FCC Test Report

FCC ID	:	**2AE92CABC-LOL01**
Equipment	:	**Lollipop**
Model No.	:	**CABC-LOL01**
Brand Name	:	**Lollipop**
Applicant	:	**Masterwork Aoitek Tech Corp Ltd.**
Address	:	**9F,No.411,Ruiguang Rd,Taipei 11492, Taiwan**
Standard	:	**47 CFR FCC Part 15.247**
Received Date	:	**Jun. 24, 2016**
Tested Date	:	**Jun. 30 ~ Aug. 17, 2016**

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

1 GENERAL DESCRIPTION 5

1.1 Information 5
1.2 Local Support Equipment List 7
1.3 Test Setup Chart 7
1.4 The Equipment List 8
1.5 Test Standards 9
1.6 Measurement Uncertainty 9

2 TEST CONFIGURATION 10

2.1 Testing Condition 10
2.2 The Worst Test Modes and Channel Details 10

3 TRANSMITTER TEST RESULTS 11

3.1 Conducted Emissions 11
3.2 6dB and Occupied Bandwidth 14
3.3 RF Output Power 17
3.4 Power Spectral Density 19
3.5 Unwanted Emissions into Restricted Frequency Bands 21
3.6 Emissions in Non-Restricted Frequency Bands 43

4 TEST LABORATORY INFORMATION 53

Release Record

Report No.	Version	Description	Issued Date
FR662401AC	Rev. 01	Initial issue	Oct. 04, 2016

Summary of Test Results

FCC Rules	Test Items	Measured	Result
15.207	Conducted Emissions	[dBuV]: 0.555MHz 31.26 (Margin -14.74dB) - AV	Pass
15.247(d) 15.209	Radiated Emissions	[dBuV/m at 3m]:2483.50MHz 72.99 (Margin -1.01dB) – PK	Pass
15.247(b)(3)	Maximum Output Power	Max Power [dBm]: 21.32	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 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]	1	1-11 Mbps
2400-2483.5	g	2412-2462	1-11 [11]	1	6-54 Mbps
2400-2483.5	n (HT20)	2412-2462	1-11 [11]	1	MCS 0-7
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.					

1.1.2 Antenna Details

Ant. No.	Brand	Model	Type	Gain (dBi)	Connector	Remarks
1	Mag.Layers	MSA-3313-2G4C1-A1	stamped metal	1.01	N/A	---

1.1.3 Power Supply Type of Equipment under Test (EUT)

Power Supply Type	5Vdc from adapter

1.1.4 Accessories

Accessories		
No.	**Equipment**	**Description**
1	AC Adapter	Brand Name: Lollipop Model Name: KSA29B0500200D5 Power Rating: I/P: 100-240Vac, 50-60Hz, 0.5A O/P: 5V, 2.0A
2	USB Cable (For charging only)	3m non-shielded cable without core

1.1.5 Channel List

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

1.1.6 Test Tool and Duty Cycle

Test Tool	telnet		
Duty Cycle and Duty Factor	Mode	Duty cycle (%)	Duty factor (dB)
	11b	99.30%	0.03
	11g	93.98%	0.27
	HT20	93.62%	0.29

1.1.7 Power Setting

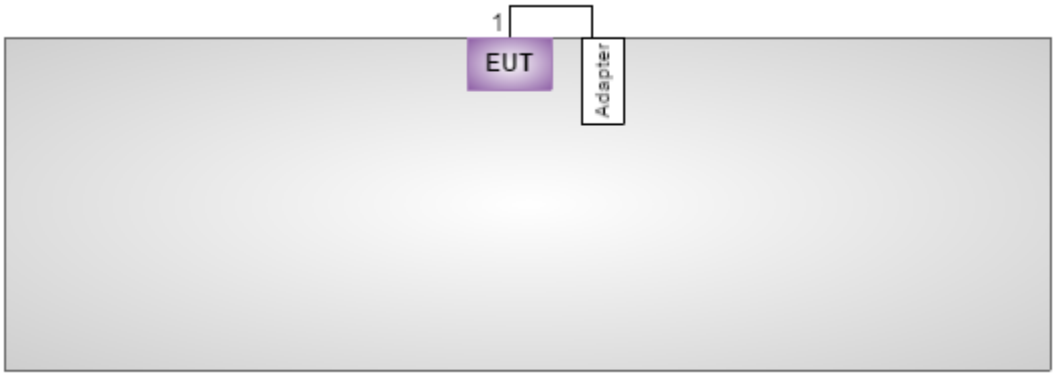
Modulation Mode	Test Frequency (MHz)	Power Set
11b	2412	DEFAULT
11b	2437	DEFAULT
11b	2462	DEFAULT
11g	2412	DEFAULT
11g	2437	DEFAULT
11g	2462	DEFAULT
HT20	2412	DEFAULT
HT20	2437	DEFAULT
HT20	2462	DEFAULT

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	---

1.3 Test Setup Chart

Test Setup Diagram



1. USB, 3m non-shielded

Note: The support notebook and USB to Console cable were disconnected from EUT and removed from test table when EUT is set to transmit continuously.

1.4 The Equipment List

Test Item	Conducted Emission				
Test Site	Conduction room 1 / (CO01-WS)				
Instrument	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
EMC Receiver	R&S	ESCS 30	100169	Oct. 21, 2015	Oct. 20, 2016
LISN	SCHWARZBECK	Schwarzbeck 8127	8127-667	Nov. 13, 2015	Nov. 12, 2016
RF Cable-CON	EMC	EMCCFD300-BM-BM-6000	50821	Dec. 21, 2015	Dec. 20, 2016
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)				
Instrument	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
Spectrum Analyzer	R&S	FSV40	101498	Dec. 13, 2015	Dec. 12, 2016
Receiver	R&S	ESR3	101658	Nov. 04, 2015	Nov. 03, 2016
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-522	Aug. 20, 2015	Aug. 19, 2016
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1096	Dec. 16, 2015	Dec. 15, 2016
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Nov. 04, 2015	Nov. 03, 2016
Preamplifier	Burgeon	BPA-530	SN:100219	Sep. 10, 2015	Sep. 09, 2016
Preamplifier	Agilent	83017A	MY39501308	Oct. 02, 2015	Oct. 01, 2016
Preamplifier	EMC	EMC184045B	980192	Sep. 01, 2015	Aug. 31, 2016
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16014/4	Dec. 10, 2015	Dec. 09, 2016
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16019/4	Dec. 10, 2015	Dec. 09, 2016
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16139/4	Dec. 10, 2015	Dec. 09, 2016
LF cable 3M	Woken	CFD400NL-LW	CFD400NL-001	Dec. 10, 2015	Dec. 09, 2016
LF cable 10M	Woken	CFD400NL-LW	CFD400NL-002	Dec. 10, 2015	Dec. 09, 2016
Loop Antenna	R&S	HFH2-Z2	100330	Nov. 16, 2015	Nov. 15, 2016
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)				
Instrument	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
Spectrum Analyzer	R&S	FSV40	101063	Feb. 17, 2016	Feb. 16, 2017
Power Meter	Anritsu	ML2495A	1241002	Sep. 21, 2015	Sep. 20, 2016
Power Sensor	Anritsu	MA2411B	1207366	Sep. 21, 2015	Sep. 20, 2016
DC POWER SOURCE	GW INSTEK	GPC-3060D	EM884797	Oct. 20, 2015	Oct. 19, 2016
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 v03r05

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	22°C / 59%	Howard Huang
Radiated Emissions	03CH01-WS	23-24°C / 62-64%	Vincent Yeh Brad Wu Aska Huang
RF Conducted	TH01-WS	23°C / 66%	Alex Huang

- 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	11g	2437	6 Mbps	---
Radiated Emissions ≤1GHz	11g	2437	6 Mbps	---
Radiated Emissions >1GHz Maximum Output Power 6dB bandwidth Power spectral density	11b 11g HT20	2412 / 2437 / 2462 2412 / 2437 / 2462 2412 / 2437 / 2462	1 Mbps 6 Mbps MCS 0	---
NOTE: 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.				

3 Transmitter Test Results

3.1 Conducted Emissions

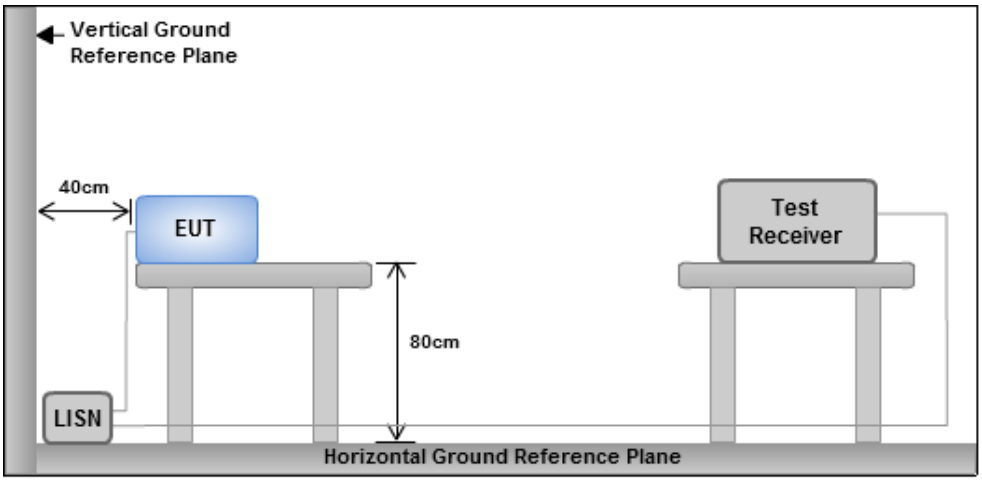
3.1.1 Limit of Conducted Emissions

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.

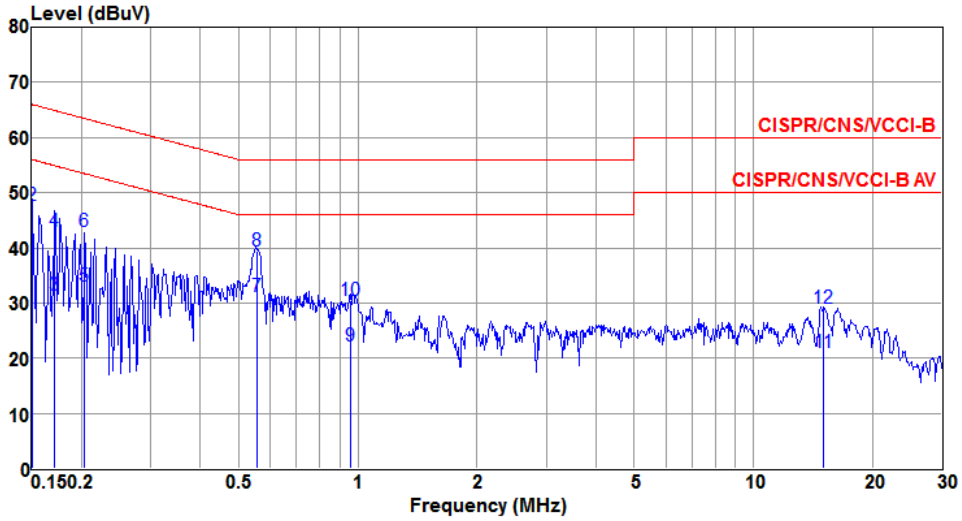
3.1.3 Test Setup



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

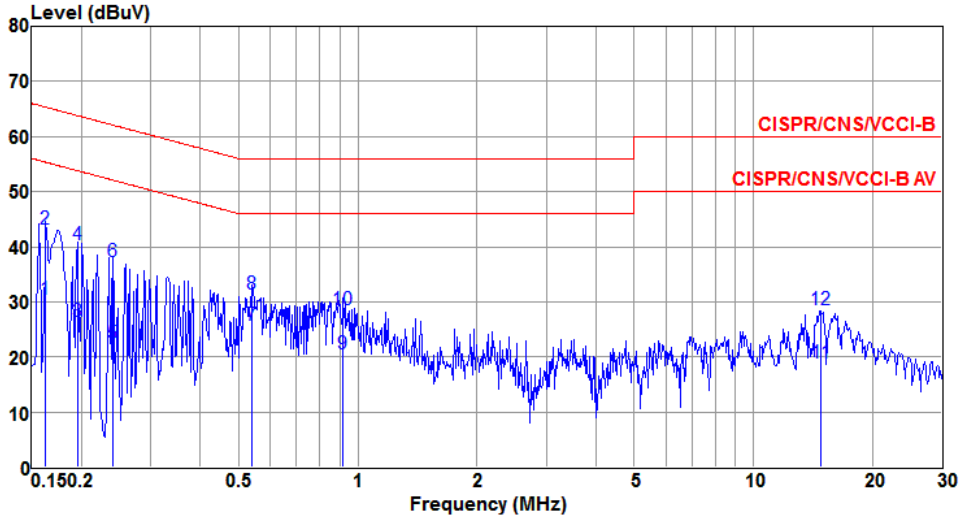
Modulation	11g	Test Freq. (MHz)	2437
Power Phase	Line		



	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark
1	0.150	34.70	56.00	-21.30	33.76	0.92	0.02	Average
2	0.150	47.68	66.00	-18.32	46.74	0.92	0.02	QP
3	0.171	31.33	54.90	-23.57	30.70	0.61	0.02	Average
4	0.171	43.05	64.90	-21.85	42.42	0.61	0.02	QP
5	0.204	32.93	53.45	-20.52	32.66	0.25	0.02	Average
6	0.204	42.97	63.45	-20.48	42.70	0.25	0.02	QP
7@	0.555	31.26	46.00	-14.74	31.07	0.15	0.04	Average
8	0.555	39.40	56.00	-16.60	39.21	0.15	0.04	QP
9	0.958	22.09	46.00	-23.91	21.94	0.09	0.06	Average
10	0.958	30.51	56.00	-25.49	30.36	0.09	0.06	QP
11	15.066	21.06	50.00	-28.94	20.12	0.73	0.21	Average
12	15.066	29.09	60.00	-30.91	28.15	0.73	0.21	QP

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

Modulation	11g	Test Freq. (MHz)	2437
Power Phase	Neutral		



	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark
1	0.162	30.42	55.34	-24.92	29.72	0.68	0.02	Average
2	0.162	43.27	65.34	-22.07	42.57	0.68	0.02	QP
3	0.195	26.53	53.80	-27.27	26.22	0.29	0.02	Average
4	0.195	40.34	63.80	-23.46	40.03	0.29	0.02	QP
5	0.240	22.33	52.08	-29.75	22.10	0.21	0.02	Average
6	0.240	37.34	62.08	-24.74	37.11	0.21	0.02	QP
7@	0.541	25.64	46.00	-20.36	25.42	0.18	0.04	Average
8	0.541	31.48	56.00	-24.52	31.26	0.18	0.04	QP
9	0.918	20.61	46.00	-25.39	20.29	0.26	0.06	Average
10	0.918	28.56	56.00	-27.44	28.24	0.26	0.06	QP
11	14.828	18.91	50.00	-31.09	18.06	0.64	0.21	Average
12	14.828	28.46	60.00	-31.54	27.61	0.64	0.21	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

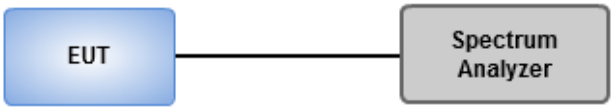
6dB Bandwidth

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) = 300 kHz, Video bandwidth = 1 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.

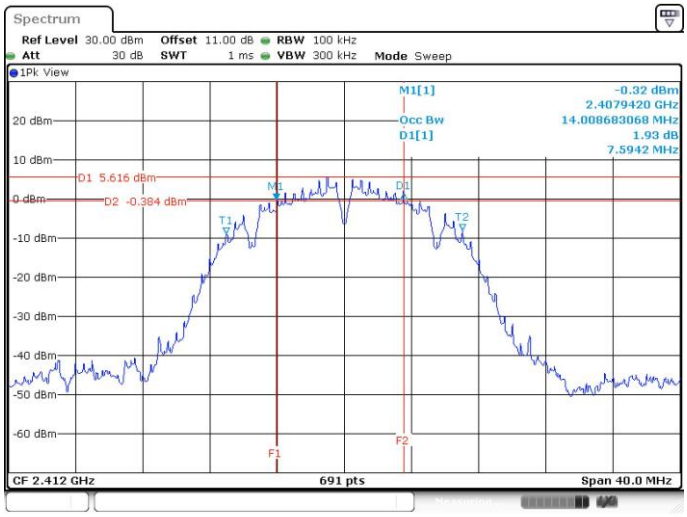
3.2.3 Test Setup



3.2.4 Test Result of 6dB and Occupied Bandwidth

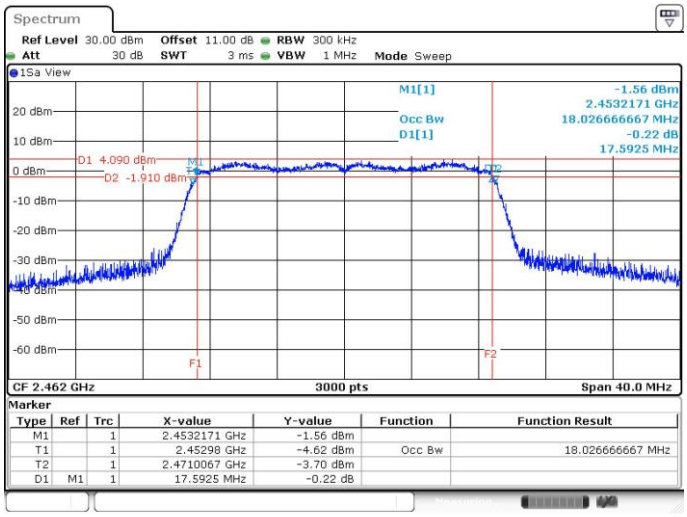
Modulation Mode	N_{TX}	Freq. (MHz)	6dB Bandwidth (MHz)				Limit (kHz)
			Chain 0	Chain 1	Chain 2	Chain 3	
11b	1	2412	7.59	---	---	---	500
11b	1	2437	9.04	---	---	---	500
11b	1	2462	8.52	---	---	---	500
11g	1	2412	15.77	---	---	---	500
11g	1	2437	16.35	---	---	---	500
11g	1	2462	15.54	---	---	---	500
HT20	1	2412	16.70	---	---	---	500
HT20	1	2437	17.57	---	---	---	500
HT20	1	2462	15.48	---	---	---	500

Worst Plot



Modulation Mode	N_{TX}	Freq. (MHz)	99% Occupied Bandwidth (MHz)			
			Chain 0	Chain 1	Chain 2	Chain 3
11b	1	2412	14.01	---	---	---
11b	1	2437	14.01	---	---	---
11b	1	2462	14.03	---	---	---
11g	1	2412	16.93	---	---	---
11g	1	2437	16.92	---	---	---
11g	1	2462	16.92	---	---	---
HT20	1	2412	18.01	---	---	---
HT20	1	2437	18.01	---	---	---
HT20	1	2462	18.03	---	---	---

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	1	2412	16.28	---	---	---	42.462	16.28	30.00	1.01	17.29	36.00
11b	1	2437	16.32	---	---	---	42.855	16.32	30.00	1.01	17.33	36.00
11b	1	2462	16.63	---	---	---	46.026	16.63	30.00	1.01	17.64	36.00
11g	1	2412	21.24	---	---	---	133.045	21.24	30.00	1.01	22.25	36.00
11g	1	2437	21.32	---	---	---	135.519	**21.32**	30.00	1.01	22.33	36.00
11g	1	2462	21.28	---	---	---	134.276	21.28	30.00	1.01	22.29	36.00
HT20	1	2412	20.58	---	---	---	114.288	20.58	30.00	1.01	21.59	36.00
HT20	1	2437	20.42	---	---	---	110.154	20.42	30.00	1.01	21.43	36.00
HT20	1	2462	20.64	---	---	---	115.878	20.64	30.00	1.01	21.65	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	1	2412	14.02	---	---	---	25.235	14.02	---
11b	1	2437	14.06	---	---	---	25.468	14.06	---
11b	1	2462	14.31	---	---	---	26.977	**14.31**	---
11g	1	2412	13.51	---	---	---	22.439	13.51	---
11g	1	2437	13.59	---	---	---	22.856	13.59	---
11g	1	2462	13.56	---	---	---	22.699	13.56	---
HT20	1	2412	12.25	---	---	---	16.788	12.25	---
HT20	1	2437	12.16	---	---	---	16.444	12.16	---
HT20	1	2462	12.29	---	---	---	16.943	12.29	---

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

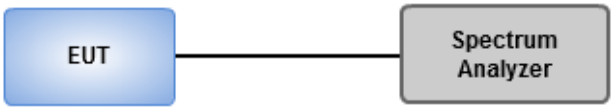
☒ Maximum peak conducted output power was used to demonstrate compliance to the fundamental output power limit.

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.

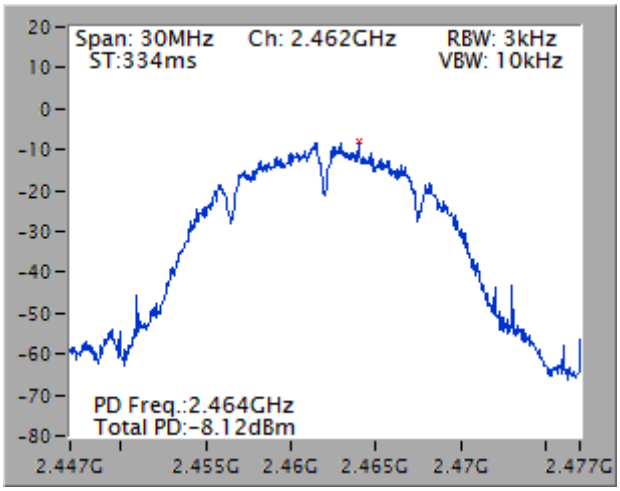
3.4.3 Test Setup



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	1	2412	-8.91	8.00
11b	1	2437	-8.25	8.00
11b	1	2462	-8.12	8.00
11g	1	2412	-11.19	8.00
11g	1	2437	-11.69	8.00
11g	1	2462	-10.79	8.00
HT20	1	2412	-13.68	8.00
HT20	1	2437	-12.88	8.00
HT20	1	2462	-13.00	8.00

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

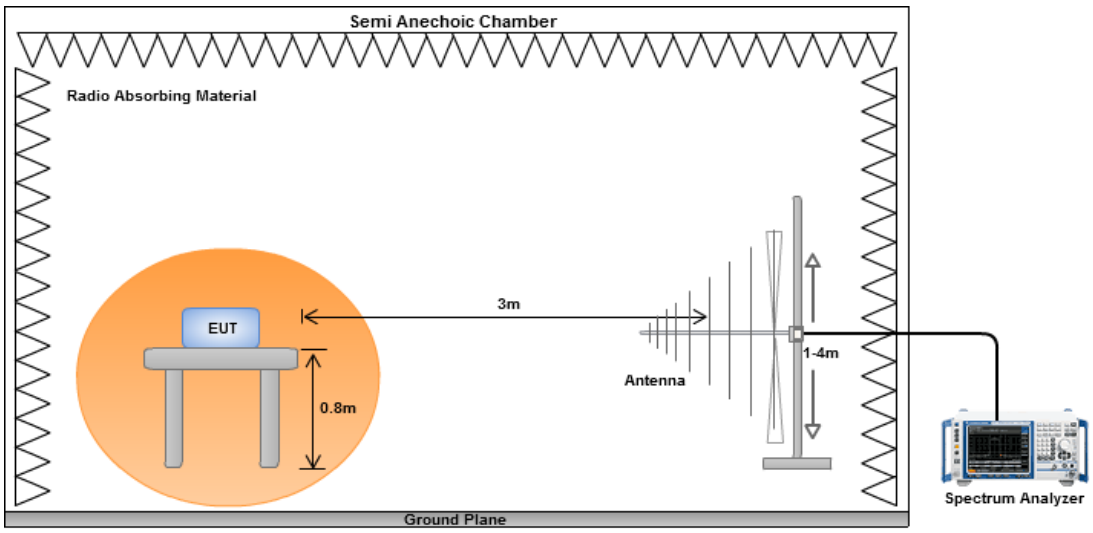
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission 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:

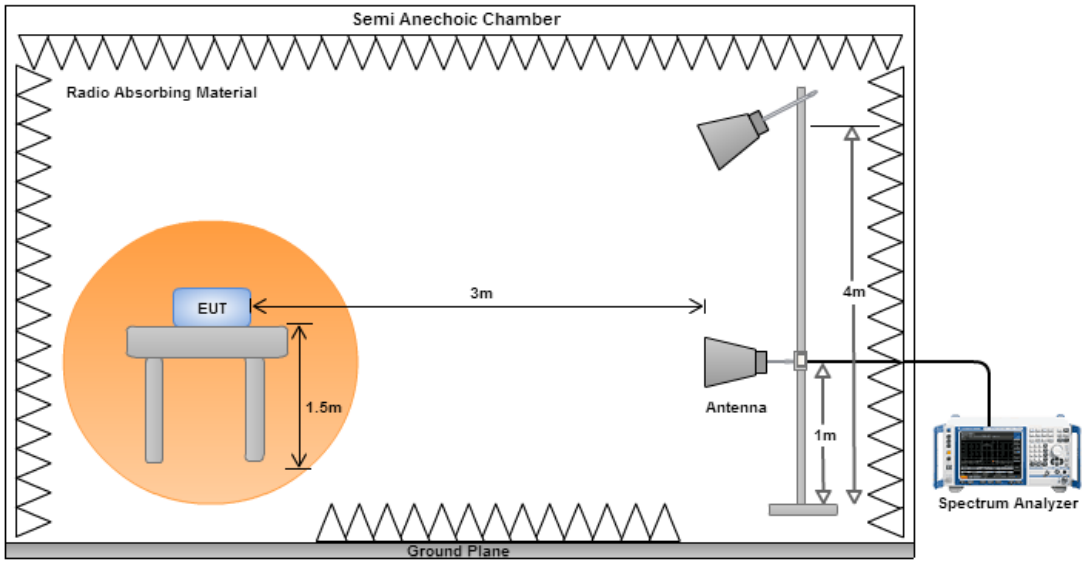
1. 120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission below 1GHz.
2. RBW=1MHz, VBW=3MHz and Peak detector is for peak measured value of radiated emission above 1GHz.
3. RBW=1MHz, VBW=1/T and Peak detector is for average measured value of radiated emission above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

3.5.3 Test Setup

Radiated Emissions below 1 GHz

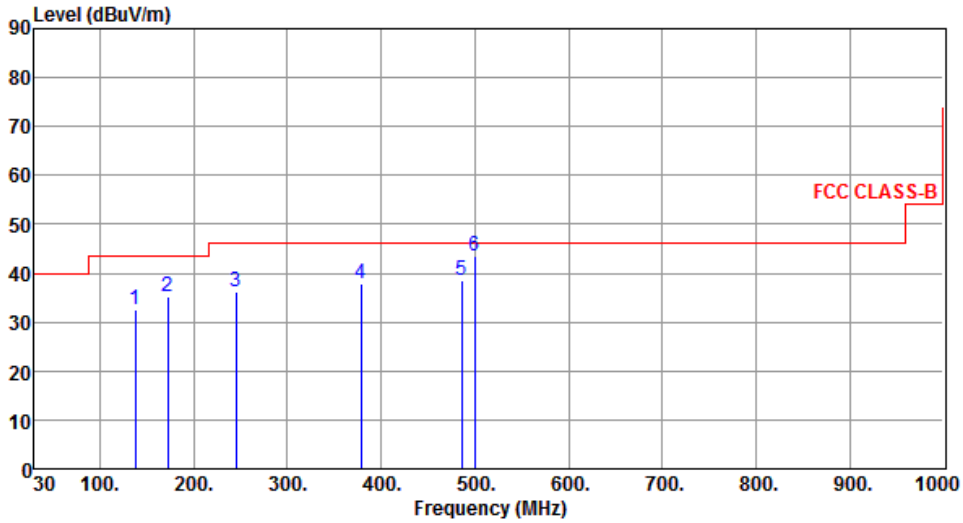


Radiated Emissions above 1 GHz



3.5.4 Transmitter Radiated Unwanted Emissions (Below 1GHz)

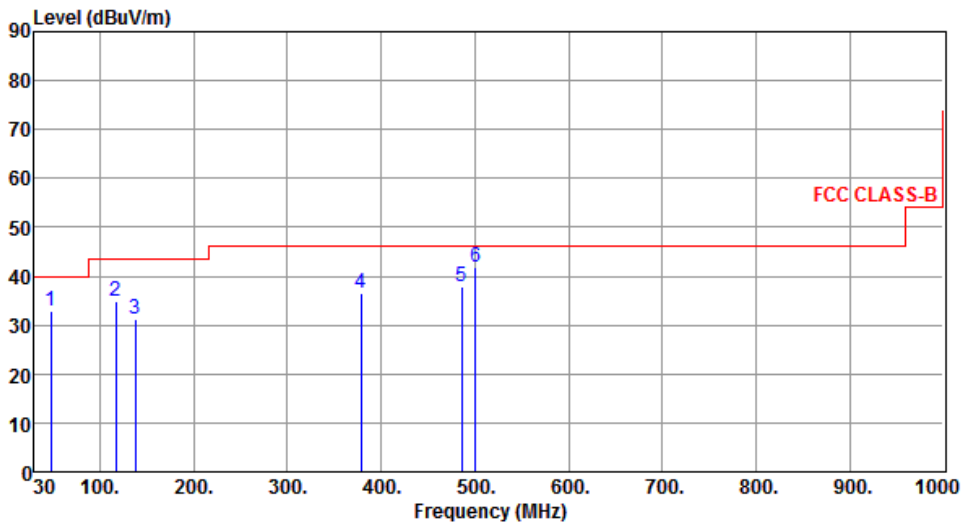
Modulation	11g	**Test Freq. (MHz)**	2437
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	137.67	32.71	43.50	-10.79	41.33	-8.62	Peak	---	---
2	172.59	35.06	43.50	-8.44	44.09	-9.03	Peak	---	---
3	245.34	36.06	46.00	-9.94	45.54	-9.48	Peak	---	---
4	378.23	37.80	46.00	-8.20	43.54	-5.74	Peak	---	---
5	485.90	38.38	46.00	-7.62	41.73	-3.35	Peak	---	---
6	500.01	43.42	46.00	-2.58	46.50	-3.08	QP	141	180

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	11g	Test Freq. (MHz)	2437
Polarization	Vertical		

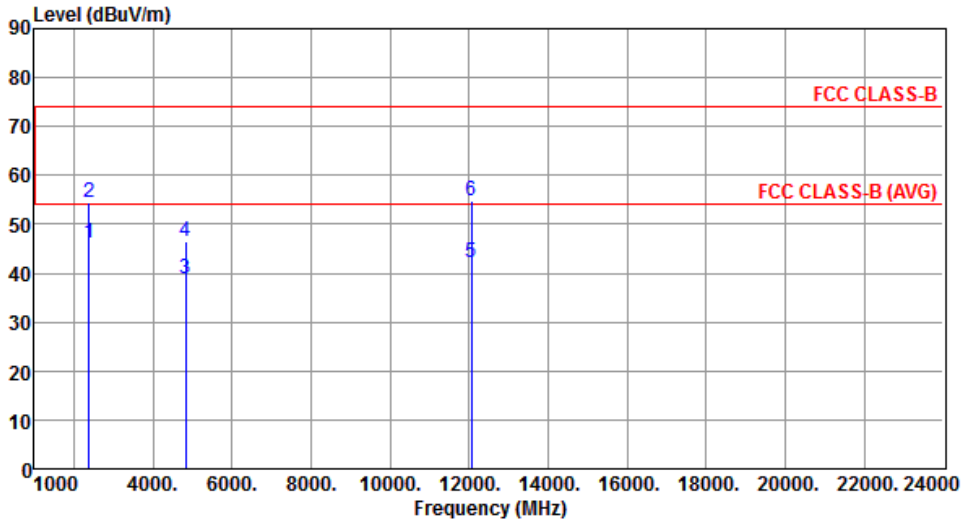


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	47.46	32.85	40.00	-7.15	40.51	-7.66	Peak	---	---
2	117.30	34.99	43.50	-8.51	45.57	-10.58	Peak	---	---
3	137.67	31.37	43.50	-12.13	39.99	-8.62	Peak	---	---
4	378.23	36.54	46.00	-9.46	42.28	-5.74	Peak	---	---
5	485.90	37.85	46.00	-8.15	41.20	-3.35	Peak	---	---
6	500.45	41.97	46.00	-4.03	45.04	-3.07	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

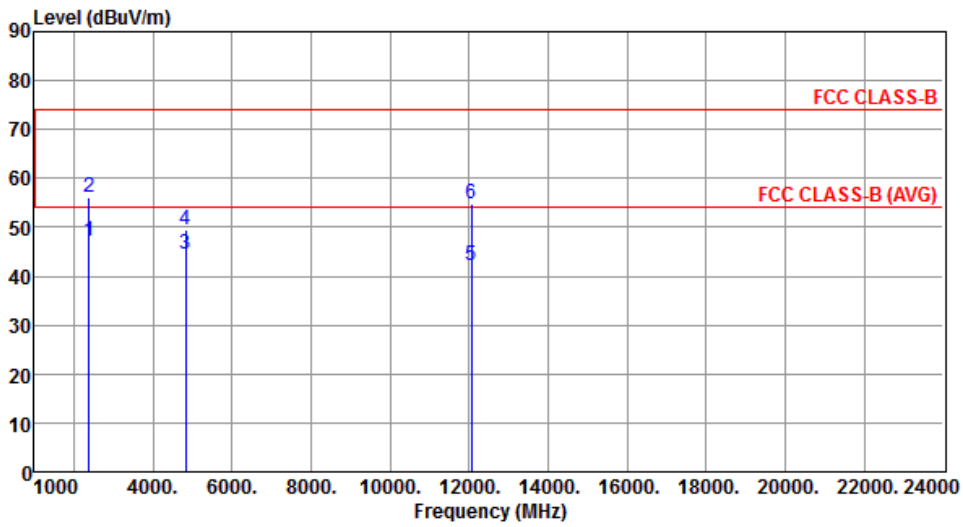
Modulation	11b	**Test Freq. (MHz)**	2412
Polarization	Horizontal		



	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	46.31	54.00	-7.69	49.66	-3.35	Average	274	312
2	2390.00	54.49	74.00	-19.51	57.84	-3.35	Peak	274	312
3	4824.00	38.69	54.00	-15.31	35.10	3.59	Average	100	146
4	4824.00	46.57	74.00	-27.43	42.98	3.59	Peak	100	146
5	12060.00	42.32	54.00	-11.68	28.19	14.13	Average	100	165
6	12060.00	54.90	74.00	-19.10	40.77	14.13	Peak	100	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).

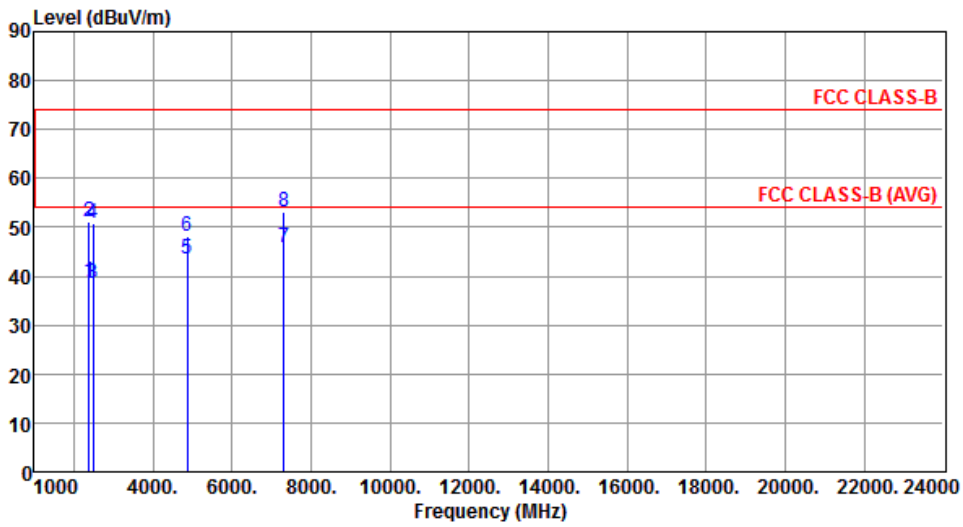
Modulation	11b	Test Freq. (MHz)	2412
Polarization	Vertical		



	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	47.21	54.00	-6.79	50.56	-3.35	Average	243	205
2	2390.00	56.06	74.00	-17.94	59.41	-3.35	Peak	243	205
3	4824.00	44.39	54.00	-9.61	40.80	3.59	Average	293	313
4	4824.00	49.39	74.00	-24.61	45.80	3.59	Peak	293	313
5	12060.00	42.13	54.00	-11.87	28.00	14.13	Average	100	221
6	12060.00	54.91	74.00	-19.09	40.78	14.13	Peak	100	221

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).

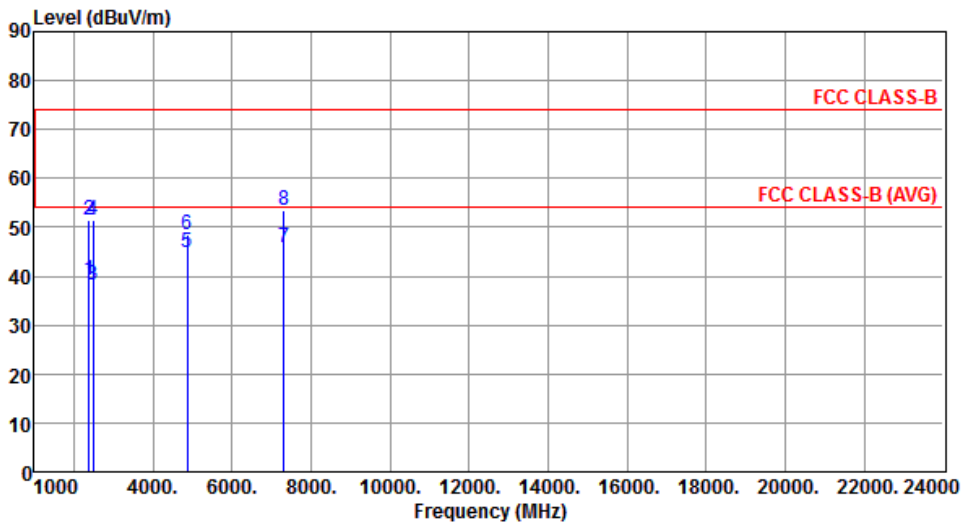
Modulation	11b	Test Freq. (MHz)	2437
Polarization	Horizontal		



	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	38.76	54.00	-15.24	42.11	-3.35	Average	294	315
2	2390.00	51.15	74.00	-22.85	54.50	-3.35	Peak	294	315
3	2483.50	38.44	54.00	-15.56	41.37	-2.93	Average	294	315
4	2483.50	50.83	74.00	-23.17	53.76	-2.93	Peak	294	315
5	4874.00	43.57	54.00	-10.43	39.82	3.75	Average	292	0
6	4874.00	48.00	74.00	-26.00	44.25	3.75	Peak	292	0
7	7311.00	45.71	54.00	-8.29	37.29	8.42	Average	268	268
8	7311.00	53.28	74.00	-20.72	44.86	8.42	Peak	268	268

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).

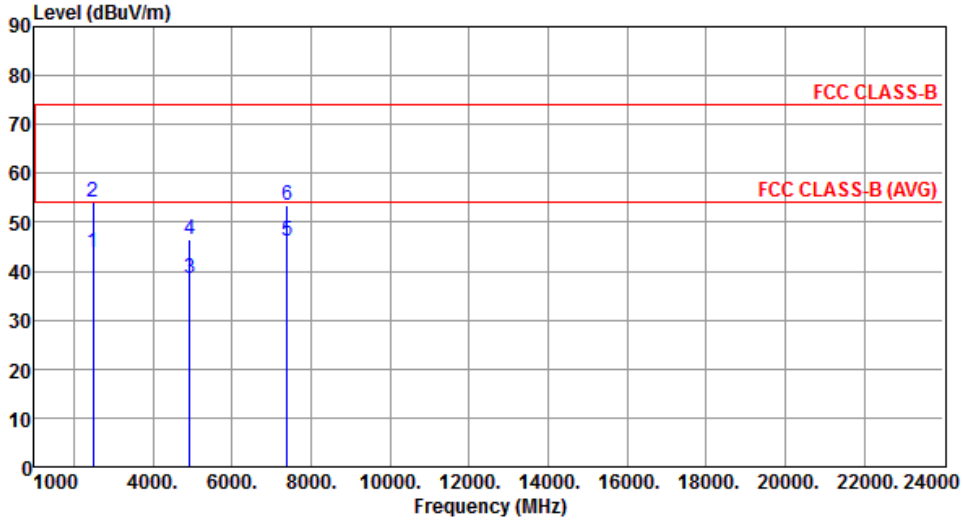
Modulation	11b	Test Freq. (MHz)	2437
Polarization	Vertical		



	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	39.07	54.00	-14.93	42.42	-3.35	Average	236	202
2	2390.00	51.45	74.00	-22.55	54.80	-3.35	Peak	236	202
3	2483.50	38.29	54.00	-15.71	41.22	-2.93	Average	236	202
4	2483.50	51.54	74.00	-22.46	54.47	-2.93	Peak	236	202
5	4874.00	44.81	54.00	-9.19	41.06	3.75	Average	234	315
6	4874.00	48.33	74.00	-25.67	44.58	3.75	Peak	234	315
7	7311.00	45.69	54.00	-8.31	37.27	8.42	Average	160	307
8	7311.00	53.39	74.00	-20.61	44.97	8.42	Peak	160	307

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).

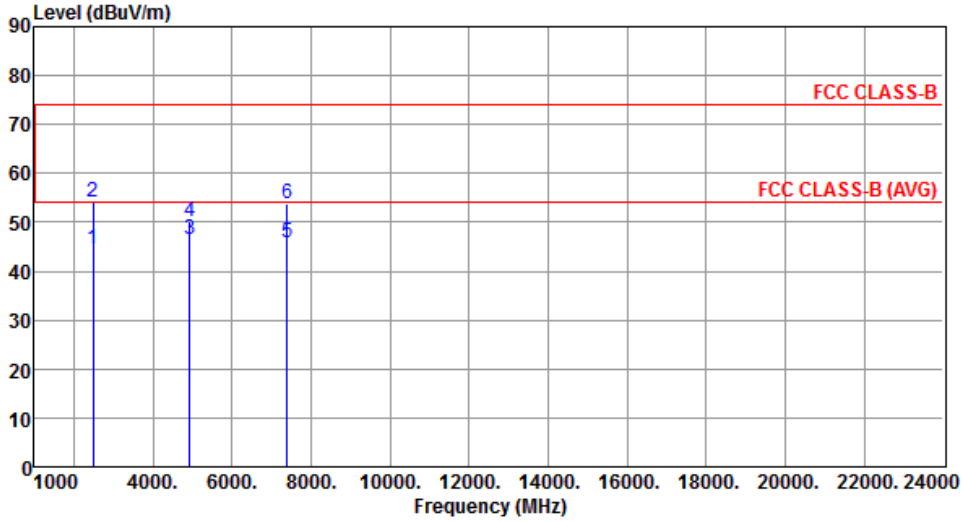
Modulation	11b	Test Freq. (MHz)	2462
Polarization	Horizontal		



	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	43.97	54.00	-10.03	46.90	-2.93	Average	258	312
2	2483.50	54.23	74.00	-19.77	57.16	-2.93	Peak	258	312
3	4924.00	38.57	54.00	-15.43	34.66	3.91	Average	100	148
4	4924.00	46.49	74.00	-27.51	42.58	3.91	Peak	100	148
5	7386.00	46.05	54.00	-7.95	37.59	8.46	Average	317	280
6	7386.00	53.46	74.00	-20.54	45.00	8.46	Peak	317	280

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		

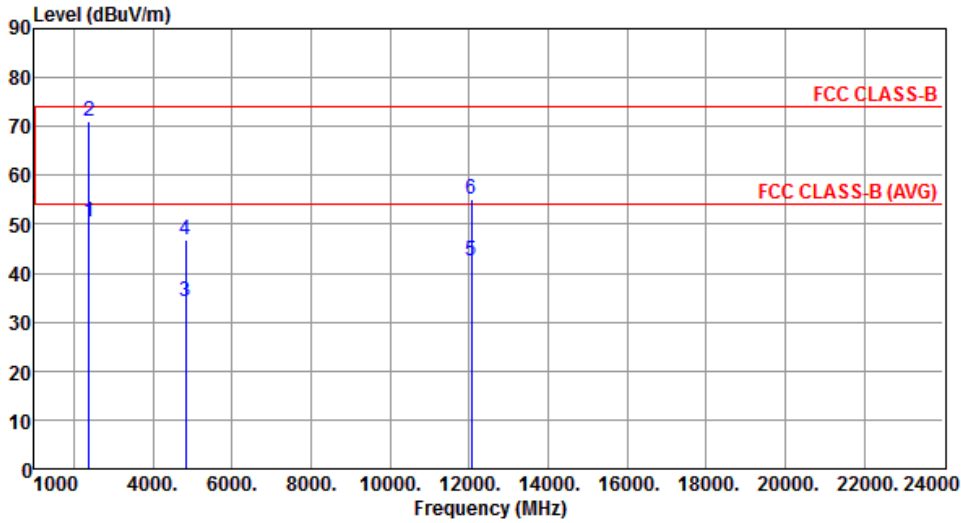


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	44.60	54.00	-9.40	47.53	-2.93	Average	242	227
2	2483.50	54.04	74.00	-19.96	56.97	-2.93	Peak	242	227
3	4924.00	46.42	54.00	-7.58	42.51	3.91	Average	242	318
4	4924.00	50.22	74.00	-23.78	46.31	3.91	Peak	242	318
5	7386.00	45.86	54.00	-8.14	37.40	8.46	Average	135	300
6	7386.00	53.70	74.00	-20.30	45.24	8.46	Peak	135	300

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

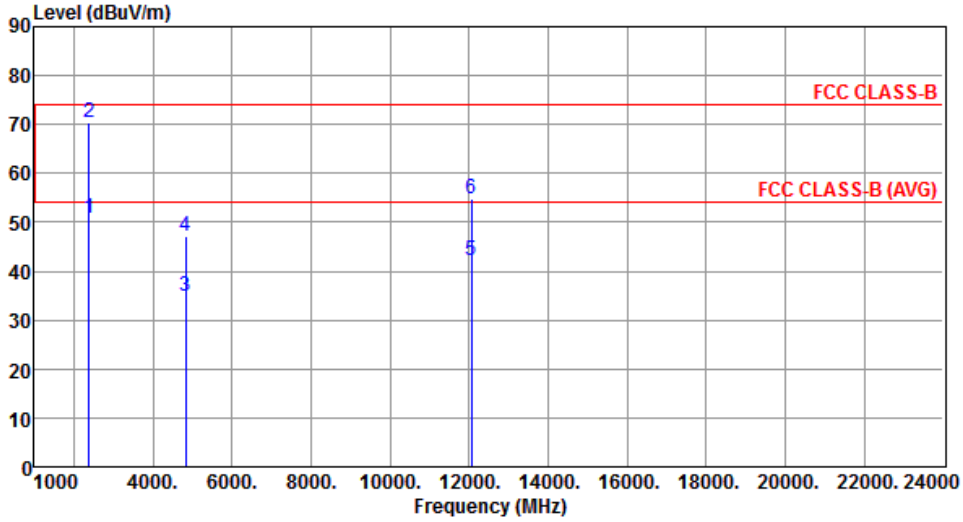
Modulation	11g	**Test Freq. (MHz)**	2412
Polarization	Horizontal		



	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	50.58	54.00	-3.42	53.93	-3.35	Average	280	311
2	2390.00	71.18	74.00	-2.82	74.53	-3.35	Peak	280	311
3	4824.00	34.18	54.00	-19.82	30.59	3.59	Average	280	43
4	4824.00	46.96	74.00	-27.04	43.37	3.59	Peak	280	43
5	12060.00	42.58	54.00	-11.42	28.45	14.13	Average	100	177
6	12060.00	55.23	74.00	-18.77	41.10	14.13	Peak	100	177

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).

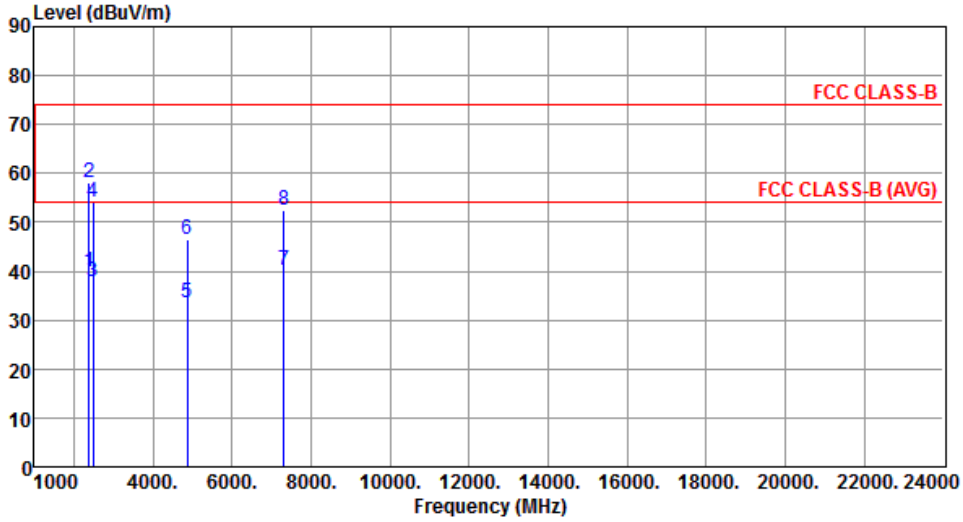
Modulation	11g	Test Freq. (MHz)	2412
Polarization	Vertical		



	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	50.96	54.00	-3.04	54.31	-3.35	Average	238	208
2	2390.00	70.46	74.00	-3.54	73.81	-3.35	Peak	238	208
3	4824.00	34.88	54.00	-19.12	31.29	3.59	Average	250	311
4	4824.00	47.23	74.00	-26.77	43.64	3.59	Peak	250	311
5	12060.00	42.06	54.00	-11.94	27.93	14.13	Average	100	244
6	12060.00	54.76	74.00	-19.24	40.63	14.13	Peak	100	244

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).

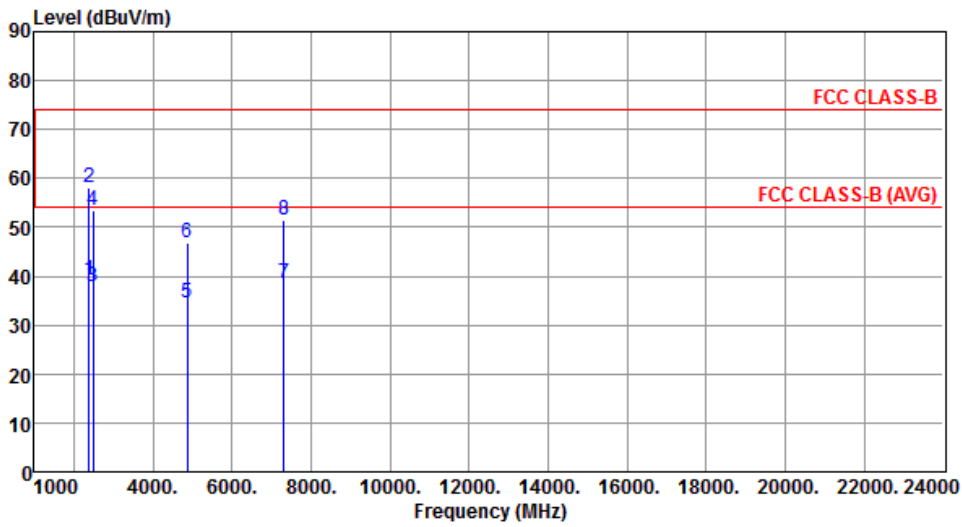
Modulation	11g	Test Freq. (MHz)	2437
Polarization	Horizontal		



	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	39.86	54.00	-14.14	43.21	-3.35	Average	305	314
2	2390.00	58.11	74.00	-15.89	61.46	-3.35	Peak	305	314
3	2483.50	37.80	54.00	-16.20	40.73	-2.93	Average	305	322
4	2483.50	54.14	74.00	-19.86	57.07	-2.93	Peak	305	322
5	4874.00	33.56	54.00	-20.44	29.81	3.75	Average	278	42
6	4874.00	46.58	74.00	-27.42	42.83	3.75	Peak	278	42
7	7311.00	40.12	54.00	-13.88	31.70	8.42	Average	315	285
8	7311.00	52.39	74.00	-21.61	43.97	8.42	Peak	315	285

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).

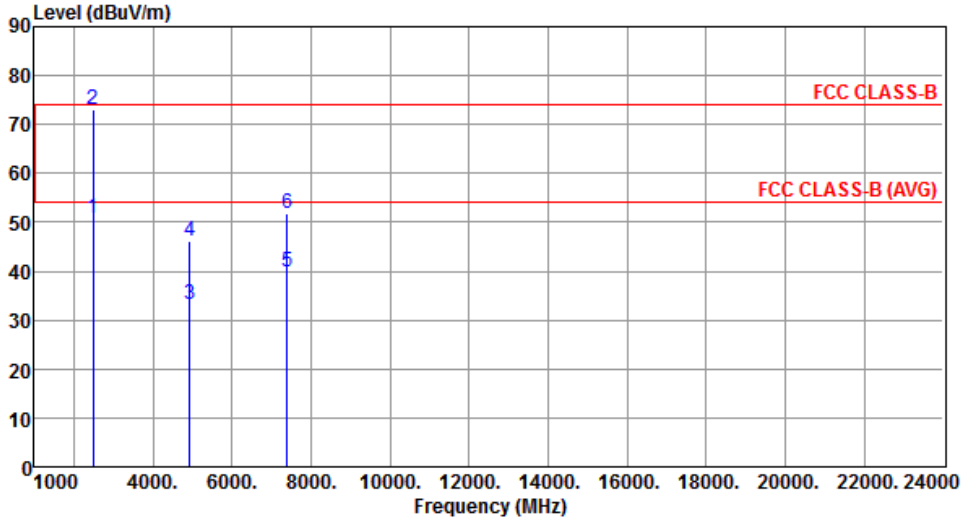
Modulation	11g	Test Freq. (MHz)	2437
Polarization	Vertical		



	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	39.32	54.00	-14.68	42.67	-3.35	Average	279	234
2	2390.00	58.17	74.00	-15.83	61.52	-3.35	Peak	279	234
3	2483.50	37.76	54.00	-16.24	40.69	-2.93	Average	279	234
4	2483.50	53.58	74.00	-20.42	56.51	-2.93	Peak	279	234
5	4874.00	34.56	54.00	-19.44	30.81	3.75	Average	250	308
6	4874.00	46.90	74.00	-27.10	43.15	3.75	Peak	250	308
7	7311.00	38.51	54.00	-15.49	30.09	8.42	Average	128	313
8	7311.00	51.51	74.00	-22.49	43.09	8.42	Peak	128	313

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).

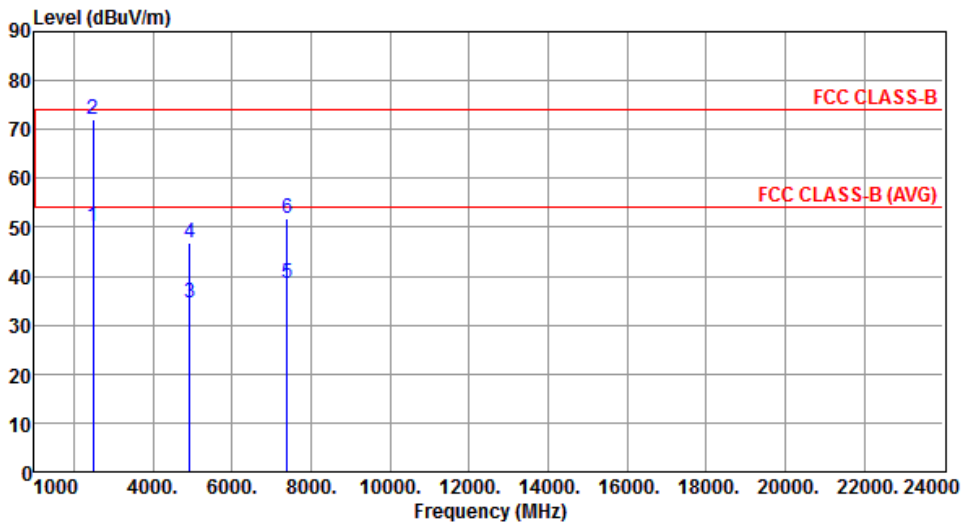
Modulation	11g	Test Freq. (MHz)	2462
Polarization	Horizontal		



	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	50.93	54.00	-3.07	53.86	-2.93	Average	295	301
2	2483.50	72.99	74.00	-1.01	75.92	-2.93	Peak	295	301
3	4924.00	33.22	54.00	-20.78	29.31	3.91	Average	283	38
4	4924.00	46.06	74.00	-27.94	42.15	3.91	Peak	283	38
5	7386.00	39.86	54.00	-14.14	31.40	8.46	Average	318	287
6	7386.00	51.81	74.00	-22.19	43.35	8.46	Peak	318	287

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		

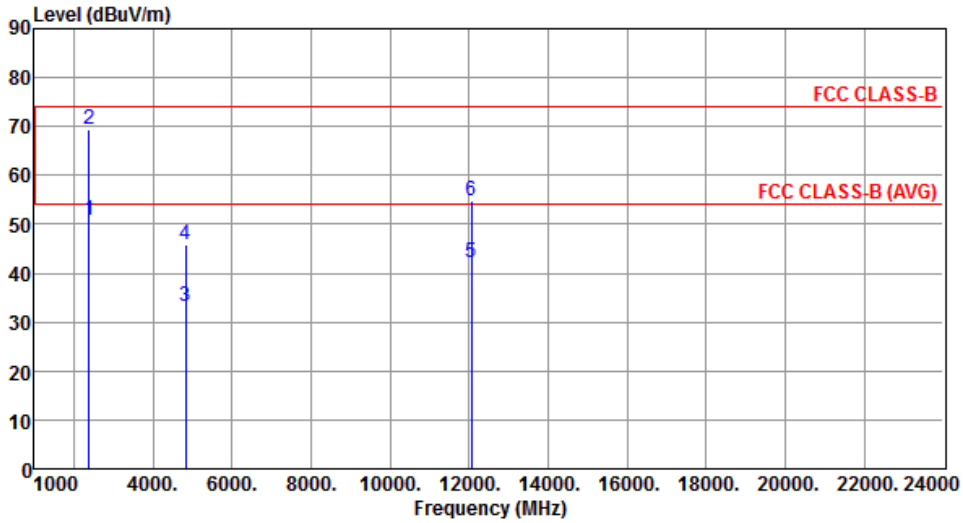


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	50.21	54.00	-3.79	53.14	-2.93	Average	269	238
2	2483.50	72.10	74.00	-1.90	75.03	-2.93	Peak	269	238
3	4924.00	34.42	54.00	-19.58	30.51	3.91	Average	249	311
4	4924.00	46.86	74.00	-27.14	42.95	3.91	Peak	249	311
5	7386.00	38.68	54.00	-15.32	30.22	8.46	Average	135	311
6	7386.00	51.65	74.00	-22.35	43.19	8.46	Peak	135	311

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

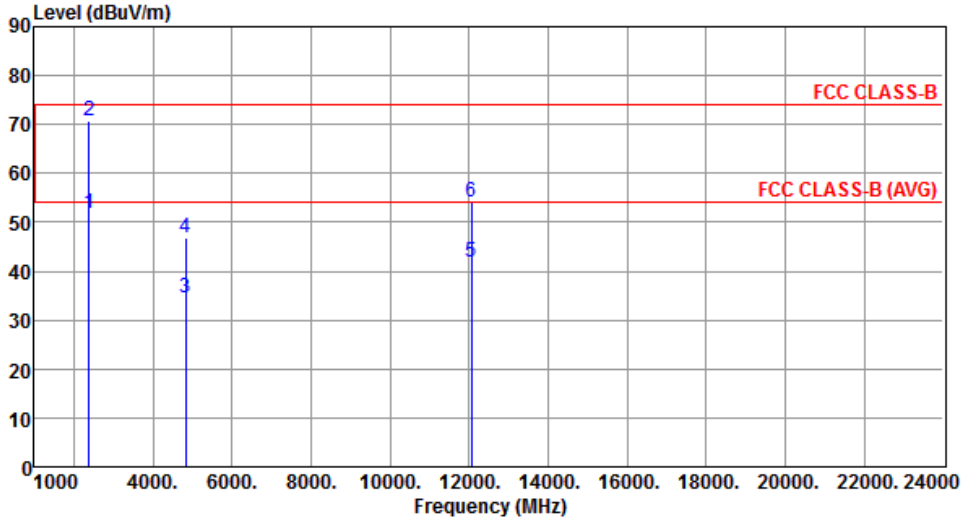
Modulation	HT20	**Test Freq. (MHz)**	2412
Polarization	Horizontal		



	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	50.65	54.00	-3.35	54.00	-3.35	Average	277	210
2	2390.00	69.42	74.00	-4.58	72.77	-3.35	Peak	277	210
3	4824.00	33.11	54.00	-20.89	29.52	3.59	Average	279	39
4	4824.00	45.94	74.00	-28.06	42.35	3.59	Peak	279	39
5	12060.00	42.02	54.00	-11.98	27.89	14.13	Average	100	174
6	12060.00	54.70	74.00	-19.30	40.57	14.13	Peak	100	174

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).

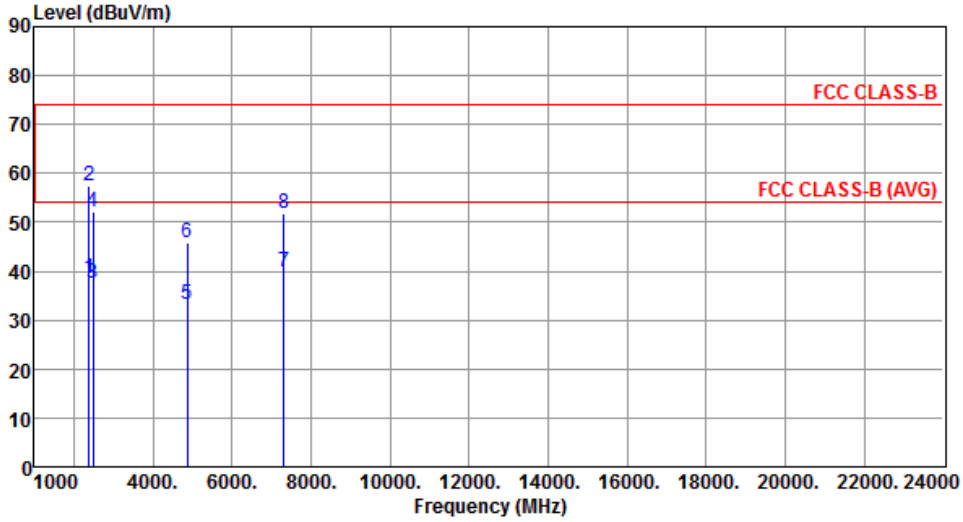
Modulation	HT20	Test Freq. (MHz)	2412
Polarization	Vertical		



	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	51.65	54.00	-2.35	55.00	-3.35	Average	222	213
2	2390.00	70.90	74.00	-3.10	74.25	-3.35	Peak	222	213
3	4824.00	34.38	54.00	-19.62	30.79	3.59	Average	250	308
4	4824.00	46.80	74.00	-27.20	43.21	3.59	Peak	250	308
5	12060.00	41.85	54.00	-12.15	27.72	14.13	Average	100	232
6	12060.00	54.28	74.00	-19.72	40.15	14.13	Peak	100	232

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).

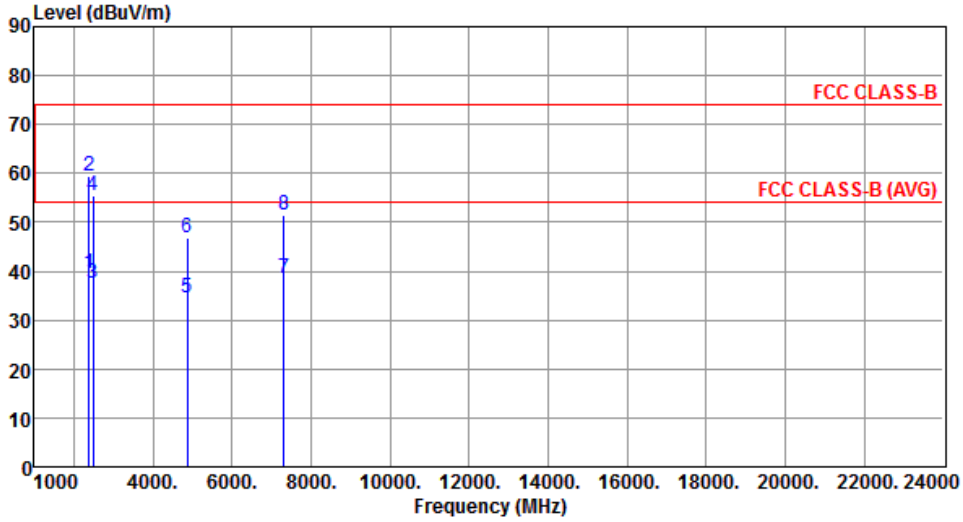
Modulation	HT20	Test Freq. (MHz)	2437
Polarization	Horizontal		



	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	38.66	54.00	-15.34	42.01	-3.35	Average	245	323
2	2390.00	57.46	74.00	-16.54	60.81	-3.35	Peak	245	323
3	2483.50	37.44	54.00	-16.56	40.37	-2.93	Average	245	323
4	2483.50	52.29	74.00	-21.71	55.22	-2.93	Peak	245	323
5	4874.00	33.10	54.00	-20.90	29.35	3.75	Average	284	43
6	4874.00	45.97	74.00	-28.03	42.22	3.75	Peak	284	43
7	7311.00	39.75	54.00	-14.25	31.33	8.42	Average	312	281
8	7311.00	51.70	74.00	-22.30	43.28	8.42	Peak	312	281

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).

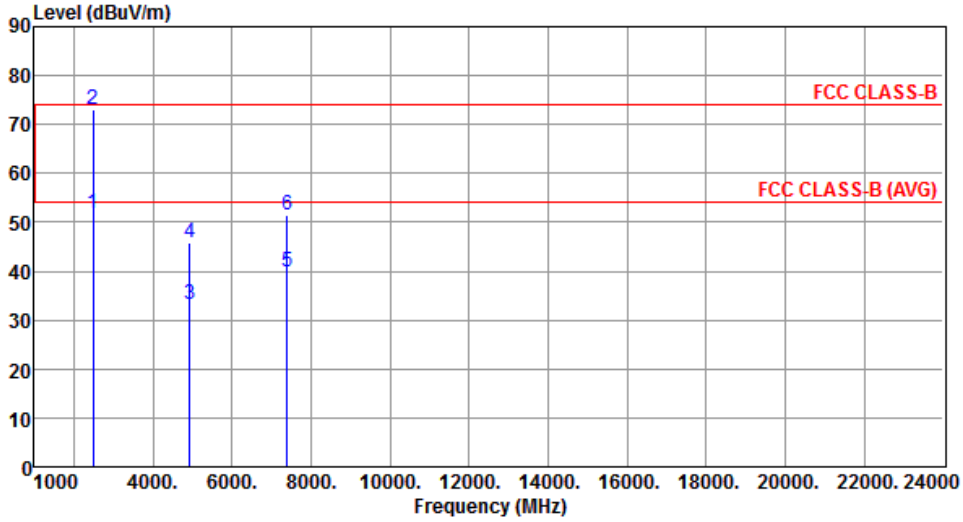
Modulation	HT20	Test Freq. (MHz)	2437
Polarization	Vertical		



	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	39.39	54.00	-14.61	42.74	-3.35	Average	221	210
2	2390.00	59.46	74.00	-14.54	62.81	-3.35	Peak	221	210
3	2483.50	37.65	54.00	-16.35	40.58	-2.93	Average	221	210
4	2483.50	55.60	74.00	-18.40	58.53	-2.93	Peak	221	210
5	4874.00	34.53	54.00	-19.47	30.78	3.75	Average	251	310
6	4874.00	46.94	74.00	-27.06	43.19	3.75	Peak	251	310
7	7311.00	38.49	54.00	-15.51	30.07	8.42	Average	135	315
8	7311.00	51.48	74.00	-22.52	43.06	8.42	Peak	135	315

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).

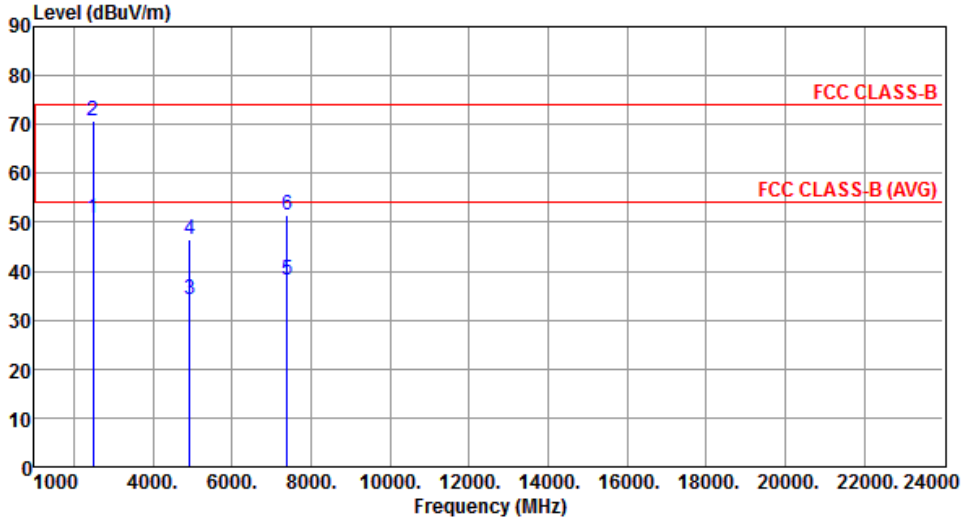
Modulation	HT20	Test Freq. (MHz)	2462
Polarization	Horizontal		



	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	51.86	54.00	-2.14	54.79	-2.93	Average	234	312
2	2483.50	72.99	74.00	-1.01	75.92	-2.93	Peak	234	312
3	4924.00	33.08	54.00	-20.92	29.17	3.91	Average	278	40
4	4924.00	45.92	74.00	-28.08	42.01	3.91	Peak	278	40
5	7386.00	39.74	54.00	-14.26	31.28	8.46	Average	315	286
6	7386.00	51.63	74.00	-22.37	43.17	8.46	Peak	315	286

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		



	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	50.72	54.00	-3.28	53.65	-2.93	Average	240	228
2	2483.50	70.66	74.00	-3.34	73.59	-2.93	Peak	240	228
3	4924.00	34.13	54.00	-19.87	30.22	3.91	Average	244	310
4	4924.00	46.54	74.00	-27.46	42.63	3.91	Peak	244	310
5	7386.00	38.35	54.00	-15.65	29.89	8.46	Average	133	309
6	7386.00	51.36	74.00	-22.64	42.90	8.46	Peak	133	309

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 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.6.3 Test Procedures

Reference level measurement

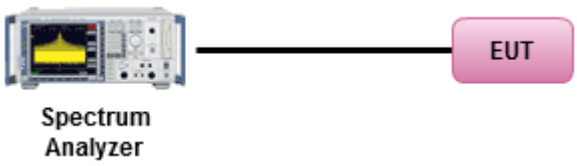
1. Set RBW=100kHz, VBW = 300kHz , Detector = Peak, Sweep time = Auto
2. Trace = max hold , Allow Trace to fully stabilize
3. Use the peak marker function to determine the maximum PSD level

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

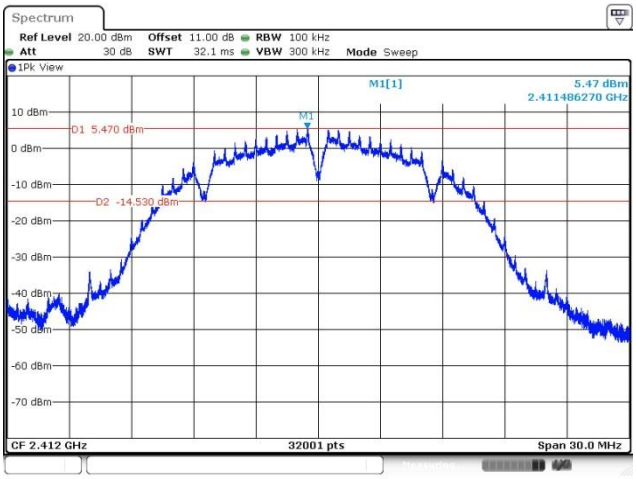
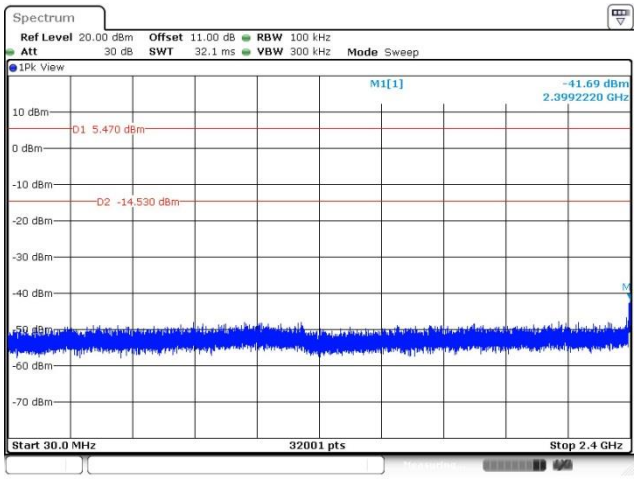
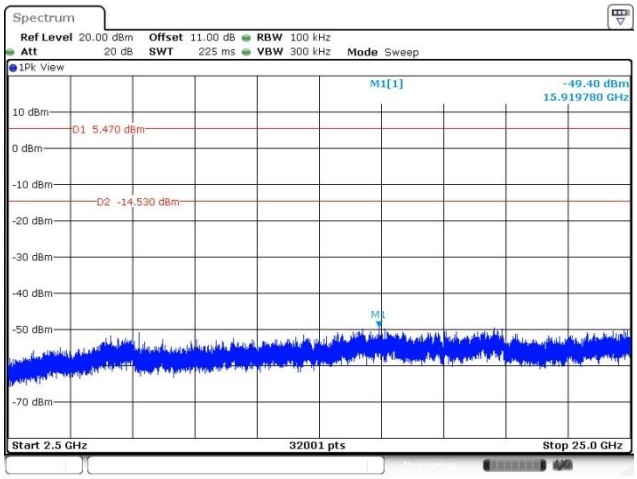
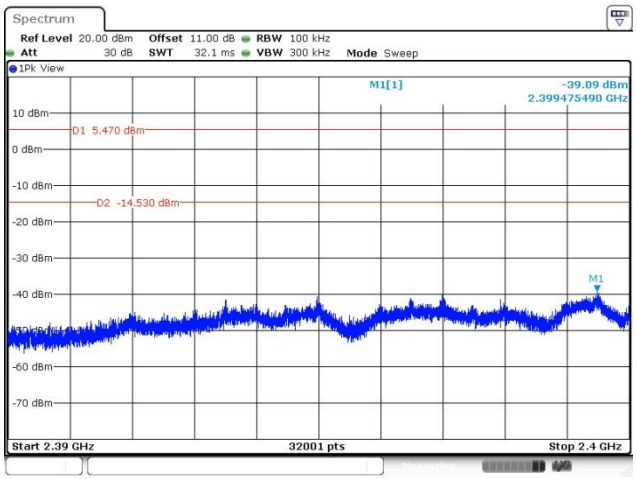
3.6.4 Test Setup

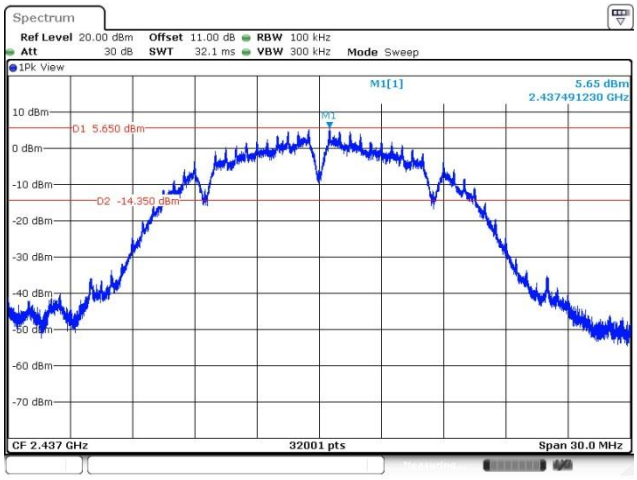
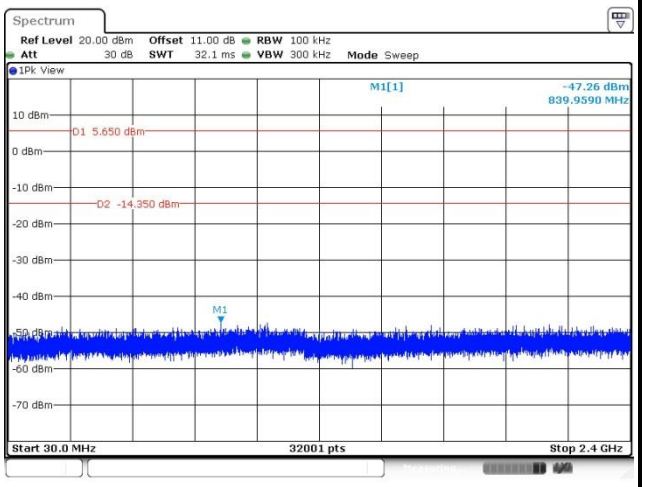
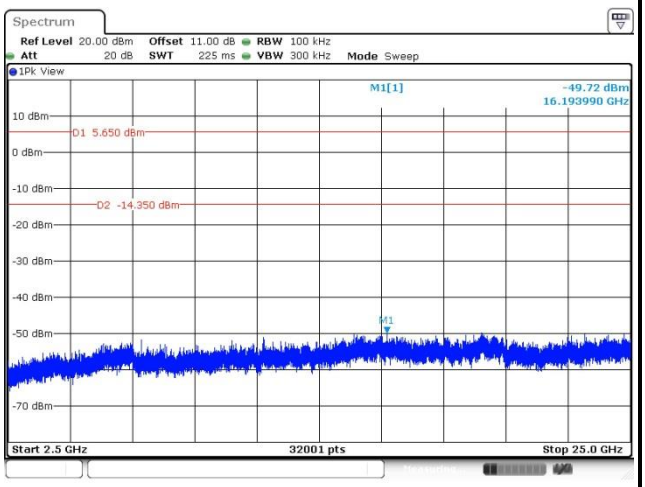
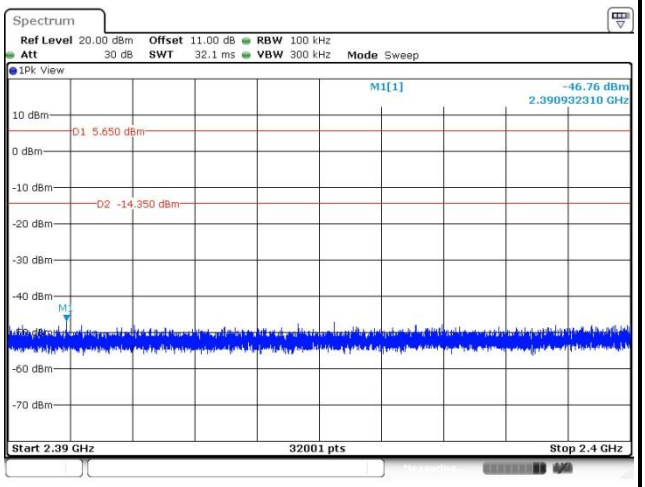
Transmitter Radiated Bandedge Emissions

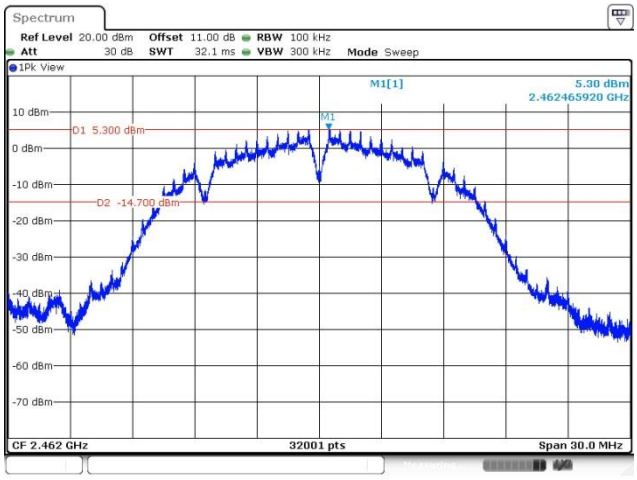
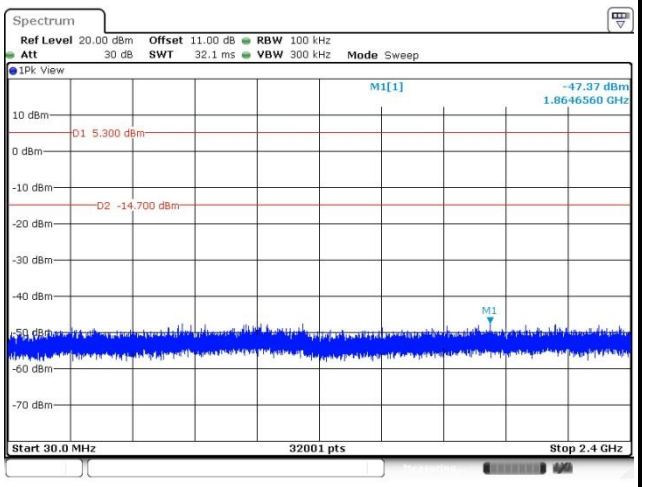
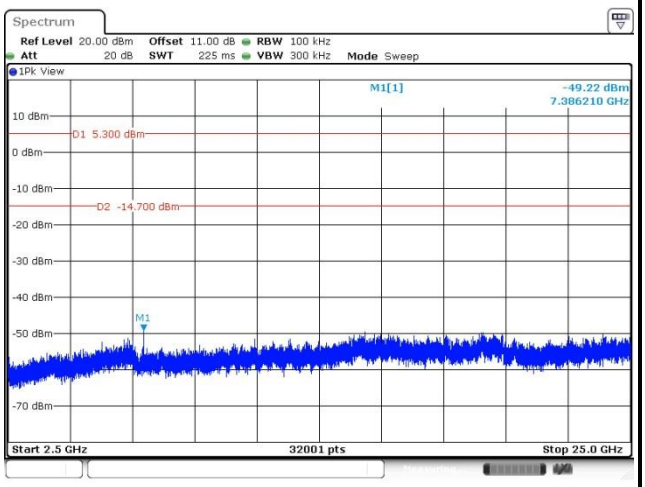
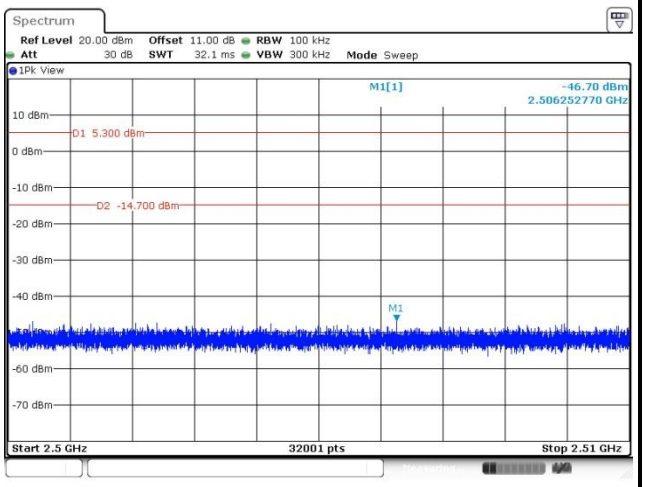


3.6.5 Unwanted Emissions into Non-Restricted Frequency Bands

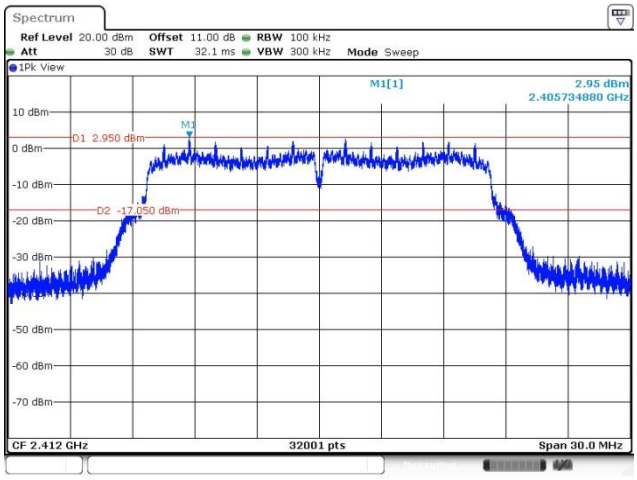
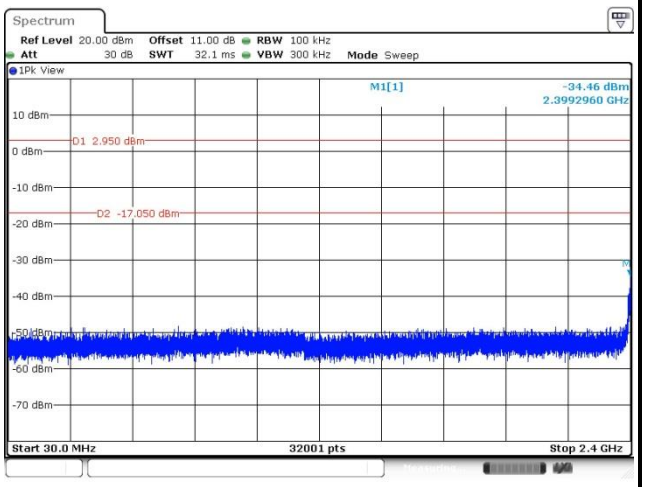
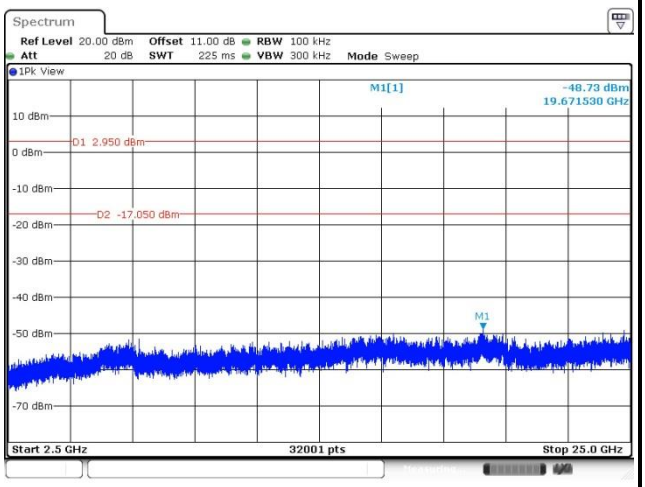
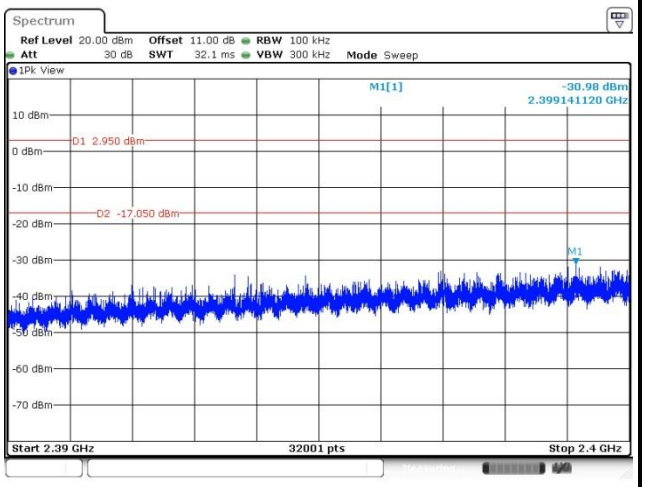
802.11b

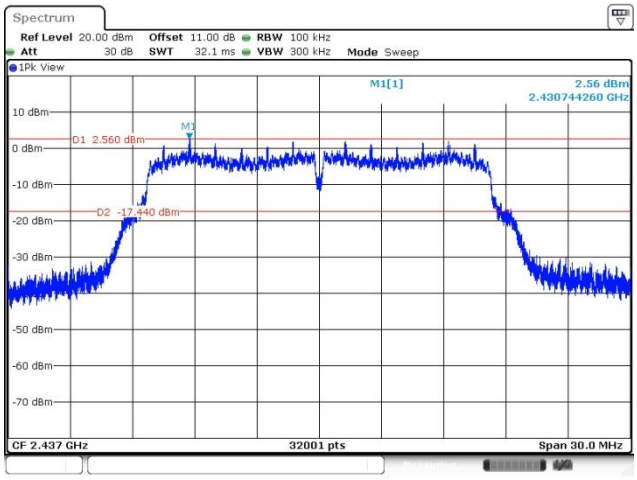
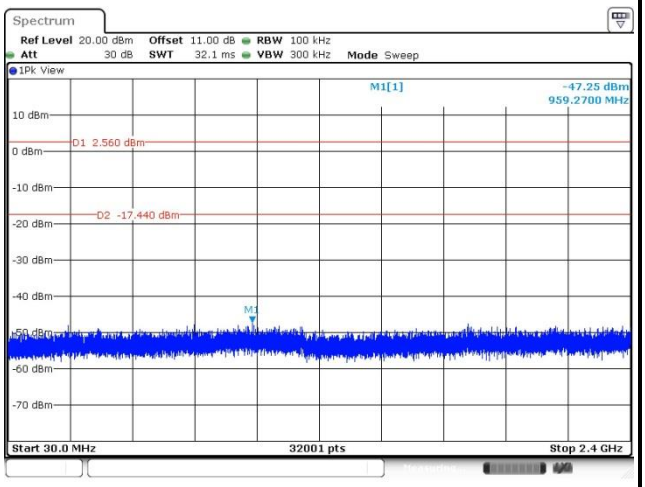
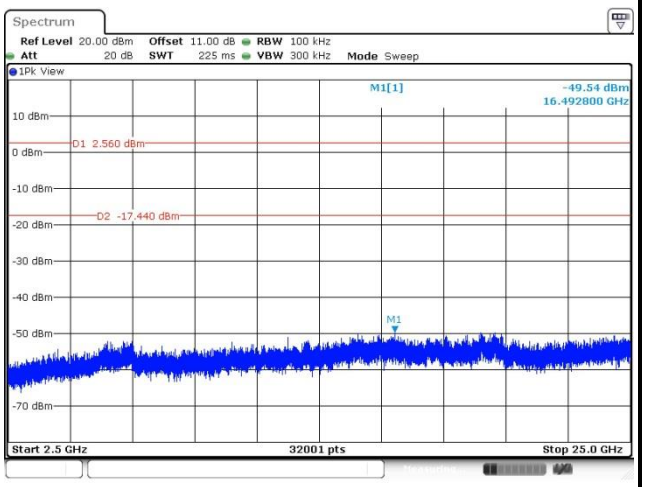
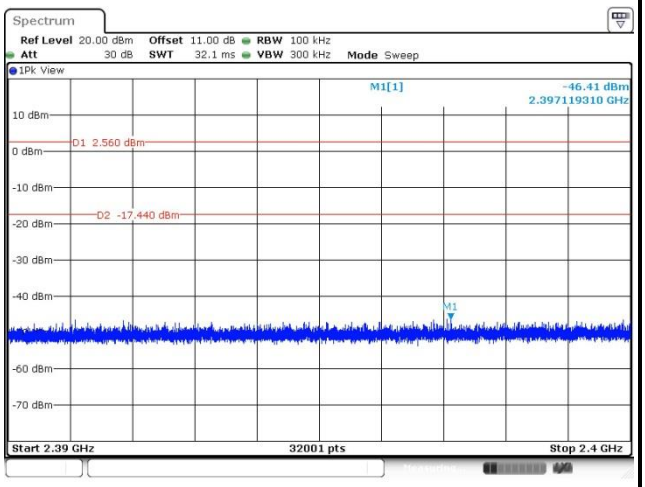
Reference Level	Tx 2412MHz / 30MHz~25GHz (down 20dBc)
	
---	
---	

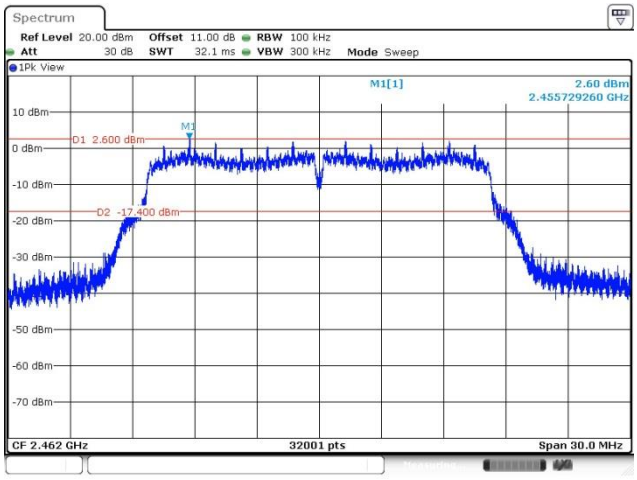
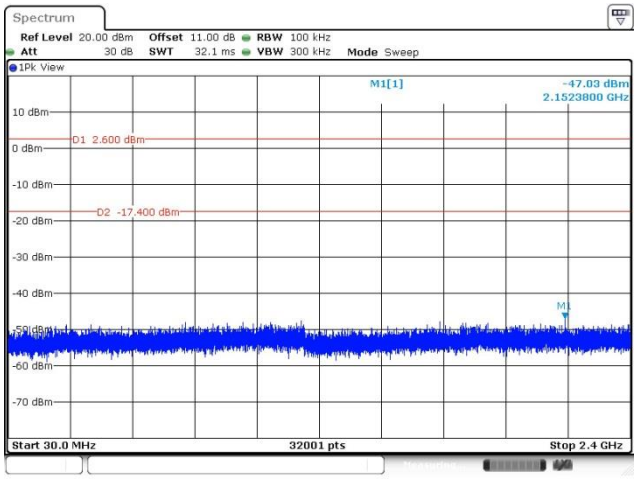
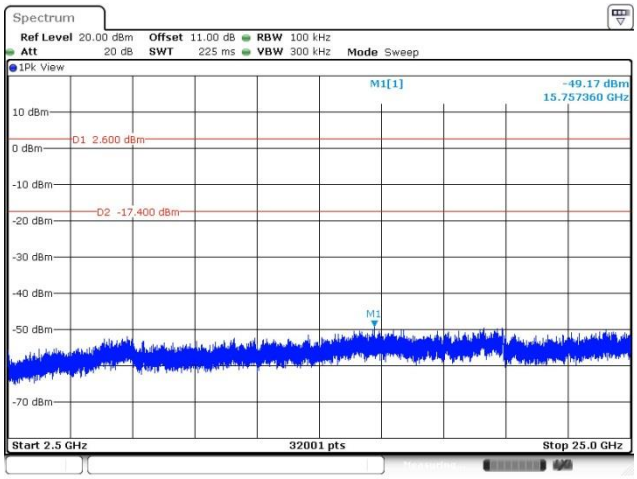
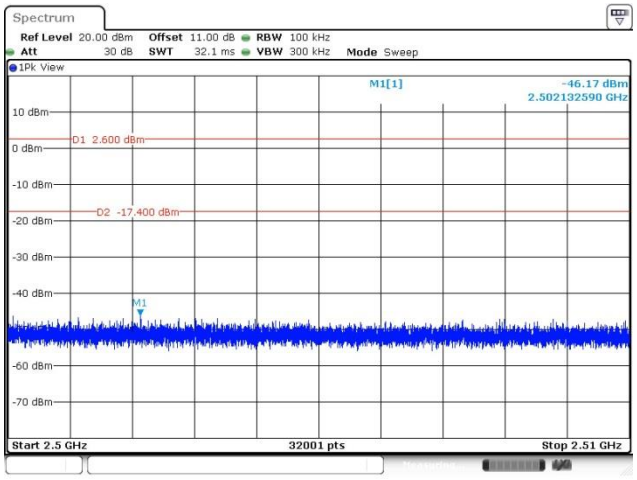
Reference Level	Tx 2437MHz / 30MHz~25GHz (down 20dBc)
	
---	
---	

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

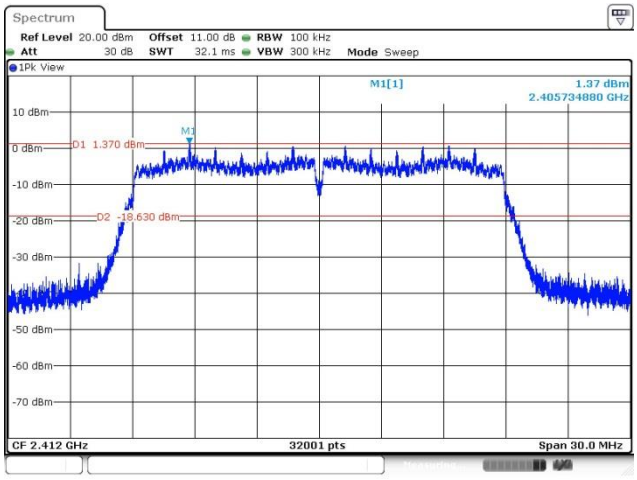
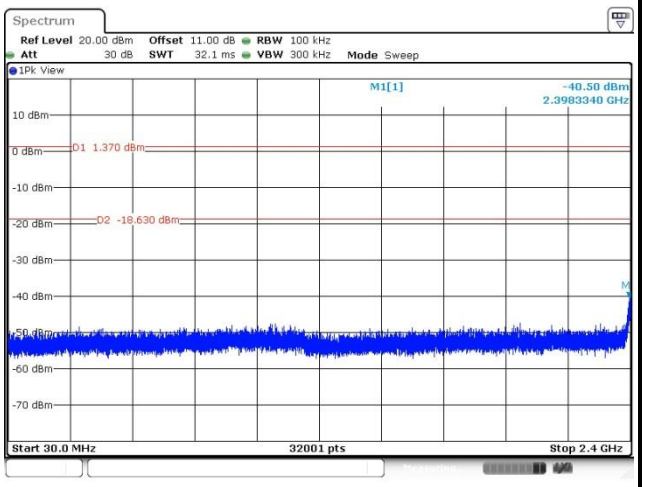
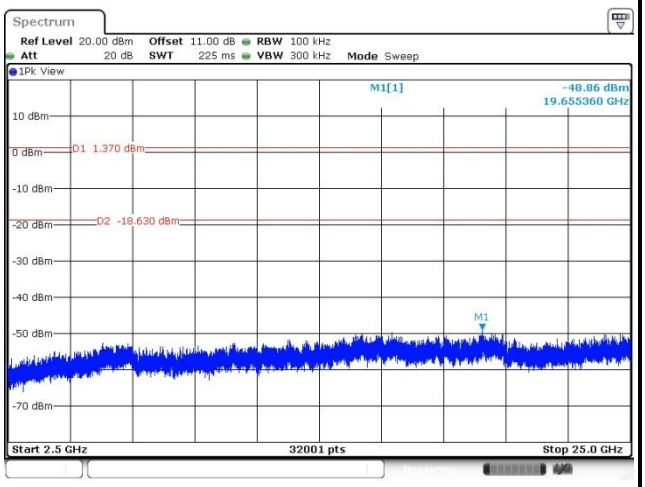
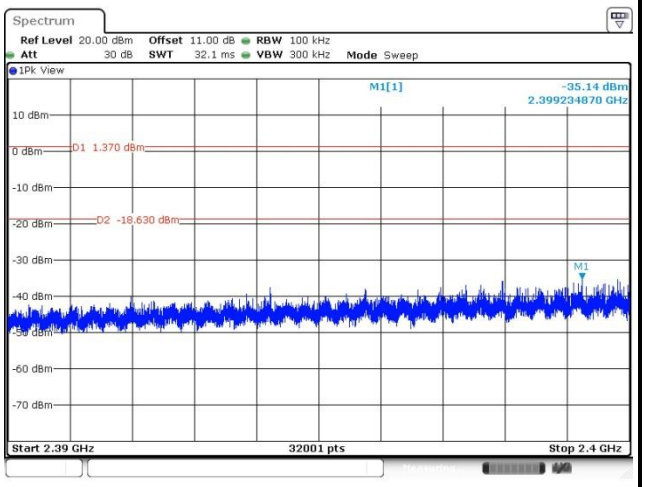
802.11g

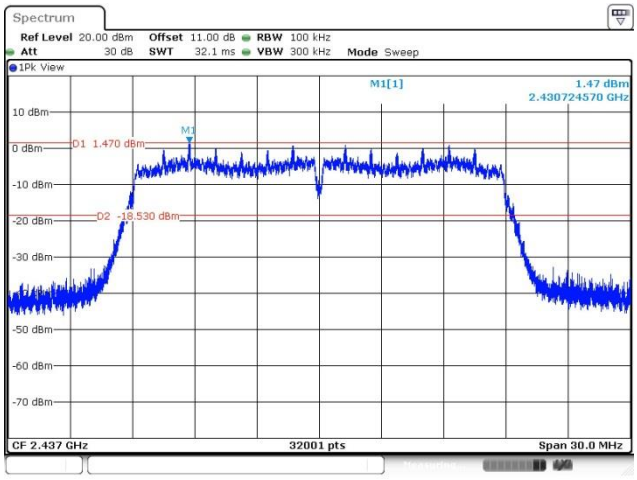
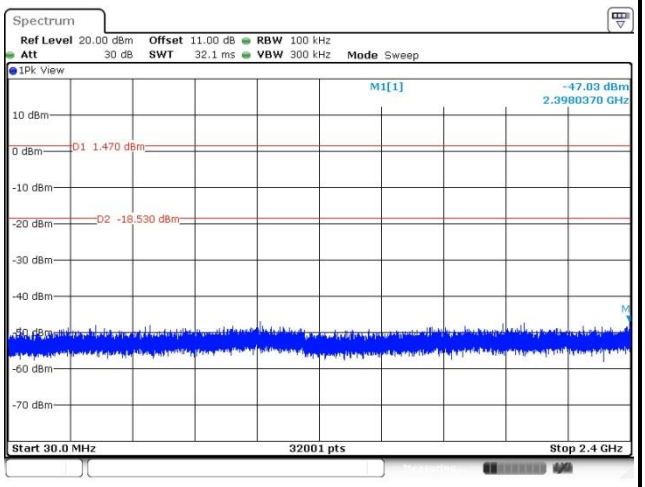
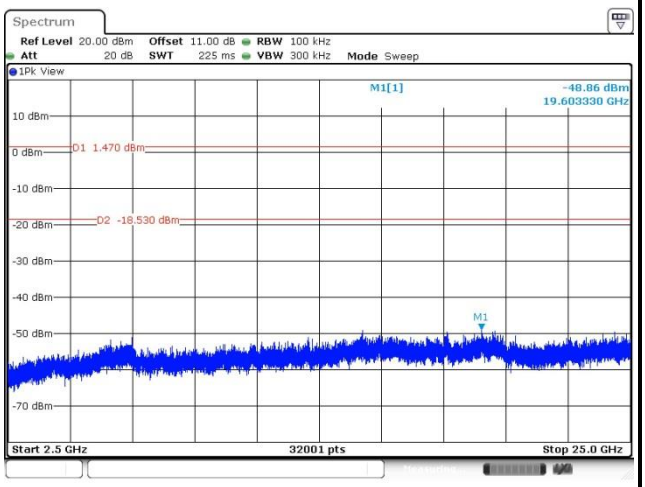
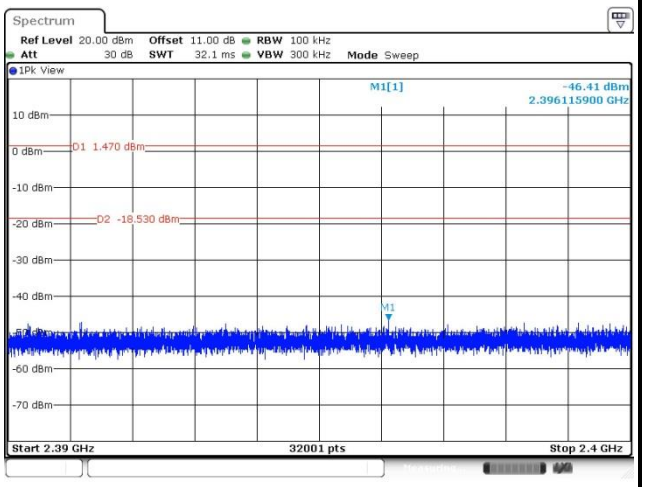
Reference Level	Tx 2412MHz / 30MHz~25GHz (down 20dBc)
	
---	
---	

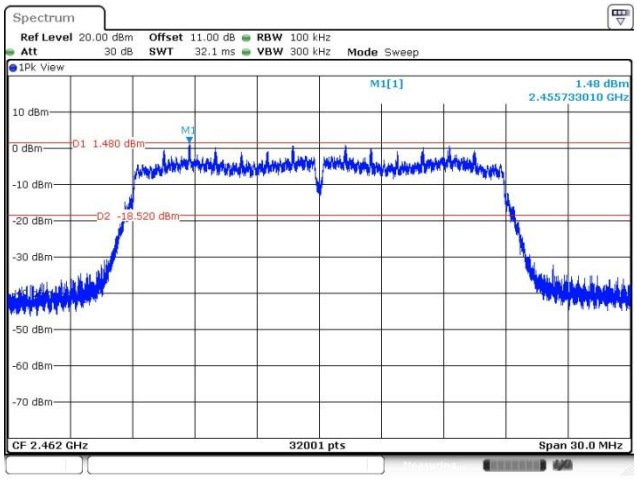
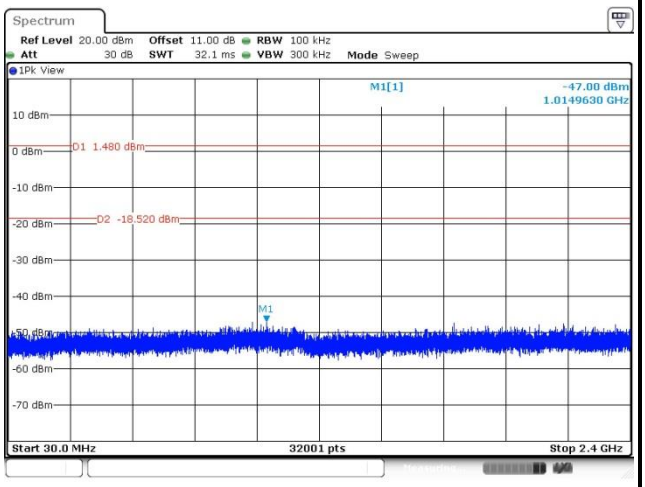
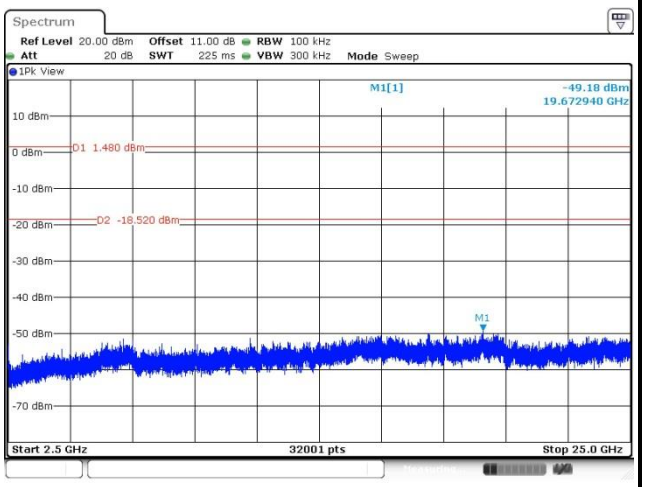
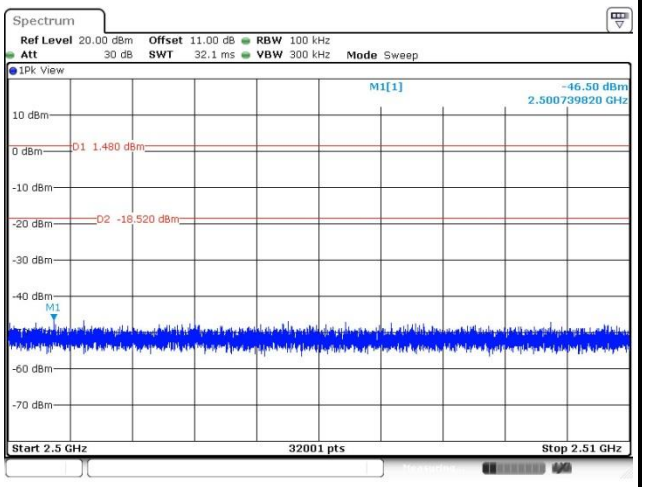
Reference Level	Tx 2437MHz / 30MHz~25GHz (down 20dBc)
	
---	
---	

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)
	
---	
---	

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 Hsiang. 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.

Tel: 886-3-271-8666
Fax: 886-3-318-0155
Email: ICC_Service@icertifi.com.tw

═END═