FCC Test Report

FCC ID	:	**P27RC8510A**
Equipment	:	**Indoor Full HD Wi-Fi Camera**
Model No.	:	**RC8510A**
Brand Name	:	**Sercomm**
Multiple Listing	:	**Refer to item 1.1.1 for more details**
Applicant	:	**Sercomm Corporation**
Address	:	**8F, No. 3-1, YuanQu St., NanKang, Taipei 115, Taiwan, R.O.C.**
Standard	:	**47 CFR FCC Part 15.247**
Received Date	:	**Jul. 17, 2017**
Tested Date	:	**Jul. 26 ~ Sep. 08, 2017**

We, International Certification Corp., would like to declare that the tested sample has been evaluated and in compliance with the requirement of the above standards. The test results contained in this report refer exclusively to the product. It may be duplicated completely for legal use with the approval of the applicant. It shall not be reproduced except in full without the written approval of our laboratory.

Reviewed by: **Approved by:**

Along Chen / Assistant Manager **Gary Chang / Manager**

Testing Laboratory 2732

Table of Contents

Release Record

Report No.	Version	Description	Issued Date
FR771705	Rev. 01	Initial issue	Oct. 26, 2017

Summary of Test Results

FCC Rules	Test Items	Measured	Result
15.207	Conducted Emissions	[dBuV]: 0.515MHz 38.77 (Margin -7.23dB) - AV	Pass
15.247(d) 15.209	Radiated Emissions	[dBuV/m at 3m]: 4924.00MHz 53.36 (Margin -0.64dB) - AV	Pass
15.247(b)(3)	Maximum Output Power	Max Power [dBm]: 28.31	Pass
15.247(a)(2)	6dB Bandwidth	Meet the requirement of limit	Pass
15.247(e)	Power Spectral Density	Meet the requirement of limit	Pass
15.203	Antenna Requirement	Meet the requirement of limit	Pass

1 General Description

1.1 Information

1.1.1 Product Details

The following models are provided to this EUT.

Brand Name	Model Name	Product Name	Description
Sercomm, ROC Connect	RC8510Axxxxxxxx	Indoor Full HD Wi-Fi Camera	RC8510A: 1080p, support micro-SD card RC8510: 1080p, support micro-SD card, w/o speaker.
	RC8510xxxxxxxx		
MiOS, Ltd.	VistaCam 701xxxxx		Sames as model RC8510A. For marking purpose
Sercomm, ROC Connect	RC8310Axxxxxxxx	Indoor HD Wi-Fi Camera	RC8310A: 720p, w/o micro-SD card RC8310: 720p, w/o micro-SD card, w/o speaker.
	RC8310xxxxxxxx		
✦ the 1st x should be "blank" or "-"; the rest x could be 0 to 9, A to Z, a to z, "blank" or "-" , for marketing purpose.			

1.1.2 Specification of the Equipment under Test (EUT)

RF General Information					
Frequency Range (MHz)	**IEEE Std. 802.11**	**Ch. Freq. (MHz)**	**Channel Number**	**Transmit Chains (N_{TX})**	**Data Rate / MCS**
2400-2483.5	b	2412-2462	1-11 [11]	2	1-11 Mbps
2400-2483.5	g	2412-2462	1-11 [11]	2	6-54 Mbps
2400-2483.5	n (HT20)	2412-2462	1-11 [11]	2	MCS 0-15
2400-2483.5	n (HT40)	2422-2452	3-9 [7]	2	MCS 0-15
Note 1: RF output power specifies that Maximum Peak Conducted Output Power. Note 2: 802.11b uses a combination of DSSS-DBPSK, DQPSK, CCK modulation. Note 3: 802.11g/n uses a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.					

1.1.3 Antenna Details

Ant. No.	Model	Type	Gain (dBi)	Connector
1	ANT1	PCB	1.98	N/A
2	ANT2	PCB	1.56	N/A

1.1.4 Power Supply Type of Equipment under Test (EUT)

Power Supply Type	5Vdc from adapter

1.1.5 Accessories

Accessories		
No.	**Equipment**	**Description**
1	AC adapter	Brand Name: LUCENT TRANS Model Name: ONC16WI005 Power Rating: I/P: 100-240Vac, 50-60Hz, 0.2A O/P: 5Vdc, 1A DC 1.5m non-shielded cable without core
2	AC adapter	Brand Name: JIANGSU CHENYANG ELECTRON Co.LTD Model Name: CYSE12-050100U Power Rating: I/P: 100-240Vac, 50-60Hz, 0.35A Max O/P: 5Vdc, 1A DC 1.51m non-shielded cable without core

1.1.6 Channel List

Frequency band (MHz)		2400~2483.5	
802.11 b / g / n HT20		802.11n HT40	
Channel	**Frequency(MHz)**	**Channel**	**Frequency(MHz)**
1	2412	3	2422
2	2417	4	2427
3	2422	5	2432
4	2427	6	2437
5	2432	7	2442
6	2437	8	2447
7	2442	9	2452
8	2447	---	---
9	2452	---	---
10	2457	---	---
11	2462	---	---

1.1.7 Test Tool and Duty Cycle

Test Tool	QATool_Dbg, V0.0.1.76		
Duty Cycle and Duty Factor	Mode	Duty cycle (%)	Duty factor (dB)
	11b	99.30%	0.03
	11g	93.85%	0.28
	HT20	92.72%	0.33
	HT40	87.70%	0.57

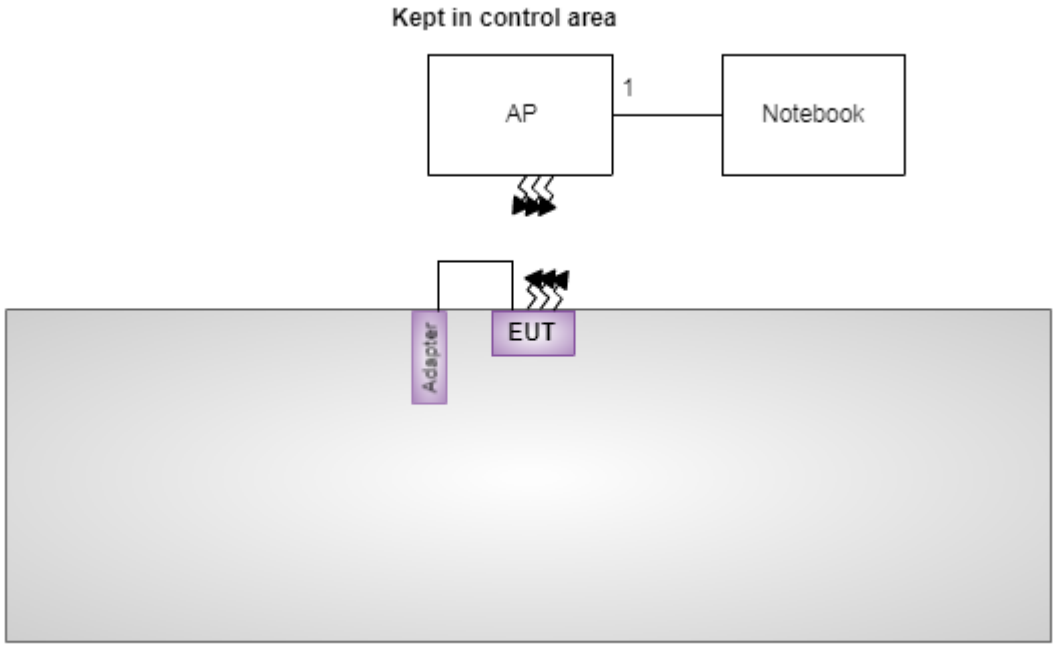
1.1.8 Power Setting

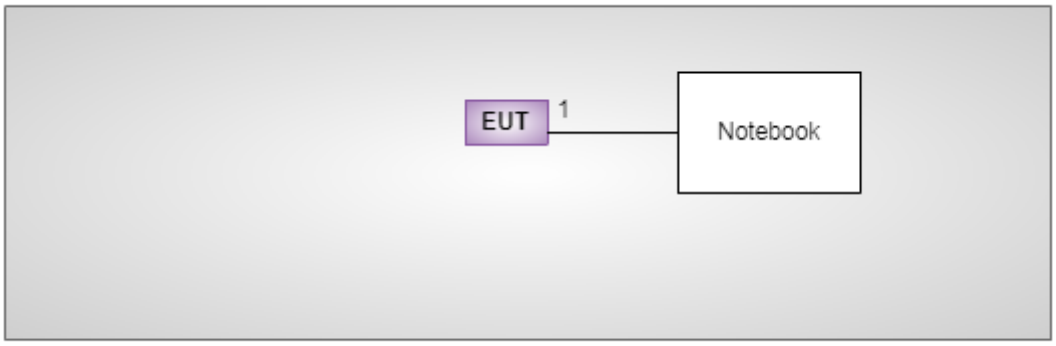
Modulation Mode	Test Frequency (MHz)	Power Set
11b	2412	1C
11b	2437	20
11b	2462	22
11g	2412	28
11g	2437	2B
11g	2462	21
HT20	2412	24
HT20	2437	2B
HT20	2462	1E
HT40	2422	1F
HT40	2437	23
HT40	2452	1A

1.2 Local Support Equipment List

Support Equipment List					
No.	Equipment	Brand	Model	FCC ID	Signal cable / Length (m)
1	Notebook	DELL	Latitude E6430	DoC	RJ45, 1m non-shielded.
2	Notebook	DELL	Latitude E5420	DoC	USB, 1m shielded.
2	AP	belkin	F9K1117V2	---	---

1.3 Test Setup Chart

Test Setup Diagram (Adapter mode)
 1. RJ45, 1m non-shielded.

Test Setup Diagram (USB mode)
 1. USB, 1m shielded.

1.4 The Equipment List

Test Item	Conducted Emission				
Test Site	Conduction room 1 / (CO01-WS)				
Tested Date	Sep. 05, 2017				
Instrument	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
Receiver	R&S	ESR3	101657	Dec. 21, 2016	Dec. 20, 2017
LISN	SCHWARZBECK	Schwarzbeck 8127	8127-667	Nov. 08, 2016	Nov. 07, 2017
RF Cable-CON	EMC	EMCCFD300-BM-BM-6000	50821	Dec. 20, 2016	Dec. 19, 2017
Measurement Software	AUDIX	e3	6.120210k	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

Test Item	Radiated Emission				
Test Site	966 chamber1 / (03CH01-WS)				
Tested Date	Jul. 26 ~ Jul. 27, 2017				
Instrument	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
Spectrum Analyzer	R&S	FSV40	101498	Nov. 25, 2016	Nov. 24, 2017
Receiver	R&S	ESR3	101658	Nov. 24, 2016	Nov. 23, 2017
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-522	Aug. 04, 2016	Aug. 03, 2017
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1096	Dec. 21, 2016	Dec. 20, 2017
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Oct. 25, 2016	Oct. 24, 2017
Loop Antenna	R&S	HFH2-Z2	100330	Nov. 10, 2016	Nov. 09, 2017
Loop Antenna	R&S	HFH2-Z2	100330	Nov. 10, 2016	Nov. 09, 2017
Preamplifier	EMC	EMC02325	980225	Aug. 05, 2016	Aug. 04, 2017
Preamplifier	Agilent	83017A	MY39501308	Oct. 06, 2016	Oct. 05, 2017
Preamplifier	EMC	EMC184045B	980192	Aug. 24, 2016	Aug. 23, 2017
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16014/4	Dec. 09, 2016	Dec. 08, 2017
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16019/4	Dec. 09, 2016	Dec. 08, 2017
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16139/4	Dec. 09, 2016	Dec. 08, 2017
LF cable 1M	EMC	EMCCFD400-NM-NM-1000	16052	Dec. 09, 2016	Dec. 08, 2017
LF cable 3M	Woken	CFD400NL-LW	CFD400NL-001	Dec. 09, 2016	Dec. 08, 2017
LF cable 10M	Woken	CFD400NL-LW	CFD400NL-002	Dec. 09, 2016	Dec. 08, 2017
Measurement Software	AUDIX	e3	6.120210g	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

Test Item	Radiated Emission				
Test Site	966 chamber1 / (03CH01-WS)				
Tested Date	Sep. 04, 2017				
Instrument	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
Spectrum Analyzer	R&S	FSV40	101498	Nov. 25, 2016	Nov. 24, 2017
Receiver	R&S	ESR3	101658	Nov. 24, 2016	Nov. 23, 2017
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-522	Jul. 25, 2017	Jul. 24, 2018
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1096	Dec. 21, 2016	Dec. 20, 2017
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Oct. 25, 2016	Oct. 24, 2017
Loop Antenna	R&S	HFH2-Z2	100330	Nov. 10, 2016	Nov. 09, 2017
Loop Antenna Cable	KOAX KABEL	101354-BW	101354-BW	Dec. 09, 2016	Dec. 08, 2017
Preamplifier	EMC	EMC02325	980225	Jul. 28, 2017	Jul. 27, 2018
Preamplifier	Agilent	83017A	MY39501308	Oct. 06, 2016	Oct. 05, 2017
Preamplifier	EMC	EMC184045B	980192	Aug. 22, 2017	Aug. 21, 2018
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16014/4	Dec. 09, 2016	Dec. 08, 2017
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16019/4	Dec. 09, 2016	Dec. 08, 2017
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16139/4	Dec. 09, 2016	Dec. 08, 2017
LF cable 1M	EMC	EMCCFD400-NM-NM-1000	16052	Dec. 09, 2016	Dec. 08, 2017
LF cable 3M	Woken	CFD400NL-LW	CFD400NL-001	Dec. 09, 2016	Dec. 08, 2017
LF cable 10M	Woken	CFD400NL-LW	CFD400NL-002	Dec. 09, 2016	Dec. 08, 2017
Measurement Software	AUDIX	e3	6.120210g	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

Test Item	RF Conducted				
Test Site	(TH01-WS)				
Tested Date	Sep. 08, 2017				
Instrument	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
Spectrum Analyzer	R&S	FSV40	101063	Mar. 15, 2017	Mar. 14, 2018
Power Meter	Anritsu	ML2495A	1241002	Oct. 06, 2016	Oct. 05, 2017
Power Sensor	Anritsu	MA2411B	1207366	Oct. 06, 2016	Oct. 05, 2017
AC POWER SOURCE	APC	AFC-500W	F312060012	Oct. 28, 2016	Oct. 27, 2017
Measurement Software	Sporton	Sporton_1	1.3.30	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

1.5 Test Standards

According to the specification of EUT, the EUT must comply with following standards and KDB documents.

47 CFR FCC Part 15.247
ANSI C63.10-2013
FCC KDB 558074 D01 DTS Meas Guidance v04
FCC KDB 662911 D01 Multiple Transmitter Output v02r01

1.6 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2)

Measurement Uncertainty	
Parameters	**Uncertainty**
Bandwidth	±34.134 Hz
Conducted power	±0.808 dB
Power density	±0.463 dB
Conducted emission	±2.670 dB
AC conducted emission	±2.90 dB
Radiated emission ≤ 1GHz	±3.66 dB
Radiated emission > 1GHz	±5.63 dB

2 Test Configuration

2.1 Testing Condition

Test Item	Test Site	Ambient Condition	Tested By
AC Conduction	CO01-WS	26°C / 60%	Howard Huang
Radiated Emissions	03CH01-WS	24-25°C / 66%	Aska Huang Brad Wu
RF Conducted	TH01-WS	24°C / 64%	Brad Wu

- FCC Designation No.: TW2732
- FCC site registration No.: 181692
- IC site registration No.: 10807A-1

2.2 The Worst Test Modes and Channel Details

Test item	Modulation Mode	Test Frequency (MHz)	Data Rate	Test Configuration
Conducted Emissions	HT20	2437	6 Mbps	1, 2
Radiated Emissions ≤1GHz	HT20	2437	6 Mbps	1, 2
Radiated Emissions >1GHz	11b 11g HT20 HT40	2412 / 2437 / 2462 2412 / 2437 / 2462 2412 / 2437 / 2462 2422 / 2437 / 2452	1 Mbps 6 Mbps MCS 0 MCS 0	2
Maximum Output Power 6dB bandwidth Power spectral density				1

NOTE:
1. The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement – X, Y, and Z-plane. The **Y-plane** results were found as the worst case and were shown in this report.
2. Adapter ONC16WI005 and CYSE12-050100U had been covered during the pretest. The worst adapter is ONC16WI005, therefore the following test results came out from this.
3. Model RC8510A, RC8510, RC8310A and RC8310 had been covered during the pretest. The worst model is RC8510A, therefore the following test results came out from this.
4. Test configurations are listed as below:
   1) Configuration 1: Adapter mode
   2) Configuration 2: USB mode

3 Transmitter Test Results

3.1 Conducted Emissions

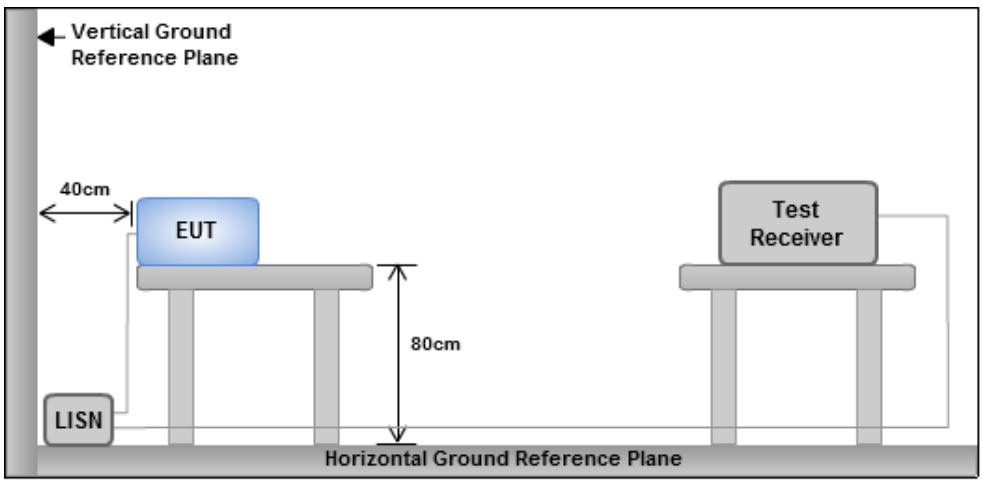
3.1.1 Limit of Conducted Emissions

Conducted Emissions Limit		
Frequency Emission (MHz)	**Quasi-Peak**	**Average**
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50
Note 1: * Decreases with the logarithm of the frequency.		

3.1.2 Test Procedures

1. The device is placed on a test table, raised 80 cm above the reference ground plane. The vertical conducting plane is located 40 cm to the rear of the device.
2. The device is connected to line impedance stabilization network (LISN) and other accessories are connected to other LISN. Measured levels of AC power line conducted emission are across the 50 Ω LISN port.
3. AC conducted emission measurements is made over frequency range from 150 kHz to 30 MHz.
4. This measurement was performed with AC 120V / 60Hz.

3.1.3 Test Setup

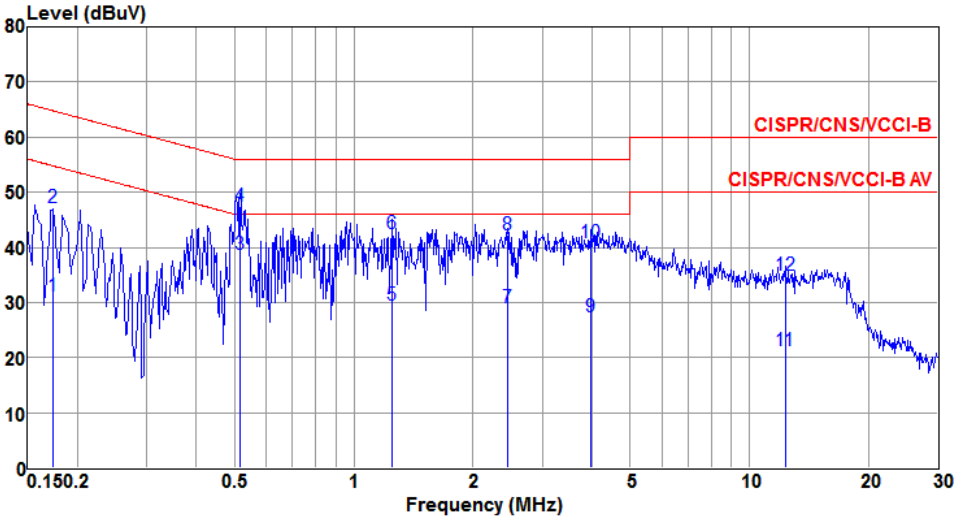


Note: 1. Support units were connected to second LISN.

2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes

3.1.4 Test Result of Conducted Emissions

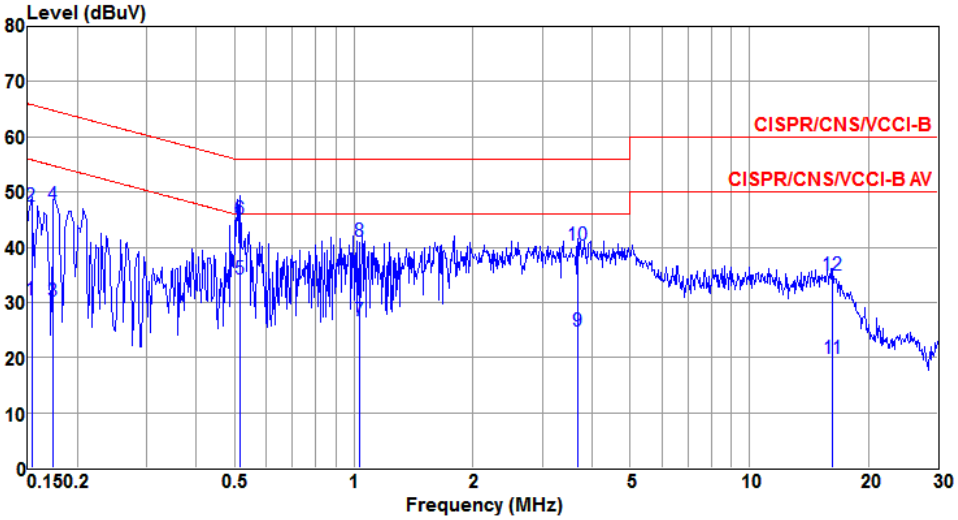
Modulation	HT20	Test Freq. (MHz)	2437
Power Phase	Line	Test Configuration	1



	Freq	Level	Limit Line	Over Limit	Read Level	LISN factor	cable loss	Remark
	MHz	dBuV	dBuV	dB	dBuV	dB	dB	
1	0.174	31.22	54.77	-23.55	31.09	0.09	0.04	Average
2	0.174	47.24	64.77	-17.53	47.11	0.09	0.04	QP
3@	0.515	38.77	46.00	-7.23	38.67	0.06	0.04	Average
4	0.515	47.34	56.00	-8.66	47.24	0.06	0.04	QP
5	1.249	29.52	46.00	-16.48	29.39	0.09	0.04	Average
6	1.249	42.37	56.00	-13.63	42.24	0.09	0.04	QP
7	2.448	29.11	46.00	-16.89	28.90	0.14	0.07	Average
8	2.448	42.18	56.00	-13.82	41.97	0.14	0.07	QP
9	3.985	27.31	46.00	-18.69	26.98	0.17	0.16	Average
10	3.985	40.90	56.00	-15.10	40.57	0.17	0.16	QP
11	12.318	21.21	50.00	-28.79	20.73	0.26	0.22	Average
12	12.318	34.87	60.00	-25.13	34.39	0.26	0.22	QP

Note 1: Level (dBuV) = Read Level (dBuV) + LISN Factor (dB) + Cable Loss (dB).
2: Over Limit (dB) = Level (dBuV) – Limit Line (dBuV).

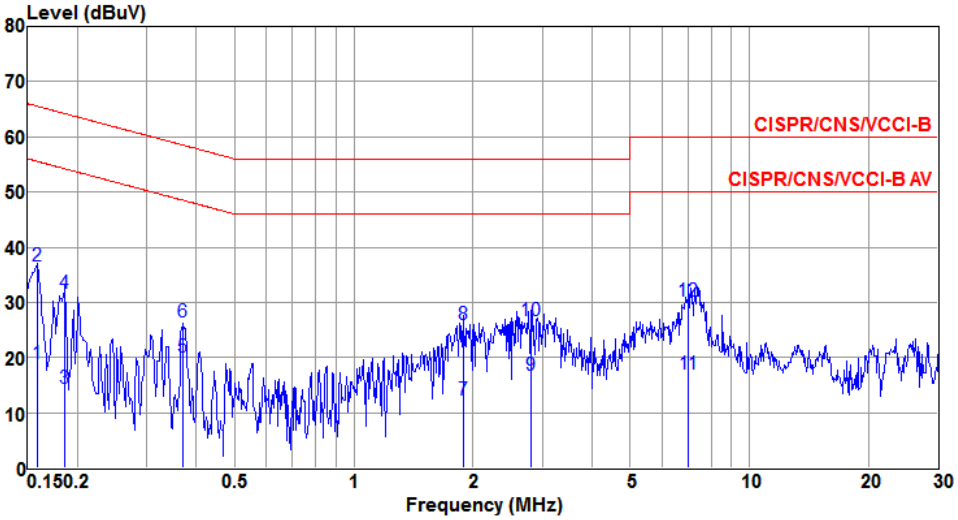
Modulation	HT20	Test Freq. (MHz)	2437
Power Phase	Neutral	Test Configuration	1



	Freq	Level	Limit Line	Over Limit	Read Level	LISN factor	cable loss	Remark
	MHz	dBuV	dBuV	dB	dBuV	dB	dB	
1	0.153	30.49	55.82	-25.33	30.35	0.10	0.04	Average
2	0.153	47.42	65.82	-18.40	47.28	0.10	0.04	QP
3	0.174	30.15	54.77	-24.62	30.02	0.09	0.04	Average
4	0.174	47.56	64.77	-17.21	47.43	0.09	0.04	QP
5	0.516	34.11	46.00	-11.89	33.95	0.12	0.04	Average
6@	0.516	45.04	56.00	-10.96	44.88	0.12	0.04	QP
7	1.031	26.71	46.00	-19.29	26.58	0.09	0.04	Average
8	1.031	40.96	56.00	-15.04	40.83	0.09	0.04	QP
9	3.681	24.72	46.00	-21.28	24.44	0.14	0.14	Average
10	3.681	40.29	56.00	-15.71	40.01	0.14	0.14	QP
11	16.226	19.74	50.00	-30.26	19.12	0.38	0.24	Average
12	16.226	34.91	60.00	-25.09	34.29	0.38	0.24	QP

Note 1: Level (dBuV) = Read Level (dBuV) + LISN Factor (dB) + Cable Loss (dB).
2: Over Limit (dB) = Level (dBuV) – Limit Line (dBuV).

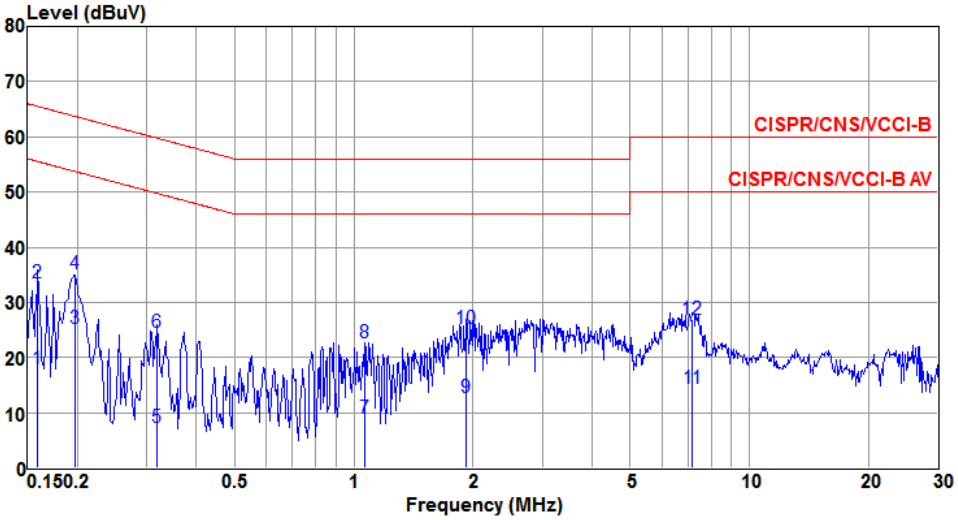
Modulation	HT20	Test Freq. (MHz)	2437
Power Phase	Line	Test Configuration	2



	Freq	Level	Limit Line	Over Limit	Read Level	LISN factor	cable loss	Remark
	MHz	dBuV	dBuV	dB	dBuV	dB	dB	
1	0.159	18.93	55.52	-36.59	18.81	0.08	0.04	Average
2	0.159	36.50	65.52	-29.02	36.38	0.08	0.04	QP
3	0.186	14.40	54.20	-39.80	14.27	0.09	0.04	Average
4	0.186	31.54	64.20	-32.66	31.41	0.09	0.04	QP
5@	0.369	20.02	48.52	-28.50	19.92	0.06	0.04	Average
6	0.369	26.34	58.52	-32.18	26.24	0.06	0.04	QP
7	1.888	12.20	46.00	-33.80	12.03	0.13	0.04	Average
8	1.888	26.03	56.00	-29.97	25.86	0.13	0.04	QP
9	2.809	16.88	46.00	-29.12	16.63	0.15	0.10	Average
10	2.809	26.64	56.00	-29.36	26.39	0.15	0.10	QP
11	7.025	17.04	50.00	-32.96	16.65	0.19	0.20	Average
12	7.025	30.22	60.00	-29.78	29.83	0.19	0.20	QP

Note 1: Level (dBuV) = Read Level (dBuV) + LISN Factor (dB) + Cable Loss (dB).
2: Over Limit (dB) = Level (dBuV) – Limit Line (dBuV).

Modulation	HT20	Test Freq. (MHz)	2437
Power Phase	Neutral	Test Configuration	2



	Freq	Level	Limit Line	Over Limit	Read Level	LISN factor	cable loss	Remark
	MHz	dBuV	dBuV	dB	dBuV	dB	dB	
1	0.159	18.03	55.52	-37.49	17.89	0.10	0.04	Average
2	0.159	33.53	65.52	-31.99	33.39	0.10	0.04	QP
3@	0.198	25.26	53.71	-28.45	25.13	0.09	0.04	Average
4	0.198	35.06	63.71	-28.65	34.93	0.09	0.04	QP
5	0.318	7.40	49.75	-42.35	7.24	0.12	0.04	Average
6	0.318	24.59	59.75	-35.16	24.43	0.12	0.04	QP
7	1.065	8.90	46.00	-37.10	8.76	0.10	0.04	Average
8	1.065	22.64	56.00	-33.36	22.50	0.10	0.04	QP
9	1.928	12.66	46.00	-33.34	12.46	0.16	0.04	Average
10	1.928	25.34	56.00	-30.66	25.14	0.16	0.04	QP
11	7.175	14.47	50.00	-35.53	14.02	0.25	0.20	Average
12	7.175	26.80	60.00	-33.20	26.35	0.25	0.20	QP

Note 1: Level (dBuV) = Read Level (dBuV) + LISN Factor (dB) + Cable Loss (dB).
2: Over Limit (dB) = Level (dBuV) – Limit Line (dBuV).

3.2 6dB and Occupied Bandwidth

3.2.1 Limit of 6dB Bandwidth

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

3.2.2 Test Procedures

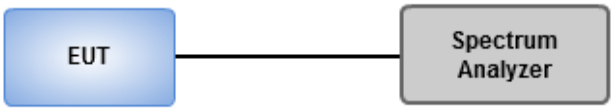
6dB Bandwidth

1. Set resolution bandwidth (RBW) = 100 kHz, Video bandwidth = 300 kHz.
2. Detector = Peak, Trace mode = max hold.
3. Sweep = auto couple, Allow the trace to stabilize.
4. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 6dB relative to the maximum level measured in the fundamental emission.

Occupied Bandwidth

1. Set resolution bandwidth (RBW) = 1 MHz, Video bandwidth = 3 MHz.
2. Detector = Sample, Trace mode = max hold.
3 Sweep = auto couple, Allow the trace to stabilize.
4. Use the OBW measurement function of spectrum analyzer to measure the occupied bandwidth.

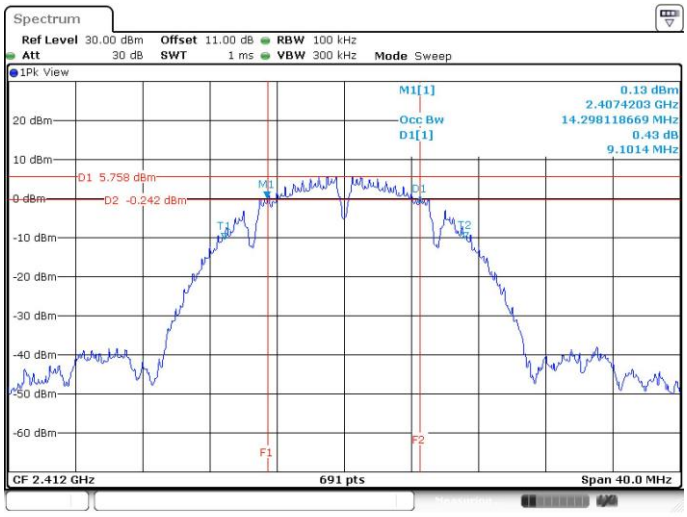
3.2.3 Test Setup



3.2.4 Test Result of 6dB and Occupied Bandwidth

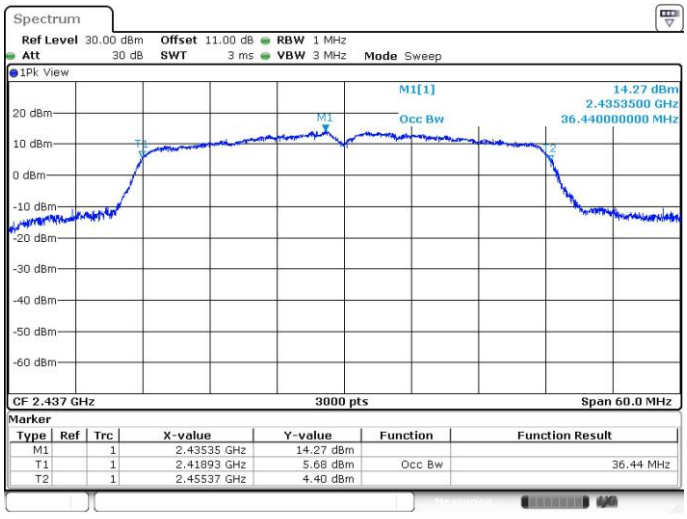
Modulation Mode	N_{TX}	Freq. (MHz)	6dB Bandwidth (MHz)				Limit (kHz)
			Chain 0	Chain 1	Chain 2	Chain 3	
11b	2	2412	9.10	9.51	---	---	500
11b	2	2437	9.62	10.09	---	---	500
11b	2	2462	10.03	10.09	---	---	500
11g	2	2412	15.07	13.91	---	---	500
11g	2	2437	15.13	15.07	---	---	500
11g	2	2462	12.00	15.07	---	---	500
HT20	2	2412	15.13	15.71	---	---	500
HT20	2	2437	12.64	15.13	---	---	500
HT20	2	2462	14.55	15.13	---	---	500
HT40	2	2422	33.74	33.74	---	---	500
HT40	2	2437	33.86	33.86	---	---	500
HT40	2	2452	35.13	35.01	---	---	500

Worst Plot



Modulation Mode	N_{TX}	Freq. (MHz)	99% Occupied Bandwidth (MHz)			
			Chain 0	Chain 1	Chain 2	Chain 3
11b	2	2412	14.23	14.22	---	---
11b	2	2437	14.30	14.38	---	---
11b	2	2462	14.45	14.46	---	---
11g	2	2412	20.77	19.94	---	---
11g	2	2437	20.17	21.86	---	---
11g	2	2462	16.75	16.53	---	---
HT20	2	2412	17.81	17.67	---	---
HT20	2	2437	20.04	22.60	---	---
HT20	2	2462	17.65	17.56	---	---
HT40	2	2422	36.14	36.24	---	---
HT40	2	2437	36.30	36.44	---	---
HT40	2	2452	35.98	36.18	---	---

Worst Plot



3.3 RF Output Power

3.3.1 Limit of RF Output Power

Conducted power shall not exceed 1Watt.

☒ Antenna gain <= 6dBi, no any corresponding reduction is in output power limit.

☐ Antenna gain > 6dBi

☐ Non Fixed, point to point operations.
The conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dB

☐ Fixed, point to point operations
Systems operating in the 2400–2483.5 MHz band that are used exclusively for fixed, point-to-point Operations, maximum peak output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

Systems operating in the 5725–5850 MHz band that are used exclusively for fixed, point-to-point operations ,no any corresponding reduction is in transmitter peak output power

3.3.2 Test Procedures

☒ Maximum Peak Conducted Output Power

☐ **Spectrum analyzer**

1. Set RBW = 1MHz, VBW = 3MHz, Detector = Peak.
2. Sweep time = auto, Trace mode = max hold, Allow trace to fully stabilize.
3. Use the spectrum analyzer channel power measurement function with the band limits set equal to the DTS bandwidth edges.

☒ **Power meter**

1. A broadband Peak RF power meter is used for output power measurement. The video bandwidth of power meter is greater than DTS bandwidth of EUT. If duty cycle of test signal is not 100 %, trigger and gating function of power meter will be enabled to capture transmission burst for measuring output power.

☒ Maximum Conducted Output Power (For reference only)

☒ **Power meter**

1. A broadband Average RF power meter is used for output power measurement. The video bandwidth of power meter is greater than DTS bandwidth of EUT. If duty cycle of test signal is not 100 %, trigger and gating function of power meter will be enabled to capture transmission burst for measuring output power.

3.3.3 Test Setup

3.3.4 Test Result of Maximum Output Power

Modulation Mode	N_{TX}	Freq. (MHz)	Peak conducted Output Power (dBm)							Ant. Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)
			Chain 0	Chain 1	Chain 2	Chain 3	Total Power (mW)	Total Power (dBm)	Limit (dBm)			
11b	2	2412	17.1	17.21	---	---	103.888	20.17	30.00	1.98	22.15	36.00
11b	2	2437	18.69	19.41	---	---	161.258	22.08	30.00	1.98	24.06	36.00
11b	2	2462	20.09	20.41	---	---	211.995	23.26	30.00	1.98	25.24	36.00
11g	2	2412	24.5	25.19	---	---	612.208	27.87	30.00	1.98	29.85	36.00
11g	2	2437	24.66	25.69	---	---	663.096	28.22	30.00	1.98	30.20	36.00
11g	2	2462	22.93	23.85	---	---	438.997	26.42	30.00	1.98	28.40	36.00
HT20	2	2412	24.15	24.39	---	---	534.805	27.28	30.00	1.98	29.26	36.00
HT20	2	2437	24.66	25.86	---	---	677.894	**28.31**	30.00	1.98	30.29	36.00
HT20	2	2462	22.21	22.79	---	---	356.449	25.52	30.00	1.98	27.50	36.00
HT40	2	2422	22.75	22.78	---	---	378.036	25.78	30.00	1.98	27.76	36.00
HT40	2	2437	23.11	23.9	---	---	450.115	26.53	30.00	1.98	28.51	36.00
HT40	2	2452	20.4	21.3	---	---	244.544	23.88	30.00	1.98	25.86	36.00

Modulation Mode	N_{TX}	Freq. (MHz)	Conducted (Average) Output Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)
			Chain 0	Chain 1	Chain 2	Chain 3			
11b	2	2412	15.23	15.26	---	---	66.916	18.26	---
11b	2	2437	16.87	17.51	---	---	105.004	20.21	---
11b	2	2462	18.24	18.55	---	---	138.295	21.41	---
11g	2	2412	19.95	20.13	---	---	201.894	23.05	---
11g	2	2437	20.78	22.32	---	---	290.282	24.63	---
11g	2	2462	16.55	17.22	---	---	97.909	19.91	---
HT20	2	2412	18.05	18.39	---	---	132.850	21.23	---
HT20	2	2437	20.59	22.67	---	---	299.478	**24.76**	---
HT20	2	2462	15.07	15.78	---	---	69.981	18.45	---
HT40	2	2422	16.01	16.13	---	---	80.923	19.08	---
HT40	2	2437	17.28	18.45	---	---	123.441	20.91	---
HT40	2	2452	13.12	14.02	---	---	45.746	16.60	---

Note: Conducted average output power is for reference only.

3.4 Power Spectral Density

3.4.1 Limit of Power Spectral Density

Power spectral density shall not be greater than 8 dBm in any 3 kHz band.

3.4.2 Test Procedures

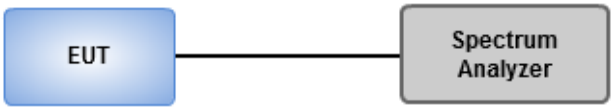
☒ Maximum peak conducted output power was used to demonstrate compliance to the fundamental output power limit.

1. Set the RBW = 3kHz, VBW = 10kHz.
2. Detector = Peak, Sweep time = auto couple.
3. Trace mode = max hold, allow trace to fully stabilize.
4. Use the peak marker function to determine the maximum amplitude level.

☐ Maximum (average) conducted output power was used to demonstrate compliance to the fundamental output power limit.

1. Set the RBW = 100kHz, VBW = 300 kHz.
2. Detector = RMS, Sweep time = auto couple.
3. Set the sweep time to: ≥ 10 x (number of measurement points in sweep) x (maximum data rate per stream).
4. Perform the measurement over a single sweep.
5. Use the peak marker function to determine the maximum amplitude level.

3.4.3 Test Setup



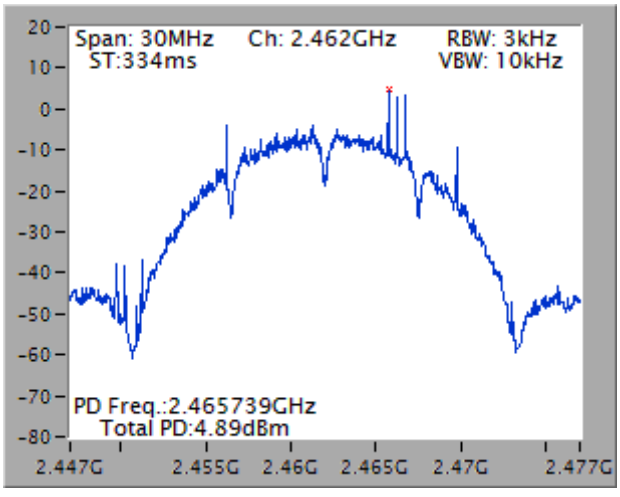
3.4.4 Test Result of Power Spectral Density

Modulation Mode	N_{TX}	Freq. (MHz)	Total Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)
11b	2	2412	2.52	8.00
11b	2	2437	4.52	8.00
11b	2	2462	4.89	8.00
11g	2	2412	-3.84	8.00
11g	2	2437	-1.55	8.00
11g	2	2462	-7.00	8.00
HT20	2	2412	-5.74	8.00
HT20	2	2437	-1.82	8.00
HT20	2	2462	-5.17	8.00
HT40	2	2422	-10.08	8.00
HT40	2	2437	-8.30	8.00
HT40	2	2452	-12.47	8.00

Note:

1. Test result is bin-by-bin summing measured value of each TX port.
2. Directional gain = 10 * log((10$^{1.98/20}$+10$^{1.56/20}$)^2/2) = 4.78 dBi < 6dBi, Limit correction is not required.

Worst Plot



3.5 Unwanted Emissions into Restricted Frequency Bands

3.5.1 Limit of Unwanted Emissions into Restricted Frequency Bands

Restricted Band Emissions Limit			
Frequency Range (MHz)	**Field Strength (uV/m)**	**Field Strength (dBuV/m)**	**Measure Distance (m)**
0.009~0.490	2400/F(kHz)	48.5 - 13.8	300
0.490~1.705	24000/F(kHz)	33.8 - 23	30
1.705~30.0	30	29	30
30~88	100	40	3
88~216	150	43.5	3
216~960	200	46	3
Above 960	500	54	3

Note 1:
Qusai-Peak value is measured for frequency below 1GHz except for 9–90 kHz, 110–490 kHz frequency band. Peak and average value are measured for frequency above 1GHz. The limit on average radio frequency emission is as above table. The limit on peak radio frequency emissions is 20 dB above the maximum permitted average emission limit
Note 2:
Measurements may be performed at a distance other than what is specified provided. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor as below, Frequency at or above 30 MHz: 20 dB/decade Frequency below 30 MHz: 40 dB/decade.

3.5.2 Test Procedures

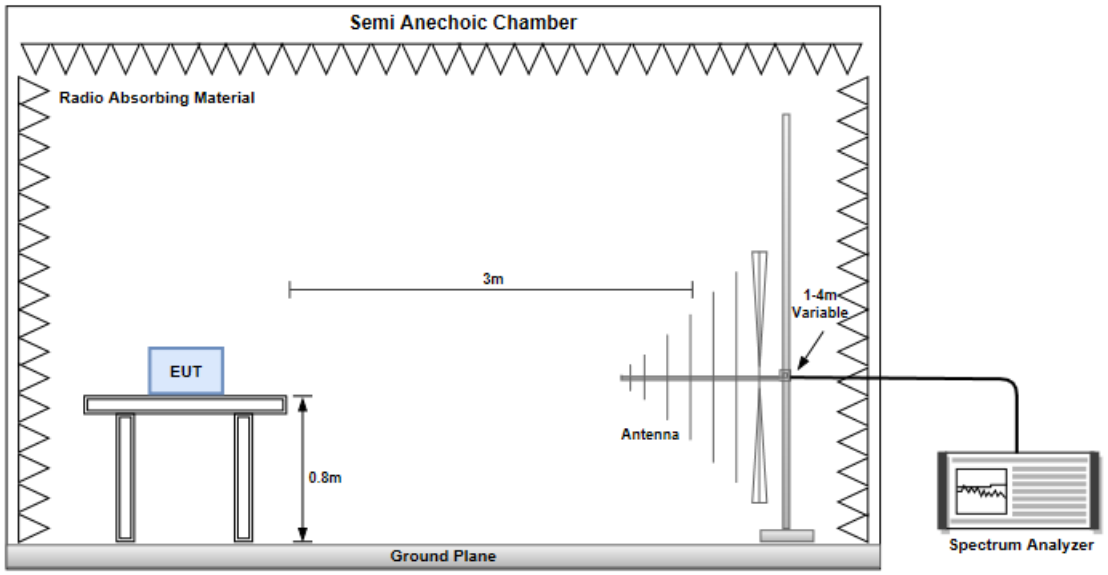
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission frequency. The EUT is placed at test table. For emissions testing at or below 1 GHz, the table height is 80 cm above the reference ground plane. For emission measurements above 1 GHz, the table height is 1.5 m
2. Measurement is made with the antenna positioned in both the horizontal and vertical planes of polarization. The measurement antenna is varied in height (1m ~ 4m) above the reference ground plane to obtain the maximum signal strength. Distance between EUT and antenna is 3 m.
3. This investigation is performed with the EUT rotated 360°, the antenna height scanned between 1 m and 4 m, and the antenna rotated to repeat the measurements for both the horizontal and vertical antenna polarizations.

Note:

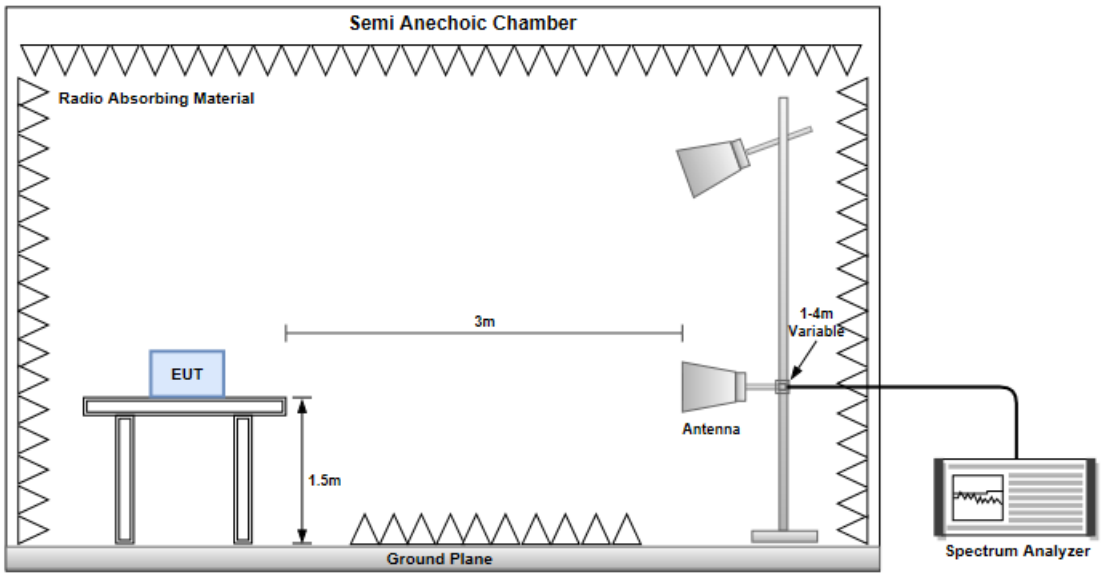
1. 120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission below 1GHz.
2. RBW=1MHz, VBW=3MHz and Peak detector is for peak measured value of radiated emission above 1GHz.
3. RBW=1MHz, VBW=1/T and Peak detector is for average measured value of radiated emission above 1GHz.

3.5.3 Test Setup

Radiated Emissions below 1 GHz

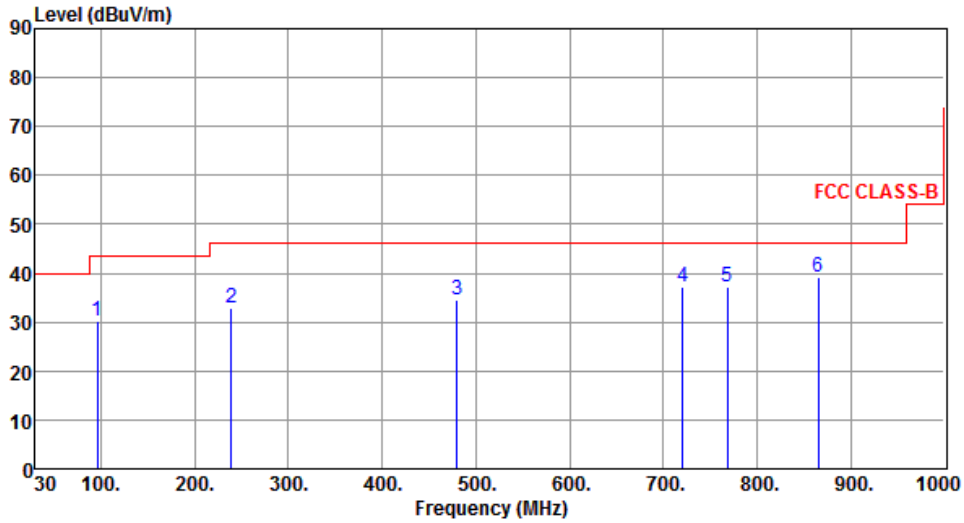


Radiated Emissions above 1 GHz



3.5.4 Transmitter Radiated Unwanted Emissions (Below 1GHz)

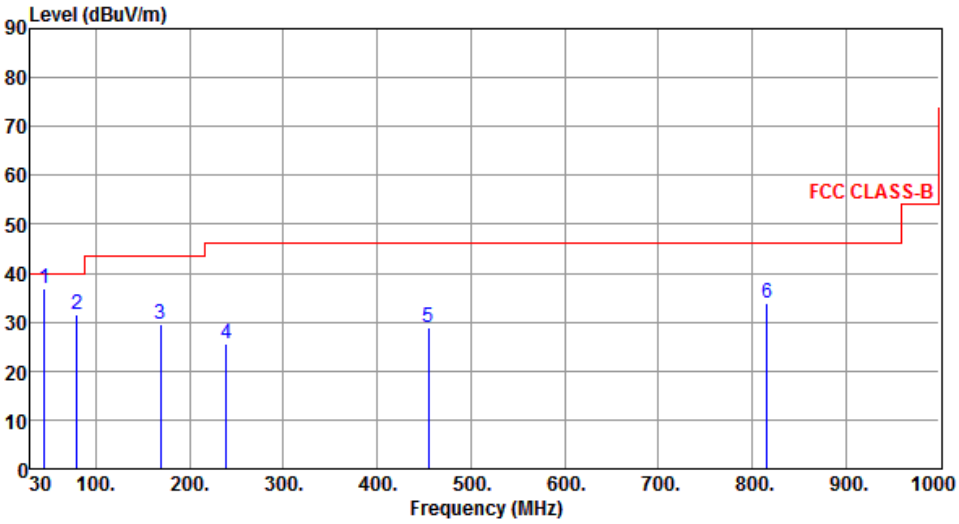
Modulation	HT20	Test Freq. (MHz)	2437
Polarization	Horizontal	Test Configuration	1



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	95.96	30.37	43.50	-13.13	43.94	-13.57	Peak	---	---
2	239.52	32.88	46.00	-13.12	42.60	-9.72	Peak	---	---
3	480.08	34.43	46.00	-11.57	37.65	-3.22	Peak	---	---
4	720.64	37.23	46.00	-8.77	36.13	1.10	Peak	---	---
5	768.17	37.28	46.00	-8.72	35.34	1.94	Peak	---	---
6	865.17	39.20	46.00	-6.80	35.74	3.46	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

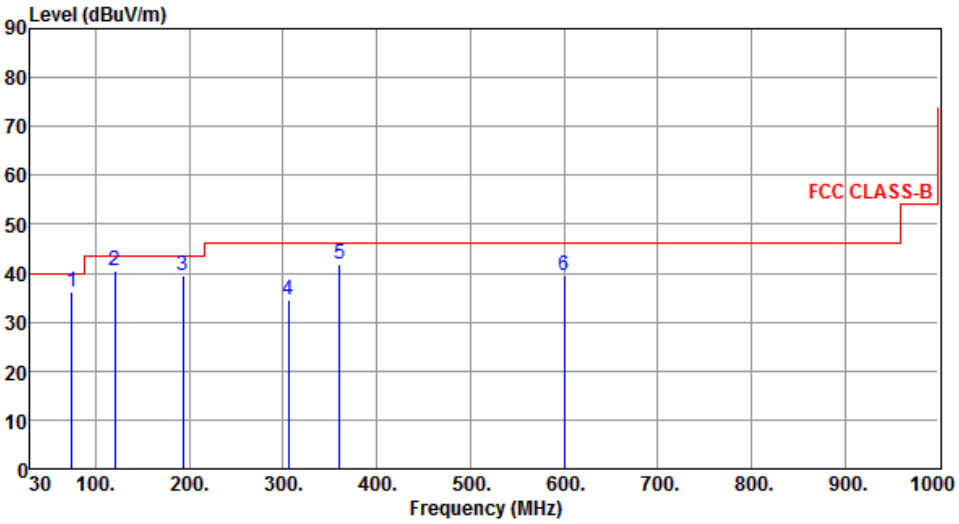
Modulation	HT20	Test Freq. (MHz)	2437
Polarization	Vertical	Test Configuration	1



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	44.69	36.98	40.00	-3.02	44.83	-7.85	QP	100	253
2	79.47	31.46	40.00	-8.54	44.27	-12.81	Peak	---	---
3	168.71	29.56	43.50	-13.94	38.11	-8.55	Peak	---	---
4	239.52	25.56	46.00	-20.44	35.28	-9.72	Peak	---	---
5	454.86	28.96	46.00	-17.04	32.65	-3.69	Peak	---	---
6	815.70	33.83	46.00	-12.17	31.30	2.53	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

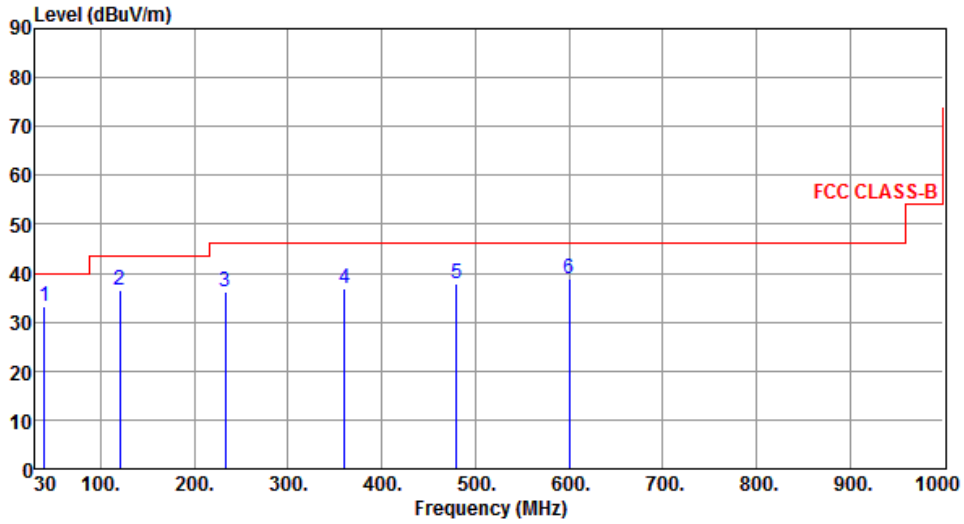
Modulation	HT20	Test Freq. (MHz)	2437
Polarization	Horizontal	Test Configuration	2



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	74.81	36.28	40.00	-3.72	48.10	-11.82	QP	165	171
2	120.21	40.41	43.50	-3.09	51.00	-10.59	Peak	---	---
3	192.96	39.66	43.50	-3.84	50.40	-10.74	Peak	---	---
4	305.48	34.50	46.00	-11.50	42.03	-7.53	Peak	---	---
5	360.00	41.69	46.00	-4.31	47.80	-6.11	QP	100	59
6	600.00	39.49	46.00	-6.51	40.21	-0.72	QP	100	211

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

Modulation	HT20	Test Freq. (MHz)	2437
Polarization	Vertical	Test Configuration	2

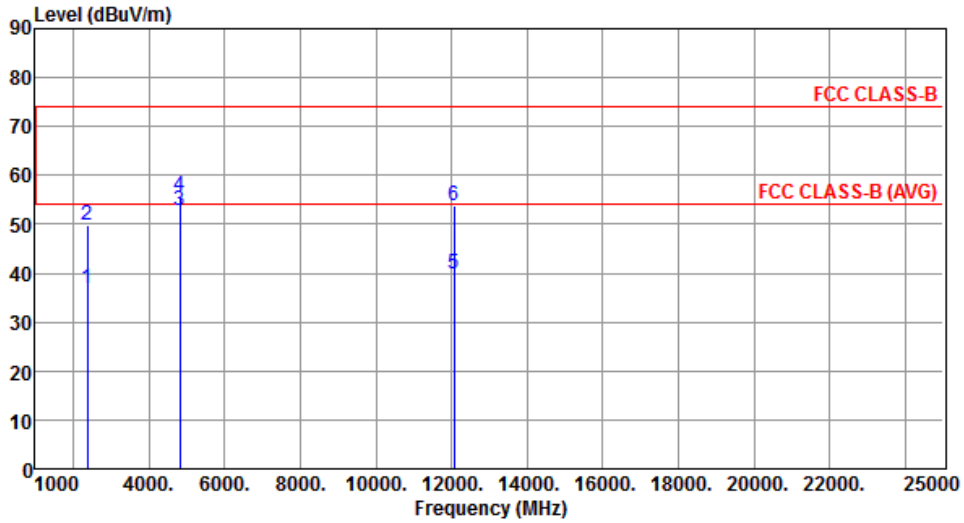


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	39.70	33.05	40.00	-6.95	41.24	-8.19	Peak	---	---
2	120.21	36.69	43.50	-6.81	47.28	-10.59	Peak	---	---
3	232.73	36.34	46.00	-9.66	46.48	-10.14	Peak	---	---
4	360.77	37.00	46.00	-9.00	43.09	-6.09	Peak	---	---
5	480.08	37.80	46.00	-8.20	41.02	-3.22	Peak	---	---
6	600.36	38.91	46.00	-7.09	39.63	-0.72	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

3.5.5 Transmitter Radiated Unwanted Emissions (Above 1GHz) for 11b

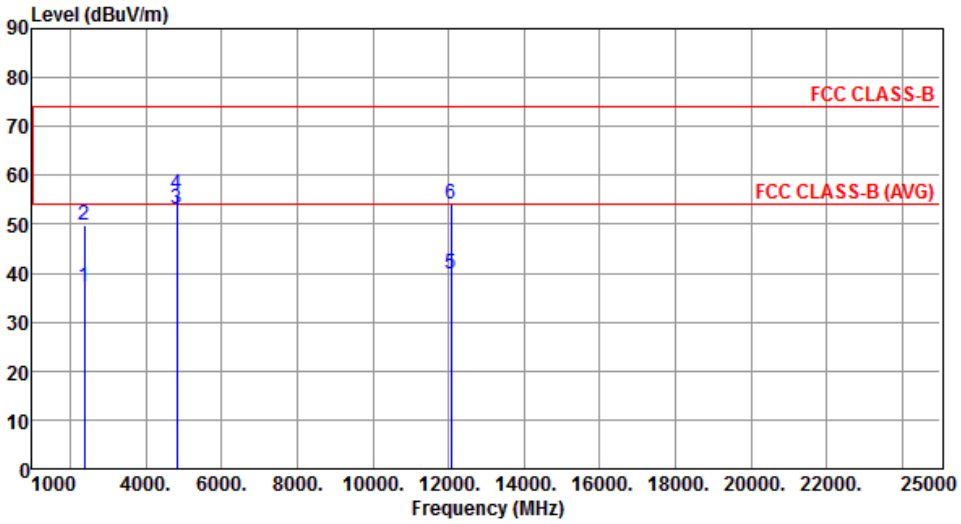
Modulation	11b	Test Freq. (MHz)	2412
Polarization	Horizontal	Test Configuration	2



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	36.77	54.00	-17.23	39.95	-3.18	Average	171	150
2	2390.00	49.75	74.00	-24.25	52.93	-3.18	Peak	171	150
3	4824.00	52.97	54.00	-1.03	49.19	3.78	Average	267	108
4	4824.00	55.64	74.00	-18.36	51.86	3.78	Peak	267	108
5	12060.00	39.91	54.00	-14.09	26.33	13.58	Average	100	156
6	12060.00	53.79	74.00	-20.21	40.21	13.58	Peak	100	156

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

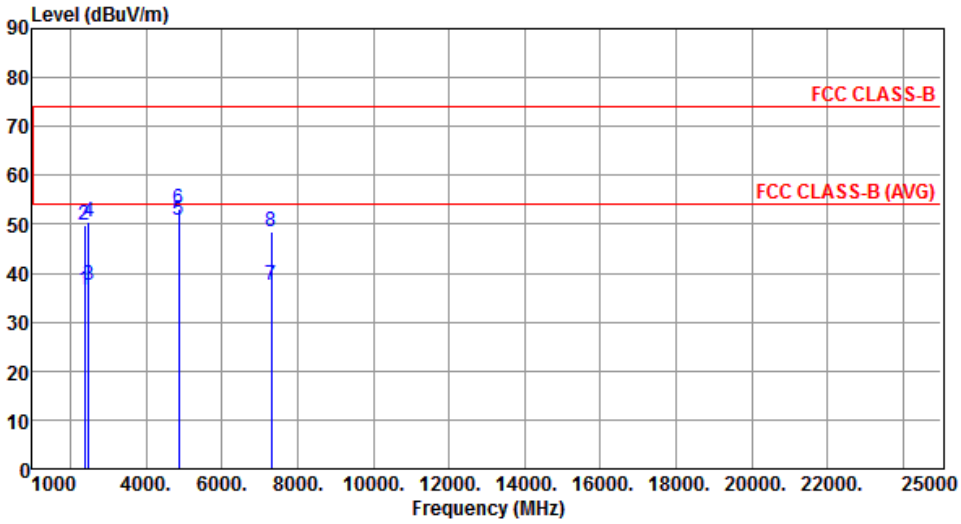
Modulation	11b	**Test Freq. (MHz)**	2412
Polarization	Vertical	**Test Configuration**	2



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	37.27	54.00	-16.73	40.45	-3.18	Average	233	91
2	2390.00	49.78	74.00	-24.22	52.96	-3.18	Peak	233	91
3	4824.00	53.11	54.00	-0.89	49.33	3.78	Average	231	167
4	4824.00	55.97	74.00	-18.03	52.19	3.78	Peak	231	167
5	12060.00	39.91	54.00	-14.09	26.33	13.58	Average	100	175
6	12060.00	53.98	74.00	-20.02	40.40	13.58	Peak	100	175

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

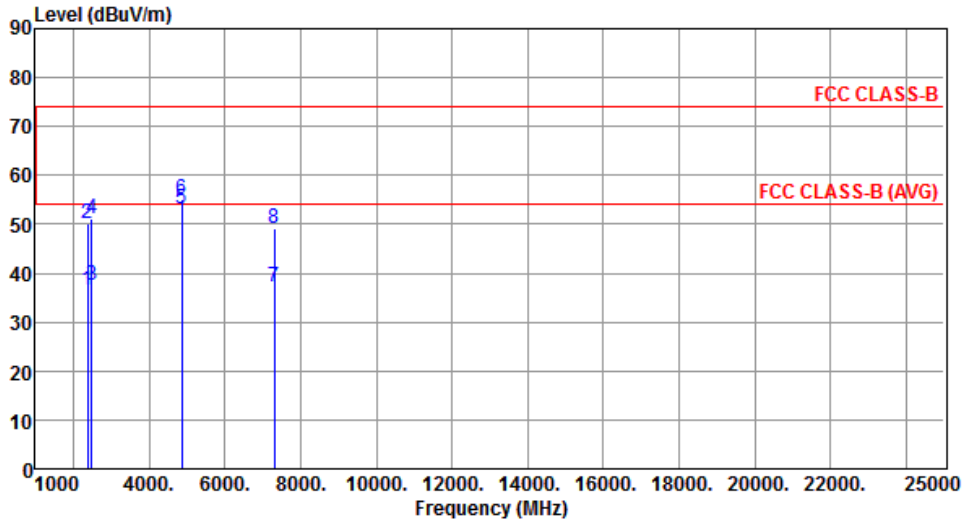
Modulation	11b	Test Freq. (MHz)	2437
Polarization	Horizontal	Test Configuration	2



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	36.54	54.00	-17.46	39.72	-3.18	Average	238	34
2	2390.00	49.85	74.00	-24.15	53.03	-3.18	Peak	238	34
3	2483.50	37.48	54.00	-16.52	40.28	-2.80	Average	238	34
4	2483.50	50.55	74.00	-23.45	53.35	-2.80	Peak	238	34
5	4874.00	50.95	54.00	-3.05	47.01	3.94	Average	224	110
6	4874.00	53.25	74.00	-20.75	49.31	3.94	Peak	224	110
7	7311.00	37.37	54.00	-16.63	28.96	8.41	Average	215	43
8	7311.00	48.33	74.00	-25.67	39.92	8.41	Peak	215	43

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

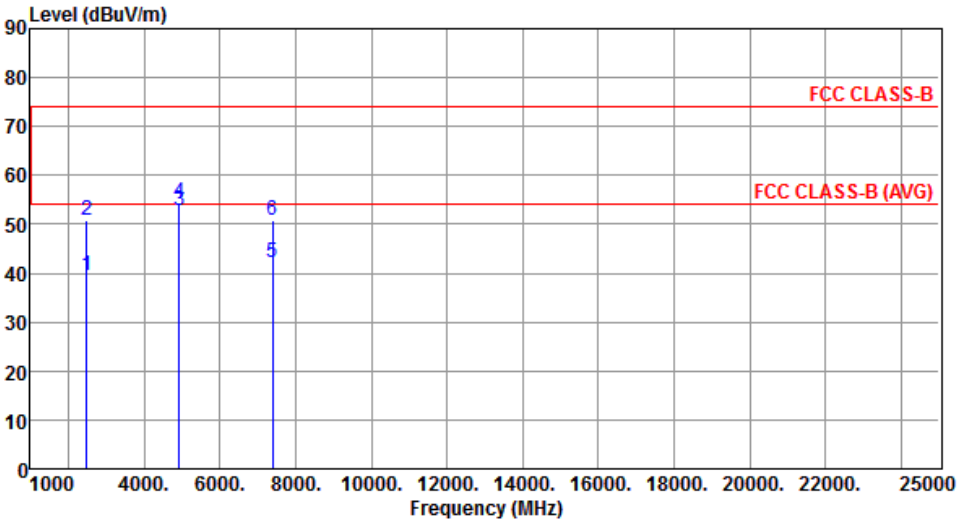
Modulation	11b	Test Freq. (MHz)	2437
Polarization	Vertical	Test Configuration	2



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	36.61	54.00	-17.39	39.79	-3.18	Average	233	93
2	2390.00	50.04	74.00	-23.96	53.22	-3.18	Peak	233	93
3	2483.50	37.58	54.00	-16.42	40.38	-2.80	Average	233	93
4	2483.50	51.10	74.00	-22.90	53.90	-2.80	Peak	233	93
5	4874.00	53.14	54.00	-0.86	49.20	3.94	Average	226	44
6	4874.00	55.17	74.00	-18.83	51.23	3.94	Peak	226	44
7	7311.00	37.29	54.00	-16.71	28.88	8.41	Average	222	357
8	7311.00	49.06	74.00	-24.94	40.65	8.41	Peak	222	357

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

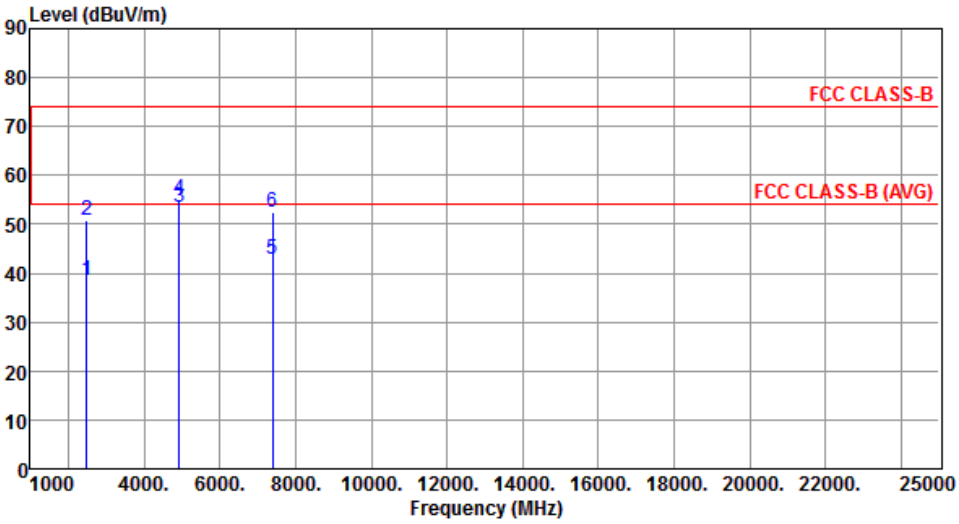
Modulation	11b	Test Freq. (MHz)	2462
Polarization	Horizontal	Test Configuration	2



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	39.53	54.00	-14.47	42.33	-2.80	Average	229	17
2	2483.50	50.71	74.00	-23.29	53.51	-2.80	Peak	229	17
3	4924.00	52.74	54.00	-1.26	48.64	4.10	Average	247	88
4	4924.00	54.60	74.00	-19.40	50.50	4.10	Peak	247	88
5	7386.00	42.07	54.00	-11.93	33.63	8.44	Average	213	67
6	7386.00	50.82	74.00	-23.18	42.38	8.44	Peak	213	67

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Modulation	11b	Test Freq. (MHz)	2462
Polarization	Vertical	Test Configuration	2

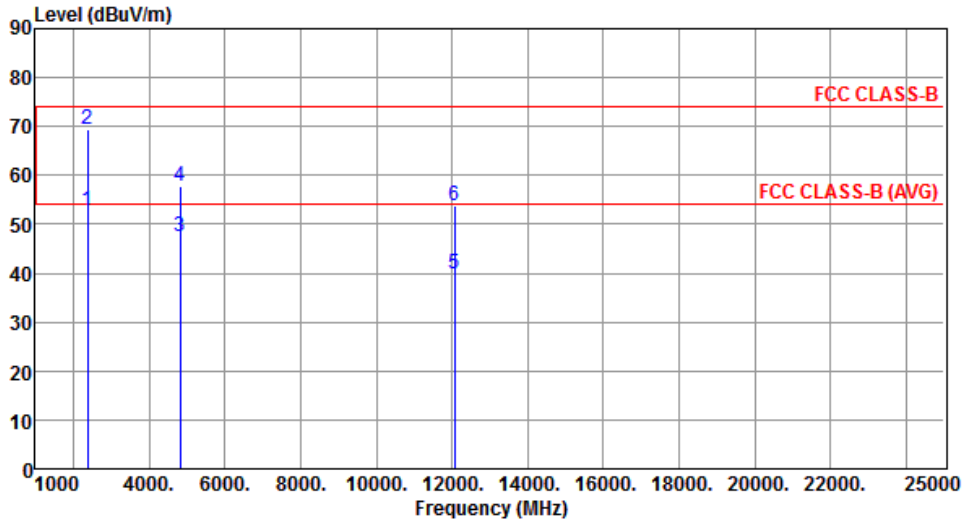


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	38.58	54.00	-15.42	41.38	-2.80	Average	260	94
2	2483.50	50.67	74.00	-23.33	53.47	-2.80	Peak	260	94
3	4924.00	53.36	54.00	-0.64	49.26	4.10	Average	221	163
4	4924.00	55.09	74.00	-18.91	50.99	4.10	Peak	221	163
5	7386.00	42.70	54.00	-11.30	34.26	8.44	Average	207	10
6	7386.00	52.31	74.00	-21.69	43.87	8.44	Peak	207	10

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

3.5.6 Transmitter Radiated Unwanted Emissions (Above 1GHz) for 11g

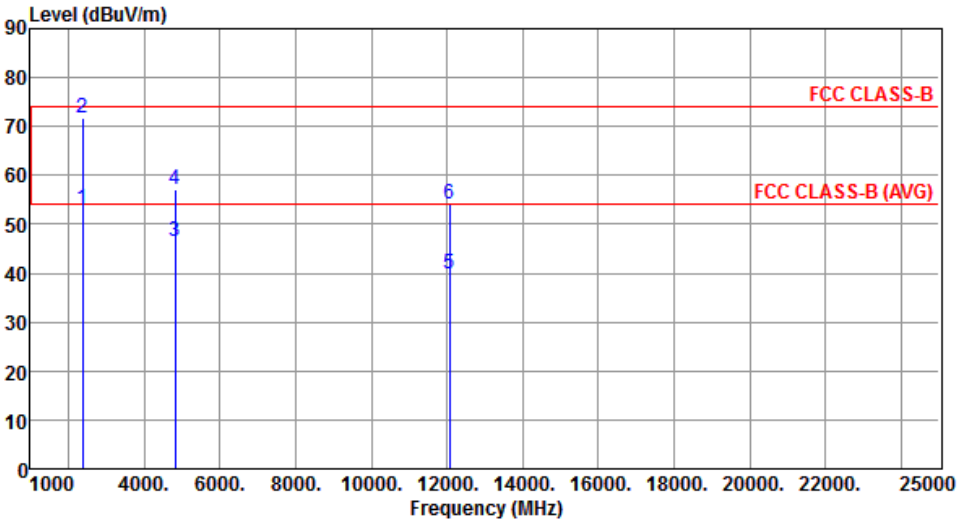
Modulation	11g	Test Freq. (MHz)	2412
Polarization	Horizontal	Test Configuration	2



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	52.95	54.00	-1.05	56.13	-3.18	Average	252	249
2	2390.00	69.48	74.00	-4.52	72.66	-3.18	Peak	252	249
3	4824.00	47.54	54.00	-6.46	43.76	3.78	Average	252	256
4	4824.00	57.90	74.00	-16.10	54.12	3.78	Peak	252	256
5	12060.00	39.98	54.00	-14.02	26.40	13.58	Average	100	145
6	12060.00	53.95	74.00	-20.05	40.37	13.58	Peak	100	145

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

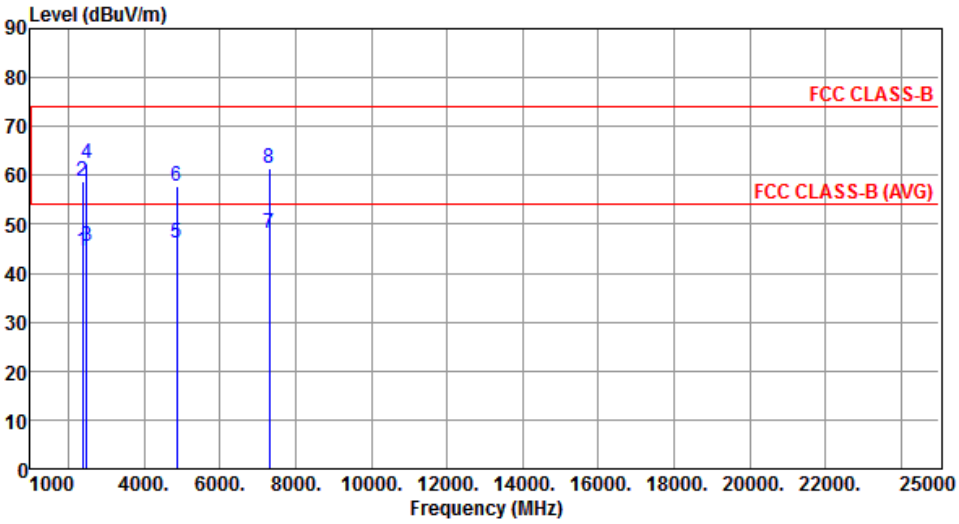
Modulation	11g	Test Freq. (MHz)	2412
Polarization	Vertical	Test Configuration	2



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	53.16	54.00	-0.84	56.34	-3.18	Average	243	93
2	2390.00	71.78	74.00	-2.22	74.96	-3.18	Peak	243	93
3	4824.00	46.41	54.00	-7.59	42.63	3.78	Average	252	38
4	4824.00	57.07	74.00	-16.93	53.29	3.78	Peak	252	38
5	12060.00	39.75	54.00	-14.25	26.17	13.58	Average	100	175
6	12060.00	54.00	74.00	-20.00	40.42	13.58	Peak	100	175

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

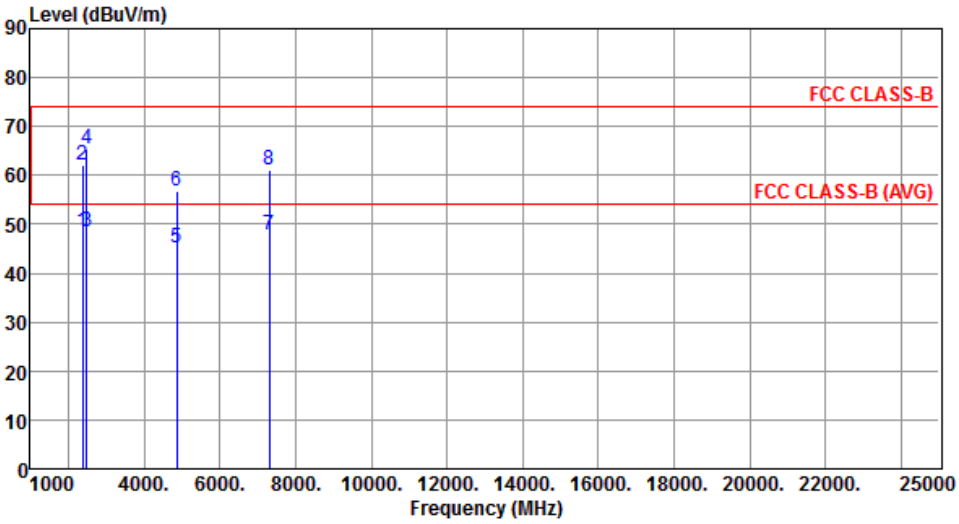
Modulation	11g	Test Freq. (MHz)	2437
Polarization	Horizontal	Test Configuration	2



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	44.64	54.00	-9.36	47.82	-3.18	Average	237	24
2	2390.00	58.71	74.00	-15.29	61.89	-3.18	Peak	237	24
3	2483.50	45.58	54.00	-8.42	48.38	-2.80	Average	237	24
4	2483.50	62.55	74.00	-11.45	65.35	-2.80	Peak	237	24
5	4874.00	46.17	54.00	-7.83	42.23	3.94	Average	219	105
6	4874.00	57.66	74.00	-16.34	53.72	3.94	Peak	219	105
7	7311.00	48.30	54.00	-5.70	39.89	8.41	Average	219	66
8	7311.00	61.45	74.00	-12.55	53.04	8.41	Peak	219	66

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

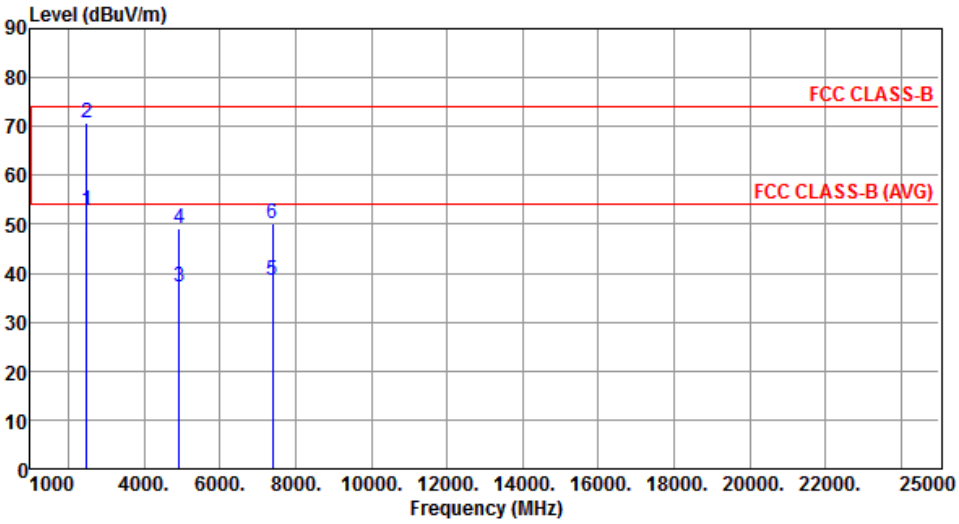
Modulation	11g	**Test Freq. (MHz)**	2437
Polarization	Vertical	**Test Configuration**	2



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	48.44	54.00	-5.56	51.62	-3.18	Average	234	97
2	2390.00	62.01	74.00	-11.99	65.19	-3.18	Peak	234	97
3	2483.50	48.52	54.00	-5.48	51.32	-2.80	Average	234	97
4	2483.50	65.39	74.00	-8.61	68.19	-2.80	Peak	234	97
5	4874.00	45.02	54.00	-8.98	41.08	3.94	Average	234	32
6	4874.00	56.79	74.00	-17.21	52.85	3.94	Peak	234	32
7	7311.00	47.76	54.00	-6.24	39.35	8.41	Average	234	356
8	7311.00	61.25	74.00	-12.75	52.84	8.41	Peak	234	356

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

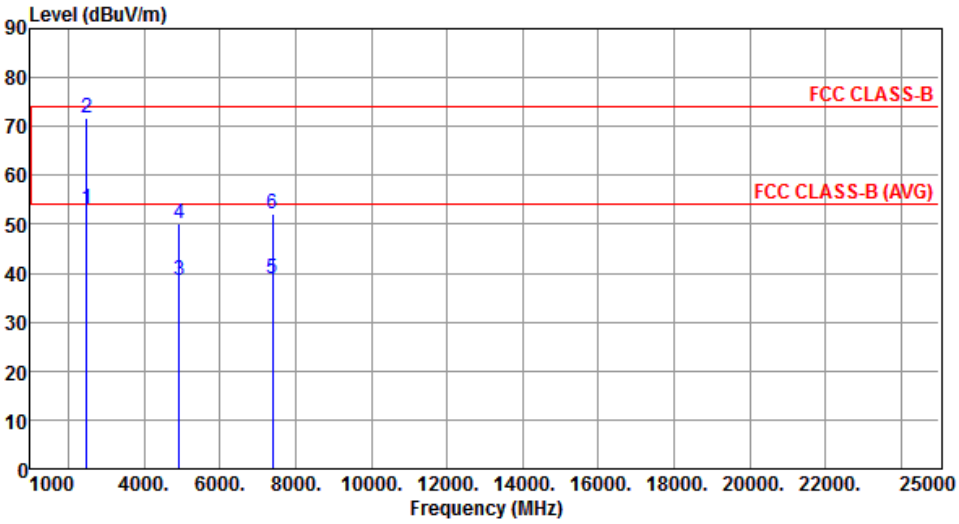
Modulation	11g	Test Freq. (MHz)	2462
Polarization	Horizontal	Test Configuration	2



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	52.67	54.00	-1.33	55.47	-2.80	Average	237	35
2	2483.50	70.77	74.00	-3.23	73.57	-2.80	Peak	237	35
3	4924.00	37.22	54.00	-16.78	33.12	4.10	Average	237	110
4	4924.00	49.11	74.00	-24.89	45.01	4.10	Peak	237	110
5	7386.00	38.69	54.00	-15.31	30.25	8.44	Average	237	60
6	7386.00	50.31	74.00	-23.69	41.87	8.44	Peak	237	60

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Modulation	11g	**Test Freq. (MHz)**	2462
Polarization	Vertical	**Test Configuration**	2

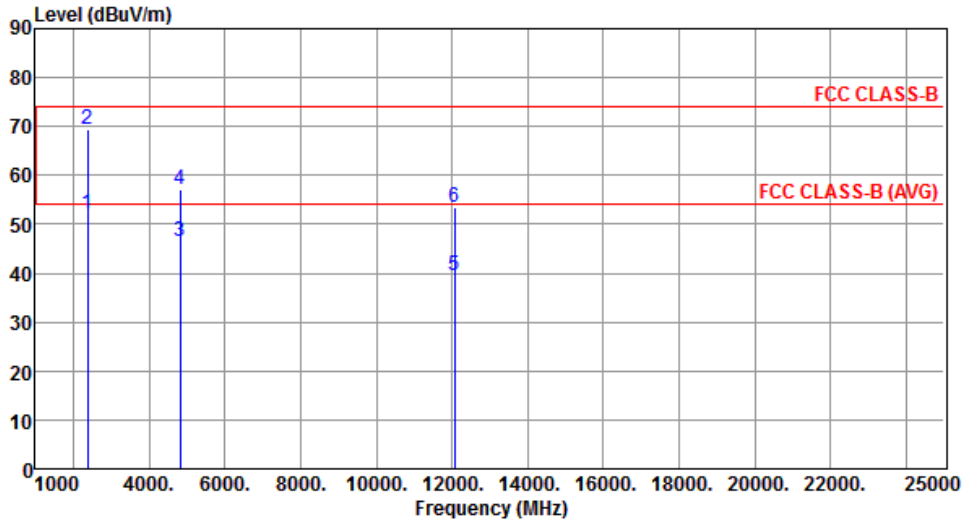


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	53.16	54.00	-0.84	55.96	-2.80	Average	278	110
2	2483.50	71.76	74.00	-2.24	74.56	-2.80	Peak	278	110
3	4924.00	38.55	54.00	-15.45	34.45	4.10	Average	237	46
4	4924.00	50.30	74.00	-23.70	46.20	4.10	Peak	237	46
5	7386.00	38.96	54.00	-15.04	30.52	8.44	Average	225	1
6	7386.00	52.25	74.00	-21.75	43.81	8.44	Peak	225	1

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

3.5.7 Transmitter Radiated Unwanted Emissions (Above 1GHz) for HT20

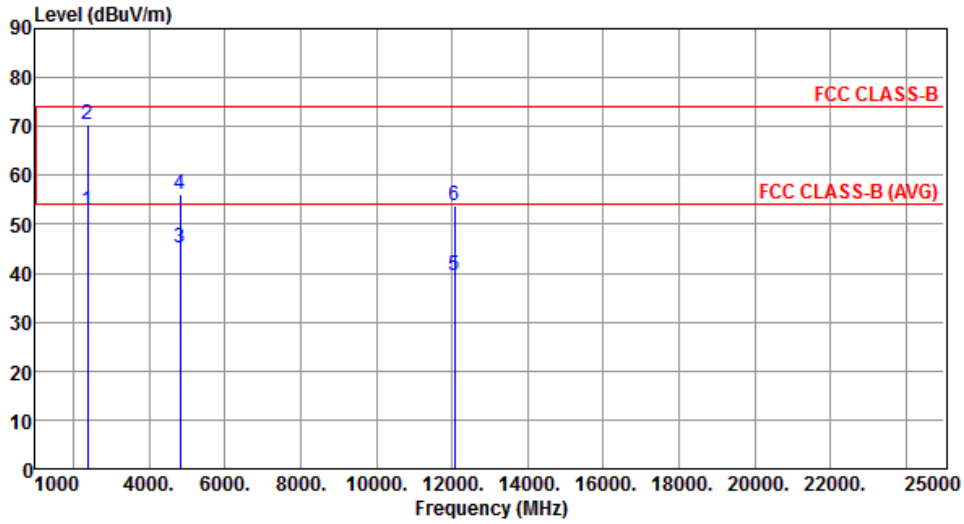
Modulation	HT20	Test Freq. (MHz)	2412
Polarization	Horizontal	Test Configuration	2



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	52.16	54.00	-1.84	55.34	-3.18	Average	253	248
2	2390.00	69.35	74.00	-4.65	72.53	-3.18	Peak	253	248
3	4824.00	46.45	54.00	-7.55	42.67	3.78	Average	254	262
4	4824.00	57.21	74.00	-16.79	53.43	3.78	Peak	254	262
5	12060.00	39.51	54.00	-14.49	25.93	13.58	Average	105	165
6	12060.00	53.62	74.00	-20.38	40.04	13.58	Peak	105	165

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

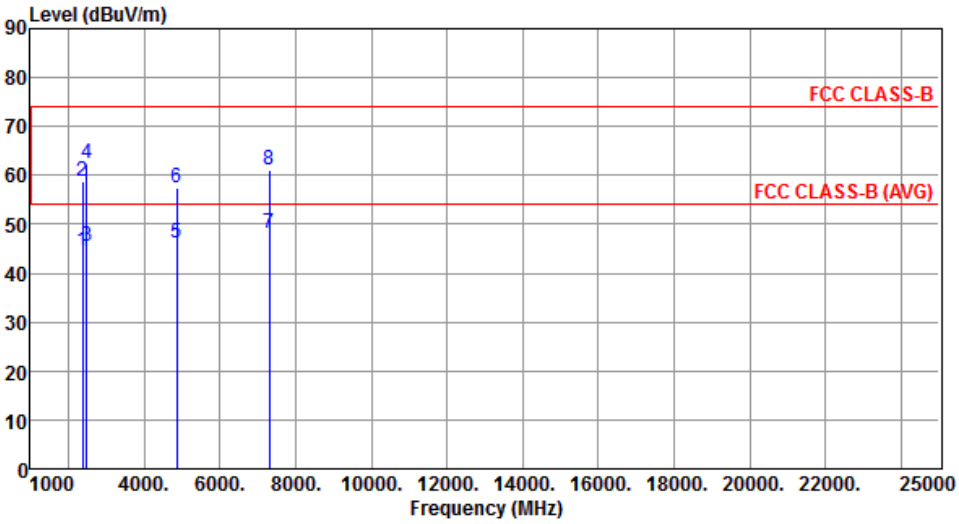
Modulation	HT20	Test Freq. (MHz)	2412
Polarization	Vertical	Test Configuration	2



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	52.69	54.00	-1.31	55.87	-3.18	Average	270	92
2	2390.00	70.25	74.00	-3.75	73.43	-3.18	Peak	270	92
3	4824.00	45.26	54.00	-8.74	41.48	3.78	Average	265	56
4	4824.00	56.15	74.00	-17.85	52.37	3.78	Peak	265	56
5	12060.00	39.62	54.00	-14.38	26.04	13.58	Average	105	181
6	12060.00	53.85	74.00	-20.15	40.27	13.58	Peak	105	181

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

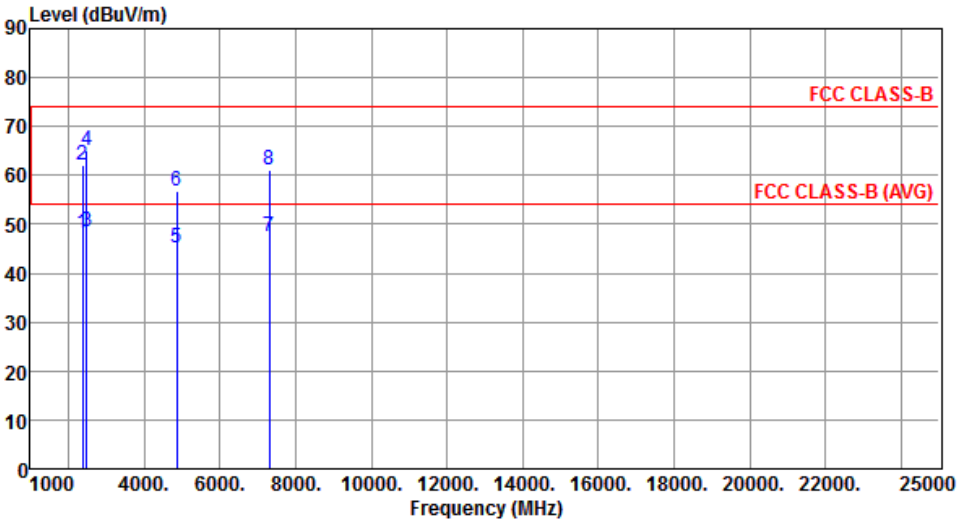
Modulation	HT20	Test Freq. (MHz)	2437
Polarization	Horizontal	Test Configuration	2



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	44.56	54.00	-9.44	47.74	-3.18	Average	254	249
2	2390.00	58.63	74.00	-15.37	61.81	-3.18	Peak	254	249
3	2483.50	45.41	54.00	-8.59	48.21	-2.80	Average	254	249
4	2483.50	62.35	74.00	-11.65	65.15	-2.80	Peak	254	249
5	4874.00	46.05	54.00	-7.95	42.11	3.94	Average	251	266
6	4874.00	57.48	74.00	-16.52	53.54	3.94	Peak	251	266
7	7311.00	48.15	54.00	-5.85	39.74	8.41	Average	110	126
8	7311.00	61.24	74.00	-12.76	52.83	8.41	Peak	110	126

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

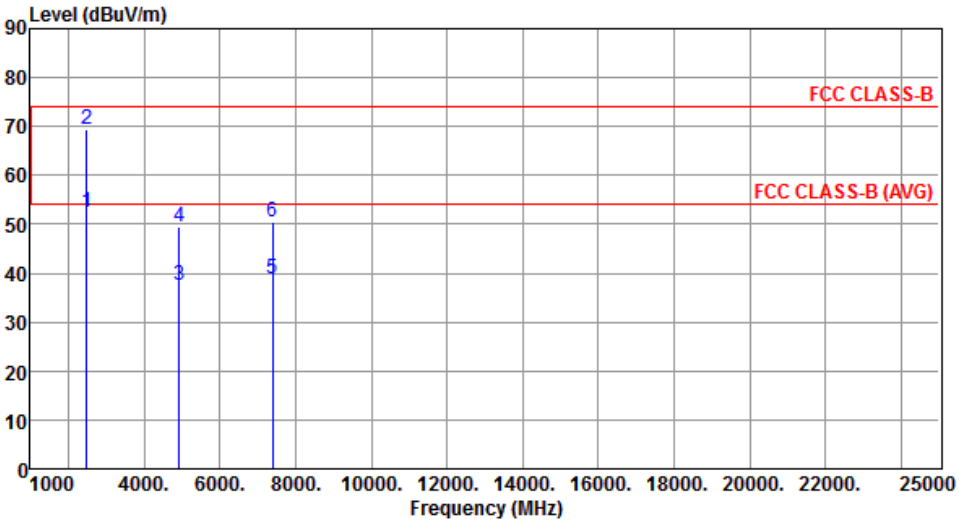
Modulation	HT20	Test Freq. (MHz)	2437
Polarization	Vertical	Test Configuration	2



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	48.21	54.00	-5.79	51.39	-3.18	Average	269	92
2	2390.00	61.95	74.00	-12.05	65.13	-3.18	Peak	269	92
3	2483.50	48.36	54.00	-5.64	51.16	-2.80	Average	269	92
4	2483.50	65.24	74.00	-8.76	68.04	-2.80	Peak	269	92
5	4874.00	45.16	54.00	-8.84	41.22	3.94	Average	265	61
6	4874.00	56.82	74.00	-17.18	52.88	3.94	Peak	265	61
7	7311.00	47.62	54.00	-6.38	39.21	8.41	Average	236	344
8	7311.00	61.15	74.00	-12.85	52.74	8.41	Peak	236	344

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

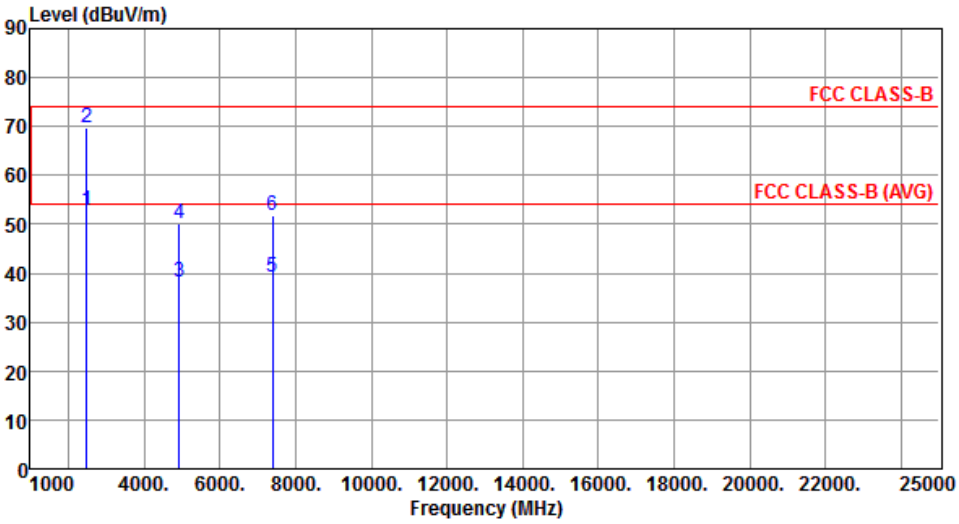
Modulation	HT20	Test Freq. (MHz)	2462
Polarization	Horizontal	Test Configuration	2



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	52.41	54.00	-1.59	55.21	-2.80	Average	251	246
2	2483.50	69.36	74.00	-4.64	72.16	-2.80	Peak	251	246
3	4924.00	37.45	54.00	-16.55	33.35	4.10	Average	245	266
4	4924.00	49.36	74.00	-24.64	45.26	4.10	Peak	245	266
5	7386.00	38.95	54.00	-15.05	30.51	8.44	Average	110	133
6	7386.00	50.63	74.00	-23.37	42.19	8.44	Peak	110	133

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Modulation	HT20	**Test Freq. (MHz)**	2462
Polarization	Vertical	**Test Configuration**	2

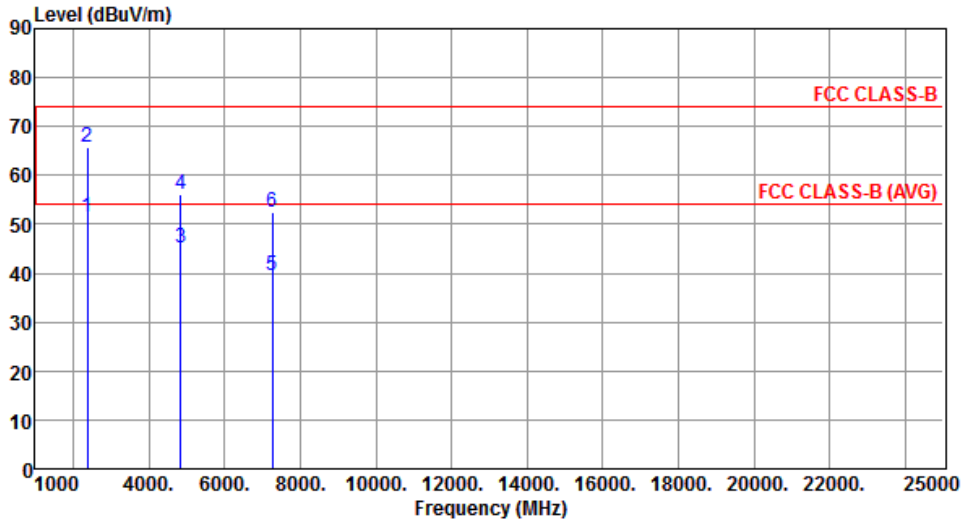


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	52.88	54.00	-1.12	55.68	-2.80	Average	271	90
2	2483.50	69.88	74.00	-4.12	72.68	-2.80	Peak	271	90
3	4924.00	38.16	54.00	-15.84	34.06	4.10	Average	266	58
4	4924.00	50.24	74.00	-23.76	46.14	4.10	Peak	266	58
5	7386.00	39.25	54.00	-14.75	30.81	8.44	Average	235	329
6	7386.00	51.86	74.00	-22.14	43.42	8.44	Peak	235	329

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

3.5.8 Transmitter Radiated Unwanted Emissions (Above 1GHz) for HT40

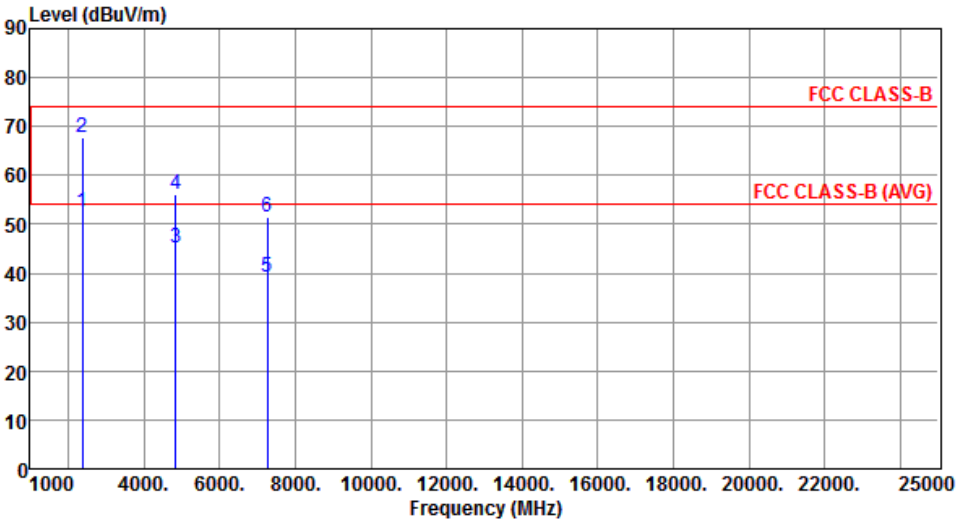
Modulation	HT40	Test Freq. (MHz)	2422
Polarization	Horizontal	Test Configuration	2



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	51.46	54.00	-2.54	54.64	-3.18	Average	251	244
2	2390.00	65.88	74.00	-8.12	69.06	-3.18	Peak	251	244
3	4844.00	45.31	54.00	-8.69	41.46	3.85	Average	255	269
4	4844.00	56.02	74.00	-17.98	52.17	3.85	Peak	255	269
5	7266.00	39.44	54.00	-14.56	31.05	8.39	Average	103	126
6	7266.00	52.41	74.00	-21.59	44.02	8.39	Peak	103	126

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

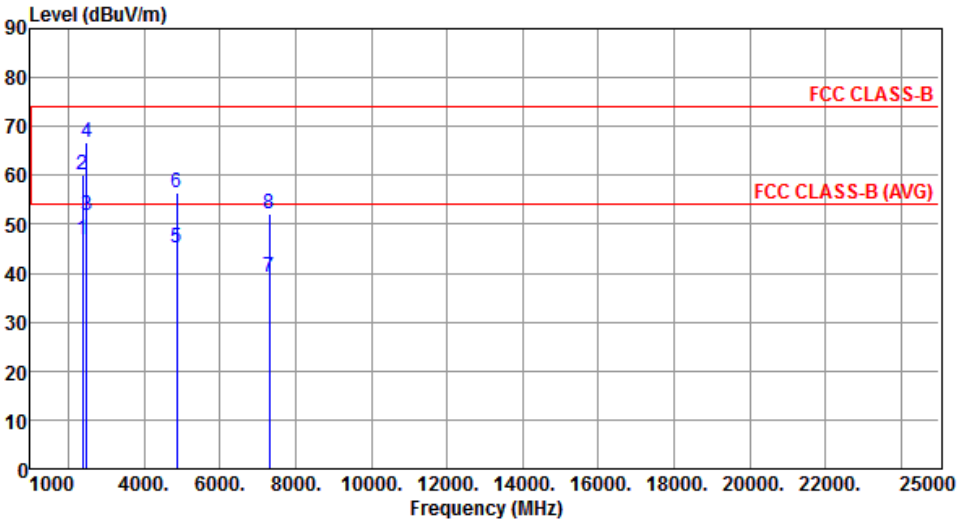
Modulation	HT40	Test Freq. (MHz)	2422
Polarization	Vertical	Test Configuration	2



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	52.51	54.00	-1.49	55.69	-3.18	Average	245	92
2	2390.00	67.71	74.00	-6.29	70.89	-3.18	Peak	245	92
3	4844.00	45.12	54.00	-8.88	41.27	3.85	Average	263	51
4	4844.00	56.08	74.00	-17.92	52.23	3.85	Peak	263	51
5	7266.00	39.15	54.00	-14.85	30.76	8.39	Average	104	166
6	7266.00	51.48	74.00	-22.52	43.09	8.39	Peak	104	166

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

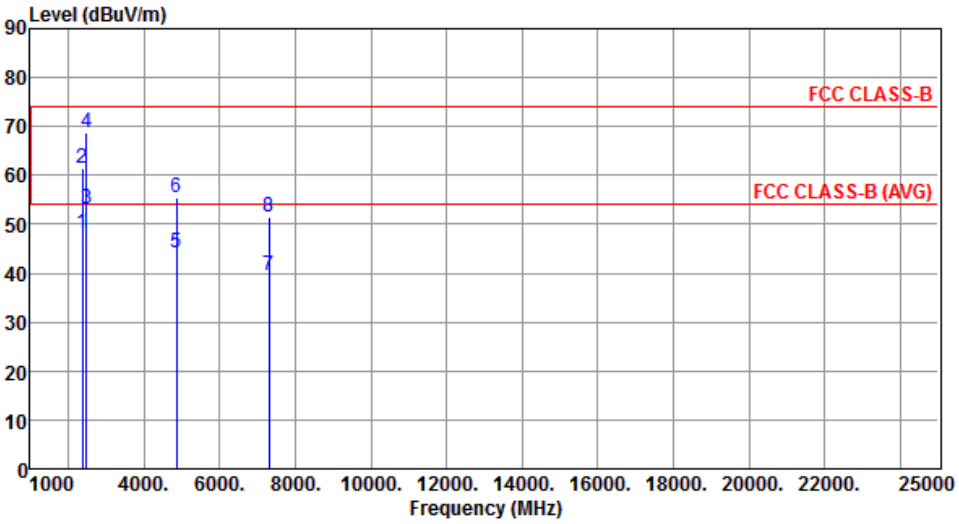
Modulation	HT40	**Test Freq. (MHz)**	2437
Polarization	Horizontal	**Test Configuration**	2



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	46.95	54.00	-7.05	50.13	-3.18	Average	250	247
2	2390.00	60.11	74.00	-13.89	63.29	-3.18	Peak	250	247
3	2483.50	51.96	54.00	-2.04	54.76	-2.80	Average	250	247
4	2483.50	66.84	74.00	-7.16	69.64	-2.80	Peak	250	247
5	4874.00	45.13	54.00	-8.87	41.19	3.94	Average	253	241
6	4874.00	56.58	74.00	-17.42	52.64	3.94	Peak	253	241
7	7311.00	39.25	54.00	-14.75	30.84	8.41	Average	105	106
8	7311.00	52.18	74.00	-21.82	43.77	8.41	Peak	105	106

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

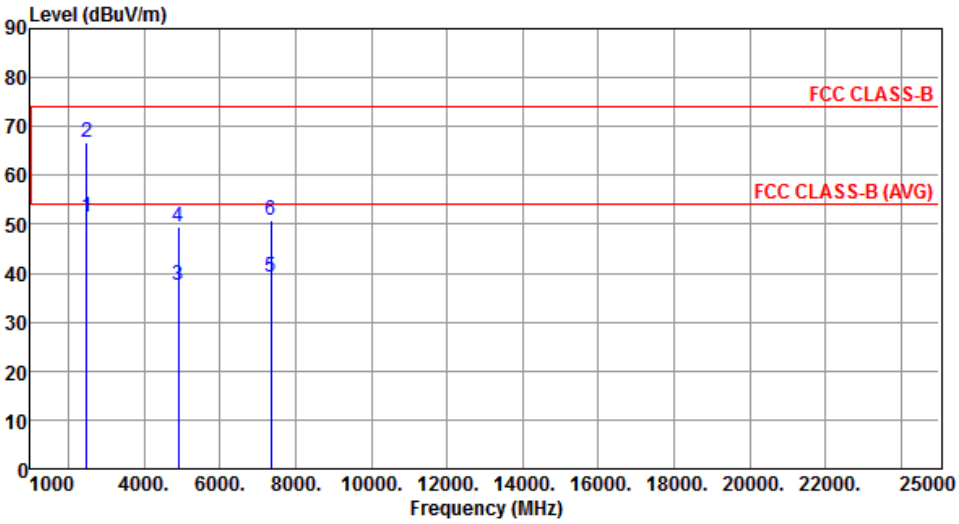
Modulation	HT40	Test Freq. (MHz)	2437
Polarization	Vertical	Test Configuration	2



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	48.01	54.00	-5.99	51.19	-3.18	Average	243	92
2	2390.00	61.30	74.00	-12.70	64.48	-3.18	Peak	243	92
3	2483.50	53.15	54.00	-0.85	55.95	-2.80	Average	243	92
4	2483.50	68.69	74.00	-5.31	71.49	-2.80	Peak	243	92
5	4874.00	44.02	54.00	-9.98	40.08	3.94	Average	254	81
6	4874.00	55.61	74.00	-18.39	51.67	3.94	Peak	254	81
7	7311.00	39.65	54.00	-14.35	31.24	8.41	Average	204	306
8	7311.00	51.58	74.00	-22.42	43.17	8.41	Peak	204	306

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

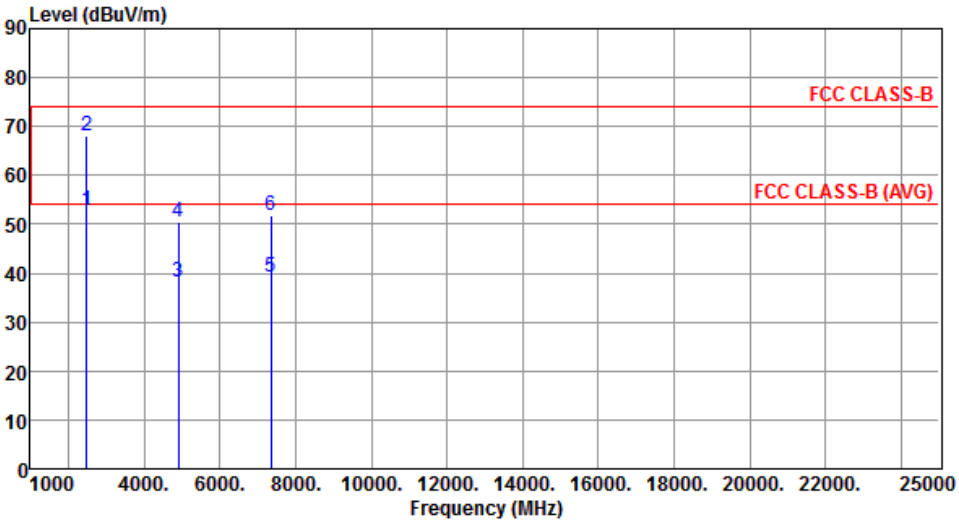
Modulation	HT40	Test Freq. (MHz)	2452
Polarization	Horizontal	Test Configuration	2



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	51.42	54.00	-2.58	54.22	-2.80	Average	245	241
2	2483.50	66.59	74.00	-7.41	69.39	-2.80	Peak	245	241
3	4904.00	37.65	54.00	-16.35	33.60	4.05	Average	239	251
4	4904.00	49.48	74.00	-24.52	45.43	4.05	Peak	239	251
5	7356.00	39.14	54.00	-14.86	30.71	8.43	Average	103	116
6	7356.00	50.88	74.00	-23.12	42.45	8.43	Peak	103	116

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Modulation	HT40	Test Freq. (MHz)	2452
Polarization	Vertical	Test Configuration	2



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	52.86	54.00	-1.14	55.66	-2.80	Average	242	90
2	2483.50	68.08	74.00	-5.92	70.88	-2.80	Peak	242	90
3	4904.00	38.35	54.00	-15.65	34.30	4.05	Average	256	134
4	4904.00	50.46	74.00	-23.54	46.41	4.05	Peak	256	134
5	7356.00	39.12	54.00	-14.88	30.69	8.43	Average	231	306
6	7356.00	51.68	74.00	-22.32	43.25	8.43	Peak	231	306

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

3.6 Emissions in Non-Restricted Frequency Bands

3.6.1 Emissions in Non-Restricted Frequency Bands Limit

Peak power in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz

3.6.2 Test Procedures

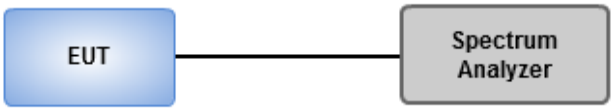
Reference level measurement

1. Set RBW=100kHz, VBW = 300kHz , Detector = Peak, Sweep time = Auto
2. Trace = max hold , Allow Trace to fully stabilize
3. Use the peak marker function to determine the maximum PSD level

Emission level measurement

1. Set RBW=100kHz, VBW = 300kHz , Detector = Peak, Sweep time = Auto
2. Trace = max hold , Allow Trace to fully stabilize
3. Scan Frequency range is up to 25GHz
4. Use the peak marker function to determine the maximum amplitude level

3.6.3 Test Setup

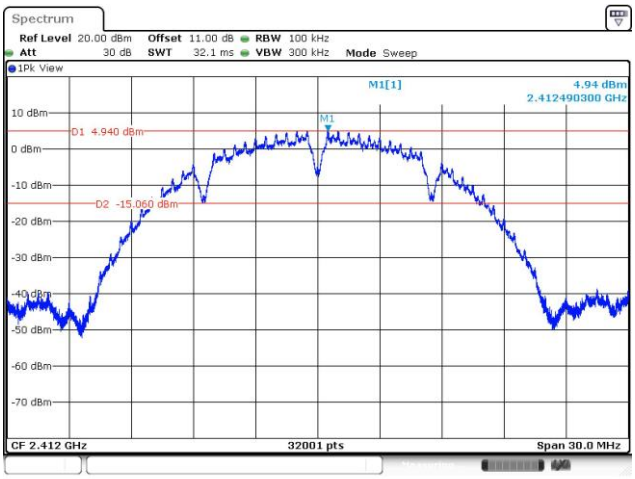
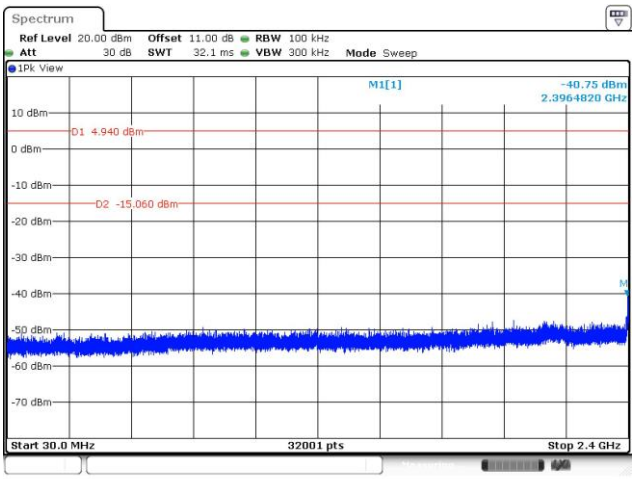
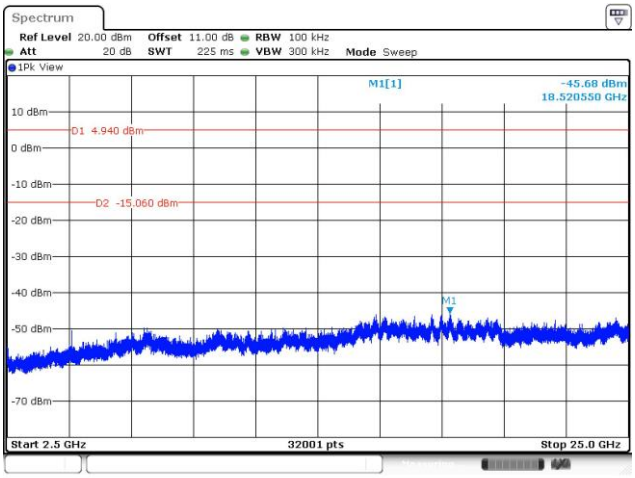
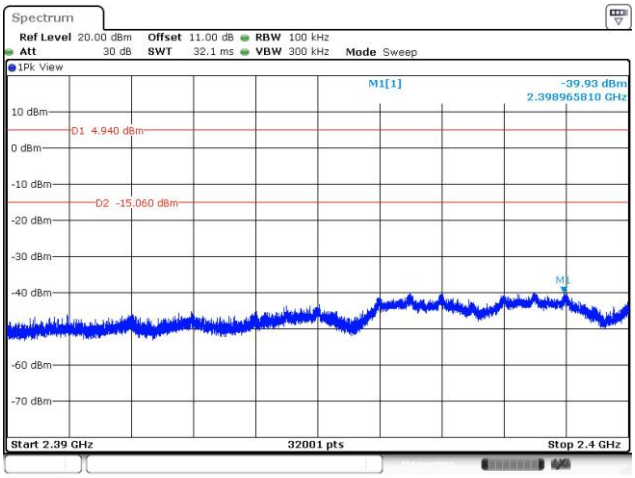


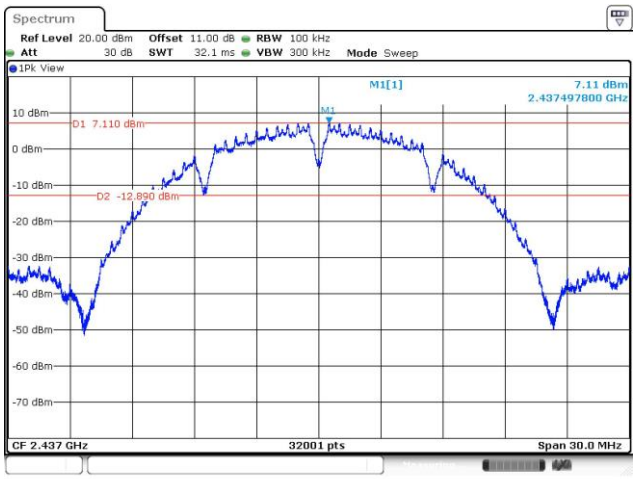
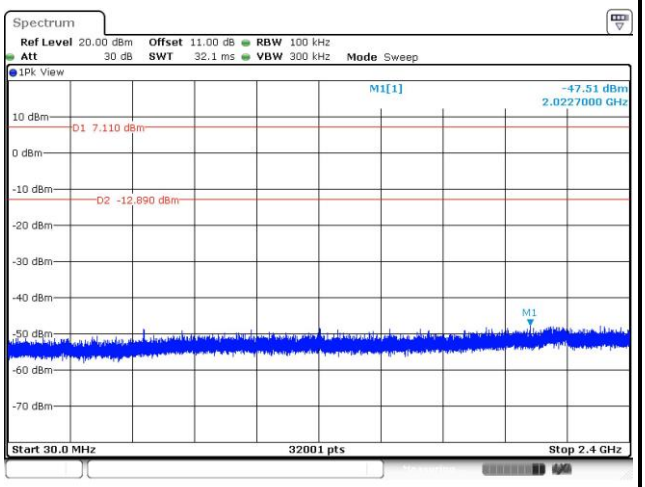
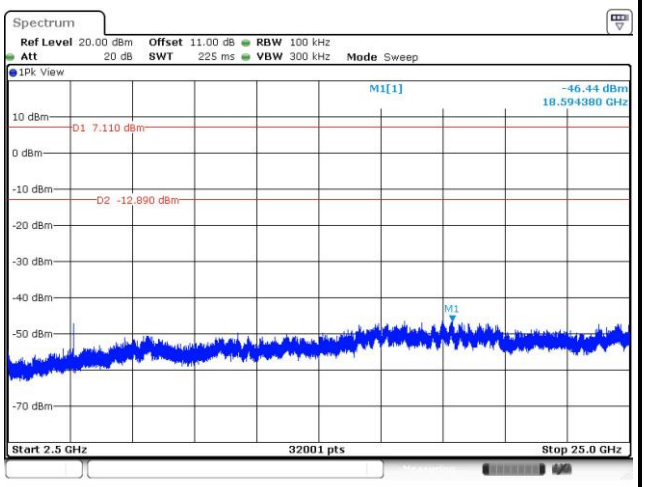
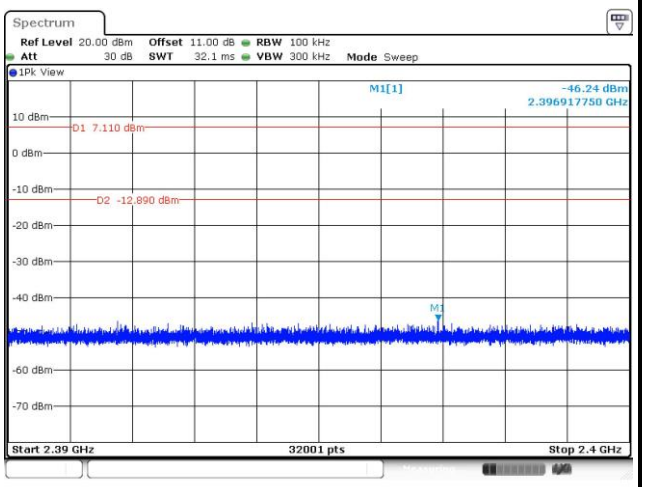
3.6.4 Test Result of Emissions in non-restricted frequency bands

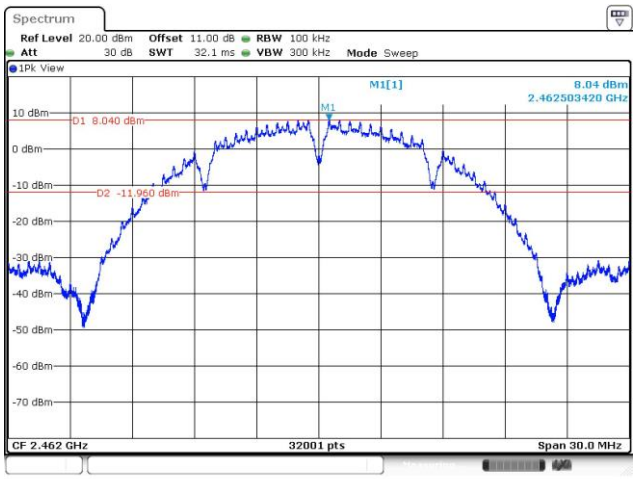
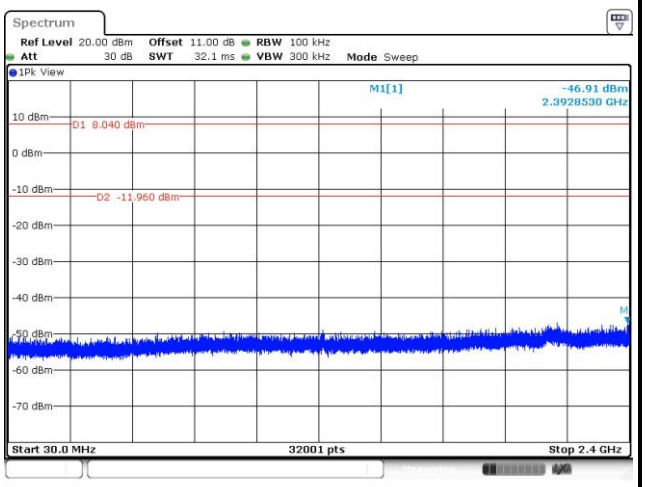
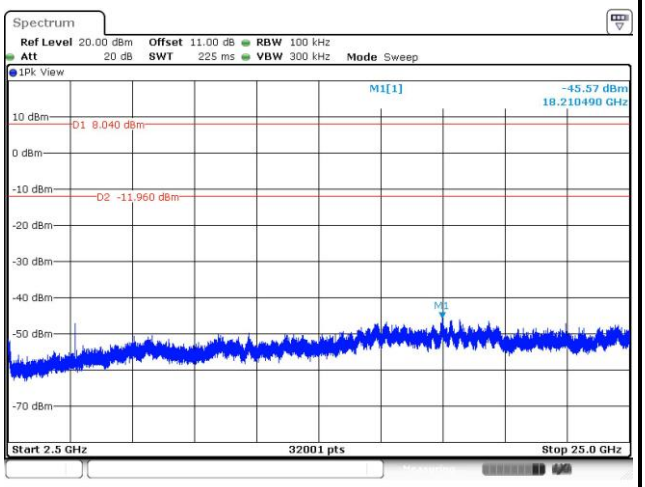
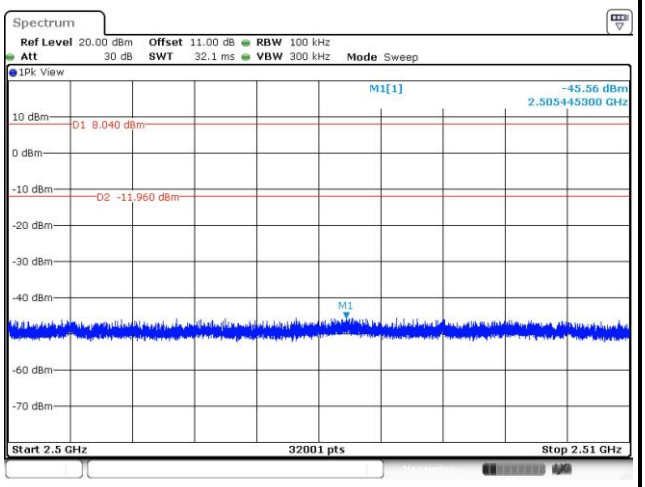
This test item is performed on each TX output individually without summing or adding 10 log(N_{ANT}) since measurements are made relative to the in-band emissions on the individual outputs. Only worst test result of each operating mode is presented.

3.6.5 Unwanted Emissions into Non-Restricted Frequency Bands

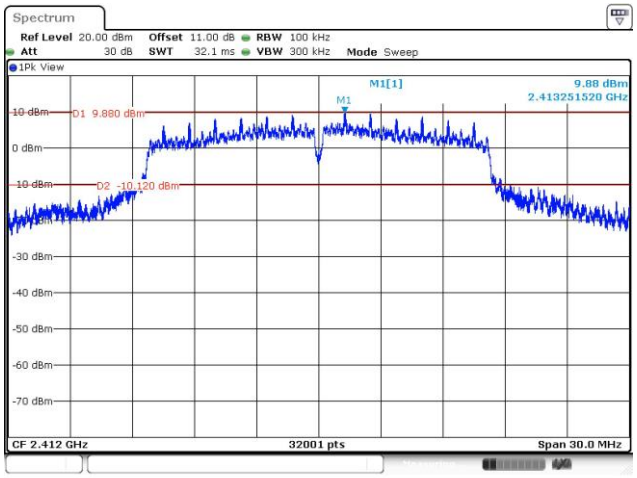
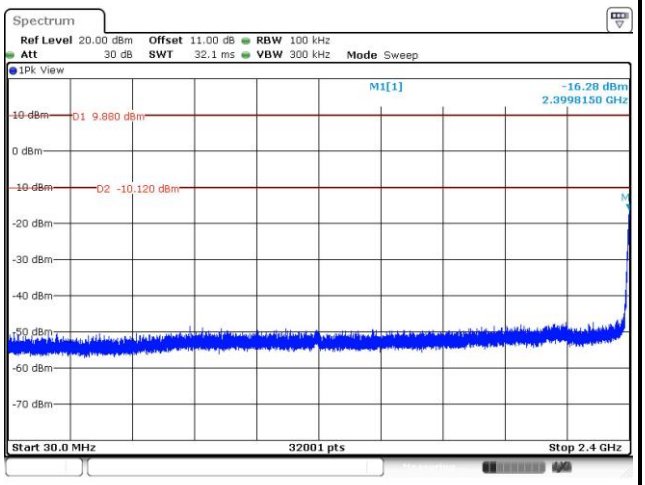
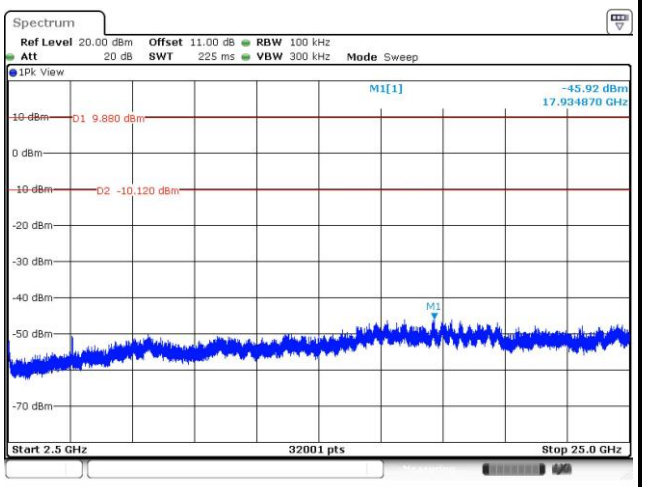
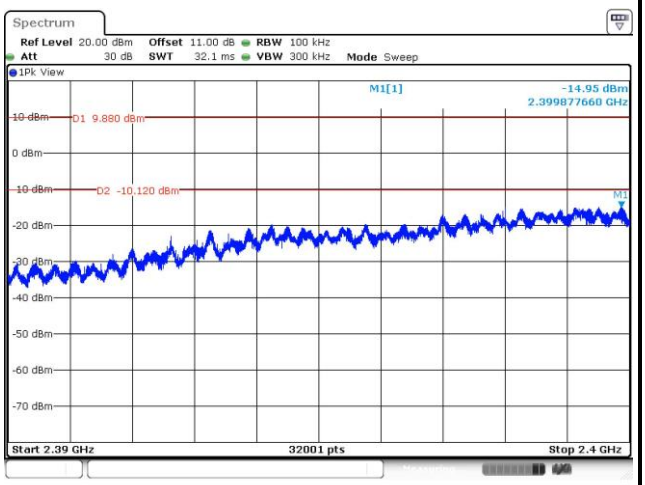
802.11b

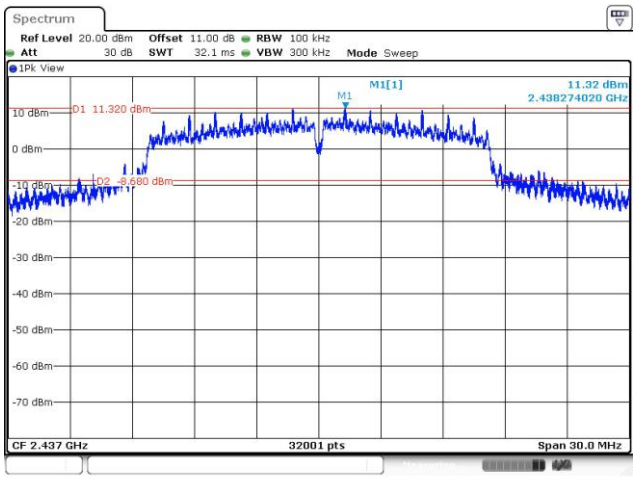
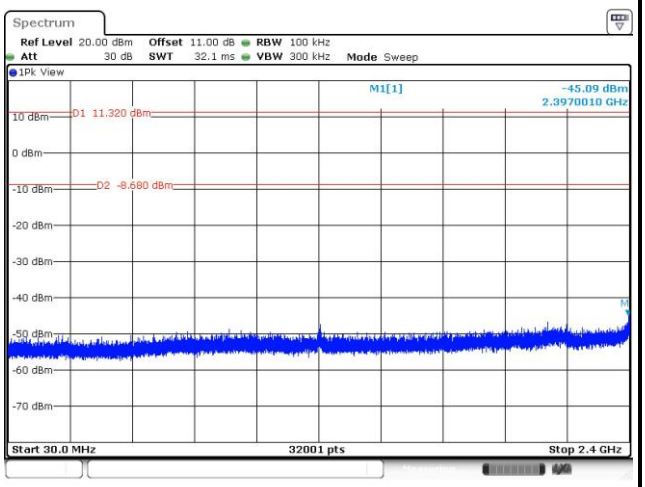
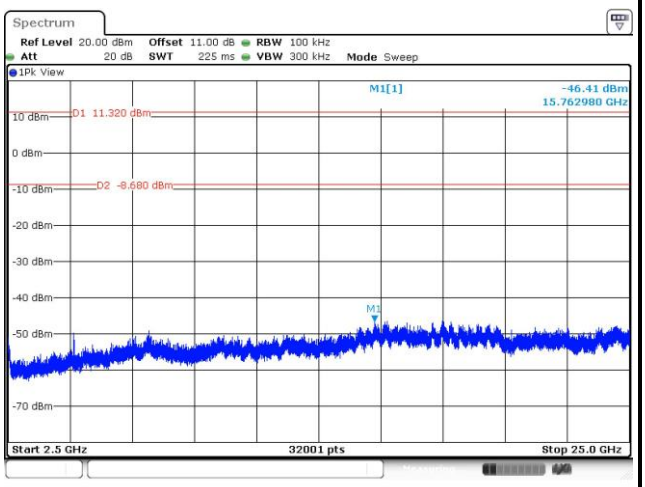
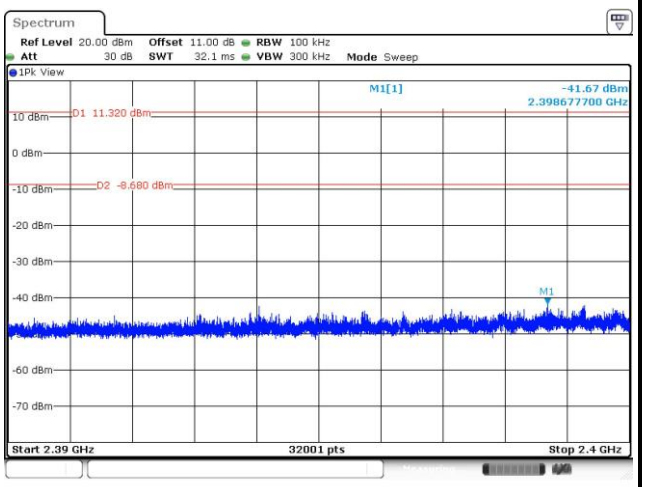
Reference Level	Tx 2412MHz / 30MHz~25GHz (down 20dBc)
	
---	
---	

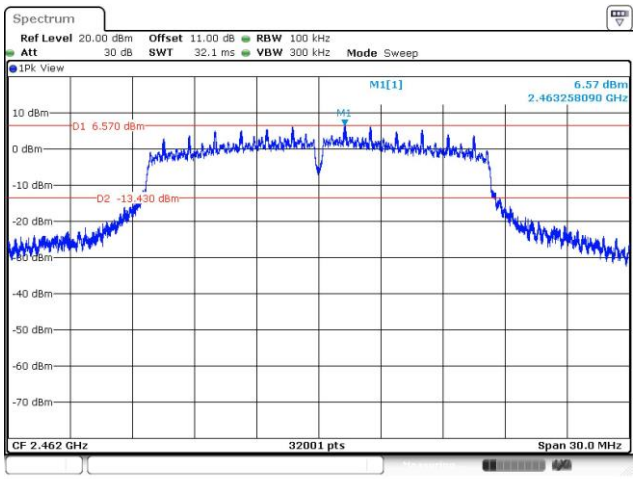
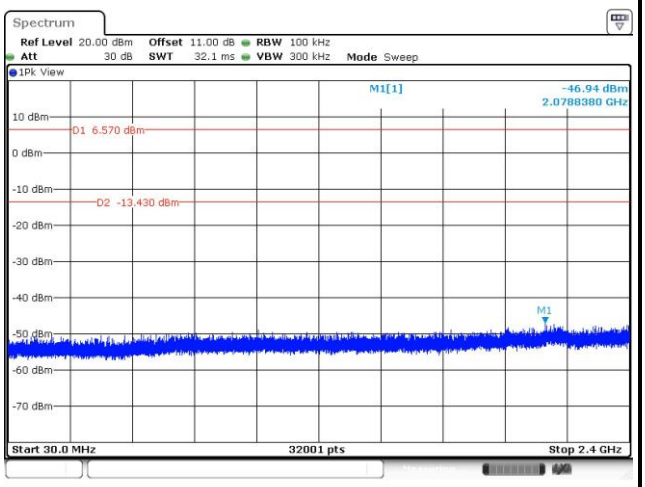
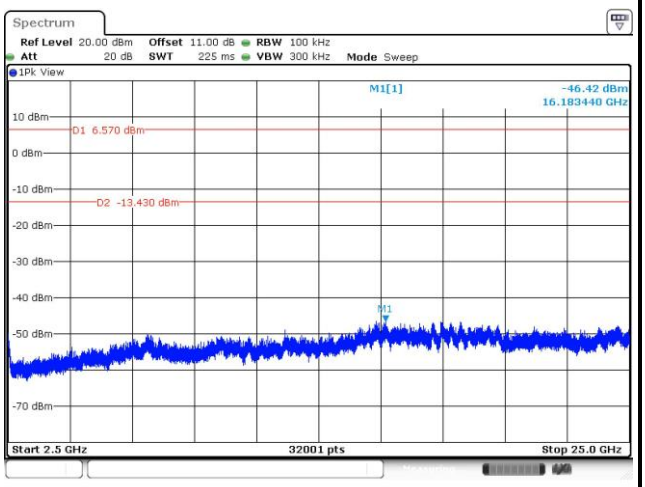
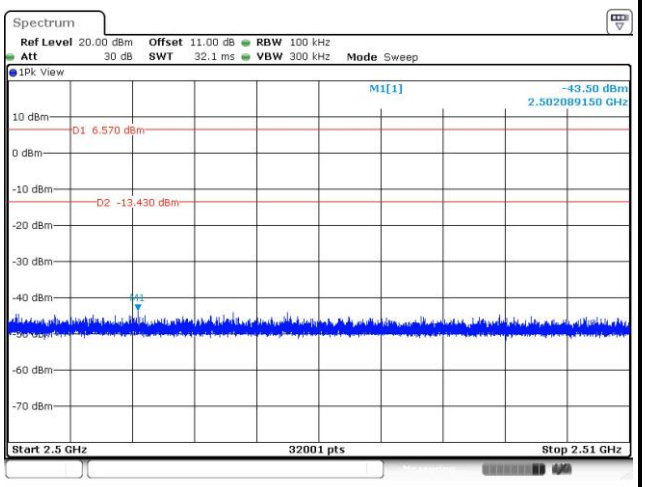
Reference Level	Tx 2437MHz / 30MHz~25GHz (down 20dBc)
	
---	
---	

Reference Level	Tx 2462MHz / 30MHz~25GHz (down 20dBc)
	
---	
---	

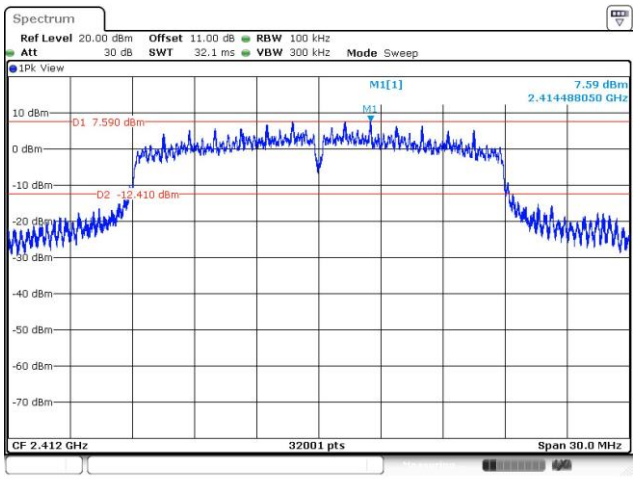
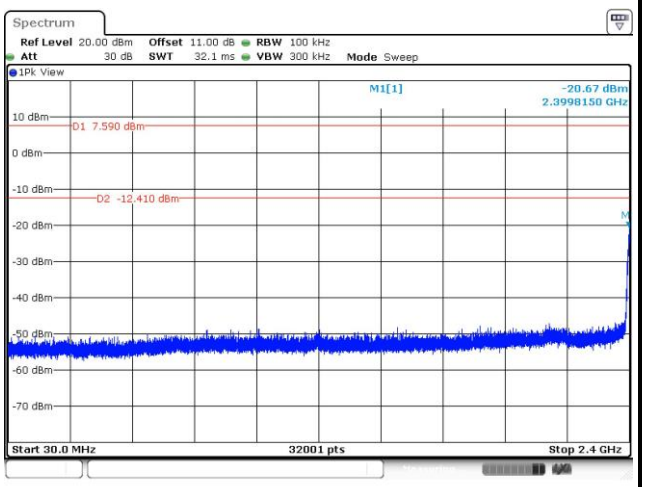
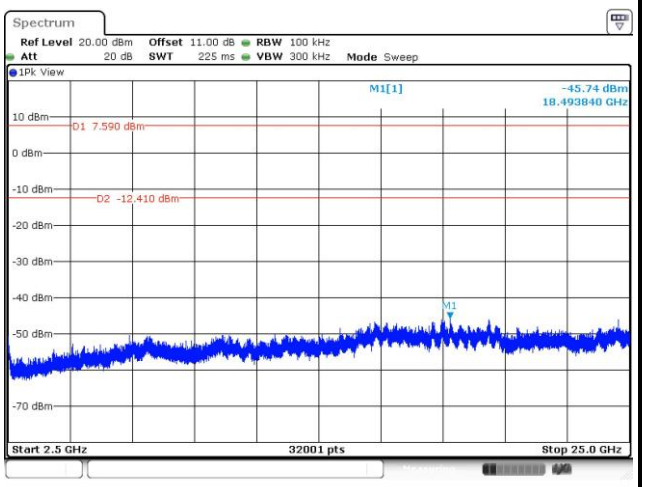
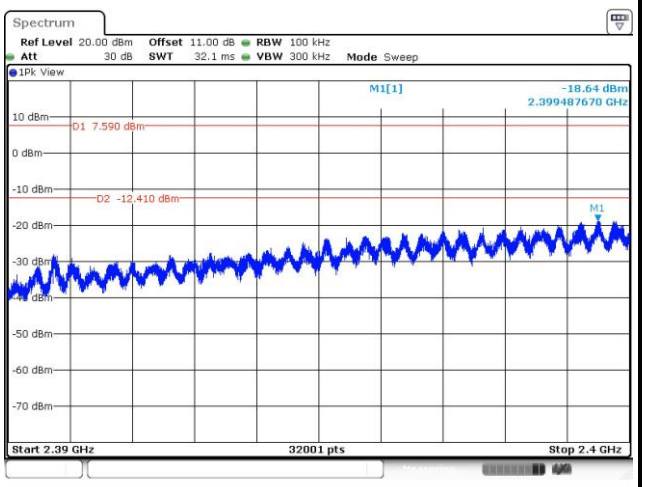
802.11g

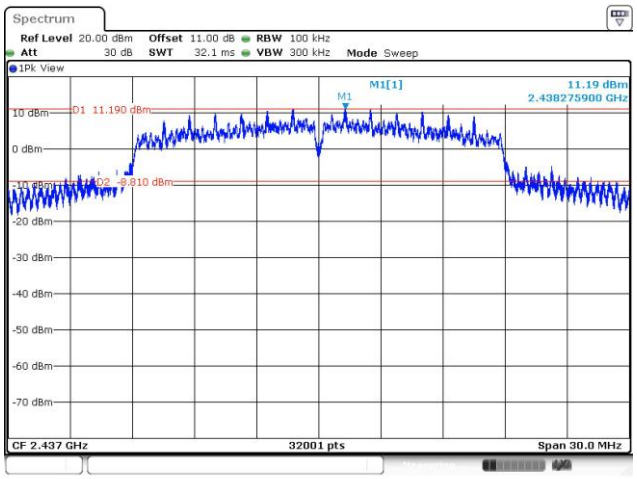
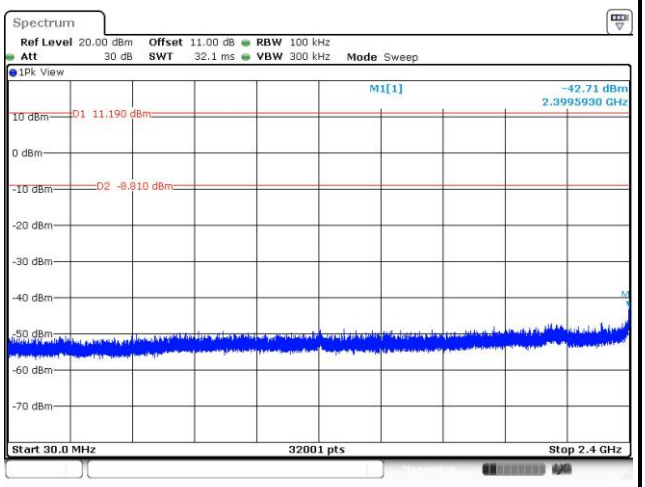
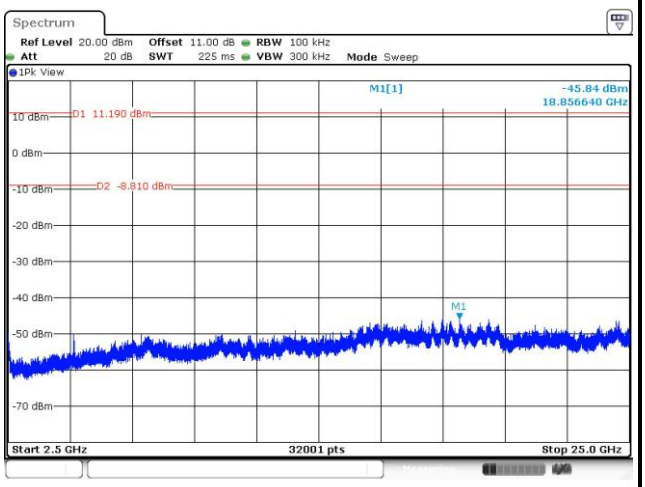
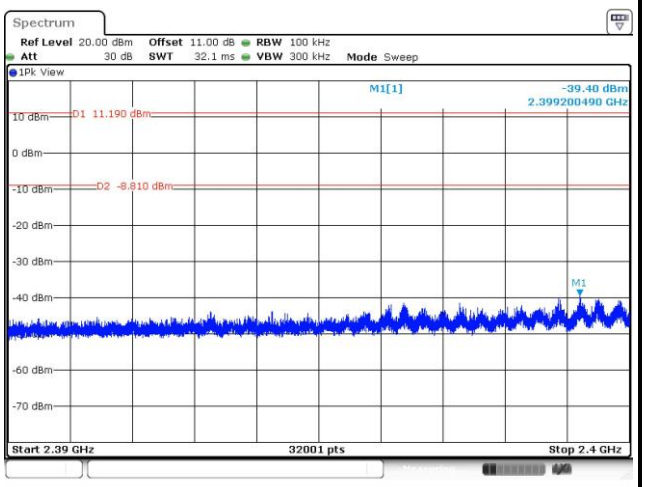
Reference Level	Tx 2412MHz / 30MHz~25GHz (down 20dBc)
	
---	
---	

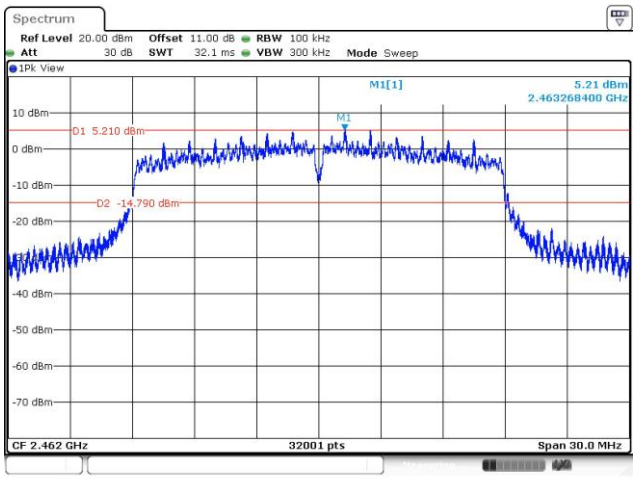
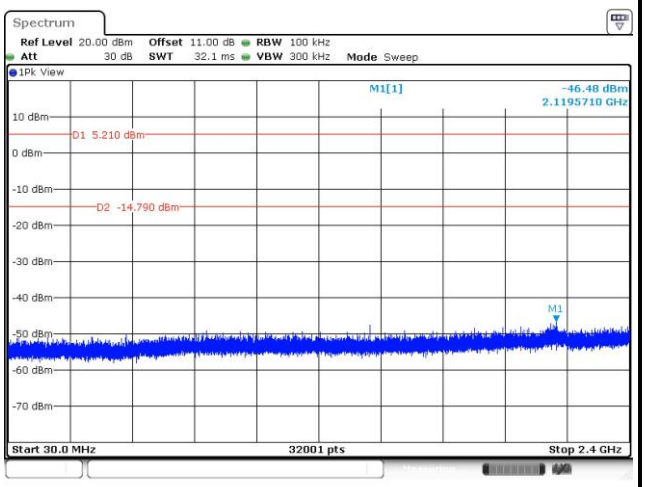
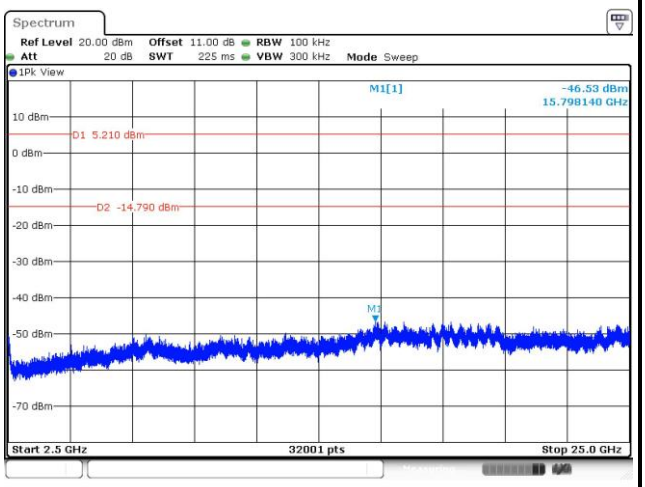
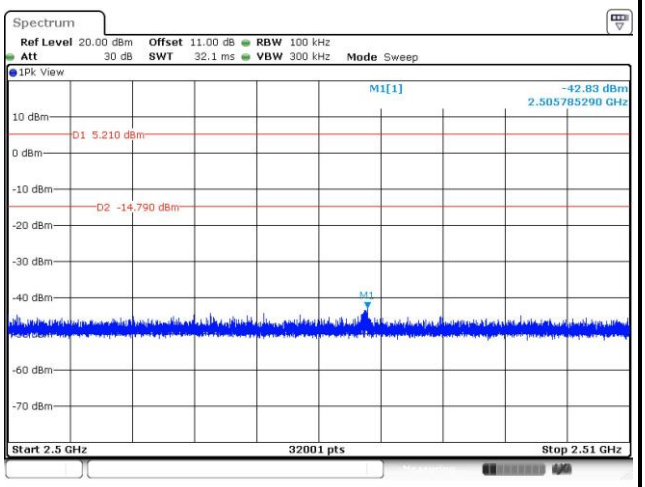
Reference Level	Tx 2437MHz / 30MHz~25GHz (down 20dBc)
	
---	
---	

Reference Level	Tx 2462MHz / 30MHz~25GHz (down 20dBc)
	
---	
---	

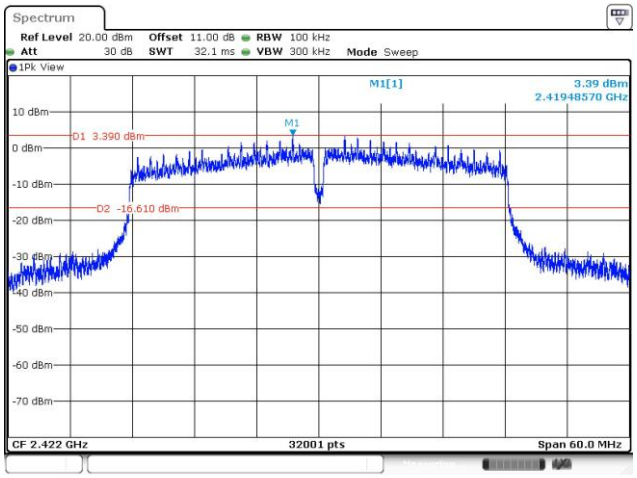
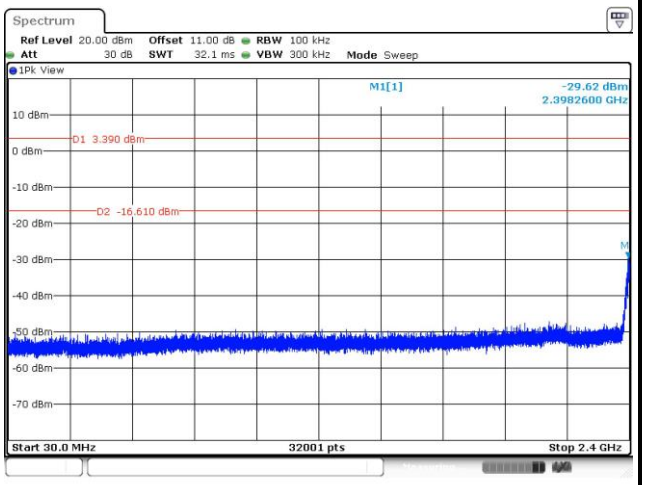
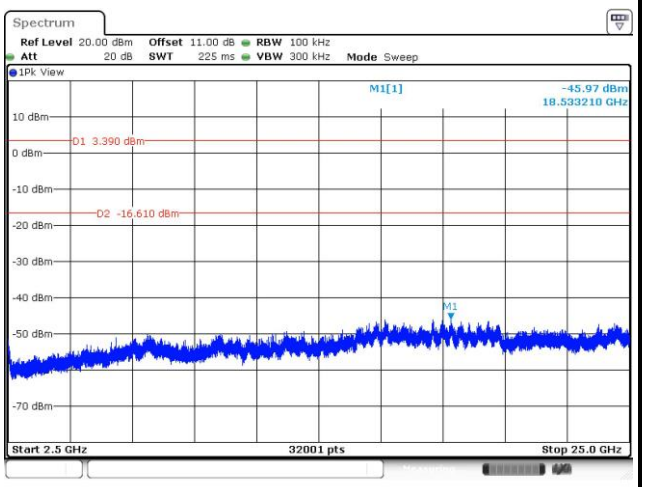
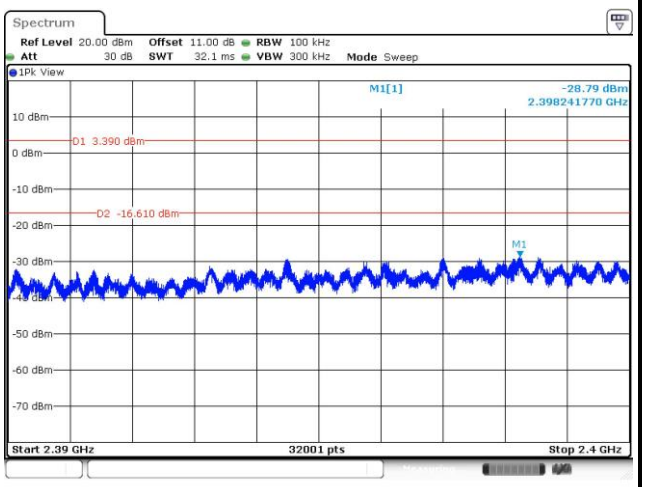
802.11n HT20

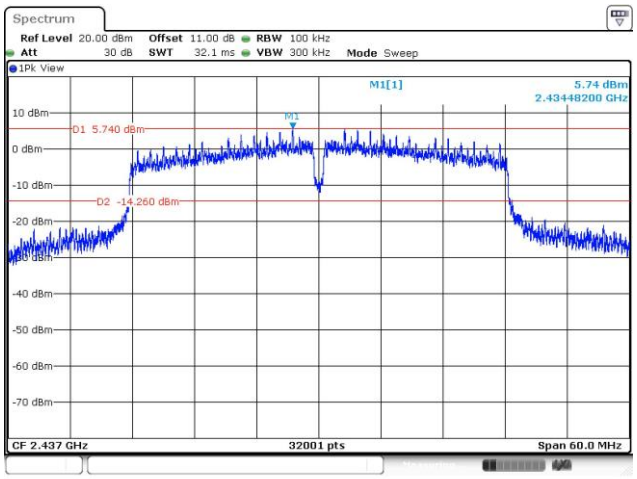
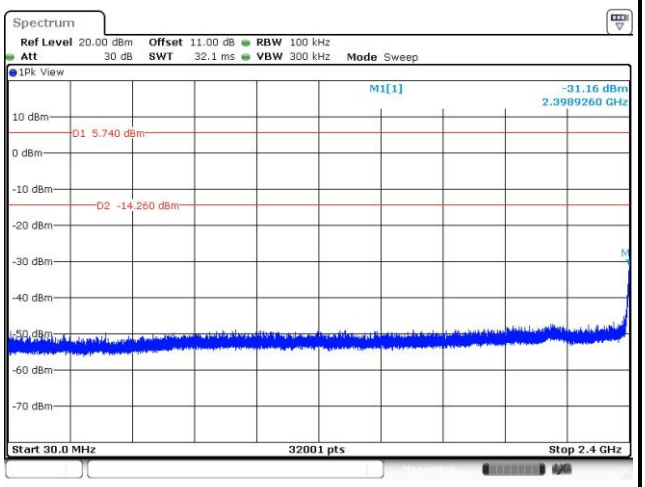
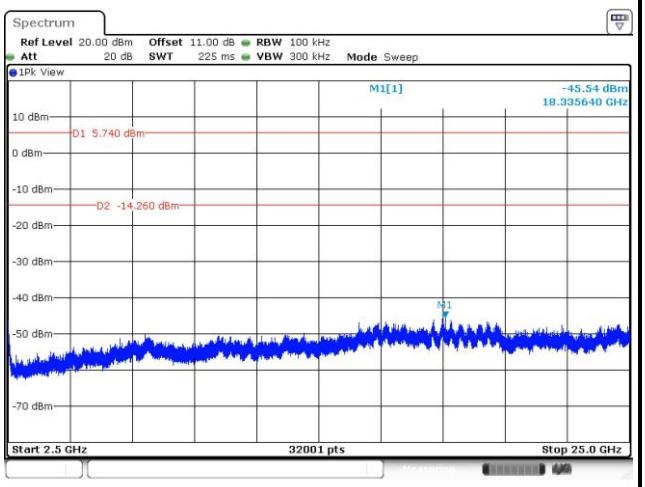
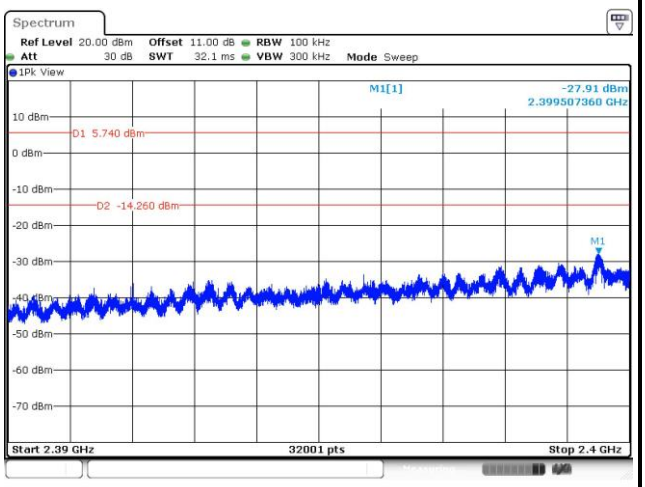
Reference Level	Tx 2412MHz / 30MHz~25GHz (down 20dBc)
	
---	
---	

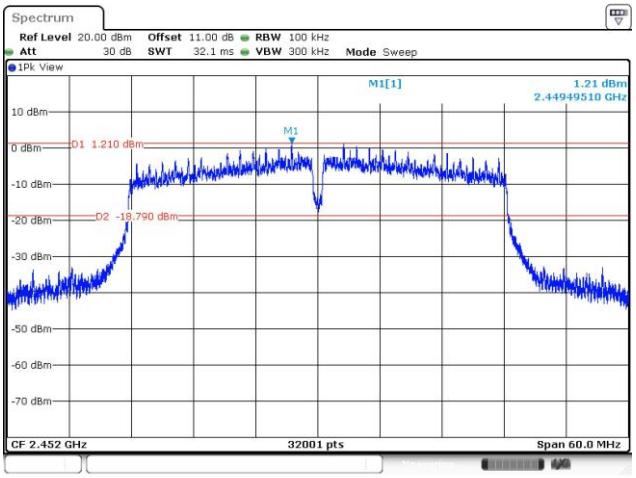
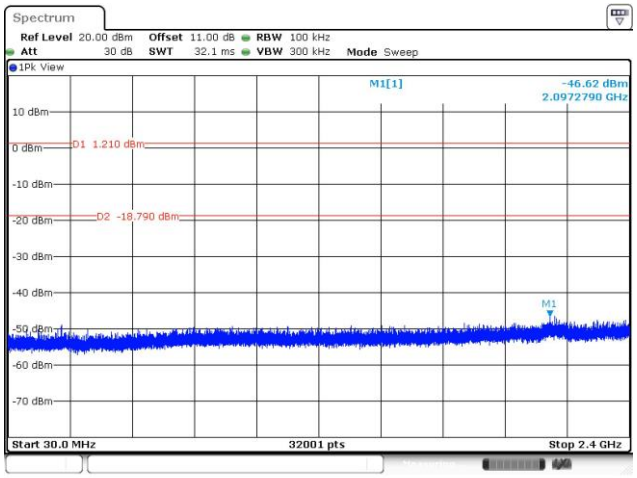
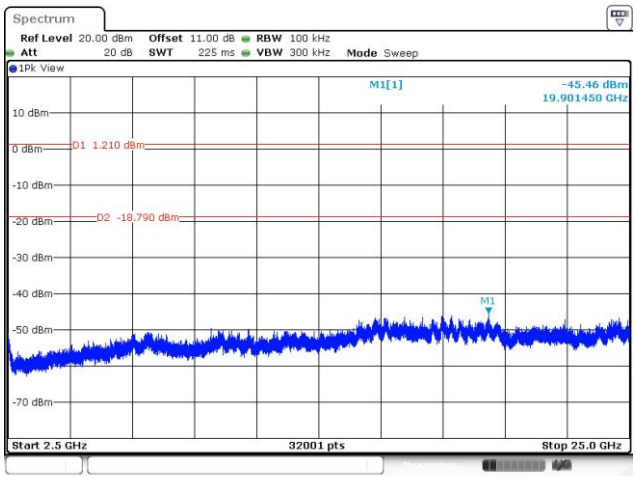
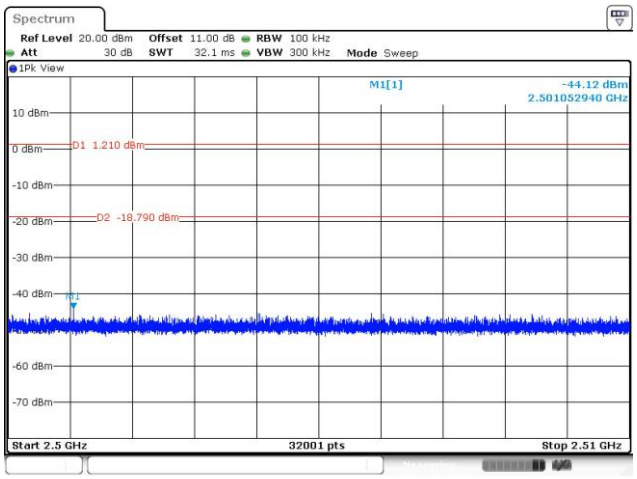
Reference Level	Tx 2437MHz / 30MHz~25GHz (down 20dBc)
	
---	
---	

Reference Level	Tx 2462MHz / 30MHz~25GHz (down 20dBc)
	
---	
---	

802.11n HT40

Reference Level	Tx 2422MHz / 30MHz~25GHz (down 20dBc)
	
---	
---	

Reference Level	Tx 2437MHz / 30MHz~25GHz (down 20dBc)
	
---	
---	

Reference Level	Tx 2452MHz / 30MHz~25GHz (down 20dBc)
	
---	
---	

4 Test laboratory information

Established in 2012, ICC provides foremost EMC & RF Testing and advisory consultation services by our skilled engineers and technicians. Our services employ a wide variety of advanced edge test equipment and one of the widest certification extents in the business.

International Certification Corp (EMC and Wireless Communication Laboratory), it is our definitive objective is to institute long term, trust-based associations with our clients. The expectation we set up with our clients is based on outstanding service, practical expertise and devotion to a certified value structure. Our passion is to grant our clients with best EMC / RF services by oriented knowledgeable and accommodating staff.

Our Test sites are located at Linkou District and Kwei Shan District. Location map can be found on our website http://www.icertifi.com.tw.

Linkou	**Kwei Shan**	**Kwei Shan Site II**
Tel: 886-2-2601-1640	Tel: 886-3-271-8666	Tel: 886-3-271-8640
No. 30-2, Ding Fwu Tsuen, Lin Kou District, New Taipei City, Taiwan, R.O.C.	No. 3-1, Lane 6, Wen San 3rd St., Kwei Shan District, Tao Yuan City 333, Taiwan, R.O.C.	No. 14-1, Lane 19, Wen San 3rd St., Kwei Shan District, Tao Yuan City 333, Taiwan, R.O.C.

If you have any suggestion, please feel free to contact us as below information.

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