

FCC/IC RF Test Report

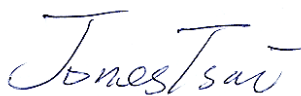
APPLICANT : Sony Mobile Communications AB
EQUIPMENT : Smart phone
BRAND NAME : SONY
MODEL NAME : D2306
TYPE NAME : PM-0723-BV
FCC ID : PY7PM-0723
IC : 4170B-PM0723
STANDARD : FCC Part 15 Subpart C §15.247
IC RSS-210 issue 8
CLASSIFICATION : (DTS) Digital Transmission System

The product was received on Nov. 15, 2013 and testing was completed on Dec. 23, 2013. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures and shown to be compliant with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.



Reviewed by: Joseph Lin / Supervisor



Approved by: Jones Tsai / Manager



SPORTON INTERNATIONAL INC.

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FCC ID : PY7PM-0723

IC : 4170B-PM0723

Page Number : 1 of 127

Report Issued Date : Jan. 24, 2014

Report Version : Rev. 01



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR3N1535C	Rev. 01	Initial issue of report	Jan. 24, 2014

SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.247(a)(2)	RSS-210 A8.2(a)	6dB Bandwidth	$\geq 0.5\text{MHz}$	Pass	-
3.1	-	RSS-Gen 4.6.1	99% Bandwidth	-	Pass	-
3.2	15.247(b)	RSS-210 A8.4	Power Output Measurement	$\leq 30\text{dBm}$	Pass	-
3.3	15.247(e)	RSS-210 A8.2(b)	Power Spectral Density	$\leq 8\text{dBm}/3\text{kHz}$	Pass	-
3.4	15.247(d)	RSS-210 A8.5	Conducted Band Edges	$\leq 20\text{dBc}$	Pass	-
			Conducted Spurious Emission		Pass	-
3.5	15.247(d)	RSS-210 A8.5	Radiated Band Edges and Radiated Spurious Emission	15.209(a) & 15.247(d)	Pass	Under limit 1.16 dB at 2483.980 MHz
3.6	15.207	RSS-Gen 7.2.4	AC Conducted Emission	15.207(a)	Pass	Under limit 8.70 dB at 0.190 MHz
3.7	15.203 & 15.247(b)	RSS-210 A8.4	Antenna Requirement	N/A	Pass	-

1 General Description

1.1 Applicant

Sony Mobile Communications AB
Nya Vattentorget, 22188 Lund, Sweden

1.2 Manufacturer

Compal Communications, INC.
No. 385, Yangguang Street, Neihu, Taipei 11491, Taiwan

1.3 Feature of Equipment Under Test

The Equipment Under Test (hereafter called: EUT) is smart phone supporting, GSM / WCDMA / LTE, Wi-Fi 2.4GHz 802.11b/g/n, Wi-Fi 5GHz 802.11a/n, Bluetooth with FM Receiver, GPS, and NFC features, and below is details of information.

General Information of Equipment Under Test	
Equipment	Smart phone
Brand Name	SONY
Model Name	D2306
Marketing Name	PM-0723-BV
FCC ID	PY7PM-0723
IC	4170B-PM0723
GSM Operating Band(s)	GSM 850/900/1800/1900MHz
GPRS / EGPRS Multi Slot Class	GPRS Class 33, EGPRS Class 33
WCDMA Operating Band(s)	FDD Band I / II / IV / V
WCDMA Rel. Version	Rel. 8
LTE Operating Band(s)	FDD Band IV / VII / XVII
Wi-Fi Specification	802.11b/g/n (HT20) 802.11a/n (HT20/HT40)
Bluetooth Version	v3.0+EDR / v4.0-LE
NFC Specification	ISO14443A / ISO14443B / Felica
Power Supply	Battery / AC Adapter / Car Charger

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

1.4 Product Specification of Equipment Under Test

Product Specification subjective to this standard	
Tx/Rx Channel Frequency Range	802.11b/g/n : 2412 MHz ~ 2462 MHz 802.11a/n: 5745~5825MHz.
Maximum (Peak) Output Power to Antenna	<2412 MHz ~ 2462 MHz> 802.11b : 19.19 dBm (0.0830 W) 802.11g : 22.40 dBm (0.1738 W) 802.11n HT20 : 21.76 dBm (0.1500 W) <5745 MHz ~ 5825 MHz> 802.11a : 20.15 dBm (0.1035 W) 802.11n HT20 : 20.23 dBm (0.1054 W) 802.11n HT40 : 19.75 dBm (0.0944 W)
99% Occupied Bandwidth	<2412 MHz ~ 2462 MHz> 802.11b : 14.35MHz 802.11g : 18.80MHz 802.11n HT20 : 19.35MHz <5745 MHz ~ 5825 MHz> 802.11a : 18.75MHz 802.11n HT20 : 19.40MHz 802.11n HT40 : 36.90MHz
Antenna Type	802.11b/g/n : PIFA Antenna type with gain 1.55 dBi 802.11a/n : PIFA Antenna type with gain -2.00 dBi
Type of Modulation	802.11b : DSSS (DBPSK / DQPSK / CCK) 802.11a/g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)
EUT #1	IMEI : 004402451442879 S/N : ZH8001NA38
EUT #2	IMEI : 004402451650869 S/N : 468191348BB
EUT #3	IMEI : 004402451443497 S/N : ZH8001NA4U
HW Version	A
SW Version	18.0.C.0.30
EUT Stage	Production Unit

Accessory List	
AC Adapter	Model No. : EP800
	Type No. : CAA-0002016-US B
Battery	Model No. : LIS1502ERPC
	Type No. : LIS1502ERPC
Earphone	Model No. : MH410c
	Type No. : AG-1100
USB Cable	Model No. : AHAB EC450
	Part No. : 1242-6715.4

Note:

1. Above EUT list and accessory list used are electrically identical per declared by manufacturer.
2. Above the accessories list are used to exercise the EUT during test, and the serial number of each type of accessories is listed in each section of this report.
3. For other wireless features of this EUT, test report will be issued separately.

1.5 Modification of EUT

No modifications are made to the EUT during all test items.

1.6 Testing Site

Test Site	SPORTON INTERNATIONAL INC.			
Test Site Location	No. 52, Hwa Ya 1 st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-3273456 / FAX: +886-3-3284978			
Test Site No.	Sporton Site No.			FCC/IC Registration No.
	TH02-HY	CO05-HY	03CH06-HY	722060/4086B-1

Note: The test site complies with ANSI C63.4 2003 requirement.

1.7 Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ FCC Part 15 Subpart C §15.247
- ♦ FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v03r01
- ♦ ANSI C63.4-2003
- ♦ IC RSS-210 Issue 8
- ♦ IC RSS-Gen Issue 3
- ♦ NOTICE 2012-DRS0126

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.
3. Per the section 2.2.3 of Notice of 2012-DRS0126, " Receivers Excluded from Industry Canada Requirements", only radiocommunication receivers operating in stand-alone mode within the band 30-960 MHz and scanner receivers are subject to Industry Canada requirements.

2 Test Configuration of Equipment Under Test

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conducted emission (150 kHz to 30 MHz) and radiated emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (Y plane for 2.4G and Z plane for 5G) were recorded in this report.

The final configuration from all the combinations and the worst-case data rates were investigated by measuring the maximum power across all the data rates and modulation modes under section 2.2.

Based on the worst configuration found above, the RF power setting is set individually to meet FCC compliance limit for the final conducted and radiated tests shown in section 2.3.

2.1 Carrier Frequency Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
2400-2483.5 MHz	1	2412	7	2442
	2	2417	8	2447
	3	2422	9	2452
	4	2427	10	2457
	5	2432	11	2462
	6	2437	-	-

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5725-5850 MHz Band 4	149	5745	159	5795
	151	5755	161	5805
	153	5765	165	5825
	157	5785	-	-

2.2 Pre-Scanned RF Power

Preliminary tests were performed in different data rate and data rate associated with the highest power were chosen for full test shown in the following tables.

2.4GHz 802.11b mode				
Data Rate (MHz)	1M bps	2M bps	5.5M bps	11M bps
Peak Power (dBm)	19.19	19.15	19.09	19.07

2.4GHz 802.11g mode								
Data Rate (MHz)	6M bps	9M bps	12M bps	18M bps	24M bps	36M bps	48M bps	54M bps
Peak Power (dBm)	22.40	21.97	21.92	21.86	22.25	22.03	21.84	22.13

2.4GHz 802.11n HT20 mode								
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Peak Power (dBm)	21.76	21.73	21.71	21.62	21.38	21.27	21.23	21.19

5GHz 802.11a mode								
Data Rate (MHz)	6M bps	9M bps	12M bps	18M bps	24M bps	36M bps	48M bps	54M bps
Peak Power (dBm)	20.15	19.99	19.96	20.02	19.97	19.96	20.04	19.67

5GHz 802.11n HT20 mode								
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Peak Power (dBm)	20.23	20.19	20.13	20.12	20.01	19.95	20.04	20.07

5GHz 802.11n HT40 mode								
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Peak Power (dBm)	19.75	19.71	19.58	19.46	19.53	19.61	19.57	19.44

2.3 Test Mode

Final results of test modes, data rates and test channels are shown as following table.

<2.4GHz>

Test Cases				
Conducted TCs	Test Items	Mode	Data Rate	Test Channel
	6dB and 99% BW Power Spectral Density	802.11b	1 Mbps	1/6/11
		802.11g	6 Mbps	1/6/11
		802.11n HT20	MCS0	1/6/11
	Output Power	802.11b	1 Mbps	1/6/11
		802.11g	6 Mbps	1/6/11
		802.11n HT20	MCS0	1/6/11
	Conducted Band Edge	802.11b	1 Mbps	1/11
		802.11g	6 Mbps	1/11
		802.11n HT20	MCS0	1/11
	Conducted Spurious Emission	802.11b	1 Mbps	1/6/11
		802.11g	6 Mbps	1/6/11
		802.11n HT20	MCS0	1/6/11
Radiated TCs	Radiated Band Edge	802.11b	1 Mbps	1/11
		802.11g	6 Mbps	1/11
		802.11n HT20	MCS0	1/11
	Radiated Spurious Emission	802.11b	1 Mbps	1/6/11
		802.11g	6 Mbps	1/6/11
		802.11n HT20	MCS0	1/6/11

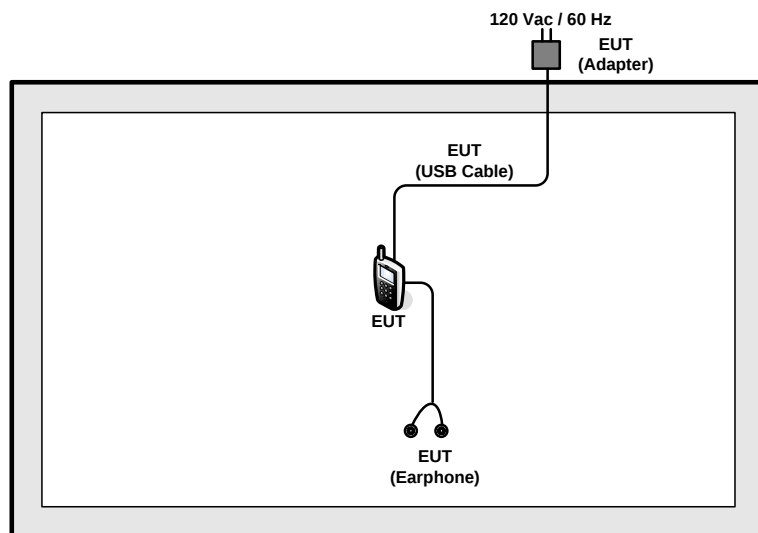
<5GHz>

Test Cases				
Conducted TCs	Test Items	Mode	Data Rate	Test Channel
	6dB and 99% BW Power Spectral Density	802.11a	6 Mbps	149/157/165
		802.11n HT20	MCS0	149/157/165
		802.11n HT40	MCS0	151/159
	Output Power	802.11a	6 Mbps	149/157/165
		802.11n HT20	MCS0	149/157/165
		802.11n HT40	MCS0	151/159
	Conducted Band Edge	802.11a	6 Mbps	149/165
		802.11n HT20	MCS0	149/165
		802.11n HT40	MCS0	151/159
	Conducted Spurious Emission	802.11a	6 Mbps	149/157/165
		802.11n HT20	MCS0	149/157/165
		802.11n HT40	MCS0	151/159
Radiated TCs	Radiated Spurious Emission	802.11a	6 Mbps	149/157/165
		802.11n HT20	MCS0	149/157/165
		802.11n HT40	MCS0	151/159

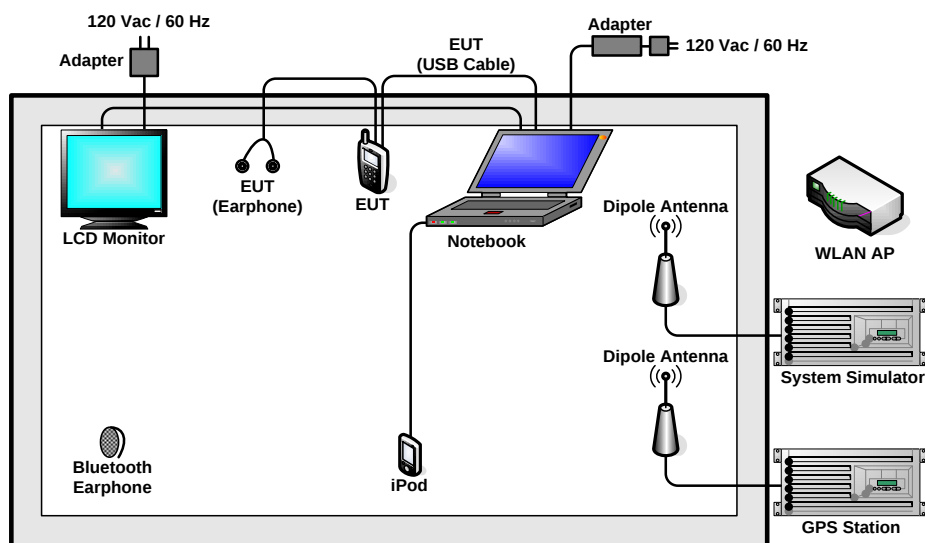
Test Cases	
AC Conducted Emission	Mode 1: GSM1900 Idle + Bluetooth Link + WLAN Idle + GPS Rx + Earphone + Battery + USB Cable (Data Link with Notebook)
	Mode 2: GSM1900 Idle + Bluetooth Idle + WLAN Link + GPS Rx + Earphone + Battery + USB Cable (Data Link with Notebook)

2.4 Connection Diagram of Test System

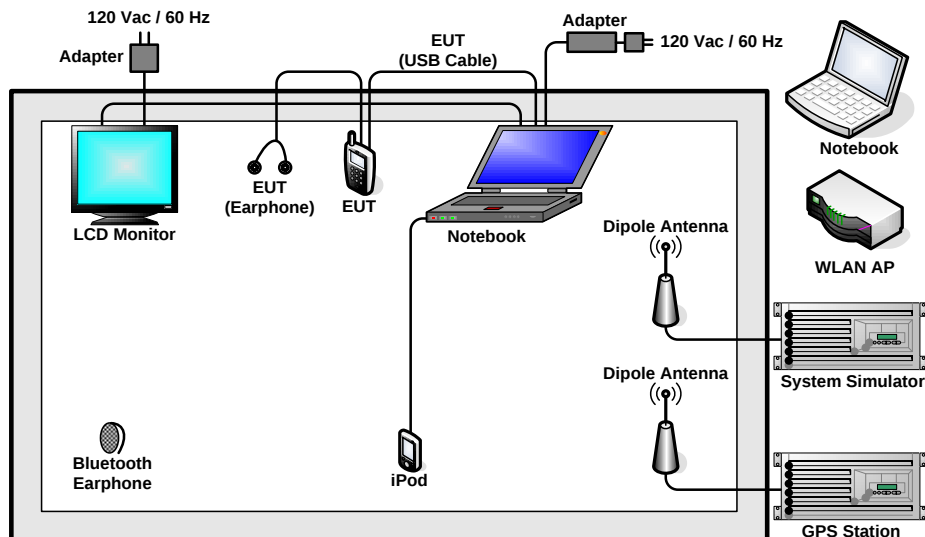
<WLAN Tx Mode>



<AC Conducted Emission Mode in WLAN Idle>



<AC Conducted Emission Mode in WLAN Link>



2.5 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	System Simulator	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m
2.	GPS Station	Pendulum	GSG-54	N/A	N/A	Unshielded, 1.8 m
3.	WLAN AP	D-Link	DIR-628	KA2DIR628A2	N/A	Unshielded, 1.8 m
4.	Notebook	DELL	Latitude E6320	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
5.	LCD Monitor	DELL	U2410	FCC DoC	Shielded, 1.6 m	Unshielded, 1.8 m
6.	Bluetooth Earphone	Sony Ericsson	MH755	FCC Doc	N/A	N/A
7.	Bluetooth Body	Sony Ericsson	SBH20	PY7-RD0010	N/A	N/A
8.	iPod	Apple	A1285	FCC DoC	Shielded, 1.0 m	N/A
9.	SD Card	SanDisk	MicroSD HC	FCC DoC	N/A	N/A

2.6 EUT Operation Test Setup

For WLAN Tx 20M function, the programmed RF utility “WiFi Tx app”, is installed in EUT to provide channel selection, power level, data rate and the application type. RF Utility can send transmitting signal for all testing. 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 WLAN Tx 40M function, the programmed RF utility “QPST”, is installed in EUT to provide channel selection, power level, data rate and the application type. RF Utility can send transmitting signal for all testing. 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.

2.7 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

Example :

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

Following shows an offset computation example with cable loss 4.2 dB and 10dB attenuator.

$$\begin{aligned}\text{Offset(dB)} &= \text{RF cable loss(dB)} + \text{attenuator factor(dB)} \\ &= 4.2 + 10 = 14.2 \text{ (dB)}\end{aligned}$$

3 Test Result

3.1 6dB and 99% Bandwidth Measurement

3.1.1 Limit of 6dB and 99% Bandwidth

The minimum 6 dB bandwidth shall be at least 500 kHz.

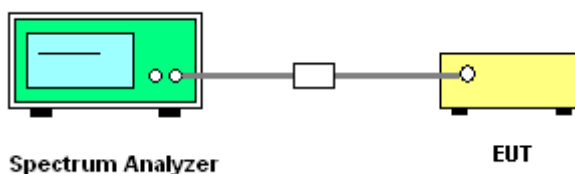
3.1.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.1.3 Test Procedures

1. The testing follows FCC KDB Publication No. 558074 DTS D01 Meas. Guidance v03r01.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. Set the Video bandwidth (VBW) = 300 kHz. In order to make an accurate measurement. The 6 dB bandwidth must be greater than 500 kHz.
5. For 99% Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) = 1MHz and set the Video bandwidth (VBW) = 3MHz.
6. Measure and record the results in the test report.

3.1.4 Test Setup

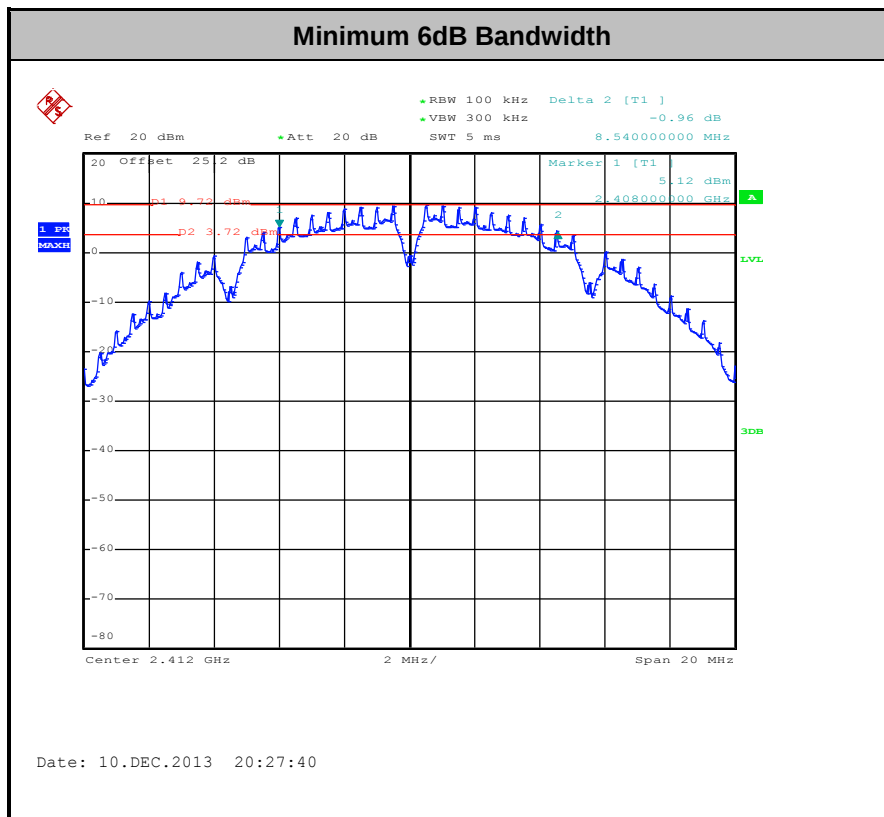


3.1.5 Test Result of 6dB and 99% Occupied Bandwidth

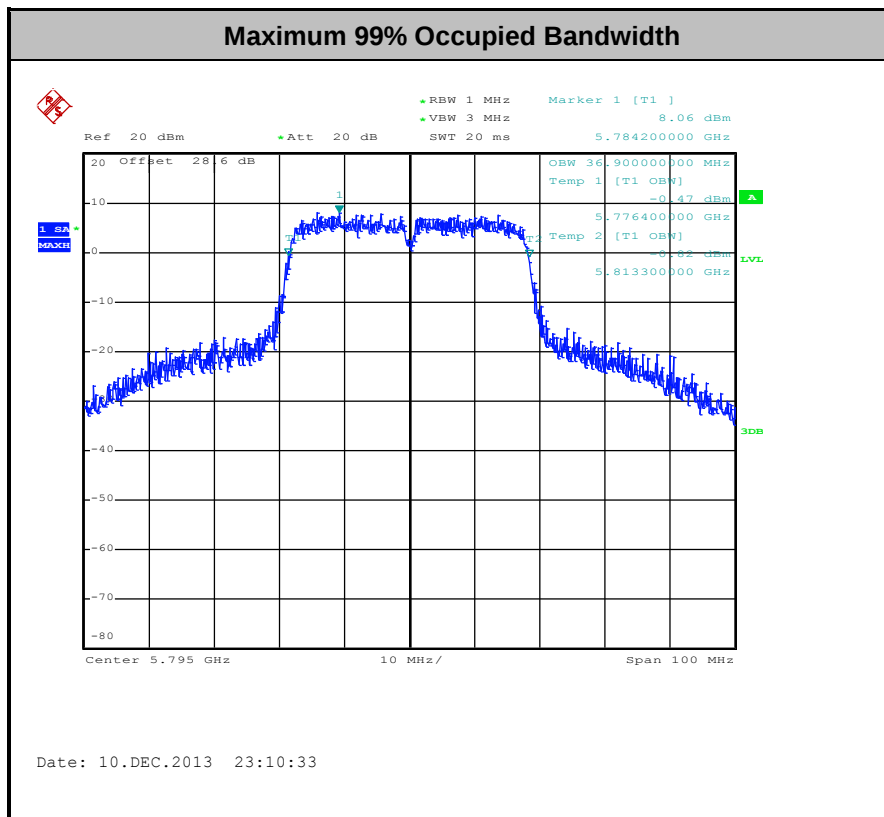
Test Band :	2.4GHz + 5GHz band 4	Temperature :	21~26℃
Test Engineer :	Osolemio Chang	Relative Humidity :	45~54%

Mod.	Data Rate	N _{TX}	Channel	Freq. (MHz)	99% Bandwidth (MHz)	6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
11b	1Mbps	1	1	2412	14.35	8.54	0.5	Pass
11b	1Mbps	1	6	2437	14.00	9.04	0.5	Pass
11b	1Mbps	1	11	2462	14.15	9.04	0.5	Pass
11g	6Mbps	1	1	2412	18.80	16.36	0.5	Pass
11g	6Mbps	1	6	2437	18.45	16.32	0.5	Pass
11g	6Mbps	1	11	2462	18.75	16.31	0.5	Pass
HT20	MCS0	1	1	2412	19.35	17.56	0.5	Pass
HT20	MCS0	1	6	2437	19.10	17.56	0.5	Pass
HT20	MCS0	1	11	2462	19.30	17.56	0.5	Pass

Mod.	Data Rate	N _{TX}	Channel	Freq. (MHz)	99% Bandwidth (MHz)	6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
11a	6Mbps	1	149	5745	18.70	16.32	0.5	Pass
11a	6Mbps	1	157	5785	18.35	16.36	0.5	Pass
11a	6Mbps	1	165	5825	18.75	16.32	0.5	Pass
HT20	MCS0	1	149	5745	19.30	17.56	0.5	Pass
HT20	MCS0	1	157	5785	19.25	17.54	0.5	Pass
HT20	MCS0	1	165	5825	19.40	17.56	0.5	Pass
HT40	MCS0	1	151	5755	36.80	35.12	0.5	Pass
HT40	MCS0	1	159	5795	36.90	35.36	0.5	Pass



Note: The total loss is 25.2 dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer offset.



Note: The total loss is 28.6 dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer offset.

3.2 Output Power Measurement

3.2.1 Limit of Output Power

For systems using digital modulation in the 2400-2483.5MHz and 5725-5850MHz, the limit for peak output power is 30dBm. If transmitting Antenna of directional gain greater than 6dBi are used the peak output power from the intentional radiator shall be reduced below the above stated value by the amount in dB that the directional gain of the Antenna exceeds 6 dBi. 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.

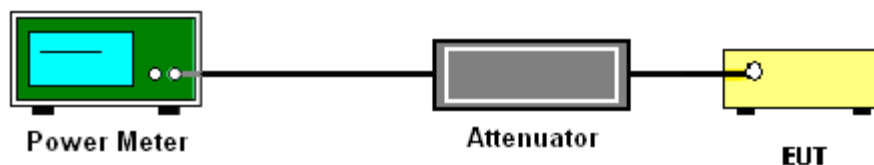
3.2.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.2.3 Test Procedures

1. The testing follows the Measurement Procedure of FCC KDB No. 558074 DTS D01 Meas. Guidance v03r01.
2. The RF output of EUT was connected to the power meter by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Measure the conducted output power and record the results in the test report.

3.2.4 Test Setup



3.2.5 Test Result of Peak Output Power

Test Mode :	2.4GHz + 5GHz band 4	Temperature :	21~26℃
Test Engineer :	Osolemio Chang	Relative Humidity :	45~54%

Mod.	Data Rate	N _{TX}	Channel	Freq. (MHz)	RF Output Power (dBm)	Power Limit (dBm)	DG (dBi)	Pass/Fail
11b	1Mbps	1	1	2412	18.94	30	1.55	Pass
11b	1Mbps	1	6	2437	19.19	30	1.55	Pass
11b	1Mbps	1	11	2462	18.81	30	1.55	Pass
11g	6Mbps	1	1	2412	21.67	30	1.55	Pass
11g	6Mbps	1	6	2437	22.40	30	1.55	Pass
11g	6Mbps	1	11	2462	21.87	30	1.55	Pass
HT20	MCS0	1	1	2412	21.03	30	1.55	Pass
HT20	MCS0	1	6	2437	21.73	30	1.55	Pass
HT20	MCS0	1	11	2462	21.76	30	1.55	Pass

Mod.	Data Rate	N _{TX}	Channel	Freq. (MHz)	RF Output Power (dBm)	Power Limit (dBm)	DG (dBi)	Pass/Fail
11a	6Mbps	1	149	5745	20.15	30	-2.00	Pass
11a	6Mbps	1	157	5785	20.07	30	-2.00	Pass
11a	6Mbps	1	165	5825	19.46	30	-2.00	Pass
HT20	MCS0	1	149	5745	19.96	30	-2.00	Pass
HT20	MCS0	1	157	5785	20.23	30	-2.00	Pass
HT20	MCS0	1	165	5825	19.42	30	-2.00	Pass
HT40	MCS0	1	151	5755	19.66	30	-2.00	Pass
HT40	MCS0	1	159	5795	19.75	30	-2.00	Pass

Note: Measured power (dBm) has offset with cable loss.

3.2.6 Test Result of Average output Power (Reporting Only)

Test Mode :	2.4GHz + 5GHz band 4	Temperature :	21~26℃
Test Engineer :	Osolemio Chang	Relative Humidity :	45~54%

Mod.	Data Rate	N _{TX}	Channel	Freq. (MHz)	Duty Factor (dB)	Average Output Power (dBm)	Power Limit (dBm)	DG (dBi)	Pass/Fail
11b	1Mbps	1	1	2412	0.10	16.62	30	1.55	Pass
11b	1Mbps	1	6	2437	0.10	16.74	30	1.55	Pass
11b	1Mbps	1	11	2462	0.10	16.51	30	1.55	Pass
11g	6Mbps	1	1	2412	0.59	14.77	30	1.55	Pass
11g	6Mbps	1	6	2437	0.59	14.92	30	1.55	Pass
11g	6Mbps	1	11	2462	0.59	14.60	30	1.55	Pass
HT20	MCS0	1	1	2412	0.63	13.58	30	1.55	Pass
HT20	MCS0	1	6	2437	0.63	13.67	30	1.55	Pass
HT20	MCS0	1	11	2462	0.63	13.90	30	1.55	Pass

Mod.	Data Rate	N _{TX}	Channel	Freq. (MHz)	Duty Factor (dB)	Average Output Power (dBm)	Power Limit (dBm)	DG (dBi)	Pass/Fail
11a	6Mbps	1	149	5745	0.59	13.95	30	-2.00	Pass
11a	6Mbps	1	157	5785	0.59	13.76	30	-2.00	Pass
11a	6Mbps	1	165	5825	0.59	13.82	30	-2.00	Pass
HT20	MCS0	1	149	5745	0.63	13.62	30	-2.00	Pass
HT20	MCS0	1	157	5785	0.63	13.98	30	-2.00	Pass
HT20	MCS0	1	165	5825	0.63	13.88	30	-2.00	Pass
HT40	MCS0	1	151	5755	1.18	13.63	30	-2.00	Pass
HT40	MCS0	1	159	5795	1.18	13.82	30	-2.00	Pass

Note: Measured power (dBm) has offset with cable loss and duty factor.

3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

The peak power spectral density shall not be greater than 8dBm in any 3kHz band at any time interval of continuous transmission.

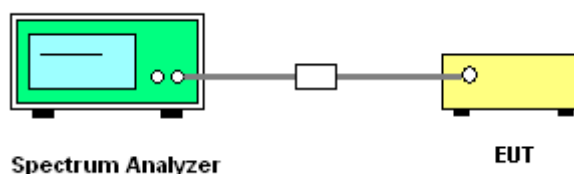
3.3.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.3.3 Test Procedures

1. The testing follows Measurement Procedure 10.2 Method PKPSD of FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v03r01
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 3 kHz. Video bandwidth VBW = 10 kHz In order to make an accurate measurement, set the span to 1.5 times DTS Channel Bandwidth. (6dB BW)
5. Detector = peak, Sweep time = auto couple, Trace mode = max hold, Allow trace to fully stabilize. Use the peak marker function to determine the maximum power level.
6. Measure and record the results in the test report.

3.3.4 Test Setup



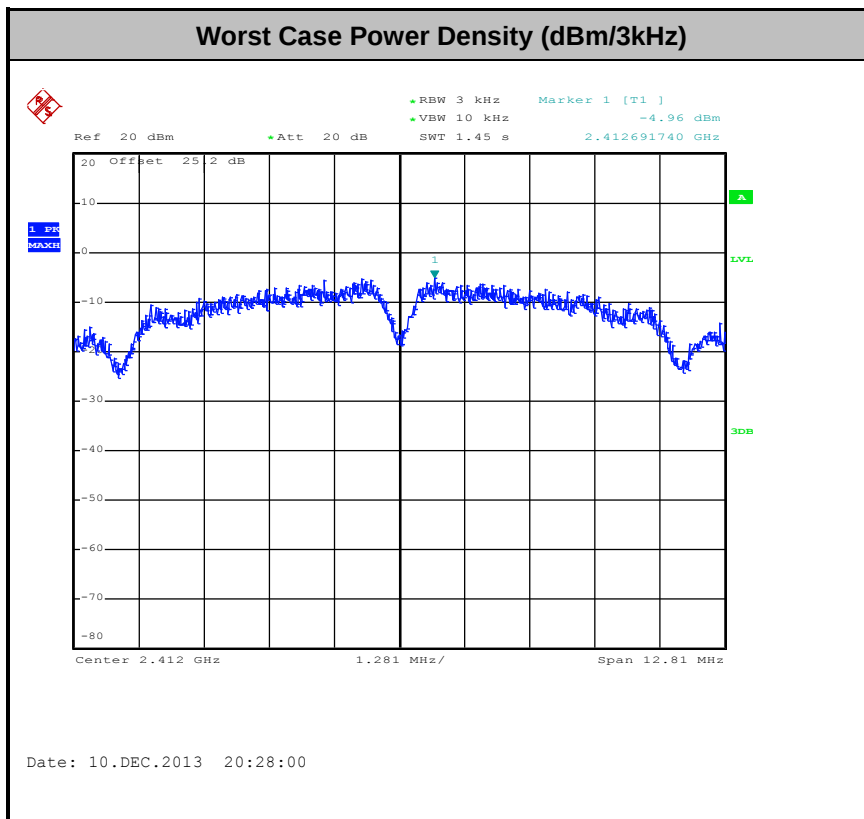
3.3.5 Test Result of Power Spectral Density

Test Mode :	2.4GHz + 5GHz band 4	Temperature :	21~26℃
Test Engineer :	Osolemio Chang	Relative Humidity :	45~54%

Mod.	Data Rate	N _{TX}	Channel	Freq. (MHz)	Peak Power Density (dBm/3kHz)	Max. Limits (dBm/3kHz)	DG (dBi)	Pass/Fail
11b	1Mbps	1	1	2412	-4.96	8	1.55	Pass
11b	1Mbps	1	6	2437	-5.01	8	1.55	Pass
11b	1Mbps	1	11	2462	-5.62	8	1.55	Pass
11g	6Mbps	1	1	2412	-10.12	8	1.55	Pass
11g	6Mbps	1	6	2437	-10.93	8	1.55	Pass
11g	6Mbps	1	11	2462	-11.51	8	1.55	Pass
HT20	MCS0	1	1	2412	-13.00	8	1.55	Pass
HT20	MCS0	1	6	2437	-11.87	8	1.55	Pass
HT20	MCS0	1	11	2462	-13.10	8	1.55	Pass

Mod.	Data Rate	N _{TX}	Channel	Freq. (MHz)	Peak Power Density (dBm/3kHz)	Max. Limits (dBm/3kHz)	DG (dBi)	Pass/Fail
11a	6Mbps	1	149	5745	-10.57	8	-2.00	Pass
11a	6Mbps	1	157	5785	-10.41	8	-2.00	Pass
11a	6Mbps	1	165	5825	-10.49	8	-2.00	Pass
HT20	MCS0	1	149	5745	-11.06	8	-2.00	Pass
HT20	MCS0	1	157	5785	-10.23	8	-2.00	Pass
HT20	MCS0	1	165	5825	-11.29	8	-2.00	Pass
HT40	MCS0	1	151	5755	-13.99	8	-2.00	Pass
HT40	MCS0	1	159	5795	-12.96	8	-2.00	Pass

Note: Measured power density (dBm) has offset with cable loss.



3.4 Conducted Band Edges and Spurious Emission Measurement

3.4.1 Limit of Conducted Band Edges and Spurious Emission Measurement

In any 100 kHz bandwidth outside of the authorized frequency band, the emissions which fall in the non-restricted bands shall be attenuated at least 20 dB / 30dB relative to the maximum PSD level in 100 kHz by RF conducted measurement and radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

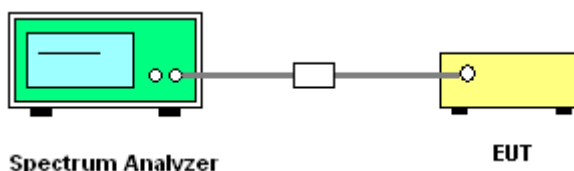
3.4.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.4.3 Test Procedures

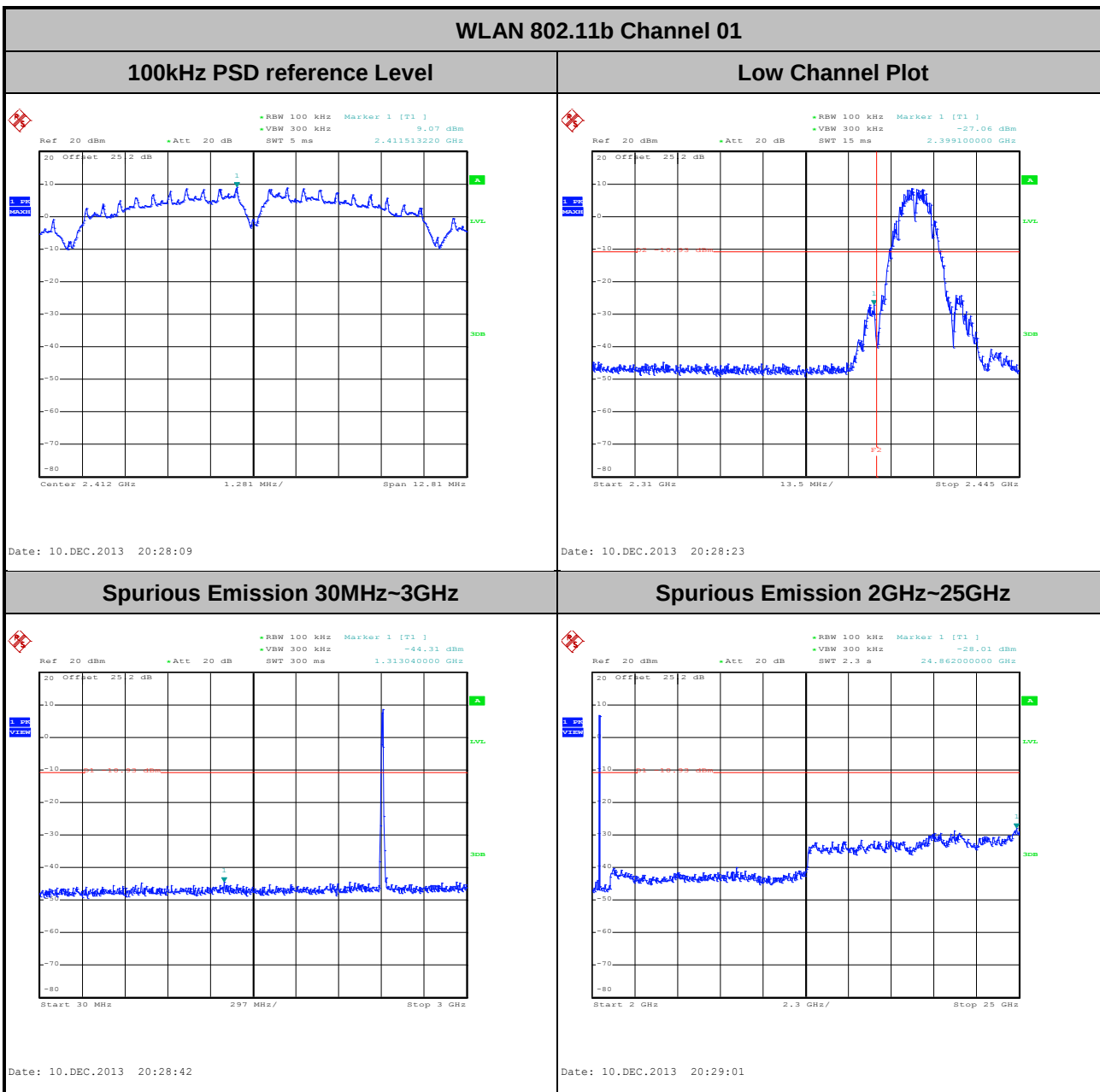
1. The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v03r01.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Set RBW = 100 kHz, VBW=300 kHz, Peak Detector. Unwanted Emissions measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when maximum peak conducted output power procedure is used. 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 per 15.247(d).
5. Measure and record the results in the test report.
6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

3.4.4 Test Setup



3.4.5 Test Result of Conducted Band Edges and Spurious Emission

Test Mode :	802.11b	Temperature :	21~26°C
Test Band :	2.4GHz Low	Relative Humidity :	45~54%
Test Channel :	01	Test Engineer :	Osolemio Chang


Note:

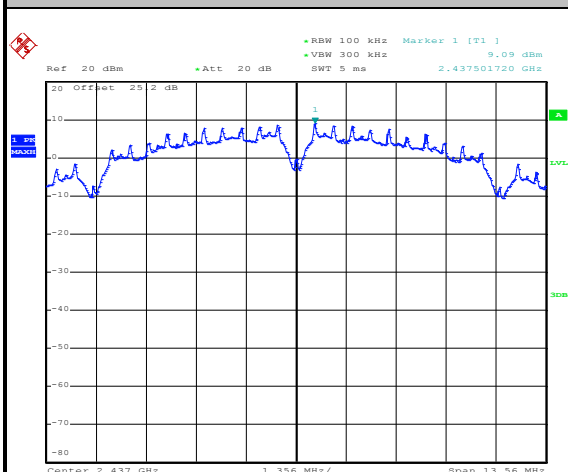
1. The total loss is 25.2 dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer offset.
2. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.



Test Mode :	802.11b	Temperature :	21~26°C
Test Band :	2.4GHz Mid.	Relative Humidity :	45~54%
Test Channel :	06	Test Engineer :	Osolemio Chang

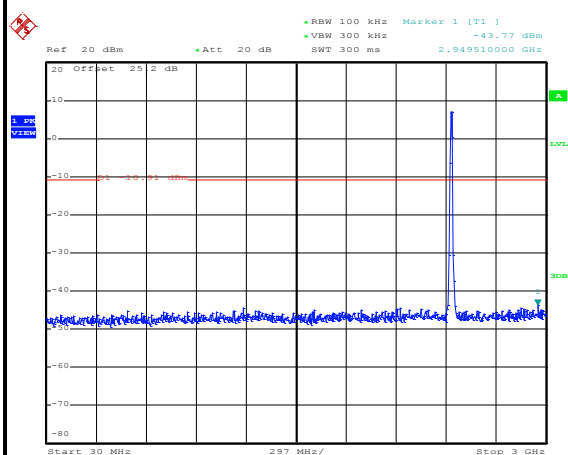
WLAN 802.11b Channel 06

100kHz PSD reference Level



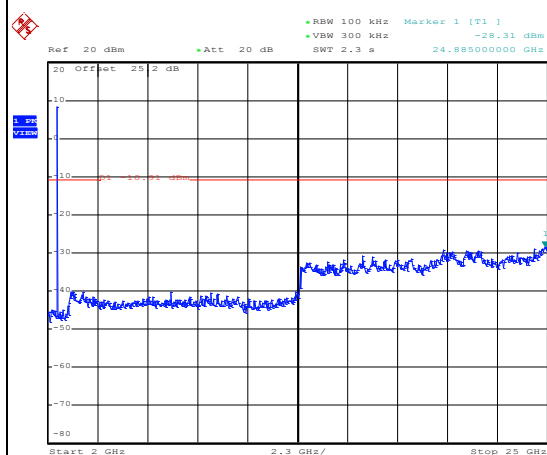
Date: 10.DEC.2013 20:38:53

Spurious Emission 30MHz~3GHz



Date: 10.DEC.2013 20:39:13

Spurious Emission 2GHz~25GHz



Date: 10.DEC.2013 20:39:31

Note:

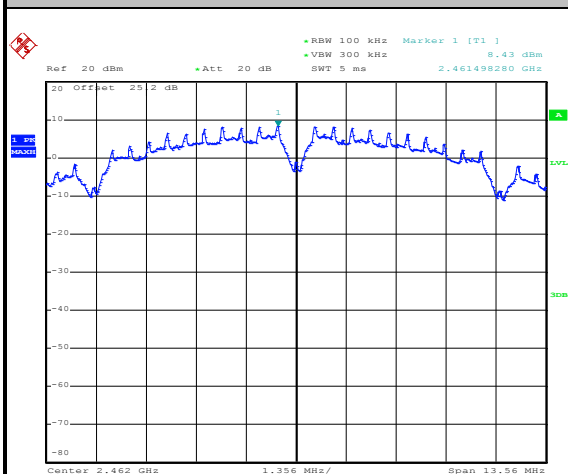
1. The total loss is 25.2 dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer offset.
2. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.



Test Mode :	802.11b	Temperature :	21~26°C
Test Band :	2.4GHz High	Relative Humidity :	45~54%
Test Channel :	11	Test Engineer :	Osolemio Chang

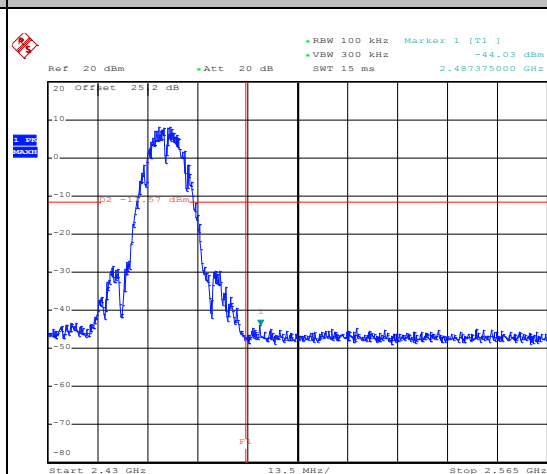
WLAN 802.11b Channel 11

100kHz PSD reference Level



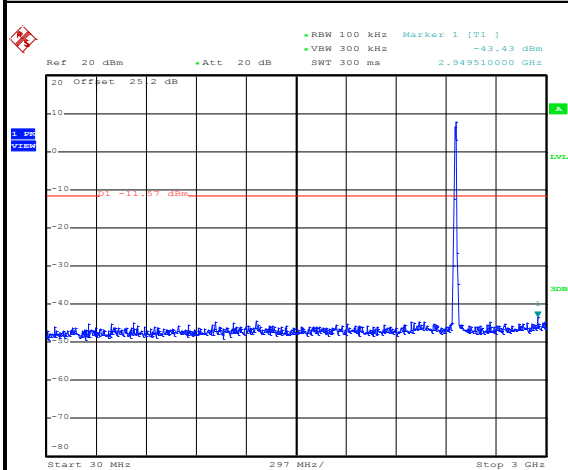
Date: 10.DEC.2013 20:46:44

High Channel Plot



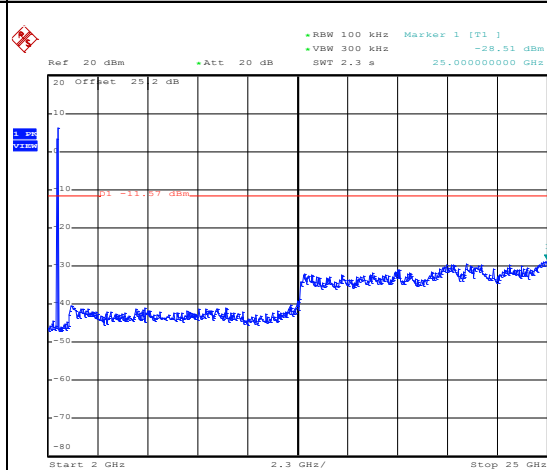
Date: 10.DEC.2013 20:46:57

Spurious Emission 30MHz~3GHz



Date: 10.DEC.2013 20:47:17

Spurious Emission 2GHz~25GHz



Date: 10.DEC.2013 20:47:35

Note:

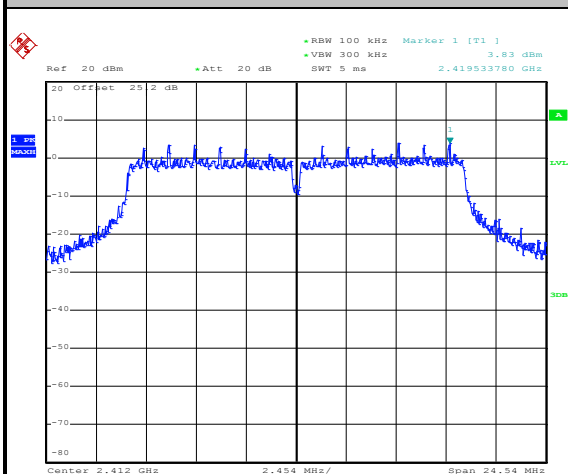
1. The total loss is 25.2 dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer offset.
2. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.



Test Mode :	802.11g	Temperature :	21~26°C
Test Band :	2.4GHz Low	Relative Humidity :	45~54%
Test Channel :	01	Test Engineer :	Osolemio Chang

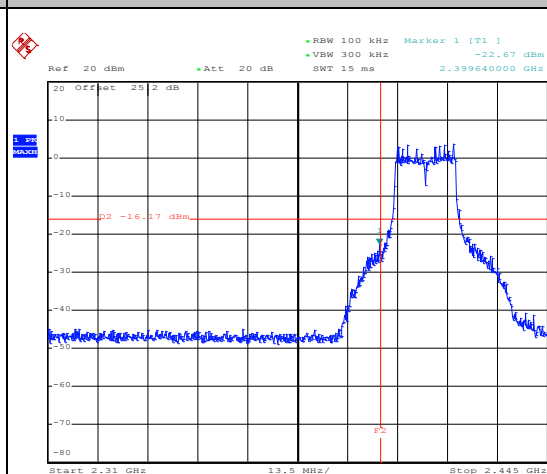
WLAN 802.11g Channel 01

100kHz PSD reference Level



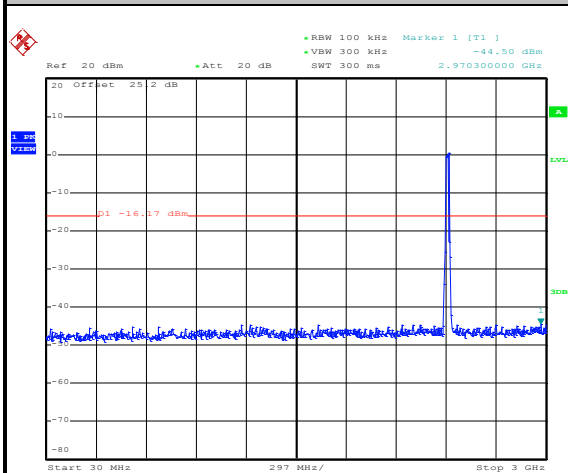
Date: 10.DEC.2013 20:58:47

Low Channel Plot



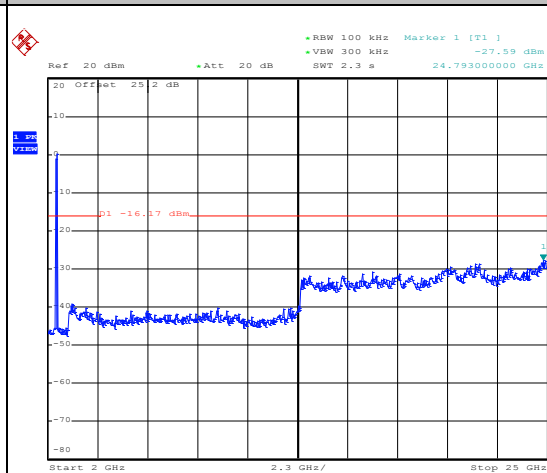
Date: 10.DEC.2013 20:59:01

Spurious Emission 30MHz~3GHz



Date: 10.DEC.2013 20:59:20

Spurious Emission 2GHz~25GHz

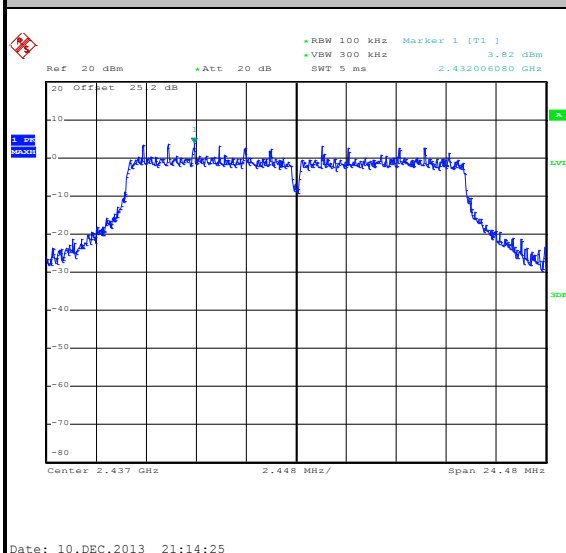
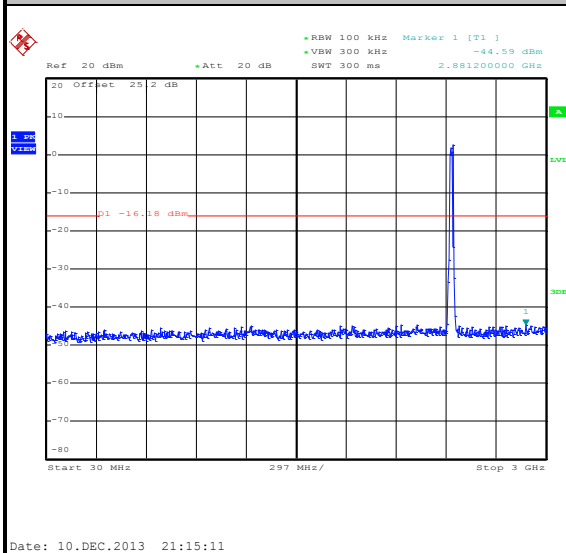
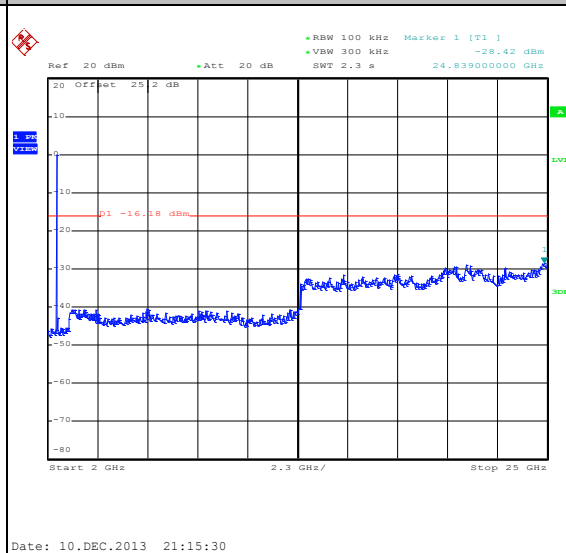


Date: 10.DEC.2013 20:59:39

Note:

1. The total loss is 25.2 dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer offset.
2. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

Test Mode :	802.11g	Temperature :	21~26°C
Test Band :	2.4GHz Mid.	Relative Humidity :	45~54%
Test Channel :	06	Test Engineer :	Osolemio Chang

WLAN 802.11g Channel 06
100kHz PSD reference Level

Spurious Emission 30MHz~3GHz

Spurious Emission 2GHz~25GHz

Note:

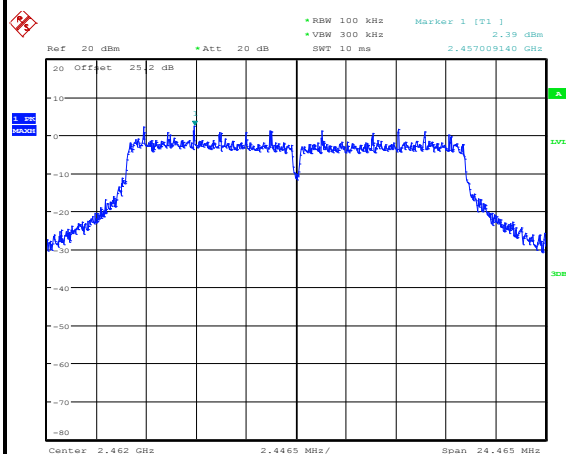
- The total loss is 25.2 dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer offset.
- The RF fundamental frequency should be excluded against the limit line in the operating frequency band.



Test Mode :	802.11g	Temperature :	21~26°C
Test Band :	2.4GHz High	Relative Humidity :	45~54%
Test Channel :	11	Test Engineer :	Osolemio Chang

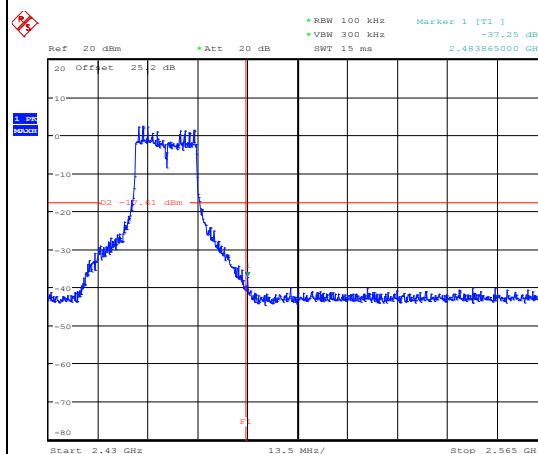
WLAN 802.11g Channel 11

100kHz PSD reference Level



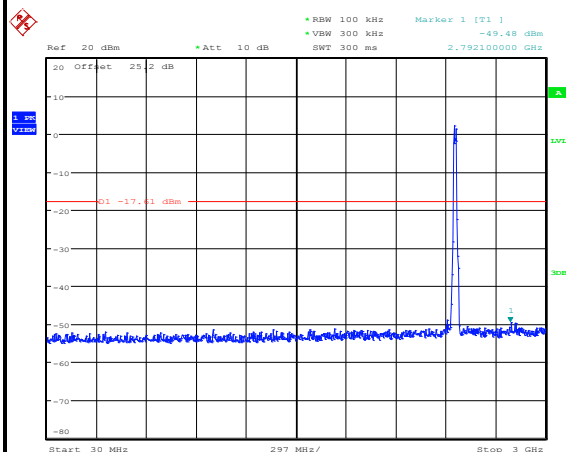
Date: 23.DEC.2013 22:06:06

High Channel Plot



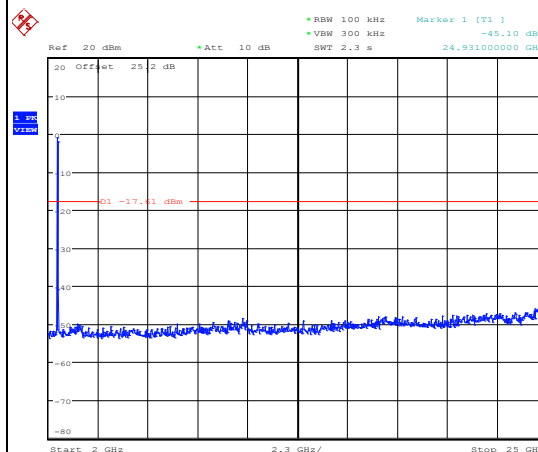
Date: 23.DEC.2013 22:06:49

Spurious Emission 30MHz~3GHz



Date: 23.DEC.2013 22:12:30

Spurious Emission 2GHz~25GHz



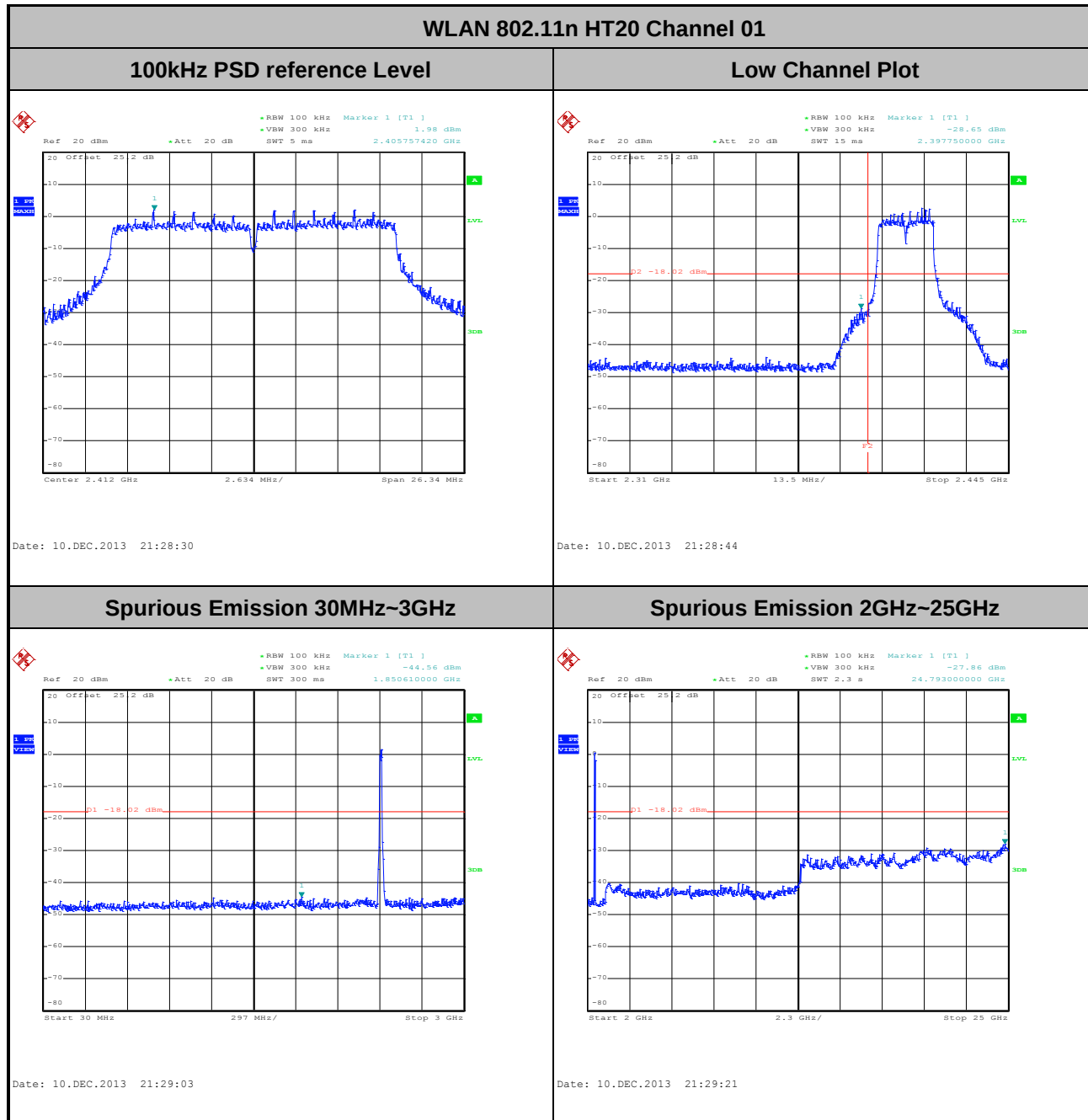
Date: 23.DEC.2013 22:12:48

Note:

1. The total loss is 25.2 dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer offset.
2. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.



Test Mode :	802.11n HT20	Temperature :	21~26°C
Test Band :	2.4GHz Low	Relative Humidity :	45~54%
Test Channel :	01	Test Engineer :	Osolemio Chang

**Note:**

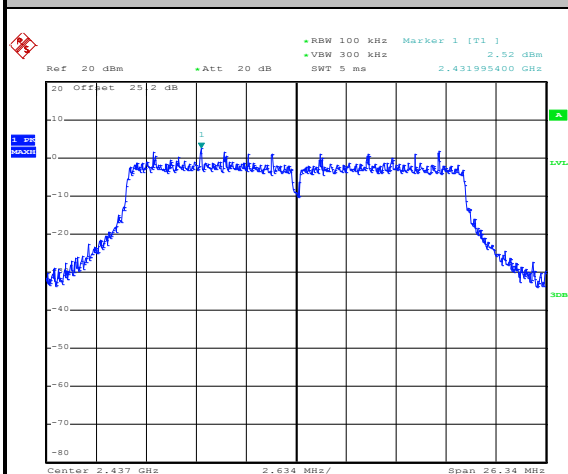
1. The total loss is 25.2 dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer offset.
2. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.



Test Mode :	802.11n HT20	Temperature :	21~26°C
Test Band :	2.4GHz Mid.	Relative Humidity :	45~54%
Test Channel :	06	Test Engineer :	Osolemio Chang

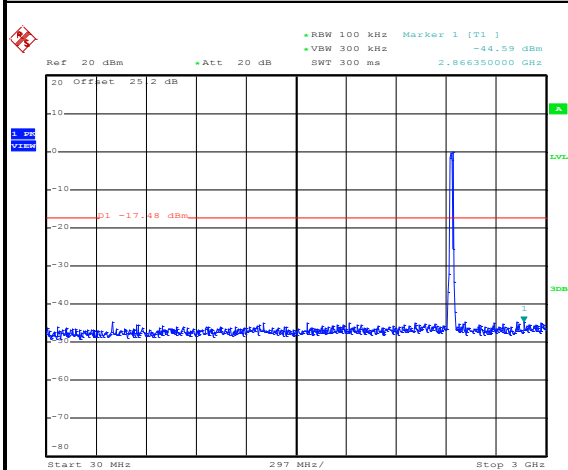
WLAN 802.11n HT20 Channel 06

100kHz PSD reference Level



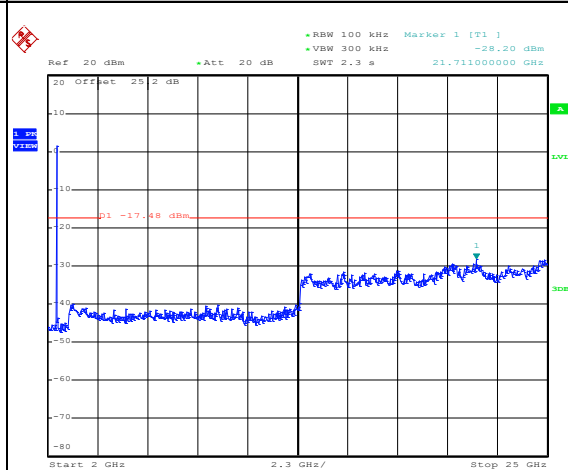
Date: 10.DEC.2013 21:49:31

Spurious Emission 30MHz~3GHz



Date: 10.DEC.2013 21:49:51

Spurious Emission 2GHz~25GHz



Date: 10.DEC.2013 21:50:09

Note:

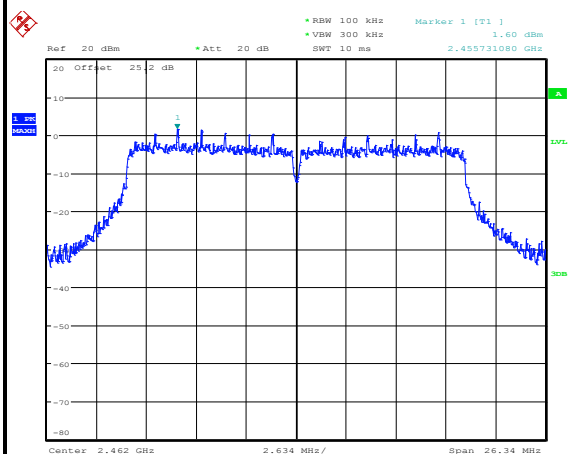
1. The total loss is 25.2 dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer offset.
2. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.



Test Mode :	802.11n HT20	Temperature :	21~26°C
Test Band :	2.4GHz High	Relative Humidity :	45~54%
Test Channel :	11	Test Engineer :	Osolemio Chang

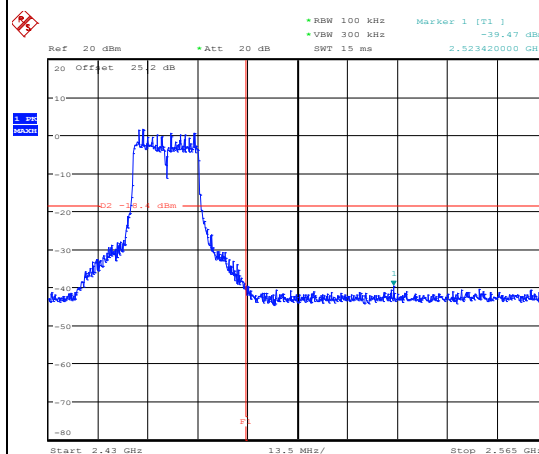
WLAN 802.11n HT20 Channel 11

100kHz PSD reference Level



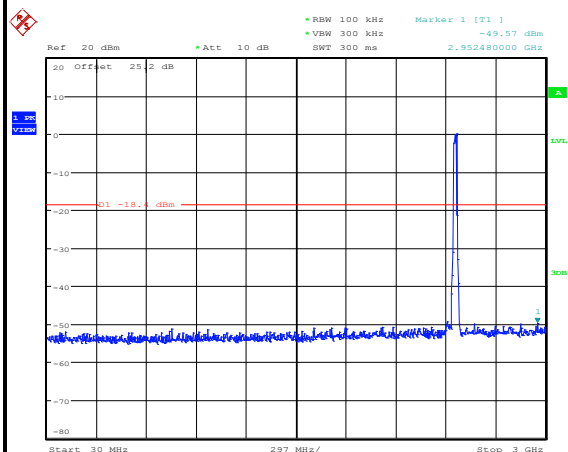
Date: 23.DEC.2013 22:17:25

High Channel Plot



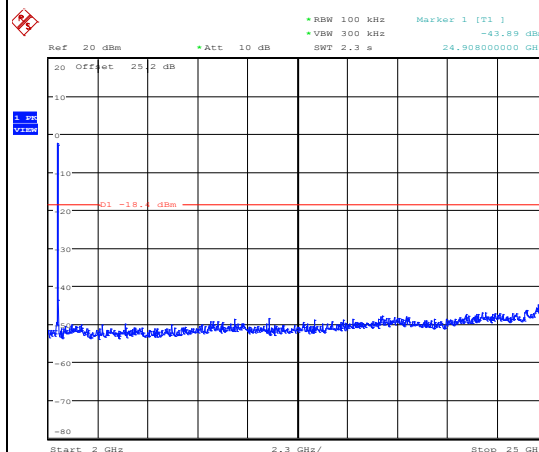
Date: 23.DEC.2013 22:17:38

Spurious Emission 30MHz~3GHz



Date: 23.DEC.2013 22:20:15

Spurious Emission 2GHz~25GHz



Date: 23.DEC.2013 22:20:33

Note:

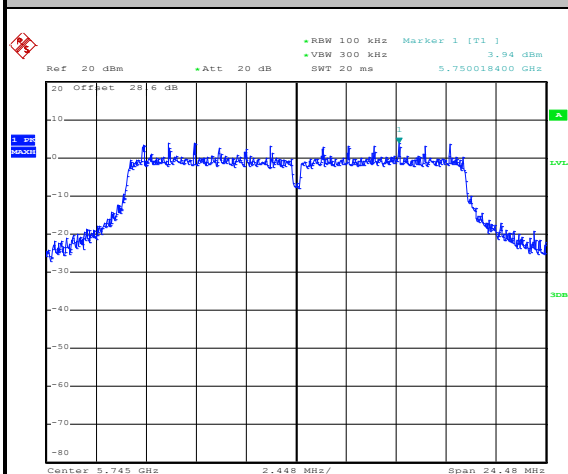
1. The total loss is 25.2 dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer offset.
2. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.



Test Mode :	802.11a	Temperature :	21~26°C
Test Band :	5GHz Low	Relative Humidity :	45~54%
Test Channel :	149	Test Engineer :	Osolemio Chang

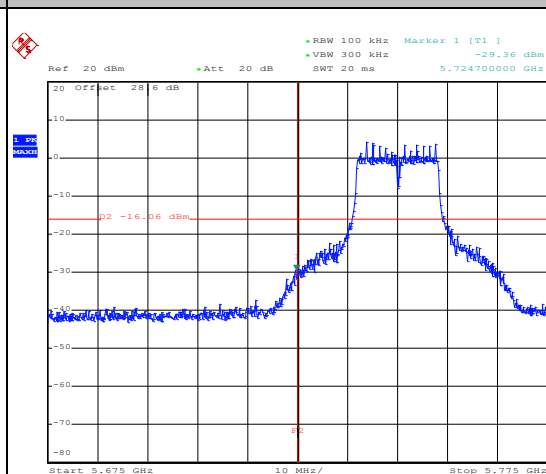
WLAN 802.11a Channel 149

100kHz PSD reference Level



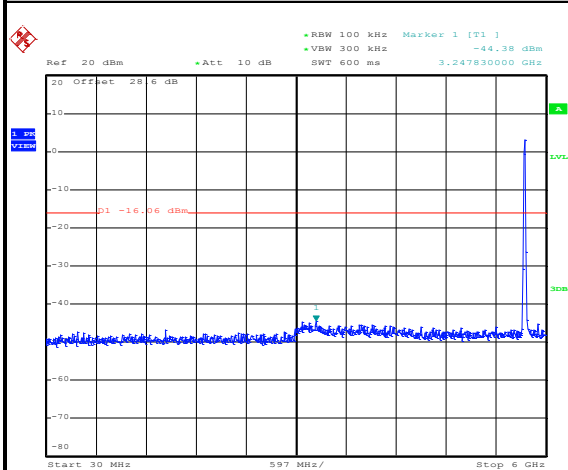
Date: 10.DEC.2013 22:03:37

Low Channel Plot



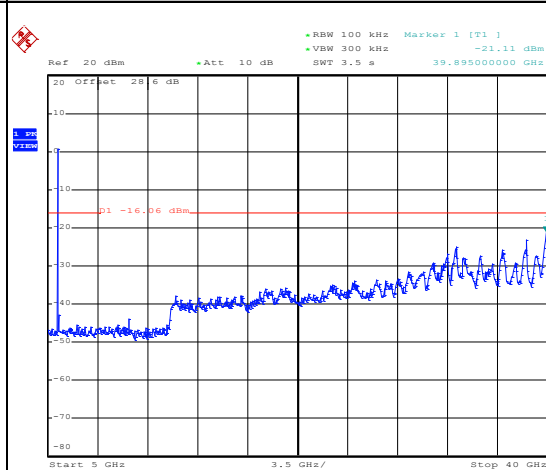
Date: 10.DEC.2013 22:03:51

Spurious Emission 30MHz~6GHz



Date: 10.DEC.2013 22:46:16

Spurious Emission 5GHz~40GHz



Date: 10.DEC.2013 22:46:35

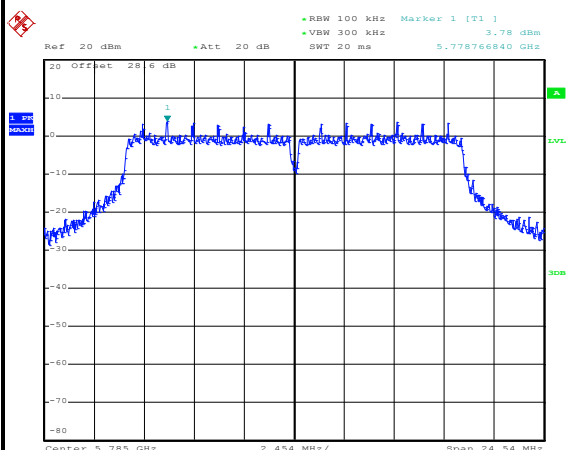
Note:

1. The total loss is 28.6 dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer offset.
2. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

Test Mode :	802.11a	Temperature :	21~26℃
Test Band :	5GHz Mid.	Relative Humidity :	45~54%
Test Channel :	157	Test Engineer :	Osolemio Chang

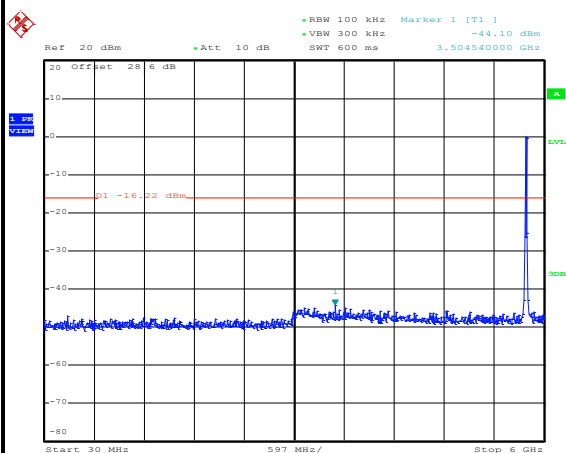
WLAN 802.11a Channel 157

100kHz PSD reference Level



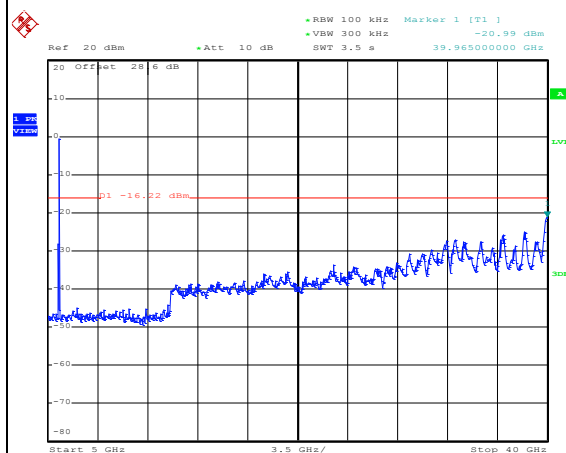
Date: 10.DEC.2013 22:10:21

Spurious Emission 30MHz~6GHz



Date: 10.DEC.2013 22:48:27

Spurious Emission 5GHz~40GHz



Date: 10.DEC.2013 22:48:46

Note:

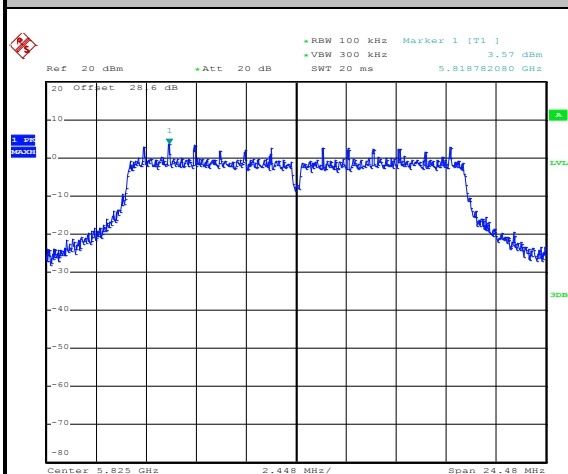
1. The total loss is 28.6 dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer offset.
2. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.



Test Mode :	802.11a	Temperature :	21~26°C
Test Band :	5GHz High	Relative Humidity :	45~54%
Test Channel :	165	Test Engineer :	Osolemio Chang

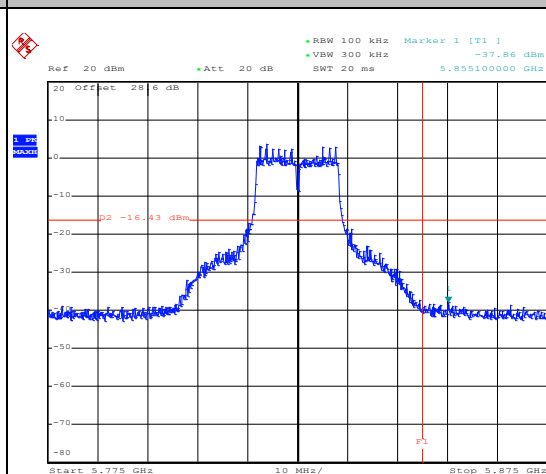
WLAN 802.11a Channel 165

100kHz PSD reference Level



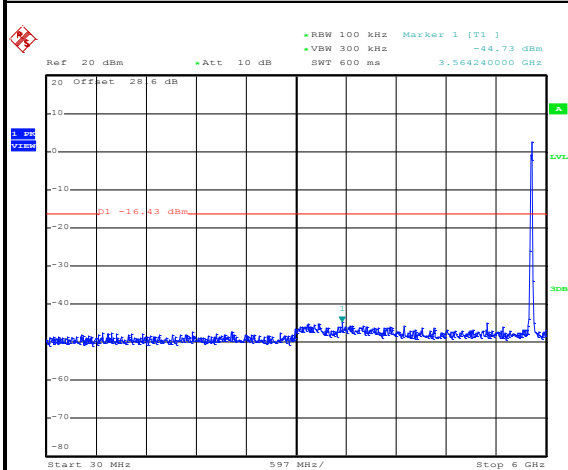
Date: 10.DEC.2013 22:20:02

High Channel Plot



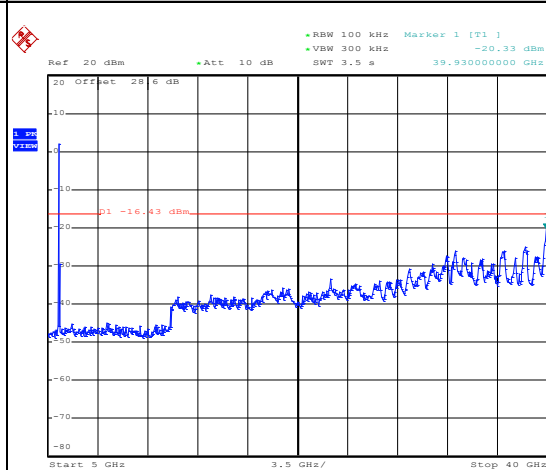
Date: 10.DEC.2013 22:20:16

Spurious Emission 30MHz~6GHz



Date: 10.DEC.2013 22:50:26

Spurious Emission 5GHz~40GHz



Date: 10.DEC.2013 22:50:45

Note:

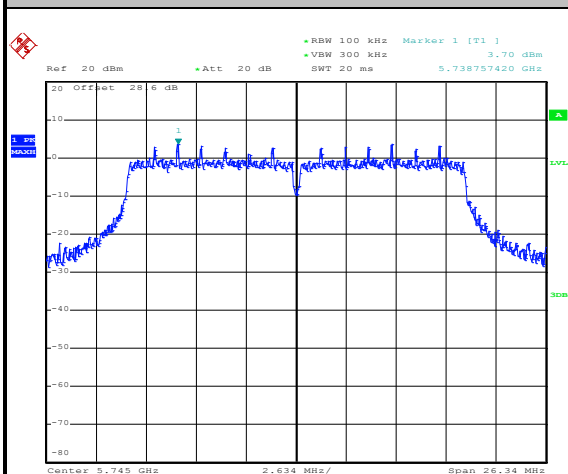
1. The total loss is 28.6 dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer offset.
2. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.



Test Mode :	802.11n HT20	Temperature :	21~26°C
Test Band :	5GHz Low	Relative Humidity :	45~54%
Test Channel :	149	Test Engineer :	Osolemio Chang

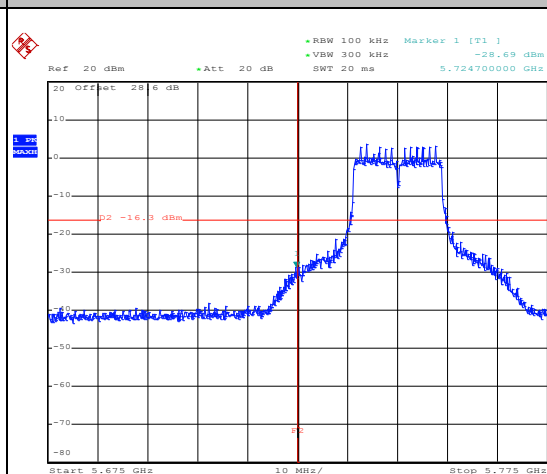
WLAN 802.11n HT20 Channel 149

100kHz PSD reference Level



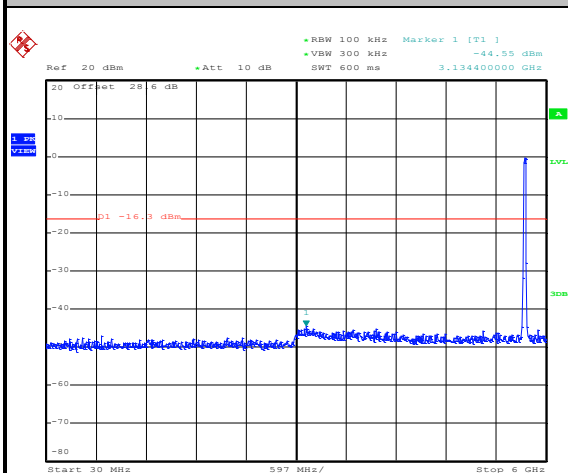
Date: 10.DEC.2013 22:32:12

Low Channel Plot



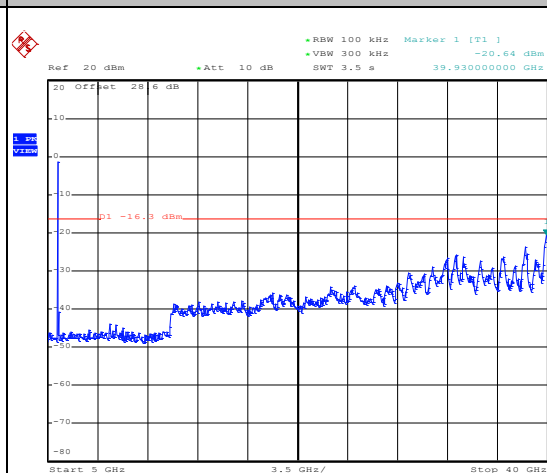
Date: 10.DEC.2013 22:32:26

Spurious Emission 30MHz~6GHz



Date: 10.DEC.2013 22:32:45

Spurious Emission 5GHz~40GHz

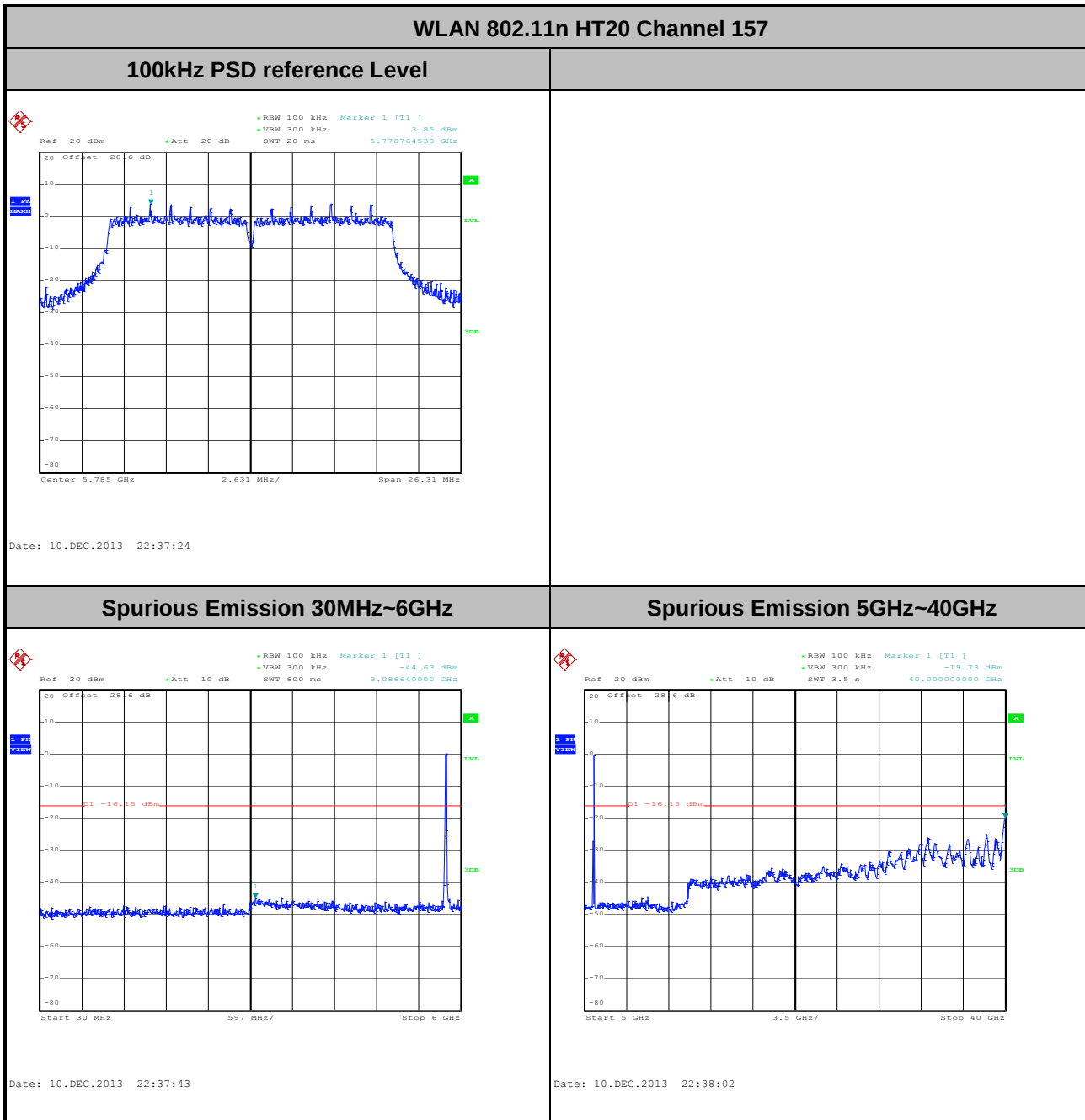


Date: 10.DEC.2013 22:33:03

Note:

1. The total loss is 28.6 dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer offset.
2. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

Test Mode :	802.11n HT20	Temperature :	21~26°C
Test Band :	5GHz Mid.	Relative Humidity :	45~54%
Test Channel :	157	Test Engineer :	Osolemio Chang


Note:

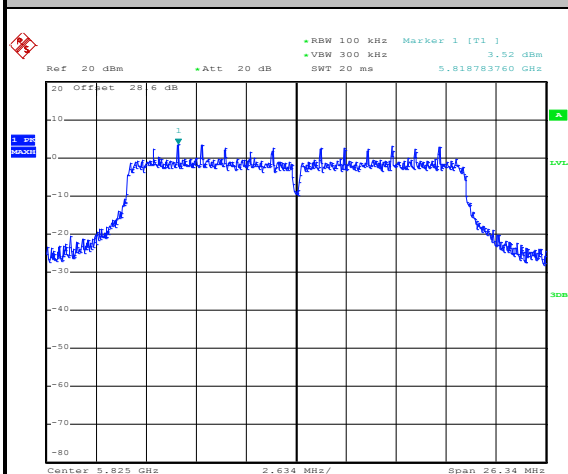
1. The total loss is 28.6 dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer offset.
2. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.



Test Mode :	802.11n HT20	Temperature :	21~26°C
Test Band :	5GHz High	Relative Humidity :	45~54%
Test Channel :	165	Test Engineer :	Osolemio Chang

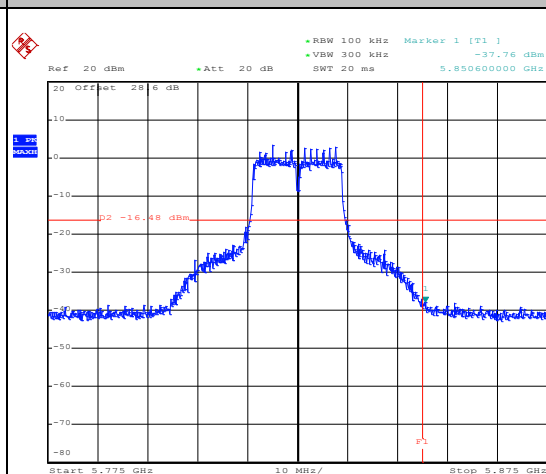
WLAN 802.11n HT20 Channel 165

100kHz PSD reference Level



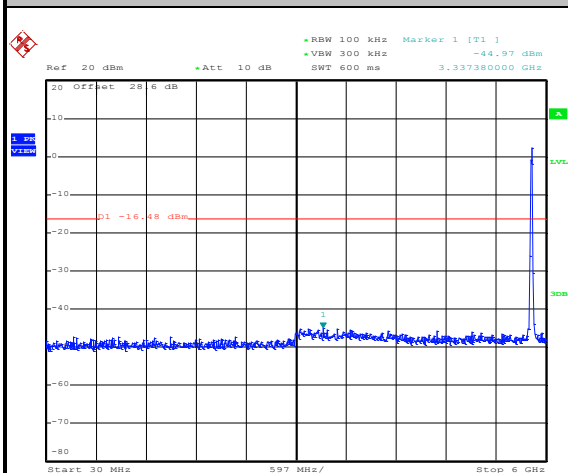
Date: 10.DEC.2013 22:41:55

High Channel Plot



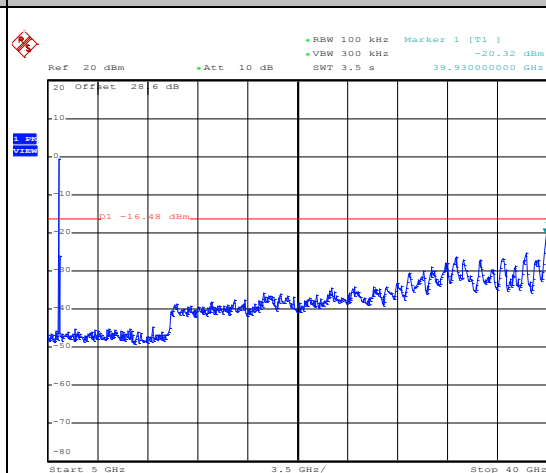
Date: 10.DEC.2013 22:42:09

Spurious Emission 30MHz~6GHz



Date: 10.DEC.2013 22:42:28

Spurious Emission 5GHz~40GHz



Date: 10.DEC.2013 22:42:47

Note:

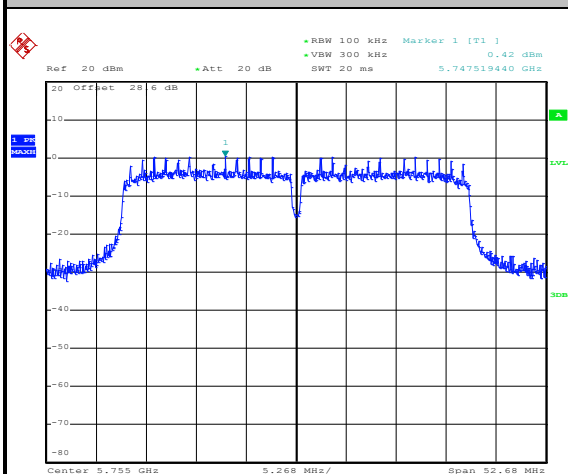
1. The total loss is 28.6 dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer offset.
2. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.



Test Mode :	802.11n HT40	Temperature :	21~26°C
Test Band :	5GHz Low	Relative Humidity :	45~54%
Test Channel :	151	Test Engineer :	Osolemio Chang

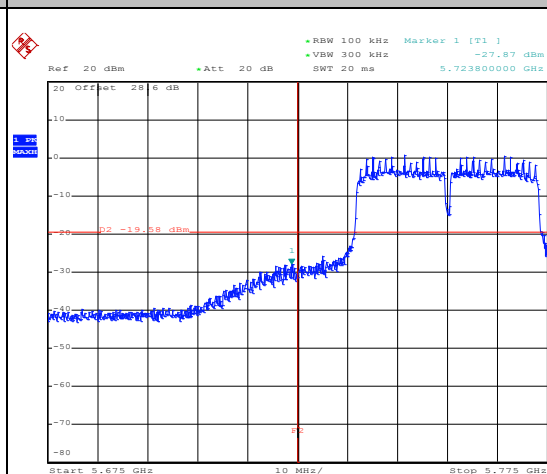
WLAN 802.11n HT40 Channel 151

100kHz PSD reference Level



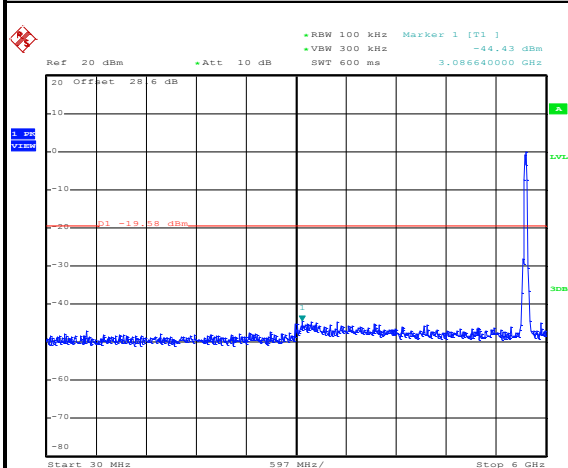
Date: 10.DEC.2013 23:04:44

Low Channel Plot



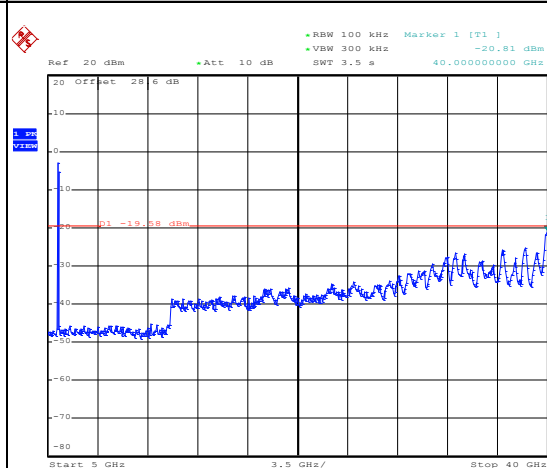
Date: 10.DEC.2013 23:04:57

Spurious Emission 30MHz~6GHz



Date: 10.DEC.2013 23:05:17

Spurious Emission 5GHz~40GHz



Date: 10.DEC.2013 23:05:35

Note:

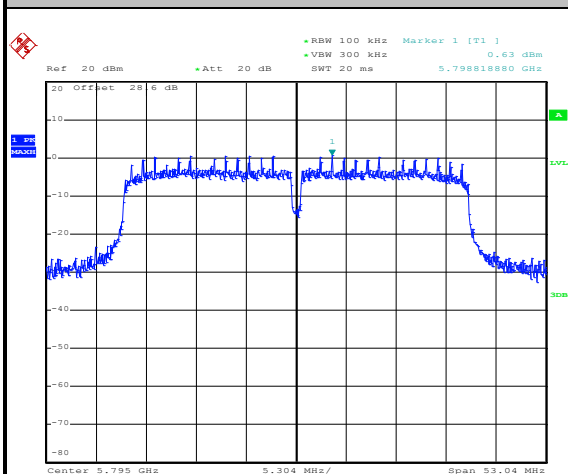
1. The total loss is 28.6 dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer offset.
2. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.



Test Mode :	802.11n HT40	Temperature :	21~26°C
Test Band :	5GHz High	Relative Humidity :	45~54%
Test Channel :	159	Test Engineer :	Osolemio Chang

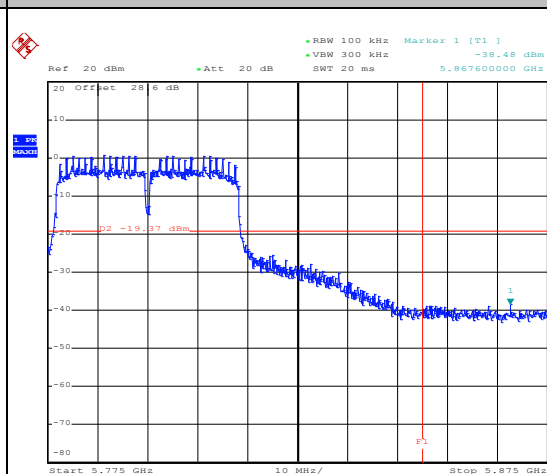
WLAN 802.11n HT40 Channel 159

100kHz PSD reference Level



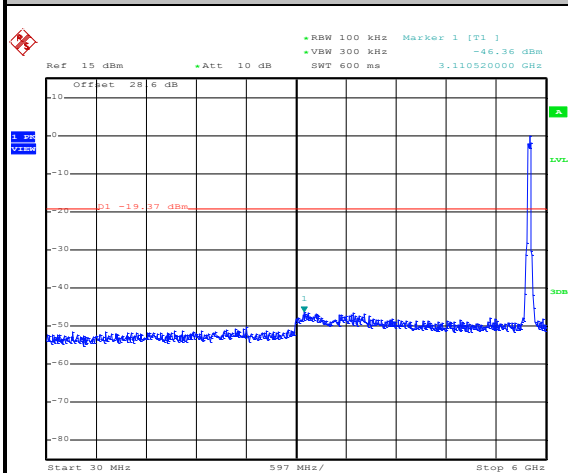
Date: 10.DEC.2013 23:09:30

High Channel Plot



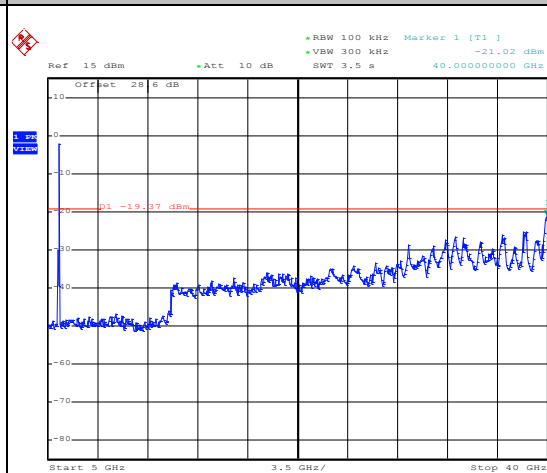
Date: 10.DEC.2013 23:09:44

Spurious Emission 30MHz~6GHz



Date: 10.DEC.2013 23:12:51

Spurious Emission 5GHz~40GHz



Date: 10.DEC.2013 23:13:09

Note:

1. The total loss is 28.6 dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer offset.
2. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

3.5 Radiated Band Edges and Spurious Emission Measurement

3.5.1 Limit of Radiated band edge and Spurious Emission Measurement

In any 100 kHz bandwidth outside the intentional radiator frequency band, all harmonics/spurious must be at least 20 dB below the highest emission level within the authorized band. If the output power of this device was measured by spectrum analyzer, the attenuation under this paragraph shall be 30 dB instead of 20 dB. In addition, radiated emissions which fall in the restricted bands must also comply with the FCC section 15.209 limits as below.

Frequency (MHz)	Field Strength (microvolts/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

3.5.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.5.3 Test Procedures

1. The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v03r01.
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level.
3. The EUT was placed on a turntable with 0.8 meter above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
6. For measurement below 1GHz, If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
7. Use the following spectrum analyzer settings:
 - (1) Span shall wide enough to fully capture the emission being measured;
 - (2) Set RBW=100 kHz for $f < 1$ GHz; $VBW \geq RBW$; Sweep = auto; Detector function = peak; Trace = max hold;
 - (3) Set RBW = 1 MHz, VBW= 3MHz for $f \geq 1$ GHz for peak measurement.

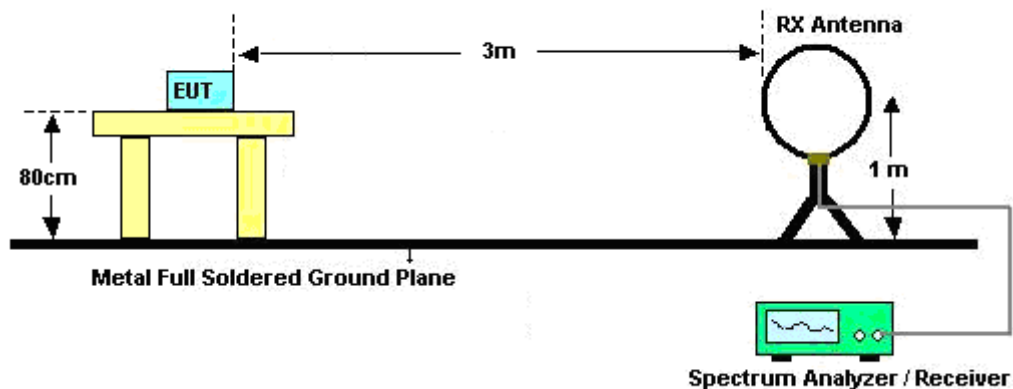
For average measurement:

 - VBW = 10 Hz, when duty cycle is no less than 98 percent.
 - $VBW \geq 1/T$, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

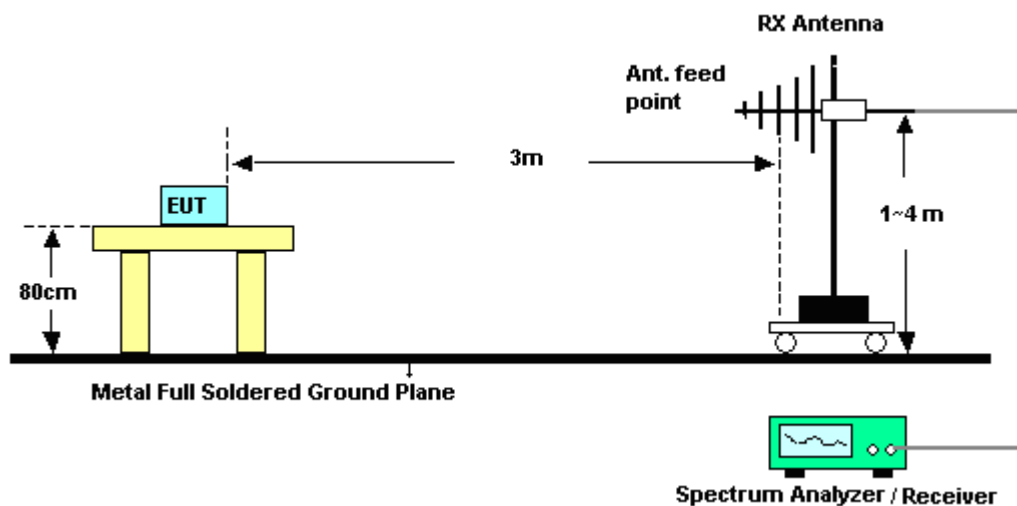
Band	Duty Cycle (%)	T(μ s)	1/T(kHz)	VBW Setting
802.11b	97.63	8240.00	0.12	300Hz
802.11g	87.26	1370.00	0.73	1kHz
2.4GHz 802.11n HT20	86.49	1280.00	0.78	1kHz
802.11a	87.26	1370.00	0.73	1kHz
5GHz 802.11n HT20	86.49	1280.00	0.78	1kHz
5GHz 802.11n HT40	76.19	640.00	1.56	3kHz

3.5.4 Test Setup

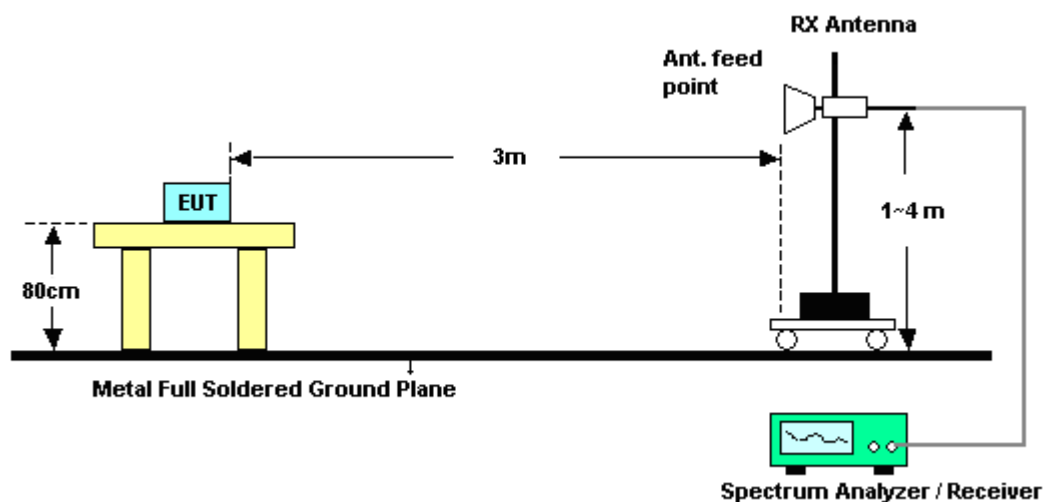
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



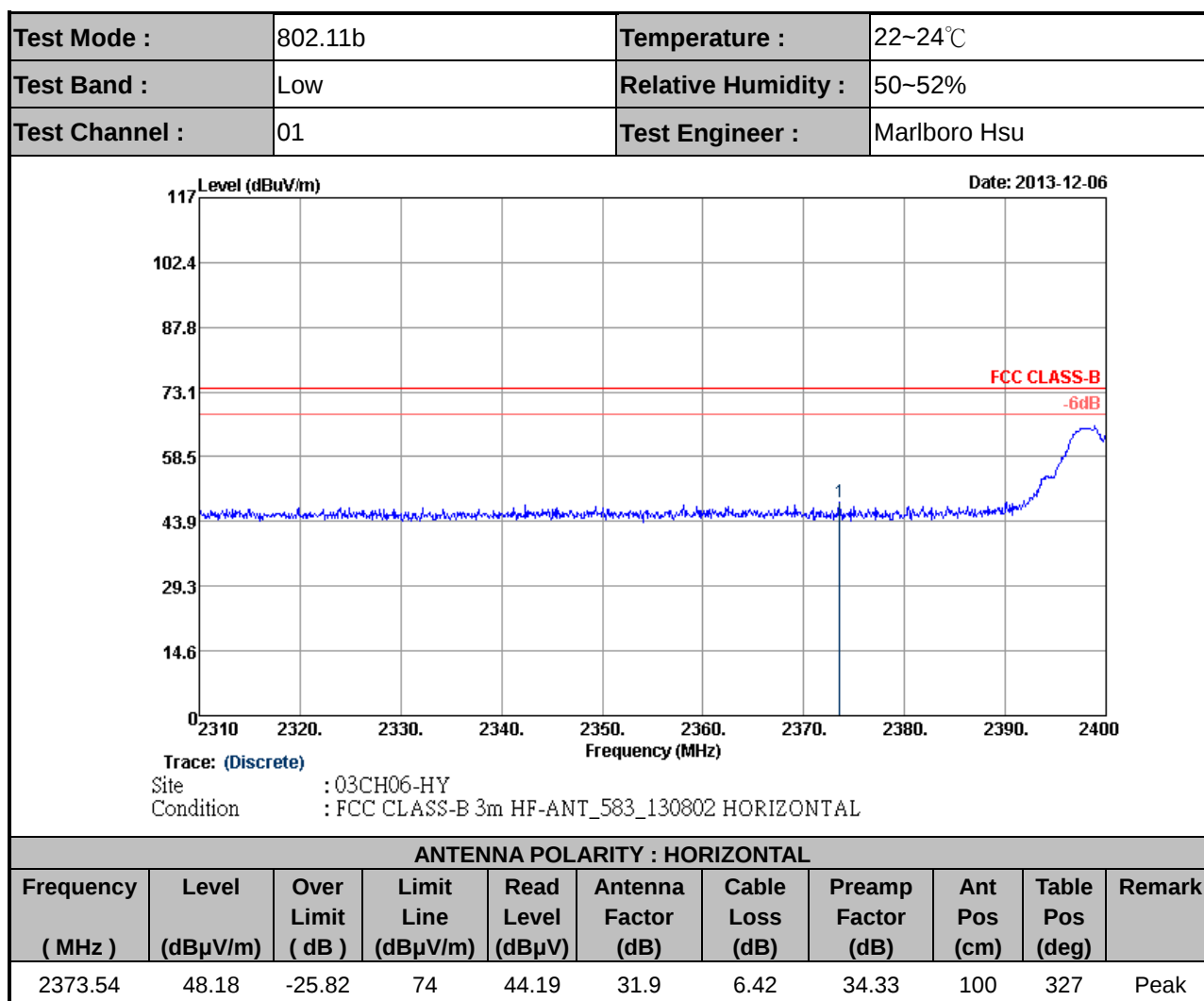
For radiated emissions above 1GHz



3.5.5 Test Results of Radiated Spurious Emissions (9kHz ~ 30MHz)

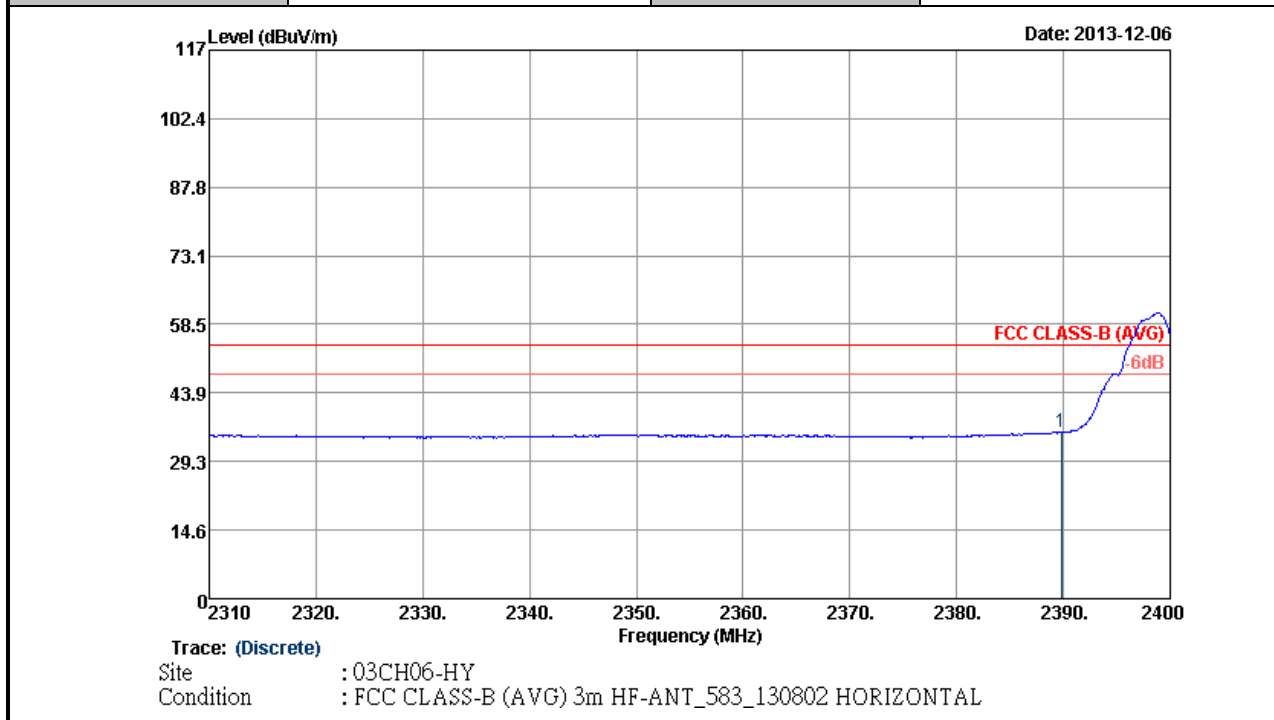
The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

3.5.6 Test Result of Radiated Spurious at Band Edges



Note: Worst case measurement on 2373.54 MHz is compliance with 74/54 dBuV/m (peak/average) limit and band edge measurement in the restricted band 2310-2390MHz. And, 2390-2400 MHz is non-restricted band which limit line is 20dB below the fundamental frequency emission level which is tested by conducted spurious emission. Both the test results are compliance with the FCC limit line.

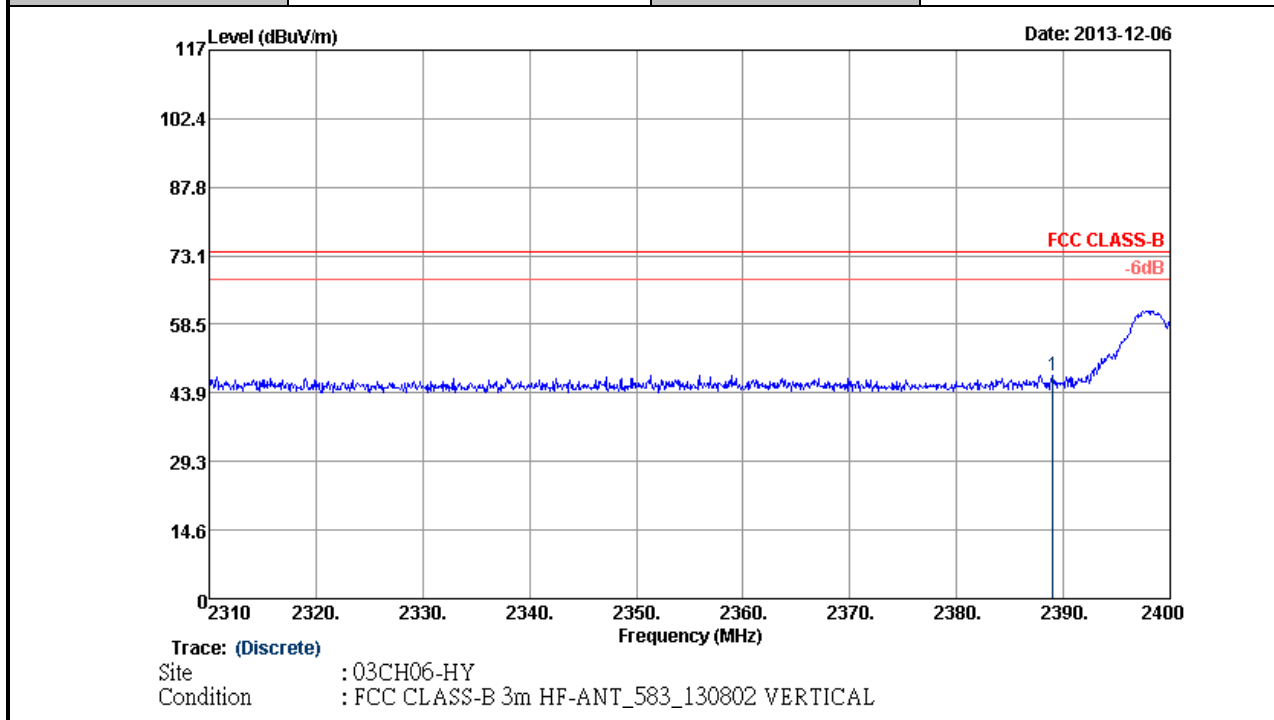
Test Mode :	802.11b	Temperature :	22~24°C
Test Band :	Low	Relative Humidity :	50~52%
Test Channel :	01	Test Engineer :	Marlboro Hsu



ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.83	35.59	-18.41	54	31.55	31.92	6.45	34.33	100	327	Average

Note: Worst case measurement on 2389.83 MHz is compliance with 74/54 dBuV/m (peak/average) limit and band edge measurement in the restricted band 2310-2390MHz. And, 2390-2400 MHz is non-restricted band which limit line is 20dB below the fundamental frequency emission level which is tested by conducted spurious emission. Both the test results are compliance with the FCC limit line.

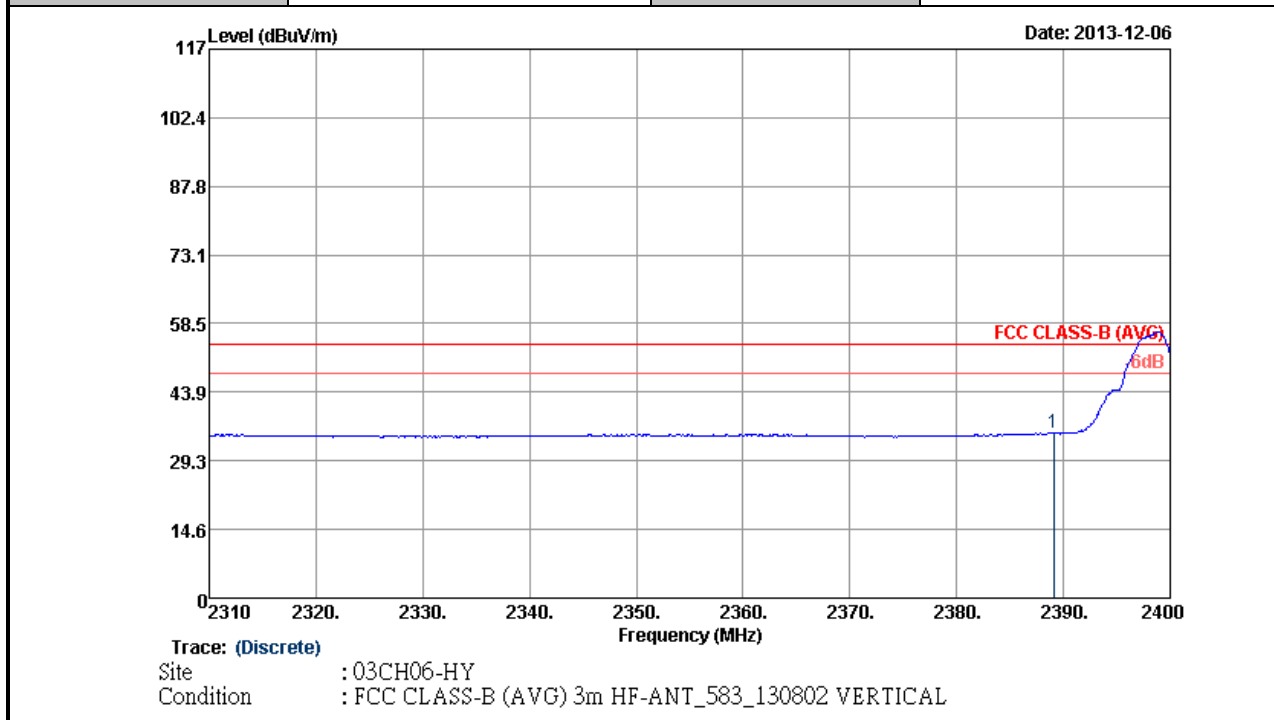
Test Mode :	802.11b	Temperature :	22~24°C
Test Band :	Low	Relative Humidity :	50~52%
Test Channel :	01	Test Engineer :	Marlboro Hsu



ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.02	47.63	-26.37	74	43.59	31.92	6.45	34.33	109	274	Peak

Note: Worst case measurement on 2389.02 MHz is compliance with 74/54 dBuV/m (peak/average) limit and band edge measurement in the restricted band 2310-2390MHz. And, 2390-2400 MHz is non-restricted band which limit line is 20dB below the fundamental frequency emission level which is tested by conducted spurious emission. Both the test results are compliance with the FCC limit line.

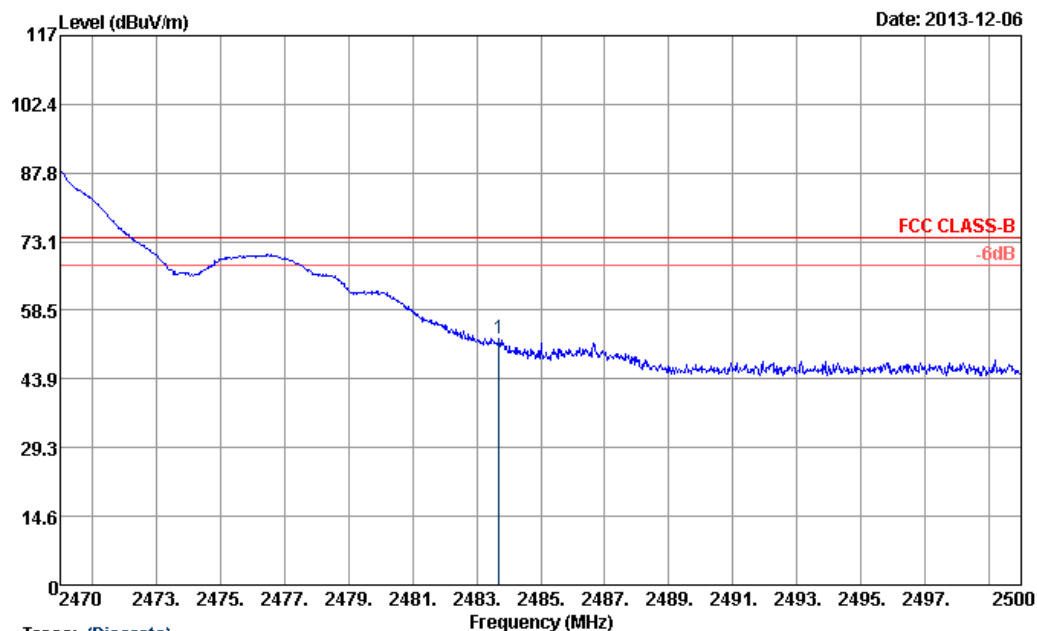
Test Mode :	802.11b	Temperature :	22~24°C
Test Band :	Low	Relative Humidity :	50~52%
Test Channel :	01	Test Engineer :	Marlboro Hsu



ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.11	35.26	-18.74	54	31.22	31.92	6.45	34.33	109	274	Average

Note: Worst case measurement on 2389.11 MHz is compliance with 74/54 dBuV/m (peak/average) limit and band edge measurement in the restricted band 2310-2390MHz. And, 2390-2400 MHz is non-restricted band which limit line is 20dB below the fundamental frequency emission level which is tested by conducted spurious emission. Both the test results are compliance with the FCC limit line.

Test Mode :	802.11b	Temperature :	22~24℃
Test Band :	High	Relative Humidity :	50~52%
Test Channel :	11	Test Engineer :	Marlboro Hsu



Trace: (Discrete)

Site : 03CH06-HY

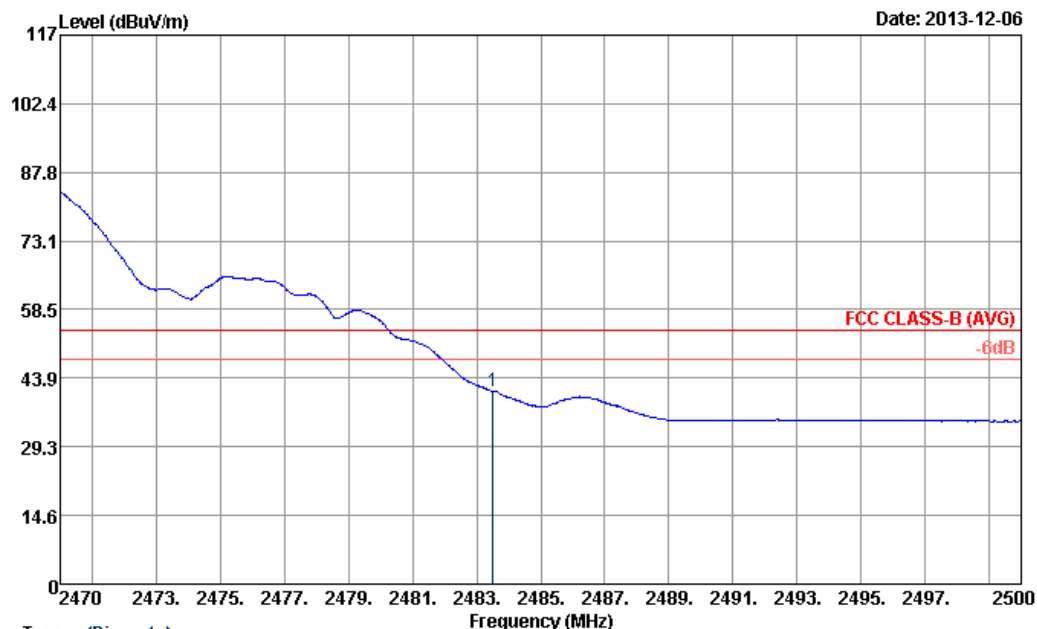
Condition : FCC CLASS-B 3m HF-ANT_583_130802 HORIZONTAL

ANTENNA POLARITY : HORIZONTAL

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.71	52.34	-21.66	74	48.06	31.99	6.59	34.3	100	328	Peak

Note: Worst case measurement on 2483.71 MHz is compliance with 74/54 dBuV/m (peak/average) limit and band edge measurement in the restricted band 2483.5-2500MHz. And, 2470-2483.5MHz is within the operating band and not within the restricted band. The test result is compliance with the FCC limit line.

Test Mode :	802.11b	Temperature :	22~24℃
Test Band :	High	Relative Humidity :	50~52%
Test Channel :	11	Test Engineer :	Marlboro Hsu



Trace: (Discrete)

Site : 03CH06-HY

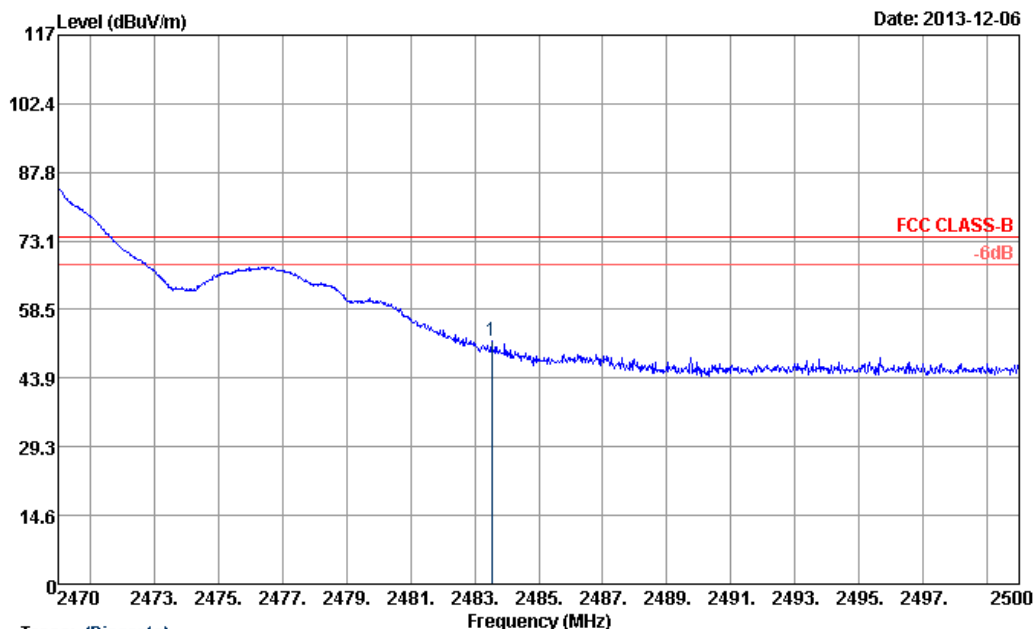
Condition : FCC CLASS-B (AVG) 3m HF-ANT_583_130802 HORIZONTAL

ANTENNA POLARITY : HORIZONTAL

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.5	41.06	-12.94	54	36.78	31.99	6.59	34.3	100	328	Average

Note: Worst case measurement on 2483.50 MHz is compliance with 74/54 dBuV/m (peak/average) limit and band edge measurement in the restricted band 2483.5-2500MHz. And, 2470-2483.5MHz is within the operating band and not within the restricted band. The test result is compliance with the FCC limit line.

Test Mode :	802.11b	Temperature :	22~24℃
Test Band :	High	Relative Humidity :	50~52%
Test Channel :	11	Test Engineer :	Marlboro Hsu



Trace: (Discrete)

Site : 03CH06-HY

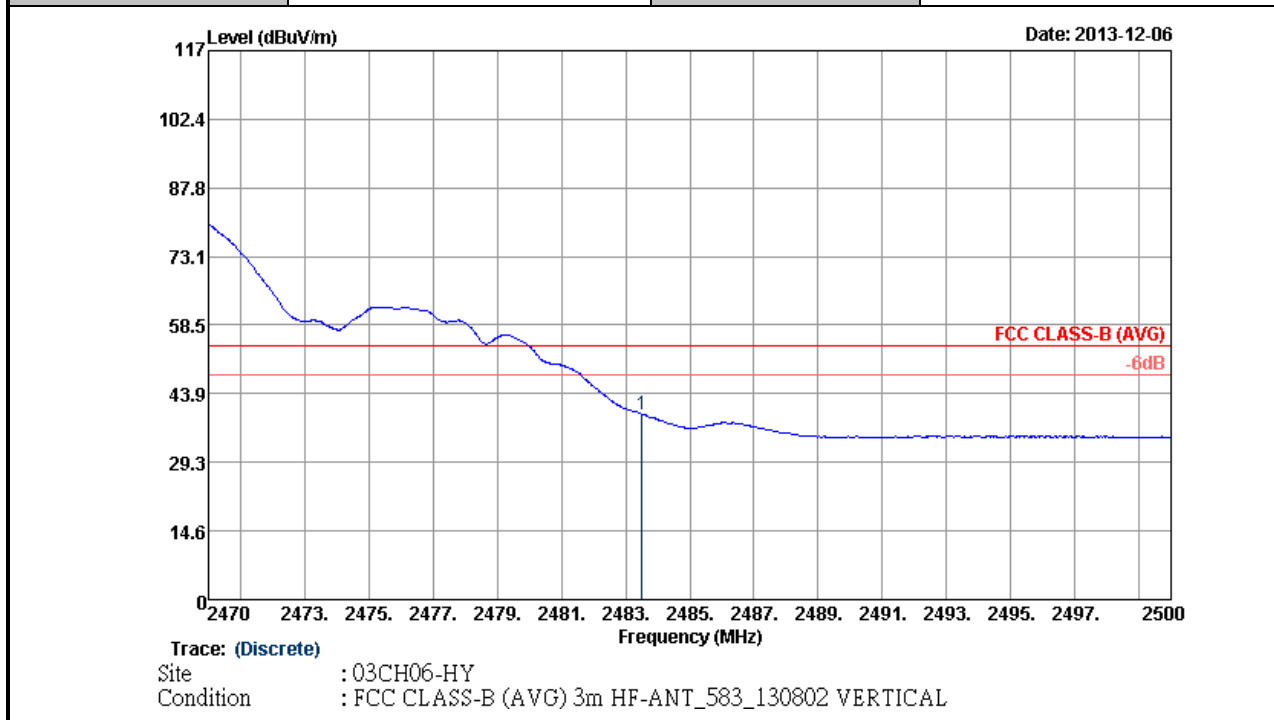
Condition : FCC CLASS-B 3m HF-ANT_583_130802 VERTICAL

ANTENNA POLARITY : VERTICAL

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.53	51.93	-22.07	74	47.65	31.99	6.59	34.3	103	279	Peak

Note: Worst case measurement on 2483.53 MHz is compliance with 74/54 dBuV/m (peak/average) limit and band edge measurement in the restricted band 2483.5-2500MHz. And, 2470-2483.5MHz is within the operating band and not within the restricted band. The test result is compliance with the FCC limit line.

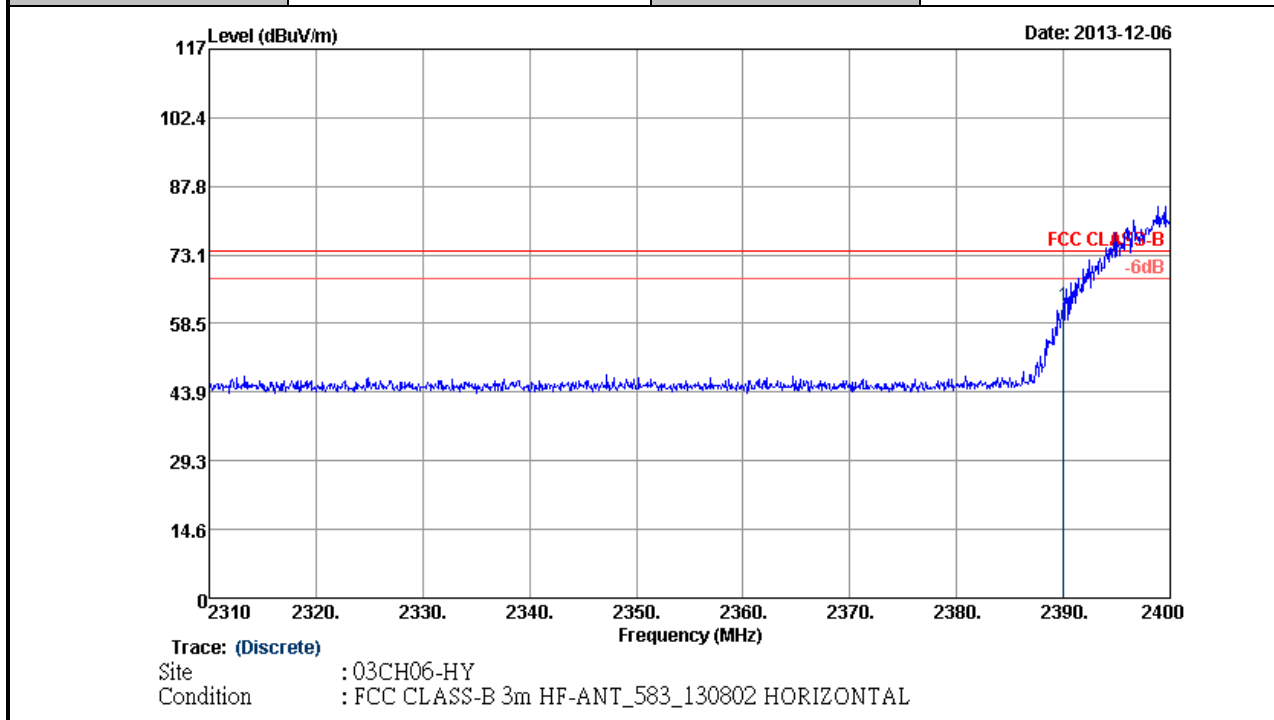
Test Mode :	802.11b	Temperature :	22~24℃
Test Band :	High	Relative Humidity :	50~52%
Test Channel :	11	Test Engineer :	Marlboro Hsu



ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.5	39.5	-14.5	54	35.22	31.99	6.59	34.3	103	279	Average

Note: Worst case measurement on 2483.50 MHz is compliance with 74/54 dBuV/m (peak/average) limit and band edge measurement in the restricted band 2483.5-2500MHz. And, 2470-2483.5MHz is within the operating band and not within the restricted band. The test result is compliance with the FCC limit line.

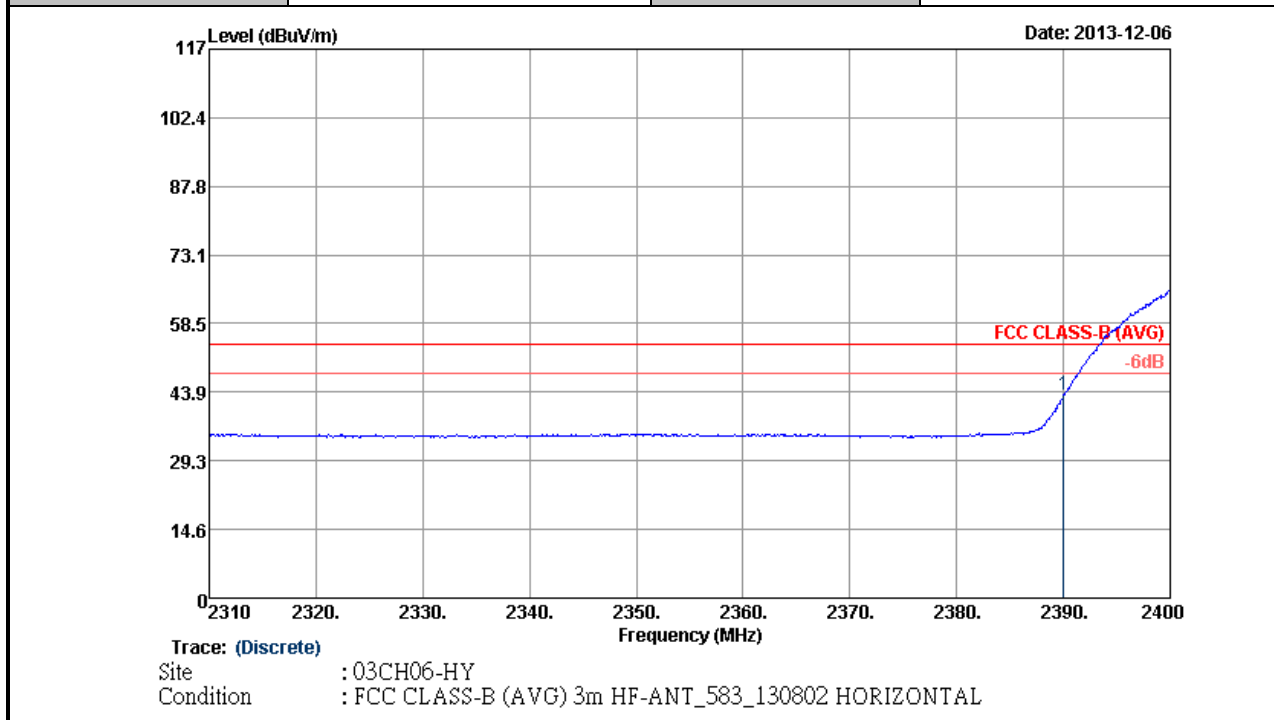
Test Mode :	802.11g	Temperature :	22~24°C
Test Band :	Low	Relative Humidity :	50~52%
Test Channel :	01	Test Engineer :	Marlboro Hsu



ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2390	62.26	-11.74	74	58.22	31.92	6.45	34.33	100	327	Peak

Note: Worst case measurement on 2390 MHz is compliance with 74/54 dBuV/m (peak/average) limit and band edge measurement in the restricted band 2310-2390MHz. And, 2390-2400 MHz is non-restricted band which limit line is 20dB below the fundamental frequency emission level which is tested by conducted spurious emission. Both the test results are compliance with the FCC limit line.

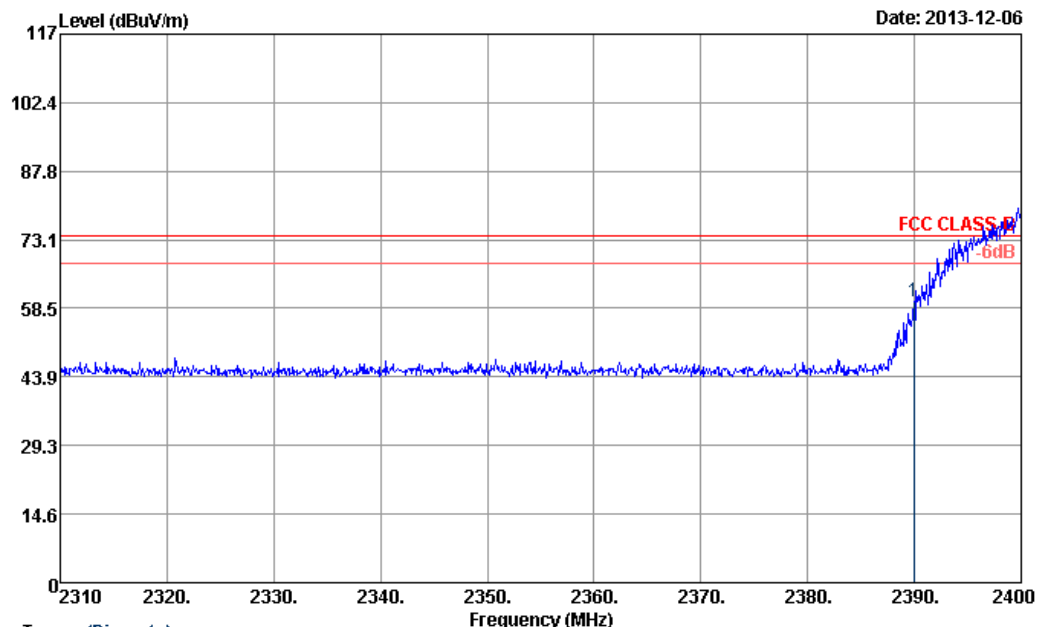
Test Mode :	802.11g	Temperature :	22~24°C
Test Band :	Low	Relative Humidity :	50~52%
Test Channel :	01	Test Engineer :	Marlboro Hsu



ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2390	43.25	-10.75	54	39.21	31.92	6.45	34.33	100	327	Average

Note: Worst case measurement on 2390 MHz is compliance with 74/54 dBuV/m (peak/average) limit and band edge measurement in the restricted band 2310-2390MHz. And, 2390-2400 MHz is non-restricted band which limit line is 20dB below the fundamental frequency emission level which is tested by conducted spurious emission. Both the test results are compliance with the FCC limit line.

Test Mode :	802.11g	Temperature :	22~24°C
Test Band :	Low	Relative Humidity :	50~52%
Test Channel :	01	Test Engineer :	Marlboro Hsu



Trace: (Discrete)

Site : 03CH06-HY

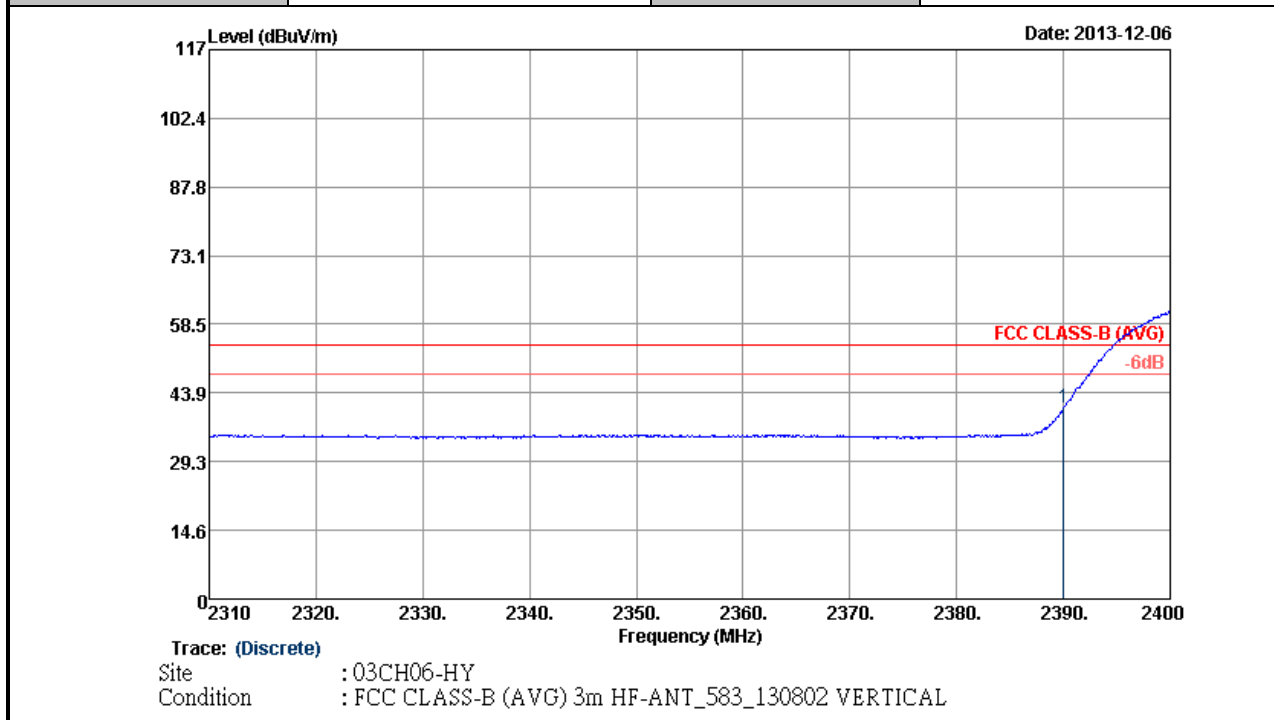
Condition : FCC CLASS-B 3m HF-ANT_583_130802 VERTICAL

ANTENNA POLARITY : VERTICAL

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.92	59.87	-14.13	74	55.83	31.92	6.45	34.33	107	276	Peak

Note: Worst case measurement on 2389.92 MHz is compliance with 74/54 dBuV/m (peak/average) limit and band edge measurement in the restricted band 2310-2390MHz. And, 2390-2400 MHz is non-restricted band which limit line is 20dB below the fundamental frequency emission level which is tested by conducted spurious emission. Both the test results are compliance with the FCC limit line.

Test Mode :	802.11g	Temperature :	22~24°C
Test Band :	Low	Relative Humidity :	50~52%
Test Channel :	01	Test Engineer :	Marlboro Hsu

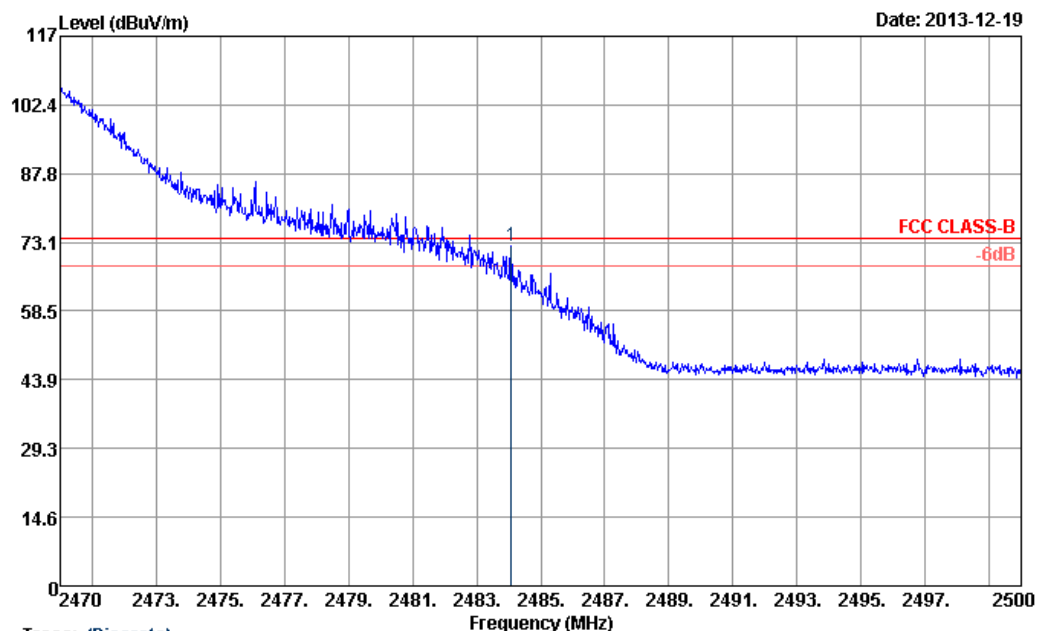


ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2390	40.67	-13.33	54	36.63	31.92	6.45	34.33	107	276	Average

Note: Worst case measurement on 2390 MHz is compliance with 74/54 dBuV/m (peak/average) limit and band edge measurement in the restricted band 2310-2390MHz. And, 2390-2400 MHz is non-restricted band which limit line is 20dB below the fundamental frequency emission level which is tested by conducted spurious emission. Both the test results are compliance with the FCC limit line.



Test Mode :	802.11g	Temperature :	22~24°C
Test Band :	High	Relative Humidity :	50~52%
Test Channel :	11	Test Engineer :	Marlboro Hsu



Trace: (Discrete)

Site : 03CH06-HY

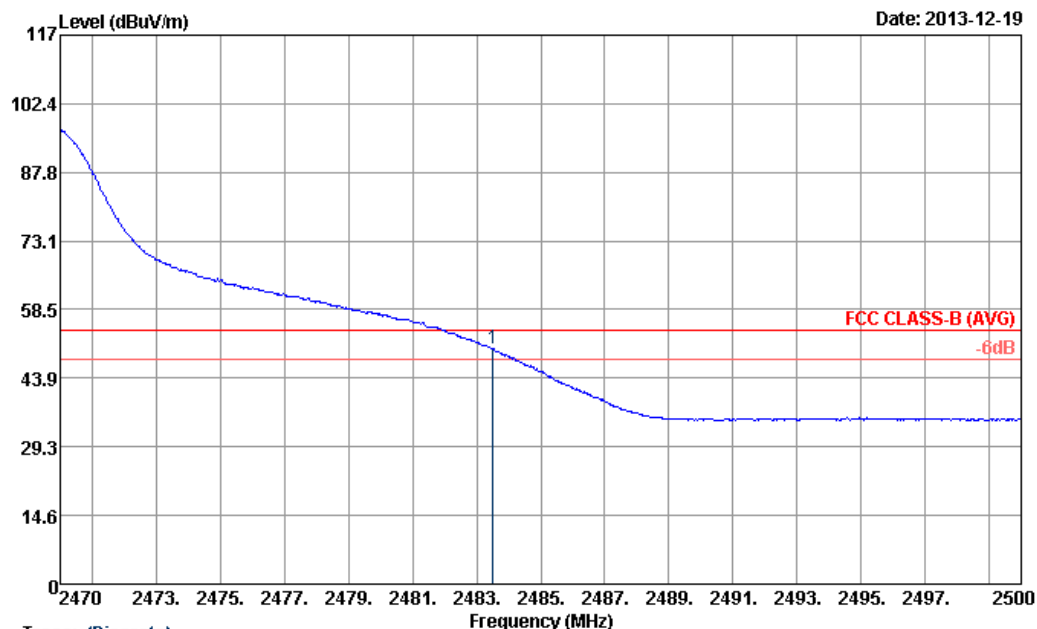
Condition : FCC CLASS-B 3m HF-ANT_583_130802 HORIZONTAL

ANTENNA POLARITY : HORIZONTAL

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2484.07	72.35	-1.65	74	68.07	31.99	6.59	34.3	100	318	Peak

Note: Worst case measurement on 2484.07 MHz is compliance with 74/54 dBuV/m (peak/average) limit and band edge measurement in the restricted band 2483.5-2500MHz. And, 2470-2483.5MHz is within the operating band and not within the restricted band. The test result is compliance with the FCC limit line.

Test Mode :	802.11g	Temperature :	22~24℃
Test Band :	High	Relative Humidity :	50~52%
Test Channel :	11	Test Engineer :	Marlboro Hsu



Trace: (Discrete)

Site : 03CH06-HY

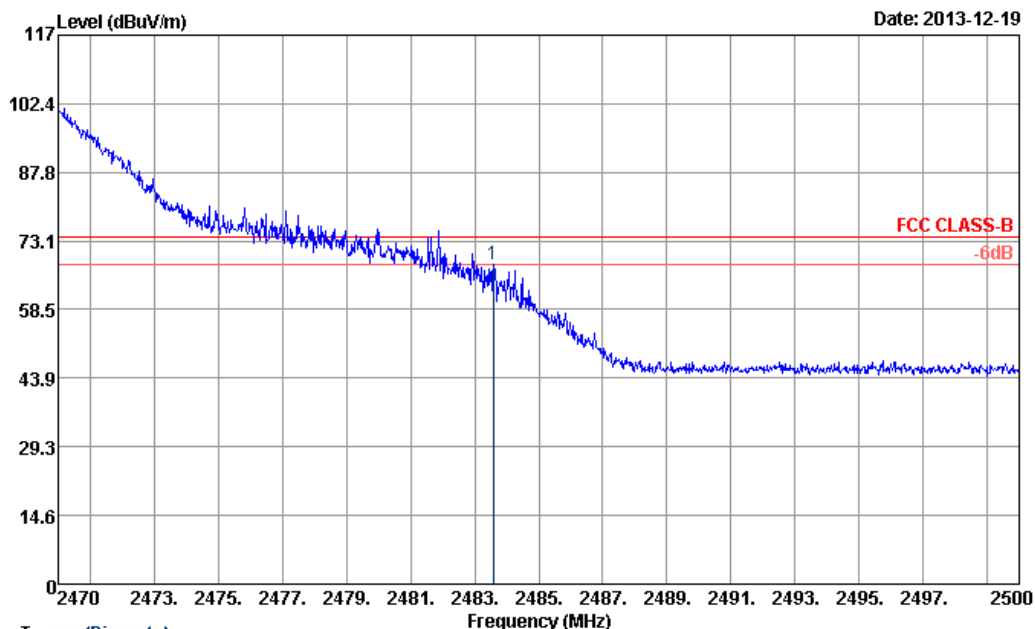
Condition : FCC CLASS-B (AVG) 3m HF-ANT_583_130802 HORIZONTAL

ANTENNA POLARITY : HORIZONTAL

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.5	50.1	-3.9	54	45.82	31.99	6.59	34.3	100	318	Average

Note: Worst case measurement on 2483.50 MHz is compliance with 74/54 dBuV/m (peak/average) limit and band edge measurement in the restricted band 2483.5-2500MHz. And, 2470-2483.5MHz is within the operating band and not within the restricted band. The test result is compliance with the FCC limit line.

Test Mode :	802.11g	Temperature :	22~24°C
Test Band :	High	Relative Humidity :	50~52%
Test Channel :	11	Test Engineer :	Marlboro Hsu



Trace: (Discrete)

Site : 03CH06-HY

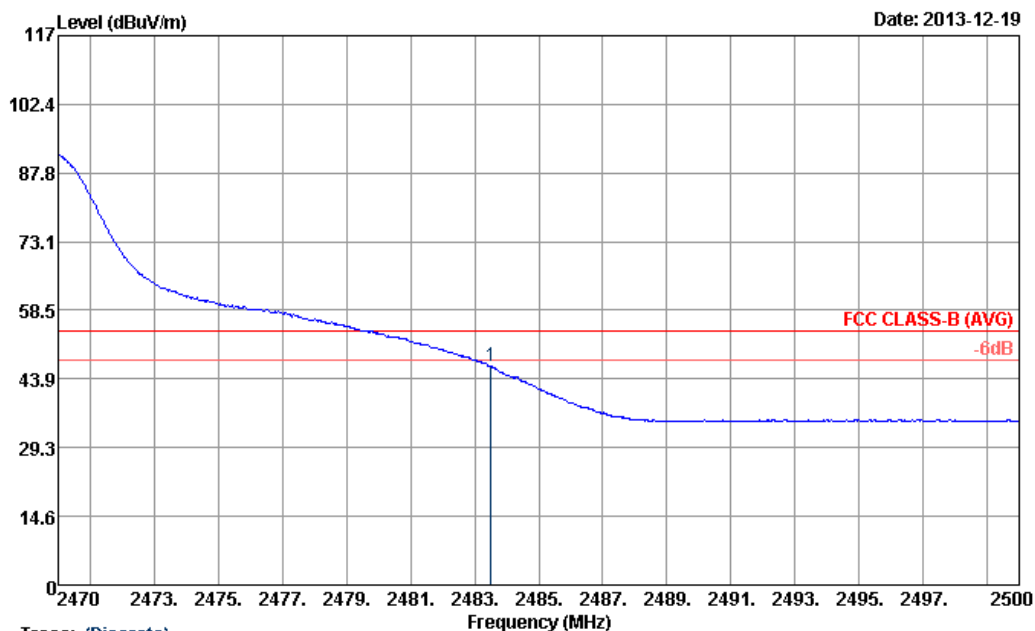
Condition : FCC CLASS-B 3m HF-ANT_583_130802 VERTICAL

ANTENNA POLARITY : VERTICAL

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.59	68.04	-5.96	74	63.76	31.99	6.59	34.3	103	259	Peak

Note: Worst case measurement on 2483.59 MHz is compliance with 74/54 dBuV/m (peak/average) limit and band edge measurement in the restricted band 2483.5-2500MHz. And, 2470-2483.5MHz is within the operating band and not within the restricted band. The test result is compliance with the FCC limit line.

Test Mode :	802.11g	Temperature :	22~24℃
Test Band :	High	Relative Humidity :	50~52%
Test Channel :	11	Test Engineer :	Marlboro Hsu



Trace: (Discrete)

Site : 03CH06-HY

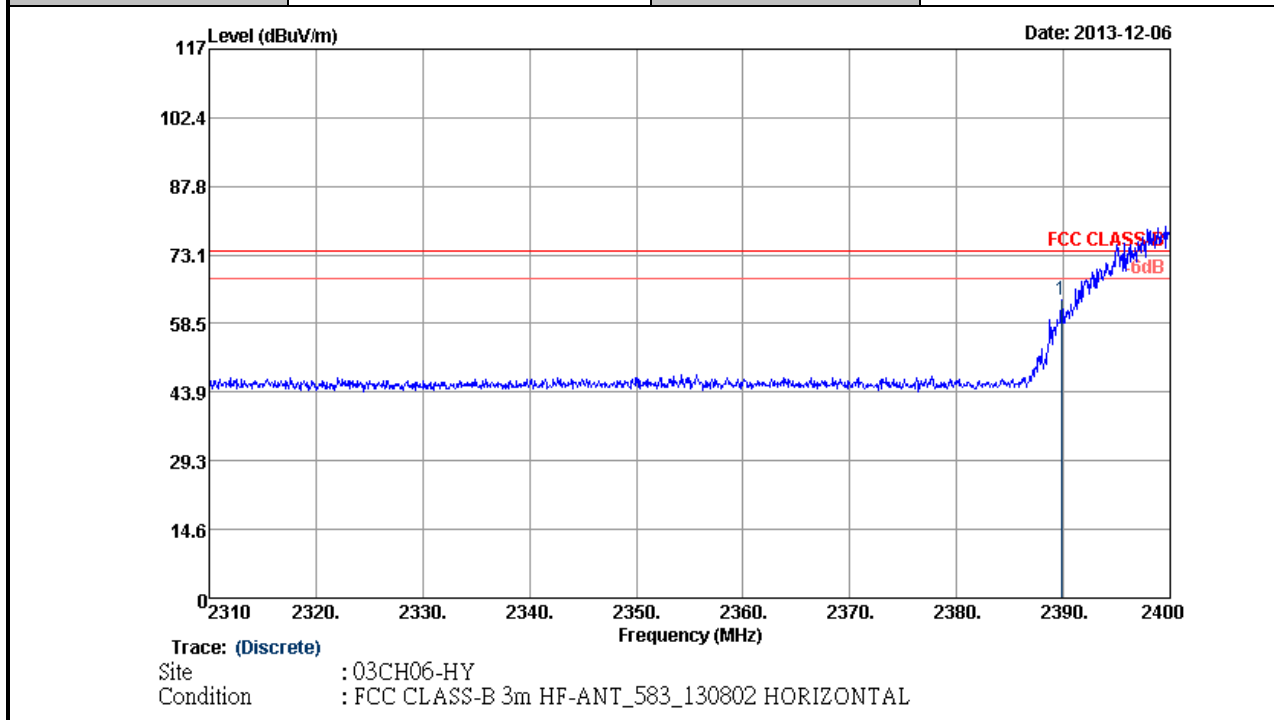
Condition : FCC CLASS-B (AVG) 3m HF-ANT_583_130802 VERTICAL

ANTENNA POLARITY : VERTICAL

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.5	46.53	-7.47	54	42.25	31.99	6.59	34.3	103	259	Average

Note: Worst case measurement on 2483.50 MHz is compliance with 74/54 dBuV/m (peak/average) limit and band edge measurement in the restricted band 2483.5-2500MHz. And, 2470-2483.5MHz is within the operating band and not within the restricted band. The test result is compliance with the FCC limit line.

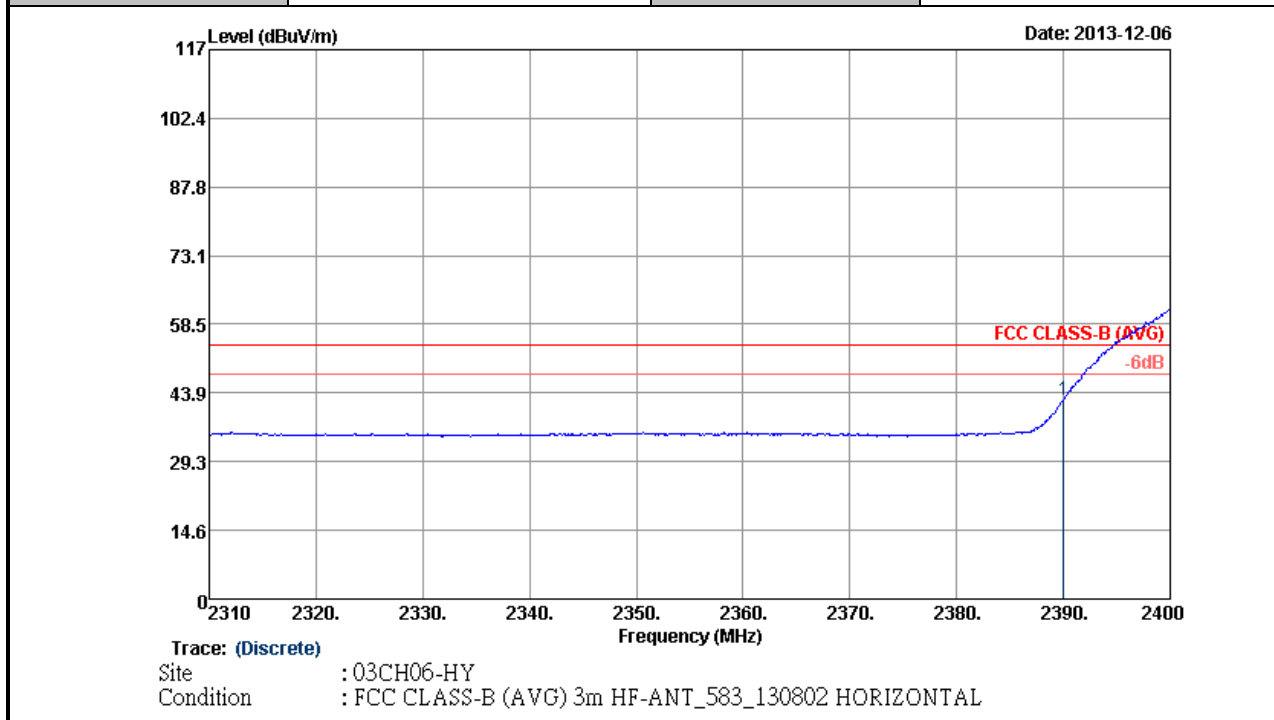
Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Band :	Low	Relative Humidity :	50~52%
Test Channel :	01	Test Engineer :	Marlboro Hsu



ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.83	63.67	-10.33	74	59.63	31.92	6.45	34.33	100	325	Peak

Note: Worst case measurement on 2389.83 MHz is compliance with 74/54 dBuV/m (peak/average) limit and band edge measurement in the restricted band 2310-2390MHz. And, 2390-2400 MHz is non-restricted band which limit line is 20dB below the fundamental frequency emission level which is tested by conducted spurious emission. Both the test results are compliance with the FCC limit line.

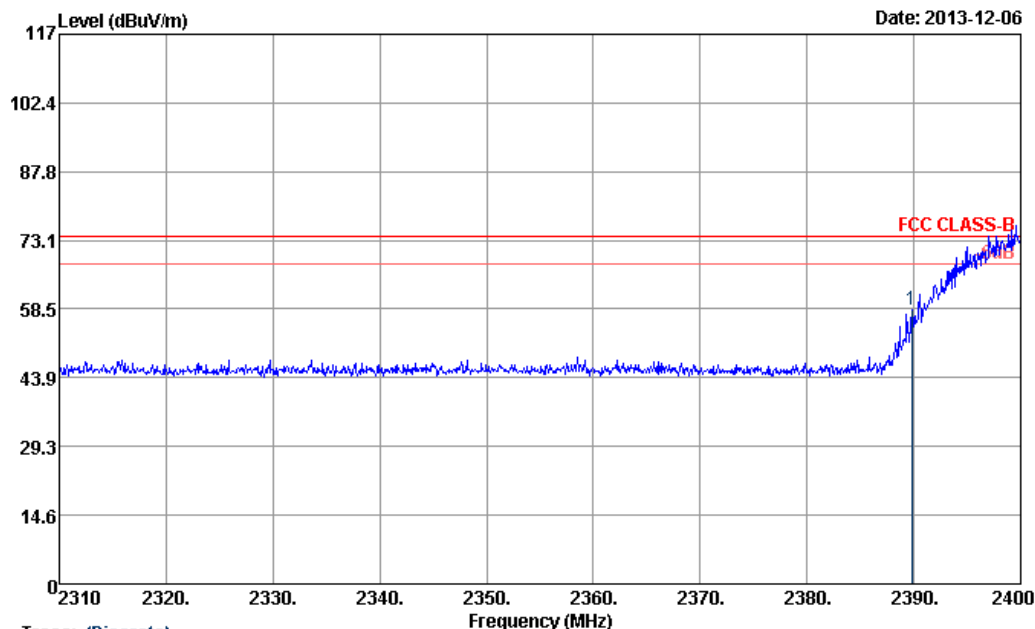
Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Band :	Low	Relative Humidity :	50~52%
Test Channel :	01	Test Engineer :	Marlboro Hsu



ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2390	42.51	-11.49	54	38.47	31.92	6.45	34.33	100	325	Average

Note: Worst case measurement on 2390 MHz is compliance with 74/54 dBuV/m (peak/average) limit and band edge measurement in the restricted band 2310-2390MHz. And, 2390-2400 MHz is non-restricted band which limit line is 20dB below the fundamental frequency emission level which is tested by conducted spurious emission. Both the test results are compliance with the FCC limit line.

Test Mode :	802.11n HT20	Temperature :	22~24℃
Test Band :	Low	Relative Humidity :	50~52%
Test Channel :	01	Test Engineer :	Marlboro Hsu



Trace: (Discrete)

Site : 03CH06-HY

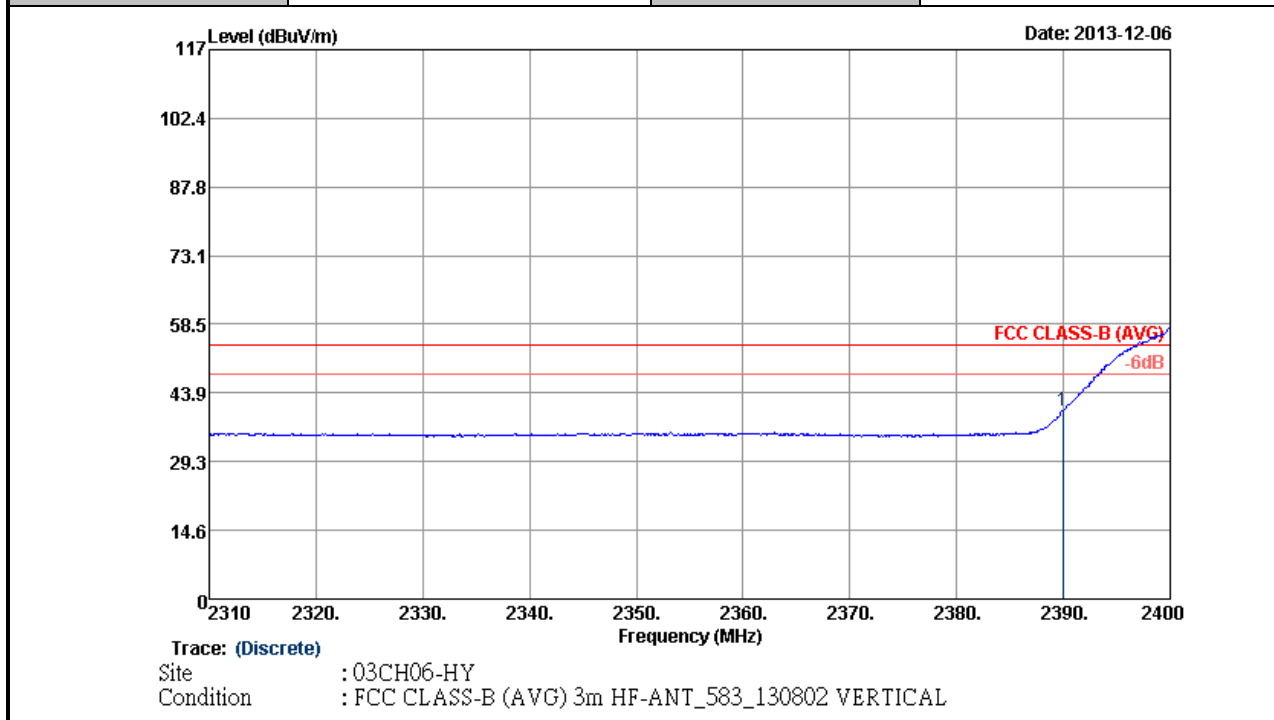
Condition : FCC CLASS-B 3m HF-ANT_583_130802 VERTICAL

ANTENNA POLARITY : VERTICAL

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.83	58.22	-15.78	74	54.18	31.92	6.45	34.33	107	277	Peak

Note: Worst case measurement on 2389.83 MHz is compliance with 74/54 dBuV/m (peak/average) limit and band edge measurement in the restricted band 2310-2390MHz. And, 2390-2400 MHz is non-restricted band which limit line is 20dB below the fundamental frequency emission level which is tested by conducted spurious emission. Both the test results are compliance with the FCC limit line.

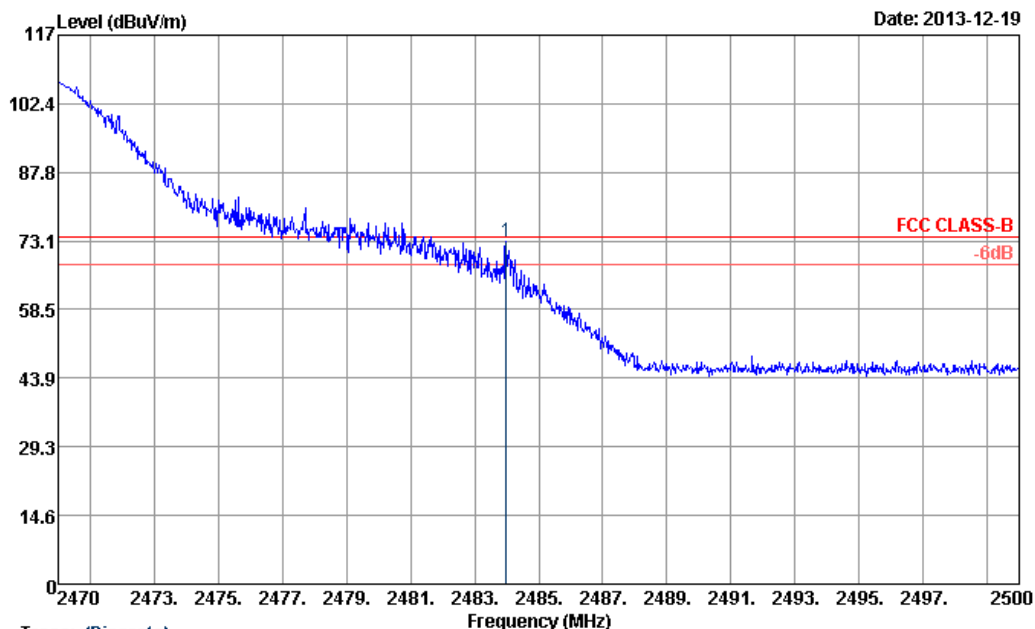
Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Band :	Low	Relative Humidity :	50~52%
Test Channel :	01	Test Engineer :	Marlboro Hsu



ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.92	40.01	-13.99	54	35.97	31.92	6.45	34.33	107	277	Average

Note: Worst case measurement on 2389.92 MHz is compliance with 74/54 dBuV/m (peak/average) limit and band edge measurement in the restricted band 2310-2390MHz. And, 2390-2400 MHz is non-restricted band which limit line is 20dB below the fundamental frequency emission level which is tested by conducted spurious emission. Both the test results are compliance with the FCC limit line.

Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Band :	High	Relative Humidity :	50~52%
Test Channel :	11	Test Engineer :	Marlboro Hsu



Trace: (Discrete)

Site : 03CH06-HY

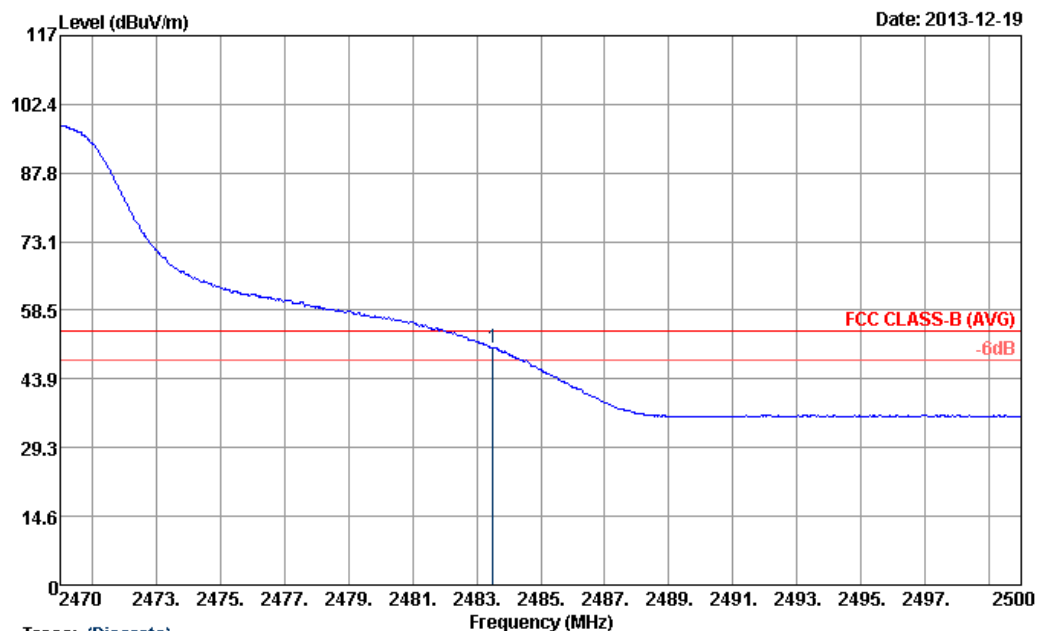
Condition : FCC CLASS-B 3m HF-ANT_583_130802 HORIZONTAL

ANTENNA POLARITY : HORIZONTAL

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.98	72.84	-1.16	74	68.56	31.99	6.59	34.3	100	317	Peak

Note: Worst case measurement on 2483.98 MHz is compliance with 74/54 dBuV/m (peak/average) limit and band edge measurement in the restricted band 2483.5-2500MHz. And, 2470-2483.5MHz is within the operating band and not within the restricted band. The test result is compliance with the FCC limit line.

Test Mode :	802.11n HT20	Temperature :	22~24℃
Test Band :	High	Relative Humidity :	50~52%
Test Channel :	11	Test Engineer :	Marlboro Hsu



Trace: (Discrete)

Site : 03CH06-HY

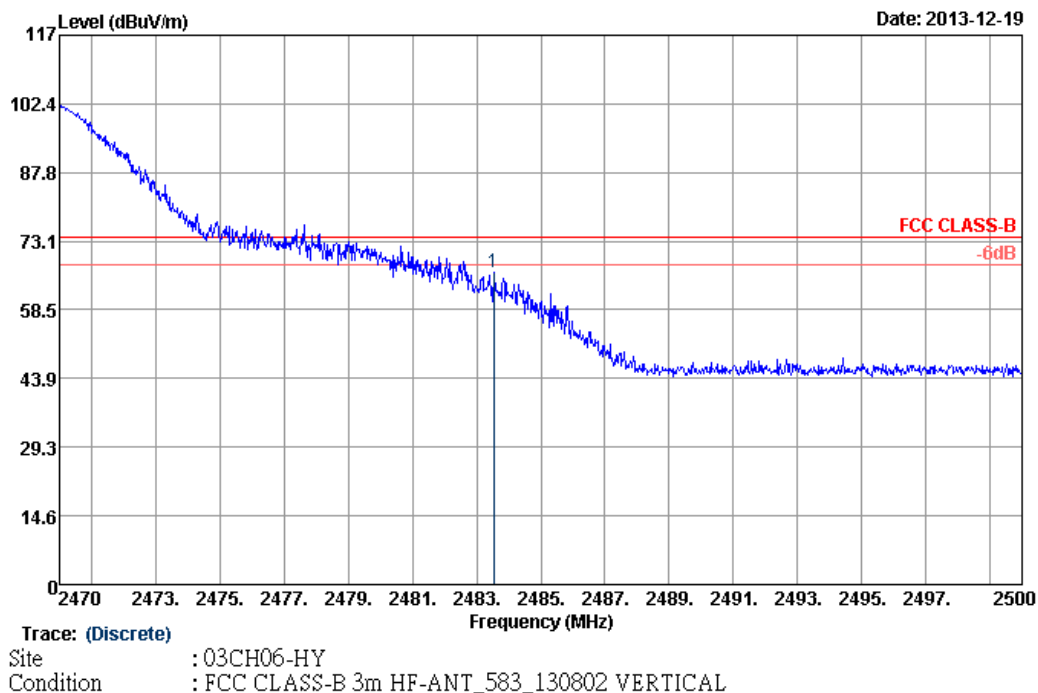
Condition : FCC CLASS-B (AVG) 3m HF-ANT_583_130802 HORIZONTAL

ANTENNA POLARITY : HORIZONTAL

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.5	50.6	-3.4	54	46.32	31.99	6.59	34.3	100	317	Average

Note: Worst case measurement on 2483.50 MHz is compliance with 74/54 dBuV/m (peak/average) limit and band edge measurement in the restricted band 2483.5-2500MHz. And, 2470-2483.5MHz is within the operating band and not within the restricted band. The test result is compliance with the FCC limit line.

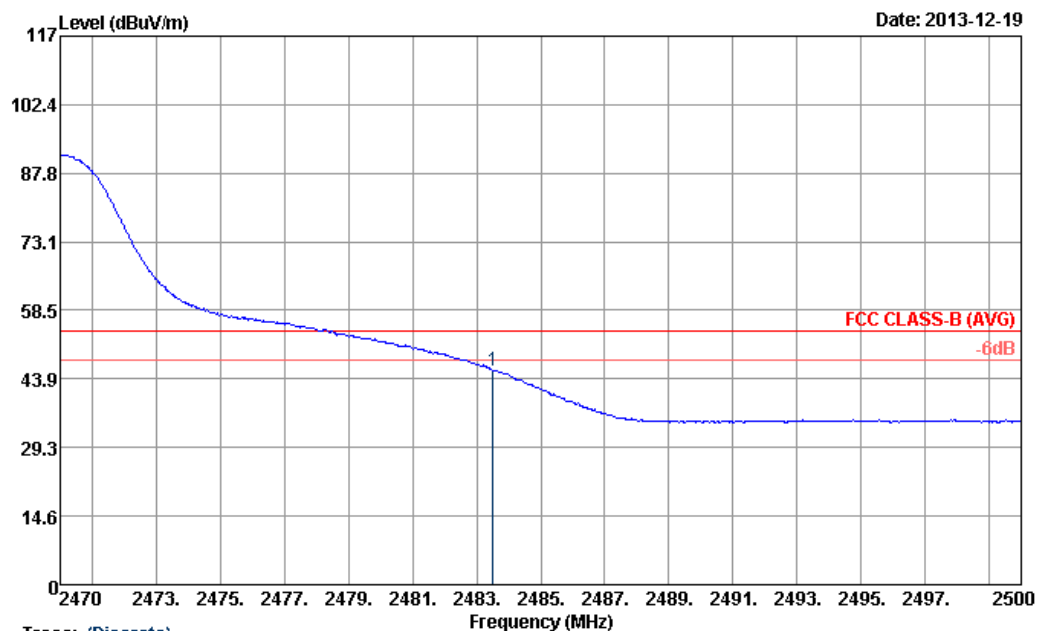
Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Band :	High	Relative Humidity :	50~52%
Test Channel :	11	Test Engineer :	Marlboro Hsu


ANTENNA POLARITY : VERTICAL

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.53	66.64	-7.36	74	62.36	31.99	6.59	34.3	103	263	Peak

Note: Worst case measurement on 2483.53 MHz is compliance with 74/54 dBuV/m (peak/average) limit and band edge measurement in the restricted band 2483.5-2500MHz. And, 2470-2483.5MHz is within the operating band and not within the restricted band. The test result is compliance with the FCC limit line.

Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Band :	High	Relative Humidity :	50~52%
Test Channel :	11	Test Engineer :	Marlboro Hsu



Trace: (Discrete)

Site : 03CH06-HY

Condition : FCC CLASS-B (AVG) 3m HF-ANT_583_130802 VERTICAL

ANTENNA POLARITY : VERTICAL

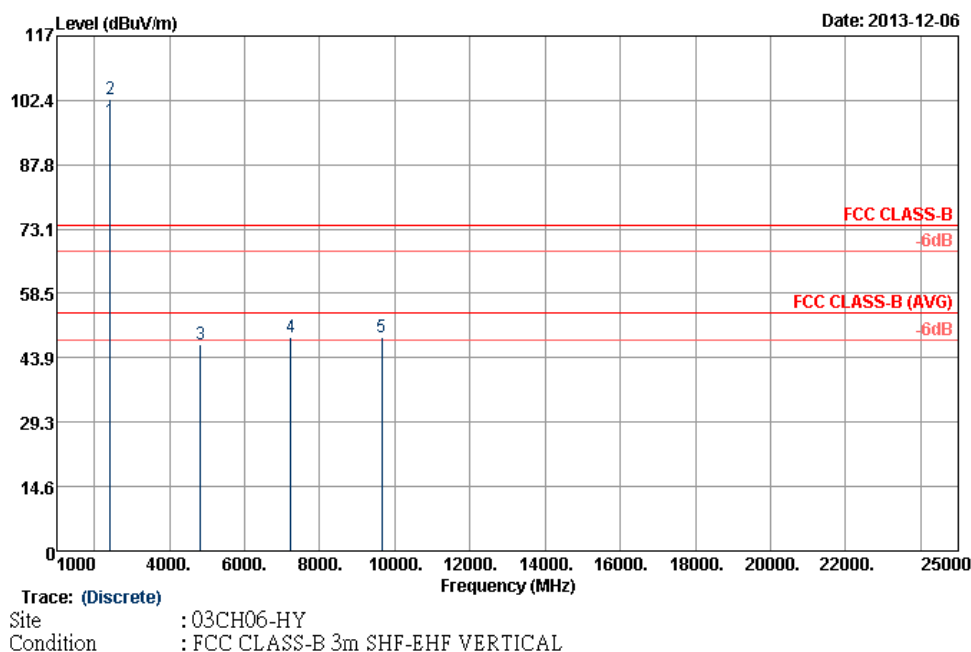
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.5	45.76	-8.24	54	41.48	31.99	6.59	34.3	103	263	Average

Note: Worst case measurement on 2483.50 MHz is compliance with 74/54 dBuV/m (peak/average) limit and band edge measurement in the restricted band 2483.5-2500MHz. And, 2470-2483.5MHz is within the operating band and not within the restricted band. The test result is compliance with the FCC limit line.

3.5.7 Test Result of Radiated Spurious Emission (30MHz ~ 10th Harmonic)

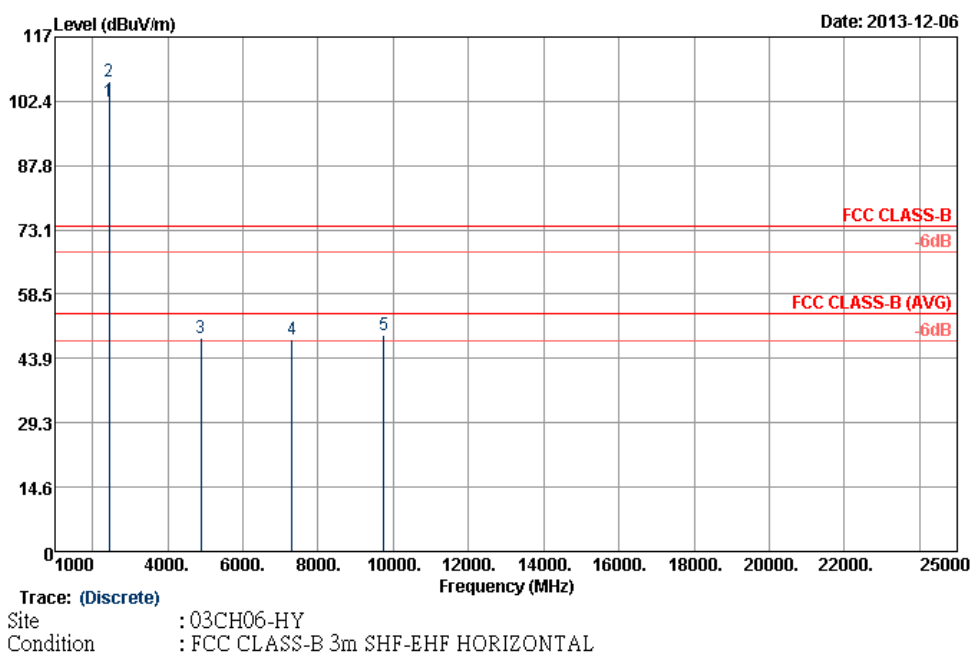
Test Mode :	802.11b	Temperature :	22~24℃							
Test Channel :	01	Relative Humidity :	50~52%							
Test Engineer :	Marlboro Hsu									
Remark :	1. 2413 MHz is fundamental signal which can be ignored. 2. 7236 MHz and 9648 MHz are not within a restricted band, and its limit line is 20dB below the highest emission level. For example, 106.22dBμV/m - 20dB = 86.22 dBμV/m. 3. Average measurement was not performed if peak level went lower than the average limit. 4. The harmonic (5th ,6th , 7th ,...etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise.									
Level (dBuV/m) Date: 2013-12-06 Trace: (Discrete) Site : 03CH06-HY Condition : FCC CLASS-B 3m SHF-EHF HORIZONTAL										
ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2413	101.5	-	-	97.41	31.93	6.49	34.33	100	327	Average
2413	106.22	-	-	102.13	31.93	6.49	34.33	100	327	Peak
4824	48.09	-25.91	74	59.11	34.4	10.17	55.59	100	0	Peak
7236	49.45	-36.77	86.22	59.25	35.66	10.96	56.42	100	0	Peak
9648	48.26	-37.96	86.22	57.32	36.39	10.56	56.01	100	0	Peak
Other harmonics are lower than background noise										

Test Mode :	802.11b	Temperature :	22~24°C
Test Channel :	01	Relative Humidity :	50~52%
Test Engineer :	Marlboro Hsu		
Remark :	1. 2413 MHz is fundamental signal which can be ignored. 2. 7236 MHz and 9648 MHz are not within a restricted band, and its limit line is 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit. 4. The harmonic (5 th , 6 th , 7 th , ...etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise		


ANTENNA POLARITY : VERTICAL

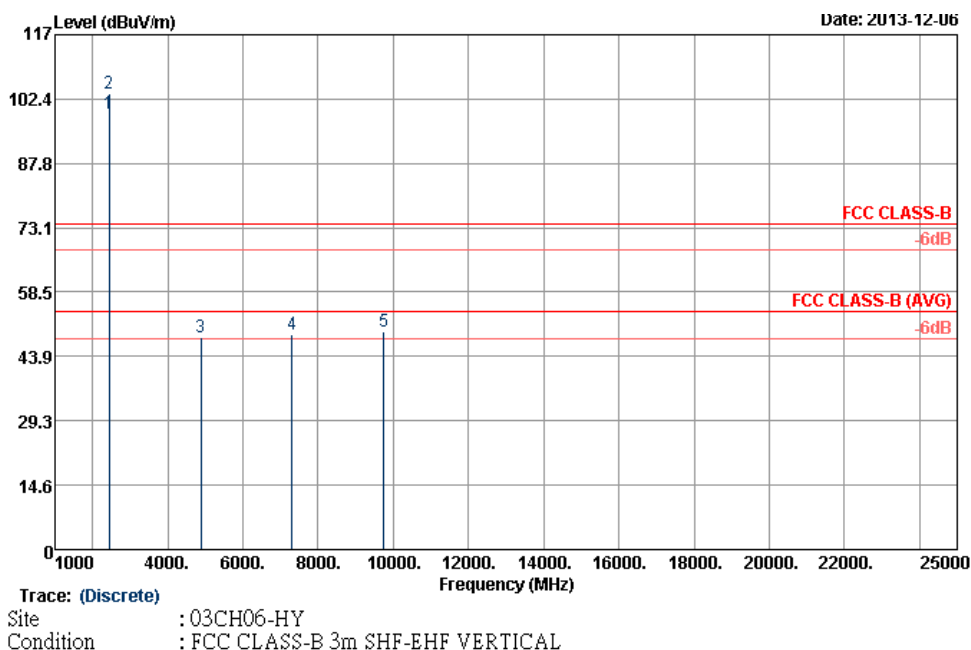
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2413	97.82	-	-	93.73	31.93	6.49	34.33	109	274	Average
2413	102.55	-	-	98.46	31.93	6.49	34.33	109	274	Peak
4824	46.82	-27.18	74	57.84	34.4	10.17	55.59	100	0	Peak
7236	48.71	-33.84	82.55	58.51	35.66	10.96	56.42	100	0	Peak
9648	48.6	-33.95	82.55	57.66	36.39	10.56	56.01	100	0	Peak
Other harmonics are lower than background noise										

Test Mode :	802.11b	Temperature :	22~24°C
Test Channel :	06	Relative Humidity :	50~52%
Test Engineer :	Marlboro Hsu		
Remark :	1. 2436 MHz is fundamental signal which can be ignored. 2. 9747 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit. 4. The harmonic (5 th , 6 th , 7 th , ...etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise		


ANTENNA POLARITY : HORIZONTAL

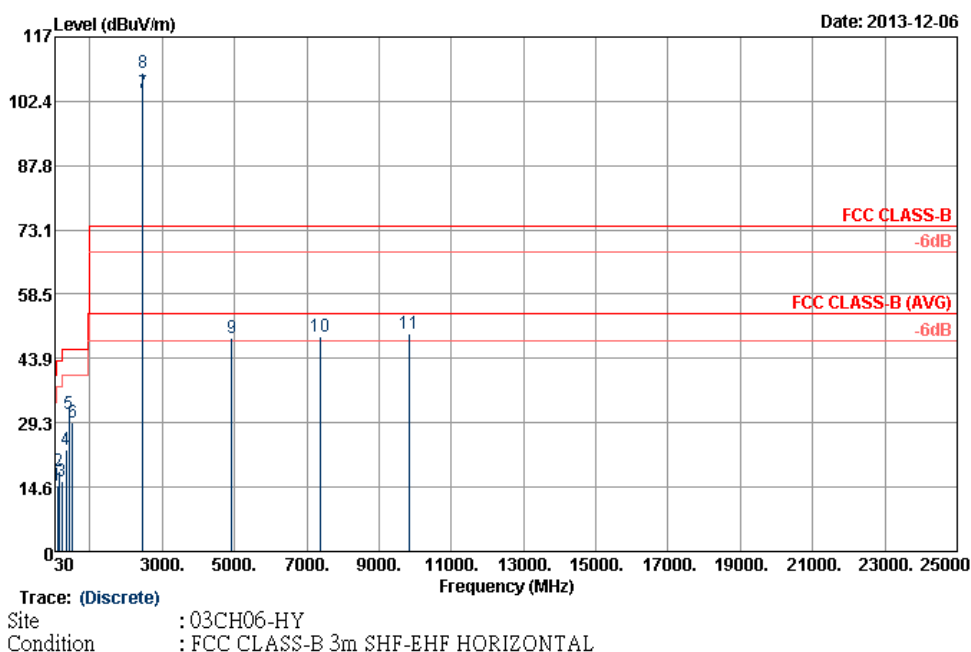
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2436	102.19	-	-	98.05	31.94	6.52	34.32	100	328	Average
2436	106.99	-	-	102.85	31.94	6.52	34.32	100	328	Peak
4875	48.51	-25.49	74	59.64	34.37	10.18	55.68	100	0	Peak
7311	48.21	-25.79	74	57.94	35.61	10.94	56.28	100	0	Peak
9747	49.32	-37.67	86.99	58.19	36.51	10.56	55.94	100	0	Peak
Other harmonics are lower than background noise										

Test Mode :	802.11b	Temperature :	22~24°C
Test Channel :	06	Relative Humidity :	50~52%
Test Engineer :	Marlboro Hsu		
Remark :	1. 2438 MHz is fundamental signal which can be ignored. 2. 9747 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit. 4. The harmonic (5 th , 6 th , 7 th , ...etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise		


ANTENNA POLARITY : VERTICAL

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2438	99.18	-	-	95.02	31.96	6.52	34.32	105	276	Average
2438	103.73	-	-	99.57	31.96	6.52	34.32	105	276	Peak
4875	48.37	-25.63	74	59.5	34.37	10.18	55.68	100	0	Peak
7311	48.89	-25.11	74	58.62	35.61	10.94	56.28	100	0	Peak
9747	49.41	-34.32	83.73	58.28	36.51	10.56	55.94	100	0	Peak
Other harmonics are lower than background noise										

Test Mode :	802.11b	Temperature :	22~24°C
Test Channel :	11	Relative Humidity :	50~52%
Test Engineer :	Marlboro Hsu		
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. 9849 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit. 4. The harmonic (5 th , 6 th , 7 th , ...etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise		

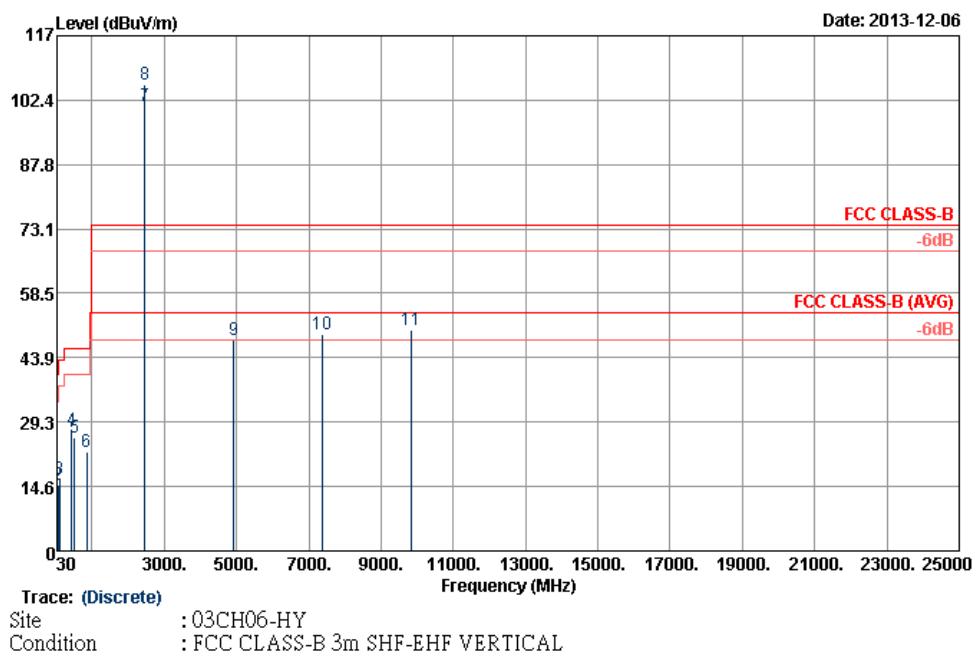

ANTENNA POLARITY : HORIZONTAL

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
105.6	14.87	-28.63	43.5	33.77	11.72	1.13	31.75	-	-	Peak
137.46	18.11	-25.39	43.5	37.26	11.3	1.3	31.75	-	-	Peak
227.1	15.87	-30.13	46	36.07	9.9	1.64	31.74	-	-	Peak
333.6	22.99	-23.01	46	38.94	13.81	1.99	31.75	-	-	Peak
422.5	31.37	-14.63	46	44.16	16.8	2.25	31.84	100	109	Peak
525.4	29.35	-16.65	46	40.61	18.18	2.52	31.96	-	-	Peak



ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2462	104.42	-	-	100.2	31.97	6.56	34.31	100	328	Average
2462	108.89	-	-	104.67	31.97	6.56	34.31	100	328	Peak
4923	48.68	-25.32	74	59.92	34.34	10.2	55.78	100	0	Peak
7386	48.93	-25.07	74	58.56	35.56	10.92	56.11	100	0	Peak
9849	49.69	-39.2	88.89	58.37	36.63	10.57	55.88	100	0	Peak
Other harmonics are lower than background noise										

Test Mode :	802.11b	Temperature :	22~24℃
Test Channel :	11	Relative Humidity :	50~52%
Test Engineer :	Marlboro Hsu		
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. 9849 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit. 4. The harmonic (5 th , 6 th , 7 th ,...etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise		

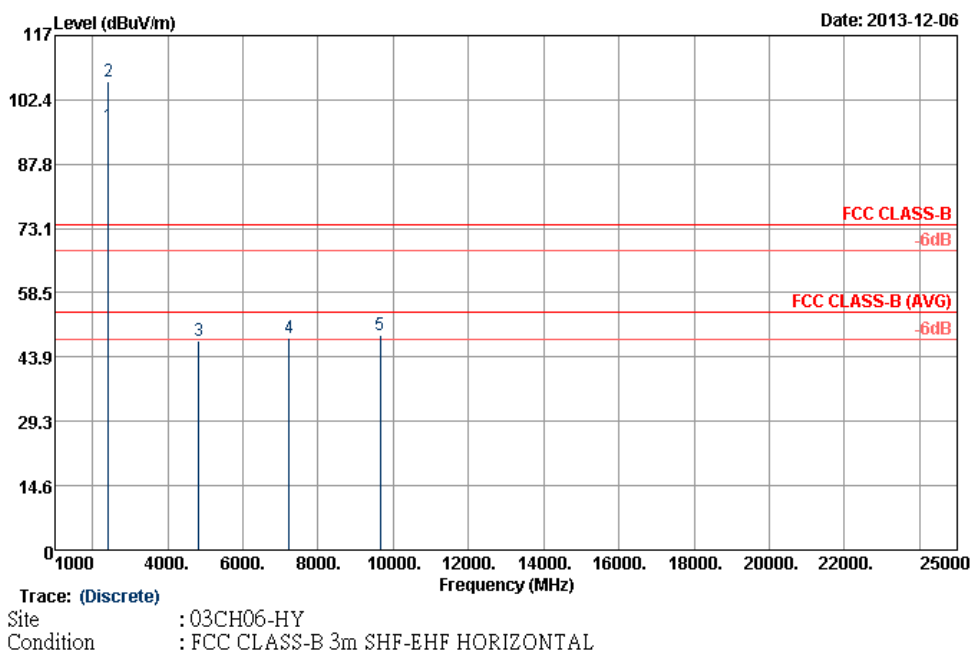

ANTENNA POLARITY : VERTICAL

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	30.71	-9.29	40	43.37	18.5	0.64	31.8	100	206	Peak
66.45	14.85	-25.15	40	39.44	6.26	0.92	31.77	-	-	Peak
92.64	16.2	-27.3	43.5	37.38	9.5	1.07	31.75	-	-	Peak
433	27.4	-18.6	46	40.19	16.8	2.27	31.86	-	-	Peak
525.4	25.78	-20.22	46	37.04	18.18	2.52	31.96	-	-	Peak
854.4	22.63	-23.37	46	30.31	20.8	3.24	31.72	-	-	Peak



ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2462	101.05	-	-	96.83	31.97	6.56	34.31	103	279	Average
2462	105.84	-	-	101.62	31.97	6.56	34.31	103	279	Peak
4923	47.82	-26.18	74	59.06	34.34	10.2	55.78	100	0	Peak
7386	49.26	-24.74	74	58.89	35.56	10.92	56.11	100	0	Peak
9849	50.15	-35.69	85.84	58.83	36.63	10.57	55.88	100	0	Peak
Other harmonics are lower than background noise										

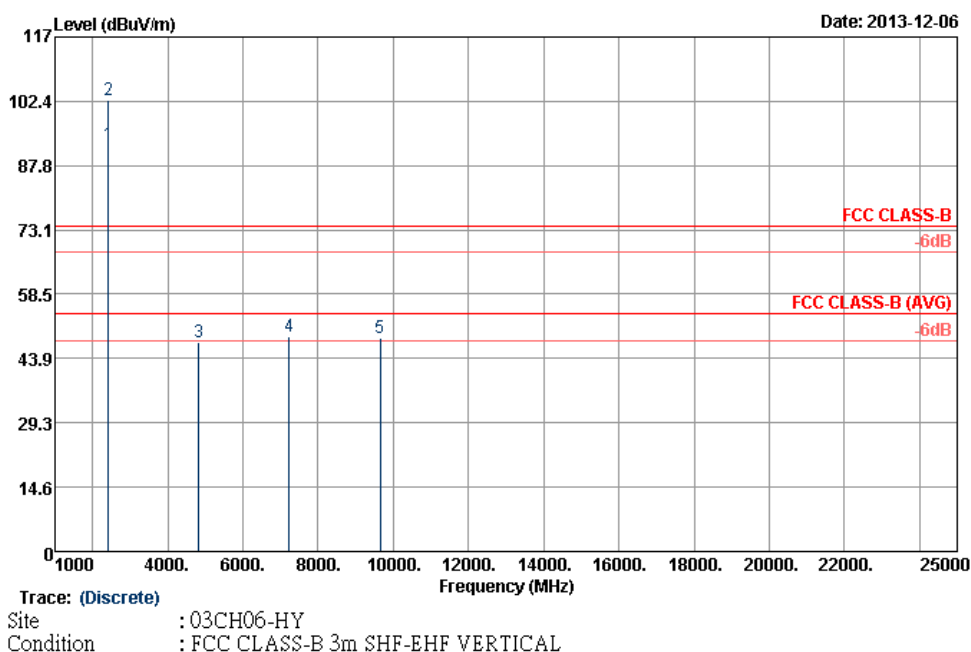
Test Mode :	802.11g	Temperature :	22~24℃
Test Channel :	01	Relative Humidity :	50~52%
Test Engineer :	Marlboro Hsu		
Remark :	1. 2413 MHz is fundamental signal which can be ignored. 2. 7236 MHz and 9648 MHz are not within a restricted band, and its limit line is 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit. 4. The harmonic (5 th , 6 th , 7 th , ...etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise		


ANTENNA POLARITY : HORIZONTAL

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2413	96.32	-	-	92.23	31.93	6.49	34.33	100	327	Average
2413	106.51	-	-	102.42	31.93	6.49	34.33	100	327	Peak
4824	47.59	-26.41	74	58.61	34.4	10.17	55.59	100	0	Peak
7236	48.37	-38.14	86.51	58.17	35.66	10.96	56.42	100	0	Peak
9648	48.74	-37.77	86.51	57.8	36.39	10.56	56.01	100	0	Peak
Other harmonics are lower than background noise										

Test Mode :	802.11g	Temperature :	22~24℃
Test Channel :	01	Relative Humidity :	50~52%
Test Engineer :	Marlboro Hsu		

Remark :	2413 MHz is fundamental signal which can be ignored. 7236 MHz and 9648 MHz are not within a restricted band, and its limit line is 20dB below the highest emission level. - Average measurement was not performed if peak level went lower than the average limit. - The harmonic (5th, 6th, 7th, ...etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise
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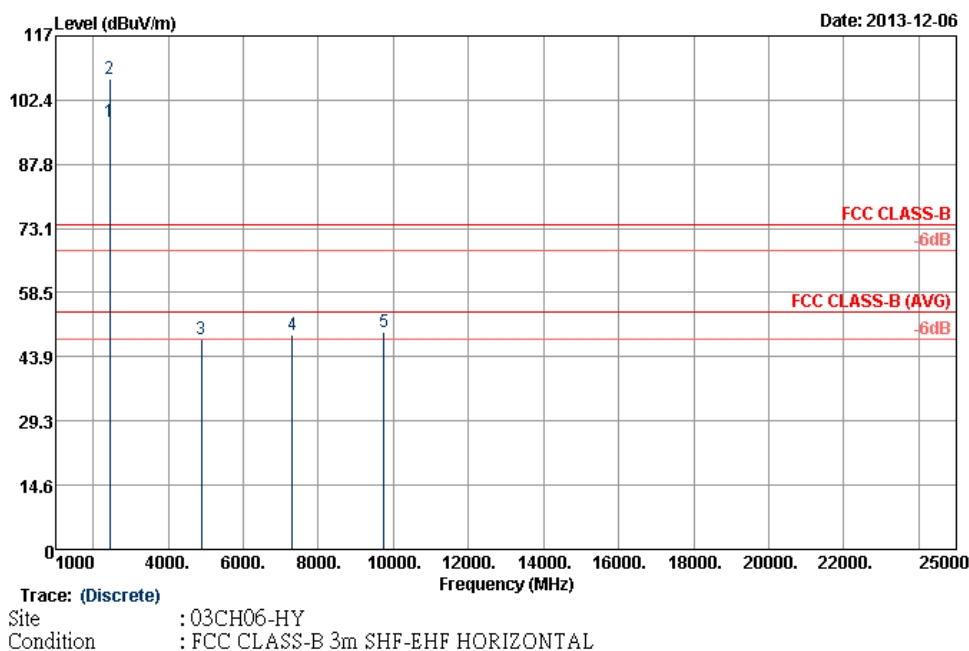

ANTENNA POLARITY : VERTICAL

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2413	92.48	-	-	88.39	31.93	6.49	34.33	107	276	Average
2413	102.54	-	-	98.45	31.93	6.49	34.33	107	276	Peak
4824	47.74	-26.26	74	58.76	34.4	10.17	55.59	100	0	Peak
7236	48.97	-33.57	82.54	58.77	35.66	10.96	56.42	100	0	Peak
9648	48.47	-34.07	82.54	57.53	36.39	10.56	56.01	100	0	Peak

Other harmonics are lower than background noise

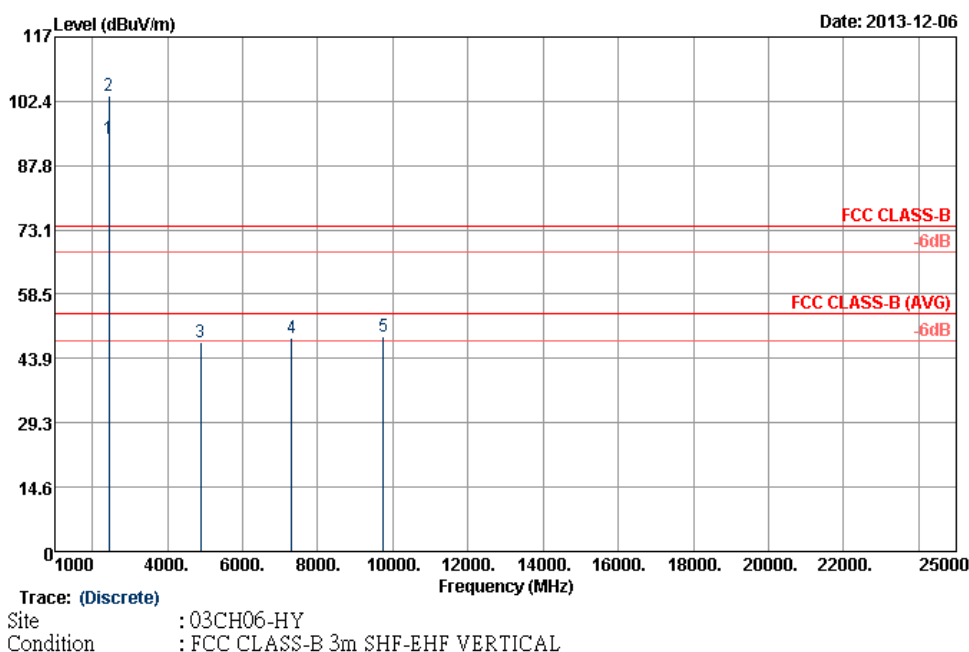
Test Mode :	802.11g	Temperature :	22~24°C
Test Channel :	06	Relative Humidity :	50~52%
Test Engineer :	Marlboro Hsu		

Remark :	2436 MHz is fundamental signal which can be ignored. 9747 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level. - Average measurement was not performed if peak level went lower than the average limit. - The harmonic (5th, 6th, 7th, ...etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise
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ANTENNA POLARITY : HORIZONTAL

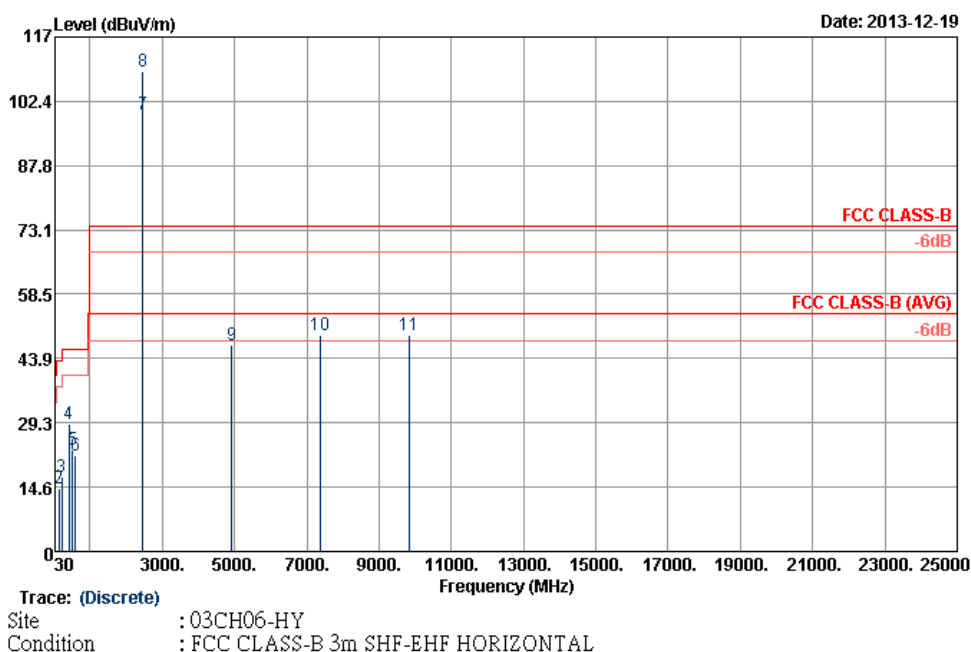
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2436	97.37	-	-	93.23	31.94	6.52	34.32	100	328	Average
2436	107.16	-	-	103.02	31.94	6.52	34.32	100	328	Peak
4875	47.79	-26.21	74	58.92	34.37	10.18	55.68	100	0	Peak
7311	48.86	-25.14	74	58.59	35.61	10.94	56.28	100	0	Peak
9747	49.44	-37.72	87.16	58.31	36.51	10.56	55.94	100	0	Peak
Other harmonics are lower than background noise										

Test Mode :	802.11g	Temperature :	22~24℃
Test Channel :	06	Relative Humidity :	50~52%
Test Engineer :	Marlboro Hsu		
Remark :	1. 2436 MHz is fundamental signal which can be ignored. 2. 9747 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit. 4. The harmonic (5 th , 6 th , 7 th , ...etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise		


ANTENNA POLARITY : VERTICAL

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2436	93.81	-	-	89.67	31.94	6.52	34.32	108	279	Average
2436	103.57	-	-	99.43	31.94	6.52	34.32	108	279	Peak
4875	47.71	-26.29	74	58.84	34.37	10.18	55.68	100	0	Peak
7311	48.71	-25.29	74	58.44	35.61	10.94	56.28	100	0	Peak
9747	48.83	-34.74	83.57	57.7	36.51	10.56	55.94	100	0	Peak
Other harmonics are lower than background noise										

Test Mode :	802.11g	Temperature :	22~24°C
Test Channel :	11	Relative Humidity :	50~52%
Test Engineer :	Marlboro Hsu		
Remark :	1. 2461 MHz is fundamental signal which can be ignored. 2. 9849 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit. 4. The harmonic (5 th , 6 th , 7 th ,...etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise		

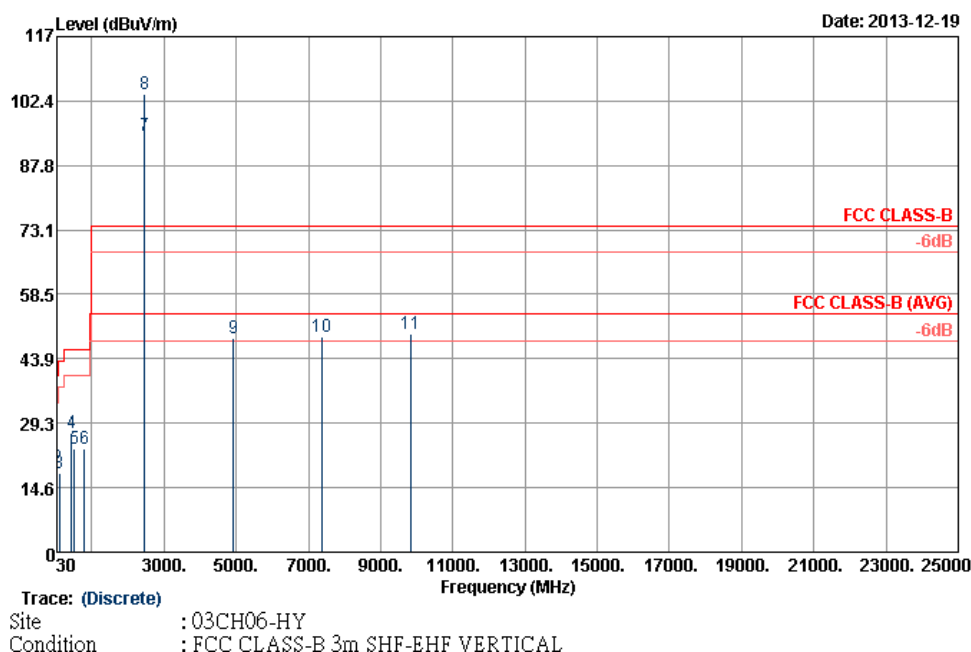

ANTENNA POLARITY : HORIZONTAL

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	16.83	-23.17	40	29.49	18.5	0.64	31.8	-	-	Peak
129.9	14.25	-29.25	43.5	33.33	11.4	1.27	31.75	-	-	Peak
227.1	16.82	-29.18	46	37.02	9.9	1.64	31.74	-	-	Peak
426	29.08	-16.92	46	41.88	16.8	2.25	31.85	100	124	Peak
525.4	23.26	-22.74	46	34.52	18.18	2.52	31.96	-	-	Peak
588.4	21.74	-24.26	46	31.75	19.31	2.72	32.04	-	-	Peak



ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2461	99.28	-	-	95.06	31.97	6.56	34.31	100	318	Average
2461	109.06	-	-	104.84	31.97	6.56	34.31	100	318	Peak
4923	46.93	-27.07	74	58.17	34.34	10.2	55.78	100	0	Peak
7386	49.05	-24.95	74	58.68	35.56	10.92	56.11	100	0	Peak
9849	49.24	-39.82	89.06	57.92	36.63	10.57	55.88	100	0	Peak
Other harmonics are lower than background noise										

Test Mode :	802.11g	Temperature :	22~24°C
Test Channel :	11	Relative Humidity :	50~52%
Test Engineer :	Marlboro Hsu		
Remark :	1. 2461MHz is fundamental signal which can be ignored. 2. 9849 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit. 4. The harmonic (5 th , 6 th , 7 th ,...etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise		


ANTENNA POLARITY : VERTICAL

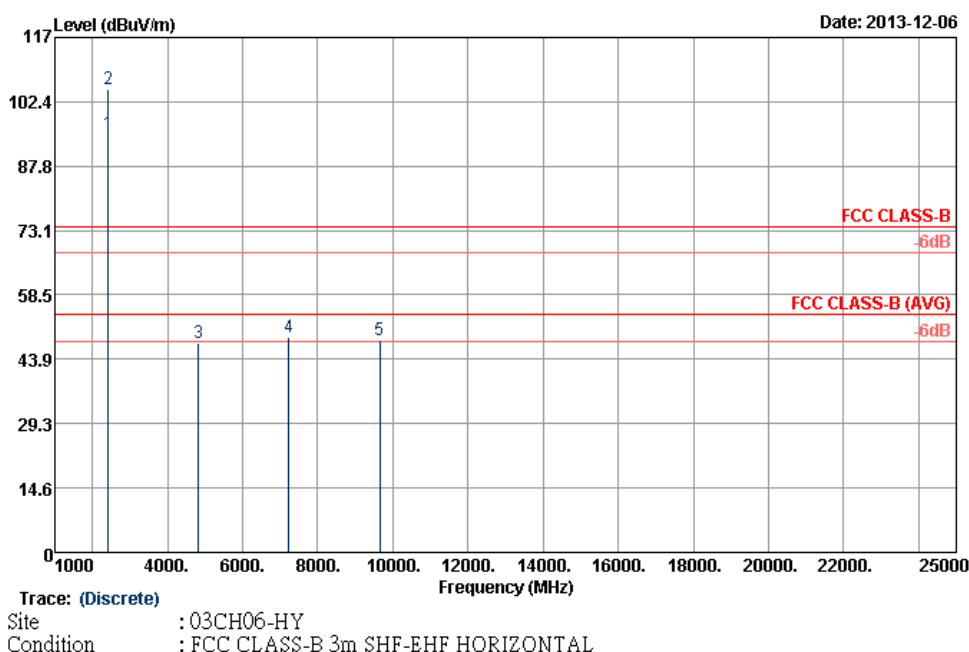
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	31.44	-8.56	40	44.1	18.5	0.64	31.8	100	97	Peak
45.39	19.19	-20.81	40	40.82	9.38	0.77	31.78	-	-	Peak
91.56	18.04	-25.46	43.5	39.84	8.9	1.06	31.76	-	-	Peak
433	26.93	-19.07	46	39.72	16.8	2.27	31.86	-	-	Peak
525.4	23.44	-22.56	46	34.7	18.18	2.52	31.96	-	-	Peak
784.4	23.6	-22.4	46	32.35	20.15	3.06	31.96	-	-	Peak



ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2461	94.67	-	-	90.45	31.97	6.56	34.31	103	259	Average
2461	103.96	-	-	99.74	31.97	6.56	34.31	103	259	Peak
4923	48.45	-25.55	74	59.69	34.34	10.2	55.78	100	0	Peak
7386	48.75	-25.25	74	58.38	35.56	10.92	56.11	100	0	Peak
9849	49.52	-34.44	83.96	58.2	36.63	10.57	55.88	100	0	Peak
Other harmonics are lower than background noise										

Test Mode :	2.4GHz 802.11n HT20	Temperature :	22~24°C
Test Channel :	01	Relative Humidity :	50~52%
Test Engineer :	Marlboro Hsu		

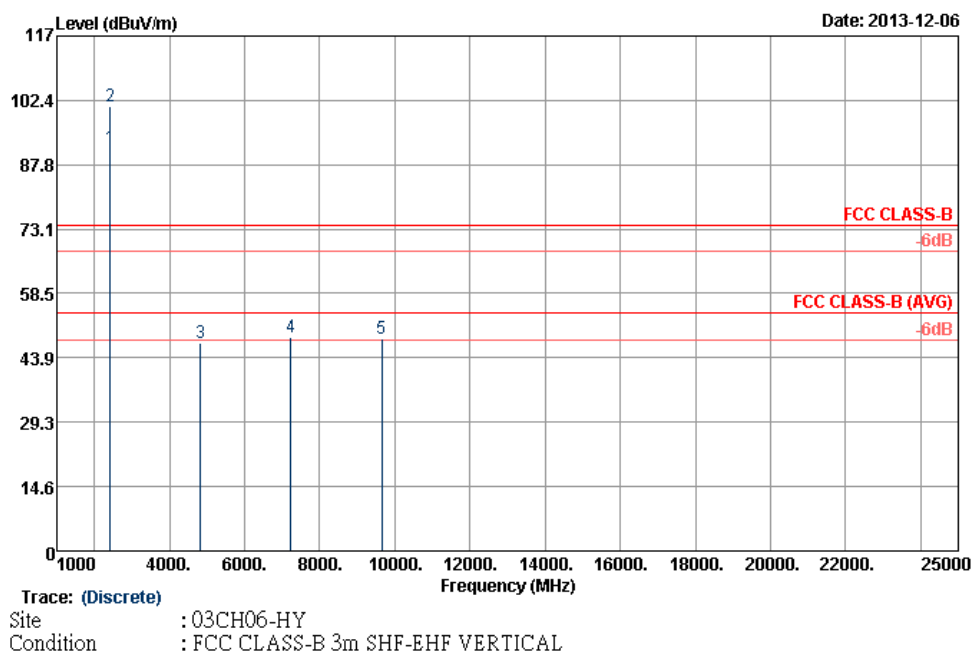
Remark :	2413 MHz is fundamental signal which can be ignored. 7236 MHz and 9648 MHz are not within a restricted band, and its limit line is 20dB below the highest emission level. - Average measurement was not performed if peak level went lower than the average limit. - The harmonic (5th, 6th, 7th, ...etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise
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ANTENNA POLARITY : HORIZONTAL

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2413	95.21	-	-	91.12	31.93	6.49	34.33	100	325	Average
2413	105.36	-	-	101.27	31.93	6.49	34.33	100	325	Peak
4824	47.54	-26.46	74	58.56	34.4	10.17	55.59	100	0	Peak
7236	49	-36.36	85.36	58.8	35.66	10.96	56.42	100	0	Peak
9648	48.13	-37.23	85.36	57.19	36.39	10.56	56.01	100	0	Peak

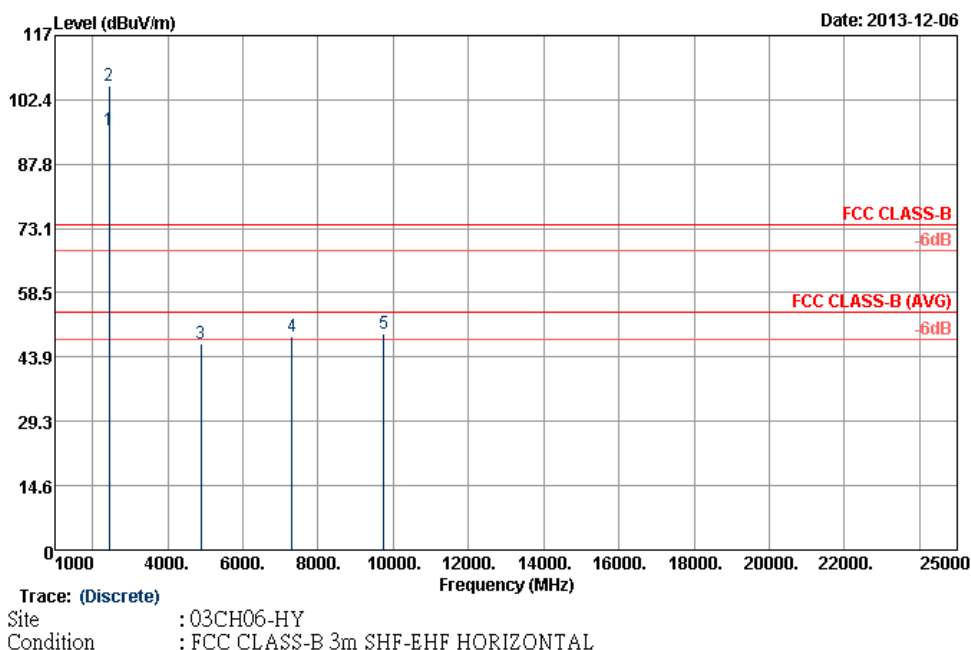
Other harmonics are lower than background noise

Test Mode :	2.4GHz 802.11n HT20	Temperature :	22~24°C
Test Channel :	01	Relative Humidity :	50~52%
Test Engineer :	Marlboro Hsu		
Remark :	1. 2413 MHz is fundamental signal which can be ignored. 2. 7236 MHz and 9648 MHz are not within a restricted band, and its limit line is 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit. 4. The harmonic (5 th , 6 th , 7 th ,...etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise		


ANTENNA POLARITY : VERTICAL

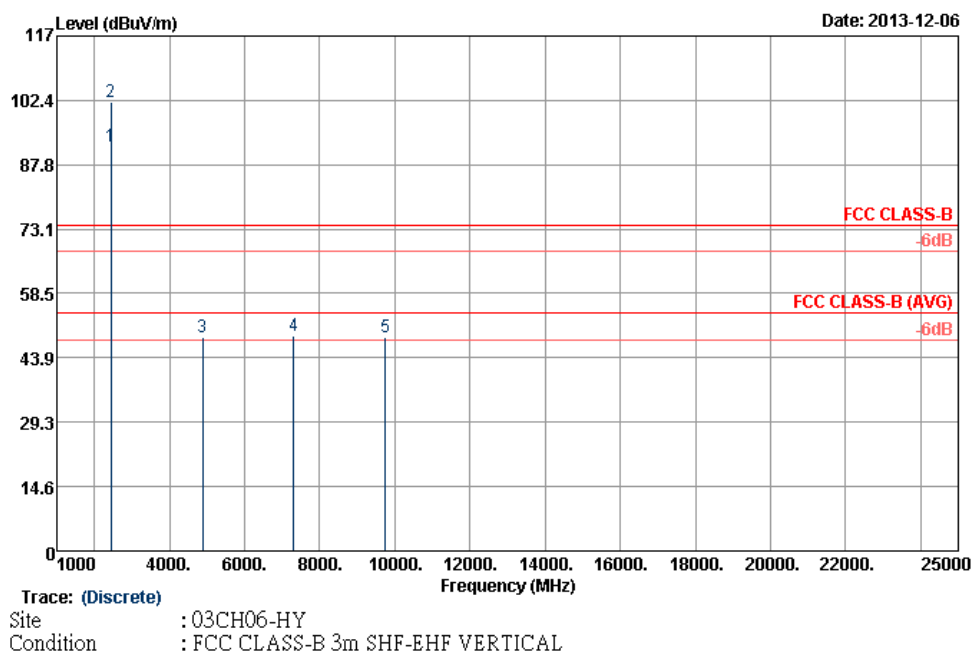
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2413	91.52	-	-	87.43	31.93	6.49	34.33	107	277	Average
2413	101	-	-	96.91	31.93	6.49	34.33	107	277	Peak
4824	47.13	-26.87	74	58.15	34.4	10.17	55.59	100	0	Peak
7236	48.61	-32.39	81	58.41	35.66	10.96	56.42	100	0	Peak
9648	48.17	-32.83	81	57.23	36.39	10.56	56.01	100	0	Peak
Other harmonics are lower than background noise										

Test Mode :	2.4GHz 802.11n HT20	Temperature :	22~24°C
Test Channel :	06	Relative Humidity :	50~52%
Test Engineer :	Marlboro Hsu		
Remark :	1. 2436 MHz is fundamental signal which can be ignored. 2. 9747 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit. 4. The harmonic (5 th , 6 th , 7 th , ...etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise		


ANTENNA POLARITY : HORIZONTAL

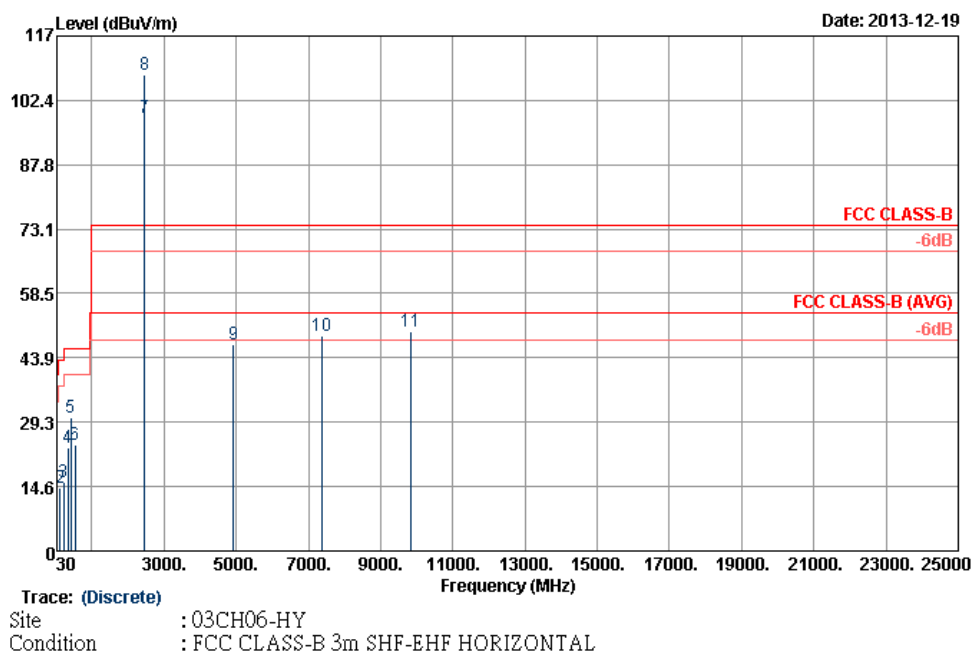
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2436	95.39	-	-	91.25	31.94	6.52	34.32	100	323	Average
2436	105.56	-	-	101.42	31.94	6.52	34.32	100	323	Peak
4875	46.96	-27.04	74	58.09	34.37	10.18	55.68	100	0	Peak
7311	48.57	-25.43	74	58.3	35.61	10.94	56.28	100	0	Peak
9747	49.28	-36.28	85.56	58.15	36.51	10.56	55.94	100	0	Peak
Other harmonics are lower than background noise										

Test Mode :	2.4GHz 802.11n HT20	Temperature :	22~24°C
Test Channel :	06	Relative Humidity :	50~52%
Test Engineer :	Marlboro Hsu		
Remark :	1. 2436 MHz is fundamental signal which can be ignored. 2. 9747 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit. 4. The harmonic (5 th , 6 th , 7 th , ...etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise		


ANTENNA POLARITY : VERTICAL

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2436	91.92	-	-	87.78	31.94	6.52	34.32	105	272	Average
2436	101.97	-	-	97.83	31.94	6.52	34.32	105	272	Peak
4875	48.43	-25.57	74	59.56	34.37	10.18	55.68	100	0	Peak
7311	48.93	-25.07	74	58.66	35.61	10.94	56.28	100	0	Peak
9747	48.45	-33.52	81.97	57.32	36.51	10.56	55.94	100	0	Peak
Other harmonics are lower than background noise										

Test Mode :	2.4GHz 802.11n HT20	Temperature :	22~24°C
Test Channel :	11	Relative Humidity :	50~52%
Test Engineer :	Marlboro Hsu		
Remark :	1. 2461 MHz is fundamental signal which can be ignored. 2. 9849 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit. 4. The harmonic (5 th , 6 th , 7 th , ...etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise		

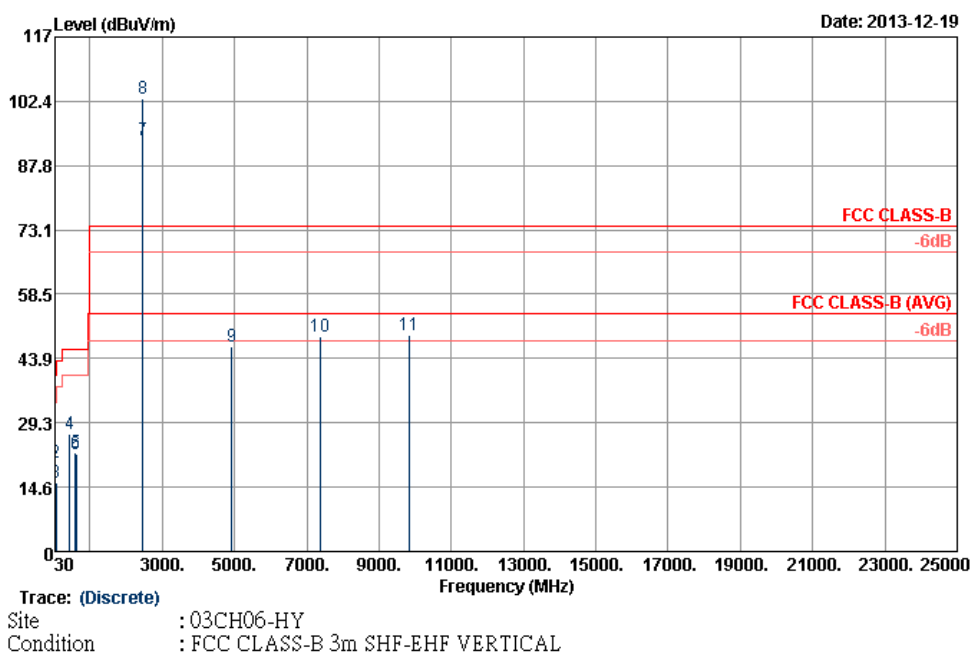

ANTENNA POLARITY : HORIZONTAL

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	16.95	-23.05	40	29.61	18.5	0.64	31.8	-	-	Peak
122.34	14.3	-29.2	43.5	32.7	12.12	1.23	31.75	-	-	Peak
227.1	15.63	-30.37	46	35.83	9.9	1.64	31.74	-	-	Peak
329.4	23.56	-22.44	46	39.63	13.7	1.98	31.75	-	-	Peak
422.5	30.46	-15.54	46	43.25	16.8	2.25	31.84	100	121	Peak
531	24.07	-21.93	46	35.15	18.37	2.52	31.97	-	-	Peak



ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2461	98.35	-	-	94.13	31.97	6.56	34.31	100	317	Average
2461	108.32	-	-	104.1	31.97	6.56	34.31	100	317	Peak
4923	47.09	-26.91	74	58.33	34.34	10.2	55.78	100	0	Peak
7386	48.8	-25.2	74	58.43	35.56	10.92	56.11	100	0	Peak
9849	49.78	-38.54	88.32	58.46	36.63	10.57	55.88	100	0	Peak
Other harmonics are lower than background noise										

Test Mode :	2.4GHz 802.11n HT20	Temperature :	22~24°C
Test Channel :	11	Relative Humidity :	50~52%
Test Engineer :	Marlboro Hsu		
Remark :	1. 2461 MHz is fundamental signal which can be ignored. 2. 9849 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit. 4. The harmonic (5 th , 6 th , 7 th ,...etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise		

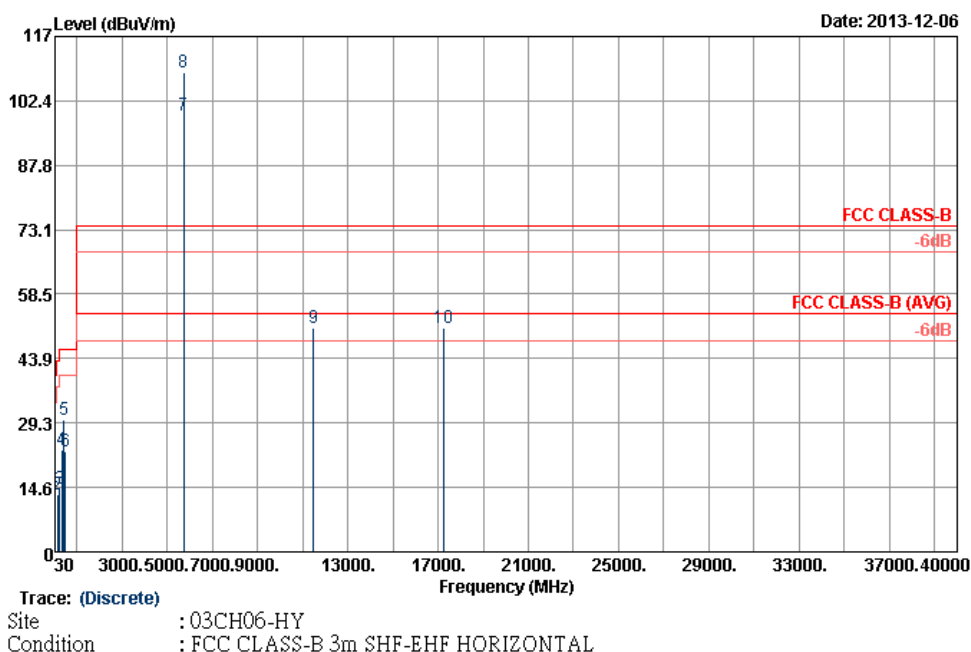

ANTENNA POLARITY : VERTICAL

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	30.66	-9.34	40	43.32	18.5	0.64	31.8	100	160	Peak
44.85	20.1	-19.9	40	41.52	9.6	0.76	31.78	-	-	Peak
67.8	15.64	-24.36	40	40.14	6.34	0.93	31.77	-	-	Peak
431.6	26.8	-19.2	46	39.59	16.8	2.27	31.86	-	-	Peak
588.4	22.36	-23.64	46	32.37	19.31	2.72	32.04	-	-	Peak
623.4	22.17	-23.83	46	31.77	19.67	2.78	32.05	-	-	Peak



ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2461	93.67	-	-	89.45	31.97	6.56	34.31	103	263	Average
2461	103.15	-	-	98.93	31.97	6.56	34.31	103	263	Peak
4923	46.59	-27.41	74	57.83	34.34	10.2	55.78	100	0	Peak
7386	48.99	-25.01	74	58.62	35.56	10.92	56.11	100	0	Peak
9849	49.09	-34.06	83.15	57.77	36.63	10.57	55.88	100	0	Peak
Other harmonics are lower than background noise										

Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	149	Relative Humidity :	50~52%
Test Engineer :	Marlboro Hsu		
Remark :	1. 5744 MHz is fundamental signal which can be ignored. 2. 17235 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit. 4. The harmonic (4 th , 5 th , 6 th , ...etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise		

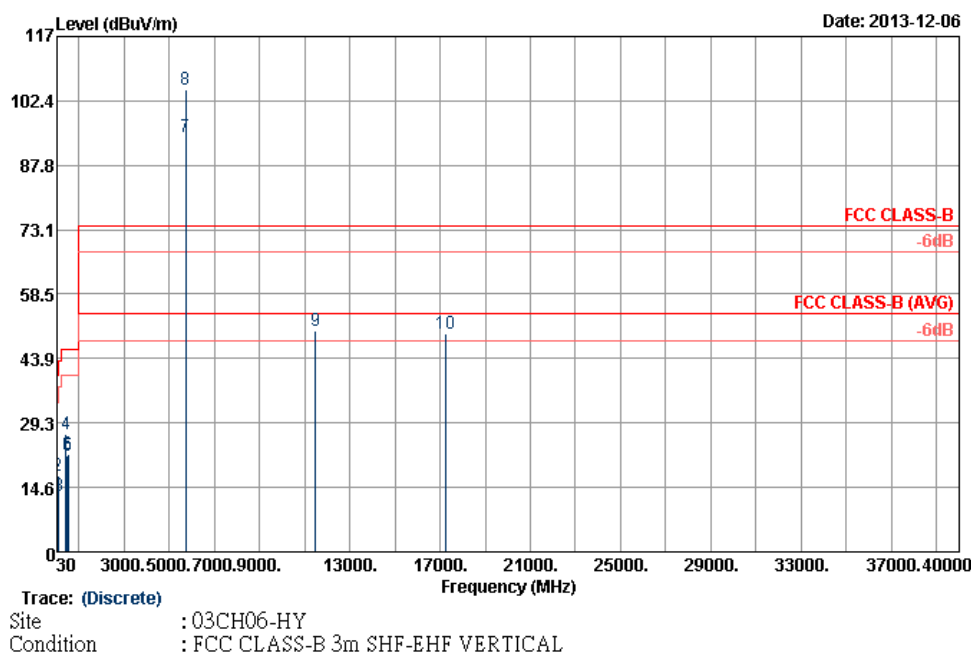

ANTENNA POLARITY : HORIZONTAL

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
34.86	14.22	-25.78	40	29.82	15.5	0.69	31.79	-	-	Peak
137.46	13.09	-30.41	43.5	32.24	11.3	1.3	31.75	-	-	Peak
223.86	14.46	-31.54	46	34.96	9.6	1.64	31.74	-	-	Peak
329.4	23.01	-22.99	46	39.08	13.7	1.98	31.75	-	-	Peak
422.5	29.92	-16.08	46	42.71	16.8	2.25	31.84	100	119	Peak
506.5	22.66	-23.34	46	34.24	17.86	2.5	31.94	-	-	Peak



ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5744	98.93	-	-	85.8	35.04	11.39	33.3	101	347	Average
5744	108.94	-	-	95.81	35.04	11.39	33.3	101	347	Peak
11490	50.76	-23.24	74	55.76	37.79	11.04	53.83	100	0	Peak
17235	50.74	-38.2	88.94	50.71	41.13	12.27	53.37	100	0	Peak
Other harmonics are lower than background noise										

Test Mode :	802.11a	Temperature :	22~24℃
Test Channel :	149	Relative Humidity :	50~52%
Test Engineer :	Marlboro Hsu		
Remark :	1. 5746 MHz is fundamental signal which can be ignored. 2. 17235 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit. 4. The harmonic (4 th , 5 th , 6 th , ...etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise		

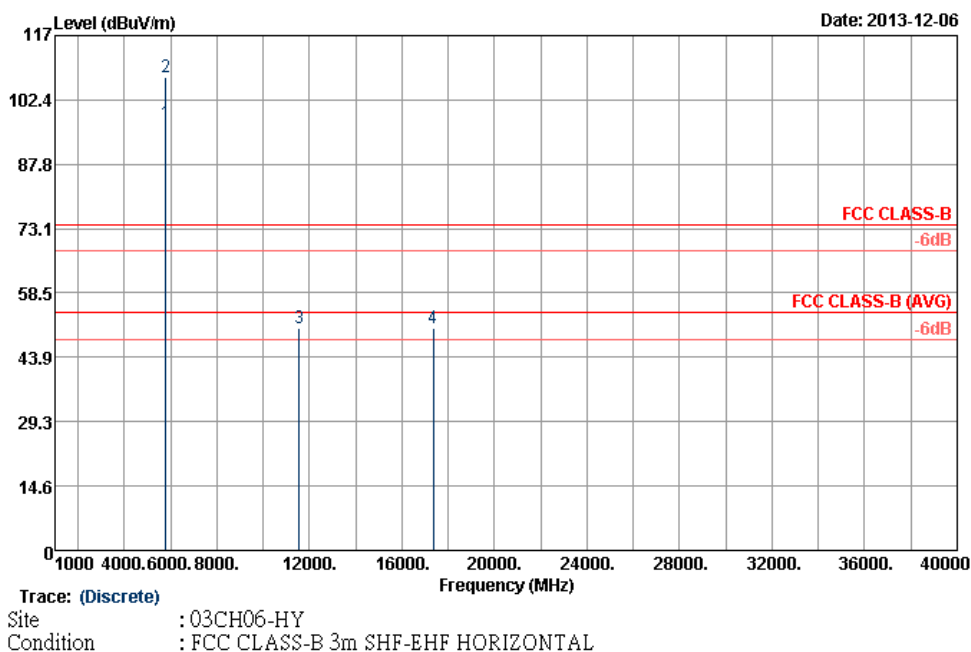

ANTENNA POLARITY : VERTICAL

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
33.24	27.24	-12.76	40	41.66	16.7	0.67	31.79	100	182	Peak
91.56	17.43	-26.07	43.5	39.23	8.9	1.06	31.76	-	-	Peak
114.24	12.64	-30.86	43.5	31.18	12.03	1.18	31.75	-	-	Peak
438.6	26.73	-19.27	46	39.5	16.8	2.29	31.86	-	-	Peak
499.5	21.75	-24.25	46	33.41	17.79	2.48	31.93	-	-	Peak
531	22.29	-23.71	46	33.37	18.37	2.52	31.97	-	-	Peak



ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5746	94.31	-	-	81.18	35.04	11.39	33.3	112	252	Average
5746	104.85	-	-	91.72	35.04	11.39	33.3	112	252	Peak
11490	50.07	-23.93	74	55.07	37.79	11.04	53.83	100	0	Peak
17235	49.5	-35.35	84.85	49.47	41.13	12.27	53.37	100	0	Peak
Other harmonics are lower than background noise										

Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	157	Relative Humidity :	50~52%
Test Engineer :	Marlboro Hsu		
Remark :	1. 5786 MHz is fundamental signal which can be ignored. 2. 17355 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit. 4. The harmonic (4 th , 5 th , 6 th , ...etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise		


ANTENNA POLARITY : HORIZONTAL

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5786	97.11	-	-	83.91	35.09	11.43	33.32	100	346	Average
5786	107.53	-	-	94.33	35.09	11.43	33.32	100	346	Peak
11571	50.44	-23.56	74	55.19	37.92	11.09	53.76	100	0	Peak
17355	50.6	-36.93	87.53	50.84	40.94	12.42	53.6	100	0	Peak
Other harmonics are lower than background noise										

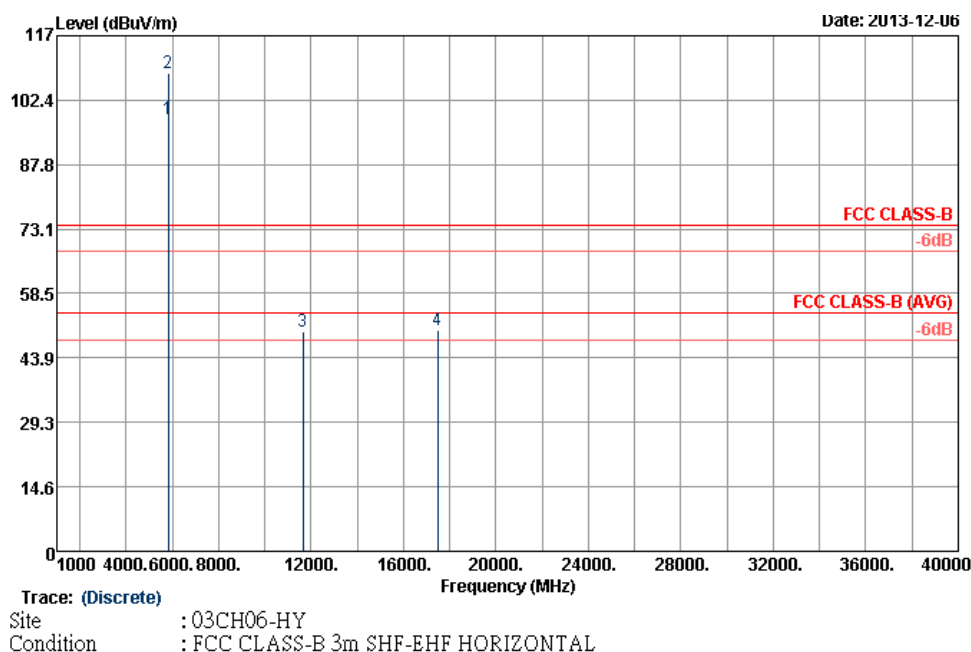
Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	157	Relative Humidity :	50~52%
Test Engineer :	Marlboro Hsu		
Remark :	1. 5784 MHz is fundamental signal which can be ignored. 2. 17355 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit. 4. The harmonic (4 th , 5 th , 6 th , ...etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise		


ANTENNA POLARITY : VERTICAL

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5784	93.9	-	-	80.71	35.08	11.43	33.32	100	243	Average
5784	104	-	-	90.81	35.08	11.43	33.32	100	243	Peak
11571	49.75	-24.25	74	54.5	37.92	11.09	53.76	100	0	Peak
17355	50.97	-33.03	84	51.21	40.94	12.42	53.6	100	0	Peak
Other harmonics are lower than background noise										

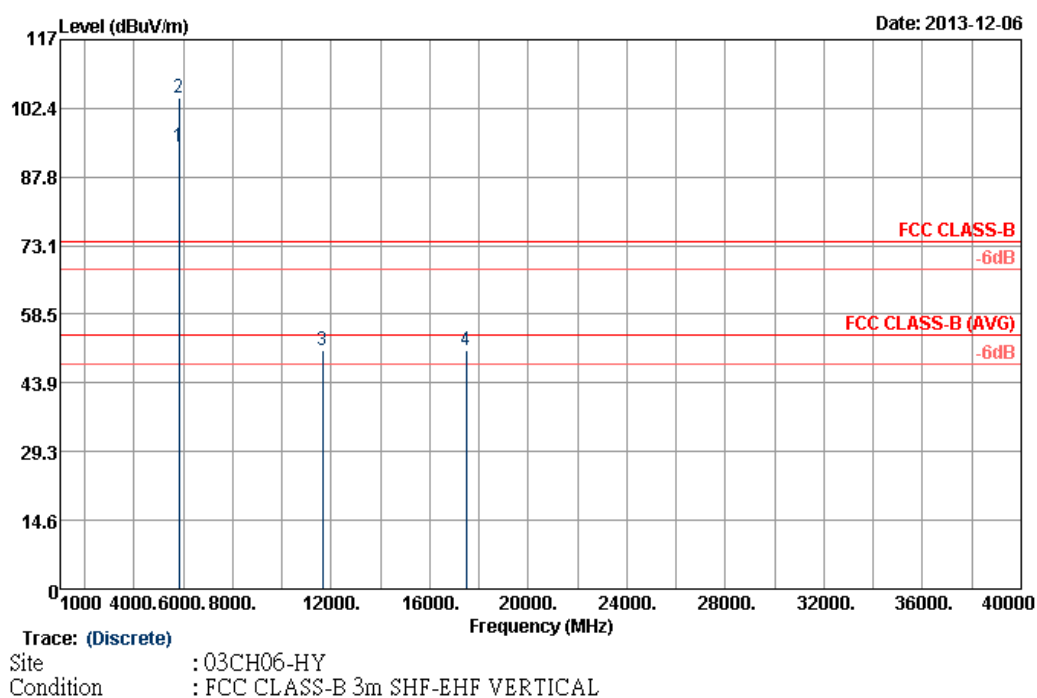
Test Mode :	802.11a	Temperature :	22~24℃
Test Channel :	165	Relative Humidity :	50~52%
Test Engineer :	Marlboro Hsu		

Remark :	5826 MHz is fundamental signal which can be ignored. 17475 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level. - Average measurement was not performed if peak level went lower than the average limit. - The harmonic (4th, 5th, 6th, ...etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise
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ANTENNA POLARITY : HORIZONTAL

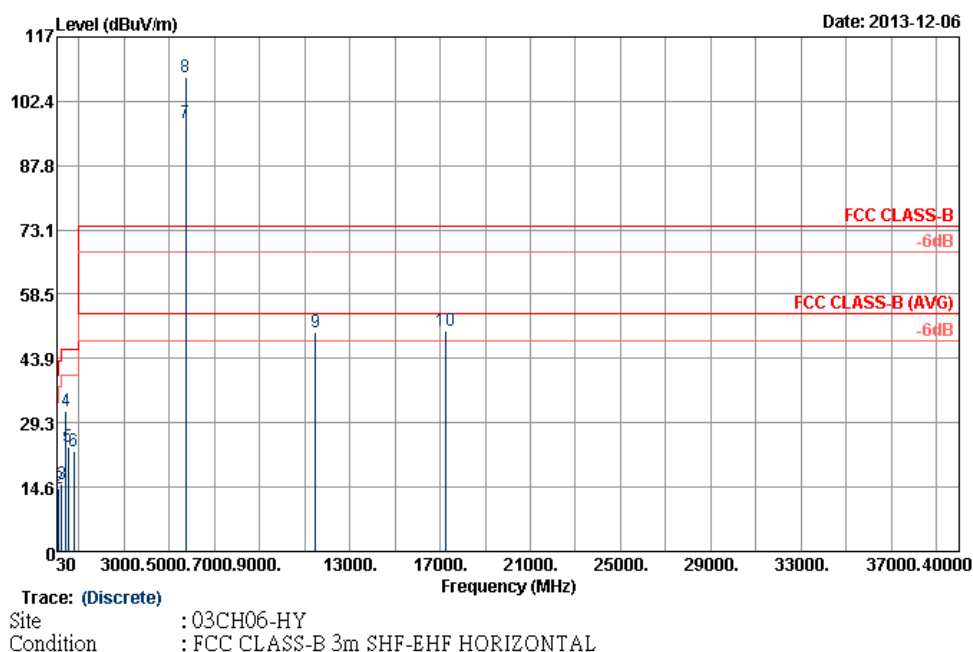
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5826	98.02	-	-	84.71	35.13	11.51	33.33	100	349	Average
5826	108.5	-	-	95.19	35.13	11.51	33.33	100	349	Peak
11649	49.83	-24.17	74	54.36	38.05	11.14	53.72	100	0	Peak
17475	50.28	-38.22	88.5	50.79	40.75	12.57	53.83	100	0	Peak
Other harmonics are lower than background noise										

Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	165	Relative Humidity :	50~52%
Test Engineer :	Marlboro Hsu		
Remark :	1. 5826 MHz is fundamental signal which can be ignored. 2. 17475 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit. 4. The harmonic (4 th , 5 th , 6 th , ...etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise		


ANTENNA POLARITY : VERTICAL

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5826	94.23	-	-	80.92	35.13	11.51	33.33	102	246	Average
5826	104.65	-	-	91.34	35.13	11.51	33.33	102	246	Peak
11649	50.78	-23.22	74	55.31	38.05	11.14	53.72	100	0	Peak
17475	50.71	-33.94	84.65	51.22	40.75	12.57	53.83	100	0	Peak
Other harmonics are lower than background noise										

Test Mode :	5GHz 802.11n HT20	Temperature :	22~24℃
Test Channel :	149	Relative Humidity :	50~52%
Test Engineer :	Marlboro Hsu		
Remark :	1. 5744 MHz is fundamental signal which can be ignored. 2. 17235 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit. 4. The harmonic (4 th , 5 th , 6 th , ...etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise		

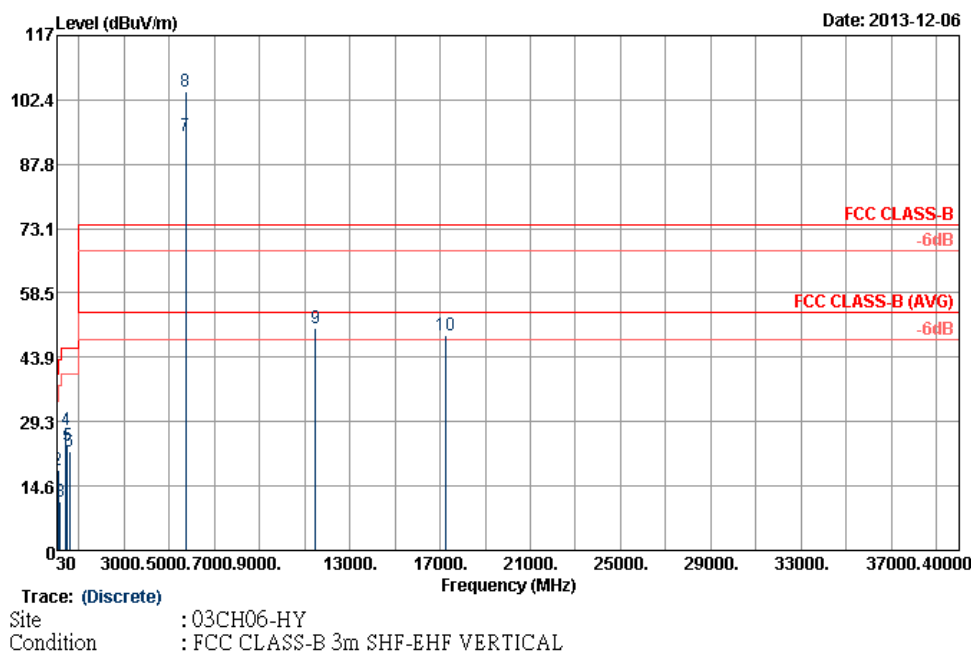

ANTENNA POLARITY : HORIZONTAL

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	16.67	-23.33	40	29.33	18.5	0.64	31.8	-	-	Peak
121.8	14.42	-29.08	43.5	32.82	12.12	1.23	31.75	-	-	Peak
227.1	15.26	-30.74	46	35.46	9.9	1.64	31.74	-	-	Peak
429.5	31.84	-14.16	46	44.63	16.8	2.26	31.85	100	245	Peak
531	23.87	-22.13	46	34.95	18.37	2.52	31.97	-	-	Peak
784.4	22.84	-23.16	46	31.59	20.15	3.06	31.96	-	-	Peak



ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5744	97.51	-	-	84.38	35.04	11.39	33.3	100	346	Average
5744	107.86	-	-	94.73	35.04	11.39	33.3	100	346	Peak
11490	49.96	-24.04	74	54.96	37.79	11.04	53.83	100	0	Peak
17235	50.07	-37.79	87.86	50.04	41.13	12.27	53.37	100	0	Peak
Other harmonics are lower than background noise										

Test Mode :	5GHz 802.11n HT20	Temperature :	22~24℃
Test Channel :	149	Relative Humidity :	50~52%
Test Engineer :	Marlboro Hsu		
Remark :	1. 5746 MHz is fundamental signal which can be ignored. 2. 17235 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit. 4. The harmonic (4 th , 5 th , 6 th , ...etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise		

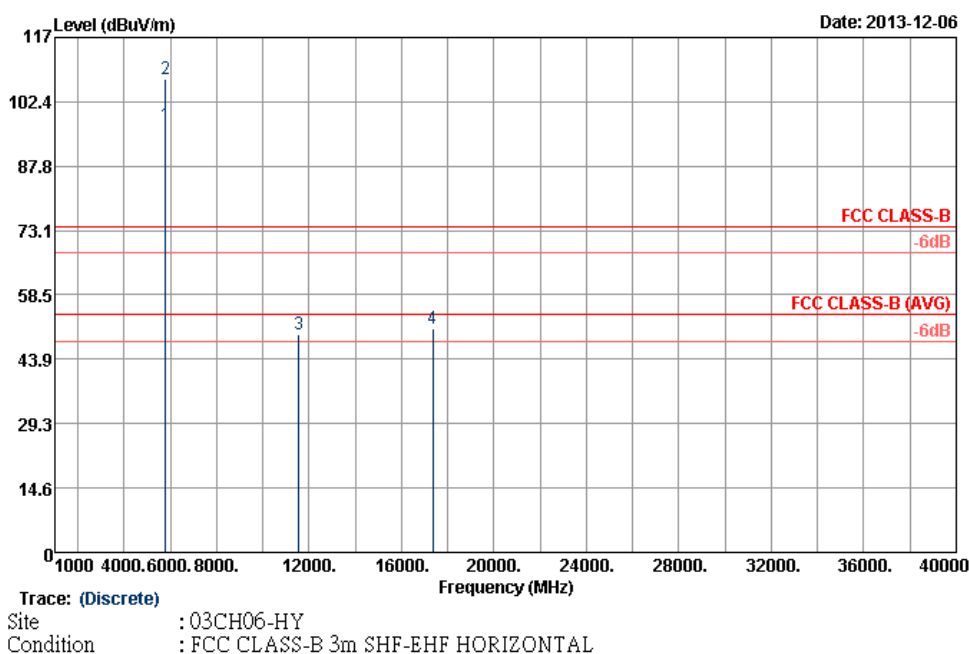

ANTENNA POLARITY : VERTICAL

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	30.51	-9.49	40	43.17	18.5	0.64	31.8	100	124	Peak
92.64	18.13	-25.37	43.5	39.31	9.5	1.07	31.75	-	-	Peak
159.06	11.14	-32.36	43.5	31.31	10.12	1.46	31.75	-	-	Peak
429.5	27.43	-18.57	46	40.22	16.8	2.26	31.85	-	-	Peak
492.5	23.66	-22.34	46	35.43	17.73	2.42	31.92	-	-	Peak
592.6	22.34	-23.66	46	32.33	19.33	2.73	32.05	-	-	Peak



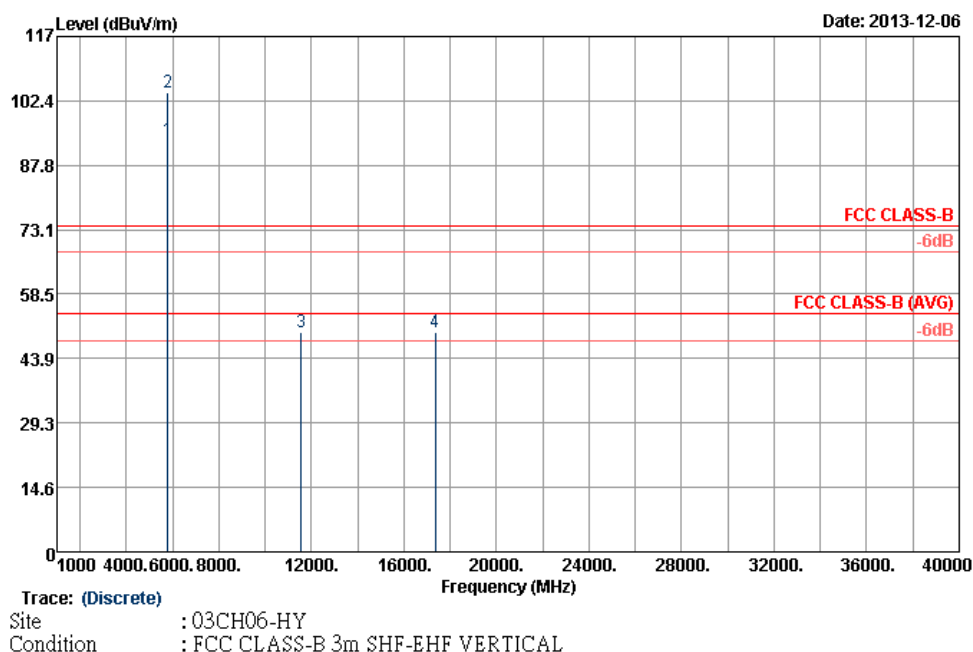
ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5746	94.35	-	-	81.22	35.04	11.39	33.3	112	243	Average
5746	104.39	-	-	91.26	35.04	11.39	33.3	112	243	Peak
11490	50.56	-23.44	74	55.56	37.79	11.04	53.83	100	0	Peak
17235	48.81	-35.58	84.39	48.78	41.13	12.27	53.37	100	0	Peak
Other harmonics are lower than background noise										

Test Mode :	5GHz 802.11n HT20	Temperature :	22~24°C
Test Channel :	157	Relative Humidity :	50~52%
Test Engineer :	Marlboro Hsu		
Remark :	1. 5786 MHz is fundamental signal which can be ignored. 2. 17355 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit. 4. The harmonic (4 th , 5 th , 6 th , ...etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise		


ANTENNA POLARITY : HORIZONTAL

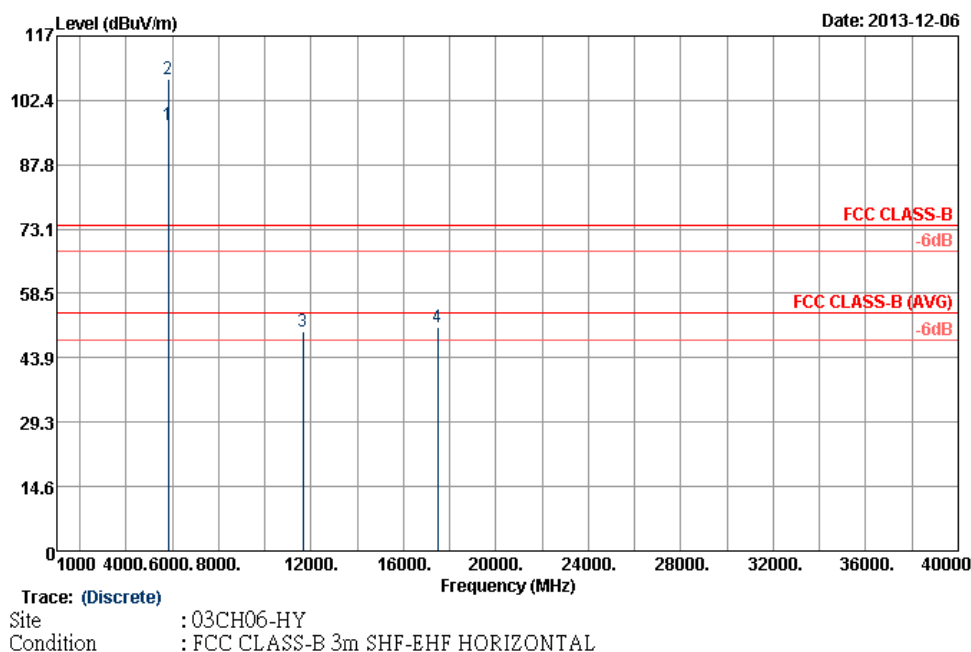
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5786	97.08	-	-	83.88	35.09	11.43	33.32	100	348	Average
5786	107.4	-	-	94.2	35.09	11.43	33.32	100	348	Peak
11571	49.61	-24.39	74	54.36	37.92	11.09	53.76	100	0	Peak
17355	50.94	-36.46	87.4	51.18	40.94	12.42	53.6	100	0	Peak
Other harmonics are lower than background noise										

Test Mode :	5GHz 802.11n HT20	Temperature :	22~24°C
Test Channel :	157	Relative Humidity :	50~52%
Test Engineer :	Marlboro Hsu		
Remark :	1. 5784 MHz is fundamental signal which can be ignored. 2. 17355 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit. 4. The harmonic (4 th , 5 th , 6 th , ...etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise		


ANTENNA POLARITY : VERTICAL

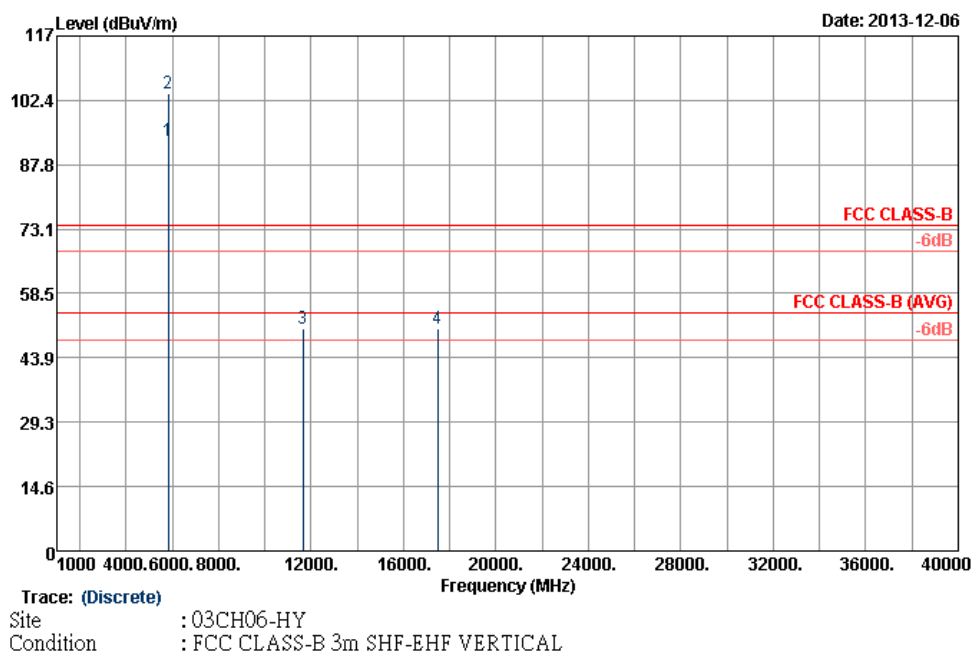
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5784	93.65	-	-	80.46	35.08	11.43	33.32	100	242	Average
5784	104.44	-	-	91.25	35.08	11.43	33.32	100	242	Peak
11571	49.97	-24.03	74	54.72	37.92	11.09	53.76	100	0	Peak
17355	49.73	-34.71	84.44	49.97	40.94	12.42	53.6	100	0	Peak
Other harmonics are lower than background noise										

Test Mode :	5GHz 802.11n HT20	Temperature :	22~24°C
Test Channel :	165	Relative Humidity :	50~52%
Test Engineer :	Marlboro Hsu		
Remark :	1. 5826 MHz is fundamental signal which can be ignored. 2. 17475 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit. 4. The harmonic (4 th , 5 th , 6 th , ...etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise		


ANTENNA POLARITY : HORIZONTAL

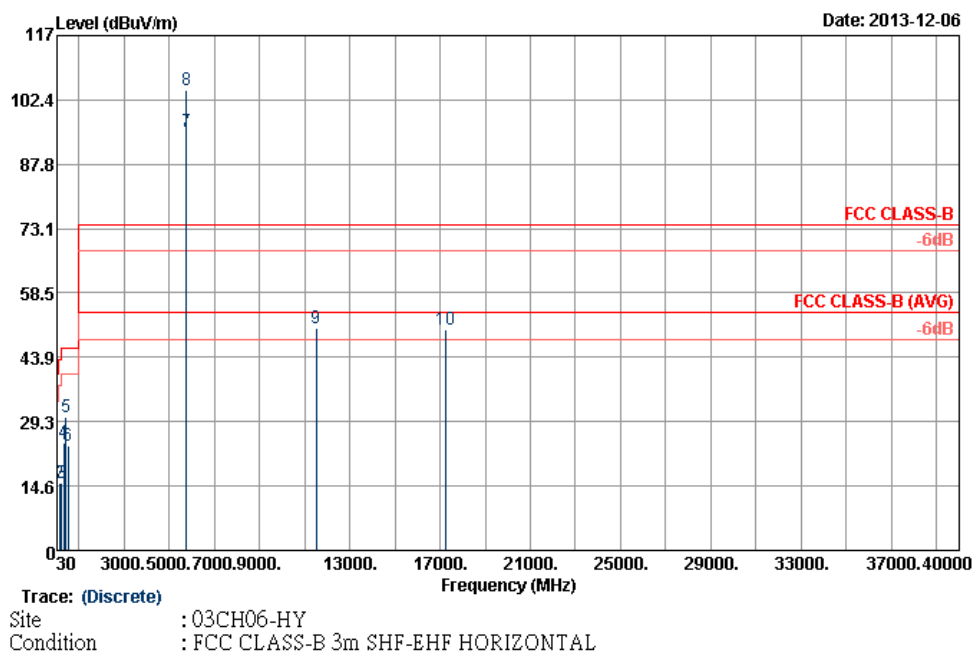
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5826	96.74	-	-	83.43	35.13	11.51	33.33	100	348	Average
5826	107.27	-	-	93.96	35.13	11.51	33.33	100	348	Peak
11649	49.87	-24.13	74	54.4	38.05	11.14	53.72	100	0	Peak
17475	50.72	-36.55	87.27	51.23	40.75	12.57	53.83	100	0	Peak
Other harmonics are lower than background noise										

Test Mode :	5GHz 802.11n HT20	Temperature :	22~24°C
Test Channel :	165	Relative Humidity :	50~52%
Test Engineer :	Marlboro Hsu		
Remark :	1. 5824 MHz is fundamental signal which can be ignored. 2. 17475 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit. 4. The harmonic (4 th , 5 th , 6 th , ...etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise		


ANTENNA POLARITY : VERTICAL

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5824	93.34	-	-	80.03	35.13	11.51	33.33	100	247	Average
5824	103.97	-	-	90.66	35.13	11.51	33.33	100	247	Peak
11649	50.37	-23.63	74	54.9	38.05	11.14	53.72	100	0	Peak
17475	50.6	-33.37	83.97	51.11	40.75	12.57	53.83	100	0	Peak
Other harmonics are lower than background noise										

Test Mode :	5GHz 802.11n HT40	Temperature :	22~24℃
Test Channel :	151	Relative Humidity :	50~52%
Test Engineer :	Marlboro Hsu		
Remark :	1. 5753 MHz is fundamental signal which can be ignored. 2. 17265 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit. 4. The harmonic (4 th , 5 th , 6 th , ...etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise		

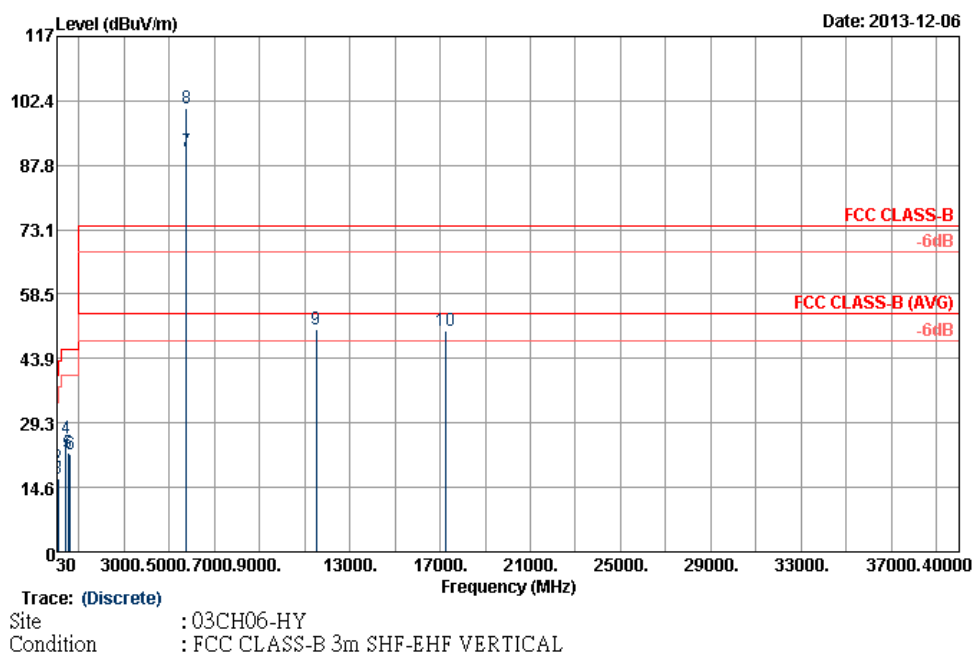

ANTENNA POLARITY : HORIZONTAL

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	16.62	-23.38	40	29.28	18.5	0.64	31.8	-	-	Peak
132.6	15.34	-28.16	43.5	34.29	11.52	1.28	31.75	-	-	Peak
227.1	15.23	-30.77	46	35.43	9.9	1.64	31.74	-	-	Peak
333.6	24.48	-21.52	46	40.43	13.81	1.99	31.75	-	-	Peak
422.5	30.34	-15.66	46	43.13	16.8	2.25	31.84	100	50	Peak
525.4	23.69	-22.31	46	34.95	18.18	2.52	31.96	-	-	Peak



ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5753	95.04	-	-	81.89	35.06	11.39	33.3	100	345	Average
5753	104.49	-	-	91.34	35.06	11.39	33.3	100	345	Peak
11511	50.51	-23.49	74	55.45	37.8	11.06	53.8	100	0	Peak
17265	50.25	-34.24	84.49	50.28	41.07	12.33	53.43	100	0	Peak
Other harmonics are lower than background noise										

Test Mode :	5GHz 802.11n HT40	Temperature :	22~24℃
Test Channel :	151	Relative Humidity :	50~52%
Test Engineer :	Marlboro Hsu		
Remark :	1. 5754 MHz is fundamental signal which can be ignored. 2. 17265 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit. 4. The harmonic (4 th , 5 th , 6 th , ...etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise		

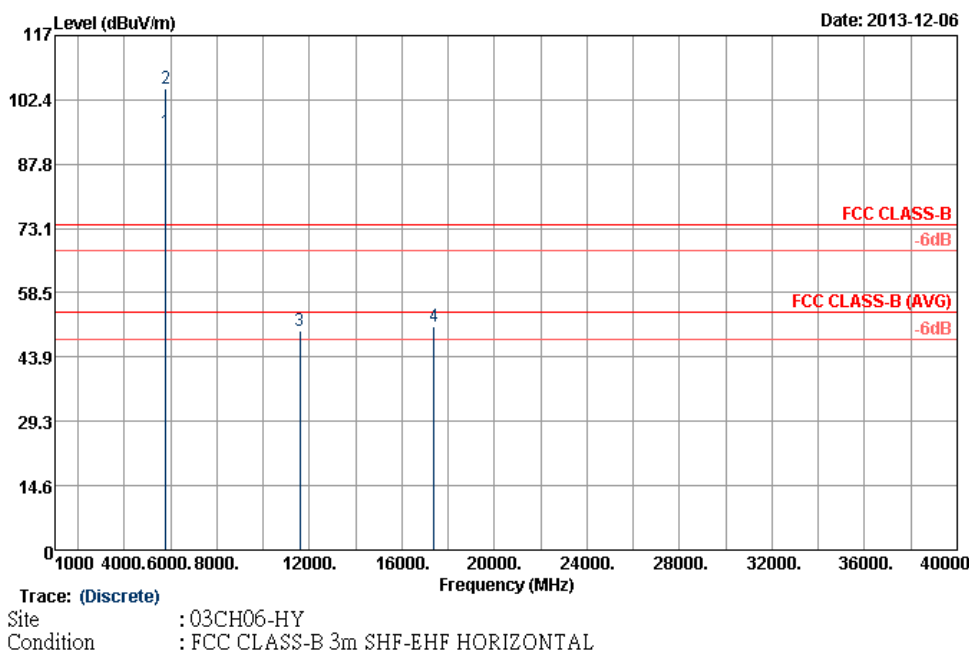

ANTENNA POLARITY : VERTICAL

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	31.09	-8.91	40	43.75	18.5	0.64	31.8	100	143	Peak
50.25	19.34	-20.66	40	42.02	8.3	0.8	31.78	-	-	Peak
91.56	16.74	-26.76	43.5	38.54	8.9	1.06	31.76	-	-	Peak
433	25.89	-20.11	46	38.68	16.8	2.27	31.86	-	-	Peak
525.4	22.43	-23.57	46	33.69	18.18	2.52	31.96	-	-	Peak
608	22.05	-23.95	46	31.86	19.48	2.77	32.06	-	-	Peak



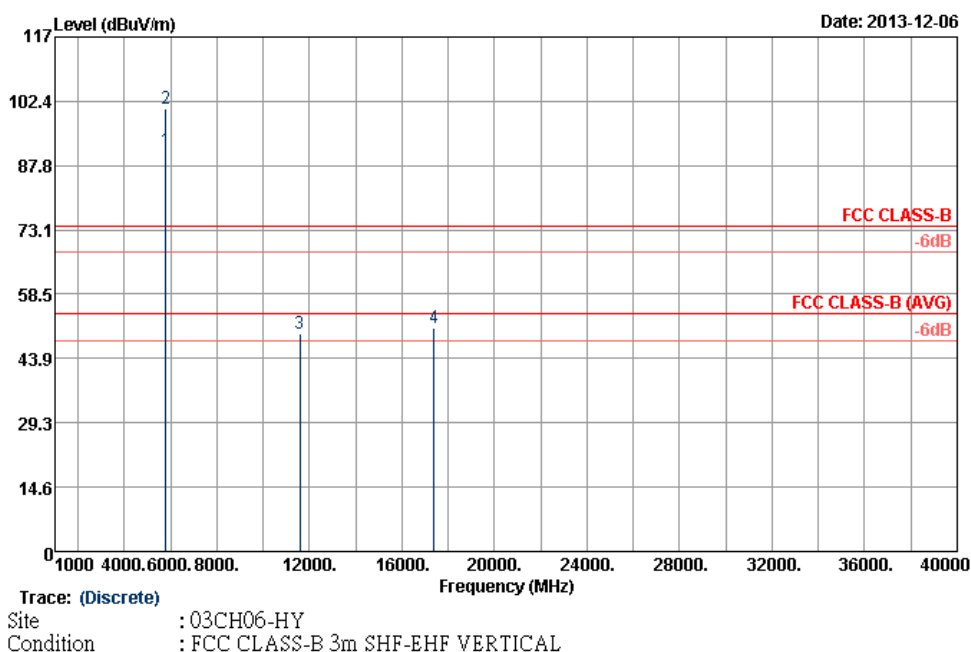
ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5754	91	-	-	77.85	35.06	11.39	33.3	103	242	Average
5754	100.77	-	-	87.62	35.06	11.39	33.3	103	242	Peak
11511	50.41	-23.59	74	55.35	37.8	11.06	53.8	100	0	Peak
17265	50.31	-30.46	80.77	50.34	41.07	12.33	53.43	100	0	Peak
Other harmonics are lower than background noise										

Test Mode :	5GHz 802.11n HT40	Temperature :	22~24°C
Test Channel :	159	Relative Humidity :	50~52%
Test Engineer :	Marlboro Hsu		
Remark :	1. 5797 MHz is fundamental signal which can be ignored. 2. 17385 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit. 4. The harmonic (4 th , 5 th , 6 th , ...etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise		


ANTENNA POLARITY : HORIZONTAL

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5797	95.01	-	-	81.77	35.09	11.47	33.32	100	347	Average
5797	104.85	-	-	91.61	35.09	11.47	33.32	100	347	Peak
11589	49.91	-24.09	74	54.6	37.96	11.1	53.75	100	0	Peak
17385	50.89	-33.96	84.85	51.19	40.89	12.48	53.67	100	0	Peak
Other harmonics are lower than background noise										

Test Mode :	5GHz 802.11n HT40	Temperature :	22~24°C
Test Channel :	159	Relative Humidity :	50~52%
Test Engineer :	Marlboro Hsu		
Remark :	1. 5793 MHz is fundamental signal which can be ignored. 2. 17385 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit. 4. The harmonic (4 th , 5 th , 6 th , ...etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise		


ANTENNA POLARITY : VERTICAL

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5793	91.11	-	-	77.87	35.09	11.47	33.32	100	242	Average
5793	100.55	-	-	87.31	35.09	11.47	33.32	100	242	Peak
11589	49.52	-24.48	74	54.21	37.96	11.1	53.75	100	0	Peak
17385	50.8	-29.75	80.55	51.1	40.89	12.48	53.67	100	0	Peak
Other harmonics are lower than background noise										

3.6 AC Conducted Emission Measurement

3.6.1 Limit of AC Conducted Emission

For equipment that is designed to be connected to the public utility (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 the limits in the following table.

Frequency of Emission (MHz)	Conducted Limit (dB μ V)	
	Quasi-Peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

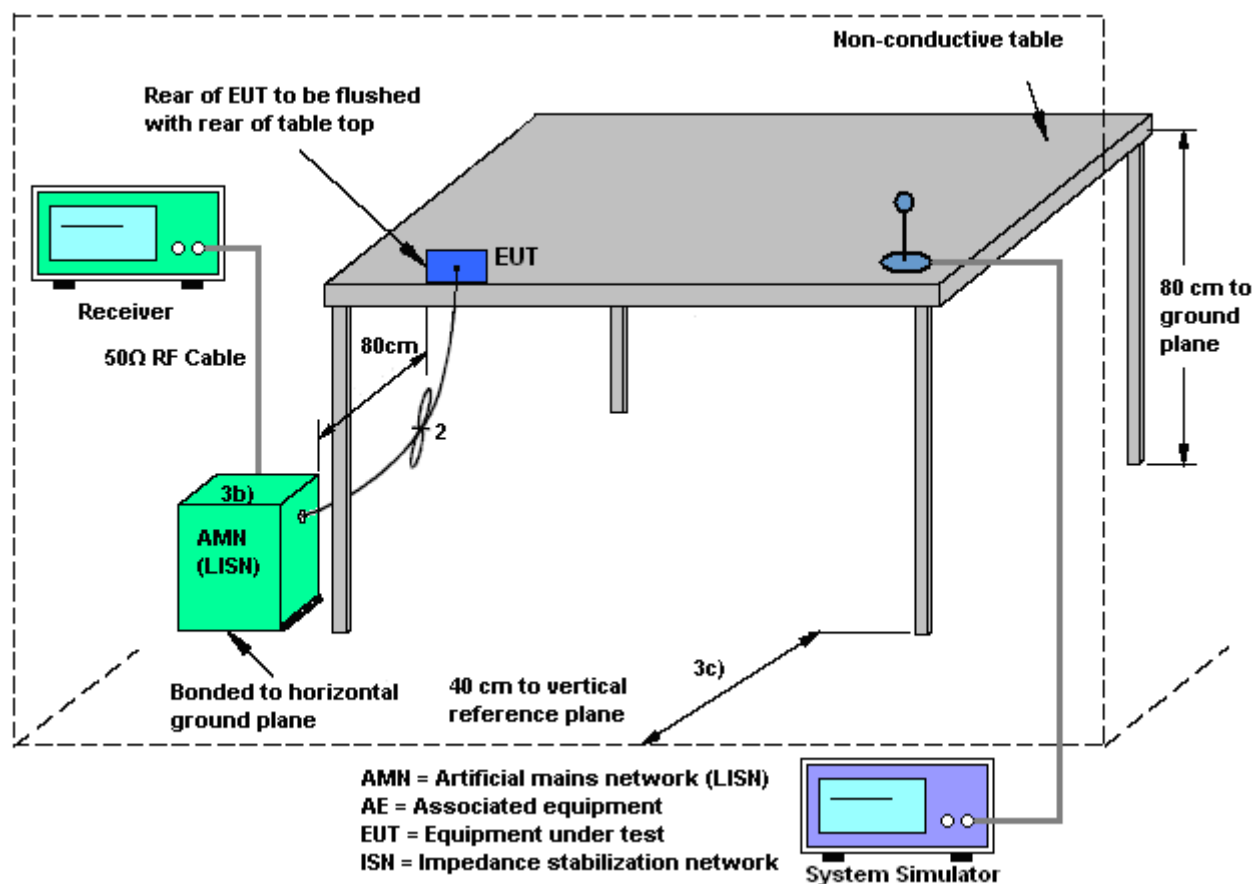
3.6.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.6.3 Test Procedures

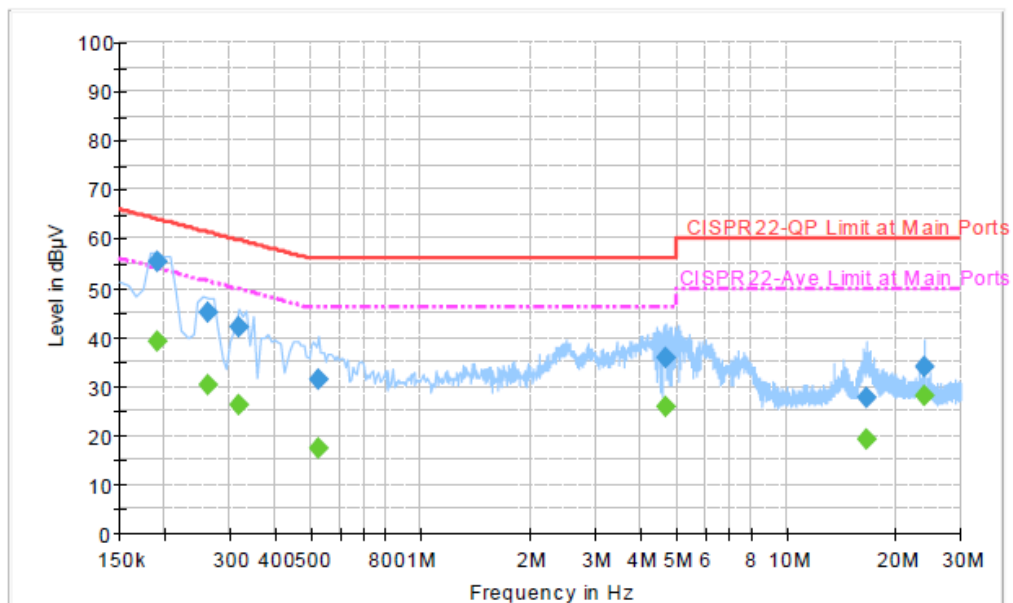
1. The EUT was placed 0.4 meter from the conducting wall of the shielding room, and it was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

3.6.4 Test Setup



3.6.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	Temperature :	20~22℃
Test Engineer :	Cosmo Xu	Relative Humidity :	45~47%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	GSM1900 Idle + Bluetooth Link + WLAN Idle + GPS Rx + Earphone + Battery + USB Cable (Data Link with Notebook)		



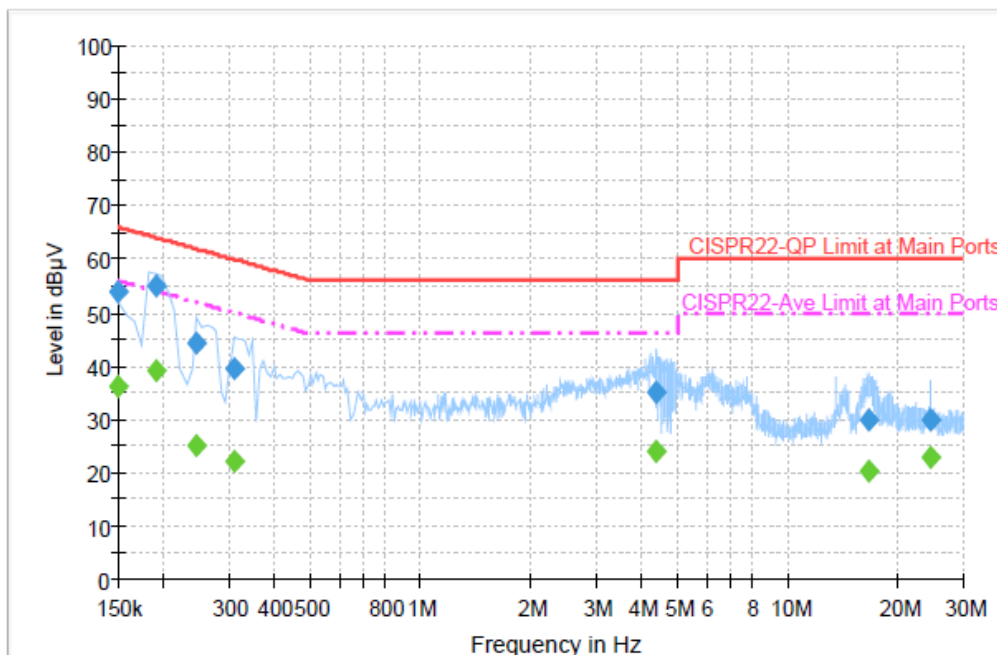
Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.190000	55.3	Off	L1	19.4	8.7	64.0
0.262000	45.0	Off	L1	19.4	16.4	61.4
0.318000	42.0	Off	L1	19.4	17.8	59.8
0.526000	31.4	Off	L1	19.4	24.6	56.0
4.662000	35.9	Off	L1	19.6	20.1	56.0
16.646000	27.7	Off	L1	19.8	32.3	60.0
23.862000	34.0	Off	L1	19.9	26.0	60.0

Final Result : Average

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.190000	39.3	Off	L1	19.4	14.7	54.0
0.262000	30.2	Off	L1	19.4	21.2	51.4
0.318000	26.2	Off	L1	19.4	23.6	49.8
0.526000	17.3	Off	L1	19.4	28.7	46.0
4.662000	25.7	Off	L1	19.6	20.3	46.0
16.646000	19.4	Off	L1	19.8	30.6	50.0
23.862000	28.0	Off	L1	19.9	22.0	50.0

Test Mode :	Mode 1	Temperature :	20~22°C
Test Engineer :	Cosmo Xu	Relative Humidity :	45~47%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	GSM1900 Idle + Bluetooth Link + WLAN Idle + GPS Rx + Earphone + Battery + USB Cable (Data Link with Notebook)		

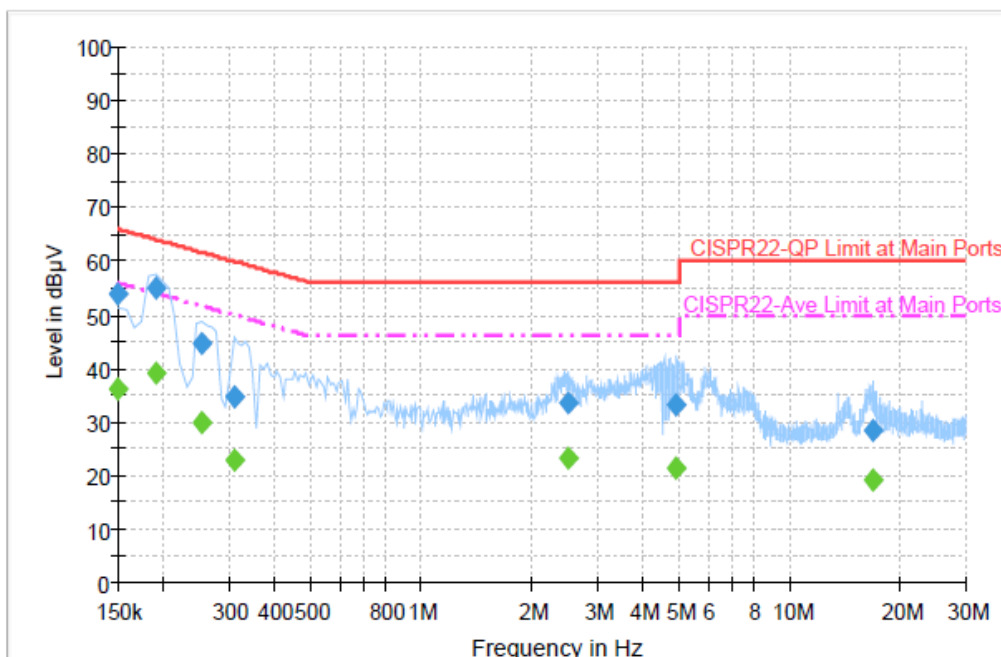

Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.150000	54.0	Off	N	19.4	12.0	66.0
0.190000	54.8	Off	N	19.3	8.9	63.7
0.246000	44.2	Off	N	19.4	17.7	61.9
0.310000	39.5	Off	N	19.4	20.5	60.0
4.398000	35.1	Off	N	19.7	20.9	56.0
16.654000	29.7	Off	N	19.9	30.3	60.0
24.542000	30.0	Off	N	20.0	30.0	60.0

Final Result : Average

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.150000	36.0	Off	N	19.4	20.0	56.0
0.190000	39.0	Off	N	19.3	14.7	53.7
0.246000	24.9	Off	N	19.4	27.0	51.9
0.310000	22.1	Off	N	19.4	27.9	50.0
4.398000	23.9	Off	N	19.7	22.1	46.0
16.654000	20.5	Off	N	19.9	29.5	50.0
24.542000	23.0	Off	N	20.0	27.0	50.0

Test Mode :	Mode 2	Temperature :	20~22°C
Test Engineer :	Cosmo Xu	Relative Humidity :	45~47%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	GSM1900 Idle + Bluetooth Idle + WLAN Link + GPS Rx + Earphone + Battery + USB Cable (Data Link with Notebook)		

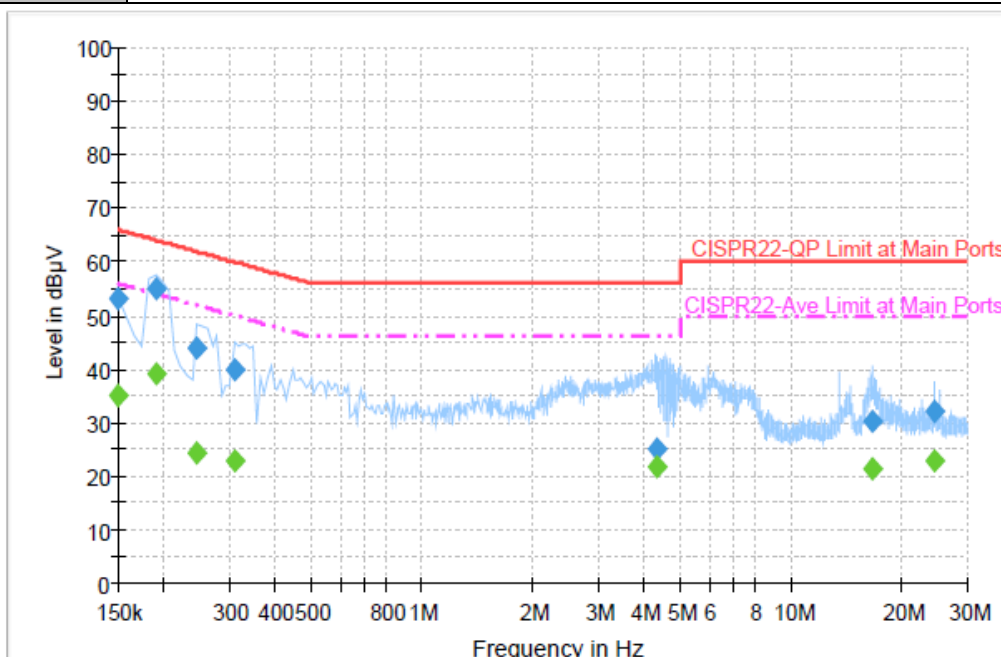

Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.150000	53.7	Off	L1	19.4	12.3	66.0
0.190000	54.8	Off	L1	19.4	9.2	64.0
0.254000	44.7	Off	L1	19.5	16.9	61.6
0.310000	34.7	Off	L1	19.4	25.3	60.0
2.502000	33.7	Off	L1	19.6	22.3	56.0
4.918000	33.4	Off	L1	19.6	22.6	56.0
16.782000	28.5	Off	L1	19.8	31.5	60.0

Final Result : Average

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.150000	36.0	Off	L1	19.4	20.0	56.0
0.190000	39.0	Off	L1	19.4	15.0	54.0
0.254000	30.1	Off	L1	19.5	21.5	51.6
0.310000	22.7	Off	L1	19.4	27.3	50.0
2.502000	23.4	Off	L1	19.6	22.6	46.0
4.918000	21.4	Off	L1	19.6	24.6	46.0
16.782000	19.1	Off	L1	19.8	30.9	50.0

Test Mode :	Mode 2	Temperature :	20~22°C
Test Engineer :	Cosmo Xu	Relative Humidity :	45~47%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	GSM1900 Idle + Bluetooth Idle + WLAN Link + GPS Rx + Earphone + Battery + USB Cable (Data Link with Notebook)		


Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.150000	53.2	Off	N	19.4	12.8	66.0
0.190000	54.8	Off	N	19.4	9.2	64.0
0.246000	44.0	Off	N	19.4	17.9	61.9
0.310000	40.0	Off	N	19.4	20.0	60.0
4.326000	24.9	Off	N	19.6	31.1	56.0
16.542000	30.3	Off	N	19.9	29.7	60.0
24.542000	32.0	Off	N	20.0	28.0	60.0

Final Result : Average

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.150000	35.0	Off	N	19.4	21.0	56.0
0.190000	39.0	Off	N	19.4	15.0	54.0
0.246000	24.4	Off	N	19.4	27.5	51.9
0.310000	22.8	Off	N	19.4	27.2	50.0
4.326000	21.6	Off	N	19.6	24.4	46.0
16.542000	21.5	Off	N	19.9	28.5	50.0
24.542000	23.0	Off	N	20.0	27.0	50.0



3.7 Antenna Requirements

3.7.1 Standard Applicable

If directional gain of transmitting antennas is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi. For the fixed point-to-point operation, the power shall be reduced by one dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the FCC rule.

3.7.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.7.3 Antenna Gain

The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.

4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	Rohde & Schwarz	FSP40	100055	9kHz~40GHz	Jun. 07, 2013	Nov. 29, 2013 ~ Dec. 23, 2013	Jun. 06, 2014	Conducted (TH02-HY)
Power Meter	Anritsu	ML2495A	1036004	300MHz~40GHz	Aug. 17, 2013	Nov. 29, 2013 ~ Dec. 23, 2013	Aug. 16, 2014	Conducted (TH02-HY)
Power Sensor	Anritsu	MA2411B	1027253	300MHz~40GHz	Aug. 17, 2013	Nov. 29, 2013 ~ Dec. 23, 2013	Aug. 16, 2014	Conducted (TH02-HY)
Hygrometer	Testo	608-H1	34897199	N/A	May 07, 2013	Nov. 29, 2013 ~ Dec. 23, 2013	May 06, 2014	Conducted (TH02-HY)
RF cable	HONOVA	MF86	N/A	N/A	Nov. 25, 2013	Nov. 29, 2013 ~ Dec. 23, 2013	Nov. 24, 2014	Conducted (TH02-HY)
Spectrum Analyzer	R&S	FSP30	101067	9kHz ~ 30GHz	Nov. 20, 2013	Dec. 06, 2013 ~ Dec. 19, 2013	Nov. 19, 2014	Radiation (03CH06-HY)
Spectrum Analyzer	Agilent	E4408B	MY44211030	9kHz ~ 26.5GHz	Dec. 02, 2013	Dec. 06, 2013 ~ Dec. 19, 2013	Dec. 01, 2014	Radiation (03CH06-HY)
EMI Test Receiver	R&S	ESVS10	834468/0003	20MHz ~ 1000MHz	May 06, 2013	Dec. 06, 2013 ~ Dec. 19, 2013	May 05, 2014	Radiation (03CH06-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	860004/0001	9kHz ~ 30MHz	Jul. 03, 2012	Dec. 06, 2013 ~ Dec. 19, 2013	Jul. 02, 2014	Radiation (03CH06-HY)
Bilog Antenna	Schaffner	CBL6112B	2885	30MHz ~ 2GHz	Oct. 10, 2013	Dec. 06, 2013 ~ Dec. 19, 2013	Oct. 09, 2014	Radiation (03CH06-HY)
Double Ridge Horn Antenna	EMCO	3117	00066583	1GHz ~ 18GHz	Aug. 02, 2013	Dec. 06, 2013 ~ Dec. 19, 2013	Aug. 01, 2014	Radiation (03CH06-HY)
Amplifier	Agilent	310N	186713	9kHz ~ 1GHz	Apr. 12, 2013	Dec. 06, 2013 ~ Dec. 19, 2013	Apr. 11, 2014	Radiation (03CH06-HY)
Pre Amplifier	EMCI	EMC051845	SN980048	1GHz ~ 18GHz	Jul. 18, 2013	Dec. 06, 2013 ~ Dec. 19, 2013	Jul. 17, 2014	Radiation (03CH06-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	15GHz ~ 40GHz	Oct. 03, 2013	Dec. 06, 2013 ~ Dec. 19, 2013	Oct. 02, 2014	Radiation (03CH06-HY)
Preamplifier	Agilent	8449B	3008A01917	1GHz ~ 26.5GHz	Apr. 12, 2013	Dec. 06, 2013 ~ Dec. 19, 2013	Apr. 11, 2014	Radiation (03CH06-HY)
Turn Table	INN-CO	DS2000	420/650/00	0 ~ 360 degree	N/A	Dec. 06, 2013 ~ Dec. 19, 2013	N/A	Radiation (03CH06-HY)
Antenna Mast	MF	MF-7802	MF780208212	1 m ~ 4 m	N/A	Dec. 06, 2013 ~ Dec. 19, 2013	N/A	Radiation (03CH06-HY)
LF RF Cable	warison	WCBA-WC04NM.NM2	N/A	30MHz~1GHz	Nov. 28, 2013	Dec. 06, 2013 ~ Dec. 19, 2013	Nov. 27, 2014	Radiation (03CH06-HY)
HF RF Cable	Huber + Suhner	sucoflex 104	286027/4	1GHz~26.5GHz	Nov. 28, 2013	Dec. 06, 2013 ~ Dec. 19, 2013	Nov. 27, 2014	Radiation (03CH06-HY)
High Pass Filter	Microwave Circuits	H3G018G1	SN477219	3G HPF	Nov. 28, 2013	Dec. 06, 2013 ~ Dec. 19, 2013	Nov. 27, 2014	Radiation (03CH06-HY)
High Pass Filter	Microwave Circuits	H07G18G3	282388	7G HPF	Nov. 28, 2013	Dec. 06, 2013 ~ Dec. 19, 2013	Nov. 27, 2014	Radiation (03CH06-HY)



Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Low Pass Filter	Wainwright	WLKS1500-8 SS	SN51	1.5G LPF	Nov. 28, 2013	Dec. 06, 2013 ~ Dec. 19, 2013	Nov. 27, 2014	Radiation (03CH06-HY)
Hygrometer	WISEWIND	410	BU5004	N/A	May 07, 2013	Dec. 06, 2013 ~ Dec. 19, 2013	May 06, 2014	Radiation (03CH06-HY)
Test Software	Audix	E3 V6.0	N/A	N/A	N/A	Dec. 06, 2013 ~ Dec. 19, 2013	N/A	Radiation (03CH06-HY)
EMI Test Receiver	Rohde & Schwarz	ESCS 30	100356	9kHz ~ 2.75GHz	Nov. 15, 2013	Nov. 29, 2013	Nov. 14, 2014	Conduction (CO05-HY)
Two-LISN	Rohde & Schwarz	ENV216	100081	9kHz ~ 30MHz	Dec. 12, 2012	Nov. 29, 2013	Dec. 11, 2013	Conduction (CO05-HY)
Two-LISN	Rohde & Schwarz	ENV216	100080	9kHz ~ 30MHz	Dec. 06, 2012	Nov. 29, 2013	Dec. 05, 2013	Conduction (CO05-HY)
AC Power Source	APC	APC-1000W	N/A	N/A	N/A	Nov. 29, 2013	N/A	Conduction (CO05-HY)
Test Software	N/A	EMC32	8.40.0	N/A	N/A	Nov. 29, 2013	N/A	Conduction (CO05-HY)
Hygrometer	Testo	608-H1	34913912	N/A	Apr. 25, 2013,	Nov. 29, 2013	Apr. 24, 2014	Conduction (CO05-HY)
LF Cable	Shuner	RG-402	N/A	N/A	Oct. 17, 2013	Nov. 29, 2013	Oct. 16, 2014	Conduction (CO05-HY)

Note: Test equipment calibration is traceable to the procedure of ISO17025.

5 Uncertainty of Evaluation

Uncertainty of Conducted Emission Measurement (150kHz ~ 30MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.26
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Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.50
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