FCC TEST REPORT
FCC ID: 2A242-CP20

Report Number	ZKT-210904L278-02
Date of Test	Aug. 26, 2021 -- Sep. 06, 2021
Date of issue	Sep. 06, 2021
Total number of pages	58
Test Result	PASS
Testing Laboratory	**Shenzhen ZKT Technology Co., Ltd.**
Address	1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an District, Shenzhen, China
Applicant's name	SHENZHEN ZHENYI INTELLIGENT TECH CO., LTD
Address	701 Building A, Haohe Zhichuang, No.10, Fuyuan, 2nd road Zhancheng Community, Fuhai Street, BaoAn District, Shenzhen, Guangdong, China
Manufacturer's name	SHENZHEN PEICHENG TECHNOLOGY CO.,LTD
Address	5th floor, 64 building,baotian Industrial Zone,qianjin 2nd road,xixiang,bao'an District, Shenzhen,Guangdong, China
Test specification:	
Standard	FCC CFR Title 47 Part 15 Subpart C Section 15.247 ANSI C63.10:2013 KDB558074 D0115.247 Meas Guidance v 05r02
Test procedure	/
Non-standard test method	N/A
Test Report Form No.	TRF-EL-110_V0
Test Report Form(s) Originator	ZKT Testing
Master TRF	Dated: 2020-01-06

This device described above has been tested by ZKT, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.
This report shall not be reproduced except in full, without the written approval of ZKT, this document may be altered or revised by ZKT, personal only, and shall be noted in the revision of the document.

Product name	tablet PC
Trademark	ZZB
Model/Type reference	CP20
Ratings	DC 3.7V from battery DC 5V 2A from adapter or others

Testing procedure and testing location:

Testing Laboratory..... :	**Shenzhen ZKT Technology Co., Ltd.**
Address ..... :	1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an District, Shenzhen, China
Tested by (name + signature) ..... :	Alen He
Reviewer (name + signature)..... :	Joe Liu
Approved (name + signature) ..... :	Lake Xie

Table of Contents

1. VERSION

Report No.	Version	Description	Approved
ZKT-210904L278-02	Rev.01	Initial issue of report	Sep. 06, 2021

2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part15 (15.247) , Subpart C			
Standard Section	Test Item	Result	Remark
FCC part 15.203/15.247 (c)	Antenna requirement	PASS	
FCC part 15.207	AC Power Line Conducted Emission	PASS	
FCC part 15.247 (b)(3)	Conducted Peak Output Power	PASS	
FCC part 15.247 (a)(2)	Channel Bandwidth& 99% OCB	PASS	
FCC part 15.247 (e)	Power Spectral Density	PASS	
FCC part 15.247(d)	Band Edge	PASS	
FCC part 15.205/15.209	Spurious Emission	PASS	

NOTE:

(1)" N/A" denotes test is not applicable in this Test Report

2.1 TEST FACILITY

Shenzhen ZKT Technology Co., Ltd.
Add. : 1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an District, Shenzhen, China

FCC Test Firm Registration Number: 692225
Designation Number: CN1299
IC Registered No.: 27033

2.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement y ± U，where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2，providing a level of confidence of approximately 95 %。

No.	Item	Uncertainty
1	Conducted Emission Test	±1.38dB
2	RF power conducted	±0.16dB
3	Spurious emissions conducted	±0.21dB
4	All emissions radiated(<1G)	±4.68dB
5	All emissions radiated(>1G)	±4.89dB
6	Temperature	±0.5℃
7	Humidity	±2%

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Product Name:	tablet PC
Model No.:	CP20
Model Different.:	/
Serial No.:	N/A
Hardware Version:	V1.0
Software Version:	V1.0
Sample(s) Status:	Engineer sample
Channel numbers:	802.11b/802.11g /802.11n(HT20):11
Channel separation:	5MHz
Modulation technology:	802.11b: Direct Sequence Spread Spectrum(DSSS) 802.11g/802.11n(H20)/802.11n: Orthogonal Frequency Division Multiplexing(OFDM)
Antenna Type:	FPC antenna
Antenna gain:	2dBi
Power supply:	DC 3.7V from battery DC 5V 2A from adapter or others
POWER ADAPTER:	/

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

Note:
In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Test channel	Frequency (MHz)
	802.11b/802.11g/802.11n(HT20)
Lowest channel	2412MHz
Middle channel	2437MHz
Highest channel	2462MHz

3.2 DESCRIPTION OF TEST MODES

Transmitting mode	Keep the EUT in continuously transmitting mode
Remark: During the test, the duty cycle >98%, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's data.	

We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:

Pre-scan all kind of data rate in lowest channel, and found the follow list which it was worst case.

Mode	802.11b	802.11g	802.11n(HT20)	/
Data rate	1Mbps	6Mbps	6.5Mbps	/

Test Software	Realtek Test Tool
Power level setup	<20dBm

3.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Conducted Emission

AC Line — EUT

Radiated Emission

AC Line — EUT

Conducted Spurious

EUT

3.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Note
1	ADAPTER	HUAWEI	HW-100100C01	/	SDOC

Item	Shielded Type	Ferrite Core	Length	Note

Note:

(1) The support equipment was authorized by Declaration of Confirmation.
(2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.

3.5EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation Test equipment

Item	Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	Spectrum Analyzer (9kHz-26.5GHz)	KEYSIGHT	9020A	MY45109572	Sep. 22, 2020	Sep. 21, 2021
2	Spectrum Analyzer (1GHz-40GHz)	Agilent	E4446A	100363	Sep. 22, 2020	Sep. 21, 2021
3	Test Receiver (9kHz-7GHz)	R&S	ESCI7	101169	Sep. 22, 2020	Sep. 21, 2021
4	Bilog Antenna (30MHz-1400MHz)	Schwarzbeck	VULB9168	00877	Sep. 22, 2020	Sep. 21, 2021
5	Horn Antenna (1GHz-18GHz)	SCHWARZBECK	BBHA9120D	1541	Sep. 22, 2020	Sep. 21, 2021
6	Horn Antenna (18GHz-40GHz)	A.H. System	SAS-574	588	Sep. 22, 2020	Sep. 21, 2021
7	Amplifier (30-1000MHz)	EM Electronics	EM330 Amplifier	N/A	Sep. 22, 2020	Sep. 21, 2021
8	Amplifier (1GHz-40GHz)	QUANJUDA	DLE-161	097	Sep. 22, 2020	Sep. 21, 2021
9	Loop Antenna (9KHz-30MHz)	SCHWARZBECK	FMZB1519B	014	Sep. 22, 2020	Sep. 21, 2021
10	RF cables1 (9kHz-30MHz)	N/A	9kHz-30MHz	N/A	Sep. 22, 2020	Sep. 21, 2021
11	RF cables2 (30MHz-1GHz)	N/A	30MHz-1GHz	N/A	Sep. 22, 2020	Sep. 21, 2021
12	RF cables3 (1GHz-40GHz)	N/A	1GHz-40GHz	N/A	Sep. 22, 2020	Sep. 21, 2021
13	CMW500 Test	R&S	CMW500	106504	Sep. 22, 2020	Sep. 21, 2021
14	ESG Signal Generator	Agilent	E4421B	GB40051203	Sep. 22, 2020	Sep. 21, 2021
15	Signal Generator	Agilent	N5182A	MY47420215	Sep. 22, 2020	Sep. 21, 2021
16	D.C. Power Supply	LongWei	TPR-6405D	\	\	\
17	Software	Frad	EZ-EMC	FA-03A2 RE	\	\

Conduction Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	LISN	R&S	ENV216	101471	Sep. 22, 2020	Sep. 21, 2021
2	LISN	CYBERTEK	EM5040A	E1850400149	Sep. 22, 2020	Sep. 21, 2021
3	Test Cable	N/A	C01	N/A	Sep. 22, 2020	Sep. 21, 2021
4	Test Cable	N/A	C02	N/A	Sep. 22, 2020	Sep. 21, 2021
5	EMI Test Receiver	R&S	ESRP3	101946	Sep. 22, 2020	Sep. 21, 2021
6	Absorbing Clamp	DZ	ZN23201	N/A	Sep. 22, 2020	Sep. 21, 2021

4. EMC EMISSION TEST

4.1 CONDUCTED EMISSION MEASUREMENT

Test Requirement:	FCC Part15 C Section 15.207
Test Method:	ANSI C63.10:2013
Test Frequency Range:	150KHz to 30MHz
Receiver setup:	RBW=9KHz, VBW=30KHz, Sweep time=auto

4.1.1 POWER LINE CONDUCTED EMISSION LIMITS

FREQUENCY (MHz)	Limit (dBuV)		Standard
	Quasi-peak	Average	
0.15 -0.5	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	56.00	46.00	FCC
5.0 -30.0	60.00	50.00	FCC

Note:
(1) *Decreases with the logarithm of the frequency.

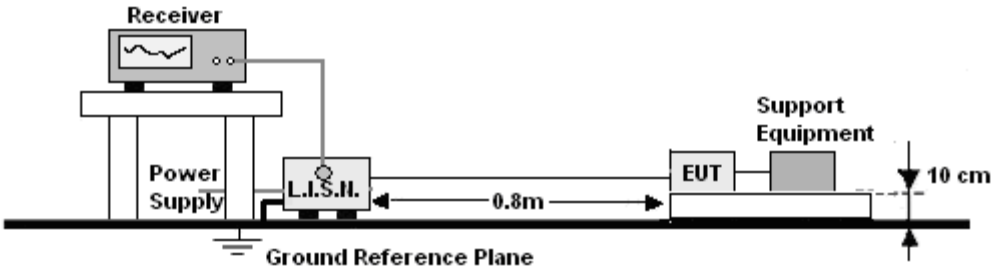
4.1.2 TEST PROCEDURE

1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. The EUT is a tabletop system; a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10:2013.
2. Support equipment, if needed, was placed as per ANSI C63.10:2013
3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10:2013.
4. The adapter received AC120V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
5. All support equipments received AC power from a second LISN, if any.
6. The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
7. Analyzer / Receiver scanned from 150 KHz to 30MHz for emissions in each of the test modes.e.
8 For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.1.3 DEVIATION FROM TEST STANDARD

No deviation

4.1.4 TEST SETUP



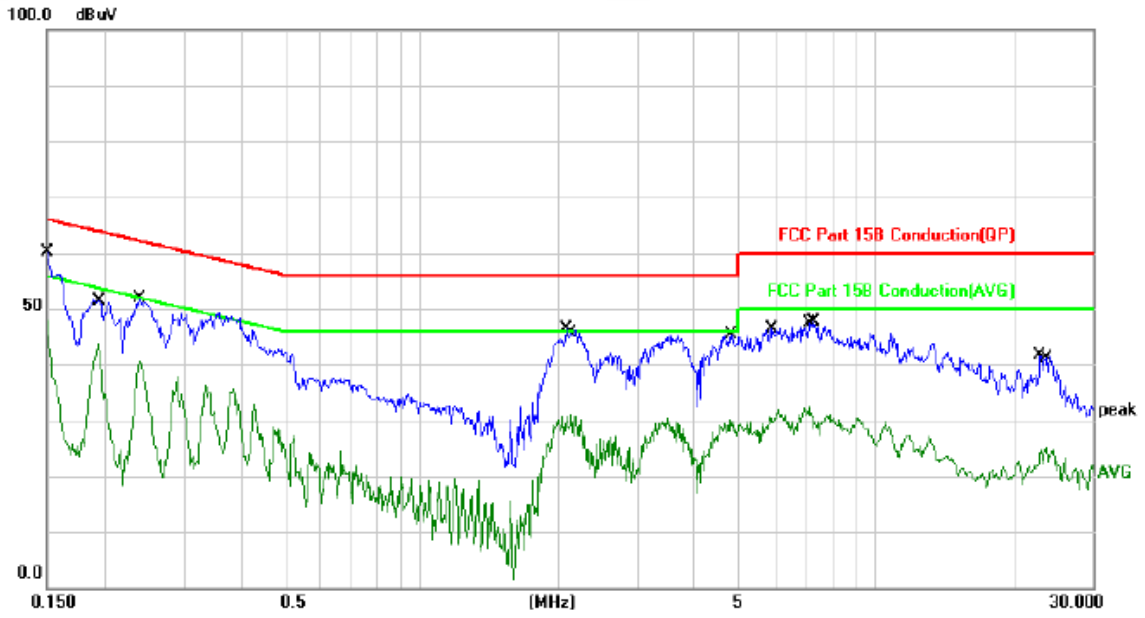
4.1.5 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

We pretest AC 120V and AC 230V, the worst voltage was AC 120V and the data recording in the report.

4.1.6 TEST RESULT

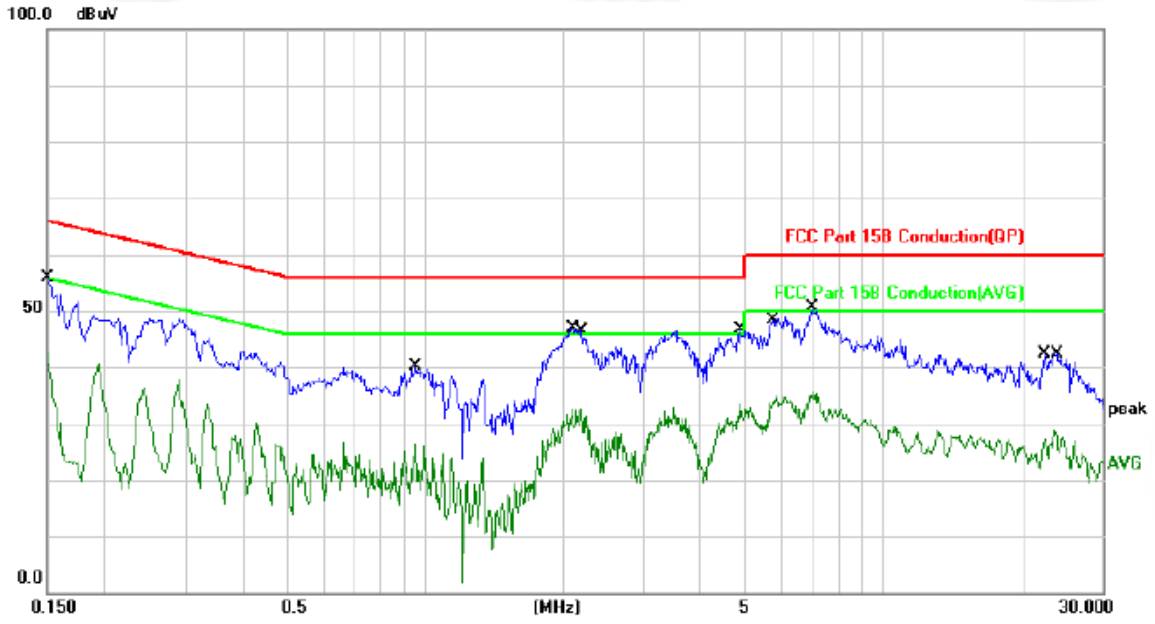
Temperature：	26℃	Relative Humidity：	54%
Pressure：	101kPa	Phase :N	L
Test Voltage ：	AC 120V/60Hz		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1499	60.33	-0.13	60.20	66.00	-5.80	QP	
2		0.1499	48.01	-0.13	47.88	56.00	-8.12	AVG	
3		0.1945	43.25	-0.13	43.12	53.84	-10.72	AVG	
4		0.2391	51.92	-0.11	51.81	62.12	-10.31	QP	
5		2.0780	46.53	-0.23	46.30	56.00	-9.70	QP	
6		2.1420	31.41	-0.24	31.17	46.00	-14.83	AVG	
7		4.8139	45.67	-0.22	45.45	56.00	-10.55	QP	
8		5.8659	30.92	-0.25	30.67	50.00	-19.33	AVG	
9		7.1499	32.60	-0.28	32.32	50.00	-17.68	AVG	
10		7.2539	47.99	-0.28	47.71	60.00	-12.29	QP	
11		22.9740	42.08	-0.41	41.67	60.00	-18.33	QP	
12		23.7460	25.62	-0.42	25.20	50.00	-24.80	AVG	

Notes:
1.An initial pre-scan was performed on the line and neutral lines with peak detector.
2.Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3.Mesurement Level = Reading level + Correct Factor

Temperature :	26℃	Relative Humidity:	54%
Pressure :	101kPa	Phase :L	N
Test Voltage :	AC 120V/60Hz		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1499	56.06	-0.13	55.93	66.00	-10.07	QP	
2		0.1499	42.80	-0.13	42.67	56.00	-13.33	AVG	
3		0.9539	40.17	-0.11	40.06	56.00	-15.94	QP	
4		0.9539	26.42	-0.11	26.31	46.00	-19.69	AVG	
5	*	2.1018	47.08	-0.24	46.84	56.00	-9.16	QP	
6		2.1899	32.91	-0.24	32.67	46.00	-13.33	AVG	
7		4.8539	46.80	-0.22	46.58	56.00	-9.42	QP	
8		5.6779	33.93	-0.24	33.69	50.00	-16.31	AVG	
9		6.9618	50.95	-0.28	50.67	60.00	-9.33	QP	
10		6.9618	36.01	-0.28	35.73	50.00	-14.27	AVG	
11		22.5060	42.80	-0.41	42.39	60.00	-17.61	QP	
12		23.6259	29.42	-0.42	29.00	50.00	-21.00	AVG	

Notes:
1.An initial pre-scan was performed on the line and neutral lines with peak detector.
2.Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3.Mesurement Level = Reading level + Correct Factor

4.2 RADIATED EMISSION MEASUREMENT

Test Requirement:	FCC Part15 C Section 15.209
Test Method:	ANSI C63.10:2013
Test Frequency Range:	9kHz to 25GHz
Test site:	Measurement Distance: 3m
Receiver setup:	

Frequency	Detector	RBW	VBW	Value
9KHz-150KHz	Quasi-peak	200Hz	600Hz	Quasi-peak
150KHz-30MHz	Quasi-peak	9KHz	30KHz	Quasi-peak
30MHz-1GHz	Quasi-peak	100KHz	300KHz	Quasi-peak
Above 1GHz	Peak	1MHz	3MHz	Peak
	Peak	1MHz	10Hz	Average

4.2.1 RADIATED EMISSION LIMITS

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

LIMITS OF RADIATED EMISSION MEASUREMENT

FREQUENCY (MHz)	Limit (dBuV/m) (at 3M)	
	PEAK	AVERAGE
Above 1000	74	54

Notes:

(1) The limit for radiated test was performed according to FCC PART 15C.

(2) The tighter limit applies at the band edges.

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

4.2.2 TEST PROCEDURE

Below 1GHz test procedure as below:

a. The EUT was placed on the top of a rotating table 0.1 meters above the ground at a 3 meter semi-anechoiccamber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of avariable-height antenna tower.

c. The antenna height is varied from one meter to four meters above the ground to determine the maximum valueof the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned toheights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could bestopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dBmargin would be re-tested one by one using peak, quasi-peak or average method as specified and then reportedin a data sheet.

Above 1GHz test procedure as below:

g. Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber andchange form table 0.8 metre to 1.5 metre(Above 18GHz the distance is 1 meter and table is 1.5 metre).

h. Test the EUT in the lowest channel ,the middle channel ,the Highest channel

Note:

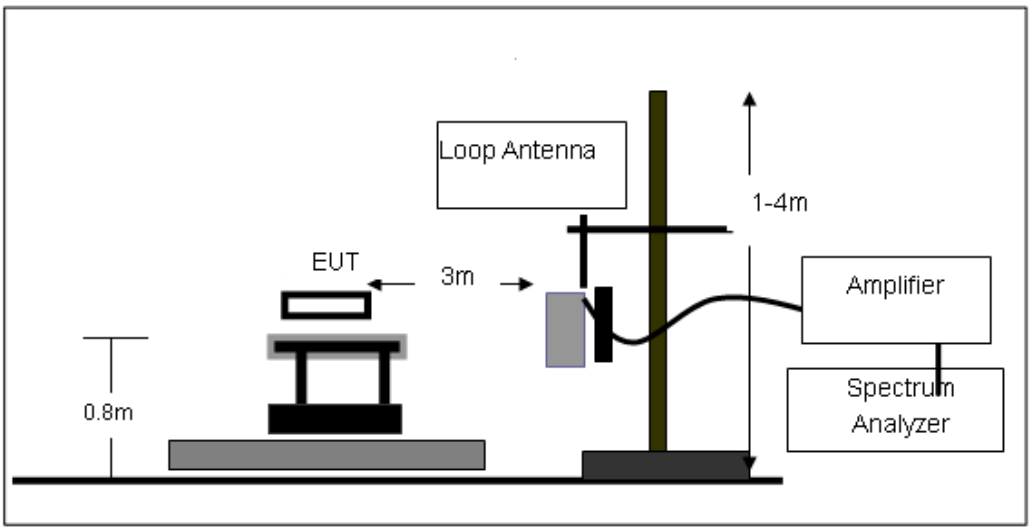
Both horizontal and vertical antenna polarities were tested
and performed pretest to three orthogonal axis. The worst case emissions were reported

4.2.3 DEVIATION FROM TEST STANDARD

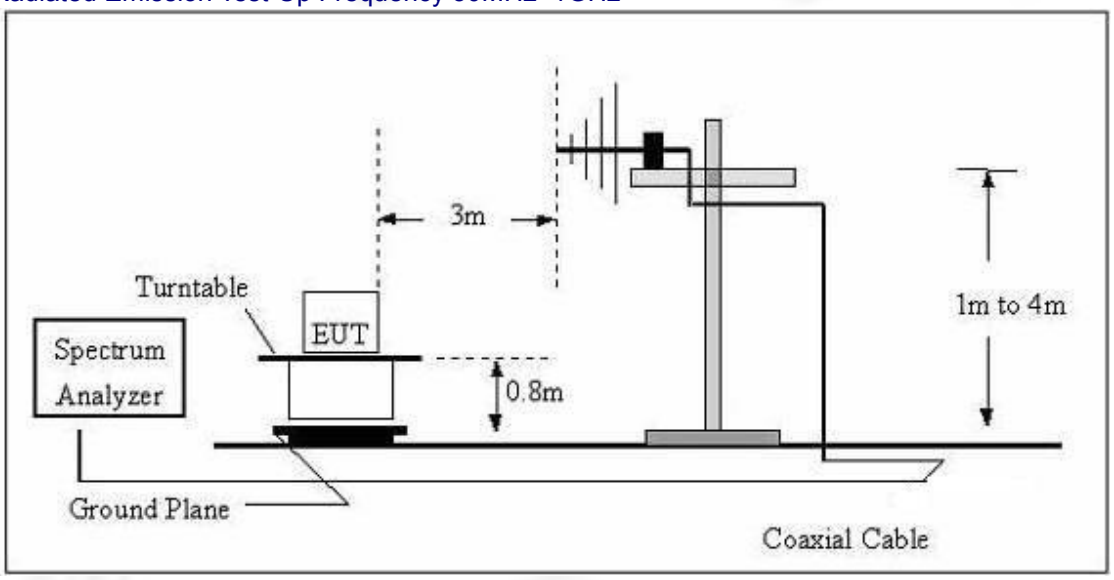
No deviation

4.2.4 TEST SETUP

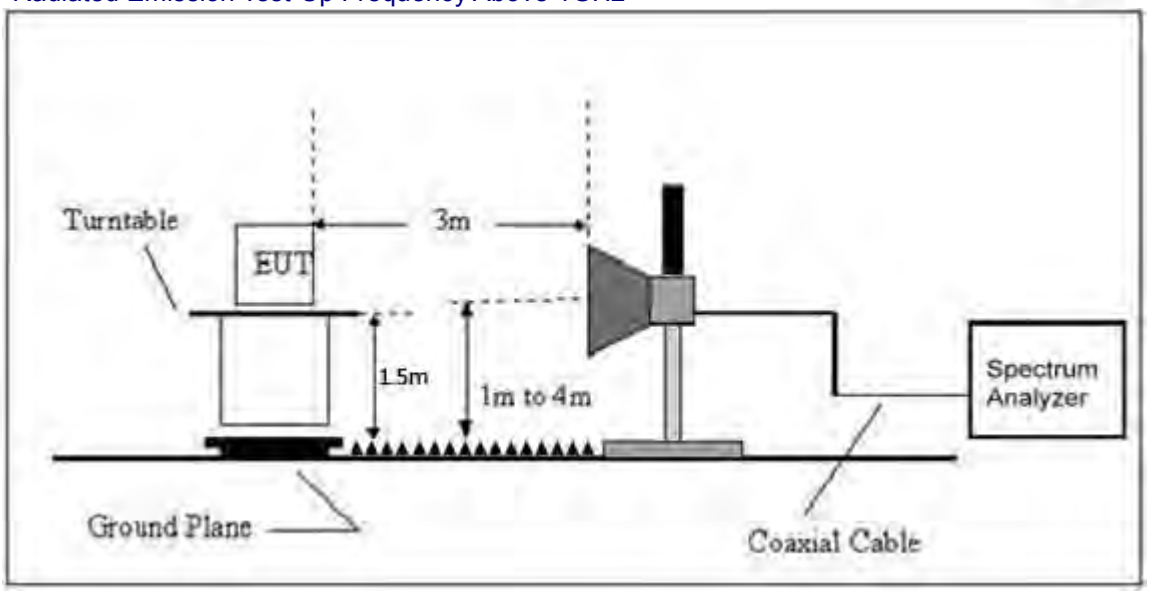
（A）Radiated Emission Test-Up Frequency Below 30MHz



（B）Radiated Emission Test-Up Frequency 30MHz~1GHz



（C）Radiated Emission Test-Up Frequency Above 1GHz



4.2.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

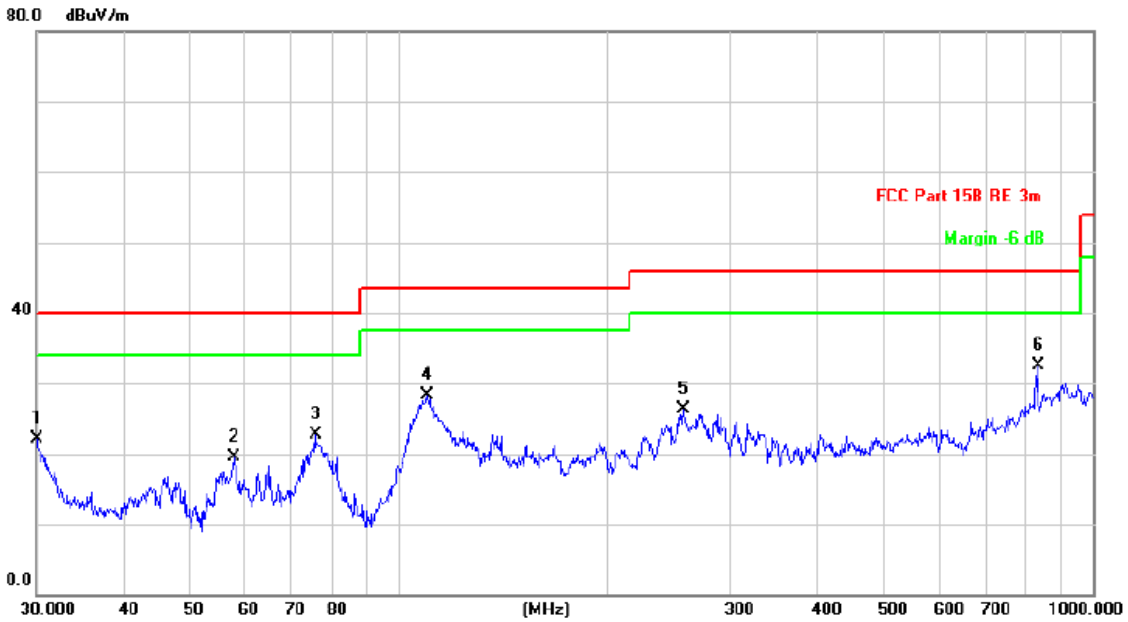
4.2.6 TEST RESULTS

Between 9KHz – 30MHz

The emission from 9 kHz to 30MHz was pre-tested and found the result was 20dB lower than the limit, and according to 15.31(o) & RSS-Gen 6.13, the test result no need to reported.

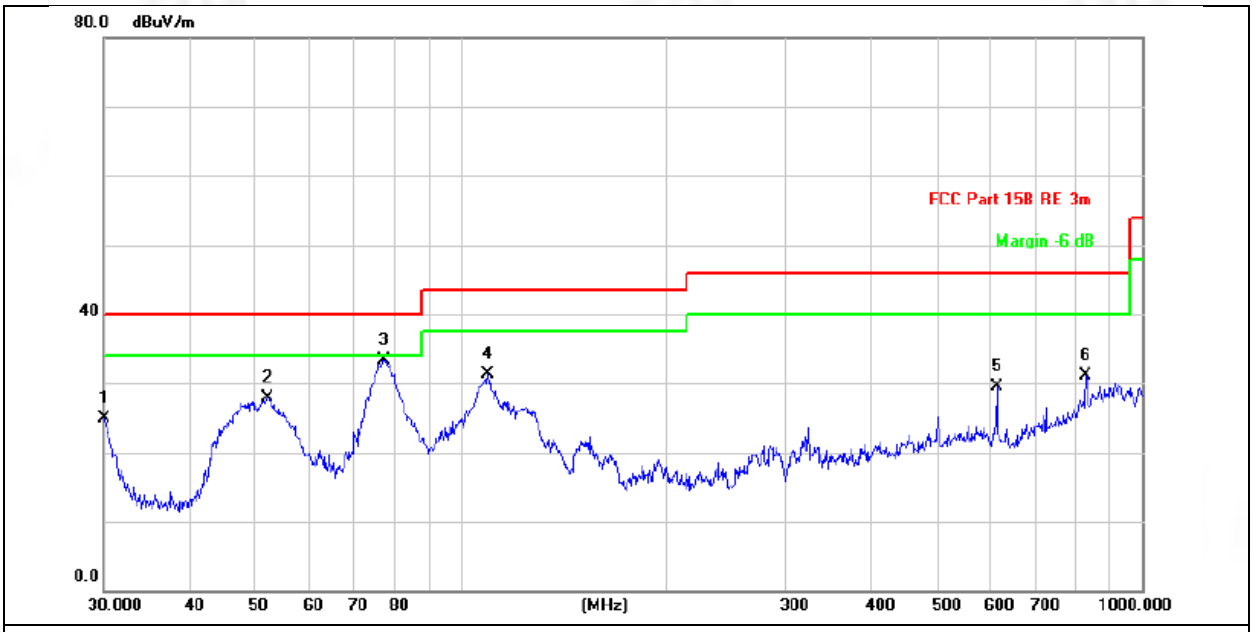
Between 30MHz – 1GHz

Temperature:	26℃	Relative Humidity:	54%
Pressure:	101 kPa	Polarization:	Horizontal
Test Voltage:	AC 120V/60Hz		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		30.0000	20.51	1.62	22.13	40.00	-17.87	QP			
2		57.7961	35.91	-16.48	19.43	40.00	-20.57	QP			
3		75.7114	36.26	-13.58	22.68	40.00	-17.32	QP			
4		109.7960	34.57	-6.30	28.27	43.50	-15.23	QP			
5		256.5211	31.89	-5.59	26.30	46.00	-19.70	QP			
6	*	833.3171	26.94	5.66	32.60	46.00	-13.40	QP			

Temperature:	26℃	Relative Humidity:	54%
Pressure:	101kPa	Polarization:	Vertical
Test Voltage:	AC 120V/60Hz		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		30.0000	23.27	1.62	24.89	40.00	-15.11	QP			
2		52.2079	45.04	-17.19	27.85	40.00	-12.15	QP			
3	*	77.3212	46.93	-13.57	33.36	40.00	-6.64	QP			
4		109.7960	37.51	-6.30	31.21	43.50	-12.29	QP			
5		612.0642	28.61	0.92	29.53	46.00	-16.47	QP			
6		827.4933	25.69	5.39	31.08	46.00	-14.92	QP			

Remarks:
1.Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2.The emission levels of other frequencies are very lower than the limit and not show in test report.
3.The test data shows only the worst case 802.11b mode

1GHz~25GHz

802.11b

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Low Channel:2412MHz									
V	4824.00	56.02	30.55	5.77	24.66	55.90	74	-18.10	PK
V	4824.00	41.05	30.55	5.77	24.66	40.93	54	-13.07	AV
V	7236.00	55.81	30.33	6.32	24.55	56.35	74	-17.65	PK
V	7236.00	40.50	30.33	6.32	24.55	41.04	54	-12.96	AV
V	9648.00	55.55	30.85	7.45	24.69	56.84	74	-17.16	PK
V	9648.00	41.43	30.85	7.45	24.69	42.72	54	-11.28	AV
H	4824.00	58.67	30.55	5.77	24.66	58.55	74	-15.45	PK
H	4824.00	41.16	30.55	5.77	24.66	41.04	54	-12.96	AV
H	7236.00	56.24	30.33	6.32	24.55	56.78	74	-17.22	PK
H	7236.00	39.43	30.33	6.32	24.55	39.97	54	-14.03	AV
H	9648.00	55.46	30.85	7.45	24.69	56.75	74	-17.25	PK
H	9648.00	38.82	30.85	7.45	24.69	40.11	54	-13.89	AV

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Middle Channel:2437MHz									
V	4874.00	58.08	30.55	5.77	24.66	57.96	74	-16.04	PK
V	4874.00	39.54	30.55	5.77	24.66	39.42	54	-14.58	AV
V	7311.00	58.74	30.33	6.32	24.55	59.28	74	-14.72	PK
V	7311.00	40.40	30.33	6.32	24.55	40.94	54	-13.06	AV
V	9748.00	57.96	30.85	7.45	24.69	59.25	74	-14.75	PK
V	9748.00	40.52	30.85	7.45	24.69	41.81	54	-12.19	AV
H	4874.00	57.28	30.55	5.77	24.66	57.16	74	-16.84	PK
H	4874.00	40.49	30.55	5.77	24.66	40.37	54	-13.63	AV
H	7311.00	58.64	30.33	6.32	24.55	59.18	74	-14.82	PK
H	7311.00	40.17	30.33	6.32	24.55	40.71	54	-13.29	AV
H	9748.00	57.49	30.85	7.45	24.69	58.78	74	-15.22	PK
H	9748.00	39.68	30.85	7.45	24.69	40.97	54	-13.03	AV

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
High Channel:2462MHz									
V	4924.00	57.98	30.55	5.77	24.66	57.86	74	-16.14	PK
V	4924.00	40.60	30.55	5.77	24.66	40.48	54	-13.52	AV
V	7386.00	58.64	30.33	6.32	24.55	59.18	74	-14.82	PK
V	7386.00	40.56	30.33	6.32	24.55	41.10	54	-12.90	AV
V	9848.00	55.37	30.85	7.45	24.69	56.66	74	-17.34	PK
V	9848.00	41.30	30.85	7.45	24.69	42.59	54	-11.41	AV
H	4924.00	57.82	30.55	5.77	24.66	57.70	74	-16.30	PK
H	4924.00	40.89	30.55	5.77	24.66	40.77	54	-13.23	AV
H	7386.00	55.80	30.33	6.32	24.55	56.34	74	-17.66	PK
H	7386.00	39.90	30.33	6.32	24.55	40.44	54	-13.56	AV
H	9848.00	56.94	30.85	7.45	24.69	58.23	74	-15.77	PK
H	9848.00	40.32	30.85	7.45	24.69	41.61	54	-12.39	AV

Remark:
1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

802.11g

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Low Channel:2412MHz									
V	4824.00	56.70	30.55	5.77	24.66	56.58	74	-17.42	PK
V	4824.00	39.56	30.55	5.77	24.66	39.44	54	-14.56	AV
V	7236.00	58.59	30.33	6.32	24.55	59.13	74	-14.87	PK
V	7236.00	39.38	30.33	6.32	24.55	39.92	54	-14.08	AV
V	9648.00	55.10	30.85	7.45	24.69	56.39	74	-17.61	PK
V	9648.00	39.17	30.85	7.45	24.69	40.46	54	-13.54	AV
H	4824.00	57.04	30.55	5.77	24.66	56.92	74	-17.08	PK
H	4824.00	39.87	30.55	5.77	24.66	39.75	54	-14.25	AV
H	7236.00	58.47	30.33	6.32	24.55	59.01	74	-14.99	PK
H	7236.00	40.67	30.33	6.32	24.55	41.21	54	-12.79	AV
H	9648.00	57.75	30.85	7.45	24.69	59.04	74	-14.96	PK
H	9648.00	39.17	30.85	7.45	24.69	40.46	54	-13.54	AV

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Middle Channel:2437MHz									
V	4874.00	56.87	30.55	5.77	24.66	56.75	74	-17.25	PK
V	4874.00	39.07	30.55	5.77	24.66	38.95	54	-15.05	AV
V	7311.00	55.88	30.33	6.32	24.55	56.42	74	-17.58	PK
V	7311.00	39.71	30.33	6.32	24.55	40.25	54	-13.75	AV
V	9748.00	58.72	30.85	7.45	24.69	60.01	74	-13.99	PK
V	9748.00	39.33	30.85	7.45	24.69	40.62	54	-13.38	AV
H	4874.00	54.81	30.55	5.77	24.66	54.69	74	-19.31	PK
H	4874.00	40.22	30.55	5.77	24.66	40.10	54	-13.90	AV
H	7311.00	56.67	30.33	6.32	24.55	57.21	74	-16.79	PK
H	7311.00	39.11	30.33	6.32	24.55	39.65	54	-14.35	AV
H	9748.00	58.46	30.85	7.45	24.69	59.75	74	-14.25	PK
H	9748.00	41.09	30.85	7.45	24.69	42.38	54	-11.62	AV

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
High Channel:2462MHz									
V	4924.00	55.49	30.55	5.77	24.66	55.37	74	-18.63	PK
V	4924.00	40.58	30.55	5.77	24.66	40.46	54	-13.54	AV
V	7386.00	58.76	30.33	6.32	24.55	59.30	74	-14.70	PK
V	7386.00	40.87	30.33	6.32	24.55	41.41	54	-12.59	AV
V	9848.00	56.70	30.85	7.45	24.69	57.99	74	-16.01	PK
V	9848.00	39.03	30.85	7.45	24.69	40.32	54	-13.68	AV
H	4924.00	58.14	30.55	5.77	24.66	58.02	74	-15.98	PK
H	4924.00	40.63	30.55	5.77	24.66	40.51	54	-13.49	AV
H	7386.00	55.94	30.33	6.32	24.55	56.48	74	-17.52	PK
H	7386.00	39.94	30.33	6.32	24.55	40.48	54	-13.52	AV
H	9848.00	58.68	30.85	7.45	24.69	59.97	74	-14.03	PK
H	9848.00	39.46	30.85	7.45	24.69	40.75	54	-13.25	AV

Remark:
1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

802.11n20

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Low Channel:2412MHz									
V	4824.00	57.90	30.55	5.77	24.66	57.78	74	-16.22	PK
V	4824.00	38.97	30.55	5.77	24.66	38.85	54	-15.15	AV
V	7236.00	57.53	30.33	6.32	24.55	58.07	74	-15.93	PK
V	7236.00	39.17	30.33	6.32	24.55	39.71	54	-14.29	AV
V	9648.00	56.51	30.85	7.45	24.69	57.80	74	-16.20	PK
V	9648.00	40.17	30.85	7.45	24.69	41.46	54	-12.54	AV
H	4824.00	55.29	30.55	5.77	24.66	55.17	74	-18.83	PK
H	4824.00	39.60	30.55	5.77	24.66	39.48	54	-14.52	AV
H	7236.00	57.76	30.33	6.32	24.55	58.30	74	-15.70	PK
H	7236.00	41.51	30.33	6.32	24.55	42.05	54	-11.95	AV
H	9648.00	56.07	30.85	7.45	24.69	57.36	74	-16.64	PK
H	9648.00	40.03	30.85	7.45	24.69	41.32	54	-12.68	AV

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Middle Channel:2437MHz									
V	4874.00	56.97	30.55	5.77	24.66	56.85	74	-17.15	PK
V	4874.00	41.41	30.55	5.77	24.66	41.29	54	-12.71	AV
V	7311.00	57.55	30.33	6.32	24.55	58.09	74	-15.91	PK
V	7311.00	39.09	30.33	6.32	24.55	39.63	54	-14.37	AV
V	9748.00	57.08	30.85	7.45	24.69	58.37	74	-15.63	PK

V	9748.00	39.48	30.85	7.45	24.69	40.77	54	-13.23	AV
H	4874.00	55.61	30.55	5.77	24.66	55.49	74	-18.51	PK
H	4874.00	40.90	30.55	5.77	24.66	40.78	54	-13.22	AV
H	7311.00	55.47	30.33	6.32	24.55	56.01	74	-17.99	PK
H	7311.00	40.97	30.33	6.32	24.55	41.51	54	-12.49	AV
H	9748.00	54.92	30.85	7.45	24.69	56.21	74	-17.79	PK
H	9748.00	39.71	30.85	7.45	24.69	41.00	54	-13.00	AV

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
High Channel:2462MHz									
V	4924.00	57.42	30.55	5.77	24.66	57.30	74	-16.70	PK
V	4924.00	40.99	30.55	5.77	24.66	40.87	54	-13.13	AV
V	7386.00	55.78	30.33	6.32	24.55	56.32	74	-17.68	PK
V	7386.00	40.77	30.33	6.32	24.55	41.31	54	-12.69	AV
V	9848.00	56.05	30.85	7.45	24.69	57.34	74	-16.66	PK
V	9848.00	41.33	30.85	7.45	24.69	42.62	54	-11.38	AV
H	4924.00	56.65	30.55	5.77	24.66	56.53	74	-17.47	PK
H	4924.00	41.21	30.55	5.77	24.66	41.09	54	-12.91	AV
H	7386.00	57.48	30.33	6.32	24.55	58.02	74	-15.98	PK
H	7386.00	39.34	30.33	6.32	24.55	39.88	54	-14.12	AV
H	9848.00	54.89	30.85	7.45	24.69	56.18	74	-17.82	PK
H	9848.00	40.08	30.85	7.45	24.69	41.37	54	-12.63	AV

Remark:
1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

5.RADIATED BAND EMISSIONMEASUREMENT

5.1 TEST REQUIREMENT:

Test Requirement:	FCC Part15 C Section 15.209 and 15.205
Test Method:	ANSI C63.10: 2013
Test Frequency Range:	All of the restrict bands were tested, only the worst band's (2310MHz to 2500MHz) data was showed.
Test site:	Measurement Distance: 3m
Receiver setup:	See below

Frequency	Detector	RBW	VBW	Value
Above 1GHz	Peak	1MHz	3MHz	Peak
	Average	1MHz	3MHz	Average

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

FREQUENCY (MHz)	Class B (dBuV/m) (at 3M)	
	PEAK	AVERAGE
Above 1000	74	54

Notes:

(1) The limit for radiated test was performed according to FCC PART 15C.

(2) The tighter limit applies at the band edges.

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

5.2 TEST PROCEDURE

Above 1GHz test procedure as below:

a. 1. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could bestopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dBmargin would be re-tested one by one using peak, quasi-peak or average method as specified and then reportedin a data sheet.

g. Test the EUT in the lowest channel,the Highest channel

Note:

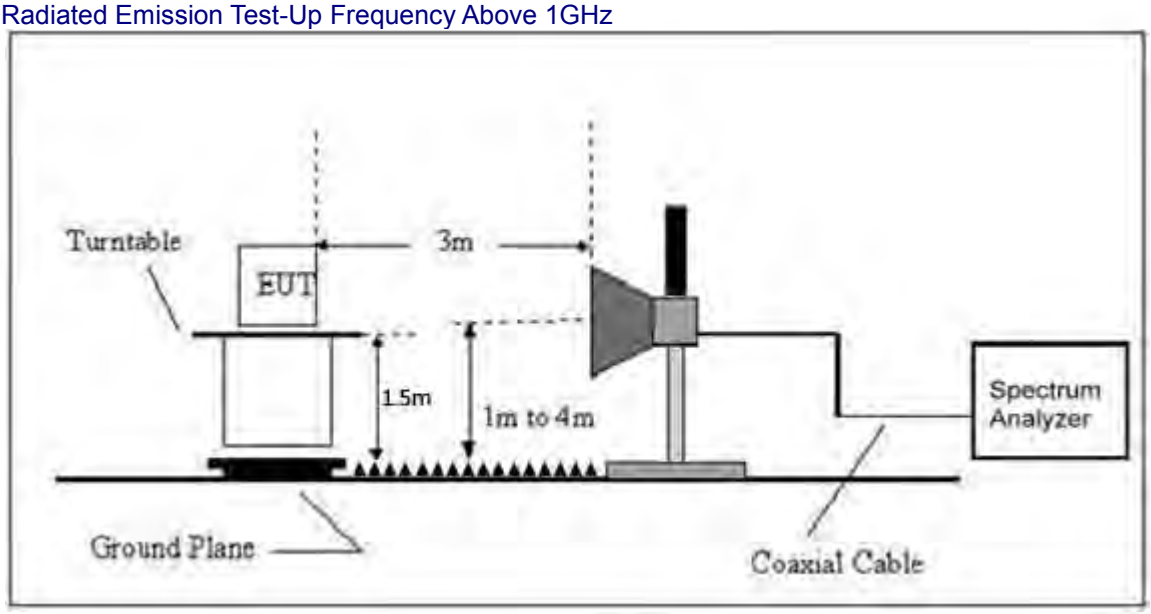
Both horizontal and vertical antenna polarities were tested
and performed pretest to three orthogonal axis. The worst case emissions were reported

5.3 DEVIATION FROM TEST STANDARD

No deviation

5.4 TEST SETUP

Radiated Emission Test-Up Frequency Above 1GHz



5.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

5.6 TEST RESULT

	Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission level (dBuV/m)	Limit (dBuV/m)	Detector Type	Result
802.11b	Low Channel 2412MHz									
	H	2390.00	57.99	30.22	4.85	23.98	56.60	74	PK	PASS
	H	2390.00	44.12	30.22	4.85	23.98	42.73	54	AV	PASS
	H	2400.00	59.46	30.22	4.85	23.98	58.07	74	PK	PASS
	H	2400.00	41.96	30.22	4.85	23.98	40.57	54	AV	PASS
	V	2390.00	58.43	30.22	4.85	23.98	57.04	74	PK	PASS
	V	2390.00	42.59	30.22	4.85	23.98	41.20	54	AV	PASS
	V	2400.00	61.71	30.22	4.85	23.98	60.32	74	PK	PASS
	V	2400.00	42.87	30.22	4.85	23.98	41.48	54	AV	PASS
	High Channel 2462MHz									
	H	2483.50	61.48	30.22	4.85	23.98	60.09	74	PK	PASS
	H	2485.50	44.49	30.22	4.85	23.98	43.10	54	AV	PASS
	H	2483.50	60.73	30.22	4.85	23.98	59.34	74	PK	PASS
	H	2485.50	42.12	30.22	4.85	23.98	40.73	54	AV	PASS
	V	2483.50	59.14	30.22	4.85	23.98	57.75	74	PK	PASS
	V	2485.50	43.04	30.22	4.85	23.98	41.65	54	AV	PASS
	V	2483.50	61.63	30.22	4.85	23.98	60.24	74	PK	PASS
	V	2485.50	43.06	30.22	4.85	23.98	41.67	54	AV	PASS
802.11g	Low Channel 2412MHz									
	H	2390.00	61.45	30.22	4.85	23.98	60.06	74	PK	PASS
	H	2390.00	42.88	30.22	4.85	23.98	41.49	54	AV	PASS
	H	2400.00	60.72	30.22	4.85	23.98	59.33	74	PK	PASS
	H	2400.00	44.42	30.22	4.85	23.98	43.03	54	AV	PASS
	V	2390.00	58.83	30.22	4.85	23.98	57.44	74	PK	PASS
	V	2390.00	44.16	30.22	4.85	23.98	42.77	54	AV	PASS
	V	2400.00	61.14	30.22	4.85	23.98	59.75	74	PK	PASS
	V	2400.00	42.47	30.22	4.85	23.98	41.08	54	AV	PASS
	High Channel 2462MHz									
	H	2483.50	59.00	30.22	4.85	23.98	57.61	74	PK	PASS
	H	2485.50	43.78	30.22	4.85	23.98	42.39	54	AV	PASS
	H	2483.50	61.26	30.22	4.85	23.98	59.87	74	PK	PASS
	H	2485.50	43.67	30.22	4.85	23.98	42.28	54	AV	PASS
	V	2483.50	58.49	30.22	4.85	23.98	57.10	74	PK	PASS
	V	2485.50	44.26	30.22	4.85	23.98	42.87	54	AV	PASS
	V	2483.50	60.95	30.22	4.85	23.98	59.56	74	PK	PASS
	V	2485.50	43.49	30.22	4.85	23.98	42.10	54	AV	PASS

802.11n20	Low Channel 2412MHz									
	H	2390.00	60.95	30.22	4.85	23.98	59.56	74	PK	PASS
	H	2390.00	43.42	30.22	4.85	23.98	42.03	54	AV	PASS
	H	2400.00	60.78	30.22	4.85	23.98	59.39	74	PK	PASS
	H	2400.00	43.65	30.22	4.85	23.98	42.26	54	AV	PASS
	V	2390.00	58.71	30.22	4.85	23.98	57.32	74	PK	PASS
	V	2390.00	43.47	30.22	4.85	23.98	42.08	54	AV	PASS
	V	2400.00	61.69	30.22	4.85	23.98	60.30	74	PK	PASS
	V	2400.00	41.78	30.22	4.85	23.98	40.39	54	AV	PASS
	High Channel 2462MHz									
	H	2483.50	58.49	30.22	4.85	23.98	57.10	74	PK	PASS
	H	2485.50	44.16	30.22	4.85	23.98	42.77	54	AV	PASS
	H	2483.50	61.35	30.22	4.85	23.98	59.96	74	PK	PASS
	H	2485.50	42.58	30.22	4.85	23.98	41.19	54	AV	PASS
	V	2483.50	59.40	30.22	4.85	23.98	58.01	74	PK	PASS
	V	2485.50	43.46	30.22	4.85	23.98	42.07	54	AV	PASS
	V	2483.50	60.49	30.22	4.85	23.98	59.10	74	PK	PASS
	V	2485.50	43.13	30.22	4.85	23.98	41.74	54	AV	PASS

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier, Margin= Emission Level - Limit

6.POWER SPECTRAL DENSITY TEST

Test Requirement:	FCC Part15 C Section 15.247 (e)
Test Method:	KDB558074 D0115.247 Meas Guidance v 05r02

6.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247	Power Spectral Density	8dBm/3kHz	2400-2483.5	PASS

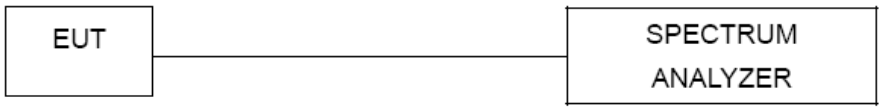
6.2 TEST PROCEDURE

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS bandwidth.
3. Set the RBW to: 3 kHz ≤ RBW ≤ 100 kHz.
4. Set the VBW ≥ 3 x RBW.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level within the RBW.
10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

6.3 DEVIATION FROM STANDARD

No deviation.

6.4 TEST SETUP



6.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.1 Unless otherwise a special operating condition is specified in the follows during the testing.

6.6 TEST RESULT

Temperature：	26℃	Relative Humidity：	54%
Pressure：	101kPa	Test Voltage ：	DC 3.7V
Test Mode ：	TX b Mode		

Frequency	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
2412 MHz	-12.19	8	PASS
2437 MHz	-9.629	8	PASS
2462 MHz	-9.954	8	PASS

TX CH01

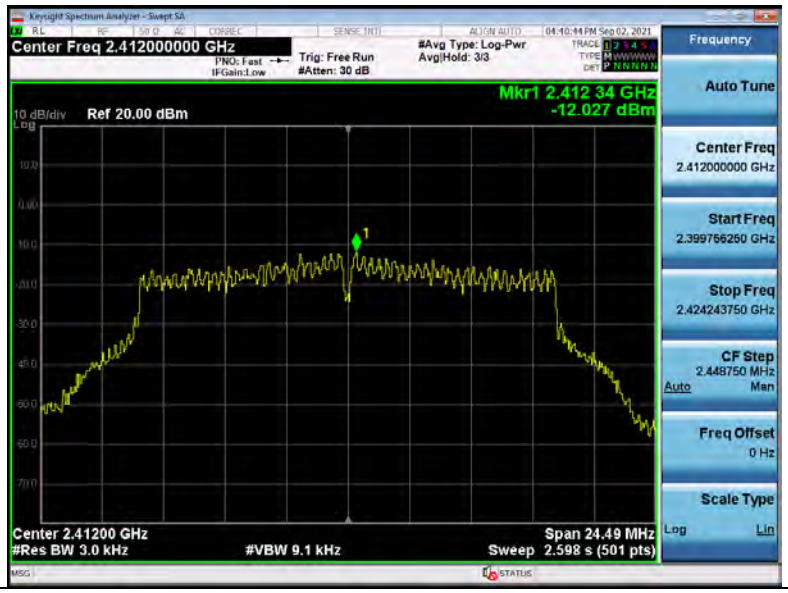
TX CH06

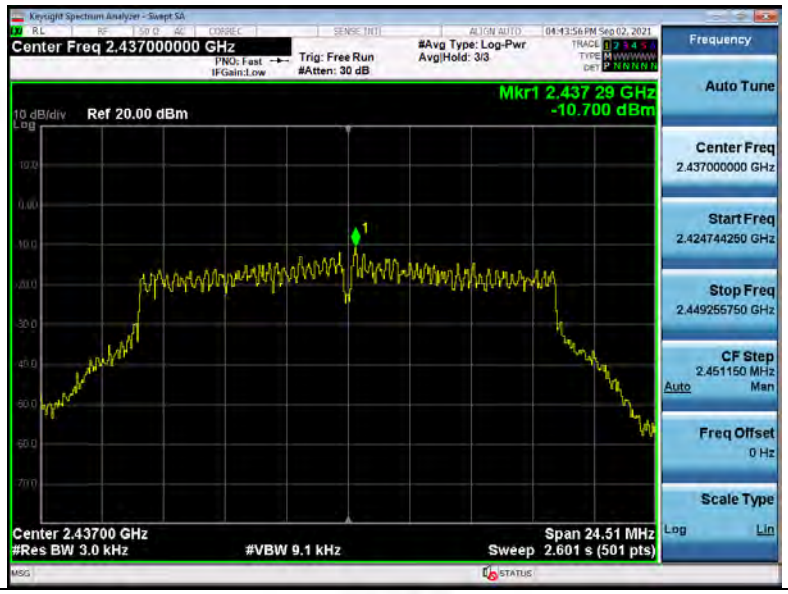
TX CH11

Temperature：	26℃	Relative Humidity：	54%
Pressure：	101kPa	Test Voltage：	DC 3.7V
Test Mode ：	TX g Mode		

Frequency	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
2412 MHz	-12.027	8	PASS
2437 MHz	-10.70	8	PASS
2462 MHz	-10.712	8	PASS

TX CH01



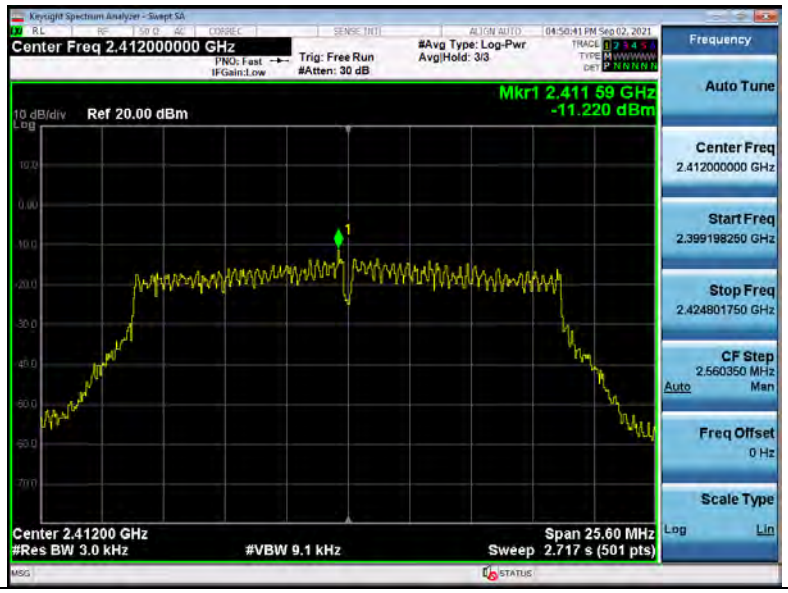
TX CH06


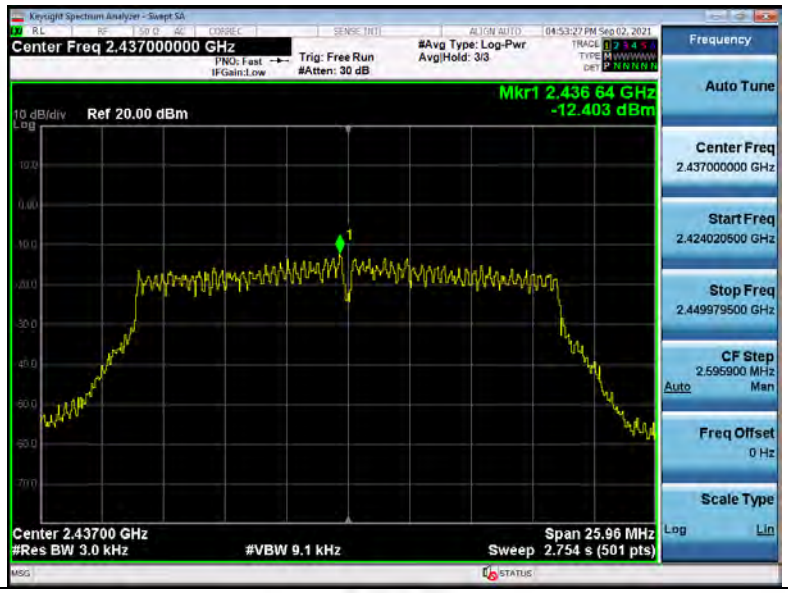
TX CH11


Temperature：	26℃	Relative Humidity：	54%
Pressure：	101kPa	Test Voltage：	DC3.7V
Test Mode ：	TX n Mode(20M)		

Frequency	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
2412 MHz	-11.22	8	PASS
2437 MHz	-12.403	8	PASS
2462 MHz	-10.747	8	PASS

TX CH01



TX CH06


TX CH11


7. CHANNEL BANDWIDTH

Test Requirement:	FCC Part15 C Section 15.247 (a)(2)
Test Method:	KDB558074 D0115.247 Meas Guidance v05r02

7.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(a)(2)	Bandwidth	>= 500KHz (6dB bandwidth)	2400-2483.5	PASS

7.2 TEST PROCEDURE

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

7.3 DEVIATION FROM STANDARD

No deviation.

7.4 TEST SETUP

7.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

7.6 TEST RESULT

Temperature：	26℃	Relative Humidity：	54%
Pressure：	101kPa	Test Voltage ：	DC 3.7V
Test Mode ：	TX Mode		

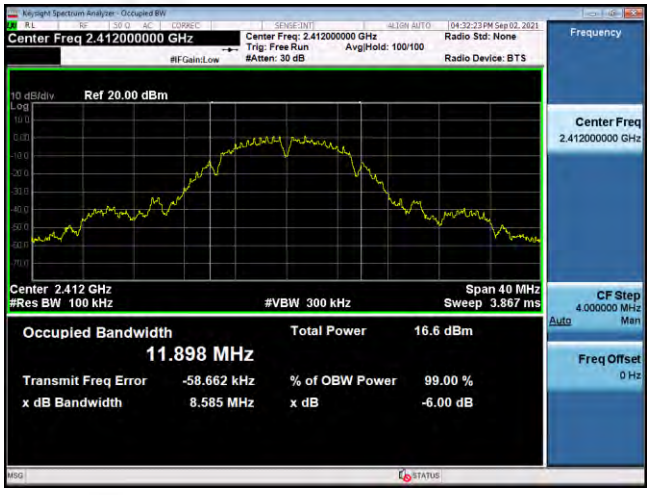
Test CH	Channel Bandwidth (MHz)			Limit(KHz)	Result
	802.11b	802.11g	802.11n(HT20)		
Lowest	8.585	16.33	17.07	>500	Pass
Middle	8.599	16.34	17.31		
Highest	8.127	15.47	16.17		

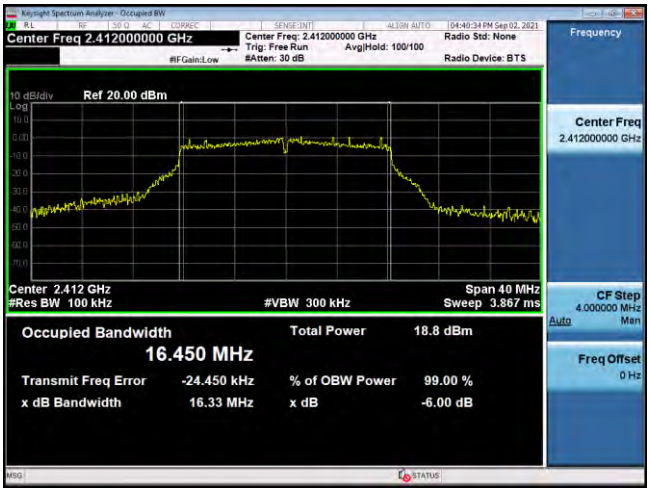
Test CH	99% Occupy Bandwidth (MHz)			Result
	802.11b	802.11g	802.11n(HT20)	
Lowest	11.898	16.450	17.634	Pass
Middle	11.933	16.447	17.637	
Highest	11.913	16.381	17.571	

Test plot as follows:

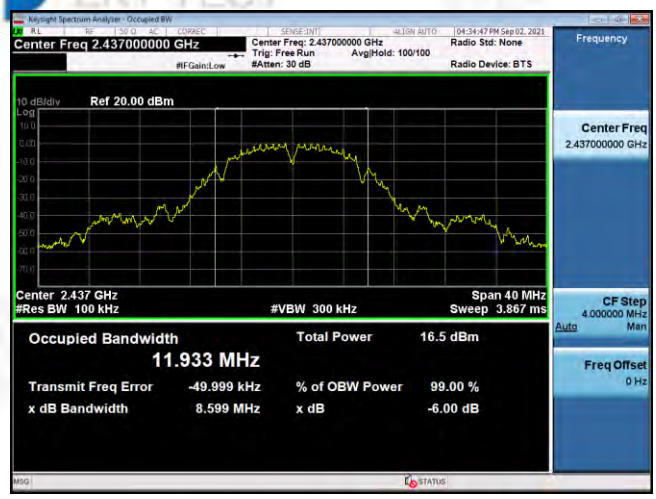
802.11b 802.11g

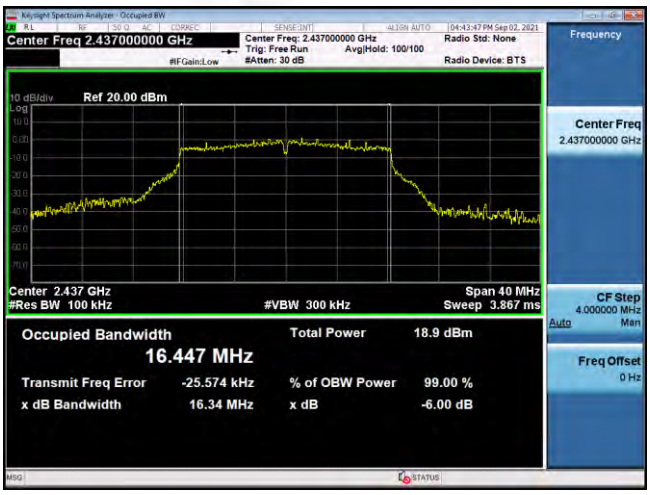
Lowest channel



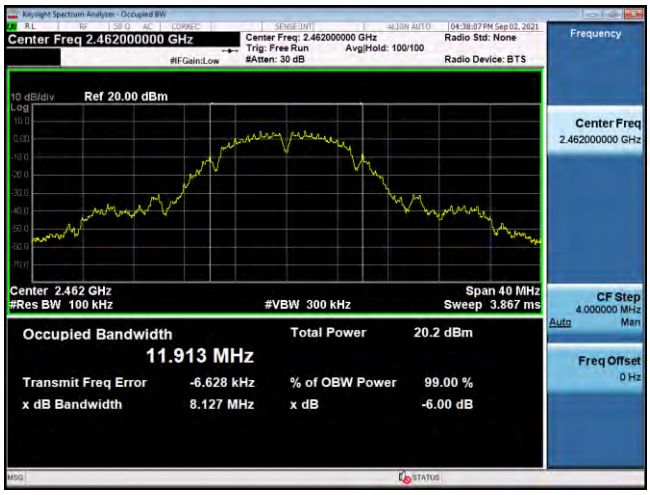


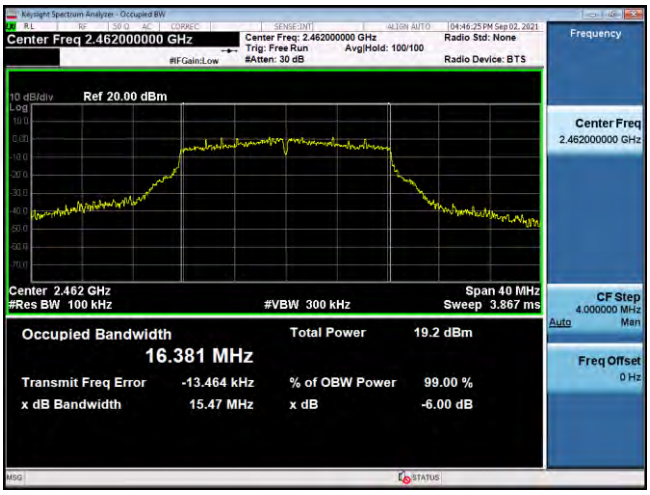
Middle channel





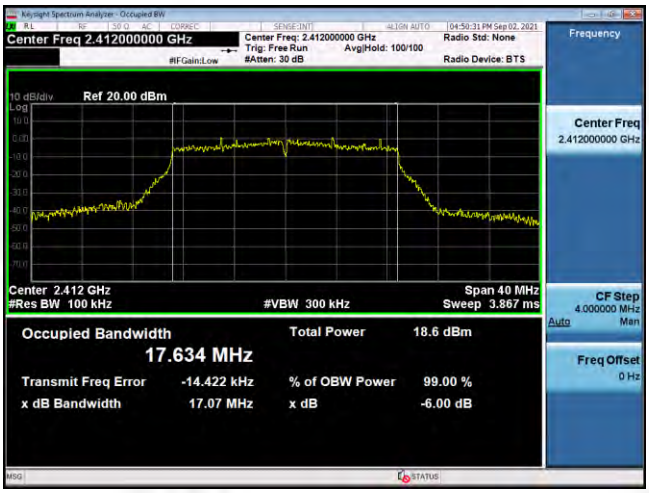
Highest channel



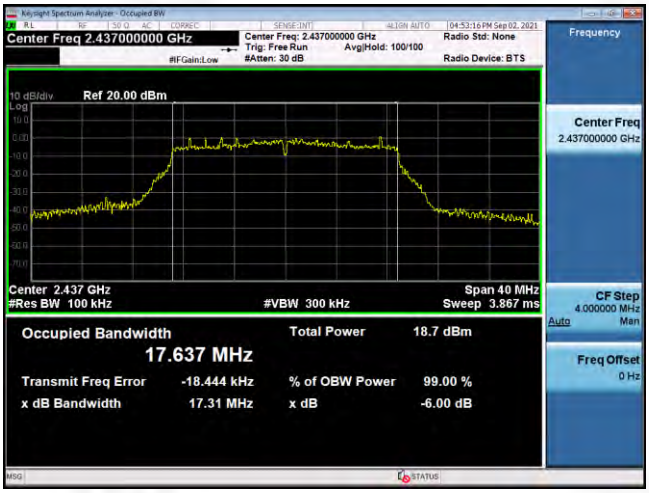


802.11n20

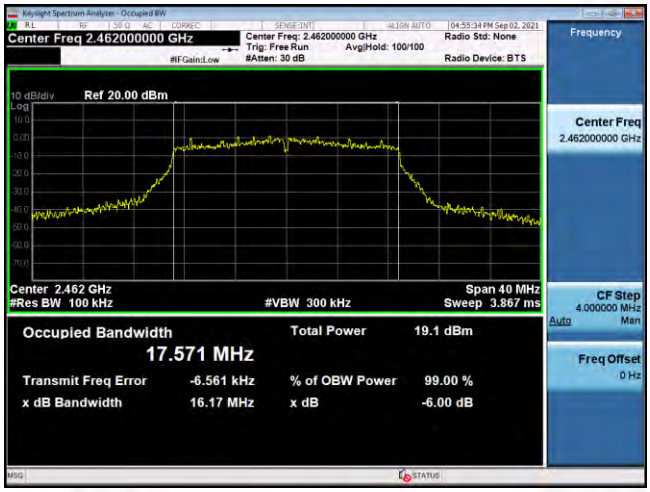
Lowest channel



Middle channel



Highest channel



8. OUTPUT POWER TEST

Test Requirement:	FCC Part15 C Section 15.247 (b)(3)
Test Method:	KDB558074 D0115.247 Meas Guidance v05r02

8.1 APPLIED PROCEDURES/LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(b)(3)	Peak Output Power	1 watt or 30dBm	2400-2483.5	PASS

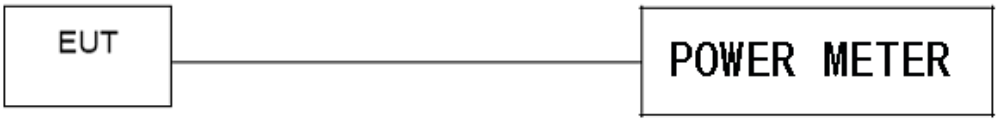
8.2 TEST PROCEDURE

a. The EUT was directly connected to the Power meter

8.3 DEVIATION FROM STANDARD

No deviation.

8.4 TEST SETUP



8.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

8.6 TEST RESULT

Temperature：	26℃	Relative Humidity：	54%
Pressure：	101kPa	Test Voltage ：	DC3.7V

Test CH	Peak Output Power (dBm)			Limit(dBm)	Result
	802.11b	802.11g	802.11n(HT20)		
Lowest	7.65	7.35	7.10	30.00	Pass
Middle	7.63	7.44	7.27		
Highest	7.21	7.89	7.53		

9. CONDUCTED BAND EDGE AND SPURIOUS EMISSION

Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	KDB558074 D0115.247 Meas Guidance v05r02

9.1 APPLICABLE STANDARD

in any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator in operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, In addition, radiated emissions which fall in the restricted bands, as defined in§15.205(a), must also comply with the radiated emission limits specified in15.209(a).

9.2 TEST PROCEDURE

Using the following spectrum analyzer setting:

A) Set the RBW = 100KHz.
B) Set the VBW = 300KHz.
C) Sweep time = auto couple.
D) Detector function = peak.
E) Trace mode = max hold.
F) Allow trace to fully stabilize.

9.3 DEVIATION FROM STANDARD

No deviation.

9.4 TEST SETUP

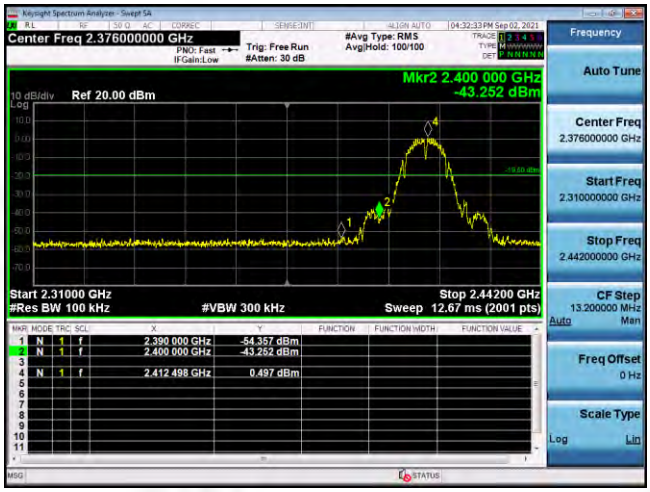
9.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

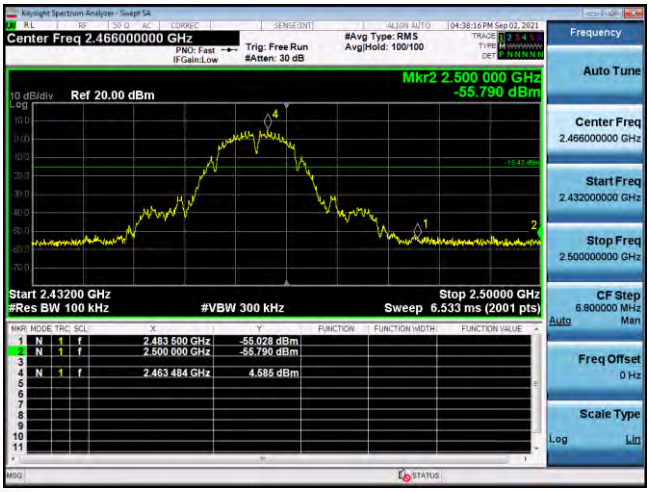
9.6 TEST RESULTS

Test plot as follows:

Test mode:	802.11b

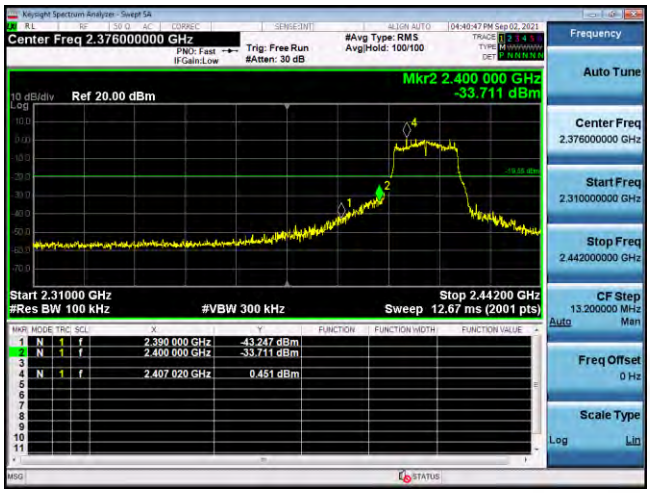


Lowest channel

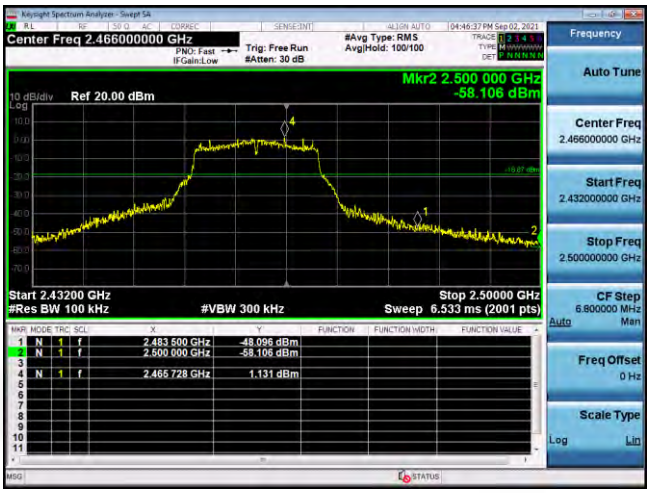


Highest channel

Test mode:	802.11g

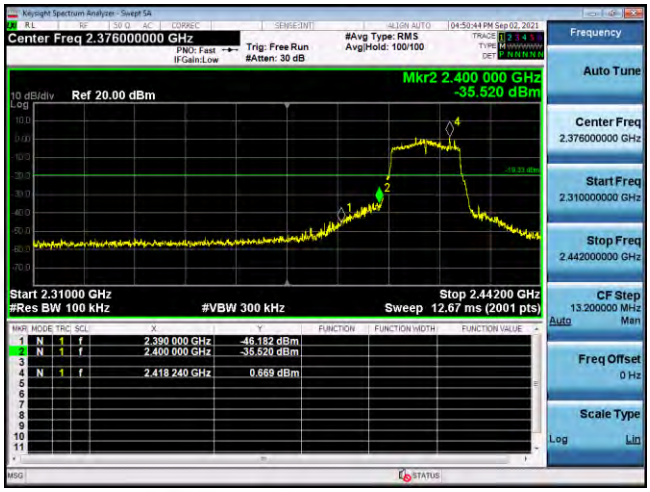


Lowest channel

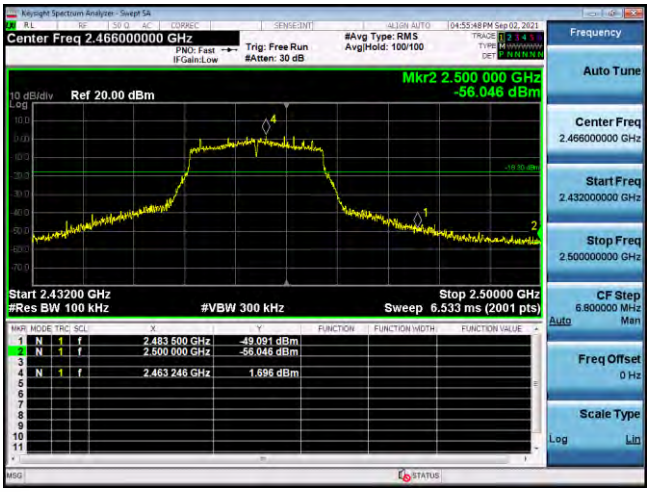


Highest channel

Test mode:	802.11n(HT20)



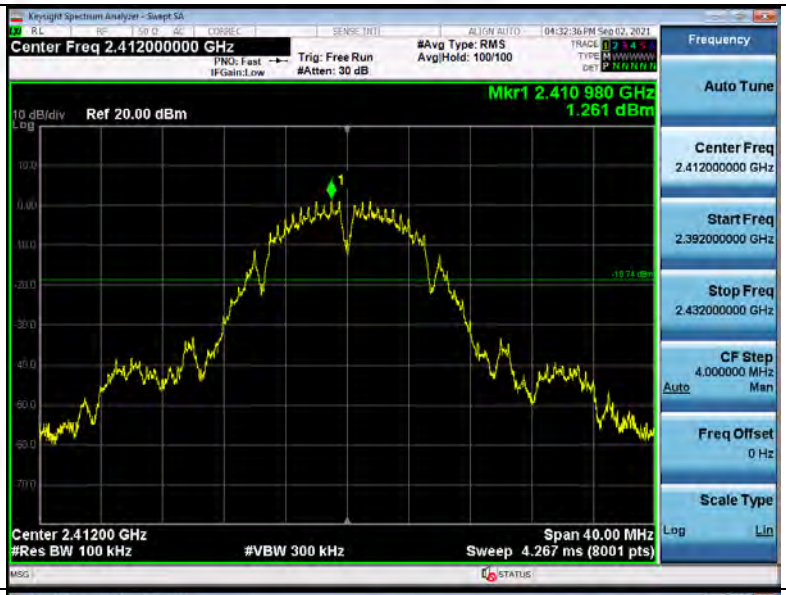
Lowest channel

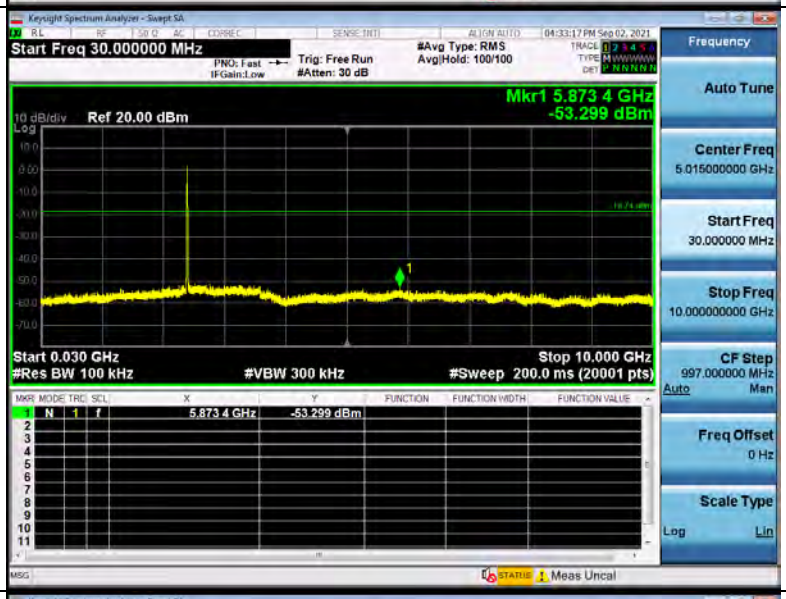


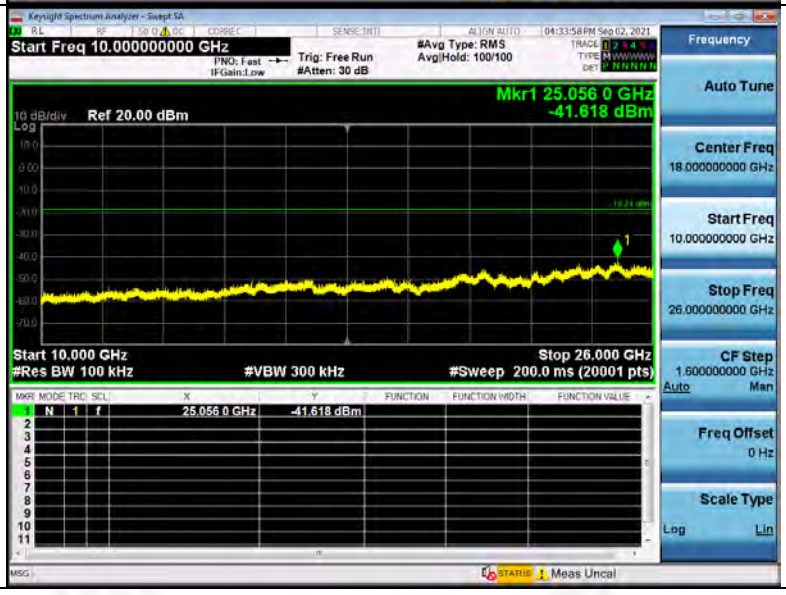
Highest channel

Test plot as follows:

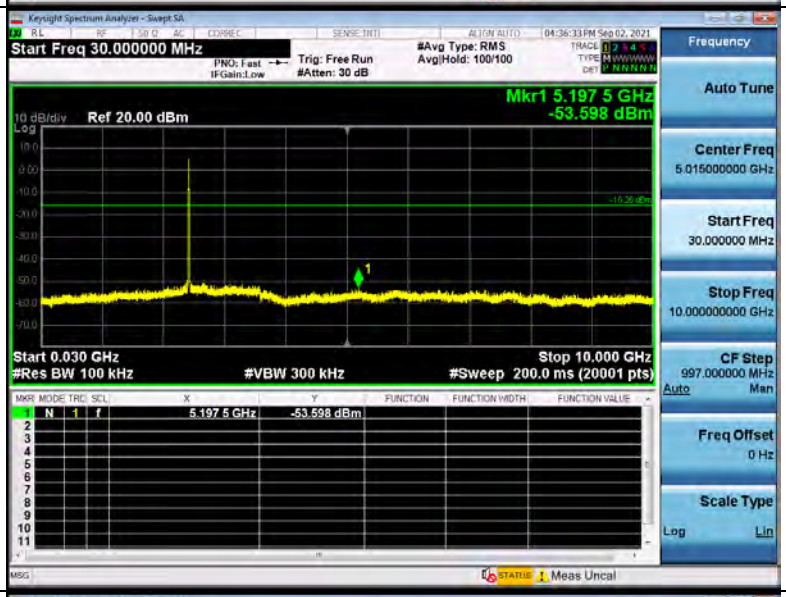
802.11b Lowest channel

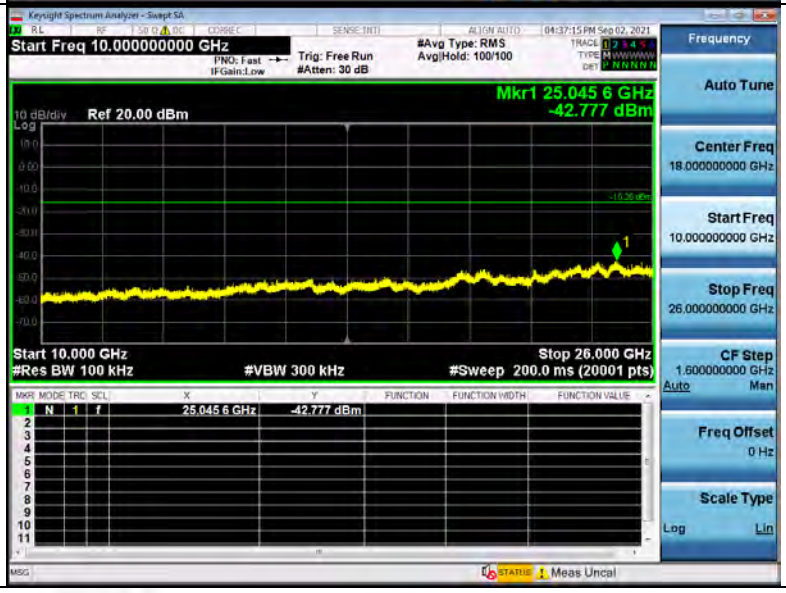




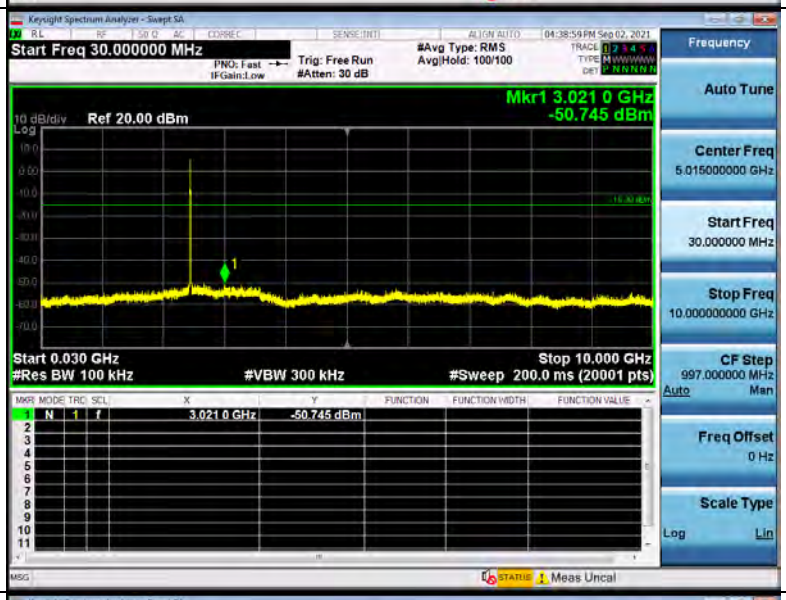


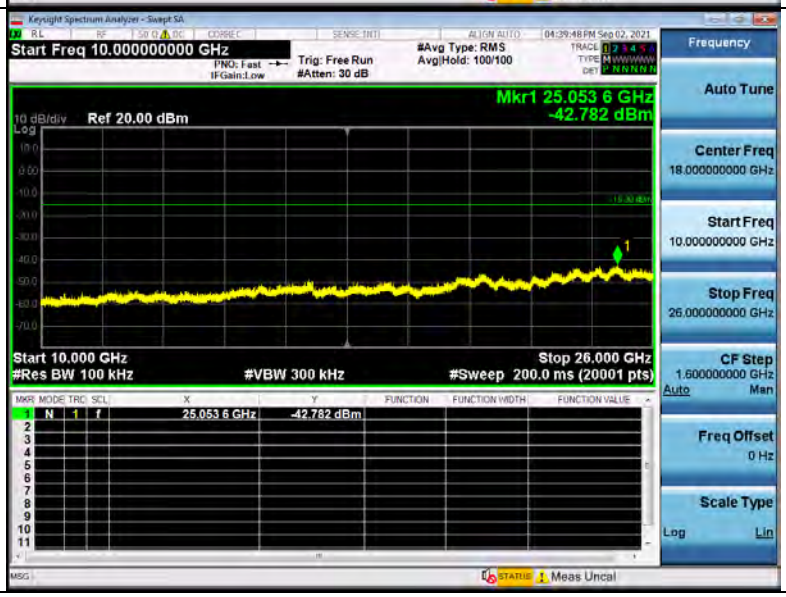
802.11b Middle channel



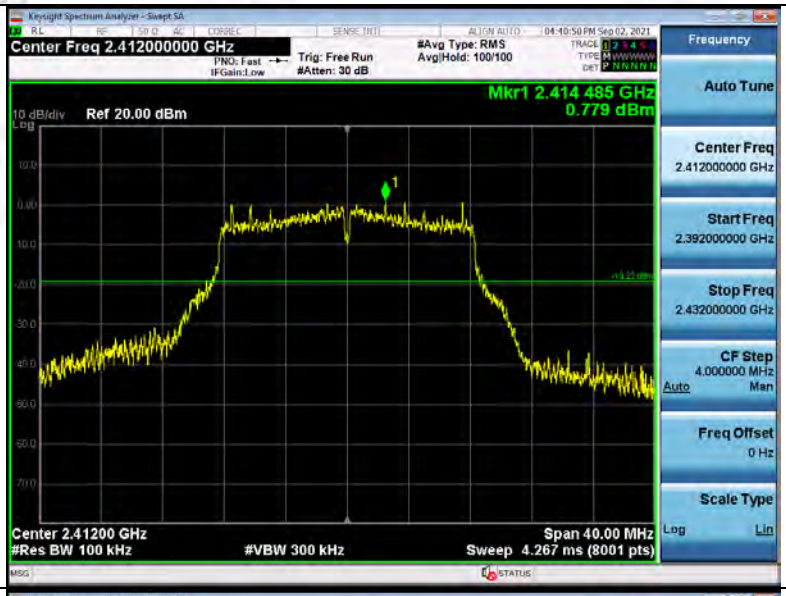


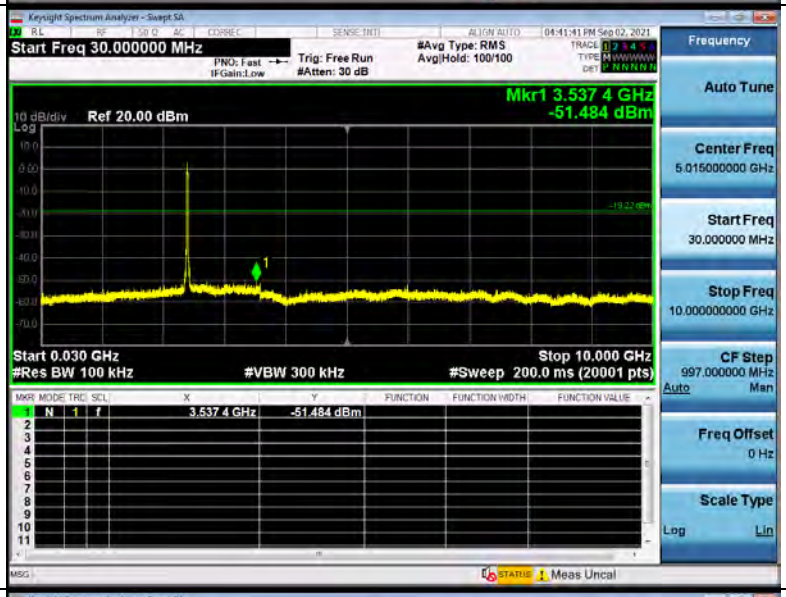
802.11b Highest channel

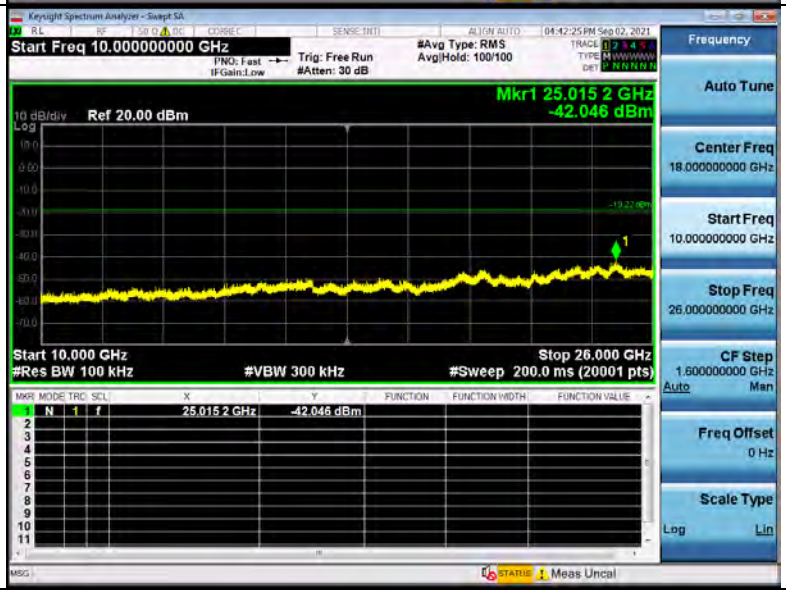




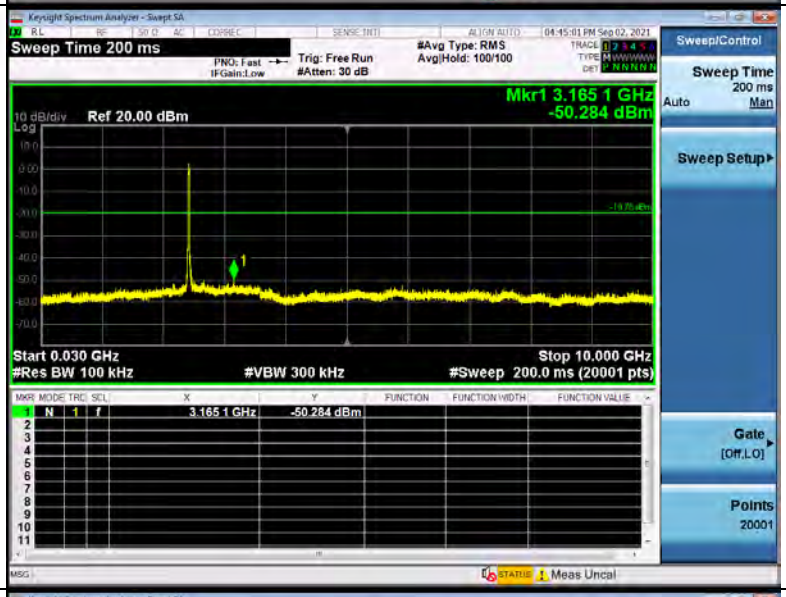
802.11g Lowest channel

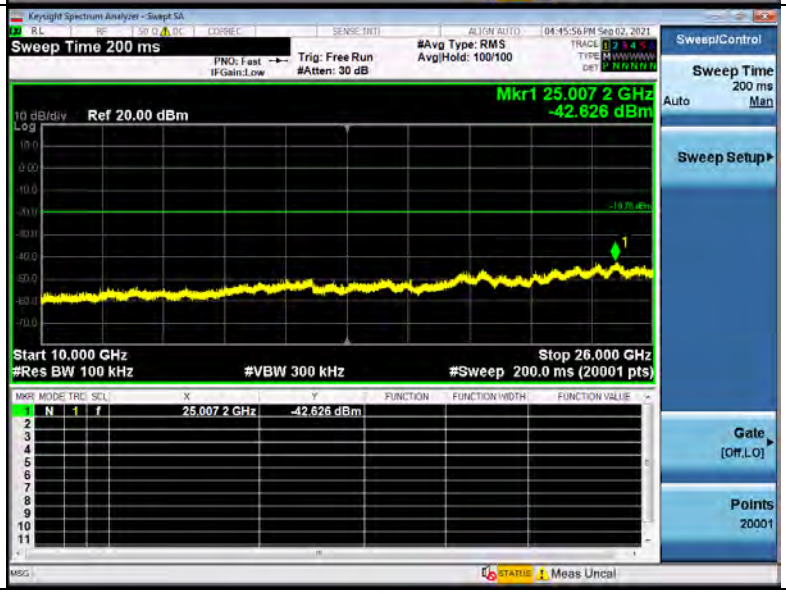




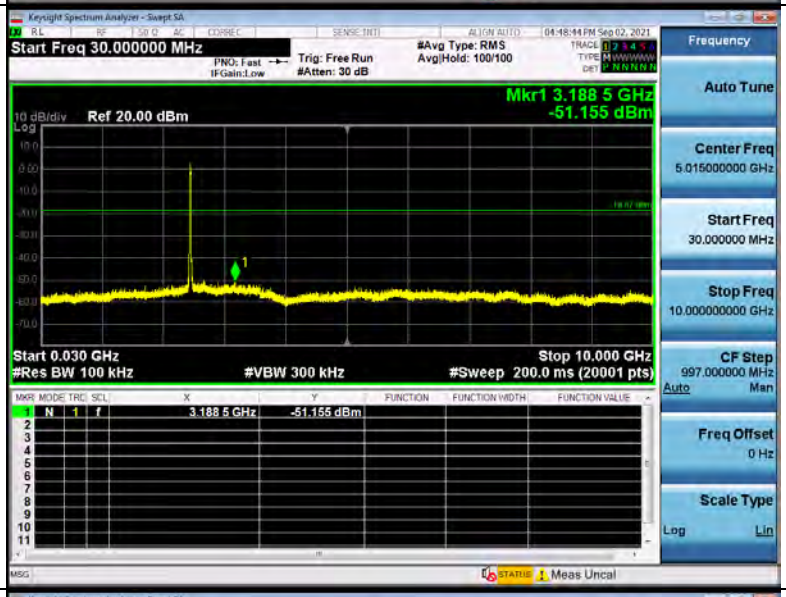


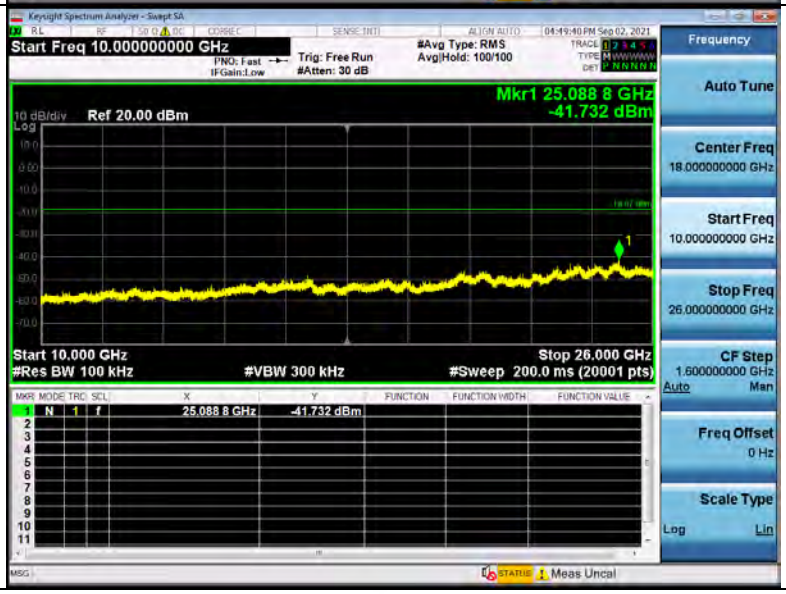
802.11g Middle channel





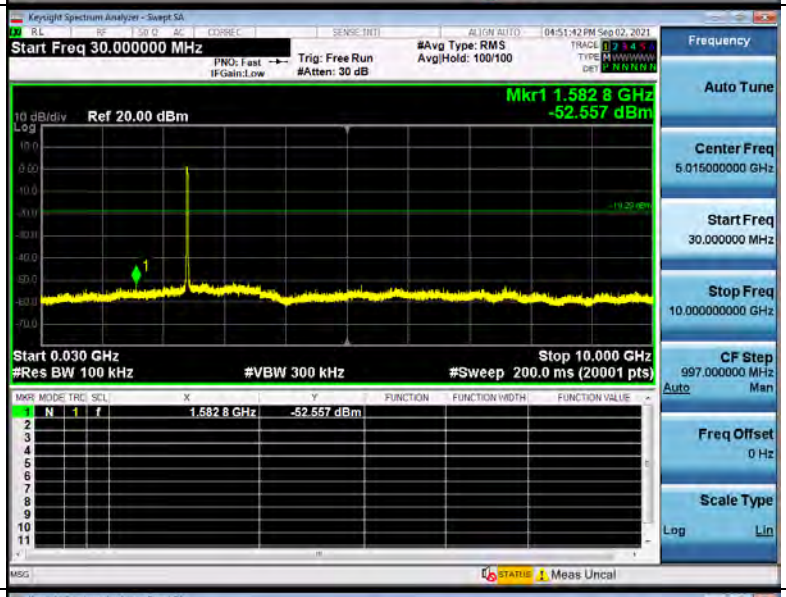
802.11g Highest channel

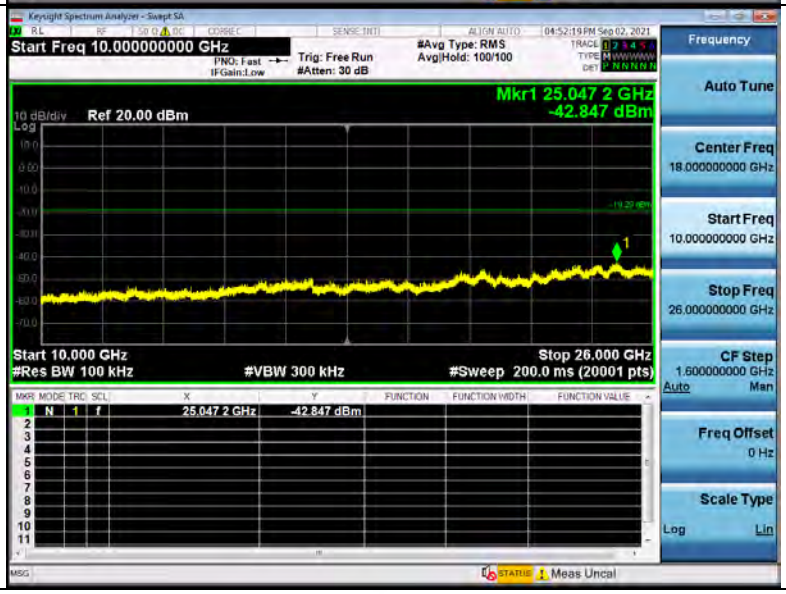




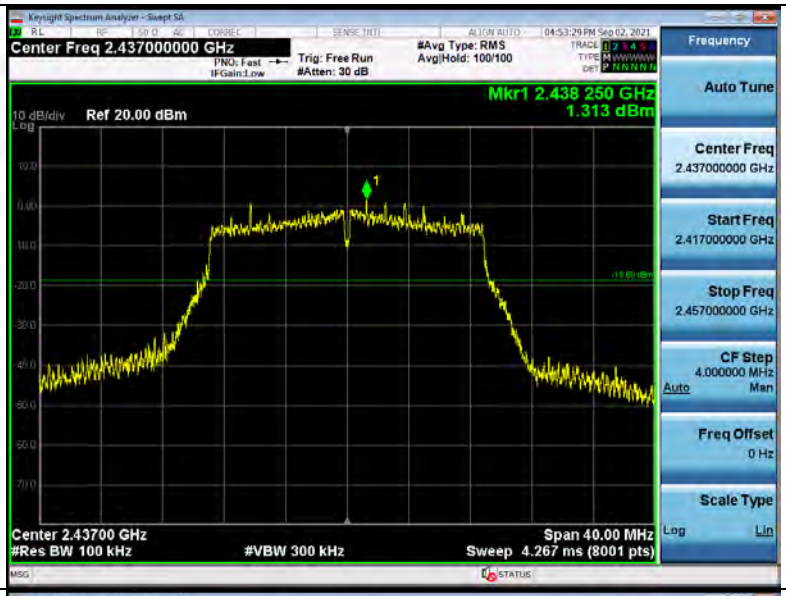
802.11n(HT20) Lowest channel

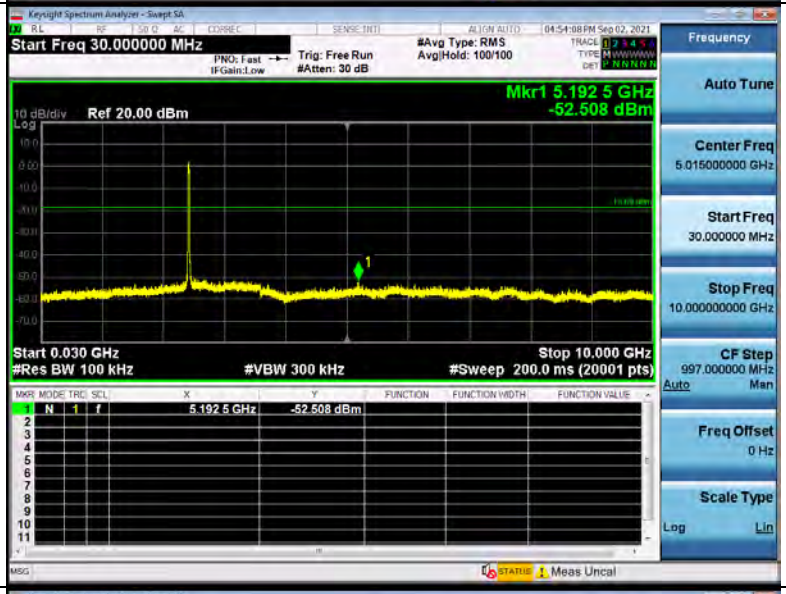

Keysight Spectrum Analyzer - Swept SA
Center Freq 2.412000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
Avg|Hold: 100/100
04:50:47 PM Sep 02, 2021
Mkr1 2.416 980 GHz
0.711 dBm
10 dB/div
Log
Ref 20.00 dBm
Center 2.41200 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 40.00 MHz
Sweep 4.267 ms (8001 pts)
Frequency
Auto Tune
Center Freq
2.412000000 GHz
Start Freq
2.392000000 GHz
Stop Freq
2.432000000 GHz
CF Step
4.000000 MHz
Auto
Man
Freq Offset
0 Hz
Scale Type
Log
Lin
MSG
STATUS

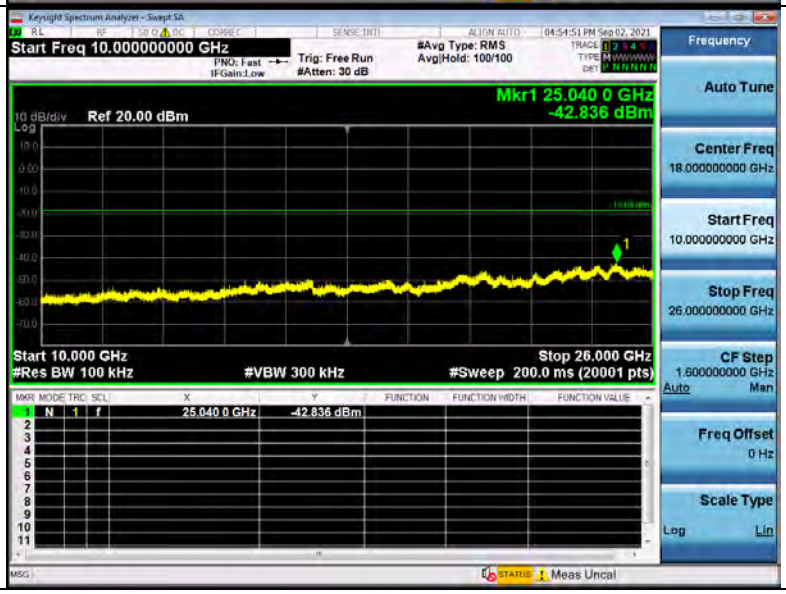

Keysight Spectrum Analyzer - Swept SA
Start Freq 30.000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
Avg|Hold: 100/100
04:51:42 PM Sep 02, 2021
Mkr1 1.582 8 GHz
-52.557 dBm
10 dB/div
Log
Ref 20.00 dBm
Start 0.030 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 10.000 GHz
#Sweep 200.0 ms (20001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 1.582 8 GHz -52.557 dBm
Frequency
Auto Tune
Center Freq
5.015000000 GHz
Start Freq
30.000000 MHz
Stop Freq
10.000000000 GHz
CF Step
997.000000 MHz
Auto
Man
Freq Offset
0 Hz
Scale Type
Log
Lin
MSG
STATUS
Meas Uncal


Keysight Spectrum Analyzer - Swept SA
Start Freq 10.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
Avg|Hold: 100/100
04:52:19 PM Sep 02, 2021
Mkr1 25.047 2 GHz
-42.847 dBm
10 dB/div
Log
Ref 20.00 dBm
Start 10.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 26.000 GHz
#Sweep 200.0 ms (20001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 25.047 2 GHz -42.847 dBm
Frequency
Auto Tune
Center Freq
18.000000000 GHz
Start Freq
10.000000000 GHz
Stop Freq
26.000000000 GHz
CF Step
1.600000000 GHz
Auto
Man
Freq Offset
0 Hz
Scale Type
Log
Lin
MSG
STATUS
Meas Uncal

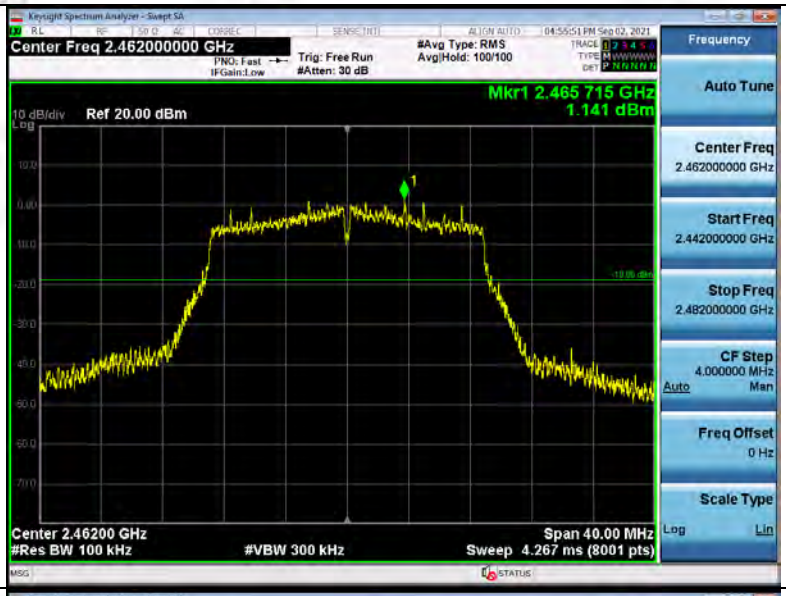
802.11n(HT20) Middle channel

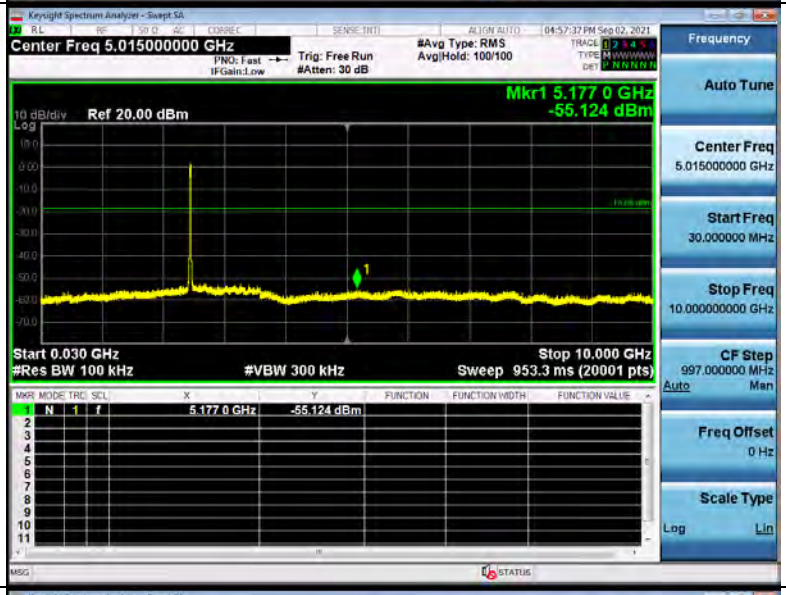


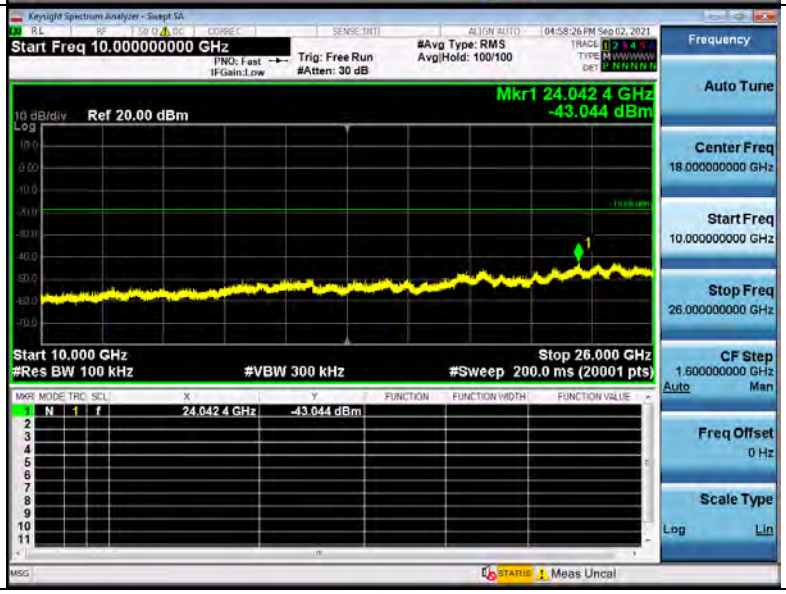




802.11n(HT20) Highest channel


Keysight Spectrum Analyzer - Swept SA
Center Freq 2.462000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
Avg|Hold: 100/100
04:56:51 PM Sep 02, 2021
Mkr1 2.465 715 GHz
1.141 dBm
10 dB/div
Log
Ref 20.00 dBm
Center 2.46200 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 40.00 MHz
Sweep 4.267 ms (8001 pts)
Frequency
Auto Tune
Center Freq
2.462000000 GHz
Start Freq
2.442000000 GHz
Stop Freq
2.482000000 GHz
CF Step
4.000000 MHz
Auto
Man
Freq Offset
0 Hz
Scale Type
Log
Lin
MSG
STATUS


Keysight Spectrum Analyzer - Swept SA
Center Freq 5.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
Avg|Hold: 100/100
04:57:37 PM Sep 02, 2021
Mkr1 5.177 0 GHz
-55.124 dBm
10 dB/div
Log
Ref 20.00 dBm
Start 0.030 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 10.000 GHz
Sweep 953.3 ms (20001 pts)
1 N 1 f 5.177 0 GHz -55.124 dBm
Frequency
Auto Tune
Center Freq
5.015000000 GHz
Start Freq
30.000000 MHz
Stop Freq
10.000000000 GHz
CF Step
997.000000 MHz
Auto
Man
Freq Offset
0 Hz
Scale Type
Log
Lin
MSG
STATUS


Keysight Spectrum Analyzer - Swept SA
Start Freq 10.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
Avg|Hold: 100/100
04:58:26 PM Sep 02, 2021
Mkr1 24.042 4 GHz
-43.044 dBm
10 dB/div
Log
Ref 20.00 dBm
Start 10.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 26.000 GHz
#Sweep 200.0 ms (20001 pts)
1 N 1 f 24.042 4 GHz -43.044 dBm
Frequency
Auto Tune
Center Freq
18.000000000 GHz
Start Freq
10.000000000 GHz
Stop Freq
26.000000000 GHz
CF Step
1.600000000 GHz
Auto
Man
Freq Offset
0 Hz
Scale Type
Log
Lin
MSG
STATUS
Meas Uncal

10. ANTENNA REQUIREMENT

Standard requirement:	FCC Part15 C Section 15.203 /247(c)

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247, if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

Refer to statement below for compliance.

The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. Further, this requirement does not apply to intentional radiators that must be professionally installed.

Antenna Connected Construction

The FPC antenna used in the product is a permanently connected antenna that complies with the provisions of part 15.203 requirement in this section. The antenna used in this product is a FPC antenna, The directional gains of antenna used for transmitting is 2dBi.

EUT Antenna:

11. TEST SETUP PHOTO

Please refer to test setup file

12. EUT CONSTRUCTIONAL DETAILS

Reference to the external photos file and internal photos file for details.

※※※※※ END OF REPORT ※※※※※