



Test Report

Product Name	DOLPHIN 7600 II Mobile Computer
Model No.	DOLPHIN 7600 II
FCC ID.	HD5760004

Applicant	Honeywell International Inc.
Address	700 Visions Drive, PO Box 208 Skaneateles Falls, NY 13153-0208

Date of Receipt	July 18, 2007
Issued Date	Apr. 16, 2008
Report No.	077258R-RFUSP06V01
Version	V1.2

The Test Results relate only to the samples tested.

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Test Report Certification

Issued Date: Apr. 16, 2008

Report No.: 077258R-RFUSP06V01



Product Name	DOLPHIN 7600 II Mobile Computer	
Applicant	Honeywell International Inc.	
Address	700 Visions Drive, PO Box 208 Skaneateles Falls, NY 13153-0208	
Manufacturer	E-TEN Information Systems Co., Ltd.	
Model No.	DOLPHIN 7600 II	
FCC ID.	HD5760004	
Rated Voltage	AC 120V/60Hz	
Working Voltage	DC 3.7V	
Trade Name	Honeywell	
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C: 2007	
	ANSI C63.4: 2003	
Test Result	Complied	 <small>NVLAP Lab Code: 200533-0</small>

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Attachment 1: EUT Test Photographs

Attachment 2: EUT Detailed Photographs

1. GENERAL INFORMATION

1.1. EUT Description

Product Name	DOLPHIN 7600 II Mobile Computer
Trade Name	Honeywell
FCC ID.	HD5760004
Model No.	DOLPHIN 7600 II
Frequency Range	2402 - 2480MHz
Channel Number	79
Type of Modulation	FHSS
Antenna type	Connector
Channel Control	Auto
Antenna Gain	Refer to the table "Antenna List"
Power Adapter	MFR: PHIHONG M/N: PSA15R-050 Cable out: Non-Shielded, 1.8m with two ferrite cores bonded.

Antenna List

No.	Manufacturer	Part No.	Peak Gain
1	E-TEN	N/A	2.39dBi (Max. Peak Gain)

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		

Note:

1. This device is a DOLPHIN 7600 II Mobile Computer with a built-in 2.4GHz Bluetooth 2.0+EDR(Enhanced Data Rate) transceiver.
2. The EUT is including two models for different marketing requirement.
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 an DOLPHIN 7600 II Mobile Computer with a built-in 2.4GHz Bluetooth 2.0+EDR(Enhanced Data Rate) transceiver. The number of the channels is 79 in 2402-2480MHz. The device adapts the frequency hopping spread spectrum modulation. The antenna is connector-type 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: Transmitter -1Mbps(GFSK)
	Mode 2: Transmitter -3Mbps(8DPSK)
	Mode 3: Transmitter -2Mbps($\pi/4$ DQPSK)

Peak Output Power			
Channel / Modulation	2402 MHz	2441MHz	2480 MHz
GFSK (1Mbps)	3.99 dBm	3.86 dBm	3.62 dBm
$\pi/4$ DQPSK* (2Mbps)	4.4 dBm	4.55 dBm	4.2 dBm
8DPSK (3Mbps)	5.1 dBm	4.73 dBm	4.36 dBm

Note: The Marked ‘ * ‘ was selected to perform for Band Edge Compliance and Occupied Bandwidth Measurements.

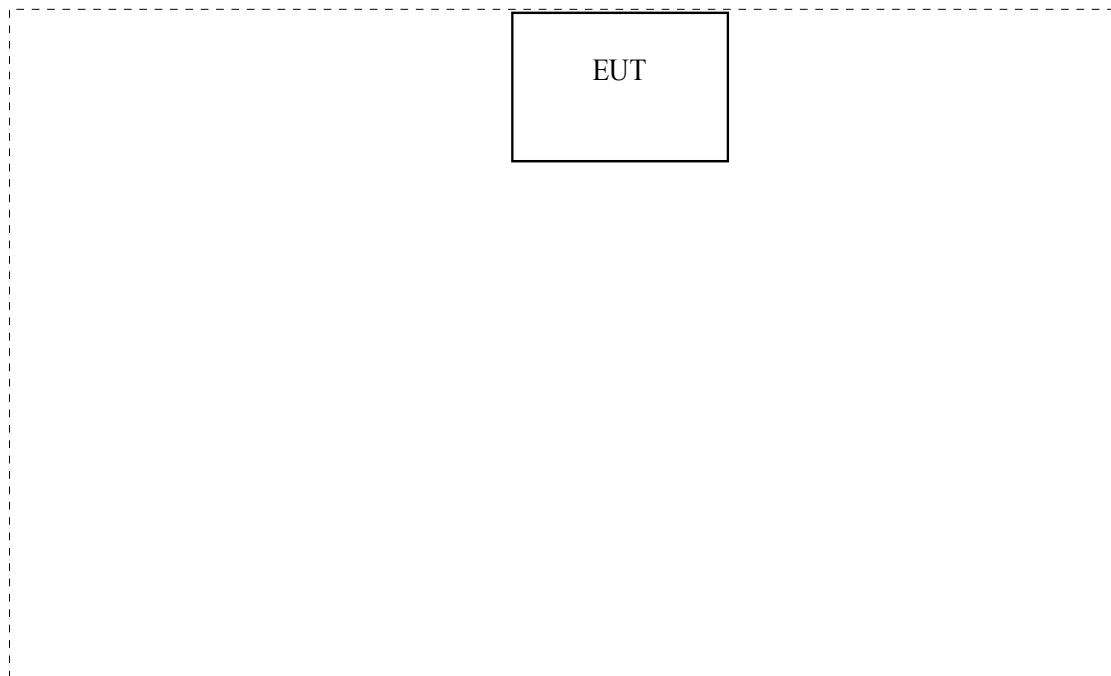
1.3. Tested System Details

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.	Power Cord
1.	N/A	N/A	N/A	N/A	N/A

	Signal Cable Type	Signal cable Description
A.	N/A	N/A

1.4. Configuration of Tested System



1.5. EUT Exercise Software

- (1) Setup the EUT as shown in section 1.4
- (2) Power on the EUT.
- (3) Double-click the icon “My Device” on the desktop.
- (4) Double-click the file folder “IPSM”.
- (5) Execute EnterTestMode M600.exe.
- (6) Click on the test channel to transmit continuously.
- (7) Verify that the EUT works properly.

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

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,
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 E-Mail : service@quietek.com

FCC Accreditation Number: TW1014



2. Conducted Emission

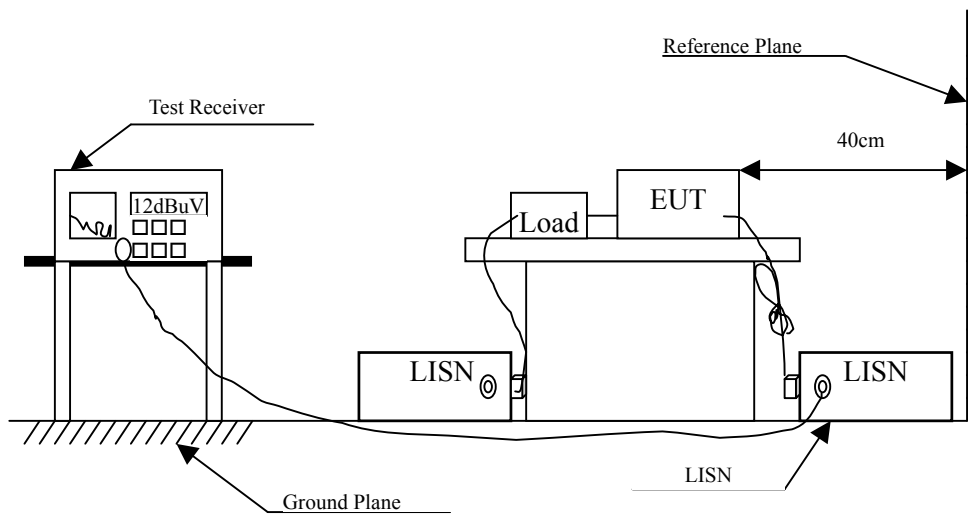
2.1. Test Equipment

The following test equipments 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., 2008	
2	L.I.S.N.	R & S	ESH3-Z5/825562/002	Feb., 2008	EUT
3	L.I.S.N.	R & S	ENV4200/848411/010	Feb., 2008	Peripherals
4	Pulse Limiter	R & S	ESH3-Z2/100410	July, 2007	
5	No.1 Shielded Room			N/A	

Note: 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

2.2. Test Setup



2.3. Limits

FCC Part 15 Subpart C Paragraph 15.207 (dBuV) Limit		
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 was setup according to ANSI C63.4, 2003 and tested according to FCC Public Notice DA 00-705.

The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface. The EUT and simulators are connected to the main power through a line impedance stabilization network (LISN). The LISN provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs.)

Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source.

The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length.

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

2.5. Uncertainty

± 2.26 dB

2.6. Test Result of Conducted Emission

Product : DOLPHIN 7600 II Mobile Computer
 Test Item : Conducted Emission Test
 Power Line : Line 1
 Test Mode : Mode 1: Transmitter -1Mbps(GFSK) (2441MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV	Margin dB	Limit dBuV
LINE 1					
Quasi-Peak					
0.193	9.850	41.090	50.940	-13.831	64.771
0.384	9.840	23.130	32.970	-26.344	59.314
1.021	9.830	25.030	34.860	-21.140	56.000
3.002	9.850	29.360	39.210	-16.790	56.000
4.920	9.870	22.940	32.810	-23.190	56.000
9.966	9.930	24.070	34.000	-26.000	60.000
Average					
0.193	9.850	33.840	43.690	-11.081	54.771
0.384	9.840	21.240	31.080	-18.234	49.314
1.021	9.830	22.870	32.700	-13.300	46.000
3.002	9.850	25.360	35.210	-10.790	46.000
4.920	9.870	17.790	27.660	-18.340	46.000
9.966	9.930	20.060	29.990	-20.010	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 : DOLPHIN 7600 II Mobile Computer
 Test Item : Conducted Emission Test
 Power Line : Line 2
 Test Mode : Mode 1: Transmitter -1Mbps(GFSK) (2441MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV	Margin dB	Limit dBuV
LINE 2					
Quasi-Peak					
0.193	9.860	41.370	51.230	-13.541	64.771
0.384	9.840	20.930	30.770	-28.544	59.314
1.088	9.830	26.410	36.240	-19.760	56.000
1.787	9.840	26.110	35.950	-20.050	56.000
3.130	9.850	28.960	38.810	-17.190	56.000
8.306	9.910	26.880	36.790	-23.210	60.000
Average					
0.193	9.860	33.430	43.290	-11.481	54.771
0.384	9.840	17.520	27.360	-21.954	49.314
1.088	9.830	23.910	33.740	-12.260	46.000
1.787	9.840	23.160	33.000	-13.000	46.000
3.130	9.850	26.000	35.850	-10.150	46.000
8.306	9.910	25.120	35.030	-14.970	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 : DOLPHIN 7600 II Mobile Computer
 Test Item : Conducted Emission Test
 Power Line : Line 1
 Test Mode : Mode 2: Transmitter -3Mbps(8DPSK) (2441MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV	Margin dB	Limit dBuV
LINE 1					
Quasi-Peak					
0.193	9.850	42.080	51.930	-12.841	64.771
0.255	9.848	27.100	36.948	-26.052	63.000
0.830	9.820	25.980	35.800	-20.200	56.000
3.002	9.850	28.820	38.670	-17.330	56.000
4.728	9.870	23.470	33.340	-22.660	56.000
8.369	9.910	23.810	33.720	-26.280	60.000
Average					
0.193	9.850	35.090	44.940	-9.831	54.771
0.255	9.848	23.800	33.648	-19.352	53.000
0.830	9.820	23.520	33.340	-12.660	46.000
3.002	9.850	25.130	34.980	-11.020	46.000
4.728	9.870	18.100	27.970	-18.030	46.000
8.369	9.910	20.770	30.680	-19.320	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 : DOLPHIN 7600 II Mobile Computer
 Test Item : Conducted Emission Test
 Power Line : Line 2
 Test Mode : Mode 2: Transmitter -3Mbps(8DPSK) (2441MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV	Margin dB	Limit dBuV
LINE 2					
Quasi-Peak					
0.193	9.860	42.290	52.150	-12.621	64.771
0.830	9.840	25.760	35.600	-20.400	56.000
1.341	9.830	27.930	37.760	-18.240	56.000
3.002	9.850	28.940	38.790	-17.210	56.000
4.920	9.870	24.200	34.070	-21.930	56.000
8.177	9.910	27.130	37.040	-22.960	60.000
Average					
0.193	9.860	34.630	44.490	-10.281	54.771
0.830	9.840	23.520	33.360	-12.640	46.000
1.341	9.830	24.990	34.820	-11.180	46.000
3.002	9.850	25.590	35.440	-10.560	46.000
4.920	9.870	19.320	29.190	-16.810	46.000
8.177	9.910	24.980	34.890	-15.110	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

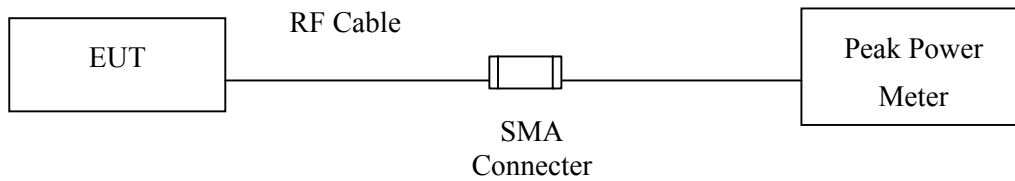
The following test equipments are used during the radiated emission tests:

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Power Meter	Anritsu	ML2495A/6K00003357	May, 2007
X	Power Sensor	Anritsu	MA2491A/034457	May, 2007

- Note:
1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
 2. The test instruments marked with “X” are used to measure the final test results.

3.2. Test Setup

Conducted Measurement



3.3. Test procedures

The EUT was setup according to ANSI C63.4, 2003 for compliance to FCC 47CFR 15.247 requirements

3.4. Limit

For frequency hopping systems in the 2400-2483.5 MHz band employing at least 75 hopping channels: 1Watt.

For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 Watt.

3.5. Uncertainty

± 1.27 dB

3.6. Test Result of Peak Power Output

Product : DOLPHIN 7600 II Mobile Computer
 Test Item : Peak Power Output
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter -1Mbps(GFSK)

Channel No.	Frequency (MHz)	Cable loss (dB)	Peak Power Output (dBm)	Max. Peak Antenna Gain (dBi)	Max. Radiated Power (EIRP) (dBm)	Limit (dBm)	Result
Channel 00	2402.00	0.5	3.99	2.39	6.38	30	Pass
Channel 39	2441.00	0.5	3.86		6.25	30	Pass
Channel 78	2480.00	0.5	3.62		6.01	30	Pass

Note: Peak Power Output = Reading value on peak power meter + cable loss
 Max. Radiated Power (EIRP) = Peak Power Output + Max. Peak Antenna Gain
 Peak power meter and power sensor setting: RBW=50MHz; VBW=20MHz

Product : DOLPHIN 7600 II Mobile Computer
 Test Item : Peak Power Output
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter -3Mbps(8DPSK)

Channel No.	Frequency (MHz)	Cable loss (dB)	Peak Power Output (dBm)	Max. Peak Antenna Gain (dBi)	Max. Radiated Power (EIRP) (dBm)	Limit (dBm)	Result
Channel 00	2402.00	0.5	5.10	2.39	7.49	30	Pass
Channel 39	2441.00	0.5	4.73		7.12	30	Pass
Channel 78	2480.00	0.5	4.36		6.75	30	Pass

Note: Peak Power Output = Reading value on peak power meter + cable loss
 Max. Radiated Power (EIRP) = Peak Power Output + Max. Peak Antenna Gain
 Peak power meter and power sensor setting: RBW=50MHz; VBW=20MHz

4. Radiated Emission

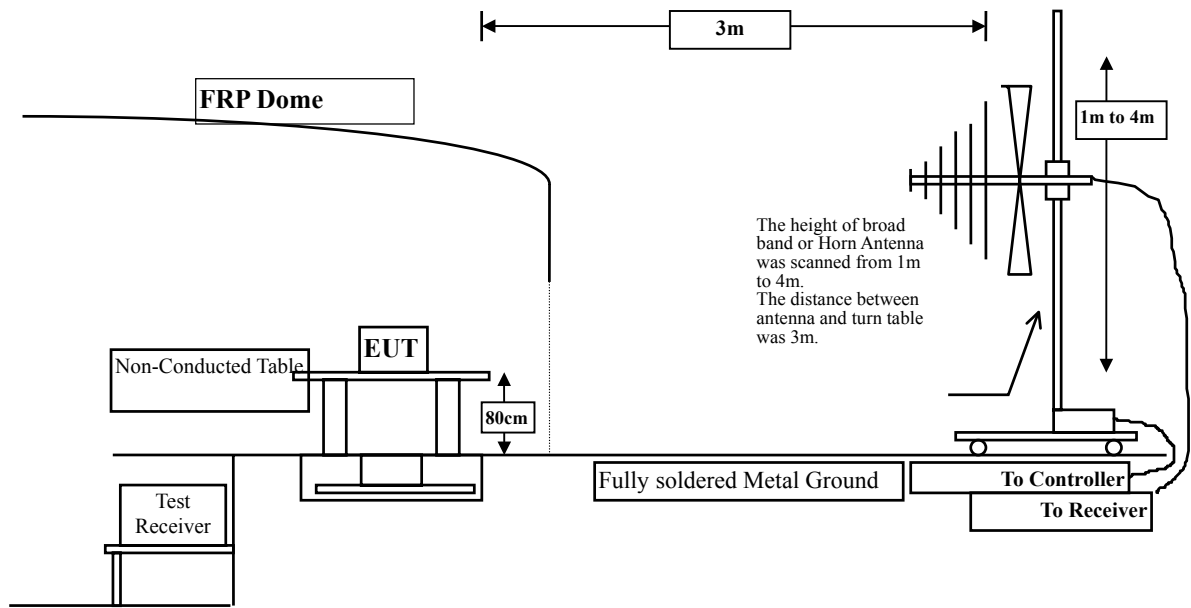
4.1. Test Equipment

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

Test Site	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
<input type="checkbox"/> Site # 1	Test Receiver	R & S	ESVS 10 / 834468/003	May, 2007
	Spectrum Analyzer	Advantest	R3162/ 00803480	May, 2007
	Pre-Amplifier	Advantest	BB525C/ 3307A01812	May, 2007
	Bilog Antenna	SCHAFFNER	CBL6112B / 2697	Sep., 2007
<input type="checkbox"/> Site # 2	Test Receiver	R & S	ESCS 30 / 836858 / 022	May, 2007
	Spectrum Analyzer	Advantest	R3162 / 100803466	May, 2007
	Pre-Amplifier	Advantest	BB525C/3307A01814	May, 2007
	Bilog Antenna	SCHAFFNER	CBL6112B / 2705	May, 2007
	Horn Antenna	ETS	3115 / 0005-6160	Sep., 2007
	Pre-Amplifier	QTK	QTK-AMP-01/ 0001	May, 2007
<input checked="" type="checkbox"/> Site # 3	Test Receiver	R & S	ESI 26 / 838786 / 004	May, 2007
	Spectrum Analyzer	HP	E4407B / US39440758	May, 2007
	Loop Antenna	R & S	HFH2-Z2/833799/004	Apr, 2008
	Bilog Antenna	SCHAFFNER	CBL6112B / 2697	May, 2007
	Horn Antenna	Schwarzbeck	BBHA9120D / 305, 306	July, 2007
	Horn Antenna	Schwarzbeck	BBHA9170 / 208, 209	July, 2007
	Pre-Amplifier	QTK	QTK-AMP-01 / 0001	July, 2007
	Pre-Amplifier	QTK	QTK-AMP-03 / 0003	May, 2007
	Pre-Amplifier	HP	8449B / 3008A01123	July, 2007

- Note:
1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
 2. The test instruments marked with "X" are used to measure the final test results.

4.2. Test Setup



4.3. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall meet the general radiated emission limits in paragraph 15.209.

FCC Part 15 Subpart C Paragraph 15.209 Limits		
Frequency MHz	uV/m @3m	dBuV/m@3m
0.009-0.490	2400/F(KHz)@300	128.52-93.8
0.0490-1.705	2400/F(KHz)@30	73.8-62.97
1.705-30.0	30@30	69.54
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

Remarks: E field strength (dBuV/m) = 20 log E field strength (uV/m)

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.

The frequency range from 9KHz 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 : DOLPHIN 7600 II Mobile Computer
 Test Item : Harmonic Radiated Emission
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter -1Mbps(GFSK)(2402MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4804.000	33.788	50.960	50.755	-23.245	74.000
7206.000	38.388	41.980	45.274	-28.726	74.000
9608.000	40.404	40.760	46.456	-27.544	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4804.000	-0.205	55.700	55.495	-18.505	74.000
7206.000	3.294	41.160	44.454	-29.546	74.000
9608.000	5.696	42.370	48.066	-25.934	74.000
Average Detector:					
4804.000	-0.205	46.650	46.445	-7.555	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : DOLPHIN 7600 II Mobile Computer
 Test Item : Harmonic Radiated Emission
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter -1Mbps(GFSK)(2441MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4882.000	-0.276	51.070	50.794	-23.206	74.000
7323.000	3.330	40.640	43.969	-30.031	74.000
9764.000	6.262	39.780	46.043	-27.957	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4882.000	-0.276	55.600	55.324	-18.676	74.000
7323.000	3.330	39.730	43.059	-30.941	74.000
9764.000	6.262	40.830	47.093	-26.907	74.000
Average Detector:					
4882.000	-0.276	41.420	41.144	-12.856	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : DOLPHIN 7600 II Mobile Computer
 Test Item : Harmonic Radiated Emission
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter -1Mbps(GFSK)(2480MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4960.000	0.591	52.840	53.431	-20.569	74.000
7440.000	3.924	40.540	44.464	-29.536	74.000
9920.000	6.468	40.580	47.048	-26.952	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4960.000	0.591	57.730	58.321	-15.679	74.000
7440.000	3.924	40.900	44.824	-29.176	74.000
9920.000	6.468	39.040	45.508	-28.492	74.000
Average Detector:					
4960.000	0.591	48.620	49.211	-4.789	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : DOLPHIN 7600 II Mobile Computer
 Test Item : Harmonic Radiated Emission
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter -3Mbps(8DPSK)(2402MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4804.000	-0.205	45.680	45.475	-28.525	74.000
7206.000	3.294	40.160	43.454	-30.546	74.000
9608.000	5.696	40.350	46.046	-27.954	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4804.000	-0.205	49.620	49.415	-24.585	74.000
7206.000	3.294	40.740	44.034	-29.966	74.000
9608.000	5.696	41.270	46.966	-27.034	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : DOLPHIN 7600 II Mobile Computer
 Test Item : Harmonic Radiated Emission
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter -3Mbps(8DPSK) (2441MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4882.000	-0.276	46.700	46.424	-27.576	74.000
7323.000	3.330	40.110	43.439	-30.561	74.000
9764.000	6.262	40.460	46.723	-27.277	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4882.000	-0.276	49.040	48.764	-25.236	74.000
7323.000	3.330	40.630	43.959	-30.041	74.000
9764.000	6.262	39.880	46.143	-27.857	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : DOLPHIN 7600 II Mobile Computer
 Test Item : Harmonic Radiated Emission
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter -3Mbps(8DPSK) (2480MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4960.000	0.591	46.280	46.871	-27.129	74.000
7440.000	3.924	39.280	43.204	-30.796	74.000
9920.000	6.468	40.110	46.578	-27.422	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4960.000	0.591	51.450	52.041	-21.959	74.000
7440.000	3.924	40.300	44.224	-29.776	74.000
9920.000	6.468	39.000	45.468	-28.532	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : DOLPHIN 7600 II Mobile Computer
 Test Item : General Radiated Emission
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter -1Mbps(GFSK)(2441MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
35.160	16.271	14.289	30.560	-9.440	40.000
58.769	6.792	22.745	29.536	-10.464	40.000
117.948	13.533	10.834	24.366	-19.134	43.500
332.890	17.823	14.335	32.158	-13.842	46.000
477.330	21.996	6.470	28.465	-17.535	46.000
689.370	24.985	12.318	37.303	-8.697	46.000
Vertical					
46.870	10.351	17.927	28.278	-11.722	40.000
90.340	10.636	16.732	27.368	-16.132	43.500
196.870	11.534	15.460	26.994	-16.506	43.500
266.980	16.046	8.341	24.387	-21.613	46.000
331.974	17.794	20.024	37.819	-8.181	46.000
696.398	25.128	7.746	32.874	-13.126	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak Value
2. "█" means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Product : DOLPHIN 7600 II Mobile Computer
 Test Item : General Radiated Emission
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter -3Mbps(8DPSK)(2441MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
36.489	15.561	12.579	28.140	-11.860	40.000
59.360	6.696	23.529	30.224	-9.776	40.000
117.860	13.530	11.157	24.687	-18.813	43.500
331.489	17.782	14.939	32.721	-13.279	46.000
473.689	21.885	6.083	27.968	-18.032	46.000
697.360	25.143	13.293	38.436	-7.564	46.000
Vertical					
30.898	18.472	12.118	30.590	-9.410	40.000
59.360	6.696	20.179	26.874	-13.126	40.000
121.550	13.662	11.018	24.680	-18.820	43.500
199.315	11.585	14.859	26.443	-17.057	43.500
333.153	17.830	19.645	37.476	-8.524	46.000
699.870	25.202	6.443	31.645	-14.355	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak Value
2. "█" means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Product : DOLPHIN 7600 II Mobile Computer
 Test Item : General Radiated Emission
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter -1Mbps(GFSK)(2441MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
0.190	20.850	32.500	53.350	-62.150	115.500
0.250	20.850	31.700	52.550	-58.610	111.160
0.694	20.840	24.800	45.640	-26.349	71.989
1.830	20.810	23.380	44.190	-25.350	69.540
4.690	20.740	23.680	44.420	-25.120	69.540
19.630	20.370	22.790	43.160	-26.380	69.540

Note:

1. All Readings below 1GHz are Quasi-Peak Value
2. "■" means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Product : DOLPHIN 7600 II Mobile Computer
 Test Item : General Radiated Emission
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter -3Mbps(8DPSK)(2441MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
0.166	20.850	33.700	54.550	-62.686	117.236
0.250	20.850	31.250	52.100	-59.060	111.160
0.882	20.830	23.470	44.300	-26.020	70.320
2.602	20.790	22.780	43.570	-25.970	69.540
6.438	20.700	23.980	44.680	-24.860	69.540
19.174	20.380	23.510	43.890	-25.650	69.540

Note:

1. All Readings below 1GHz are Quasi-Peak Value
2. "█" means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

5. Spurious RF Conducted Emissions

5.1. Test Equipment

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

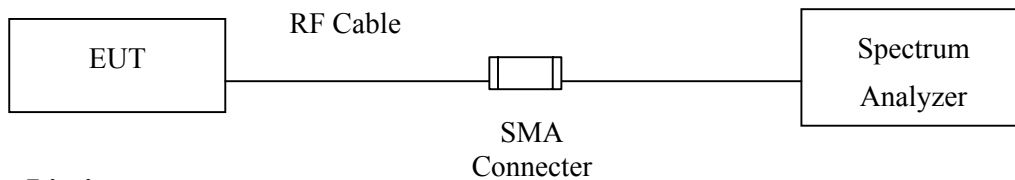
Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2007

Test Site :Site 3

- Note: 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
 2. The test instruments marked with “X” are used to measure the final test results.

5.2. Test Setup

Spurious RF Conducted Measurement



5.3. 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)).

5.4. 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.

Set RBW=100KHz, VBW ≥ RBW, Sweep = auto, Detector function = peak

Trace = max hold

5.5. Uncertainty

± 3.9 dB above 1GHz

± 3.8 dB below 1GHz

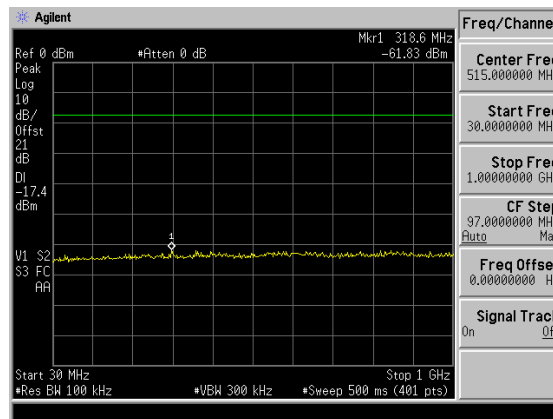
5.6. Test Result of Spurious RF Conducted Emissions

Product : DOLPHIN 7600 II Mobile Computer
 Test Item : Spurious RF Conducted Emissions
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter -1Mbps(GFSK)

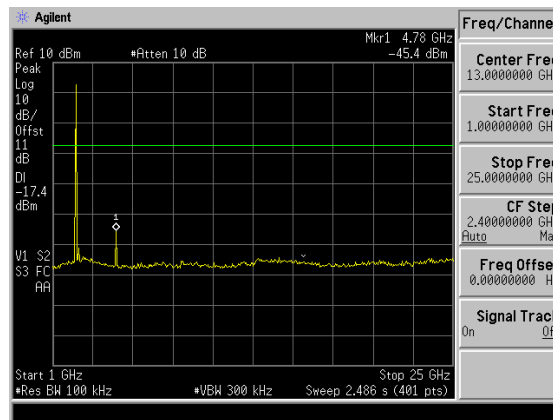
Spurious RF Conducted Measurement:

Channel No.	Frequency (MHz)	Required Limit (dBc)	Result
00	2402	>20dB	Pass

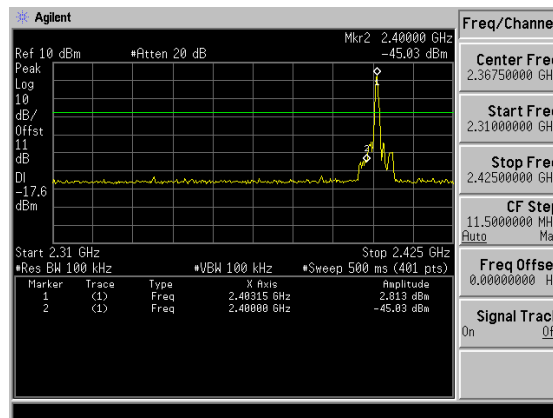
Figure Channel 00: 30-1GHz



1-25GHz



Channel 2402

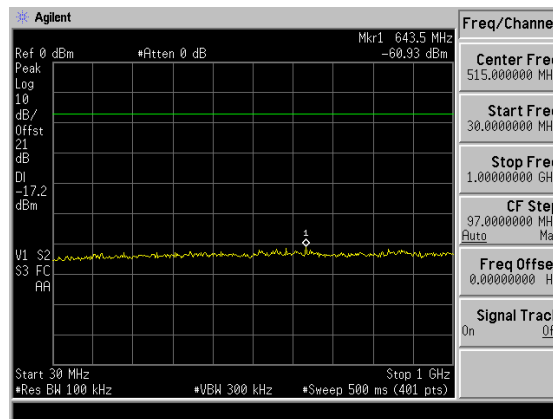


Product : DOLPHIN 7600 II Mobile Computer
 Test Item : Spurious RF Conducted Emissions
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter -1Mbps(GFSK)

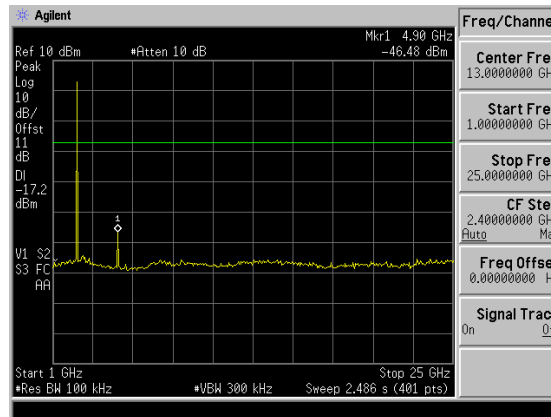
Spurious RF Conducted Measurement:

Channel No.	Frequency (MHz)	Required Limit (dBc)	Result
39	2441	>20dB	Pass

Figure Channel 39: 30-1GHz



1-25GHz

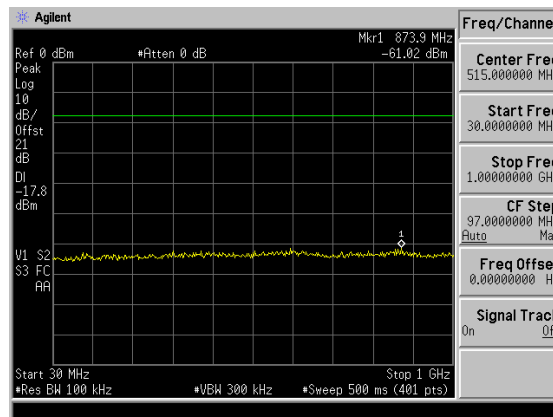


Product : DOLPHIN 7600 II Mobile Computer
 Test Item : Spurious RF Conducted Emissions
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter -1Mbps(GFSK)

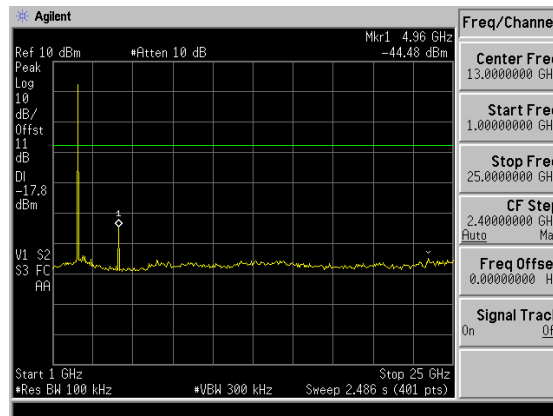
Spurious RF Conducted Measurement:

Channel No.	Frequency (MHz)	Required Limit (dBc)	Result
78	2480	>20dB	Pass

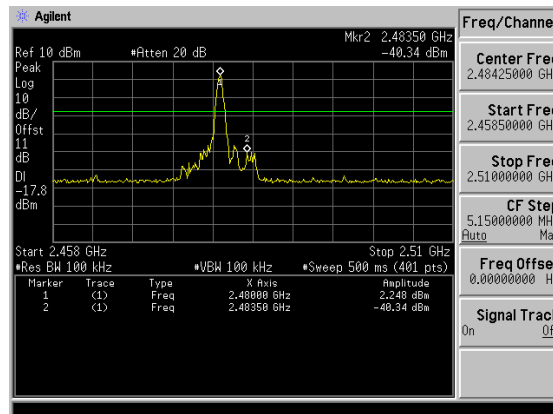
Figure Channel 78: 30-1GHz



1-25GHz



Channel 2480

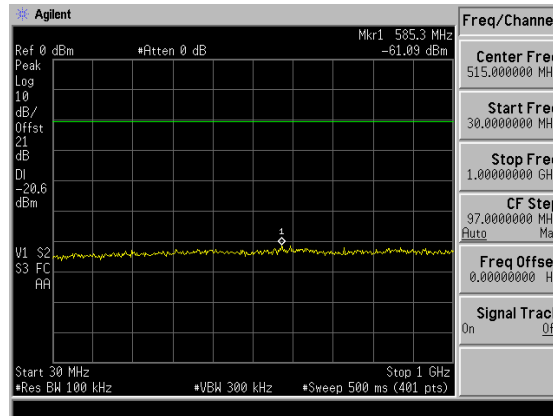


Product : DOLPHIN 7600 II Mobile Computer
 Test Item : Spurious RF Conducted Emissions
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter -3Mbps(8DPSK)

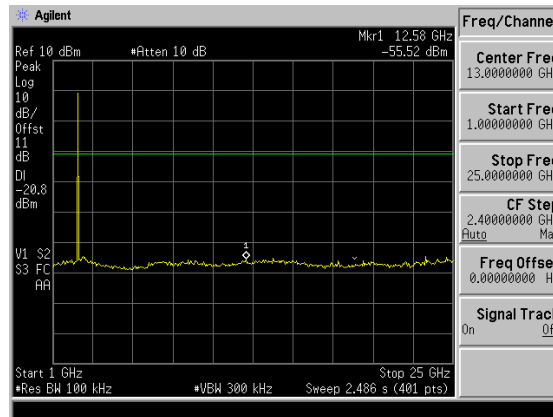
Spurious RF Conducted Measurement:

Channel No.	Frequency (MHz)	Required Limit (dBc)	Result
00	2402	>20dB	Pass

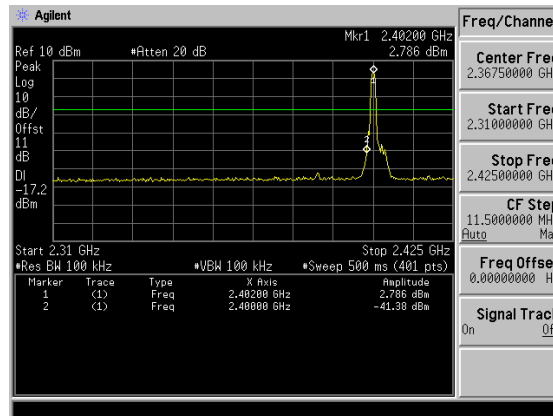
Figure Channel 00: 30-1GHz



1-25GHz



Channel 2402

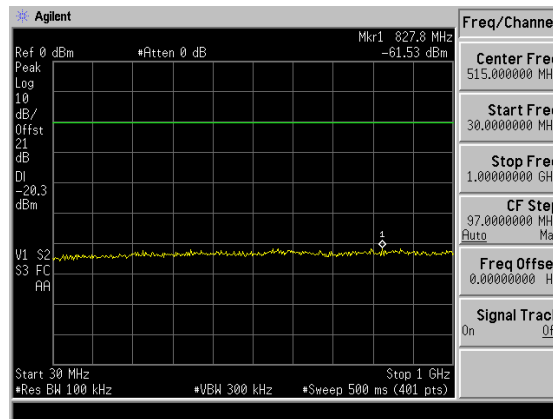


Product : DOLPHIN 7600 II Mobile Computer
 Test Item : Spurious RF Conducted Emissions
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter -3Mbps(8DPSK)

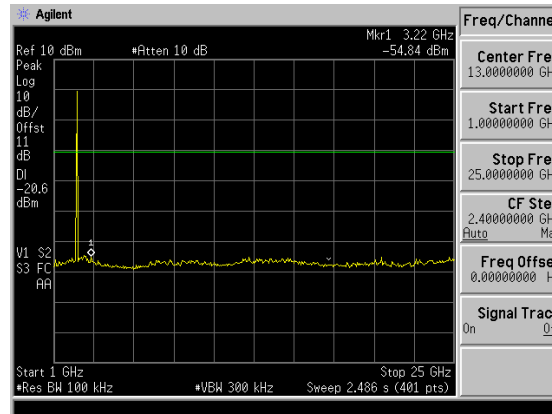
Spurious RF Conducted Measurement:

Channel No.	Frequency (MHz)	Required Limit (dBc)	Result
39	2441	>20dB	Pass

Figure Channel 39: 30-1GHz



1-25GHz

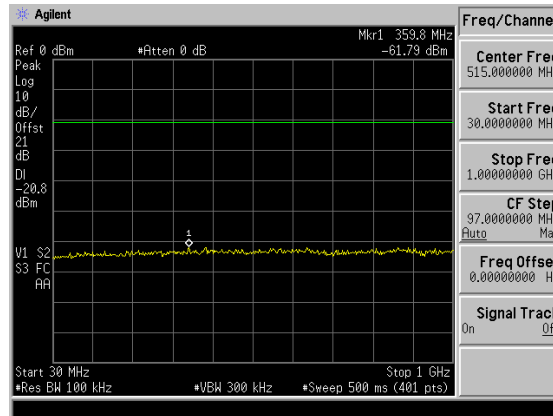


Product : DOLPHIN 7600 II Mobile Computer
 Test Item : Spurious RF Conducted Emissions
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter -3Mbps(8DPSK)

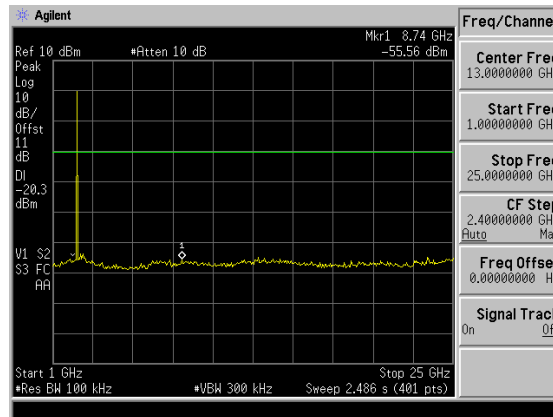
Spurious RF Conducted Measurement:

Channel No.	Frequency (MHz)	Required Limit (dBc)	Result
78	2480	>20dB	Pass

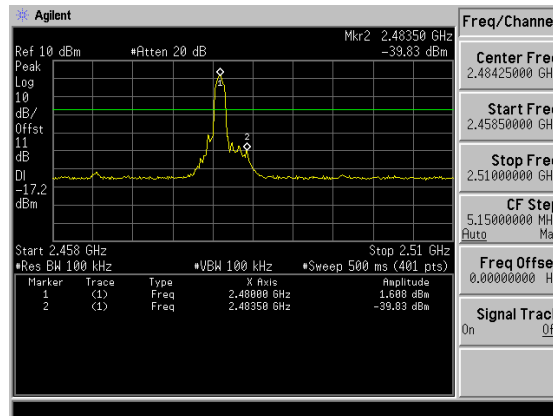
Figure Channel 78: 30-1GHz



1-25GHz



Channel 2480

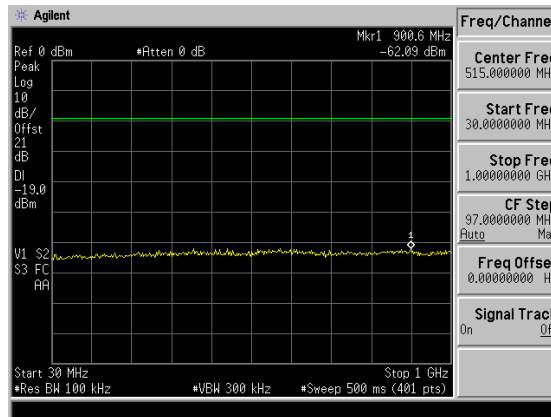


Product : DOLPHIN 7600 II Mobile Computer
 Test Item : Spurious RF Conducted Emissions
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmitter –2Mbps($\pi/4$ DQPSK)

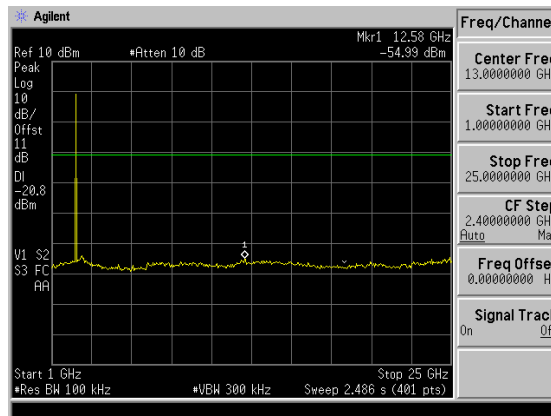
Spurious RF Conducted Measurement:

Channel No.	Frequency (MHz)	Required Limit (dBc)	Result
00	2402	>20dB	Pass

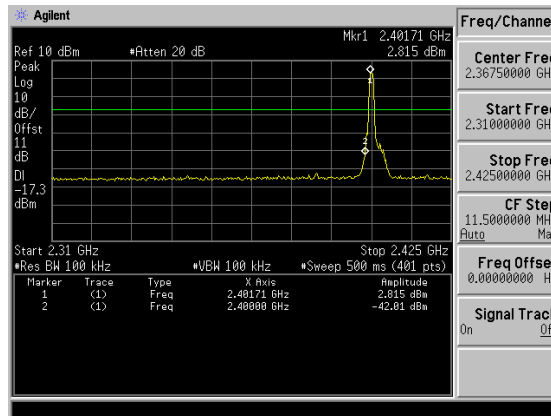
Figure Channel 00: 30-1GHz



1-25GHz



Channel 2402

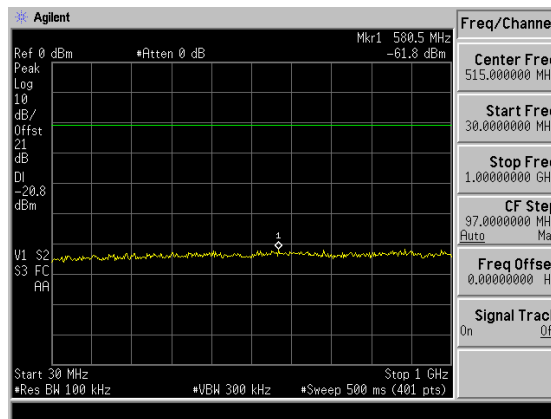


Product : DOLPHIN 7600 II Mobile Computer
 Test Item : Spurious RF Conducted Emissions
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmitter -2Mbps($\pi/4$ DQPSK)

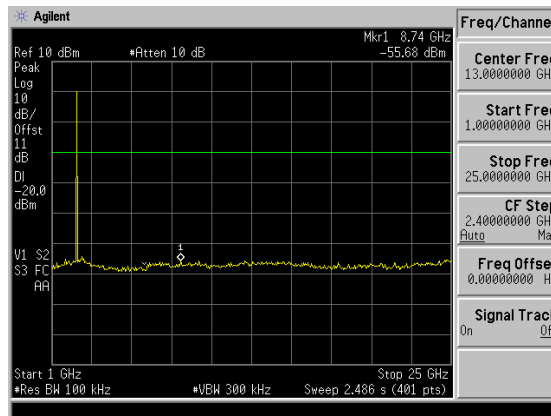
Spurious RF Conducted Measurement:

Channel No.	Frequency (MHz)	Required Limit (dBc)	Result
39	2441	>20dB	Pass

Figure Channel 39: 30-1GHz



1-25GHz

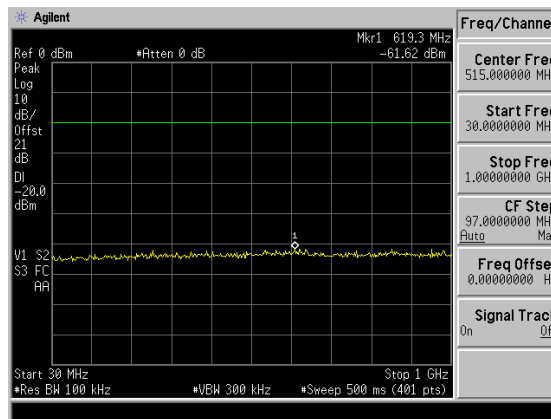


Product : DOLPHIN 7600 II Mobile Computer
 Test Item : Spurious RF Conducted Emissions
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmitter -2Mbps($\pi/4$ DQPSK)

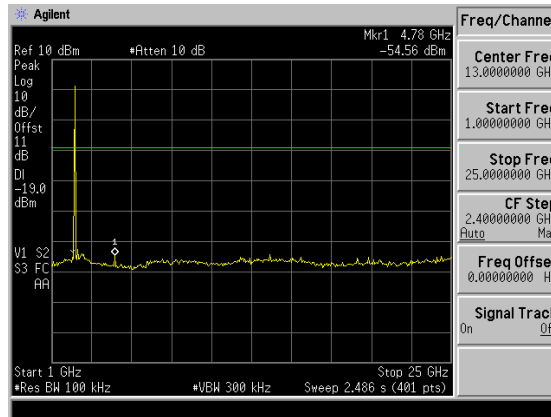
Spurious RF Conducted Measurement:

Channel No.	Frequency (MHz)	Required Limit (dBc)	Result
78	2480	>20dB	Pass

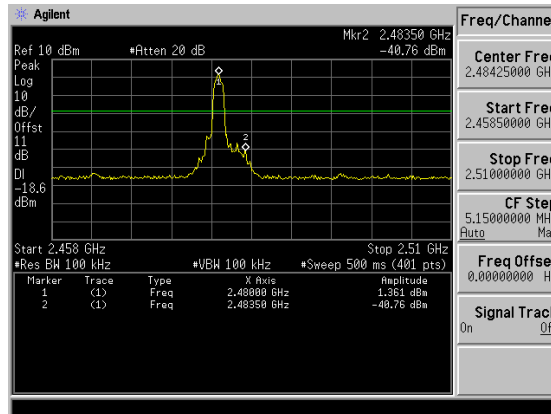
Figure Channel 78: 30-1GHz



1-25GHz



Channel 2480



6. Radiated Emission Band Edge

6.1. Test Equipment

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

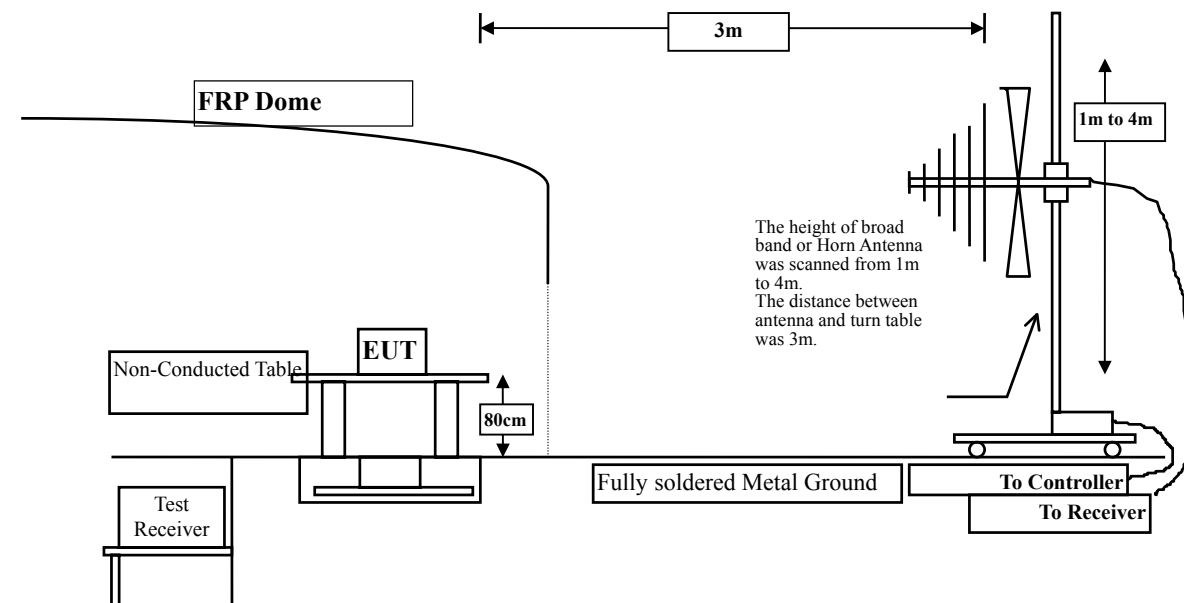
	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Test Receiver	R & S	ESI 26 / 838786 / 004	May, 2007
X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2007
X	Bilog Antenna	SCHAFFNER	CBL6112B / 2697	May, 2007
X	Horn Antenna	Schwarzbeck	BBHA9120D / 305, 306	July, 2007
X	Horn Antenna	Schwarzbeck	BBHA9170 / 208, 209	July, 2007
X	Pre-Amplifier	QTK	QTK-AMP-01 / 0001	July, 2007
X	Pre-Amplifier	QTK	QTK-AMP-03 / 0003	May, 2007
X	Pre-Amplifier	Agilent	8449B / 3008A01123	July, 2007

Test Site Site 3

- Note:
1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
 2. The test instruments marked with “X” are used to measure the final test results.

6.2. Test Setup

RF Radiated Measurement:



6.3. Limit

Emissions radiated outside of the specified frequency bands, except for harmonics, shall meet the general radiated emission limits in paragraph 15.209.

6.4. 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.

6.5. Uncertainty

± 3.9 dB above 1GHz

± 3.8 dB below 1GHz

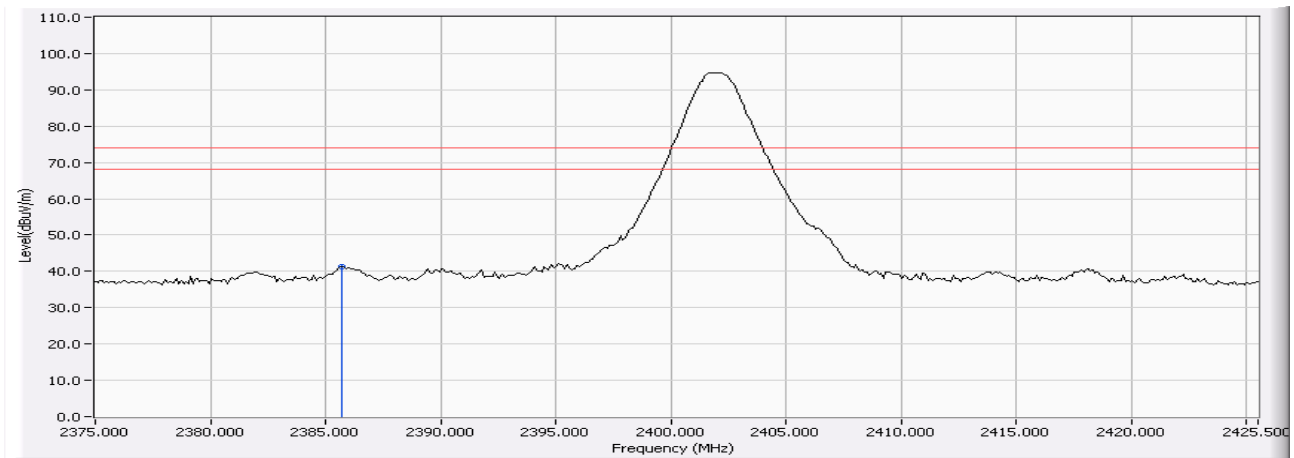
6.6. Test Result of Band Edge

Product : DOLPHIN 7600 II Mobile Computer
 Test Item : Band Edge
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter -1Mbps(GFSK)(2402MHz)

RF Radiated Measurement (Horizontal):

Channel	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
00 (Peak)	2385.706	-6.781	47.928	41.147	74.00	54.00	Pass

Figure Channel 00: (Horizontal) (Peak)



Note:

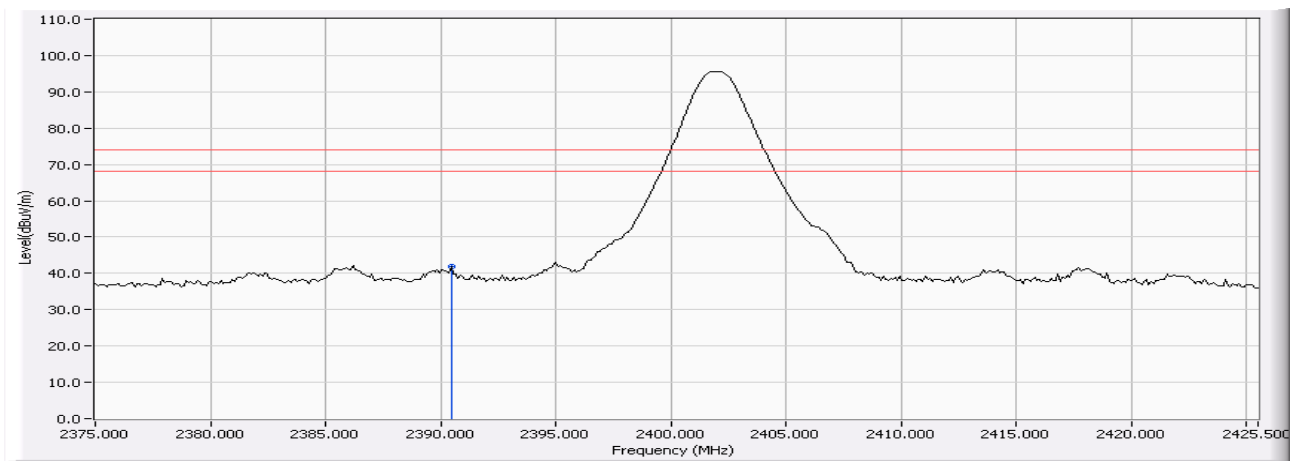
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : DOLPHIN 7600 II Mobile Computer
 Test Item : Band Edge
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter -1Mbps(GFSK)(2402MHz)

RF Radiated Measurement (Vertical):

Channel	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
00 (Peak)	2390.453	-6.767	48.589	41.822	74.00	54.00	Pass

Figure Channel 00: (Vertical) (Peak)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : DOLPHIN 7600 II Mobile Computer
 Test Item : Band Edge
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter -1Mbps(GFSK)(2480MHz)

RF Radiated Measurement (Horizontal):

Channel	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
78(Peak)	2483.500	-6.469	62.462	55.994	74.00	54.00	Pass
78(Peak)	2496.120	-6.442	47.536	41.094	74.00	54.00	Pass
78(Avg)	2483.500	-6.469	51.135	44.667	74.00	54.00	Pass

Figure Channel 78: (Horizontal) (Peak)

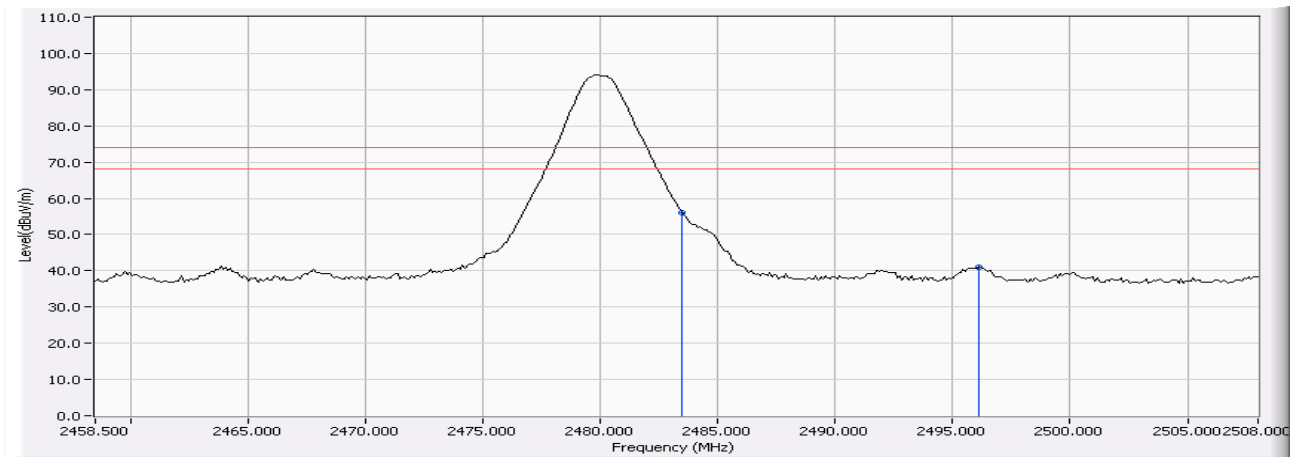
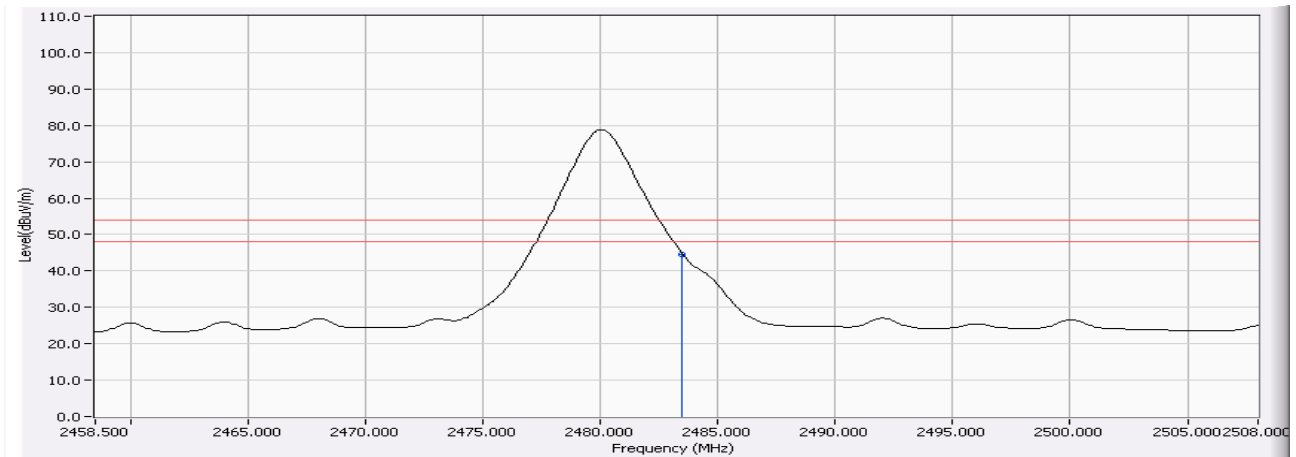


Figure Channel 78: (Horizontal) (Avg)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : DOLPHIN 7600 II Mobile Computer
 Test Item : Band Edge
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter -1Mbps(GFSK)(2480MHz)

RF Radiated Measurement (Vertical):

Channel	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
78(Peak)	2483.500	-6.469	62.625	56.157	74.00	54.00	Pass
78(Peak)	2496.219	-6.442	46.988	40.546	74.00	54.00	Pass
78(Avg)	2483.500	-6.469	51.165	44.697	74.00	54.00	Pass

Figure Channel 78: (Vertical) (Peak)

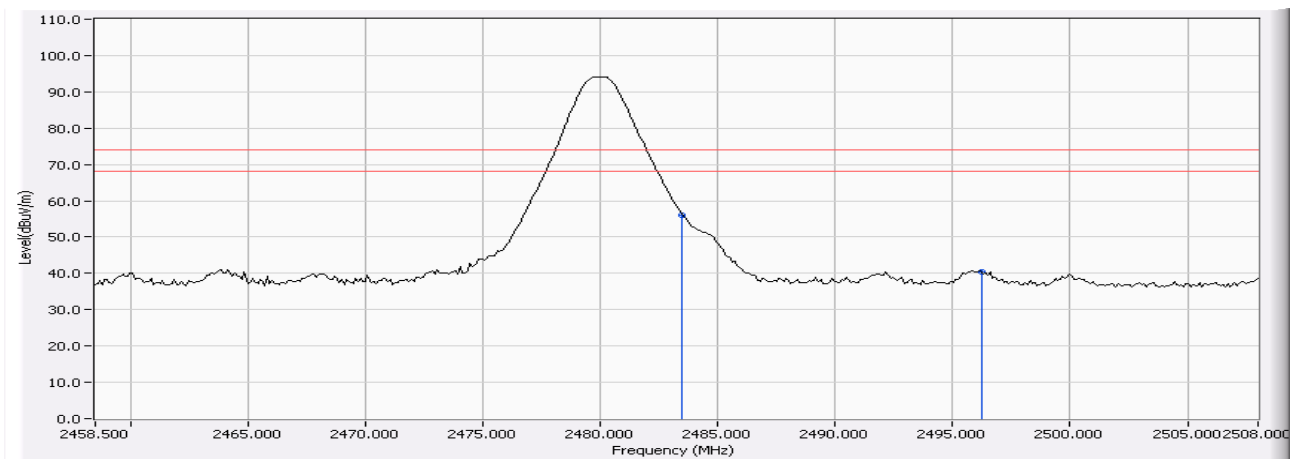
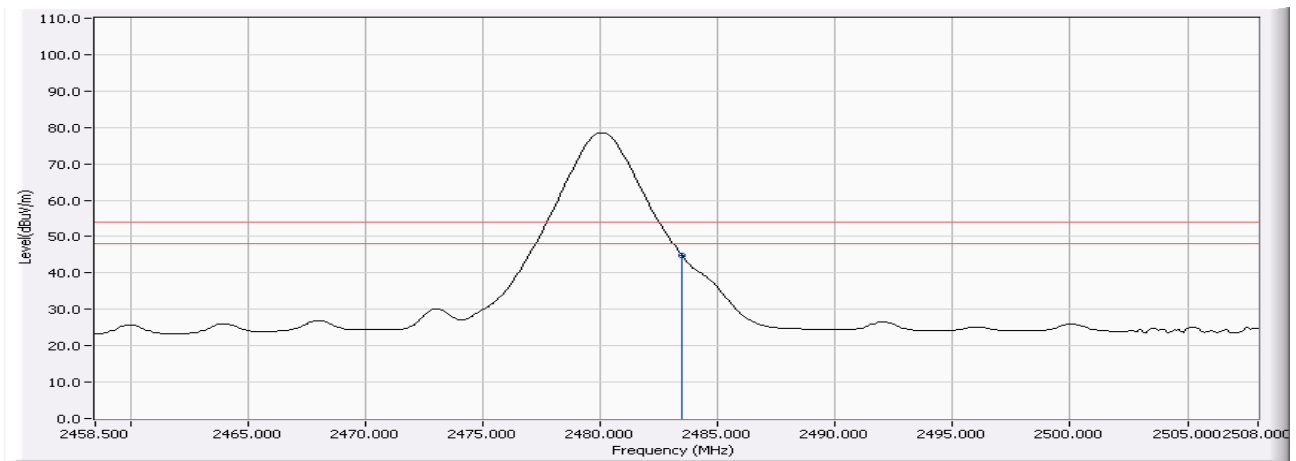


Figure Channel 78: (Vertical) (Avg)



Note:

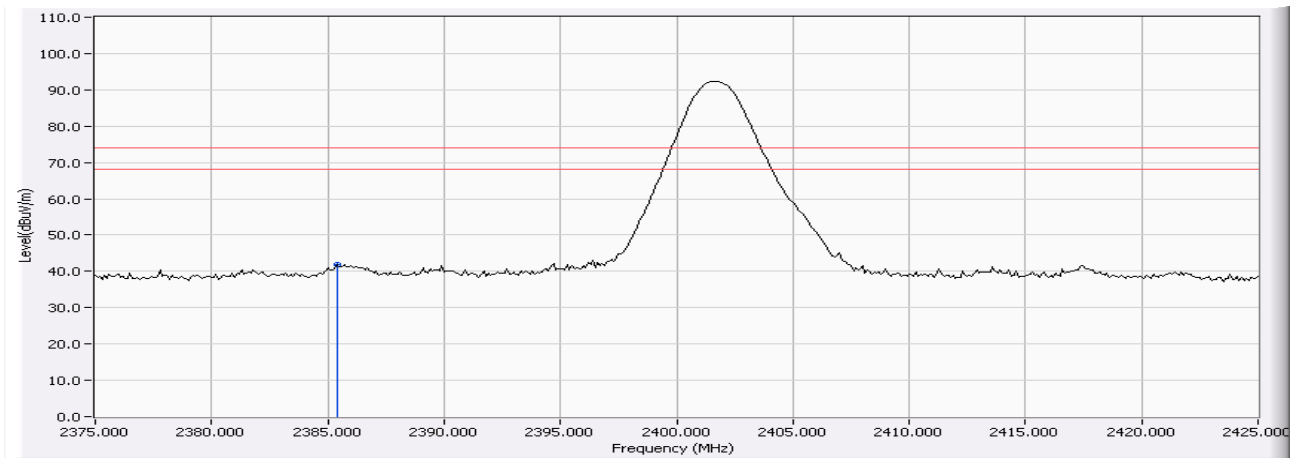
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : DOLPHIN 7600 II Mobile Computer
 Test Item : Band Edge
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter -3Mbps(8DPSK)(2402MHz)

RF Radiated Measurement (Horizontal):

Channel	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
00 (Peak)	2385.400	-6.782	48.520	41.738	74.00	54.00	Pass

Figure Channel 00: (Horizontal) (Peak)



Note:

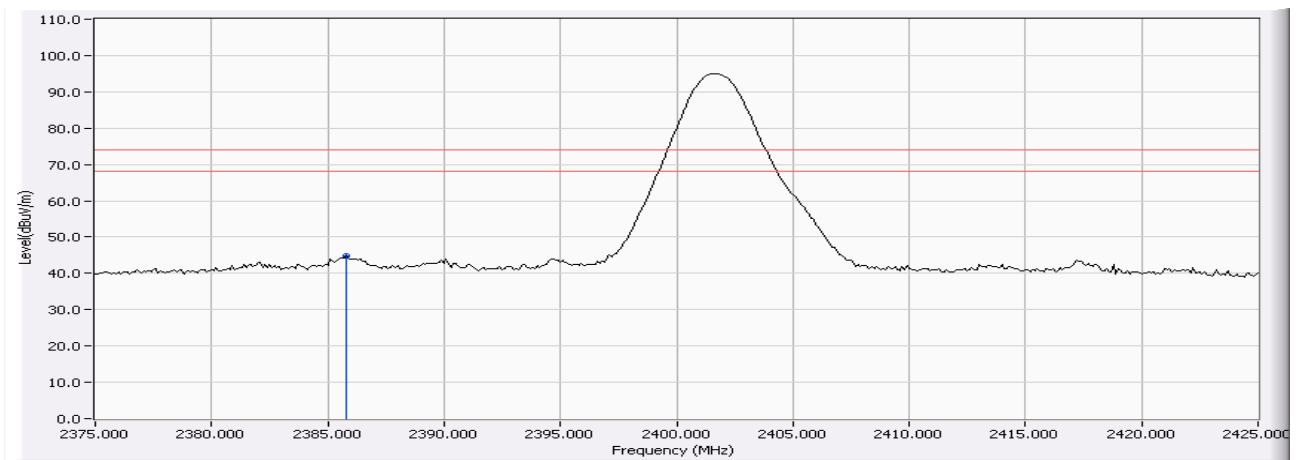
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : DOLPHIN 7600 II Mobile Computer
 Test Item : Band Edge
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter -3Mbps(8DPSK) (2402MHz)

RF Radiated Measurement (Vertical):

Channel	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
00 (Peak)	2385.800	-6.781	51.512	44.731	74.00	54.00	Pass

Figure Channel 00: (Vertical) (Peak)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : DOLPHIN 7600 II Mobile Computer
 Test Item : Band Edge
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter -3Mbps(8DPSK) (2480MHz)

RF Radiated Measurement (Horizontal):

Channel	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
78(Peak)	2483.500	-6.469	61.685	55.217	74.00	54.00	Pass
78(Peak)	2495.922	-6.443	46.315	39.872	74.00	54.00	Pass
78(Avg)	2483.500	-6.469	53.423	46.955	74.00	54.00	Pass

Figure Channel 78: (Horizontal) (Peak)

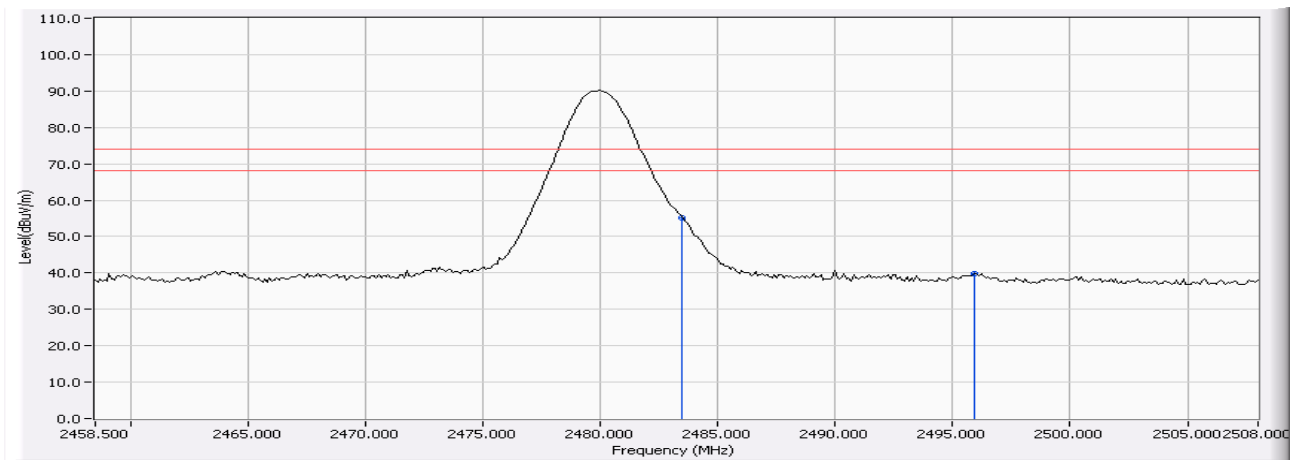
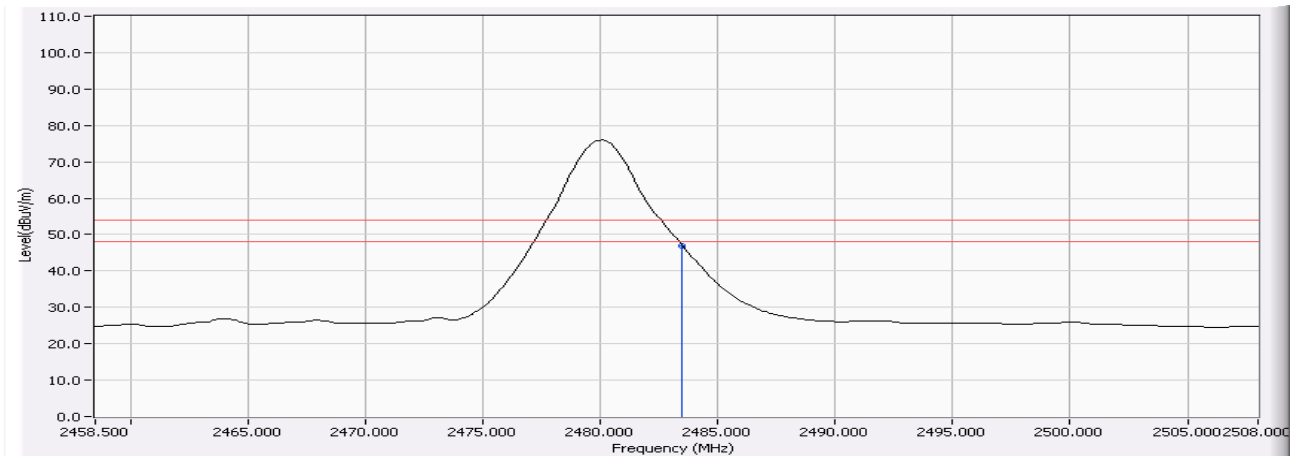


Figure Channel 78: (Horizontal) (Avg)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : DOLPHIN 7600 II Mobile Computer
 Test Item : Band Edge
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter -3Mbps(8DPSK) (2480MHz)

RF Radiated Measurement (Vertical):

Channel	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
78(Peak)	2483.500	-6.469	65.232	58.764	74.00	54.00	Pass
78(Peak)	2495.625	-6.443	49.213	42.770	74.00	54.00	Pass
78(Avg)	2483.500	-6.469	50.103	43.635	74.00	54.00	Pass

Figure Channel 78: (Vertical) (Peak)

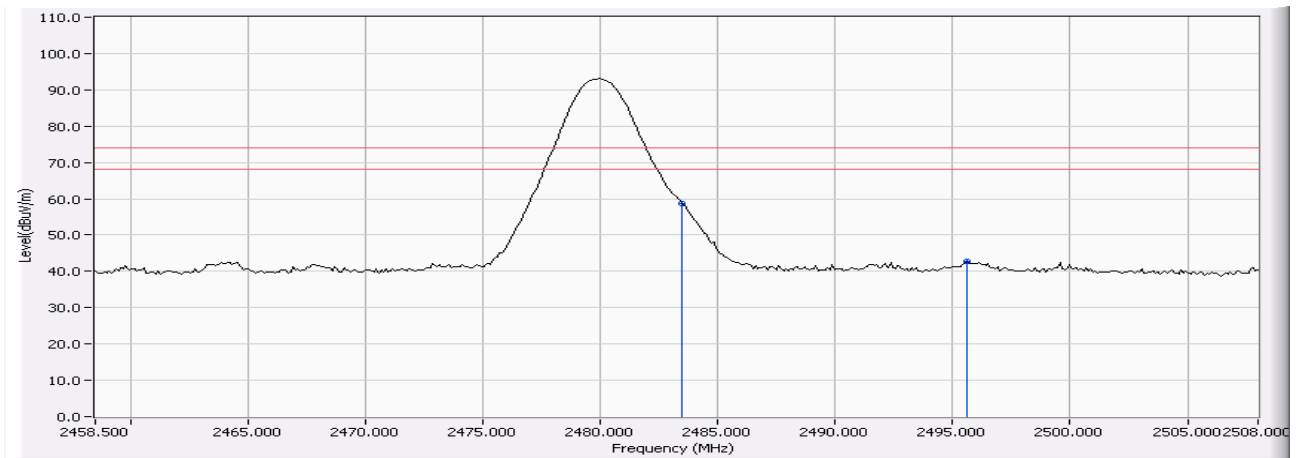
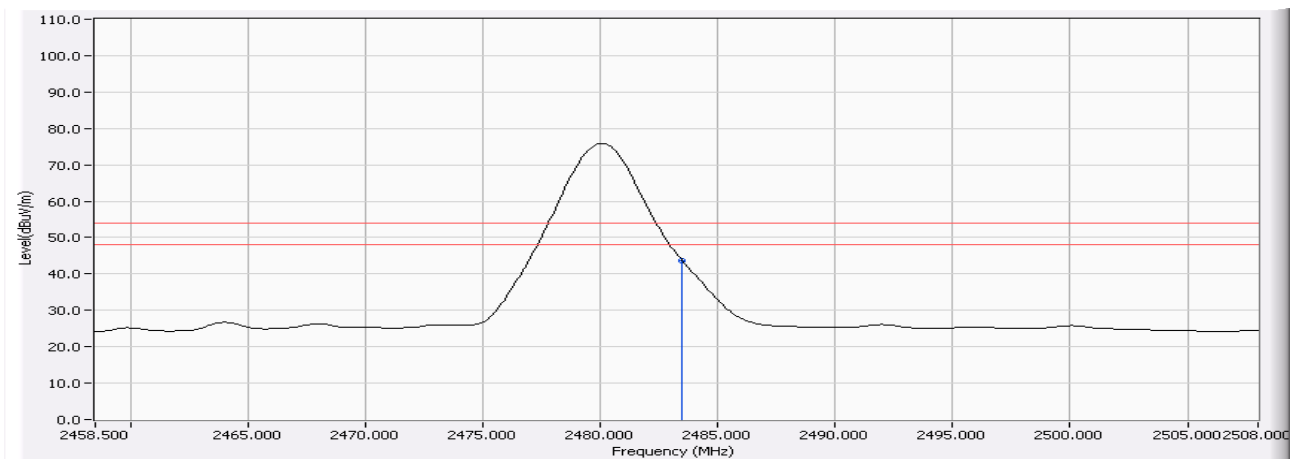


Figure Channel 78: (Vertical) (Avg)



Note:

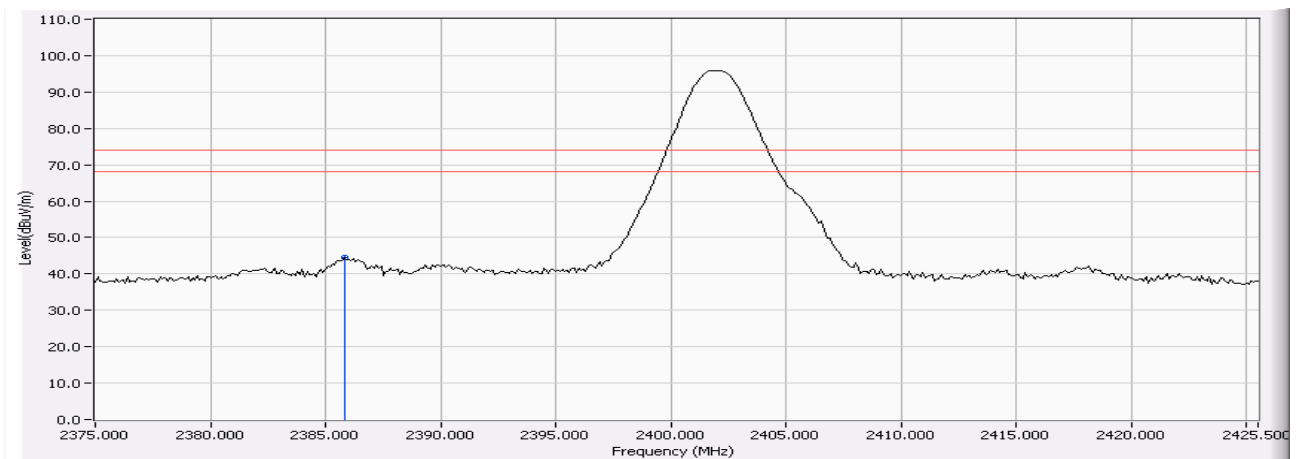
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : DOLPHIN 7600 II Mobile Computer
 Test Item : Band Edge
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmitter -2Mbps($\pi/4$ DQPSK)

RF Radiated Measurement (Horizontal):

Channel	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
00 (Peak)	2385.807	-6.781	51.371	44.590	74.00	54.00	Pass

Figure Channel 00: (Horizontal) (Peak)



Note:

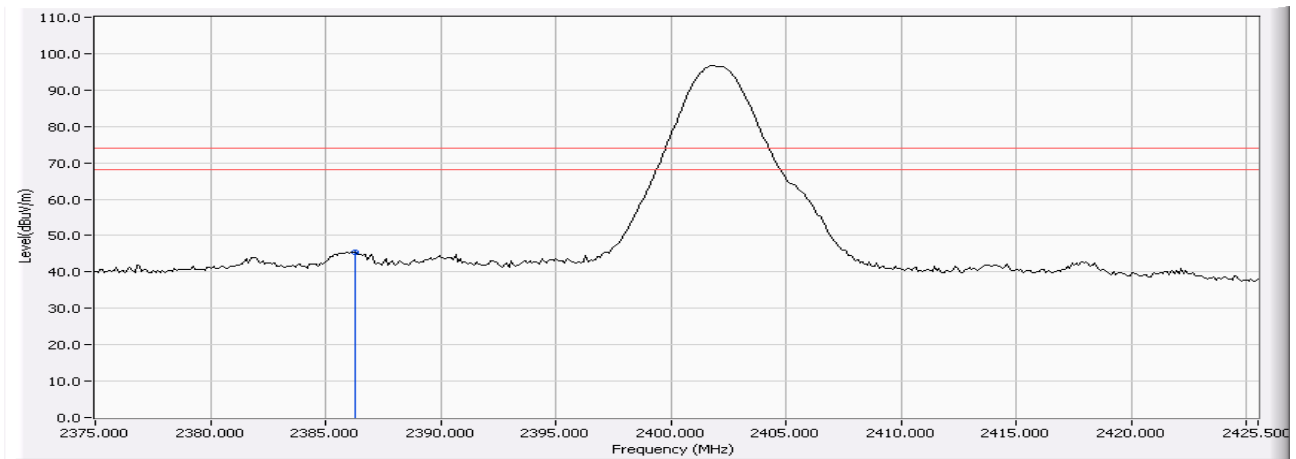
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : DOLPHIN 7600 II Mobile Computer
 Test Item : Band Edge
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmitter -2Mbps($\pi/4$ DQPSK)

RF Radiated Measurement (Vertical):

Channel	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
00 (Peak)	2386.312	-6.779	52.103	45.324	74.00	54.00	Pass

Figure Channel 00: (Vertical) (Peak)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : DOLPHIN 7600 II Mobile Computer
 Test Item : Band Edge
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmitter -2Mbps($\pi/4$ DQPSK)

RF Radiated Measurement (Horizontal):

Channel	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
78(Peak)	2483.500	-6.469	62.462	55.994	74.00	54.00	Pass
78(Peak)	2496.120	-6.442	47.536	41.094	74.00	54.00	Pass
78(Avg)	2483.500	-6.469	51.135	44.667	74.00	54.00	Pass

Figure Channel 78: (Horizontal) (Peak)

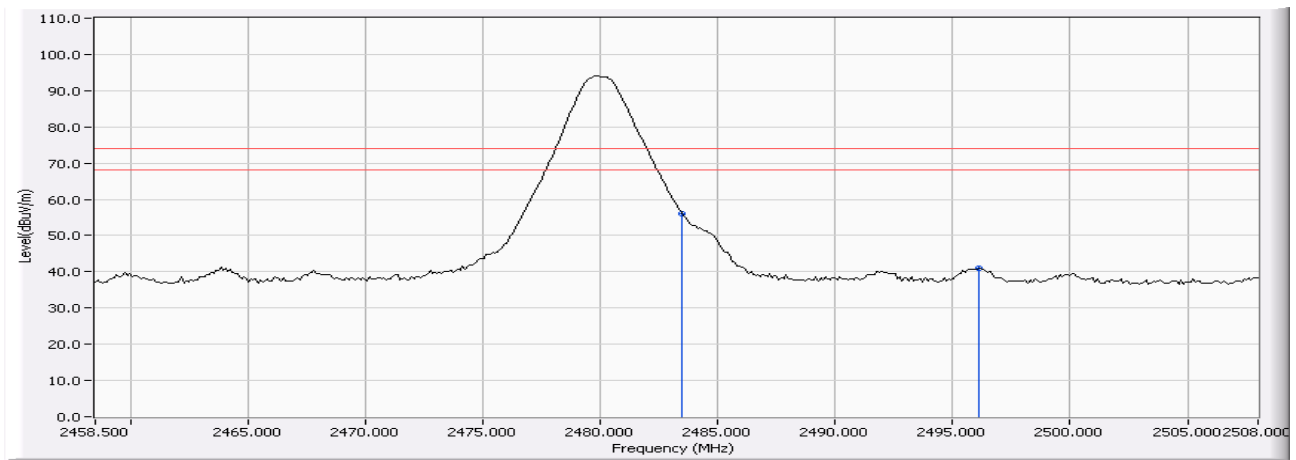
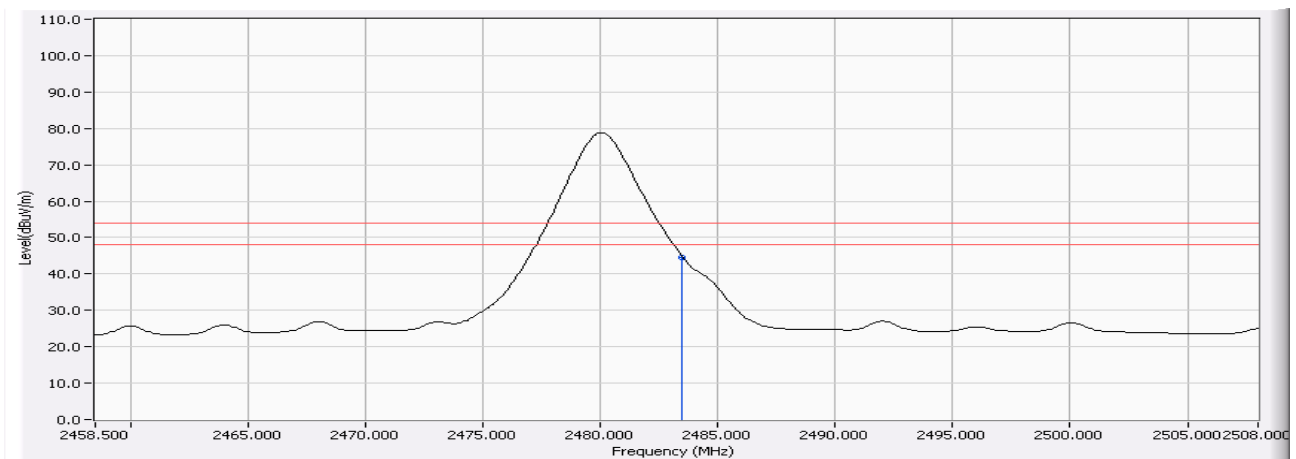


Figure Channel 78: (Horizontal) (Avg)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : DOLPHIN 7600 II Mobile Computer
 Test Item : Band Edge
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmitter -2Mbps($\pi/4$ DQPSK)

RF Radiated Measurement (Vertical):

Channel	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
78(Peak)	2483.500	-6.469	62.625	56.157	74.00	54.00	Pass
78(Peak)	2496.219	-6.442	46.988	40.546	74.00	54.00	Pass
78(Avg)	2483.500	-6.469	51.165	44.697	74.00	54.00	Pass

Figure Channel 78: (Vertical) (Peak)

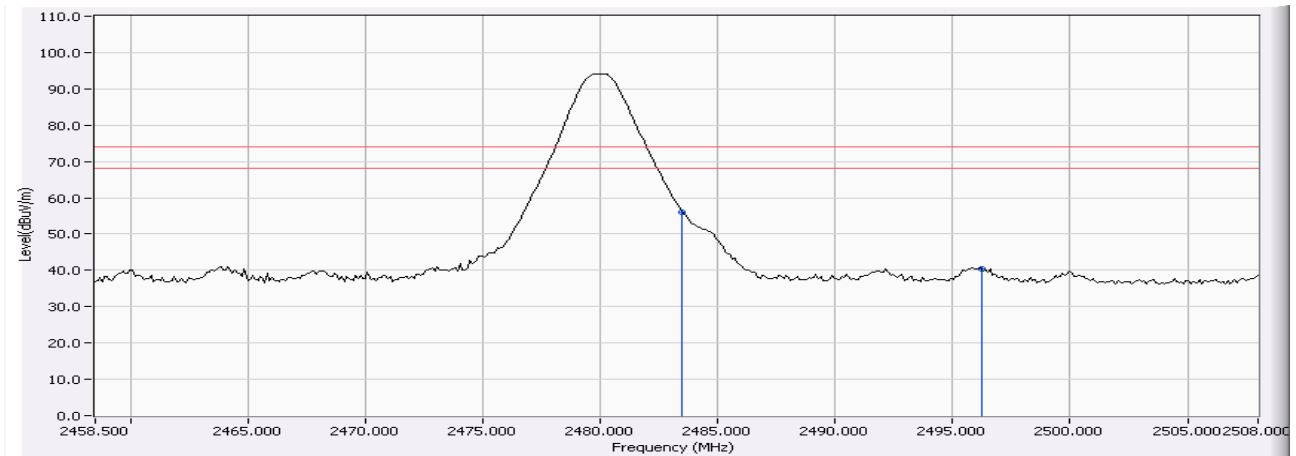
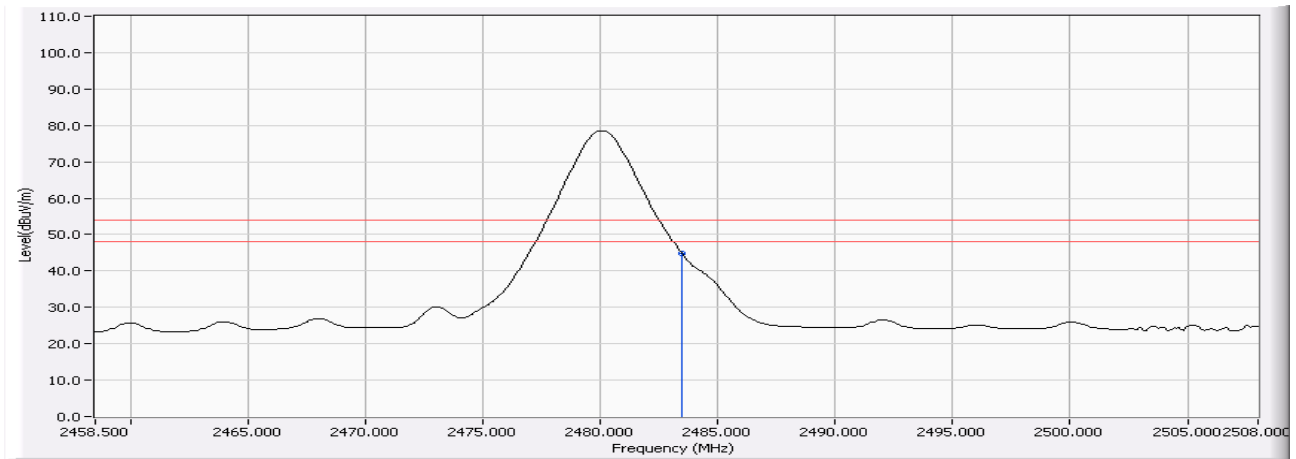


Figure Channel 78: (Vertical) (Avg)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

7. Channel Number

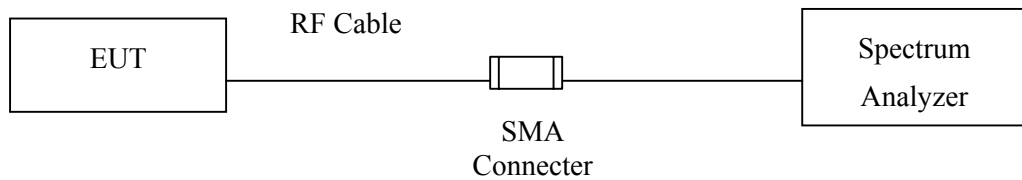
7.1. Test Equipment

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

Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2007

- Note:
1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
 2. The test instruments marked with “X” are used to measure the final test results.

7.2. Test Setup



7.3. Limit

Number of hopping frequencies ≥ 75

7.4. Test Procedures

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

Span = the frequency band of operation

RBW $\geq 1\%$ of the span , VBW \geq RBW

Sweep = auto, Detector function = peak, Trace = max hold

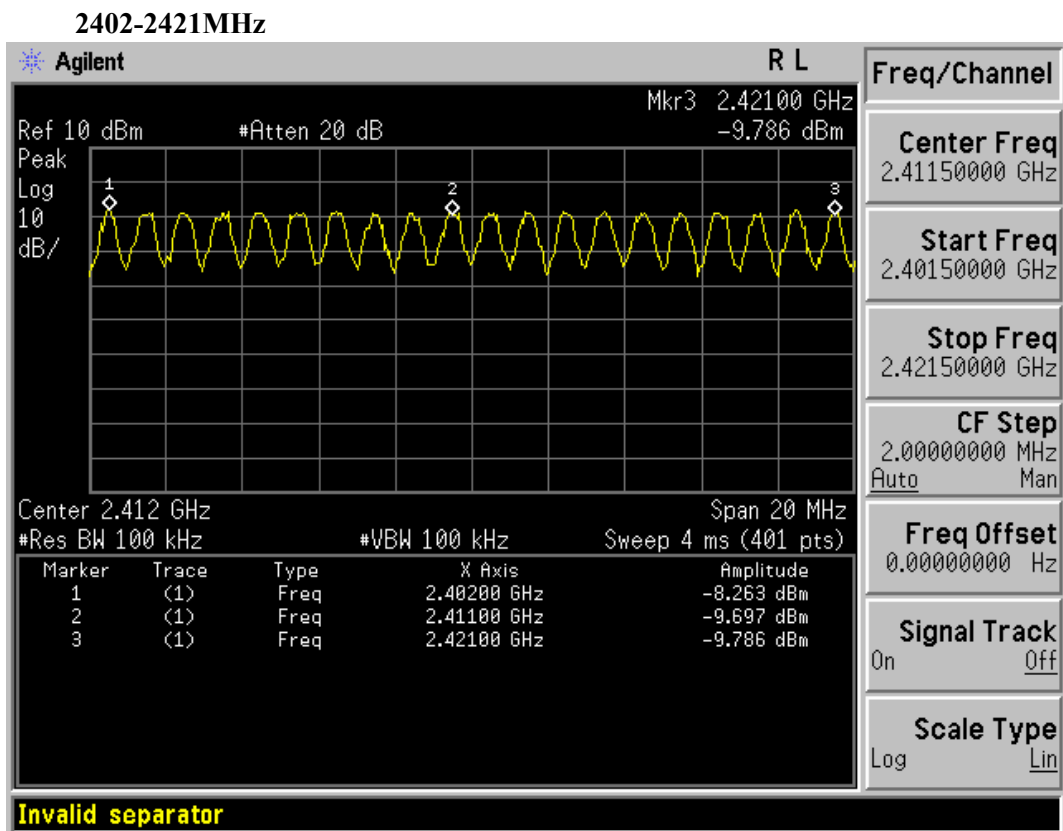
7.5. Uncertainty

N/A

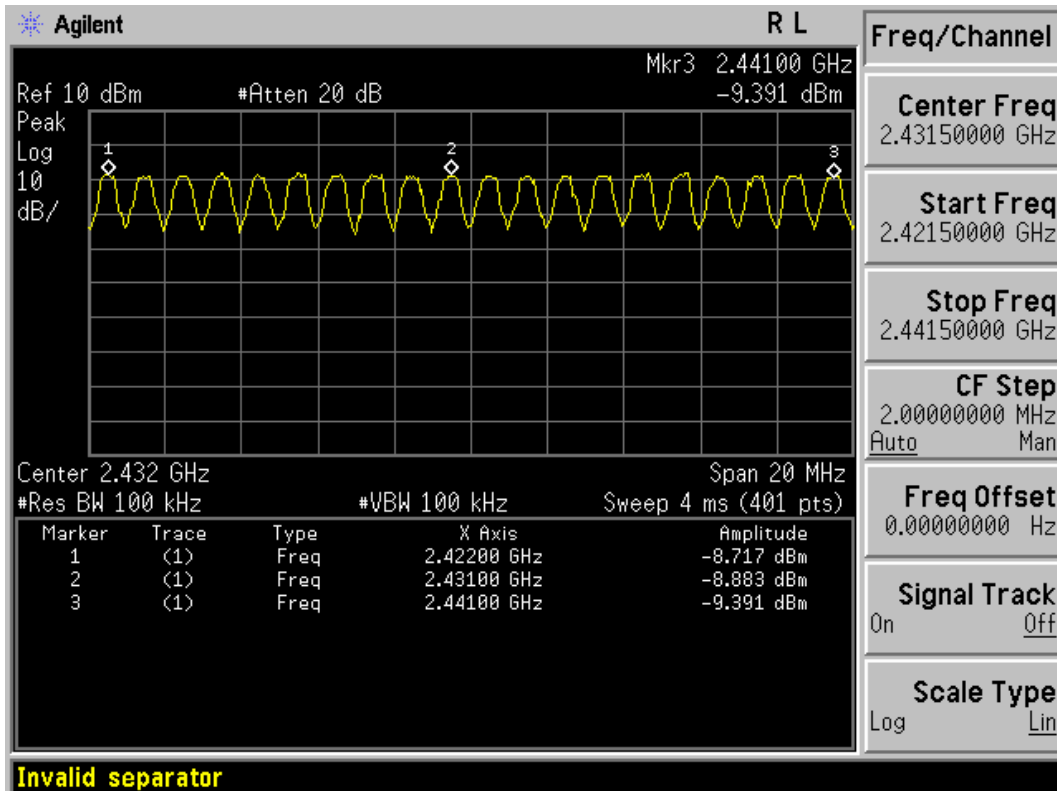
7.6. Test Result of Channel Number

Product : DOLPHIN 7600 II Mobile Computer
 Test Item : Channel Number
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter -1Mbps(GFSK)

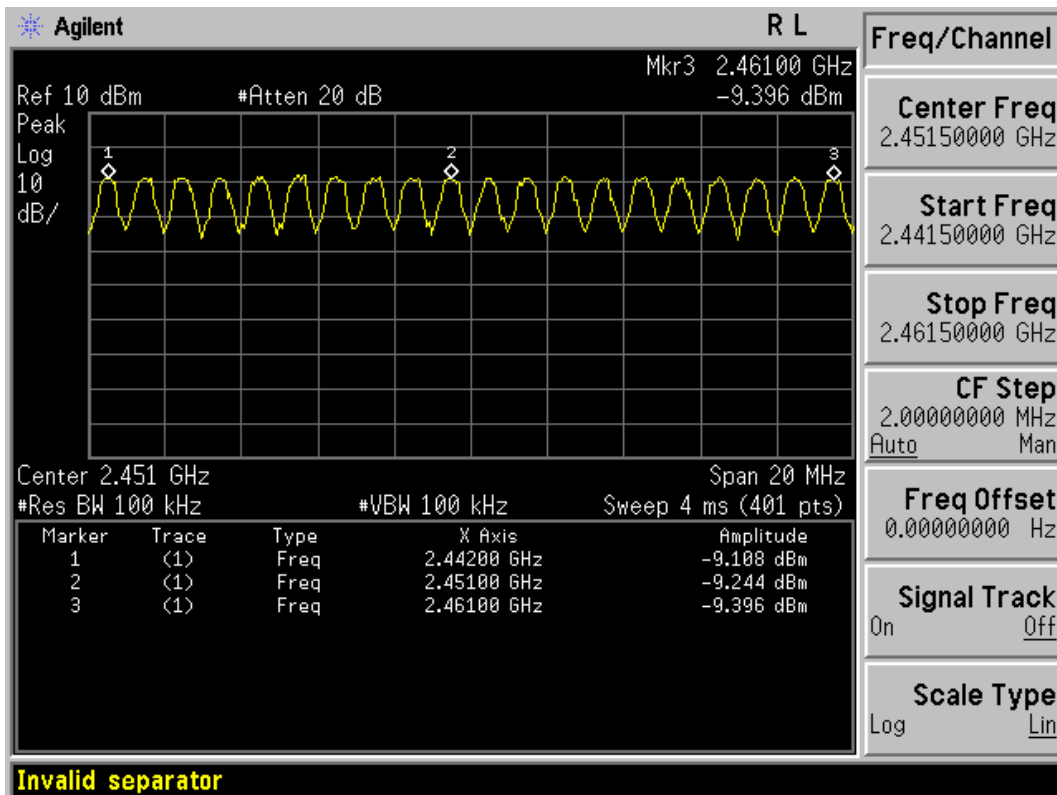
Frequency Range (MHz)	Measurement (Hopping Channel)	Required Limit (Hopping Channel)	Result
2402 ~ 2480	79	>75	Pass



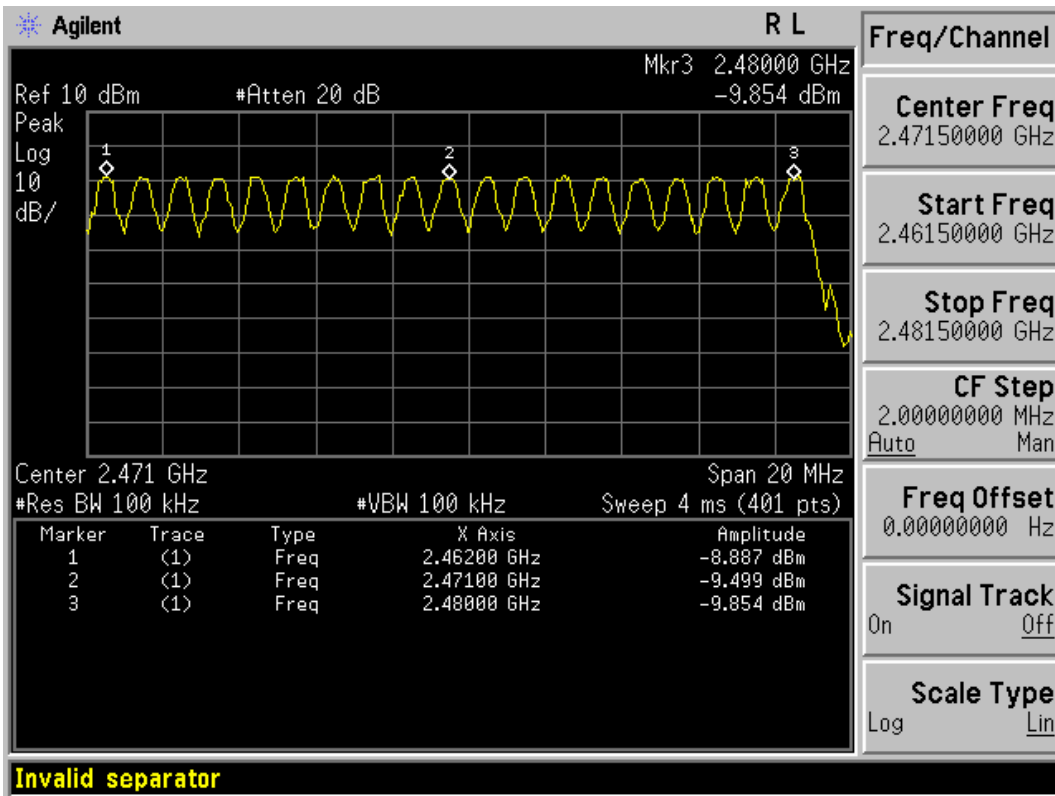
2422-2441MHz



2442-2461MHz

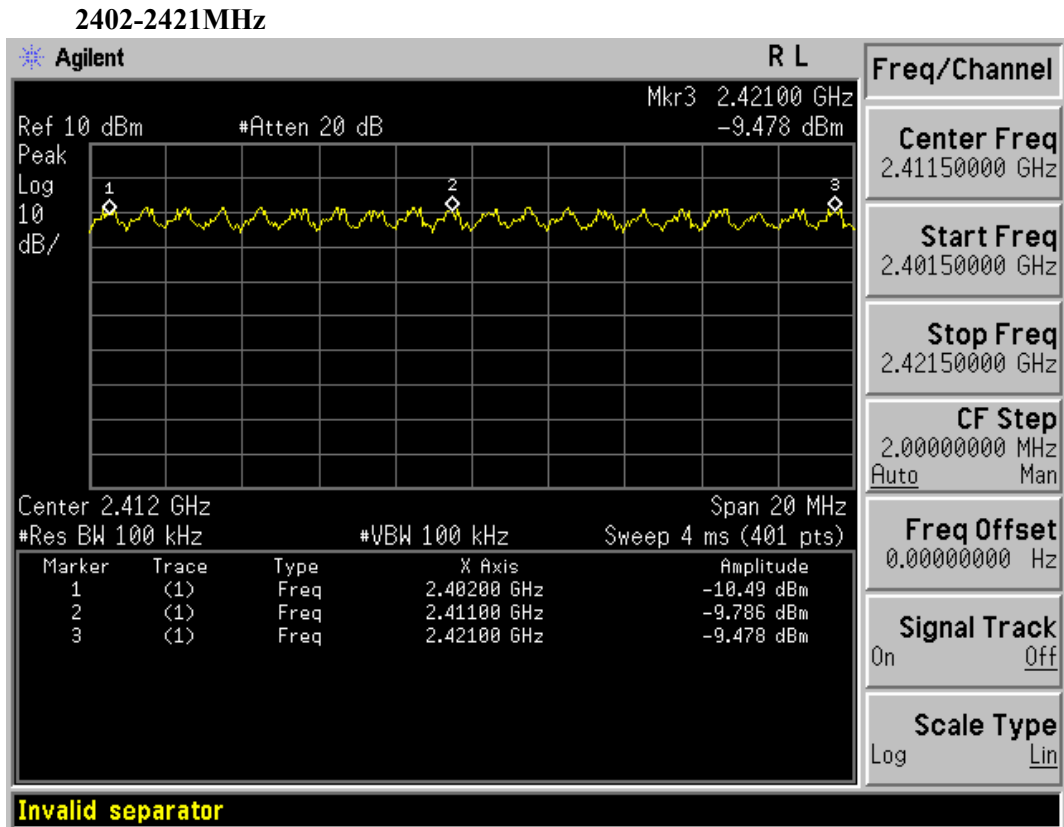


2462-2480MHz

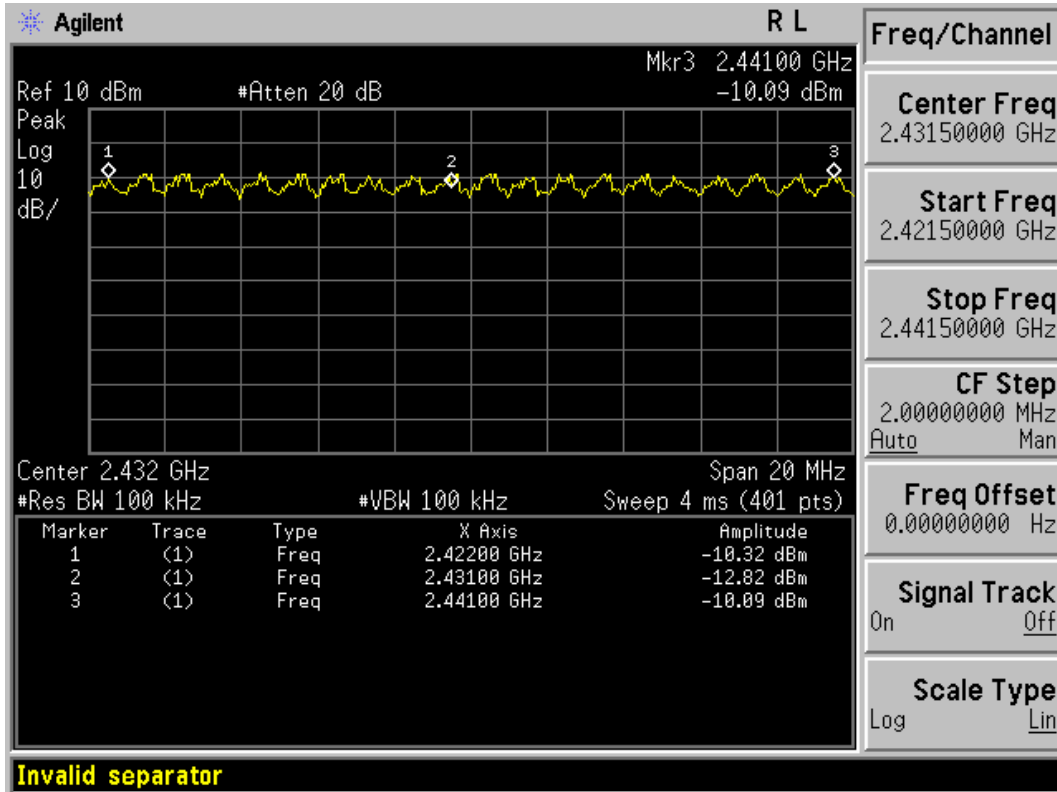


Product : DOLPHIN 7600 II Mobile Computer
 Test Item : Channel Number
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter -3Mbps(8DPSK)

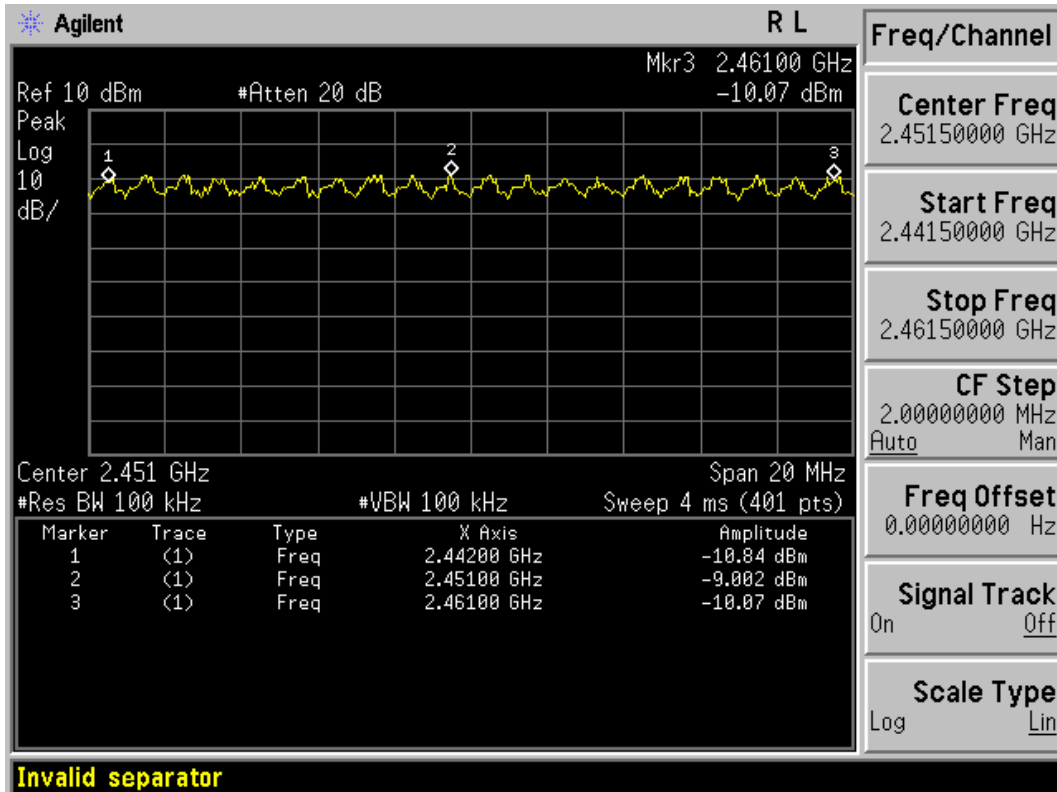
Frequency Range (MHz)	Measurement (Hopping Channel)	Required Limit (Hopping Channel)	Result
2402 ~ 2480	79	>75	Pass



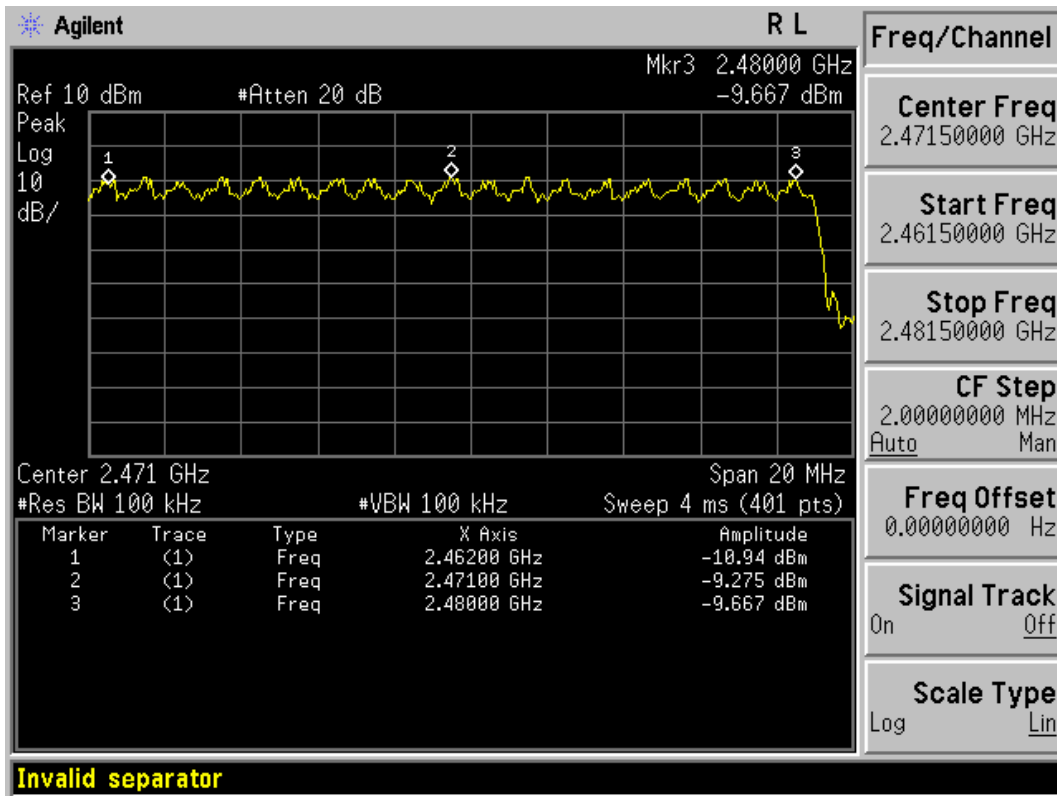
2422-2441MHz



2442-2461MHz



2462-2480MHz



8. Channel Separation

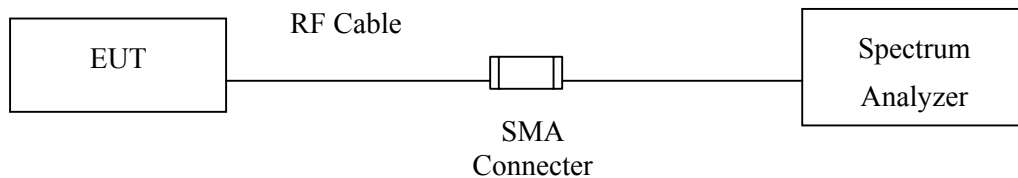
8.1. Test Equipment

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

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2007

- Note:
1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
 2. The test instruments marked with “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 Procedures

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

Span = Capture the peaks of two adjacent channels

Resolution Bandwidth (RBW) \geq 1% of the span, VBW \geq RBW

Sweep = auto, Detector function = peak, Trace = max hold

8.5. Uncertainty

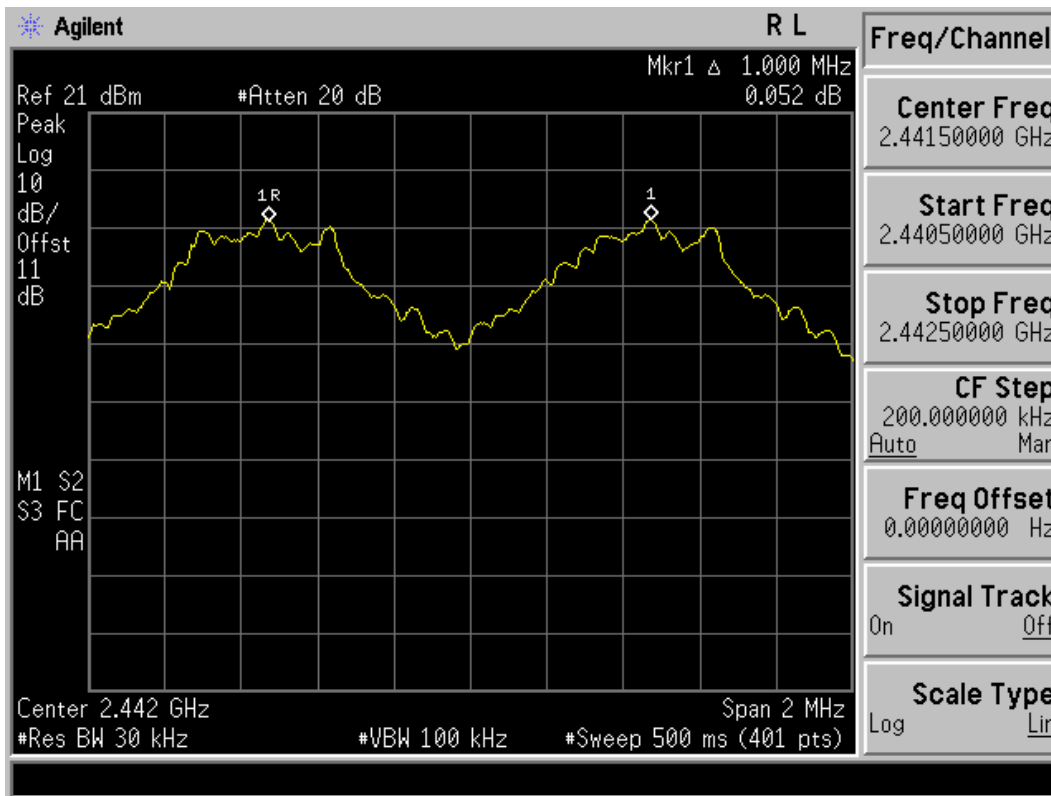
\pm 150Hz

8.6. Test Result of Channel Separation

Product : DOLPHIN 7600 II Mobile Computer
 Test Item : Channel Separation
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter -1Mbps(GFSK)

Measured Result (MHz)	Required Limit	Result
1.00	>25 kHz or 2/3 * 20 dB BW	Pass

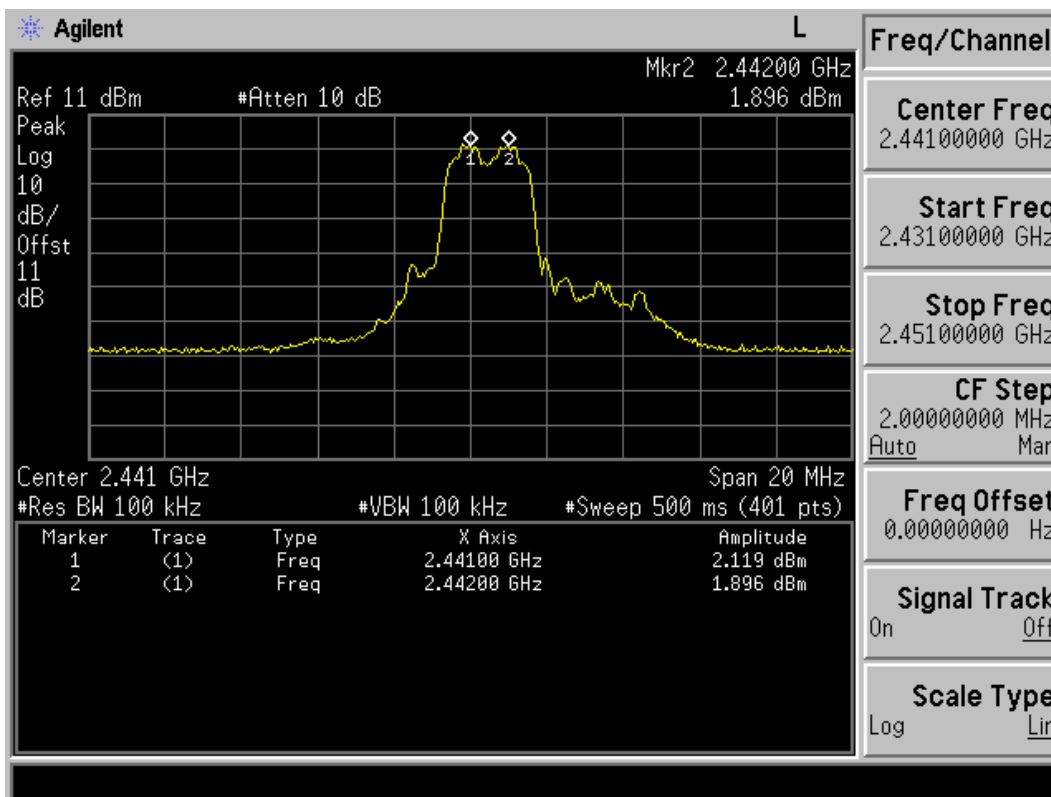
Hopping on, Carrier frequency separation of channel 39(2441MHz) and channel 40(2442MHz)



Product : DOLPHIN 7600 II Mobile Computer
 Test Item : Channel Separation
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter -3Mbps(8DPSK)

Measured Result (MHz)	Required Limit	Result
1.00	>25 kHz or 2/3 * 20 dB BW	Pass

Hopping on, Carrier frequency separation of channel 39(2441MHz) and channel 40(2442MHz)



9. Dwell Time

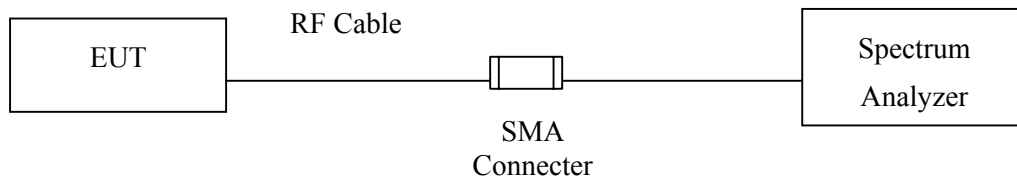
9.1. Test Equipment

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

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2007

- Note:
1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
 2. The test instruments marked with “X” are used to measure the final test results.

9.2. Test Setup



9.3. Limit

For frequency hopping systems operating in the 2400-2483.5 MHz bands. 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.

9.4. Test Procedures

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 hopping function of the EUT is enabled.

Span = zero span, centered on a hopping channel

RBW = 1 MHz, VBW ≥ RBW

Sweep = Capture the entire dwell time per hopping channel

Detector function = peak, Trace = max hold

9.5. Uncertainty

± 25msec

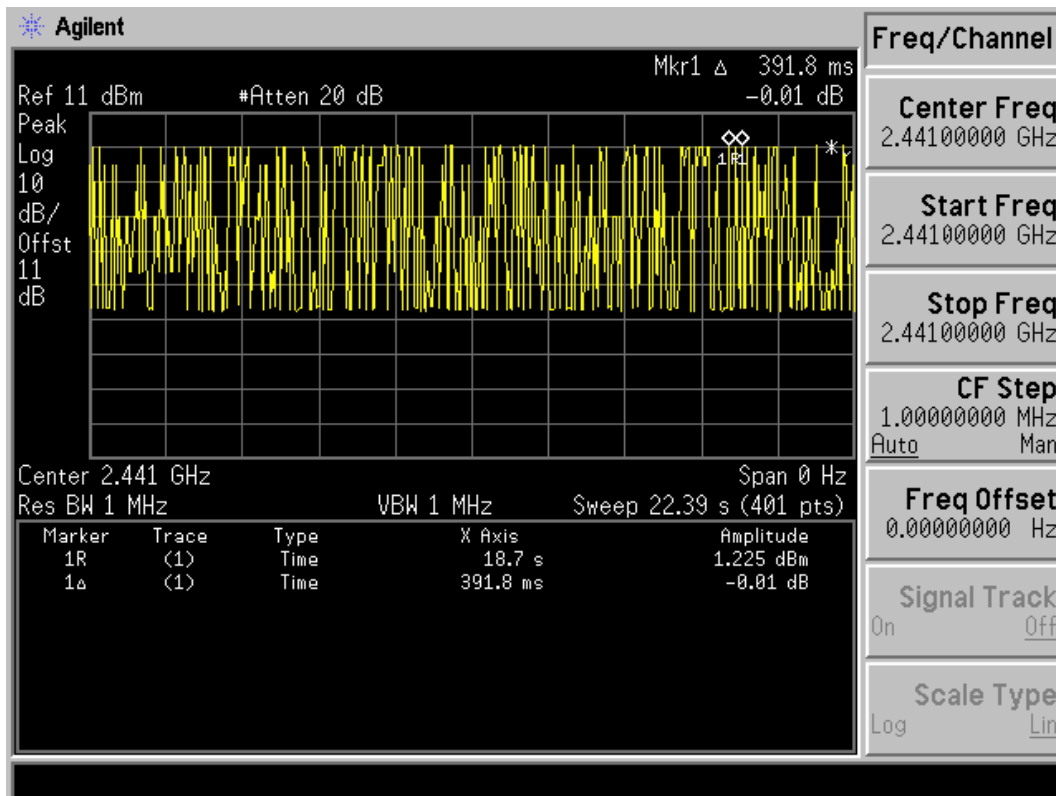
9.6. Test Result of Dwell Time

Product : DOLPHIN 7600 II Mobile Computer
 Test Item : Dwell Time
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter -1Mbps(GFSK)(DH5)

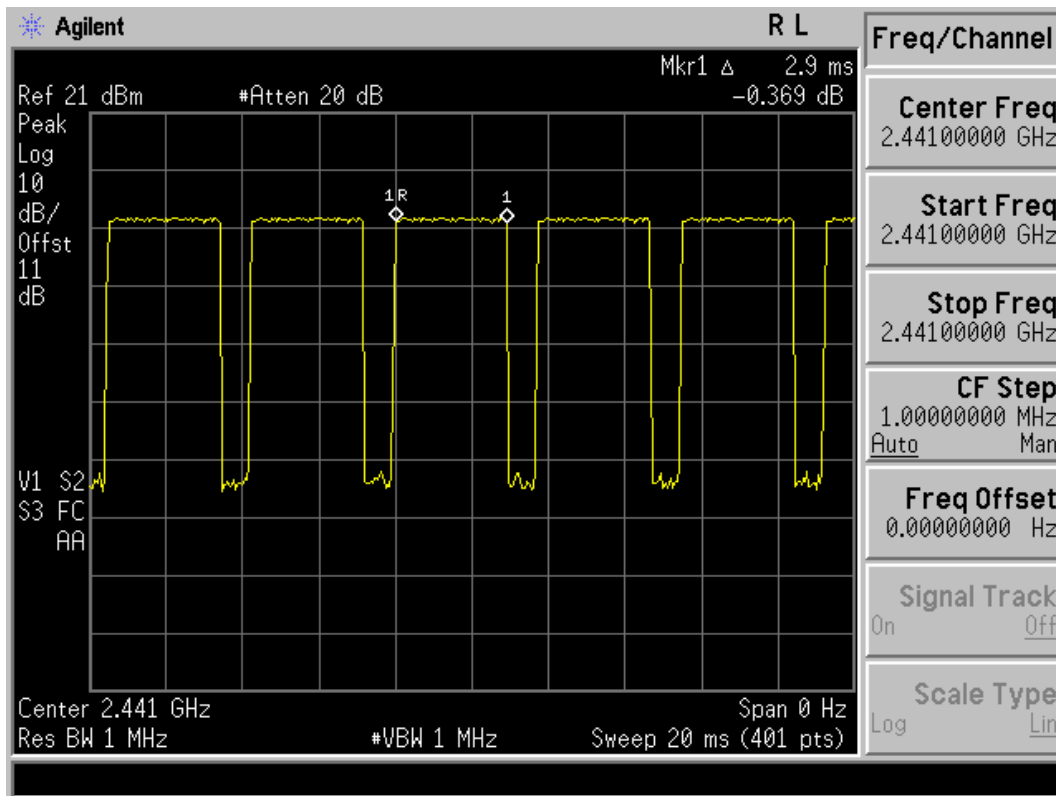
Channel No.	Frequency (MHz)	Time Interval between hops (ms)	Transmission Time (us)	Dwell Time (ms)	Limit (ms)	Result
39	2441	391.8	2900	233.894	400	Pass

Note: Dwell Time = 79 * 400 / Time Interval Between Hops * Transmission Time / 1000

CH39 Time Interval between hops



CH39 Transmission Time



Note:

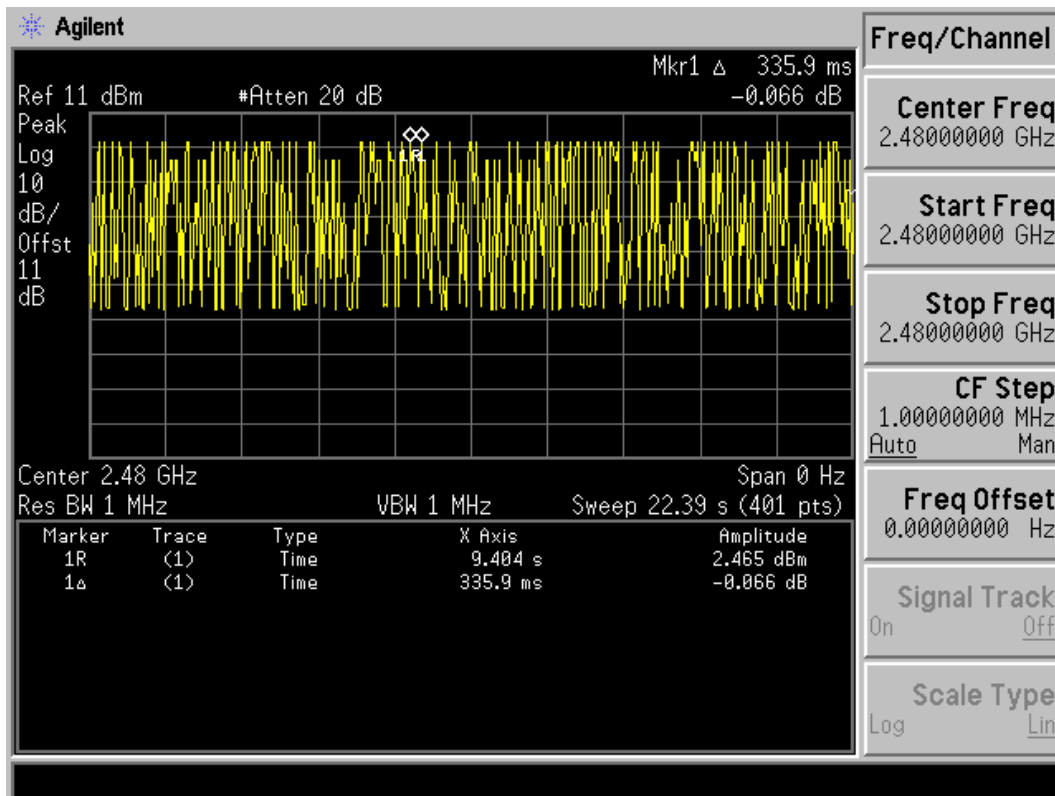
The dwell times of the packet type of DH1, DH3, and DH5 are tested. Only the worst case DH5 is shown on the report.

Product : DOLPHIN 7600 II Mobile Computer
 Test Item : Dwell Time
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter -3Mbps(8DPSK)(DH5)

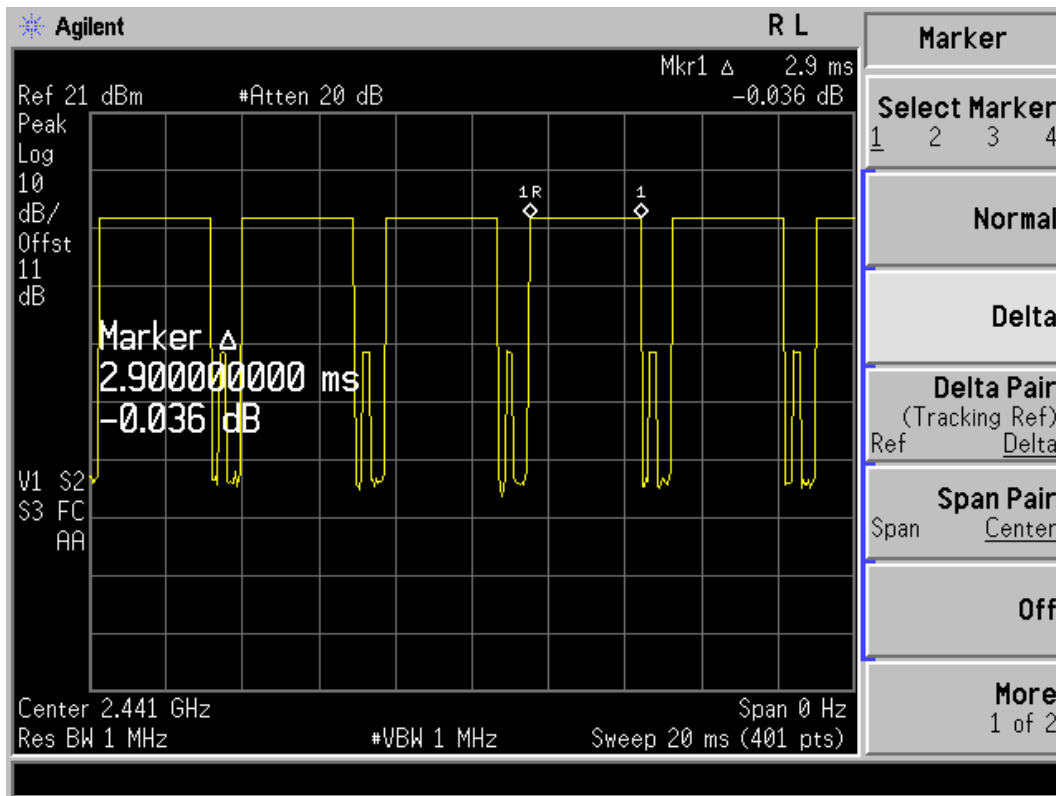
Channel No.	Frequency (MHz)	Time Interval between hops (ms)	Transmission Time (us)	Dwell Time (ms)	Limit (ms)	Result
39	2441	335.9	2900	272.819	400	Pass

Note: Dwell Time = 79 * 400 / Time Interval Between Hops * Transmission Time / 1000

CH39 Time Interval between hops



CH39 Transmission Time



Note:

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

10. Occupied Bandwidth

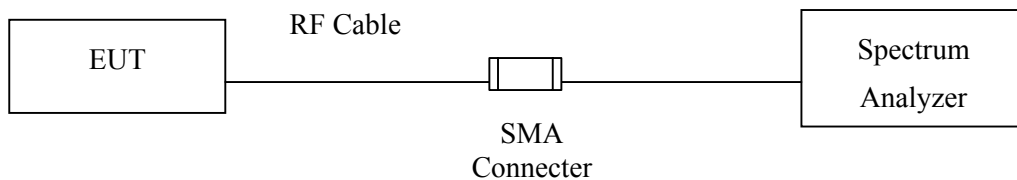
10.1. Test Equipment

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

Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2007

- Note:
1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
 2. The test instruments marked with “X” are used to measure the final test results.

10.2. Test Setup



10.3. Limits

N/A

10.4. Test Procedures

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

Use the following spectrum analyzer settings:

Span = approximately 2 to 3 times the 20 dB bandwidth, centered on a hopping channel

RBW \geq 1% of the 20 dB bandwidth, VBW \geq RBW

Sweep = auto, Detector function = peak, Trace = max hold

The EUT should be transmitting at its maximum data rate.

10.5. Uncertainty

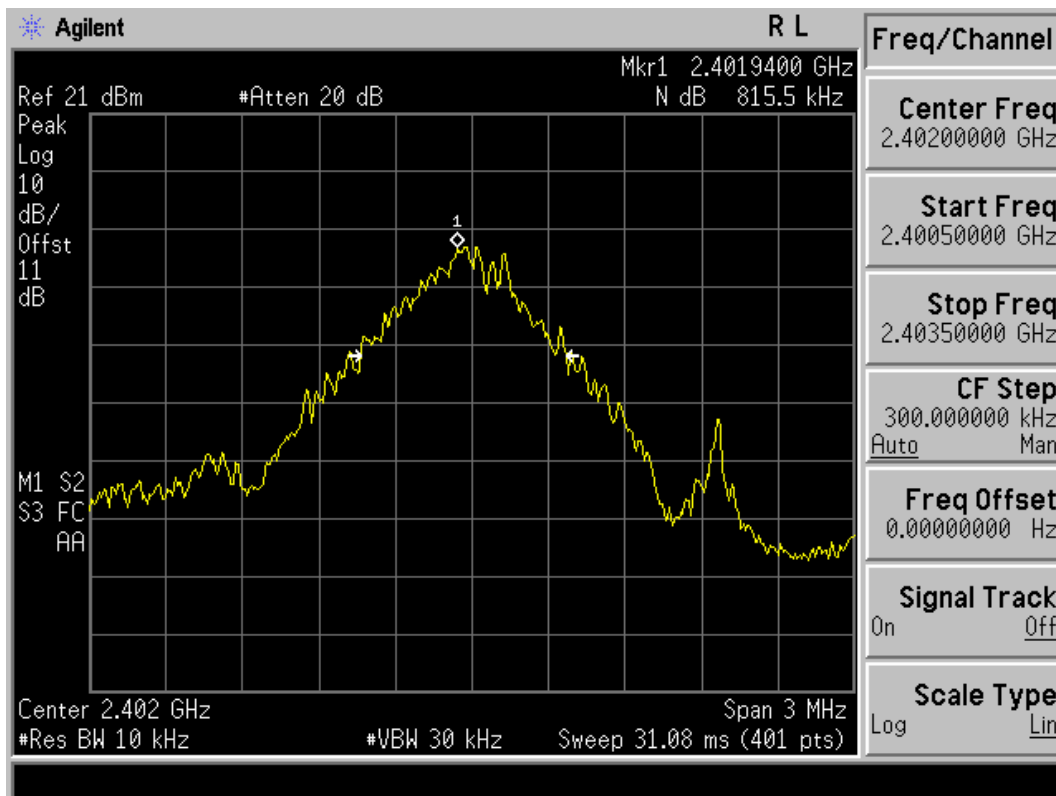
\pm 150Hz

10.6. Test Result of Occupied Bandwidth

Product : DOLPHIN 7600 II Mobile Computer
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter -1Mbps(GFSK)

Channel No.	Frequency (MHz)	20 dB bandwidth (kHz)	Required Limit (kHz)	Result
00	2402	815.5	NA	NA

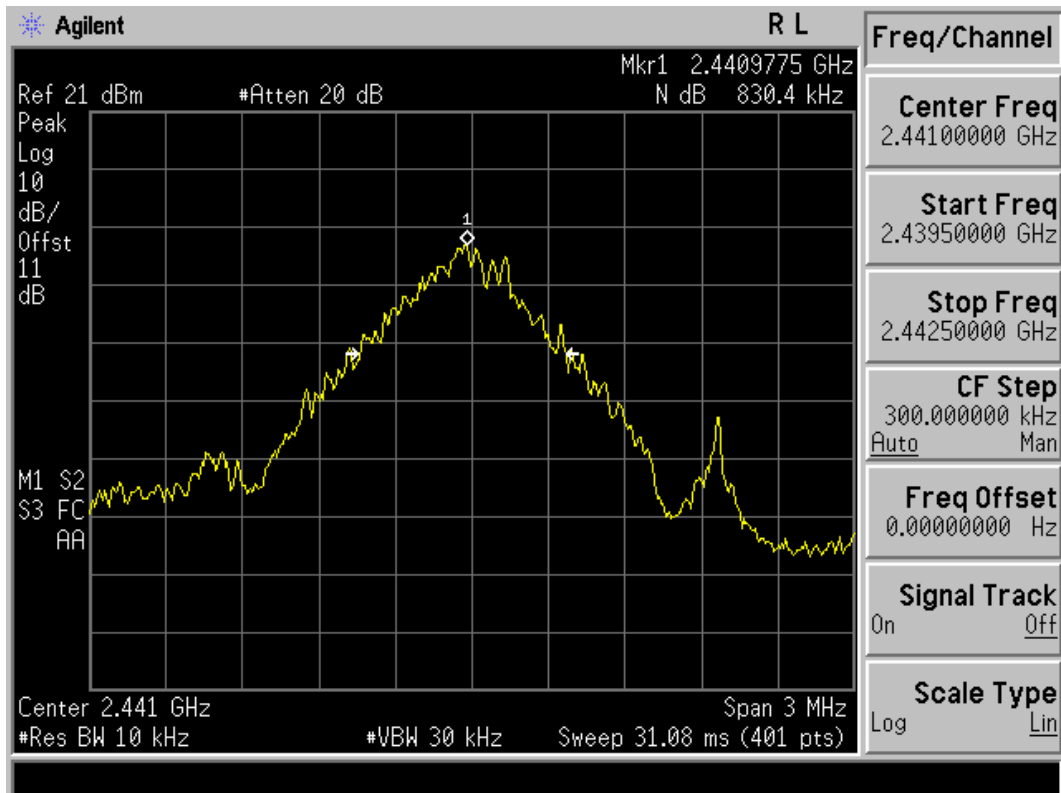
Figure Channel 00:



Product : DOLPHIN 7600 II Mobile Computer
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter -1Mbps(GFSK)

Channel No.	Frequency (MHz)	20dB bandwidth (kHz)	Required Limit (kHz)	Result
39	2441	830.4	NA	NA

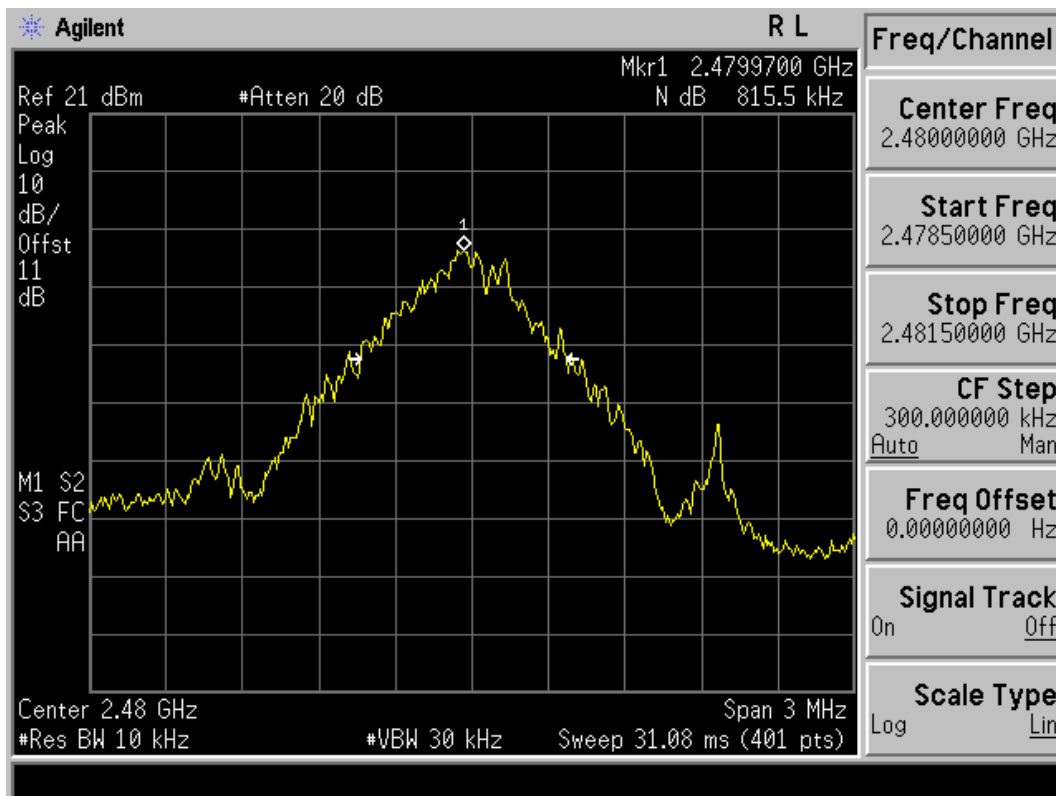
Figure Channel 39:



Product : DOLPHIN 7600 II Mobile Computer
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter -1Mbps(GFSK)

Channel No.	Frequency (MHz)	20dB bandwidth (kHz)	Required Limit (kHz)	Result
78	2480	815.5	NA	NA

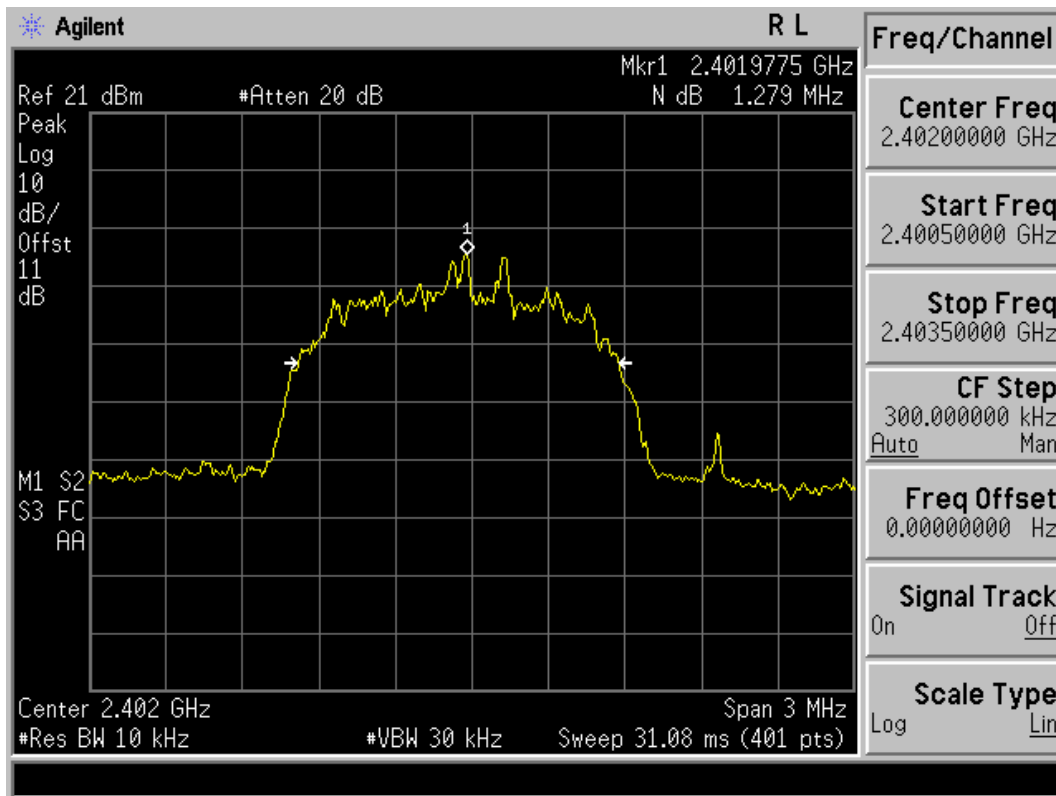
Figure Channel 78:



Product : DOLPHIN 7600 II Mobile Computer
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter -3Mbps(8DPSK)

Channel No.	Frequency (MHz)	20 dB bandwidth (kHz)	Required Limit (kHz)	Result
00	2402	1279	NA	NA

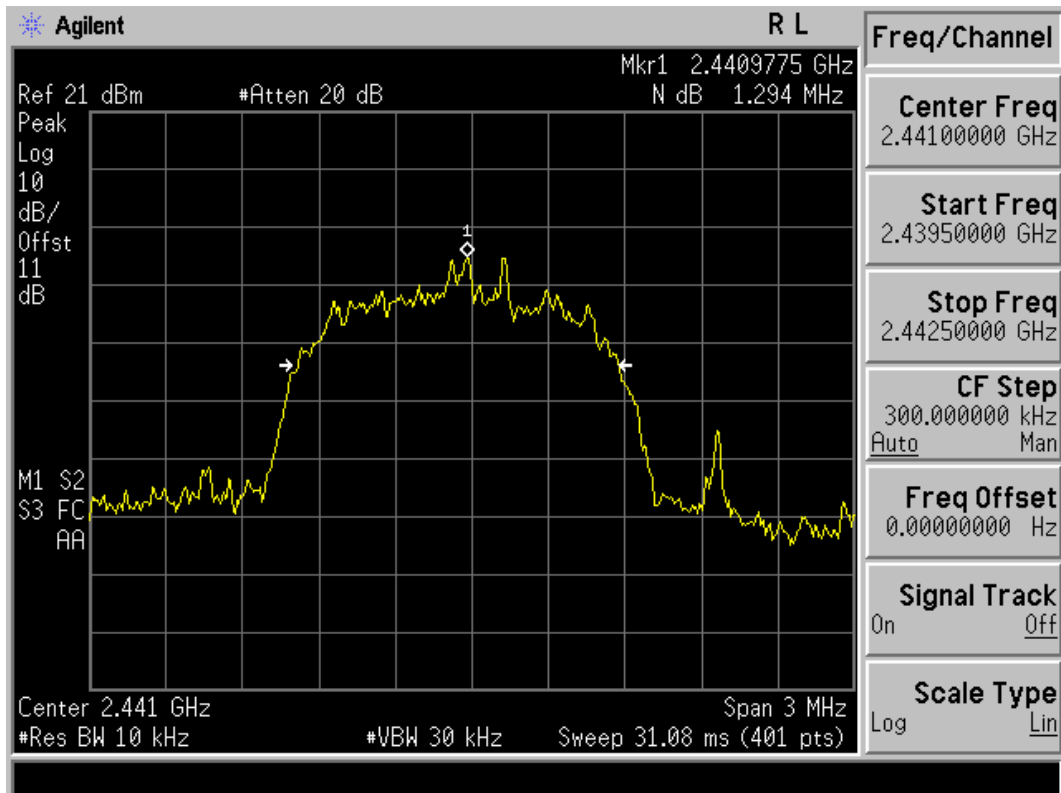
Figure Channel 00:



Product : DOLPHIN 7600 II Mobile Computer
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter -3Mbps(8DPSK)

Channel No.	Frequency (MHz)	20dB bandwidth (kHz)	Required Limit (kHz)	Result
39	2441	1294	NA	NA

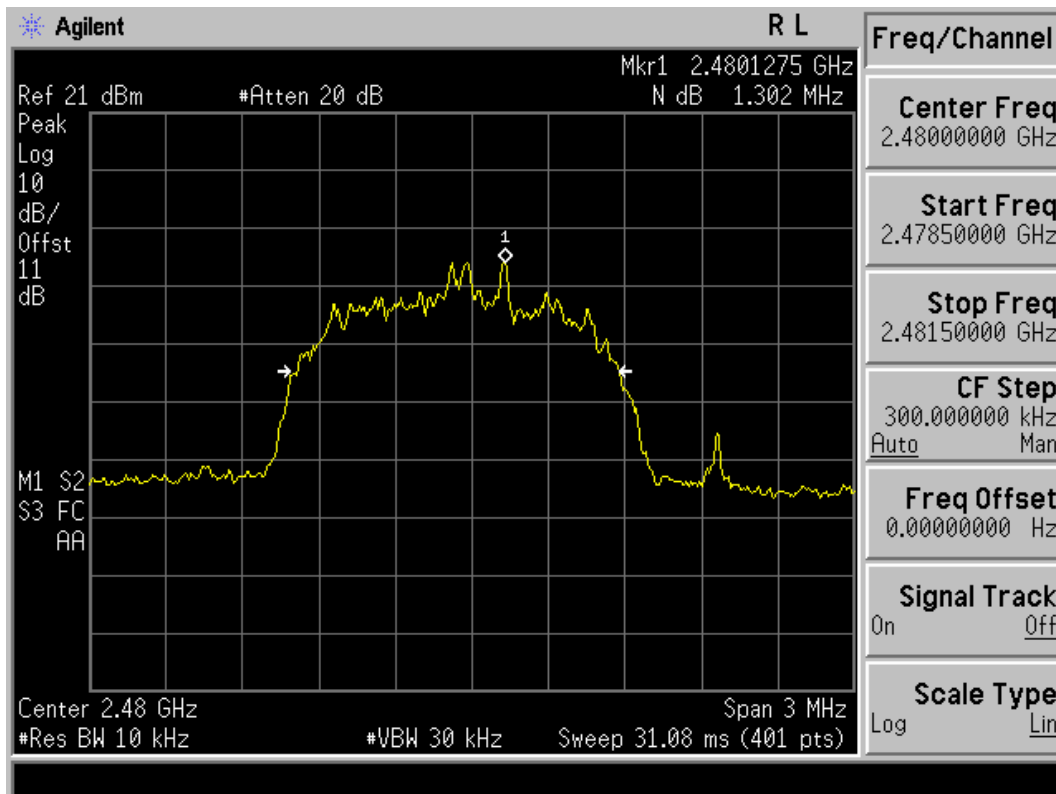
Figure Channel 39:



Product : DOLPHIN 7600 II Mobile Computer
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter -3Mbps(8DPSK)

Channel No.	Frequency (MHz)	20dB bandwidth (kHz)	Required Limit (kHz)	Result
78	2480	1302	NA	NA

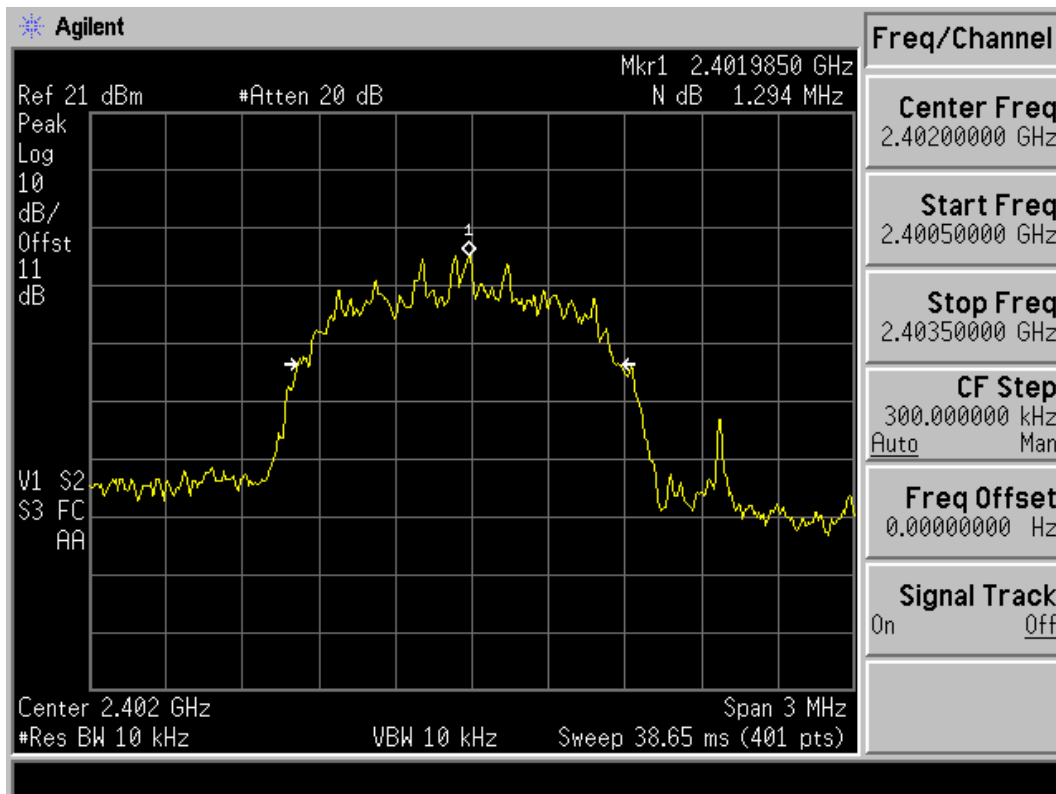
Figure Channel 78:



Product : DOLPHIN 7600 II Mobile Computer
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmitter -2Mbps($\pi/4$ DQPSK)

Channel No.	Frequency (MHz)	20 dB bandwidth (kHz)	Required Limit (kHz)	Result
00	2402	1294	NA	NA

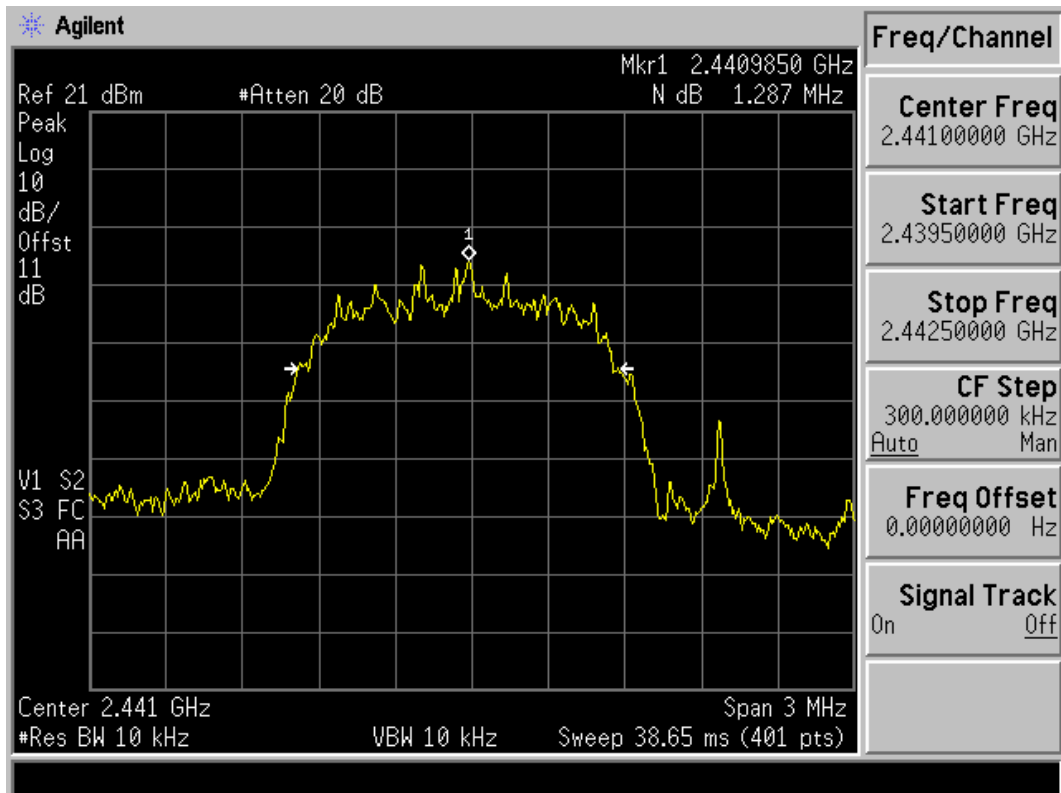
Figure Channel 00:



Product : DOLPHIN 7600 II Mobile Computer
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmitter -2Mbps($\pi/4$ DQPSK)

Channel No.	Frequency (MHz)	20dB bandwidth (kHz)	Required Limit (kHz)	Result
39	2441	1287	NA	NA

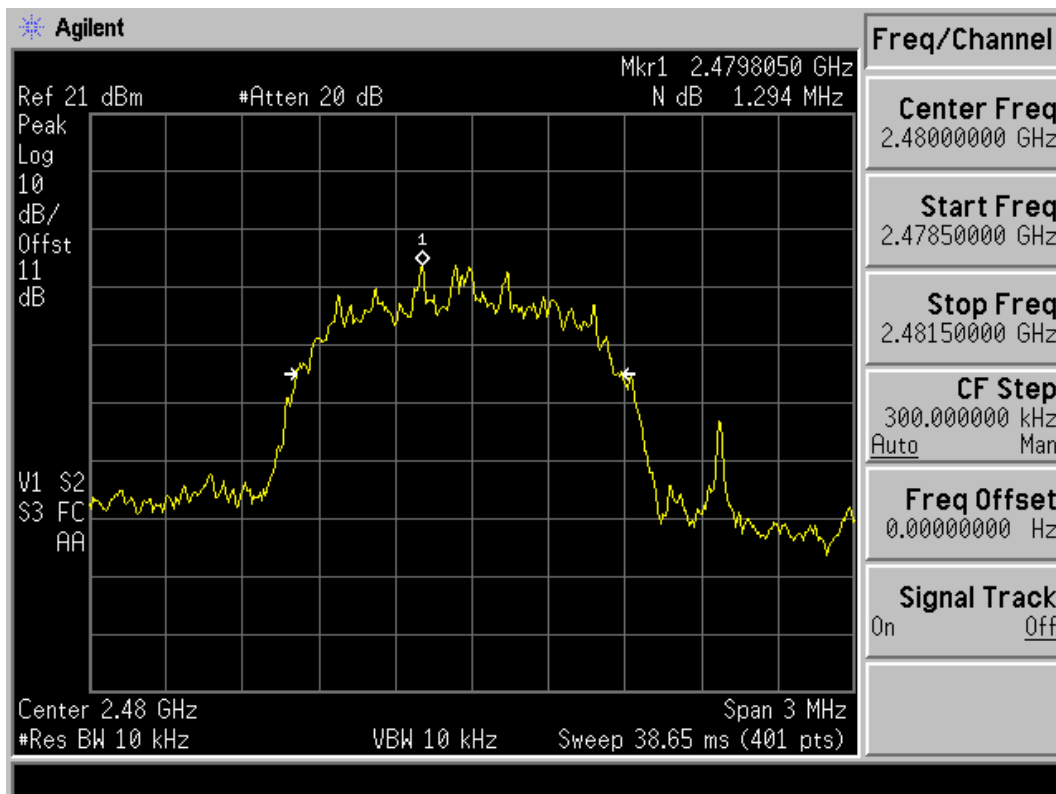
Figure Channel 39:



Product : DOLPHIN 7600 II Mobile Computer
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmitter –2Mbps($\pi/4$ DQPSK)

Channel No.	Frequency (MHz)	20dB bandwidth (kHz)	Required Limit (kHz)	Result
78	2480	1294	NA	NA

Figure Channel 78:



11. EMI Reduction Method During Compliance Testing

No modification was made during testing.

Attachment 1: EUT Test Photographs

Attachment 1: EUT Test Setup Photographs

Front View of Conducted Test



Back View of Conducted Test



Front View of Radiated Test (Loop Antenna)



Back View of Radiated Test (Loop Antenna)



Front View of Radiated Test



Back View of Radiated Test



Front View of Radiated Test (Horn)



Back View of Radiated Test (Horn)



Attachment 2: EUT Detailed Photographs

Attachment 2 : EUT Detailed Photographs

(1) EUT Photo



(2) EUT Photo



(3) EUT Photo



(4) EUT Photo



(5) EUT Photo



(6) EUT Photo



(7) EUT Photo



(8) EUT Photo



(9) EUT Photo



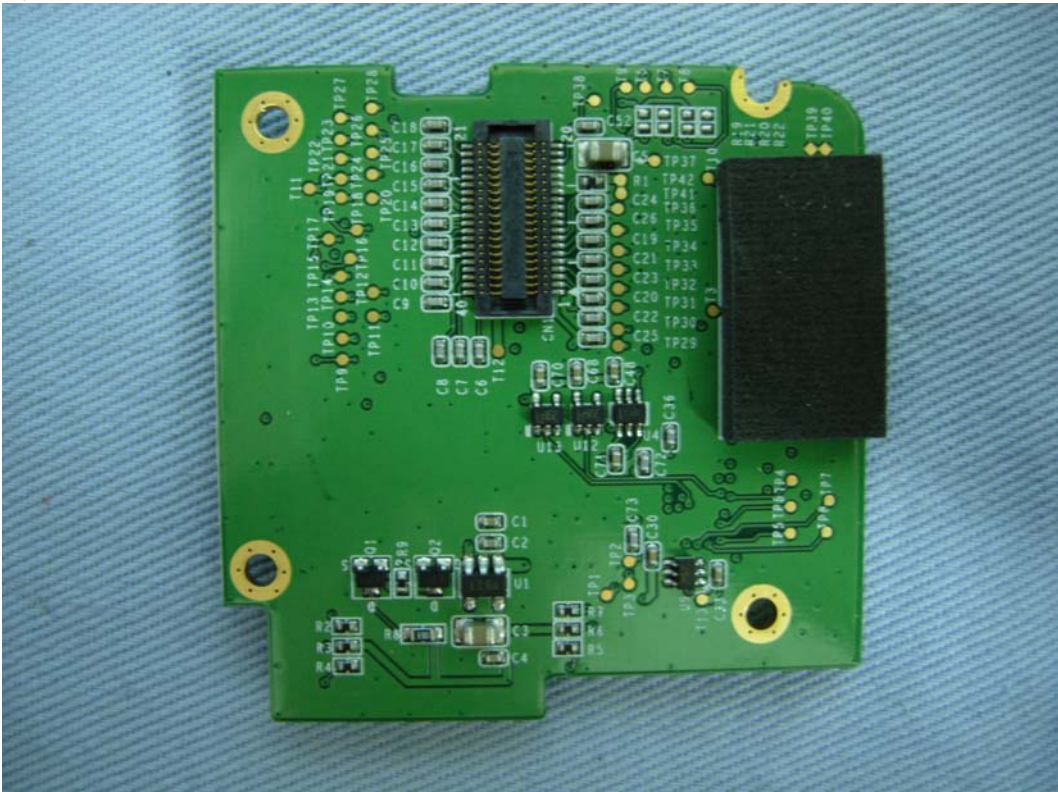
(10) EUT Photo



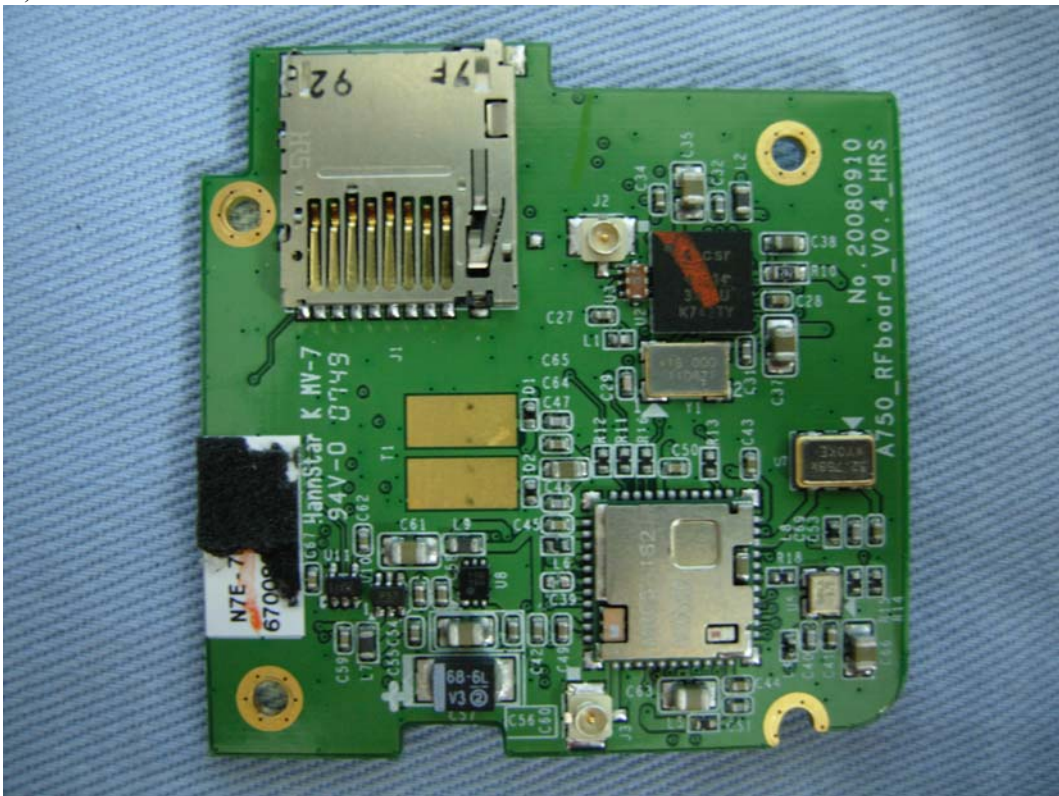
(11) EUT Photo



(12) EUT Photo



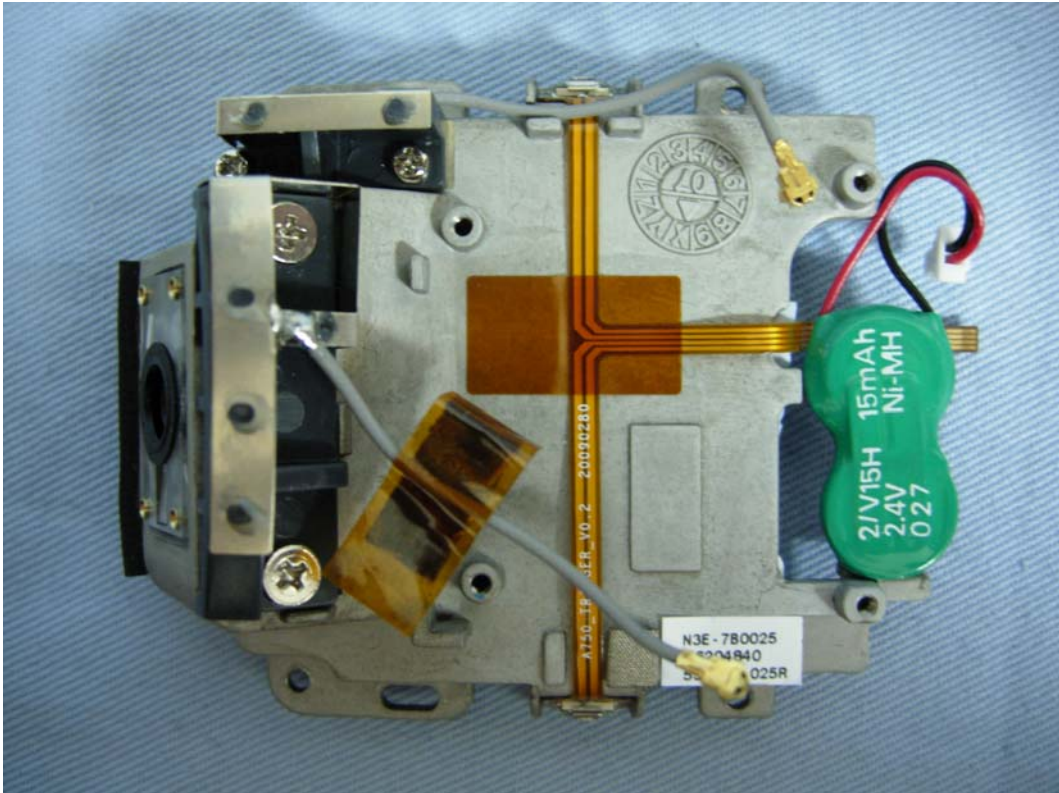
(13) EUT Photo



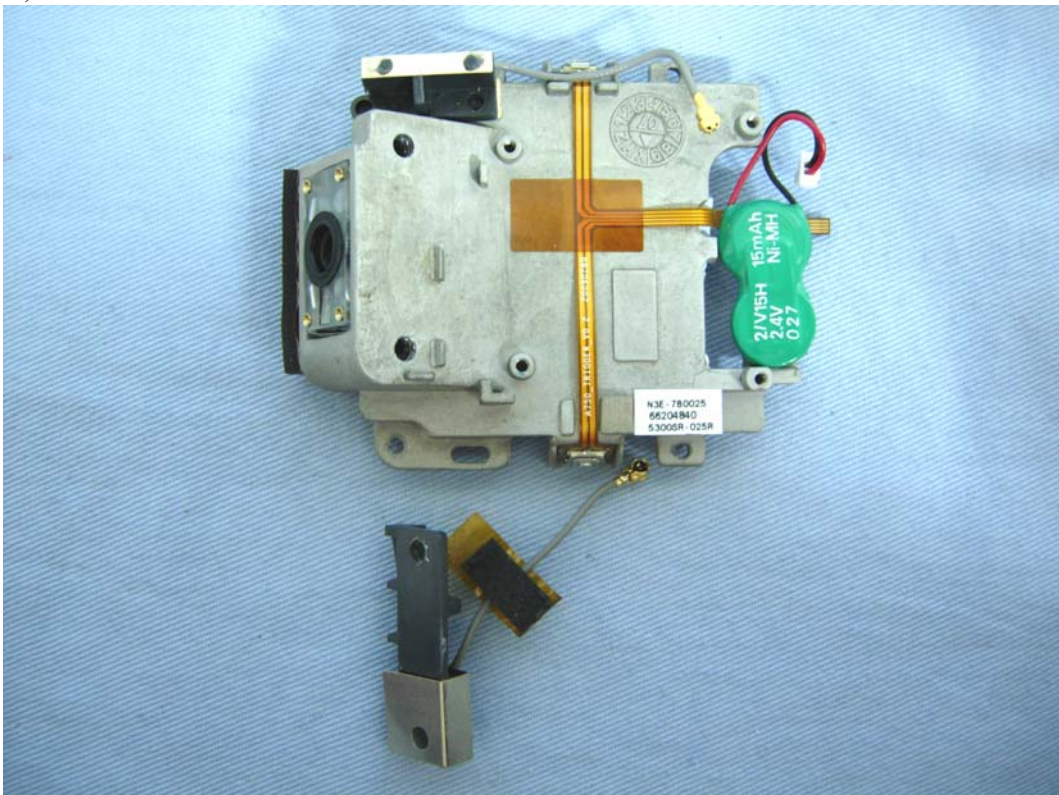
(14) EUT Photo



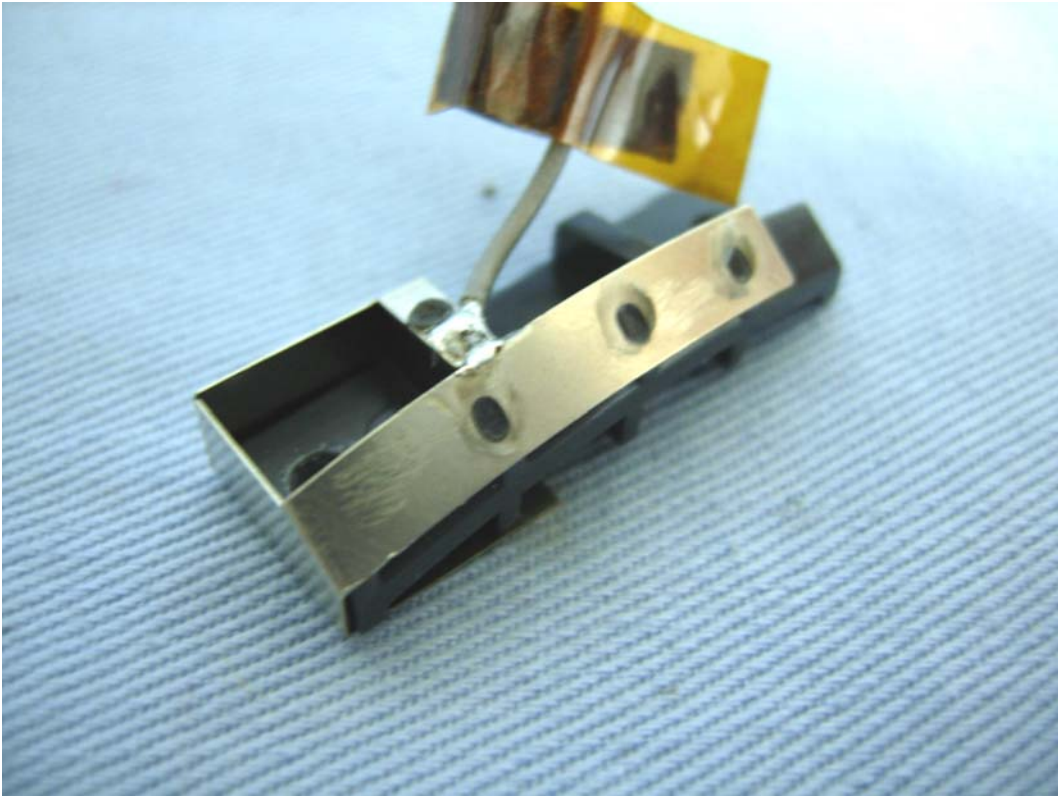
(15) EUT Photo



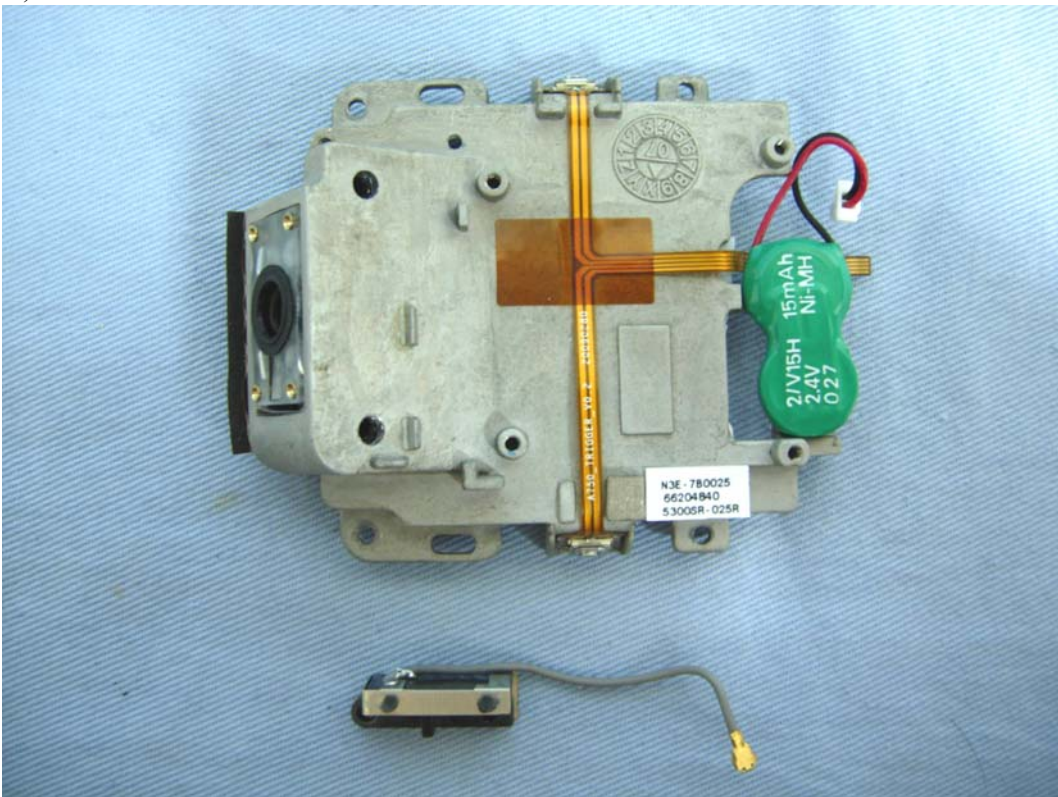
(16) EUT Photo



(17) EUT Photo



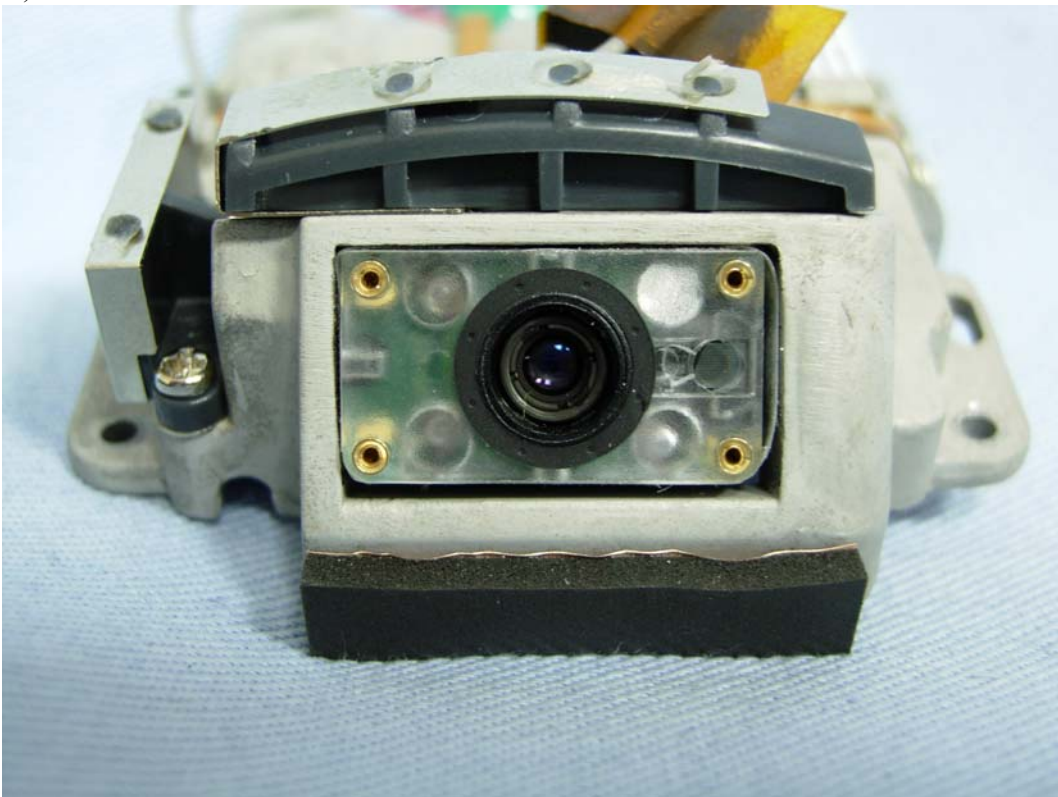
(18) EUT Photo



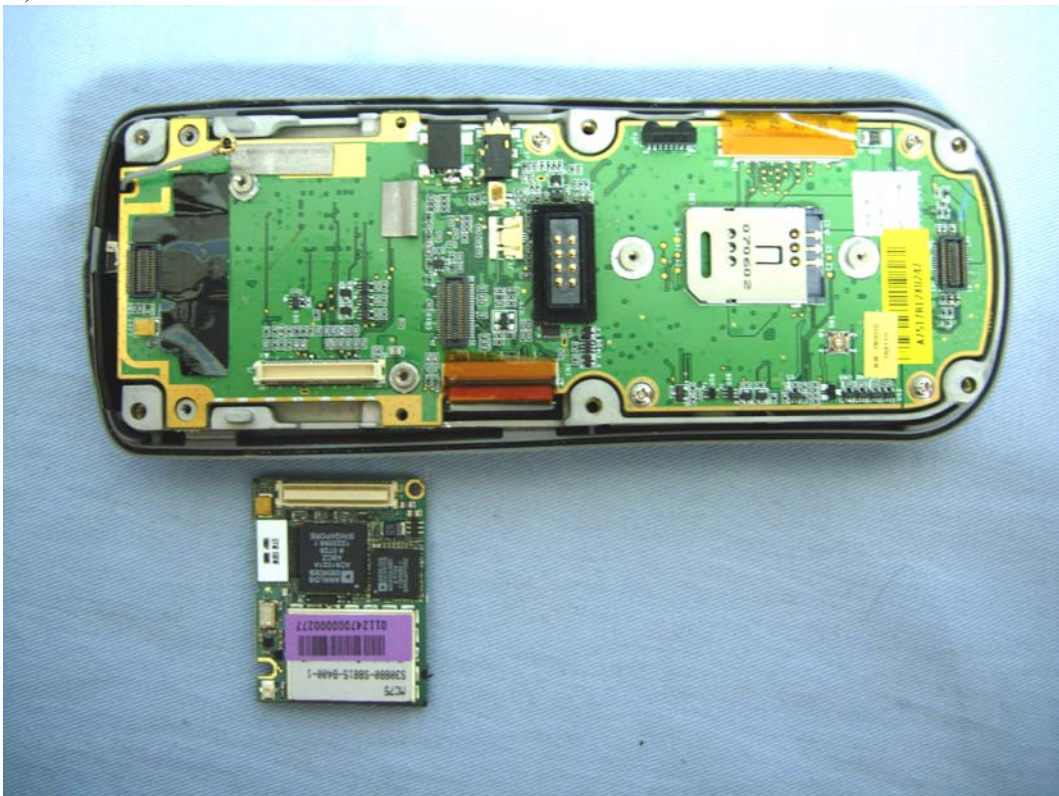
(19) EUT Photo



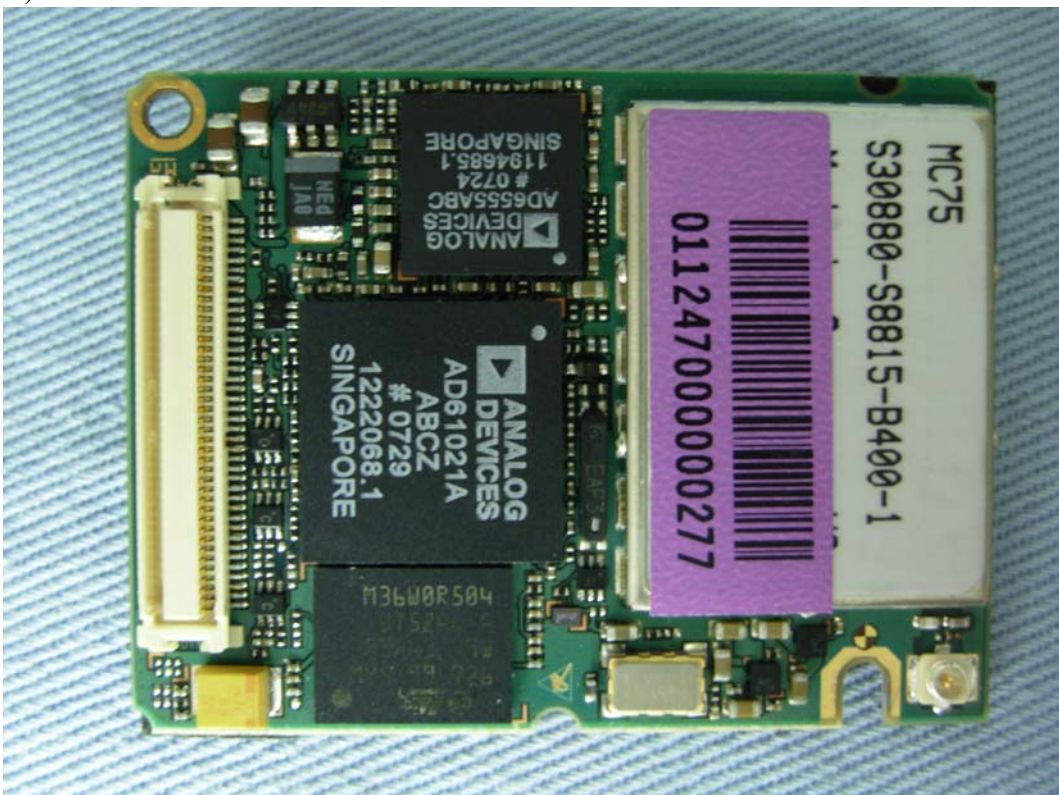
(20) EUT Photo



(21) EUT Photo



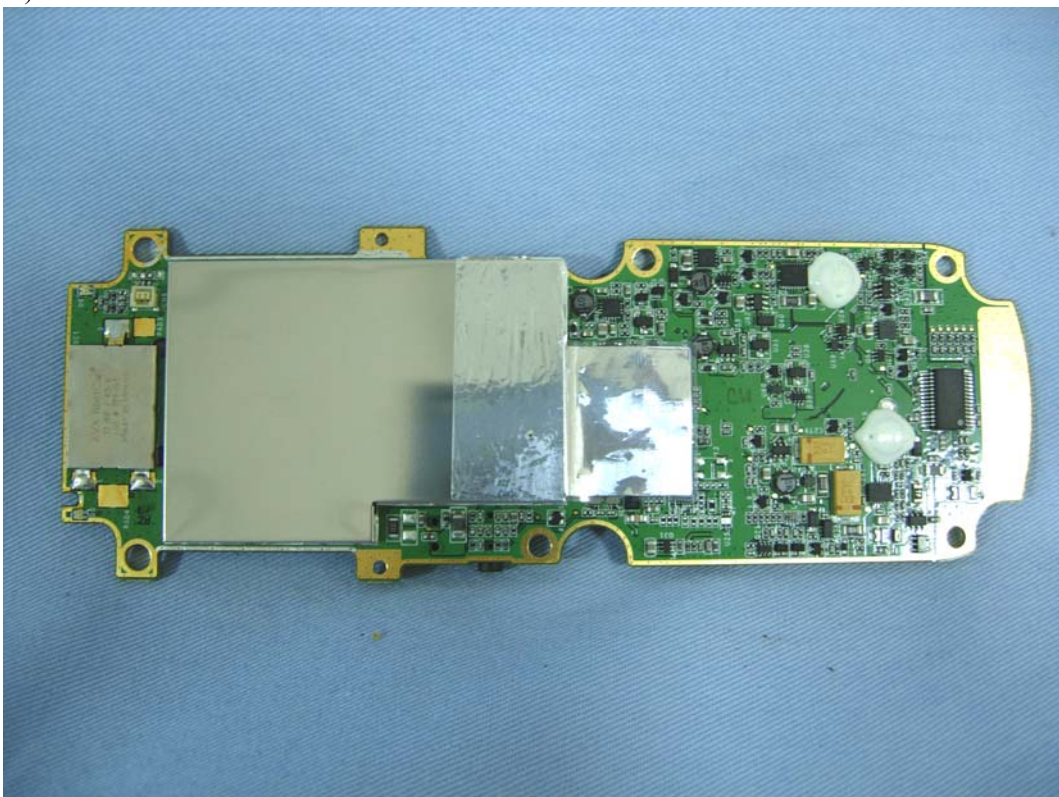
(22) EUT Photo



(23) EUT Photo



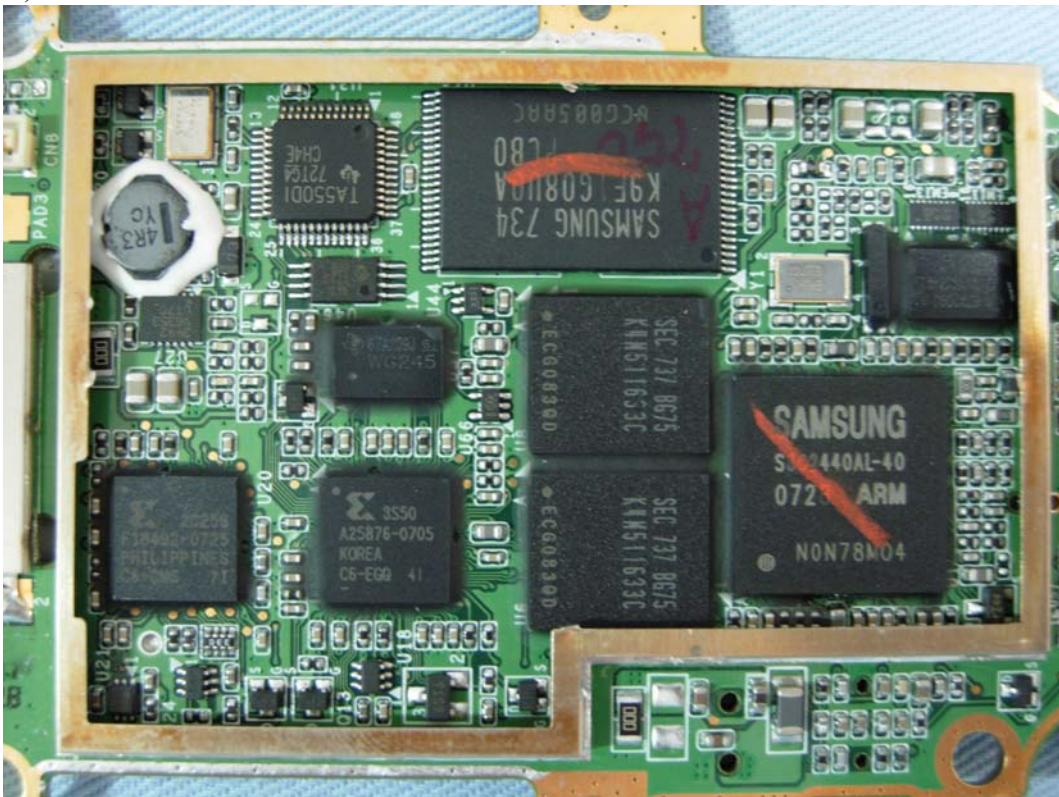
(24) EUT Photo



(25) EUT Photo



(26) EUT Photo



(27) EUT Photo



(28) EUT Photo



(29) EUT Photo



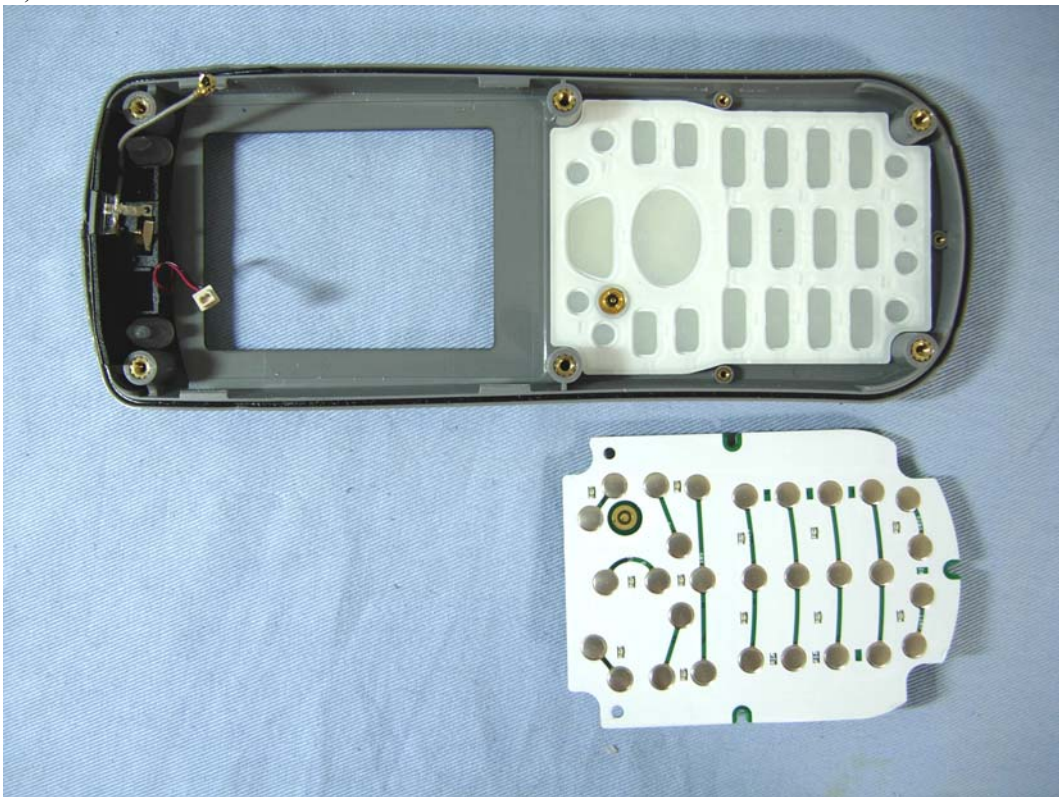
(30) EUT Photo



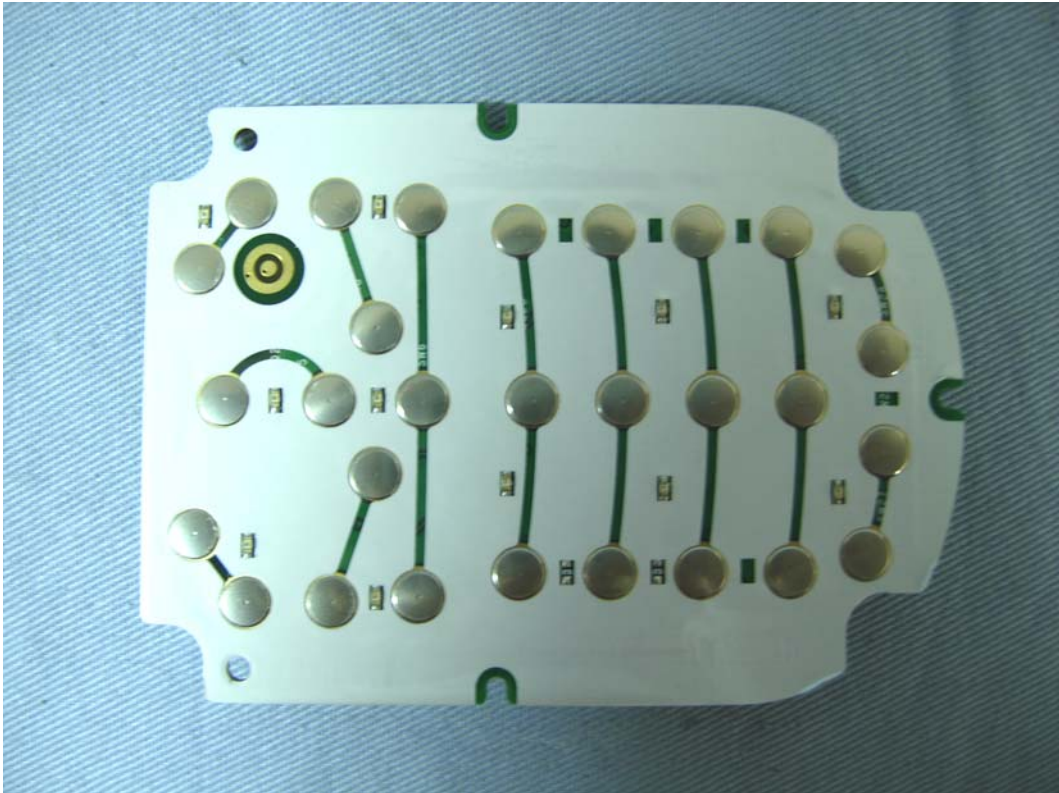
(31) EUT Photo



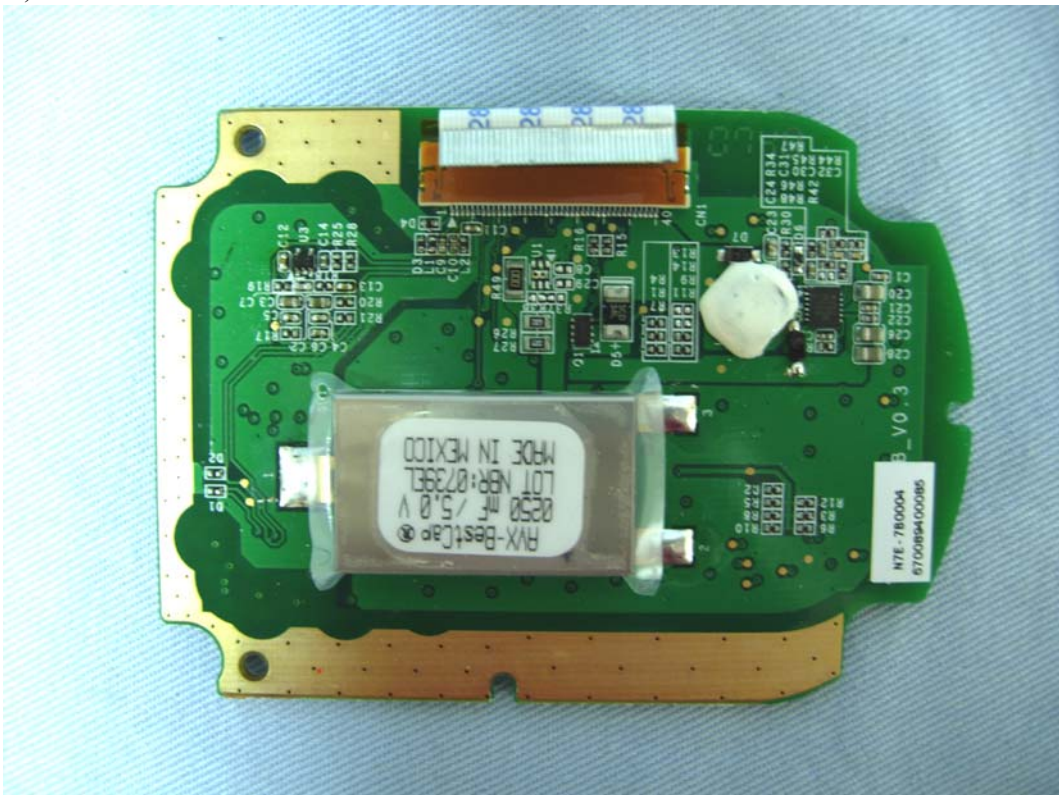
(32) EUT Photo



(33) EUT Photo



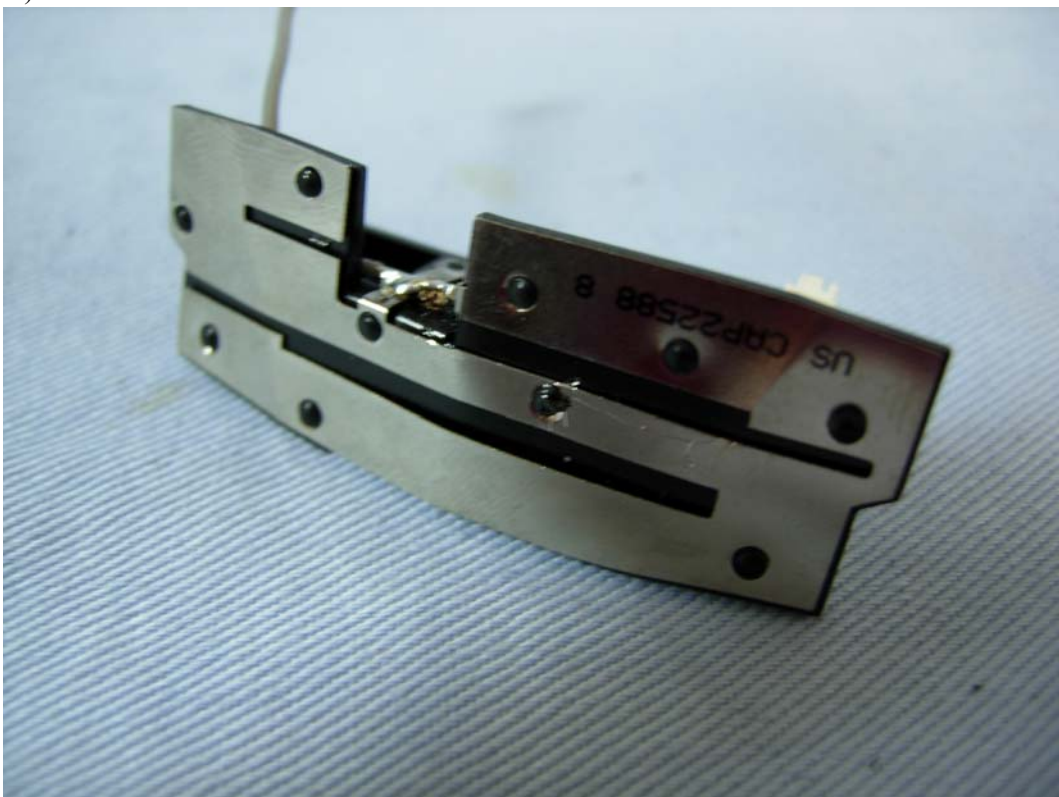
(34) EUT Photo



(35) EUT Photo



(36) EUT Photo



(37) EUT Photo



(38) EUT Photo



(39) EUT Photo

