



## Test Report

Product Name	Mobile Printer
Model No.	AME-3230B,AME-2230B
FCC ID.	NBFMP32001

Applicant	Argox Information Co.,Ltd.
Address	7F,NO.126,Lane 235,Pao-Chiao Rd., Hsin Tien , Taipei, Taiwan

Date of Receipt	Oct. 14, 2009
Issued Date	Dec. 21, 2009
Report No.	09A259R-RFUSP43V01
Report Version	V1.0

The Test Results relate only to the samples tested.

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This report must not be used to claim product endorsement by NVLAP any agency of the U.S. Government

# Test Report Certification

Issued Date: Dec. 21, 2009

Report No.: 09A259R-RFUSP43V01



Product Name	Mobile Printer
Applicant	Argox Information Co.,Ltd.
Address	7F,NO.126,Lane 235,Pao-Chiao Rd., Hsin Tien , Taipei, Taiwan
Manufacturer	Argox Information Co.,Ltd.
Model No.	AME-3230B,AME-2230B
FCC ID.	NBFMP32001
EUT Rated Voltage	AC 100-240 V, 50-60 Hz
EUT Test Voltage	AC 120V/ 60Hz
Trade Name	ARGOX
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C: 2008 ANSI C63.4: 2003
Test Result	Complied



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Documented By : Leven Huang  
 ( Adm. Specialist / Leven Huang)



Tested By : NoNo Chang  
 ( Engineer / NoNo Chang)



Approved By : Vincent Lin  
 (Manager / Vincent Lin)

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Attachment 1: EUT Test Photographs

Attachment 2: EUT Detailed Photographs

## 1. GENERAL INFORMATION

### 1.1. EUT Description

Product Name	Mobile Printer
Trade Name	ARGOX
Model No.	AME-3230B,AME-2230B
FCC ID.	NBFMP32001
Frequency Range	2402 – 2480MHz
Channel Number	79
Type of Modulation	FHSS: GFSK(1Mbps) / $\pi$ / 4DQPSK(2Mbps) / 8DPSK(3Mbps)
Antenna Type	Chip
Channel Control	Auto
Antenna Gain	Refer to the table “Antenna List”
USB to RS-232 Cable	Shielded,1.5m
Power Adapter	MFR: Sunny ,M/N: SYS1357-1409 Input: AC 100-240V,50-60Hz,1.0A Output: DC 9V,1.56A Cable Out: Non-Shielded,1.8m

#### Antenna List

No.	Manufacturer	Part No.	Peak Gain
1	Yageo	CAN4311115002701K	4.1dBi for 2.4 GHz

## Frequency of Each Channel:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 00:	2402 MHz	Channel 20:	2422 MHz	Channel 40:	2442 MHz	Channel 60:	2462 MHz
Channel 01:	2403 MHz	Channel 21:	2423 MHz	Channel 41:	2443 MHz	Channel 61:	2463 MHz
Channel 02:	2404 MHz	Channel 22:	2424 MHz	Channel 42:	2444 MHz	Channel 62:	2464 MHz
Channel 03:	2405 MHz	Channel 23:	2425 MHz	Channel 43:	2445 MHz	Channel 63:	2465 MHz
Channel 04:	2406 MHz	Channel 24:	2426 MHz	Channel 44:	2446 MHz	Channel 64:	2466 MHz
Channel 05:	2407 MHz	Channel 25:	2427 MHz	Channel 45:	2447 MHz	Channel 65:	2467 MHz
Channel 06:	2408 MHz	Channel 26:	2428 MHz	Channel 46:	2448 MHz	Channel 66:	2468 MHz
Channel 07:	2409 MHz	Channel 27:	2429 MHz	Channel 47:	2449 MHz	Channel 67:	2469 MHz
Channel 08:	2410 MHz	Channel 28:	2430 MHz	Channel 48:	2450 MHz	Channel 68:	2470 MHz
Channel 09:	2411 MHz	Channel 29:	2431 MHz	Channel 49:	2451 MHz	Channel 69:	2471 MHz
Channel 10:	2412 MHz	Channel 30:	2432 MHz	Channel 50:	2452 MHz	Channel 70:	2472 MHz
Channel 11:	2413 MHz	Channel 31:	2433 MHz	Channel 51:	2453 MHz	Channel 71:	2473 MHz
Channel 12:	2414 MHz	Channel 32:	2434 MHz	Channel 52:	2454 MHz	Channel 72:	2474 MHz
Channel 13:	2415 MHz	Channel 33:	2435 MHz	Channel 53:	2455 MHz	Channel 73:	2475 MHz
Channel 14:	2416 MHz	Channel 34:	2436 MHz	Channel 54:	2456 MHz	Channel 74:	2476 MHz
Channel 15:	2417 MHz	Channel 35:	2437 MHz	Channel 55:	2457 MHz	Channel 75:	2477 MHz
Channel 16:	2418 MHz	Channel 36:	2438 MHz	Channel 56:	2458 MHz	Channel 76:	2478 MHz
Channel 17:	2419 MHz	Channel 37:	2439 MHz	Channel 57:	2459 MHz	Channel 77:	2479 MHz
Channel 18:	2420 MHz	Channel 38:	2440 MHz	Channel 58:	2460 MHz	Channel 78:	2480 MHz
Channel 19:	2421 MHz	Channel 39:	2441 MHz	Channel 59:	2461 MHz		

The system receivers have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shift frequencies in synchronization with the transmitted signals

Frequency hopping spread spectrum systems are not required to employ all available hopping channels during each transmission. The transmitter is presented with a continuous data stream. In addition, a system employing short transmission bursts must comply with the definition of a frequency hopping system and must distribute its 79 channels and over the minimum number of hopping channels (75 channels).

The incorporation of intelligence within a frequency hopping spread spectrum system that permits the system to recognize other users within the spectrum band so that it individually and independently chooses and adapts its hopsets to avoid hopping on occupied channels is permitted. The coordination of frequency hopping systems in any other manner for the express purpose of avoiding the simultaneous occupancy of individual hopping frequencies by multiple transmitters is not permitted.

Note:

1. This device is a Mobile Printer with a built-in 2.4GHz Bluetooth V2.0+EDR transceiver
2. The different of the each model is shown as below:

Model Number	Description
AME-3230B	3 inch print head and including BT
AME-2230B	2 inch print head and including BT

3. These tests were conducted on a sample for the purpose of demonstrating compliance of Bluetooth transmitter with Part 15 Subpart C Paragraph 15.247 for spread spectrum devices.
4. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
5. The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.

## 1.2. Operational Description

The EUT is a Mobile Printer with built-in 2.4GHz Bluetooth V2.0+EDR transceiver. The number of the channels is 79 in 2402-2480MHz. The device adapts the frequency hopping spread spectrum modulation. The antenna is chip antenna and provides diversity function to improve the receiving function.

This device provides wireless technology that revolutionizes personal connectivity. It is the solution for the seamless integration of Bluetooth technology into personal computer enabling short-range wireless connections between desktop/laptop computers, Bluetooth-enabled peripherals, and portable handheld devices.

Test Mode	Mode 1: Transmit - 1Mbps (GFSK) Mode 2: Transmit - 3Mbps (8DPSK)
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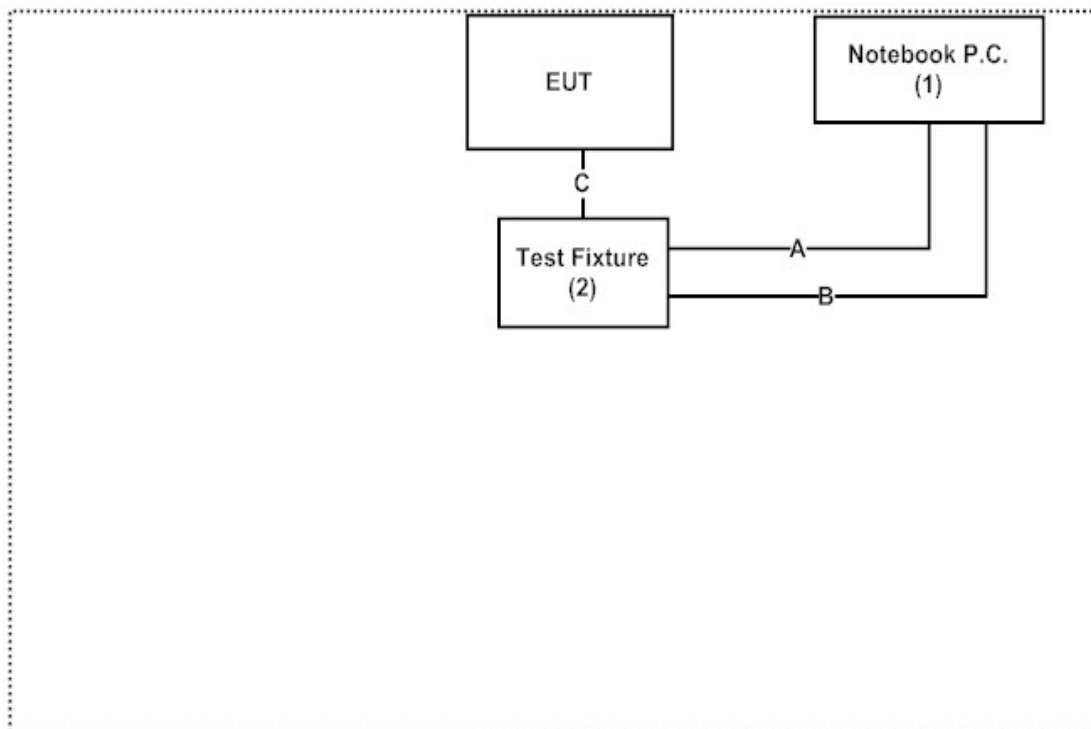
### 1.3. Tested System Details

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product	Manufacturer	Model No.	Serial No.	FCC ID	Power Cord	
1	Notebook P.C.	ASUS	L4000L	37NP067733	DoC	Non-Shielded, 1.2m
2	Test Fixture	Argox	N/A	N/A	N/A	N/A

Signal Cable Type	Signal cable Description
A Printer Cable	Shielded,1.8m
B USB Cable	Shielded,2.7m
C Control Signal Line	Shielded,0.1m

### 1.4. Configuration of Tested System



### 1.5. EUT Exercise Software

- (1) Setup the EUT as shown in section 1.4
- (2) Execute the CSR program (the continuous transmission program) on the EUT
- (3) Setup the test mode, the test channel, and the data rate.
- (4) Press OK to start the transmission.
- (5) Verify that the EUT works correctly.



**1.6. Test Facility**

Ambient conditions in the laboratory:

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	20-35
Humidity (%RH)	25-75	30-65
Barometric pressure (mbar)	860-1060	950-1000

The related certificate for our laboratories about the test site and management system can be downloaded from Quietek Corporation’s Web Site : <http://tw.quietek.com/tw/emc/accreditations/accreditations.htm>

The address and introduction of Quietek Corporation’s laboratories can be founded in our Web site : <http://www.quietek.com/>

Site Description: File on  
 Federal Communications Commission  
 FCC Engineering Laboratory  
 7435 Oakland Mills Road  
 Columbia, MD 21046  
 Registration Number: 92195



Accreditation on NVLAP  
 NVLAP Lab Code: 200533-0



Site Name: Quietek Corporation  
 Site Address: No. 5-22, Ruei-Shu Valley, Ruei-Ping Tsuen,  
 Lin-Kou Shiang, Taipei,  
 Taiwan, R.O.C.  
 TEL: 886-2-8601-3788 / FAX : 886-2-8601-3789  
 E-Mail : [service@quietek.com](mailto:service@quietek.com)

FCC Accreditation Number: TW1014



## 2. Conducted Emission

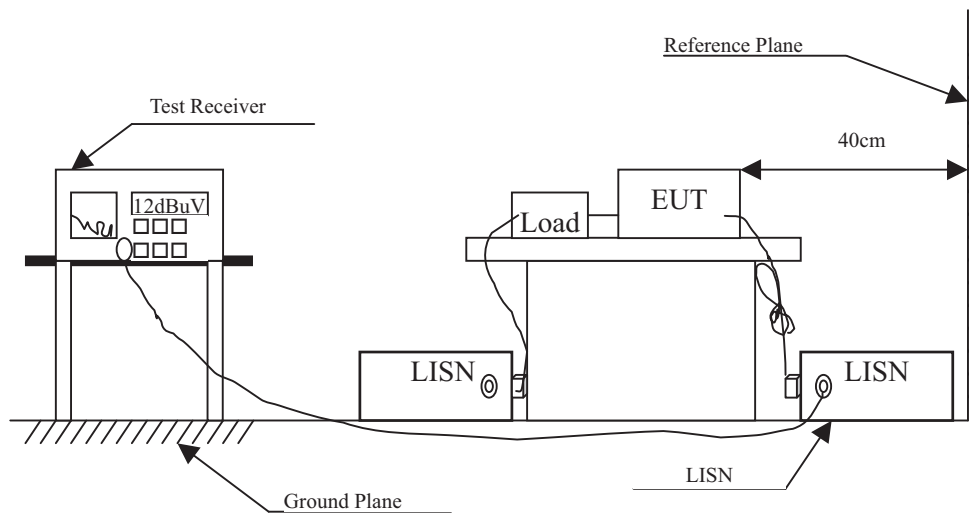
### 2.1. Test Equipment

The following test equipment are used during the conducted emission test:

Item	Instrument	Manufacturer	Type No./Serial No	Last Cal.	Remark
1	Test Receiver	R & S	ESCS 30/825442/014	Feb., 2009	
2	L.I.S.N.	R & S	ESH3-Z5/825562/002	Feb., 2009	EUT
3	L.I.S.N.	R & S	ENV4200/848411/010	Feb., 2009	Peripherals
4	Pulse Limiter	R & S	ESH3-Z2/100410	July, 2009	
5	No.1 Shielded Room			N/A	

Note: All instruments are calibrated every one year.

### 2.2. Test Setup



**2.3. Limits**

<b>FCC Part 15 Subpart C Paragraph 15.207 (dBuV) Limit</b>		
Frequency MHz	Limits	
	QP	AV
0.15 - 0.50	66-56	56-46
0.50-5.0	56	46
5.0 - 30	60	50

Remarks: In the above table, the tighter limit applies at the band edges.

**2.4. Test Procedure**

The EUT and Peripherals are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm /50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs.)

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all the interface cables must be changed according to ANSI C63.4: 2003 on conducted measurement.

Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

The EUT was setup to ANSI C63.4, 2003; tested to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.

**2.5. Uncertainty**

± 2.26 dB

## 2.6. Test Result of Conducted Emission

Product : Mobile Printer  
 Test Item : Conducted Emission Test  
 Power Line : Line 1  
 Test Mode : Mode 1: Transmit - 1Mbps (GFSK) (2441MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV	Margin dB	Limit dBuV
<b>LINE 1</b>					
<b>Quasi-Peak</b>					
0.170	9.790	27.490	37.280	-28.149	65.429
0.353	9.790	32.530	42.320	-17.880	60.200
0.439	9.790	31.160	40.950	-16.793	57.743
1.193	9.800	23.010	32.810	-23.190	56.000
5.920	9.840	27.060	36.900	-23.100	60.000
9.338	9.870	30.010	39.880	-20.120	60.000
<b>Average</b>					
0.170	9.790	12.790	22.580	-32.849	55.429
0.353	9.790	23.210	33.000	-17.200	50.200
0.439	9.790	27.620	37.410	-10.333	47.743
1.193	9.800	14.080	23.880	-22.120	46.000
5.920	9.840	25.650	35.490	-14.510	50.000
9.338	9.870	28.010	37.880	-12.120	50.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. "■" means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : Mobile Printer  
 Test Item : Conducted Emission Test  
 Power Line : Line 2  
 Test Mode : Mode 1: Transmit - 1Mbps (GFSK) (2441MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV	Margin dB	Limit dBuV
<b>LINE 2</b>					
<b>Quasi-Peak</b>					
0.357	9.790	33.070	42.860	-17.226	60.086
0.455	9.790	28.850	38.640	-18.646	57.286
0.576	9.790	27.830	37.620	-18.380	56.000
1.123	9.790	24.190	33.980	-22.020	56.000
6.244	9.850	26.190	36.040	-23.960	60.000
9.537	9.890	30.250	40.140	-19.860	60.000
<b>Average</b>					
0.357	9.790	21.720	31.510	-18.576	50.086
0.455	9.790	22.640	32.430	-14.856	47.286
0.576	9.790	14.660	24.450	-21.550	46.000
1.123	9.790	15.260	25.050	-20.950	46.000
6.244	9.850	23.040	32.890	-17.110	50.000
9.537	9.890	27.560	37.450	-12.550	50.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. "█" means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

### 3. Peak Power Output

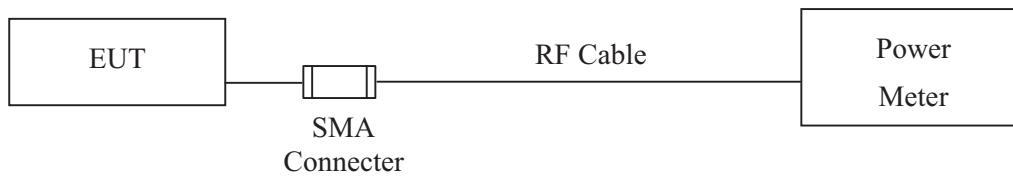
#### 3.1. Test Equipment

The following test equipments are used during the radiated emission tests:

Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X Power Meter	Anritsu	ML2495A/6K00003357	May, 2009
X Power Sensor	Anritsu	MA2491A/034457	May, 2009

Note: 1. All equipments are calibrated every one year.  
 2. The test instruments marked by “X” are used to measure the final test results.

#### 3.2. Test Setup



#### 3.3. Limit

The maximum peak power shall be less 1Watt.

#### 3.4. Test Procedure

The EUT was setup to ANSI C63.4, 2003; tested to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.

#### 3.5. Uncertainty

± 1.27 dB

### 3.6. Test Result of Peak Power Output

Product : Mobile Printer  
Test Item : Peak Power Output  
Test Site : No.3 OATS  
Test Mode : Mode 1: Transmit - 1Mbps (GFSK)

Channel No.	Frequency (MHz)	Measurement	Required Limit	Result
Channel 00	2402.00	4.42 dBm	1 Watt= 30 dBm	Pass
Channel 39	2441.00	5.17 dBm	1 Watt= 30 dBm	Pass
Channel 78	2480.00	5.38 dBm	1 Watt= 30 dBm	Pass

Product : Mobile Printer  
Test Item : Peak Power Output  
Test Site : No.3 OATS  
Test Mode : Mode 2: Transmit - 3Mbps (8DPSK)

Channel No.	Frequency (MHz)	Measurement	Required Limit	Result
Channel 00	2402.00	2.47 dBm	1 Watt= 30 dBm	Pass
Channel 39	2441.00	3.13 dBm	1 Watt= 30 dBm	Pass
Channel 78	2480.00	3.31 dBm	1 Watt= 30 dBm	Pass



#### 4. Radiated Emission

##### 4.1. Test Equipment

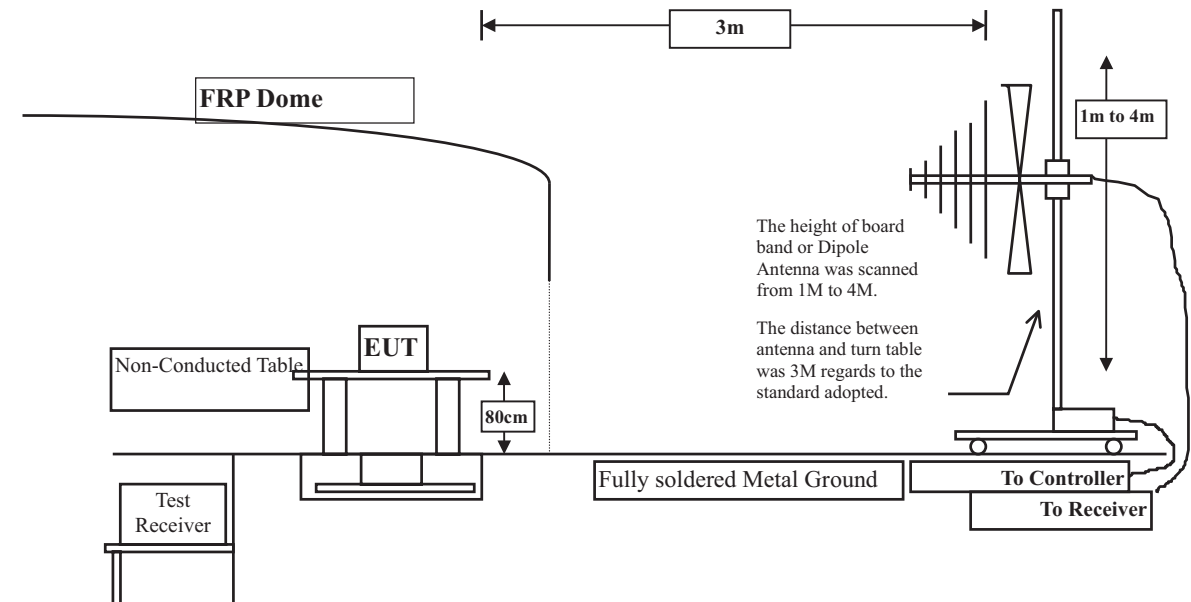
The following test equipments are used during the radiated emission test:

Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒ Site # 3	X	Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2009
	X	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2009
	X	Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2009
	X	Pre-Amplifier	Agilent	8447D/2944A09549	Sep., 2009
	X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2009
	X	Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2009
	X	Coaxial Cable	Quietek	QTK-CABLE/ CAB5	Feb., 2009
	X	Controller	Quietek	QTK-CONTROLLER/ CTRL3	N/A
	X	Coaxial Switch	Anritsu	MP59B/6200265729	N/A

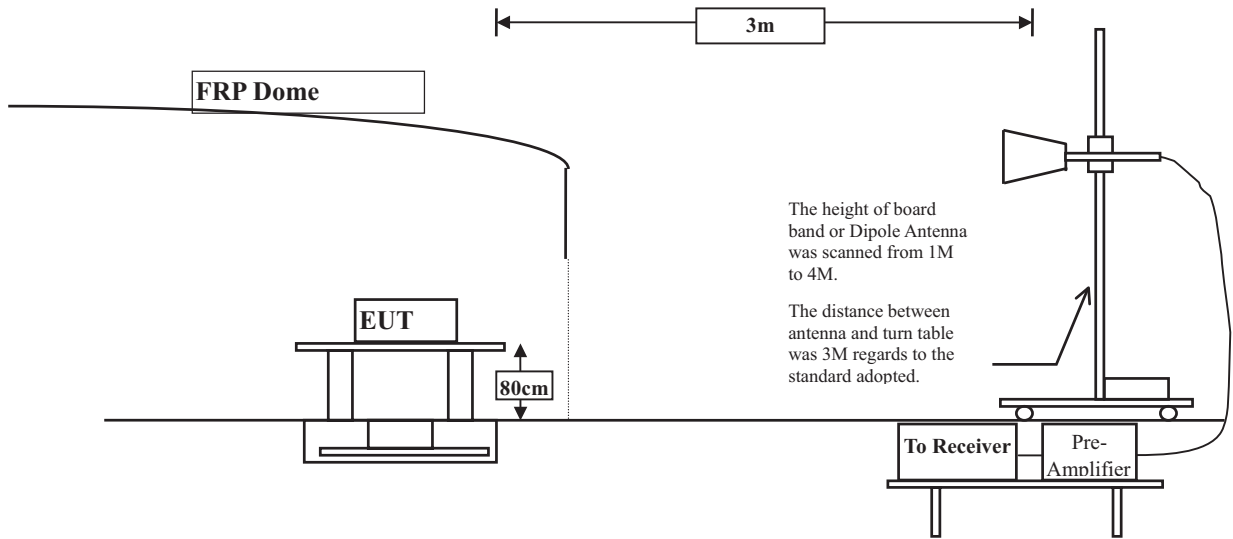
- Note: 1. All equipments are calibrated every one year.  
 2. The test instruments marked by "X" are used to measure the final test results.

##### 4.2. Test Setup

Below 1GHz



Above 1GHz



### 4.3. Limits

#### ➤ General Radiated Emission Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

FCC Part 15 Subpart C Paragraph 15.209 Limits		
Frequency MHz	uV/m @3m	dBuV/m@3m
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

- Remarks:
1. RF Voltage (dBuV) = 20 log RF Voltage (uV)
  2. In the Above Table, the tighter limit applies at the band edges.
  3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

#### 4.4. Test Procedure

The EUT was setup according to ANSI C63.4, 2003 and tested according to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.

The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.4:2003 on radiated measurement.

The resolution bandwidth below 1GHz setting on the field strength meter is 120 kHz and above 1GHz is 1MHz.

Radiated emission measurements below 1GHz are made using broadband Bilog antenna and above 1GHz are made using Horn Antennas.

The measurement is divided into the Preliminary Measurement and the Final Measurement.

The suspected frequencies are searched for in Preliminary Measurement with the measurement antenna kept pointed at the source of the emission both in azimuth and elevation, with the polarization of the antenna oriented for maximum response. The antenna is pointed at an angle towards the source of the emission, and the EUT is rotated in both height and polarization to maximize the measured emission. The emission is kept within the illumination area of the 3 dB beamwidth of the antenna.

The worst radiated emission is measured on the Final Measurement.

The frequency range from 30MHz to 10th harmonics is checked.

#### 4.5. Uncertainty

± 3.9 dB above 1GHz

± 3.8 dB below 1GHz

#### 4.6. Test Result of Radiated Emission

Product : Mobile Printer  
 Test Item : Harmonic Radiated Emission  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit - 1Mbps (GFSK)(2402MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
4804.000	9.582	40.320	49.902	-24.098	74.000
7206.000	14.401	35.790	50.191	-23.809	74.000
9608.000	19.795	33.810	53.605	-20.395	74.000
<b>Average Detector:</b>					
--					
<b>Vertical</b>					
<b>Peak Detector:</b>					
4804.000	8.462	41.920	50.382	-23.618	74.000
7206.000	15.412	35.830	51.242	-22.758	74.000
9608.000	19.005	34.680	53.685	-20.315	74.000
<b>Average Detector:</b>					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz ◦
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:10Hz; Span:20MHz ◦
4. Emission Level = Reading Level + Correct Factor.
5. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product : Mobile Printer  
 Test Item : Harmonic Radiated Emission  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit - 1Mbps (GFSK)(2441MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
4882.000	9.489	39.340	48.829	-25.171	74.000
7323.000	14.568	34.840	49.408	-24.592	74.000
9764.000	20.055	33.640	53.695	-20.305	74.000
<b>Average Detector:</b>					
--					
<b>Vertical</b>					
<b>Peak Detector:</b>					
4882.000	8.979	40.790	49.769	-24.231	74.000
7323.000	15.262	35.190	50.452	-23.548	74.000
9764.000	19.255	34.280	53.535	-20.465	74.000
<b>Average Detector:</b>					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz ◦
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:10Hz; Span:20MHz ◦
4. Emission Level = Reading Level + Correct Factor.
5. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product : Mobile Printer  
 Test Item : Harmonic Radiated Emission  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit - 1Mbps (GFSK)(2480MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
4960.000	9.418	39.480	48.897	-25.103	74.000
7440.000	15.012	35.290	50.303	-23.697	74.000
9920.000	19.754	33.410	53.164	-20.836	74.000
<b>Average Detector:</b>					
--					
<b>Vertical</b>					
<b>Peak Detector:</b>					
4960.000	9.717	41.250	50.966	-23.034	74.000
7440.000	15.386	35.520	50.906	-23.094	74.000
9920.000	18.897	34.560	53.457	-20.543	74.000
<b>Average Detector:</b>					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz ◦
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:10Hz; Span:20MHz ◦
4. Emission Level = Reading Level + Correct Factor.
5. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product : Mobile Printer  
 Test Item : Harmonic Radiated Emission  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmit - 3Mbps (8DPSK)(2402MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
4804.000	9.612	38.770	48.382	-25.618	74.000
7206.000	14.293	36.810	51.102	-22.898	74.000
9608.000	19.660	33.350	53.010	-20.990	74.000
<b>Average Detector:</b>					
--					
<b>Vertical</b>					
<b>Peak Detector:</b>					
4804.000	8.330	37.520	45.850	-28.150	74.000
7206.000	15.409	35.810	51.219	-22.781	74.000
9608.000	18.870	34.190	53.060	-20.940	74.000
<b>Average Detector:</b>					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz ◦
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:10Hz; Span:20MHz ◦
4. Emission Level = Reading Level + Correct Factor.
5. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product : Mobile Printer  
 Test Item : Harmonic Radiated Emission  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmit - 3Mbps (8DPSK) (2441MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
4882.000	9.489	36.810	46.299	-27.701	74.000
7323.000	14.568	34.810	49.378	-24.622	74.000
9764.000	20.055	33.460	53.515	-20.485	74.000
<b>Average Detector:</b>					
--					
<b>Vertical</b>					
<b>Peak Detector:</b>					
4882.000	8.979	36.810	45.789	-28.211	74.000
7323.000	15.262	35.670	50.932	-23.068	74.000
9764.000	19.255	34.710	53.965	-20.035	74.000
<b>Average Detector:</b>					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz ◦
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:10Hz; Span:20MHz ◦
4. Emission Level = Reading Level + Correct Factor.
5. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.



Product : Mobile Printer  
 Test Item : Harmonic Radiated Emission  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmit - 3Mbps (8DPSK) (2480MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
4960.000	9.418	36.950	46.367	-27.633	74.000
7440.000	15.012	35.240	50.253	-23.747	74.000
9920.000	19.754	33.710	53.464	-20.536	74.000
<b>Average Detector:</b>					
--					
<b>Vertical</b>					
<b>Peak Detector:</b>					
4960.000	9.717	37.050	46.766	-27.234	74.000
7440.000	15.386	35.300	50.686	-23.314	74.000
9920.000	18.897	34.810	53.707	-20.293	74.000
<b>Average Detector:</b>					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz ◦
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:10Hz; Span:20MHz ◦
4. Emission Level = Reading Level + Correct Factor.
5. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product : Mobile Printer  
 Test Item : General Radiated Emission  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit - 1Mbps (GFSK) (2441MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
363.680	0.844	29.345	30.189	-15.811	46.000
458.740	4.032	27.584	31.616	-14.384	46.000
598.420	4.233	29.473	33.706	-12.294	46.000
782.720	6.271	32.563	38.835	-7.165	46.000
846.740	7.404	27.110	34.514	-11.486	46.000
885.540	7.430	26.369	33.799	-12.201	46.000
<b>Vertical</b>					
363.680	0.734	28.961	29.695	-16.305	46.000
458.740	-1.828	32.100	30.272	-15.728	46.000
604.240	2.920	25.941	28.862	-17.138	46.000
683.780	2.862	26.153	29.015	-16.985	46.000
782.720	3.641	29.585	33.227	-12.773	46.000
846.740	2.704	28.173	30.877	-15.123	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. "█" means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The radiated emissions below 1GHz of the lowest, middle, highest frequency are pretested. Only the worst case is shown on the report.

Product : Mobile Printer  
 Test Item : General Radiated Emission  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmit - 3Mbps (8DPSK) (2441MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
456.800	3.169	27.500	30.669	-15.331	46.000
598.420	4.233	28.102	32.335	-13.665	46.000
716.760	4.646	26.914	31.560	-14.440	46.000
782.720	6.271	31.980	38.252	-7.748	46.000
846.740	7.404	28.275	35.679	-10.321	46.000
912.700	7.341	28.087	35.428	-10.572	46.000
<b>Vertical</b>					
363.680	0.734	28.444	29.178	-16.822	46.000
458.740	-1.828	32.832	31.004	-14.996	46.000
623.640	1.116	27.868	28.984	-17.016	46.000
687.660	3.137	26.121	29.258	-16.742	46.000
782.720	3.641	30.561	34.203	-11.797	46.000
846.740	2.704	26.202	28.906	-17.094	46.000

Note:

1. The reading levels below 1GHz are quasi-peak values.
2. "█" means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The radiated emissions below 1GHz of the lowest, middle, highest frequency are pretested. Only the worst case is shown on the report.

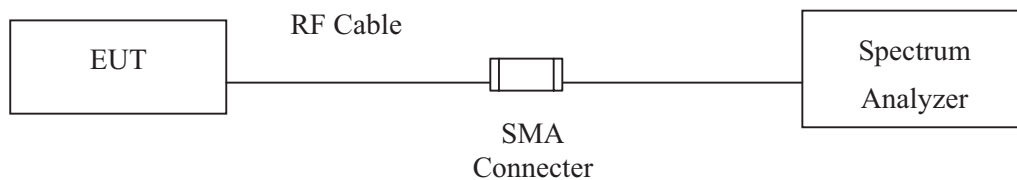
## 5. RF Antenna Conducted Test

### 5.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40/ 100339	Jun, 2009
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Jun, 2009
	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2009

- Note:
1. All equipments are calibrated every one year.
  2. The test instruments Marked “X” are used to measure the final test results.

### 5.2. Test Setup



### 5.3. Limits

According to FCC Section 15.247(d). In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

### 5.4. Test Procedure

The EUT was setup to ANSI C63.4, 2003; tested to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.

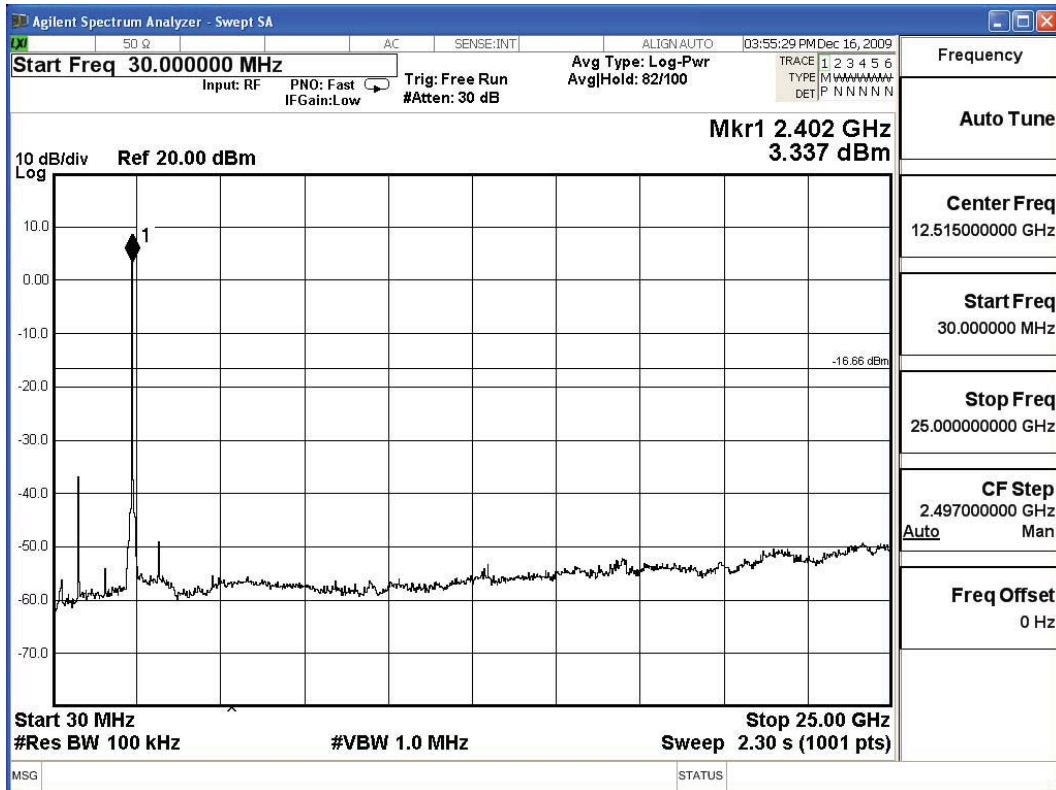
### 5.5. Uncertainty

± 150Hz

**5.6. Test Result of RF Antenna Conducted Test**

Product : Mobile Printer  
 Test Item : RF Antenna Conducted Test  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit - 1Mbps (GFSK)

**Figure Channel 00: 30MHz-25GHz**



Product : Mobile Printer  
 Test Item : RF Antenna Conducted Test  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit - 1Mbps (GFSK)

**Figure Channel 39: 30MHz-25GHz**



Product : Mobile Printer  
 Test Item : RF Antenna Conducted Test  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit - 1Mbps (GFSK)

**Figure Channel 78: 30MHz-25GHz**



Product : Mobile Printer  
 Test Item : RF Antenna Conducted Test  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmit - 3Mbps (8DPSK)

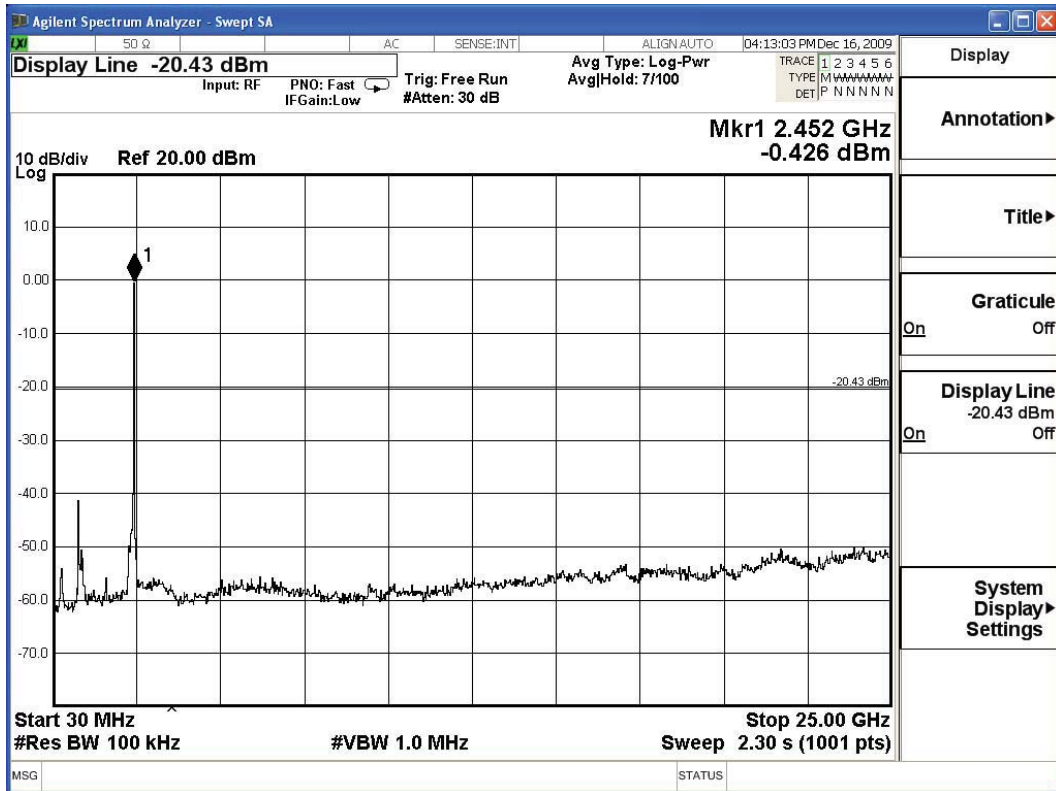
**Figure Channel 00: 30MHz-25GHz**





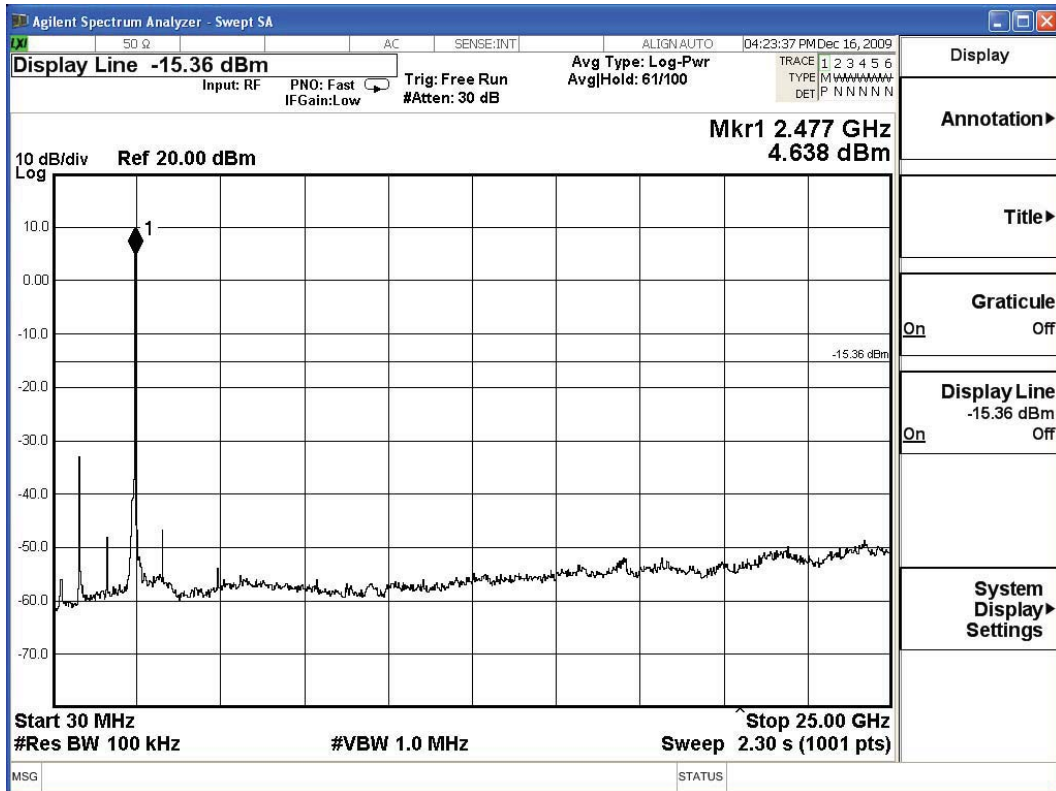
Product : Mobile Printer  
 Test Item : RF Antenna Conducted Test  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmit - 3Mbps (8DPSK)

**Figure Channel 39: 30MHz-25GHz**



Product : Mobile Printer  
 Test Item : RF Antenna Conducted Test  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmit - 3Mbps (8DPSK)

**Figure Channel 78: 30MHz-25GHz**



## 6. Band Edge

### 6.1. Test Equipment

#### RF Conducted Measurement

The following test equipments are used during the band edge tests:

Equipment	Manufacturer	Model No./Serial No.	Last Cal.
Spectrum Analyzer	Agilent	N9010A / MY48030495	Jun, 2009

#### RF Radiated Measurement:

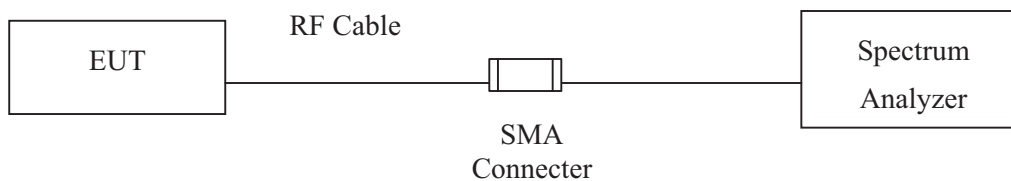
The following test equipments are used during the band edge tests:

Test Site	Equipment	Manufacturer	Model No./Serial No.	Last Cal.	
☒ Site # 3		Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2009
	X	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2009
		Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2009
	X	Pre-Amplifier	Agilent	8447D/2944A09549	Sep., 2009
	X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2009
		Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2009
	X	Coaxial Cable	QuieTek	QTK-CABLE/ CAB5	Feb., 2009
	X	Controller	QuieTek	QTK-CONTROLLER/ CTRL3	N/A
	X	Coaxial Switch	Anritsu	MP59B/6200265729	N/A

- Note:
1. All equipments are calibrated every one year.
  2. The test instruments marked by "X" are used to measure the final test results.

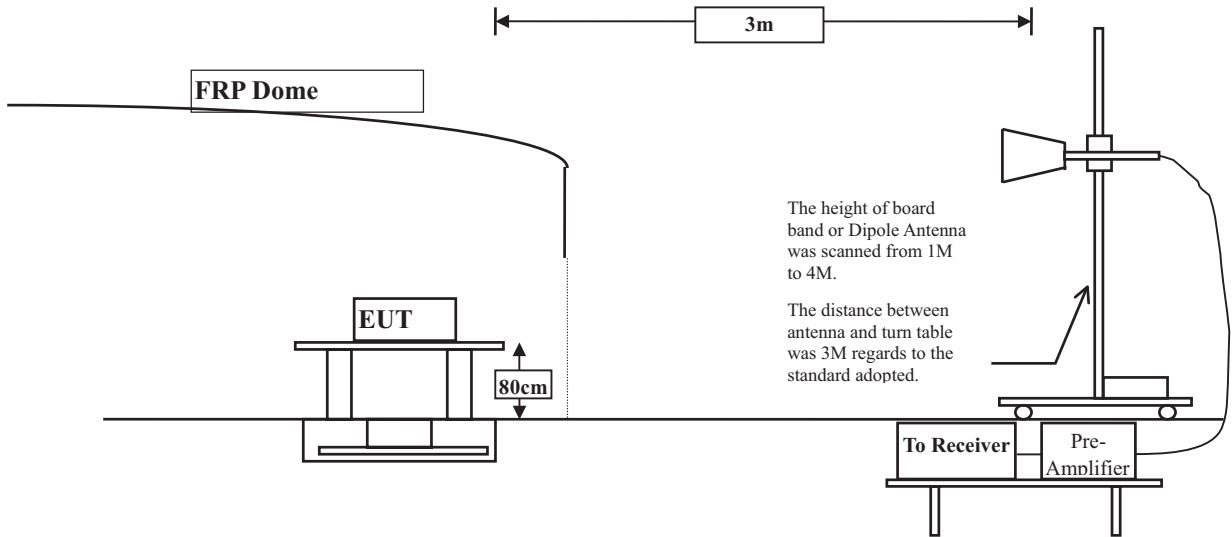
### 6.2. Test Setup

#### RF Conducted Measurement



**RF Radiated Measurement:**

Above 1GHz



### 6.3. Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

### 6.4. Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.4:2003 on radiated measurement.

The bandwidth below 1GHz setting on the field strength meter is 120 kHz, above 1GHz are 1 MHz. The EUT was setup to ANSI C63.4, 2003; tested to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.

### 6.5. Uncertainty

± 3.9 dB above 1GHz

± 3.8 dB below 1GHz

## 6.6. Test Result of Band Edge

Product : Mobile Printer  
 Test Item : Band Edge  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit - 1Mbps (GFSK)

### Fundamental Filed Strength

Antenna Pole	Frequency [MHz]	Correction Factor [dB/m]	Reading Level [dBuV]	Emission Level [dBuV/m]	Detector
Horizontal	2402	36.599	47.400	83.998	Peak
Vertical	2402	35.588	47.320	82.907	Peak

Note: 1:Spectrum Analyzer setting:

Peak detector: RBW=1MHz, VBW=1MHz

Average detector: RBW=1MHz, VBW=10Hz

### Band Edge Test Data

Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	$\Delta$ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	2375.8	83.998	41.788	42.21	Peak
Vertical	2375.8	82.907	41.788	41.119	Peak

Note:

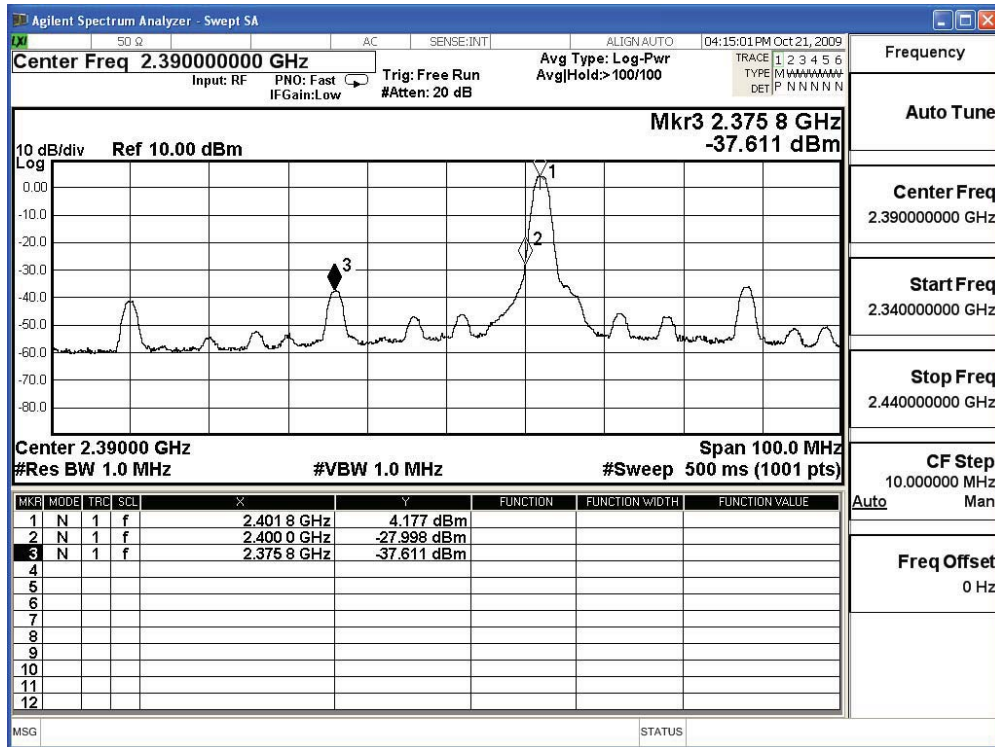
The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

Band Edge field Strength = F -  $\Delta$

F = Fundamental field Strength (Peak or Average)

$\Delta$  = Conducted Band Edge Delta (Peak or Average)

### Peak Detector of conducted Band Edge Delta



Product : Mobile Printer  
 Test Item : Band Edge  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit - 1Mbps (GFSK)

### Fundamental Filed Strength

Antenna Pole	Frequency [MHz]	Correction Factor [dB/m]	Reading Level [dBuV]	Emission Level [dB(uV/m)]	Detector
Horizontal	2480	36.706	48.160	84.866	Peak
Vertical	2480	36.162	49.650	85.812	Peak

Note: 1:Spectrum Analyzer setting:

Peak detector: RBW=1MHz, VBW=1MHz

Average detector: RBW=1MHz, VBW=10Hz

### Band Edge Test Data

Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	$\Delta$ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	2483.5	84.866	42.689	42.177	Peak
Vertical	2483.5	85.812	42.689	43.123	Peak

Note:

The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

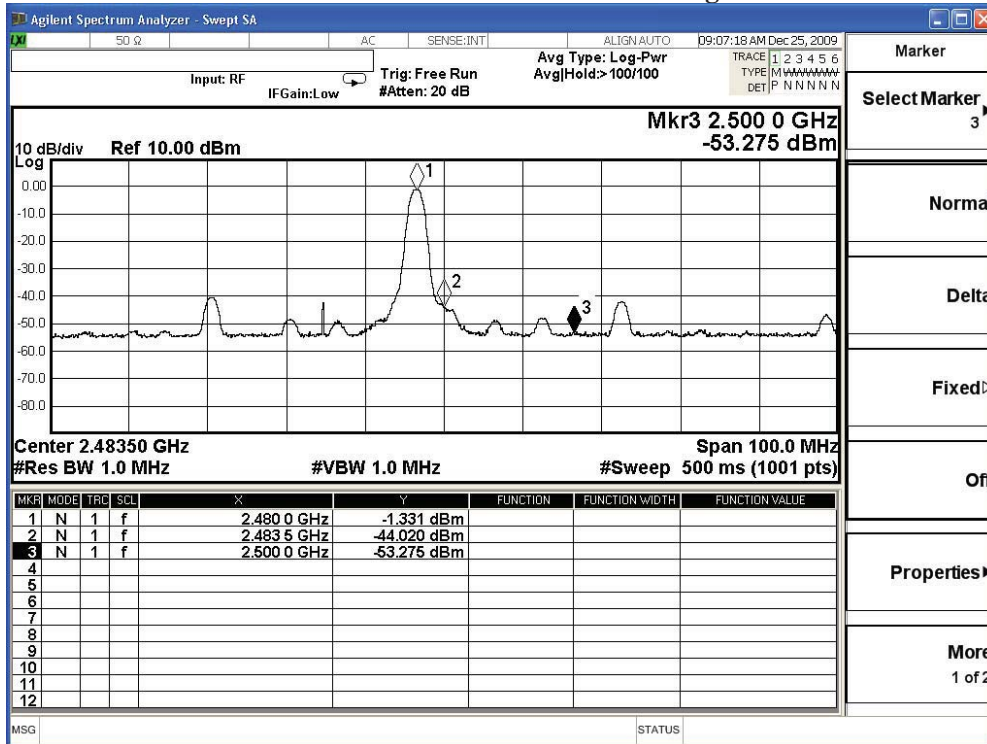
Band Edge field Strength = F -  $\Delta$

F = Fundamental field Strength (Peak or Average)

$\Delta$  = Conducted Band Edge Delta (Peak or Average)



### Peak Detector of conducted Band Edge Delta



Product : Mobile Printer  
 Test Item : Band Edge  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmit - 3Mbps (8DPSK)

### Fundamental Filed Strength

Antenna Pole	Frequency [MHz]	Correction Factor [dB/m]	Reading Level [dBuV]	Emission Level [dBuV/m]	Detector
Horizontal	2402	36.599	45.390	81.988	Peak
Vertical	2402	35.588	44.950	80.537	Peak

Note: 1:Spectrum Analyzer setting:

Peak detector: RBW=1MHz, VBW=1MHz

Average detector: RBW=1MHz, VBW=10Hz

### Band Edge Test Data

Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	$\Delta$ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	2375.8	81.988	39.16	42.828	Peak
Vertical	2375.8	80.537	39.16	41.377	Peak

Note:

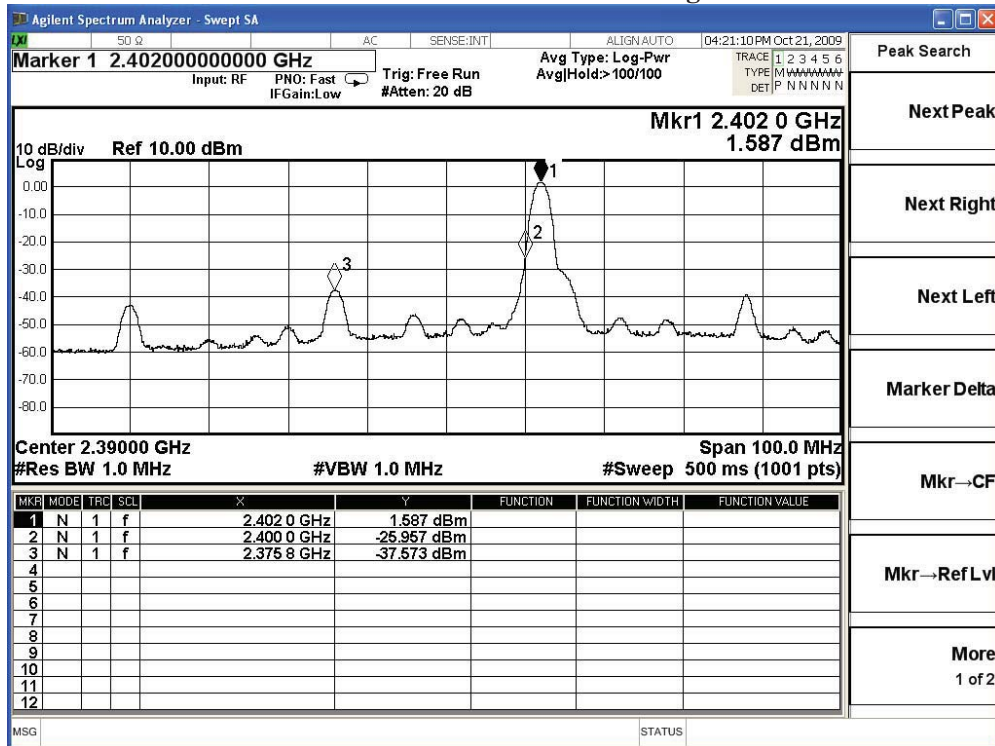
The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

Band Edge field Strength = F -  $\Delta$

F = Fundamental field Strength (Peak or Average)

$\Delta$  = Conducted Band Edge Delta (Peak or Average)

### Peak Detector of conducted Band Edge Delta



Product : Mobile Printer  
 Test Item : Band Edge  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmit - 3Mbps (8DPSK)

### Fundamental Filed Strength

Antenna Pole	Frequency [MHz]	Correction Factor [dB/m]	Reading Level [dBuV]	Emission Level [dB(uV/m)]	Detector
Horizontal	2480	36.706	44.550	81.256	Peak
Vertical	2480	36.162	46.620	82.782	Peak

Note: 1:Spectrum Analyzer setting:

Peak detector: RBW=1MHz, VBW=1MHz

Average detector: RBW=1MHz, VBW=10Hz

### Band Edge Test Data

Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	$\Delta$ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	2483.5	81.256	35.17	46.086	Peak
Vertical	2483.5	82.782	35.17	47.612	Peak

Note:

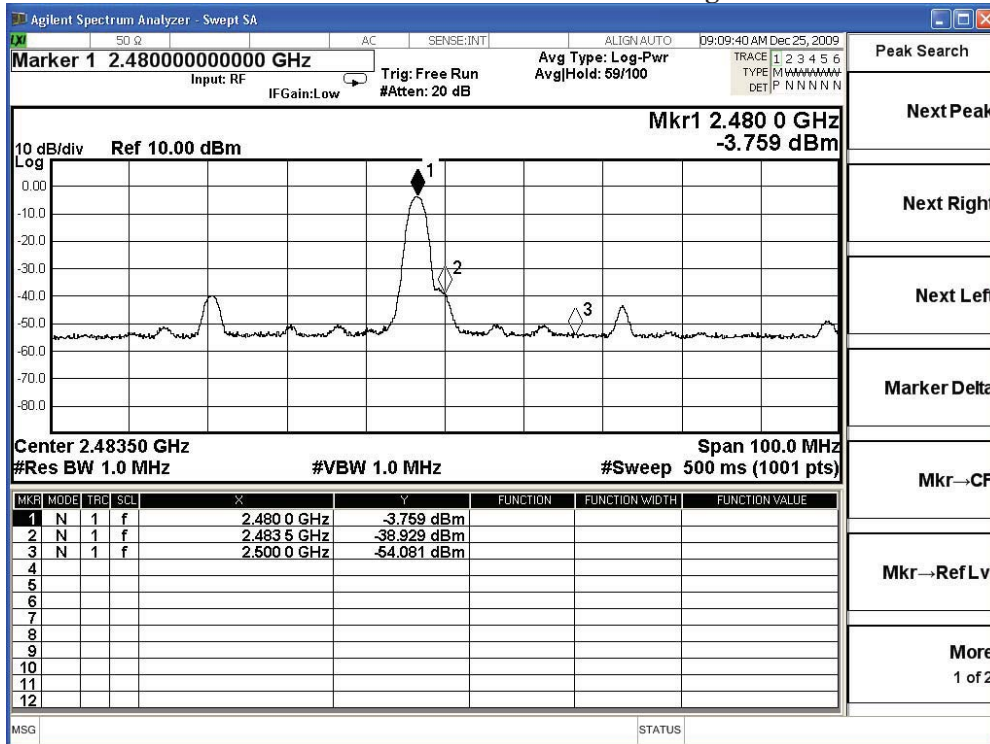
The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

Band Edge field Strength = F -  $\Delta$

F = Fundamental field Strength (Peak or Average)

$\Delta$  = Conducted Band Edge Delta (Peak or Average)

### Peak Detector of conducted Band Edge Delta



**7. Channel Number**

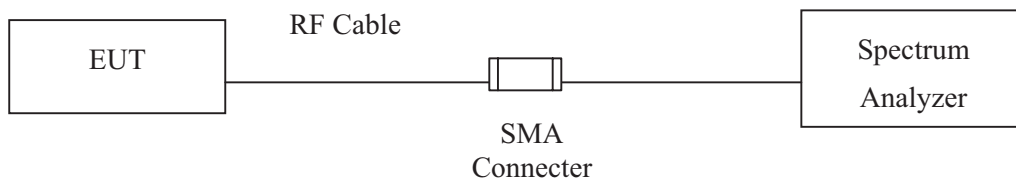
**7.1. Test Equipment**

The following test equipments are used during the radiated emission tests:

Equipment	Manufacturer	Model No./Serial No.	Last Cal.
Spectrum Analyzer	R&S	FSP40/ 100339	Jun, 2009
X Spectrum Analyzer	Agilent	N9010A / MY48030495	Jun, 2009
Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2009

- Note:
1. All equipments are calibrated every one year.
  2. The test instruments marked by “X” are used to measure the final test results.

**7.2. Test Setup**



**7.3. Limit**

Frequency hopping systems operating in the 2400-2483.5 MHz bands shall use at least 75 hopping frequencies.

**7.4. Test Procedure**

The EUT was setup to ANSI C63.4, 2003; tested to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.

**7.5. Uncertainty**

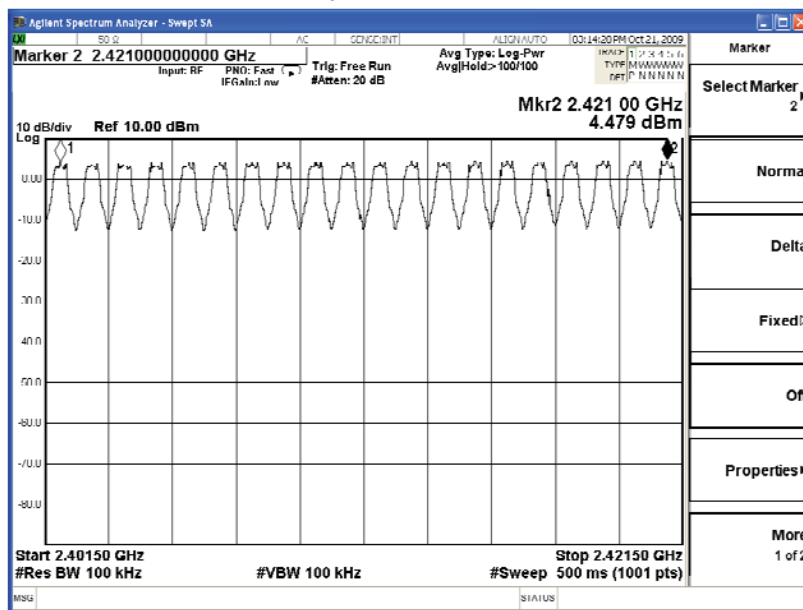
N/A

### 7.6. Test Result of Channel Number

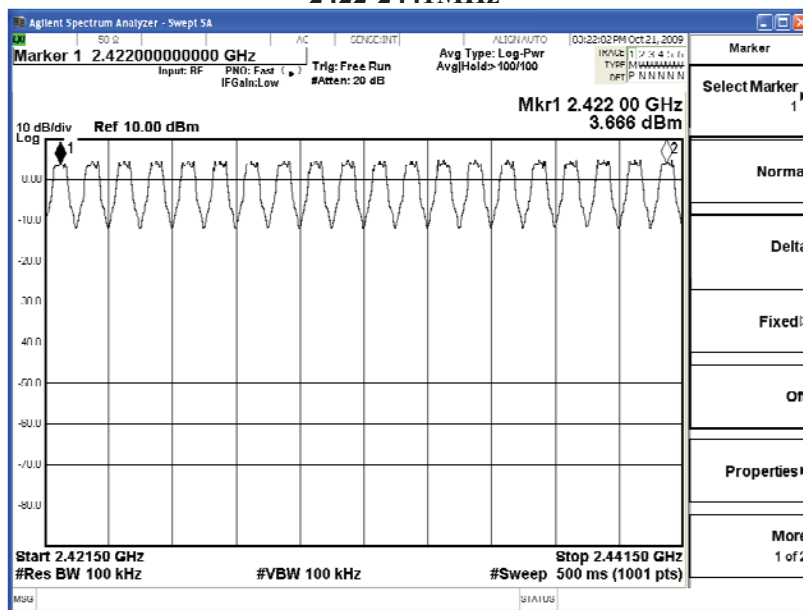
Product : Mobile Printer  
 Test Item : Channel Number  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit - 1Mbps (GFSK)

Frequency Range (MHz)	Measurement (Hopping Channel)	Required Limit (Hopping Channel)	Result
2402 ~ 2480	79	>75	Pass

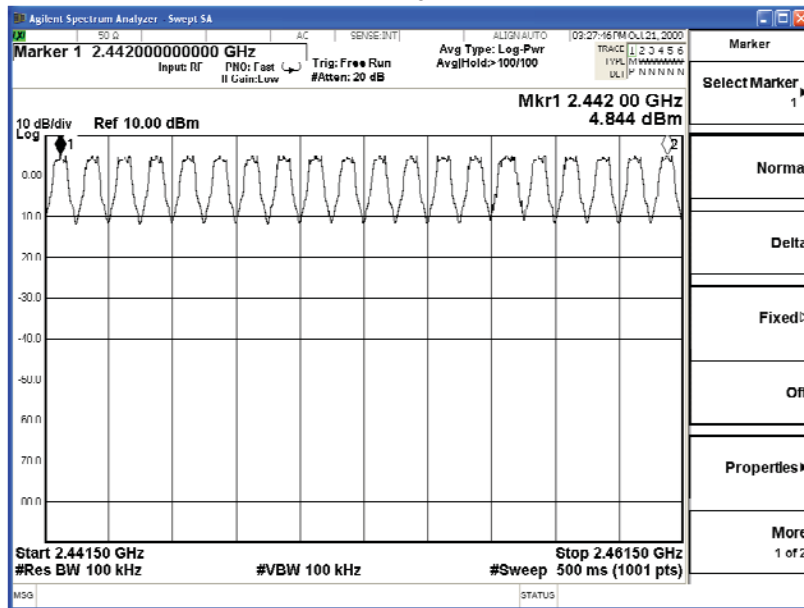
2402-2421MHz



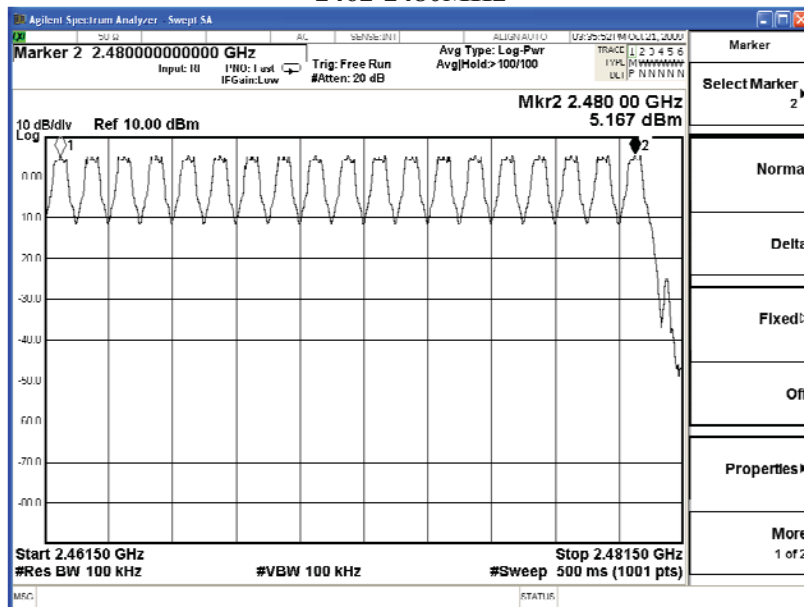
2422-2441MHz



2442-2461MHz



2462-2480MHz

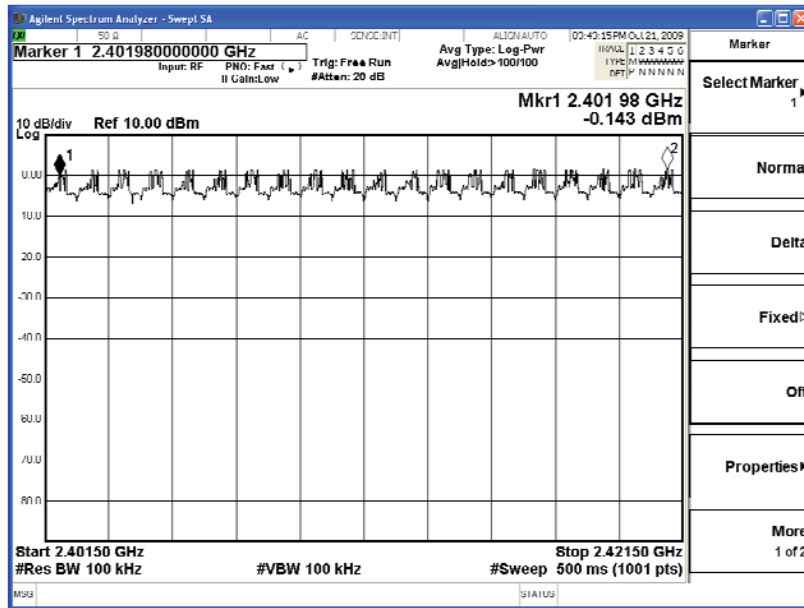




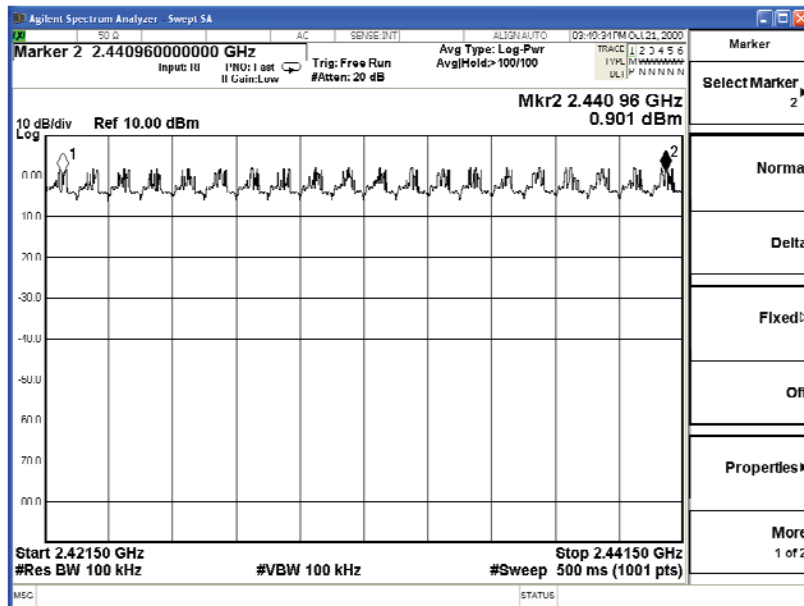
Product : Mobile Printer  
 Test Item : Channel Number  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmit - 3Mbps (8DPSK)

Frequency Range (MHz)	Measurement (Hopping Channel)	Required Limit (Hopping Channel)	Result
2402 ~ 2480	79	>75	Pass

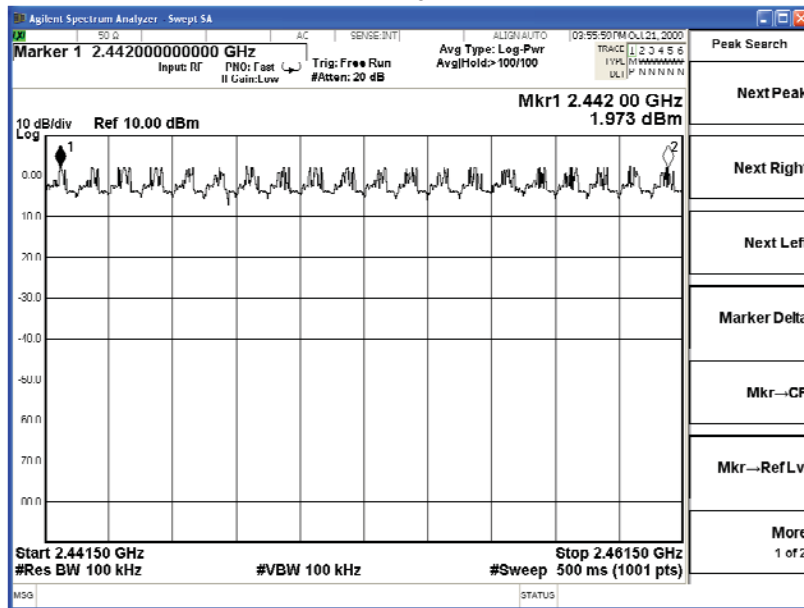
**2402-2421MHz**



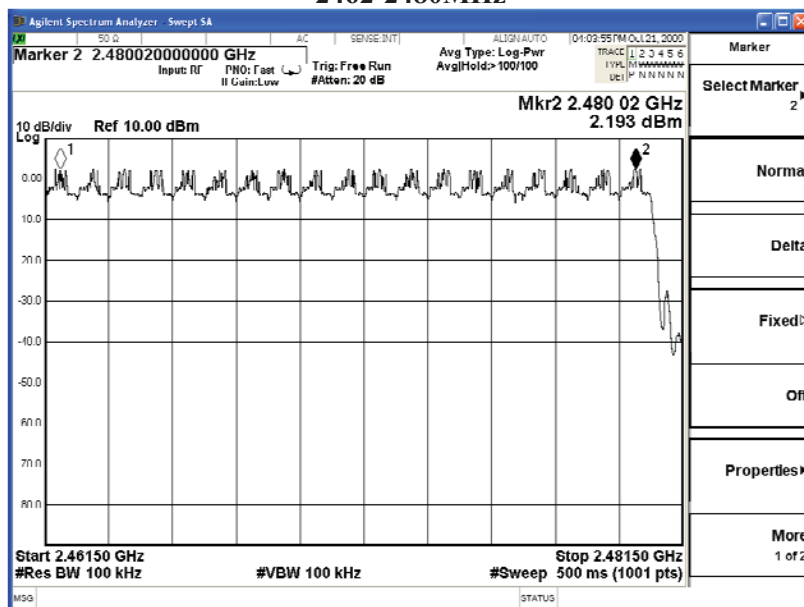
**2422-2441MHz**



### 2442-2461MHz



### 2462-2480MHz



## 8. Channel Separation

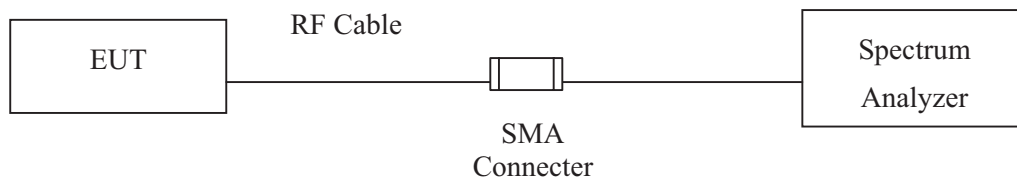
### 8.1. Test Equipment

The following test equipments are used during the radiated emission tests:

Equipment	Manufacturer	Model No./Serial No.	Last Cal.
Spectrum Analyzer	R&S	FSP40/ 100339	Jun, 2009
X Spectrum Analyzer	Agilent	N9010A / MY48030495	Jun, 2009
Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2009

Note: 1. All equipments are calibrated every one year.  
 2. The test instruments mark by "X" are used to measure the final test results.

### 8.2. Test Setup



### 8.3. 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.

### 8.4. Test Procedure

The EUT was setup to ANSI C63.4, 2003; tested to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.

### 8.5. Uncertainty

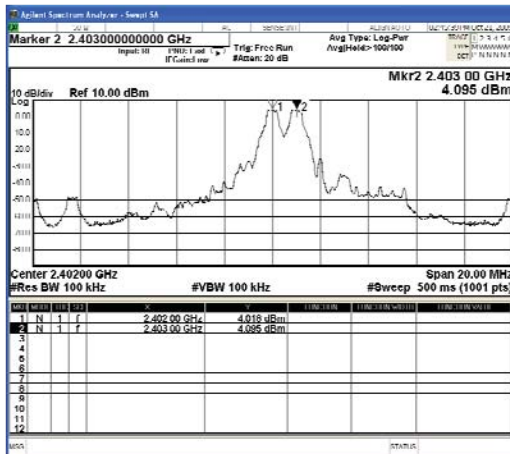
± 150Hz

### 8.6. Test Result of Channel Separation

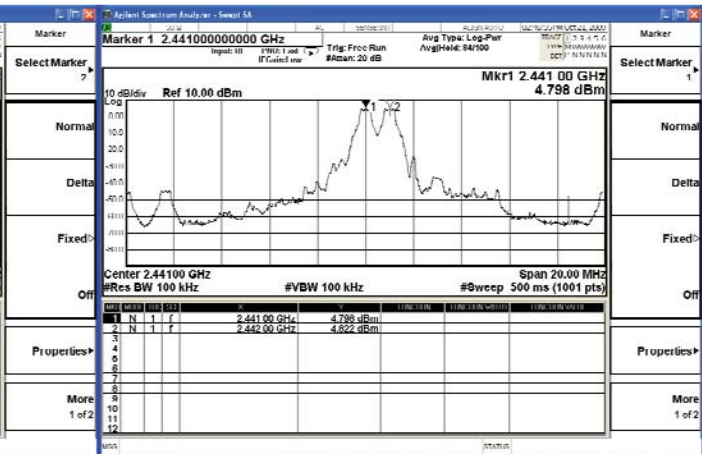
Product : Mobile Printer  
 Test Item : Channel Separation  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit - 1Mbps (GFSK)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Limit (kHz)	Limit of (2/3)*20dB Bandwidth (kHz)	Result
00	2402	1000	>25 kHz	753.3	Pass
39	2441	1000	>25 kHz	753.3	Pass
78	2480	1000	>25 kHz	753.3	Pass

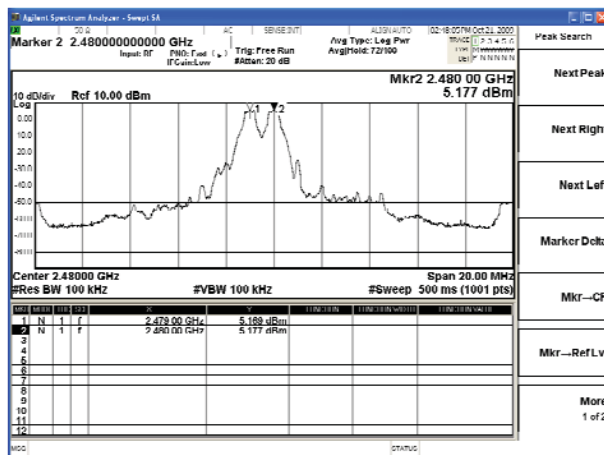
Channel 00 2402MHz



Channel 39 2441MHz



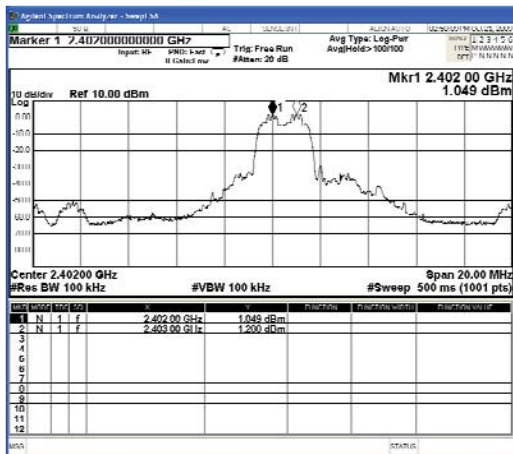
Channel 78 2480 MHz



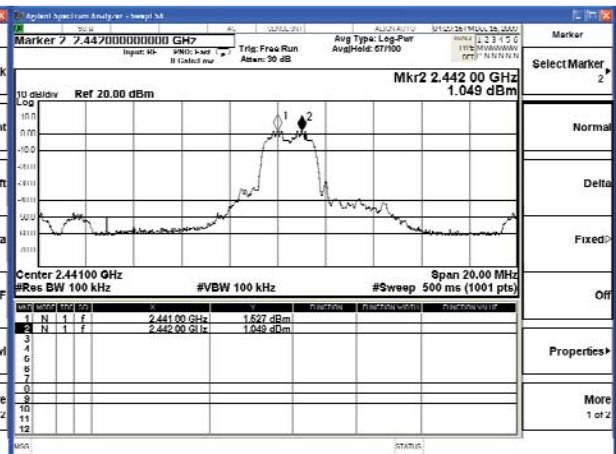
Product : Mobile Printer  
 Test Item : Channel Separation  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmit - 3Mbps (8DPSK)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Limit (kHz)	Limit of (2/3)*20dB Bandwidth (kHz)	Result
00	2402	1000	>25 kHz	746.7	Pass
39	2441	1000	>25 kHz	746.7	Pass
78	2480	1000	>25 kHz	740.0	Pass

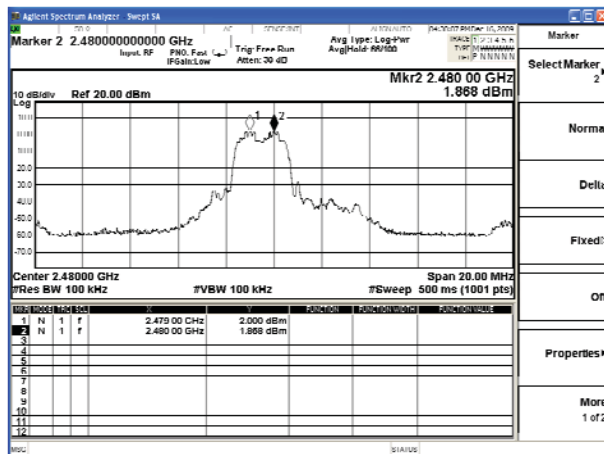
Channel 00 2402MHz



Channel 39 2441MHz



Channel 78 2480 MHz



**9. Dwell Time**

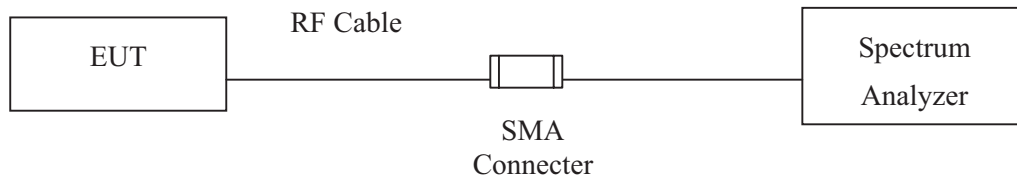
**9.1. Test Equipment**

The following test equipments are used during the radiated emission tests:

Equipment	Manufacturer	Model No./Serial No.	Last Cal.
Spectrum Analyzer	R&S	FSP40/ 100339	Jun, 2009
X Spectrum Analyzer	Agilent	N9010A / MY48030495	Jun, 2009
Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2009

- Note:
1. All equipments are calibrated every one year.
  2. The test instruments marked by “X” are used to measure the final test results.

**9.2. Test Setup**



**9.3. Limit**

The dwell time shall be the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 30 second period.

**9.4. Test Procedure**

The EUT was setup to ANSI C63.4, 2003; tested to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.

**9.5. Uncertainty**

± 25msec

### 9.6. Test Result of Dwell Time

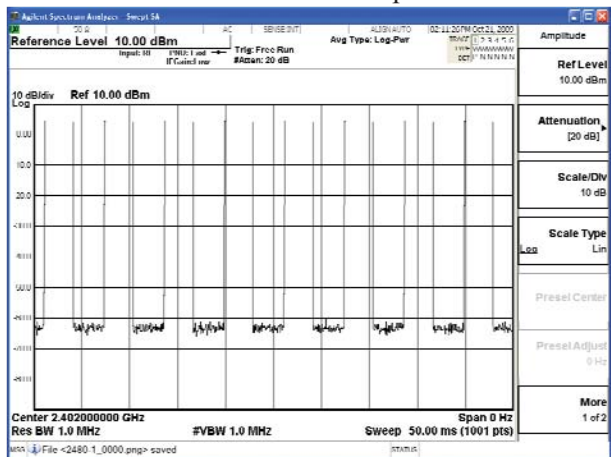
Product : Mobile Printer  
 Test Item : Dwell Time  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit - 1Mbps (GFSK) (Channel 00,39,78 –DH5)

Frequency (MHz)	Time slot length (ms)	Hopping of Number	Sweep time (ms)	Duty cycle	Dwell Time (Sec)	Limit (Sec)	Result
2402	2.900	8	50	0.46	0.186	0.4	Pass
2441	2.900	8	50	0.46	0.186	0.4	Pass
2480	2.900	8	50	0.46	0.186	0.4	Pass

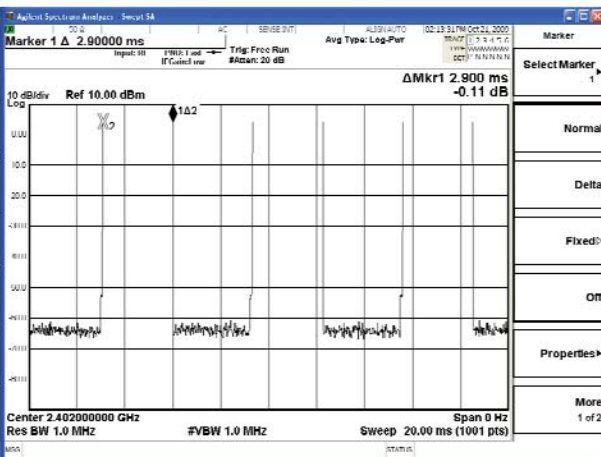
Duty cycle = ((Time slot length(ms)\*Hopping of Number) / Sweep time (ms))

Dwell time = (Duty cycle /79) \* (79\*0.4)

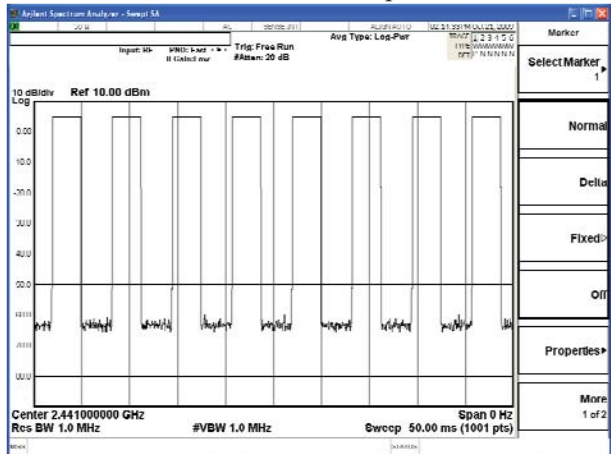
CH 00 Time Interval between hops



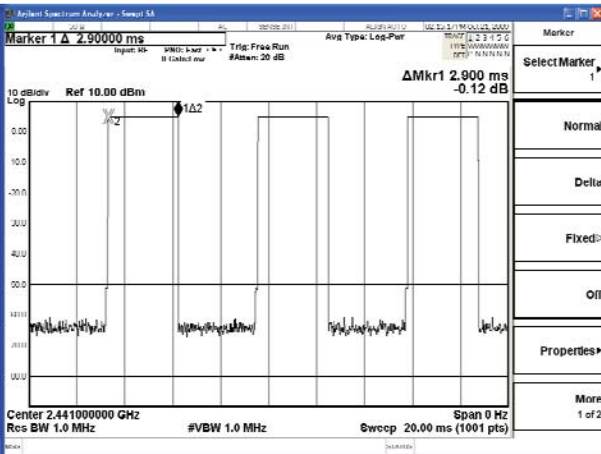
CH 00 Transmission Time



CH39 Time Interval between hops

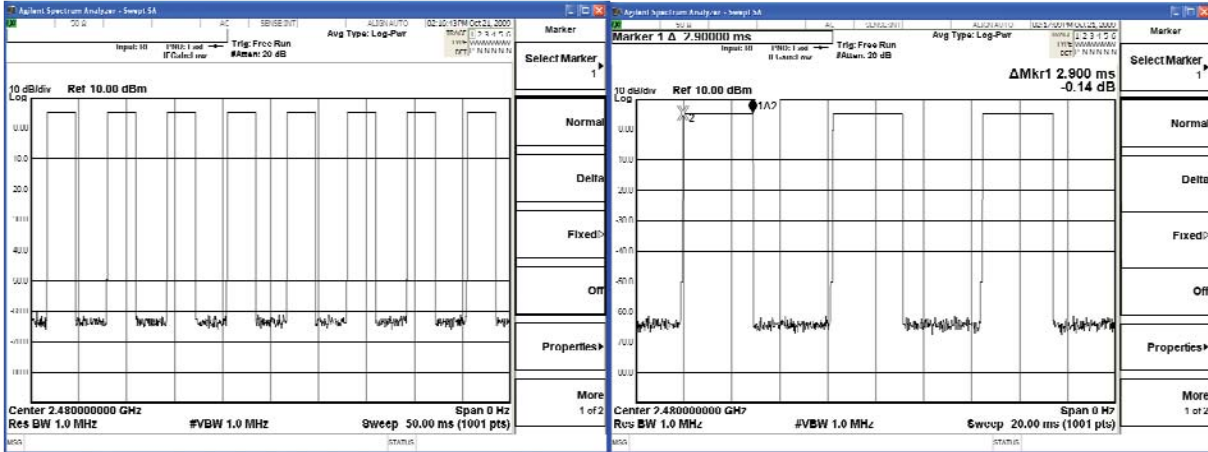


CH 39Transmission Time



CH 78 Time Interval between hops

CH 78 Transmission Time



Note:

The dwell times of the packet type of DH1, DH3, and DH5 are tested. Only the worst case is shown on the report.



Product : Mobile Printer  
 Test Item : Dwell Time  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmit - 3Mbps (8DPSK) (Channel 00,39,78 –DH5)

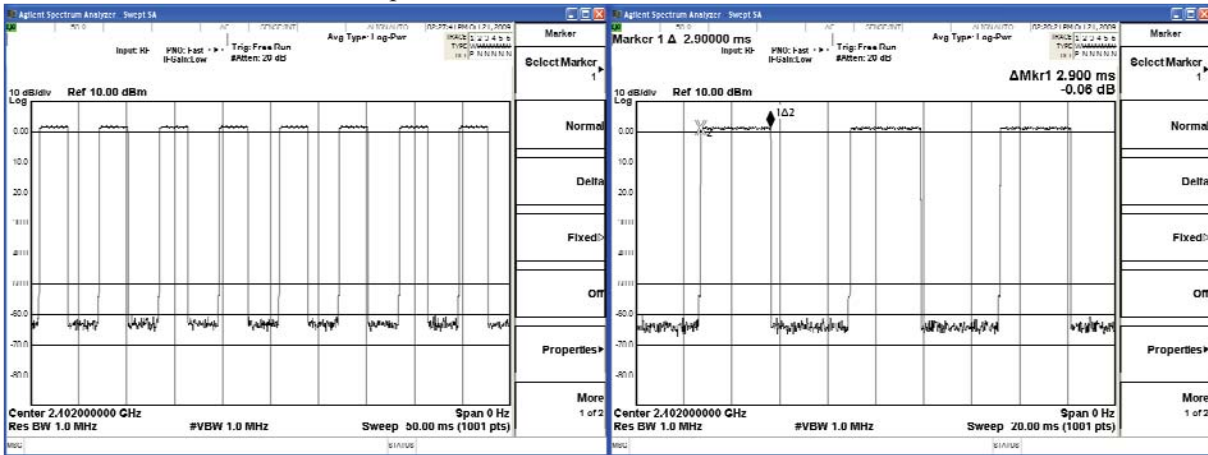
Frequency (MHz)	Time slot length (ms)	Hopping of Number	Sweep time (ms)	Duty cycle	Dwell Time (Sec)	Limit (Sec)	Result
2402	2.900	8	50	0.46	0.186	0.4	Pass
2441	2.900	8	50	0.46	0.186	0.4	Pass
2480	2.900	8	50	0.46	0.186	0.4	Pass

Duty cycle = ((Time slot length(ms)\*Hopping of Number) / Sweep time (ms))

Dwell time = (Duty cycle /79) \* (79\*0.4)

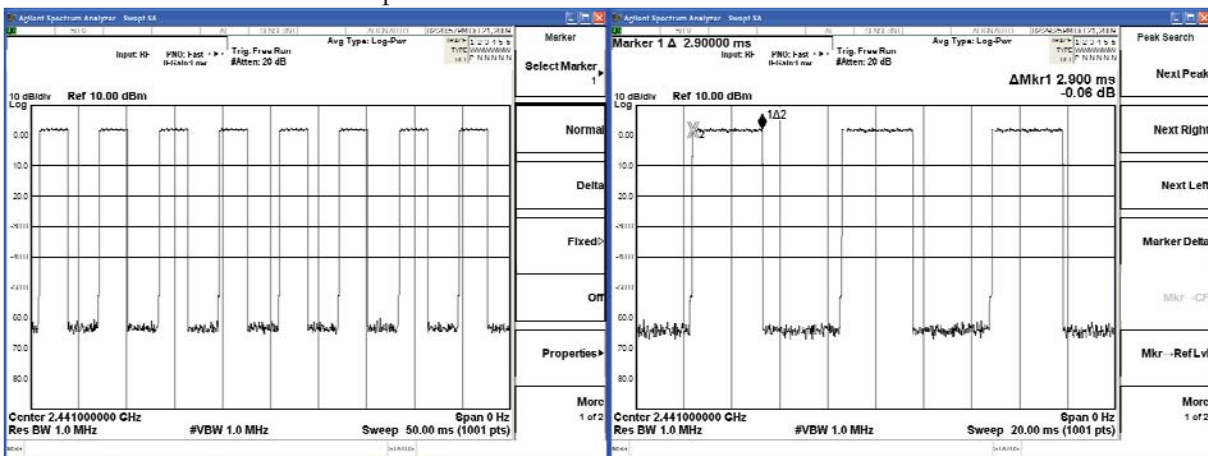
CH 00 Time Interval between hops

CH 00 Transmission Time



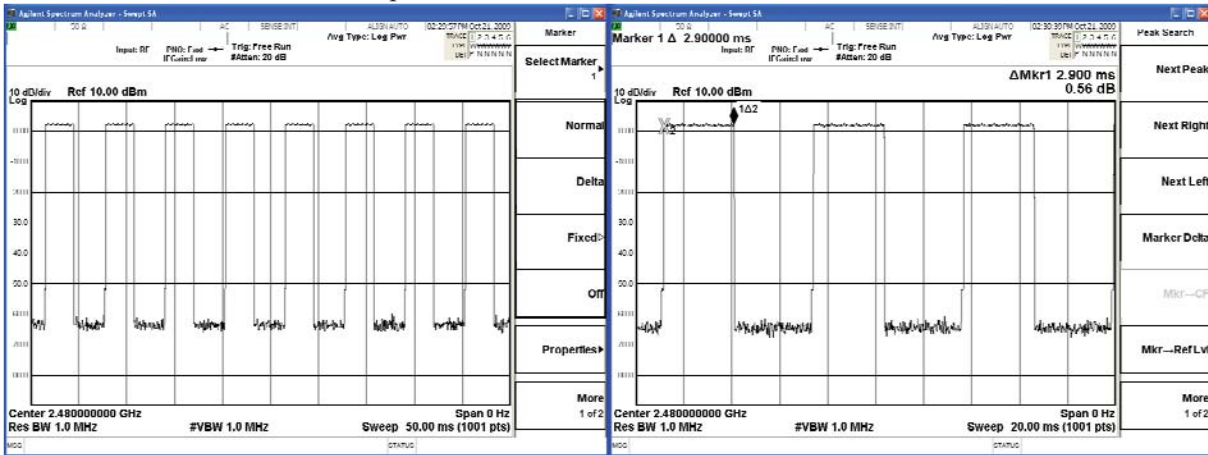
CH39 Time Interval between hops

CH 39 Transmission Time



CH 78 Time Interval between hops

CH 78 Transmission Time



Note:

The dwell times of the packet type of DH1, DH3, and DH5 are tested. Only the worst case is shown on the report.

**10. Occupied Bandwidth**

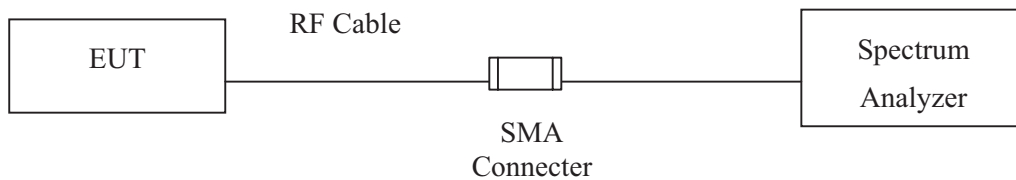
**10.1. Test Equipment**

The following test equipments are used during the radiated emission tests:

Equipment	Manufacturer	Model No./Serial No.	Last Cal.
Spectrum Analyzer	R&S	FSP40/ 100339	Jun, 2009
X Spectrum Analyzer	Agilent	N9010A / MY48030495	Jun, 2009
Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2009

Note: 1. All equipments are calibrated every one year.  
 2. The test instruments marked by “X” are used to measure the final test results.

**10.2. Test Setup**



**10.3. Limits**

N/A

**10.4. Test Procedure**

The EUT was setup to ANSI C63.4, 2003; tested to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.

**10.5. Uncertainty**

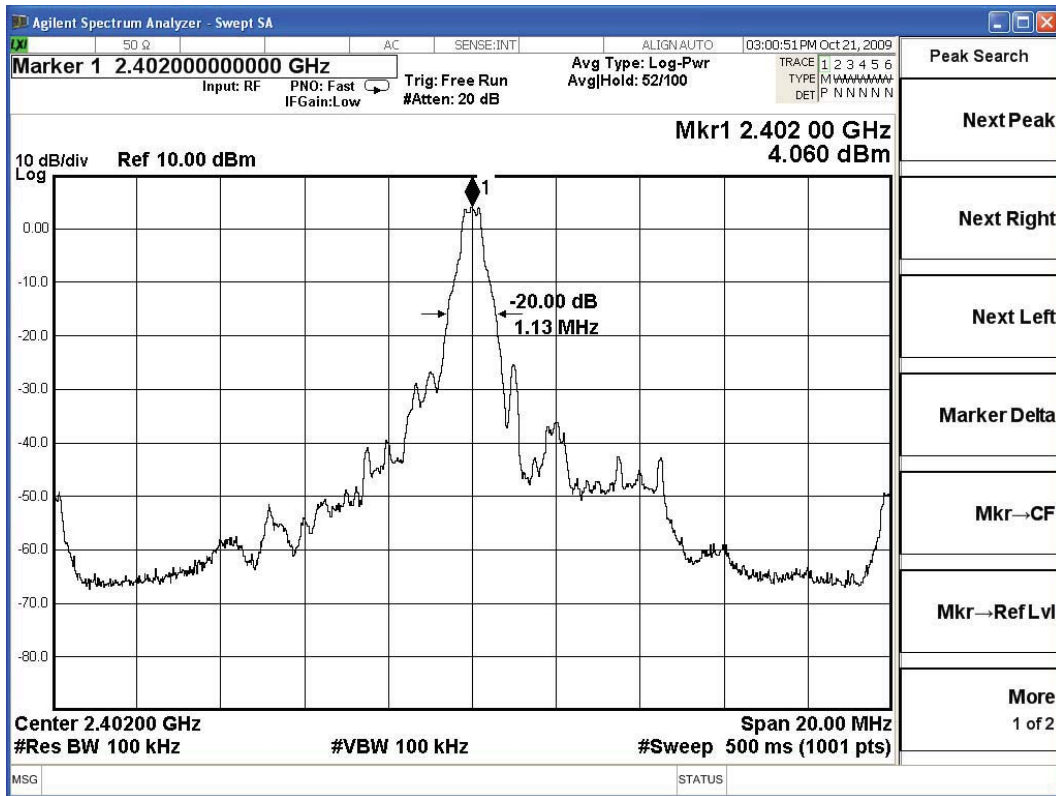
± 150Hz

### 10.6. Test Result of Occupied Bandwidth

Product : Mobile Printer  
 Test Item : Occupied Bandwidth Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit - 1Mbps (GFSK)(2402MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
00	2402	1130	--	NA

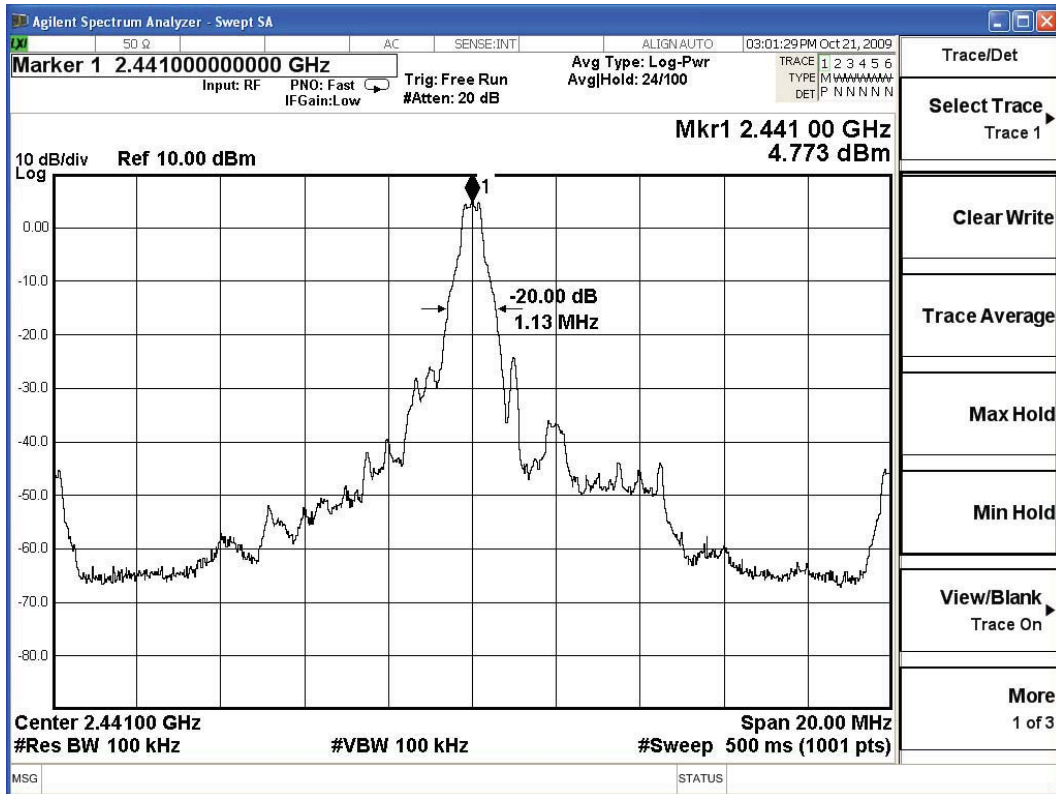
Figure Channel 00:



Product : Mobile Printer  
 Test Item : Occupied Bandwidth Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit - 1Mbps (GFSK)(2441MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
39	2441	1130	--	NA

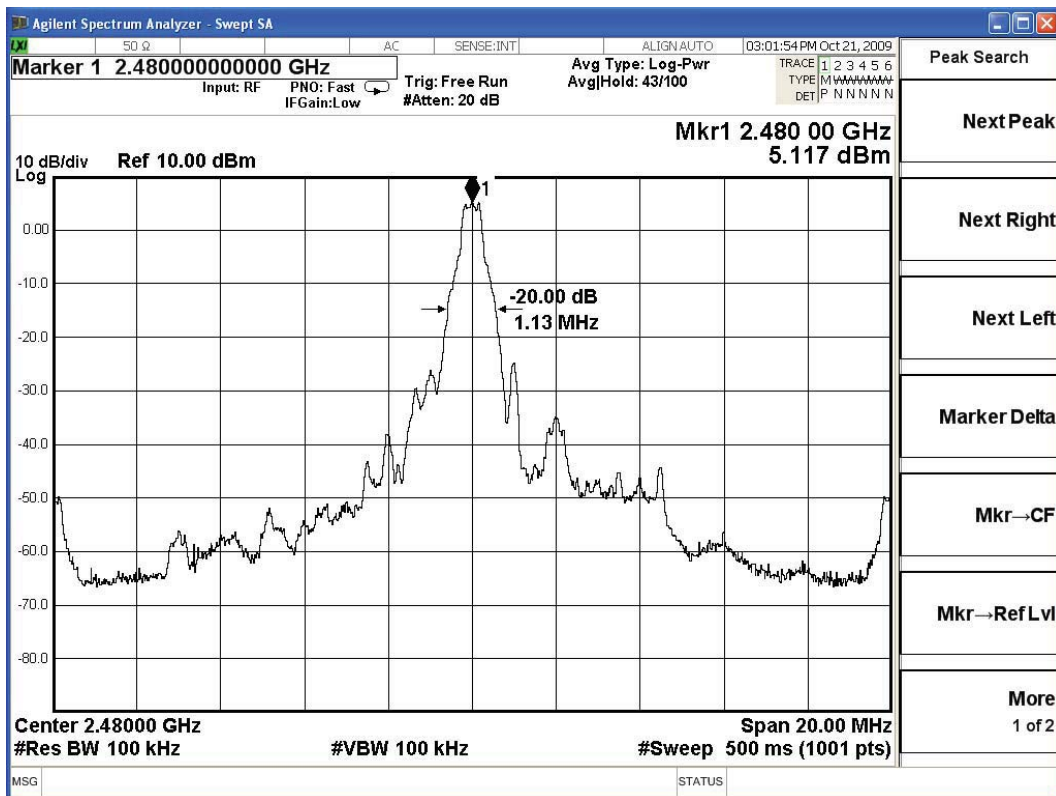
Figure Channel 39:



Product : Mobile Printer  
 Test Item : Occupied Bandwidth Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit - 1Mbps (GFSK)(2480MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
78	2480	1130	--	NA

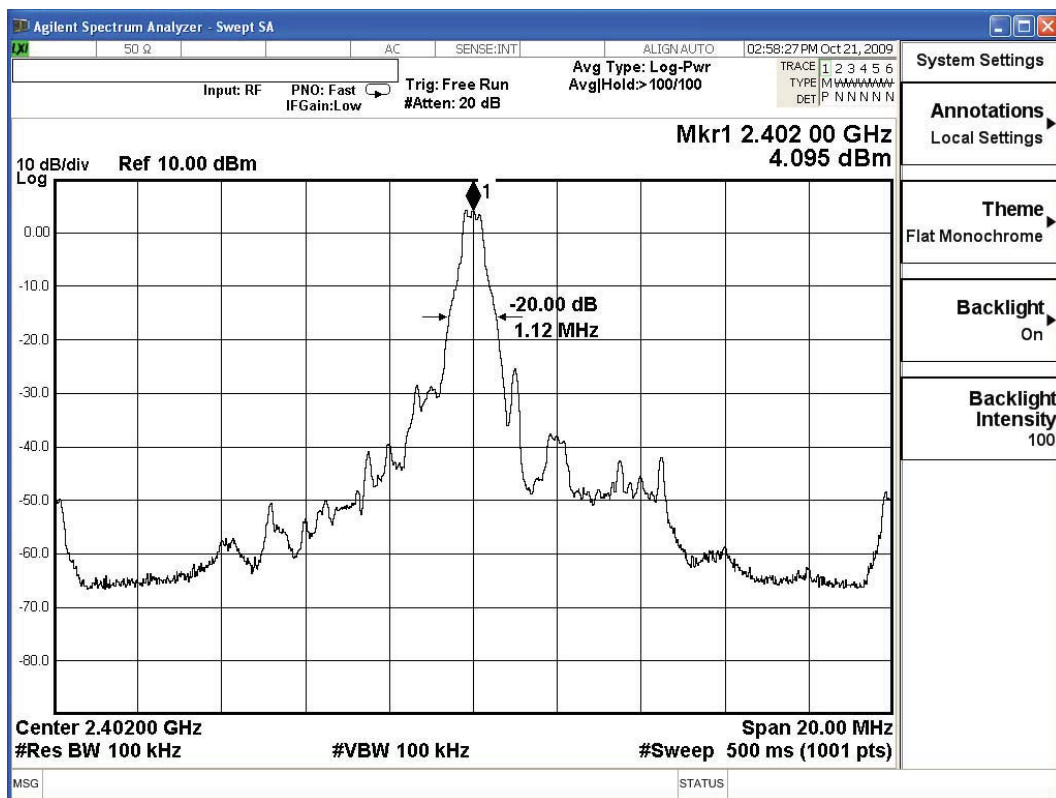
Figure Channel 78:



Product : Mobile Printer  
 Test Item : Occupied Bandwidth Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmit - 3Mbps (8DPSK) (2402MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
00	2402	1120	--	NA

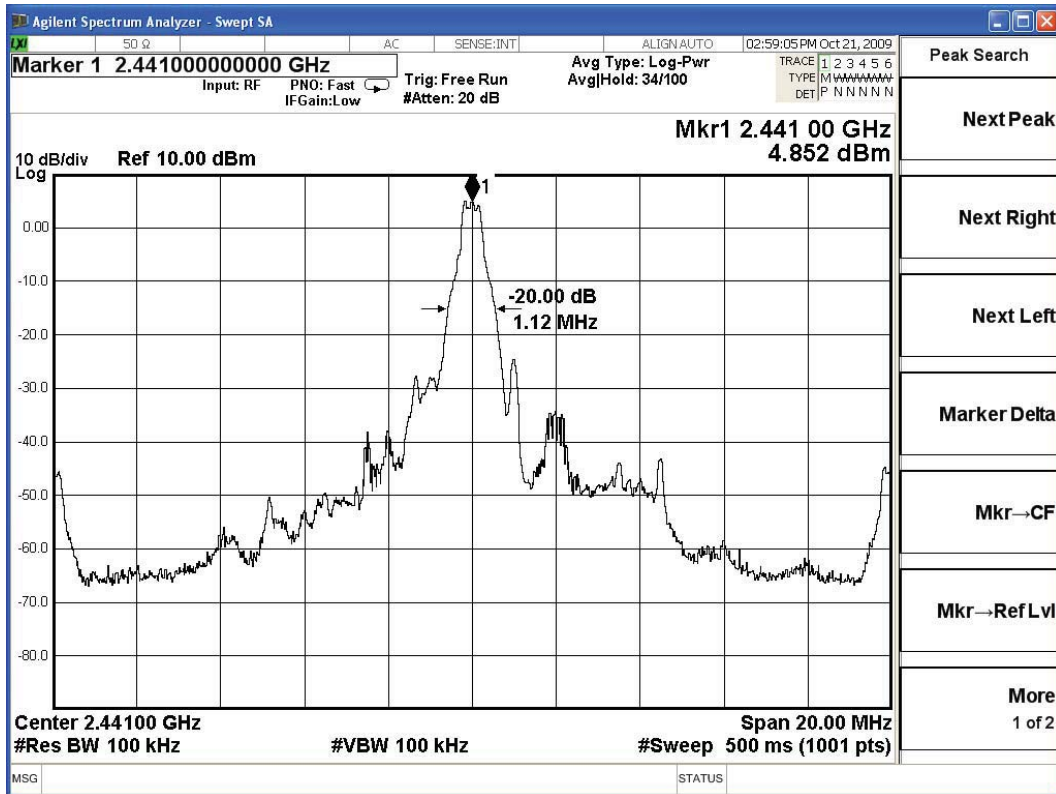
Figure Channel 00:



Product : Mobile Printer  
 Test Item : Occupied Bandwidth Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmit - 3Mbps (8DPSK) (2441MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
39	2441	1120	--	NA

Figure Channel 39:

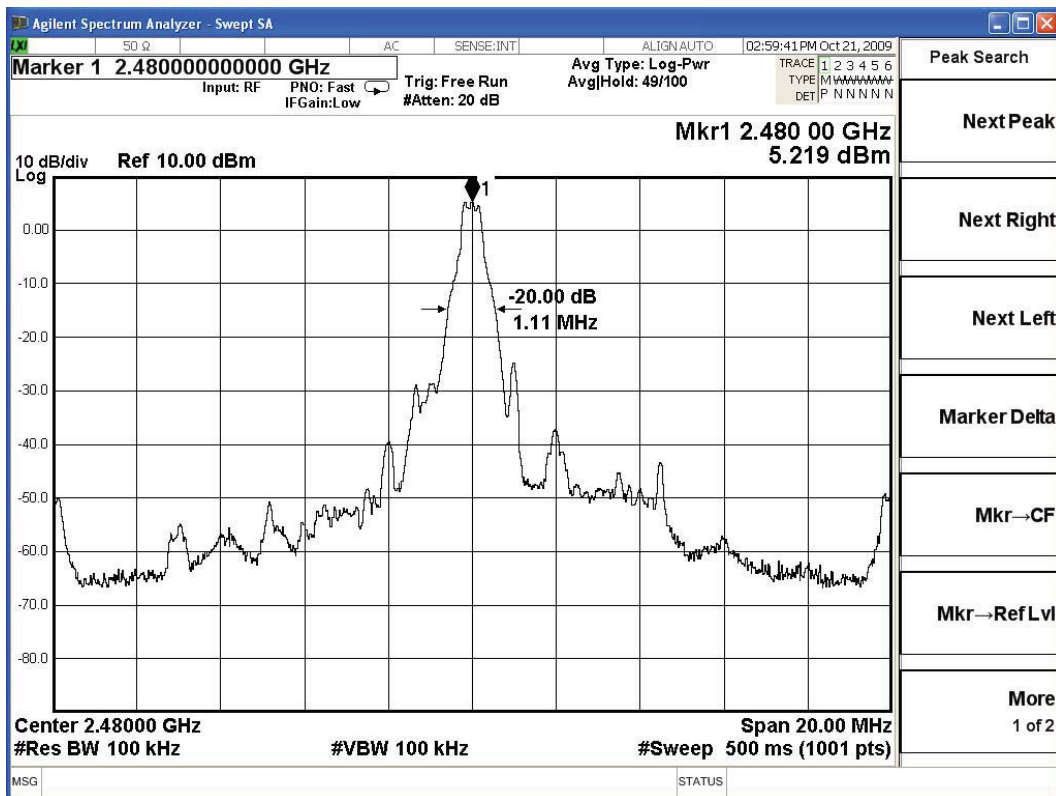




Product : Mobile Printer  
 Test Item : Occupied Bandwidth Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmit - 3Mbps (8DPSK)(2480MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
78	2480	1110	--	NA

Figure Channel 78:



## 11. EMI Reduction Method During Compliance Testing

No modification was made during testing.