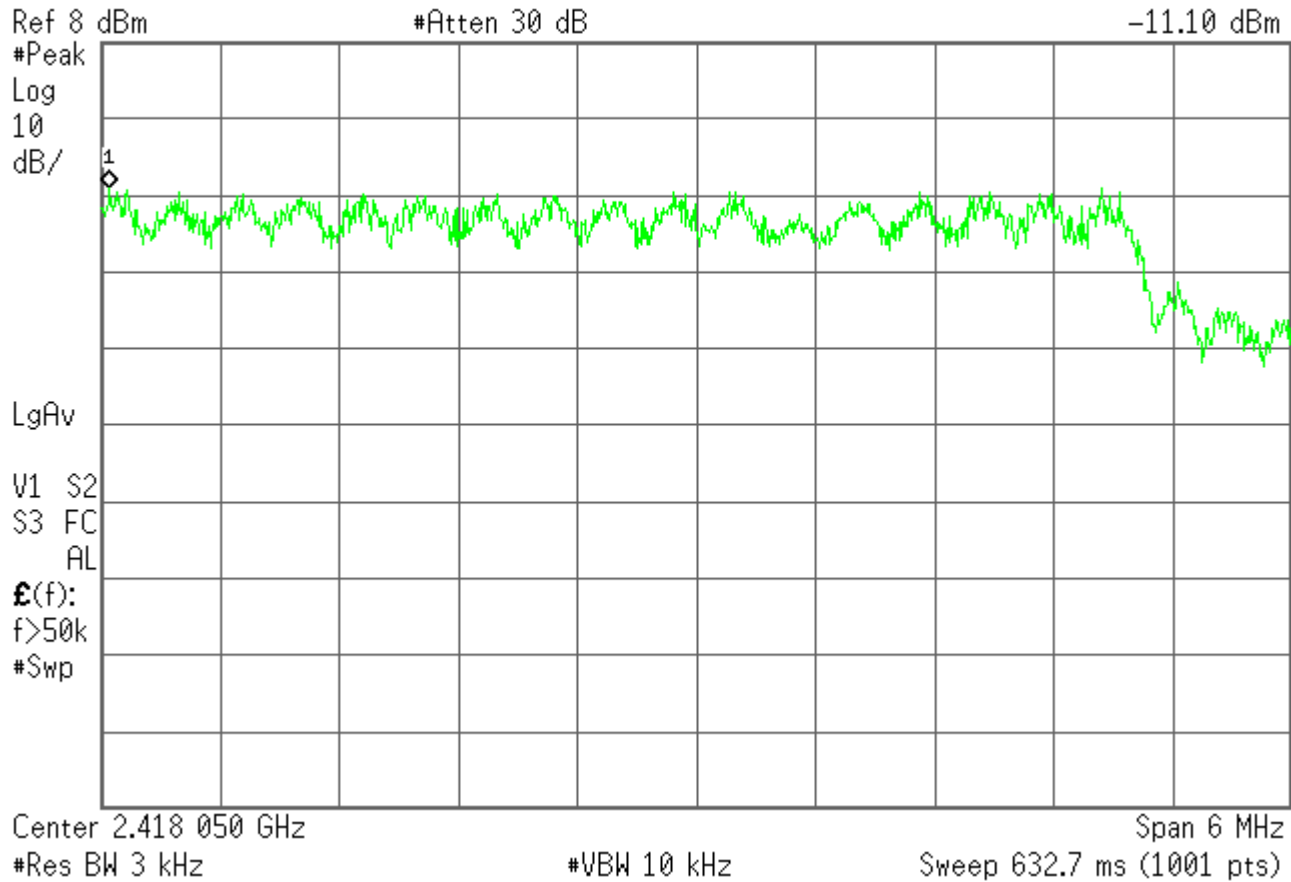
Sweep time reduced, max hold function used for several minutes, trace is similar to ch 6 data using 2000 second sweep time, peak is > 15 dB below the limit.

Power spectral density

Channel 1, 54 MB rate, 3 of 3

\* Agilent 10:46:58 Jun 26, 2008

Mkr1 2.415 092 GHz  
-11.10 dBm



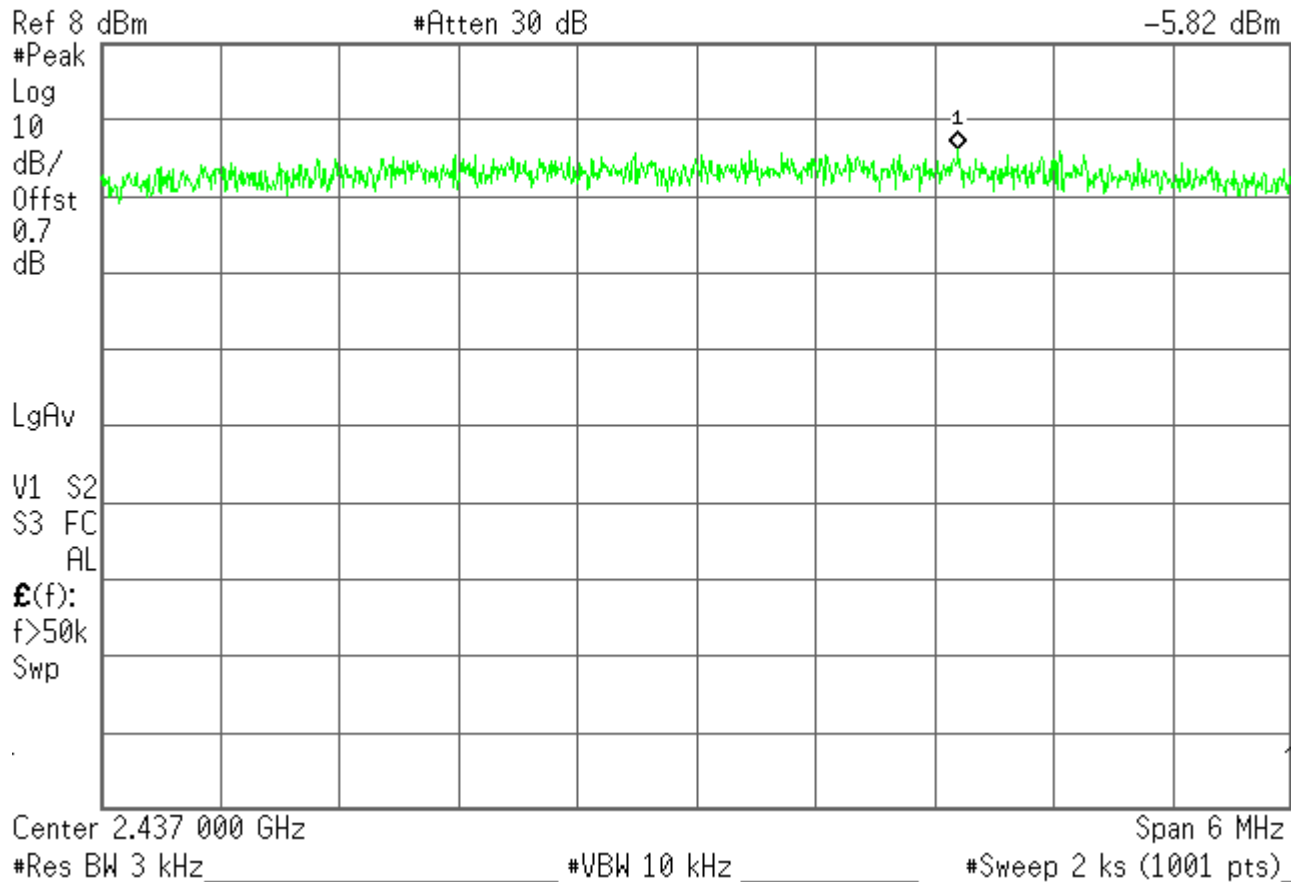
Sweep time reduced, max hold function used for several minutes, trace is similar to ch 6 data using 2000 second sweep time, peak is > 15 dB below the limit.

Power spectral density

Channel 6, 11 MB rate

Agilent 16:26:59 Jun 25, 2008

Mkr1 2.438 320 GHz  
-5.82 dBm

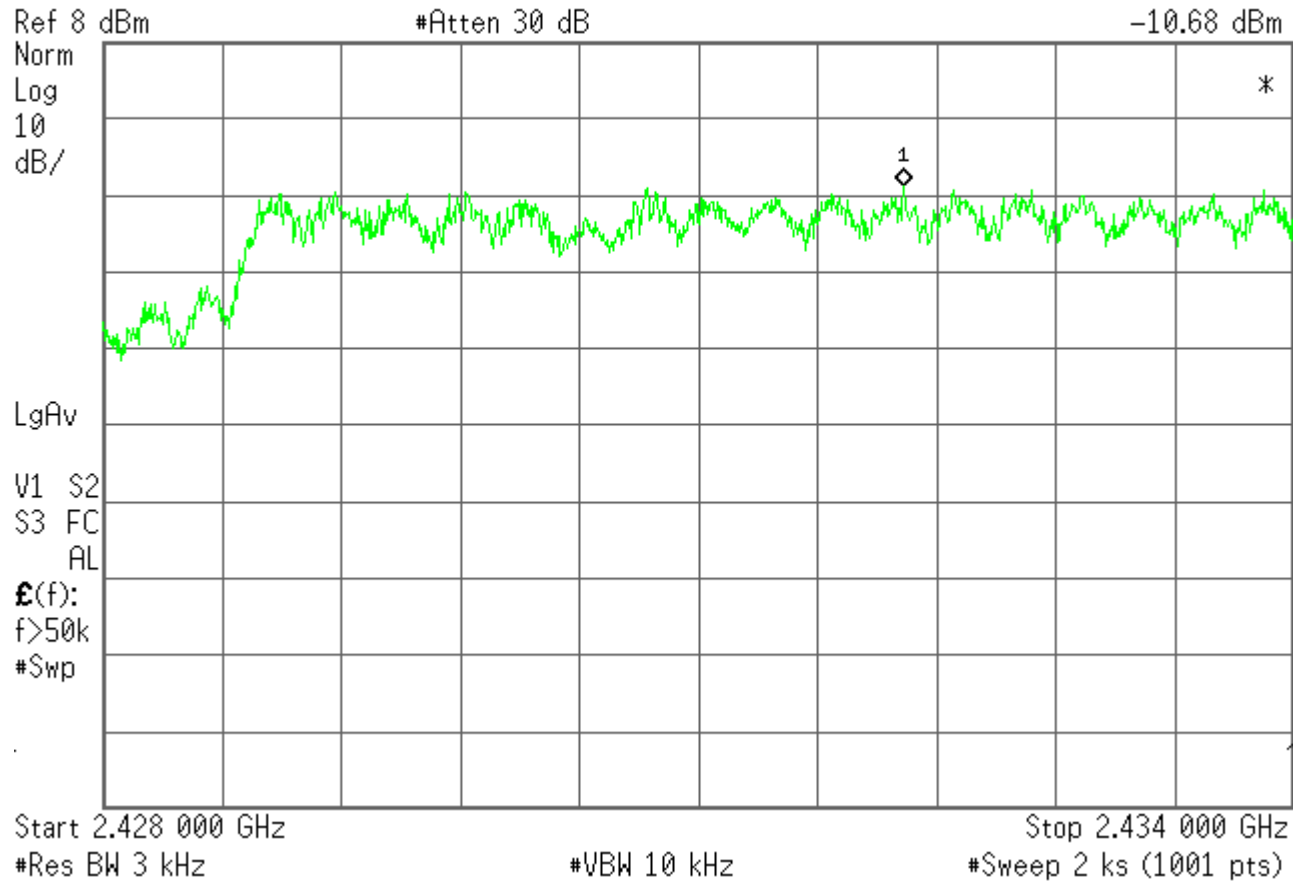


Power spectral density

Channel 6, 54 MB rate, 1 of 3

\* Agilent 09:18:39 Jun 26, 2008

Mkr1 2.432 038 GHz  
-10.68 dBm



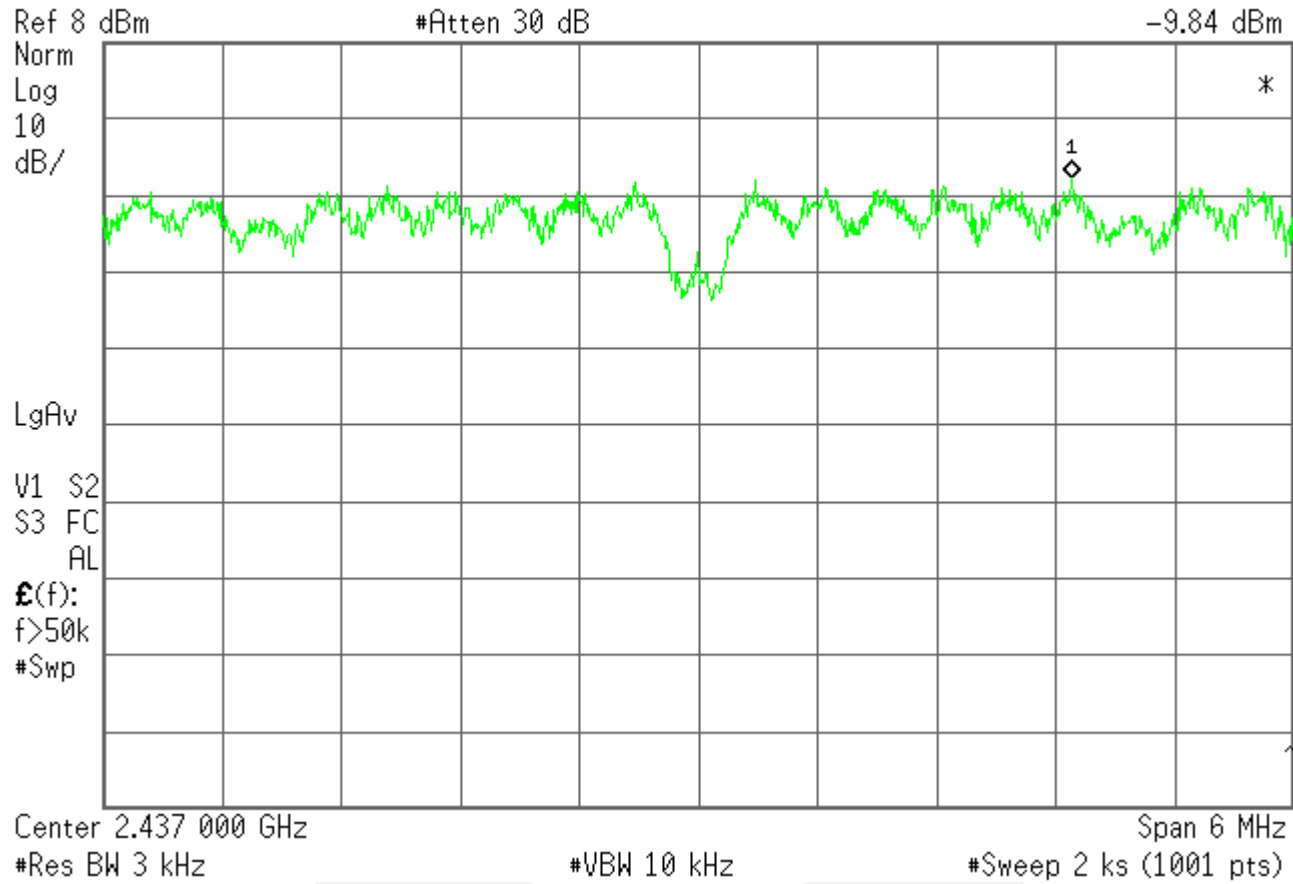


Power spectral density

Channel 6, 54 MB rate, 2 of 3

\* Agilent 09:56:47 Jun 26, 2008

Mkr1 2.438 884 GHz  
-9.84 dBm

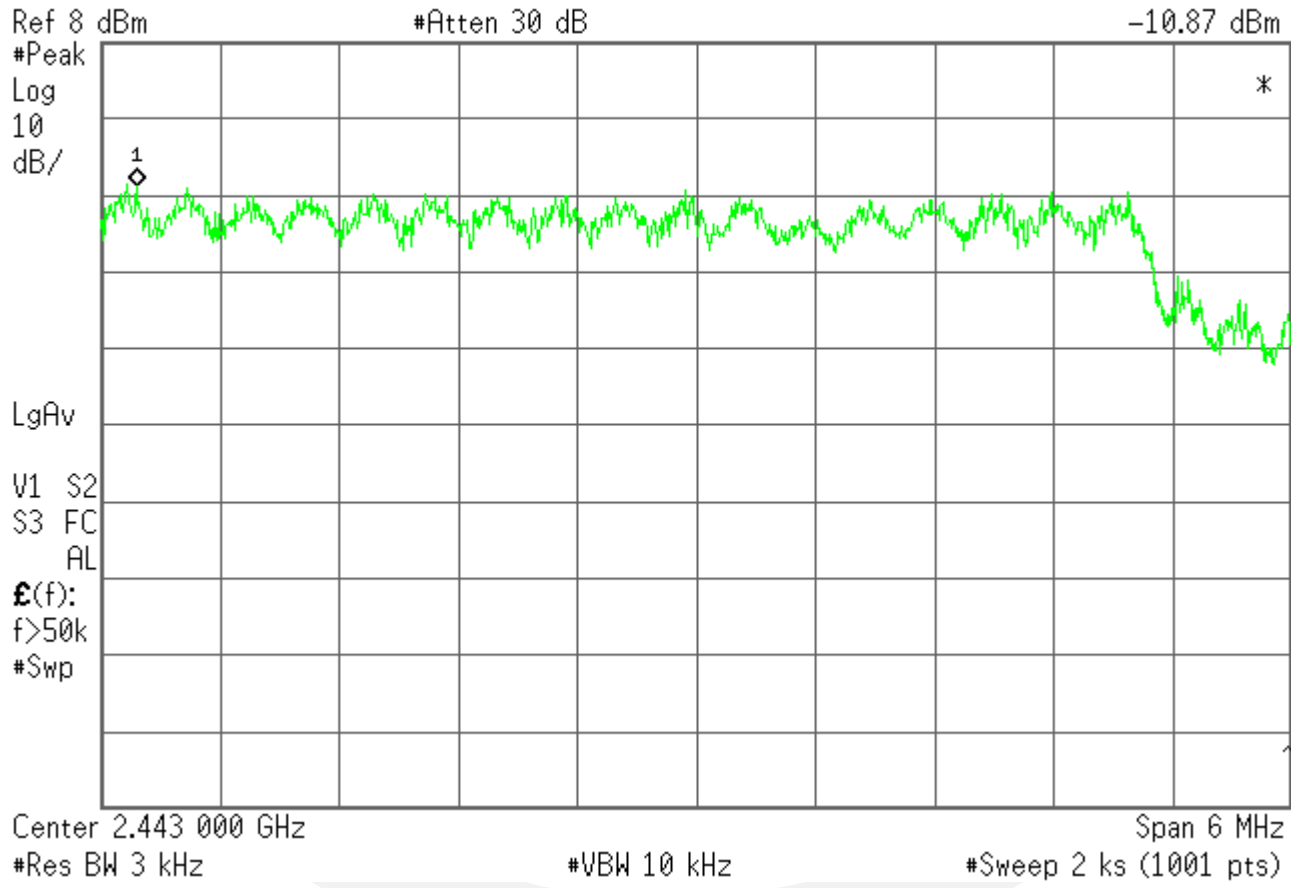


Power spectral density

Channel 6, 54 MB rate, 3 of 3

\* Agilent 10:35:59 Jun 26, 2008

Mkr1 2.440 180 GHz  
-10.87 dBm

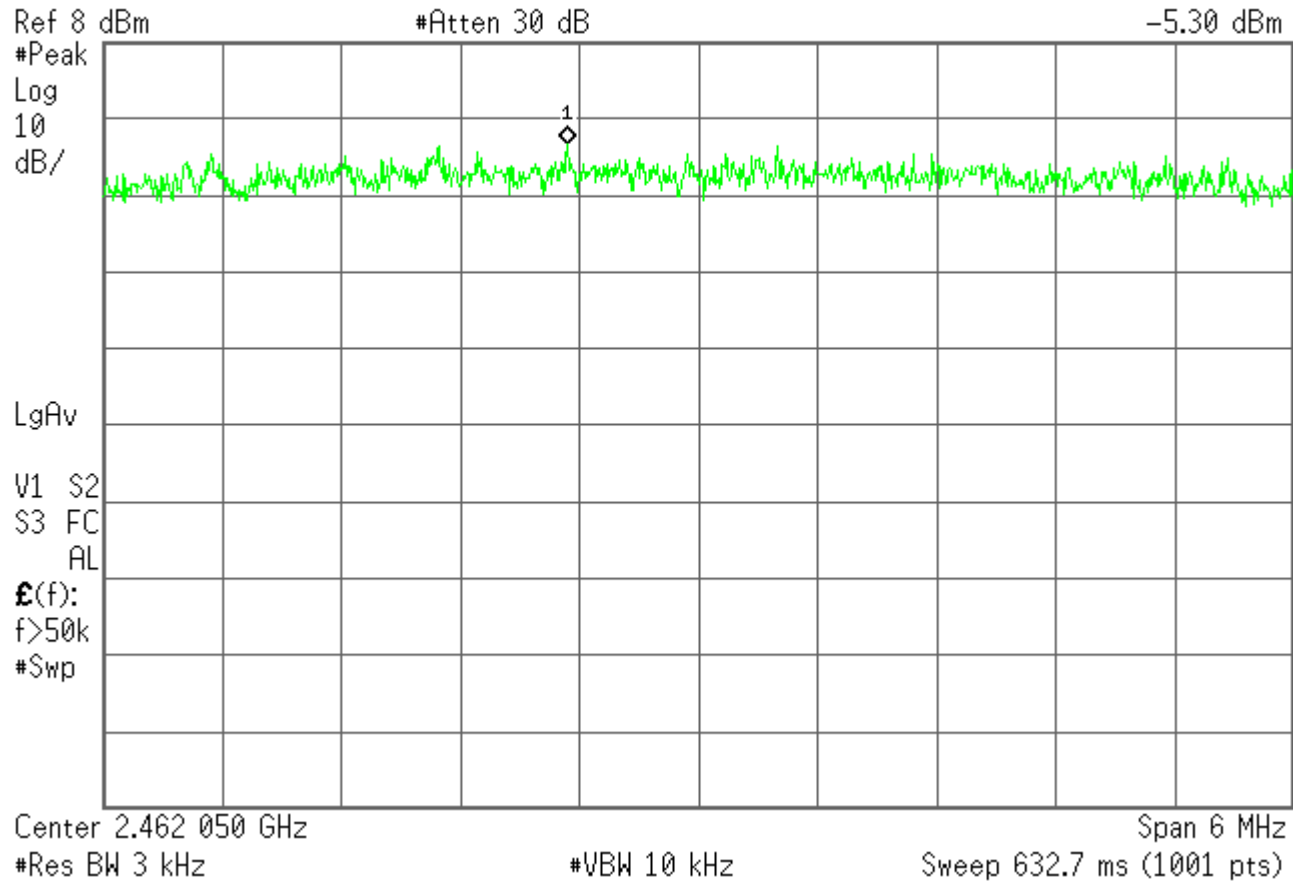


Power spectral density

Channel 11, 11 MB rate

Agilent 11:05:02 Jun 26, 2008

Mkr1 2.461 390 GHz  
-5.30 dBm



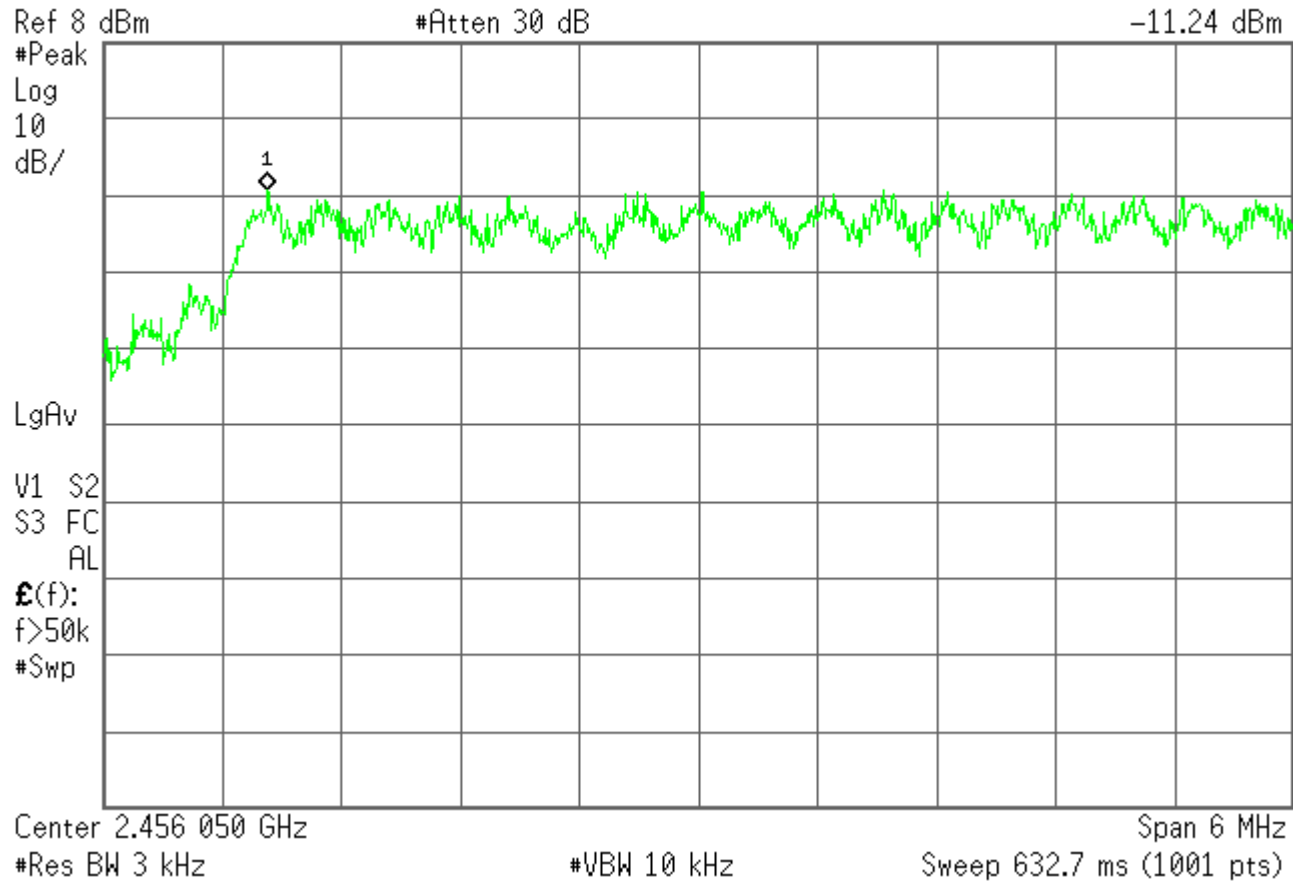
Sweep time reduced, max hold function used for several minutes, trace is similar to ch 6 data using 2000 second sweep time, peak is > 10 dB below the limit.

Power spectral density

Channel 11, 54 MB rate, 1 of 3

Agilent 10:51:47 Jun 26, 2008

Mkr1 2.453 878 GHz  
-11.24 dBm



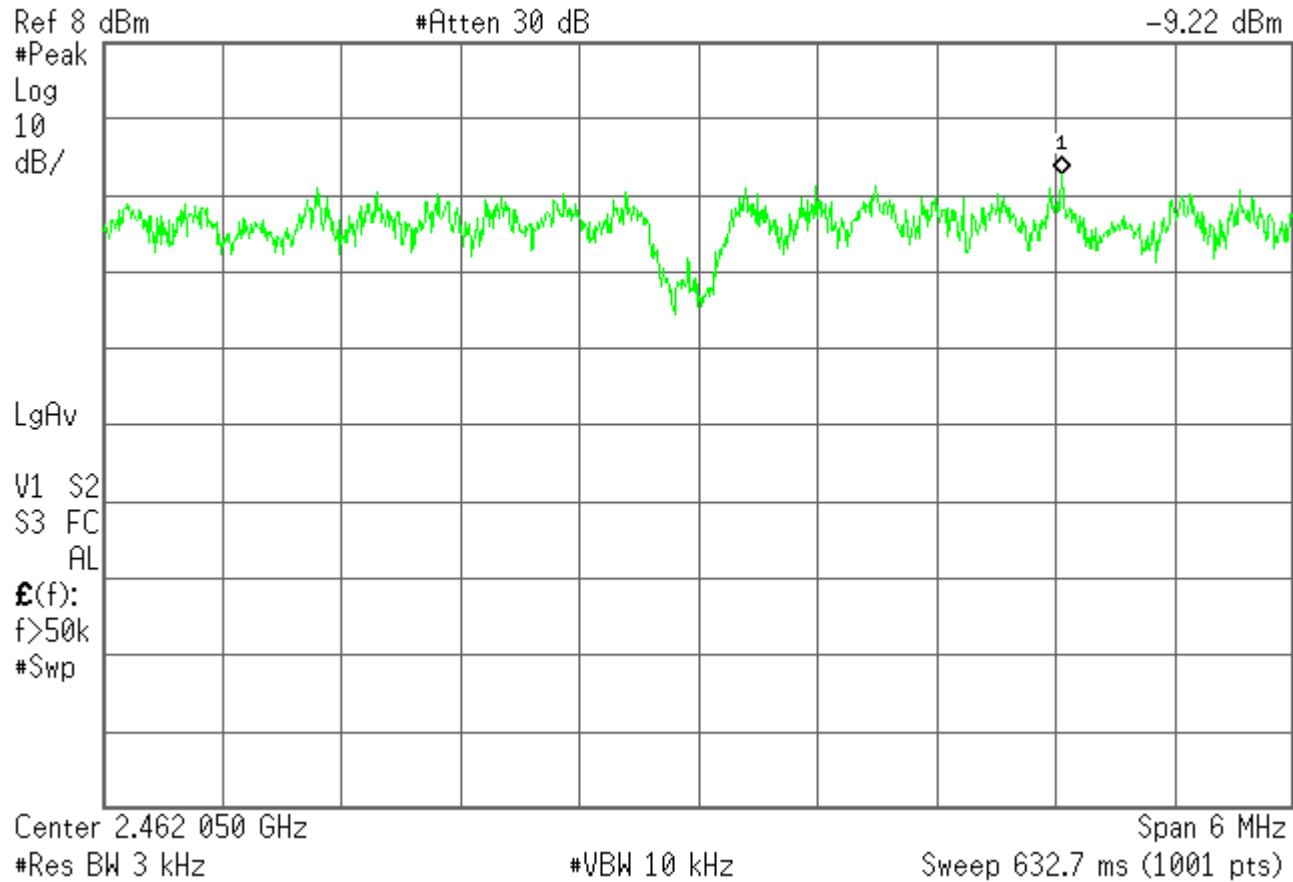
Sweep time reduced, max hold function used for several minutes, trace is similar to ch 6 data using 2000 second sweep time, peak is > 15 dB below the limit.

Power spectral density

Channel 11, 54 MB rate, 2 of 3

\* Agilent 10:53:54 Jun 26, 2008

Mkr1 2.463 880 GHz  
-9.22 dBm



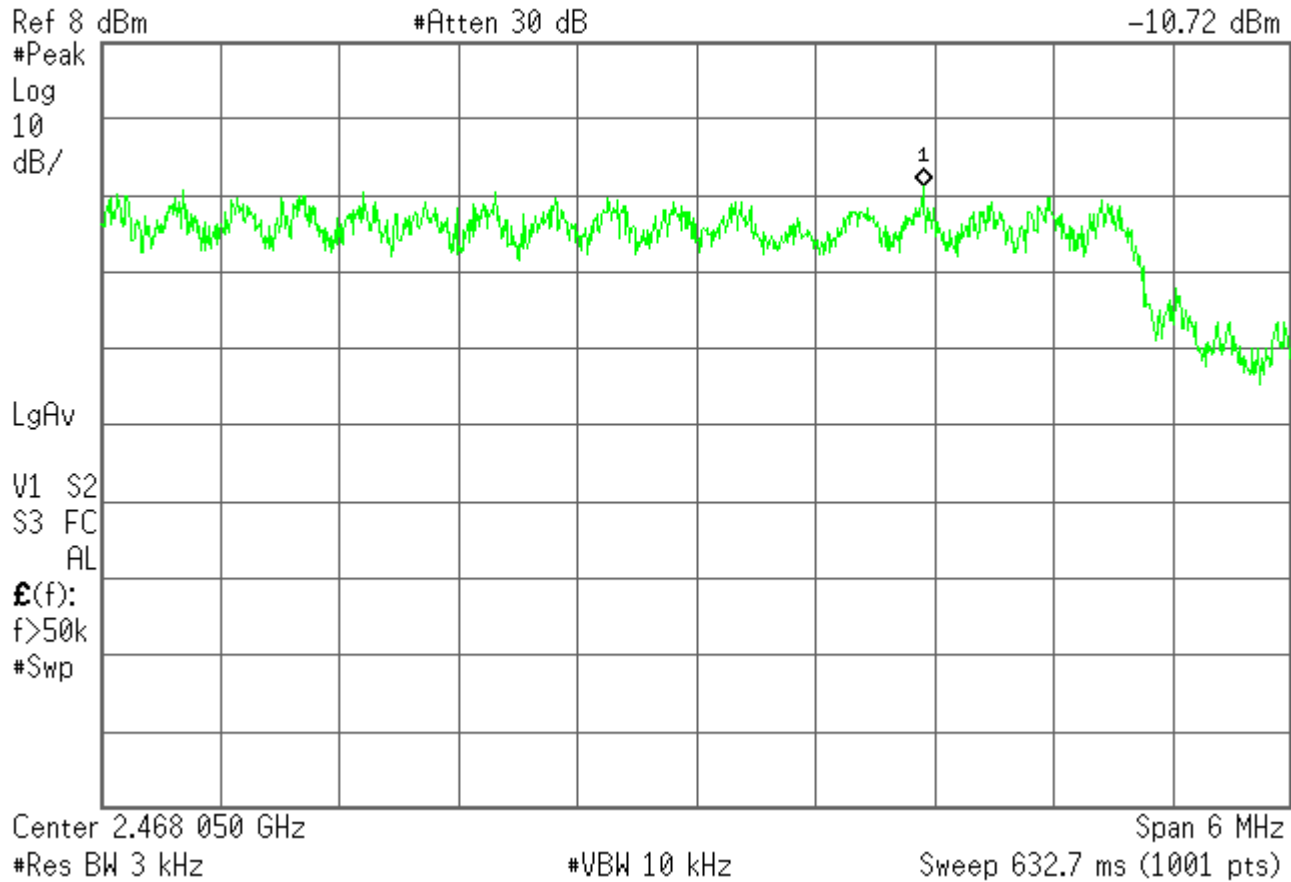
Sweep time reduced, max hold function used for several minutes, trace is similar to ch 6 data using 2000 second sweep time, peak is > 15 dB below the limit.

Power spectral density

Channel 11, 54 MB rate, 3 of 3

Agilent 10:55:06 Jun 26, 2008

Mkr1 2.469 190 GHz  
-10.72 dBm



Sweep time reduced, max hold function used for several minutes, trace is similar to ch 6 data using 2000 second sweep time, peak is > 15 dB below the limit.

## 99% Bandwidth IC RSS-GEN 4.6

### Test summary

The requirements are:  - MET  - NOT MET

Test was performed in accordance with the article "The Measurement of Occupied Bandwidth" by Industry Canada's certification bureau

99% Occupied bandwidth range is from 9.65 MHz to 16.3 MHz.

### Test location

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

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

- Wild River Lab Tech Area, conducted measurement

### Test equipment

| TUV ID    | Model  | Manufacturer | Description       | Serial     | Cal Due   |
|-----------|--------|--------------|-------------------|------------|-----------|
| WRLE03371 | E4440A | Agilent      | Spectrum Analyzer | MY43362222 | 19-Dec-08 |

### Test limit

Not applicable

### Test data

See following pages.

99% Occupied bandwidth

Channel 6, 11 MB rate

Agilent 11:28:27 Jun 26, 2008

Mkr1 9.65 MHz  
-0.32 dB

Ref 23.31 dBm

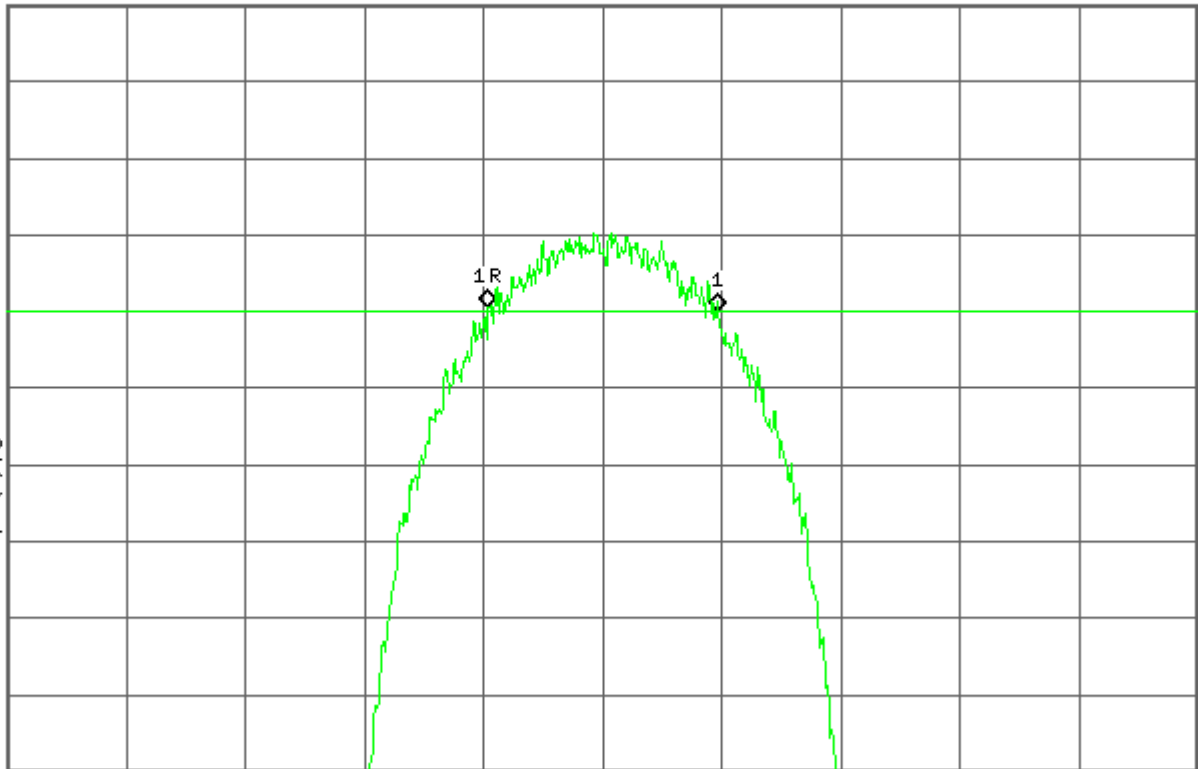
#Atten 40 dB

#Peak  
Log  
5  
dB/

DI  
3.3  
dBm  
LgAv

V1 S2  
S3 FC  
AL

$\mathcal{E}(f)$ :  
FTun  
#Swp



Center 2.437 00 GHz

Span 50 MHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 4.8 ms (1001 pts)



99% Occupied bandwidth

Channel 6, 54 MB rate

Agilent 11:43:44 Jun 26, 2008

Mkr1 16.30 MHz  
0.54 dB

Ref 21.21 dBm

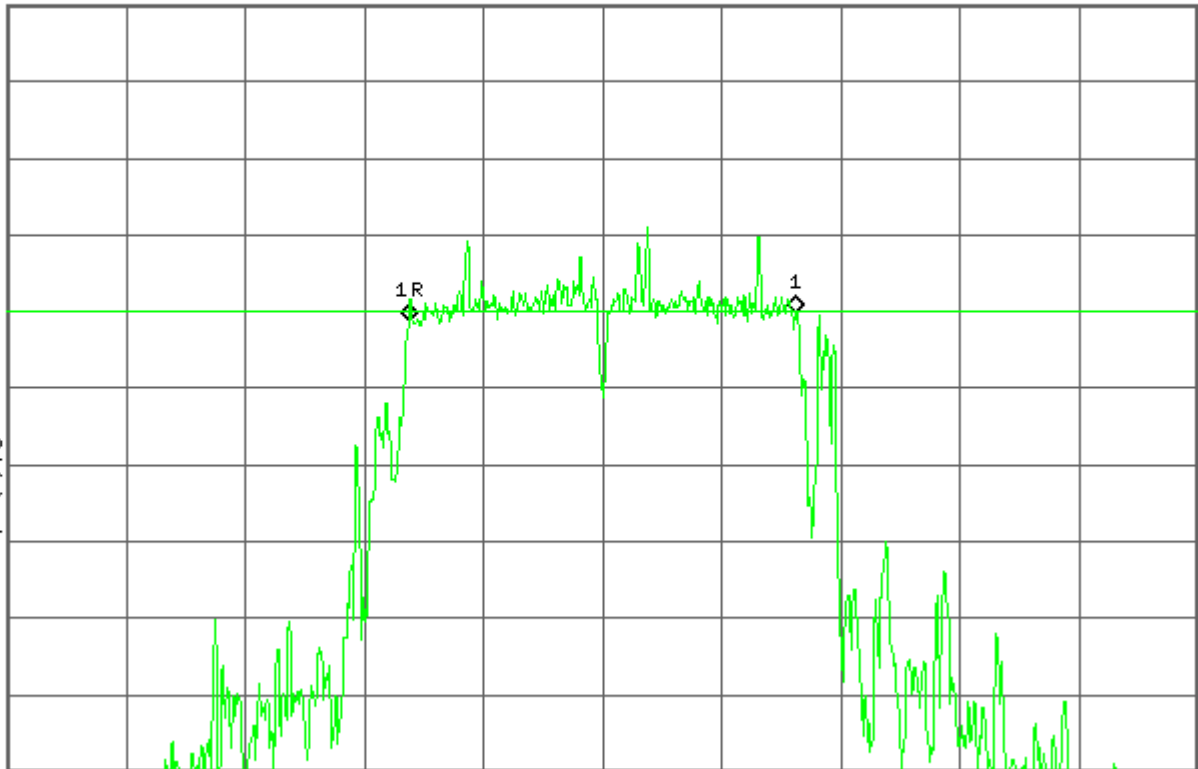
#Atten 40 dB

#Peak  
Log  
5  
dB/

DI  
1.2  
dBm  
LgAv

V1 S2  
S3 FC  
AL

$\mathcal{E}(f)$ :  
FTun  
#Swp



Center 2.437 00 GHz

#Res BW 160 kHz

VBW 470 kHz

Sweep 1.933 ms (1001 pts)

Span 50 MHz

## AC Power Lines Conducted Emission FCC 15.207(a)

### Test summary

The requirements are:  - MET  - NOT MET

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

Minimum margin of compliance = 5 dB at 350 kHz

### Test location

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

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

- Wild River Shield Room 2 - Shielded room (3.7m x 3.5m x 2.4m) or (12' x 11.5' x 8')

### Test equipment

| TUV ID    | Model   | Manufacturer             | Description      | Serial     | Cal Due   |
|-----------|---------|--------------------------|------------------|------------|-----------|
| WRLE02534 | ESHS-20 | Rhode & Schwarz          | EMI Receiver     | 837055/003 | 20-Mar-09 |
| WRLE02417 | 3825/2  | Electro-Mechanics (EMCO) | 50 $\Omega$ LISN | 8812-1439  | Code B    |

### Test limit

| Frequency range<br>(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

See following pages

# CONDUCTED EMISSIONS



America

Test Report #: WC807028 Run 2 Test Area: SR2  
 EUT Model #: 50001538-03 Date: 8/20/2008  
 EUT Serial #: 00001 EUT Power: 60Hz/120VAC Temperature: 20.0 °C  
 Test Method: FCC 15.207 Air Pressure: 98.0 kPa  
 Customer: Digi International Rel. Humidity: 56.0 %  
 EUT Description: Digi Connect ME

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

Data File Name: 7028.dat

Page: 1 of 6

## List of measurements for run #: 2

| FREQ   | LEVEL (dBuV) | CABLE / ANT / PREAMP / ATTEN (dB) | FINAL (dBuV) | EUT Lead | DELTA1 EN55022 B Qp | DELTA2 EN55022 B Avg |
|--|--------------|-----------------------------------|--------------|----------|---------------------|----------------------|
| Start of Conducted Emissions Scan at 60Hz/120VAC |              |                                   |              |          |                     |                      |
| 170.0 kHz  | 46.51 Qp     | 0.01 / 0.17 / 0.0 / 0.0           | 46.7         | N        | -18.26              | n/a                  |
| 205.0 kHz  | 7.57 Qp      | 0.01 / 0.13 / 0.0 / 0.0           | 7.71         | N        | -55.69              | n/a                  |
| 350.0 kHz  | 45.09 Qp     | 0.03 / 0.1 / 0.0 / 0.0            | 45.22        | N        | -13.75              | n/a                  |
| 530.0 kHz  | 36.45 Qp     | 0.04 / 0.13 / 0.0 / 0.0           | 36.62        | N        | -19.38              | n/a                  |
| 700.0 kHz  | 42.55 Qp     | 0.05 / 0.18 / 0.0 / 0.0           | 42.78        | N        | -13.22              | n/a                  |
| 875.0 kHz  | 45.15 Qp     | 0.06 / 0.2 / 0.0 / 0.0            | 45.41        | N        | -10.59              | n/a                  |
| 1.065 MHz  | 42.99 Qp     | 0.08 / 0.19 / 0.0 / 0.0           | 43.25        | N        | -12.75              | n/a                  |
| 1.37 MHz   | 32.73 Qp     | 0.1 / 0.13 / 0.0 / 0.0            | 32.96        | N        | -23.04              | n/a                  |
| 1.59 MHz   | 43.45 Qp     | 0.11 / 0.1 / 0.0 / 0.0            | 43.66        | N        | -12.34              | n/a                  |
| 2.12 MHz   | 43.39 Qp     | 0.12 / 0.1 / 0.0 / 0.0            | 43.61        | N        | -12.39              | n/a                  |
| 3.225 MHz  | 1.29 Qp      | 0.15 / 0.1 / 0.0 / 0.0            | 1.54         | N        | -54.46              | n/a                  |
| 9.615 MHz  | 23.95 Qp     | 0.25 / 0.28 / 0.0 / 0.0           | 24.48        | N        | -35.52              | n/a                  |
| 16.29 MHz  | 21.93 Qp     | 0.33 / 0.61 / 0.0 / 0.0           | 22.87        | N        | -37.13              | n/a                  |
| 20.01 MHz  | 24.13 Qp     | 0.36 / 0.8 / 0.0 / 0.0            | 25.3         | N        | -34.7               | n/a                  |
| 28.705 MHz                                       | 9.93 Qp      | 0.44 / 0.92 / 0.0 / 0.0           | 11.29        | N        | -48.71              | n/a                  |
| 170.0 kHz  | 37.87 Av     | 0.01 / 0.17 / 0.0 / 0.0           | 38.06        | N        | n/a                 | -16.9                |
| 205.0 kHz  | 3.56 Av      | 0.01 / 0.13 / 0.0 / 0.0           | 3.7          | N        | n/a                 | -49.7                |
| 350.0 kHz  | 43.26 Av     | 0.03 / 0.1 / 0.0 / 0.0            | 43.39        | N        | n/a                 | -5.58                |
| 530.0 kHz  | 30.14 Av     | 0.04 / 0.13 / 0.0 / 0.0           | 30.31        | N        | n/a                 | -15.69               |
| 700.0 kHz  | 36.59 Av     | 0.05 / 0.18 / 0.0 / 0.0           | 36.82        | N        | n/a                 | -9.18                |
| 875.0 kHz  | 37.47 Av     | 0.06 / 0.2 / 0.0 / 0.0            | 37.73        | N        | n/a                 | -8.27                |
| 1.065 MHz  | 29.4 Av      | 0.08 / 0.19 / 0.0 / 0.0           | 29.66        | N        | n/a                 | -16.34               |
| 1.37 MHz   | -0.66 Av     | 0.1 / 0.13 / 0.0 / 0.0            | -0.43        | N        | n/a                 | -46.43               |
| 1.59 MHz   | 31.37 Av     | 0.11 / 0.1 / 0.0 / 0.0            | 31.58        | N        | n/a                 | -14.42               |
| 2.12 MHz   | 29.05 Av     | 0.12 / 0.1 / 0.0 / 0.0            | 29.27        | N        | n/a                 | -16.73               |

Tested by: Robert J Behringer  
 Printed

*Robert Behringer*

Signature

Reviewed by: Greg S Jakubowski  
 Printed

*Greg S Jakubowski*

Signature

# CONDUCTED EMISSIONS



America

Test Report #: WC807028 Run 2 Test Area: SR2  
 EUT Model #: 50001538-03 Date: 8/20/2008  
 EUT Serial #: 00001 EUT Power: 60Hz/120VAC Temperature: 20.0 °C  
 Test Method: FCC 15.207 Air Pressure: 98.0 kPa  
 Customer: Digi International Rel. Humidity: 56.0 %  
 EUT Description: Digi Connect ME

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

Data File Name: 7028.dat

Page: 2 of 6

## List of measurements for run #: 2

| FREQ       | LEVEL (dBuV) | CABLE / ANT / PREAMP / ATTEN (dB) | FINAL (dBuV) | EUT Lead | DELTA1 EN55022 B Qp | DELTA2 EN55022 B Avg |
|------------|--------------|-----------------------------------|--------------|----------|---------------------|----------------------|
| 3.225 MHz  | -3.87 Av     | 0.15 / 0.1 / 0.0 / 0.0            | -3.62        | N        | n/a                 | -49.62               |
| 9.615 MHz  | 5.12 Av      | 0.25 / 0.28 / 0.0 / 0.0           | 5.65         | N        | n/a                 | -44.35               |
| 16.29 MHz  | 15.94 Av     | 0.33 / 0.61 / 0.0 / 0.0           | 16.88        | N        | n/a                 | -33.12               |
| 20.01 MHz  | 12.34 Av     | 0.36 / 0.8 / 0.0 / 0.0            | 13.51        | N        | n/a                 | -36.49               |
| 28.705 MHz | 3.96 Av      | 0.44 / 0.92 / 0.0 / 0.0           | 5.32         | N        | n/a                 | -44.68               |
|            |              |                                   |              |          |                     |                      |
| 170.0 kHz  | 45.67 Qp     | 0.01 / 0.17 / 0.0 / 0.0           | 45.86        | L1       | -19.1               | n/a                  |
| 205.0 kHz  | 23.33 Qp     | 0.01 / 0.13 / 0.0 / 0.0           | 23.47        | L1       | -39.93              | n/a                  |
| 350.0 kHz  | 44.73 Qp     | 0.03 / 0.1 / 0.0 / 0.0            | 44.86        | L1       | -14.11              | n/a                  |
| 530.0 kHz  | 36.05 Qp     | 0.04 / 0.13 / 0.0 / 0.0           | 36.22        | L1       | -19.78              | n/a                  |
| 700.0 kHz  | 42.47 Qp     | 0.05 / 0.18 / 0.0 / 0.0           | 42.7         | L1       | -13.3               | n/a                  |
| 875.0 kHz  | 44.99 Qp     | 0.06 / 0.2 / 0.0 / 0.0            | 45.25        | L1       | -10.75              | n/a                  |
| 1.065 MHz  | 42.97 Qp     | 0.08 / 0.19 / 0.0 / 0.0           | 43.23        | L1       | -12.77              | n/a                  |
| 1.37 MHz   | 32.97 Qp     | 0.1 / 0.13 / 0.0 / 0.0            | 33.2         | L1       | -22.8               | n/a                  |
| 1.59 MHz   | 43.51 Qp     | 0.11 / 0.1 / 0.0 / 0.0            | 43.72        | L1       | -12.28              | n/a                  |
| 2.12 MHz   | 43.43 Qp     | 0.12 / 0.1 / 0.0 / 0.0            | 43.65        | L1       | -12.35              | n/a                  |
| 3.225 MHz  | 0.69 Qp      | 0.15 / 0.1 / 0.0 / 0.0            | 0.94         | L1       | -55.06              | n/a                  |
| 9.615 MHz  | 23.95 Qp     | 0.25 / 0.28 / 0.0 / 0.0           | 24.48        | L1       | -35.52              | n/a                  |
| 16.29 MHz  | 22.25 Qp     | 0.33 / 0.61 / 0.0 / 0.0           | 23.19        | L1       | -36.81              | n/a                  |
| 20.01 MHz  | 23.13 Qp     | 0.36 / 0.8 / 0.0 / 0.0            | 24.3         | L1       | -35.7               | n/a                  |
| 28.705 MHz | 10.21 Qp     | 0.44 / 0.92 / 0.0 / 0.0           | 11.57        | L1       | -48.43              | n/a                  |
|            |              |                                   |              |          |                     |                      |
| 170.0 kHz  | 37.93 Av     | 0.01 / 0.17 / 0.0 / 0.0           | 38.12        | L1       | n/a                 | -16.84               |
| 205.0 kHz  | 2.56 Av      | 0.01 / 0.13 / 0.0 / 0.0           | 2.7          | L1       | n/a                 | -50.7                |
| 350.0 kHz  | 42.86 Av     | 0.03 / 0.1 / 0.0 / 0.0            | 42.99        | L1       | n/a                 | -5.98                |
| 530.0 kHz  | 29.3 Av      | 0.04 / 0.13 / 0.0 / 0.0           | 29.47        | L1       | n/a                 | -16.53               |
| 700.0 kHz  | 36.59 Av     | 0.05 / 0.18 / 0.0 / 0.0           | 36.82        | L1       | n/a                 | -9.18                |
| 875.0 kHz  | 37.39 Av     | 0.06 / 0.2 / 0.0 / 0.0            | 37.65        | L1       | n/a                 | -8.35                |

Tested by: Robert J Behringer  
 Printed

*Robert Behringer*

Signature

Reviewed by: Greg S Jakubowski  
 Printed

*Greg S Jakubowski*

Signature

# CONDUCTED EMISSIONS



America

Test Report #: WC807028 Run 2 Test Area: SR2  
 EUT Model #: 50001538-03 Date: 8/20/2008  
 EUT Serial #: 00001 EUT Power: 60Hz/120VAC Temperature: 20.0 °C  
 Test Method: FCC 15.207 Air Pressure: 98.0 kPa  
 Customer: Digi International Rel. Humidity: 56.0 %

EUT Description: Digi Connect ME

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

Data File Name: 7028.dat Page: 3 of 6

## List of measurements for run #: 2

| FREQ       | LEVEL (dBuV) | CABLE / ANT / PREAMP / ATTEN (dB) | FINAL (dBuV) | EUT Lead | DELTA1 EN55022 B Qp | DELTA2 EN55022 B Avg |
|------------|--------------|-----------------------------------|--------------|----------|---------------------|----------------------|
| 1.065 MHz  | 26.16 Av     | 0.08 / 0.19 / 0.0 / 0.0           | 26.42        | L1       | n/a                 | -19.58               |
| 1.37 MHz   | 0.8 Av       | 0.1 / 0.13 / 0.0 / 0.0            | 1.03         | L1       | n/a                 | -44.97               |
| 1.59 MHz   | 31.14 Av     | 0.11 / 0.1 / 0.0 / 0.0            | 31.35        | L1       | n/a                 | -14.65               |
| 2.12 MHz   | 29.2 Av      | 0.12 / 0.1 / 0.0 / 0.0            | 29.42        | L1       | n/a                 | -16.58               |
| 3.225 MHz  | -4.23 Av     | 0.15 / 0.1 / 0.0 / 0.0            | -3.98        | L1       | n/a                 | -49.98               |
| 9.615 MHz  | 6.32 Av      | 0.25 / 0.28 / 0.0 / 0.0           | 6.85         | L1       | n/a                 | -43.15               |
| 16.29 MHz  | 15.54 Av     | 0.33 / 0.61 / 0.0 / 0.0           | 16.48        | L1       | n/a                 | -33.52               |
| 20.01 MHz  | 11.48 Av     | 0.36 / 0.8 / 0.0 / 0.0            | 12.65        | L1       | n/a                 | -37.35               |
| 28.705 MHz | 3.26 Av      | 0.44 / 0.92 / 0.0 / 0.0           | 4.62         | L1       | n/a                 | -45.38               |

End of Scan

Tested by: Robert J Behringer  
 Printed

*Robert Behringer*  
 Signature

Reviewed by: Greg S Jakubowski  
 Printed

*Greg S Jakubowski*  
 Signature

# CONDUCTED EMISSIONS



America



Test Report #: WC807028 Run 2 Test Area: SR2  
 EUT Model #: 50001538-03 Date: 8/20/2008  
 EUT Serial #: 00001 EUT Power: 60Hz/120VAC Temperature: 20.0 °C  
 Test Method: FCC 15.207 Air Pressure: 98.0 kPa  
 Customer: Digi International Rel. Humidity: 56.0 %  
 EUT Description: Digi Connect ME

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

Data File Name: 7028.dat Page: 4 of 6

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

| FREQ       | LEVEL (dBuV) | CABLE / ANT / PREAMP / ATTEN (dB) | FINAL (dBuV) | EUT Lead | DELTA1 EN55022 B Qp |
|------------|--------------|-----------------------------------|--------------|----------|---------------------|
| 875.0 kHz  | 45.15 Qp     | 0.06 / 0.2 / 0.0 / 0.0            | 45.41        | N        | -10.59              |
| 1.59 MHz   | 43.51 Qp     | 0.11 / 0.1 / 0.0 / 0.0            | 43.72        | L1       | -12.28              |
| 2.12 MHz   | 43.43 Qp     | 0.12 / 0.1 / 0.0 / 0.0            | 43.65        | L1       | -12.35              |
| 1.065 MHz  | 42.99 Qp     | 0.08 / 0.19 / 0.0 / 0.0           | 43.25        | N        | -12.75              |
| 700.0 kHz  | 42.55 Qp     | 0.05 / 0.18 / 0.0 / 0.0           | 42.78        | N        | -13.22              |
| 350.0 kHz  | 45.09 Qp     | 0.03 / 0.1 / 0.0 / 0.0            | 45.22        | N        | -13.75              |
| 170.0 kHz  | 46.51 Qp     | 0.01 / 0.17 / 0.0 / 0.0           | 46.7         | N        | -18.26              |
| 530.0 kHz  | 36.45 Qp     | 0.04 / 0.13 / 0.0 / 0.0           | 36.62        | N        | -19.38              |
| 1.37 MHz   | 32.97 Qp     | 0.1 / 0.13 / 0.0 / 0.0            | 33.2         | L1       | -22.8               |
| 20.01 MHz  | 24.13 Qp     | 0.36 / 0.8 / 0.0 / 0.0            | 25.3         | N        | -34.7               |
| 9.615 MHz  | 23.95 Qp     | 0.25 / 0.28 / 0.0 / 0.0           | 24.48        | N        | -35.52              |
| 16.29 MHz  | 22.25 Qp     | 0.33 / 0.61 / 0.0 / 0.0           | 23.19        | L1       | -36.81              |
| 205.0 kHz  | 23.33 Qp     | 0.01 / 0.13 / 0.0 / 0.0           | 23.47        | L1       | -39.93              |
| 28.705 MHz | 10.21 Qp     | 0.44 / 0.92 / 0.0 / 0.0           | 11.57        | L1       | -48.43              |
| 3.225 MHz  | 1.29 Qp      | 0.15 / 0.1 / 0.0 / 0.0            | 1.54         | N        | -54.46              |

Tested by: Robert J Behringer   
 Printed Signature  
 Reviewed by: Greg S Jakubowski   
 Printed Signature

# CONDUCTED EMISSIONS



America

Test Report #: WC807028 Run 2 Test Area: SR2  
 EUT Model #: 50001538-03 Date: 8/20/2008  
 EUT Serial #: 00001 EUT Power: 60Hz/120VAC Temperature: 20.0 °C  
 Test Method: FCC 15.207 Air Pressure: 98.0 kPa  
 Customer: Digi International Rel. Humidity: 56.0 %



EUT Description: Digi Connect ME

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

Data File Name: 7028.dat Page: 5 of 6

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

| FREQ       | LEVEL (dBuV) | CABLE / ANT / PREAMP / ATTEN (dB) | FINAL (dBuV) | EUT Lead | DELTA2 EN55022 B Avg |
|------------|--------------|-----------------------------------|--------------|----------|----------------------|
| 350.0 kHz  | 43.26 Av     | 0.03 / 0.1 / 0.0 / 0.0            | 43.39        | N        | -5.58                |
| 875.0 kHz  | 37.47 Av     | 0.06 / 0.2 / 0.0 / 0.0            | 37.73        | N        | -8.27                |
| 700.0 kHz  | 36.59 Av     | 0.05 / 0.18 / 0.0 / 0.0           | 36.82        | N        | -9.18                |
| 1.59 MHz   | 31.37 Av     | 0.11 / 0.1 / 0.0 / 0.0            | 31.58        | N        | -14.42               |
| 530.0 kHz  | 30.14 Av     | 0.04 / 0.13 / 0.0 / 0.0           | 30.31        | N        | -15.69               |
| 1.065 MHz  | 29.4 Av      | 0.08 / 0.19 / 0.0 / 0.0           | 29.66        | N        | -16.34               |
| 2.12 MHz   | 29.2 Av      | 0.12 / 0.1 / 0.0 / 0.0            | 29.42        | L1       | -16.58               |
| 170.0 kHz  | 37.93 Av     | 0.01 / 0.17 / 0.0 / 0.0           | 38.12        | L1       | -16.84               |
| 16.29 MHz  | 15.94 Av     | 0.33 / 0.61 / 0.0 / 0.0           | 16.88        | N        | -33.12               |
| 20.01 MHz  | 12.34 Av     | 0.36 / 0.8 / 0.0 / 0.0            | 13.51        | N        | -36.49               |
| 9.615 MHz  | 6.32 Av      | 0.25 / 0.28 / 0.0 / 0.0           | 6.85         | L1       | -43.15               |
| 28.705 MHz | 3.96 Av      | 0.44 / 0.92 / 0.0 / 0.0           | 5.32         | N        | -44.68               |
| 1.37 MHz   | 0.8 Av       | 0.1 / 0.13 / 0.0 / 0.0            | 1.03         | L1       | -44.97               |
| 3.225 MHz  | -3.87 Av     | 0.15 / 0.1 / 0.0 / 0.0            | -3.62        | N        | -49.62               |
| 205.0 kHz  | 3.56 Av      | 0.01 / 0.13 / 0.0 / 0.0           | 3.7          | N        | -49.7                |

Tested by: Robert J Behringer  Signature  
 Printed  
 Reviewed by: Greg S Jakubowski  Signature  
 Printed

# CONDUCTED EMISSIONS



America

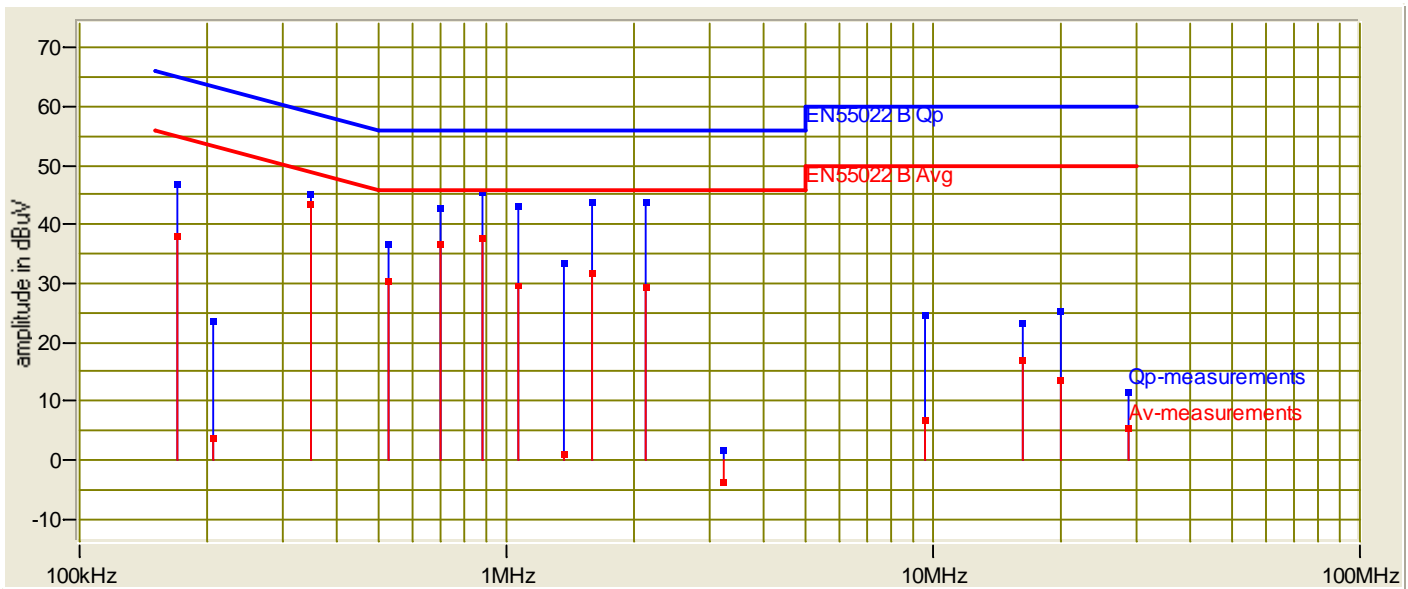
Test Report #: WC807028 Run 2 Test Area: SR2  
 EUT Model #: 50001538-03 Date: 8/20/2008  
 EUT Serial #: 00001 EUT Power: 60Hz/120VAC Temperature: 20.0 °C  
 Test Method: FCC 15.207 Air Pressure: 98.0 kPa  
 Customer: Digi International Rel. Humidity: 56.0 %  
 EUT Description: Digi Connect ME

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

Data File Name: 7028.dat

Page: 6 of 6

## Graph:



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*Robert Behringer*

Signature

Reviewed by: Greg S Jakubowski  
 Printed

*Greg S Jakubowski*

Signature

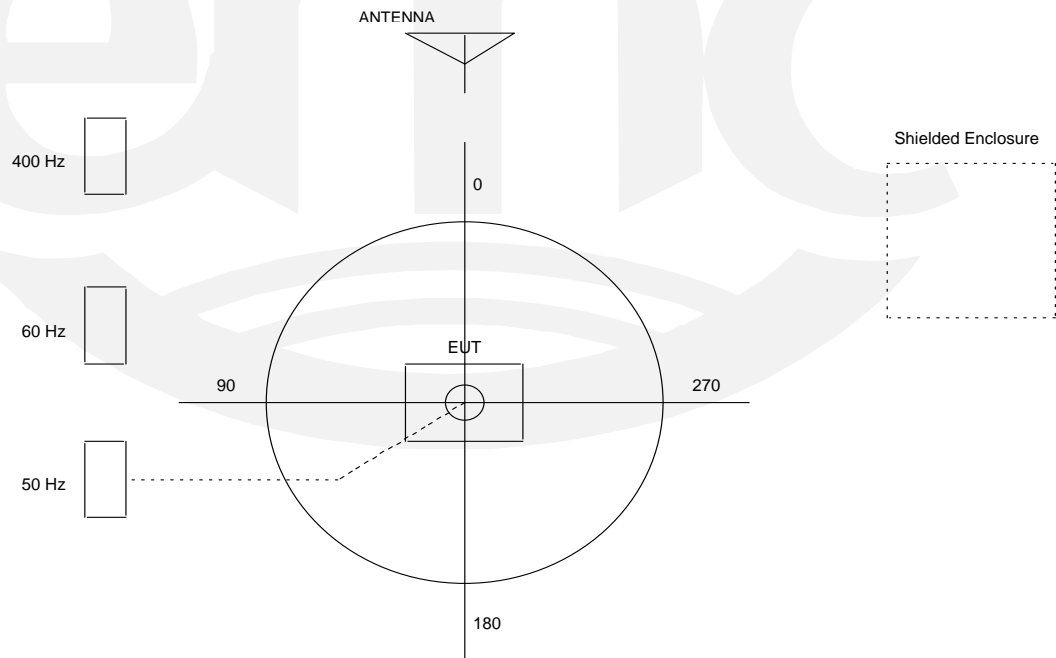


## TEST SETUP FOR EMISSIONS TESTING

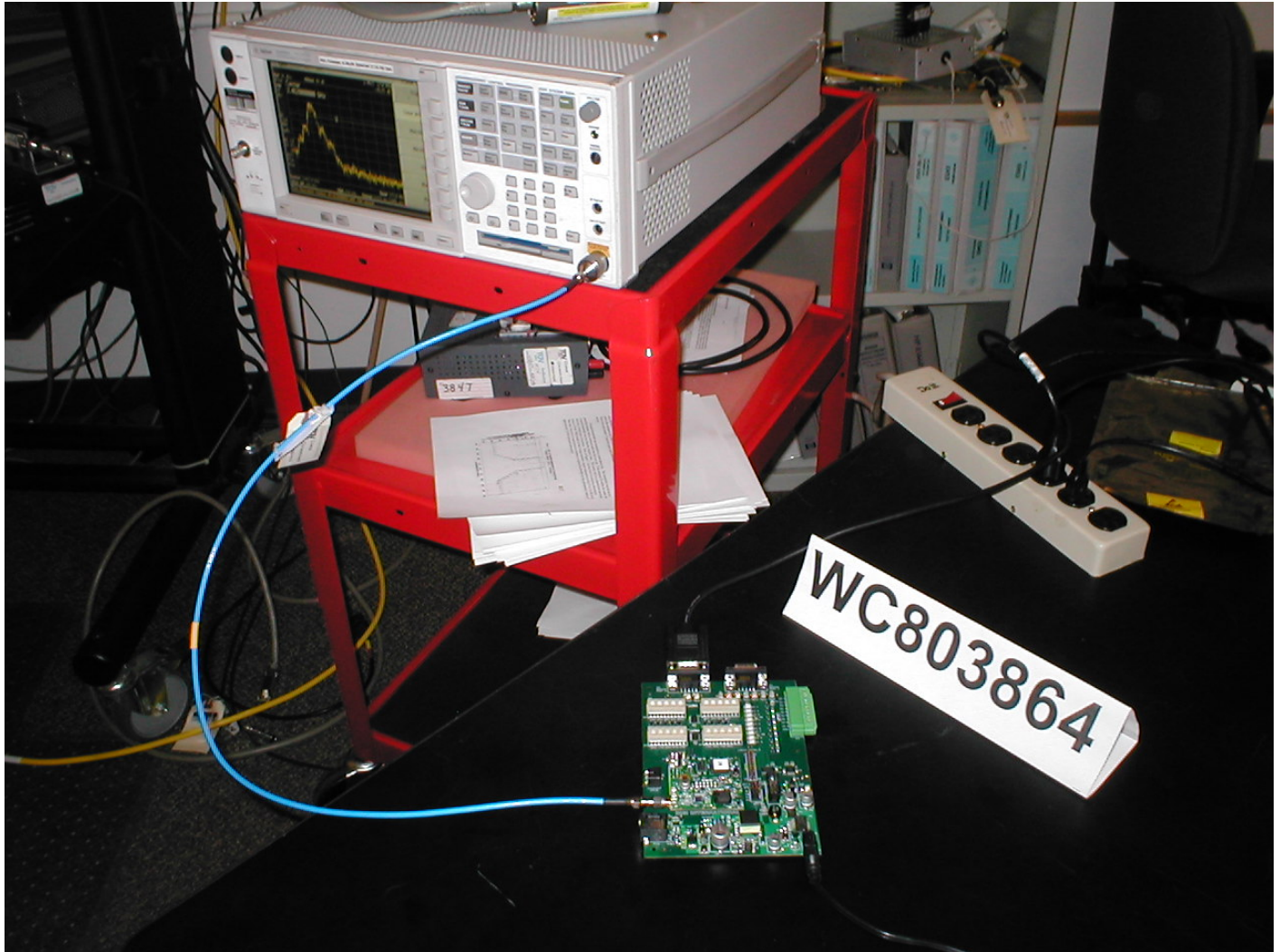
### WILD RIVER LAB Large Test Site

**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.

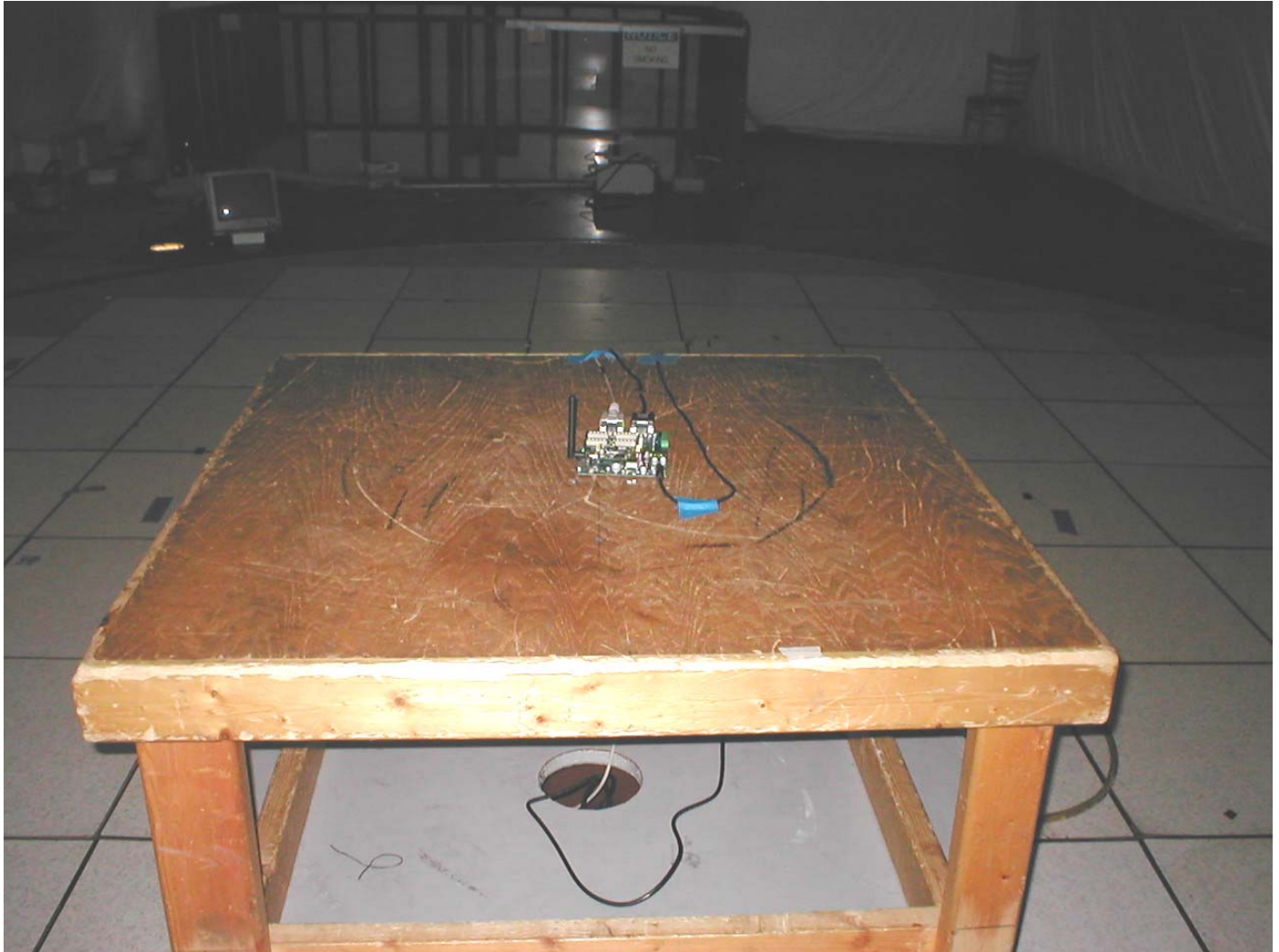


**Test-setup photo(s):**  
**Conducted measurements**



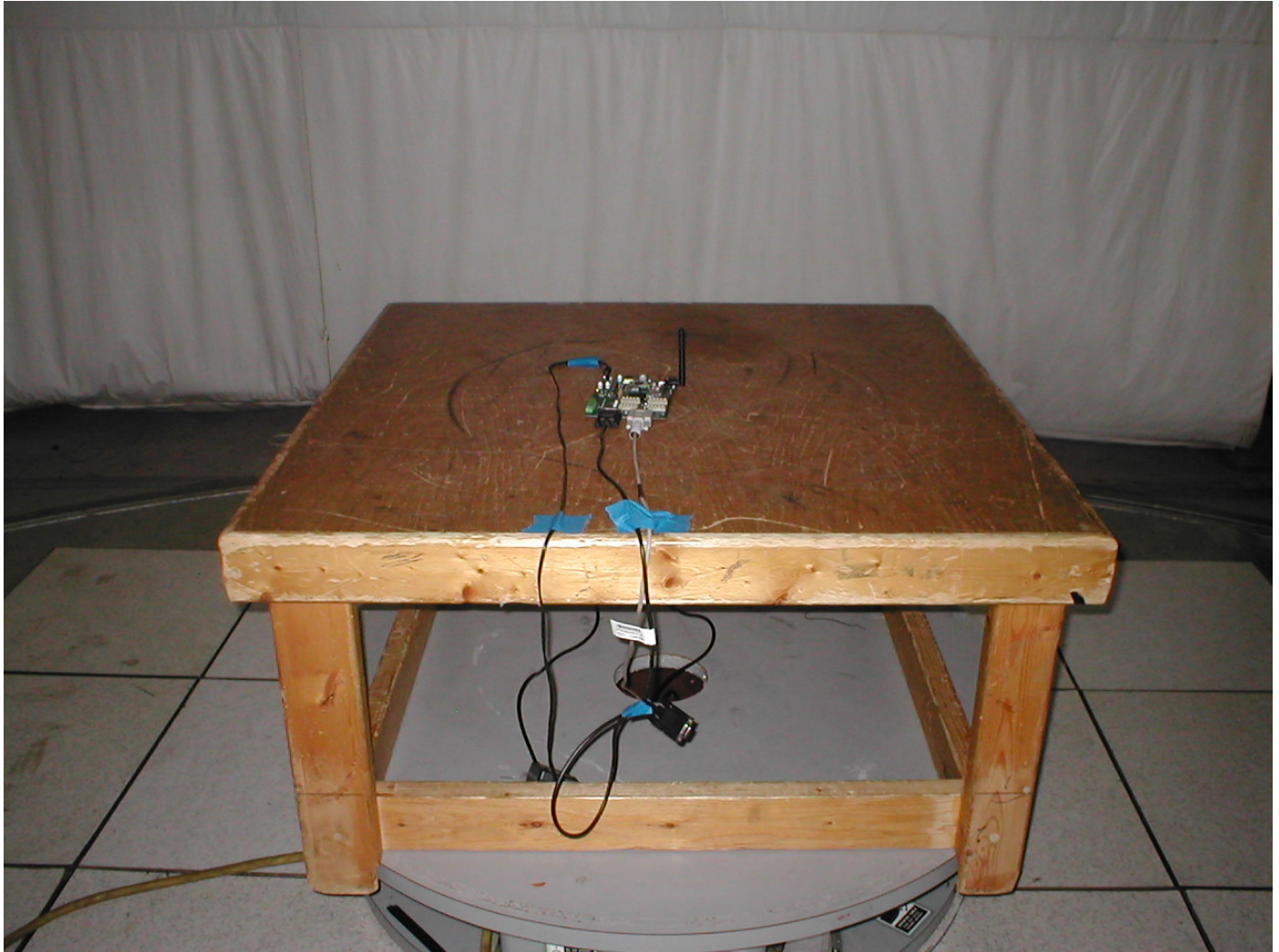
**Test-setup photo(s):**  
**Radiated measurements**

**With 2dBi Antenna**



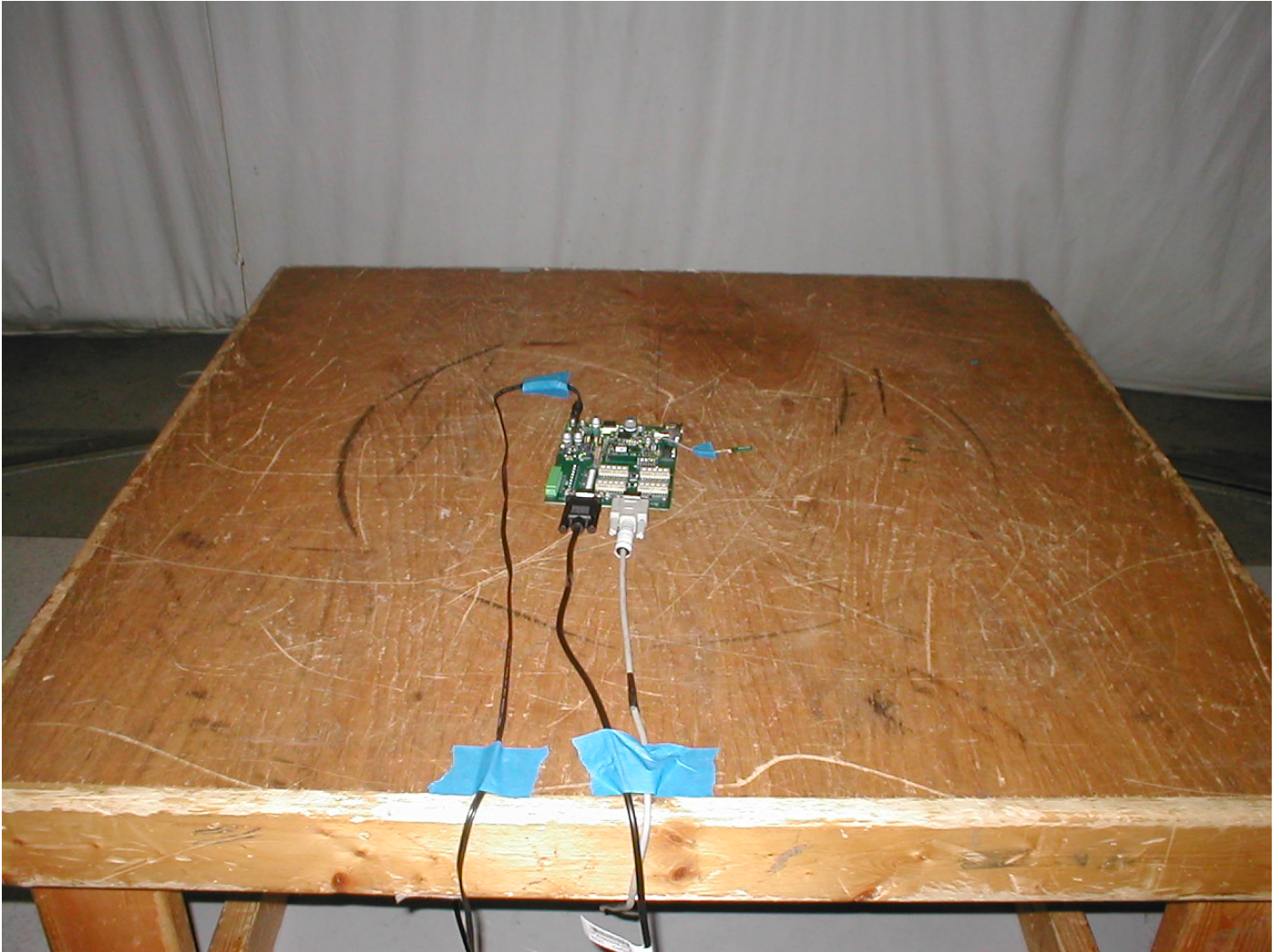
**Test-setup photo(s):**  
**Radiated measurements**

**With 2dBi Antenna**



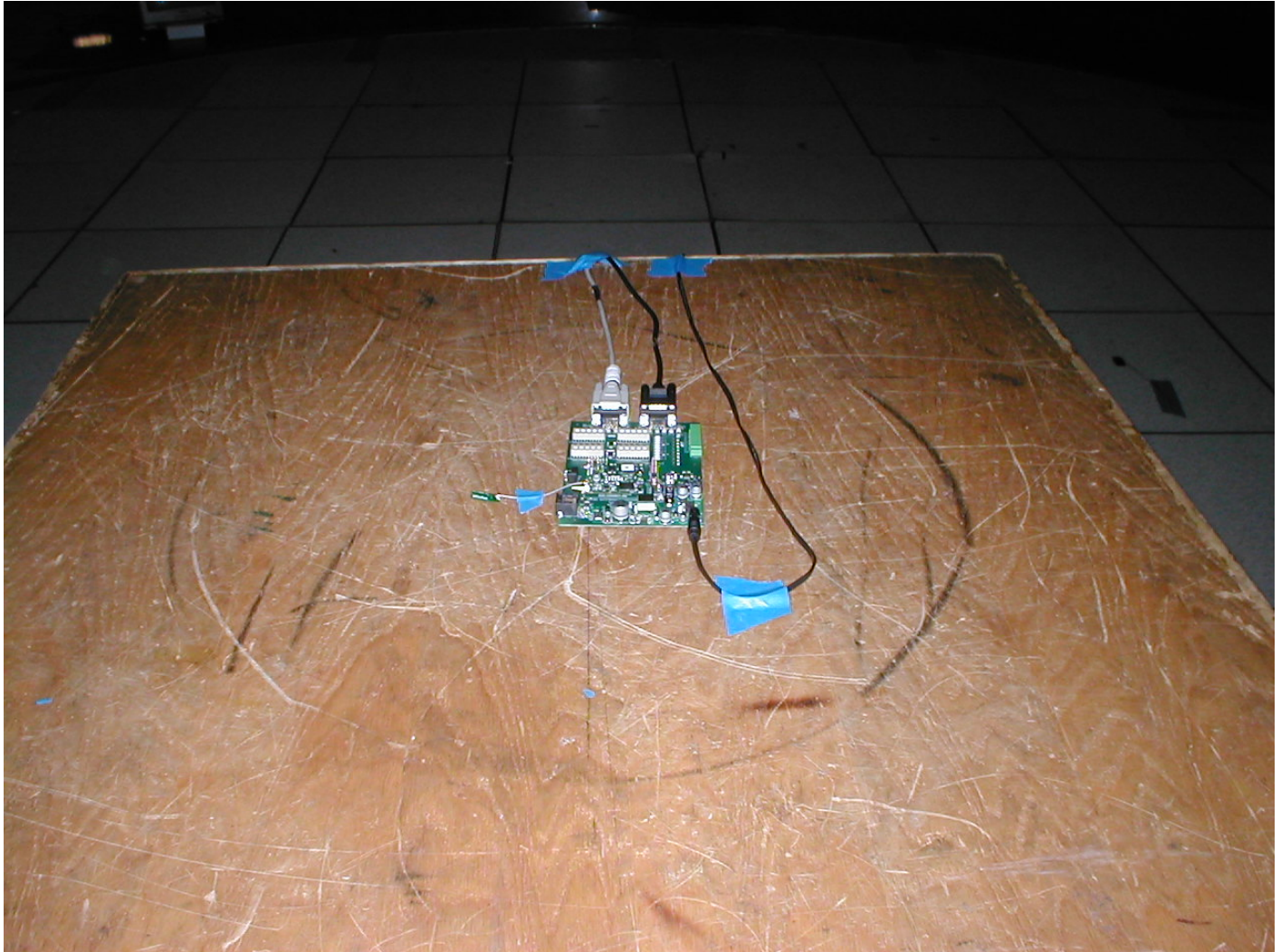
**Test-setup photo(s):**  
**Radiated measurements**

**With PCB Antenna**



**Test-setup photo(s):**  
**Radiated measurements**

**With PCB Antenna**



**Test-setup photo(s):**  
**Conducted measurements**

**Conducted emissions testing was also performed under Test Report Number WC807028**



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

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

- Standby
- Test program (H - Pattern)
- Test program (color bar)
- Test program (customer specific)
- Practice operation
- Normal operating mode
- Fixed frequencies, channels 1, 6, & 11 (low, mid, high)

**Configuration of the device under test:**

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

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

- \_\_\_\_\_ Type : \_\_\_\_\_
- \_\_\_\_\_ Type : \_\_\_\_\_
- \_\_\_\_\_ Type : \_\_\_\_\_
- \_\_\_\_\_ Type : \_\_\_\_\_
- \_\_\_\_\_ Type : \_\_\_\_\_
- \_\_\_\_\_ Type : \_\_\_\_\_
- \_\_\_\_\_ Type : \_\_\_\_\_
- \_\_\_\_\_ Type : \_\_\_\_\_
- unshielded power cable
- unshielded cables
- shielded cables                      MPS.No.: \_\_\_\_\_
- customer specific cables
- \_\_\_\_\_
- \_\_\_\_\_



## GENERAL REMARKS:

At the time of test, the EUT was identified as Model Number 50001538-xx. Notification of a change in equipment identification to Model Number 50001538-03 was received from the manufacturer and is on file with TÜV SÜD America.

Conducted emissions testing was also performed under Test Report Number WC807028

### Modifications required to pass:

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

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

- None
- As indicated in the Test Plan
- 

## SUMMARY:

The requirements according to the technical regulations are

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

EUT Received Date: 07 May 2008  
Condition of EUT: Normal  
Testing Start Date: 07 May 2008  
Testing End Date: 20 August 2008

## TÜV SÜD AMERICA INC

Tested by:



Robert J Behringer  
EMC Technician

Approved by:



Greg S Jakubowski  
Senior EMC Technician

## Appendix A

### Constructional Data Form





## EMC Test Plan and Constructional Data Form

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

Company: Digi International  
 Address: 11001 Bren Road East  
Minnetonka, MN 55343  
 Contact: Mark Tekippe Position: Hardware Engineer  
 Phone: 952-912-3564 Fax: \_\_\_\_\_  
 E-mail Address: mark.tekippe@digi.com

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

EUT Description 802.11 b/g embedded radio module (802.11 b/g to 2 serial port converter module)  
 EUT Name Connect WiEM 9210 b/g  
 Model No.: 50001538-xx Serial No.: 00001  
 Product Options: Antenna options: 29000147, 29000095, 29000105  
 Configurations to be tested: 29000147, 29000095

**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: \_\_\_\_\_  
 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 2004/108/EC (EMC)<br>Std: _____  | <input checked="" type="checkbox"/> FCC: Class <input type="checkbox"/> A <input checked="" type="checkbox"/> B Part _____ |
| <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 (Separate Report)               |
| <input type="checkbox"/> Vehicle Directive: <input type="checkbox"/> 2001/3/EC (EMC) <input type="checkbox"/> 2004/104/EC (EMC) | <input checked="" type="checkbox"/> Canada: Class <input type="checkbox"/> A <input type="checkbox"/> B                    |
| <input type="checkbox"/> FDA Reviewers Guidance for Premarket Notification Submissions (EMC)                                    | <input type="checkbox"/> Australia: Class <input type="checkbox"/> A <input type="checkbox"/> B                            |
|   | <input checked="" type="checkbox"/> Other: <u>Mexico</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)*<br>Protection Class (N/A for vehicles) | <input type="checkbox"/> Compliance Document*   |
| (Press F1 when field is selected to show additional information on Protection Class.)            | <input type="checkbox"/> Class I <input type="checkbox"/> Class II <input type="checkbox"/> Class III |
| <input checked="" type="checkbox"/> FCC / TCB Certification                                      | <input checked="" type="checkbox"/> Industry Canada / FCB Certification                               |
| <input type="checkbox"/> E-Mark Certification  | <input type="checkbox"/> Taiwan Certification   |



**EMC Test Plan and Constructional Data Form**

**Attendance**

Test will be:  Attended by the customer  Unattended by the customer

**Failure - Complete this section if testing will not be attended by the customer.**

If a failure occurs, TÜV SÜD 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: 1.935" Width: 1.855" Height: 0.0653" Weight: \_\_\_\_\_

**Power Requirements**

*Regulations require testing to be performed at typical power ratings in the countries of intended use. (i.e., European power is typically 230 VAC 50 Hz or 400 VAC 50 Hz, single and three phase, respectively)*

Voltage: 3.3V (If battery powered, make sure battery life is sufficient to complete testing.)

# of Phases: 1

Current (Amps/phase(max)): 0.63 Current (Amps/phase(nominal)): 0.4

Other \_\_\_\_\_

**Other Special Requirements**

Run radiated and conducted immunity at 10 V/m.

**Typical Installation and/or Operating Environment**

(ie. Hospital, Small Business, Industrial/Factory, etc.)  
Industrial and small business

**EUT Power Cable**

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



## EMC Test Plan and Constructional Data Form

| EUT Interface Ports and Cables |                          |                                     |                                     |                                     |     |                                     |                          |                 |                 |                        |                           |           |                                     |                          |
|--------------------------------|--------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-----|-------------------------------------|--------------------------|-----------------|-----------------|------------------------|---------------------------|-----------|-------------------------------------|--------------------------|
| Type                           | Analog                   | Digital                             | During Test                         |                                     | Qty | Shielding                           |                          | Termination     | Connector Type  | Port Termination       | Length tested (in meters) | Removable | Permanent                           |                          |
|                                |                          |                                     | Active                              | Passive                             |     | Yes                                 | No                       |                 |                 |                        |                           |           |                                     | Type                     |
| <b>EXAMPLE:</b><br>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"/> |
| Serial Cable                   | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | 2   | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Foil over braid | Connector Shell |                        |                           | 1         | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|                                | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |     | <input type="checkbox"/>            | <input type="checkbox"/> |                 |                 |                        |                           |           | <input type="checkbox"/>            | <input type="checkbox"/> |
|                                | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |     | <input type="checkbox"/>            | <input type="checkbox"/> |                 |                 |                        |                           |           | <input type="checkbox"/>            | <input type="checkbox"/> |
|                                | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |     | <input type="checkbox"/>            | <input type="checkbox"/> |                 |                 |                        |                           |           | <input type="checkbox"/>            | <input type="checkbox"/> |
|                                | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |     | <input type="checkbox"/>            | <input type="checkbox"/> |                 |                 |                        |                           |           | <input type="checkbox"/>            | <input type="checkbox"/> |
|                                | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |     | <input type="checkbox"/>            | <input type="checkbox"/> |                 |                 |                        |                           |           | <input type="checkbox"/>            | <input type="checkbox"/> |
|                                | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |     | <input type="checkbox"/>            | <input type="checkbox"/> |                 |                 |                        |                           |           | <input type="checkbox"/>            | <input type="checkbox"/> |
|                                | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |     | <input type="checkbox"/>            | <input type="checkbox"/> |                 |                 |                        |                           |           | <input type="checkbox"/>            | <input type="checkbox"/> |
|                                | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |     | <input type="checkbox"/>            | <input type="checkbox"/> |                 |                 |                        |                           |           | <input type="checkbox"/>            | <input type="checkbox"/> |
|                                | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |     | <input type="checkbox"/>            | <input type="checkbox"/> |                 |                 |                        |                           |           | <input type="checkbox"/>            | <input type="checkbox"/> |
|                                | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |     | <input type="checkbox"/>            | <input type="checkbox"/> |                 |                 |                        |                           |           | <input type="checkbox"/>            | <input type="checkbox"/> |



## EMC Test Plan and Constructional Data Form

### EUT Software.

Revision Level: A

Description: FCC Software - transmits data over wireless interface

**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. Immunity - UUT associated to Cisco Access Point. Laptop connected to AP through hub, and sending constant 'ping' to radio.
2. Radiated emissions - UUT associated to Cisco Access Point. Laptop connected to AP through hub, and sending constant 'ping' to radio. Multiple antenna configurations will be tested.
3. Conducted emissions - UUT running FCC code to transmit continuously over wireless interface. Spectrum analyzer connected to primary antenna port.

**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 # |
|-------------|---------|----------|----------|
|             |         |          |          |



## 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 # |
|-----------------------------|---------------------------|----------|----------|
| Access Point                | Cisco Aironet<br>1130AG   |          |          |
| Network Hub                 | Digi Personal Hub<br>510H |          |          |
| Laptop                      | Micron Transport<br>GX+   |          |          |
| Digi WiEM Development Board | 55001095-01 Rev<br>B      |          |          |

### Oscillator Frequencies

| Manufacturer | Frequency     | Derived Frequency | Component # / Location | Description of Use                 |
|--------------|---------------|-------------------|------------------------|------------------------------------|
|              | 20.000 MHz    |                   | 20000202 / Y1          | Baseband processor, RF transceiver |
|              | 29.4912 MHz   |                   | 21000188 / X1          | Microprocessor                     |
|              | 2.4 GHz (PLL) |                   |                        | Radio frequency                    |
|              |               |                   |                        |                                    |
|              |               |                   |                        |                                    |

### Power Supply

| Manufacturer | Model # | Serial # | Type   |
|--------------|---------|----------|--|
|              |         |          | <input type="checkbox"/> Switched-mode: (Frequency) _____<br><input type="checkbox"/> Linear <input type="checkbox"/> Other: _____ |
|              |         |          | <input type="checkbox"/> Switched-mode: (Frequency) _____<br><input type="checkbox"/> Linear <input type="checkbox"/> Other: _____ |

### Power Line Filters

| Manufacturer | Model # | Location in EUT |
|--------------|---------|-----------------|
|              |         |                 |
|              |         |                 |



## 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> |
|   |                     |                        |            |                               |
|   |                     |                        |            |                               |
|   |                     |                        |            |                               |
|   |                     |                        |            |                               |

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

PLEASE ENTER NAMES BELOW (INSERT ELECTRONIC SIGNATURE IF POSSIBLE)

**Authorization (Signature Required if a Third Party Certification is checked on pg 1)**

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

\_\_\_\_\_  
Date

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

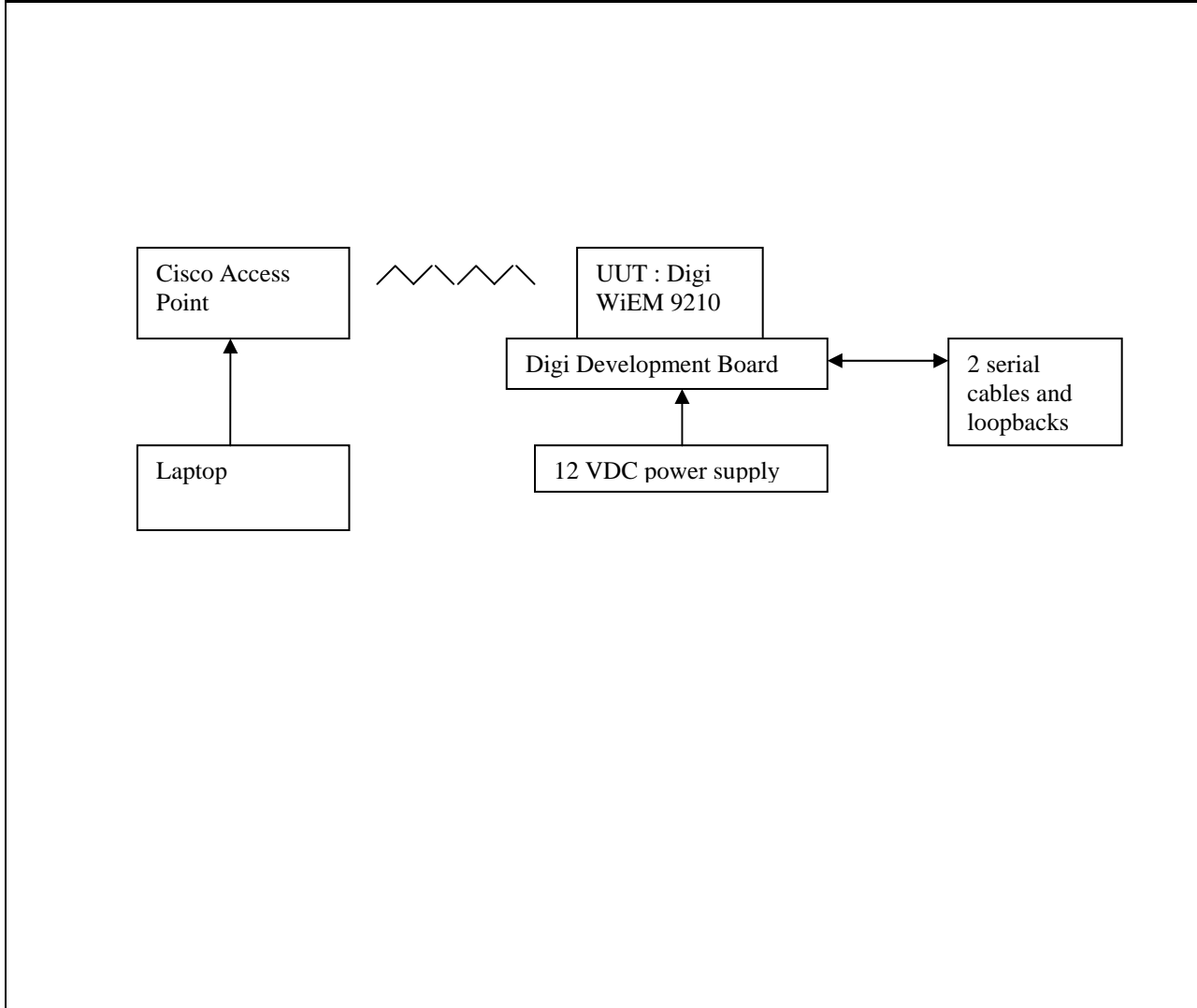
\_\_\_\_\_  
Date





# EMC Block Diagram Form

**System Configuration Block Diagram** -- Provide a line drawing identifying the EUT, simulators, support equipment, I/O cables, power cables, and any other pertinent components to be used during testing. Use a dashed line to separate the equipment in the testing field versus equipment outside testing field.



## Authorization Signatures

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

\_\_\_\_\_  
Date

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

\_\_\_\_\_  
Date

## Appendix B

### Measurement Protocol



# MEASUREMENT PROTOCOL

## GENERAL INFORMATION

### Test Methodology

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

### Measurement Uncertainty

The test system for conducted emissions is defined as the LISN, tuned receiver or spectrum analyzer, and coaxial cable. The test system has a measurement uncertainty of  $\pm 1.8$  dB. The test system for radiated emissions is defined as the antenna, the pre-amplifier, the spectrum analyzer and the coaxial cable. The test system has a measurement uncertainty of  $\pm 4.8$  dB. The equipment comprising the test systems is calibrated on an annual basis.

### Justification

The Equipment Under Test (EUT) is configured in a typical user arrangement in accordance with the manufacturer's instructions. A cable is connected to each available port and either terminated with a peripheral into its characteristic impedance or left unterminated. When appropriate, the cables are manually manipulated with respect to each other to obtain maximum emissions from the unit.

### Conducted Emissions

The final level, in  $\text{dB}\mu\text{V}$ , equals the EMI receiver level plus the cable loss and LISN factor.

### Radiated Emissions

The spectrum analyzer uses a quasi-peak detector for frequencies up to and including 1 GHz. For measurements above 1 GHz, peak and average detectors are used. The bandwidths used are equal to or greater than 100 Hz from 9 kHz to 150 kHz, 9 kHz from 150 kHz to 30 MHz, 100 kHz from 30 MHz to 1000 MHz, and 1 MHz above 1 GHz. Video bandwidth are at least three times greater than the IF bandwidth

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

Example:

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

### Test Equipment

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