

TEST REPORT

Product Name: Mobile Phone
Trade Mark: ACER
Model No.: SOSPIRO-A60G
Add. Model No.: SOSPIRO-A60S
Report Number: 211008003EMC-1
Test Standards: FCC 47 CFR Part 15 Subpart B
FCC ID: 2AZYA-A60
Test Result: PASS
Date of Issue: Dec. 03, 2021

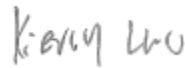
Prepared for:

Senwa Global International, S.A. de C.V.
Carretera Mexico-Toluca No. 5324 PB, Colonia El Yaqui Del.
Cuajimalpa de Morelos, C.P. 05320 Ciudad de Mexico

Prepared by:

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Version

Version No.	Date	Description
V1.0	Dec. 03, 2021	Original Report



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1. GENERAL INFORMATION

1.1. CLIENT INFORMATION

Applicant:	Senwa Global International, S.A. de C.V.
Address of Applicant:	Carretera Mexico-Toluca No. 5324 PB, Colonia El Yaqui Del. Cuajimalpa de Morelos, C.P. 05320 Ciudad de Mexico
Manufacturer:	Senwa Mobile China Ltd
Address of Manufacturer:	A611, Languang technology building, No. 27, Gaoxin North 6th Road, songpingshan community, Xili street, Nanshan District, Shenzhen, Guangdong Province

1.2. EUT INFORMATION

1.2.1. General Description of EUT

Product Name:	Mobile Phone
Model No.:	SOSPIRO-A60G
Add. Model No.:	SOSPIRO-A60S (Note 1)
Trade Mark:	ACER
DUT Stage:	Identical Prototype
Power Supply (AC):	100-240 V~50/60 Hz, 0.2 A
Power Supply (DC):	5.0 V/1 A or USB Port
Power Supply (Battery):	3.8 Vdc
Software Version:	Acer_A60_Ver01
Hardware Version:	sp7731e_1h10
Sample Received Date:	October 8, 2021
Sample Tested Date:	October 11, 2021 to October 19, 2021
Note 1: SOSPIRO-A60S is the serial model of SOSPIRO-A60G, there is no any other different for these two models except color. The last letter of model indicated different color, G is for green, S is for silver.	

1.2.2. Description of Accessories

Adapter	
Model No.:	SGCH1000
Input:	100-240 V~50/60 Hz, 0.2 A
Output:	5.0 V/1 A
AC Cable:	N/A
DC Cable:	N/A

Battery	
Model No.:	SGBT3000
Battery Type:	Lithium-ion Rechargeable Battery
Rated Voltage:	3.8 Vdc
Limited Charge Voltage:	4.4 Vdc
Rated Capacity:	3000 mAh

Cable	
Model No.:	N/A
Description:	USB Micro-B Plug Cable
Cable Type:	Unshielded without ferrite
Length:	1 Meter

Earphone	
Model No.:	N/A
Cable Type:	Unshielded without ferrite
Length:	0.9 Meter

1.3. GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a Mobile Phone according to the specifications of the manufacturers. It must comply with the requirements of the following standards:

FCC 47 CFR Part 15 Subpart B

All test items have been performed and recorded as per the above standards

1.4. DESCRIPTION OF SUPPORT UNITS

1) Support Equipment

Description	Manufacturer	Model No.	Serial Number	Supplied by
Notebook	Lenovo	E450	N/A	UnionTrust
TF Card	SanDisk	16GB	N/A	UnionTrust

2) Support Cable

Cable No.	Description	Connector	Length	Supplied by
--	--	--	--	--

1.5. TEST LOCATION

Shenzhen UnionTrust Quality and Technology Co., Ltd.

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1.6. TEST FACILITY

The test facility is recognized, certified, or accredited by the following organizations:

Shenzhen UnionTrust Quality and Technology Co., Ltd.

CNAS-Lab Code: L9069

The measuring equipment utilized to perform the tests documented in this report has been calibrated once a year or in accordance with the manufacturers recommendations, and is traceable under the ISO/IEC 17025 to international or national standards. Equipment has been calibrated by accredited calibration laboratories.

A2LA-Lab Certificate No.: 4312.01

Shenzhen UnionTrust Quality and Technology Co., Ltd. has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

ISED Wireless Device Testing Laboratories

CAB identifier: CN0032

FCC Accredited Lab.

Designation Number: CN1194

Test Firm Registration Number: 259480

1.7. DEVIATION FROM STANDARDS

None.

1.8. ABNORMALITIES FROM STANDARD CONDITIONS

None.

1.9. OTHER INFORMATION REQUESTED BY THE CUSTOMER

None.

1.10. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the Product 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.

No.	Item	Measurement Uncertainty
1	Radiated emissions	30MHz-1GHz: ± 4.6 dB(SAC) 1GHz-18GHz: ± 4.4 dB(FAR) 18GHz-40GHz: ± 4.6 dB(FAR)
2	Conducted emissions	150kHz-30MHz: ± 2.7 dB(AMN)

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Remark: 95% Confidence Levels, $k=2$.



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2. TEST SUMMARY

Emission					
Test Item	Test Standard	Test Requirement	Test Method	Limit	Result
Radiated emissions	FCC 47 CFR Part 15 Subpart B	FCC Part 15.109	ANSI C63.4-2014	FCC Part 15.109	Pass
Conducted emissions	FCC 47 CFR Part 15 Subpart B	FCC Part 15.107	ANSI C63.4-2014	FCC Part 15.107	Pass



3. EQUIPMENT LIST

Shenzhen UnionTrust Quality and Technology Co., Ltd.

Test Equipment of Radiated emissions					
Equipment	Manufacturer	Model No.	Serial No.	Cal.Date (mm dd, yyyy)	Cal.Due Date (mm dd, yyyy)
3 m SAC	ETS-Lindgren	3 m	Euroshiedpn-CT001270-1317	22-Jan-2021	21-Jan-2024
Broadband Antenna	ETS-Lindgren	3142E	00201566	14-Nov-2020	13-Nov-2022
Double-Ridged Waveguide Horn Antenna(Pre-amplifier)	ETS-Lindgren	3117-PA	00201541	30-Apr-2021	29-Apr-2023
Pre-amplifier	ETS-Lindgren	00118385	00201874	10-Nov-2020	9-Nov-2021
Double-Ridged Waveguide Horn Antenna(Pre-amplifier)	ETS-Lindgren	3116C-PA	00202652	14-Nov-2020	13-Nov-2022
Pre-amplifier	ETS-Lindgren	00118384	00202652	17-Nov-2020	16-Nov-2022
Receiver	ROHDE & SCHWARZ	ESIB26	100114	18-Nov-2020	17-Nov-2021
Pre-amplifier	HP	8447F	2805A02960	10-Nov-2020	9-Nov-2021
6dB Attenuator	Talent	RA6A5-N-18	18103001	14-Nov-2020	13-Nov-2022
Test Software	Audix	e3	Software Version: 19815(V9)	N/A	N/A
Multi device Controller	ETS-Lindgren	7006-001	00160105	N/A	N/A

Test Equipment of Conducted emissions					
Equipment	Manufacturer	Model No.	Serial No.	Cal.Date (mm dd, yyyy)	Cal.Due Date (mm dd, yyyy)
LISN Artificial Mains Network	ROHDE & SCHWARZ	ESH2-Z5	860014/024	18-Nov-2020	17-Nov-2021
Receiver	ROHDE & SCHWARZ	ESR7	101181	18-Nov-2020	17-Nov-2021
Pulse Limiter	ROHDE & SCHWARZ	ESH3-Z2	0357.8810.54	18-Nov-2020	17-Nov-2021
Shielding room	ETS-Lindgren	843	Euroshiedpn-CT001270-1246	N/A	N/A
Test Software	Audix	e3	Software Version: 9 20151119i	N/A	N/A

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4. TEST CONFIGURATION

4.1. ENVIRONMENTAL CONDITIONS FOR TESTING

4.1.1. Normal or Extreme Test Conditions

Environment Parameter	Selected Values During Tests		
Test Condition	Ambient		
	Temperature (°C)	Voltage	Relative Humidity (%)
TN/VN	+15 to +35	1. 120V~60Hz and/or 3.8Vdc Battery; 2. 240V~50Hz and/or 3.8Vdc Battery	20 to 75
Remark: 1) NV: Normal Voltage; NT: Normal Temperature			

4.1.2. Record of Normal Environment

Test Item	Temperature (°C)	Relative Humidity (%)	Pressure (kPa)	Tested by
Radiated emissions	24.5	63	99.4	Fire Huo
Conducted emissions	25.0	48	101.1	David Zhang

4.2. TEST MODES

Test Item	Test Standard	Test Modes
Radiated emissions	FCC 47 CFR Part 15 Subpart B	Test Mode 1: Charging from 120 Vac + MP4 playing (With TF Card) + Earphone Test Mode 2: Charging from 120 Vac + Camera (Front)+ With TF Card Test Mode 3: Charging from 120 Vac + Camera (Rear) + With TF Card Test Mode 4: Charging from 120 Vac + GPS +Light on + Earphone Test Mode 5: Charging from 240 Vac + Worse from mode 1~4 Test Mode 6: Battery + Worse from mode 1~4 Test Mode 7: USB Cable (data transfer with notebook) + With TF Card
Conducted emissions	FCC 47 CFR Part 15 Subpart B	Test Mode 1: Charging from 120 Vac + MP4 playing (With TF Card) + Earphone Test Mode 2: Charging from 120 Vac + Camera (Front)+ With TF Card Test Mode 3: Charging from 120 Vac + Camera (Rear) + With TF Card Test Mode 4: Charging from 120 Vac + GPS +Light on + Earphone Test Mode 5: Charging from 240 Vac + Worse from mode 1~4 Test Mode 6: Battery + Worse from mode 1~4 Test Mode 7: USB Cable (data transfer with notebook) + With TF Card

1. EMC REQUIREMENTS SPECIFICATION

1.1. EMC EMISSION

1.1.1. Radiated emissions

Test Standard FCC 47 CFR Part 15 Subpart B

Test Requirement: FCC Part 15.109

Test Method: ANSI C63.4-2014

Measured frequency range

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 1.705	30
1.705-108	1000
108-500	2000
500-1000	5000
Above 1000	5th harmonic of the highest frequency or 40 GHz, whichever is lower

All readings are extrapolated back to the equivalent three-meter reading using inverse scaling with distance. Analyzer resolution is 100 kHz or greater for frequencies below 1000MHz. The resolution is 1 MHz or greater for frequencies above 1000MHz. The spurious emissions more than 20 dB below the permissible value are not reported.

Radiated emission measurement were performed from the lowest radio frequency signal generated in the device which is greater than 9 kHz to the tenth harmonic (according to KDB 896810 D02 SDoC FAQ v01r01) of the highest fundamental frequency or to 40 GHz, whichever is lower.

Limit:

Limits for Class A devices

Frequency (MHz)	limits at 10 m (dBμV/m)		
	Quasi-peak Detector	Peak Detector	Average Detector
30-88	39.1	--	--
88-216	43.5	--	--
216-960	46.4	--	--
960 to 1000	49.5	--	--

Frequency (MHz)	limits at 3 m (dBμV/m)		
	Quasi-peak Detector	Peak Detector	Average Detector
30-88	49.5	--	--
88-216	54.0	--	--
216-960	56.9	--	--
960 to 1000	60.0	--	--
Above 1000	--	80.0	60.0

Limits for Class B devices

Frequency (MHz)	limits at 3m (dBμV/m)		
	Quasi-peak Detector	Peak Detector	Average Detector
30 – 88	40.0	--	--
88 – 216	43.5	--	--
216 – 960	46.0		

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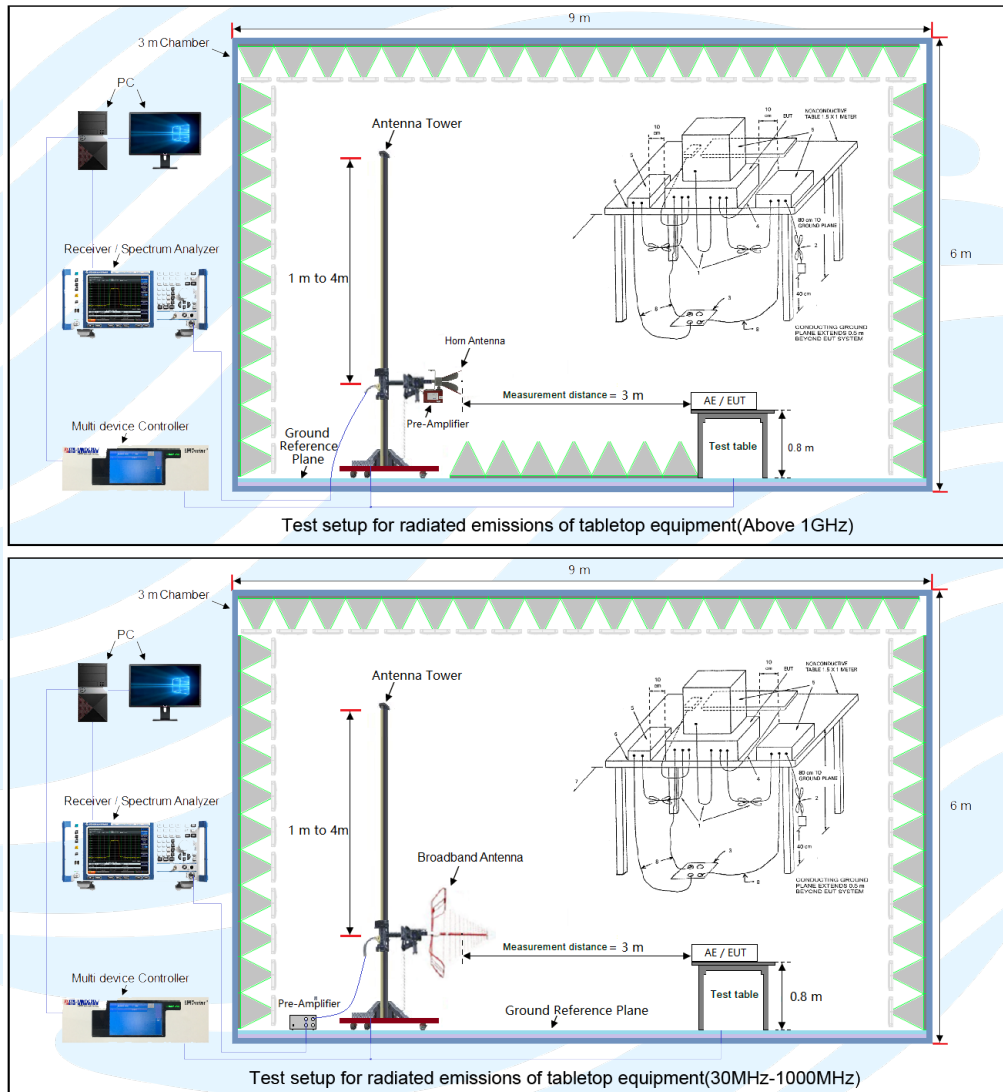
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960 – 1000	54.0	--	--
Above 1000	--	74.0	54.0

Remark:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dB μ V/m) = 20 log Emission level (μ V/m).
3. For frequencies above 1000 MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20 dB under any condition of modulation.

Test Setup:



Test Procedures:

➤ From 30 MHz to 1GHz test procedure as below:

- 1) The Product was placed on the non-conductive turntable 0.8/0.2 m above the ground at a chamber.
- 2) Set the spectrum analyzer/receiver in Peak detector, Max Hold mode, and 120 kHz RBW. Record the maximum field strength of all the pre-scan process in the full band when the antenna is varied between 1~4 m in both horizontal and vertical, and the turntable is rotated from 0 to 360 degrees.
- 3) For each frequency whose maximum record was higher or close to limit, measure its QP value: vary the antenna's height and rotate the turntable from 0 to 360 degrees to find the height and degree where Product radiated the maximum emission, then set the test frequency analyzer/receiver to QP Detector and specified bandwidth with Maximum Hold Mode, and record the maximum value.

➤ Above 1GHz test procedure as below:

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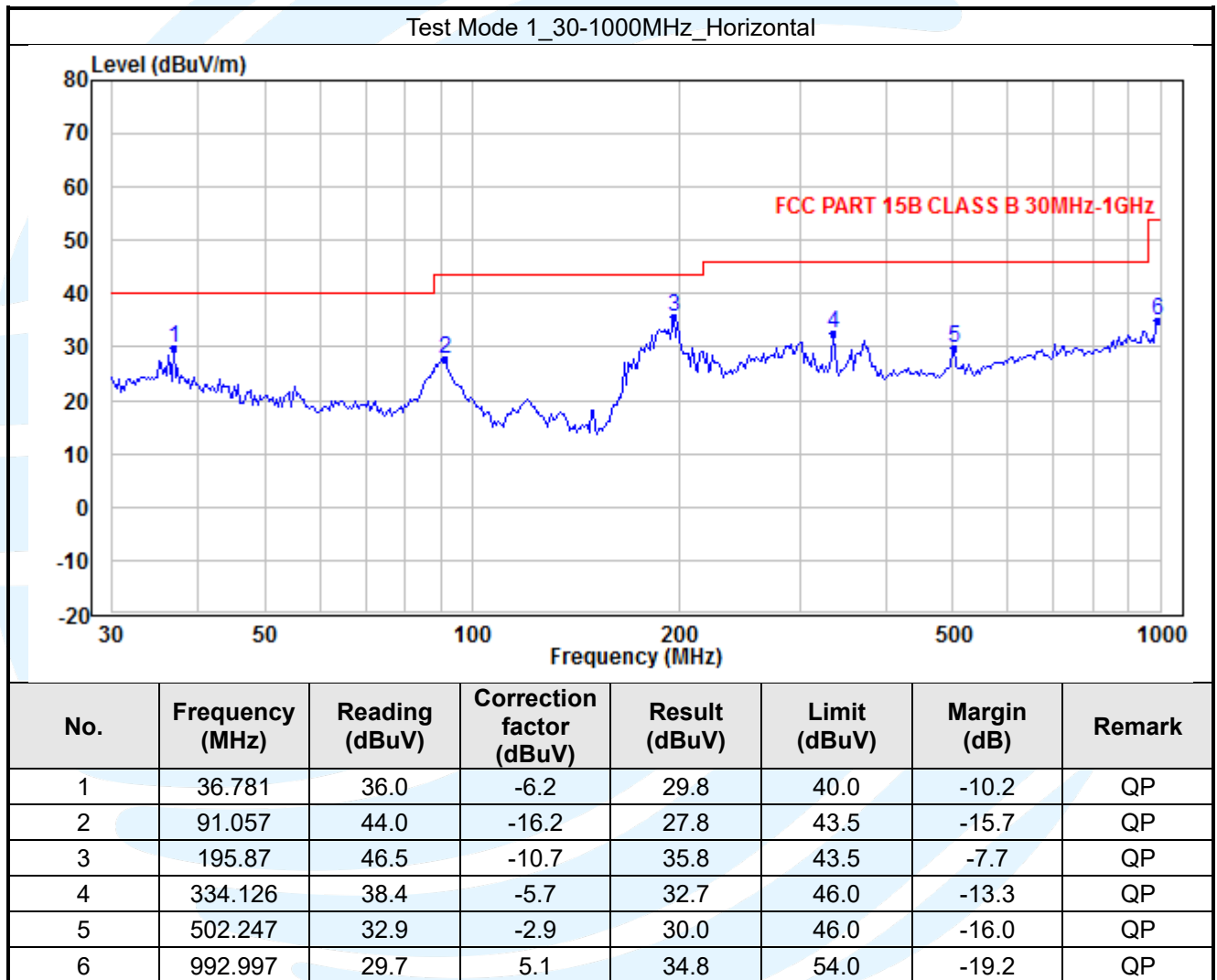
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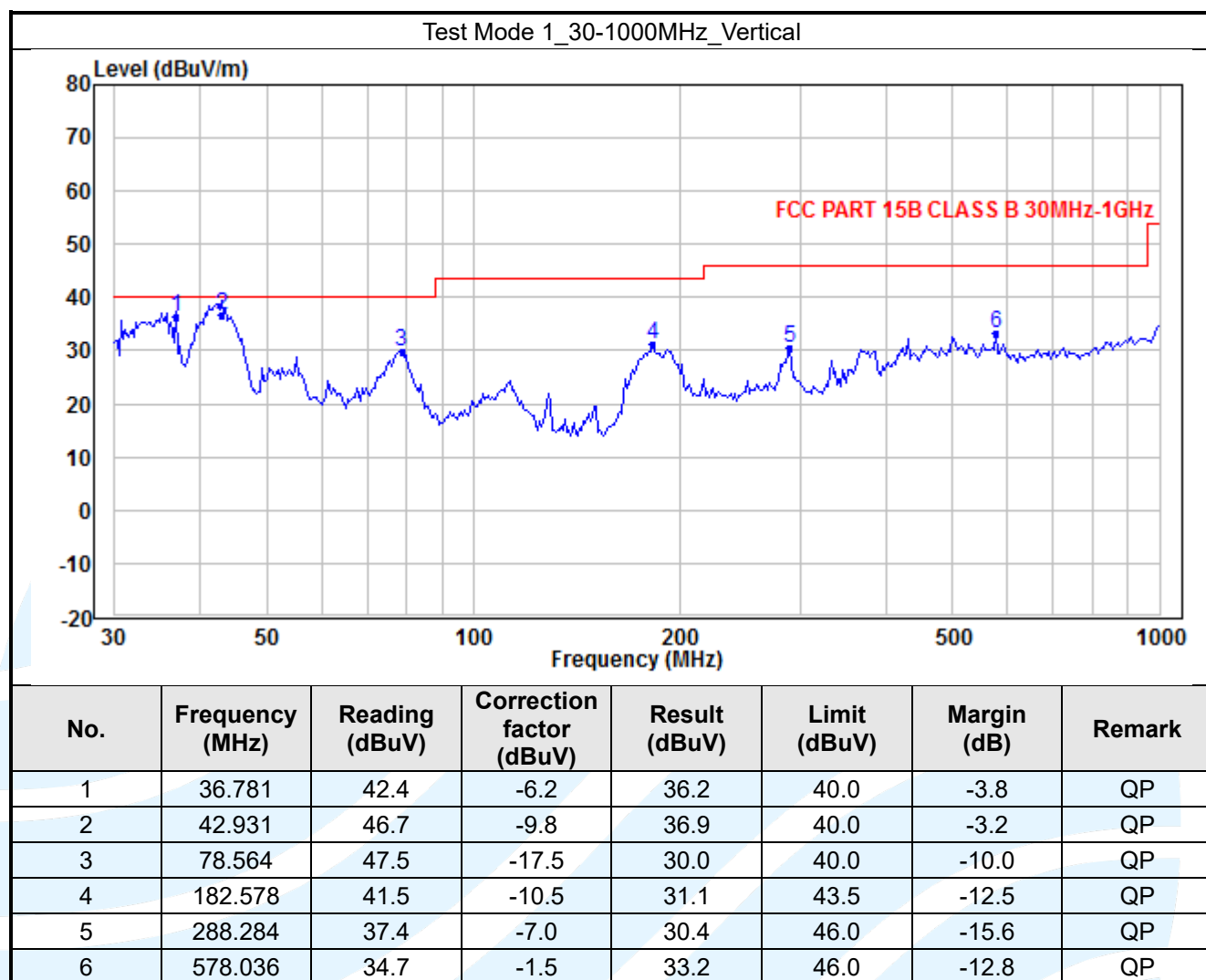
- 1) The Product was placed on the non-conductive turntable 0.8/0.2 m above the ground at a chamber.
- 2) Set the spectrum analyzer/receiver in Peak detector, Max Hold mode, and 1MHz RBW. Record the maximum field strength of all the pre-scan process in the full band when the antenna is varied in both horizontal and vertical, and the turntable is rotated from 0 to 360 degrees.
- 3) For each frequency whose maximum record was higher or close to limit, measure its AV value: rotate the turntable from 0 to 360 degrees to find the degree where Product radiated the maximum emission, then set the test frequency analyzer/receiver to AV value and specified bandwidth with Maximum Hold Mode, and record the maximum value.

Equipment Used: Refer to section 3 for details.

Test Result: Pass

The measurement worst data as follows:





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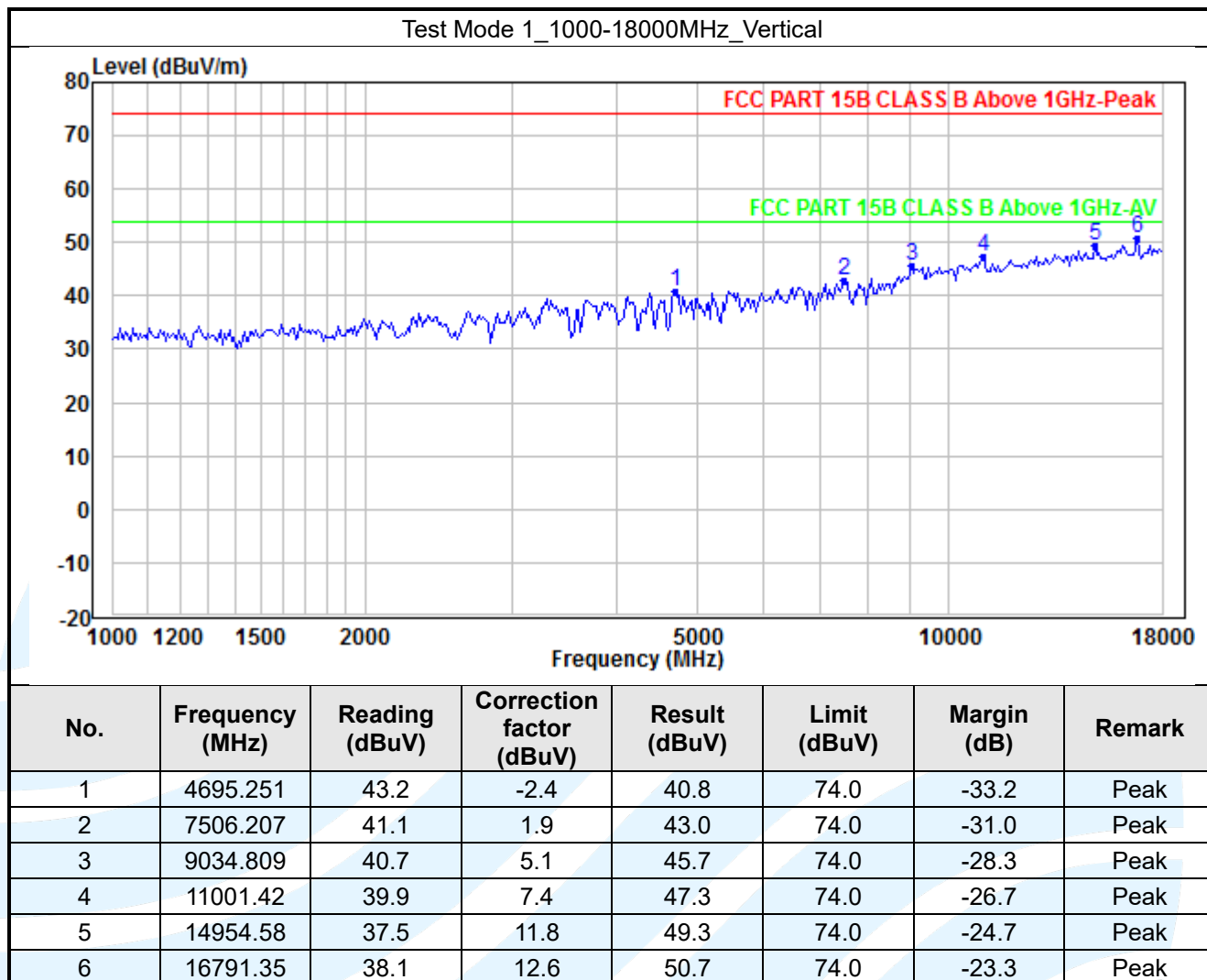
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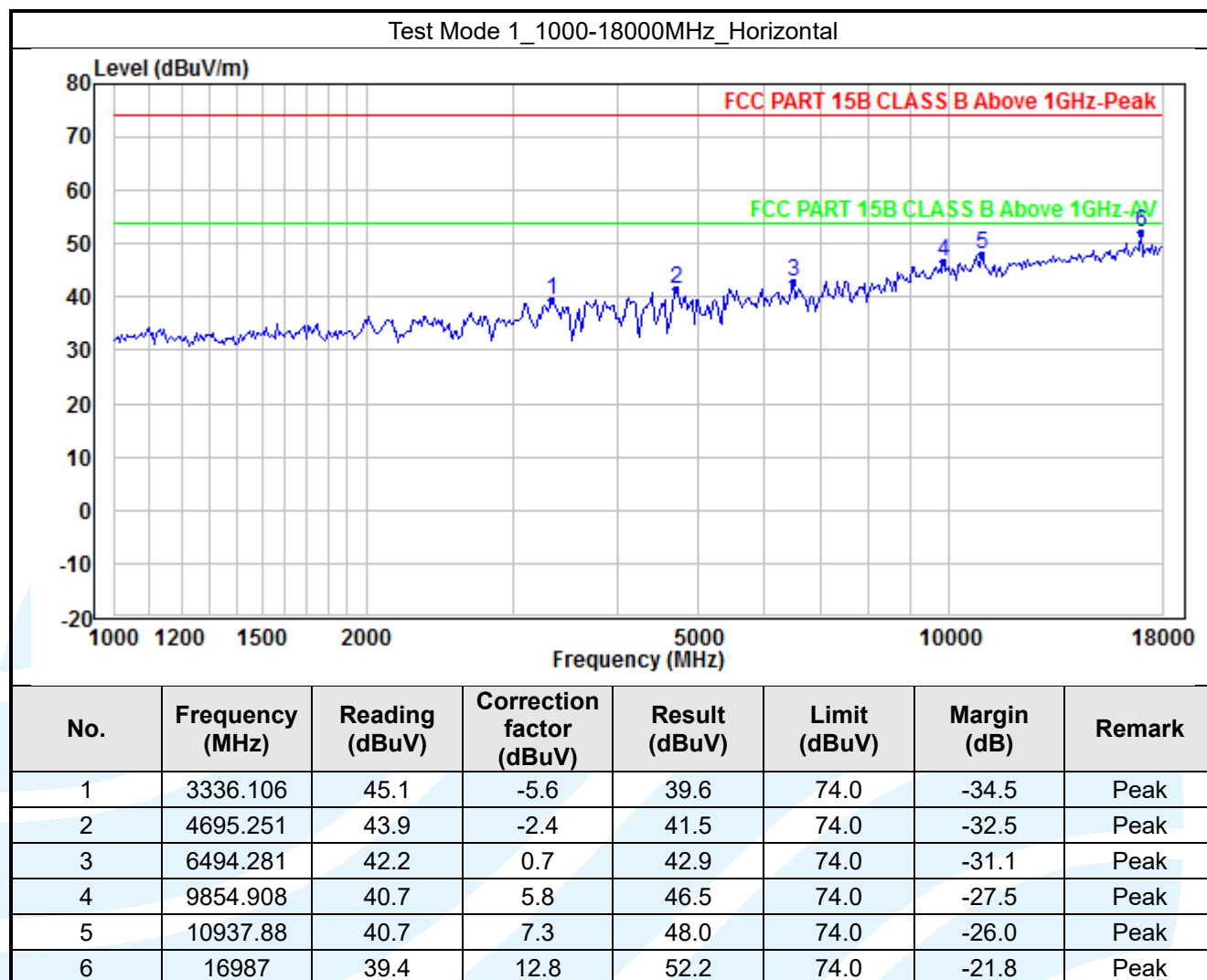
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Remark:

1. Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain, the value was added to Original Receiver Reading by the software automatically.
2. Result = Reading + Correct Factor.
3. Margin = Result - Limit
4. All possible modes of operation were investigated, and testing at two nominal voltages of 240V~50Hz and 120V~60Hz, only the worst-case emissions reported.
5. As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. So, only the peak measurements were shown in the report.
6. For Radiated Emission above 18GHz, there was not any unwanted emission detected.

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1.1.2. Conducted emissions

Test Standard FCC 47 CFR Part 15 Subpart B
Test Requirement: FCC Part 15.107
Test Method: ANSI C63.4-2014
Limit:

Limits for Class A devices

Frequency range (MHz)	Limits (dB(μV))	
	Quasi-peak	Average
0.15 to 0.50	79	66
0.50 to 30	73	60

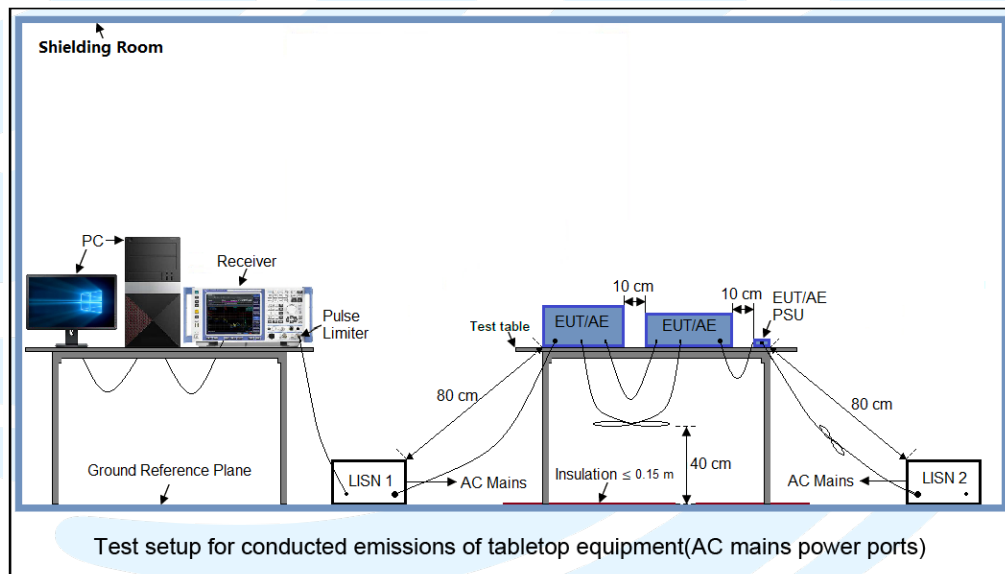
Limits for Class B devices

Frequency range (MHz)	Limits (dB(μV))	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50

Remark:

1. The lower limit shall apply at the transition frequencies.
2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 to 0.50 MHz.

Test Setup:



Test Procedures:

- 1) The Product was placed on a nonconductive table 0.8/0.2 m above the horizontal ground reference plane, and 0.4 m from the vertical ground reference plane, and connected to the main through Line Impedance Stability Network (L.I.S.N).
- 2) The RBW of the receiver was set at 9 kHz in 150 kHz ~ 30MHz with Peak and AVG detector in Max Hold mode. Run the receiver's pre-scan to record the maximum disturbance generated from Product in all power lines in the full band.
- 3) For each frequency whose maximum record was higher or close to limit, measure its QP and AVG values and record.

Equipment Used: Refer to section 3 for details.

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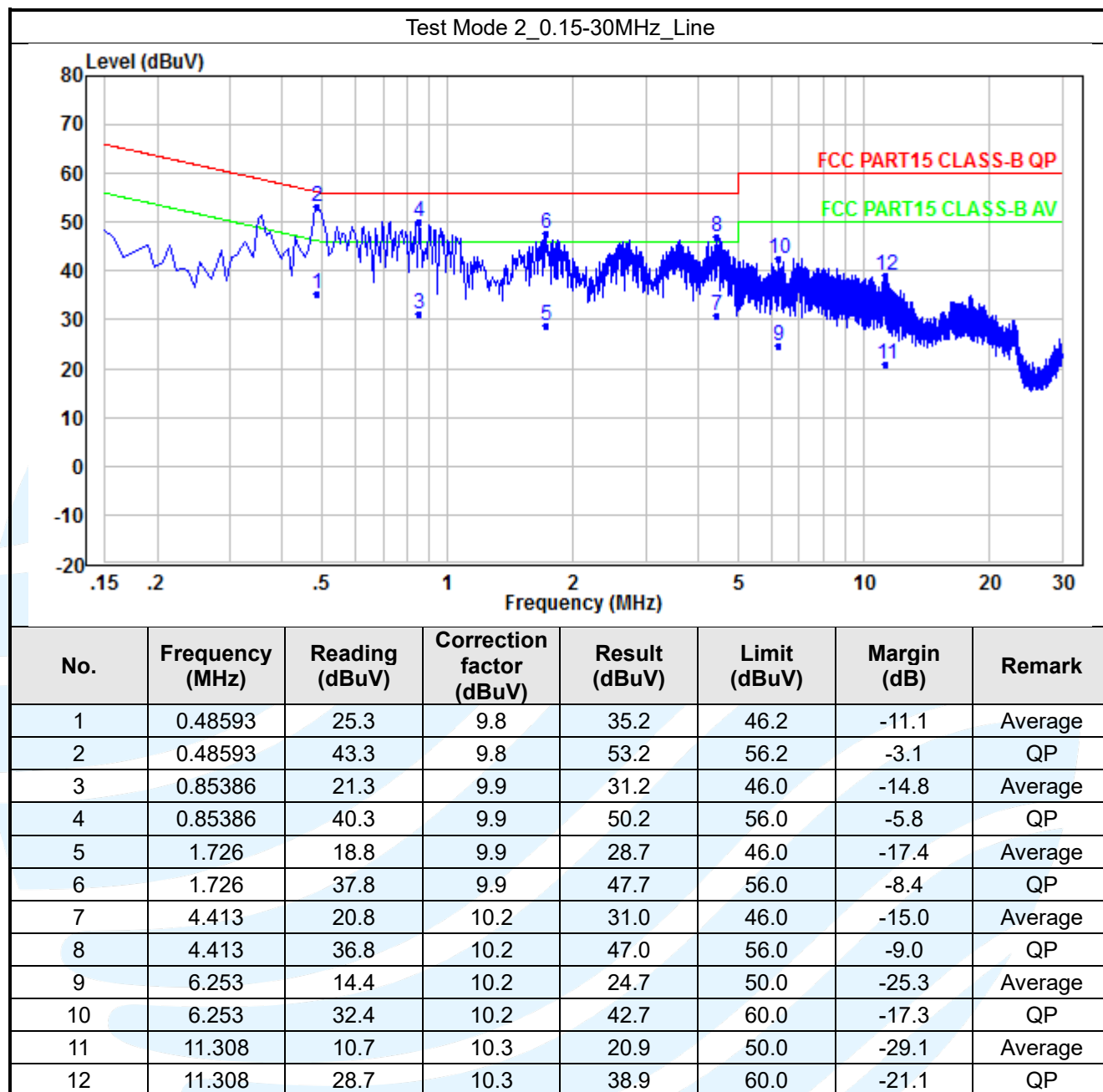
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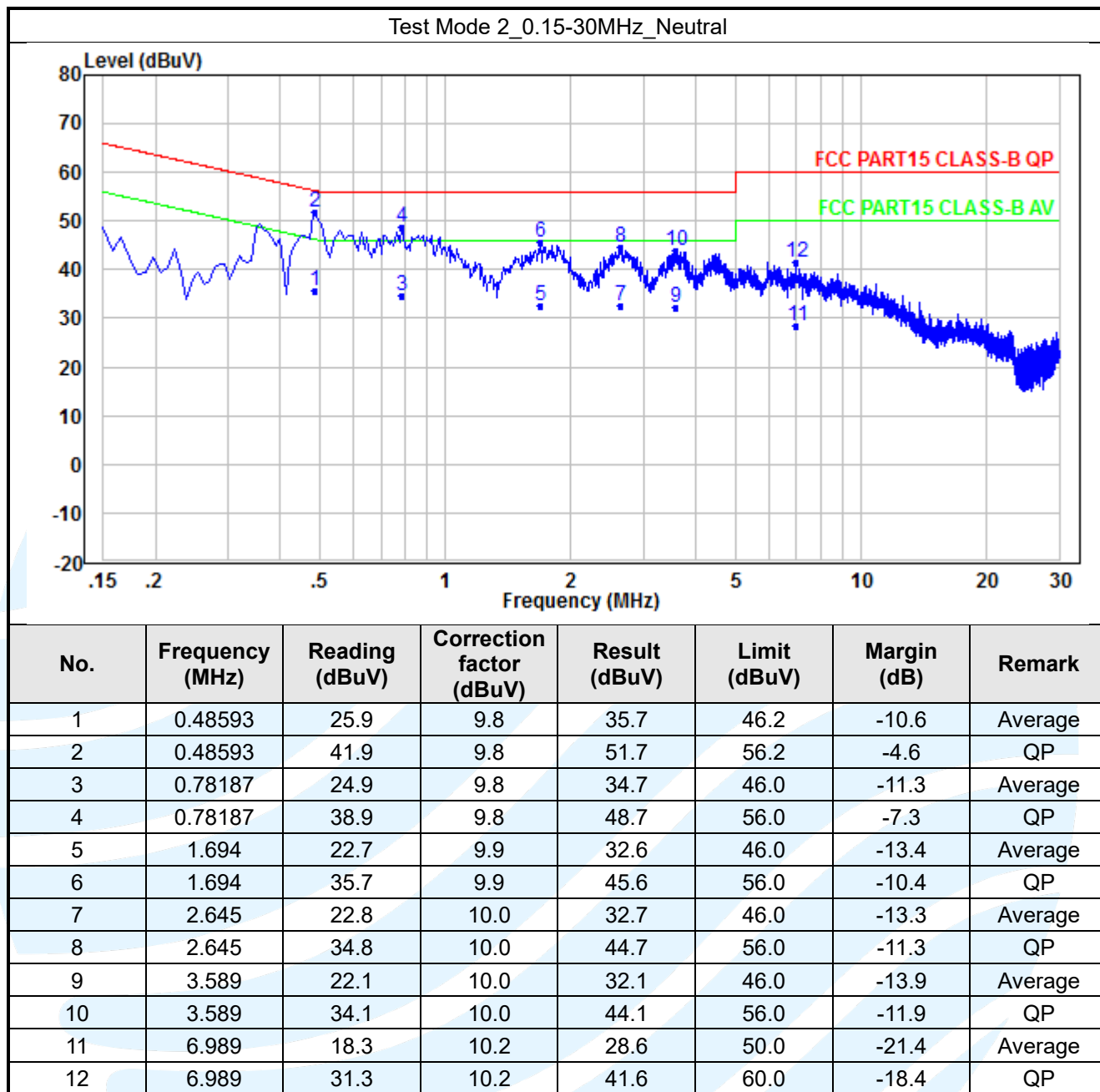
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Test Result: Pass

The measurement worst data as follows:





Remark:

1. Correct Factor = LISN Factor + Cable Loss + Pulse Limiter Factor, the value was added to Original Receiver Reading by the software automatically.
2. Result = Reading + Correct Factor.
3. Margin = Result - Limit
4. An initial pre-scan was performed on the Phase and neutral lines with peak detector. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.
5. All possible modes of operation were investigated, and testing at two nominal voltages of 240V~50Hz and 120V~60Hz, only the worst-case emissions reported.

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APPENDIX 1 PHOTOGRAPHS OF TEST SETUP

See test photos attached in Appendix 1 for the actual connections between Product and support equipment.



APPENDIX 2 PHOTOGRAPHS OF EUT CONSTRUCTIONAL DETAILS

Refer to Appendix 2 for EUT external and internal photos.

*** End of Report ***

The test report is effective only with both signature and specialized stamp. The result(s) shown in this report refer only to the sample(s) tested. Without written approval of UnionTrust, this report can't be reproduced except in full.
