



FCC Part 15C Test Report

FCC ID:2A36M-SHM-MY611EM

Applicant: **Shenzhen Anjia Information Technology Co., Ltd.**

Address: No. 13, Anye Road, Anliang Community, Yuanshan Street, Longgang District, Shenzhen City, Guangdong, China

Manufacturer: **Shenzhen Anjia Information Technology Co., Ltd.**

Address: No. 13, Anye Road, Anliang Community, Yuanshan Street, Longgang District, Shenzhen City, Guangdong, China

EUT: Indoor wifi pan-tilt camera

Trade Mark: SightSys

Model Number: SHM-MY611EM
STY-MY611EM, Y611EM

Date of Receipt: May 08, 2025

Test Date: May 08, 2025 to May 19, 2025

Date of Report: May 19, 2025

Prepared By: Shenzhen DL Testing Technology Co., Ltd.

Address: 101-201, Building C, Shuanghuan, No.8, Baoqing Road, Baolong Industrial Zone, Baolong Street, Longgang Shenzhen, Guangdong, China.

Applicable Standards: FCC CFR Title 47 Part 15 Subpart E Section 15.407
ANSI C63.10:2013
KDB 789033 D02 v02r01

Test Result: Pass

Report Number: DLE-250605014R

Prepared (Test Engineer): Dimon Tan

Reviewer (Supervisor): Jack Bu

Approved (Manager): Jade Yang



This test report is based on a single evaluation of one sample of above mentioned products. It is not permitted to be duplicated in extracts without written approval of Shenzhen DL Testing Technology Co., Ltd.



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1. VERSION

Report No.	Version	Description	Approved
DLE-250605014R	Rev.01	Initial issue of report	May 19, 2025



2.SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part15 (15.407) , Subpart E			
Standard Section	Test Item	Judgment	Remark
15.207	AC Power Line Conducted Emission	PASS	
789033 D02 General U-NII	Duty Cycle	PASS	
15.209(a) 15.407 (b)(4) 15.407 (b)(8)	Spurious Radiated Emissions	PASS	
15.407(e)	6dB Occupied Bandwidth	PASS	
15.407 (a)(3)	Maximum Conducted Output Power	PASS	
2.1051, 15.407(b)(4)	Band Edge	PASS	
15.407 (a)(3)	Power Spectral Density	PASS	
2.1051, 15.407(b)	Spurious Emissions at Antenna Terminals	PASS	
15.407(g)	Frequency Stability Measurement	PASS	
15.203	Antenna Requirement	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

CAB identifier: CN0110

2.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$ · 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	3m chamber Radiated spurious emission(9KHz-30MHz)	U=4.5dB
2	3m chamber Radiated spurious emission(30MHz-1GHz)	U=4.8dB
3	3m chamber Radiated spurious emission(1GHz-6GHz)	U=4.9dB
4	3m chamber Radiated spurious emission(6GHz-40GHz)	U=5.0dB
5	Conducted disturbance	U=3.2dB
6	RF Band Edge	U=1.68dB
7	RF power conducted	U=1.86dB
8	RF conducted Spurious Emission	U=2.2dB
9	RF Occupied Bandwidth	U=1.8MHz
10	RF Power Spectral Density	U=1.75dB
11	humidity uncertainty	U=5.3%
12	Temperature uncertainty	U=0.59°C



3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Product Name:	Indoor wifi pan-tilt camera	
Model No.:	SHM-MY611EM	
Serial Model:	STY-MY611EM, Y611EM	
Model Different.:	Only the model name is different.	
Sample(s) Status:	Engineer sample	
Product Description	IEEE 802.11 WLAN Mode Supported	☒ 802.11a/n/ac (20MHz channel bandwidth) ☒ 802.11ac/n (40MHz channel bandwidth) ☒ 802.11ac (80MHz channel bandwidth)
	Data Rate	802.11a 802.11n(HT20/HT40):MCS0-MCS7; 802.11ac(VHT20/VHT40/VHT80):MCS0-MCS9
	Modulation	OFDM with BPSK / QPSK / 16-QAM / 64-QAM for 802.11a/n; OFDM with BPSK / QPSK / 16-QAM / 64-QAM / 256-QAM for 802.11ac;
	Operating Frequency Range	☒ 5745-5825 MHz for 802.11a/n20/ac20; ☒ 5755-5795 MHz for 802.11ac40/n40; ☒ 5775MHz for 802.11 ac80.
	Number of Channels	☒ 5 channels for 802.11a/n20/ac20 in the 5745-5825MHz band ; ☒ 2 channels for 802.11 ac40/n40 in the 5755-5795 MHz band ; ☒ 1 channels for 802.11 ac80 in the 5775MHz band
Channel List	Please refer to the Note 2.	
Antenna Type:	FPC antenna	
Antenna gain:	2.64dBi	
Power supply:	Input: 5V=== 2A From Adapter	
Adapter:	Model No.: YLT-050200 Input: AC100-240V 50/60Hz 0.35A Max Output: 5V=== 2A	

Note:

For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.



802.11a/n/ac(20 MHz) Frequency Channel for 5.8G							
Channel	Frequenc y (MHz)	Channel	Frequenc y (MHz)	Channel	Frequenc y (MHz)	Channel	Frequenc y (MHz)
149	5745	153	5765	157	5785	161	5805
165	5825	-	-	-	-	-	-

802.11n/ac(40MHz) Frequency Channel for 5.8G					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
151	5755	159	5795	-	-

802.11ac (80MHz) Frequency Channel for 5.8G	
Channel	Frequency (MHz)
155	5775



3.2 DESCRIPTION OF TEST MODES

Transmitting mode	Keep the EUT in continuously transmitting mode
Remark: During the test, 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.	

Test Software	CMD
Power level setup	Default

Pretest Mode	Description
Mode 1	802.11a/n20/ac20 CH149/ CH157/ CH 165
Mode 2	802.11n 40/ac 40 CH 151 / CH 159
Mode 3	802.11 ac80 CH 155

For Conducted Emission	
Final Test Mode	Description
Mode 1	802.11a/n20/ac20 CH149/ CH157/ CH 165
Mode 2	802.11n 40/ac 40 CH 151 / CH 159
Mode 3	802.11 ac80 CH 155

For Radiated Emission	
Final Test Mode	Description
Mode 1	802.11a/n20/ac20 CH149/ CH157/ CH 165
Mode 2	802.11n 40/ac 40 CH 151 / CH 159
Mode 3	802.11 ac80 CH 155

Note:

(1) The measurements are performed at all Bit Rate of Transmitter, the worst data was reported.



3.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Conducted Emission



Radiated Emission



Conducted Spurious



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
E-1	Indoor wifi pan-tilt camera	SightSys	SHM-MY611EM	N/A	EUT
A1	AC/DC Adapter	YLT	YLT-050200	N/A	EUT

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.



3.5 EQUIPMENTS LIST FOR ALL TEST ITEMS

Conduction Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Firmware Version	Last calibration	Calibrated until
1	LISN	R&S	ENV216	101471	N/A	Sep. 30, 2024	Sep. 29, 2025
2	LISN	CYBERTEK	EM5040A	E1850400149	N/A	Sep. 30, 2024	Sep. 29, 2025
3	Test Cable	N/A	C-01	N/A	N/A	Sep. 30, 2024	Sep. 29, 2025
4	EMI Test Receiver	R&S	ESC13	101393	4.42 SP3	Sep. 29, 2024	Sep. 28, 2025
5	EMC Software	Frad	EZ-EMC	Ver.EMC-CON 3A1.1	N/A	\	\

Radiation Emissions & Radiation Spurious Emissions Test

Item	Equipment	Manufacturer	Type No.	Serial No.	Firmware Version	Last calibration	Calibrated until
1	Spectrum Analyzer (9kHz-26.5GHz)	KEYSIGHT	N9020A	MY55370835	A.17.05	Sep. 29, 2024	Sep. 28, 2025
2	Spectrum Analyzer (10kHz-39.9GHz)	R&S	FSV40-N	100363	1.71 SP2	Sep. 30, 2024	Sep. 29, 2025
3	EMI Test Receiver (9kHz-7GHz)	R&S	ESC17	100969	4.32	Sep. 29, 2024	Sep. 28, 2025
4	Bilog Antenna (30MHz-1500MHz)	Schwarzbeck	VULB9168	00877	N/A	Sep. 30, 2024	Sep. 29, 2025
5	Horn Antenna (1GHz-18GHz)	Agilent	AH-118	071145	N/A	Sep. 30, 2024	Sep. 29, 2025
6	Horn Antenna (15GHz-40GHz)	A.H.System	SAS-574	588	N/A	Sep. 30, 2024	Sep. 29, 2025
7	Loop Antenna	TESEQ	HLA6121	58357	N/A	Oct. 11, 2024	Oct. 10, 2025
8	Amplifier (30-1000MHz)	EM Electronics	EM330 Amplifier	60747	N/A	Sep. 29, 2024	Sep. 28, 2025
9	Amplifier (1GHz-26.5GHz)	HuiPu	8449B	3008A00315	N/A	Sep. 29, 2024	Sep. 28, 2025
10	Amplifier (500MHz-40GHz)	QuanJuDa	DLE-161	097	N/A	Sep. 30, 2024	Sep. 29, 2025
11	Test Cable	N/A	R-01	N/A	N/A	Sep. 30, 2024	Sep. 29, 2025
12	Test Cable	N/A	R-02	N/A	N/A	Sep. 30, 2024	Sep. 29, 2025
13	Test Cable	N/A	R-03	N/A	N/A	Sep. 30, 2024	Sep. 29, 2025
14	D.C. Power Supply	LongWei	TPR-6405D	N/A	N/A	Sep. 29, 2024	Sep. 28, 2025
15	EMC Software	Frad	EZ-EMC	Ver.EMC-CO N 3A1.1	N/A	\	\
16	Turntable	MF	MF-7802BS	N/A	N/A	\	\
17	Antenna tower	MF	MF-7802BS	N/A	N/A	\	\

RF Test equipment

Item	Equipment	Manufacturer	Type No.	Serial No.	Firmware Version	Last calibration	Calibrated until
1	Spectrum Analyzer (9kHz-26.5GHz)	KEYSIGHT	N9020A	MY55370835	A.17.05	Sep. 29, 2024	Sep. 28, 2025



2	Spectrum Analyzer (10kHz-39.9GHz)	R&S	FSV40-N	100363	1.71 SP2	Sep. 30, 2024	Sep. 29, 2025
3	Test Cable	N/A	RF-01	N/A	N/A	Sep. 30, 2024	Sep. 29, 2025
4	Test Cable	N/A	RF-02	N/A	N/A	Sep. 30, 2024	Sep. 29, 2025
5	Test Cable	N/A	RF-03	N/A	N/A	Sep. 30, 2024	Sep. 29, 2025
6	ESG Signal Generator	Agilent	E4421B	GB40051203	B.03.84	Sep. 29, 2024	Sep. 28, 2025
7	Signal Generator	Agilent	N5182A	MY47420215	A.01.87	Sep. 29, 2024	Sep. 28, 2025
8	Magnetic Field Probe Tester	Narda	ELT-400	0-0344	N/A	Sep. 29, 2024	Sep. 28, 2025
9	Van der Hoofden measuring head	Schwarzbeck Mess-elektron ik	VDHH 9502	9502-039	N/A	Sep. 30, 2024	Sep. 29, 2025
10	Wideband Radio Communication Test	R&S	CMW500	106504	V 3.7.22	Sep. 30, 2024	Sep. 29, 2025
11	MWRF Power Meter Test system	MW	MW100-RF CB	10371	N/A	Sep. 29, 2024	Sep. 28, 2025
12	Power Meter	KEYSIGHT	N1912AP	926431	A.05.00	Sep. 29, 2024	Sep. 28, 2025
13	D.C. Power Supply	LongWei	TPR-6405 D	GQ7516	N/A	Sep. 29, 2024	Sep. 28, 2025
14	RF Software	MW	MTS8310	V2.0.0.0	N/A	\	\



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

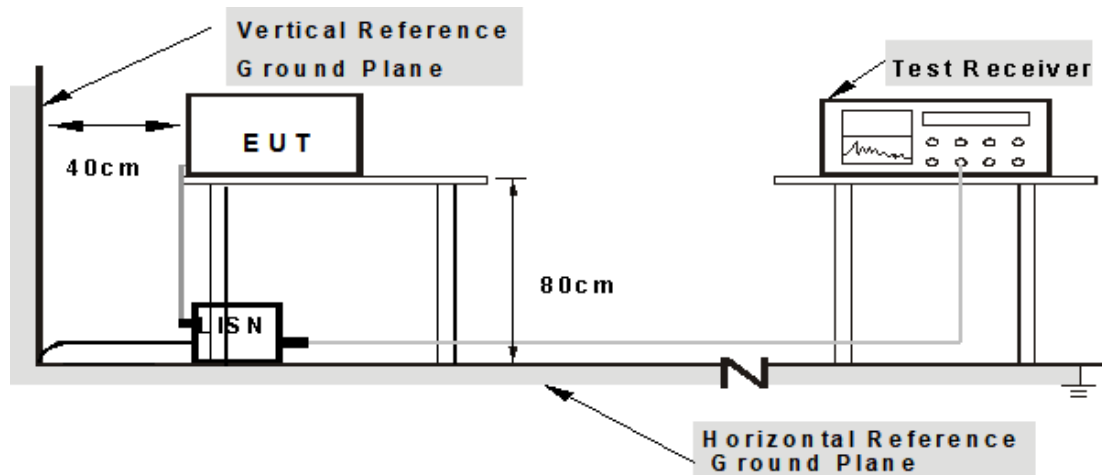
- The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- LISN at least 80 cm from nearest part of EUT chassis.
- 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



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

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

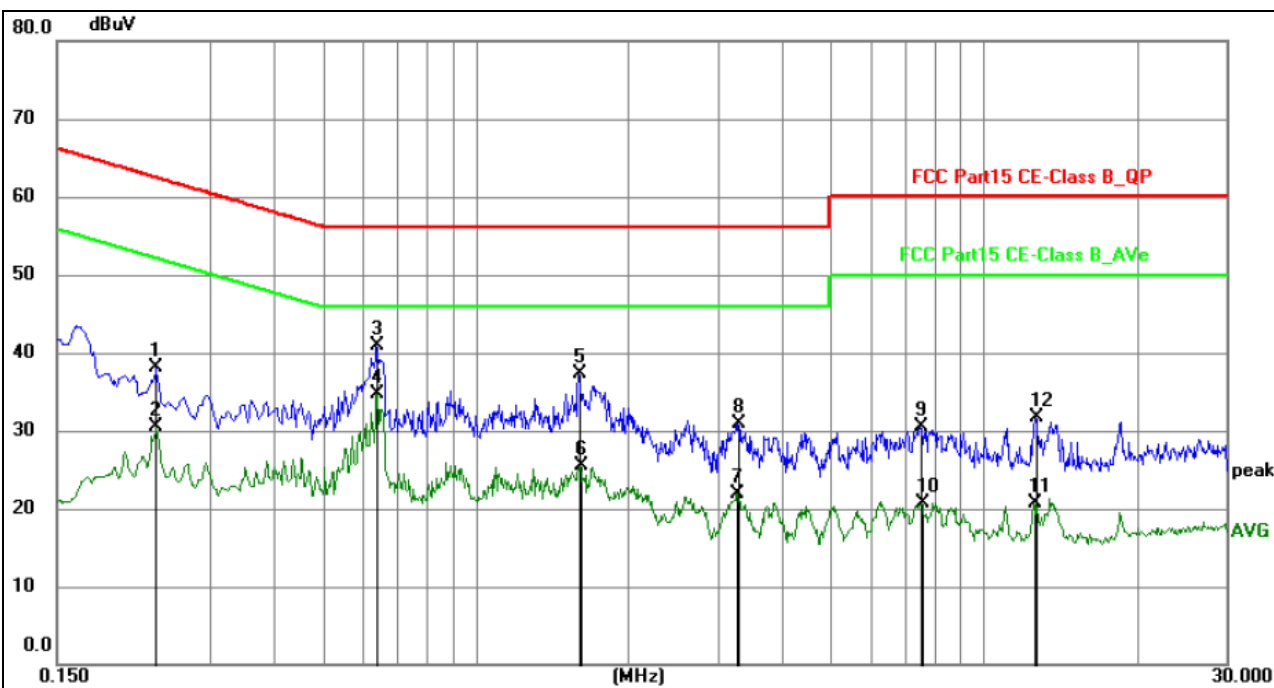
4.1.5 EUT OPERATING CONDITIONS

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.



4.1.6 TEST RESULT

Temperature :	26°C	Relative Humidity:	54%
Pressure :	101kPa	Phase :	L
Test Voltage :	AC 120V/60Hz	Test Mode:	TX 802.11n20 - 5745MHz



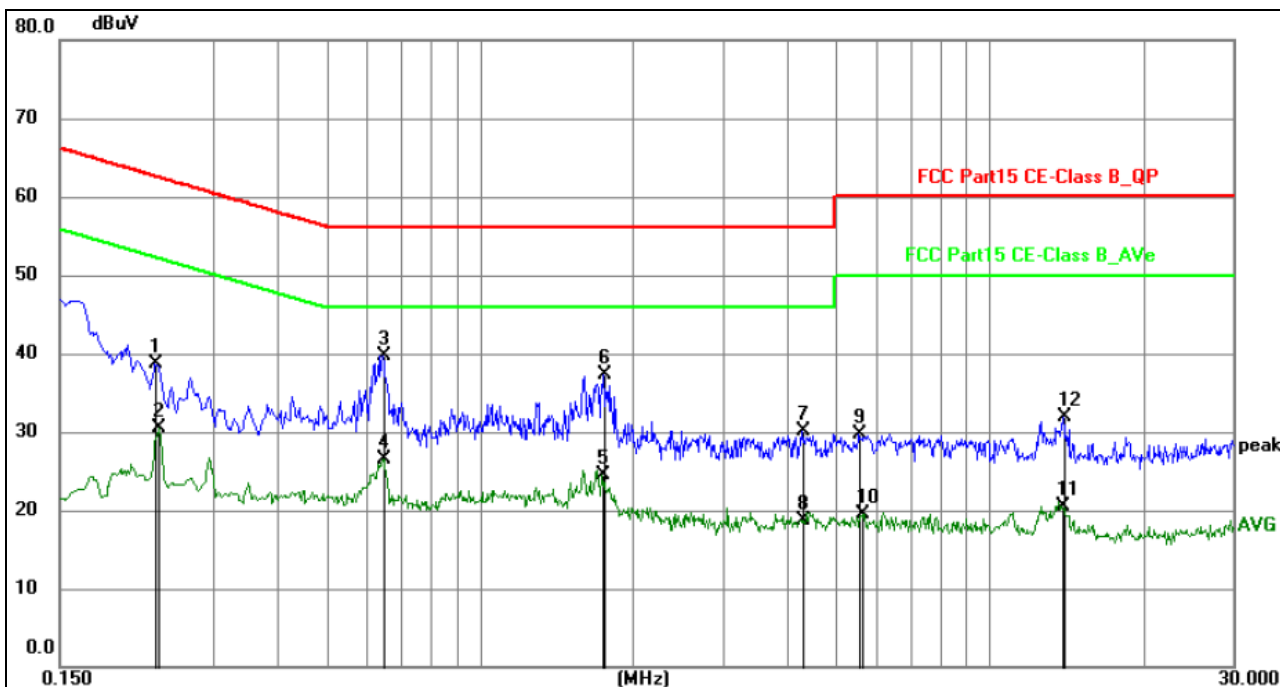
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.2353	17.82	20.37	38.19	62.26	-24.07	QP	P
2	0.2353	10.13	20.37	30.50	52.26	-21.76	AVG	P
3	0.6401	20.52	20.29	40.81	56.00	-15.19	QP	P
4	0.6401	14.39	20.29	34.68	46.00	-11.32	AVG	P
5	1.5987	17.10	20.30	37.40	56.00	-18.60	QP	P
6	1.6030	5.14	20.30	25.44	46.00	-20.56	AVG	P
7	3.2683	1.66	20.33	21.99	46.00	-24.01	AVG	P
8	3.2774	10.57	20.33	30.90	56.00	-25.10	QP	P
9	7.5255	10.17	20.40	30.57	60.00	-29.43	QP	P
10	7.5613	0.39	20.40	20.79	50.00	-29.21	AVG	P
11	12.5700	0.19	20.47	20.66	50.00	-29.34	AVG	P
12	12.6735	11.24	20.47	31.71	60.00	-28.29	QP	P

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. Measurement Level = Reading level + Correct Factor
4. The test data shows only the worst case TX 802.11n20 - 5745MHz



Temperature :	26°C	Relative Humidity:	54%
Pressure :	101kPa	Phase :	N
Test Voltage :	AC 120V/60Hz	Test Mode:	TX 802.11n20 - 5745MHz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.2310	18.31	20.36	38.67	62.41	-23.74	QP	P
2	0.2353	10.18	20.36	30.54	52.26	-21.72	AVG	P
3	0.6449	19.42	20.30	39.72	56.00	-16.28	QP	P
4	0.6491	6.20	20.30	26.50	46.00	-19.50	AVG	P
5	1.7425	4.12	20.30	24.42	46.00	-21.58	AVG	P
6	1.7474	16.95	20.30	37.25	56.00	-18.75	QP	P
7	4.2945	9.74	20.34	30.08	56.00	-25.92	QP	P
8	4.2945	-1.60	20.34	18.74	46.00	-27.26	AVG	P
9	5.5500	9.41	20.37	29.78	60.00	-30.22	QP	P
10	5.6265	-0.80	20.37	19.57	50.00	-30.43	AVG	P
11	13.8750	0.10	20.50	20.60	50.00	-29.40	AVG	P
12	13.9335	11.42	20.50	31.92	60.00	-28.08	QP	P

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. Measurement Level = Reading level + Correct Factor
4. The test data shows only the worst case TX 802.11n20 - 5745MHz



4.2 RADIATED EMISSION MEASUREMENT

4.2.1 APPLICABLE STANDARD

According to FCC Part 15.407(d) and 15.209

4.2.2 CONFORMANCE LIMIT

According to FCC Part 15.407(b)(1): radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

According to FCC Part 15.205, Restricted bands

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
10.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	(2)
13.36-13.41			

Restricted Frequency(MHz)	Field Strength (μV/m)	Field Strength (dBμV/m)	Measurement Distance
0.009~0.490	2400/F(KHz)	20 log (uV/m)	300
0.490~1.705	2400/F(KHz)	20 log (uV/m)	30
1.705~30.0	30	29.5	30
30-88	100	40	3
88-216	150	43.5	3
216-960	200	46	3
Above 960	500	54	3

Limits of Radiated Emission Measurement(Above 1000MHz)

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

Remark : 1. Emission level in dBuV/m=20 log (uV/m)

2. Measurement was performed at an antenna to the closed point of EUT distance of meters.

3. Distance extrapolation factor =40log(Specific distance/ test distance)(dB);

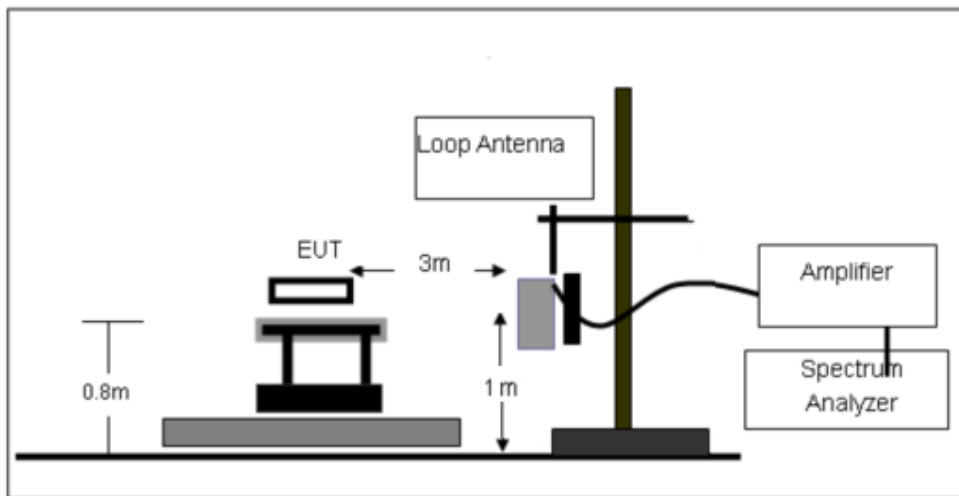
Limit line=Specific limits(dBuV) + distance extrapolation factor.

4.2.3 MEASURING INSTRUMENTS

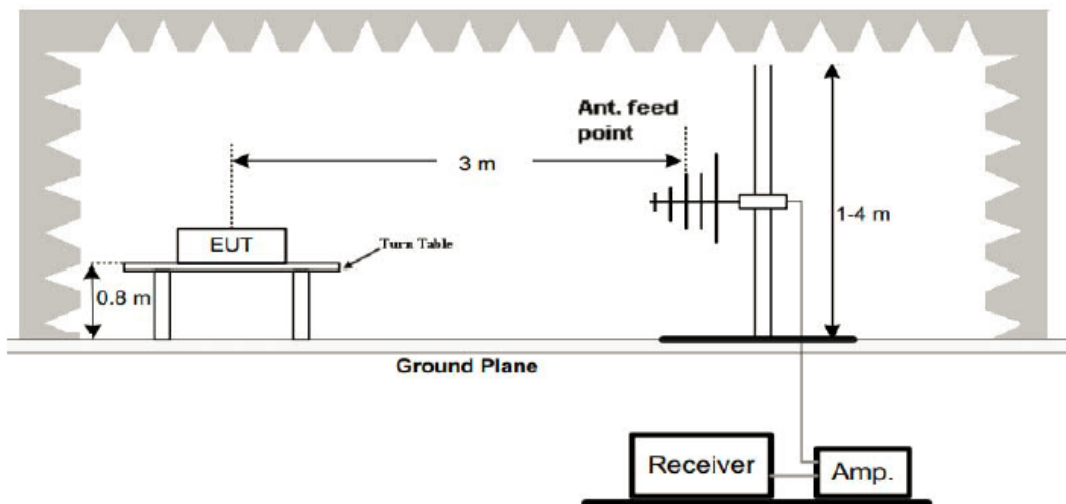
The Measuring equipment is listed in the section 6.3 of this test report.

4.2.4 TEST CONFIGURATION

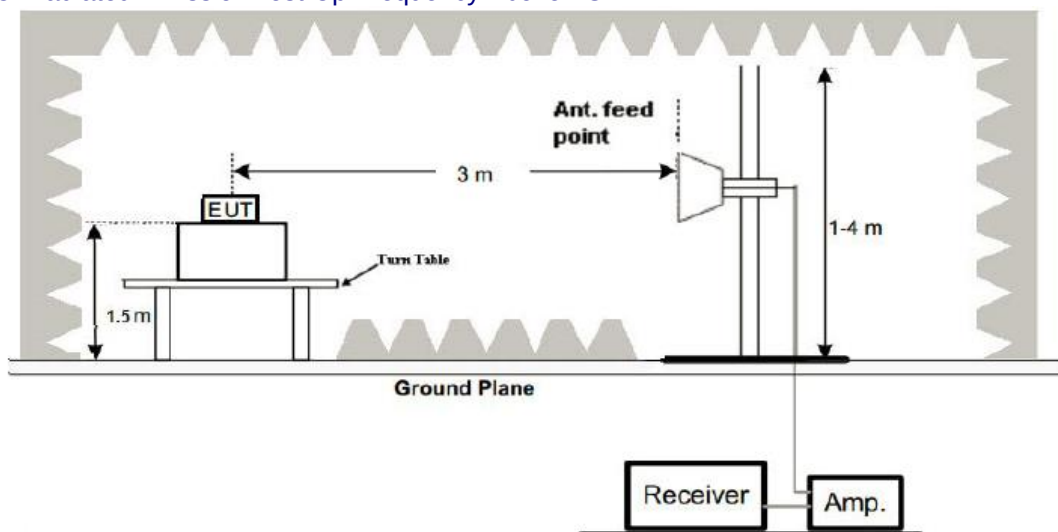
1. For radiated emissions below 30MHz



2. For radiated emissions from 30MHz to 1000MHz



3. Radiated Emission Test-Up Frequency Above 1GHz





4.2.5 TEST PROCEDURE

The test site semi-anechoic chamber has met the requirement of NSA tolerance 4 dB according to the standards: ANSI C63.10-2013. The test distance is 3m. The setup is according to the requirements in Section 13.1.4.1 of ANSI C63.10-2013 and CAN/CSA-CEI/IEC CISPR 22.

This test is required for any spurious emission that falls in a Restricted Band, as defined in Section 15.205. It must be performed with the highest gain of each type of antenna proposed for use with the EUT. Use the following spectrum analyzer settings:

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB / VB (emission in restricted band)	1 MHz / 1 MHz for Peak, 1 MHz / 10Hz for Average

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

- The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- The EUT was placed on the top of a rotating table 0.8 m for below 1GHz and 1.5m for above 1GHz the ground at a 3 meter. The table was rotated 360 degrees to determine the position of the highest radiation.
- The height of the equipment or of the substitution antenna shall be 0.8 m for below 1GHz and 1.5m for above 1GHz; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- For the actual test configuration, please refer to the related Item – EUT Test Photos.

Note:

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

During the radiated emission test, the Spectrum Analyzer was set with the following configurations:

Frequency Band (MHz)	Function	Resolution bandwidth	Video Bandwidth
30 to 1000	QP	120 kHz	300 kHz
Above 1000	Peak	1 MHz	1 MHz
	Average	1 MHz	10 Hz

Note: for the frequency ranges below 30 MHz, a narrower RBW is used for these ranges but the measured value should add a RBW correction factor (RBWCF) where $RBWCF [dB] = 10 \cdot \lg(100 [kHz] / \text{narrower RBW [kHz]})$. , the narrower RBW is 1 kHz and RBWCF is 20 dB for the frequency 9 kHz to 150 kHz, and the narrower RBW is 10 kHz and RBWCF is 10 dB for the frequency 150 kHz to 30 MHz.



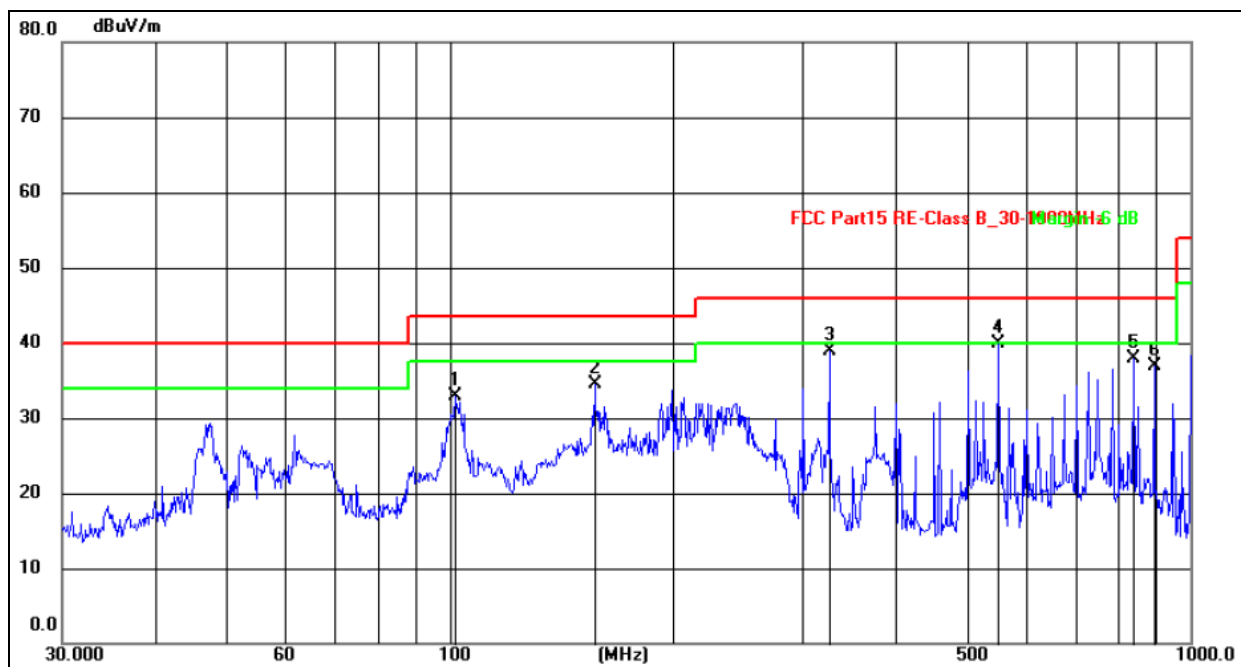
4.2.6 TEST RESULT

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

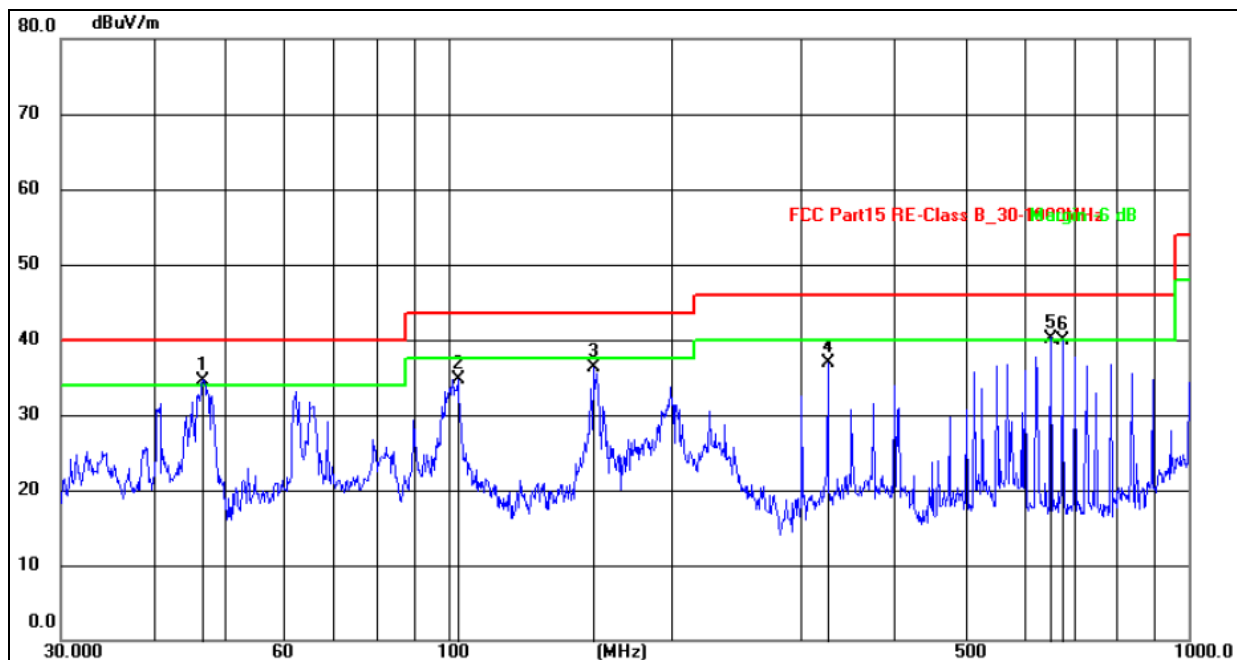
Temperature:	26°C	Relative Humidity:	54%
Pressure:	101 kPa	Polarization:	Horizontal
Test Voltage:	DC 5V	Test Mode :	TX 802.11n20 - 5745MHz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	101.6443	52.52	-19.60	32.92	43.50	-10.58	QP
2	157.0072	50.64	-16.08	34.56	43.50	-8.94	QP
3	325.5957	55.40	-16.42	38.98	46.00	-7.02	QP
4	550.9479	49.60	-9.68	39.92	46.00	-6.08	QP
5	839.1816	44.62	-6.67	37.95	46.00	-8.05	QP
6	893.8564	43.51	-6.69	36.82	46.00	-9.18	QP



Temperature:	26°C	Relative Humidity:	54%
Pressure:	101kPa	Polarization:	Vertical
Test Voltage:	DC 5V	Test Mode :	TX 802.11n20 - 5745MHz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	46.6662	51.64	-17.04	34.60	40.00	-5.40	QP
2	103.0800	55.90	-21.12	34.78	43.50	-8.72	QP
3	157.5586	56.34	-20.06	36.28	43.50	-7.22	QP
4	325.5957	53.98	-17.03	36.95	46.00	-9.05	QP
5	651.9415	47.55	-7.35	40.20	46.00	-5.80	QP
6	675.2078	47.31	-7.36	39.95	46.00	-6.05	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. All modes were tested, and only the worst test data was recorded is 802.11n20 - 5745MHz.



Between 1GHz – 40GHz

Temperature :	26°C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	5.8G TX - 802.11a/ n20/ ac20/ n40/ ac40/ac80		
Note: All patterns have been tested, and only the worst test data recorded in this report is 802.11a/n20/ac20.			

802.11a

Polar (H/V)	Frequency	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel:5745MHz									
V	11490.00	50.21	30.55	5.77	24.66	50.09	74.00	-23.91	PK
V	11490.00	42.49	30.55	5.77	24.66	42.37	54.00	-11.63	AV
V	17235.00	51.48	30.33	6.32	24.55	52.02	68.20	-16.18	PK
V	17235.00	42.01	30.33	6.32	24.55	42.55	54.00	-11.45	AV
V	22980.00	49.09	30.85	7.45	24.69	50.38	74.00	-23.62	PK
V	22980.00	41.94	30.85	7.45	24.69	43.23	54.00	-10.77	AV
V	28725.00	52.34	31.02	8.99	25.57	55.88	68.20	-12.32	PK
V	28725.00	42.16	31.02	8.99	25.57	45.70	54.00	-8.30	AV
H	11490.00	50.96	30.55	5.77	24.66	50.84	74.00	-23.16	PK
H	11490.00	42.46	30.55	5.77	24.66	42.34	54.00	-11.66	AV
H	17235.00	52.97	30.33	6.32	24.55	53.51	68.20	-14.69	PK
H	17235.00	42.17	30.33	6.32	24.55	42.71	54.00	-11.29	AV
H	22980.00	50.93	30.85	7.45	24.69	52.22	74.00	-21.78	PK
H	22980.00	42.40	30.85	7.45	24.69	43.69	54.00	-10.31	AV
H	28725.00	51.52	31.02	8.99	25.57	55.06	68.20	-13.14	PK
H	28725.00	42.63	31.02	8.99	25.57	46.17	54.00	-7.83	AV

Polar (H/V)	Frequency	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Middle Channel:5785MHz									
V	11570.00	50.36	30.55	5.77	24.66	50.24	74.00	-23.76	PK
V	11570.00	42.75	30.55	5.77	24.66	42.63	54.00	-11.37	AV
V	17355.00	49.50	30.33	6.32	24.55	50.04	68.20	-18.16	PK
V	17355.00	42.55	30.33	6.32	24.55	43.09	54.00	-10.91	AV
V	23140.00	51.58	30.85	7.45	24.69	52.87	68.20	-15.33	PK
V	23140.00	42.36	30.85	7.45	24.69	43.65	54.00	-10.35	AV
V	28925.00	49.53	31.02	8.99	25.57	53.07	68.20	-15.13	PK
V	28925.00	42.58	31.02	8.99	25.57	46.12	54.00	-7.88	AV
H	11570.00	49.71	30.55	5.77	24.66	49.59	74.00	-24.41	PK
H	11570.00	42.83	30.55	5.77	24.66	42.71	54.00	-11.29	AV
H	17355.00	53.94	30.33	6.32	24.55	54.48	68.20	-13.72	PK
H	17355.00	42.36	30.33	6.32	24.55	42.90	54.00	-11.10	AV
H	23140.00	51.45	30.85	7.45	24.69	52.74	68.20	-15.46	PK
H	23140.00	42.77	30.85	7.45	24.69	44.06	54.00	-9.94	AV
H	28925.00	49.35	31.02	8.99	25.57	52.89	68.20	-15.31	PK
H	28925.00	42.95	31.02	8.99	25.57	46.49	54.00	-7.51	AV



Polar (H/V)	Frequency	Meter Reading	Pre-ampli fier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
High Channel:5825MHz									
V	11650.00	50.84	30.55	5.77	24.66	50.72	74.00	-23.28	PK
V	11650.00	42.65	30.55	5.77	24.66	42.53	54.00	-11.47	AV
V	17475.00	49.53	30.33	6.32	24.55	50.07	68.20	-18.13	PK
V	17475.00	42.40	30.33	6.32	24.55	42.94	54.00	-11.06	AV
V	23300.00	50.60	30.85	7.45	24.69	51.89	68.20	-16.31	PK
V	23300.00	42.49	30.85	7.45	24.69	43.78	54.00	-10.22	AV
V	29125.00	53.18	31.02	8.99	25.57	56.72	68.20	-11.48	PK
V	29125.00	42.43	31.02	8.99	25.57	45.97	54.00	-8.03	AV
H	11650.00	51.83	30.55	5.77	24.66	51.71	74.00	-22.29	PK
H	11650.00	42.19	30.55	5.77	24.66	42.07	54.00	-11.93	AV
H	17475.00	52.42	30.33	6.32	24.55	52.96	68.20	-15.24	PK
H	17475.00	42.63	30.33	6.32	24.55	43.17	54.00	-10.83	AV
H	23300.00	53.26	30.85	7.45	24.69	54.55	68.20	-13.65	PK
H	23300.00	42.43	30.85	7.45	24.69	43.72	54.00	-10.28	AV
H	29125.00	49.25	31.02	8.99	25.57	52.79	68.20	-15.41	PK
H	29125.00	42.81	31.02	8.99	25.57	46.35	54.00	-7.65	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	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel:5745MHz									
V	11490.00	50.58	30.55	5.77	24.66	50.46	74.00	-23.54	PK
V	11490.00	42.86	30.55	5.77	24.66	42.74	54.00	-11.26	AV
V	17235.00	51.85	30.33	6.32	24.55	52.39	68.20	-15.81	PK
V	17235.00	42.38	30.33	6.32	24.55	42.92	54.00	-11.08	AV
V	22980.00	49.46	30.85	7.45	24.69	50.75	74.00	-23.25	PK
V	22980.00	42.31	30.85	7.45	24.69	43.60	54.00	-10.40	AV
V	28725.00	52.71	31.02	8.99	25.57	56.25	68.20	-11.95	PK
V	28725.00	42.53	31.02	8.99	25.57	46.07	54.00	-7.93	AV
H	11490.00	51.33	30.55	5.77	24.66	51.21	74.00	-22.79	PK
H	11490.00	42.83	30.55	5.77	24.66	42.71	54.00	-11.29	AV
H	17235.00	53.34	30.33	6.32	24.55	53.88	68.20	-14.32	PK
H	17235.00	42.54	30.33	6.32	24.55	43.08	54.00	-10.92	AV
H	22980.00	51.30	30.85	7.45	24.69	52.59	74.00	-21.41	PK
H	22980.00	42.77	30.85	7.45	24.69	44.06	54.00	-9.94	AV
H	28725.00	51.89	31.02	8.99	25.57	55.43	68.20	-12.77	PK
H	28725.00	43.00	31.02	8.99	25.57	46.54	54.00	-7.46	AV

Polar (H/V)	Frequency	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Middle Channel:5785MHz									
V	11570.00	50.59	30.55	5.77	24.66	50.47	74.00	-23.53	PK
V	11570.00	42.98	30.55	5.77	24.66	42.86	54.00	-11.14	AV
V	17355.00	49.73	30.33	6.32	24.55	50.27	68.20	-17.93	PK
V	17355.00	42.78	30.33	6.32	24.55	43.32	54.00	-10.68	AV
V	23140.00	51.81	30.85	7.45	24.69	53.10	68.20	-15.10	PK
V	23140.00	42.59	30.85	7.45	24.69	43.88	54.00	-10.12	AV
V	28925.00	49.76	31.02	8.99	25.57	53.30	68.20	-14.90	PK
V	28925.00	42.81	31.02	8.99	25.57	46.35	54.00	-7.65	AV
H	11570.00	49.94	30.55	5.77	24.66	49.82	74.00	-24.18	PK
H	11570.00	43.06	30.55	5.77	24.66	42.94	54.00	-11.06	AV
H	17355.00	54.17	30.33	6.32	24.55	54.71	68.20	-13.49	PK
H	17355.00	42.59	30.33	6.32	24.55	43.13	54.00	-10.87	AV
H	23140.00	51.68	30.85	7.45	24.69	52.97	68.20	-15.23	PK
H	23140.00	43.00	30.85	7.45	24.69	44.29	54.00	-9.71	AV
H	28925.00	49.58	31.02	8.99	25.57	53.12	68.20	-15.08	PK
H	28925.00	43.18	31.02	8.99	25.57	46.72	54.00	-7.28	AV



Polar (H/V)	Frequency	Meter Reading	Pre-ampli fier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
High Channel:5825MHz									
V	11650.00	51.09	30.55	5.77	24.66	50.97	74.00	-23.03	PK
V	11650.00	42.90	30.55	5.77	24.66	42.78	54.00	-11.22	AV
V	17475.00	49.78	30.33	6.32	24.55	50.32	68.20	-17.88	PK
V	17475.00	42.65	30.33	6.32	24.55	43.19	54.00	-10.81	AV
V	23300.00	50.85	30.85	7.45	24.69	52.14	68.20	-16.06	PK
V	23300.00	42.74	30.85	7.45	24.69	44.03	54.00	-9.97	AV
V	29125.00	53.43	31.02	8.99	25.57	56.97	68.20	-11.23	PK
V	29125.00	42.68	31.02	8.99	25.57	46.22	54.00	-7.78	AV
H	11650.00	52.08	30.55	5.77	24.66	51.96	74.00	-22.04	PK
H	11650.00	42.44	30.55	5.77	24.66	42.32	54.00	-11.68	AV
H	17475.00	52.67	30.33	6.32	24.55	53.21	68.20	-14.99	PK
H	17475.00	42.88	30.33	6.32	24.55	43.42	54.00	-10.58	AV
H	23300.00	53.51	30.85	7.45	24.69	54.80	68.20	-13.40	PK
H	23300.00	42.68	30.85	7.45	24.69	43.97	54.00	-10.03	AV
H	29125.00	49.50	31.02	8.99	25.57	53.04	68.20	-15.16	PK
H	29125.00	43.06	31.02	8.99	25.57	46.60	54.00	-7.40	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.

**802.11ac20**

Polar (H/V)	Frequency	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel:5745MHz									
V	11490.00	50.66	30.55	5.77	24.66	50.54	74.00	-23.46	PK
V	11490.00	42.94	30.55	5.77	24.66	42.82	54.00	-11.18	AV
V	17235.00	51.93	30.33	6.32	24.55	52.47	68.20	-15.73	PK
V	17235.00	42.46	30.33	6.32	24.55	43.00	54.00	-11.00	AV
V	22980.00	49.54	30.85	7.45	24.69	50.83	74.00	-23.17	PK
V	22980.00	42.39	30.85	7.45	24.69	43.68	54.00	-10.32	AV
V	28725.00	52.79	31.02	8.99	25.57	56.33	68.20	-11.87	PK
V	28725.00	42.61	31.02	8.99	25.57	46.15	54.00	-7.85	AV
H	11490.00	51.41	30.55	5.77	24.66	51.29	74.00	-22.71	PK
H	11490.00	42.91	30.55	5.77	24.66	42.79	54.00	-11.21	AV
H	17235.00	53.42	30.33	6.32	24.55	53.96	68.20	-14.24	PK
H	17235.00	42.62	30.33	6.32	24.55	43.16	54.00	-10.84	AV
H	22980.00	51.38	30.85	7.45	24.69	52.67	74.00	-21.33	PK
H	22980.00	42.85	30.85	7.45	24.69	44.14	54.00	-9.86	AV
H	28725.00	51.97	31.02	8.99	25.57	55.51	68.20	-12.69	PK
H	28725.00	43.08	31.02	8.99	25.57	46.62	54.00	-7.38	AV

Polar (H/V)	Frequency	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Middle Channel:5785MHz									
V	11570.00	50.71	30.55	5.77	24.66	50.59	74.00	-23.41	PK
V	11570.00	43.10	30.55	5.77	24.66	42.98	54.00	-11.02	AV
V	17355.00	49.85	30.33	6.32	24.55	50.39	68.20	-17.81	PK
V	17355.00	42.90	30.33	6.32	24.55	43.44	54.00	-10.56	AV
V	23140.00	51.93	30.85	7.45	24.69	53.22	68.20	-14.98	PK
V	23140.00	42.71	30.85	7.45	24.69	44.00	54.00	-10.00	AV
V	28925.00	49.88	31.02	8.99	25.57	53.42	68.20	-14.78	PK
V	28925.00	42.93	31.02	8.99	25.57	46.47	54.00	-7.53	AV
H	11570.00	50.06	30.55	5.77	24.66	49.94	74.00	-24.06	PK
H	11570.00	43.18	30.55	5.77	24.66	43.06	54.00	-10.94	AV
H	17355.00	54.29	30.33	6.32	24.55	54.83	68.20	-13.37	PK
H	17355.00	42.71	30.33	6.32	24.55	43.25	54.00	-10.75	AV
H	23140.00	51.80	30.85	7.45	24.69	53.09	68.20	-15.11	PK
H	23140.00	43.12	30.85	7.45	24.69	44.41	54.00	-9.59	AV
H	28925.00	49.70	31.02	8.99	25.57	53.24	68.20	-14.96	PK
H	28925.00	43.30	31.02	8.99	25.57	46.84	54.00	-7.16	AV



Polar (H/V)	Frequency	Meter Reading	Pre-ampli fier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
High Channel:5825MHz									
V	11650.00	51.01	30.55	5.77	24.66	50.89	74.00	-23.11	PK
V	11650.00	42.82	30.55	5.77	24.66	42.70	54.00	-11.30	AV
V	17475.00	49.70	30.33	6.32	24.55	50.24	68.20	-17.96	PK
V	17475.00	42.57	30.33	6.32	24.55	43.11	54.00	-10.89	AV
V	23300.00	50.77	30.85	7.45	24.69	52.06	68.20	-16.14	PK
V	23300.00	42.66	30.85	7.45	24.69	43.95	54.00	-10.05	AV
V	29125.00	53.35	31.02	8.99	25.57	56.89	68.20	-11.31	PK
V	29125.00	42.60	31.02	8.99	25.57	46.14	54.00	-7.86	AV
H	11650.00	52.00	30.55	5.77	24.66	51.88	74.00	-22.12	PK
H	11650.00	42.36	30.55	5.77	24.66	42.24	54.00	-11.76	AV
H	17475.00	52.59	30.33	6.32	24.55	53.13	68.20	-15.07	PK
H	17475.00	42.80	30.33	6.32	24.55	43.34	54.00	-10.66	AV
H	23300.00	53.43	30.85	7.45	24.69	54.72	68.20	-13.48	PK
H	23300.00	42.60	30.85	7.45	24.69	43.89	54.00	-10.11	AV
H	29125.00	49.42	31.02	8.99	25.57	52.96	68.20	-15.24	PK
H	29125.00	42.98	31.02	8.99	25.57	46.52	54.00	-7.48	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.



4.2.7 RADIATED BAND EDGE TEST RESULT

Temperature :	26°C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	TX - 802.11a/ n20/ ac20/ n40/ ac40/ac80		

802.11a

Polar (H/V)	Frequency	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel:5745MHz									
V	5700.00	64.47	30.45	8.77	38.66	81.45	110.80	-29.35	PK
V	5700.00	30.47	30.45	8.77	38.66	47.45	54.00	-6.55	AV
V	5725.00	62.56	30.45	8.77	38.66	79.54	122.20	-42.66	PK
V	5725.00	31.45	30.45	8.77	38.66	48.43	54.00	-5.57	AV
H	5700.00	64.09	30.45	8.77	38.66	81.07	110.80	-29.73	PK
H	5700.00	30.83	30.45	8.77	38.66	47.81	54.00	-6.19	AV
H	5725.00	65.11	30.45	8.77	38.66	82.09	122.20	-40.11	PK
H	5725.00	31.71	30.45	8.77	38.66	48.69	54.00	-5.31	AV

Polar (H/V)	Frequency	Meter Reading	Pre-ampli fier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
High Channel:5825MHz									
V	5850.00	65.51	30.45	8.77	38.66	82.49	122.20	-39.71	PK
V	5850.00	31.77	30.45	8.77	38.66	48.75	54.00	-5.25	AV
V	5875.00	64.60	30.45	8.77	38.66	81.58	110.80	-29.22	PK
V	5875.00	30.64	30.45	8.77	38.66	47.62	54.00	-6.38	AV
H	5850.00	66.23	30.45	8.77	38.66	83.21	122.20	-38.99	PK
H	5850.00	31.86	30.45	8.77	38.66	48.84	54.00	-5.16	AV
H	5875.00	64.27	30.45	8.77	38.66	81.25	110.80	-29.55	PK
H	5875.00	31.36	30.45	8.77	38.66	48.34	54.00	-5.66	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	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel:5745MHz									
V	5700.00	64.36	30.45	8.77	38.66	81.34	110.80	-29.46	PK
V	5700.00	30.58	30.45	8.77	38.66	47.56	54.00	-6.44	AV
V	5725.00	63.20	30.45	8.77	38.66	80.18	122.20	-42.02	PK
V	5725.00	32.09	30.45	8.77	38.66	49.07	54.00	-4.93	AV
H	5700.00	64.07	30.45	8.77	38.66	81.05	110.80	-29.75	PK
H	5700.00	30.96	30.45	8.77	38.66	47.94	54.00	-6.06	AV
H	5725.00	64.78	30.45	8.77	38.66	81.76	122.20	-40.44	PK
H	5725.00	32.31	30.45	8.77	38.66	49.29	54.00	-4.71	AV

Polar (H/V)	Frequency	Meter Reading	Pre-ampli fier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
High Channel:5825MHz									
V	5850.00	65.50	30.45	8.77	38.66	82.48	122.20	-39.72	PK
V	5850.00	31.48	30.45	8.77	38.66	48.46	54.00	-5.54	AV
V	5875.00	65.18	30.45	8.77	38.66	82.16	110.80	-28.64	PK
V	5875.00	30.51	30.45	8.77	38.66	47.49	54.00	-6.51	AV
H	5850.00	65.93	30.45	8.77	38.66	82.91	122.20	-39.29	PK
H	5850.00	31.52	30.45	8.77	38.66	48.50	54.00	-5.50	AV
H	5875.00	63.87	30.45	8.77	38.66	80.85	110.80	-29.95	PK
H	5875.00	30.58	30.45	8.77	38.66	47.56	54.00	-6.44	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.



802.11n40

Polar (H/V)	Frequency	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel:5755MHz									
V	5700.00	64.85	30.45	8.77	38.66	81.83	110.80	-28.97	PK
V	5700.00	31.00	30.45	8.77	38.66	47.98	54.00	-6.02	AV
V	5725.00	62.83	30.45	8.77	38.66	79.81	122.20	-42.39	PK
V	5725.00	31.66	30.45	8.77	38.66	48.64	54.00	-5.36	AV
H	5700.00	64.07	30.45	8.77	38.66	81.05	110.80	-29.75	PK
H	5700.00	30.91	30.45	8.77	38.66	47.89	54.00	-6.11	AV
H	5725.00	65.17	30.45	8.77	38.66	82.15	122.20	-40.05	PK
H	5725.00	31.85	30.45	8.77	38.66	48.83	54.00	-5.17	AV

Polar (H/V)	Frequency	Meter Reading	Pre-ampli fier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
High Channel:5795MHz									
V	5850.00	65.38	30.45	8.77	38.66	82.36	122.20	-39.84	PK
V	5850.00	31.68	30.45	8.77	38.66	48.66	54.00	-5.34	AV
V	5875.00	65.17	30.45	8.77	38.66	82.15	110.80	-28.65	PK
V	5875.00	30.52	30.45	8.77	38.66	47.50	54.00	-6.50	AV
H	5850.00	65.96	30.45	8.77	38.66	82.94	122.20	-39.26	PK
H	5850.00	31.54	30.45	8.77	38.66	48.52	54.00	-5.48	AV
H	5875.00	64.28	30.45	8.77	38.66	81.26	110.80	-29.54	PK
H	5875.00	30.95	30.45	8.77	38.66	47.93	54.00	-6.07	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.



802.11ac20

Polar (H/V)	Frequency	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel:5755MHz									
V	5700.00	64.82	30.45	8.77	38.66	81.80	110.80	-29.00	PK
V	5700.00	30.50	30.45	8.77	38.66	47.48	54.00	-6.52	AV
V	5725.00	63.15	30.45	8.77	38.66	80.13	122.20	-42.07	PK
V	5725.00	32.21	30.45	8.77	38.66	49.19	54.00	-4.81	AV
H	5700.00	63.78	30.45	8.77	38.66	80.76	110.80	-30.04	PK
H	5700.00	30.47	30.45	8.77	38.66	47.45	54.00	-6.55	AV
H	5725.00	65.05	30.45	8.77	38.66	82.03	122.20	-40.17	PK
H	5725.00	32.17	30.45	8.77	38.66	49.15	54.00	-4.85	AV

Polar (H/V)	Frequency	Meter Reading	Pre-ampli fier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
High Channel:5795MHz									
V	5850.00	65.83	30.45	8.77	38.66	82.81	122.20	-39.39	PK
V	5850.00	31.28	30.45	8.77	38.66	48.26	54.00	-5.74	AV
V	5875.00	64.98	30.45	8.77	38.66	81.96	110.80	-28.84	PK
V	5875.00	30.73	30.45	8.77	38.66	47.71	54.00	-6.29	AV
H	5850.00	66.27	30.45	8.77	38.66	83.25	122.20	-38.95	PK
H	5850.00	31.71	30.45	8.77	38.66	48.69	54.00	-5.31	AV
H	5875.00	64.52	30.45	8.77	38.66	81.50	110.80	-29.30	PK
H	5875.00	30.85	30.45	8.77	38.66	47.83	54.00	-6.17	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.



802.11ac40

Polar (H/V)	Frequency	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel:5755MHz									
V	5700.00	64.92	30.45	8.77	38.66	81.90	110.80	-28.90	PK
V	5700.00	30.29	30.45	8.77	38.66	47.27	54.00	-6.73	AV
V	5725.00	62.85	30.45	8.77	38.66	79.83	122.20	-42.37	PK
V	5725.00	32.17	30.45	8.77	38.66	49.15	54.00	-4.85	AV
H	5700.00	63.61	30.45	8.77	38.66	80.59	110.80	-30.21	PK
H	5700.00	30.67	30.45	8.77	38.66	47.65	54.00	-6.35	AV
H	5725.00	65.32	30.45	8.77	38.66	82.30	122.20	-39.90	PK
H	5725.00	31.78	30.45	8.77	38.66	48.76	54.00	-5.24	AV

Polar (H/V)	Frequency	Meter Reading	Pre-ampli fier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
High Channel:5795MHz									
V	5850.00	65.36	30.45	8.77	38.66	82.34	122.20	-39.86	PK
V	5850.00	31.98	30.45	8.77	38.66	48.96	54.00	-5.04	AV
V	5875.00	65.00	30.45	8.77	38.66	81.98	110.80	-28.82	PK
V	5875.00	31.20	30.45	8.77	38.66	48.18	54.00	-5.82	AV
H	5850.00	65.64	30.45	8.77	38.66	82.62	122.20	-39.58	PK
H	5850.00	32.12	30.45	8.77	38.66	49.10	54.00	-4.90	AV
H	5875.00	64.59	30.45	8.77	38.66	81.57	110.80	-29.23	PK
H	5875.00	31.02	30.45	8.77	38.66	48.00	54.00	-6.00	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.



802.11ac80

Polar (H/V)	Frequency	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel:5755MHz									
V	5700.00	64.98	30.45	8.77	38.66	81.96	110.80	-28.84	PK
V	5700.00	30.96	30.45	8.77	38.66	47.94	54.00	-6.06	AV
V	5725.00	63.21	30.45	8.77	38.66	80.19	122.20	-42.01	PK
V	5725.00	31.55	30.45	8.77	38.66	48.53	54.00	-5.47	AV
H	5700.00	63.87	30.45	8.77	38.66	80.85	110.80	-29.95	PK
H	5700.00	30.50	30.45	8.77	38.66	47.48	54.00	-6.52	AV
H	5725.00	65.57	30.45	8.77	38.66	82.55	122.20	-39.65	PK
H	5725.00	32.10	30.45	8.77	38.66	49.08	54.00	-4.92	AV

Polar (H/V)	Frequency	Meter Reading	Pre-ampli fier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
High Channel:5795MHz									
V	5850.00	65.70	30.45	8.77	38.66	82.68	122.20	-39.52	PK
V	5850.00	31.46	30.45	8.77	38.66	48.44	54.00	-5.56	AV
V	5875.00	64.58	30.45	8.77	38.66	81.56	110.80	-29.24	PK
V	5875.00	31.01	30.45	8.77	38.66	47.99	54.00	-6.01	AV
H	5850.00	65.75	30.45	8.77	38.66	82.73	122.20	-39.47	PK
H	5850.00	31.63	30.45	8.77	38.66	48.61	54.00	-5.39	AV
H	5875.00	64.33	30.45	8.77	38.66	81.31	110.80	-29.49	PK
H	5875.00	30.66	30.45	8.77	38.66	47.64	54.00	-6.36	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. POWER SPECTRAL DENSITY TEST

5.1 APPLIED PROCEDURES / LIMIT

According to FCC §15.407(a) (3) (i)

Power limits:

(1) For the band 5.15-5.25 GHz.

(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(iv) For client devices in the 5.15-5.25 GHz band, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(3) For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.



5.2 TEST PROCEDURE

For devices operating in the bands 5.15-5.25 GHz, 5.25-5.35 GHz, and 5.47-5.725 GHz, the above procedures make use of 1 MHz RBW to satisfy directly the 1 MHz reference bandwidth specified in § 15.407(a)(5). For devices operating in the band 5.725-5.85 GHz, the rules specify a measurement bandwidth of 500 kHz. Many spectrum analyzers do not have 500 kHz RBW, thus a narrower RBW may need to be used. The rules permit the use of a RBWs less than 1 MHz, or 500 kHz, “provided that the measured power is integrated over the full reference bandwidth” to show the total power over the specified measurement bandwidth (i.e., 1 MHz, or 500 kHz). If measurements are performed using a reduced resolution bandwidth (< 1 MHz, or < 500 kHz) and integrated over 1 MHz, or 500 KHz bandwidth, the following adjustments to the procedures apply:

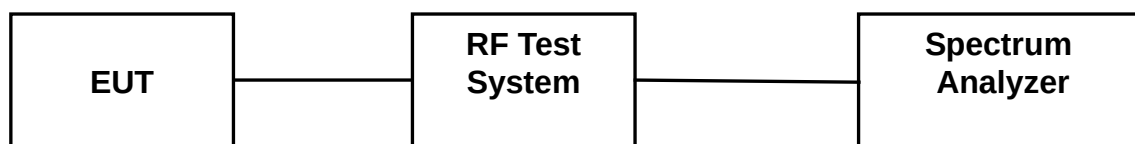
- a) Set $RBW \geq 1/T$, where T is defined in section II.B.I.a).
- b) Set $VBW \geq 3 RBW$.
- c) If measurement bandwidth of Maximum PSD is specified in 500 kHz, add $10\log(500\text{kHz}/RBW)$ to the measured result, whereas $RBW (< 500 \text{ KHz})$ is the reduced resolution bandwidth of the spectrum analyzer set during measurement.
- d) If measurement bandwidth of Maximum PSD is specified in 1 MHz, add $10\log(1\text{MHz}/RBW)$ to the measured result, whereas $RBW (< 1 \text{ MHz})$ is the reduced resolution bandwidth of spectrum analyzer set during measurement.
- e) Care must be taken to ensure that the measurements are performed during a period of continuous transmission or are corrected upward for duty cycle.

Note: As a practical matter, it is recommended to use reduced RBW of 100 KHz for the sections 5.c) and 5.d) above, since $RBW=100 \text{ KHz}$ is available on nearly all spectrum analyzers.

5.3 DEVIATION FROM STANDARD

No deviation.

5.4 TEST SETUP



5.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 5.4 Unless otherwise a special operating condition is specified in the follows during the testing.



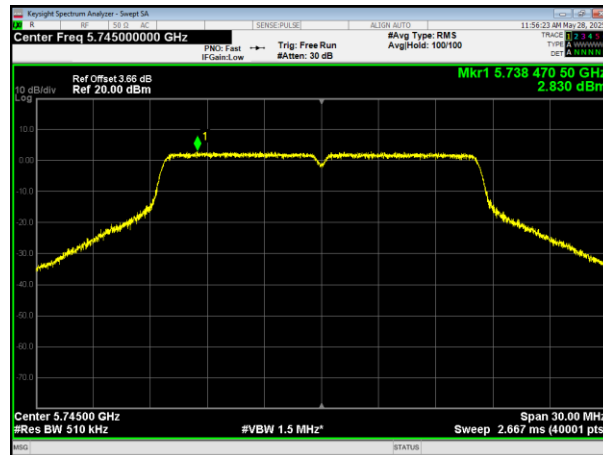
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	1015 hPa	Test Voltage :	DC 5V
Test Band :	5.8G		

5.8G						
Test mode	Test Channel (MHz)	PSD (dBm/500kHz)	duty cycle Factor (dB)	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Result
802.11a	5745	2.830	0.08	2.91	30	Pass
	5785	3.652	0.08	3.732	30	Pass
	5825	4.306	0.08	4.386	30	Pass
802.11n20	5745	1.715	0.04	1.755	30	Pass
	5785	2.777	0.04	2.817	30	Pass
	5825	2.000	0.04	2.04	30	Pass
802.11n40	5755	-1.648	0.05	-1.598	30	Pass
	5795	-1.105	0.05	-1.055	30	Pass
802.11ac20	5745	0.555	0.05	0.605	30	Pass
	5785	1.658	0.05	1.708	30	Pass
	5825	2.025	0.05	2.075	30	Pass
802.11ac40	5755	-1.445	0.05	-1.395	30	Pass
	5795	-1.116	0.05	-1.066	30	Pass
802.11ac80	5775	-3.439	0.05	-3.389	30	Pass

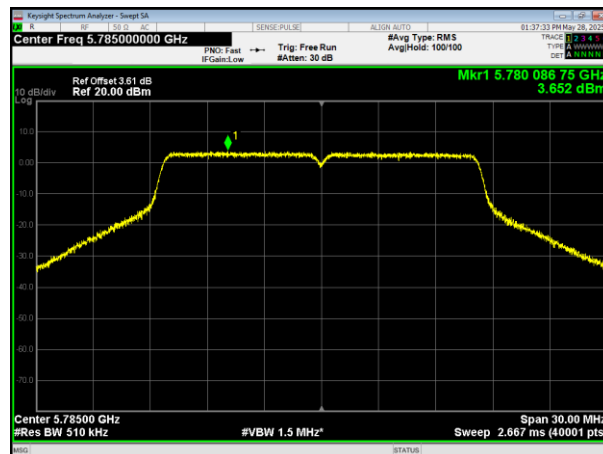
Note: duty cycle Factor see page 56.



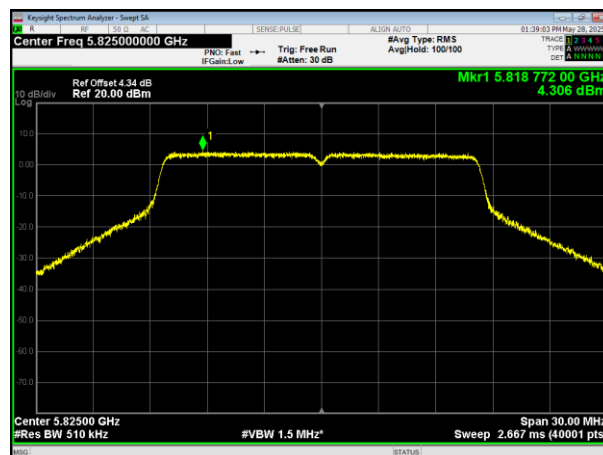
(802.11a) PSD plot on channel 149



(802.11a) PSD plot on channel 157

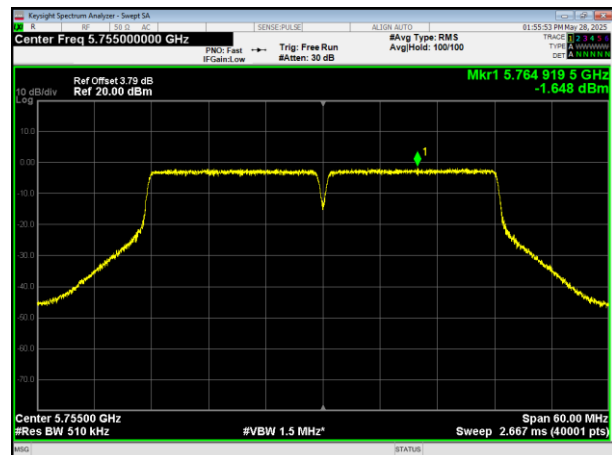


(802.11a) PSD plot on channel 165

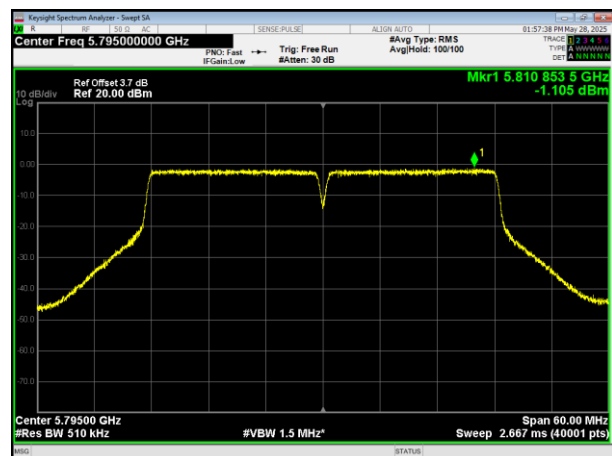




(802.11n40) PSD plot on channel 151



(802.11n40) PSD plot on channel 159



Keysight Spectrum Analyzer - Sweep 54

RF 5.8250 AC SENSE: PULSE ALIGN: AUTO

Center Freq 5.825000000 GHz PNO: Fast Trig: Free Run #Avg Type: RMS Avg/Hold: 100/100

81:53:51 PM May 28, 2025

Ref Offset 4.34 dB Ref 20.00 dBm

Mkr1 5.820 007 25 GHz 2.000 dBm

10 dB/div Log

Center 5.82500 GHz Span 30.00 MHz

#Res BW 510 kHz #VBW 1.5 MHz* Sweep 2.667 ms (40001 pts)

0.00

1

40.00

60.00

80.00

100.00

120.00

140.00

160.00

180.00

200.00

220.00

240.00

260.00

280.00

300.00

320.00

340.00

360.00

380.00

400.00

420.00

440.00

460.00

480.00

500.00

520.00

540.00

560.00

580.00

600.00

620.00

640.00

660.00

680.00

700.00

720.00

740.00

760.00

780.00

800.00

820.00

840.00

860.00

880.00

900.00

920.00

940.00

960.00

980.00

1000.00

1020.00

1040.00

1060.00

1080.00

1100.00

1120.00

1140.00

1160.00

1180.00

1200.00

1220.00

1240.00

1260.00

1280.00

1300.00

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1520.00

1540.00

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1600.00

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1780.00

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1840.00

1860.00

1880.00

1900.00

1920.00

1940.00

1960.00

1980.00

2000.00

2020.00

2040.00

2060.00

2080.00

2100.00

2120.00

2140.00

2160.00

2180.00

2200.00

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2800.00

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2880.00

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2980.00

3000.00

3020.00

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3080.00

3100.00

3120.00

3140.00

3160.00

3180.00

3200.00

3220.00

3240.00

3260.00

3280.00

3300.00

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3680.00

3700.00

3720.00

3740.00

3760.00

3780.00

3800.00

3820.00

3840.00

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3880.00

3900.00

3920.00

3940.00

3960.00

3980.00

4000.00

4020.00

4040.00

4060.00

4080.00

4100.00

4120.00

4140.00

4160.00

4180.00

4200.00

4220.00

4240.00

4260.00

4280.00

4300.00

4320.00

4340.00

4360.00

4380.00

4400.00

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4560.00

4580.00

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4620.00

4640.00

4660.00

4680.00

4700.00

4720.00

4740.00

4760.00

4780.00

4800.00

4820.00

4840.00

4860.00

4880.00

4900.00

4920.00

4940.00

4960.00

4980.00

5000.00

5020.00

5040.00

5060.00

5080.00

5100.00

5120.00

5140.00

5160.00

5180.00

5200.00

5220.00

5240.00

5260.00

5280.00

5300.00

5320.00

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5360.00

5380.00

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5740.00

5760.00

5780.00

5800.00

5820.00

5840.00

5860.00

5880.00

5900.00

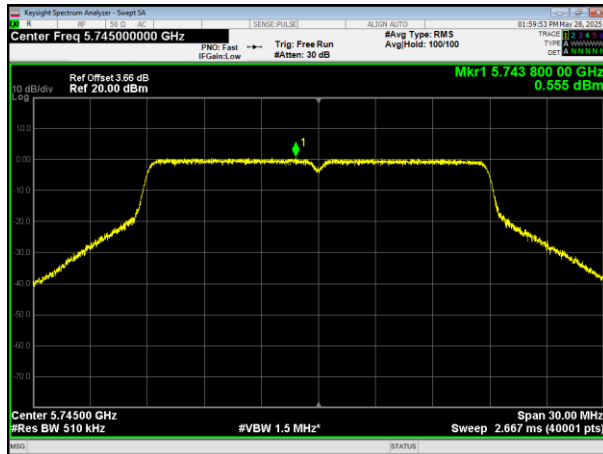
5920.00

5940.00

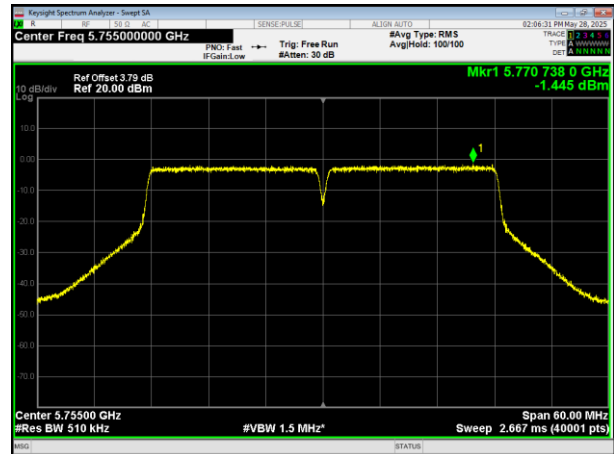
5960.00



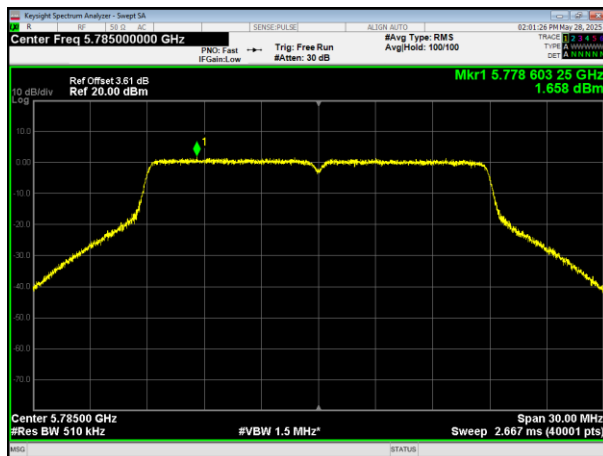
(802.11ac20) PSD plot on channel 149



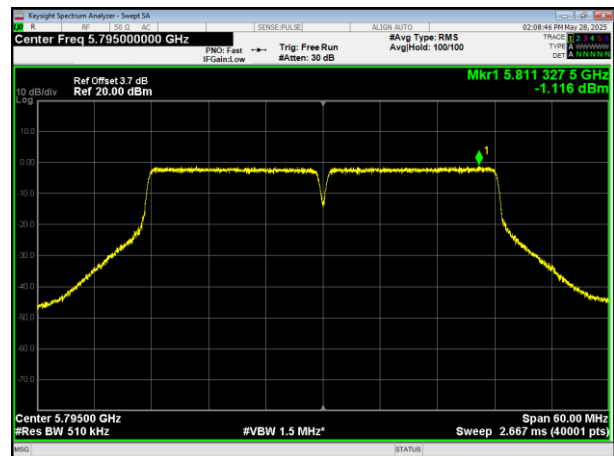
(802.11ac40) PSD plot on channel 151



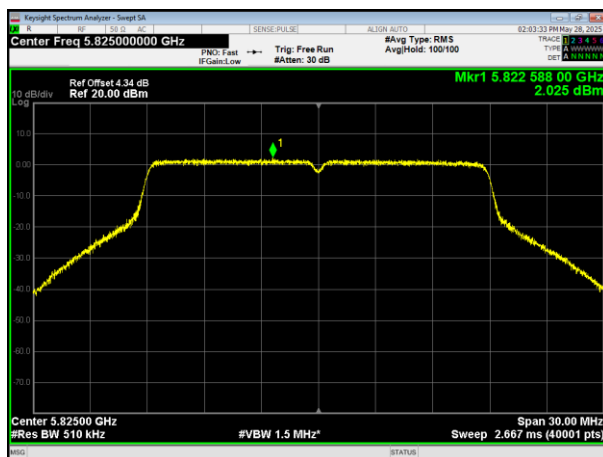
(802.11ac20) PSD plot on channel 157



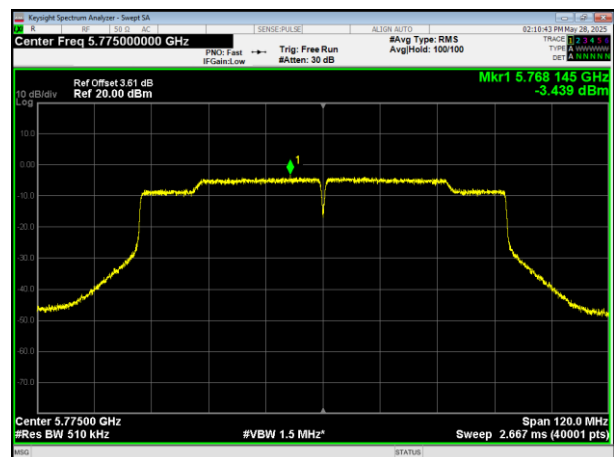
(802.11ac40) PSD plot on channel 159



(802.11ac20) PSD plot on channel 165



(802.11ac80) PSD plot on channel 155





6. 6DB OCCUPIED BANDWIDTH

6.1 APPLIED PROCEDURES / LIMIT

The maximum power spectral density is measured as a conducted emission by direct connection of a calibrated test instrument to the equipment under test. If the device cannot be connected directly, alternative techniques acceptable to the Commission may be used. Measurements in the 5.725-5.85 GHz band, the minimum bandwidth 6 dB bandwidth of U-NII devices shall be at least 500KHz. Measurements in the 5.15-5.25 GHz, 5.25-5.35 GHz, and the 5.47-5.725 GHz bands are made over a bandwidth of 1 MHz or the 26 dB emission bandwidth of the device, whichever is less. A narrower resolution bandwidth can be used, provided that the measured power is integrated over the full reference bandwidth.

6.2 TEST PROCEDURE

The following procedure shall be used for measuring 6dB Occupied Bandwidth:

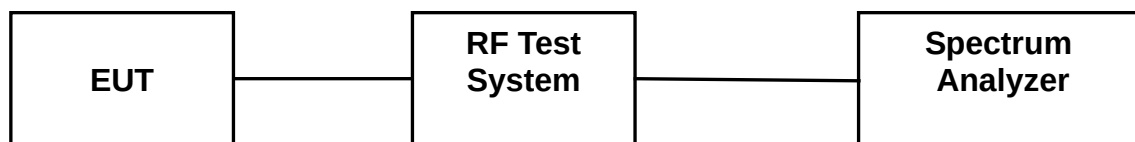
The procedure for this method is as follows:

- a) Set RBW = 100KHz.
- b) Set the VBW > RBW.
- c) Detector = Peak.
- d) Trace mode = max hold.
- e) 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.

The following procedure shall be used for measuring 26dB Emission bandwidth:

The procedure for this method is as follows:

- a) Set RBW = approximately 1% of the emission bandwidth.
- b) Set the VBW > RBW.
- c) Detector = peak.
- d) Trace mode = max hold.
- e) Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the instrument. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.



6.3 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 6.2 Unless otherwise a special operating condition is specified in the follows during the testing.



6.4 TEST RESULTS

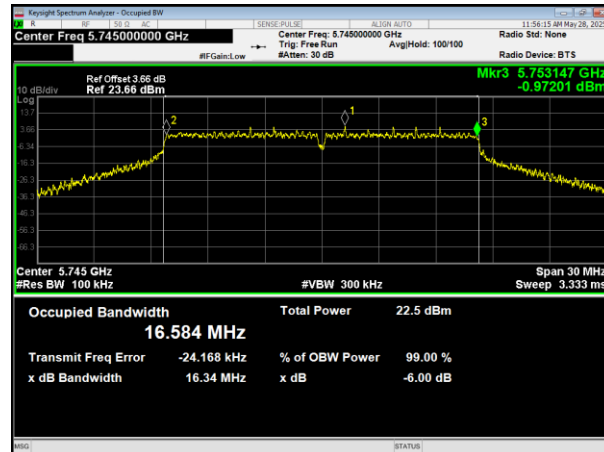
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	DC 5V
Test Band :	5.8G		

5.8G				
Test Mode	Test Channel (MHz)	6dB Occupied Bandwidth (MHz)	Limit(KHz)	Result
802.11a	5745	16.342	>500	Pass
	5785	16.307		
	5825	16.329		
802.11n20	5745	17.610	>500	Pass
	5785	17.323		
	5825	17.570		
802.11n40	5755	36.334	>500	Pass
	5795	36.35		
802.11ac20	5745	17.55	>500	Pass
	5785	17.547		
	5825	17.158		
802.11ac40	5755	36.313	>500	Pass
	5795	36.394		
802.11ac80	5775	60.942	>500	Pass

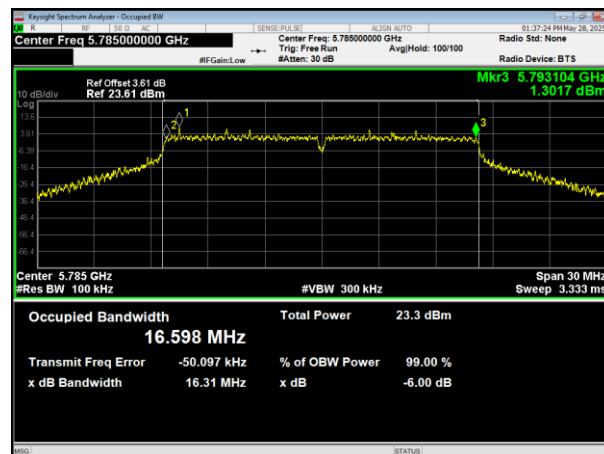


5.8G Test plot

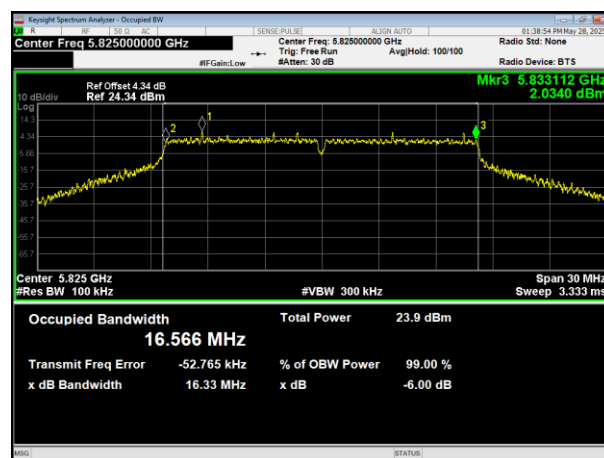
(802.11a) 6dB Bandwidth plot on channel 149



(802.11a) 6dB Bandwidth plot on channel 157



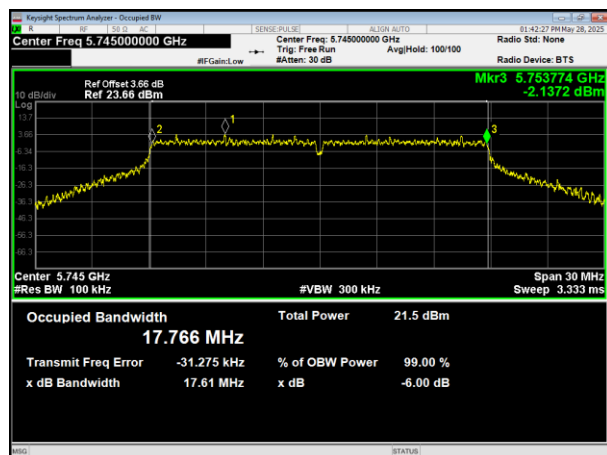
(802.11a) 6dB Bandwidth plot on channel 165



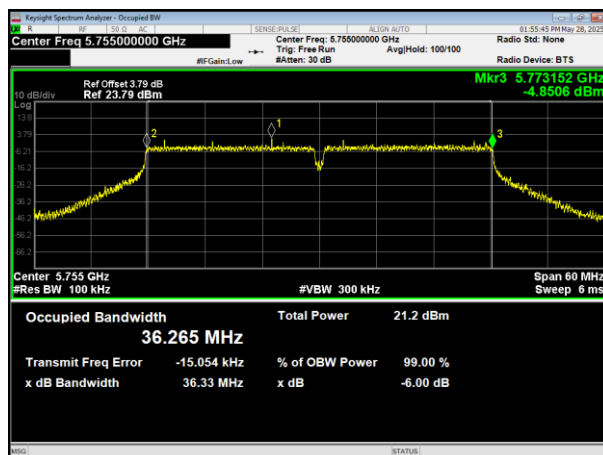


5.8G Test plot

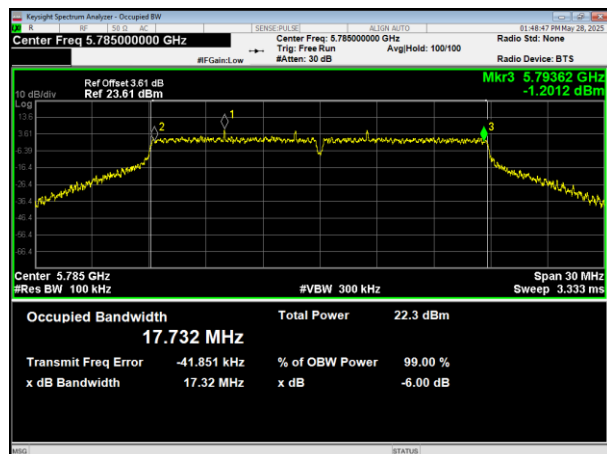
(802.11n20) 6dB Bandwidth plot on channel 149



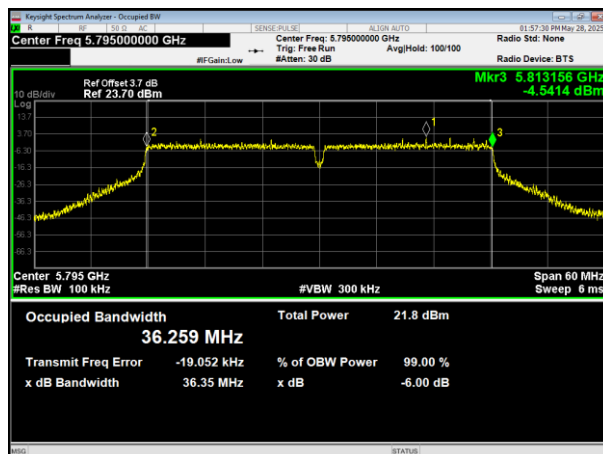
(802.11n40) 6dB Bandwidth plot on channel 151



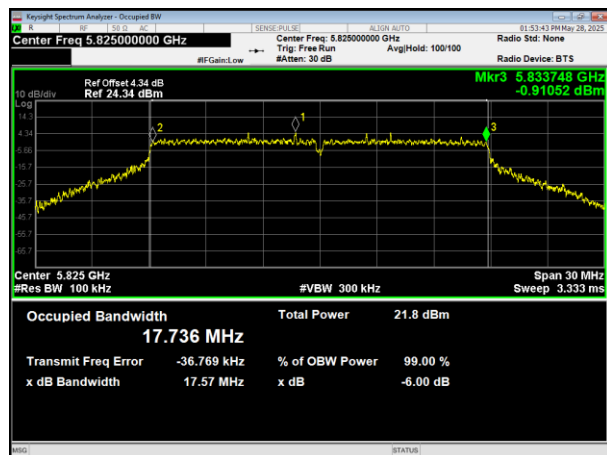
(802.11n20) 6dB Bandwidth plot on channel 157



(802.11n40) 6dB Bandwidth plot on channel 159



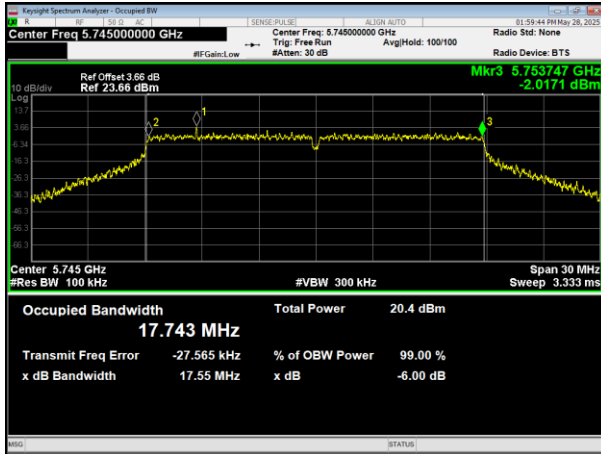
(802.11n20) 6dB Bandwidth plot on channel 165



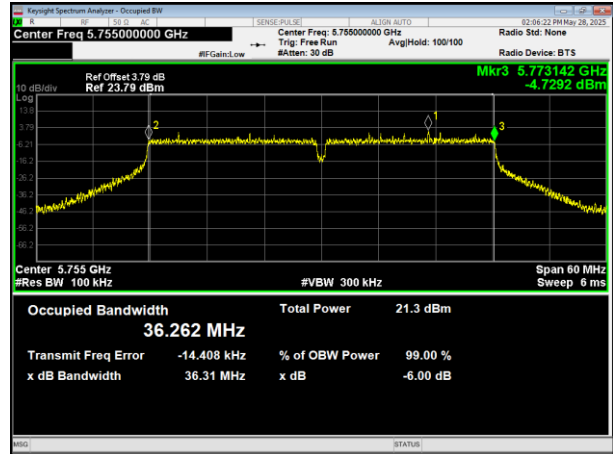


5.8G Test plot

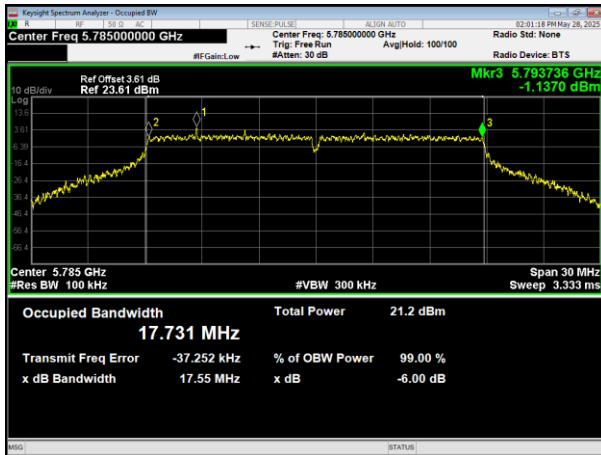
(802.11ac20) 6dB Bandwidth plot on channel 149



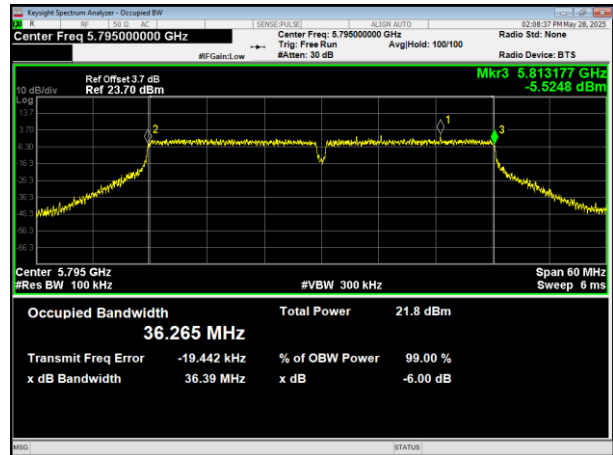
(802.11ac40) PSD plot on channel 151



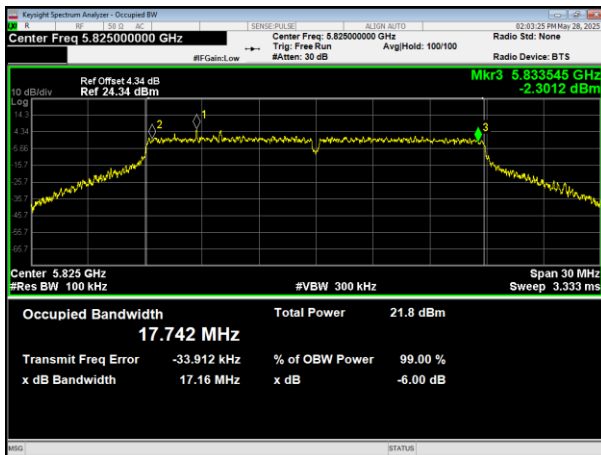
(802.11ac20) 6dB Bandwidth plot on channel 157



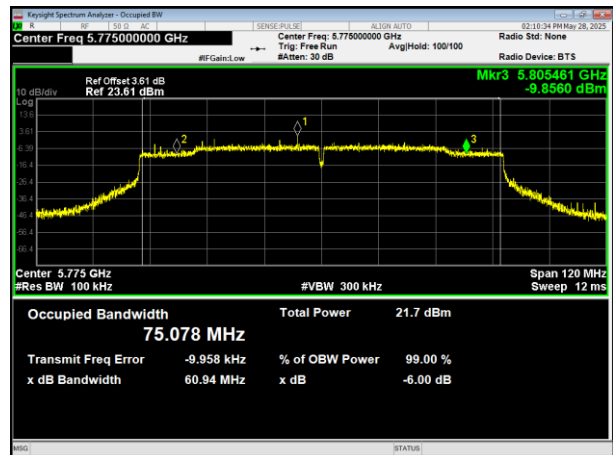
(802.11ac40) PSD plot on channel 159



(802.11ac20) 6dB Bandwidth plot on channel 165



(802.11ac80) PSD plot on channel 155





7. Maximum Conducted Output Power

7.1 PPLIED PROCEDURES / LIMIT

According to FCC §15.407

The maximum conducted output power should not exceed:

Frequency Band(MHz)	Limit
5725~5850	1W

7.2 TEST PROCEDURE

The EUT was directly connected to the Power meter

According 789033 D02 General UNII Test Procedures New Rules v02r01.

EUT Measurement using a Power Meter (PM)

a)Method PM (Measurement using an RF average power meter):

(i) Measurements may be performed using a wideband RF power meter with a thermocouple detector or equivalent if all of the following conditions are satisfied:

The EUT is configured to transmit continuously or to transmit with a constant duty cycle.

At all times when the EUT is transmitting, it must be transmitting at its maximum power control level.

The integration period of the power meter exceeds the repetition period of the transmitted signal by at least a factor of five.

(ii) If the transmitter does not transmit continuously, measure the duty cycle, x , of the transmitter output signal as described in II.B.

(iii) Measure the average power of the transmitter. This measurement is an average over both the on and off periods of the transmitter.

(iv) Adjust the measurement in dBm by adding $10 \log (1/x)$ where x is the duty cycle (e.g., $10 \log (1/0.25)$ if the duty cycle is 25%).

b)Method PM-G (Measurement using a gated RF average power meter):

Measurements may be performed using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

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 7.4 Unless otherwise a special operating condition is specified in the follows during the testing.



Temperature :	26 °C	Relative Humidity :	54%
Pressure :	1012 hPa	Test Voltage :	DC 5V
Test Band :	5.8G		

Note: duty cycle Factor see page 56.



8.OUT OF BAND EMISSIONS

8.1 APPLICABLE STANDARD

According to FCC §15.407(b)

Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(2)

(i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

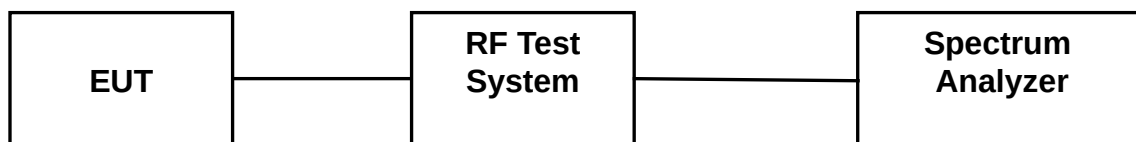
8.2 TEST PROCEDURE

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3. Set RBW of spectrum analyzer to 1 MHz with a convenient frequency span.
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
5. Repeat above procedures until all measured frequencies were complete.

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 8.4 Unless otherwise a special operating condition is specified in the follows during the testing.

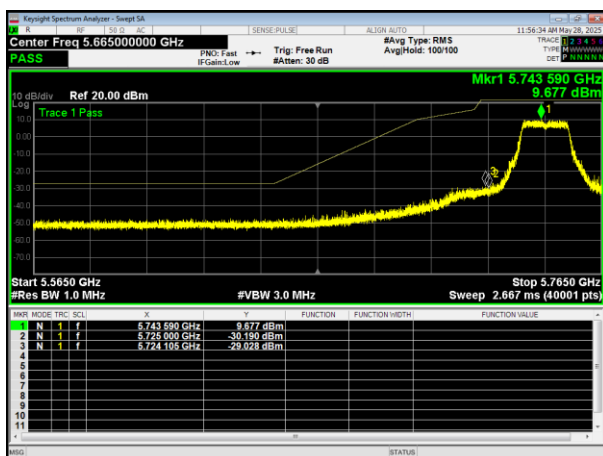


8.6 TEST RESULTS

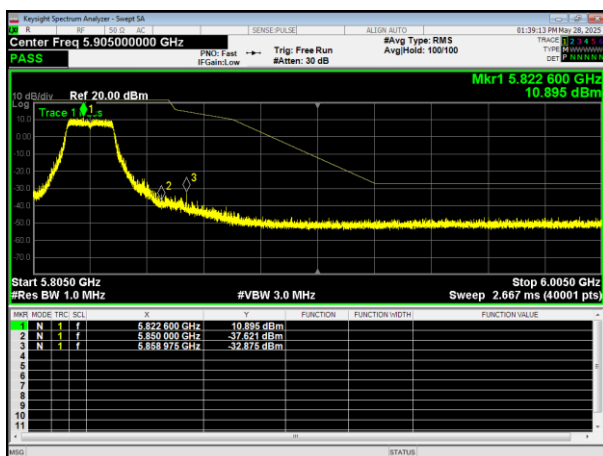
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	1012 hPa	Test Voltage :	DC 5V
Test band :	5.8G	Antenna gain :	2.64dBi

5.745~5.825 GHz

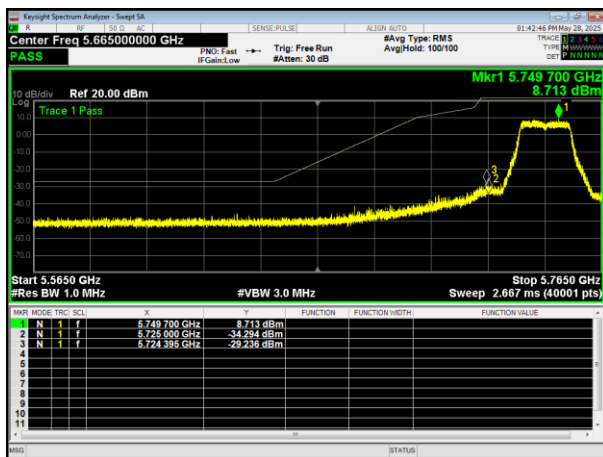
(802.11a) Band Edge, Left Side



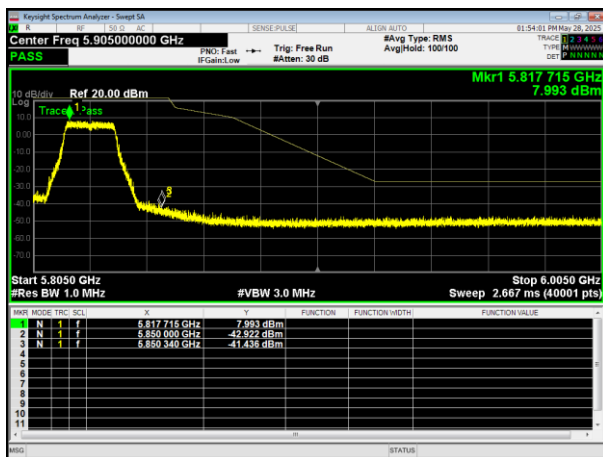
(802.11a) Band Edge, Right Side



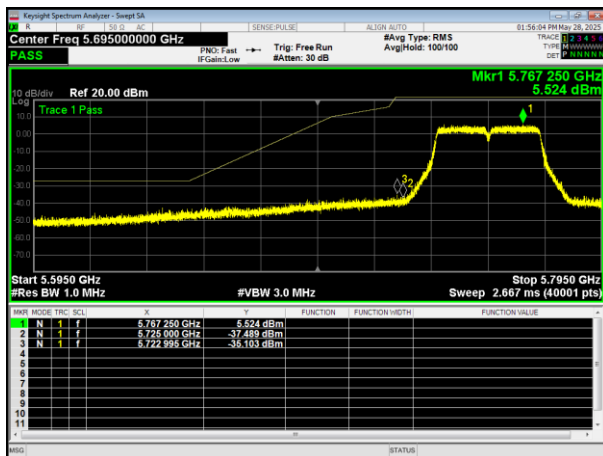
(802.11n20) Band Edge, Left Side



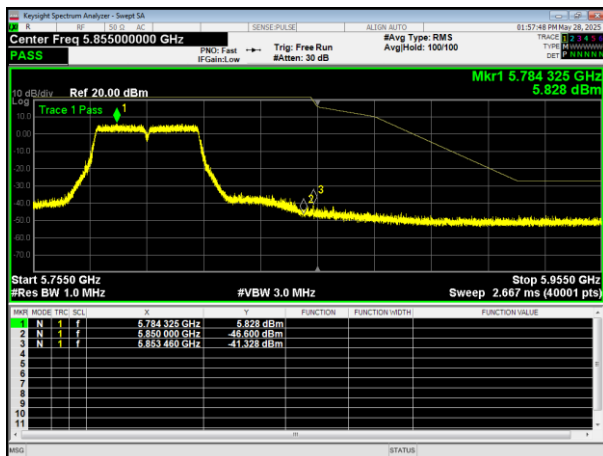
(802.11n20) Band Edge, Right Side



(802.11n40) Band Edge, Left Side

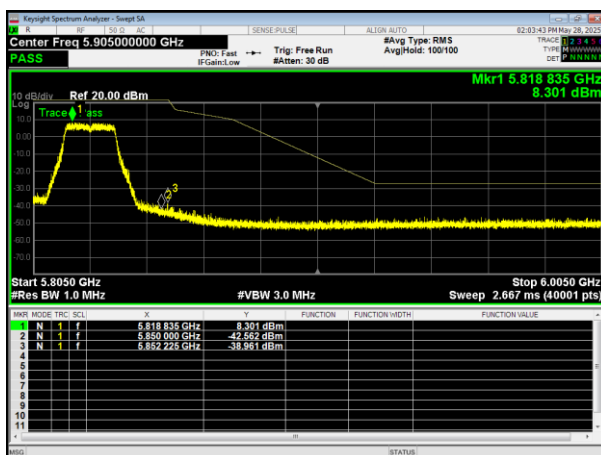


(802.11n40) Band Edge, Right Side

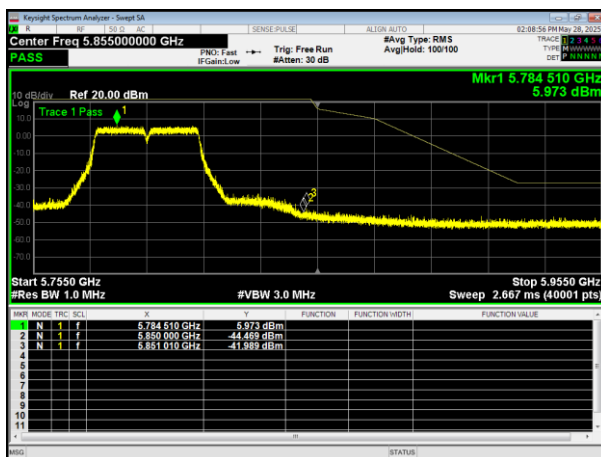




(802.11ac20) Band Edge, Right Side



(802.11ac40) Band Edge, Right Side



The screenshot displays a Keysight Spectrum Analyzer interface. At the top, the center frequency is set to 5.755000000 GHz. The signal trace is yellow, showing a flat baseline at approximately -50 dBm, a sharp rise to a plateau at 0 dBm, and a subsequent fall. A green peak marker labeled '1' is positioned on the plateau. The reference level is set to 20.00 dBm. Below the plot, a table lists three measurement points (N 1, N 1, N 1) with their respective frequencies, amplitudes, and functions. The first two points are at 5.751070 GHz and 5.725000 GHz, both at -36.100 dBm. The third point is at 5.724795 GHz at -32.479 dBm. The table also includes columns for function, function width, and function value, which are currently empty.

Center Freq 5.755000000 GHz

Trace 1: 5.751070 GHz, 3.404 dBm

Marker	Freq (GHz)	Amplitude (dBm)	Function	Function Width	Function Value
1	5.751070	-36.100			
2	5.725000	-36.100			
3	5.724795	-32.479			

05:16:03 PM Jan 16, 2025



9.FREQUENCY STABILITY MEASUREMENT

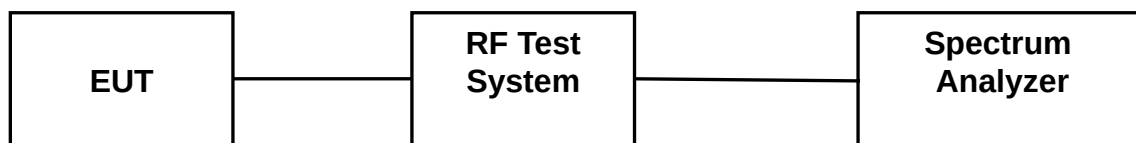
9.1 LIMIT

Manufactures of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

9.2 TEST PROCEDURES

1. The transmitter output (antenna port) was connected to the spectrum analyzer.
2. EUT have transmitted absence of modulation signal and fixed channelize.
3. Set the spectrum analyzer span to view the entire absence of modulation emissions bandwidth.
4. Set RBW = 10 kHz, VBW = 10 kHz with peak detector and maxhold settings.
5. f_c is declaring of channel frequency. Then the frequency error formula is $(f_c - f)/f_c \times 10^6$ ppm
6. The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value
7. Extreme temperature is -20°C~70°C.

9.3 TEST SETUP LAYOUT



9.4 EUT OPERATION DURING TEST

The EUT was programmed to be in continuously un-modulation transmitting mode.

9.5 TEST RESULTS

Temperature :	26 °C	Relative Humidity :	54%
Pressure :	1012 hPa	Test Voltage :	DC 5V
Test Band :	5.8G		
Note: All channels have been tested, and only the worst test data is recorded in this report.			

**5.8G:**

802.11a

Reference Frequency(Middle Channel): 5745MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF	Error (ppm)
50	5	46	0.00815
40	5	27	0.00757
30	5	36	0.00462
20	5	23	0.00419
10	5	14	0.00306
0	5	16	0.00324
-10	5	13	0.00342
-20	5	27	0.00443
-30	5	38	0.00632

802.11n20

Reference Frequency(Middle Channel): 5745MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF	Error (ppm)
50	5	42	0.00658
40	5	24	0.00534
30	5	32	0.00385
20	5	24	0.00347
10	5	13	0.00157
0	5	12	0.00139
-10	5	13	0.00157
-20	5	21	0.00295
-30	5	32	0.00543



802.11n40

Reference Frequency(Middle Channel): 5755MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF	Error (ppm)
50	5	62	0.00953
40	5	54	0.00801
30	5	42	0.00725
20	5	44	0.00759
10	5	34	0.00587
0	5	32	0.00552
-10	5	34	0.00587
-20	5	42	0.00725
-30	5	51	0.00884

802.11ac20

Reference Frequency(Middle Channel): 5745 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF	Error (ppm)
50	5	43	0.00709
40	5	51	0.00648
30	5	23	0.00375
20	5	26	0.00515
10	5	23	0.00374
0	5	26	0.00415
-10	5	22	0.00346
-20	5	36	0.00588
-30	5	26	0.00462



802.11ac40

Reference Frequency(Middle Channel): 5755MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF	Error (ppm)
50	5	60	0.00675
40	5	55	0.00614
30	5	47	0.00341
20	5	45	0.00481
10	5	32	0.0034
0	5	26	0.00381
-10	5	38	0.00312
-20	5	43	0.00554
-30	5	54	0.00428

802.11ac80

Reference Frequency(Middle Channel): 5775MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF	Error (ppm)
50	5	52	0.00866
40	5	41	0.00705
30	5	43	0.00711
20	5	41	0.00676
10	5	36	0.00589
0	5	32	0.0052
-10	5	34	0.00555
-20	5	32	0.0052
-30	5	52	0.00866



So, Frequency Stability Versus Input Voltage is:

802.11a

Reference Frequency(Middle Channel): 5745 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency	Error (ppm)
20	5.5	46	0.00815
20	5	27	0.00757
20	4.5	38	0.00632

802.11n20

Reference Frequency(Middle Channel): 5745 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency	Error (ppm)
20	5.5	42	0.00658
20	5	24	0.00534
20	4.5	32	0.00543

802.11n40

Reference Frequency(Middle Channel): 5755 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency	Error (ppm)
20	5.5	62	0.00953
20	5	54	0.00801
20	4.5	51	0.00884

802.11ac20

Reference Frequency(Middle Channel): 5745 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency	Error (ppm)
20	5.5	43	0.00709
20	5	51	0.00648
20	4.5	36	0.00588



802.11ac40

Reference Frequency(Middle Channel): 5755 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency	Error (ppm)
20	5.5	60	0.00675
20	5	55	0.00614
20	4.5	43	0.00554

802.11ac80

Reference Frequency(Middle Channel): 5775 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency	Error (ppm)
20	5.5	52	0.00866
20	5	41	0.00705
20	4.5	52	0.00866



10. DUTY CYCLE

10.1 APPLIED PROCEDURES / LIMIT

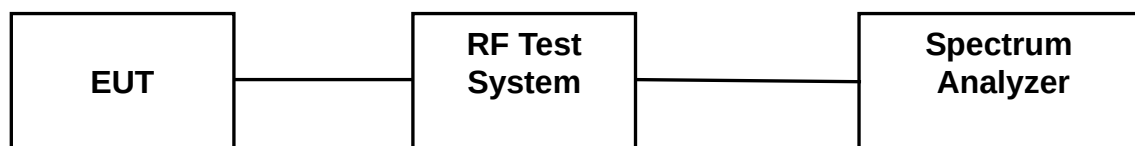
Measurements of duty cycle and transmission duration shall be performed using one of the following techniques:

- a) A diode detector and an oscilloscope that together have a sufficiently short response time to permit accurate measurements of the ON and OFF times of the transmitted signal.
- b) The zero-span mode on a spectrum analyzer or EMI receiver if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the ON and OFF times of the transmitted signal:
 - 1) Set the center frequency of the instrument to the center frequency of the transmission.
 - 2) Set $RBW \geq OBW$ if possible; otherwise, set RBW to the largest available value.
 - 3) Set $VBW \geq RBW$. Set detector = peak or average.
 - 4) The zero-span measurement method shall not be used unless both RBW and VBW are $> 50/T$ and the number of sweep points across duration T exceeds 100. (For example, if VBW and/or RBW are limited to 3 MHz, then the zero-span method of measuring the duty cycle shall not be used if $T \leq 16.7 \mu s$.)

10.2 DEVIATION FROM STANDARD

No deviation.

10.3 TEST SETUP



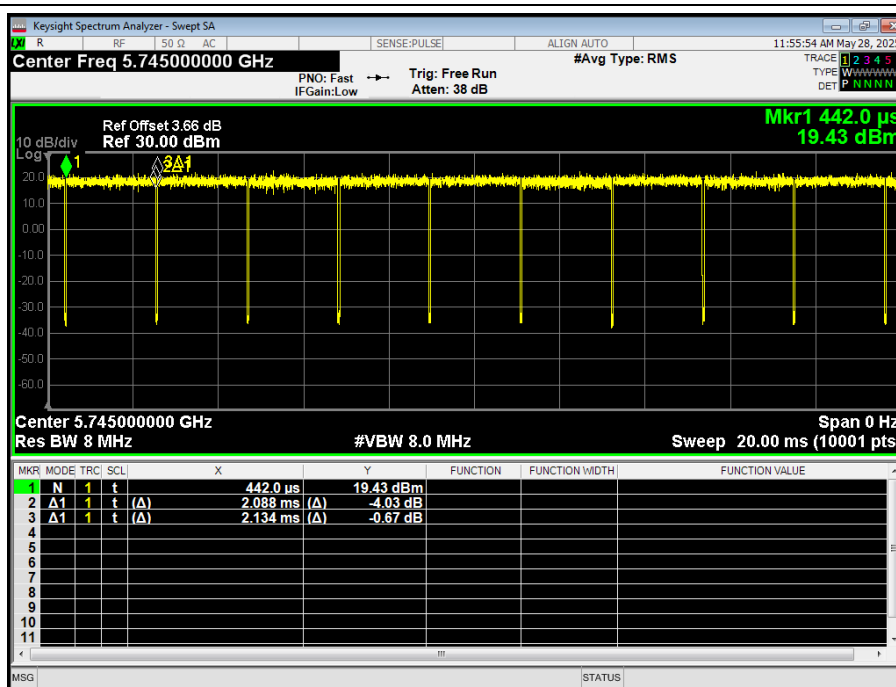


10.4 TEST RESULTS

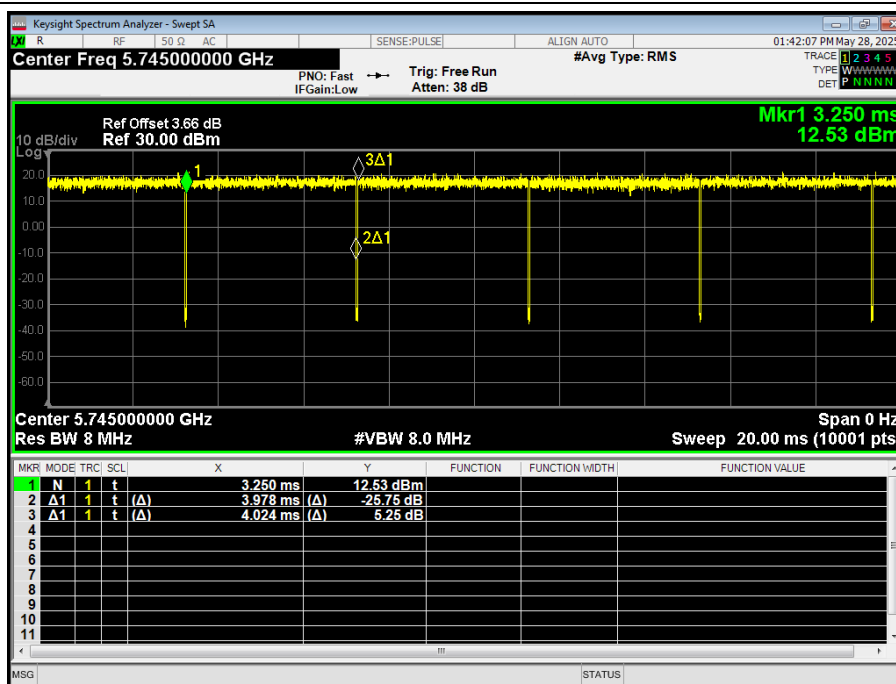
5.8G				
Mode	Frequency (MHz)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Result
802.11a	5745	98.12	0.08	Pass
802.11n20	5745	99.00	0.04	Pass
802.11n40	5755	99.25	0.05	Pass
802.11ac20	5745	98.75	0.05	Pass
802.11ac40	5755	98.75	0.05	Pass
802.11ac80	5775	98.76	0.05	Pass



802.11a

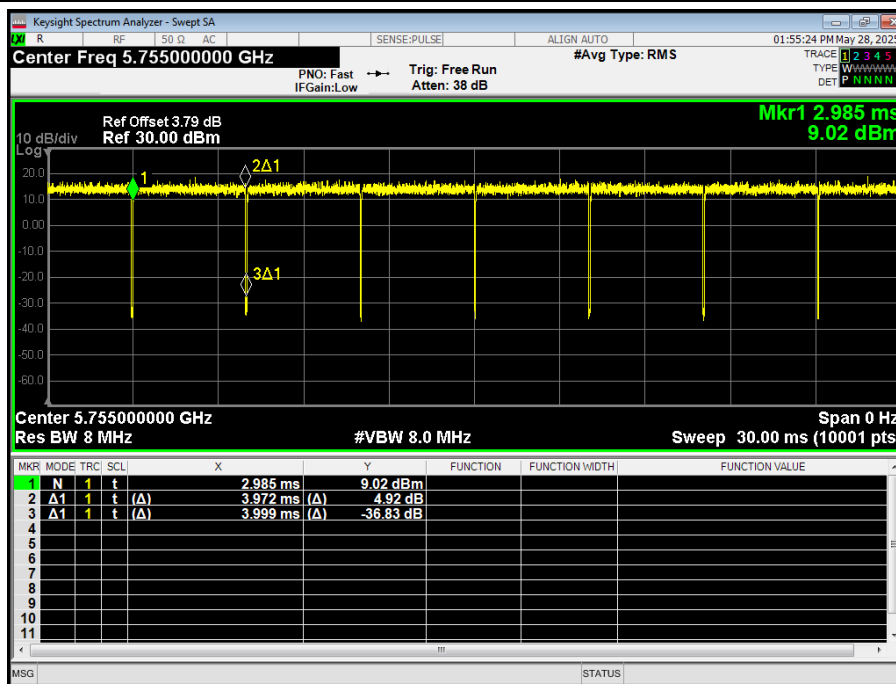


802.11n20

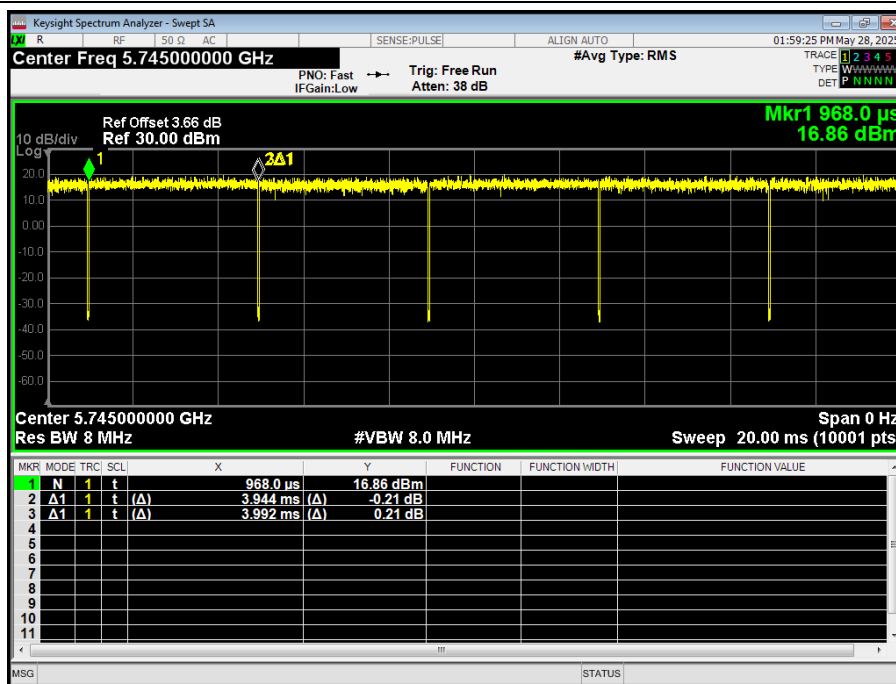




802.11n40

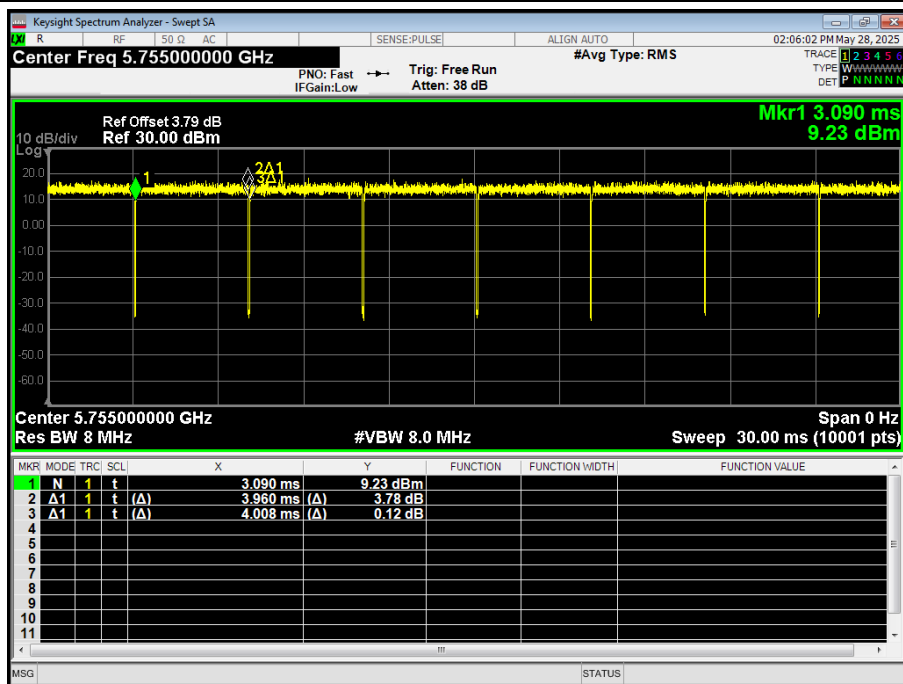


802.11ac20

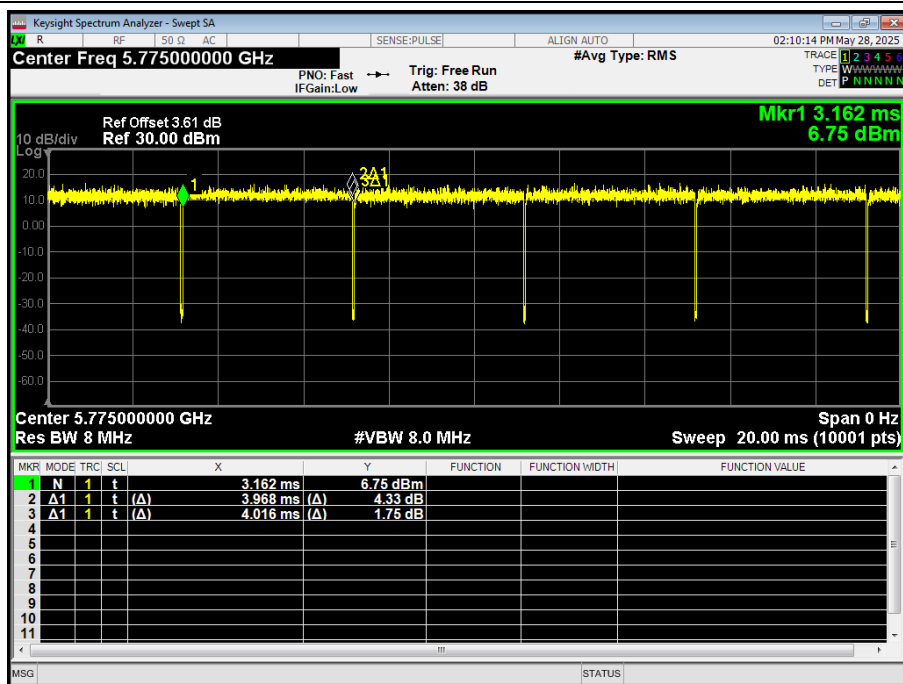




802.11ac40



802.11ac80



Note: All channel have been tested, and the report only reflects the worst case data.

Duty Cycle= Ton /Total*100%

Duty Cycle Correction Factor = 10log (1/Duty Cycle)



11.ANTENNA REQUIREMENT

Standard requirement:	FCC Part15 C Section 15.203
15.203 requirement: 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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.	
EUT Antenna:	
The antenna is FPC antenna, the best case gain of the antenna is 2.64dBi, reference to the appendix II for details	



12. TEST SETUP PHOTO

Reference to the appendix I for details.

13. EUT CONSTRUCTIONAL DETAILS

Reference to the appendix II for details.

******* END OF REPORT *******