Test Report
Application for
Declaration of Conformity
On Behalf Of

SAMMI INFORMATION SYSTEMS CO., LTD

EUT:
Industrial Tablet PC

Model Number:
Smart Tablet

FCC ID:
RQKSMARTTABLET

Prepared for:
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1. CERTIFICATION

Applicant : SAMMI INFORMATION SYSTEMS CO., LTD

EUT Description	: Industrial Tablet PC
Model Number	: Smart Tablet
Serial Number	: N/A
FCC ID	: RQKSMARTTABLET
Tested Power Supply	: 120V/60Hz

MEASUREMENT PROCEDURES USED:

☑ **CFR 47, Part 15**	Radio Frequency Device Subpart C Paragraph 15.247 Intentional Radiators :2000
☑ **ANSI C63.4**	Methods of Measurements of Radio-Noise Emissions from Low- Voltage Electrical and Electronic Equipment in the range of 9kHz To 40GHz. 2001

THE MEASUREMENT SHOWN IN THE ATTACHMENT WAS MADE IN ACCORDANCE WITH THE PROCEDURES INDICATED, AND THE MAXIMUM ENERGY EMITTED BY THE EQUIPMENT WAS FOUND TO BE WITHIN THE ABOVE LIMITS APPLICABLE.

Sample Received Date : **December 01, 2003**
Final Test Date : **May 30, 2004**

In order to ensure the quality and accuracy of this document, the contents have been thoroughly reviewed by the following qualified personnel from GesTek Lab.

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2. GENERAL INFORMATION

2.1 PRODUCTION DESCRIPTION

Product Name : Industrial Tablet PC
Model Number : Smart Tablet
Serial Number : N/A
FCC ID : RQKSMARTTABLET
Modulation Type : DBPSK, DQPSK, CCK/GFSK
Antenna Gain : Bluetooth: 0.5dBi
WLAN: 2dBi
Antenna Type : Soldered on PCB for Bluetooth USB Adapter
Connecter(MMCX) for WLAN Card
Frequencg Range : 2402-2480MHz for Bluetooth
2412-2462MHz for WLAN
Channel Number : 11 Channel / 79 Channel
Data Rate : 1, 2, 5.5, 11Mbps/ 723.2kbps
Channel Control : Manual
Working Voltage : AC 120V/60Hz
Power Cable : 1.8m, Non-Shielded, Non core

Frequency of Each Channel:

(1) WLAN :

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	5	2432	9	2452
2	2417	6	2437	10	2457
3	2422	7	2442	11	2462
4	2427	8	2447		

(2) Bluetooth：

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	2402	27	2429	54	2456
1	2403	28	2430	55	2457
2	2404	29	2431	56	2458
3	2405	30	2432	57	2459
4	2406	31	2433	58	2460
5	2407	32	2434	59	2461
6	2408	33	2435	60	2462
7	2409	34	2436	61	2463
8	2410	35	2437	62	2464
9	2411	36	2438	63	2465
10	2412	37	2439	64	2466
11	2413	38	2440	65	2467
12	2414	39	2441	66	2468
13	2415	40	2442	67	2469
14	2416	41	2443	68	2470
15	2417	42	2444	69	2471
16	2418	43	2445	70	2472
17	2419	44	2446	71	2473
18	2420	45	2447	72	2474
19	2421	46	2448	73	2475
20	2422	47	2449	74	2476
21	2423	48	2450	75	2477
22	2424	49	2451	76	2478
23	2425	50	2452	77	2479
24	2426	51	2453	78	2480
25	2427	52	2454		
26	2428	53	2455		

Note:

1. This device is an Tablet PC included 802.11b 2.4GHz Wireless LAN Card and Bluetooth USB Adapter .
2. The test is included WLAN and Bluetooth transmit function. Test of channel is included the lowest、middle and highest frequency in highest data rate and to perform the test, then record in this report.
3. 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.
4. The device is accordance with Part 15 regulations. The function receiving was under Declaration of Conformity and record of measurment in test report that the report number is 0312025 FCC DOC.

2.2 OPERATIONAL DESCRIPTION

The WLAN transmitter inside EUT is Mini PCI interface and powered by EUT. This device has one antenna and connect in PCB. The other instruction, please look at user manual.

This is a digital transmission system (DTS) and have four type of modulation DBPSK, DQPSK, CCK. The data rate are 1, 2, 5.5, 11Mbps Mbps.

The equipment enables high-speed access without wires to network assets. This adapter uses the IEEE 802.11b protocol to enable wireless communications between the host computer and other computers, in the same way that the computer would use an Ethernet adapter.

The Bluetooth USB Adapter inside EUT is an USB interface 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 (printers, faxes,….), portable handheld devices, and connectivity to the Internet.

2.3 TEST MODES & EUT COMPONENTS DESCRIPTION

EUT: Industrial Tablet PC, M/N: Smart Tablet	
CPU	Transmeta Crusoe 5800 (800MHz)
SDRAM	256MB
Display	Color Active Matrix 8.4" TFT LCD (800x 600), with resistive touch panel
Multi I/O	PS2 x 1, USB x 2, VGA, Audio, PCMCIA Type-II, CF type-II socket, mini PCI socket, LAN Port, telecom port (RJ-11)
H.D.D	TOSHIBA, 20GB, M/N: MK2018GAP
Wireless LAN Card	USI, M/N: MP-B-AG-00
Bluetooth USB Dongle	USI, M/N: UD-23011
GPS Antenna	Shielding Cable 2m, Non-Core
VGA Cable	Shielding Cable 0.2m, Non-core
LAN Cable	Non-shielding Cable 3m. with Core
Ferrite Core	EROCORE Enterprise Co., Ltd., M/N: FH1000B (For LAN Cable)
Power Adapter	LI SHIN, M/N: LSE9901B1970, cable out shielding 1.5m, core x 1 AC Input : 100-240V, 50/60Hz, 1.5A, DC Output: 19.0V, 3.68A, 70W
Power Cable	1.8m, Non-Shielded, Non core
Resolution	800 x 600, H-Sync:54KHz, V-Sync:85Hz

	Mode 1	**Mode 2**
Test Mode	WLAN (802.11b: 11Mbps)	Bluetooth

2.4 CONFIGURATION OF THE TESTED SYSTEM

The FCC IDs/Types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards, which have grants) are:

Device	No.	Configuration
D-Sub Monitor	**M01-031**	Manufacturer : ADI Model Number : MICRO SCAN G1000 Serial Number : N/A BSMI ID : 3892A351 FCC ID : N/A Data Cable : Shielded, detachable, 1.5m, VGA Cable Power Cord : 3Pin, Shielded, Detachable, 1.5m
Headset & Earphone	**E01-052**	Manufacturer : TOKYO Model Number : SX-M1 Serial Number : N/A Data Cable : Non-Shielded, Undetachable, 1.8 m Power Cord : N/A Purchase Date : 2/22/1999
USB Mouse	**M02-210**	Manufacturer : Logitech Model Number : M-U48A BSMI ID : 4882A177 FCC ID : JNZ211360 Data Cable : Shielded, Undetachable, 1.5m
PS2 Keyboard	**K01-090**	Manufacturer : IBM Model Number : SK-8811 Serial Number : 01979618 BSMI ID : 3902B330 FCC ID : N/A Data Cable : Shielded, Undetachable, 1.8 m
USB Mouse	**M02-237**	Manufacturer : Logitech Model Number : M-U48A BSMI ID : 4882A177 FCC ID : JNZ211360 Data Cable : Shielded, Undetachable, 1.5m
Modem	**M03-006**	Manufacturer : ACEEX Model Number : 2814 Serial Number : 960018051 BSMI ID : N/A FCC ID : IFAXDM2814 Data Cable : Type:RS232, Shielded, Detachable, 1.2m Power Cord : Non-Shielded, Detachable, 1.5m Line : Type:RJ11(4P2C), Detachable, 1.8m Phone : Type:RJ11(4P2C), Detachable, 1.8m

Device	No.	Configuration
Bluetooth Adaptor	---	Manufacturer : Level Model Number : MDU-0005USB
Wireless LAN Card	---	Manufacturer : PESI Model Number : CPWUA001
Notebook PC	----	Manufacturer : DELL COMPUTER Model Number : PP05L BSMI ID : R33002 FCC ID : N/A Power Cord : Non-Shielded, Detachable, 1.5m.
Far End Network Server	----	Manufacturer : ASUS Model Number : AP160R Power Cord : Non- Shielded, Detachable, 1.8m
Electronic Private Automatic Branch Exchange	-----	Manufacturer : Sun Moon Star Model Number : SMS-4 Serial Number : 9708006 FCC ID : N/A Data Cable to EUT : Type:RJ11(4P2C), Detachable, 1.5m Power Cord : Non-Shielded, Detachable, 1.5m

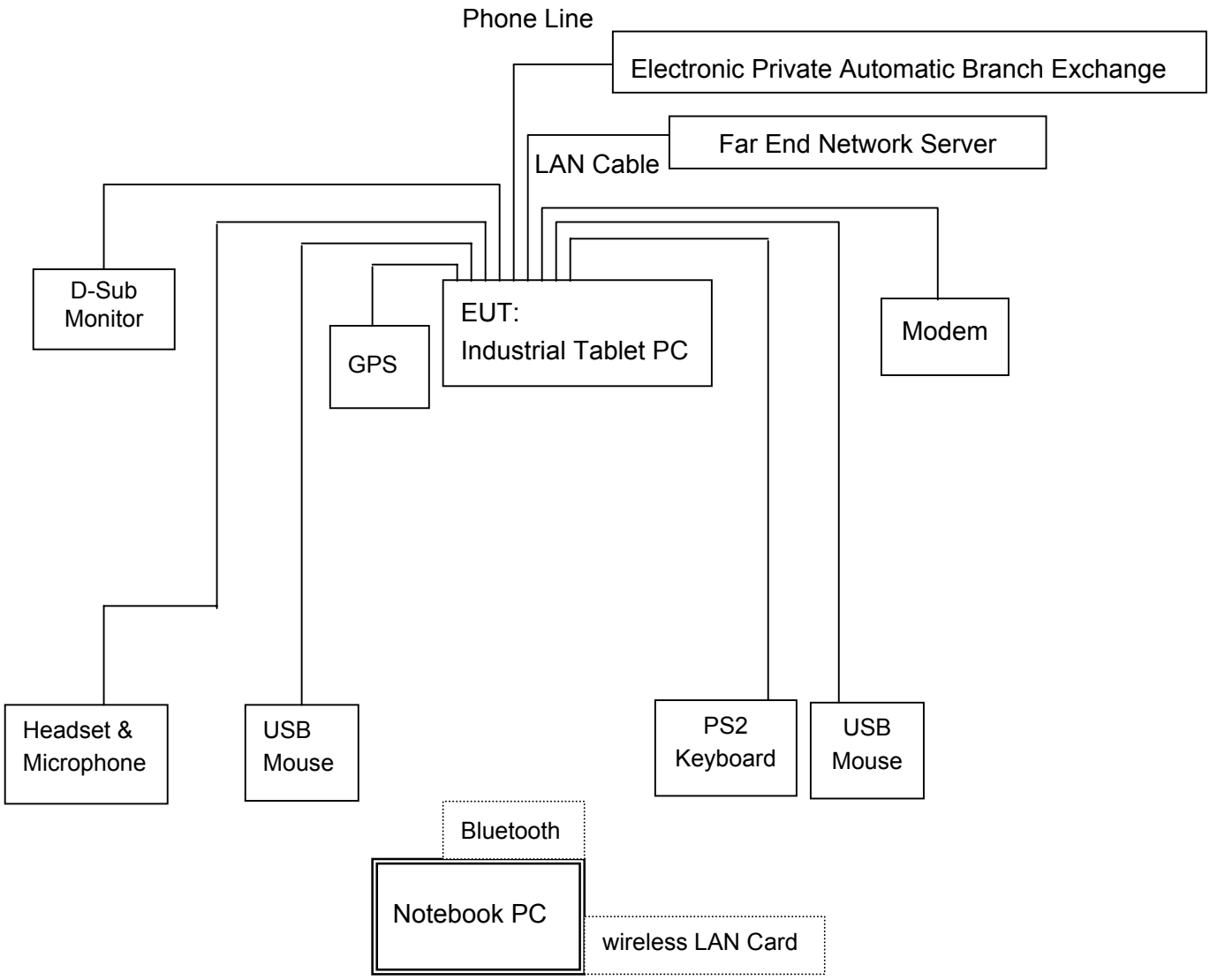
2.5 TEST FACILITY

Ambient conditions in the laboratory:

ITEMS	REQIORED(IEC 68-1)	ACTUAL
TEMPERATURE (°C)	15-35	24-27
HUMIDITY (%RH)	25-75	50-65
BAROMETRIC PRESSURE (mbar)	860-1060	950-1000
FCC SITE DESCRIPTION	Aug. 10, 1995 /Aug. 25, 1998 File on FCC Engineering Laboratory Federal Communication Commission 7435 Oakland Mills Road Columbia, MD 21046 Reference 31040/SIT1300F2	
NVLAP LAB. CODE	200085-0 United Stated Department of commerce National Institute of Standards and Technology National Voluntary Laboratory Accreditation Program Accreditation on NVLAP effective through Sep. 30,2004 For CISPR 22, FCC Method and AS/NZS 3548 Measurement.	
Chinese National Laboratory Accreditation Certificate R.O.C.	Recognized by the Council of Chinese National Laboratory Accreditation and confirmed to meet the requirements of ISO/IEC 17025 also has been registered for fifteen items, and meet the requirements of the Article 4 of Measures Governing the Recognition both Approval of Designated Laboratory for Commodities Inspection and has been registered for four items within the field of Electrical Testing. Registration No.: 1082 Registration on CNLA effective through April 30, 2006.	

2.6 TEST SETUP

2.6.1 BLOCK DIAGRAM OF CONNECTIONS BETWEEN EUT AND SIMULATORS



2.7 EUT OPERATING CONDITIONS

The EUT exercise program used during conducted testing was designed to exercise the EUT in a manner similar to a typical use. The exercise sequence is listed as below:

1. Setup the EUT and simulators as shown on 2.6.
2. Turn on the power of all equipments.
3. The EUT ping with the wireless LAN card and bluetooth
4. Repeat the above steps.

3. CONDUCTION EMISSION DATA

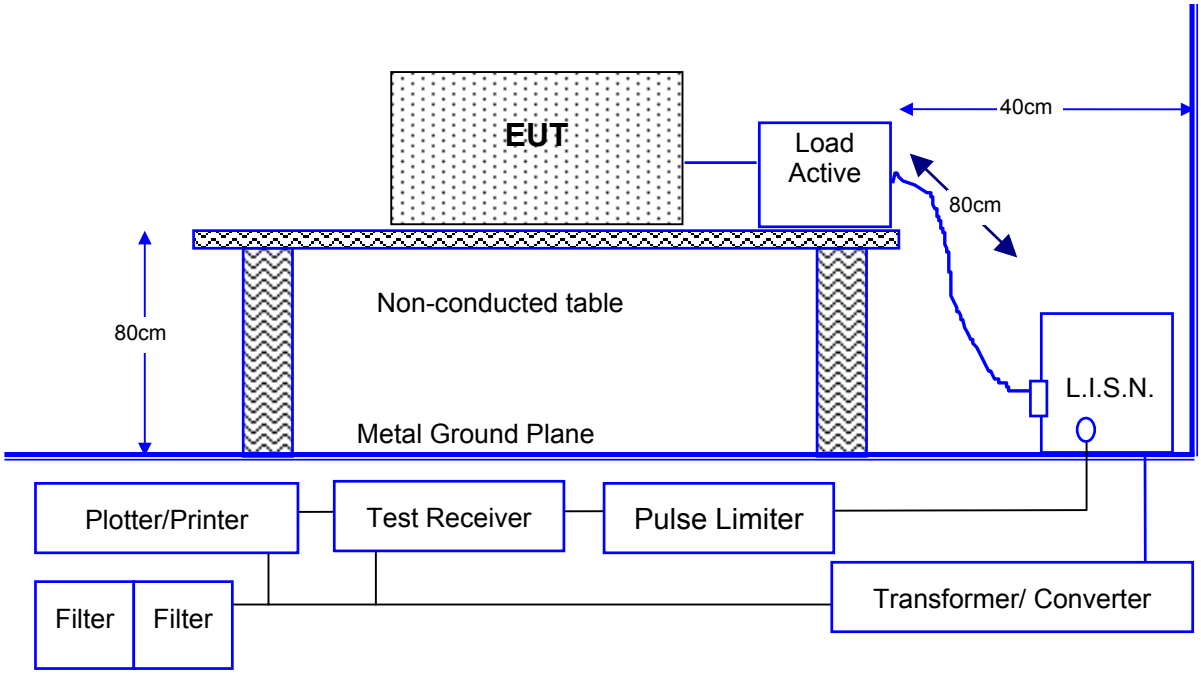
3.1 TEST EQUIPMENTS

The following test equipment are used during the conducted power line tests:

Item	Instrument	Manufacturer	Model	Serial No.	Last Cal.
1	Test Receiver	Rohde & Schwarz	ESHS30	828109/010	12/22/03
2	L.I.S.N.	KYORISTU	KNW-407	8-1345-10	11/20/03
3	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	357.8810.52	08/07/03
4	RF CABLE	GesTek	N/A	GTK-E-A154-01	12/03/03
5	50 Ohm Terminator	GesTek	N/A	GTK-E-A130-01	10/11/03
6	Shielded Room	GesTek	N/A	B5	N/A

Note: All measurement critical items of test instrumentation were within their calibration period of 1 year.

3.2 BLOCK DIAGRAM OF TEST SETUP



Note: This is a reprehensive setup diagram for Table-top EUT.
For Floor-standing EUT, the table will be removed with all others setup condition remain the same.

3.3 CONDUCTED EMISSION LIMIT

☒FCC Limit (15.207)

Frequency	Conducted Limits dB(μV)	
MHz	QUASI-PEAK	AVERAGE
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5.0	56	46
5.0 to 30	60	50

Remarks : In the Above Table, the tighter limit applies at the band edges.

3.4 OPERATING CONDITION OF EUT

Same as section 2.8.

3.5 EUT CONFIGURATION ON MEASUREMENT

The equipment, which is listed 3.1, is installed on Conducted Power Line Test to meet the Commission requirement and operating in a manner, which tends to maximize its emission characteristics in a normal application.
The device under test, installed in a representative system as described in section 3.2, was placed on a non-conductive table whose total height equal to 80cm. Powered from one L.I.S.N. which signal output to receiver, and the other peripherals was powered from another L.I.S.N. which signal output was terminated by 50Ω.

3.6 CONDUCTED EMISSION DATA

The measurement range of conducted emission from **0.15 MHz to 30 MHz** was investigated. All readings are quasi-peak and average values with a resolution Bandwidth of 9 KHz. The initial step in collecting conducted data is a spectrum analyzer peak scan of the measurement range for all the test modes. Then the worst modes were reported the following data pages.

3.7 CONDUCTED EMISSIONS MEASUREMENT RESULTS

Date of Test	April 30, 2004	Temperature	23 ℃
EUT	Industrial Tablet PC	Humidity	56 %
Test Mode	Tx Mode	Display Pattern	H Pattern

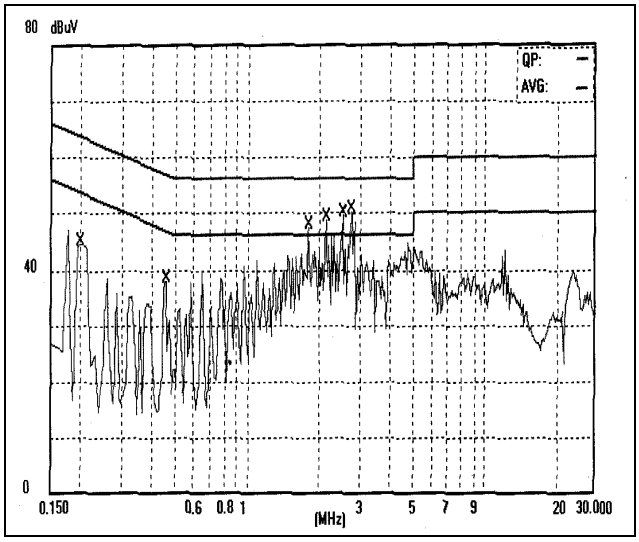
No.	FREQUENCY	READING LEVEL dBμV		LIMIT	
	MHz	LINE1 Q.P.	LINE1 AV.	Q.P.	AV.
1	0.1935	43.89	35.31	63.88	53.88
2	0.4587	38.21	33.74	56.72	46.72
3	1.8250	49.34	42.87	56.00	46.00
4	2.1488	50.42	41.50	56.00	46.00
5	2.5434	51.43	43.45	56.00	46.00
6	★2.7400	49.45	44.10	56.00	46.00

No.	FREQUENCY	READING LEVEL dBμV		LIMIT	
	MHz	LINE2 Q.P.	LINE2 AV.	Q.P.	AV.
1	0.1971	42.11	27.15	63.73	53.73
2	1.4975	46.67	39.68	56.00	46.00
3	2.3448	51.50	41.92	56.00	46.00
4	2.5436	50.80	39.61	56.00	46.00
5	★3.0632	49.32	42.94	56.00	46.00
6	5.2783	45.95	39.72	60.00	50.00

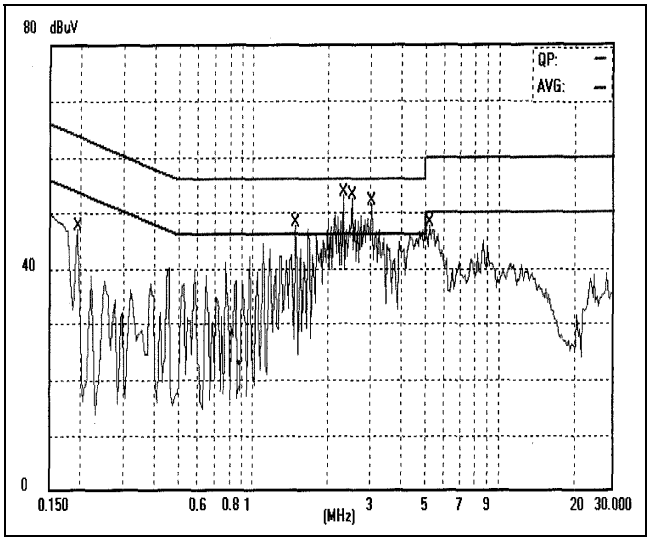
Remarks :

1 All readings are Quasi-peak and Average..
2 "★ " means that this data is the worse case emission level.
3 Final measurement = (Receiver reading) + (Correction factor if available).

Line 1



Line 2



4. RADIATION EMISSION DATA

4.1 TEST EQUIPMENT

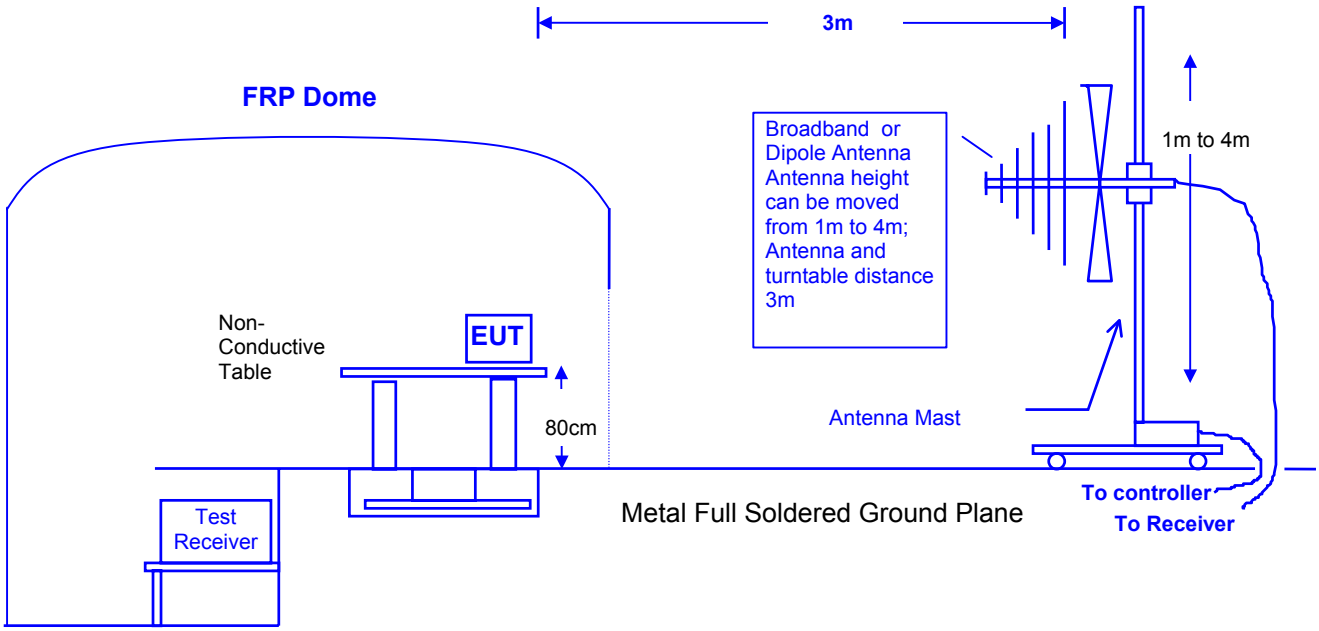
The following test equipments are used during the radiated emission tests:
Radiated test was performed on: ☐Site #1 ☒Site #2 ☐Site #3 ☐Site #4

Item	Instrument	Manufacturer	Model	Serial No.	Last Cal.
1	Test Receiver	Rohde & Schwarz	ESVS30	829007/014	12/13/03
2	Spectrum Analyzer	Rohde & Schwarz	FSP40	100061	03/16/04
3	Spectrum Analyzer	HP	E4407B	39240339	08/16/03
4	Power Meter	Rohde & Schwarz	NRVS	100666	04/29/04
5	Peak Power Sensor	Rohde & Schwarz	NRV-Z32	8360191058	04/29/04
6	Pre-Amplifier	HP	8449B	3008A01263	10/11/03
7	BILOG ANTENNA	SCHAFFNER	CBL6112B	2620	12/01/03
8	Horn Antenna	Electro-Metrics	EM-6961	103318	05/30/03
9	Horn Antenna	Schwarzbeck	BBHA 9120	D243	12/18/03
10	RF Cable	GesTek	N/A	GTK-E-A151-01	02/09/04
11	Open Site	GesTek	N/A	B1	11/25/03
12	Test Program Software	GesTek	N/A	GTK-E-S001-01	N/A

Note: All measurement critical items of test instrumentation were within their calibration period of 1 year.

4.2 OPEN TEST SITE SETUP DIAGRAM

Note: This is a reprehensive setup diagram for Table-top EUT.
For Floor-standing EUT, the table will be removed with all others setup condition remain the same.



4.3 RADIATED EMISSION LIMIT

☒**FCC Class C Limit at 3m**

Frequency	Distance	Field Strength	
MHz	Meter	μV/M	dBμV/M
30 to 88	3	100	40.0
88 to 216	3	150	43.5
216 to 960	3	200	46.0
Above 960	3	500	54.0

Note：The frequencies above 1000MHz, as measured using instrumentation with a peak detector function was corresponding to 20dB above the maximum permitted average limit.

4.4 EUT CONFIGURATION

The equipment, which is listed on 4.1 was, installed on radiated emission test to meet the commission requirement and operating in a manner which tends to maximize its emission characteristics in a normal application.

The device under test, installed in a representative system as described in section 4.2, was placed on a non-conductive table whose total height equaled 80 cm. This table can be rotated 360 degree. The measurement antenna was mounted to a non-conductive mast capable of moving the antenna vertically. Antenna height was varied from 1 meter to 4 meters and the system under test was rotated from 0 degree through 360 degrees relative to the antenna position and polarization (Horizontal and Vertical). Also the I/O cable position was investigated to find the maximum emission condition.

4.5 OPERATING CONDITION OF EUT

Same as section 2.8.

4.6 RADIATED EMISSION DATA

The measurement range of radiated emissions from **30 MHz to 10 Harminics** was investigated. All readings below 1GHz are quasi-peak values with a resolution bandwidth of 120 KHz. Above 1GHz are peak and avg. values with a resolution bandwidth of 1MHz. The initial step in collecting radiated emission data is a spectrum analyzer peak scans of the measurement range for all the test modes and then use test receiver for final measurement. Then the worst modes were reported the following data pages..

4.7 RADIATED EMISSIONS MEASUREMENT RESULTS

Date of Test	April 27, 2004	**Temperature**	25 deg/C
EUT	Industrial Tablet PC	**Humidity**	55 %RH
Working Cond.	WLAN (Channel 1)	**Display Pattern**	H Pattern
Antenna distance	3m at **Horizontal**	**Frequency Range**	30-1000MHz

No.	Frequency [MHz]	Cable Loss [dB]	Antenna Factor [dB/m]	Reading Level [dB(μV)]	Emission Level [dB(μV/m)]	Amp. Factor [dB]	Limit [dB(μV/m)]	Margin [dB]
1	33.100	1.06	18.89	11.25	31.20	0.00	40.00	-8.80
2	131.880	2.08	12.74	19.60	34.42	0.00	43.50	-9.08
3	156.200	2.30	11.38	20.30	33.98	0.00	43.50	-9.52
4	164.075	2.35	10.89	22.42	35.66	0.00	43.50	-7.84
5	184.333	2.52	10.08	24.30	36.90	0.00	43.50	-6.60
6	200.453	2.66	10.40	23.70	36.76	0.00	43.50	-6.74
7	228.580	2.87	11.69	20.59	35.15	0.00	46.00	-10.85
8	240.008	2.97	12.23	26.95	42.15	0.00	46.00	-3.85
9	263.910	3.18	13.08	15.20	31.46	0.00	46.00	-14.54
10	271.063	3.28	13.27	25.00	41.55	0.00	46.00	-4.45
11	★300.693	3.65	14.12	25.10	42.87	0.00	46.00	-3.13
12	327.150	3.88	14.75	18.30	36.93	0.00	46.00	-9.07
13	374.390	4.28	15.89	12.06	32.23	0.00	46.00	-13.77
14	400.906	4.45	16.51	18.20	39.16	0.00	46.00	-6.84
15	427.439	4.61	16.85	13.60	35.06	0.00	46.00	-10.94
16	500.190	4.99	17.80	12.60	35.39	0.00	46.00	-10.61
17	527.680	5.20	18.13	15.60	38.93	0.00	46.00	-7.07
18	672.900	6.09	19.50	14.20	39.79	0.00	46.00	-6.21

Remarks:

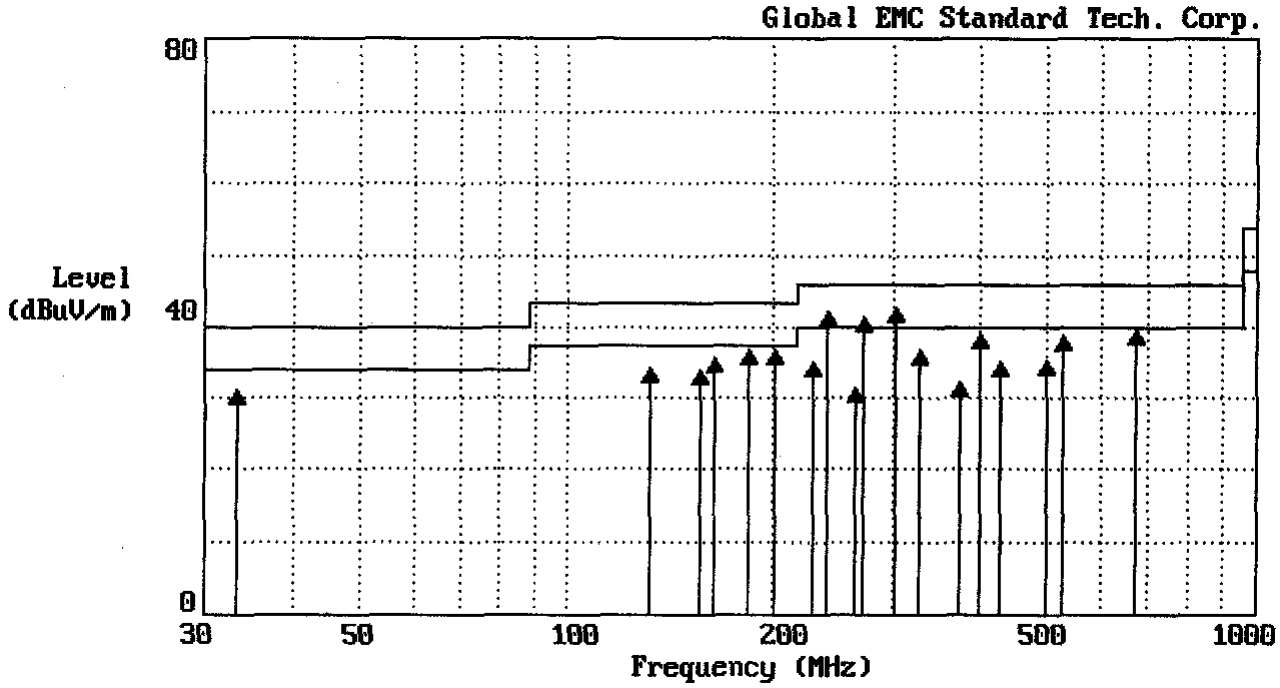
1. All Readings below 1GHz are Quasi-Peak.
2. Emission Level= Reading + Antenna Factor + Cable loss (Could have ±0.01 tolerance due to computer automatically round off calculation).
3. Margin Value=Emission level-Limit value.
4. The "★" means this data is the worse case emission level.

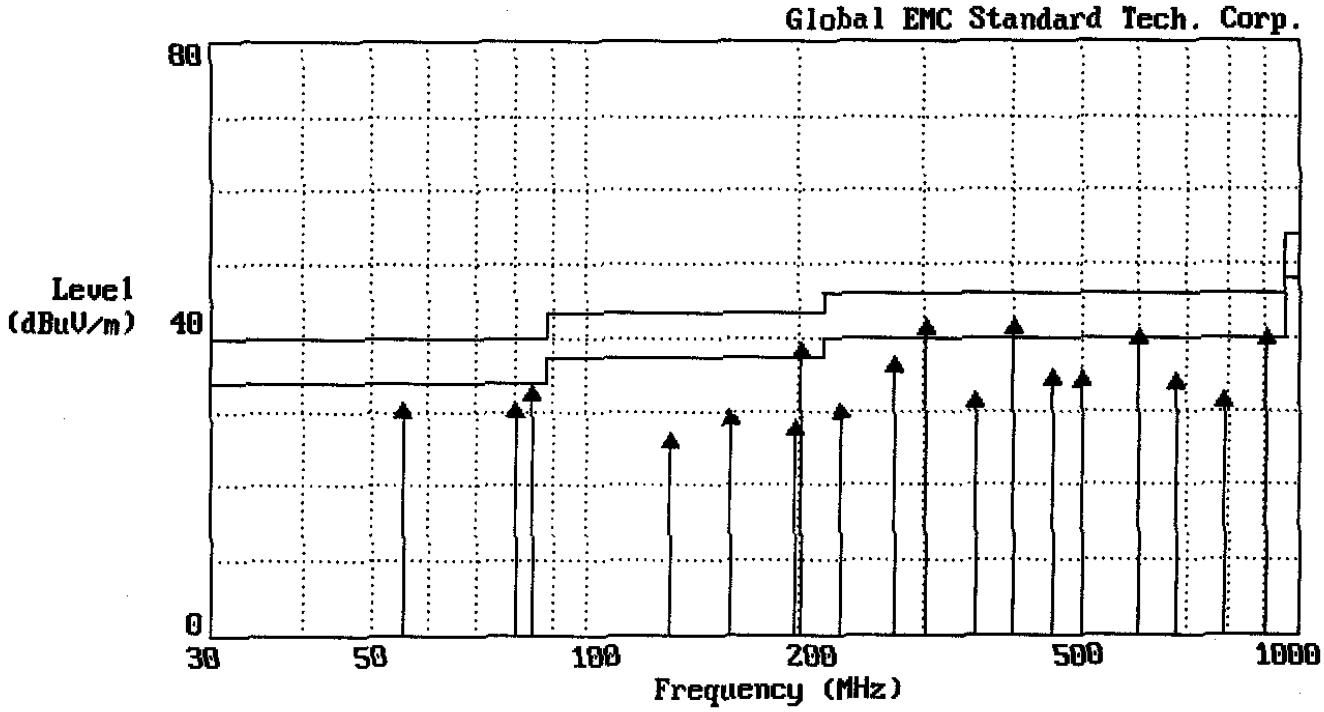
Date of Test	April 27, 2004	**Temperature**	25 deg/C
EUT	Industrial Tablet PC	**Humidity**	55 %RH
Working Cond.	WLAN (Channel 1)	**Display Pattern**	H Pattern
Antenna distance	3m at **Vertical**	**Frequency Range**	30-1000MHz

No.	Frequency [MHz]	Cable Loss [dB]	Antenna Factor [dB/m]	Reading Level [dB(μV)]	Emission Level [dB(μV/m)]	Amp. Factor [dB]	Limit [dB(μV/m)]	Margin [dB]
1	55.240	1.34	8.34	21.89	31.58	0.00	40.00	-8.42
2	79.775	1.57	7.68	22.29	31.54	0.00	40.00	-8.46
3	83.970	1.69	7.99	24.00	33.68	0.00	40.00	-6.32
4	131.057	2.06	12.75	12.50	27.31	0.00	43.50	-16.19
5	159.900	2.31	11.15	16.80	30.26	0.00	43.50	-13.24
6	197.290	2.64	10.33	15.90	28.87	0.00	43.50	-14.63
7	200.452	2.66	10.40	26.50	39.56	0.00	43.50	-3.94
8	228.650	2.87	11.69	16.50	31.06	0.00	46.00	-14.94
9	271.458	3.28	13.27	20.90	37.45	0.00	46.00	-8.55
10	★300.677	3.65	14.12	24.90	42.67	0.00	46.00	-3.33
11	353.800	4.12	15.38	13.20	32.70	0.00	46.00	-13.30
12	400.906	4.45	16.51	21.50	42.46	0.00	46.00	-3.54
13	455.684	4.79	17.22	13.60	35.61	0.00	46.00	-10.39
14	500.123	4.99	17.80	12.60	35.39	0.00	46.00	-10.61
15	599.790	5.68	18.99	16.50	41.17	0.00	46.00	-4.83
16	674.331	6.09	19.52	9.50	35.11	0.00	46.00	-10.89
17	787.613	6.62	20.22	5.90	32.74	0.00	46.00	-13.26
18	902.058	7.40	21.31	12.30	41.01	0.00	46.00	-4.99

Remarks:

1. All Readings below 1GHz are Quasi-Peak.
2. Emission Level= Reading + Antenna Factor + Cable loss (Could have ±0.01 tolerance due to computer automatically round off calculation).
3. Margin Value=Emission level-Limit value.
4. The "★" means this data is the worse case emission level.


Global EMC Standard Tech. Corp.
Level
(dBuV/m)
80
40
0
30
50
100
200
500
1000
Frequency (MHz)

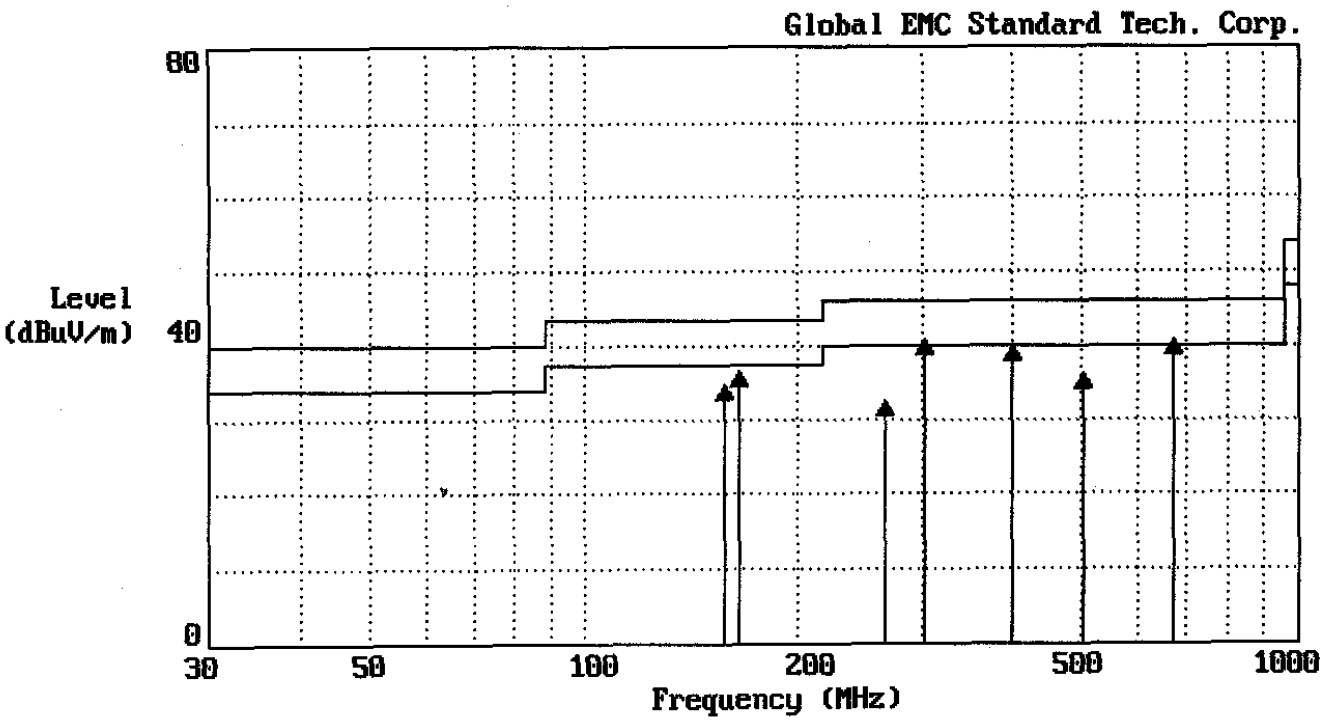

Global EMC Standard Tech. Corp.
Level
(dBuV/m)
80
40
0
30
50
100
200
500
1000
Frequency (MHz)

Date of Test	April 27, 2004	**Temperature**	25 deg/C
EUT	Industrial Tablet PC	**Humidity**	55 %RH
Working Cond.	WLAN (Channel 6)	**Display Pattern**	H Pattern
Antenna distance	3m at **Horizontal**	**Frequency Range**	30-1000MHz

No.	Frequency [MHz]	Cable Loss [dB]	Antenna Factor [dB/m]	Reading Level [dB(μV)]	Emission Level [dB(μV/m)]	Amp. Factor [dB]	Limit [dB(μV/m)]	Margin [dB]
1	157.230	2.30	11.30	21.25	34.85	0.00	43.50	-8.65
2	165.074	2.35	10.83	23.41	36.59	0.00	43.50	-6.91
3	265.170	3.25	13.11	16.21	32.57	0.00	46.00	-13.43
4	★300.500	3.65	14.10	23.12	40.87	0.00	46.00	-5.13
5	400.150	4.42	16.50	19.21	40.13	0.00	46.00	-5.87
6	501.260	5.01	17.80	13.60	36.41	0.00	46.00	-9.59
7	673.900	6.09	19.51	15.20	40.80	0.00	46.00	-5.20

Remarks:

1. All Readings below 1GHz are Quasi-Peak.
2. Emission Level= Reading + Antenna Factor + Cable loss (Could have ±0.01 tolerance due to computer automatically round off calculation).
3. Margin Value=Emission level-Limit value.
4. The "★" means this data is the worse case emission level.

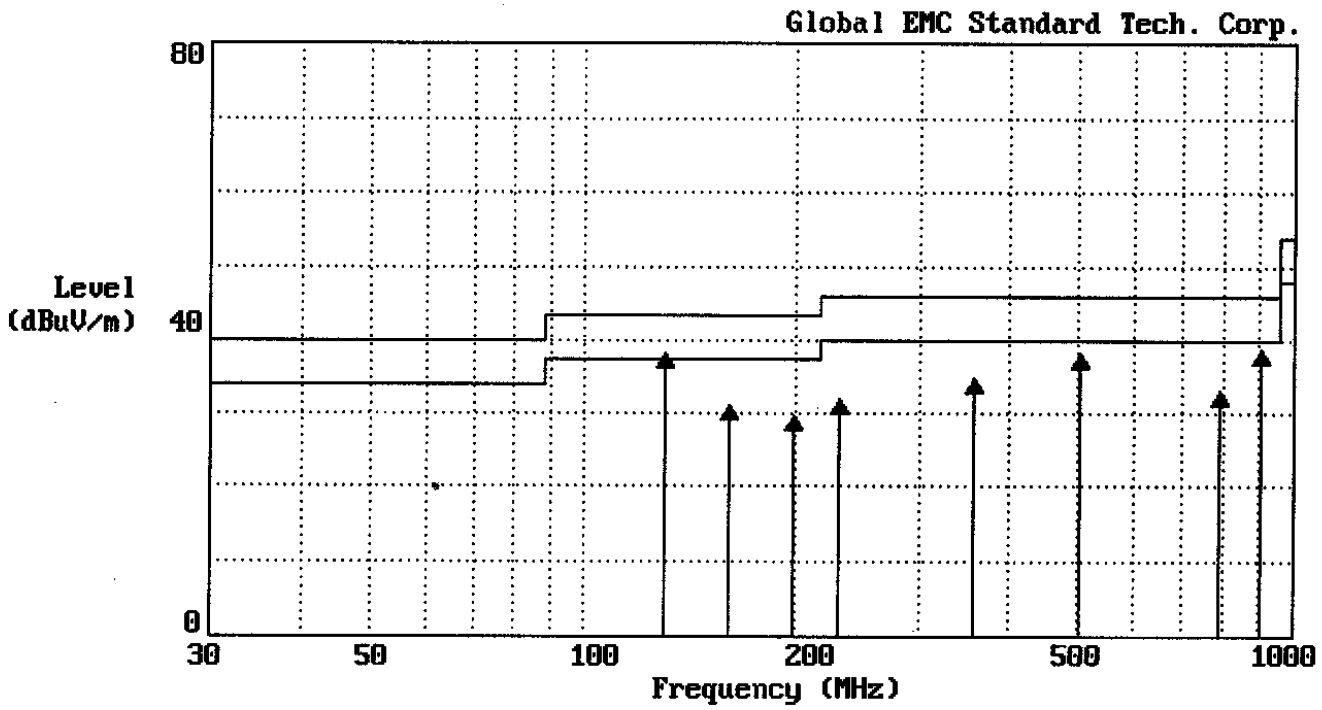


Date of Test	April 27, 2004	**Temperature**	25 deg/C
EUT	Industrial Tablet PC	**Humidity**	55 %RH
Working Cond.	WLAN (Channel 6)	**Display Pattern**	H Pattern
Antenna distance	3m at **Vertical**	**Frequency Range**	30-1000MHz

No.	Frequency [MHz]	Cable Loss [dB]	Antenna Factor [dB/m]	Reading Level [dB(μV)]	Emission Level [dB(μV/m)]	Amp. Factor [dB]	Limit [dB(μV/m)]	Margin [dB]
1	★130.056	2.06	12.75	23.56	38.37	0.00	43.50	-5.13
2	160.970	2.33	11.05	17.89	31.27	0.00	43.50	-12.23
3	198.210	2.64	10.35	16.90	29.89	0.00	43.50	-13.61
4	229.650	2.90	11.74	17.50	32.14	0.00	46.00	-13.86
5	355.650	4.13	15.43	15.20	34.76	0.00	46.00	-11.24
6	501.230	5.01	17.80	15.60	38.41	0.00	46.00	-7.59
7	788.980	6.65	20.23	6.23	33.11	0.00	46.00	-12.89
8	901.230	7.40	21.30	10.25	38.95	0.00	46.00	-7.05

Remarks:

1. All Readings below 1GHz are Quasi-Peak.
2. Emission Level= Reading + Antenna Factor + Cable loss (Could have ±0.01 tolerance due to computer automatically round off calculation).
3. Margin Value=Emission level-Limit value.
4. The "★" means this data is the worse case emission level.

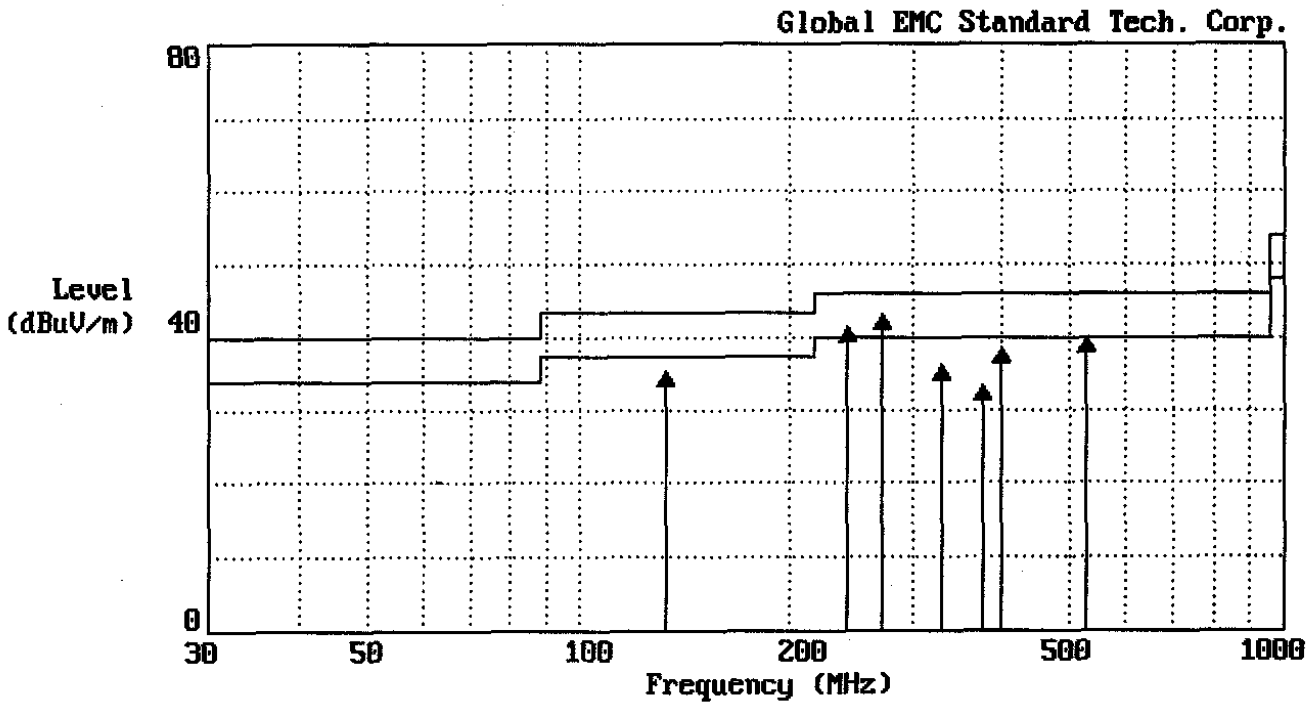


Date of Test	April 27, 2004	**Temperature**	25 deg/C
EUT	Industrial Tablet PC	**Humidity**	55 %RH
Working Cond.	WLAN (Channel 11)	**Display Pattern**	H Pattern
Antenna distance	3m at **Horizontal**	**Frequency Range**	30-1000MHz

No.	Frequency [MHz]	Cable Loss [dB]	Antenna Factor [dB/m]	Reading Level [dB(μV)]	Emission Level [dB(μV/m)]	Amp. Factor [dB]	Limit [dB(μV/m)]	Margin [dB]
1	132.870	2.08	12.74	20.60	35.42	0.00	43.50	-8.08
2	241.005	2.97	12.27	26.10	41.34	0.00	46.00	-4.66
3	★270.740	3.28	13.27	26.51	43.06	0.00	46.00	-2.94
4	328.950	3.90	14.80	17.63	36.33	0.00	46.00	-9.67
5	375.390	4.28	15.92	13.26	33.46	0.00	46.00	-12.54
6	400.020	4.42	16.50	17.52	38.44	0.00	46.00	-7.56
7	528.230	5.20	18.13	16.60	39.93	0.00	46.00	-6.07

Remarks:

1. All Readings below 1GHz are Quasi-Peak.
2. Emission Level= Reading + Antenna Factor + Cable loss (Could have ±0.01 tolerance due to computer automatically round off calculation).
3. Margin Value=Emission level-Limit value.
4. The "★" means this data is the worse case emission level.

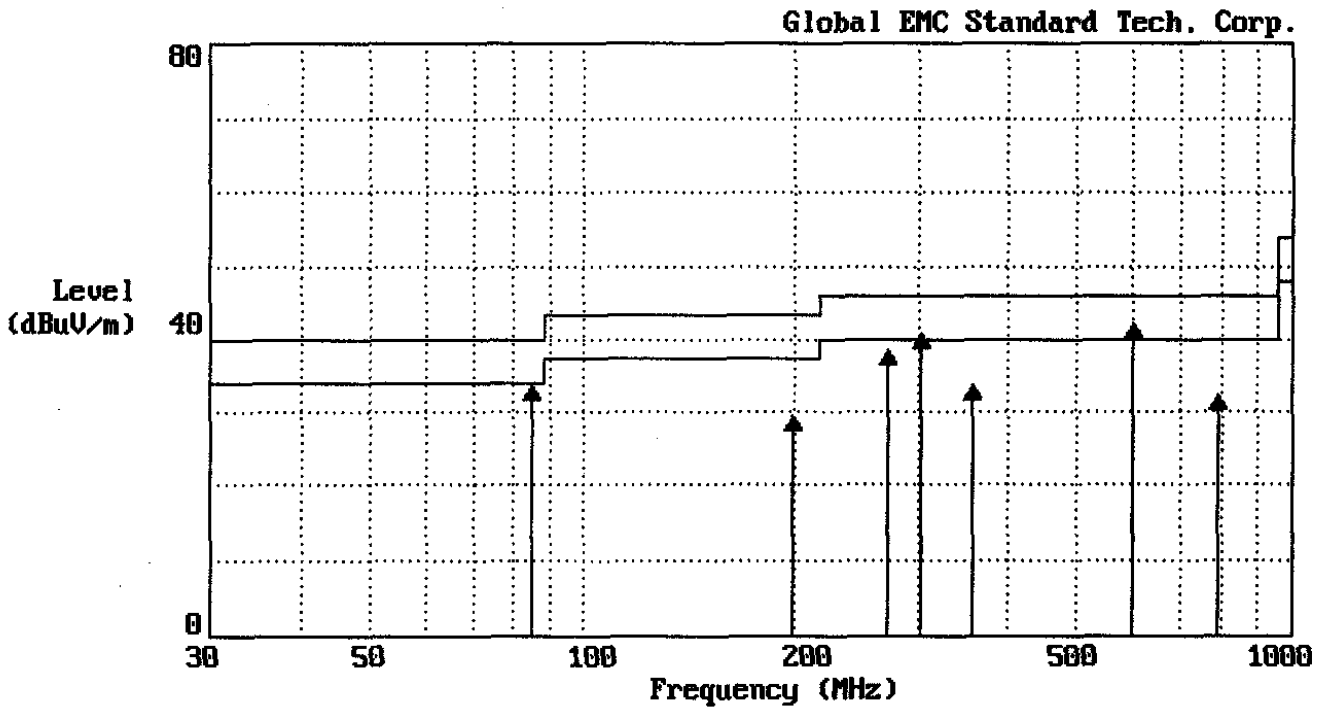


Date of Test	April 27, 2004	**Temperature**	25 deg/C
EUT	Industrial Tablet PC	**Humidity**	55 %RH
Working Cond.	WLAN (Channel 11)	**Display Pattern**	H Pattern
Antenna distance	3m at **Vertical**	**Frequency Range**	30-1000MHz

No.	Frequency [MHz]	Cable Loss [dB]	Antenna Factor [dB/m]	Reading Level [dB(μV)]	Emission Level [dB(μV/m)]	Amp. Factor [dB]	Limit [dB(μV/m)]	Margin [dB]
1	84.970	1.69	8.09	24.12	33.90	0.00	40.00	-6.10
2	198.350	2.64	10.35	16.52	29.51	0.00	43.50	-13.99
3	270.590	3.28	13.27	21.90	38.45	0.00	46.00	-7.55
4	300.120	3.65	14.10	23.15	40.90	0.00	46.00	-5.10
5	355.260	4.13	15.43	14.23	33.79	0.00	46.00	-12.21
6	★598.150	5.68	18.96	17.56	42.20	0.00	46.00	-3.80
7	788.320	6.62	20.22	5.62	32.46	0.00	46.00	-13.54

Remarks:

1. All Readings below 1GHz are Quasi-Peak.
2. Emission Level= Reading + Antenna Factor + Cable loss (Could have ±0.01 tolerance due to computer automatically round off calculation).
3. Margin Value=Emission level-Limit value.
4. The "★" means this data is the worse case emission level.

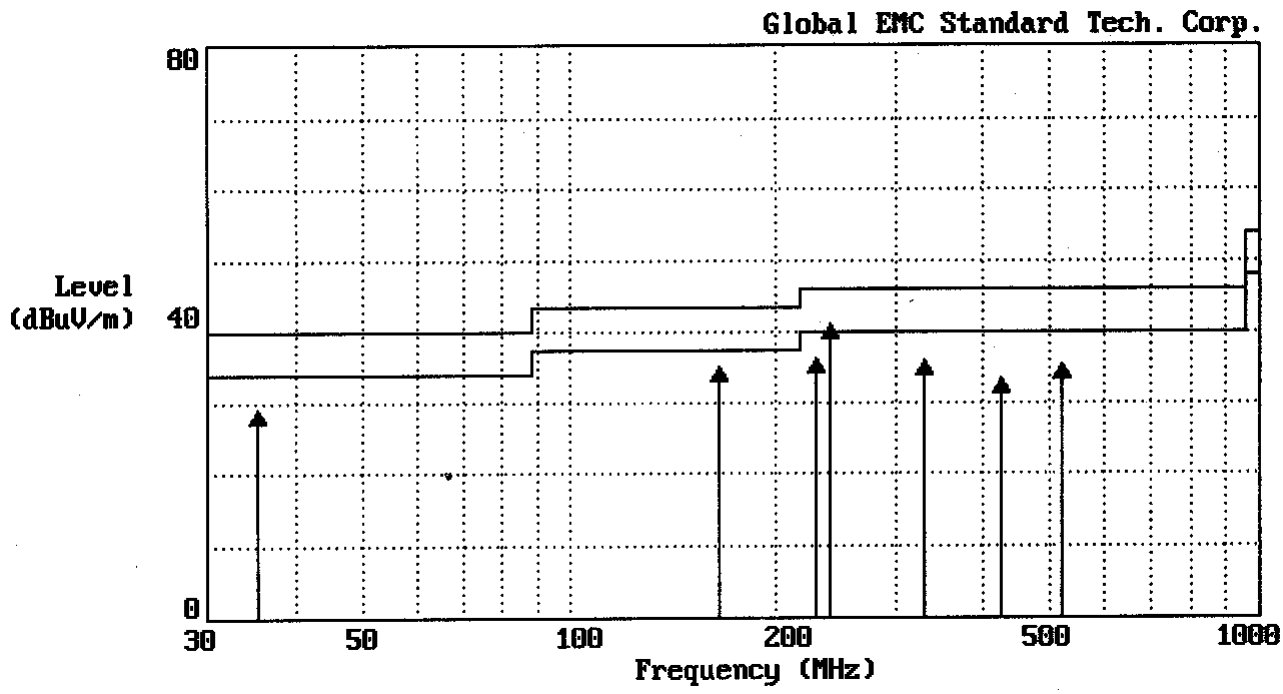


Date of Test	April 28, 2004	**Temperature**	25 deg/C
EUT	Industrial Tablet PC	**Humidity**	55 %RH
Working Cond.	Bluetooth (Channel 0)	**Display Pattern**	H Pattern
Antenna distance	3m at **Horizontal**	**Frequency Range**	30-1000MHz

No.	Frequency [MHz]	Cable Loss [dB]	Antenna Factor [dB/m]	Reading Level [dB(μV)]	Emission Level [dB(μV/m)]	Amp. Factor [dB]	Limit [dB(μV/m)]	Margin [dB]
1	35.230	1.13	17.80	10.32	29.25	0.00	40.00	-10.75
2	165.290	2.35	10.83	21.99	35.17	0.00	43.50	-8.33
3	228.450	2.87	11.69	21.76	36.32	0.00	46.00	-6.68
4	★240.210	2.97	12.23	25.89	41.09	0.00	46.00	-4.91
5	329.670	3.90	14.80	17.23	35.93	0.00	46.00	-10.07
6	425.560	4.56	16.83	12.10	33.49	0.00	46.00	-12.51
7	521.110	5.15	18.04	12.34	35.53	0.00	46.00	-10.47

Remarks:

1. All Readings below 1GHz are Quasi-Peak.
2. Emission Level= Reading + Antenna Factor + Cable loss (Could have ±0.01 tolerance due to computer automatically round off calculation).
3. Margin Value=Emission level-Limit value.
4. The "★" means this data is the worse case emission level.

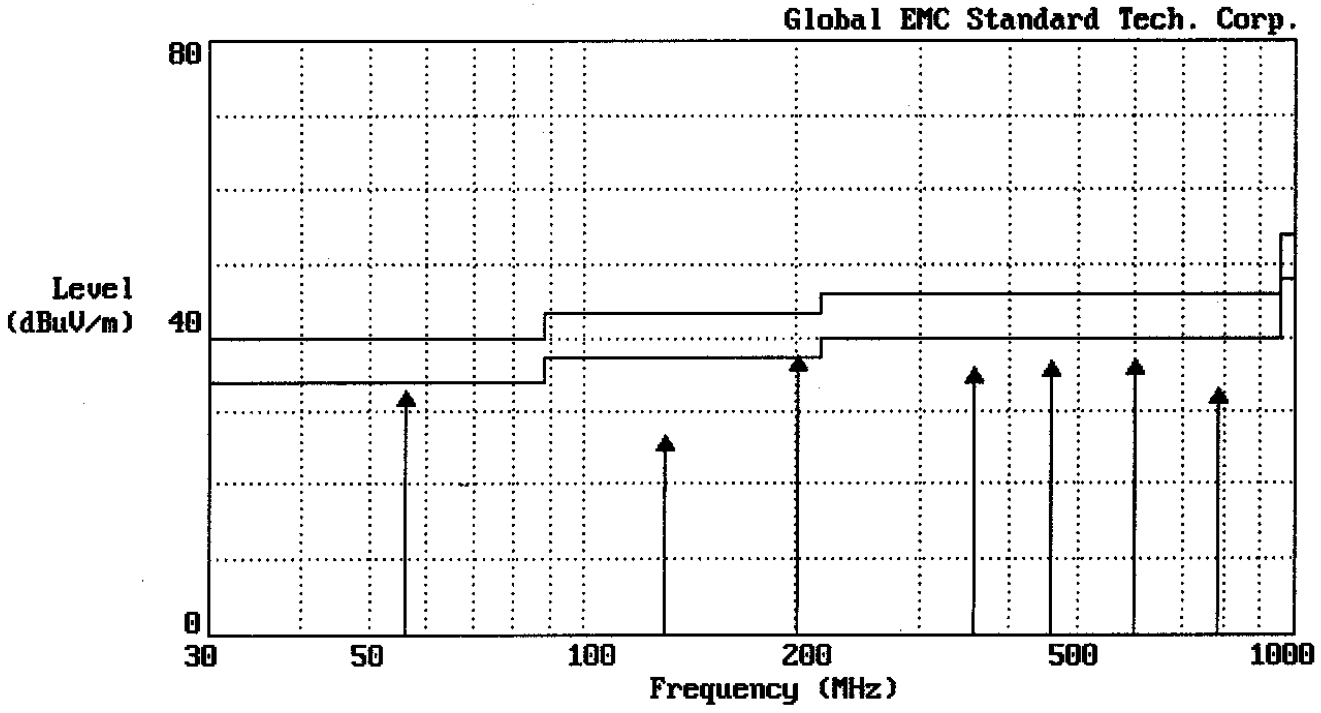


Date of Test	April 28, 2004	**Temperature**	25 deg/C
EUT	Industrial Tablet PC	**Humidity**	55 %RH
Working Cond.	Bluetooth (Channel 0)	**Display Pattern**	H Pattern
Antenna distance	3m at **Vertical**	**Frequency Range**	30-1000MHz

No.	Frequency [MHz]	Cable Loss [dB]	Antenna Factor [dB/m]	Reading Level [dB(μV)]	Emission Level [dB(μV/m)]	Amp. Factor [dB]	Limit [dB(μV/m)]	Margin [dB]
1	56.290	1.34	8.05	23.45	32.84	0.00	40.00	-7.16
2	130.400	2.06	12.75	11.98	26.79	0.00	43.50	-16.71
3	★200.480	2.66	10.40	24.57	37.63	0.00	43.50	-5.87
4	355.650	4.13	15.43	16.51	36.07	0.00	46.00	-9.93
5	457.530	4.82	17.24	14.78	36.84	0.00	46.00	-9.16
6	600.710	5.71	19.00	12.37	37.08	0.00	46.00	-8.92
7	785.910	6.59	20.21	6.40	33.20	0.00	46.00	-12.80

Remarks:

1. All Readings below 1GHz are Quasi-Peak.
2. Emission Level= Reading + Antenna Factor + Cable loss (Could have ±0.01 tolerance due to computer automatically round off calculation).
3. Margin Value=Emission level-Limit value.
4. The "★" means this data is the worse case emission level.

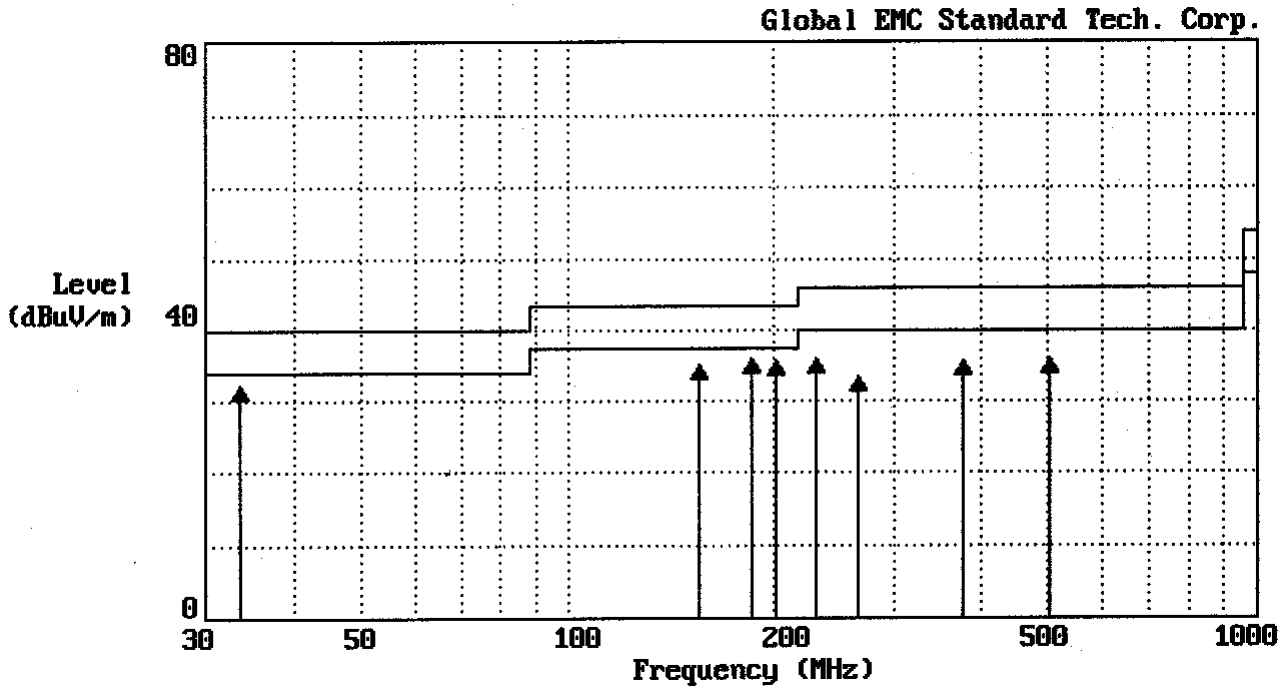


Date of Test	April 28, 2004	**Temperature**	25 deg/C
EUT	Industrial Tablet PC	**Humidity**	55 %RH
Working Cond.	Bluetooth (Channel 39)	**Display Pattern**	H Pattern
Antenna distance	3m at **Horizontal**	**Frequency Range**	30-1000MHz

No.	Frequency [MHz]	Cable Loss [dB]	Antenna Factor [dB/m]	Reading Level [dB(μV)]	Emission Level [dB(μV/m)]	Amp. Factor [dB]	Limit [dB(μV/m)]	Margin [dB]
1	33.490	1.06	18.89	12.40	32.35	0.00	40.00	-7.65
2	155.390	2.26	11.46	21.56	35.28	0.00	43.50	-8.22
3	★185.230	2.52	10.10	23.50	36.12	0.00	43.50	-7.38
4	200.460	2.66	10.40	22.67	35.73	0.00	43.50	-7.77
5	230.590	2.90	11.78	21.23	35.91	0.00	46.00	-10.09
6	264.100	3.18	13.08	17.20	33.46	0.00	46.00	-12.54
7	375.230	4.28	15.89	15.66	35.83	0.00	46.00	-10.17
8	501.120	5.01	17.80	13.12	35.93	0.00	46.00	-10.07

Remarks:

1. All Readings below 1GHz are Quasi-Peak.
2. Emission Level= Reading + Antenna Factor + Cable loss (Could have ±0.01 tolerance due to computer automatically round off calculation).
3. Margin Value=Emission level-Limit value.
4. The "★" means this data is the worse case emission level.

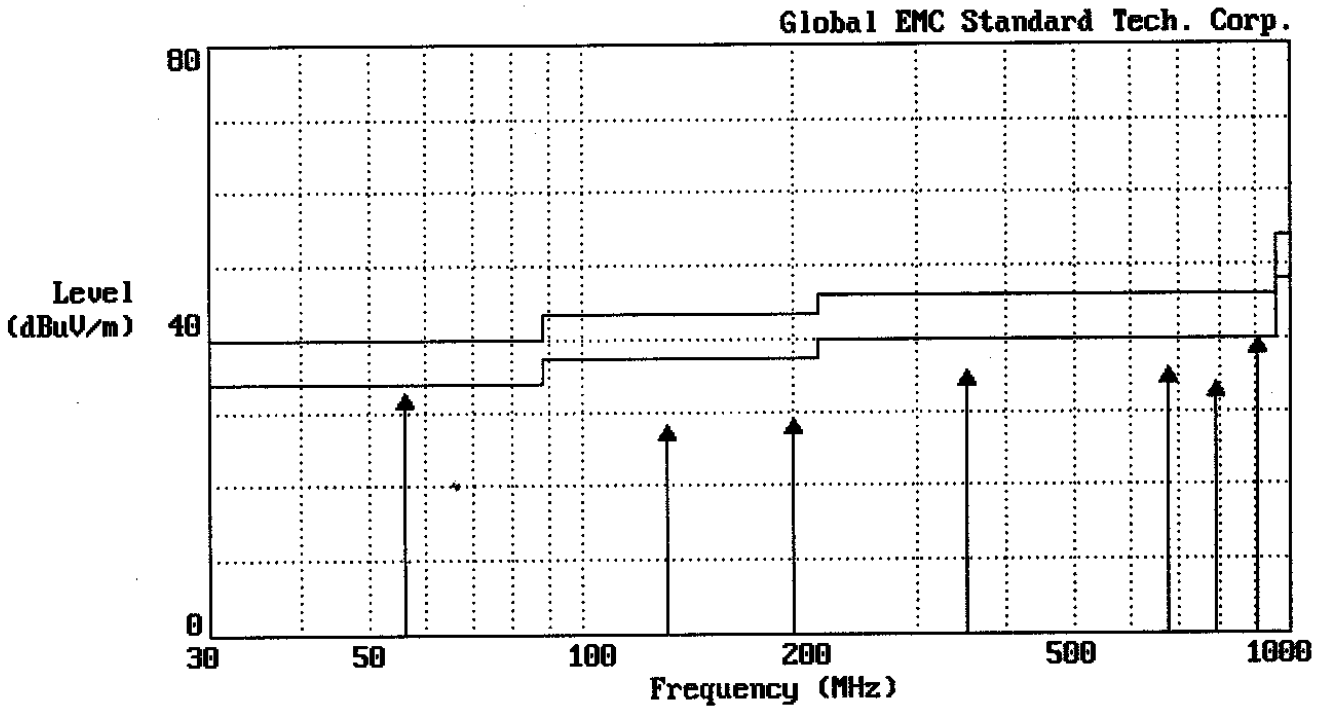


Date of Test	April 28, 2004	**Temperature**	25 deg/C
EUT	Industrial Tablet PC	**Humidity**	55 %RH
Working Cond.	Bluetooth (Channel 39)	**Display Pattern**	H Pattern
Antenna distance	3m at **Vertical**	**Frequency Range**	30-1000MHz

No.	Frequency [MHz]	Cable Loss [dB]	Antenna Factor [dB/m]	Reading Level [dB(μV)]	Emission Level [dB(μV/m)]	Amp. Factor [dB]	Limit [dB(μV/m)]	Margin [dB]
1	56.230	1.34	8.05	23.44	32.84	0.00	40.00	-7.16
2	132.600	2.08	12.74	13.56	28.38	0.00	43.50	-15.12
3	199.340	2.64	10.37	16.20	29.21	0.00	43.50	-14.29
4	351.510	4.09	15.33	16.40	35.82	0.00	46.00	-10.18
5	675.590	6.17	19.52	10.21	35.90	0.00	46.00	-10.10
6	788.100	6.62	20.22	7.12	33.96	0.00	46.00	-12.04
7	★ 901.220	7.40	21.30	11.20	39.90	0.00	46.00	-6.10

Remarks:

1. All Readings below 1GHz are Quasi-Peak.
2. Emission Level= Reading + Antenna Factor + Cable loss (Could have ±0.01 tolerance due to computer automatically round off calculation).
3. Margin Value=Emission level-Limit value.
4. The "★" means this data is the worse case emission level.

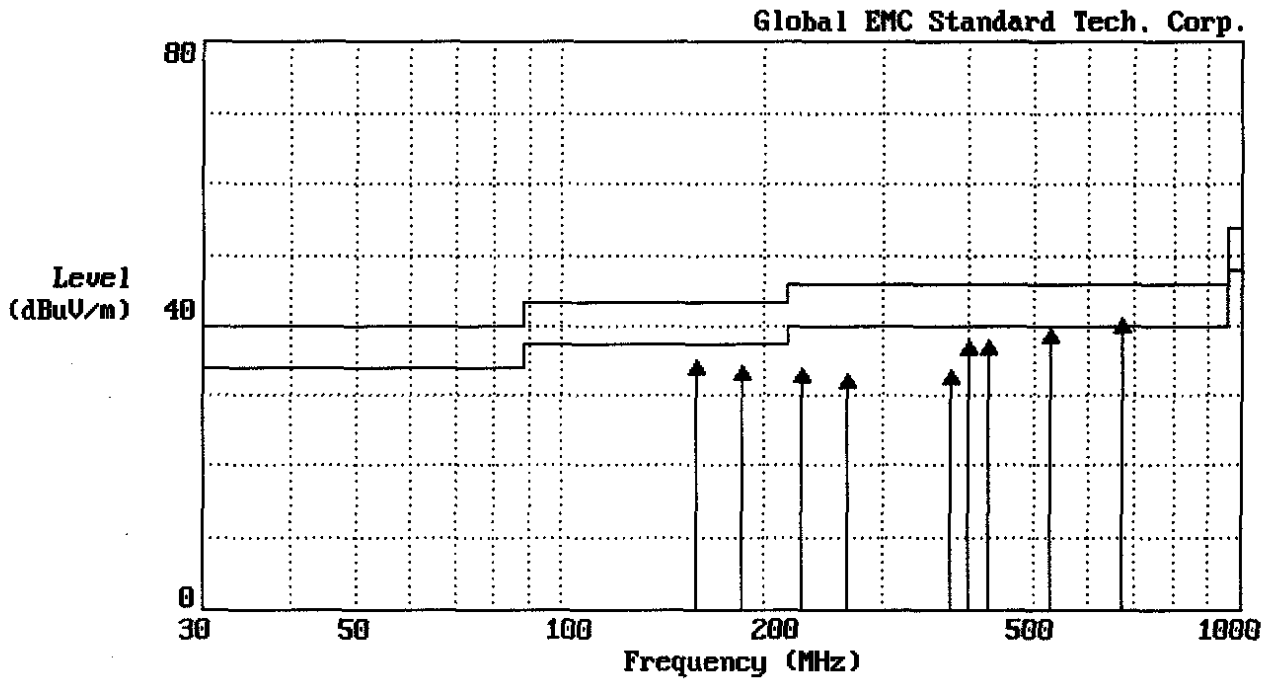


Date of Test	April 28, 2004	**Temperature**	25 deg/C
EUT	Industrial Tablet PC	**Humidity**	55 %RH
Working Cond.	Bluetooth (Channel 78)	**Display Pattern**	H Pattern
Antenna distance	3m at **Horizontal**	**Frequency Range**	30-1000MHz

No.	Frequency [MHz]	Cable Loss [dB]	Antenna Factor [dB/m]	Reading Level [dB(μV)]	Emission Level [dB(μV/m)]	Amp. Factor [dB]	Limit [dB(μV/m)]	Margin [dB]
1	158.390	2.31	11.23	21.56	35.10	0.00	43.50	-8.40
2	185.260	2.52	10.10	21.65	34.27	0.00	43.50	-9.23
3	226.150	2.87	11.60	19.65	34.12	0.00	46.00	-11.88
4	265.550	3.25	13.11	16.78	33.14	0.00	46.00	-12.86
5	377.390	4.29	15.96	13.45	33.70	0.00	46.00	-12.30
6	399.540	4.42	16.47	17.23	38.12	0.00	46.00	-7.88
7	428.890	4.57	16.88	16.45	37.90	0.00	46.00	-8.10
8	525.260	5.20	18.09	16.29	39.58	0.00	46.00	-6.42
9	★670.190	6.02	19.48	15.60	41.10	0.00	46.00	-4.90

Remarks:

1. All Readings below 1GHz are Quasi-Peak.
2. Emission Level= Reading + Antenna Factor + Cable loss (Could have ±0.01 tolerance due to computer automatically round off calculation).
3. Margin Value=Emission level-Limit value.
4. The "★" means this data is the worse case emission level.

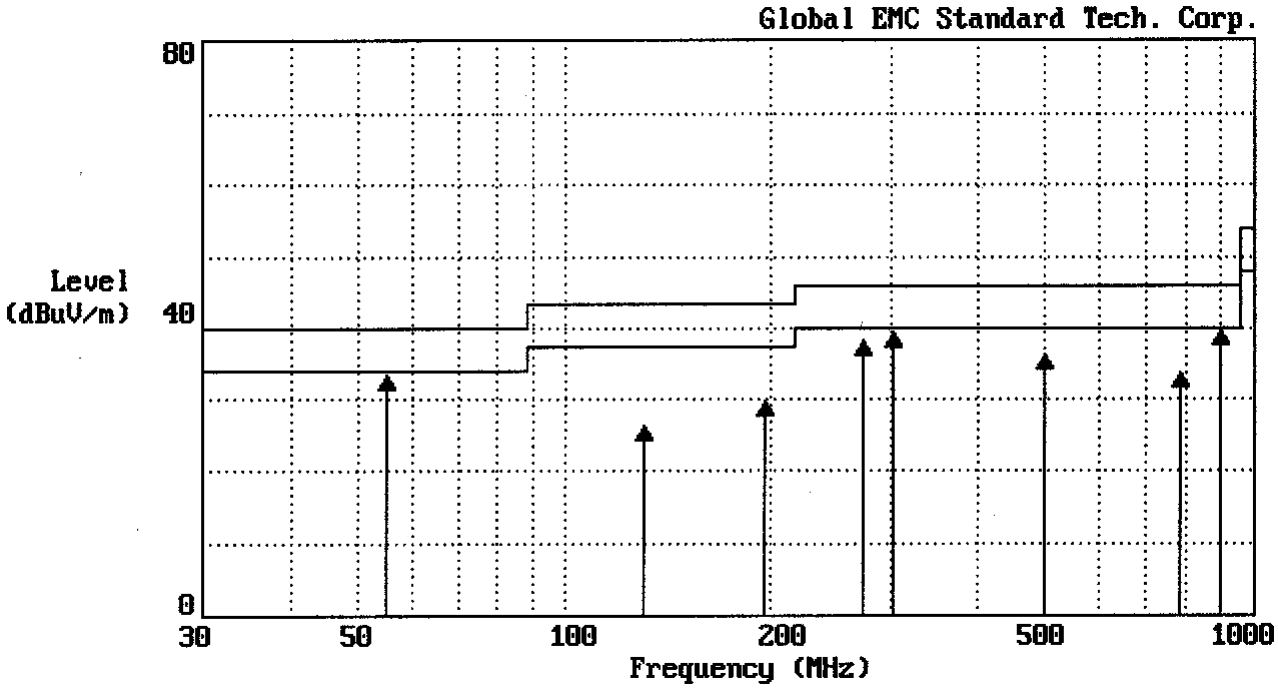


Date of Test	April 28, 2004	**Temperature**	25 deg/C
EUT	Industrial Tablet PC	**Humidity**	55 %RH
Working Cond.	Bluetooth (Channel 78)	**Display Pattern**	H Pattern
Antenna distance	3m at **Vertical**	**Frequency Range**	30-1000MHz

No.	Frequency [MHz]	Cable Loss [dB]	Antenna Factor [dB/m]	Reading Level [dB(μV)]	Emission Level [dB(μV/m)]	Amp. Factor [dB]	Limit [dB(μV/m)]	Margin [dB]
1	55.190	1.34	8.64	23.40	33.38	0.00	40.00	-6.62
2	130.230	2.06	12.75	11.56	26.37	0.00	43.50	-17.13
3	195.690	2.62	10.29	16.78	29.69	0.00	43.50	-13.81
4	272.560	3.31	13.32	21.68	38.31	0.00	46.00	-7.69
5	300.150	3.65	14.10	21.57	39.32	0.00	46.00	-6.68
6	500.390	4.99	17.80	13.40	36.19	0.00	46.00	-9.81
7	785.430	6.59	20.21	6.88	33.68	0.00	46.00	-12.32
8	★900.360	7.31	21.30	11.23	39.84	0.00	46.00	-6.16

Remarks:

1. All Readings below 1GHz are Quasi-Peak.
2. Emission Level= Reading + Antenna Factor + Cable loss (Could have ±0.01 tolerance due to computer automatically round off calculation).
3. Margin Value=Emission level-Limit value.
4. The "★" means this data is the worse case emission level.



Date of Test	December 11, 2003	**Temperature**	25 deg/C
EUT	Industrial Tablet PC	**Humidity**	60 %RH
Working Cond.	Mode 1 (802.11b) Channel 1	**Data Rate**	11Mbps
Antenna distance	3m at **Horizontal**	**Frequency Range**	Above 1GHz

Peak

No.	Frequency [MHz]	Reading Level [dB(μV)]	Correction Factor [dB/m]	Emission Level [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
1	4825.00	54.71	2.41	57.12	74.00	-16.88
2	7238.00	55.28	-0.47	< 54.81	74.00	-19.19
3	9649.00	51.99	-0.79	< 51.20	74.00	-22.80

Average

No.	Frequency [MHz]	Reading Level [dB(μV)]	Correction Factor [dB/m]	Emission Level [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
1	4823.25	44.12	2.41	46.53	54.00	-7.47
2	7236.00	43.91	-0.46	< 43.45	54.00	-10.55

Remark

1. All Readings below 1GHz are Quasi-Peak and above 1GHz are peak or average.
2. Spectrum Analizyer Setting(Peak Detector): RBW=1MHz, VBW=1MHZ, Span=100MHz.
3. Spectrum Analizyer Setting(AVG Detector): RBW=1MHz, VBW=30HZ, Span=20MHz.
4. Emission Level= Reading + Correction Factor (Could have ±0.01 tolerance due to computer automatically round off calculation).
5. Correction Factor= Antenna Factor + Cable Loss – Amplifier Factor
6. Margin Value=Emission level-Limit value.
7. The average measurement was not performed when the peak measured data under the limit of average detection. If the average value is measured, peak measurement should also be supplied.

Date of Test	December 11, 2003	**Temperature**	25 deg/C
EUT	Industrial Tablet PC	**Humidity**	60 %RH
Working Cond.	Mode 1 (802.11b) Channel 1	**Data Rate**	11Mbps
Antenna distance	3m at **Verticial**	**Frequency Range**	Above 1GHz

Peak

No.	Frequency [MHz]	Reading Level [dB(μV)]	Correction Factor [dB/m]	Emission Level [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
1	4824.50	56.09	2.52	58.61	74.00	-15.39
2	7237.00	54.51	0.88	< 55.39	74.00	-18.61
3	9647.25	51.42	-0.17	< 51.25	74.00	-22.75

Average

No.	Frequency [MHz]	Reading Level [dB(μV)]	Correction Factor [dB/m]	Emission Level [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
1	4823.25	44.34	2.53	46.87	54.00	-7.13
2	7235.50	43.81	0.87	< 44.68	54.00	-9.32

Remark

1. All Readings below 1GHz are Quasi-Peak and above 1GHz are peak or average.
2. Spectrum Analizyer Setting(Peak Detector): RBW=1MHz, VBW=1MHZ, Span=100MHz.
3. Spectrum Analizyer Setting(AVG Detector): RBW=1MHz, VBW=30HZ, Span=20MHz.
4. Emission Level= Reading + Correction Factor (Could have ±0.01 tolerance due to computer automatically round off calculation).
5. Correction Factor= Antenna Factor + Cable Loss – Amplifier Factor
6. Margin Value=Emission level-Limit value.
7. The average measurement was not performed when the peak measured data under the limit of average detection. If the average value is measured, peak measurement should also be supplied.

Date of Test	December 11, 2003	**Temperature**	25 deg/C
EUT	Industrial Tablet PC	**Humidity**	60 %RH
Working Cond.	Mode 1 (802.11b) Channel 6	**Data Rate**	11Mbps
Antenna distance	3m at **Horizontal**	**Frequency Range**	Above 1GHz

Peak

No.	Frequency [MHz]	Reading Level [dB(μV)]	Correction Factor [dB/m]	Emission Level [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
1	4873.75	56.08	2.40	58.48	74.00	-15.52
2	7310.25	56.16	-0.49	< 55.67	74.00	-18.33
3	9748.75	50.26	-0.50	< 49.76	74.00	-24.24

Average

No.	Frequency [MHz]	Reading Level [dB(μV)]	Correction Factor [dB/m]	Emission Level [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
1	4875.00	44.43	2.40	46.83	54.00	-7.17
2	7311.50	44.02	-0.49	< 43.53	54.00	-10.47

Remark

1. All Readings below 1GHz are Quasi-Peak and above 1GHz are peak or average.
2. Spectrum Analizyer Setting(Peak Detector): RBW=1MHz, VBW=1MHZ, Span=100MHz.
3. Spectrum Analizyer Setting(AVG Detector): RBW=1MHz, VBW=30HZ, Span=20MHz.
4. Emission Level= Reading + Correction Factor (Could have ±0.01 tolerance due to computer automatically round off calculation).
5. Correction Factor= Antenna Factor + Cable Loss – Amplifier Factor
6. Margin Value=Emission level-Limit value.
7. The average measurement was not performed when the peak measured data under the limit of average detection. If the average value is measured, peak measurement should also be supplied.

Date of Test	December 11, 2003	**Temperature**	25 deg/C
EUT	Industrial Tablet PC	**Humidity**	60 %RH
Working Cond.	Mode 1 (802.11b) Channel 6	**Data Rate**	11Mbps
Antenna distance	3m at **Verticial**	**Frequency Range**	Above 1GHz

Peak

No.	Frequency [MHz]	Reading Level [dB(μV)]	Correction Factor [dB/m]	Emission Level [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
1	4875.25	55.48	2.36	57.84	74.00	-16.16
2	7310.25	54.79	1.22	< 56.01	74.00	-17.99
3	9748.50	50.09	0.15	< 50.24	74.00	-23.76

Average

No.	Frequency [MHz]	Reading Level [dB(μV)]	Correction Factor [dB/m]	Emission Level [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
1	4874.50	44.44	2.36	46.80	54.00	-7.20
2	7312.00	43.86	1.23	< 45.09	54.00	-8.91

Remark

1. All Readings below 1GHz are Quasi-Peak and above 1GHz are peak or average.
2. Spectrum Analizyer Setting(Peak Detector): RBW=1MHz, VBW=1MHZ, Span=100MHz.
3. Spectrum Analizyer Setting(AVG Detector): RBW=1MHz, VBW=30HZ, Span=20MHz.
4. Emission Level= Reading + Correction Factor (Could have ±0.01 tolerance due to computer automatically round off calculation).
5. Correction Factor= Antenna Factor + Cable Loss – Amplifier Factor
6. Margin Value=Emission level-Limit value.
7. The average measurement was not performed when the peak measured data under the limit of average detection. If the average value is measured, peak measurement should also be supplied.

Date of Test	December 11, 2003	**Temperature**	25 deg/C
EUT	Industrial Tablet PC	**Humidity**	60 %RH
Working Cond.	Mode 1 (802.11b) Channel 11	**Data Rate**	11Mbps
Antenna distance	3m at **Horizontal**	**Frequency Range**	Above 1GHz

Peak

No.	Frequency [MHz]	Reading Level [dB(μV)]	Correction Factor [dB/m]	Emission Level [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
1	4924.00	59.87	2.39	62.26	74.00	-11.74
2	7387.75	55.42	-0.52	< 54.90	74.00	-19.10
3	9849.00	49.94	-0.21	< 49.73	74.00	-24.27

Average

No.	Frequency [MHz]	Reading Level [dB(μV)]	Correction Factor [dB/m]	Emission Level [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
1	4925.75	48.35	2.39	50.74	54.00	-3.26
2	7385.25	43.72	-0.52	< 43.20	54.00	-10.80

Remark

1. All Readings below 1GHz are Quasi-Peak and above 1GHz are peak or average.
2. Spectrum Analizyer Setting(Peak Detector): RBW=1MHz, VBW=1MHZ, Span=100MHz.
3. Spectrum Analizyer Setting(AVG Detector): RBW=1MHz, VBW=30HZ, Span=20MHz.
4. Emission Level= Reading + Correction Factor (Could have ±0.01 tolerance due to computer automatically round off calculation).
5. Correction Factor= Antenna Factor + Cable Loss – Amplifier Factor
6. Margin Value=Emission level-Limit value.
7. The average measurement was not performed when the peak measured data under the limit of average detection. If the average value is measured, peak measurement should also be supplied.

Date of Test	December 11, 2003	**Temperature**	25 deg/C
EUT	Industrial Tablet PC	**Humidity**	60 %RH
Working Cond.	Mode 1 (802.11b) Channel 11	**Data Rate**	11Mbps
Antenna distance	3m at **Verticial**	**Frequency Range**	Above 1GHz

Peak

No.	Frequency [MHz]	Reading Level [dB(μV)]	Correction Factor [dB/m]	Emission Level [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
1	4924.25	58.65	2.21	60.86	74.00	-13.14
2	7388.50	55.55	1.59	< 57.14	74.00	-16.86
3	9846.50	51.14	0.47	< 51.61	74.00	-22.39

Average

No.	Frequency [MHz]	Reading Level [dB(μV)]	Correction Factor [dB/m]	Emission Level [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
1	4926.25	48.41	2.21	50.61	54.00	-3.39
2	7386.25	43.75	1.58	< 45.33	54.00	-8.67

Remark

1. All Readings below 1GHz are Quasi-Peak and above 1GHz are peak or average.
2. Spectrum Analizyer Setting(Peak Detector): RBW=1MHz, VBW=1MHZ, Span=100MHz.
3. Spectrum Analizyer Setting(AVG Detector): RBW=1MHz, VBW=30HZ, Span=20MHz.
4. Emission Level= Reading + Correction Factor (Could have ±0.01 tolerance due to computer automatically round off calculation).
5. Correction Factor= Antenna Factor + Cable Loss – Amplifier Factor
6. Margin Value=Emission level-Limit value.
7. The average measurement was not performed when the peak measured data under the limit of average detection. If the average value is measured, peak measurement should also be supplied.

Date of Test	December 22, 2003	**Temperature**	25 deg/C
EUT	Industrial Tablet PC	**Humidity**	60 %RH
Working Cond.	Mode 2 (Bluetooth) Channel 0 (2402MHz)	**Frequency Range**	Above 1GHz
Antenna distance	3m at **Horizontal**		

Peak

No.	Frequency [MHz]	Reading Level [dB(μV)]	Correction Factor [dB/m]	Emission Level [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
1	4804.06	56.22	2.42	58.64	74.00	-15.36
2	7206.25	58.02	-0.45	< 57.57	74.00	-16.43
3	9608.25	53.16	-0.91	< 52.25	74.00	-21.75

Average

No.	Frequency [MHz]	Reading Level [dB(μV)]	Correction Factor [dB/m]	Emission Level [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
1	4804.19	45.37	2.42	47.79	54.00	-6.21
2	7205.87	45.07	-0.45	< 44.62	54.00	-9.38

Remark

1. All Readings below 1GHz are Quasi-Peak and above 1GHz are peak or average.
2. Spectrum Analizyer Setting(Peak Detector): RBW=1MHz, VBW=1MHZ, Span=100MHz.
3. Spectrum Analizyer Setting(AVG Detector): RBW=1MHz, VBW=30HZ, Span=20MHz.
4. Emission Level= Reading + Correction Factor (Could have ±0.01 tolerance due to computer automatically round off calculation).
5. Correction Factor= Antenna Factor + Cable Loss – Amplifier Factor
6. Margin Value=Emission level-Limit value.
7. The average measurement was not performed when the peak measured data under the limit of average detection. If the average value is measured, peak measurement should also be supplied.

Date of Test	December 22, 2003	**Temperature**	25 deg/C
EUT	Industrial Tablet PC	**Humidity**	60 %RH
Working Cond.	Mode 2 (Bluetooth) Channel 0 (2402MHz)	**Frequency Range**	Above 1GHz
Antenna distance	3m at **Vertical**		

Peak

No.	Frequency [MHz]	Reading Level [dB(μV)]	Correction Factor [dB/m]	Emission Level [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
1	4804.00	53.52	2.59	56.11	74.00	-17.89
2	7206.50	55.36	0.74	< 56.10	74.00	-17.90
3	9608.00	50.53	-0.30	< 50.23	74.00	-23.77

Average

No.	Frequency [MHz]	Reading Level [dB(μV)]	Correction Factor [dB/m]	Emission Level [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
1	4804.12	44.56	2.59	47.15	54.00	-6.85
2	7206.10	43.96	0.79	< 44.69	54.00	-9.31

Remark

1. All Readings below 1GHz are Quasi-Peak and above 1GHz are peak or average.
2. Spectrum Analizyer Setting(Peak Detector): RBW=1MHz, VBW=1MHZ, Span=100MHz.
3. Spectrum Analizyer Setting(AVG Detector): RBW=1MHz, VBW=30HZ, Span=20MHz.
4. Emission Level= Reading + Correction Factor (Could have ±0.01 tolerance due to computer automatically round off calculation).
5. Correction Factor= Antenna Factor + Cable Loss – Amplifier Factor
6. Margin Value=Emission level-Limit value.
7. The average measurement was not performed when the peak measured data under the limit of average detection. If the average value is measured, peak measurement should also be supplied.

Date of Test	December 22, 2003	**Temperature**	25 deg/C
EUT	Industrial Tablet PC	**Humidity**	60 %RH
Working Cond.	Mode 2 (Bluetooth) Channel 39 (2441 MHz)	**Frequency Range**	Above 1GHz
Antenna distance	3m at **Horizontal**		

Peak

No.	Frequency [MHz]	Reading Level [dB(μV)]	Correction Factor [dB/m]	Emission Level [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
1	4881.40	57.23	2.40	59.63	74.00	-14.37
2	7322.97	57.03	-0.50	< 56.53	74.00	-17.47
3	9764.25	51.52	-0.46	< 51.06	74.00	-22.94

Average

No.	Frequency [MHz]	Reading Level [dB(μV)]	Correction Factor [dB/m]	Emission Level [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
1	4882.10	42.34	2.40	47.74	54.00	-9.26
2	7323.10	43.05	-0.50	42.55	54.00	-11.45

Remark

1. All Readings below 1GHz are Quasi-Peak and above 1GHz are peak or average.
2. Spectrum Analizyer Setting(Peak Detector): RBW=1MHz, VBW=1MHZ, Span=100MHz.
3. Spectrum Analizyer Setting(AVG Detector): RBW=1MHz, VBW=30HZ, Span=20MHz.
4. Emission Level= Reading + Correction Factor (Could have ±0.01 tolerance due to computer automatically round off calculation).
5. Correction Factor= Antenna Factor + Cable Loss – Amplifier Factor
6. Margin Value=Emission level-Limit value.
7. The average measurement was not performed when the peak measured data under the limit of average detection. If the average value is measured, peak measurement should also be supplied.

Date of Test	December 22, 2003	**Temperature**	25 deg/C
EUT	Industrial Tablet PC	**Humidity**	60 %RH
Working Cond.	Mode 2 (Bluetooth) Channel 39 (2441 MHz)	**Frequency Range**	Above 1GHz
Antenna distance	3m at **Vertical**		

Peak

No.	Frequency [MHz]	Reading Level [dB(μV)]	Correction Factor [dB/m]	Emission Level [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
1	4882.17	56.45	2.34	58.79	74.00	-15.21
2	7323.05	55.32	1.28	< 56.60	74.00	-17.40
3	9764.62	50.94	0.21	< 51.15	74.00	-22.85

Average

No.	Frequency [MHz]	Reading Level [dB(μV)]	Correction Factor [dB/m]	Emission Level [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
1	4882.00	44.49	2.34	46.83	54.00	-7.17
2	7323.35	43.59	1.28	< 44.87	54.00	-9.13

Remark

1. All Readings below 1GHz are Quasi-Peak and above 1GHz are peak or average.
2. Spectrum Analizyer Setting(Peak Detector): RBW=1MHz, VBW=1MHZ, Span=100MHz.
3. Spectrum Analizyer Setting(AVG Detector): RBW=1MHz, VBW=30HZ, Span=20MHz.
4. Emission Level= Reading + Correction Factor (Could have ±0.01 tolerance due to computer automatically round off calculation).
5. Correction Factor= Antenna Factor + Cable Loss – Amplifier Factor
6. Margin Value=Emission level-Limit value.
7. The average measurement was not performed when the peak measured data under the limit of average detection. If the average value is measured, peak measurement should also be supplied.

Date of Test	December 22, 2003	**Temperature**	25 deg/C
EUT	Industrial Tablet PC	**Humidity**	60 %RH
Working Cond.	Mode 2 (Bluetooth) Channel 78 (2480MHz)	**Frequency Range**	Above 1GHz
Antenna distance	3m at **Horizontal**		

Peak

No.	Frequency [MHz]	Reading Level [dB(μV)]	Correction Factor [dB/m]	Emission Level [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
1	4960.75	55.96	2.38	58.34	74.00	-15.66
2	7440.05	54.56	-0.54	< 54.02	74.00	-19.98
3	9919.77	51.19	-0.01	< 51.18	74.00	-22.82

Average

No.	Frequency [MHz]	Reading Level [dB(μV)]	Correction Factor [dB/m]	Emission Level [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
1	4960.05	43.78	2.38	46.16	54.00	-7.84
2	7440.00	42.53	-0.54	< 41.99	54.00	-12.01

Remark

1. All Readings below 1GHz are Quasi-Peak and above 1GHz are peak or average.
2. Spectrum Analizyer Setting(Peak Detector): RBW=1MHz, VBW=1MHZ, Span=100MHz.
3. Spectrum Analizyer Setting(AVG Detector): RBW=1MHz, VBW=30HZ, Span=20MHz.
4. Emission Level= Reading + Correction Factor (Could have ±0.01 tolerance due to computer automatically round off calculation).
5. Correction Factor= Antenna Factor + Cable Loss – Amplifier Factor
6. Margin Value=Emission level-Limit value.
7. The average measurement was not performed when the peak measured data under the limit of average detection. If the average value is measured, peak measurement should also be supplied.

Date of Test	December 22, 2003	**Temperature**	25 deg/C
EUT	Industrial Tablet PC	**Humidity**	60 %RH
Working Cond.	Mode 2 (Bluetooth) Channel 78 (2480MHz)	**Frequency Range**	Above 1GHz
Antenna distance	3m at **Vertical**		

Peak

No.	Frequency [MHz]	Reading Level [dB(μV)]	Correction Factor [dB/m]	Emission Level [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
1	4959.87	56.95	2.10	59.05	74.00	-14.95
2	7440.11	55.66	1.83	< 57.49	74.00	-16.51
3	9920.06	50.48	0.71	< 51.19	74.00	-22.81

Average

No.	Frequency [MHz]	Reading Level [dB(μV)]	Correction Factor [dB/m]	Emission Level [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
1	4959.94	46.72	2.10	48.82	54.00	-5.18
2	7440.19	42.90	1.83	< 44.73	54.00	-9.27

Remark

1. All Readings below 1GHz are Quasi-Peak and above 1GHz are peak or average.
2. Spectrum Analizyer Setting(Peak Detector): RBW=1MHz, VBW=1MHZ, Span=100MHz.
3. Spectrum Analizyer Setting(AVG Detector): RBW=1MHz, VBW=30HZ, Span=20MHz.
4. Emission Level= Reading + Correction Factor (Could have ±0.01 tolerance due to computer automatically round off calculation).
5. Correction Factor= Antenna Factor + Cable Loss – Amplifier Factor
6. Margin Value=Emission level-Limit value.
7. The average measurement was not performed when the peak measured data under the limit of average detection. If the average value is measured, peak measurement should also be supplied.

5. PEAK POWER OUTPUT

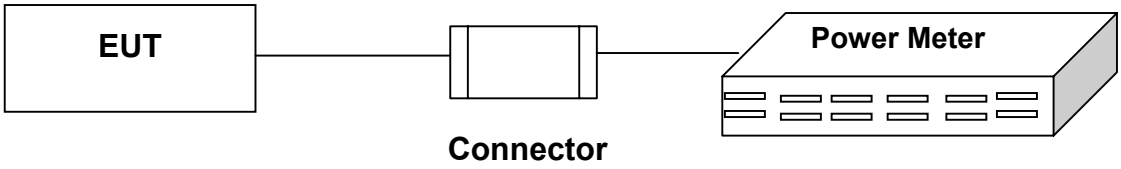
5.1 TEST EQUIPMENT

The following test equipments are used during the Conduct tests:

Item	Instrument	Manufacturer	Model	Serial No.	Last Cal.
1	Spectrum Analyzer	Advantest	R3272	82420232	02/14/03
	Spectrum Analyzer	HP	E4407B	39240339	08/16/03
2	Power Meter	Rohde & Schwarz	NRVS	100666	04/29/04
3	Peak Power Sensor	Rohde & Schwarz	NRV-Z32	8360191058	04/29/04

Note: All measurement critical items of test instrumentation were within their calibration period of 1 year.

5.2 BLOCK DIAGRAM OF TEST SETUP



5.3 PEAK POWER OUTPUT LIMIT

The maximum peak power shall be less 1 Watt.

5.4 TEST RESULT

Date of Test	December 10, 2003
EUT	Industrial Tablet PC
Test Mode	Mode 1 (802.11b)

Channel No.	Frequency (MHz)	Measurement (dBm)	Required Limit	Result
1	2412	15.81	1W(30dBm)	Pass
6	2437	15.59	1W(30dBm)	Pass
11	2462	15.55	1W(30dBm)	Pass

Date of Test	December 1, 2003
EUT	Industrial Tablet PC
Test Mode	Mode 2 (Bluetooth)

Channel No.	Frequency (MHz)	Measurement (dBm)	Required Limit	Result
0	2402	4.373	1W(30dBm)	Pass
39	2441	3.7	1W(30dBm)	Pass
78	2480	3.773	1W(30dBm)	Pass

6. BAND EDGE

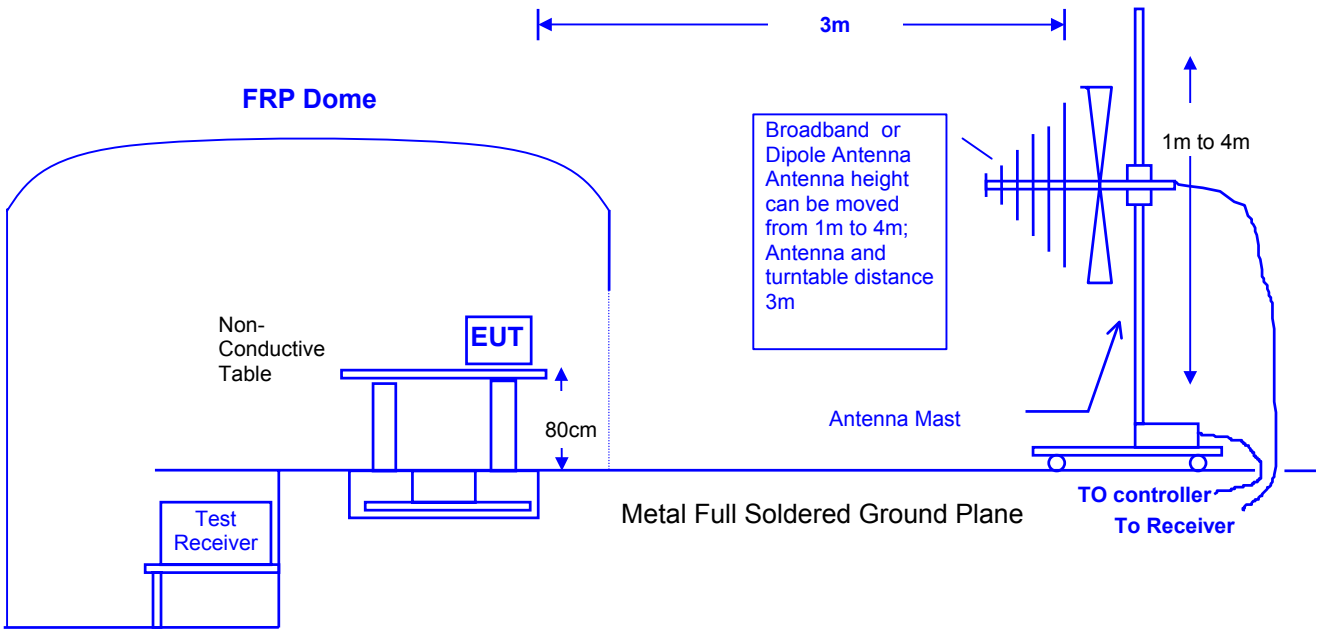
6.1 TEST EQUIPMENT

Item	Instrument	Manufacturer	Model	Serial No.	Last Cal.
1	Test Receiver	Rohde & Schwarz	ESVS30	829007/014	12/13/03
2	Spectrum Analyzer	Rohde & Schwarz	FSP40	100061	03/16/04
3	Spectrum Analyzer	HP	E4407B	39240339	08/16/03
4	Power Meter	Rohde & Schwarz	NRVS	100666	04/29/04
5	Peak Power Sensor	Rohde & Schwarz	NRV-Z32	8360191058	04/29/04
6	Pre-Amplifier	HP	8449B	3008A01263	10/11/03
7	BILOG ANTENNA	SCHAFFNER	CBL6112B	2620	12/01/03
8	Horn Antenna	Electro-Metrics	EM-6961	103318	05/30/03
9	Horn Antenna	Schwarzbeck	BBHA 9120	D243	12/18/03
10	RF Cable	GesTek	N/A	GTK-E-A151-01	02/09/04
11	Open Site	GesTek	N/A	B1	11/25/03
12	Test Program Software	GesTek	N/A	GTK-E-S001-01	N/A

Note: All measurement critical items of test instrumentation were within their calibration period of 1 year.

6.2 BLOCK DIAGRAM OF TEST SETUP

◎ **RF Radiated Measurement:** ◎



6.3 BAND EDGE LIMIT

In any 100KHz 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 100KHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209 (a) (see Section 15.205(c)).

6.4 EUT CONFIGURATION

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 C63.4:2000 on radiated measurement.
The bandwidth below 1GHz setting on the field strength meter is 120KHz, above 1GHz are 1MHz.

6.5 OPERATING CONDITION OF EUT

Same as section 2.8.

6.6 TEST RELULT

Date of Test	December 25, 2003
EUT	Industrial Tablet PC
Working Cond.	Mode 1 (802.11b)

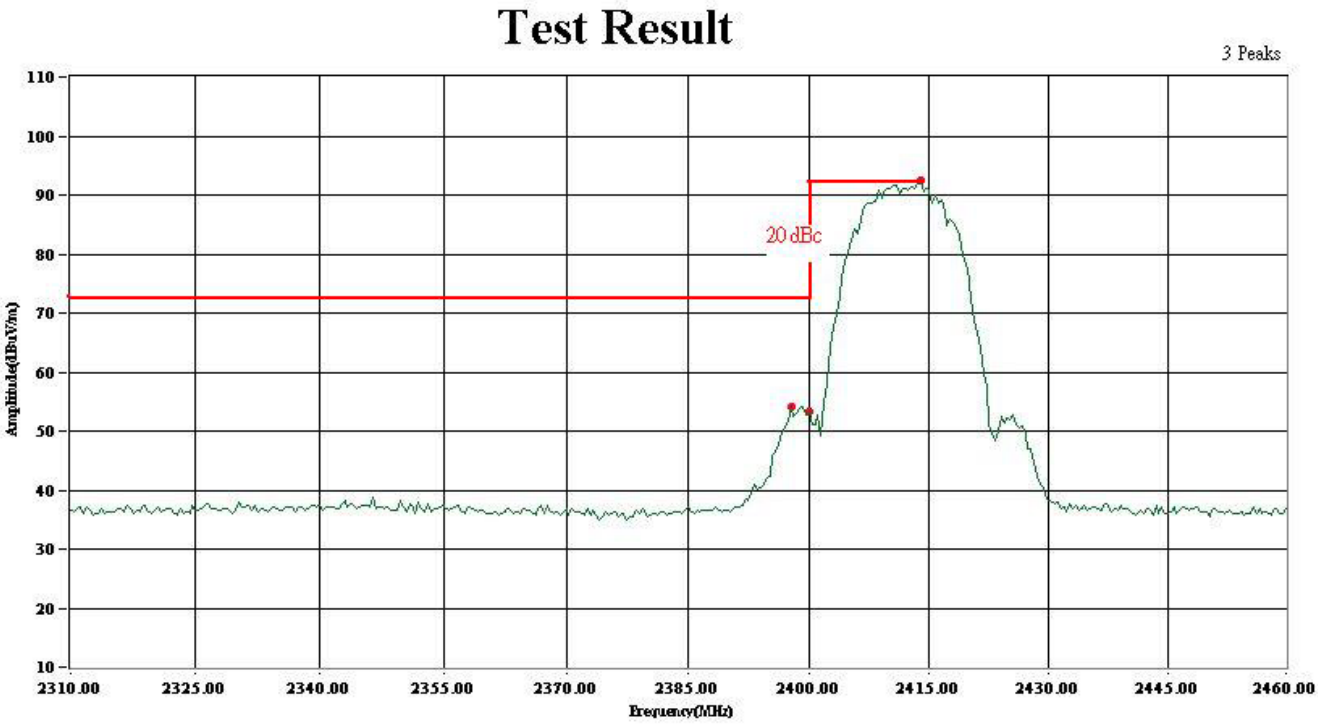
Channel No.	Frequency(MHz)	Required Limit(dBc)	Result
1(Horizontal)	< 2400	>20	Pass

Horizontal

No.	Frequency [MHz]	Reading Level [dB(μV)]	Correction Factor [dB/m]	Emission Level [dB(μV/m)]
1	2397.75	53.97	0.27	54.24
2	2400.00	53.04	0.27	53.31
3	2413.87	92.08	0.26	92.34

Note: RBW=100kHz, VBW=100kHz

Horizontal



Date of Test	December 25, 2003
EUT	Industrial Tablet PC
Working Cond.	Mode 1 (802.11b)

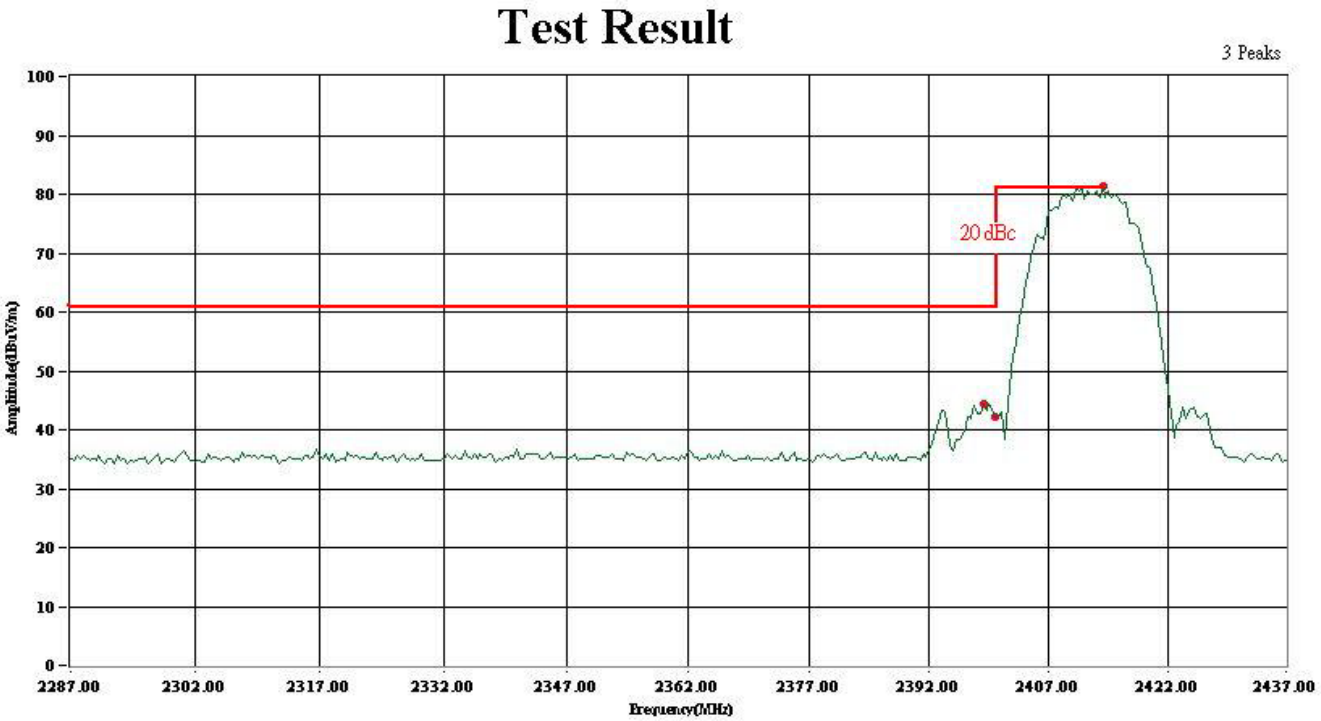
Channel No.	Frequency(MHz)	Required Limit(dBc)	Result
1(Vertical)	< 2400	>20	Pass

Vertical

No.	Frequency [MHz]	Reading Level [dB(μV)]	Correction Factor [dB/m]	Emission Level [dB(μV/m)]
1	2398.75	48.92	-4.57	44.35
2	2400.25	46.85	-4.57	42.28
3	2413.75	86.07	-4.58	81.49

Note: RBW=100kHz, VBW=100kHz

Vertical



Date of Test	December 25, 2003
EUT	Industrial Tablet PC
Working Cond.	Mode 2 (Bluetooth)

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

Horizontal

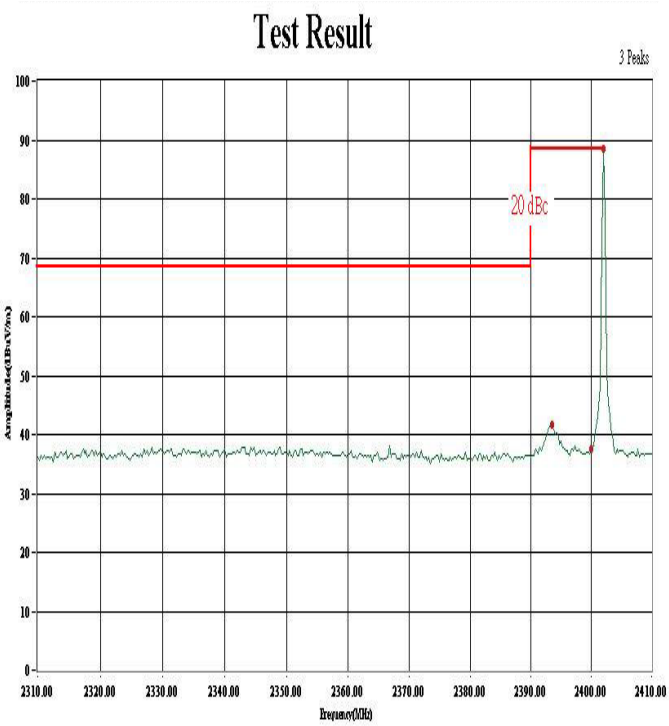
No.	Frequency [MHz]	Reading Level [dB(μV)]	Correction Factor [dB/m]	Emission Level [dB(μV/m)]
1	2393.50	41.31	0.27	41.58
2	2400.00	37.39	0.27	37.66
3	2402.00	88.31	0.27	88.58

Vertical

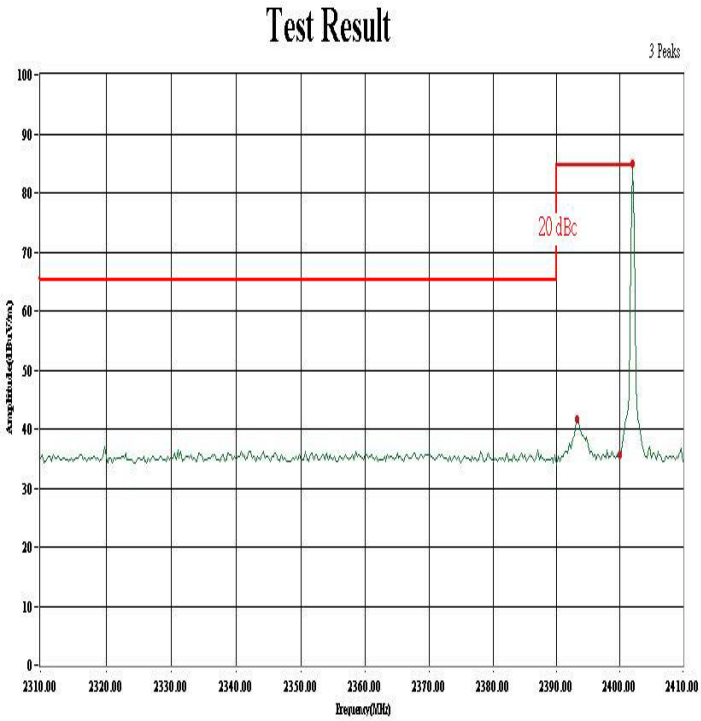
No.	Frequency [MHz]	Reading Level [dB(μV)]	Correction Factor [dB/m]	Emission Level [dB(μV/m)]
1	2393.25	46.31	-4.57	41.74
2	2400.00	40.30	-4.57	35.73
3	2402.00	89.63	-4.57	85.06

Note: RBW=100kHz, VBW=100kHz

Horizontal



Vertical



Date of Test	December 25, 2003	**Temperature**	25 deg/C
EUT	Industrial Tablet PC	**Humidity**	60 %RH
Working Cond.	Mode 1 (802.11b) Channel 11	**Data Rate**	11Mbps
Antenna distance	3m at **Horizontal**	**Frequency Range**	Above 1GHz

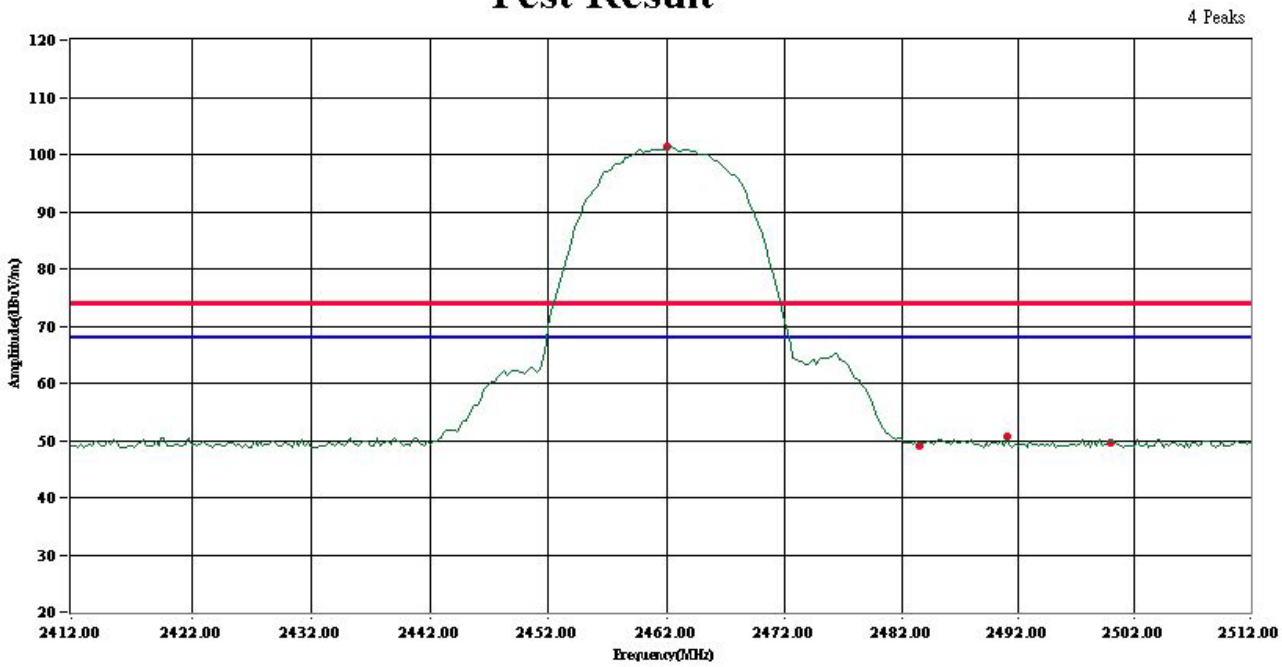
Peak

No.	Frequency [MHz]	Reading Level [dB(μV)]	Correction Factor [dB/m]	Emission Level [dB(μV/m)]	Limit [dB(μV/m)]	Result
1	2462.00	101.19	0.22	101.41	74.00	N/A
2	2483.50	48.86	0.19	49.05	74.00	PASS
3	2491.00	50.52	0.19	50.71	74.00	PASS
4	2500.00	49.36	0.18	49.54	74.00	PASS

Remark:

1. All Readings below 1GHz are Quasi-Peak and above 1GHz are peak or average.
2. Spectrum Analizyer Setting(Peak Detector): RBW=1MHz, VBW=1MHZ.
3. Spectrum Analizyer Setting(AVG Detector): RBW=1MHz, VBW=30HZ.
4. Emission Level= Reading + Correction Factor (Could have ±0.01 tolerance due to computer automatically round off calculation).
5. Correction Factor= Antenna Factor + Cable Loss – Amplifier Factor
6. Margin Value=Emission level-Limit value.
7. The average measurement was not performed when the peak measured data under the limit of average detection. If the average value is measured, peak measurement should also be supplied.

Test Result



Date of Test	December 25, 2003	**Temperature**	25 deg/C
EUT	Industrial Tablet PC	**Humidity**	60 %RH
Working Cond.	Mode 1 (802.11b) Channel 11	**Data Rate**	11Mbps
Antenna distance	3m at **Vertical**	**Frequency Range**	Above 1GHz

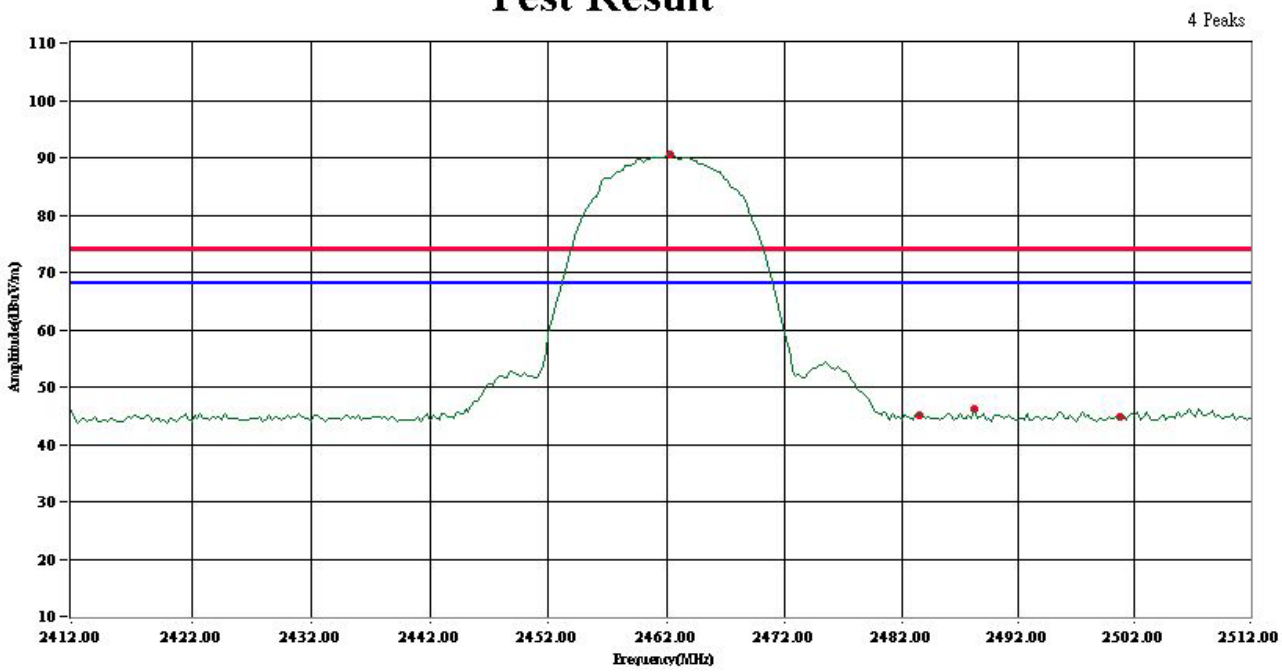
Peak

No.	Frequency [MHz]	Reading Level [dB(μV)]	Correction Factor [dB/m]	Emission Level [dB(μV/m)]	Limit [dB(μV/m)]	Result
1	2462.25	95.07	-4.59	90.48	74.00	N/A
2	2483.50	49.56	-4.60	44.96	74.00	PASS
3	2488.25	50.75	-4.60	46.15	74.00	PASS
4	2500.75	49.47	-4.60	44.87	74.00	PASS

Remark:

1. All Readings below 1GHz are Quasi-Peak and above 1GHz are peak or average.
2. Spectrum Analizyer Setting(Peak Detector): RBW=1MHz, VBW=1MHZ.
3. Spectrum Analizyer Setting(AVG Detector): RBW=1MHz, VBW=30HZ.
4. Emission Level= Reading + Correction Factor (Could have ±0.01 tolerance due to computer automatically round off calculation).
5. Correction Factor= Antenna Factor + Cable Loss – Amplifier Factor
6. Margin Value=Emission level-Limit value.
7. The average measurement was not performed when the peak measured data under the limit of average detection. If the average value is measured, peak measurement should also be supplied.

Test Result



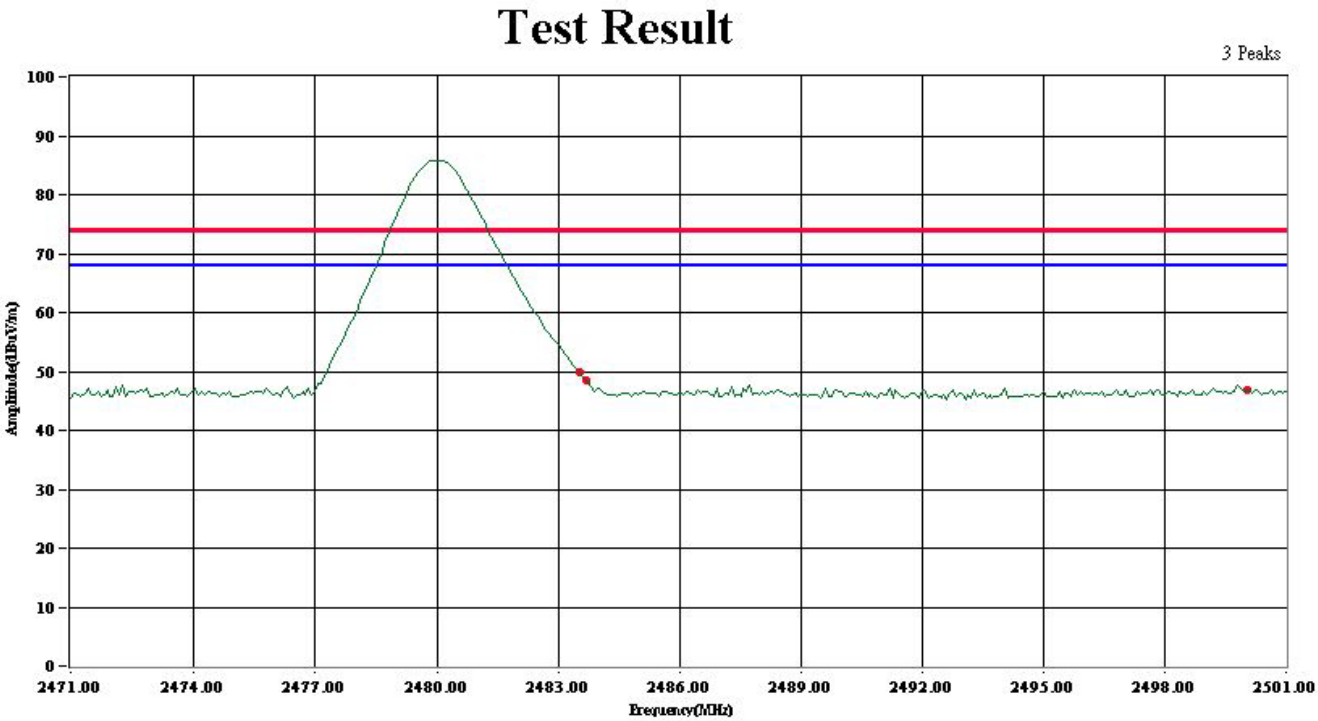
Date of Test	December 25, 2003	**Temperature**	25 deg/C
EUT	Industrial Tablet PC	**Humidity**	60 %RH
Working Cond.	Mode 2 (Bluetooth) Channel 78	**Frequency Range**	Above 1GHz
Antenna distance	3m at **Horizontal**		

Peak

No.	Frequency [MHz]	Reading Level [dB(μV)]	Correction Factor [dB/m]	Emission Level [dB(μV/m)]	Limit [dB(μV/m)]	Result
1	2483.52	49.78	0.19	49.97	74.00	N/A
2	2483.67	48.39	0.19	48.58	74.00	PASS
3	2500.02	46.80	0.18	46.98	74.00	PASS

Remark:

1. All Readings below 1GHz are Quasi-Peak and above 1GHz are peak or average.
2. Spectrum Analizyer Setting(Peak Detector): RBW=1MHz, VBW=1MHZ.
3. Spectrum Analizyer Setting(AVG Detector): RBW=1MHz, VBW=30HZ.
4. Emission Level= Reading + Correction Factor (Could have ±0.01 tolerance due to computer automatically round off calculation).
5. Correction Factor= Antenna Factor + Cable Loss – Amplifier Factor
6. Margin Value=Emission level-Limit value.
7. The average measurement was not performed when the peak measured data under the limit of average detection. If the average value is measured, peak measurement should also be supplied.



Date of Test	December 25, 2003	**Temperature**	25 deg/C
EUT	Industrial Tablet PC	**Humidity**	60 %RH
Working Cond.	Mode 2 (Bluetooth) Channel 78	**Frequency Range**	Above 1GHz
Antenna distance	3m at **Vertical**		

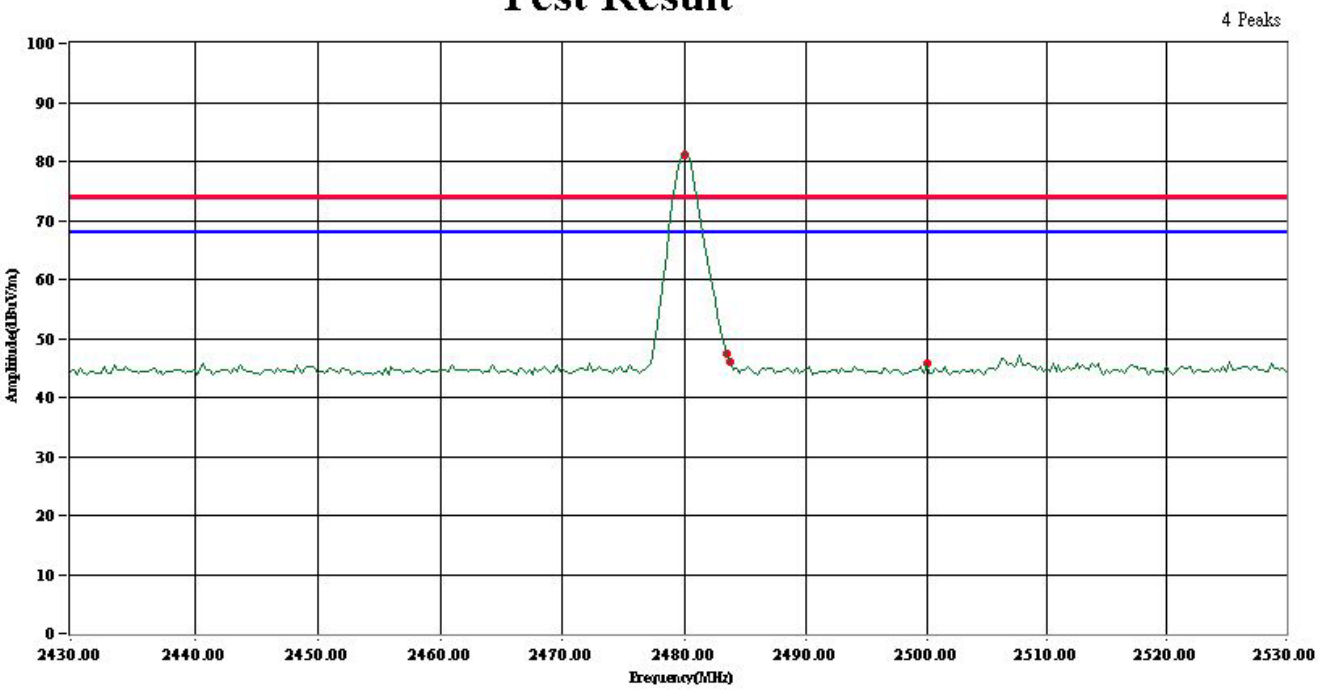
Peak

No.	Frequency [MHz]	Reading Level [dB(μV)]	Correction Factor [dB/m]	Emission Level [dB(μV/m)]	Limit [dB(μV/m)]	Result
1	2480.00	85.75	-4.59	81.16	74.00	N/A
2	2483.50	52.00	-4.60	47.40	74.00	PASS
3	2483.75	50.49	-4.60	45.89	74.00	PASS
4	2500.00	50.26	-4.60	45.66	74.00	PASS

Remark:

1. All Readings below 1GHz are Quasi-Peak and above 1GHz are peak or average.
2. Spectrum Analizyer Setting(Peak Detector): RBW=1MHz, VBW=1MHZ.
3. Spectrum Analizyer Setting(AVG Detector): RBW=1MHz, VBW=30HZ.
4. Emission Level= Reading + Correction Factor (Could have ±0.01 tolerance due to computer automatically round off calculation).
5. Correction Factor= Antenna Factor + Cable Loss – Amplifier Factor
6. Margin Value=Emission level-Limit value.
7. The average measurement was not performed when the peak measured data under the limit of average detection. If the average value is measured, peak measurement should also be supplied.

Test Result



7. OCCUPIED BANDWIDTH

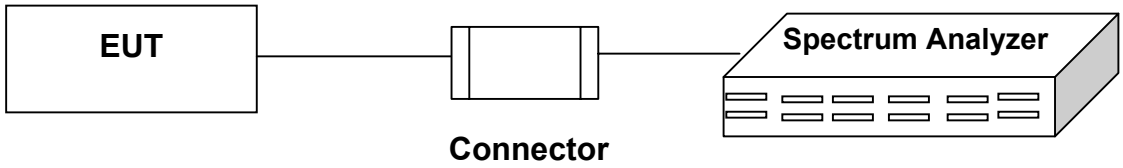
7.1 TEST EQUIPMENT

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

Item	Instrument	Manufacturer	Model	Serial No.	Last Cal.
1	Spectrum Analyzer	Rohde & Schwarz	FSP40	100061	03/16/04
2	Spectrum Analyzer	HP	E4407B	39240339	08/16/03

Note: All measurement critical items of test instrumentation were within their calibration period of 1 year.

7.2 BLOCK DIAGRAM OF TEST SETUP



7.3 LIMIT

WLAN: The minimum 6dB bandwidth shall be at least 500KHz.
Bluetooth: The maximum 20 dB bandwidth of the hopping channel is 1 MHz.

7.4 TEST RESULT

Date of Test	December 10, 2003
EUT	Industrial Tablet PC
Working Cond.	Mode 1 (802.11b)

Channel No.	Frequency (MHz)	Bandwidth (MHz)	Required limit (KHz)	Result
1	2412	11.1	>500	Pass
6	2437	11.3	>500	Pass
11	2462	11.3	>500	Pass

Figure Channel 1:

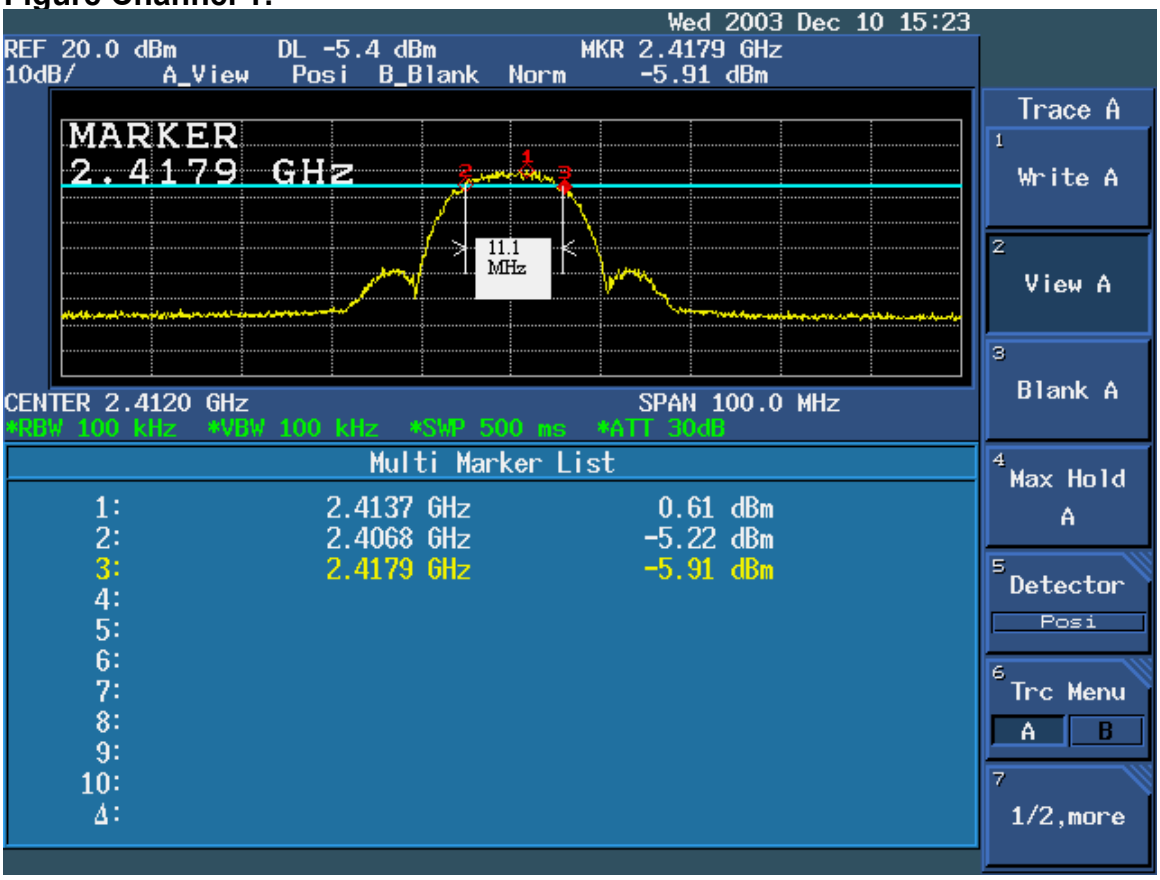


Figure Channel 6:

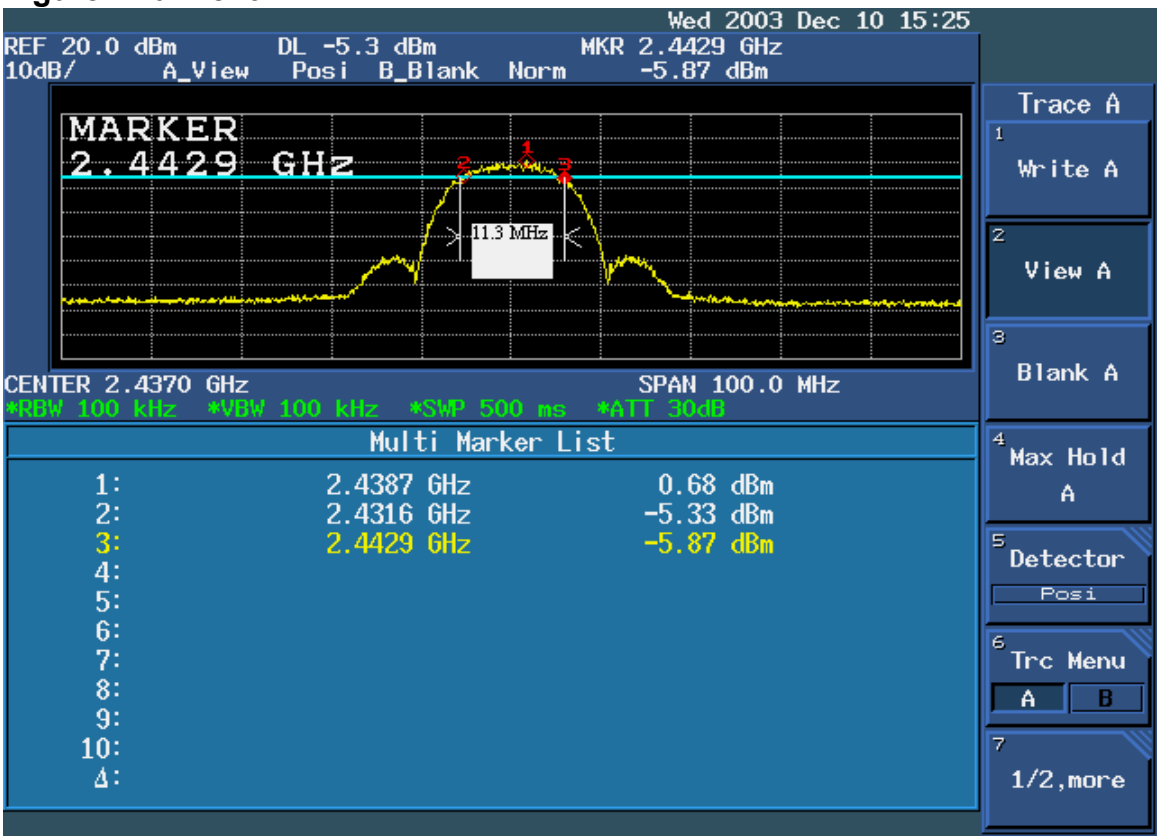
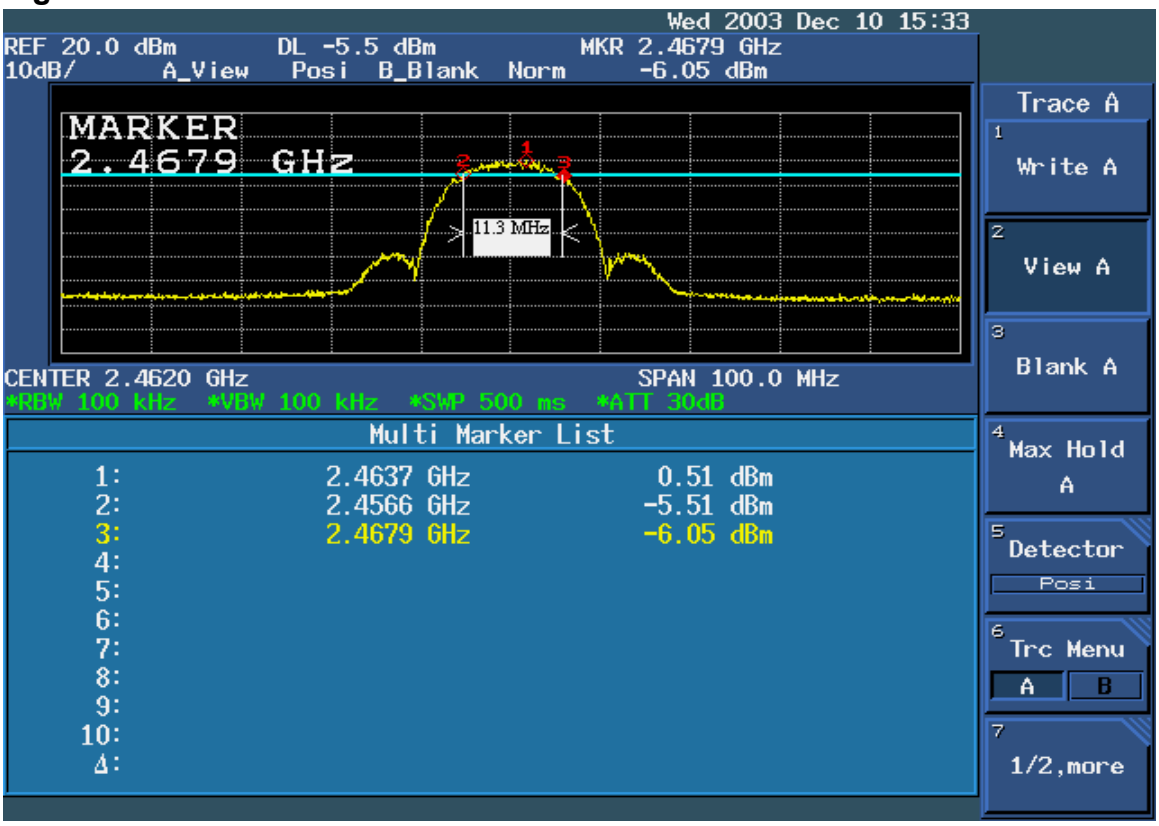


Figure Channel 11:



Date of Test	December 01, 2003
EUT	Industrial Tablet PC
Working Cond.	Mode 2

Channel No.	Frequency (MHz)	Measurement Level (MHz)	Required limit (MHz)	Result
0	2402	0.38	< 1	Pass
39	2441	0.365	< 1	Pass
78	2480	0.36	< 1	Pass

Figure Channel 0:

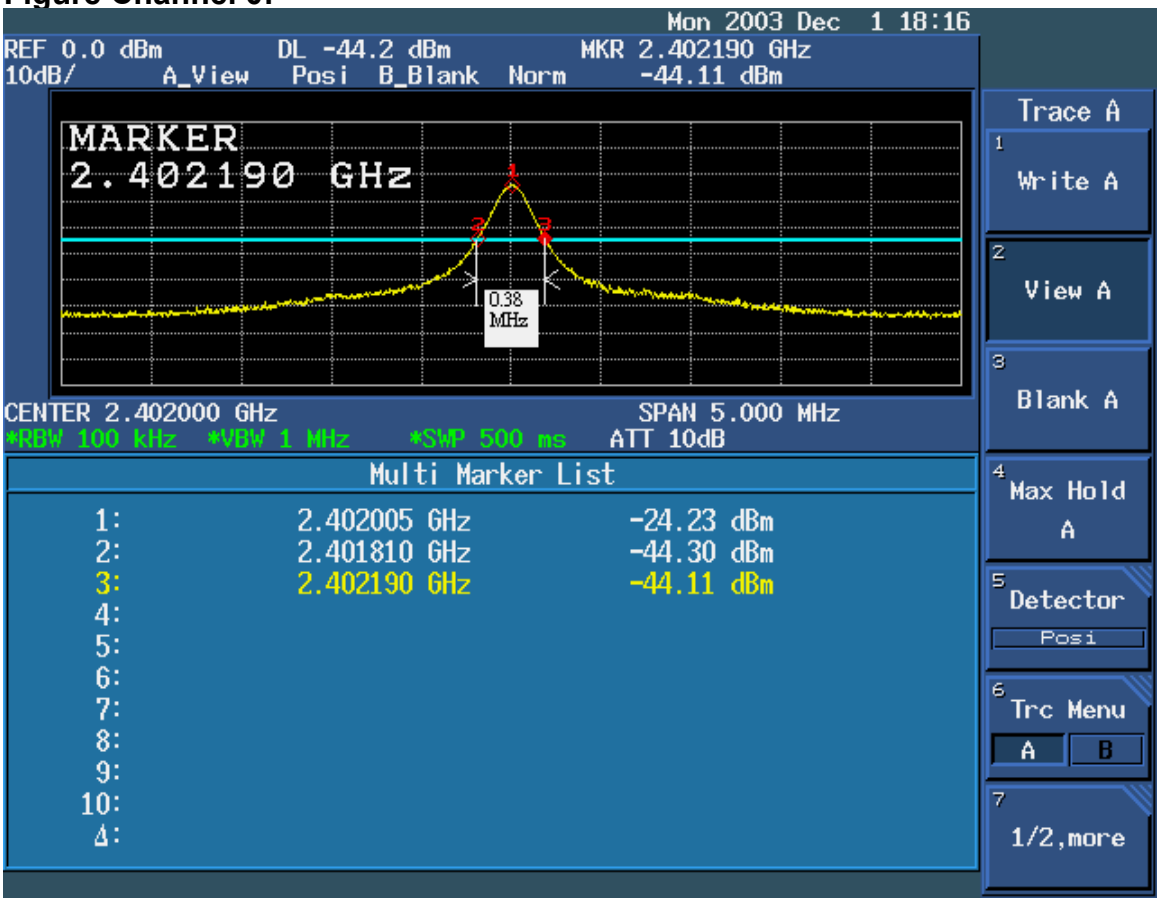


Figure Channel 39:

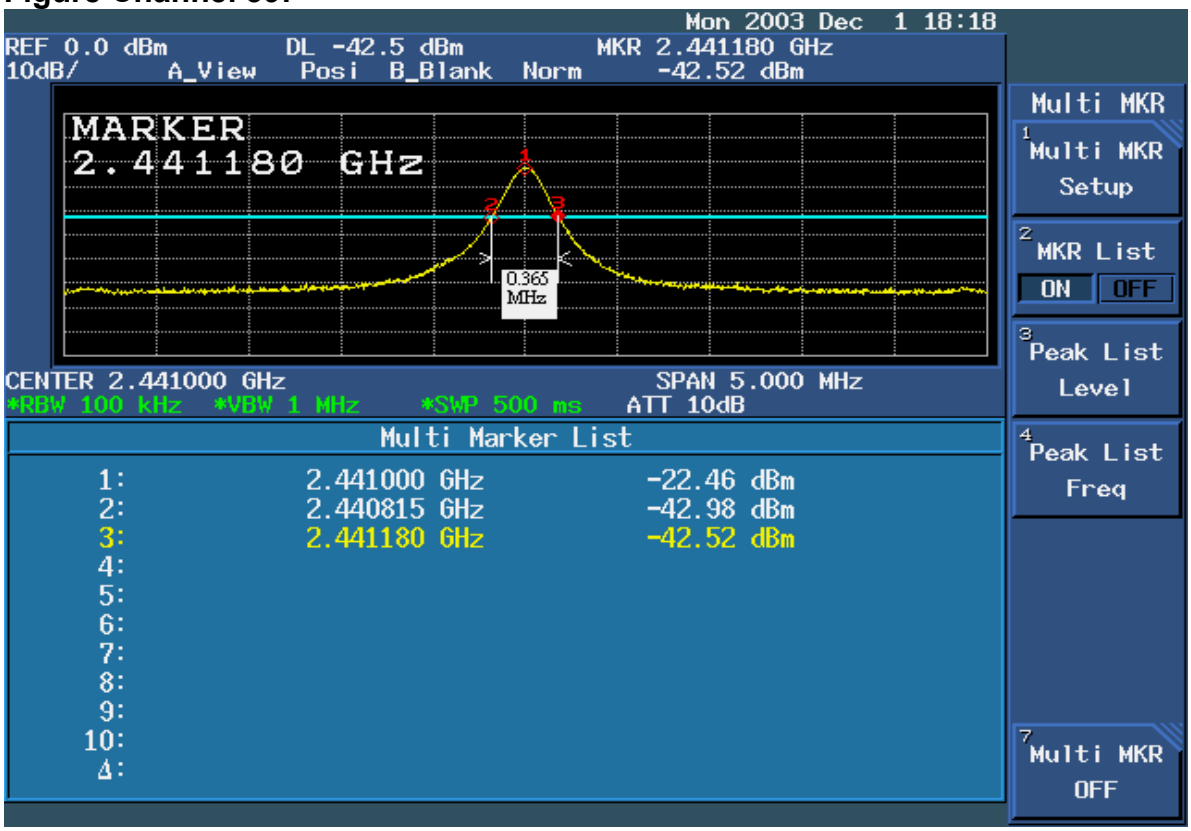
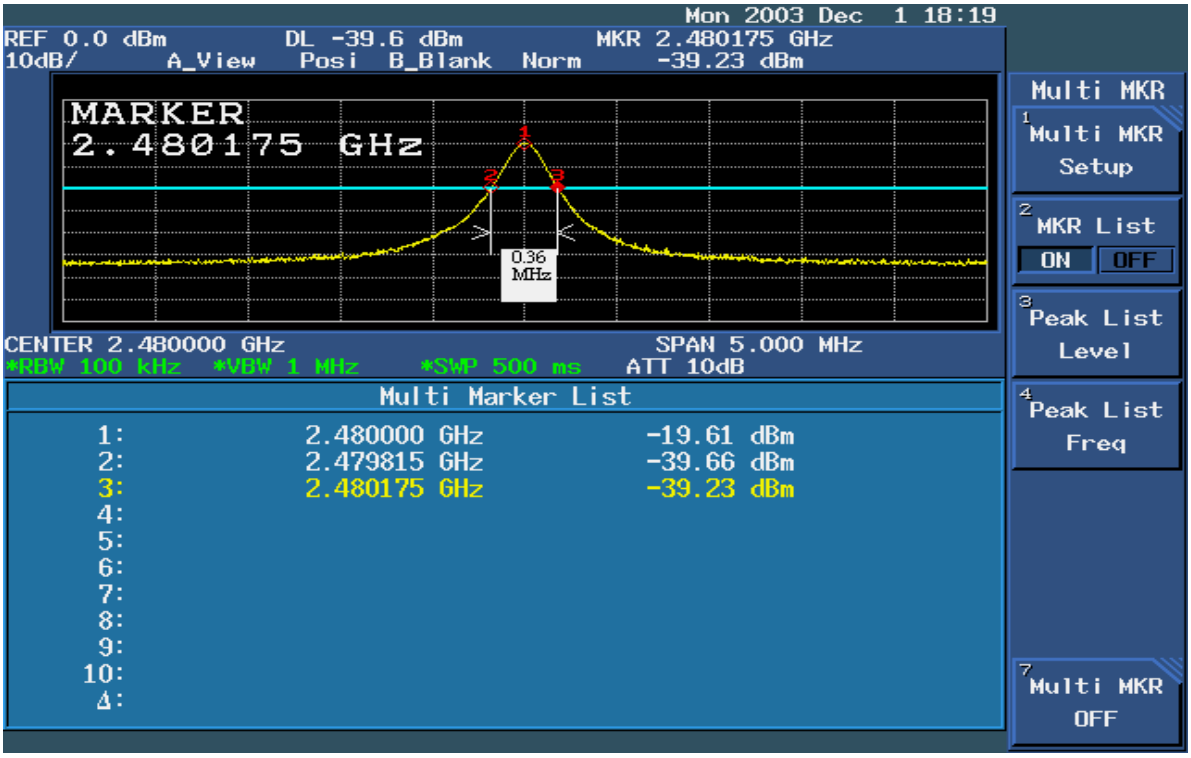


Figure Channel 78:



8. POWER DENSITY

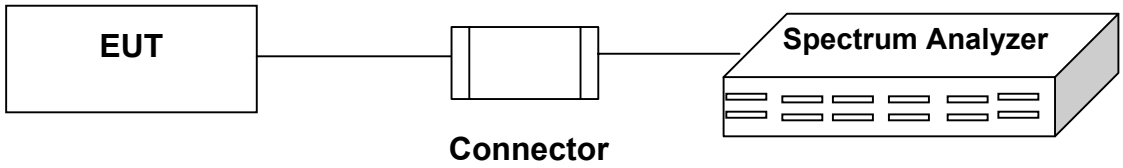
8.1 TEST EQUIPMENT

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

Item	Instrument	Manufacturer	Model	Serial No.	Last Cal.
1	Spectrum Analyzer	Rohde & Schwarz	FSP40	100061	03/16/04
2	Spectrum Analyzer	HP	E4407B	39240339	08/16/03

Note: All measurement critical items of test instrumentation were within their calibration period of 1 year.

8.2 BLOCK DIAGRAM OF TEST SETUP



8.3 LIMIT

The transmitted power density averaged over any 1 second interval shall not be greater +8dBm in any 3KHz bandwidth.

8.4 TEST RESULT

Date of Test	December 10, 2003
EUT	Industrial Tablet PC
Working Cond.	Mode 1 (802.11b)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required limit (dBm)	Result
1	2411.978	-13.89	<8dBm	Pass
6	2436.978	-13.55	<8dBm	Pass
11	2461.978	-13.95	<8dBm	Pass

Figure Channel 1:

Figure Channel 6:

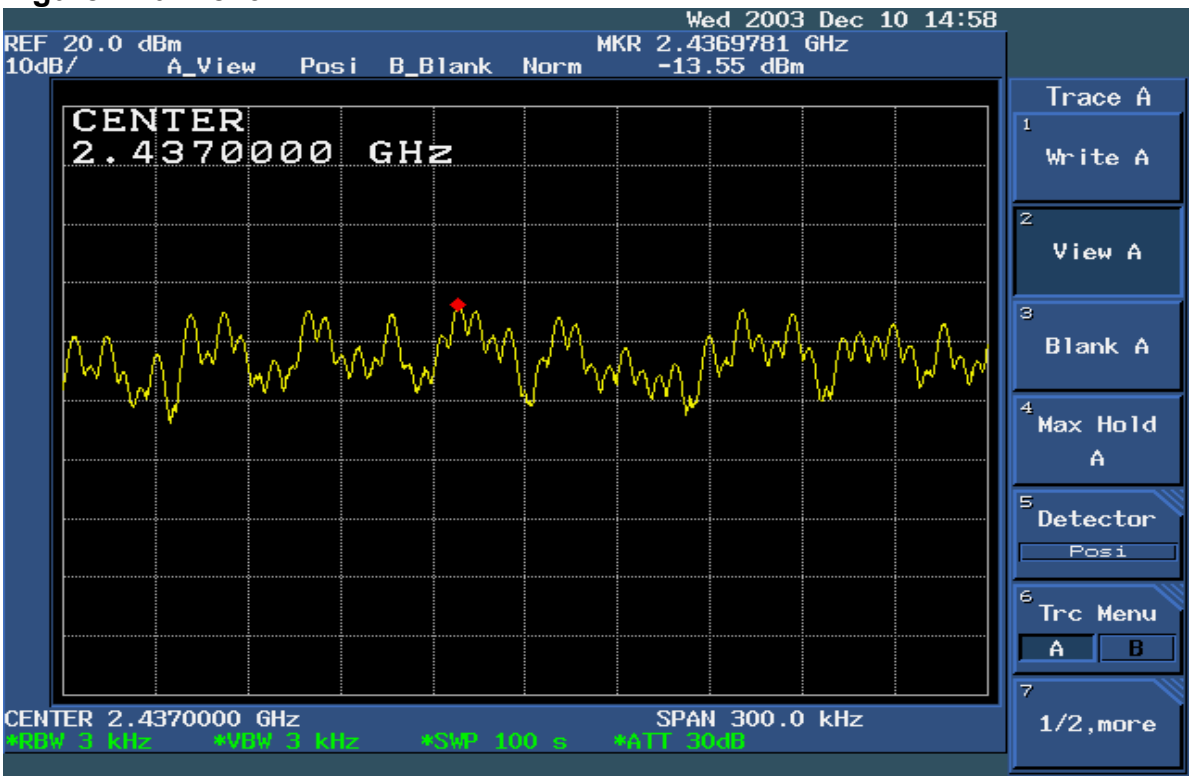
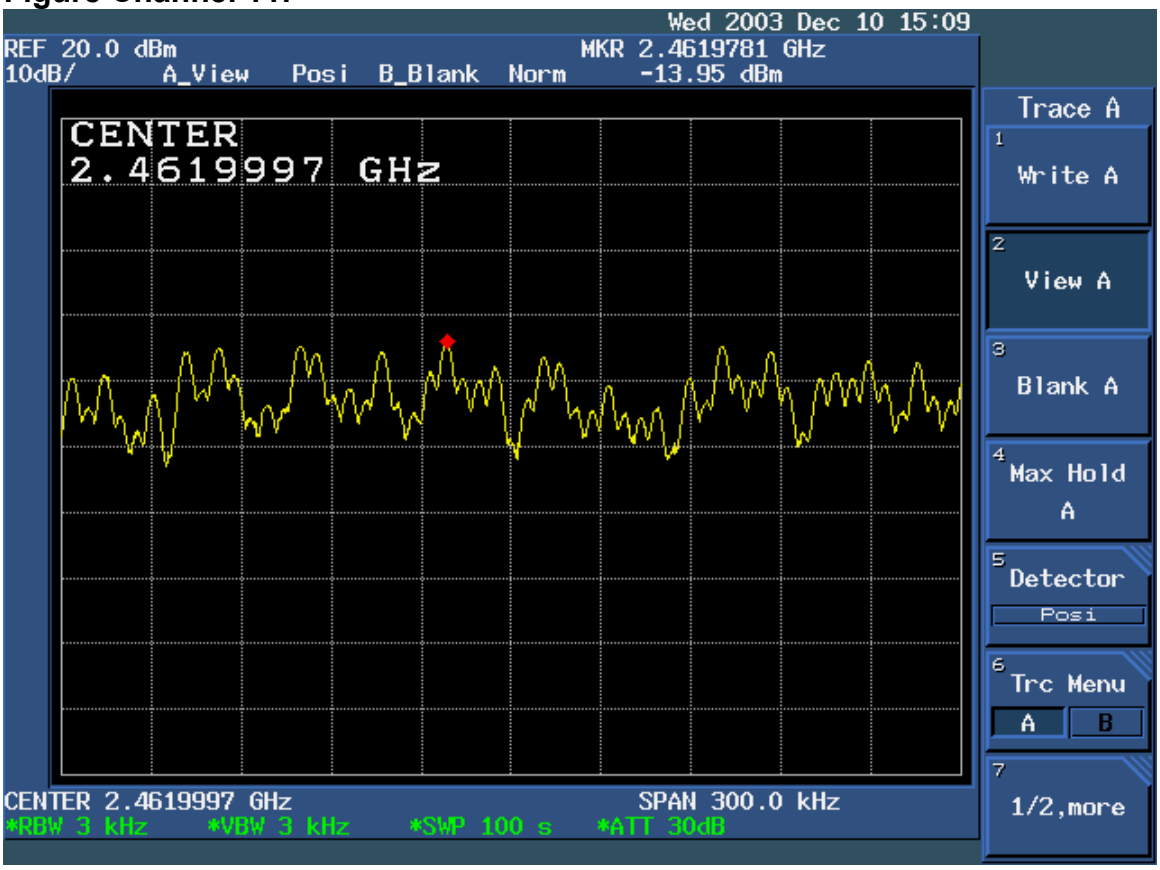


Figure Channel 11:



9. DWELL TIME

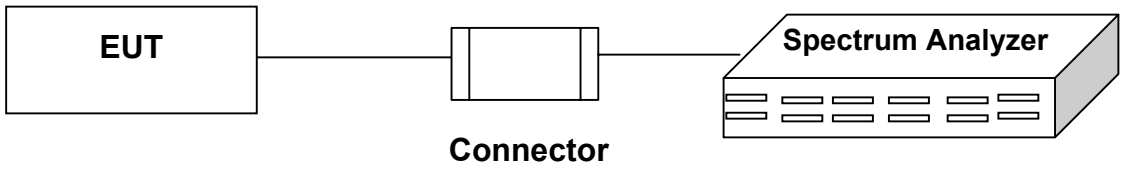
9.1 TEST EQUIPMENT

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

Item	Instrument	Manufacturer	Model	Serial No.	Last Cal.
1	Spectrum Analyzer	Rohde & Schwarz	FSP40	100061	03/16/04
2	Spectrum Analyzer	HP	E4407B	39240339	08/16/03

Note: All measurement critical items of test instrumentation were within their calibration period of 1 year.

9.2 BLOCK DIAGRAM OF TEST SETUP



9.3 Limit

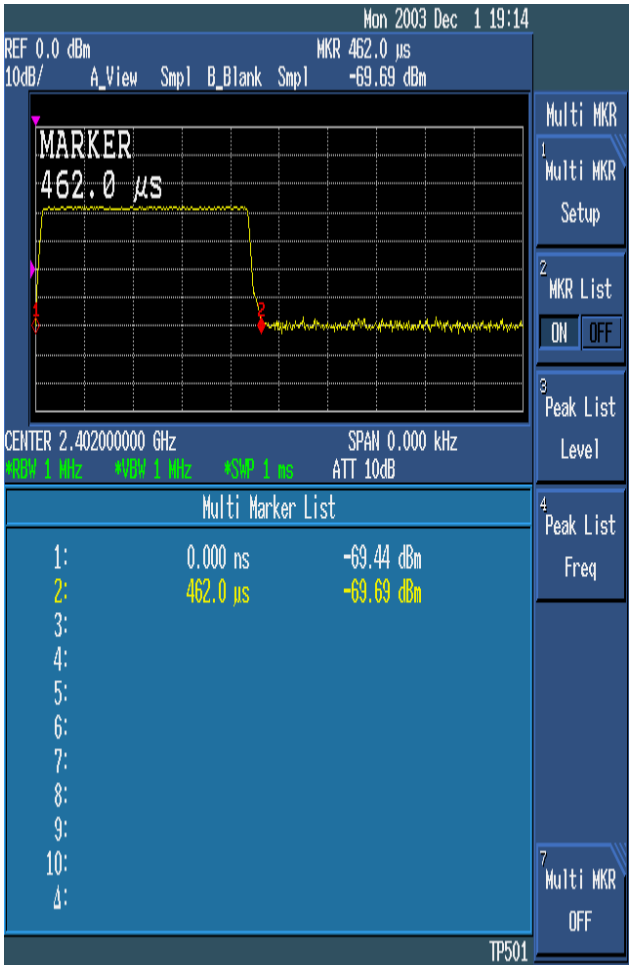
The dwell time shall be the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 30 second period.

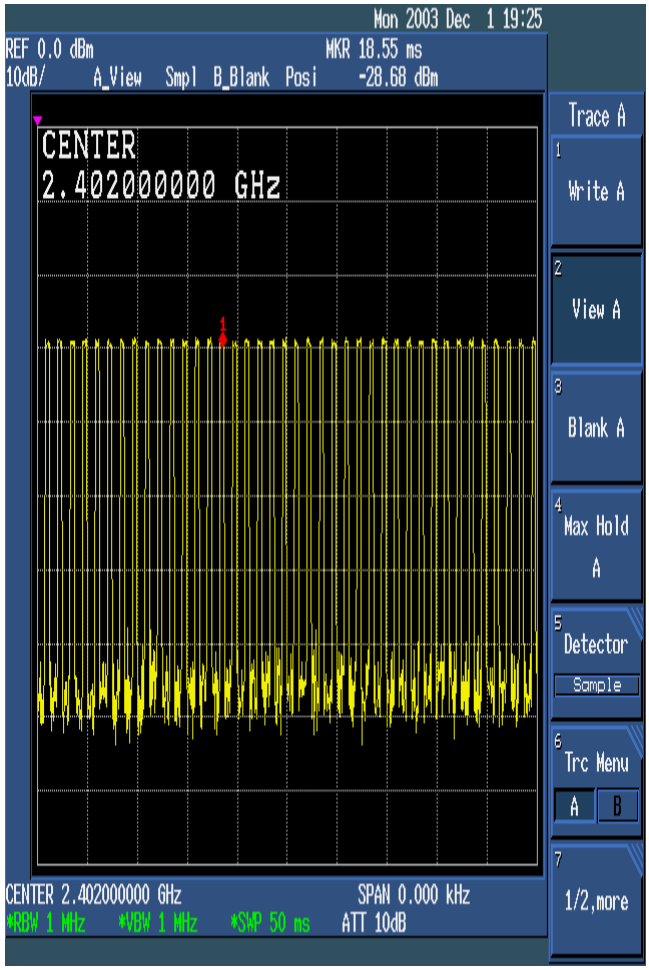
9.4 TEST RESULT

Date of Test	December 01, 2003
EUT	Industrial Tablet PC
Working Cond.	Mode 2 (Channel 0)

Measurement Level (sec)	Required Limit (sec)	Result
(1) Period ＝ 0.4 (sec) * 79 (number of channel) ＝ 31.6 (sec) (2) Hop rate ＝ 40 / 50 (ms) ＝ 800 / sec (3) Time slot length ＝ 462 (μs) ＝ 0.000462 (sec)	< 0.4	Pass
※ Dwell Time ＝0.000462 * (800 / 79) * 31.6 ＝0.14784 (sec)		

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

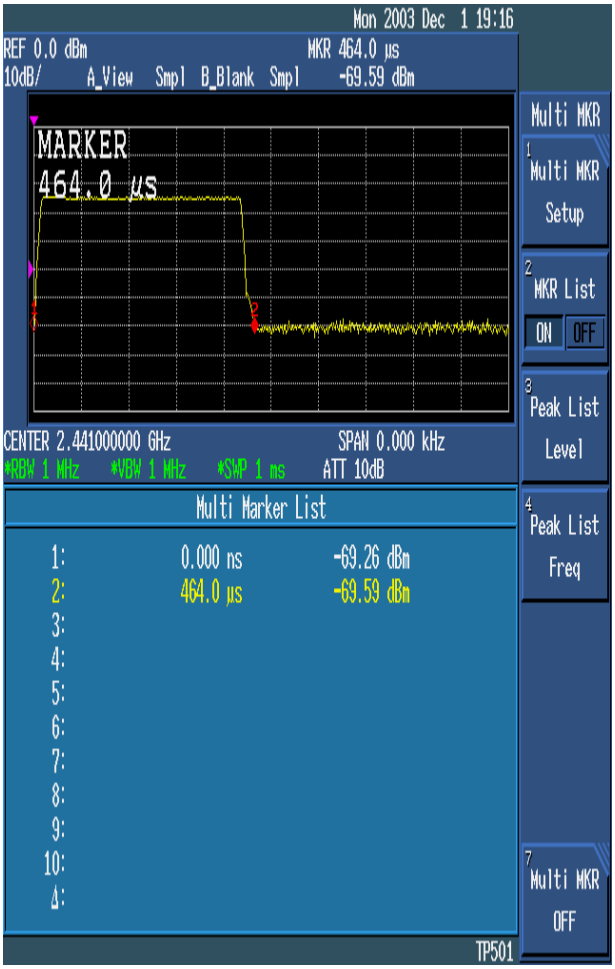


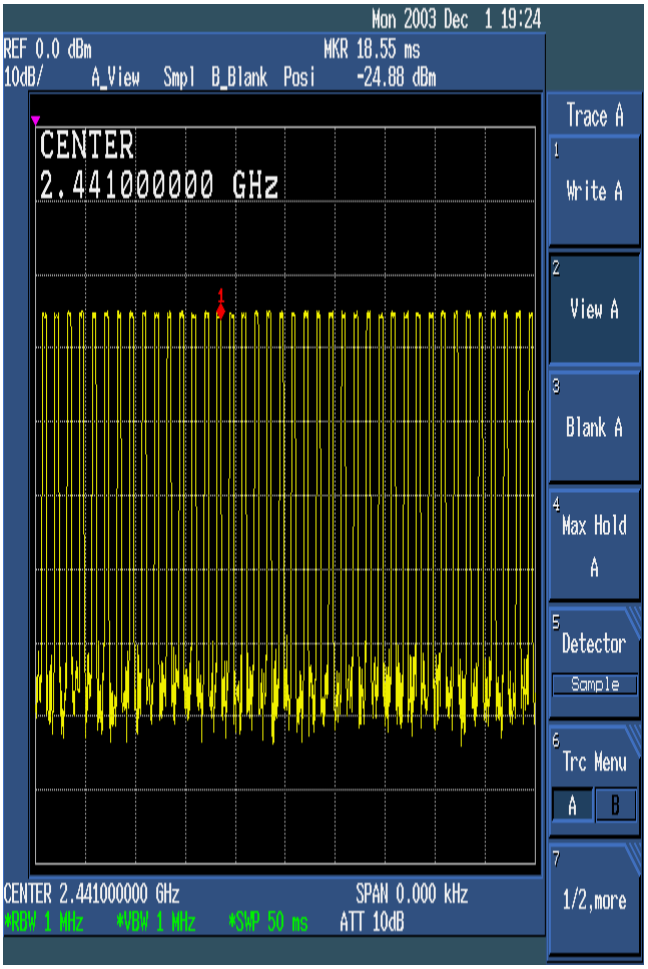


Date of Test	December 01, 2003
EUT	Industrial Tablet PC
Working Cond.	Mode 2 (Channel 39)

Measurement Level (sec)	**Required Limit (sec)**	**Result**
(2) Period ＝ 0.4 (sec) * 79 (number of channel) ＝ 31.6 (sec) (2) Hop rate ＝ 40 / 50 (ms) ＝ 800 / sec (3) Time slot length ＝ 464 (μs) ＝ 0.000464 (sec)	< 0.4	Pass
※ Dwell Time ＝0.000464 * (800 / 79) * 31.6 ＝0.14848 (sec)		

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

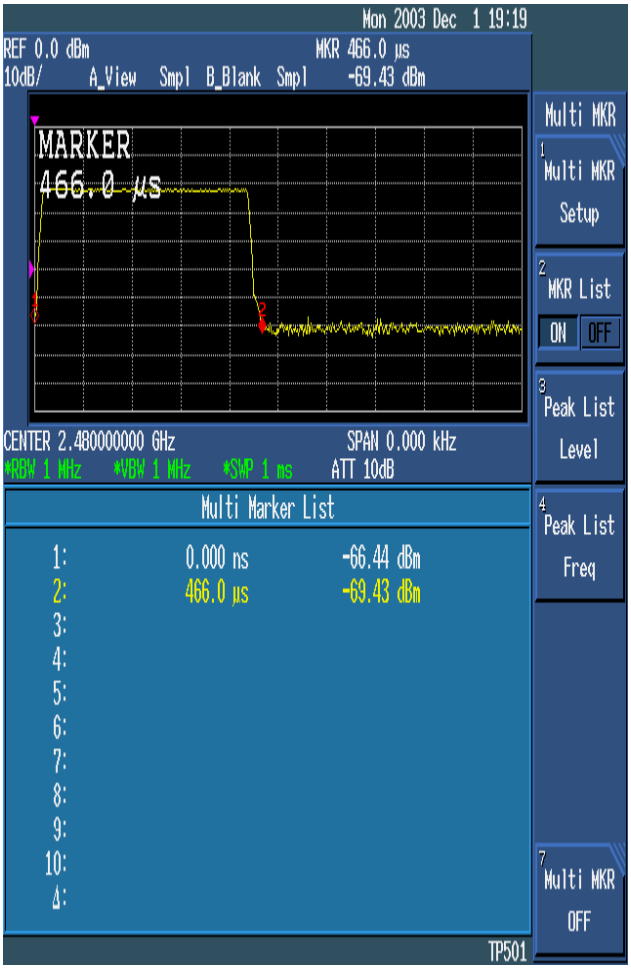


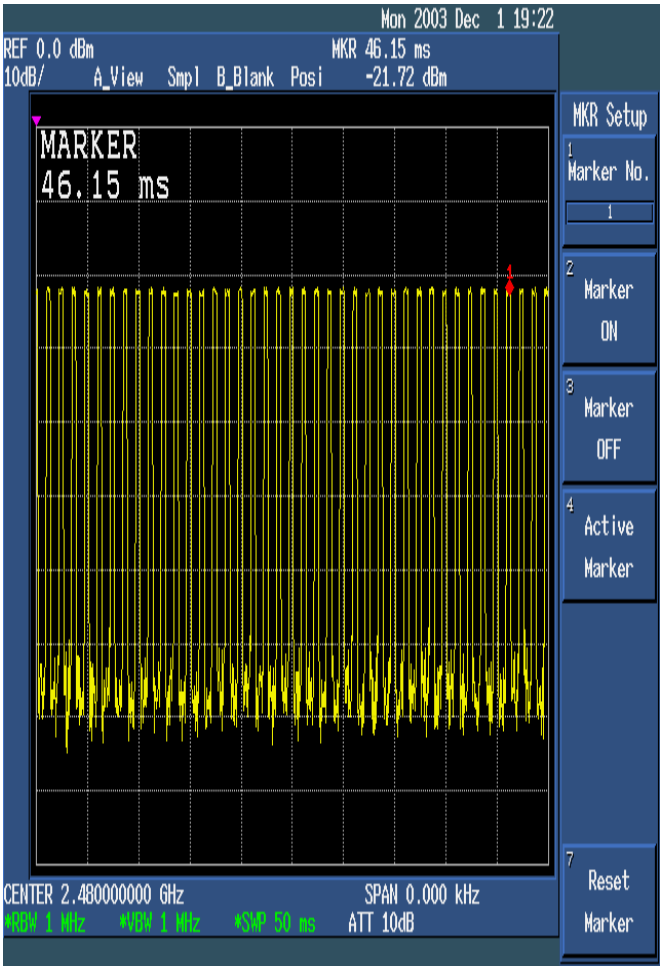


Date of Test	December 01, 2003
EUT	Industrial Tablet PC
Working Cond.	Mode 2 (Channel 79)

Measurement Level (sec)	**Required Limit (sec)**	**Result**
(3) Period ＝ 0.4 (sec) * 79 (number of channel) ＝ 31.6 (sec) (2) Hop rate ＝ 40 / 50 (ms) ＝ 800 / sec (3) Time slot length ＝ 466 (μs) ＝ 0.000466 (sec)	< 0.4	Pass
※ Dwell Time ＝0.000466 * (800 / 79) * 31.6 ＝0.14912 (sec)		

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





10. CHANNEL OF NUMBER

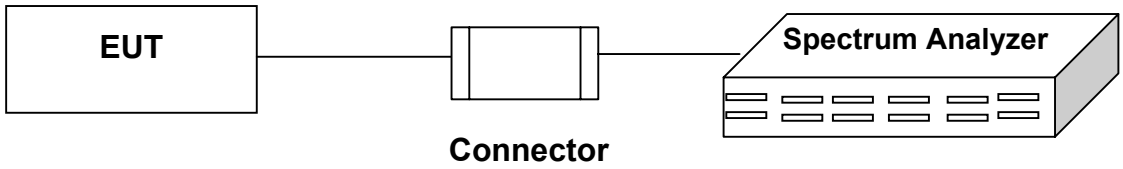
10.1 TEST EQUIPMENT

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

Item	Instrument	Manufacturer	Model	Serial No.	Last Cal.
1	Spectrum Analyzer	Rohde & Schwarz	FSP40	100061	03/16/04
2	Spectrum Analyzer	HP	E4407B	39240339	08/16/03

Note: All measurement critical items of test instrumentation were within their calibration period of 1 year.

10.2 BLOCK DIAGRAM OF TEST SETUP



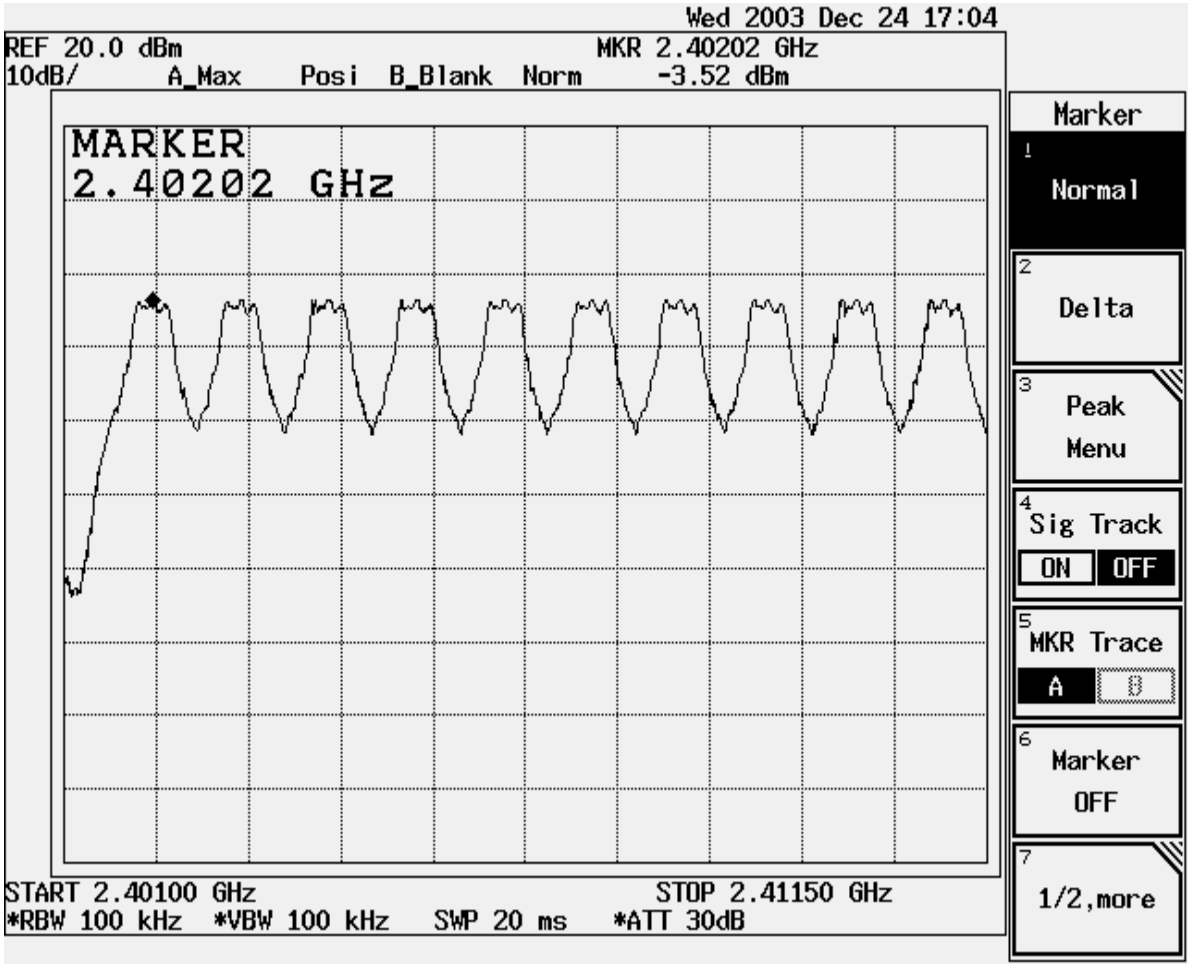
10.3 Limit

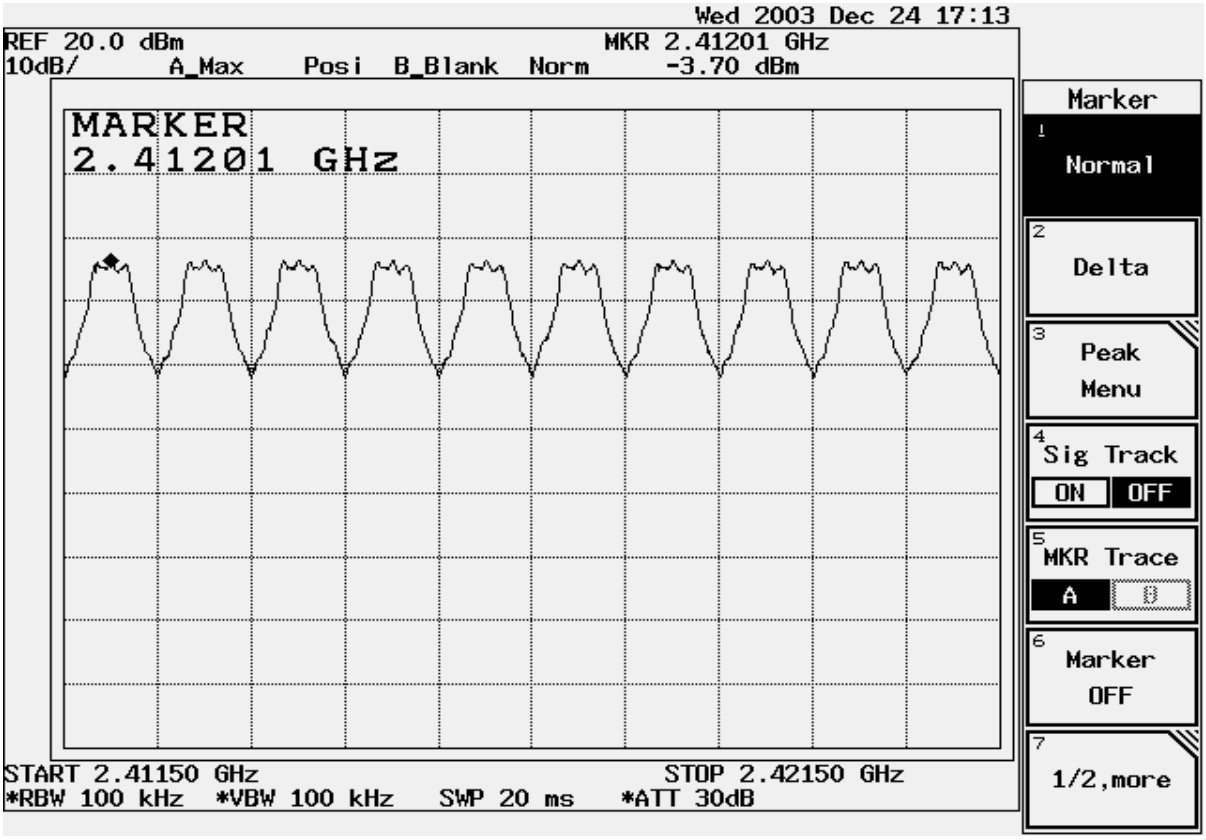
Frequency hopping systems operating in the 2400-2483.5 MHz bands shall use at least 75 hopping frequencies.

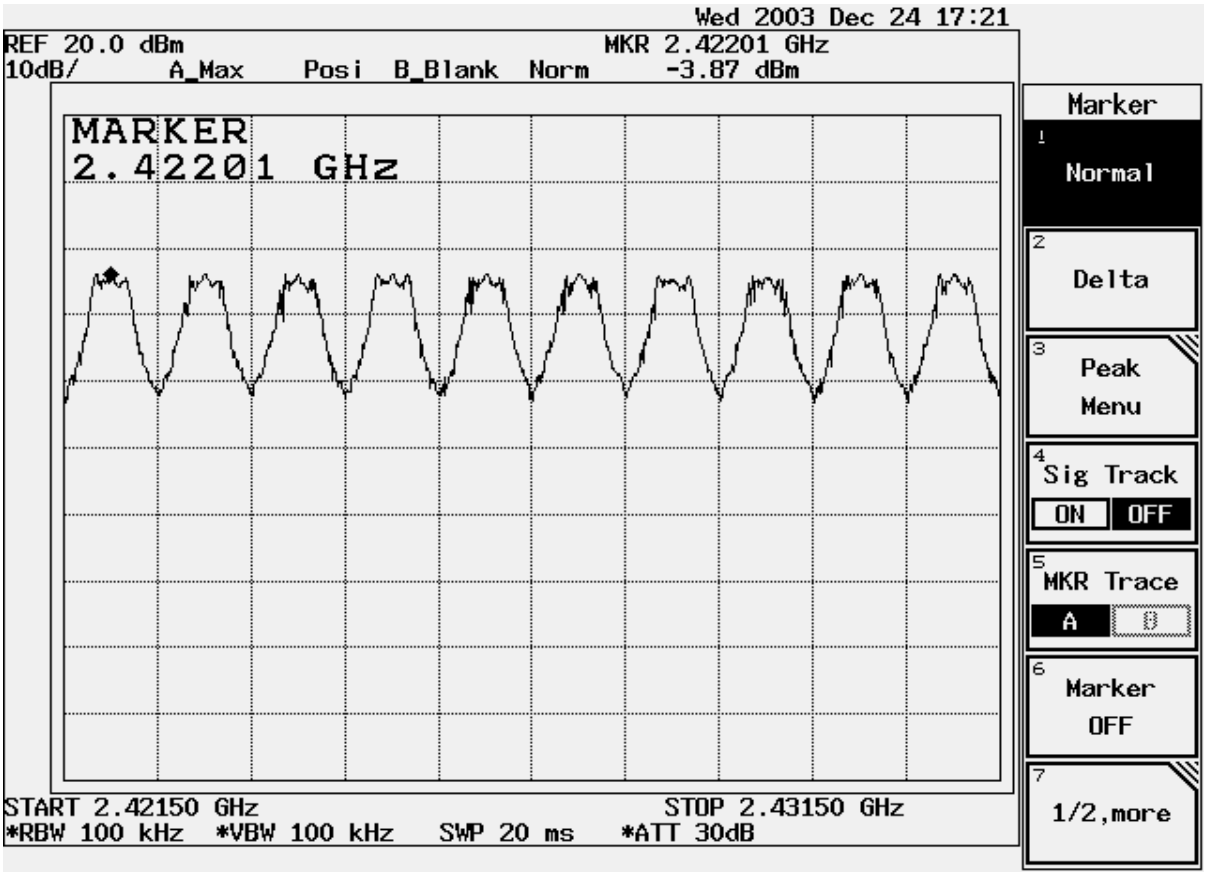
10.4 TEST RESULT

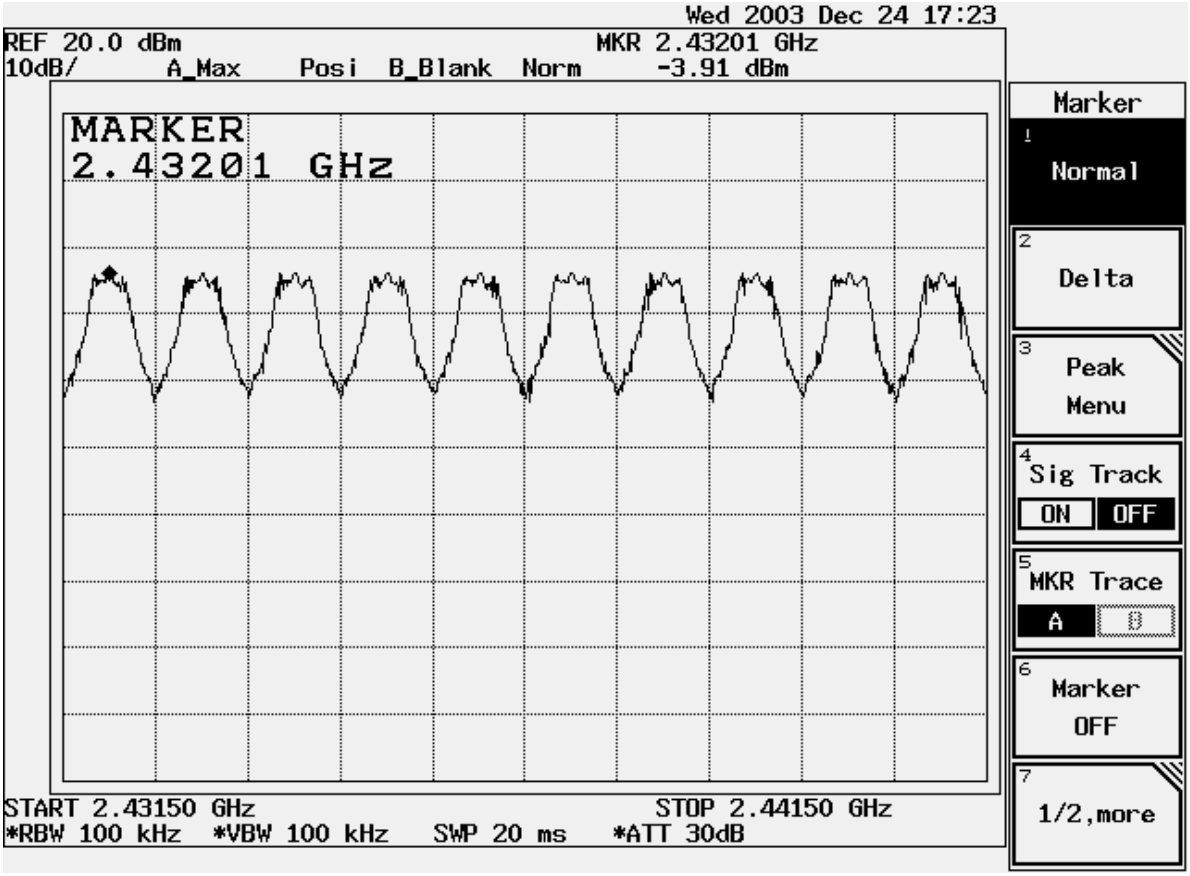
Date of Test	December 24, 2003
EUT	Industrial Tablet PC
Working Cond.	Mode 2

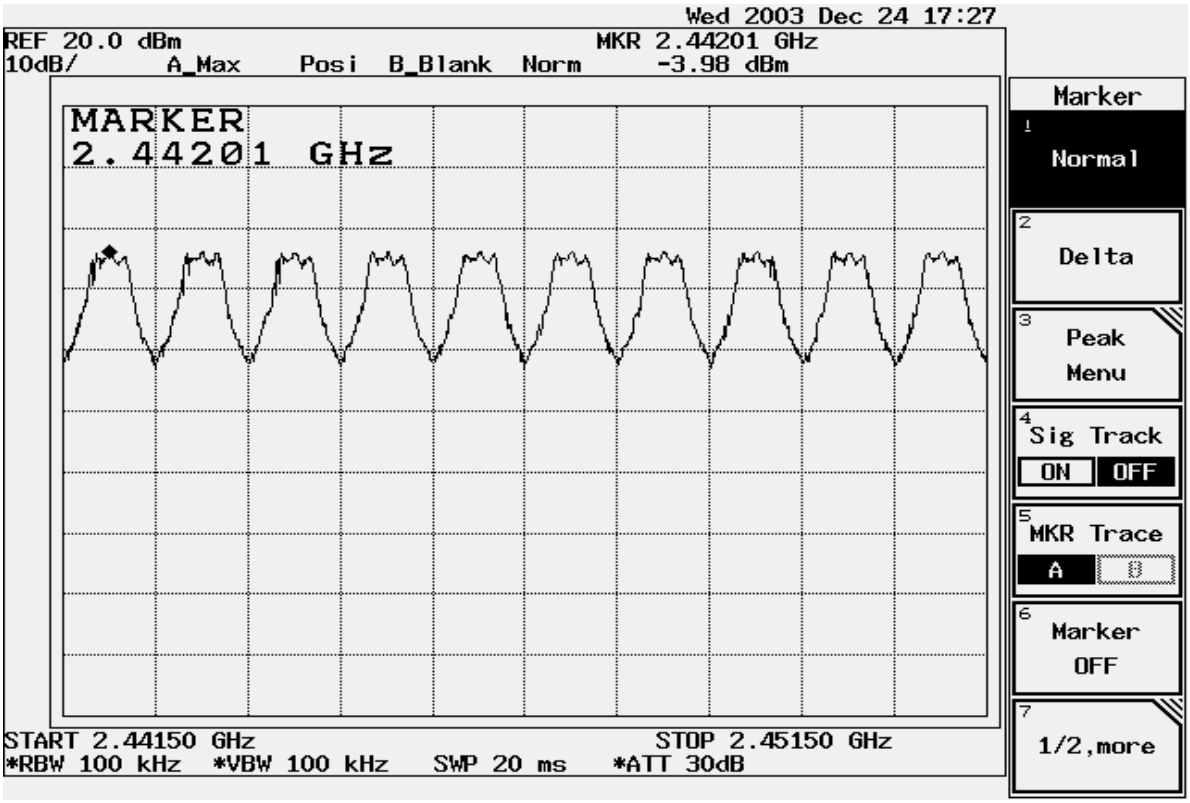
Frequency Range (MHz)	Measurement (Hopping Channel)	Required Limit (Hopping Channel)	Result
2402 ~ 2480	**79**	**>75**	**Pass**

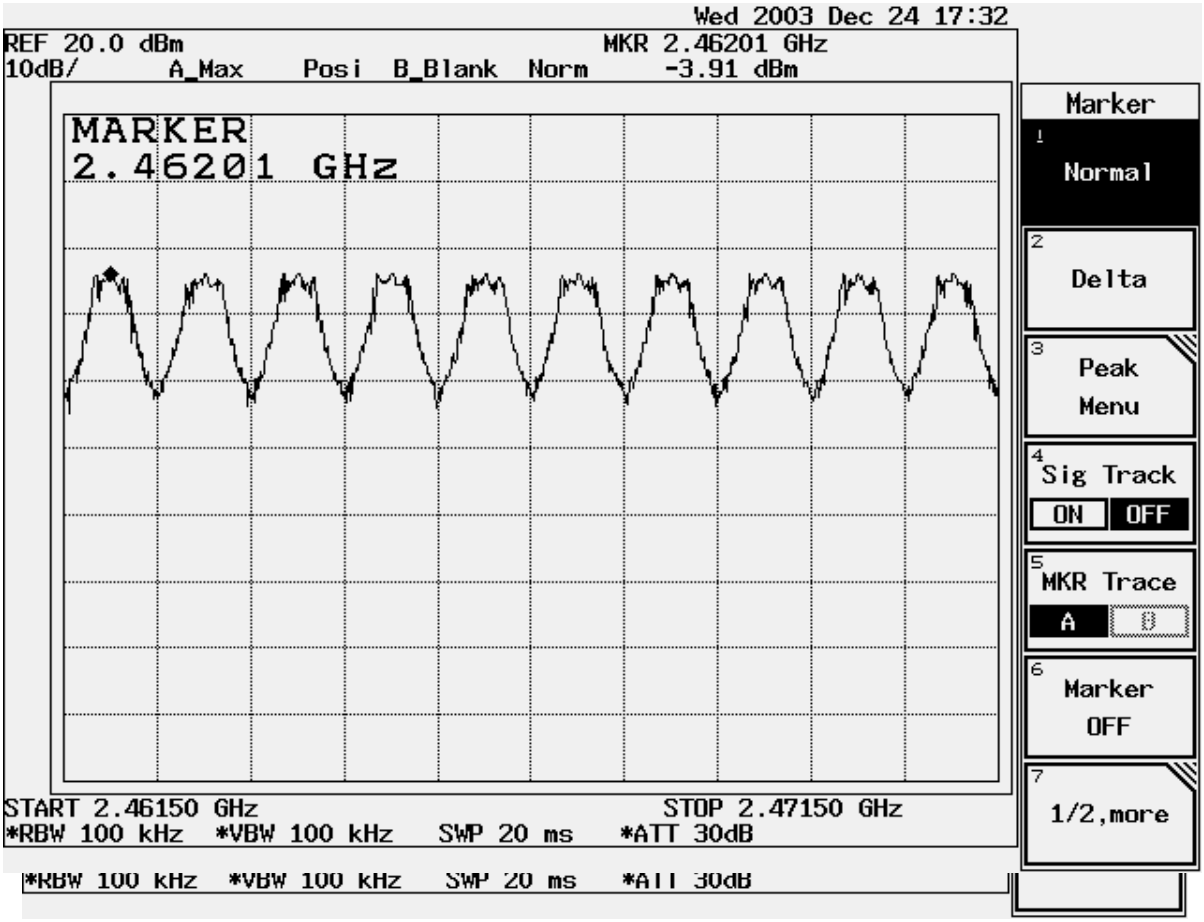


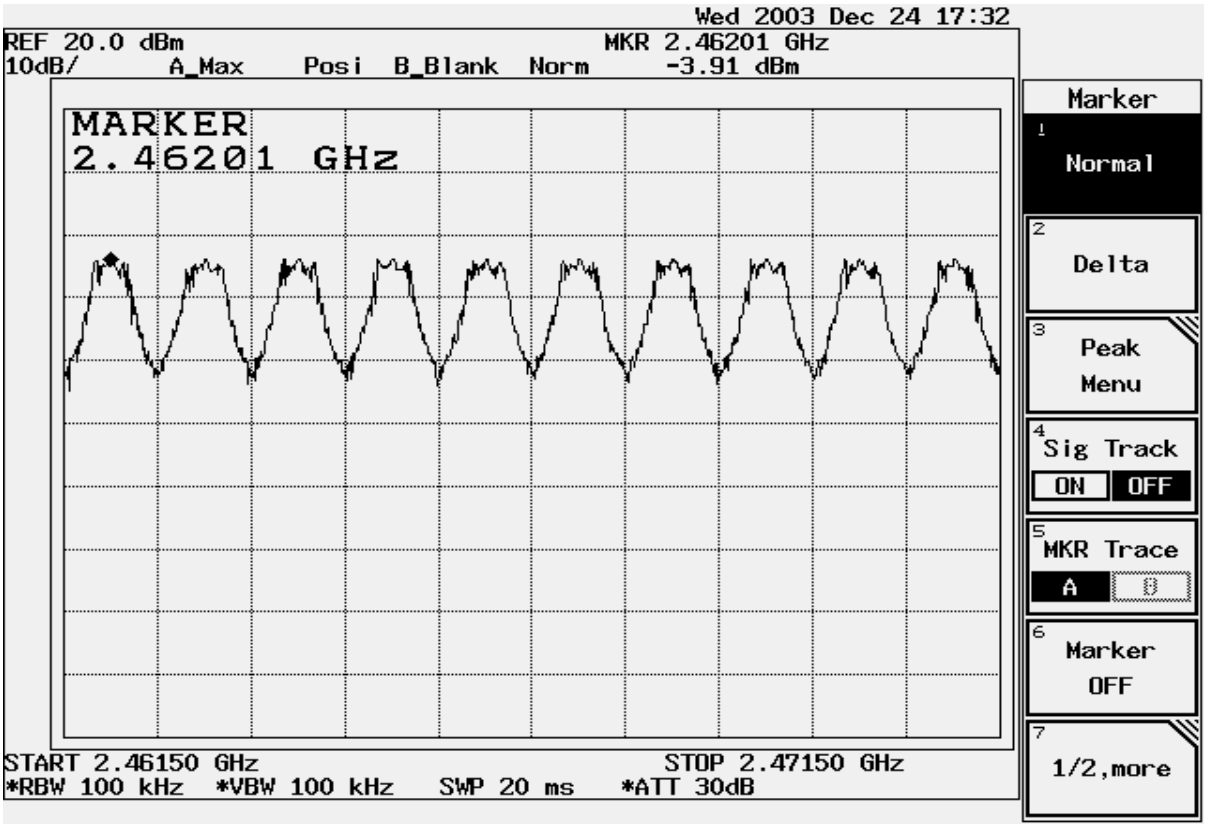

Wed 2003 Dec 24 17:13
REF 20.0 dBm
MKR 2.41201 GHz
10dB/ A_Max Posi B_Blank Norm -3.70 dBm
MARKER
2.41201 GHz
START 2.41150 GHz
STOP 2.42150 GHz
*RBW 100 kHz *VBW 100 kHz SWP 20 ms *ATT 30dB
Marker
1 Normal
2 Delta
3 Peak Menu
4 Sig Track
ON OFF
5 MKR Trace
A B
6 Marker OFF
7 1/2,more

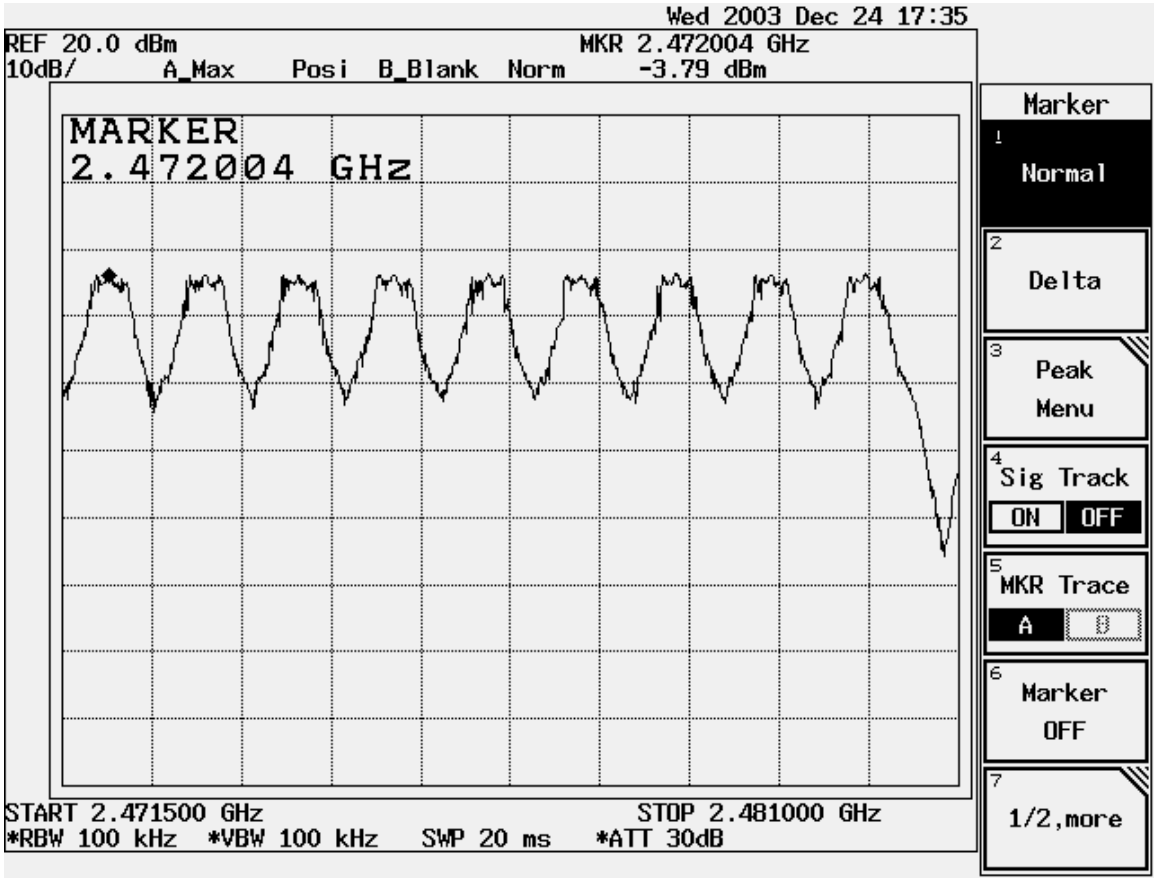

Wed 2003 Dec 24 17:21
REF 20.0 dBm
MKR 2.42201 GHz
10dB/ A_Max Posi B_Blank Norm -3.87 dBm
MARKER
2.42201 GHz
START 2.42150 GHz
STOP 2.43150 GHz
*RBW 100 kHz *VBW 100 kHz SWP 20 ms *ATT 30dB
Marker
1 Normal
2 Delta
3 Peak Menu
4 Sig Track
ON OFF
5 MKR Trace
A B
6 Marker OFF
7 1/2,more


Wed 2003 Dec 24 17:23
REF 20.0 dBm
10dB/ A_Max Posi B_Blank Norm
MKR 2.43201 GHz
-3.91 dBm
MARKER
2.43201 GHz
START 2.43150 GHz
STOP 2.44150 GHz
*RBW 100 kHz *VBW 100 kHz SWP 20 ms *ATT 30dB
Marker
1 Normal
2 Delta
3 Peak Menu
4 Sig Track
ON OFF
5 MKR Trace
A B
6 Marker OFF
7 1/2,more


Wed 2003 Dec 24 17:27
REF 20.0 dBm
10dB/ A_Max Posi B_Blank Norm
MKR 2.44201 GHz
-3.98 dBm
MARKER
2.44201 GHz
START 2.44150 GHz
STOP 2.45150 GHz
*RBW 100 kHz *VBW 100 kHz SWP 20 ms *ATT 30dB
Marker
1 Normal
2 Delta
3 Peak Menu
4 Sig Track
ON OFF
5 MKR Trace
A B
6 Marker OFF
7 1/2,more


Wed 2003 Dec 24 17:32
REF 20.0 dBm
MKR 2.46201 GHz
10dB/ A_Max Posi B_Blank Norm -3.91 dBm
MARKER
2.46201 GHz
Marker
1 Normal
2 Delta
3 Peak Menu
4 Sig Track
ON OFF
5 MKR Trace
A B
6 Marker OFF
7 1/2,more
START 2.46150 GHz
STOP 2.47150 GHz
*RBW 100 kHz *VBW 100 kHz SWP 20 ms *ATT 30dB


Wed 2003 Dec 24 17:32
REF 20.0 dBm
MKR 2.46201 GHz
10dB/ A_Max Posi B_Blank Norm -3.91 dBm
MARKER
2.46201 GHz
Marker
1 Normal
2 Delta
3 Peak Menu
4 Sig Track
ON OFF
5 MKR Trace
A B
6 Marker OFF
7 1/2,more
START 2.46150 GHz
STOP 2.47150 GHz
*RBW 100 kHz *VBW 100 kHz SWP 20 ms *ATT 30dB


Wed 2003 Dec 24 17:35
REF 20.0 dBm
MKR 2.472004 GHz
10dB/ A_Max Posi B_Blank Norm -3.79 dBm
MARKER
2.472004 GHz
START 2.471500 GHz
STOP 2.481000 GHz
*RBW 100 kHz *VBW 100 kHz SWP 20 ms *ATT 30dB
Marker
1 Normal
2 Delta
3 Peak Menu
4 Sig Track
ON OFF
5 MKR Trace
A B
6 Marker OFF
7 1/2,more

11. CHANNEL SEPARATION

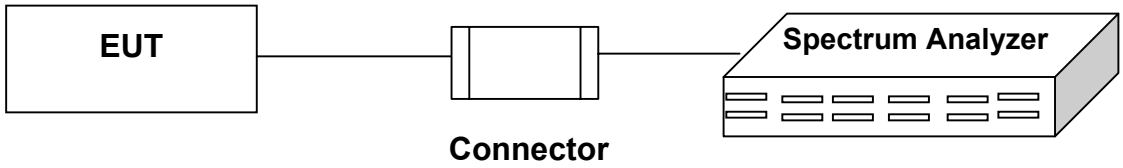
11.1 TEST EQUIPMENT

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

Item	Instrument	Manufacturer	Model	Serial No.	Last Cal.
1	Spectrum Analyzer	Rohde & Schwarz	FSP40	100061	03/16/04
2	Spectrum Analyzer	HP	E4407B	39240339	08/16/03

Note: All measurement critical items of test instrumentation were within their calibration period of 1 year.

11.2 BLOCK DIAGRAM OF TEST SETUP



11.3 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.

11.4 TEST RESULT

Date of Test	December 01, 2003
EUT	Industrial Tablet PC
Working Cond.	Mode 2

Measurement Level (MHz)	Required Limit (kHz)	Result
1.03	**>25**	**Pass**

14. EMI REDUCTION METHOD DURING COMPLIANCE TESTING

No modification was made during testing.

Appendix A

Circuit (Block) Diagram

(Shall be added by Applicant)

Appendix B

User Manual

(Shall be added by Applicant)