FCC Test Report

Product Name	FIELDBOOK
Model No	I1
FCC ID.	XGIFBI1

Applicant	Ubiqconn Technology,Inc.
Address	43 Avenue de l'Europe, BP60012, 95331 DOMONT cedex, France.

Date of Receipt	Oct. 08, 2014
Issue Date	Nov. 28, 2014
Report No.	14A0216R-RFUSP38V00
Report Version	V1.0

The test results relate only to the samples tested.
The test results shown in the test report are traceable to the national/international standard through the calibration of the equipment and evaluated measurement uncertainty herein.
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Test Report

Issue Date: Nov. 28, 2014
Report No.: 14A0216R-RFUSP38V00

QuieTek

Product Name	FIELDBOOK
Applicant	LOGIC INSTRUMENT S.A.
Address	43 Avenue de l'Europe, BP60012, 95331 DOMONT cedex, France.
Manufacturer	Ubiqconn Technology,Inc.
Model No.	I1
EUT Rated Voltage	AC 100-240V, 50/60Hz
EUT Test Voltage	AC 120V/60Hz
Trade Name	LOGIC INSTRUMENT
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C: 2013 ANSI C63.10: 2009, KDB 558074 D01 DTS Meas Guidance v03r02
Test Result	Complied

Documented By : Genie Chang

(Senior Adm. Specialist / Genie Chang)

Tested By : Alan Chen

(Engineer / Alan Chen)

Approved By :

(Director / Vincent Lin)

TABLE OF CONTENTS

	Description	Page
1.	**GENERAL INFORMATION**	**5**
1.1.	EUT Description	5
1.2.	Operational Description	8
1.3.	Tested System Details	9
1.4.	Configuration of Tested System	9
1.5.	EUT Exercise Software	10
1.6.	Test Facility	11
2.	**Conducted Emission**	**12**
2.1.	Test Equipment	12
2.2.	Test Setup	12
2.3.	Limits	13
2.4.	Test Procedure	13
2.5.	Uncertainty	13
2.6.	Test Result of Conducted Emission	14
3.	**Peak Power Output**	**18**
3.1.	Test Equipment	18
3.2.	Test Setup	18
3.3.	Limits	18
3.4.	Test Procedure	18
3.5.	Uncertainty	18
3.6.	Test Result of Peak Power Output	19
4.	**Radiated Emission**	**28**
4.1.	Test Equipment	28
4.2.	Test Setup	29
4.3.	Limits	30
4.4.	Test Procedure	31
4.5.	Uncertainty	31
4.6.	Test Result of Radiated Emission	32
5.	**RF antenna conducted test**	**61**
5.1.	Test Equipment	61
5.2.	Test Setup	61
5.3.	Limits	61
5.4.	Test Procedure	62
5.5.	Uncertainty	62
5.6.	Test Result of RF antenna conducted test	63
6.	**Band Edge**	**84**
6.1.	Test Equipment	84
6.2.	Test Setup	85
6.3.	Limits	85
6.4.	Test Procedure	86
6.5.	Uncertainty	86
6.6.	Test Result of Band Edge	87

7. Occupied Bandwidth 131

7.1. Test Equipment 131
7.2. Test Setup 131
7.3. Limits 131
7.4. Test Procedure 131
7.5. Uncertainty 131
7.6. Test Result of Occupied Bandwidth 132

8. Power Density 153

8.1. Test Equipment 153
8.2. Test Setup 153
8.3. Limits 153
8.4. Test Procedure 153
8.5. Uncertainty 153
8.6. Test Result of Power Density 154

9. EMI Reduction Method During Compliance Testing 175

Attachment 1: EUT Test Photographs

Attachment 2: EUT Detailed Photographs

1. GENERAL INFORMATION

1.1. EUT Description

Product Name	FIELDBOOK
Trade Name	LOGIC INSTRUMENT
Model No.	I1
FCC ID.	XGIFBI1
Frequency Range	802.11b/g/n-20MHz:2412-2462MHz,802.11n-40MHz:2422-2452MHz 802.11a/n-20MHz:5745-5825MHz ,802.11n-40MHz:5755-5795MHz 802.11ac-80MHz: 5775MHz,
Number of Channels	802.11b/g/n-20MHz: 11, n-40MHz: 7 802.11a/n-20MHz: 5, n-40MHz: 2 802.11ac-80MHz: 1
Data Speed	802.11b: 1-11Mbps, 802.11a/g: 6-54Mbps, 802.11n: up to 300Mbps 802.11ac-80MHz: up to 866.7MHz
Channel separation	802.11b/g/n-20MHz: 5 MHz, 802.11a/n-20MHz: 20MHz 802.11n-40MHz: 40MHz, 802.11ac-80MHz: 80MHz
Type of Modulation	802.11b:DSSS, DBPSK, DQPSK, CCK 802.11a/g/n/ac: OFDM, BPSK, QPSK, 16QAM, 64QAM, 256QAM
Antenna Type	PIFA Antenna
Antenna Gain	Refer to the table “Antenna List”
Channel Control	Auto
Power Adapter	MFR: FSP, M/N: FSP065-REB Input: AC 100-240V ~1.5A, 50-60 Hz Output: 19V, 3.42A Cable Out: Non-Shielded, 1.5m, with one ferrite core bonded.
Contain Module	Intel / 7260HMW

Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	ethertronics	5001791 (Main) 5001799 (Aux)	PIFA Antenna	3.8dBi for 2.4 GHz 5.1dBi For 5.15~5.25GHz 5.1dBi For 5.25~5.35GHz 4.2dBi For 5.47~5.725GHz 2.6dBi For 5.725~5.850GHz

Note: The antenna of EUT is conform to FCC 15.203

802.11b/g/n-20MHz Center Frequency of Each Channel:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 01:	2412 MHz	Channel 02:	2417 MHz	Channel 03:	2422 MHz	Channel 04:	2427 MHz
Channel 05:	2432 MHz	Channel 06:	2437 MHz	Channel 07:	2442 MHz	Channel 08:	2447 MHz
Channel 09:	2452 MHz	Channel 10:	2457 MHz	Channel 11:	2462 MHz		

802.11a/n-20MHz Center Working Frequency of Each Channel:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 149:	5745 MHz	Channel 153:	5765 MHz	Channel 157:	5785 MHz	Channel 161:	5805 MHz
Channel 165:	5825 MHz						

802.11n-40MHz (2.4G Band) Center Working Frequency of Each Channel:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 1:	2422 MHz	Channel 2:	2427 MHz	Channel 3:	2432 MHz	Channel 4:	2437 MHz
Channel 5:	2442 MHz	Channel 6:	2447 MHz	Channel 7:	2452 MHz		

802.11n-40MHz (5G Band) Center Working Frequency of Each Channel:

Channel	Frequency	Channel	Frequency
Channel 151:	5755 MHz	Channel 159:	5795 MHz

802.11ac-80MHz Center Working Frequency of Each Channel:

Channel	Frequency
Channel 155:	5775 MHz

Note:

1. This device is a FIELDBOOK with a built-in 2.4GHz and 5GHz WLAN transceiver.
2. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
3. Lowest and highest data rates are tested in each mode. Only worst case is shown in the report. (802.11b is 1Mbps、802.11g is 6Mbps、802.11n(20M-BW) is 14.4Mbps、802.11n(40M-BW) is 30Mbps and 802.11ac(80M-BW) is 65 Mbps).
4. The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.
5. These tests are conducted on a sample for the purpose of demonstrating compliance of 802.11a/b/g/n transmitter with Part 15 Subpart C Paragraph 15.247 of spread spectrum devices.

Test Mode:	Mode 1: Transmit (802.11b 1Mbps)
	Mode 2: Transmit (802.11g 6Mbps)
	Mode 3: Transmit - 802.11a 6Mbps
	Mode 4: Transmit - 802.11n-20BW_7.2Mbps(2.4G Band)
	Mode 5: Transmit - 802.11n-40BW_15Mbps(2.4G Band)
	Mode 6: Transmit - 802.11n-20BW_7.2Mbps(5G Band)
	Mode 7: Transmit - 802.11n-40BW_15Mbps(5G Band)
	Mode 8: Transmit - 802.11ac-80BW_32.5Mbps(5G Band)

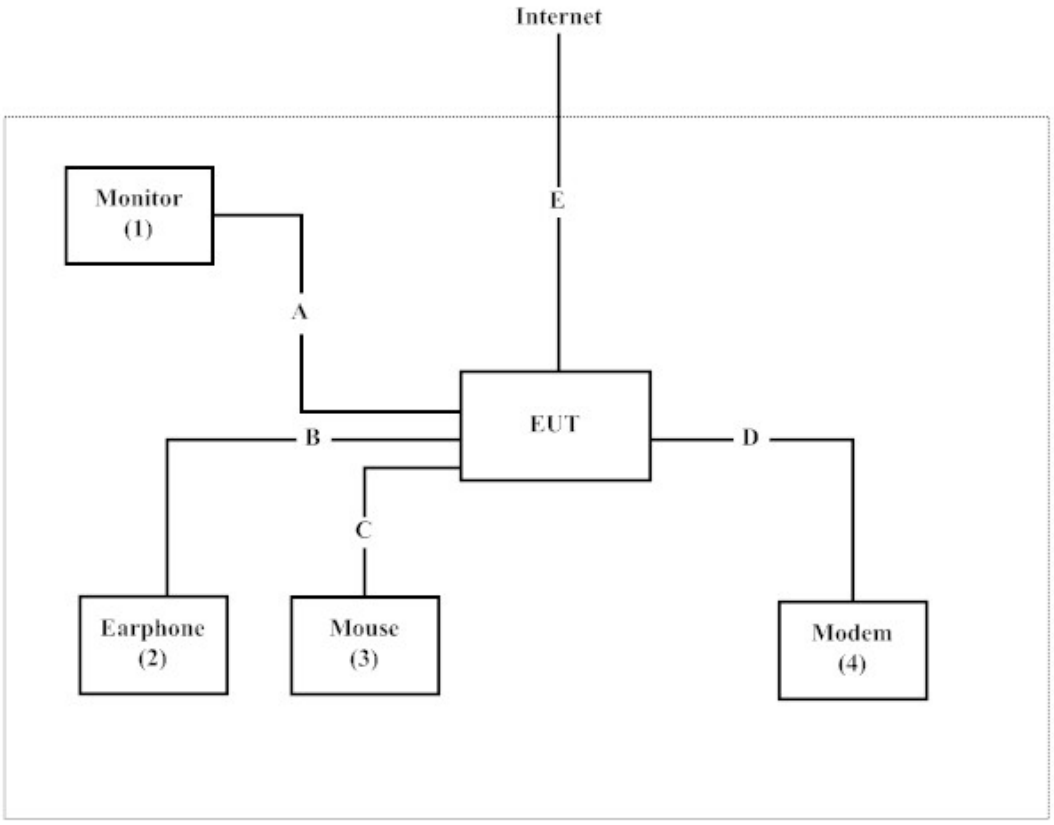
1.3. Tested System Details

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

Product		Manufacturer	Model No.	Serial No.	Power Cord
(1)	Monitor	DELL	ST2320L		Non-Shielded, 1.8m
(2)	Earphone	AIWA	N/A	N/A	N/A
(3)	USB Mouse	Logitech	M-BE58	HCA30103211	N/A
(4)	Modem	ACEEX	DM-1414	0102027553	Non-Shielded, 1.8m

Signal Cable Type		Signal cable Description
A	HDMI Cable	Shielded, 1.8m
B	Earphone Cable	Shielded, 1.8m
C	Mouse Cable	Shielded, 1.8m
D	RS-232 Cable	Shielded, 1.8m
E	RJ45 Cable	Shielded, 2.0m

1.4. Configuration of Tested System



1.5. EUT Exercise Software

(1) Setup the EUT as shown in Section 1.4
(2) Execute software “DRTU-v1.7.3.859” on the Notebook PC.
(3) Configure the test mode, the test channel, and the data rate.
(4) Press “OK” to start the continuous Transmit.
(5) Verify that the EUT works properly.

1.6. Test Facility

Ambient conditions in the laboratory:

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	20-35
Humidity (%RH)	25-75	50-65
Barometric pressure (mbar)	860-1060	950-1000

The related certificate for our laboratories about the test site and management system can be downloaded from QuieTek Corporation's Web Site : http://www.quietek.com/tw/ctg/cts/accreditations.htm
The address and introduction of QuieTek Corporation's laboratories can be founded in our Web site : http://www.quietek.com/

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FCC Accreditation Number: TW1014

2. Conducted Emission

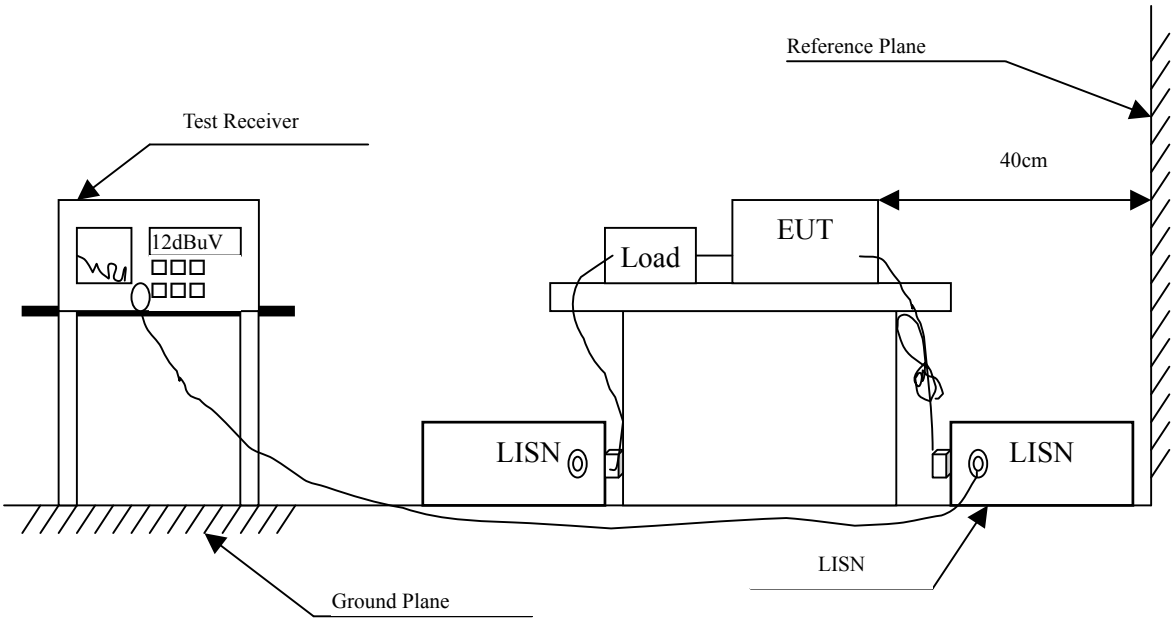
2.1. Test Equipment

	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.	Remark
X	Test Receiver	R & S	ESCS 30 / 825442/018	Sep., 2014	
X	Artificial Mains Network	R & S	ENV4200 / 848411/10	Feb., 2014	Peripherals
X	LISN	R & S	ESH3-Z5 / 825562/002	Feb., 2014	EUT
	DC LISN	Schwarzbeck	8226 / 176	Mar, 2014	EUT
X	Pulse Limiter	R & S	ESH3-Z2 / 357.8810.52	Feb., 2014	
	No.1 Shielded Room				

Note:

1. All equipments are calibrated every one year.
2. The test instruments marked by "X" are used to measure the final test results.

2.2. Test Setup



2.3. Limits

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

2.4. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm /50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs.)

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2009 on conducted measurement.

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

2.5. Uncertainty

± 2.26 dB

2.6. Test Result of Conducted Emission

Product : FIELDBOOK
Test Item : Conducted Emission Test
Power Line : Line 1
Test Mode : Mode 5: Transmit - 802.11n-40BW_15Mbps(2.4G Band) (2437MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 1					
Quasi-Peak					
0.170	9.743	34.220	43.964	-21.465	65.429
0.216	9.739	30.030	39.769	-24.345	64.114
0.334	9.745	27.380	37.125	-23.618	60.743
0.490	9.752	32.180	41.932	-14.354	56.286
0.779	9.765	28.600	38.365	-17.635	56.000
7.920	9.910	27.320	37.230	-22.770	60.000
Average					
0.170	9.743	18.800	28.544	-26.885	55.429
0.216	9.739	22.700	32.439	-21.675	54.114
0.334	9.745	24.340	34.085	-16.658	50.743
0.490	9.752	24.580	34.332	-11.954	46.286
0.779	9.765	20.320	30.085	-15.915	46.000
7.920	9.910	21.530	31.440	-18.560	50.000

Note:

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

Product : FIELDBOOK
Test Item : Conducted Emission Test
Power Line : Line 2
Test Mode : Mode 5: Transmit - 802.11n-40BW_15Mbps(2.4G Band) (2437MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 2					
Quasi-Peak					
0.173	9.747	31.650	41.397	-23.946	65.343
0.509	9.753	33.100	42.853	-13.147	56.000
0.771	9.775	28.660	38.435	-17.565	56.000
1.974	9.839	19.840	29.679	-26.321	56.000
6.685	9.900	23.990	33.890	-26.110	60.000
20.920	10.100	24.460	34.560	-25.440	60.000
Average					
0.173	9.747	12.100	21.847	-33.496	55.343
0.509	9.753	21.120	30.873	-15.127	46.000
0.771	9.775	18.660	28.435	-17.565	46.000
1.974	9.839	6.030	15.869	-30.131	46.000
6.685	9.900	16.290	26.190	-23.810	50.000
20.920	10.100	19.050	29.150	-20.850	50.000

Note:

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

Product : FIELDBOOK
Test Item : Conducted Emission Test
Power Line : Line 1
Test Mode : Mode 8: Transmit - 802.11ac-80BW_15Mbps(5G Band) (5775MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 1					
Quasi-Peak					
0.158	9.747	34.680	44.427	-21.344	65.771
0.170	9.743	32.900	42.644	-22.785	65.429
0.212	9.739	28.440	38.179	-26.050	64.229
0.341	9.745	26.150	35.895	-24.648	60.543
0.505	9.753	33.100	42.853	-13.147	56.000
0.654	9.759	26.900	36.659	-19.341	56.000
Average					
0.158	9.747	26.160	35.907	-19.864	55.771
0.170	9.743	13.810	23.554	-31.875	55.429
0.212	9.739	20.420	30.159	-24.070	54.229
0.341	9.745	10.480	20.225	-30.318	50.543
0.505	9.753	21.420	31.173	-14.827	46.000
0.654	9.759	19.760	29.519	-16.481	46.000

Note:

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

Product : FIELDBOOK
Test Item : Conducted Emission Test
Power Line : Line 2
Test Mode : Mode 8: Transmit - 802.11ac-80BW_15Mbps(5G Band) (5775MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 2					
Quasi-Peak					
0.166	9.747	33.830	43.577	-21.966	65.543
0.212	9.749	28.580	38.329	-25.900	64.229
0.373	9.747	28.450	38.197	-21.432	59.629
0.498	9.752	32.750	42.502	-13.555	56.057
7.912	9.920	27.580	37.500	-22.500	60.000
21.162	10.105	25.840	35.945	-24.055	60.000
Average					
0.166	9.747	28.500	38.247	-17.296	55.543
0.212	9.749	24.300	34.049	-20.180	54.229
0.373	9.747	15.410	25.157	-24.472	49.629
0.498	9.752	28.740	38.492	-7.565	46.057
7.912	9.920	22.630	32.550	-17.450	50.000
21.162	10.105	20.160	30.265	-19.735	50.000

Note:

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

3. Peak Power Output

3.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Power Meter	Anritsu	ML2495A/6K00003357	May, 2014
X	Power Sensor	Anritsu	MA2411B/0738448	Jun, 2014

Note:

1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with "X" are used to measure the final test results.

3.2. Test Setup

3.3. Limits

The maximum peak power shall be less 1 Watt.

3.4. Test Procedure

The EUT was tested according to DTS test procedure of KDB 558074 for compliance to FCC 47CFR 15.247 requirements. The maximum peak conducted output power using KDB 558074 D01 DTS Meas Guidance v03r02 section 9.1.2 PKPM1 Peak power meter methodfor for 802.11a/b/g/n, section 9.2.2 Measurement using a spectrum analyzer (SA) for 802.11ac.

3.5. Uncertainty

± 1.27 dB

3.6. Test Result of Peak Power Output

Product : FIELDBOOK
Test Item : Peak Power Output Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)

CHAIN A

Channel No	Frequency (MHz)	Peak Power For different Data Rate (Mbps)				Required Limit	Result
		1	2	5.5	11		
		Measurement Level (dBm)					
01	2412	18.67	--	--	--	<30dBm	Pass
06	2437	18.85	18.66	18.46	18.31	<30dBm	Pass
11	2462	19.06	--	--	--	<30dBm	Pass

Note: Peak Power Output Value =Reading value on power meter + cable loss

CHAIN B

Channel No	Frequency (MHz)	Peak Power For different Data Rate (Mbps)				Required Limit	Result
		1	2	5.5	11		
		Measurement Level (dBm)					
01	2412	17.68	--	--	--	<30dBm	Pass
06	2437	17.65	17.55	17.43	17.31	<30dBm	Pass
11	2462	17.79	--	--	--	<30dBm	Pass

Note: Peak Power Output Value =Reading value on power meter + cable loss

Product : FIELDBOOK
Test Item : Peak Power Output Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)

CHAIN A

Channel No	Frequency (MHz)	Peak Power For different Data Rate (Mbps)								Required Limit	Result
		7.2	14.4	21.7	28.9	43.3	57.8	65	72.2		
		`Measurement Level (dBm)									
01	2412	22.01	--	--	--	--	--	--	--	<30dBm	Pass
06	2437	25.70	25.66	25.61	25.51	25.44	25.38	25.31	25.28	<30dBm	Pass
11	2462	23.24	--	--	--	--	--	--	--	<30dBm	Pass

Note: Peak Power Output Value =Reading value on power meter + cable loss

CHAIN B

Channel No	Frequency (MHz)	Peak Power For different Data Rate (Mbps)								Required Limit	Result
		6	9	12	18	24	36	48	54		
		Measurement Level (dBm)									
01	2412	21.34	--	--	--	--	--	--	--	<30dBm	Pass
06	2437	24.60	24.44	24.39	24.32	24.28	24.21	24.17	24.08	<30dBm	Pass
11	2462	23.45	--	--	--	--	--	--	--	<30dBm	Pass

Note: Peak Power Output Value =Reading value on power meter + cable loss

Product : FIELDBOOK
Test Item : Peak Power Output Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit - 802.11a 6Mbps

CHAIN A

Channel No	Frequency (MHz)	Peak Power For different Data Rate (Mbps)							
		6	9	12	18	24	36	48	54
		Measurement Level (dBm)							
149	5745	25.33	--	--	--	--	--	--	--
157	5785	24.49	24.41	24.34	24.28	24.21	24.17	24.09	24.01
165	5825	26.06	--	--	--	--	--	--	--

Note: Peak Power Output Value =Reading value on power meter + cable loss

CHAIN B

Channel No	Frequency (MHz)	Peak Power For different Data Rate (Mbps)							
		6	9	12	18	24	36	48	54
		Measurement Level (dBm)							
149	5745	25.13	--	--	--	--	--	--	--
157	5785	24.93	24.88	24.81	24.75	24.70	24.61	24.57	24.43
165	5825	25.64	--	--	--	--	--	--	--

Note: Peak Power Output Value =Reading value on power meter + cable loss

Product : FIELDBOOK
Test Item : Peak Power Output Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11n-20BW_7.2Mbps(2.4G Band)

CHAIN A

Channel No	Frequency (MHz)	Peak Power For different Data Rate (Mbps)							
		14.4	28.9	43.3	57.8	86.7	115.6	130	144.4
		Measurement Level (dBm)							
01	2412	22.50	--	--	--	--	--	--	--
06	2437	23.19	23.11	23.07	22.98	22.91	22.83	22.74	22.66
11	2462	23.00	--	--	--	--	--	--	--

Note: Peak Power Output Value =Reading value on power meter + cable loss

CHAIN B

Channel No	Frequency (MHz)	Peak Power For different Data Rate (Mbps)							
		14.4	28.9	43.3	57.8	86.7	115.6	130	144.4
		Measurement Level (dBm)							
01	2412	21.56	--	--	--	--	--	--	--
06	2437	22.78	22.71	22.68	22.61	22.55	22.50	22.44	22.38
11	2462	22.62	--	--	--	--	--	--	--

Note: Peak Power Output Value =Reading value on power meter + cable loss

CHAIN A+B

Channel	Frequency (MHz)	Data Rata (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
01	2412	14.4	22.50	21.56	25.07	<30dBm	Pass
06	2437	14.4	23.19	22.78	26.00	<30dBm	Pass
11	2462	14.4	23.00	22.62	25.82	<30dBm	Pass

Note: Peak Power Output Value (dBm) = 10*LOG (Chain A (mW)+ Chain B (mW))

Product : FIELDBOOK
Test Item : Peak Power Output Data
Test Site : No.3 OATS
Test Mode : Mode 5: Transmit - 802.11n-40BW_15Mbps(2.4G Band)

CHAIN A

Channel No	Frequency (MHz)	Peak Power For different Data Rate (Mbps)							
		6	9	12	18	24	36	48	54
		Measurement Level (dBm)							
3	2422	18.78	--	--	--	--	--	--	--
6	2437	23.44	23.39	23.31	23.28	23.23	22.16	22.09	22.01
9	2452	22.39	--	--	--	--	--	--	--

Note: Peak Power Output Value =Reading value on power meter + cable loss

CHAIN B

Channel No	Frequency (MHz)	Peak Power For different Data Rate (Mbps)							
		6	9	12	18	24	36	48	54
		Measurement Level (dBm)							
3	2422	18.78	--	--	--	--	--	--	--
6	2437	22.81	22.77	22.72	22.66	22.61	22.55	22.48	22.40
9	2452	21.91	--	--	--	--	--	--	--

Note: Peak Power Output Value =Reading value on power meter + cable loss

CHAIN A+B

Channel	Frequency (MHz)	Data Rata (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
01	2422	14.4	18.78	18.78	21.79	<30dBm	Pass
04	2437	14.4	23.44	22.81	26.15	<30dBm	Pass
07	2452	14.4	22.39	21.91	25.17	<30dBm	Pass

Note: Peak Power Output Value (dBm) = 10*LOG (Chain A (mW)+ Chain B (mW))

Product : FIELDBOOK
Test Item : Peak Power Output Data
Test Site : No.3 OATS
Test Mode : Mode 6: Transmit - 802.11n-20BW_7.2Mbps(5G Band)

CHAIN A

Channel No	Frequency (MHz)	Peak Power For different Data Rate (Mbps)							
		14.4	28.9	43.3	57.8	86.7	115.6	130	144.4
		Measurement Level (dBm)							
149	5745	24.36	--	--	--	--	--	--	--
157	5785	24.33	24.29	24.25	24.21	24.19	24.11	24.09	24.02
165	5825	23.72	--	--	--	--	--	--	--

Note: Peak Power Output Value =Reading value on power meter + cable loss

CHAIN B

Channel No	Frequency (MHz)	Peak Power For different Data Rate (Mbps)							
		14.4	28.9	43.3	57.8	86.7	115.6	130	144.4
		Measurement Level (dBm)							
149	5745	23.18	--	--	--	--	--	--	--
157	5785	23.29	23.24	23.18	23.14	23.08	23.02	22.97	22.89
165	5825	23.26	--	--	--	--	--	--	--

Note: Peak Power Output Value =Reading value on power meter + cable loss

CHAIN A+B

Channel	Frequency (MHz)	Data Rata (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
149	5745	14.4	24.36	23.18	26.82	<30dBm	Pass
157	5785	14.4	24.33	23.29	26.85	<30dBm	Pass
165	5825	14.4	23.72	23.26	26.51	<30dBm	Pass

Note: Peak Power Output Value (dBm) = 10*LOG (Chain A (mW)+ Chain B (mW))

Product : FIELDBOOK
Test Item : Peak Power Output Data
Test Site : No.3 OATS
Test Mode : Mode 7: Transmit - 802.11n-40BW_15Mbps(5G Band)

CHAIN A

Channel No	Frequency (MHz)	Peak Power For different Data Rate (Mbps)							
		30	60	90	120	180	240	270	300
		Measurement Level (dBm)							
151	5755	24.86	--	--	--	--	--	--	--
159	5795	23.57	23.51	23.48	23.41	23.33	23.27	23.22	23.11

Note: Peak Power Output Value =Reading value on power meter + cable loss

CHAIN B

Channel No	Frequency (MHz)	Peak Power For different Data Rate (Mbps)							
		30	60	90	120	180	240	270	300
		Measurement Level (dBm)							
151	5755	23.33	--	--	--	--	--	--	--
159	5795	23.41	23.32	23.28	23.24	23.19	23.14	23.07	22.96

Note: Peak Power Output Value =Reading value on power meter + cable loss

CHAIN A+B

Channel	Frequency (MHz)	Data Rata (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
151	5755	30	24.86	23.33	27.17	<30dBm	Pass
159	5795	30	23.57	23.41	26.50	<30dBm	Pass

Note: Peak Power Output Value (dBm) = 10*LOG (Chain A (mW)+ Chain B (mW))

Product : FIELDBOOK
Test Item : Peak Power Output Data
Test Site : No.3 OATS
Test Mode : Mode 8: Transmit - 802.11ac-80BW_32.5Mbps(5G Band)

CHAIN A

Cable loss=1dB		Maximum conducted output power										
Channel No	Frequency (MHz)	Data Rate (Mbps)										Required Limit
		VTH0	VTH1	VTH2	VTH3	VTH4	VTH5	VTH6	VTH7	VTH8	VTH9	
155	5775	11.09	10.88	10.75	10.57	10.40	10.23	10.06	9.89	9.72	9.55	<30dBm

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

CHAIN B

Cable loss=1dB		Maximum conducted output power										
Channel No	Frequency (MHz)	Data Rate (Mbps)										Required Limit
		VTH0	VTH1	VTH2	VTH3	VTH4	VTH5	VTH6	VTH7	VTH8	VTH9	
155	5775	11.19	10.98	10.78	10.57	10.37	10.16	9.96	9.75	9.55	9.34	<30dBm

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

Maximum conducted output power Measurement:

CHAIN A+ B

Channel Number	Frequency (MHz)	Chain A Power (dBm)	Chain B Power (dBm)	Output Power (dBm)	Output Power Limit (dBm)
155	5775	11.09	11.19	14.15	30

Note:

1. Power Output Value =Reading value on average power meter + cable loss
2. Output Power (dBm) = 10LOG (Chain A Power (mW)+ Chain B Power (mW))
3.

Figure Channel 155: (Chain A)

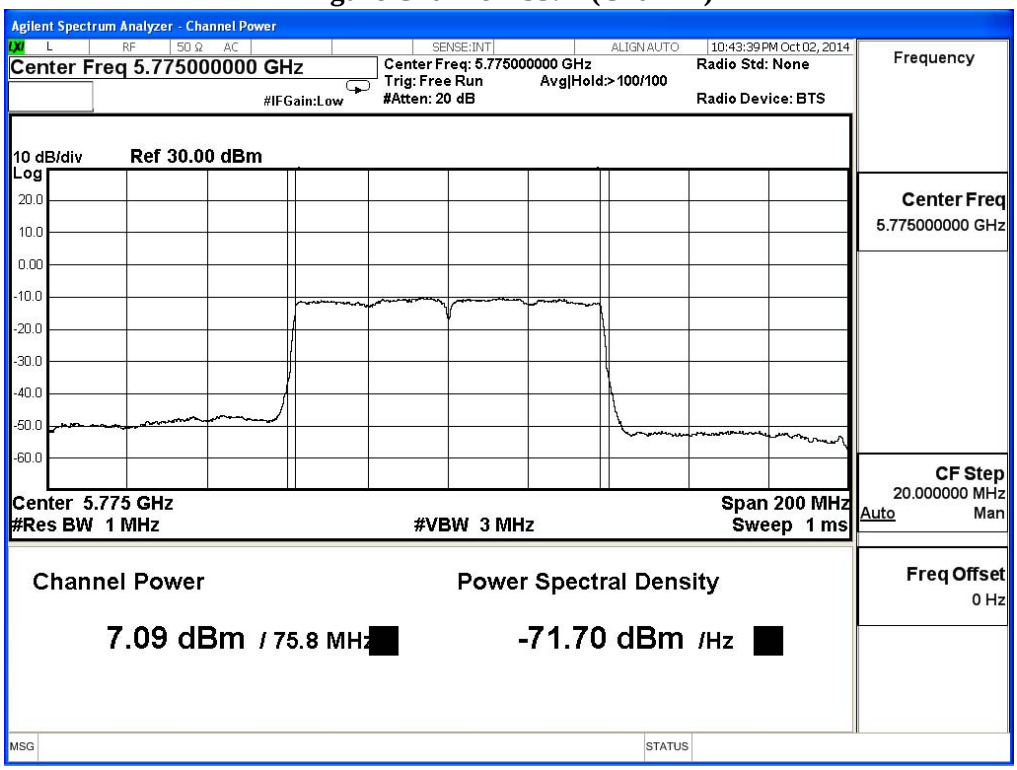
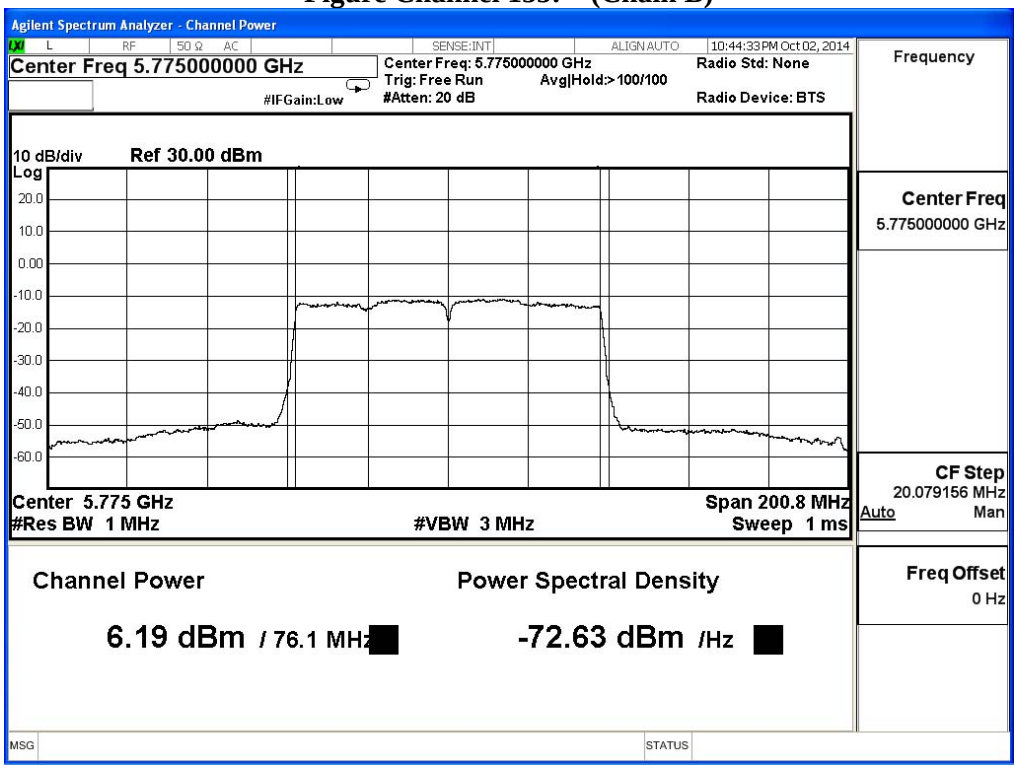


Figure Channel 155: (Chain B)



4. Radiated Emission

4.1. Test Equipment

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

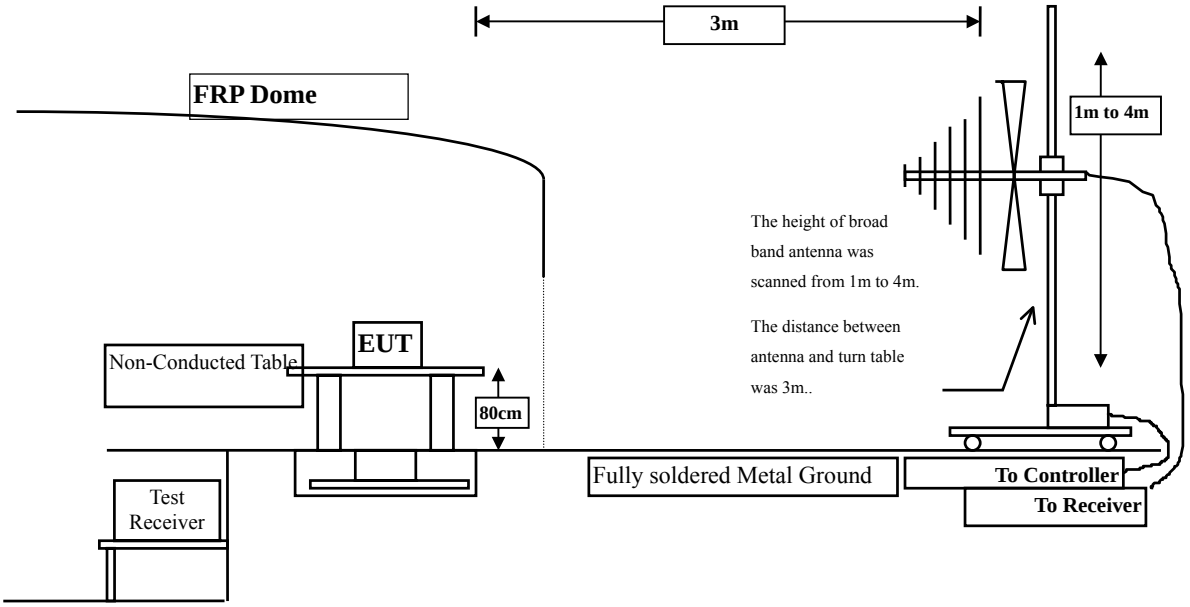
Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒Site # 3	X	Loop Antenna	Teseq	HLA6120 / 26739	Jul., 2014
	X	Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2014
	X	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2014
	X	Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2014
	X	Pre-Amplifier	QTK	QTK-AMP-03 / 0003	May, 2014
	X	Pre-Amplifier	QTK	AP-180C / CHM_0906076	Sep., 2014
	X	Pre-Amplifier	MITEQ	AMF-4D-180400-45-6P/ 925975	Mar, 2014
	X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2014
	X	Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2014
	X	Coaxial Cable	QuieTek	QTK-CABLE/ CAB5	Feb., 2014
	X	Controller	QuieTek	QTK-CONTROLLER/ CTRL3	N/A
	X	Coaxial Switch	Anritsu	MP59B/6200265729	N/A

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

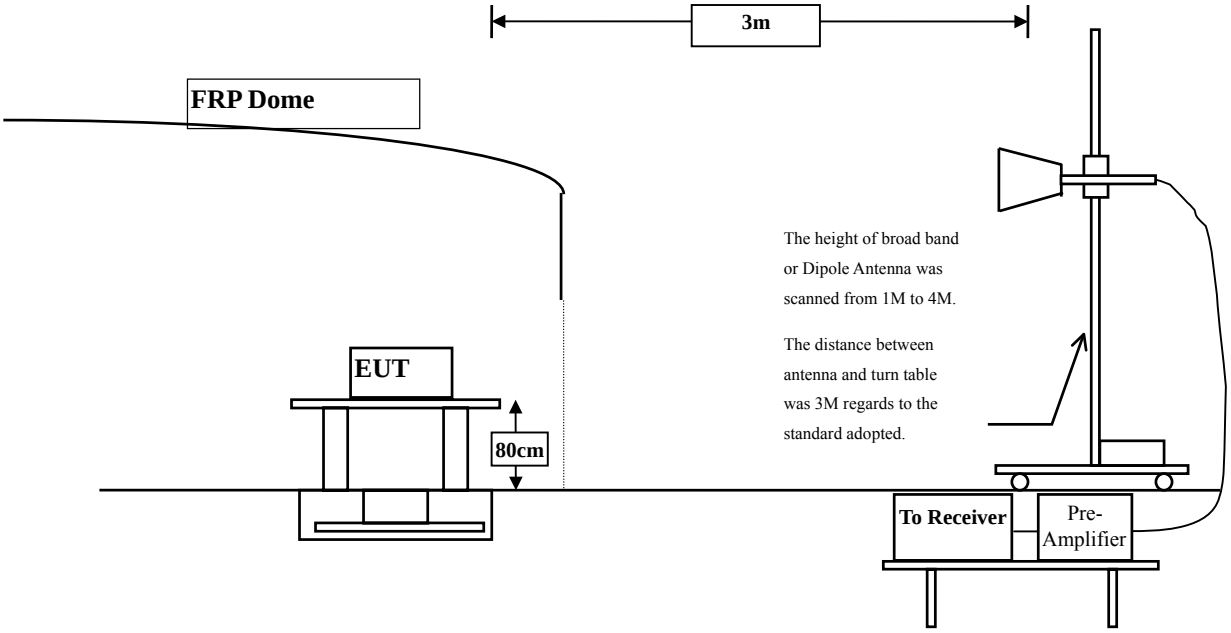
2. The test instruments marked with “X” are used to measure the final test results.

4.2. Test Setup

Radiated Emission Below 1GHz



Radiated Emission Above 1GHz



4.3. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

FCC Part 15 Subpart C Paragraph 15.209(a) Limits		
Frequency MHz	Field strength (microvolts/meter)	Measurement distance (meter)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

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

4.4. Test Procedure

The EUT was setup according to ANSI C63.10, 2009 and tested according to DTS test procedure of KDB558074 for compliance to FCC 47CFR 15.247 requirements.

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

The antenna is scanned between 1 meter and 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10:2009 on radiated measurement.

The resolution bandwidth below 30MHz setting on the field strength meter is 9kHz and 30MHz~1GHz is 120kHz and above 1GHz is 1MHz.

Radiated emission measurements below 30MHz are made using Loop Antenna and 30MHz~1GHz are made using broadband Bilog antenna and above 1GHz are made using Horn Antennas.

The measurement is divided into the Preliminary Measurement and the Final Measurement.

The suspected frequencies are searched for in Preliminary Measurement with the measurement antenna kept pointed at the source of the emission both in azimuth and elevation, with the polarization of the antenna oriented for maximum response. The antenna is pointed at an angle towards the source of the emission, and the EUT is rotated in both height and polarization to maximize the measured emission. The emission is kept within the illumination area of the 3 dB bandwidth of the antenna.

The worst radiated emission is measured in the Open Area Test Site on the Final Measurement.

The measurement frequency range form 9kHz - 10th Harmonic of fundamental was investigated.

4.5. Uncertainty

± 3.9 dB above 1GHz

± 3.8 dB below 1GHz

4.6. Test Result of Radiated Emission

Product : FIELDBOOK
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2412MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4824.000	3.261	46.130	49.391	-24.609	74.000
7236.000	10.650	36.300	46.950	-27.050	74.000
9648.000	13.337	36.130	49.466	-24.534	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4824.000	6.421	46.320	52.741	-21.259	74.000
7236.000	11.495	35.800	47.295	-26.705	74.000
9648.000	13.807	36.790	50.596	-23.404	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : FIELDBOOK
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4874.000	3.038	45.680	48.717	-25.283	74.000
7311.000	11.795	34.820	46.614	-27.386	74.000
9748.000	12.635	36.630	49.265	-24.735	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4874.000	5.812	45.290	51.101	-22.899	74.000
7311.000	12.630	34.860	47.489	-26.511	74.000
9748.000	13.126	36.780	49.906	-24.094	74.000
Average					
Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : FIELDBOOK
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2462 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4924.000	2.858	49.060	51.917	-22.083	74.000
7386.000	12.127	35.220	47.348	-26.652	74.000
9848.000	12.852	36.500	49.353	-24.647	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4924.000	5.521	48.360	53.880	-20.120	74.000
7386.000	13.254	34.850	48.104	-25.896	74.000
9848.000	13.367	37.080	50.447	-23.553	74.000
Average					
Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : FIELDBOOK
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4824.000	3.261	43.670	46.931	-27.069	74.000
7236.000	10.650	36.570	47.220	-26.780	74.000
9648.000	13.337	36.770	50.106	-23.894	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4824.000	6.421	42.810	49.231	-24.769	74.000
7236.000	11.495	36.940	48.435	-25.565	74.000
9648.000	13.807	35.960	49.766	-24.234	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : FIELDBOOK
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4874.000	3.038	44.080	47.117	-26.883	74.000
7311.000	11.795	34.910	46.704	-27.296	74.000
9748.000	12.635	36.050	48.685	-25.315	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4874.000	5.812	43.210	49.021	-24.979	74.000
7311.000	12.630	35.310	47.939	-26.061	74.000
9748.000	13.126	36.400	49.526	-24.474	74.000
Average					
Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : FIELDBOOK
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4924.000	2.858	43.750	46.607	-27.393	74.000
7386.000	12.127	35.210	47.338	-26.662	74.000
9848.000	12.852	36.280	49.133	-24.867	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4924.000	5.521	45.120	50.640	-23.360	74.000
7386.000	13.254	35.070	48.324	-25.676	74.000
9848.000	13.367	37.120	50.487	-23.513	74.000
Average					
Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : FIELDBOOK
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit - 802.11a 6Mbps (5745 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
11490.000	17.106	40.750	57.857	-16.143	74.000
Average Detector:					
11490.000	17.106	25.620	42.727	-11.273	54.000
Vertical Peak Detector:					
11490.000	18.034	44.850	62.885	-11.115	74.000
Average Detector:					
11490.000	18.034	28.990	47.025	-6.975	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : FIELDBOOK
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit - 802.11a 6Mbps (5785 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
11570.000	16.809	45.750	62.559	-11.441	74.000
Average Detector:					
11570.000	16.809	29.420	46.229	-7.771	54.000
Vertical Peak Detector:					
11570.000	17.698	45.170	62.868	-11.132	74.000
Average Detector:					
11570.000	17.698	29.950	47.648	-6.352	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : FIELDBOOK
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit - 802.11a 6Mbps (5825 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
11650.000	16.158	46.590	62.748	-11.252	74.000
Average Detector:					
11650.000	16.158	29.900	46.058	-7.942	54.000
Vertical Peak Detector:					
11650.000	17.274	48.220	65.495	-8.505	74.000
Average Detector:					
11650.000	17.274	31.480	48.755	-5.245	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : FIELDBOOK
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11n-20BW_7.2Mbps(2.4G Band) (2412MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4824.000	3.261	42.390	45.651	-28.349	74.000
7236.000	10.650	35.960	46.610	-27.390	74.000
9648.000	13.337	35.520	48.856	-25.144	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4824.000	6.421	42.440	48.861	-25.139	74.000
7236.000	11.495	35.970	47.465	-26.535	74.000
9648.000	13.807	35.930	49.736	-24.264	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : FIELDBOOK
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11n-20BW_7.2Mbps(2.4G Band) (2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4874.000	3.038	42.840	45.877	-28.123	74.000
7311.000	11.795	35.340	47.134	-26.866	74.000
9748.000	12.635	36.650	49.285	-24.715	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4874.000	5.812	42.550	48.361	-25.639	74.000
7311.000	12.630	34.630	47.259	-26.741	74.000
9748.000	13.126	36.440	49.566	-24.434	74.000
Average					
Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : FIELDBOOK
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11n-20BW_7.2Mbps(2.4G Band) (2462 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4924.000	2.858	42.050	44.907	-29.093	74.000
7386.000	12.127	34.660	46.788	-27.212	74.000
9848.000	12.852	36.170	49.023	-24.977	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4924.000	5.521	44.550	50.070	-23.930	74.000
7386.000	13.254	34.680	47.934	-26.066	74.000
9848.000	13.367	37.000	50.367	-23.633	74.000
Average					
Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : FIELDBOOK
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 5: Transmit - 802.11n-40BW_15Mbps(2.4G Band) (2422MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4844.000	3.171	37.470	40.641	-33.359	74.000
7266.000	11.162	35.120	46.282	-27.718	74.000
9688.000	12.964	36.820	49.785	-24.215	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4844.000	6.178	38.670	44.848	-29.152	74.000
7266.000	11.982	35.610	47.592	-26.408	74.000
9688.000	13.507	36.780	50.288	-23.712	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : FIELDBOOK
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 5: Transmit - 802.11n-40BW_15Mbps(2.4G Band) (2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4874.000	3.038	37.670	40.707	-33.293	74.000
7311.000	11.795	35.720	47.514	-26.486	74.000
9748.000	12.635	36.760	49.395	-24.605	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4874.000	5.812	39.490	45.301	-28.699	74.000
7311.000	12.630	34.950	47.579	-26.421	74.000
9748.000	13.126	36.620	49.746	-24.254	74.000
Average					
Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : FIELDBOOK
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 5: Transmit - 802.11n-40BW_15Mbps(2.4G Band) (2452 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4904.000	2.914	38.690	41.605	-32.395	74.000
7356.000	11.995	35.490	47.484	-26.516	74.000
9808.000	12.475	36.390	48.865	-25.135	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4904.000	5.530	37.930	43.461	-30.539	74.000
7356.000	13.005	35.980	48.984	-25.016	74.000
9808.000	12.901	37.260	50.161	-23.839	74.000
Average					
Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : FIELDBOOK
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 6: Transmit - 802.11n-20BW_7.2Mbps(5G Band) (5745MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11490.000	17.106	41.530	58.637	-15.363	74.000
Average					
Detector:					
11490.000	17.106	25.760	42.867	-11.133	54.000
Vertical					
Peak Detector:					
11490.000	18.034	47.020	65.055	-8.945	74.000
Average					
Detector:					
11490.000	18.034	31.910	49.945	-4.055	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : FIELDBOOK
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 6: Transmit - 802.11n-20BW_7.2Mbps(5G Band) (5785 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
11570.000	16.809	46.720	63.529	-10.471	74.000
Average Detector:					
11570.000	16.809	30.000	46.809	-7.191	54.000
Vertical Peak Detector:					
11570.000	17.698	49.770	67.468	-6.532	74.000
Average Detector:					
11570.000	17.698	33.212	50.910	-3.090	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : FIELDBOOK
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 6: Transmit - 802.11n-20BW_7.2Mbps(5G Band) (5825 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
11650.000	16.158	46.380	62.538	-11.462	74.000
Average Detector:					
11650.000	16.158	29.680	45.838	-8.162	54.000
Vertical Peak Detector:					
11650.000	17.274	50.380	67.655	-6.345	74.000
Average Detector:					
11650.000	17.274	33.560	50.835	-3.165	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : FIELDBOOK
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 7: Transmit - 802.11n-40BW_15Mbps(5G Band) (5755MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11510.000	17.124	36.510	53.634	-20.366	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
11510.000	18.081	43.270	61.351	-12.649	74.000
Average					
Detector:					
11510.000	18.081	27.660	45.741	-8.259	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : FIELDBOOK
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 7: Transmit - 802.11n-40BW_15Mbps(5G Band) (5795 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
11590.000	16.701	36.890	53.590	-20.410	74.000
Average Detector:					
--					
Vertical Peak Detector:					
11590.000	17.567	45.640	63.206	-10.794	74.000
Average Detector:					
11590.000	17.567	29.590	47.156	-6.844	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : FIELDBOOK
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 8: Transmit - 802.11ac-80BW_32.5Mbps(5G Band) (5775 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11550.000	16.914	36.060	52.974	-21.026	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
11550.000	16.914	36.602	53.515	-20.485	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : FIELDBOOK
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
330.700	-4.492	44.339	39.847	-6.153	46.000
480.080	-0.329	37.630	37.301	-8.699	46.000
528.580	1.848	37.348	39.196	-6.804	46.000
604.240	4.770	24.582	29.352	-16.648	46.000
720.640	3.511	29.794	33.305	-12.695	46.000
918.520	6.396	29.900	36.296	-9.704	46.000
Vertical					
119.240	-3.541	37.522	33.981	-9.519	43.500
293.840	-7.738	41.263	33.526	-12.474	46.000
480.080	-4.359	36.869	32.510	-13.490	46.000
528.580	-0.462	34.707	34.245	-11.755	46.000
790.480	2.913	27.258	30.170	-15.830	46.000
924.340	5.550	32.731	38.281	-7.719	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product : FIELDBOOK
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
142.520	-10.427	41.964	31.537	-11.963	43.500
324.880	-4.491	40.068	35.577	-10.423	46.000
454.860	-0.779	41.365	40.585	-5.415	46.000
528.580	1.848	36.999	38.847	-7.153	46.000
722.580	3.496	34.423	37.919	-8.081	46.000
883.600	6.146	25.644	31.789	-14.211	46.000
Vertical					
94.020	-3.539	35.406	31.866	-11.634	43.500
231.760	-8.848	42.793	33.945	-12.055	46.000
394.720	-4.024	43.887	39.863	-6.137	46.000
528.580	-0.462	33.492	33.030	-12.970	46.000
666.320	-1.809	36.541	34.733	-11.267	46.000
792.420	2.889	37.181	40.070	-5.930	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product : FIELDBOOK
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit - 802.11a 6Mbps (5785MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
134.760	-7.473	45.851	38.378	-5.122	43.500
462.620	3.589	37.276	40.865	-5.135	46.000
598.420	3.524	35.198	38.722	-7.278	46.000
666.320	1.879	36.476	38.355	-7.645	46.000
800.180	6.417	33.109	39.526	-6.474	46.000
957.320	6.615	29.553	36.168	-9.832	46.000
Vertical					
111.480	-3.439	41.499	38.061	-5.439	43.500
299.660	-4.061	42.259	38.198	-7.802	46.000
666.320	-0.951	38.277	37.326	-8.674	46.000
796.300	2.639	35.926	38.565	-7.435	46.000
897.180	0.937	36.630	37.567	-8.433	46.000
957.320	3.015	31.693	34.708	-11.292	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product : FIELDBOOK
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11n-20BW_7.2Mbps(2.4G Band) (2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
127.000	-10.017	41.439	31.422	-12.078	43.500
191.020	-10.040	40.249	30.209	-13.291	43.500
324.880	-4.491	38.660	34.169	-11.831	46.000
435.460	-1.920	35.055	33.135	-12.865	46.000
584.840	3.391	26.276	29.667	-16.333	46.000
724.520	3.485	32.611	36.096	-9.904	46.000
Vertical					
167.740	-8.239	40.974	32.735	-10.765	43.500
264.740	-7.681	46.257	38.576	-7.424	46.000
462.620	-3.838	36.014	32.176	-13.824	46.000
528.580	-0.462	33.818	33.356	-12.644	46.000
666.320	-1.809	36.662	34.854	-11.146	46.000
903.000	2.966	29.905	32.871	-13.129	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product : FIELDBOOK
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 5: Transmit - 802.11n-40BW_15Mbps(2.4G Band) (2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
167.740	-10.799	41.157	30.358	-13.142	43.500
342.340	-3.272	41.238	37.966	-8.034	46.000
439.340	-2.009	36.532	34.523	-11.477	46.000
577.080	3.169	30.693	33.862	-12.138	46.000
666.320	2.031	33.267	35.299	-10.701	46.000
924.340	6.240	32.678	38.918	-7.082	46.000
Vertical					
167.740	-8.239	40.543	32.304	-11.196	43.500
295.780	-7.455	39.626	32.171	-13.829	46.000
410.240	-6.616	40.004	33.388	-12.612	46.000
528.580	-0.462	35.535	35.073	-10.927	46.000
697.360	1.311	35.453	36.764	-9.236	46.000
924.340	5.550	30.832	36.382	-9.618	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product : FIELDBOOK
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 6: Transmit - 802.11n-20BW_7.2Mbps(5G Band) (5785 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
134.760	-7.473	45.210	37.737	-5.763	43.500
365.620	0.382	42.174	42.556	-3.444	46.000
536.340	3.239	37.783	41.022	-4.978	46.000
800.180	6.417	31.655	38.072	-7.928	46.000
833.160	6.616	33.366	39.982	-6.018	46.000
955.380	6.596	30.199	36.795	-9.205	46.000
Vertical					
111.480	-3.439	40.500	37.062	-6.438	43.500
299.660	-4.061	41.931	37.870	-8.130	46.000
359.800	-1.316	37.850	36.534	-9.466	46.000
598.420	1.114	33.735	34.849	-11.151	46.000
796.300	2.639	34.991	37.630	-8.370	46.000
957.320	3.015	32.241	35.256	-10.744	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product : FIELDBOOK
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 7: Transmit - 802.11n-40BW_15Mbps(5G Band) (5755MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
134.760	-7.473	45.597	38.124	-5.376	43.500
359.800	-0.226	41.537	41.311	-4.689	46.000
460.680	4.030	35.894	39.924	-6.076	46.000
600.360	3.472	36.160	39.632	-6.368	46.000
854.500	7.380	32.122	39.502	-6.498	46.000
930.160	7.530	30.408	37.938	-8.062	46.000
Vertical					
111.480	-3.439	41.112	37.674	-5.826	43.500
299.660	-4.061	42.357	38.296	-7.704	46.000
600.360	1.302	33.112	34.414	-11.586	46.000
664.380	-0.978	38.036	37.058	-8.942	46.000
796.300	2.639	35.199	37.838	-8.162	46.000
901.060	1.858	35.042	36.900	-9.100	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product : FIELDBOOK
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 8: Transmit - 802.11ac-80BW_32.5Mbps(5G Band) (5775MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
309.360	-3.740	40.208	36.468	-9.532	46.000
400.540	-2.276	36.097	33.821	-12.179	46.000
499.480	0.048	32.258	32.306	-13.694	46.000
600.360	3.977	27.098	31.075	-14.925	46.000
668.260	2.016	30.454	32.470	-13.530	46.000
798.240	5.148	26.122	31.270	-14.730	46.000
Vertical					
109.540	-0.418	32.944	32.526	-10.974	43.500
212.360	-7.981	39.360	31.379	-12.121	43.500
332.640	-4.914	36.304	31.390	-14.610	46.000
499.480	-0.852	32.115	31.263	-14.737	46.000
623.640	-2.631	29.711	27.080	-18.920	46.000
868.080	0.641	33.224	33.865	-12.135	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

5. RF antenna conducted test

5.1. Test Equipment

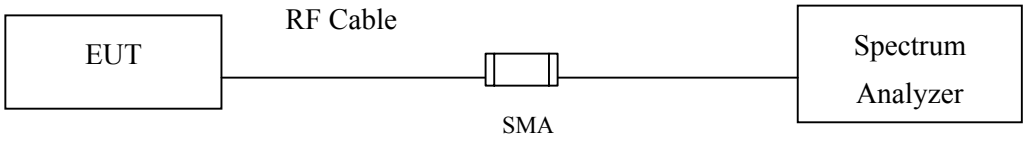
	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2014
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2014
	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2014

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

2. The test instruments marked with "X" are used to measure the final test results.

5.2. Test Setup

RF antenna Conducted Measurement:



5.3. Limits

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

5.4. Test Procedure

The EUT was tested according to DTS test procedure of Jan. 2012 KDB558074 for compliance to FCC 47CFR 15.247 requirements.
Set RBW = 100 kHz, Set VBW> RBW, scan up through 10th harmonic.

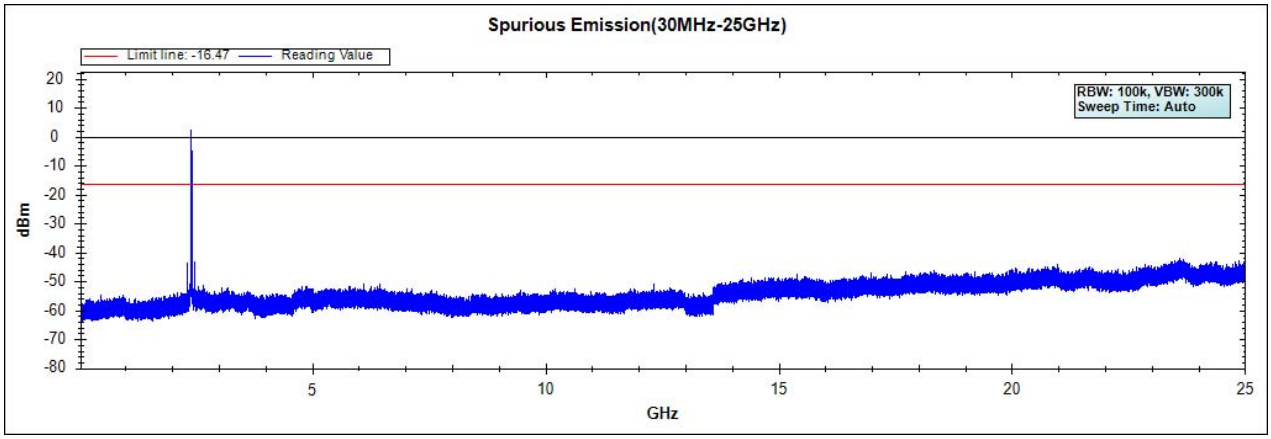
5.5. Uncertainty

The measurement uncertainty
Conducted is defined as ± 1.27dB

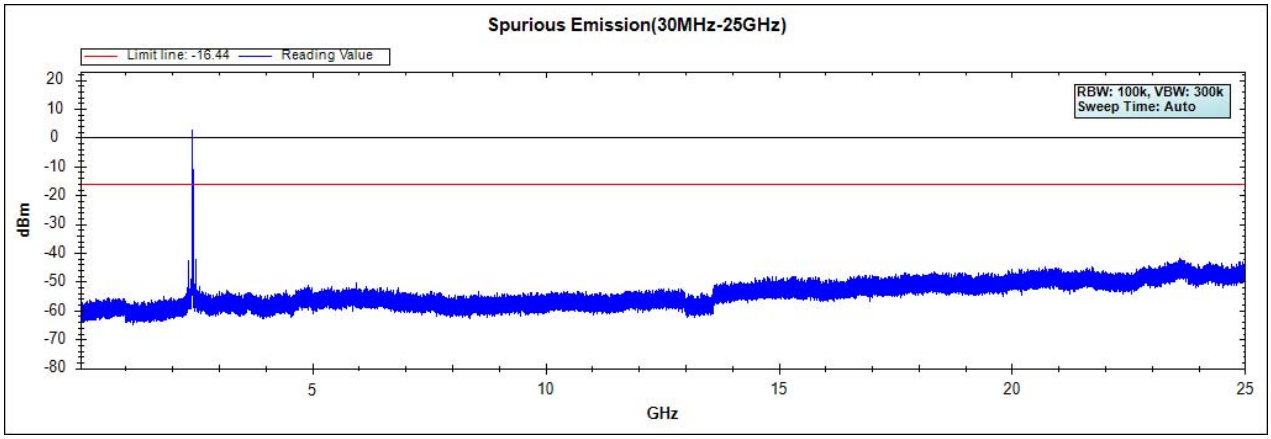
5.6. Test Result of RF antenna conducted test

Product : FIELDBOOK
Test Item : RF antenna conducted test
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)

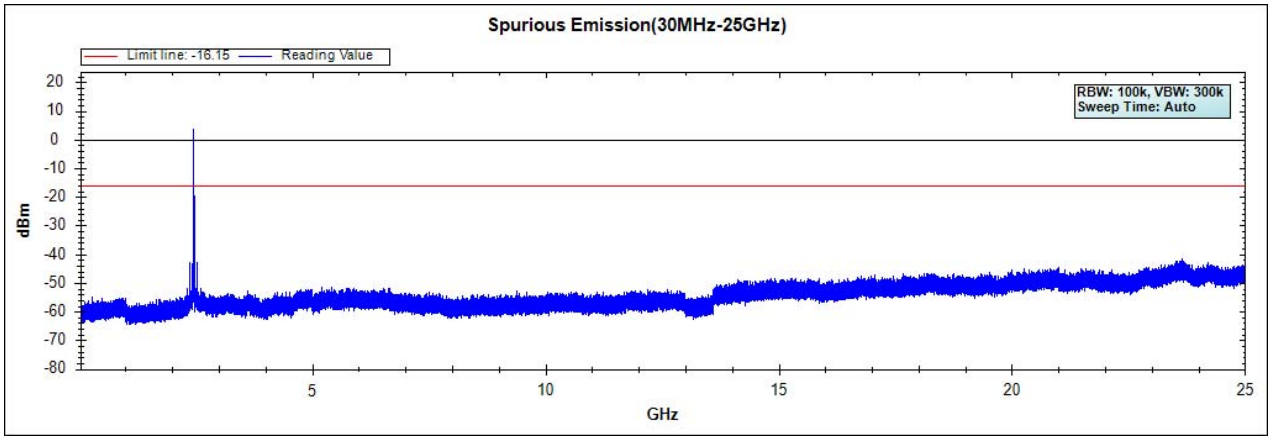
Channel 01 (2412MHz) 30MHz-25GHz



Channel 06 (2437MHz) 30MHz -25GHz



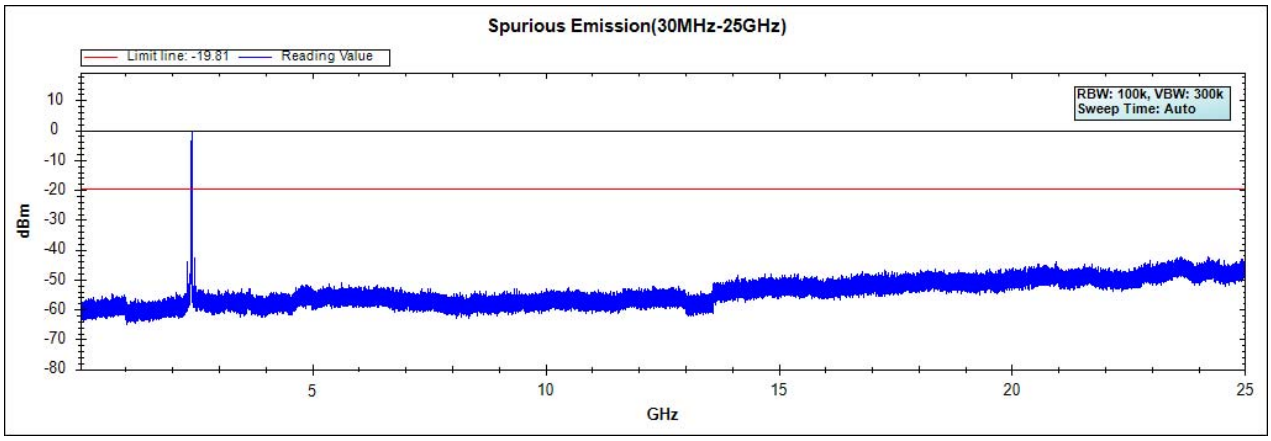
Channel 11 (2462MHz) 30MHz -25GHz



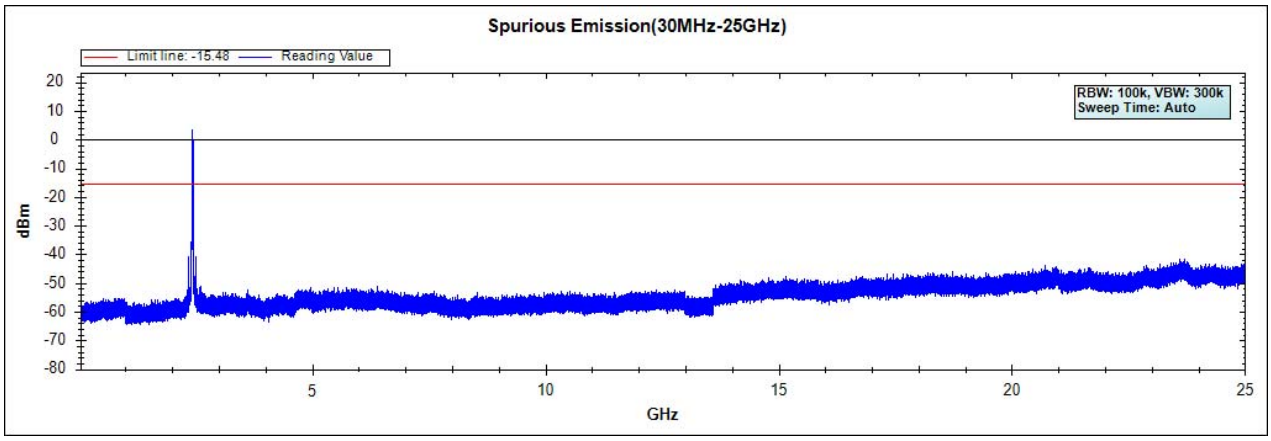
Note: The above test pattern is synthesized by multiple of the frequency range.

Product : FIELDBOOK
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)

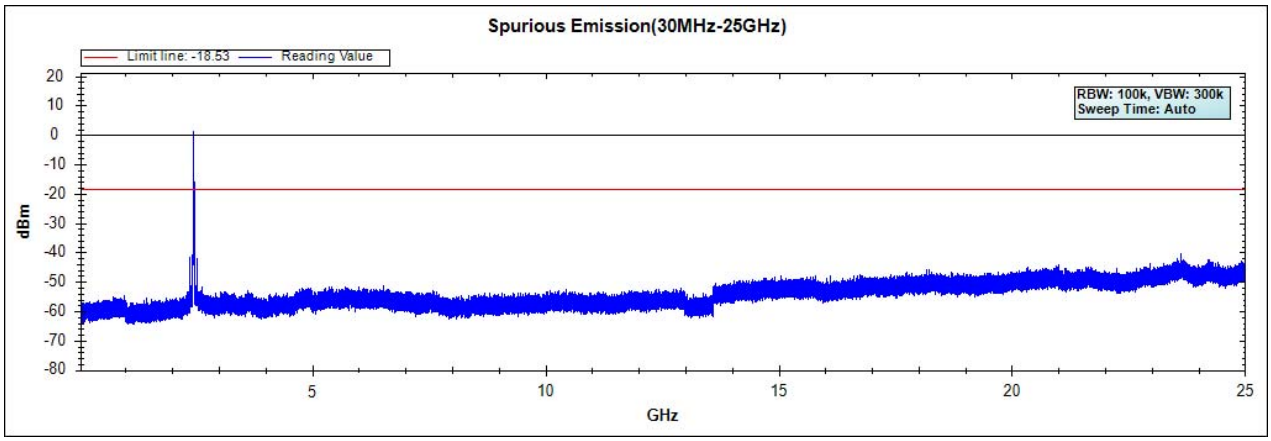
Channel 01 (2412MHz) 30MHz -25GHz



Channel 06 (2437MHz) 30MHz -25GHz



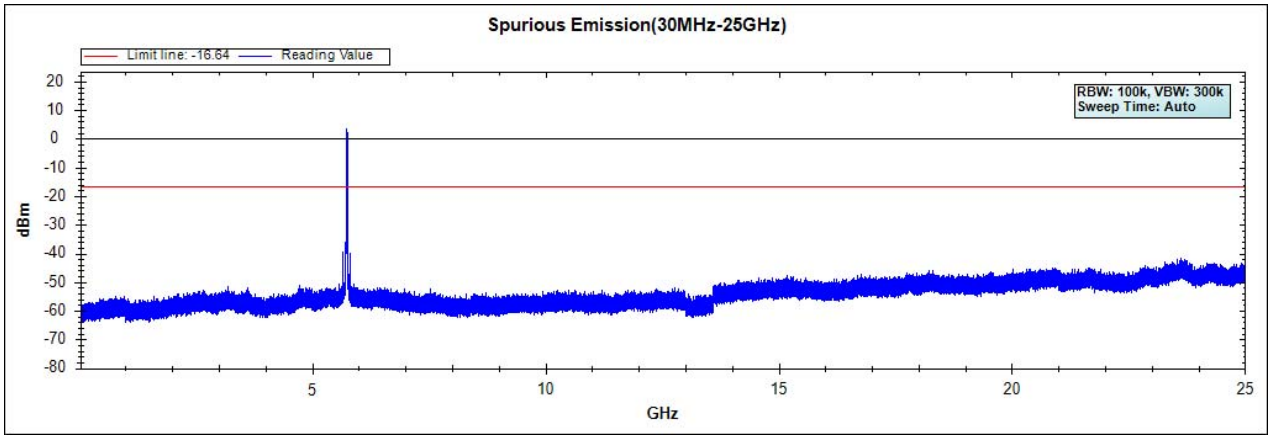
Channel 11 (2462MHz) 30MHz -25GHz

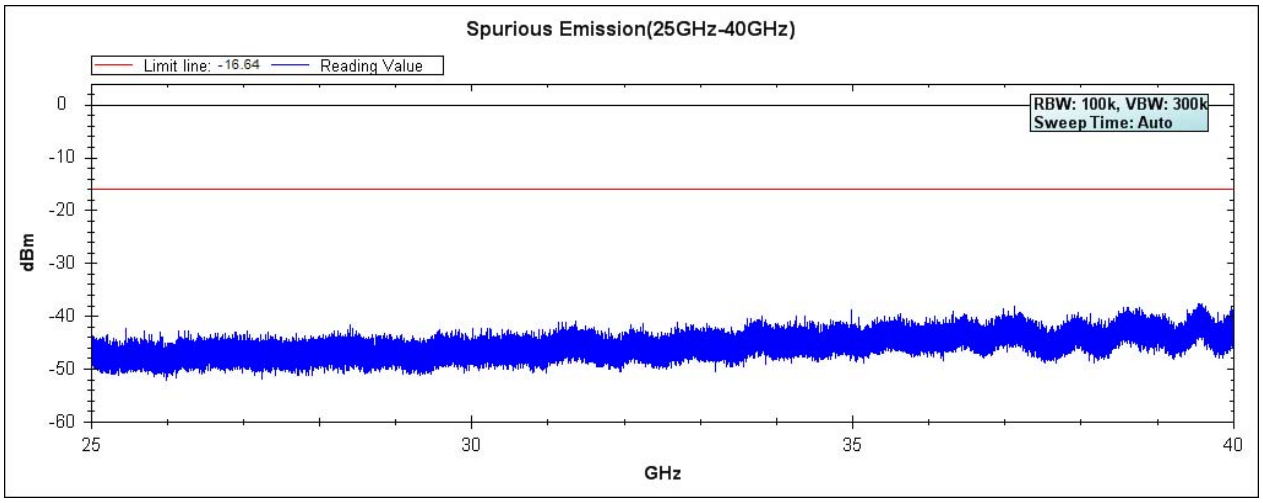


Note: The above test pattern is synthesized by multiple of the frequency range.

Product : FIELDBOOK
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit - 802.11a 6Mbps

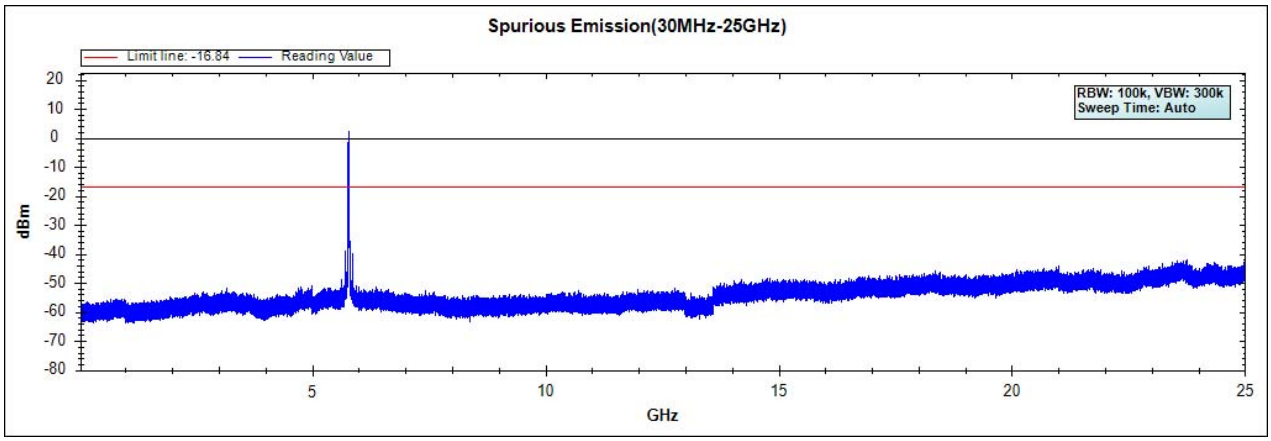
Channel 149 (5745MHz) 30MHz -40GHz

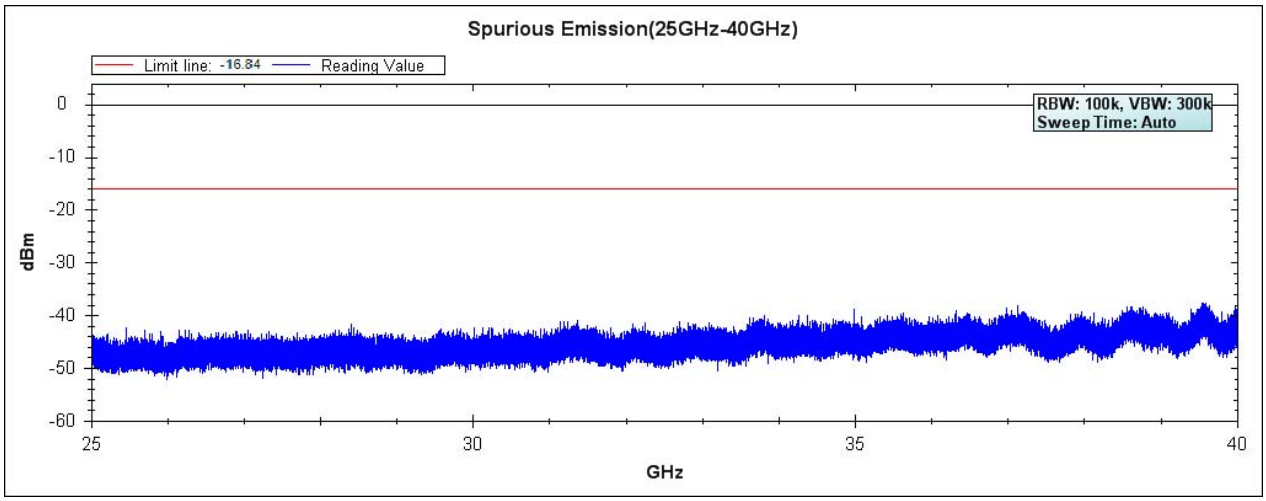




Note: The above test pattern is synthesized by multiple of the frequency range.

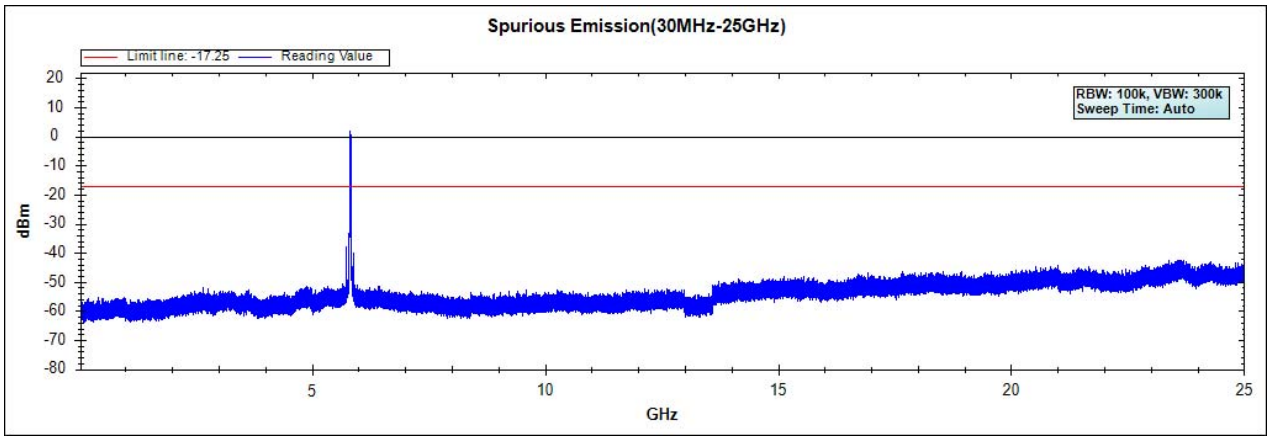
Channel 157 (5785MHz) 30MHz -40GHz

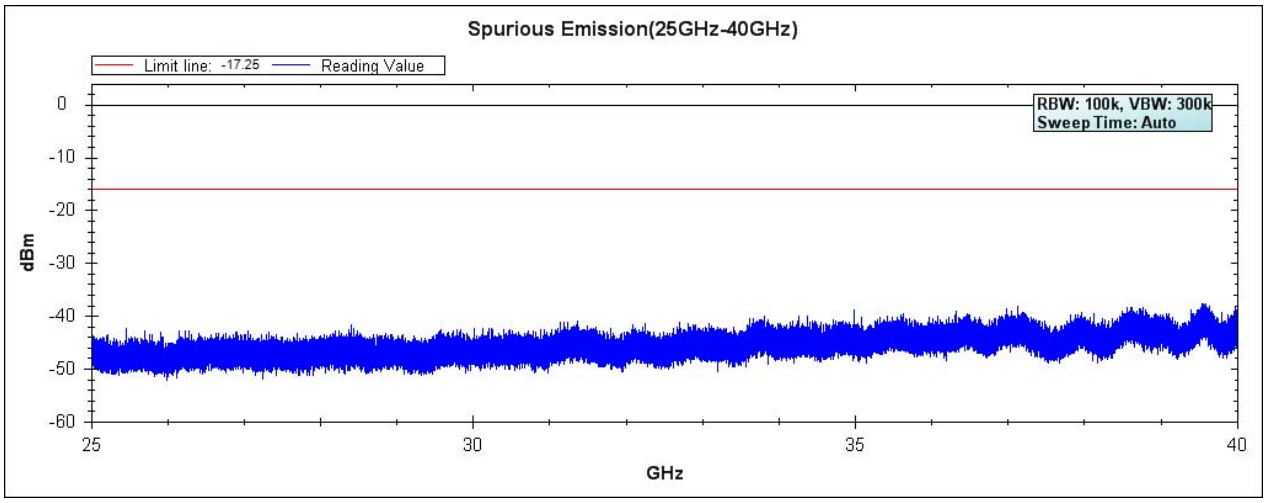




Note: The above test pattern is synthesized by multiple of the frequency range.

Channel 165 (5825MHz) 30MHz -40GHz

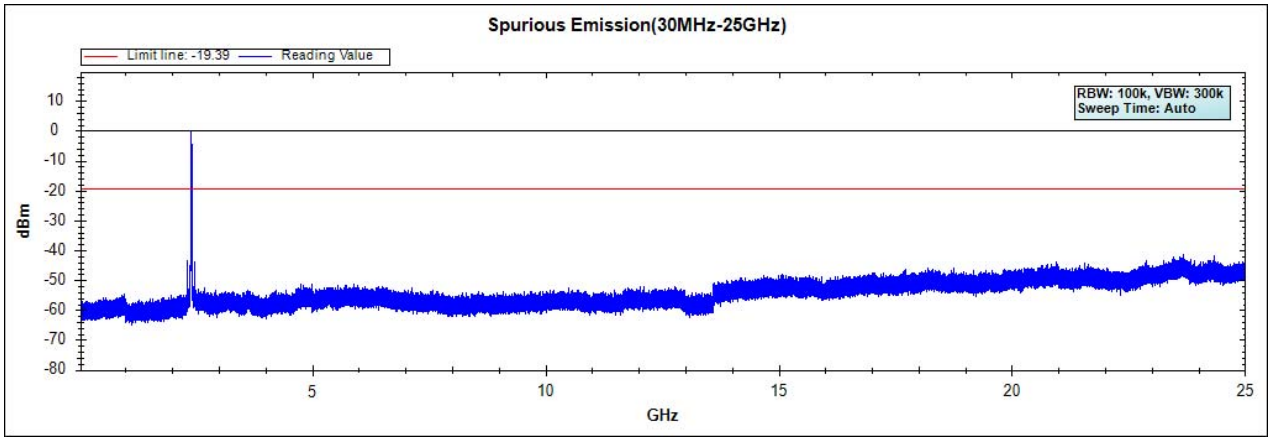




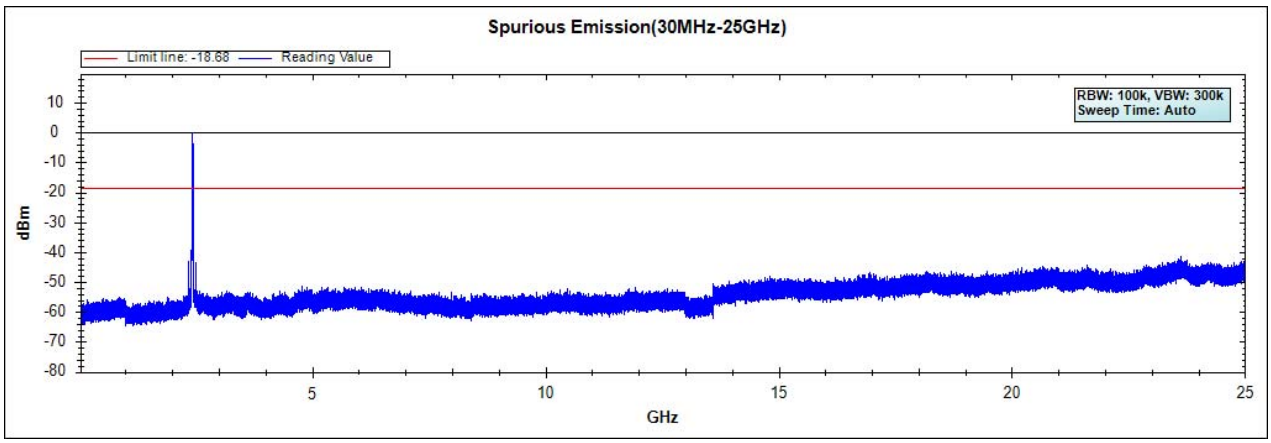
Note: The above test pattern is synthesized by multiple of the frequency range.

Product : FIELDBOOK
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11n-20BW_7.2Mbps(2.4G Band)

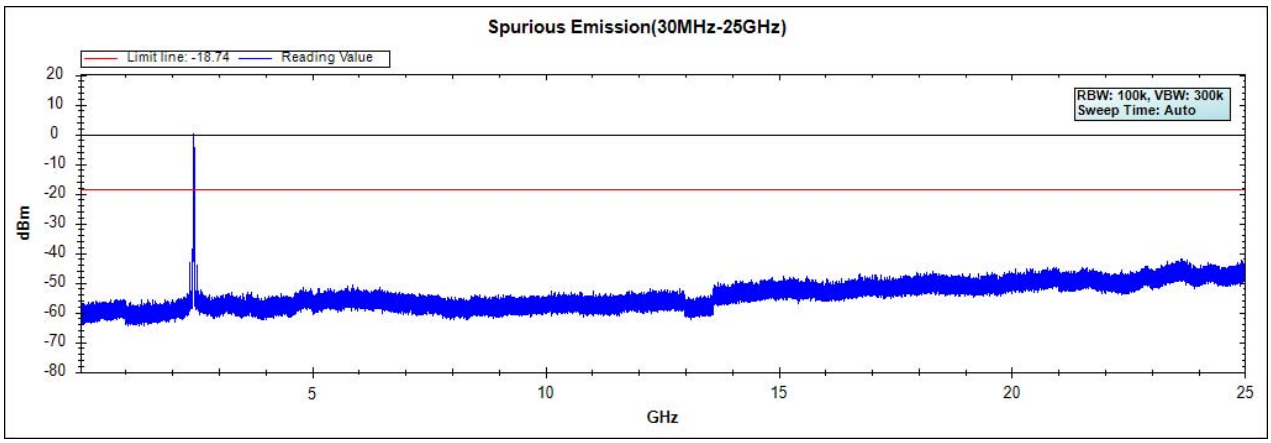
Channel 01 (2412MHz) 30MHz -25GHz-Chain A



Channel 06 (2437MHz) 30MHz -25GHz-Chain A

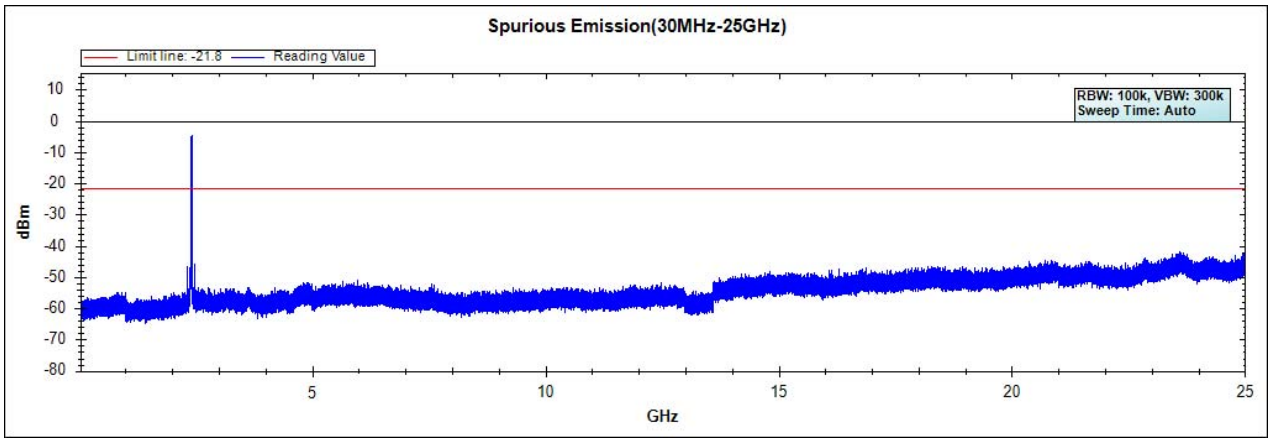


Channel 11 (2462MHz) 30MHz -25GHz-Chain A

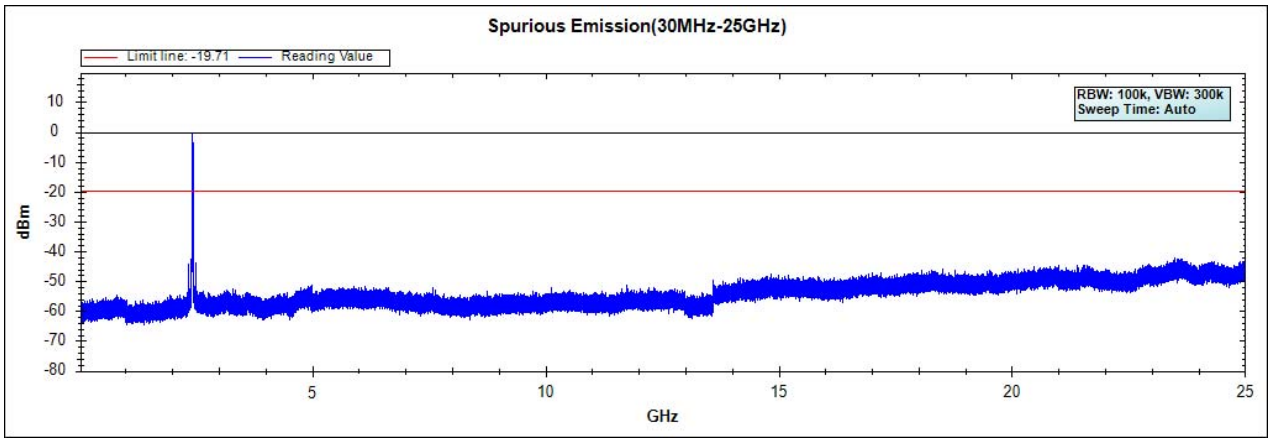


Note: The above test pattern is synthesized by multiple of the frequency range.

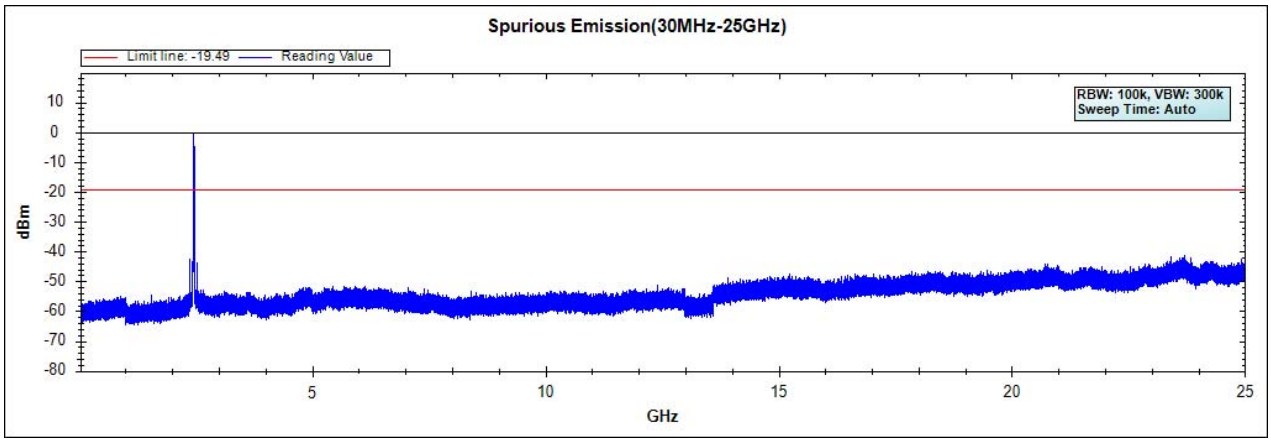
Channel 01 (2412MHz) 30MHz -25GHz-Chain B



Channel 06 (2437MHz) 30MHz -25GHz-Chain B



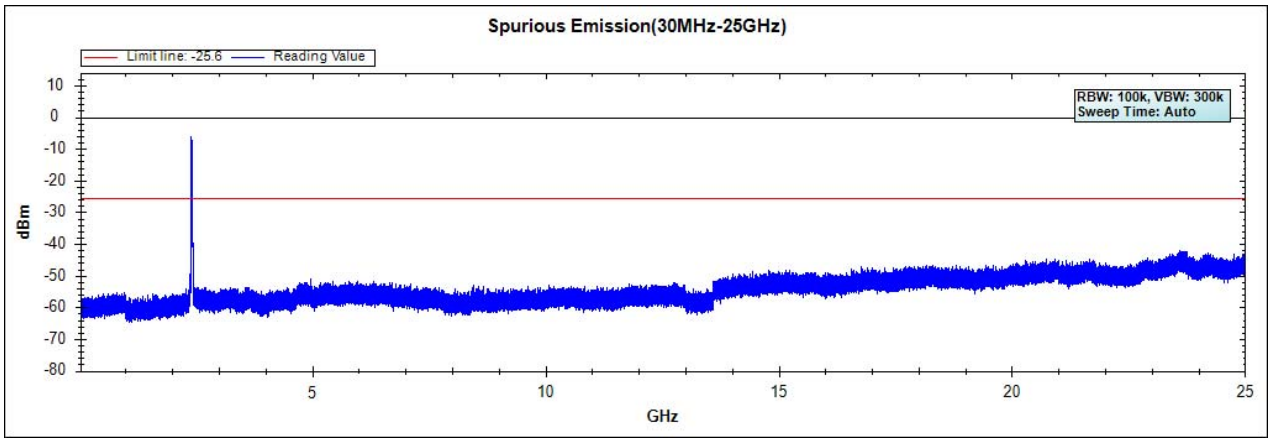
Channel 11 (2462MHz) 30MHz -25GHz-Chain B



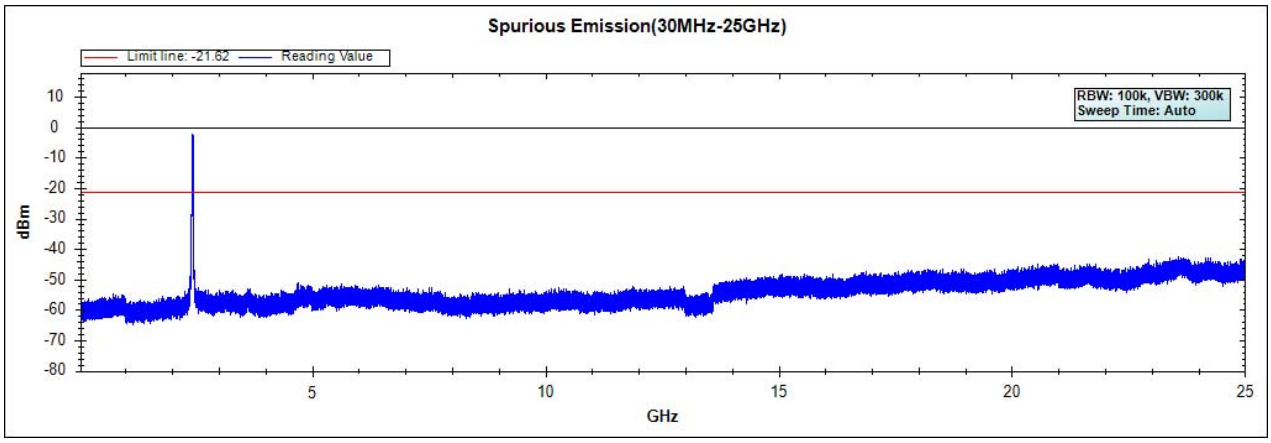
Note: The above test pattern is synthesized by multiple of the frequency range.

Product : FIELDBOOK
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 5: Transmit - 802.11n-40BW_15Mbps(2.4G Band)

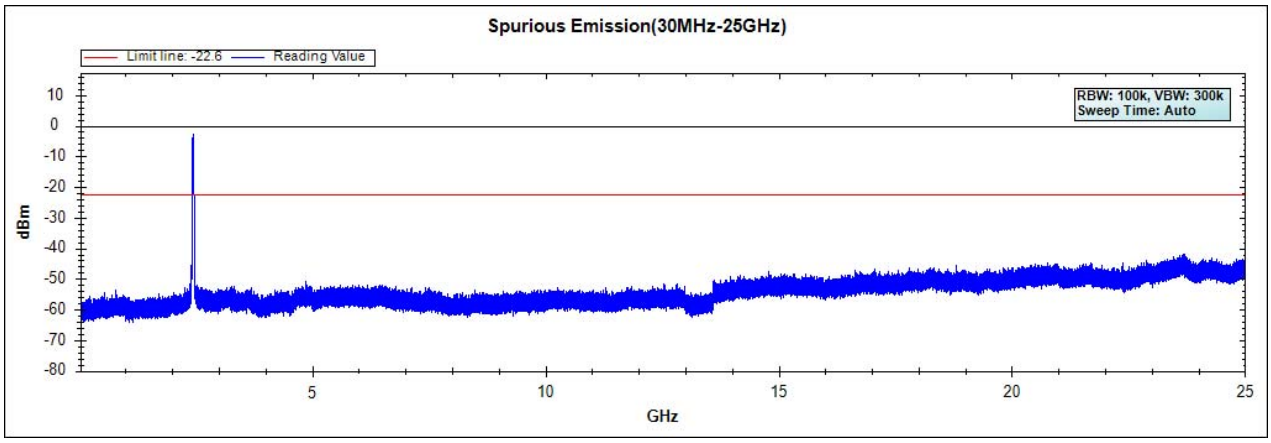
Channel 01 (2422MHz) 30MHz -25GHz-Chain A



Channel 04 (2437MHz) 30MHz -25GHz-Chain A

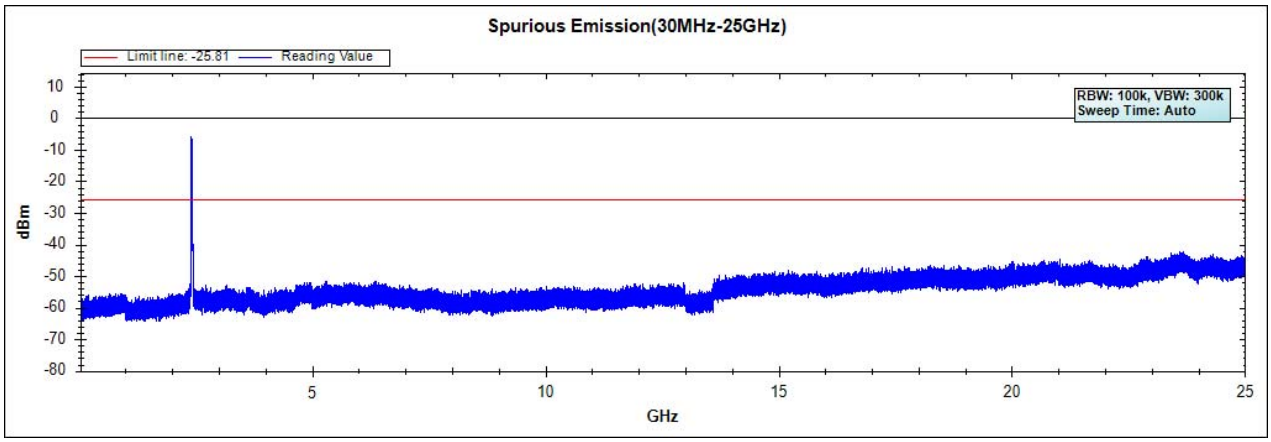


Channel 07 (2452MHz) 30MHz -25GHz-Chain A

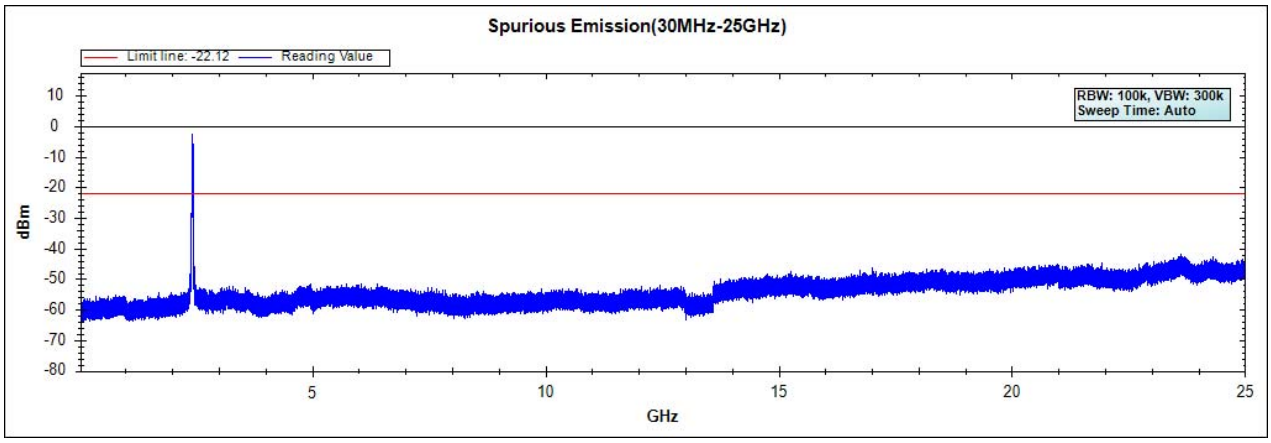


Note: The above test pattern is synthesized by multiple of the frequency range.

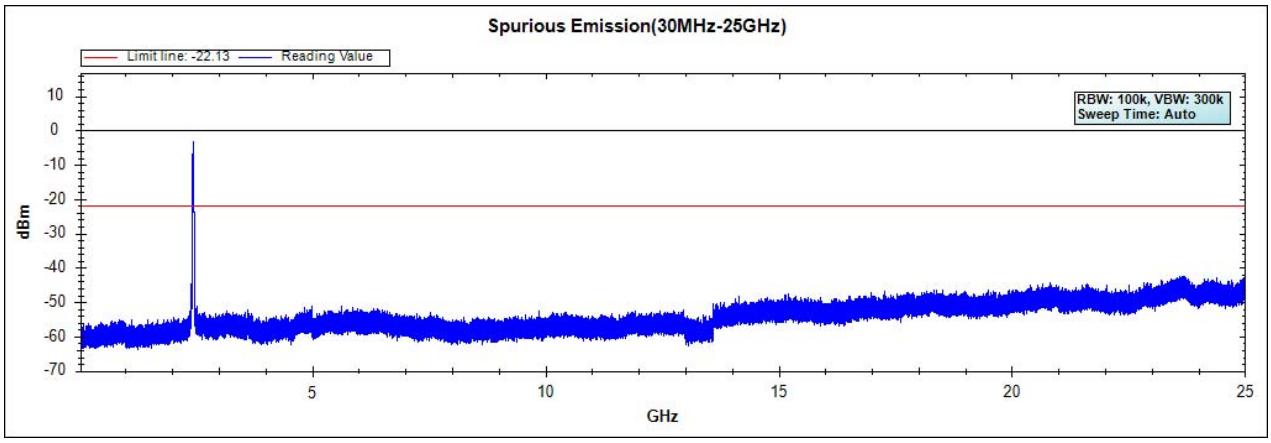
Channel 01 (2422MHz) 30MHz -25GHz-Chain B



Channel 04 (2437MHz) 30MHz -25GHz-Chain B



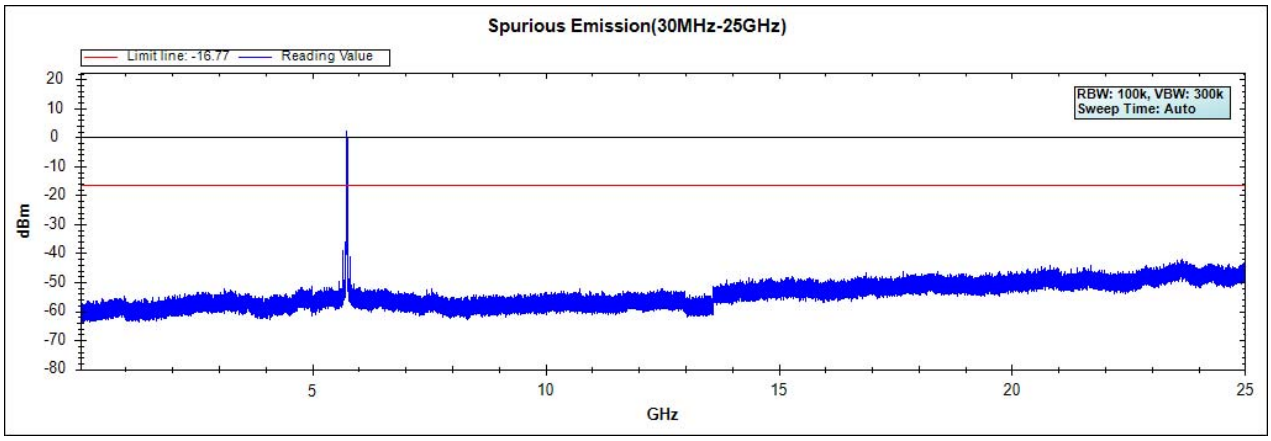
Channel 07 (2452MHz) 30MHz -25GHz-Chain B

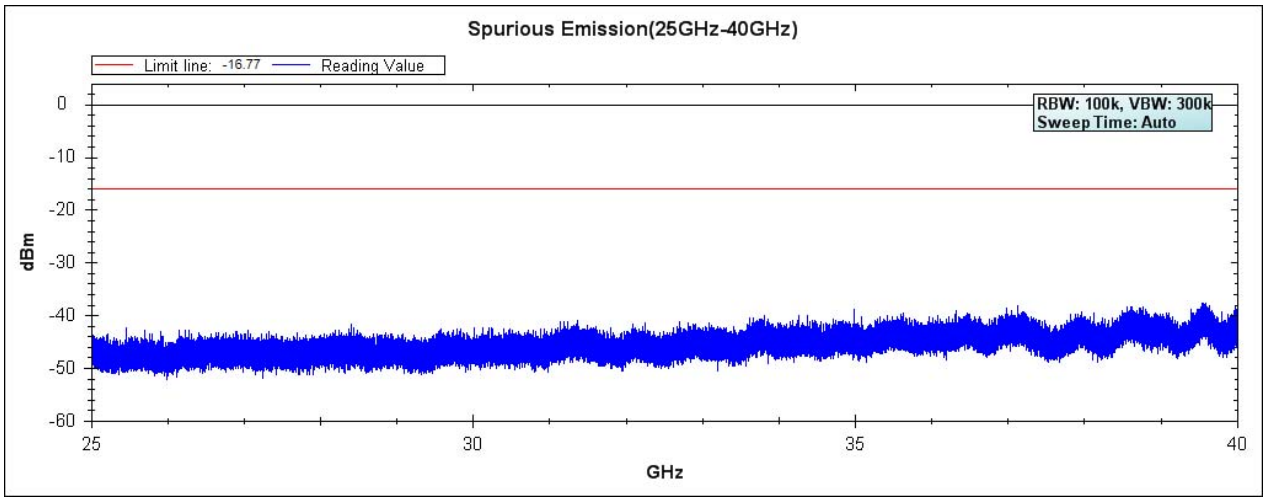


Note: The above test pattern is synthesized by multiple of the frequency range.

Product : FIELDBOOK
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 6: Transmit - 802.11n-20BW_7.2Mbps(5G Band)

Channel 49 (5745MHz) 30MHz -40GHz-Chain A





Note: The above test pattern is synthesized by multiple of the frequency range

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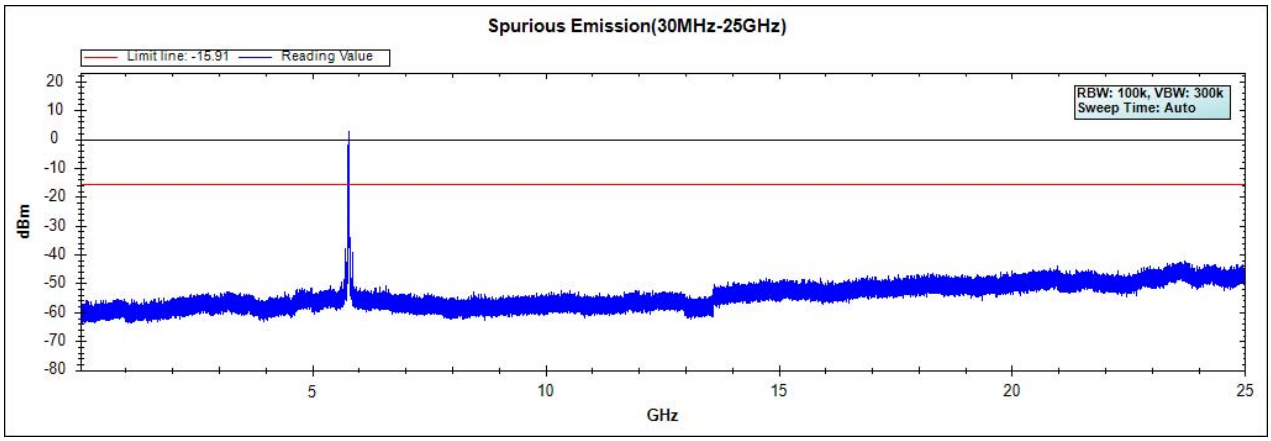
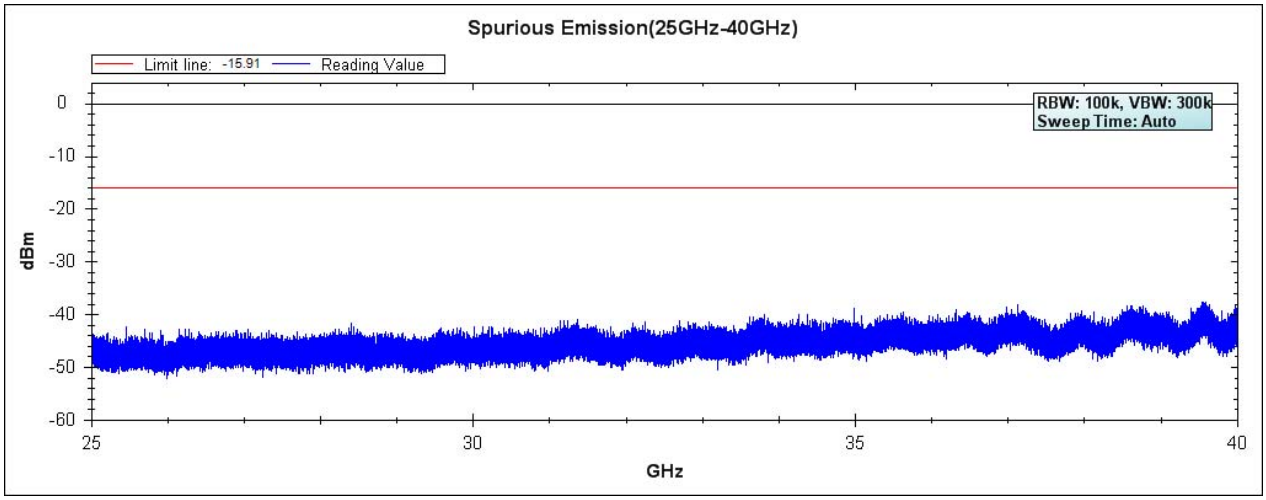
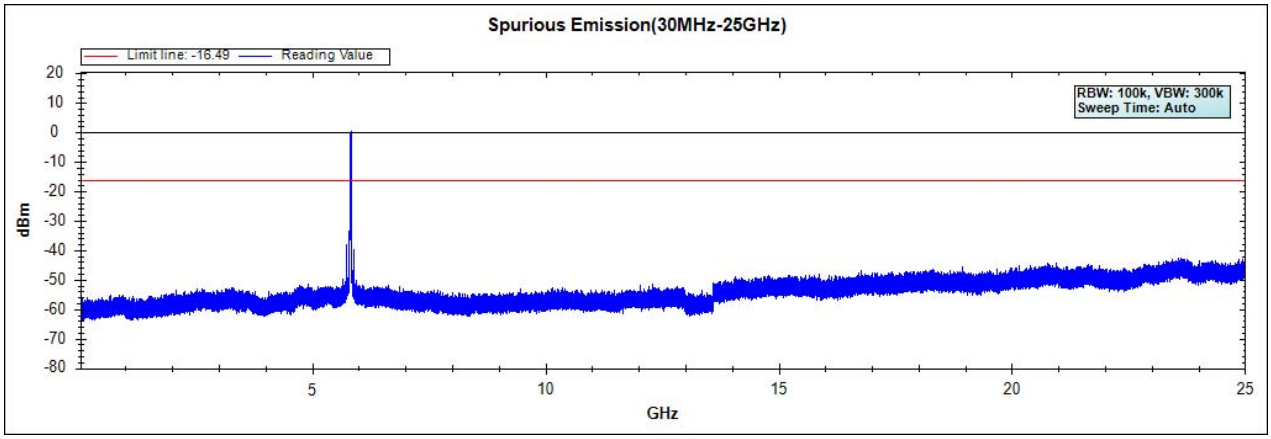
Channel 157 (5785MHz) 30MHz -40GHz-Chain A

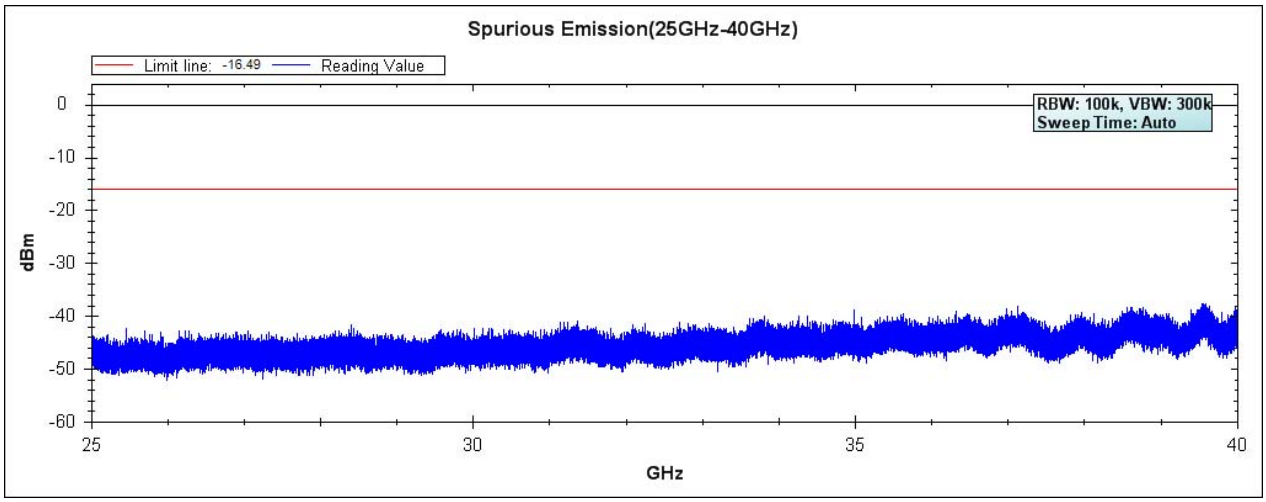




Note: The above test pattern is synthesized by multiple of the frequency range

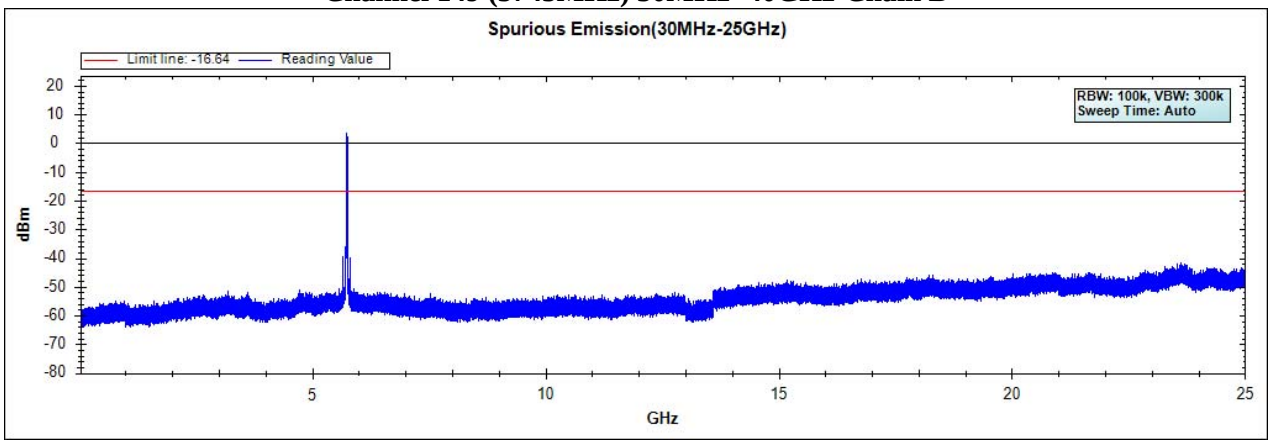
Channel 165 (5825MHz) 30MHz -40GHz-Chain A

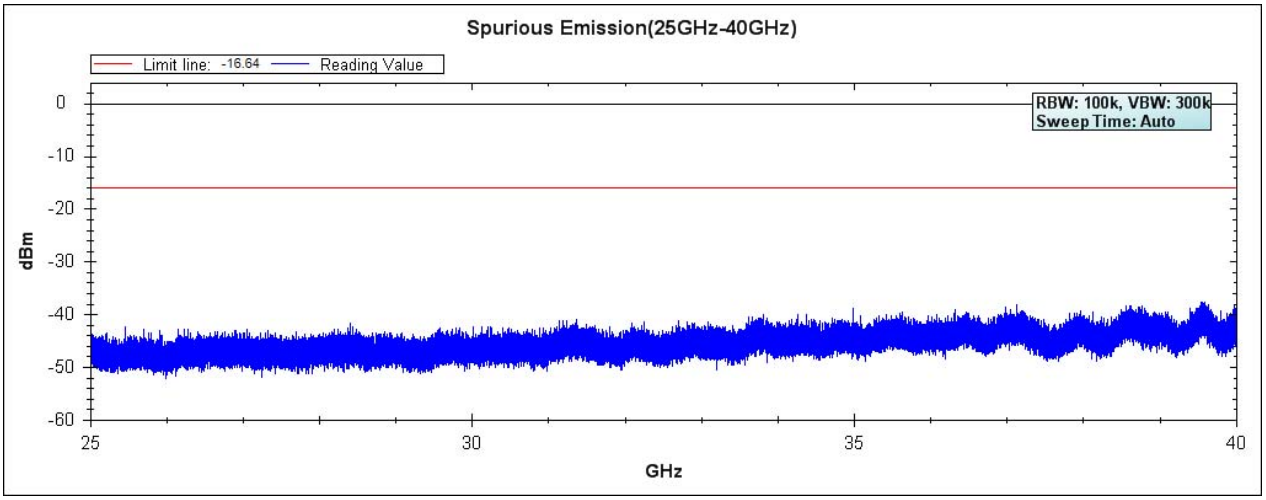




Note: The above test pattern is synthesized by multiple of the frequency range

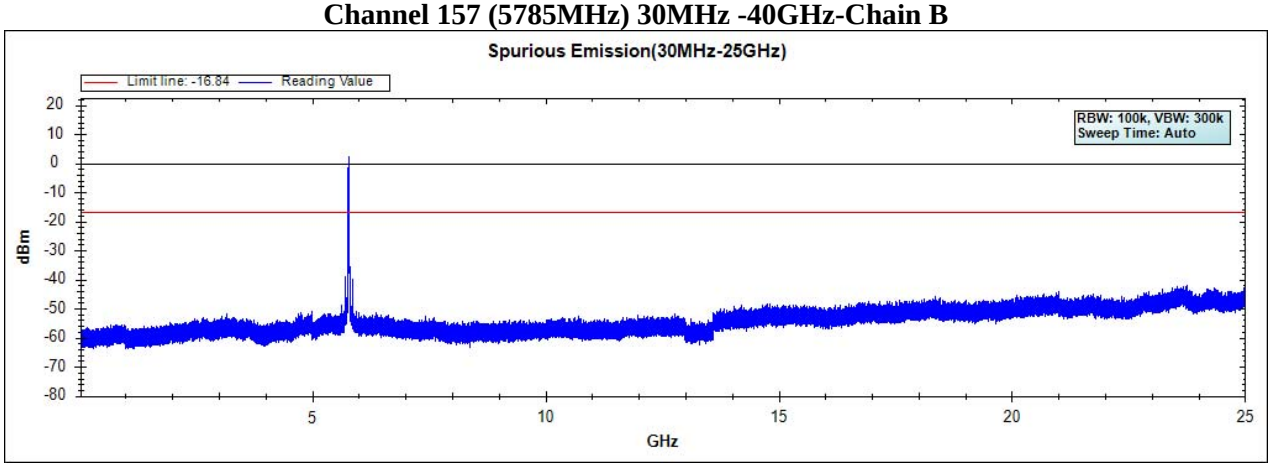
Channel 149 (5745MHz) 30MHz -40GHz-Chain B

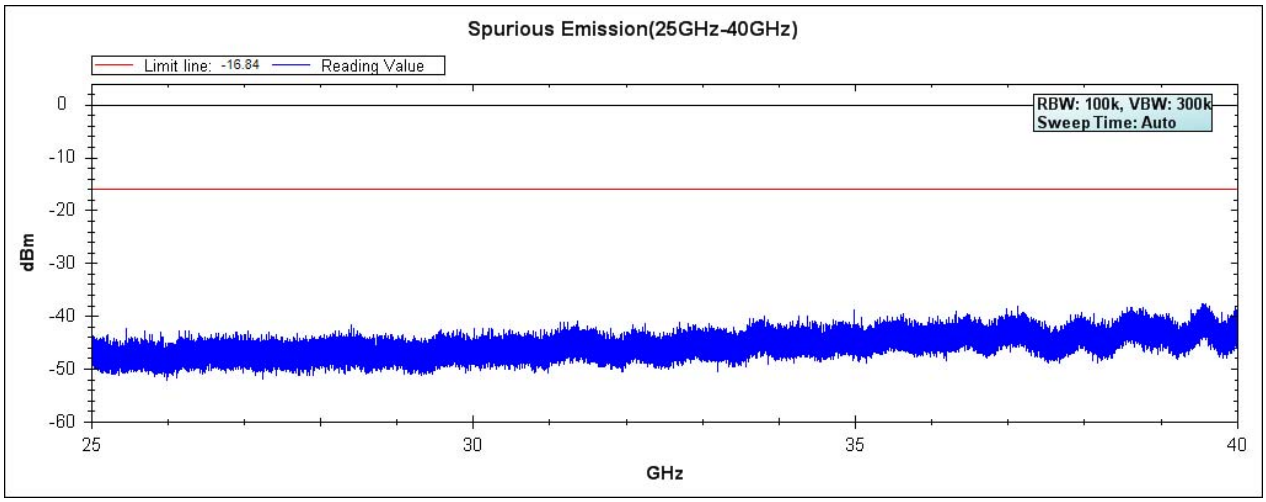




Note: The above test pattern is synthesized by multiple of the frequency range.

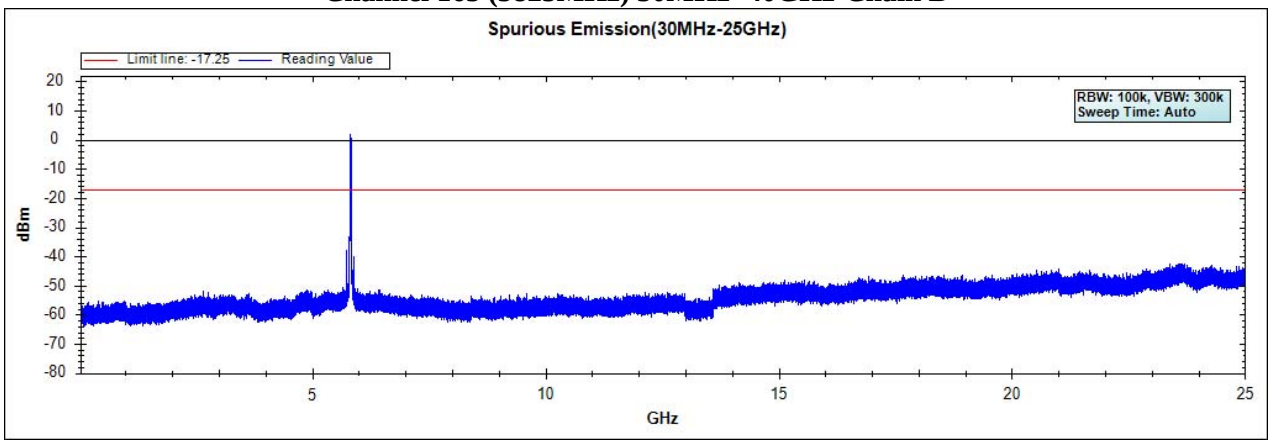
Channel 157 (5785MHz) 30MHz -40GHz-Chain B

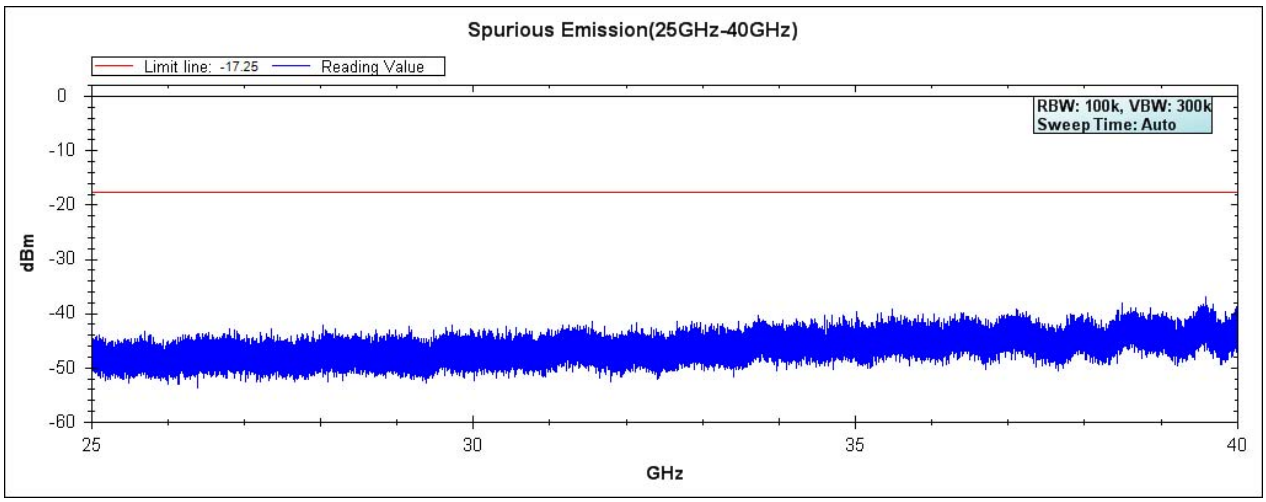




Note: The above test pattern is synthesized by multiple of the frequency range.

Channel 165 (5825MHz) 30MHz -40GHz-Chain B

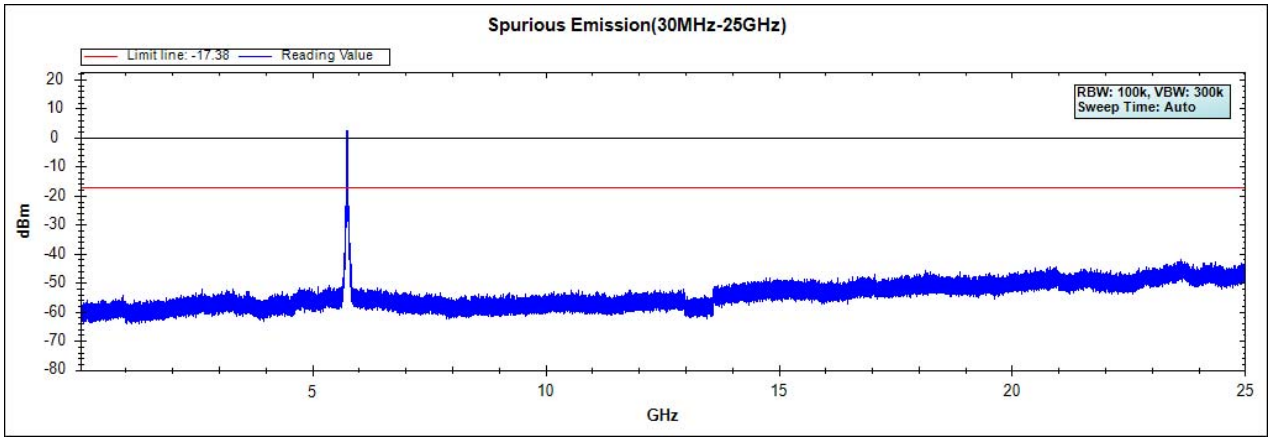


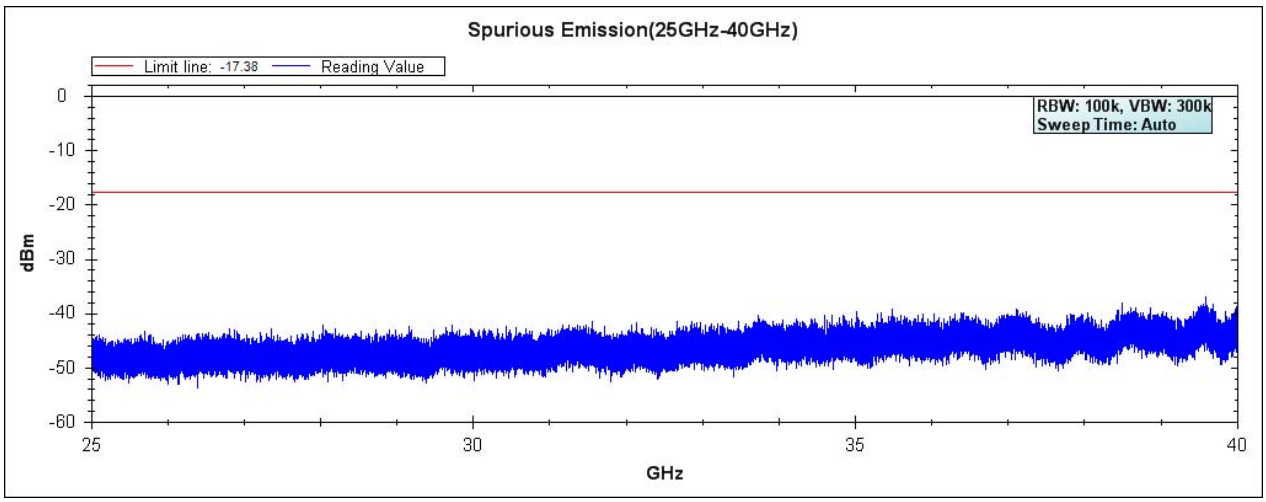


Note: The above test pattern is synthesized by multiple of the frequency range.

Product : FIELDBOOK
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 7: Transmit - 802.11n-40BW_15Mbps(5G Band)

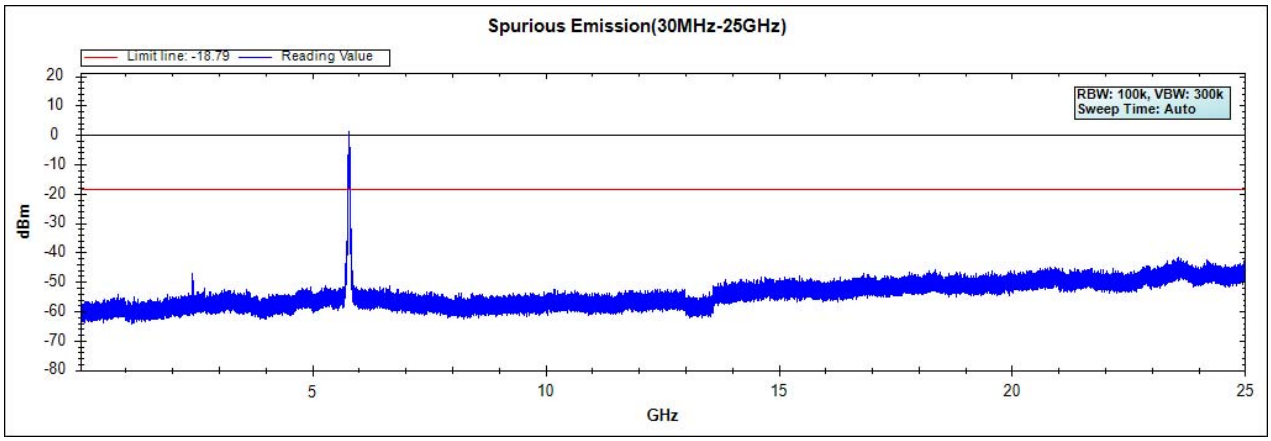
Channel 151 (5755MHz) 30MHz -40GHz-Chain A

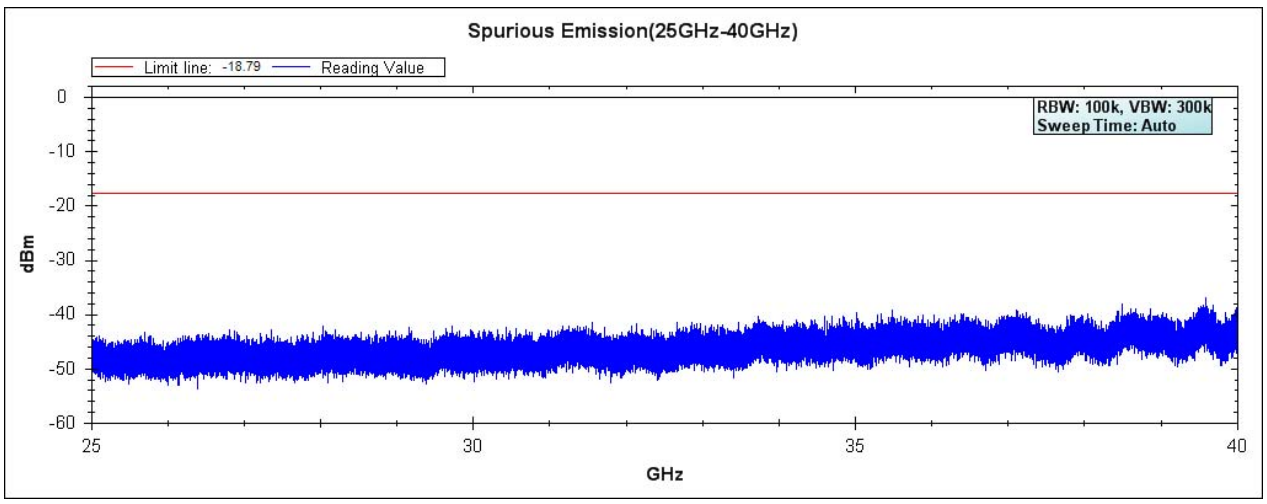




Note: The above test pattern is synthesized by multiple of the frequency range

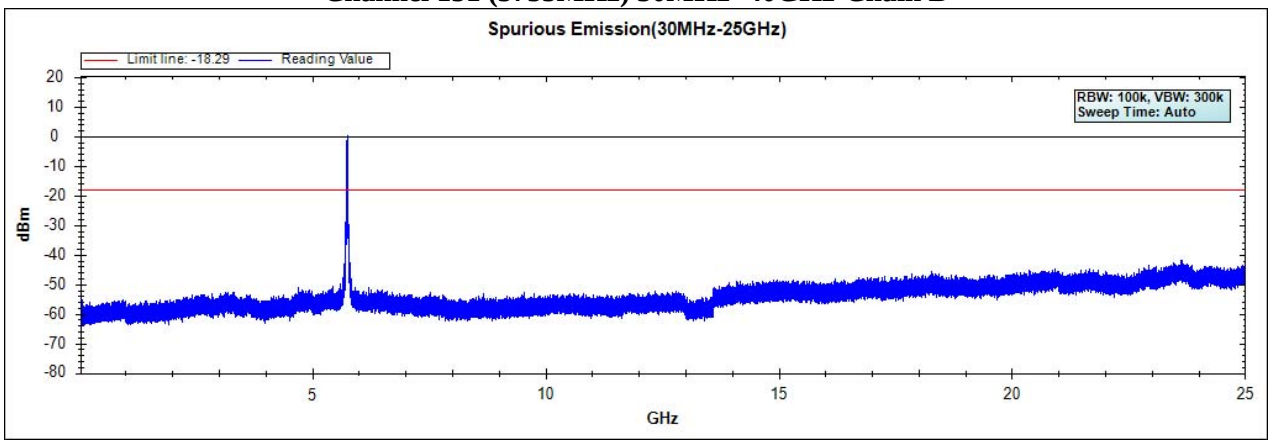
Channel 159 (5795MHz) 30MHz -40GHz-Chain A

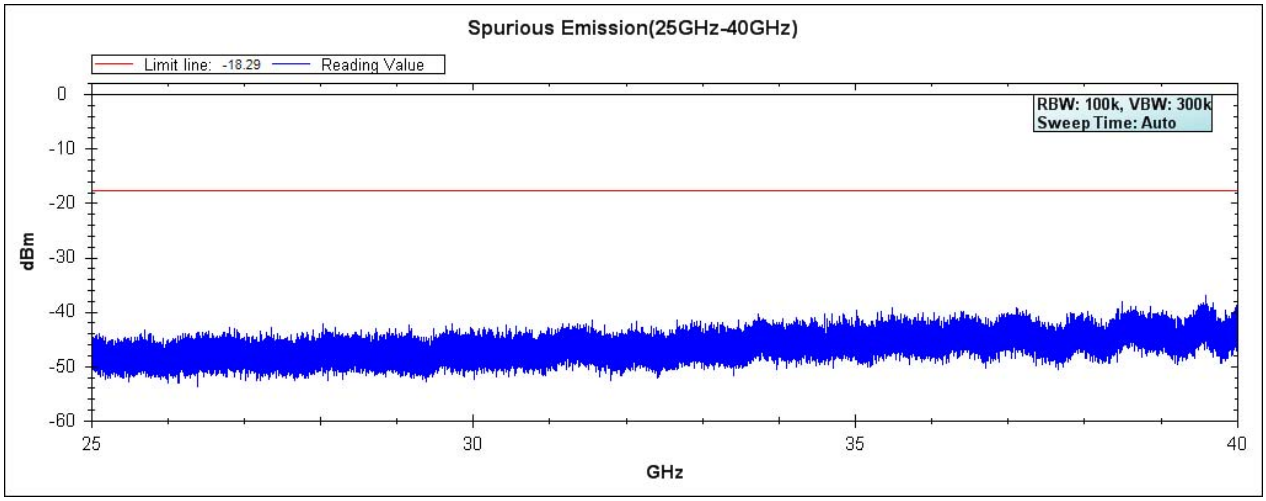




Note: The above test pattern is synthesized by multiple of the frequency range

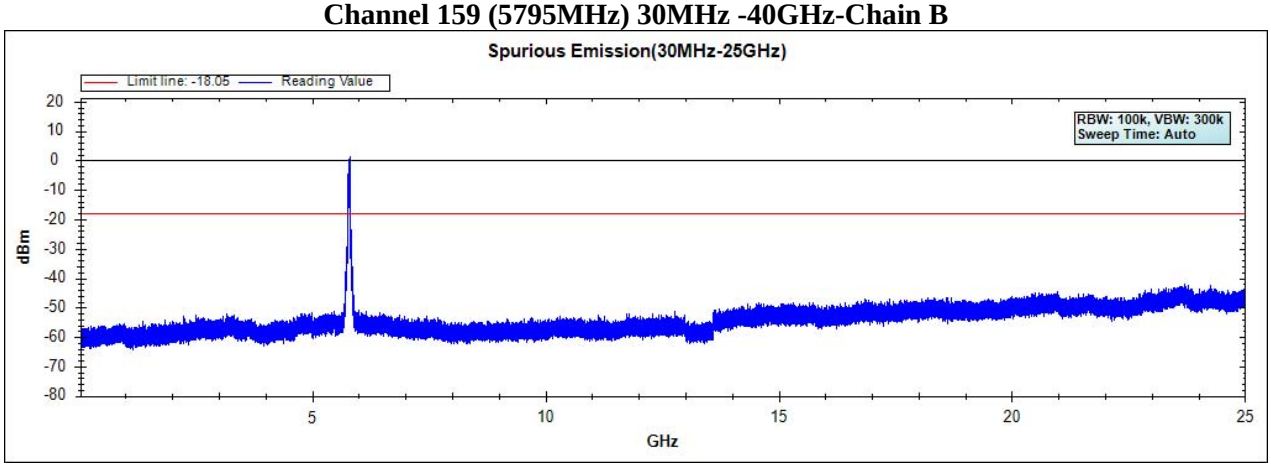
Channel 151 (5755MHz) 30MHz -40GHz-Chain B

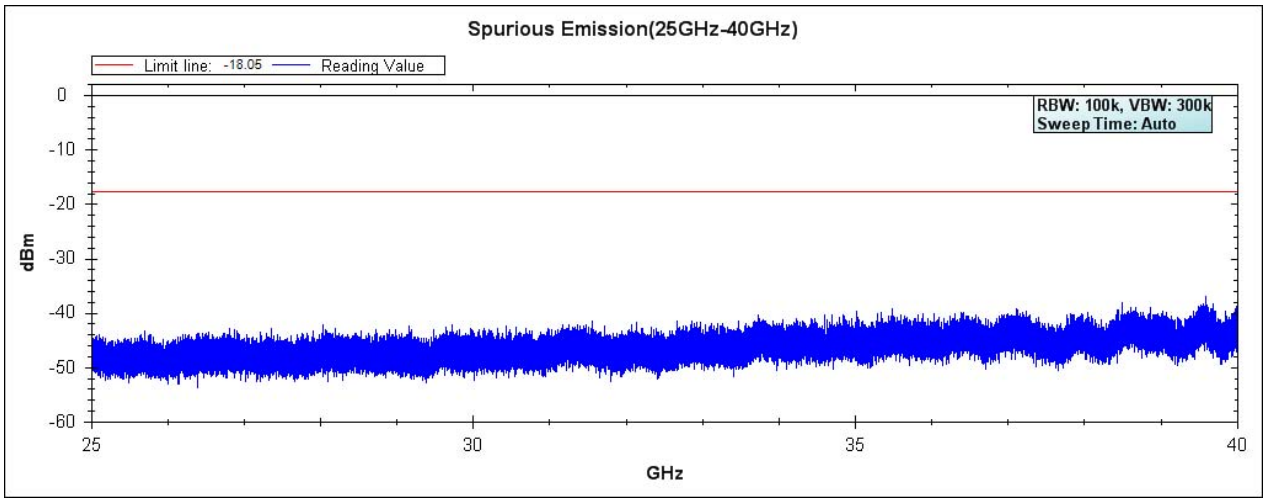




Note: The above test pattern is synthesized by multiple of the frequency range.

Channel 159 (5795MHz) 30MHz -40GHz-Chain B

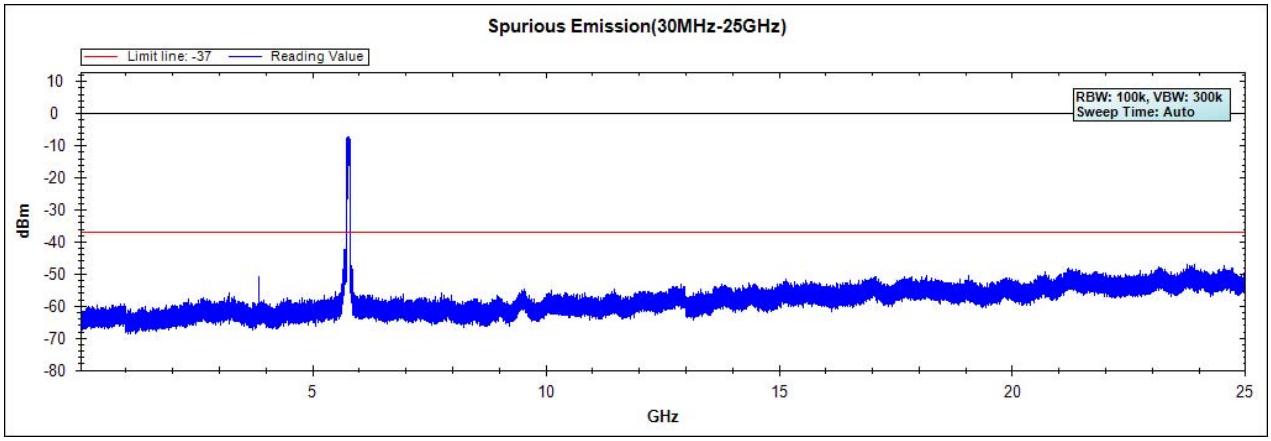


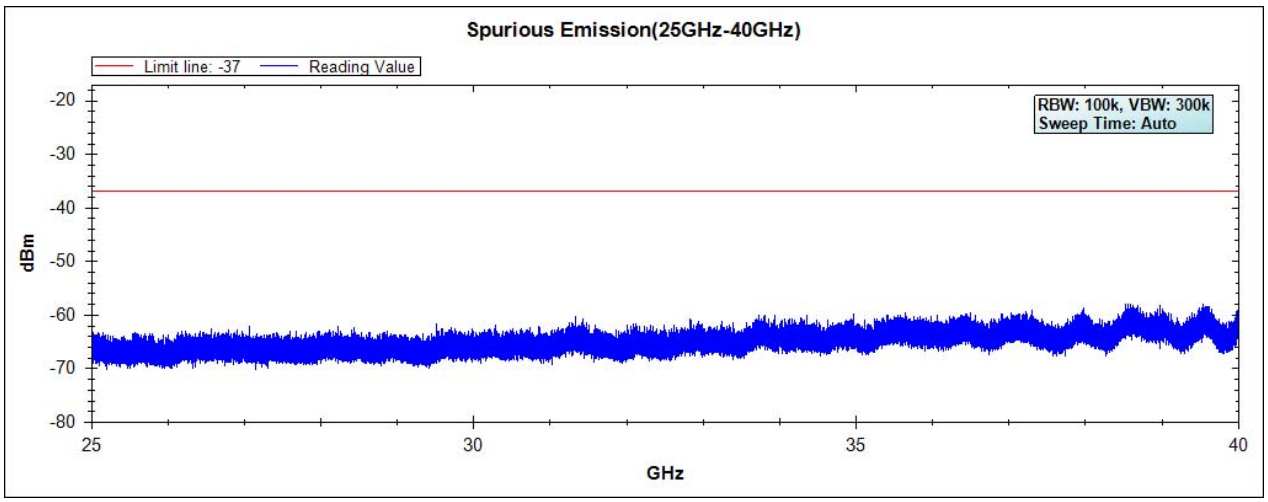


Note: The above test pattern is synthesized by multiple of the frequency range.

Product : FIELDBOOK
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 8: Transmit - 802.11ac-80BW_32.5Mbps(5G Band)

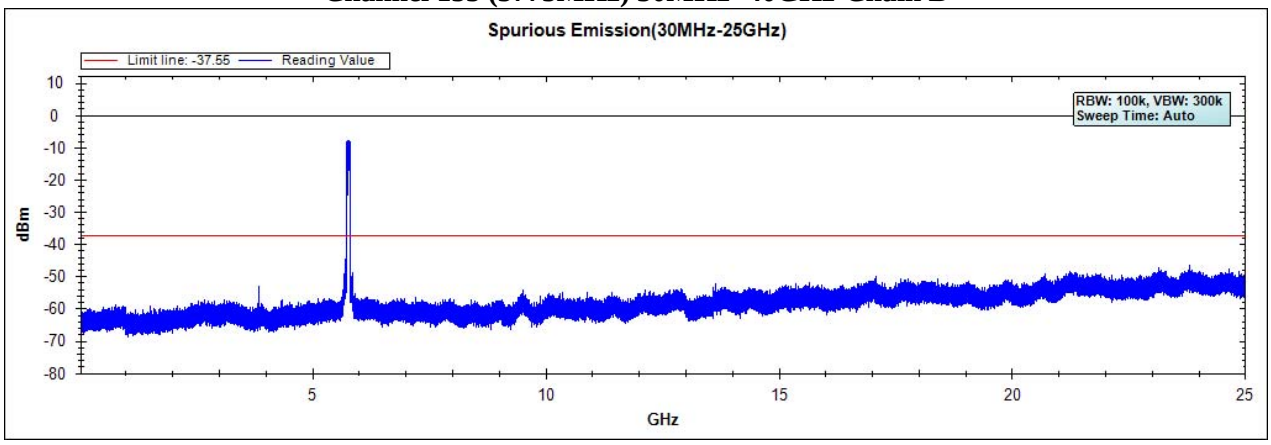
Channel 155 (5775MHz) 30MHz -40GHz-Chain A

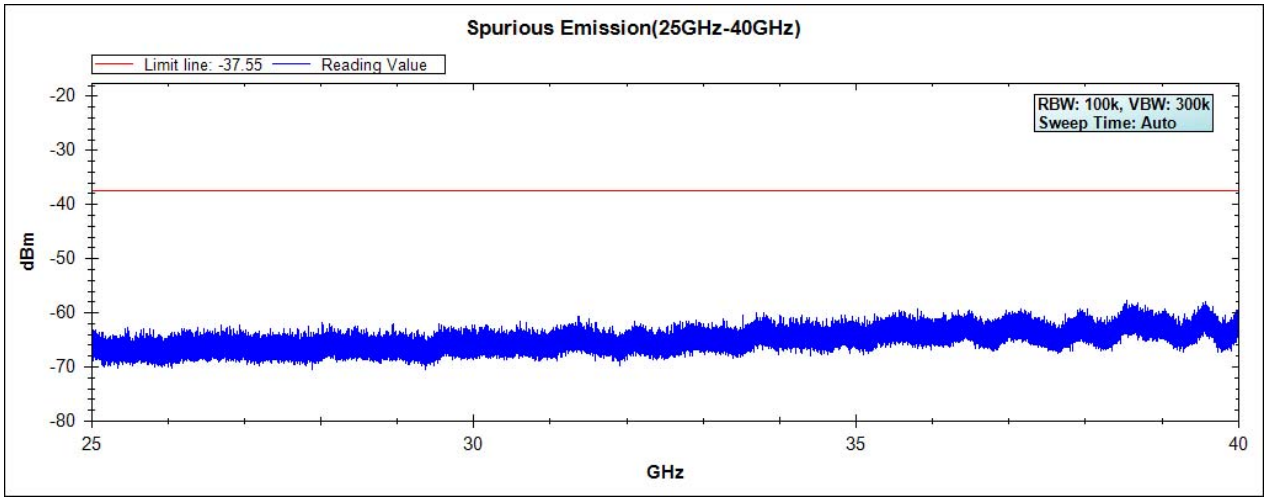




Note: The above test pattern is synthesized by multiple of the frequency range

Channel 155 (5775MHz) 30MHz -40GHz-Chain B





Note: The above test pattern is synthesized by multiple of the frequency range.

6. Band Edge

6.1. Test Equipment

RF Conducted Measurement

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

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2014
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2014
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2014
	8-WAY Power Divider	JFW	50PD-647 / 526770 0916	Apr., 2014

Note:

1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with "X" are used to measure the final test results.

RF Radiated Measurement:

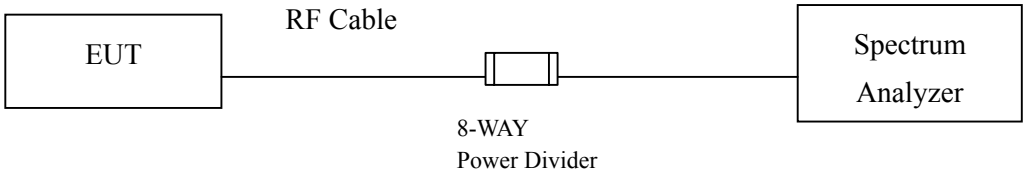
The following test equipments are used during the band edge tests:

Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒Site # 3		Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2014
	X	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2014
		Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2014
		Pre-Amplifier	QTK	QTK-AMP-03 / 0003	May, 2014
	X	Pre-Amplifier	QTK	AP-180C / CHM_0906076	Sep., 2014
		Pre-Amplifier	MITEQ	AMF-4D-180400-45-6P/ 925975	Mar, 2014
	X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2014
		Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2014
	X	Coaxial Cable	QuieTek	QTK-CABLE/ CAB5	Feb., 2014
	X	Controller	QuieTek	QTK-CONTROLLER/ CTRL3	N/A
	X	Coaxial Switch	Anritsu	MP59B/6200265729	N/A

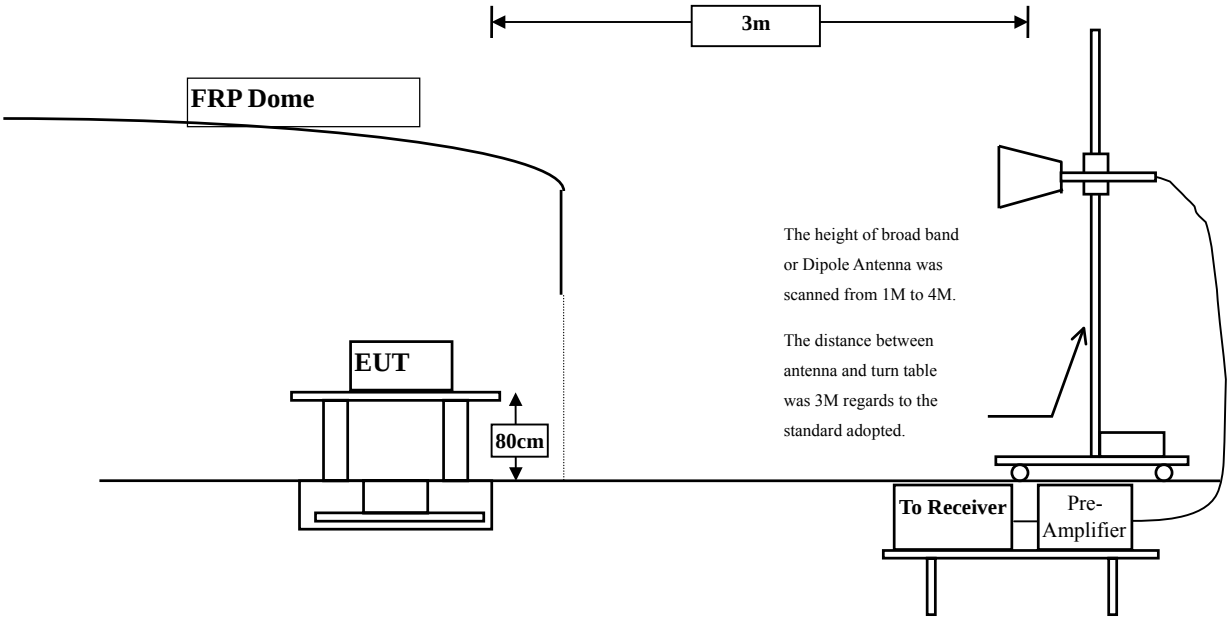
Note: 1. All instruments are calibrated every one year.
2. The test instruments marked by "X" are used to measure the final test results.

6.2. Test Setup

RF Conducted Measurement



RF Radiated Measurement:



6.3. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

6.4. Test Procedure

The EUT was setup according to ANSI C63.10, 2009 and tested according to DTS test procedure of KDB558074 for compliance to FCC 47CFR 15.247 requirements.
The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10:2009. on radiated measurement.

6.5. Uncertainty

± 3.9 dB above 1GHz
± 3.8 dB below 1GHz

6.6. Test Result of Band Edge

Product : FIELDBOOK
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Arerage Limit (dBuV/m)	Result
01 (Peak)	2376.600	31.457	29.831	61.288	74.00	54.00	Pass
01 (Peak)	2390.000	31.509	27.844	59.353	74.00	54.00	Pass
01 (Peak)	2400.000	31.561	34.141	65.702	--	--	--
01 (Peak)	2412.100	31.639	72.676	104.315	--	--	--
01 (Average)	2390.000	31.509	16.668	48.177	74.00	54.00	Pass
01 (Average)	2400.000	31.561	27.237	58.798	--	--	--
01 (Average)	2411.200	31.632	69.903	101.535	--	--	--

Figure Channel 01: Horizontal (Peak)

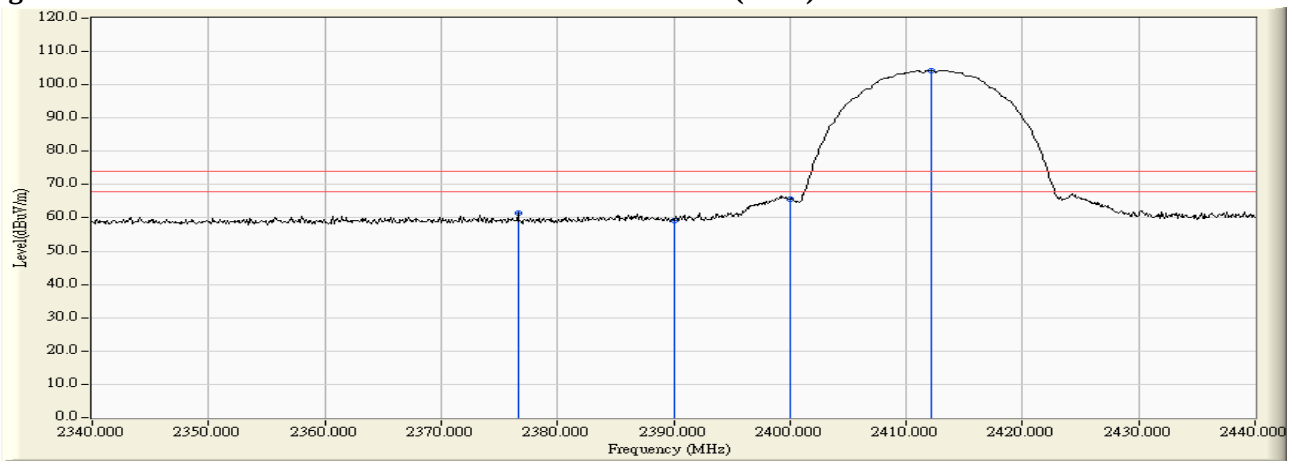
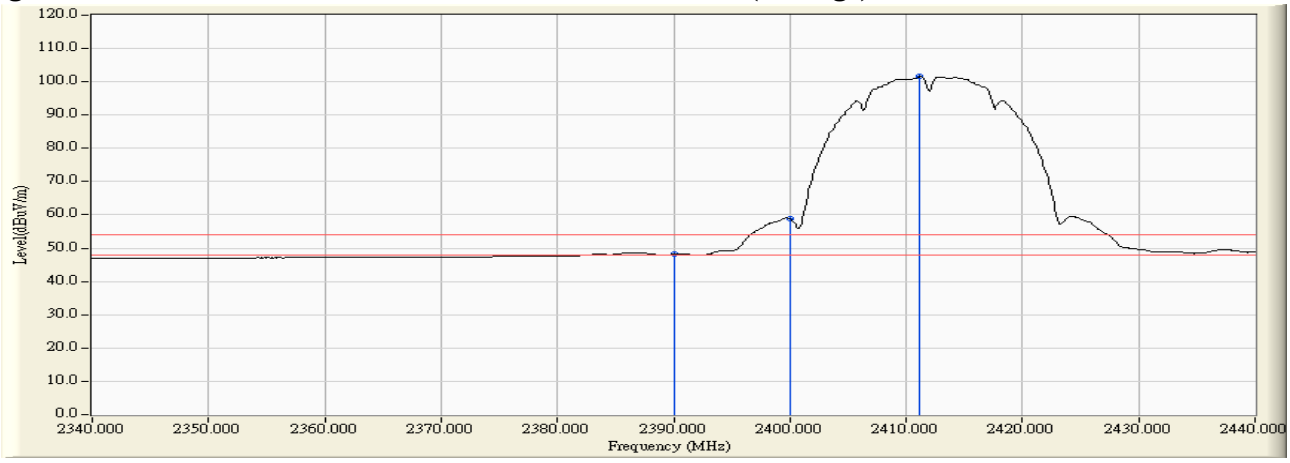


Figure Channel 01: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : FIELDBOOK
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Arerage Limit (dBuV/m)	Result
01 (Peak)	2386.300	30.932	29.976	60.908	74.00	54.00	Pass
01 (Peak)	2390.000	30.915	27.853	58.768	74.00	54.00	Pass
01 (Peak)	2400.000	30.912	32.000	62.912	--	--	--
01 (Peak)	2412.100	30.950	68.721	99.671	--	--	--
01 (Average)	2390.000	30.915	16.294	47.209	74.00	54.00	Pass
01 (Average)	2400.000	30.912	23.795	54.707	--	--	--
01 (Average)	2411.200	30.944	65.976	96.920	--	--	--

Figure Channel 01: Vertical (Peak)

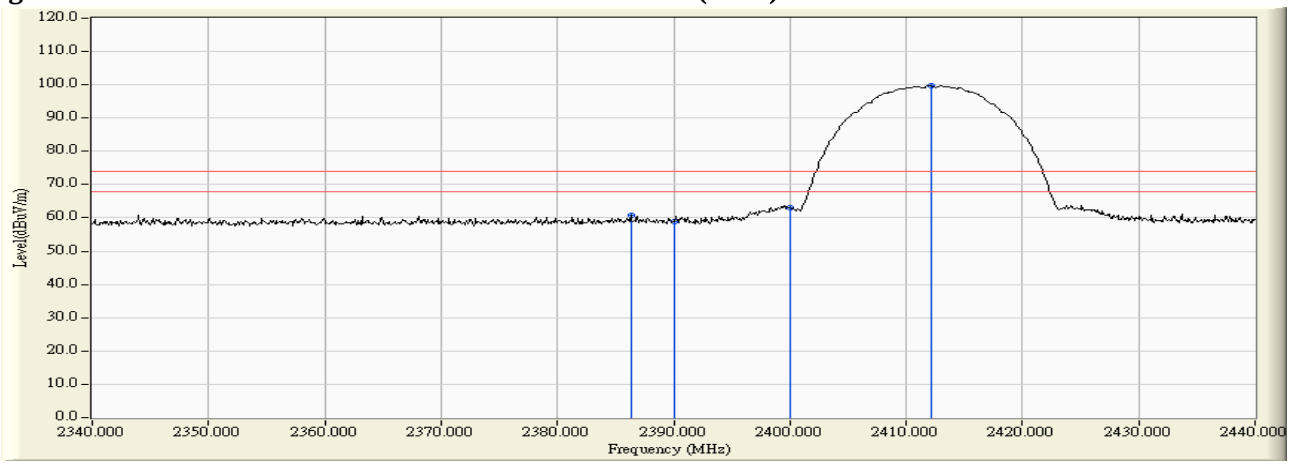
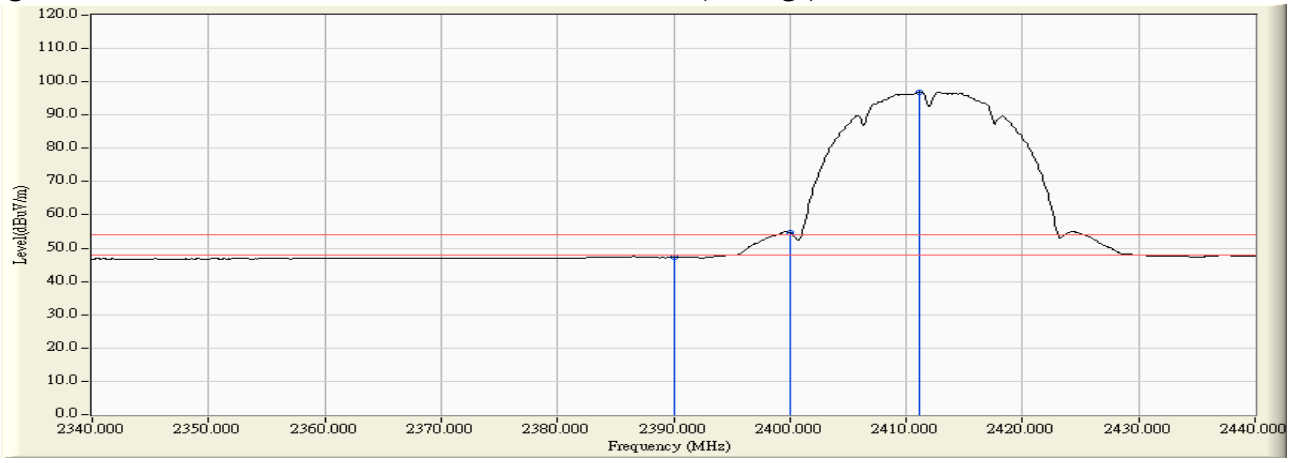


Figure Channel 01: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : FIELDBOOK
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Arerage Limit (dBuV/m)	Result
11 (Peak)	2462.000	32.019	73.849	105.868	--	--	--
11 (Peak)	2483.500	32.182	28.778	60.960	74.00	54.00	Pass
11 (Average)	2461.200	32.014	71.124	103.137	--	--	--
11 (Average)	2483.500	32.182	17.226	49.408	74.00	54.00	Pass
11 (Average)	2487.300	32.211	17.831	50.042	74.00	54.00	Pass

Figure Channel 11: Horizontal (Peak)

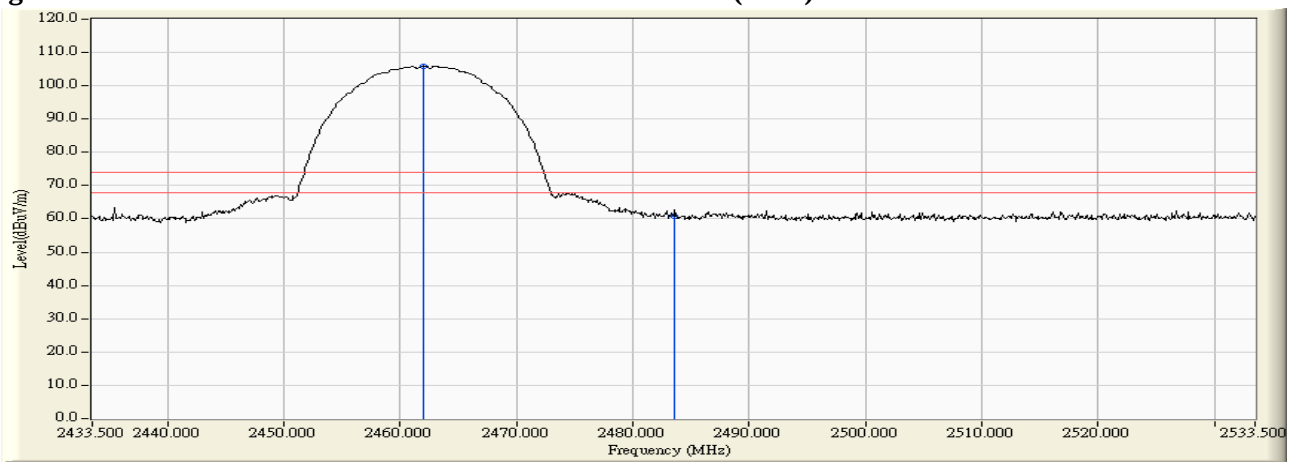
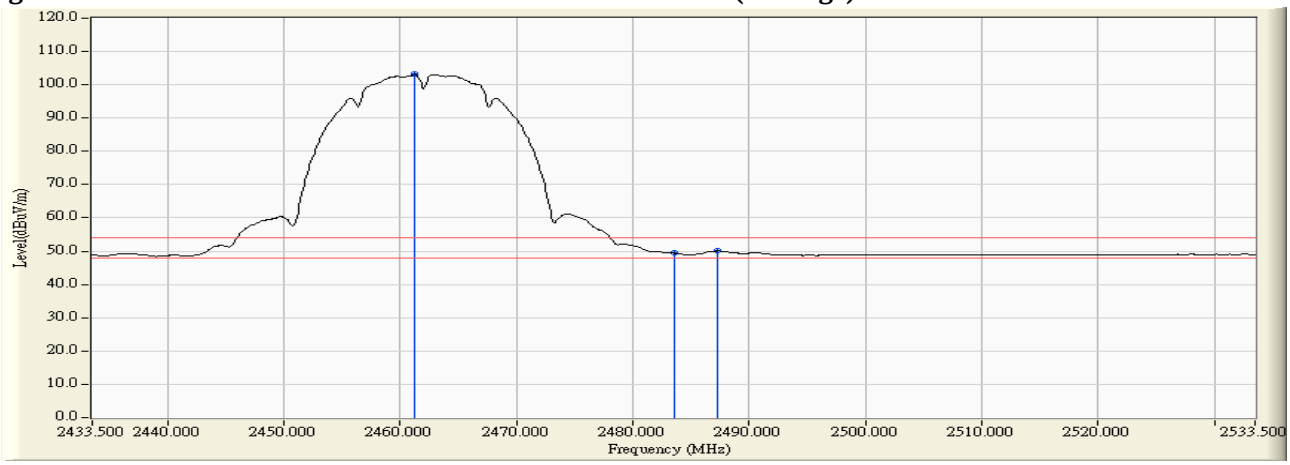


Figure Channel 1: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : FIELDBOOK
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Arerage Limit (dBuV/m)	Result
11 (Peak)	2461.900	31.289	69.115	100.405	--	--	--
11 (Peak)	2483.500	31.435	28.772	60.207	74.00	54.00	Pass
11 (Peak)	2486.600	31.457	29.954	61.410	74.00	54.00	Pass
11 (Average)	2461.200	31.285	66.409	97.694	--	--	--
11 (Average)	2483.500	31.435	16.584	48.019	74.00	54.00	Pass
11 (Average)	2487.400	31.461	16.797	48.259	74.00	54.00	Pass

Figure Channel 11: Vertical (Peak)

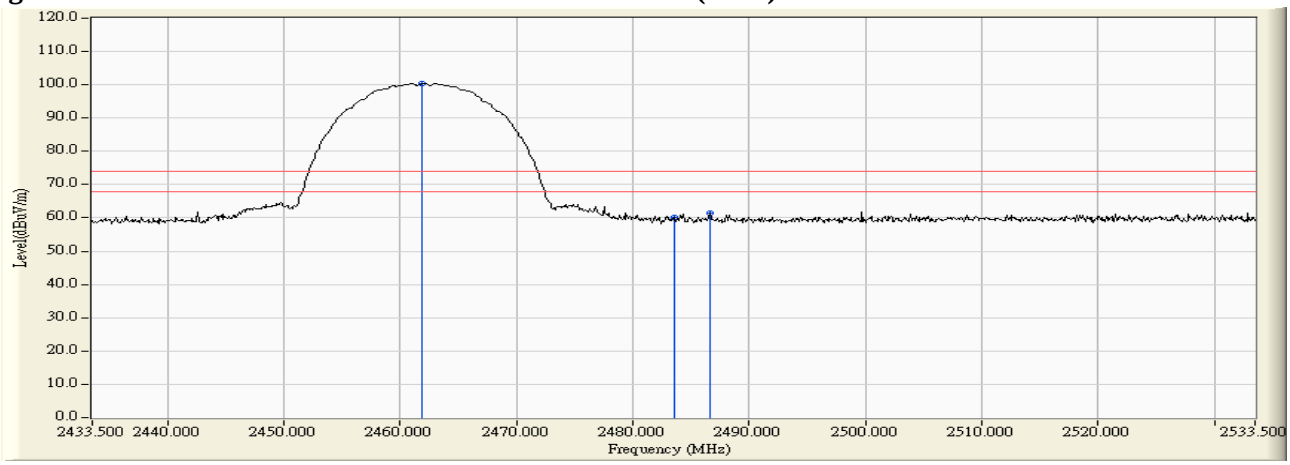
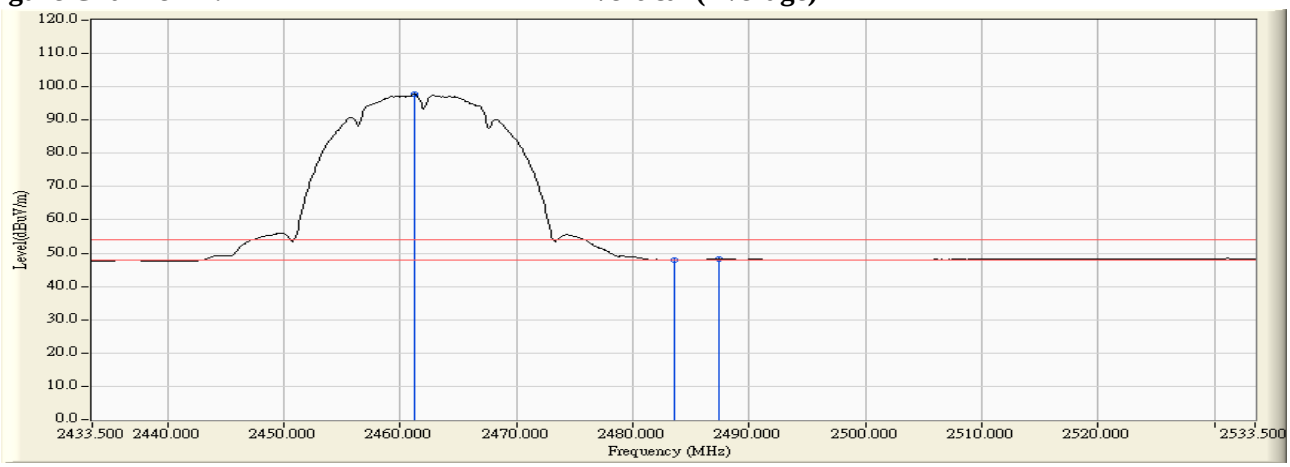


Figure Channel 11: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : FIELDBOOK
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Arerage Limit (dBuV/m)	Result
01 (Peak)	2390.000	33.739	28.716	62.455	74.00	54.00	Pass
01 (Peak)	2400.000	33.752	34.975	68.726	--	--	--
01 (Peak)	2410.800	33.769	75.859	109.628	--	--	--
01 (Average)	2390.000	33.739	14.872	48.611	74.00	54.00	Pass
01 (Average)	2400.000	33.752	20.673	54.424	--	--	--
01 (Average)	2423.400	33.799	66.795	100.594	--	--	--

Figure Channel 01: Horizontal (Peak)

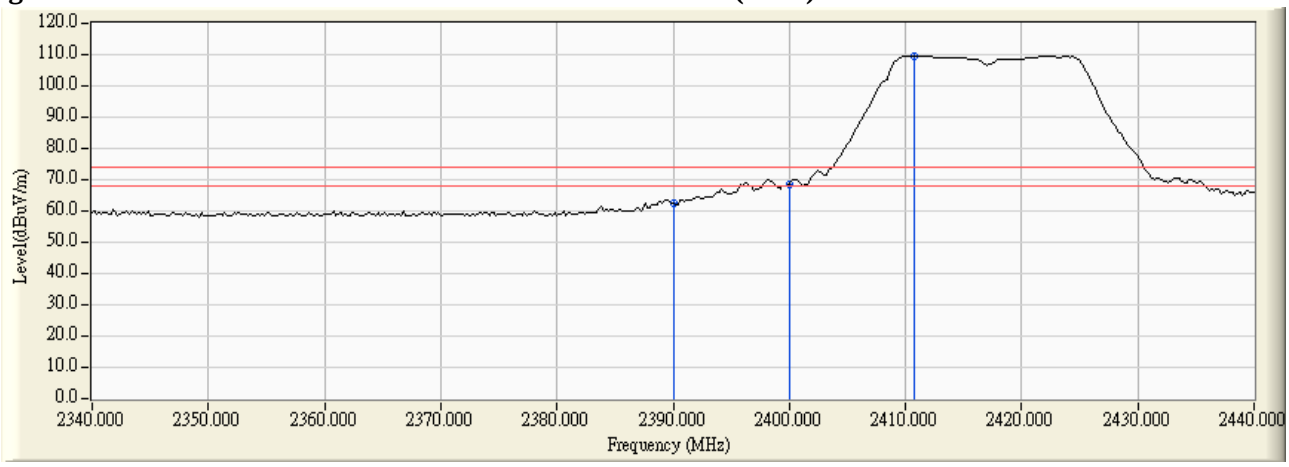
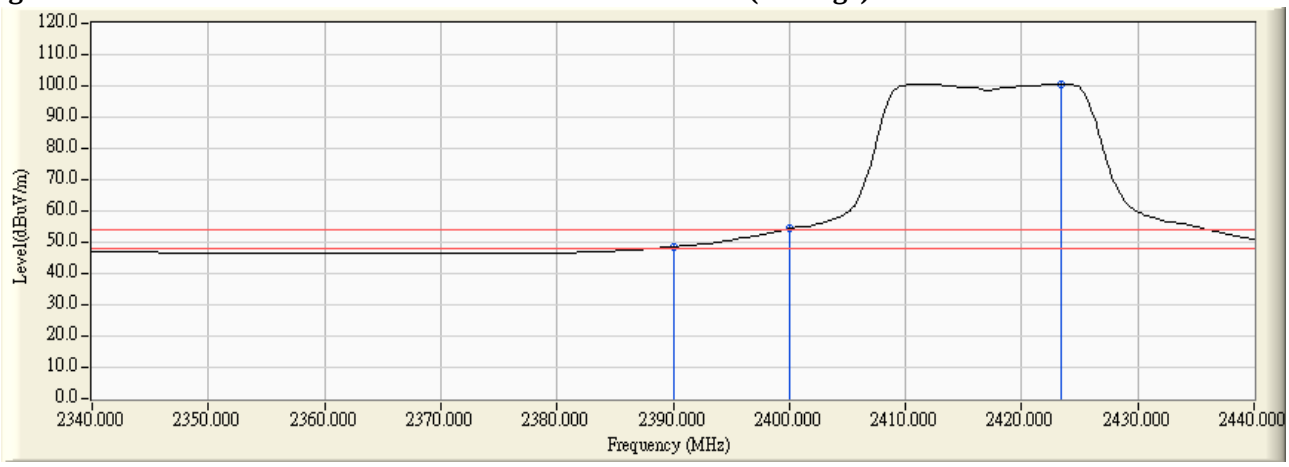


Figure Channel 01: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : FIELDBOOK
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Arerage Limit (dBuV/m)	Result
01 (Peak)	2389.200	32.273	27.541	59.813	74.00	54.00	Pass
01 (Peak)	2390.000	32.267	26.074	58.341	74.00	54.00	Pass
01 (Peak)	2400.000	32.241	32.306	64.547	--	--	--
01 (Peak)	2410.600	32.244	72.779	105.023	--	--	--
01 (Average)	2390.000	32.267	13.713	45.980	74.00	54.00	Pass
01 (Average)	2400.000	32.241	18.373	50.614	--	--	--
01 (Average)	2423.400	32.301	63.592	95.892	--	--	--

Figure Channel 01: Vertical (Peak)

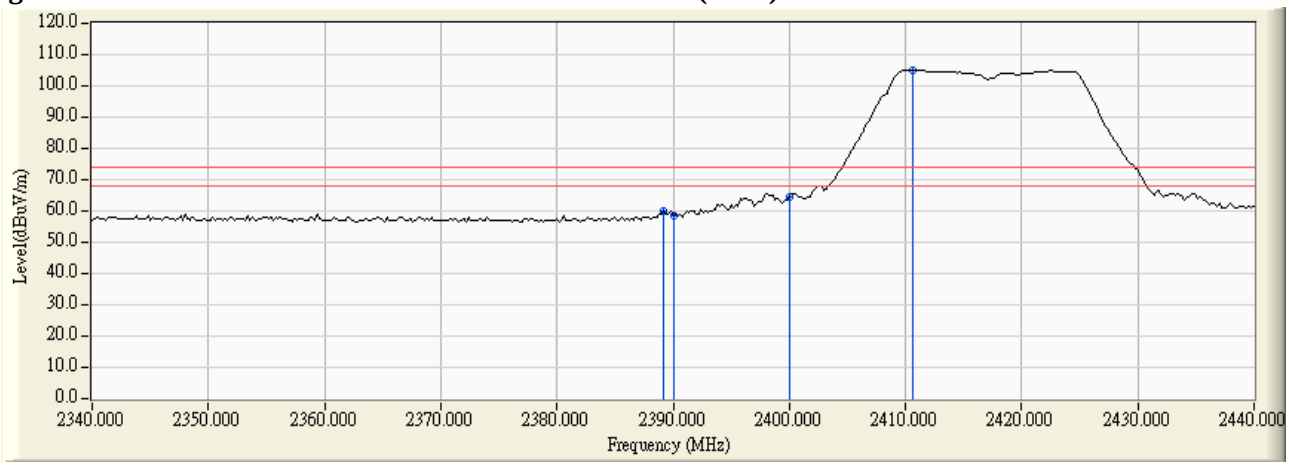
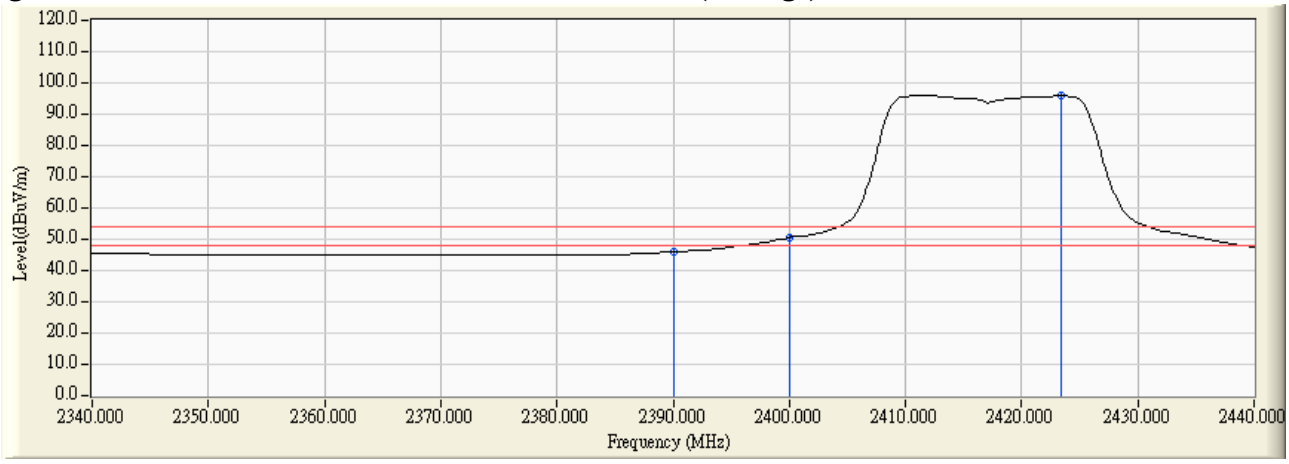


Figure Channel 01: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : FIELDBOOK
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Arerage Limit (dBuV/m)	Result
11 (Peak)	2455.700	33.877	77.096	110.973	--	--	--
11 (Peak)	2483.500	33.951	32.652	66.602	74.00	54.00	Pass
11 (Average)	2456.700	33.879	67.862	101.741	--	--	--
11 (Average)	2483.500	33.951	18.597	52.547	74.00	54.00	Pass

Figure Channel 11: Horizontal (Peak)

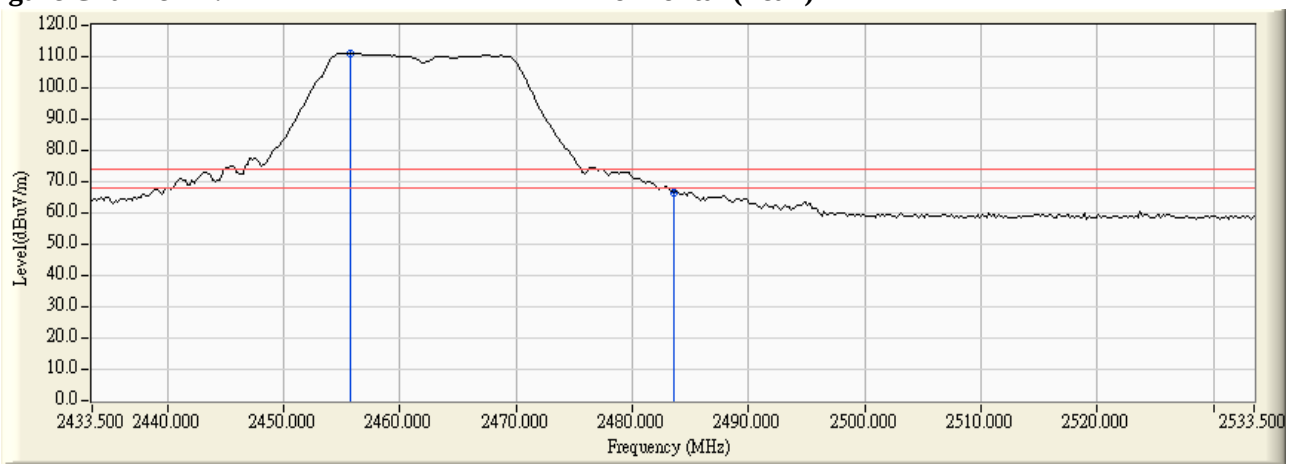
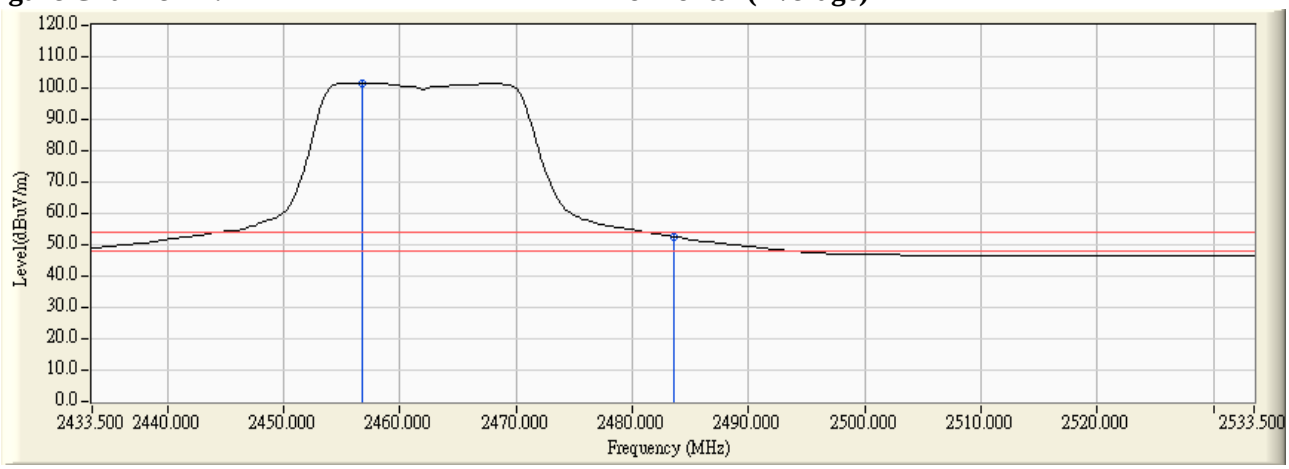


Figure Channel 11: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : FIELDBOOK
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Arerage Limit (dBuV/m)	Result
11 (Peak)	2467.500	32.506	73.732	106.239	--	--	--
11 (Peak)	2483.500	32.586	30.588	63.173	74.00	54.00	Pass
11 (Average)	2468.300	32.511	64.794	97.305	--	--	--
11 (Average)	2483.500	32.586	17.126	49.711	74.00	54.00	Pass

Figure Channel 11: Vertical (Peak)

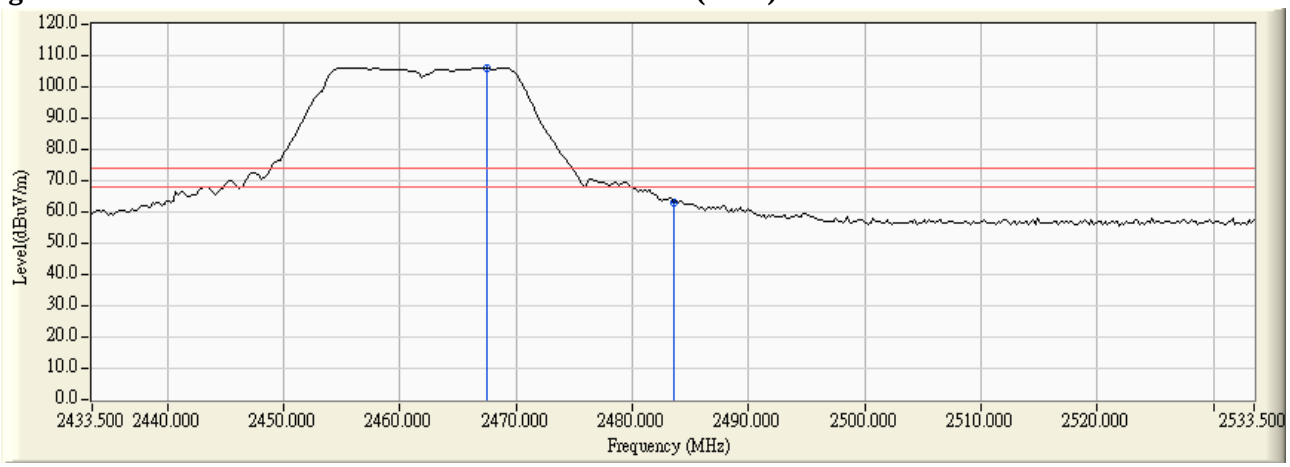
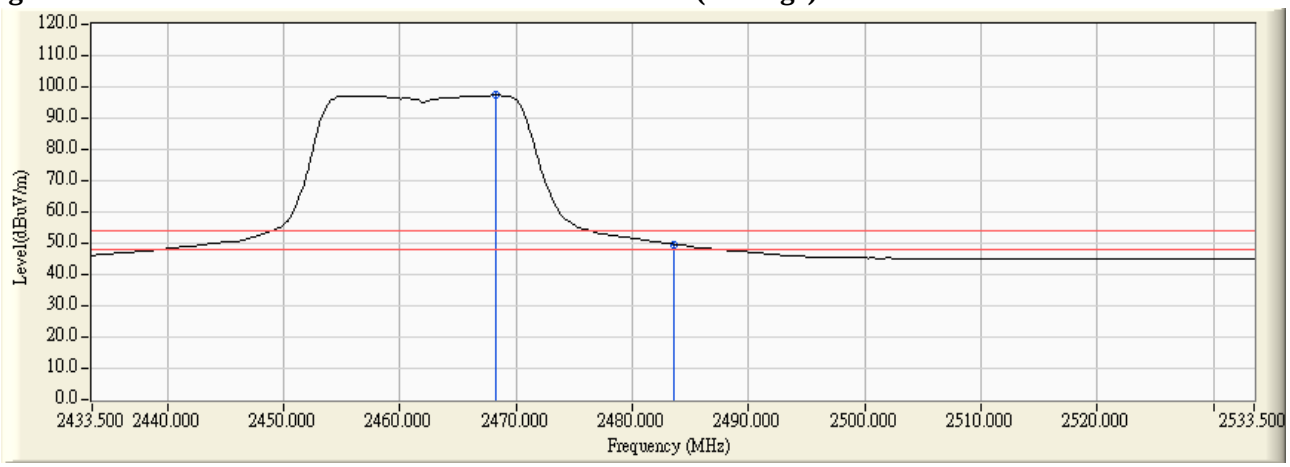


Figure Channel 11: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : FIELDBOOK
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11n-20BW_7.2Mbps(2.4G Band)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Arerage Limit (dBuV/m)	Result
01 (Peak)	2390.000	33.739	37.096	70.835	74.00	54.00	Pass
01 (Peak)	2400.000	33.752	51.706	85.457	--	--	--
01 (Peak)	2406.600	33.762	77.331	111.093	--	--	--
01 (Average)	2390.000	33.739	19.429	53.168	74.00	54.00	Pass
01 (Average)	2400.000	33.752	28.159	61.910	--	--	--
01 (Average)	2406.400	33.762	67.452	101.214	--	--	--

Figure Channel 01: Horizontal (Peak)

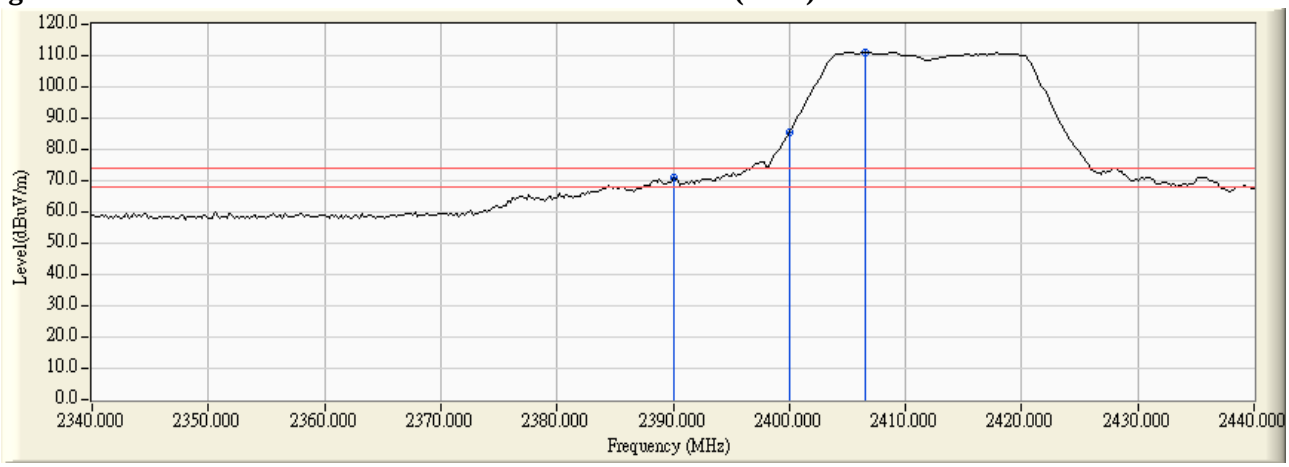
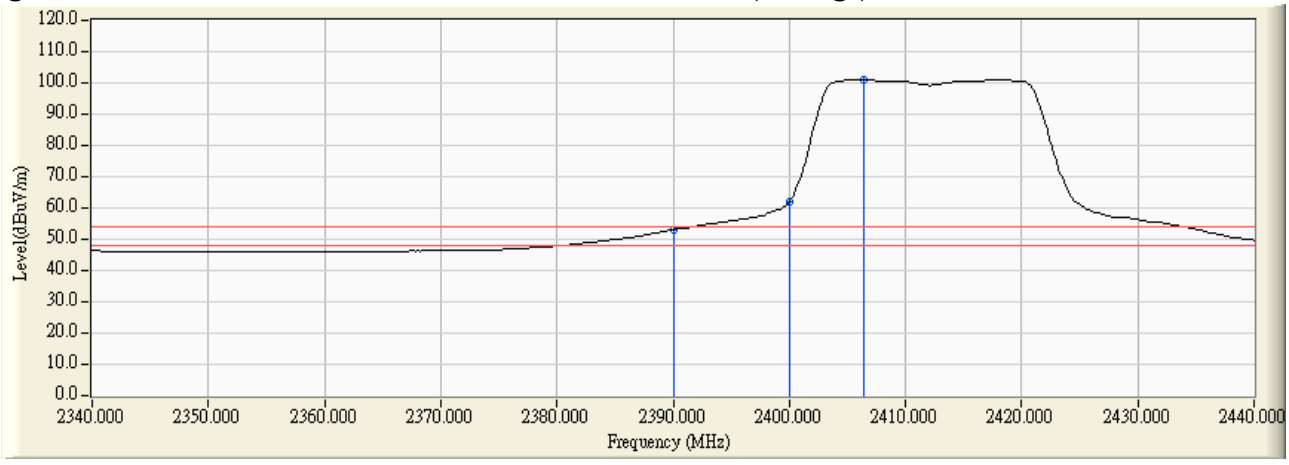


Figure Channel 01: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : FIELDBOOK
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11n-20BW_7.2Mbps(2.4G Band)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Arerage Limit (dBuV/m)	Result
01 (Peak)	2390.000	32.267	34.566	66.833	74.00	54.00	Pass
01 (Peak)	2400.000	32.241	49.119	81.360	--	--	--
01 (Peak)	2406.600	32.243	74.883	107.126	--	--	--
01 (Average)	2390.000	32.267	17.999	50.266	74.00	54.00	Pass
01 (Average)	2400.000	32.241	26.258	58.499	--	--	--
01 (Average)	2406.400	32.243	65.304	97.547	--	--	--

Figure Channel 01: Vertical (Peak)

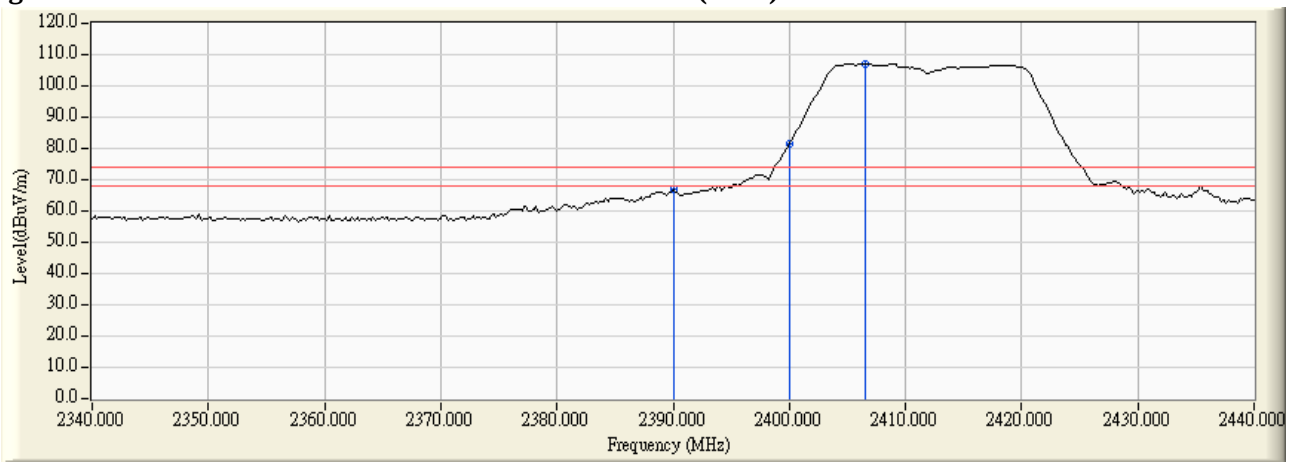
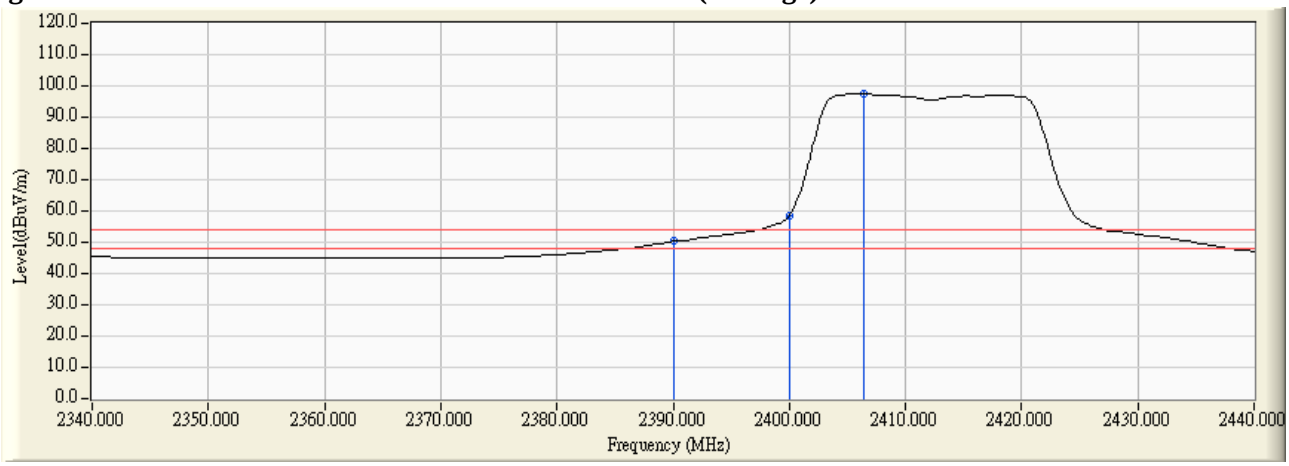


Figure Channel 01: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : FIELDBOOK
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11n-20BW_7.2Mbps(2.4G Band)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Arerage Limit (dBuV/m)	Result
11 (Peak)	2458.900	33.885	78.132	112.017	--	--	--
11 (Peak)	2483.500	33.951	34.221	68.171	74.00	54.00	Pass
11 (Peak)	2485.900	33.956	37.436	71.392	74.00	54.00	Pass
11 (Average)	2456.300	33.878	67.967	101.845	--	--	--
11 (Average)	2483.500	33.951	18.948	52.898	74.00	54.00	Pass

Figure Channel 11: Horizontal (Peak)

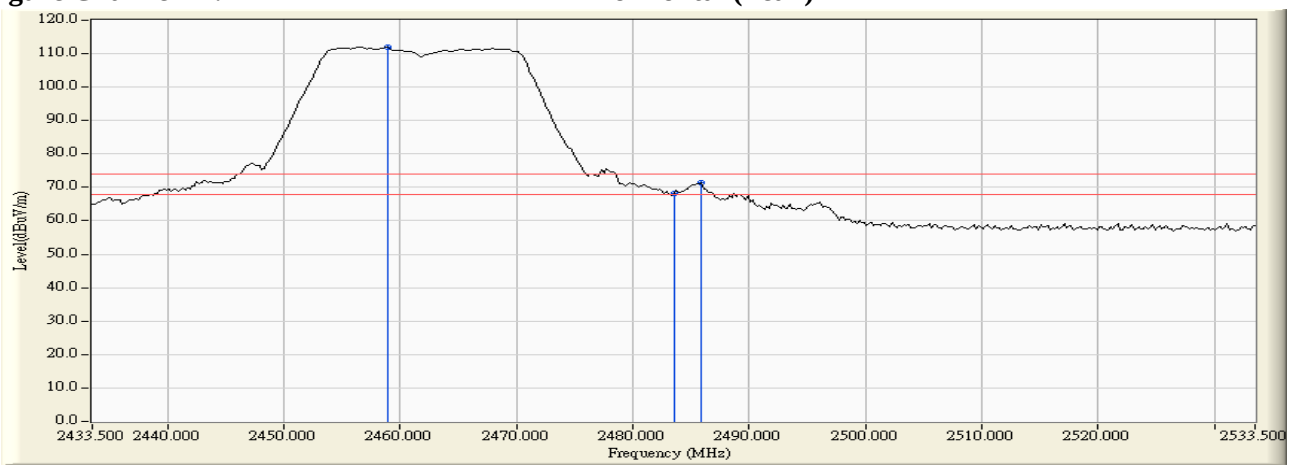
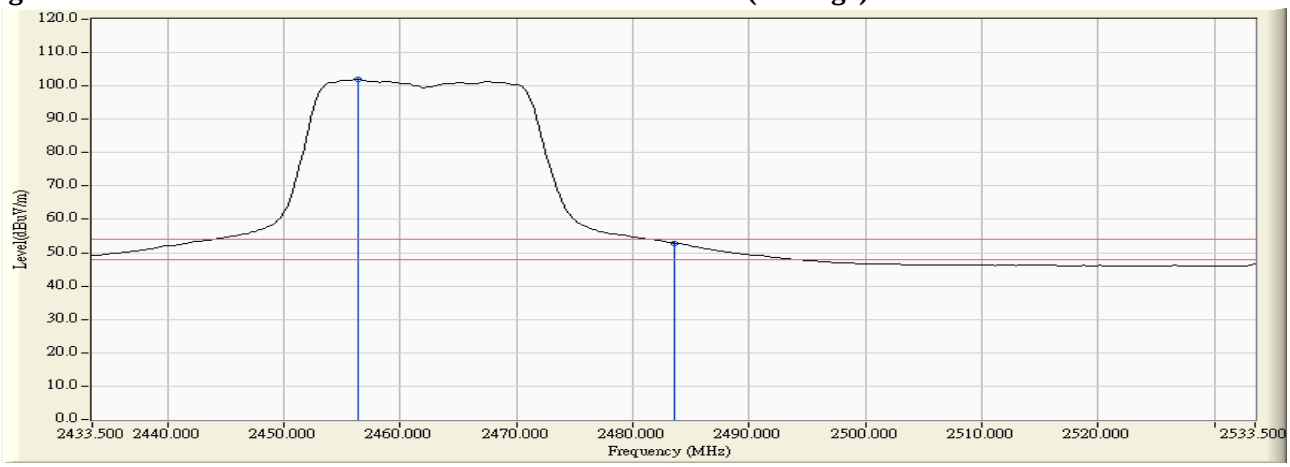


Figure Channel 11: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : FIELDBOOK
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11n-20BW_7.2Mbps(2.4G Band)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Arerage Limit (dBuV/m)	Result
11 (Peak)	2458.900	32.466	73.921	106.387	--	--	--
11 (Peak)	2483.500	32.586	31.488	64.073	74.00	54.00	Pass
11 (Peak)	2485.500	32.595	34.351	66.946	74.00	54.00	Pass
11 (Average)	2456.300	32.453	64.294	96.747	--	--	--
11 (Average)	2483.500	32.586	17.498	50.083	74.00	54.00	Pass

Figure Channel 11: Vertical (Peak)

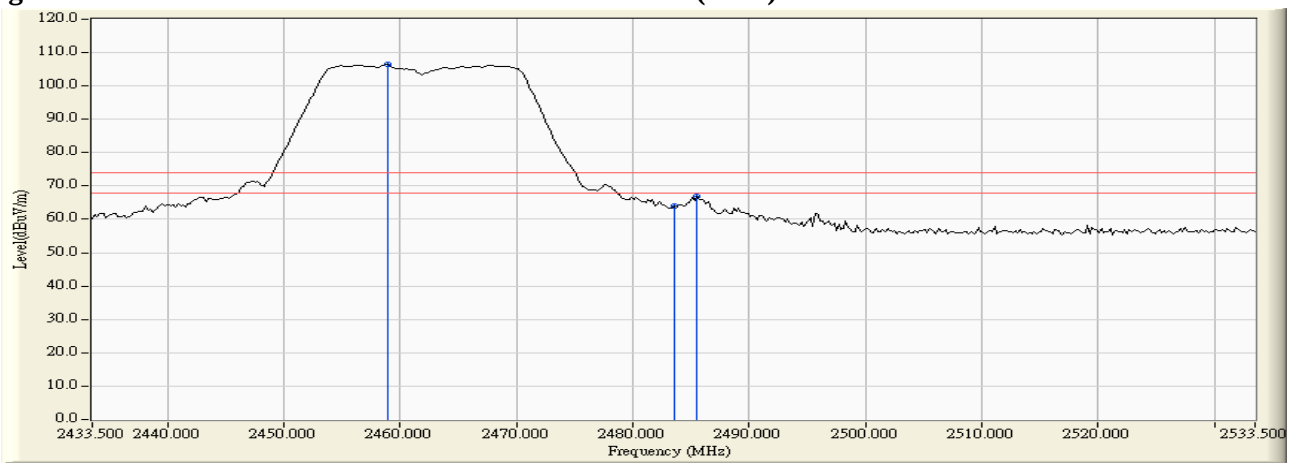
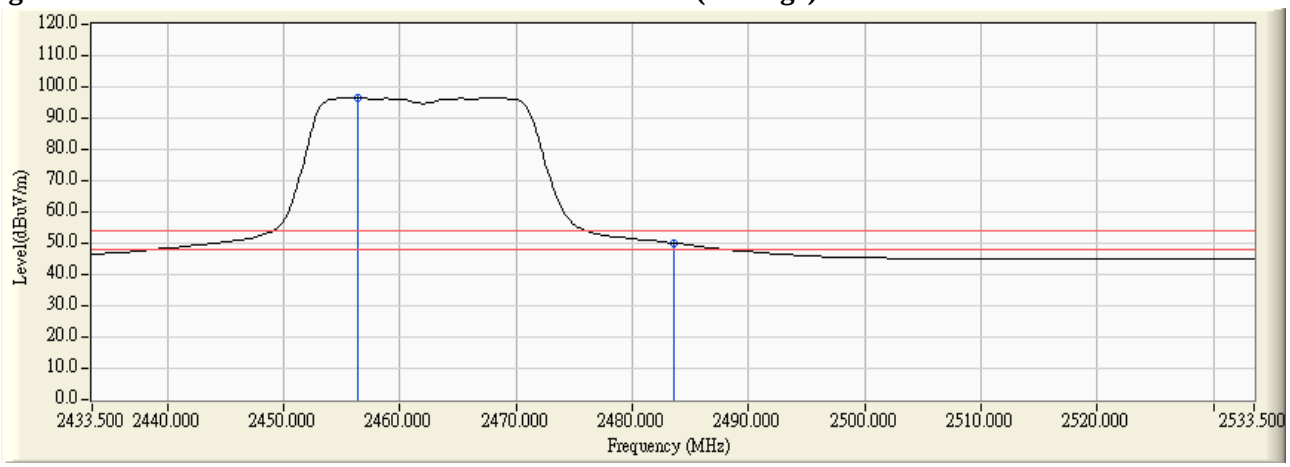


Figure Channel 11: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : FIELDBOOK
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 5: Transmit - 802.11n-40BW_15Mbps(2.4G Band)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Arerage Limit (dBuV/m)	Result
03 (Peak)	2386.200	33.735	36.473	70.209	74.00	54.00	Pass
03 (Peak)	2390.000	33.739	35.479	69.218	74.00	54.00	Pass
03 (Peak)	2400.000	33.752	52.421	86.172	--	--	--
03 (Peak)	2419.800	33.790	74.580	108.370	--	--	--
03 (Average)	2390.000	33.739	20.084	53.823	74.00	54.00	Pass
03 (Average)	2400.000	33.752	25.409	59.160	--	--	--
03 (Average)	2408.000	33.765	64.135	97.899	--	--	--

Figure Channel 03: Horizontal (Peak)

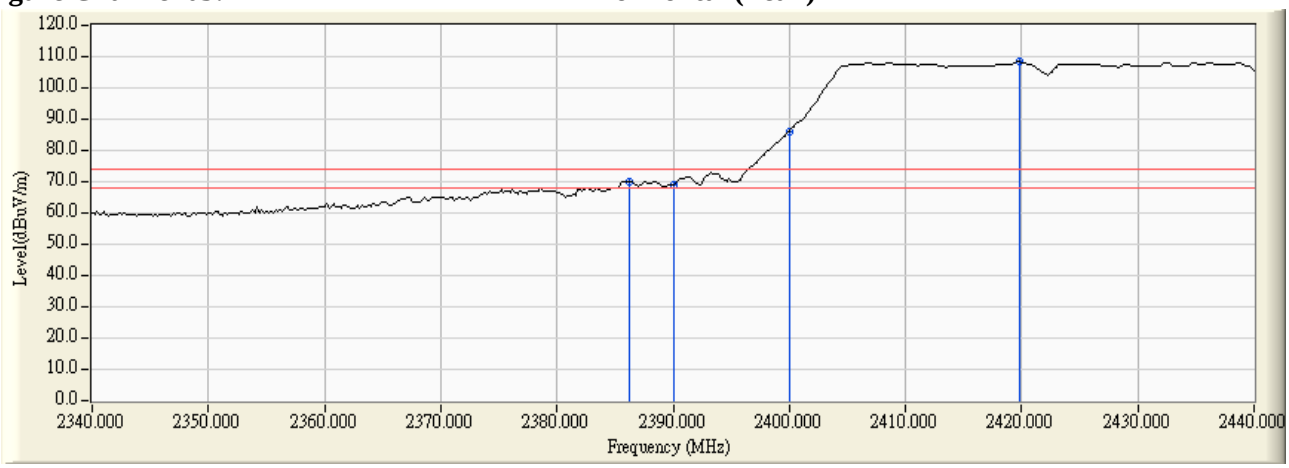
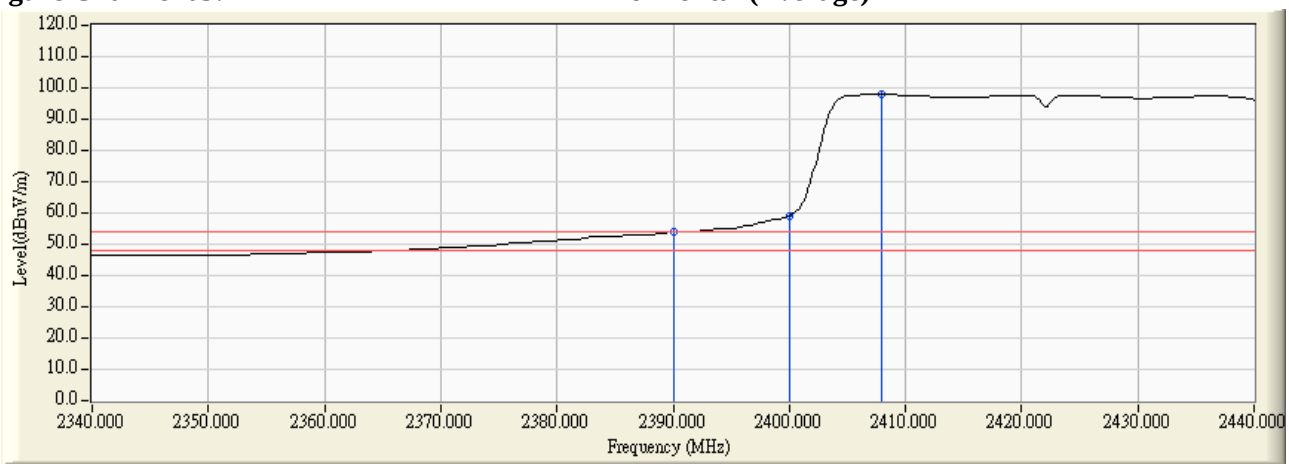


Figure Channel 03: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : FIELDBOOK
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 5: Transmit - 802.11n-40BW_15Mbps(2.4G Band)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Arerage Limit (dBuV/m)	Result
03 (Peak)	2386.000	32.295	33.508	65.803	74.00	54.00	Pass
03 (Peak)	2390.000	32.267	32.442	64.709	74.00	54.00	Pass
03 (Peak)	2400.000	32.241	49.823	82.064	--	--	--
03 (Peak)	2419.800	32.284	71.726	104.010	--	--	--
03 (Average)	2390.000	32.267	18.432	50.699	74.00	54.00	Pass
03 (Average)	2400.000	32.241	23.887	56.128	--	--	--
03 (Average)	2408.000	32.244	62.283	94.526	--	--	--

Figure Channel 03: Vertical (Peak)

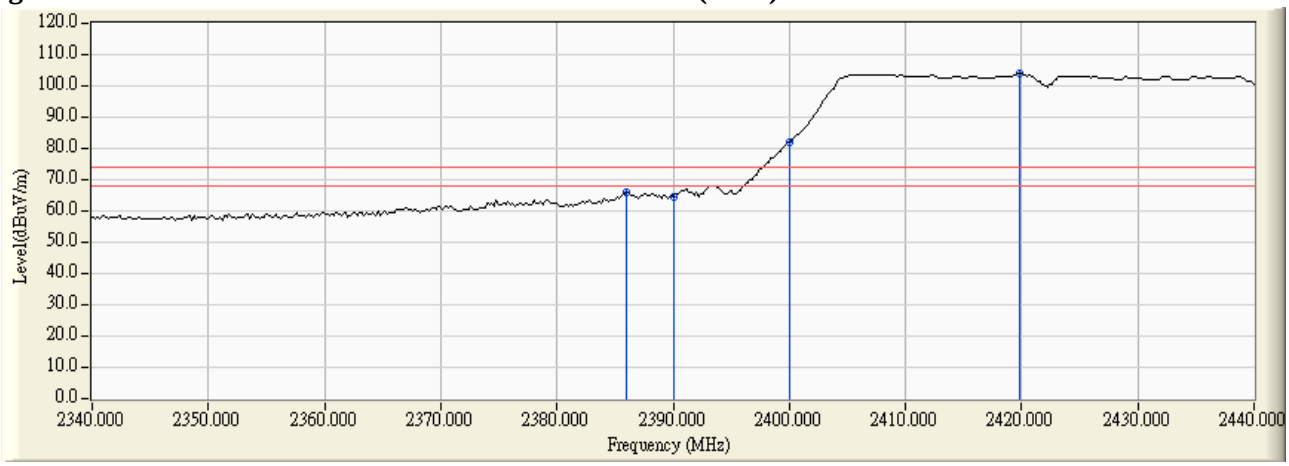
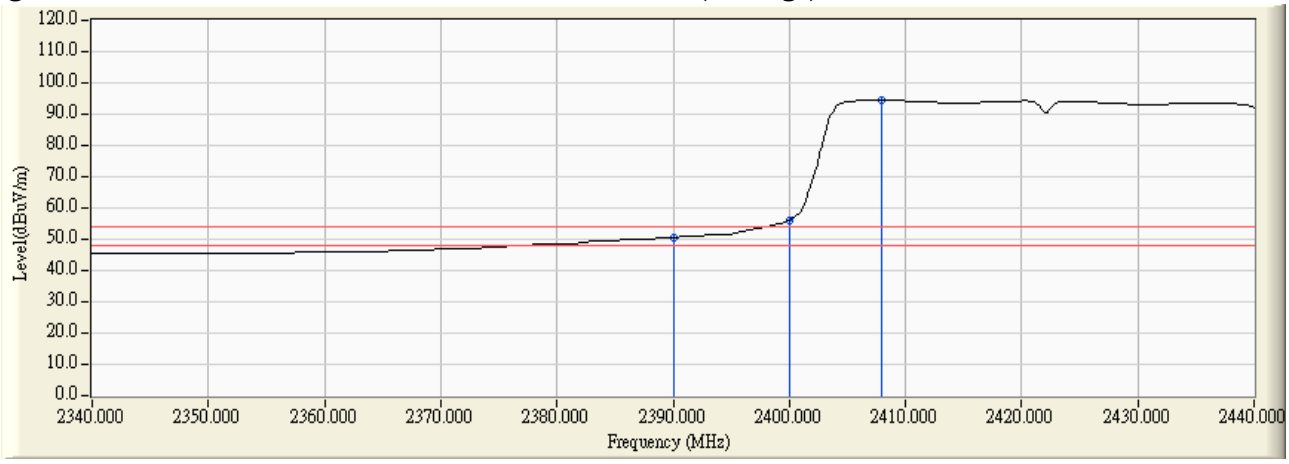


Figure Channel 03: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : FIELDBOOK
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 5: Transmit - 802.11n-40BW_15Mbps(2.4G Band)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Arerage Limit (dBuV/m)	Result
09 (Peak)	2449.700	33.861	74.893	108.754	--	--	--
09 (Peak)	2483.500	33.951	34.423	68.373	74.00	54.00	Pass
09 (Peak)	2488.500	33.964	35.203	69.166	74.00	54.00	Pass
09 (Average)	2450.100	33.862	63.968	97.830	--	--	--
09 (Average)	2483.500	33.951	19.961	53.911	74.00	54.00	Pass

Figure Channel 09: Horizontal (Peak)

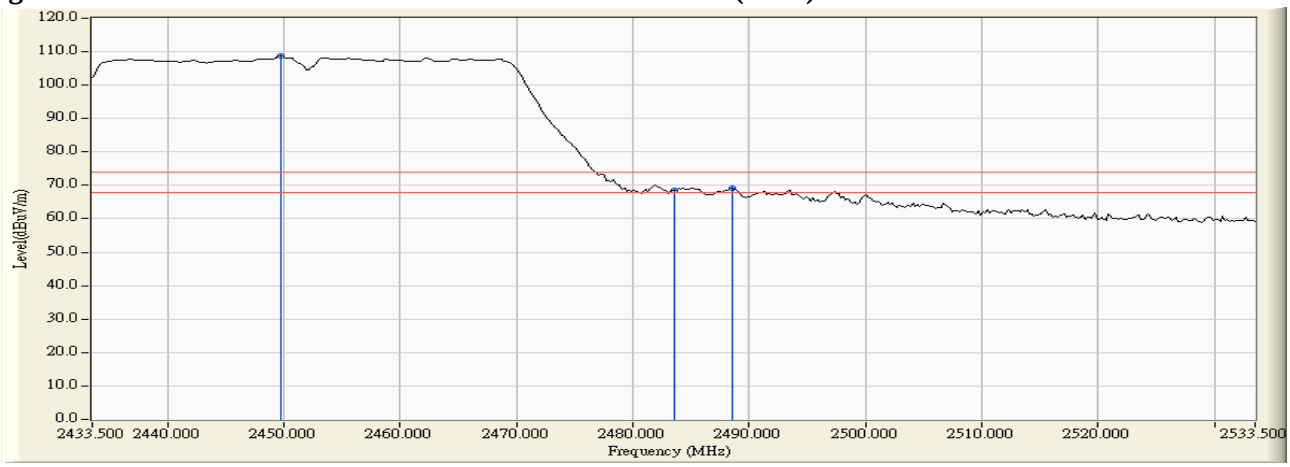
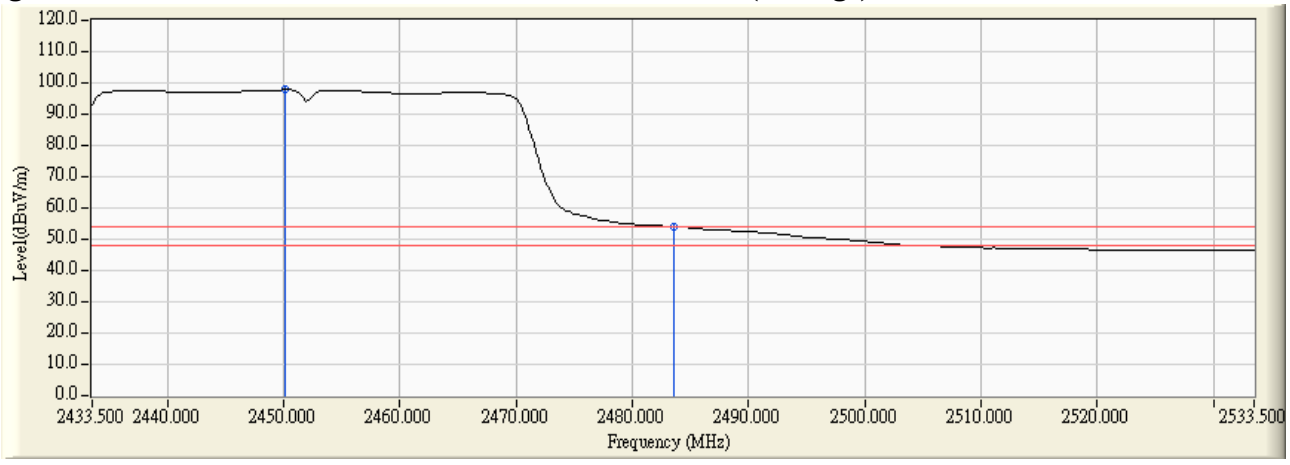


Figure Channel 09: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : FIELDBOOK
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 5: Transmit - 802.11n-40BW_15Mbps(2.4G Band)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Arerage Limit (dBuV/m)	Result
09 (Peak)	2449.700	32.421	70.508	102.929	--	--	--
09 (Peak)	2483.500	32.586	31.089	63.674	74.00	54.00	Pass
09 (Peak)	2488.300	32.608	32.104	64.712	74.00	54.00	Pass
09 (Average)	2437.100	32.362	60.895	93.257	--	--	--
09 (Average)	2483.500	32.586	17.451	50.036	74.00	54.00	Pass

Figure Channel 09: Vertical (Peak)

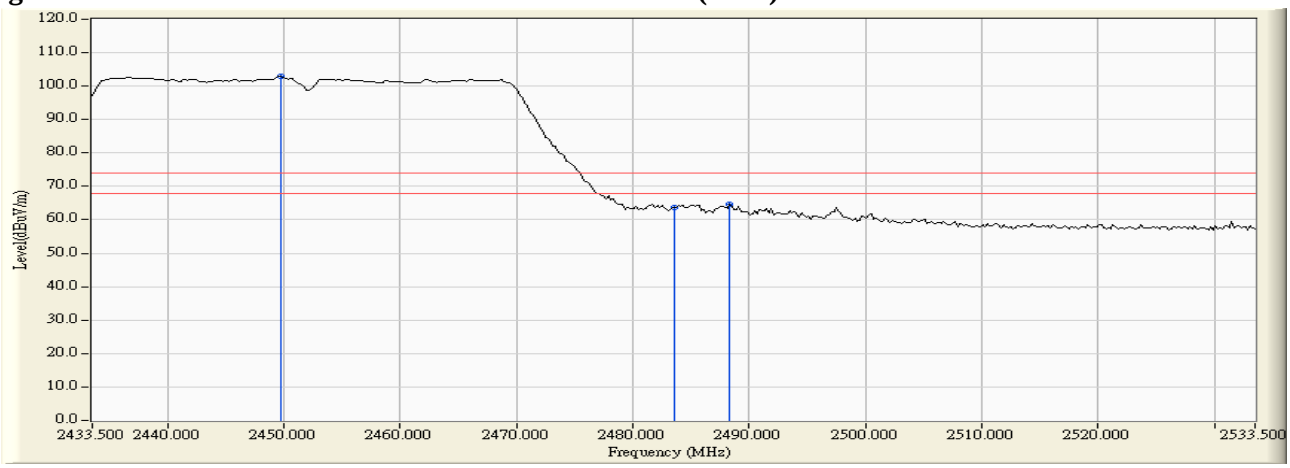
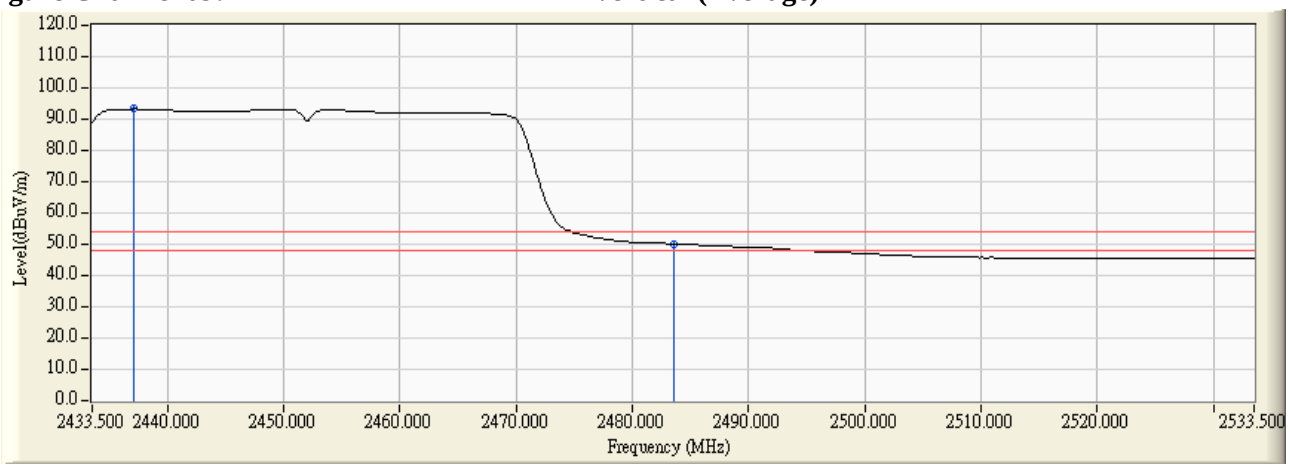


Figure Channel 09: Vertical (Average)

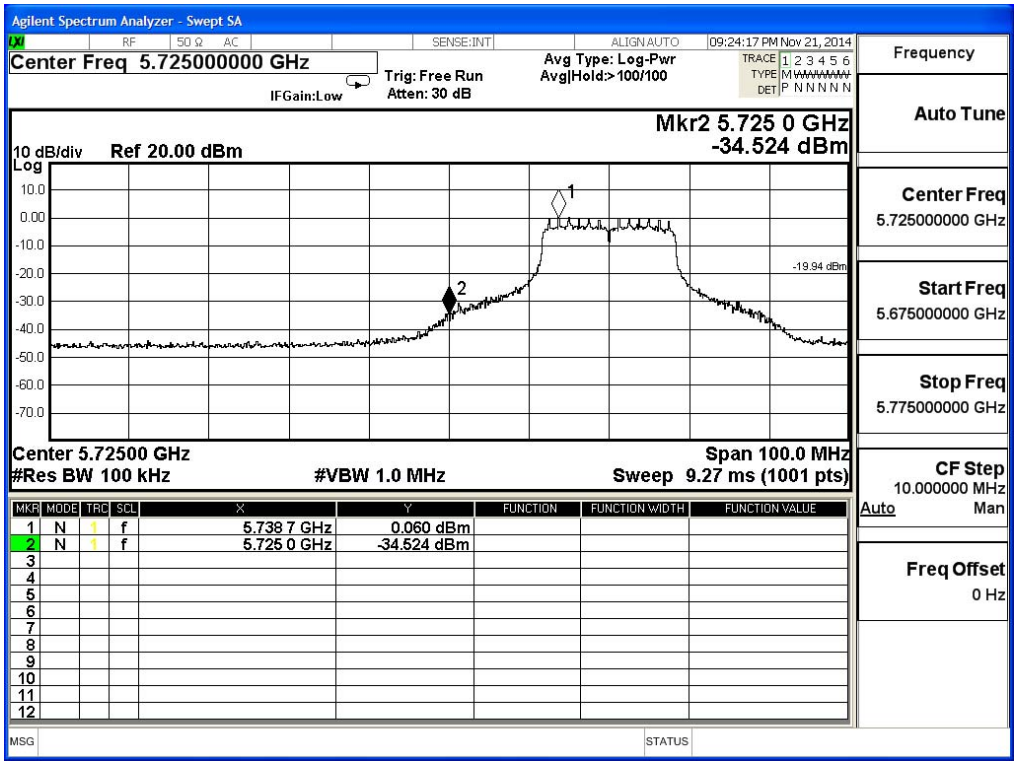


Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

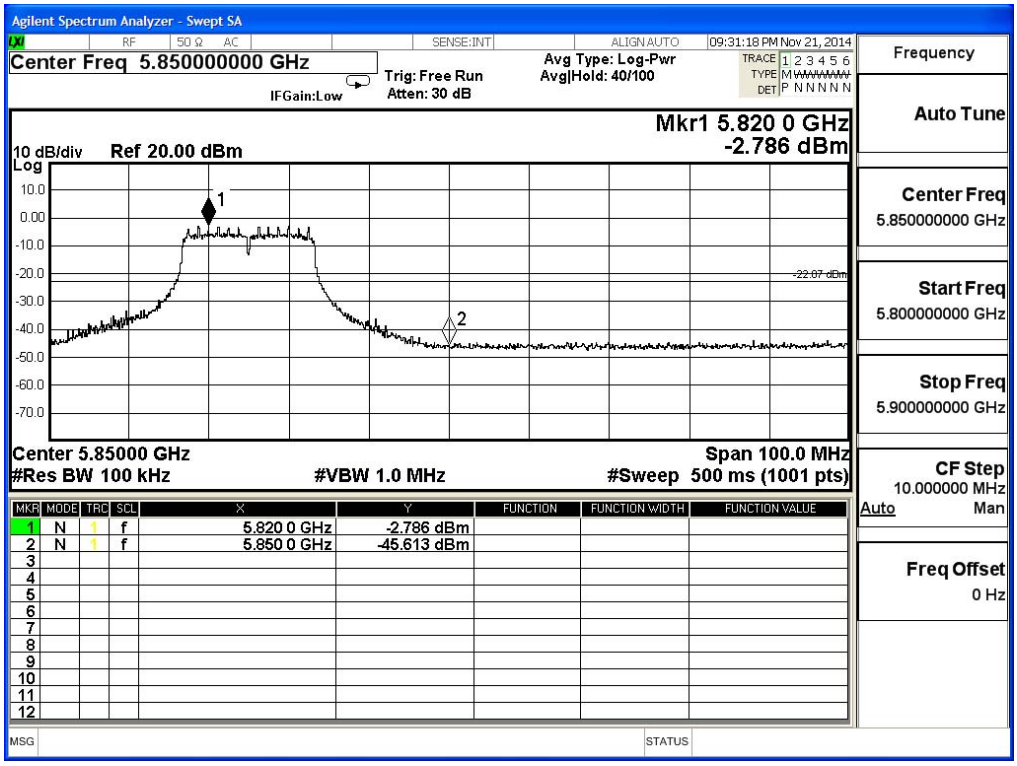
Product : FIELDBOOK
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit - 802.11a 6Mbps

Test Frequency (MHz)	Measurement Level Δ (dB)	Limit Δ (dB)	Result
5745	34.58	>20	PASS



Product : FIELDBOOK
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit - 802.11a 6Mbps

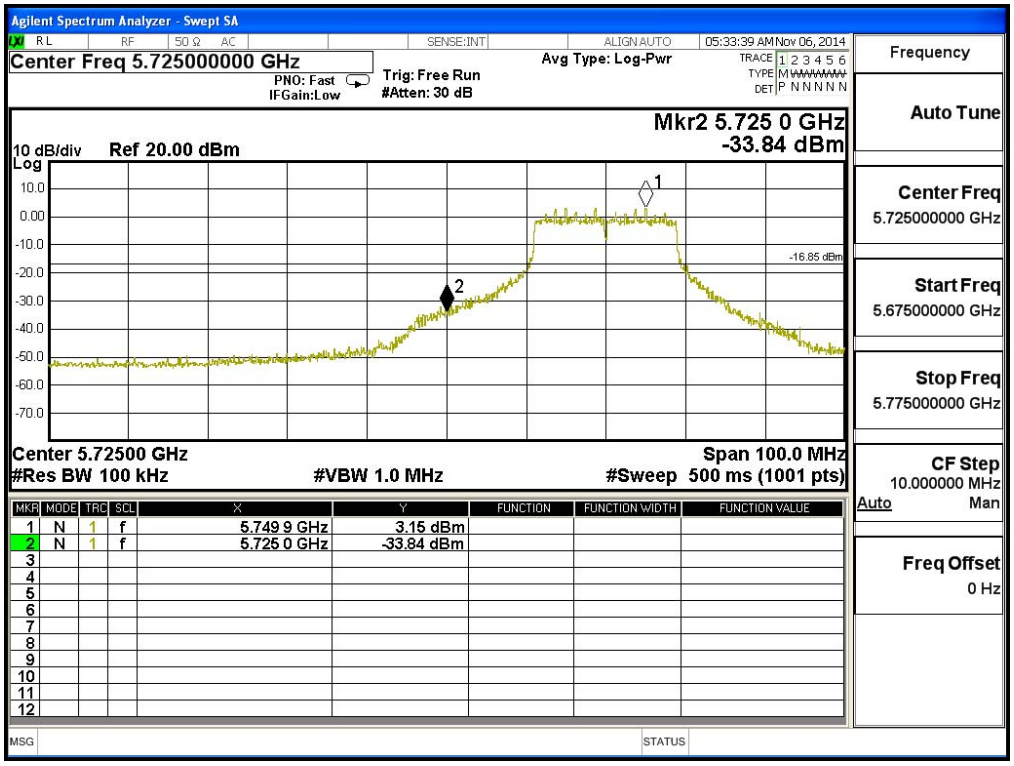
Test Frequency (MHz)	Measurement Level Δ (dB)	Limit Δ (dB)	Result
5825	42.83	>20	PASS



Product : FIELDBOOK
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 6: Transmit - 802.11n-20BW_7.2Mbps(5G Band)

Chain A

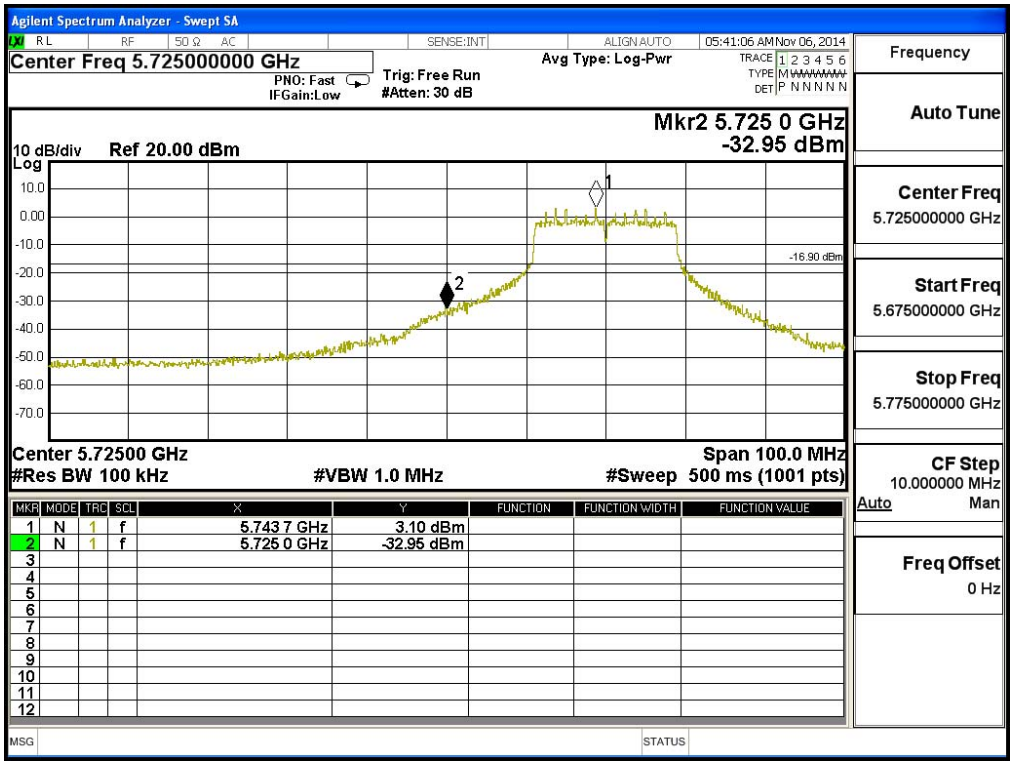
Test Frequency (MHz)	Measurement Level Δ (dB)	Limit Δ (dB)	Result
5745	36.99	>20	PASS



Product : FIELDBOOK
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 6: Transmit - 802.11n-20BW_7.2Mbps(5G Band)

Chain B

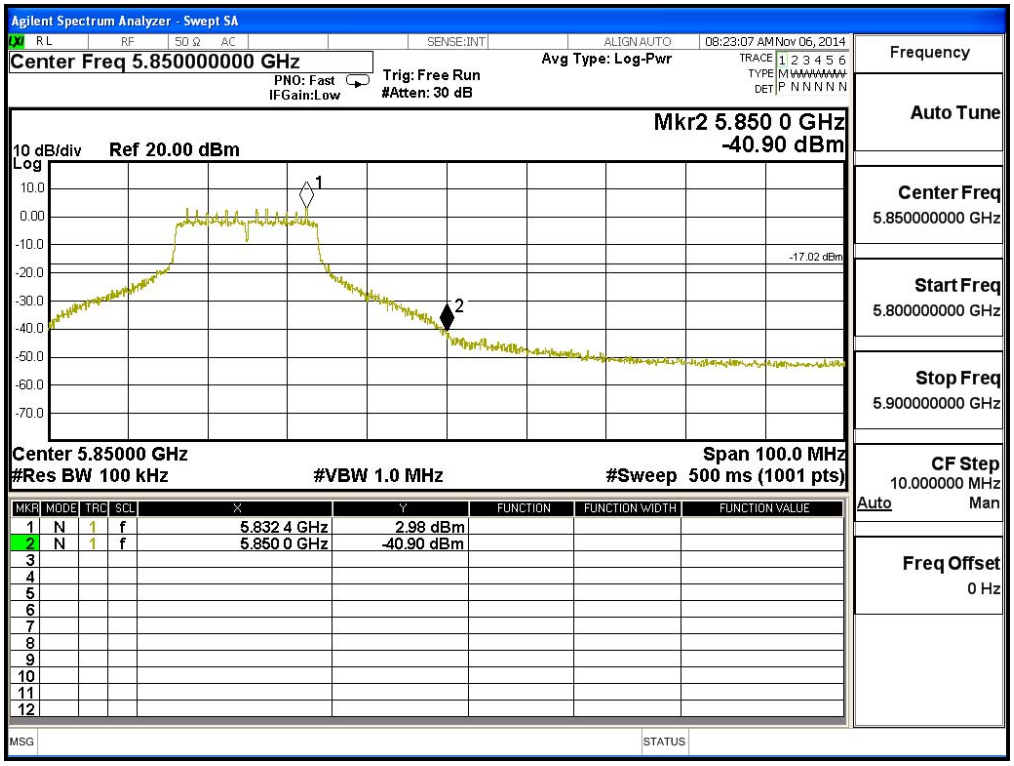
Test Frequency (MHz)	Measurement Level Δ (dB)	Limit Δ (dB)	Result
5745	36.05	>20	PASS



Product : FIELDBOOK
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 6: Transmit - 802.11n-20BW_7.2Mbps(5G Band)

Chain A

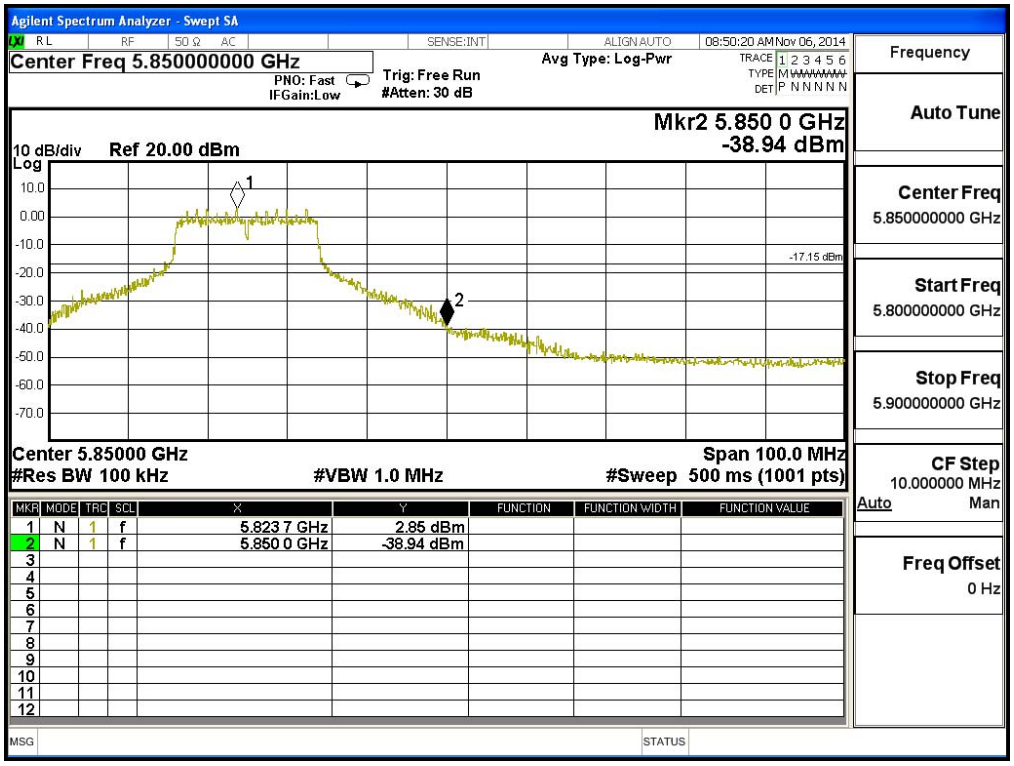
Test Frequency (MHz)	Measurement Level Δ (dB)	Limit Δ (dB)	Result
5825	43.88	>20	PASS



Product : FIELDBOOK
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 6: Transmit - 802.11n-20BW_7.2Mbps(5G Band)

Chain B

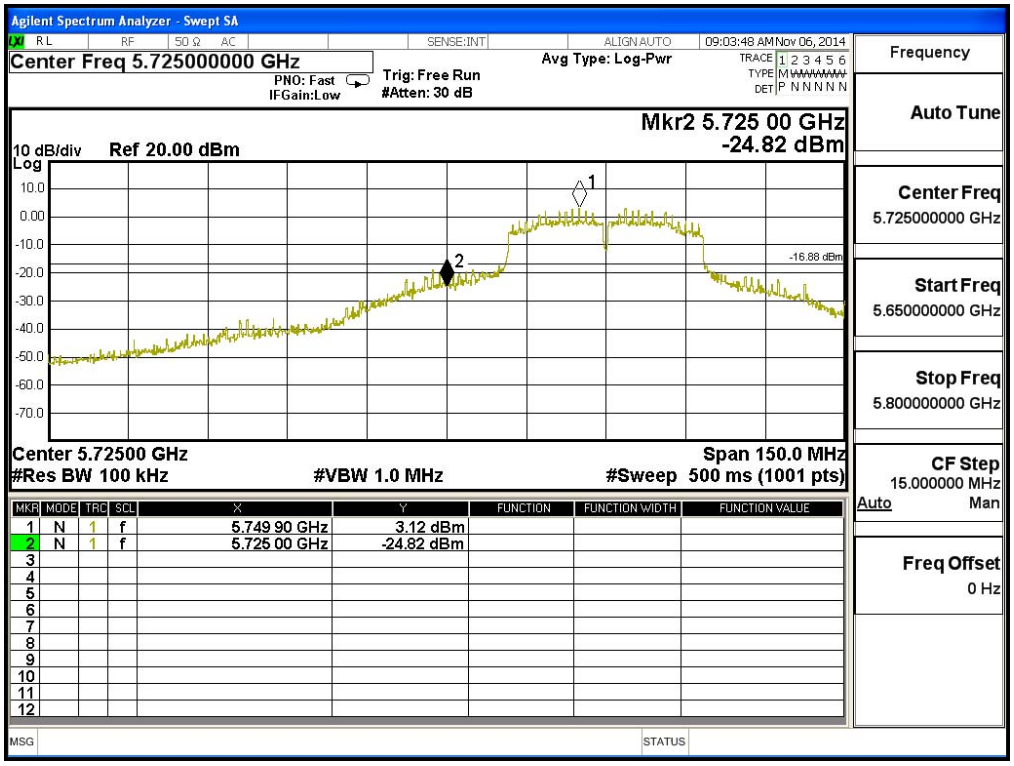
Test Frequency (MHz)	Measurement Level Δ (dB)	Limit Δ (dB)	Result
5825	41.79	>20	PASS



Product : FIELDBOOK
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 7: Transmit - 802.11n-40BW_15Mbps(5G Band)

Chain A

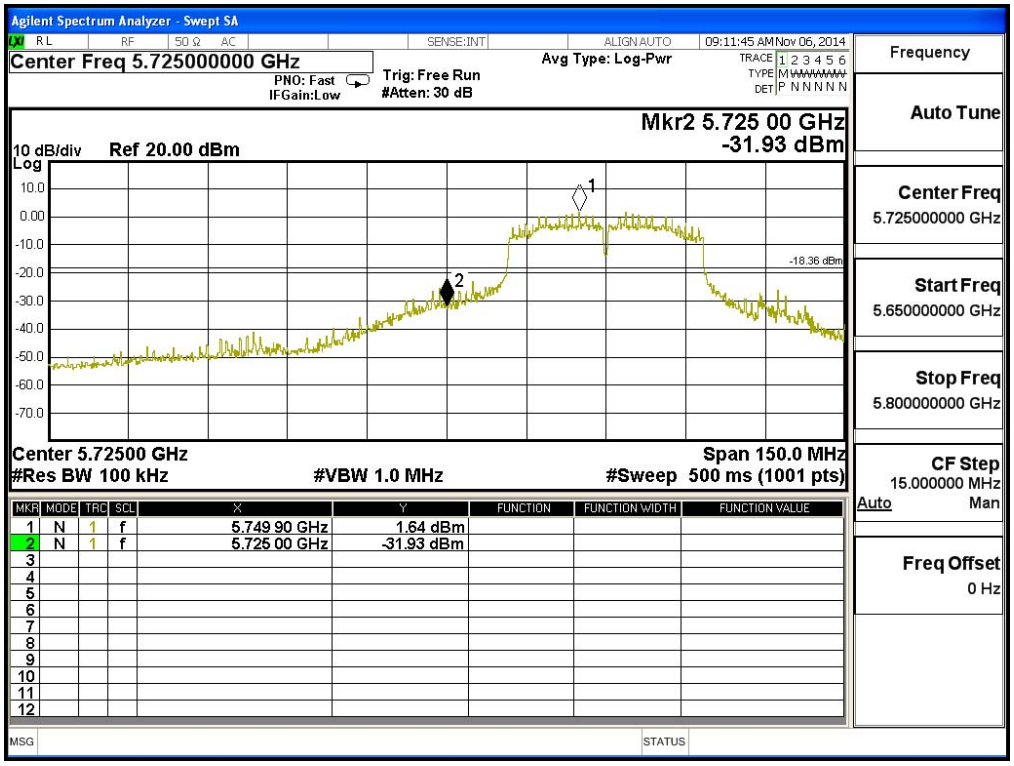
Test Frequency (MHz)	Measurement Level Δ (dB)	Limit Δ (dB)	Result
5755	27.94	>20	PASS



Product : FIELDBOOK
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 7: Transmit - 802.11n-40BW_15Mbps(5G Band)

Chain B

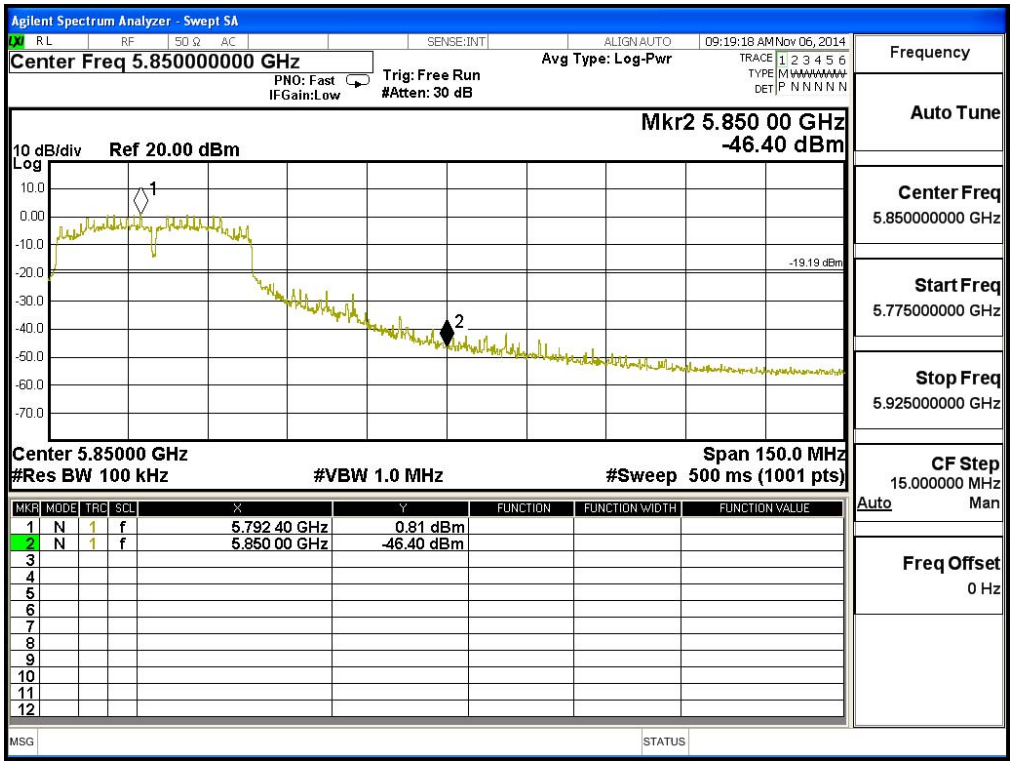
Test Frequency (MHz)	Measurement Level Δ (dB)	Limit Δ (dB)	Result
5755	33.57	>20	PASS



Product : FIELDBOOK
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 7: Transmit - 802.11n-40BW_15Mbps(5G Band)

Chain A

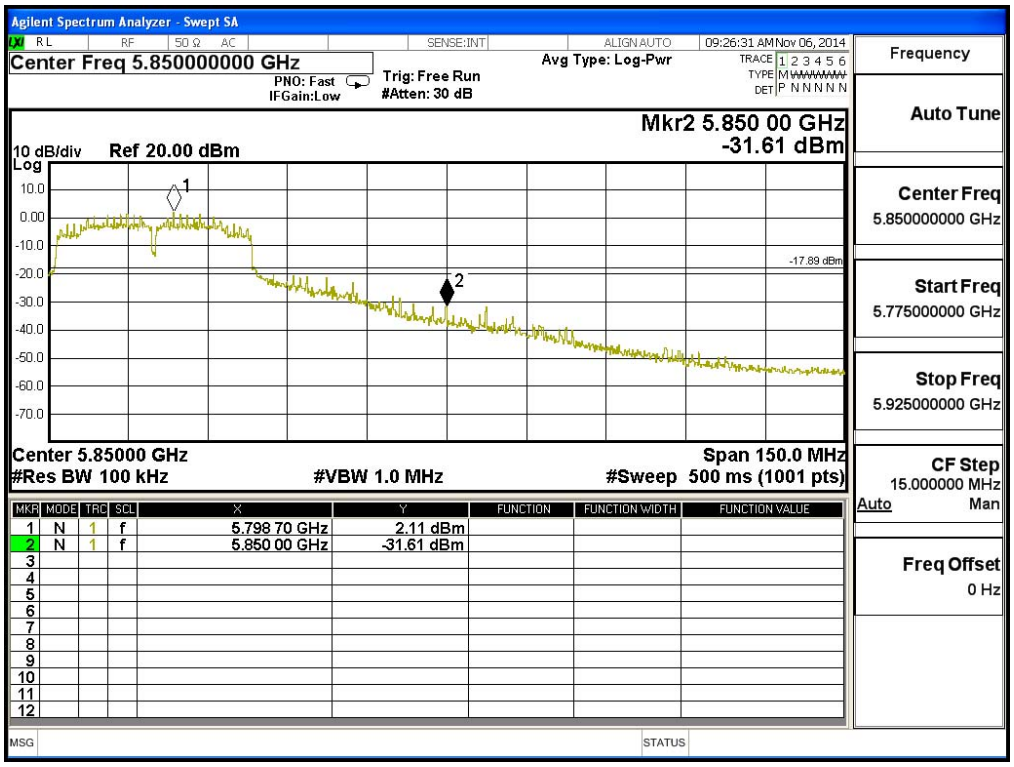
Test Frequency (MHz)	Measurement Level Δ (dB)	Limit Δ (dB)	Result
5795	47.21	>20	PASS



Product : FIELDBOOK
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 7: Transmit - 802.11n-40BW_15Mbps(5G Band)

Chain B

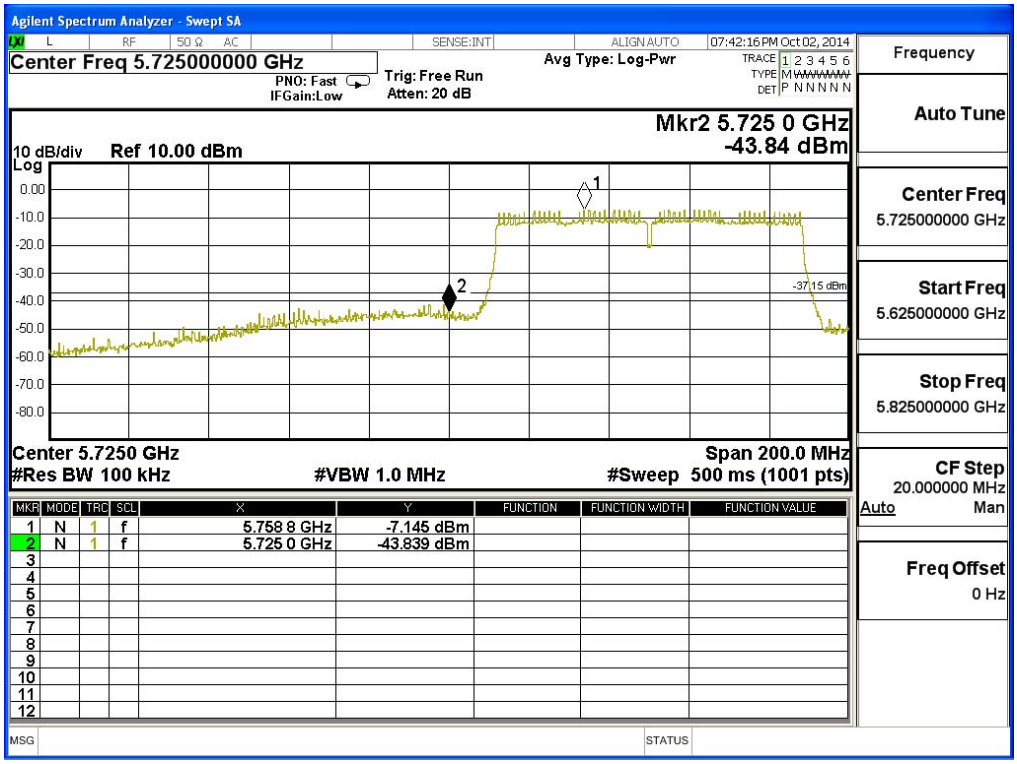
Test Frequency (MHz)	Measurement Level Δ (dB)	Limit Δ (dB)	Result
5795	33.72	>20	PASS



Product : FIELDBOOK
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 8: Transmit - 802.11ac-80BW_32.5Mbps(5G Band)

Chain A

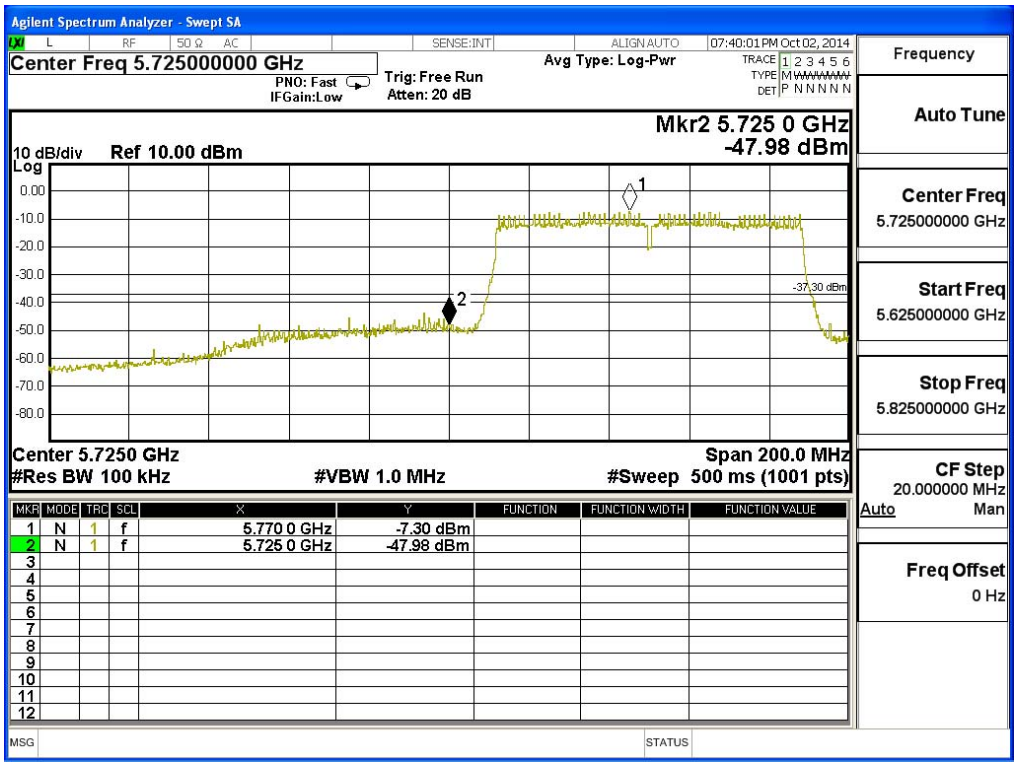
Test Frequency (MHz)	Measurement Level Δ (dB)	Limit Δ (dB)	Result
5775	50.984	>30	PASS



Product : FIELDBOOK
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 8: Transmit - 802.11ac-80BW_32.5Mbps(5G Band)

Chain B

Test Frequency (MHz)	Measurement Level Δ (dB)	Limit Δ (dB)	Result
5775	40.68	>30	PASS



7. Occupied Bandwidth

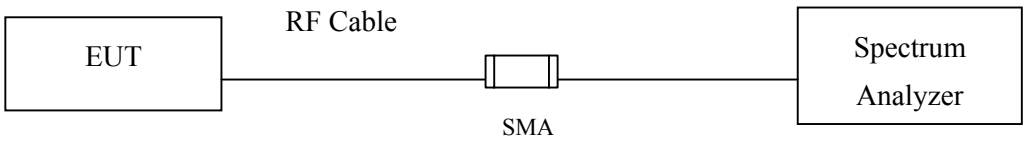
7.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2014
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2014
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2014

Note:

1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with "X" are used to measure the final test results.

7.2. Test Setup



7.3. Limits

The minimum bandwidth shall be at least 500 kHz.

7.4. Test Procedure

The EUT was setup according to ANSI C63.10, 2009; tested according to DTS test procedure of KDB558074 for compliance to FCC 47CFR 15.247 requirements.

7.5. Uncertainty

± 150Hz