FCC Part15 Subpart C Test Report

Product Name	：	Notebook
Model No.	：	SZ900/SZ901
FCC ID	：	WXC-900901WBG

Applicant	：	FOXCONN INTERNATIONAL INC
Address	：	2 TZU YU ST TU-CHENG,TAIPEI HSIEN 236 TAIWAN

Date of Receipt	：	2009/05/31
Issued Date	：	2009/06/19
Report No.	：	096S038R-RF-US-P06V01
Report Version	：	V1.1

Test Report Certification

Issued Date : 2009/06/19
Report No. : 096S038R-RF-US-P06V01

QuieTek

Product Name	:	Notebook
Applicant	:	FOXCONN INTERNATIONAL INC
Address	:	2 TZU YU ST TU-CHENG, TAIPEI HSIEN 236 TAIWAN
Manufacturer	:	FULIN ELECTRONICAL TECHNOLOGY (CHANGSHU) CO LTD
Address	:	HUANGPU RD, DONGNAN ECONOMICAL DEVELOPMENT ZONE, CHANGSHU JIANGSU, CHINA
Model No.	:	SZ900/SZ901
FCC ID	:	WXC-900901WBG
Rated Voltage	:	AC 120 V / 60 Hz
EUT Voltage	:	AC 100~240 V/ 50~60Hz
Trade Name	:	FOXCONN
Applicable Standard	:	FCC CFR Title 47 Part 15 Subpart C / ANSI C63.4: 2003
Test Result	:	Complied
Performed Location	:	SuZhou EMC laboratory No.99 Hongye Rd., Suzhou Industrial Park Loufeng Hi-Tech Development Zone., SuZhou, China TEL: +86-512-6251-5088 / FAX: +86-512-6251-5098 FCC Registration Number: 800392

Documented By : Alice Ni
(Alice Ni)

Reviewed By : Marlin Chen
(Marlin Chen)

Approved By : Gene Chang
(Gene Chang)

Laboratory Information

We , **QuieTek Corporation**, are an independent EMC and safety consultancy that was established the whole facility in our laboratories. The test facility has been accredited by the following accreditation Bodies in compliance with ISO 17025, EN 45001 and Guide 25:

Taiwan R.O.C.	**:**	**BSMI, DGT, CNLA**
Germany	**:**	**TUV Rheinland**
Norway	**:**	**Nemko, DNV**
USA	**:**	**FCC, NVLAP**
Japan	**:**	**VCCI**

The related certificate for our laboratories about the test site and management system can be downloaded from QuieTek Corporation's Web Site : http://tw.quietek.com/modules/myalbum/
The address and introduction of QuieTek Corporation's laboratories can be founded in our Web site : http://www.quietek.com/
If you have any comments, Please don't hesitate to contact us. Our contact information is as below:

HsinChu Testing Laboratory :
No.75-2, 3rd Lin, Wangye Keng, Yonghxing Tsuen, Qionglin Shiang, Hsinchu County 307, Taiwan, R.O.C.
TEL:+886-3-592-8858 / FAX:+886-3-592-8859 E-Mail : service@quietek.com

NVLAP Lab Code : 200347-0
1313

LinKou Testing Laboratory :
No. 5, 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

NVLAP Lab Code: 200533-0
0914

Suzhou Testing Laboratory :
No.99 Hongye Rd., Suzhou Industrial Park Loufeng Hi-Tech Development Zone., SuZhou, China
TEL : +86-512-6251-5088 / FAX : 86-512-6251-5098 E-Mail : service@quietek.com

NVLAP Lab Code : 200743-0
1596

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1. General Information

1.1. EUT Description

Product Name	Notebook
Trade Name	FOXCONN
Model No.	SZ900/SZ901
FCC ID	WXC-900901WBG
BT Work Voltage	DC 3.3V
Frequency Range	2402 - 2480 MHz
Channel Number	79
Type of Modulation	FHSS
Data Rate	1Mbps(GFSK), 2Mbps(8DPSK), 3Mbps (Pi/4 DQPSK)
Channel Control	Auto
Antenna Type	Chip Antenna
Antenna Gain	3.5dBi

Note: This product includes two models SZ900 and SZ901. SZ900 and SZ901 are only different from externally. The motherboard and the material are the same.

Component	
AC Adapter	Manufacturer: Darfon Electronics Corp. Model: BA01-J Input: 100-240V~, 50~60Hz, 1A Output: 19V, 2.1A

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

Antenna List

Antenna	Manufacturer	Model No.	Peak Gain
Bluetooth Antenna	Amotech	ALA621C5	3.5dBi

1.2. Mode of Operation

QuieTek has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as:

Test Mode
Mode 1: DH5 (TX)
Mode 2: 3DH5 (TX)

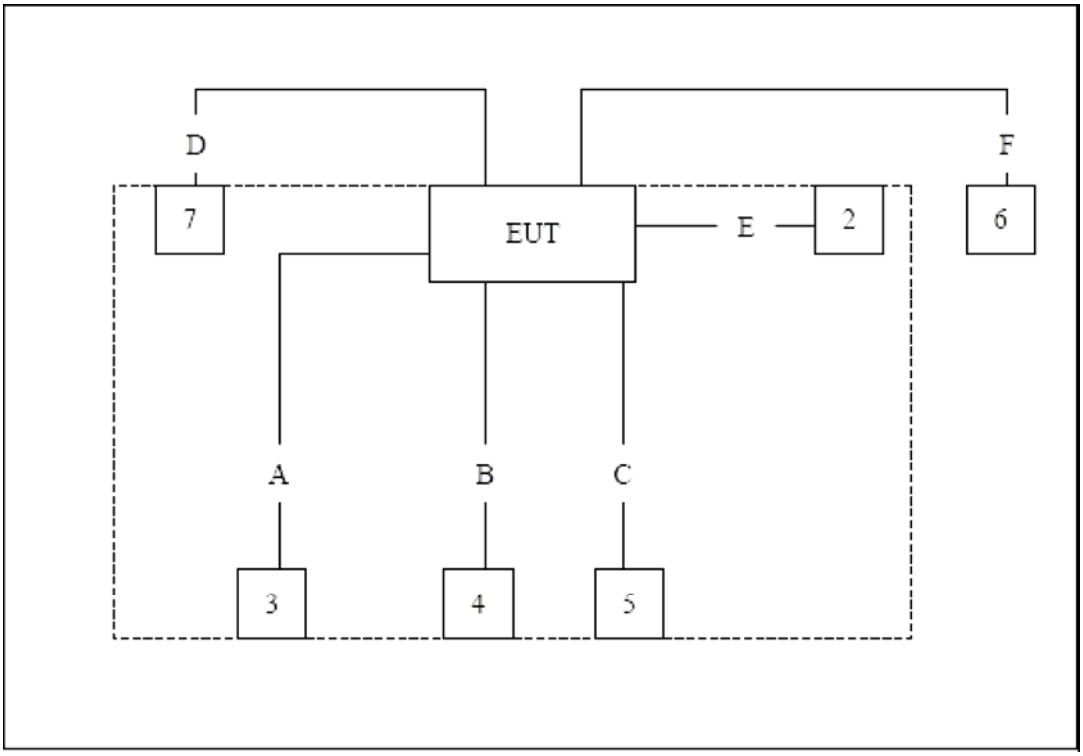
1.3. Tested System Details

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

Product		Manufacturer	Model No.	Serial No.	Power Cord
2	CRT ‘’21	IBM	6652-U3N	1	Non-Shielded, 1.8m
3	Microphone & Earphone	SALAR	V81	N/A	N/A
4	iPod	Apple	A1199	6U715YSVVQ5	Power by PC
5	USB Mouse	DELL	MO56UOA	GOQ02414	Power by PC
6	Notebook	DELL	PP19L	JH097 A01	Power by adapter
7	Printer	HP	C9027D	CN53Q3Y22X	Non-Shielded, 1.8m

1.4. Configuration of Tested System

Connection Diagram



Signal Cable Type		Signal cable Description
A	Microphone & Earphone Cable	Non-Shielded, 2.1m
B	USB Cable	Shielded, 1.0m
C	USB Cable	Shielded, 1.8m
D	USB Cable	Shielded, 1.5m
E	VGA Cable	Shielded, 1.8m, with two ferrite core bonded
F	LAN Cable	Shielded, >10m

1.5. EUT Exercise Software

1	Setup the EUT and simulators as shown on above.
2	Turn on the power of equipment.
3	Open the software “Bluetooth”, then select the channel and start test.

2. Technical Test

2.1. Summary of Test Result

☒ No deviations from the test standards

☐ Deviations from the test standards as below description:

Performed Test Item	Normative References	Test Performed	Deviation
Conducted Emission	FCC CFR Title 47 Part 15 Subpart C: 2008 Section 15.207	Yes	No
Radiated Emission	FCC CFR Title 47 Part 15 Subpart C: 2008 Section 15.209	Yes	No
20dB Bandwidth	FCC CFR Title 47 Part 15 Subpart C: 2008 Section 15.247(a)(1)	Yes	No
Carrier Frequency Separation	FCC CFR Title 47 Part 15 Subpart C: 2008 Section 15.247(a)(1)	Yes	No
Number of Hopping Frequencies	FCC CFR Title 47 Part 15 Subpart C: 2008 Section 15.247(a)(1)(iii)	Yes	No
Time of Occupancy (Dwell Time)	FCC CFR Title 47 Part 15 Subpart C: 2008 Section 15.247(a)(1)(iii)	Yes	No
Peak Output Power	FCC CFR Title 47 Part 15 Subpart C: 2008 Section 15.247(b)(1)	Yes	No
Band-edge Compliance of RF Conducted Emissions	FCC CFR Title 47 Part 15 Subpart C: 2008 Section 15.215(c), 15.247(d)	Yes	No
Spurious RF Conducted Emissions	FCC CFR Title 47 Part 15 Subpart C: 2008 15.247(d)	Yes	No
Radiated Emission Band Edge	FCC CFR Title 47 Part 15 Subpart C: 2008 15.247(d)	Yes	No

2.2. Test Environment

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	21
Humidity (%RH)	25-75	50
Barometric pressure (mbar)	860-1060	950-1000

3. Conducted Emission

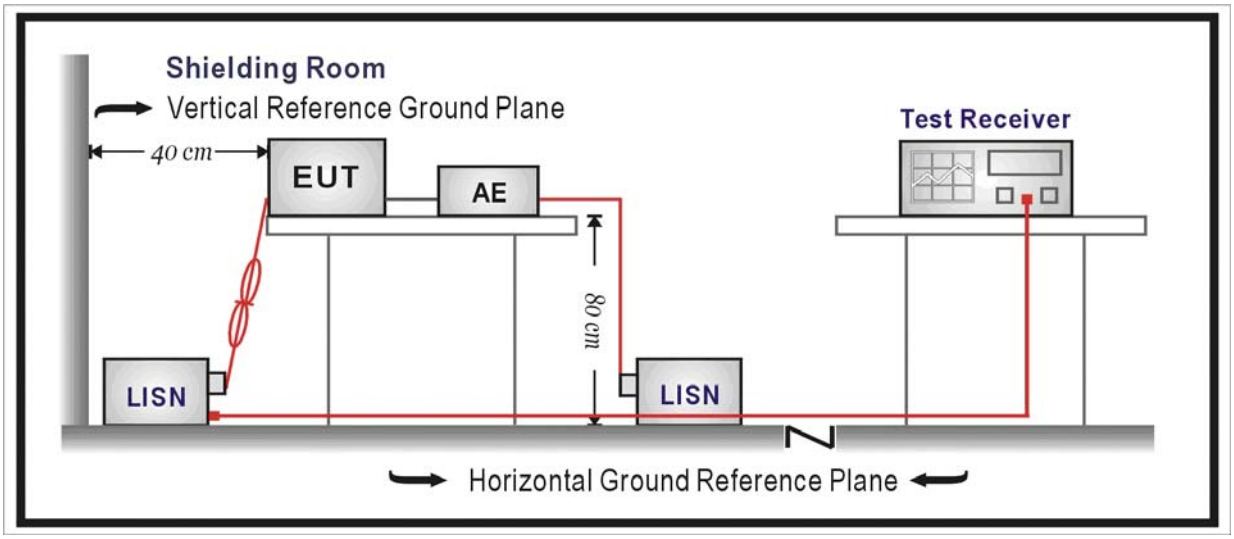
3.1. Test Equipment

Conducted Emission / SR-1

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
EMI Test Receiver	R&S	ESCI	100726	2008/06/28
Two-Line V-Network	R&S	ENV216	100013	2008/06/28
Two-Line V-Network	R&S	ENV216	100014	2008/06/28
50ohm Coaxial Switch	Anritsu	MP59B	6200464462	2008/11/24
50ohm Termination	SHX	TF2	07081401	2008/09/28
Coaxial Cable	Luthi	RG214	519358	2008/11/24
Temperature/Humidity Meter	zhicheng	ZC1-2	AC6-TH	2009/03/31

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

3.2. Test Setup



3.3. Limit

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

Note 1: The lower limit shall apply at the transition frequencies.

Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

3.4. Test Procedure

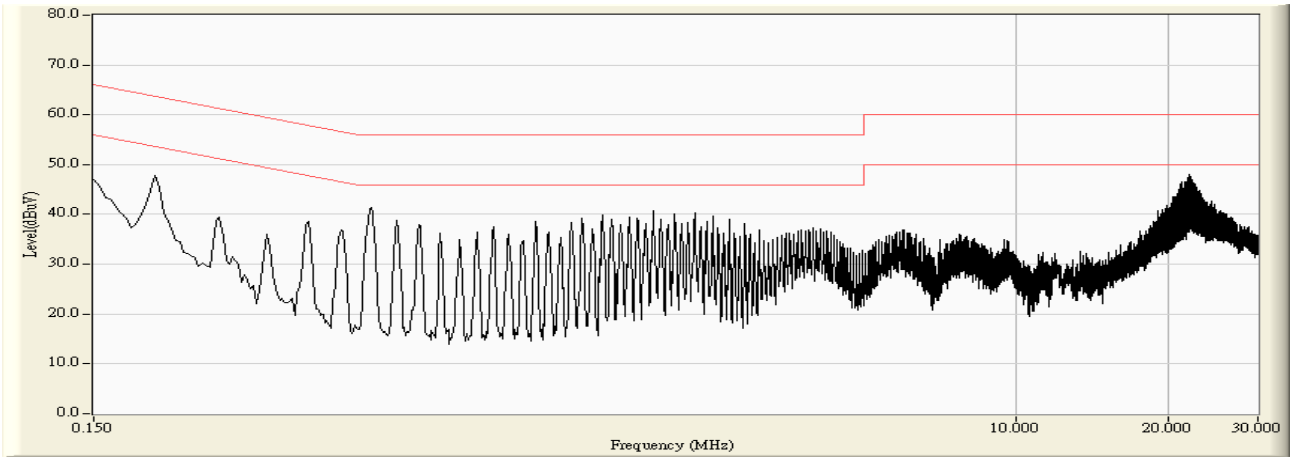
According to FCC Public Notice DA 00-705, March 30, 2000.
The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface. The EUT and simulators are connected to the main power through a line impedance stabilization network (LISN). The LISN provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs)
Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source.
The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length.
Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

3.5. Uncertainty

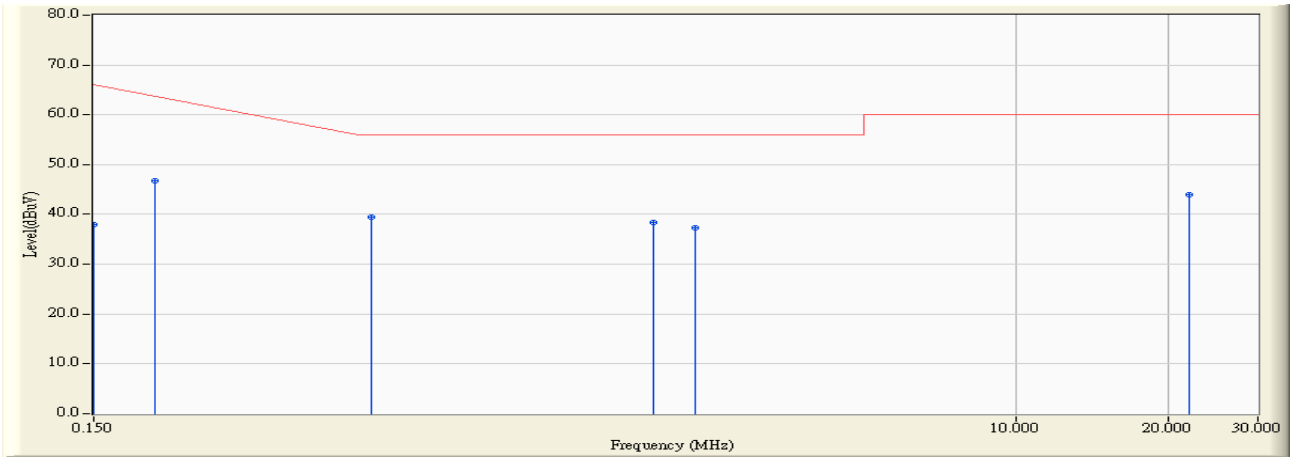
The measurement uncertainty is defined as ± 2.02 dB

3.6. Test Result

Engineer : Jame	
Site : SR-1 (Conducted Emission and Power Disturbance Test)	**Time : 2009/06/17 - 10:26**
Limit : FCC_Part15_207_00M_QP	**Margin : 10**
EUT : NOTEBOOK	**Probe : ENV216_100014(0.009-30MHz) - Line1**
Power : AC 120V/60Hz	**Note : Mode 1: DH5 (TX)**

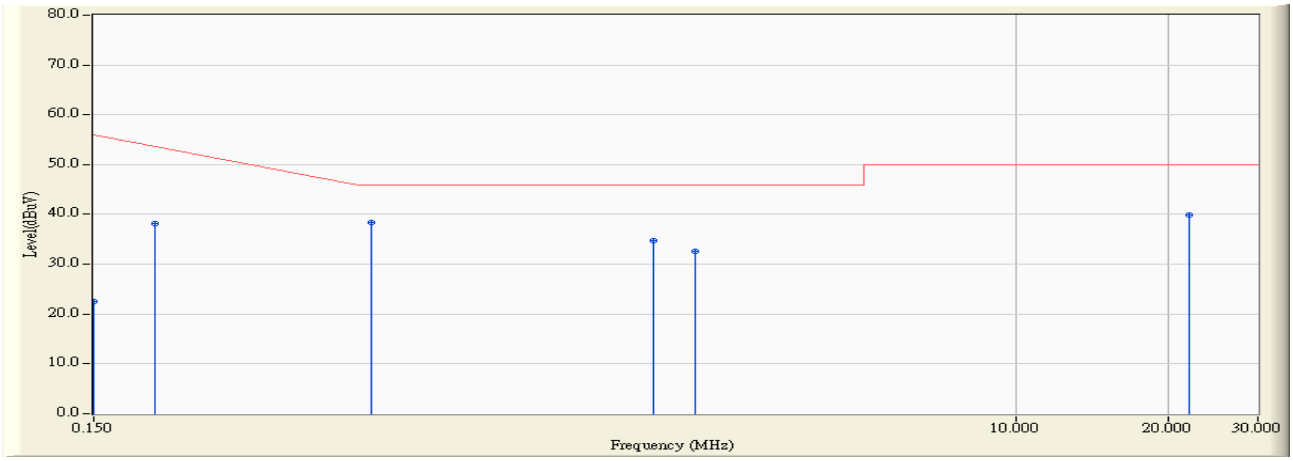


Engineer : Jame	
Site : SR-1 (Conducted Emission and Power Disturbance Test)	**Time : 2009/06/17 - 10:27**
Limit : FCC_Part15_207_00M_QP	**Margin : 0**
EUT : NOTEBOOK	**Probe : ENV216_100014(0.009-30MHz) - Line1**
Power : AC 120V/60Hz	**Note : Mode 1: DH5 (TX)**



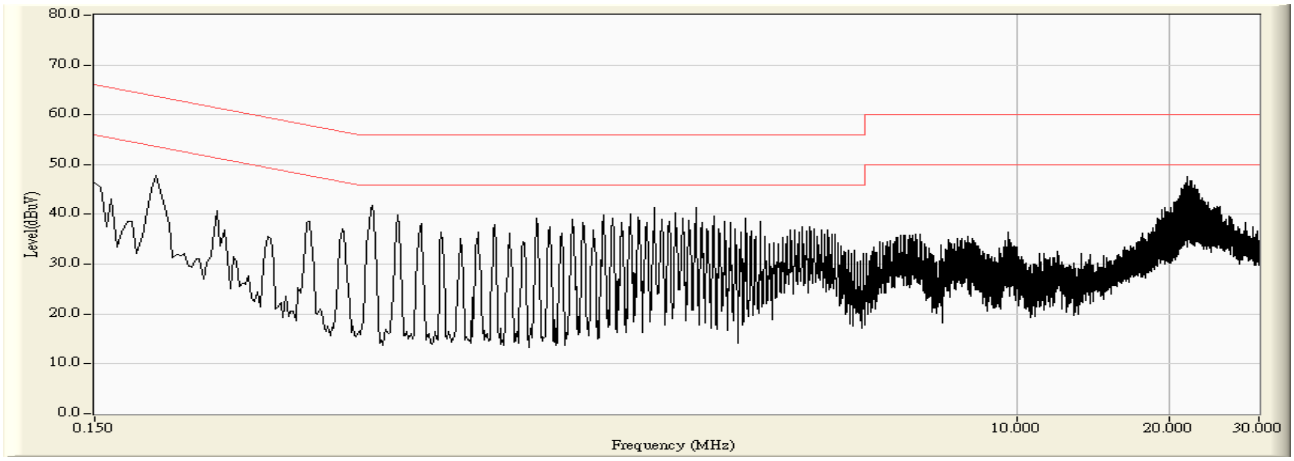
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.150	10.160	27.700	37.860	-28.140	66.000	QUASIPEAK
2		0.198	9.580	37.100	46.680	-17.014	63.694	QUASIPEAK
3		0.530	9.634	29.900	39.534	-16.466	56.000	QUASIPEAK
4		1.914	9.685	28.800	38.485	-17.515	56.000	QUASIPEAK
5		2.310	9.704	27.700	37.404	-18.596	56.000	QUASIPEAK
6	*	21.914	10.700	33.200	43.900	-16.100	60.000	QUASIPEAK

Engineer : Jame	
Site : SR-1 (Conducted Emission and Power Disturbance Test)	**Time : 2009/06/17 - 10:27**
Limit : FCC_Part15_207_00M_AV	**Margin : 0**
EUT : NOTEBOOK	**Probe : ENV216_100014(0.009-30MHz) - Line1**
Power : AC 120V/60Hz	**Note : Mode 1: DH5 (TX)**

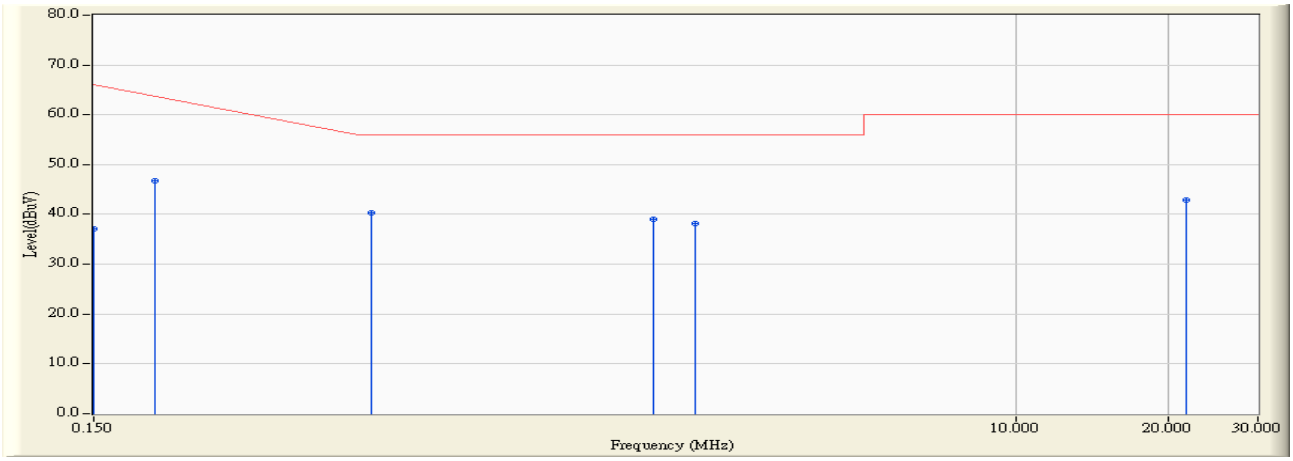


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.150	10.160	12.300	22.460	-33.540	56.000	AVERAGE
2		0.198	9.580	28.700	38.280	-15.414	53.694	AVERAGE
3	*	0.530	9.634	28.700	38.334	-7.666	46.000	AVERAGE
4		1.914	9.685	25.100	34.785	-11.215	46.000	AVERAGE
5		2.310	9.704	22.900	32.604	-13.396	46.000	AVERAGE
6		21.914	10.700	29.200	39.900	-10.100	50.000	AVERAGE

Engineer : Jame	
Site : SR-1 (Conducted Emission and Power Disturbance Test)	**Time : 2009/06/17 - 10:29**
Limit : FCC_Part15_207_00M_QP	**Margin : 10**
EUT : NOTEBOOK	**Probe : ENV216_100014(0.009-30MHz) - Line2**
Power : AC 120V/60Hz	**Note : Mode 1: DH5 (TX)**

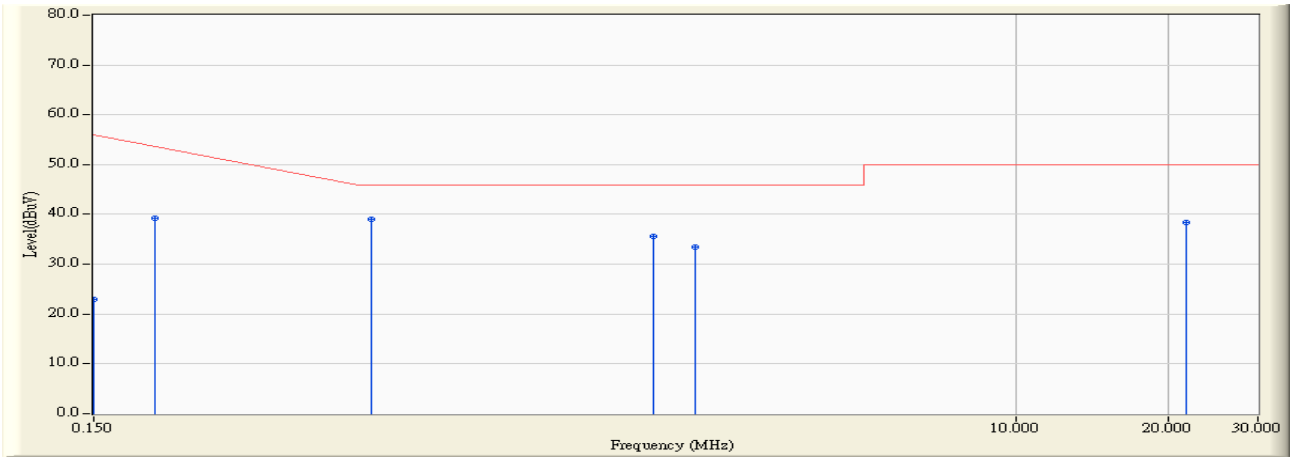


Engineer : Jame	
Site : SR-1 (Conducted Emission and Power Disturbance Test)	**Time : 2009/06/17 - 10:31**
Limit : FCC_Part15_207_00M_QP	**Margin : 0**
EUT : NOTEBOOK	**Probe : ENV216_100014(0.009-30MHz) - Line2**
Power : AC 120V/60Hz	**Note : Mode 1: DH5 (TX)**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.150	10.006	27.100	37.106	-28.894	66.000	QUASIPEAK
2		0.198	9.664	37.100	46.764	-16.930	63.694	QUASIPEAK
3	*	0.530	9.637	30.600	40.237	-15.763	56.000	QUASIPEAK
4		1.914	9.670	29.400	39.070	-16.930	56.000	QUASIPEAK
5		2.310	9.664	28.600	38.264	-17.736	56.000	QUASIPEAK
6		21.718	10.470	32.500	42.970	-17.030	60.000	QUASIPEAK

Engineer : Jame	
Site : SR-1 (Conducted Emission and Power Disturbance Test)	**Time : 2009/06/17 - 10:31**
Limit : FCC_Part15_207_00M_AV	**Margin : 0**
EUT : NOTEBOOK	**Probe : ENV216_100014(0.009-30MHz) - Line2**
Power : AC 120V/60Hz	**Note : Mode 1: DH5 (TX)**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.150	10.006	13.000	23.006	-32.994	56.000	AVERAGE
2		0.198	9.664	29.500	39.164	-14.530	53.694	AVERAGE
3	*	0.530	9.637	29.500	39.137	-6.863	46.000	AVERAGE
4		1.914	9.670	25.900	35.570	-10.430	46.000	AVERAGE
5		2.310	9.664	23.900	33.564	-12.436	46.000	AVERAGE
6		21.718	10.470	27.900	38.370	-11.630	50.000	AVERAGE

4. Radiated Emission

4.1. Test Equipment

☒Radiated Emission / AC-2

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	E4408B	MY45102679	2008/06/28
EMI Test Receiver	R&S	ESCI	100573	2008/05/10
Preamplifier	Quietek	AP-025C	QT-AP003	2008/11/24
Preamplifier	Quietek	AP-180C	CHM-0602012	2008/11/24
Bilog Type Antenna	Schaffner	CBL6112B	2932	2008/11/21
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	496	2008/11/24
High-Pass Filter	Wainwright	WHKX2.8/18G-12SS	SN1	2009/03/01
Band Reject Filter	Wainwright	WRCG2400/2485-2375/2510-60/11SS	SN9	2009/03/01
High-Pass Filter	Wainwright	WHKX7.0/18G-8SS	SN16	2009/03/01
Low-Pass Filter	Wainwright	WLKS4500-9SS	SN2	2009/03/01
50ohm Coaxial Switch	Anritsu	MP59B	6200447304	2008/11/24
Coaxial Cable	Huber+Suhner	AC2-C	04	2008/11/24
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH002	2009/03/30

☐Radiated Emission / AC-3

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2009/04/23
EMI Test Receiver	R&S	ESCI	100176	2008/11/15
Preamplifier	Quietek	AP-025C	QT-AP004	2008/11/24
Preamplifier	Quietek	AP-180C	CHM-0602012	2008/11/24
Bilog Type Antenna	Schaffner	CBL6112D	22254	2008/11/21
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	496	2008/11/24
High-Pass Filter	Wainwright	WHKX2.8/18G-12SS	SN1	2009/03/01
Band Reject Filter	Wainwright	WRCG2400/2485-2375/2510-60/11SS	SN9	2009/03/01
High-Pass Filter	Wainwright	WHKX7.0/18G-8SS	SN16	2009/03/01
Low-Pass Filter	Wainwright	WLKS4500-9SS	SN2	2009/03/01
50ohm Coaxial Switch	Anritsu	MP59B	6200464463	2008/11/24
Coaxial Cable	Huber+Suhner	AC2-C	05	2008/11/24

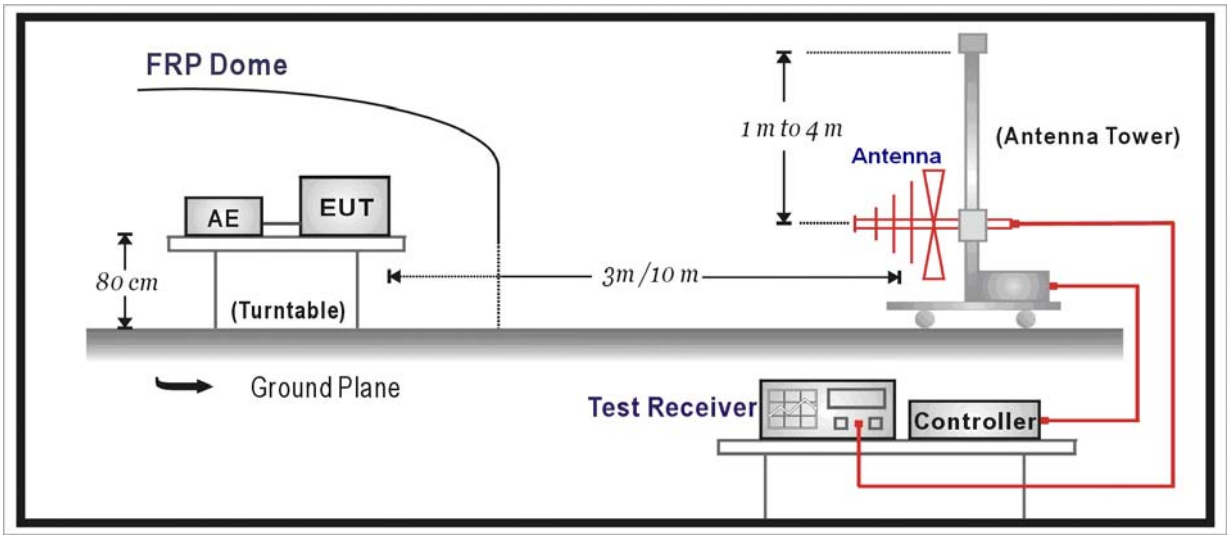
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH003	2009/03/30

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

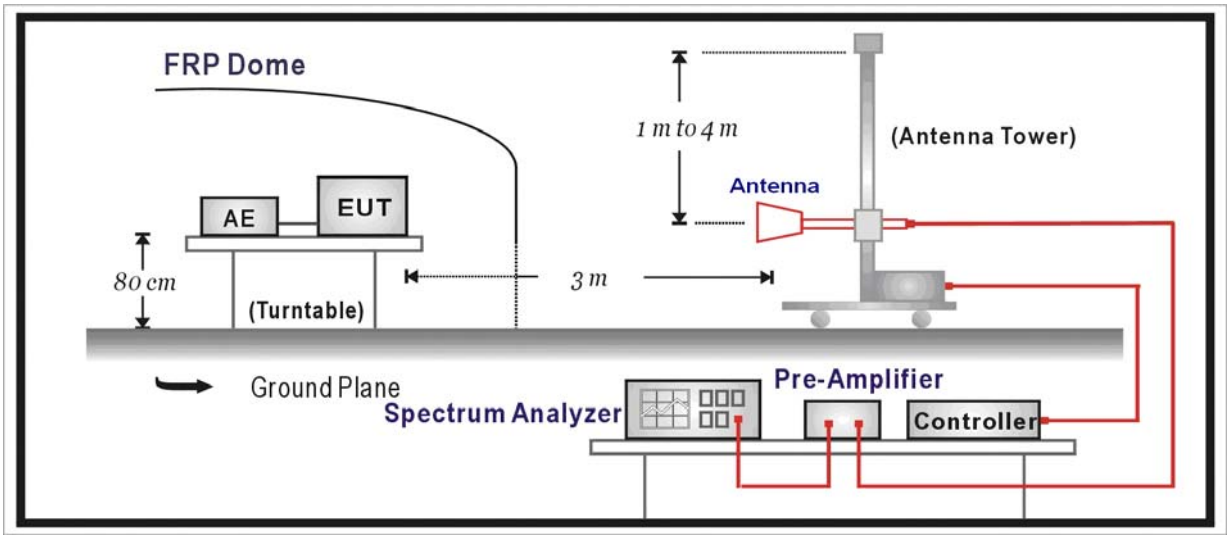
Note 2: The test instruments marked with “X” are used to measure the final test results.

4.2. Test Setup

Under 1GHz Test Setup:



Above 1GHz Test Setup:



4.3. Limit

FCC Part 15 Subpart C Paragraph 15.209		
Frequency (MHz)	Distance (m)	Level (dBuV/m)
30 - 88	3	40
88 - 216	3	43.5
216 - 960	3	46
Above 960	3	54

Note 1: The lower limit shall apply at the transition frequency.

Note 2: Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

Note 3: E field strength (dBuV/m) = 20 log E field strength (uV/m)

4.4. Test Procedure

According to FCC Public Notice DA 00-705, March 30, 2000.

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

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

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

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

Note: When measurement above 1GHz, the horn antenna will bend down a little (as horn antenna have the narrow beamwidth) in order to find the maximum emission of EUT.

4.5. Uncertainty

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

below 1G is defined as ± 3.8 dB

4.6. Test Result

Below 1GHz

Mode 1: Transmit(DH5)							
Frequency (MHz)	Polarization (H/V)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (degree)
Channel 0 (2402MHz)							
99.8	H	18.8	43.5	-24.7	QP	120.500	65.800
198.7	H	17.9	43.5	-25.6	QP	120.500	65.800
532.7	H	26.0	46.0	-20.0	QP	114.200	144.800
99.8	V	24.7	43.5	-18.8	QP	114.200	144.800
198.7	V	26.3	43.5	-17.2	QP	120.500	65.800
532.7	V	32.0	46.0	-14.0	QP	120.500	65.800
Channel 39 (2441MHz)							
120.1	H	17.3	43.5	-26.2	QP	120.500	65.800
342.6	H	19.6	46.0	-26.4	QP	120.500	65.800
635.5	H	26.1	46.0	-19.9	QP	114.200	144.800
120.1	V	20.2	43.5	-23.3	QP	114.200	144.800
342.6	V	25.4	46.0	-20.6	QP	120.500	65.800
635.5	V	33.4	46.0	-12.6	QP	120.500	65.800
Channel 78 (2480MHz)							
134.7	H	16.8	43.5	-26.7	QP	120.500	65.800
295.1	H	18.0	46.0	-28.0	QP	120.500	65.800
648.0	H	25.2	46.0	-20.8	QP	114.200	144.800
134.7	V	20.5	43.5	-23.0	QP	114.200	144.800
295.1	V	21.4	46.0	-24.6	QP	120.500	65.800
648.0	V	33.4	46.0	-12.6	QP	120.500	65.800

Mode 2: Transmit(3DH5)							
Frequency (MHz)	Polarization (H/V)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (degree)
Channel 0 (2402MHz)							
99.8	H	19.1	43.5	-24.7	QP	120.500	65.800
198.7	H	17.9	43.5	-25.6	QP	120.500	65.800
532.7	H	26.4	46.0	-20.0	QP	114.200	144.800
99.8	V	24.7	43.5	-18.8	QP	114.200	144.800
198.7	V	26.3	43.5	-17.2	QP	120.500	65.800
532.7	V	32.0	46.0	-14.0	QP	120.500	65.800
Channel 39 (2441MHz)							
120.1	H	17.3	43.5	-26.2	QP	120.500	65.800
342.6	H	19.6	46.0	-23.9	QP	120.500	65.800
635.5	H	26.1	46.0	-19.9	QP	114.200	144.800
120.1	V	20.2	43.5	-23.3	QP	114.200	144.800
342.6	V	25.4	46.0	-18.1	QP	120.500	65.800
635.5	V	33.4	46.0	-12.6	QP	120.500	65.800
Channel 78 (2480MHz)							
134.7	H	16.8	43.5	-26.7	QP	120.500	65.800
295.1	H	18.0	46.0	-25.5	QP	120.500	65.800
648.0	H	25.2	46.0	-20.8	QP	114.200	144.800
134.7	V	20.5	43.5	-23.0	QP	114.200	144.800
295.1	V	21.4	46.0	-22.1	QP	120.500	65.800
648.0	V	33.4	46.0	-12.6	QP	120.500	65.800

Above 1GHz

Mode 1: Transmit(DH5)							
Frequency (MHz)	Polarization (H/V)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (degree)
Channel 0 (2402MHz)							
4808.0	H	44.3	74	-29.7	PK	150.5	75.2
4808.0	H	30.1	54	-23.9	AV	150.5	75.2
4808.0	V	45.0	74	-29.0	PK	144.2	124.8
4808.0	V	30.5	54	-23.5	AV	144.2	124.8
Channel 39 (2441MHz)							
4876.0	H	43.6	74	-30.4	PK	151.0	65.8
4876.0	H	29.2	54	-24.8	AV	151.0	65.8
4876.0	V	45.7	74	-28.3	PK	144.6	114.8
4876.0	V	31.2	54	-22.8	AV	144.6	114.8
Channel 78 (2480MHz)							
4961.1	H	44.2	74	-29.8	PK	151.2	65.8
4961.1	H	29.7	54	-24.3	AV	151.2	65.8
4961.1	V	45.7	74	-28.3	PK	144.3	144.8
4961.1	V	31.4	54	-22.6	AV	144.3	144.8
Mode 2: Transmit(3DH5)							
Frequency (MHz)	Polarization (H/V)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (degree)
Channel 1 (2412MHz)							
4808.0	H	44.8	74	-29.2	PK	150.5	75.2
4808.0	H	30.2	54	-23.8	AV	150.5	75.2
4808.0	V	45.9	74	-28.1	PK	144.2	124.8
4808.0	V	31.5	54	-22.5	AV	144.2	124.8
Channel 39 (2441MHz)							
4876.0	H	44.2	74	-29.8	PK	151.0	65.8
4876.0	H	30.1	54	-23.9	AV	151.0	65.8
4876.0	V	45.6	74	-28.4	PK	144.6	114.8
4876.0	V	31.2	54	-22.8	AV	144.6	114.8
Channel 78 (2480MHz)							
4961.1	H	44.5	74	-29.5	PK	151.2	65.8
4961.1	H	30.1	54	-23.9	AV	151.2	65.8
4961.1	V	45.8	74	-28.2	PK	144.3	144.8
4961.1	V	31.4	54	-22.6	AV	144.3	144.8

5. 20dB Bandwidth

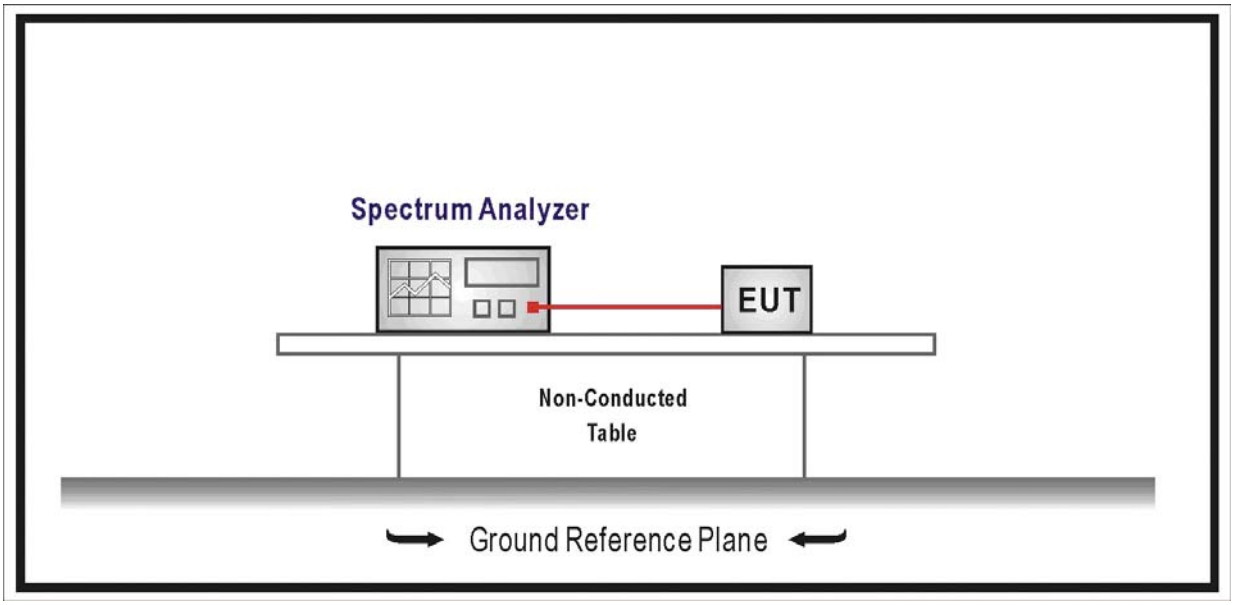
5.1. Test Equipment

20dB Bandwidth / AC-6

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2009/06/10
Coaxial Cable	Huber+Suhner	AC4-RF	09	2008/11/24
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH007	2009/03/30

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

5.2. Test Setup



5.3. Limit

- For frequency hopping systems operating in 2400-2483.5 MHz band, no limitation.
- For frequency hopping systems operating in 902-928 MHz band, the maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.
- For frequency hopping systems operating in 5725-5850 MHz band, the maximum 20 dB bandwidth of the hopping channel is 1 MHz.

5.4. Test Procedure

According to FCC Public Notice DA 00-705, March 30, 2000.
Use the following spectrum analyzer settings:
Span = approximately 2 to 3 times the 20dB bandwidth, centered on a hopping channel
RBW ≧ 1% of the 20dB bandwidth
VBW ≧ RBW
Sweep = auto
Detector function = peak
Trace = max hold
The EUT should be transmitting at its maximum data rate. Allow the trace to stabilize.
Use the marker-to-peak function to set the marker to the peak of the emission. Use the marker-delta function to measure 20 dB down one side of the emission. Reset the marker-delta function, and move the marker to the other side of the emission, until it is (as close as possible to) even with the reference marker level. The marker-delta reading at this point is the 20 dB bandwidth of the emission. If this value varies with different modes of operation (e.g., data rate, modulation format, etc.), repeat this test for each variation.

5.5. Uncertainty

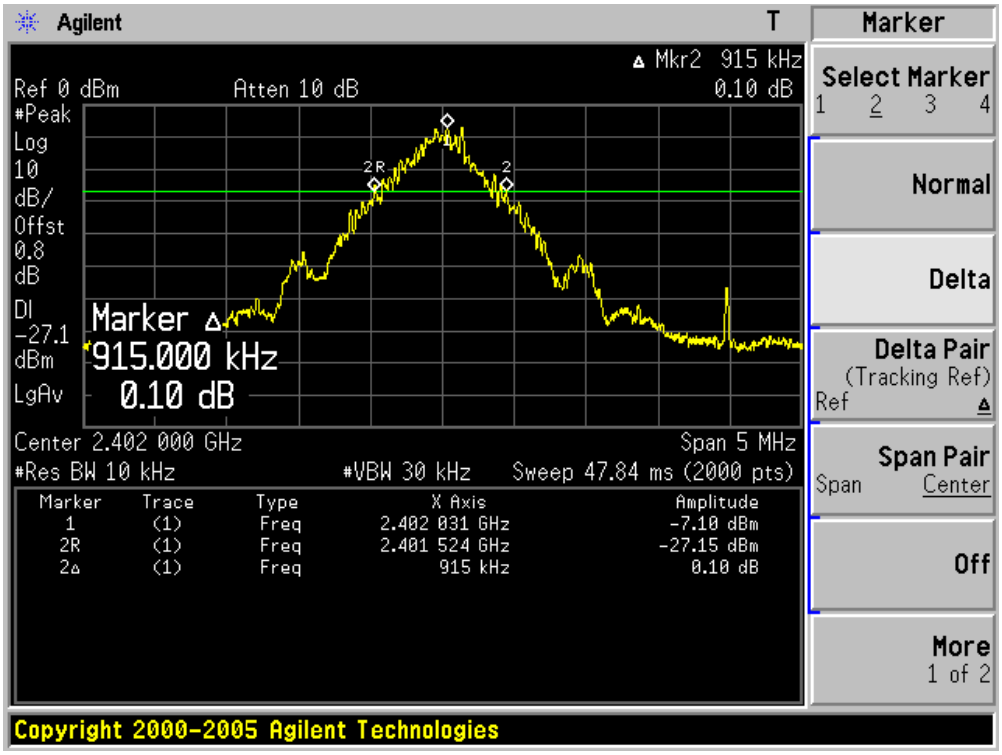
The measurement uncertainty is defined as ± 1 kHz

5.6. Test Result

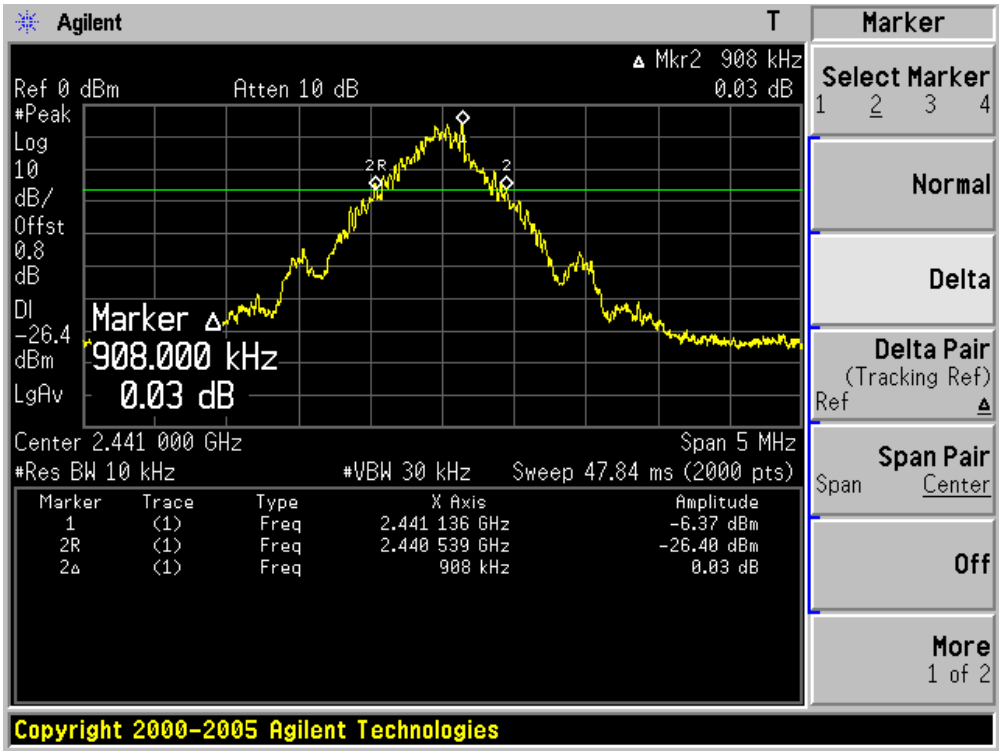
Product	:	Notebook
Test Item	:	20dB Bandwidth
Test Site	:	AC-6
Test Mode	:	Mode 1: Transmit (DH5)

Channel No.	Frequency (MHz)	20dB Bandwidth (kHz)	Limit (kHz)	Result
00	2402	915	N/A	Pass
39	2441	908	N/A	Pass
78	2480	900	N/A	Pass

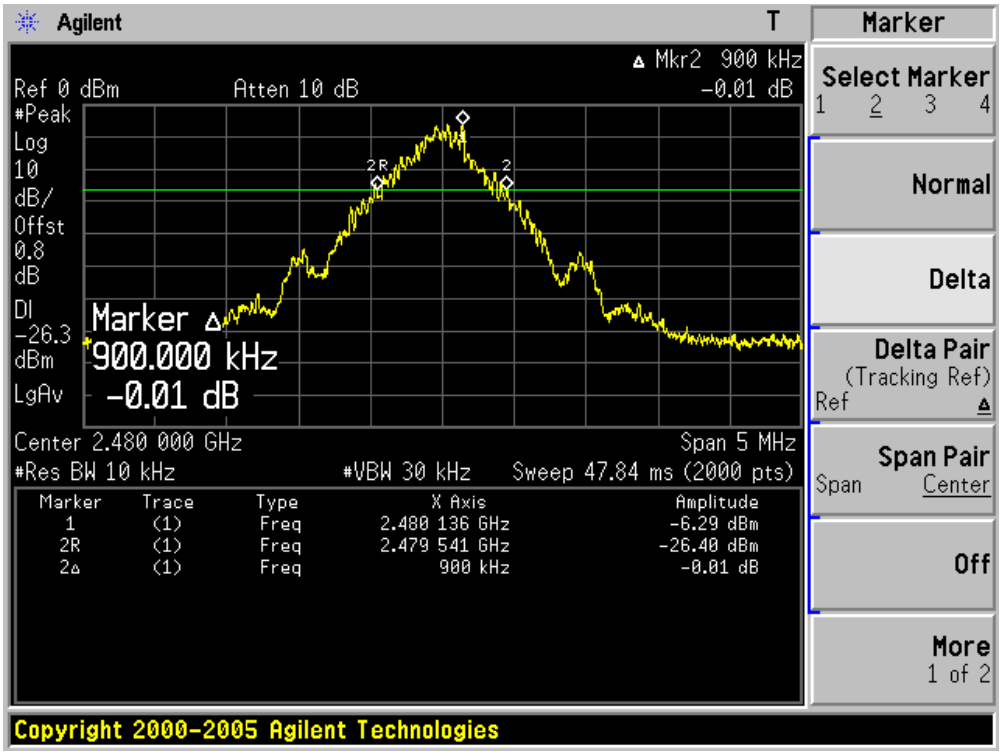
Channel 00 (2402MHz)



Channel 39 (2441MHz)



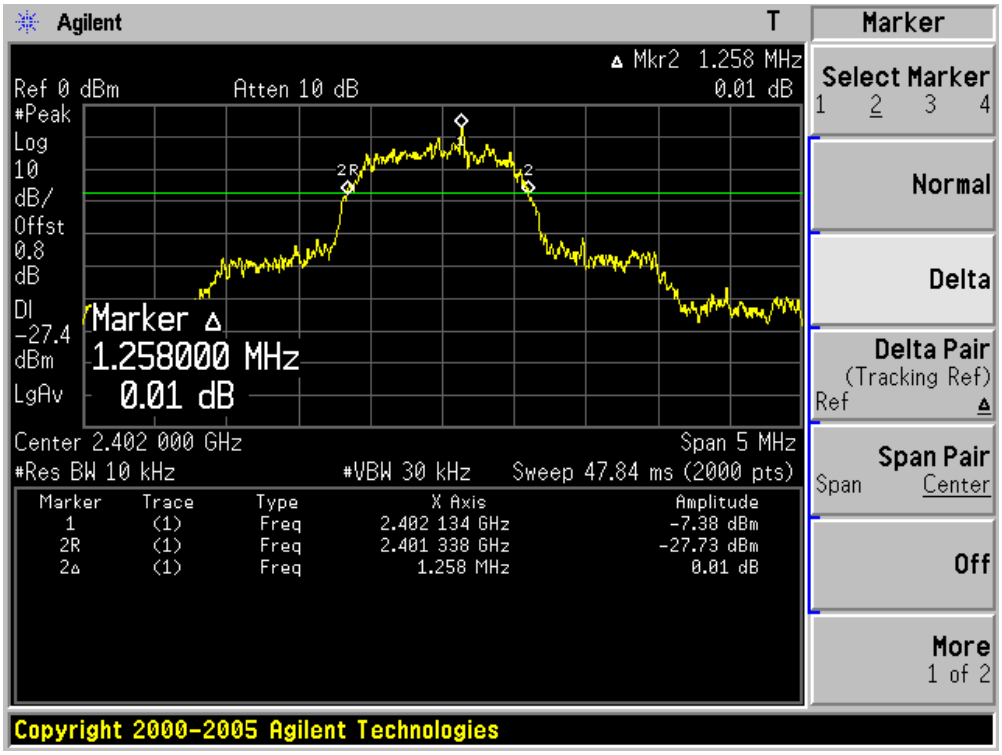
Channel 78 (2480MHz)



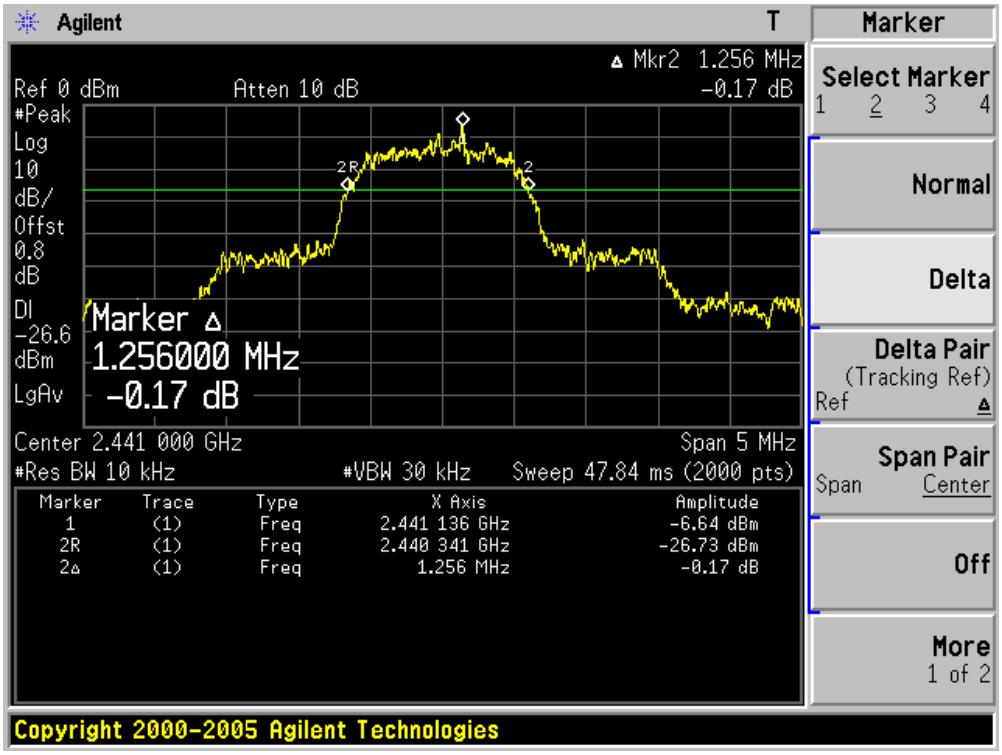
Product	:	Notebook
Test Item	:	20dB Bandwidth
Test Site	:	AC-6
Test Mode	:	Mode 2: Transmit (3DH5)

Channel No.	Frequency (MHz)	20dB Bandwidth (kHz)	Limit (kHz)	Result
00	2402	1258	N/A	Pass
39	2441	1256	N/A	Pass
78	2480	1261	N/A	Pass

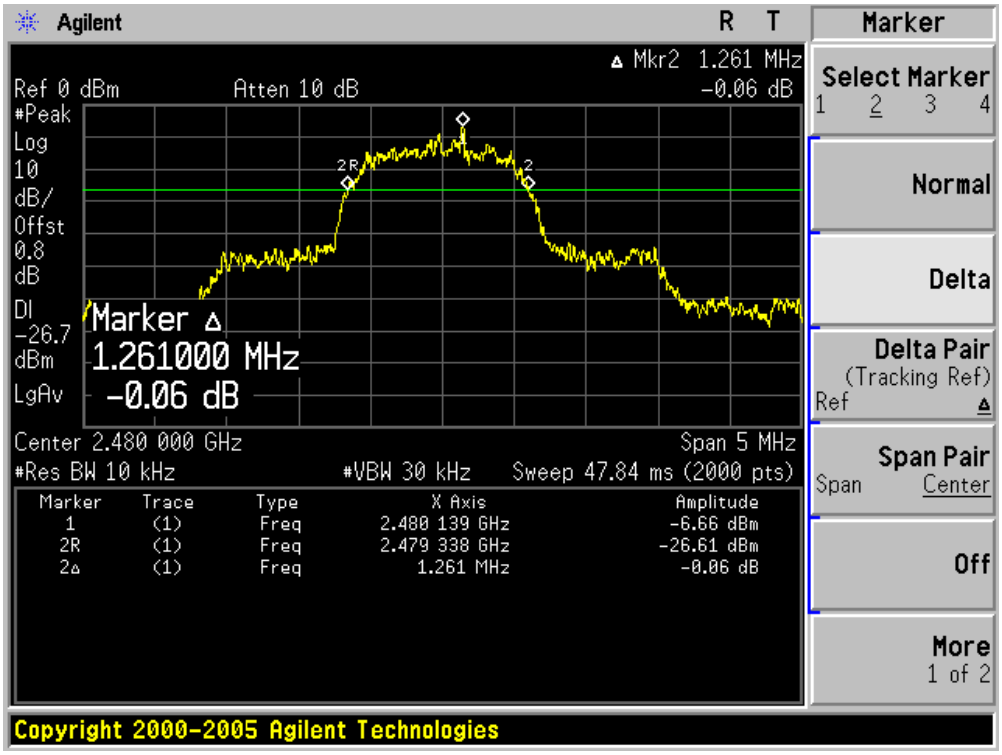
Channel 00 (2402MHz)



Channel 39 (2441MHz)



Channel 78 (2480MHz)



6. Carrier Frequency Separation

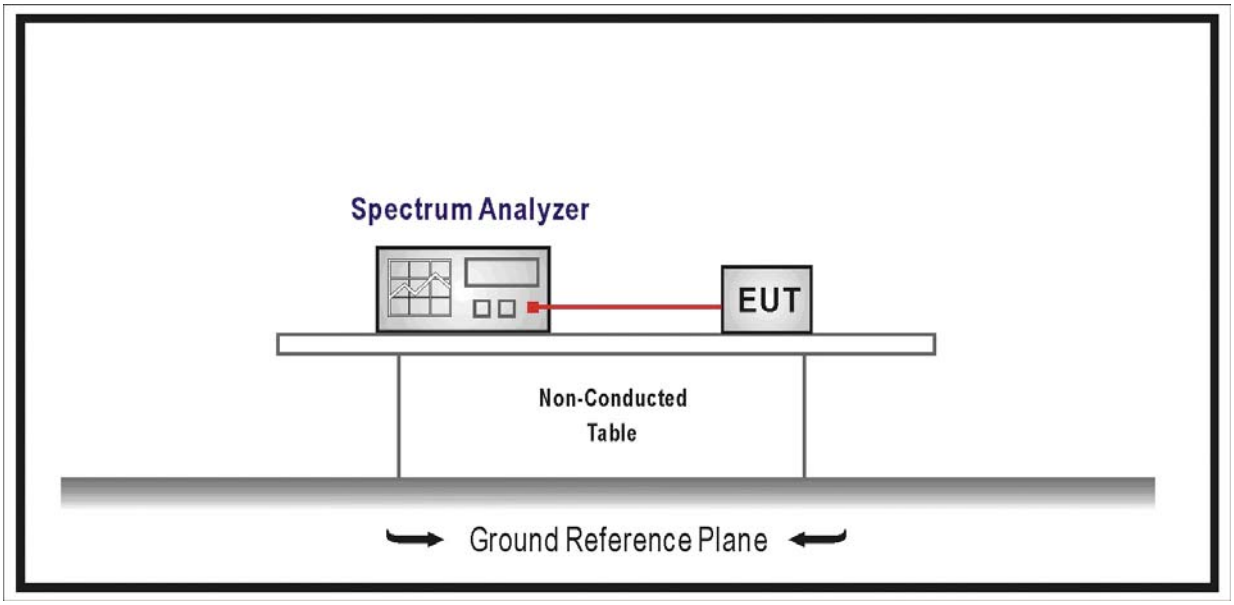
6.1. Test Equipment

Carrier Frequency Separation / AC-6

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2009/06/10
Coaxial Cable	Huber+Suhner	AC4-RF	09	2008/11/24
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH007	2009/03/30

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

6.2. Test Setup



6.3. 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. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125mW. The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudorandomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each

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

- For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less then 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; If the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.
- Frequency hopping systems operating in the 5725-5850 MHz band shall use at least 75 hopping frequencies. The maximum 20 dB bandwidth of the hopping channel is 1 MHz. The average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 30 second period.

6.4. Test Procedure

According to FCC Public Notice DA 00-705, March 30, 2000.
The EUT must have its hopping function enabled. Use the following spectrum analyzer settings:
Span = wide enough to capture the peaks of two adjacent channels
Resolution (or IF) Bandwidth (RBW) ≧ 1% of the span
Video (or Average) Bandwidth VBW ≧ RBW
Sweep = auto
Detector function = peak
Trace = max hold
Allow the trace to stabilize. Use the marker-delta function to determine the separation between the peaks of the adjacent channels.

6.5. Uncertainty

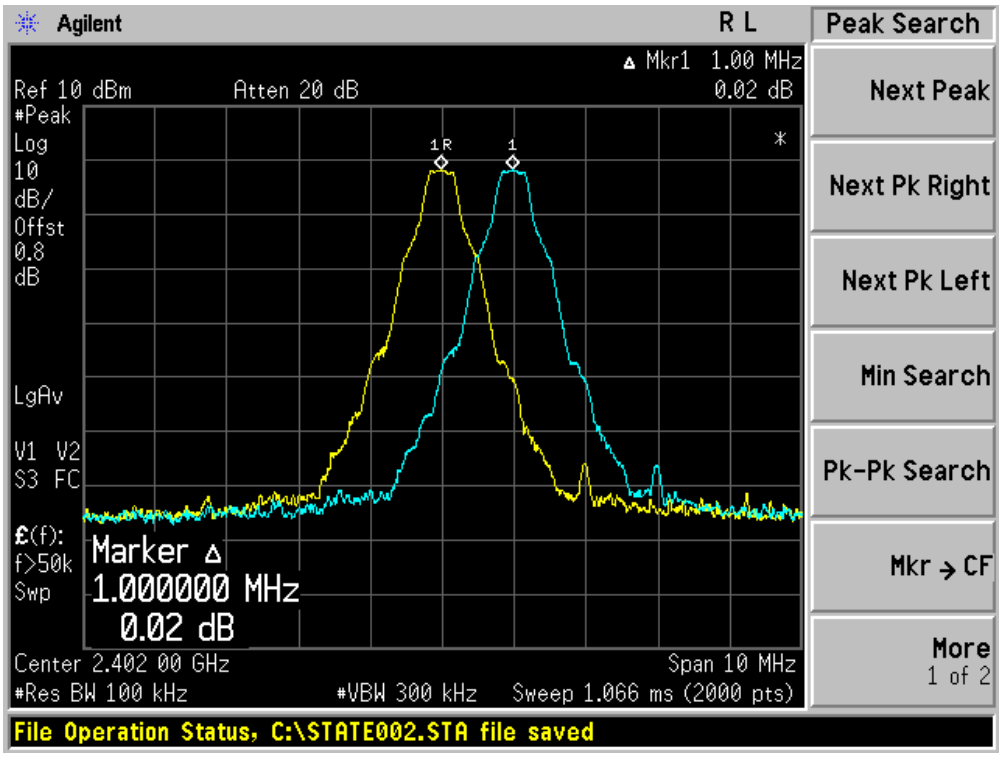
The measurement uncertainty is defined as ± 1 kHz

6.6. Test Result

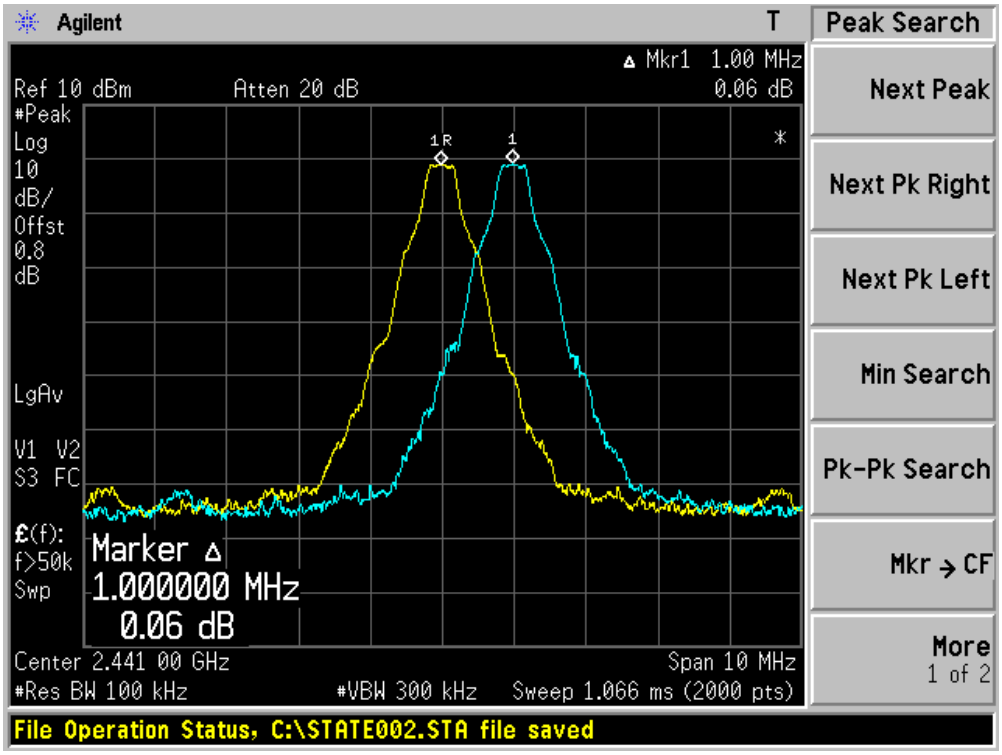
Product	:	Notebook
Test Item	:	Carrier Frequency Separation
Test Site	:	AC-6
Test Mode	:	Mode 1: Transmit (DH5)

Channel No.	Frequency (MHz)	Carrier Frequency Separation (kHz)	Limit (kHz)	Result
00	2402	1000	>25 kHz or 2/3 of 20 dB BW	Pass
39	2441	1000	>25 kHz or 2/3 of 20 dB BW	Pass
78	2480	1000	>25 kHz or 2/3 of 20 dB BW	Pass

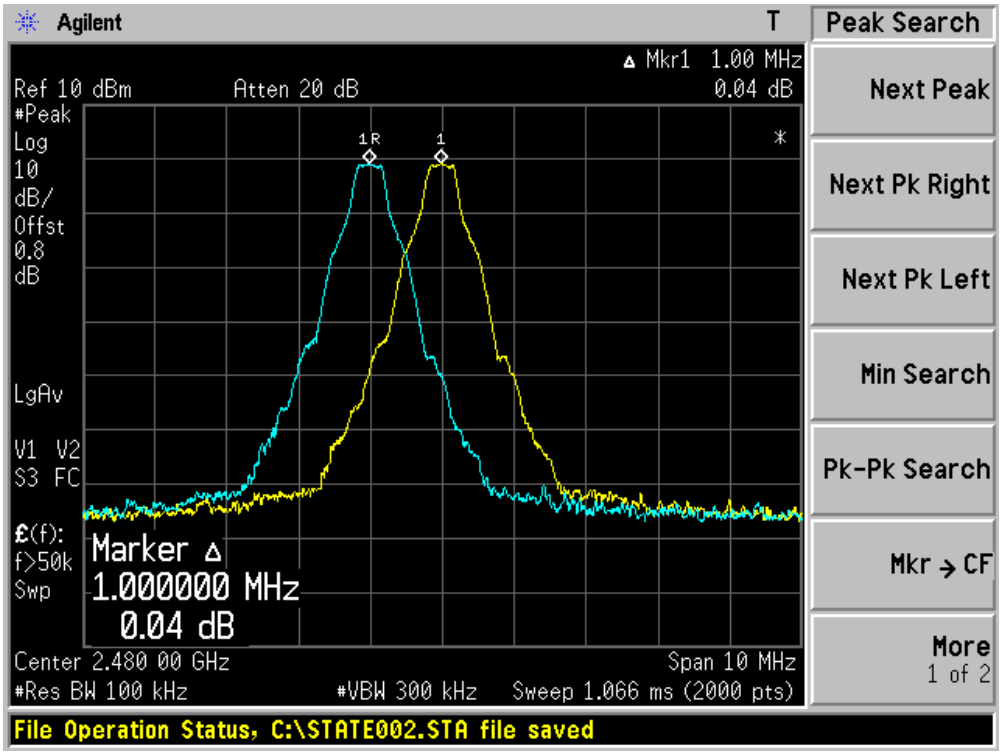
Channel 00 (2402MHz)



Channel 39 (2441MHz)



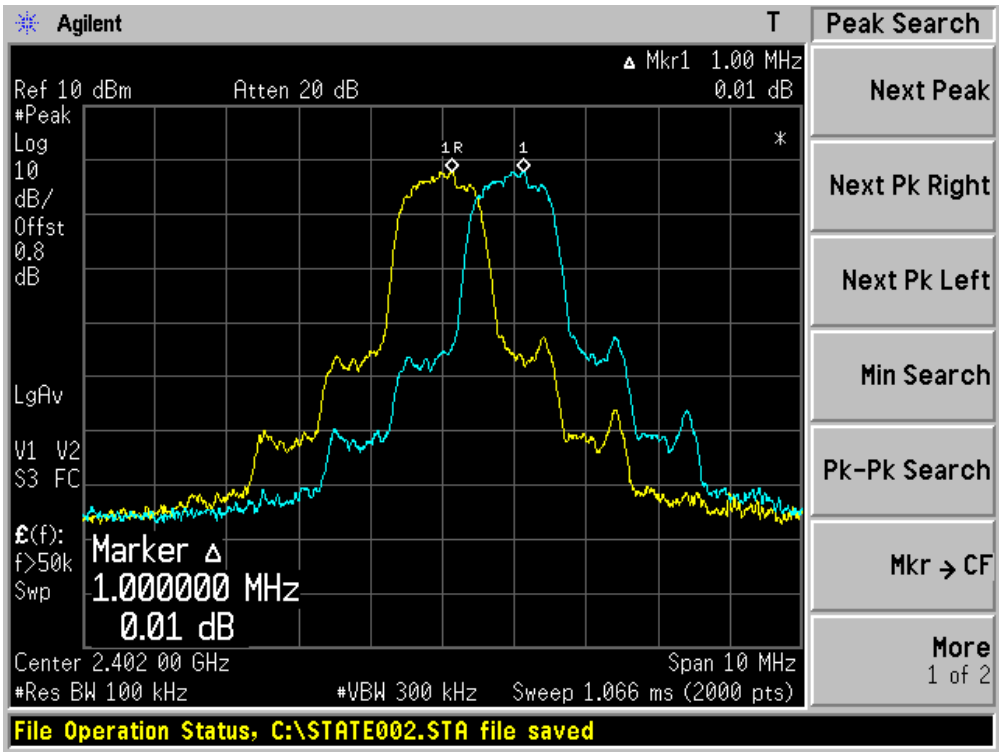
Channel 78 (2480MHz)



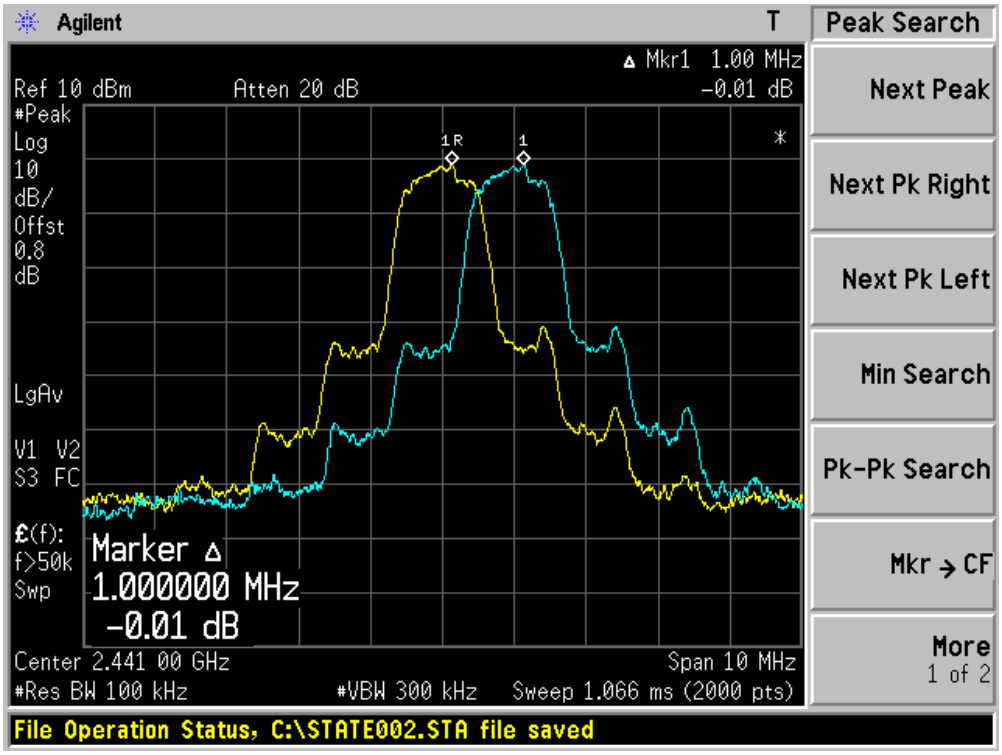
Product	:	Notebook
Test Item	:	Carrier Frequency Separation
Test Site	:	AC-6
Test Mode	:	Mode 2: Transmit (3DH5)

Channel No.	Frequency (MHz)	Carrier Frequency Separation (kHz)	Limit (kHz)	Result
00	2402	1000	>25 kHz or 2/3 of 20 dB BW	Pass
39	2441	1000	>25 kHz or 2/3 of 20 dB BW	Pass
78	2480	1000	>25 kHz or 2/3 of 20 dB BW	Pass

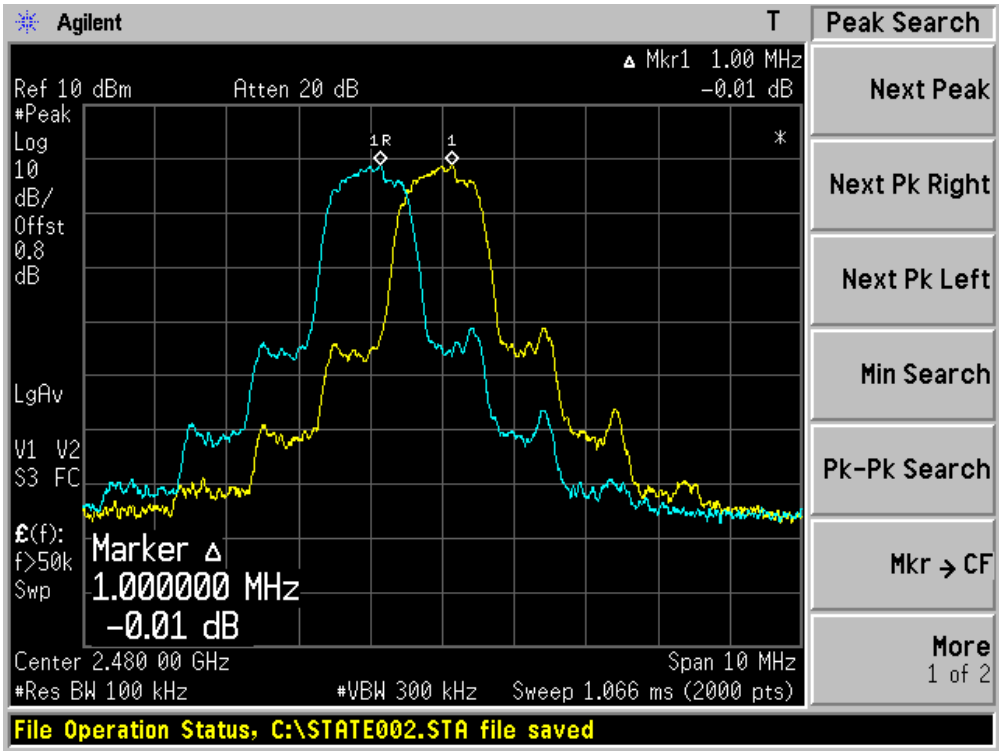
Channel 00 (2402MHz)



Channel 39 (2441MHz)



Channel 78 (2480MHz)



7. Number of Hopping Frequencies

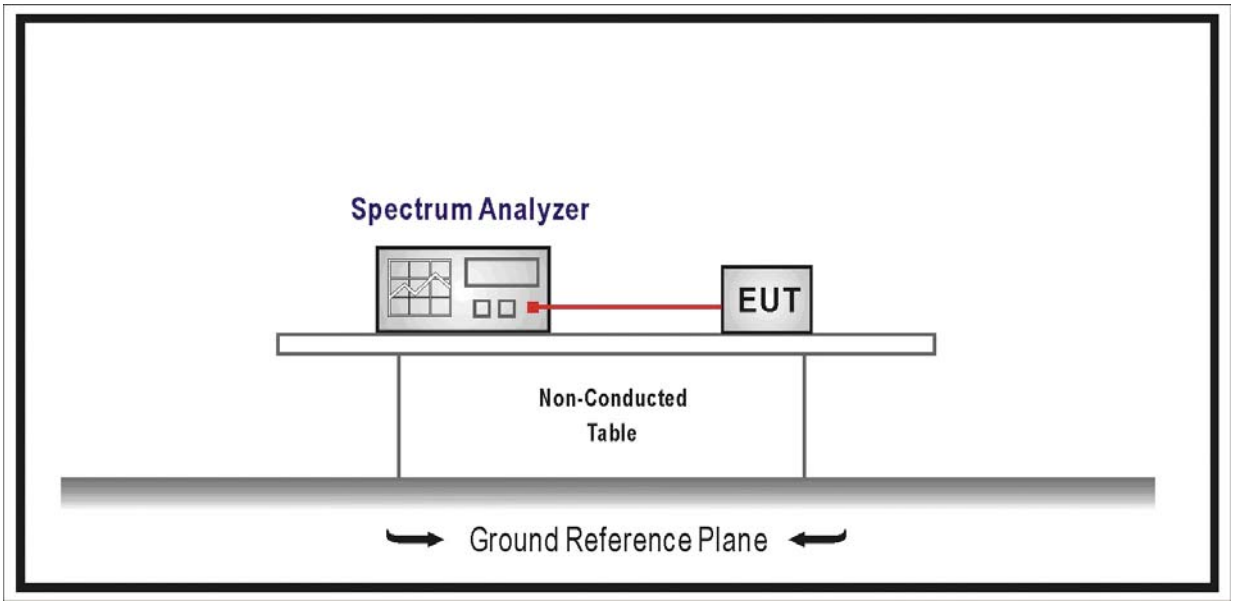
7.1. Test Equipment

Number of Hopping Frequencies / AC-6

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2009/06/10
Coaxial Cable	Huber+Suhner	AC4-RF	09	2008/11/24
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH007	2009/03/30

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

7.2. Test Setup



7.3. Limit

- For frequency hopping systems operating in the 2400-2483.5 MHz band shall use at least 15 hopping frequencies.
- For frequency hopping systems operating in 902-928 MHz band shall use at least 50 hopping frequencies.
- For frequency hopping systems operating in the 5725-5850 MHz band shall use at least 75 hopping frequencies.

7.4. Test Procedure

According to FCC Public Notice DA 00-705, March 30, 2000.
The EUT must have its hopping function enabled. Use the following spectrum analyzer settings:
Span = the frequency band of operation
RBW ≧ 1% of the span
VBW ≧ RBW
Sweep = auto
Detector function = peak
Trace = max hold
Allow the trace to stabilize. It may prove necessary to bread the span up to sections, in order to clearly show all of the hopping frequencies.

7.5. Uncertainty

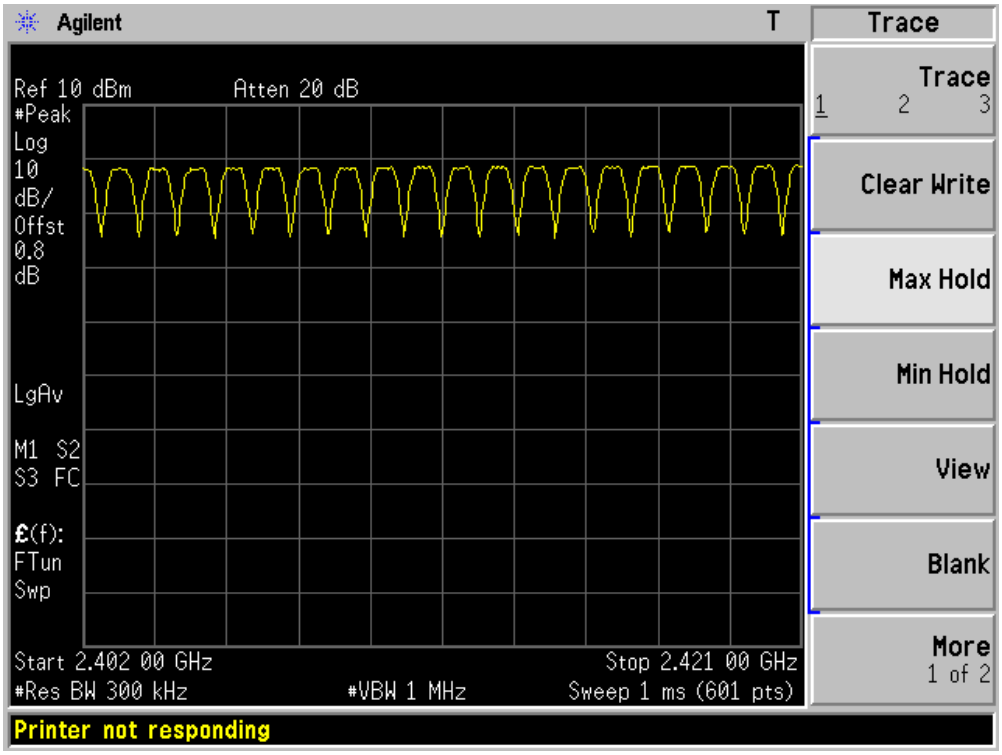
The measurement uncertainty is defined as ± 1 kHz

7.6. Test Result

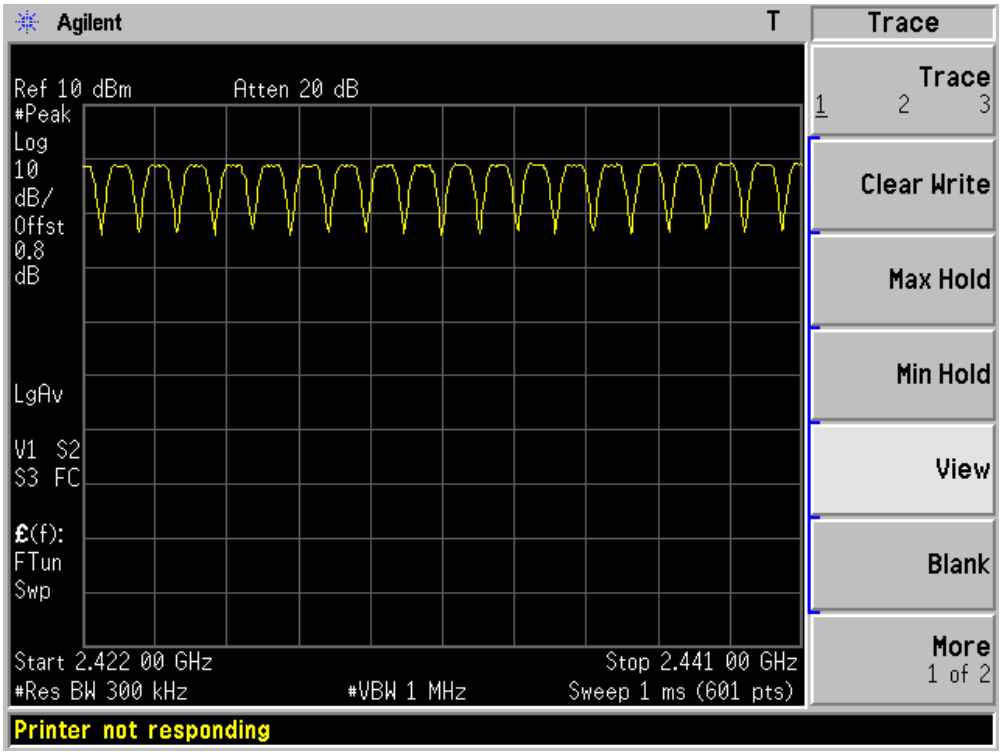
Product	:	Notebook
Test Item	:	Number of Hopping Frequencies
Test Site	:	AC-6
Test Mode	:	Mode 1: Transmit (DH5)

Frequency Band (MHz)	Number of Hopping Frequencies	Limit	Result
2400 - 2483.5	79	>15	Pass

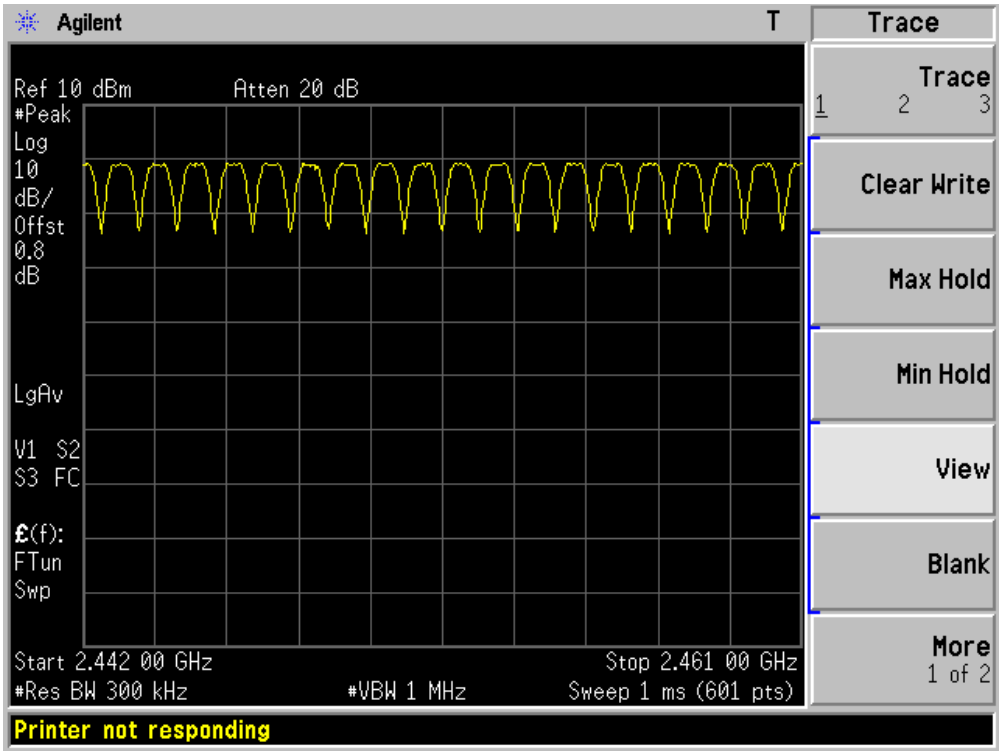
2402 - 2421 MHz



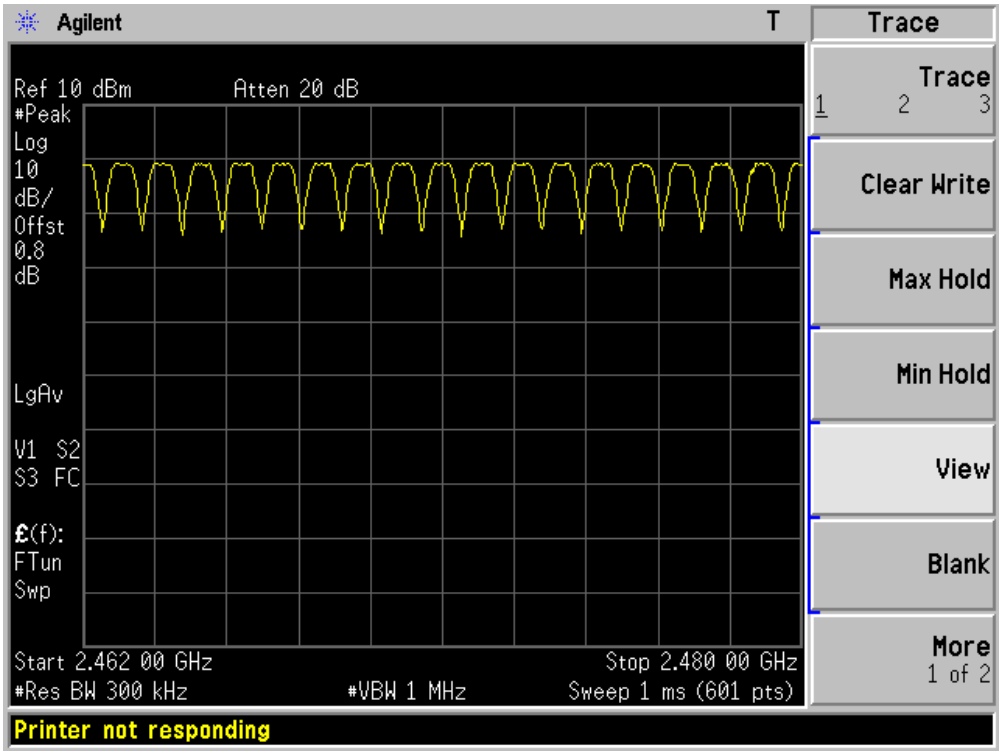
2422 - 2441 MHz



2442 - 2461 MHz



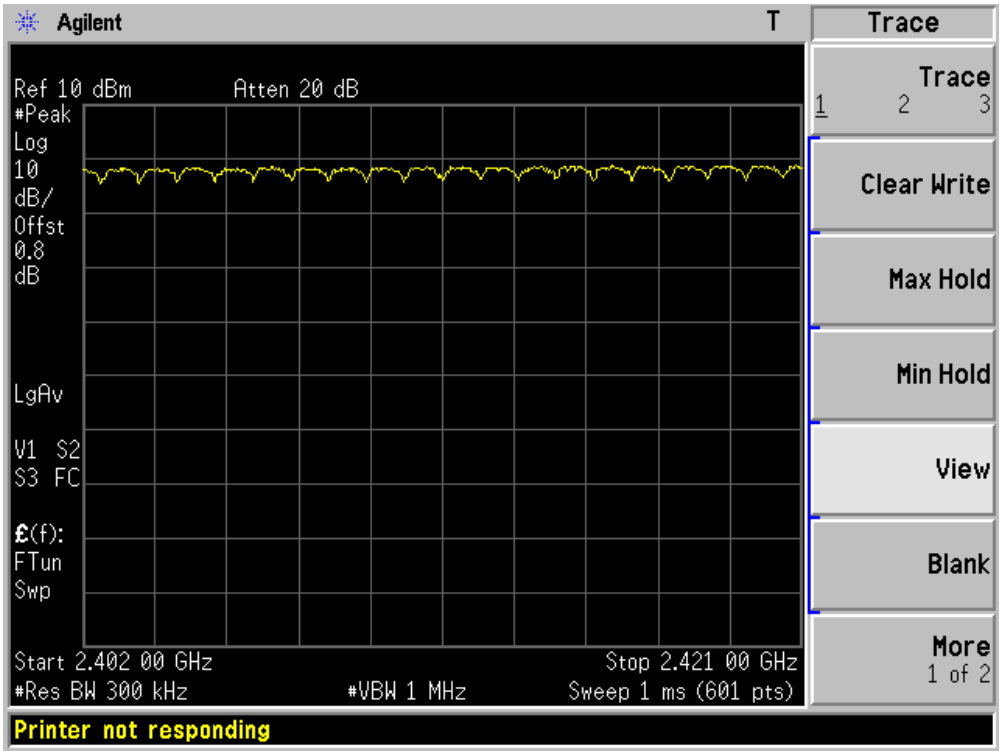
2462 - 2480 MHz



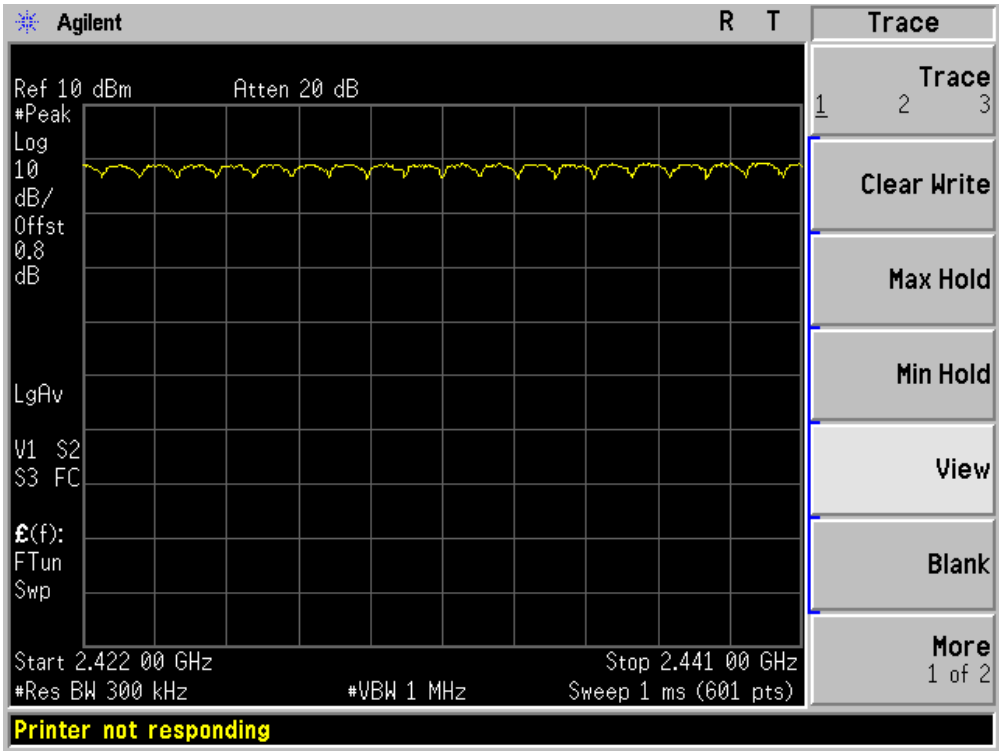
Product	:	Notebook
Test Item	:	Number of Hopping Frequencies
Test Site	:	AC-6
Test Mode	:	Mode 2: Transmit (3DH5)

Frequency Band (MHz)	Number of Hopping Frequencies	Limit	Result
2400 - 2483.5	79	>15	Pass

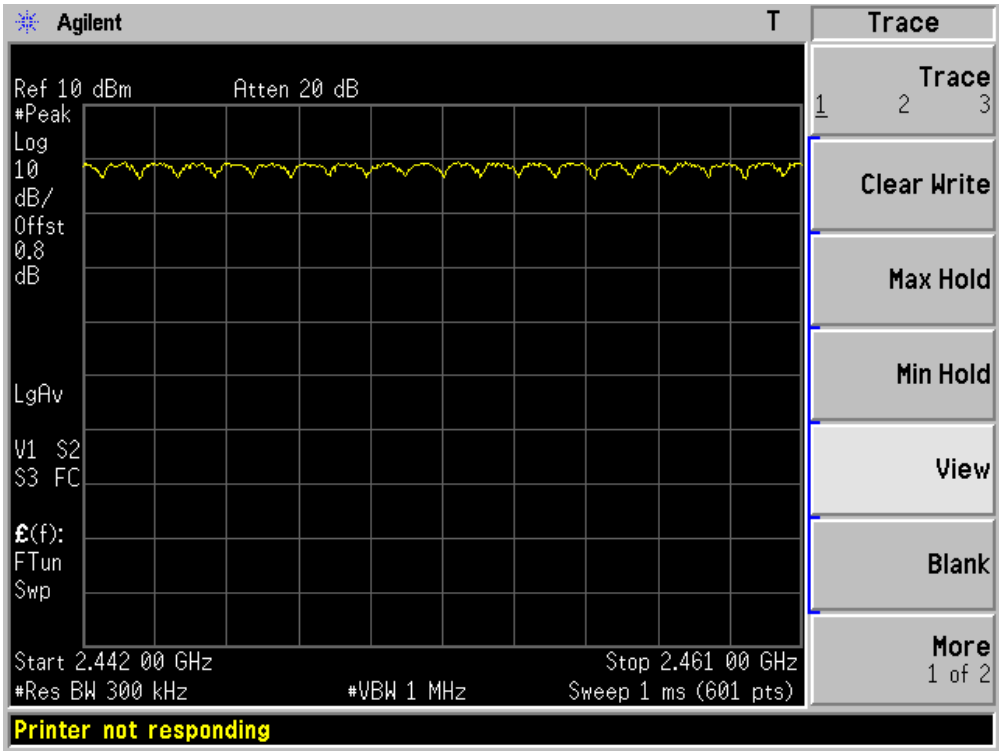
2402 - 2421 MHz



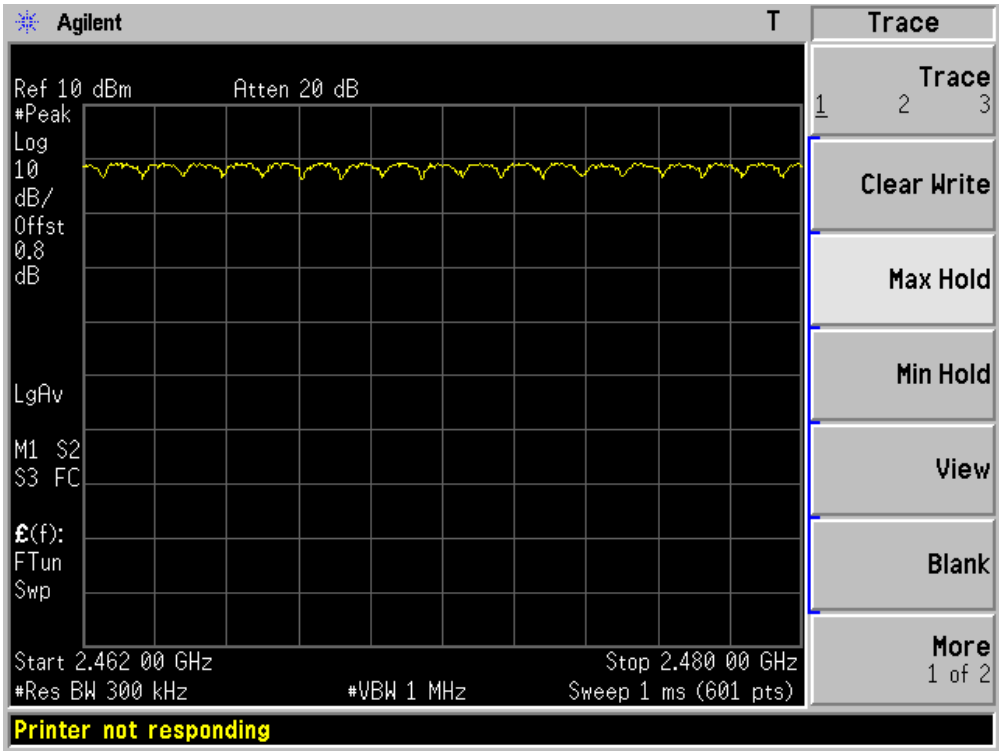
2422 - 2441 MHz



2442 - 2461 MHz



2462 - 2480 MHz



8. Time of Occupancy (Dwell Time)

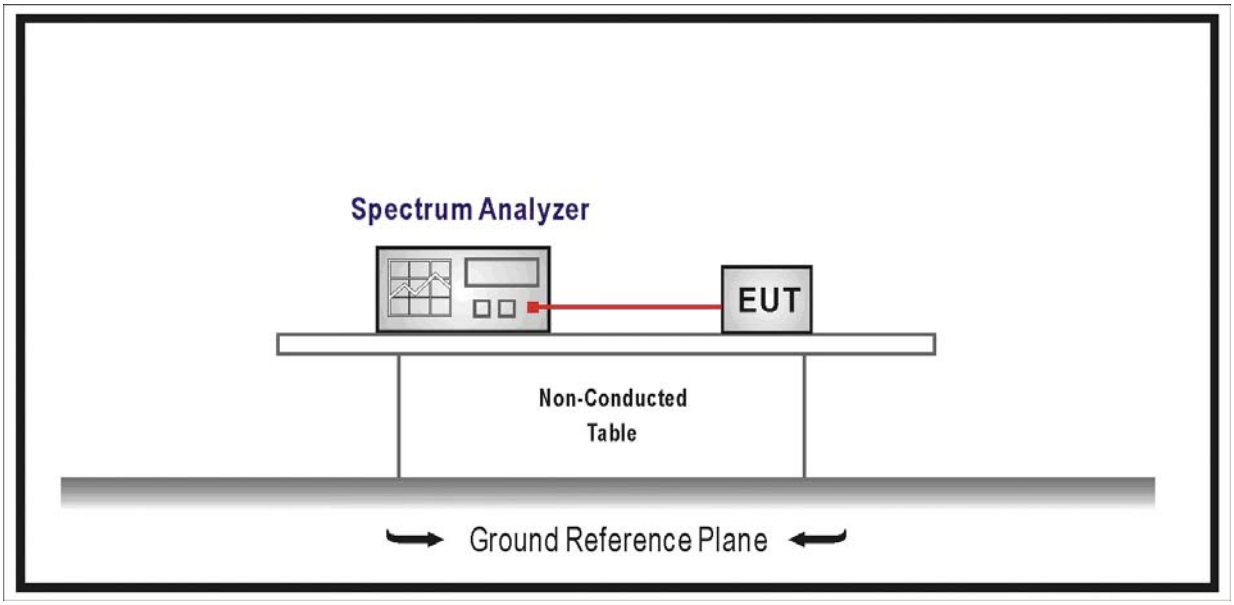
8.1. Test Equipment

Time of Occupancy (Dwell Time) / AC-6

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2009/06/10
Coaxial Cable	Huber+Suhner	AC4-RF	09	2008/11/24
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH007	2009/03/30

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

8.2. Test Setup



8.3. Limit

- For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less then 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; If the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.

- Frequency hopping systems operating in the 5725-5850 MHz band shall use at least 75 hopping frequencies. The maximum 20 dB bandwidth of the hopping channel is 1 MHz. The average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 30 second period.
- Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater then 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

8.4. Test Procedure

According to FCC Public Notice DA 00-705, March 30, 2000.
The EUT must have its hopping function enabled. Use the following spectrum analyzer settings:
Span = zero span, centered on a hopping channel
RBW = 1MHz
VBW ≧ RBW
Sweep = as necessary to capture the entire dwell time per hopping channel
Detector function = peak
Trace = max hold
If possible, use the marker-delta function to determine the dwell time. If this value varies with different modes of operation (e.g., data rate, modulation format, etc.), repeat this test for each variation.

8.5. Uncertainty

The measurement uncertainty is defined as ± 0.1 us

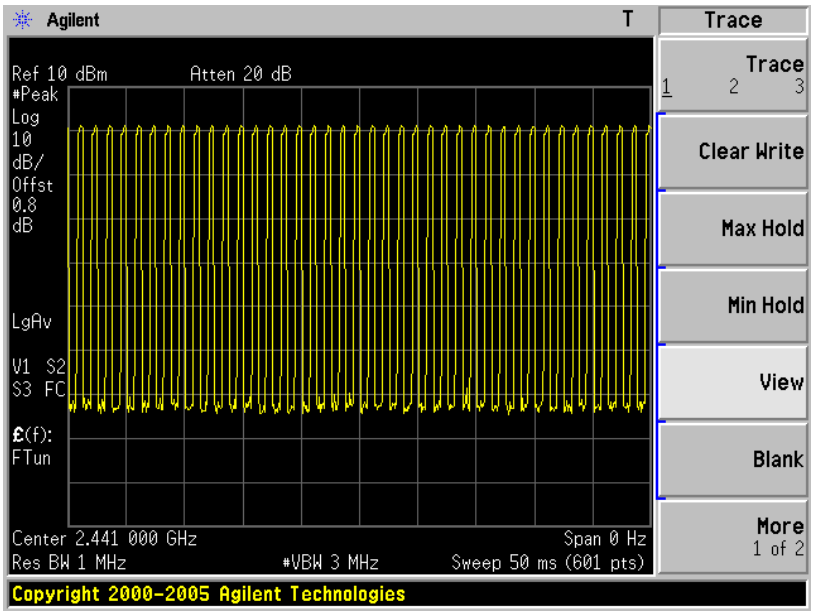
8.6. Test Result

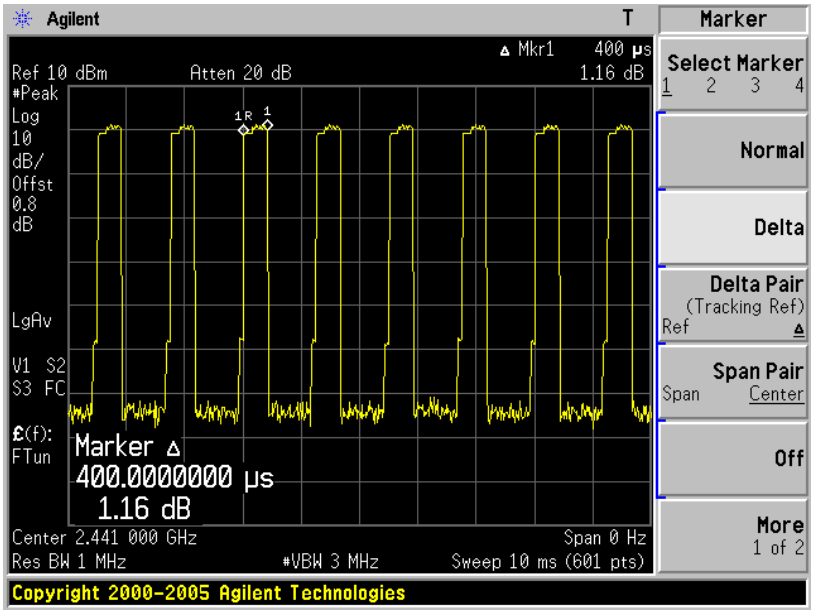
Product	:	Notebook
Test Item	:	Time of Occupancy (Dwell Time)
Test Site	:	AC-6
Test Mode	:	Transmit (3DH1)

Channel No.	Frequency (MHz)	Time of Occupancy (ms)	Limit (ms)	Result
39	2441	128.0	< 400	Pass

Test Time Period: 0.4*79=31.6sec, Hopping Times within 1sec: 40/50msec = 800hops/sec,
So the Maximum Occupancy Time Within 31.6sec: [(416.7 μs*800)/79]*31.6 = 128.0msec

Channel 39 (2441MHz)-(3DH1)





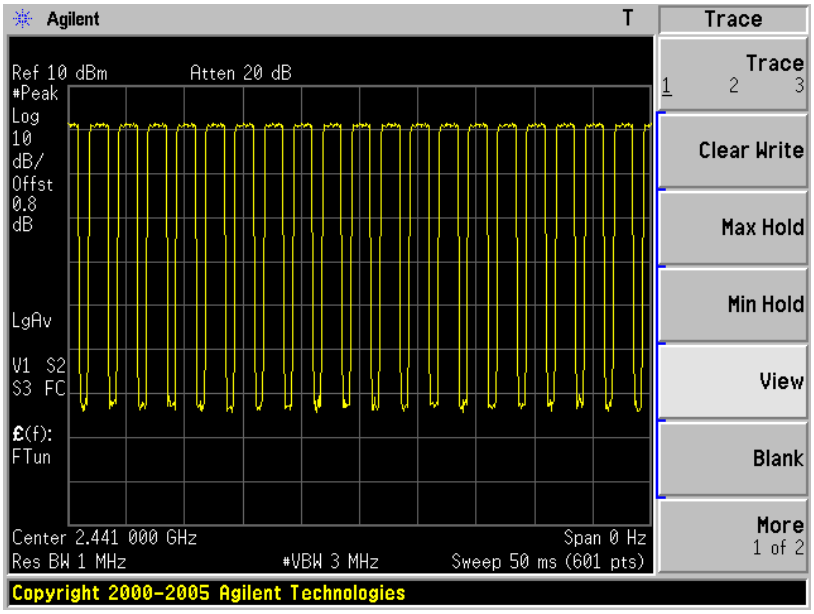
Product	:	Notebook
Test Item	:	Time of Occupancy (Dwell Time)
Test Site	:	AC-6
Test Mode	:	Transmit (3DH3)

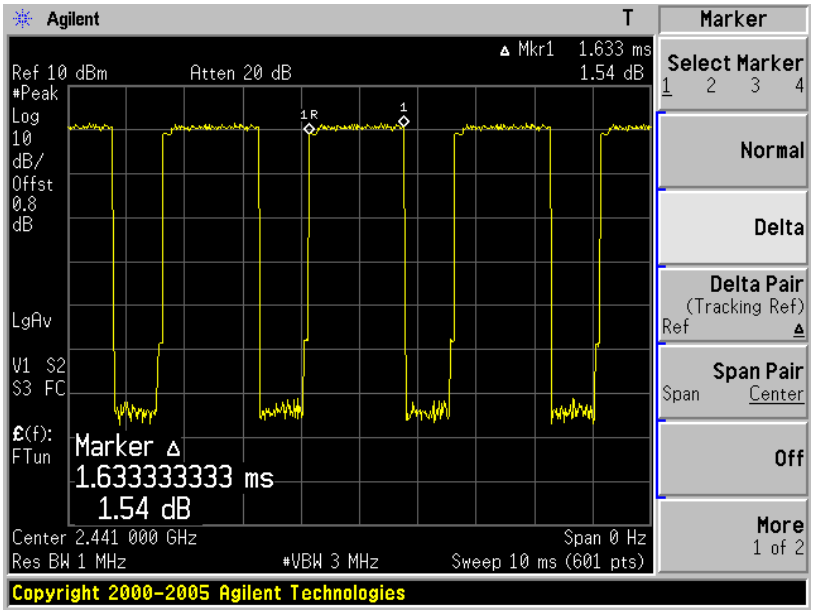
Channel No.	Frequency (MHz)	Time of Occupancy (ms)	Limit (ms)	Result
39	2441	260.8	< 400	Pass

Test Time Period: 0.4*79=31.6sec, Hopping Times within 1sec: 20/50msec = 400hops/sec

So the Maximum Occupancy Time Within 31.6sec: [(1.63 ms*400)/79]*31.6 = 260.8msec

Channel 39 (2441MHz) - (3DH3)





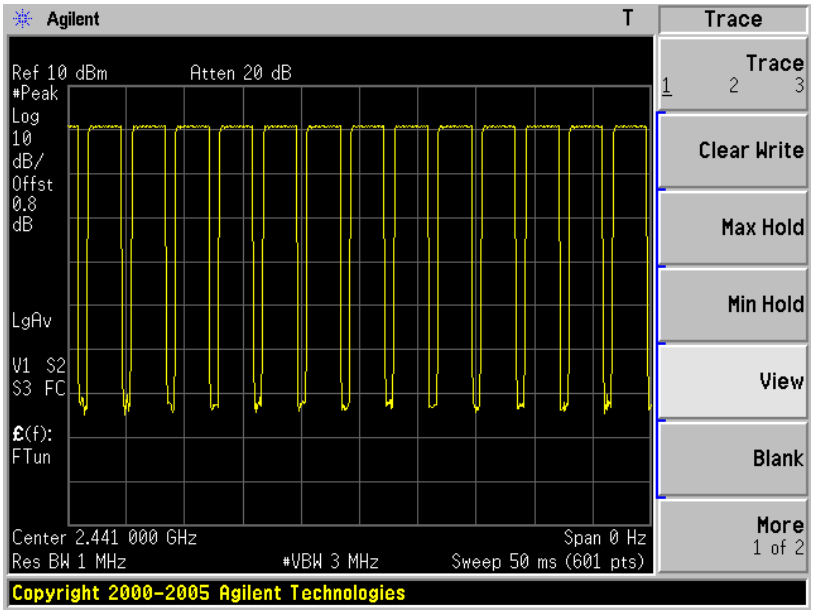
Product	:	Notebook
Test Item	:	Time of Occupancy (Dwell Time)
Test Site	:	AC-6
Test Mode	:	Transmit (3DH5)

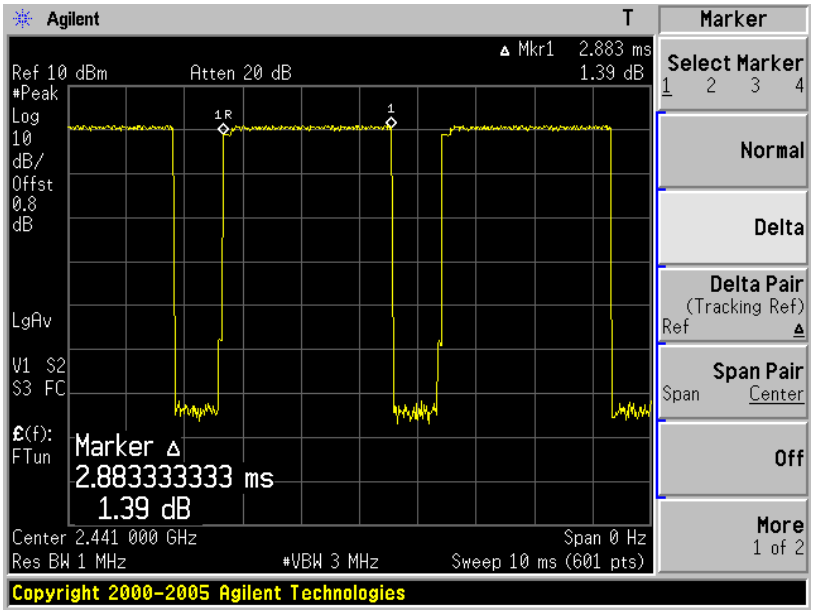
Channel No.	Frequency (MHz)	Time of Occupancy (ms)	Limit (ms)	Result
39	2441	322.6	< 400	Pass

Test Time Period: 0.4*79=31.6sec, Hopping Times within 1sec: 14/50msec = 280hops/sec

So the Maximum Occupancy Time Within 31.6sec: [(2.88 ms*280)/79]*31.6 = 322.6msec

Channel 39 (2441MHz) - (3DH5)





9. Peak Output Power

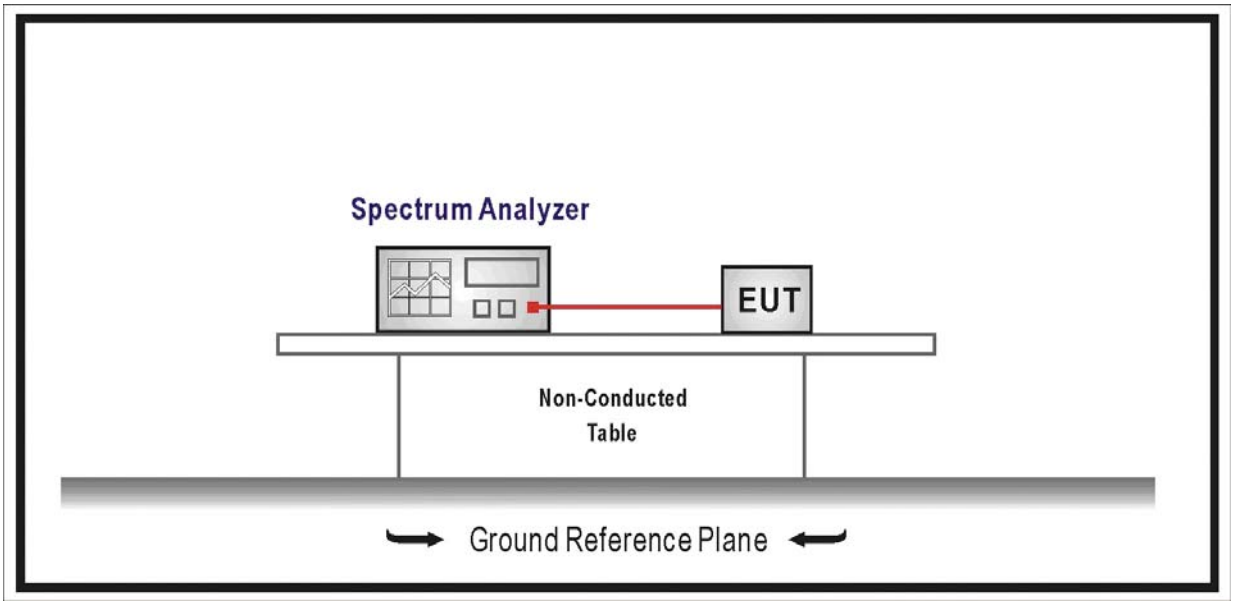
9.1. Test Equipment

Power Output / AC-6

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Wideband Peak Power Meter	Anritsu	ML2495A	0905006	2009/02/12
Power Sensor	Anritsu	MA2411B	0846014	2009/01/12
Coaxial Cable	Huber+Suhner	AC4-RF	09	2008/11/24
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH007	2009/03/01

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

9.2. Test Setup



9.3. Limit

- For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts.
- For frequency hopping systems operating in the 902-928 MHz band: 1 watt for systems employing at least 50 hopping channels; and, 0.25 watts for systems employing less than 50 hopping channels, but at least 25 hopping channels.

Note: the conducted output power limit specified above is based on the use the antennas with directional gains that do not exceed 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values above, as appropriate, by the amount in dB that the directional gain of antenna exceeds 6 dBi.

9.4. Test Procedure

The EUT was tested according to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.
Power output measurement allowed per Section 15.247(b)(3).

Use the wideband power meter to test peak power and record the result.

9.5. Uncertainty

The measurement uncertainty is defined as ± 1.0 dB

9.6. Test Result

Product	:	Notebook
Test Item	:	Peak Output Power
Test Site	:	AC-6

Mode 1: Transmit – DH5

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)	Cable Loss (dBm)	Total Power (dBm)	Limit (dBm)	Result
0	2402	-1.86	0.8	-1.06	30.00	Pass
39	2441	-1.44	0.8	-0.64	30.00	Pass
78	2480	-1.36	0.8	-0.56	30.00	Pass

Mode 2: Transmit – 3DH5

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)	Cable Loss (dBm)	Total Power (dBm)	Limit (dBm)	Result
0	2402	0.50	0.8	1.30	30.00	Pass
39	2441	0.64	0.8	1.44	30.00	Pass
78	2480	0.53	0.8	1.33	30.00	Pass

Note: The antenna gain of transmitter is less than 6 dBi and other than fixed, point-to-point operation, therefore the limit is 30 dBm.

10. Band-edge Compliance of RF Conducted Emissions

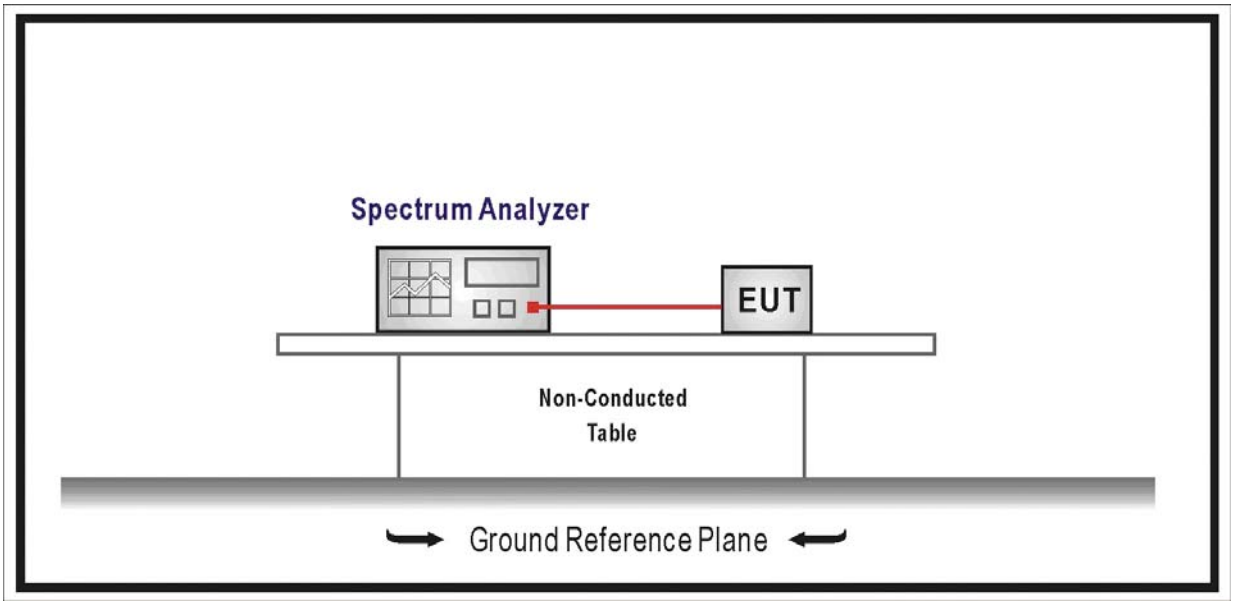
10.1. Test Equipment

Band-edge Compliance of RF Conducted Emissions / AC-6

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2009/06/10
Coaxial Cable	Huber+Suhner	AC4-RF	09	2008/11/24
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH007	2009/03/30

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

10.2. Test Setup



10.3. Limit

- Intentional radiators operating under the alternative provisions to the general emission limits as contained in 15.217 through 15.257 and in Subpart E of FCC part 15, must be designed to ensure that 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.
- In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is

produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) of FCC part 15 is not required.

10.4. Test Procedure

According to FCC Public Notice DA 00-705, March 30, 2000.
Use the following spectrum analyzer settings:
Span = wide enough to capture the peak level of the emission operating on the channel closest to the bandedge, as well as any modulation products which fall outside of the authorized band of operation.
RBW ≧ 1% of the span
VBW ≧ RBW
Sweep = auto
Detector function = peak
Trace = max hold
Allow the trace to stabilize. Set the marker on the emission at the bandedge, or on the highest modulation prouduct outside of the band, if this level is greater than that at the bandedge.
Enable the marker-delta function, then use the marker-to-peak function to move the marker to the peak of the in-band emission. The marker-delta value now displayed must comply with the limit specified in this Section.
Now, using the same instrument settings, enable the hopping function of the EUT. Allow the trace to stabilize. Follow the same procedure listed above to determine if any spurious emissions caused by the hopping function also comply with the specified limit.

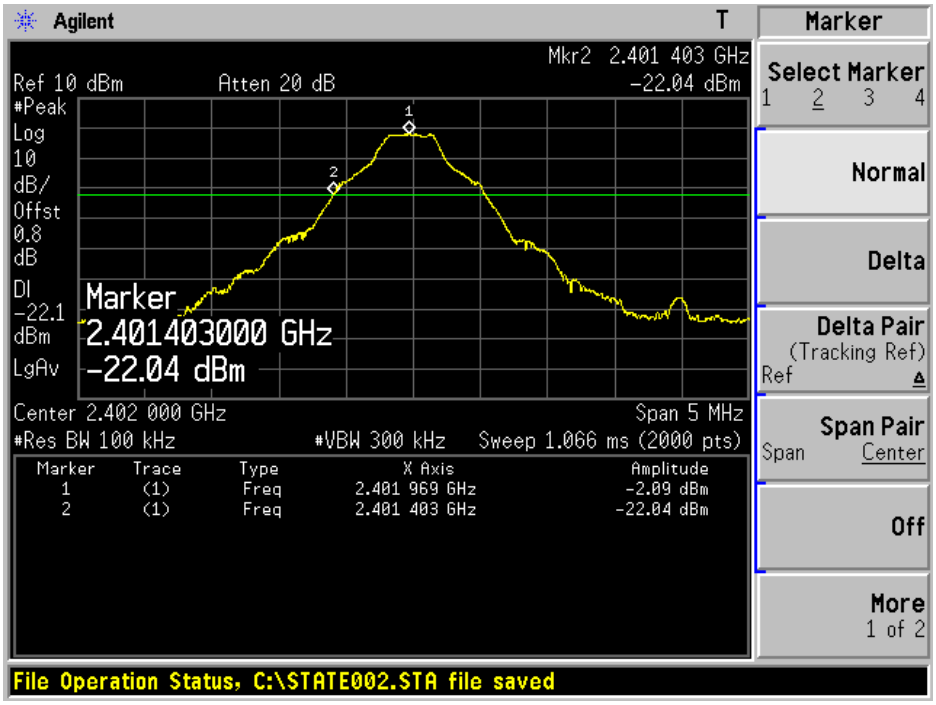
10.5. Uncertainty

The measurement uncertainty is defined as ± 1.0 dB

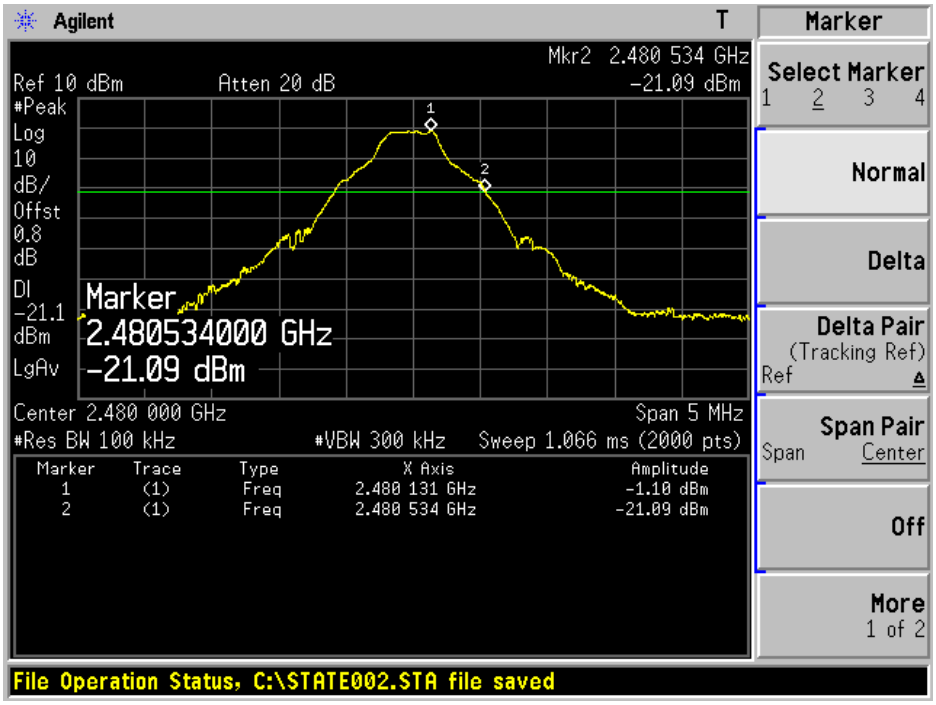
10.6. Test Result

Product	:	Notebook
Test Item	:	Band-edge Compliance of RF Conducted Emissions
Test Site	:	AC-6
Test Mode	:	Mode 1: Transmit (DH5)

Channel 00 (2402MHz)

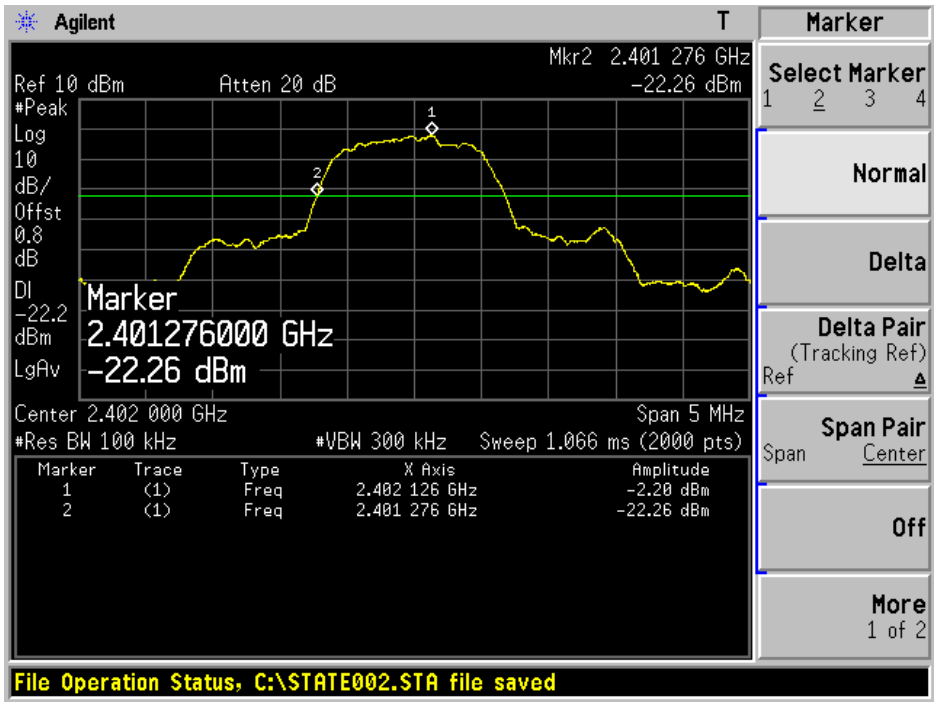


Channel 78 (2480MHz)

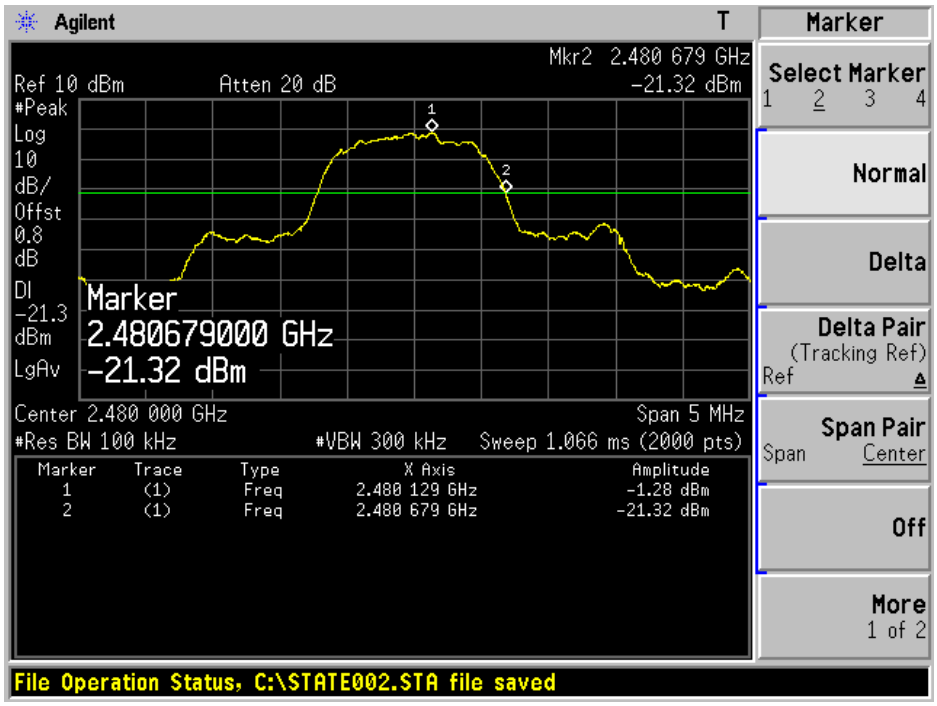


Product	:	Notebook
Test Item	:	Band-edge Compliance of RF Conducted Emissions
Test Site	:	AC-6
Test Mode	:	Mode 2: Transmit (3DH5)

Channel 00 (2402MHz)



Channel 78 (2480MHz)



11. Spurious RF Conducted Emissions

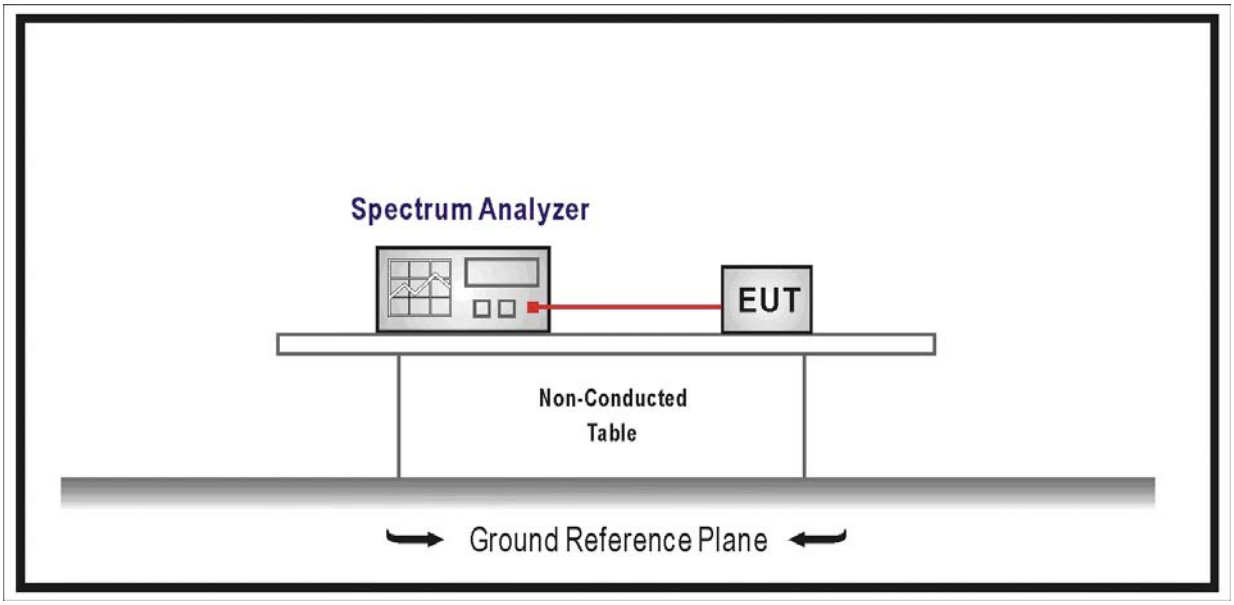
11.1. Test Equipment

Spurious RF Conducted Emissions / AC-6

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2009/06/10
Coaxial Cable	Huber+Suhner	AC4-RF	09	2008/11/24
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH007	2009/03/30

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

11.2. Test Setup



11.3. Limit

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

paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) of FCC part 15 is not required.

11.4. Test Procedure

According to FCC Public Notice DA 00-705, March 30, 2000.
Use the following spectrum analyzer settings:
Span = wide enough to capture the peak level of the in-band emission and all spurious emissions (e.g., harmonics) from the lowest frequency generated in the EUT up through the 10^{th} harmonic. Typically, several plots are required to cover this entire span.
RBW = 100 kHz
VBW ≧ RBW
Sweep = auto
Detector function = peak
Trace = max hold
Allow the trace to stabilize. Set the marker on the peak of any spurious emission recorded. The level displayed must comply with the limit specified in this section.

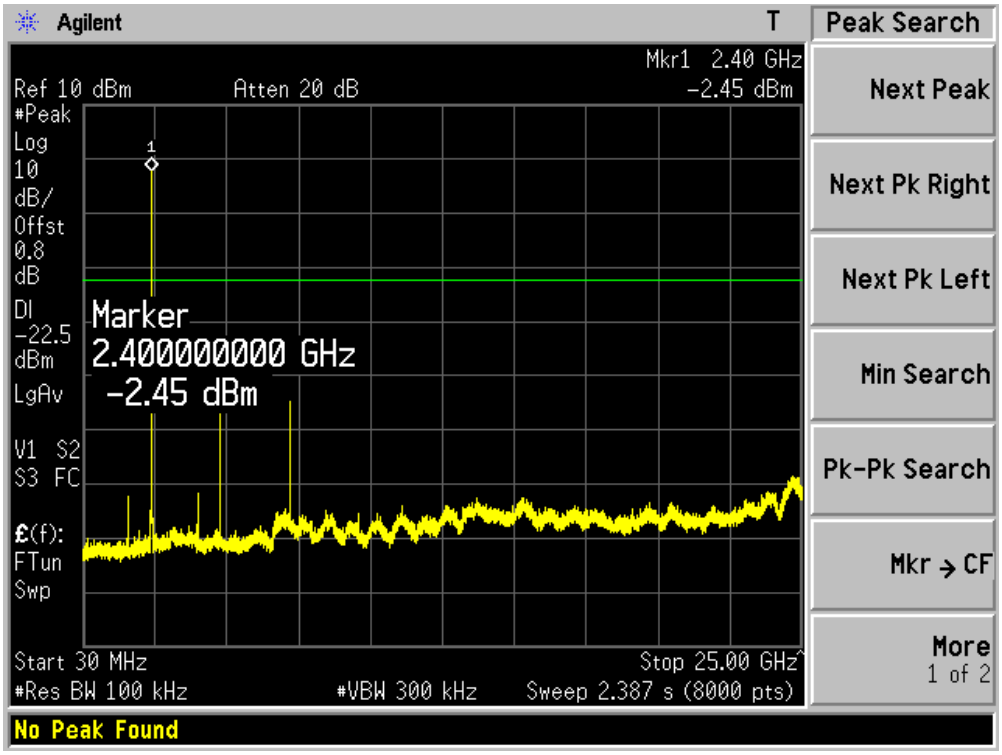
11.5. Uncertainty

The measurement uncertainty is defined as ± 1.0 dB

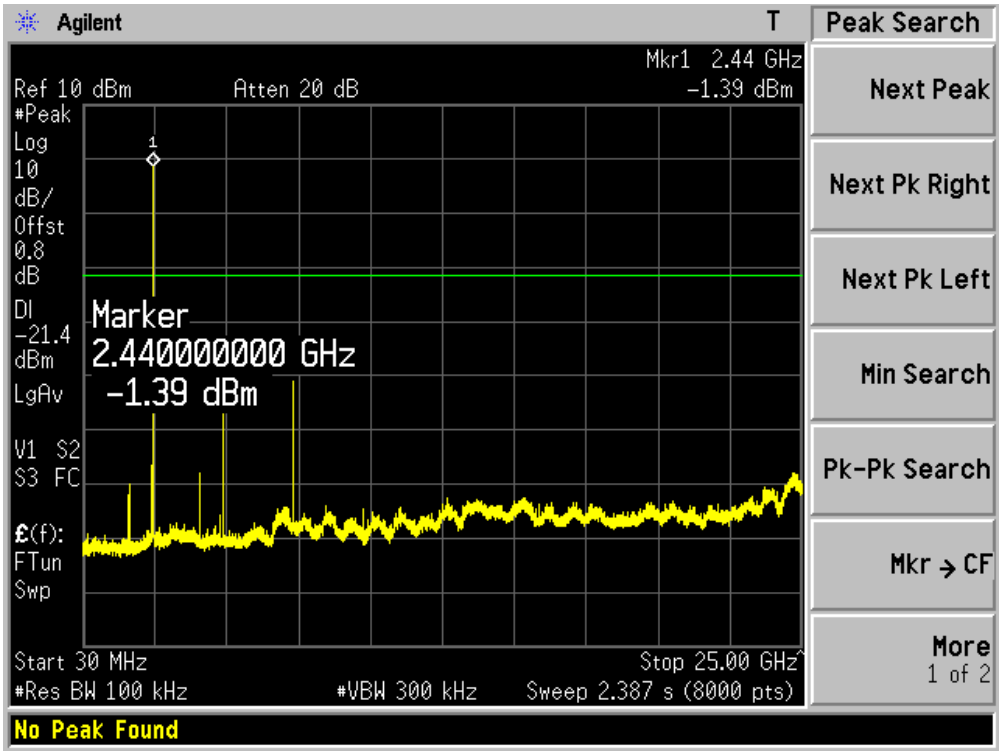
11.6. Test Result

Product	:	Notebook
Test Item	:	Spurious RF Conducted Emissions
Test Site	:	AC-6
Test Mode	:	Mode 1: Transmit (DH5)

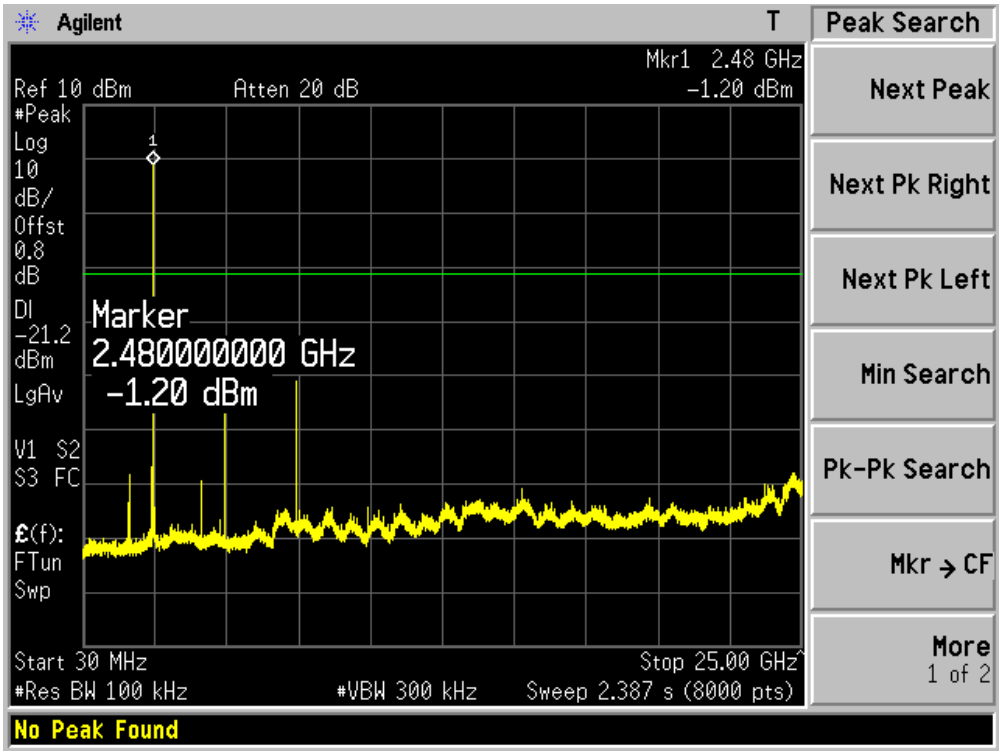
Channel 00 (2402MHz)



Channel 39 (2441MHz)

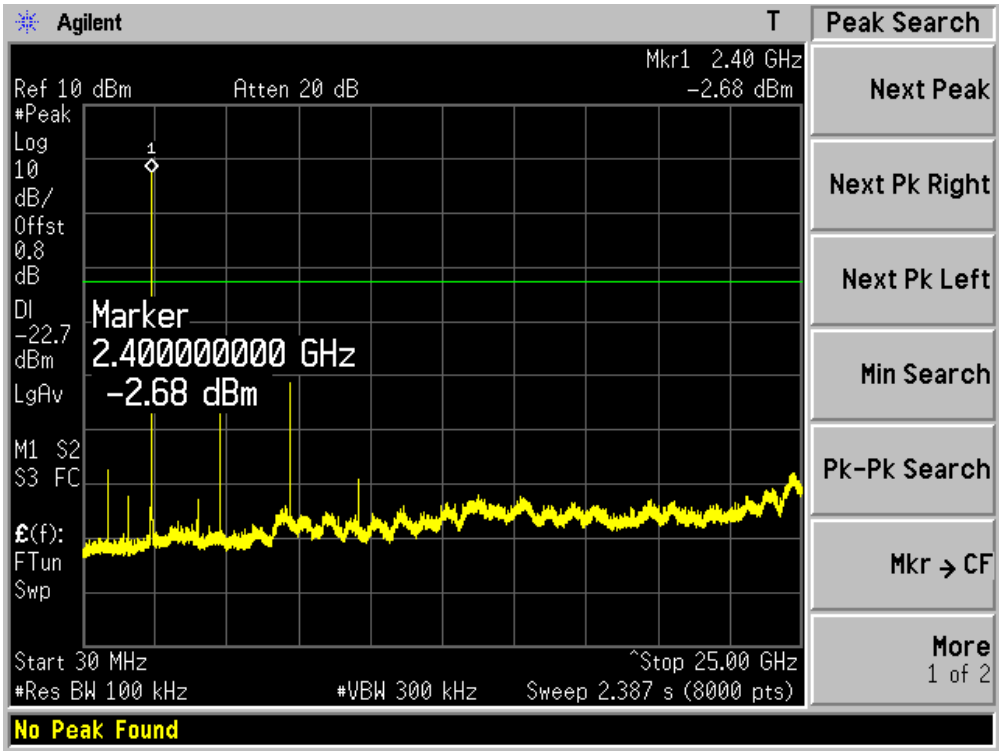


Channel 78 (2480MHz)

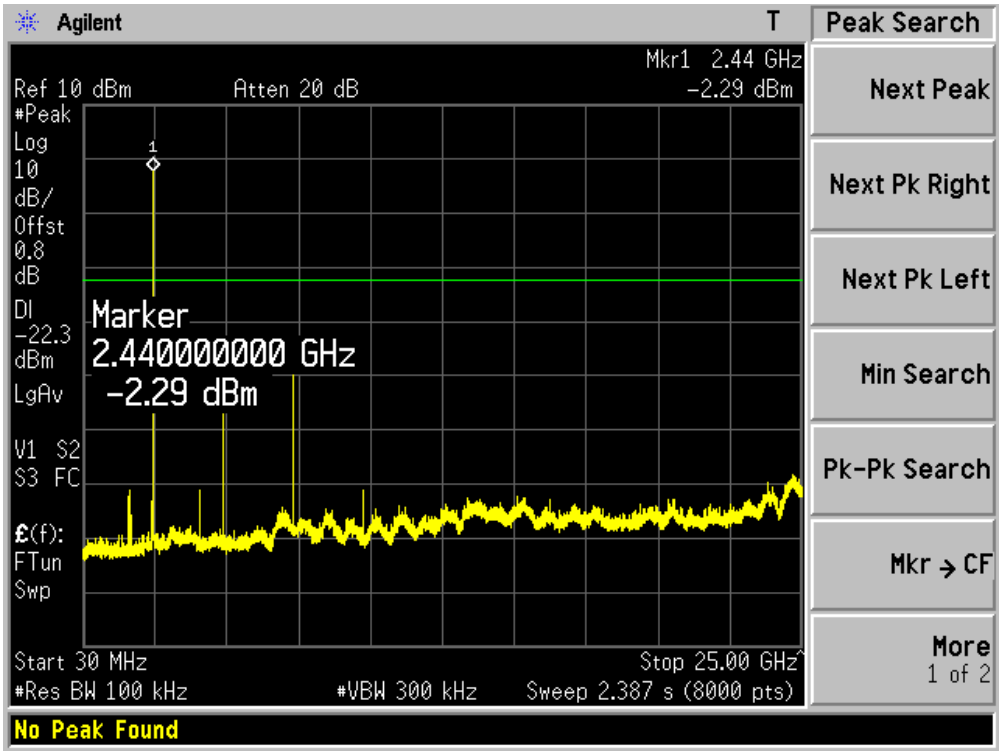


Product	:	Notebook
Test Item	:	Spurious RF Conducted Emissions
Test Site	:	AC-6
Test Mode	:	Mode 2: Transmit (3DH5)

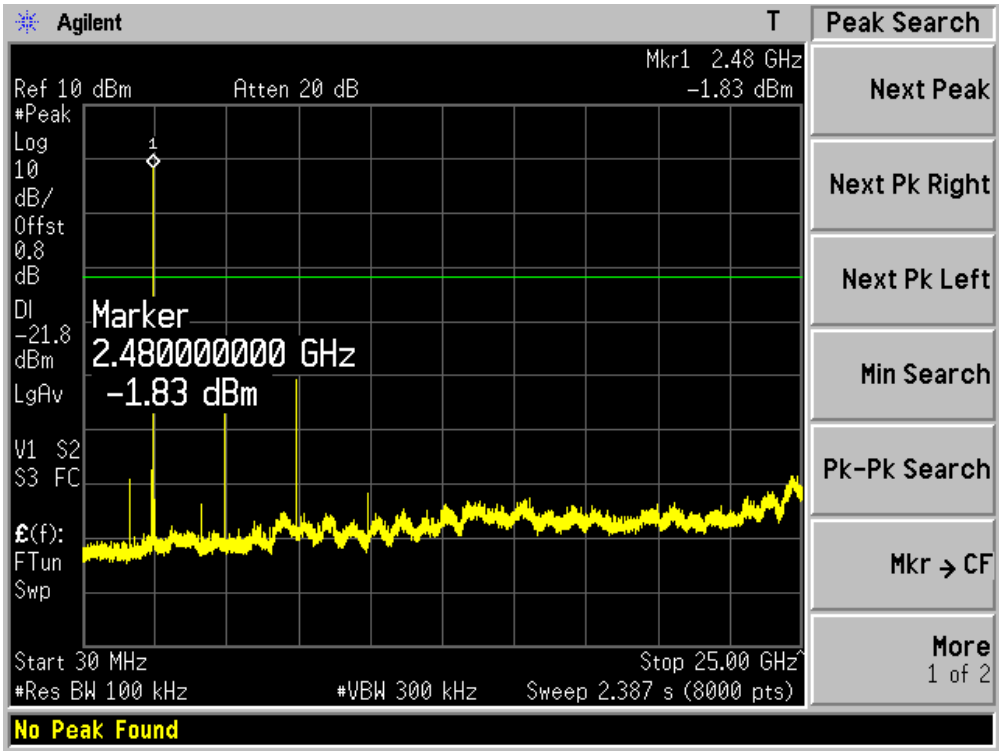
Channel 00 (2402MHz)



Channel 39 (2441MHz)



Channel 78 (2480MHz)



12. Radiated Emission Band Edge

12.1. Test Equipment

☒Radiated Emission Band Edge / AC-2

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	E4408B	MY45102679	2008/06/28
EMI Test Receiver	R&S	ESCI	100573	2009/05/10
Preamplifier	Quietek	AP-025C	QT-AP003	2008/11/24
Preamplifier	Quietek	AP-180C	CHM-0602012	2008/11/24
Bilog Type Antenna	Schaffner	CBL6112B	2932	2008/11/21
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	496	2008/11/24
50ohm Coaxial Switch	Anritsu	MP59B	6200447304	2008/11/24
Coaxial Cable	Huber+Suhner	AC2-C	04	2008/11/24
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH002	2009/03/30

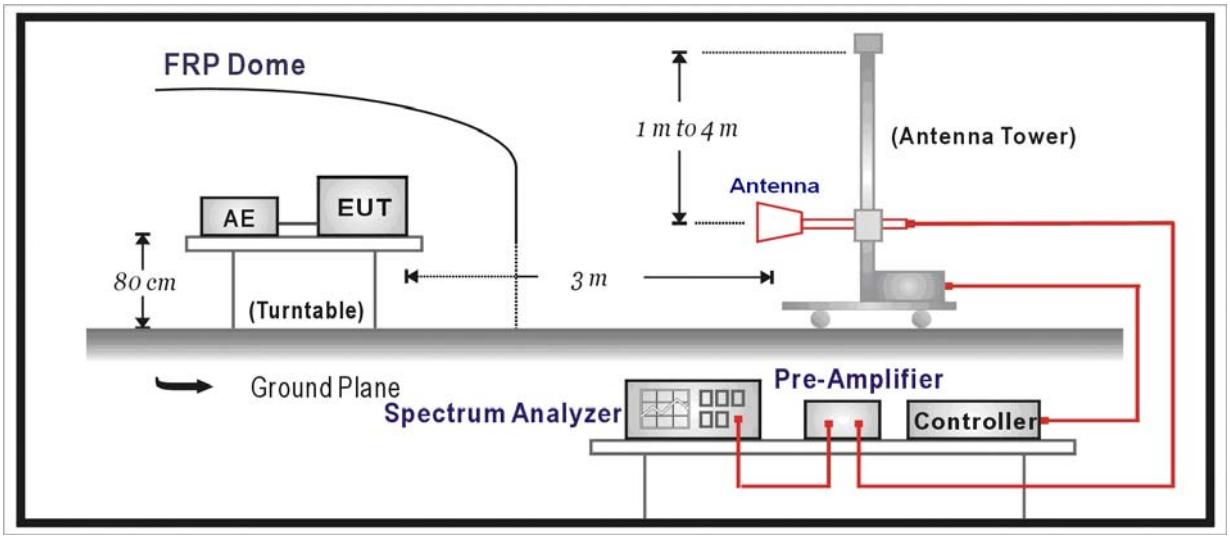
☐Radiated Emission Band Edge / AC-3

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2009/04/23
EMI Test Receiver	R&S	ESCI	100176	2008/11/15
Preamplifier	Quietek	AP-025C	QT-AP004	2008/11/24
Preamplifier	Quietek	AP-180C	CHM-0602012	2008/11/24
Bilog Type Antenna	Schaffner	CBL6112D	22254	2008/11/24
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	496	2008/11/24
50ohm Coaxial Switch	Anritsu	MP59B	6200464463	2008/11/24
Coaxial Cable	Huber+Suhner	AC2-C	05	2008/11/24
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH003	2009/03/30

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

Note 2: The test instruments marked with “X” are used to measure the final test results.

12.2. Test Setup



12.3. Limit

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a) of FCC part 15, must also comply with the radiated emission limits specified in Section 15.209(a) of FCC part 15.

12.4. Test Procedure

According to FCC Public Notice DA 00-705, March 30, 2000.
This test is required for any spurious emission or modulation product that falls in a Restricted Band, as defined in Section 15.205 of FCC part 15. It must be performed with the highest gain of each type of antenna proposed for use with the EUT. Use the following spectrum analyzer settings:
Span = wide enough to fully capture the emission being measured
RBW = 1 MHz for f ≧ 1 GHz, 100 kHz for f < 1GHz
VBW ≧ RBW
Sweep = auto
Detector function = peak
Trace = max hold
Follow the guidelines in ANSI C63.4 with respect to maximizing the emission by rotating the EUT, measuring the emission while the EUT is situated in three orthogonal planes (if appropriate), adjusting the measurement antenna height and polarization, etc. A pre-amp and a high pass filter are required for this test, in order to provide the measuring system with sufficient sensitivity. Allow the trace to stabilize. The peak reading of the emission, after being

corrected by the antenna factor, cable loss, pre-amp gain, etc., is the peak field strength, which must comply with the limit specified in Section 15.35(b) of FCC part 15.

Now set the VBW to 10 Hz, while maintaining all of the other instrument settings. This peak level, once corrected, must comply with the limit specified in Section 15.209 of FCC Part 15. If the dwell time per channel of the hopping signal is less than 100 ms, then the reading obtained with the 10 Hz VBW may be further adjusted by a “duty cycle correction factor”, derived from 20log (dwell time/100 ms), in an effort to demonstrate compliance with the 15.209 limit of FCC part 15.

If the emission on which a radiated measurement must be made is located at the edge of the authorized band of operation, then the alternative “marker-delta” method may be employed.

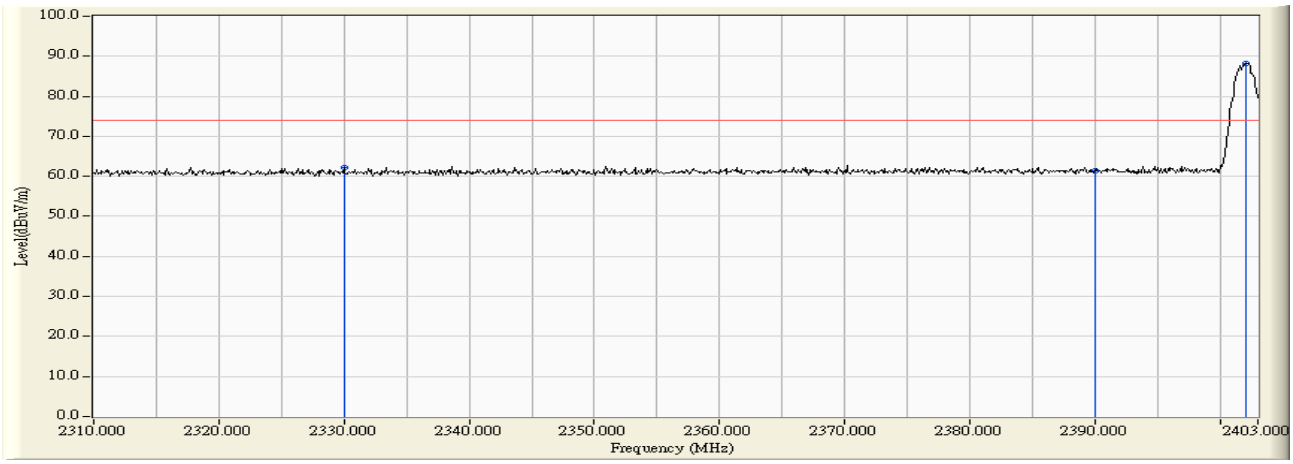
12.5. Uncertainty

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

below 1G is defined as ± 3.8 dB

12.6. Test Result

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	**Time : 2009/06/05 - 15:04**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 0**
EUT : NOTEBOOK	**Probe : 9120D_499(1-18GHz) - HORIZONTAL**
Power : AC 120V/60Hz	**Note : Mode 1:Transmit at channel 2402MHz by DH5**

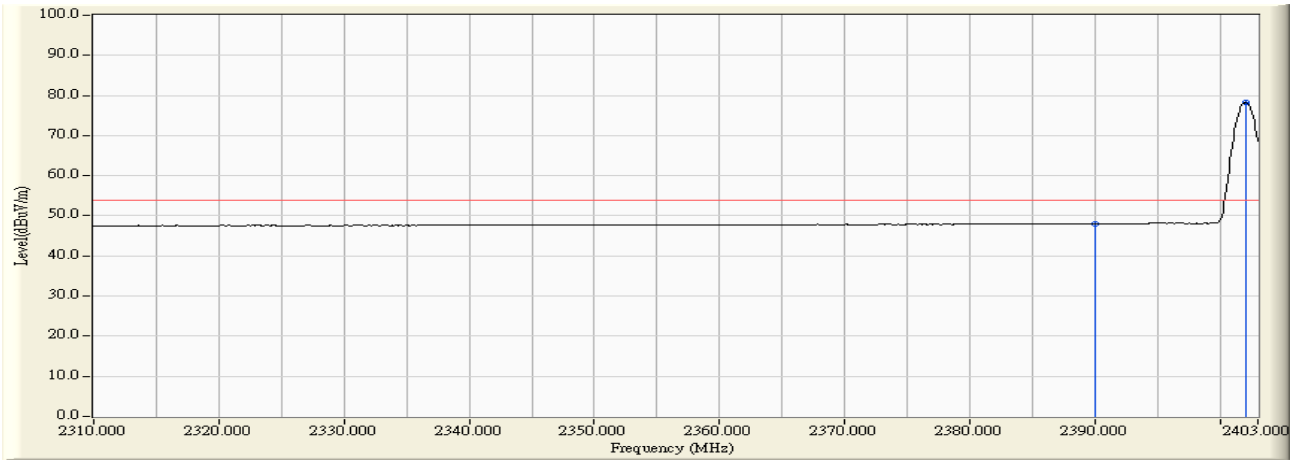


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2329.995	31.245	31.086	62.331	-11.639	73.970	PEAK
2		2390.000	31.184	30.217	61.401	-12.569	73.970	PEAK
3	*	2402.070	31.184	56.939	88.123	N/A	N/A	PEAK

Note:

1. Peak detector set as follows, RBW = 1MHz, VBW = 3MHz, Sweep time = 500ms
2. Average detector set as follows, RBW = 1MHz, VBW = 10Hz, Sweep time = Auto.

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	**Time : 2009/06/05 - 15:06**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 6**
EUT : NOTEBOOK	**Probe : 9120D_499(1-18GHz) - HORIZONTAL**
Power : AC 120V/60Hz	**Note : Mode 1:Transmit at channel 2402MHz by DH5**

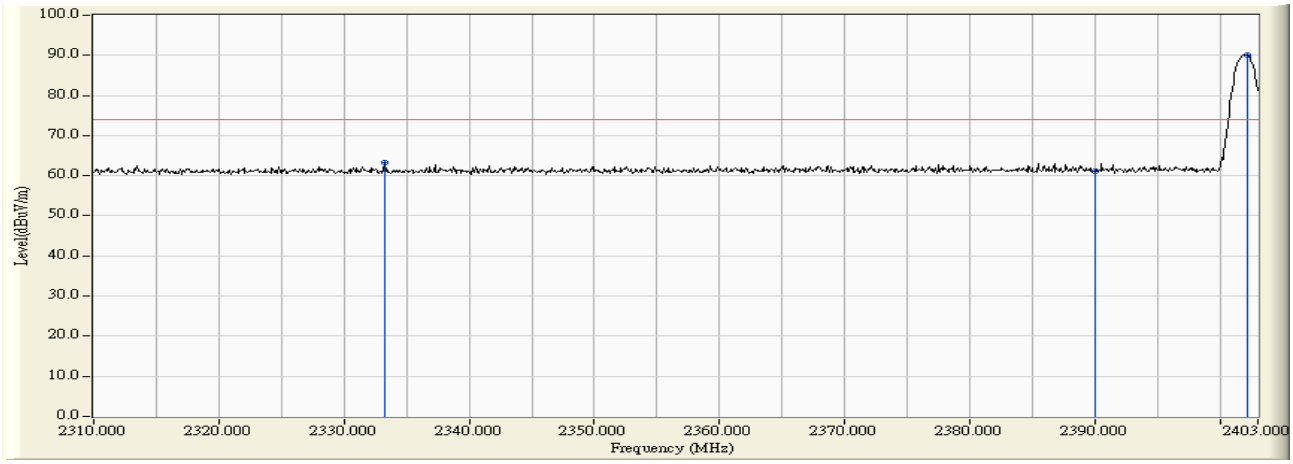


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2390.000	31.184	16.779	47.963	-6.007	53.970	AVERAGE
2	*	2402.070	31.184	47.009	78.193	N/A	N/A	AVERAGE

Note:

1. Peak detector set as follows, RBW = 1MHz, VBW = 3MHz, Sweep time = 500ms
2. Average detector set as follows, RBW = 1MHz, VBW = 10Hz, Sweep time = Auto.

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	**Time : 2009/06/05 - 15:10**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 0**
EUT : NOTEBOOK	**Probe : 9120D_499(1-18GHz) - VERTICAL**
Power : AC 120V/60Hz	**Note : Mode 1:Transmit at channel 2402MHz by DH5**

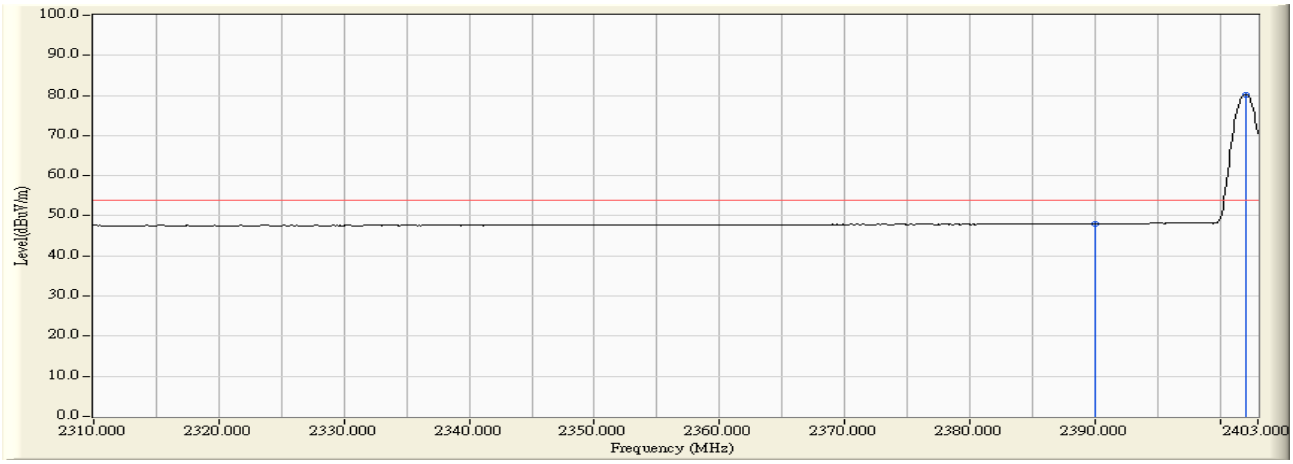


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2333.250	31.242	31.899	63.141	-10.829	73.970	PEAK
2		2390.000	31.184	29.981	61.165	-12.805	73.970	PEAK
3	*	2402.163	31.184	58.973	90.157	N/A	N/A	PEAK

Note:

1. Peak detector set as follows, RBW = 1MHz, VBW = 3MHz, Sweep time = 500ms
2. Average detector set as follows, RBW = 1MHz, VBW = 10Hz, Sweep time = Auto.

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	**Time : 2009/06/05 - 15:10**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 6**
EUT : NOTEBOOK	**Probe : 9120D_499(1-18GHz) - VERTICAL**
Power : AC 120V/60Hz	**Note : Mode 1:Transmit at channel 2402MHz by DH5**

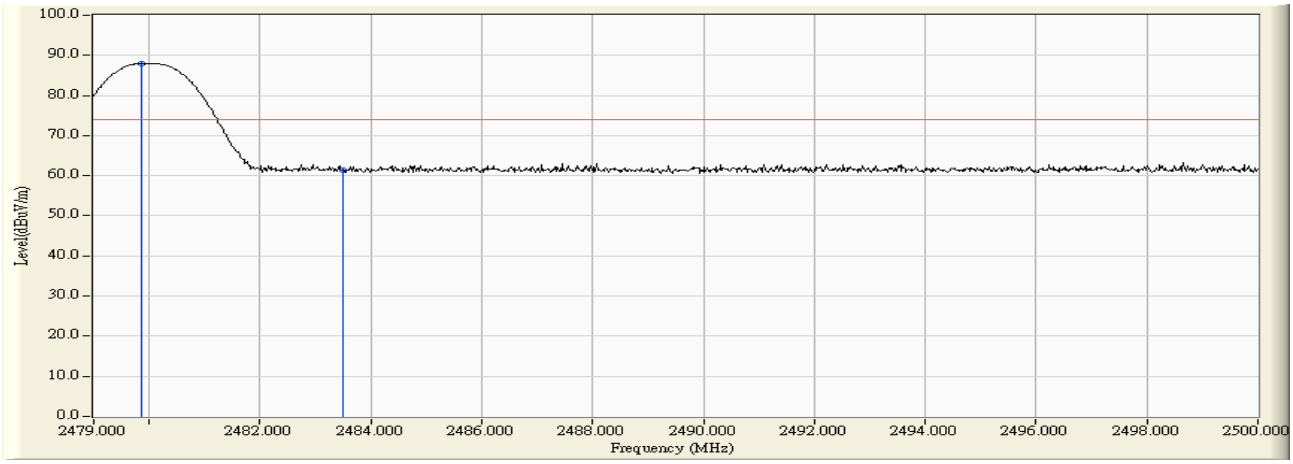


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2390.000	31.184	16.792	47.976	-5.994	53.970	AVERAGE
2	*	2402.070	31.184	49.025	80.209	N/A	N/A	AVERAGE

Note:

1. Peak detector set as follows, RBW = 1MHz, VBW = 3MHz, Sweep time = 500ms
2. Average detector set as follows, RBW = 1MHz, VBW = 10Hz, Sweep time = Auto.

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	**Time : 2009/06/05 - 15:21**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 0**
EUT : NOTEBOOK	**Probe : 9120D_499(1-18GHz) - HORIZONTAL**
Power : AC 120V/60Hz	**Note : Mode 1:Transmit at channel 2480MHz DH5**

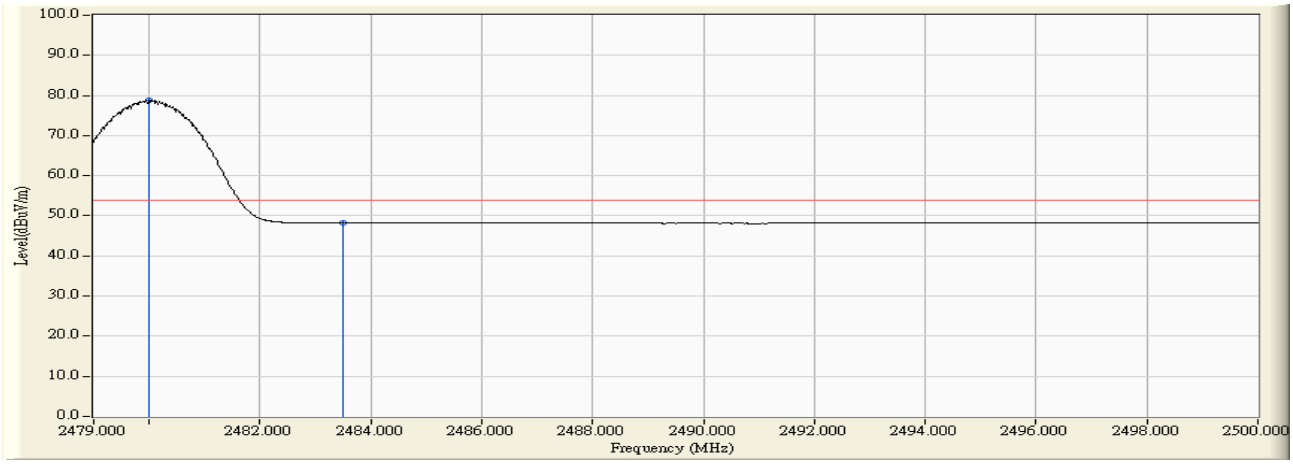


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2479.861	31.214	56.759	87.973	N/A	N/A	PEAK
2		2483.500	31.212	30.143	61.355	-12.615	73.970	PEAK

Note:

1. Peak detector set as follows, RBW = 1MHz, VBW = 3MHz, Sweep time = 500ms
2. Average detector set as follows, RBW = 1MHz, VBW = 10Hz, Sweep time = Auto.

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	**Time : 2009/06/05 - 15:22**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 0**
EUT : NOTEBOOK	**Probe : 9120D_499(1-18GHz) - HORIZONTAL**
Power : AC 120V/60Hz	**Note : Mode 1:Transmit at channel 2480MHz DH5**

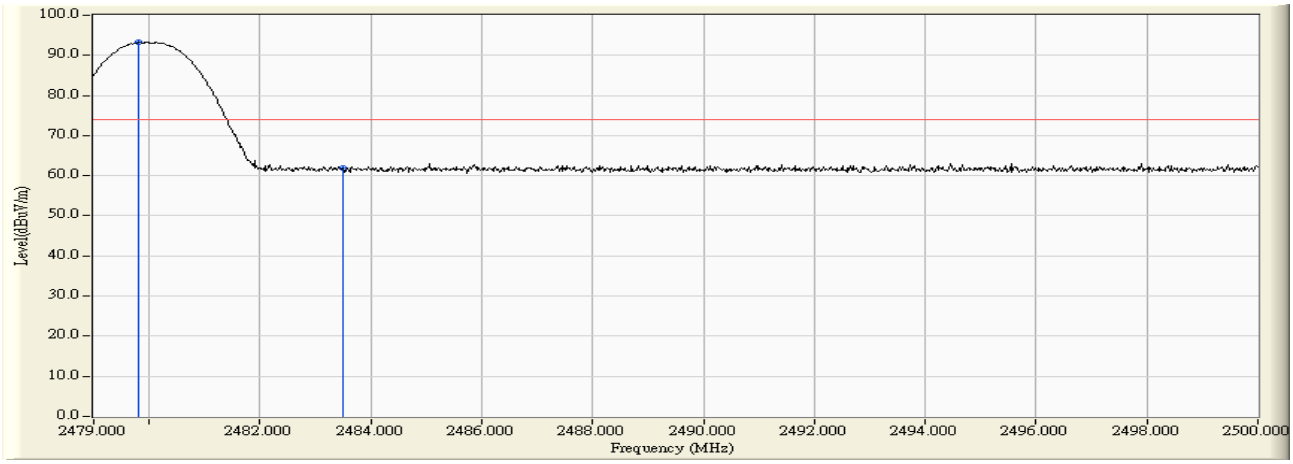


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2479.987	31.214	47.568	78.782	N/A	N/A	AVERAGE
2		2483.500	31.212	17.007	48.219	-5.751	53.970	AVERAGE

Note:

1. Peak detector set as follows, RBW = 1MHz, VBW = 3MHz, Sweep time = 500ms
2. Average detector set as follows, RBW = 1MHz, VBW = 10Hz, Sweep time = Auto.

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	**Time : 2009/06/05 - 15:18**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 0**
EUT : NOTEBOOK	**Probe : 9120D_499(1-18GHz) - VERTICAL**
Power : AC 120V/60Hz	**Note : Mode 1:Transmit at channel 2480MHz DH5**

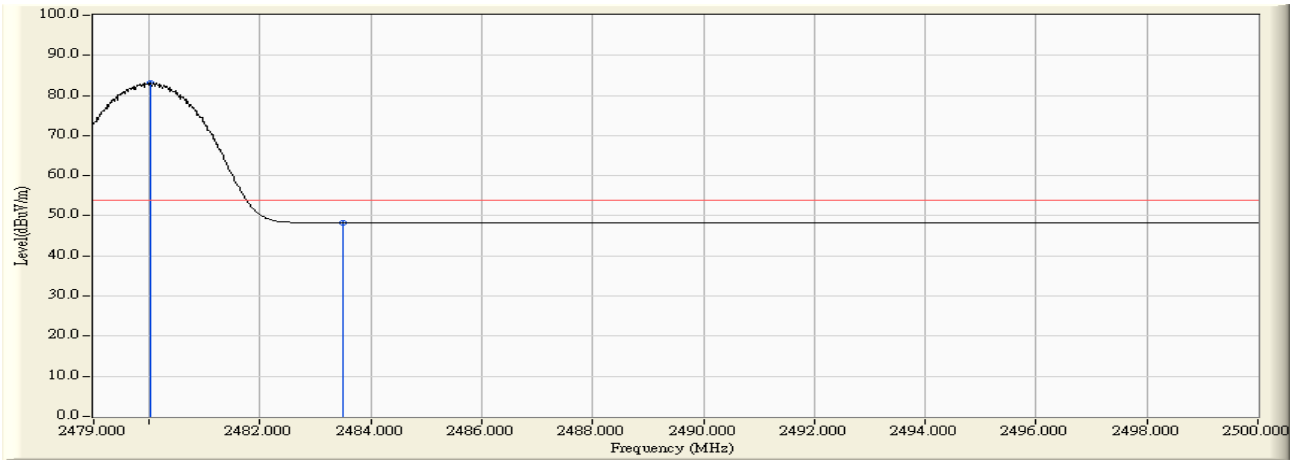


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2479.798	31.215	61.987	93.201	N/A	N/A	PEAK
2		2483.500	31.212	30.607	61.819	-12.151	73.970	PEAK

Note:

1. Peak detector set as follows, RBW = 1MHz, VBW = 3MHz, Sweep time = 500ms
2. Average detector set as follows, RBW = 1MHz, VBW = 10Hz, Sweep time = Auto.

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	**Time : 2009/06/05 - 15:18**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 0**
EUT : NOTEBOOK	**Probe : 9120D_499(1-18GHz) - VERTICAL**
Power : AC 120V/60Hz	**Note : Mode 1:Transmit at channel 2480MHz DH5**

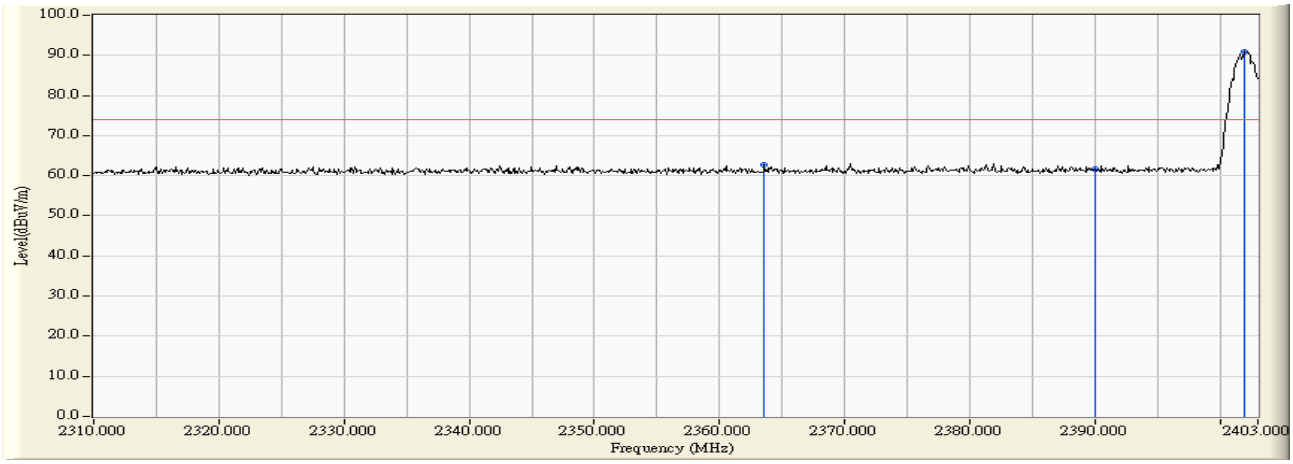


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2480.029	31.214	51.894	83.108	N/A	N/A	AVERAGE
2		2483.500	31.212	16.995	48.207	-5.763	53.970	AVERAGE

Note:

1. Peak detector set as follows, RBW = 1MHz, VBW = 3MHz, Sweep time = 500ms
2. Average detector set as follows, RBW = 1MHz, VBW = 10Hz, Sweep time = Auto.

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	**Time : 2009/06/13 - 16:24**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 0**
EUT : NOTEBOOK	**Probe : 9120D_499(1-18GHz) - HORIZONTAL**
Power : AC 120V/60Hz	**Note : Mode 2:Transmit at channel 2402MHz By 3DH5**

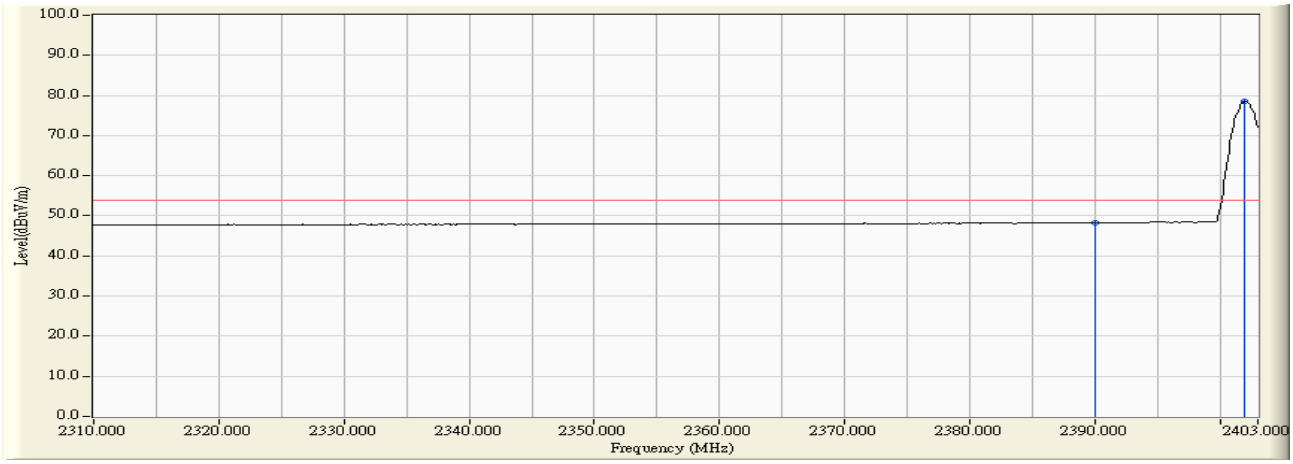


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2363.568	31.214	31.608	62.822	-11.148	73.970	PEAK
2		2390.000	31.184	30.478	61.662	-12.308	73.970	PEAK
3	*	2401.977	31.184	59.720	90.904	N/A	N/A	PEAK

Note:

1. Peak detector set as follows, RBW = 1MHz, VBW = 3MHz, Sweep time = 500ms
2. Average detector set as follows, RBW = 1MHz, VBW = 10Hz, Sweep time = Auto.

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	**Time : 2009/06/13 - 16:25**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 0**
EUT : NOTEBOOK	**Probe : 9120D_499(1-18GHz) - HORIZONTAL**
Power : AC 120V/60Hz	**Note : Mode 2:Transmit at channel 2402MHz By 3DH5**

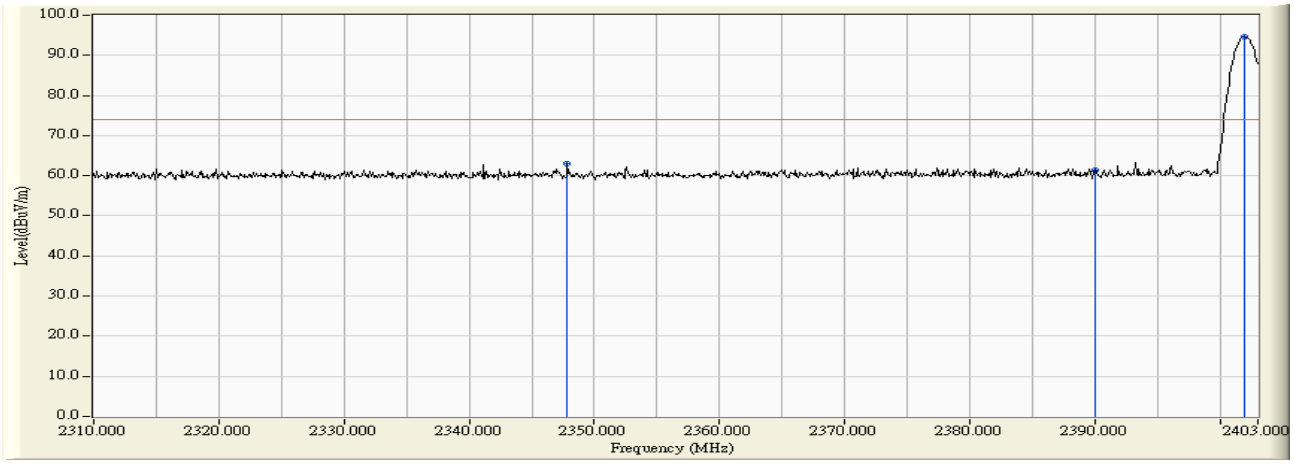


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2390.000	31.184	17.005	48.189	-5.781	53.970	AVERAGE
2	*	2401.977	31.184	47.306	78.490	N/A	N/A	AVERAGE

Note:

1. Peak detector set as follows, RBW = 1MHz, VBW = 3MHz, Sweep time = 500ms
2. Average detector set as follows, RBW = 1MHz, VBW = 10Hz, Sweep time = Auto.

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	**Time : 2009/06/13 - 16:30**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 0**
EUT : NOTEBOOK	**Probe : 9120D_499(1-18GHz) - VERTICAL**
Power : AC 120V/60Hz	**Note : Mode 2:Transmit at channel 2402MHz 3DH5**

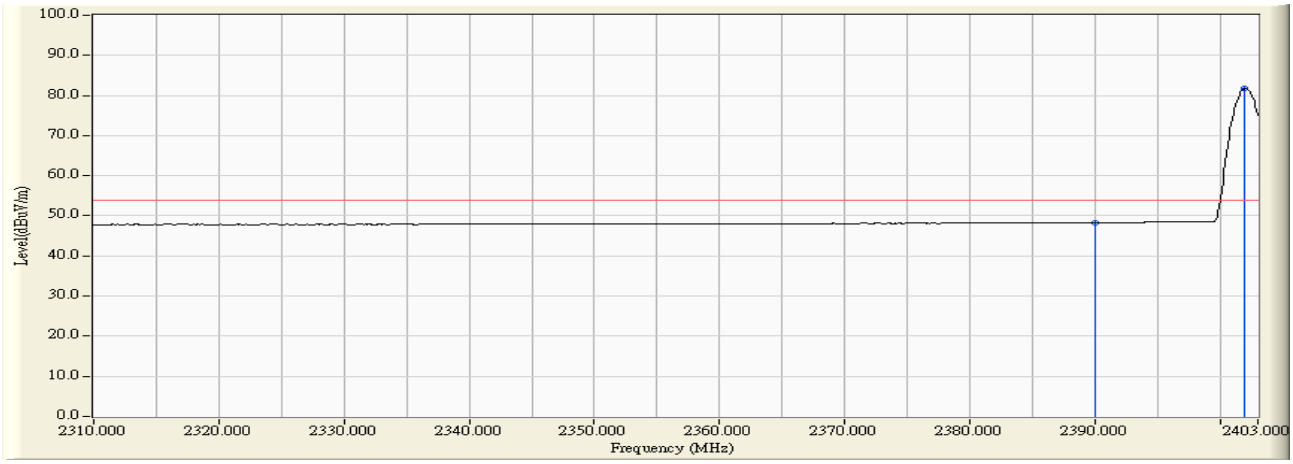


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2347.851	31.229	31.819	63.049	-10.921	73.970	PEAK
2		2390.000	31.184	30.198	61.382	-12.588	73.970	PEAK
3	*	2401.884	31.184	63.498	94.682	N/A	N/A	PEAK

Note:

1. Peak detector set as follows, RBW = 1MHz, VBW = 3MHz, Sweep time = 500ms
2. Average detector set as follows, RBW = 1MHz, VBW = 10Hz, Sweep time = Auto.

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	**Time : 2009/06/13 - 16:31**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 0**
EUT : NOTEBOOK	**Probe : 9120D_499(1-18GHz) - VERTICAL**
Power : AC 120V/60Hz	**Note : Mode 2:Transmit at channel 2402MHz 3DH5**

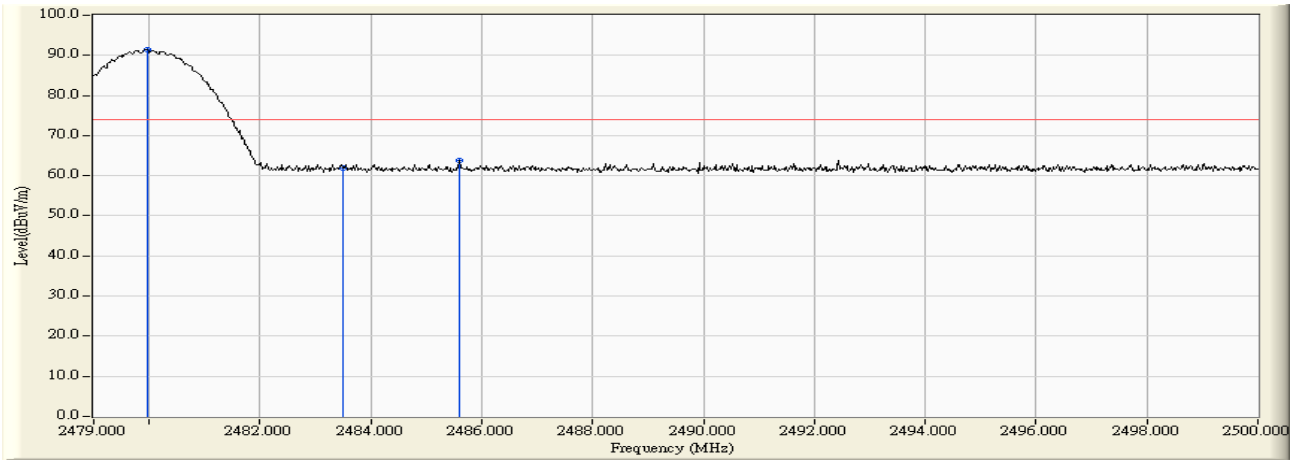


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2390.000	31.184	17.047	48.231	-5.739	53.970	AVERAGE
2	*	2401.977	31.184	50.476	81.660	N/A	N/A	AVERAGE

Note:

1. Peak detector set as follows, RBW = 1MHz, VBW = 3MHz, Sweep time = 500ms
2. Average detector set as follows, RBW = 1MHz, VBW = 10Hz, Sweep time = Auto.

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	**Time : 2009/06/13 - 16:39**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 0**
EUT : NOTEBOOK	**Probe : 9120D_499(1-18GHz) - HORIZONTAL**
Power : AC 120V/60Hz	**Note : Mode 2:Transmit at channel 2480MHz 3DH5**

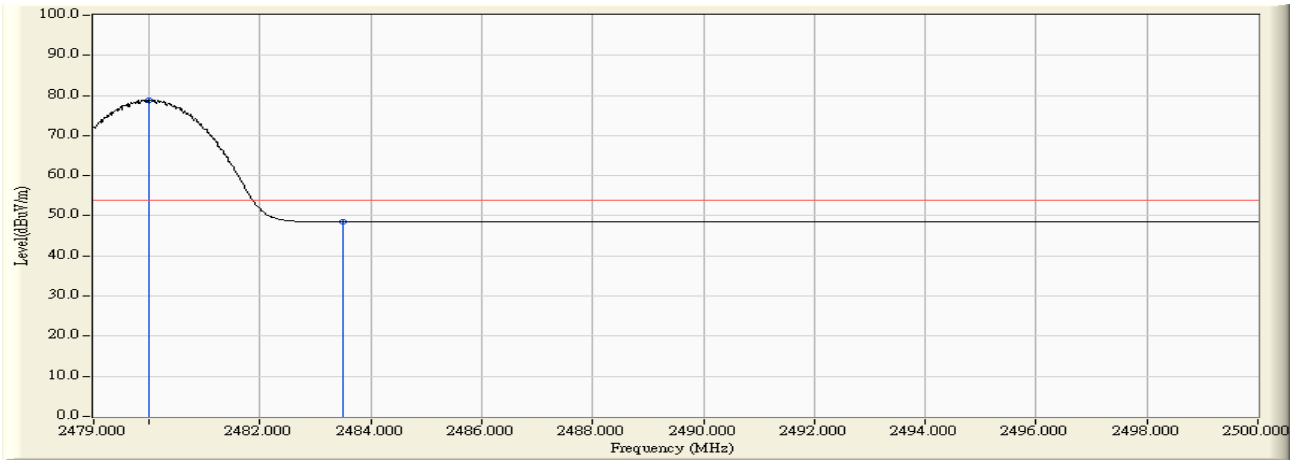


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2479.966	31.214	60.211	91.425	N/A	N/A	PEAK
2		2483.500	31.212	30.712	61.924	-12.046	73.970	PEAK
3		2485.594	31.211	32.494	63.705	-10.265	73.970	PEAK

Note:

1. Peak detector set as follows, RBW = 1MHz, VBW = 3MHz, Sweep time = 500ms
2. Average detector set as follows, RBW = 1MHz, VBW = 10Hz, Sweep time = Auto.

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	**Time : 2009/06/13 - 16:39**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 0**
EUT : NOTEBOOK	**Probe : 9120D_499(1-18GHz) - HORIZONTAL**
Power : AC 120V/60Hz	**Note : Mode 2:Transmit at channel 2480MHz 3DH5**

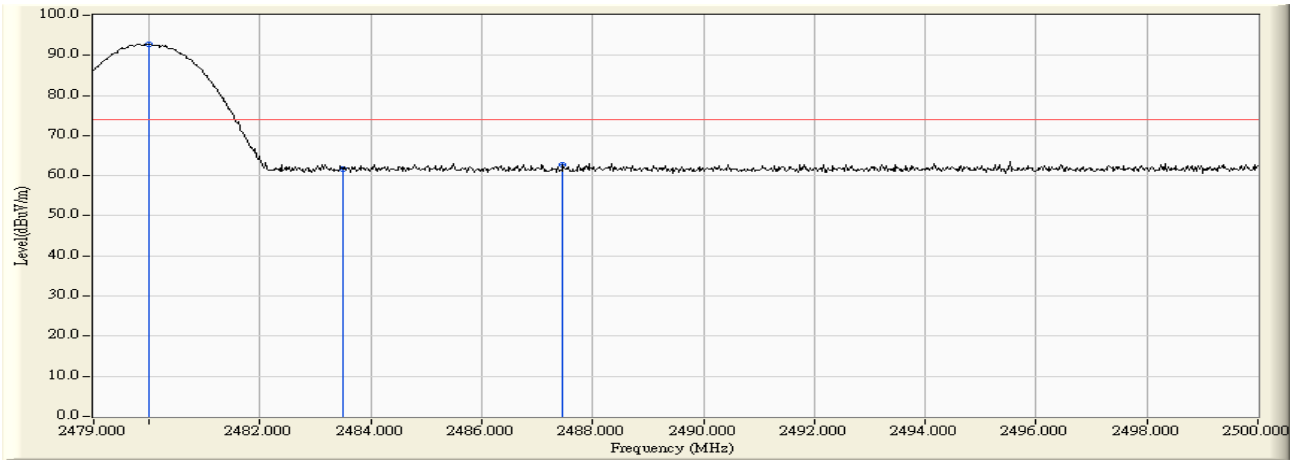


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2480.008	31.214	47.718	78.932	N/A	N/A	AVERAGE
2		2483.500	31.212	17.345	48.557	-5.413	53.970	AVERAGE

Note:

1. Peak detector set as follows, RBW = 1MHz, VBW = 3MHz, Sweep time = 500ms
2. Average detector set as follows, RBW = 1MHz, VBW = 10Hz, Sweep time = Auto.

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	**Time : 2009/06/13 - 16:36**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 0**
EUT : NOTEBOOK	**Probe : 9120D_499(1-18GHz) - VERTICAL**
Power : AC 120V/60Hz	**Note : Mode 2:Transmit at channel 2480MHz 3DH5**

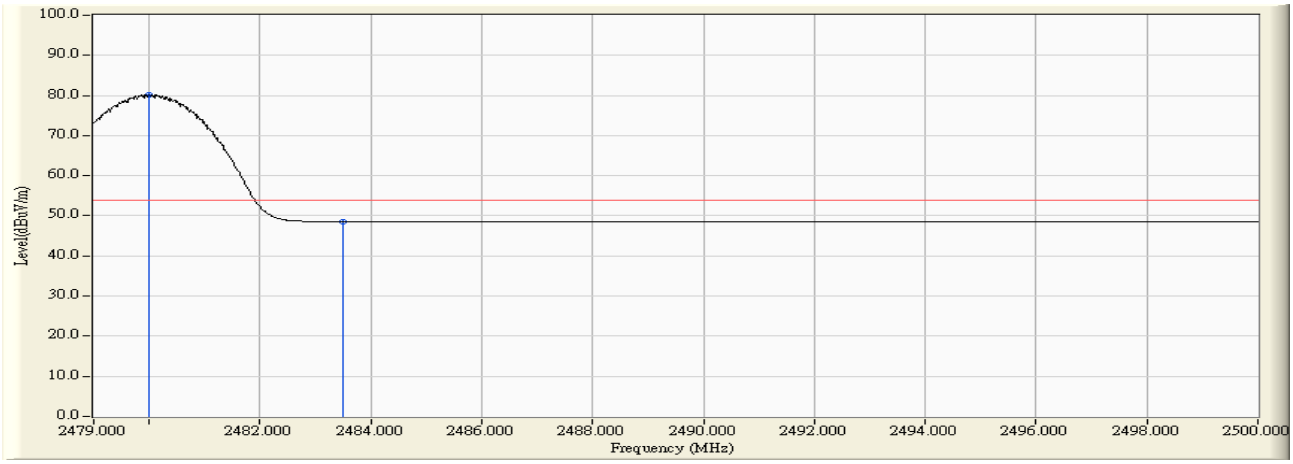


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2480.008	31.214	61.659	92.873	N/A	N/A	PEAK
2		2483.500	31.212	30.580	61.792	-12.178	73.970	PEAK
3		2487.463	31.210	31.559	62.769	-11.201	73.970	PEAK

Note:

1. Peak detector set as follows, RBW = 1MHz, VBW = 3MHz, Sweep time = 500ms
2. Average detector set as follows, RBW = 1MHz, VBW = 10Hz, Sweep time = Auto.

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	**Time : 2009/06/13 - 16:36**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 0**
EUT : NOTEBOOK	**Probe : 9120D_499(1-18GHz) - VERTICAL**
Power : AC 120V/60Hz	**Note : Mode 2:Transmit at channel 2480MHz 3DH5**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2480.008	31.214	49.004	80.218	N/A	N/A	AVERAGE
2		2483.500	31.212	17.315	48.527	-5.443	53.970	AVERAGE

Note:

1. Peak detector set as follows, RBW = 1MHz, VBW = 3MHz, Sweep time = 500ms
2. Average detector set as follows, RBW = 1MHz, VBW = 10Hz, Sweep time = Auto.