FCC Test Report

Test report

On Behalf of

Shenzhen Haimeilan Technology Co., LTD.d

For

Smart Phone

Model No.: S25 Ultra, S24 Ultra, S23 Ultra, C25 Ultra, C24 Ultra, C23 Ultra, X23 Ultra, X24 Ultra, X25 Ultra, Z23 Ultra, Z24 Ultra, Z25 Ultra, C10 Plus, C30 Plus, G50 Plus, G60 Plus, C73, C7 Ultra, Polaris7 Pro, C3 Luxury, G37 Ultra, M13 Pro, Polaris7, Rise77 Luxury, Opus33 Luxury, Acro77 Luxury, Sirius40 Ultra, H50 Ultra, G3 Luxury, Rise30 Ultra, G7 Ultra, E-on33 Ultra, Vista16 Ultra, I24 Ultra, I25 Ultra, X24, S01, C25, S10, S11, S08, S25 MAX, I15 Ultra, S24 Pro Max

FCC ID: 2BDI3-S

Prepared For :	**Shenzhen Haimeilan Technology Co., LTD.d** **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:	**Dec. 18, 2024 ~ Feb. 17, 2025**
Date of Report:	**Feb. 17, 2025**
Report Number:	**HK2412187831-5E**

Test Result Certification

Applicant's name	:	Shenzhen Haimeilan Technology Co., LTD.d
Address	:	9V777, East 9th Floor, Building 2, SEG Science Park, Huaqiang North Street, Futian District, Shenzhen, 518000 China
Manufacturer's Name	:	Shenzhen Yinma Intelligent Technology Co., Ltd
Address	:	2nd Floor, Building 2, Donglongxing Science and Technology Park, Dalang Street, Longhua District, Shenzhen, 518000 China

Product description

Trade Mark:		N/A
Product name	:	Smart Phone
Series Models	:	S25 Ultra, S24 Ultra, S23 Ultra, C25 Ultra, C24 Ultra, C23 Ultra, X23 Ultra, X24 Ultra, X25 Ultra, Z23 Ultra, Z24 Ultra, Z25 Ultra, C10 Plus, C30 Plus, G50 Plus, G60 Plus, C73, C7 Ultra, Polaris7 Pro, C3 Luxury, G37 Ultra, M13 Pro, Polaris7, Rise77 Luxury, Opus33 Luxury, Acro77 Luxury, Sirius40 Ultra, H50 Ultra, G3 Luxury, Rise30 Ultra, G7 Ultra, E-on33 Ultra, Vista16 Ultra, I24 Ultra, I25 Ultra, X24, S01, C25, S10, S11, S08, S25 MAX, I15 Ultra, S24 Pro Max
Standards	:	**47 CFR FCC Part 15 Subpart C 15.247**

Date of Test	:	
Date (s) of performance of tests	:	Dec. 18, 2024 ~ Feb. 17, 2025
Date of Issue	:	Feb. 17, 2025
Test Result	:	**Pass**

Testing Engineer : Len Liao
(Len Liao)

Technical Manager : Sliver Wan
(Sliver Wan)

Authorized Signatory : Jason Zhou
(Jason Zhou)

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** Modified History **

Revision	Description	Issued Data	Remark
Revision 1.0	Initial Test Report Release	Feb. 17, 2025	Jason Zhou

TEL : +86-755 2302 9901 FAX : +86-755 2302 9901 E-mail : service@cer-mark.com
Add: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

1 Test Summary

1.1 Test Description

Test Item	Test Requirement	Result
Antenna Requirement	§15.203/§15.247(b)(4)	PASS
Conducted Emission	FCC Part 15.207	PASS
Radiated Emissions	FCC Part 15.205/15.209	PASS
Maximum Peak Output Power	FCC Part 15.247(b)	PASS
Power Spectral Density	FCC Part 15.247(e)	PASS
6dB Bandwidth & 99% Bandwidth	FCC Part 15.247(a)(2)	PASS
Spurious RF Conducted Emission	FCC Part 15.247(d)	PASS
Band Edge	FCC Part 15.247(d)	PASS

1.2 Measurement Uncertainty

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

No.	Item	Uncertainty
1	Conducted Emission Test	±2.71dB
2	All emissions, radiated(<1G)	±3.90dB
3	All emissions, radiated(>1G)	±4.28dB

1.3 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.

2 General Information

2.1 General Description of EUT

EUT Name:	Smart Phone
Model Name	S25 Ultra
Series Models:	S24 Ultra, S23 Ultra, C25 Ultra, C24 Ultra, C23 Ultra, X23 Ultra, X24 Ultra, X25 Ultra, Z23 Ultra, Z24 Ultra, Z25 Ultra, C10 Plus, C30 Plus, G50 Plus, G60 Plus, C73, C7 Ultra, Polaris7 Pro, C3 Luxury, G37 Ultra, M13 Pro, Polaris7, Rise77 Luxury, Opus33 Luxury, Acro77 Luxury, Sirius40 Ultra, H50 Ultra, G3 Luxury, Rise30 Ultra, G7 Ultra, E-on33 Ultra, Vista16 Ultra, I24 Ultra, I25 Ultra, X24, S01, C25, S10, S11, S08, S25 MAX, I15 Ultra, S24 Pro Max
Model Difference:	All model's the function, software and electric circuit are the same, only with a product appearance, color and model named different. Test sample mode: S25 Ultra.
Trade Mark:	N/A
Operation Frequency:	2402 MHz to 2480 MHz
Channel Separation:	2MHz
Number of Channel:	40
Modulation Technology:	GFSK
Hardware Version:	V1.0
Software Version:	V1.0
Antenna Type:	FPC Antenna
Antenna Gain:	0.72dBi
Power Supply:	DC 5V From Type-C or DC 3.85V From Battery
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.	

Description of Channel:					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	2402	14	2430	28	2458
1	2404	15	2432	29	2460
2	2406	16	2434	30	2462
3	2408	17	2436	31	2464
4	2410	18	2438	32	2466
5	2412	19	2440	33	2468
6	2414	20	2442	34	2470
7	2416	21	2444	35	2472
8	2418	22	2446	36	2474
9	2420	23	2448	37	2476
10	2422	24	2450	38	2478
11	2424	25	2452	39	2480
12	2426	26	2454		
13	2428	27	2456		

The EUT has been operated in modulations: GFSK independently.

NO.	Test Mode Description
1	Low channel TX
2	Middle channel TX
3	High channel TX

Note:
1. All the test modes can be supply by Built-in Li-ion battery, only the result of the worst case was recorded in the report if no any records.
2. For Radiated Emission, 3axis were chosen for testing for each applicable mode.

2.2 Description of Test Conditions

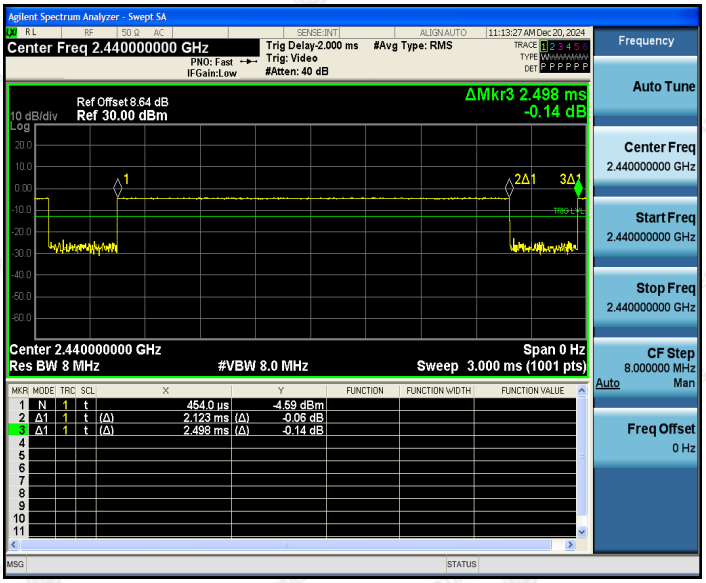
(1) E.U.T. test conditions:
For intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage. For battery operated equipment, the equipment tests shall be performed using a new battery.

(2) Frequency range of radiated measurements:
The test range will be up to the tenth harmonic of the highest fundamental frequency.

(3) Pre-test the EUT in all transmitting mode at the lowest (2402 MHz), middle (2440 MHz) and highest (2480 MHz) channel with different data packet and conducted to determine the worst-case mode, only the worst-case results are recorded in this report.

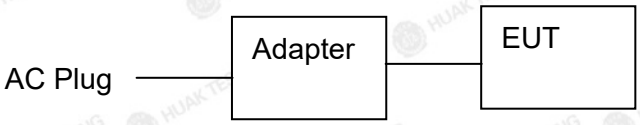
(4) Mode Test Duty Cycle

Mode	Duty Cycle	Duty Cycle Factor (dB)
BT-LE(1Mbps)	0.85	-0.71



2.3 Description of Test Setup

Operation of EUT during conducted testing and below 1GHz radiation testing:



Operation of EUT during above1GHz radiation 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.

2.4 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 Equipments List for All Test Items

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	L.I.S.N.	R&S	ENV216	HKE-002	2024/02/20	1 Year
2	L.I.S.N.	R&S	ENV216	HKE-059	2024/02/20	1 Year
3	EMI Test Receiver	R&S	ESR	HKE-005	2024/02/20	1 Year
4	Spectrum analyzer	Agilent	N9020A	HKE-048	2024/02/20	1 Year
5	Spectrum analyzer	R&S	FSV3044	HKE-126	2024/02/20	1 Year
6	Preamplifier	EMCI	EMC051845S	HKE-006	2024/02/20	1 Year
7	Preamplifier	Schwarzbeck	BBV 9743	HKE-016	2024/02/20	1 Year
8	Preamplifier	A.H. Systems	SAS-574	HKE-182	2024/02/20	1 Year
9	6d Attenuator	Pasternack	6db	HKE-184	2024/02/20	1 Year
10	EMI Test Receiver	Rohde & Schwarz	ESR-7	HKE-010	2024/02/20	1 Year
11	Broadband Antenna	Schwarzbeck	VULB9168	HKE-167	2024/02/21	2 Year
12	Loop Antenna	COM-POWER	AL-130R	HKE-014	2024/02/21	2 Year
13	Horn Antenna	Schwarzbeck	9120D	HKE-013	2024/02/21	2 Year
14	EMI Test Software	Tonscend	JS32-CE 2.5.0.6	HKE-081	/	/
15	EMI Test Software	Tonscend	JS32-RE 5.0.0	HKE-082	/	/
16	RF Automatic control unit	Tonscend	JS0806-1	HKE-096	2024/02/20	1 Year
17	High pass filter unit	Tonscend	JS0806-F	HKE-055	2024/02/20	1 Year
18	Wireless Communication Test Set	R&S	CMU200	HKE-026	2024/02/20	1 Year
19	Wireless Communication Test Set	R&S	CMW500	HKE-027	2024/02/20	1 Year
20	High-low temperature chamber	Guangke	HT-80L	HKE-118	2024/06/10	1 Year
21	Temperature and humidity meter	Boyang	HTC-1	HKE-075	2024/06/10	1 Year
22	RF Test Software	Tonscend	JS1120-3 Version 3.5.39	HKE-083	/	/
23	10dB Attenuator	Schwarzbeck	VTSD9561F	HKE-153	2024/02/20	1 Year
24	RSE Test Software	Tonscend	JS36-RSE 5.0.0	HKE-184	/	/

4 Test Result

4.1 Antenna Requirement

4.1.1 Standard Requirement

Standard Applicable

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

Refer to statement below for compliance.

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

Antenna Connected Construction

The antenna used in this product is a FPC Antenna, need professional installation, not easy to remove. It conforms to the standard requirements. The directional gains of antenna used for transmitting is 0.72dBi.

4.1.2 EUT Antenna

4.2 Conduction Emissions Measurement

4.2.1 Applied Procedures / Limit

According to FCC CFR Title 47 Part 15 Subpart C Section 15.207, AC Power Line Conducted Emissions Limits for Licence-Exempt Radio Apparatus as below:

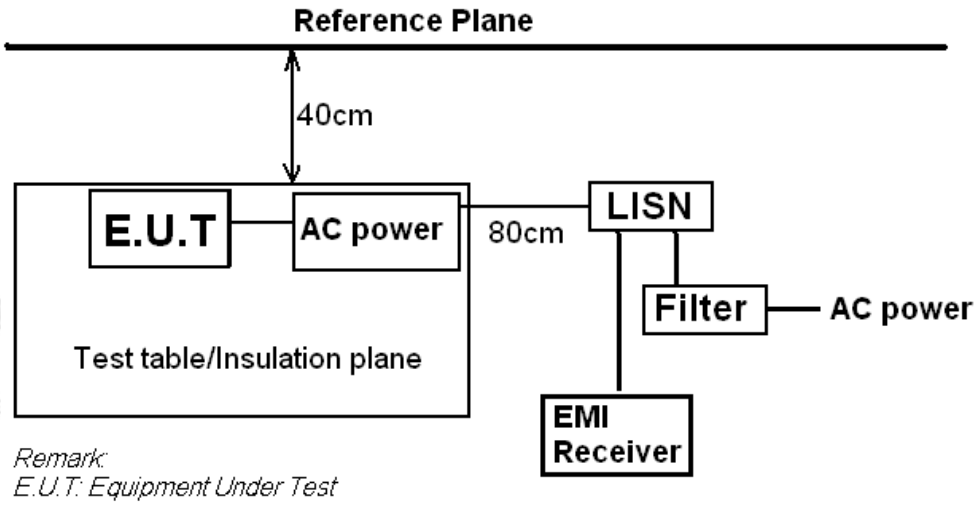
Frequency range (MHz)	Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

4.2.2 Test Procedure

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

4.2.3 Test Setup



Remark:
E.U.T: Equipment Under Test
LISN: Line Impedence Stabilization Network
Test table height=0.8m

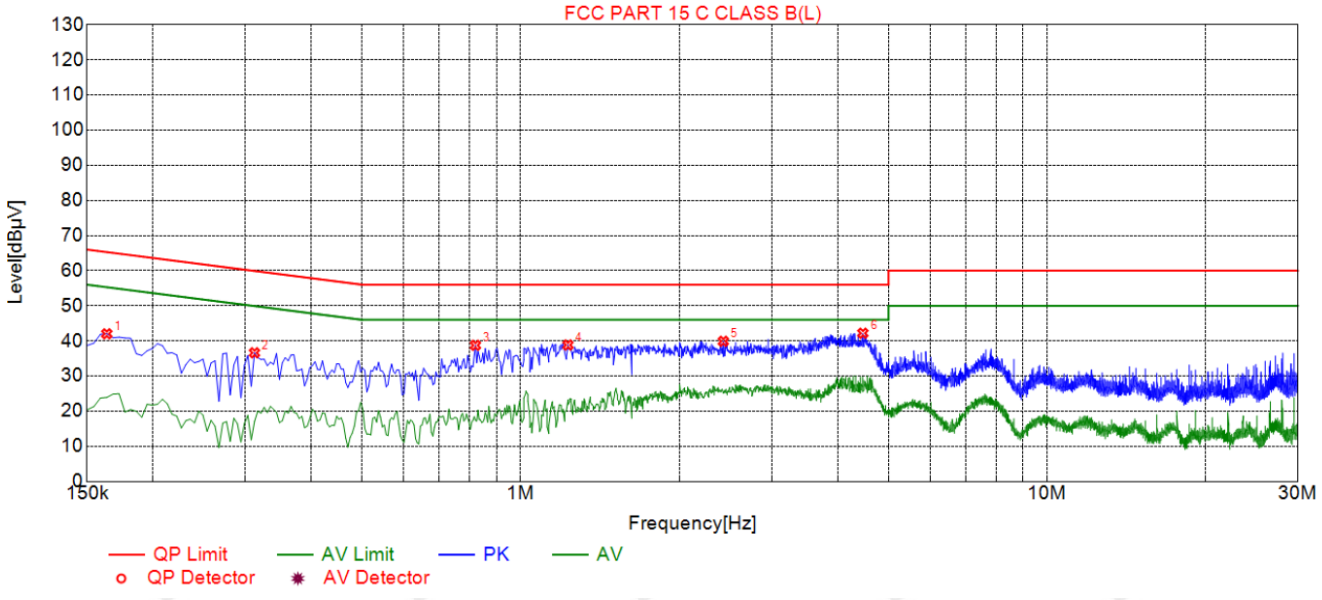
4.2.4 Test Results

PASS

Only the worst result of GFSK Low channel TX was reported as below:

Test Model No.: S25 Ultra

Test Specification: Line



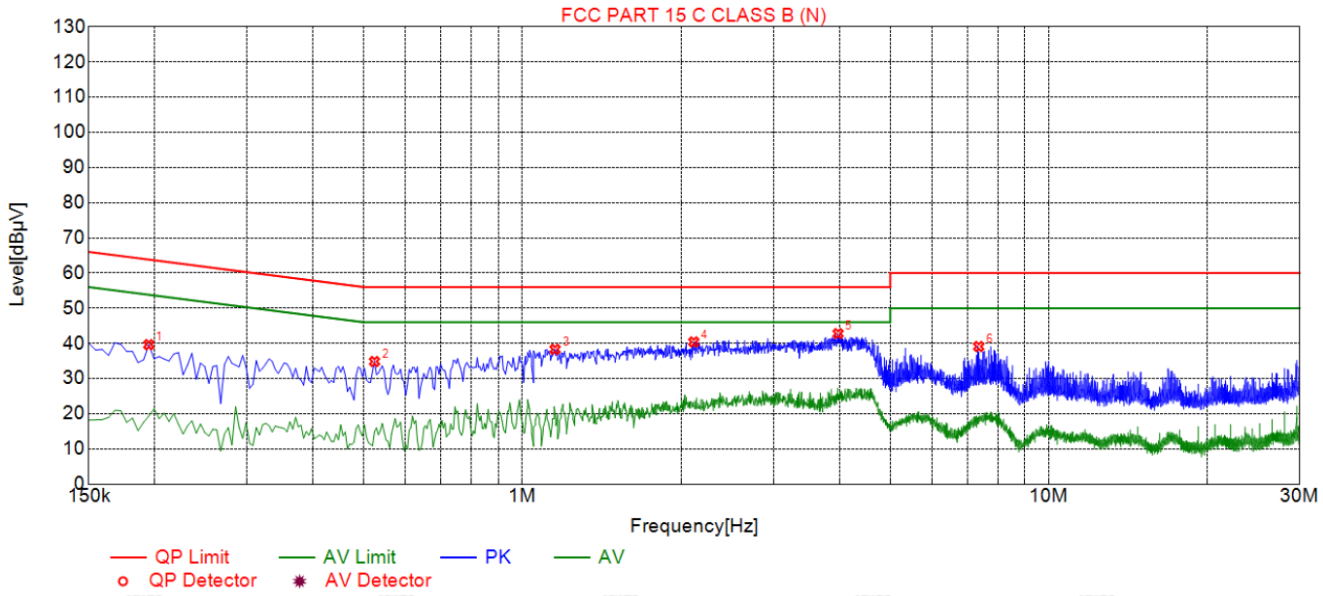
Suspected List								
NO.	Freq. [MHz]	Level [dBµV]	Factor [dB]	Limit [dBµV]	Margin [dB]	Reading [dBµV]	Detector	Type
1	0.1635	42.03	19.78	65.28	23.25	22.25	PK	L
2	0.3120	36.62	19.85	59.92	23.30	16.77	PK	L
3	0.8205	38.76	19.87	56.00	17.24	18.89	PK	L
4	1.2300	38.84	19.90	56.00	17.16	18.94	PK	L
5	2.4270	39.89	20.01	56.00	16.11	19.88	PK	L
6	4.4700	42.19	20.09	56.00	13.81	22.10	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	0.1950	39.63	19.73	63.82	24.19	19.90	PK	N
2	0.5235	34.84	19.73	56.00	21.16	15.11	PK	N
3	1.1535	38.31	19.77	56.00	17.69	18.54	PK	N
4	2.1165	40.41	19.85	56.00	15.59	20.56	PK	N
5	3.9795	42.78	19.97	56.00	13.22	22.81	PK	N
6	7.3635	39.11	19.95	60.00	20.89	19.16	PK	N

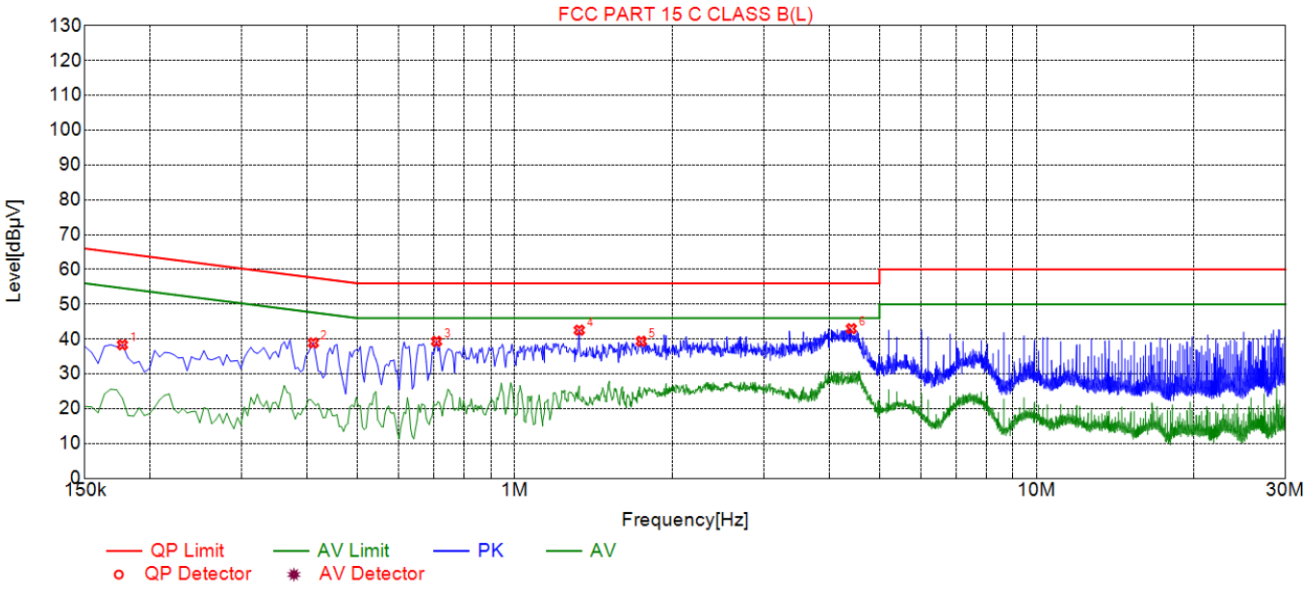
Remark: Margin = Limit – Level

Correction factor = Cable lose + LISN insertion loss

Level=Test receiver reading + correction factor

Series Model No.: X24 Ultra

Test Specification: Line



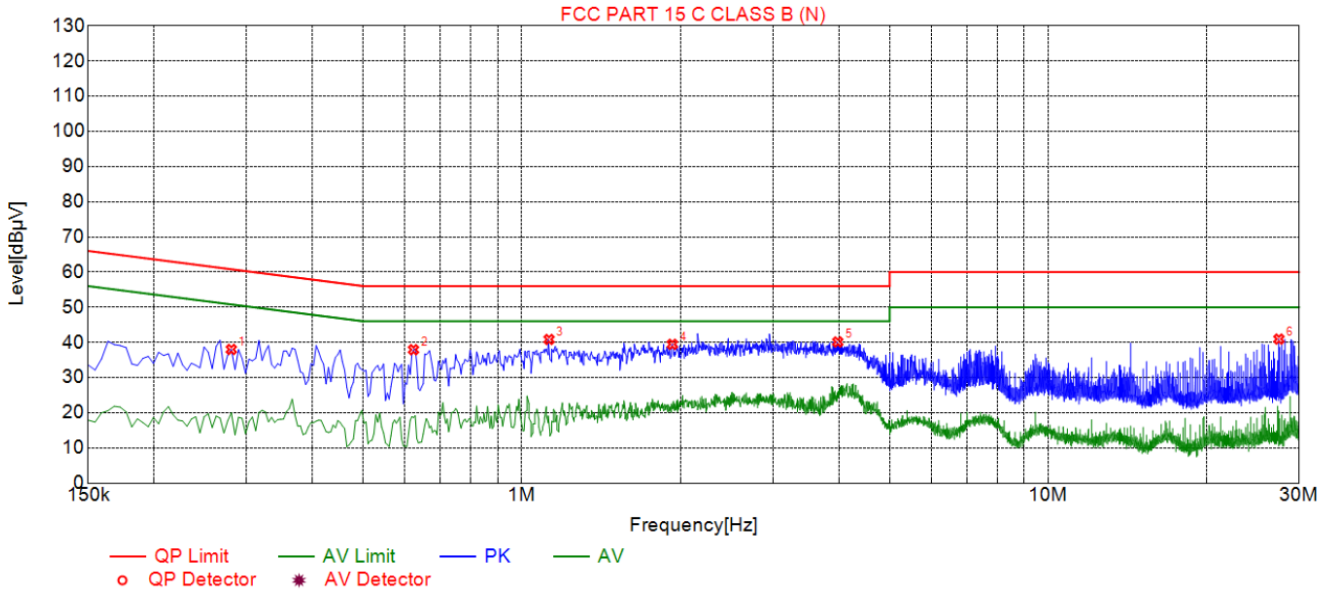
Suspected List								
NO.	Freq. [MHz]	Level [dBµV]	Factor [dB]	Limit [dBµV]	Margin [dB]	Reading [dBµV]	Detector	Type
1	0.1770	38.35	19.85	64.63	26.28	18.50	PK	L
2	0.4110	38.90	19.83	57.63	18.73	19.07	PK	L
3	0.7080	39.34	19.86	56.00	16.66	19.48	PK	L
4	1.3290	42.56	19.91	56.00	13.44	22.65	PK	L
5	1.7475	39.37	19.95	56.00	16.63	19.42	PK	L
6	4.4160	42.99	20.09	56.00	13.01	22.90	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	0.2805	38.01	19.73	60.80	22.79	18.28	PK	N
2	0.6225	37.93	19.74	56.00	18.07	18.19	PK	N
3	1.1265	40.84	19.76	56.00	15.16	21.08	PK	N
4	1.9320	39.45	19.83	56.00	16.55	19.62	PK	N
5	3.9840	40.13	19.97	56.00	15.87	20.16	PK	N
6	27.4605	40.94	20.31	60.00	19.06	20.63	PK	N

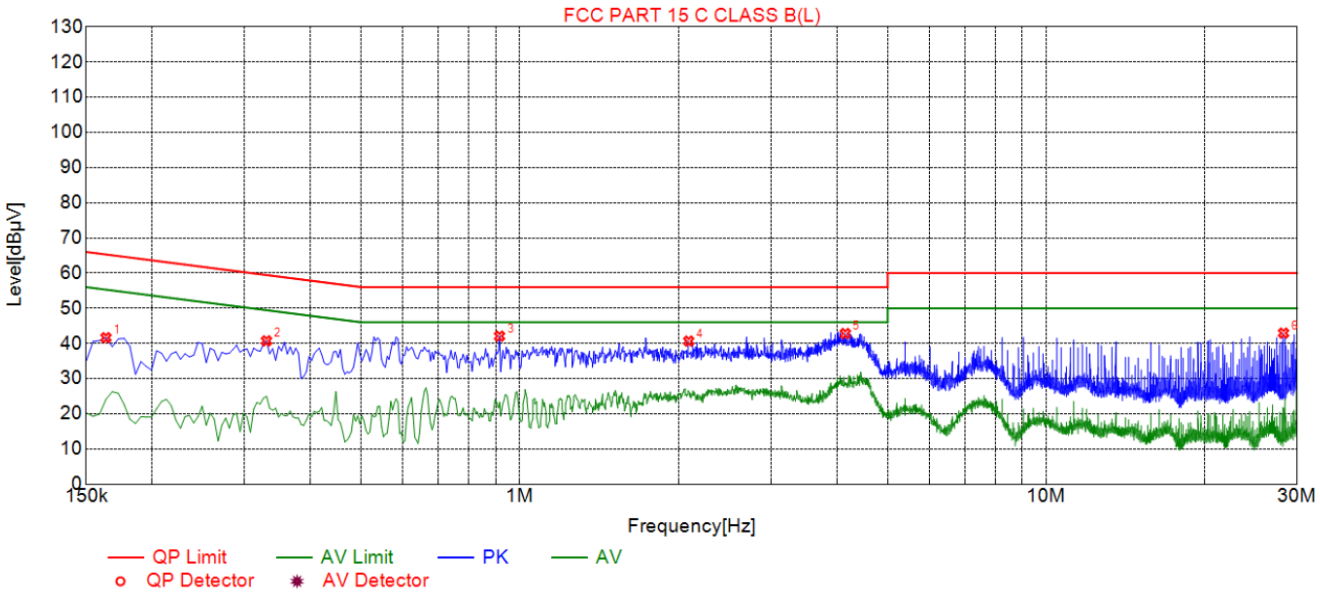
Remark: Margin = Limit – Level

Correction factor = Cable lose + LISN insertion loss

Level=Test receiver reading + correction factor

Series Model No.: C24 Ultra

Test Specification: Line



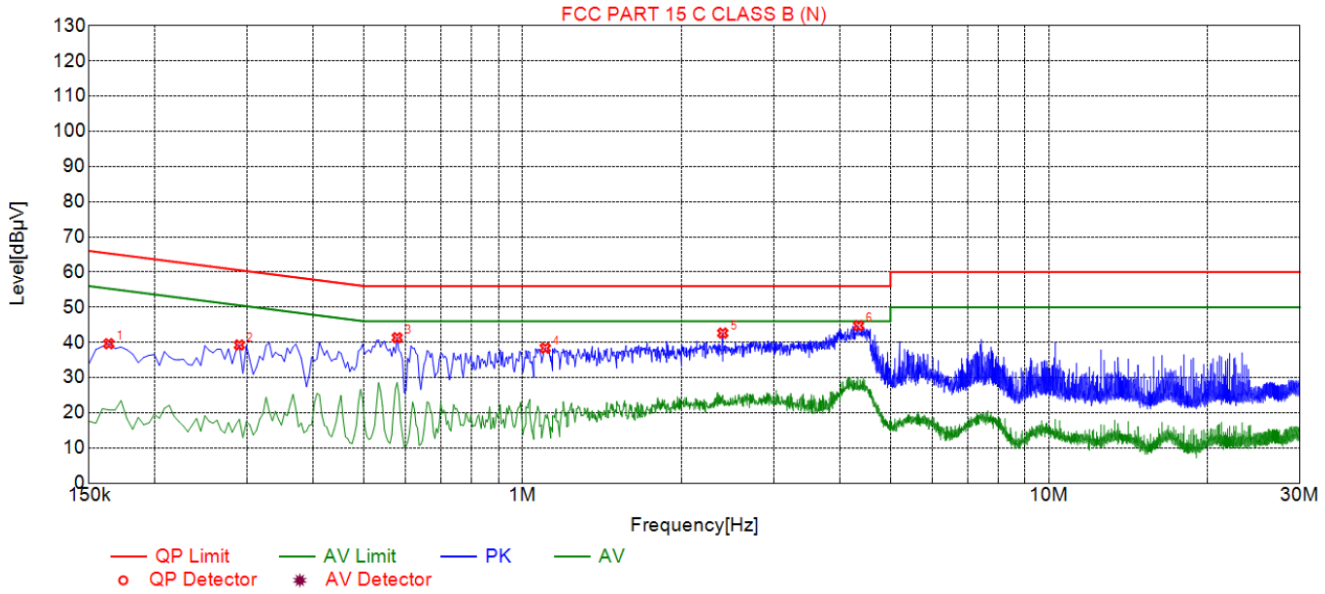
Suspected List								
NO.	Freq. [MHz]	Level [dBµV]	Factor [dB]	Limit [dBµV]	Margin [dB]	Reading [dBµV]	Detector	Type
1	0.1635	41.64	19.78	65.28	23.64	21.86	PK	L
2	0.3300	40.73	19.84	59.45	18.72	20.89	PK	L
3	0.9150	42.07	19.87	56.00	13.93	22.20	PK	L
4	2.0940	40.66	19.97	56.00	15.34	20.69	PK	L
5	4.1550	42.82	20.09	56.00	13.18	22.73	PK	L
6	28.2615	42.94	20.23	60.00	17.06	22.71	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	0.1635	39.63	19.68	65.28	25.65	19.95	PK	N
2	0.2895	39.26	19.73	60.54	21.28	19.53	PK	N
3	0.5775	41.34	19.74	56.00	14.66	21.60	PK	N
4	1.1040	38.38	19.76	56.00	17.62	18.62	PK	N
5	2.4000	42.65	19.88	56.00	13.35	22.77	PK	N
6	4.3485	44.74	19.98	56.00	11.26	24.76	PK	N

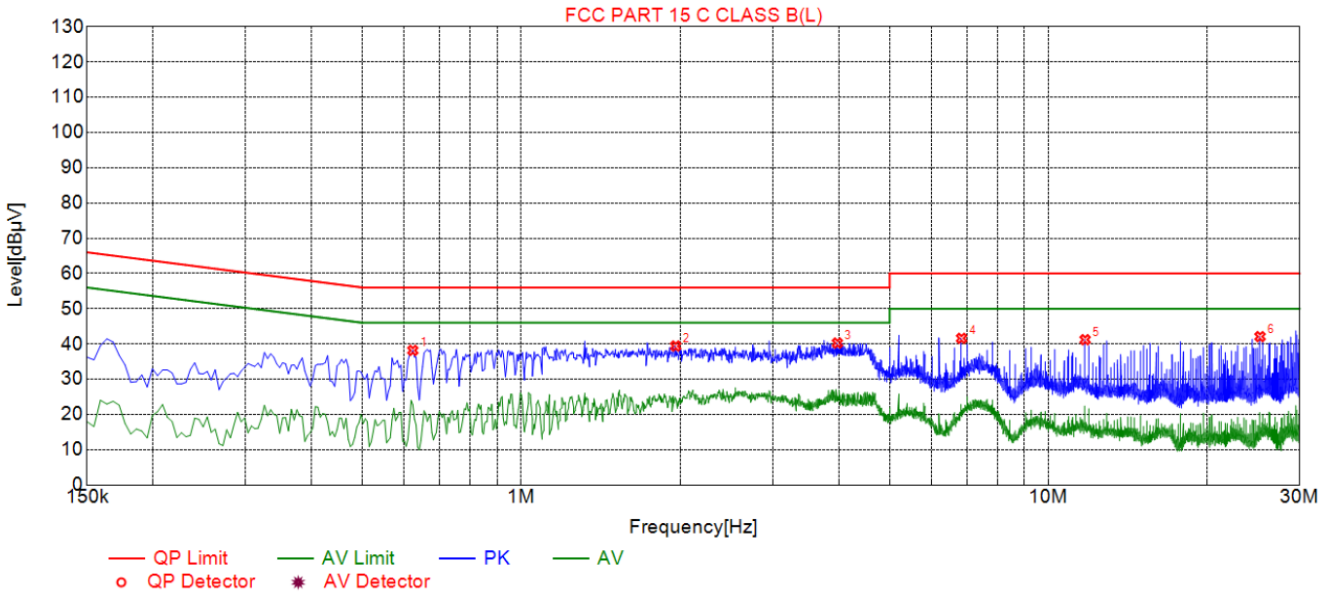
Remark: Margin = Limit – Level

Correction factor = Cable lose + LISN insertion loss

Level=Test receiver reading + correction factor

Series Model No.: C25

Test Specification: Line



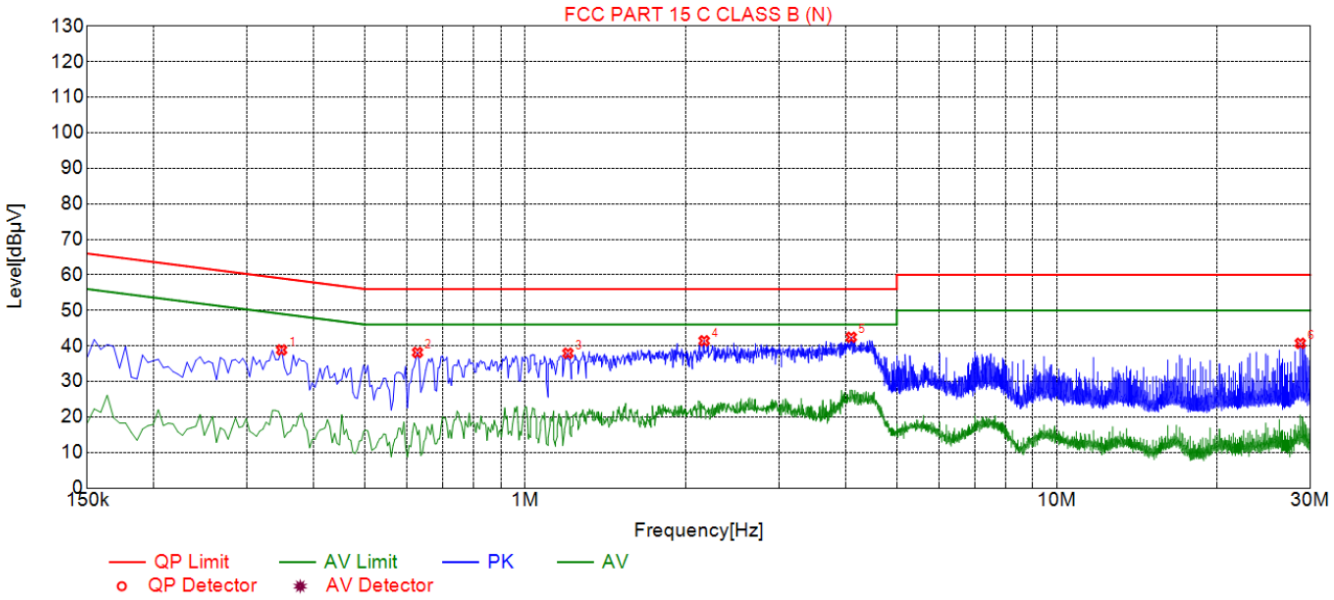
Suspected List								
NO.	Freq. [MHz]	Level [dBµV]	Factor [dB]	Limit [dBµV]	Margin [dB]	Reading [dBµV]	Detector	Type
1	0.6225	38.18	19.86	56.00	17.82	18.32	PK	L
2	1.9635	39.41	19.96	56.00	16.59	19.45	PK	L
3	3.9795	40.26	20.09	56.00	15.74	20.17	PK	L
4	6.8460	41.59	20.07	60.00	18.41	21.52	PK	L
5	11.7465	41.21	19.88	60.00	18.79	21.33	PK	L
6	25.2285	42.08	20.15	60.00	17.92	21.93	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	0.3480	38.88	19.72	59.01	20.13	19.16	PK	N
2	0.6270	38.17	19.74	56.00	17.83	18.43	PK	N
3	1.2030	37.94	19.77	56.00	18.06	18.17	PK	N
4	2.1705	41.44	19.86	56.00	14.56	21.58	PK	N
5	4.1055	42.45	19.97	56.00	13.55	22.48	PK	N
6	28.7115	40.74	20.34	60.00	19.26	20.40	PK	N

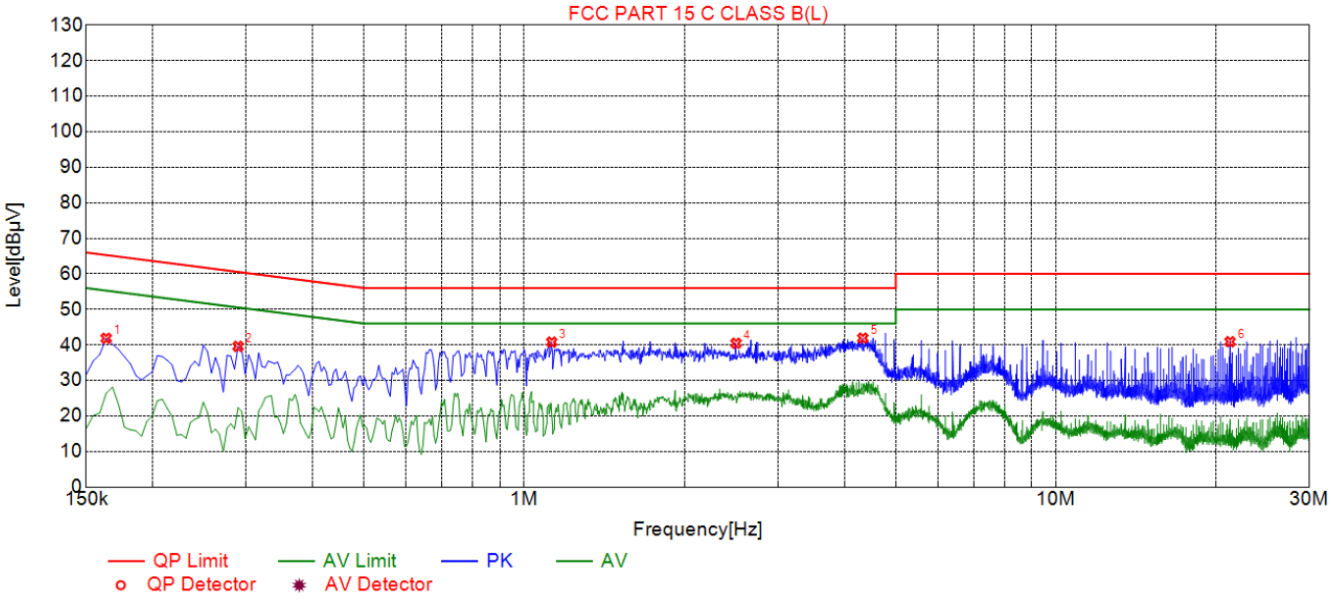
Remark: Margin = Limit – Level

Correction factor = Cable lose + LISN insertion loss

Level=Test receiver reading + correction factor

Series Model No.: I15 Ultra

Test Specification: Line



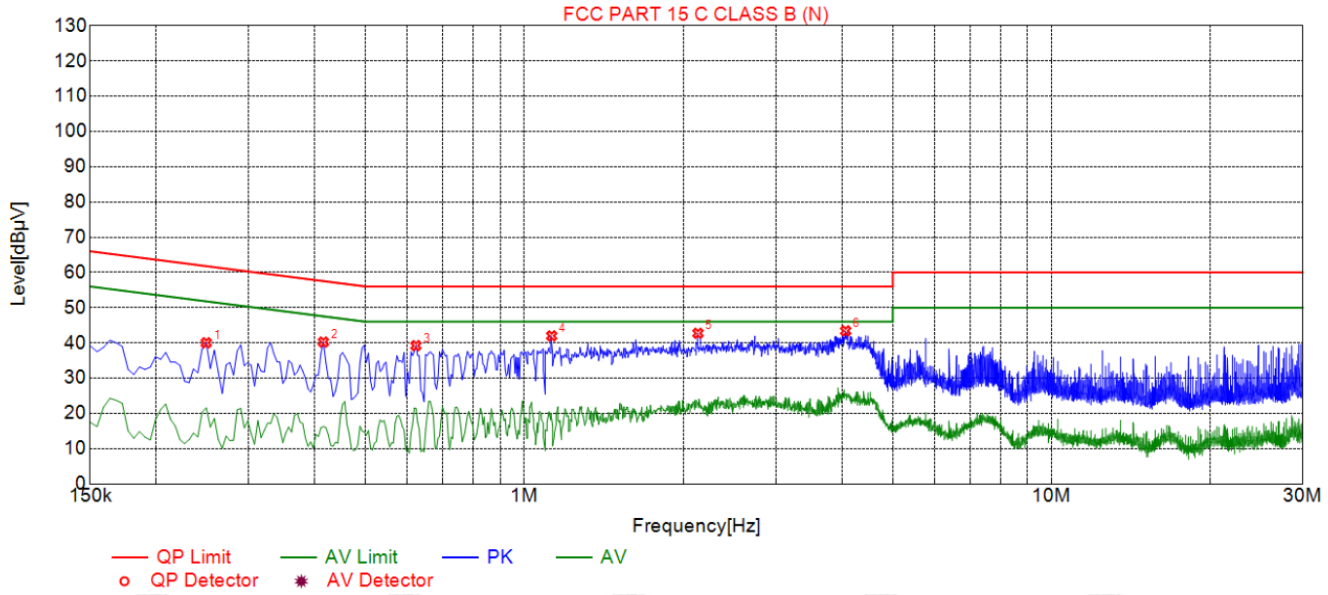
Suspected List								
NO.	Freq. [MHz]	Level [dBµV]	Factor [dB]	Limit [dBµV]	Margin [dB]	Reading [dBµV]	Detector	Type
1	0.1635	41.87	19.78	65.28	23.41	22.09	PK	L
2	0.2895	39.59	19.84	60.54	20.95	19.75	PK	L
3	1.1265	40.79	19.89	56.00	15.21	20.90	PK	L
4	2.5035	40.47	20.02	56.00	15.53	20.45	PK	L
5	4.3350	41.91	20.09	56.00	14.09	21.82	PK	L
6	21.2730	40.90	19.96	60.00	19.10	20.94	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	0.2490	40.04	19.73	61.79	21.75	20.31	PK	N
2	0.4155	40.25	19.73	57.54	17.29	20.52	PK	N
3	0.6225	39.23	19.74	56.00	16.77	19.49	PK	N
4	1.1265	42.00	19.76	56.00	14.00	22.24	PK	N
5	2.1345	42.74	19.85	56.00	13.26	22.89	PK	N
6	4.0695	43.40	19.97	56.00	12.60	23.43	PK	N

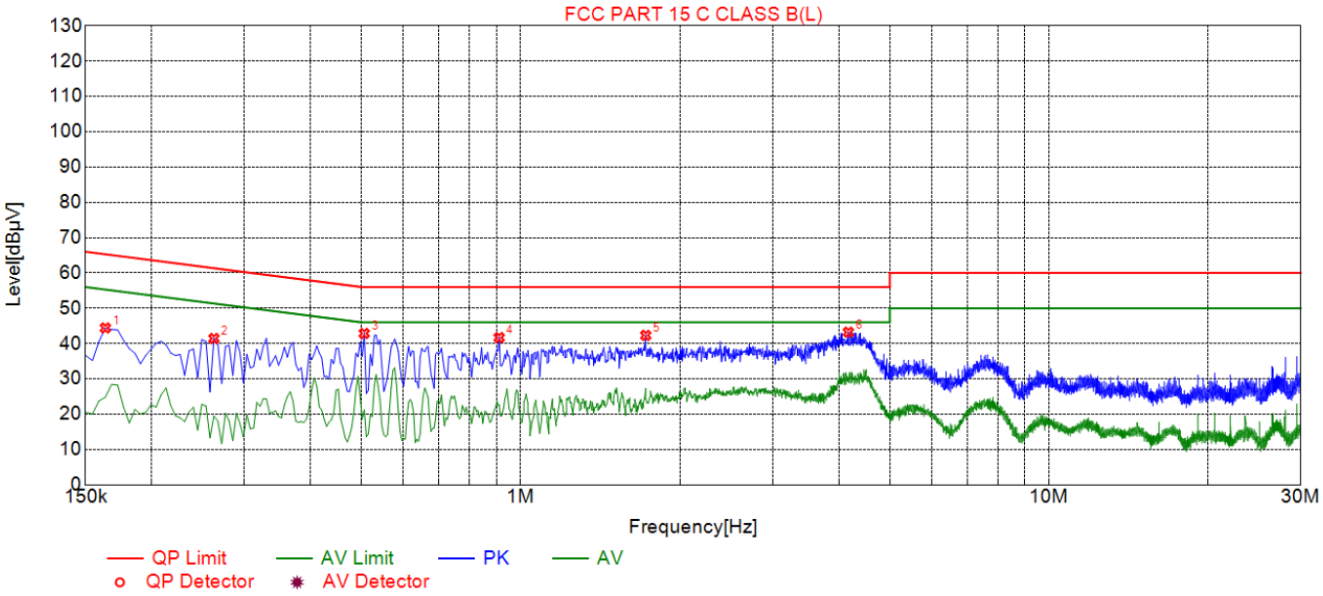
Remark: Margin = Limit – Level

Correction factor = Cable lose + LISN insertion loss

Level=Test receiver reading + correction factor

Series Model No.: C7 Ultra

Test Specification: Line



Suspected List

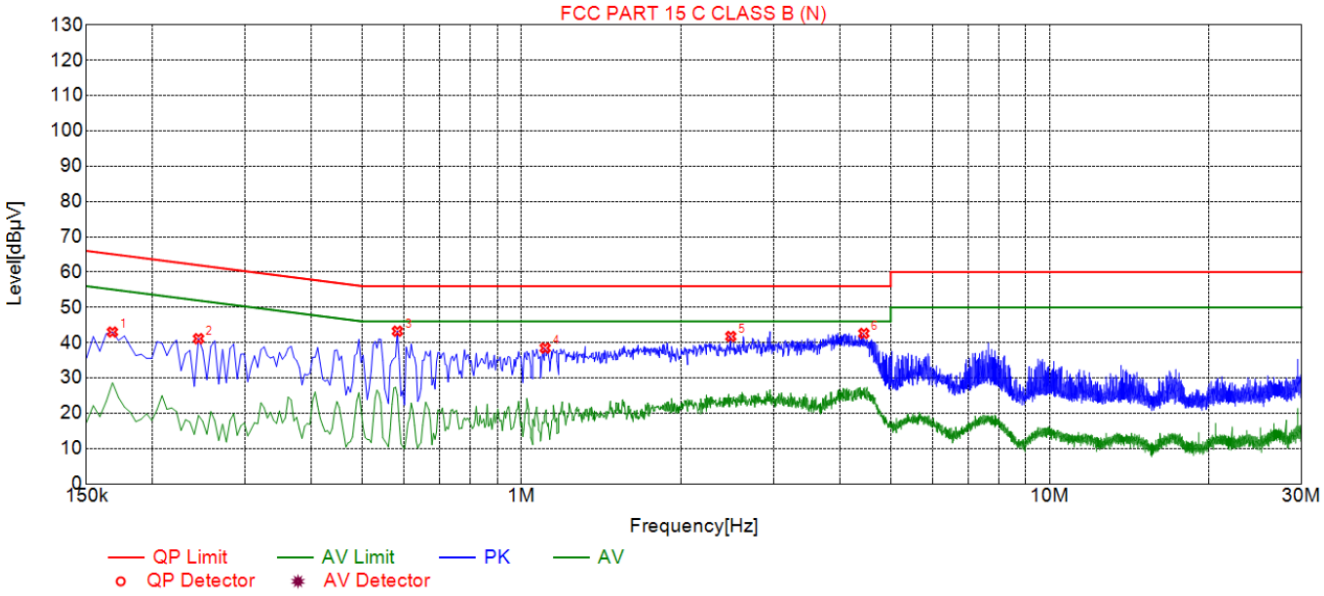
NO.	Freq. [MHz]	Level [dBµV]	Factor [dB]	Limit [dBµV]	Margin [dB]	Reading [dBµV]	Detector	Type
1	0.1635	44.42	19.78	65.28	20.86	24.64	PK	L
2	0.2625	41.43	19.83	61.35	19.92	21.60	PK	L
3	0.5055	42.86	19.84	56.00	13.14	23.02	PK	L
4	0.9105	41.67	19.87	56.00	14.33	21.80	PK	L
5	1.7250	42.32	19.95	56.00	13.68	22.37	PK	L
6	4.1730	43.22	20.09	56.00	12.78	23.13	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	0.1680	43.01	19.71	65.06	22.05	23.30	PK	N
2	0.2445	41.13	19.73	61.94	20.81	21.40	PK	N
3	0.5820	43.25	19.74	56.00	12.75	23.51	PK	N
4	1.1085	38.47	19.76	56.00	17.53	18.71	PK	N
5	2.4900	41.75	19.89	56.00	14.25	21.86	PK	N
6	4.4475	42.62	19.98	56.00	13.38	22.64	PK	N

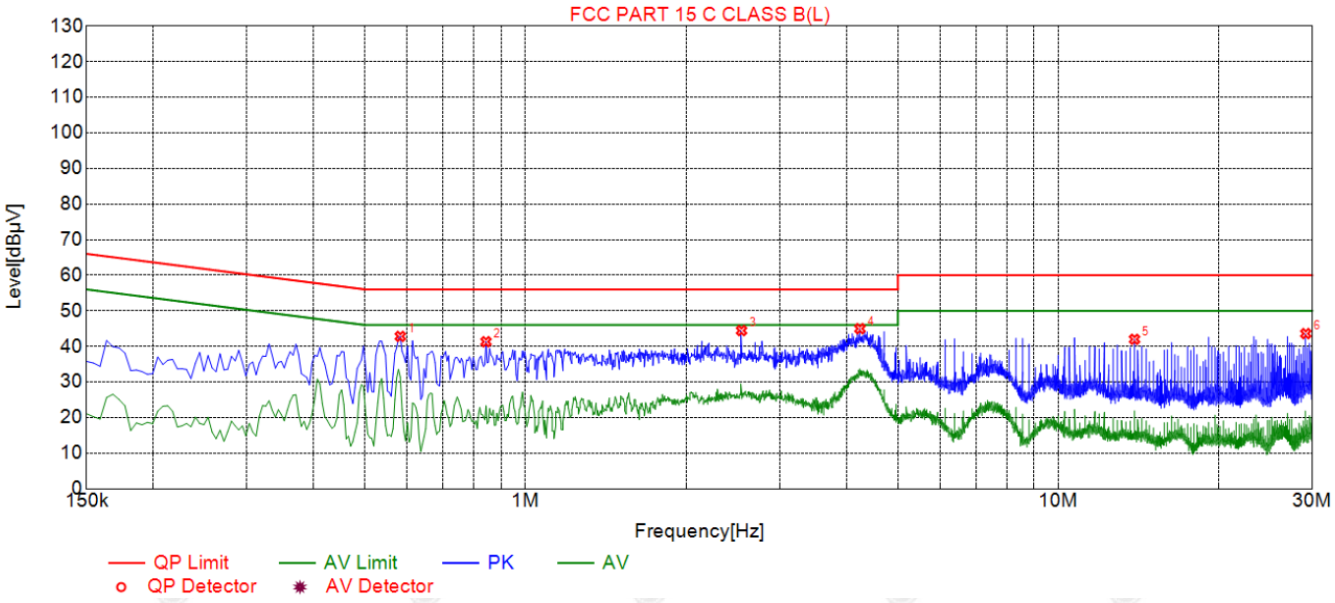
Remark: Margin = Limit – Level

Correction factor = Cable lose + LISN insertion loss

Level=Test receiver reading + correction factor

Series Model No.: S24 Ultra

Test Specification: Line



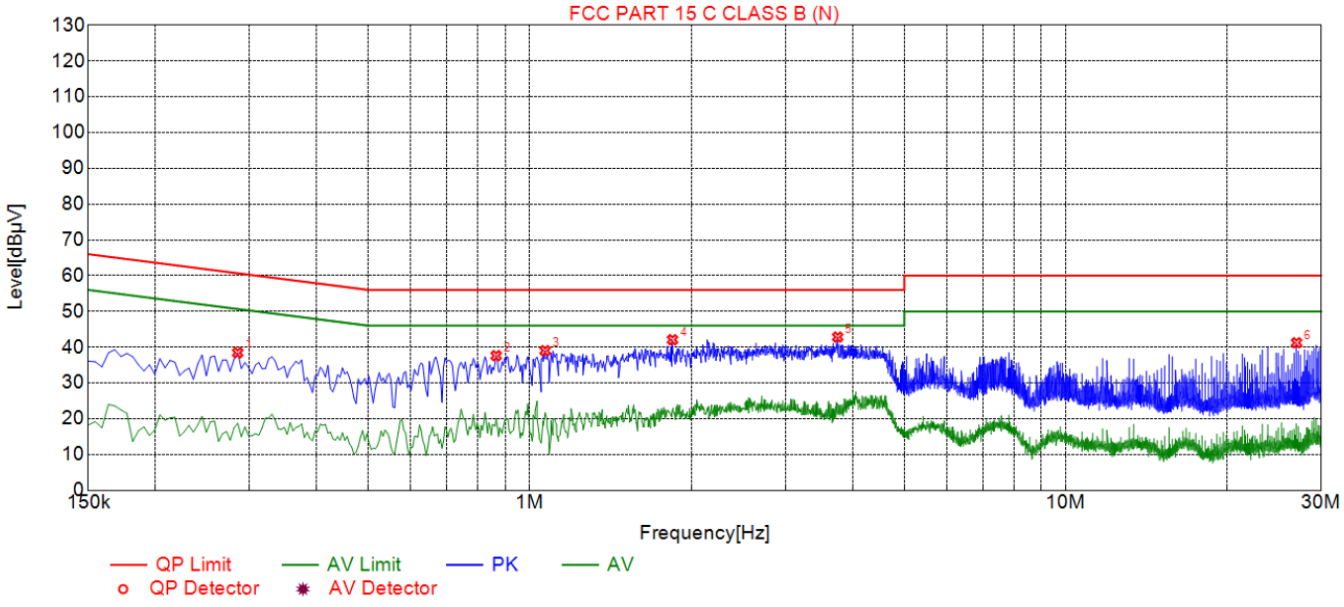
Suspected List								
NO.	Freq. [MHz]	Level [dBµV]	Factor [dB]	Limit [dBµV]	Margin [dB]	Reading [dBµV]	Detector	Type
1	0.5820	42.81	19.86	56.00	13.19	22.95	PK	L
2	0.8430	41.31	19.87	56.00	14.69	21.44	PK	L
3	2.5440	44.44	20.02	56.00	11.56	24.42	PK	L
4	4.2450	44.99	20.09	56.00	11.01	24.90	PK	L
5	13.9065	41.99	19.82	60.00	18.01	22.17	PK	L
6	29.1570	43.60	20.24	60.00	16.40	23.36	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	0.2850	38.44	19.73	60.67	22.23	18.71	PK	N
2	0.8655	37.64	19.74	56.00	18.36	17.90	PK	N
3	1.0680	39.02	19.75	56.00	16.98	19.27	PK	N
4	1.8465	42.08	19.83	56.00	13.92	22.25	PK	N
5	3.7545	42.83	19.97	56.00	13.17	22.86	PK	N
6	26.9835	41.23	20.30	60.00	18.77	20.93	PK	N

Remark: Margin = Limit – Level

Correction factor = Cable lose + LISN insertion loss

Level=Test receiver reading + correction factor

4.3 Radiated Emissions Measurement

4.3.1 Applied Procedures / Limit

For intentional device, according to § 15.209(a), the general requirement of field strength of radiated emission out of authorized band shall not exceed the following table at a 3 meters measurement distance.

In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a).

Except when the requirements applicable to a given device state otherwise, emissions from license-exempt transmitters shall comply with the field strength limits shown in table below. Additionally, the level of any transmitter emission shall not exceed the level of the transmitter's fundamental emission.

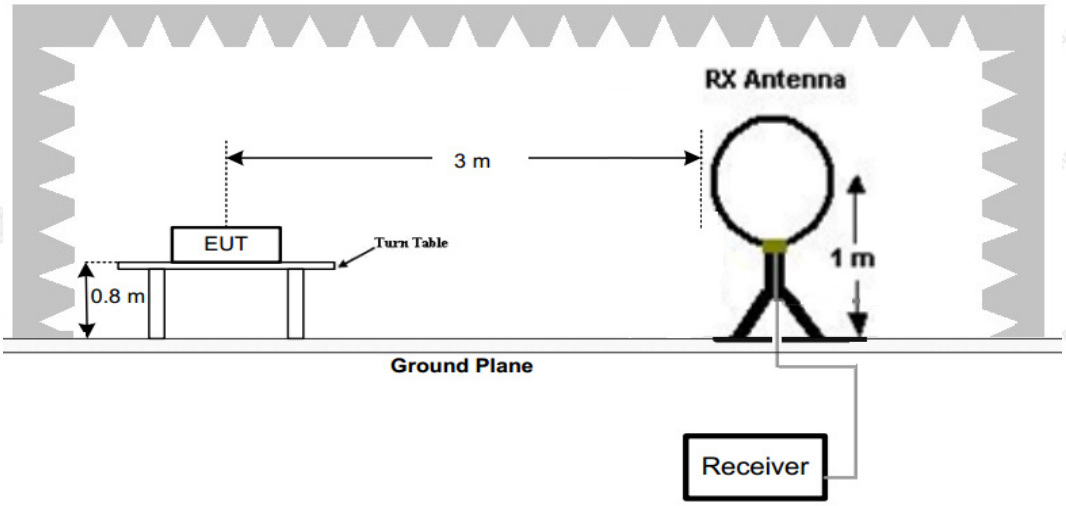
Radiated emission limits

Frequency (MHz)	Distance (Meters)	Radiated (dBμV/m)	Radiated (μV/m)
0.009-0.49	3	20log(2400/F(KHz))+40log(300/3)	2400/F(KHz)
0.49-1.705	3	20log(24000/F(KHz))+ 40log(30/3)	24000/F(KHz)
1.705-30	3	20log(30)+ 40log(30/3)	30
30-88	3	40.0	100
88-216	3	43.5	150
216-960	3	46.0	200
Above 960	3	54.0	500

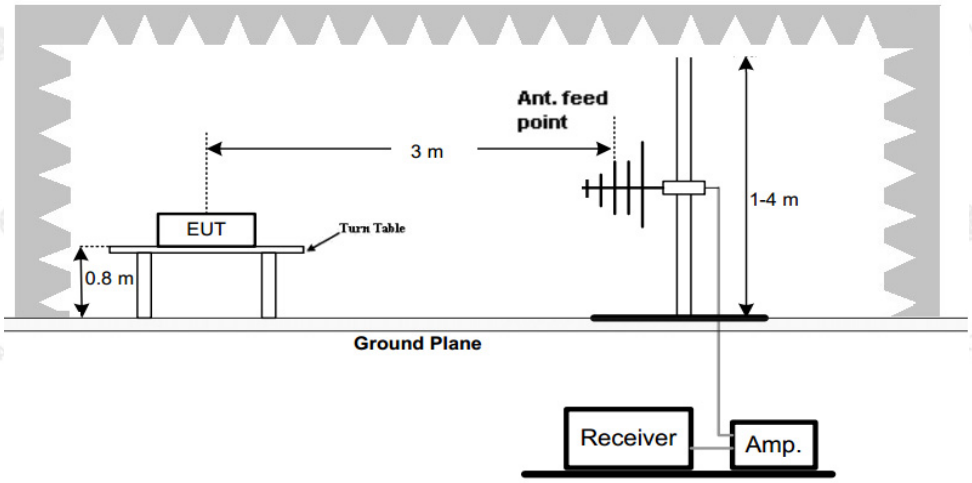
4.3.2 Test Setup

Test Configuration:

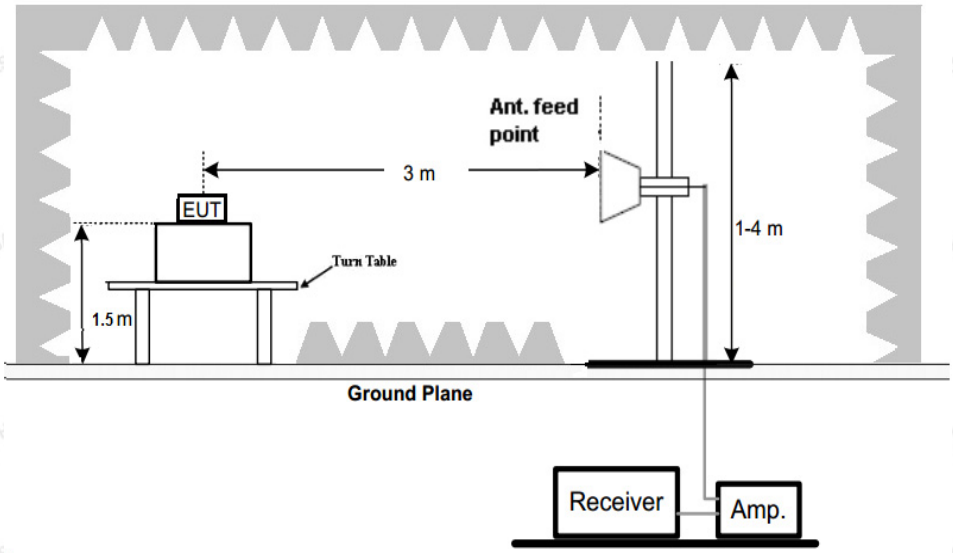
1) 9 kHz to 30 MHz emissions:



2) 30 MHz to 1 GHz emissions:



3) 1 GHz to 25 GHz emissions:



Test Procedure

1. The EUT was placed on turn table which is 0.8m above ground plane for below 1GHz test, and on a low permittivity and low loss tangent turn table which is 1.5m above ground plane for above 1GHz test.
2. Maximum procedure was performed by raising the receiving antenna from 1m to 4m and rotating the turn table from 0° to 360° to acquire the highest emissions from EUT.
3. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
4. Repeat above procedures until all frequency measurements have been completed.

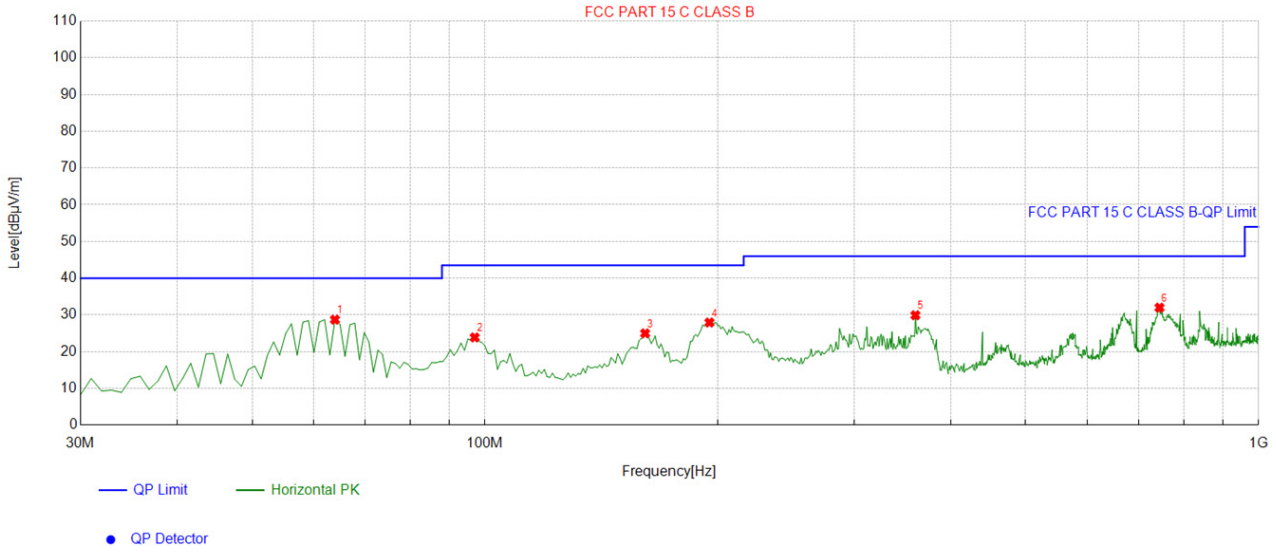
4.3.3 Test Result

Below 1GHz Test Results:

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

Test Model No.: S25 Ultra

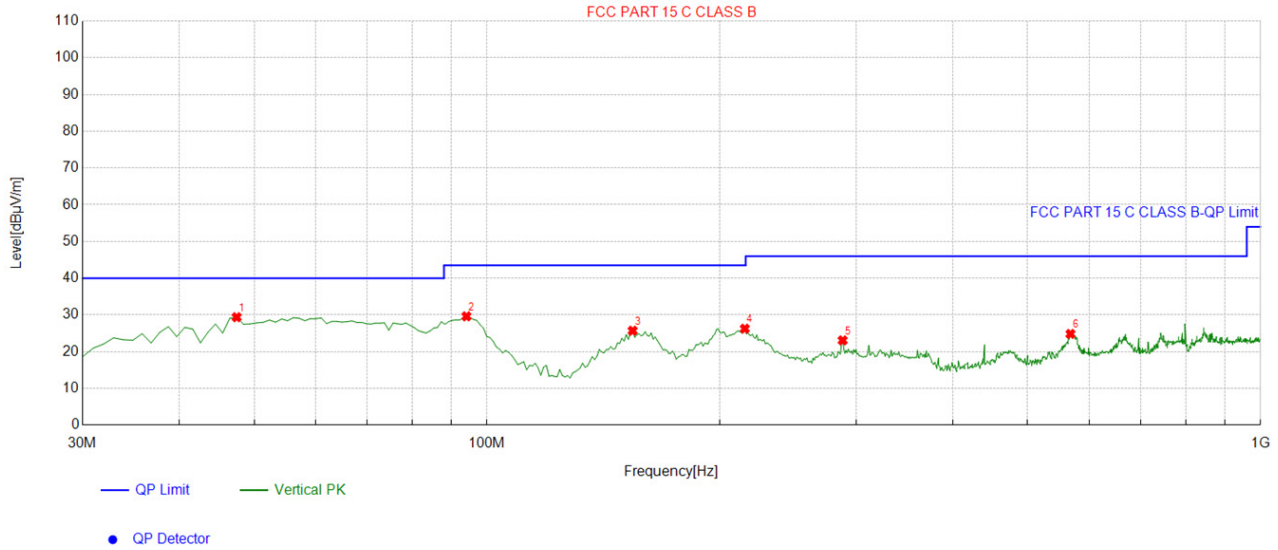
Horizontal



Suspected List									
NO.	Freq. [MHz]	Factor [dB]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	63.983984	-14.38	43.09	28.71	40.00	11.29	100	14	Horizontal
2	96.996997	-14.95	38.82	23.87	43.50	19.63	100	20	Horizontal
3	161.08108	-17.67	42.65	24.98	43.50	18.52	100	179	Horizontal
4	195.06506	-15.20	43.13	27.93	43.50	15.57	100	87	Horizontal
5	360.13013	-9.86	39.77	29.91	46.00	16.09	100	274	Horizontal
6	744.63463	-3.42	35.40	31.98	46.00	14.02	100	254	Horizontal

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

Vertical

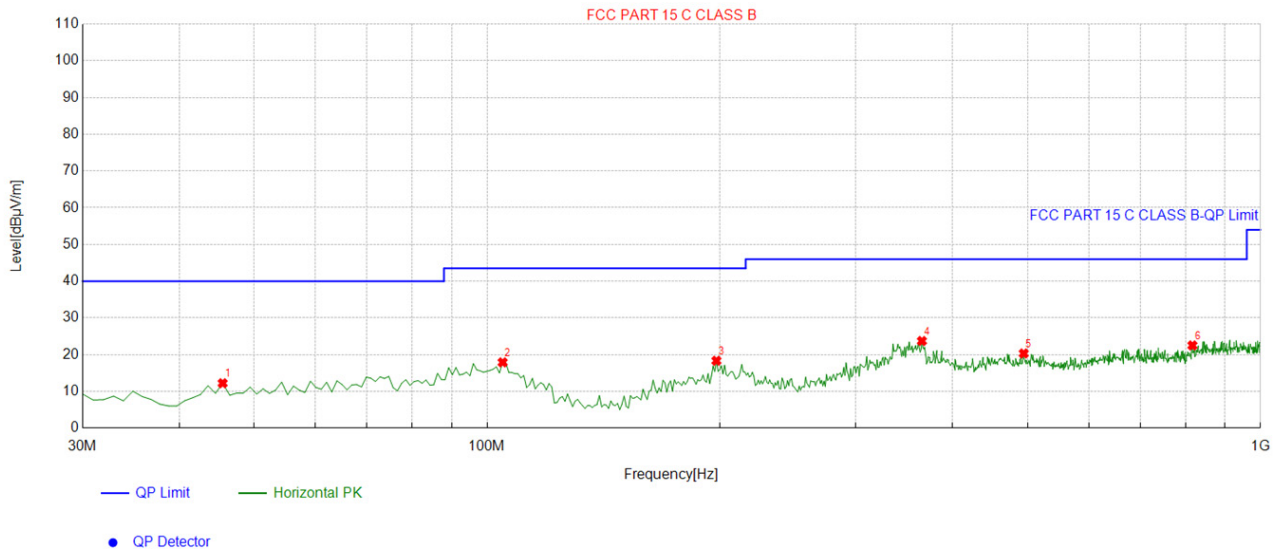


Suspected List									
NO.	Freq. [MHz]	Factor [dB]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	47.477477	-13.86	43.24	29.38	40.00	10.62	100	156	Vertical
2	94.084084	-15.78	45.39	29.61	43.50	13.89	100	203	Vertical
3	154.28428	-17.76	43.46	25.70	43.50	17.80	100	16	Vertical
4	215.45545	-14.72	40.97	26.25	43.50	17.25	100	18	Vertical
5	288.27827	-12.19	35.26	23.07	46.00	22.93	100	124	Vertical
6	567.91791	-6.00	30.83	24.83	46.00	21.17	100	165	Vertical

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

Series Model No.: X24 Ultra

Horizontal



Suspected List									
NO.	Freq. [MHz]	Factor [dB]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	45.535536	-13.92	26.14	12.22	40.00	27.78	100	350	Horizontal
2	104.76476	-14.69	32.59	17.90	43.50	25.60	100	20	Horizontal
3	197.97797	-14.86	33.20	18.34	43.50	25.16	100	112	Horizontal
4	364.98498	-9.55	33.27	23.72	46.00	22.28	100	77	Horizontal
5	494.12412	-7.84	28.17	20.33	46.00	25.67	100	97	Horizontal
6	816.48648	-3.07	25.59	22.52	46.00	23.48	100	269	Horizontal

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

Vertical

Suspected List									
NO.	Freq. [MHz]	Factor [dB]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	62.042042	-14.29	46.64	32.35	40.00	7.65	100	234	Vertical
2	67.867868	-16.02	49.34	33.32	40.00	6.68	100	316	Vertical
3	89.229229	-16.75	43.00	26.25	43.50	17.25	100	243	Vertical
4	167.87787	-17.31	32.44	15.13	43.50	28.37	100	28	Vertical
5	205.74574	-15.25	33.98	18.73	43.50	24.77	100	62	Vertical
6	492.18218	-7.87	31.37	23.50	46.00	22.50	100	279	Vertical

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