SPORTON International Inc.
No. 52, Hwa Ya 1st Rd., Kwei-Shan Hsiang, TaoYuan Hsien, Taiwan, R.O.C.
Ph: 886-3-327-3456 / FAX: 886-3-327-0973 / www.sporton.com.tw

FCC RADIO TEST REPORT

Applicant's company	**Ralink Technology Corporation**
Applicant Address	5F., No.36, Taiyuan St., Jhubei City, Hsinchu County 302, Taiwan, R.O.C.
FCC ID	**VQF-RT3090BC4**
Manufacturer's company	**Ralink Technology Corporation**
Manufacturer Address	5F., No.36, Taiyuan St., Jhubei City, Hsinchu County 302, Taiwan, R.O.C.

Product Name	802.11b/g/n 1T1R combo card
Brand Name	Ralink
Model Name	RT3090BC4
Test Rule	47 CFR FCC Part 15 Subpart C § 15.247
Test Freq. Range	2400 ~ 2483.5MHz
Received Date	Nov. 15, 2009
Final Test Date	Jan. 07, 2010
Submission Type	Class II Change
Multiple Listing	Please refer to section 3.7

Statement

Test result included is only for the Bluetooth part of the product.

The test result in this report refers exclusively to the presented test model / sample.

Without written approval of SPORTON International Inc., the test report shall not be reproduced except in full.

The measurements and test results shown in this test report were made in accordance with the procedures and found in compliance with the limit given in **ANSI C63.4-2003** and **47 CFR FCC Part 15 Subpart C**.

The test equipment used to perform the test is calibrated and traceable to NML/ROC.

Testing Laboratory
1190

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History of This Test Report

Original Issue Date: Jan. 18, 2010

Report No.: FR9D0210-01AB

■ No additional attachment.

□ Additional attachment were issued as following record:

Attachment No.	Issue Date	Description

Certificate No.: CB9812139

1. CERTIFICATE OF COMPLIANCE

Product Name	:	802.11b/g/n 1T1R combo card
Brand Name	:	Ralink
Model Name	:	RT3090BC4
Applicant	:	Ralink Technology Corporation
Test Rule Part(s)	:	47 CFR FCC Part 15 Subpart C § 15.247

Sporton International as requested by the applicant to evaluate the EMC performance of the product sample received on Nov. 15, 2009 would like to declare that the tested sample has been evaluated and found to be in compliance with the tested rule parts. The data recorded as well as the test configuration specified is true and accurate for showing the sample's EMC nature.

Jordan Hsiao 2010. 1.18

Jordan Hsiao

SPORTON INTERNATIONAL INC.

2. SUMMARY OF THE TEST RESULT

Applied Standard: 47 CFR FCC Part 15 Subpart C				
Part	**Rule Section**	**Description of Test**	**Result**	**Under Limit**
4.1	15.207	AC Power Line Conducted Emissions	Complies	9.26 dB
4.2	15.247(b)(1)	Maximum Peak Conducted Output Power	Complies	25.48 dB
4.3	15.247(a)(1)	Hopping Channel Separation	Complies	-
4.4	15.247(b)(1)	Number of Hopping Frequency	Complies	-
4.5	15.247(a)(1)	Dwell Time	Complies	-
4.6	15.247(d)	Radiated Emissions	Complies	3.03 dB
4.7	15.247(d)	Band Edge Emissions	Complies	2.76 dB
4.8	15.203	Antenna Requirements	Complies	-

Test Items	Uncertainty	Remark
AC Power Line Conducted Emissions	±2.3dB	Confidence levels of 95%
Maximum Peak Conducted Output Power	±0.8dB	Confidence levels of 95%
Hopping Channel Separation	$\pm 8.5\times10^{-8}$	Confidence levels of 95%
Radiated Emissions (9kHz~30MHz)	±0.8dB	Confidence levels of 95%
Radiated Emissions (30MHz~1000MHz)	±1.9dB	Confidence levels of 95%
Radiated / Band Edge Emissions (1GHz~18GHz)	±1.9dB	Confidence levels of 95%
Radiated Emissions (18GHz~40GHz)	±1.9dB	Confidence levels of 95%
Temperature	±0.7℃	Confidence levels of 95%
Humidity	±3.2%	Confidence levels of 95%
DC / AC Power Source	±1.4%	Confidence levels of 95%

3. GENERAL INFORMATION

3.1. Product Details

Items	Description
Power Type	From host system
Modulation	FHSS (GFSK / π/4-DQPSK / 8DPSK)
Data Rate (Mbps)	GFSK: 1 ; π/4-QPSK: 2 ; 8DPSK: 3
Frequency Range	2400 ~ 2483.5MHz
Channel Number	79
Channel Band Width (99%)	Ant. A: 852.00 kHz ; Ant. B: 852.00 kHz ; Ant. C: 852.00 kHz ; Ant. D: 852.00 kHz
Conducted Output Power	Ant. A: 4.52 dBm ; Ant. B: 4.52 dBm ; Ant. C: 4.52 dBm ; Ant. D: 4.52 dBm
Carrier Frequencies	Please refer to section 3.4
Antenna	Please refer to section 3.3

3.2. Accessories

N/A

3.3. Table for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	Remark
A	Micon	71306	Dipole Antenna	Reversed-SMA	2.93	TX/RX
B	MICHIGAN	6036B0014401 (Main) 6036B0016901 (Aux)	PIFA Antenna	I-PEX	2.95	TX/RX
C	JOYMAX	IWX-145XRSXX-999	Dipole Antenna	Reversed-SMA	3.7	TX/RX
D	ACON	APP6P-700119	PIFA Antenna	I-PEX	3.5	TX/RX

Note: There are four types of EUT, the difference of each type as following description:

EUT 1. Two antenna connectors with two crystals

EUT 2. Two antenna connectors with one crystal

EUT 3. One antenna connector with two crystals

EUT 4. One antenna connector with one crystal

After pre-testing, EUT 1 generated the worst test result, so it was recorded in the report.

There are two sizes of EUT.

One is full size (with PCB extend card), and another is half size (without PCB extend card).

But their internal structures are identical. So only full size of EUT was tested and recorded in the report.

All the detail antenna information, please refer to Appendix D for further information.

<For Original report>

Due to Ant. A and B mentioned above are the highest gain value among two different types, only ant A and B were tested and recorded in this test report.

<For Class II Change>

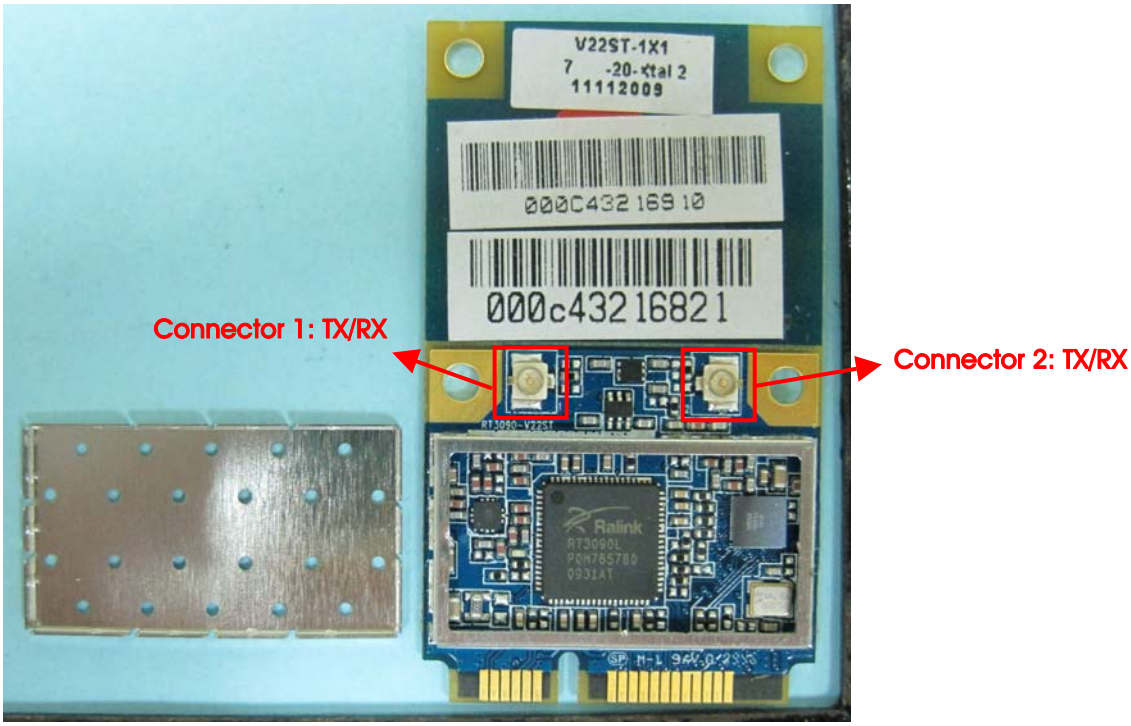
Add two antennas: Ant. C and Ant. D.

Due to the antenna gain of Ant. C and Ant. D are higher than Ant. A and Ant. B, so both of Ant. C and Ant. D were tested and recorded in the report.

The EUT supports the antenna with TX/RX diversity function for WLAN and Bluetooth.

When Connector 1 is WLAN function, Connector 2 must be Bluetooth function.

Oppositely, if Connector 2 is WLAN function, Connector 1 must be Bluetooth function.



3.4. Table for Carrier Frequencies

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
2400~2483.5MHz	0	2402 MHz	40	2442 MHz
	1	2403 MHz	:	:
	:	:	77	2479 MHz
	38	2440 MHz	78	2480 MHz
	39	2441 MHz		

3.5. Table for Test Modes

Preliminary tests were performed in different data rate to find the worst radiated emission. The data rate shown in the table below is the worst-case rate with respect to the specific test item. Investigation has been done on all the possible configurations for searching the worst cases. The following table is a list of the test modes shown in this test report.

Test Items	Mode	Data Rate	Channel	Antenna
AC Power Conducted Emissions	Normal Link	3 Mbps	Hopping 0~78	A / B / C / D
Max. Conducted Output Power	8DPSK	3 Mbps	0/39/78	NA
Hopping Channel Separation	8DPSK	3 Mbps	0~1/39~40/77~78	NA
Number of Hopping Frequency	8DPSK	3 Mbps	0~78	NA
Dwell Time	3DH1/3DH3/3DH5	3 Mbps	0/39/78	NA
Radiated Emissions Below 1GHz	8DPSK	3 Mbps	39	A / B / C / D
Radiated Emissions Above 1GHz	8DPSK	3 Mbps	0/39/78	A / B / C / D
Band Edge Emissions	8DPSK	3 Mbps	0/78	A / B / C / D

The following test modes were performed for all tests:

Mode 1. EUT 1 with Ant. A

Mode 2. EUT 1 with Ant. B

Mode 3. EUT 1 with Ant. C

Mode 4. EUT 1 with Ant. D

All the test results were recorded in the report.

Note: Due to add antenna will not affect the test result for Conducted Emission test, so only Ant. A and Ant. B were tested recorded in the report.

3.6. Table for Testing Locations

Test Site No.	Site Category	Location	FCC Reg. No.	IC File No.	VCCI Reg. No
03CH03-HY	SAC	Hwa Ya	480872	IC 4086	-
CO04-HY	Conduction	Hwa Ya	480872	IC 4086	-
TH01-HY	OVEN Room	Hwa Ya	-	-	-

Open Area Test Site (OATS); Semi Anechoic Chamber (SAC); Fully Anechoic Chamber (FAC).

Please refer section 6 for Test Site Address.

3.7. Table for Multiple Listing & Class II Change

This product is an extension of original one reported under Sporton project number: 9D0210

Below is the table for the change of the product with respect to the original one.

Modifications	Description	Performance Checking
Add 2 antennas	Additional antenna information as below: Ant. C (Dipole Antenna) Model No.: IWX-145XRSXX-999 Brand Name: JOYMAX Antenna gain: 3.7dBi Ant. D (PIFA Antenna) Model No.: APP6P-700119 Brand Name: ACON Antenna gain: 3.5dBi	Maximum Peak Conducted Output Power Power Spectral Density 6dB Spectrum Bandwidth Radiated Emissions Band Edge Emissions

3.8. Table for Supporting Units

Support Unit	Brand	Model	FCC ID
Modem	ACEEX	DM1414	IFAXDM1414
Wireless AP	Planex	GW-AP54SGX	N/A
Notebook	DELL	M1330	E2KWM3945ABG
Notebook	DELL	PP25L	E2K4965AGNM
Mouse	iCooky	AMS0706W	N/A

3.9. Table for Parameters of Test Software Setting

During testing, Channel & Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

<For Antenna A>

Power Parameters of Bluetooth

Test Software Version	Bluetest		
Frequency	2402 MHz	2441 MHz	2480 MHz
Power Parameters	63	63	63

<For Antenna B>

Power Parameters of Bluetooth

Test Software Version	Bluetest		
Frequency	2402 MHz	2441 MHz	2480 MHz
Power Parameters	63	63	63

<For Antenna C>

Power Parameters of Bluetooth

Test Software Version	Bluetest		
Frequency	2402 MHz	2441 MHz	2480 MHz
Power Parameters	63	63	63

<For Antenna D>

Power Parameters of Bluetooth

Test Software Version	Bluetest		
Frequency	2402 MHz	2441 MHz	2480 MHz
Power Parameters	63	63	63

During the test, the following programs under WIN XP were executed:

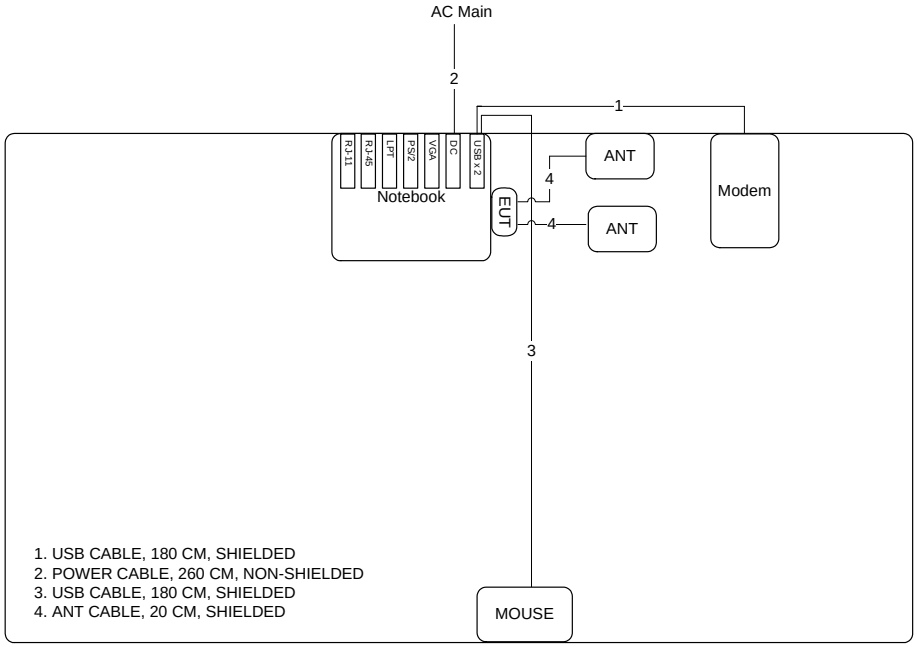
Executed “Bluetest” was executed the test program to control the EUT continuously transmit Bluetooth signal.

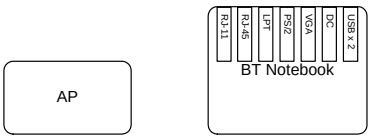
3.10. Test Configurations

3.10.1. Radiation Emissions Test Configuration

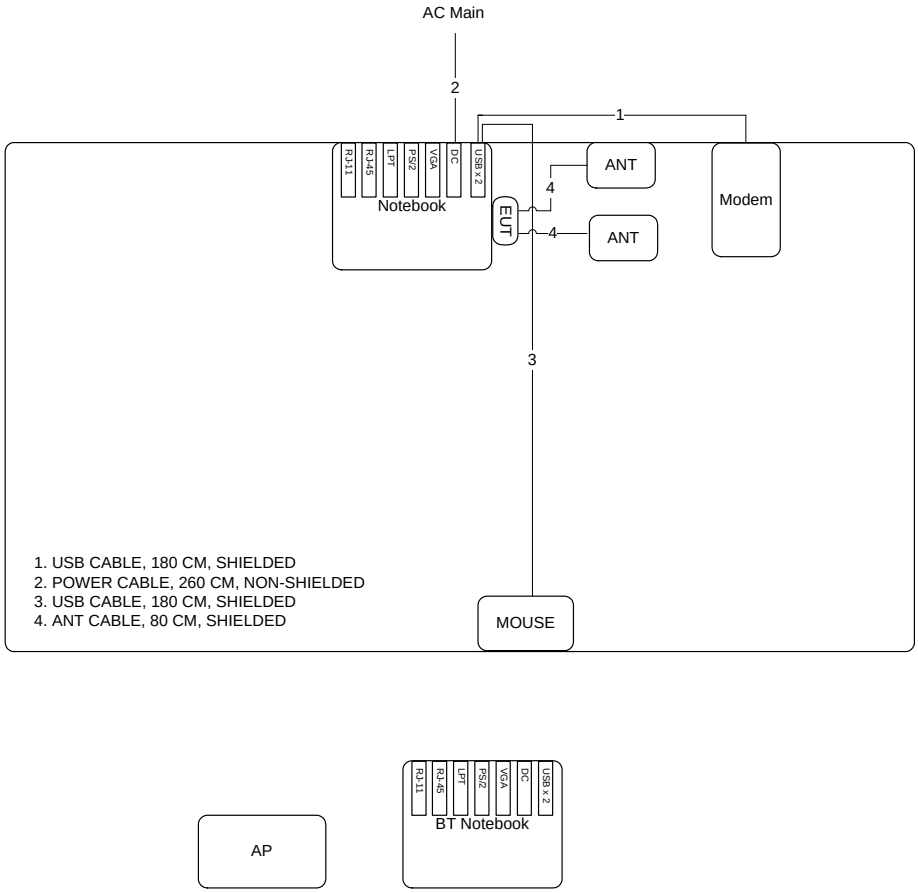
Test Configuration: 9KHz~1GHz

Test Mode: Mode 1 / Mode 3



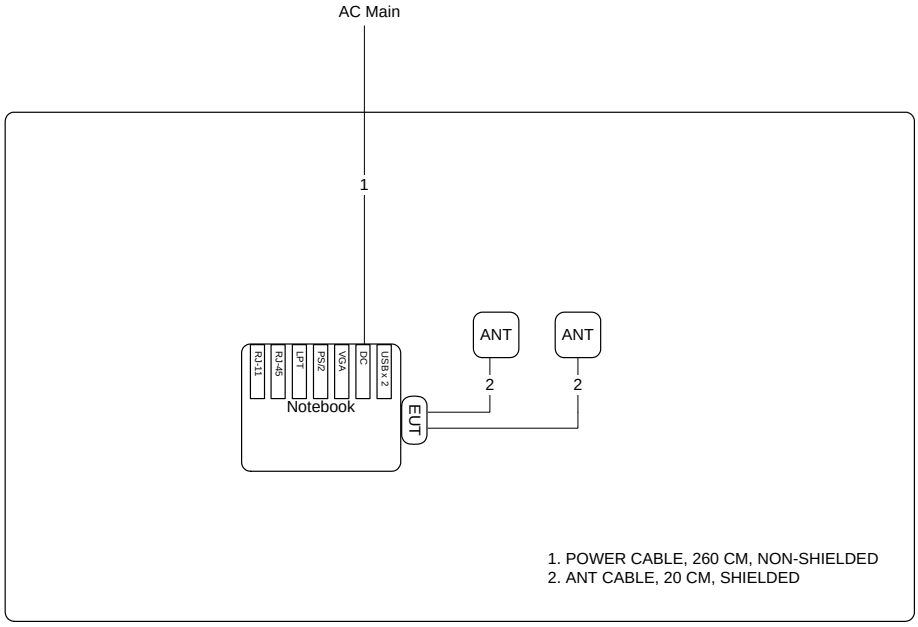


Test Mode: Mode 2 / Mode 4

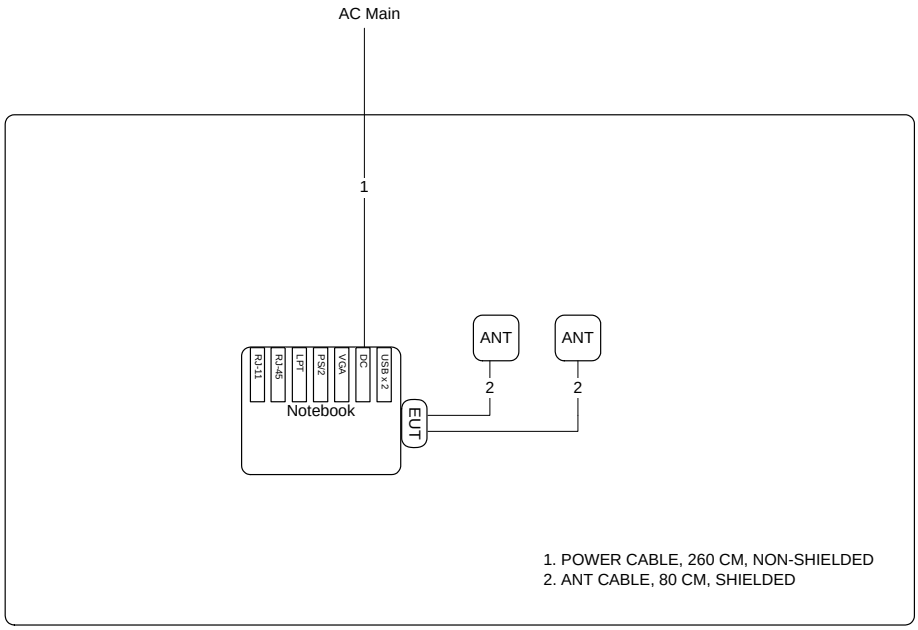


Test Configuration: above 1GHz

Test Mode: Mode 1 / Mode 3

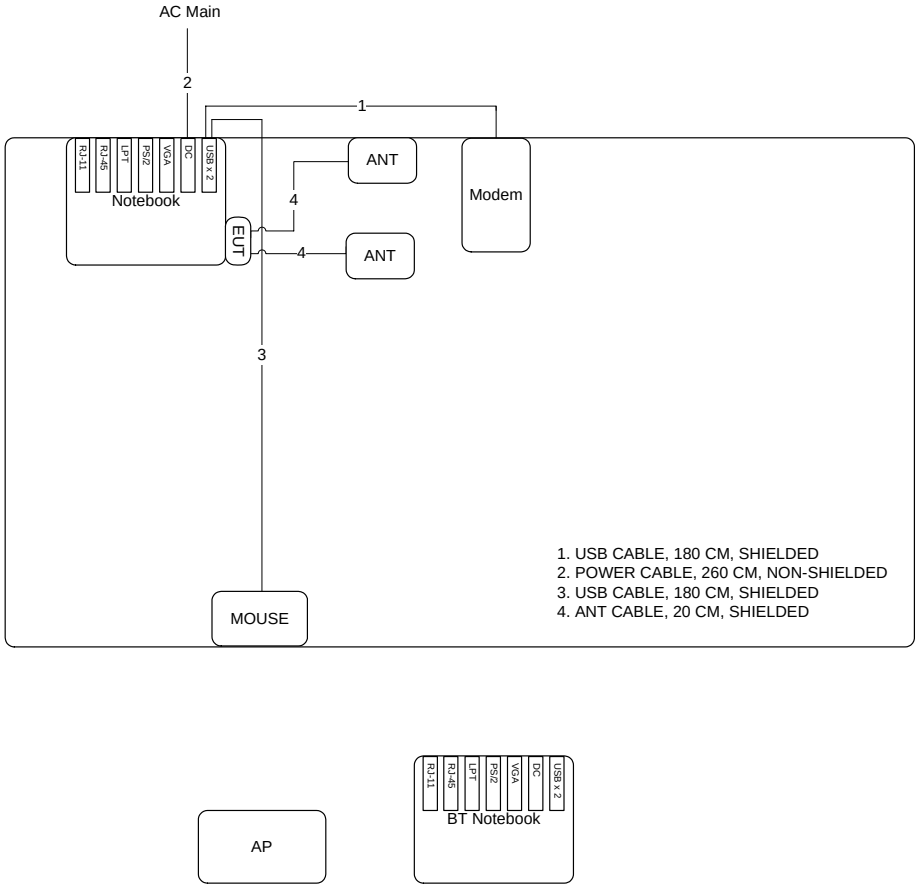


Test Mode: Mode 2 / Mode 4

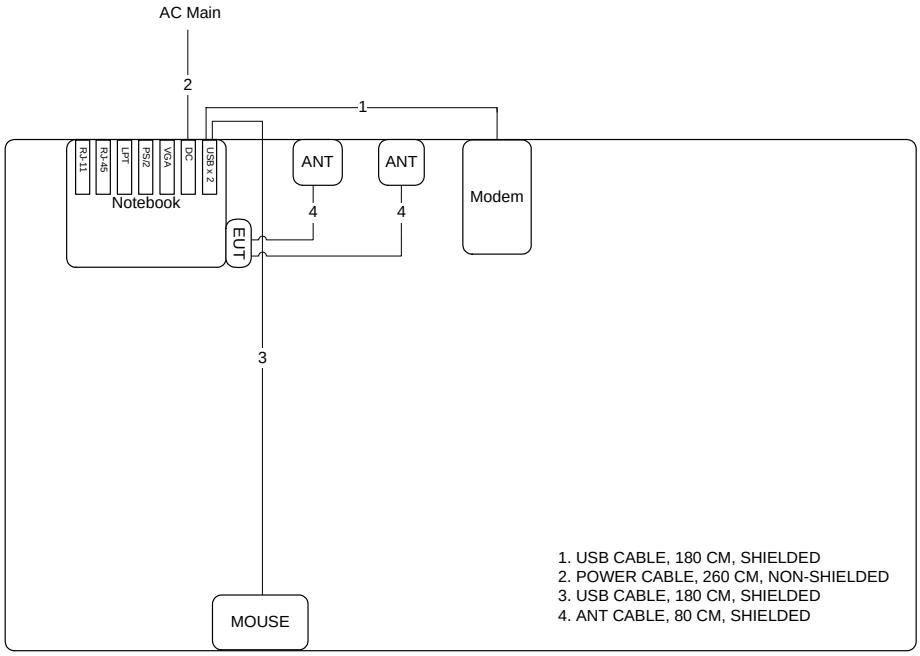


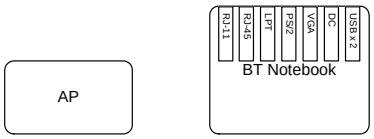
3.10.2. AC Power Line Conduction Emissions Test Configuration

Test Mode: Mode 1 / Mode 3



Test Mode: Mode 2 / Mode 4





4. TEST RESULT

4.1. AC Power Line Conducted Emissions Measurement

4.1.1. Limit

For a Low-power Radio-frequency Device which is designed to be connected to the AC power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed below limits table.

Frequency (MHz)	QP Limit (dBuV)	AV Limit (dBuV)
0.15~0.5	66~56	56~46
0.5~5	56	46
5~30	60	50

4.1.2. Measuring Instruments and Setting

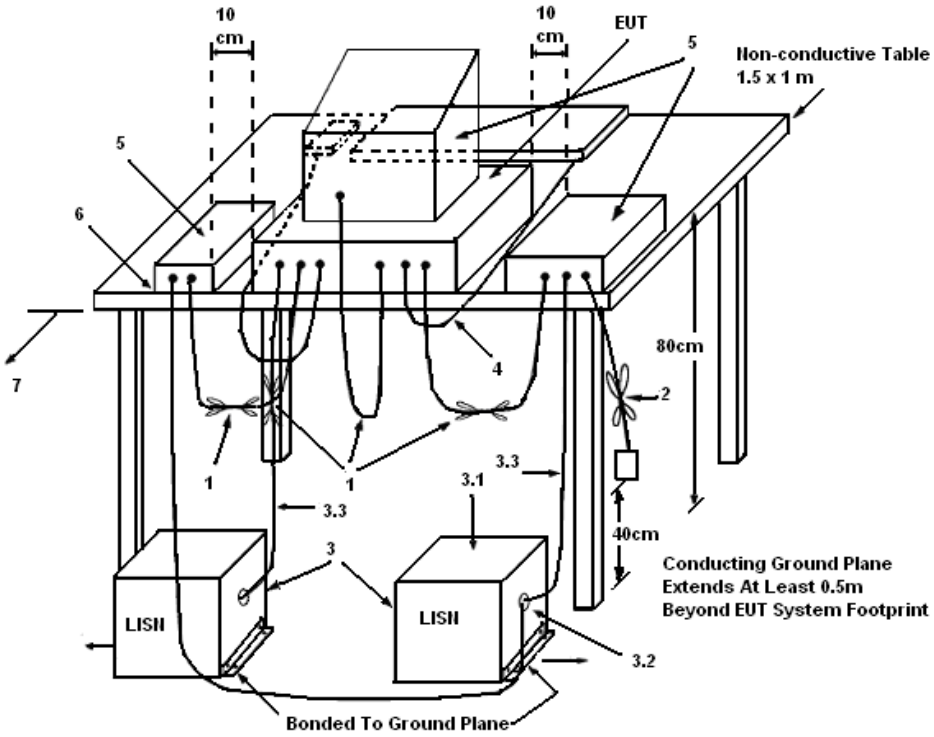
Please refer to section 5 of equipments list in this report. The following table is the setting of the receiver.

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 KHz

4.1.3. Test Procedures

1. Configure the EUT according to ANSI C63.4. The EUT or host of EUT has to be placed 0.4 meter far from the conducting wall of the shielding room and at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT or host of EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connected to the other LISNs. The LISN should provide 50uH/50ohms coupling impedance.
4. The frequency range from 150 KHz to 30 MHz was searched.
5. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. The measurement has to be done between each power line and ground at the power terminal.

4.1.4. Test Setup Layout



LEGEND:

(1) Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

(2) I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

(3) EUT connected to one LISN. Unused LISN measuring port connectors shall be terminated in 50 Ω. LISN can be placed on top of, or immediately beneath, reference ground plane.

(3.1) All other equipment powered from additional LISN(s).

(3.2) Multiple outlet strip can be used for multiple power cords of non-EUT equipment.

(3.3) LISN at least 80 cm from nearest part of EUT chassis.

(4) Cables of hand-operated devices, such as keyboards, mice, etc., shall be placed as for normal use.

(5) Non-EUT components of EUT system being tested.

(6) Rear of EUT, including peripherals, shall all be aligned and flush with rear of tabletop.

(7) Rear of tabletop shall be 40 cm removed from a vertical conducting plane that is bonded to the ground plane.

4.1.5. Test Deviation

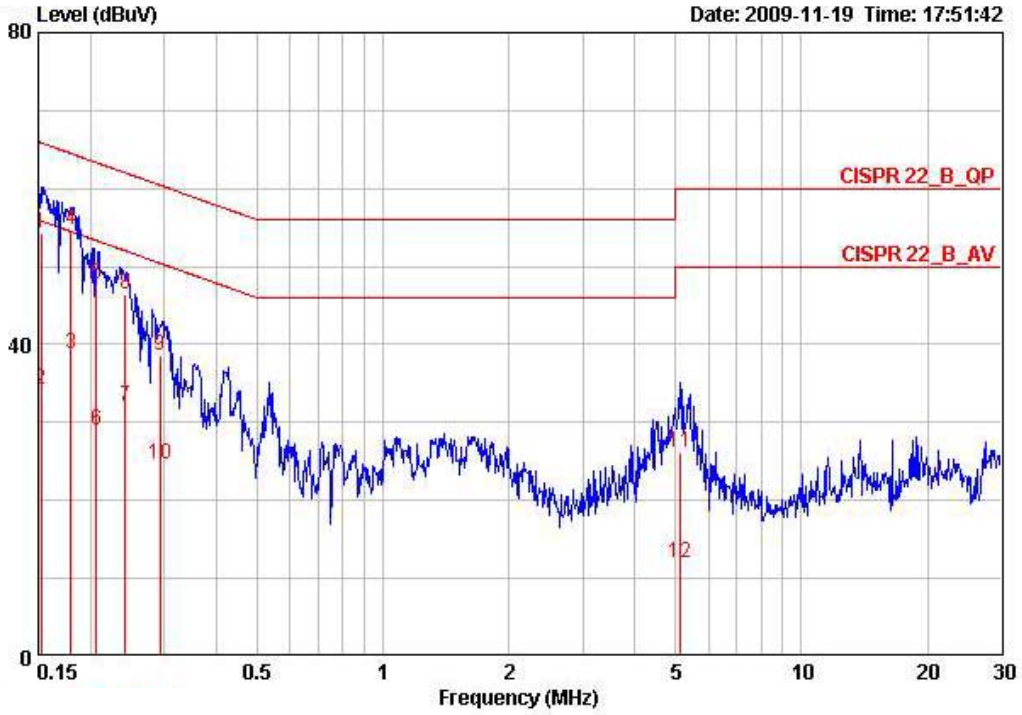
There is no deviation with the original standard.

4.1.6. EUT Operation during Test

The EUT was placed on the test table and programmed in normal function.

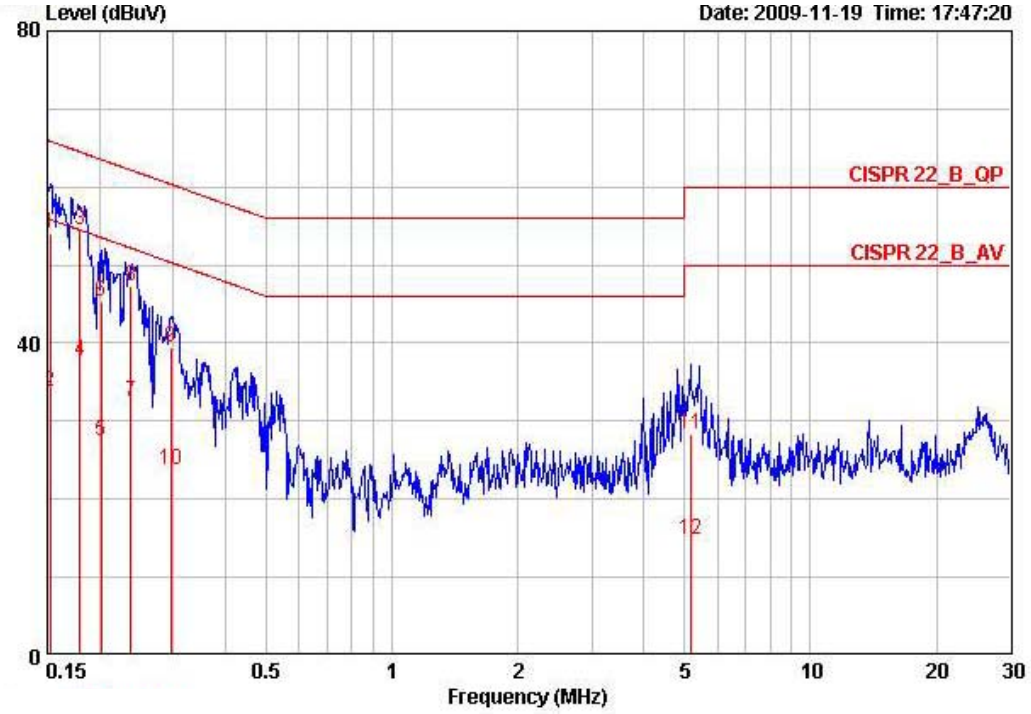
4.1.7. Results of AC Power Line Conducted Emissions Measurement

Temperature	23°C	Humidity	54%
Test Engineer	Rex Chiu	Phase	Line
Configuration	Normal Link / Mode 1		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.15240	54.37	-11.49	65.87	54.10	0.07	0.20	QP
2	0.15240	34.20	-21.66	55.87	33.93	0.07	0.20	AVERAGE
3	0.17920	38.72	-15.80	54.52	38.46	0.06	0.20	AVERAGE
4 @	0.17920	54.66	-9.86	64.52	54.40	0.06	0.20	QP
5	0.20640	47.73	-15.62	63.35	47.48	0.05	0.20	QP
6	0.20640	28.89	-24.46	53.35	28.64	0.05	0.20	AVERAGE
7	0.24240	32.14	-19.87	52.01	31.90	0.04	0.20	AVERAGE
8	0.24240	46.32	-15.69	62.01	46.08	0.04	0.20	QP
9	0.29320	38.62	-21.81	60.43	38.38	0.04	0.20	QP
10	0.29320	24.54	-25.89	50.43	24.30	0.04	0.20	AVERAGE
11	5.112	26.25	-33.75	60.00	25.78	0.17	0.30	QP
12	5.112	12.02	-37.98	50.00	11.55	0.17	0.30	AVERAGE

Temperature	23°C	Humidity	54%
Test Engineer	Rex Chiu	Phase	Neutral
Configuration	Normal Link / Mode 1		

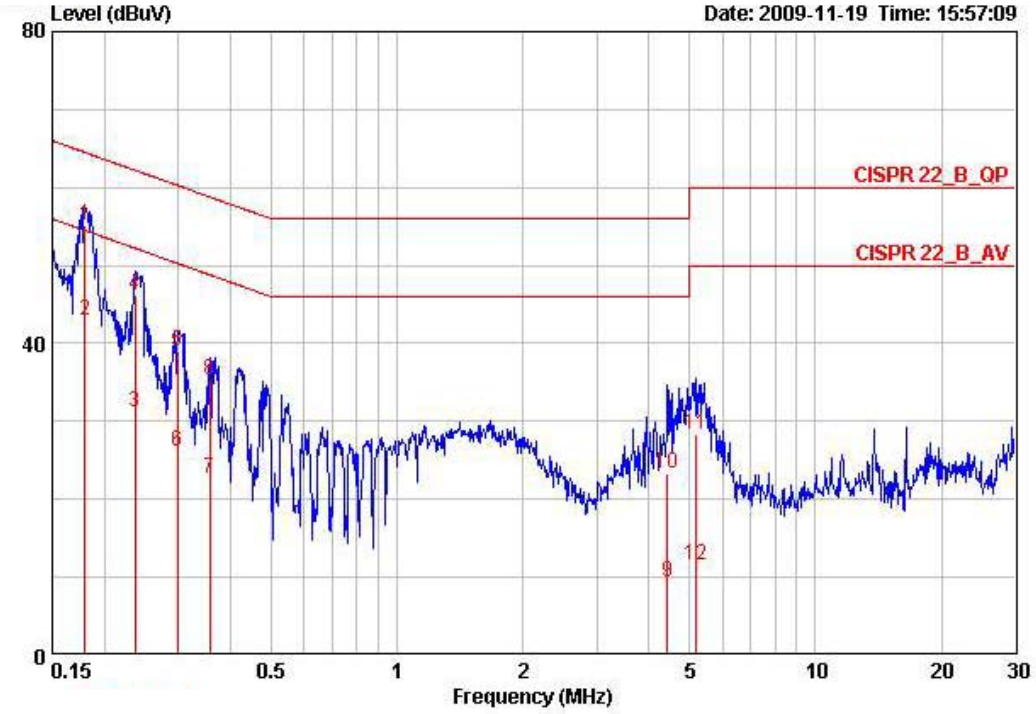


	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.15240	54.05	-11.81	65.87	53.75	0.10	0.20	QP
2	0.15240	33.79	-22.07	55.87	33.49	0.10	0.20	AVERAGE
3	0.17960	54.53	-9.97	64.50	54.24	0.09	0.20	QP
4	0.17960	37.80	-16.70	54.50	37.51	0.09	0.20	AVERAGE
5	0.20200	27.48	-26.05	53.53	27.20	0.08	0.20	AVERAGE
6	0.20200	45.44	-18.09	63.53	45.16	0.08	0.20	QP
7	0.23760	32.59	-19.59	52.18	32.31	0.08	0.20	AVERAGE
8	0.23760	47.41	-14.77	62.18	47.13	0.08	0.20	QP
9	0.29635	39.51	-20.83	60.34	39.24	0.07	0.20	QP
10	0.29635	23.70	-26.64	50.34	23.43	0.07	0.20	AVERAGE
11	5.166	28.33	-31.67	60.00	27.82	0.21	0.30	QP
12	5.166	14.82	-35.18	50.00	14.31	0.21	0.30	AVERAGE

Note:

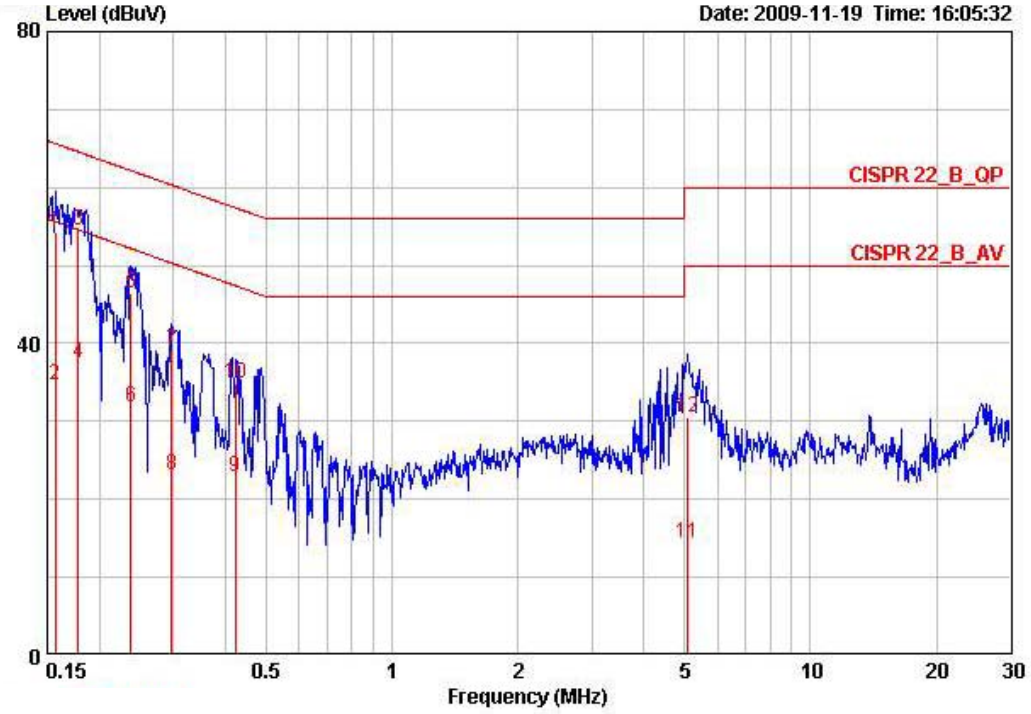
Level = Read Level + LISN Factor + Cable Loss.

Temperature	23°C	Humidity	54%
Test Engineer	Rex Chiu	Phase	Line
Configuration	Normal Link / Mode 2		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1 @	0.17946	55.25	-9.26	64.51	54.99	0.06	0.20	QP
2	0.17946	42.94	-11.57	54.51	42.68	0.06	0.20	AVERAGE
3	0.23658	31.15	-21.07	52.22	30.90	0.05	0.20	AVERAGE
4	0.23658	46.31	-15.91	62.22	46.06	0.05	0.20	QP
5	0.29869	39.08	-21.20	60.28	38.84	0.04	0.20	QP
6	0.29869	26.18	-24.10	50.28	25.94	0.04	0.20	AVERAGE
7	0.35765	22.64	-26.14	48.78	22.41	0.03	0.20	AVERAGE
8	0.35765	35.34	-23.44	58.78	35.11	0.03	0.20	QP
9	4.430	9.35	-36.65	46.00	8.92	0.13	0.30	AVERAGE
10	4.430	23.23	-32.77	56.00	22.80	0.13	0.30	QP
11	5.194	28.42	-31.58	60.00	27.95	0.17	0.30	QP
12	5.194	11.60	-38.40	50.00	11.13	0.17	0.30	AVERAGE

Temperature	23°C	Humidity	54%
Test Engineer	Rex Chiu	Phase	Neutral
Configuration	Normal Link / Mode 2		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.15650	54.33	-11.32	65.65	54.03	0.10	0.20	QP
2	0.15650	34.59	-21.06	55.65	34.29	0.10	0.20	AVERAGE
3	0.17810	54.43	-10.14	64.57	54.14	0.09	0.20	QP
4	0.17810	37.49	-17.08	54.57	37.20	0.09	0.20	AVERAGE
5	0.23784	46.38	-15.79	62.17	46.10	0.08	0.20	QP
6	0.23784	31.91	-20.26	52.17	31.63	0.08	0.20	AVERAGE
7	0.29712	39.05	-21.27	60.32	38.78	0.07	0.20	QP
8	0.29712	23.15	-27.17	50.32	22.88	0.07	0.20	AVERAGE
9	0.42225	22.90	-24.50	47.40	22.63	0.07	0.20	AVERAGE
10	0.42225	34.91	-22.49	57.40	34.64	0.07	0.20	QP
11	5.085	14.29	-35.71	50.00	13.78	0.21	0.30	AVERAGE
12	5.085	30.55	-29.45	60.00	30.04	0.21	0.30	QP

Note:

Level = Read Level + LISN Factor + Cable Loss.

4.2. Maximum Peak Output Power Measurement

4.2.1. Limit

For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, the limit for peak output power is 1Watt (30dBm). For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts (21dBm). The limited has to be reduced by the amount in dB that the gain of the antenna exceed 6dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3dB that the directional gain of the antenna exceeds 6dBi.

4.2.2. Measuring Instruments and Setting

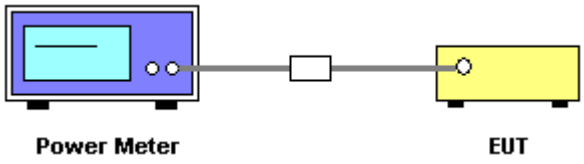
Please refer to section 5 of equipments list in this report. The following table is the setting of the power meter.

Power Meter Parameter	Setting
Filter No.	Auto
Measurement time	0.135 s ~ 26 s
Used Peak Sensor	NRV-Z51

4.2.3. Test Procedures

1. The transmitter output (antenna port) was connected to the power meter.
2. Turn on the EUT and power meter and then record the peak power value.
3. Repeat above procedures on all channels needed to be tested.

4.2.4. Test Setup Layout



4.2.5. Test Deviation

There is no deviation with the original standard.

4.2.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.2.7. Test Result of Maximum Peak Output Power

<For Antenna A>

Temperature	23°C	Humidity	58%
Test Engineer	Jacky Ho	Configurations	8DPSK
Test Date	Dec. 02, 2009		

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
0	2402 MHz	4.52	30.00	Complies
39	2441 MHz	3.83	30.00	Complies
78	2480 MHz	2.88	30.00	Complies

<For Antenna B>

Temperature	23°C	Humidity	58%
Test Engineer	Jacky Ho	Configurations	8DPSK
Test Date	Dec. 02, 2009		

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
0	2402 MHz	4.52	30.00	Complies
39	2441 MHz	3.83	30.00	Complies
78	2480 MHz	2.88	30.00	Complies

<For Antenna C>

Temperature	23°C	Humidity	58%
Test Engineer	Jacky Ho	Configurations	8DPSK
Test Date	Dec. 02, 2009		

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
0	2402 MHz	4.52	30.00	Complies
39	2441 MHz	3.83	30.00	Complies
78	2480 MHz	2.88	30.00	Complies

<For Antenna D>

Temperature	23°C	Humidity	58%
Test Engineer	Jacky Ho	Configurations	8DPSK
Test Date	Dec. 02, 2009		

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
0	2402 MHz	4.52	30.00	Complies
39	2441 MHz	3.83	30.00	Complies
78	2480 MHz	2.88	30.00	Complies

4.3. Hopping Channel Separation Measurement

4.3.1. 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.

4.3.2. Measuring Instruments and Setting

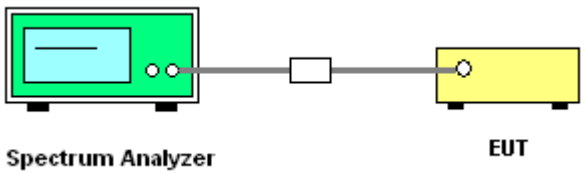
Please refer to section 5 of equipments list in this report. The following table is the setting of spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	> Measurement Bandwidth or Channel Separation
RB	30 kHz (20dB Bandwidth) / 100 kHz (Channel Separation)
VB	100 kHz (20dB Bandwidth) / 300 kHz (Channel Separation)
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

4.3.3. Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyser in peak hold mode.
2. The resolution bandwidth of 30 kHz and the video bandwidth of 100 kHz were utilised for 20 dB bandwidth measurement.
3. The resolution bandwidth of 100 kHz and the video bandwidth of 300 kHz were utilised for channel separation measurement.

4.3.4. Test Setup Layout



4.3.5. Test Deviation

There is no deviation with the original standard.

4.3.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.3.7. Test Result of Hopping Channel Separation

<For Antenna A>

Temperature	23°C	Humidity	58%
Test Engineer	Jacky Ho	Configurations	8DPSK

Frequency	Ch. Separation (kHz)	20dB Bandwidth (kHz)	99% Occupied Bandwidth (kHz)	Result
2402 MHz	1000	855.00	849.00	Complies
2441 MHz	1000	843.00	852.00	Complies
2480 MHz	1000	846.00	852.00	Complies

Ch. Separation Limits: >20dB bandwidth or >2/3 of 20dB bandwidth

<For Antenna B>

Temperature	23°C	Humidity	58%
Test Engineer	Jacky Ho	Configurations	8DPSK

Frequency	Ch. Separation (kHz)	20dB Bandwidth (kHz)	99% Occupied Bandwidth (kHz)	Result
2402 MHz	1000	855.00	849.00	Complies
2441 MHz	1000	843.00	852.00	Complies
2480 MHz	1000	846.00	852.00	Complies

Ch. Separation Limits: >20dB bandwidth or >2/3 of 20dB bandwidth

<For Antenna C>

Temperature	23°C	Humidity	58%
Test Engineer	Jacky Ho	Configurations	8DPSK

Frequency	Ch. Separation (kHz)	20dB Bandwidth (kHz)	99% Occupied Bandwidth (kHz)	Result
2402 MHz	1000	855.00	849.00	Complies
2441 MHz	1000	843.00	852.00	Complies
2480 MHz	1000	846.00	852.00	Complies

Ch. Separation Limits: >20dB bandwidth or >2/3 of 20dB bandwidth

<For Antenna D>

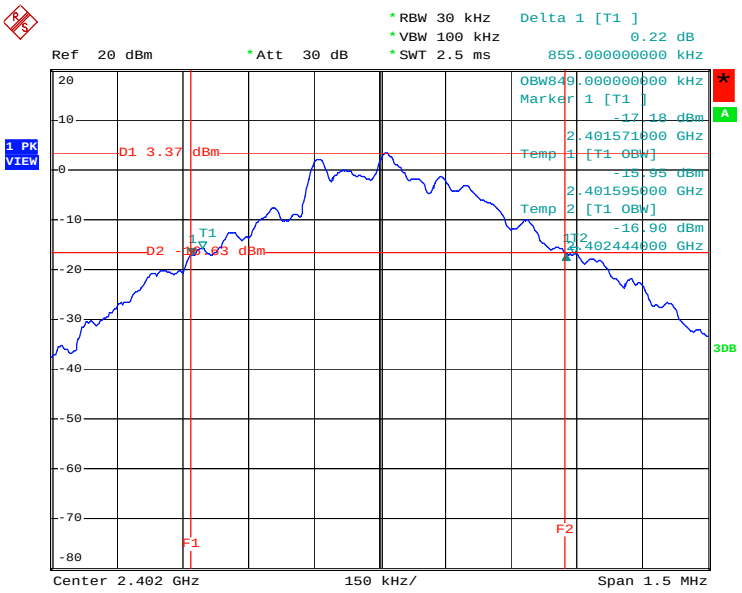
Temperature	23°C	Humidity	58%
Test Engineer	Jacky Ho	Configurations	8DPSK

Frequency	Ch. Separation (kHz)	20dB Bandwidth (kHz)	99% Occupied Bandwidth (kHz)	Result
2402 MHz	1000	855.00	849.00	Complies
2441 MHz	1000	843.00	852.00	Complies
2480 MHz	1000	846.00	852.00	Complies

Ch. Separation Limits: >20dB bandwidth or >2/3 of 20dB bandwidth

<For Antenna A>

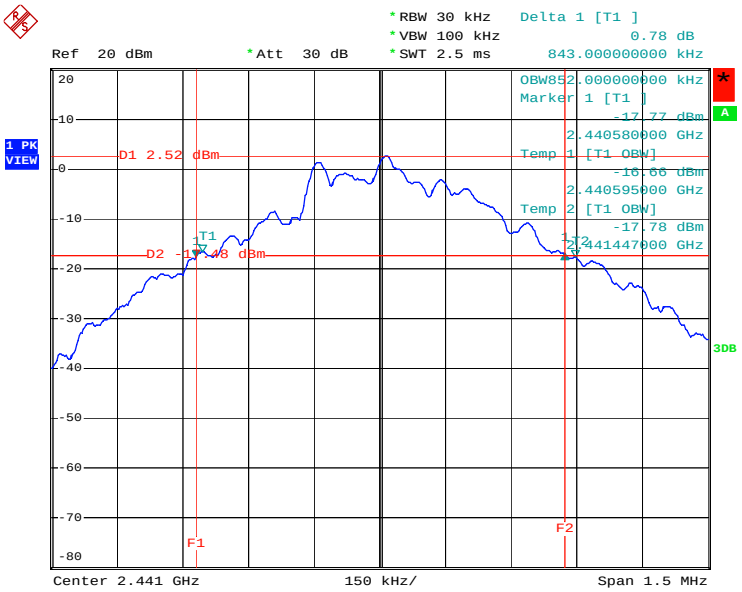
20 dB Bandwidth Plot on Channel 0 Ant. A / 2402 MHz



TVjf

Date: 2.DEC.2009 13:13:48

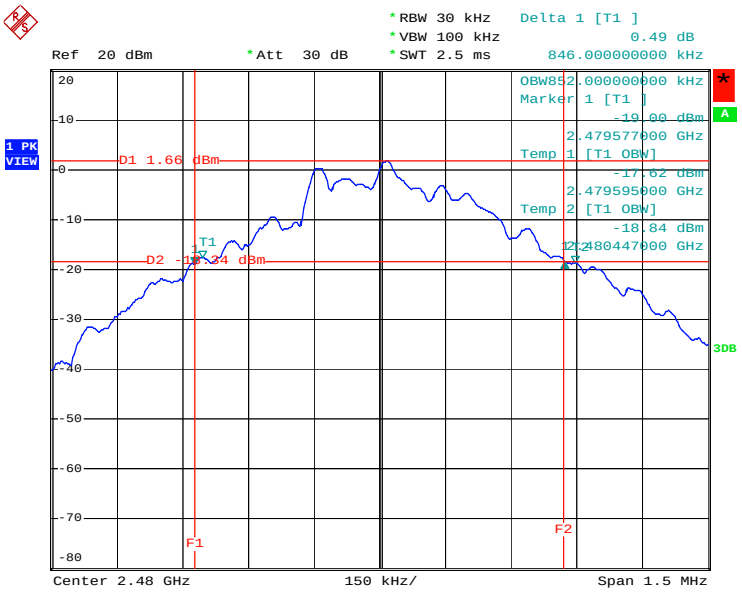
20 dB Bandwidth Plot on Channel 39 Ant. A / 2441 MHz



TVjf

Date: 2.DEC.2009 13:28:56

20 dB Bandwidth Plot on Channel 78 Ant. A / 2480 MHz



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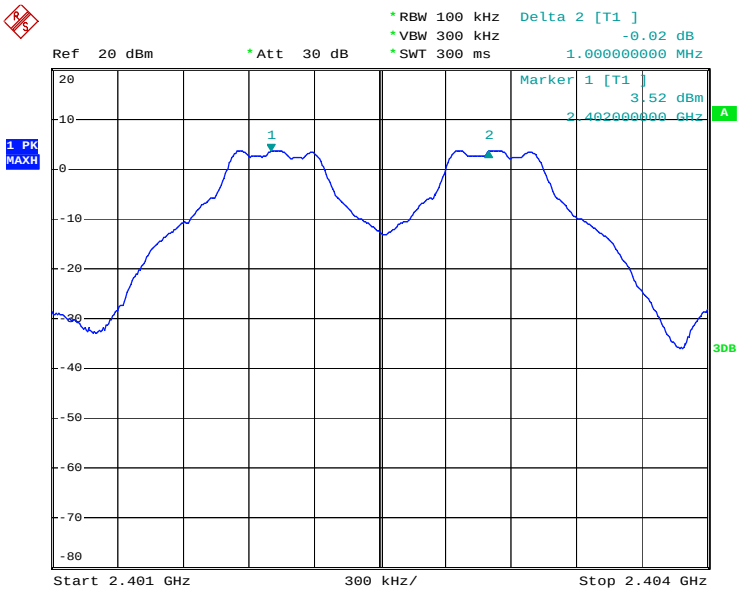
Date: 2.DEC.2009 13:23:39

Channel Separation Plot on Channel 0~1 Ant. A / 2402 MHz ~ 2403 MHz



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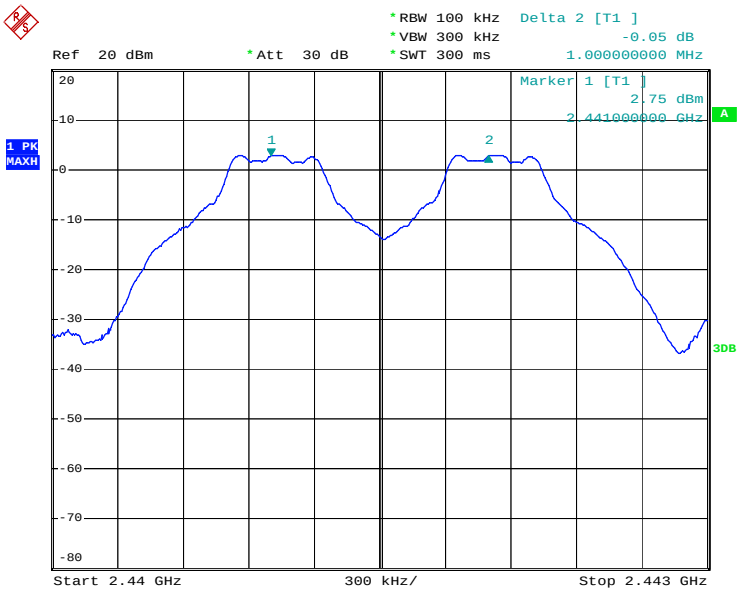
Date: 2.DEC.2009 14:05:32

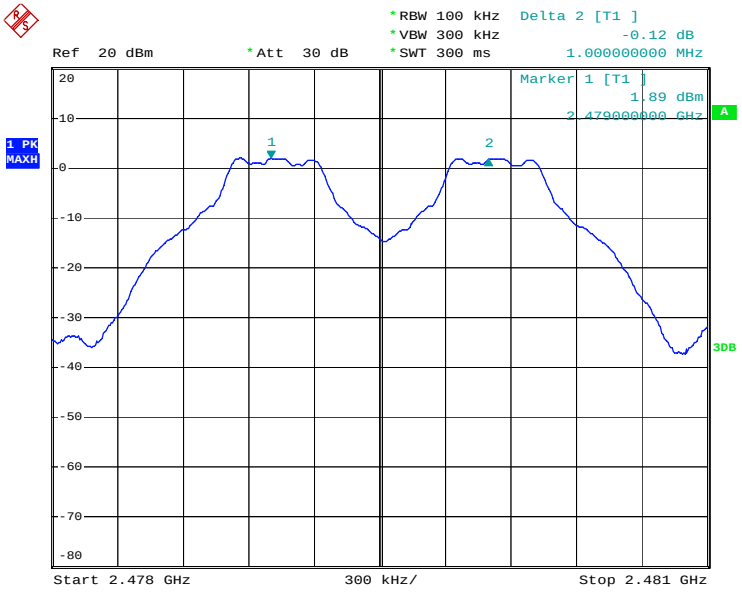
Channel Separation Plot on Channel 39~40 Ant. A / 2441 MHz ~ 2442 MHz



TVjf

Date: 2.DEC.2009 14:04:21

Channel Separation Plot on Channel 77~78 Ant. A / 2479 MHz ~ 2480 MHz

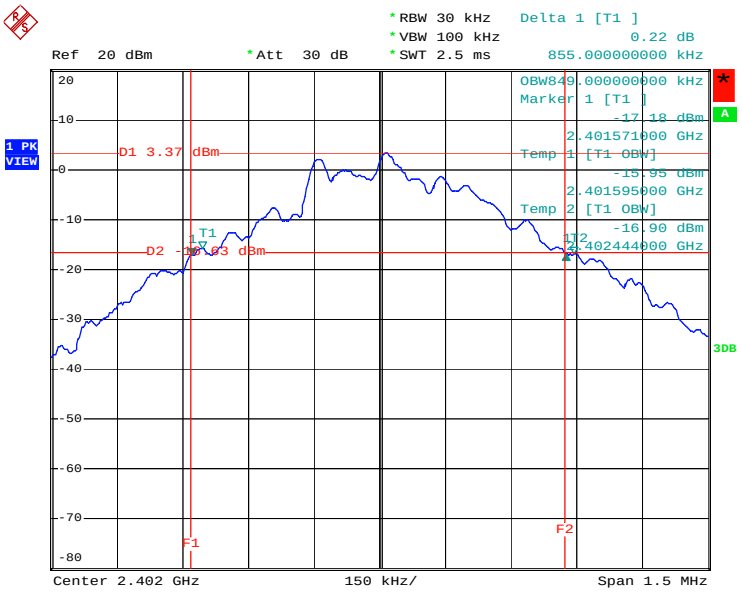


TVjf

Date: 2.DEC.2009 14:02:56

<For Antenna B>

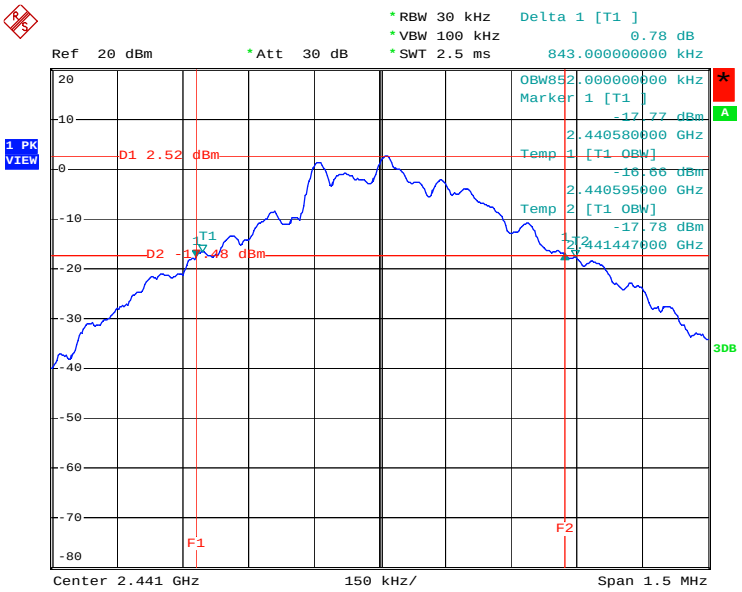
20 dB Bandwidth Plot on Channel 0 Ant. B / 2402 MHz



TVjf

Date: 2.DEC.2009 13:13:48

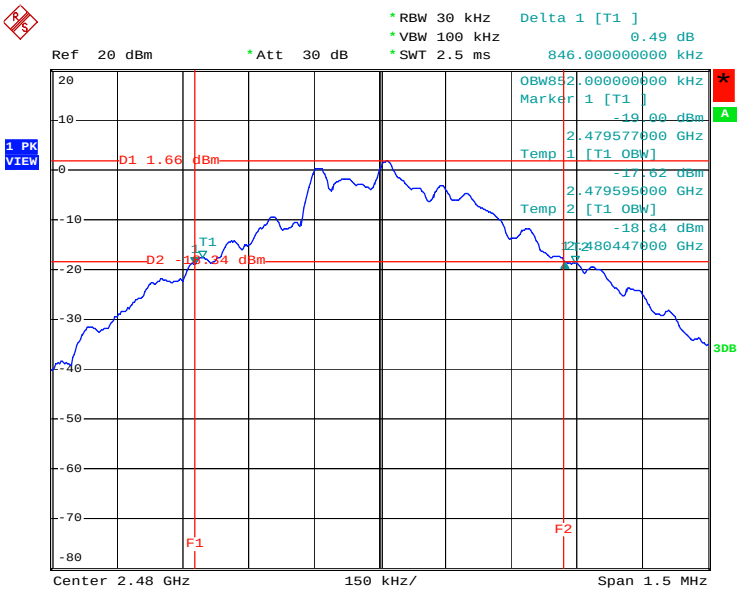
20 dB Bandwidth Plot on Channel 39 Ant. B / 2441 MHz



TVjf

Date: 2.DEC.2009 13:28:56

20 dB Bandwidth Plot on Channel 78 Ant. B / 2480 MHz



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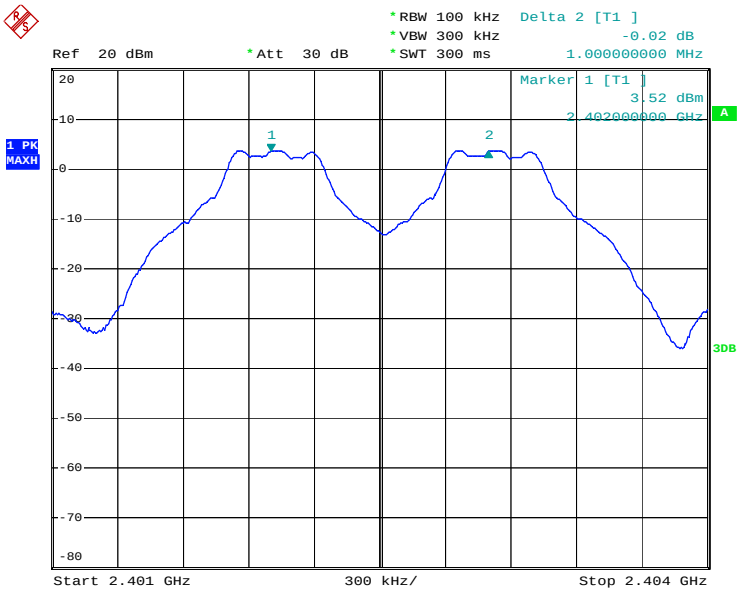
Date: 2.DEC.2009 13:23:39

Channel Separation Plot on Channel 0~1 Ant. B / 2402 MHz ~ 2403 MHz



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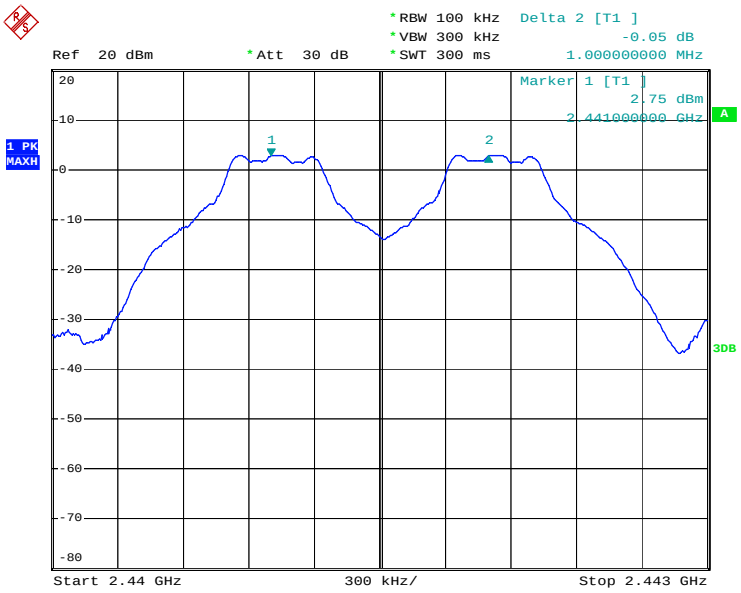
Date: 2.DEC.2009 14:05:32

Channel Separation Plot on Channel 39~40 Ant. B / 2441 MHz ~ 2442 MHz



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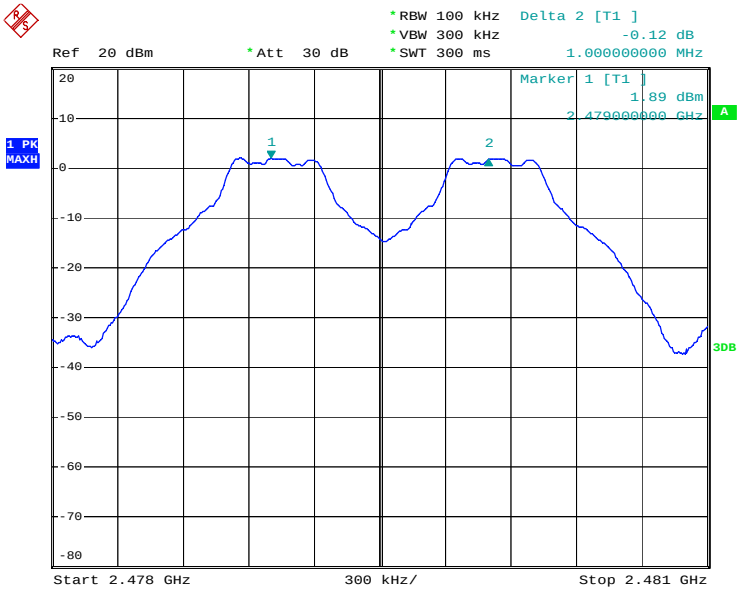
Date: 2.DEC.2009 14:04:21

Channel Separation Plot on Channel 77~78 Ant. B / 2479 MHz ~ 2480 MHz



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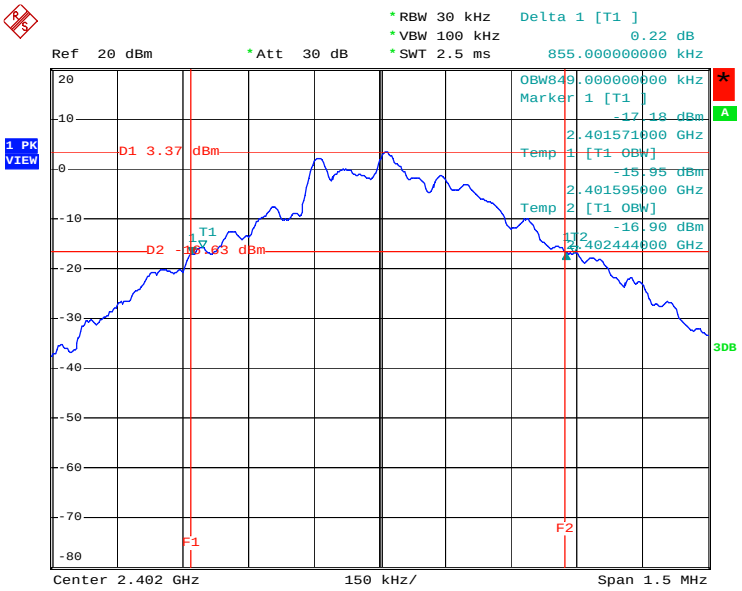
Date: 2.DEC.2009 14:02:56

<For Antenna C>

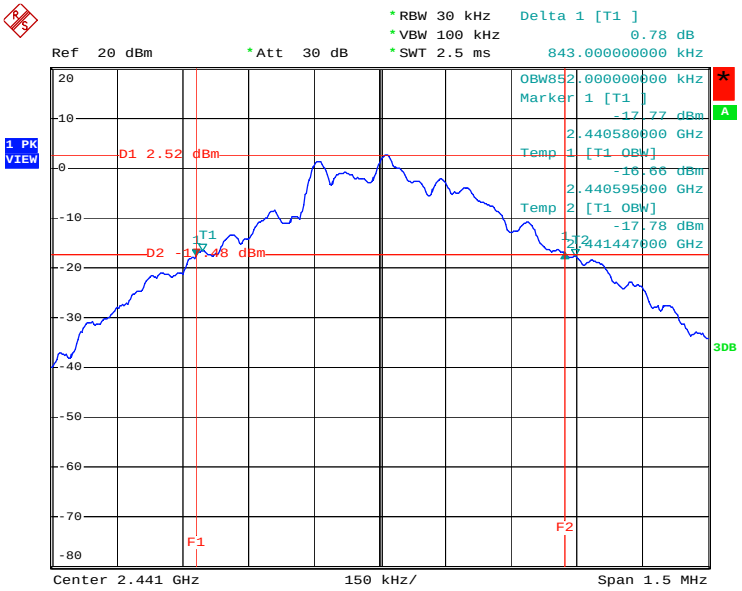
20 dB Bandwidth Plot on Channel 0 Ant. C / 2402 MHz



TVjf

Date: 2.DEC.2009 13:13:48

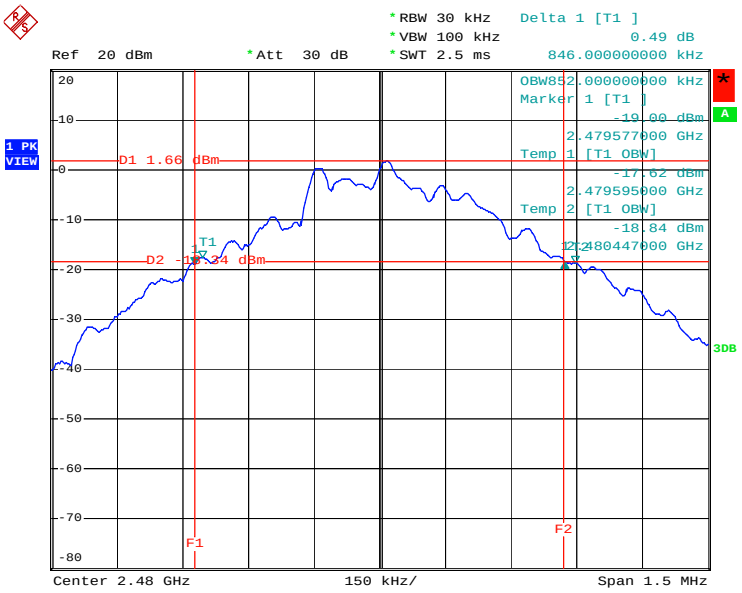
20 dB Bandwidth Plot on Channel 39 Ant. C / 2441 MHz



TVjf

Date: 2.DEC.2009 13:28:56

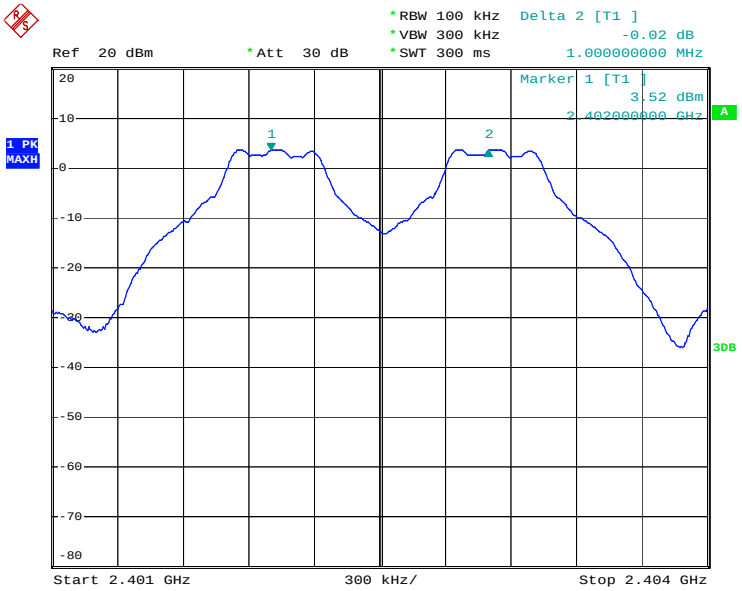
20 dB Bandwidth Plot on Channel 78 Ant. C / 2480 MHz



TVjf

Date: 2.DEC.2009 13:23:39

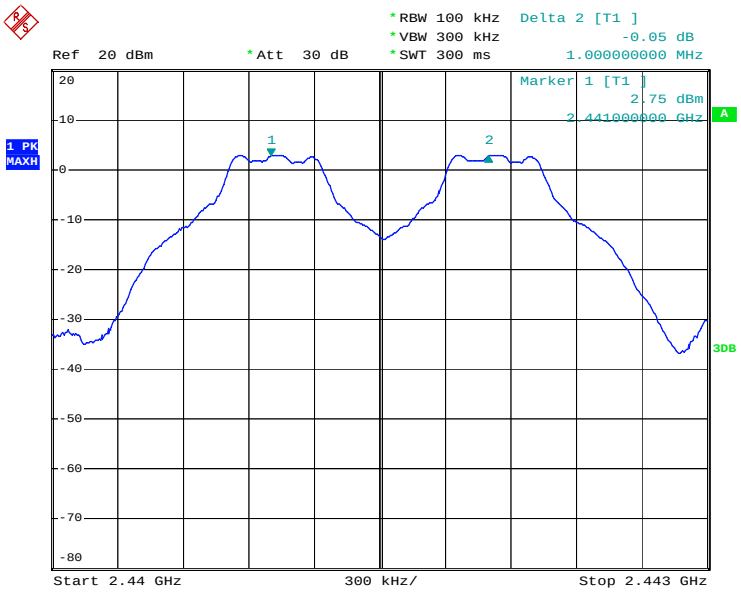
Channel Separation Plot on Channel 0~1 Ant. C / 2402 MHz ~ 2403 MHz



TVjf

Date: 2.DEC.2009 14:05:32

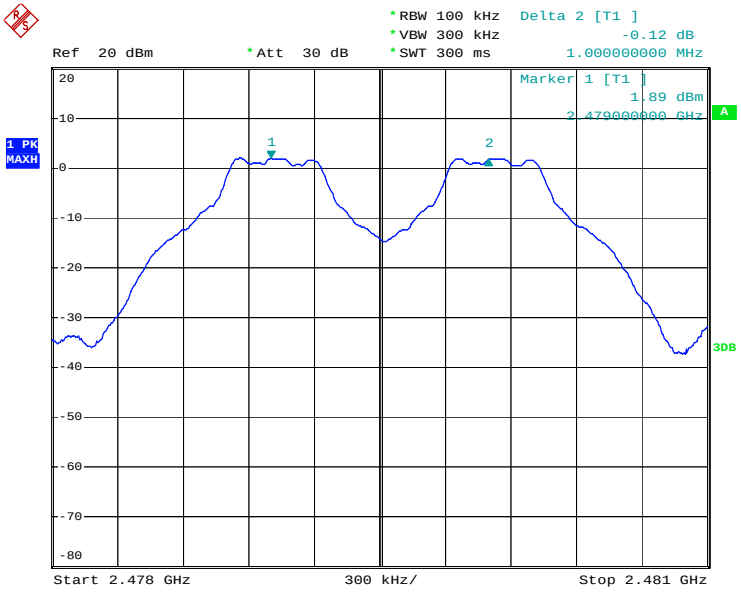
Channel Separation Plot on Channel 39~40 Ant. C / 2441 MHz ~ 2442 MHz



TVjf

Date: 2.DEC.2009 14:04:21

Channel Separation Plot on Channel 77~78 Ant. C / 2479 MHz ~ 2480 MHz

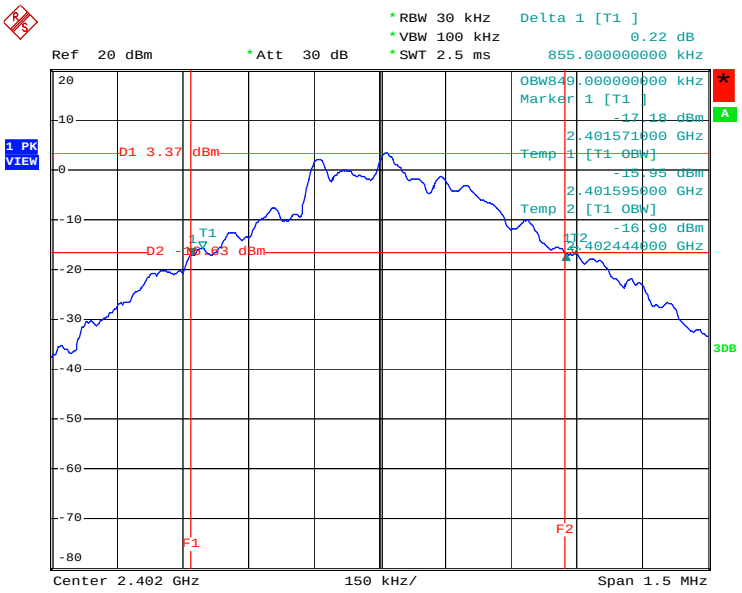


TVjf

Date: 2.DEC.2009 14:02:56

<For Antenna D>

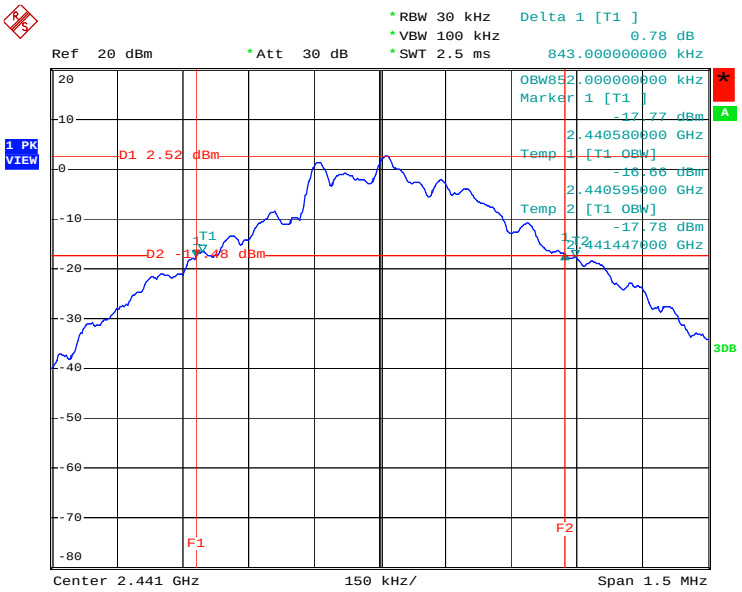
20 dB Bandwidth Plot on Channel 0 Ant. D / 2402 MHz



TVjf

Date: 2.DEC.2009 13:13:48

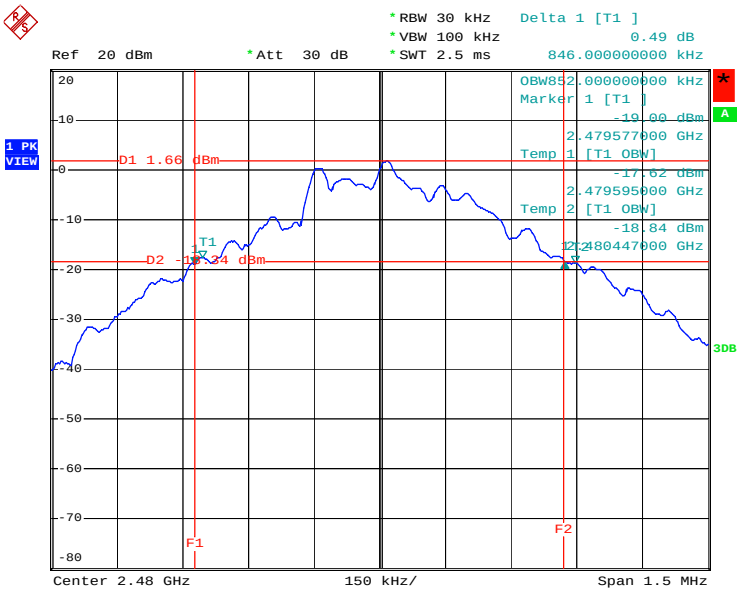
20 dB Bandwidth Plot on Channel 39 Ant. D / 2441 MHz



TVjf

Date: 2.DEC.2009 13:28:56

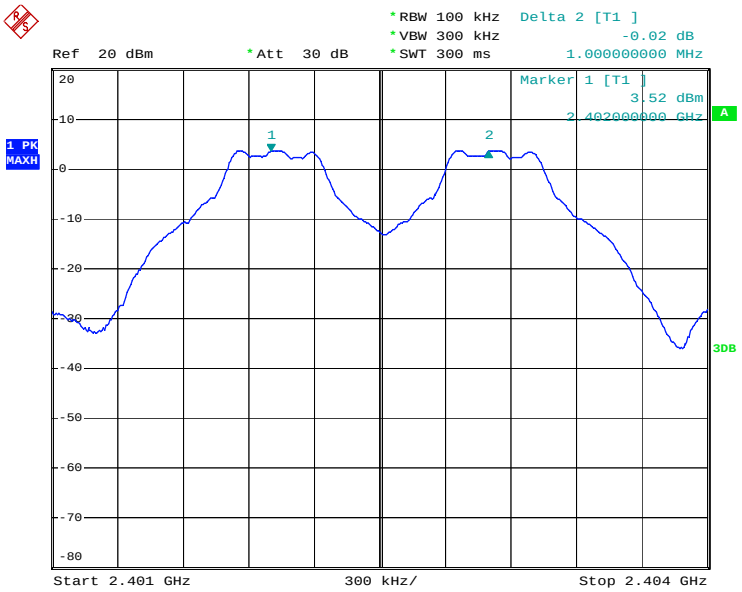
20 dB Bandwidth Plot on Channel 78 Ant. D / 2480 MHz



TVjf

Date: 2.DEC.2009 13:23:39

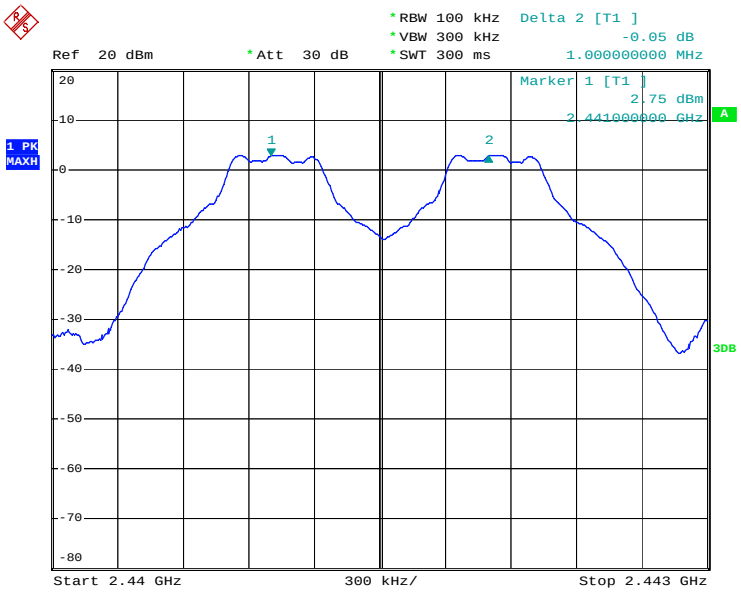
Channel Separation Plot on Channel 0~1 Ant. D / 2402 MHz ~ 2403 MHz



TVjf

Date: 2.DEC.2009 14:05:32

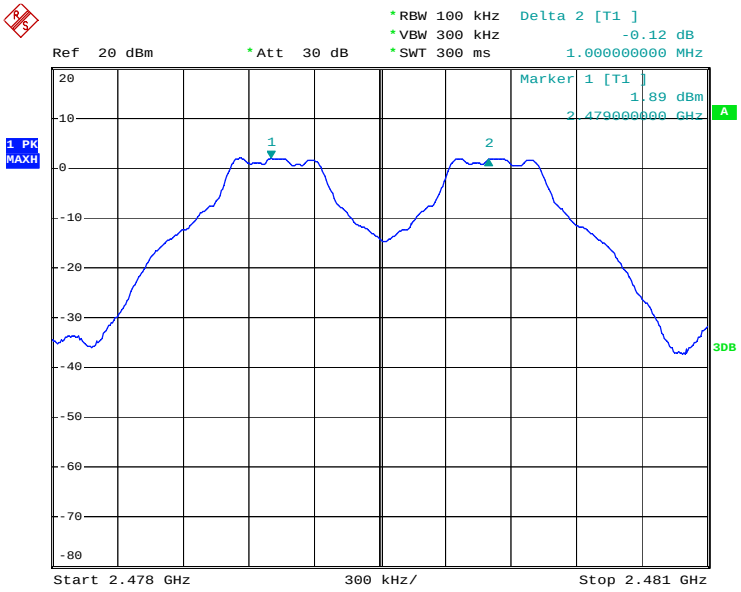
Channel Separation Plot on Channel 39~40 Ant. D / 2441 MHz ~ 2442 MHz



TVjf

Date: 2.DEC.2009 14:04:21

Channel Separation Plot on Channel 77~78 Ant. D / 2479 MHz ~ 2480 MHz



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Date: 2.DEC.2009 14:02:56

4.4. Number of Hopping Frequency Measurement

4.4.1. Limit

For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels.

4.4.2. Measuring Instruments and Setting

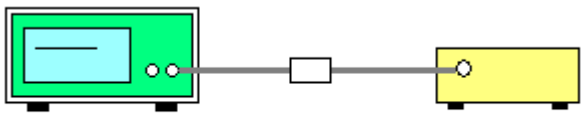
Please refer to section 5 of equipments list in this report. The following table is the setting of spectrum analyzer.

Spectrum Parameters	Setting
Attenuation	Auto
Span Frequency	> Operating Frequency Range
RB	100 kHz
VB	100 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

4.4.3. Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyser in peak hold mode.
2. The resolution bandwidth of 100 kHz and the video bandwidth of 100 kHz were utilised.
3. Observe frequency hopping in 2400MHz~2483.5MHz, there are at least 75 non-overlapping channels.

4.4.4. Test Setup Layout



4.4.5. Test Deviation

There is no deviation with the original standard.

4.4.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.4.7. Test Result of Number of Hopping Frequency

<For Antenna A>

Temperature	23°C	Humidity	58%
Test Engineer	Jacky Ho	Configurations	8DPSK

Modulation Type	Channel No.	Frequency (MHz)	Hopping Ch. (Channels)	Min. Limit (Channels)	Test Result
GFSK	0 ~ 78	2402 ~ 2480	79	75	Complies

<For Antenna B>

Temperature	23°C	Humidity	58%
Test Engineer	Jacky Ho	Configurations	8DPSK

Modulation Type	Channel No.	Frequency (MHz)	Hopping Ch. (Channels)	Min. Limit (Channels)	Test Result
GFSK	0 ~ 78	2402 ~ 2480	79	75	Complies

<For Antenna C>

Temperature	23℃	Humidity	58%
Test Engineer	Jacky Ho	Configurations	8DPSK

Modulation Type	Channel No.	Frequency (MHz)	Hopping Ch. (Channels)	Min. Limit (Channels)	Test Result
GFSK	0 ~ 78	2402 ~ 2480	79	75	Complies

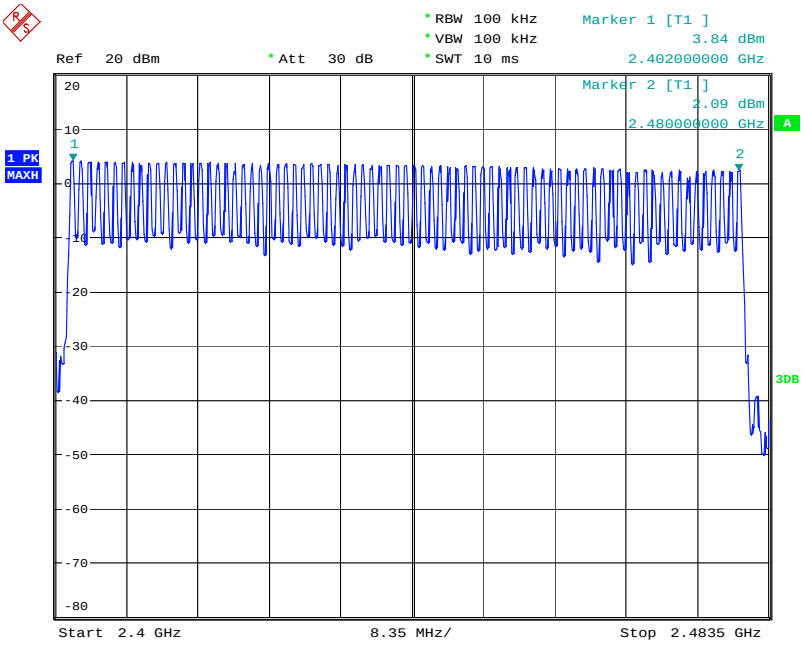
<For Antenna D>

Temperature	23℃	Humidity	58%
Test Engineer	Jacky Ho	Configurations	8DPSK

Modulation Type	Channel No.	Frequency (MHz)	Hopping Ch. (Channels)	Min. Limit (Channels)	Test Result
GFSK	0 ~ 78	2402 ~ 2480	79	75	Complies

<For Antenna A>

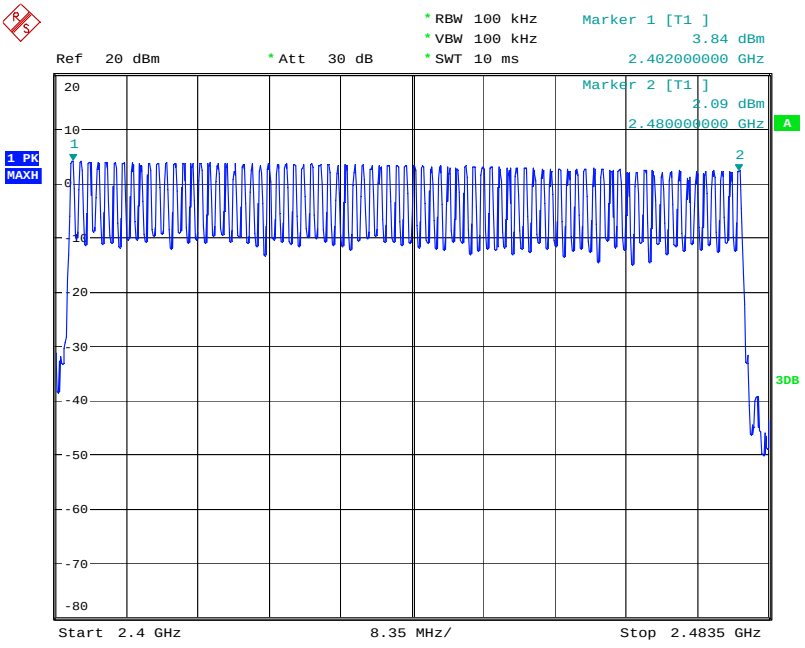
Number of Hopping Channel Plot on Channel 0~78 Ant. A / 2402 MHz ~ 2480 MHz



Date: 2.DEC.2009 12:44:19

<For Antenna B>

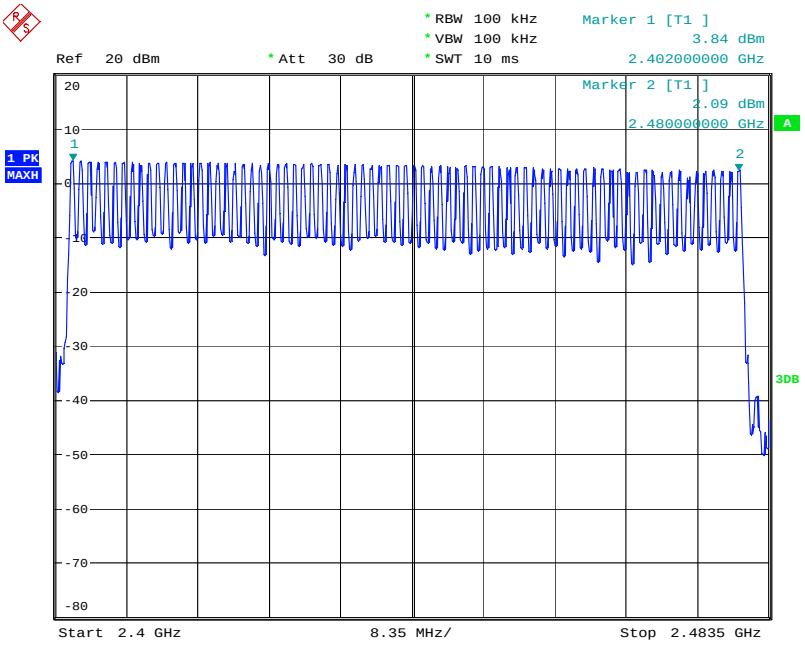
Number of Hopping Channel Plot on Channel 0~78 Ant. B / 2402 MHz ~ 2480 MHz



Date: 2.DEC.2009 12:44:19

<For Antenna C>

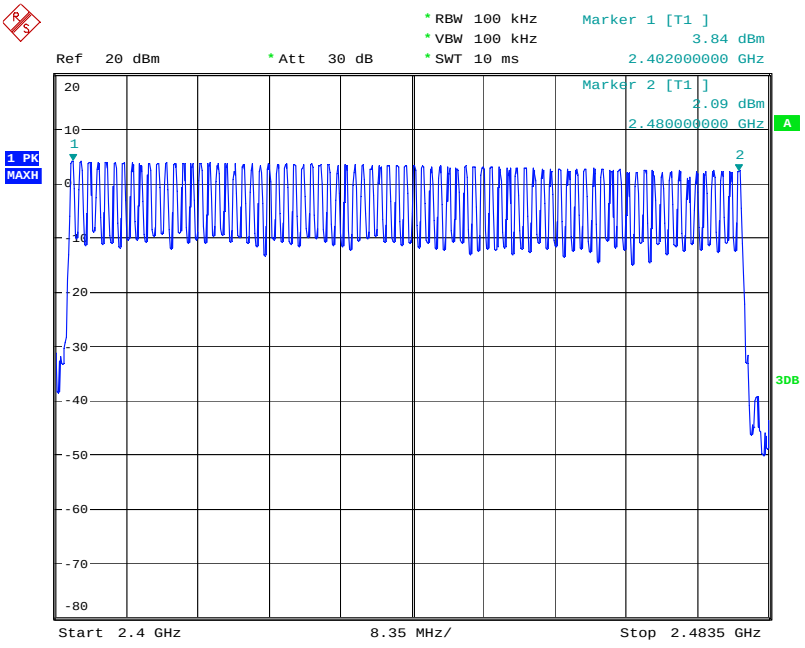
Number of Hopping Channel Plot on Channel 0~78 Ant. C / 2402 MHz ~ 2480 MHz



Date: 2.DEC.2009 12:44:19

<For Antenna D>

Number of Hopping Channel Plot on Channel 0~78 Ant. D / 2402 MHz ~ 2480 MHz



Date: 2.DEC.2009 12:44:19

4.5. Dwell Time Measurement

4.5.1. Limit

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 than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

4.5.2. Measuring Instruments and Setting

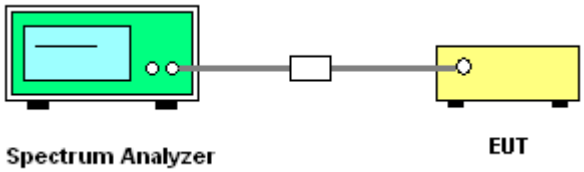
Please refer to section 5 of equipments list in this report. The following table is the setting of spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	0 MHz
RB	1000 kHz
VB	1000 kHz
Detector	Peak
Trace	Single Trigger

4.5.3. Test Procedures

4. The transmitter output (antenna port) was connected to the spectrum analyser
5. Set RBW of spectrum analyzer to 1000kHz and VBW to 1000kHz.
6. Use a video trigger with the trigger level set to enable triggering only on full pulses.
7. Sweep Time is more than once pulse time.
8. Set the center frequency on any frequency would be measure and set the frequency span to zero span.
9. Measure the maximum time duration of one single pulse.
10. Set the EUT for DH5, DH3 and DH1 packet transmitting.
11. Measure the maximum time duration of one single pulse.
12. DH5 Packet permit maximum 1600/ 79 / 6 = 3.37 hops per second in each channel (5 time slots RX, 1 time slot TX). So, the dwell time is the time duration of the pulse times 3.37 x 31.6 = 106.6 within 31.6 seconds
13. DH3 Packet permit maximum 1600 / 79 / 4 = 5.06 hops per second in each channel (3 time slots RX, 1 time slot TX). So, the dwell time is the time duration of the pulse times 5.06 x 31.6 = 160 within 31.6 seconds.
14. DH1 Packet permit maximum 1600 / 79 /2 = 10.12 hops per second in each channel (1 time slot RX, 1 time slot TX). So, the dwell time is the time duration of the pulse times 10.12 x 31.6 = 320 within 31.6 seconds.

4.5.4. Test Setup Layout



4.5.5. Test Deviation

There is no deviation with the original standard.

4.5.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.5.7. Test Result of Dwell Time

<For Antenna A>

Temperature	23°C	Humidity	58%
Test Engineer	Jacky Ho	Configurations	DH1, DH3, DH5

Data Packet	Frequency	Pulse Duration (ms)	Dwell Time (s)	Limits (s)	Test Result
DH5	2402 MHz	2.9200	0.3115	0.4000	Complies
DH3	2402 MHz	1.6700	0.2672	0.4000	Complies
DH1	2402 MHz	0.4100	0.1312	0.4000	Complies
DH5	2441 MHz	2.9200	0.3115	0.4000	Complies
DH3	2441 MHz	1.6600	0.2656	0.4000	Complies
DH1	2441 MHz	0.4100	0.1312	0.4000	Complies
DH5	2480 MHz	2.9200	0.3115	0.4000	Complies
DH3	2480 MHz	1.6700	0.2672	0.4000	Complies
DH1	2480 MHz	0.4100	0.1312	0.4000	Complies

<For Antenna B>

Temperature	23°C	Humidity	58%
Test Engineer	Jacky Ho	Configurations	DH1, DH3, DH5

Data Packet	Frequency	Pulse Duration (ms)	Dwell Time (s)	Limits (s)	Test Result
DH5	2402 MHz	2.9200	0.3115	0.4000	Complies
DH3	2402 MHz	1.6700	0.2672	0.4000	Complies
DH1	2402 MHz	0.4100	0.1312	0.4000	Complies
DH5	2441 MHz	2.9200	0.3115	0.4000	Complies
DH3	2441 MHz	1.6600	0.2656	0.4000	Complies
DH1	2441 MHz	0.4100	0.1312	0.4000	Complies
DH5	2480 MHz	2.9200	0.3115	0.4000	Complies
DH3	2480 MHz	1.6700	0.2672	0.4000	Complies
DH1	2480 MHz	0.4100	0.1312	0.4000	Complies

<For Antenna C>

Temperature	23°C	Humidity	58%
Test Engineer	Jacky Ho	Configurations	DH1, DH3, DH5

Data Packet	Frequency	Pulse Duration (ms)	Dwell Time (s)	Limits (s)	Test Result
DH5	2402 MHz	2.9200	0.3115	0.4000	Complies
DH3	2402 MHz	1.6700	0.2672	0.4000	Complies
DH1	2402 MHz	0.4100	0.1312	0.4000	Complies
DH5	2441 MHz	2.9200	0.3115	0.4000	Complies
DH3	2441 MHz	1.6600	0.2656	0.4000	Complies
DH1	2441 MHz	0.4100	0.1312	0.4000	Complies
DH5	2480 MHz	2.9200	0.3115	0.4000	Complies
DH3	2480 MHz	1.6700	0.2672	0.4000	Complies
DH1	2480 MHz	0.4100	0.1312	0.4000	Complies

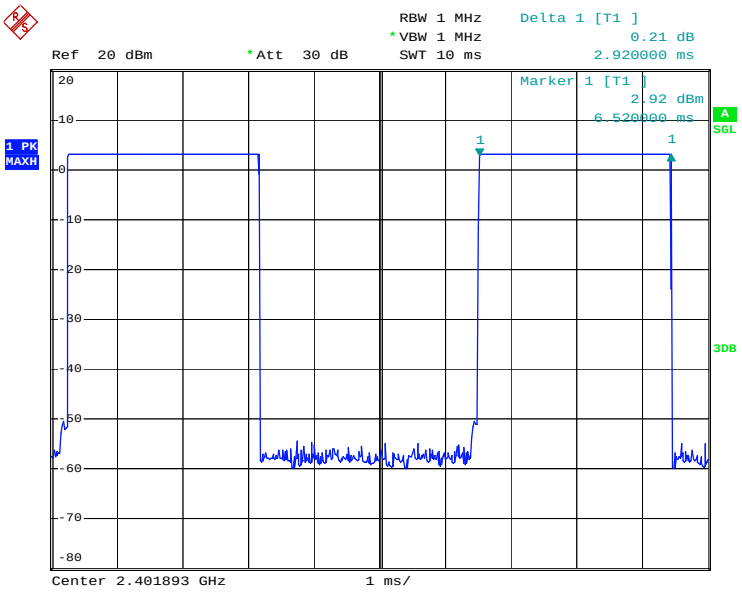
<For Antenna D>

Temperature	23°C	Humidity	58%
Test Engineer	Jacky Ho	Configurations	DH1, DH3, DH5

Data Packet	Frequency	Pulse Duration (ms)	Dwell Time (s)	Limits (s)	Test Result
DH5	2402 MHz	2.9200	0.3115	0.4000	Complies
DH3	2402 MHz	1.6700	0.2672	0.4000	Complies
DH1	2402 MHz	0.4100	0.1312	0.4000	Complies
DH5	2441 MHz	2.9200	0.3115	0.4000	Complies
DH3	2441 MHz	1.6600	0.2656	0.4000	Complies
DH1	2441 MHz	0.4100	0.1312	0.4000	Complies
DH5	2480 MHz	2.9200	0.3115	0.4000	Complies
DH3	2480 MHz	1.6700	0.2672	0.4000	Complies
DH1	2480 MHz	0.4100	0.1312	0.4000	Complies

<For Antenna A>

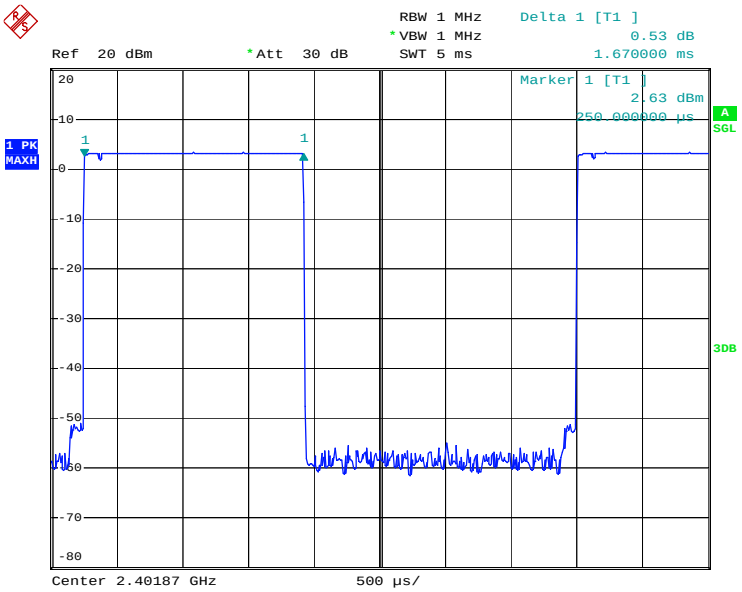
DH5 Dwell Time Plot on Channel 0 Ant. A / 2402 MHz



TVjf

Date: 2.DEC.2009 14:28:06

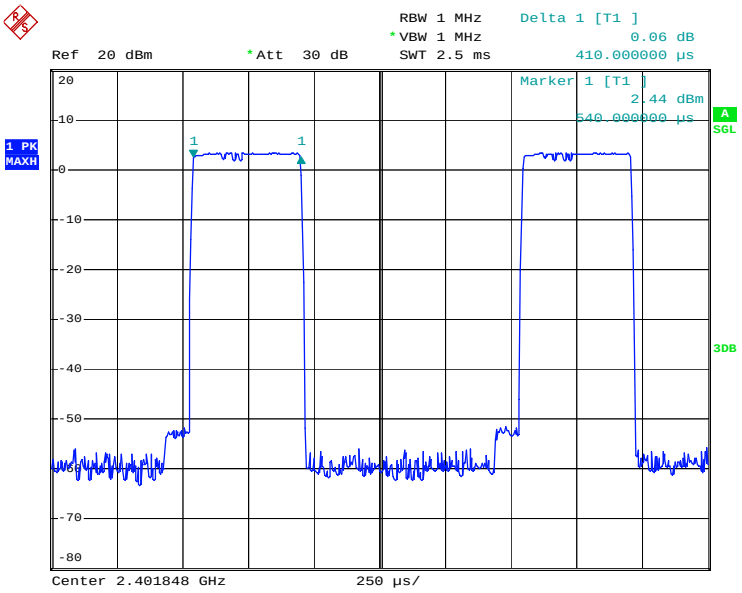
DH3 Dwell Time Plot on Channel 0 Ant. A / 2402 MHz



TVjf

Date: 2.DEC.2009 14:22:03

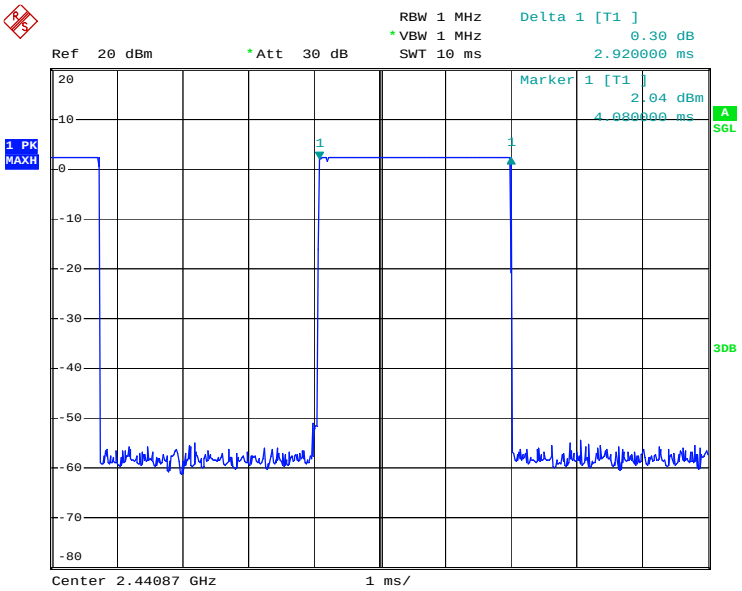
DH1 Dwell Time Plot on Channel 0 Ant. A / 2402 MHz



TVjf

Date: 2.DEC.2009 14:14:48

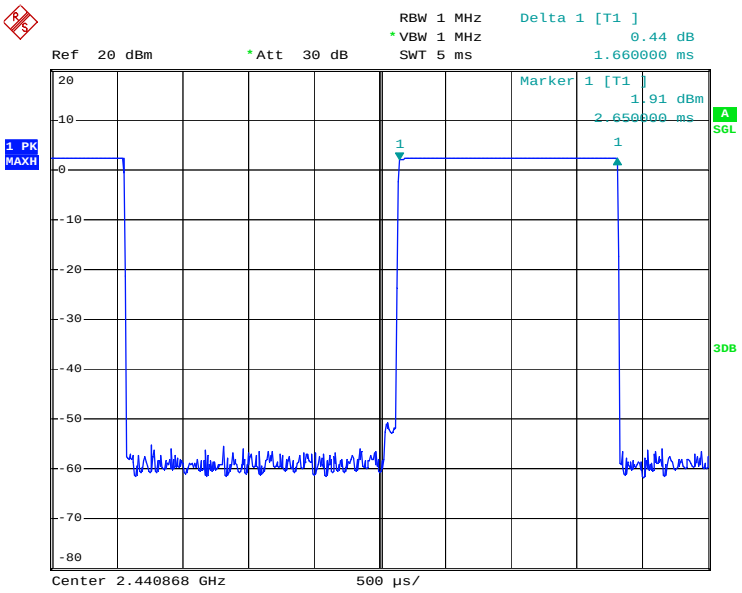
DH5 Dwell Time Plot on Channel 39 Ant. A / 2441 MHz



TVjf

Date: 2.DEC.2009 14:28:48

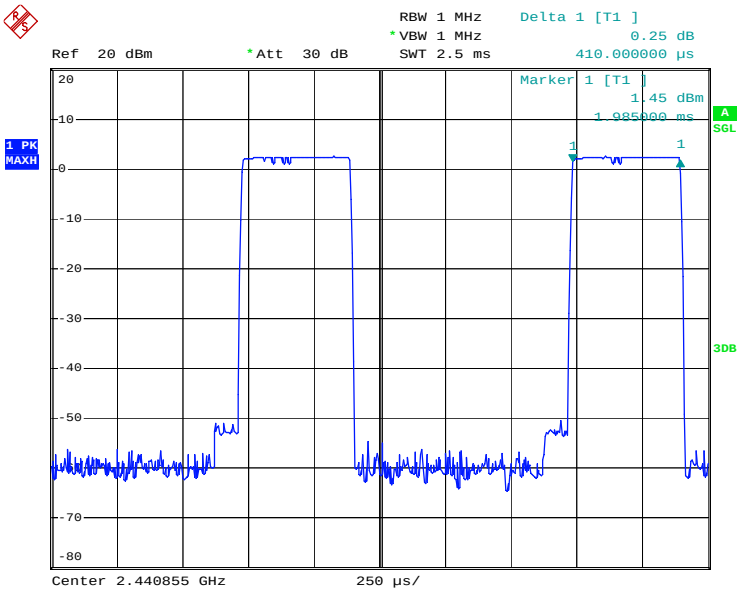
DH3 Dwell Time Plot on Channel 39 Ant. A / 2441 MHz



TVjf

Date: 2.DEC.2009 14:23:00

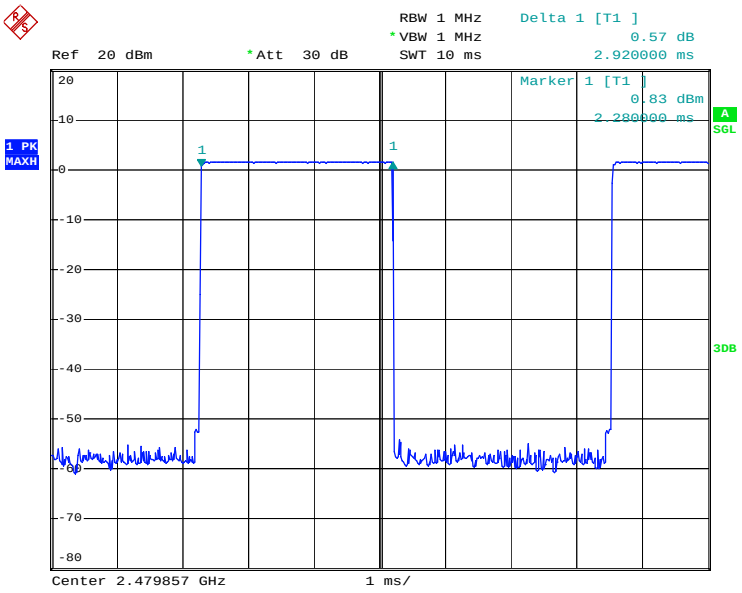
DH1 Dwell Time Plot on Channel 39 Ant. A / 2441 MHz



TVjf

Date: 2.DEC.2009 14:16:11

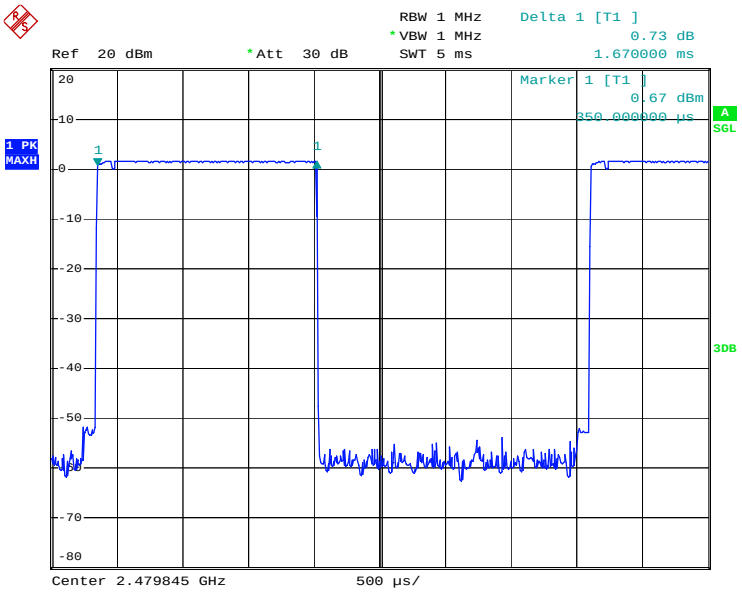
DH5 Dwell Time Plot on Channel 78 Ant. A / 2480 MHz



TVjf

Date: 2.DEC.2009 14:31:24

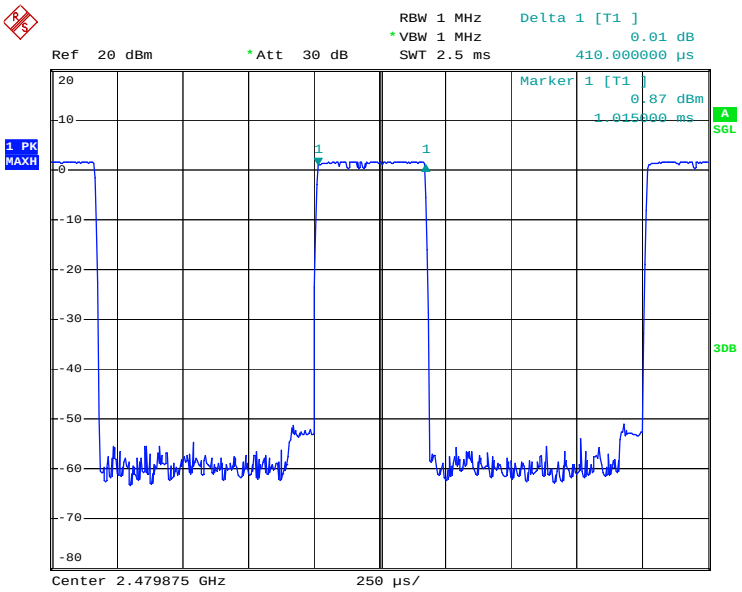
DH3 Dwell Time Plot on Channel 78 Ant. A / 2480 MHz



TVjf

Date: 2.DEC.2009 14:24:42

DH1 Dwell Time Plot on Channel 78 Ant. A / 2480 MHz

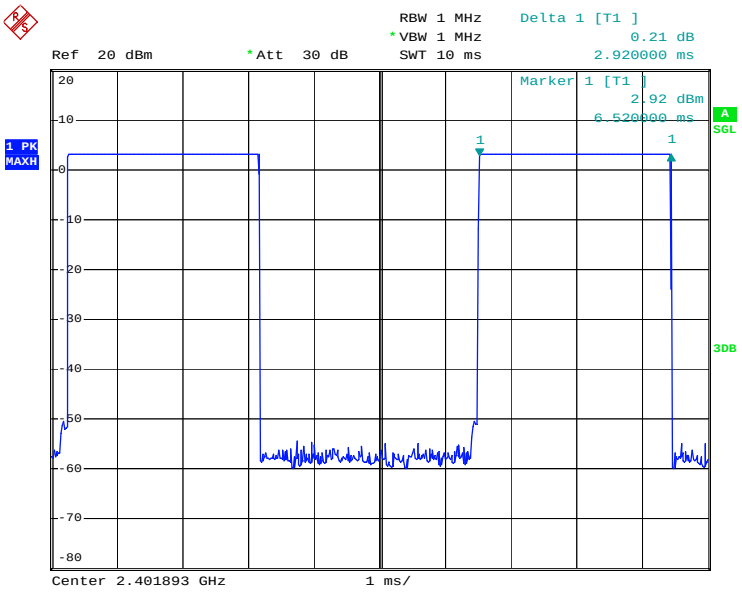


TVjf

Date: 2.DEC.2009 14:18:07

<For Antenna B>

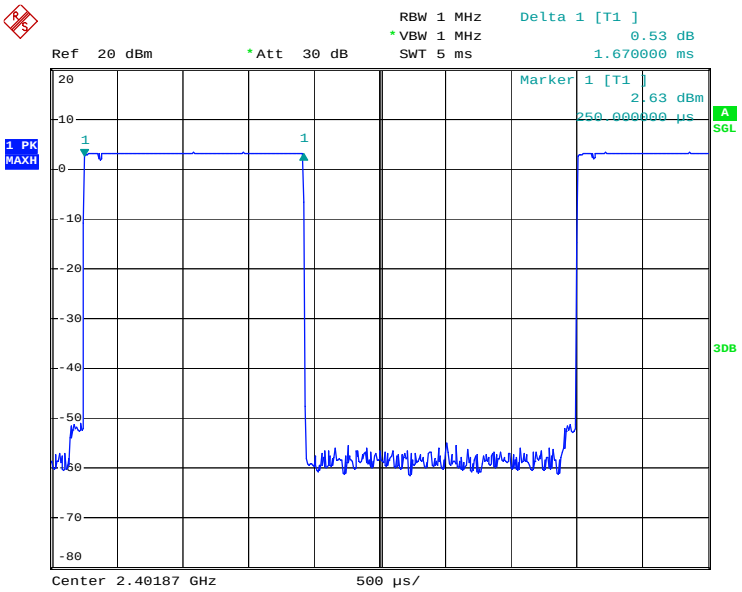
DH5 Dwell Time Plot on Channel 0 Ant. B / 2402 MHz



TVjf

Date: 2.DEC.2009 14:28:06

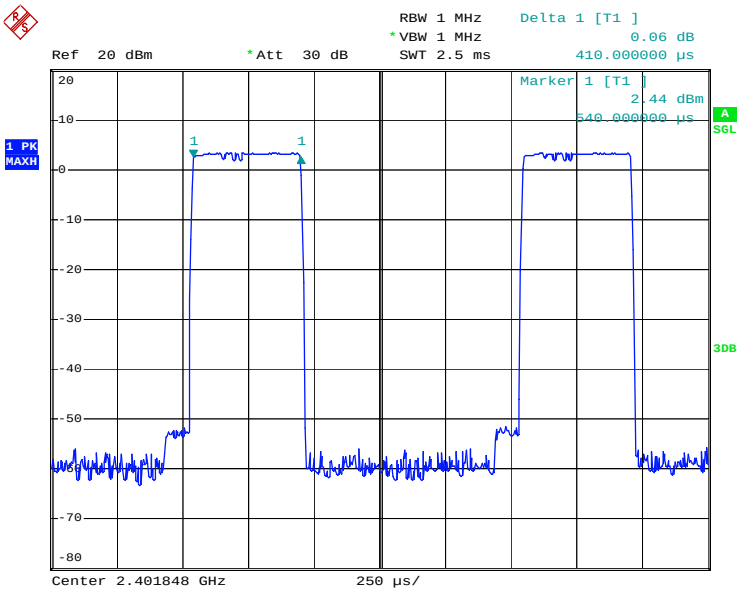
DH3 Dwell Time Plot on Channel 0 Ant. B / 2402 MHz



TVjf

Date: 2.DEC.2009 14:22:03

DH1 Dwell Time Plot on Channel 0 Ant. B / 2402 MHz



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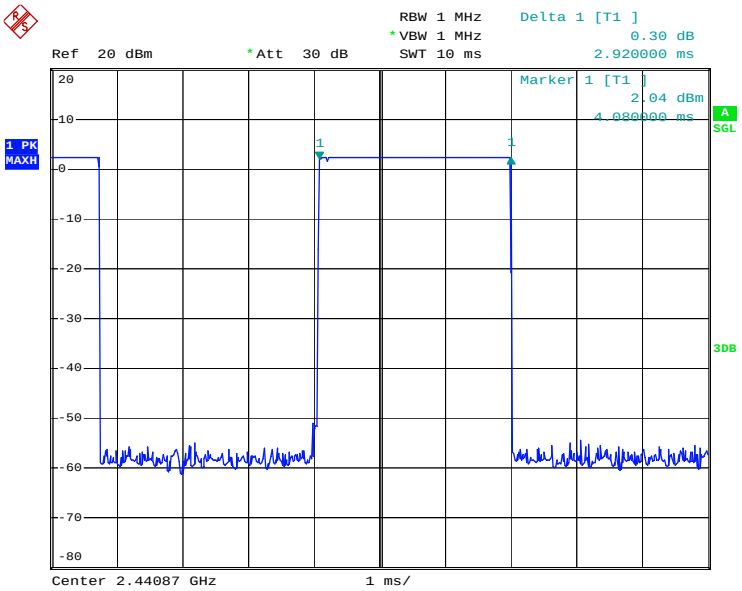
Date: 2.DEC.2009 14:14:48

DH5 Dwell Time Plot on Channel 39 Ant. B / 2441 MHz



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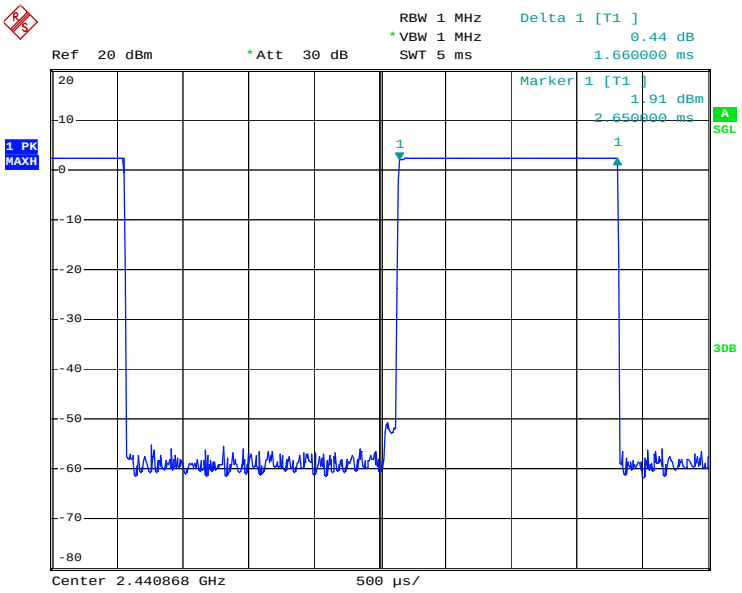
Date: 2.DEC.2009 14:28:48

DH3 Dwell Time Plot on Channel 39 Ant. B / 2441 MHz



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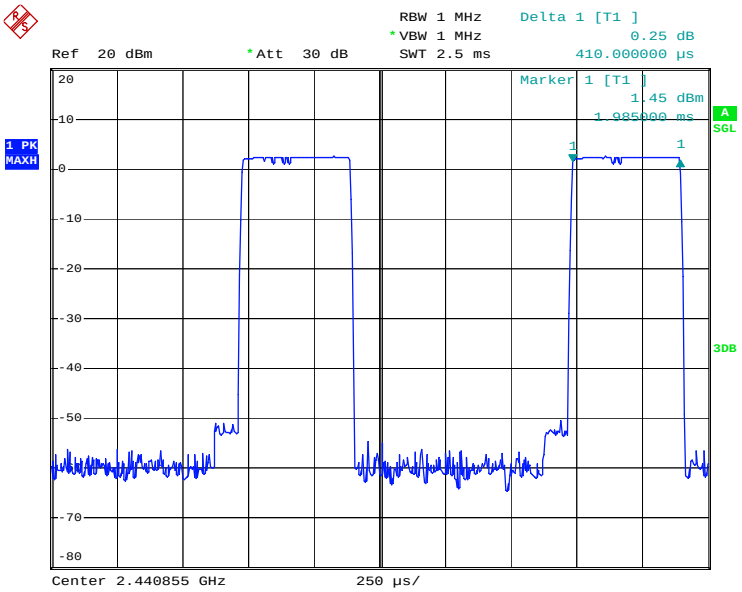
Date: 2.DEC.2009 14:23:00

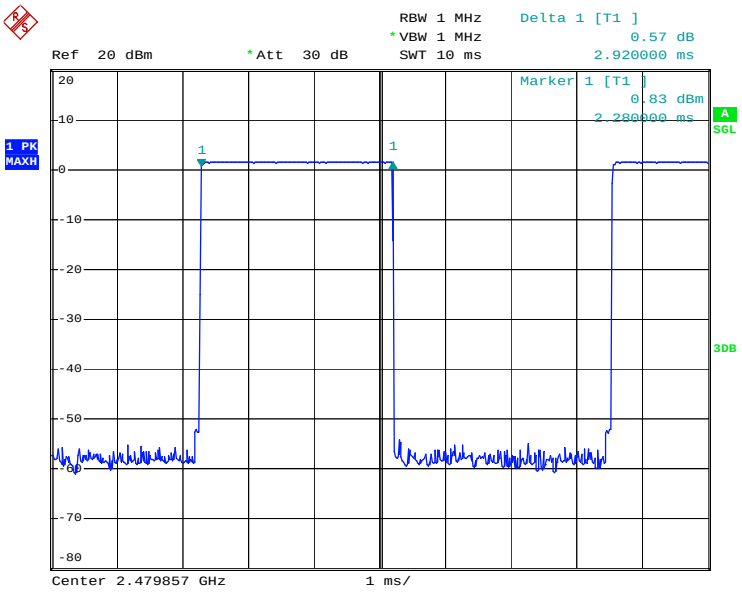
DH1 Dwell Time Plot on Channel 39 Ant. B / 2441 MHz



TVjf

Date: 2.DEC.2009 14:16:11

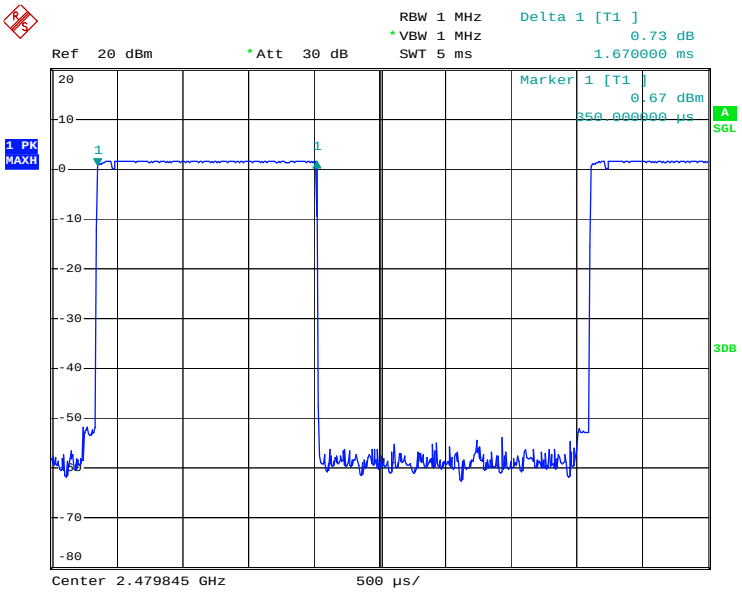
DH5 Dwell Time Plot on Channel 78 Ant. B / 2480 MHz



TVjf

Date: 2.DEC.2009 14:31:24

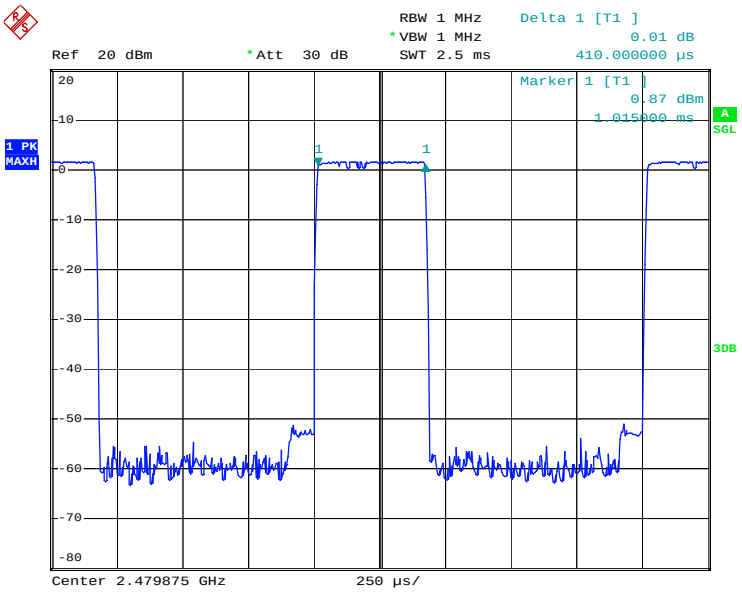
DH3 Dwell Time Plot on Channel 78 Ant. B / 2480 MHz



TVjf

Date: 2.DEC.2009 14:24:42

DH1 Dwell Time Plot on Channel 78 Ant. B / 2480 MHz

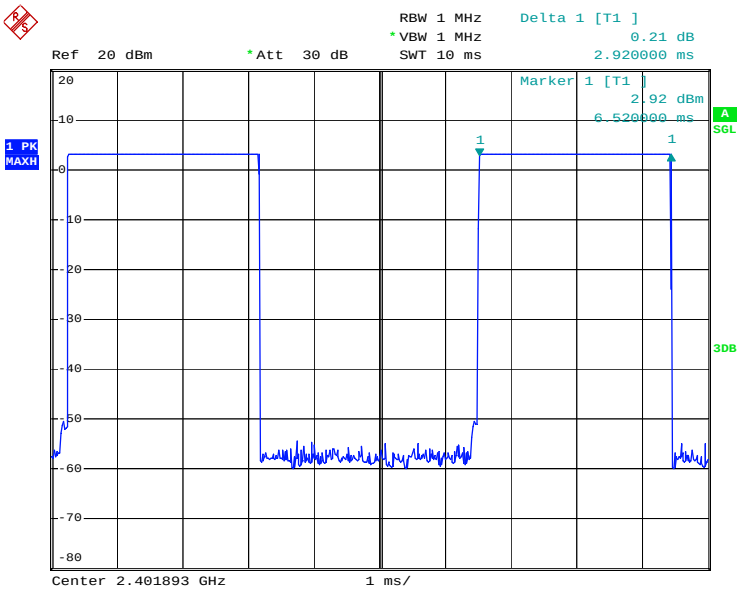


TVjf

Date: 2.DEC.2009 14:18:07

<For Antenna C>

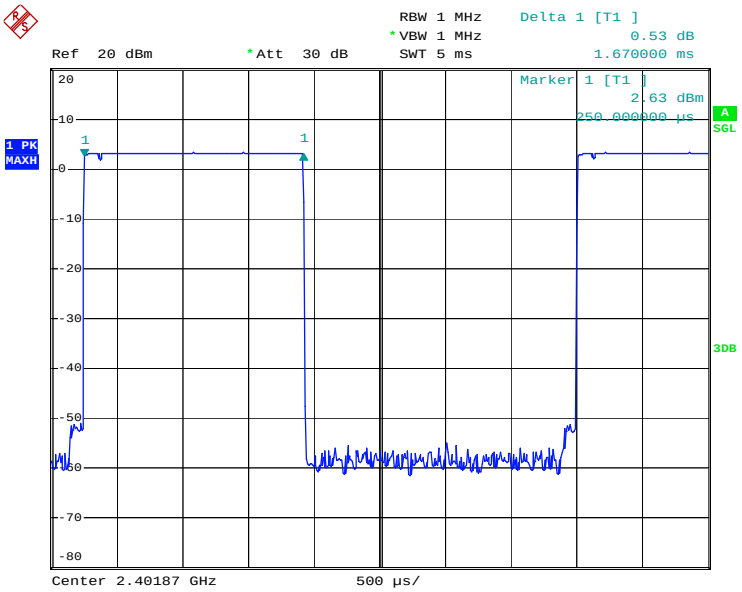
DH5 Dwell Time Plot on Channel 0 Ant. C / 2402 MHz



TVjf

Date: 2.DEC.2009 14:28:06

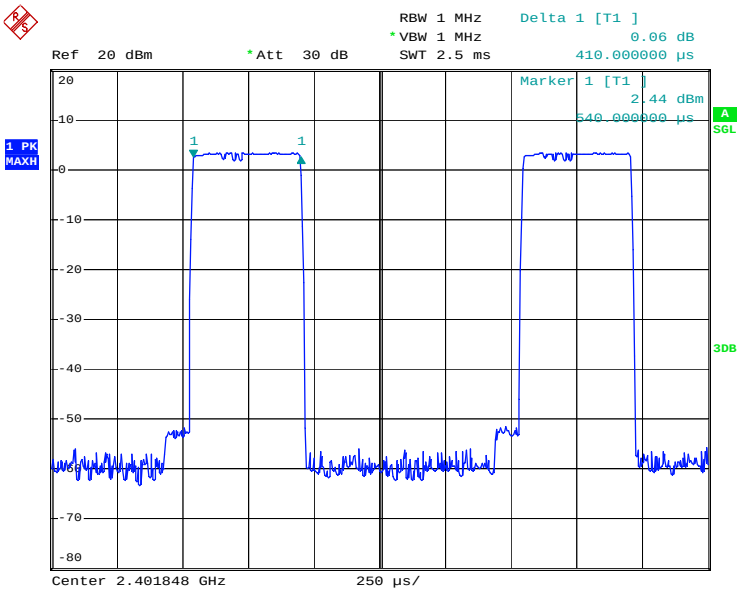
DH3 Dwell Time Plot on Channel 0 Ant. C / 2402 MHz



TVjf

Date: 2.DEC.2009 14:22:03

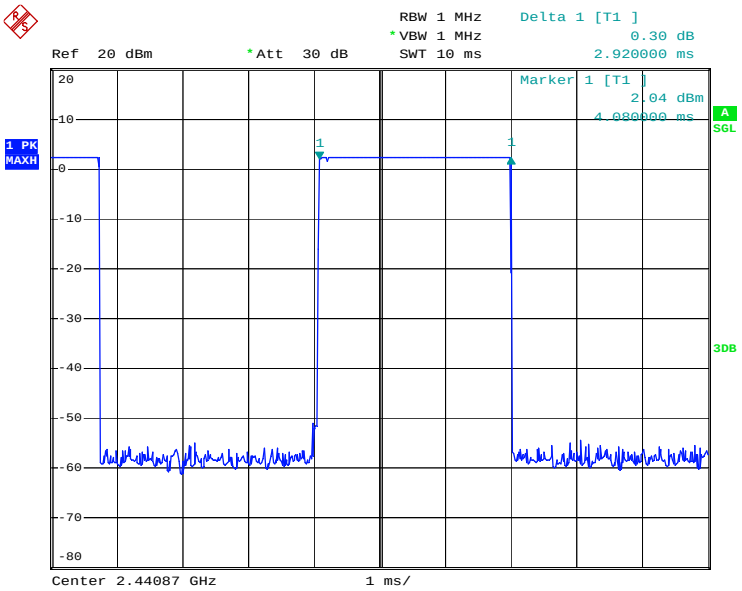
DH1 Dwell Time Plot on Channel 0 Ant. C / 2402 MHz



TVjf

Date: 2.DEC.2009 14:14:48

DH5 Dwell Time Plot on Channel 39 Ant. C / 2441 MHz



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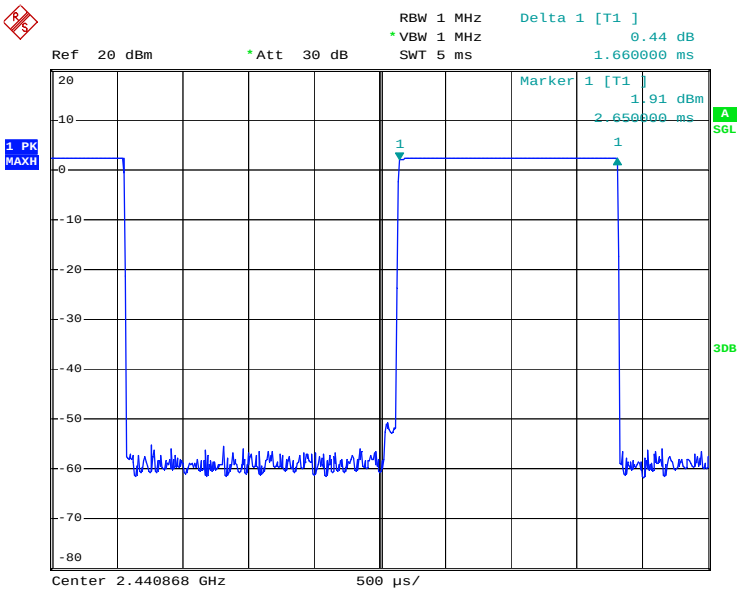
DH3 Dwell Time Plot on Channel 39 Ant. C / 2441 MHz



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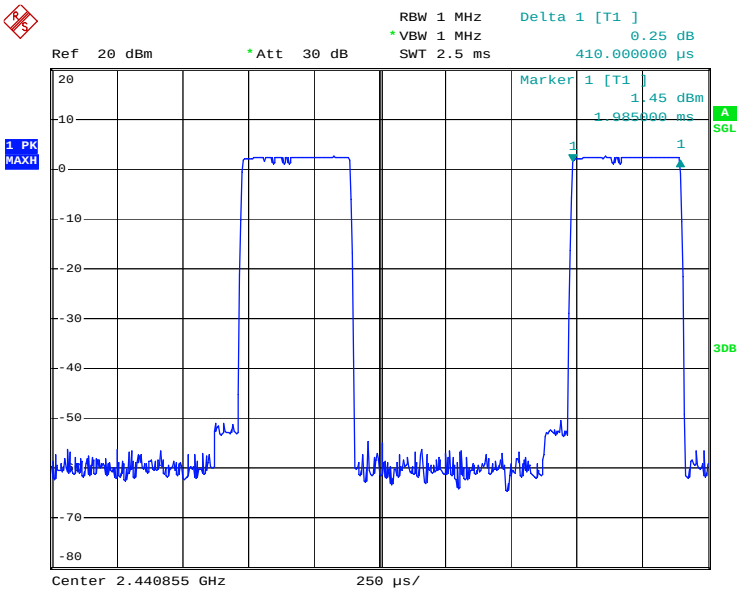
Date: 2.DEC.2009 14:23:00

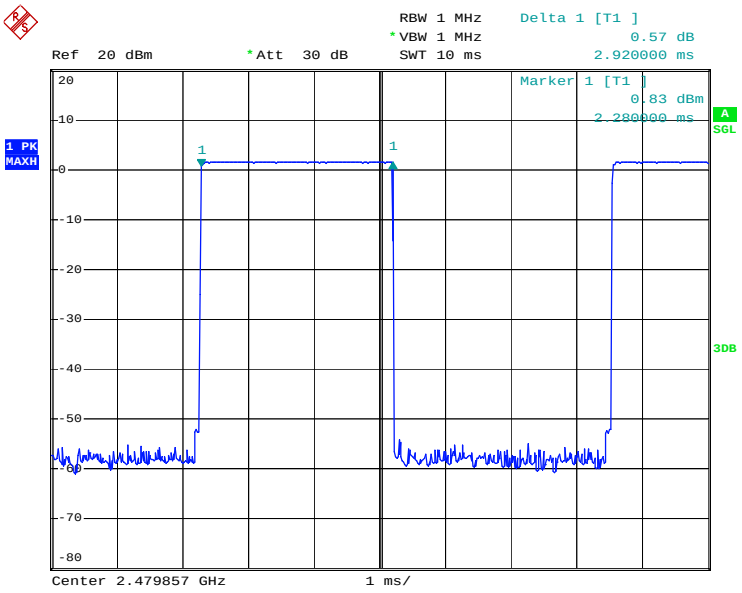
DH1 Dwell Time Plot on Channel 39 Ant. C / 2441 MHz



TVjf

Date: 2.DEC.2009 14:16:11

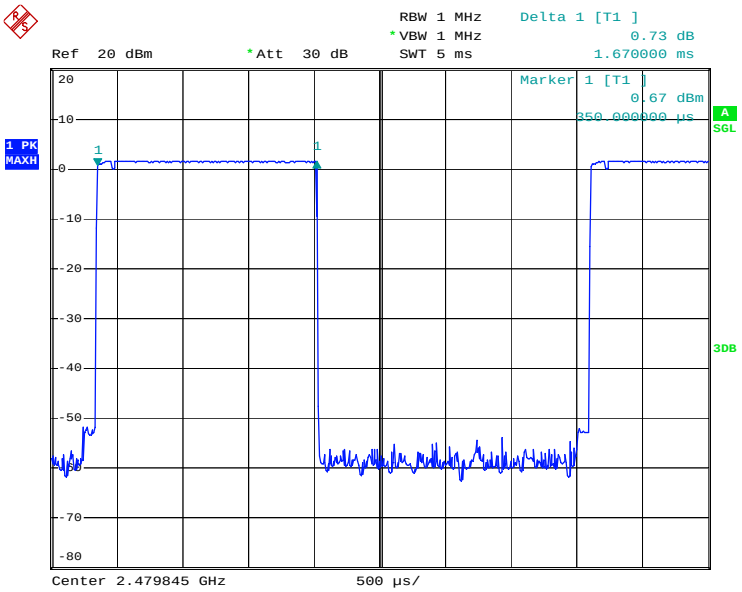
DH5 Dwell Time Plot on Channel 78 Ant. C / 2480 MHz



TVjf

Date: 2.DEC.2009 14:31:24

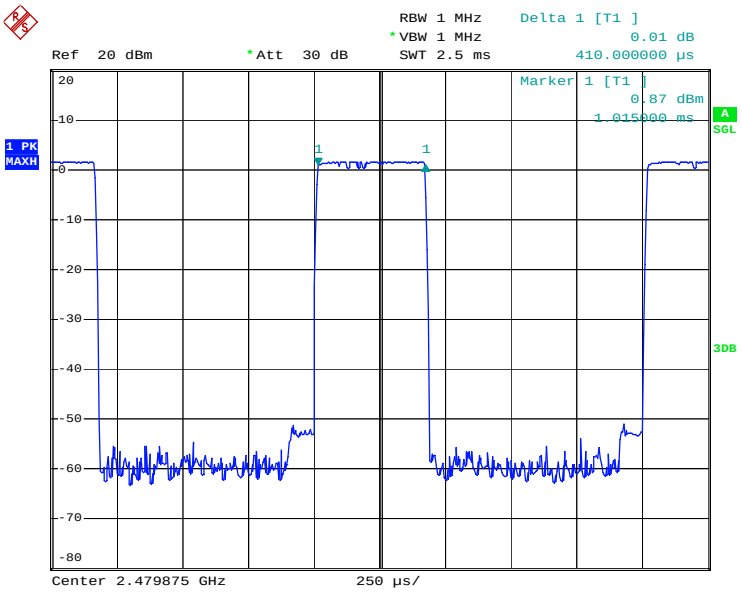
DH3 Dwell Time Plot on Channel 78 Ant. C / 2480 MHz



TVjf

Date: 2.DEC.2009 14:24:42

DH1 Dwell Time Plot on Channel 78 Ant. C / 2480 MHz

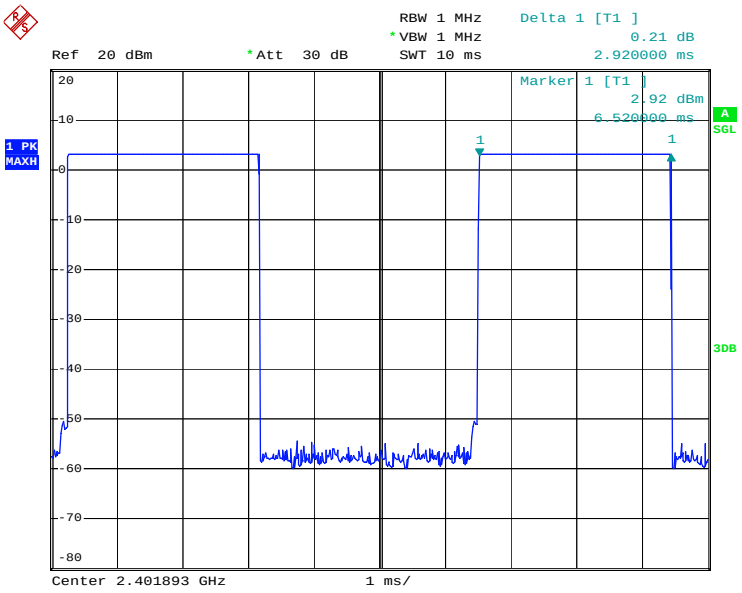


TVjf

Date: 2.DEC.2009 14:18:07

<For Antenna D>

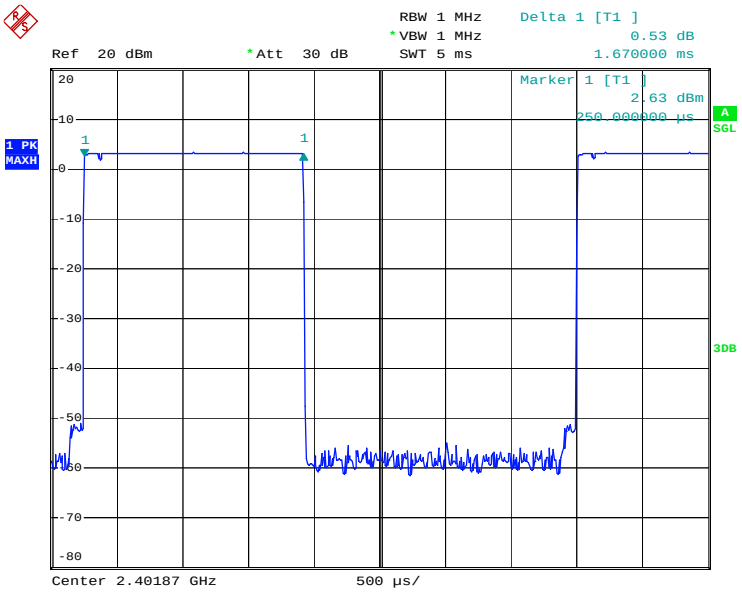
DH5 Dwell Time Plot on Channel 0 Ant. D / 2402 MHz



TVjf

Date: 2.DEC.2009 14:28:06

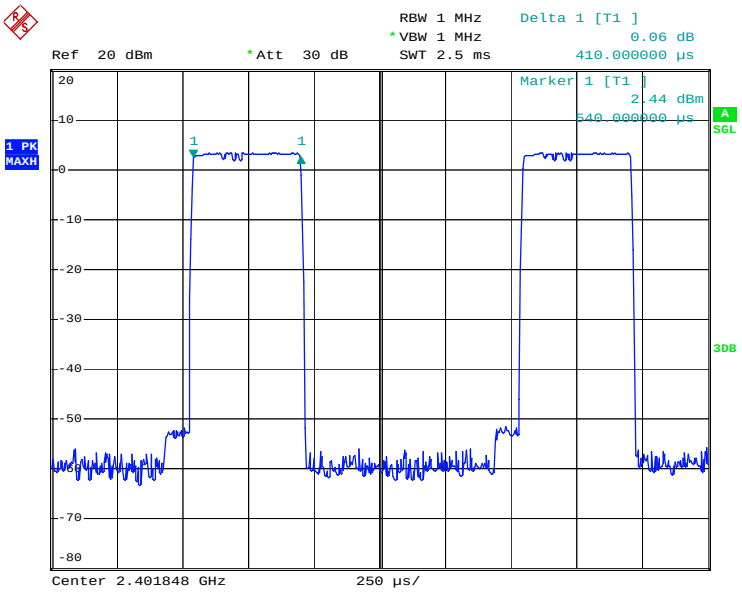
DH3 Dwell Time Plot on Channel 0 Ant. D / 2402 MHz



TVjf

Date: 2.DEC.2009 14:22:03

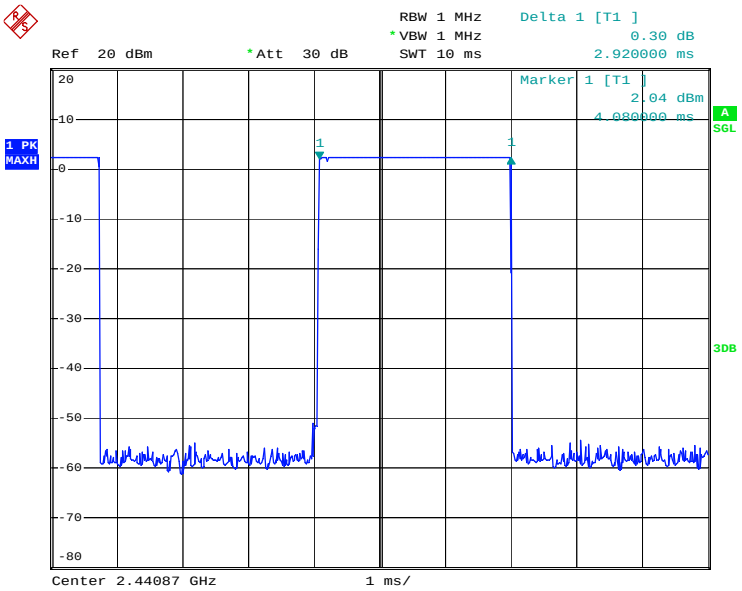
DH1 Dwell Time Plot on Channel 0 Ant. D / 2402 MHz



TVjf

Date: 2.DEC.2009 14:14:48

DH5 Dwell Time Plot on Channel 39 Ant. D / 2441 MHz



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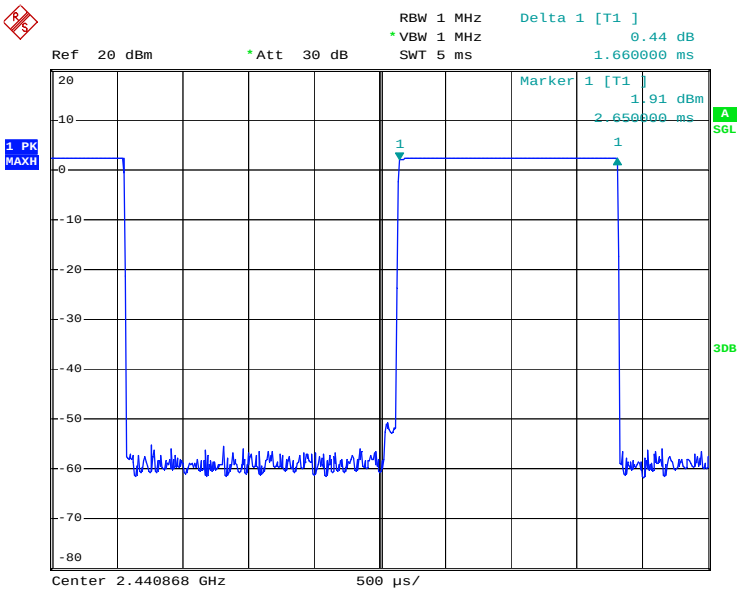
Date: 2.DEC.2009 14:28:48

DH3 Dwell Time Plot on Channel 39 Ant. D / 2441 MHz



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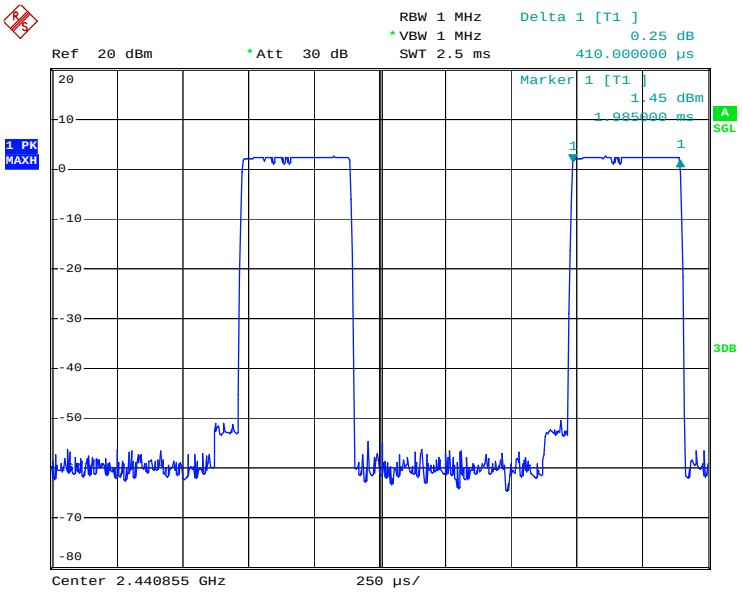
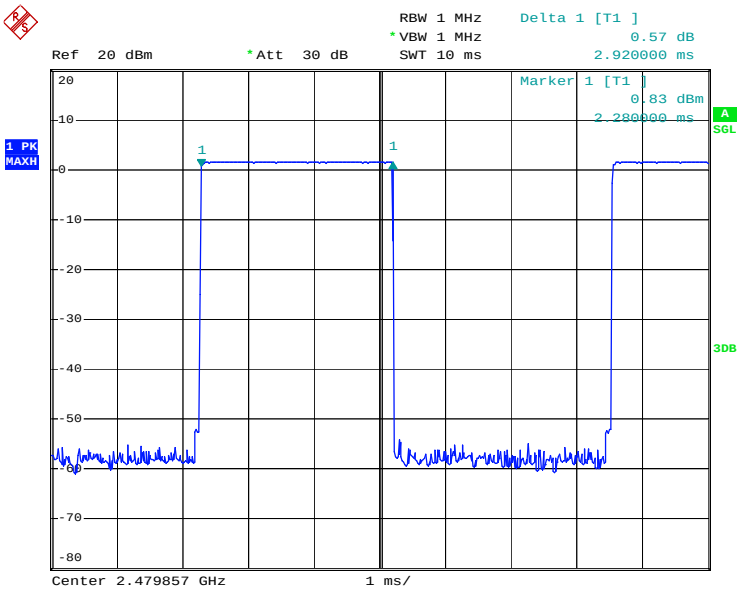
DH1 Dwell Time Plot on Channel 39 Ant. D / 2441 MHz



TVjf

Date: 2.DEC.2009 14:16:11

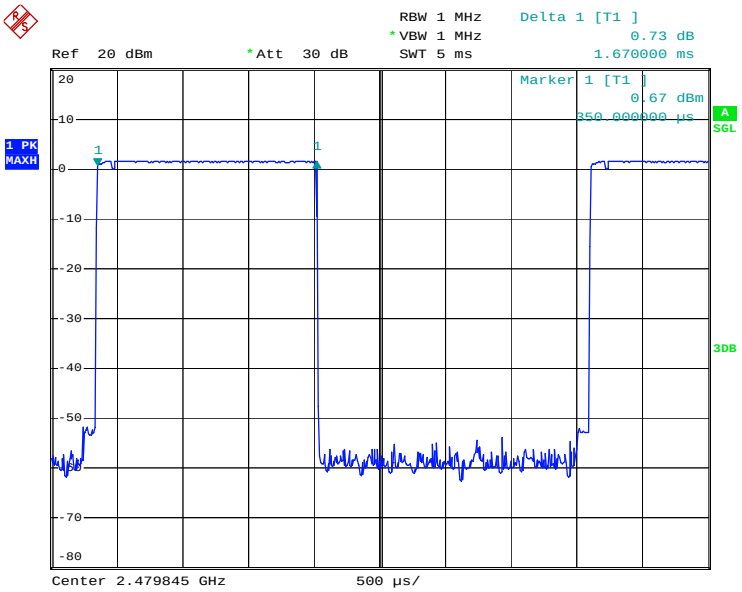
DH5 Dwell Time Plot on Channel 78 Ant. D / 2480 MHz



TVjf

Date: 2.DEC.2009 14:31:24

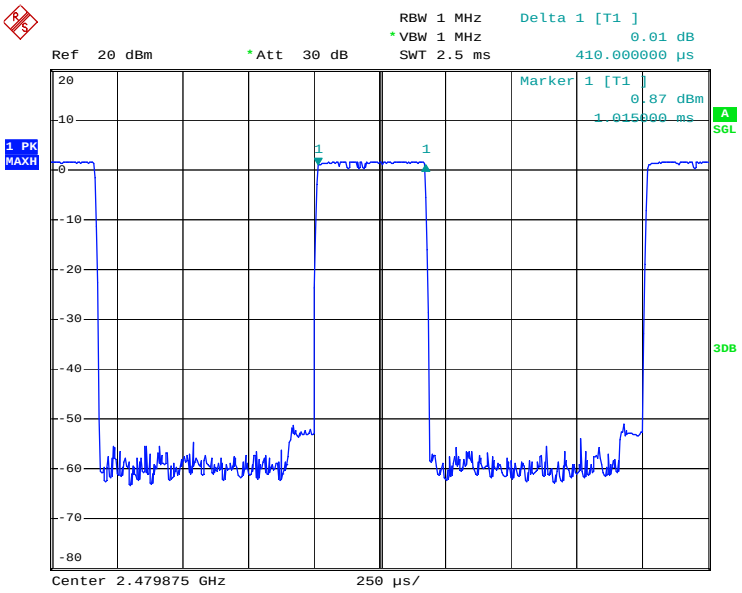
DH3 Dwell Time Plot on Channel 78 Ant. D / 2480 MHz



TVjf

Date: 2.DEC.2009 14:24:42

DH1 Dwell Time Plot on Channel 78 Ant. D / 2480 MHz



TVjf

Date: 2.DEC.2009 14:18:07

4.6. Radiated Emissions Measurement

4.6.1. Limit

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

4.6.2. Measuring Instruments and Setting

Please refer to section 5 of equipments list in this report. The following table is the setting of spectrum analyzer and receiver.

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB / VB (Emission in restricted band)	1MHz / 1MHz for Peak, 1 MHz / 10Hz for Average
RB / VB (Emission in non-restricted band)	1000KHz / 1000KHz for peak

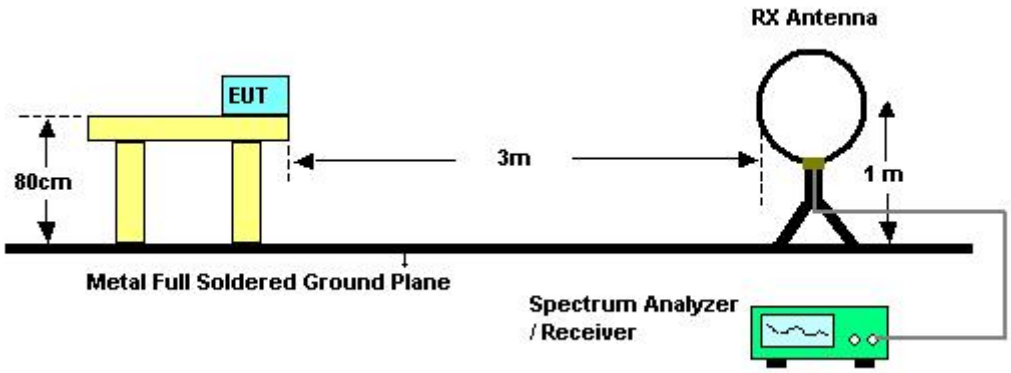
Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

4.6.3. Test Procedures

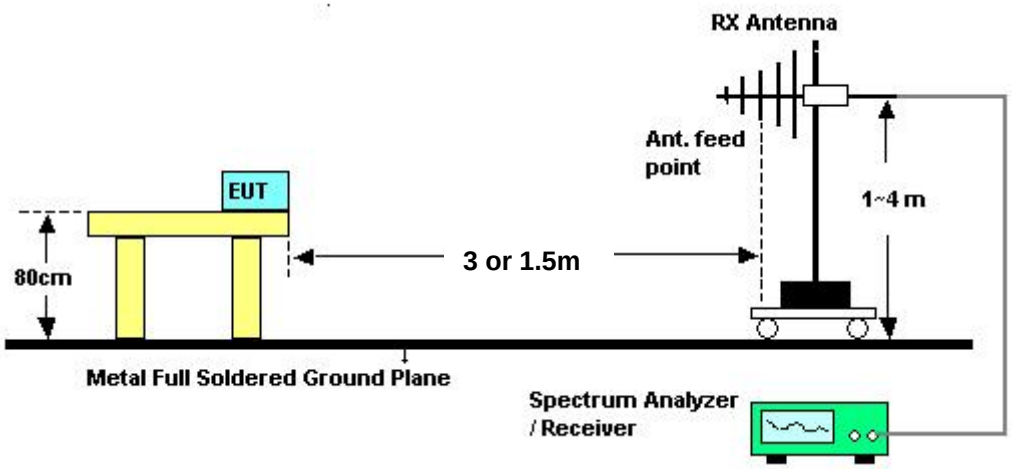
1. Configure the EUT according to ANSI C63.4. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. For emissions above 1GHz, use 1MHz VBW and RBW for peak reading. Then 1MHz RBW and 10Hz VBW for average reading in spectrum analyzer.
7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value.
8. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High – Low scan is not required in this case.

4.6.4. Test Setup Layout

For radiated emissions below 30MHz



For radiated emissions above 30MHz



Above 10 GHz shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade form 3m to 1.5m.

Distance extrapolation factor = 20 log (specific distance [3m] / test distance [1.5m]) (dB);

Limit line = specific limits (dBuV) + distance extrapolation factor [6 dB].

4.6.5. Test Deviation

There is no deviation with the original standard.

4.6.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.6.7. Results of Radiated Emissions (9kHz~30MHz)

Temperature	23°C	Humidity	56%
Test Engineer	Alan Huang	Test Date	Nov. 30, 2009

Freq. (MHz)	Level (dBuV)	Over Limit (dB)	Limit Line (dBuV)	Remark
-	-	-	-	See Note

Note:

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Distance extrapolation factor = 40 log (specific distance / test distance) (dB);

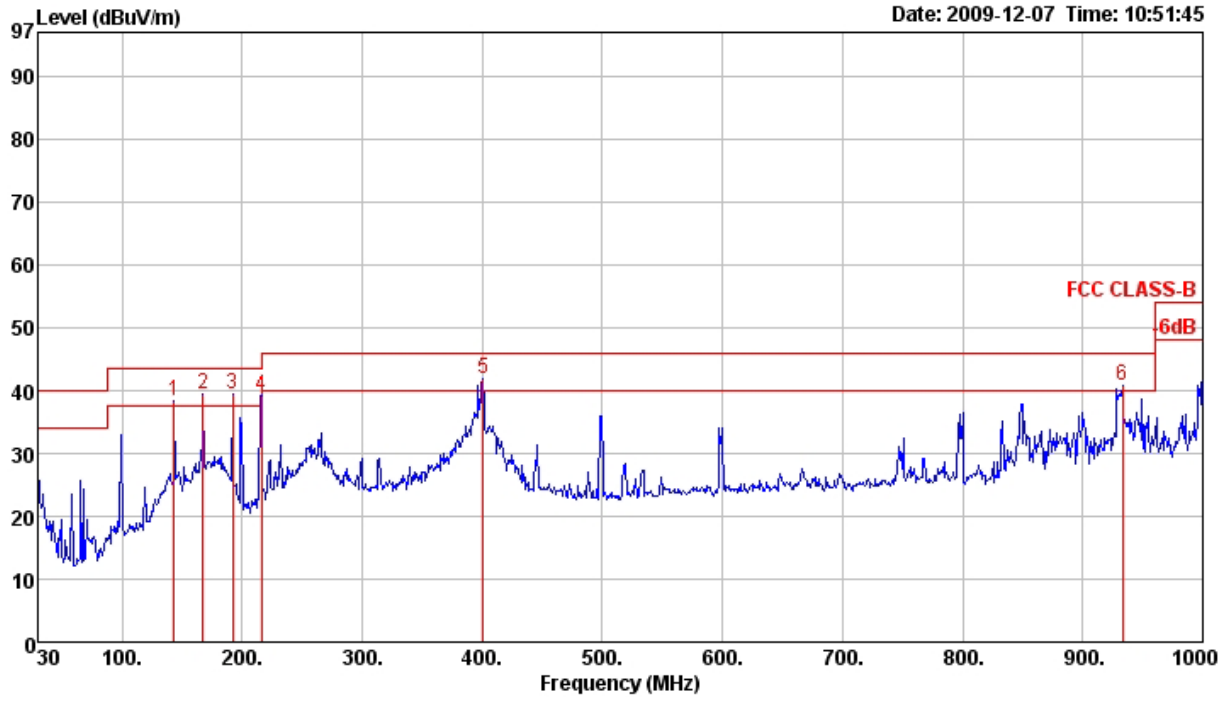
Limit line = specific limits (dBuV) + distance extrapolation factor.

4.6.8. Results of Radiated Emissions (30MHz~1GHz)

<For Antenna A>

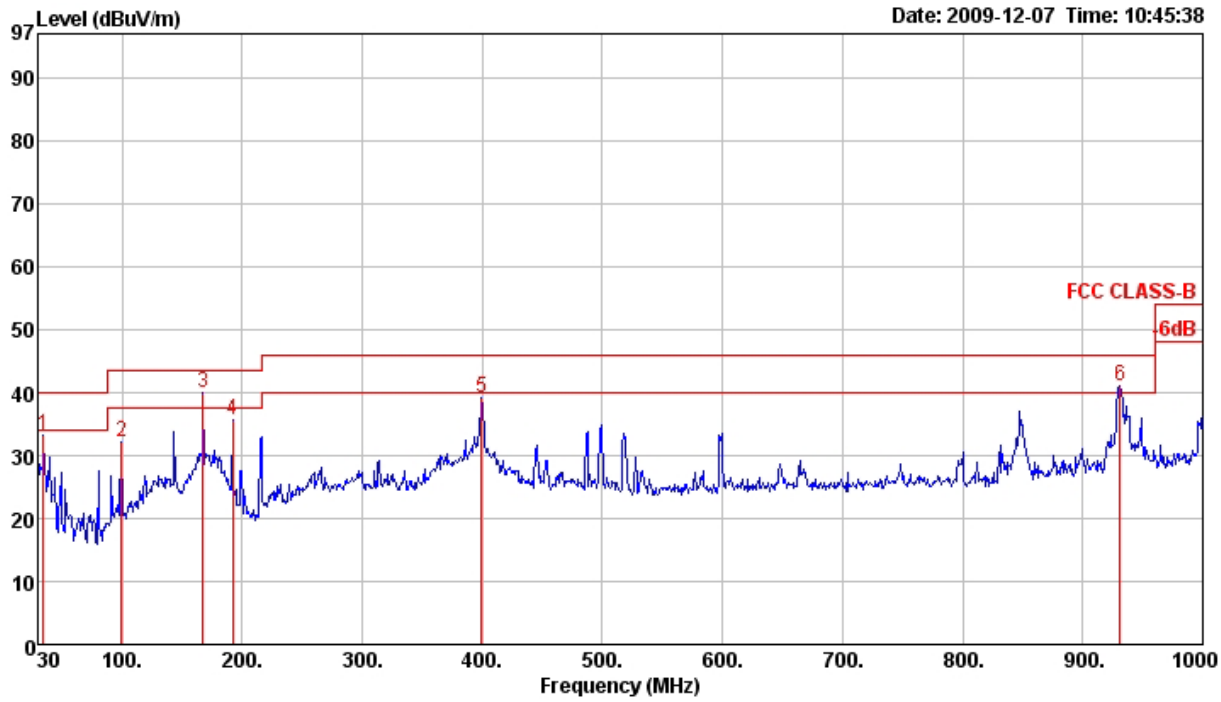
Temperature	23℃	Humidity	56%
Test Engineer	Alan Huang	Configurations	Normal Link / Ant. A

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 !	143.49	38.49	43.50	-5.01	52.28	1.42	27.38	12.17	0	100	Peak	HORIZONTAL
2 !	167.74	39.38	43.50	-4.12	52.49	1.54	27.26	12.61	0	100	Peak	HORIZONTAL
3 !	191.99	39.46	43.50	-4.04	54.25	1.66	27.14	10.69	0	100	Peak	HORIZONTAL
4	216.24	39.07	46.00	-6.93	54.10	1.77	27.07	10.27	0	100	Peak	HORIZONTAL
5 p	400.54	42.00	46.00	-4.00	51.22	2.31	27.61	16.08	325	100	Peak	HORIZONTAL
6 !	933.07	40.93	46.00	-5.07	43.82	3.60	27.27	20.78	0	100	Peak	HORIZONTAL

Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1	34.85	33.32	40.00	-6.68	44.54	0.50	27.80	16.08	0	400	Peak	VERTICAL
2	99.84	32.14	43.50	-11.36	47.55	1.20	27.60	10.99	0	400	Peak	VERTICAL
3 p	167.74	40.11	43.50	-3.39	53.22	1.54	27.26	12.61	216	100	Peak	VERTICAL
4	191.99	35.76	43.50	-7.74	50.55	1.66	27.14	10.69	0	400	Peak	VERTICAL
5	399.57	39.18	46.00	-6.82	48.42	2.30	27.60	16.06	0	400	Peak	VERTICAL
6 !	931.13	41.02	46.00	-4.98	43.92	3.60	27.27	20.77	0	400	Peak	VERTICAL

Note:

The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.

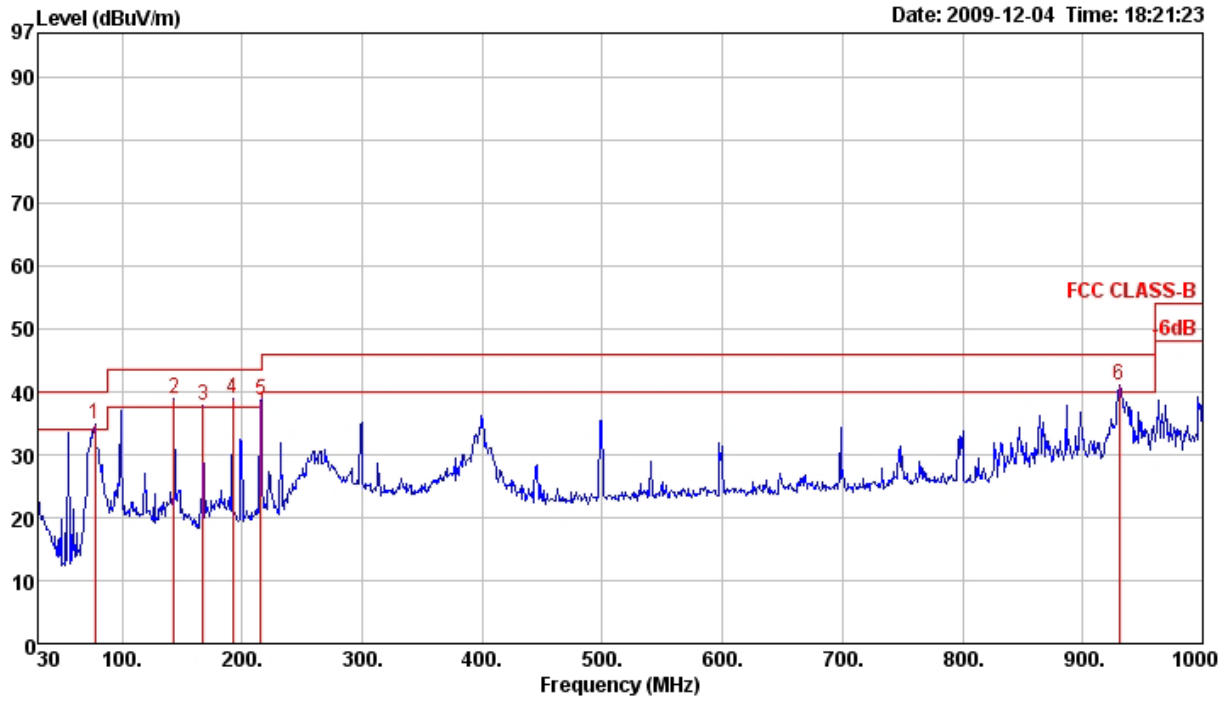
Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

<For Antenna B>

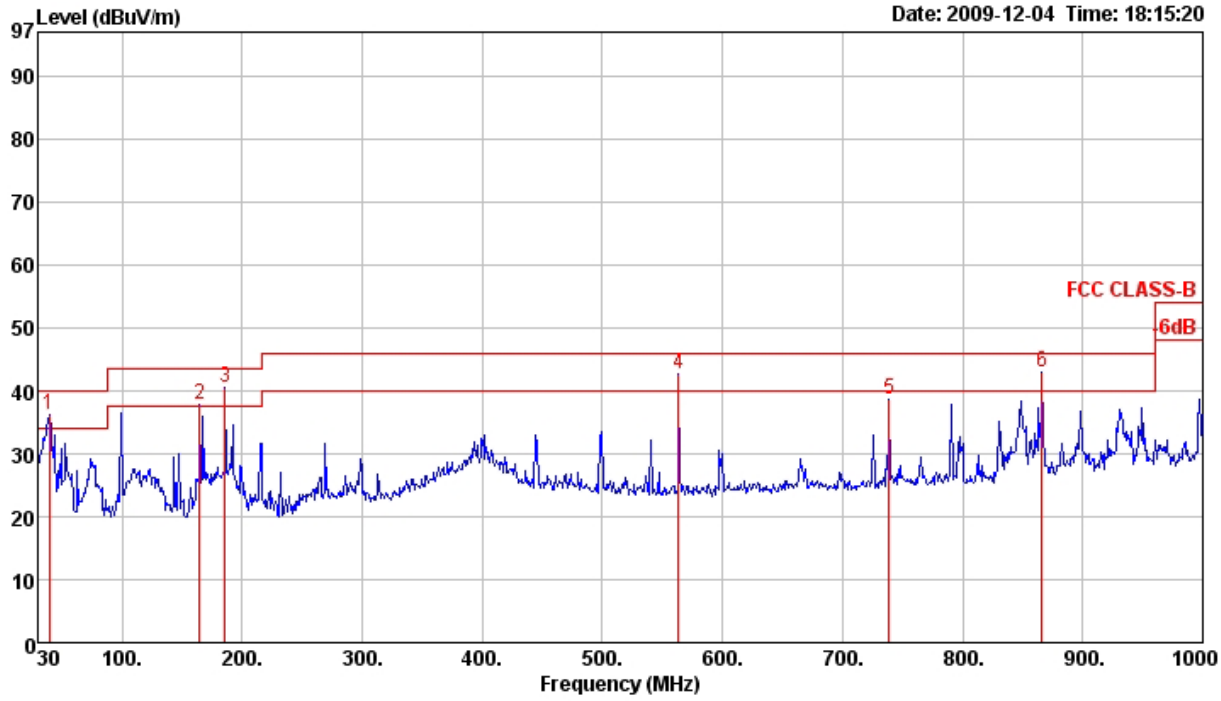
Temperature	23°C	Humidity	56%
Test Engineer	Alan Huang	Configurations	Normal Link / Ant. B

Horizontal



		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1	!	77.53	34.88	40.00	-5.12	54.54	1.00	27.69	7.03	0	100	Peak	HORIZONTAL
2	!	143.49	38.79	43.50	-4.71	52.58	1.42	27.38	12.17	0	100	Peak	HORIZONTAL
3	!	167.74	37.92	43.50	-5.58	51.03	1.54	27.26	12.61	0	100	Peak	HORIZONTAL
4	p	191.99	38.80	43.50	-4.70	53.59	1.66	27.14	10.69	137	100	Peak	HORIZONTAL
5	!	215.27	38.57	43.50	-4.93	53.69	1.76	27.07	10.19	0	100	Peak	HORIZONTAL
6	!	930.16	41.09	46.00	-4.91	44.01	3.60	27.28	20.76	0	100	Peak	HORIZONTAL

Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 !	39.70	36.13	40.00	-3.87	50.12	0.70	27.80	13.11	0	400	Peak	VERTICAL
2 !	164.83	37.95	43.50	-5.55	51.31	1.52	27.27	12.39	0	400	Peak	VERTICAL
3 p	186.17	40.47	43.50	-3.03	54.10	1.63	27.17	11.91	235	100	Peak	VERTICAL
4 !	563.50	42.73	46.00	-3.27	49.65	2.83	28.10	18.35	0	400	Peak	VERTICAL
5	739.07	38.68	46.00	-7.32	43.71	3.46	27.84	19.35	0	400	Peak	VERTICAL
6 !	866.14	42.93	46.00	-3.07	46.66	3.47	27.47	20.27	0	400	Peak	VERTICAL

Note:

The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.

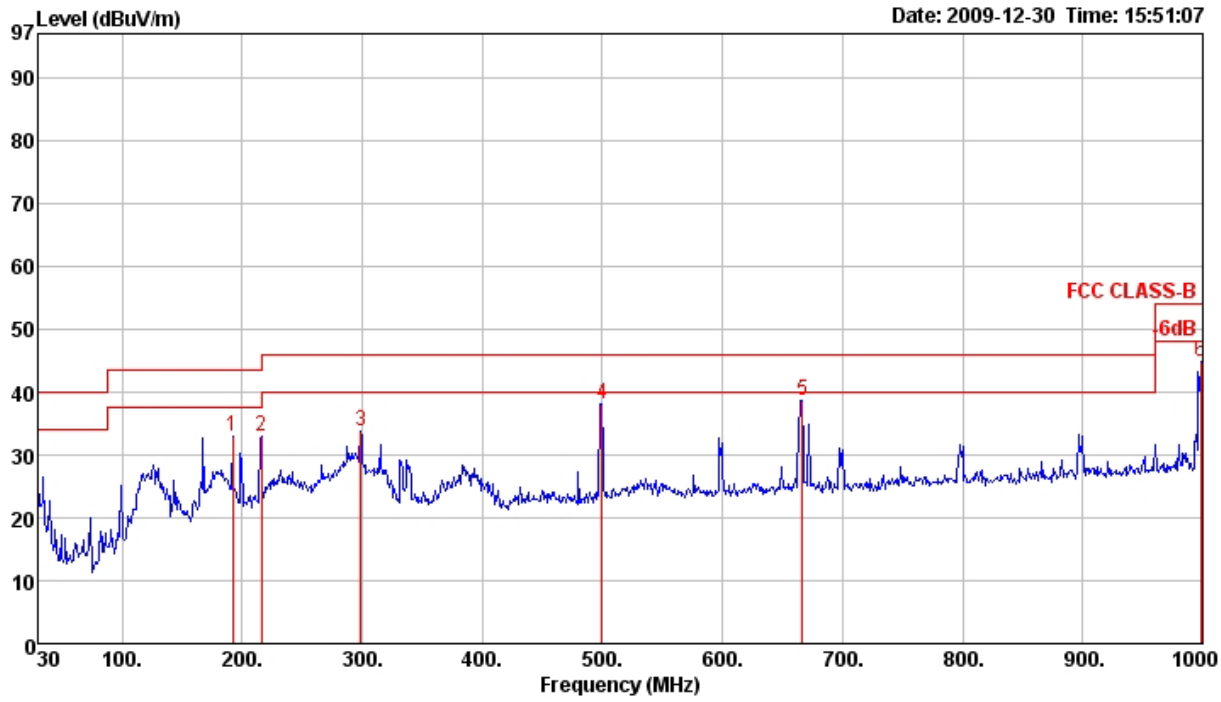
Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

<For Antenna C>

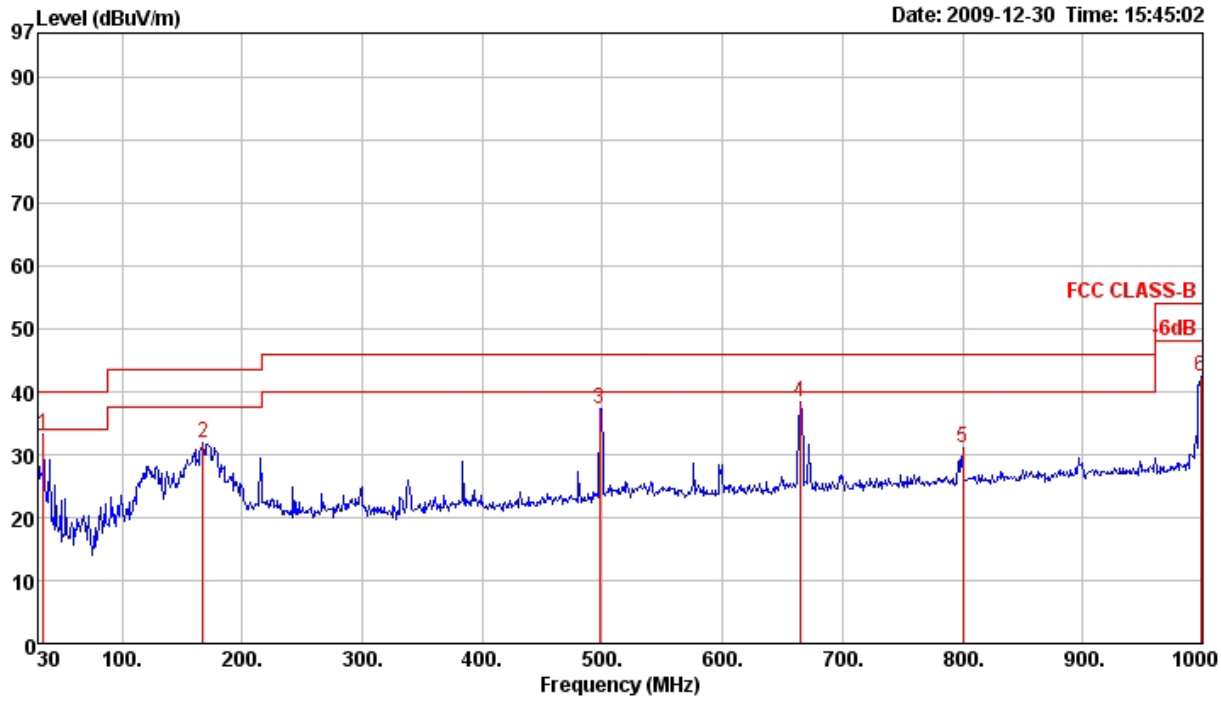
Temperature	23°C	Humidity	56%
Test Engineer	Alan Huang	Configurations	Normal Link / Mode 3

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1	191.99	32.84	43.50	-10.66	47.63	1.66	27.14	10.69	0	100	Peak	HORIZONTAL
2	216.24	33.07	46.00	-12.93	48.10	1.77	27.07	10.27	0	100	Peak	HORIZONTAL
3	298.69	33.79	46.00	-12.21	45.24	2.10	26.90	13.35	0	100	Peak	HORIZONTAL
4	499.48	38.13	46.00	-7.87	45.91	2.70	28.09	17.61	0	100	Peak	HORIZONTAL
5 p	666.32	38.60	46.00	-7.40	44.22	3.43	28.03	18.98	0	100	Peak	HORIZONTAL
6	998.06	44.96	54.00	-9.04	46.99	3.70	27.01	21.28	0	100	Peak	HORIZONTAL

Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p	34.85	33.26	40.00	-6.74	44.48	0.50	27.80	16.08	0	400	Peak	VERTICAL
2	167.74	31.90	43.50	-11.60	45.01	1.54	27.26	12.61	0	400	Peak	VERTICAL
3	497.54	37.37	46.00	-8.63	45.19	2.69	28.09	17.58	0	400	Peak	VERTICAL
4	664.38	38.38	46.00	-7.62	44.00	3.44	28.04	18.98	0	400	Peak	VERTICAL
5	800.18	31.04	46.00	-14.96	35.57	3.30	27.60	19.77	0	400	Peak	VERTICAL
6	998.06	42.50	54.00	-11.50	44.53	3.70	27.01	21.28	0	400	Peak	VERTICAL

Note:

The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.

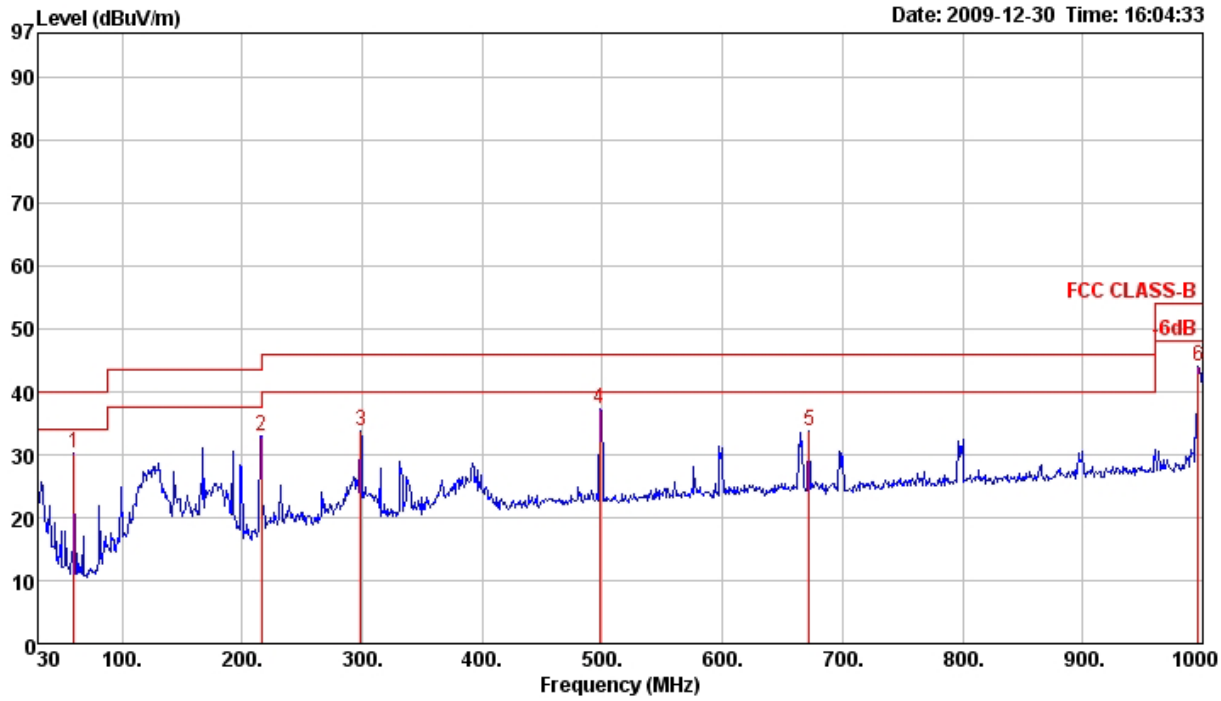
Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

<For Antenna D>

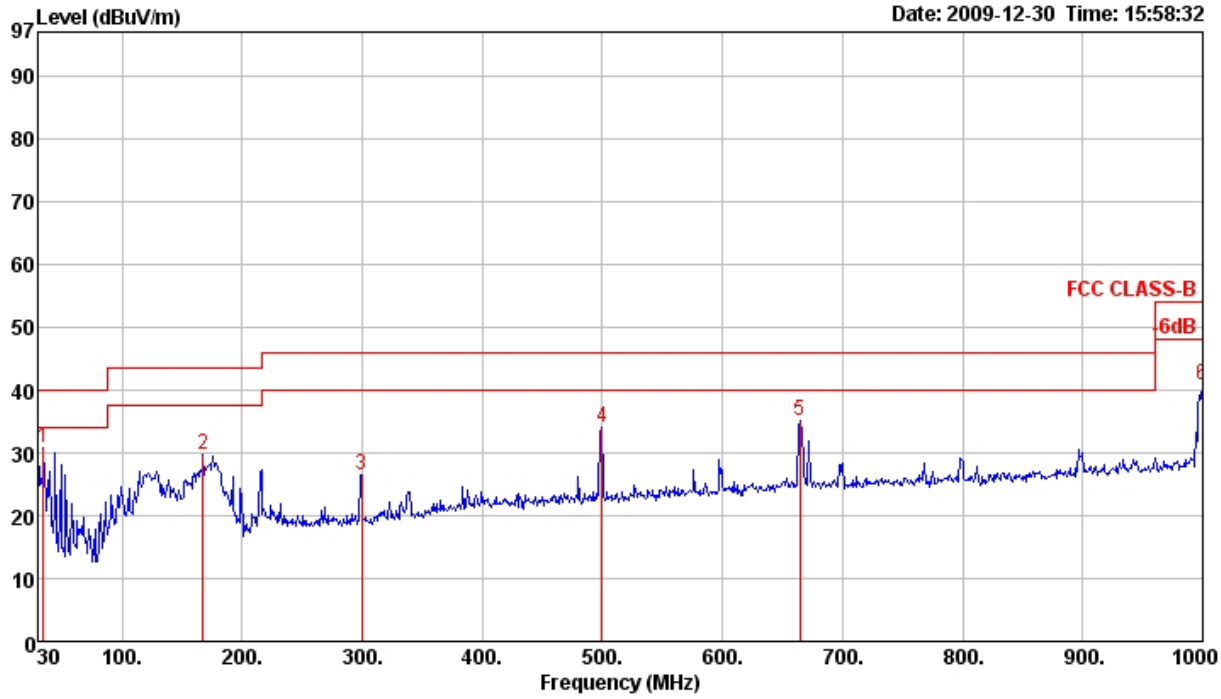
Temperature	23°C	Humidity	56%
Test Engineer	Alan Huang	Configurations	Normal Link / Mode 4

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1	60.07	30.28	40.00	-9.72	50.47	0.80	27.76	6.77	0	100	Peak	HORIZONTAL
2	216.24	32.98	46.00	-13.02	48.01	1.77	27.07	10.27	0	100	Peak	HORIZONTAL
3	298.69	33.73	46.00	-12.27	45.18	2.10	26.90	13.35	0	100	Peak	HORIZONTAL
4 p	497.54	37.33	46.00	-8.67	45.15	2.69	28.09	17.58	0	100	Peak	HORIZONTAL
5	672.14	33.67	46.00	-12.33	39.29	3.41	28.03	19.00	0	100	Peak	HORIZONTAL
6	996.12	44.00	54.00	-10.00	46.07	3.69	27.02	21.26	0	100	Peak	HORIZONTAL

Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p	34.85	30.70	40.00	-9.30	41.92	0.50	27.80	16.08	0	400	Peak	VERTICAL
2	167.74	29.67	43.50	-13.83	42.78	1.54	27.26	12.61	0	400	Peak	VERTICAL
3	299.66	26.51	46.00	-19.49	37.95	2.10	26.90	13.36	0	400	Peak	VERTICAL
4	499.48	34.12	46.00	-11.88	41.90	2.70	28.09	17.61	0	400	Peak	VERTICAL
5	664.38	35.05	46.00	-10.95	40.67	3.44	28.04	18.98	0	400	Peak	VERTICAL
6	1000.00	40.68	54.00	-13.32	42.69	3.70	27.00	21.29	0	400	Peak	VERTICAL

Note:

The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

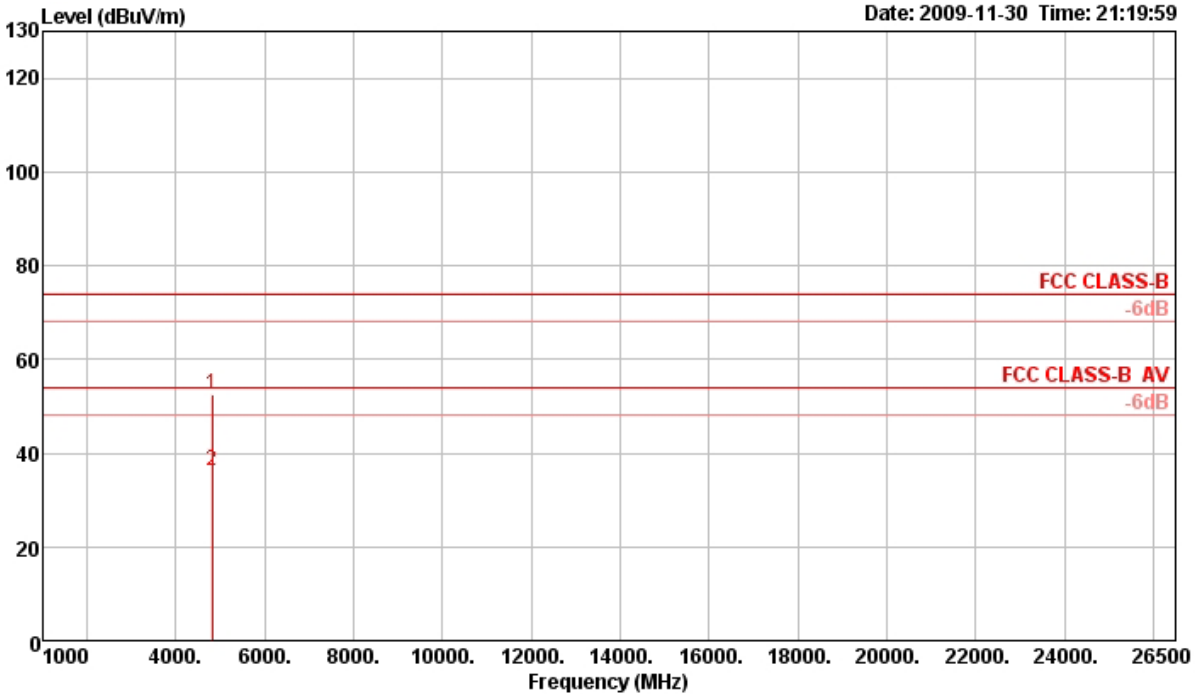
Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

4.6.9. Results for Radiated Emissions (1GHz~10th Harmonic)

<For Antenna A>

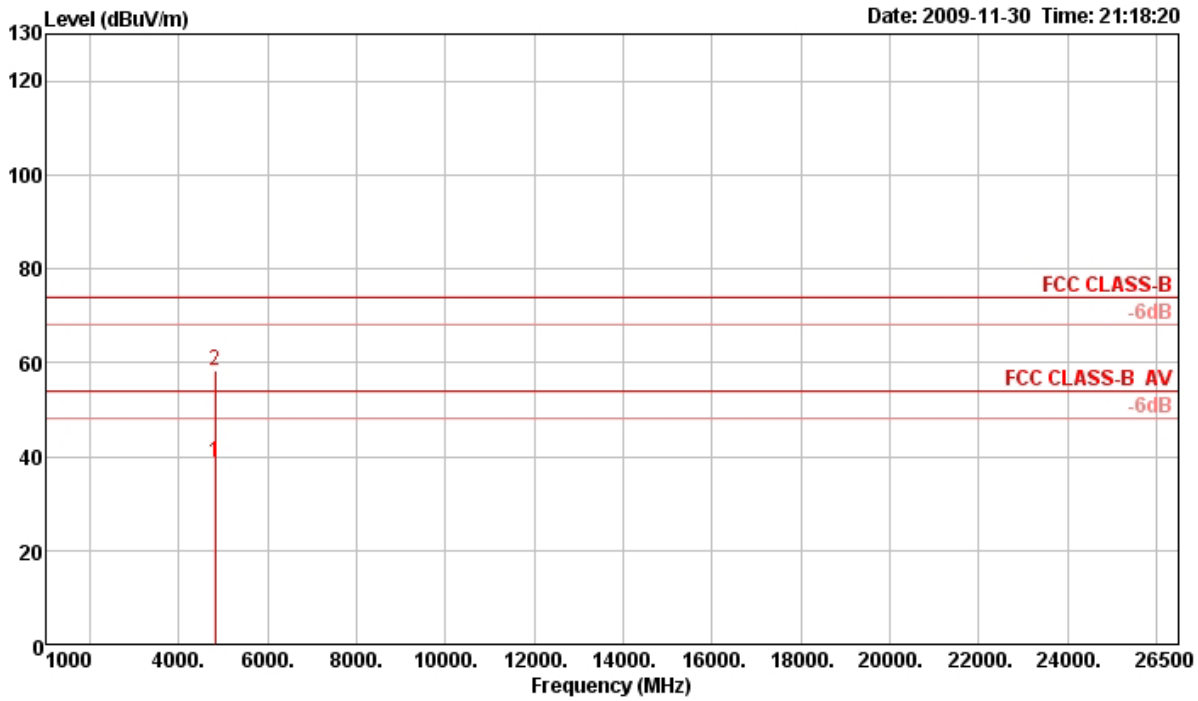
Temperature	23°C	Humidity	56%
Test Engineer	Alan Huang	Configurations	Channel 0 / Ant. A

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1 p	4804.00	52.58	74.00	-21.42	50.64	3.96	33.02	35.04	113	197	Peak	HORIZONTAL
2 a	4804.04	36.21	54.00	-17.79	34.27	3.96	33.02	35.04	113	197	Average	HORIZONTAL

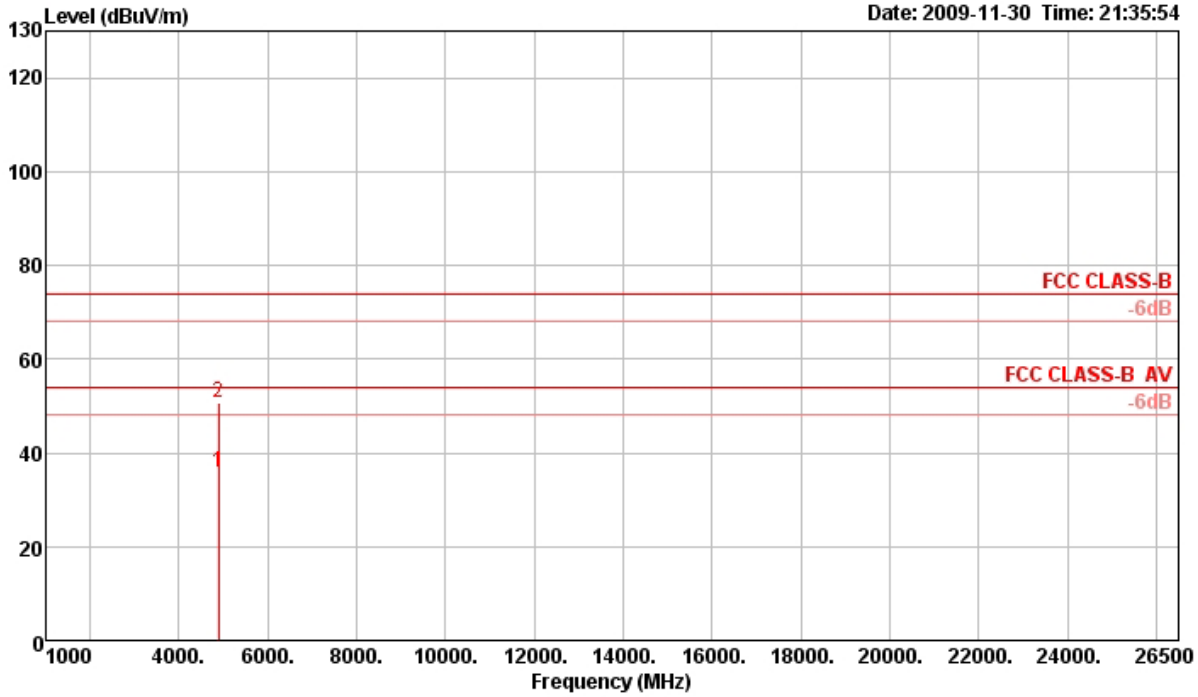
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1 a	4803.98	38.87	54.00	-15.13	36.93	3.96	33.02	35.04	83	153	Average	VERTICAL
2 p	4804.04	58.29	74.00	-15.71	56.35	3.96	33.02	35.04	83	153	Peak	VERTICAL

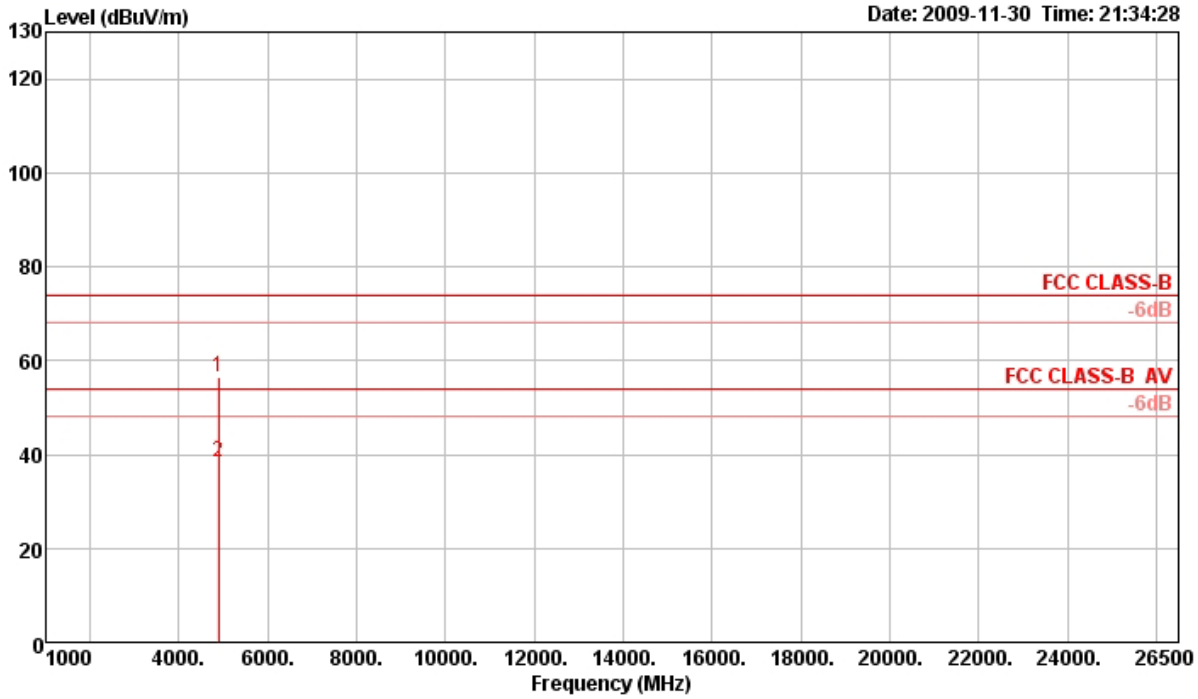
Temperature	23°C	Humidity	56%
Test Engineer	Alan Huang	Configurations	Channel 39 / Ant. A

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1 a	4882.05	35.79	54.00	-18.21	33.69	3.97	33.16	35.03	302	176	Average	HORIZONTAL
2 p	4882.23	50.58	74.00	-23.42	48.48	3.97	33.16	35.03	302	176	Peak	HORIZONTAL

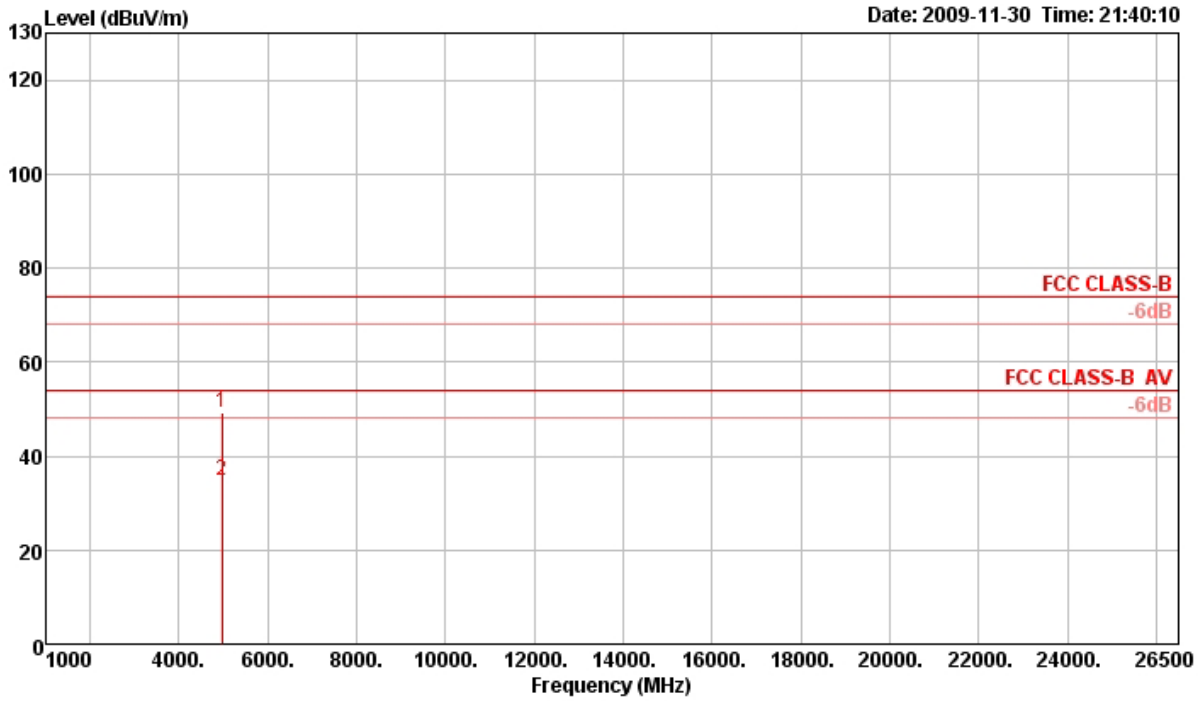
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1 p	4881.96	56.49	74.00	-17.51	54.39	3.97	33.16	35.03	83	100	Peak	VERTICAL
2 a	4882.01	38.31	54.00	-15.69	36.21	3.97	33.16	35.03	83	100	Average	VERTICAL

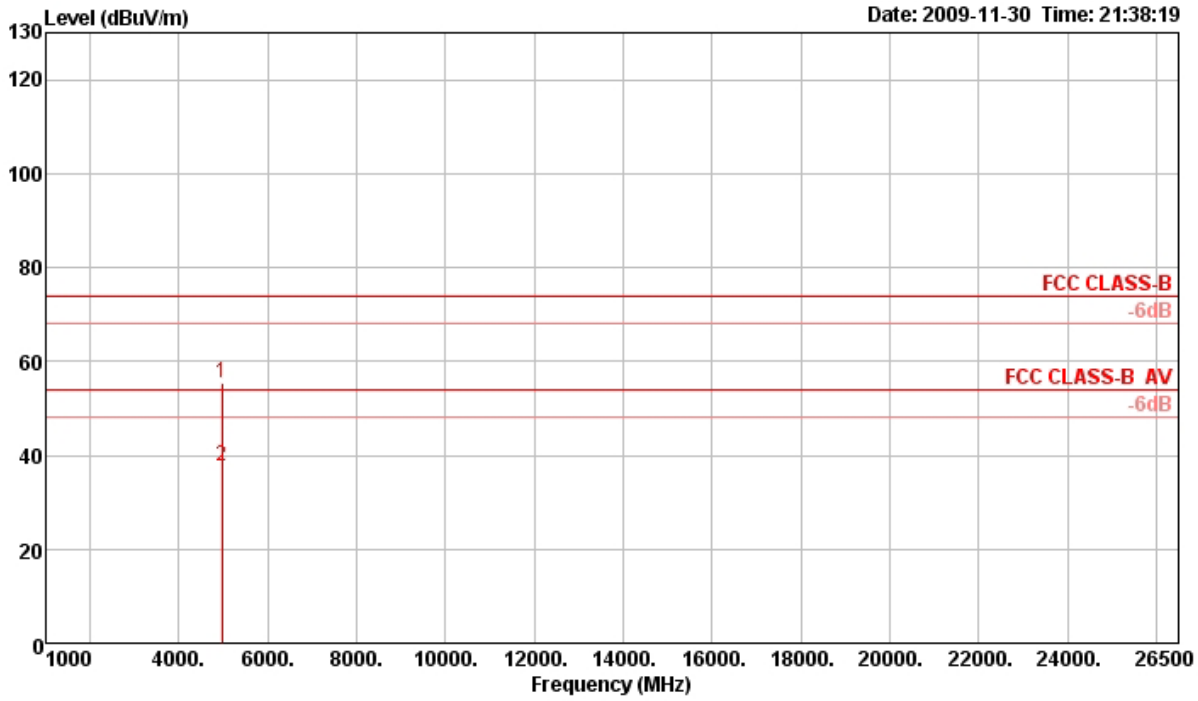
Temperature	23°C	Humidity	56%
Test Engineer	Alan Huang	Configurations	Channel 78 / Ant. A

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1 p	4959.74	49.31	74.00	-24.69	47.00	3.99	33.33	35.01	203	100	Peak	HORIZONTAL
2 a	4960.05	34.89	54.00	-19.11	32.58	3.99	33.33	35.01	203	100	Average	HORIZONTAL

Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1 p	4959.93	55.40	74.00	-18.60	53.09	3.99	33.33	35.01	43	188	Peak	VERTICAL
2 a	4960.05	37.50	54.00	-16.50	35.19	3.99	33.33	35.01	43	188	Average	VERTICAL

Note:

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

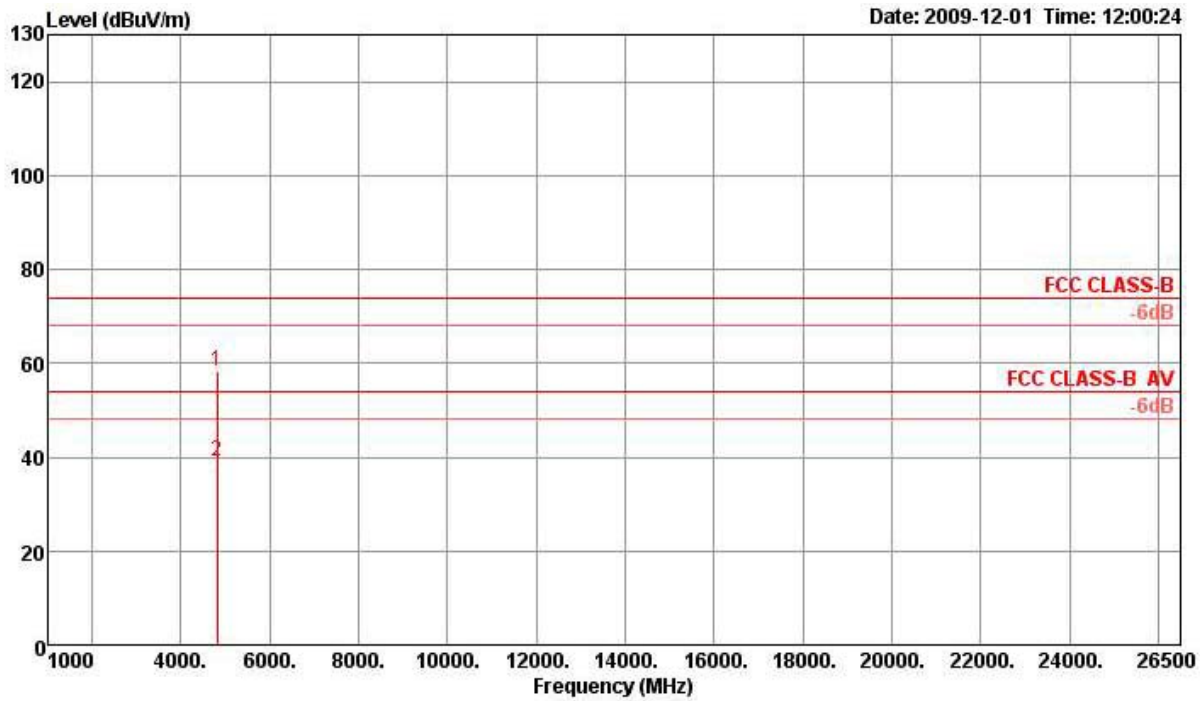
Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

<For Antenna B>

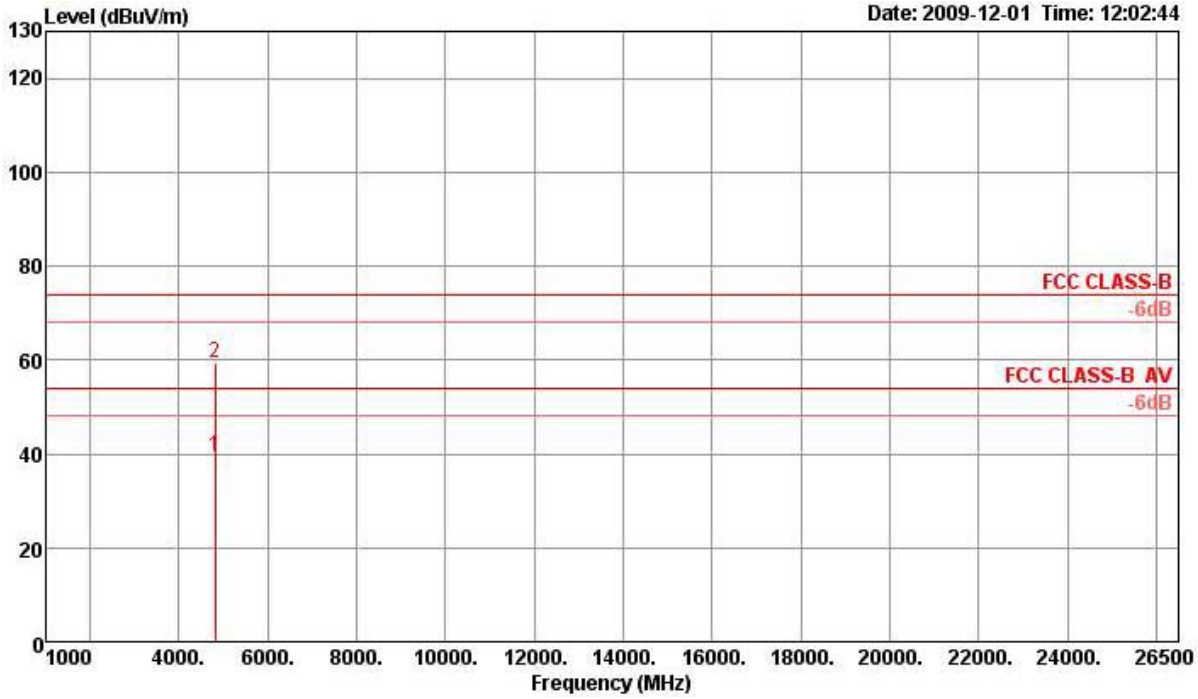
Temperature	23°C	Humidity	56%
Test Engineer	Alan Huang	Configurations	Channel 0 / Ant. B

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1 p	4804.00	58.13	74.00	-15.87	56.19	3.96	33.02	35.04	237	100	Peak	HORIZONTAL
2 a	4804.05	39.07	54.00	-14.93	37.13	3.96	33.02	35.04	237	100	Average	HORIZONTAL

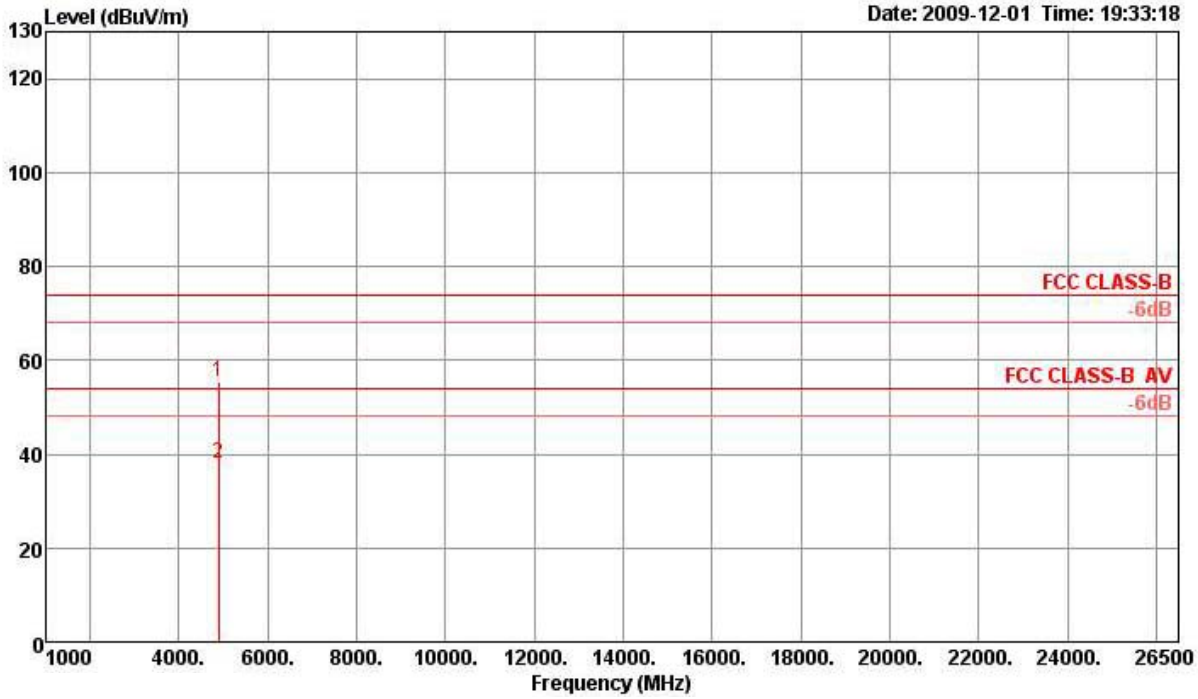
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1 a	4803.99	39.53	54.00	-14.47	37.59	3.96	33.02	35.04	261	172	Average	VERTICAL
2 p	4804.06	59.46	74.00	-14.54	57.52	3.96	33.02	35.04	261	172	Peak	VERTICAL

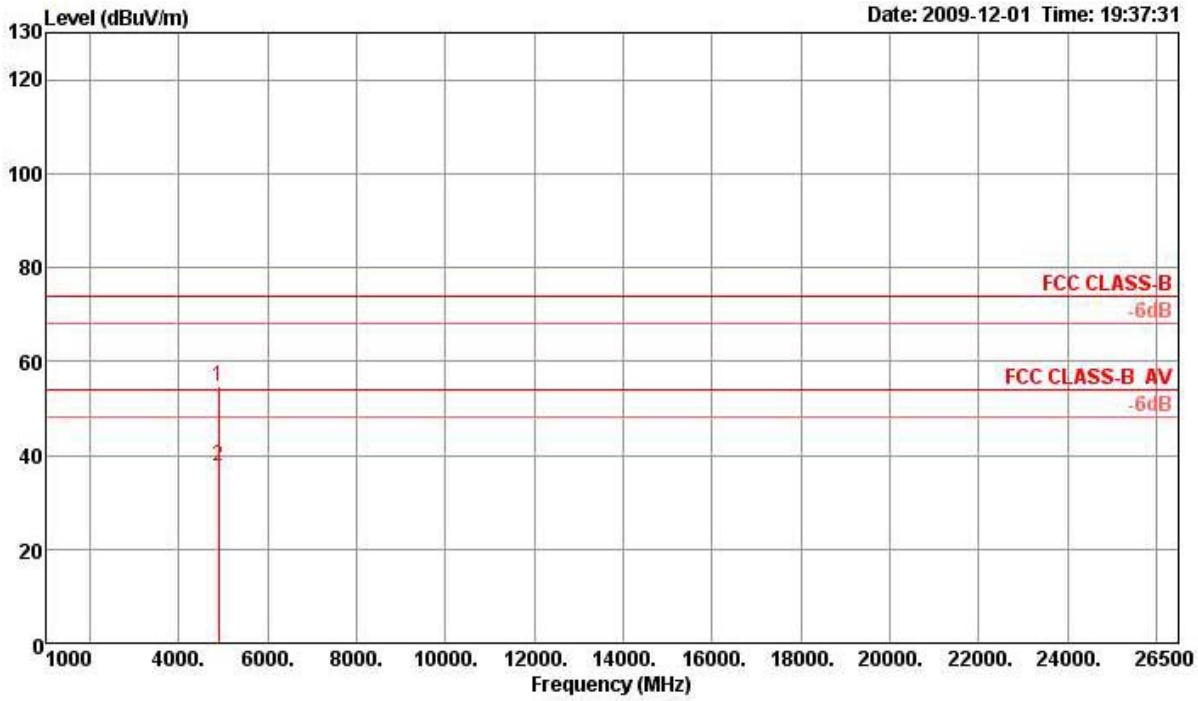
Temperature	23°C	Humidity	56%
Test Engineer	Alan Huang	Configurations	Channel 39 / Ant. B

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1 p	4881.94	55.39	74.00	-18.61	53.29	3.97	33.16	35.03	47	100	Peak	HORIZONTAL
2 a	4882.03	38.08	54.00	-15.92	35.98	3.97	33.16	35.03	47	100	Average	HORIZONTAL

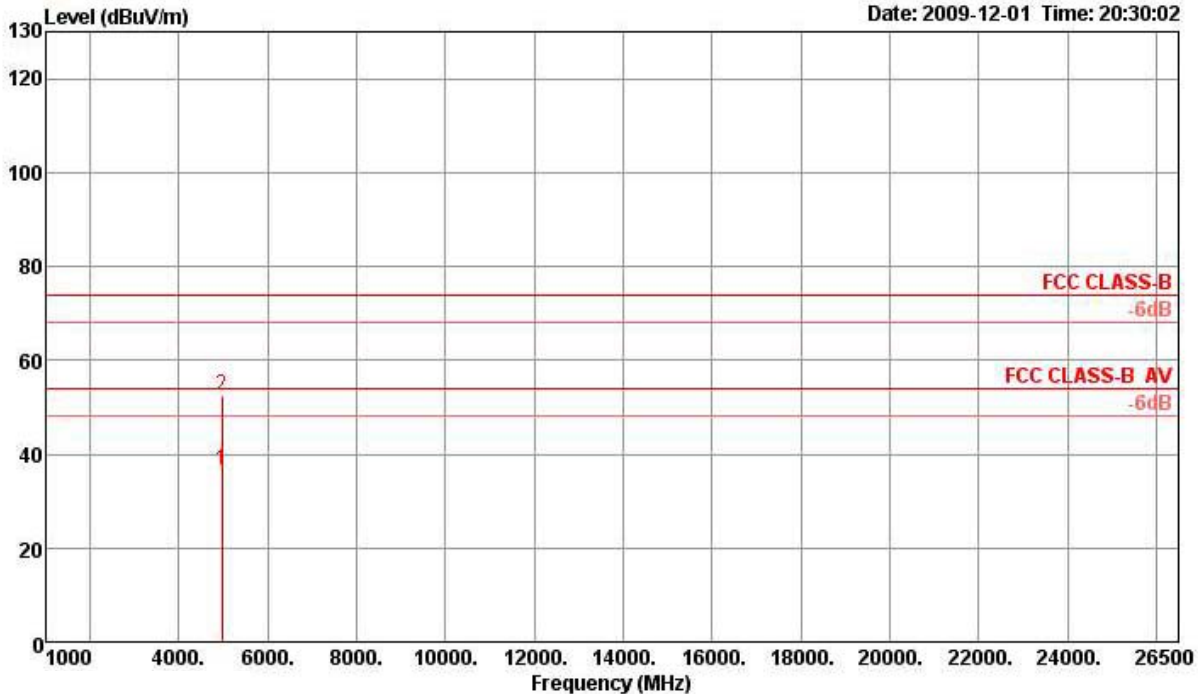
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1 p	4881.99	54.83	74.00	-19.17	52.73	3.97	33.16	35.03	342	129	Peak	VERTICAL
2 a	4882.03	37.59	54.00	-16.41	35.49	3.97	33.16	35.03	342	129	Average	VERTICAL

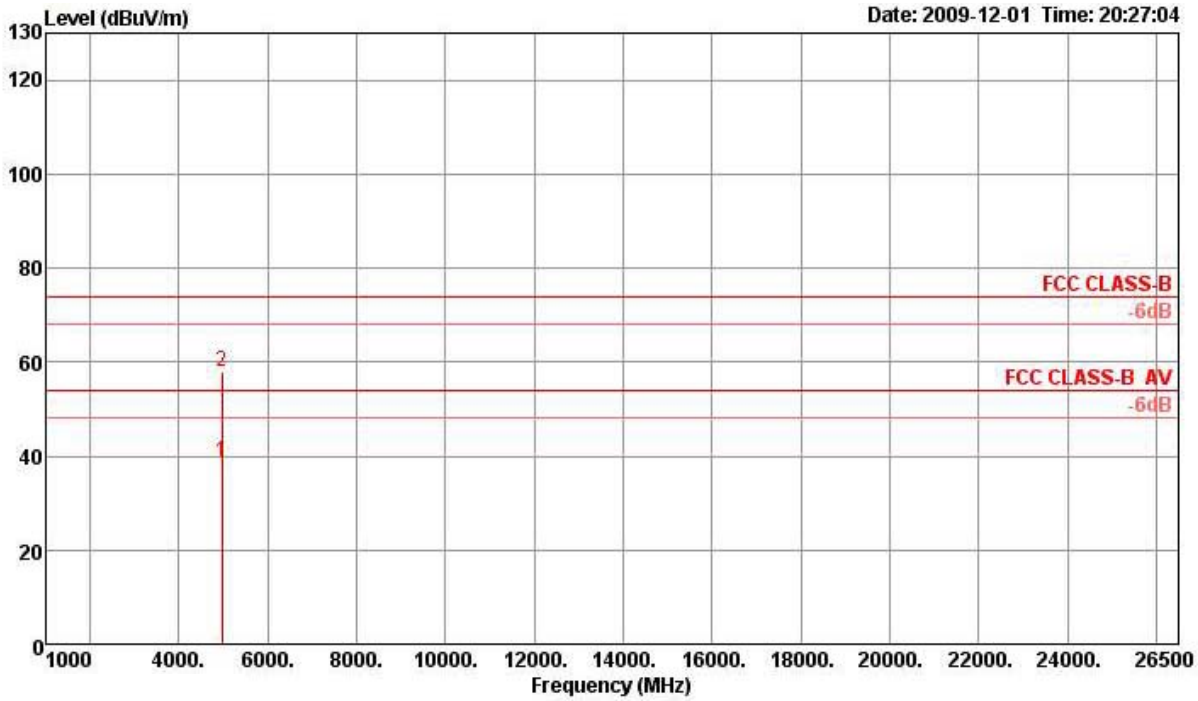
Temperature	23°C	Humidity	56%
Test Engineer	Alan Huang	Configurations	Channel 78 / Ant. B

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1 a	4960.01	36.47	54.00	-17.53	34.16	3.99	33.33	35.01	128	100	Average	HORIZONTAL
2 p	4960.09	52.46	74.00	-21.54	50.15	3.99	33.33	35.01	128	100	Peak	HORIZONTAL

Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1 a	4960.03	38.87	54.00	-15.13	36.56	3.99	33.33	35.01	6	113	Average	VERTICAL
2 p	4960.18	58.08	74.00	-15.92	55.77	3.99	33.33	35.01	6	113	Peak	VERTICAL

Note:

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

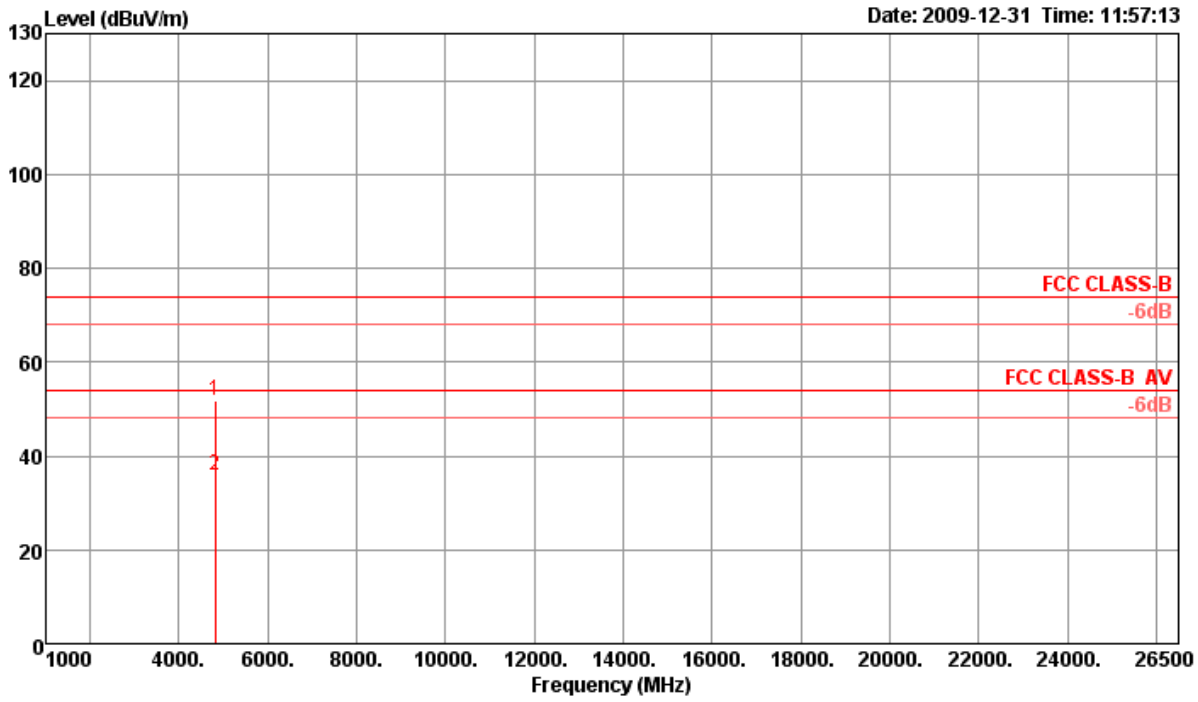
Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

<For Antenna C>

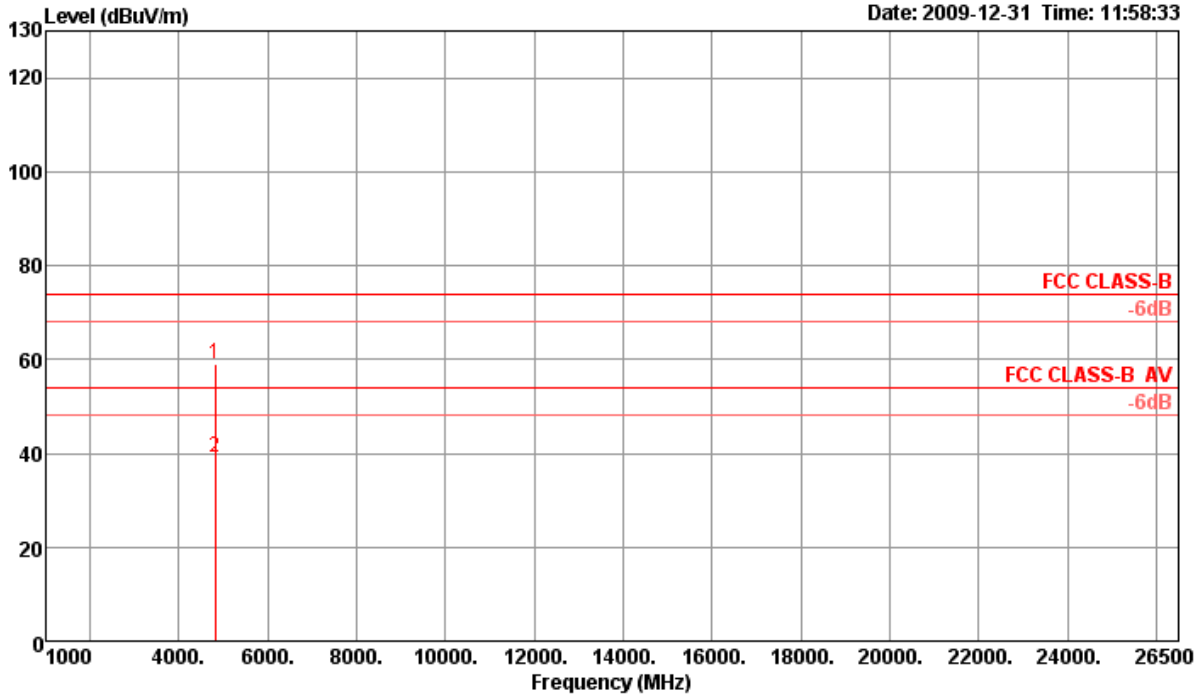
Temperature	23°C	Humidity	56%
Test Engineer	Alan Huang	Configurations	Channel 0 / Ant. C

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1 p	4803.97	51.87	74.00	-22.13	49.93	3.96	33.02	35.04	310	100	Peak	HORIZONTAL
2 a	4803.99	36.02	54.00	-17.98	34.08	3.96	33.02	35.04	310	100	Average	HORIZONTAL

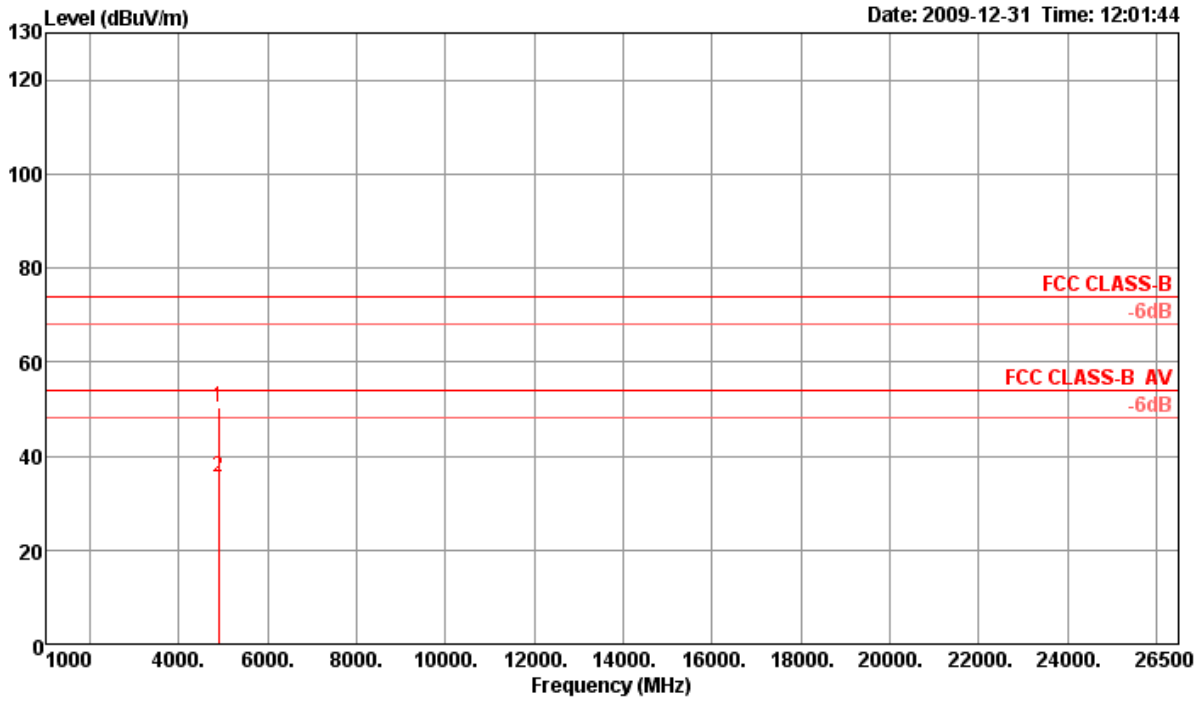
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1 p	4804.02	58.87	74.00	-15.13	56.93	3.96	33.02	35.04	279	112	Peak	VERTICAL
2 a	4804.09	39.26	54.00	-14.74	37.32	3.96	33.02	35.04	279	112	Average	VERTICAL

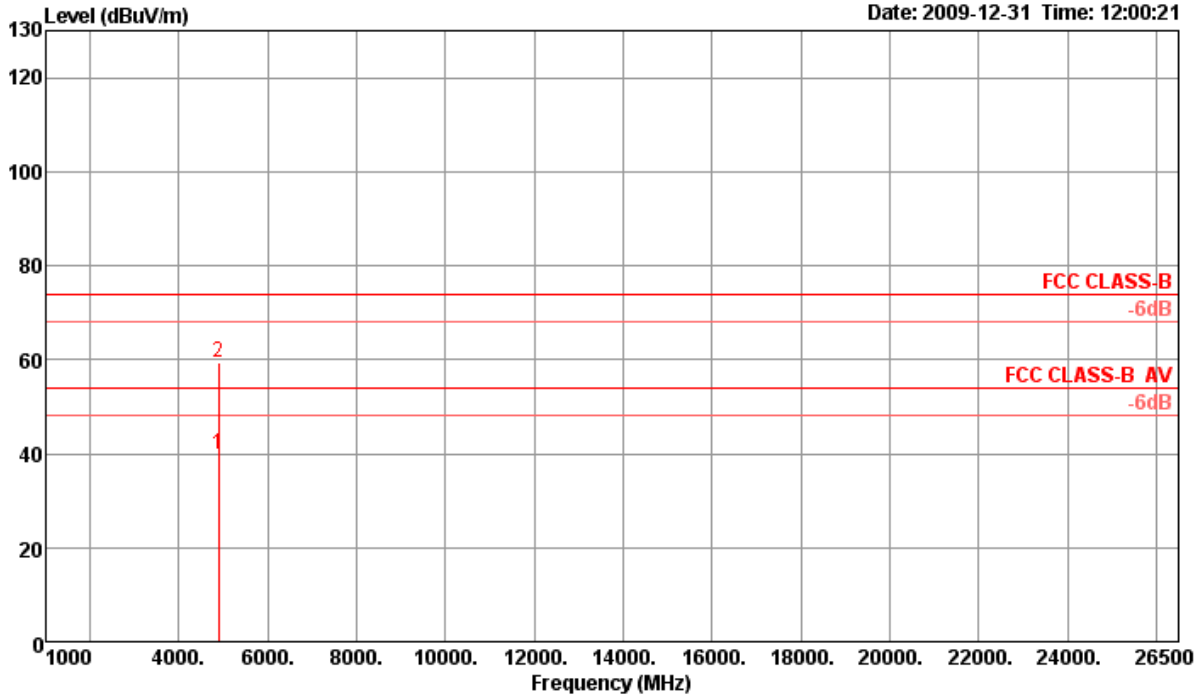
Temperature	23°C	Humidity	56%
Test Engineer	Alan Huang	Configurations	Channel 39 / Ant. C

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1 p	4881.94	50.16	74.00	-23.84	48.06	3.97	33.16	35.03	304	100	Peak	HORIZONTAL
2 a	4882.05	35.56	54.00	-18.44	33.46	3.97	33.16	35.03	304	100	Average	HORIZONTAL

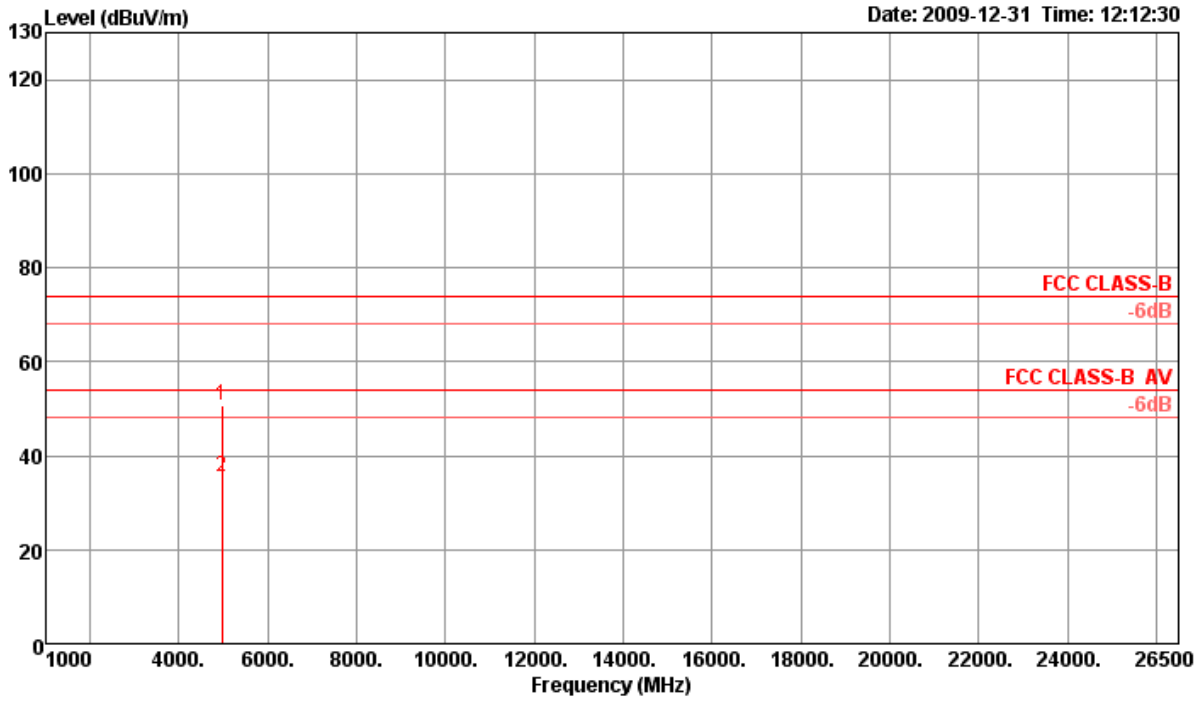
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1 a	4882.05	39.82	54.00	-14.18	37.72	3.97	33.16	35.03	83	100	Average	VERTICAL
2 p	4882.08	59.24	74.00	-14.76	57.14	3.97	33.16	35.03	83	100	Peak	VERTICAL

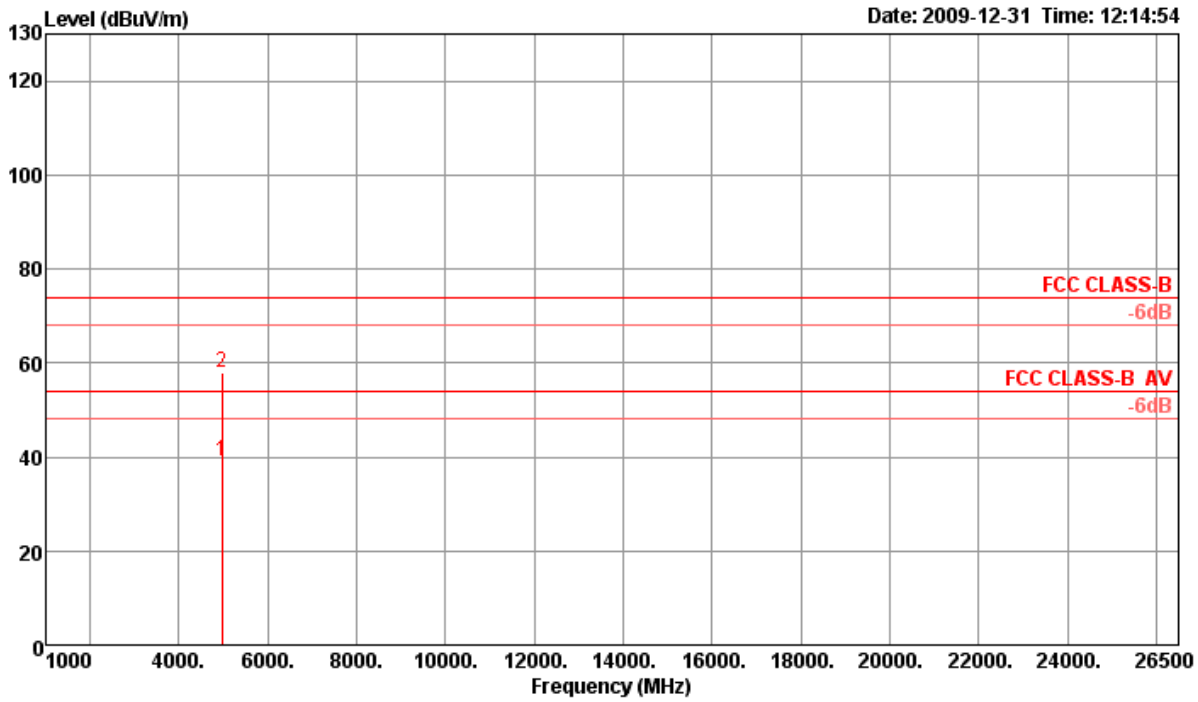
Temperature	23°C	Humidity	56%
Test Engineer	Alan Huang	Configurations	Channel 78 / Ant. C

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1 p	4960.04	50.59	74.00	-23.41	48.28	3.99	33.33	35.01	92	155	Peak	HORIZONTAL
2 a	4960.11	35.43	54.00	-18.57	33.12	3.99	33.33	35.01	92	155	Average	HORIZONTAL

Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1 a	4960.03	38.94	54.00	-15.06	36.63	3.99	33.33	35.01	83	100	Average	VERTICAL
2 p	4960.12	57.79	74.00	-16.21	55.48	3.99	33.33	35.01	83	100	Peak	VERTICAL

Note:

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

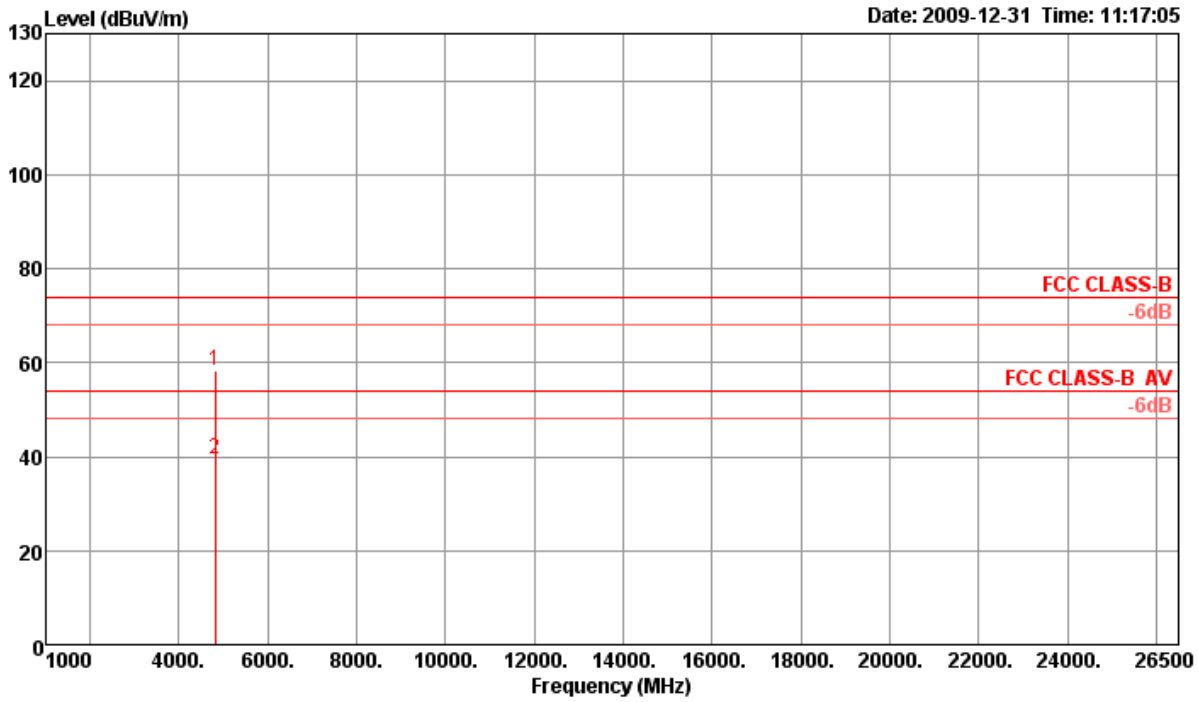
Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

<For Antenna D>

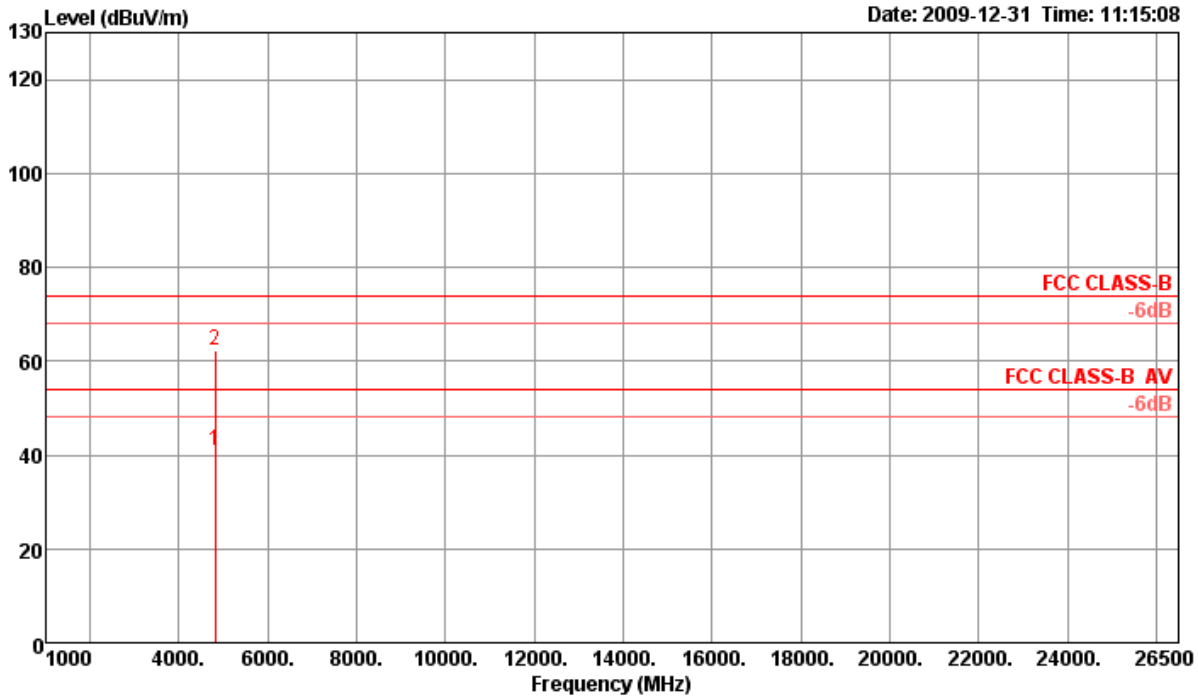
Temperature	23°C	Humidity	56%
Test Engineer	Alan Huang	Configurations	Channel 0 / Ant. D

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1 p	4804.07	58.16	74.00	-15.84	56.22	3.96	33.02	35.04	124	135	Peak	HORIZONTAL
2 a	4804.09	39.45	54.00	-14.55	37.51	3.96	33.02	35.04	124	135	Average	HORIZONTAL

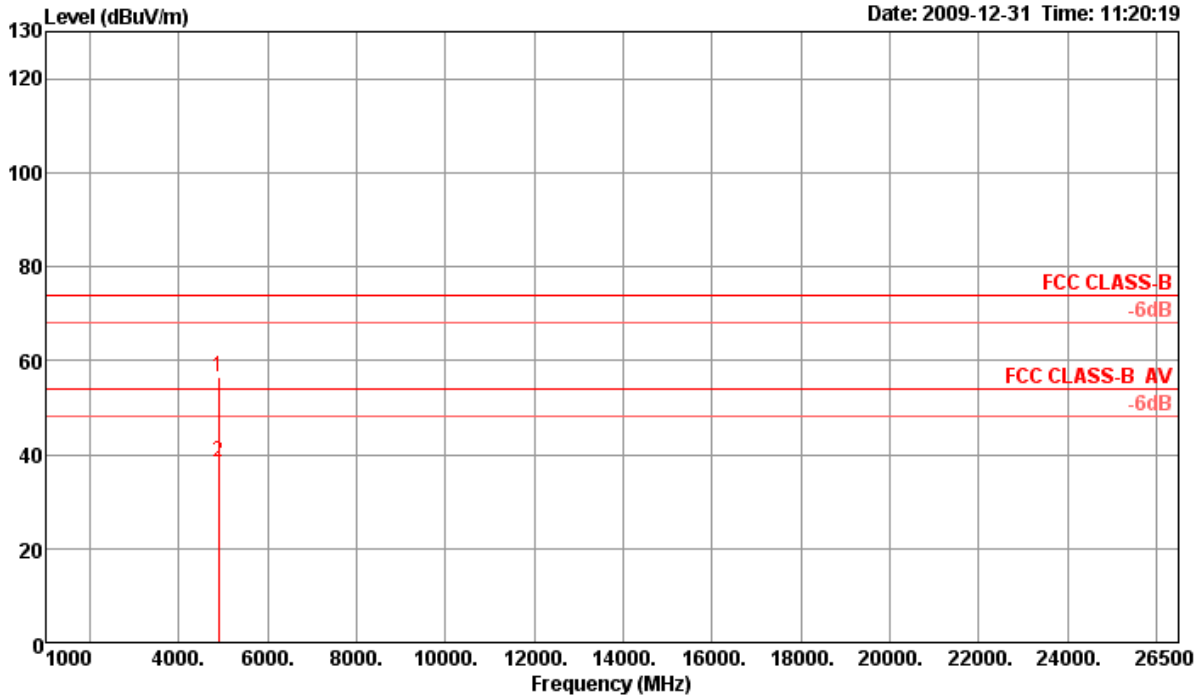
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1 a	4804.07	40.94	54.00	-13.06	39.00	3.96	33.02	35.04	82	115	Average	VERTICAL
2 p	4804.07	62.12	74.00	-11.88	60.18	3.96	33.02	35.04	82	115	Peak	VERTICAL

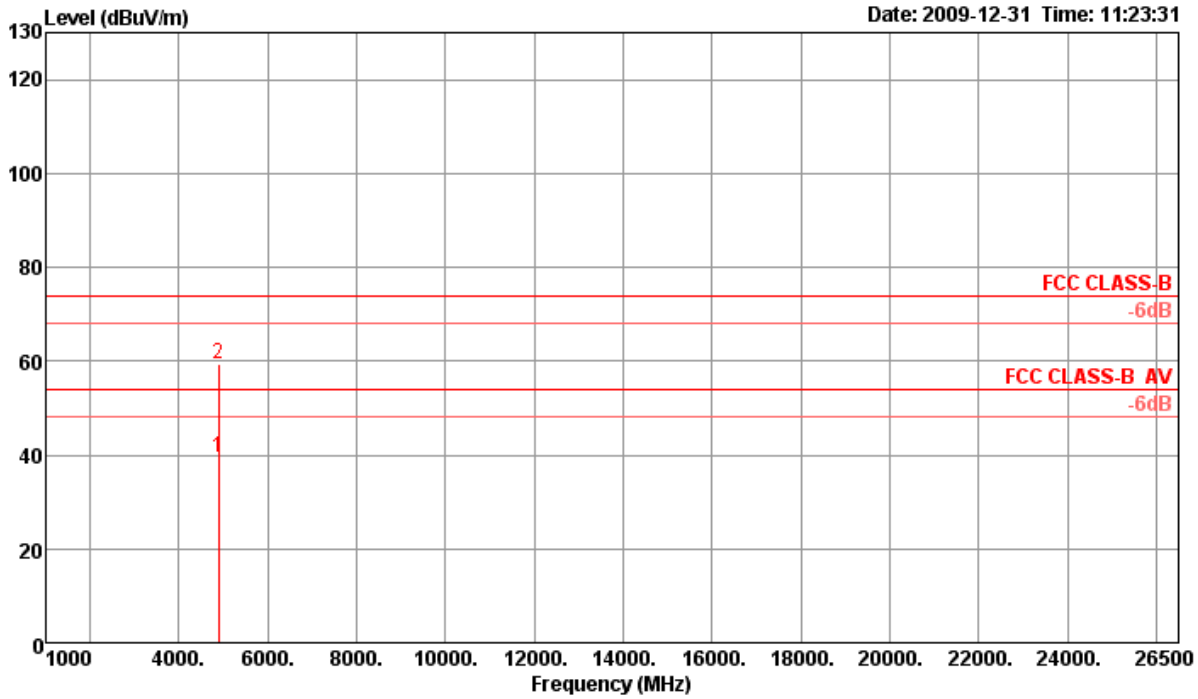
Temperature	23°C	Humidity	56%
Test Engineer	Alan Huang	Configurations	Channel 39 / Ant. D

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1 p	4881.98	56.46	74.00	-17.54	54.36	3.97	33.16	35.03	84	141	Peak	HORIZONTAL
2 a	4882.09	38.29	54.00	-15.71	36.19	3.97	33.16	35.03	84	141	Average	HORIZONTAL

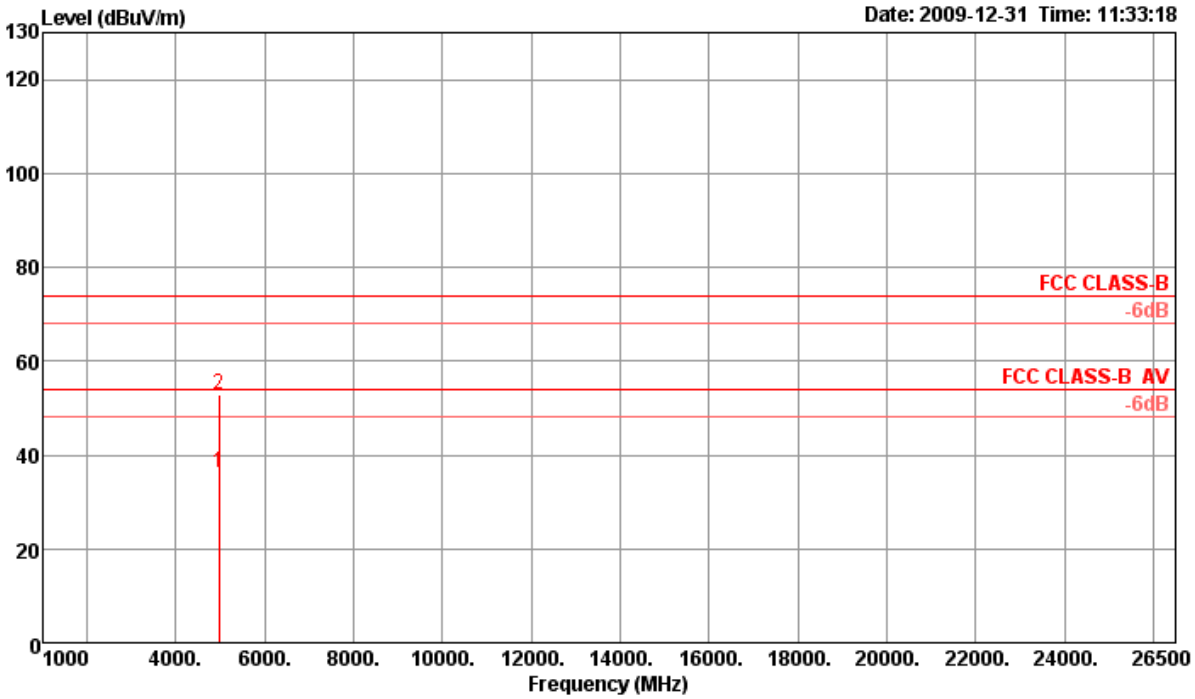
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1 a	4882.09	39.65	54.00	-14.35	37.55	3.97	33.16	35.03	82	100	Average	VERTICAL
2 p	4882.12	59.49	74.00	-14.51	57.39	3.97	33.16	35.03	82	100	Peak	VERTICAL

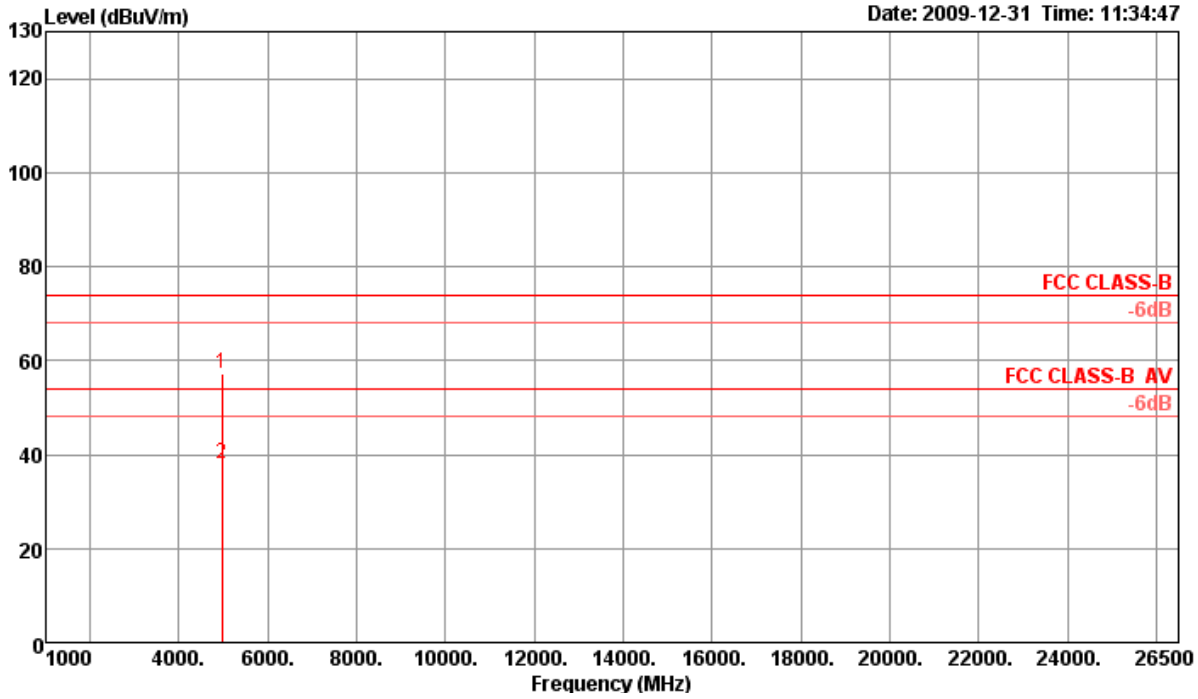
Temperature	23°C	Humidity	56%
Test Engineer	Alan Huang	Configurations	Channel 78 / Ant. D

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1 a	4960.01	36.12	54.00	-17.88	33.81	3.99	33.33	35.01	87	152	Average	HORIZONTAL
2 p	4960.03	52.90	74.00	-21.10	50.59	3.99	33.33	35.01	87	152	Peak	HORIZONTAL

Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1 p	4959.90	57.26	74.00	-16.74	54.95	3.99	33.33	35.01	82	101	Peak	VERTICAL
2 a	4960.07	38.12	54.00	-15.88	35.81	3.99	33.33	35.01	82	101	Average	VERTICAL

Note:

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.