TEST REPORT

FCC PART 15 SUBPART E 15.407

Report Reference No.....:	**CTA25061301502**
FCC ID..... :	**2BNKS-TW37**
Compiled by (position+printed name+signature)...:	File administrators Zoey Cao
Supervised by (position+printed name+signature)...:	Project Engineer Ace Chai
Approved by (position+printed name+signature)...:	RF Manager Eric Wang
Date of issue.....:	Jun. 30, 2025
Testing Laboratory Name .....:	**Shenzhen CTA Testing Technology Co., Ltd.**
Address.....:	Room 106, Building 1, Yibaolai Industrial Park, Qiaotou Community, Fuhai Street, Bao'an District, Shenzhen, China
Applicant's name.....:	**Maxtop Global Trading Limited**
Address.....:	WORKSHOP 60, 3/F, BLOCK A, EAST SUN INDUSTRIAL CENTRE NO. 16 SHING YIP STREET KOWLOON, HONG KONG, China
Test specification ..... :	
Standard .....:	**FCC Part 15 Subpart E 15.407**
TRF Originator.....:	Shenzhen CTA Testing Technology Co., Ltd.

Shenzhen CTA Testing Technology Co., Ltd. All rights reserved.

This publication may be reproduced in whole or in part for non-commercial purposes as long as the Shenzhen CTA Testing Technology Co., Ltd. is acknowledged as copyright owner and source of the material. Shenzhen CTA Testing Technology Co., Ltd. takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.

Test item description ..... :	**WIRELESS CAMERA**
Trade Mark .....:	N/A
Manufacturer.....:	ShenZhen HuaFuShiXun Tech Co., Ltd
Model/Type reference.....:	TW37
Listed Models.....:	TW36, QS12, QS6, QS16, QS13, QS17, TW39, TW38
Modulation .....:	OFDM/OFDMA
Frequency.....	From 5745MHz-5825MHz
Rating .....:	Input: 5V ⎓ 2.0A Battery: 3.7V 8000mAh 29.6Wh
Result.....:	**PASS**

TEST REPORT

Equipment under Test	:	WIRELESS CAMERA
Model /Type	:	TW37
Listed Models	:	TW36, QS12, QS6, QS16, QS13, QS17, TW39, TW38
Model difference	:	The Main PCB board, circuit, structure and internal of these models are the same, LED light panels and components of power supply board and antenna type and model number and colour are different for these model.
Applicant	:	**Maxtop Global Trading Limited**
Address	:	WORKSHOP 60, 3/F, BLOCK A, EAST SUN INDUSTRIAL CENTRE NO. 16 SHING YIP STREET KOWLOON, HONG KONG, China
Manufacturer	:	**ShenZhen HuaFuShiXun Tech Co., Ltd**
Address	:	Floor 3, Building 16, 370 Huan Guang Middle Rd., Guang Lan, Long Hua District, Shen Zhen, China

Test Result:	**PASS**

The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

Contents

1 TEST STANDARDS 4
2 SUMMARY 5
2.1 General Remarks 5
2.2 Product Description 5
2.3 Equipment Under Test 5
2.4 Short description of the Equipment under Test (EUT) 5
2.5 EUT configuration 6
2.6 EUT operation mode 6
2.7 Block Diagram of Test Setup 6
2.8 Related Submittal(s) / Grant (s) 6
2.9 Modifications 6
3 TEST ENVIRONMENT 7
3.1 Address of the test laboratory 7
3.2 Test Facility 7
3.3 Environmental conditions 7
3.4 Test Description 8
3.5 Statement of the measurement uncertainty 8
3.6 Equipments Used during the Test 10
4 TEST CONDITIONS AND RESULTS 11
4.1 AC Power Conducted Emission 11
4.2 Radiated and Conducted Unwanted Emissions 30
4.3 Maximum Conducted Average Output Power 69
4.4 Power Spectral Density 70
4.5 Minimum Emission Bandwidth (6dB Bandwidth) 72
4.6 Frequency Stability 73
4.7 On Time and Duty Cycle 75
5 Test Setup Photos of the EUT 76
6 Photos of the EUT 76

1 TEST STANDARDS

The tests were performed according to following standards:

FCC Rules Part 15 Subpart E—Unlicensed National Information Infrastructure Devices
ANSI C63.10-2013: American National Standard for Testing Unlicensed Wireless Devices
KDB789033 D02: General UNII Test Procedures New Rules v02r01

2 SUMMARY

2.1 General Remarks

Date of receipt of test sample	:	Jun. 13, 2025
Testing commenced on	:	Jun. 13, 2025
Testing concluded on	:	Jun. 30, 2025

2.2 Product Description

Product Description:	WIRELESS CAMERA			
Model:	TW37			
Power supply:	Input: 5V ⎓ 2.0A Battery: 3.7V 8000mAh 29.6Wh			
Hardware version:	V1.0			
Software version:	V1.0			
Testing sample ID:	CTA250613015-1# (Engineer sample) CTA250613015-2# (Normal sample)			
WIFI				
Supported type:	20MHz system	40MHz system	80MHz system	160MHz system
	802.11a 802.11n 802.11ac 802.11ax	802.11n 802.11ac 802.11ax	N/A	N/A
Operation frequency:	5745MHz-5825MHz	5755MHz-5795MHz	N/A	N/A
Modulation:	OFDM OFDMA	OFDM OFDMA	N/A	N/A
Channel number:	5	2	N/A	N/A
Channel separation:	20MHz	40MHz	N/A	N/A
Antenna type:	External antenna			
Antenna gain:	2.10 dBi			

2.3 Equipment Under Test

Power supply system utilised

Refer to section 2.2

2.4 Short description of the Equipment under Test (EUT)

This is a WIRELESS CAMERA.
For more details, refer to the user's manual of the EUT.

Test Software Version	Tools software(ADB command)		
Frequency	5745 MHz	5785 MHz	5825 MHz
802.11a	13	13	13
802.11n20	12	12	12
802.11ac20	12	12	12
802.11ax20	12	12	12
Frequency	5755 MHz	/	5795 MHz
802.11n40	13	/	13

802.11ac40	12	/	12
802.11ax40	12	/	12

2.5 EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

○ - supplied by the manufacturer
● - supplied by the lab

●	Adapter information (Auxiliary test supplied by test Lab)		Model: EP-TA20CBC Input: AC 100-240V 50/60Hz Output: DC 5V 2A

2.6 EUT operation mode

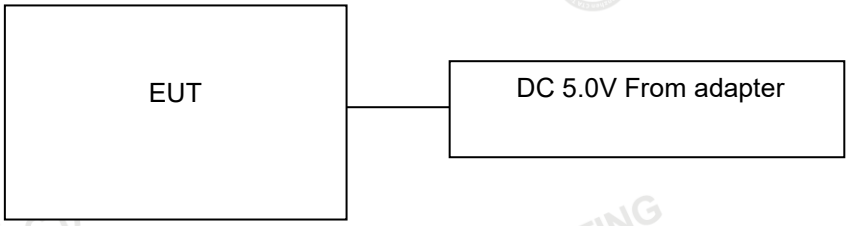
The Applicant provides communication tools software to control the EUT for staying in continuous transmitting and receiving mode for testing.
All test performed at the low, middle and high of operational frequency range of each mode.

Operation Frequency List WIFI on 5G Band：

Operating band	20MHz		40MHz	
	Channel	Frequency (MHz)	Channel	Frequency (MHz)
U-NII 3 (5725MHz-5850MHz)	149	5745	151	5755
	153	5765		
	157	5785	159	5795
	161	5805		
	165	5825	--	--

Note: The line display in grey is those Channels/Frequencies select to test in this report for each operation mode.

2.7 Block Diagram of Test Setup



2.8 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended to comply with Section 15.407 of the FCC Part 15, Subpart E Rules.

2.9 Modifications

No modifications were implemented to meet testing criteria.

3 TEST ENVIRONMENT

3.1 Address of the test laboratory

Shenzhen CTA Testing Technology Co., Ltd.
Room 106, Building 1, Yibaolai Industrial Park, Qiaotou Community, Fuhai Street, Bao'an District, Shenzhen, China

3.2 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:
FCC-Registration No.: 517856 Designation Number: CN1318

Shenzhen CTA Testing Technology Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements.

A2LA-Lab Cert. No.: 6534.01

Shenzhen CTA Testing Technology Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform electromagnetic emission measurement.

The 3m-Semi anechoic test site fulfils CISPR 16-1-4 according to ANSI C63.10 and CISPR 16-1-4:2010.

3.3 Environmental conditions

During the measurement the environmental conditions were within the listed ranges:
Radiated Emission:

Temperature:	25 ° C
Humidity:	45 %
Atmospheric pressure:	950-1050mbar

Conducted testing：

Temperature:	25 ° C
Humidity:	44 %
Atmospheric pressure:	950-1050mbar

AC Power Conducted Emission

Temperature:	24 ° C
Humidity:	44 %
Atmospheric pressure:	950-1050mbar

3.4 Test Description

FCC Requirement		
FCC Part 15.207	AC Power Conducted Emission	PASS
FCC Part 15.407(e)	Minimum Emission Bandwidth(6dBm Bandwidth)	PASS Note2
FCC Part 15.407(a)	Maximum Conducted Output Power	PASS
FCC Part 15.407(a)	Peak Power Spectral Density	PASS
FCC Part 15.407(g)	Frequency Stability	PASS
FCC Part 15.407(b)	Undesirable emission	PASS
FCC Part 15.407(b)/15.205/15.209	Radiated Emissions	PASS
FCC Part 15.407(h)	Dynamic Frequency Selection	N/A Note 3
FCC Part 15.203/15.247(b)	Antenna Requirement	PASS

Note 1: Apply to U-NII 1 band.
Note 2: Apply to U-NII 3 band only.
Note 3: This device not work in DFS band.

Data Rate Used:
Preliminary tests were performed in different data rate to find the worst radiated emission. The data rate shown in the table below is the worst-case rate with respect to the specific test item. Investigation has been done on all the possible configurations for searching the worst cases. The following table is a list of the test modes shown in this test report.

Test Items	Mode	Data Rate
Maximum Conducted Output Power Power Spectral Density Minimum Emission Bandwidth(6dBm Bandwidth) Undesirable emission Frequency Stability	11a/OFDM	6 Mbps
	11n(20MHz),11ac(20MHz)/OFDM, 11ax(20MHz)/OFDMA	MCS0
	11n(40MHz),11ac(40MHz)/OFDM, 11ax(40MHz)/OFDMA	MCS0

3.5 Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to TR-100028-01" Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics; Part 1" and TR-100028-02 "Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics; Part 2 " and is documented in the Shenzhen CTA Testing Technology Co., Ltd. quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.
Hereafter the best measurement capability for Shenzhen CTA Testing Technology Co., Ltd. :

Test	Range	Measurement Uncertainty	Notes
Radiated Emission	9KHz~30MHz	3.02 dB	(1)
Radiated Emission	30~1000MHz	4.06 dB	(1)
Radiated Emission	1~18GHz	5.14 dB	(1)
Radiated Emission	18-40GHz	5.38 dB	(1)
Conducted Disturbance	0.15~30MHz	2.14 dB	(1)
Output Peak power	30MHz~18GHz	0.55 dB	(1)
Power spectral density	/	0.57 dB	(1)
Spectrum bandwidth	/	1.1%	(1)

Radiated spurious emission (30MHz-1GHz)	30~1000MHz	4.10 dB	(1)
Radiated spurious emission (1GHz-18GHz)	1~18GHz	4.32 dB	(1)
Radiated spurious emission (18GHz-40GHz)	18-40GHz	5.54 dB	(1)
Time	/	±2%	(1)

(1)This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

3.6 Equipments Used during the Test

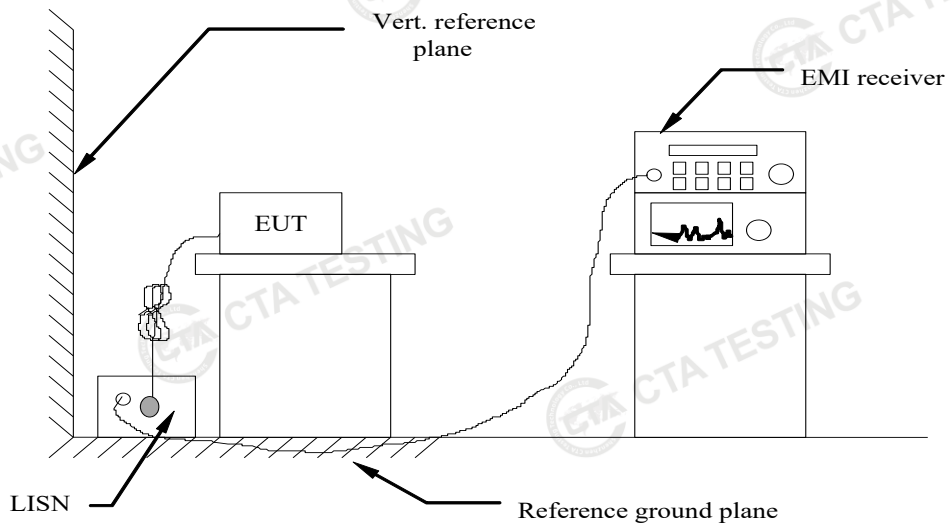
Test Equipment	Manufacturer	Model No.	Equipment No.	Calibration Date	Calibration Due Date
LISN	R&S	ENV216	CTA-308	2024/08/03	2025/08/02
LISN	R&S	ENV216	CTA-314	2024/08/03	2025/08/02
EMI Test Receiver	R&S	ESPI	CTA-307	2024/08/03	2025/08/02
EMI Test Receiver	R&S	ESCI	CTA-306	2024/08/03	2025/08/02
Spectrum Analyzer	Agilent	N9020A	CTA-301	2024/08/03	2025/08/02
Spectrum Analyzer	R&S	FSU	CTA-337	2024/08/03	2025/08/02
Vector Signal generator	Agilent	N5182A	CTA-305	2024/08/03	2025/08/02
Analog Signal Generator	R&S	SML03	CTA-304	2024/08/03	2025/08/02
Universal Radio Communication	CMW500	R&S	CTA-302	2024/08/03	2025/08/02
Temperature and humidity meter	Chigo	ZG-7020	CTA-326	2024/08/03	2025/08/02
Ultra-Broadband Antenna	Schwarzbeck	VULB9163	CTA-310	2023/10/17	2026/10/16
Horn Antenna	Schwarzbeck	BBHA 9120D	CTA-309	2023/10/13	2026/10/12
Loop Antenna	Zhinan	ZN30900C	CTA-311	2023/10/17	2026/10/16
Broadband Horn Antenna	A-INFOMW	LB-180500H-2.4F	CTA-336	2023/09/13	2026/09/12
Amplifier	Schwarzbeck	BBV 9745	CTA-312	2024/08/03	2025/08/02
Amplifier	Taiwan chengyi	EMC051845B	CTA-313	2024/08/03	2025/08/02
Directional coupler	NARDA	4226-10	CTA-303	2024/08/03	2025/08/02
High-Pass Filter	XingBo	XBLBQ-GTA18	CTA-402	2024/08/03	2025/08/02
High-Pass Filter	XingBo	XBLBQ-GTA27	CTA-403	2024/08/03	2025/08/02
Automated filter bank	Tonscend	JS0806-F	CTA-404	2024/08/03	2025/08/02
Power Sensor	Agilent	U2021XA	CTA-405	2024/08/03	2025/08/02
Amplifier	Schwarzbeck	BBV9719	CTA-406	2024/08/03	2025/08/02
Spectrum analyzer	R&S	FSV40-N	CTA-344	2025/05/17	2026/05/16
Power Meter	R&S	NRVS	CTA-354	2024/08/03	2025/08/02

Test Equipment	Manufacturer	Model No.	Version number	Calibration Date	Calibration Due Date
EMI Test Software	Tonscend	TS®JS32-RE	5.0.0.2	N/A	N/A
EMI Test Software	Tonscend	TS®JS32-CE	5.0.0.1	N/A	N/A
RF Test Software	Tonscend	TS®JS1120-3	3.1.65	N/A	N/A
RF Test Software	Tonscend	TS®JS1120	3.1.46	N/A	N/A

4 TEST CONDITIONS AND RESULTS

4.1 AC Power Conducted Emission

TEST CONFIGURATION



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 Multi-System Scannerop 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 EUT received power from adapter, the adapter received AC120V/60Hz and AC 240V/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.

AC Power Conducted Emission Limit

For intentional device, according to § 15.207(a) AC Power Conducted Emission Limits is as following：

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.		

TEST RESULTS

Passed

Please refer to the below test data:

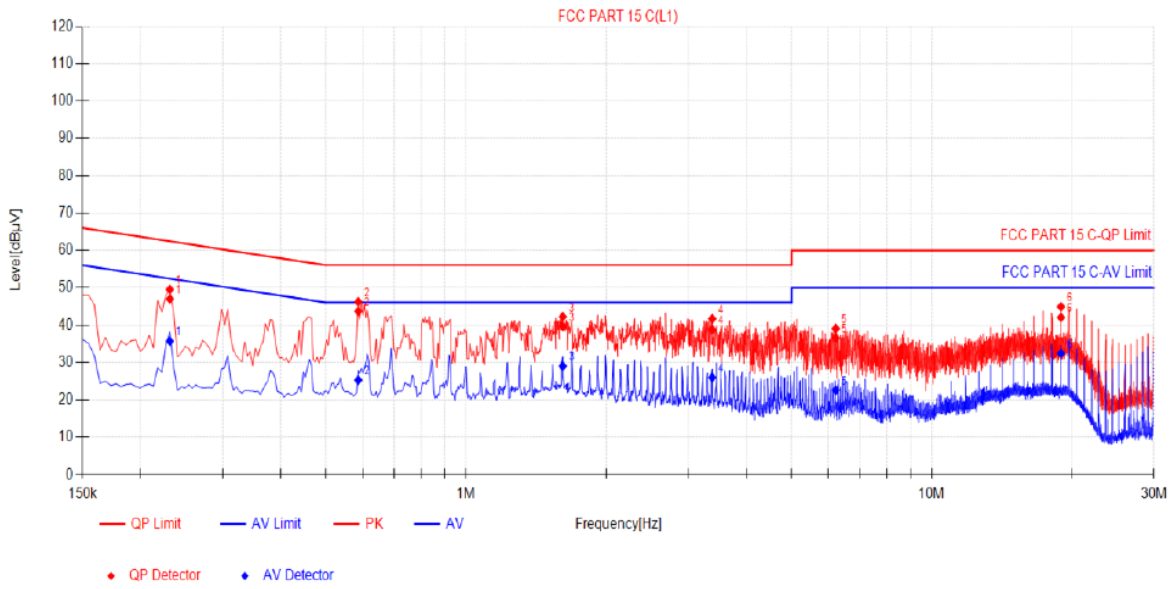
Remark:

1. 1. All modes of 802.11a/n/11ac/11ax were test at Low, Middle, and High channel; only the worst result of a Middle Channel was reported as below:

2. Both 120 VAC, 50/60 Hz and 240 VAC, 50/60 Hz power supply have been tested, only the worst result of 120 VAC, 60 Hz was reported as below:

Model: TW37

Power supply:	DC 5.0V from adapter AC 120V/60Hz	Polarization	L



Final Data List

NO.	Freq. [MHz]	Factor [dB]	QP Reading[dBμV]	QP Value [dBμV]	QP Limit [dBμV]	QP Margin [dB]	AV Reading [dBμV]	AV Value [dBμV]	AV Limit [dBμV]	AV Margin [dB]	Verdict
1	0.231	10.00	36.97	46.97	62.41	15.44	25.66	35.66	52.41	16.75	PASS
2	0.5865	10.04	33.62	43.66	56.00	12.34	15.19	25.23	46.00	20.77	PASS
3	1.6125	9.91	29.73	39.64	56.00	16.36	19.10	29.01	46.00	16.99	PASS
4	3.3765	9.98	28.80	38.78	56.00	17.22	15.94	25.92	46.00	20.08	PASS
5	6.2205	10.18	26.31	36.49	60.00	23.51	12.37	22.55	50.00	27.45	PASS
6	18.951	10.40	31.62	42.02	60.00	17.98	21.95	32.35	50.00	17.65	PASS

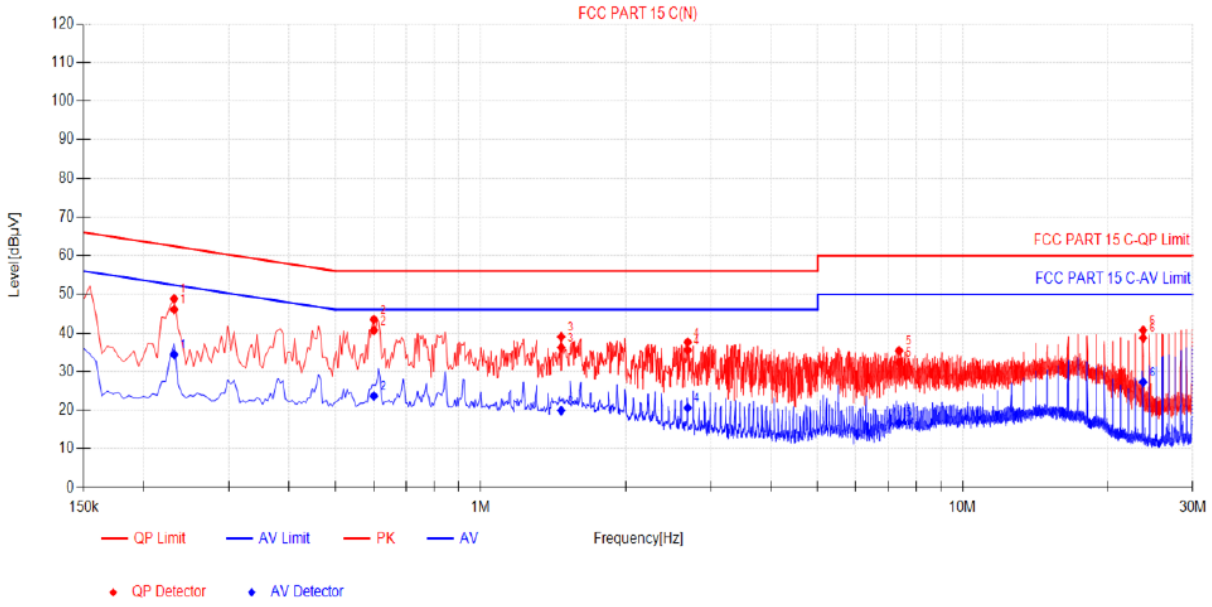
Note:1).QP Value (dBμV)= QP Reading (dBμV)+ Factor (dB)

2). Factor (dB)=insertion loss of LISN (dB) + Cable loss (dB)

3). QPMargin(dB) = QP Limit (dBμV) - QP Value (dBμV)

4). AVMargin(dB) = AV Limit (dBμV) - AV Value (dBμV)

Power supply:	DC 5.0V from adapter AC 120V/60Hz	Polarization	N



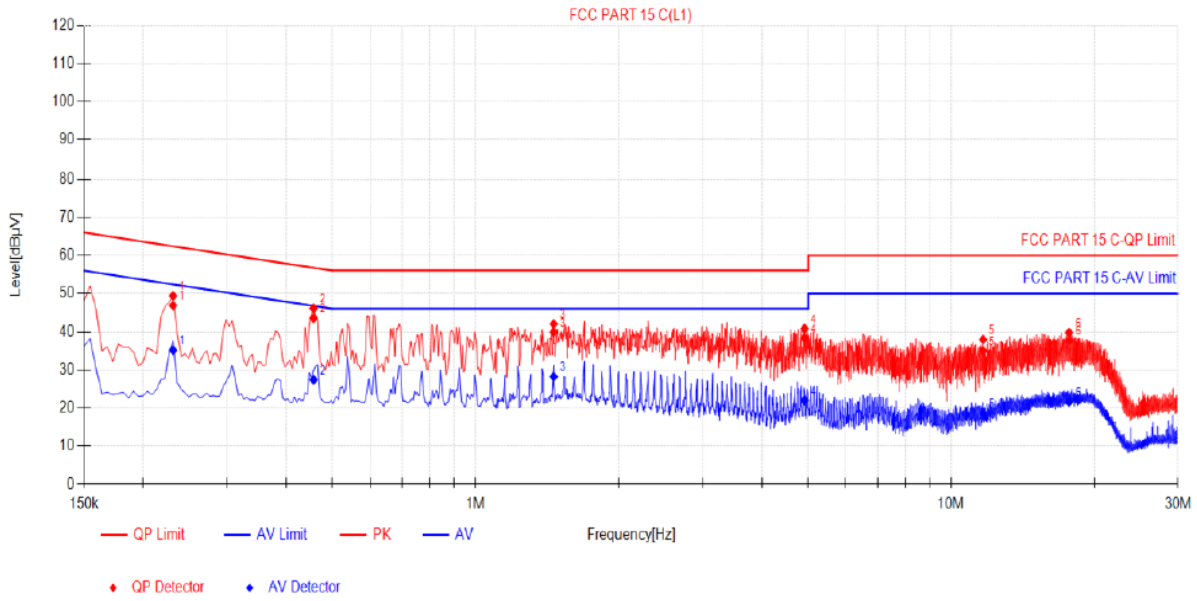
Final Data List

NO.	Freq. [MHz]	Factor [dB]	QP Reading[dBμV]	QP Value [dBμV]	QP Limit [dBμV]	QP Margin [dB]	AV Reading [dBμV]	AV Value [dBμV]	AV Limit [dBμV]	AV Margin [dB]	Verdict
1	0.231	9.99	36.06	46.05	62.41	16.36	24.42	34.41	52.41	18.00	PASS
2	0.6	10.15	30.51	40.66	56.00	15.34	13.51	23.66	46.00	22.34	PASS
3	1.4685	10.14	26.05	36.19	56.00	19.81	9.75	19.89	46.00	26.11	PASS
4	2.688	10.16	25.33	35.49	56.00	20.51	10.42	20.58	46.00	25.42	PASS
5	7.377	10.42	21.95	32.37	60.00	27.63	6.33	16.75	50.00	33.25	PASS
6	23.676	10.66	28.01	38.67	60.00	21.33	16.57	27.23	50.00	22.77	PASS

Note:1).QP Value (dBμV)= QP Reading (dBμV)+ Factor (dB)
2). Factor (dB)=insertion loss of LISN (dB) + Cable loss (dB)
3). QPMargin(dB) = QP Limit (dBμV) - QP Value (dBμV)
4). AVMargin(dB) = AV Limit (dBμV) - AV Value (dBμV)

Model: TW36

Power supply:	DC 5.0V from adapter AC 120V/60Hz	Polarization	L

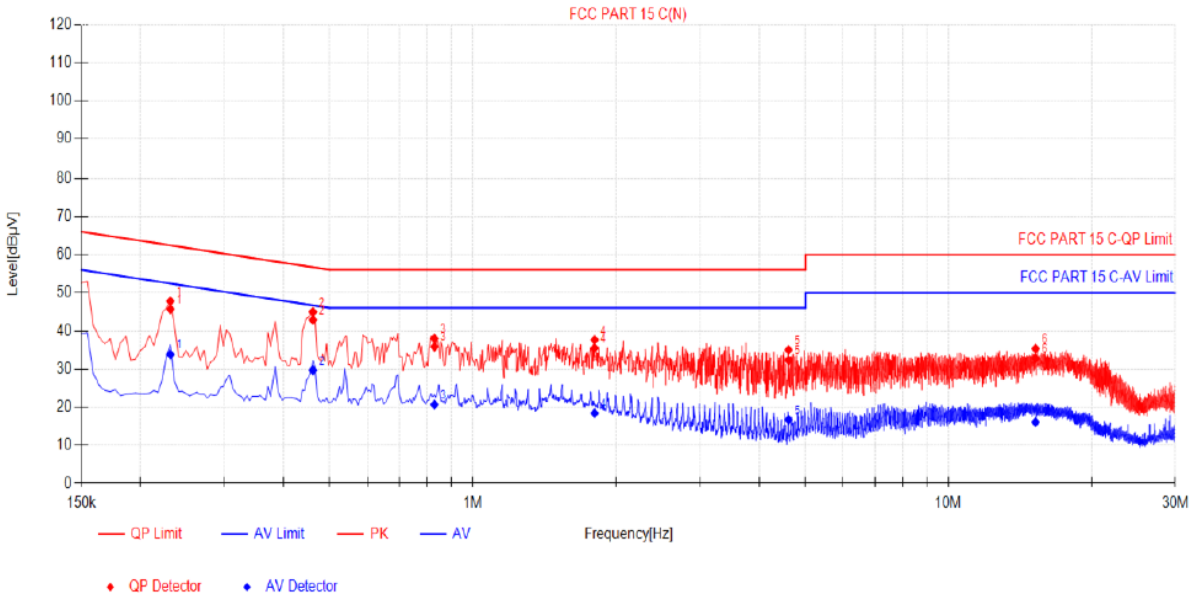


Final Data List

NO.	Freq. [MHz]	Factor [dB]	QP Reading[dBμV]	QP Value [dBμV]	QP Limit [dBμV]	QP Margin [dB]	AV Reading [dBμV]	AV Value [dBμV]	AV Limit [dBμV]	AV Margin [dB]	Verdict
1	0.231	10.00	36.88	46.88	62.41	15.53	25.14	35.14	52.41	17.27	PASS
2	0.456	9.95	33.62	43.57	56.77	13.20	17.44	27.39	46.77	19.38	PASS
3	1.4595	9.90	30.00	39.90	56.00	16.10	18.33	28.23	46.00	17.77	PASS
4	4.9155	9.98	28.37	38.35	56.00	17.65	11.98	21.96	46.00	24.04	PASS
5	11.6745	10.27	24.72	34.99	60.00	25.01	8.36	18.63	50.00	31.37	PASS
6	17.7045	10.36	27.32	37.68	60.00	22.32	11.23	21.59	50.00	28.41	PASS

Note:1).QP Value (dBμV)= QP Reading (dBμV)+ Factor (dB)
2). Factor (dB)=insertion loss of LISN (dB) + Cable loss (dB)
3). QPMargin(dB) = QP Limit (dBμV) - QP Value (dBμV)
4). AVMargin(dB) = AV Limit (dBμV) - AV Value (dBμV)

Power supply:	DC 5.0V from adapter AC 120V/60Hz	Polarization	N



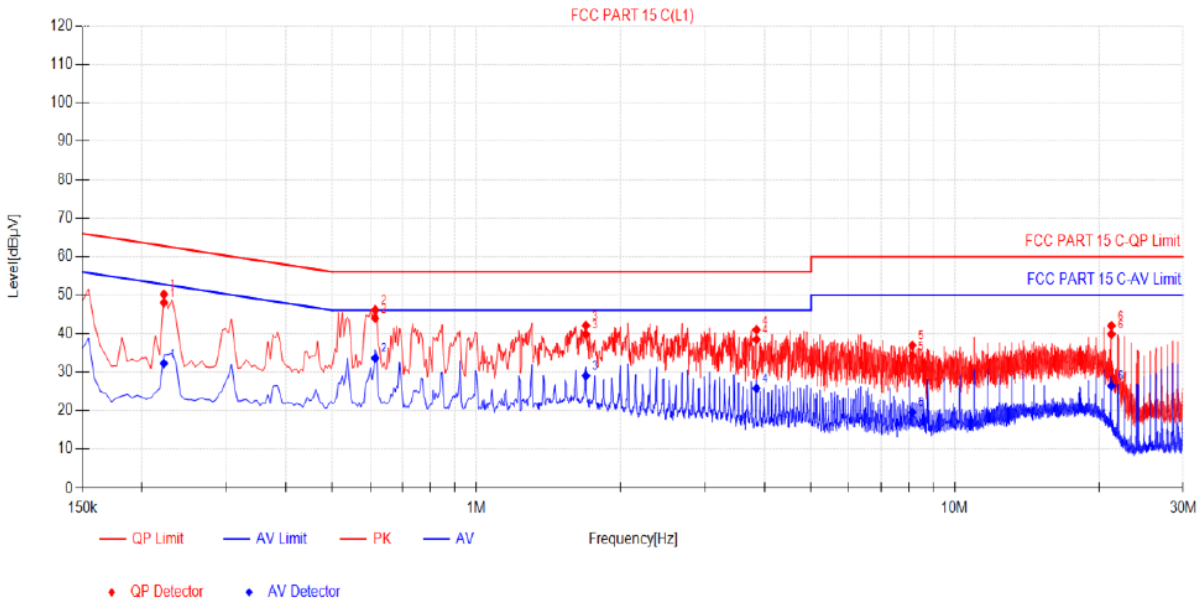
Final Data List

NO.	Freq. [MHz]	Factor [dB]	QP Reading[dBμV]	QP Value [dBμV]	QP Limit [dBμV]	QP Margin [dB]	AV Reading [dBμV]	AV Value [dBμV]	AV Limit [dBμV]	AV Margin [dB]	Verdict
1	0.231	9.99	35.69	45.68	62.41	16.73	23.84	33.83	52.41	18.58	PASS
2	0.4605	9.98	32.90	42.88	56.68	13.80	19.70	29.68	46.68	17.00	PASS
3	0.8295	10.14	25.72	35.86	56.00	20.14	10.54	20.68	46.00	25.32	PASS
4	1.8015	10.17	25.35	35.52	56.00	20.48	8.24	18.41	46.00	27.59	PASS
5	4.6095	10.09	22.21	32.30	56.00	23.70	6.57	16.66	46.00	29.34	PASS
6	15.2475	10.43	22.38	32.81	60.00	27.19	5.64	16.07	50.00	33.93	PASS

Note:1).QP Value (dBμV)= QP Reading (dBμV)+ Factor (dB)
2). Factor (dB)=insertion loss of LISN (dB) + Cable loss (dB)
3). QPMargin(dB) = QP Limit (dBμV) - QP Value (dBμV)
4). AVMargin(dB) = AV Limit (dBμV) - AV Value (dBμV)

Model: QS12

Power supply:	DC 5.0V from adapter AC 120V/60Hz	Polarization	L

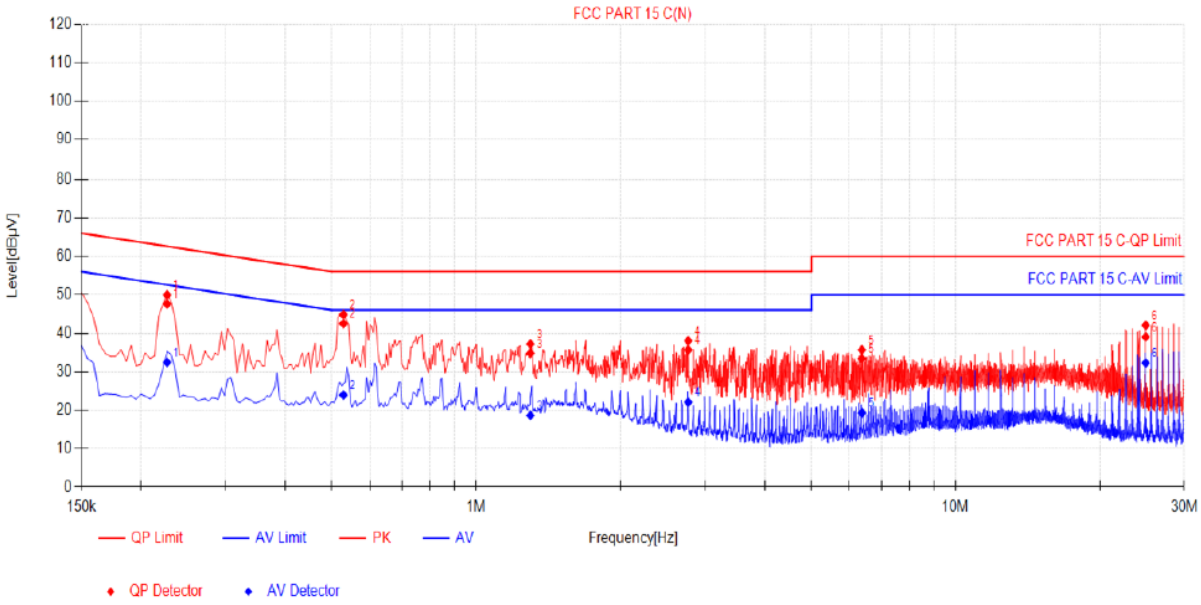


Final Data List

NO.	Freq. [MHz]	Factor [dB]	QP Reading[dBμV]	QP Value [dBμV]	QP Limit [dBμV]	QP Margin [dB]	AV Reading [dBμV]	AV Value [dBμV]	AV Limit [dBμV]	AV Margin [dB]	Verdict
1	0.222	10.03	37.97	48.00	62.74	14.74	22.17	32.20	52.74	20.54	PASS
2	0.6135	10.03	33.93	43.96	56.00	12.04	23.57	33.60	46.00	12.40	PASS
3	1.6935	9.91	29.93	39.84	56.00	16.16	19.10	29.01	46.00	16.99	PASS
4	3.8445	9.93	28.51	38.44	56.00	17.56	15.77	25.70	46.00	20.30	PASS
5	8.151	10.28	23.91	34.19	60.00	25.81	9.24	19.52	50.00	30.48	PASS
6	21.2415	10.45	29.39	39.84	60.00	20.16	15.95	26.40	50.00	23.60	PASS

Note:1).QP Value (dBμV)= QP Reading (dBμV)+ Factor (dB)
2). Factor (dB)=insertion loss of LISN (dB) + Cable loss (dB)
3). QPMargin(dB) = QP Limit (dBμV) - QP Value (dBμV)
4). AVMargin(dB) = AV Limit (dBμV) - AV Value (dBμV)

Power supply:	DC 5.0V from adapter AC 120V/60Hz	Polarization	N



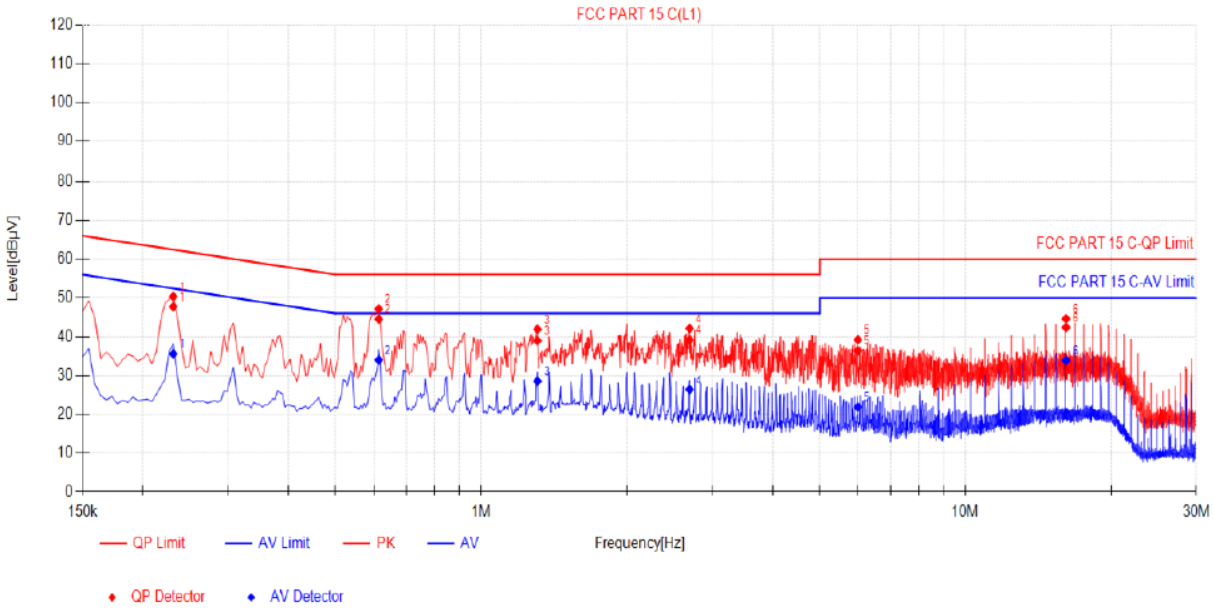
Final Data List

NO.	Freq. [MHz]	Factor [dB]	QP Reading[dBμV]	QP Value [dBμV]	QP Limit [dBμV]	QP Margin [dB]	AV Reading [dBμV]	AV Value [dBμV]	AV Limit [dBμV]	AV Margin [dB]	Verdict
1	0.2265	9.99	37.62	47.61	62.58	14.97	22.45	32.44	52.58	20.14	PASS
2	0.528	10.05	32.44	42.49	56.00	13.51	13.90	23.95	46.00	22.05	PASS
3	1.2975	10.16	24.65	34.81	56.00	21.19	8.48	18.64	46.00	27.36	PASS
4	2.769	10.18	25.49	35.67	56.00	20.33	11.90	22.08	46.00	23.92	PASS
5	6.378	10.32	23.08	33.40	60.00	26.60	8.98	19.30	50.00	30.70	PASS
6	24.9135	10.69	28.36	39.05	60.00	20.95	21.59	32.28	50.00	17.72	PASS

Note:1).QP Value (dBμV)= QP Reading (dBμV)+ Factor (dB)
2). Factor (dB)=insertion loss of LISN (dB) + Cable loss (dB)
3). QPMargin(dB) = QP Limit (dBμV) - QP Value (dBμV)
4). AVMargin(dB) = AV Limit (dBμV) - AV Value (dBμV)

Model: QS6

Power supply:	DC 5.0V from adapter AC 120V/60Hz	Polarization	L

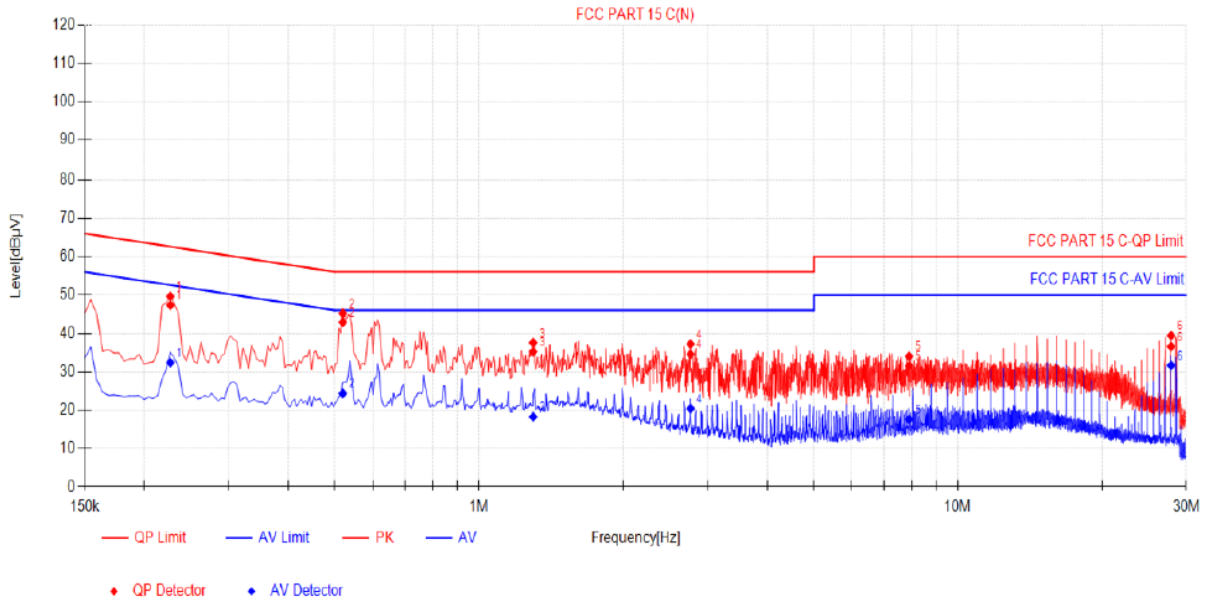


Final Data List

NO.	Freq. [MHz]	Factor [dB]	QP Reading[dBμV]	QP Value [dBμV]	QP Limit [dBμV]	QP Margin [dB]	AV Reading [dBμV]	AV Value [dBμV]	AV Limit [dBμV]	AV Margin [dB]	Verdict
1	0.231	10.00	37.72	47.72	62.41	14.69	25.59	35.59	52.41	16.82	PASS
2	0.6135	10.03	34.51	44.54	56.00	11.46	23.99	34.02	46.00	11.98	PASS
3	1.3065	9.90	29.09	38.99	56.00	17.01	18.65	28.55	46.00	17.45	PASS
4	2.6925	10.07	29.12	39.19	56.00	16.81	16.32	26.39	46.00	19.61	PASS
5	5.9955	10.14	26.24	36.38	60.00	23.62	11.74	21.88	50.00	28.12	PASS
6	16.143	10.33	32.04	42.37	60.00	17.63	23.58	33.91	50.00	16.09	PASS

Note:1).QP Value (dBμV)= QP Reading (dBμV)+ Factor (dB)
2). Factor (dB)=insertion loss of LISN (dB) + Cable loss (dB)
3). QPMargin(dB) = QP Limit (dBμV) - QP Value (dBμV)
4). AVMargin(dB) = AV Limit (dBμV) - AV Value (dBμV)

Power supply:	DC 5.0V from adapter AC 120V/60Hz	Polarization	N



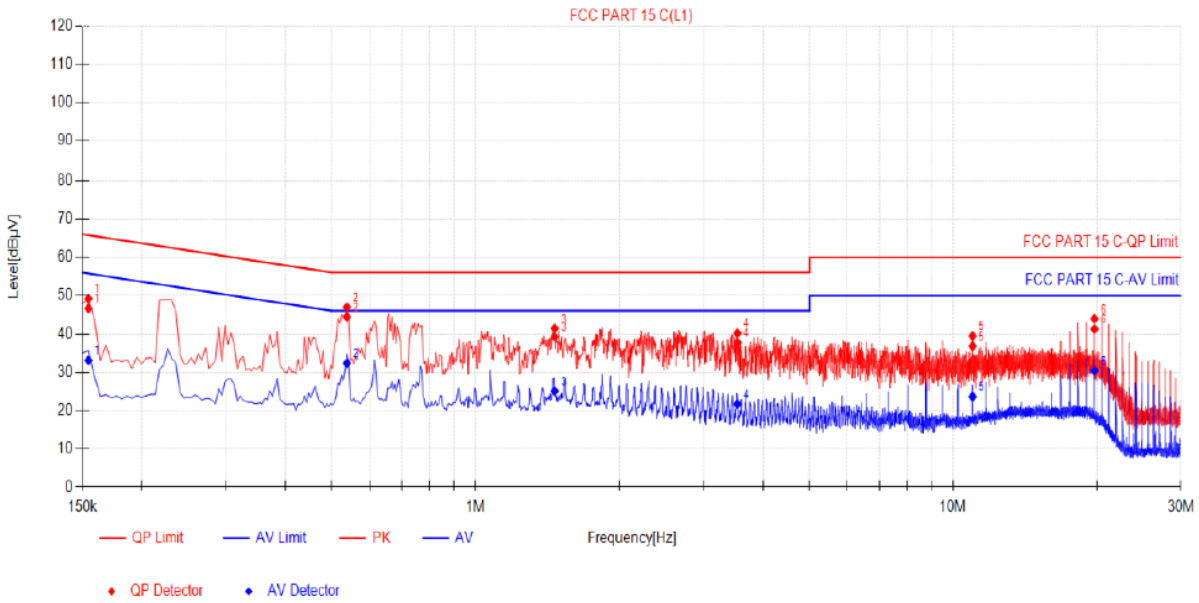
Final Data List

NO.	Freq. [MHz]	Factor [dB]	QP Reading[dBμV]	QP Value [dBμV]	QP Limit [dBμV]	QP Margin [dB]	AV Reading [dBμV]	AV Value [dBμV]	AV Limit [dBμV]	AV Margin [dB]	Verdict
1	0.2265	9.99	37.35	47.34	62.58	15.24	22.41	32.40	52.58	20.18	PASS
2	0.519	10.04	32.85	42.89	56.00	13.11	14.34	24.38	46.00	21.62	PASS
3	1.2975	10.16	25.07	35.23	56.00	20.77	8.13	18.29	46.00	27.71	PASS
4	2.7645	10.18	24.39	34.57	56.00	21.43	10.25	20.43	46.00	25.57	PASS
5	7.908	10.42	21.11	31.53	60.00	28.47	7.18	17.60	50.00	32.40	PASS
6	27.8745	10.79	25.79	36.58	60.00	23.42	20.86	31.65	50.00	18.35	PASS

Note:1).QP Value (dBμV)= QP Reading (dBμV)+ Factor (dB)
2). Factor (dB)=insertion loss of LISN (dB) + Cable loss (dB)
3). QPMargin(dB) = QP Limit (dBμV) - QP Value (dBμV)
4). AVMargin(dB) = AV Limit (dBμV) - AV Value (dBμV)

Model: QS16

Power supply:	DC 5.0V from adapter AC 120V/60Hz	Polarization	L

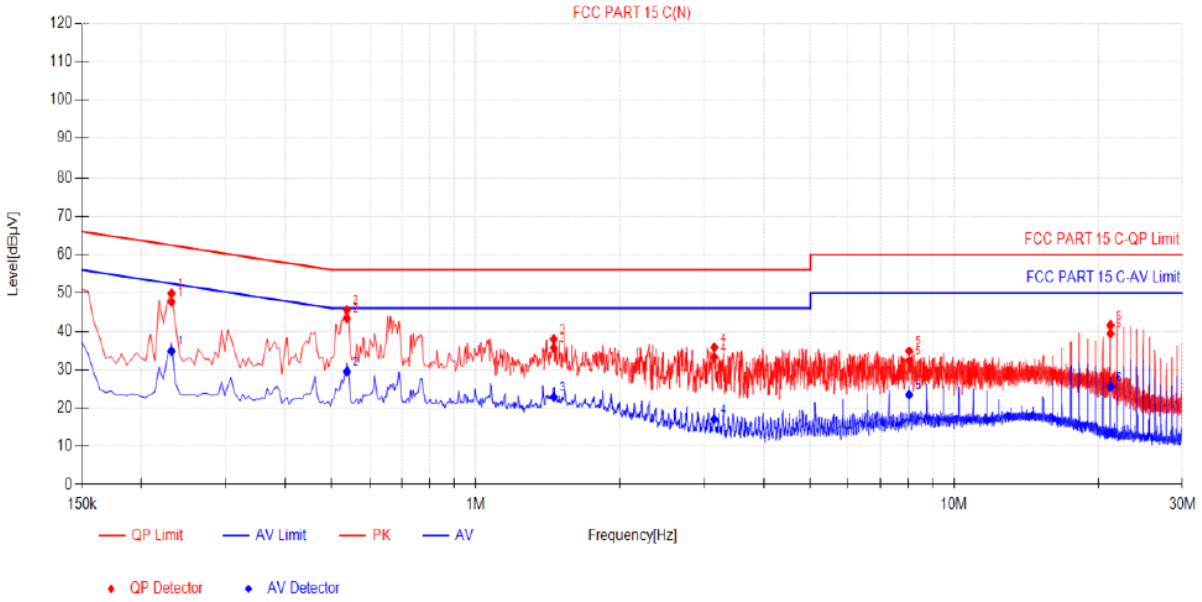


Final Data List

NO.	Freq. [MHz]	Factor [dB]	QP Reading[dBμV]	QP Value [dBμV]	QP Limit [dBμV]	QP Margin [dB]	AV Reading [dBμV]	AV Value [dBμV]	AV Limit [dBμV]	AV Margin [dB]	Verdict
1	0.1545	9.89	36.75	46.64	65.75	19.11	23.22	33.11	55.75	22.64	PASS
2	0.537	10.03	34.37	44.40	56.00	11.60	22.31	32.34	46.00	13.66	PASS
3	1.464	9.90	29.37	39.27	56.00	16.73	15.19	25.09	46.00	20.91	PASS
4	3.534	9.96	27.78	37.74	56.00	18.26	11.70	21.66	46.00	24.34	PASS
5	10.986	10.26	26.52	36.78	60.00	23.22	13.38	23.64	50.00	26.36	PASS
6	19.7745	10.42	30.85	41.27	60.00	18.73	20.02	30.44	50.00	19.56	PASS

Note:1).QP Value (dBμV)= QP Reading (dBμV)+ Factor (dB)
2). Factor (dB)=insertion loss of LISN (dB) + Cable loss (dB)
3). QPMargin(dB) = QP Limit (dBμV) - QP Value (dBμV)
4). AVMargin(dB) = AV Limit (dBμV) - AV Value (dBμV)

Power supply:	DC 5.0V from adapter AC 120V/60Hz	Polarization	N



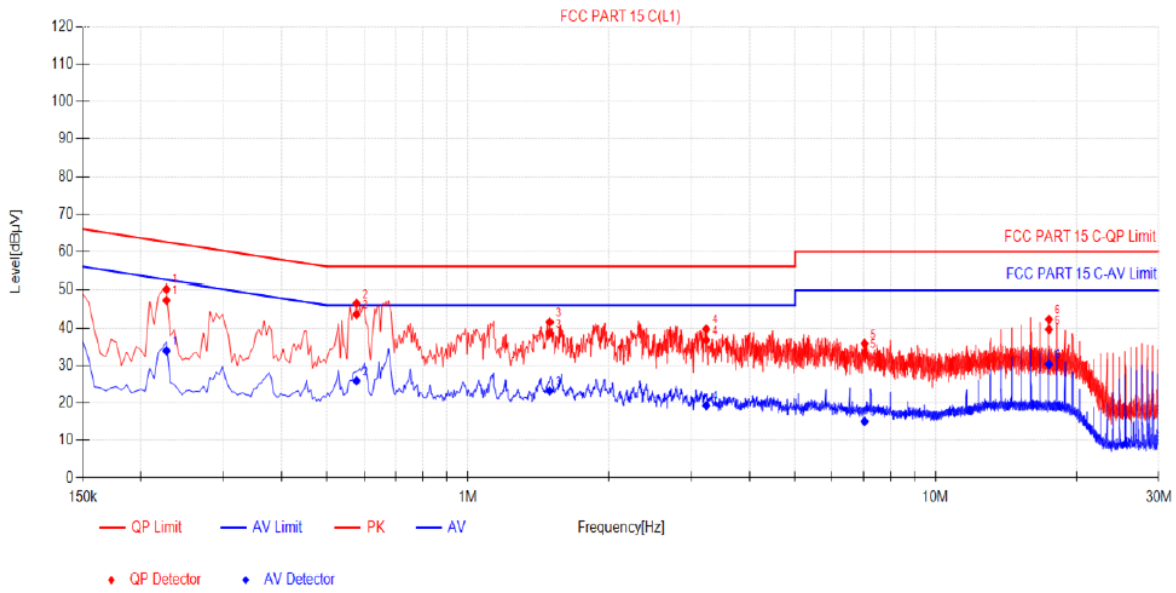
Final Data List

NO.	Freq. [MHz]	Factor [dB]	QP Reading[dBµV]	QP Value [dBµV]	QP Limit [dBµV]	QP Margin [dB]	AV Reading [dBµV]	AV Value [dBµV]	AV Limit [dBµV]	AV Margin [dB]	Verdict
1	0.231	9.99	37.68	47.67	62.41	14.74	24.83	34.82	52.41	17.59	PASS
2	0.537	10.06	33.27	43.33	56.00	12.67	19.43	29.49	46.00	16.51	PASS
3	1.455	10.14	25.56	35.70	56.00	20.30	12.76	22.90	46.00	23.10	PASS
4	3.1515	10.23	23.02	33.25	56.00	22.75	6.82	17.05	46.00	28.95	PASS
5	8.052	10.42	21.96	32.38	60.00	27.62	13.03	23.45	50.00	26.55	PASS
6	21.2235	10.61	28.80	39.41	60.00	20.59	14.99	25.60	50.00	24.40	PASS

Note:1).QP Value (dBµV)= QP Reading (dBµV)+ Factor (dB)
2). Factor (dB)=insertion loss of LISN (dB) + Cable loss (dB)
3). QPMargin(dB) = QP Limit (dBµV) - QP Value (dBµV)
4). AVMargin(dB) = AV Limit (dBµV) - AV Value (dBµV)

Model: QS13

Power supply:	DC 5.0V from adapter AC 120V/60Hz	Polarization	L

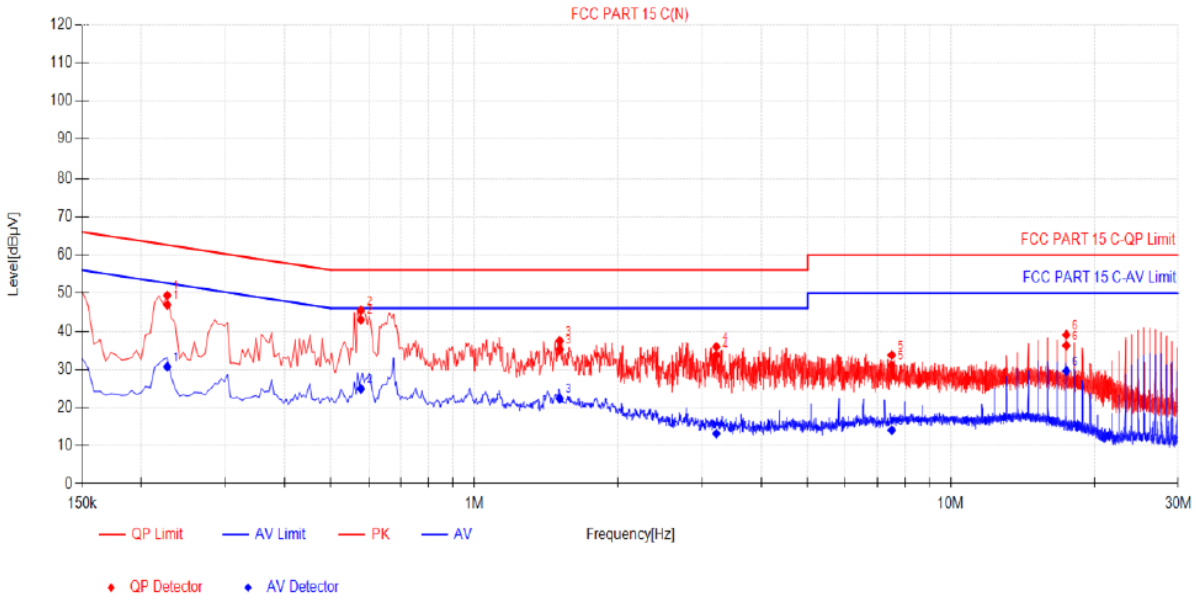


Final Data List

NO.	Freq. [MHz]	Factor [dB]	QP Reading[dBμV]	QP Value [dBμV]	QP Limit [dBμV]	QP Margin [dB]	AV Reading [dBμV]	AV Value [dBμV]	AV Limit [dBμV]	AV Margin [dB]	Verdict
1	0.2265	10.01	37.31	47.32	62.58	15.26	23.88	33.89	52.58	18.69	PASS
2	0.5775	10.04	33.55	43.59	56.00	12.41	15.83	25.87	46.00	20.13	PASS
3	1.4955	9.90	28.69	38.59	56.00	17.41	13.29	23.19	46.00	22.81	PASS
4	3.2325	9.99	26.74	36.73	56.00	19.27	9.30	19.29	46.00	26.71	PASS
5	7.0485	10.30	22.98	33.28	60.00	26.72	4.77	15.07	50.00	34.93	PASS
6	17.4705	10.36	29.23	39.59	60.00	20.41	19.93	30.29	50.00	19.71	PASS

Note:1).QP Value (dBμV)= QP Reading (dBμV)+ Factor (dB)
2). Factor (dB)=insertion loss of LISN (dB) + Cable loss (dB)
3). QPMargin(dB) = QP Limit (dBμV) - QP Value (dBμV)
4). AVMargin(dB) = AV Limit (dBμV) - AV Value (dBμV)

Power supply:	DC 5.0V from adapter AC 120V/60Hz	Polarization	N



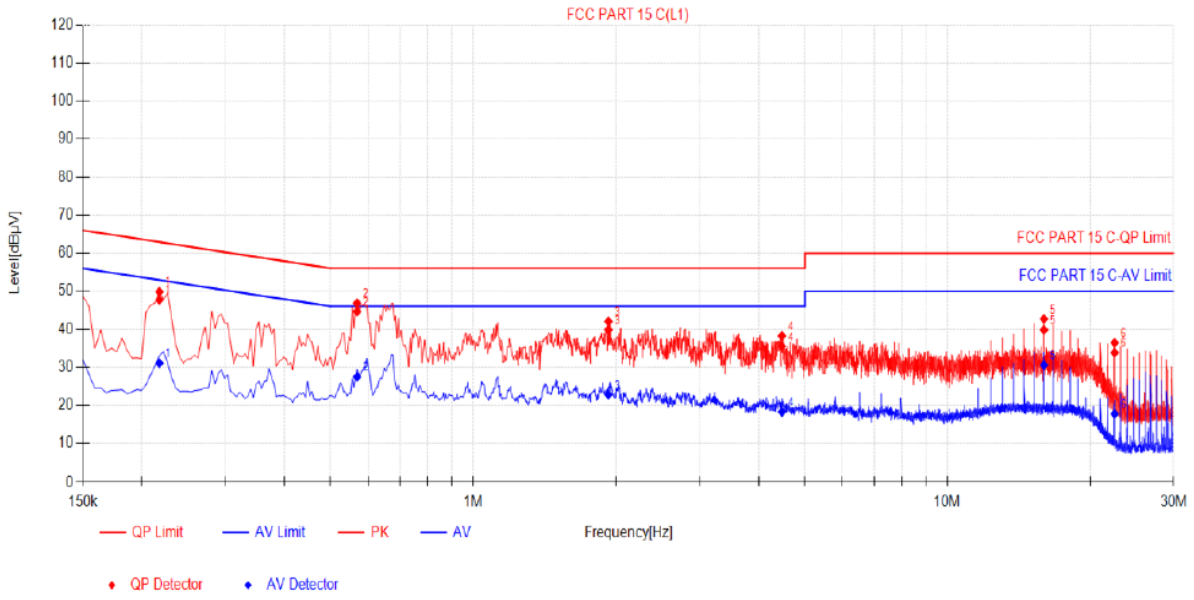
Final Data List

NO.	Freq. [MHz]	Factor [dB]	QP Reading[dBμV]	QP Value [dBμV]	QP Limit [dBμV]	QP Margin [dB]	AV Reading [dBμV]	AV Value [dBμV]	AV Limit [dBμV]	AV Margin [dB]	Verdict
1	0.2265	9.99	36.88	46.87	62.58	15.71	20.71	30.70	52.58	21.88	PASS
2	0.5775	10.12	32.85	42.97	56.00	13.03	14.79	24.91	46.00	21.09	PASS
3	1.509	10.13	25.12	35.25	56.00	20.75	12.22	22.35	46.00	23.65	PASS
4	3.219	10.22	23.59	33.81	56.00	22.19	2.95	13.17	46.00	32.83	PASS
5	7.512	10.42	20.62	31.04	60.00	28.96	3.65	14.07	50.00	35.93	PASS
6	17.4705	10.49	25.75	36.24	60.00	23.76	19.11	29.60	50.00	20.40	PASS

Note:1).QP Value (dBμV)= QP Reading (dBμV)+ Factor (dB)
2). Factor (dB)=insertion loss of LISN (dB) + Cable loss (dB)
3). QPMargin(dB) = QP Limit (dBμV) - QP Value (dBμV)
4). AVMargin(dB) = AV Limit (dBμV) - AV Value (dBμV)

Model: QS17

Power supply:	DC 5.0V from adapter AC 120V/60Hz	Polarization	L

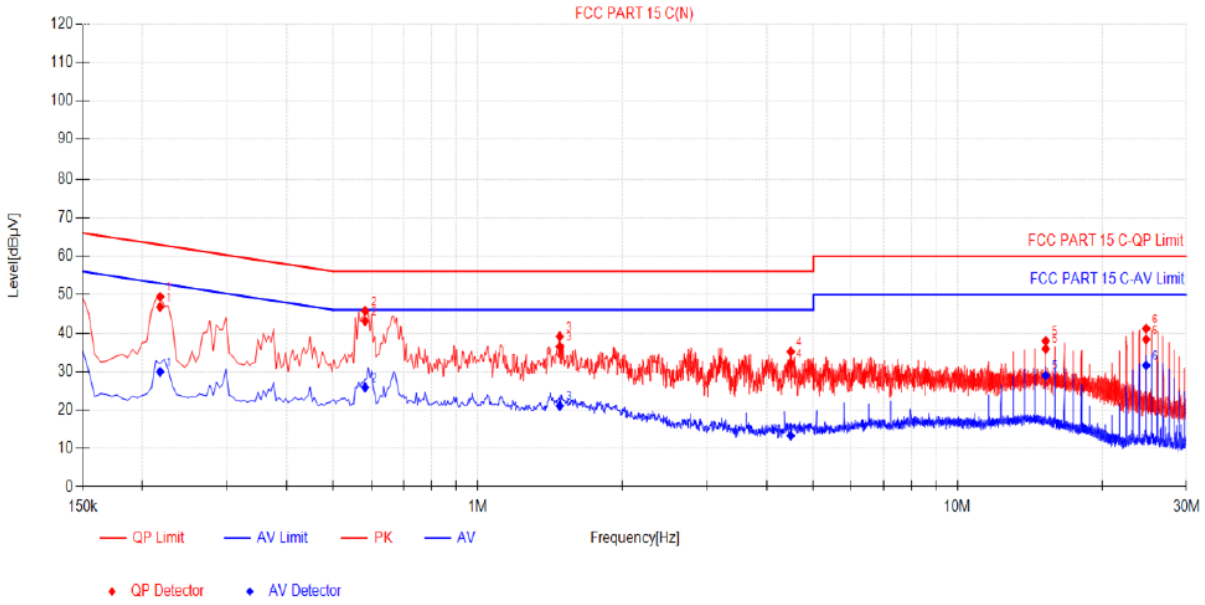


Final Data List

NO.	Freq. [MHz]	Factor [dB]	QP Reading[dBμV]	QP Value [dBμV]	QP Limit [dBμV]	QP Margin [dB]	AV Reading [dBμV]	AV Value [dBμV]	AV Limit [dBμV]	AV Margin [dB]	Verdict
1	0.2175	10.04	37.65	47.69	62.91	15.22	20.99	31.03	52.91	21.88	PASS
2	0.5685	10.04	34.61	44.65	56.00	11.35	17.45	27.49	46.00	18.51	PASS
3	1.9275	9.92	29.92	39.84	56.00	16.16	12.88	22.80	46.00	23.20	PASS
4	4.4745	9.95	25.55	35.50	56.00	20.50	8.36	18.31	46.00	27.69	PASS
5	15.99	10.33	29.49	39.82	60.00	20.18	20.23	30.56	50.00	19.44	PASS
6	22.5285	10.47	23.37	33.84	60.00	26.16	7.34	17.81	50.00	32.19	PASS

Note:1).QP Value (dBμV)= QP Reading (dBμV)+ Factor (dB)
2). Factor (dB)=insertion loss of LISN (dB) + Cable loss (dB)
3). QPMargin(dB) = QP Limit (dBμV) - QP Value (dBμV)
4). AVMargin(dB) = AV Limit (dBμV) - AV Value (dBμV)

Power supply:	DC 5.0V from adapter AC 120V/60Hz	Polarization	N



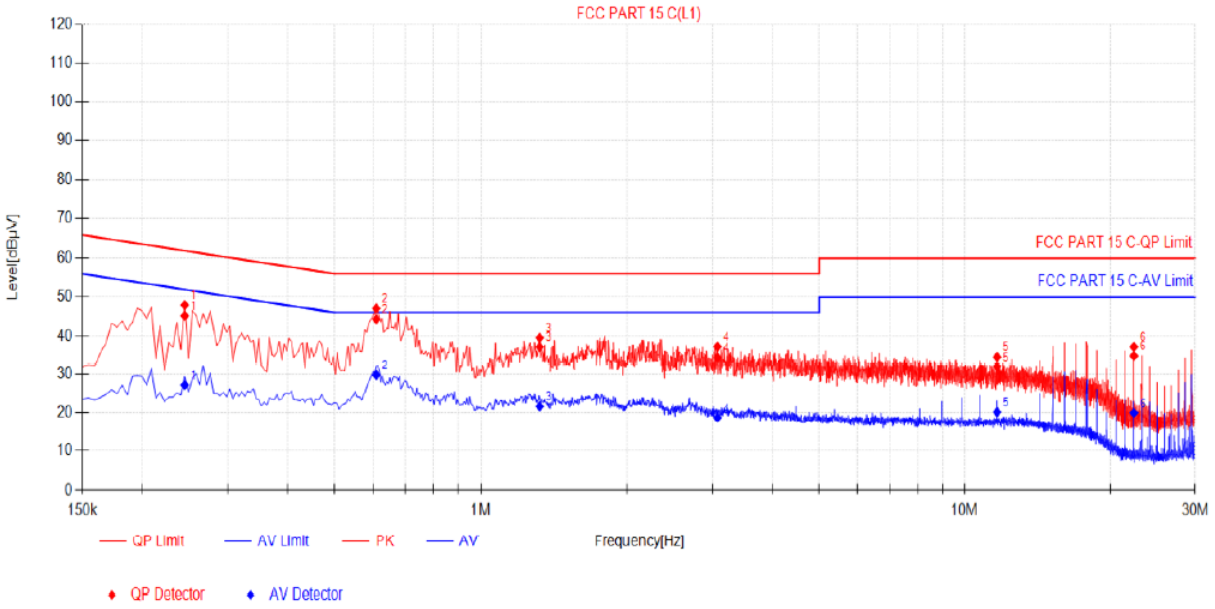
Final Data List

NO.	Freq. [MHz]	Factor [dB]	QP Reading[dBμV]	QP Value [dBμV]	QP Limit [dBμV]	QP Margin [dB]	AV Reading [dBμV]	AV Value [dBμV]	AV Limit [dBμV]	AV Margin [dB]	Verdict
1	0.2175	9.98	36.79	46.77	62.91	16.14	19.97	29.95	52.91	22.96	PASS
2	0.582	10.13	32.96	43.09	56.00	12.91	15.75	25.88	46.00	20.12	PASS
3	1.482	10.13	26.33	36.46	56.00	19.54	10.95	21.08	46.00	24.92	PASS
4	4.488	10.10	22.09	32.19	56.00	23.81	3.23	13.33	46.00	32.67	PASS
5	15.261	10.43	25.43	35.86	60.00	24.14	18.55	28.98	50.00	21.02	PASS
6	24.711	10.69	27.64	38.33	60.00	21.67	20.89	31.58	50.00	18.42	PASS

Note:1).QP Value (dBμV)= QP Reading (dBμV)+ Factor (dB)
2). Factor (dB)=insertion loss of LISN (dB) + Cable loss (dB)
3). QPMargin(dB) = QP Limit (dBμV) - QP Value (dBμV)
4). AVMargin(dB) = AV Limit (dBμV) - AV Value (dBμV)

Model: TW39

Power supply:	DC 5.0V from adapter AC 120V/60Hz	Polarization	L

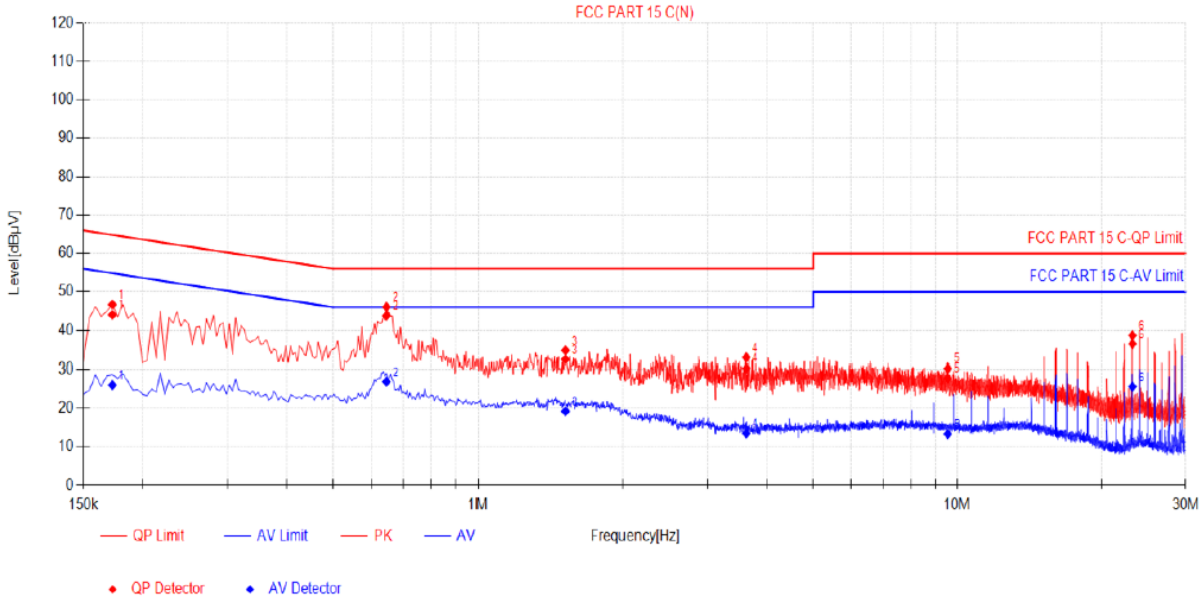


Final Data List

NO.	Freq. [MHz]	Factor [dB]	QP Reading[dBµV]	QP Value [dBµV]	QP Limit [dBµV]	QP Margin [dB]	AV Reading [dBµV]	AV Value [dBµV]	AV Limit [dBµV]	AV Margin [dB]	Verdict
1	0.2445	9.95	35.22	45.17	61.94	16.77	17.20	27.15	51.94	24.79	PASS
2	0.609	10.03	34.25	44.28	56.00	11.72	19.73	29.76	46.00	16.24	PASS
3	1.32	9.90	27.25	37.15	56.00	18.85	11.78	21.68	46.00	24.32	PASS
4	3.0795	10.01	24.43	34.44	56.00	21.56	8.72	18.73	46.00	27.27	PASS
5	11.6745	10.27	21.72	31.99	60.00	28.01	9.95	20.22	50.00	29.78	PASS
6	22.407	10.47	24.39	34.86	60.00	25.14	9.54	20.01	50.00	29.99	PASS

Note:1).QP Value (dBµV)= QP Reading (dBµV)+ Factor (dB)
2). Factor (dB)=insertion loss of LISN (dB) + Cable loss (dB)
3). QPMargin(dB) = QP Limit (dBµV) - QP Value (dBµV)
4). AVMargin(dB) = AV Limit (dBµV) - AV Value (dBµV)

Power supply:	DC 5.0V from adapter AC 120V/60Hz	Polarization	N



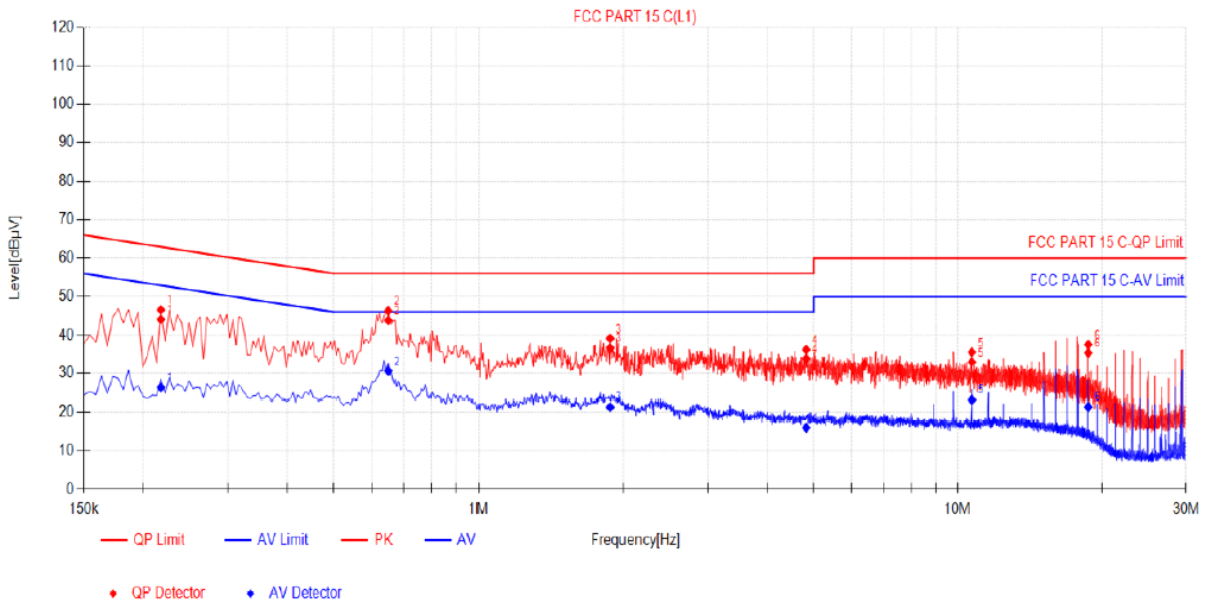
Final Data List

NO.	Freq. [MHz]	Factor [dB]	QP Reading[dBµV]	QP Value [dBµV]	QP Limit [dBµV]	QP Margin [dB]	AV Reading [dBµV]	AV Value [dBµV]	AV Limit [dBµV]	AV Margin [dB]	Verdict
1	0.1725	10.07	33.95	44.02	64.84	20.82	15.95	26.02	54.84	28.82	PASS
2	0.645	10.11	33.68	43.79	56.00	12.21	16.77	26.88	46.00	19.12	PASS
3	1.518	10.13	22.36	32.49	56.00	23.51	9.09	19.22	46.00	26.78	PASS
4	3.624	10.17	20.12	30.29	56.00	25.71	3.26	13.43	46.00	32.57	PASS
5	9.5505	10.40	17.38	27.78	60.00	32.22	2.88	13.28	50.00	36.72	PASS
6	23.244	10.65	25.80	36.45	60.00	23.55	14.97	25.62	50.00	24.38	PASS

Note:1).QP Value (dBµV)= QP Reading (dBµV)+ Factor (dB)
2). Factor (dB)=insertion loss of LISN (dB) + Cable loss (dB)
3). QPMargin(dB) = QP Limit (dBµV) - QP Value (dBµV)
4). AVMargin(dB) = AV Limit (dBµV) - AV Value (dBµV)

Model: TW38

Power supply:	DC 5.0V from adapter AC 120V/60Hz	Polarization	L

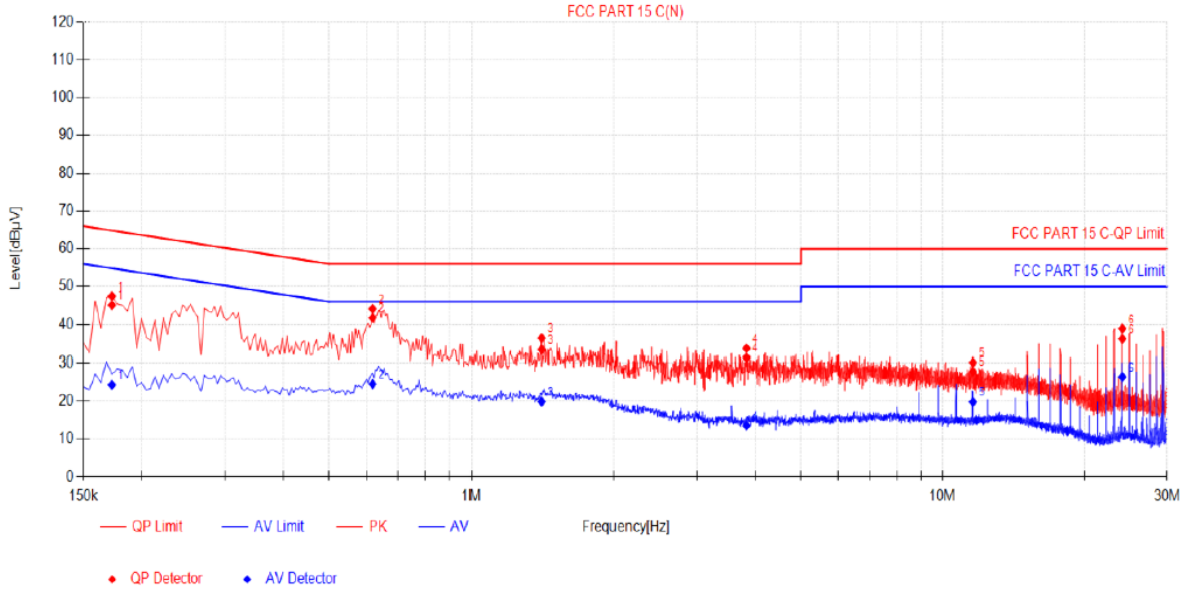


Final Data List

NO.	Freq. [MHz]	Factor [dB]	QP Reading[dBµV]	QP Value [dBµV]	QP Limit [dBµV]	QP Margin [dB]	AV Reading [dBµV]	AV Value [dBµV]	AV Limit [dBµV]	AV Margin [dB]	Verdict
1	0.2175	10.04	34.06	44.10	62.91	18.81	16.18	26.22	52.91	26.69	PASS
2	0.6495	9.98	33.86	43.84	56.00	12.16	20.53	30.51	46.00	15.49	PASS
3	1.878	9.92	26.77	36.69	56.00	19.31	11.41	21.33	46.00	24.67	PASS
4	4.8255	9.98	23.88	33.86	56.00	22.14	6.10	16.08	46.00	29.92	PASS
5	10.7115	10.26	22.73	32.99	60.00	27.01	12.86	23.12	50.00	26.88	PASS
6	18.7395	10.39	24.99	35.38	60.00	24.62	11.00	21.39	50.00	28.61	PASS

Note:1).QP Value (dBµV)= QP Reading (dBµV)+ Factor (dB)
2). Factor (dB)=insertion loss of LISN (dB) + Cable loss (dB)
3). QPMargin(dB) = QP Limit (dBµV) - QP Value (dBµV)
4). AVMargin(dB) = AV Limit (dBµV) - AV Value (dBµV)

Power supply:	DC 5.0V from adapter AC 120V/60Hz	Polarization	N



Final Data List

NO.	Freq. [MHz]	Factor [dB]	QP Reading[dBµV]	QP Value [dBµV]	QP Limit [dBµV]	QP Margin [dB]	AV Reading [dBµV]	AV Value [dBµV]	AV Limit [dBµV]	AV Margin [dB]	Verdict
1	0.1725	10.07	35.01	45.08	64.84	19.76	14.25	24.32	54.84	30.52	PASS
2	0.618	10.14	31.59	41.73	56.00	14.27	14.39	24.53	46.00	21.47	PASS
3	1.4055	10.15	23.24	33.39	56.00	22.61	9.73	19.88	46.00	26.12	PASS
4	3.831	10.14	21.24	31.38	56.00	24.62	3.34	13.48	46.00	32.52	PASS
5	11.598	10.41	17.35	27.76	60.00	32.24	9.41	19.82	50.00	30.18	PASS
6	24.099	10.67	25.50	36.17	60.00	23.83	15.69	26.36	50.00	23.64	PASS

Note:1).QP Value (dBµV)= QP Reading (dBµV)+ Factor (dB)
2). Factor (dB)=insertion loss of LISN (dB) + Cable loss (dB)
3). QPMargin(dB) = QP Limit (dBµV) - QP Value (dBµV)
4). AVMargin(dB) = AV Limit (dBµV) - AV Value (dBµV)

4.2 Radiated and Conducted Unwanted Emissions

Limit

The maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.
(2) 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: 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.

Undesirable emission limits

Requirement	Limit(EIRP)	Limit (Field strength at 3m) Note1
15.407(b)(1)	PK:-27(dBm/MHz)	PK:68.2(dBμV/m)
15.407(b)(2)		
15.407(b)(3)		
15.407(b)(4)		

Note1: The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

$$E = \frac{1000000\sqrt{30P}}{3}$$ μV/m, where P is the eirp (Watts)

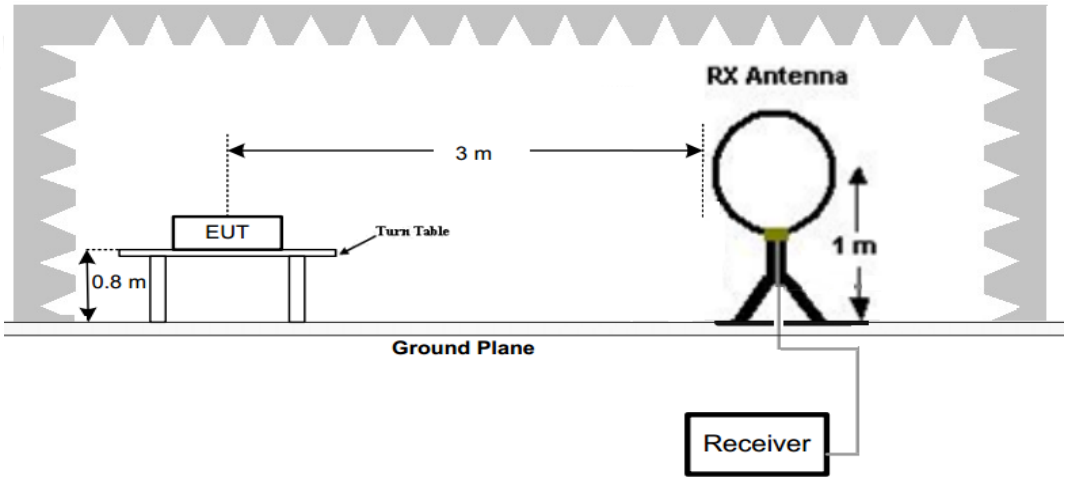
(5) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209
(6)In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a)

Radiated emission limits

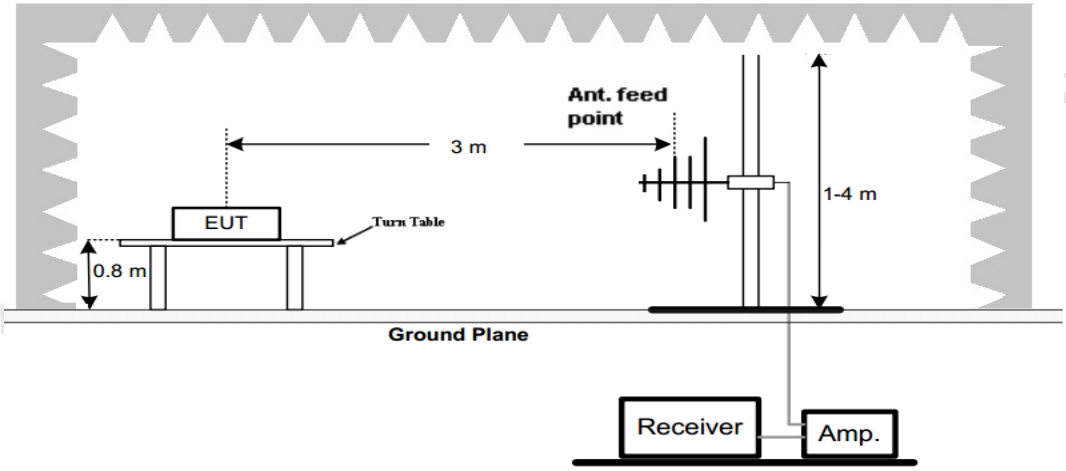
Frequency (MHz)	Distance (Meters)	Radiated (dBμV/m)	Radiated (μV/m)
0.009-0.49	3	20log(2400/F(KHz))+40log(300/3)	2400/F(KHz)
0.49-1.705	3	20log(24000/F(KHz))+ 40log(30/3)	24000/F(KHz)
1.705-30	3	20log(30)+ 40log(30/3)	30
30-88	3	40.0	100
88-216	3	43.5	150
216-960	3	46.0	200
Above 960	3	54.0	500

TEST CONFIGURATION

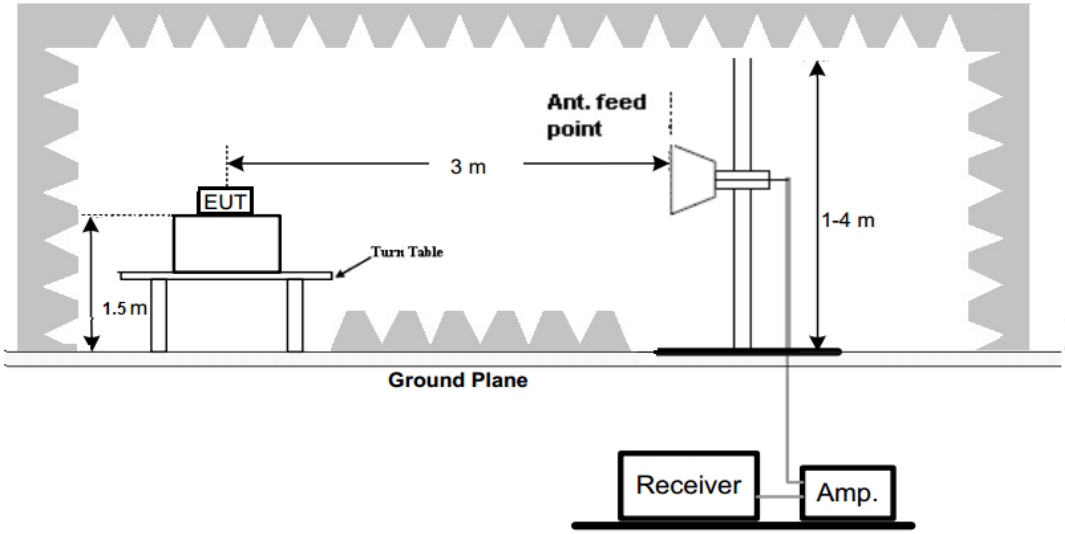
(A) Radiated Emission Test Set-Up, Frequency Below 30MHz

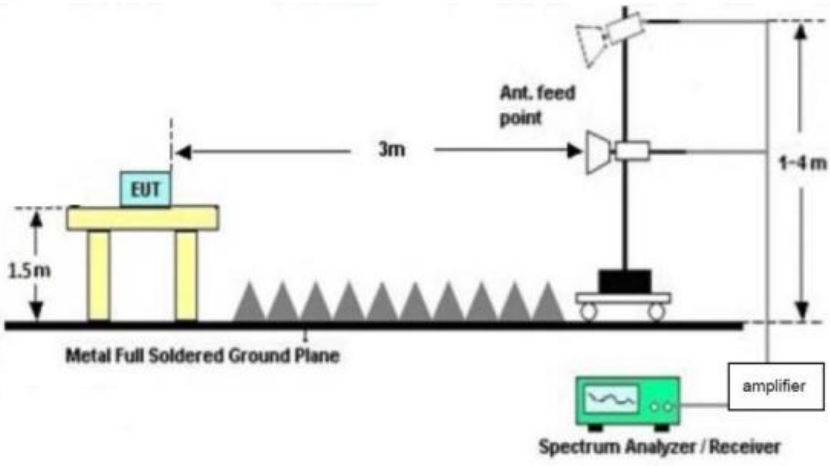


(B) Radiated Emission Test Set-Up, Frequency below 1000MHz



(C) Radiated Emission Test Set-Up, Frequency above 1000MHz





Test Procedure

1. Below 1GHz measurement the EUT is placed on a turntable which is 0.8m above ground plane, and above 1GHz measurement EUT was placed on a low permittivity and low loss tangent turn table which is 1.5m above ground plane.
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.
5. Radiated emission test frequency band from 9KHz to 40GHz.
6. The distance between test antenna and EUT as following table states:

Test Frequency range	Test Antenna Type	Test Distance
9KHz-30MHz	Active Loop Antenna	3
30MHz-1GHz	Bilog Antenna	3
1GHz-18GHz	Horn Antenna	3
18GHz-25GHz	Horn Anternna	1

7. Setting test receiver/spectrum as following table states:

Test Frequency range	Test Receiver/Spectrum Setting	Detector
9KHz-150KHz	RBW=200Hz/VBW=3KHz,Sweep time=Auto	QP
150KHz-30MHz	RBW=9KHz/VBW=100KHz,Sweep time=Auto	QP
30MHz-1GHz	RBW=120KHz/VBW=1000KHz,Sweep time=Auto	QP
1GHz-40GHz	Peak Value: RBW=1MHz/VBW=3MHz, Sweep time=Auto Average Value: RBW=1MHz/VBW=10Hz, Sweep time=Auto	Peak

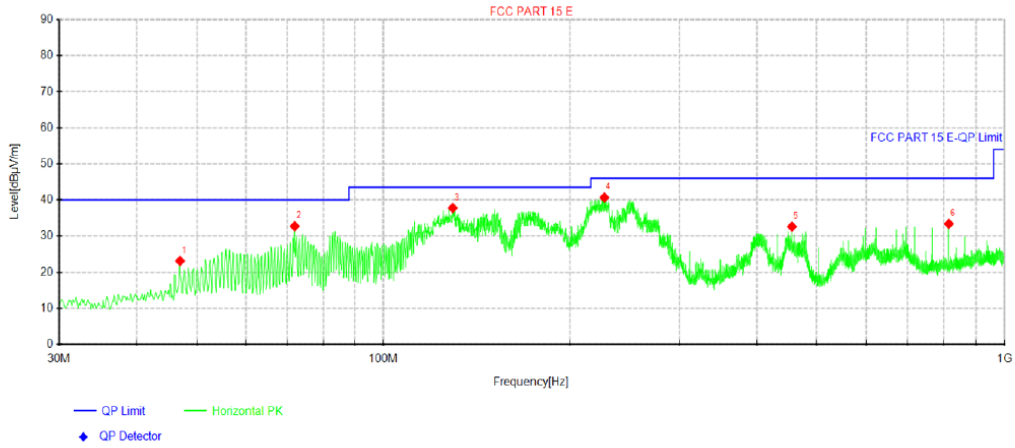
TEST RESULTS

Remark:
1. This test was performed with EUT in X, Y, Z position and the worse case was found when EUT in X position.
2. All modes of 802.11a/n/11ac/11ax have been tested for below 1GHz test, only the worst case 802.11a low channel was recorded.
3. All modes of 802.11a/n/11ac/11ax have been tested for above 1GHz test, only the worst case 802.11a was recorded.
4. Radiated emission test from 9 KHz to 40GHz harmonic of fundamental was verified, and no emission found except system noise floor in 9 KHz to 30MHz and not recorded in this report.
5. Conducted emission test from 30MHz to 40GHz harmonic of fundamental was verified, and emission margin is greater than 20dB in 27GHz to 40GHz and not recorded in this report.

6. We tested the product in both adapter and solar panel power supply modes, and recorded the worst data for using the adapter in the report.

Model: TW37
For 30MHz-1GHz

Horizontal

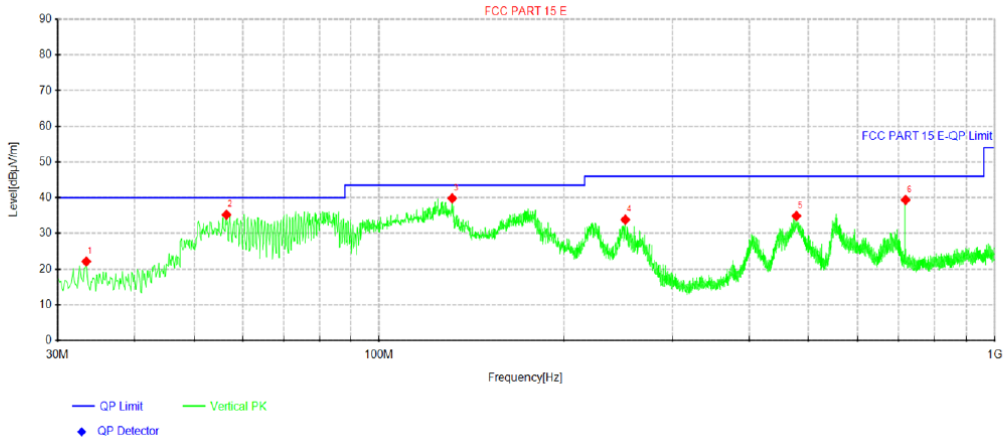


Suspected Data List

NO.	Freq. [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	46.975	34.48	23.16	-11.32	40.00	16.84	100	1	Horizontal
2	71.9525	48.01	32.78	-15.23	40.00	7.22	100	16	Horizontal
3	129.303	54.18	37.79	-16.39	43.50	5.71	200	177	Horizontal
4	227.152	53.12	40.67	-12.45	46.00	5.33	100	257	Horizontal
5	455.951	42.39	32.67	-9.72	46.00	13.33	100	269	Horizontal
6	816.063	37.77	33.45	-4.32	46.00	12.55	200	281	Horizontal

Note:1).Level (dBµV/m)= Reading (dBµV)+ Factor (dB/m)
2). Factor(dB/m)=Antenna Factor (dB/m) + Cable loss (dB) - Pre Amplifier gain (dB)
3). Margin(dB) = Limit (dBµV/m) - Level (dBµV/m)

Vertical



Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	33.395	36.00	22.13	-13.87	40.00	17.87	100	333	Vertical
2	56.4325	47.12	35.23	-11.89	40.00	4.77	100	321	Vertical
3	131.486	56.17	39.82	-16.35	43.50	3.68	200	297	Vertical
4	251.523	45.94	33.84	-12.10	46.00	12.16	100	181	Vertical
5	477.655	44.22	34.89	-9.33	46.00	11.11	100	112	Vertical
6	718.821	44.52	39.39	-5.13	46.00	6.61	200	350	Vertical

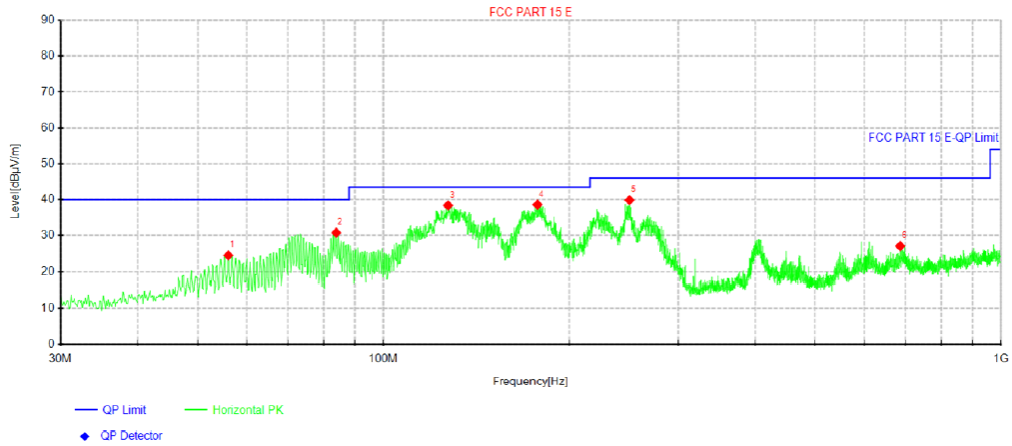
Note:1).Level (dBμV/m)= Reading (dBμV)+ Factor (dB/m)

2). Factor(dB/m)=Antenna Factor (dB/m) + Cable loss (dB) - Pre Amplifier gain (dB)

3). Margin(dB) = Limit (dBμV/m) - Level (dBμV/m)

Model: TW36
For 30MHz-1GHz

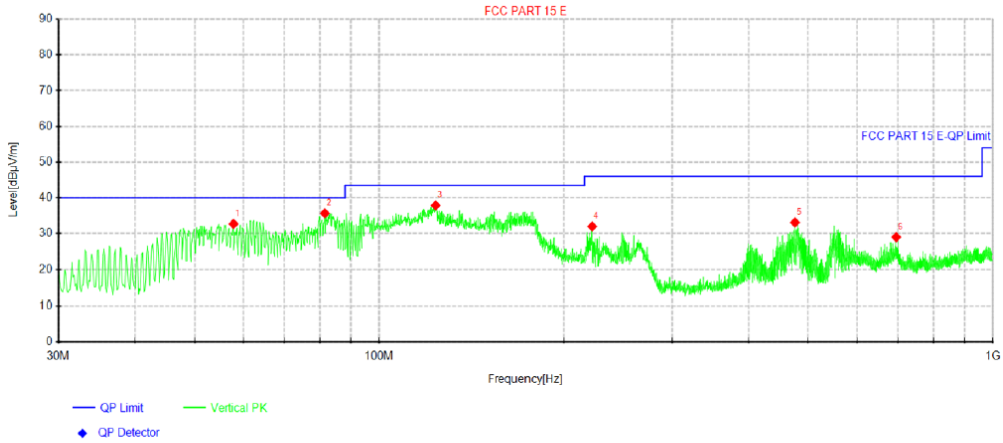
Horizontal



Suspected Data List									
NO.	Freq. [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	56.0688	36.33	24.51	-11.82	40.00	15.49	100	40	Horizontal
2	83.835	46.85	30.79	-16.06	40.00	9.21	100	1	Horizontal
3	127.242	54.56	38.40	-16.16	43.50	5.10	100	214	Horizontal
4	177.561	53.28	38.60	-14.68	43.50	4.90	100	99	Horizontal
5	250.19	51.99	39.87	-12.12	46.00	6.13	100	271	Horizontal
6	686.568	32.27	27.08	-5.19	46.00	18.92	100	144	Horizontal

Note:1).Level (dBµV/m)= Reading (dBµV)+ Factor (dB/m)
2). Factor(dB/m)=Antenna Factor (dB/m) + Cable loss (dB) - Pre Amplifier gain (dB)
3). Margin(dB) = Limit (dBµV/m) - Level (dBµV/m)

Vertical



Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	57.8875	44.98	32.73	-12.25	40.00	7.27	100	131	Vertical
2	81.5312	52.16	35.68	-16.48	40.00	4.32	100	358	Vertical
3	123.605	53.25	37.92	-15.33	43.50	5.58	100	299	Vertical
4	222.423	44.50	32.03	-12.47	46.00	13.97	100	359	Vertical
5	475.957	42.48	33.13	-9.35	46.00	12.87	100	230	Vertical
6	695.541	34.19	29.01	-5.18	46.00	16.99	100	278	Vertical

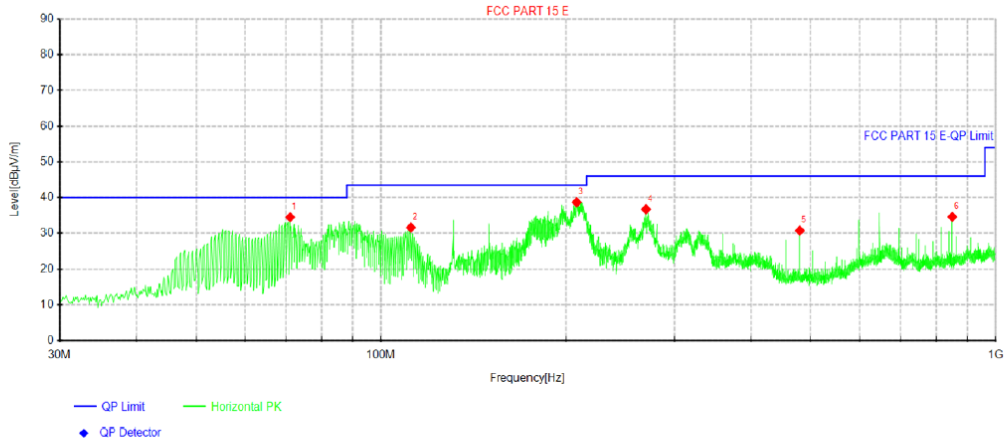
Note:1).Level (dBμV/m)= Reading (dBμV)+ Factor (dB/m)

2). Factor(dB/m)=Antenna Factor (dB/m) + Cable loss (dB) - Pre Amplifier gain (dB)

3). Margin(dB) = Limit (dBμV/m) - Level (dBμV/m)

Model: QS12
For 30MHz-1GHz

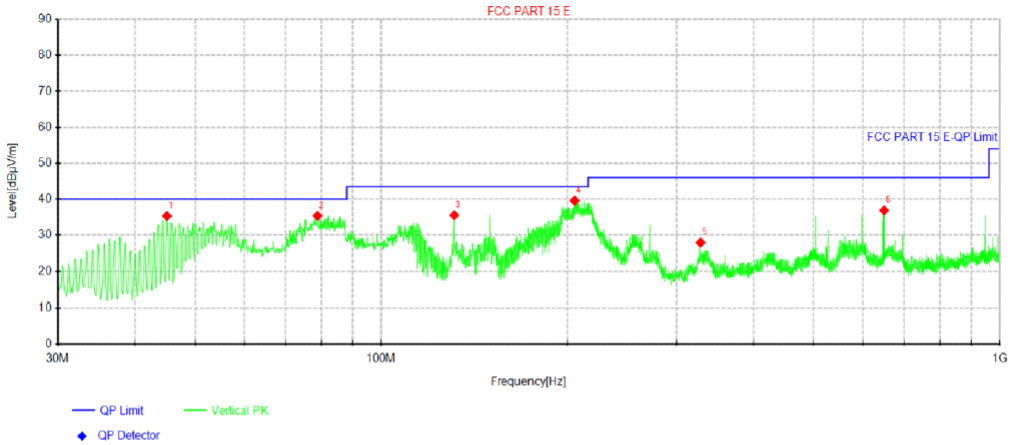
Horizontal



Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	71.1038	49.49	34.50	-14.99	40.00	5.50	100	350	Horizontal
2	111.843	45.08	31.62	-13.46	43.50	11.88	100	215	Horizontal
3	208.116	51.42	38.67	-12.75	43.50	4.83	100	61	Horizontal
4	269.832	48.37	36.75	-11.62	46.00	9.25	100	86	Horizontal
5	480.08	40.09	30.77	-9.32	46.00	15.23	100	155	Horizontal
6	850.013	38.32	34.61	-3.71	46.00	11.39	100	0	Horizontal

Note:1).Level (dBμV/m)= Reading (dBμV)+ Factor (dB/m)
2). Factor(dB/m)=Antenna Factor (dB/m) + Cable loss (dB) - Pre Amplifier gain (dB)
3). Margin(dB) = Limit (dBμV/m) - Level (dBμV/m)

Vertical



Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	45.035	46.77	35.33	-11.44	40.00	4.67	100	358	Vertical
2	78.8638	51.99	35.37	-16.62	40.00	4.63	100	359	Vertical
3	131.243	51.93	35.56	-16.37	43.50	7.94	100	254	Vertical
4	205.448	52.36	39.60	-12.76	43.50	3.90	100	335	Vertical
5	328.153	38.81	27.94	-10.87	46.00	18.06	100	345	Vertical
6	650.072	42.31	36.90	-5.41	46.00	9.10	100	126	Vertical

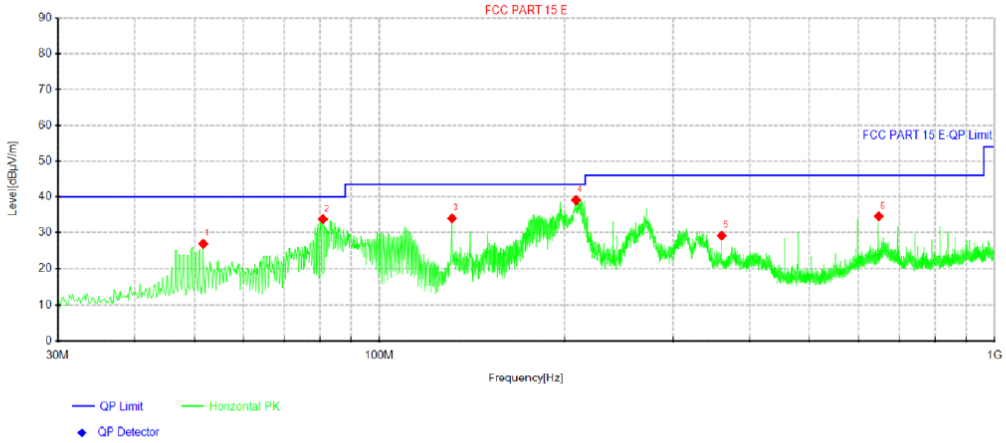
Note:1).Level (dBμV/m)= Reading (dBμV)+ Factor (dB/m)

2). Factor(dB/m)=Antenna Factor (dB/m) + Cable loss (dB) - Pre Amplifier gain (dB)

3). Margin(dB) = Limit (dBμV/m) - Level (dBμV/m)

Model: QS6
For 30MHz-1GHz

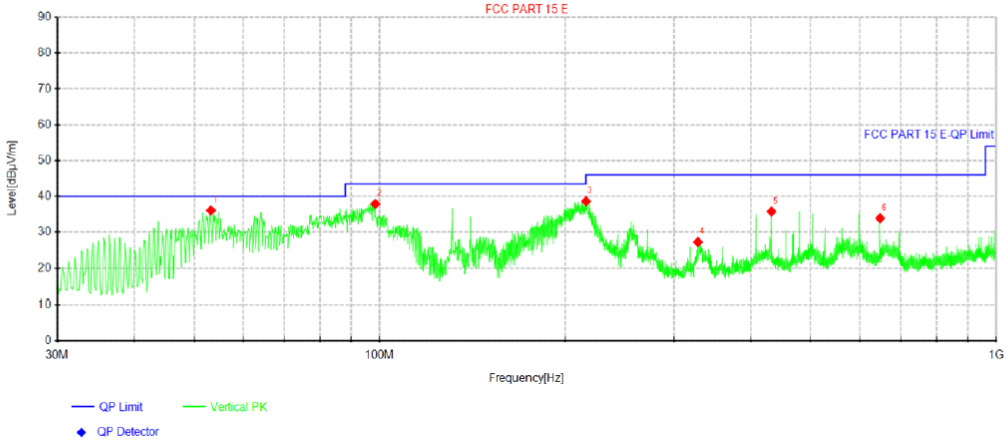
Horizontal



Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	51.7038	38.16	26.88	-11.28	40.00	13.12	100	322	Horizontal
2	80.925	50.36	33.76	-16.60	40.00	6.24	100	138	Horizontal
3	131.243	50.36	33.99	-16.37	43.50	9.51	100	184	Horizontal
4	208.722	51.83	39.08	-12.75	43.50	4.42	100	81	Horizontal
5	360.042	39.69	29.14	-10.55	46.00	16.86	100	36	Horizontal
6	648.011	40.00	34.57	-5.43	46.00	11.43	100	138	Horizontal

Note:1).Level (dBμV/m)= Reading (dBμV)+ Factor (dB/m)
2). Factor(dB/m)=Antenna Factor (dB/m) + Cable loss (dB) - Pre Amplifier gain (dB)
3). Margin(dB) = Limit (dBμV/m) - Level (dBμV/m)

Vertical



Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	53.28	47.50	36.09	-11.41	40.00	3.91	100	352	Vertical
2	98.385	51.17	37.93	-13.24	43.50	5.57	100	360	Vertical
3	216.118	51.23	38.66	-12.57	46.00	7.34	100	290	Vertical
4	328.153	38.14	27.27	-10.87	46.00	18.73	100	324	Vertical
5	432.065	45.62	35.78	-9.84	46.00	10.22	100	197	Vertical
6	648.011	39.34	33.91	-5.43	46.00	12.09	100	290	Vertical

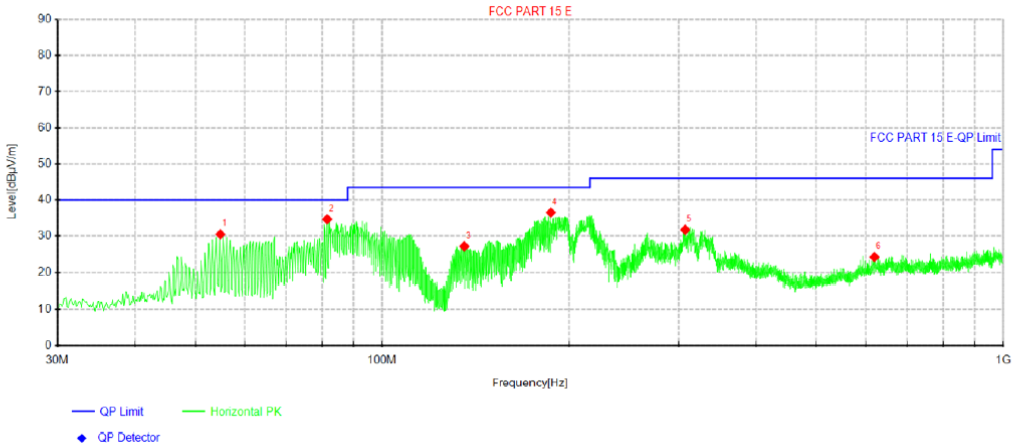
Note:1).Level (dBμV/m)= Reading (dBμV)+ Factor (dB/m)

2). Factor(dB/m)=Antenna Factor (dB/m) + Cable loss (dB) - Pre Amplifier gain (dB)

3). Margin(dB) = Limit (dBμV/m) - Level (dBμV/m)

Model: QS16
For 30MHz-1GHz

Horizontal

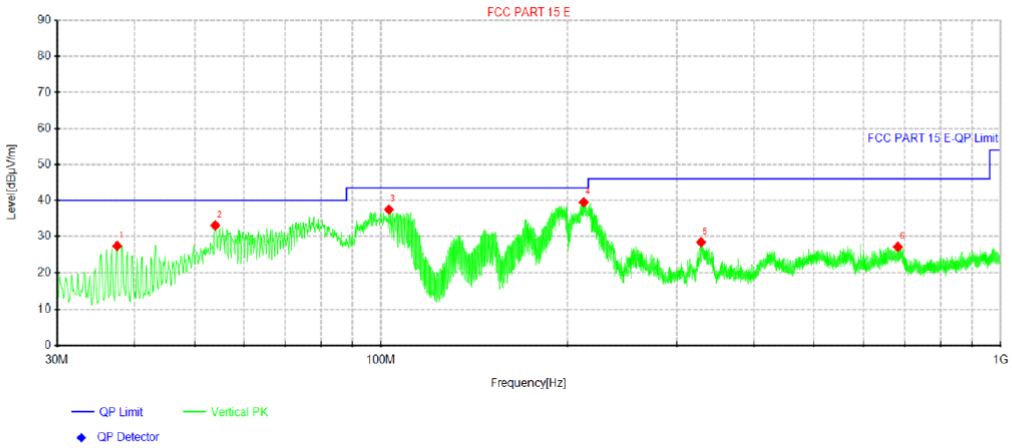


Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	54.8562	42.07	30.53	-11.54	40.00	9.47	100	14	Horizontal
2	81.5312	51.16	34.68	-16.48	40.00	5.32	100	150	Horizontal
3	135.608	43.21	27.17	-16.04	43.50	16.33	100	185	Horizontal
4	186.897	50.51	36.55	-13.96	43.50	6.95	100	45	Horizontal
5	307.541	42.62	31.74	-10.88	46.00	14.26	100	268	Horizontal
6	620.366	29.95	24.23	-5.72	46.00	21.77	100	126	Horizontal

Note:1).Level (dBμV/m)= Reading (dBμV)+ Factor (dB/m)
2). Factor(dB/m)=Antenna Factor (dB/m) + Cable loss (dB) - Pre Amplifier gain (dB)
3). Margin(dB) = Limit (dBμV/m) - Level (dBμV/m)

Vertical



Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	37.5175	40.21	27.39	-12.82	40.00	12.61	100	100	Vertical
2	54.0075	44.53	33.07	-11.46	40.00	6.93	100	54	Vertical
3	102.992	50.49	37.49	-13.00	43.50	6.01	100	42	Vertical
4	212.36	52.19	39.51	-12.68	43.50	3.99	100	42	Vertical
5	328.396	39.28	28.41	-10.87	46.00	17.59	100	343	Vertical
6	682.688	32.37	27.12	-5.25	46.00	18.88	100	261	Vertical

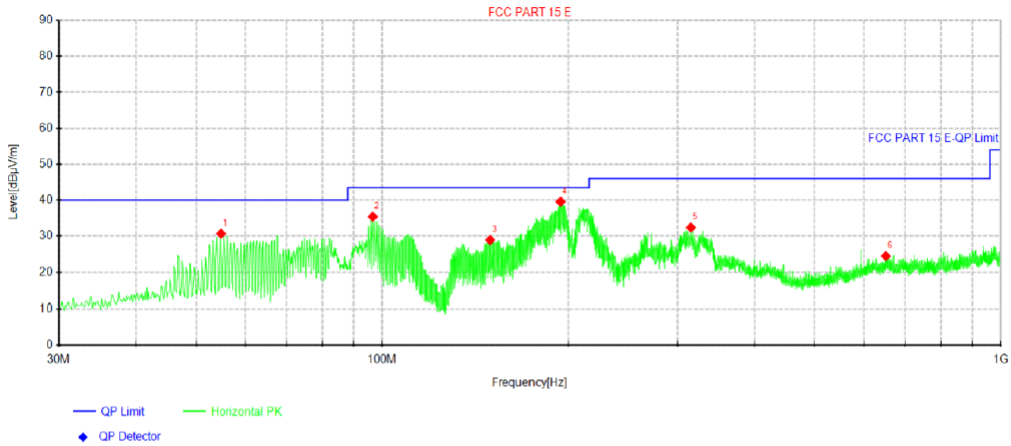
Note:1).Level (dBμV/m)= Reading (dBμV)+ Factor (dB/m)

2). Factor(dB/m)=Antenna Factor (dB/m) + Cable loss (dB) - Pre Amplifier gain (dB)

3). Margin(dB) = Limit (dBμV/m) - Level (dBμV/m)

Model: QS13
For 30MHz-1GHz

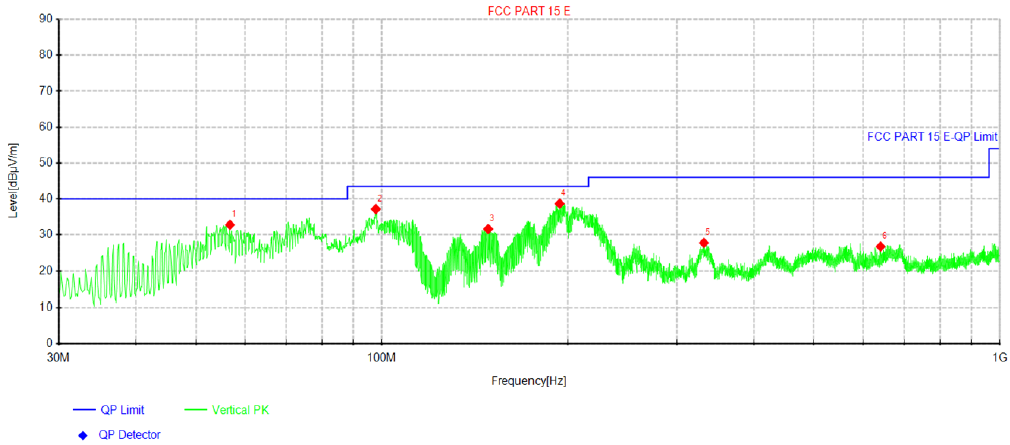
Horizontal



Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	54.8562	42.25	30.71	-11.54	40.00	9.29	100	2	Horizontal
2	96.5662	49.01	35.43	-13.58	43.50	8.07	100	190	Horizontal
3	149.431	44.33	28.92	-15.41	43.50	14.58	100	202	Horizontal
4	194.172	52.84	39.58	-13.26	43.50	3.92	100	43	Horizontal
5	315.543	43.34	32.42	-10.92	46.00	13.58	100	274	Horizontal
6	651.891	29.88	24.46	-5.42	46.00	21.54	100	214	Horizontal

Note:1).Level (dBμV/m)= Reading (dBμV)+ Factor (dB/m)
2). Factor(dB/m)=Antenna Factor (dB/m) + Cable loss (dB) - Pre Amplifier gain (dB)
3). Margin(dB) = Limit (dBμV/m) - Level (dBμV/m)

Vertical



Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	56.7962	44.79	32.81	-11.98	40.00	7.19	100	360	Vertical
2	97.7788	50.56	37.20	-13.36	43.50	6.30	100	348	Vertical
3	148.582	47.09	31.65	-15.44	43.50	11.85	100	213	Vertical
4	193.93	51.98	38.71	-13.27	43.50	4.79	100	0	Vertical
5	331.912	38.62	27.79	-10.83	46.00	18.21	100	359	Vertical
6	640.978	32.29	26.77	-5.52	46.00	19.23	100	259	Vertical

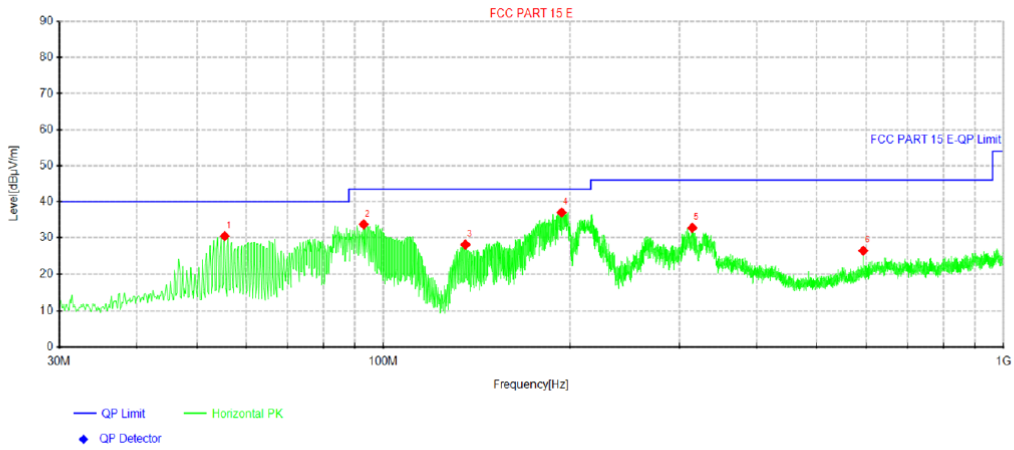
Note:1).Level (dBμV/m)= Reading (dBμV)+ Factor (dB/m)

2). Factor(dB/m)=Antenna Factor (dB/m) + Cable loss (dB) - Pre Amplifier gain (dB)

3). Margin(dB) = Limit (dBμV/m) - Level (dBμV/m)

Model: QS17
For 30MHz-1GHz

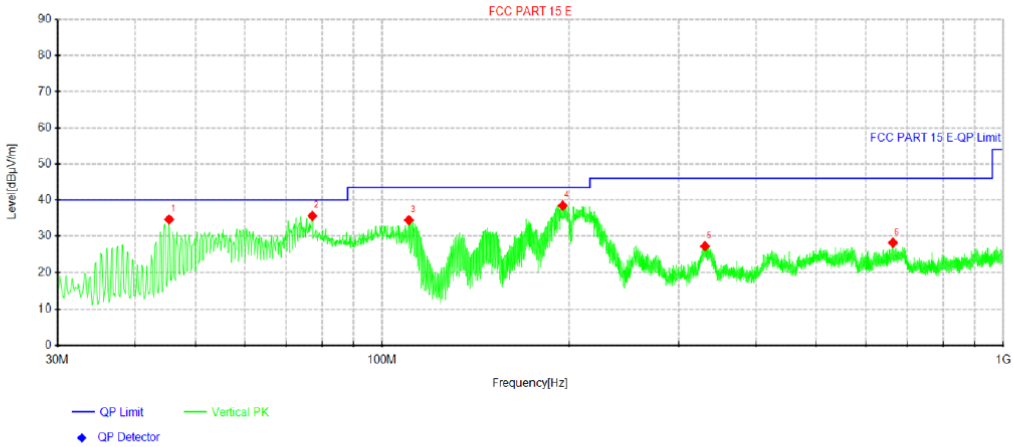
Horizontal



Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	55.4625	42.12	30.46	-11.66	40.00	9.54	100	0	Horizontal
2	92.9287	47.95	33.74	-14.21	43.50	9.76	100	177	Horizontal
3	135.608	44.16	28.12	-16.04	43.50	15.38	100	186	Horizontal
4	193.808	50.31	37.03	-13.28	43.50	6.47	100	58	Horizontal
5	314.937	43.69	32.78	-10.91	46.00	13.22	100	246	Horizontal
6	594.055	32.63	26.45	-6.18	46.00	19.55	100	358	Horizontal

Note:1).Level (dBμV/m)= Reading (dBμV)+ Factor (dB/m)
2). Factor(dB/m)=Antenna Factor (dB/m) + Cable loss (dB) - Pre Amplifier gain (dB)
3). Margin(dB) = Limit (dBμV/m) - Level (dBμV/m)

Vertical



Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	45.3988	46.04	34.63	-11.41	40.00	5.37	100	360	Vertical
2	77.1662	51.98	35.60	-16.38	40.00	4.40	100	360	Vertical
3	110.388	47.80	34.44	-13.36	43.50	9.06	100	238	Vertical
4	195.263	51.65	38.46	-13.19	43.50	5.04	100	23	Vertical
5	330.942	38.06	27.22	-10.84	46.00	18.78	100	355	Vertical
6	664.501	33.65	28.19	-5.46	46.00	17.81	100	286	Vertical

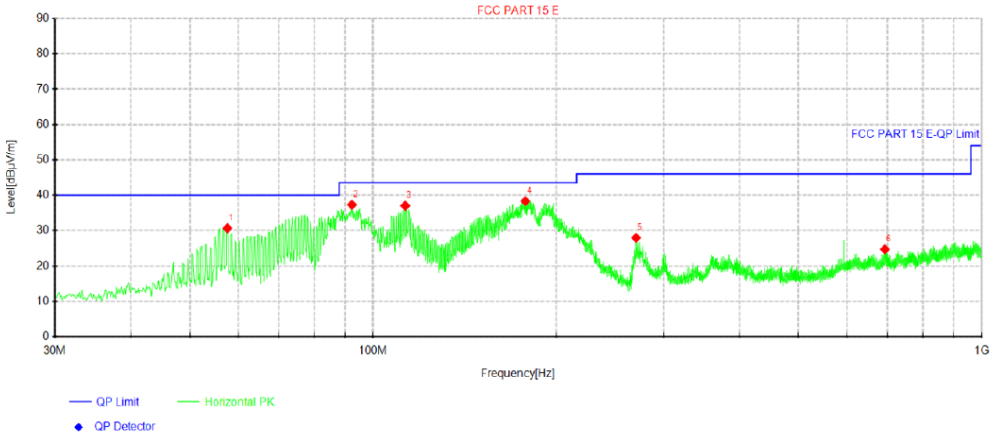
Note:1).Level (dBμV/m)= Reading (dBμV)+ Factor (dB/m)

2). Factor(dB/m)=Antenna Factor (dB/m) + Cable loss (dB) - Pre Amplifier gain (dB)

3). Margin(dB) = Limit (dBμV/m) - Level (dBμV/m)

Model: TW39
For 30MHz-1GHz

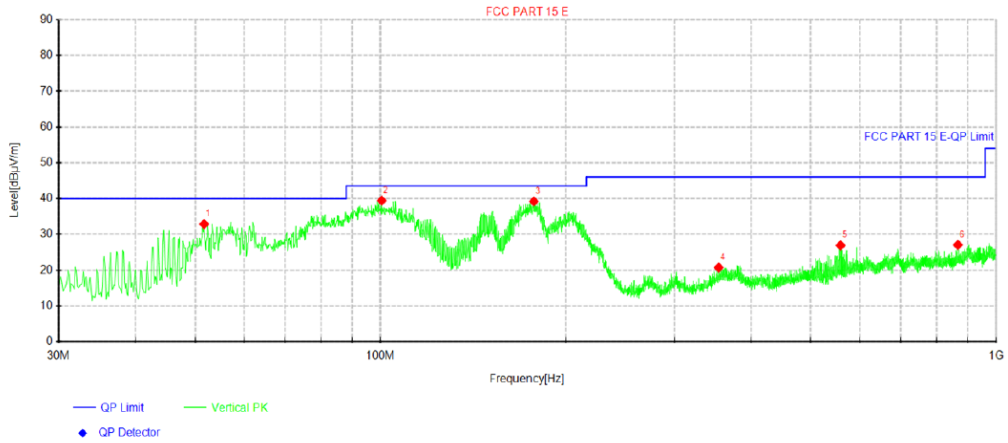
Horizontal



Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	57.645	42.87	30.68	-12.19	40.00	9.32	100	357	Horizontal
2	92.3225	51.61	37.30	-14.31	43.50	6.20	100	178	Horizontal
3	112.935	50.55	37.03	-13.52	43.50	6.47	100	201	Horizontal
4	177.925	52.98	38.33	-14.65	43.50	5.17	100	234	Horizontal
5	270.438	39.56	27.95	-11.61	46.00	18.05	100	73	Horizontal
6	693.237	29.89	24.72	-5.17	46.00	21.28	100	350	Horizontal

Note:1).Level (dBμV/m)= Reading (dBμV)+ Factor (dB/m)
2). Factor(dB/m)=Antenna Factor (dB/m) + Cable loss (dB) - Pre Amplifier gain (dB)
3). Margin(dB) = Limit (dBμV/m) - Level (dBμV/m)

Vertical



Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	51.7038	44.13	32.85	-11.28	40.00	7.15	100	360	Vertical
2	100.446	52.38	39.43	-12.95	43.50	4.07	100	336	Vertical
3	177.44	53.89	39.21	-14.68	43.50	4.29	100	185	Vertical
4	354.222	31.35	20.71	-10.64	46.00	25.29	100	300	Vertical
5	558.771	35.22	26.90	-8.32	46.00	19.10	100	185	Vertical
6	866.625	30.56	27.05	-3.51	46.00	18.95	100	3	Vertical

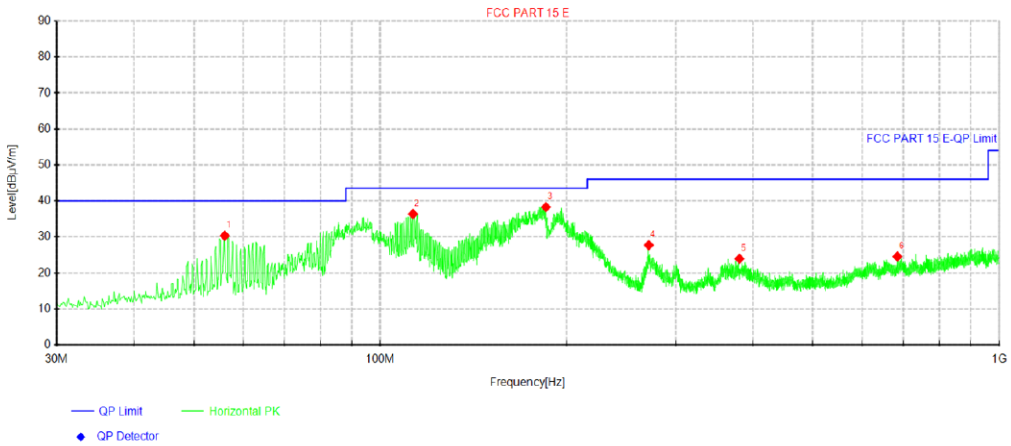
Note:1).Level (dBμV/m)= Reading (dBμV)+ Factor (dB/m)

2). Factor(dB/m)=Antenna Factor (dB/m) + Cable loss (dB) - Pre Amplifier gain (dB)

3). Margin(dB) = Limit (dBμV/m) - Level (dBμV/m)

Model: TW38
For 30MHz-1GHz

Horizontal



Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	56.0688	42.16	30.34	-11.82	40.00	9.66	100	350	Horizontal
2	112.935	49.89	36.37	-13.52	43.50	7.13	100	233	Horizontal
3	185.2	52.49	38.29	-14.20	43.50	5.21	100	68	Horizontal
4	271.53	39.30	27.71	-11.59	46.00	18.29	100	80	Horizontal
5	380.412	34.28	23.94	-10.34	46.00	22.06	100	269	Horizontal
6	684.75	29.77	24.55	-5.22	46.00	21.45	100	357	Horizontal

Note:1).Level (dBμV/m)= Reading (dBμV)+ Factor (dB/m)
2). Factor(dB/m)=Antenna Factor (dB/m) + Cable loss (dB) - Pre Amplifier gain (dB)
3). Margin(dB) = Limit (dBμV/m) - Level (dBμV/m)