FCC Test Report

Test Report
On Behalf of
Shenzhen Haimeilan Technology Co., LTD.
For
Smart Phone
Model No.: S25 Ultra, F5 Pro, M13, F50 Pro, M5S Pro, F5, Note12 Pro, X40 Pro, X40 Edge, Mate 14, Mate 16, Mate 17, Mate 18, Mate 19, Mate 20, Mate 21, Mate 22, Mate 23, Mate 24, Mate 25, Mate 26, Mate 27, Mate28, D14, D16, D17, D18, D19, D20, D21, D22, D23, D24, D25, D26, D27, D28, D29, R12 pro, P5 pro, E50 Ultra, I16 pro max, P6 pro, Sp20 Pro, OP12 pro, T3 Pro, P8 Pro

FCC ID: 2BDI3-K

Prepared For:	**Shenzhen Haimeilan Technology Co., LTD.** **9V777, East 9th Floor, Building 2, SEG Science Park, Huaqiang North Street, Futian District, Shenzhen, 518000 China**
Prepared By:	**Shenzhen HUAK Testing Technology Co., Ltd.** **1-2/F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China**
Date of Test:	**Feb. 08, 2025 ~ Apr. 10, 2025**
Date of Report:	**Apr. 10, 2025**
Report Number:	**HK2502080452-1E**

Test Result Certification

Applicant's Name.....:	Shenzhen Haimeilan Technology Co., LTD.
Address .....:	9V777, East 9th Floor, Building 2, SEG Science Park, Huaqiang North Street, Futian District, Shenzhen, 518000 China
Manufacturer's Name .....:	Shenzhen Haimeilan Technology Co., LTD.
Address .....:	9V777, East 9th Floor, Building 2, SEG Science Park, Huaqiang North Street, Futian District, Shenzhen, 518000 China
Product Description	
Trade Mark .....:	N/A
Product Name.....:	Smart Phone
Model and/or Type Reference :	S25 Ultra, F5 Pro, M13, F50 Pro, M5S Pro, F5, Note12 Pro, X40 Pro, X40 Edge, Mate 14, Mate 16, Mate 17, Mate 18, Mate 19, Mate 20, Mate 21, Mate 22, Mate 23, Mate 24, Mate 25, Mate 26, Mate 27, Mate28, D14, D16, D17, D18, D19, D20, D21, D22, D23, D24, D25, D26, D27, D28, D29, R12 pro, P5 pro, E50 Ultra, I16 pro max, P6 pro, Sp20 Pro, OP12 pro, T3 Pro, P8 Pro
Standards .....:	FCC Rules and Regulations Part 15 Subpart C Section 15.247 ANSI C63.10: 2013

Date of Test.....:	
Date (s) of performance of tests .....:	**Feb. 08, 2025 ~ Apr. 10, 2025**
Date of Issue.....:	**Apr. 10, 2025**
Test Result.....:	**Pass**

Testing Engineer : Len Liao

(Len Liao)

Technical Manager : Sliver Wan

(Sliver Wan)

Authorized Signatory : Jason Zhou

(Jason Zhou)

Table of Contents

** Modified History **

Revision	Description	Issued Data	Remark
Revision 1.0	Initial Test Report Release	Apr. 10, 2025	Jason Zhou

1. Test Result Summary

1.1. Test Procedures and Results

Requirement	CFR 47 Section	Result
Antenna Requirement	§15.203/§15.247(b)(4)	PASS
AC Power Line Conducted Emission	§15.207	PASS
Conducted Peak Output Power	§15.247(b)(3)	PASS
6db Emission Bandwidth	§15.247(a)(2)	PASS
Power Spectral Density	§15.247(e)	PASS
Band Edge	§15.247(d)	PASS
Spurious Emission	§15.205/§15.209	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 HUAK Testing Technology Co., Ltd.
Add.: 1-2/F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

Testing Laboratory Authorization：

A2LA Accreditation Code is 4781.01.
FCC Designation Number is CN1229.
Canada IC CAB identifier is CN0045.
CNAS Registration Number is L9589.

1.3. Measurement Uncertainty

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

No.	Item	MU
1	Conducted Emission	±2.71dB
2	RF power, conducted	±0.37dB
3	Spurious emissions, conducted	±0.11dB
4	All emissions, radiated(<1G)	±3.90dB
5	All emissions, radiated(>1G)	±4.28dB
6	Temperature	±0.1°C
7	Humidity	±1.0%

2. EUT Description

2.1. General Description of EUT

Equipment:	Smart Phone
Model Name:	S25 Ultra
Series Model(s):	F5 Pro, M13, F50 Pro, M5S Pro, F5, Note12 Pro, X40 Pro, X40 Edge, Mate 14, Mate 16, Mate 17, Mate 18, Mate 19, Mate 20, Mate 21, Mate 22, Mate 23, Mate 24, Mate 25, Mate 26, Mate 27, Mate28, D14, D16, D17, D18, D19, D20, D21, D22, D23, D24, D25, D26, D27, D28, D29, R12 pro, P5 pro, E50 Ultra, I16 pro max, P6 pro, Sp20 Pro, OP12 pro, T3 Pro, P8 Pro
Model Difference:	All model's the function, software and electric circuit are the same, only with appearance, product color and model named different. Test sample model: S25 Ultra.
Trade Mark:	N/A
FCC ID:	2BDI3-K
Antenna Type:	FPC Antenna
Antenna Gain:	-0.75dBi
Operation Frequency:	802.11b/g/n (HT20):2412~2462 MHz 802.11n (HT40): 2422~2452MHz
Number of Channels:	802.11b/g/n(HT20): 11CH 802.11n (HT40): 7CH
Modulation Type:	DSSS, OFDM
Power Source:	DC5V from Type-C or DC3.85V from battery
Power Rating:	DC5V from Type-C or DC3.85V from battery
Hardware Version:	V2.0
Software Version:	V2.0
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. Carrier Frequency of Channels

Channel List For 802.11b/802.11g/802.11n (HT20)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2412	04	2427	07	2442	10	2457
02	2417	05	2432	08	2447	11	2462
03	2422	06	2437	09	2452	--	--

Channel List For 802.11n (HT40)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
--	--	04	2427	07	2442	--	--
--	--	05	2432	08	2447	--	--
03	2422	06	2437	09	2452	--	--

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

Operating Mode

The mode is used: Transmitting mode for 802.11b/802.11g/802.11n (HT20)

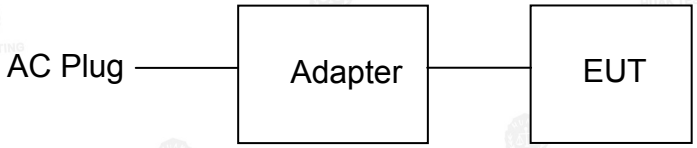
Low Channel: 2412MHz
Middle Channel: 2437MHz
High Channel: 2462MHz

The mode is used: Transmitting mode for 802.11n (HT40)

Low Channel: 2422MHz
Middle Channel: 2437MHz
High Channel: 2452MHz

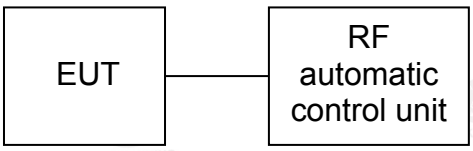
2.4. Description of Test Setup

Operation of EUT during AC Conducted and Radiation below 1GHz testing:



Operation of EUT during Radiation above 1GHz 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 emissions worst-case are shown in Test Results of the following pages. 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	Remark
1	Smart Phone	N/A	S25 Ultra	N/A	EUT
2	USB Cable	N/A	N/A	Length:0.82m	Accessory
3	Adapter	N/A	APD5-2	Input: AC 100-240V, 50/60Hz, 0.5A Output: DC 5V, 2A	Accessory

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.

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
802.11b	1Mbps
802.11g	6Mbps
802.11n(HT20)	6.5Mbps
802.11n(HT40)	13.5Mbps

Final Test Mode:	
Operation mode:	Keep the EUT in continuous transmitting with modulation

1. For WIFI function, the engineering test program was provided and enabled to make EUT continuous transmit/receive.

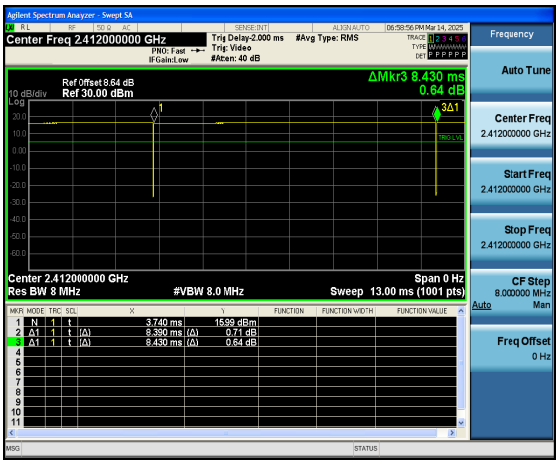
2.According to ANSI C63.10 standards, the test results are both the “worst case” and “worst setup” 1Mbps for 802.11b, 6Mbps for 802.11g, 6.5Mbps for 802.11n(HT20), 13.5Mbps for 802.11n(HT40).

3. Mode Test Duty Cycle

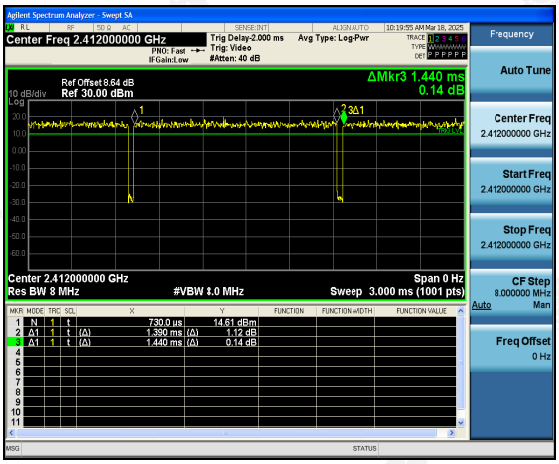
Mode	Duty Cycle
802.11b	0.995
802.11g	0.965
802.11n(HT20)	0.970
802.11n(HT40)	0.929

Test plots as follows:

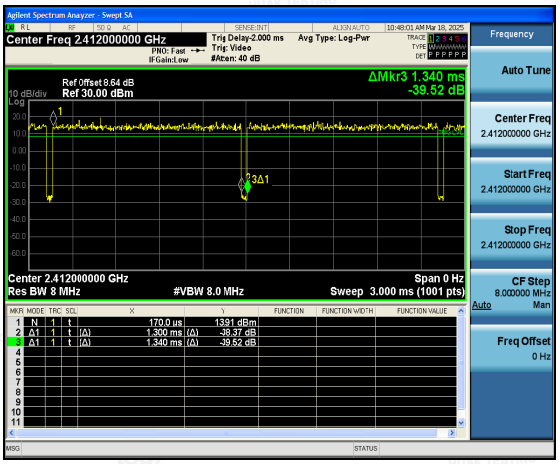
802.11b



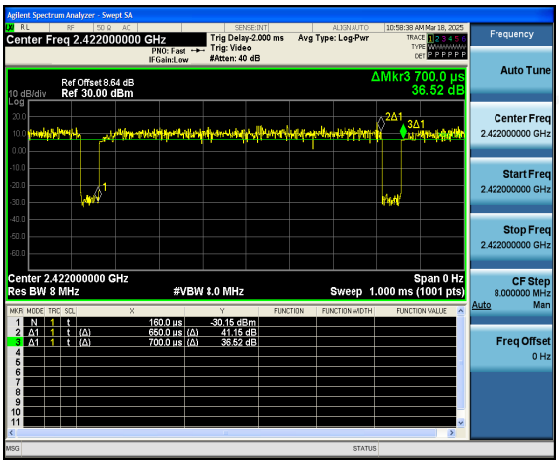
802.11g



802.11n(HT20)



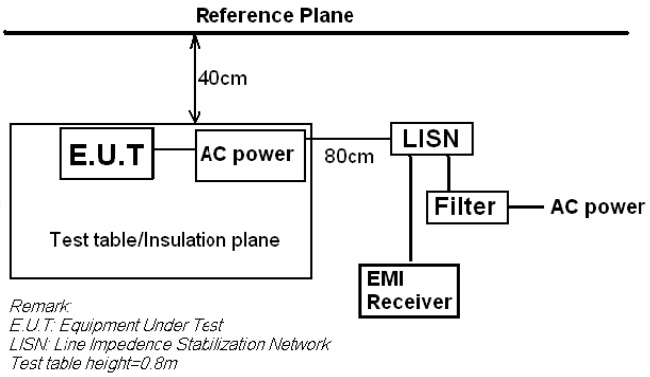
802.11n(HT40)



4. Test Results and Measurement Data

4.1. AC Conducted Emission

Test Specification

Test Requirement:	FCC Part15 C Section 15.207
Test Method:	ANSI C63.10:2013
Frequency Range:	150 kHz to 30 MHz
Receiver setup:	RBW=9 kHz, VBW=30 kHz, Sweep time=auto
Limits:	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:	 *Remark:* *E.U.T: Equipment Under Test* *LISN: Line Impedence Stabilization Network* *Test table height=0.8m*
Test Mode:	transmitting with modulation
Test Procedure:	1. The E.U.T is 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: 2013 on conducted measurement.
Test Result:	PASS

Test Instruments

Conducted Emission Shielding Room Test Site (843)					
Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Date**	**Calibration Due**
Receiver	R&S	ESR	HKE-005	Feb. 20, 2024	Feb. 19, 2025
LISN	R&S	ENV216	HKE-002	Feb. 20, 2024	Feb. 19, 2025
LISN	R&S	ENV216	HKE-059	Feb. 20, 2024	Feb. 19, 2025
Coax cable (9KHz-30MHz)	Times	381806-002	N/A	Feb. 20, 2024	Feb. 19, 2025
EMI Test Software	Tonscend	JS32-CE 2.5.0.6	HKE-081	N/A	N/A
10dB Attenuator	Schwarzbeck	VTSD9561F	HKE-153	Feb. 20, 2024	Feb. 19, 2025

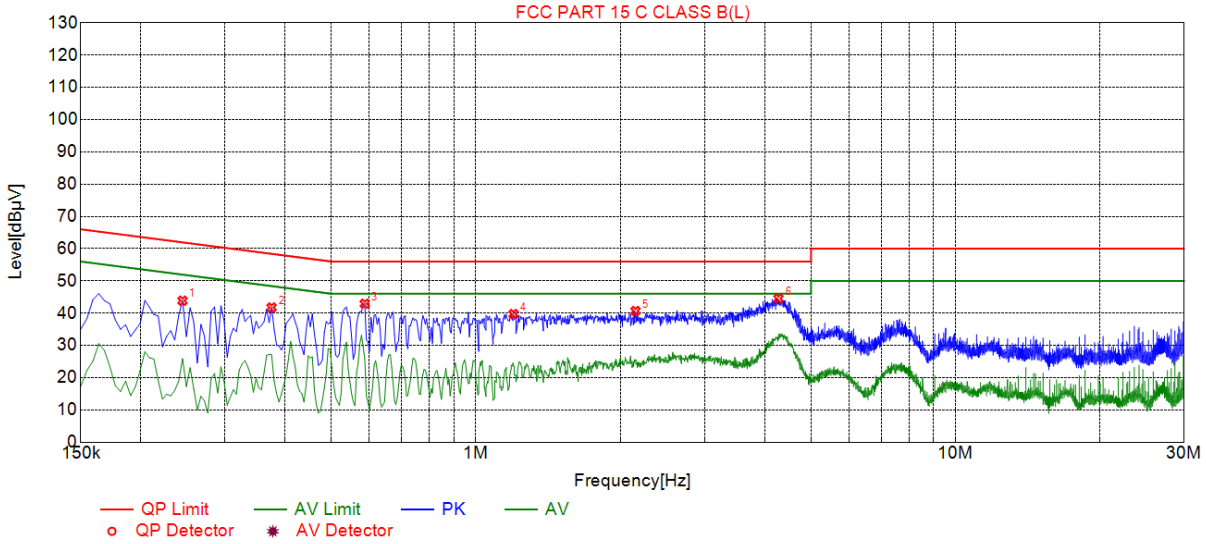
Note: *The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).*

Conducted Emission Shielding Room Test Site (843)					
Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Date**	**Calibration Due**
Receiver	R&S	ESR	HKE-005	Feb. 19, 2025	Feb. 18, 2026
LISN	R&S	ENV216	HKE-002	Feb. 19, 2025	Feb. 18, 2026
LISN	R&S	ENV216	HKE-059	Feb. 19, 2025	Feb. 18, 2026
Coax cable (9KHz-30MHz)	Times	381806-002	N/A	Feb. 19, 2025	Feb. 18, 2026
EMI Test Software	Tonscend	JS32-CE 2.5.0.6	HKE-081	N/A	N/A
10dB Attenuator	Schwarzbeck	VTSD9561F	HKE-153	Feb. 19, 2025	Feb. 18, 2026

4.2. Test Result

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

Test Model No.: S25 Ultra
Test Specification: Line



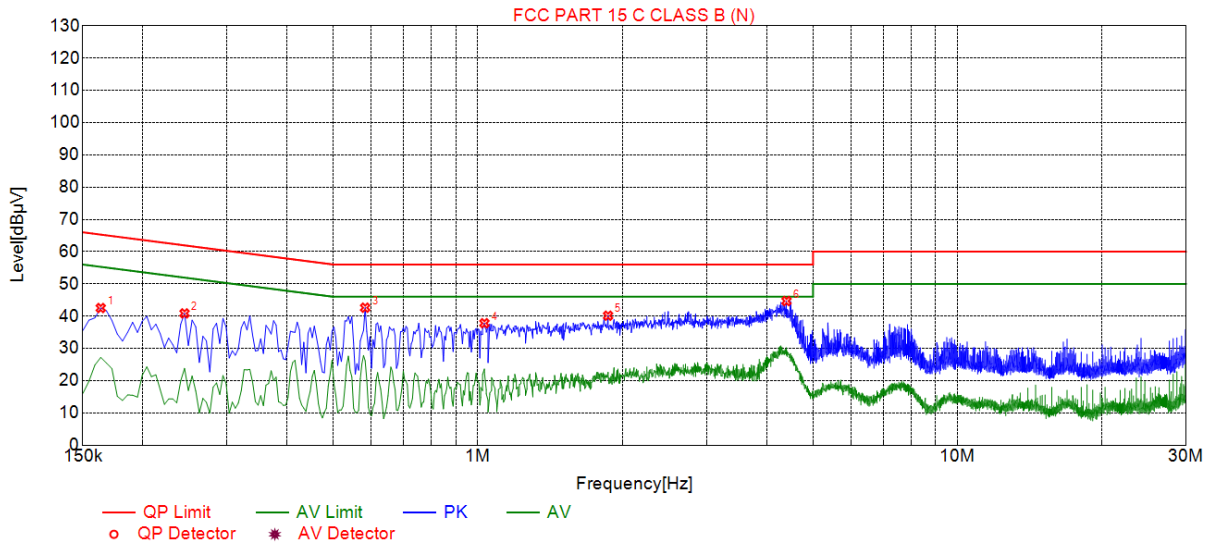
Suspected List								
NO.	Freq. [MHz]	Level [dBµV]	Factor [dB]	Limit [dBµV]	Margin [dB]	Reading [dBµV]	Detector	Type
1	0.2445	43.86	19.84	61.94	18.08	24.02	PK	L
2	0.3750	41.76	19.85	58.39	16.63	21.91	PK	L
3	0.5865	42.92	19.86	56.00	13.08	23.06	PK	L
4	1.1985	39.74	19.90	56.00	16.26	19.84	PK	L
5	2.1525	40.68	19.98	56.00	15.32	20.70	PK	L
6	4.2765	44.52	20.09	56.00	11.48	24.43	PK	L

Remark: Margin = Limit – Level

Correction factor = Cable lose + ISN insertion loss

Level=Test receiver reading + correction factor

Test Specification: Neutral



Suspected List

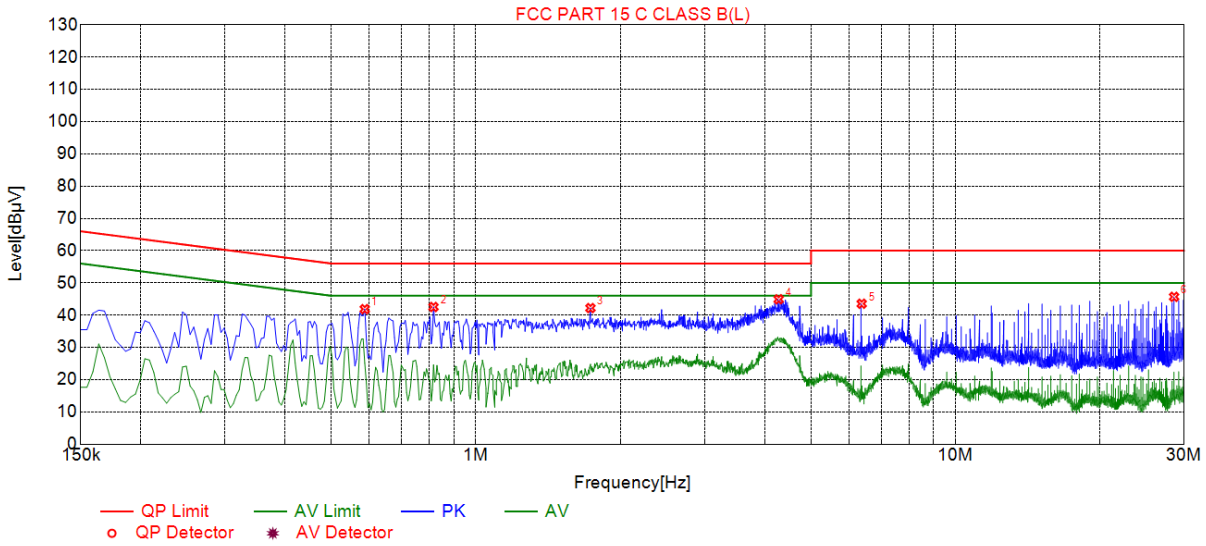
NO.	Freq. [MHz]	Level [dBµV]	Factor [dB]	Limit [dBµV]	Margin [dB]	Reading [dBµV]	Detector	Type
1	0.1635	42.52	19.68	65.28	22.76	23.64	PK	N
2	0.2445	40.86	19.73	61.94	21.08	21.93	PK	N
3	0.5820	42.62	19.74	56.00	13.38	23.68	PK	N
4	1.0320	37.81	19.75	56.00	18.19	18.86	PK	N
5	1.8690	40.14	19.83	56.00	15.86	21.11	PK	N
6	4.4025	44.68	19.98	56.00	11.32	25.50	PK	N

Remark: Margin = Limit – Level

Correction factor = Cable lose + ISN insertion loss

Level=Test receiver reading + correction factor

Series Model No.: R12 pro
Test Specification: Line



Suspected List

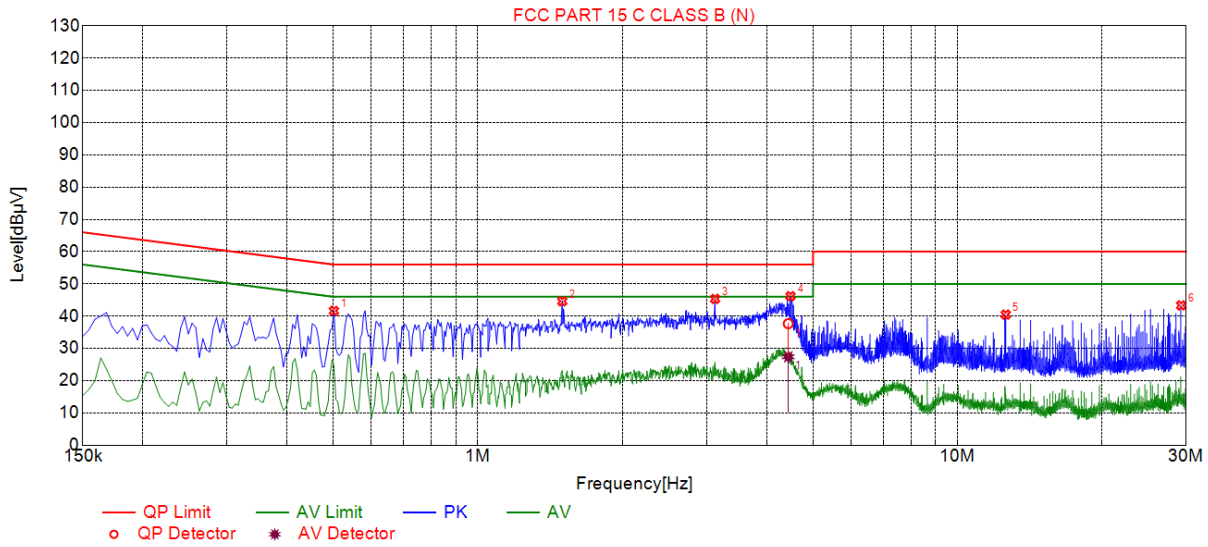
NO.	Freq. [MHz]	Level [dBµV]	Factor [dB]	Limit [dBµV]	Margin [dB]	Reading [dBµV]	Detector	Type
1	0.5865	41.87	19.86	56.00	14.13	22.01	PK	L
2	0.8160	42.53	19.87	56.00	13.47	22.66	PK	L
3	1.7340	42.19	19.95	56.00	13.81	22.24	PK	L
4	4.2810	44.92	20.09	56.00	11.08	24.83	PK	L
5	6.3780	43.54	20.08	60.00	16.46	23.46	PK	L
6	28.5900	45.68	20.23	60.00	14.32	25.45	PK	L

Remark: Margin = Limit – Level

Correction factor = Cable lose + ISN 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	0.5010	41.64	19.73	56.00	14.36	21.91	PK	N
2	1.5000	44.61	19.79	56.00	11.39	24.82	PK	N
3	3.1245	45.34	19.94	56.00	10.66	25.40	PK	N
4	4.4880	46.21	19.98	56.00	9.79	26.23	PK	N
5	12.6150	40.48	19.81	60.00	19.52	20.67	PK	N
6	29.2965	43.34	20.35	60.00	16.66	22.99	PK	N

Final Data List

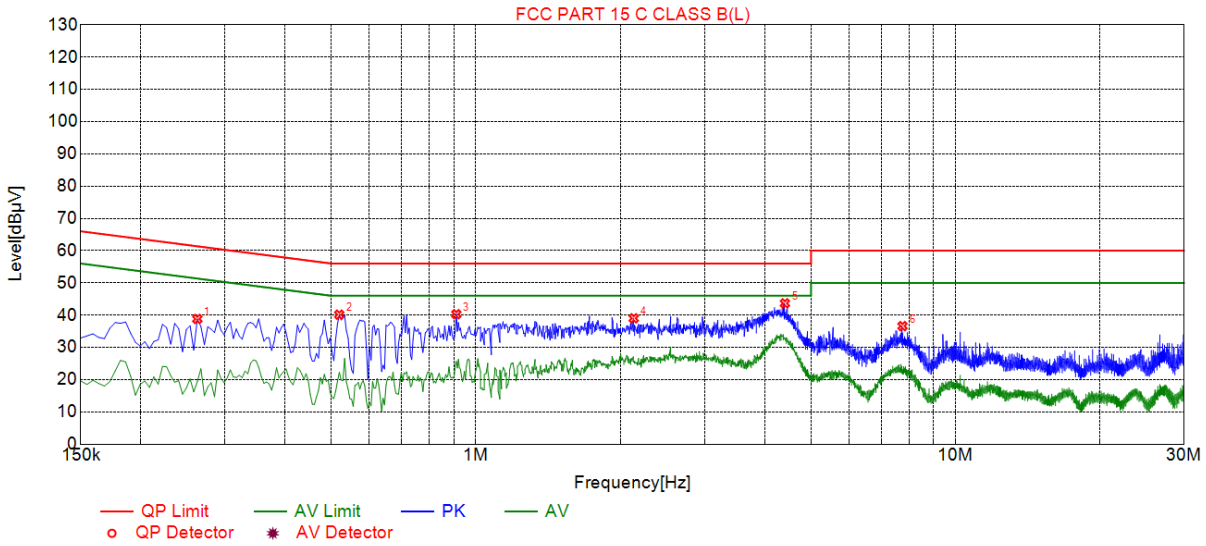
NO.	Freq. [MHz]	Correction factor[dB]	QP Value [dBµV]	QP Limit [dBµV]	QP Margin [dB]	QP Reading [dBµV]	AV Value [dBµV]	AV Limit [dBµV]	AV Margin [dB]	AV Reading [dBµV]	Type
1	4.4401	19.98	37.66	56.00	18.34	17.68	27.39	46.00	18.61	7.41	N

Remark: Margin = Limit – Level

Correction factor = Cable lose + ISN insertion loss

Level=Test receiver reading + correction factor

Series Model No.: P5 pro
Test Specification: Line



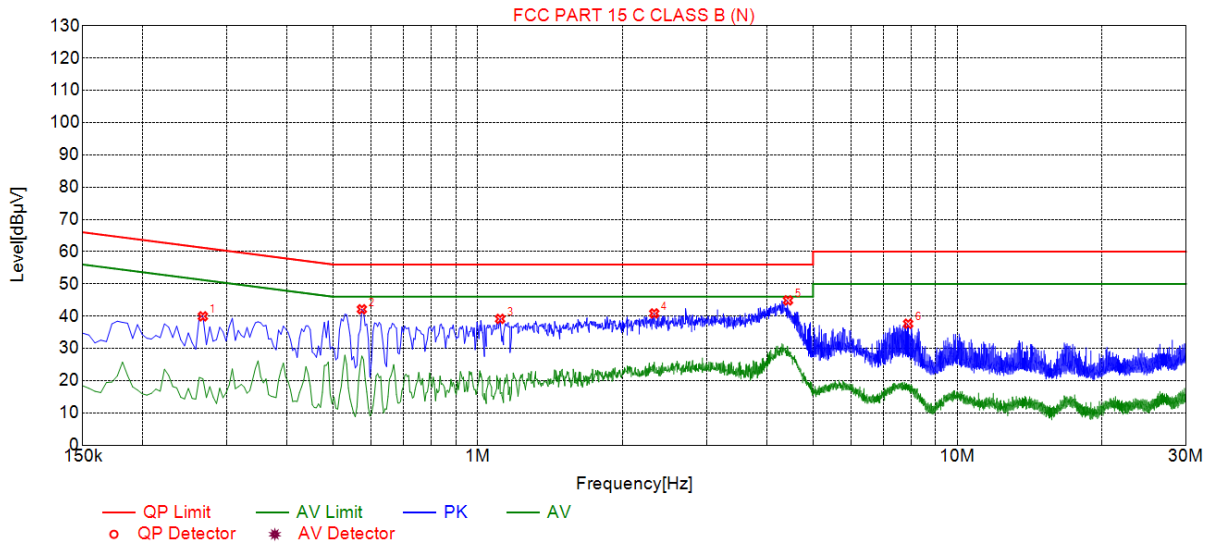
Suspected List								
NO.	Freq. [MHz]	Level [dBµV]	Factor [dB]	Limit [dBµV]	Margin [dB]	Reading [dBµV]	Detector	Type
1	0.2625	38.82	19.83	61.35	22.53	19.49	PK	L
2	0.5190	40.15	19.85	56.00	15.85	20.80	PK	L
3	0.9105	40.30	19.87	56.00	15.70	20.93	PK	L
4	2.1345	39.02	19.98	56.00	16.98	19.54	PK	L
5	4.4115	43.67	20.09	56.00	12.33	24.08	PK	L
6	7.7595	36.61	20.04	60.00	23.39	17.07	PK	L

Remark: Margin = Limit – Level

Correction factor = Cable lose + ISN insertion loss

Level=Test receiver reading + correction factor

Test Specification: Neutral



Suspected List

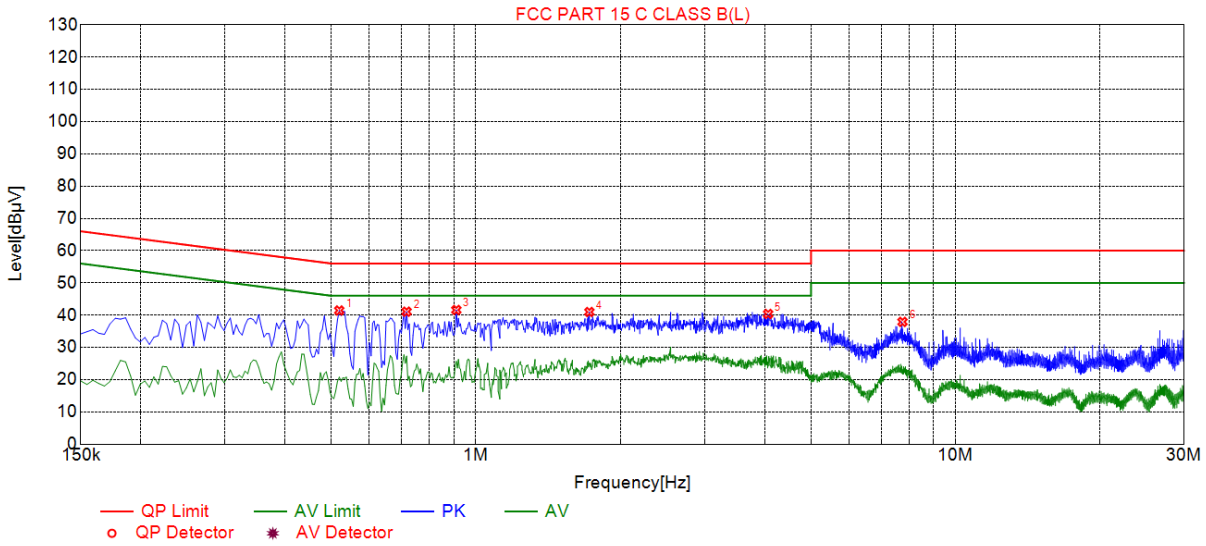
NO.	Freq. [MHz]	Level [dBµV]	Factor [dB]	Limit [dBµV]	Margin [dB]	Reading [dBµV]	Detector	Type
1	0.2670	39.94	19.73	61.21	21.27	20.21	PK	N
2	0.5730	42.13	19.74	56.00	13.87	22.39	PK	N
3	1.1130	39.15	19.76	56.00	16.85	19.39	PK	N
4	2.3325	40.84	19.88	56.00	15.16	20.96	PK	N
5	4.4340	44.88	19.98	56.00	11.12	24.90	PK	N
6	7.8945	37.64	19.93	60.00	22.36	17.71	PK	N

Remark: Margin = Limit – Level

Correction factor = Cable lose + ISN insertion loss

Level=Test receiver reading + correction factor

Series Model No.: E50 Ultra
Test Specification: Line



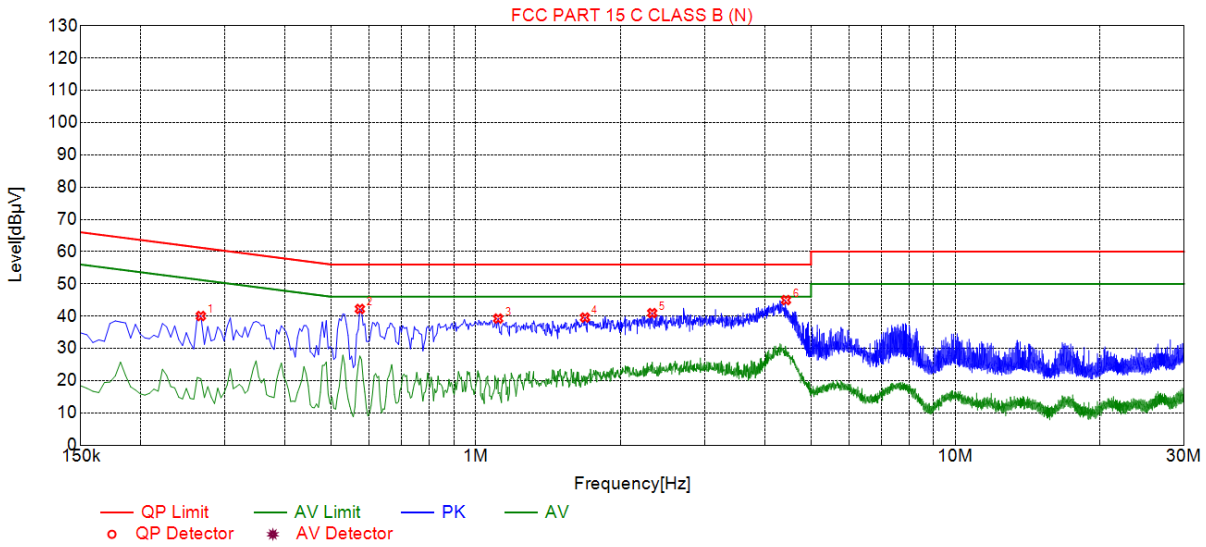
Suspected List								
NO.	Freq. [MHz]	Level [dBµV]	Factor [dB]	Limit [dBµV]	Margin [dB]	Reading [dBµV]	Detector	Type
1	0.5190	41.45	19.85	56.00	14.55	21.60	PK	L
2	0.7170	41.08	19.86	56.00	14.92	21.22	PK	L
3	0.9105	41.60	19.87	56.00	14.40	21.73	PK	L
4	1.7250	40.97	19.95	56.00	15.03	21.02	PK	L
5	4.0695	40.37	20.09	56.00	15.63	20.28	PK	L
6	7.7595	37.91	20.04	60.00	22.09	17.87	PK	L

Remark: Margin = Limit – Level

Correction factor = Cable lose + ISN insertion loss

Level=Test receiver reading + correction factor

Test Specification: Neutral



Suspected List

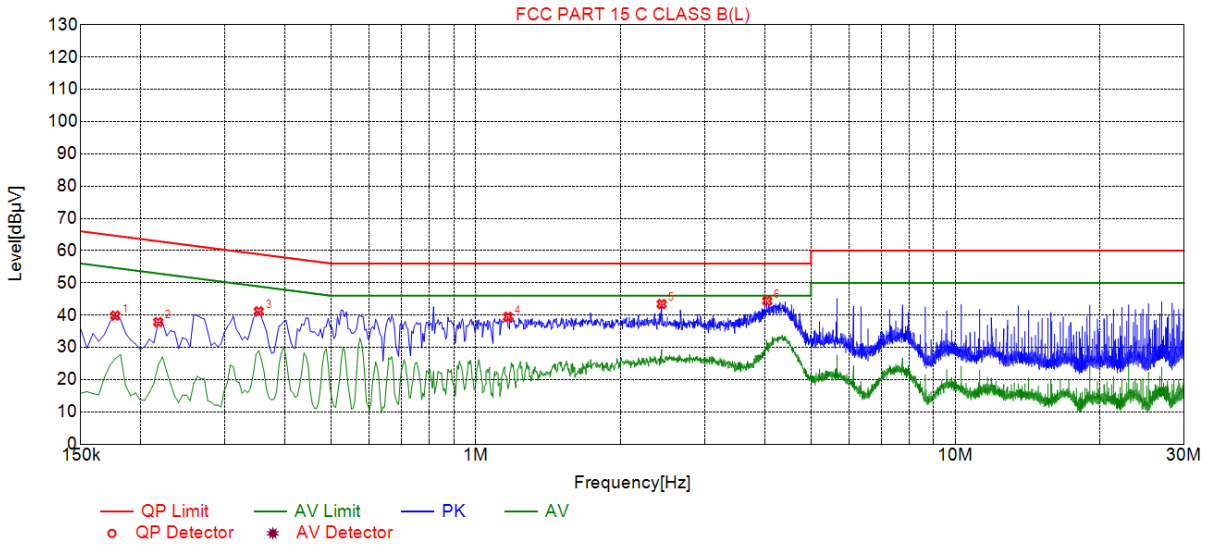
NO.	Freq. [MHz]	Level [dBµV]	Factor [dB]	Limit [dBµV]	Margin [dB]	Reading [dBµV]	Detector	Type
1	0.2670	40.04	19.73	61.21	21.17	20.31	PK	N
2	0.5730	42.23	19.74	56.00	13.77	22.49	PK	N
3	1.1130	39.25	19.76	56.00	16.75	19.49	PK	N
4	1.6890	39.56	19.82	56.00	16.44	19.74	PK	N
5	2.3325	40.94	19.88	56.00	15.06	21.06	PK	N
6	4.4340	44.98	19.98	56.00	11.02	25.00	PK	N

Remark: Margin = Limit – Level

Correction factor = Cable lose + ISN insertion loss

Level=Test receiver reading + correction factor

Series Model No.: I16 pro max
Test Specification: Line



Suspected List

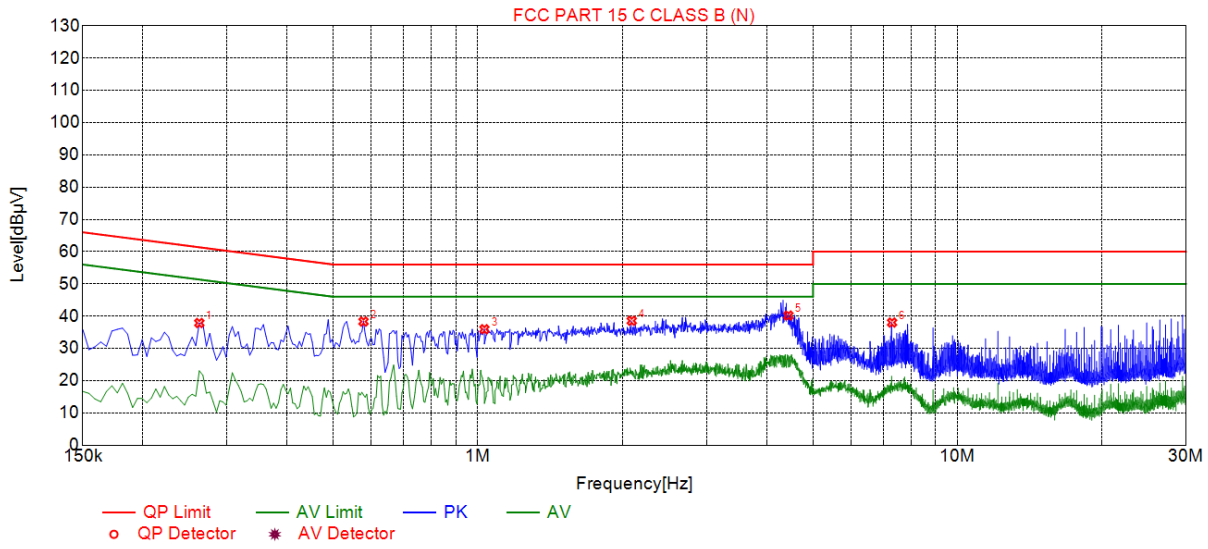
NO.	Freq. [MHz]	Level [dBµV]	Factor [dB]	Limit [dBµV]	Margin [dB]	Reading [dBµV]	Detector	Type
1	0.1770	39.84	19.85	64.63	24.79	19.99	PK	L
2	0.2175	37.84	19.85	62.91	25.07	17.99	PK	L
3	0.3525	41.17	19.83	58.90	17.73	21.34	PK	L
4	1.1670	39.47	19.90	56.00	16.53	19.57	PK	L
5	2.4405	43.44	20.01	56.00	12.56	23.43	PK	L
6	4.0515	44.40	20.09	56.00	11.60	24.31	PK	L

Remark: Margin = Limit – Level

Correction factor = Cable lose + ISN insertion loss

Level=Test receiver reading + correction factor

Test Specification: Neutral



Suspected List

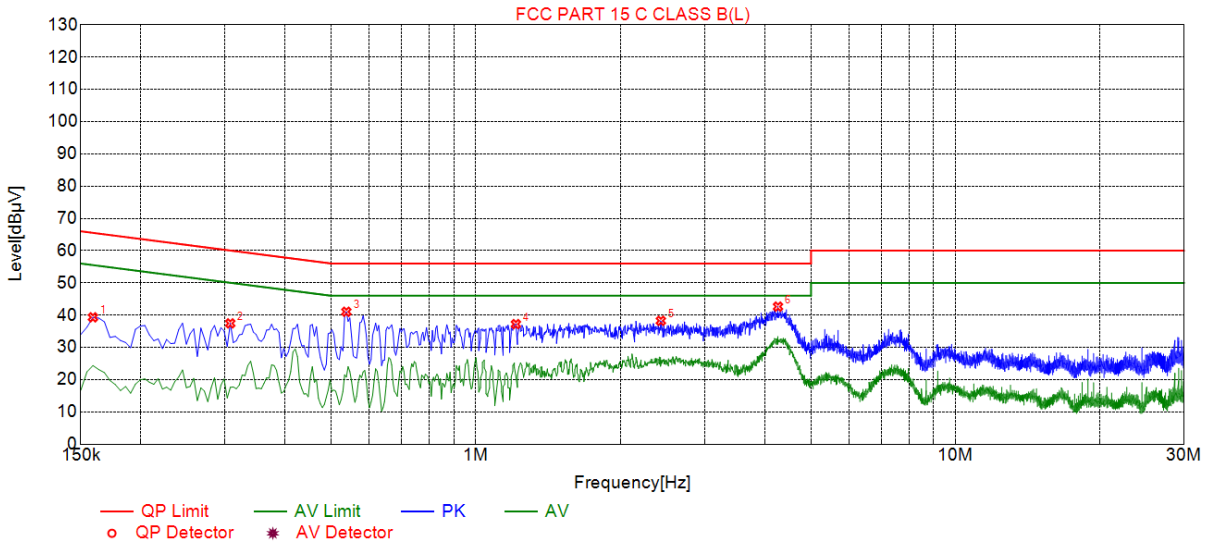
NO.	Freq. [MHz]	Level [dBµV]	Factor [dB]	Limit [dBµV]	Margin [dB]	Reading [dBµV]	Detector	Type
1	0.2625	37.87	19.73	61.35	23.48	18.14	PK	N
2	0.5775	38.32	19.74	56.00	17.68	18.58	PK	N
3	1.0320	35.94	19.75	56.00	20.06	16.19	PK	N
4	2.0940	38.55	19.85	56.00	17.45	18.70	PK	N
5	4.4430	40.19	19.98	56.00	15.81	20.21	PK	N
6	7.3095	38.02	19.95	60.00	21.98	18.07	PK	N

Remark: Margin = Limit – Level

Correction factor = Cable lose + ISN insertion loss

Level=Test receiver reading + correction factor

Series Model No.: P6 pro
Test Specification: Line



Suspected List

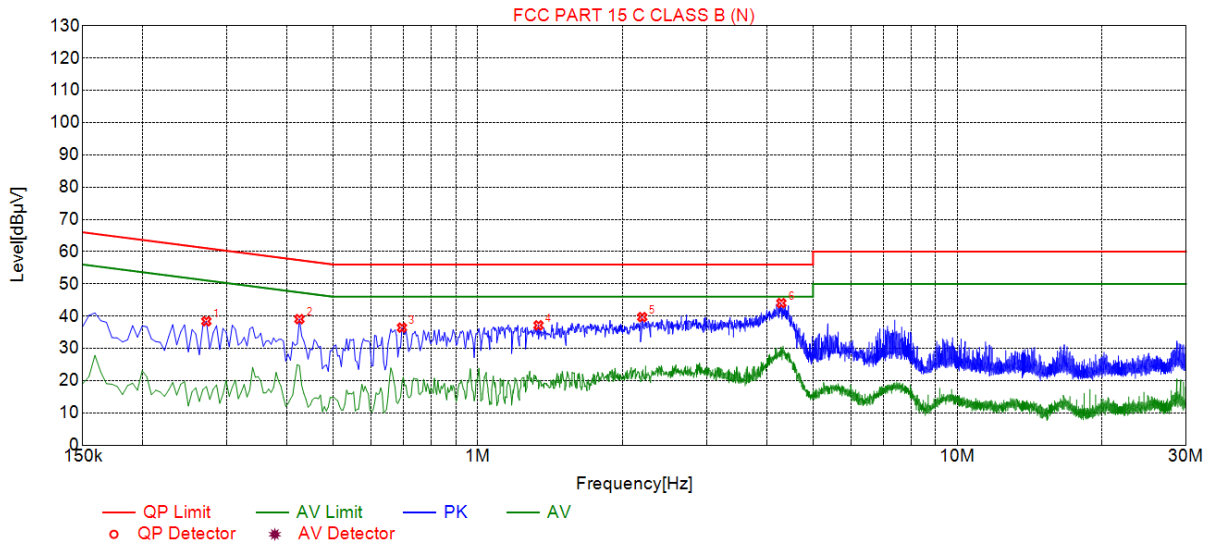
NO.	Freq. [MHz]	Level [dBµV]	Factor [dB]	Limit [dBµV]	Margin [dB]	Reading [dBµV]	Detector	Type
1	0.1590	39.33	19.81	65.52	26.19	19.52	PK	L
2	0.3075	37.45	19.85	60.04	22.59	17.60	PK	L
3	0.5370	41.05	19.85	56.00	14.95	21.20	PK	L
4	1.2120	37.22	19.90	56.00	18.78	17.32	PK	L
5	2.4315	38.25	20.01	56.00	17.75	18.24	PK	L
6	4.2675	42.65	20.09	56.00	13.35	22.56	PK	L

Remark: Margin = Limit – Level

Correction factor = Cable lose + ISN insertion loss

Level=Test receiver reading + correction factor

Test Specification: Neutral



Suspected List

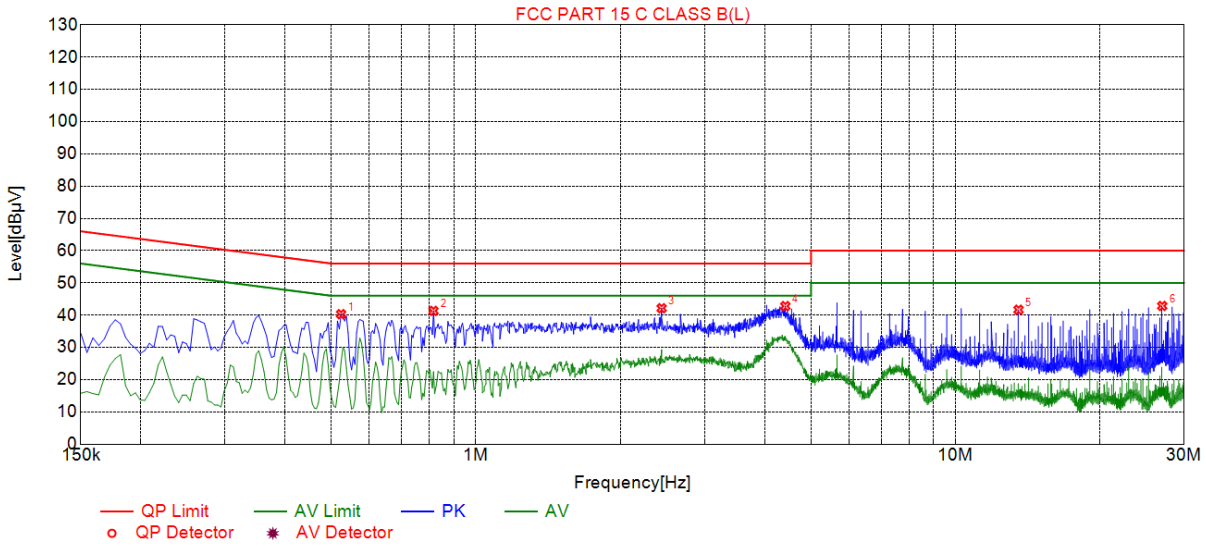
NO.	Freq. [MHz]	Level [dBµV]	Factor [dB]	Limit [dBµV]	Margin [dB]	Reading [dBµV]	Detector	Type
1	0.2715	38.41	19.73	61.07	22.66	18.68	PK	N
2	0.4245	39.07	19.74	57.36	18.29	19.33	PK	N
3	0.6945	36.43	19.74	56.00	19.57	16.69	PK	N
4	1.3380	37.15	19.79	56.00	18.85	17.36	PK	N
5	2.2020	39.71	19.86	56.00	16.29	19.85	PK	N
6	4.2945	44.05	19.98	56.00	11.95	24.07	PK	N

Remark: Margin = Limit – Level

Correction factor = Cable lose + ISN insertion loss

Level=Test receiver reading + correction factor

Series Model No.: Sp20 Pro
Test Specification: Line



Suspected List

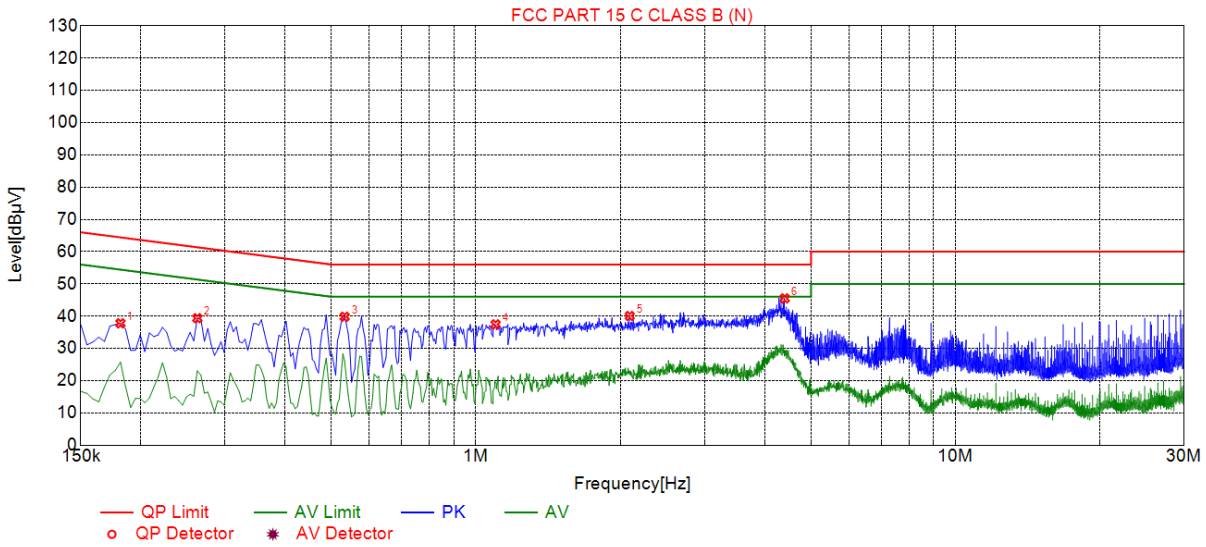
NO.	Freq. [MHz]	Level [dBµV]	Factor [dB]	Limit [dBµV]	Margin [dB]	Reading [dBµV]	Detector	Type
1	0.5235	40.30	19.85	56.00	15.70	20.45	PK	L
2	0.8160	41.32	19.87	56.00	14.68	21.45	PK	L
3	2.4405	42.14	20.01	56.00	13.86	22.13	PK	L
4	4.4205	42.80	20.09	56.00	13.20	22.71	PK	L
5	13.5465	41.67	19.82	60.00	18.33	21.85	PK	L
6	27.0060	42.85	20.20	60.00	17.15	22.65	PK	L

Remark: Margin = Limit – Level

Correction factor = Cable lose + ISN insertion loss

Level=Test receiver reading + correction factor

Test Specification: Neutral



Suspected List

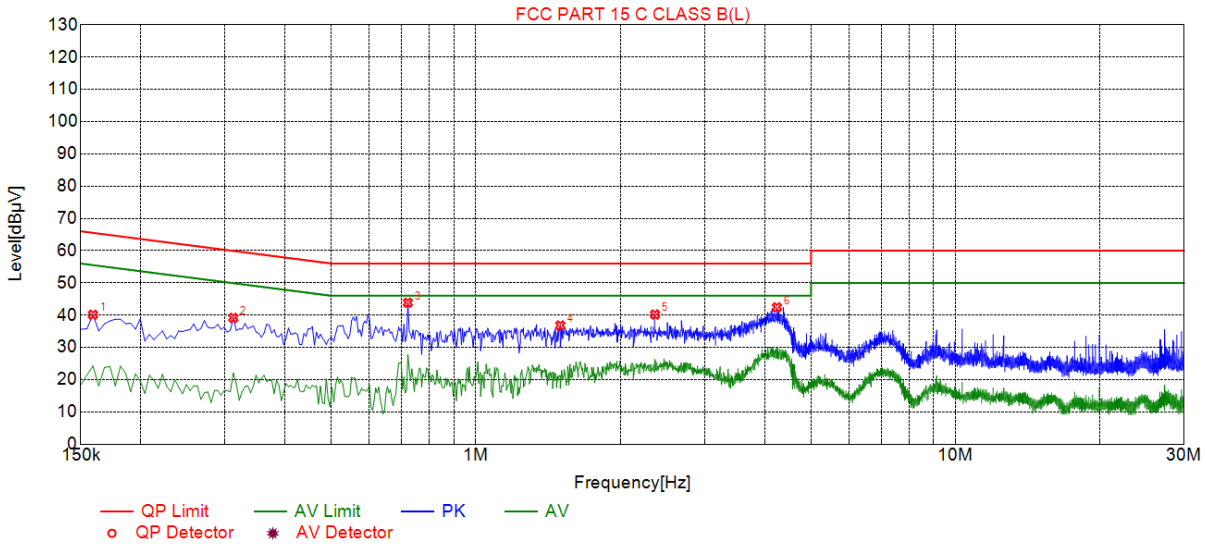
NO.	Freq. [MHz]	Level [dBµV]	Factor [dB]	Limit [dBµV]	Margin [dB]	Reading [dBµV]	Detector	Type
1	0.1815	37.78	19.75	64.42	26.64	18.03	PK	N
2	0.2625	39.37	19.73	61.35	21.98	19.64	PK	N
3	0.5325	39.82	19.74	56.00	16.18	20.08	PK	N
4	1.0995	37.44	19.75	56.00	18.56	17.69	PK	N
5	2.0940	40.05	19.85	56.00	15.95	20.20	PK	N
6	4.4070	45.51	19.98	56.00	10.49	25.53	PK	N

Remark: Margin = Limit – Level

Correction factor = Cable lose + ISN insertion loss

Level=Test receiver reading + correction factor

Series Model No.: OP12 pro
Test Specification: Line



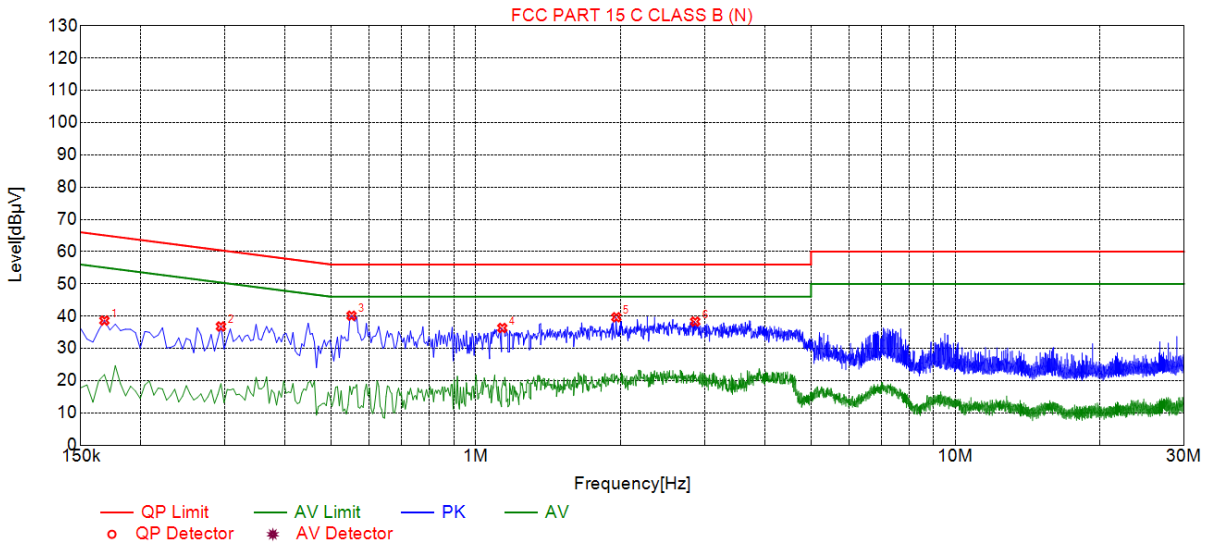
Suspected List								
NO.	Freq. [MHz]	Level [dBµV]	Factor [dB]	Limit [dBµV]	Margin [dB]	Reading [dBµV]	Detector	Type
1	0.1590	40.14	19.81	65.52	25.38	20.33	PK	L
2	0.3120	39.15	19.85	59.92	20.77	19.30	PK	L
3	0.7215	43.85	19.86	56.00	12.15	23.99	PK	L
4	1.5000	36.80	19.92	56.00	19.20	16.88	PK	L
5	2.3640	40.20	20.00	56.00	15.80	20.20	PK	L
6	4.2450	42.42	20.09	56.00	13.58	22.33	PK	L

Remark: Margin = Limit – Level

Correction factor = Cable lose + ISN insertion loss

Level=Test receiver reading + correction factor

Test Specification: Neutral



Suspected List

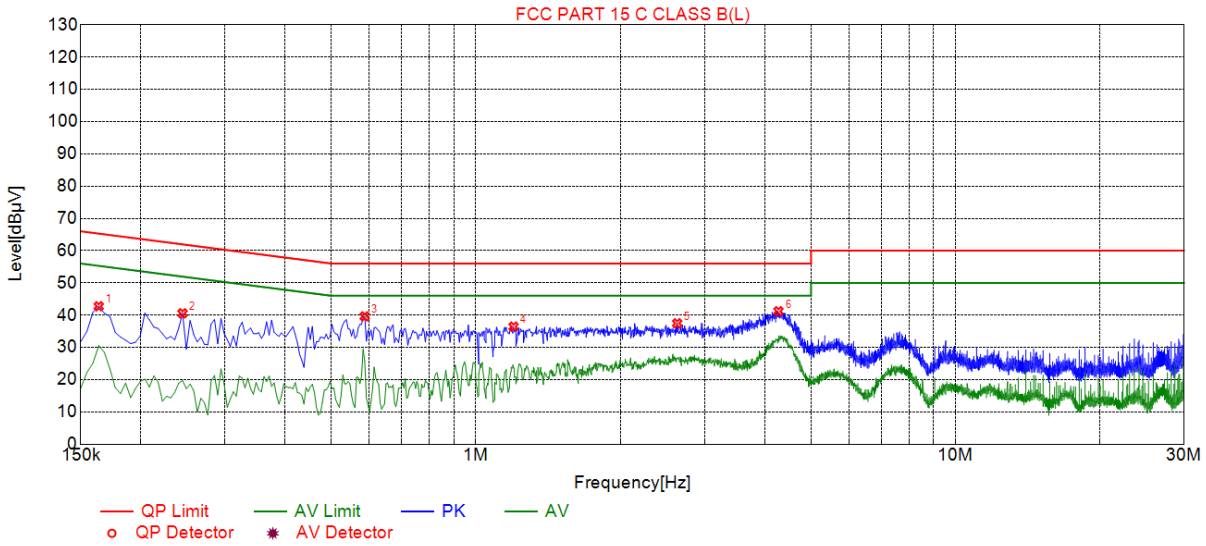
NO.	Freq. [MHz]	Level [dBµV]	Factor [dB]	Limit [dBµV]	Margin [dB]	Reading [dBµV]	Detector	Type
1	0.1680	38.63	19.71	65.06	26.43	18.92	PK	N
2	0.2940	36.80	19.73	60.41	23.61	17.07	PK	N
3	0.5505	40.13	19.75	56.00	15.87	20.38	PK	N
4	1.1355	36.33	19.77	56.00	19.67	16.56	PK	N
5	1.9635	39.66	19.83	56.00	16.34	19.83	PK	N
6	2.8680	38.31	19.92	56.00	17.69	18.39	PK	N

Remark: Margin = Limit – Level

Correction factor = Cable lose + ISN insertion loss

Level=Test receiver reading + correction factor

Series Model No.: T3 Pro
Test Specification: Line



Suspected List

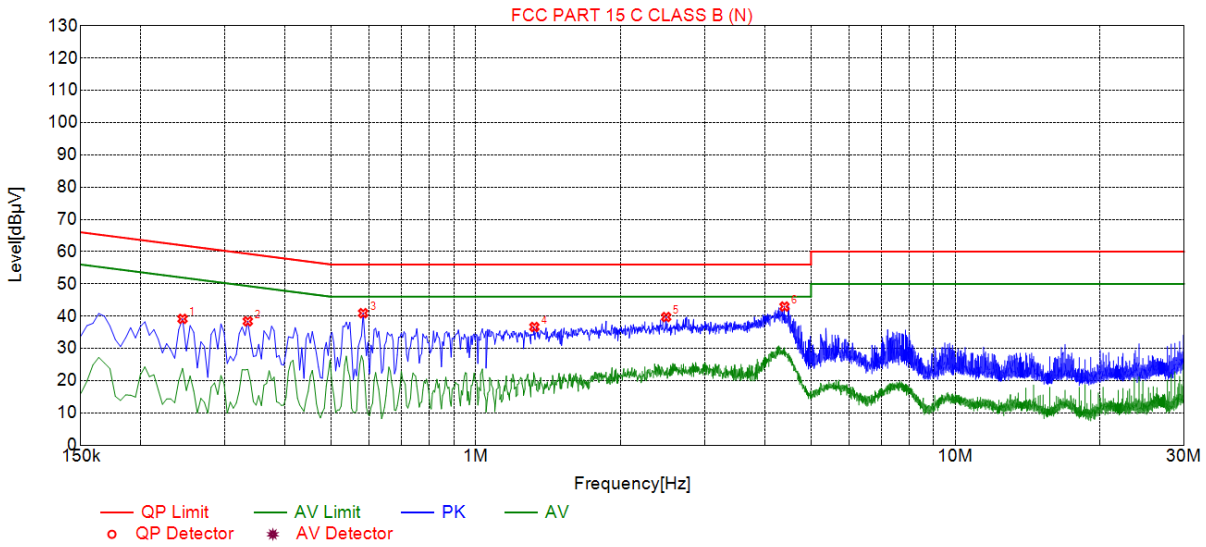
NO.	Freq. [MHz]	Level [dBµV]	Factor [dB]	Limit [dBµV]	Margin [dB]	Reading [dBµV]	Detector	Type
1	0.1635	42.75	19.78	65.28	22.53	22.97	PK	L
2	0.2445	40.56	19.84	61.94	21.38	20.72	PK	L
3	0.5865	39.62	19.86	56.00	16.38	19.76	PK	L
4	1.1985	36.44	19.90	56.00	19.56	16.54	PK	L
5	2.6295	37.47	20.04	56.00	18.53	17.43	PK	L
6	4.2765	41.22	20.09	56.00	14.78	21.13	PK	L

Remark: Margin = Limit – Level

Correction factor = Cable lose + ISN insertion loss

Level=Test receiver reading + correction factor

Test Specification: Neutral



Suspected List

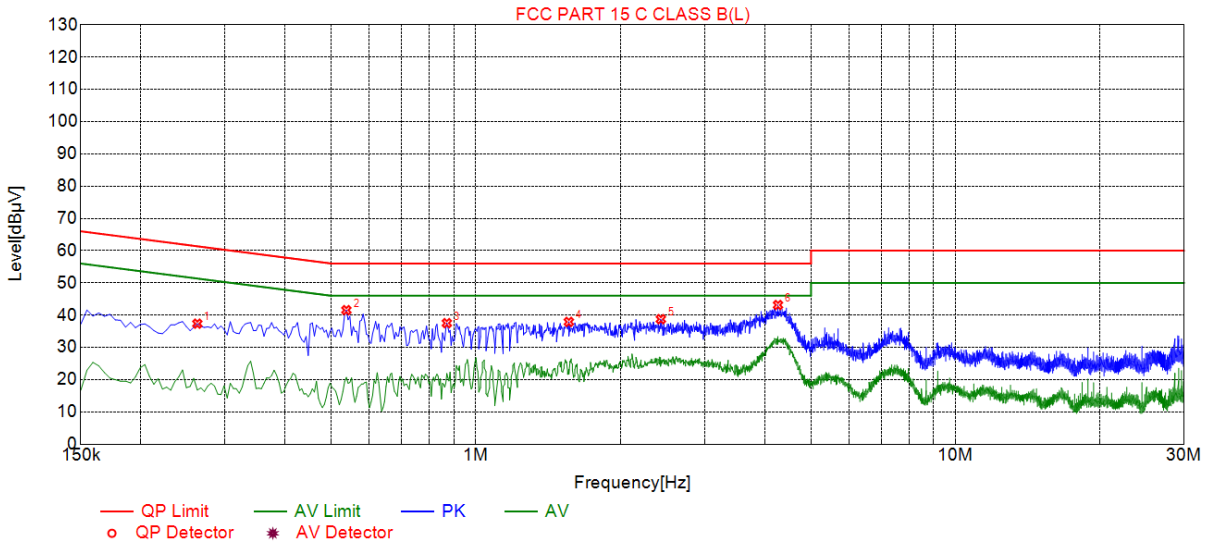
NO.	Freq. [MHz]	Level [dBµV]	Factor [dB]	Limit [dBµV]	Margin [dB]	Reading [dBµV]	Detector	Type
1	0.2445	39.16	19.73	61.94	22.78	19.43	PK	N
2	0.3345	38.39	19.73	59.34	20.95	18.66	PK	N
3	0.5820	40.92	19.74	56.00	15.08	21.18	PK	N
4	1.3245	36.64	19.78	56.00	19.36	16.86	PK	N
5	2.4945	39.73	19.89	56.00	16.27	19.84	PK	N
6	4.4025	42.98	19.98	56.00	13.02	23.00	PK	N

Remark: Margin = Limit – Level

Correction factor = Cable lose + ISN insertion loss

Level=Test receiver reading + correction factor

Series Model No.: P8 Pro
Test Specification: Line



Suspected List

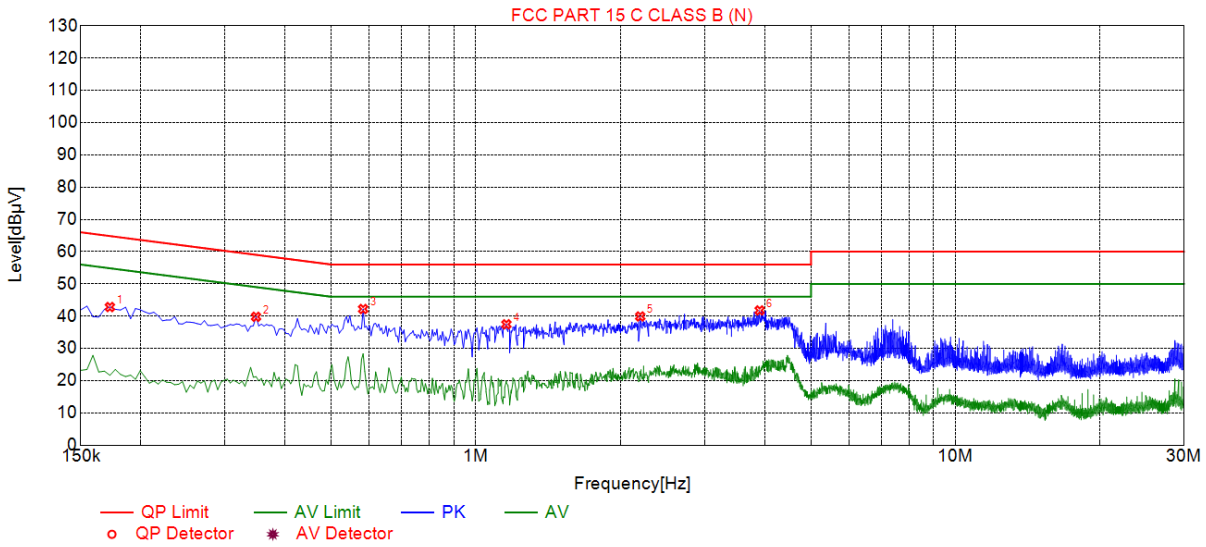
NO.	Freq. [MHz]	Level [dBµV]	Factor [dB]	Limit [dBµV]	Margin [dB]	Reading [dBµV]	Detector	Type
1	0.2625	37.36	19.83	61.35	23.99	17.53	PK	L
2	0.5370	41.55	19.85	56.00	14.45	21.70	PK	L
3	0.8700	37.52	19.87	56.00	18.48	17.65	PK	L
4	1.5630	37.91	19.93	56.00	18.09	17.98	PK	L
5	2.4315	38.75	20.01	56.00	17.25	18.74	PK	L
6	4.2675	43.15	20.09	56.00	12.85	23.06	PK	L

Remark: Margin = Limit – Level

Correction factor = Cable lose + ISN 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	0.1725	42.82	19.73	64.84	22.02	23.09	PK	N
2	0.3480	39.80	19.72	59.01	19.21	20.08	PK	N
3	0.5820	42.21	19.74	56.00	13.79	22.47	PK	N
4	1.1580	37.47	19.77	56.00	18.53	17.70	PK	N
5	2.2020	39.91	19.86	56.00	16.09	20.05	PK	N
6	3.9075	41.77	19.97	56.00	14.23	21.80	PK	N

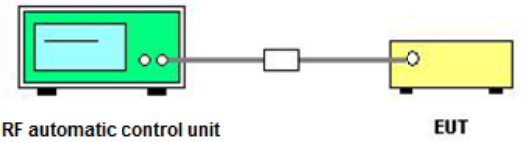
Remark: Margin = Limit – Level

Correction factor = Cable lose + ISN insertion loss

Level=Test receiver reading + correction factor

4.3. Maximum Peak Conducted Output Power

Test Specification

Test Requirement:	FCC Part15 C Section 15.247 (b)(3)
Test Method:	KDB 558074 D01 15.247 Meas Guidance v05r02
Limit:	30dBm
Test Setup:	
Test Mode:	Transmitting mode with modulation
Test Procedure:	1. The testing follows the Measurement Procedure of FCC KDB 558074 D01 15.247 Meas Guidance v05r02. 2. The RF output of EUT was connected to the RF automatic control unit by RF cable and attenuator. 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 Peak output power and record the results in the test report.
Test Result:	PASS

Test Instruments

RF Test Room					
Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Date**	**Calibration Due**
Spectrum analyzer	Agilent	N9020A	HKE-025	Feb. 20, 2024	Feb. 19, 2025
Power meter	Agilent	E4419B	HKE-085	Feb. 20, 2024	Feb. 19, 2025
Power Sensor	Agilent	E9300A	HKE-086	Feb. 20, 2024	Feb. 19, 2025
RF cable	Times	1-40G	HKE-034	Feb. 20, 2024	Feb. 19, 2025
RF automatic control unit	Tonscend	JS0806-2	HKE-060	Feb. 20, 2024	Feb. 19, 2025
RF Test Software	Tonscend	JS1120-3 Version 3.5.39	HKE-083	N/A	N/A

Note: *The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).*

RF Test Room					
Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Date**	**Calibration Due**
Spectrum analyzer	Agilent	N9020A	HKE-025	Feb. 19, 2025	Feb. 18, 2026
Power meter	Agilent	E4419B	HKE-085	Feb. 19, 2025	Feb. 18, 2026
Power Sensor	Agilent	E9300A	HKE-086	Feb. 19, 2025	Feb. 18, 2026
RF cable	Times	1-40G	HKE-034	Feb. 19, 2025	Feb. 18, 2026
RF automatic control unit	Tonscend	JS0806-2	HKE-060	Feb. 19, 2025	Feb. 18, 2026
RF Test Software	Tonscend	JS1120-3 Version 3.5.39	HKE-083	N/A	N/A

Note: *The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).*

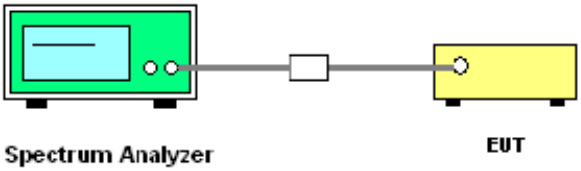
Test Data

Mode	Test Channel	Frequency	Maximum Peak Conducted Output Power	LIMIT
		(MHz)	(dBm)	dBm
802.11b	CH01	2412	12.88	30
802.11b	CH06	2437	12.27	30
802.11b	CH11	2462	11.70	30
802.11g	CH01	2412	11.67	30
802.11g	CH06	2437	13.39	30
802.11g	CH11	2462	12.32	30
802.11n(HT20)	CH01	2412	10.95	30
802.11n(HT20)	CH06	2437	12.94	30
802.11n(HT20)	CH11	2462	12.22	30
802.11n(HT40)	CH03	2422	11.43	30
802.11n(HT40)	CH06	2437	11.33	30
802.11n(HT40)	CH09	2452	11.31	30

Note: 1.The test results including the cable lose.

4.4. Emission Bandwidth

Test Specification

Test Requirement:	FCC Part15 C Section 15.247 (a)(2)
Test Method:	KDB 558074 D01 15.247 Meas Guidance v05r02
Limit:	>500kHz
Test Setup:	
Test Mode:	Transmitting mode with modulation
Test Procedure:	1. The testing follows FCC KDB Publication 558074 D01 15.247 Meas Guidance v05r02. 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 greater than 500 kHz. 4. Measure and record the results in the test report.
Test Result:	PASS

Test Instruments

RF Test Room					
Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Date**	**Calibration Due**
Spectrum analyzer	Agilent	N9020A	HKE-025	Feb. 20, 2024	Feb. 19, 2025
RF cable	Times	1-40G	HKE-034	Feb. 20, 2024	Feb. 19, 2025
RF automatic control unit	Tonscend	JS0806-2	HKE-060	Feb. 20, 2024	Feb. 19, 2025
RF Test Software	Tonscend	JS1120-3 Version 3.5.39	HKE-083	N/A	N/A

Note: *The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).*

RF Test Room					
Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Date**	**Calibration Due**
Spectrum analyzer	Agilent	N9020A	HKE-025	Feb. 19, 2025	Feb. 18, 2026
RF cable	Times	1-40G	HKE-034	Feb. 19, 2025	Feb. 18, 2026
RF automatic control unit	Tonscend	JS0806-2	HKE-060	Feb. 19, 2025	Feb. 18, 2026
RF Test Software	Tonscend	JS1120-3 Version 3.5.39	HKE-083	N/A	N/A

Note: *The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).*

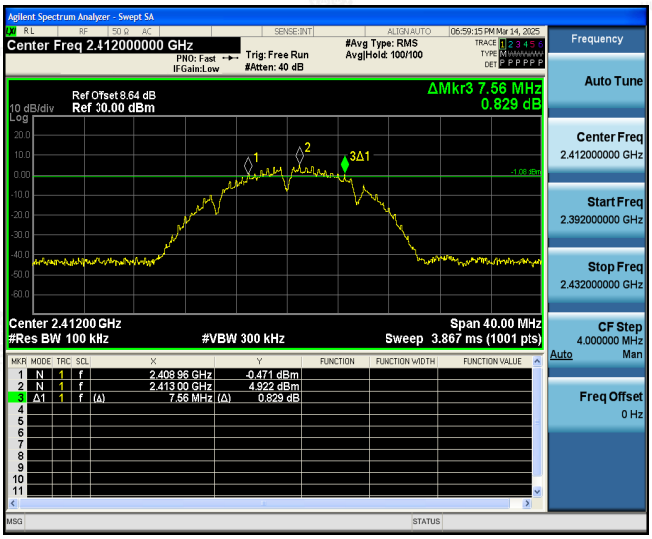
Test Data

Test channel	6dB Emission Bandwidth (MHz)			
	802.11b	802.11g	802.11n(HT20)	802.11n(HT40)
Lowest	7.560	15.040	15.040	35.040
Middle	8.520	15.680	15.960	35.040
Highest	7.080	12.560	11.400	35.760
Limit:	>500kHz			
Test Result:	PASS			

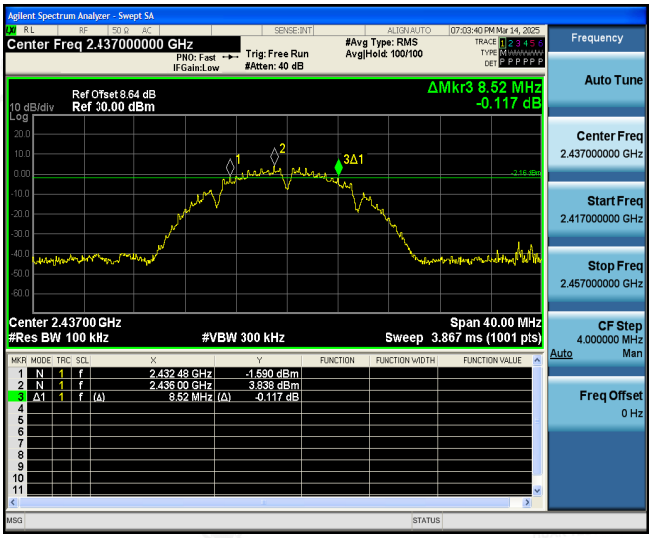
Test plots as follows:

802.11b Modulation

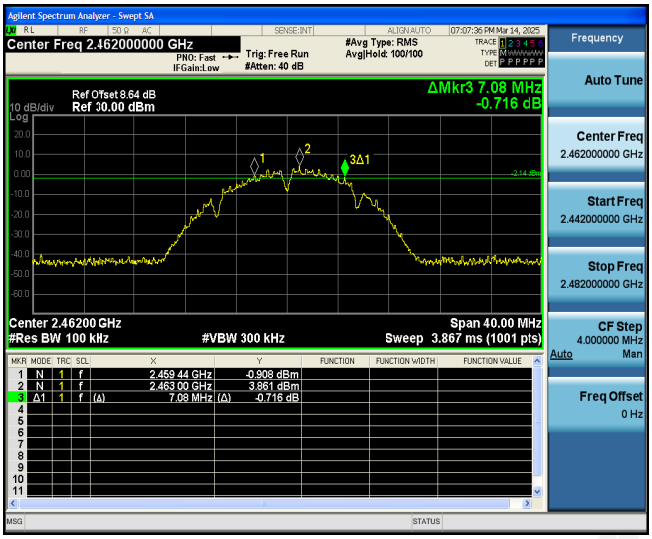
Lowest channel



Middle channel

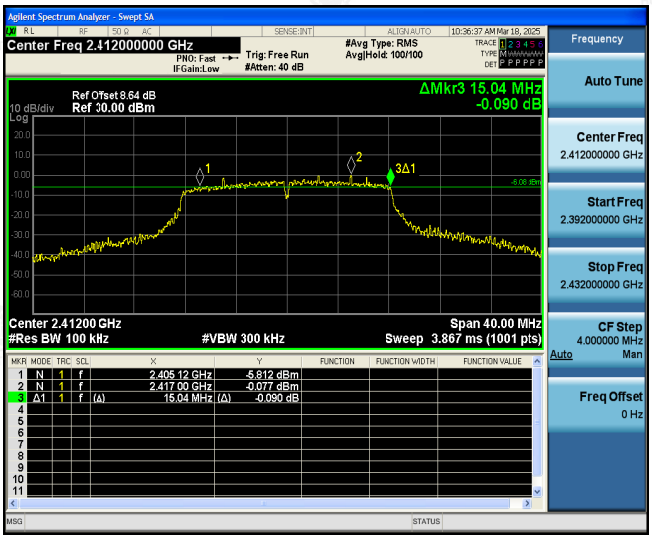


Highest channel

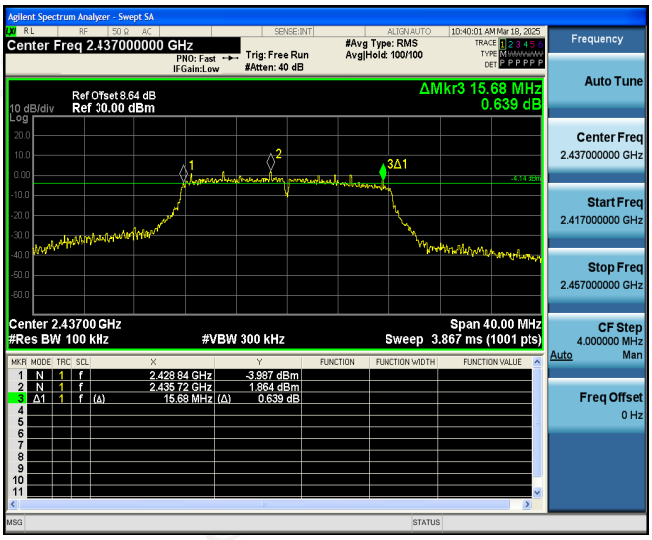


802.11g Modulation

Lowest channel



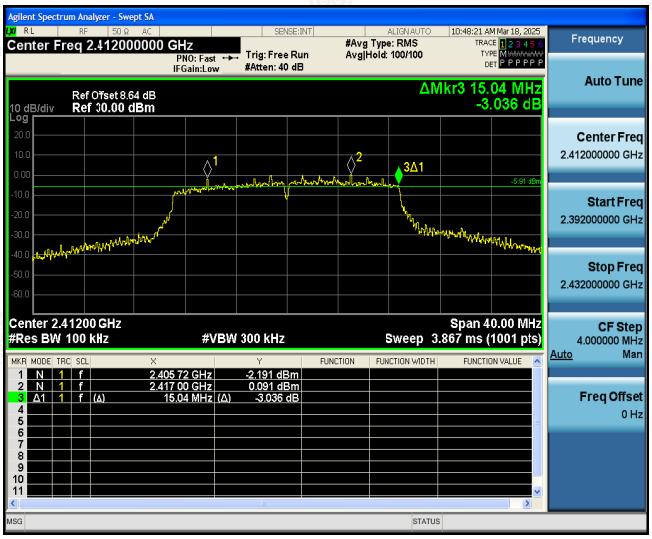
Middle channel



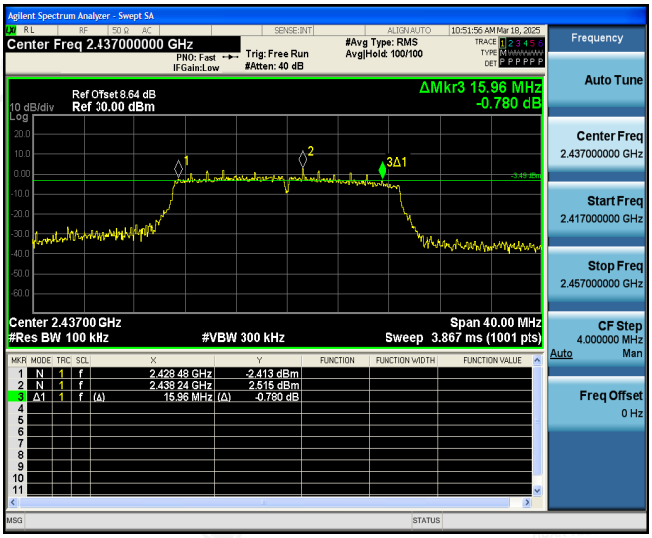
Highest channel

802.11n (HT20) Modulation

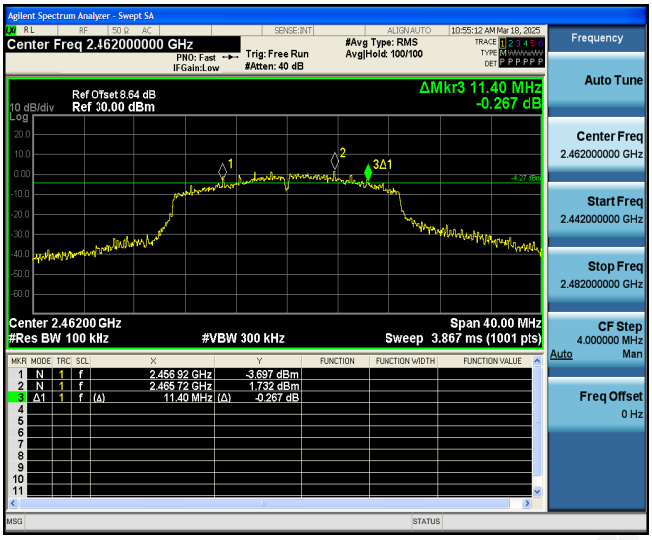
Lowest channel



Middle channel

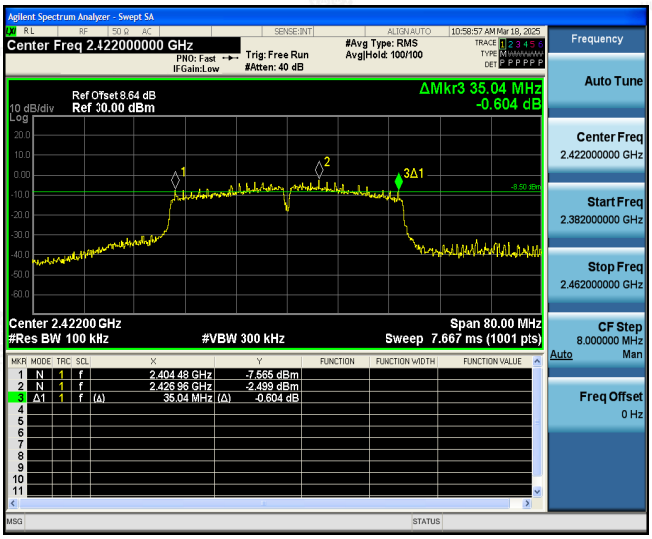


Highest channel

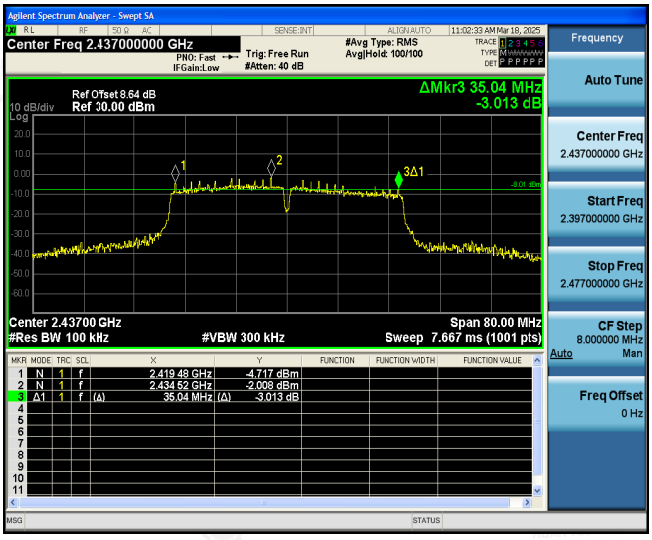


802.11n (HT40) Modulation

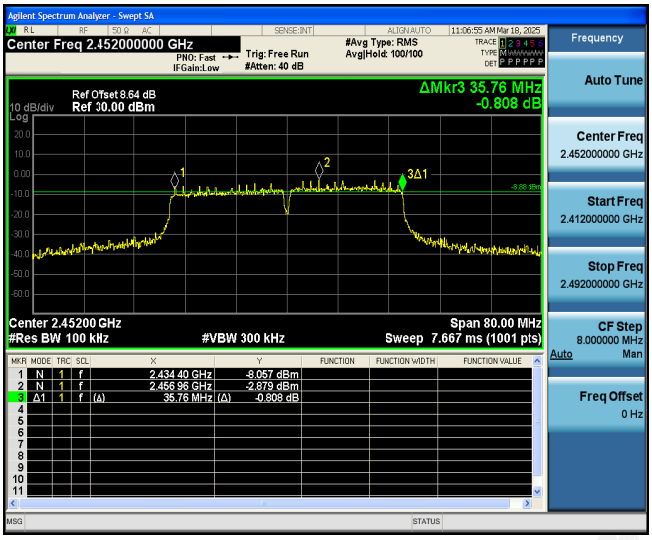
Lowest channel



Middle channel

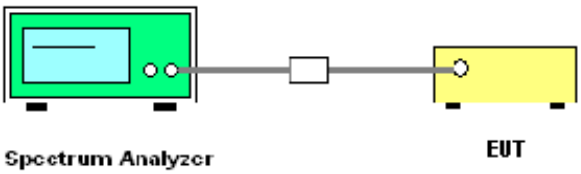


Highest channel



4.5. Power Spectral Density

Test Specification

Test Requirement:	FCC Part15 C Section 15.247 (e)
Test Method:	KDB 558074 D01 15.247 Meas Guidance v05r02
Limit:	The average power spectral density shall not be greater than 8dBm in any 3kHz band at any time interval of continuous transmission.
Test Setup:	
Test Mode:	Transmitting mode with modulation
Test Procedure:	1. The testing follows Measurement procedure 10.2 method PKPSD of FCC KDB Publication 558074 D01 15.247 Meas Guidance v05r02. 2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. 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. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW): 3 kHz ≤ RBW ≤ 100 kHz. Video bandwidth VBW ≥ 3 x RBW. Set the span to at least 1.5 times the OBW. 5. Detector = Peak, Sweep time = auto couple. 6. Employ trace averaging (Peak) mode over a minimum of 100 traces. Use the peak marker function to determine the maximum power level. 7. Measure and record the results in the test report.
Test Result:	PASS

Test Instruments

RF Test Room					
Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Date**	**Calibration Due**
Spectrum analyzer	Agilent	N9020A	HKE-025	Feb. 20, 2024	Feb. 19, 2025
RF cable	Times	1-40G	HKE-034	Feb. 20, 2024	Feb. 19, 2025
RF automatic control unit	Tonscend	JS0806-2	HKE-060	Feb. 20, 2024	Feb. 19, 2025
RF Test Software	Tonscend	JS1120-3 Version 3.5.39	HKE-083	N/A	N/A

Note: *The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).*

RF Test Room					
Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Date**	**Calibration Due**
Spectrum analyzer	Agilent	N9020A	HKE-025	Feb. 19, 2025	Feb. 18, 2026
RF cable	Times	1-40G	HKE-034	Feb. 19, 2025	Feb. 18, 2026
RF automatic control unit	Tonscend	JS0806-2	HKE-060	Feb. 19, 2025	Feb. 18, 2026
RF Test Software	Tonscend	JS1120-3 Version 3.5.39	HKE-083	N/A	N/A

Note: *The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).*

Test Data

EUT Set Mode	Channel	Test Result (dBm/30kHz)	Result (dBm/3kHz)
802.11b	Lowest	-0.45	-10.45
	Middle	0.30	-9.70
	Highest	-0.68	-10.68
802.11g	Lowest	-3.91	-13.91
	Middle	-1.83	-11.83
	Highest	-1.66	-11.66
802.11n(HT20)	Lowest	-4.02	-14.02
	Middle	-1.37	-11.37
	Highest	-1.86	-11.86
802.11n(HT40)	Lowest	-5.76	-15.76
	Middle	-6.10	-16.10
	Highest	-6.18	-16.18
PSD test result (dBm/3kHz)= PSD test result (dBm/30kHz)-10			
Limit: 8dBm/3kHz			
Test Result:	PASS		

Test plots as follows:

802.11b Modulation

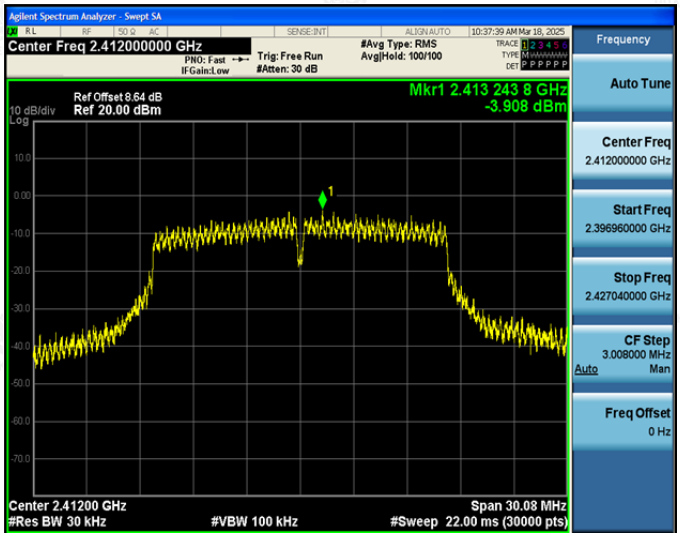
Lowest channel

Middle channel

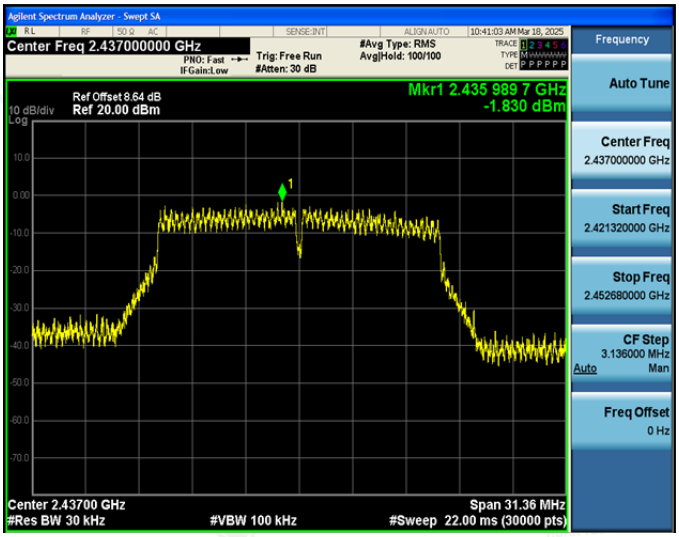
Highest channel

802.11g Modulation

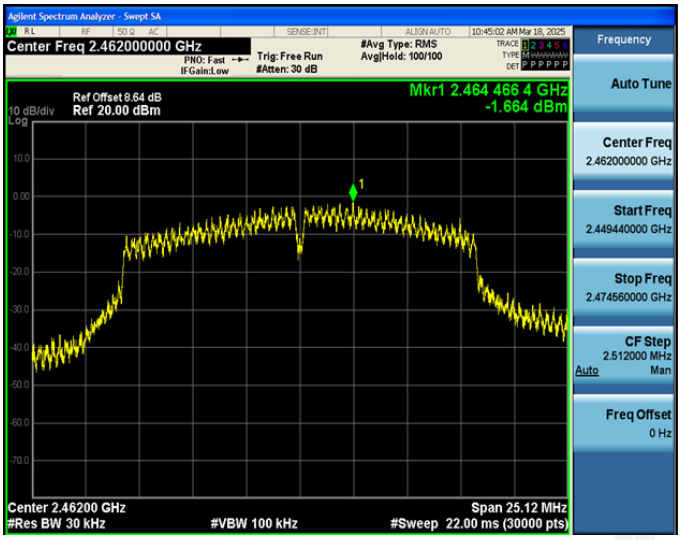
Lowest channel



Middle channel

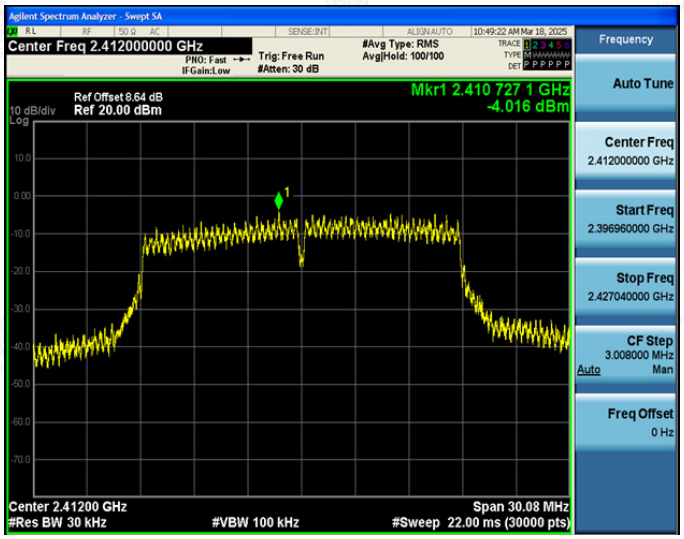


Highest channel

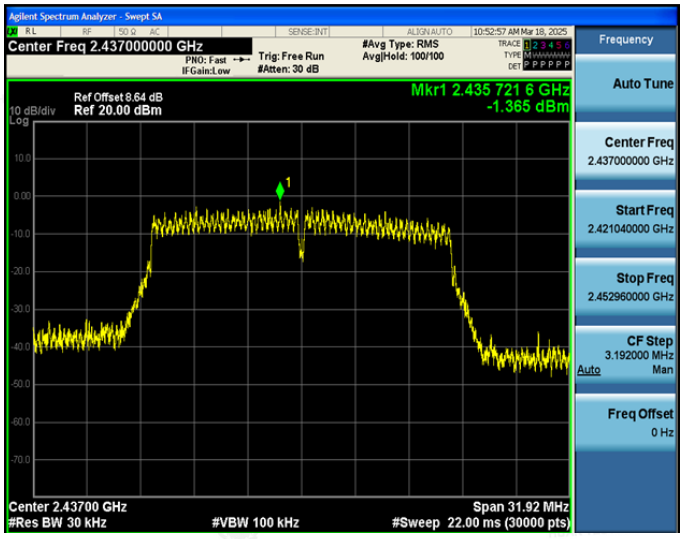


802.11n (HT20) Modulation

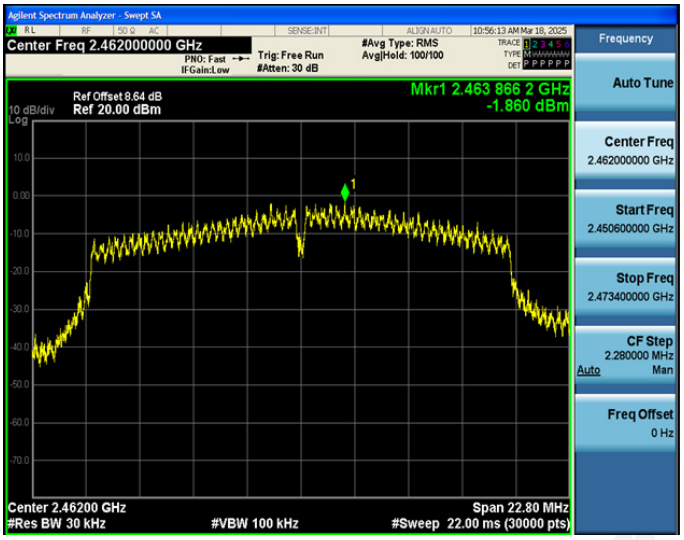
Lowest channel



Middle channel

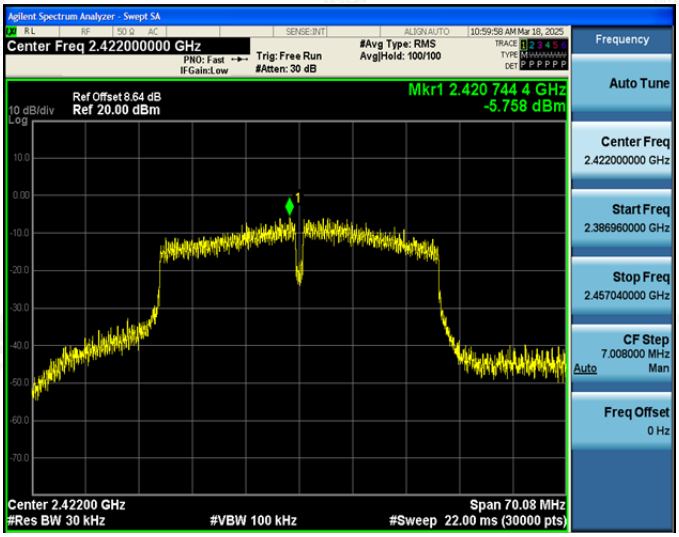


Highest channel

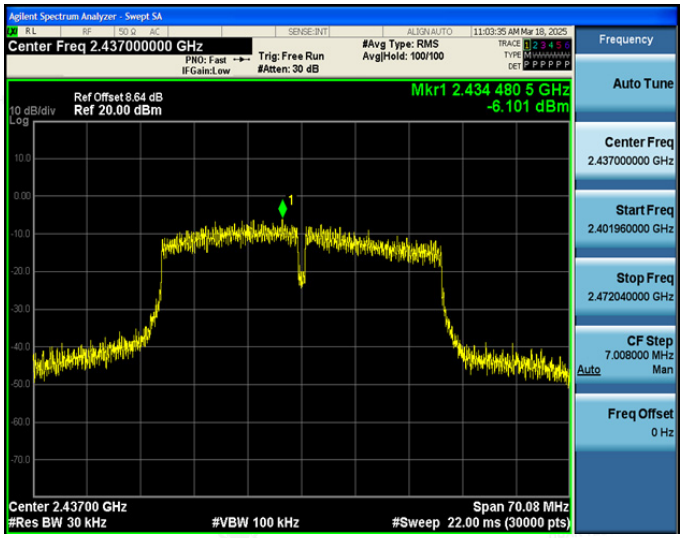


802.11n (HT40) Modulation

Lowest channel



Middle channel



Highest channel