



FCC Test Report

FCC ID: 2A7Z7-YS-HPC04

Applicant: Shenzhen zhonganshi Technology Co., Ltd

Address: 602, 6th floor, building a, Sanzhi industrial building, No. 95, Gushu 1st Road, Xixiang street, Bao'an District, Shenzhen, China

Manufacturer: Shenzhen zhonganshi Technology Co., Ltd

Address: 602, 6th floor, building a, Sanzhi industrial building, No. 95, Gushu 1st Road, Xixiang street, Bao'an District, Shenzhen, China

Product Name: Yoosee AI Camera

Trade Mark: N/A

Model Number: YS-HPC04, YS-HPC02, YS-HPC06, YS-HPC08, YS-HPC10

Date of Receipt: Jul. 10, 2026

Test Date: Jul. 10, 2026 ~ Jul. 31, 2026

Date of Report: Jul. 31, 2026

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

Address: 101-201, Comprehensive Building, Tongzhou Electronics Longgang Factory Area, No.1 Baolong Fifth Road, Baolong Community, Baolong Street, Longgang District, Shenzhen, China

Applicable Standards: FCC Rules and Regulations Part 15 Subpart E Section 15.407
ANSI C63.10: 2020

Test Result: Pass

Report Number: DLE-260803004R

Prepared by(Engineer): Ken 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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**** Issued history ****

Revision	Description	Issued Date	Remark
Revision 1.0	Initial Test Report Release	Jul. 31, 2026	



1. Summary

1.1 Test Procedures and Results

Test Item	Standard Section	Result
Antenna Requirement	§15.203	PASS
AC Power Line Conducted Emission	§15.207	PASS
Maximum Conducted Output Power	§15.407(a)	PASS
6dB Emission Bandwidth	§15.407(e)	PASS
26dB Emission Bandwidth & 99% Occupied Bandwidth	§15.407(a)	N/A
Power Spectral Density	§15.407(a)	PASS
Band Edge	§15.407(b)/15.209/15.205	PASS
Radiated Emission	§15.407(b)/15.209/15.205	PASS
Frequency Stability	§15.407(g)	PASS

Note:

1. PASS: Test item meets the requirement.
2. Fail: Test item does not meet the requirement.
3. N/A: Test case does not apply to the test object.
4. The test result judgment is decided by the limit of test standard.

1.2 Information of the Test Laboratory

Shenzhen DL Testing Technology Co., Ltd.

Add.: 101-201, Comprehensive Building, Tongzhou Electronics Longgang Factory Area,
No.1 Baolong Fifth Road, Baolong Community, Baolong Street, Longgang District,
Shenzhen, China

Designation Number: CN1307



1.3 Measurement Uncertainty

The reported uncertainty of measurement $y \pm U$, where expanded 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	$\pm 2.56\text{dB}$
2	RF power, conducted	$\pm 0.42\text{dB}$
3	Spurious emissions, conducted	$\pm 2.76\text{dB}$
4	All emissions, radiated(<1G)	$\pm 3.65\text{dB}$
5	All emissions, radiated(>1G)	$\pm 4.89\text{dB}$
6	Temperature	$\pm 0.5^{\circ}\text{C}$
7	Humidity	$\pm 2\%$
8	6dB Bandwidth	$\pm 0.2\text{MHz}$
9	Power Spectral Density	$\pm 0.3\text{dBm}$



2. EUT Description

2.1 General Description of EUT

Equipment:	Yoosee AI Camera
Model Name:	YS-HPC04
Series Model(s):	YS-HPC02, YS-HPC06, YS-HPC08, YS-HPC10
Model Difference:	All model's the function, software and electric circuit are the same, only with product model name different. Test sample model: YS-HPC04.
Operation Frequency:	IEEE 802.11a/n/ac(HT20)5.745GHz-5.825GHz IEEE 802.11n/ac(HT40)5.755GHz-5.795GHz
Modulation Technology:	IEEE 802.11a/n/ac
Modulation Type:	256QAM, 64QAM, 16QAM, QPSK, BPSK for OFDM
Antenna Type:	External Antenna
Antenna Gain:	1.39dBi
Power Source:	DC5V From Type-C
Power Supply:	DC5V From Type-C
Hardware Version:	GPW-A8E1_MAIN_V1_2
Software Version:	47.1.70
Note: 1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual. 2. Antenna gain Refer to the antenna specifications. 3. The cable loss data is obtained from the supplier. 4. The test results in the report only apply to the tested sample.	



2.2 Operation Frequency Each of Channel

802.11a/802.11n(HT20) 802.11ac(HT20)		802.11n(HT40)/ 802.11ac(HT40)	
Channel	Frequency	Channel	Frequency
149	5745	151	5755
153	5765	159	5795
157	5785		
161	5805		
165	5825		

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:

2.3 Operation of EUT during Testing

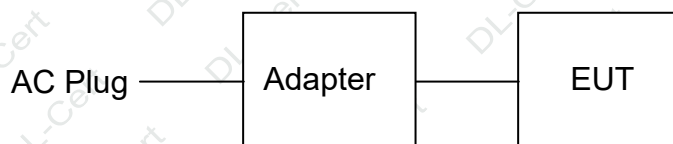
Band IV (5725 - 5850MHz)		
For 802.11a/n (HT20)/ac(HT20)		
Channel Number	Channel	Frequency (MHz)
149	Low	5745
157	Mid	5785
165	High	5825

For 802.11n(HT40)/ac(HT40)		
Channel Number	Channel	Frequency (MHz)
151	Low	5755
159	High	5795

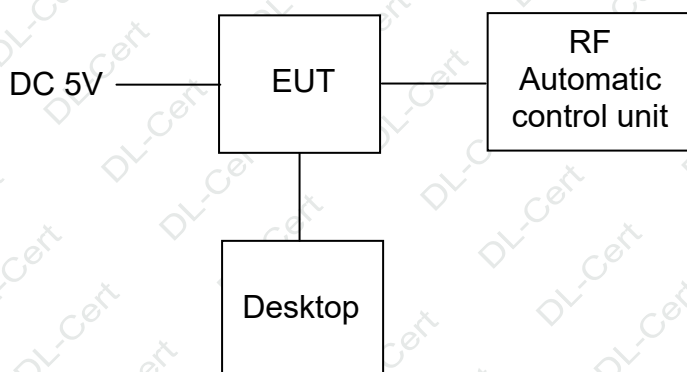


2.4 Description of Test Setup

Operation of EUT during AC Conducted and Radiation testing:



Operation of EUT during RF Conducted testing:



The sample was placed (0.8m below 1GHz, 1.5m above 1GHz) above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The report only reflects the worst emission test results. The worst case is X position.



2.5 Description of Support Units

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	Trade Mark	Model/Type No.	Specification	Note
1	Yoosee AI Camera	N/A	YS-HPC04	N/A	EUT
2	Adapter	N/A	CY-02050200UW	Input: 100-240V, 50/60Hz, 0.8A MAX Output: 5.0V, 2.0A, 10.0W	
3	USB Cable	N/A	N/A	Length: 1.5m	

Note:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.
3. For conducted measurements (Output Power, 6dB Emission Bandwidth, Power Spectral Density, Spurious Emissions), the antenna of EUT is connected to the test equipment via temporary antenna connector, the antenna connector is soldered on the antenna port of EUT, and the temporary antenna connector is listed in the Test Instruments.

2.6 The worst case power setting parameter

During testing, channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the end product.

Test Software Version	SecureCRSecureFXPortable
Transmit Antenna Number	1
Test Software setting value	13



2.7 Equipments List for All Test Items

Radiation test, Band-edge test and 6db bandwidth test equipment

Item	Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	Spectrum Analyzer (9kHz-26.5GHz)	Agilent	E4408B	MY50140780	Oct. 25, 2025	Oct. 24, 2026
2	Test Receiver (9kHz-7GHz)	R&S	ESRP7	101393	Oct. 25, 2025	Oct. 24, 2026
3	Bilog Antenna (30MHz-1GHz)	R&S	VULB9162	00306	Oct. 25, 2025	Oct. 24, 2026
4	Horn Antenna (1GHz-18GHz)	Schwarzbeck	BBHA9120D	02139	Oct. 25, 2025	Oct. 24, 2026
5	Horn Antenna (18GHz-40GHz)	A.H. Systems	SAS-574	588	Oct. 25, 2025	Oct. 24, 2026
6	Amplifier (9KHz-6GHz)	Schwarzbeck	BBV9743B	00153	Oct. 25, 2025	Oct. 24, 2026
7	Amplifier (1GHz-18GHz)	EMEC	EM01G8GA	00270	Oct. 25, 2025	Oct. 24, 2026
8	Amplifier (18GHz-40GHz)	Quanjuda	DLE-161	97	Oct. 25, 2025	Oct. 24, 2026
9	Loop Antenna (9KHz-30MHz)	Schwarzbeck	FMZB1519B	00014	Oct. 25, 2025	Oct. 24, 2026
10	RF cables1 (9kHz-1GHz)	ChengYu	966	004	Oct. 25, 2025	Oct. 24, 2026
11	RF cables2 (1GHz-40GHz)	ChengYu	966	003	Oct. 25, 2025	Oct. 24, 2026
12	Antenna connector	Florida RF Labs	N/A	RF 01#	Oct. 25, 2025	Oct. 24, 2026
13	Power probe	KEYSIGHT	U2021XA	MY55210018	Oct. 25, 2025	Oct. 24, 2026
14	Signal Analyzer 9kHz-26.5GHz	Agilent	N9020A	MY55370280	Oct. 25, 2025	Oct. 24, 2026
15	Test Receiver 20kHz-40GHz	R&S	ESU 40	100376	Oct. 25, 2025	Oct. 24, 2026
16	D.C. Power Supply	LongWei	PS-305D	010964729	Oct. 25, 2025	Oct. 24, 2026
17	Filter	COM-MW	K6-2400-2500-100S455-007	6DS2302367	Oct. 25, 2025	Oct. 24, 2026
18	Attenuator	COM-MW	5W 6DB 6G	DC-6GHz	Oct. 25, 2025	Oct. 24, 2026

Conduction Test equipment

Item	Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	843 Shielded Room	ChengYu	843 Room	843	Nov. 05, 2023	Nov. 04, 2026
2	EMI Receiver	R&S	ESR	101421	Oct. 25, 2025	Oct. 24, 2026
3	LISN	R&S	ENV216	102417	Oct. 25, 2025	Oct. 24, 2026
4	843 Cable 1#	ChengYu	CE Cable	001	Oct. 25, 2025	Oct. 24, 2026

Other

Item	Name	Manufacturer	Model	Software version
1	EMC Conduction Test System	FALA	EZ_EMCC	EMC-CON 3A1.1
2	EMC radiation test system	FALA	EZ_EMCC	FA-03A2
3	RF test system	MAIWEI	MTS8310	2.0.0.0
4	RF communication test system	MAIWEI	MTS8200	2.0.0.0



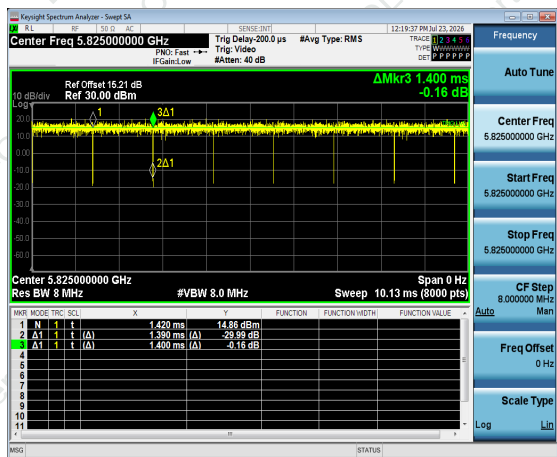
3. General Information

3.1 Test Environment and Mode

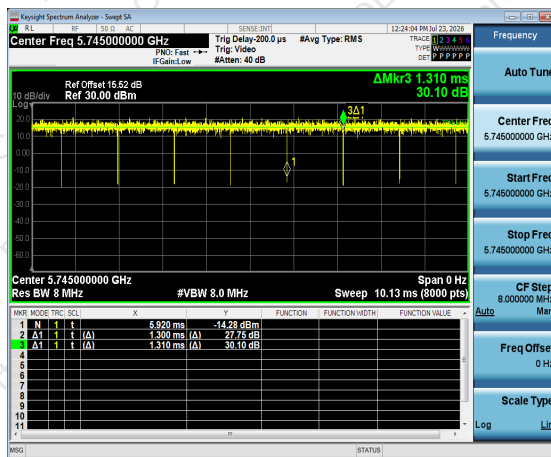
Operating Environment:													
Temperature:	25.0 °C												
Humidity:	56 % RH												
Atmospheric Pressure:	1010 mbar												
Test Mode:													
Engineering Mode:	Keep the EUT in continuous transmitting by select channel and modulations												
We have verified the construction 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:													
Per-scan all kind of data rate in lowest channel, and found the follow list which it was worst case.													
Mode	Data Rate												
802.11a	6 Mbps												
802.11n(HT20)	MCS0												
802.11n(HT40)	MCS0												
802.11ac(HT20)/ac(HT40)	MCS0												
Final Test Mode:													
Operation Mode:	Keep the EUT in continuous transmitting with modulation												
Mode Test Duty Cycle:	<table><tr><th>Mode</th><th>Duty Cycle</th></tr><tr><td>802.11a</td><td>0.9929</td></tr><tr><td>802.11n(HT20)</td><td>0.9924</td></tr><tr><td>802.11n(HT40)</td><td>0.9848</td></tr><tr><td>802.11ac(HT20)</td><td>0.9924</td></tr><tr><td>802.11ac(HT40)</td><td>0.9848</td></tr></table>	Mode	Duty Cycle	802.11a	0.9929	802.11n(HT20)	0.9924	802.11n(HT40)	0.9848	802.11ac(HT20)	0.9924	802.11ac(HT40)	0.9848
Mode	Duty Cycle												
802.11a	0.9929												
802.11n(HT20)	0.9924												
802.11n(HT40)	0.9848												
802.11ac(HT20)	0.9924												
802.11ac(HT40)	0.9848												
Test plots as follows:													



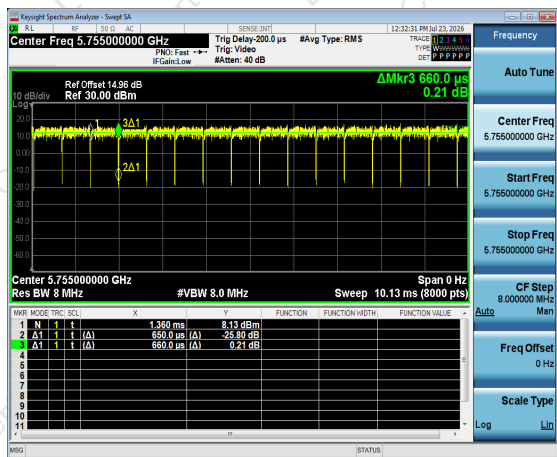
802.11a



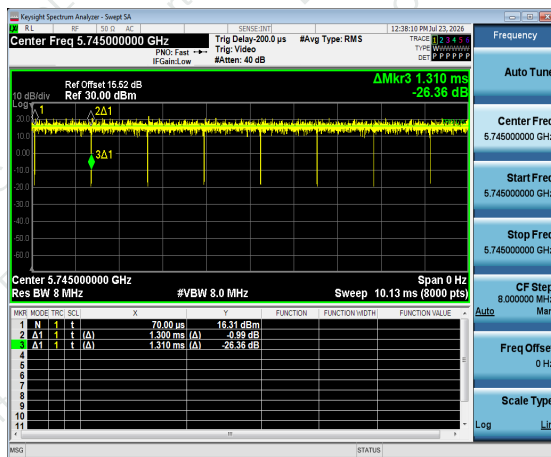
802.11n(HT20)



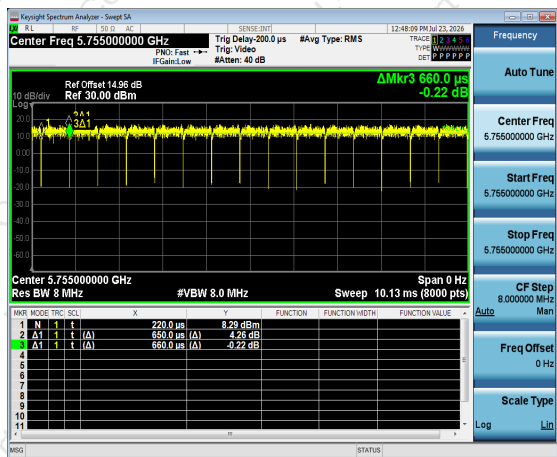
802.11n(HT40)



802.11ac(HT20)



802.11ac(HT40)





4. Test Results and Measurement Data

4.1 AC Conducted Emission

4.1.1. Test Specification

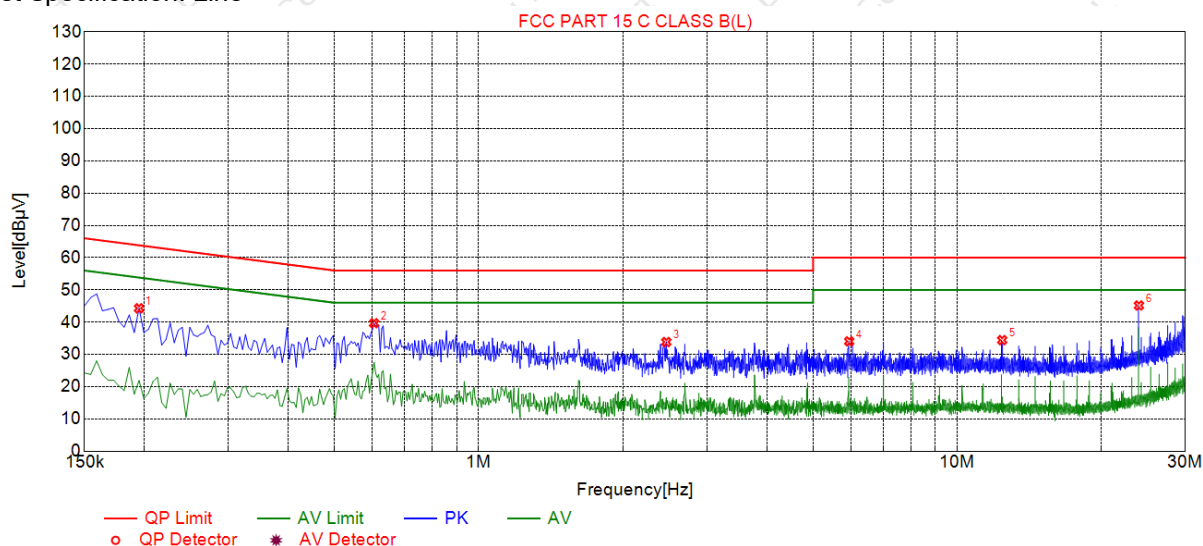
Test Requirement:	FCC Part15 C Section 15.207														
Test Method:	ANSI C63.10: 2020														
Frequency Range:	150 kHz to 30 MHz														
Receiver Setup:	RBW=9 kHz, VBW=30 kHz, Sweep time=auto														
Limits:	<table><tr><th rowspan="2">Frequency range (MHz)</th><th colspan="2">Limit (dBuV)</th></tr><tr><th>Quasi-peak</th><th>Average</th></tr><tr><td>0.15-0.5</td><td>66 to 56*</td><td>56 to 46*</td></tr><tr><td>0.5-5</td><td>56</td><td>46</td></tr><tr><td>5-30</td><td>60</td><td>50</td></tr></table>	Frequency range (MHz)	Limit (dBuV)		Quasi-peak	Average	0.15-0.5	66 to 56*	56 to 46*	0.5-5	56	46	5-30	60	50
Frequency range (MHz)	Limit (dBuV)														
	Quasi-peak	Average													
0.15-0.5	66 to 56*	56 to 46*													
0.5-5	56	46													
5-30	60	50													
Test Setup:	Reference Plane 40cm 80cm EMI Receiver Filter AC power Test table/Insulation plane Remark: E.U.T: Equipment Under Test LISN: Line Impedance Stabilization Network Test table height=0.8m														
Test Mode:	Transmitting with modulation														
Test Procedure:	1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs). 3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2020 on conducted measurement.														
Test Result:	PASS														



4.1.2. Test Data

All the test modes completed for test. Only the worst result was reported as below:

Test Specification: Line



Suspected List

NO.	Freq. [MHz]	Level [dBμV]	Factor [dB]	Limit [dBμV]	Margin [dB]	Reading [dBμV]	Detector	Type
1	0.1950	44.29	19.76	63.82	19.53	24.53	PK	L
2	0.6045	39.67	19.90	56.00	16.33	19.77	PK	L
3	2.4675	33.84	20.10	56.00	22.16	13.74	PK	L
4	5.9505	34.05	20.27	60.00	25.95	13.78	PK	L
5	12.4260	34.43	21.63	60.00	25.57	12.80	PK	L
6	24.0000	45.17	24.03	60.00	14.83	21.14	PK	L

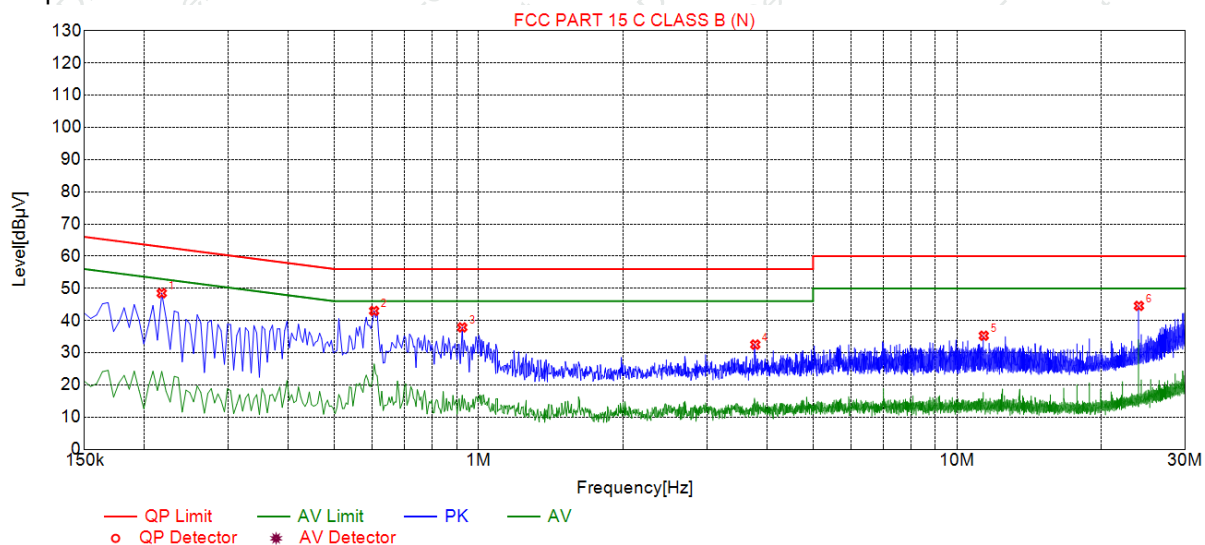
Remark: Margin = Limit – Level

Correction factor = Cable lose + LISN insertion loss

Level=Test receiver reading + correction factor



Test Specification: Neutral



Suspected List

NO.	Freq. [MHz]	Level [dBμV]	Factor [dB]	Limit [dBμV]	Margin [dB]	Reading [dBμV]	Detector	Type
1	0.2175	48.50	19.76	62.91	14.41	28.74	PK	N
2	0.6045	43.00	19.95	56.00	13.00	23.05	PK	N
3	0.9240	37.88	19.96	56.00	18.12	17.92	PK	N
4	3.7860	32.55	20.19	56.00	23.45	12.36	PK	N
5	11.3730	35.30	21.28	60.00	24.70	14.02	PK	N
6	24.0000	44.57	23.95	60.00	15.43	20.62	PK	N

Remark: Margin = Limit – Level

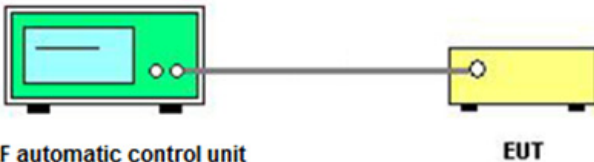
Correction factor = Cable lose + LISN insertion loss

Level=Test receiver reading + correction factor



4.2 Maximum Conducted Output Power

4.2.1. Test Specification

Test Requirement:	FCC Part15 E Section 15.407(a)	
Test Method:	KDB789033 D02 General UNII Test Procedures New Rules v02.r01 Section E	
Limit:	Frequency Band (MHz)	Limit
	5725-5850	1 W
Test Setup:	 RF automatic control unit EUT	
Test Mode:	Transmitting mode with modulation	
Test Procedure:	1. The testing follows the Measurement Procedure of KDB789033 D02 General UNII Test Procedures New Rules v02r01 Section E, 3, a. 2. The RF output of EUT was connected to the power meter by RF cable. The path loss was compensated to the results for each measurement. 3. Set to the maximum power setting and enable the EUT transmit continuously. 4. Measure the conducted output power and record the results in the test report.	
Test Result:	PASS	
Remark:	Conducted output power= measurement power +10log(1/x) X is duty cycle. During the test, the "duty cycle factor" has already been added to the testing software.	

**Test Data**

Configuration Band IV (5745 - 5825 MHz)				
Mode	Test Channel	Maximum Conducted Output Power (dBm)	FCC Limit (dBm)	Result
802.11a	CH149	12.47	30	PASS
802.11a	CH157	12.15	30	PASS
802.11a	CH165	11.66	30	PASS
802.11n(HT20)	CH149	12.49	30	PASS
802.11n(HT20)	CH157	11.73	30	PASS
802.11n(HT20)	CH165	11.43	30	PASS
802.11n(HT40)	CH151	12.97	30	PASS
802.11n(HT40)	CH159	13.19	30	PASS
802.11ac(HT20)	CH149	12.41	30	PASS
802.11ac(HT20)	CH157	11.77	30	PASS
802.11ac(HT20)	CH165	11.44	30	PASS
802.11ac(HT40)	CH151	13.23	30	PASS
802.11ac(HT40)	CH159	13.01	30	PASS
Note: 1.The test results including the cable lose.				



4.3 6dB Emission Bandwidth

4.3.1. Test Specification

Test Requirement:	FCC CFR47 Part 15 Section 15.407(e)
Test Method:	KDB789033 D02 General UNII Test Procedures New Rules v01r04 Section C
Limit:	≥500kHz
Test Setup:	 Spectrum Analyzer EUT
Test Mode:	Transmitting mode with modulation
Test Procedure:	1. KDB789033 D02 General UNII Test Procedures New Rules v02r01 Section C. 2. Set to the maximum power setting and enable the EUT transmit continuously. 3. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. Set the Video bandwidth (VBW) = 300 kHz. In order to make an accurate measurement. The 6dB bandwidth must be at least 500 kHz. 4. Measure and record the results in the test report.
Test Result:	PASS



4.3.2. Test Data

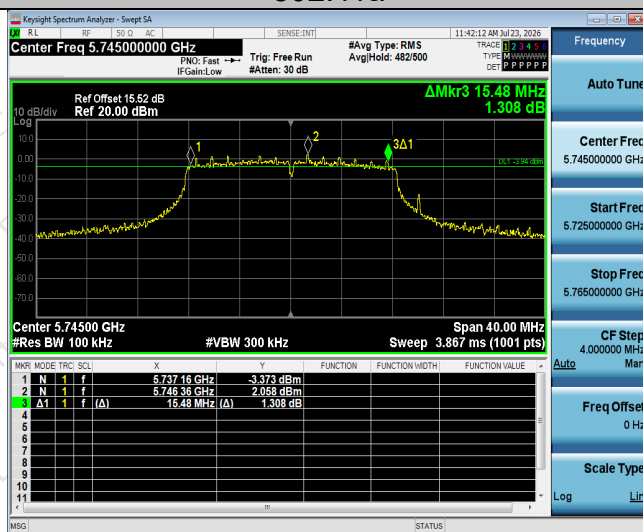
Band IV (5745 - 5825 MHz)					
Mode	Test Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)	Result
802.11a	CH149	5745	15.48	0.5	PASS
802.11a	CH157	5785	16.00	0.5	PASS
802.11a	CH165	5825	15.48	0.5	PASS
802.11n(HT20)	CH149	5745	15.92	0.5	PASS
802.11n(HT20)	CH157	5785	15.96	0.5	PASS
802.11n(HT20)	CH165	5825	16.24	0.5	PASS
802.11n(HT40)	CH151	5755	35.12	0.5	PASS
802.11n(HT40)	CH159	5795	35.12	0.5	PASS
802.11ac(HT20)	CH149	5745	16.28	0.5	PASS
802.11ac(HT20)	CH157	5785	16.28	0.5	PASS
802.11ac(HT20)	CH165	5825	16.24	0.5	PASS
802.11ac(HT40)	CH151	5755	35.20	0.5	PASS
802.11ac(HT40)	CH159	5795	35.12	0.5	PASS

Test plots as follows:

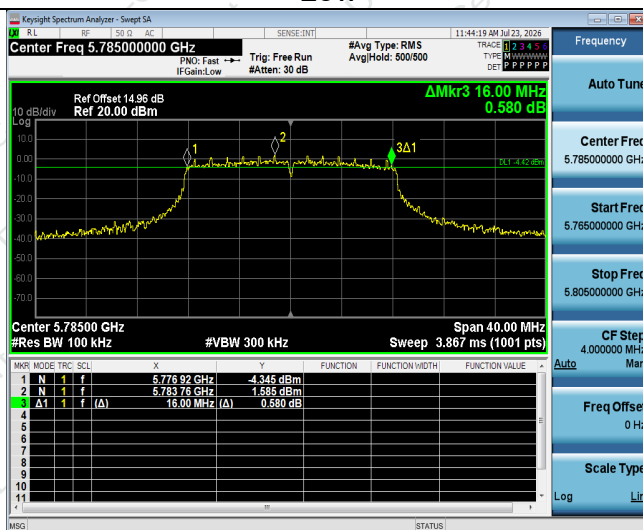


Band IV (5725 – 5850MHz)

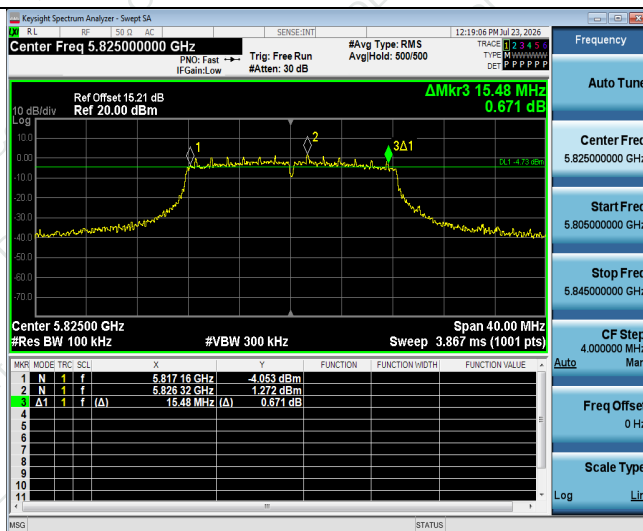
802.11a



Low



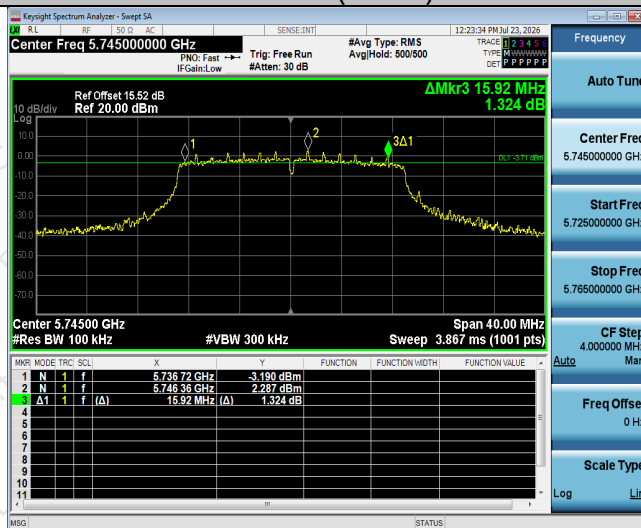
Mid



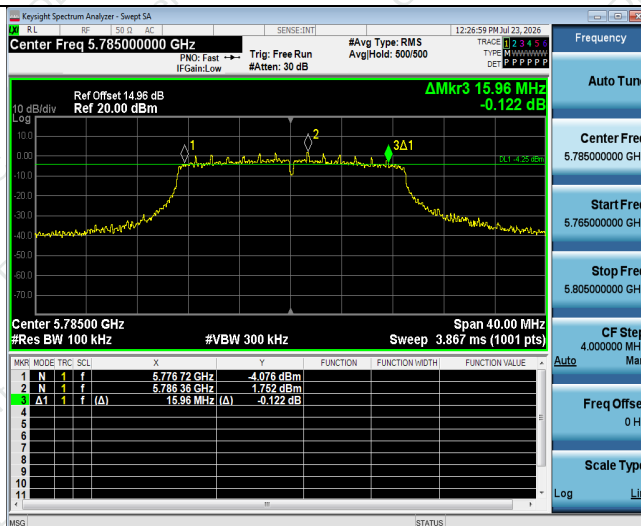
High



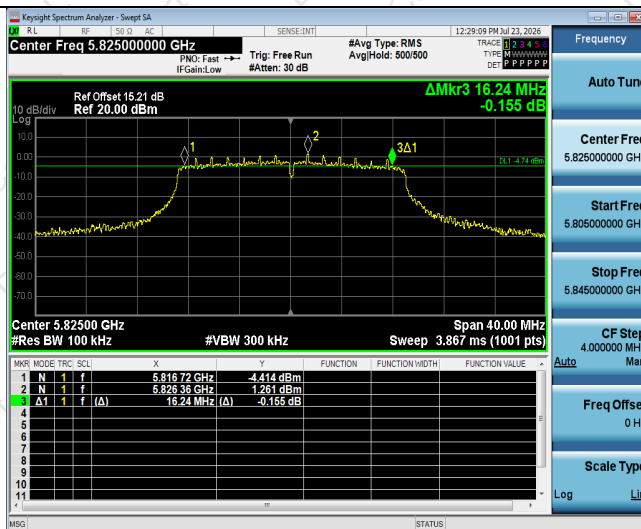
802.11n(HT20)



Low



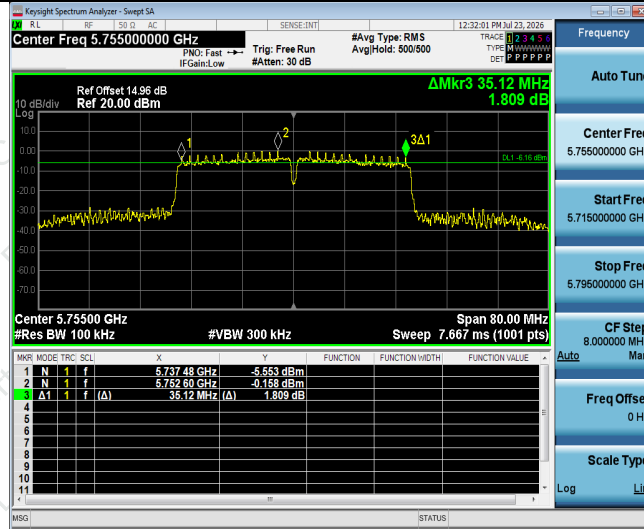
Mid



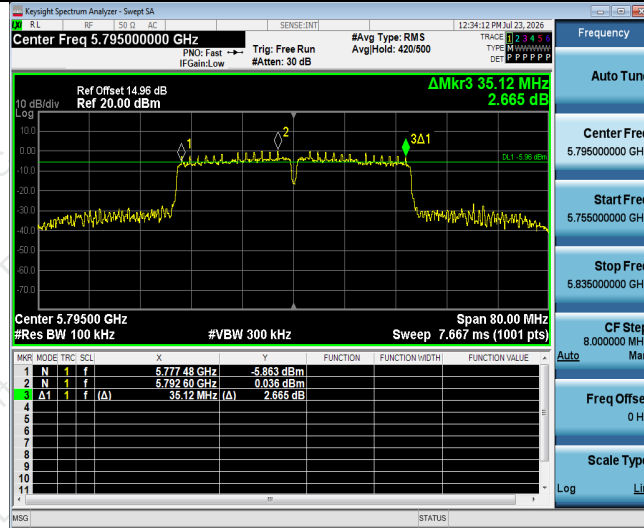
High



802.11n(HT40)



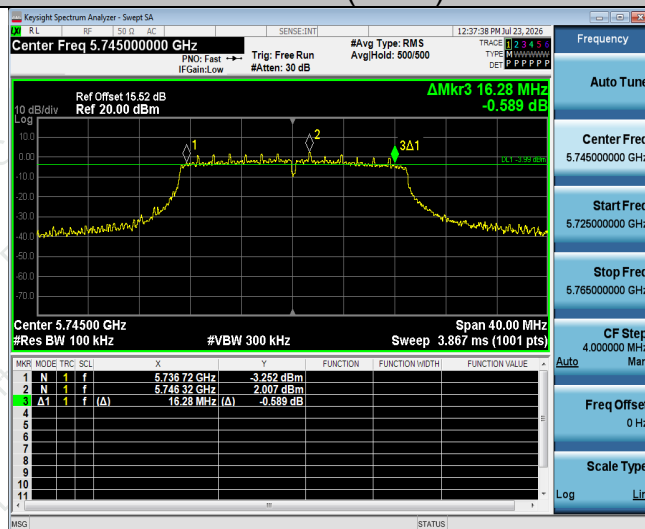
Low



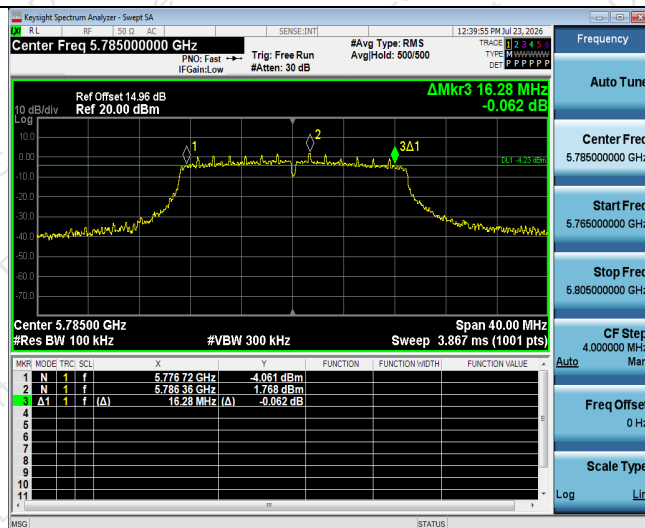
High



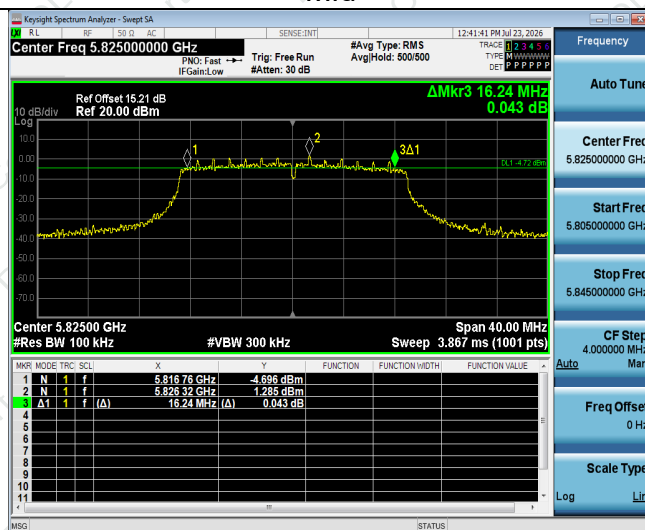
802.11ac(HT20)



Low



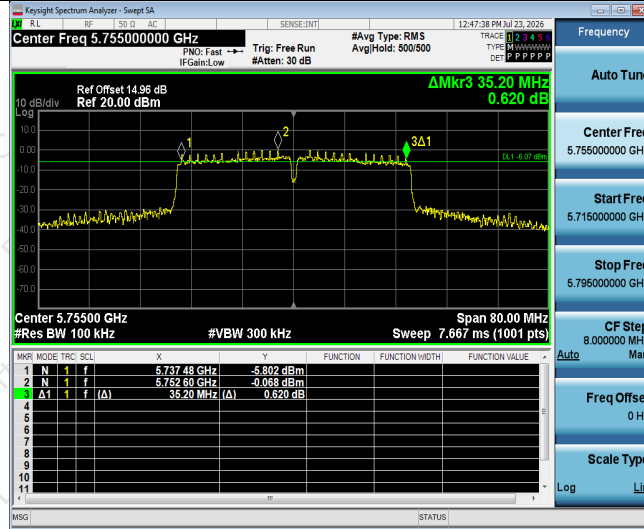
Mid



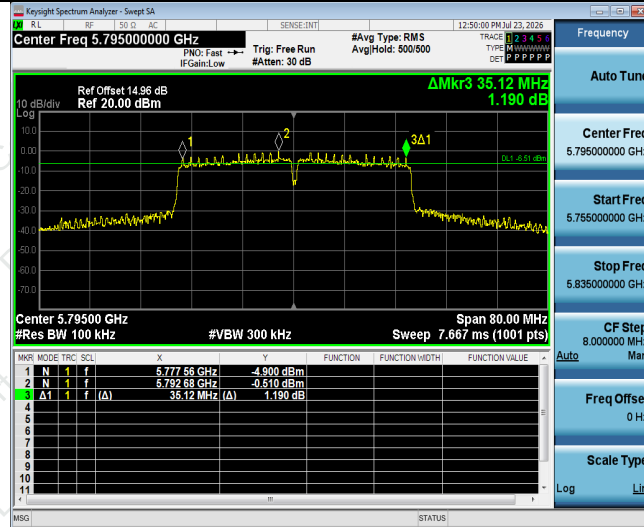
High



802.11ac(HT40)



Low



High



4.4 26dB Bandwidth and 99% Occupied Bandwidth

4.4.1. Test Specification

Test Requirement:	47 CFR Part 15C Section 15.407 (a)
Test Method:	KDB789033 D02 General UNII Test Procedures New Rules v02r01 Section C
Limit:	No restriction limits
Test Setup:	 Spectrum Analyzer EUT
Test Mode:	Transmitting mode with modulation
Test Procedure:	1. KDB789033 D02 General UNII Test Procedures New Rules v02r01 Section C. 2. Set to the maximum power setting and enable the EUT transmit continuously. 3. Make the measurement with the spectrum analyzer's resolution bandwidth $RBW = 1\% \text{ EBW}$, $VBW \geq 3RBW$, In order to make an accurate measurement. 4. Measure and record the results in the test report.
Test Result:	N/A

4.4.2. Test Result

N/A



4.5 Power Spectral Density

4.5.1. Test Specification

Test Requirement:	FCC Part15 E Section 15.407 (a)
Test Method:	KDB789033 D02 General UNII Test Procedures New Rules v02r01 Section F
Limit:	$\leq 30.00\text{dBm}/500\text{KHz}$ for Band IV 5725MHz-5850MHz
Test Setup:	 Spectrum Analyzer EUT
Test Mode:	Transmitting mode with modulation
Test Procedure:	1. Set the spectrum analyzer or EMI receiver span to view the entire emission bandwidth. 2. Set RBW = 510 kHz/1 MHz, VBW $\geq 3 \times$ RBW, Sweep time = Auto, Detector = RMS. 3. Allow the sweeps to continue until the trace stabilizes. 4. Use the peak marker function to determine the maximum amplitude level. 5. The E.I.R.P spectral density used radiated test method. At a test site that has been validated using the procedures of ANSI C63.4 or the latest CISPR 16-1-4 for measurements above 1 GHz, so as to simulate a near free-space environment.
Test Result:	PASS
Remark:	During the test, the "duty cycle factor" has already been added to the testing software.



4.5.2. Test Data

Configuration Band IV (5745 - 5825 MHz)						
Mode	Test channel	Level [dBm/510kHz]	10log (500/510)	Power Spectral Density	Limit (dBm/500kHz)	Result
802.11a	CH149	6.06	-0.086	5.974	30	PASS
802.11a	CH157	5.32	-0.086	5.234	30	PASS
802.11a	CH165	4.37	-0.086	4.284	30	PASS
802.11n(HT20)	CH149	4.93	-0.086	4.844	30	PASS
802.11n(HT20)	CH157	4.34	-0.086	4.254	30	PASS
802.11n(HT20)	CH165	3.98	-0.086	3.894	30	PASS
802.11n(HT40)	CH151	2.47	-0.086	2.384	30	PASS
802.11n(HT40)	CH159	2.39	-0.086	2.304	30	PASS
802.11ac(HT20)	CH149	4.93	-0.086	4.844	30	PASS
802.11ac(HT20)	CH157	3.92	-0.086	3.834	30	PASS
802.11ac(HT20)	CH165	4.22	-0.086	4.134	30	PASS
802.11ac(HT40)	CH151	2.36	-0.086	2.274	30	PASS
802.11ac(HT40)	CH159	2.31	-0.086	2.224	30	PASS

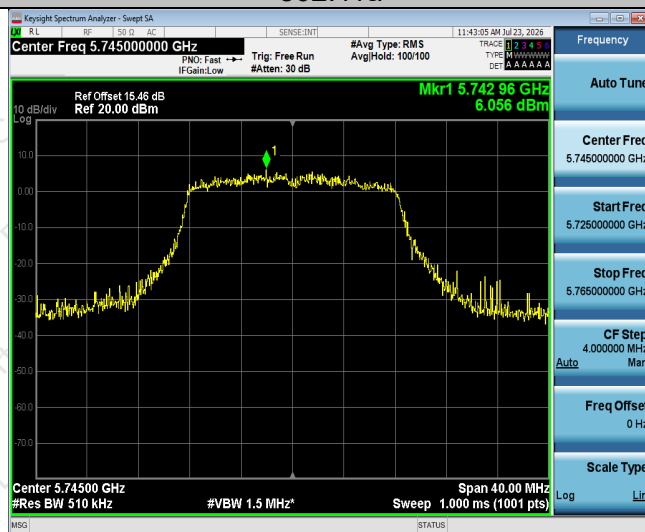
Note: Power Spectral Density= Level [dBm/510kHz]+(10log(Limit RBW/Test RBW))

Test plots as follows:

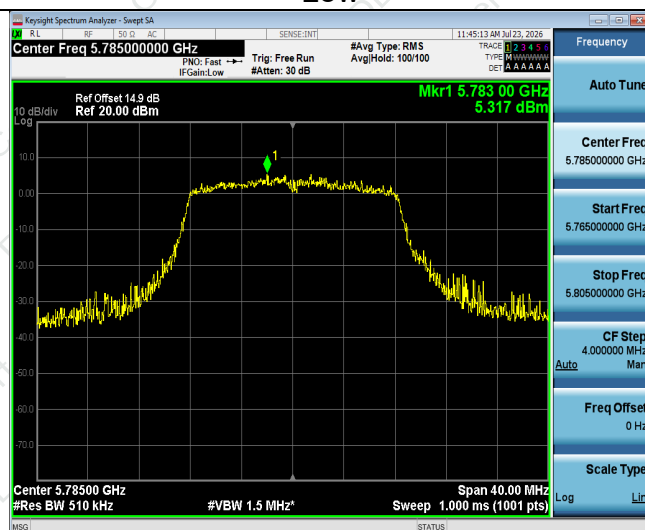


Band IV (5725-5850MHz)

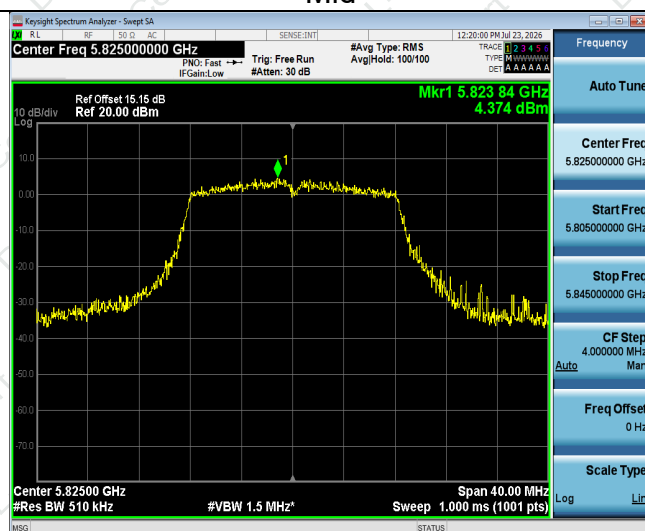
802.11a



Low



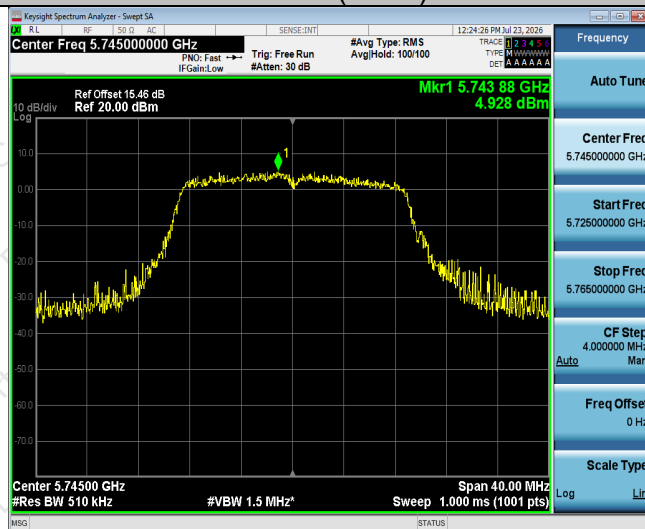
Mid



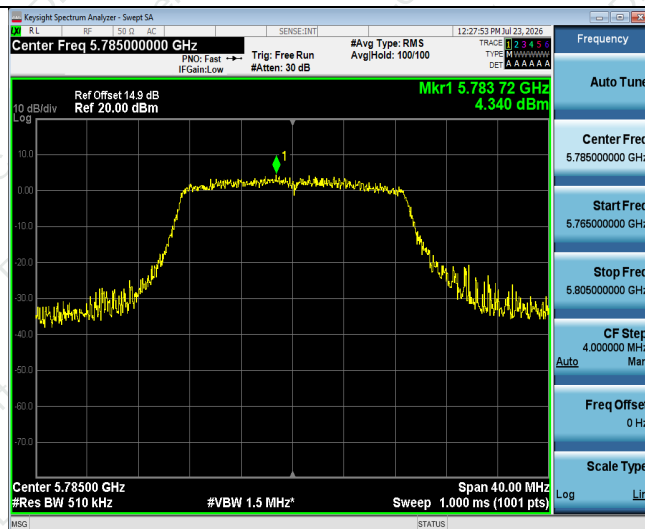
High



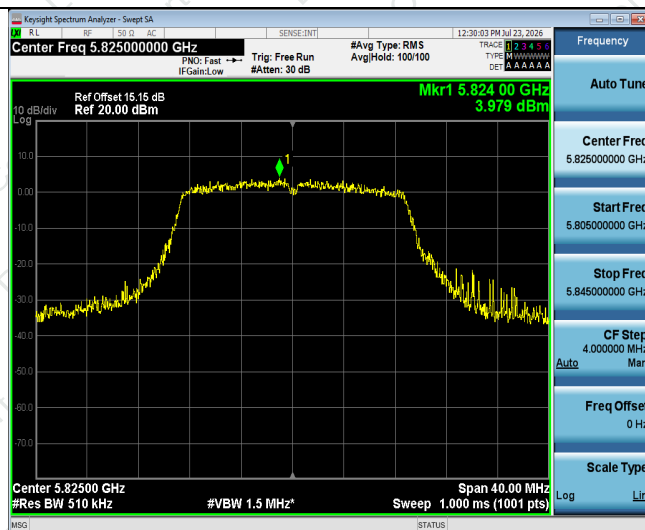
802.11n(HT20)



Low



Mid



High



802.11n(HT40)



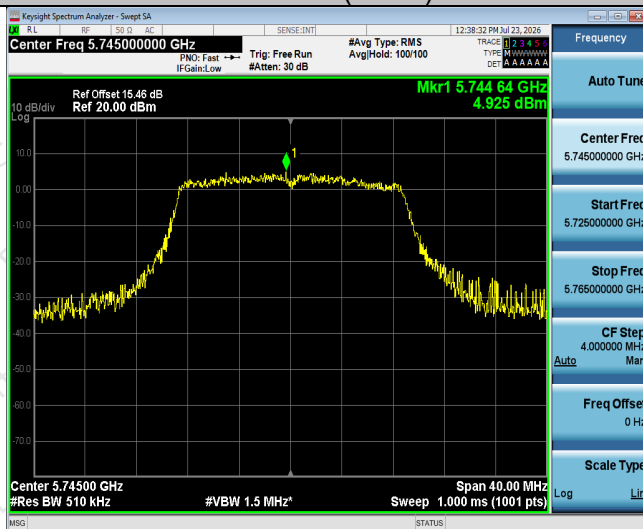
Low



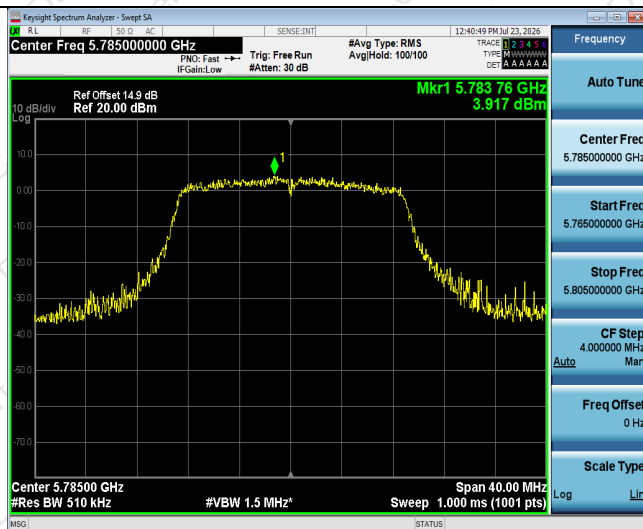
High



802.11ac(HT20)



Low



Mid



High



802.11ac(HT40)



Low



High



4.6 Spurious Emission

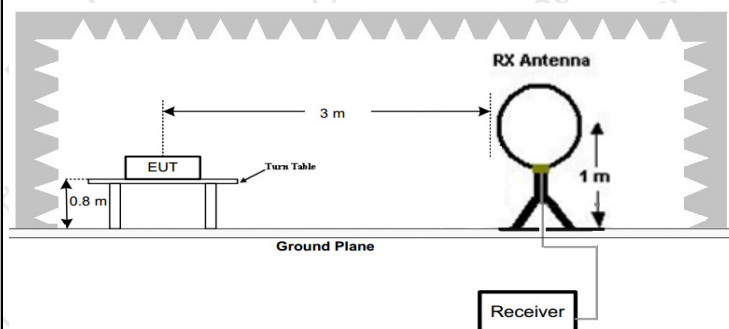
4.6.1. Test Specification

Test Requirement:	FCC CFR47 Part 15 Section 15.407 & 15.209 & 15.205				
Test Method:	KDB 789033 D02 v02r01				
Frequency Range:	9kHz to 40GHz				
Measurement Distance:	3 m				
Antenna Polarization:	Horizontal & Vertical				
Operation mode:	Transmitting mode with modulation				
Receiver Setup:	Frequency	Detector	RBW	VBW	Remark
	9kHz- 150kHz	Quasi-peak	200Hz	1kHz	Quasi-peak Value
	150kHz- 30MHz	Quasi-peak	9kHz	30kHz	Quasi-peak Value
	30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak Value
	Above 1GHz	Peak	1MHz	3MHz	Peak Value
		Peak	1MHz	10Hz	Average Value
Limit:	(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) For transmitters operating in the 5.25-5.35 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. (3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz. (4) For transmitters operating in the 5.725-5.85 GHz band: (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. The limit of frequency below 1GHz and which fall in restricted bands should comply 15.209.				

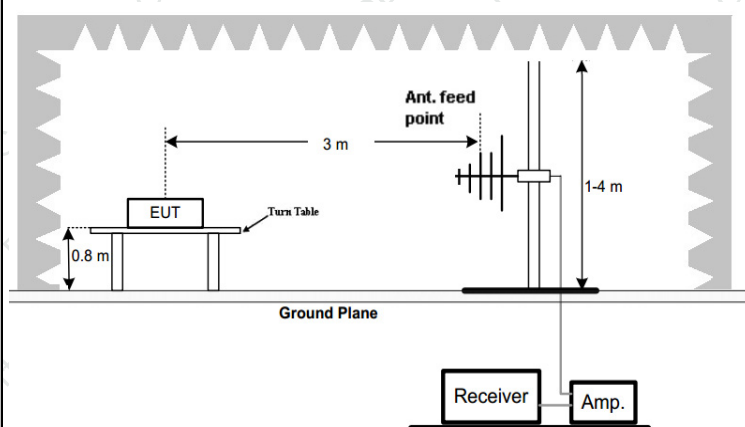


Test Setup:

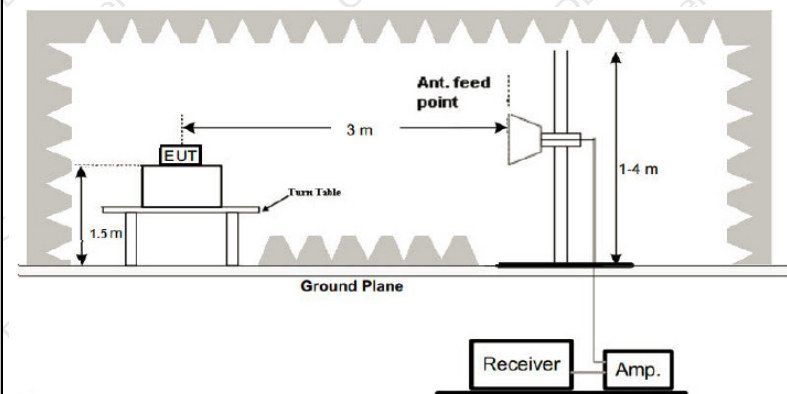
For radiated emissions below 30MHz



30MHz to 1GHz



Above 1GHz



**Test Procedure:**

1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
3. 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.
4. 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 rotatable was turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

Test Results:

PASS

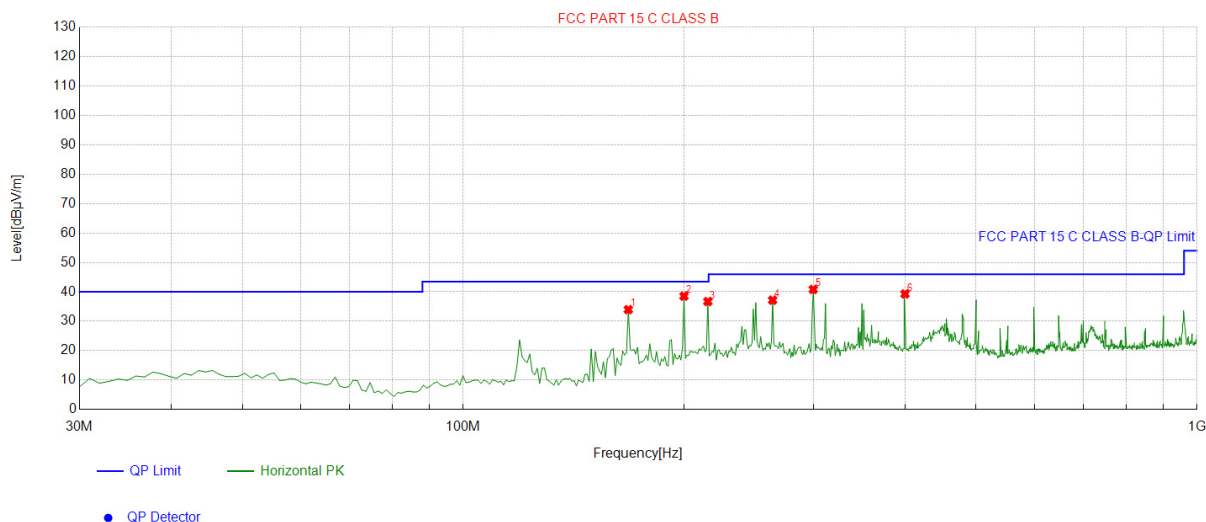


4.6.2. Test Data

All modes have been tested, only the worst mode of 802.11a Low channel TX is reflected.

Below 1GHz Test Results

Antenna polarity: Horizontal

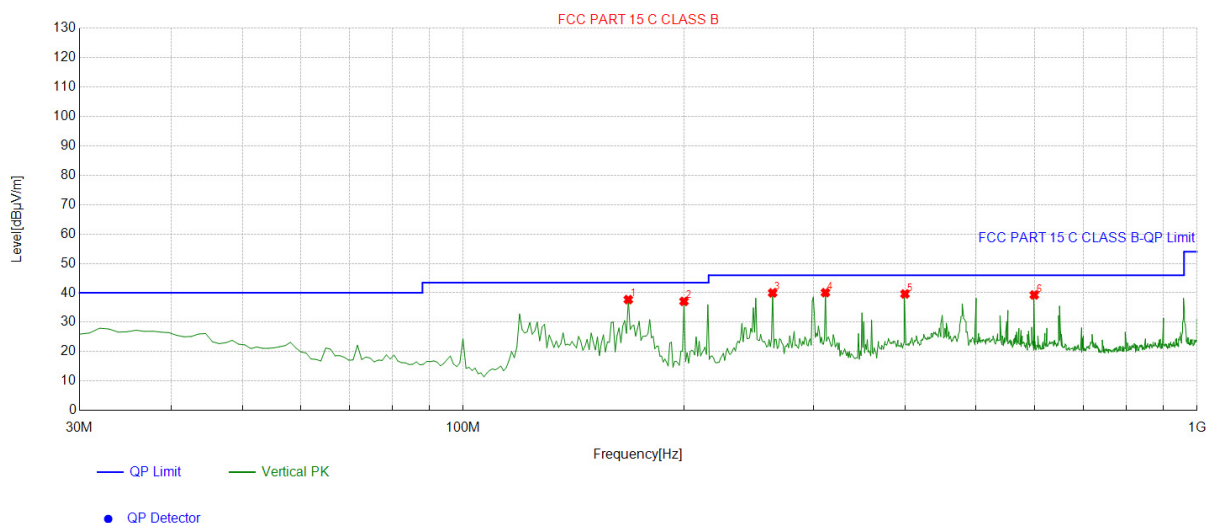


Suspected List									
NO.	Freq. [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	167.878	-17.20	51.17	33.97	43.50	9.53	100	154	Horizontal
2	199.920	-14.52	53.07	38.55	43.50	4.95	100	255	Horizontal
3	215.455	-14.51	51.22	36.71	43.50	6.79	100	195	Horizontal
4	264.004	-12.71	49.89	37.18	46.00	8.82	100	336	Horizontal
5	299.930	-12.01	52.83	40.82	46.00	5.18	100	333	Horizontal
6	399.940	-9.55	48.83	39.28	46.00	6.72	100	326	Horizontal

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level



Antenna polarity: Vertical



Suspected List

NO.	Freq. [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	167.878	-17.20	54.91	37.71	43.50	5.79	100	150	Vertical
2	199.920	-14.52	51.62	37.10	43.50	6.40	100	23	Vertical
3	264.004	-12.71	52.70	39.99	46.00	6.01	100	45	Vertical
4	311.582	-11.80	51.89	40.09	46.00	5.91	100	185	Vertical
5	399.940	-9.55	49.18	39.63	46.00	6.37	100	235	Vertical
6	599.960	-5.63	44.93	39.30	46.00	6.70	100	220	Vertical

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level

Harmonics and Spurious Emissions

Frequency Range (9 kHz-30MHz)

Frequency (MHz)	Level@3m (dBμV/m)	Limit@3m (dBμV/m)
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--	--	--
--	--	--
--	--	--

Note: 1. Emission Level=Reading+ Cable loss-Antenna factor-Amp factor

2. The emission levels are 20 dB below the limit value, which are not reported. It is deemed to comply with the requirement

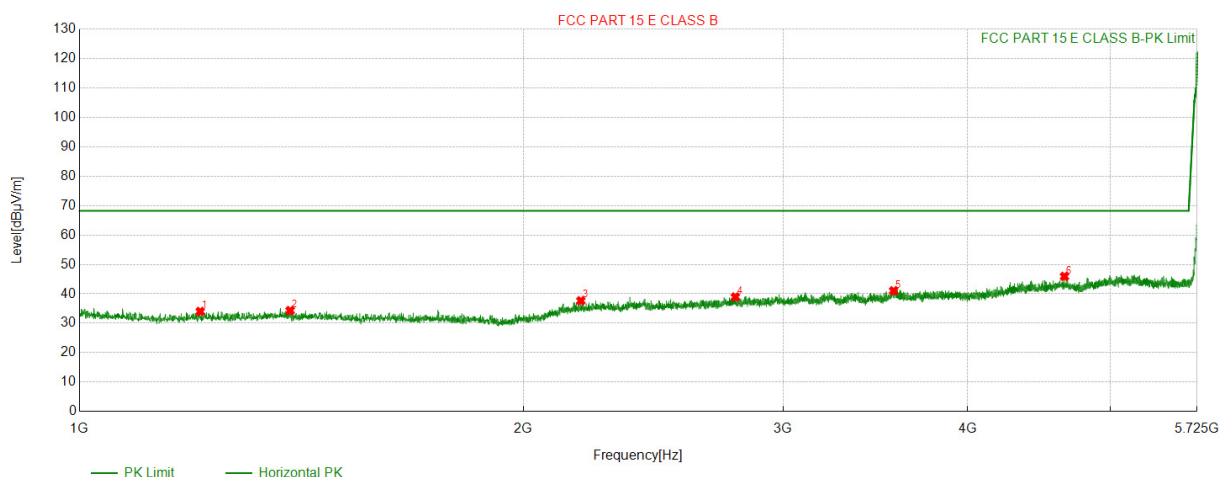


Above 1GHz Test Results

All modes have been tested, only the worst mode of 802.11a Low channel TX is reflected.

For 1GHz to 5.725GHz

Antenna polarity: Horizontal

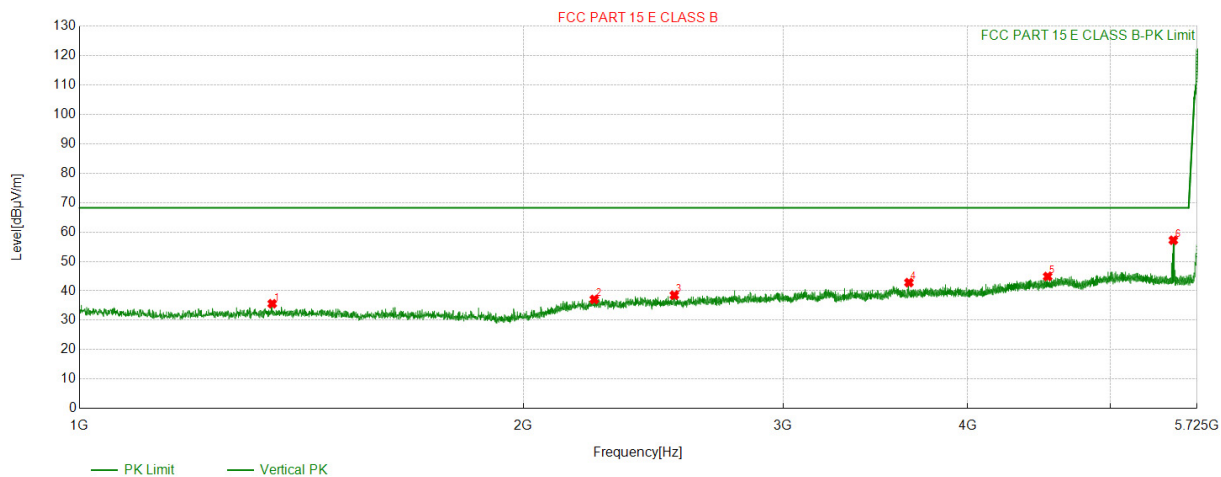


Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	PK Level [dBμV/m]	Factor [dB]	PK Limit [dBμV/m]	PK Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1207.448	52.85	34.02	-18.83	68.20	34.18	150	130	Horizontal
2	1389.379	52.37	34.31	-18.06	68.20	33.89	150	90	Horizontal
3	2187.511	52.46	37.65	-14.81	68.20	30.55	150	220	Horizontal
4	2784.338	52.59	38.93	-13.66	68.20	29.27	150	140	Horizontal
5	3564.514	52.18	41.04	-11.14	68.20	27.16	150	30	Horizontal
6	4654.208	52.50	45.92	-6.58	68.20	22.28	150	210	Horizontal

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level



Antenna polarity: Vertical



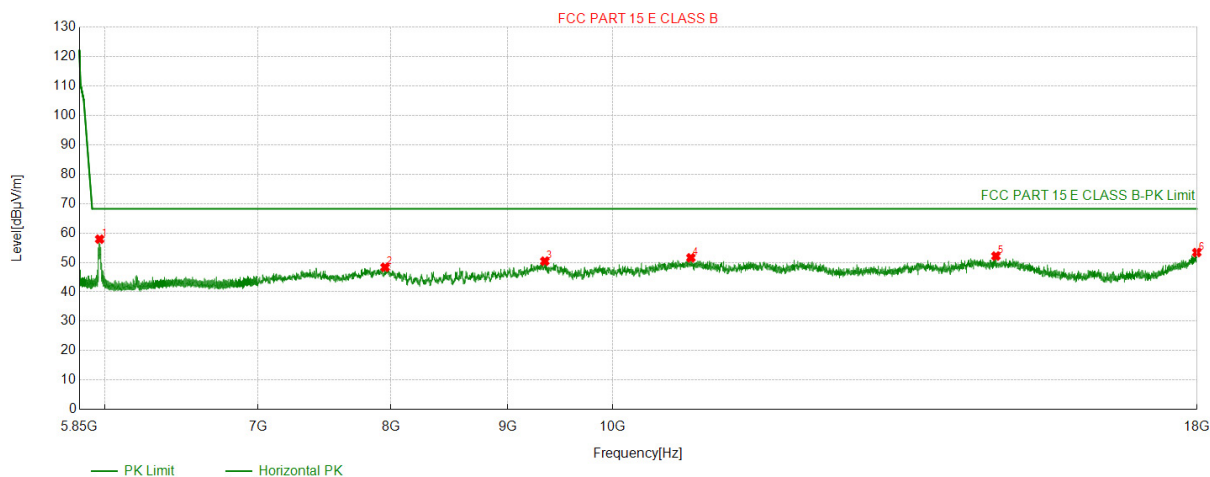
Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	PK Level [dBμV/m]	Factor [dB]	PK Limit [dBμV/m]	PK Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1351.103	53.85	35.63	-18.22	68.20	32.57	150	340	Vertical
2	2233.821	51.83	37.08	-14.75	68.20	31.12	150	250	Vertical
3	2531.053	53.18	38.52	-14.66	68.20	29.68	150	20	Vertical
4	3650.990	53.45	42.81	-10.64	68.20	25.39	150	110	Vertical
5	4533.708	52.19	44.88	-7.31	68.20	23.32	150	230	Vertical
6	5516.607	63.13	57.20	-5.93	68.20	11.00	150	170	Vertical

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level



For 5.85GHz to 18GHz

Antenna polarity: Horizontal

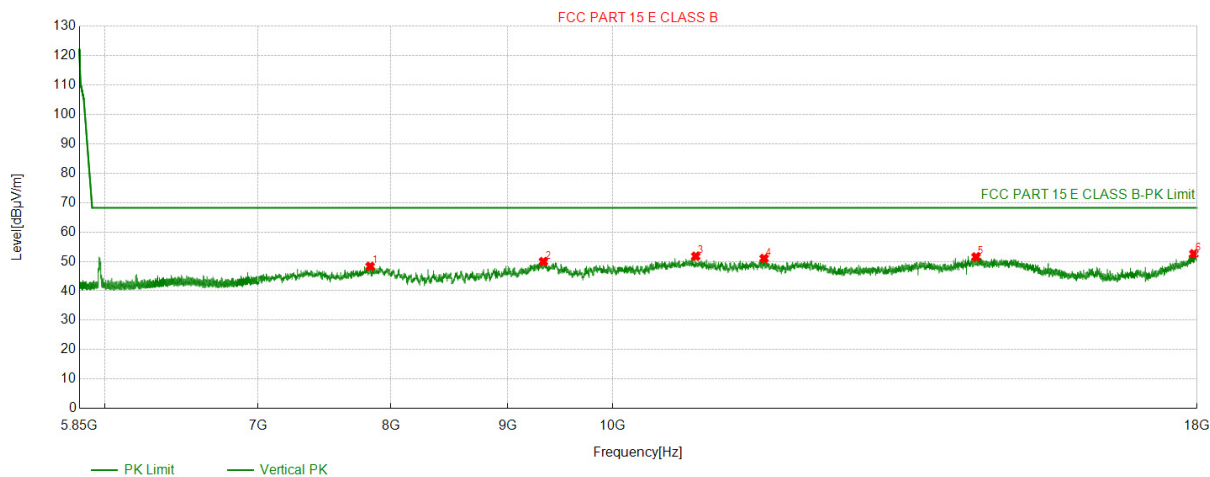


Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	PK Level [dBμV/m]	Factor [dB]	PK Limit [dBμV/m]	PK Margin [dB]	Height [cm]	Angle [°]	Polarity
1	5969.842	66.05	57.91	-8.14	68.20	10.29	150	358	Horizontal
2	7954.895	50.70	48.35	-2.35	68.20	19.85	150	360	Horizontal
3	9341.034	51.29	50.43	-0.86	68.20	17.77	150	333	Horizontal
4	10819.582	50.64	51.58	0.94	68.20	16.62	150	30	Horizontal
5	14702.970	48.41	52.17	3.76	68.20	16.03	150	30	Horizontal
6	17994.499	46.04	53.37	7.33	68.20	14.83	150	188	Horizontal

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level



Antenna polarity: Vertical



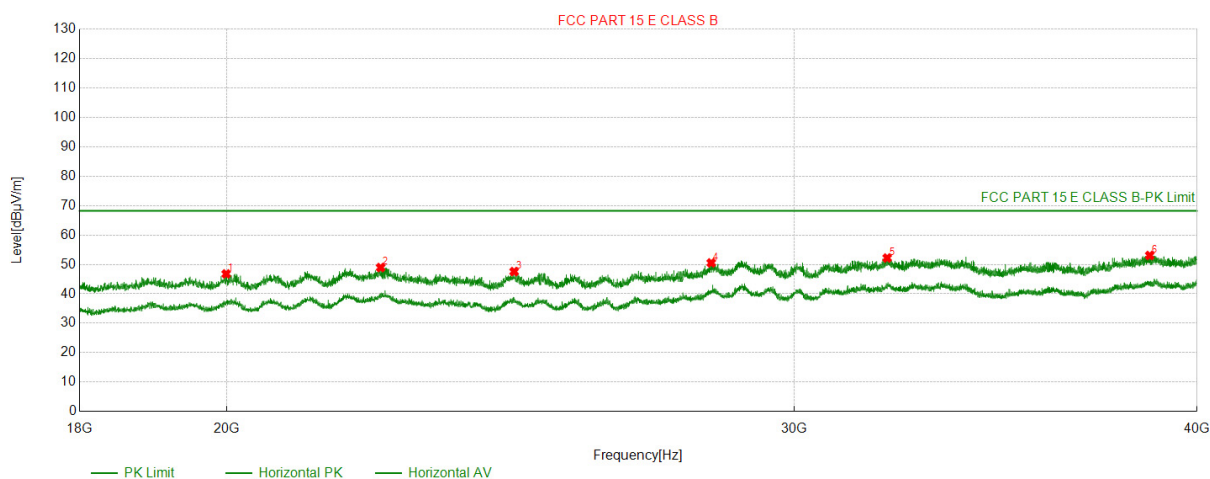
Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	PK Level [dBμV/m]	Factor [dB]	PK Limit [dBμV/m]	PK Margin [dB]	Height [cm]	Angle [°]	Polarity
1	7836.084	51.06	48.32	-2.74	68.20	19.88	150	125	Vertical
2	9327.833	50.81	49.94	-0.87	68.20	18.26	150	233	Vertical
3	10872.387	50.77	51.75	0.98	68.20	16.45	150	7	Vertical
4	11645.765	48.39	51.01	2.62	68.20	17.19	150	111	Vertical
5	14412.541	47.98	51.52	3.54	68.20	16.68	150	53	Vertical
6	17941.694	45.91	52.59	6.68	68.20	15.61	150	4	Vertical

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level



For 18GHz to 40GHz

Antenna polarity: Horizontal



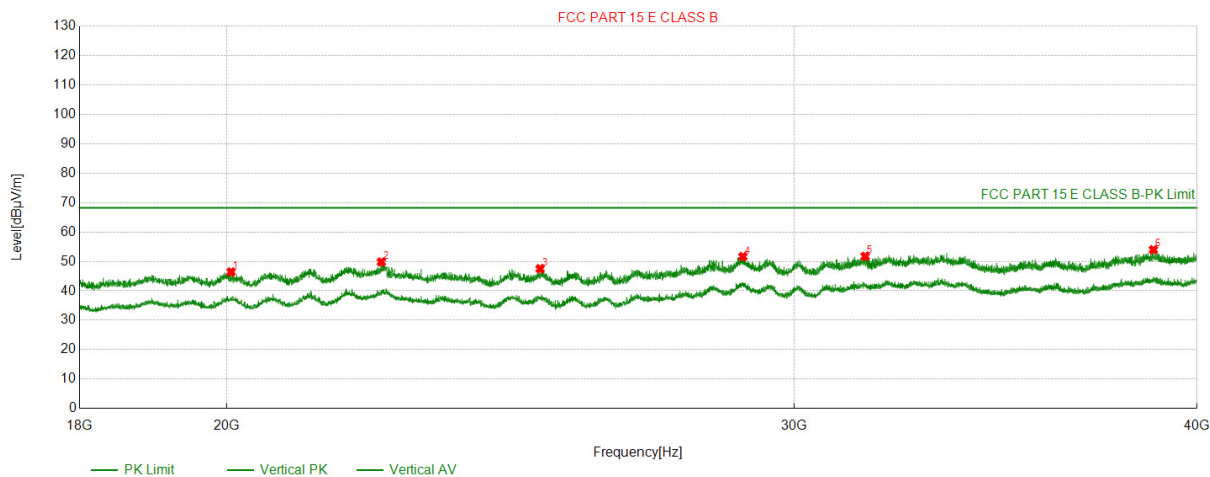
Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	PK Level [dBμV/m]	Factor [dB]	PK Limit [dBμV/m]	PK Margin [dB]	Height [cm]	Angle [°]	Polarity
1	19988.999	40.57	46.78	6.21	68.20	21.42	150	60	Horizontal
2	22321.232	43.23	48.94	5.71	68.20	19.26	150	20	Horizontal
3	24554.455	41.77	47.57	5.80	68.20	20.63	150	100	Horizontal
4	28268.427	41.88	50.52	8.64	68.20	17.68	150	360	Horizontal
5	32055.006	42.39	52.20	9.81	68.20	16.00	150	230	Horizontal
6	38668.867	42.21	53.05	10.84	68.20	15.15	150	270	Horizontal

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level



Antenna polarity: Vertical



Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	PK Level [dBμV/m]	Factor [dB]	PK Limit [dBμV/m]	PK Margin [dB]	Height [cm]	Angle [°]	Polarity
1	20059.406	40.26	46.43	6.17	68.20	21.77	150	100	Vertical
2	22332.233	44.10	49.81	5.71	68.20	18.39	150	80	Vertical
3	25014.301	41.09	47.50	6.41	68.20	20.70	150	160	Vertical
4	28915.292	42.66	51.65	8.99	68.20	16.55	150	270	Vertical
5	31555.556	41.79	51.73	9.94	68.20	16.47	150	270	Vertical
6	38770.077	42.97	53.98	11.01	68.20	14.22	150	220	Vertical

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level