



Test Report

Product Name	ASUS MyPal A632N Pocket PC
Model No.	A632N
FCC ID.	MSQA632N

Applicant	ASUSTeK COMPUTER INC.
Address	4FL., No. 150, Li-Te Rd., Peitou, Taipei, Taiwan, R.O.C.

Date of Receipt	Mar. 16, 2006
Issued Date	Apr. 12, 2006
Report No.	063L106-RF-US-P06V01-A

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: Apr. 12, 2006

Report No.: 063L106-RF-US-P06V01-A



Product Name	ASUS MyPal A632N Pocket PC
Applicant	ASUSTeK COMPUTER INC.
Address	4FL., No. 150, Li-Te Rd., Peitou, Taipei, Taiwan, R.O.C.
Manufacturer	ASUSTeK COMPUTER INC.
Model No.	A632N
FCC ID.	MSQA632N
Rated Voltage	AC 120V/60Hz
Working Voltage	DC 3.3V (Powered by Pocket PC)
Trade Name	ASUS
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C: 2005 ANSI C63.4: 2003 CISPR 22: 2005
Test Result	Complied



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Approved By : Gene Chang
 (Gene Chang)



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10. EMI REDUCTION METHOD DURING COMPLIANCE TESTING42

Attachment 1: EUT Test Photographs

Attachment 2: EUT Detailed Photographs

1. GENERAL INFORMATION

1.1. EUT Description

Product Name	ASUS MyPal A632N Pocket PC
Trade Name	ASUS
FCC ID.	MSQA632N
Model No.	A632N
Frequency Range	2402 - 2480MHz
Channel Number	79
Type of Modulation	Frequency Hopping Spread Spectrum
Antenna type	Connector
Channel Control	Auto
Antenna Gain	Refer to the table "Antenna List"
Power Adapter	DELTA, EADP-10BB REV.B Cable Out: Non-shielded, 1.8m

Antenna List

No.	Manufacturer	Part No.	Peak Gain
1	ACX	AT3216-B2R7HAA	0.5dBi in 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 ASUS MyPal A632N Pocket PC including a 2.4GHz transceiver.
2. These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15 Subpart C Paragraph 15.247 for spread spectrum devices.
3. Regards to the frequency band operation; the lowest , middle and highest frequency of channel were selected to perform the test, then shown on this report.
4. Quietek verified among construction and function in typical operation, then shown in this test report.

1.2. Operational Description

The EUT is a ASUS MyPal A632N Pocket PC with 79 channels.

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
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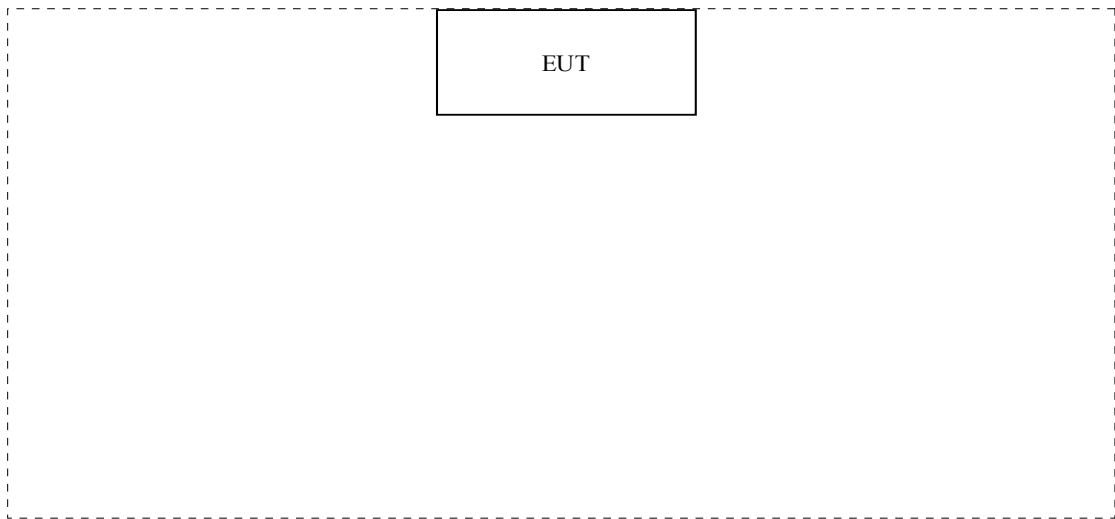
1.3. Tested System Details

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.	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) Execute the BlueTest program (v1.2.1) on the notebook.
- (3) Configure the test channel, the power level, and the packet length=DH5.
- (4) Press OK to start the continuous transmission.
- (5) 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: June 22, 2001 File on
 Federal Communications Commission
 FCC Engineering Laboratory
 7435 Oakland Mills Road
 Columbia, MD 21046
 Reference 31040/SIT1300F2



July 03, 2001 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



2. Conducted Emission

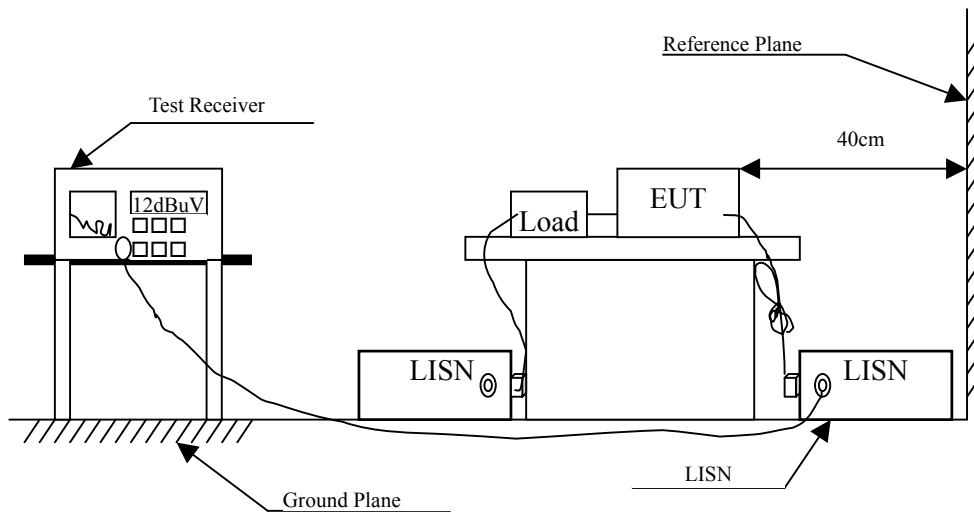
2.1. Test Equipment

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

Item	Instrument	Manufacturer	Type No./Serial No	Last Cal.	Remark
1	EMI Test Receiver	R&S	ESCS 30/100367	Aug, 2005	
2	LISN	R&S	ESH3-Z5/836679/023	July, 2005	EUT
3	LISN	R&S	ESH3-Z5/836679/017	Feb, 2006	Peripherals
4	Pulse Limiter	R&S	ESH3-Z2/357.8810.52	Sep, 2005	
5	No.7 Shielded Room			N/A	

Note: All instruments are calibrated every one year.

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 and simulators 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 refers 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 of the interface cables must be changed according to ANSI C63.4: 2003 on conducted measurement.

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

2.5. Uncertainty

The measurement uncertainty is defined as ± 2.26 dB

2.6. Test Result of Conducted Emission

Product : ASUS MyPal A632N Pocket PC
 Test Item : Conducted Emission Test
 Power Line : Line 1
 Test Mode : Mode 1: Transmitter (Channel 39)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV	Margin dB	Limit dBuV
Quasi-Peak					
0.250	0.345	41.400	41.745	-21.397	63.143
0.492	0.300	33.050	33.350	-22.879	56.229
0.730	0.310	37.910	38.220	-17.780	56.000
0.920	0.310	39.190	39.500	-16.500	56.000
1.127	0.320	32.810	33.130	-22.870	56.000
7.560	0.520	31.570	32.090	-27.910	60.000
Average					
0.250	0.345	34.150	34.495	-18.647	53.143
0.492	0.300	27.050	27.350	-18.879	46.229
0.730	0.310	28.880	29.190	-16.810	46.000
0.920	0.310	29.100	29.410	-16.590	46.000
1.127	0.320	24.200	24.520	-21.480	46.000
7.560	0.520	17.890	18.410	-31.590	50.000

Note:

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

Product : ASUS MyPal A632N Pocket PC
 Test Item : Conducted Emission Test
 Power Line : Line 2
 Test Mode : Mode 1: Transmitter (Channel 39)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV	Margin dB	Limit dBuV
Quasi-Peak					
0.244	0.300	39.760	40.060	-23.254	63.314
0.720	0.311	37.140	37.451	-18.549	56.000
0.903	0.320	37.600	37.920	-18.080	56.000
1.093	0.320	28.500	28.820	-27.180	56.000
1.573	0.340	23.140	23.480	-32.520	56.000
5.771	0.430	26.360	26.790	-33.210	60.000
Average					
0.244	0.300	27.390	27.690	-25.624	53.314
0.720	0.311	27.970	28.281	-17.719	46.000
0.903	0.320	26.600	26.920	-19.080	46.000
1.093	0.320	20.540	20.860	-25.140	46.000
1.573	0.340	17.240	17.580	-28.420	46.000
5.771	0.430	11.460	11.890	-38.110	50.000

Note:

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

3. Peak Power Output

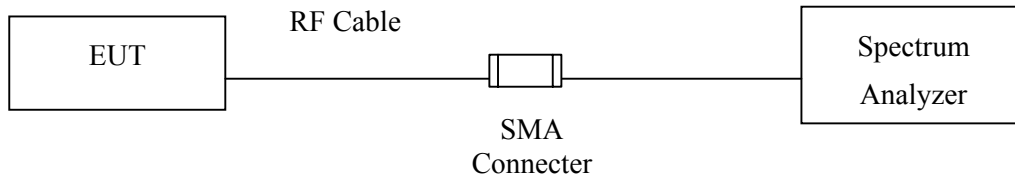
3.1. Test Equipment

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

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	EMI Test Receiver	R&S	ESI 26 / 838786/004	May, 2005

Note: 1. All equipment upon which need to calibrated are with calibration period of 1 year.
 2. Mark "X" test instruments 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. Uncertainty

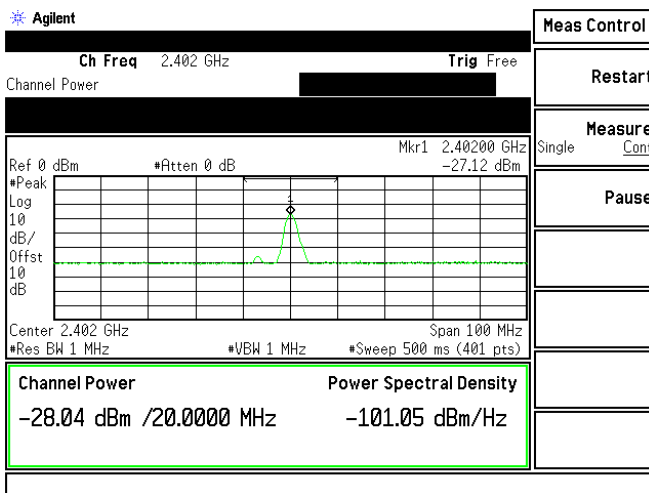
The measurement uncertainty is defined as ± 1.27 dB

3.5. Test Result of Peak Power Output

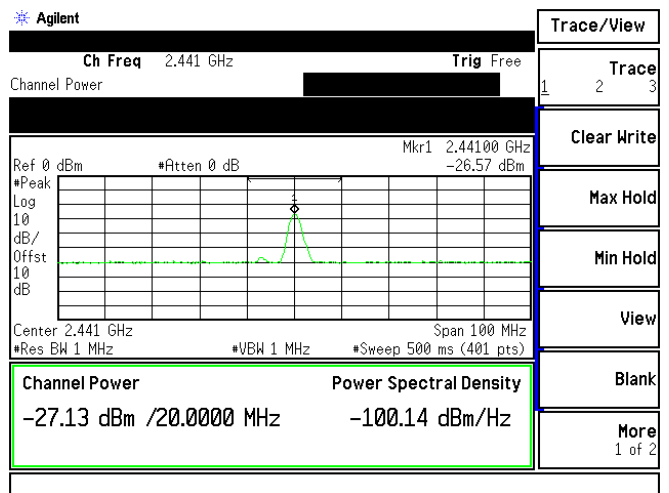
Product : ASUS MyPal A632N Pocket PC
 Test Item : Peak Power Output
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter

Channel No.	Frequency (MHz)	Measurement	Required Limit	Result
Channel 00	2402.00	-28.04dBm	1 Watt= 30 dBm	Pass
Channel 39	2441.00	-27.13dBm	1 Watt= 30 dBm	Pass
Channel 78	2480.00	-26.55dBm	1 Watt= 30 dBm	Pass

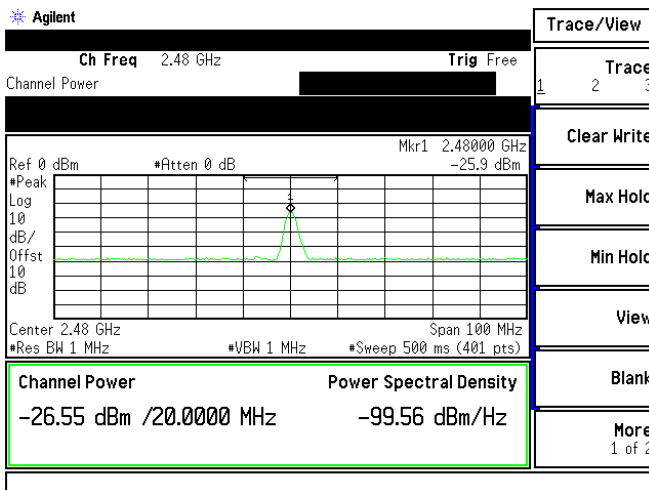
Channel 00



Channel 39



Channel 78



4. Radiated Emission

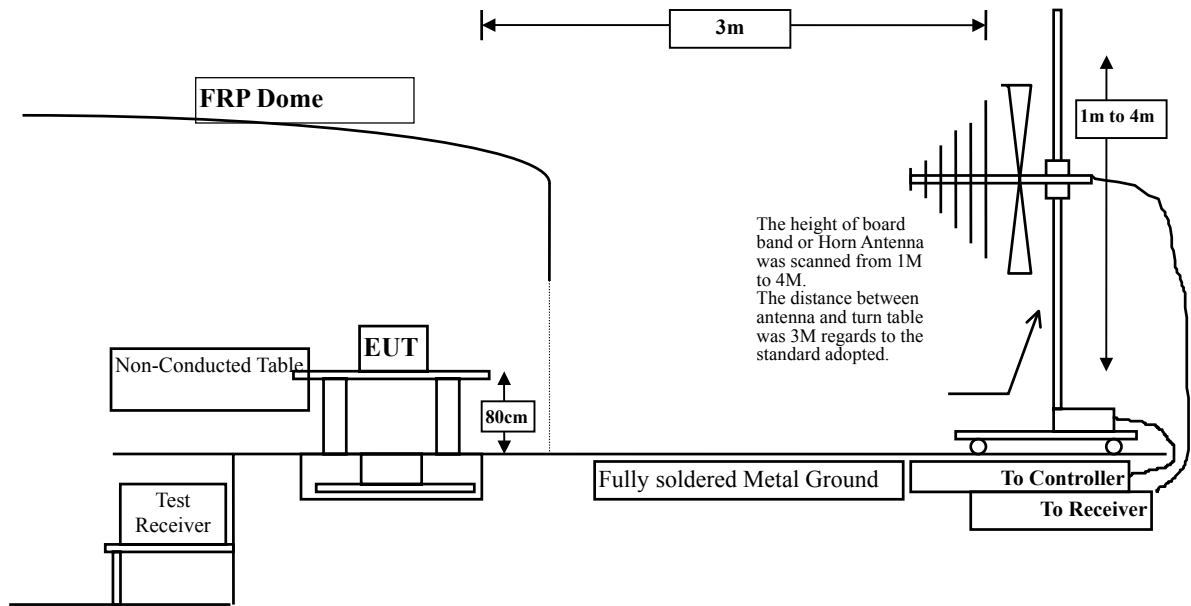
4.1. Test Equipment

The following test equipment 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, 2005
	Spectrum Analyzer	Advantest	R3162/ 00803480	May, 2005
	Pre-Amplifier	Advantest	BB525C/ 3307A01812	May, 2005
	Bilog Antenna	SCHAFFNER	CBL6112B / 2697	Sep., 2005
<input type="checkbox"/> Site # 2	Test Receiver	R & S	ESCS 30 / 836858 / 022	May, 2005
	Spectrum Analyzer	Advantest	R3162 / 100803466	May, 2005
	Pre-Amplifier	Advantest	BB525C/3307A01814	May, 2005
	Bilog Antenna	SCHAFFNER	CBL6112B / 2705	May, 2005
	Horn Antenna	ETS	3115 / 0005-6160	Sep., 2005
	Pre-Amplifier	QTK	QTK-AMP-01/ 0001	May, 2005
<input checked="" type="checkbox"/> Site # 3	Test Receiver	R & S	ESI 26 / 838786 / 004	May, 2005
	Spectrum Analyzer	Advantest	R3162 / 100803480	May, 2005
	Pre-Amplifier	QTK	QTK-AMP-03 / 0003	May, 2005
	Bilog Antenna	SCHAFFNER	CBL6112B / 2697	May, 2005
	Horn Antenna	Schwarzbeck	9120D / 305, 306	July, 2005
	Horn Antenna	Schwarzbeck	BBHA9170 / 208, 209	July, 2005
	Pre-Amplifier	QTK	QTK-AMP-01 / 0001	July, 2005
	Pre-Amplifier	HP	8449B / 3008A01123	July, 2005
Pre-Amplifier	MITEQ	AMF-4D-180400-45-6P	May, 2005	

- Note:
1. All equipments that need to calibrate are with calibration period of 1 year.
 2. Mark "X" test instruments are used to measure the final test results.

4.2. Test Setup



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 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 additional latch filter below 1GHz was used to measure the level of harmonics radiated emission during field strength of harmonics measurement.

The bandwidth below 1GHz setting on the field strength meter (R&S Test Receiver ESCS 30)is 120 kHz, above 1GHz are 1 MHz.

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

4.5. Uncertainty

The measurement uncertainty above 1G is defined as ± 3.9 dB

under 1G is defined as ± 3.8 dB

4.6. Test Result of Radiated Emission

Product : ASUS MyPal A632N Pocket PC
 Test Item : Harmonic Radiated Emission
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (Channel 00)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4804.250	4.346	56.655	61.001	-12.969	74.000
7206.250	11.567	57.443	69.010	-4.960	74.000
9608.250	15.812	46.570	62.383	-11.587	74.000
Average Detector:					
4804.000	4.346	38.370	42.716	-11.254	54.000
7206.000	11.565	36.845	48.410	-5.560	54.000
9608.000	15.813	33.315	49.128	-4.842	54.000
Vertical					
Peak Detector:					
4804.000	4.346	58.748	63.094	-10.876	74.000
7206.000	11.565	58.157	69.722	-4.248	74.000
9608.000	15.813	47.993	63.806	-10.164	74.000
Average Detector:					
4804.000	4.346	42.117	46.463	-7.507	54.000
7206.000	11.565	40.325	51.890	-2.080	54.000
9608.000	15.813	35.086	50.899	-3.071	54.000

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:30Hz; 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 : ASUS MyPal A632N Pocket PC
 Test Item : Harmonic Radiated Emission
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (Channel 39)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4882.000	4.562	56.863	61.425	-12.545	74.000
7323.000	12.468	51.640	64.108	-9.862	74.000
9764.000	14.572	42.576	57.148	-16.822	74.000
Average Detector:					
4882.000	4.562	40.870	45.432	-8.538	54.00
7323.000	12.468	37.200	49.668	-4.302	54.00
9764.000	14.572	31.022	45.594	-8.376	54.00
Vertical					
Peak Detector:					
4882.000	4.562	55.910	60.472	-13.498	74.000
7323.000	12.468	53.905	66.373	-7.597	74.000
9764.000	14.572	46.069	60.641	-13.329	74.000
Average Detector:					
4882.000	4.562	40.120	44.682	-9.288	54.00
7323.000	12.468	37.550	50.018	-3.952	54.00
9764.000	14.572	33.114	47.686	-6.284	54.00

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:30Hz; 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 : ASUS MyPal A632N Pocket PC
 Test Item : Harmonic Radiated Emission
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (Channel 78)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4960.000	4.804	52.948	57.751	-16.219	74.000
7440.000	12.912	49.770	62.682	-11.288	74.000
9920.000	14.271	42.077	56.348	-17.622	74.000
Average Detector:					
4960.000	4.804	30.640	35.443	-18.527	54.00
7440.000	12.912	30.400	43.312	-10.658	54.00
9920.000	14.271	28.760	43.031	-10.939	54.00
Vertical					
Peak Detector:					
4960.000	4.804	51.259	56.062	-17.908	74.000
7440.000	12.912	50.799	63.711	-10.259	74.000
9920.000	14.271	45.415	59.686	-14.284	74.000
Average Detector:					
4960.000	4.804	30.816	35.619	-18.351	54.00
7440.000	12.912	30.004	42.916	-11.054	54.00
9920.000	14.271	29.380	43.651	-10.319	54.00

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:30Hz; 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 : ASUS MyPal A632N Pocket PC
 Test Item : General Radiated Emission
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (Channel 00)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
173.100	9.941	14.100	24.041	-19.459	43.500
192.500	9.304	19.300	28.604	-14.896	43.500
220.100	9.869	13.100	22.969	-23.031	46.000
230.100	10.887	13.150	24.037	-21.963	46.000
396.100	16.268	14.400	30.668	-15.332	46.000
620.100	20.996	8.900	29.895	-16.105	46.000
Vertical					
177.360	9.700	16.200	25.900	-17.600	43.500
192.500	9.382	12.280	21.662	-21.838	43.500
345.100	14.863	12.240	27.102	-18.898	46.000
415.600	19.615	12.360	31.975	-14.025	46.000
544.100	20.532	12.800	33.332	-12.668	46.000
620.100	21.525	12.800	34.325	-11.675	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. "█" means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : ASUS MyPal A632N Pocket PC
 Test Item : General Radiated Emission
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (Channel 39)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
199.600	9.694	17.200	26.893	-16.607	43.500
224.100	10.286	12.360	22.645	-23.355	46.000
291.900	13.751	11.800	25.551	-20.449	46.000
357.300	15.198	14.200	29.398	-16.602	46.000
396.100	16.268	14.500	30.768	-15.232	46.000
619.200	21.049	12.820	33.869	-12.131	46.000
Vertical					
185.100	9.412	17.200	26.611	-16.889	43.500
211.800	10.287	12.640	22.927	-20.573	43.500
357.300	15.921	15.100	31.021	-14.979	46.000
415.500	19.614	12.320	31.934	-14.066	46.000
587.600	21.849	12.870	34.718	-11.282	46.000
609.300	21.736	12.870	34.606	-11.394	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. "█" means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : ASUS MyPal A632N Pocket PC
 Test Item : General Radiated Emission
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (Channel 78)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
211.900	9.460	15.200	24.660	-18.840	43.500
224.100	10.286	12.300	22.585	-23.415	46.000
299.100	14.130	12.100	26.230	-19.770	46.000
306.500	13.848	12.500	26.347	-19.653	46.000
362.200	15.518	13.250	28.768	-17.232	46.000
620.100	20.996	12.820	33.815	-12.185	46.000
Vertical					
185.100	9.412	12.250	21.661	-21.839	43.500
211.800	10.287	16.300	26.587	-16.913	43.500
357.100	15.921	15.400	31.321	-14.679	46.000
384.100	16.837	15.200	32.037	-13.963	46.000
573.200	21.374	12.870	34.244	-11.756	46.000
595.100	21.856	12.200	34.056	-11.944	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. "█" means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

5. Band Edge

5.1. Test Equipment

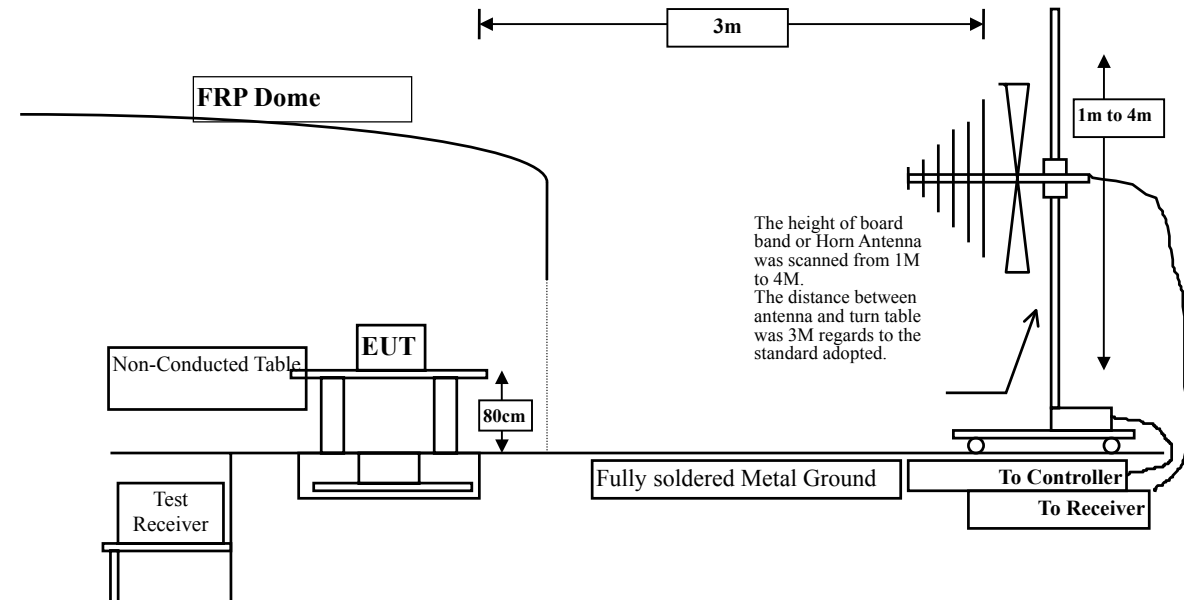
The following test equipments are used during the band edge tests:

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Spectrum Analyzer	Advantest	R3272 / 72421194	May, 2005
X	Test Receiver	R & S	ESCS 30 / 825442/14	May, 2005
X	Spectrum Analyzer	HP	E4407B / US39440758	May, 2005
X	Pre-Amplifier	HP	8447D/3307A01812	May, 2005
X	Bilog Antenna	Chase	CBL6112B / 12452	Sep., 2005
X	Horn Antenna	EM	EM6917 / 103325	May, 2005

- Note:
1. All equipments that need to calibrate are with calibration period of 1 year.
 2. Mark "X" test instruments are used to measure the final test results.

5.2. Test Setup

RF Radiated 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 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 (R&S Test Receiver ESCS 30)is 120 kHz, above 1GHz are 1 MHz.

5.5. Uncertainty

The measurement uncertainty above 1G is defined as ± 3.9 dB
under 1G is defined as ± 3.8 dB

5.6. Test Result of Band Edge

Product : ASUS MyPal A632N Pocket PC
 Test Item : Band Edge
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (Channel 00)

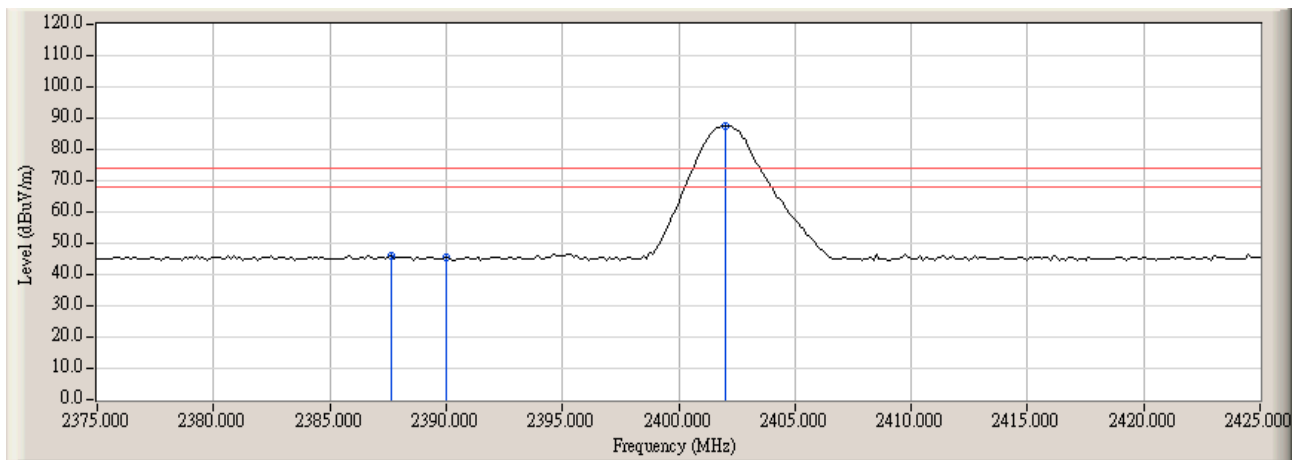
RF Radiated Measurement:

Channel No.	Frequency (MHz)	Required Limit (dBc)	Result
00	<2400	>20	Pass

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
00 (Peak)	2390.000	47.168	45.420	74.00	54.00	Pass
00 (Average)	--	--	--	74.00	54.00	Pass

Figure Channel 00: (Horizontal)



Note:

RBW=1MHz, VBW=1MHz, Sweep Time=500ms.

Product : ASUS MyPal A632N Pocket PC
 Test Item : Band Edge
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (Channel 00)

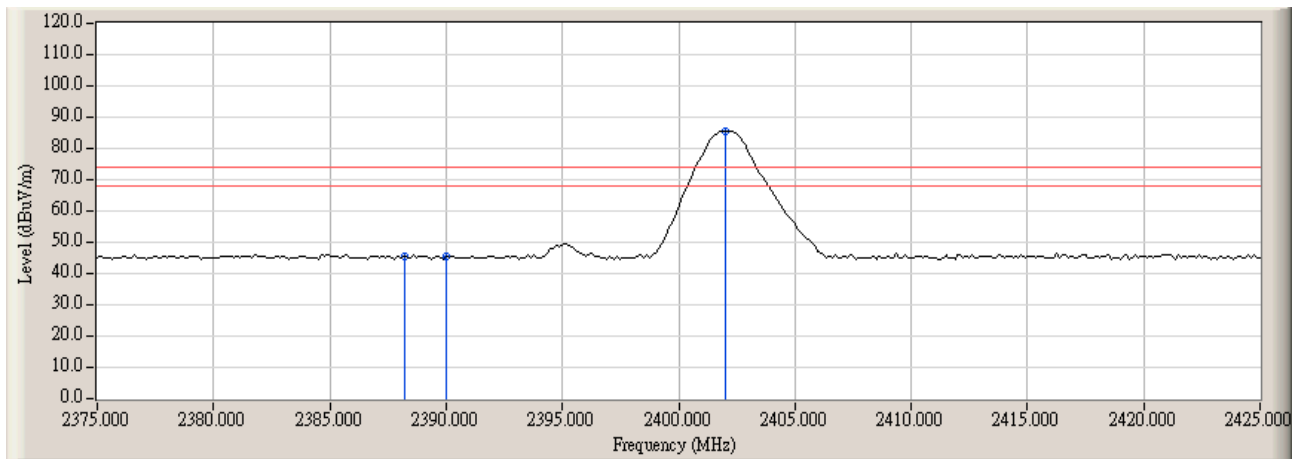
RF Radiated Measurement:

Channel No.	Frequency (MHz)	Required Limit (dBc)	Result
00	<2400	>20	Pass

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
00 (Peak)	2390.000	46.998	45.250	74.00	54.00	Pass
00(Average)	--	--	--	74.00	54.00	Pass

Figure Channel 00: (Vertical)



Note:

RBW=1MHz, VBW=1MHz, Sweep Time=500ms.

Product : ASUS MyPal A632N Pocket PC
 Test Item : Band Edge
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (Channel 78)

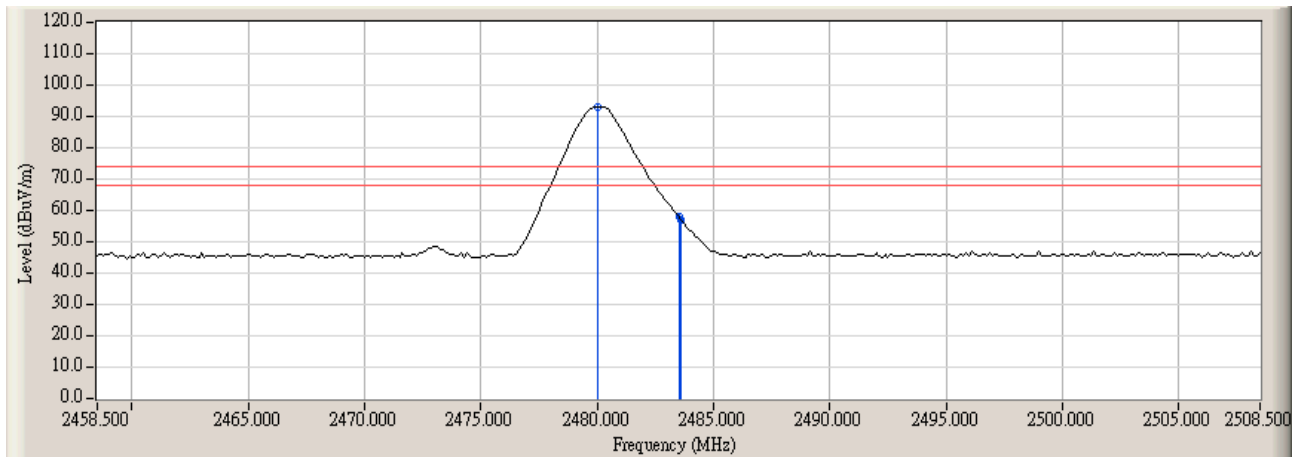
RF Radiated Measurement:

Channel No.	Frequency (MHz)	Required Limit (dBc)	Result
78	>2483.5	>20	Pass

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
78(Peak)	2483.500	59.181	57.790	74.00	54.00	Pass
78(Average)	2483.500	45.691	44.300	74.00	54.00	Pass

Figure Channel 78: (Horizontal)



Note:

RBW=1MHz, VBW=1MHz, Sweep Time=500ms.

Product : ASUS MyPal A632N Pocket PC
 Test Item : Band Edge
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (Channel 78)

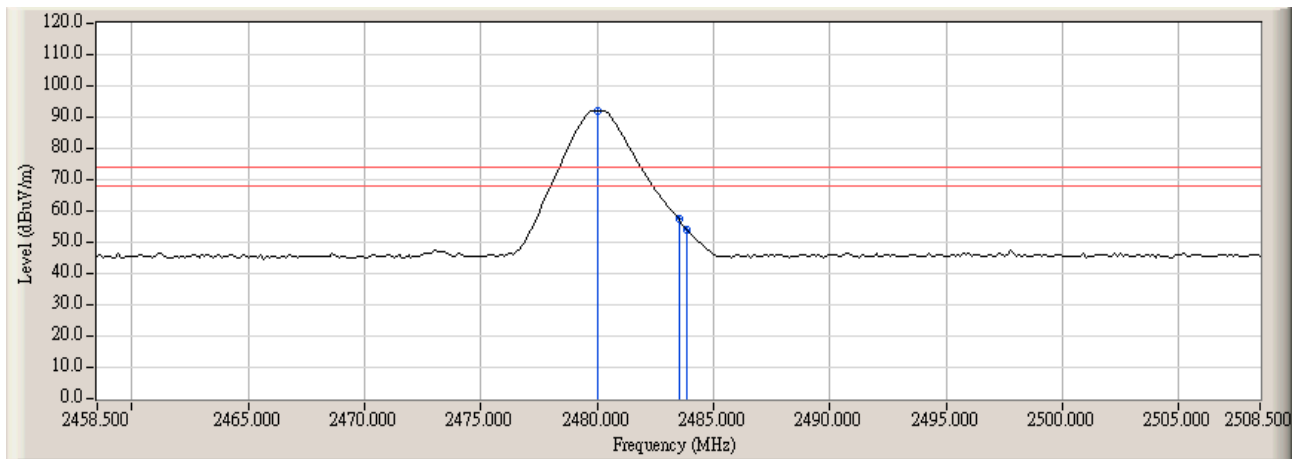
RF Radiated Measurement:

Channel No.	Frequency (MHz)	Required Limit (dBc)	Result
78	>2483.5	>20	Pass

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
78(Peak)	2483.500	58.661	57.270	74.00	54.00	Pass
78(Average)	2483.500	45.111	43.720	74.00	54.00	Pass

Figure Channel 78: (Vertical)



Note:

RBW=1MHz, VBW=1MHz, Sweep Time=500ms.

Note: 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.

6. Channel Number

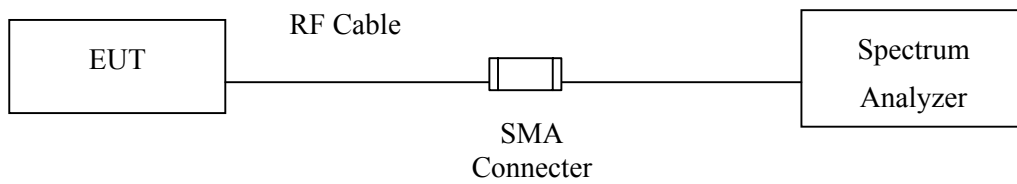
6.1. Test Equipment

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

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	EMI Test Receiver	R&S	ESI 26 / 838786/004	May, 2005

Note: 1. All equipment upon which need to calibrated are with calibration period of 1 year.
 2. Mark "X" test instruments are used to measure the final test results.

6.2. Test Setup



6.3. Limit

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

6.4. Uncertainty

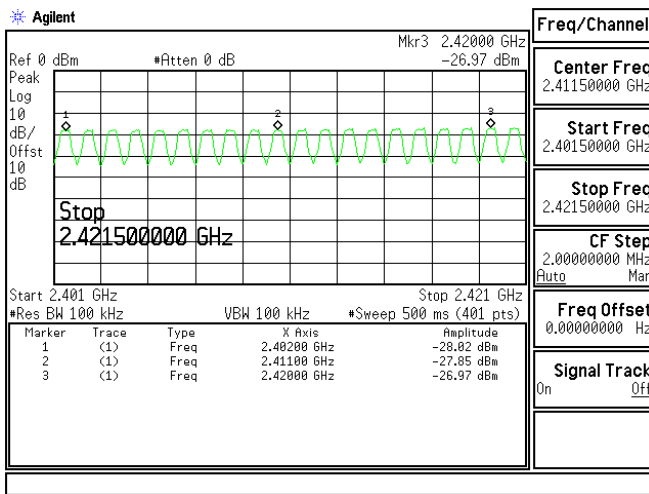
The measurement uncertainty is defined as $\pm 200\text{kHz}$

6.5. Test Result of Channel Number

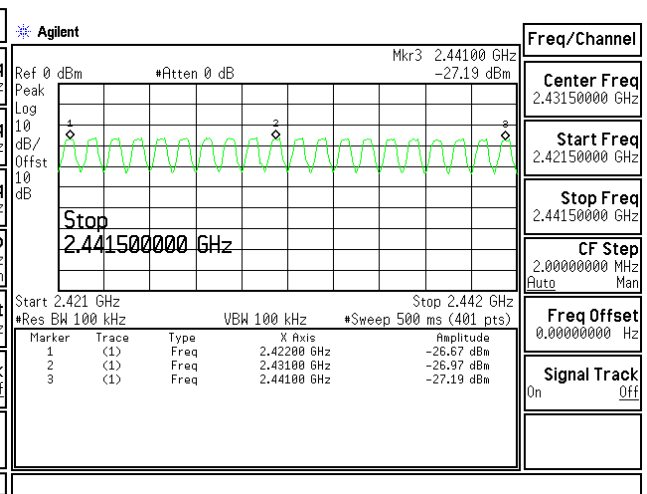
Product : ASUS MyPal A632N Pocket PC
 Test Item : Channel Number
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter

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

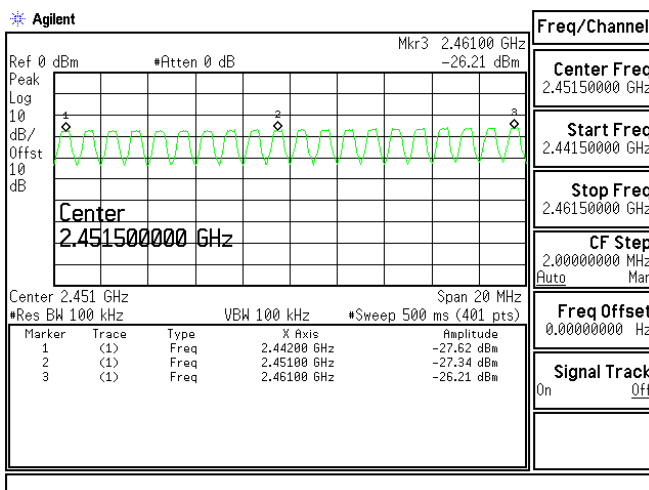
2402-2421MHz



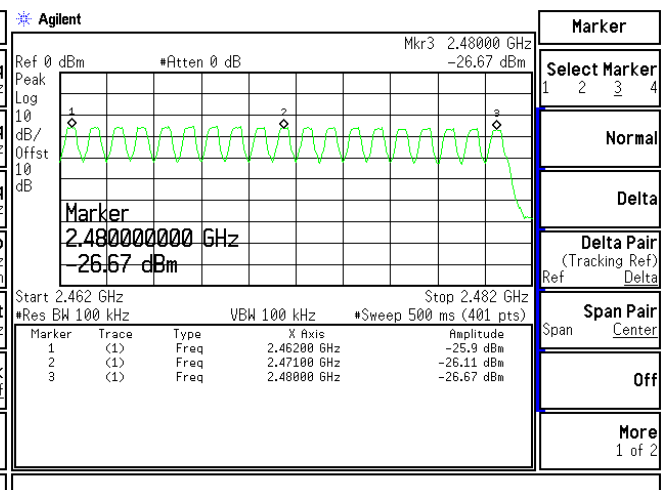
2422-2441MHz



2442-2471MHz



2462-2481MHz



7. Channel Separation

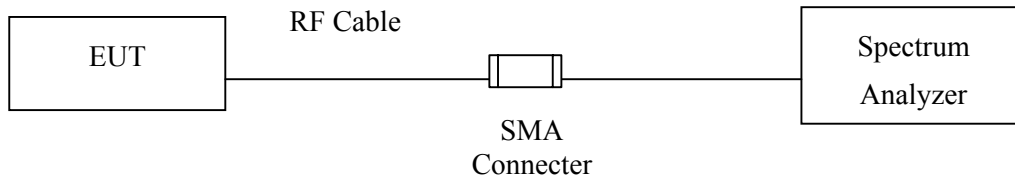
7.1. Test Equipment

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

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	EMI Test Receiver	R&S	ESI 26 / 838786/004	May, 2005

Note: 1. All equipment upon which need to calibrated are with calibration period of 1 year.
 2. Mark "X" test instruments are used to measure the final test results.

7.2. Test Setup



7.3. 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.

7.4. Uncertainty

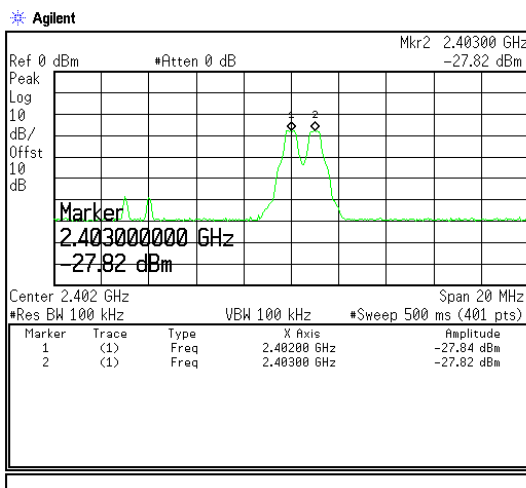
The measurement uncertainty is defined as $\pm 150\text{Hz}$

7.5. Test Result of Channel Separation

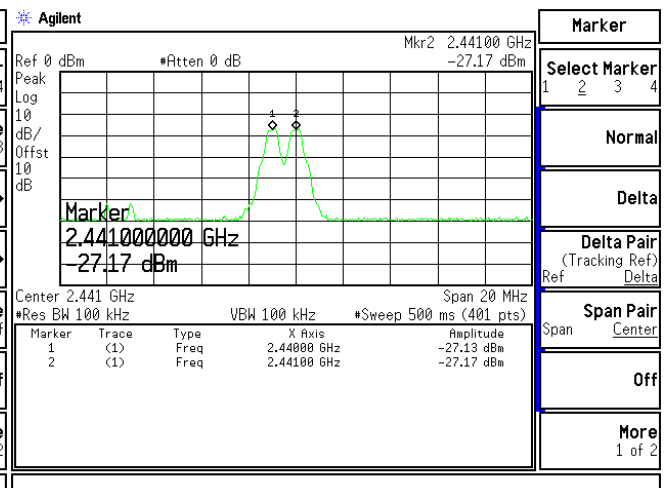
Product : ASUS MyPal A632N Pocket PC
 Test Item : Channel Separation
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter

Frequency (MHz)	Measurement Level (MHz)	Required Limit	Result
2402	1.00	>25 kHz or 2/3 * 20 dB BW	Pass
2441	1.00	>25 kHz or 2/3 * 20 dB BW	Pass
2480	1.00	>25 kHz or 2/3 * 20 dB BW	Pass

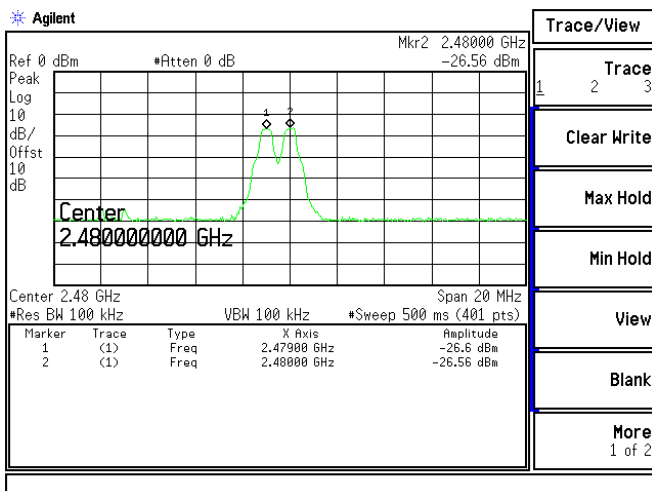
Channel 00 2402MHz



Channel 39 2441MHz



Channel 78 2480 MHz



8. Dwell Time

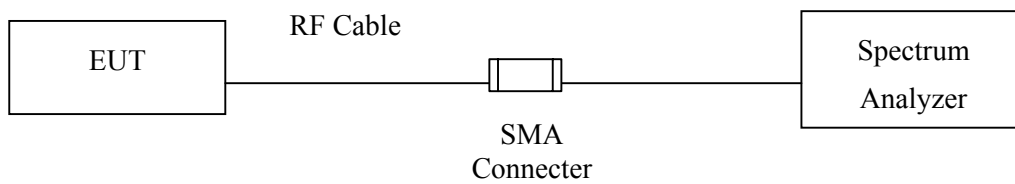
8.1. Test Equipment

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

Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X EMI Test Receiver	R&S	ESI 26 / 838786/004	May, 2005

Note: 1. All equipment upon which need to calibrated are with calibration period of 1 year.
 2. Mark "X" test instruments are used to measure the final test results.

8.2. Test Setup



8.3. 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.

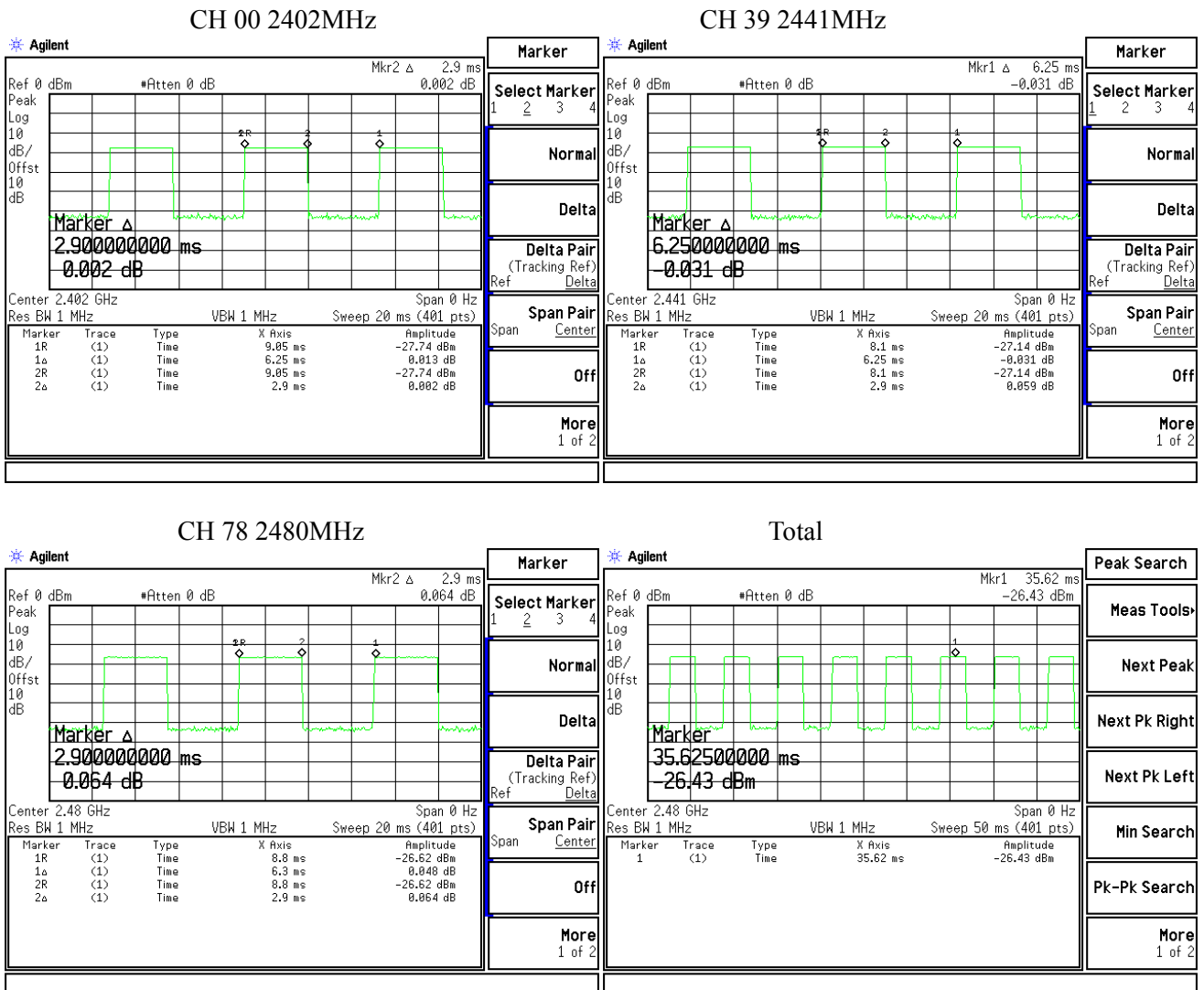
8.4. Uncertainty

The measurement uncertainty is defined as $\pm 25\text{msec}$

8.5. Test Result of Dwell Time

Product : ASUS MyPal A632N Pocket PC
 Test Item : Dwell Time
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (Channel 00,39,78 –DH5)

Channel (MHz)	Measurement Level (ms)	Required Limit (sec.)	Result
CH 00 2402	185.868	< 0.4	Pass
CH 39 2441	400.577	< 0.4	Pass
CH 78 2480	185.868	< 0.4	Pass



Note: Dwell time = time slot length * hop rate / number of hopping channels * period

Occupancy Time of Frequency Hopping System

Test Time Period: $0.4 \times 79 = 31.6\text{sec}$, Hopping Times Within 1sec: $8/50\text{msec} = 0.16 \text{ hops/msec}$.

A) 2402MHz The Maximum Occupancy Time Within 31.6sec: $(2900 \mu\text{s} \times 160) / (79 \times 31.6) = 185.868\text{msec}$ ◦

B) 2441MHz The Maximum Occupancy Time Within 31.6sec: $(6250 \mu\text{s} \times 160) / (79 \times 31.6) = 400.577\text{msec}$ ◦

C) 2480MHz The Maximum Occupancy Time Within 31.6sec: $(2900 \mu\text{s} \times 160) / (79 \times 31.6) = 185.868\text{msec}$ ◦

Test Result: The Average Occupancy Time of Each Highest , Middle and Lowest Channel Is Less Than 0.4sec , And Corresponds to The Standard ◦

PS: (1) From Bluetooth Specification , It Hops 1640 Times in 1sec ◦ The Average Occupancy Time of Each 79 Channels is $1600/79$ Times , Therefore , We Calculate The Maximum Occupancy Time (worse cars)As Below:

A) 2402Mhz The Occupancy Time of Each Pulse is 0.4msec , The Maximum Occupancy Time within 31.6sec is $0.4\text{msec} \times 1640 / 79 \times 31.6 = 289.056\text{msec}$

B) 2441MHz The Occupancy Time of Each Pulse is 0.4msec , The Maximum Occupancy Time within 31.6sec is $0.4\text{msec} \times 1640 / 79 \times 31.6 = 289.056\text{msec}$

C) 2480MHz The Occupancy Time of Each Pulse is 0.4msec , The Maximum Occupancy Time within 31.6sec is $0.4\text{msec} \times 1640 / 79 \times 31.6 = 289.056\text{msec}$

Test Result: The Maximum Occupancy Time of Each Highest , Middle and Lowest Channel Is Less Than 0.4sec , And Corresponds to The Standard ◦

9. Occupied Bandwidth

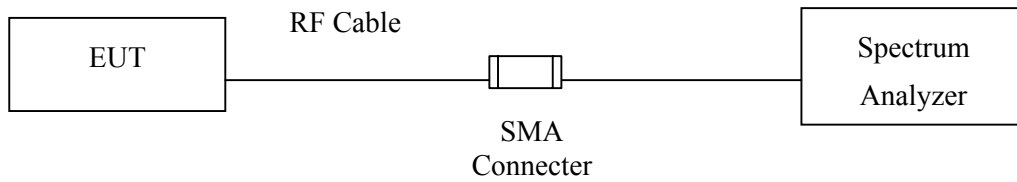
9.1. Test Equipment

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

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	EMI Test Receiver	R&S	ESI 26 / 838786/004	May, 2005

Note: 1. All equipment upon which need to calibrated are with calibration period of 1 year.
 2. Mark “X” test instruments are used to measure the final test results.

9.2. Test Setup



9.3. Limits

The minimum bandwidth shall be at least 500kHz.

9.4. Uncertainty

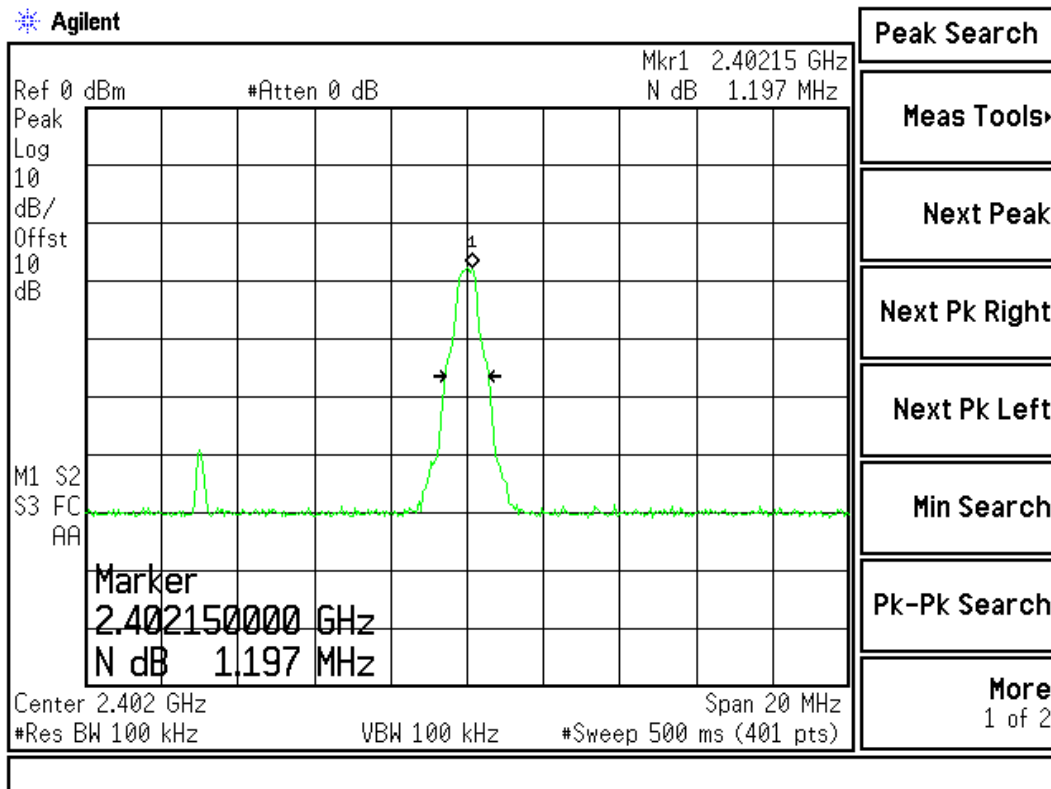
The measurement uncertainty is defined as ± 1.27 dB

9.5. Test Result of Occupied Bandwidth

Product : ASUS MyPal A632N Pocket PC
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (2402MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
00	2402	1197	>500	Pass

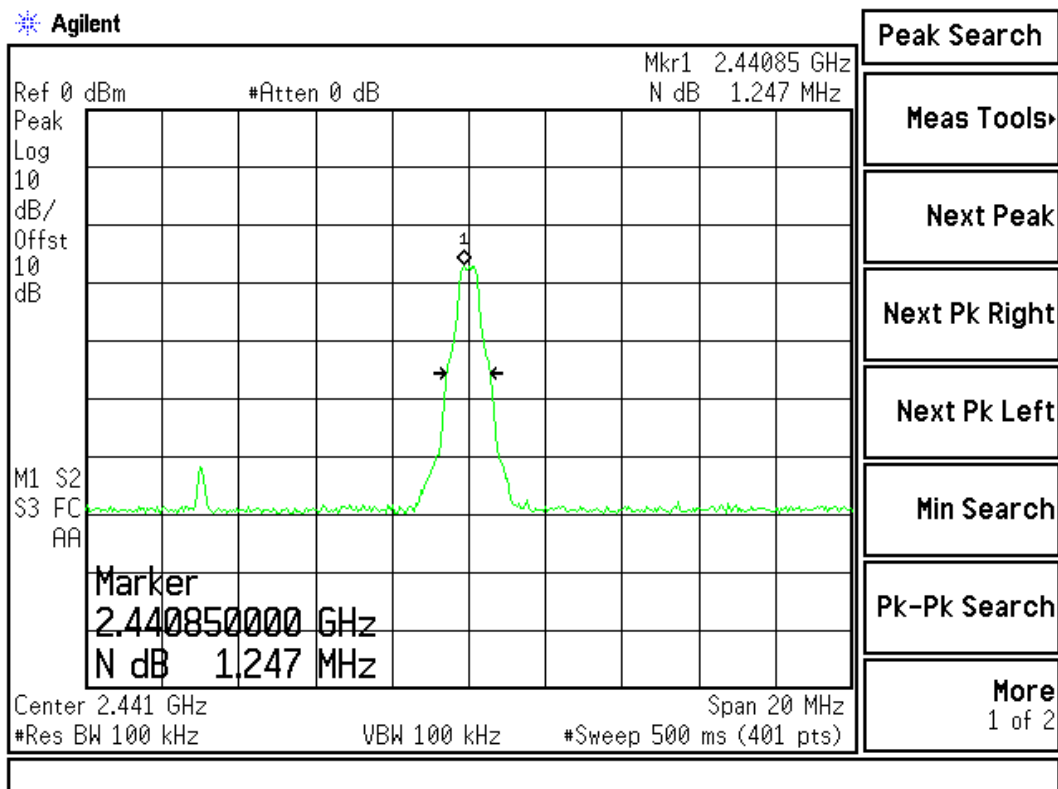
Figure Channel 00:



Product : ASUS MyPal A632N Pocket PC
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (2441MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
39	2441	1247	>500	Pass

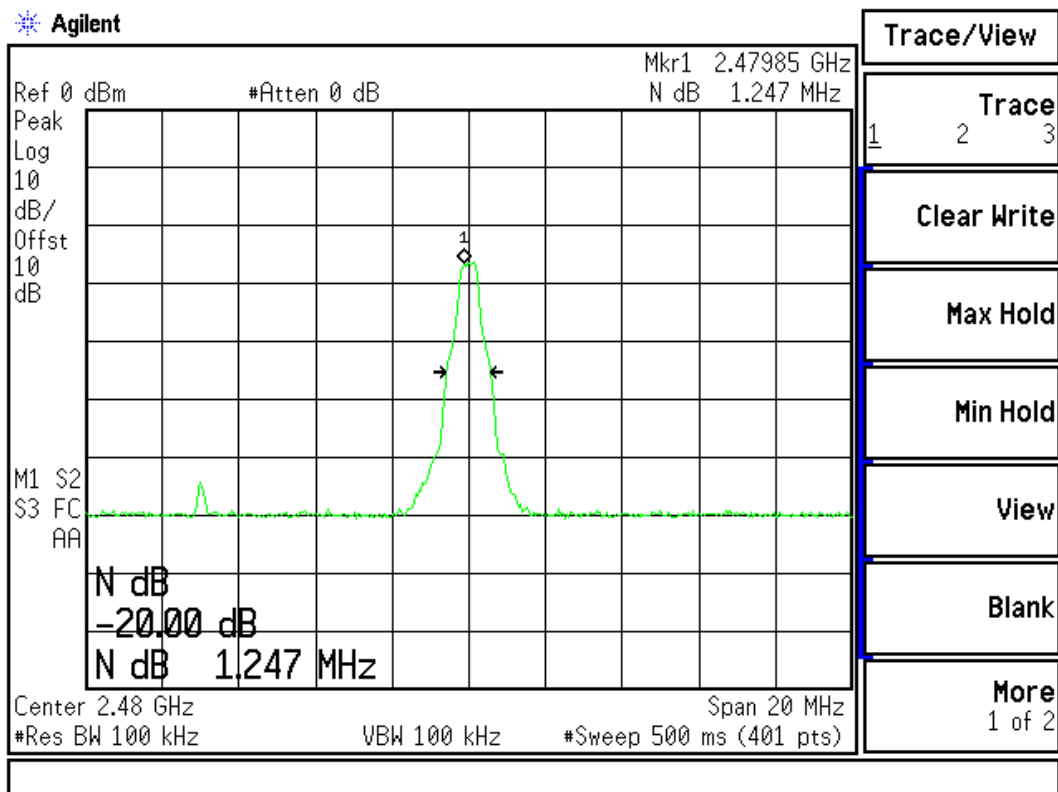
Figure Channel 39:



Product : ASUS MyPal A632N Pocket PC
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (2480MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
78	2480	1247	>500	Pass

Figure Channel 78:



10. 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



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



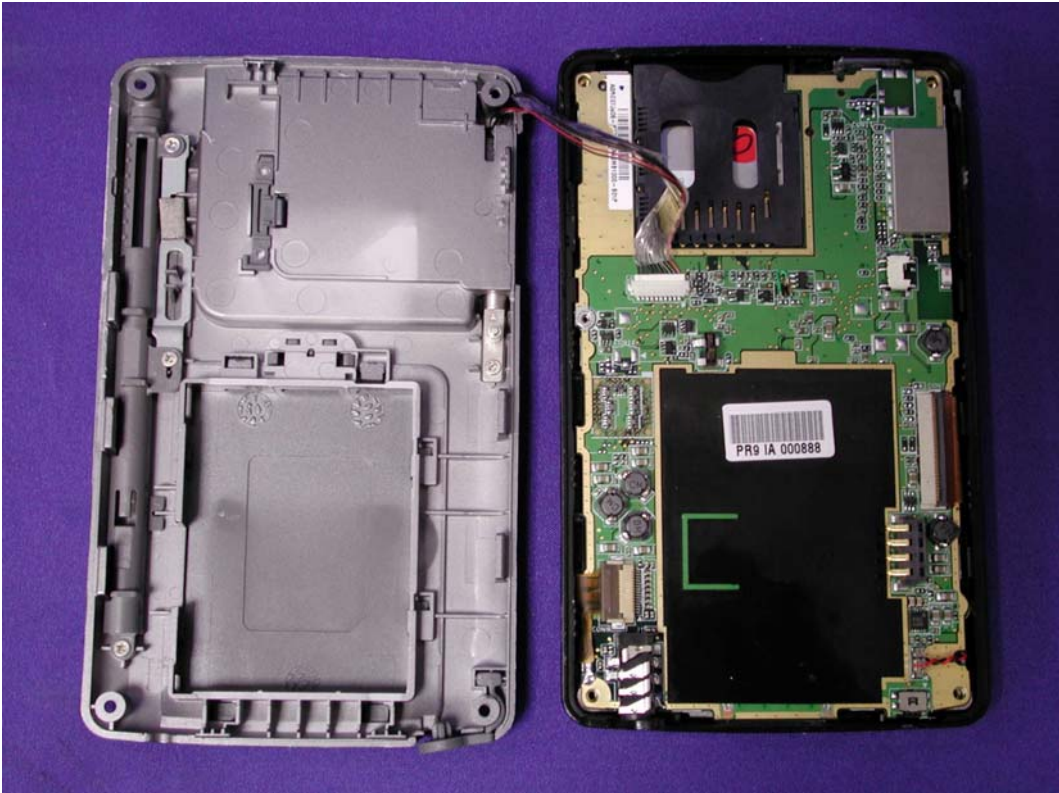
(9) EUT Photo



(10) EUT Photo



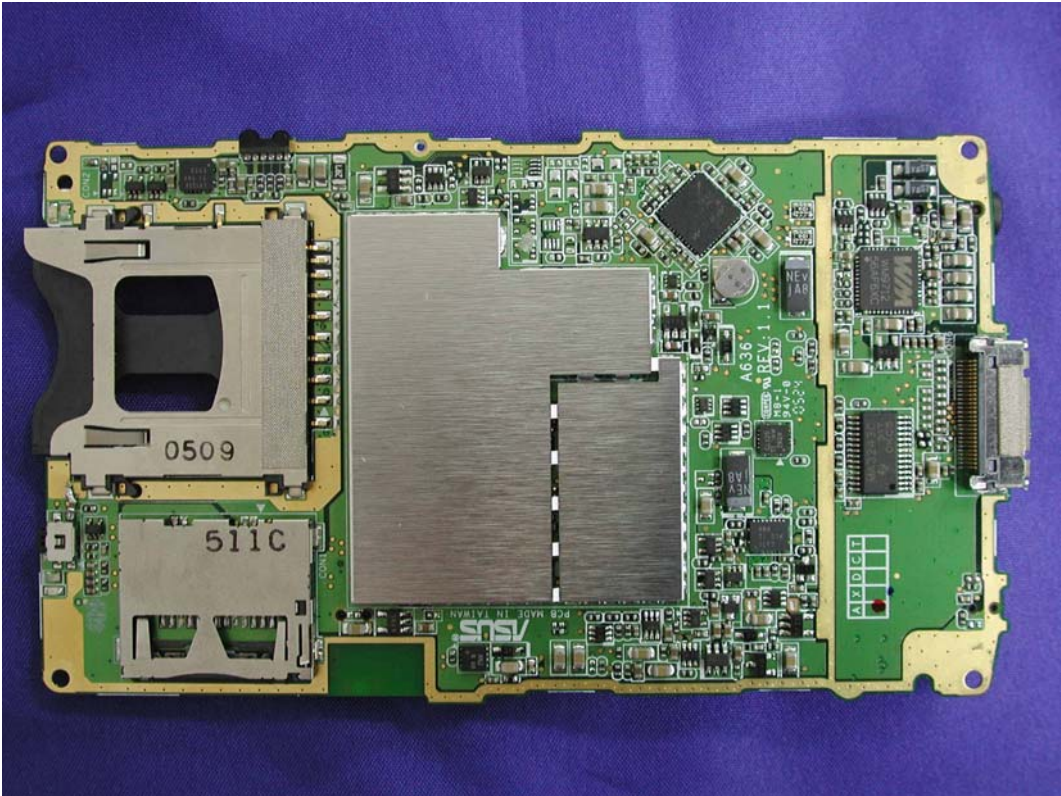
(11) EUT Photo



(12) EUT Photo



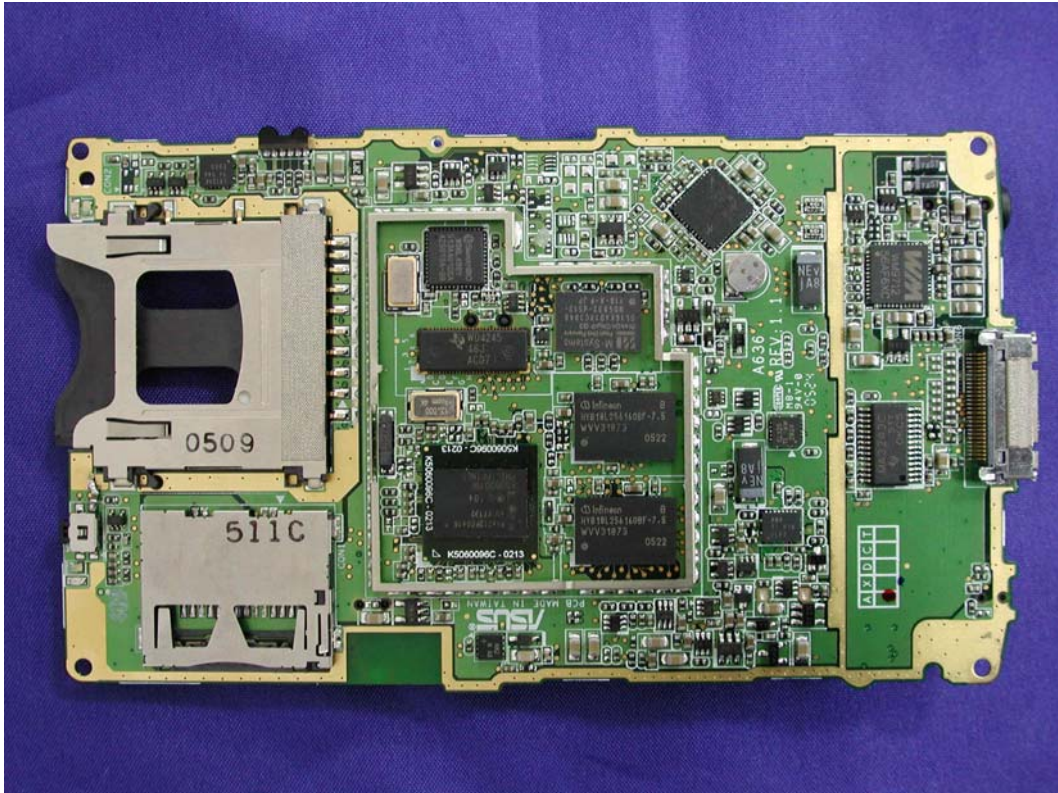
(13) EUT Photo



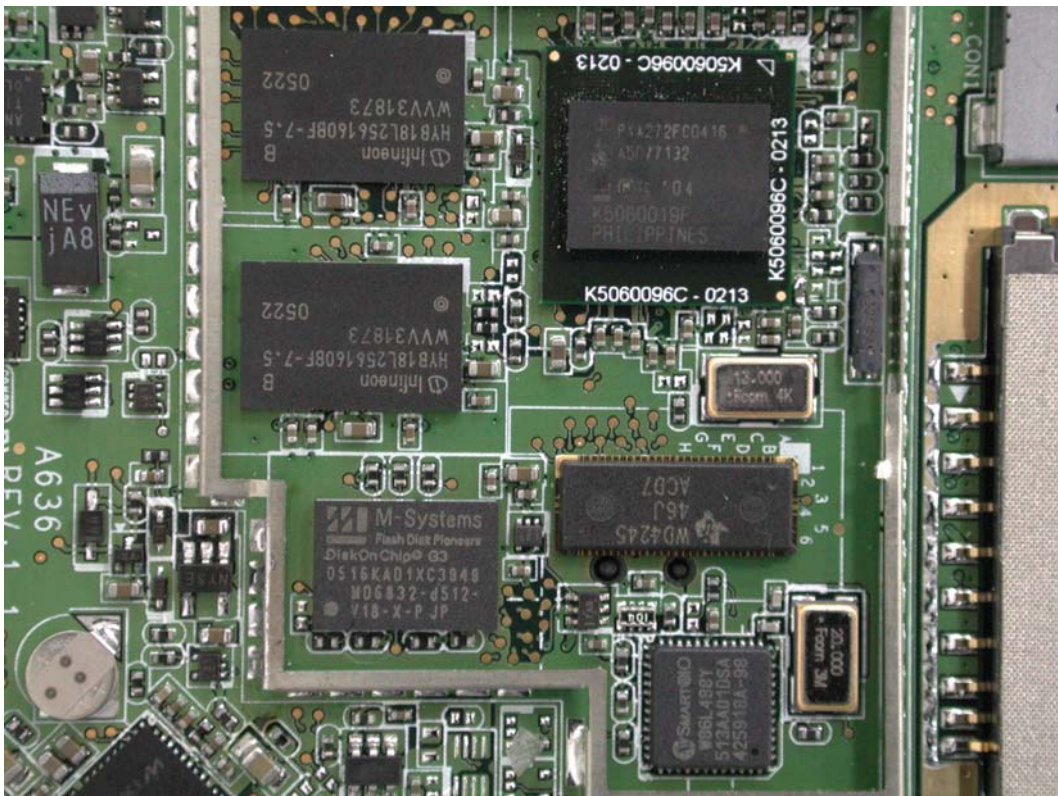
(14) EUT Photo



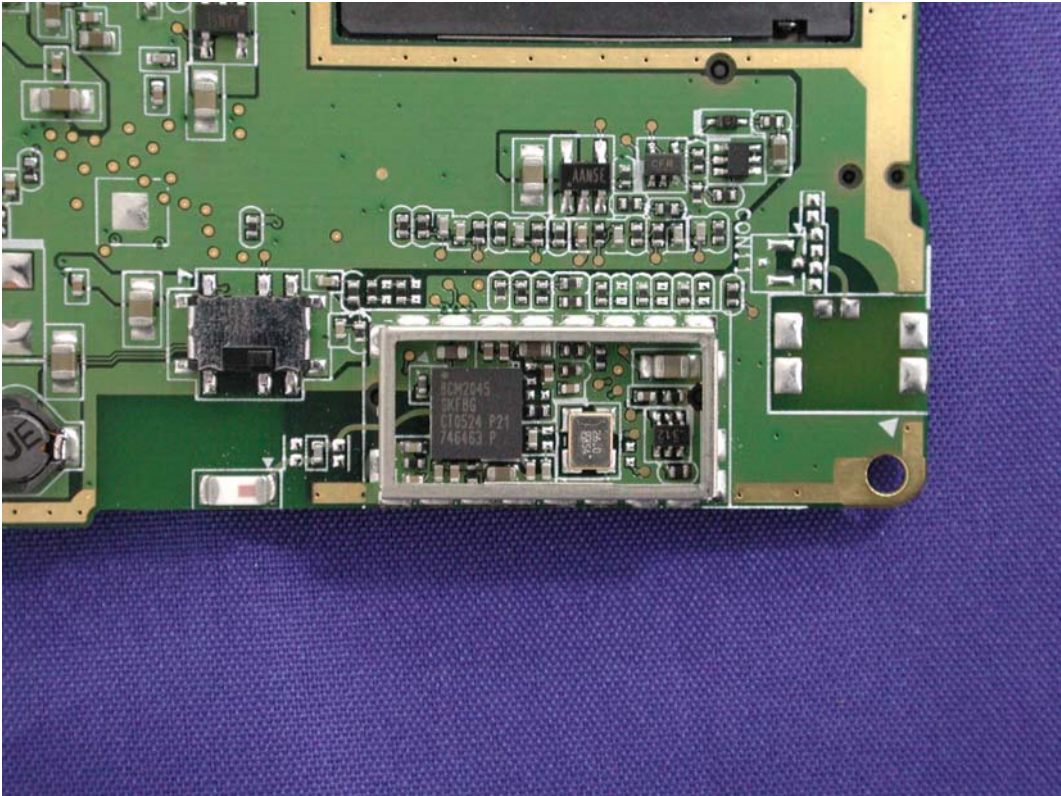
(15) EUT Photo



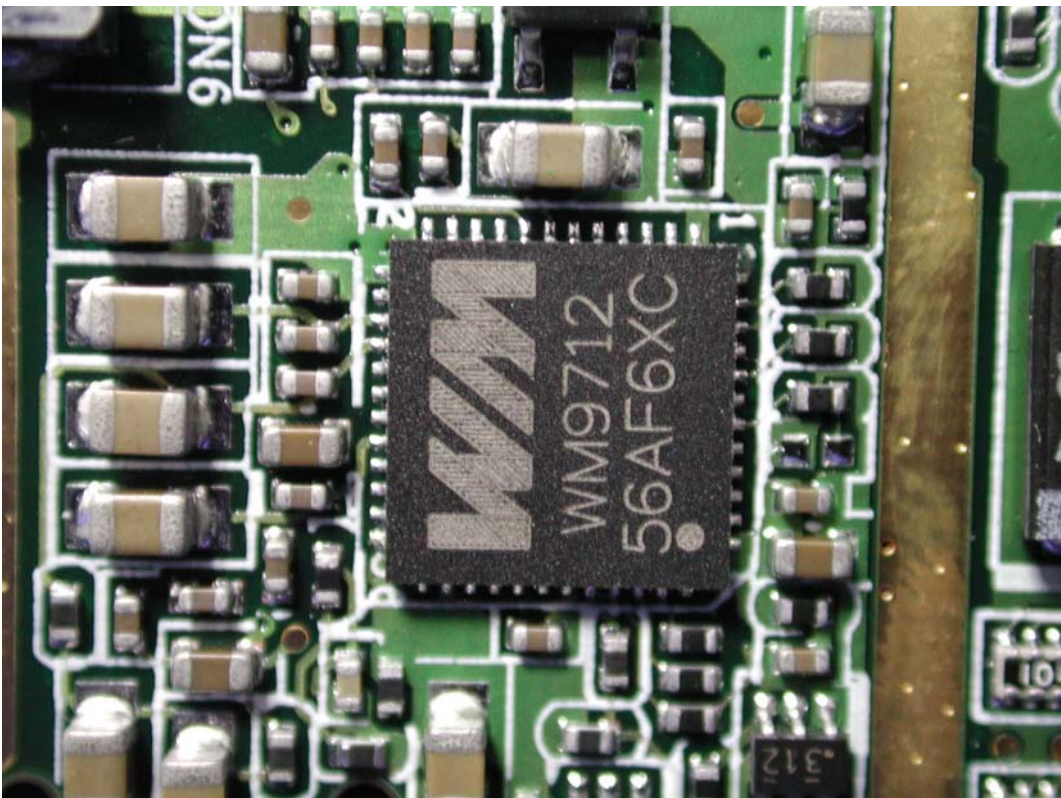
(16) EUT Photo



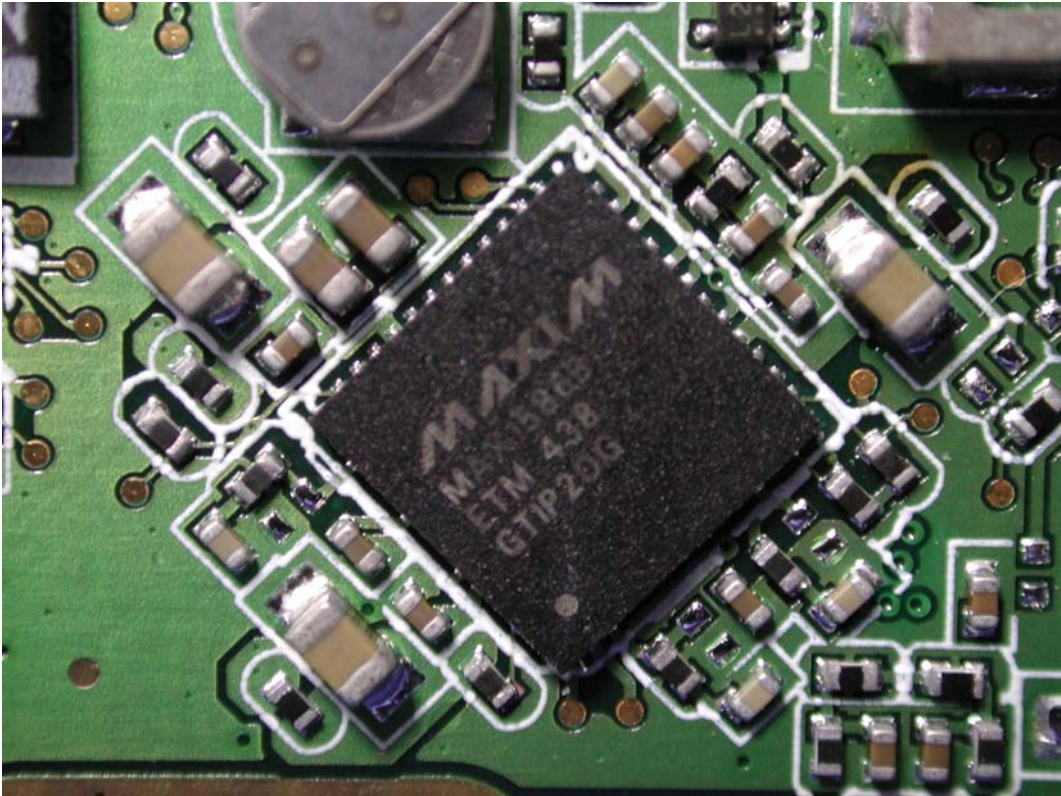
(17) EUT Photo



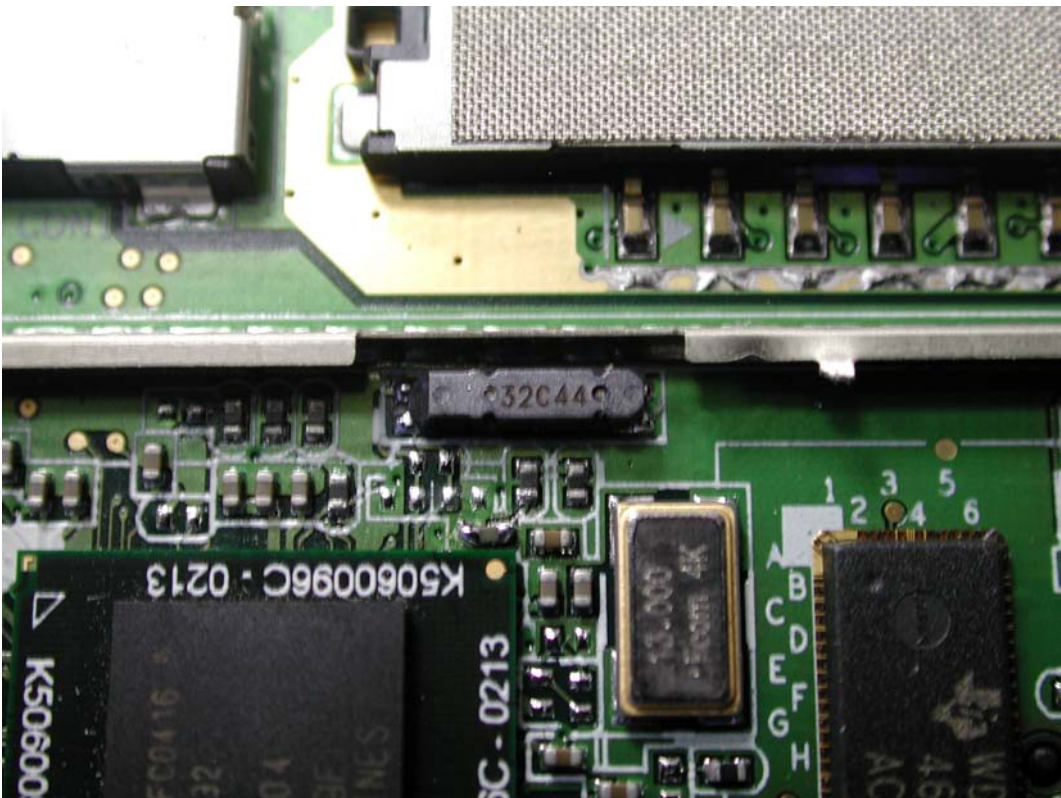
(18) EUT Photo



(19) EUT Photo



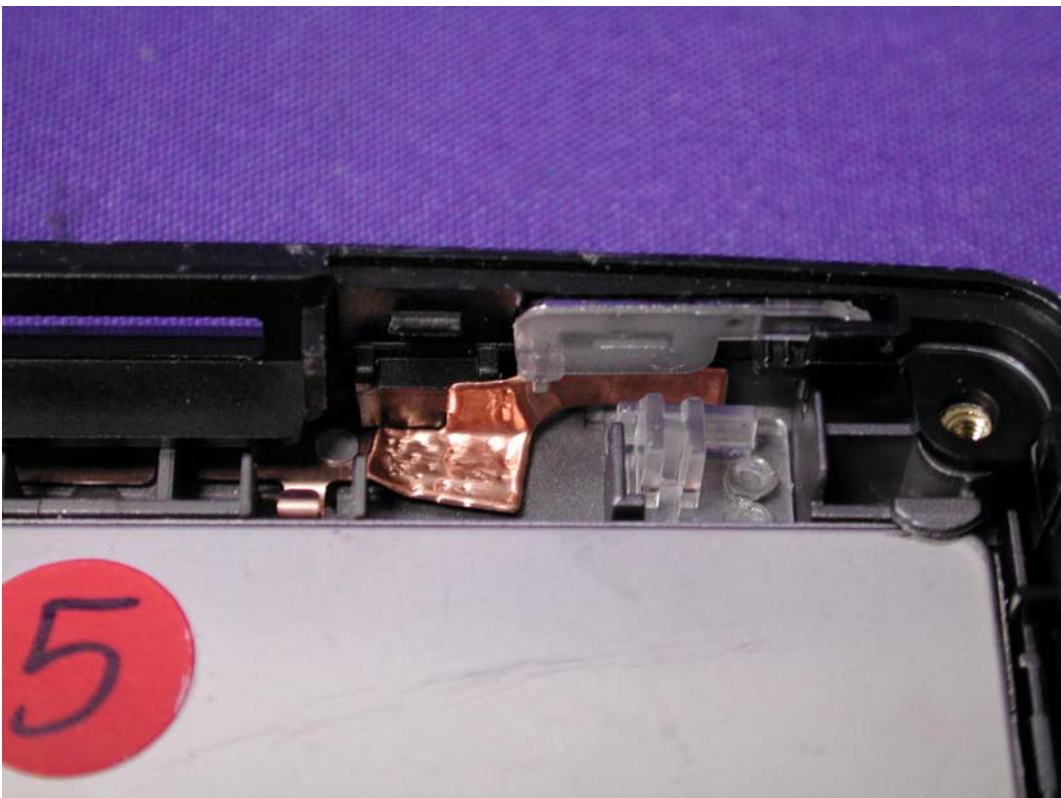
(20) EUT Photo



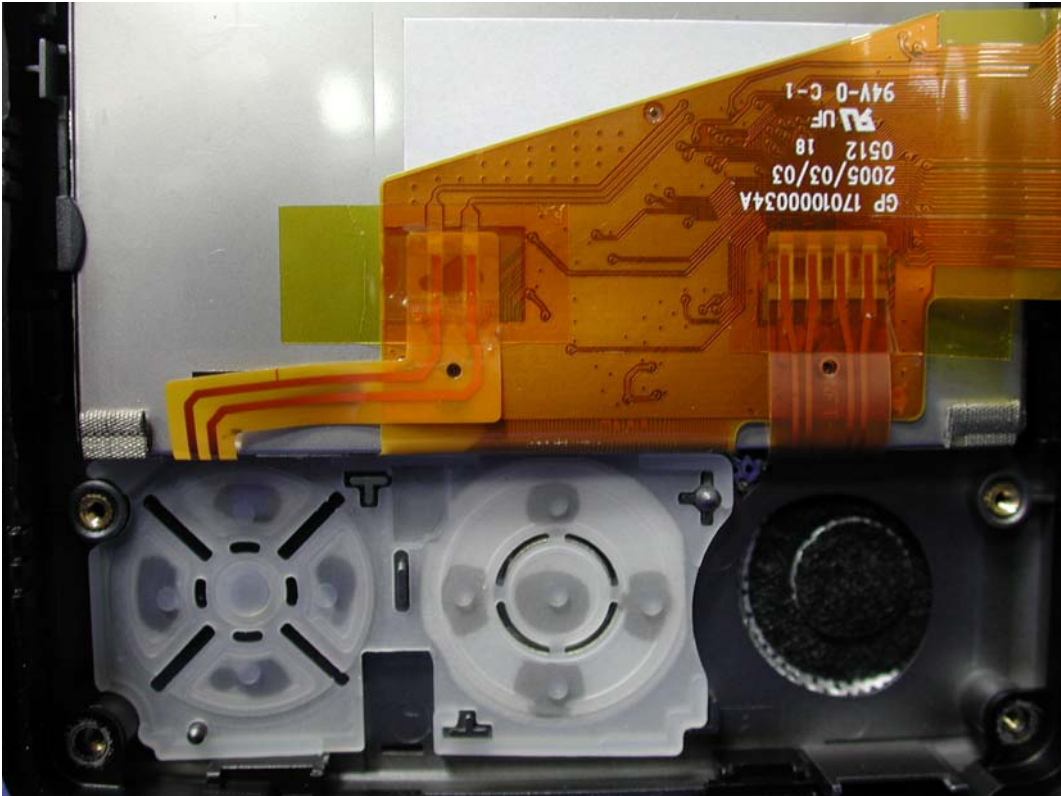
(23) EUT Photo



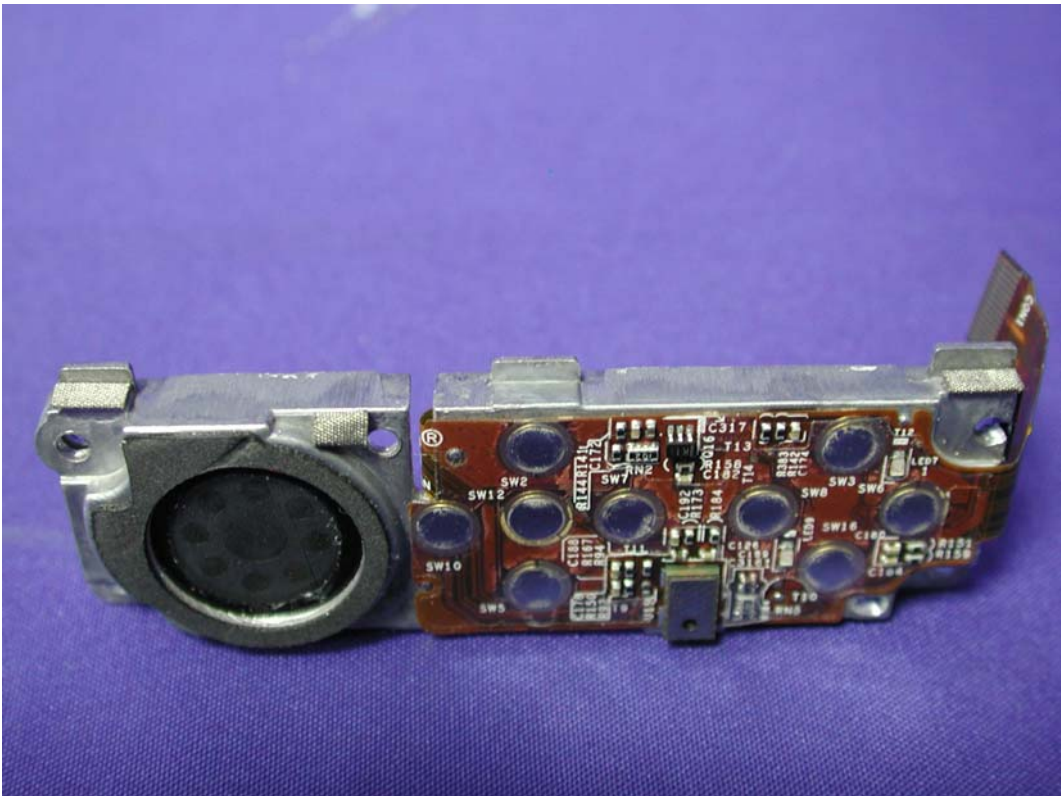
(24) EUT Photo



(25) EUT Photo



(26) EUT Photo



(27) EUT Photo



(28) EUT Photo



(29) EUT Photo



(30) EUT Photo



(31) EUT Photo



(32) EUT Photo

