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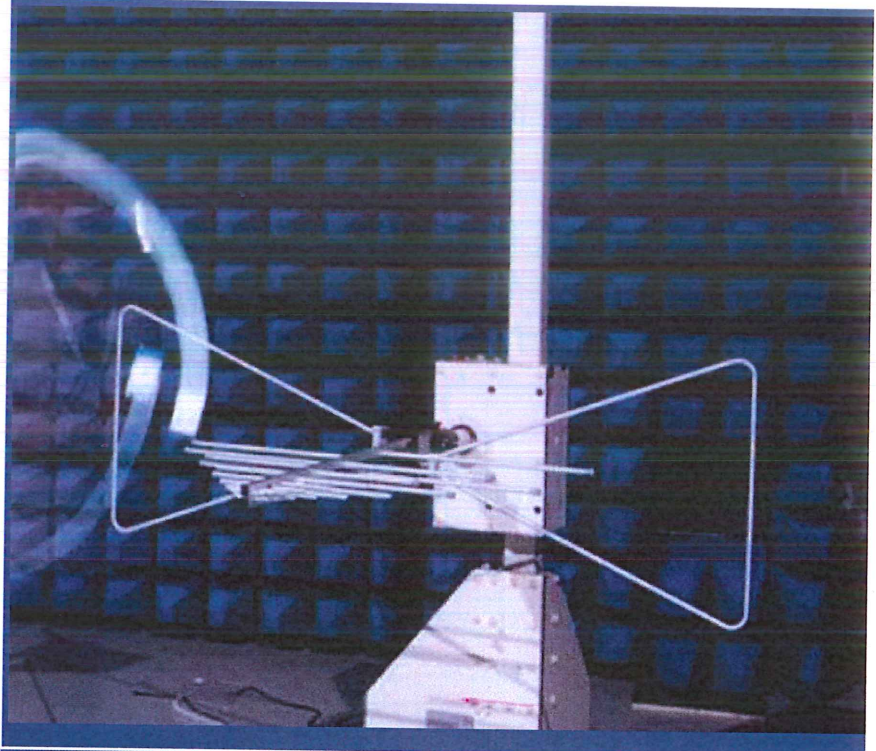
TEST REPORT

ISSUED BY
Shenzhen BALUN Technology Co., Ltd.



FOR
wireless charger

ISSUED TO
Hong chuang shen zi (shen zhen) Technology Co., Ltd
4B76 No. 93, Qianjin 2nd Road, Area 81, Hexi Community, Xixiang
Street, Baoan District, Shenzhen



Tested by: Xiong Chong
Xiong Chong
Date Sep. 28, 2020

Approved by: Wei Yanquan
Wei Yanquan
(Chief Engineer)
Date Sep. 28, 2020

Report No.: BL-SZ2080117-401
EUT Name: wireless charger
Model Name: HX399 (refer section 2.4)
Brand Name: HALCURT
Test Standard: 47 CFR Part 15 Subpart C
FCC ID: 2AW7C-HX399

Test Conclusion: Pass
Test Date: Aug. 06, 2020 ~ Aug. 31, 2016
Date of Issue: Sep. 28, 2020

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Revision History

Version	Issue Date	Revisions
<u>Rev. 01</u>	<u>Sep. 18, 2020</u>	<u>Initial Issue</u>
<u>Rev. 02</u>	<u>Sep. 25, 2020</u>	<u>Updated Section 2.6 Technical</u>
		<u>Information</u>
<u>Rev. 03</u>	<u>Sep. 28, 2020</u>	<u>Added EUT Serial Number in section 2.4</u>

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1 GENERAL INFORMATION

1.1 Identification of the Testing Laboratory

Company Name	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Phone Number	+86 755 6685 0100

1.2 Identification of the Responsible Testing Location

Test Location	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Accreditation Certificate	The laboratory has been listed by Industry Canada to perform electromagnetic emission measurements. The recognition numbers of test site are 11524A-1. The laboratory is a testing organization accredited by FCC as a accredited testing laboratory. The designation number is CN1196. The laboratory is a testing organization accredited by American Association for Laboratory Accreditation(A2LA) according to ISO/IEC 17025.The accreditation certificate is 4344.01. The laboratory is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L6791.
Description	All measurement facilities used to collect the measurement data are located at Block B, FL 1, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China 518055

1.3 Laboratory Condition

Ambient Temperature	20°C to 25°C
Ambient Relative Humidity	45% to 55%
Ambient Pressure	100 kPa to 102 kPa

1.4 Announce

- (1) The test report reference to the report template version v2.7.
- (2) The test report is invalid if not marked with the signatures of the persons responsible for preparing and approving the test report.
- (3) The test report is invalid if there is any evidence and/or falsification.
- (4) The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein.
- (5) This document may not be altered or revised in any way unless done so by BALUN and all revisions are duly noted in the revisions section.
- (6) Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.
- (7) The laboratory is only responsible for the data released by the laboratory, except for the part provided by the applicant.

2 PRODUCT INFORMATION

2.1 Applicant Information

Applicant	Hong chuang shen zi (shen zhen) Technology Co., Ltd
Address	4B76 No. 93, Qianjin 2nd Road, Area 81, Hexi Community, Xixiang Street, Baoan District, Shenzhen

2.2 Manufacturer Information

Manufacturer	N/A
Address	N/A

2.3 Factory Information

Factory	N/A
Address	N/A

2.4 General Description for Equipment under Test (EUT)

EUT Name	wireless charger
Model Name Under Test	HX399, HX399-P
Series Model Name	N/A
Description of Model name differentiation	The model changed for different market and customer, the others are the same.
Series Number	H02070399001
Hardware Version	REV1.0
Software Version	REV1.0
Dimensions (Approx.)	N/A
Weight (Approx.)	N/A

2.5 Ancillary Equipment

Ancillary Equipment 1	Adapter	
	Brand Name	wirezon
	Model No.	CH100
	Serial No.	N/A
	Rated Input	100-240 V~, 0.5 A, 50/60 Hz
	Rated Output	5 V= 3 A, 9 V= 2 A, 12 V= 1.5 A
Ancillary Equipment 2	USB Cable	
	Model No.	N/A
	Length (Approx.)	0.8 m

2.6 Technical Information

Network and Wireless connectivity	Qi
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The requirement for the following technical information of the EUT was tested in this report:

Operating Frequency	111~205 kHz
Product Type	☒ Mobile ☐ Portable ☐ Fix Location
Antenna Type	Coil Antenna
About Product	The EUT support the Qi.

3 SUMMARY OF TEST RESULTS

3.1 Test Standards

No.	Identity	Document Title
1	47 CFR Part 15, Subpart C (10-1-19 Edition)	Intentional Radiators
2	ANSI C63.10-2013	American National Standard for Testing Unlicensed Wireless Devices

3.2 Verdict

No.	Description	FCC Rule	Test Verdict	Result
1	Radiated Emission	15.209,15.215(b)	Pass	Annex A.1
2	Conducted Emission, AC Ports	15.207	Pass	Annex A.2
3	20 dB Bandwidth	15.215(c)	Pass	Annex A.3
Note: The EUT have four work modes: Mode1: EUT + USB Cable + Adapter Mode2: EUT + USB Cable + Adapter + Earphone Charging Case Mode3: EUT + USB Cable + Adapter + Watch Mode4: EUT + USB Cable + Adapter + Phone				

3.3 Test Uncertainty

The following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Measurement	Value
Conducted emissions (9 kHz-30 MHz)	2.96 dB
Radiated emissions (30 MHz-1 GHz)	3.66 dB
Radiated emissions (1 GHz-18 GHz)	5.57 dB

4 GENERAL TEST CONFIGURATIONS

4.1 Test Environments

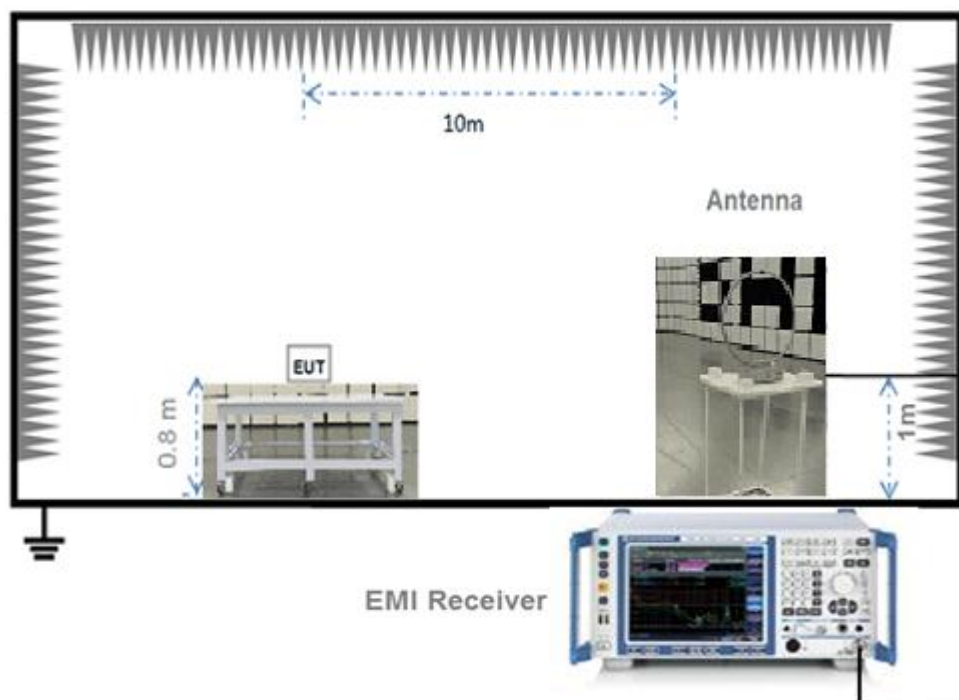
Relative Humidity	45% to 55%	
Atmospheric Pressure	100 kPa to 102 kPa	
Temperature	NT (Normal Temperature)	+22°C to +25°C
Working Voltage of the EUT	NV (Normal Voltage)	AC 120 V/60 Hz

4.2 Test Equipment List

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
EMI Receiver	ROHDE&SCHWARZ	ESRP	101036	2020.06.09	2021.06.08
Test Antenna- Loop(9 kHz-30 MHz)	SCHWARZBECK	FMZB 1519	1519-037	2019.10.29	2021.10.28
Test Antenna- Bi-Log(30 MHz-3 GHz)	SCHWARZBECK	VULB 9163	9163-624	2019.07.02	2021.07.01
Anechoic Chamber	EMC Electronic Co., Ltd	20.10*11.60*7.35m	N/A	2018.08.08	2021.08.07
EMI Receiver	KEYSIGHT	N9010B	MY57110309	2020.06.09	2021.06.08
LISN	SCHWARZBECK	NSLK 8127	8127-687	2020.06.09	2021.06.08
Shielded Enclosure	YiHeng Electronic Co., Ltd	3.4m*3.1m*2.8m	N/A	2018.08.16	2021.08.15
Test Software	BALUN	BL410_E	V19.918	--	--
Earphone Charging Case	N/A	N/A	N/A	N/A	N/A
Watch	N/A	N/A	N/A	N/A	N/A
Phone	N/A	N/A	N/A	N/A	N/A

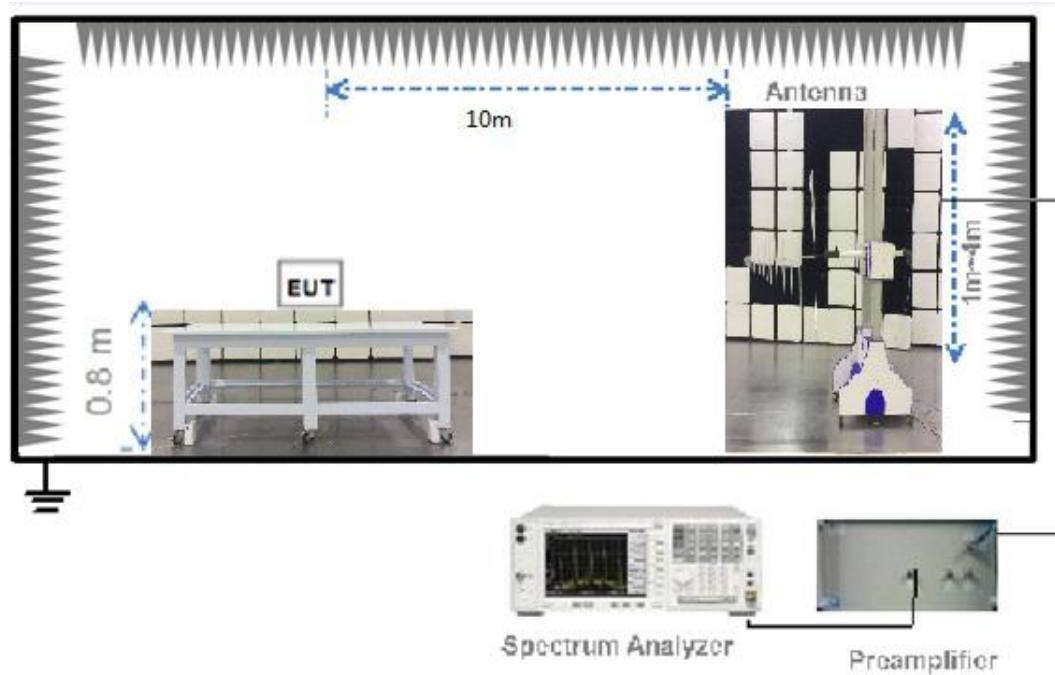
4.3 Test Setups

Test Setup 1



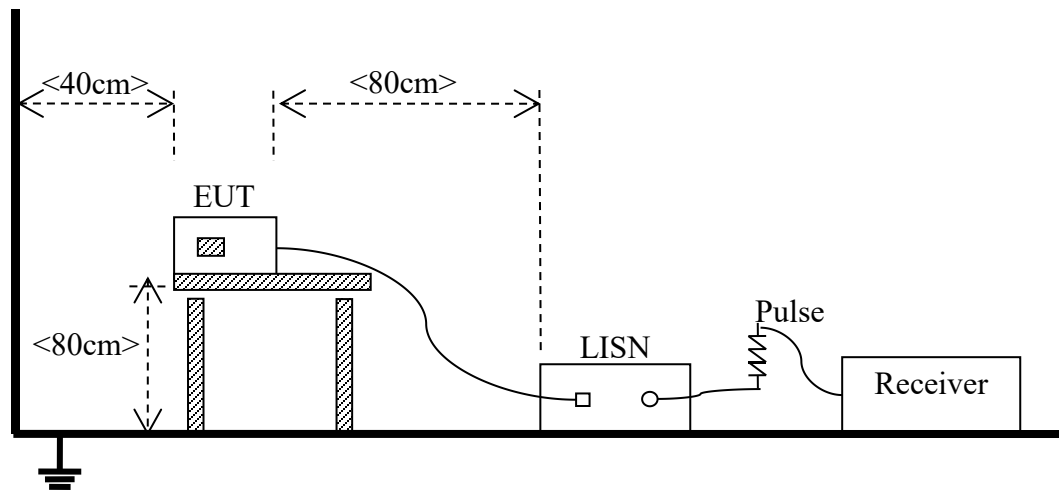
For Radiated Emission Test (Below 30 MHz))

Test Setup 2



(For Radiated Emission Test (30 MHz-1 GHz))

Test Setup 3



(For Conducted Emission, AC Ports Test)

5 TEST ITEMS

5.1 Emission Tests

5.1.1 Radiated Emission

5.1.1.1 Limit

Frequency (MHz)	Field Strength ($\mu\text{V/m}$)	Measurement Distance (m)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 - 30.0	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

NOTE:

- 1) Field Strength ($\text{dB}\mu\text{V/m}$) = $20 \times \log [\text{Field Strength } (\mu\text{V/m})]$.
- 2) In the emission tables above, the tighter limit applies at the band edges.
- 3) For above 1000 MHz, limit field strength of harmonics: 54 $\text{dB}\mu\text{V/m}@3\text{ m}$ (AV) and 74 $\text{dB}\mu\text{V/m}@3\text{ m}$ (PK)
- 4) At frequencies below 30 MHz, measurements may be performed at a distance closer than that specified in the regulations, when performing measurements at a closer distance than specified, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). For example, at the frequency 9 kHz, limit @10m = $20 \times \log (2400/f) + 40 \log (d_{\text{limit}}/d_{\text{measure}})$ where limit = 300m, $d_{\text{measure}}=10\text{m}$. limit @10m = $20 \times \log (2400/9) + 40 \log (300/10) = 107.5$ ($\text{dB}\mu\text{V/m}$).
- 5) At frequencies at or above 30 MHz, measurements may be performed at a distance other than what is specified provided, When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse linear-distance for field strength measurements; inverse-linear-distance-squared for power density measurements). For example, at the frequency 30 MHz, limit @10m = $20 \times \log (100) + 20 \log (d_{\text{limit}}/d_{\text{measure}})$ where limit = 3m, $d_{\text{measure}}=10\text{m}$. limit @10m = $20 \times \log (100) + 20 \log (3/10) = 29.5$ ($\text{dB}\mu\text{V/m}$).

5.1.1.2 Test Setup

Refer to 4.3 section (test setup 1 to test setup 2) for radiated emission test, the photo of test setup please refer to ANNEX B.

5.1.1.3 Test Procedure

All Spurious Emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

An initial pre-scan was performed in the chamber using the EMI Receiver in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by Bi-Log antenna with 2 orthogonal polarities.

5.1.1.4 Test Result

Please refer to ANNEX A.1.

NOTE:

1. Results (dBuV/m) = Reading (dBuV) + Factor (dB/m)

The reading level is calculated by software which is not shown in the sheet

2. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Amplifier Gain (dB)

3. Over limit = Results – Limit.

5.1.2 Conducted Emission

5.1.2.1 Test Limit

Frequency range (MHz)	Conducted Limit (dBμV)	
	Quasi-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
5 - 30	60	50

NOTE:

- 1) The limit is applicable to Class B ITE.
- 2) The lower limit shall apply at the band edges.
- 3) The limit decreases linearly with the logarithm of the frequency in the range 0.15 - 0.50 MHz.

5.1.2.2 Test Setup

Refer to 4.3 section test (test setup 3) for conducted emission, the photo of test setup please refer to ANNEX B.

5.1.2.3 Test Procedure

The EUT is connected to the power mains through a LISN which provides 50 Ω/50 μH of coupling impedance for the measuring instrument. The test frequency range is from 150 kHz to 30 MHz. The maximum conducted interference is searched using Peak (PK), Quasi-peak (QP) and Average (AV) detectors; the emission levels that are more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors. Tests for both L phase and N phase lines of the power mains connected to the EUT are performed.

Devices subject to Part 15 must be tested for all available U.S. voltages and frequencies (such as a nominal 120 VAC, 50/60 Hz and 240 VAC, 50/60 Hz) for which the device is capable of operation. A device rated for 50/60 Hz operation need not be tested at both frequencies provided the radiated and line conducted emissions are the same at both frequencies.

5.1.2.4 Test Result

Please refer to ANNEX A.2.

NOTE:

1. Results (dBuV/m) = Reading (dBuV) + Factor (dB/m)

The reading level is calculated by software which is not shown in the sheet

2. Factor = Insertion loss + Cable loss

3. Over limit = Results – Limit.

5.1.3 20 dB Bandwidth

5.1.3.1 Limit

FCC §15.215(c)

The 20 dB bandwidth is known as the 99% emission bandwidth, or 20 dB bandwidth ($10 \cdot \log 1\% = 20$ dB) taking the total RF output power.

5.1.3.2 Test Setup

Refer to 4.3 section test (test setup 1) for test setup description for the antenna port. The photo of test setup please refer to ANNEX B.

5.1.3.3 Test Procedure

Use the following spectrum analyzer settings:

Span = approximately 2 to 3 times the 20 dB bandwidth, centered on a hopping channel

RBW $\geq$ 1% of the 20 dB bandwidth

VBW $\geq$ RBW

Sweep = auto

Detector function = peak

Trace = max hold

The EUT should be transmitting at its maximum data rate, Allow the trace to stabilize.

5.1.3.4 Test Result

Please refer to ANNEX A.3.

ANNEX A TEST RESULTS

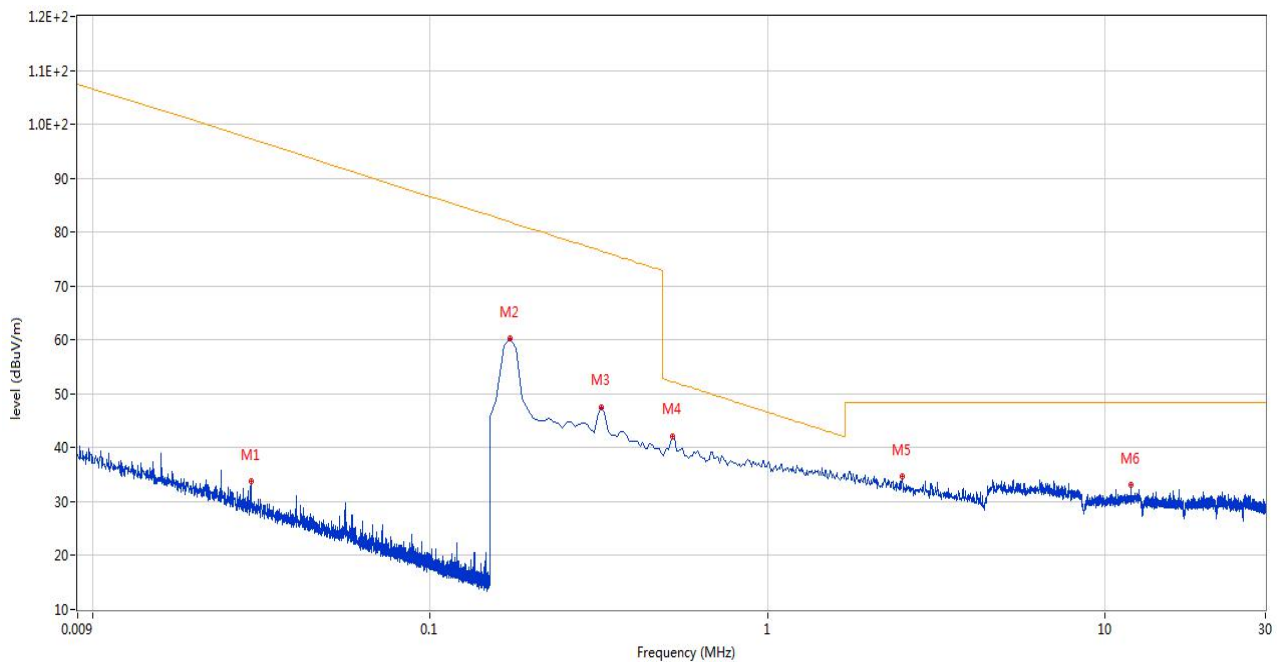
A.1 Radiated Emission

Note ¹: The symbol of "--" in the table which means not application.

Note ²: For the test data above 1 GHz, according the ANSI C63.4-2014, where limits are specified for both average and peak (or quasi-peak) detector functions, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement.

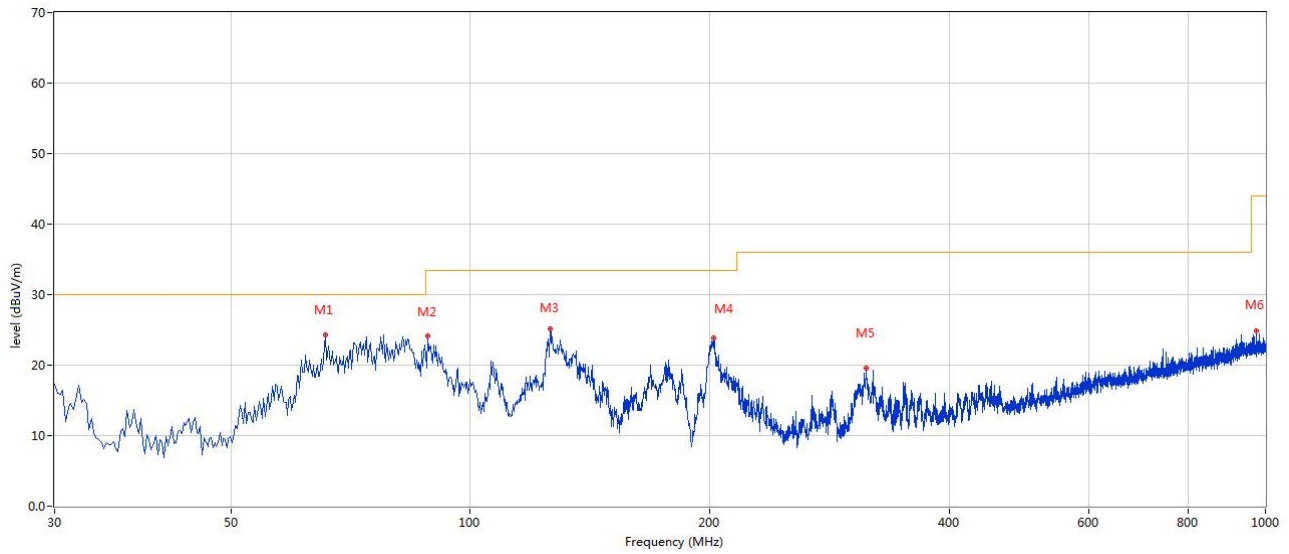
QI Test Data and Plots(mode 1)

A.1.1 Test Antenna Vertical, 9 kHz –30 MHz



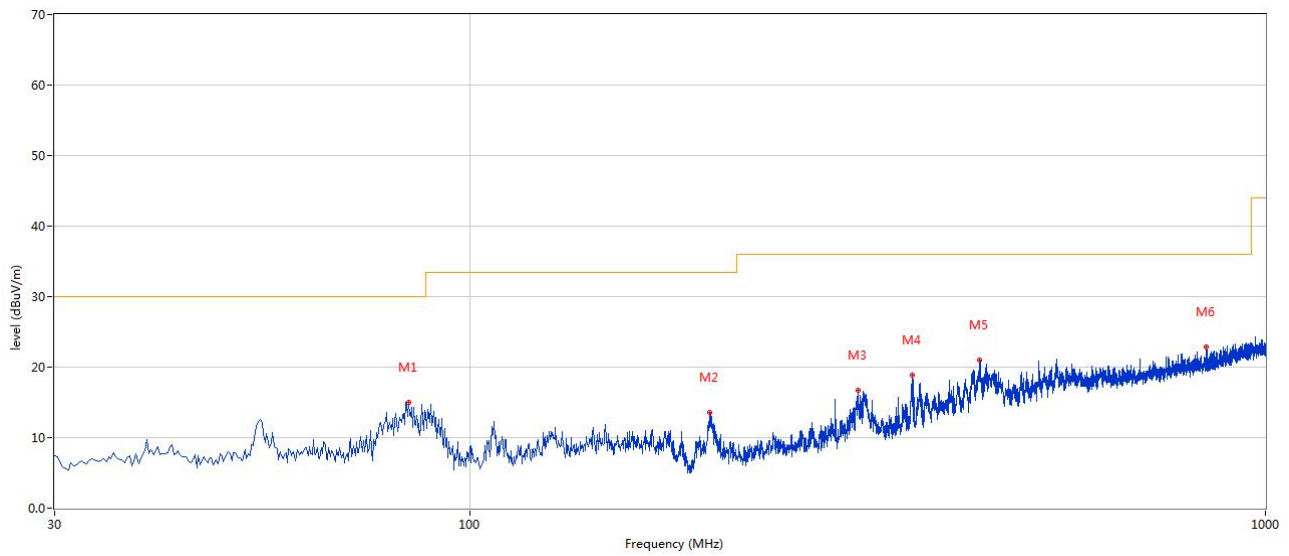
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	0.029	33.05	20.17	97.3	-64.25	Peak	272.00	100	Vertical	Pass
2	0.175	60.22	20.10	81.9	-21.68	Peak	185.00	100	Vertical	N/A
3	0.322	47.59	20.15	76.4	-28.81	Peak	132.00	100	Vertical	Pass
4	0.523	42.18	20.28	52.2	-10.02	Peak	360.00	100	Vertical	Pass
5	2.508	34.69	20.45	48.5	-13.81	Peak	4.00	100	Vertical	Pass
6	12.005	33.12	20.85	48.5	-15.38	Peak	273.00	100	Vertical	Pass

A.1.2 Test Antenna Vertical, 30 MHz – 1 GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	65.639	24.22	-28.97	30.0	-5.78	Peak	176.00	200	Vertical	Pass
2	88.428	24.14	-31.13	33.5	-9.36	Peak	108.00	100	Vertical	Pass
3	126.006	25.10	-27.49	33.5	-8.40	Peak	290.00	100	Vertical	Pass
4	202.617	23.80	-29.43	33.5	-9.70	Peak	335.00	100	Vertical	Pass
5	315.109	19.52	-25.40	36.0	-16.48	Peak	229.00	100	Vertical	Pass
6	974.786	24.86	-11.49	44.0	-19.14	Peak	24.00	200	Vertical	Pass

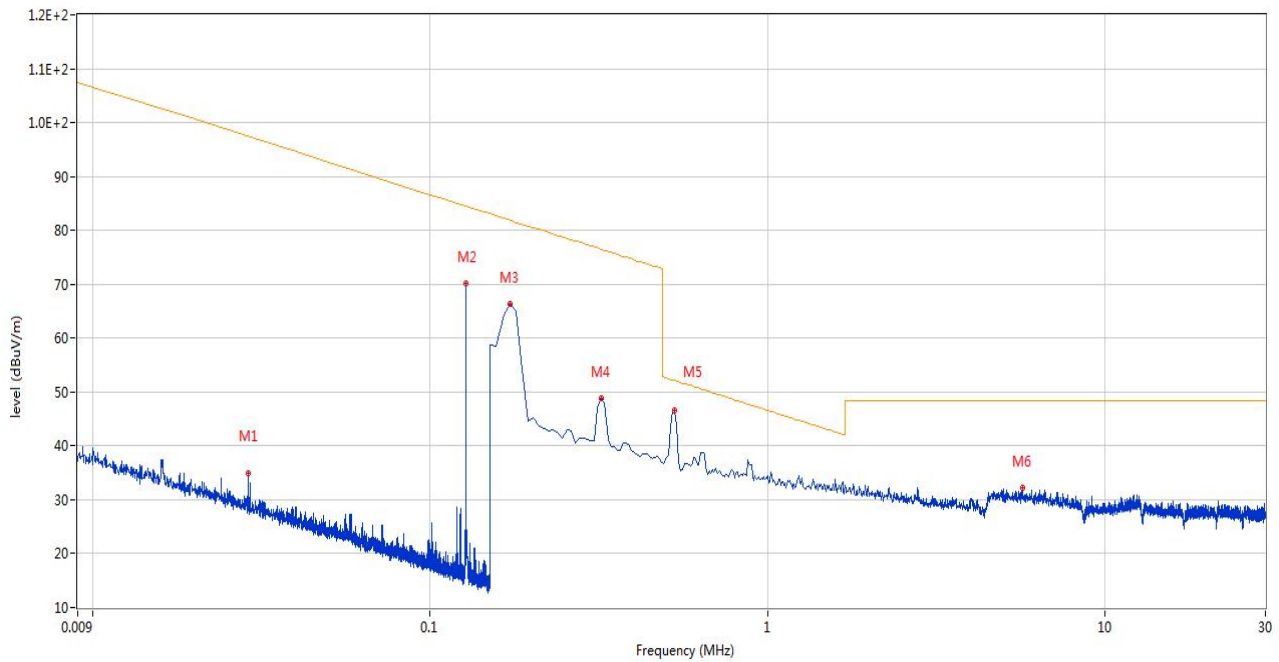
A.1.3 Test Antenna Horizontal, 30 MHz – 1 GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	83.579	15.04	-31.28	30.0	-14.96	Peak	0.00	200	Horizontal	Pass
2	199.708	13.56	-29.68	33.5	-19.94	Peak	282.00	200	Horizontal	Pass
3	307.108	16.72	-25.67	36.0	-19.28	Peak	282.00	200	Horizontal	Pass
4	359.718	18.86	-24.19	36.0	-17.14	Peak	292.00	200	Horizontal	Pass
5	437.056	21.01	-21.91	36.0	-14.99	Peak	226.00	200	Horizontal	Pass
6	842.414	22.88	-13.49	36.0	-13.12	Peak	0.00	200	Horizontal	Pass

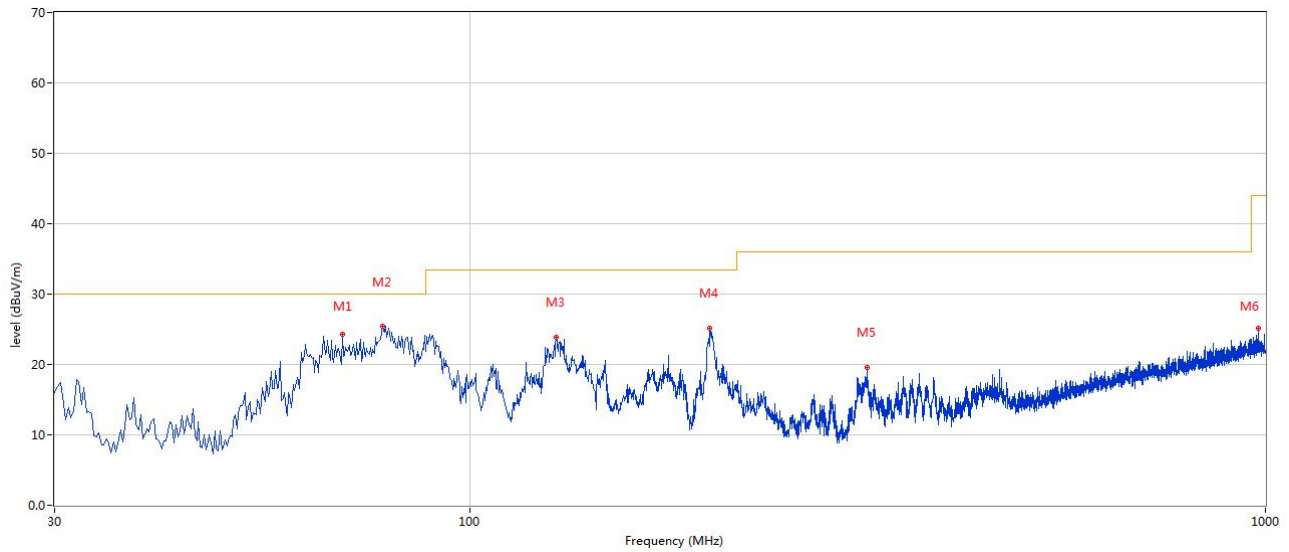
QI Test Data and Plots(mode 2)

A.1.4 Test Antenna Vertical, 9 kHz –30 MHz



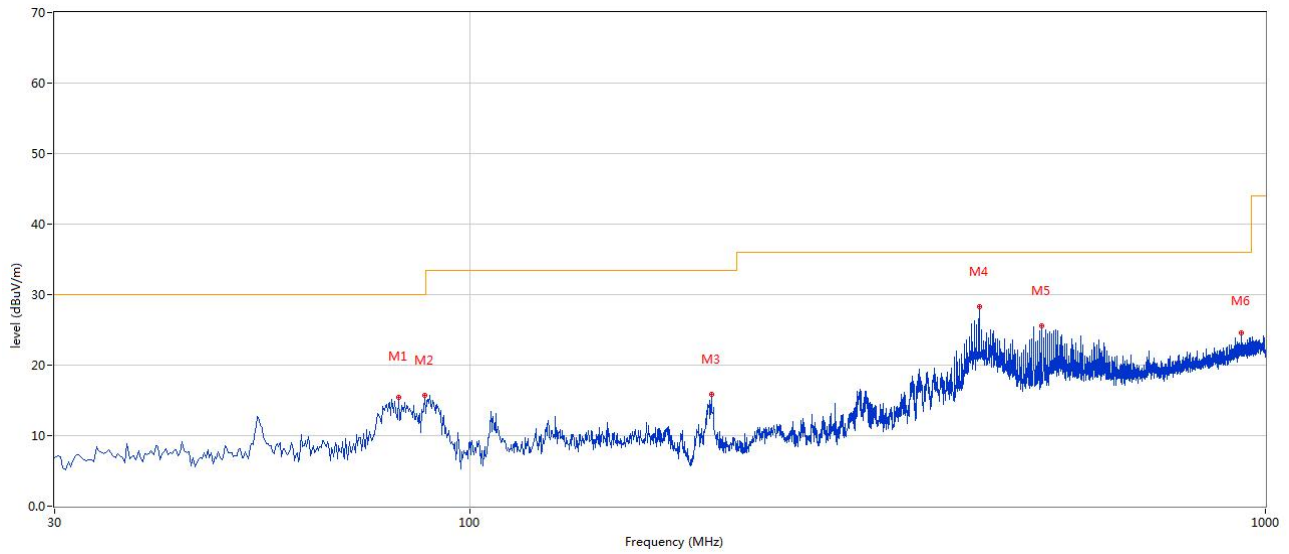
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	0.029	35.02	20.16	97.4	-62.38	Peak	122.00	100	Vertical	Pass
2	0.128	70.08	20.15	84.4	-14.32	Peak	299.00	100	Vertical	N/A
3	0.175	64.73	20.10	81.9	-17.17	Peak	168.00	100	Vertical	Pass
4	0.322	48.85	20.15	76.4	-27.55	Peak	0.00	100	Vertical	Pass
5	0.530	46.49	20.28	52.1	-5.61	Peak	283.00	100	Vertical	Pass
6	5.716	32.18	20.82	48.5	-16.32	Peak	61.00	100	Vertical	Pass

A.1.5 Test Antenna Vertical, 30 MHz – 1 GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	69.033	24.28	-29.55	30.0	-5.72	Peak	176.00	200	Vertical	Pass
2	77.518	25.39	-30.89	30.0	-4.61	Peak	110.00	200	Vertical	Pass
3	128.188	23.91	-27.34	33.5	-9.59	Peak	290.00	100	Vertical	Pass
4	200.192	25.14	-29.70	33.5	-8.36	Peak	265.00	100	Vertical	Pass
5	315.836	19.50	-25.35	36.0	-16.50	Peak	235.00	100	Vertical	Pass
6	979.635	25.17	-11.30	44.0	-18.83	Peak	0.00	200	Vertical	Pass

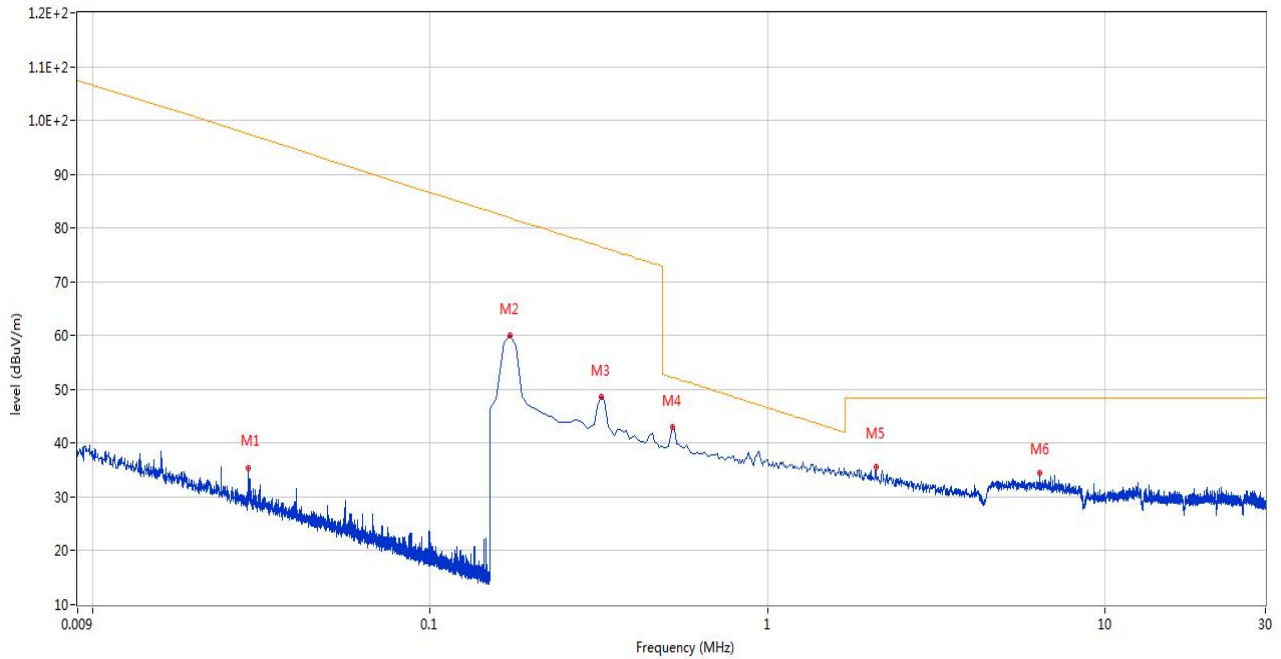
A.1.6 Test Antenna Horizontal, 30 MHz – 1 GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	81.155	15.37	-31.23	30.0	-14.63	Peak	50.00	200	Horizontal	Pass
2	87.701	15.78	-31.07	30.0	-14.22	Peak	80.00	200	Horizontal	Pass
3	200.920	15.85	-29.61	33.5	-17.65	Peak	237.00	200	Horizontal	Pass
4	436.328	28.30	-21.99	36.0	-7.70	Peak	181.00	200	Horizontal	Pass
5	523.607	25.64	-20.04	36.0	-10.36	Peak	216.00	200	Horizontal	Pass
6	933.329	24.52	-11.90	36.0	-11.48	Peak	63.00	100	Horizontal	Pass

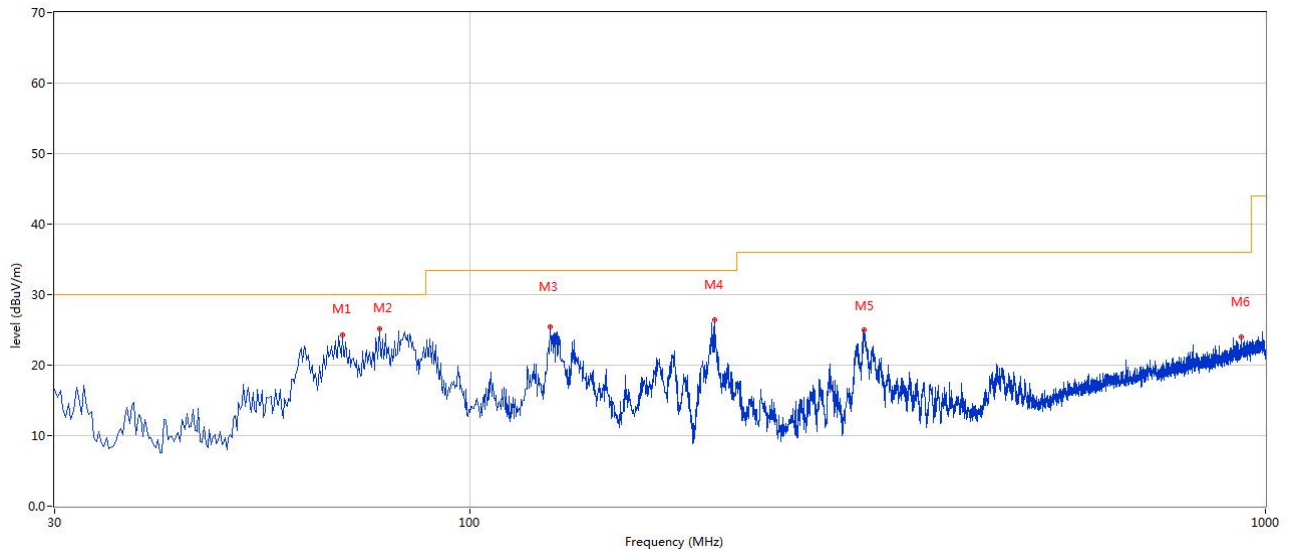
QI Test Data and Plots(mode 3)

A.1.7 Test Antenna Vertical, 9 kHz –30 MHz



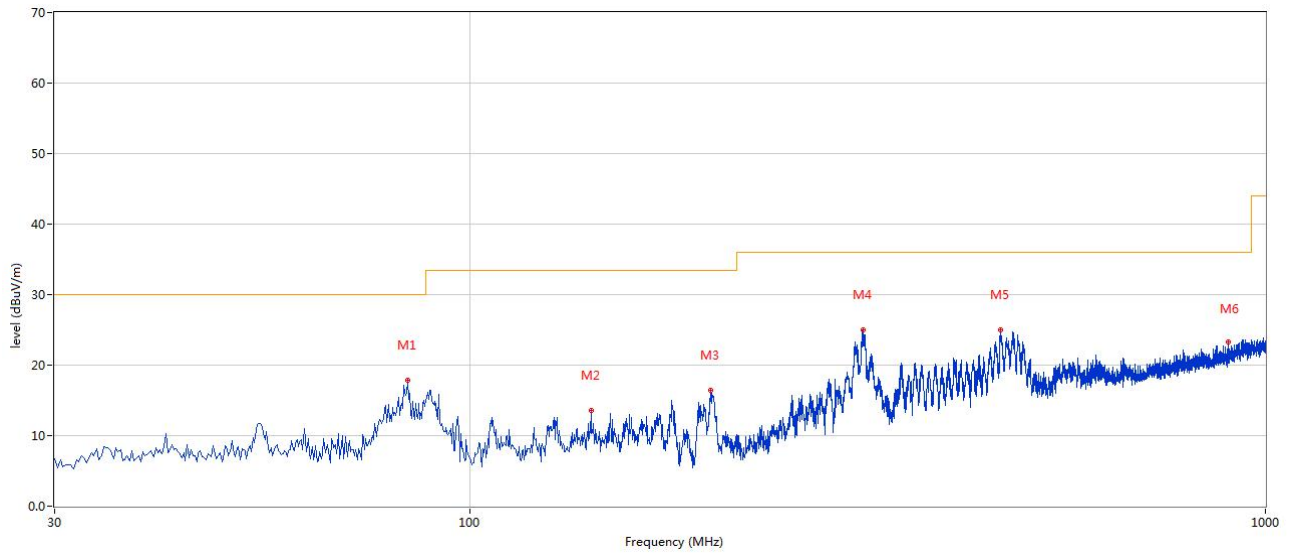
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	0.029	36.31	20.16	97.4	-61.09	Peak	263.00	100	Vertical	Pass
2	0.176	59.09	20.10	81.7	-22.61	Peak	190.00	100	Vertical	N/A
3	0.322	48.59	20.15	76.4	-27.81	Peak	274.00	100	Vertical	Pass
4	0.523	42.97	20.28	52.2	-9.23	Peak	185.00	100	Vertical	Pass
5	2.097	35.49	20.43	48.5	-13.01	Peak	0.00	100	Vertical	Pass
6	6.409	34.36	20.82	48.5	-14.14	Peak	159.00	100	Vertical	Pass

A.1.8 Test Antenna Vertical, 30 MHz – 1 GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	69.033	24.22	-29.55	30.0	-5.78	Peak	35.00	200	Vertical	Pass
2	76.791	25.09	-30.75	30.0	-4.91	Peak	186.00	200	Vertical	Pass
3	126.006	25.41	-27.49	33.5	-8.09	Peak	295.00	100	Vertical	Pass
4	202.859	26.38	-29.42	33.5	-7.12	Peak	351.00	100	Vertical	Pass
5	312.927	24.99	-25.46	36.0	-11.01	Peak	230.00	100	Vertical	Pass
6	932.117	23.98	-11.88	36.0	-12.02	Peak	251.00	200	Vertical	Pass

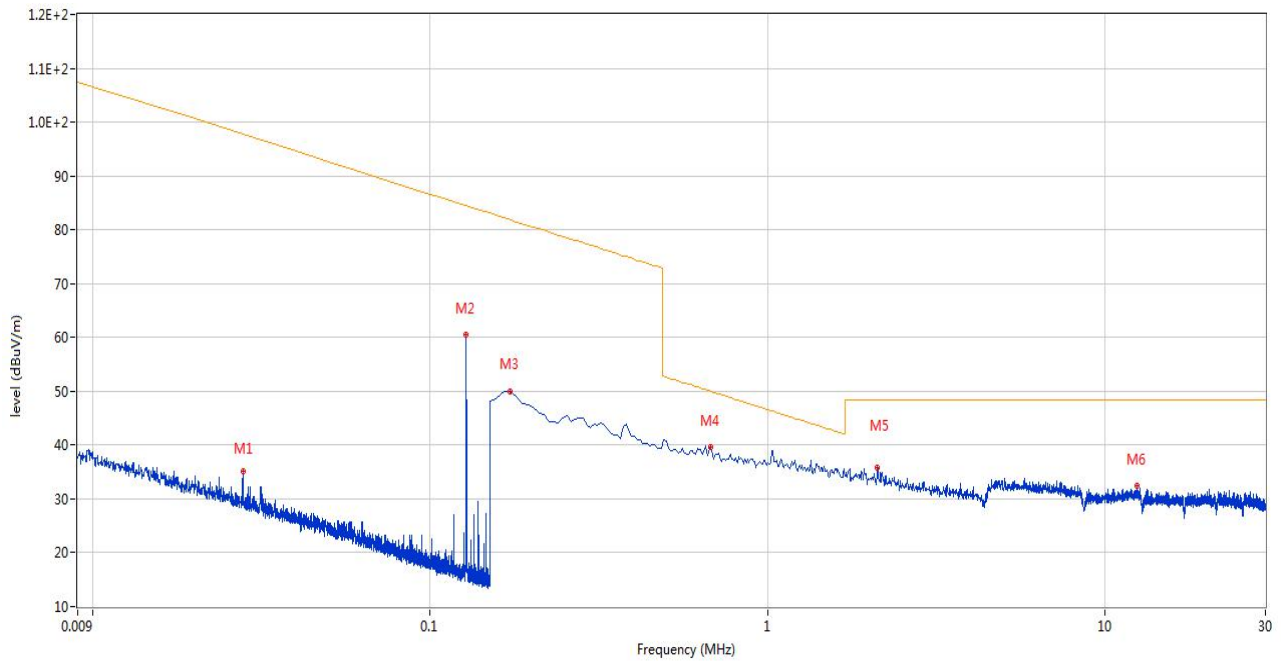
A.1.9 Test Antenna Horizontal, 30 MHz – 1 GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	83.337	17.79	-31.30	30.0	-12.21	Peak	35.00	200	Horizontal	Pass
2	141.765	13.52	-26.38	33.5	-19.98	Peak	50.00	200	Horizontal	Pass
3	200.435	16.39	-29.67	33.5	-17.11	Peak	90.00	200	Horizontal	Pass
4	311.957	24.94	-25.46	36.0	-11.06	Peak	292.00	200	Horizontal	Pass
5	463.967	25.03	-21.22	36.0	-10.97	Peak	251.00	200	Horizontal	Pass
6	899.388	23.22	-12.50	36.0	-12.78	Peak	287.00	200	Horizontal	Pass

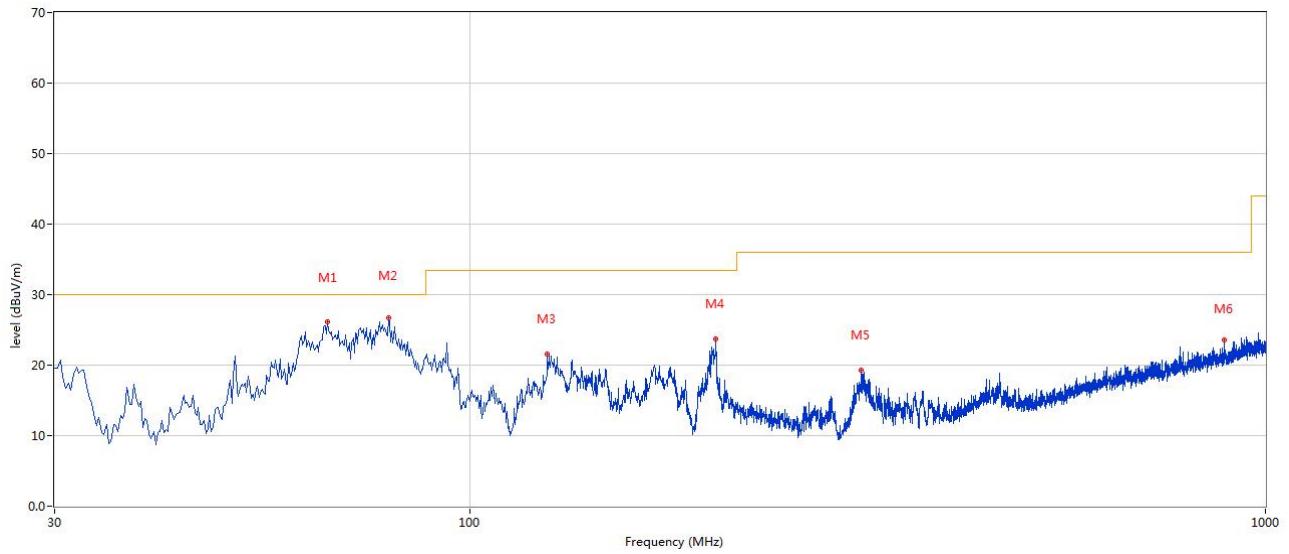
QI Test Data and Plots(mode 4)

A.1.10 Test Antenna Vertical, 9 kHz –30 MHz



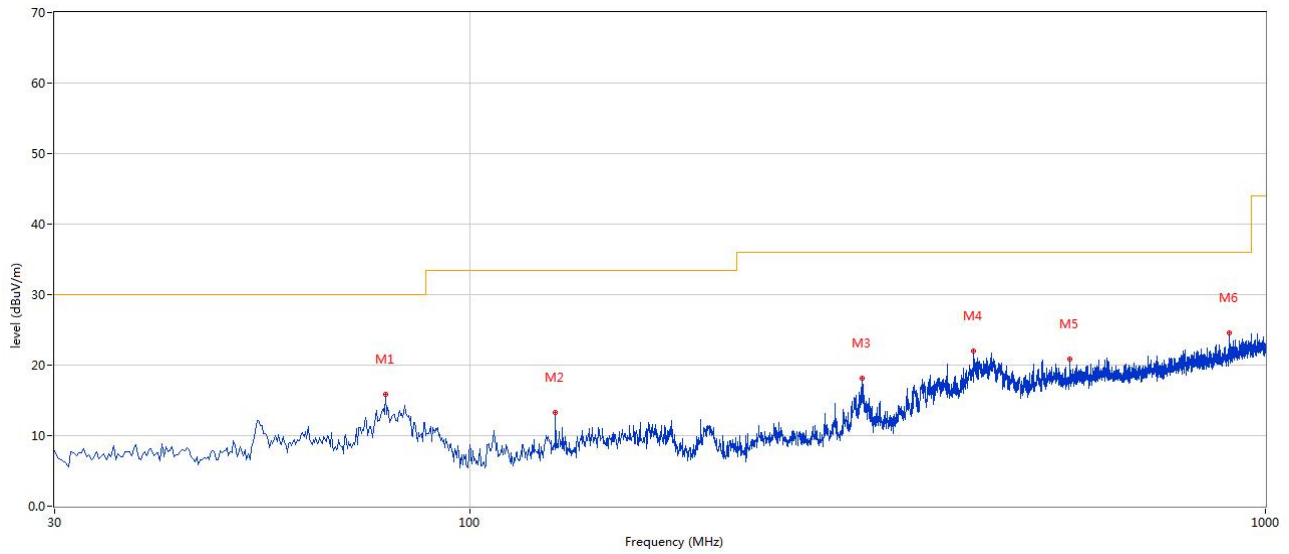
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	0.028	35.05	20.17	97.8	-62.75	Peak	157.00	100	Vertical	Pass
2	0.128	60.10	20.15	84.4	-24.30	Peak	350.00	100	Vertical	N/A
3	0.172	50.03	20.10	81.9	-31.87	Peak	326.00	100	Vertical	Pass
4	0.680	39.53	20.38	50.0	-10.47	Peak	238.00	100	Vertical	Pass
5	2.120	35.85	20.43	48.5	-12.65	Peak	211.00	100	Vertical	Pass
6	12.505	32.35	20.87	48.5	-16.15	Peak	10.00	100	Vertical	Pass

A.1.11 Test Antenna Vertical, 30 MHz – 1 GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	66.123	25.36	-29.08	30.0	-4.64	Peak	124.00	100	Vertical	Pass
2	78.973	26.65	-31.17	30.0	-3.35	Peak	166.00	200	Vertical	Pass
3	125.036	21.53	-27.63	33.5	-11.97	Peak	235.00	100	Vertical	Pass
4	203.587	23.74	-29.39	33.5	-9.76	Peak	360.00	200	Vertical	Pass
5	310.502	19.26	-25.45	36.0	-16.74	Peak	250.00	100	Vertical	Pass
6	888.963	23.61	-12.79	36.0	-12.39	Peak	154.00	100	Vertical	Pass

A.1.12 Test Antenna Horizontal, 30 MHz – 1 GHz



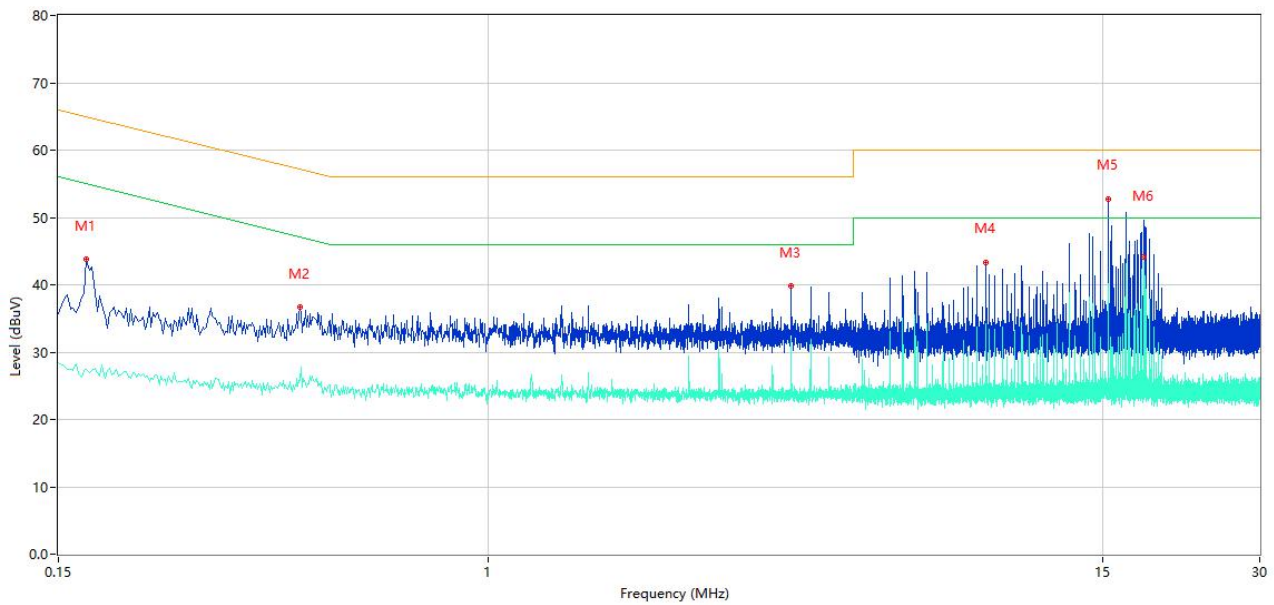
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	78.245	15.82	-31.03	30.0	-14.18	Peak	0.00	200	Horizontal	Pass
2	127.946	13.27	-27.34	33.5	-20.23	Peak	204.00	100	Horizontal	Pass
3	310.745	18.11	-25.44	36.0	-17.89	Peak	282.00	200	Horizontal	Pass
4	429.298	21.93	-22.00	36.0	-14.07	Peak	211.00	200	Horizontal	Pass
5	567.246	20.90	-18.96	36.0	-15.10	Peak	231.00	200	Horizontal	Pass
6	901.085	24.60	-12.41	36.0	-11.40	Peak	1.00	200	Horizontal	Pass

A.2 Conducted Emission

Note: Devices subject to Part 15 must be tested for all available U.S. voltages and frequencies (such as a nominal 120 VAC, 50/60 Hz and 240 VAC, 50/60 Hz) for which the device is capable of operation. So, The configuration 120 VAC, 60 Hz and 240 VAC, 50 Hz were tested respectively, but only the worst configuration (120 VAC, 60 Hz) shown here.

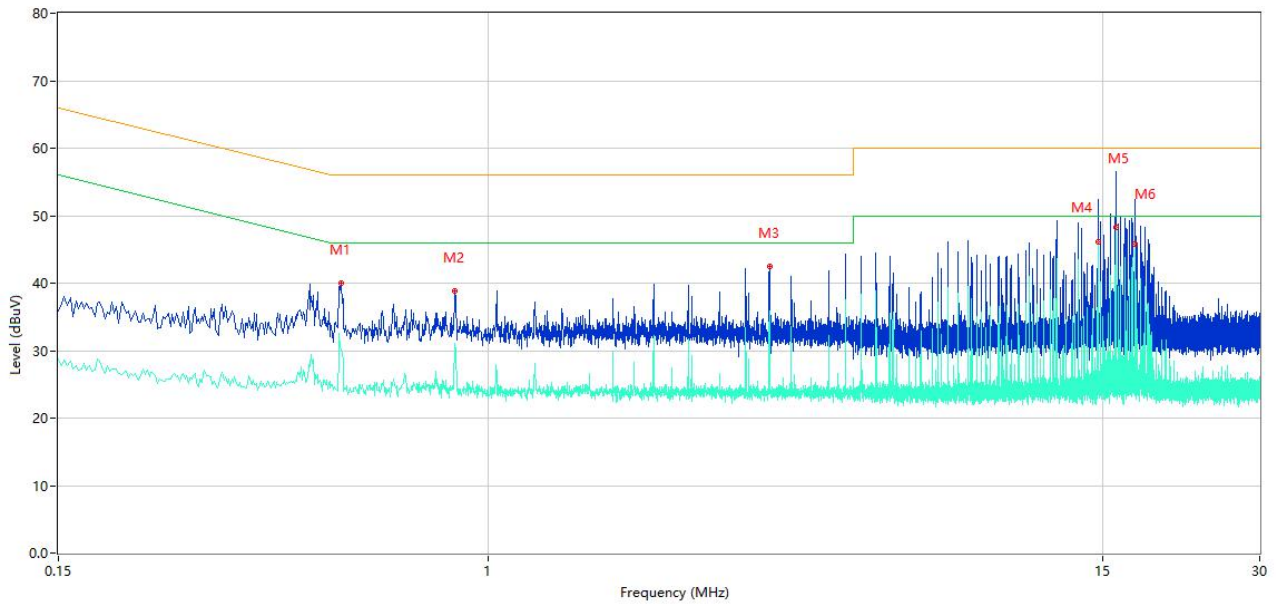
QI Test Data and Plots(mode 1)

A.2.1 L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.170	43.73	10.40	64.96	-21.23	Peak	L	Pass
1**	0.170	27.50	10.40	54.96	-27.46	AV	L	Pass
2	0.436	36.67	10.31	57.14	-20.47	Peak	L	Pass
2**	0.436	25.82	10.31	47.14	-21.32	AV	L	Pass
3	3.798	39.79	10.30	56.00	-16.21	Peak	L	Pass
3**	3.798	31.98	10.30	46.00	-14.02	AV	L	Pass
4	8.976	43.25	10.36	60.00	-16.75	Peak	L	Pass
4**	8.976	34.16	10.36	50.00	-15.84	AV	L	Pass
5	15.390	52.65	10.42	60.00	-7.35	Peak	L	Pass
5**	15.390	40.11	10.42	50.00	-9.89	AV	L	Pass
6	18.018	49.63	10.49	60.00	-10.37	Peak	L	Pass
6**	18.018	44.06	10.49	50.00	-5.94	AV	L	Pass

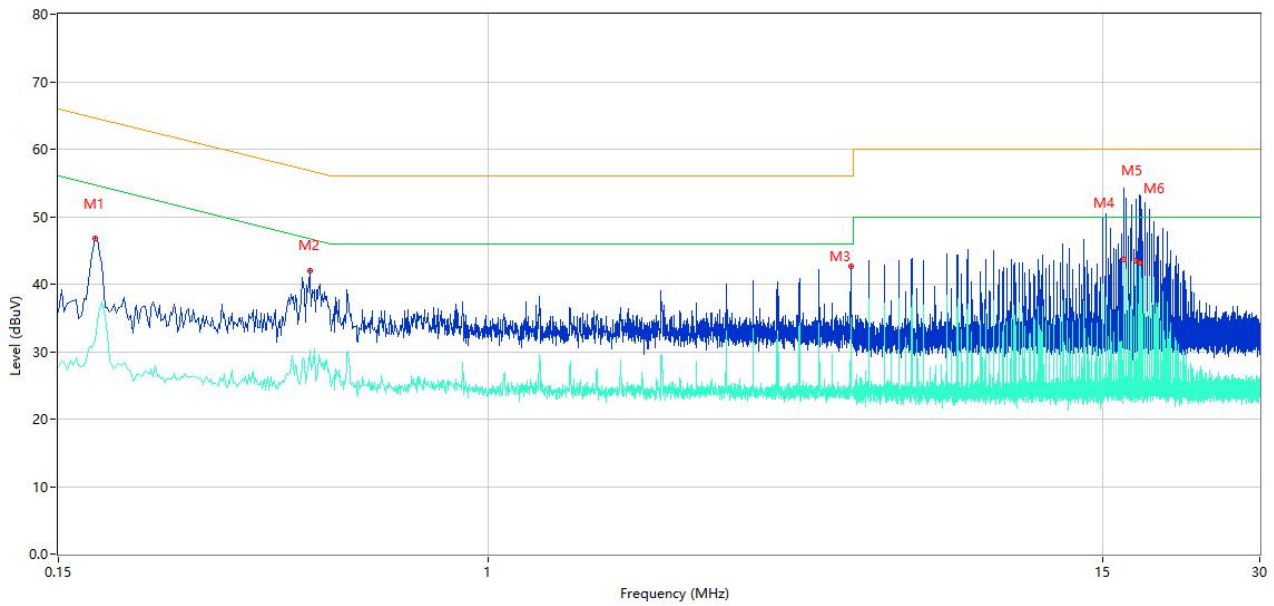
A.2.2 N Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.522	39.99	10.30	56.00	-16.01	Peak	N	Pass
1**	0.522	30.23	10.30	46.00	-15.77	AV	N	Pass
2	0.862	38.83	10.24	56.00	-17.17	Peak	N	Pass
2**	0.862	31.08	10.24	46.00	-14.92	AV	N	Pass
3	3.452	42.42	10.30	56.00	-13.58	Peak	N	Pass
3**	3.452	35.86	10.30	46.00	-10.14	AV	N	Pass
4	14.700	51.72	10.40	60.00	-8.28	Peak	N	Pass
4**	14.700	46.12	10.40	50.00	-3.88	AV	N	Pass
5	15.920	56.46	10.43	60.00	-3.54	Peak	N	Pass
5**	15.920	48.22	10.43	50.00	-1.78	AV	N	Pass
6	17.320	52.46	10.48	60.00	-7.54	Peak	N	Pass
6**	17.320	45.77	10.48	50.00	-4.23	AV	N	Pass

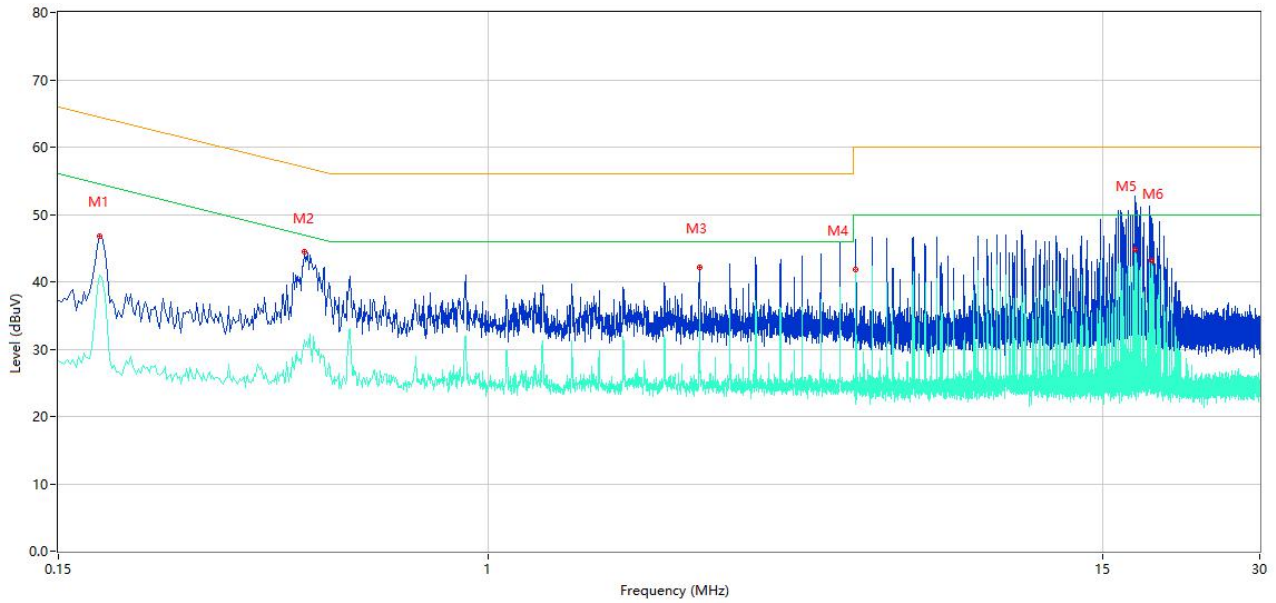
QI Test Data and Plots(mode 2)

A.2.3 L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.176	46.85	10.39	64.67	-17.82	Peak	L	Pass
1**	0.176	31.65	10.39	54.67	-23.02	AV	L	Pass
2	0.454	42.04	10.30	56.80	-14.76	Peak	L	Pass
2**	0.454	30.18	10.30	46.80	-16.62	AV	L	Pass
3	4.942	42.72	10.31	56.00	-13.28	Peak	L	Pass
3**	4.942	34.96	10.31	46.00	-11.04	AV	L	Pass
4	16.448	54.18	10.44	60.00	-5.82	Peak	L	Pass
4**	16.448	43.60	10.44	50.00	-6.40	AV	L	Pass
5	17.380	52.53	10.47	60.00	-7.47	Peak	L	Pass
5**	17.380	43.41	10.47	50.00	-6.59	AV	L	Pass
6	17.748	53.13	10.48	60.00	-6.87	Peak	L	Pass
6**	17.748	43.12	10.48	50.00	-6.88	AV	L	Pass

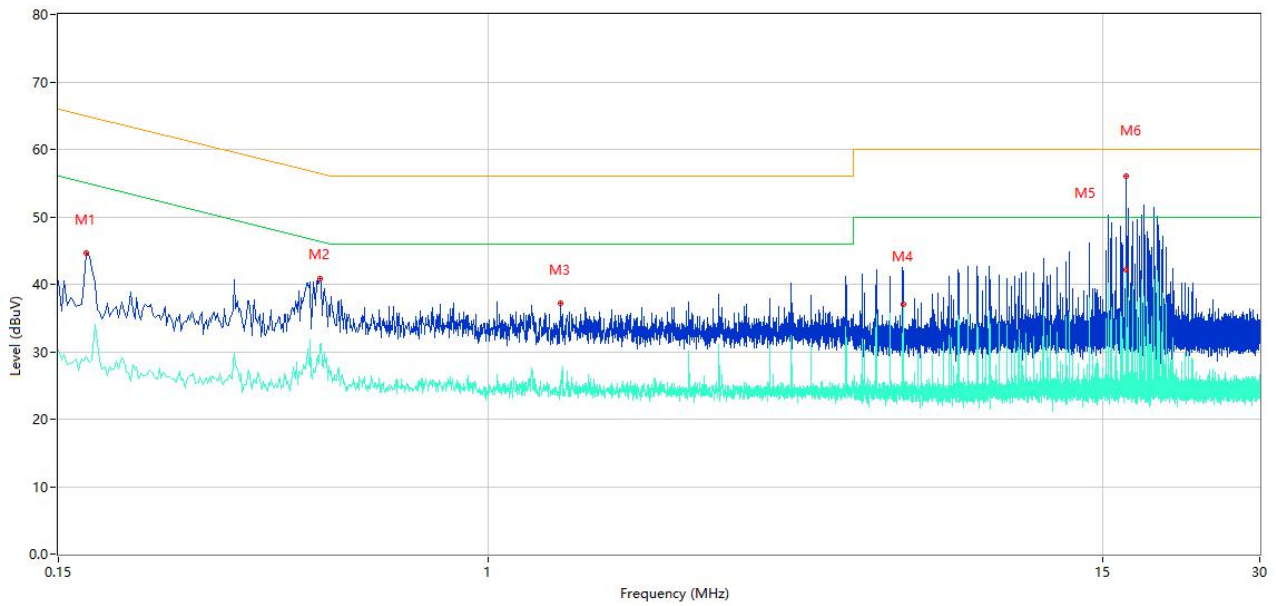
A.2.4 N Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.180	46.85	10.39	64.49	-17.64	Peak	N	Pass
1**	0.180	41.07	10.39	54.49	-13.42	AV	N	Pass
2	0.444	44.43	10.30	56.99	-12.56	Peak	N	Pass
2**	0.444	31.39	10.30	46.99	-15.60	AV	N	Pass
3	2.534	42.17	10.28	56.00	-13.83	Peak	N	Pass
3**	2.534	34.27	10.28	46.00	-11.73	AV	N	Pass
4	5.054	43.98	10.32	60.00	-16.02	Peak	N	Pass
4**	5.054	41.79	10.32	50.00	-8.21	AV	N	Pass
5	17.322	52.73	10.48	60.00	-7.27	Peak	N	Pass
5**	17.322	44.80	10.48	50.00	-5.20	AV	N	Pass
6	18.596	47.59	10.51	60.00	-12.41	Peak	N	Pass
6**	18.596	43.09	10.51	50.00	-6.91	AV	N	Pass

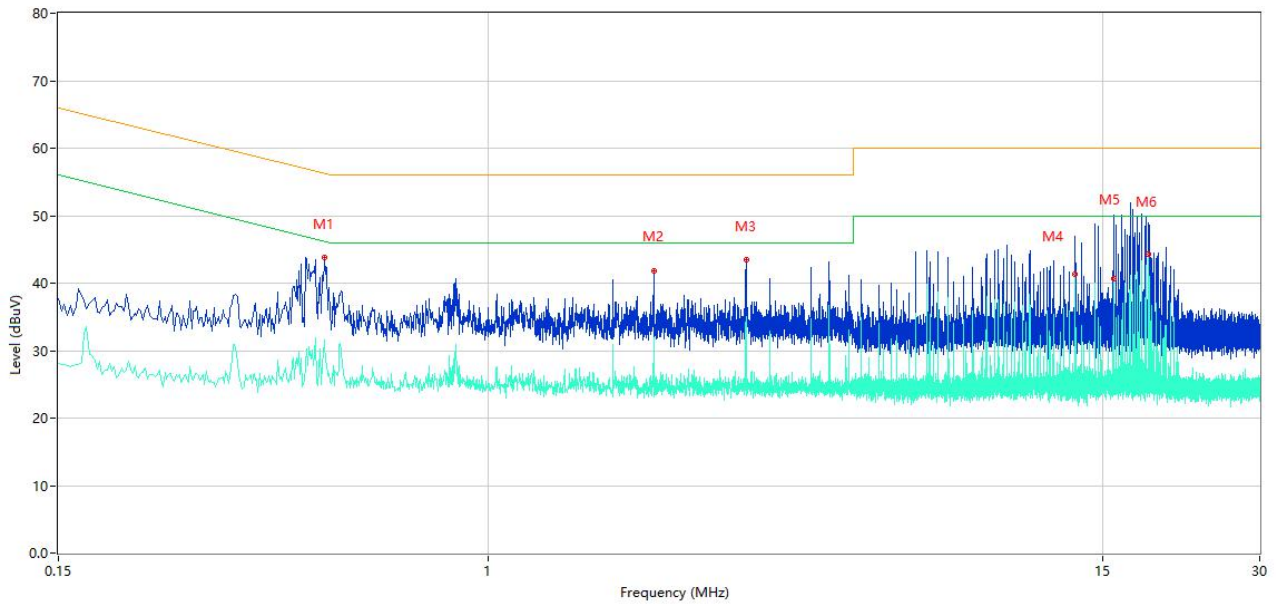
QI Test Data and Plots(mode 3)

A.2.5 L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.170	44.64	10.40	64.96	-20.32	Peak	L	Pass
1**	0.170	29.27	10.40	54.96	-25.69	AV	L	Pass
2	0.476	40.74	10.29	56.41	-15.67	Peak	L	Pass
2**	0.476	30.90	10.29	46.41	-15.51	AV	L	Pass
3	1.372	37.12	10.25	56.00	-18.88	Peak	L	Pass
3**	1.372	24.08	10.25	46.00	-21.92	AV	L	Pass
4	6.220	41.71	10.34	60.00	-18.29	Peak	L	Pass
4**	6.220	37.09	10.34	50.00	-12.91	AV	L	Pass
5	16.612	55.46	10.45	60.00	-4.54	Peak	L	Pass
5**	16.612	42.13	10.45	50.00	-7.87	AV	L	Pass
6	16.620	56.10	10.45	60.00	-3.90	Peak	L	Pass
6**	16.620	40.67	10.45	50.00	-9.33	AV	L	Pass

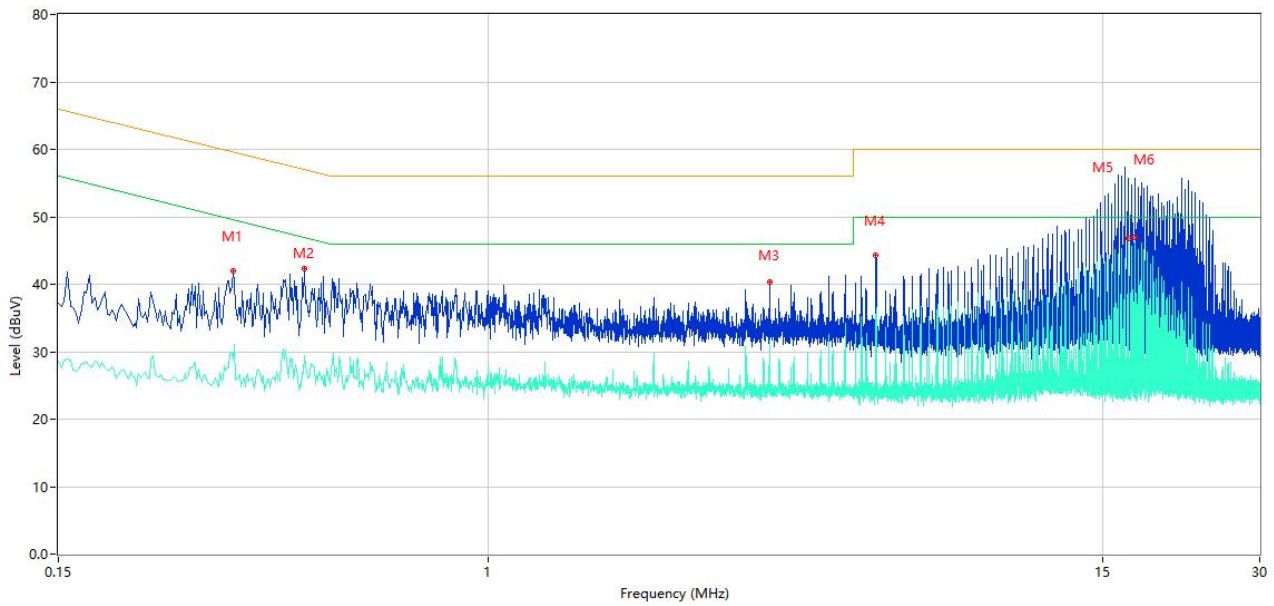
A.2.6 N Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.486	43.82	10.29	56.24	-12.42	Peak	N	Pass
1**	0.486	30.94	10.29	46.24	-15.30	AV	N	Pass
2	2.072	41.85	10.26	56.00	-14.15	Peak	N	Pass
2**	2.072	31.59	10.26	46.00	-14.41	AV	N	Pass
3	3.112	43.51	10.29	56.00	-12.49	Peak	N	Pass
3**	3.112	35.03	10.29	46.00	-10.97	AV	N	Pass
4	13.302	46.53	10.39	60.00	-13.47	Peak	N	Pass
4**	13.302	41.31	10.39	50.00	-8.69	AV	N	Pass
5	15.744	48.32	10.42	60.00	-11.68	Peak	N	Pass
5**	15.744	40.58	10.42	50.00	-9.42	AV	N	Pass
6	18.372	48.21	10.50	60.00	-11.79	Peak	N	Pass
6**	18.372	44.36	10.50	50.00	-5.64	AV	N	Pass

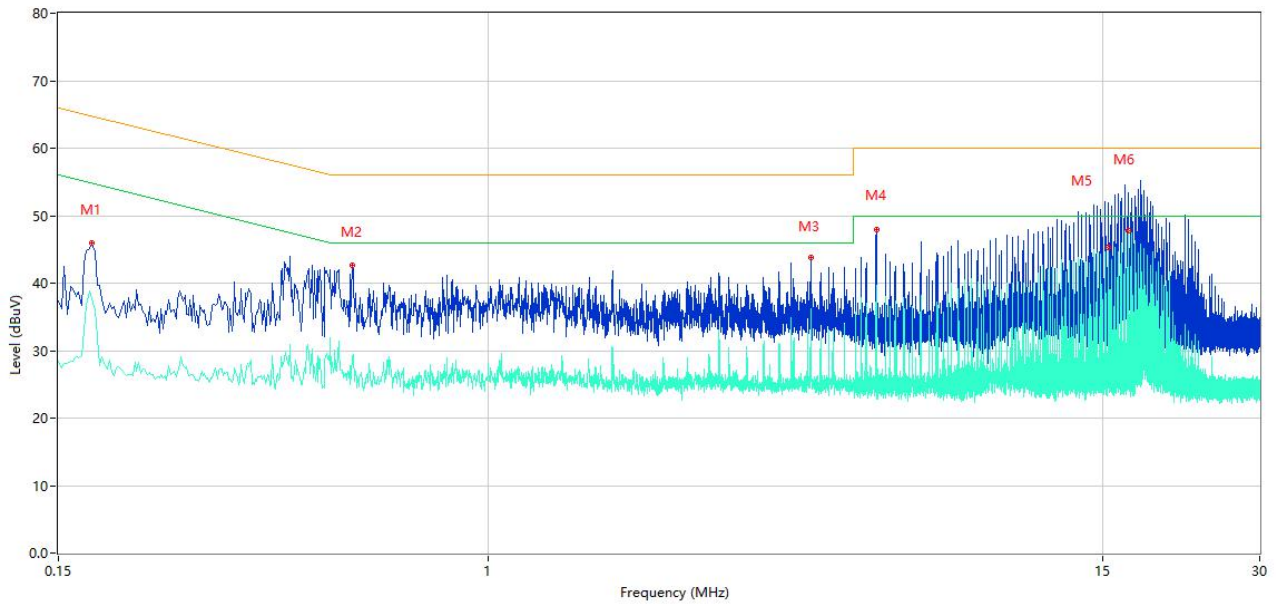
QI Test Data and Plots(mode 4)

A.2.7 L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.324	42.05	10.33	59.60	-17.55	Peak	L	Pass
1**	0.324	28.95	10.33	49.60	-20.65	AV	L	Pass
2	0.444	42.25	10.30	56.99	-14.74	Peak	L	Pass
2**	0.444	29.46	10.30	46.99	-17.53	AV	L	Pass
3	3.452	40.25	10.30	56.00	-15.75	Peak	L	Pass
3**	3.452	31.77	10.30	46.00	-14.23	AV	L	Pass
4	5.526	44.35	10.32	60.00	-15.65	Peak	L	Pass
4**	5.526	34.68	10.32	50.00	-15.32	AV	L	Pass
5	16.822	55.26	10.46	60.00	-4.74	Peak	L	Pass
5**	16.822	46.84	10.46	50.00	-3.16	AV	L	Pass
6	17.298	54.61	10.47	60.00	-5.39	Peak	L	Pass
6**	17.298	46.87	10.47	50.00	-3.13	AV	L	Pass

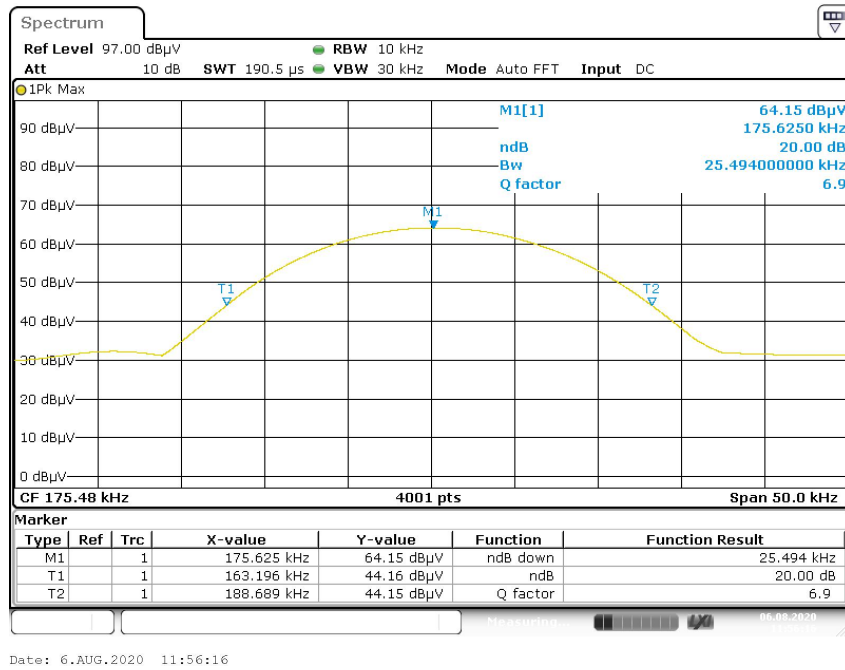
A.2.8 N Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.174	45.92	10.39	64.77	-18.85	Peak	N	Pass
1**	0.174	37.66	10.39	54.77	-17.11	AV	N	Pass
2	0.548	42.67	10.28	56.00	-13.33	Peak	N	Pass
2**	0.548	29.18	10.28	46.00	-16.82	AV	N	Pass
3	4.142	43.77	10.30	56.00	-12.23	Peak	N	Pass
3**	4.142	36.24	10.30	46.00	-9.76	AV	N	Pass
4	5.528	47.97	10.32	60.00	-12.03	Peak	N	Pass
4**	5.528	39.65	10.32	50.00	-10.35	AV	N	Pass
5	15.384	51.12	10.42	60.00	-8.88	Peak	N	Pass
5**	15.384	45.35	10.42	50.00	-4.65	AV	N	Pass
6	16.820	53.36	10.46	60.00	-6.64	Peak	N	Pass
6**	16.820	47.73	10.46	50.00	-2.27	AV	N	Pass

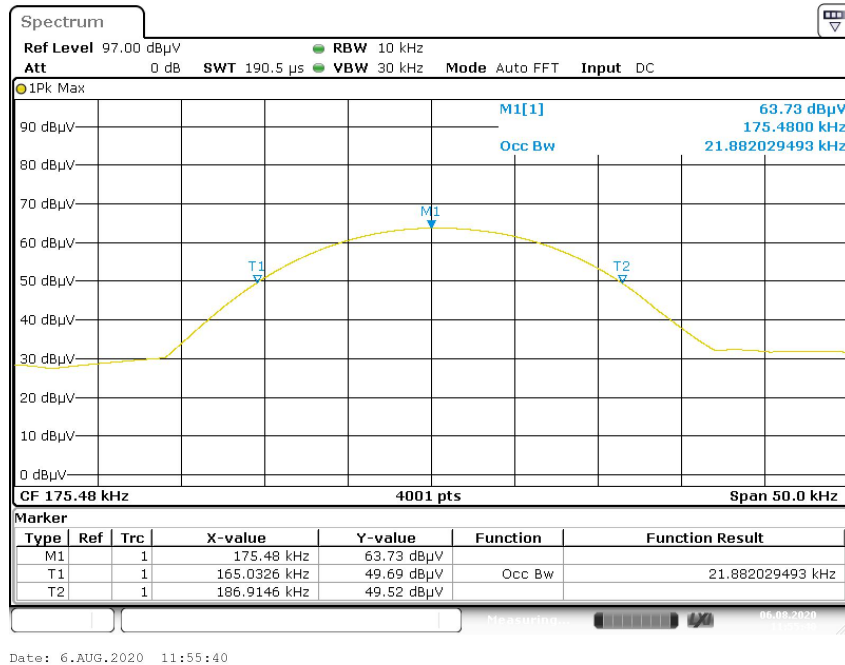
A.3 20 dB Bandwidth

QI Test Data and Plots (Mode 1)

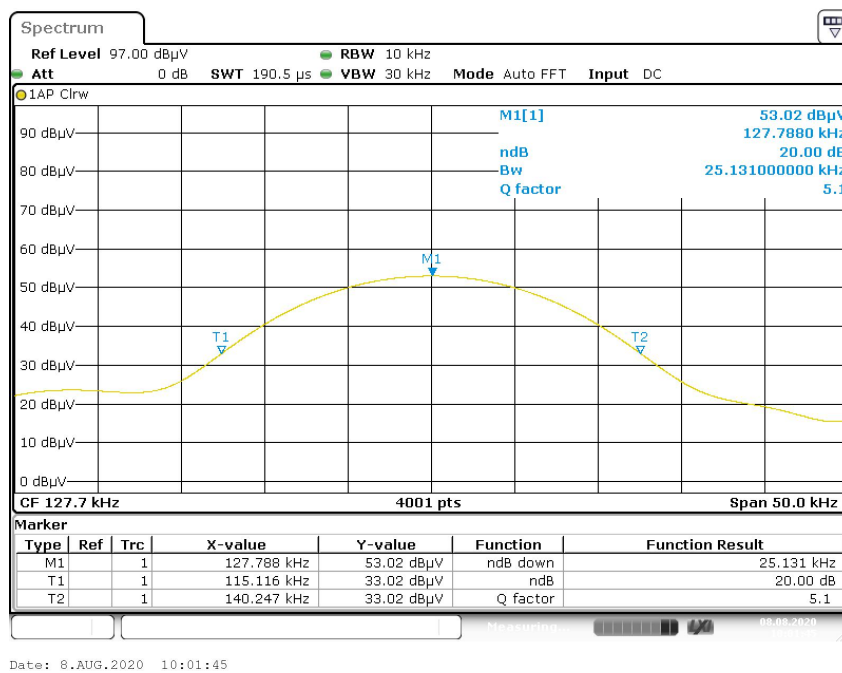


99% Occupied Bandwidth

QI Test Data and Plots (Mode 1)

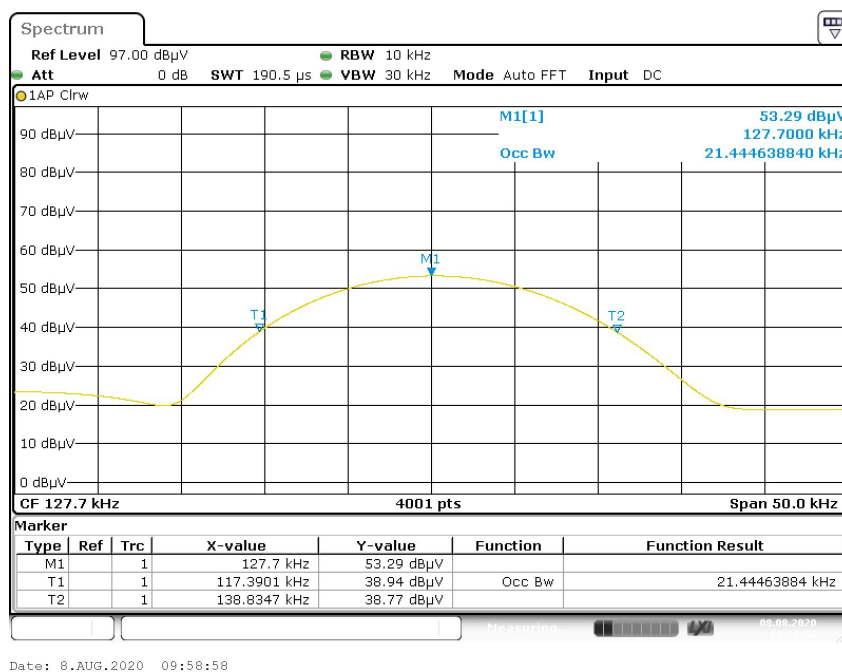


QI Test Data and Plots (Mode 2)

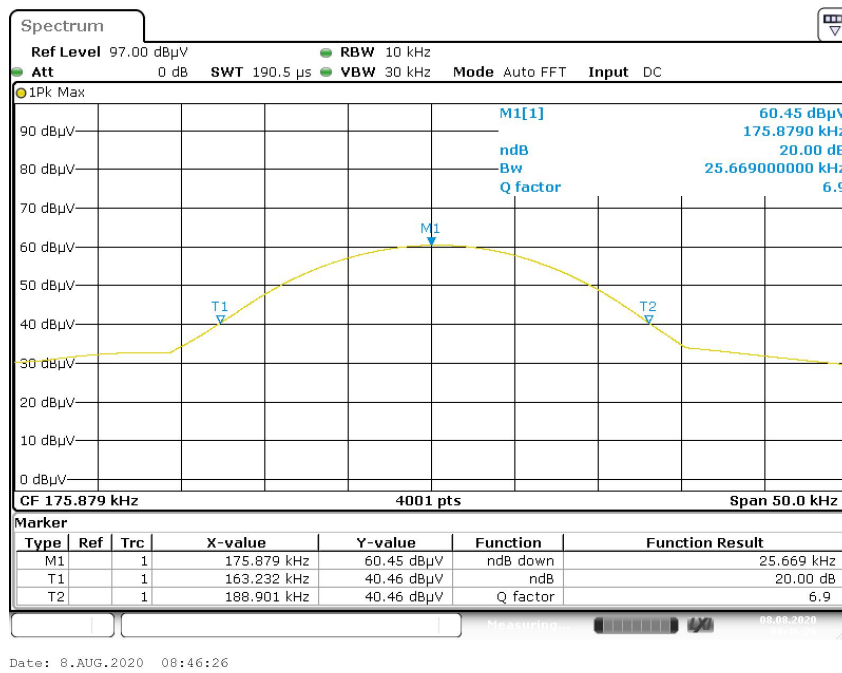


99% Occupied Bandwidth

QI Test Data and Plots (Mode 2)

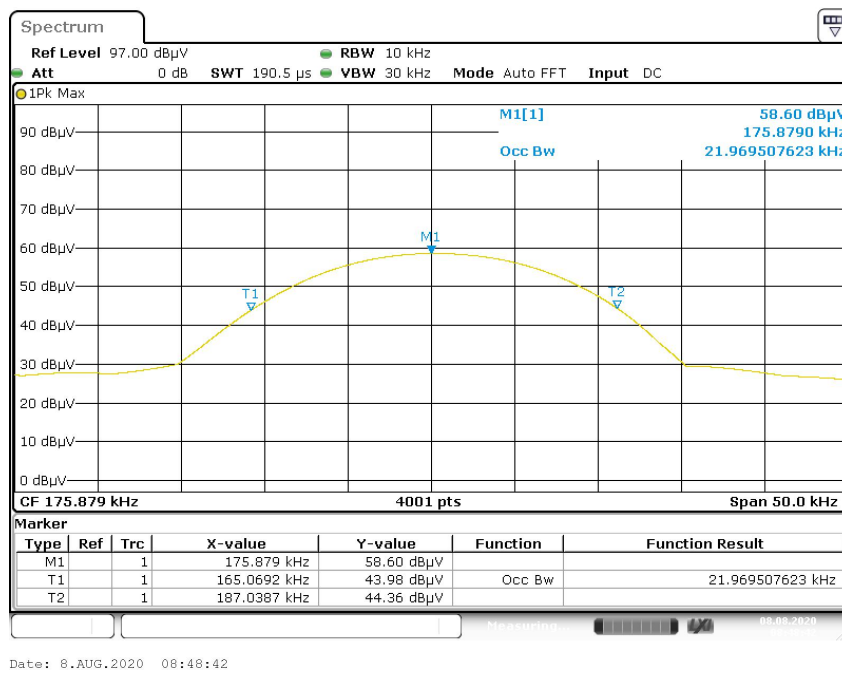


QI Test Data and Plots (Mode 3)

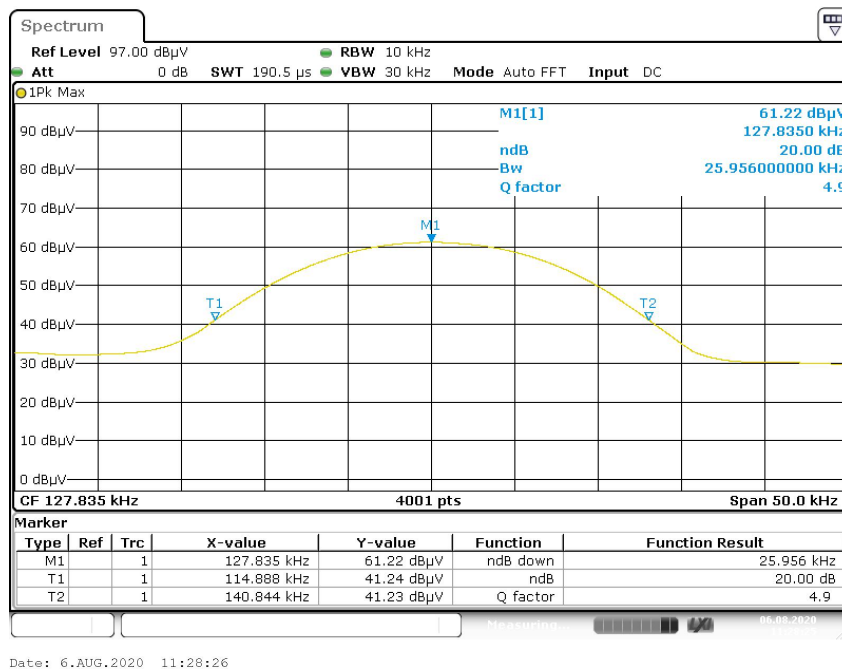


99% Occupied Bandwidth

QI Test Data and Plots (Mode 3)

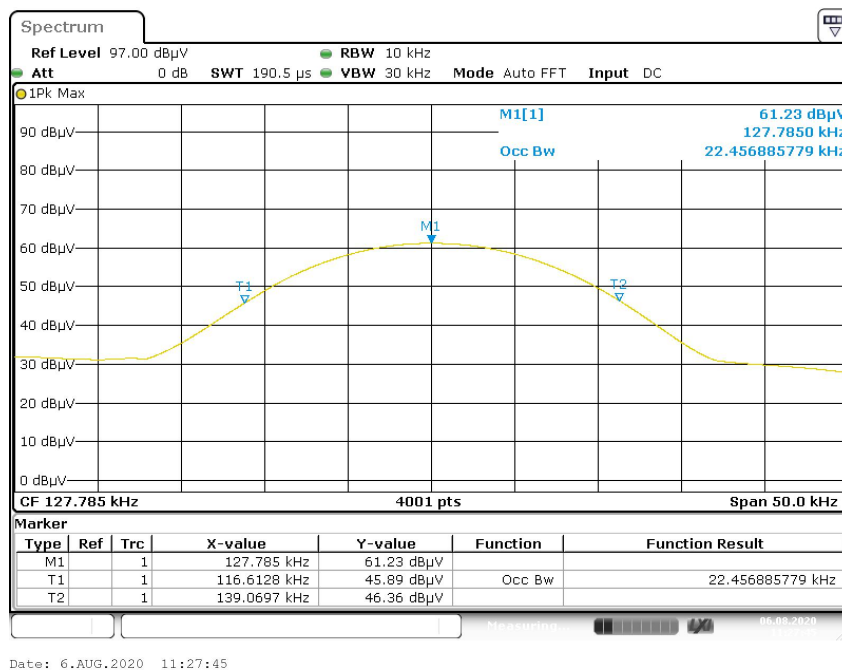


QI Test Data and Plots (Mode 4)



99% Occupied Bandwidth

QI Test Data and Plots (Mode 4)



ANNEX B TEST SETUP PHOTOS

Please refer the document “BL-SZ2080117-AE.PDF”.

ANNEX C EUT EXTERNAL PHOTOS

Please refer the document “BL-SZ2080117-AW.PDF”.

ANNEX D EUT INTERNAL PHOTOS

Please refer the document “BL-SZ2080117-AI.PDF”.

--END OF REPORT--