

# FCC TEST REPORT

according to

## FCC Rules and Regulations

### Part 15 Subpart C

|            |   |
|------------|---|
| Applicant  | : Advantech CO., Ltd.   |
| Address    | : No.1, Alley20, Lane 26, Rueiquang Road, Neihu<br>District, Taipei, Taiwan 114, R.O.C. |
| Equipment  | : Industrial Tablet PC  |
| Model No.  | : MARS-3100S  |
| FCC ID     | : M82-M31S01  |
| Trade Name | : ADVANTECH   |

Laboratory Accreditation



- The test result refers exclusively to the test presented test model / sample.,
- Without written approval of *Exclusive Certification Corp.* the test report shall not be reproduced except in full.
- The EUT is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.

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# CERTIFICATE OF COMPLIANCE

according to

## FCC Rules and Regulations

### Part 15 Subpart C

Applicant : Advantech CO., Ltd.  
Address : No.1, Alley20, Lane 26, Rueiquang Road, Neihu  
District, Taipei, Taiwan 114, R.O.C.  
Equipment : Industrial Tablet PC  
Model No. : MARS-3100S  
FCC ID : M82-M31S01

#### I HEREBY CERTIFY THAT :

The measurements shown in this test report were made in accordance with the procedures given in **ANSI C63.4** The equipment was **passed** the test performed according to **FCC Rules and Regulations Part 15 Subpart C (2003)**.

The test was carried out on May. 12, 2008 at *Exclusive Certification Corp.*

Signature

  
Anson Chou / Manager

## 1. Report of Measurements and Examinations

### 1.1 List of Measurements and Examinations

| FCC Rule     | Description of Test                       | Result |
|--------------|---|--------|
| 15.203       | . Antenna Requirement                     | Pass   |
| 15.207       | . Conducted Emission                      | Pass   |
| 15.209       | . Radiated Emission                       | Pass   |
| 15.247(a)(1) | . Channel Carrier Frequencies Separation  | Pass   |
| 15.247(a)(1) | . 20dB Bandwidth Measurement              | Pass   |
| 15.247(a)(1) | . Dwell Time                              | Pass   |
| 15.247(b)    | . Number of Hopping Channels              | Pass   |
| 15.247(b)    | . Peak Output Power Measurement Data      | Pass   |
| 15.247(d)    | . Band Edges Measurement Data             | Pass   |
| 15.247(e)    | . Power Spectral Density Measurement Data | Pass   |

## 2. Test Configuration of Equipment under Test

### 2.1 Feature of Equipment under Test

|                           |  |
|---------------------------|--|
| OS                        | MS XP Professional   |
| Dimension W x D x H       | 293 x 210 x 38 mm  |
| Weight                    | 2.1 kg   |
| Panel                     | 10.4" XGA TFT<br>(Sunlight readable option)                  |
| Touchscreen               | Digitizer / Resistant touchscreen                            |
| CPU                       | Intel Pentium Duo Core Ultra Low Voltage U2500 1.2GHz        |
| DRAM                      | 1GB DDRII533 (One memory module support)                     |
| L2 cache                  | 1 MB   |
| Chipset                   | Intel 945GME   |
| Graphic                   | Intel 945GME with shared memory                              |
| Storage                   | 2.5" shock mounted HDD (CF storage option)                   |
| Keypad                    | 5-way navigation key; 3 x function key (programmable)        |
| Wireless                  | 802.11 a/b/g   |
| PAN                       | Bluetooth V2.0/EDR (default)                                 |
| Microphone Jack           | Yes  |
| Headset Jack              | Yes  |
| RS232                     | Yes (COM3)   |
| USB                       | USB2.0 x 2   |
| RJ-45                     | 10/100 Base-T  |
| DC-in                     | Yes  |
| VGA D_sub connector       | Yes  |
| Docking / Port Replicator | Yes  |
| AC97 Audio I/F            | HD Audio I/F   |
| Speaker                   | One integrated speaker                                       |
| Battery                   | Removable 11.1V@3600mAh Li-ion battery pack;<br>swappable    |
| Battery Life              | 3 hour battery life  |
| Charging Time             | 2.5 hours to 90%   |
| Backup Battery            | 7.2V, 120mAh   |
| Adapter                   | Auto-switching 100-240V, 50-60Hz; supplies 19VDC at<br>3.42A |

## 2.2 RF Specifications

|                                   |   |
|-----------------------------------|---|
| Type of Modulation                | 802.11b: DSSS (CCK, DQPSK, DBPSK)<br>802.11g: OFDM (64-QAM, 16-QAM, QPSK, BPSK)<br>802.11a: OFDM<br>BT: GFSK, $\pi/4$ -DQPSK, 8DPSK   |
| Data Rate                         | 802.11b(11, 5.5, 2, 1 Mbps)<br>802.11g(54 Mbps, 48 Mbps, 36 Mbps, 24 Mbps,<br>18 Mbps, 12 Mbps, 9 Mbps, 6 Mbps)<br>802.11a(54 Mbps, 48 Mbps, 36 Mbps, 24 Mbps,<br>18 Mbps, 12 Mbps, 9 Mbps, 6 Mbps)<br>802.11BT(3Mbps, 2Mbps, 1Mbps)  |
| Number of Channels                | Number of Channels<br>802.11b / 802.11g<br>USA, Canada and Taiwan: 1 ~ 11 (11 Channels)<br>Most European Countries: 1 ~ 13 (13 Channels)<br>France: 1 ~ 7 (7 Channels)<br>802.11a<br>USA, Canada and Taiwan: 36 ~ 48, 149 ~ 165<br>(9 Channels)<br>Most European Countries: 36 ~ 64, 100 ~ 140<br>(19 Channels)<br>BT: 0 ~ 78 (79 Channels)                       |
| Frequency Band                    | USA, Canada and Taiwan:<br>802.11b/g, BT: 2.4 ~ 2.4835GHz<br>802.11a: 5.15 ~ 5.25GHz, 5.725 ~ 5.85GHz<br>Most European Countries:<br>802.11b/g, BT: 2.4 ~ 2.4835GHz<br>802.11a: 5.15 ~ 5.35GHz, 5.47 ~ 5.725GHz   |
| Carrier Frequency of each channel | 802.11b / 802.11g<br>US: 2412 + 5 * K MHz; K = 0 ~ 10<br>EU: 2412 + 5 * K MHz; K = 0 ~ 12<br>France: 2412 + 5 * K MHz; K = 0 ~ 6<br>802.11a<br>US : 5150 ~ 5250: 5180 + 20 K MHz; K = 0 ~ 3<br>5725 ~ 5850: 5745 + 20 K MHz; K = 0 ~ 4<br>EU: 5150 ~ 5250: 5180 + 20 K MHz; K = 0 ~ 7<br>5470 ~ 5725: 5500 + 20 K MHz; K = 0 ~ 10<br>BT: 2402 + K MHz; K = 0 ~ 78 |
| Channel Spacing                   | 802.11b/g: 5MHz ; 802.11a: 20MHz ; BT: 1MHz   |
| Output Power                      | Max. Peak Output power (FCC):<br>802.11b: 18 dBm; 802.11g: 15 dBm;<br>802.11a: 13 dBm; BT: 0 dBm<br>E.I.R.P (CE)<br>802.11b: 17 dBm; 802.11g: 14 dBm<br>802.11a: 12 dBm; BT: 0 dBm  |
| Antenna Type                      | GPRS + WL Antenna (AT103-105)<br>PCB Antenna (GB04001-A01)  |
| Antenna Gain                      | AT103-105 (WLAN)<br>1.54 dBi (2.4GHz)<br>1.74 dBi (5GHz)<br>GB04001-A01 (BT)<br>2.2 dBi   |

## 2.3 Test Mode & Test Software

- a. During testing, the interface cables and equipment positions were varied according to ANSI C63.4
- b. The complete test system included the remote workstation, Monitor, Modem, Flash Memory, Earphone and EUT for EMC test. The remote workstation means Toshiba Notebook.
- c. An executive program, EMITEST.exe under WIN XP, which generates a complete line of continuously repeating "H" pattern was used as the test software.

The program was executed as follows:

1. Turn on the power of all equipment.
  2. The EUT reads the test program from the hard disk drive and runs it.
  3. The EUT sends "H" messages to the monitor, and the monitor displays "H" patterns on the screen.
  4. The PC sends "H" messages to the modem.
  5. The PC sends "H" messages to the internal Hard Disk, and the Hard Disk reads and writes the message.
  6. Repeat the steps from 2 to 5.
- d. An executive program, Bluesuite.exe under WIN XP, which generates a continuous signal by the following frequency to test.
    - GFSK: CH 00: 2402MHz, CH 39: 2441MHz, CH 78: 2480MHz.
    - $\pi/4$ -DQPSK: CH 00: 2402MHz, CH 39: 2441MHz, CH 78: 2480MHz.
    - 8DPSK: CH 00: 2402MHz, CH 39: 2441MHz, CH 78: 2480MHz.

Note: All the transmitter rates had been pre-tested, and the test data is worst case.

## 2.4 Description of Test System

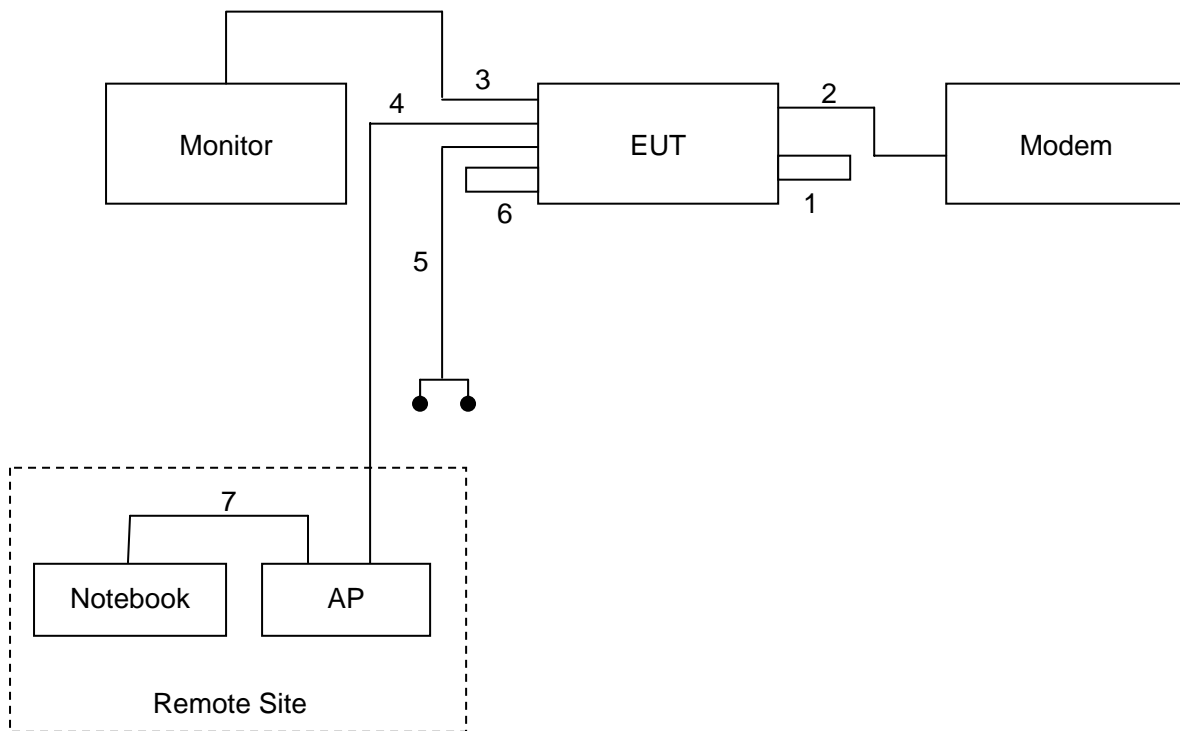
| Device                            | Manufacturer | Model No.     | Description  |
|-----------------------------------|--------------|---------------|--|
| Monitor                           | SlimAGE      | IGV           | Power Cable, Adapter Unshielding 1.8 m<br>Data Cable, VGA Shielding 1.35 m   |
| Modem                             | ACEXX        | DM-1414       | Power Cable, Adapter Unshielding 1.8 m<br>Data Cable, RS232 Shielding 1.35 m |
| Flash memory                      | TranSend     | JF150 512MB   | N/A  |
| Earphone                          | MIC          | MIC-4         | Data Cable, Audio Shielding 1.6 m  |
| SIM Card                          | N/A          | N/A           | N/A  |
| CF Card                           | TranScend    | 4GB           | N/A  |
| Notebook<br>(Remote workstation)  | TOSHIBA      | PSA50T-05M00C | Power Cable, Adapter Unshielding 1.8 m                                       |
| AP Router<br>(Remote Workstation) | Netgear      | WAG102        | Power Cable, Adapter Unshielding 1.8 m                                       |

Use Cable:

| Cable | Quantity | Description       |
|-------|----------|-------------------|
| RJ45  | 1        | Unshielding, 5.0m |



## 2.5 Connection Diagram of Test System



1. The SIM Card is connected to EUT by SIM slot.
2. The RS232 cable is connected from EUT to the Modem.
3. The VGA cable is connected from EUT to the Monitor.
4. The RJ45 cable is connected from EUT to the AP.
5. The Audio cable is connected from EUT to the Earphone.
6. The Flash Memory is connected to EUT by USB Port.
7. The RJ45 cable is connected from Notebook to the AP.

## 2.6 General Information of Test

|                                |   |
|--------------------------------|---|
| Test Site :                    | Exclusive Certification Corp.<br>4F-2, No. 28, Lane 78, Xing-Ai Rd. Nei-hu, Taipei<br>City 114 Taiwan R.O.C.  |
| Test Site Location (OATS1-SD): | No.68-1, Shihbachongsi, shihding Township,<br>Taipei City 223, Taiwan, R.O.C.<br>Registration Number: 632249. |
| FCC Registration Number :      | 632249  |
| IC Registration Number :       | 6597A-1   |
| VCCI Registration Number :     | T-338 for Telecommunication Test<br>C-2188 for Conducted emission test<br>R-1902 for Radiated emission test   |
| Test Voltage:                  | AC 120V/ 60Hz   |
| Test in Compliance with:       | ANSI C63.4-2003<br>FCC Part 15 Subpart C  |
| Frequency Range Investigated:  | Conducted: from 150kHz to 30 MHz<br>Radiation: from 30 MHz to 24620MHz  |
| Test Distance:                 | The test distance of radiated emission from antenna to EUT is<br>3 M.   |

## 2.7 Measurement Uncertainty

| Measurement Item                            | Measurement Frequency | Polarization | Uncertainty |
|---|-----------------------|--------------|-------------|
| Conducted Emission                          | 9 kHz ~ 30 MHz        | LINE/NEUTRAL | 2.71 dB     |
| Radiated Emission                           | 30 MHz ~ 1GHz         | Vertical     | 4.11 dB     |
|   |                       | Horizontal   | 4.10 dB     |
| 6 dB Bandwidth                              | ---                   | ---          | 7500 Hz     |
| Maximum Peak Output Power                   | ---                   | ---          | 1.4 dB      |
| 100kHz Bandwidth of Frequency<br>Band Edges | ---                   | ---          | 2.2 dB      |
| Power Spectral Density                      | ---                   | ---          | 2.2 dB      |

**2.8 History of this test report**

ORIGINAL.

Additional attachment as following record:

| Attachment No. | Issue Date | Description |
|----------------|------------|-------------|
|                |            |             |
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### 3. Antenna Requirements

#### 3.1 Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

#### 3.2 Antenna Construction and Directional Gain

Antenna 1 (WLAN Antenna):

Antenna Model: AT103-105

Antenna type: GPRS + WL Antenna

Antenna Gain: 1.54 dBi for 2.4GHz Band / 1.74 dBi for 5GHz Band.

Antenna 2 (BT Antenna):

Antenna Model: GB04001-A01

Antenna type: PCB Antenna

Antenna Gain: 2.2 dBi

## 4. Test of Conducted Emission

### 4.1 Test Limit

Conducted Emissions were measured from 150 kHz to 30 MHz with a bandwidth of 9 KHz on the 120 VAC power and return leads of the EUT according to the methods defined in ANSI C63.4-2003 Section 3.1. The EUT was placed on a nonmetallic stand in a shielded room 0.8 meters above the ground plane as shown in section 2.2. The interface cables and equipment positioning were varied within limits of reasonable applications to determine the position produced maximum conducted emissions.

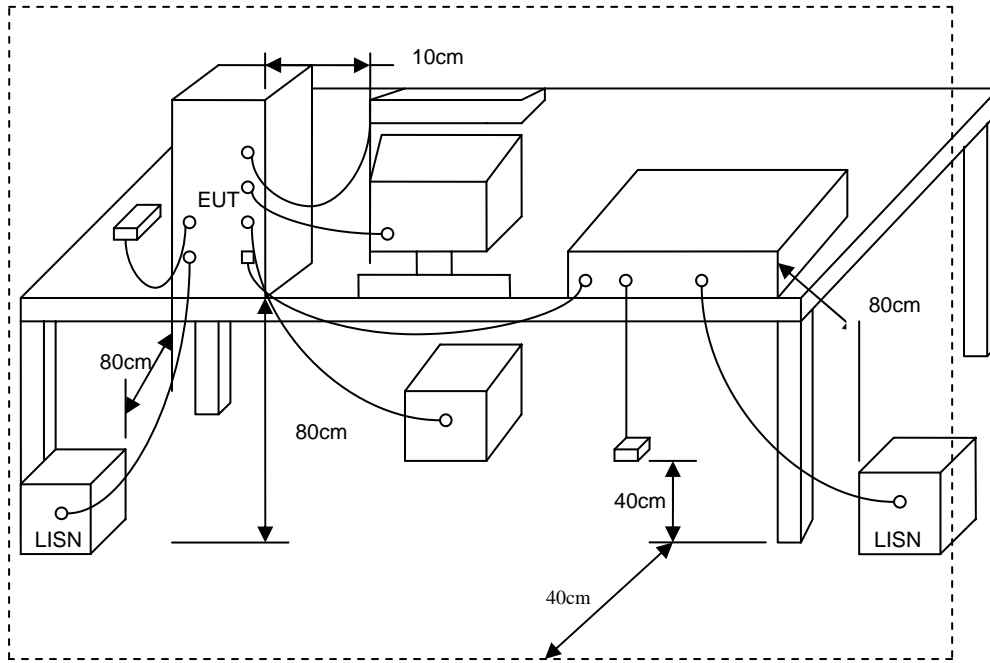
| Frequency (MHz) | Quasi Peak (dB $\mu$ V) | Average (dB $\mu$ V) |
|-----------------|-------------------------|----------------------|
| 0.15 – 0.5      | 66-56*                  | 56-46*               |
| 0.5 – 5.0       | 56                      | 46                   |
| 5.0 – 30.0      | 60                      | 50                   |

\*Decreases with the logarithm of the frequency.

### 4.2 Test Procedures

- a. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
- b. Connect EUT to the power mains through a line impedance stabilization network (LISN).
- c. All the support units are connecting to the other LISN.
- d. The LISN provides 50 ohm coupling impedance for the measuring instrument.
- e. The FCC states that a 50 ohm, 50 micro-Henry LISN should be used.
- f. Both sides of AC line were checked for maximum conducted interference.
- g. The frequency range from 150 kHz to 30 MHz was searched.
- h. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

### 4.3 Typical Test Setup

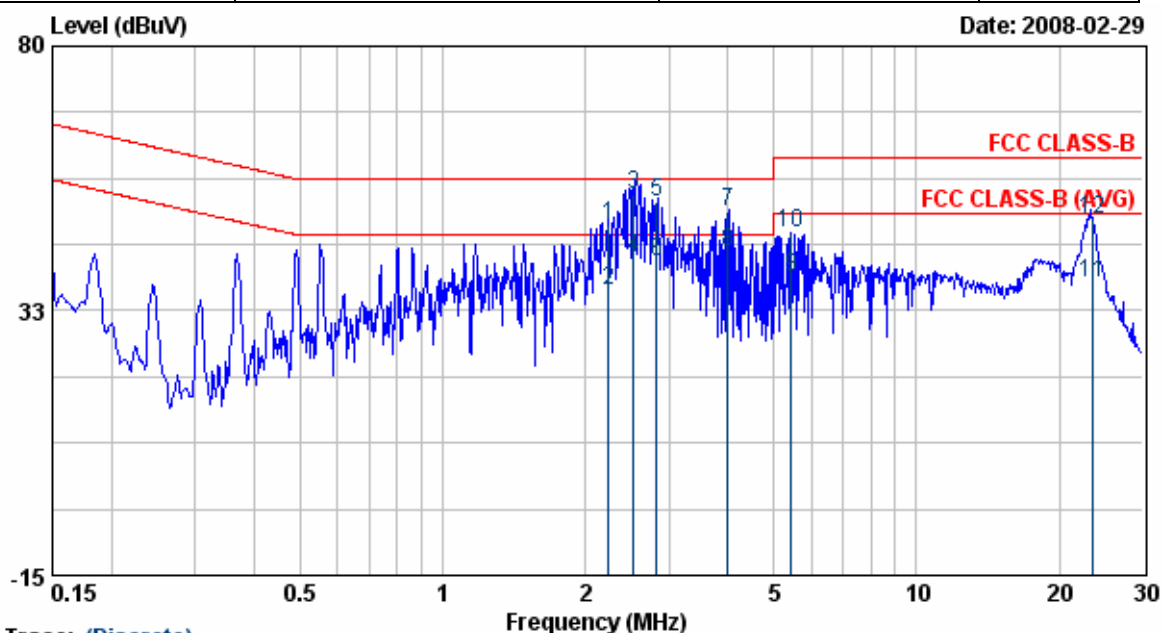


### 4.4 Measurement equipment

| Instrument/Ancillary | Model No.  | Manufacturer | Serial No. | Calibration Date | Valid Date. |
|----------------------|------------|--------------|------------|------------------|-------------|
| Receiver             | R&S        | ESCI         | 100443     | 2007/09/27       | 2008/09/26  |
| LISN                 | MESS TEC   | NNB-2/16Z    | 02/10191   | 2008/05/15       | 2009/05/14  |
| LISN                 | Rolf Heine | NNB-2/16Z    | 03/10058   | 2008/04/22       | 2009/04/21  |

### 4.5 Test Result and Data

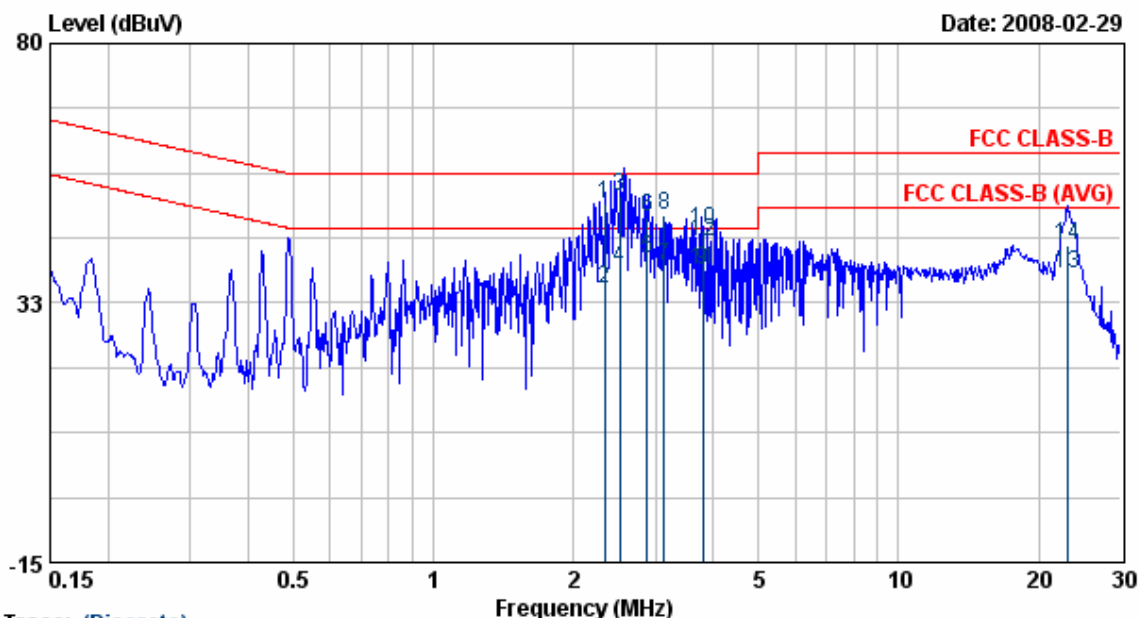
|           |               |             |         |
|-----------|---------------|-------------|---------|
| Power     | : AC 120V     | Pol/Phase   | : LINE  |
| Test Mode | : GFSK CH0    | Temperature | : 24 °C |
| Memo      | : LE-9702B-01 | Humidity    | : 58 %  |



| Item | Freq  | Read Value | Factor | Result | Limit | Margin | Remark  |
|------|-------|------------|--------|--------|-------|--------|---------|
|      | MHz   | dBuV       | dB     | dBuV   | dBuV  | dBuV   |         |
| 1    | 2.24  | 47.60      | 0.20   | 47.81  | 56.00 | -8.19  | QP      |
| 2    | 2.24  | 35.92      | 0.20   | 36.12  | 46.00 | -9.88  | AVERAGE |
| 3    | 2.53  | 53.20      | 0.21   | 53.41  | 56.00 | -2.59  | QP      |
| 4    | 2.53  | 41.75      | 0.21   | 41.96  | 46.00 | -4.04  | AVERAGE |
| 5    | 2.83  | 51.76      | 0.22   | 51.98  | 56.00 | -4.02  | QP      |
| 6    | 2.83  | 40.93      | 0.22   | 41.14  | 46.00 | -4.86  | AVERAGE |
| 7    | 4.00  | 49.98      | 0.23   | 50.21  | 56.00 | -5.79  | QP      |
| 8    | 4.00  | 42.66      | 0.23   | 42.89  | 46.00 | -3.11  | AVERAGE |
| 9    | 5.45  | 38.37      | 0.27   | 38.63  | 50.00 | -11.37 | Average |
| 10   | 5.45  | 46.37      | 0.27   | 46.63  | 60.00 | -13.37 | QP      |
| 11   | 23.42 | 37.08      | 0.48   | 37.56  | 50.00 | -12.44 | AVERAGE |
| 12   | 23.42 | 48.51      | 0.48   | 48.99  | 60.00 | -11.01 | QP      |

- Remarks:
1. Level = Read Level + Factor
  2. Factor = LISN(ISN) Factor + Cable Loss
  3. According to technical experiences, all spurious emission of FM mode at channel 0,39,78 are almost the same below 1GHz, so that the channel 0 was chosen as representative in final test.
  4. The data is worst case.

|           |               |             |           |
|-----------|---------------|-------------|-----------|
| Power     | : AC 120V     | Pol/Phase   | : NEUTRAL |
| Test Mode | : GFSK CH0    | Temperature | : 24 °C   |
| Memo      | : LE-9702B-01 | Humidity    | : 58 %    |



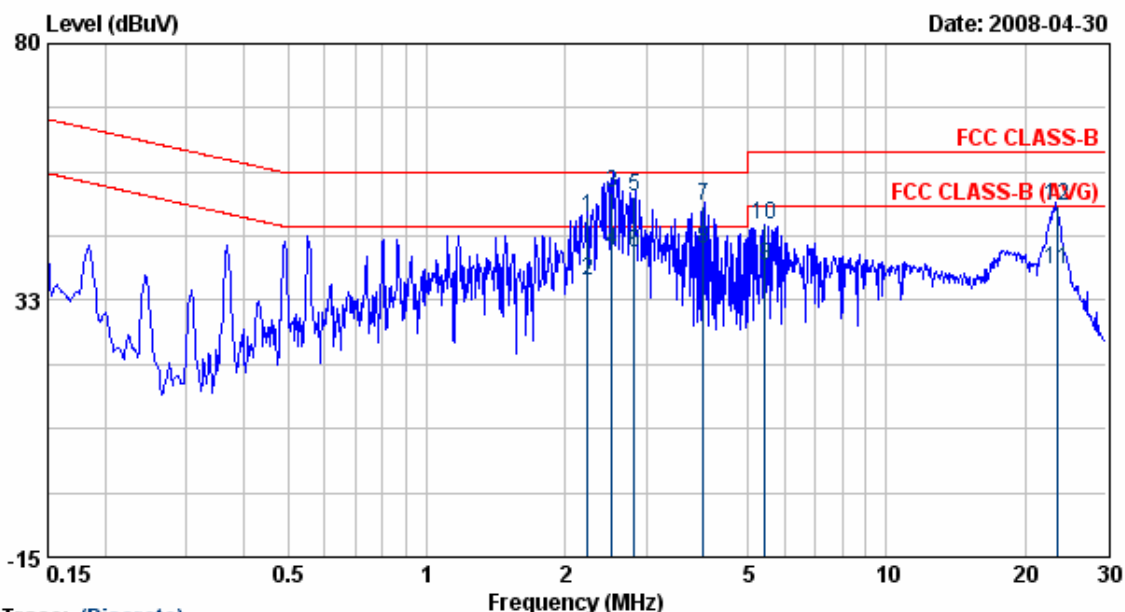
Trace: (Discrete)

| Item | Freq  | Read Value | Factor | Result | Limit | Margin | Remark  |
|------|-------|------------|--------|--------|-------|--------|---------|
|      | MHz   | dBuV       | dB     | dBuV   | dBuV  | dBuV   |         |
| 1    | 2.33  | 50.27      | 0.20   | 50.47  | 56.00 | -5.53  | QP      |
| 2    | 2.33  | 34.85      | 0.20   | 35.05  | 46.00 | -10.95 | AVERAGE |
| 3    | 2.52  | 51.86      | 0.21   | 52.07  | 56.00 | -3.93  | QP      |
| 4    | 2.52  | 38.83      | 0.21   | 39.04  | 46.00 | -6.96  | AVERAGE |
| 5    | 2.88  | 40.55      | 0.22   | 40.77  | 46.00 | -5.23  | AVERAGE |
| 6    | 2.88  | 48.06      | 0.22   | 48.28  | 56.00 | -7.72  | QP      |
| 7    | 3.14  | 39.08      | 0.23   | 39.31  | 46.00 | -6.69  | Average |
| 8    | 3.14  | 48.48      | 0.23   | 48.71  | 56.00 | -7.29  | QP      |
| 9    | 3.80  | 38.36      | 0.25   | 38.60  | 46.00 | -7.40  | AVERAGE |
| 10   | 3.80  | 45.61      | 0.25   | 45.85  | 56.00 | -10.15 | QP      |
| 11   | 3.80  | 38.45      | 0.25   | 38.70  | 46.00 | -7.30  | AVERAGE |
| 12   | 3.80  | 43.38      | 0.25   | 43.62  | 56.00 | -12.38 | QP      |
| 13   | 23.09 | 37.10      | 0.65   | 37.76  | 50.00 | -12.24 | AVERAGE |
| 14   | 23.09 | 42.46      | 0.65   | 43.11  | 60.00 | -16.89 | QP      |

- Remarks:
1. Level = Read Level + Factor
  2. Factor = LISN(ISN) Factor + Cable Loss
  3. According to technical experiences, all spurious emission of FM mode at channel 0,39,78 are almost the same below 1GHz, so that the channel 0 was chosen as representative in final test.
  4. The data is worst case.



|           |                      |             |         |
|-----------|----------------------|-------------|---------|
| Power     | : AC 120V            | Pol/Phase   | : LINE  |
| Test Mode | : $\pi/4$ -DQPSK CH0 | Temperature | : 25 °C |
| Memo      | : LE-9702B-01        | Humidity    | : 58 %  |

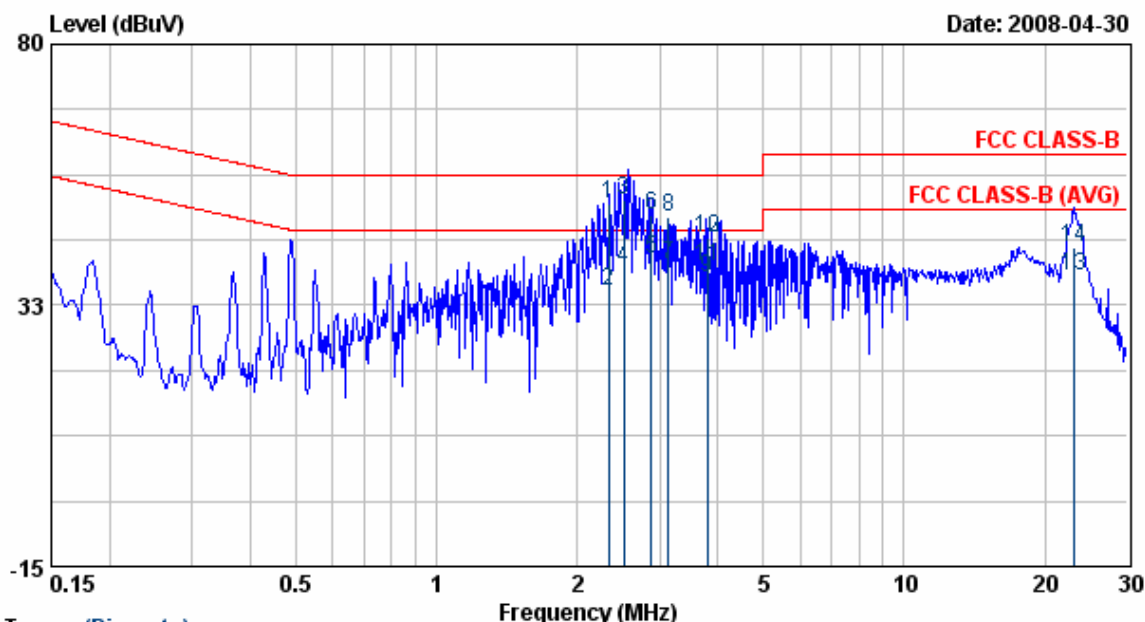


Trace: (Discrete)

| Item | Freq  | Read Value | Factor | Result | Limit | Margin | Remark  |
|------|-------|------------|--------|--------|-------|--------|---------|
|      | MHz   | dBuV       | dB     | dBuV   | dBuV  | dBuV   |         |
| 1    | 2.24  | 47.62      | 0.20   | 47.82  | 56.00 | -8.18  | QP      |
| 2    | 2.24  | 35.95      | 0.20   | 36.16  | 46.00 | -9.84  | AVERAGE |
| 3    | 2.53  | 52.20      | 0.21   | 52.41  | 56.00 | -3.59  | QP      |
| 4    | 2.53  | 41.48      | 0.21   | 41.69  | 46.00 | -4.31  | AVERAGE |
| 5    | 2.83  | 51.61      | 0.22   | 51.83  | 56.00 | -4.17  | QP      |
| 6    | 2.83  | 40.99      | 0.22   | 41.21  | 46.00 | -4.79  | AVERAGE |
| 7    | 4.00  | 49.82      | 0.23   | 50.05  | 56.00 | -5.95  | QP      |
| 8    | 4.00  | 41.66      | 0.23   | 41.89  | 46.00 | -4.11  | AVERAGE |
| 9    | 5.45  | 38.67      | 0.27   | 38.94  | 50.00 | -11.06 | Average |
| 10   | 5.45  | 46.37      | 0.27   | 46.64  | 60.00 | -13.36 | QP      |
| 11   | 23.42 | 37.79      | 0.48   | 38.27  | 50.00 | -11.73 | AVERAGE |
| 12   | 23.42 | 49.51      | 0.48   | 49.99  | 60.00 | -10.01 | QP      |

- Remarks:
1. Level = Read Level + Factor
  2. Factor = LISN(ISN) Factor + Cable Loss
  3. According to technical experiences, all spurious emission of FM mode at channel 0,39,78 are almost the same below 1GHz, so that the channel 0 was chosen as representative in final test.
  4. The data is worst case.

|           |                      |             |           |
|-----------|----------------------|-------------|-----------|
| Power     | : AC 120V            | Pol/Phase   | : NEUTRAL |
| Test Mode | : $\pi/4$ -DQPSK CH0 | Temperature | : 25 °C   |
| Memo      | : LE-9702B-01        | Humidity    | : 58 %    |

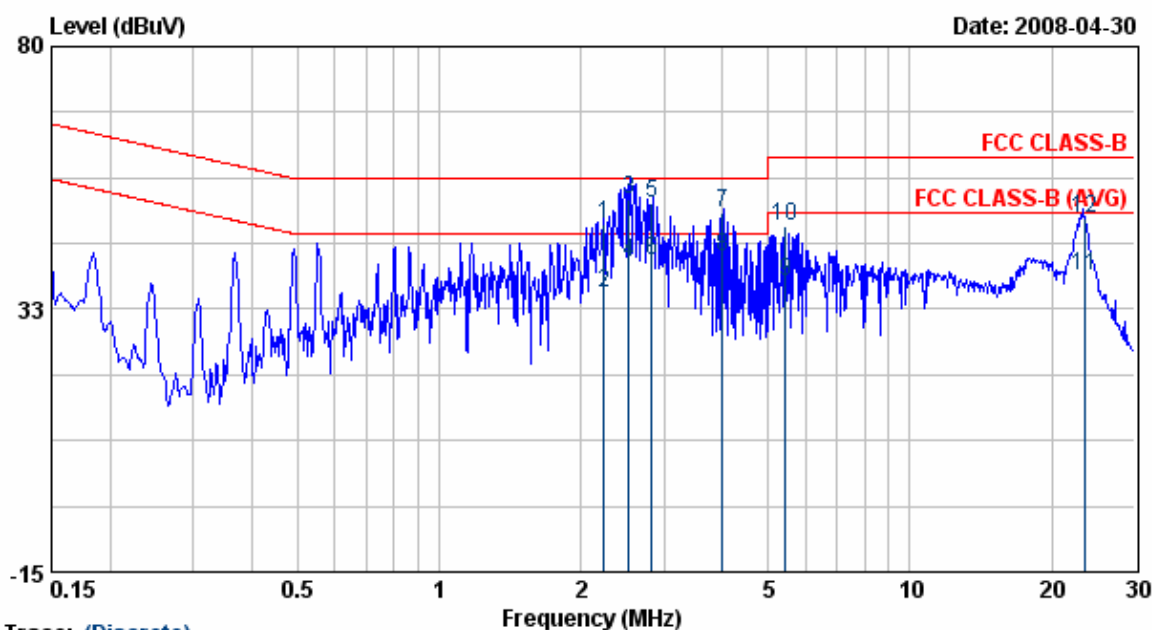


Trace: (Discrete)

| Item | Freq  | Read Value | Factor | Result | Limit | Margin | Remark  |
|------|-------|------------|--------|--------|-------|--------|---------|
|      | MHz   | dBuV       | dB     | dBuV   | dBuV  | dBuV   |         |
| 1    | 2.33  | 50.71      | 0.20   | 50.91  | 56.00 | -5.09  | QP      |
| 2    | 2.33  | 34.87      | 0.20   | 35.07  | 46.00 | -10.93 | AVERAGE |
| 3    | 2.52  | 51.61      | 0.21   | 51.82  | 56.00 | -4.18  | QP      |
| 4    | 2.52  | 38.90      | 0.21   | 39.11  | 46.00 | -6.89  | AVERAGE |
| 5    | 2.88  | 40.57      | 0.22   | 40.79  | 46.00 | -5.21  | AVERAGE |
| 6    | 2.88  | 48.56      | 0.22   | 48.78  | 56.00 | -7.22  | QP      |
| 7    | 3.14  | 39.80      | 0.23   | 40.02  | 46.00 | -5.98  | Average |
| 8    | 3.14  | 48.50      | 0.23   | 48.72  | 56.00 | -7.28  | QP      |
| 9    | 3.80  | 37.36      | 0.25   | 37.60  | 46.00 | -8.40  | AVERAGE |
| 10   | 3.80  | 44.61      | 0.25   | 44.85  | 56.00 | -11.15 | QP      |
| 11   | 3.80  | 39.45      | 0.25   | 39.70  | 46.00 | -6.30  | AVERAGE |
| 12   | 3.80  | 44.38      | 0.25   | 44.62  | 56.00 | -11.38 | QP      |
| 13   | 23.09 | 37.10      | 0.65   | 37.76  | 50.00 | -12.24 | AVERAGE |
| 14   | 23.09 | 42.46      | 0.65   | 43.11  | 60.00 | -16.89 | QP      |

- Remarks:
1. Level = Read Level + Factor
  2. Factor = LISN(ISN) Factor + Cable Loss
  3. According to technical experiences, all spurious emission of FM mode at channel 0,39,78 are almost the same below 1GHz, so that the channel 0 was chosen as representative in final test.
  4. The data is worst case.

|           |               |             |         |
|-----------|---------------|-------------|---------|
| Power     | : AC 120V     | Pol/Phase   | : LINE  |
| Test Mode | : 8DPSK CH0   | Temperature | : 25 °C |
| Memo      | : LE-9702B-01 | Humidity    | : 58 %  |

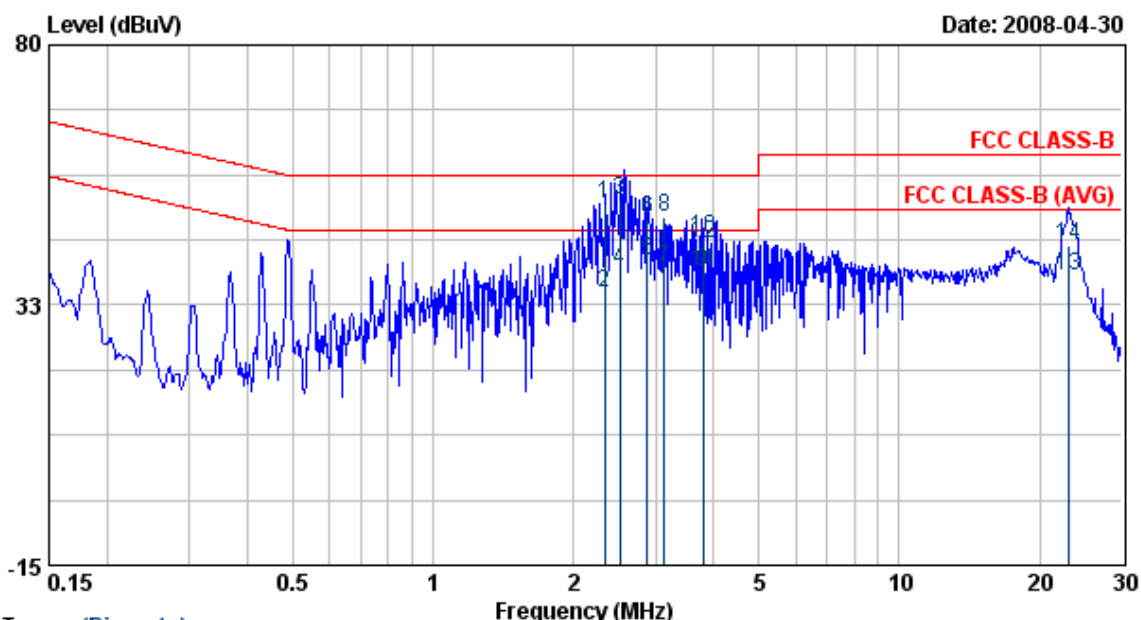


Trace: (Discrete)

| Item | Freq  | Read Value | Factor | Result | Limit | Margin | Remark  |
|------|-------|------------|--------|--------|-------|--------|---------|
|      | MHz   | dBuV       | dB     | dBuV   | dBuV  | dBuV   |         |
| 1    | 2.24  | 47.62      | 0.20   | 47.82  | 56.00 | -8.18  | QP      |
| 2    | 2.24  | 35.15      | 0.20   | 35.36  | 46.00 | -10.64 | AVERAGE |
| 3    | 2.53  | 52.20      | 0.21   | 52.41  | 56.00 | -3.59  | QP      |
| 4    | 2.53  | 40.75      | 0.21   | 40.96  | 46.00 | -5.04  | AVERAGE |
| 5    | 2.83  | 51.61      | 0.22   | 51.83  | 56.00 | -4.17  | QP      |
| 6    | 2.83  | 40.99      | 0.22   | 41.21  | 46.00 | -4.79  | AVERAGE |
| 7    | 4.00  | 49.82      | 0.23   | 50.05  | 56.00 | -5.95  | QP      |
| 8    | 4.00  | 41.66      | 0.23   | 41.89  | 46.00 | -4.11  | AVERAGE |
| 9    | 5.45  | 37.37      | 0.27   | 37.63  | 50.00 | -12.37 | Average |
| 10   | 5.45  | 47.37      | 0.27   | 47.63  | 60.00 | -12.37 | QP      |
| 11   | 23.42 | 38.08      | 0.48   | 38.56  | 50.00 | -11.44 | AVERAGE |
| 12   | 23.42 | 48.51      | 0.48   | 48.99  | 60.00 | -11.01 | QP      |

- Remarks:
1. Level = Read Level + Factor
  2. Factor = LISN(ISN) Factor + Cable Loss
  3. According to technical experiences, all spurious emission of FM mode at channel 0,39,78 are almost the same below 1GHz, so that the channel 0 was chosen as representative in final test.
  4. The data is worst case.

|           |               |             |           |
|-----------|---------------|-------------|-----------|
| Power     | : AC 120V     | Pol/Phase   | : NEUTRAL |
| Test Mode | : 8DPSK CH0   | Temperature | : 25 °C   |
| Memo      | : LE-9702B-01 | Humidity    | : 58 %    |



Trace: (Discrete)

| Item | Freq  | Read Value | Factor | Result | Limit | Margin | Remark  |
|------|-------|------------|--------|--------|-------|--------|---------|
|      | MHz   | dBuV       | dB     | dBuV   | dBuV  | dBuV   |         |
| 1    | 2.33  | 50.61      | 0.20   | 50.81  | 56.00 | -5.19  | QP      |
| 2    | 2.33  | 34.47      | 0.20   | 34.67  | 46.00 | -11.33 | AVERAGE |
| 3    | 2.52  | 51.55      | 0.21   | 51.76  | 56.00 | -4.24  | QP      |
| 4    | 2.52  | 38.54      | 0.21   | 38.75  | 46.00 | -7.25  | AVERAGE |
| 5    | 2.88  | 40.26      | 0.22   | 40.48  | 46.00 | -5.52  | AVERAGE |
| 6    | 2.88  | 48.16      | 0.22   | 48.38  | 56.00 | -7.62  | QP      |
| 7    | 3.14  | 39.04      | 0.23   | 39.27  | 46.00 | -6.73  | Average |
| 8    | 3.14  | 48.50      | 0.23   | 48.72  | 56.00 | -7.28  | QP      |
| 9    | 3.80  | 38.34      | 0.25   | 38.58  | 46.00 | -7.42  | AVERAGE |
| 10   | 3.80  | 44.61      | 0.25   | 44.85  | 56.00 | -11.15 | QP      |
| 11   | 3.80  | 38.25      | 0.25   | 38.50  | 46.00 | -7.50  | AVERAGE |
| 12   | 3.80  | 43.46      | 0.25   | 43.70  | 56.00 | -12.30 | QP      |
| 13   | 23.09 | 37.19      | 0.65   | 37.84  | 50.00 | -12.16 | AVERAGE |
| 14   | 23.09 | 42.57      | 0.65   | 43.23  | 60.00 | -16.77 | QP      |

- Remarks:
1. Level = Read Level + Factor
  2. Factor = LISN(ISN) Factor + Cable Loss
  3. According to technical experiences, all spurious emission of FM mode at channel 0,39,78 are almost the same below 1GHz, so that the channel 0 was chosen as representative in final test.
  4. The data is worst case.

Test engineer: Ben

## 5. Test of Radiated Emission

### 5.1 Test Limit

Radiated emissions from 30 MHz to 25 GHz were measured according to the methods defines in ANSI C63.4-2003. The EUT was placed, 0.8 meter above the ground plane, as shown in section 5.6.3. The interface cables and equipment positions were varied within limits of reasonable applications to determine the positions producing maximum radiated emissions For unintentional device, according to § 15.109(a), except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

| Frequency (MHz) | Distance Meters | Radiated ( $\mu$ V / M) | Radiated (dB $\mu$ V/ M) |
|-----------------|-----------------|-------------------------|--------------------------|
| 30-88           | 3               | 100                     | 40.0                     |
| 88-216          | 3               | 150                     | 43.5                     |
| 216-960         | 3               | 200                     | 46.0                     |
| Above 960       | 3               | 500                     | 54.0                     |

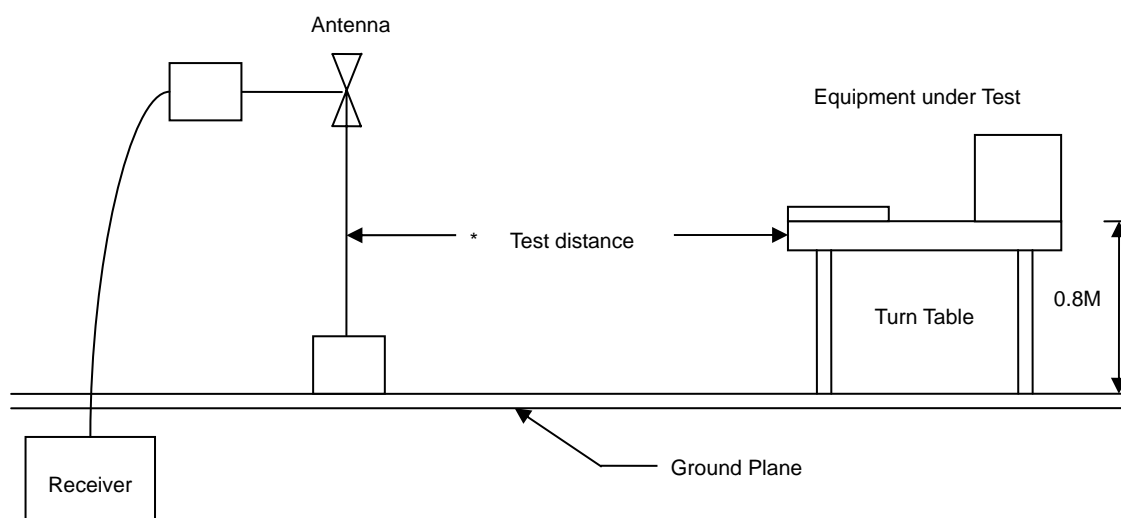
For unintentional device, according to CISPR PUB.22, for Class B digital devices, the general requirement of field strength of radiated emissions from intentional radiators at a distance of 10 meters shall not exceed the above table.

| Frequency (MHz) | Distance Meters | Radiated (dB $\mu$ V/ M) |
|-----------------|-----------------|--------------------------|
| 30-230          | 10              | 30                       |
| 230-1000        | 10              | 37                       |

## 5.2 Test Procedures

- a. The EUT was placed on a rotatable table top 0.8 meter above ground.
- b. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
- c. The table was rotated 360 degrees to determine the position of the highest radiation.
- d. The antenna is a broadband antenna and its height is varied between one meter and four meters above ground to find the maximum value of the field strength both horizontal polarization and vertical polarization of the antenna are set to make the measurement.
- e. For each suspected emission the EUT was arranged to its worst case and then tune the antenna tower (from 1 M to 4 M) and turn table (from 0 degree to 360 degrees) to find the maximum reading.
- f. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function and specified bandwidth with Maximum Hold Mode.
- g. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method and reported.
- h. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

### 5.3 Typical Test Setup

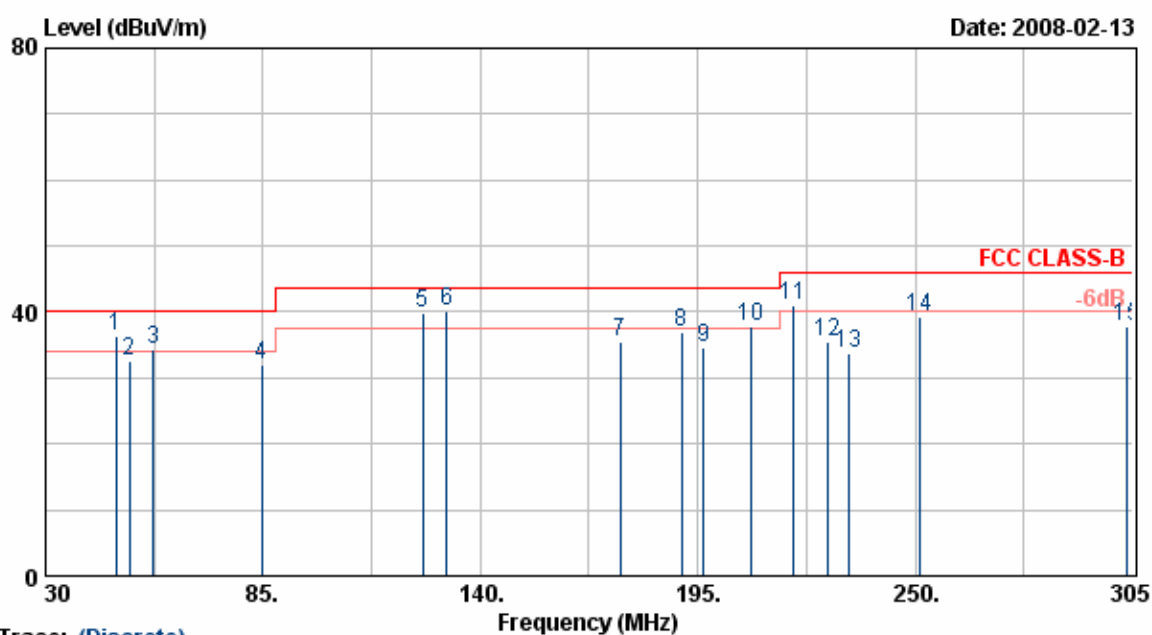


### 5.4 Measurement equipment

| Instrument/Ancillary | Model No. | Manufacturer | Serial No. | Calibration Date | Valid Date |
|----------------------|-----------|--------------|------------|------------------|------------|
| EMI Receiver         | 85460A    | HP           | 3807A00454 | 2007/06/05       | 2008/06/04 |
| Spectrum Analyzer    | FSP40     | R&S          | 10047      | 2008/02/22       | 2009/02/21 |
| Horn Antenna         | 3115      | EMCO         | 31589      | 2008/03/28       | 2009/03/27 |
| Horn Antenna         | 3116      | EMCO         | 31970      | 2008/04/08       | 2009/04/07 |
| Bilog Antenna        | CBL6112B  | Schaffner    | 2840       | 2008/04/26       | 2009/04/25 |
| Amplifier            | 8449B     | Agilent      | 3008A01954 | 2008/01/24       | 2009/01/23 |
| Amplifier            | 8447D     | Agilent      | 2944A10531 | 2007/09/26       | 2008/09/25 |
| Amplifier            | PA-840    | Com-Power    | 711885     | 2007/08/28       | 2008/08/27 |

### 5.5 Test Result and Data

|                   |                      |                      |            |
|-------------------|----------------------|----------------------|------------|
| Power             | : AC 120V            | Pol/Phase            | : VERTICAL |
| Test Mode         | : Transmit / Receive | Temperature          | : 15 °C    |
| Operation Channel | : 0                  | Humidity             | : 70 %     |
| Modulation Type   | : GFSK               | Atmospheric Pressure | : 1030 hPa |
| Memo              | :                    | Rate                 | : 1 Mbps   |



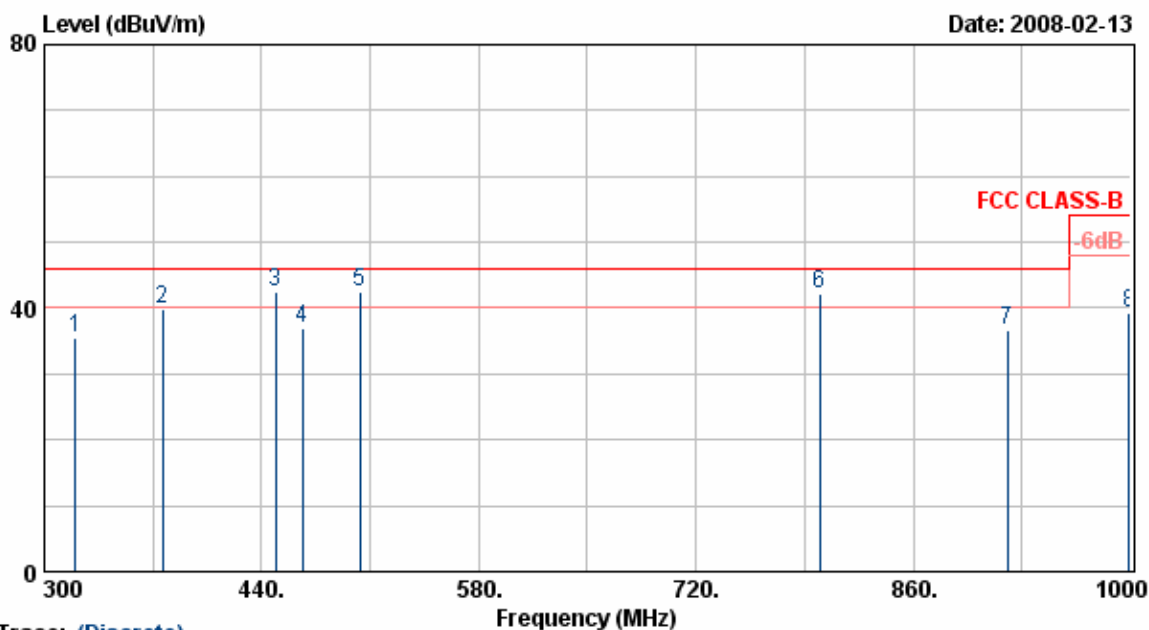
Trace: (Discrete)

| Item | Freq<br>MHz | Read<br>Value<br>dBuV/m | Factor<br>dB | Result<br>dBuV/m | Limit<br>dBuV/m | Margin<br>dB | Remark | Ant<br>Pos<br>cm | Tab<br>Pos<br>Deg |
|------|-------------|-------------------------|--------------|------------------|-----------------|--------------|--------|------------------|-------------------|
| 1    | 47.80       | 55.33                   | -19.01       | 36.32            | 40.00           | -3.68        | QP     | 100              | 96                |
| 2    | 51.20       | 53.17                   | -20.62       | 32.55            | 40.00           | -7.45        | Peak   | 100              | 122               |
| 3    | 57.25       | 52.46                   | -18.04       | 34.42            | 40.00           | -5.58        | QP     | 100              | 122               |
| 4    | 84.66       | 49.89                   | -17.96       | 31.93            | 40.00           | -8.07        | Peak   | 100              | 122               |
| 5    | 125.43      | 51.41                   | -11.45       | 39.96            | 43.50           | -3.54        | QP     | 100              | 88                |
| 6    | 131.50      | 53.23                   | -13.04       | 40.19            | 43.50           | -3.31        | QP     | 100              | 88                |
| 7    | 175.30      | 50.52                   | -15.01       | 35.51            | 43.50           | -7.99        | Peak   | 100              | 154               |
| 8    | 191.00      | 49.41                   | -12.49       | 36.92            | 43.50           | -6.58        | Peak   | 100              | 154               |
| 9    | 196.53      | 47.43                   | -12.95       | 34.48            | 43.50           | -9.02        | Peak   | 100              | 96                |
| 10   | 208.25      | 50.52                   | -12.73       | 37.80            | 43.50           | -5.71        | QP     | 100              | 133               |
| 11   | 219.16      | 54.23                   | -13.28       | 40.95            | 46.00           | -5.05        | QP     | 100              | 133               |
| 12   | 227.90      | 49.33                   | -13.79       | 35.55            | 46.00           | -10.46       | Peak   | 100              | 222               |
| 13   | 233.20      | 46.18                   | -12.29       | 33.89            | 46.00           | -12.11       | Peak   | 100              | 222               |
| 14   | 251.00      | 50.22                   | -10.89       | 39.33            | 46.00           | -6.67        | Peak   | 100              | 222               |
| 15   | 303.35      | 50.22                   | -12.54       | 37.68            | 46.00           | -8.32        | Peak   | 100              | 50                |

- Remarks:
1. Result = Read Value + Factor
  2. Factor = Antenna Factor + Cable Loss - Amplifier
  3. According to technical experiences, all spurious emission of FM mode at channel 0,39,78 are almost the same below 1GHz, so that the channel 0 was chosen as representative in final test.
  4. The data is worst case.



|                   |                      |                      |            |
|-------------------|----------------------|----------------------|------------|
| Power             | : AC 120V            | Pol/Phase            | : VERTICAL |
| Test Mode         | : Transmit / Receive | Temperature          | : 15 °C    |
| Operation Channel | : 0                  | Humidity             | : 70 %     |
| Modulation Type   | : GFSK               | Atmospheric Pressure | : 1030 hPa |
| Memo              | :                    | Rate                 | : 1 Mbps   |

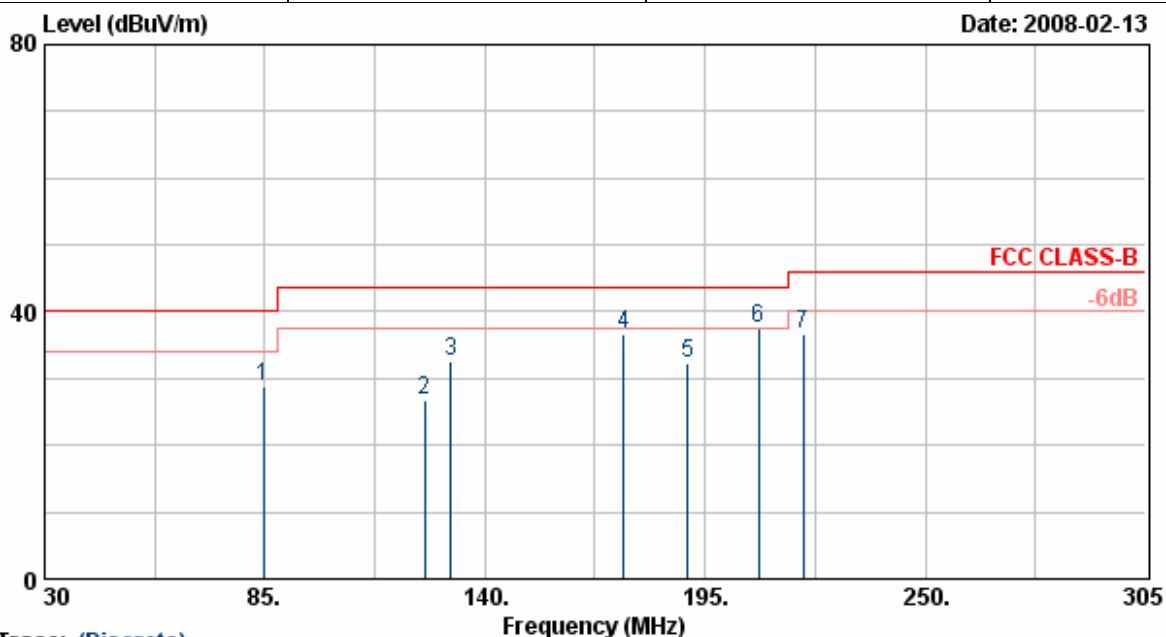


Trace: (Discrete)

| Item | Freq   | Read Value | Factor | Result | Limit  | Margin | Remark | Ant Pos | Tab Pos |
|------|--------|------------|--------|--------|--------|--------|--------|---------|---------|
|      | MHz    | dBuV/m     | dB     | dBuV/m | dBuV/m | dB     |        | cm      | Deg     |
| 1    | 320.30 | 48.51      | -12.88 | 35.63  | 46.00  | -10.37 | Peak   | 100     | 222     |
| 2    | 376.30 | 49.50      | -9.67  | 39.83  | 46.00  | -6.17  | Peak   | 100     | 222     |
| 3    | 448.80 | 52.21      | -9.78  | 42.43  | 46.00  | -3.57  | QP     | 100     | 188     |
| 4    | 466.10 | 43.22      | -6.19  | 37.03  | 46.00  | -8.97  | Peak   | 100     | 174     |
| 5    | 503.70 | 46.60      | -4.26  | 42.34  | 46.00  | -3.66  | QP     | 100     | 180     |
| 6    | 799.80 | 44.15      | -1.93  | 42.22  | 46.00  | -3.78  | QP     | 100     | 0       |
| 7    | 920.45 | 33.43      | 3.26   | 36.69  | 46.00  | -9.31  | Peak   | 100     | 0       |
| 8    | 999.30 | 37.90      | 1.41   | 39.31  | 54.00  | -14.69 | Peak   | 100     | 50      |

- Remarks:
1. Result = Read Value + Factor
  2. Factor = Antenna Factor + Cable Loss - Amplifier
  3. According to technical experiences, all spurious emission of FM mode at channel 0,39,78 are almost the same below 1GHz, so that the channel 0 was chosen as representative in final test.
  4. The data is worst case.

|                   |                      |                      |              |
|-------------------|----------------------|----------------------|--------------|
| Power             | : AC 120V            | Pol/Phase            | : HORIZONTAL |
| Test Mode         | : Transmit / Receive | Temperature          | : 15 °C      |
| Operation Channel | : 0                  | Humidity             | : 70 %       |
| Modulation Type   | : GFSK               | Atmospheric Pressure | : 1030 hPa   |
| Memo              | :                    | Rate                 | : 1 Mbps     |

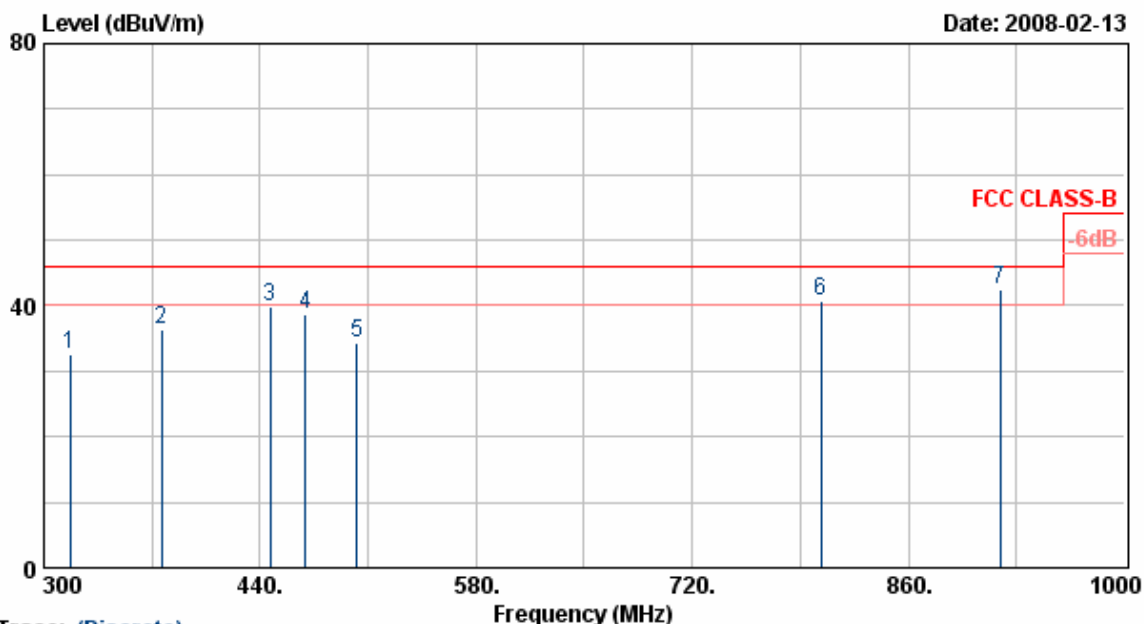


Trace: (Discrete)

| Item | Freq   | Read Value | Factor | Result | Limit  | Margin | Remark | Ant Pos | Tab Pos |
|------|--------|------------|--------|--------|--------|--------|--------|---------|---------|
|      | MHz    | dBuV/m     | dB     | dBuV/m | dBuV/m | dB     |        | cm      | Deg     |
| 1    | 84.76  | 52.60      | -23.79 | 28.81  | 40.00  | -11.19 | Peak   | 200     | 48      |
| 2    | 125.00 | 46.72      | -20.04 | 26.68  | 43.50  | -16.82 | Peak   | 200     | 89      |
| 3    | 131.46 | 52.50      | -19.87 | 32.63  | 43.50  | -10.87 | Peak   | 200     | 89      |
| 4    | 174.69 | 57.51      | -20.92 | 36.59  | 43.50  | -6.91  | Peak   | 200     | 111     |
| 5    | 190.78 | 53.15      | -20.87 | 32.28  | 43.50  | -11.22 | Peak   | 200     | 142     |
| 6    | 208.48 | 56.55      | -18.90 | 37.65  | 43.50  | -5.85  | QP     | 200     | 222     |
| 7    | 219.48 | 55.23      | -18.58 | 36.65  | 46.00  | -9.35  | Peak   | 200     | 222     |

- Remarks:
1. Result = Read Value + Factor
  2. Factor = Antenna Factor + Cable Loss - Amplifier
  3. According to technical experiences, all spurious emission of FM mode at channel 0,39,78 are almost the same below 1GHz, so that the channel 0 was chosen as representative in final test.
  4. The data is worst case.

|                   |                      |                      |              |
|-------------------|----------------------|----------------------|--------------|
| Power             | : AC 120V            | Pol/Phase            | : HORIZONTAL |
| Test Mode         | : Transmit / Receive | Temperature          | : 15 °C      |
| Operation Channel | : 0                  | Humidity             | : 70 %       |
| Modulation Type   | : GFSK               | Atmospheric Pressure | : 1030 hPa   |
| Memo              | :                    | Rate                 | : 1 Mbps     |

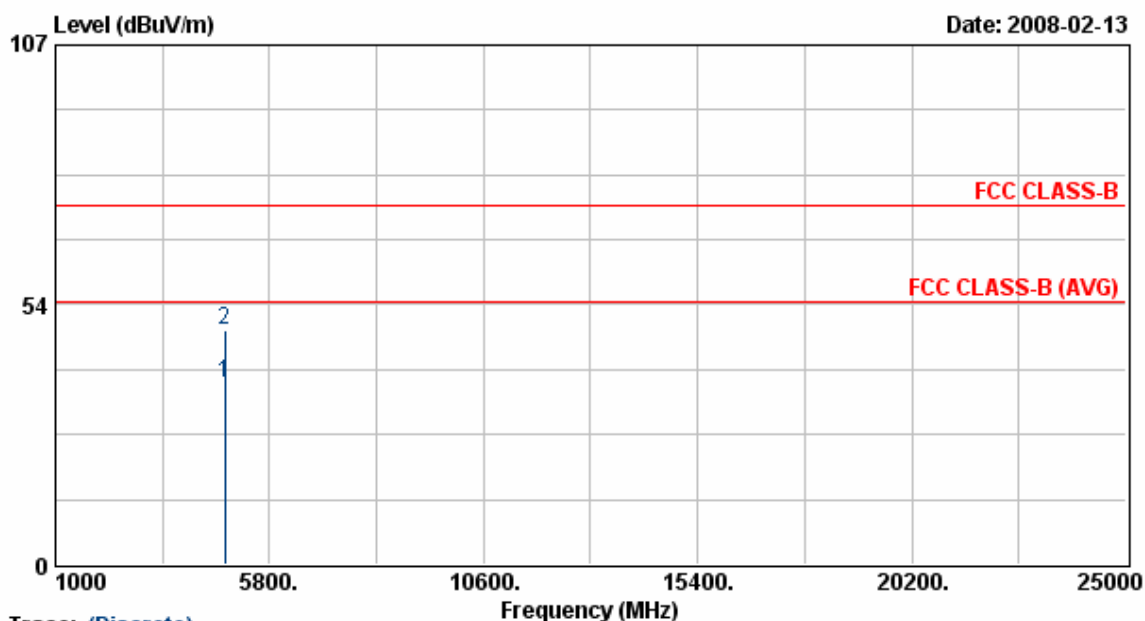


Trace: (Discrete)

| Item | Freq   | Read Value | Factor | Result | Limit  | Margin | Remark | Ant Pos | Tab Pos |
|------|--------|------------|--------|--------|--------|--------|--------|---------|---------|
|      | MHz    | dBuV/m     | dB     | dBuV/m | dBuV/m | dB     |        | cm      | Deg     |
| 1    | 316.80 | 47.54      | -15.02 | 32.52  | 46.00  | -13.48 | Peak   | 200     | 149     |
| 2    | 376.30 | 46.70      | -10.46 | 36.24  | 46.00  | -9.76  | Peak   | 200     | 149     |
| 3    | 446.30 | 47.22      | -7.46  | 39.76  | 46.00  | -6.24  | Peak   | 200     | 168     |
| 4    | 469.40 | 46.33      | -7.56  | 38.77  | 46.00  | -7.23  | Peak   | 200     | 168     |
| 5    | 503.00 | 40.59      | -6.28  | 34.31  | 46.00  | -11.69 | Peak   | 200     | 196     |
| 6    | 803.30 | 44.36      | -3.62  | 40.74  | 46.00  | -5.26  | QP     | 200     | 255     |
| 7    | 919.60 | 39.45      | 2.89   | 42.34  | 46.00  | -3.66  | QP     | 200     | 333     |

- Remarks:
1. Result = Read Value + Factor
  2. Factor = Antenna Factor + Cable Loss - Amplifier
  3. According to technical experiences, all spurious emission of FM mode at channel 0,39,78 are almost the same below 1GHz, so that the channel 0 was chosen as representative in final test.
  4. The data is worst case.

|                   |                      |                      |            |
|-------------------|----------------------|----------------------|------------|
| Power             | : AC 120V            | Pol/Phase            | : VERTICAL |
| Test Mode         | : Transmit / Receive | Temperature          | : 15 °C    |
| Operation Channel | : 0                  | Humidity             | : 70 %     |
| Modulation Type   | : GFSK               | Atmospheric Pressure | : 1030 hPa |
| Memo              | :                    | Rate                 | : 1 Mbps   |



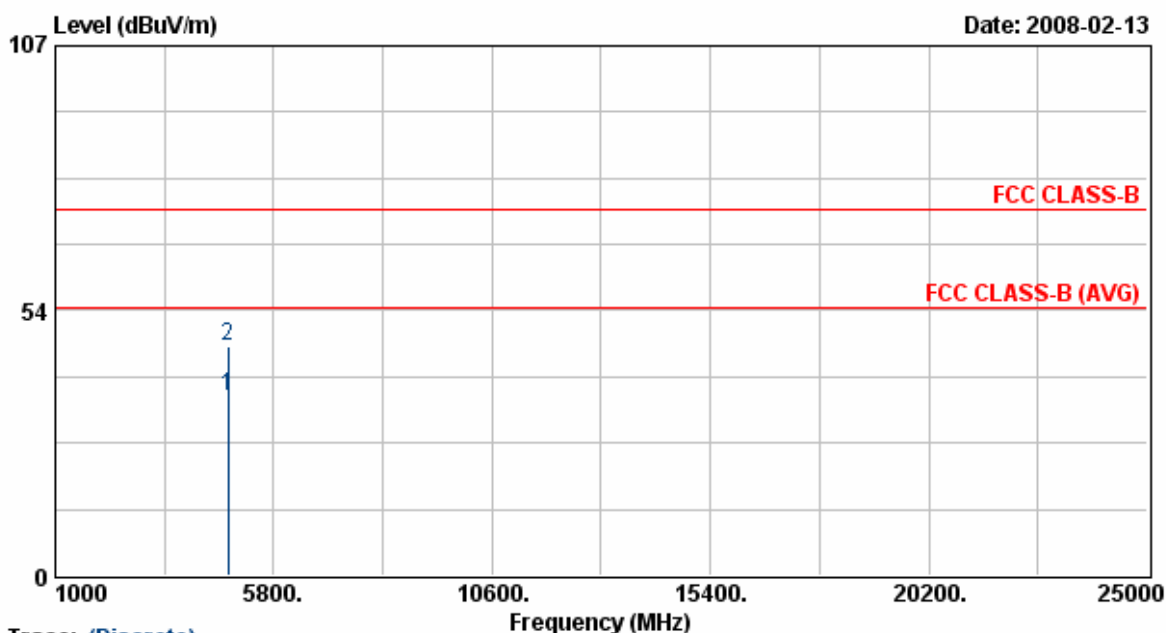
Trace: (Discrete)

| Item | Freq    | Read Value | Factor | Result | Limit  | Margin | Remark  | Ant Pos | Tab Pos |
|------|---------|------------|--------|--------|--------|--------|---------|---------|---------|
|      | MHz     | dBuV/m     | dB     | dBuV/m | dBuV/m | dB     |         | cm      | Deg     |
| 1    | 4804.00 | 31.32      | 5.92   | 37.24  | 54.00  | -16.76 | Average | 100     | 194     |
| 2    | 4804.00 | 42.50      | 5.92   | 48.42  | 74.00  | -25.58 | Peak    | 100     | 194     |

Notes:

1. Result = Read Value + Factor
2. Factor = Antenna Factor + Cable Loss - Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 120KHz and video bandwidth is 300kHz for Peak detection and Quasi-peak detection at frequency below 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
5. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average detection at frequency above 1GHz.
6. The other emissions is too low to be measured.

|                   |                      |                      |              |
|-------------------|----------------------|----------------------|--------------|
| Power             | : AC 120V            | Pol/Phase            | : HORIZONTAL |
| Test Mode         | : Transmit / Receive | Temperature          | : 15 °C      |
| Operation Channel | : 0                  | Humidity             | : 70 %       |
| Modulation Type   | : GFSK               | Atmospheric Pressure | : 1030 hPa   |
| Memo              | :                    | Rate                 | : 1 Mbps     |



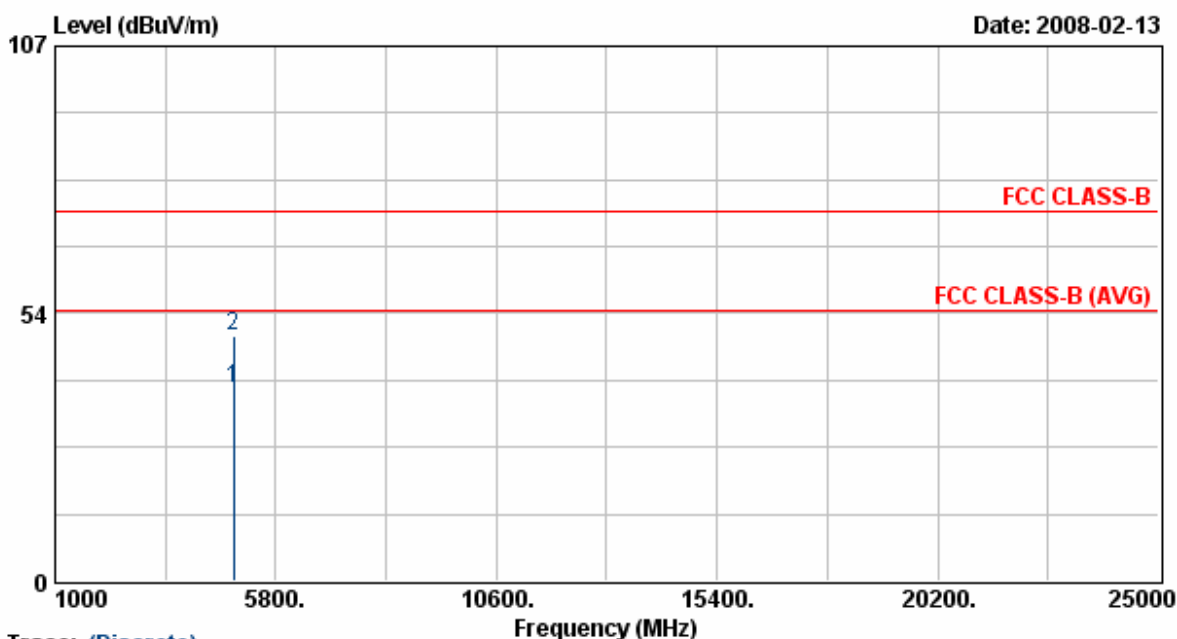
Trace: (Discrete)

| Item | Freq    | Read Value | Factor | Result | Limit  | Margin | Remark  | Ant Pos | Tab Pos |
|------|---------|------------|--------|--------|--------|--------|---------|---------|---------|
|      | MHz     | dBuV/m     | dB     | dBuV/m | dBuV/m | dB     |         | cm      | Deg     |
| 1    | 4804.00 | 30.12      | 5.92   | 36.04  | 54.00  | -17.96 | Average | 100     | 238     |
| 2    | 4804.00 | 40.42      | 5.92   | 46.34  | 74.00  | -27.66 | Peak    | 100     | 238     |

Notes:

1. Result = Read Value + Factor
2. Factor = Antenna Factor + Cable Loss - Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 120KHz and video bandwidth is 300kHz for Peak detection and Quasi-peak detection at frequency below 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
5. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average detection at frequency above 1GHz.
6. The other emissions is too low to be measured.

|                   |                      |                      |            |
|-------------------|----------------------|----------------------|------------|
| Power             | : AC 120V            | Pol/Phase            | : VERTICAL |
| Test Mode         | : Transmit / Receive | Temperature          | : 15 °C    |
| Operation Channel | : 39                 | Humidity             | : 70 %     |
| Modulation Type   | : GFSK               | Atmospheric Pressure | : 1030 hPa |
| Memo              | :                    | Rate                 | : 1 Mbps   |



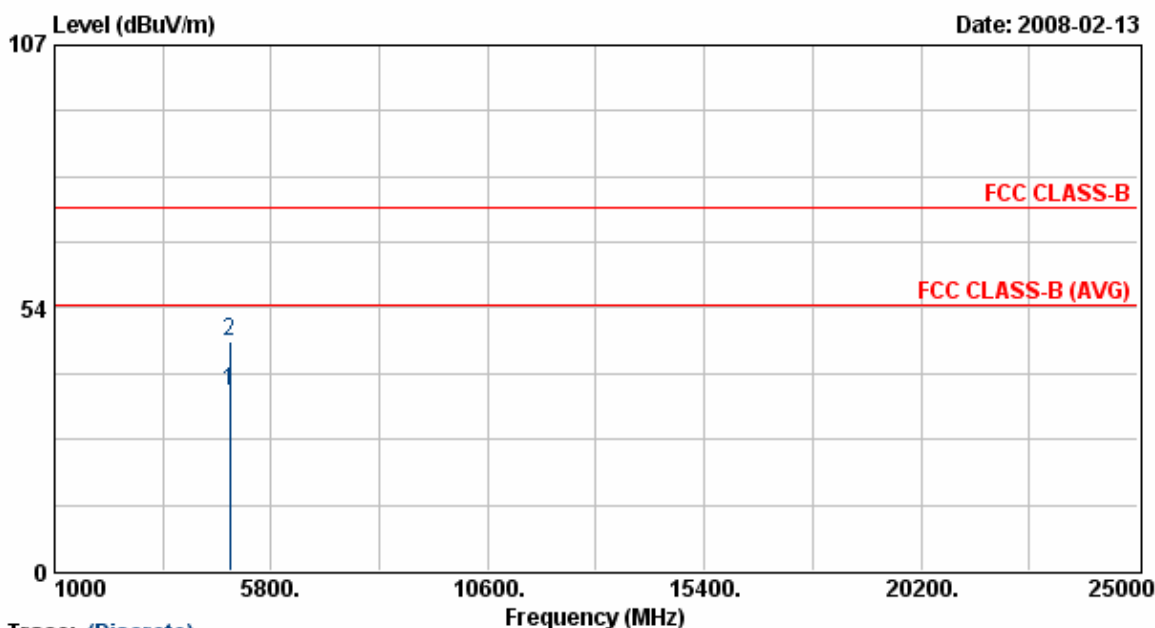
Trace: (Discrete)

| Item | Freq    | Read Value | Factor | Result | Limit  | Margin | Remark  | Ant Pos | Tab Pos |
|------|---------|------------|--------|--------|--------|--------|---------|---------|---------|
|      | MHz     | dBuV/m     | dB     | dBuV/m | dBuV/m | dB     |         | cm      | Deg     |
| 1    | 4881.88 | 32.49      | 6.12   | 38.61  | 54.00  | -15.39 | Average | 100     | 194     |
| 2    | 4881.88 | 42.88      | 6.12   | 49.00  | 74.00  | -25.00 | Peak    | 100     | 194     |

Notes:

1. Result = Read Value + Factor
2. Factor = Antenna Factor + Cable Loss - Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 120KHz and video bandwidth is 300kHz for Peak detection and Quasi-peak detection at frequency below 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
5. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average detection at frequency above 1GHz.
6. The other emissions is too low to be measured.

|                   |                      |                      |              |
|-------------------|----------------------|----------------------|--------------|
| Power             | : AC 120V            | Pol/Phase            | : HORIZONTAL |
| Test Mode         | : Transmit / Receive | Temperature          | : 15 °C      |
| Operation Channel | : 39                 | Humidity             | : 70 %       |
| Modulation Type   | : GFSK               | Atmospheric Pressure | : 1030 hPa   |
| Memo              | :                    | Rate                 | : 1 Mbps     |



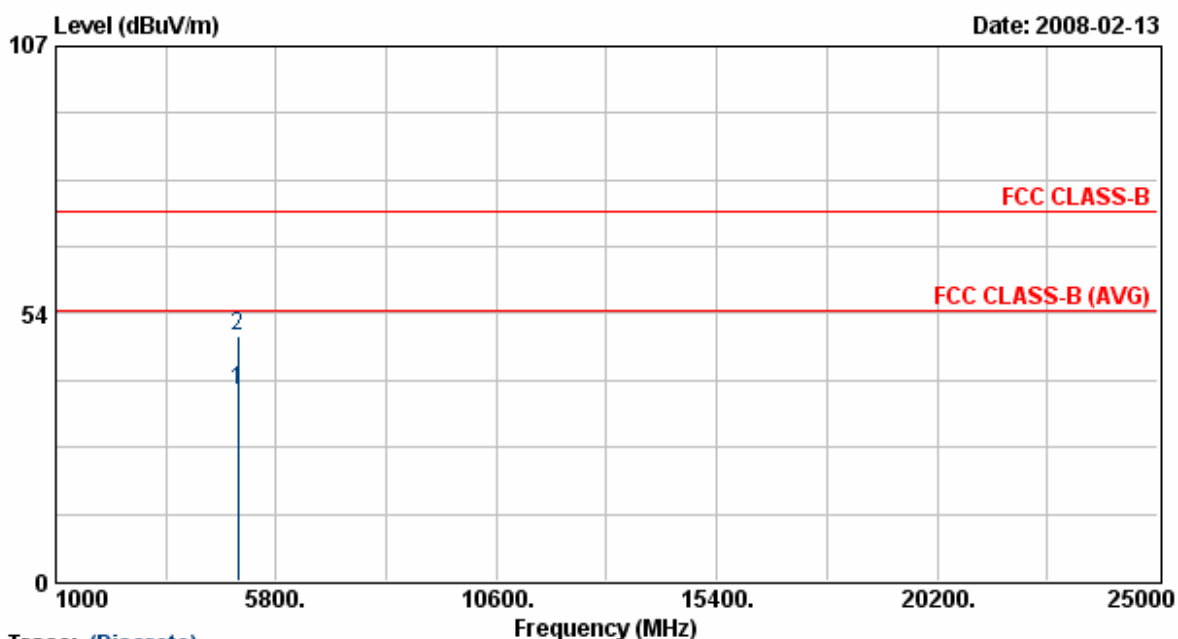
Trace: (Discrete)

| Item | Freq    | Read Value | Factor | Result | Limit  | Margin | Remark  | Ant Pos | Tab Pos |
|------|---------|------------|--------|--------|--------|--------|---------|---------|---------|
|      | MHz     | dBuV/m     | dB     | dBuV/m | dBuV/m | dB     |         | cm      | Deg     |
| 1    | 4882.00 | 30.26      | 6.12   | 36.38  | 54.00  | -17.62 | Average | 100     | 238     |
| 2    | 4882.00 | 40.58      | 6.12   | 46.70  | 74.00  | -27.30 | Peak    | 100     | 238     |

Notes:

1. Result = Read Value + Factor
2. Factor = Antenna Factor + Cable Loss - Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 120KHz and video bandwidth is 300kHz for Peak detection and Quasi-peak detection at frequency below 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
5. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average detection at frequency above 1GHz.
6. The other emissions is too low to be measured.

|                   |                      |                      |            |
|-------------------|----------------------|----------------------|------------|
| Power             | : AC 120V            | Pol/Phase            | : VERTICAL |
| Test Mode         | : Transmit / Receive | Temperature          | : 15 °C    |
| Operation Channel | : 78                 | Humidity             | : 70 %     |
| Modulation Type   | : GFSK               | Atmospheric Pressure | : 1030 hPa |
| Memo              | :                    | Rate                 | : 1 Mbps   |



Trace: (Discrete)

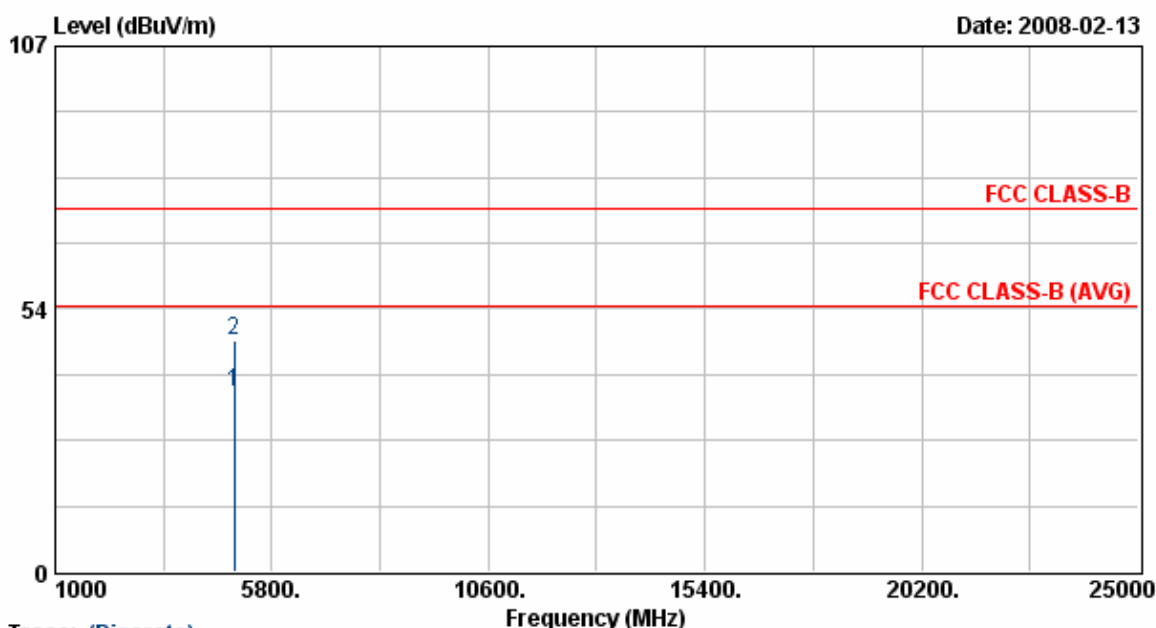
| Item | Freq    | Read Value | Factor | Result | Limit  | Margin | Remark  | Ant Pos | Tab Pos |
|------|---------|------------|--------|--------|--------|--------|---------|---------|---------|
|      | MHz     | dBuV/m     | dB     | dBuV/m | dBuV/m | dB     |         | cm      | Deg     |
| 1    | 4959.88 | 31.75      | 6.33   | 38.08  | 54.00  | -15.92 | Average | 100     | 194     |
| 2    | 4959.88 | 42.55      | 6.33   | 48.87  | 74.00  | -25.13 | Peak    | 100     | 194     |

Notes:

1. Result = Read Value + Factor
2. Factor = Antenna Factor + Cable Loss - Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 120KHz and video bandwidth is 300kHz for Peak detection and Quasi-peak detection at frequency below 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
5. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average detection at frequency above 1GHz.
6. The other emissions is too low to be measured.



|                   |                      |                      |              |
|-------------------|----------------------|----------------------|--------------|
| Power             | : AC 120V            | Pol/Phase            | : HORIZONTAL |
| Test Mode         | : Transmit / Receive | Temperature          | : 15 °C      |
| Operation Channel | : 78                 | Humidity             | : 70 %       |
| Modulation Type   | : GFSK               | Atmospheric Pressure | : 1030 hPa   |
| Memo              | :                    | Rate                 | : 1 Mbps     |



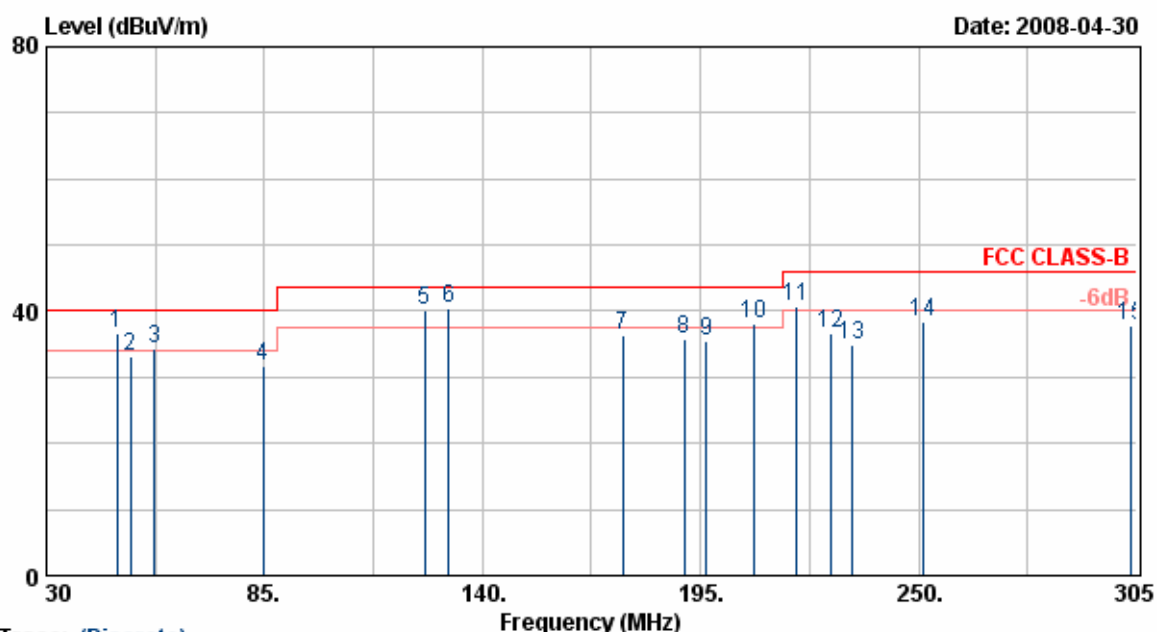
Trace: (Discrete)

| Item | Freq    | Read Value | Factor | Result | Limit  | Margin | Remark  | Ant Pos | Tab Pos |
|------|---------|------------|--------|--------|--------|--------|---------|---------|---------|
|      | MHz     | dBUV/m     | dB     | dBUV/m | dBUV/m | dB     |         | cm      | Deg     |
| 1    | 4960.13 | 30.26      | 6.33   | 36.59  | 54.00  | -17.41 | Average | 100     | 238     |
| 2    | 4960.13 | 40.59      | 6.33   | 46.91  | 74.00  | -27.09 | Peak    | 100     | 238     |

Notes:

1. Result = Read Value + Factor
2. Factor = Antenna Factor + Cable Loss - Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 120KHz and video bandwidth is 300kHz for Peak detection and Quasi-peak detection at frequency below 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
5. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average detection at frequency above 1GHz.
6. The other emissions is too low to be measured.

|                   |                      |                      |            |
|-------------------|----------------------|----------------------|------------|
| Power             | : AC 120V            | Pol/Phase            | : VERTICAL |
| Test Mode         | : Transmit / Receive | Temperature          | : 25 °C    |
| Operation Channel | : 0                  | Humidity             | : 70 %     |
| Modulation Type   | : $\pi/4$ -DQPSK     | Atmospheric Pressure | : 1030 hPa |
| Memo              | :                    | Rate                 | : 2 Mbps   |

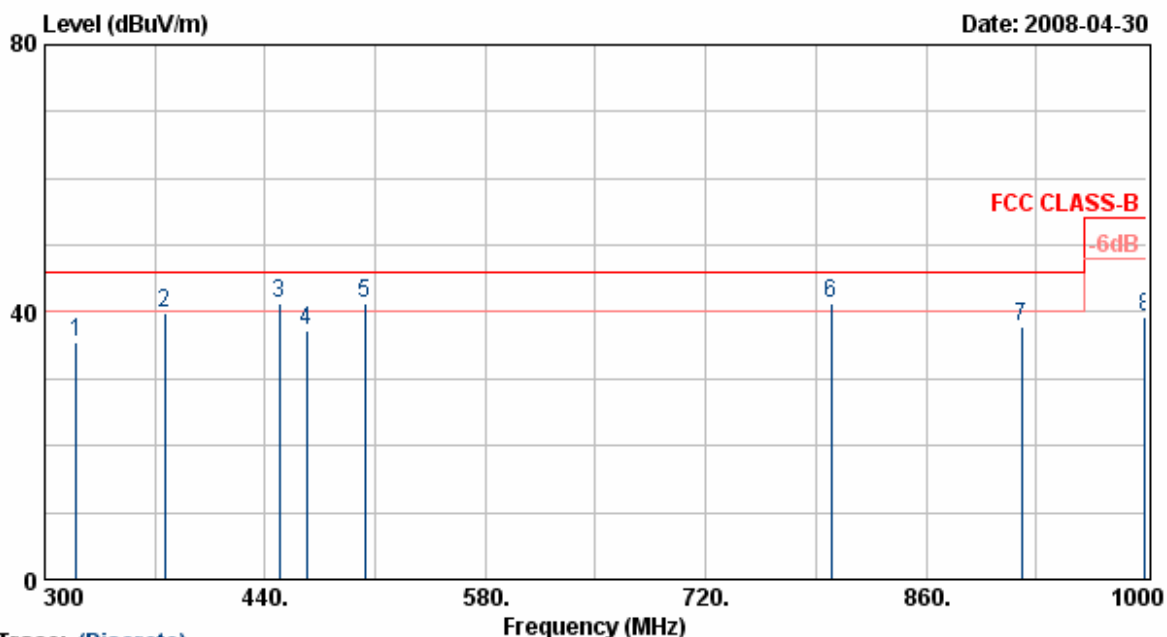


Trace: (Discrete)

| Item | Freq   | Read Value | Factor | Result | Limit  | Margin | Remark | Ant Pos | Tab Pos |
|------|--------|------------|--------|--------|--------|--------|--------|---------|---------|
|      | MHz    | dBuV/m     | dB     | dBuV/m | dBuV/m | dB     |        | cm      | Deg     |
| 1    | 47.80  | 55.53      | -19.01 | 36.52  | 40.00  | -3.48  | QP     | 100     | 96      |
| 2    | 51.20  | 53.76      | -20.62 | 33.14  | 40.00  | -6.86  | Peak   | 100     | 122     |
| 3    | 57.25  | 52.33      | -18.04 | 34.29  | 40.00  | -5.71  | QP     | 100     | 122     |
| 4    | 84.66  | 49.80      | -17.96 | 31.84  | 40.00  | -8.16  | Peak   | 100     | 122     |
| 5    | 125.43 | 51.55      | -11.45 | 40.10  | 43.50  | -3.40  | QP     | 100     | 88      |
| 6    | 131.50 | 53.52      | -13.04 | 40.48  | 43.50  | -3.02  | QP     | 100     | 88      |
| 7    | 175.30 | 51.52      | -15.01 | 36.51  | 43.50  | -6.99  | Peak   | 100     | 154     |
| 8    | 191.00 | 48.41      | -12.49 | 35.92  | 43.50  | -7.58  | Peak   | 100     | 154     |
| 9    | 196.53 | 48.43      | -12.95 | 35.48  | 43.50  | -8.02  | Peak   | 100     | 96      |
| 10   | 208.25 | 50.76      | -12.73 | 38.04  | 43.50  | -5.47  | QP     | 100     | 133     |
| 11   | 219.16 | 54.11      | -13.28 | 40.83  | 46.00  | -5.17  | QP     | 100     | 133     |
| 12   | 227.90 | 50.33      | -13.79 | 36.55  | 46.00  | -9.46  | Peak   | 100     | 222     |
| 13   | 233.20 | 47.18      | -12.29 | 34.89  | 46.00  | -11.11 | Peak   | 100     | 222     |
| 14   | 251.00 | 49.22      | -10.89 | 38.33  | 46.00  | -7.67  | Peak   | 100     | 222     |
| 15   | 303.35 | 50.22      | -12.54 | 37.68  | 46.00  | -8.32  | Peak   | 100     | 50      |

Remarks: 1. Result = Read Value + Factor  
 2. Factor = Antenna Factor + Cable Loss - Amplifier  
 3. According to technical experiences, all spurious emission of FM mode at channel 0,39,78 are almost the same below 1GHz, so that the channel 0 was chosen as representative in final test.  
 4. The data is worst case.

|                   |                      |                      |            |
|-------------------|----------------------|----------------------|------------|
| Power             | : AC 120V            | Pol/Phase            | : VERTICAL |
| Test Mode         | : Transmit / Receive | Temperature          | : 25 °C    |
| Operation Channel | : 0                  | Humidity             | : 70 %     |
| Modulation Type   | : $\pi/4$ -DQPSK     | Atmospheric Pressure | : 1030 hPa |
| Memo              | :                    | Rate                 | : 2 Mbps   |

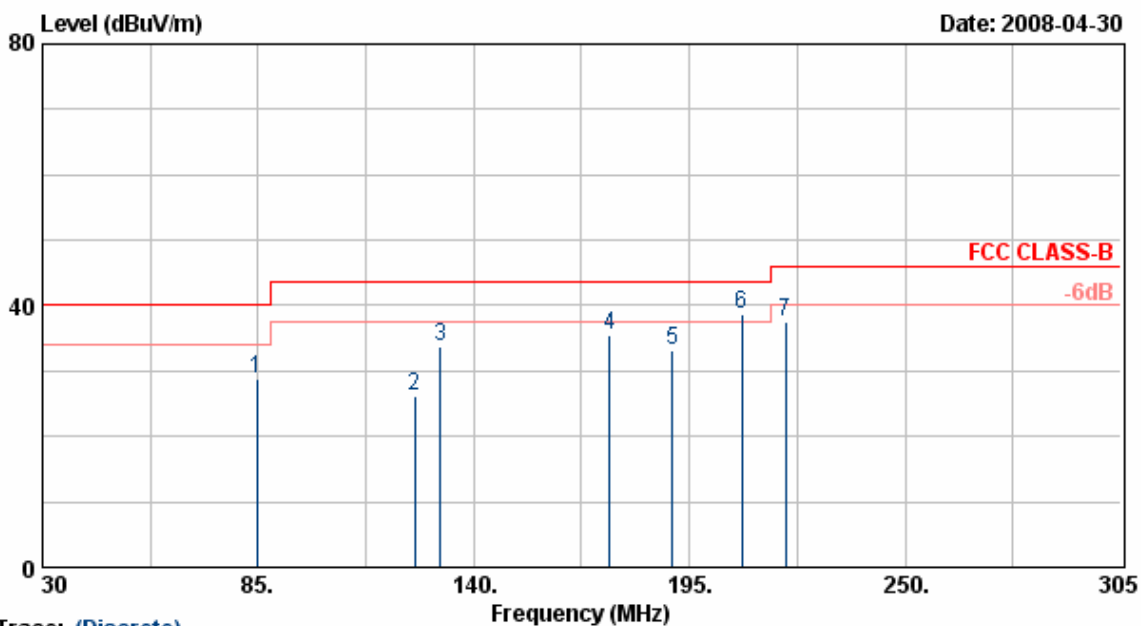


Trace: (Discrete)

| Item | Freq   | Read Value | Factor | Result | Limit  | Margin | Remark | Ant Pos | Tab Pos |
|------|--------|------------|--------|--------|--------|--------|--------|---------|---------|
|      | MHz    | dBuV/m     | dB     | dBuV/m | dBuV/m | dB     |        | cm      | Deg     |
| 1    | 320.30 | 48.41      | -12.88 | 35.53  | 46.00  | -10.47 | Peak   | 100     | 222     |
| 2    | 376.30 | 49.53      | -9.67  | 39.86  | 46.00  | -6.14  | Peak   | 100     | 222     |
| 3    | 448.80 | 51.21      | -9.78  | 41.43  | 46.00  | -4.57  | QP     | 100     | 188     |
| 4    | 466.10 | 43.33      | -6.19  | 37.14  | 46.00  | -8.86  | Peak   | 100     | 174     |
| 5    | 503.70 | 45.60      | -4.26  | 41.34  | 46.00  | -4.66  | QP     | 100     | 180     |
| 6    | 799.80 | 43.15      | -1.93  | 41.22  | 46.00  | -4.78  | QP     | 100     | 0       |
| 7    | 920.45 | 34.43      | 3.26   | 37.69  | 46.00  | -8.31  | Peak   | 100     | 0       |
| 8    | 999.30 | 37.90      | 1.41   | 39.31  | 54.00  | -14.69 | Peak   | 100     | 50      |

Remarks: 1. Result = Read Value + Factor  
 2. Factor = Antenna Factor + Cable Loss - Amplifier  
 3. According to technical experiences, all spurious emission of FM mode at channel 0,39,78 are almost the same below 1GHz, so that the channel 0 was chosen as representative in final test.  
 4. The data is worst case.

|                   |                      |                      |              |
|-------------------|----------------------|----------------------|--------------|
| Power             | : AC 120V            | Pol/Phase            | : HORIZONTAL |
| Test Mode         | : Transmit / Receive | Temperature          | : 25 °C      |
| Operation Channel | : 0                  | Humidity             | : 70 %       |
| Modulation Type   | : $\pi/4$ -DQPSK     | Atmospheric Pressure | : 1030 hPa   |
| Memo              | :                    | Rate                 | : 2 Mbps     |

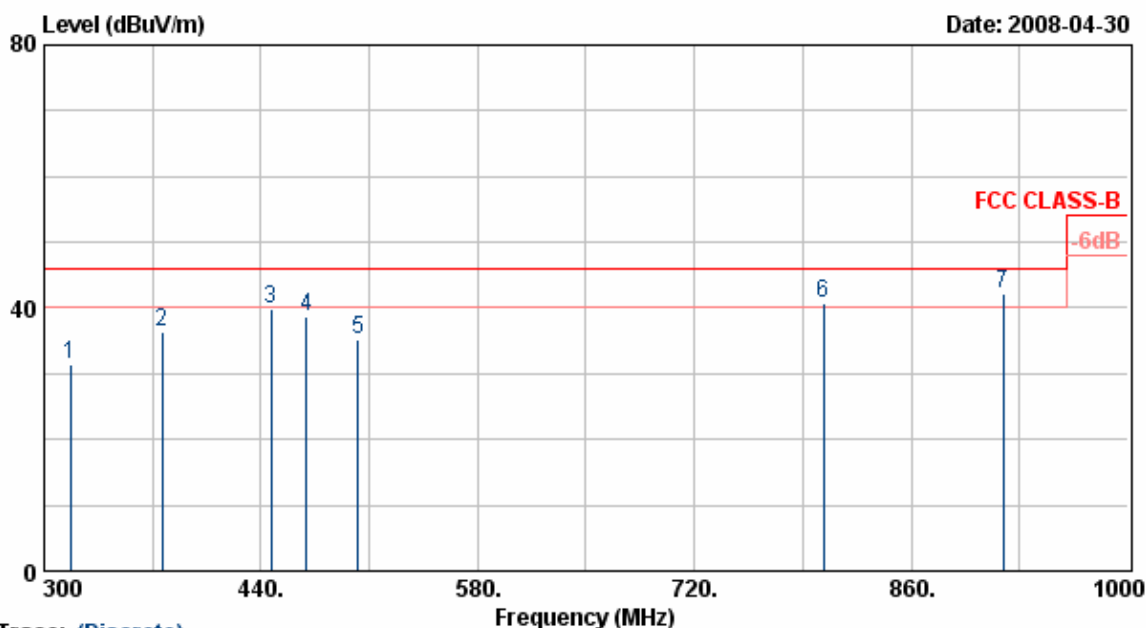


Trace: (Discrete)

| Item | Freq   | Read Value | Factor | Result | Limit  | Margin | Remark | Ant Pos | Tab Pos |
|------|--------|------------|--------|--------|--------|--------|--------|---------|---------|
|      | MHz    | dBuV/m     | dB     | dBuV/m | dBuV/m | dB     |        | cm      | Deg     |
| 1    | 84.76  | 52.63      | -23.79 | 28.84  | 40.00  | -11.16 | Peak   | 200     | 48      |
| 2    | 125.00 | 46.21      | -20.04 | 26.17  | 43.50  | -17.33 | Peak   | 200     | 89      |
| 3    | 131.46 | 53.50      | -19.87 | 33.63  | 43.50  | -9.87  | Peak   | 200     | 89      |
| 4    | 174.69 | 56.51      | -20.92 | 35.59  | 43.50  | -7.91  | Peak   | 200     | 111     |
| 5    | 190.78 | 54.15      | -20.87 | 33.28  | 43.50  | -10.22 | Peak   | 200     | 142     |
| 6    | 208.48 | 57.55      | -18.90 | 38.65  | 43.50  | -4.85  | QP     | 200     | 222     |
| 7    | 219.48 | 56.23      | -18.58 | 37.65  | 46.00  | -8.35  | Peak   | 200     | 222     |

Remarks: 1. Result = Read Value + Factor  
 2. Factor = Antenna Factor + Cable Loss - Amplifier  
 3. According to technical experiences, all spurious emission of FM mode at channel 0,39,78 are almost the same below 1GHz, so that the channel 0 was chosen as representative in final test.  
 4. The data is worst case.

|                   |                      |                      |              |
|-------------------|----------------------|----------------------|--------------|
| Power             | : AC 120V            | Pol/Phase            | : HORIZONTAL |
| Test Mode         | : Transmit / Receive | Temperature          | : 25 °C      |
| Operation Channel | : 0                  | Humidity             | : 70 %       |
| Modulation Type   | : $\pi/4$ -DQPSK     | Atmospheric Pressure | : 1030 hPa   |
| Memo              | :                    | Rate                 | : 2 Mbps     |

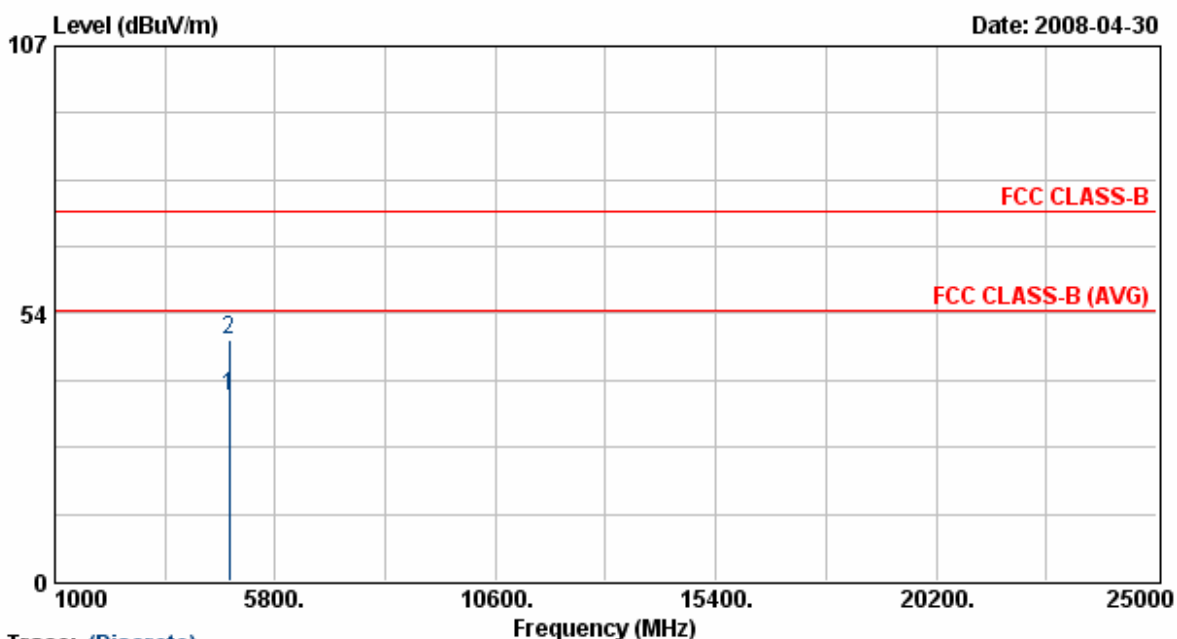


Trace: (Discrete)

| Item | Freq<br>MHz | Read<br>Value<br>dBuV/m | Factor<br>dB | Result<br>dBuV/m | Limit<br>dBuV/m | Margin<br>dB | Remark | Ant<br>Pos<br>cm | Tab<br>Pos<br>Deg |
|------|-------------|-------------------------|--------------|------------------|-----------------|--------------|--------|------------------|-------------------|
| 1    | 316.80      | 46.54                   | -15.02       | 31.52            | 46.00           | -14.48       | Peak   | 200              | 149               |
| 2    | 376.30      | 46.71                   | -10.46       | 36.25            | 46.00           | -9.75        | Peak   | 200              | 149               |
| 3    | 446.30      | 47.19                   | -7.46        | 39.73            | 46.00           | -6.27        | Peak   | 200              | 168               |
| 4    | 469.40      | 46.21                   | -7.56        | 38.65            | 46.00           | -7.35        | Peak   | 200              | 168               |
| 5    | 503.00      | 41.59                   | -6.28        | 35.31            | 46.00           | -10.69       | Peak   | 200              | 196               |
| 6    | 803.30      | 44.28                   | -3.62        | 40.66            | 46.00           | -5.34        | QP     | 200              | 255               |
| 7    | 919.60      | 39.40                   | 2.89         | 42.29            | 46.00           | -3.71        | QP     | 200              | 333               |

- Remarks:
1. Result = Read Value + Factor
  2. Factor = Antenna Factor + Cable Loss - Amplifier
  3. According to technical experiences, all spurious emission of FM mode at channel 0,39,78 are almost the same below 1GHz, so that the channel 0 was chosen as representative in final test.
  4. The data is worst case.

|                   |                      |                      |            |
|-------------------|----------------------|----------------------|------------|
| Power             | : AC 120V            | Pol/Phase            | : VERTICAL |
| Test Mode         | : Transmit / Receive | Temperature          | : 25 °C    |
| Operation Channel | : 0                  | Humidity             | : 70 %     |
| Modulation Type   | : $\pi/4$ -DQPSK     | Atmospheric Pressure | : 1030 hPa |
| Memo              | :                    | Rate                 | : 2 Mbps   |



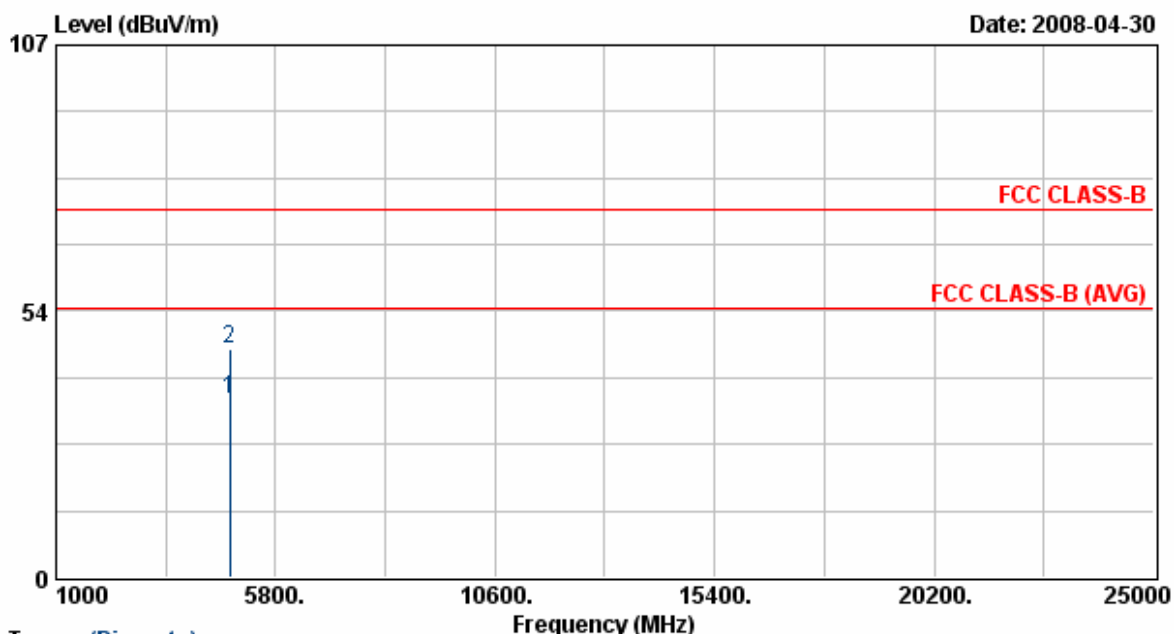
Trace: (Discrete)

| Item | Freq    | Read Value | Factor | Result | Limit  | Margin | Remark  | Ant Pos | Tab Pos |
|------|---------|------------|--------|--------|--------|--------|---------|---------|---------|
|      | MHz     | dBuV/m     | dB     | dBuV/m | dBuV/m | dB     |         | cm      | Deg     |
| 1    | 4804.00 | 31.32      | 5.62   | 36.94  | 54.00  | -17.06 | Average | 100     | 194     |
| 2    | 4804.00 | 42.50      | 5.62   | 48.12  | 74.00  | -25.88 | Peak    | 100     | 194     |

Notes:

1. Result = Read Value + Factor
2. Factor = Antenna Factor + Cable Loss - Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 120KHz and video bandwidth is 300kHz for Peak detection and Quasi-peak detection at frequency below 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
5. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average detection at frequency above 1GHz.
6. The other emissions is too low to be measured.

|                   |                      |                      |              |
|-------------------|----------------------|----------------------|--------------|
| Power             | : AC 120V            | Pol/Phase            | : HORIZONTAL |
| Test Mode         | : Transmit / Receive | Temperature          | : 25 °C      |
| Operation Channel | : 0                  | Humidity             | : 70 %       |
| Modulation Type   | : $\pi/4$ -DQPSK     | Atmospheric Pressure | : 1030 hPa   |
| Memo              | :                    | Rate                 | : 2 Mbps     |



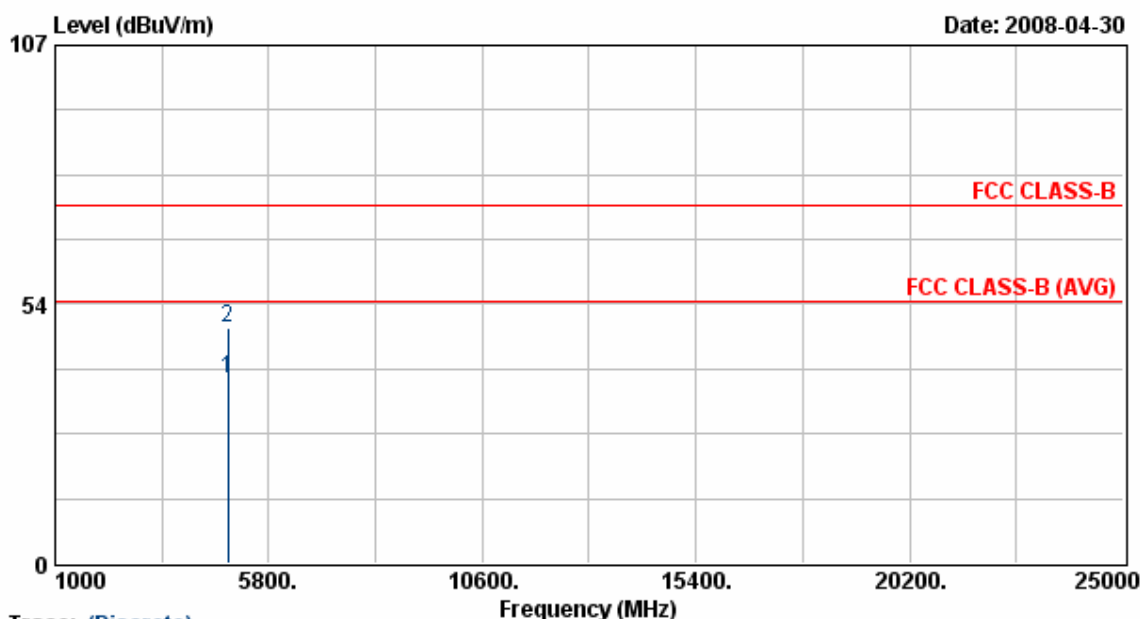
Trace: (Discrete)

| Item | Freq    | Read Value | Factor | Result | Limit  | Margin | Remark  | Ant Pos | Tab Pos |
|------|---------|------------|--------|--------|--------|--------|---------|---------|---------|
|      | MHz     | dBuV/m     | dB     | dBuV/m | dBuV/m | dB     |         | cm      | Deg     |
| 1    | 4804.00 | 30.12      | 5.62   | 35.74  | 54.00  | -18.26 | Average | 100     | 238     |
| 2    | 4804.00 | 40.42      | 5.62   | 46.04  | 74.00  | -27.96 | Peak    | 100     | 238     |

Notes:

1. Result = Read Value + Factor
2. Factor = Antenna Factor + Cable Loss - Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 120KHz and video bandwidth is 300kHz for Peak detection and Quasi-peak detection at frequency below 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
5. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average detection at frequency above 1GHz.
6. The other emissions is too low to be measured.

|                   |                      |                      |            |
|-------------------|----------------------|----------------------|------------|
| Power             | : AC 120V            | Pol/Phase            | : VERTICAL |
| Test Mode         | : Transmit / Receive | Temperature          | : 25 °C    |
| Operation Channel | : 39                 | Humidity             | : 70 %     |
| Modulation Type   | : $\pi/4$ -DQPSK     | Atmospheric Pressure | : 1030 hPa |
| Memo              | :                    | Rate                 | : 2 Mbps   |



Trace: (Discrete)

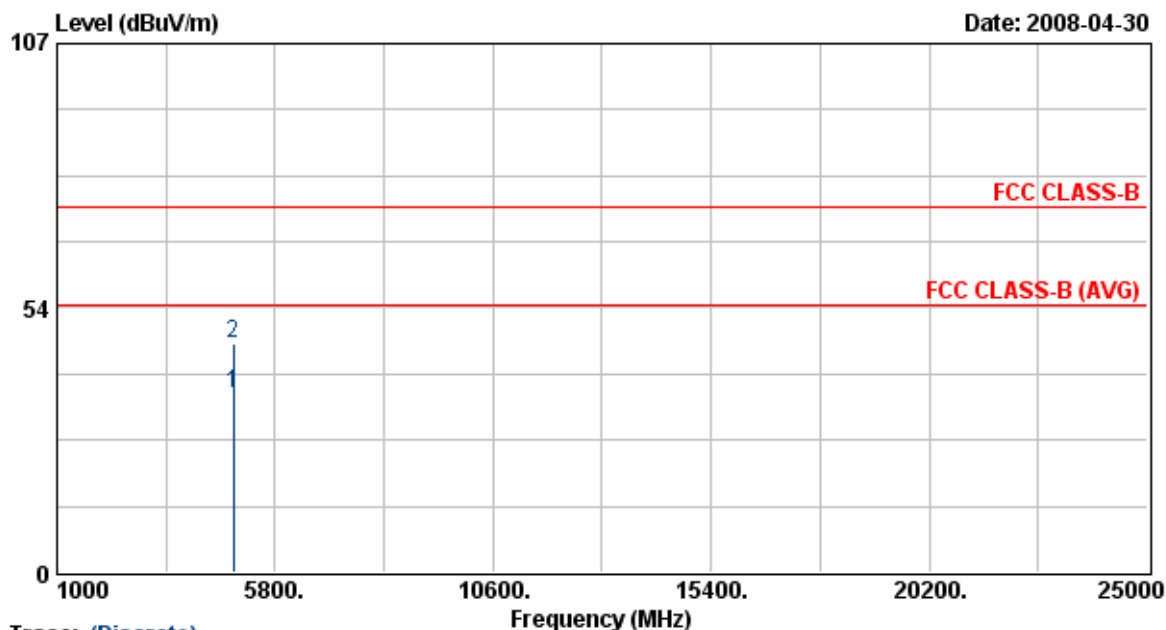
| Item | Freq    | Read Value | Factor | Result | Limit  | Margin | Remark  | Ant Pos | Tab Pos |
|------|---------|------------|--------|--------|--------|--------|---------|---------|---------|
|      | MHz     | dBuV/m     | dB     | dBuV/m | dBuV/m | dB     |         | cm      | Deg     |
| 1    | 4881.88 | 32.49      | 5.82   | 38.31  | 54.00  | -15.69 | Average | 100     | 194     |
| 2    | 4881.88 | 42.88      | 5.82   | 48.70  | 74.00  | -25.30 | Peak    | 100     | 194     |

Notes:

1. Result = Read Value + Factor
2. Factor = Antenna Factor + Cable Loss - Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 120KHz and video bandwidth is 300kHz for Peak detection and Quasi-peak detection at frequency below 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
5. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average detection at frequency above 1GHz.
6. The other emissions is too low to be measured.



|                   |                      |                      |              |
|-------------------|----------------------|----------------------|--------------|
| Power             | : AC 120V            | Pol/Phase            | : HORIZONTAL |
| Test Mode         | : Transmit / Receive | Temperature          | : 25 °C      |
| Operation Channel | : 39                 | Humidity             | : 70 %       |
| Modulation Type   | : $\pi/4$ -DQPSK     | Atmospheric Pressure | : 1030 hPa   |
| Memo              | :                    | Rate                 | : 2 Mbps     |



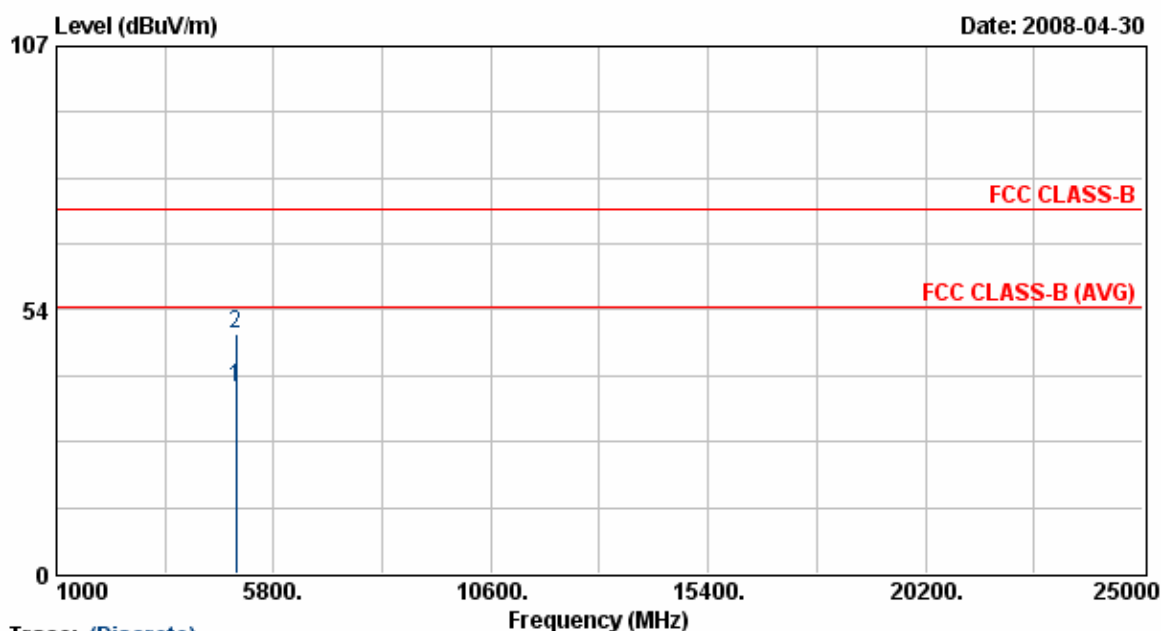
Trace: (Discrete)

| Item | Freq    | Read Value | Factor | Result | Limit  | Margin | Remark  | Ant Pos | Tab Pos |
|------|---------|------------|--------|--------|--------|--------|---------|---------|---------|
|      | MHz     | dBuV/m     | dB     | dBuV/m | dBuV/m | dB     |         | cm      | Deg     |
| 1    | 4882.00 | 30.26      | 5.82   | 36.08  | 54.00  | -17.92 | Average | 100     | 238     |
| 2    | 4882.00 | 40.58      | 5.82   | 46.40  | 74.00  | -27.60 | Peak    | 100     | 238     |

Notes:

1. Result = Read Value + Factor
2. Factor = Antenna Factor + Cable Loss - Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 120KHz and video bandwidth is 300kHz for Peak detection and Quasi-peak detection at frequency below 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
5. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average detection at frequency above 1GHz.
6. The other emissions is too low to be measured.

|                   |                      |                      |            |
|-------------------|----------------------|----------------------|------------|
| Power             | : AC 120V            | Pol/Phase            | : VERTICAL |
| Test Mode         | : Transmit / Receive | Temperature          | : 25 °C    |
| Operation Channel | : 78                 | Humidity             | : 70 %     |
| Modulation Type   | : $\pi/4$ -DQPSK     | Atmospheric Pressure | : 1030 hPa |
| Memo              | :                    | Rate                 | : 2 Mbps   |



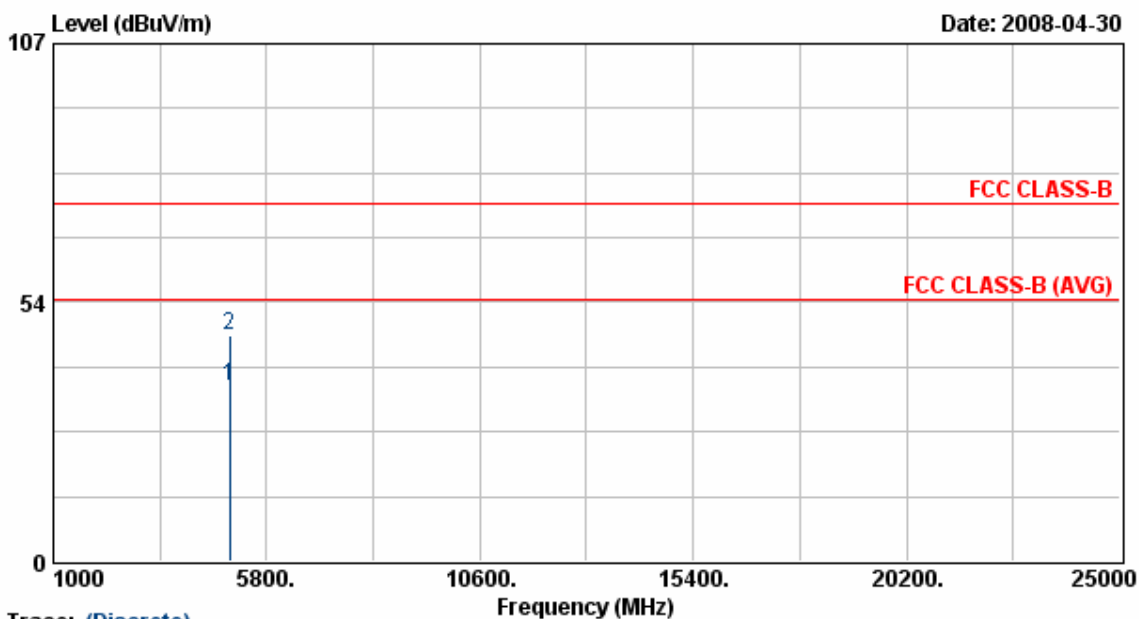
Trace: (Discrete)

| Item | Freq    | Read Value | Factor | Result | Limit  | Margin | Remark  | Ant Pos | Tab Pos |
|------|---------|------------|--------|--------|--------|--------|---------|---------|---------|
|      | MHz     | dBuV/m     | dB     | dBuV/m | dBuV/m | dB     |         | cm      | Deg     |
| 1    | 4959.88 | 31.75      | 6.03   | 37.78  | 54.00  | -16.22 | Average | 100     | 194     |
| 2    | 4959.88 | 42.55      | 6.03   | 48.57  | 74.00  | -25.43 | Peak    | 100     | 194     |

Notes:

1. Result = Read Value + Factor
2. Factor = Antenna Factor + Cable Loss - Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 120KHz and video bandwidth is 300kHz for Peak detection and Quasi-peak detection at frequency below 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
5. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average detection at frequency above 1GHz.
6. The other emissions is too low to be measured.

|                   |                      |                      |              |
|-------------------|----------------------|----------------------|--------------|
| Power             | : AC 120V            | Pol/Phase            | : HORIZONTAL |
| Test Mode         | : Transmit / Receive | Temperature          | : 25 °C      |
| Operation Channel | : 78                 | Humidity             | : 70 %       |
| Modulation Type   | : $\pi/4$ -DQPSK     | Atmospheric Pressure | : 1030 hPa   |
| Memo              | :                    | Rate                 | : 2 Mbps     |



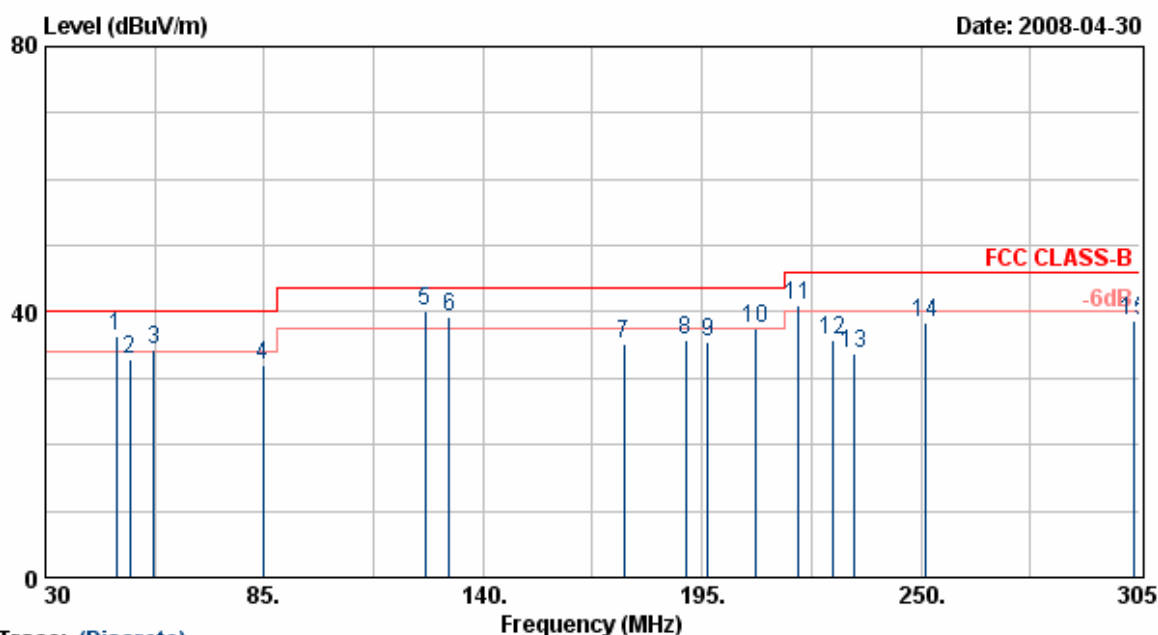
Trace: (Discrete)

| Item | Freq    | Read Value | Factor | Result | Limit  | Margin | Remark  | Ant Pos | Tab Pos |
|------|---------|------------|--------|--------|--------|--------|---------|---------|---------|
|      | MHz     | dBuV/m     | dB     | dBuV/m | dBuV/m | dB     |         | cm      | Deg     |
| 1    | 4960.13 | 30.26      | 6.03   | 36.29  | 54.00  | -17.71 | Average | 100     | 238     |
| 2    | 4960.13 | 40.59      | 6.03   | 46.61  | 74.00  | -27.39 | Peak    | 100     | 238     |

Notes:

1. Result = Read Value + Factor
2. Factor = Antenna Factor + Cable Loss - Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 120KHz and video bandwidth is 300kHz for Peak detection and Quasi-peak detection at frequency below 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
5. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average detection at frequency above 1GHz.
6. The other emissions is too low to be measured.

|                   |                      |                      |            |
|-------------------|----------------------|----------------------|------------|
| Power             | : AC 120V            | Pol/Phase            | : VERTICAL |
| Test Mode         | : Transmit / Receive | Temperature          | : 25 °C    |
| Operation Channel | : 0                  | Humidity             | : 70 %     |
| Modulation Type   | : 8DPSK              | Atmospheric Pressure | : 1030 hPa |
| Memo              | :                    | Rate                 | : 3 Mbps   |

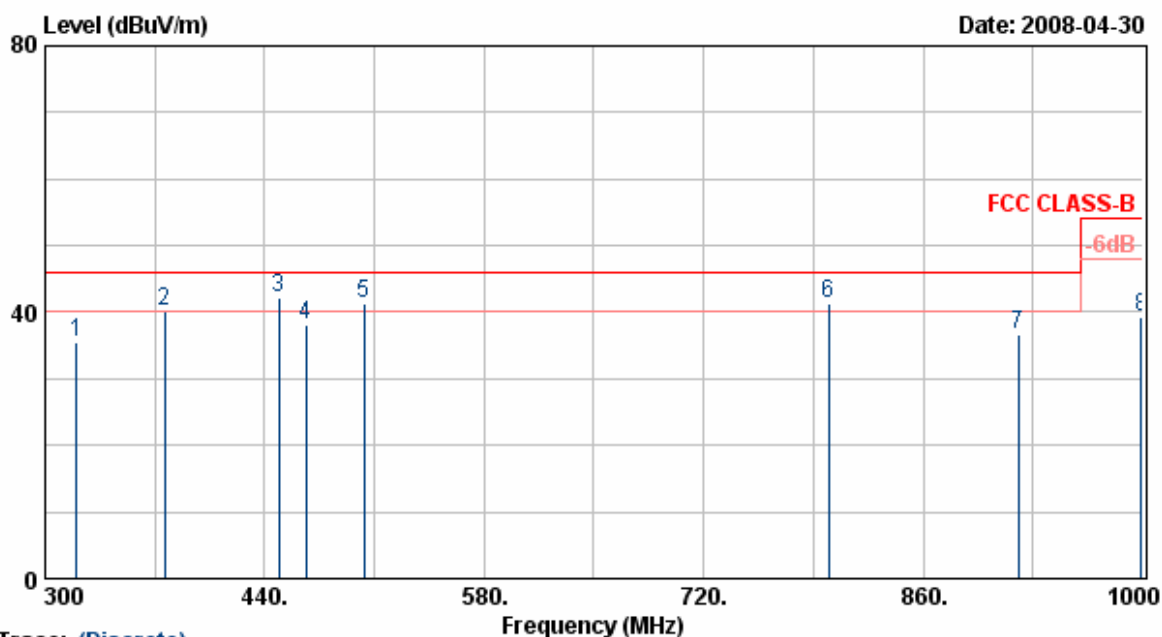


Trace: (Discrete)

| Item | Freq   | Read Value | Factor | Result | Limit  | Margin | Remark | Ant Pos | Tab Pos |
|------|--------|------------|--------|--------|--------|--------|--------|---------|---------|
|      | MHz    | dBuV/m     | dB     | dBuV/m | dBuV/m | dB     |        | cm      | Deg     |
| 1    | 47.80  | 55.44      | -19.01 | 36.43  | 40.00  | -3.57  | QP     | 100     | 96      |
| 2    | 51.20  | 53.36      | -20.62 | 32.74  | 40.00  | -7.26  | Peak   | 100     | 122     |
| 3    | 57.25  | 52.46      | -18.04 | 34.42  | 40.00  | -5.58  | QP     | 100     | 122     |
| 4    | 84.66  | 49.89      | -17.96 | 31.93  | 40.00  | -8.07  | Peak   | 100     | 122     |
| 5    | 125.43 | 51.48      | -11.45 | 40.03  | 43.50  | -3.47  | QP     | 100     | 88      |
| 6    | 131.50 | 52.23      | -13.04 | 39.19  | 43.50  | -4.31  | QP     | 100     | 88      |
| 7    | 175.30 | 50.25      | -15.01 | 35.24  | 43.50  | -8.26  | Peak   | 100     | 154     |
| 8    | 191.00 | 48.41      | -12.49 | 35.92  | 43.50  | -7.58  | Peak   | 100     | 154     |
| 9    | 196.53 | 48.40      | -12.95 | 35.45  | 43.50  | -8.05  | Peak   | 100     | 96      |
| 10   | 208.25 | 50.22      | -12.73 | 37.50  | 43.50  | -6.01  | QP     | 100     | 133     |
| 11   | 219.16 | 54.36      | -13.28 | 41.08  | 46.00  | -4.92  | QP     | 100     | 133     |
| 12   | 227.90 | 49.55      | -13.79 | 35.77  | 46.00  | -10.24 | Peak   | 100     | 222     |
| 13   | 233.20 | 46.13      | -12.29 | 33.84  | 46.00  | -12.16 | Peak   | 100     | 222     |
| 14   | 251.00 | 49.22      | -10.89 | 38.33  | 46.00  | -7.67  | Peak   | 100     | 222     |
| 15   | 303.35 | 51.22      | -12.54 | 38.68  | 46.00  | -7.32  | Peak   | 100     | 50      |

Remarks: 1. Result = Read Value + Factor  
 2. Factor = Antenna Factor + Cable Loss - Amplifier  
 3. According to technical experiences, all spurious emission of FM mode at channel 0,39,78 are almost the same below 1GHz, so that the channel 0 was chosen as representative in final test.  
 4. The data is worst case.

|                   |                      |                      |            |
|-------------------|----------------------|----------------------|------------|
| Power             | : AC 120V            | Pol/Phase            | : VERTICAL |
| Test Mode         | : Transmit / Receive | Temperature          | : 25 °C    |
| Operation Channel | : 0                  | Humidity             | : 70 %     |
| Modulation Type   | : 8DPSK              | Atmospheric Pressure | : 1030 hPa |
| Memo              | :                    | Rate                 | : 3 Mbps   |

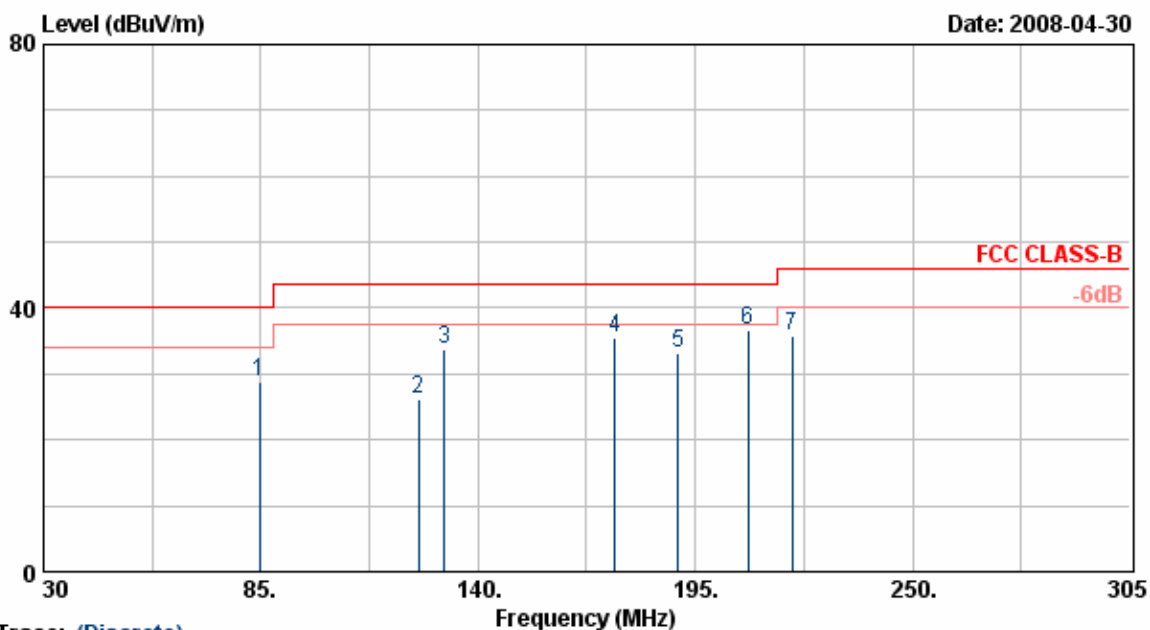


Trace: (Discrete)

| Item | Freq   | Read Value | Factor | Result | Limit  | Margin | Remark | Ant Pos | Tab Pos |
|------|--------|------------|--------|--------|--------|--------|--------|---------|---------|
|      | MHz    | dBuV/m     | dB     | dBuV/m | dBuV/m | dB     |        | cm      | Deg     |
| 1    | 320.30 | 48.39      | -12.88 | 35.51  | 46.00  | -10.49 | Peak   | 100     | 222     |
| 2    | 376.30 | 49.84      | -9.67  | 40.17  | 46.00  | -5.83  | Peak   | 100     | 222     |
| 3    | 448.80 | 52.06      | -9.78  | 42.28  | 46.00  | -3.72  | QP     | 100     | 188     |
| 4    | 466.10 | 44.22      | -6.19  | 38.03  | 46.00  | -7.97  | Peak   | 100     | 174     |
| 5    | 503.70 | 45.60      | -4.26  | 41.34  | 46.00  | -4.66  | QP     | 100     | 180     |
| 6    | 799.80 | 43.15      | -1.93  | 41.22  | 46.00  | -4.78  | QP     | 100     | 0       |
| 7    | 920.45 | 33.43      | 3.26   | 36.69  | 46.00  | -9.31  | Peak   | 100     | 0       |
| 8    | 999.30 | 37.90      | 1.41   | 39.31  | 54.00  | -14.69 | Peak   | 100     | 50      |

Remarks: 1. Result = Read Value + Factor  
 2. Factor = Antenna Factor + Cable Loss - Amplifier  
 3. According to technical experiences, all spurious emission of FM mode at channel 0,39,78 are almost the same below 1GHz, so that the channel 0 was chosen as representative in final test.  
 4. The data is worst case.

|                   |                      |                      |              |
|-------------------|----------------------|----------------------|--------------|
| Power             | : AC 120V            | Pol/Phase            | : HORIZONTAL |
| Test Mode         | : Transmit / Receive | Temperature          | : 25 °C      |
| Operation Channel | : 0                  | Humidity             | : 70 %       |
| Modulation Type   | : 8DPSK              | Atmospheric Pressure | : 1030 hPa   |
| Memo              | :                    | Rate                 | : 3 Mbps     |



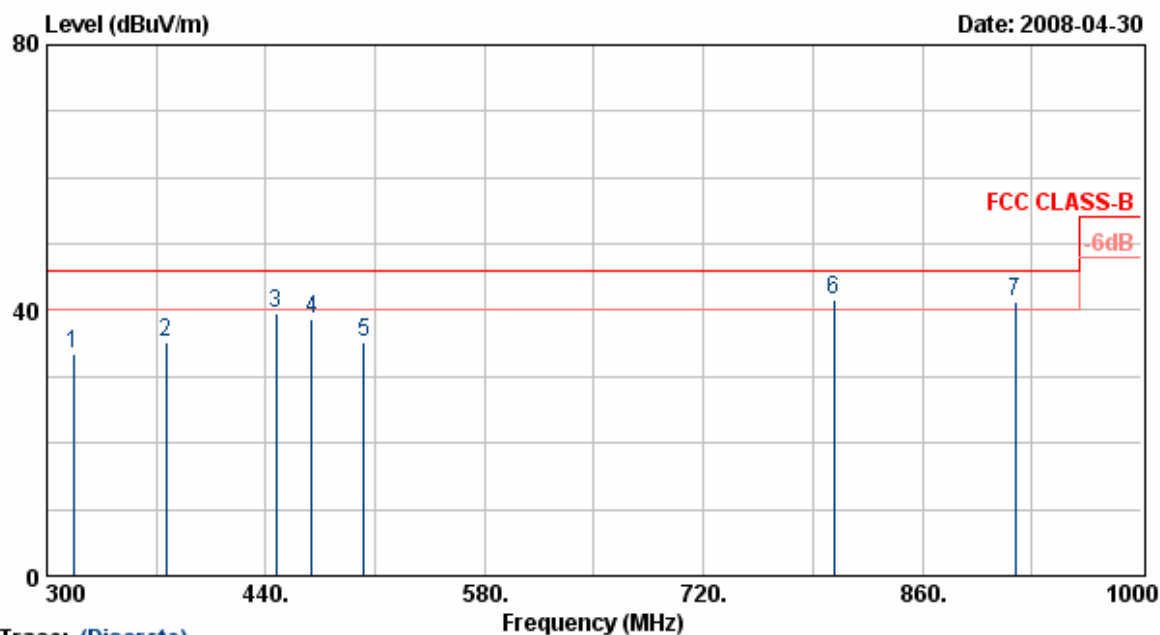
Trace: (Discrete)

| Item | Freq   | Read Value | Factor | Result | Limit  | Margin | Remark | Ant Pos | Tab Pos |
|------|--------|------------|--------|--------|--------|--------|--------|---------|---------|
|      | MHz    | dBuV/m     | dB     | dBuV/m | dBuV/m | dB     |        | cm      | Deg     |
| 1    | 84.76  | 52.62      | -23.79 | 28.83  | 40.00  | -11.17 | Peak   | 200     | 48      |
| 2    | 125.00 | 46.18      | -20.04 | 26.14  | 43.50  | -17.36 | Peak   | 200     | 89      |
| 3    | 131.46 | 53.50      | -19.87 | 33.63  | 43.50  | -9.87  | Peak   | 200     | 89      |
| 4    | 174.69 | 56.51      | -20.92 | 35.59  | 43.50  | -7.91  | Peak   | 200     | 111     |
| 5    | 190.78 | 54.15      | -20.87 | 33.28  | 43.50  | -10.22 | Peak   | 200     | 142     |
| 6    | 208.48 | 55.55      | -18.90 | 36.65  | 43.50  | -6.85  | QP     | 200     | 222     |
| 7    | 219.48 | 54.23      | -18.58 | 35.65  | 46.00  | -10.35 | Peak   | 200     | 222     |

Remarks:

1. Result = Read Value + Factor
2. Factor = Antenna Factor + Cable Loss - Amplifier
3. According to technical experiences, all spurious emission of FM mode at channel 0,39,78 are almost the same below 1GHz, so that the channel 0 was chosen as representative in final test.
4. The data is worst case.

|                   |                      |                      |              |
|-------------------|----------------------|----------------------|--------------|
| Power             | : AC 120V            | Pol/Phase            | : HORIZONTAL |
| Test Mode         | : Transmit / Receive | Temperature          | : 25 °C      |
| Operation Channel | : 0                  | Humidity             | : 70 %       |
| Modulation Type   | : 8DPSK              | Atmospheric Pressure | : 1030 hPa   |
| Memo              | :                    | Rate                 | : 3 Mbps     |

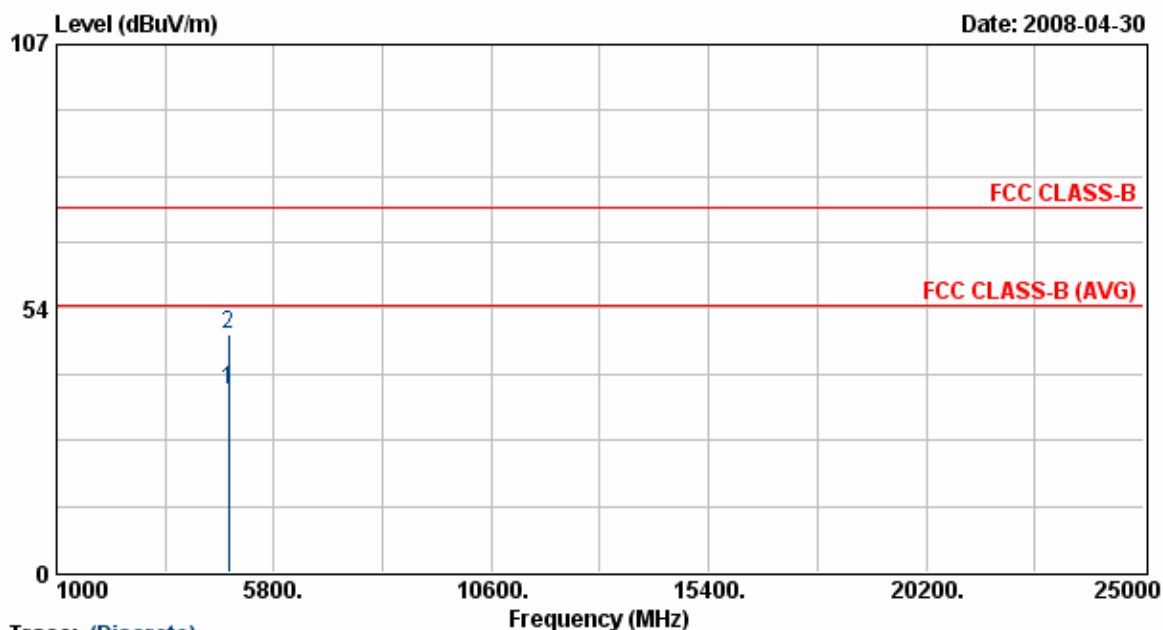


Trace: (Discrete)

| Item | Freq   | Read Value | Factor | Result | Limit  | Margin | Remark | Ant Pos | Tab Pos |
|------|--------|------------|--------|--------|--------|--------|--------|---------|---------|
|      | MHz    | dBuV/m     | dB     | dBuV/m | dBuV/m | dB     |        | cm      | Deg     |
| 1    | 316.80 | 48.54      | -15.02 | 33.52  | 46.00  | -12.48 | Peak   | 200     | 149     |
| 2    | 376.30 | 45.70      | -10.46 | 35.24  | 46.00  | -10.76 | Peak   | 200     | 149     |
| 3    | 446.30 | 47.11      | -7.46  | 39.65  | 46.00  | -6.35  | Peak   | 200     | 168     |
| 4    | 469.40 | 46.21      | -7.56  | 38.65  | 46.00  | -7.35  | Peak   | 200     | 168     |
| 5    | 503.00 | 41.59      | -6.28  | 35.31  | 46.00  | -10.69 | Peak   | 200     | 196     |
| 6    | 803.30 | 45.36      | -3.62  | 41.74  | 46.00  | -4.26  | QP     | 200     | 255     |
| 7    | 919.60 | 38.45      | 2.89   | 41.34  | 46.00  | -4.66  | QP     | 200     | 333     |

- Remarks:
1. Result = Read Value + Factor
  2. Factor = Antenna Factor + Cable Loss - Amplifier
  3. According to technical experiences, all spurious emission of FM mode at channel 0,39,78 are almost the same below 1GHz, so that the channel 0 was chosen as representative in final test.
  4. The data is worst case.

|                   |                      |                      |            |
|-------------------|----------------------|----------------------|------------|
| Power             | : AC 120V            | Pol/Phase            | : VERTICAL |
| Test Mode         | : Transmit / Receive | Temperature          | : 25 °C    |
| Operation Channel | : 0                  | Humidity             | : 70 %     |
| Modulation Type   | : 8DPSK              | Atmospheric Pressure | : 1030 hPa |
| Memo              | :                    | Rate                 | : 3 Mbps   |



Trace: (Discrete)

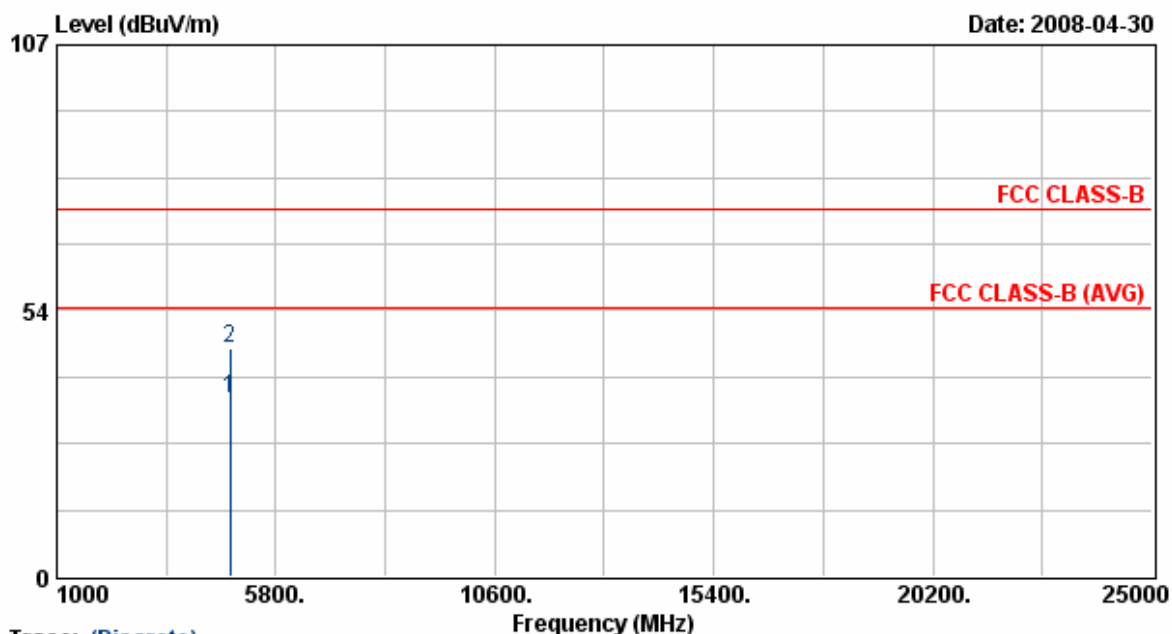
| Item | Freq    | Read Value | Factor | Result | Limit  | Margin | Remark  | Ant Pos | Tab Pos |
|------|---------|------------|--------|--------|--------|--------|---------|---------|---------|
|      | MHz     | dBuV/m     | dB     | dBuV/m | dBuV/m | dB     |         | cm      | Deg     |
| 1    | 4804.00 | 31.32      | 5.62   | 36.94  | 54.00  | -17.06 | Average | 100     | 194     |
| 2    | 4804.00 | 42.50      | 5.62   | 48.12  | 74.00  | -25.88 | Peak    | 100     | 194     |

Notes:

1. Result = Read Value + Factor
2. Factor = Antenna Factor + Cable Loss - Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 120KHz and video bandwidth is 300kHz for Peak detection and Quasi-peak detection at frequency below 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
5. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average detection at frequency above 1GHz.
6. The other emissions is too low to be measured.



|                   |                      |                      |              |
|-------------------|----------------------|----------------------|--------------|
| Power             | : AC 120V            | Pol/Phase            | : HORIZONTAL |
| Test Mode         | : Transmit / Receive | Temperature          | : 25 °C      |
| Operation Channel | : 0                  | Humidity             | : 70 %       |
| Modulation Type   | : 8DPSK              | Atmospheric Pressure | : 1030 hPa   |
| Memo              | :                    | Rate                 | : 3 Mbps     |



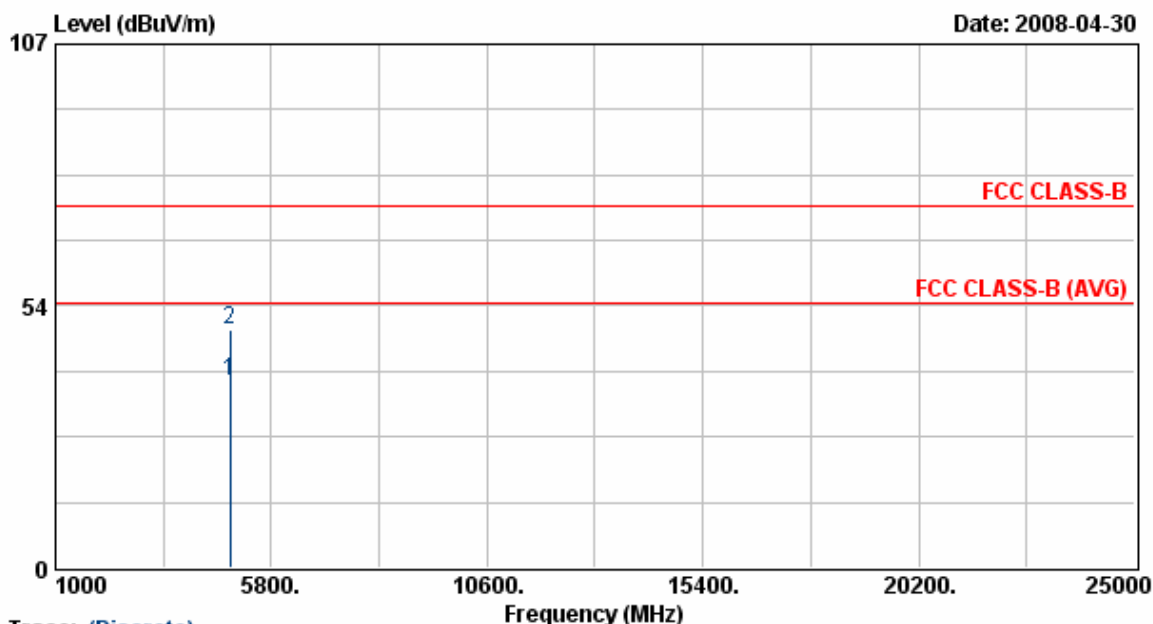
Trace: (Discrete)

| Item | Freq    | Read Value | Factor | Result | Limit  | Margin | Remark  | Ant Pos | Tab Pos |
|------|---------|------------|--------|--------|--------|--------|---------|---------|---------|
|      | MHz     | dBuV/m     | dB     | dBuV/m | dBuV/m | dB     |         | cm      | Deg     |
| 1    | 4804.00 | 30.12      | 5.62   | 35.74  | 54.00  | -18.26 | Average | 100     | 238     |
| 2    | 4804.00 | 40.42      | 5.62   | 46.04  | 74.00  | -27.96 | Peak    | 100     | 238     |

Notes:

1. Result = Read Value + Factor
2. Factor = Antenna Factor + Cable Loss - Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 120KHz and video bandwidth is 300kHz for Peak detection and Quasi-peak detection at frequency below 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
5. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average detection at frequency above 1GHz.
6. The other emissions is too low to be measured.

|                   |                      |                      |            |
|-------------------|----------------------|----------------------|------------|
| Power             | : AC 120V            | Pol/Phase            | : VERTICAL |
| Test Mode         | : Transmit / Receive | Temperature          | : 25 °C    |
| Operation Channel | : 39                 | Humidity             | : 70 %     |
| Modulation Type   | : 8DPSK              | Atmospheric Pressure | : 1030 hPa |
| Memo              | :                    | Rate                 | : 3 Mbps   |



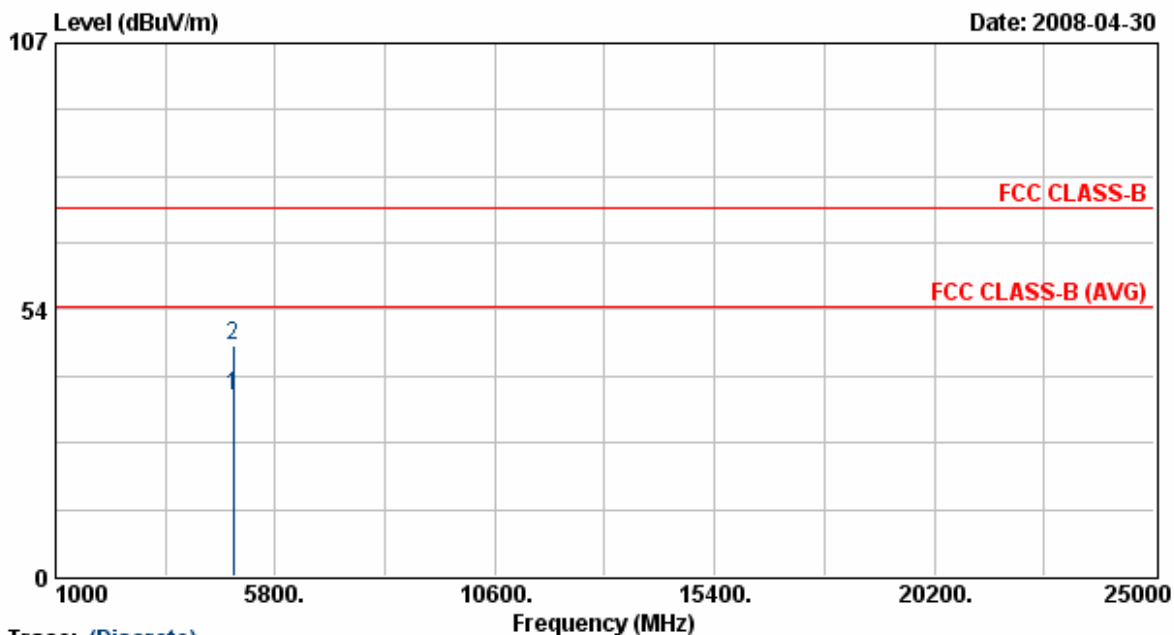
Trace: (Discrete)

| Item | Freq    | Read Value | Factor | Result | Limit  | Margin | Remark  | Ant Pos | Tab Pos |
|------|---------|------------|--------|--------|--------|--------|---------|---------|---------|
|      | MHz     | dBuV/m     | dB     | dBuV/m | dBuV/m | dB     |         | cm      | Deg     |
| 1    | 4881.88 | 32.49      | 5.82   | 38.31  | 54.00  | -15.69 | Average | 100     | 194     |
| 2    | 4881.88 | 42.88      | 5.82   | 48.70  | 74.00  | -25.30 | Peak    | 100     | 194     |

Notes:

1. Result = Read Value + Factor
2. Factor = Antenna Factor + Cable Loss - Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 120KHz and video bandwidth is 300kHz for Peak detection and Quasi-peak detection at frequency below 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
5. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average detection at frequency above 1GHz.
6. The other emissions is too low to be measured.

|                   |                      |                      |              |
|-------------------|----------------------|----------------------|--------------|
| Power             | : AC 120V            | Pol/Phase            | : HORIZONTAL |
| Test Mode         | : Transmit / Receive | Temperature          | : 25 °C      |
| Operation Channel | : 39                 | Humidity             | : 70 %       |
| Modulation Type   | : 8DPSK              | Atmospheric Pressure | : 1030 hPa   |
| Memo              | :                    | Rate                 | : 3 Mbps     |



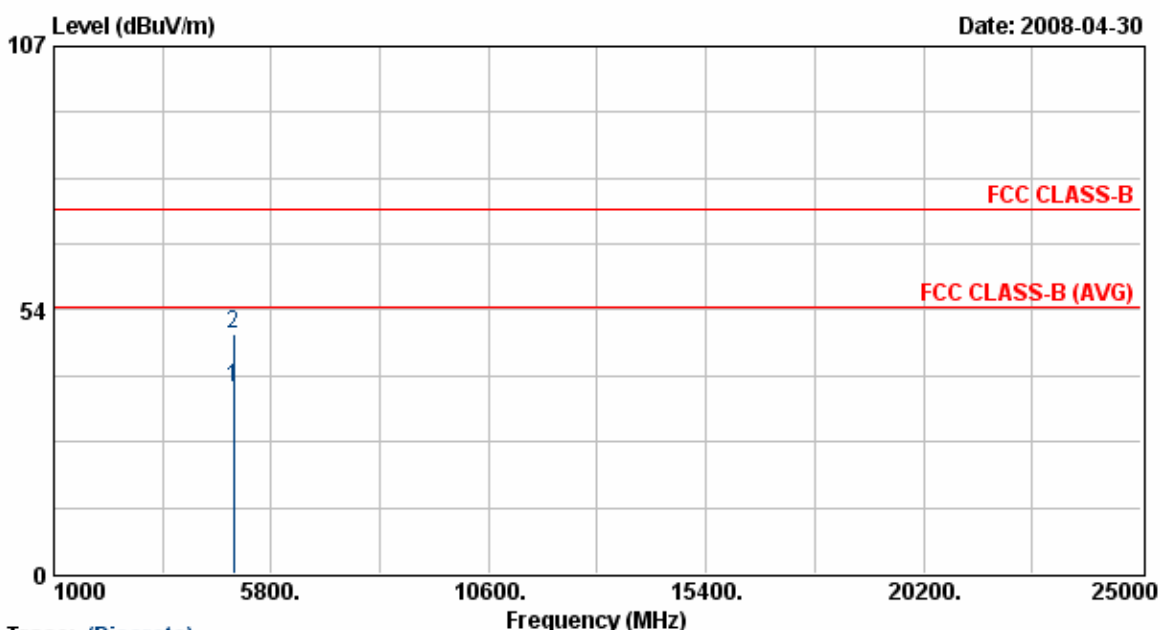
Trace: (Discrete)

| Item | Freq    | Read Value | Factor | Result | Limit  | Margin | Remark  | Ant Pos | Tab Pos |
|------|---------|------------|--------|--------|--------|--------|---------|---------|---------|
|      | MHz     | dBuV/m     | dB     | dBuV/m | dBuV/m | dB     |         | cm      | Deg     |
| 1    | 4882.00 | 30.26      | 5.82   | 36.08  | 54.00  | -17.92 | Average | 100     | 238     |
| 2    | 4882.00 | 40.58      | 5.82   | 46.40  | 74.00  | -27.60 | Peak    | 100     | 238     |

Notes:

1. Result = Read Value + Factor
2. Factor = Antenna Factor + Cable Loss - Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 120KHz and video bandwidth is 300kHz for Peak detection and Quasi-peak detection at frequency below 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
5. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average detection at frequency above 1GHz.
6. The other emissions is too low to be measured.

|                   |                      |                      |            |
|-------------------|----------------------|----------------------|------------|
| Power             | : AC 120V            | Pol/Phase            | : VERTICAL |
| Test Mode         | : Transmit / Receive | Temperature          | : 25 °C    |
| Operation Channel | : 78                 | Humidity             | : 70 %     |
| Modulation Type   | : 8DPSK              | Atmospheric Pressure | : 1030 hPa |
| Memo              | :                    | Rate                 | : 3 Mbps   |



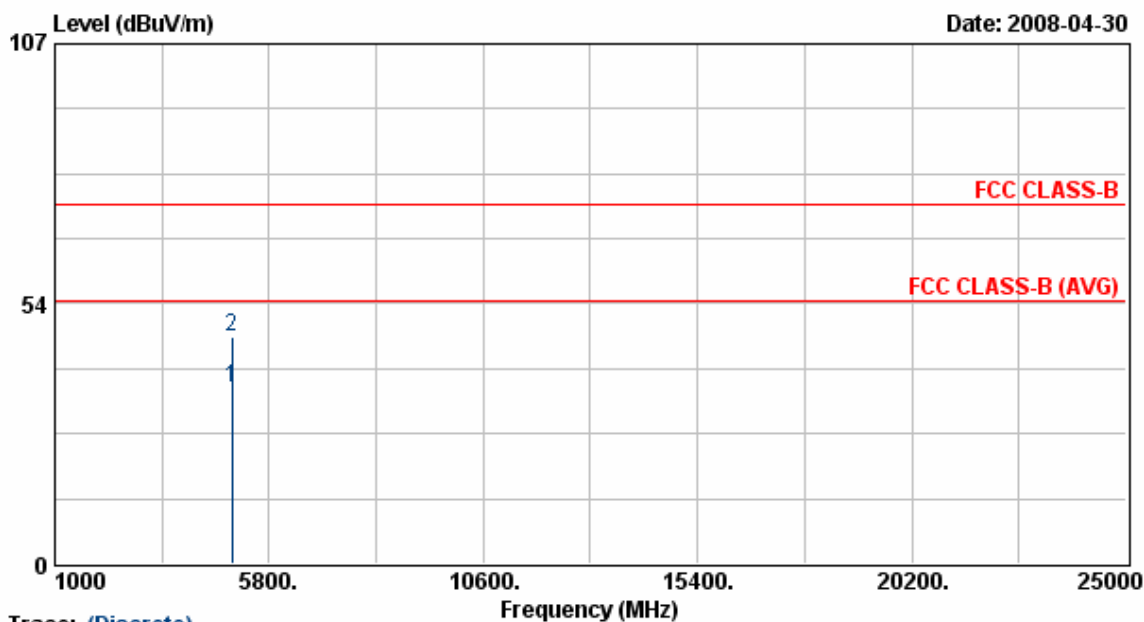
Trace: (Discrete)

| Item | Freq    | Read Value | Factor | Result | Limit  | Margin | Remark  | Ant Pos | Tab Pos |
|------|---------|------------|--------|--------|--------|--------|---------|---------|---------|
|      | MHz     | dBuV/m     | dB     | dBuV/m | dBuV/m | dB     |         | cm      | Deg     |
| 1    | 4959.88 | 31.75      | 6.03   | 37.78  | 54.00  | -16.22 | Average | 100     | 194     |
| 2    | 4959.88 | 42.55      | 6.03   | 48.57  | 74.00  | -25.43 | Peak    | 100     | 194     |

Notes:

1. Result = Read Value + Factor
2. Factor = Antenna Factor + Cable Loss - Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 120KHz and video bandwidth is 300kHz for Peak detection and Quasi-peak detection at frequency below 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
5. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average detection at frequency above 1GHz.
6. The other emissions is too low to be measured.

|                   |                      |                      |              |
|-------------------|----------------------|----------------------|--------------|
| Power             | : AC 120V            | Pol/Phase            | : HORIZONTAL |
| Test Mode         | : Transmit / Receive | Temperature          | : 25 °C      |
| Operation Channel | : 78                 | Humidity             | : 70 %       |
| Modulation Type   | : 8DPSK              | Atmospheric Pressure | : 1030 hPa   |
| Memo              | :                    | Rate                 | : 3 Mbps     |



Trace: (Discrete)

| Item | Freq<br>MHz | Read<br>Value<br>dBuV/m | Factor<br>dB | Result<br>dBuV/m | Limit<br>dBuV/m | Margin<br>dB | Remark  | Ant<br>Pos<br>cm | Tab<br>Pos<br>Deg |
|------|-------------|-------------------------|--------------|------------------|-----------------|--------------|---------|------------------|-------------------|
| 1    | 4960.13     | 30.26                   | 6.03         | 36.29            | 54.00           | -17.71       | Average | 100              | 238               |
| 2    | 4960.13     | 40.59                   | 6.03         | 46.61            | 74.00           | -27.39       | Peak    | 100              | 238               |

Notes:

1. Result = Read Value + Factor
2. Factor = Antenna Factor + Cable Loss - Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 120KHz and video bandwidth is 300kHz for Peak detection and Quasi-peak detection at frequency below 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
5. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average detection at frequency above 1GHz.
6. The other emissions is too low to be measured.

Test engineer: Ben

## 6. 20dB Bandwidth Measurement Data

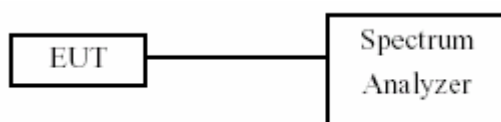
### 6.1 Test Limit

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400–2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

### 6.2 Test Procedures

- a. The transmitter output was connected to the spectrum analyzer.
- b. Set RBW of spectrum analyzer to 30 KHz and VBW to 100 KHz.
- c. The 20 dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20 dB.

### 6.3 Test Setup Layout



### 6.4 Measurement equipment

| Instrument/Ancillary | Model No. | Manufacturer | Serial No. | Calibration Date | Valid Date |
|----------------------|-----------|--------------|------------|------------------|------------|
| Spectrum Analyzer    | FSP40     | R&S          | 10047      | 2008/02/22       | 2009/02/21 |

### 6.5 Test Result and Data

Modulation Standard: GFSK (1Mbps)

Test Date: Feb. 29, 2008 Temperature: 20 Humidity: 60% Atmospheric pressure: 1008 hPa

| Channel | Frequency (MHz) | 20dB Bandwidth (KHz) |
|---------|-----------------|----------------------|
| 00      | 2402            | 796.00               |
| 39      | 2441            | 792.00               |
| 78      | 2480            | 792.00               |

Modulation Standard:  $\pi/4$ -DQPSK (2Mbps)

Test Date: May. 12, 2008 Temperature: 24 Humidity: 64% Atmospheric pressure: 1008 hPa

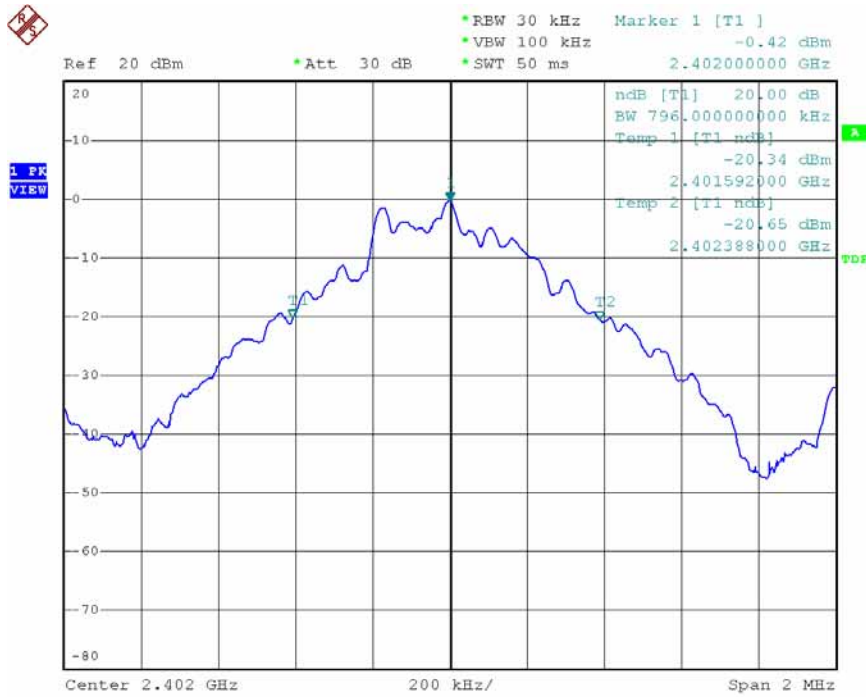
| Channel | Frequency (MHz) | 20dB Bandwidth (KHz) |
|---------|-----------------|----------------------|
| 00      | 2402            | 1240.00              |
| 39      | 2441            | 1222.00              |
| 78      | 2480            | 1252.00              |

Modulation Standard: 8DPSK (3Mbps)

Test Date: May. 12, 2008 Temperature: 24 Humidity: 64% Atmospheric pressure: 1008 hPa

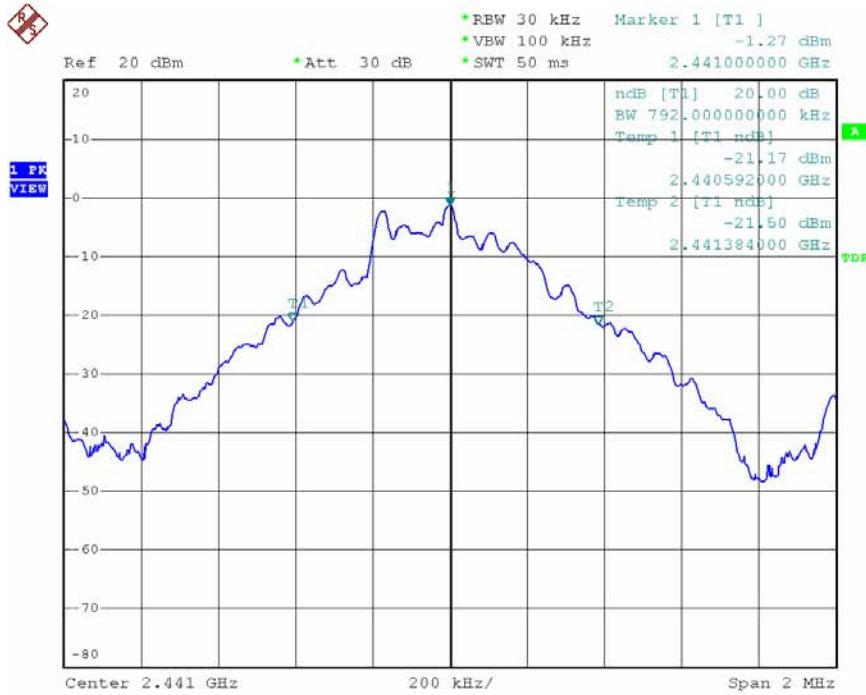
| Channel | Frequency (MHz) | 20dB Bandwidth (KHz) |
|---------|-----------------|----------------------|
| 00      | 2402            | 1264.00              |
| 39      | 2441            | 1264.00              |
| 78      | 2480            | 1268.00              |

Modulation Standard: GFSK (1Mbps)  
 Channel: 00



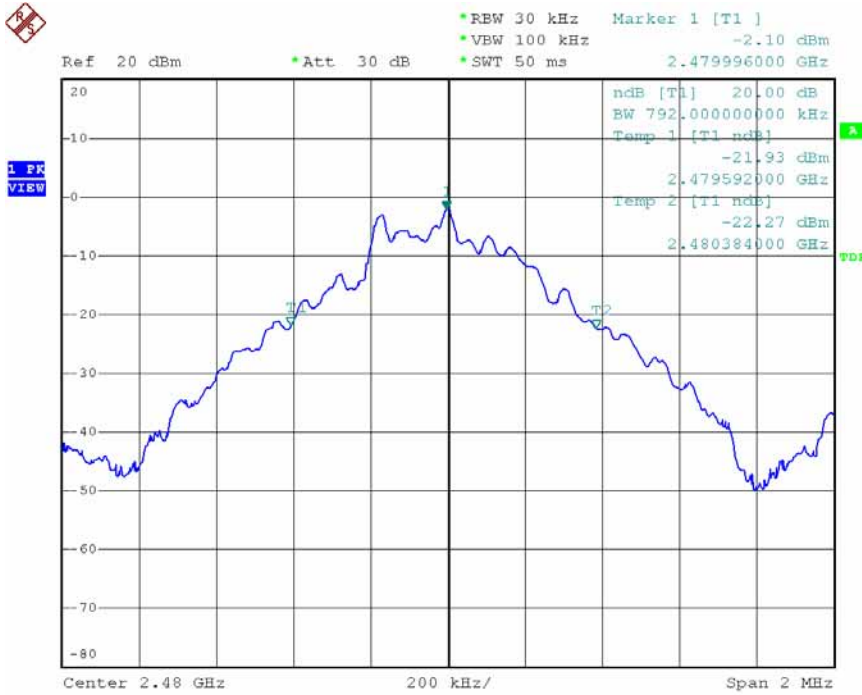
Date: 29.FEB.2008 15:00:18

Modulation Standard: GFSK (1Mbps)  
 Channel: 39



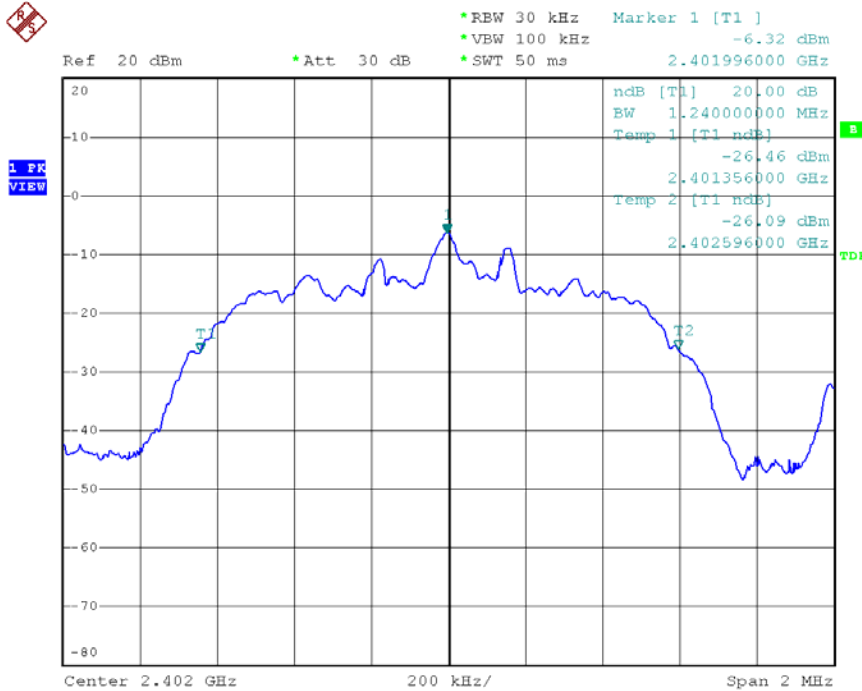
Date: 29.FEB.2008 15:01:15

Modulation Standard: GFSK (1Mbps)  
 Channel: 78



Date: 29.FEB.2008 15:02:07

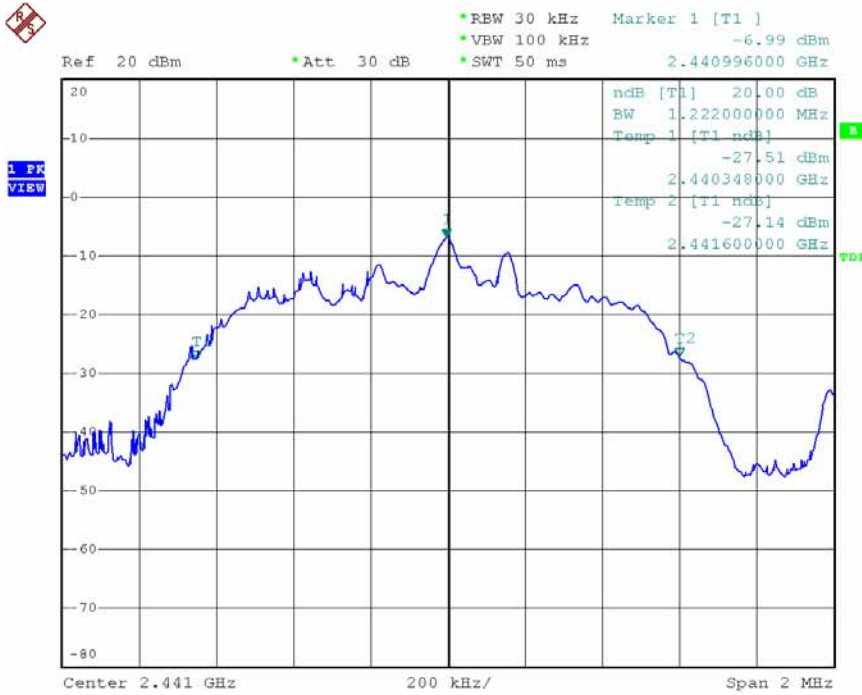
Modulation Standard:  $\pi/4$ -DQPSK (2Mbps)  
 Channel: 00



Date: 12.MAY.2008 13:49:55

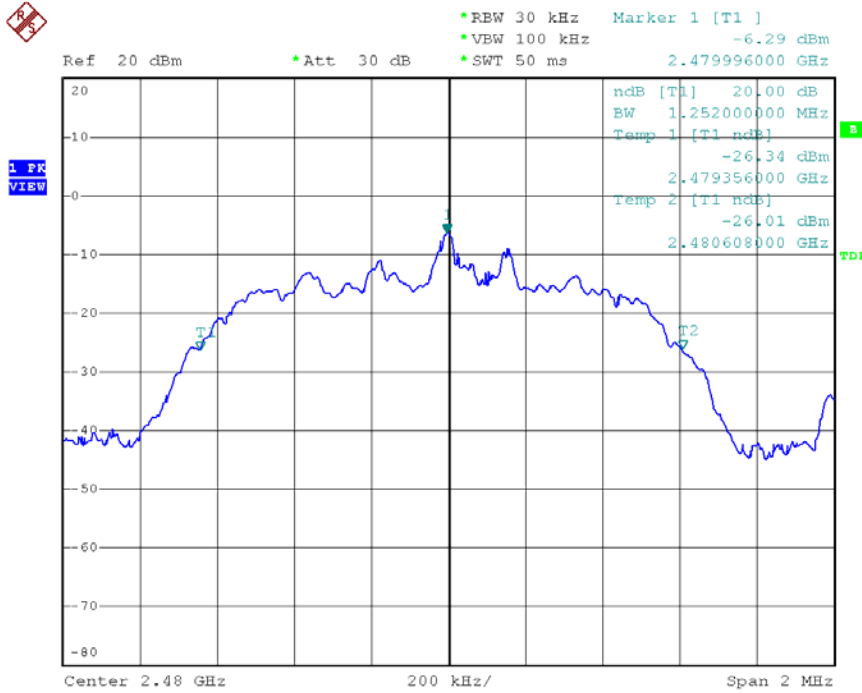


Modulation Standard:  $\pi/4$ -DQPSK (2Mbps)  
 Channel: 39



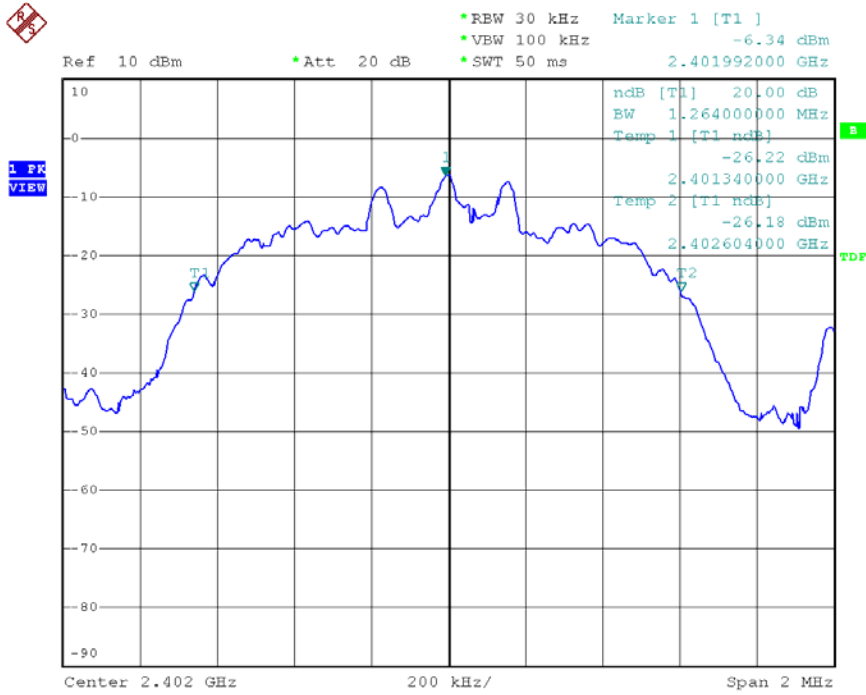
Date: 12.MAY.2008 13:50:49

Modulation Standard:  $\pi/4$ -DQPSK (2Mbps)  
 Channel: 78



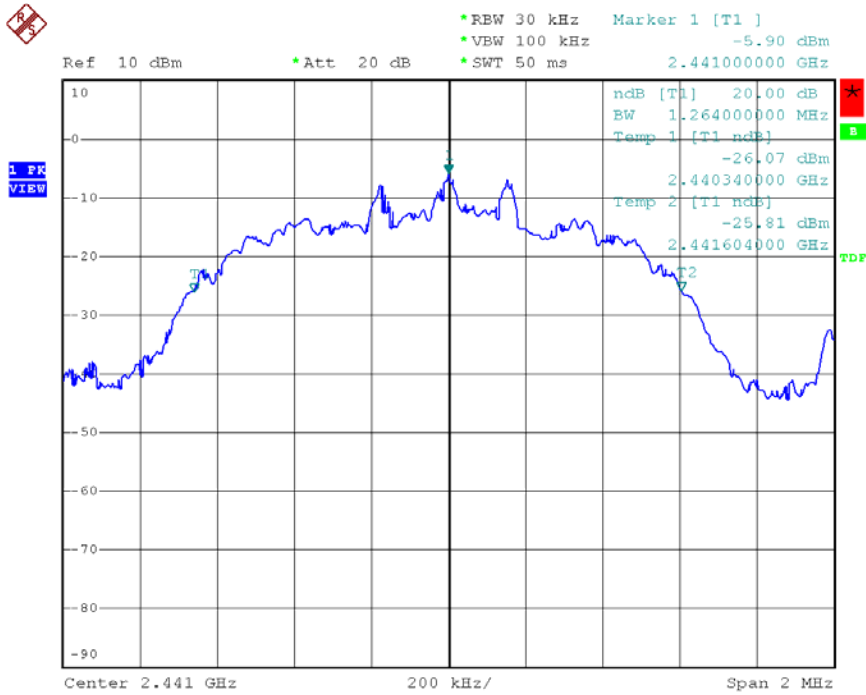
Date: 12.MAY.2008 13:51:27

Modulation Standard: 8DPSK (3Mbps)  
 Channel: 00



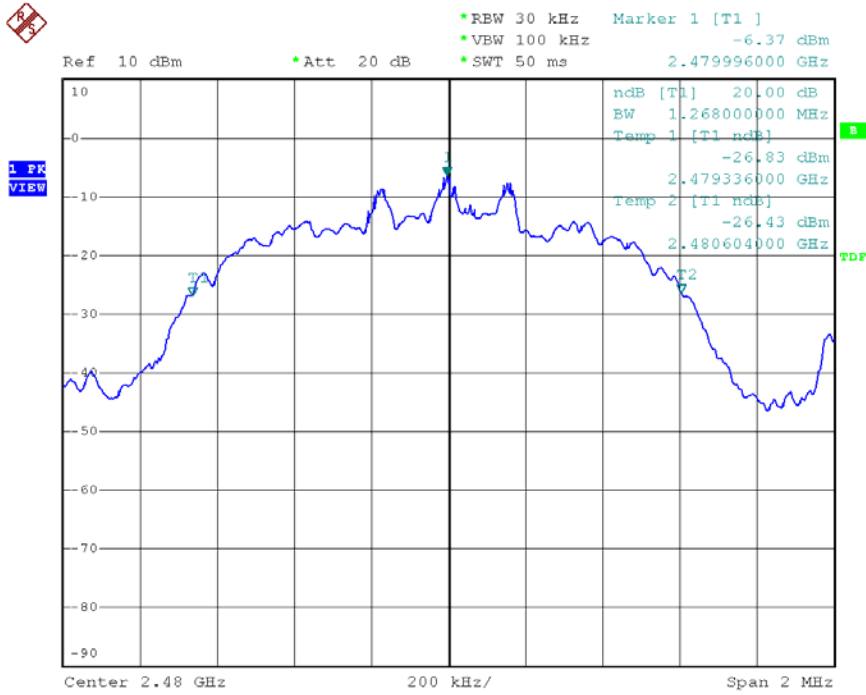
Date: 12.MAY.2008 15:11:22

Modulation Standard: 8DPSK (3Mbps)  
 Channel: 39



Date: 12.MAY.2008 15:12:09

Modulation Standard: 8DPSK (3Mbps)  
 Channel: 78



Date: 12.MAY.2008 15:12:41

## 7. Frequencies Separation

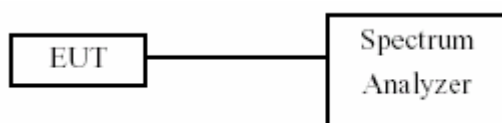
### 7.1 Test Limit

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

### 7.2 Test Procedures

- The transmitter output was connected to the spectrum analyzer.
- Set RBW of spectrum analyzer to 100 KHz and VBW to 100 KHz.
- By using the MaxHold function record the separation of two adjacent channels.
- Measure the frequency difference of these two adjacent channels.

### 7.3 Test Setup Layout



### 7.4 Measurement equipment

| Instrument/Ancillary | Model No. | Manufacturer | Serial No. | Calibration Date | Valid Date |
|----------------------|-----------|--------------|------------|------------------|------------|
| Spectrum Analyzer    | FSP40     | R&S          | 10047      | 2008/02/22       | 2009/02/21 |

### 7.5 Test Result and Data

Modulation Standard: GFSK (1Mbps)

Test Date: Feb. 29, 2008 Temperature: 20 Humidity: 60% Atmospheric pressure: 1008 hPa

| Channel | Frequency (MHz) | Channel Separation (MHz) | Minimum Limit (MHz) |
|---------|-----------------|--------------------------|---------------------|
| 00      | 2402            | 1.004                    | 0.531               |
| 39      | 2441            | 1.000                    | 0.528               |
| 78      | 2480            | 1.004                    | 0.528               |

Modulation Standard:  $\pi/4$ -DQPSK (2Mbps)

Test Date: May. 12, 2008 Temperature: 24 Humidity: 64% Atmospheric pressure: 1008 hPa

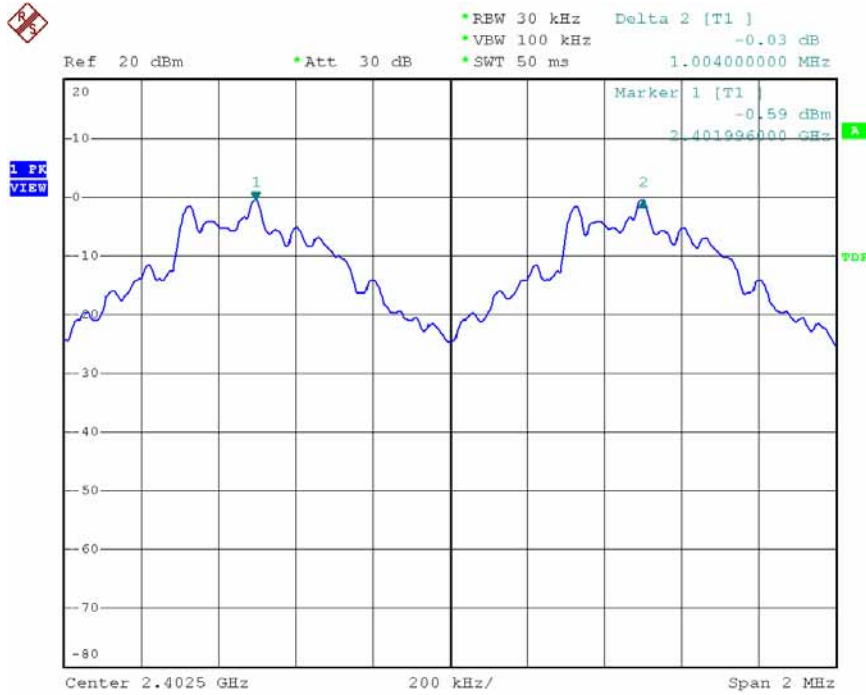
| Channel | Frequency (MHz) | Channel Separation (MHz) | Minimum Limit (MHz) |
|---------|-----------------|--------------------------|---------------------|
| 00      | 2402            | 0.996                    | 0.827               |
| 39      | 2441            | 1.000                    | 0.815               |
| 78      | 2480            | 1.000                    | 0.835               |

Modulation Standard: 8DPSK (3Mbps)

Test Date: Apr. 28, 2008 Temperature: 22 Humidity: 62% Atmospheric pressure: 1008 hPa

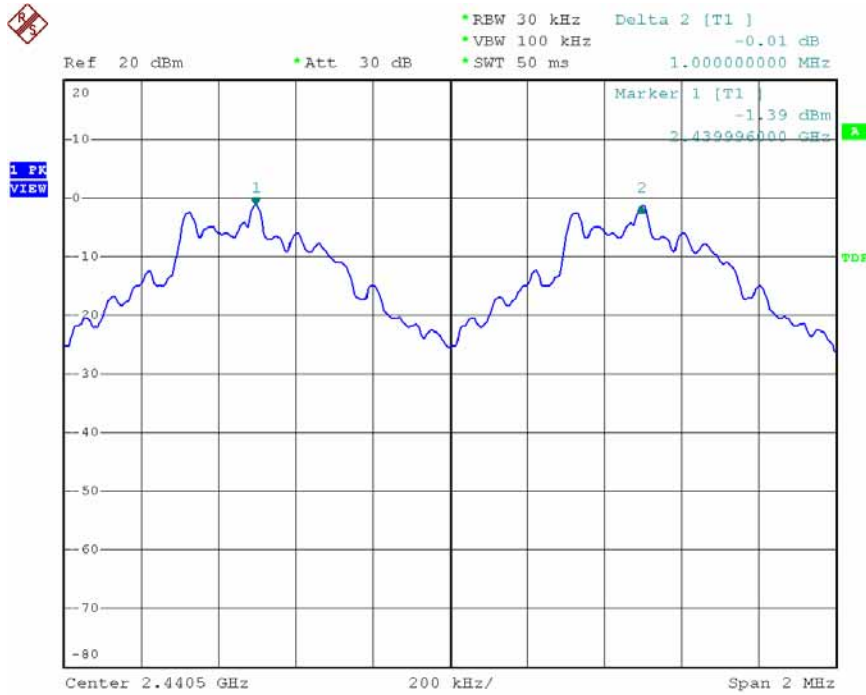
| Channel | Frequency (MHz) | Channel Separation (MHz) | Minimum Limit (MHz) |
|---------|-----------------|--------------------------|---------------------|
| 00      | 2402            | 1.000                    | 0.843               |
| 39      | 2441            | 1.000                    | 0.843               |
| 78      | 2480            | 1.000                    | 0.845               |

Modulation Standard: GFSK (1Mbps)  
 Channel: 00



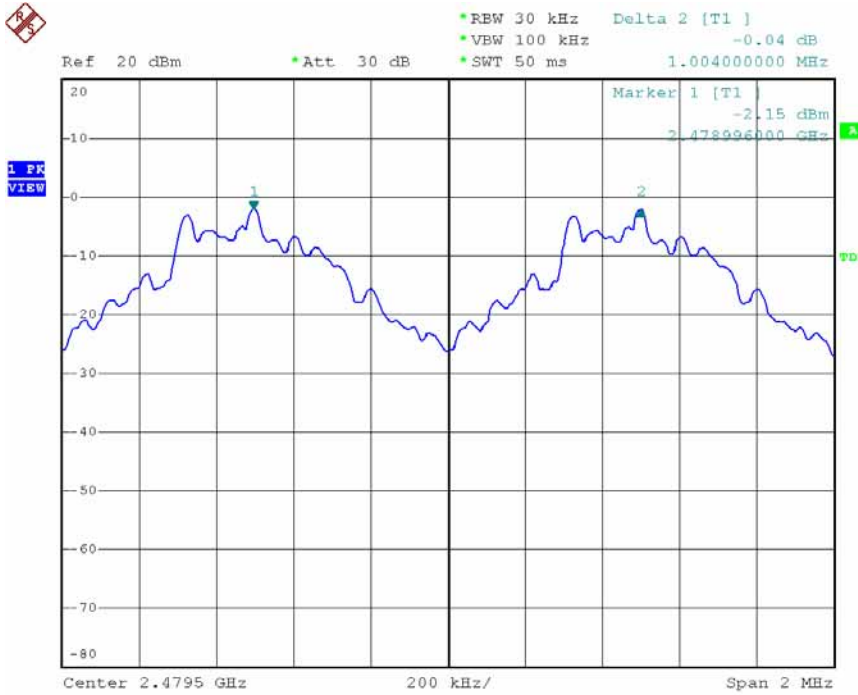
Date: 29.FEB.2008 13:28:06

Modulation Standard: GFSK (1Mbps)  
 Channel: 39



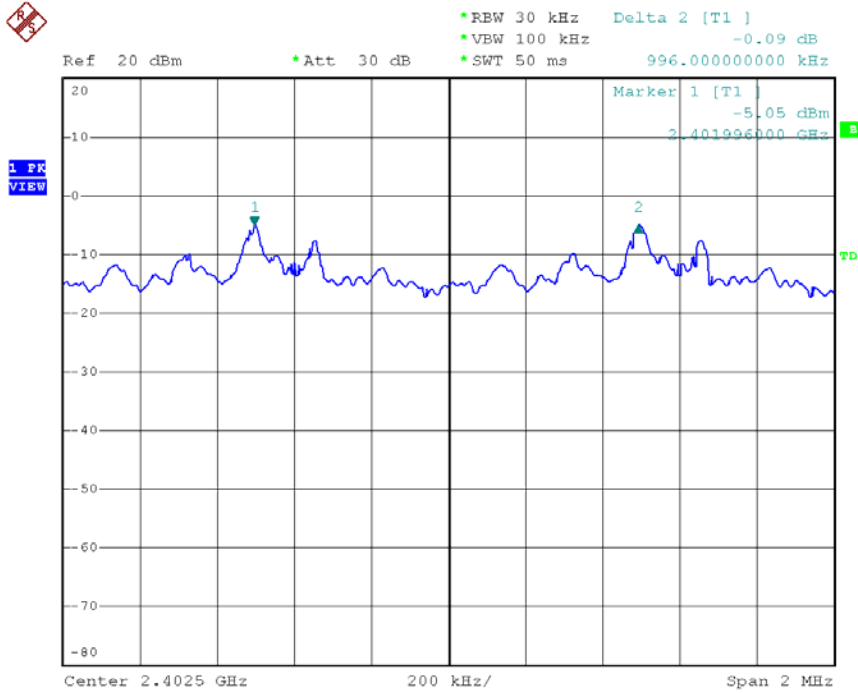
Date: 29.FEB.2008 13:26:49

Modulation Standard: GFSK (1Mbps)  
 Channel: 78



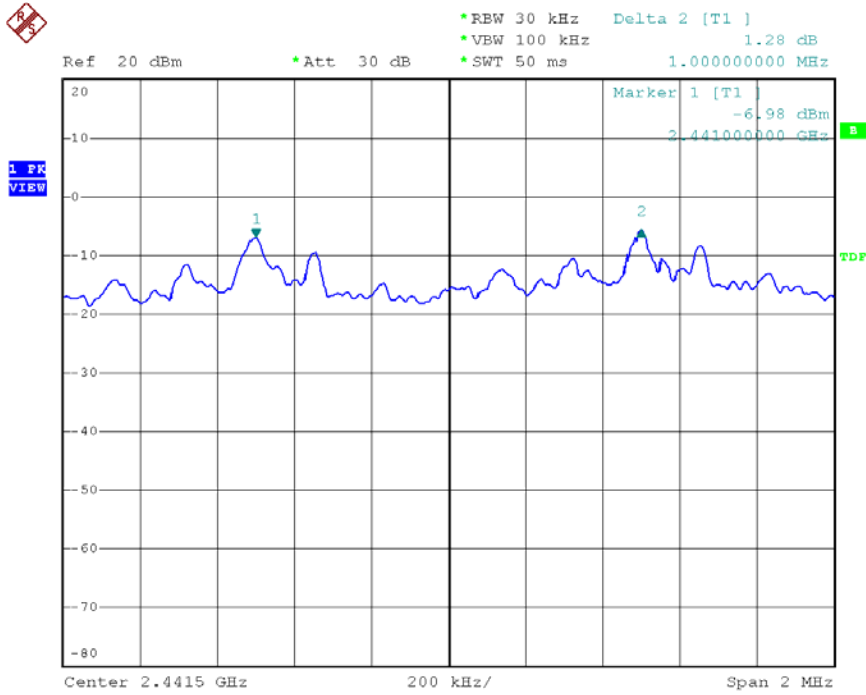
Date: 29.FEB.2008 13:25:06

Modulation Standard:  $\pi/4$ -DQPSK (2Mbps)  
 Channel: 00



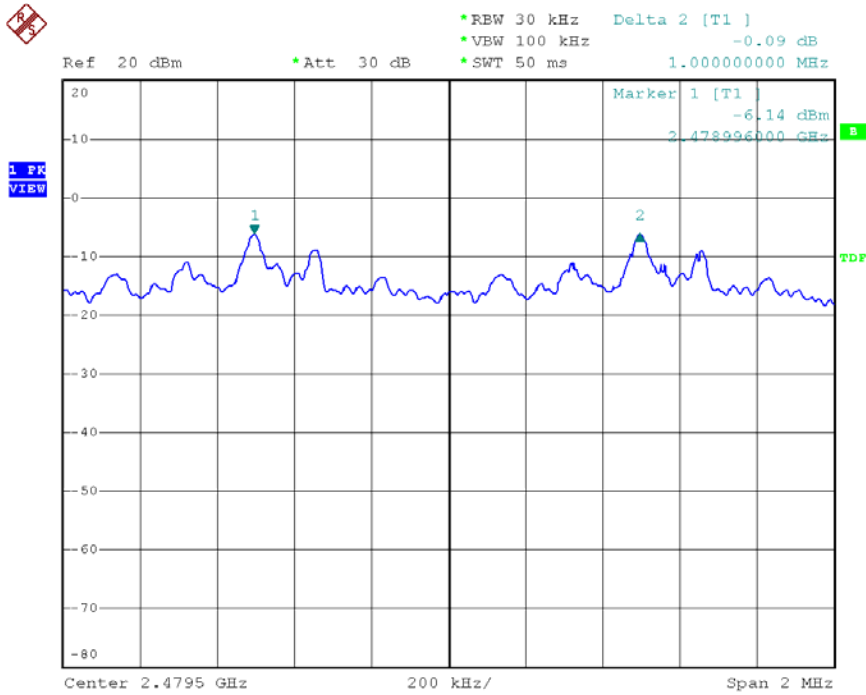
Date: 12.MAY.2008 13:28:09

Modulation Standard:  $\pi/4$ -DQPSK (2Mbps)  
 Channel: 39



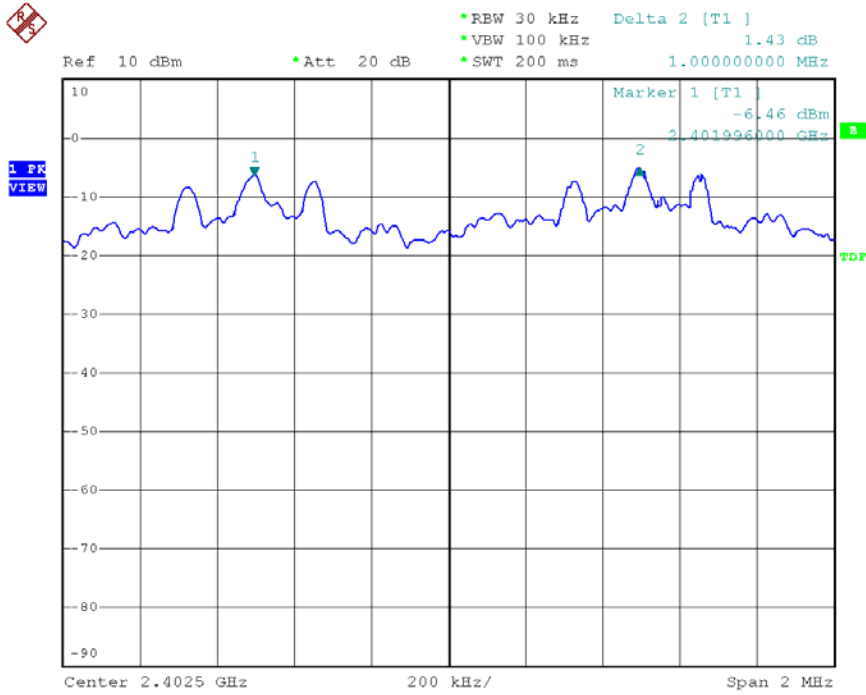
Date: 12.MAY.2008 13:29:30

Modulation Standard:  $\pi/4$ -DQPSK (2Mbps)  
 Channel: 78



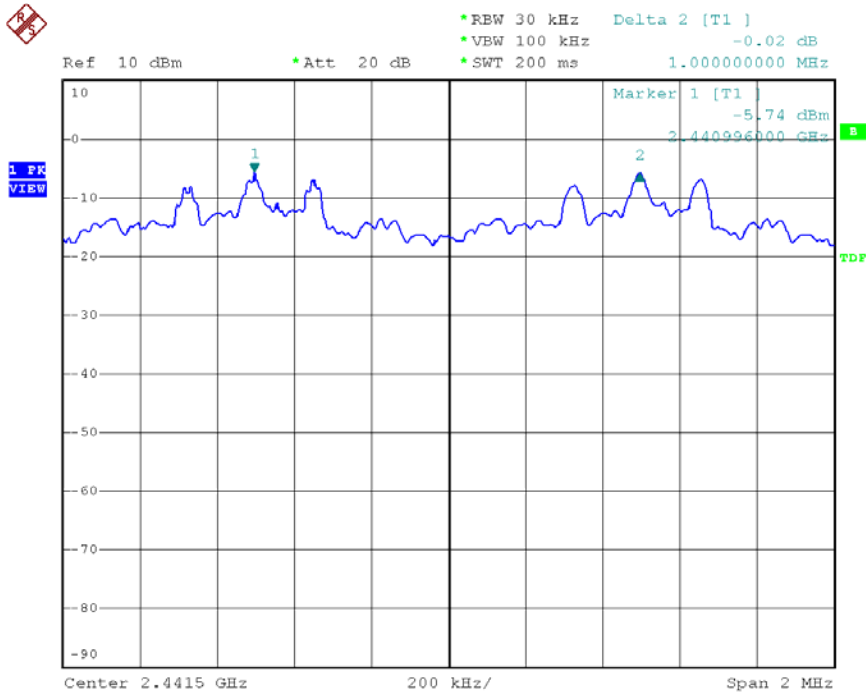
Date: 12.MAY.2008 13:30:32

Modulation Standard: 8DQPSK (3Mbps)  
 Channel: 00



Date: 12.MAY.2008 14:57:00

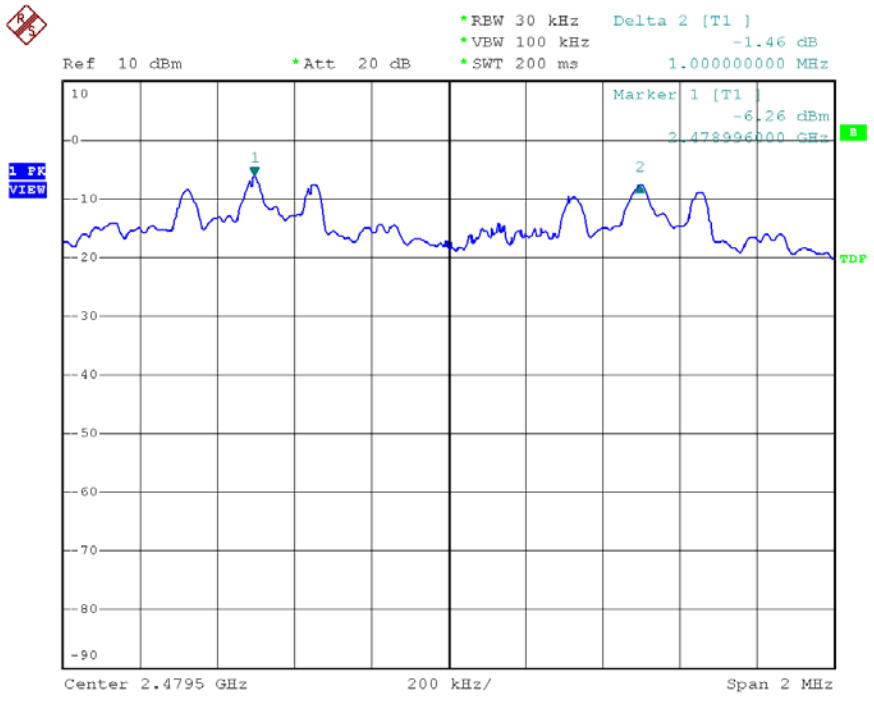
Modulation Standard: 8DQPSK (3Mbps)  
 Channel: 39



Date: 12.MAY.2008 14:58:15



Modulation Standard: 8DQPSK (3Mbps)  
Channel: 78



Date: 12.MAY.2008 15:00:35

## 8. Dwell Time on each channel

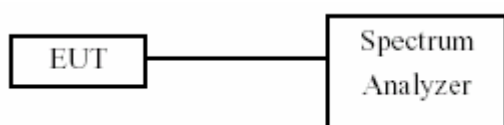
### 8.1 Test Limit

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

### 8.2 Test Procedures

1. The transmitter output was connected to the spectrum analyzer.
2. Adjust the center frequency to measure frequency, then set zero span mode.
2. Set RBW of spectrum analyzer to 100 KHz and VBW to 100 KHz.
4. Measure the time duration of one transmission on the measured frequency.

### 8.3 Test Setup Layout



### 8.4 Measurement equipment

| Instrument/Ancillary | Model No. | Manufacturer | Serial No. | Calibration Date | Valid Date |
|----------------------|-----------|--------------|------------|------------------|------------|
| Spectrum Analyzer    | FSP40     | R&S          | 10047      | 2008/02/22       | 2009/02/21 |

### 8.5 Test Result and Data

Modulation Standard: GFSK (1Mbps)

Test Date: Feb. 29, 2008 Temperature: 20 Humidity: 60% Atmospheric pressure: 1008 hPa

Test Period = 0.4 (second/ channel) x 79 Channel = 31.6 sec

- a) 2402 MHz Dwell Time is = 0.414ms x  $\frac{31.6}{3.16}$  x 32 = 132.48ms
- b) 2441 MHz Dwell Time is = 0.414ms x  $\frac{31.6}{3.16}$  x 32 = 132.48ms
- c) 2480 MHz Dwell Time is = 0.414ms x  $\frac{31.6}{3.16}$  x 32 = 132.48ms

Modulation Standard:  $\pi/4$ -DQPSK (2Mbps)

Test Date: May. 12, 2008 Temperature: 24 Humidity: 64% Atmospheric pressure: 1008 hPa

Test Period = 0.4 (second/ channel) x 79 Channel = 31.6 sec

- a) 2402 MHz Dwell Time is = 2.936ms x  $\frac{31.6}{3.16}$  x 11 = 322.96ms
- b) 2441 MHz Dwell Time is = 2.936ms x  $\frac{31.6}{3.16}$  x 11 = 322.96ms
- c) 2480 MHz Dwell Time is = 2.944ms x  $\frac{31.6}{3.16}$  x 11 = 323.84ms

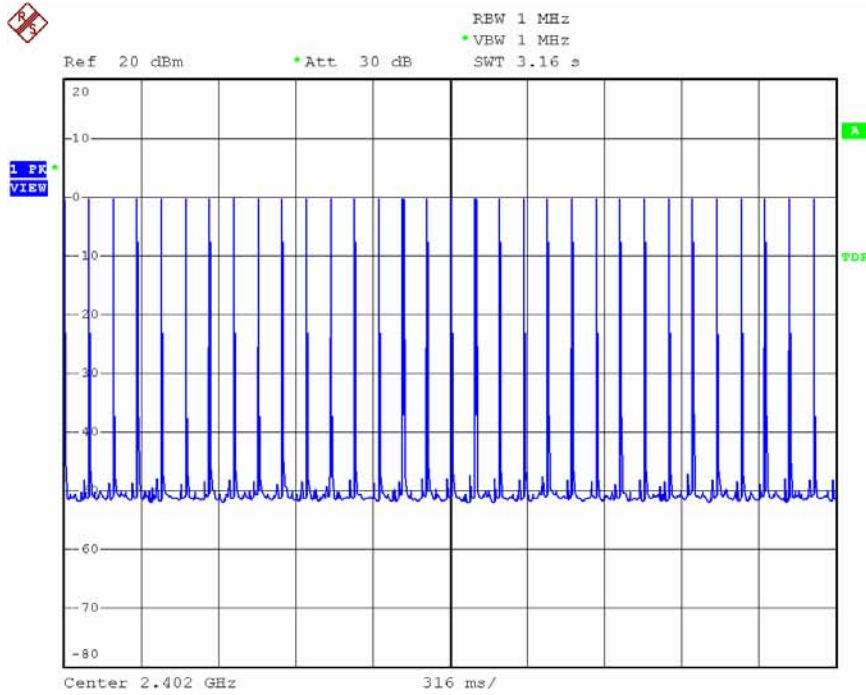
Modulation Standard: 8DPSK (3Mbps)

Test Date: May. 12, 2008 Temperature: 24 Humidity: 64% Atmospheric pressure: 1008 hPa

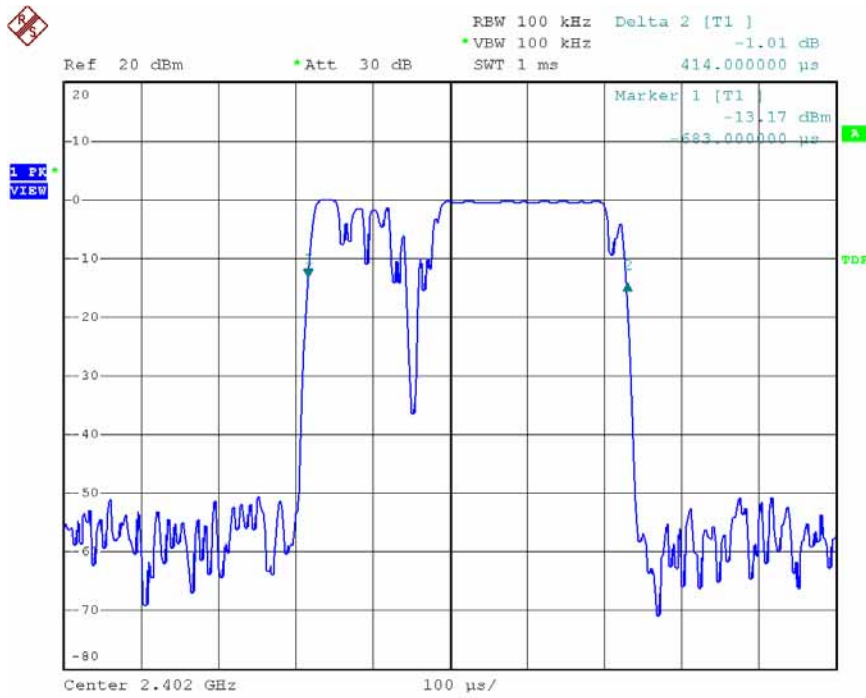
Test Period = 0.4 (second/ channel) x 79 Channel = 31.6 sec

- a) 2402 MHz Dwell Time is = 2.944ms x  $\frac{31.6}{3.16}$  x 11 = 323.84ms
- b) 2441 MHz Dwell Time is = 2.944ms x  $\frac{31.6}{3.16}$  x 11 = 323.84ms
- c) 2480 MHz Dwell Time is = 2.936ms x  $\frac{31.6}{3.16}$  x 11 = 322.96ms

Modulation Standard: GFSK (1Mbps)  
 Channel: 00

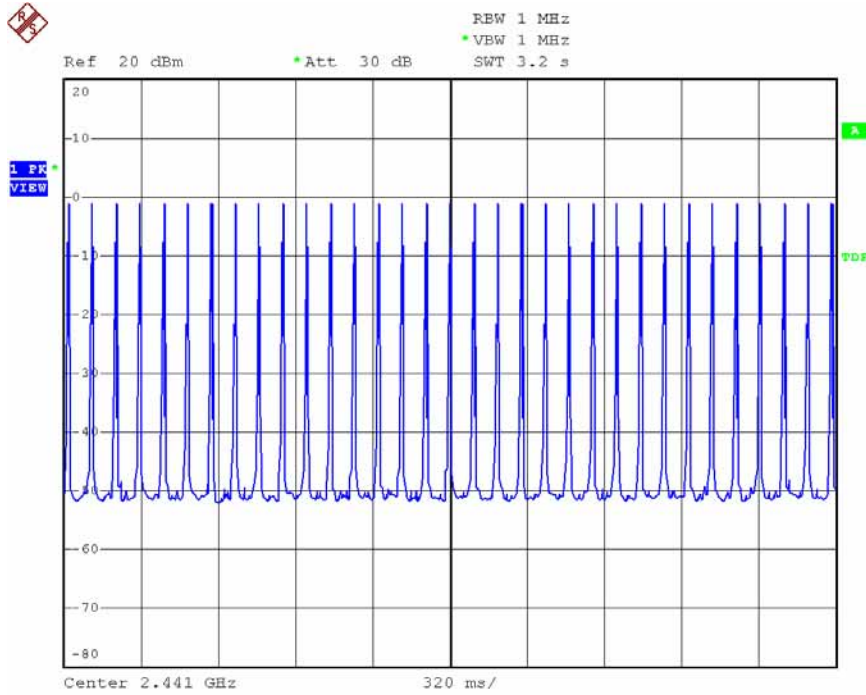


Date: 29.FEB.2008 15:41:24

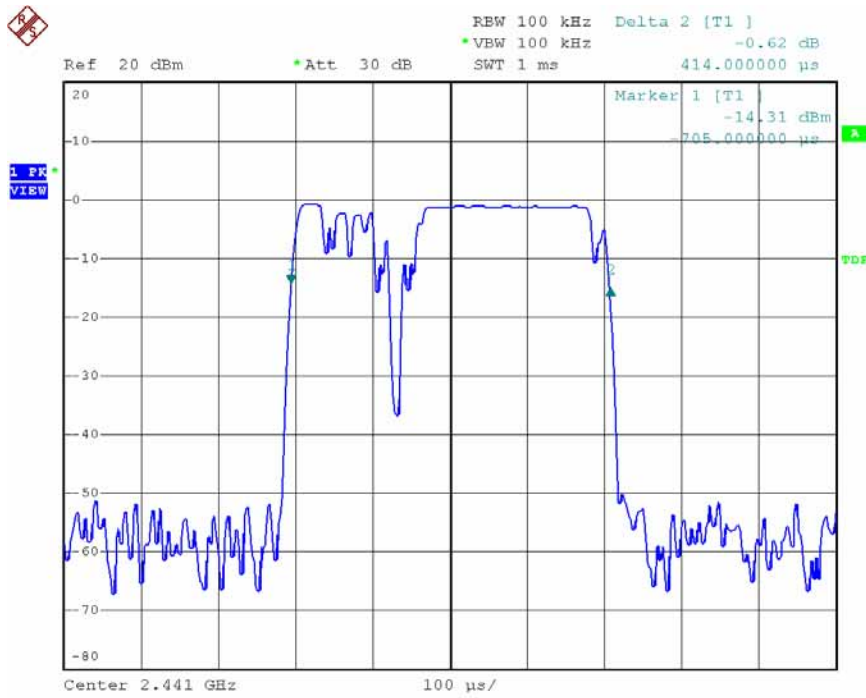


Date: 29.FEB.2008 15:39:04

Modulation Standard: GFSK (1Mbps)  
 Channel: 39

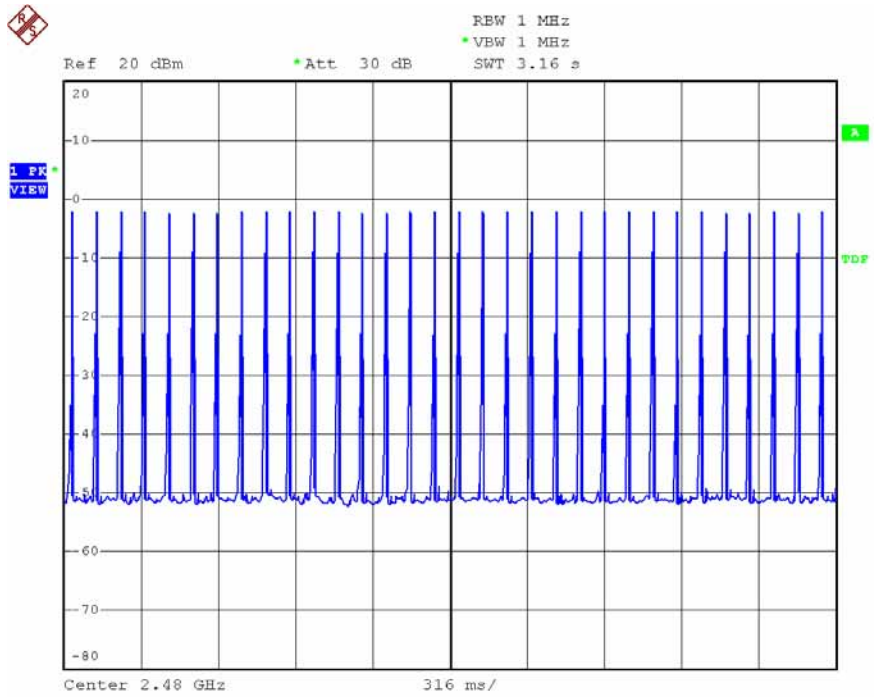


Date: 29.FEB.2008 15:51:06

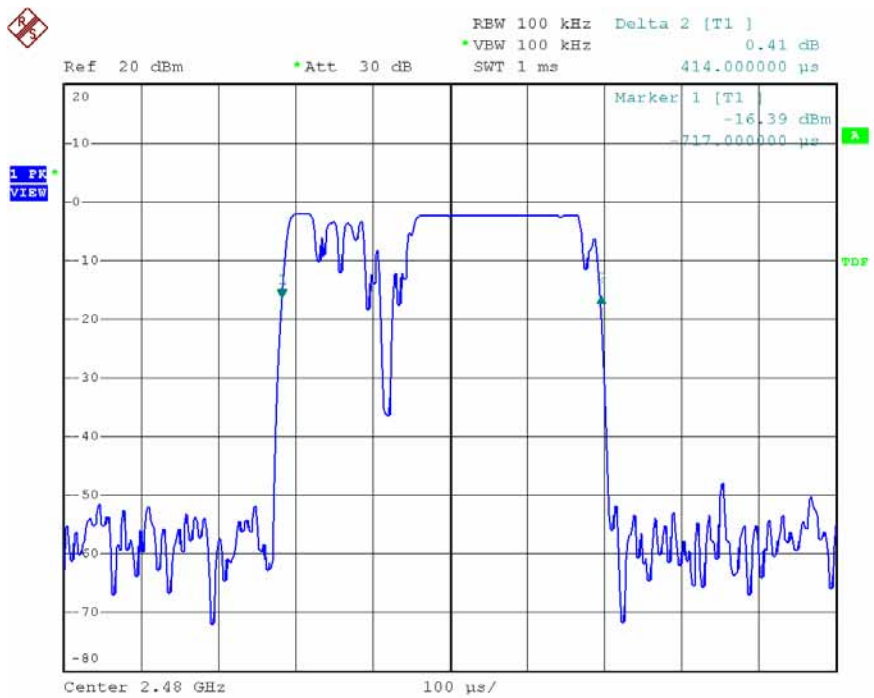


Date: 29.FEB.2008 15:43:18

Modulation Standard: GFSK (1Mbps)  
 Channel: 78

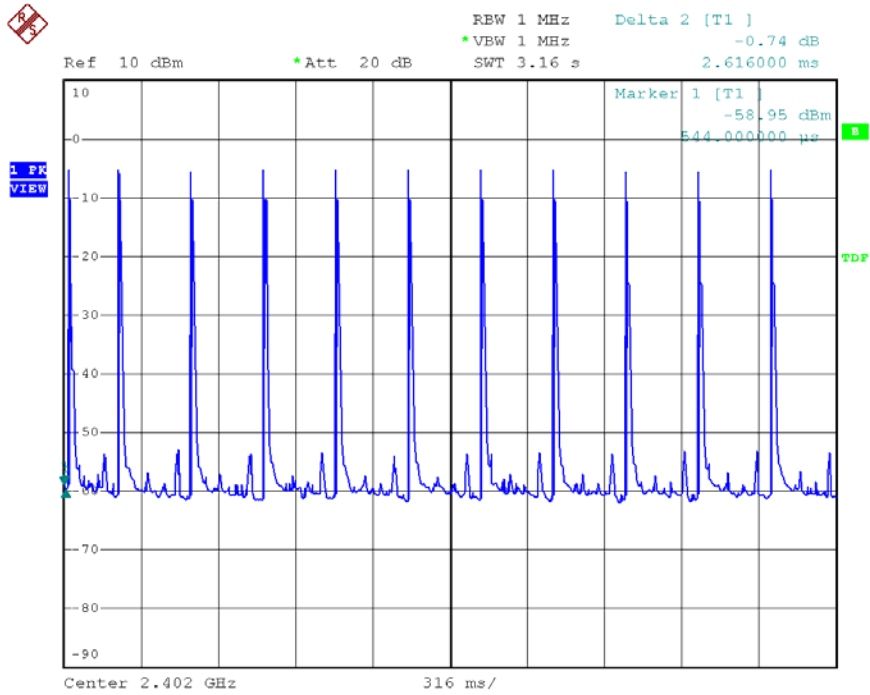


Date: 29.FEB.2008 15:53:07

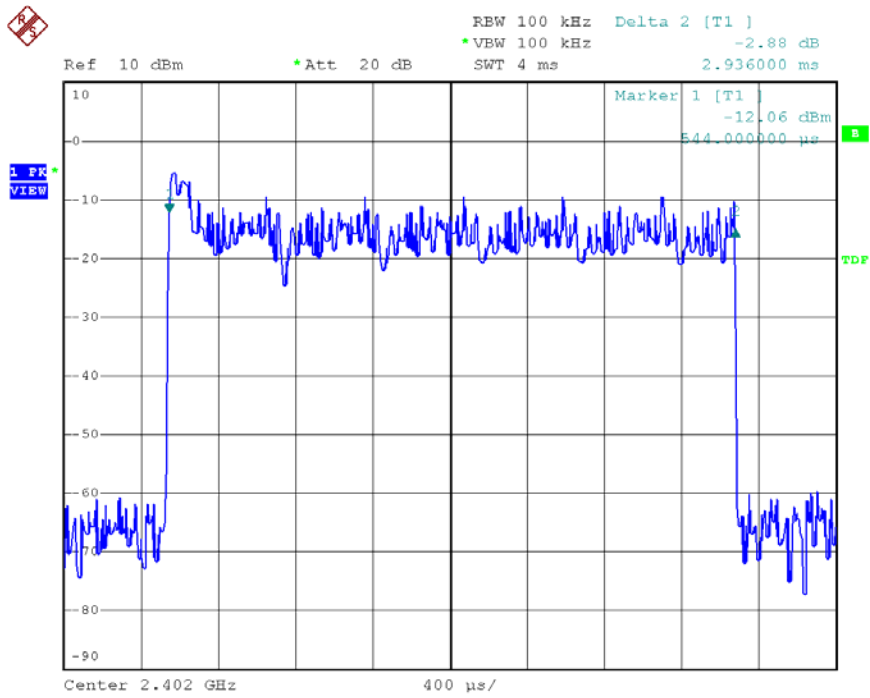


Date: 29.FEB.2008 15:52:28

Modulation Standard:  $\pi/4$ -DQPSK (2Mbps)  
 Channel: 00

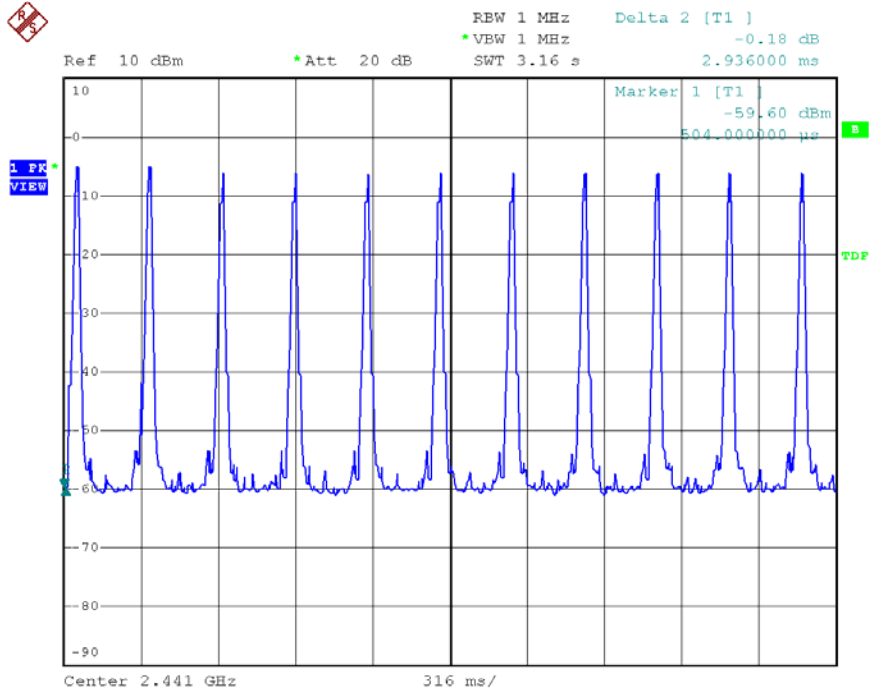


Date: 12.MAY.2008 14:44:46

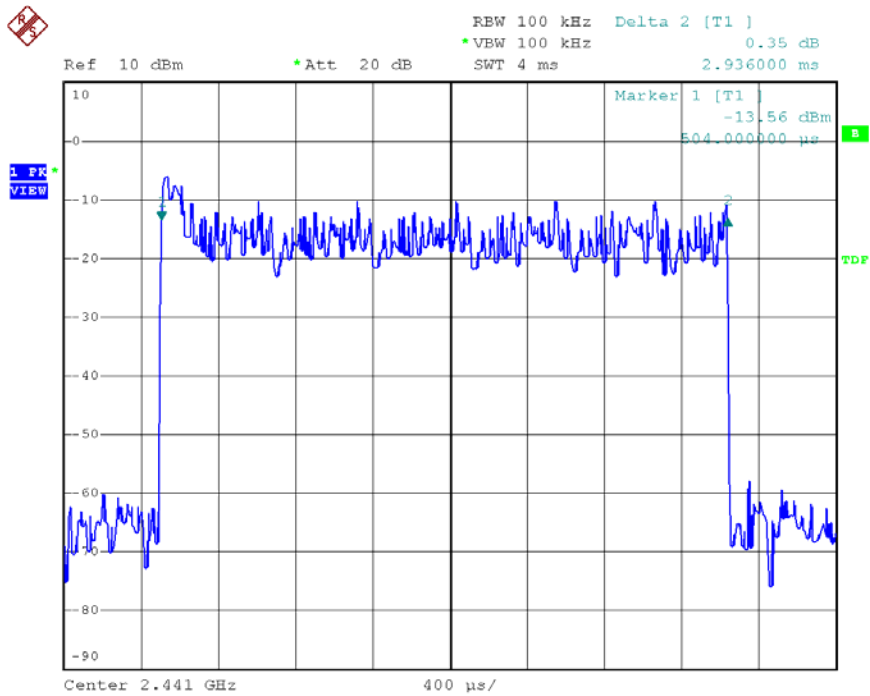


Date: 12.MAY.2008 14:43:18

Modulation Standard:  $\pi/4$ -DQPSK (2Mbps)  
 Channel: 39

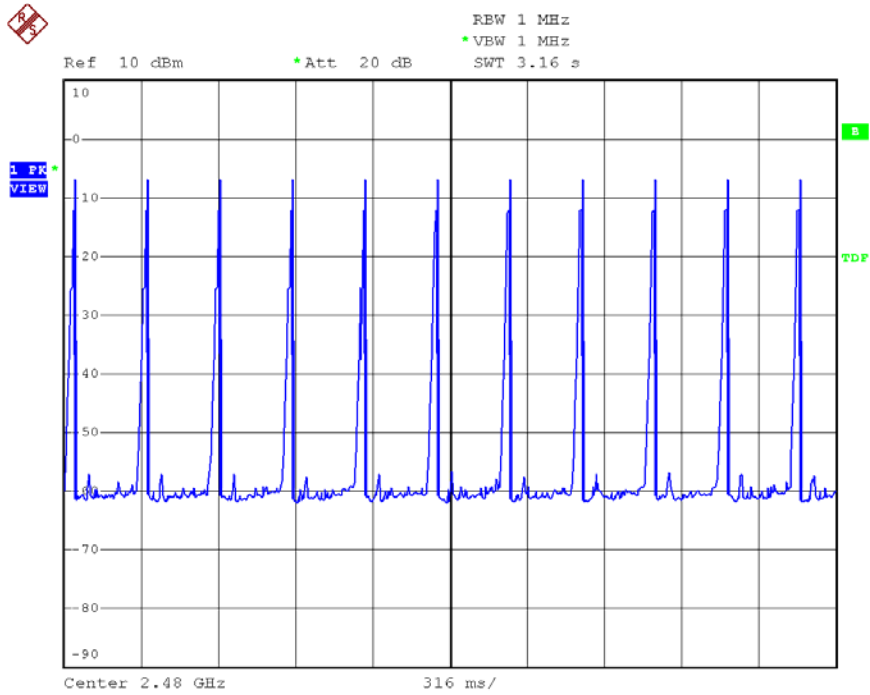


Date: 12.MAY.2008 14:47:04

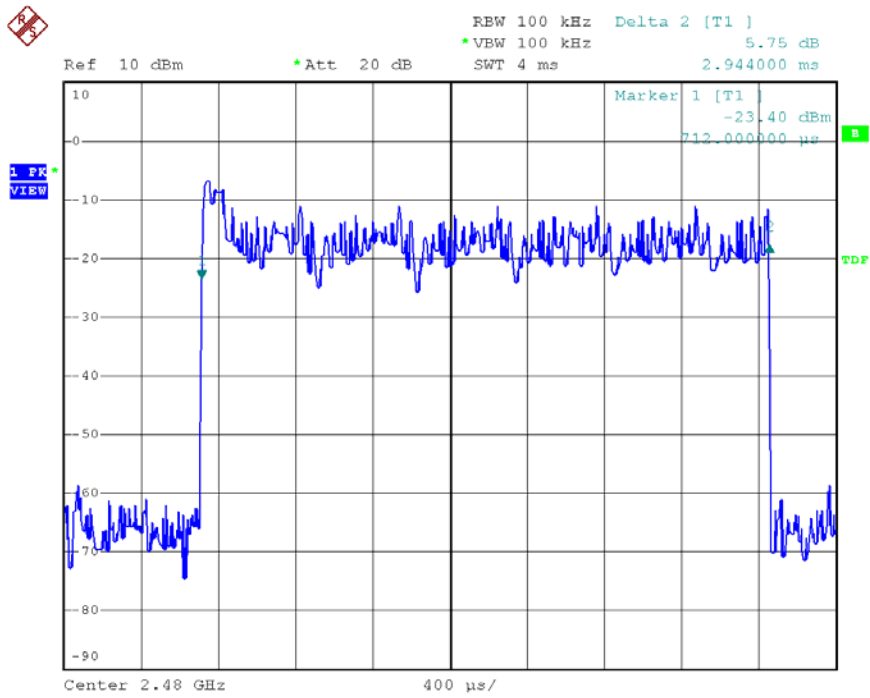


Date: 12.MAY.2008 14:46:18

Modulation Standard:  $\pi/4$ -DQPSK (2Mbps)  
 Channel: 78



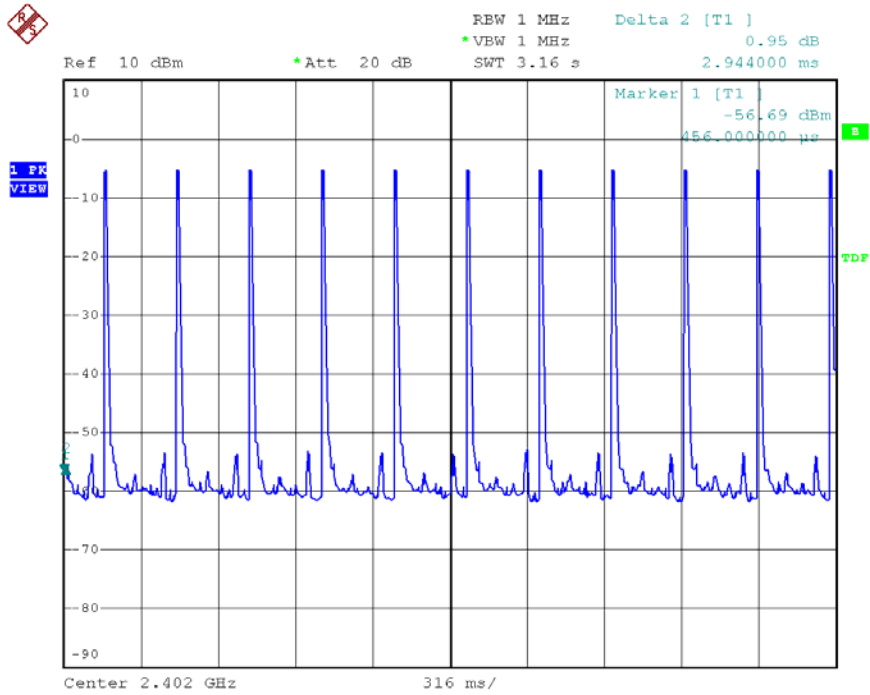
Date: 12.MAY.2008 14:49:20



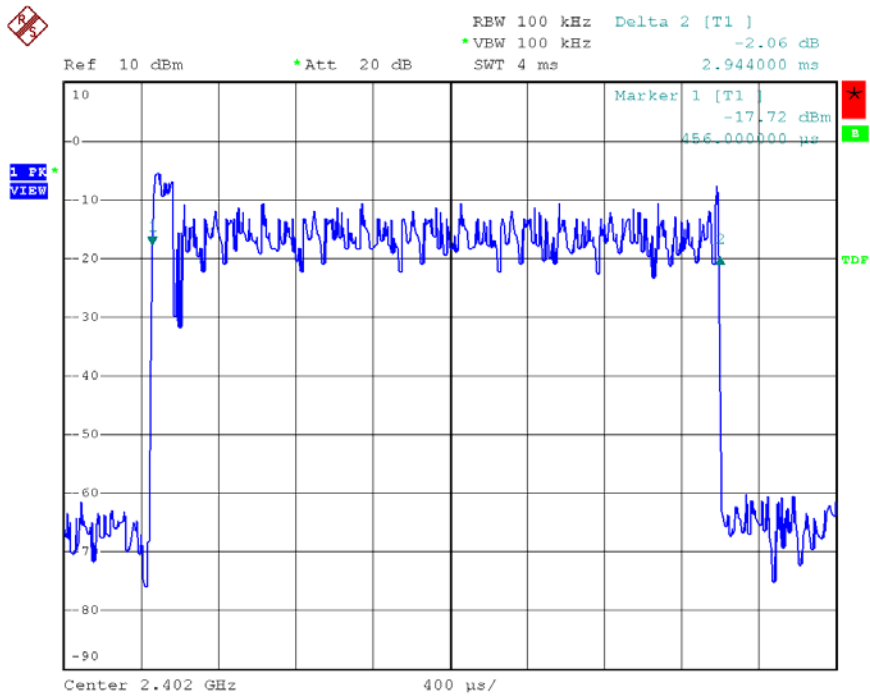
Date: 12.MAY.2008 14:48:32



Modulation Standard: 8DPSK (3Mbps)  
 Channel: 00

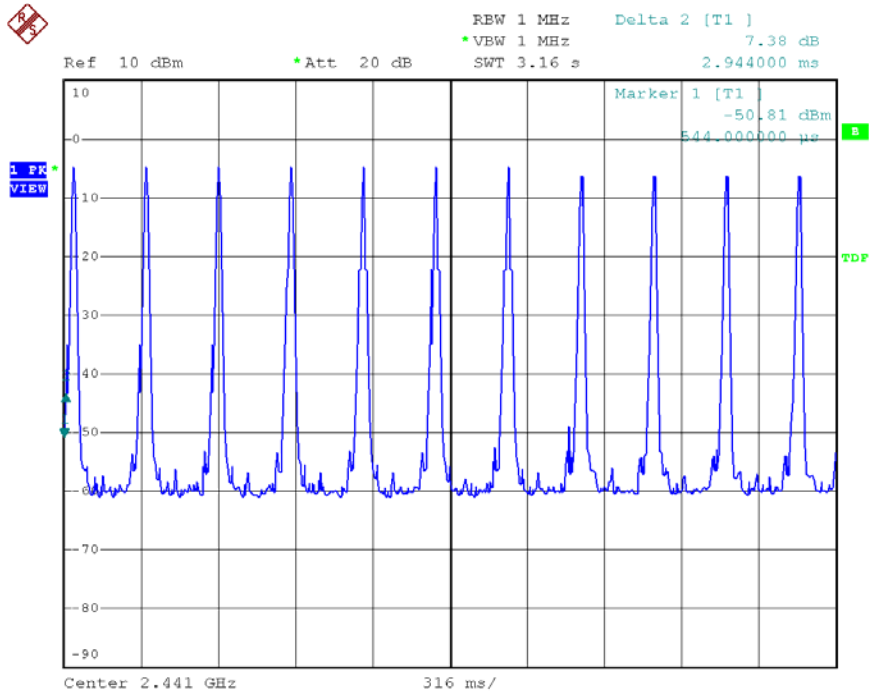


Date: 12.MAY.2008 15:05:42

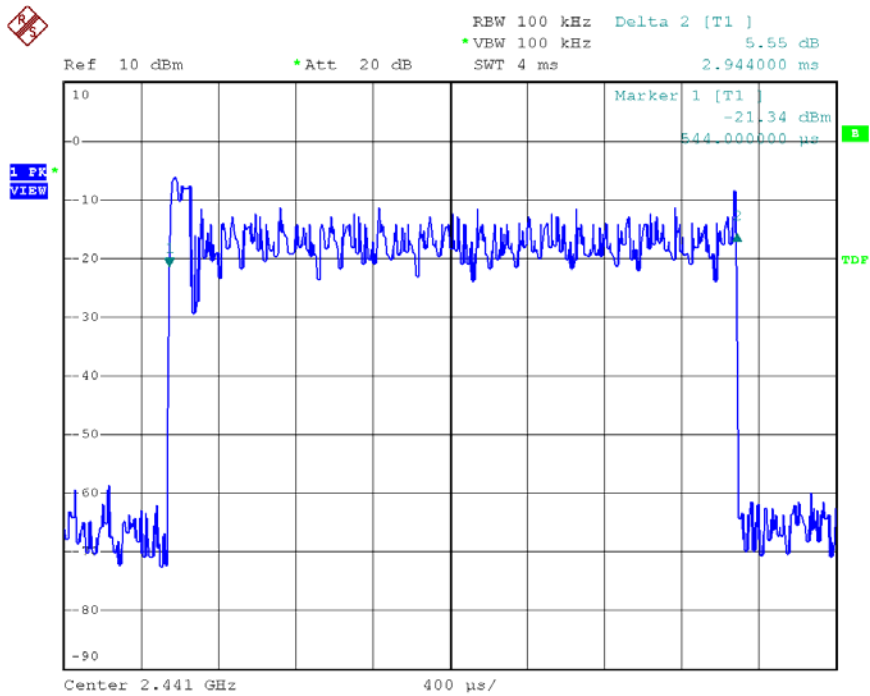


Date: 12.MAY.2008 15:02:52

Modulation Standard: 8DPSK (3Mbps)  
 Channel: 39

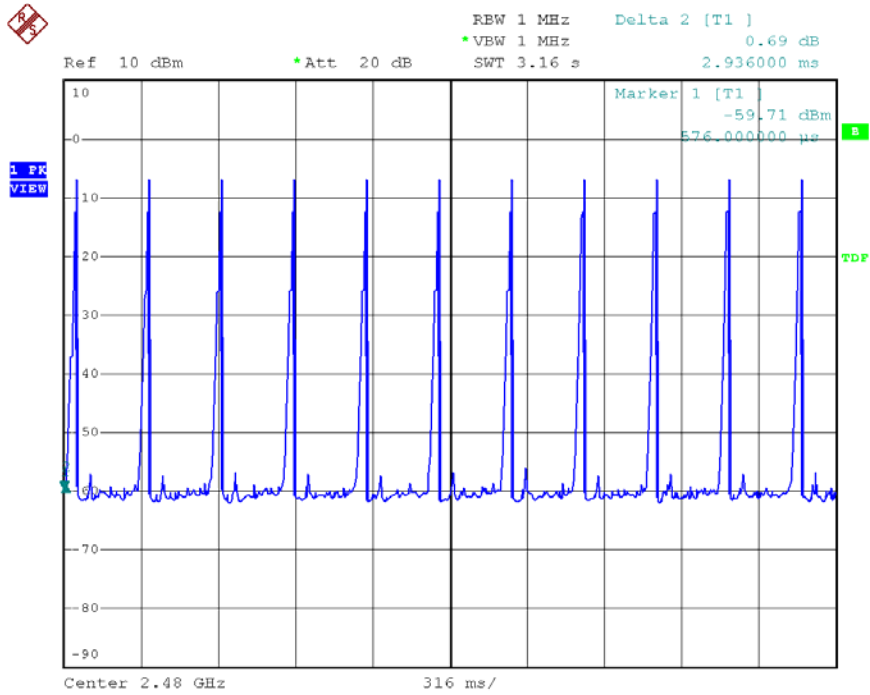


Date: 12.MAY.2008 15:07:42

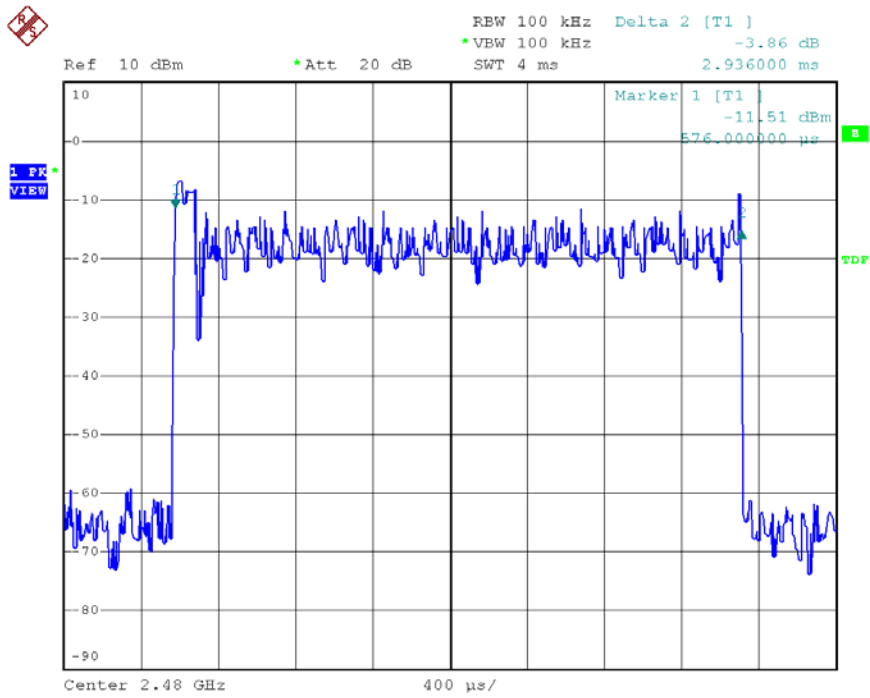


Date: 12.MAY.2008 15:07:04

Modulation Standard: 8DPSK (3Mbps)  
Channel: 78



Date: 12.MAY.2008 15:09:31



Date: 12.MAY.2008 15:08:53

## 9. Number of Hopping Channels

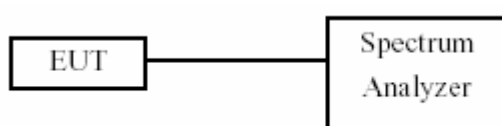
### 9.1 Test Limit

Frequency hopping systems in the 2400 ~ 2483.5 MHz band shall use at least 15 channels.

### 9.2 Test Procedures

- a. The transmitter output was connected to the spectrum analyzer.
- b. 2. Set RBW of spectrum analyzer to 100 KHz and VBW to 100 KHz.
- c. 3. Set the MaxHold function, and then keep the EUT in hopping mode. Record all the signals from each channel until each one has been record.

### 9.3 Test Setup Layout



### 9.4 Measurement equipment

| Instrument/Ancillary | Model No. | Manufacturer | Serial No. | Calibration Date | Valid Date |
|----------------------|-----------|--------------|------------|------------------|------------|
| Spectrum Analyzer    | FSP40     | R&S          | 10047      | 2008/02/22       | 2009/02/21 |

### 9.5 Test Result and Data

Modulation Standard: GFSK (1Mbps)

Test Date: Feb. 29, 2008 Temperature: 20 Humidity: 60% Atmospheric pressure: 1008 hPa

Number of hopping channels: 79 Channels

Modulation Standard:  $\pi/4$ -DQPSK (2Mbps)

Test Date: May. 12, 2008 Temperature: 24 Humidity: 64% Atmospheric pressure: 1008 hPa

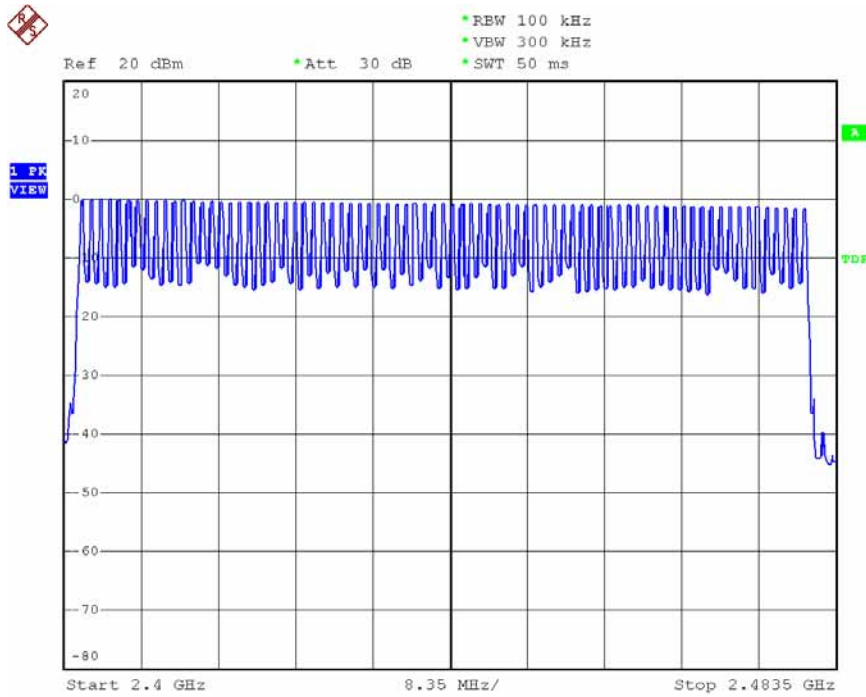
Number of hopping channels: 79 Channels

Modulation Standard: 8DPSK (3Mbps)

Test Date: May. 12, 2008 Temperature: 24 Humidity: 64% Atmospheric pressure: 1008 hPa

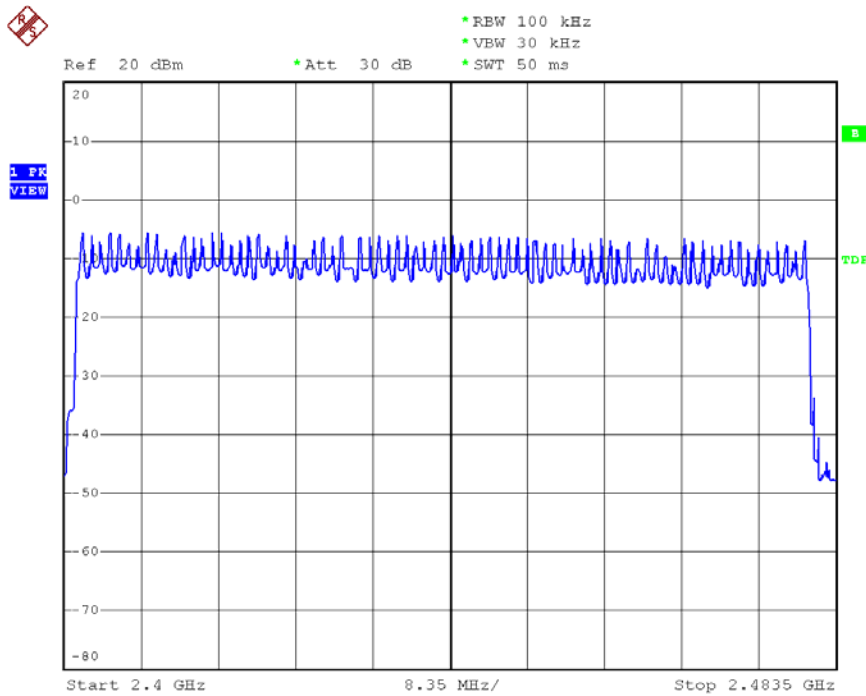
Number of hopping channels: 79 Channels

Modulation Standard: GFSK (1Mbps)



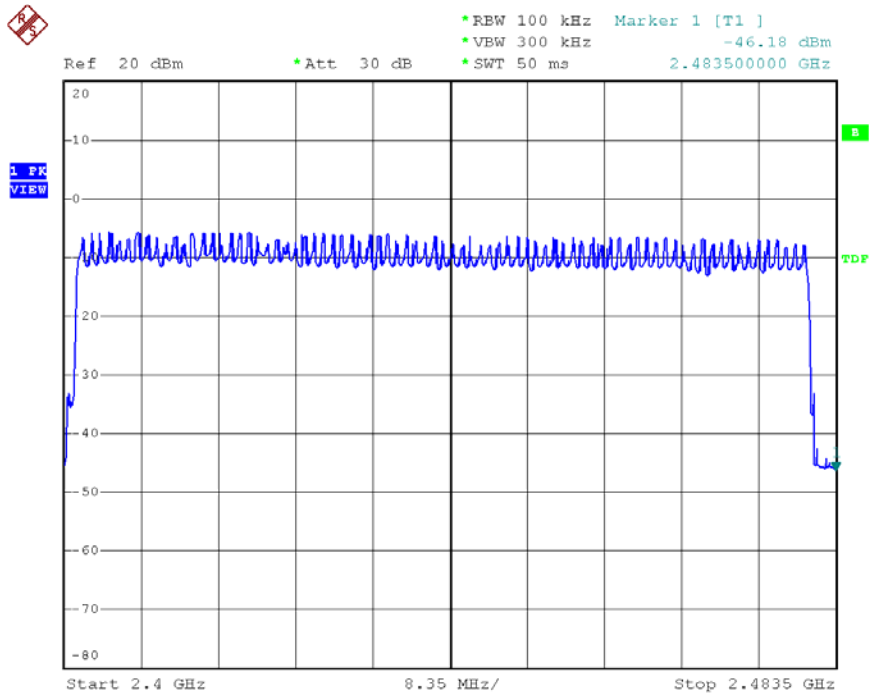
Date: 29.FEB.2008 15:25:39

Modulation Standard:  $\pi/4$ -DQPSK (2Mbps)



Date: 12.MAY.2008 13:59:52

Modulation Standard: 8DPSK (3Mbps)



Date: 12.MAY.2008 15:21:59

## 10. Maximum Peak Output Power

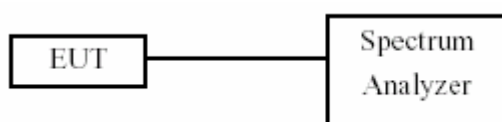
### 10.1 Test Limit

The Maximum Peak Output Power Measurement is 30dBm.

### 10.2 Test Procedures

The antenna port( RF output )of the EUT was connected to the input( RF input )of a power meter. Power was read directly from the meter and cable loss connection was added to the reading to obtain power at the EUT antenna terminal. The EUT Output Power was set to maximum to produce the worse case test result.

### 10.3 Test Setup Layout



### 10.4 Measurement equipment

| Instrument/Ancillary | Model No. | Manufacturer | Serial No. | Calibration Date | Valid Date |
|----------------------|-----------|--------------|------------|------------------|------------|
| Spectrum Analyzer    | FSP40     | R&S          | 10047      | 2008/02/22       | 2009/02/21 |

### 10.5 Test Result and Data

Modulation Standard: GFSK (1Mbps)

Test Date: Feb. 29, 2008 Temperature: 20 Humidity: 60% Atmospheric pressure: 1008 hPa

| Channel | Frequency (MHz) | Peak Power Output (dBm) | Peak Power Output (mW) |
|---------|-----------------|-------------------------|------------------------|
| 00      | 2402            | -0.01                   | 1.00                   |
| 39      | 2441            | -0.78                   | 0.80                   |
| 78      | 2478            | -1.76                   | 0.70                   |

Modulation Standard:  $\pi/4$ -DQPSK (2Mbps)

Test Date: May. 12, 2008 Temperature: 24 Humidity: 64% Atmospheric pressure: 1008 hPa

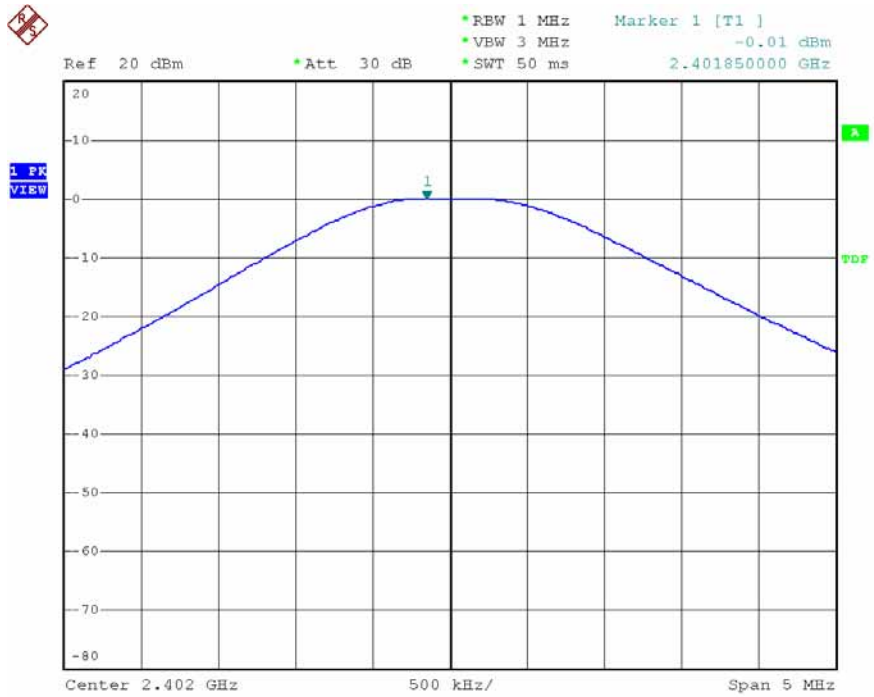
| Channel | Frequency (MHz) | Peak Power Output (dBm) | Peak Power Output (mW) |
|---------|-----------------|-------------------------|------------------------|
| 00      | 2402            | -4.11                   | 0.39                   |
| 39      | 2441            | -5.99                   | 0.25                   |
| 78      | 2478            | -5.26                   | 0.30                   |

Modulation Standard: 8DPSK (3Mbps)

Test Date: May. 12, 2008 Temperature: 24 Humidity: 64% Atmospheric pressure: 1008 hPa

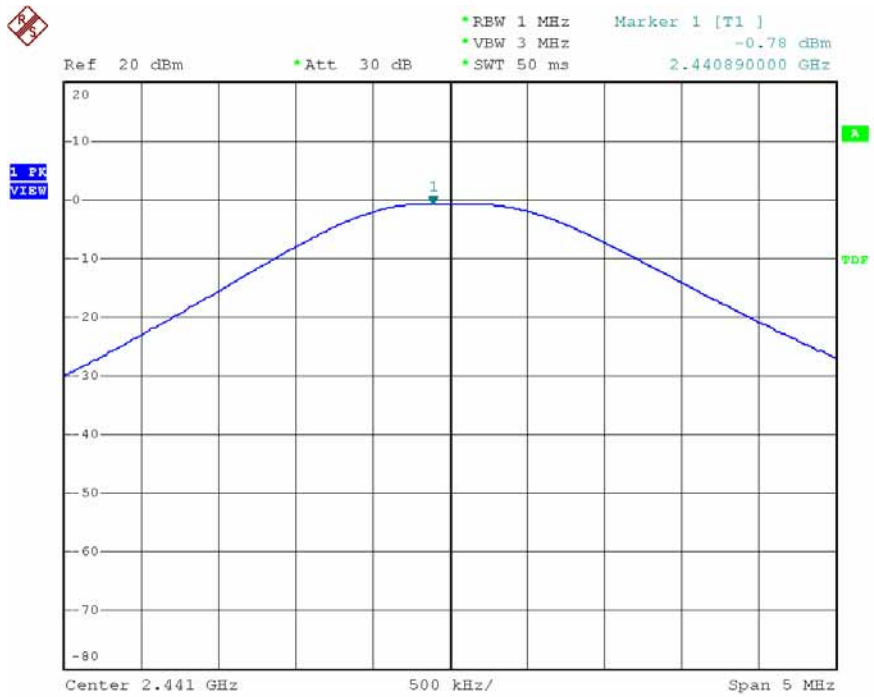
| Channel | Frequency (MHz) | Peak Power Output (dBm) | Peak Power Output (mW) |
|---------|-----------------|-------------------------|------------------------|
| 00      | 2402            | -5.11                   | 0.31                   |
| 39      | 2441            | -4.67                   | 0.34                   |
| 78      | 2478            | -5.02                   | 0.31                   |

Modulation Standard: GFSK (1Mbps)  
 Channel: 00



Date: 29.FEB.2008 11:52:27

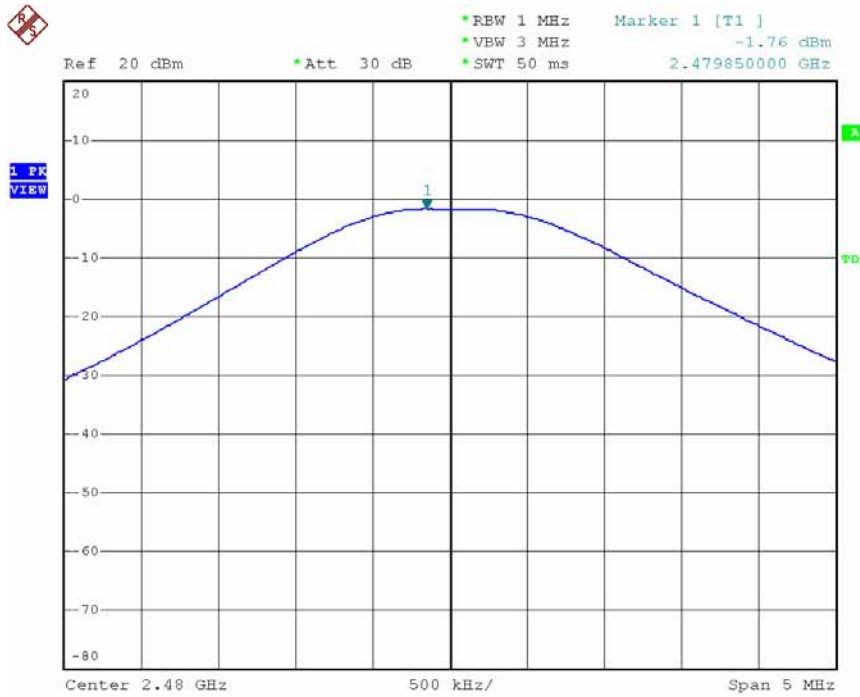
Modulation Standard: GFSK (1Mbps)  
 Channel: 39



Date: 29.FEB.2008 13:16:38

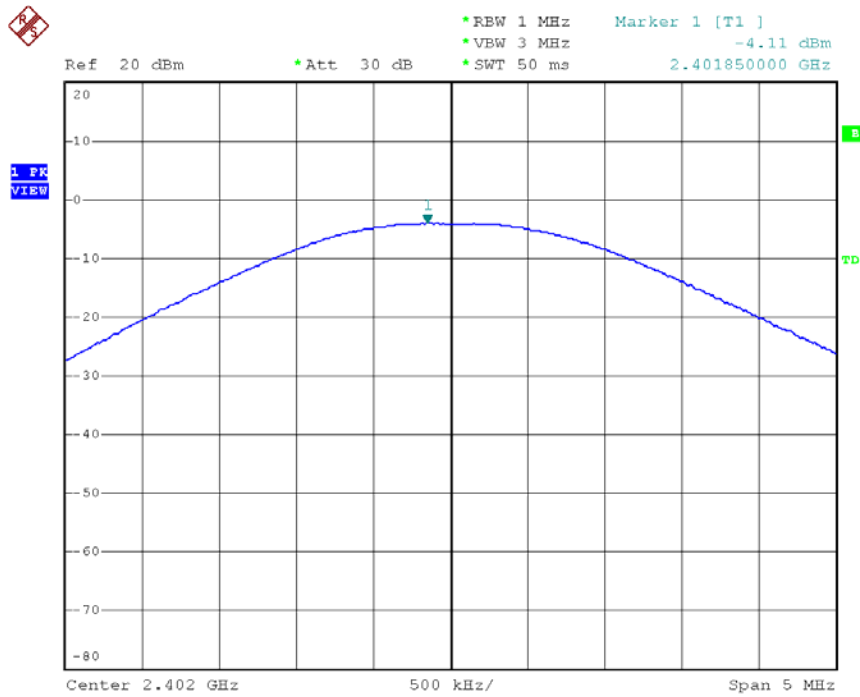


Modulation Standard: GFSK (1Mbps)  
 Channel: 78



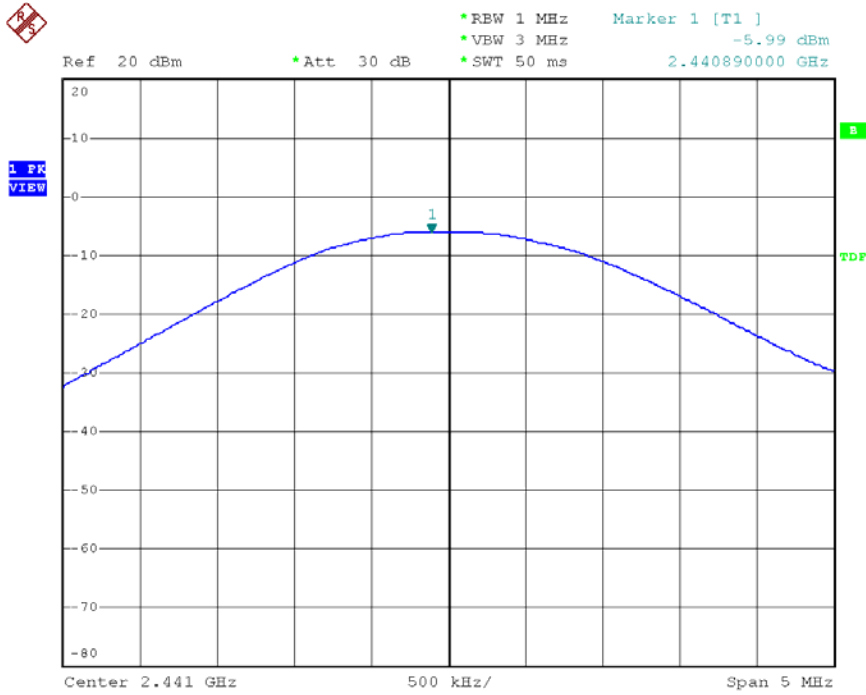
Date: 29.FEB.2008 13:18:57

Modulation Standard:  $\pi/4$ -DQPSK (2Mbps)  
 Channel: 00



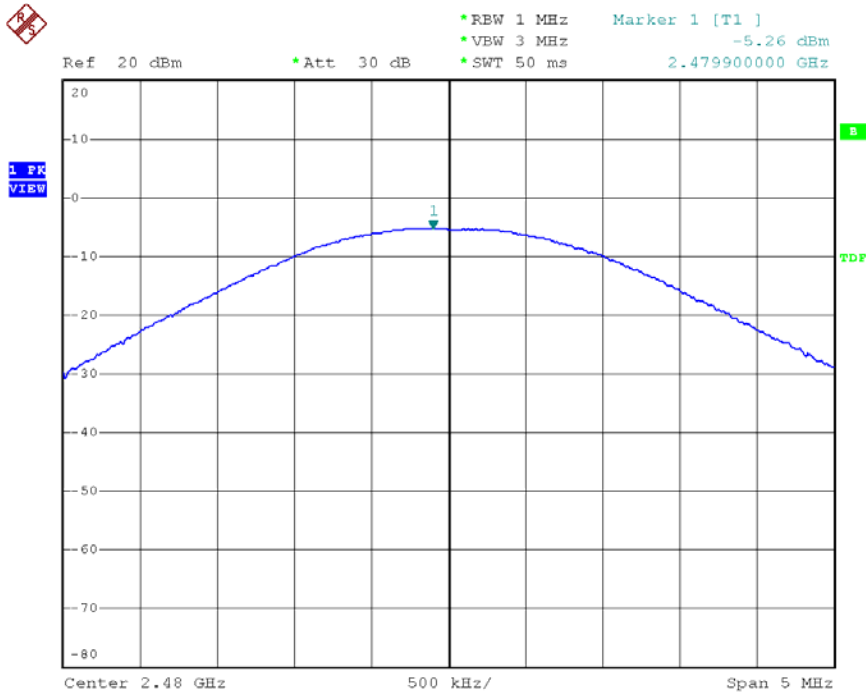
Date: 12.MAY.2008 13:22:43

Modulation Standard:  $\pi/4$ -DQPSK (2Mbps)  
 Channel: 39



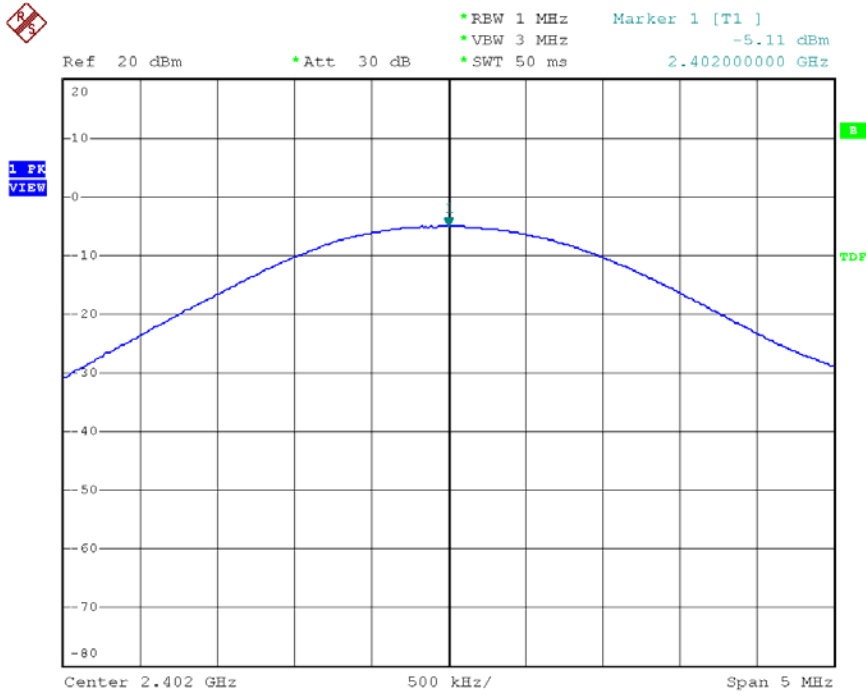
Date: 12.MAY.2008 13:25:03

Modulation Standard:  $\pi/4$ -DQPSK (2Mbps)  
 Channel: 78



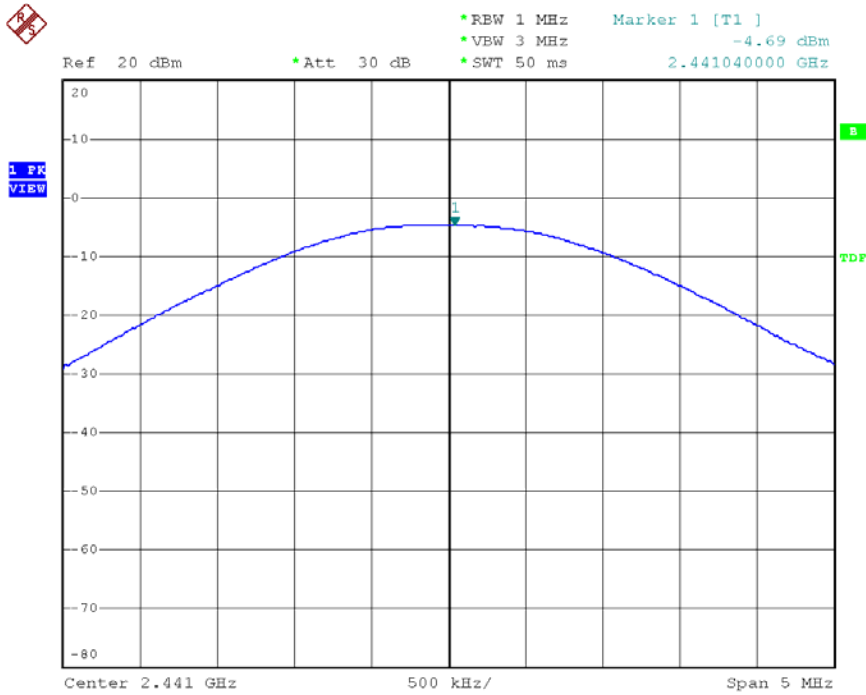
Date: 12.MAY.2008 13:25:30

Modulation Standard: 8DPSK (3Mbps)  
Channel: 00



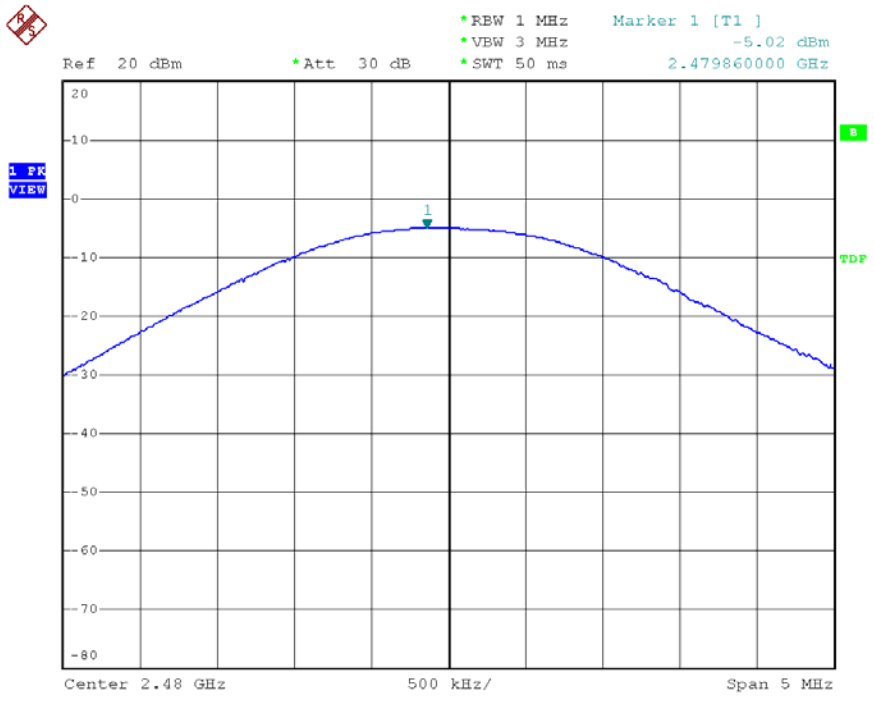
Date: 12.MAY.2008 15:22:57

Modulation Standard: 8DPSK (3Mbps)  
Channel: 39



Date: 12.MAY.2008 15:24:34

Modulation Standard: 8DPSK (3Mbps)  
Channel: 78



Date: 12.MAY.2008 15:25:04

## 11. Band Edges Measurement

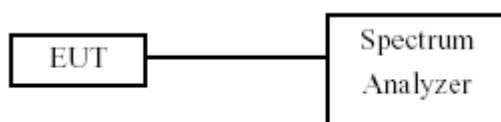
### 11.1 Test Limit

Below -20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

### 11.2 Test Procedure :

- The transmitter output was connected to the spectrum analyzer via a low lose cable.
- Set both RBW and VBW of spectrum analyzer to 100 KHz with convenient frequency span including 100 KHz bandwidth from band edge.
- The band edges was measured and recorded.

### 11.3 Test Setup Layout



### 11.4 List of Measuring Equipment Used

| Instrument/Ancillary | Model No. | Manufacturer | Serial No. | Calibration Date | Valid Date |
|----------------------|-----------|--------------|------------|------------------|------------|
| Spectrum Analyzer    | FSP40     | R&S          | 10047      | 2008/02/22       | 2009/02/21 |

### 11.5 Test Result and Data

Modulation Standard: GFSK (1Mbps)

Test Date: Feb. 29, 2008 Temperature: 20 Humidity: 60% Atmospheric pressure: 1008 hPa

| Channel | Frequency | maximum value in frequency (MHz) | maximum value is (dBm) |
|---------|-----------|----------------------------------|------------------------|
| 00      | 2402      | 2399.92                          | -42.41                 |
| 78      | 2480      | 2484.54                          | -48.24                 |

Modulation Standard:  $\pi/4$ -DQPSK (2Mbps)

Test Date: May. 12, 2008 Temperature: 24 Humidity: 64% Atmospheric pressure: 1008 hPa

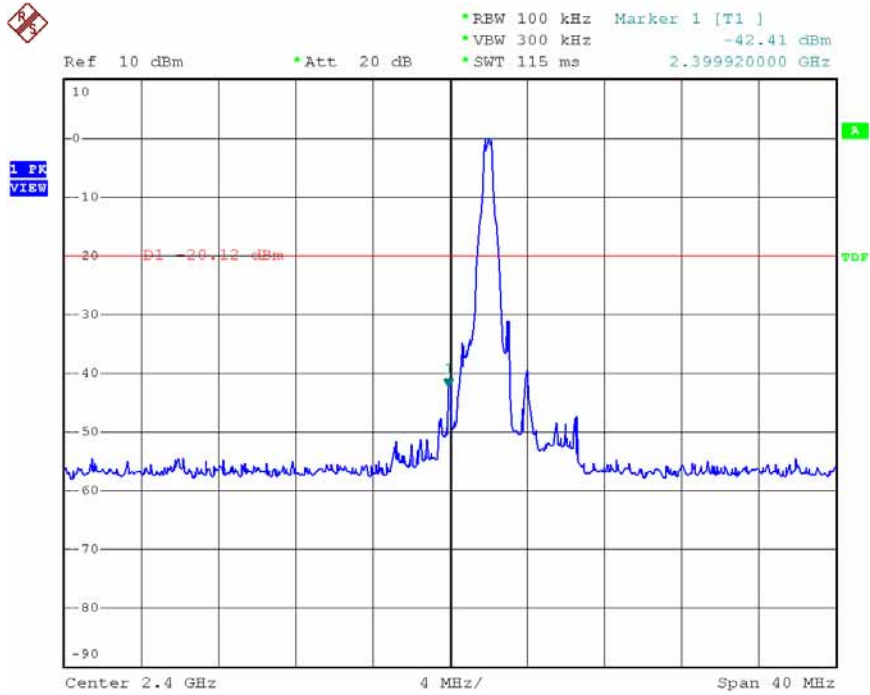
| Channel | Frequency | maximum value in frequency (MHz) | maximum value is (dBm) |
|---------|-----------|----------------------------------|------------------------|
| 00      | 2402      | 2399.92                          | -50.08                 |
| 78      | 2480      | 2483.58                          | -48.95                 |

Modulation Standard: 8DPSK (3Mbps)

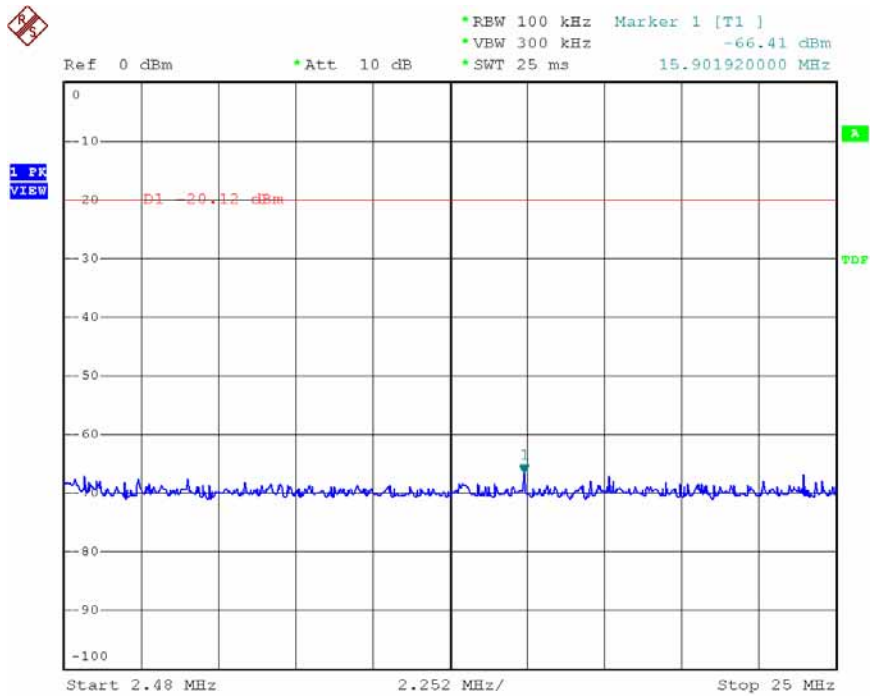
Test Date: May. 12, 2008 Temperature: 24 Humidity: 64% Atmospheric pressure: 1008 hPa

| Channel | Frequency | maximum value in frequency (MHz) | maximum value is (dBm) |
|---------|-----------|----------------------------------|------------------------|
| 00      | 2402      | 2399.60                          | -52.45                 |
| 78      | 2480      | 2483.70                          | -52.50                 |

Modulation Standard: GFSK (1Mbps)  
 Channel: 00

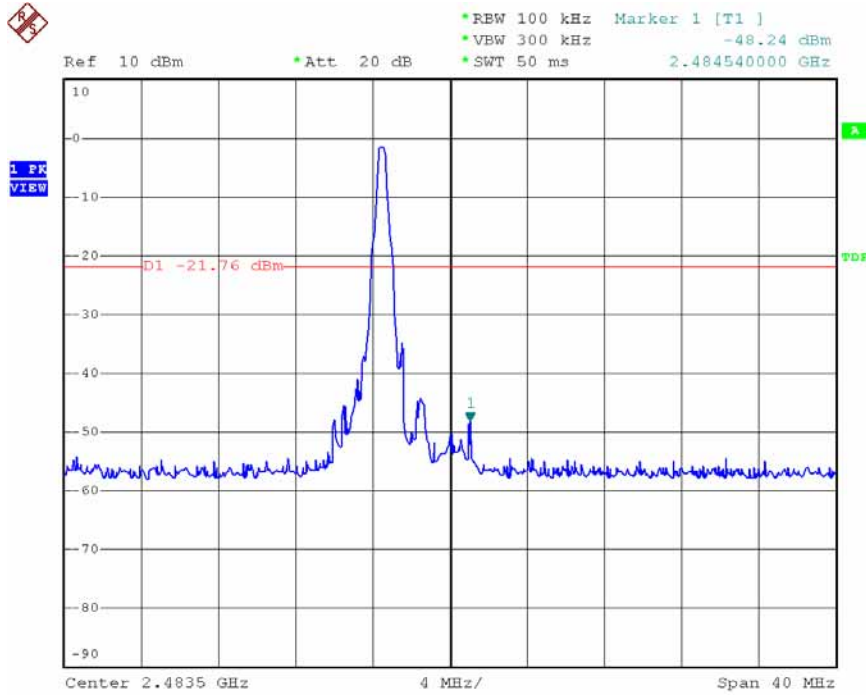


Date: 29.FEB.2008 15:32:39

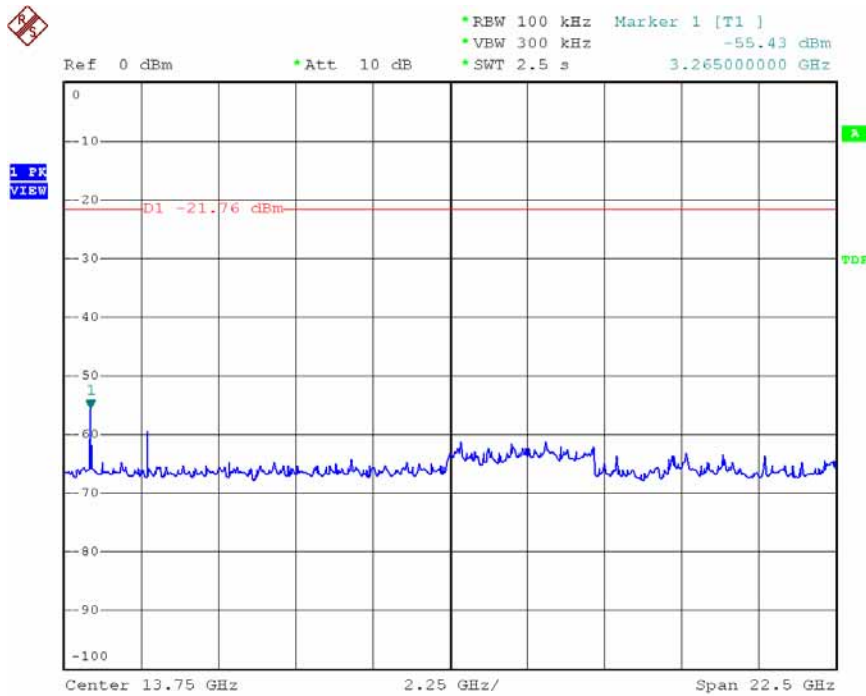


Date: 29.FEB.2008 15:33:06

Modulation Standard: GFSK (1Mbps)  
 Channel: 78

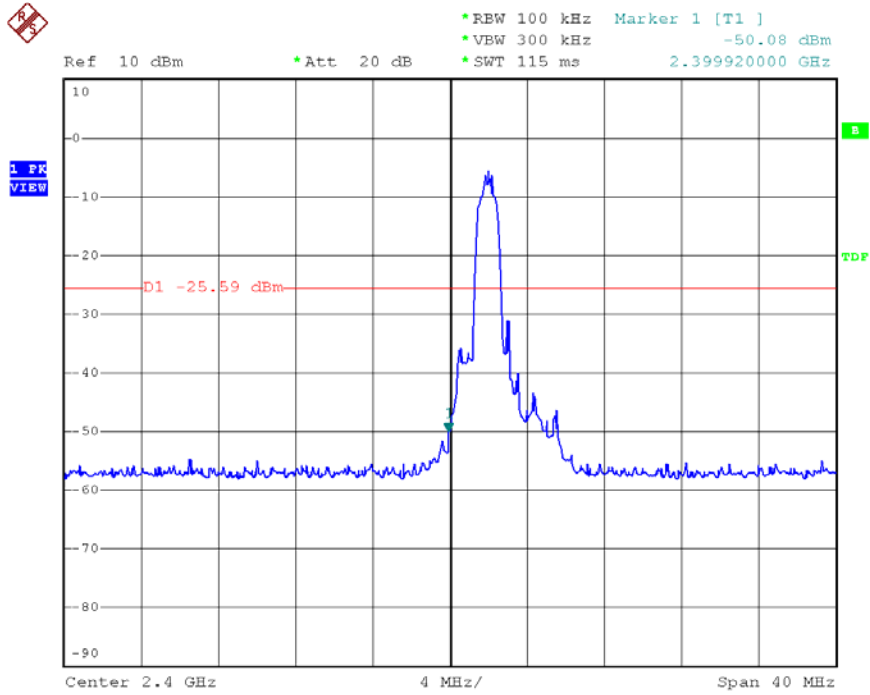


Date: 29.FEB.2008 15:28:33

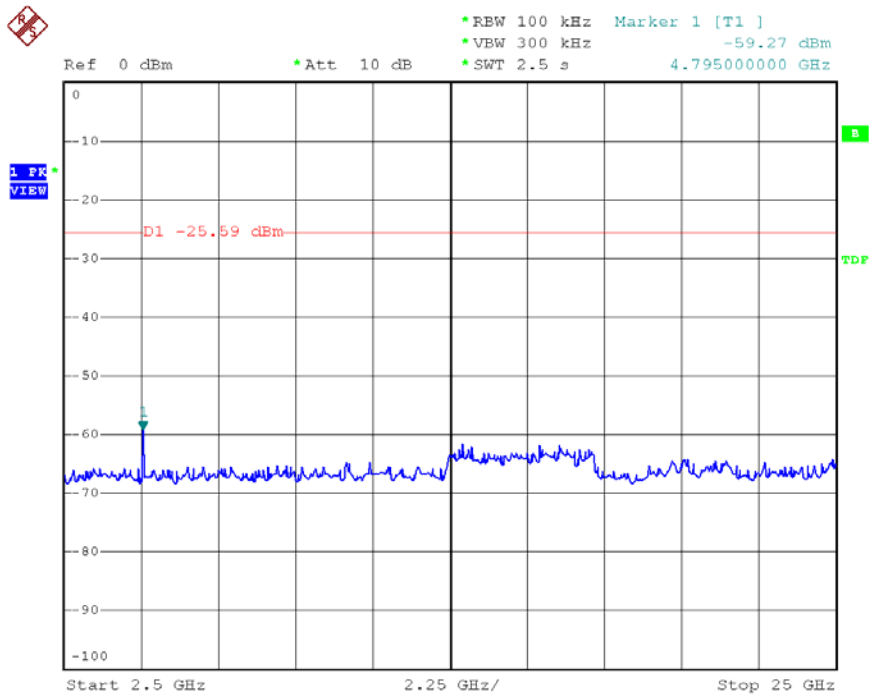


Date: 29.FEB.2008 15:31:04

Modulation Standard:  $\pi/4$ -DQPSK (2Mbps)  
 Channel: 00



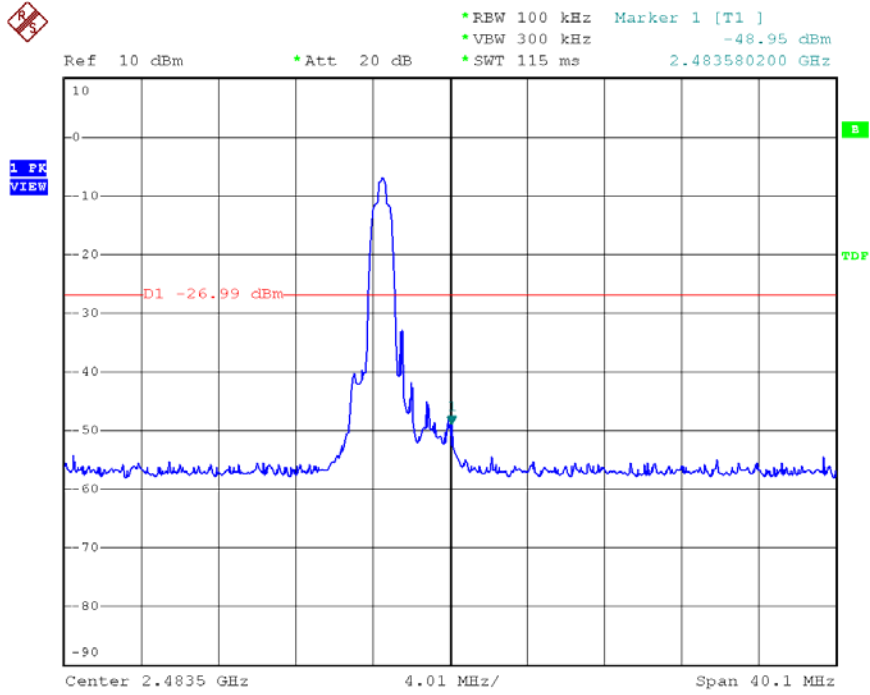
Date: 12.MAY.2008 14:01:22



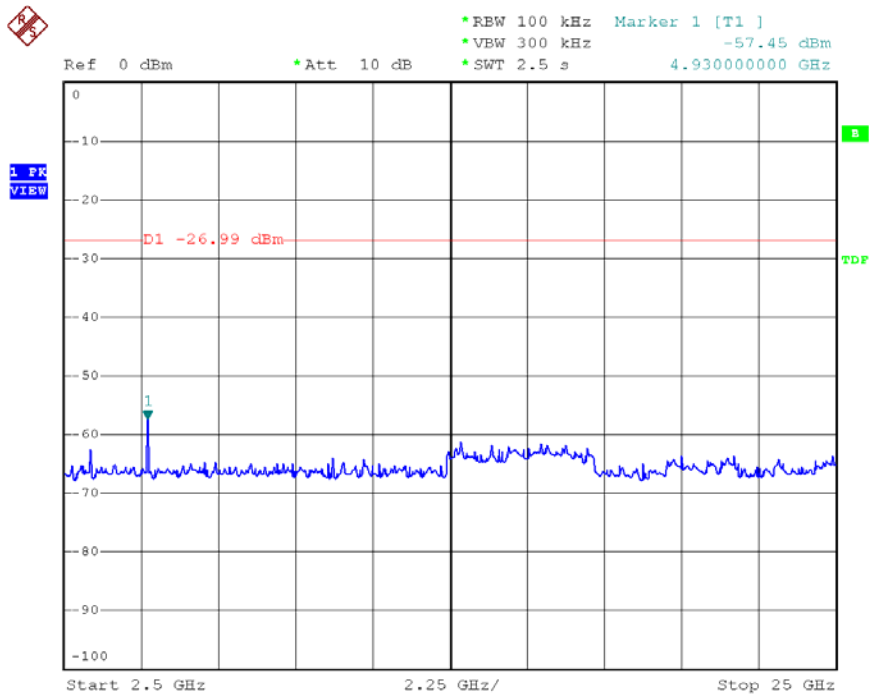
Date: 12.MAY.2008 14:02:41



Modulation Standard:  $\pi/4$ -DQPSK (2Mbps)  
 Channel: 78

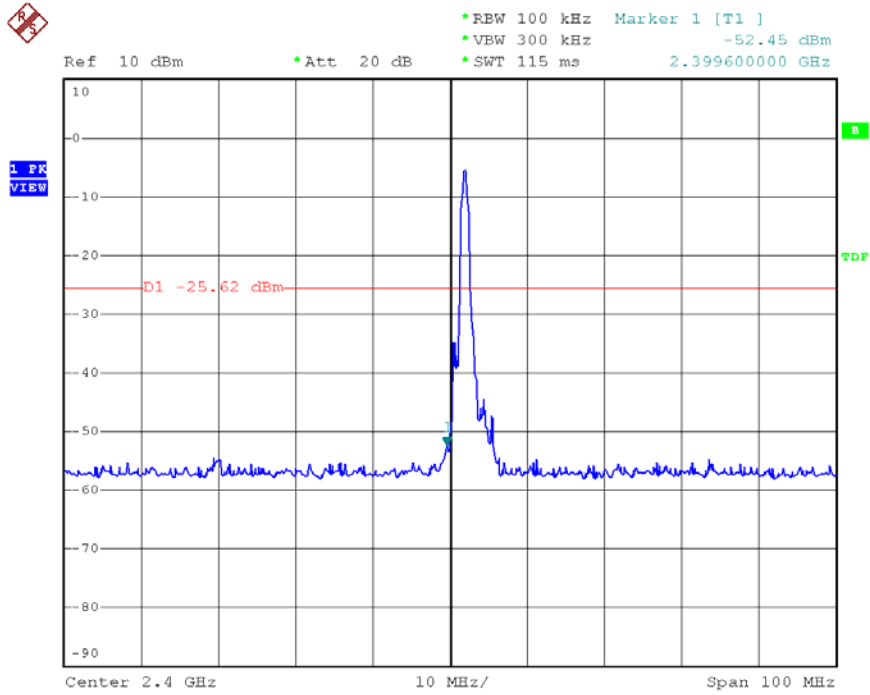


Date: 12.MAY.2008 14:05:23

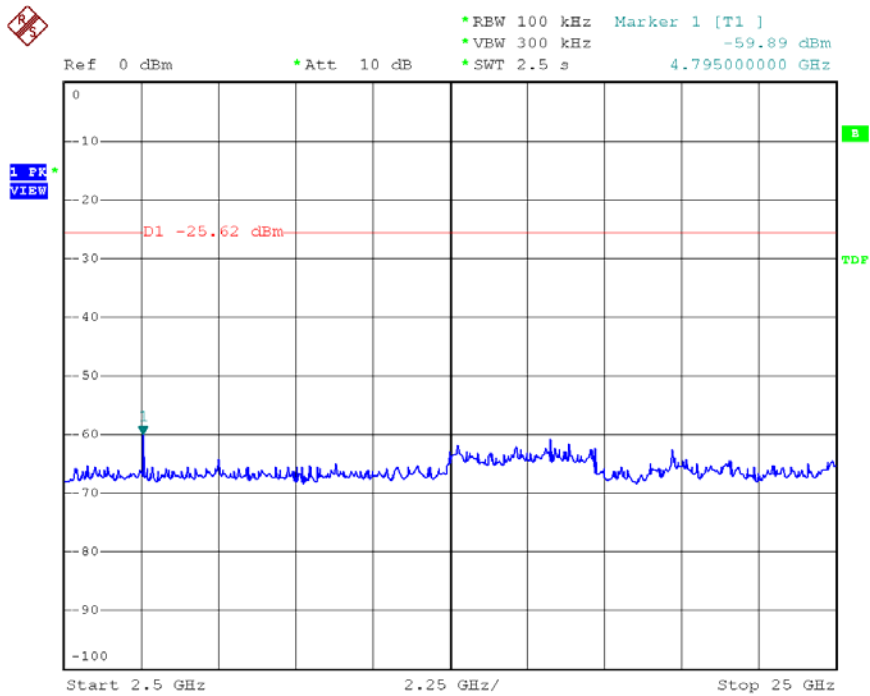


Date: 12.MAY.2008 14:05:50

Modulation Standard: 8DPSK (3Mbps)  
 Channel: 00

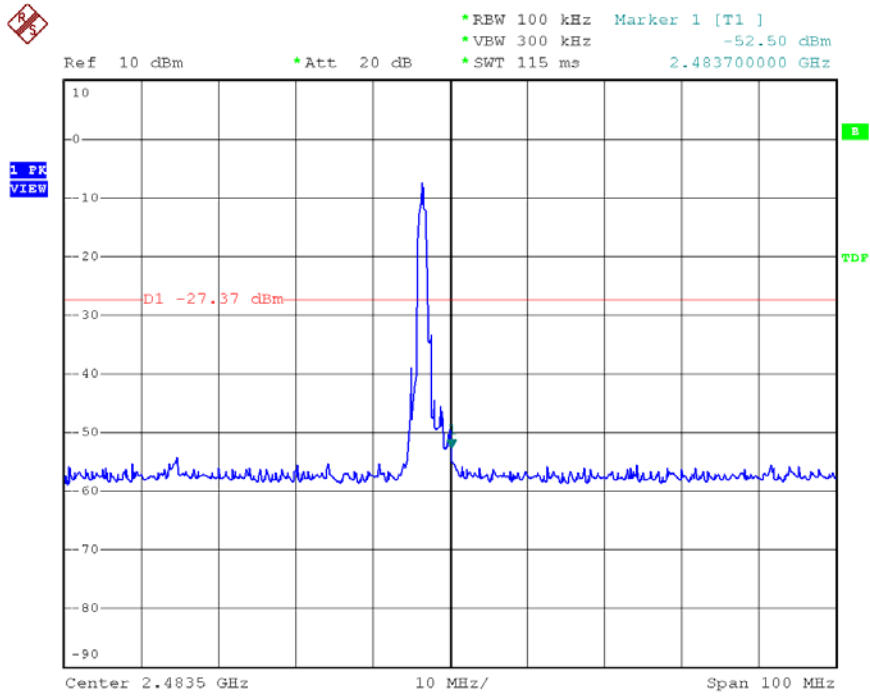


Date: 12.MAY.2008 15:14:08

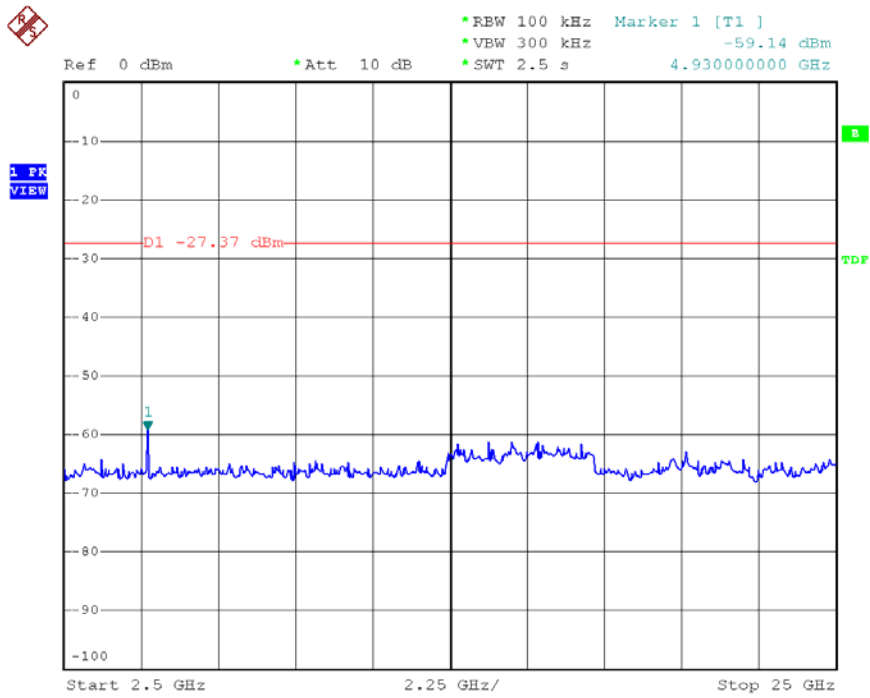


Date: 12.MAY.2008 15:14:35

Modulation Standard:  $\pi/4$ -DQPSK (2Mbps)  
 Channel: 78



Date: 12.MAY.2008 15:15:36



Date: 12.MAY.2008 15:16:09

## 11.6 Restrict band emission Measurement Data

Modulation Standard: GFSK (1Mbps)

Test Date: Feb. 13, 2008 Temperature: 15 Humidity: 70% Atmospheric pressure: 1030 hPa

### a) Channel 00

| Frequency (MHz) | Ant-Pol H/V | Meter Reading | Corrected Factor | Result (dBuV/m) | Remark | Limit@3m (dBuV/m) |      | Margin (dB) | Table (Deg.) | Ant High (m) |
|-----------------|-------------|---------------|------------------|-----------------|--------|-------------------|------|-------------|--------------|--------------|
|                 |             |               |                  |                 |        | Peak              | Ave. |             |              |              |
| 2340.80         | H           | 52.35         | -3.27            | 49.08           | Peak   | 74                | 54   | -24.92      | 238          | 1.0          |
| 2385.89         | H           | 41.43         | -3.11            | 38.32           | Ave    | 74                | 54   | -15.68      | 238          | 1.0          |
| 2379.26         | V           | 51.93         | -3.13            | 48.80           | Peak   | 74                | 54   | -25.20      | 194          | 1.0          |
| 2385.89         | V           | 40.85         | -3.11            | 37.74           | Ave    | 74                | 54   | -16.26      | 194          | 1.0          |

### b) Channel 78

| Frequency (MHz) | Ant-Pol H/V | Meter Reading | Corrected Factor | Result (dBuV/m) | Remark | Limit@3m (dBuV/m) |      | Margin (dB) | Table (Deg.) | Ant High (m) |
|-----------------|-------------|---------------|------------------|-----------------|--------|-------------------|------|-------------|--------------|--------------|
|                 |             |               |                  |                 |        | Peak              | Ave. |             |              |              |
| 2486.64         | H           | 51.87         | -2.75            | 49.12           | Peak   | 74                | 54   | -24.88      | 238          | 1.0          |
| 2483.51         | H           | 40.05         | -2.76            | 37.29           | Ave    | 74                | 54   | -16.71      | 238          | 1.0          |
| 2488.04         | V           | 52.36         | -2.74            | 49.62           | Peak   | 74                | 54   | -24.38      | 194          | 1.0          |
| 2483.51         | V           | 41.62         | -2.76            | 38.86           | Ave    | 74                | 54   | 15.14       | 194          | 1.0          |

Modulation Standard:  $\pi/4$ -DQPSK (2Mbps)

Test Date: May. 12, 2008 Temperature: 24 Humidity: 64% Atmospheric pressure: 1008 hPa

### a) Channel 00

| Frequency (MHz) | Ant-Pol H/V | Meter Reading | Corrected Factor | Result (dBuV/m) | Remark | Limit@3m (dBuV/m) |      | Margin (dB) | Table (Deg.) | Ant High (m) |
|-----------------|-------------|---------------|------------------|-----------------|--------|-------------------|------|-------------|--------------|--------------|
|                 |             |               |                  |                 |        | Peak              | Ave. |             |              |              |
| 2340.80         | H           | 52.13         | -3.27            | 48.86           | Peak   | 74                | 54   | -25.14      | 238          | 1.0          |
| 2385.89         | H           | 41.76         | -3.11            | 38.65           | Ave    | 74                | 54   | -15.35      | 238          | 1.0          |
| 2379.26         | V           | 51.56         | -3.13            | 48.43           | Peak   | 74                | 54   | -25.57      | 194          | 1.0          |
| 2385.89         | V           | 40.46         | -3.11            | 37.35           | Ave    | 74                | 54   | -16.65      | 194          | 1.0          |

### b) Channel 78

| Frequency (MHz) | Ant-Pol H/V | Meter Reading | Corrected Factor | Result (dBuV/m) | Remark | Limit@3m (dBuV/m) |      | Margin (dB) | Table (Deg.) | Ant High (m) |
|-----------------|-------------|---------------|------------------|-----------------|--------|-------------------|------|-------------|--------------|--------------|
|                 |             |               |                  |                 |        | Peak              | Ave. |             |              |              |
| 2486.64         | H           | 52.12         | -2.75            | 49.37           | Peak   | 74                | 54   | -24.63      | 238          | 1.0          |
| 2483.51         | H           | 40.10         | -2.76            | 37.34           | Ave    | 74                | 54   | -16.66      | 238          | 1.0          |
| 2488.04         | V           | 52.36         | -2.74            | 49.62           | Peak   | 74                | 54   | -24.38      | 194          | 1.0          |
| 2483.51         | V           | 41.51         | -2.76            | 38.75           | Ave    | 74                | 54   | -15.25      | 194          | 1.0          |

#### Notes:

1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and video bandwidth is 3 MHz for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average detection at frequency above 1GHz

Modulation Standard: 8DPSK (3Mbps)

Test Date: Apr. 28, 2008 Temperature: 22 Humidity: 62% Atmospheric pressure: 1008 hPa

a) Channel 00

| Frequency (MHz) | Ant-Pol H/V | Meter Reading | Corrected Factor | Result (dBuV/m) | Remark | Limit@3m (dBuV/m) |      | Margin (dB) | Table (Deg.) | Ant High (m) |
|-----------------|-------------|---------------|------------------|-----------------|--------|-------------------|------|-------------|--------------|--------------|
|                 |             |               |                  |                 |        | Peak              | Ave. |             |              |              |
| 2340.80         | H           | 52.81         | -3.27            | 49.54           | Peak   | 74                | 54   | -24.46      | 238          | 1.0          |
| 2385.89         | H           | 41.52         | -3.11            | 38.41           | Ave    | 74                | 54   | -16.59      | 238          | 1.0          |
| 2379.26         | V           | 51.48         | -3.13            | 48.35           | Peak   | 74                | 54   | -25.65      | 194          | 1.0          |
| 2385.89         | V           | 40.96         | -3.11            | 37.85           | Ave    | 74                | 54   | -16.15      | 194          | 1.0          |

b) Channel 78

| Frequency (MHz) | Ant-Pol H/V | Meter Reading | Corrected Factor | Result (dBuV/m) | Remark | Limit@3m (dBuV/m) |      | Margin (dB) | Table (Deg.) | Ant High (m) |
|-----------------|-------------|---------------|------------------|-----------------|--------|-------------------|------|-------------|--------------|--------------|
|                 |             |               |                  |                 |        | Peak              | Ave. |             |              |              |
| 2486.64         | H           | 52.23         | -2.75            | 49.48           | Peak   | 74                | 54   | -24.52      | 238          | 1.0          |
| 2483.51         | H           | 40.29         | -2.76            | 37.53           | Ave    | 74                | 54   | -16.47      | 238          | 1.0          |
| 2488.04         | V           | 52.33         | -2.74            | 49.59           | Peak   | 74                | 54   | -24.41      | 194          | 1.0          |
| 2483.51         | V           | 41.80         | -2.76            | 39.04           | Ave    | 74                | 54   | -14.96      | 194          | 1.0          |

Notes:

1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and video bandwidth is 3 MHz for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average detection at frequency above 1GHz

## 12. Power Spectral Density

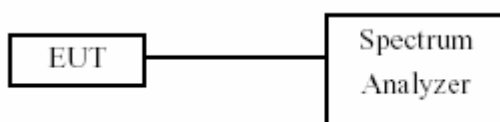
### 12.1 Test Limit

The Maximum of Power Spectral Density Measurement is 8dBm.

### 12.2 Test Procedures

- 1.The transmitter output was connected to spectrum analyzer.
- 2.The spectrum analyzer's resolution bandwidth were set at 3KHz RBW and 30KHz VBW as that of the fundamental frequency. Set the sweep time=span/3KHz.
- 3.The power spectral density was measured and recorded.
- 4.The Sweep time is allowed to be longer than span/3KHz for a full response of the mixer in the spectrum analyzer.

### 12.3 Test Setup Layout :



### 12.4 List of Measuring Equipment Used

| Instrument/Ancillary | Model No. | Manufacturer | Serial No. | Calibration Date | Valid Date |
|----------------------|-----------|--------------|------------|------------------|------------|
| Spectrum Analyzer    | FSP40     | R&S          | 10047      | 2008/02/22       | 2009/02/21 |

### 12.5 Test Result and Data

Modulation Standard: GFSK (1Mbps)

Test Date: Feb. 29, 2008 Temperature: 20 Humidity: 60% Atmospheric pressure: 1008 hPa

| Channel | Frequency | Maximum Power Density of 3 kHz Bandwidth (dBm) |
|---------|-----------|--|
| 00      | 2402      | -11.70   |
| 39      | 2441      | -12.43   |
| 78      | 2480      | -13.22   |

Modulation Standard:  $\pi/4$ -DQPSK (2Mbps)

Test Date: May. 12, 2008 Temperature: 24 Humidity: 64% Atmospheric pressure: 1008 hPa

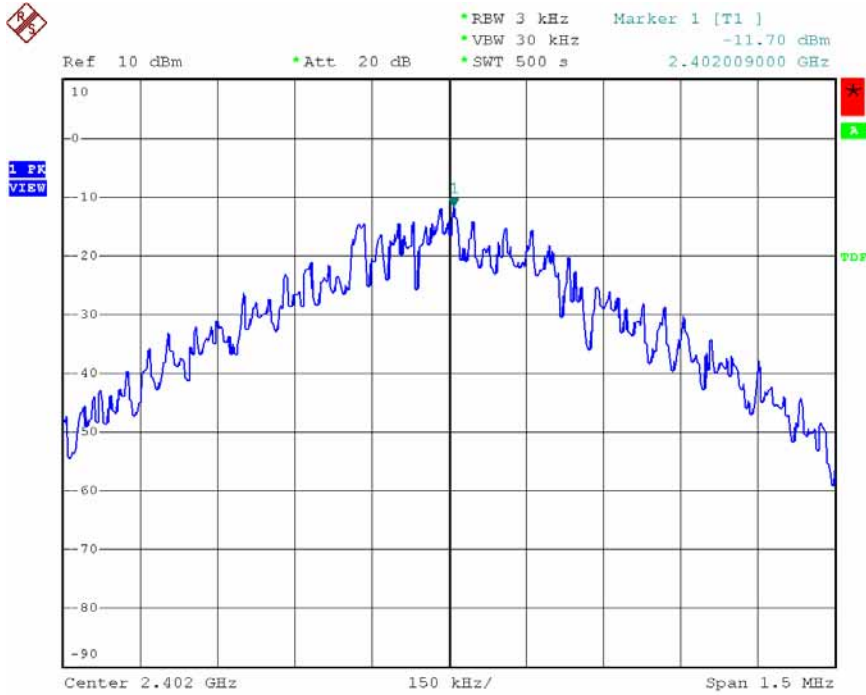
| Channel | Frequency | Maximum Power Density of 3 kHz Bandwidth (dBm) |
|---------|-----------|--|
| 00      | 2402      | -16.99   |
| 39      | 2441      | -17.93   |
| 78      | 2480      | -18.83   |

Modulation Standard: 8DPSK (3Mbps)

Test Date: May. 12, 2008 Temperature: 24 Humidity: 64% Atmospheric pressure: 1008 hPa

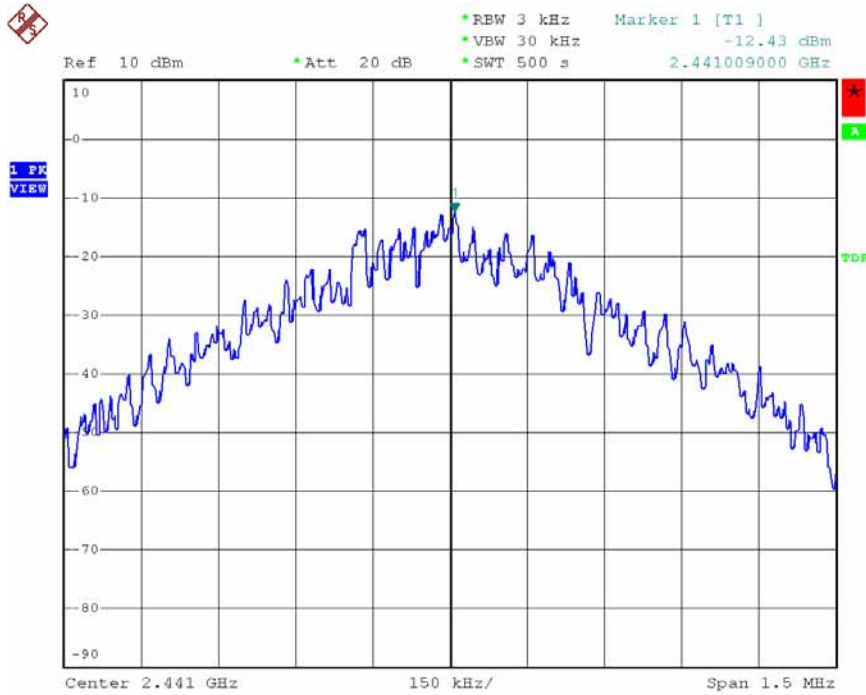
| Channel | Frequency | Maximum Power Density of 3 kHz Bandwidth (dBm) |
|---------|-----------|--|
| 00      | 2402      | -17.76   |
| 39      | 2441      | -18.66   |
| 78      | 2480      | -18.91   |

Modulation Standard: GFSK (1Mbps)  
Channel: 00



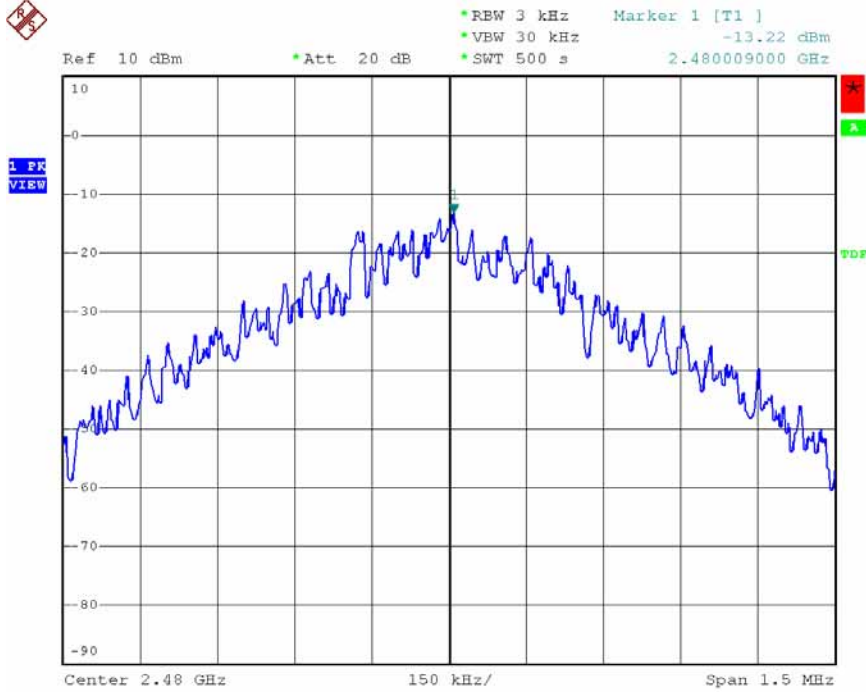
Date: 3.MAR.2008 14:09:29

Modulation Standard: GFSK (1Mbps)  
Channel: 39



Date: 3.MAR.2008 14:19:04

Modulation Standard: GFSK (1Mbps)  
 Channel: 78



Date: 3.MAR.2008 14:47:56

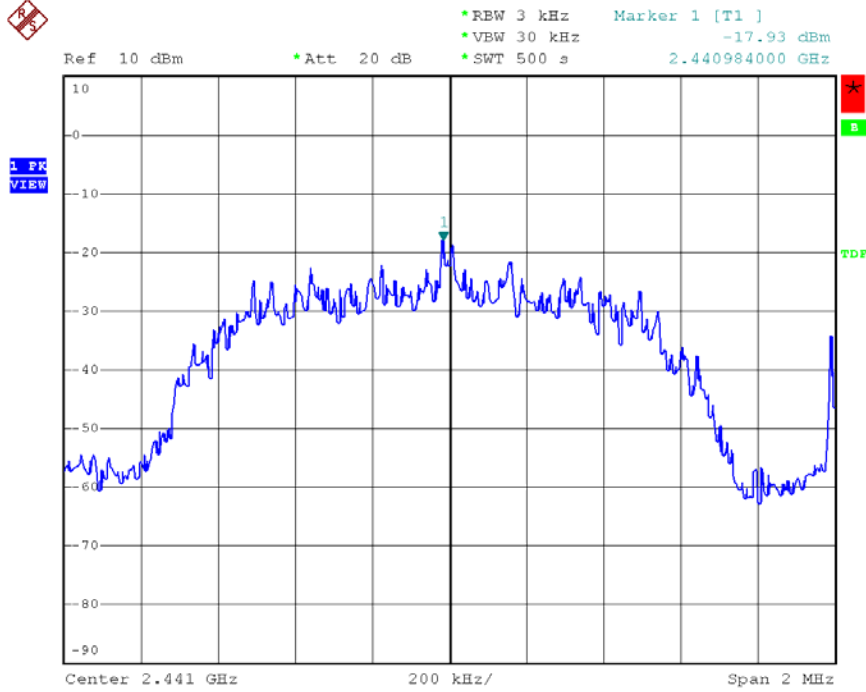
Modulation Standard:  $\pi/4$ -DQPSK (2Mbps)  
 Channel: 00



Date: 12.MAY.2008 14:40:13

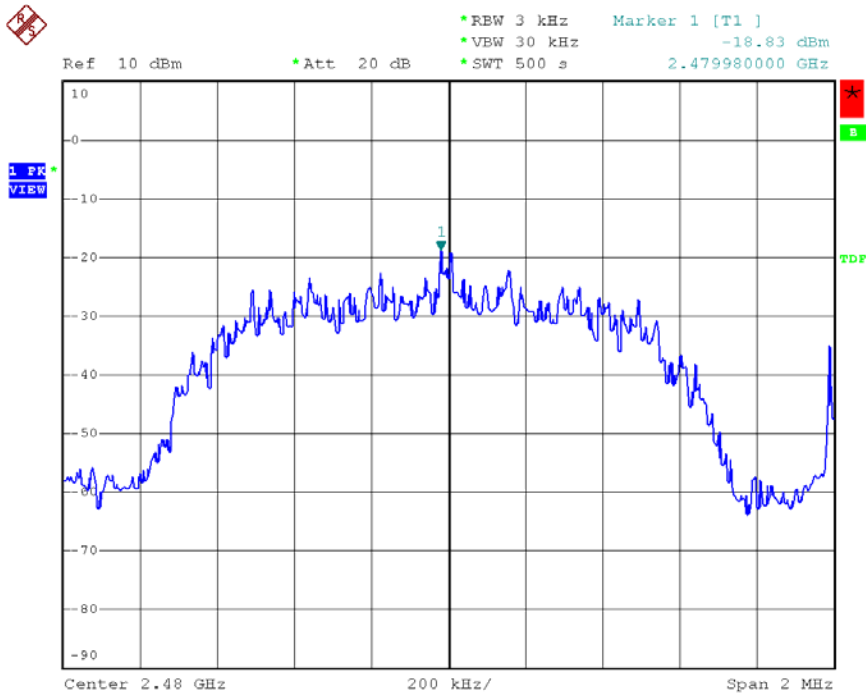


Modulation Standard:  $\pi/4$ -DQPSK (2Mbps)  
 Channel: 39



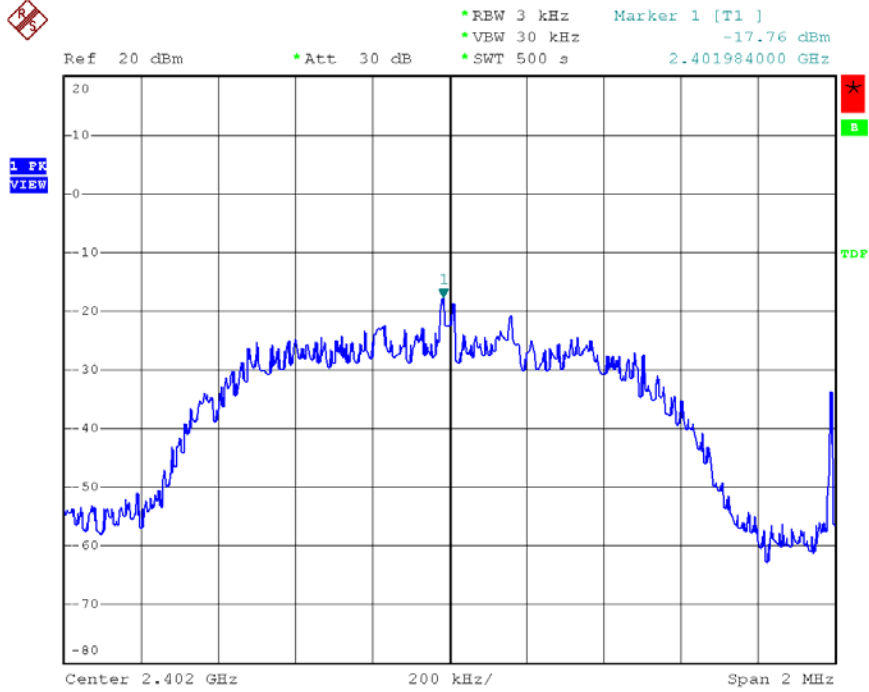
Date: 12.MAY.2008 14:29:53

Modulation Standard:  $\pi/4$ -DQPSK (2Mbps)  
 Channel: 78



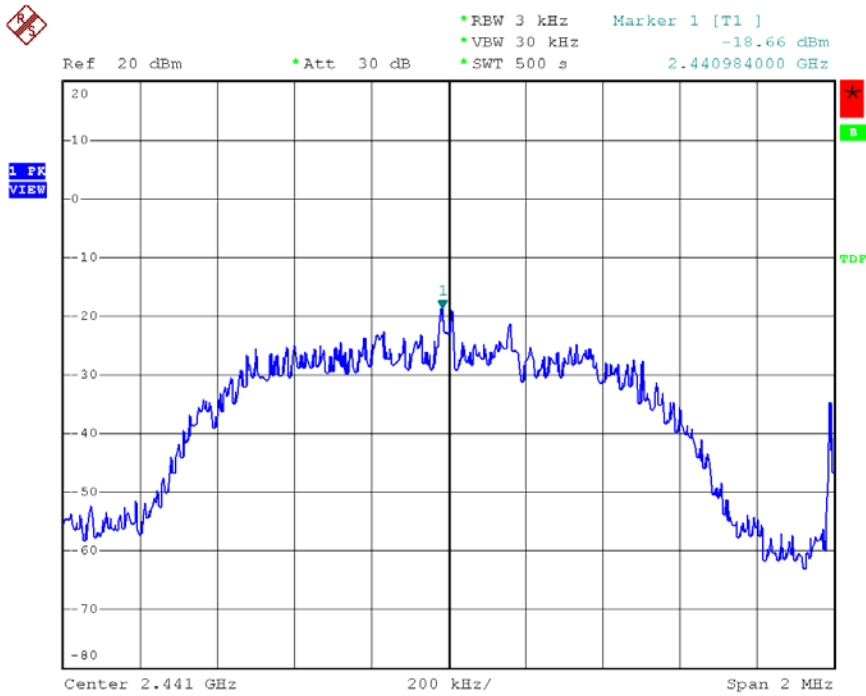
Date: 12.MAY.2008 14:20:26

Modulation Standard: 8DPSK (3Mbps)  
 Channel: 00



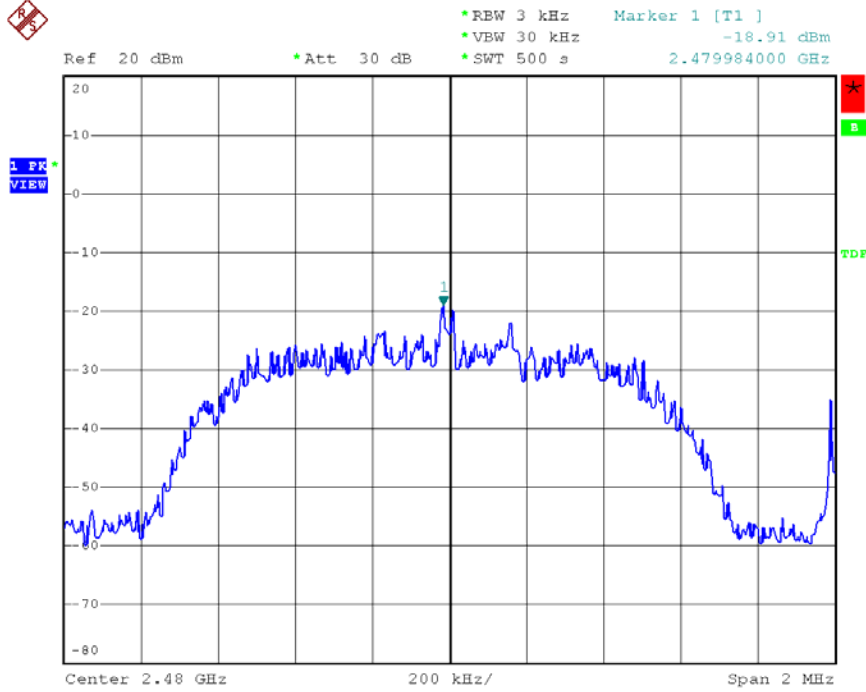
Date: 12.MAY.2008 15:53:24

Modulation Standard: 8DPSK (3Mbps)  
 Channel: 39



Date: 12.MAY.2008 15:45:25

Modulation Standard: 8DPSK (3Mbps)  
Channel: 78



Date: 12.MAY.2008 15:36:51

### 13. Restricted Bands of Operation

Only spurious emissions are permitted in any of the frequency bands listed below:

| MHz                 | MHz                   | MHz             | GHz             |
|---------------------|-----------------------|-----------------|-----------------|
| 0.09000 – 0.11000   | 16.42000 – 16.42300   | 399.9 – 410.0   | 4.500 – 5.250   |
| 0.49500 – 0.505**   | 16.69475 – 16.69525   | 608.0 – 614.0   | 5.350 – 5.460   |
| 2.17350 – 2.19050   | 16.80425 – 16.80475   | 960.0 – 1240.0  | 7.250 – 7.750   |
| 4.12500 – 4.12800   | 25.50000 – 25.67000   | 1300.0 – 1427.0 | 8.025 – 8.500   |
| 4.17725 – 4.17775   | 37.50000 – 38.25000   | 1435.0 – 1626.5 | 9.000 – 9.200   |
| 4.20725 – 4.20775   | 73.00000 – 74.60000   | 1645.5 – 1646.5 | 9.300 – 9.500   |
| 6.21500 – 6.21800   | 74.80000 – 75.20000   | 1660.0 – 1710.0 | 10.600 – 12.700 |
| 6.26775 – 6.26825   | 108.00000 – 121.94000 | 1718.8 – 1722.2 | 13.250 – 13.400 |
| 6.31175 – 6.31225   | 123.00000 – 138.00000 | 2200.0 – 2300.0 | 14.470 – 14.500 |
| 8.29100 – 8.29400   | 149.90000 – 150.05000 | 2310.0 – 2390.0 | 15.350 – 16.200 |
| 8.36200 – 8.36600   | 156.52475 – 156.52525 | 2483.5 – 2500.0 | 17.700 – 21.400 |
| 8.37625 – 8.38675   | 156.70000 – 156.90000 | 2655.0 – 2900.0 | 22.010 – 23.120 |
| 8.41425 – 8.41475   | 162.01250 – 167.17000 | 3260.0 – 3267.0 | 23.600 – 24.000 |
| 12.29000 – 12.29300 | 167.72000 – 173.20000 | 3332.0 – 3339.0 | 31.200 – 31.800 |
| 12.51975 – 12.52025 | 240.00000 – 285.00000 | 3345.8 – 3358.0 | 36.430 – 36.500 |
| 12.57675 – 12.57725 | 322.00000 – 335.40000 | 3600.0 – 4400.0 | Above 38.6      |
| 13.36000 – 13.41000 |                       |                 |                 |

\*\* : Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz

#### 13.1 Labeling Requirement

The device shall bear the following statement in a conspicuous location on the device:

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