

FCC & ISCED TEST REPORT

Product Name: IP Phone
Trade Mark: GRANDSTREAM
Model No.: GRP2601P, GRP2602P
Add. Model No.: GRP2601, GRP2602
Report Number: 200408001EMC-1
Test Standards: FCC 47 CFR Part 15 Subpart B
ICES-003 Issue 6
FCC ID: YZZGRP2602P
Test Result: PASS
Date of Issue: May 22, 2020

Prepared for:

Grandstream Networks, Inc.
126 Brookline Ave., 3rd Floor Boston, MA 02215, USA

Prepared by:

Shenzhen UnionTrust Quality and Technology Co., Ltd.
16/F, Block A, Building 6, Baoneng Science and Technology Park,
Qingxiang Road No.1, Longhua New District, Shenzhen, China
TEL: +86-755-2823 0888
FAX: +86-755-2823 0886

Prepared by:

Eric Yu

Eric Yu
Team Leader

Reviewed by:

Kevin Liang

Kevin Liang
Assistant Manager

Approved by:



Billy Li
Technical Director

Date:

May 22, 2020

Shenzhen UnionTrust Quality and Technology Co., Ltd.

Address: 16/F, Block A, Building 6, Baoneng Science and Technology Park, Qingxiang Road No.1, Longhua New District, Shenzhen, China
Tel: +86-755-28230888 Fax: +86-755-28230886 E-mail: info@uttlab.com <http://www.uttlab.com>

UTTR-EMC-ICES003-V1.0

Version

Version No.	Date	Description
V1.0	May 22, 2020	Original



Shenzhen UnionTrust Quality and Technology Co., Ltd.

Address: 16/F, Block A, Building 6, Baoneng Science and Technology Park, Qingxiang Road No.1, Longhua New District, Shenzhen, China

Tel: +86-755-28230888

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1. GENERAL INFORMATION

1.1 CLIENT INFORMATION

Applicant:	Grandstream Networks, Inc.
Address of Applicant:	126 Brookline Ave., 3rd Floor Boston, MA 02215, USA
Manufacturer:	Grandstream Networks, Inc.
Address of Manufacturer:	126 Brookline Ave., 3rd Floor Boston, MA 02215, USA

1.2 EUT INFORMATION

1.2.1 General Description of EUT

Product Name:	IP Phone
Model No.:	GRP2601P, GRP2602P
Add. Model No.:	GRP2601, GRP2602
Trade Mark:	GRANDSTREAM
DUT Stage:	Production Unit
Rated Voltage:	☒ 100-240V~50/60Hz ☒ Powered by POE port
Classification of digital devices:	Class B
Highest Internal Frequency:	1.3 GHz
Software Version:	0.0.0.14
Hardware Version:	V1.3
Sample Received Date:	April 11, 2020
Sample Tested Date:	May 7, 2020 to May 14, 2020
Remark: Compared with GRP2601P, GRP2602P supports more keypads and supports LCD backlight; Compared with GRP2601 and GRP2602, GRP2601P and GRP2602P support POE function, but only the BOM is different, the PCB is the same. Declared by manufacturer.	

1.2.2 Description of Accessories

Adapter 1	
Model No.:	GQ06-050060-ZU
Input:	100-240 V~50/60 Hz 0.3 A Max
Output:	5.0 V $\pm$ 0.6 A
DC Cable:	1.50 Meter, Unshielded without ferrite

Adapter 2	
Model No.:	PS05L050K0600UD
Input:	100-240 V~50/60 Hz 0.25 A Max
Output:	5.0 V $\pm$ 0.6 A
DC Cable:	1.50 Meter, Unshielded without ferrite

Adapter 3	
Model No.:	F06US0500060A
Input:	100-240 V~50/60 Hz 0.2 A Max
Output:	5.0 V $\pm$ 0.6 A
DC Cable:	1.50 Meter, Unshielded without ferrite

Cable (1)	
Description:	Ethernet Cable (RJ45)
Cable Type:	Unshielded without ferrite
Length:	1.5 Meter

Cable (2)	
Description:	Phone Cord (RJ9)
Cable Type:	Unshielded without ferrite
Length:	3.5 Meter

1.3 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested with associated equipment below.

1) Support Equipment

Description	Manufacturer	Model No.	Serial Number	FCC ID	Supplied by
Notebook	Lenovo	B40-80	MP12NEQ6	N/A	UnionTrust
Notebook	DELL	Latitude 3400	6GJQKT2	N/A	UnionTrust
Mouse	DELL	MS111	CN-011D3V-738	N/A	UnionTrust
Mouse	DELL	MOCZUL	CN-0V7623-73826-65K-00XR	N/A	UnionTrust
Headset	YEY	VE120-MV	N/A	N/A	UnionTrust
Standard POE Power supply	TP-LINK	TL-POE160S	N/A	N/A	UnionTrust
IP Phone	GRANDSTREAM	GRP2602P	N/A	N/A	Applicant
IP Phone	GRANDSTREAM	GRP2601P	N/A	N/A	Applicant

2) Support Cable

Cable No.	Description	Connector	Length	Supplied by
1	Ethernet Cable	RJ45	1.0 Unshielded without ferrite	UnionTrust
2	Ethernet Cable	RJ45	5.0 Unshielded without ferrite	UnionTrust
3	Ethernet Cable	RJ45	2.0 Unshielded without ferrite	UnionTrust

1.4 TEST LOCATION

Shenzhen UnionTrust Quality and Technology Co., Ltd.

Address: 16/F, Block A, Building 6, Baoneng Science and Technology Park, Qingxiang Road No.1, Longhua New District, Shenzhen, China 518109

Telephone: +86 (0) 755 2823 0888

Fax: +86 (0) 755 2823 0886

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1.5 TEST FACILITY

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

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 manufacturer's recommendations, and is traceable under the ISO/IEC/EN 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: 2005 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

1.6 DEVIATION FROM STANDARDS

None.

1.7 ABNORMALITIES FROM STANDARD CONDITIONS

None.

1.8 OTHER INFORMATION REQUESTED BY THE CUSTOMER

None.

1.9 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	Conducted emission 9KHz-150KHz	±3.8 dB
2	Conducted emission 150KHz-30MHz	±3.4 dB
3	Radiated emission 9KHz-30MHz	±4.9 dB
4	Radiated emission 30MHz-1GHz	±4.7 dB
5	Radiated emission 1GHz-18GHz	±5.1 dB
6	Radiated emission 18GHz-26GHz	±5.2 dB
7	Radiated emission 26GHz-40GHz	±5.2 dB

2. TEST SUMMARY

FCC 47 CFR Part 15 Subpart B Test Cases			
Test Item	Test Requirement	Test Method	Result
Conducted Emission	FCC 47 CFR Part 15.107 ICES-003 Issue 6 Section 6.1	ANSI C63.4-2014	PASS
Radiated Emission	FCC 47 CFR Part 15.109 ICES-003 Issue 6 Section 6.2	ANSI C63.4-2014	PASS

3. EQUIPMENT LIST

Radiated Emission Test Equipment List						
Used	Equipment	Manufacturer	Model No.	Serial Number	Cal. date (mm dd, yyyy)	Cal. Due date (mm dd, yyyy)
☒	3M Chamber & Accessory Equipment	ETS-LINDGREN	3M	N/A	Dec. 03, 2018	Dec. 03, 2021
☒	Receiver	R&S	ESIB26	100114	Nov. 24, 2019	Nov. 23, 2020
☒	Broadband Antenna	ETS-LINDGREN	3142E	00201566	Nov. 16, 2019	Nov. 15, 2020
☒	6dB Attenuator	Talent	RA6A5-N-18	18103001	Nov. 16, 2019	Nov. 15, 2020
☒	Preamplifier	HP	8447F	2805A02960	Nov. 24, 2019	Nov. 23, 2020
☒	Horn Antenna (Pre-amplifier)	ETS-LINDGREN	3117-PA	00201874	May 18, 2019	May 18, 2020
☒	Multi device Controller	ETS-LINDGREN	7006-001	00160105	N/A	N/A
☒	Test Software	Audix	e3	Software Version: 9.160323		

Conducted Emission Test Equipment List						
Used	Equipment	Manufacturer	Model No.	Serial Number	Cal. date (mm dd, yyyy)	Cal. Due date (mm dd, yyyy)
☒	Receiver	R&S	ESR7	1316.3003K07-101181-K3	Nov. 24, 2019	Nov. 23, 2020
☒	Pulse Limiter	R&S	ESH3-Z2	0357.8810.54	Nov. 24, 2019	Nov. 23, 2020
☒	LISN	R&S	ESH2-Z5	860014/024	Nov. 24, 2019	Nov. 23, 2020
☒	LISN	R&S	ESH2-Z5	860014/024	Nov. 24, 2019	Nov. 23, 2020
☒	Test Software	Audix	e3	Software Version: 9.160323		

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 (%)
NT/NV	+15 to +35	AC 120V/60Hz or AC 240V/50Hz	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
Conducted Emission	25.0	49.0	100.2	Bert Xiong
Radiated Emission	25.4	57.0	100.6	Asia Yan

4.2 TEST MODES

Test Item	EMI Test Modes
Radiated Emission	TM1: AC120V/60Hz (Adaptor1) + Hands Free (with GRP2601P) TM2: AC120V/60Hz (Adaptor1) + Ringing (with GRP2601P) TM3: AC120V/60Hz (Adaptor1) + Handset (with GRP2601P) TM4: AC120V/60Hz (Adaptor1) + Headset (with GRP2601P) TM5: AC240V/50Hz (Adaptor1) + Worse from mode 1~4(with GRP2601P) TM6: Worse from mode 1~5 (Adaptor2 with GRP2601P) TM7: Worse from mode 1~5 (Adaptor3 with GRP2601P) TM8: Worse from mode 1~5 (Adaptor1 with GRP2601P) TM9: Worse from mode 1~5 (Adaptor2 with GRP2601P) TM10: Worse from mode 1~5 (Adaptor3 with GRP2601P) TM11: AC120V/60Hz (Adaptor1) + Hands Free (with GRP2602P) TM12: AC120V/60Hz (Adaptor1) + Ringing (with GRP2602P) TM13: AC120V/60Hz (Adaptor1) + Handset (with GRP2602P) TM14: AC120V/60Hz (Adaptor1) + Headset (with GRP2602P) TM15: AC240V/50Hz (Adaptor1) + Worse from mode 11~14(with GRP2602P) TM16: Worse from mode 11~15 (Adaptor2 with GRP2602P) TM17: Worse from mode 11~15 (Adaptor3 with GRP2602P) TM18: Worse from mode 11~15 (Adaptor1 with GRP2602P) TM19: Worse from mode 11~15 (Adaptor2 with GRP2602P) TM20: Worse from mode 11~15 (Adaptor3 with GRP2602P) TM21: AC120V/60Hz (POE) +Worse from mode 1~4(with GRP2601P) TM22: AC120V/60Hz (POE) +Worse from mode 11~14(with GRP2602P)
Conducted Emission	TM1: AC120V/60Hz (Adaptor1) + Hands Free (with GRP2601P) TM2: AC120V/60Hz (Adaptor1) + Ringing (with GRP2601P) TM3: AC120V/60Hz (Adaptor1) + Handset (with GRP2601P) TM4: AC120V/60Hz (Adaptor1) + Headset (with GRP2601P) TM5: AC240V/50Hz (Adaptor1) + Worse from mode 1~4(with GRP2601P) TM6: Worse from mode 1~5 (Adaptor2 with GRP2601P) TM7: Worse from mode 1~5 (Adaptor3 with GRP2601P) TM8: Worse from mode 1~5 (Adaptor1 with GRP2601P) TM9: Worse from mode 1~5 (Adaptor2 with GRP2601P) TM10: Worse from mode 1~5 (Adaptor3 with GRP2601P) TM11: AC120V/60Hz (Adaptor1) + Hands Free (with GRP2602P) TM12: AC120V/60Hz (Adaptor1) + Ringing (with GRP2602P) TM13: AC120V/60Hz (Adaptor1) + Handset (with GRP2602P) TM14: AC120V/60Hz (Adaptor1) + Headset (with GRP2602P) TM15: AC240V/50Hz (Adaptor1) + Worse from mode 11~14(with GRP2602P) TM16: Worse from mode 11~15 (Adaptor2 with GRP2602P) TM17: Worse from mode 11~15 (Adaptor3 with GRP2602P) TM18: Worse from mode 11~15 (Adaptor1 with GRP2602P) TM19: Worse from mode 11~15 (Adaptor2 with GRP2602P) TM20: Worse from mode 11~15 (Adaptor3 with GRP2602P) TM21: AC120V/60Hz (POE) +Worse from mode 1~4(with GRP2601P) TM22: AC120V/60Hz (POE) +Worse from mode 11~14(with GRP2602P)

4.3 TEST SETUP

4.3.1 For Radiated Emissions test setup

Figure 1. 30MHz to 1GHz

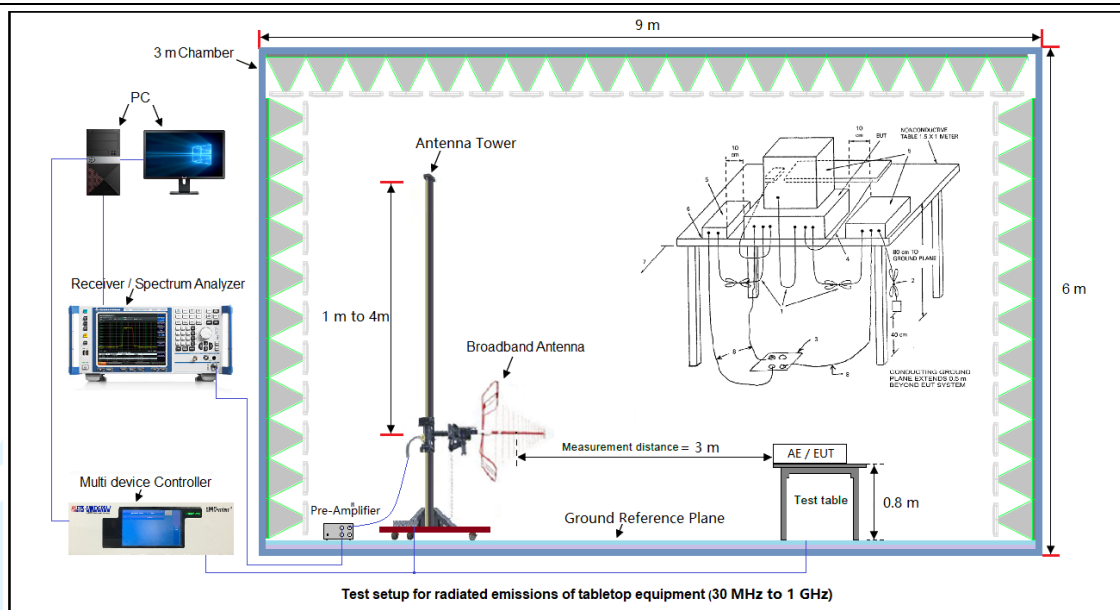
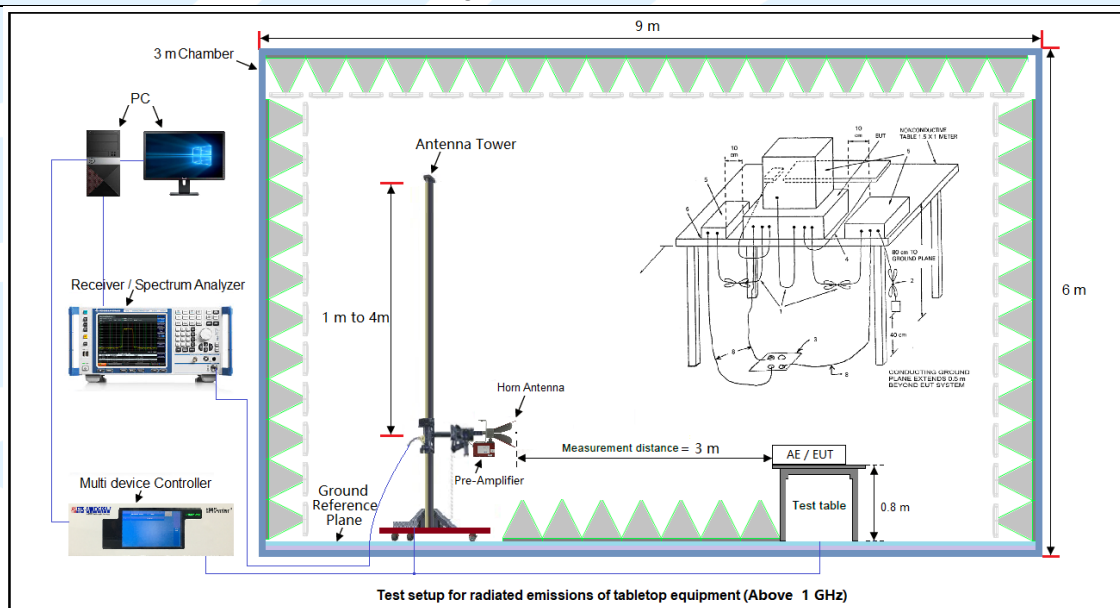
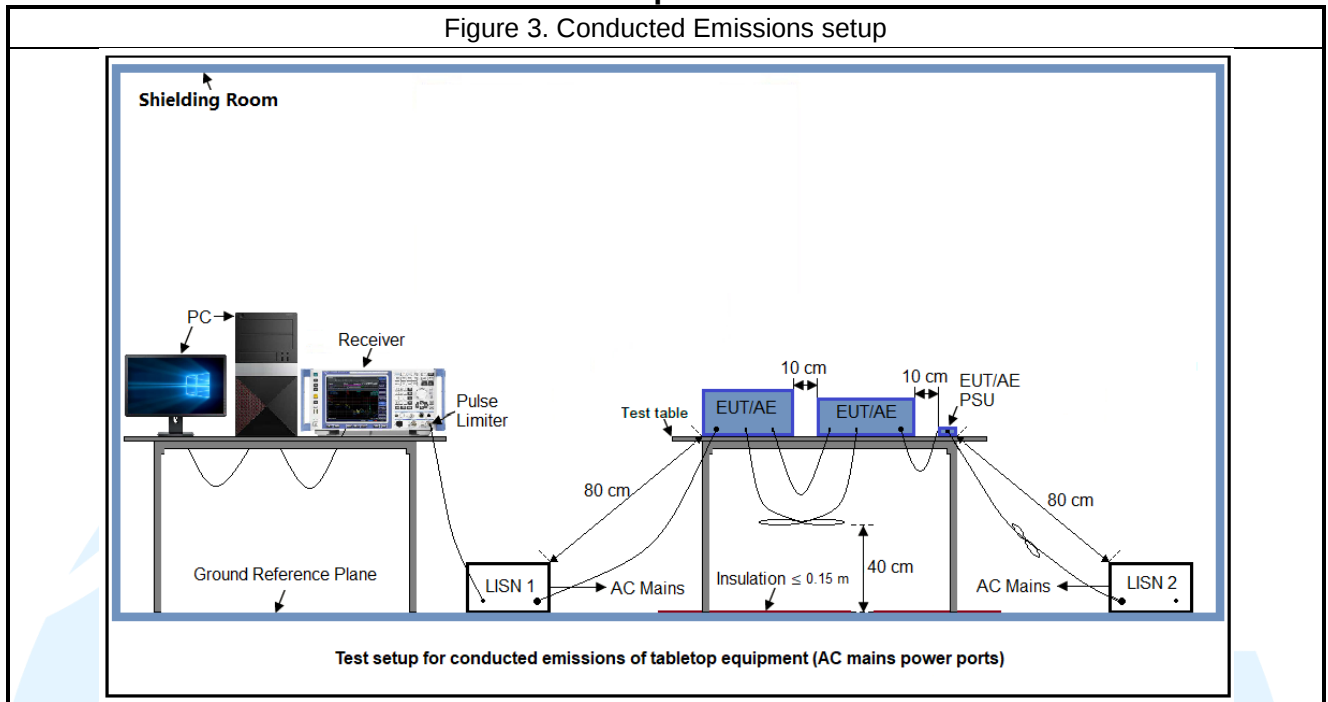


Figure 2. Above 1GHz



4.3.2 For Conducted Emissions test setup

Figure 3. Conducted Emissions setup



4.4 SYSTEM TEST CONFIGURATION

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.

5. REFERENCE DOCUMENTS FOR TESTING

No.	Identity	Document Title
1	FCC 47 CFR Part15 Subpart B	Unintentional Radiators
2	ICES-003 Issue 6	Information Technology Equipment (Including Digital Apparatus) —Limits and Methods of Measurement
3	ANSI C63.4-2014	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz
4	KDB 174176 D01 Line Conducted FAQ v01r01	AC power-line conducted emission frequency asked questions
5	KDB 896810 D02 SDoC FAQ v01r02	Supplier's Declaration of Conformity frequency asked questions

6. EMC REQUIREMENTS SPECIFICATION

6.1 RADIATED EMISSION

Test Requirement: FCC 47 CFR Part 15.109
ICES-003 Issue 6 Clause 6.2

Test Method: ANSI C63.4-2014

Receiver Setup:

Frequency: (f) (MHz)	Detector type	Measurement receiver bandwidth	
		RBW	VBW
$30 \leq f \leq 1\,000$	Quasi Peak	120 kHz	300 kHz
$f \geq 1000$	Peak	1 MHz	3 MHz
	Average	1 MHz	3 MHz

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.

Limits:

Limits for Class B devices

Frequency (MHz)	limits at 3m (dB μ V/m)		
	QP Detector	PK Detector	AV Detector
30-88	40.0	--	--
88-216	43.5	--	--
216-960	46.0	--	--
960 to 1000	54.0	--	--
Above 1000	--	74.0	54.0

Remark:

- The lower limit shall apply at the transition frequencies.
- Emission level (dB μ V/m) = 20 log Emission level (μ V/m).
- 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.

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Test Setup: Refer to section 4.3.1 for details.

Test Procedures:

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

- 1) The Product was placed on the non-conductive turntable 0.8 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.

2. Above 1GHz test procedure as below:

- 1) The Product was placed on the non-conductive turntable 0.8 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.

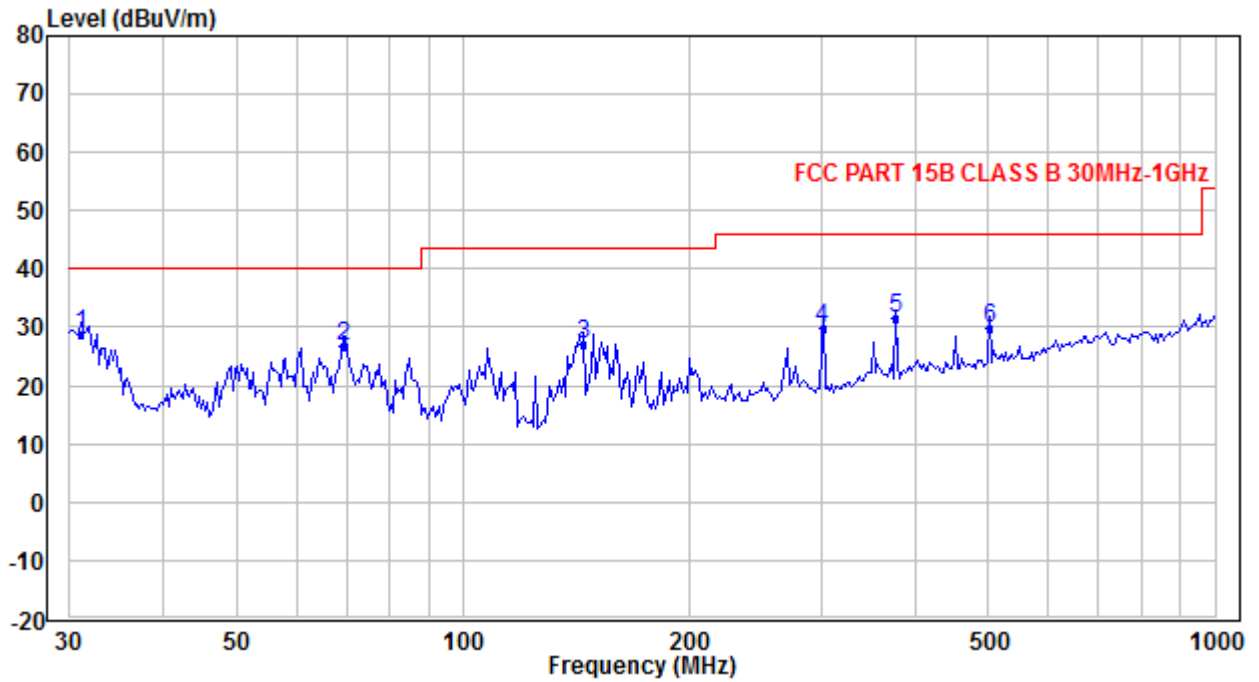
Test Result: Pass

The measurement data as follows:

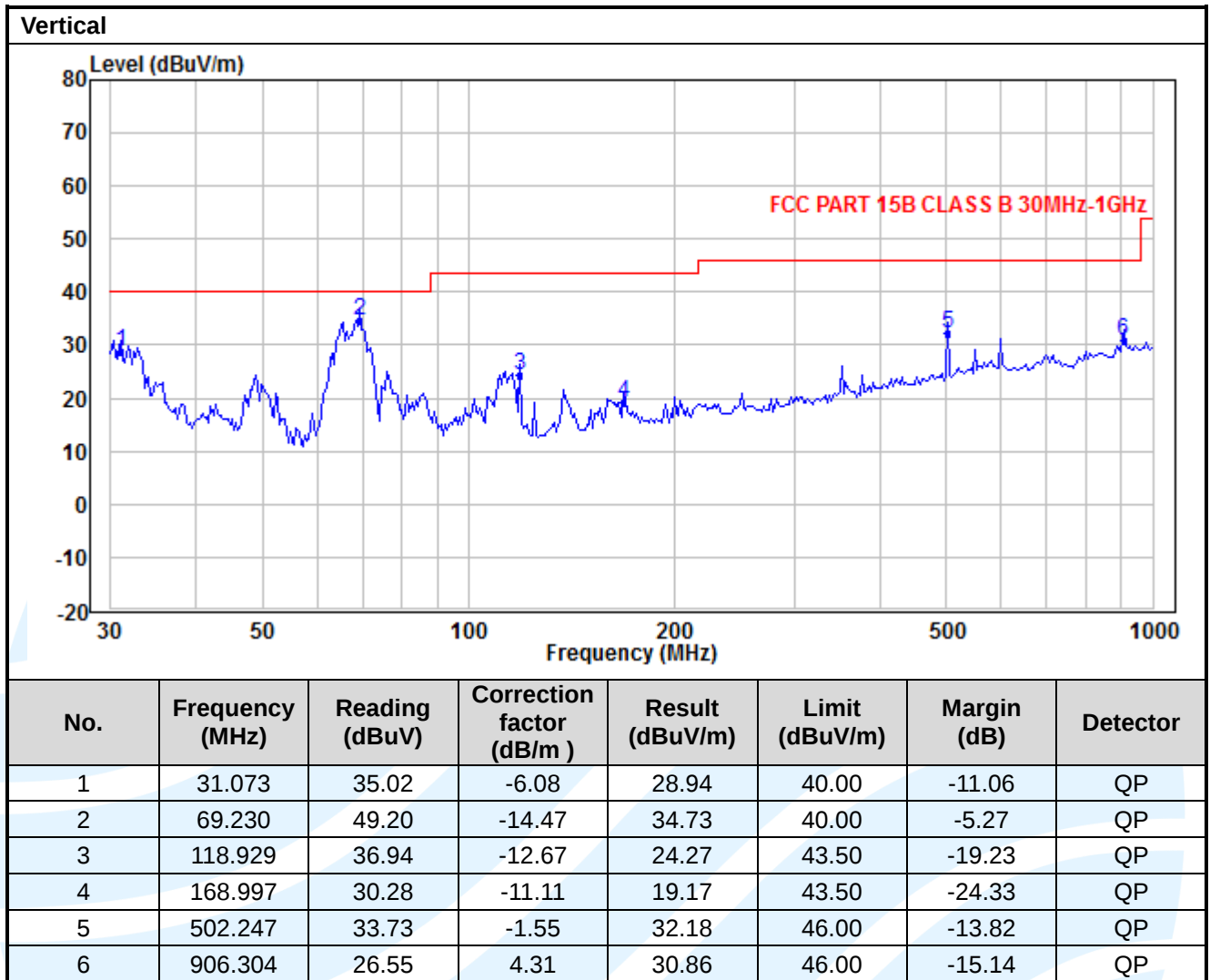
Below 1GHz(Quasi Peak):

TM4

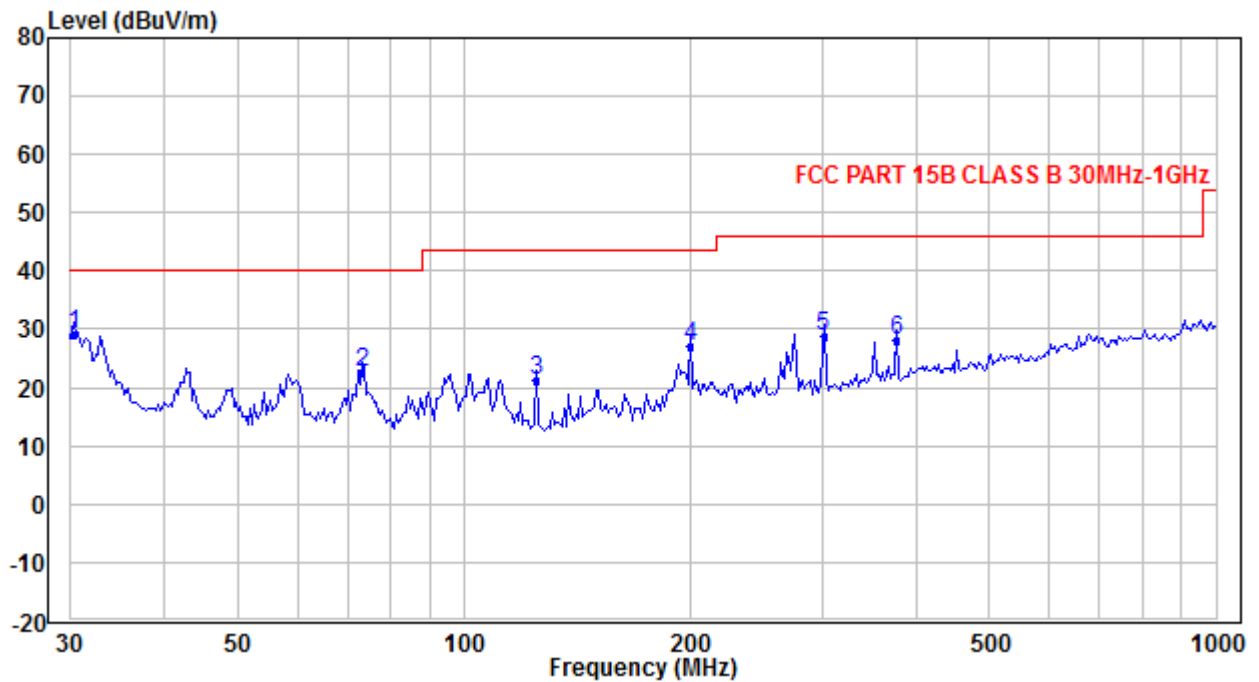
Horizontal



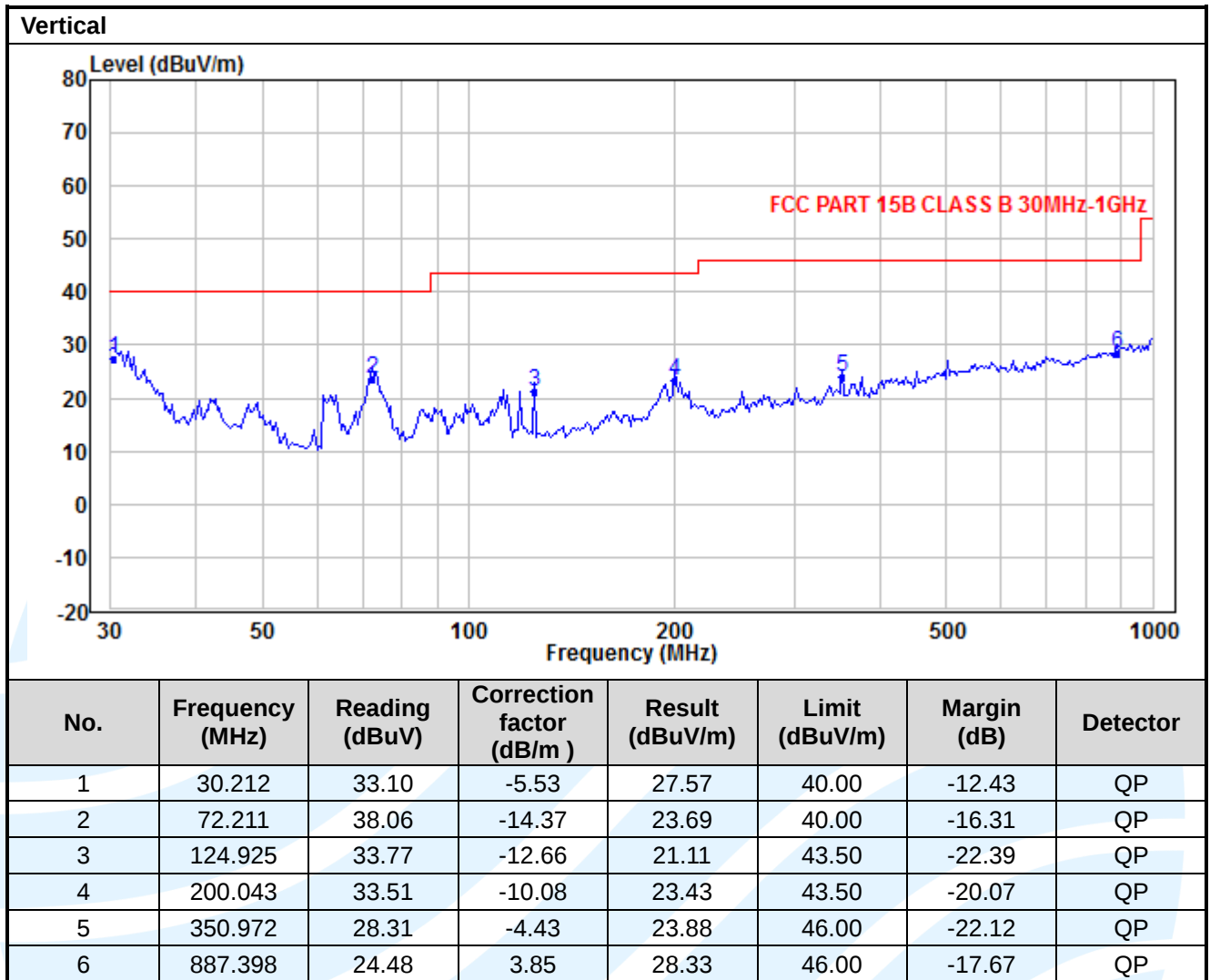
No.	Frequency (MHz)	Reading (dBuV)	Correction factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	31.073	35.07	-6.24	28.83	40.00	-11.17	QP
2	69.230	41.13	-14.51	26.62	40.00	-13.38	QP
3	144.790	39.11	-11.87	27.24	43.50	-16.26	QP
4	300.699	36.09	-6.21	29.88	46.00	-16.12	QP
5	376.523	36.12	-4.60	31.52	46.00	-14.48	QP
6	502.247	31.94	-2.08	29.86	46.00	-16.14	QP



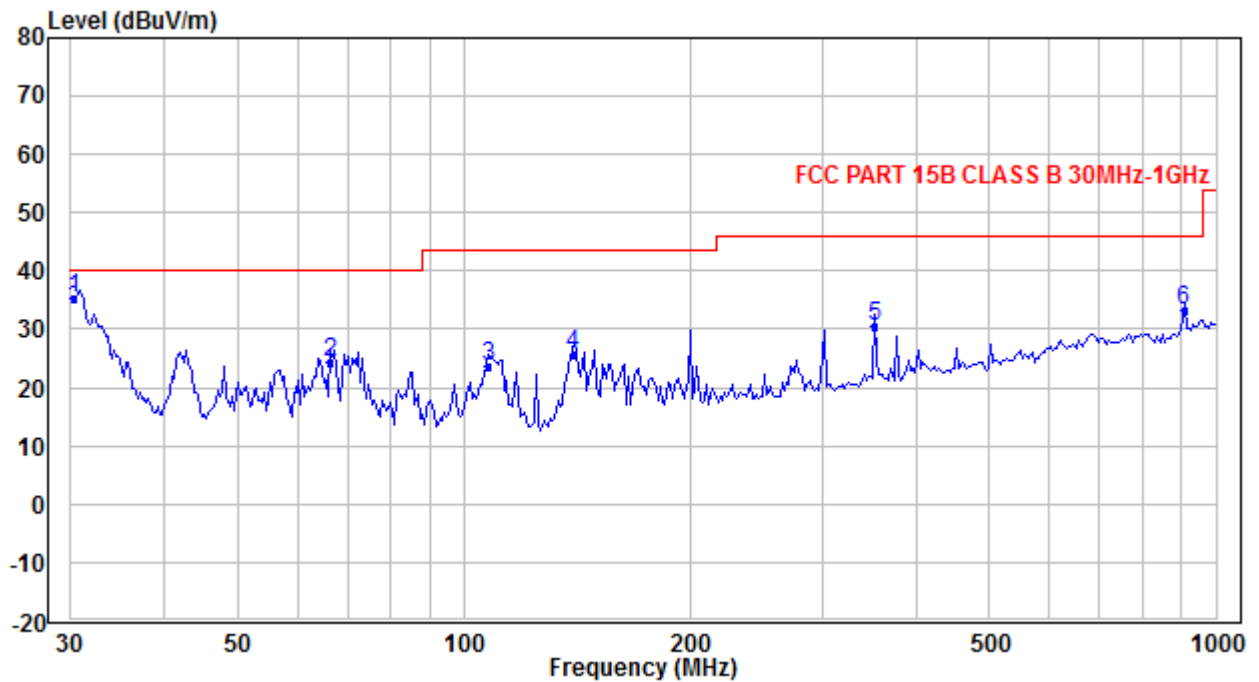
Below 1GHz(Quasi Peak):
TM6
Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correction factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	30.212	35.02	-5.80	29.22	40.00	-10.78	QP
2	73.233	36.83	-14.33	22.50	40.00	-17.50	QP
3	124.925	33.73	-12.66	21.07	43.50	-22.43	QP
4	200.043	37.11	-10.08	27.03	43.50	-16.47	QP
5	300.699	34.90	-6.21	28.69	46.00	-17.31	QP
6	376.523	32.56	-4.60	27.96	46.00	-18.04	QP



Below 1GHz(Quasi Peak):
TM7
Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correction factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	30.212	41.14	-5.80	35.34	40.00	-4.66	QP
2	66.371	39.10	-14.76	24.34	40.00	-15.66	QP
3	107.785	36.26	-12.45	23.81	43.50	-19.69	QP
4	139.791	38.09	-12.34	25.75	43.50	-17.75	QP
5	350.972	34.89	-4.43	30.46	46.00	-15.54	QP
6	906.304	28.50	4.68	33.18	46.00	-12.82	QP

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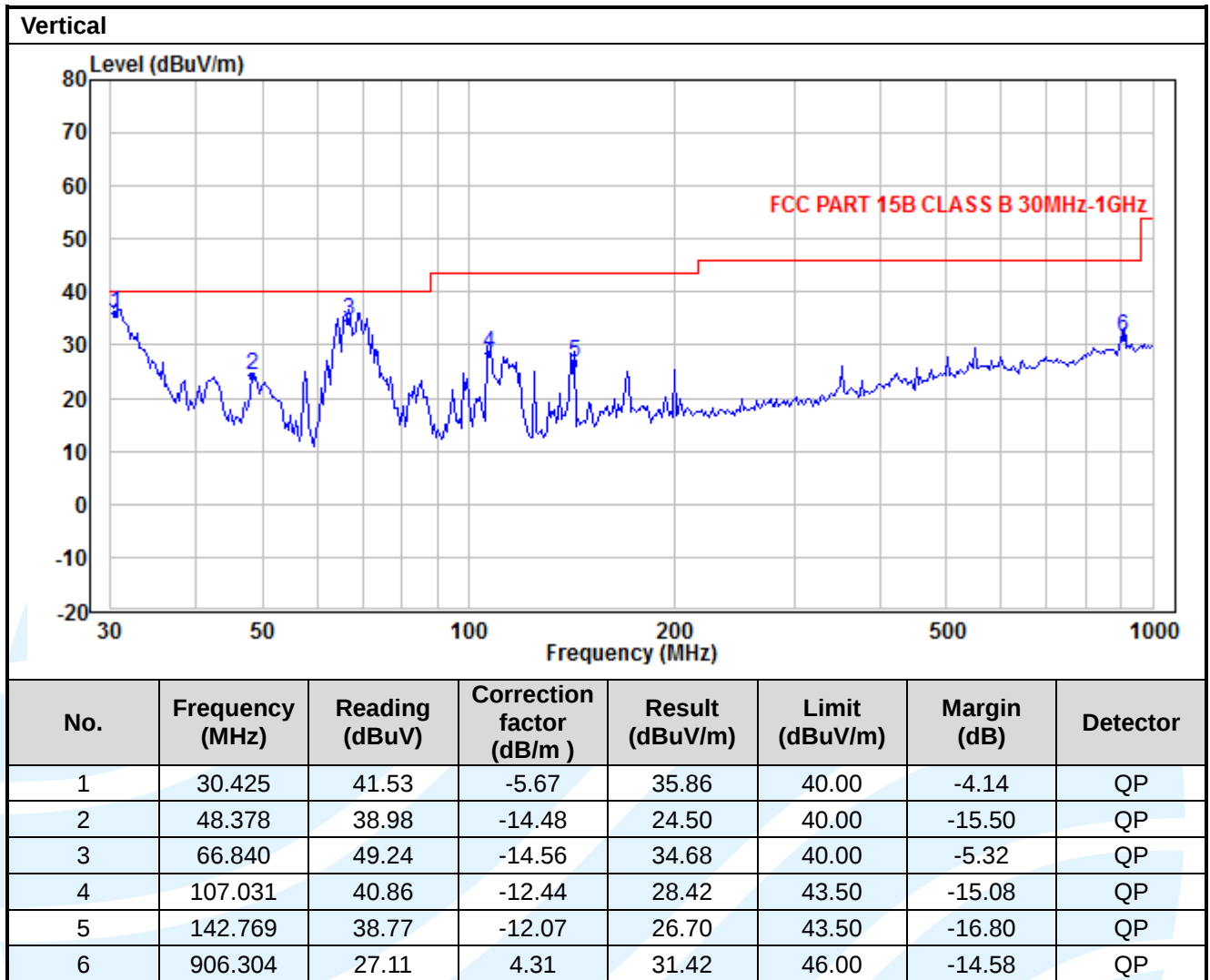
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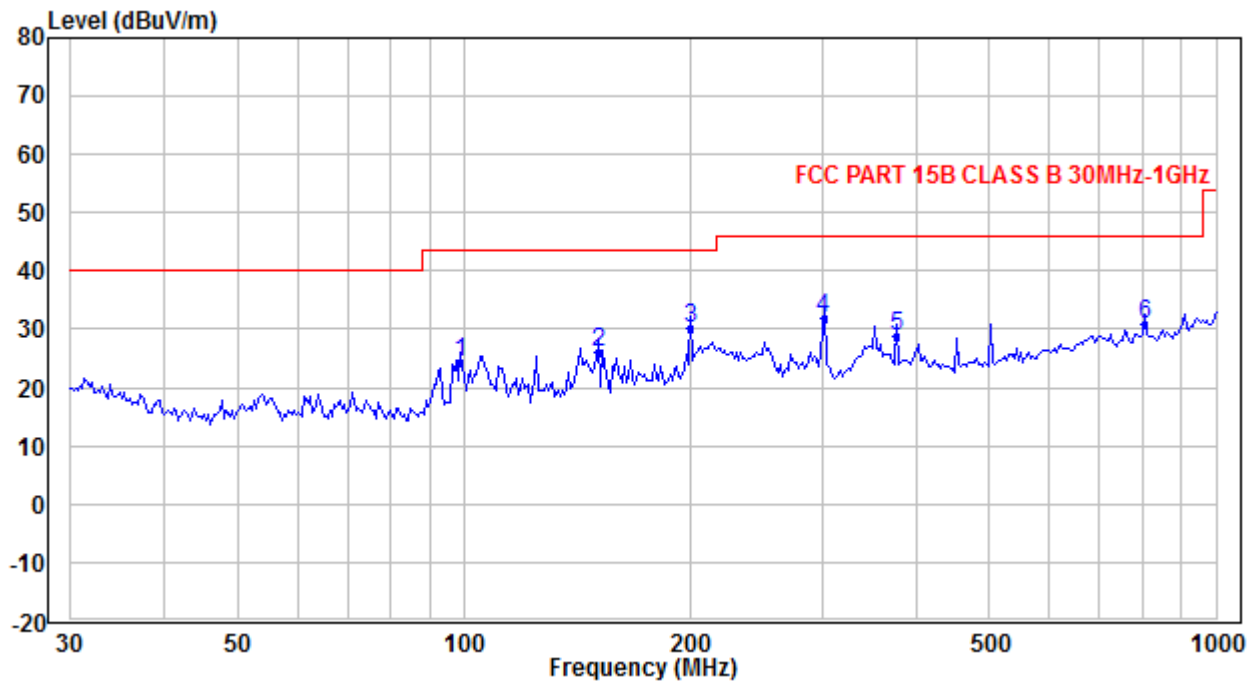
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Below 1GHz(Quasi Peak):
TM8
Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correction factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	99.069	36.66	-12.46	24.20	43.50	-19.30	QP
2	151.025	37.34	-11.26	26.08	43.50	-17.42	QP
3	200.043	40.25	-10.08	30.17	43.50	-13.33	QP
4	300.699	38.12	-6.21	31.91	46.00	-14.09	QP
5	376.523	33.56	-4.60	28.96	46.00	-17.04	QP
6	804.252	27.37	3.36	30.73	46.00	-15.27	QP

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Address: 16/F, Block A, Building 6, Baoneng Science and Technology Park, Qingxiang Road No.1, Longhua New District, Shenzhen, China

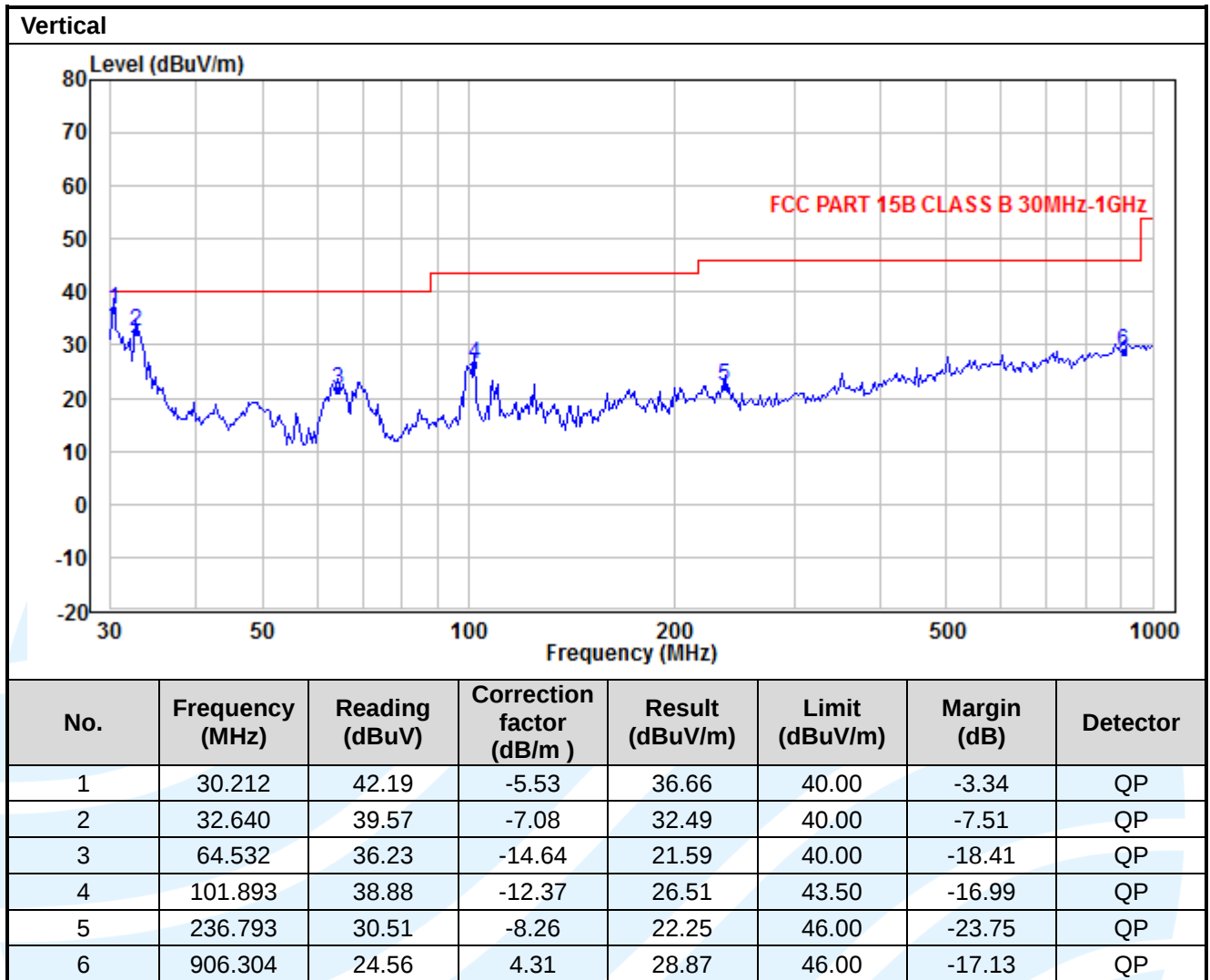
Tel: +86-755-28230888

Fax: +86-755-28230886

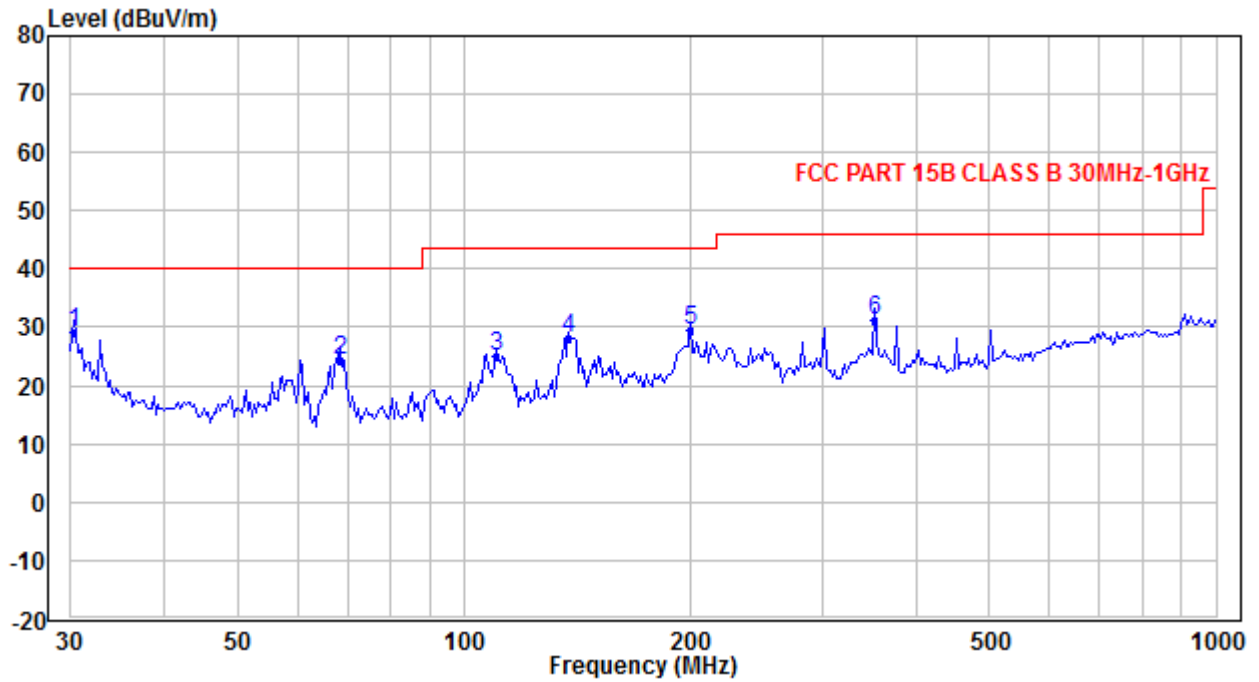
E-mail: info@uttlab.com

<http://www.uttlab.com>

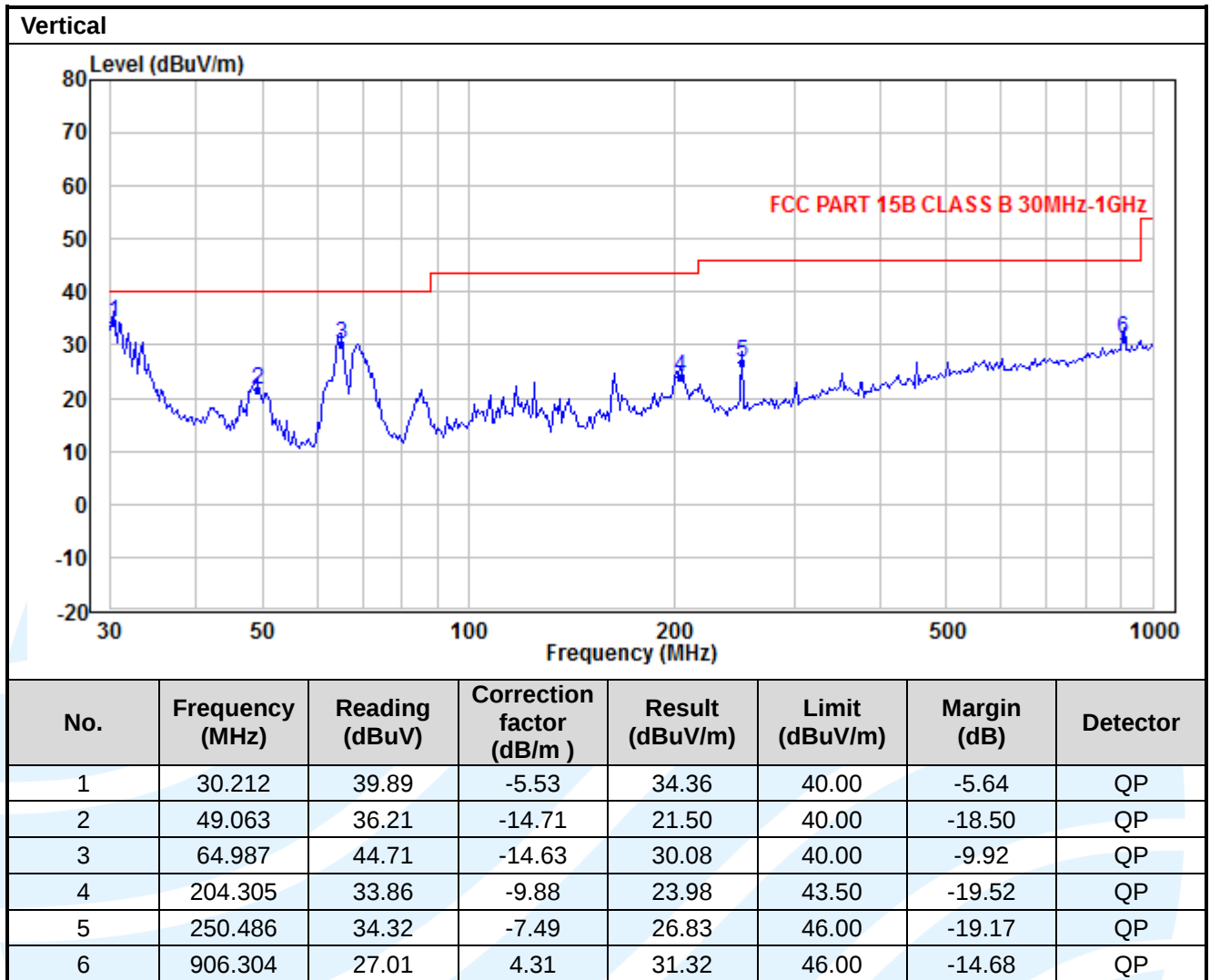
UTTR-EMC-ICES003-V1.0

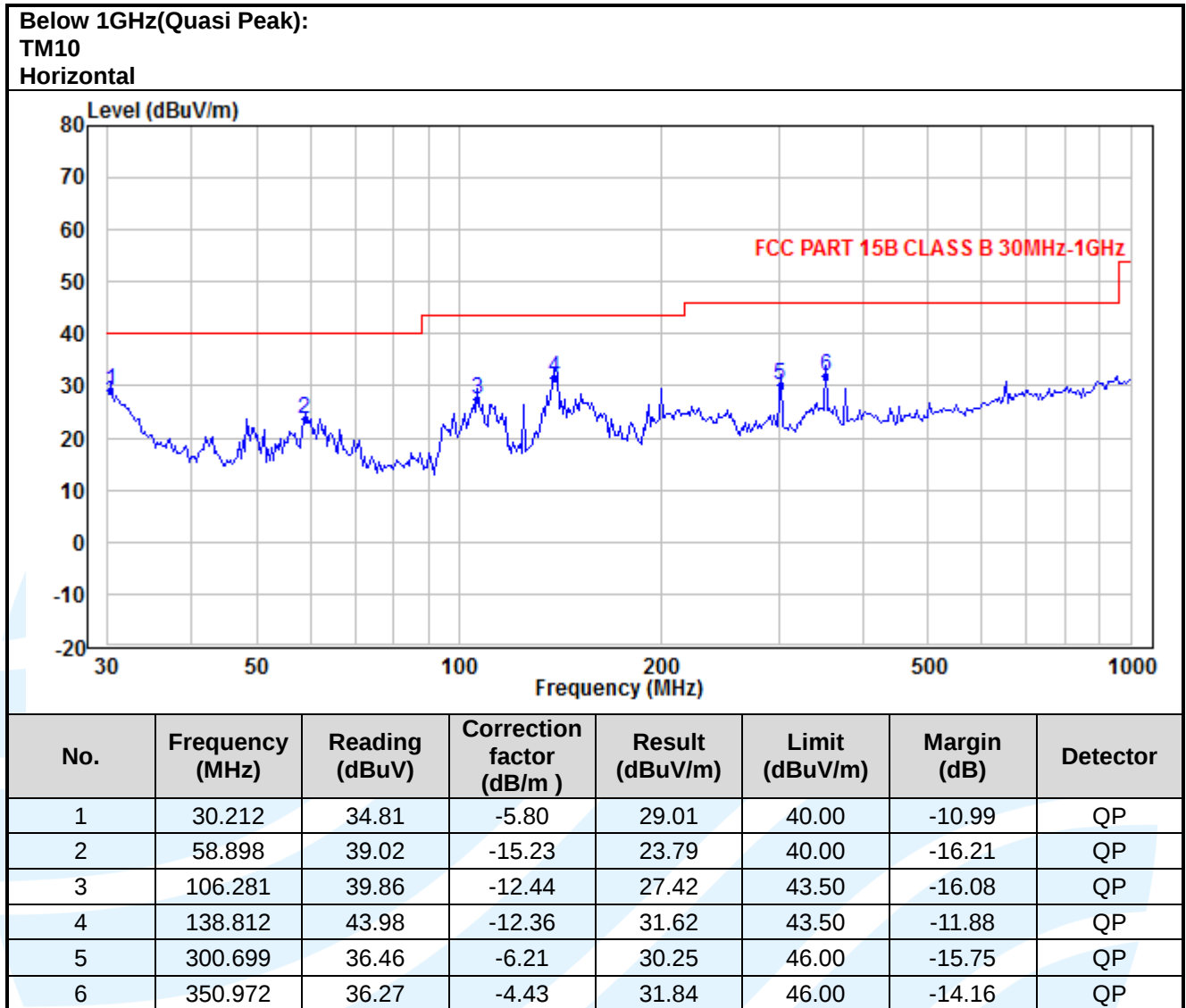


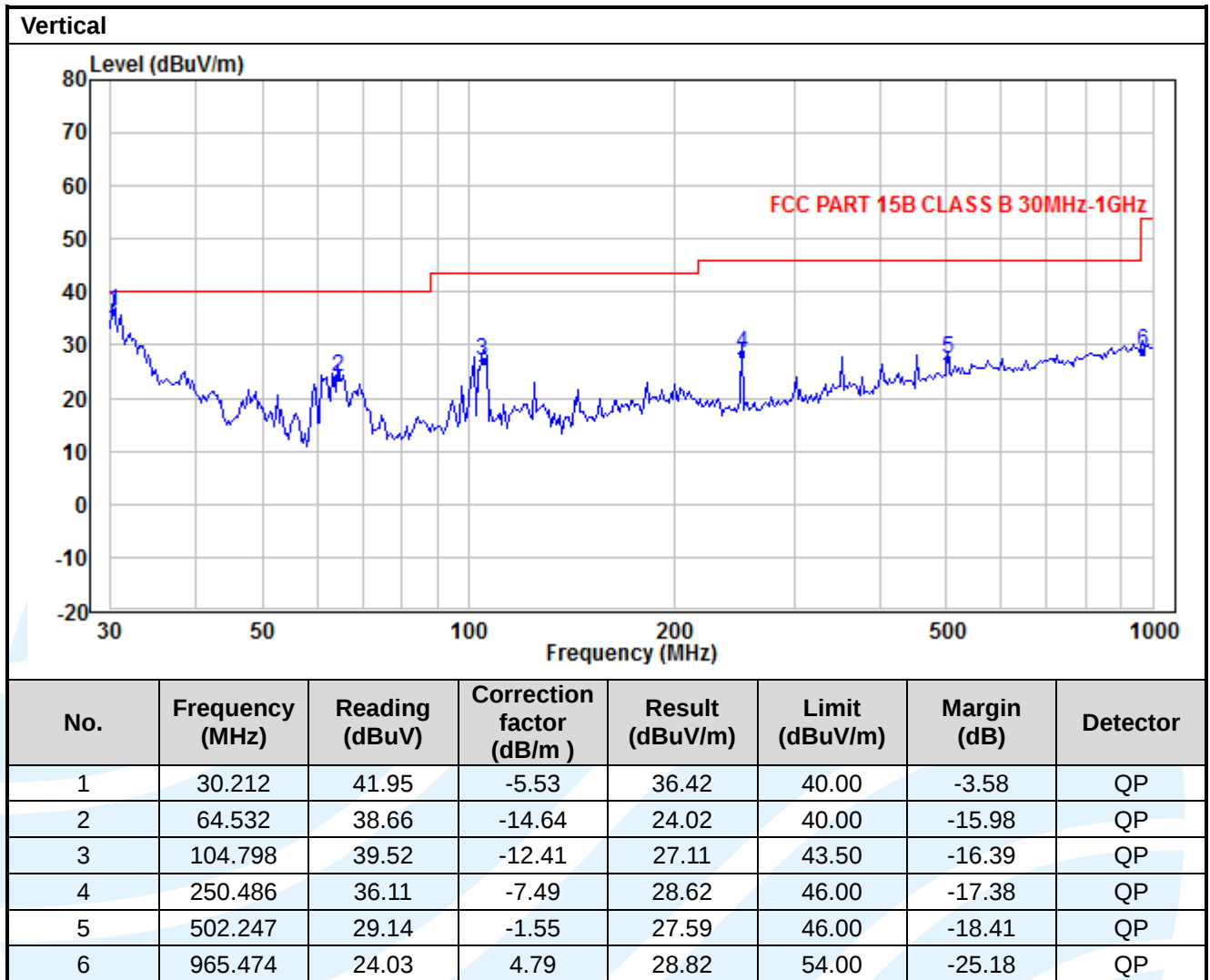
Below 1GHz(Quasi Peak):
TM9
Horizontal



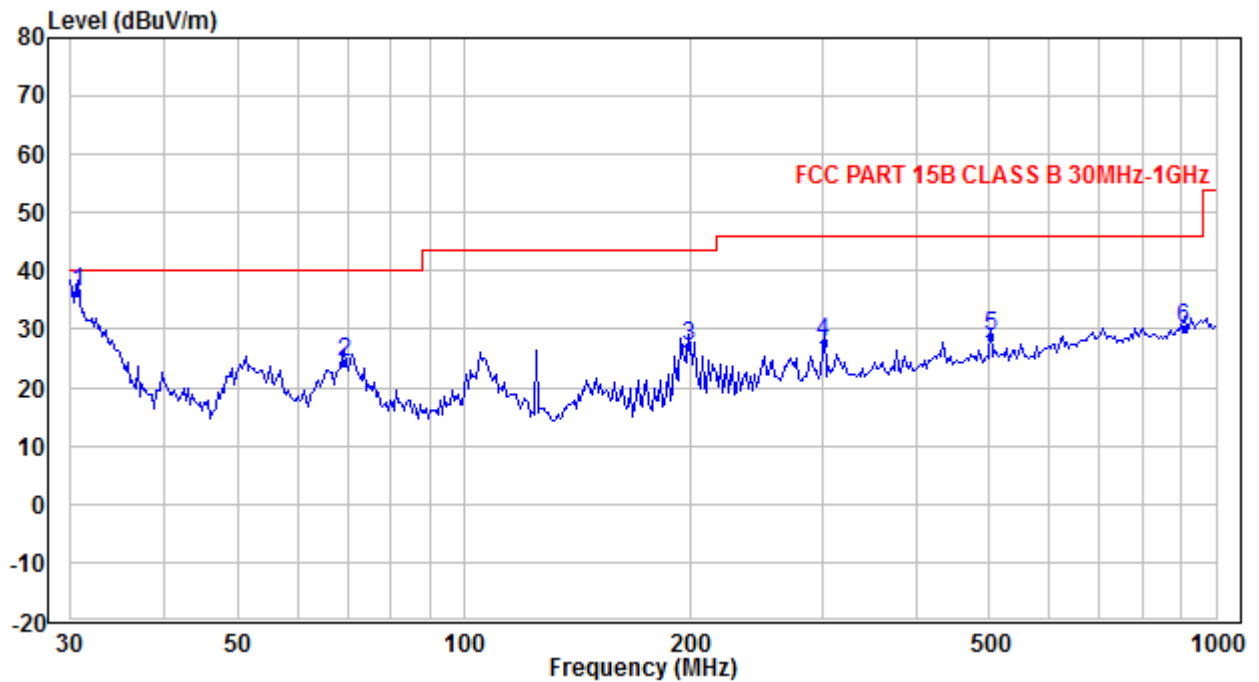
No.	Frequency (MHz)	Reading (dBuV)	Correction factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	30.212	34.89	-5.80	29.09	40.00	-10.91	QP
2	68.264	38.82	-14.60	24.22	40.00	-15.78	QP
3	110.082	37.50	-12.47	25.03	43.50	-18.47	QP
4	137.840	40.61	-12.40	28.21	43.50	-15.29	QP
5	200.043	39.62	-10.08	29.54	43.50	-13.96	QP
6	350.972	35.72	-4.43	31.29	46.00	-14.71	QP



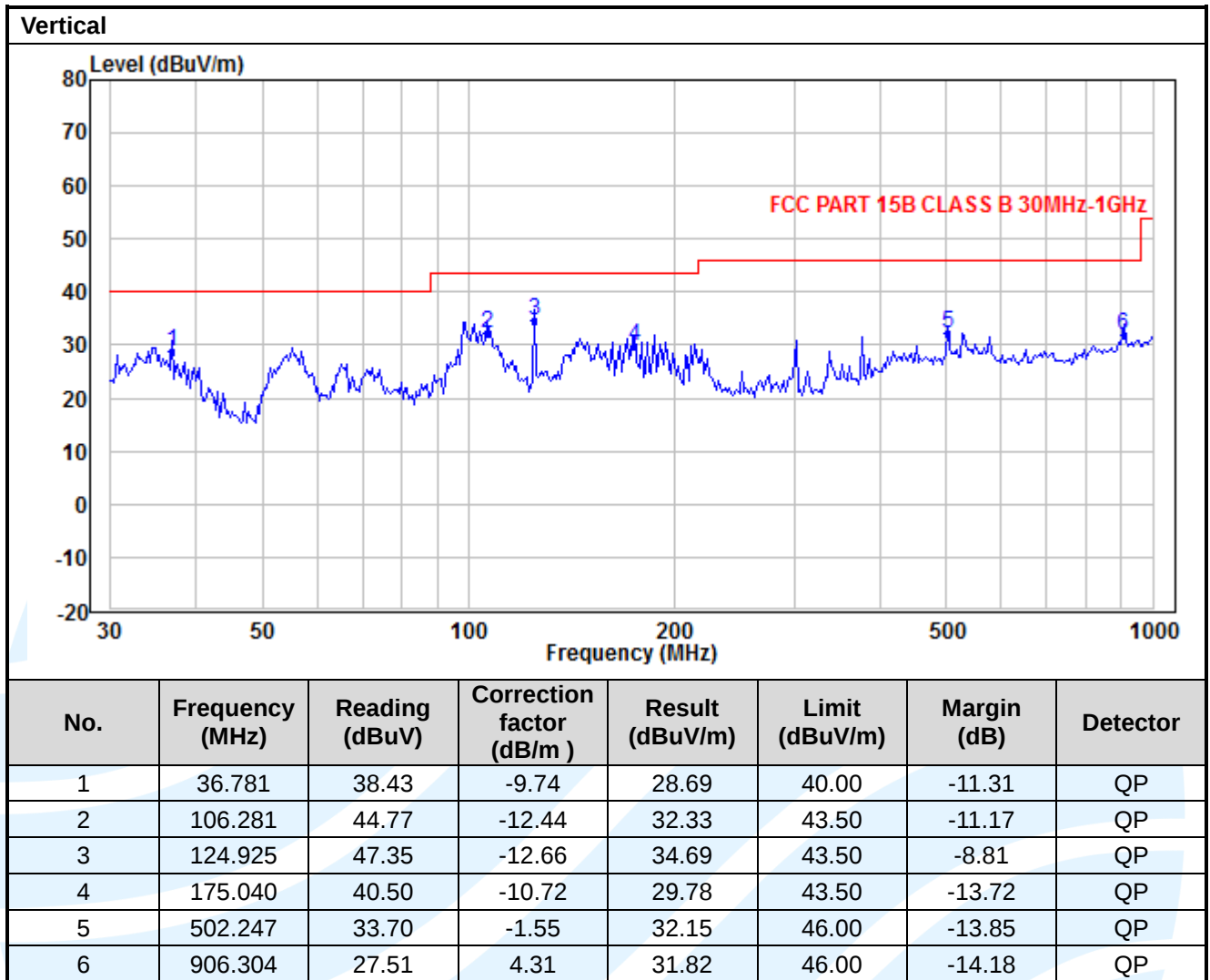




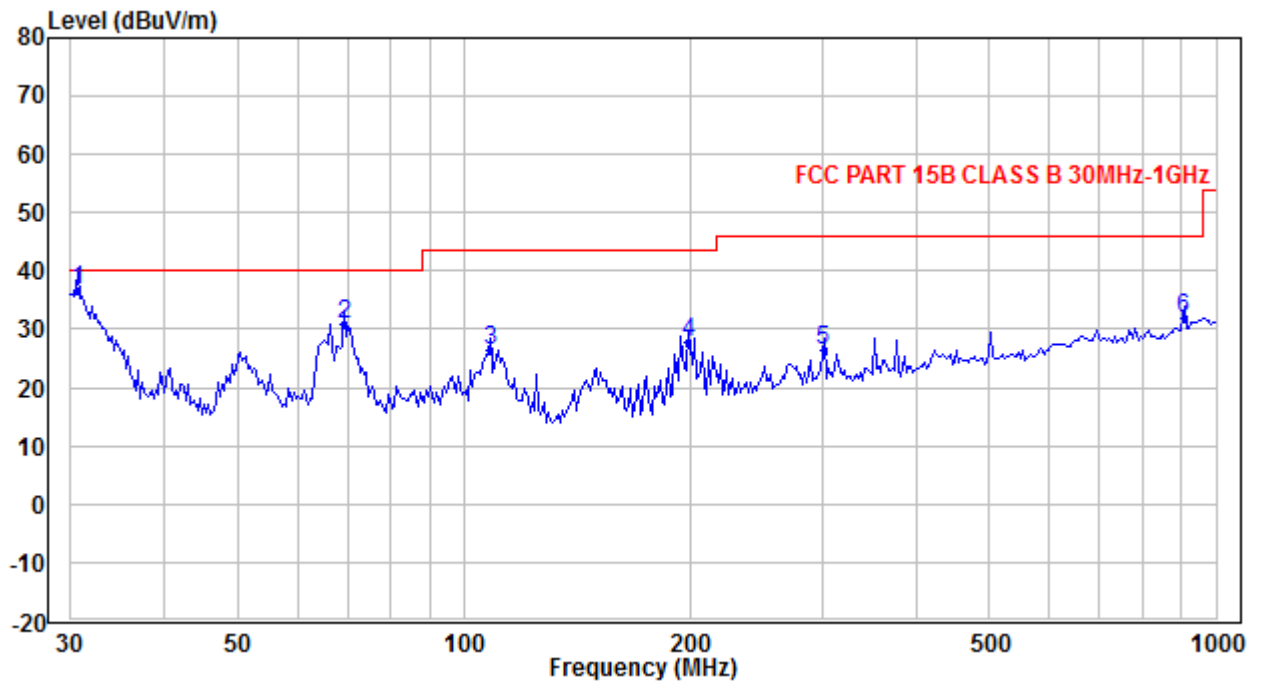
Below 1GHz(Quasi Peak):
TM11
Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correction factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	30.639	42.53	-6.02	36.51	40.00	-3.49	QP
2	69.230	38.89	-14.51	24.38	40.00	-15.62	QP
3	198.642	37.34	-10.13	27.21	43.50	-16.29	QP
4	300.699	33.93	-6.21	27.72	46.00	-18.28	QP
5	502.247	31.04	-2.08	28.96	46.00	-17.04	QP
6	906.304	25.65	4.68	30.33	46.00	-15.67	QP



Below 1GHz(Quasi Peak):
TM16
Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correction factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	30.639	42.66	-6.02	36.64	40.00	-3.36	QP
2	69.230	45.51	-14.51	31.00	40.00	-9.00	QP
3	108.546	38.90	-12.46	26.44	43.50	-17.06	QP
4	198.642	38.07	-10.13	27.94	43.50	-15.56	QP
5	300.699	32.74	-6.21	26.53	46.00	-19.47	QP
6	906.304	27.33	4.68	32.01	46.00	-13.99	QP

Shenzhen UnionTrust Quality and Technology Co., Ltd.

Address: 16/F, Block A, Building 6, Baoneng Science and Technology Park, Qingxiang Road No.1, Longhua New District, Shenzhen, China

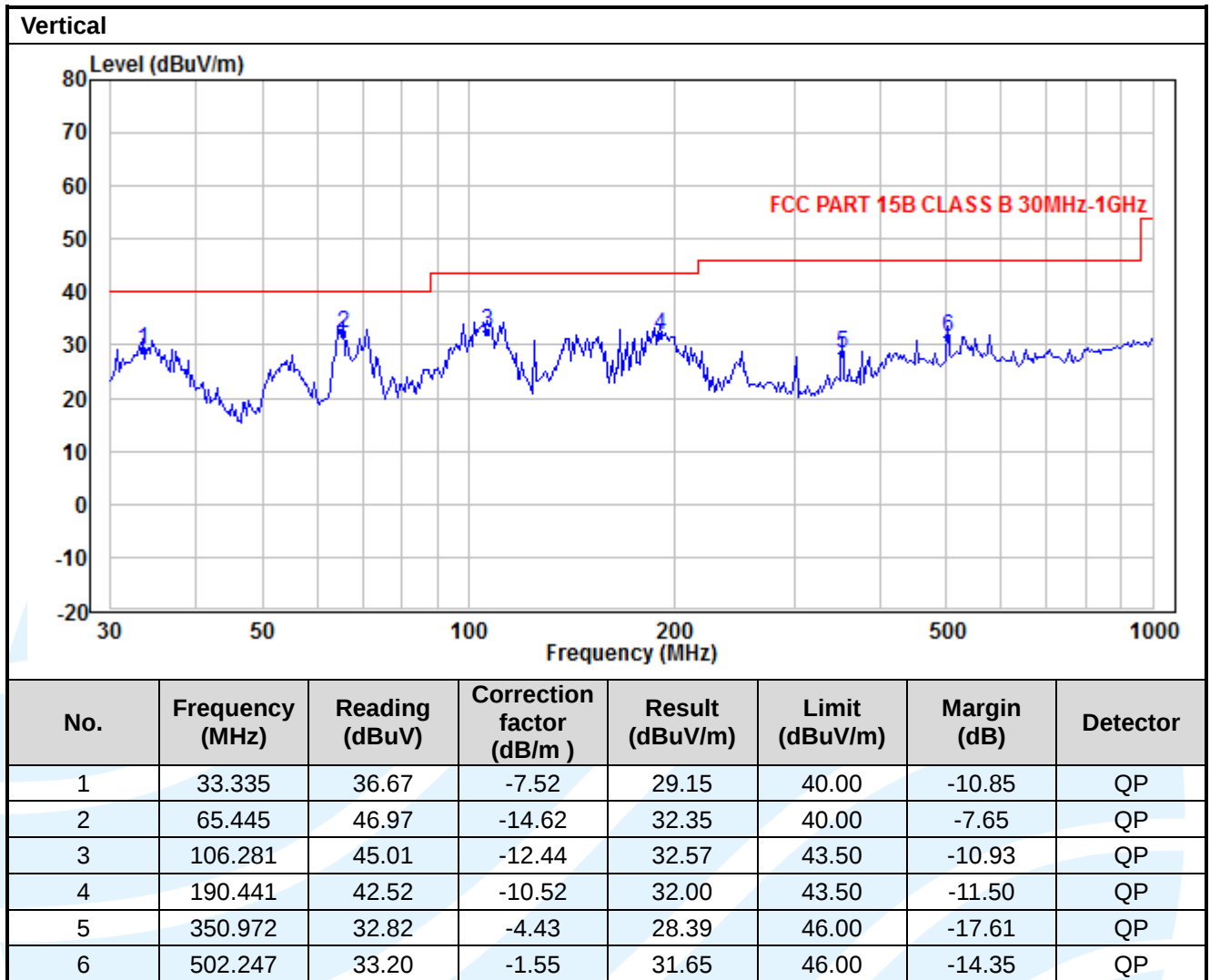
Tel: +86-755-28230888

Fax: +86-755-28230886

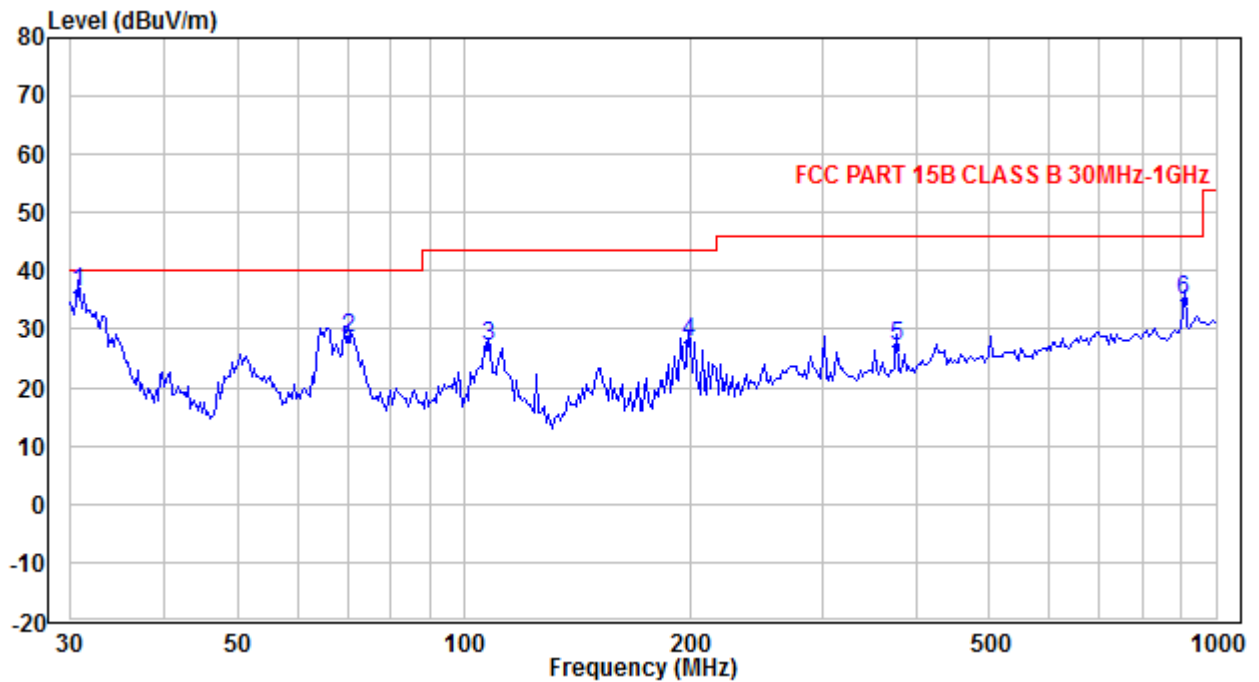
E-mail: info@uttlab.com

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Below 1GHz(Quasi Peak):
TM17
Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correction factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	30.639	42.54	-6.02	36.52	40.00	-3.48	QP
2	70.210	42.98	-14.43	28.55	40.00	-11.45	QP
3	107.785	39.63	-12.45	27.18	43.50	-16.32	QP
4	198.642	37.91	-10.13	27.78	43.50	-15.72	QP
5	376.523	31.78	-4.60	27.18	46.00	-18.82	QP
6	906.304	30.17	4.68	34.85	46.00	-11.15	QP

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Address: 16/F, Block A, Building 6, Baoneng Science and Technology Park, Qingxiang Road No.1, Longhua New District, Shenzhen, China

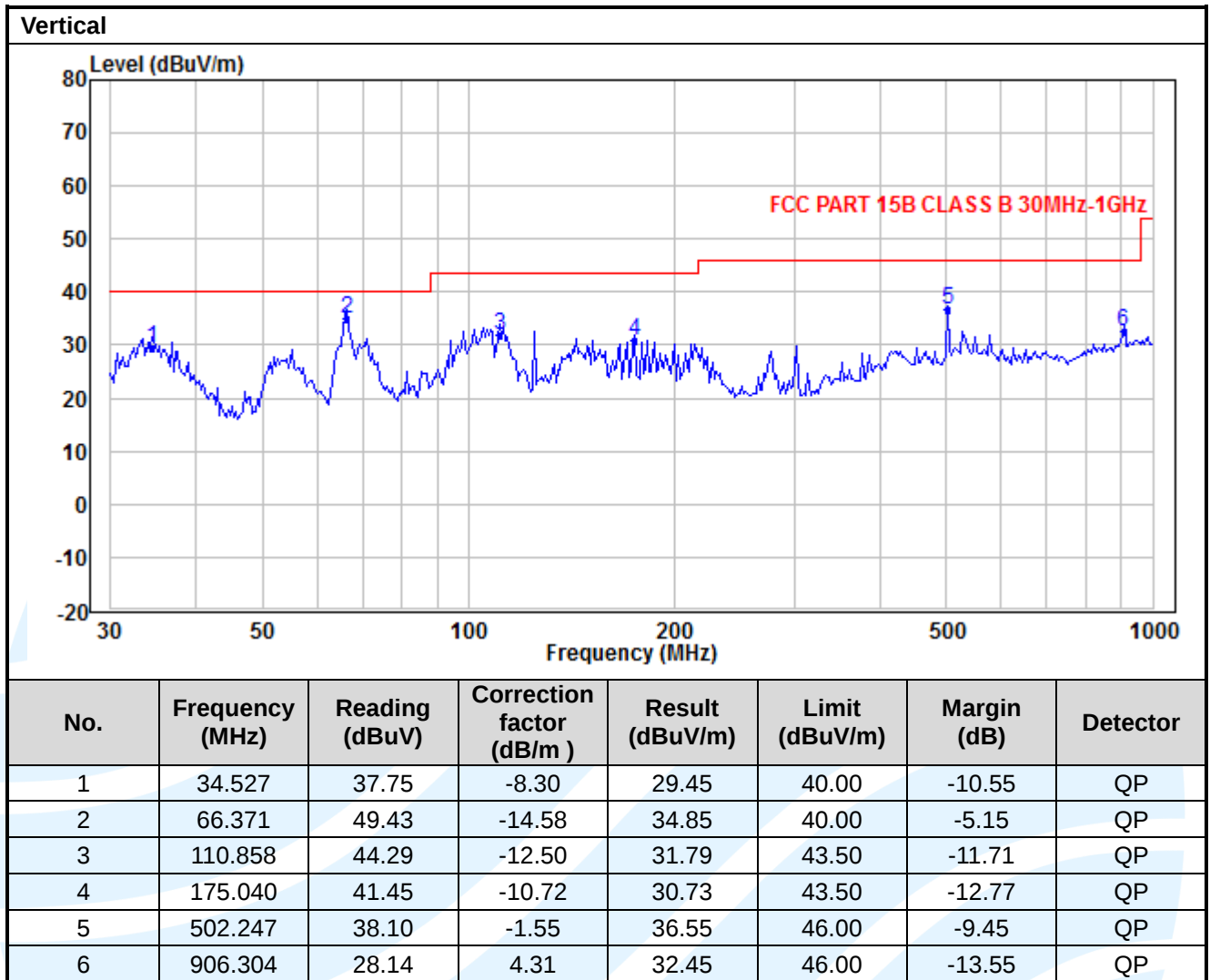
Tel: +86-755-28230888

Fax: +86-755-28230886

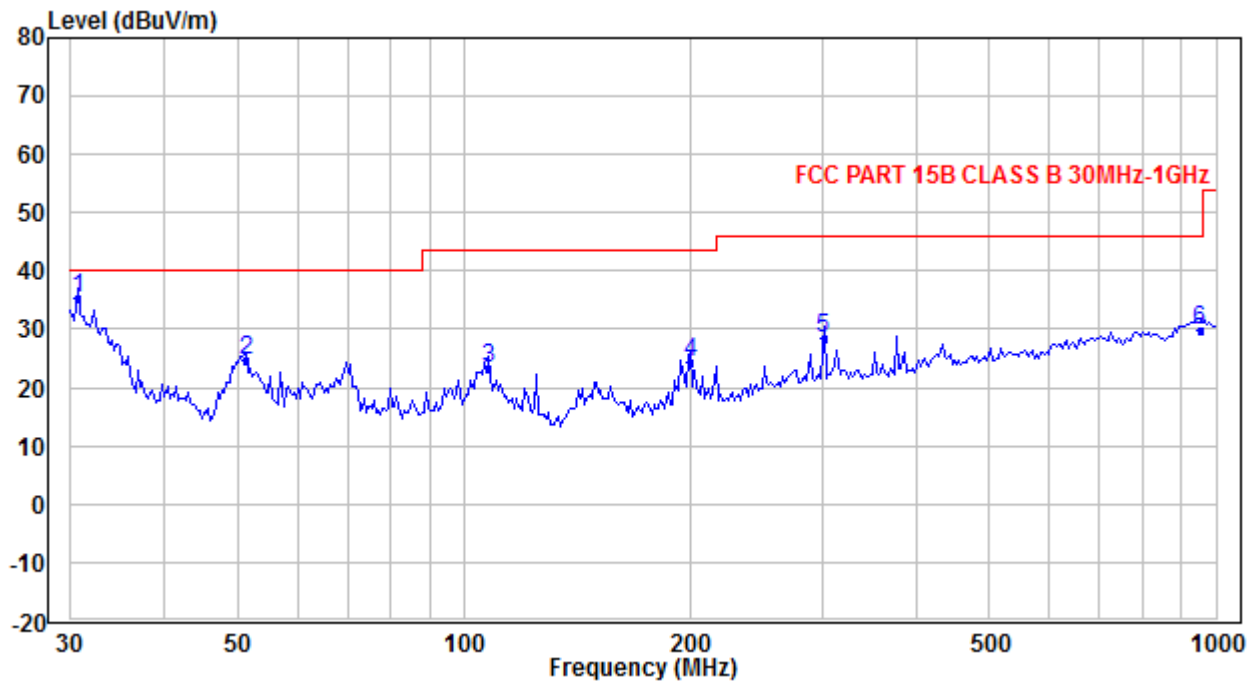
E-mail: info@uttlab.com

<http://www.uttlab.com>

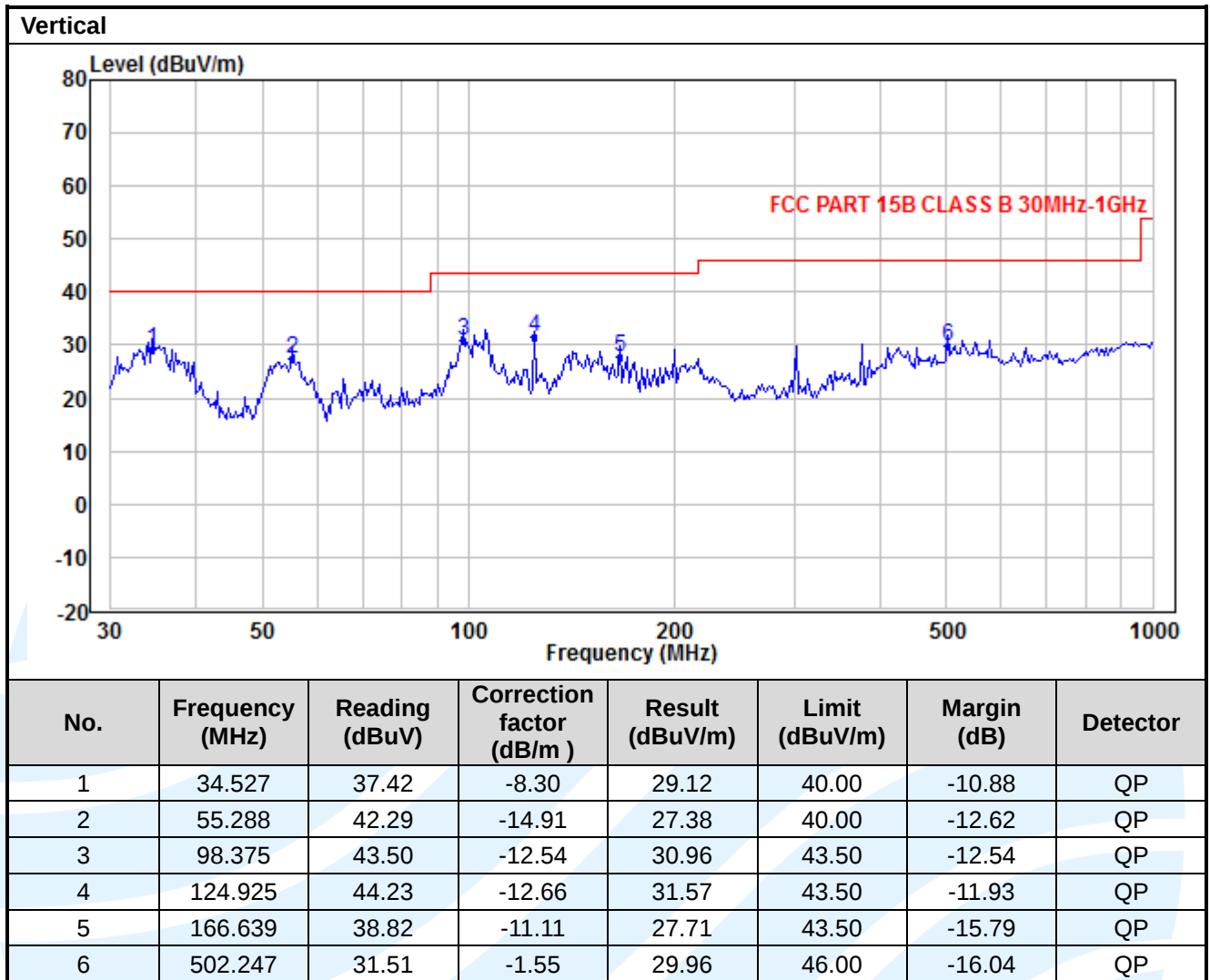
UTTR-EMC-ICES003-V1.0



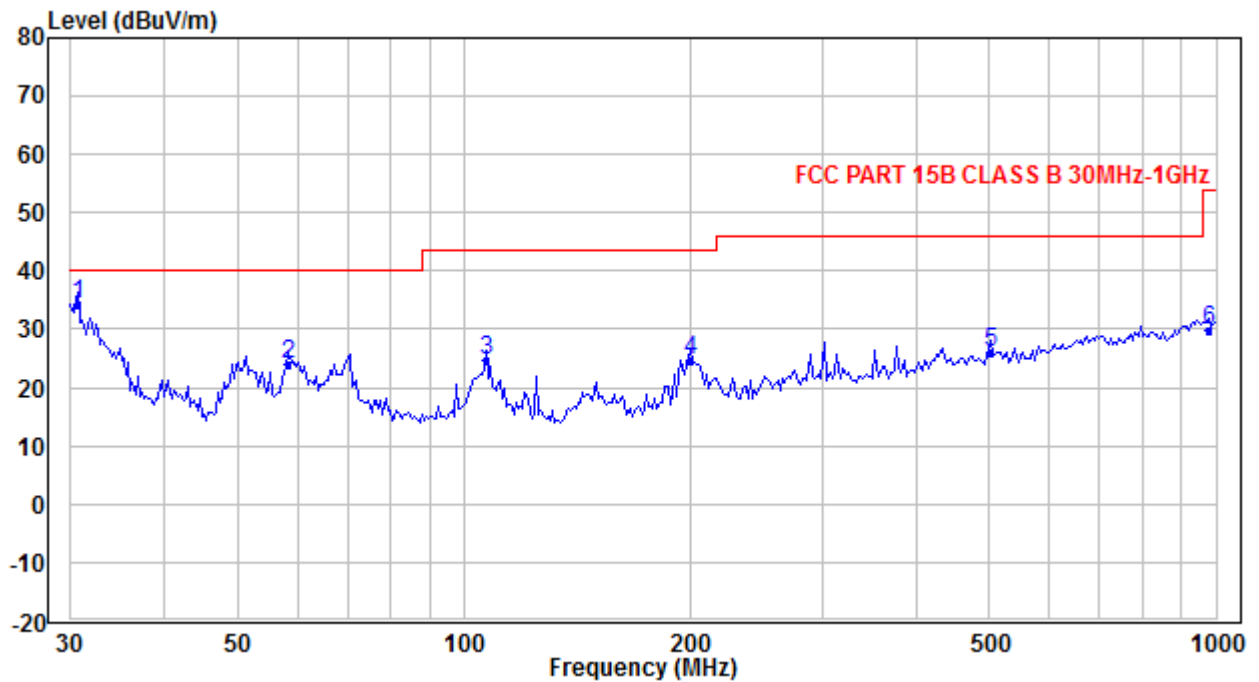
Below 1GHz(Quasi Peak):
TM18
Horizontal



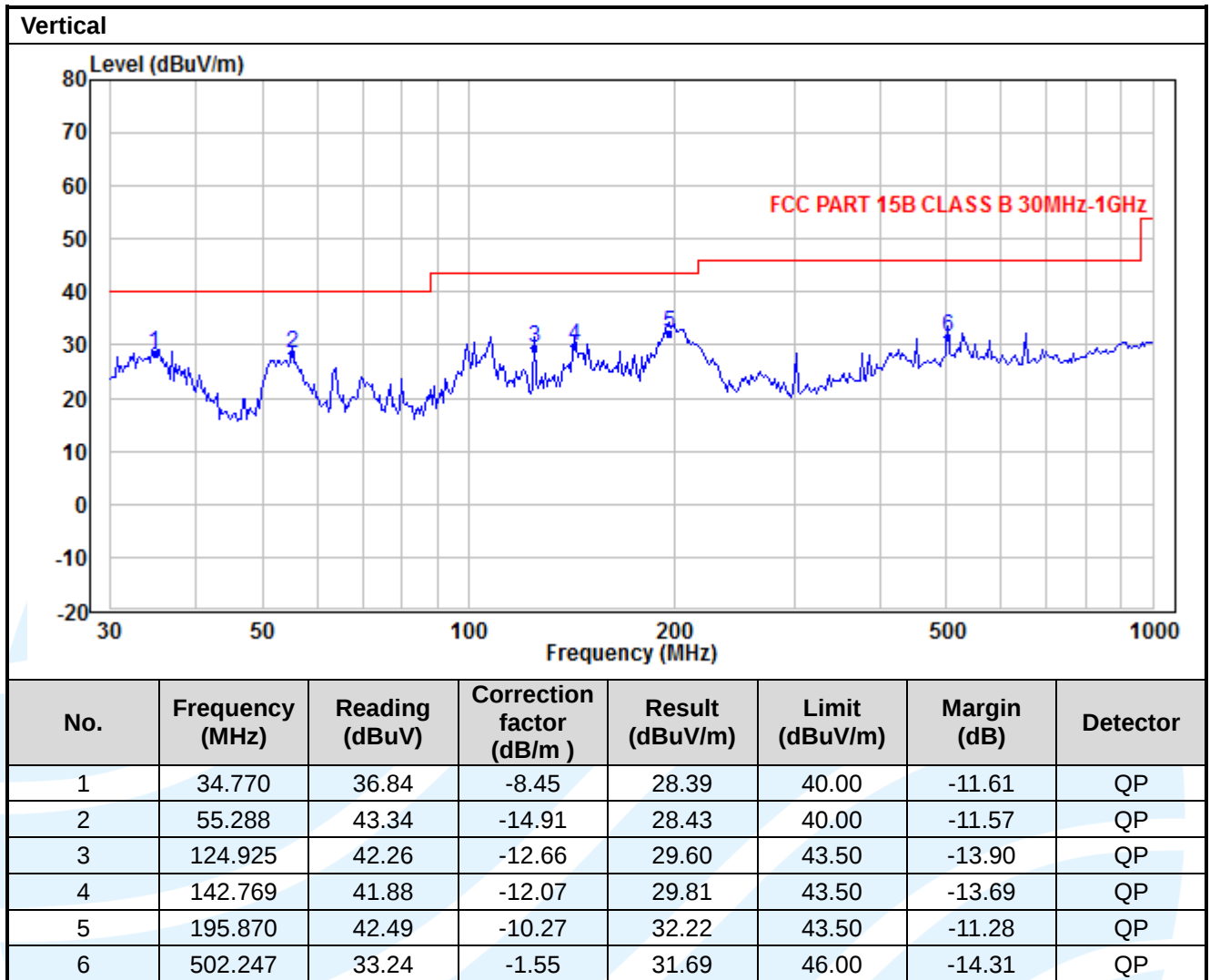
No.	Frequency (MHz)	Reading (dBuV)	Correction factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	30.639	41.21	-6.02	35.19	40.00	-4.81	QP
2	51.176	39.38	-14.69	24.69	40.00	-15.31	QP
3	107.785	35.84	-12.45	23.39	43.50	-20.11	QP
4	200.043	34.36	-10.08	24.28	43.50	-19.22	QP
5	300.699	34.62	-6.21	28.41	46.00	-17.59	QP
6	952.000	23.74	6.14	29.88	46.00	-16.12	QP

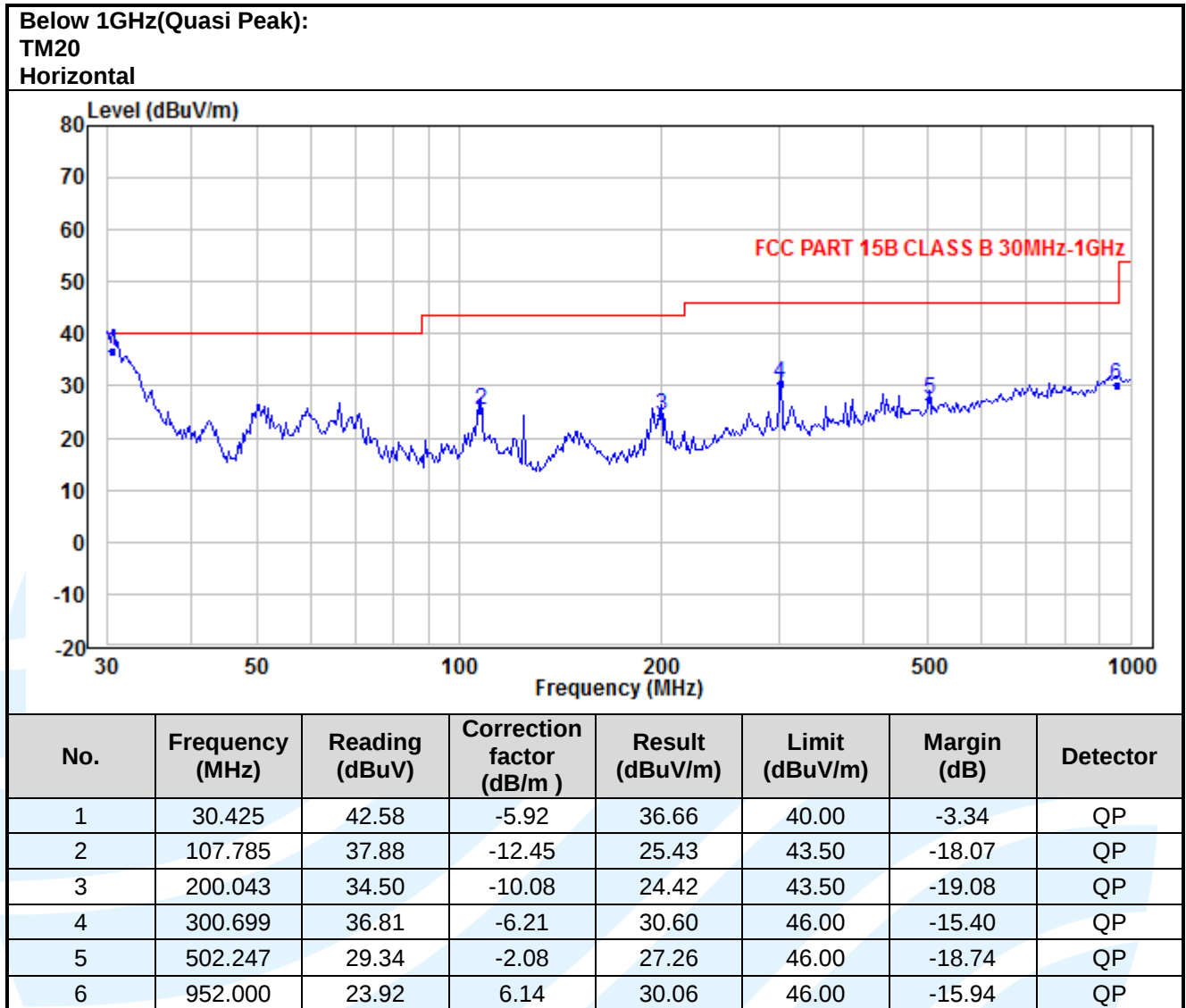


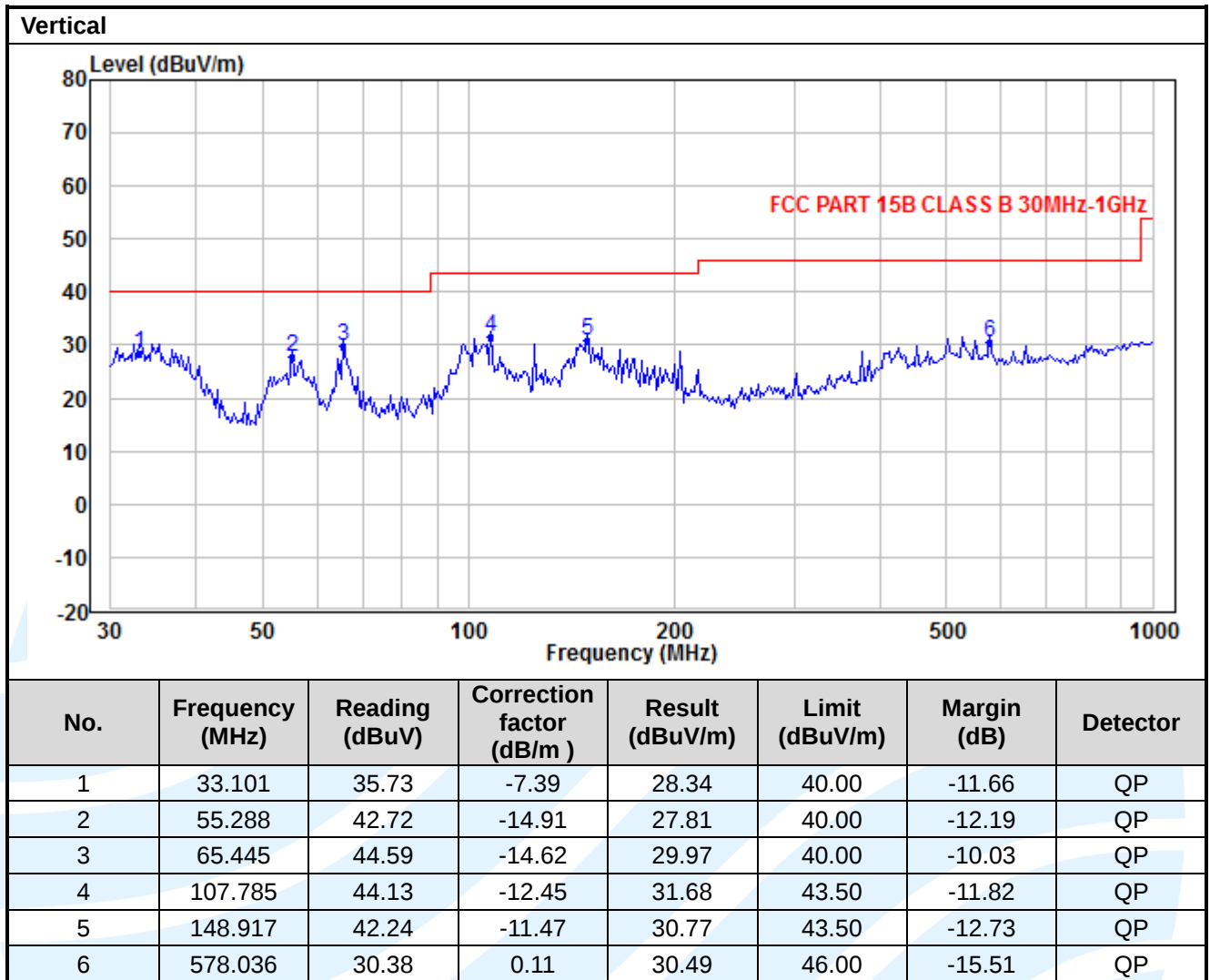
Below 1GHz(Quasi Peak):
TM19
Horizontal

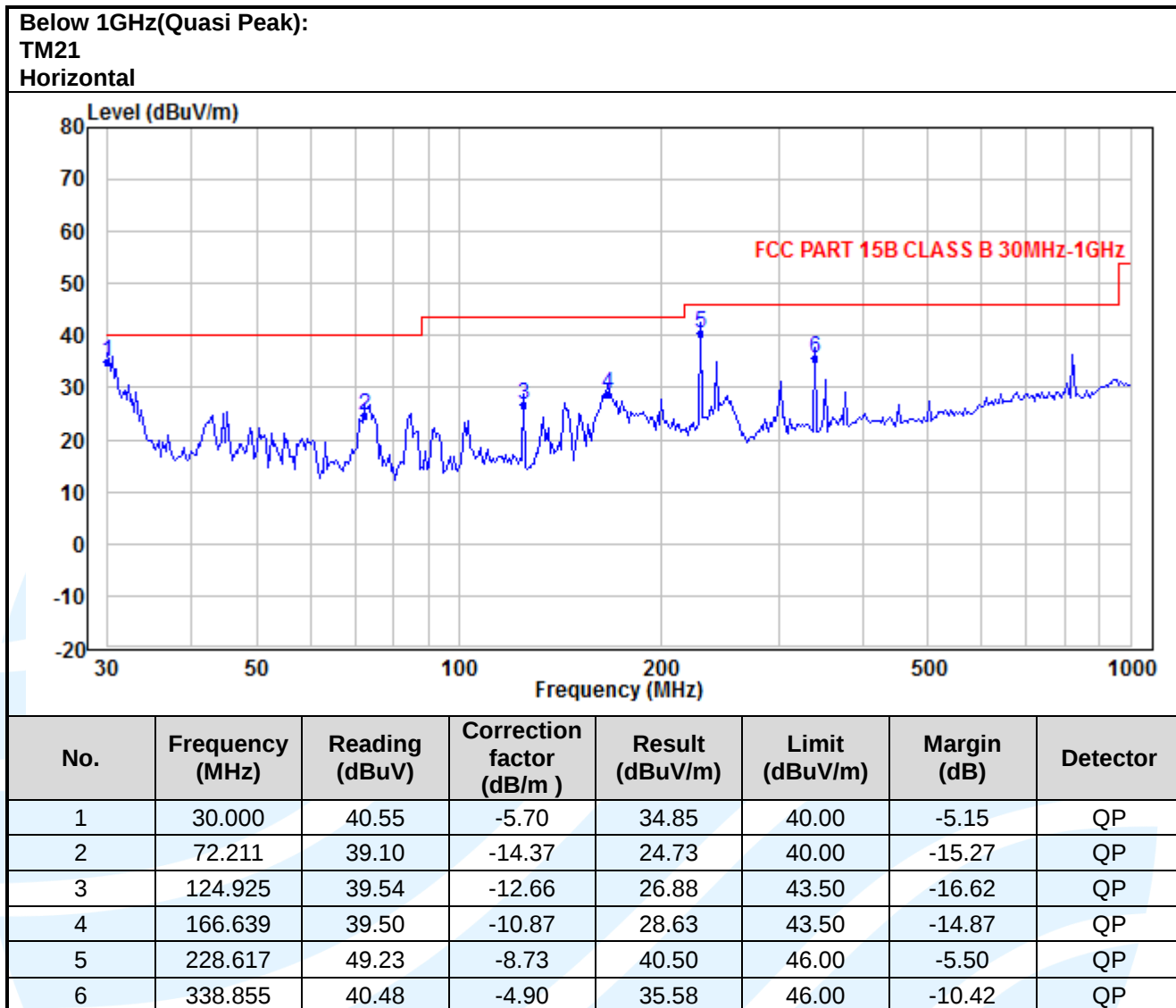


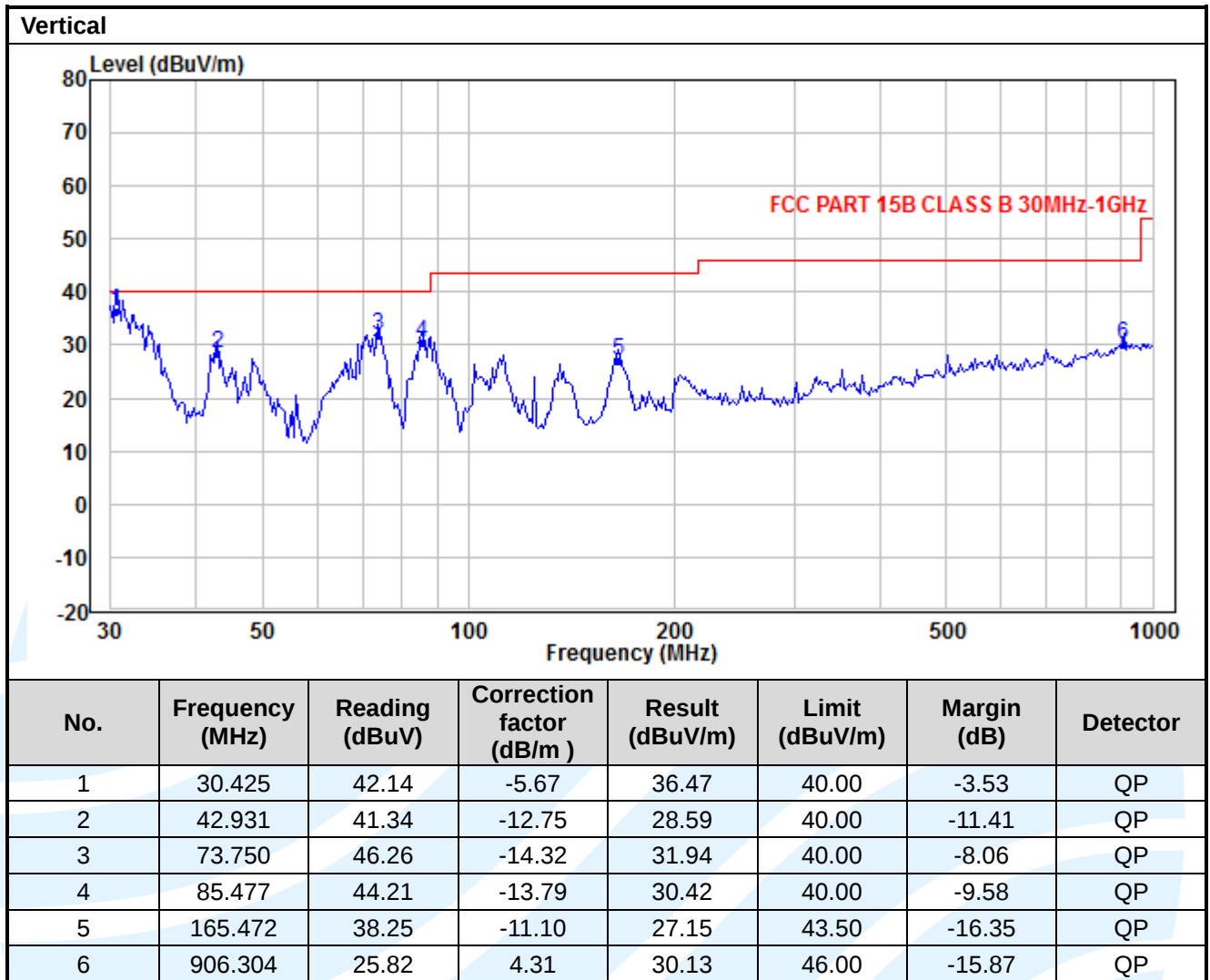
No.	Frequency (MHz)	Reading (dBuV)	Correction factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	30.639	40.28	-6.02	34.26	40.00	-5.74	QP
2	58.485	39.11	-15.20	23.91	40.00	-16.09	QP
3	107.031	36.98	-12.44	24.54	43.50	-18.96	QP
4	200.043	34.70	-10.08	24.62	43.50	-18.88	QP
5	502.247	28.24	-2.08	26.16	46.00	-19.84	QP
6	979.139	24.03	5.80	29.83	54.00	-24.17	QP

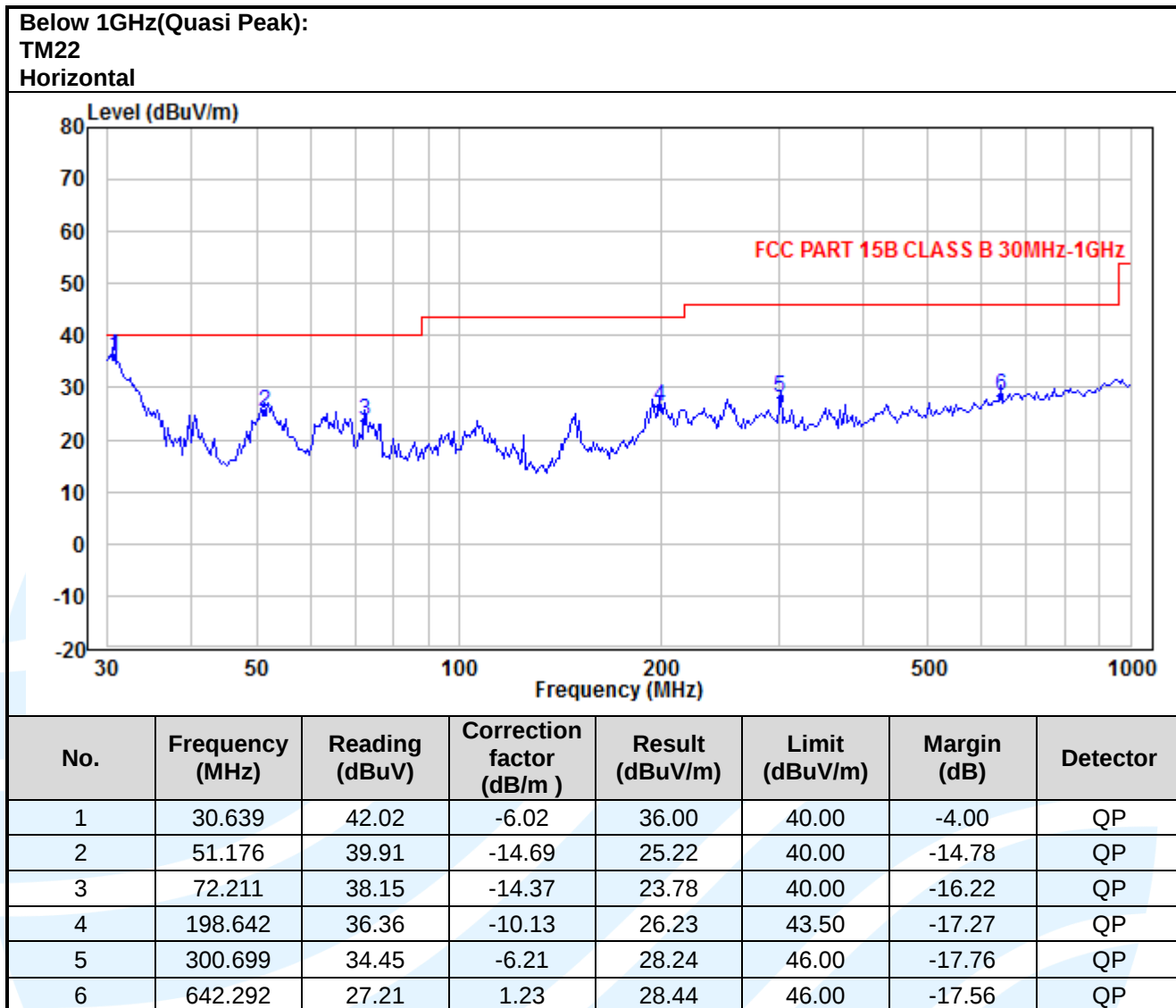


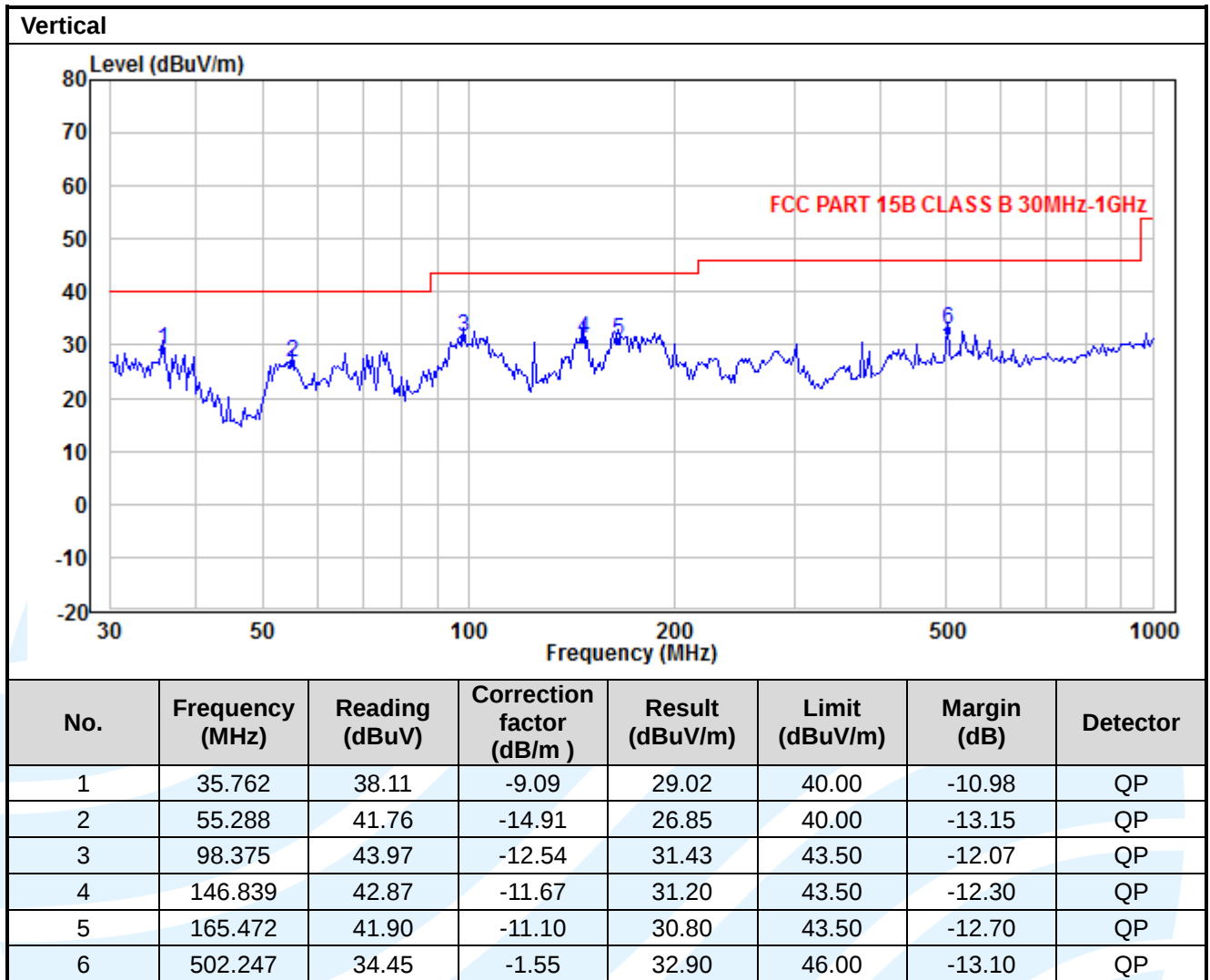




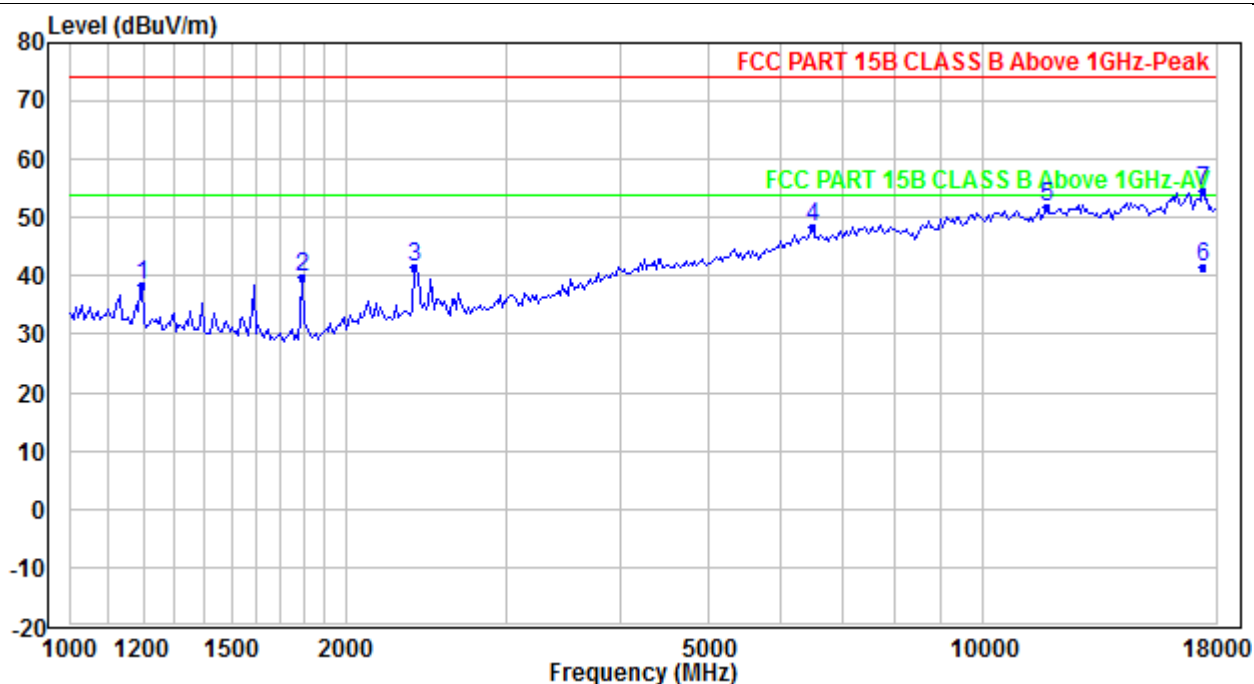




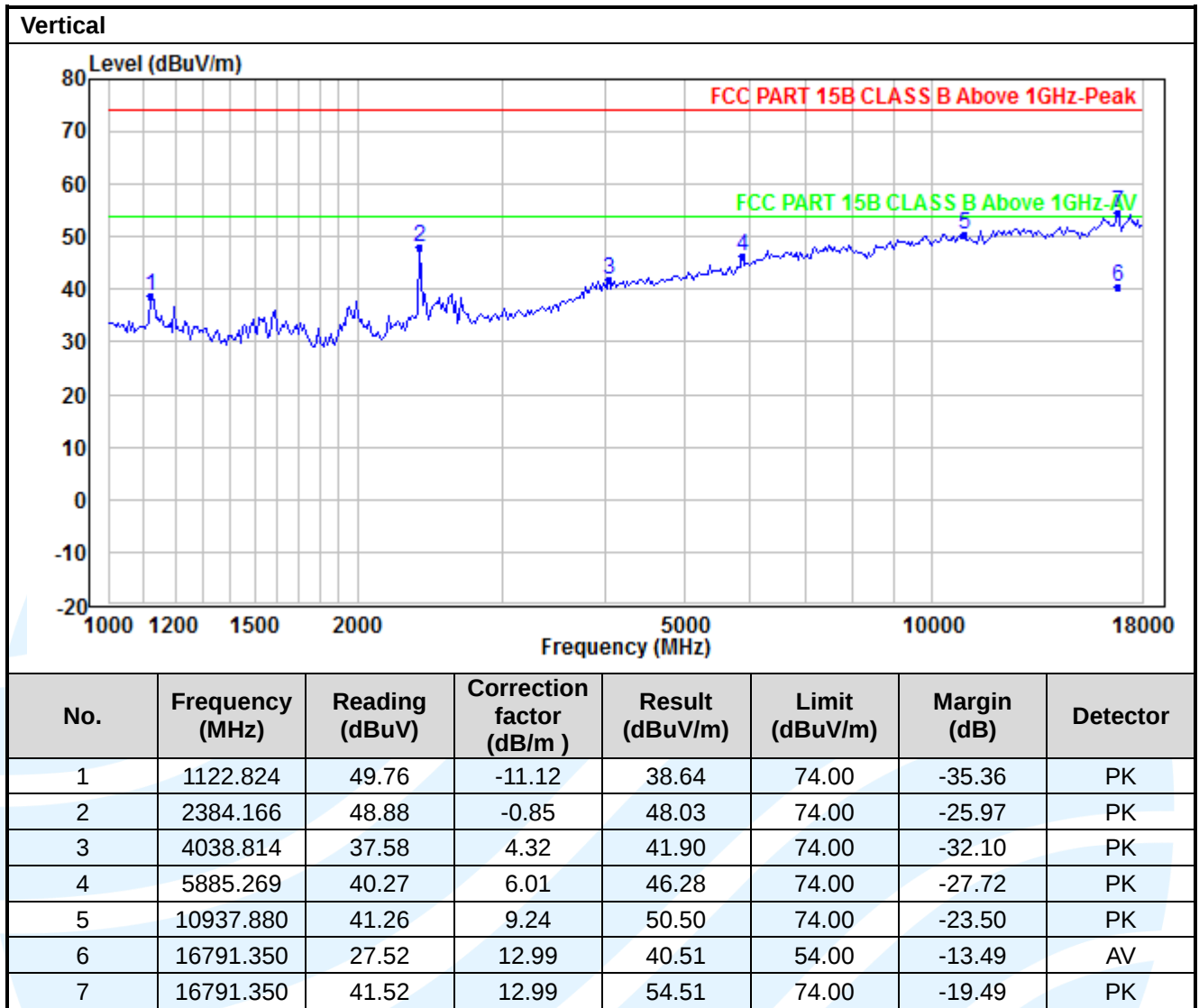




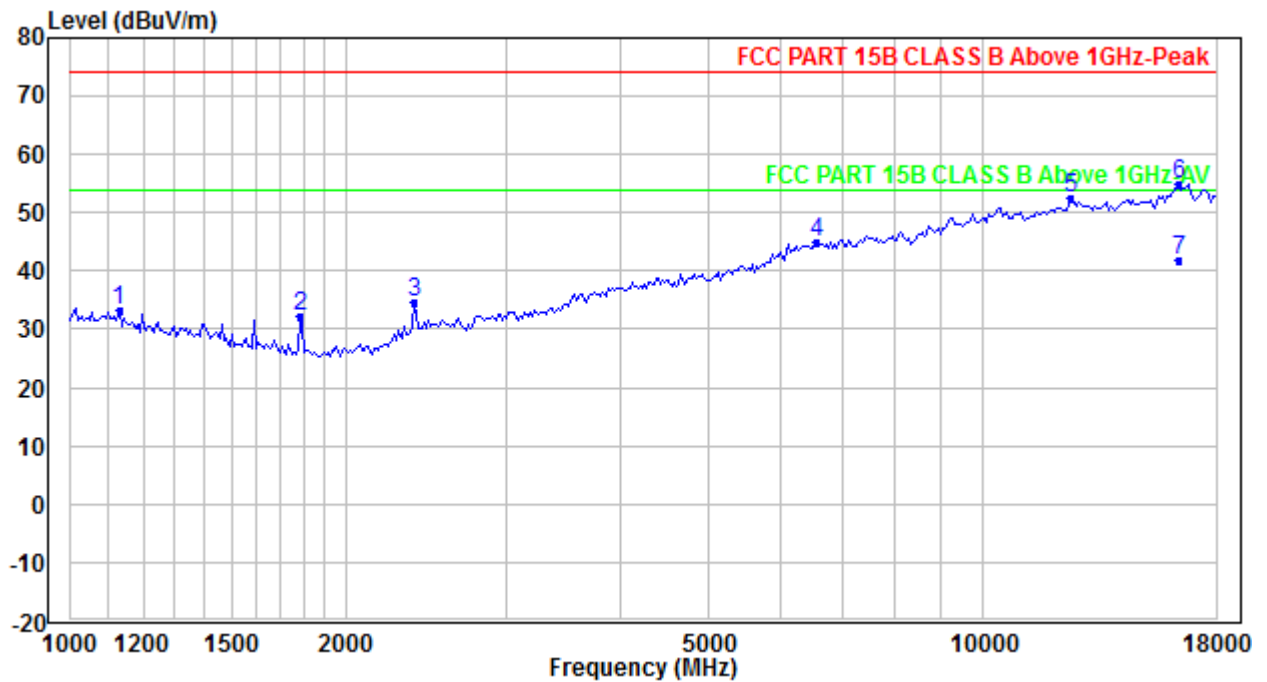
Above 1GHz(Peak & Average)
TM4
Horizontal



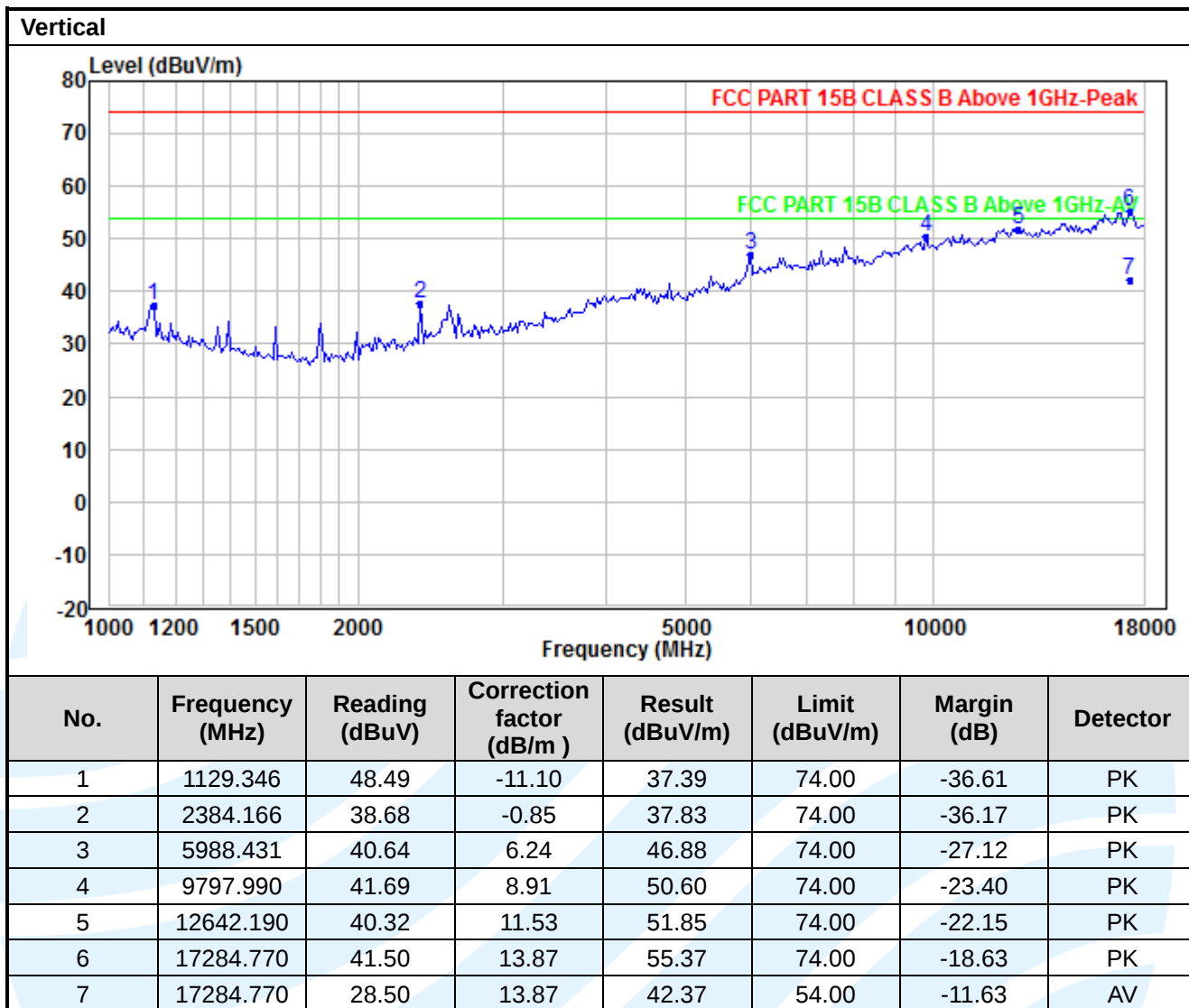
No.	Frequency (MHz)	Reading (dBuV)	Correction factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1196.693	49.38	-11.05	38.33	74.00	-35.67	PK
2	1795.036	46.89	-7.00	39.89	74.00	-34.11	PK
3	2384.166	42.08	-0.65	41.43	74.00	-32.57	PK
4	6494.281	41.20	7.26	48.46	74.00	-25.54	PK
5	11725.190	42.26	9.73	51.99	74.00	-22.01	PK
6	17385.170	27.33	14.15	41.48	54.00	-12.52	AV
7	17385.170	40.33	14.15	54.48	74.00	-19.52	PK



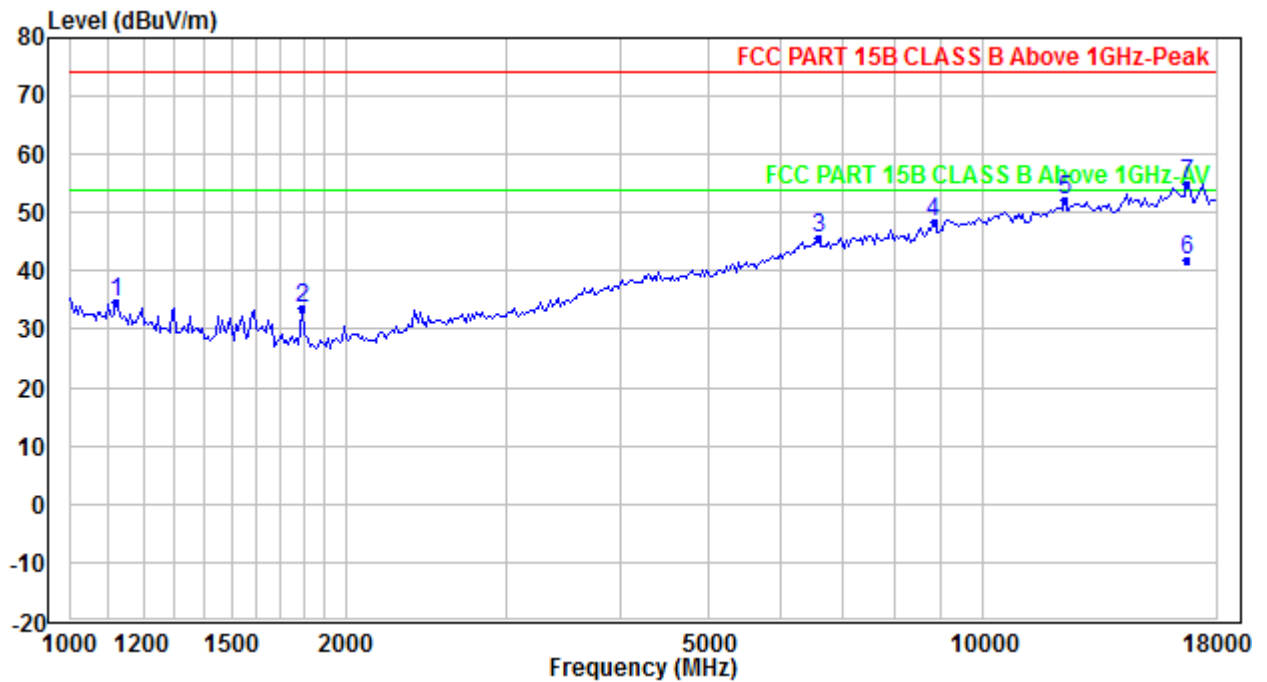
Above 1GHz(Peak & Average)
TM6
Horizontal



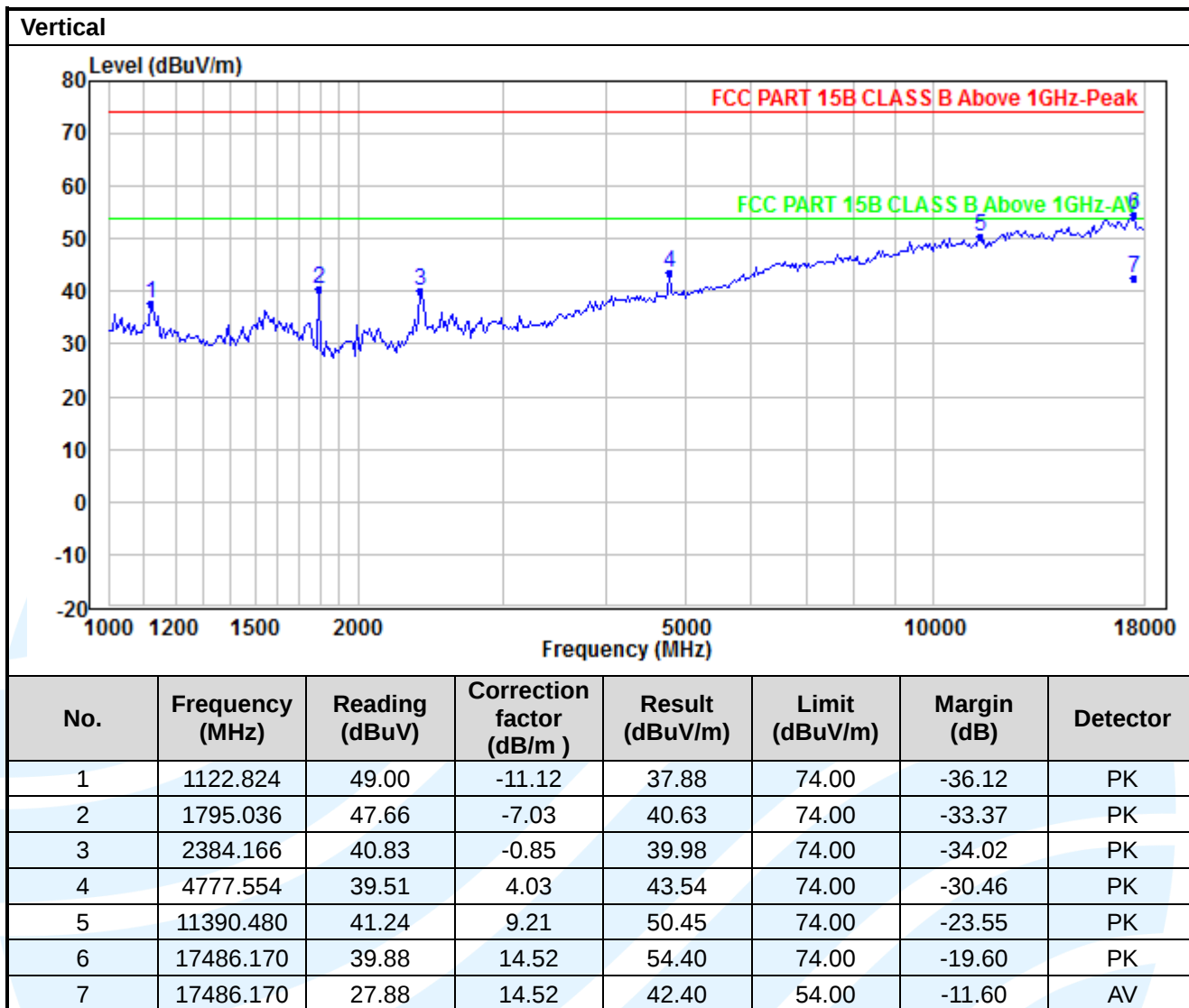
No.	Frequency (MHz)	Reading (dBuV)	Correction factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1129.346	44.67	-11.23	33.44	74.00	-40.56	PK
2	1784.669	39.19	-7.10	32.09	74.00	-41.91	PK
3	2384.166	35.18	-0.65	34.53	74.00	-39.47	PK
4	6569.953	37.67	7.16	44.83	74.00	-29.17	PK
5	12496.580	41.43	11.19	52.62	74.00	-21.38	PK
6	16406.780	41.88	13.11	54.99	74.00	-19.01	PK
7	16406.780	28.88	13.11	41.99	54.00	-12.01	AV



Above 1GHz(Peak & Average)
TM7
Horizontal



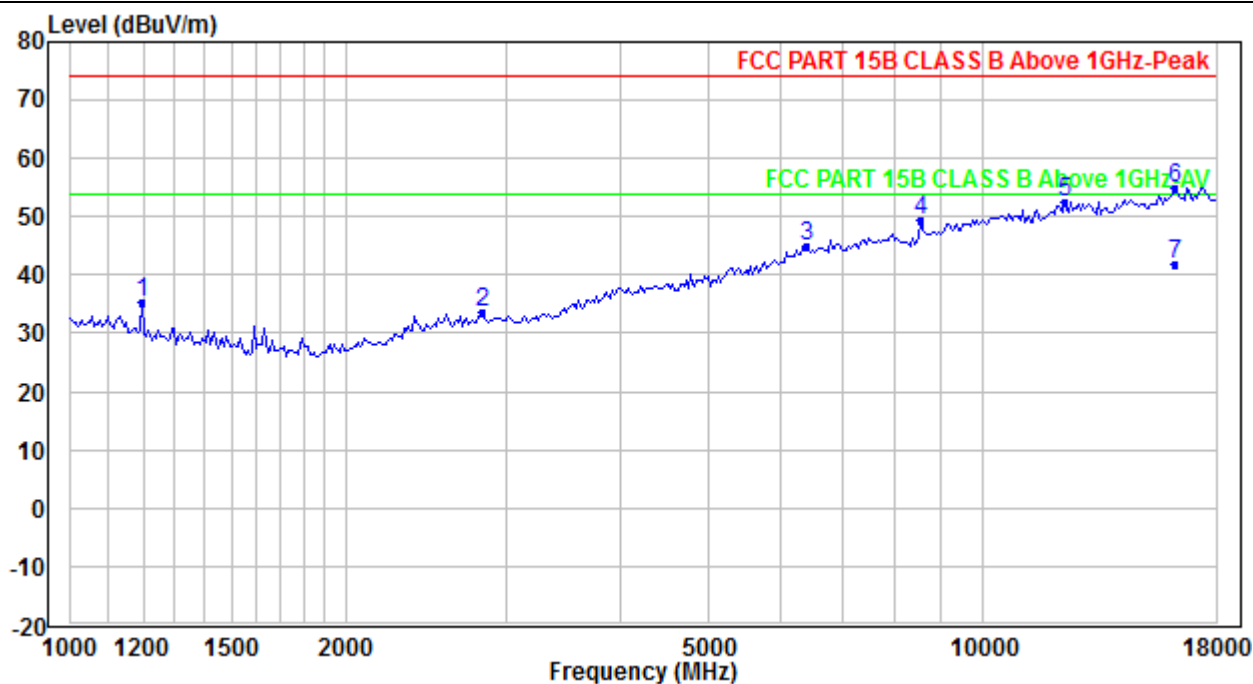
No.	Frequency (MHz)	Reading (dBuV)	Correction factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1122.824	45.82	-11.24	34.58	74.00	-39.42	PK
2	1795.036	40.73	-7.00	33.73	74.00	-40.27	PK
3	6608.119	38.66	7.12	45.78	74.00	-28.22	PK
4	8827.885	40.25	8.11	48.36	74.00	-25.64	PK
5	12281.300	41.30	10.84	52.14	74.00	-21.86	PK
6	16694.370	28.81	13.15	41.96	54.00	-12.04	AV
7	16694.370	41.81	13.15	54.96	74.00	-19.04	PK



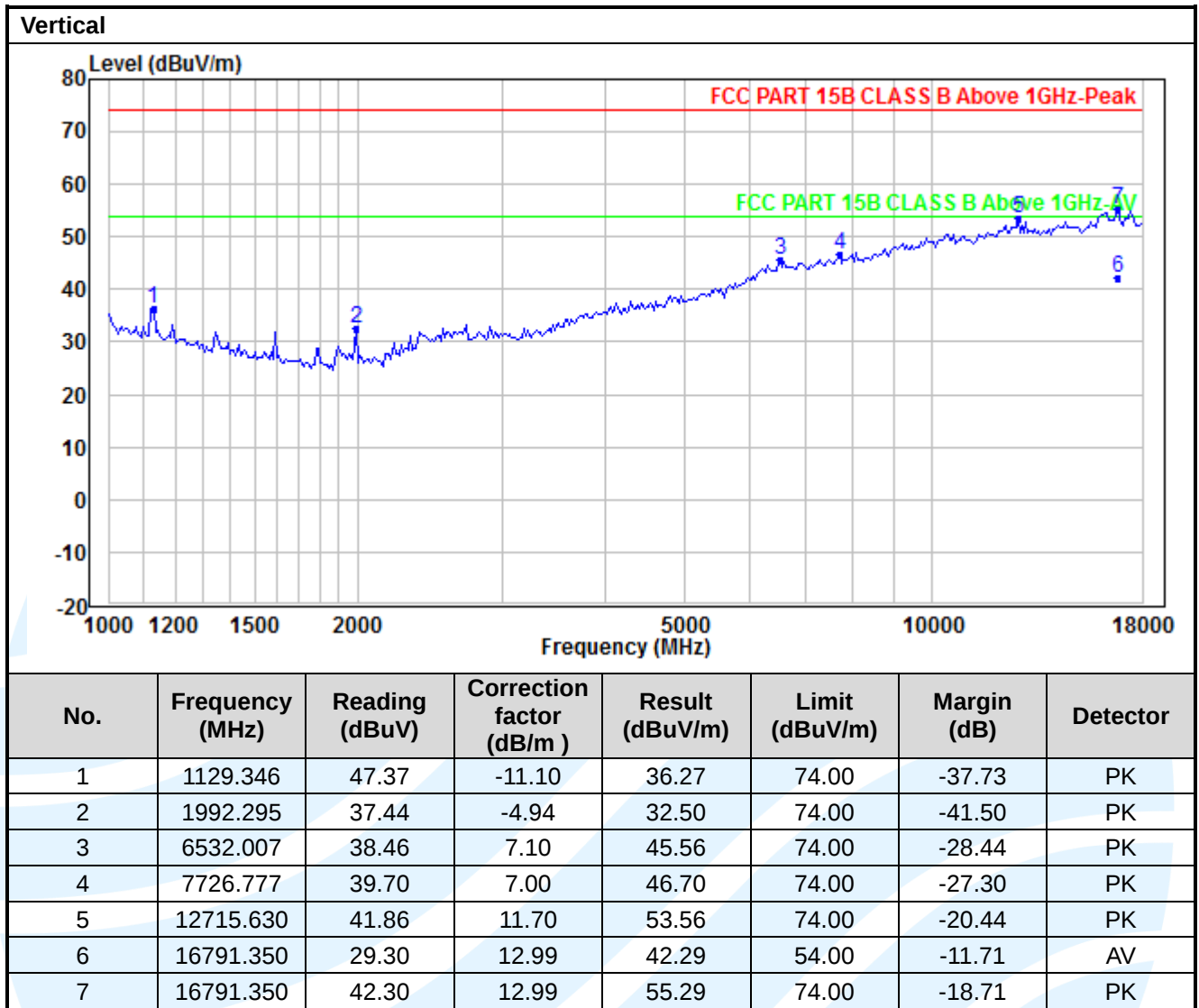
Above 1GHz(Peak & Average)

TM8

Horizontal



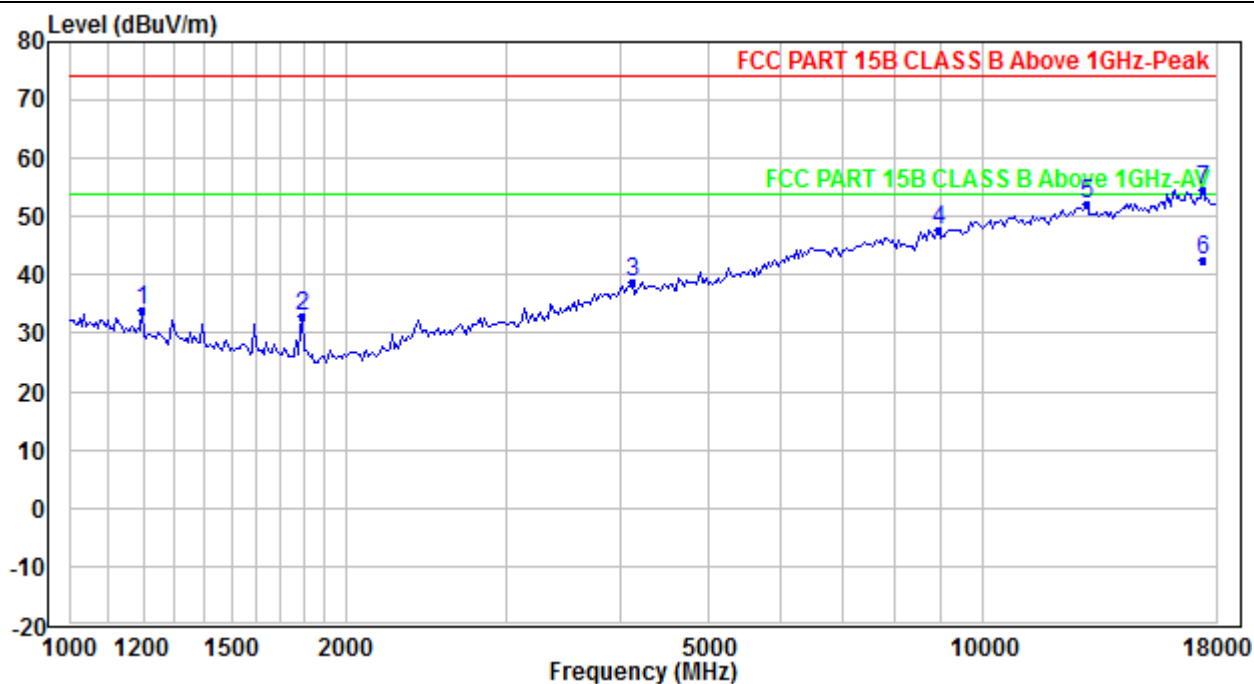
No.	Frequency (MHz)	Reading (dBuV)	Correction factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1196.693	46.31	-11.05	35.26	74.00	-38.74	PK
2	2820.253	33.69	0.02	33.71	74.00	-40.29	PK
3	6419.481	37.61	7.33	44.94	74.00	-29.06	PK
4	8526.351	41.53	7.74	49.27	74.00	-24.73	PK
5	12281.300	41.57	10.84	52.41	74.00	-21.59	PK
6	16217.810	41.94	13.03	54.97	74.00	-19.03	PK
7	16217.810	28.94	13.03	41.97	54.00	-12.03	AV



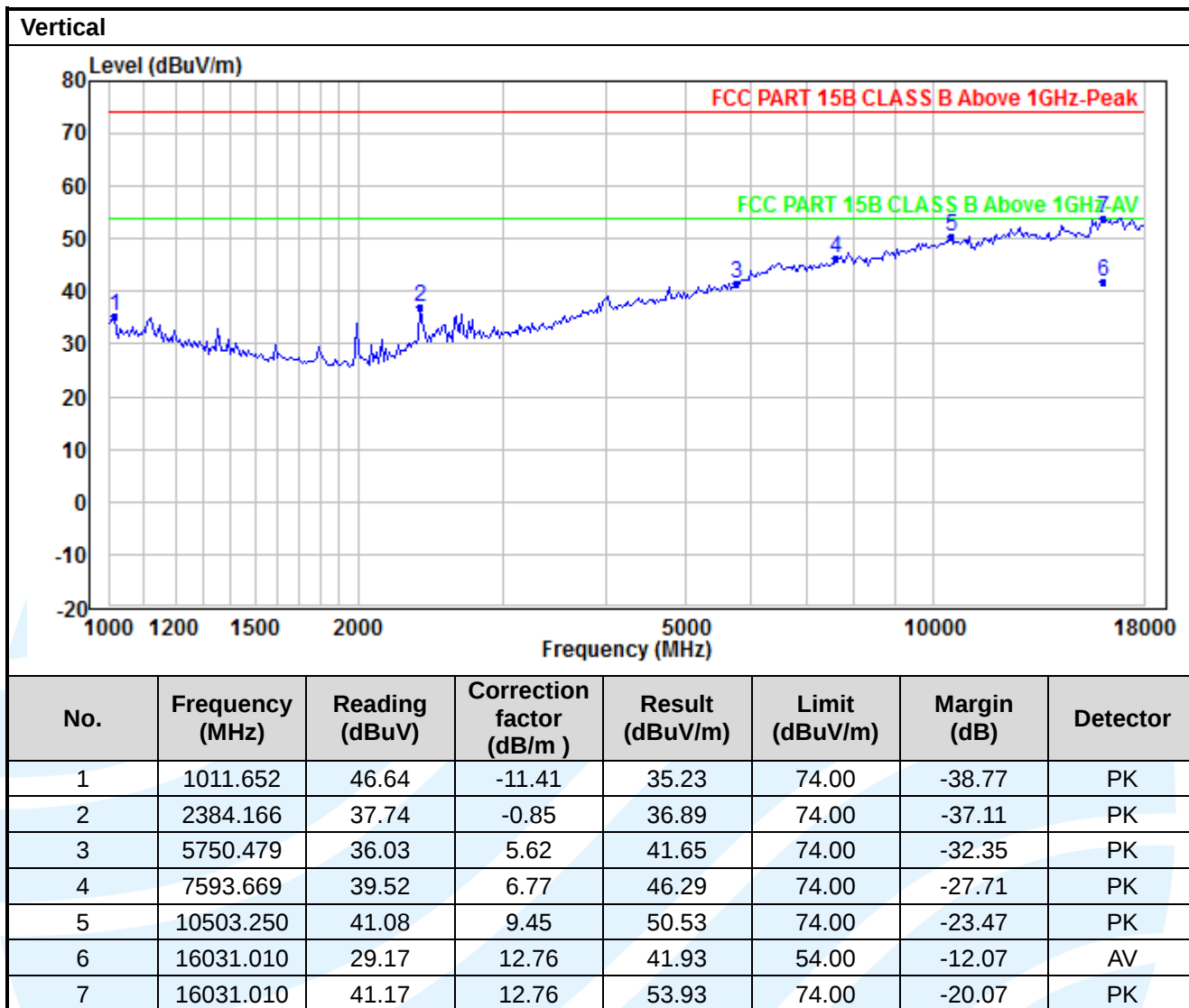
Above 1GHz(Peak & Average)

TM9

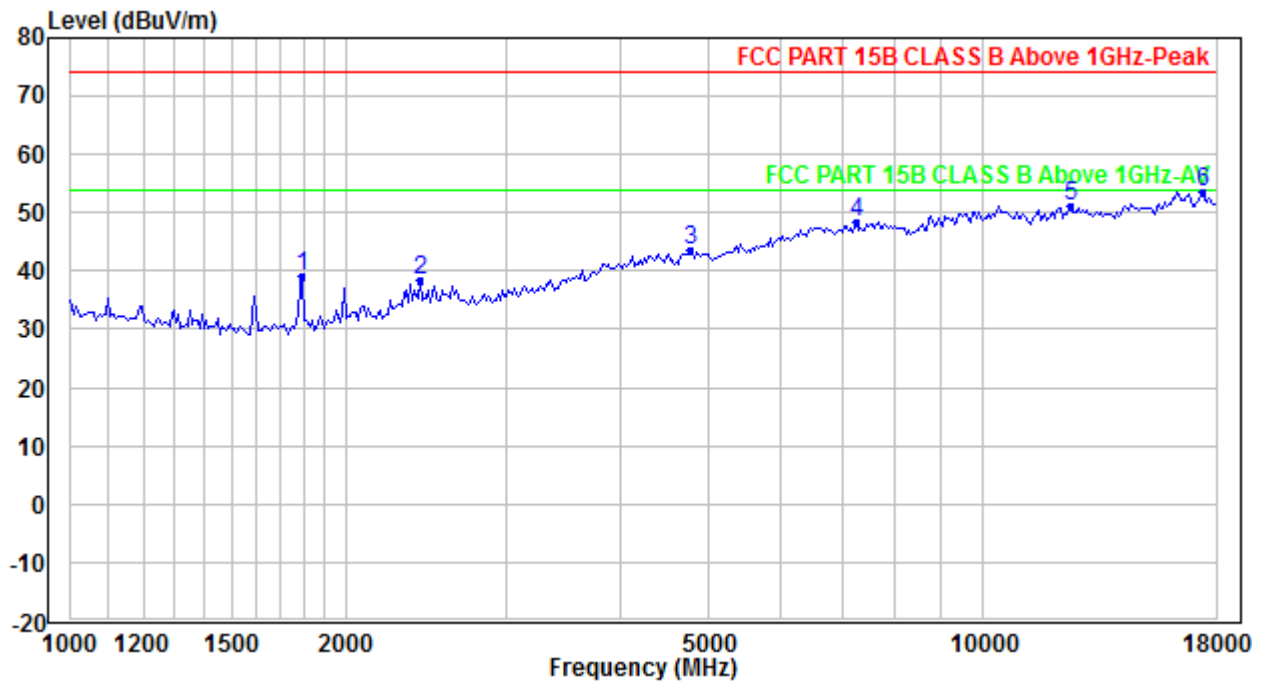
Horizontal



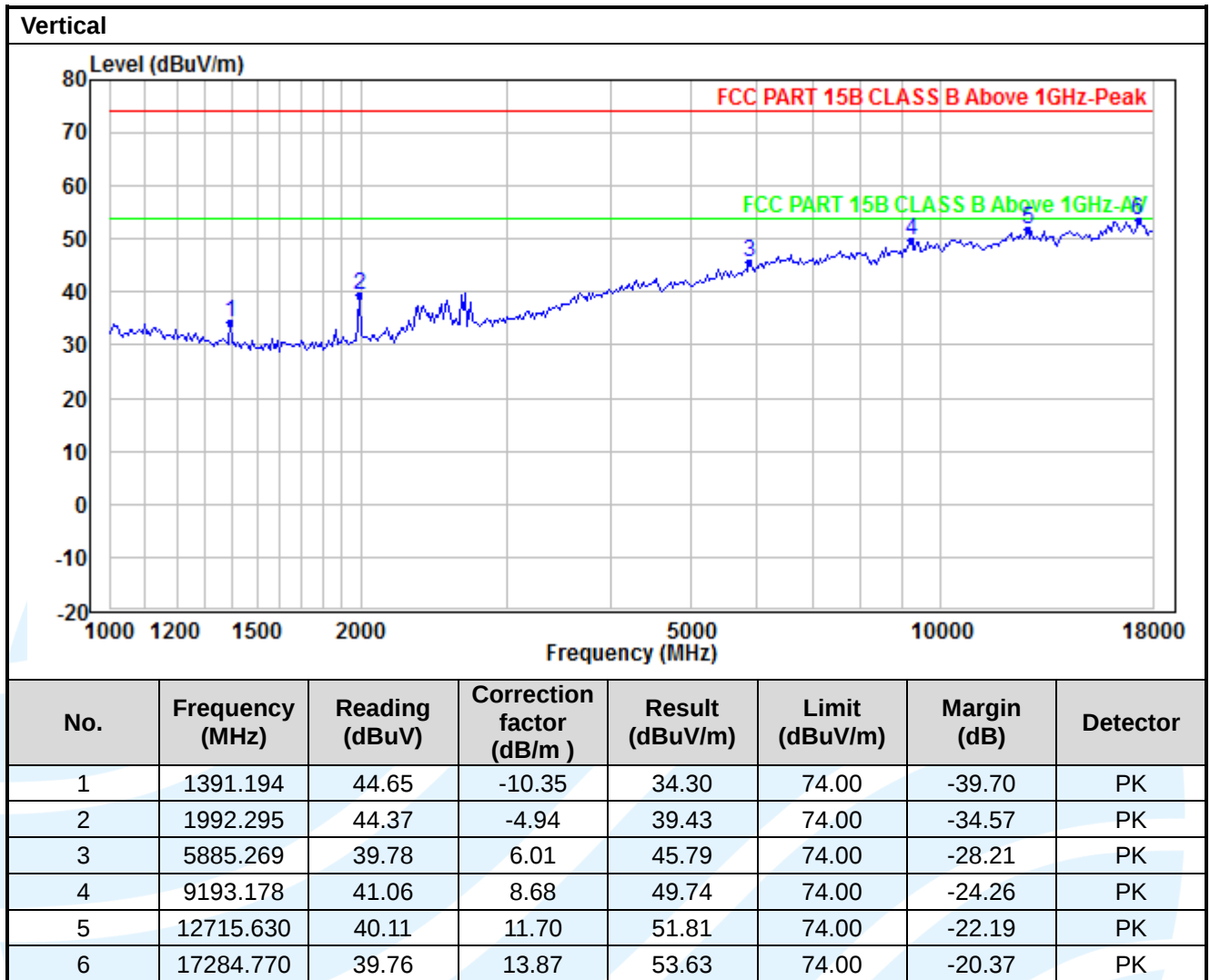
No.	Frequency (MHz)	Reading (dBuV)	Correction factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1196.693	44.96	-11.05	33.91	74.00	-40.09	PK
2	1795.036	39.86	-7.00	32.86	74.00	-41.14	PK
3	4133.483	34.00	4.62	38.62	74.00	-35.38	PK
4	8930.747	39.72	8.13	47.85	74.00	-26.15	PK
5	13013.680	39.58	12.45	52.03	74.00	-21.97	PK
6	17385.170	28.30	14.15	42.45	54.00	-11.55	AV
7	17385.170	40.30	14.15	54.45	74.00	-19.55	PK



Above 1GHz(Peak & Average)
TM10
Horizontal



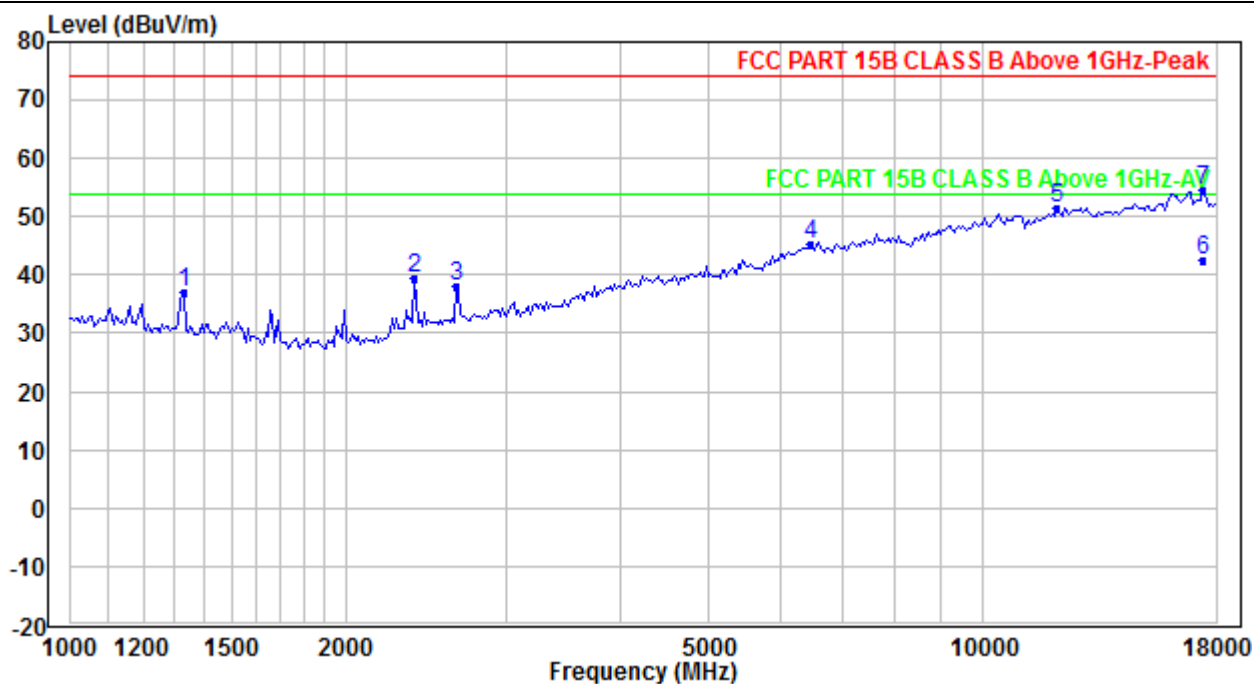
No.	Frequency (MHz)	Reading (dBuV)	Correction factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1795.036	46.03	-7.00	39.03	74.00	-34.97	PK
2	2411.946	38.97	-0.40	38.57	74.00	-35.43	PK
3	4777.554	39.09	4.39	43.48	74.00	-30.52	PK
4	7249.817	41.75	6.70	48.45	74.00	-25.55	PK
5	12496.580	40.09	11.19	51.28	74.00	-22.72	PK
6	17385.170	39.33	14.15	53.48	74.00	-20.52	PK



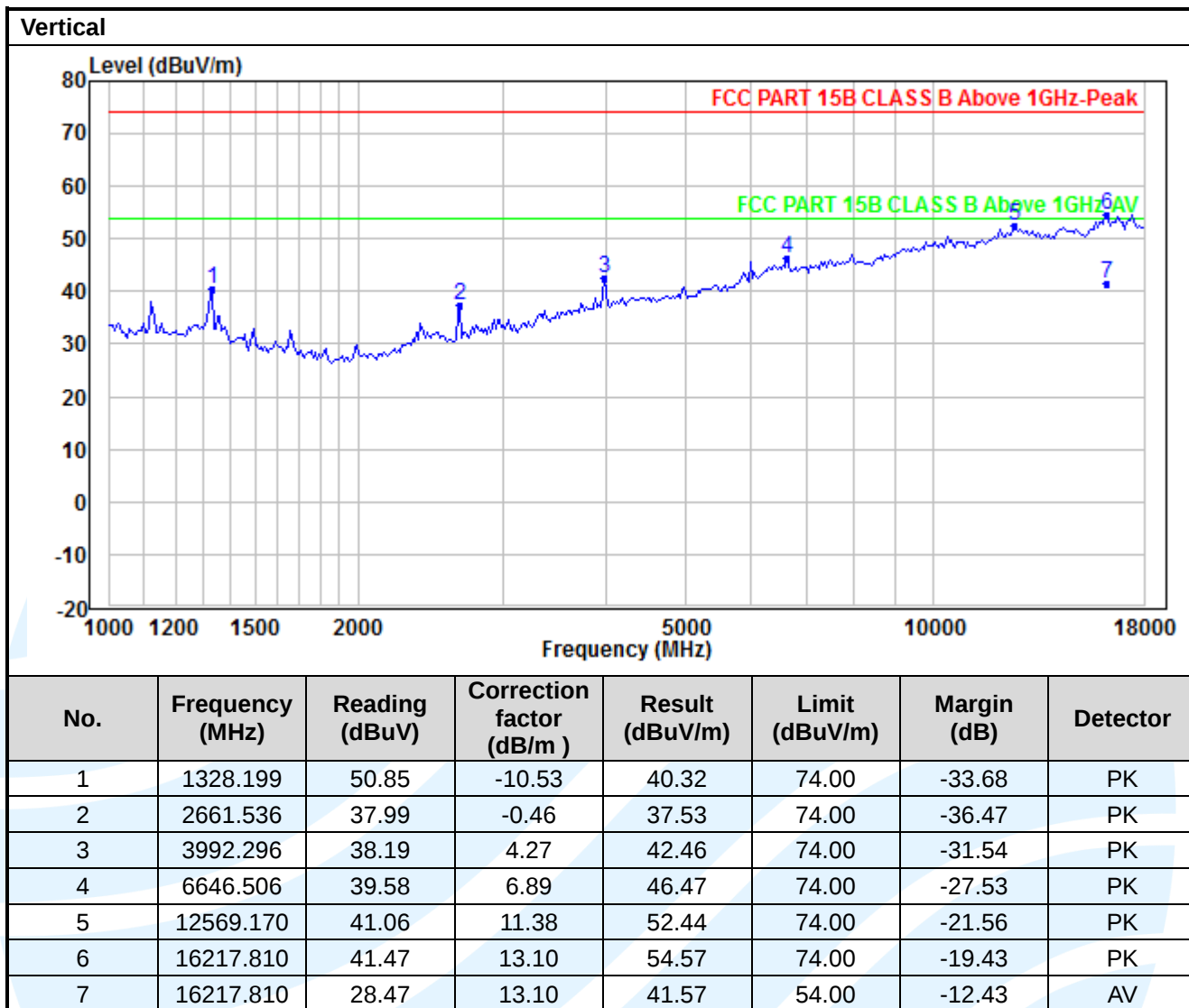
Above 1GHz(Peak & Average)

TM14

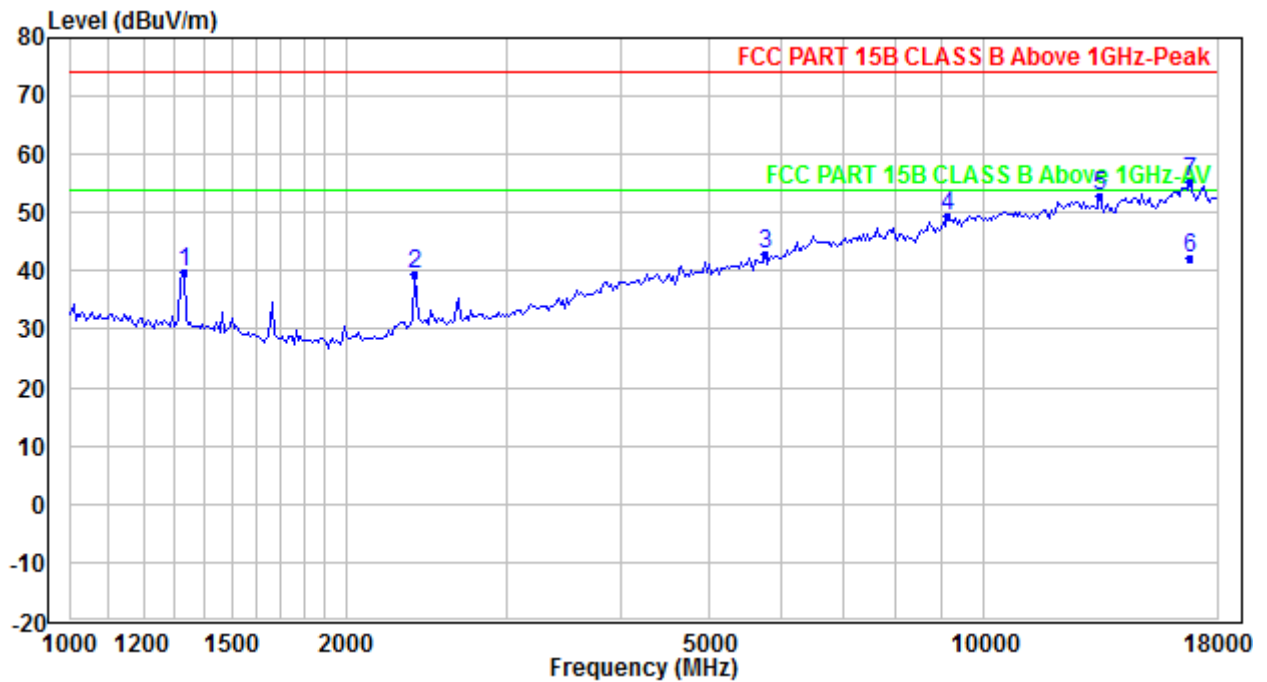
Horizontal



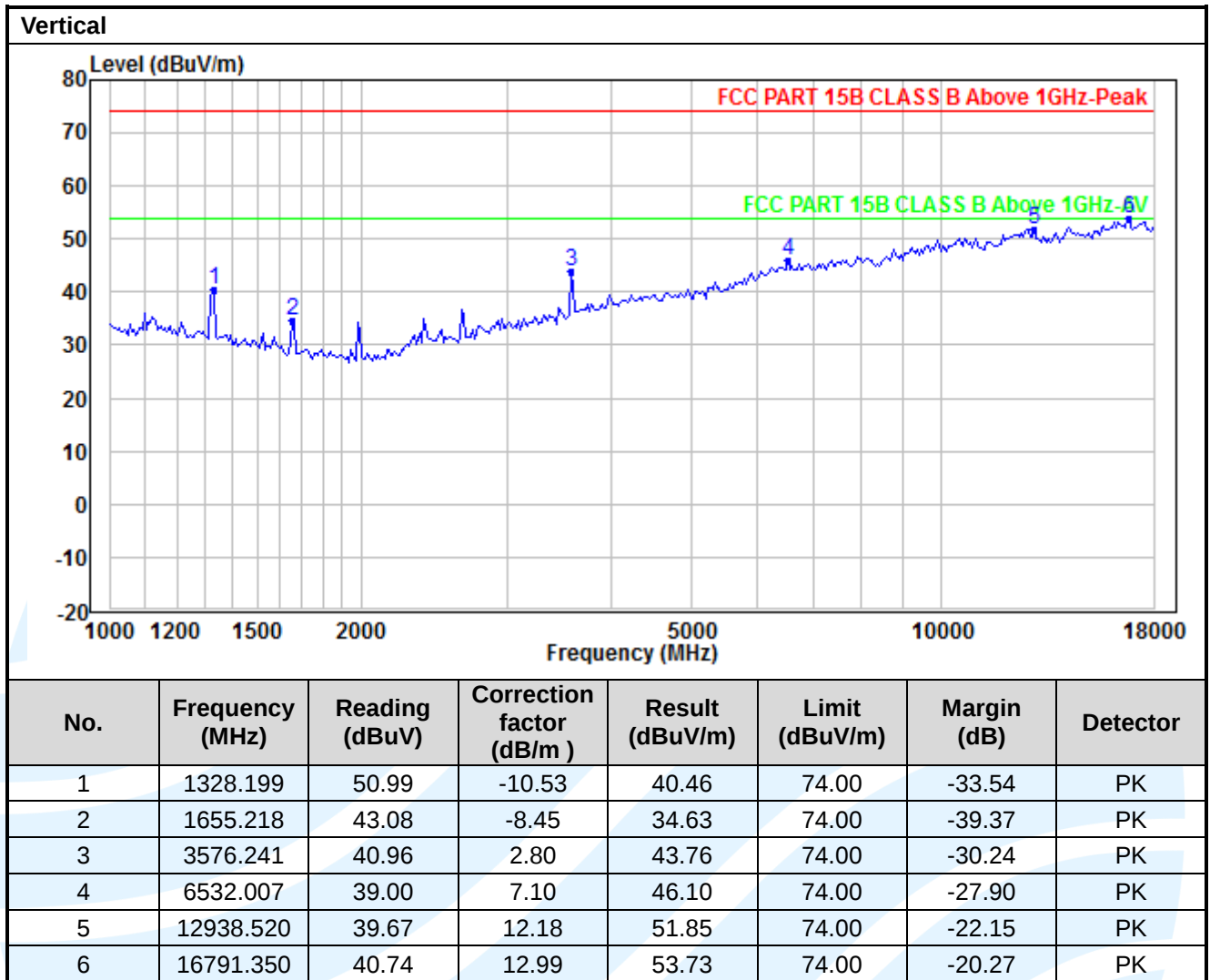
No.	Frequency (MHz)	Reading (dBuV)	Correction factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1328.199	47.66	-10.70	36.96	74.00	-37.04	PK
2	2384.166	40.05	-0.65	39.40	74.00	-34.60	PK
3	2646.164	38.36	-0.25	38.11	74.00	-35.89	PK
4	6456.773	38.01	7.30	45.31	74.00	-28.69	PK
5	12069.740	41.54	10.09	51.63	74.00	-22.37	PK
6	17385.170	28.34	14.15	42.49	54.00	-11.51	AV
7	17385.170	40.34	14.15	54.49	74.00	-19.51	PK



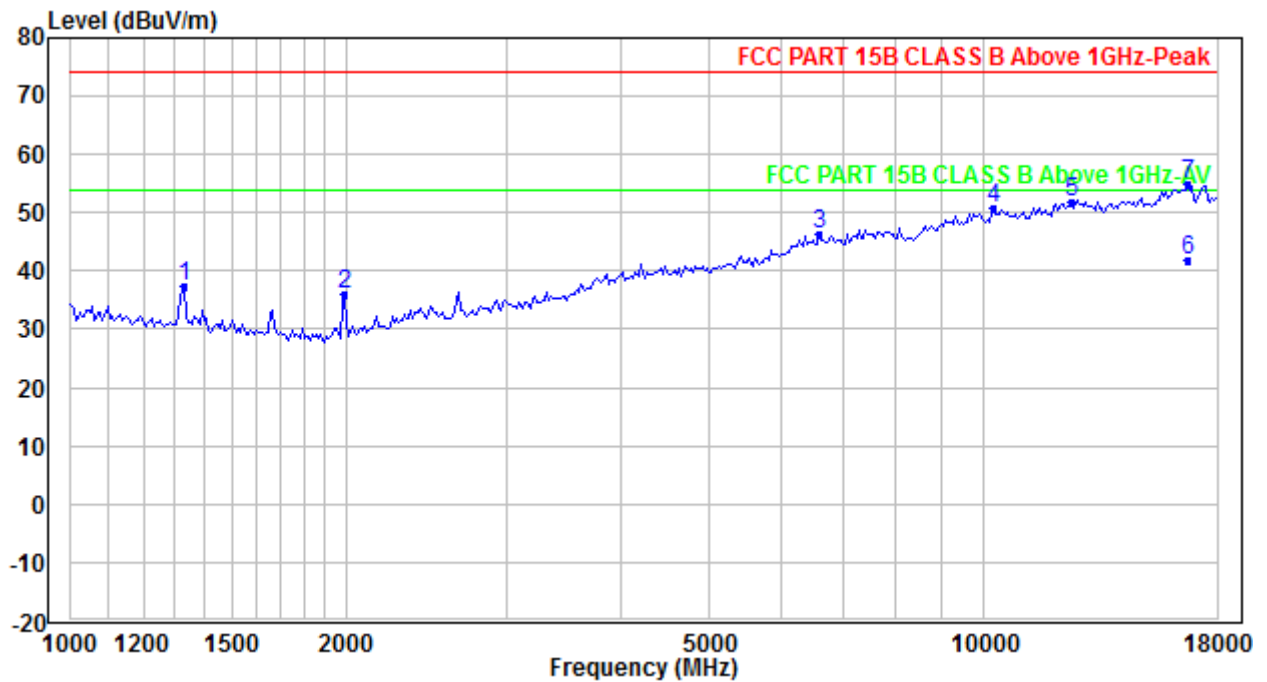
Above 1GHz(Peak & Average)
TM16
Horizontal



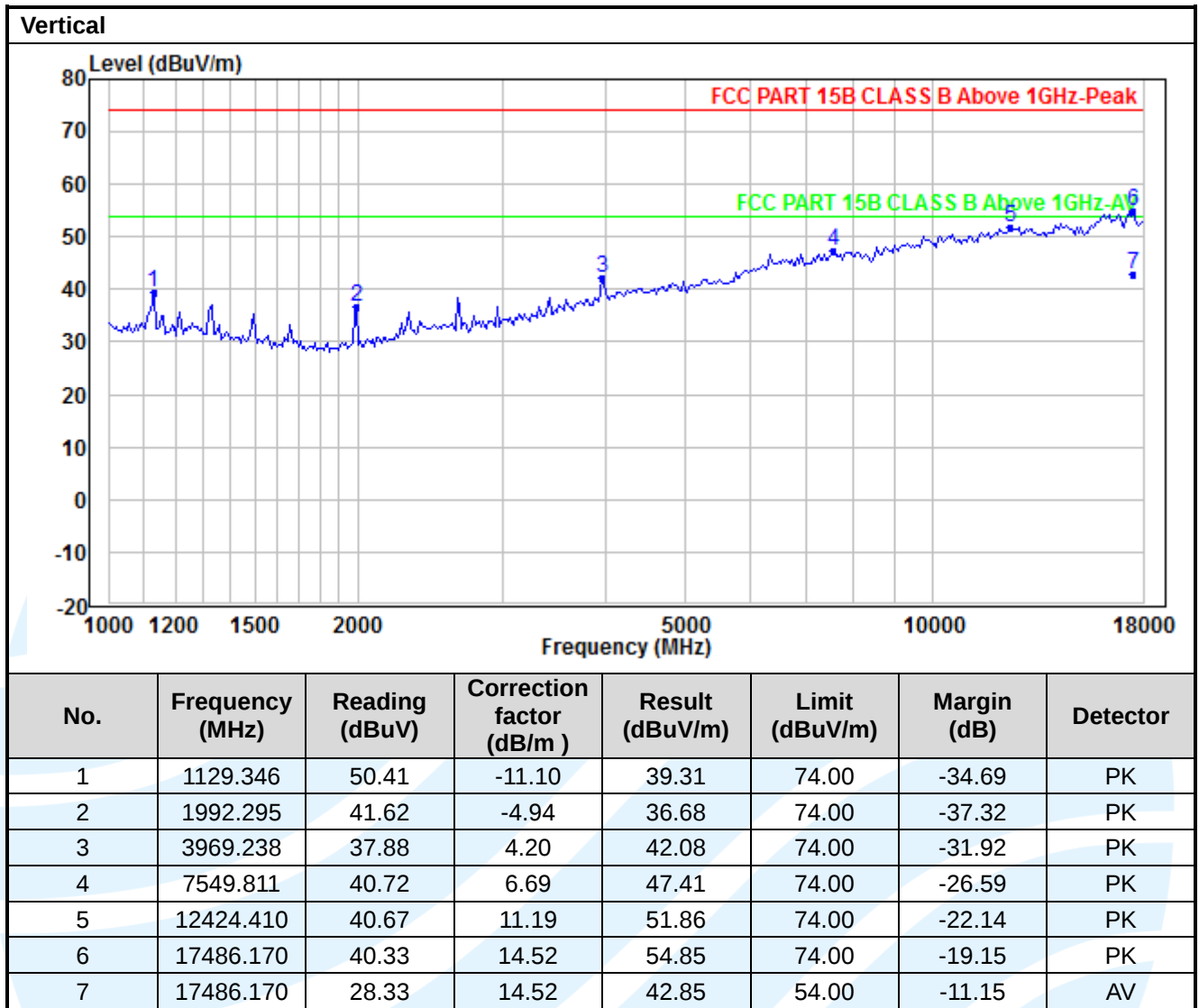
No.	Frequency (MHz)	Reading (dBuV)	Correction factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1328.199	50.64	-10.70	39.94	74.00	-34.06	PK
2	2384.166	40.05	-0.65	39.40	74.00	-34.60	PK
3	5750.479	37.12	5.82	42.94	74.00	-31.06	PK
4	9140.082	40.71	8.61	49.32	74.00	-24.68	PK
5	13396.090	40.37	12.34	52.71	74.00	-21.29	PK
6	16791.350	29.08	13.14	42.22	54.00	-11.78	AV
7	16791.350	42.08	13.14	55.22	74.00	-18.78	PK



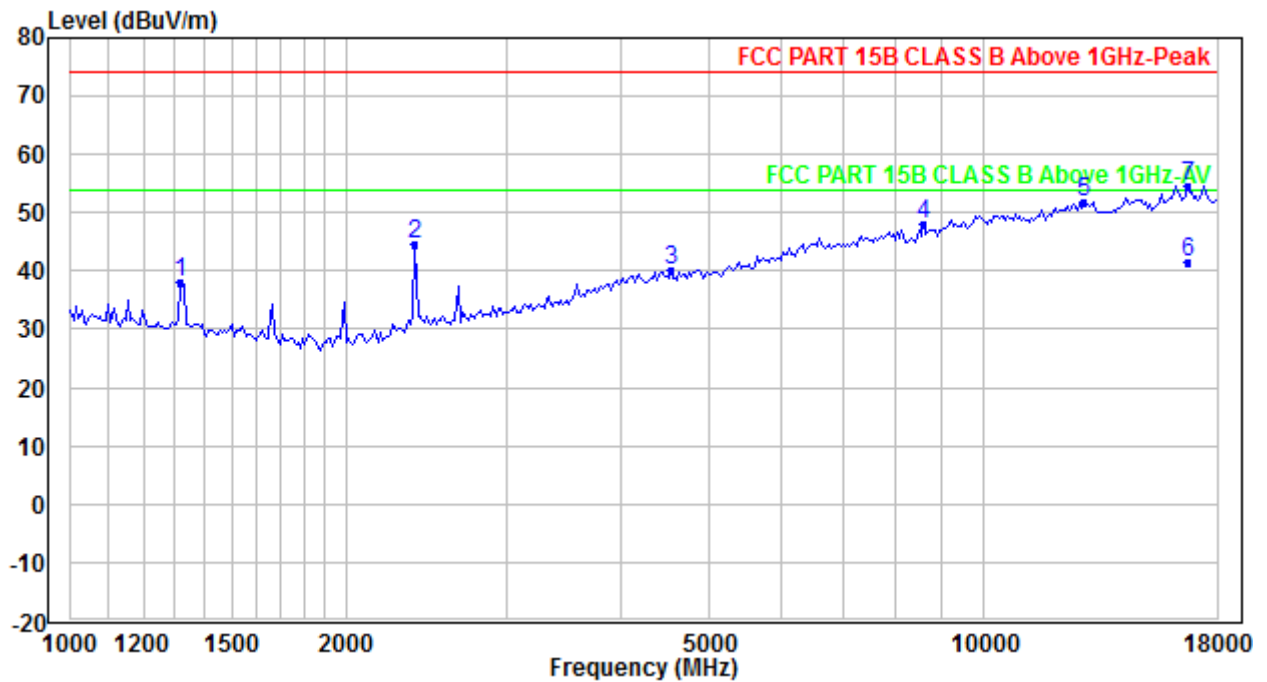
Above 1GHz(Peak & Average)
TM17
Horizontal



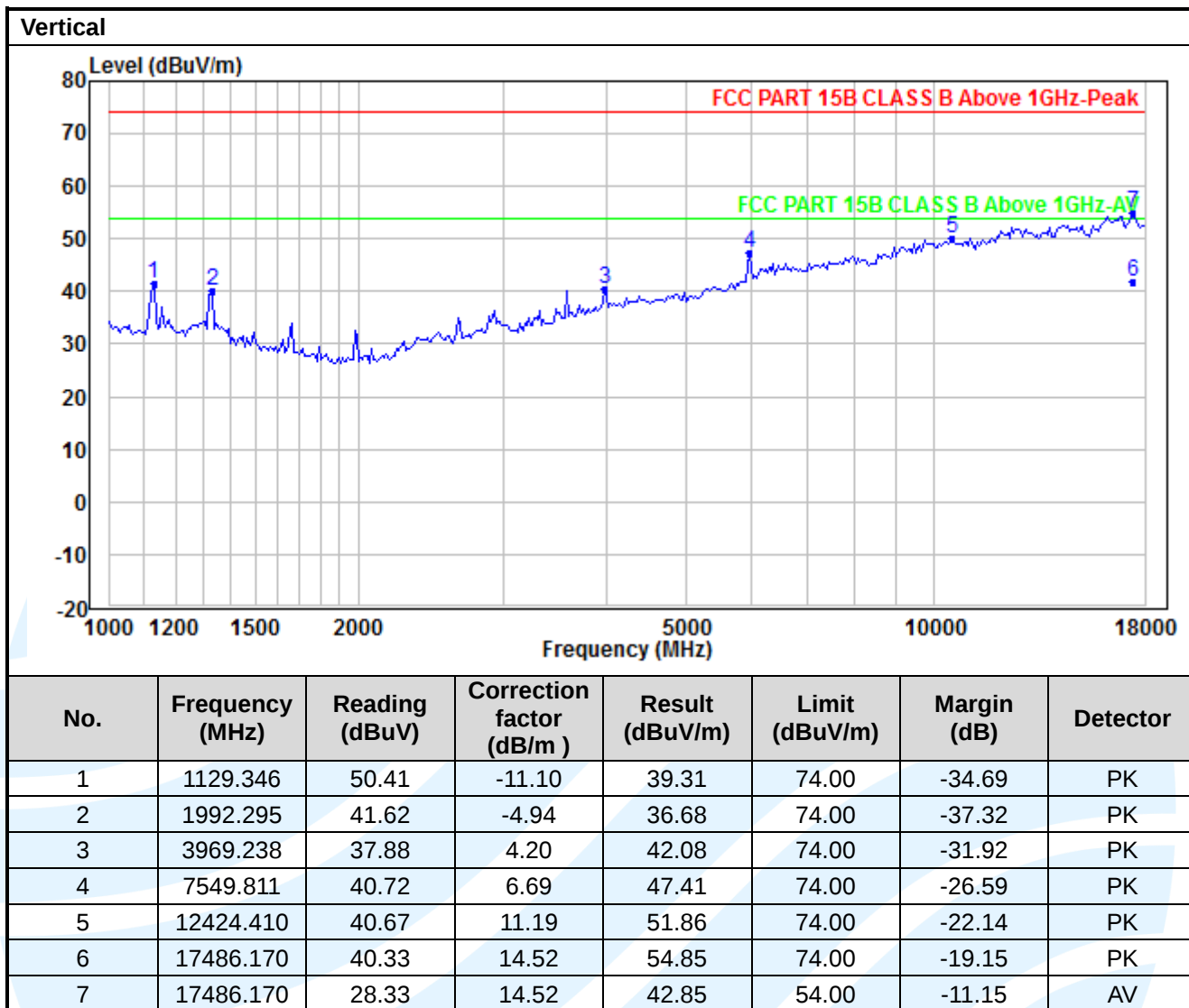
No.	Frequency (MHz)	Reading (dBuV)	Correction factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1328.199	48.24	-10.70	37.54	74.00	-36.46	PK
2	1992.295	40.62	-4.75	35.87	74.00	-38.13	PK
3	6608.119	39.09	7.12	46.21	74.00	-27.79	PK
4	10262.700	41.59	9.28	50.87	74.00	-23.13	PK
5	12496.580	40.50	11.19	51.69	74.00	-22.31	PK
6	16694.370	28.71	13.15	41.86	54.00	-12.14	AV
7	16694.370	41.71	13.15	54.86	74.00	-19.14	PK



Above 1GHz(Peak & Average)
TM18
Horizontal



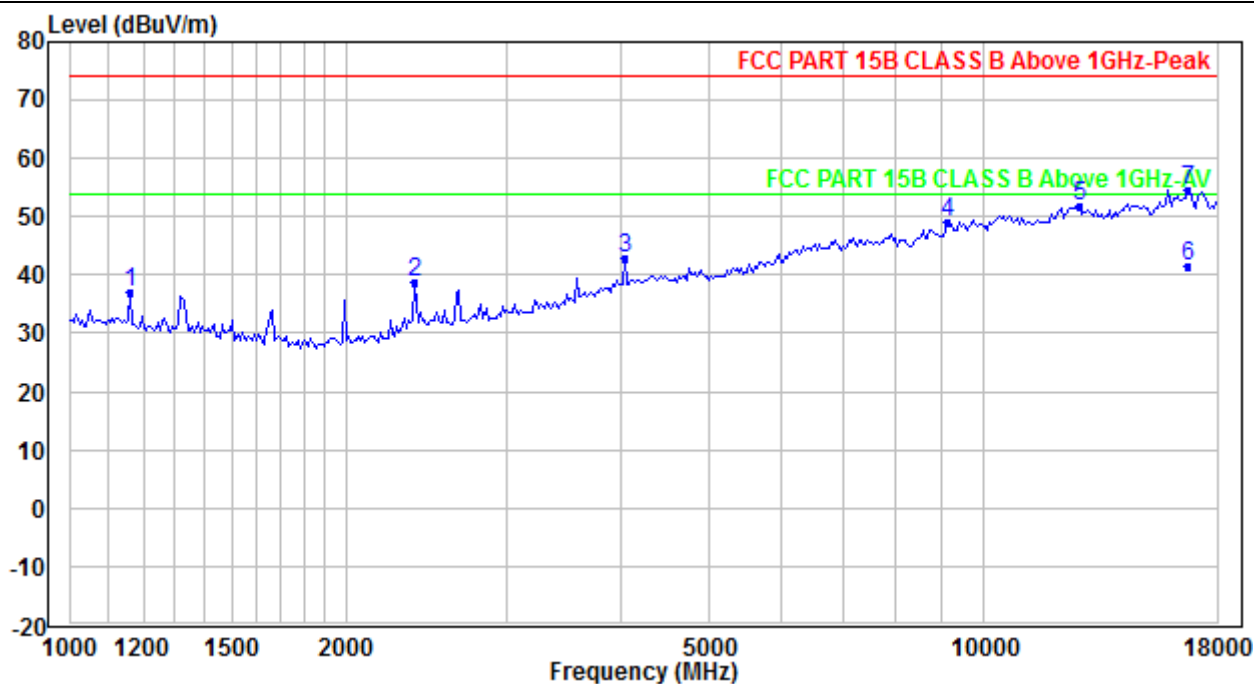
No.	Frequency (MHz)	Reading (dBuV)	Correction factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1320.528	48.62	-10.72	37.90	74.00	-36.10	PK
2	2384.166	45.26	-0.65	44.61	74.00	-29.39	PK
3	4534.875	35.82	4.18	40.00	74.00	-34.00	PK
4	8575.881	40.08	7.83	47.91	74.00	-26.09	PK
5	12863.790	39.57	12.19	51.76	74.00	-22.24	PK
6	16694.370	28.49	13.15	41.64	54.00	-12.36	AV
7	16694.370	41.49	13.15	54.64	74.00	-19.36	PK



Above 1GHz(Peak & Average)

TM19

Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correction factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1162.532	48.25	-11.14	37.11	74.00	-36.89	PK
2	2384.166	39.37	-0.65	38.72	74.00	-35.28	PK
3	4038.814	38.22	4.53	42.75	74.00	-31.25	PK
4	9140.082	40.45	8.61	49.06	74.00	-24.94	PK
5	12715.630	40.01	11.73	51.74	74.00	-22.26	PK
6	16694.370	28.39	13.15	41.54	54.00	-12.46	AV
7	16694.370	41.39	13.15	54.54	74.00	-19.46	PK

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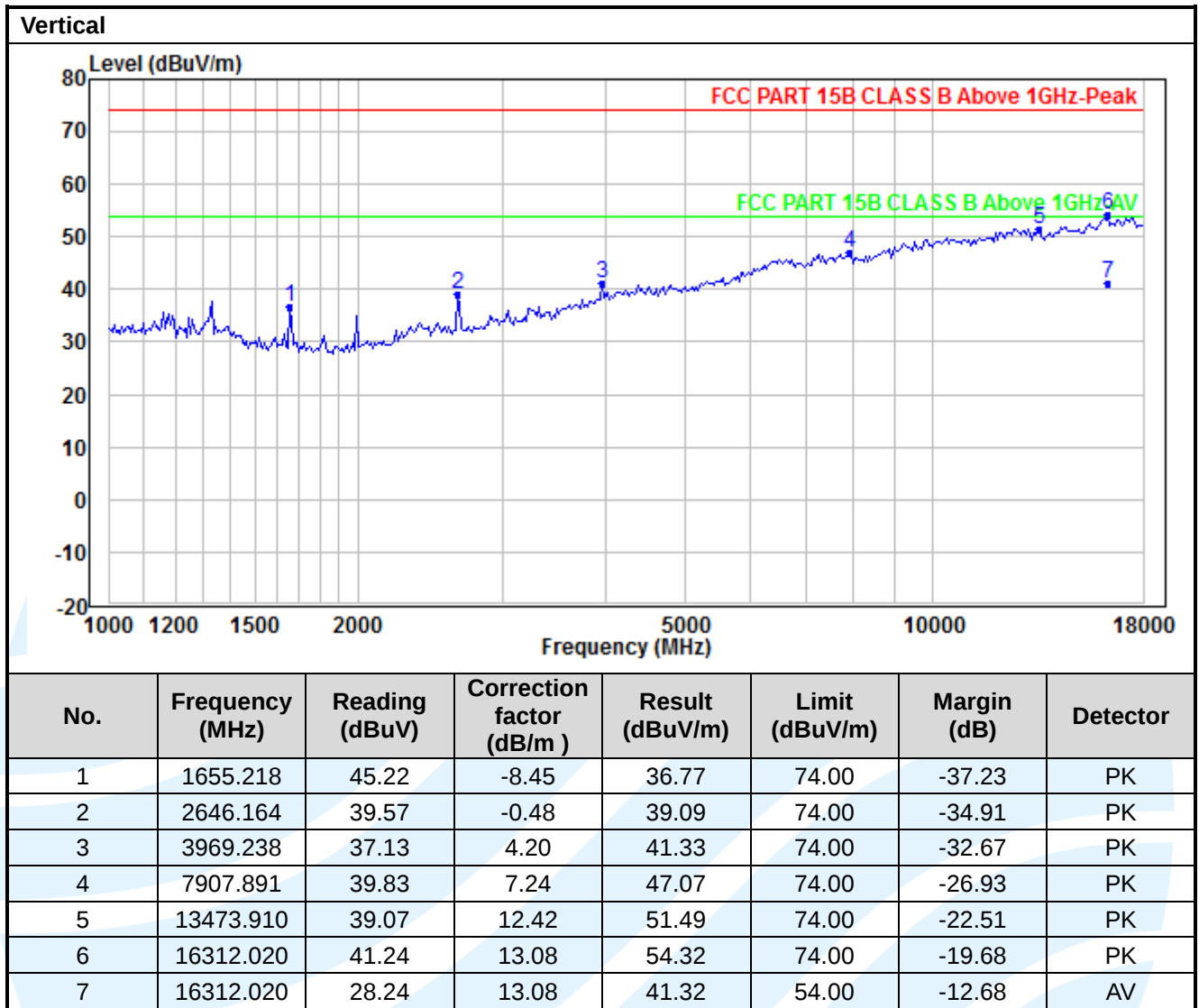
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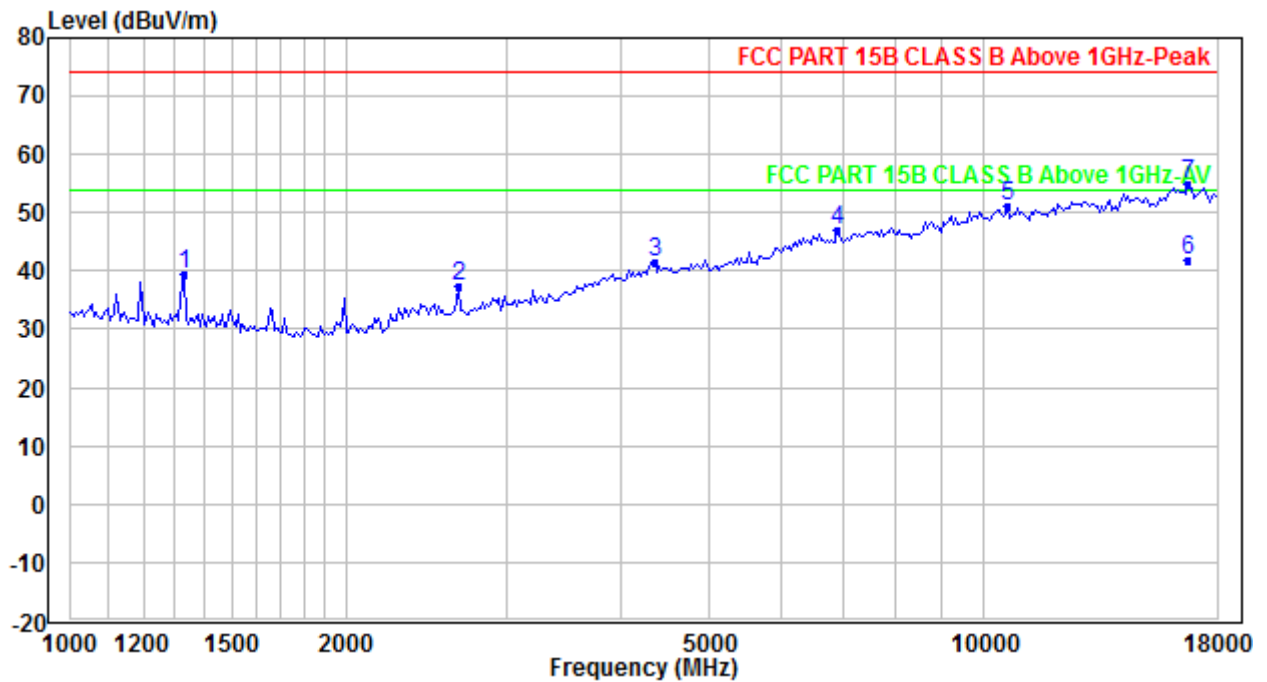
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Above 1GHz(Peak & Average)
TM20
Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correction factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1328.199	50.29	-10.70	39.59	74.00	-34.41	PK
2	2661.536	37.58	-0.23	37.35	74.00	-36.65	PK
3	4354.681	36.71	4.72	41.43	74.00	-32.57	PK
4	6921.535	40.42	6.65	47.07	74.00	-26.93	PK
5	10625.640	41.43	9.71	51.14	74.00	-22.86	PK
6	16694.370	28.79	13.15	41.94	54.00	-12.06	AV
7	16694.370	41.79	13.15	54.94	74.00	-19.06	PK

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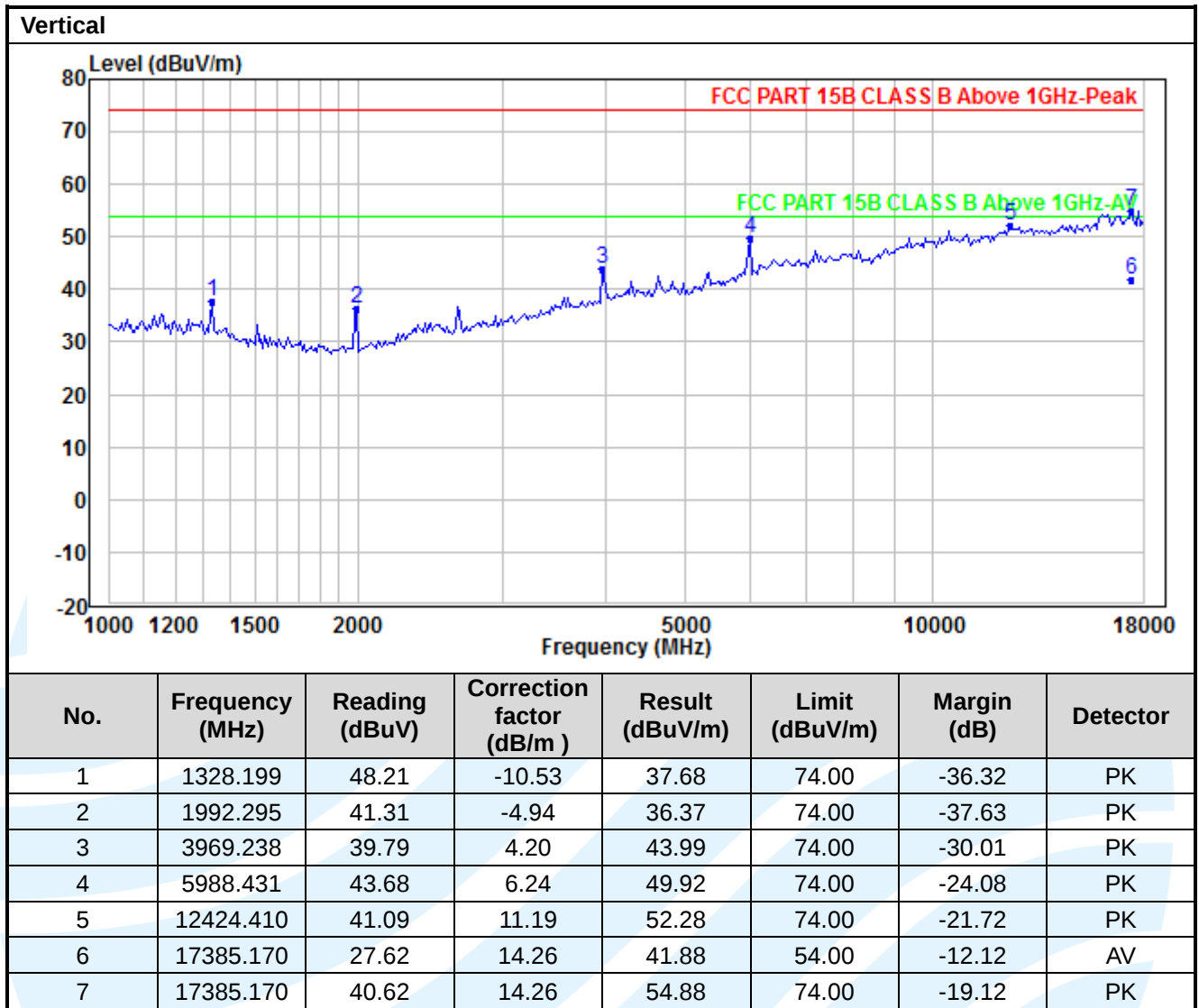
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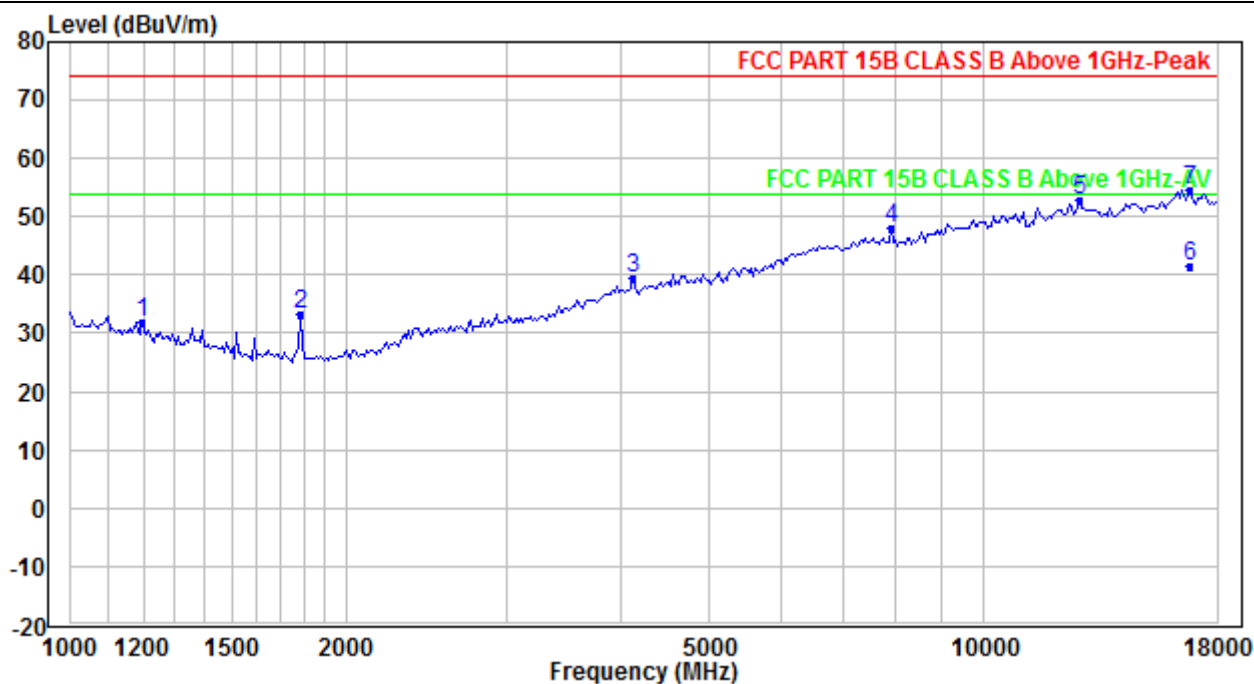
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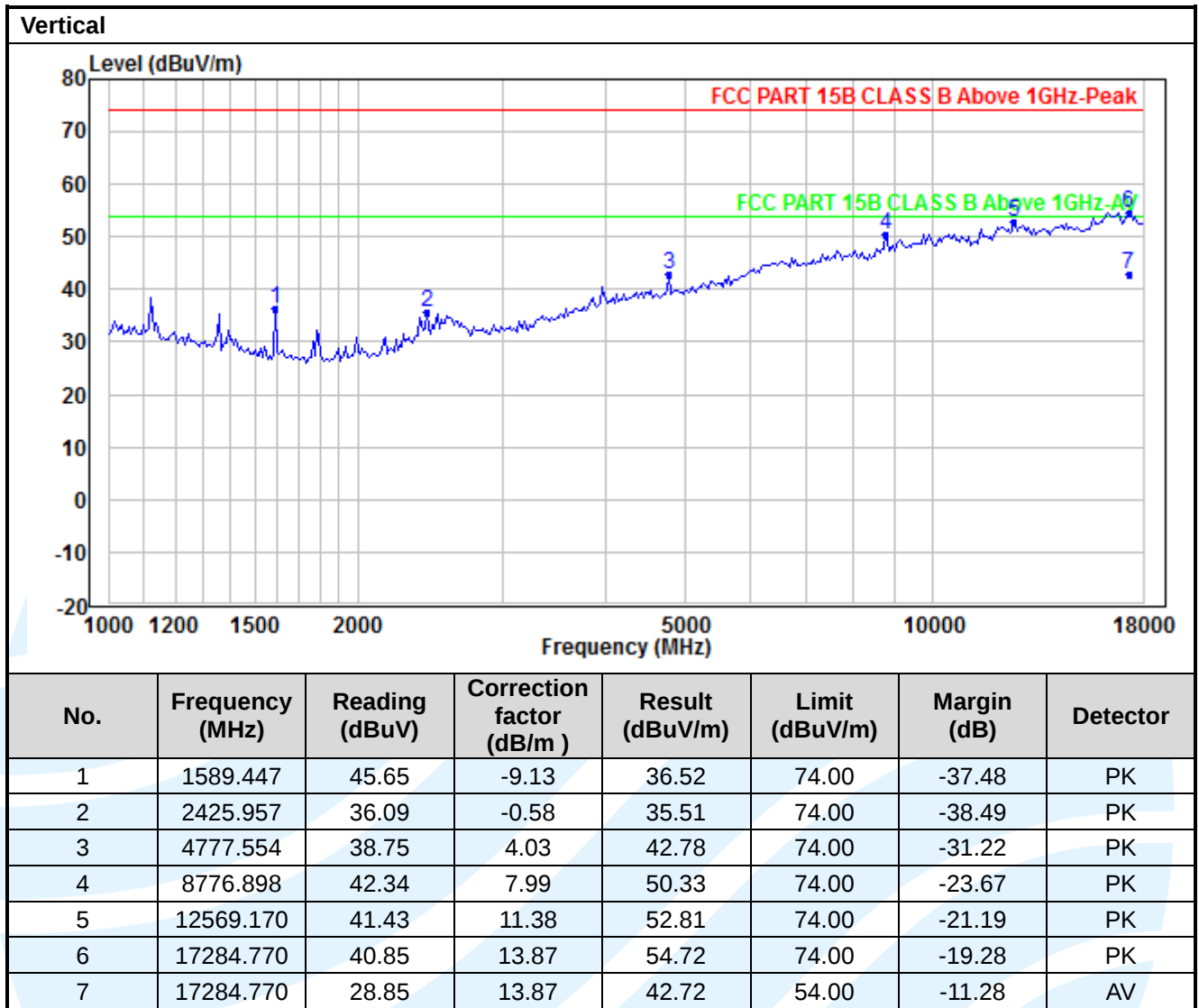
Above 1GHz(Peak & Average)

TM21

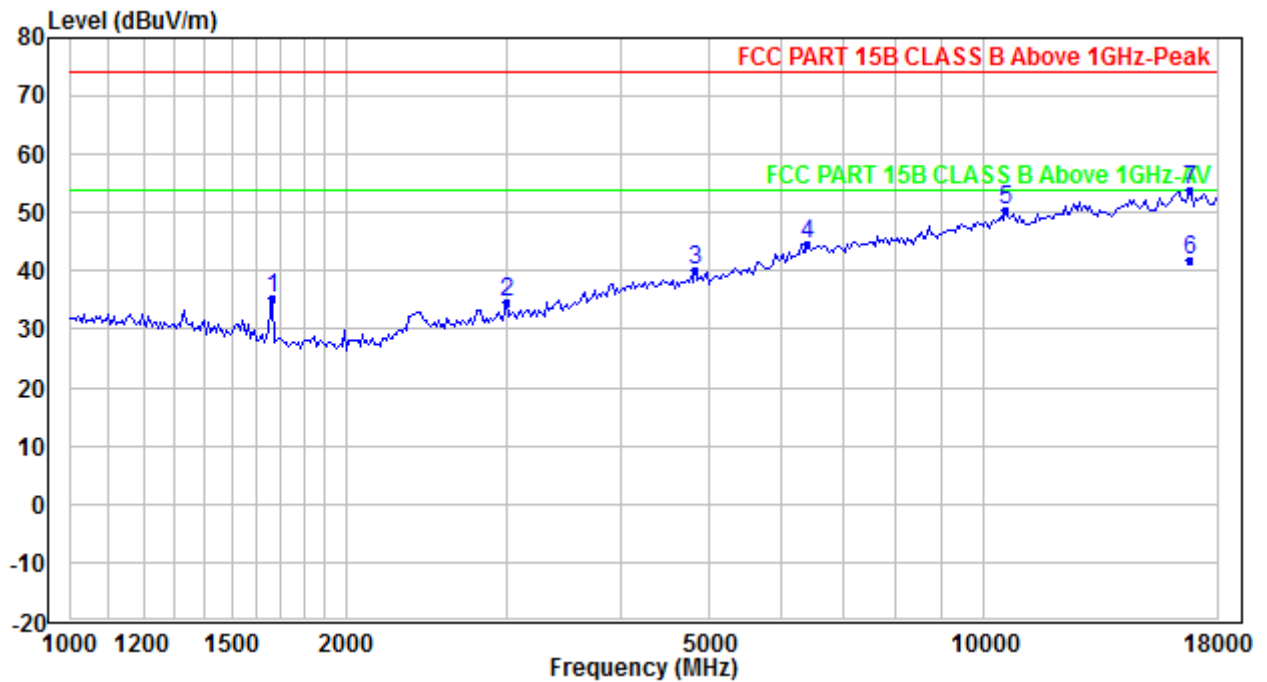
Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correction factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1196.693	42.89	-11.05	31.84	74.00	-42.16	PK
2	1784.669	40.39	-7.10	33.29	74.00	-40.71	PK
3	4133.483	34.74	4.62	39.36	74.00	-34.64	PK
4	7907.891	40.68	7.22	47.90	74.00	-26.10	PK
5	12715.630	41.20	11.73	52.93	74.00	-21.07	PK
6	16791.350	28.41	13.14	41.55	54.00	-12.45	AV
7	16791.350	41.41	13.14	54.55	74.00	-19.45	PK



Above 1GHz(Peak & Average)
TM22
Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correction factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1664.833	43.70	-8.42	35.28	74.00	-38.72	PK
2	3005.796	34.23	0.39	34.62	74.00	-39.38	PK
3	4833.222	35.66	4.39	40.05	74.00	-33.95	PK
4	6419.481	37.44	7.33	44.77	74.00	-29.23	PK
5	10564.270	40.62	9.68	50.30	74.00	-23.70	PK
6	16791.350	28.67	13.14	41.81	54.00	-12.19	AV
7	16791.350	40.67	13.14	53.81	74.00	-20.19	PK

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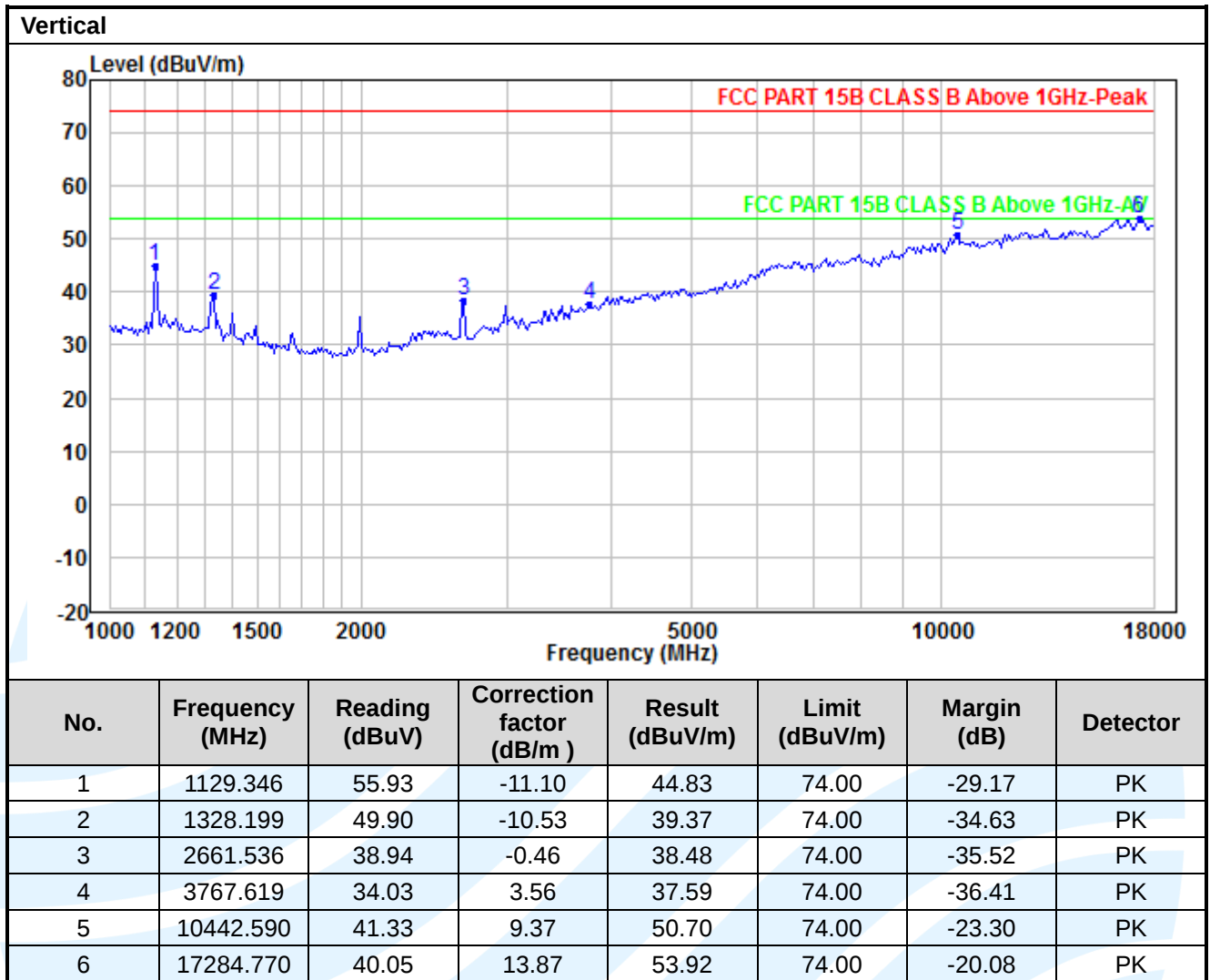
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Remark:

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. For Radiated Emission above 18GHz, there was not any unwanted emission detected.
6. As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits.

6.2 CONDUCTED EMISSION

Test Requirement: FCC 47 CFR Part 15.107
ICES-003 Issue 6 Section 6.1

Test Method: ANSI C63.4-2014

Limits:

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: Refer to section 4.3.2 for details.

Test Procedures:

- 1) The Product was placed on a nonconductive table 0.8 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.

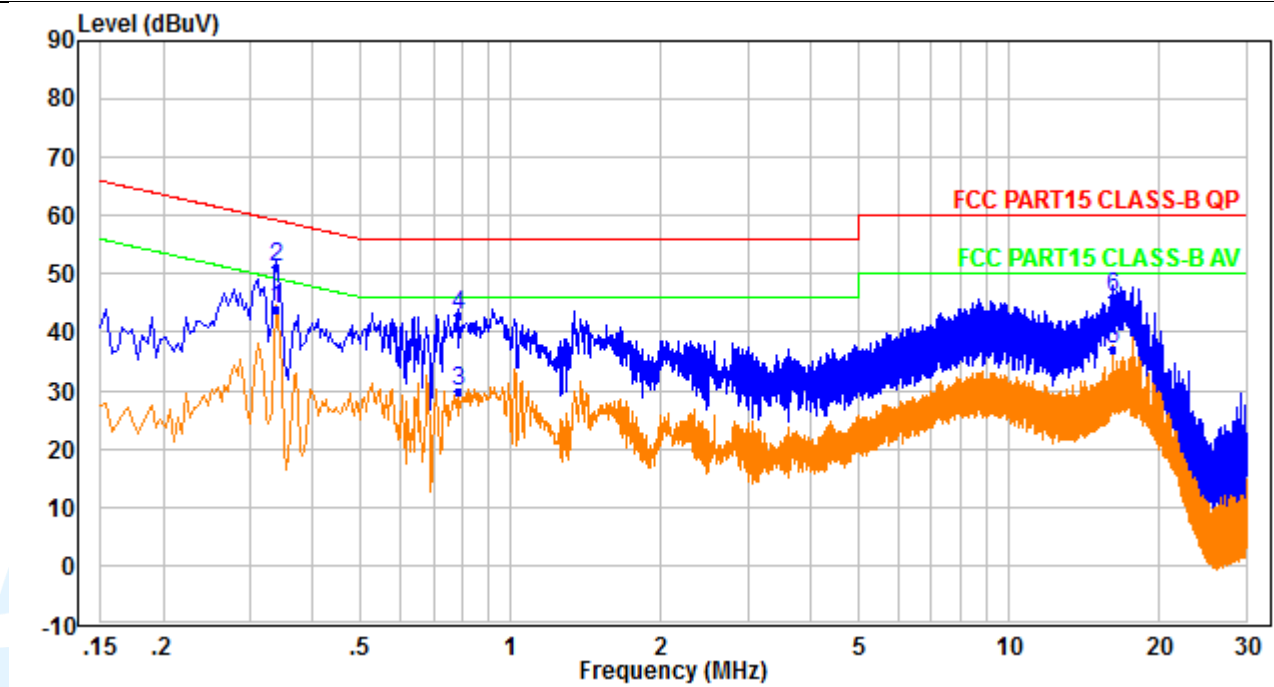
Test Result: Pass

The measurement data as follows:

Quasi Peak and Average:

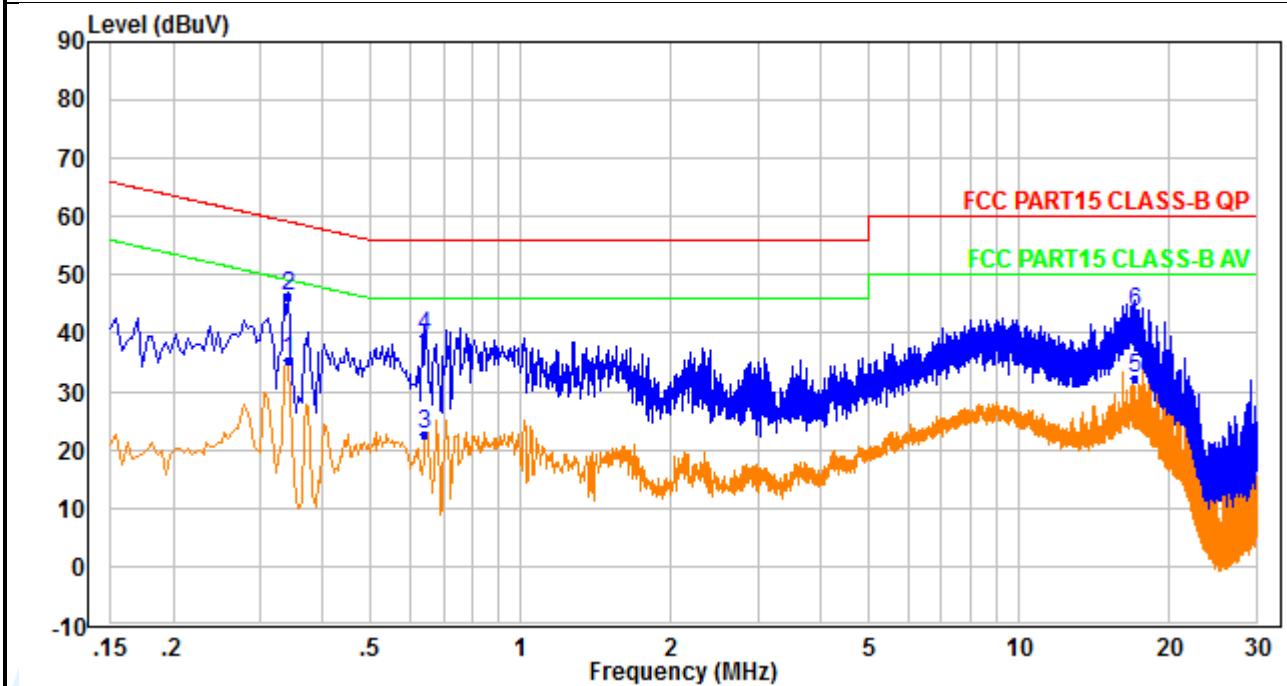
TM5

Live Line



No.	Frequency (MHz)	Reading (dBuV)	Correction factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.338	34.75	9.20	43.95	49.25	-5.30	Average
2	0.338	41.98	9.20	51.18	59.25	-8.07	QP
3	0.782	20.41	9.42	29.83	46.00	-16.17	Average
4	0.782	33.49	9.42	42.91	56.00	-13.09	QP
5	16.225	27.05	9.92	36.97	50.00	-13.03	Average
6	16.225	36.06	9.92	45.98	60.00	-14.02	QP

Neutral Line



No.	Frequency (MHz)	Reading (dBUV)	Correction factor (dB)	Result (dBUV)	Limit (dBUV)	Margin (dB)	Detector
1	0.342	26.02	9.18	35.20	49.15	-13.95	Average
2	0.342	37.03	9.18	46.21	59.15	-12.94	QP
3	0.638	13.13	9.37	22.50	46.00	-23.50	Average
4	0.638	30.26	9.37	39.63	56.00	-16.37	QP
5	17.085	22.27	9.94	32.21	50.00	-17.79	Average
6	17.085	33.76	9.94	43.70	60.00	-16.30	QP

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Fax: +86-755-28230886

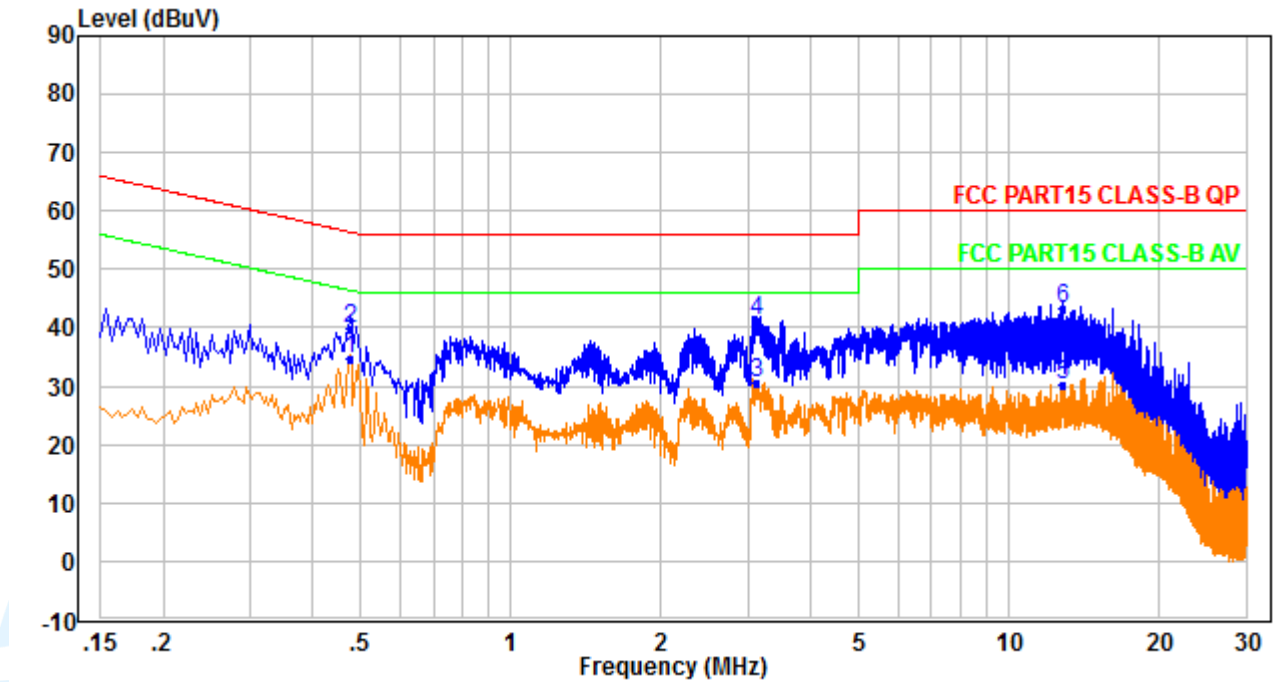
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Quasi Peak and Average: TM6

Live Line



No.	Frequency (MHz)	Reading (dBuV)	Correction factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.474	25.22	9.30	34.52	46.44	-11.92	Average
2	0.474	30.58	9.30	39.88	56.44	-16.56	QP
3	3.106	21.08	9.60	30.68	46.00	-15.32	Average
4	3.106	31.44	9.60	41.04	56.00	-14.96	QP
5	12.885	20.34	9.80	30.14	50.00	-19.86	Average
6	12.885	33.44	9.80	43.24	60.00	-16.76	QP

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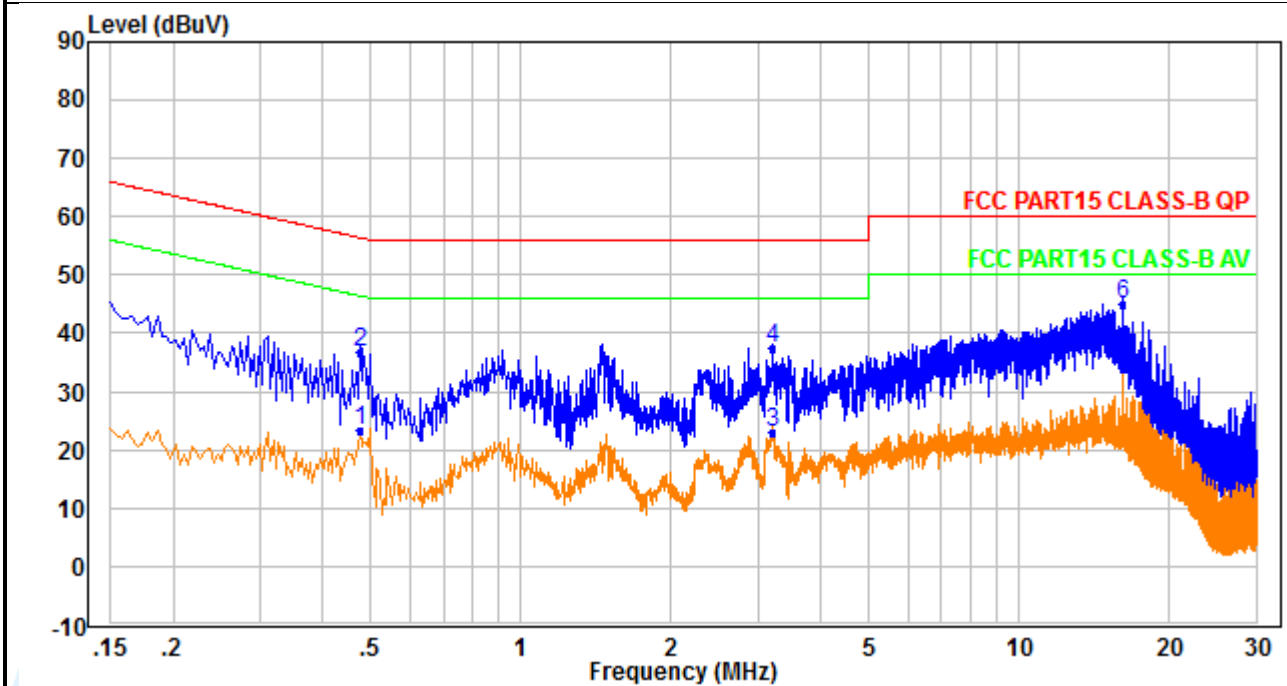
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Neutral Line



No.	Frequency (MHz)	Reading (dBUV)	Correction factor (dB)	Result (dBUV)	Limit (dBUV)	Margin (dB)	Detector
1	0.474	14.13	9.32	23.45	46.44	-22.99	Average
2	0.474	27.33	9.32	36.65	56.44	-19.79	QP
3	3.206	13.50	9.61	23.11	46.00	-22.89	Average
4	3.206	27.65	9.61	37.26	56.00	-18.74	QP
5	16.229	24.05	9.92	33.97	50.00	-16.03	Average
6	16.229	35.20	9.92	45.12	60.00	-14.88	QP

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Fax: +86-755-28230886

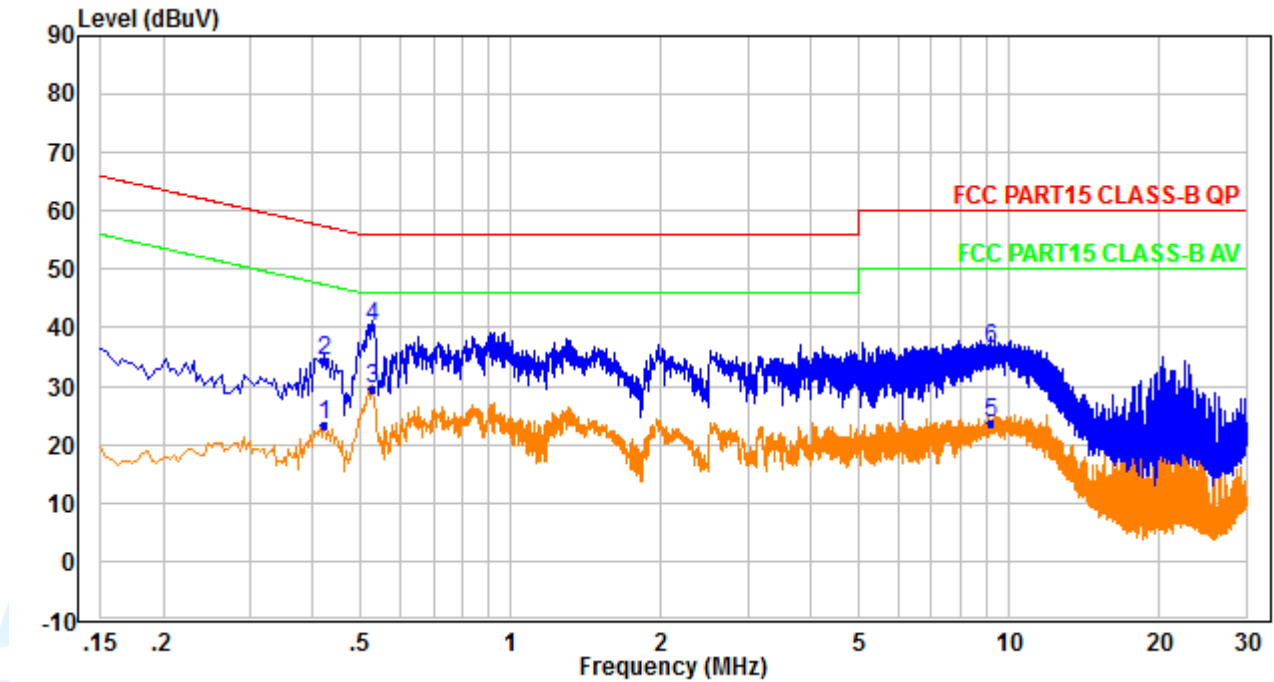
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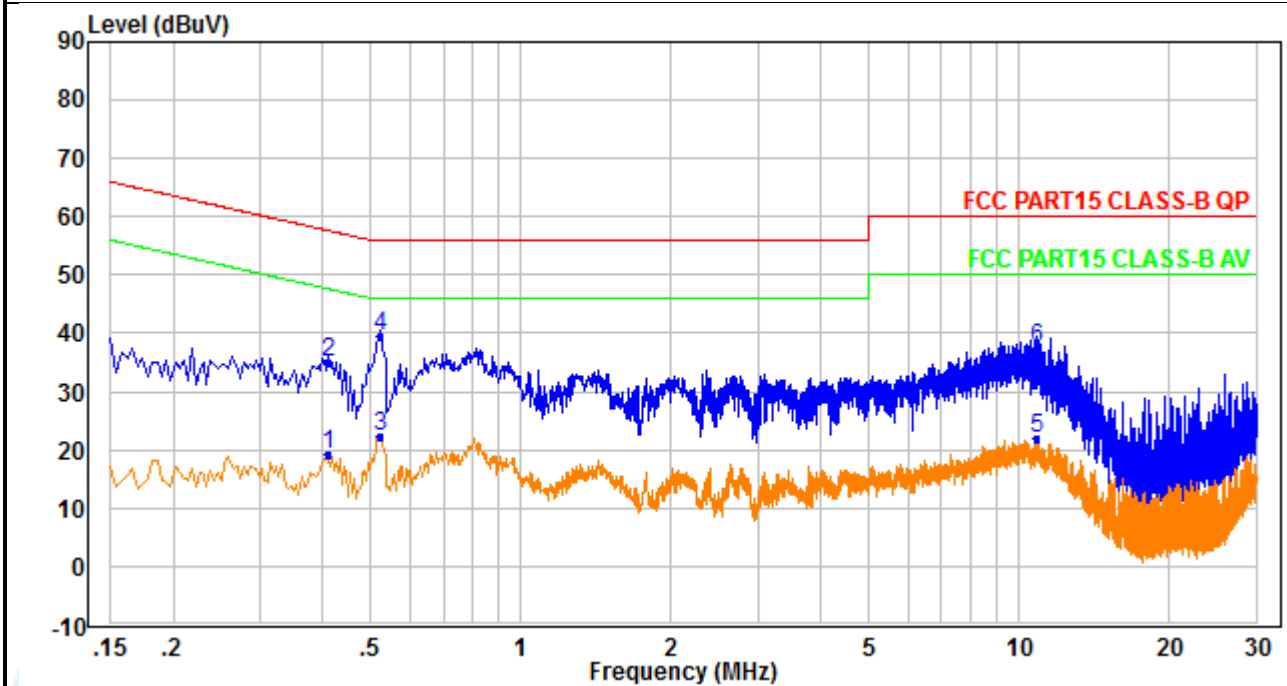
Quasi Peak and Average:
TM7

Live Line



No.	Frequency (MHz)	Reading (dBuV)	Correction factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.422	14.11	9.23	23.34	47.41	-24.07	Average
2	0.422	25.17	9.23	34.40	57.41	-23.01	QP
3	0.526	20.10	9.33	29.43	46.00	-16.57	Average
4	0.526	30.81	9.33	40.14	56.00	-15.86	QP
5	9.193	14.09	9.67	23.76	50.00	-26.24	Average
6	9.193	26.76	9.67	36.43	60.00	-23.57	QP

Neutral Line



No.	Frequency (MHz)	Reading (dBUV)	Correction factor (dB)	Result (dBUV)	Limit (dBUV)	Margin (dB)	Detector
1	0.410	10.13	9.20	19.33	47.65	-28.32	Average
2	0.410	25.95	9.20	35.15	57.65	-22.50	QP
3	0.522	13.00	9.36	22.36	46.00	-23.64	Average
4	0.522	30.06	9.36	39.42	56.00	-16.58	QP
5	10.869	12.26	9.71	21.97	50.00	-28.03	Average
6	10.869	27.87	9.71	37.58	60.00	-22.42	QP

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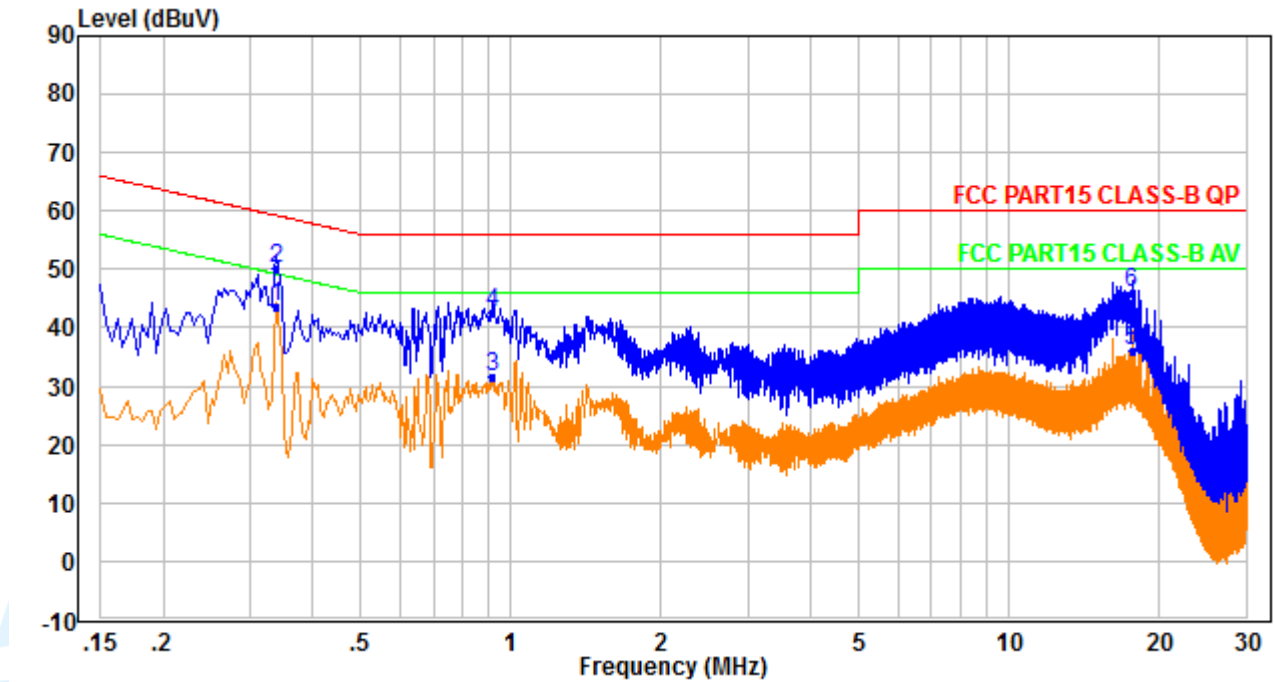
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Quasi Peak and Average: TM8

Live Line



No.	Frequency (MHz)	Reading (dBuV)	Correction factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.338	34.38	9.20	43.58	49.25	-5.67	Average
2	0.338	40.84	9.20	50.04	59.25	-9.21	QP
3	0.914	22.05	9.42	31.47	46.00	-14.53	Average
4	0.914	33.07	9.42	42.49	56.00	-13.51	QP
5	17.693	26.04	9.97	36.01	50.00	-13.99	Average
6	17.693	36.17	9.97	46.14	60.00	-13.86	QP

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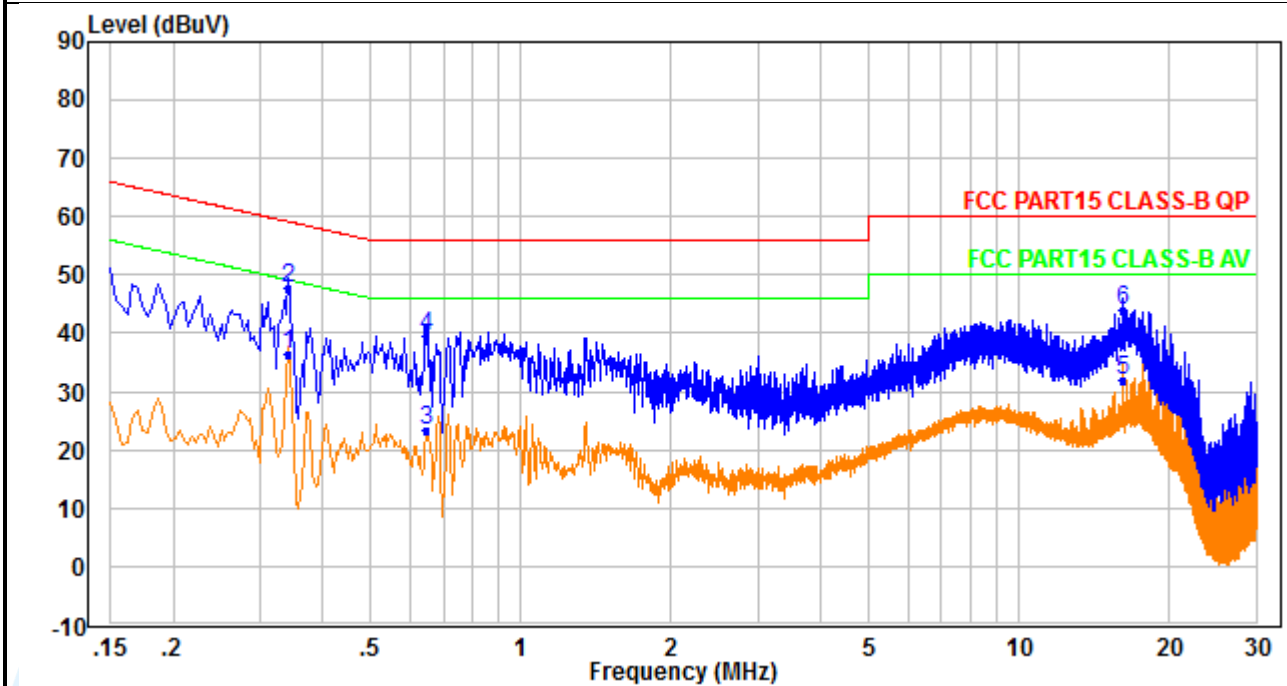
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Neutral Line



No.	Frequency (MHz)	Reading (dBUV)	Correction factor (dB)	Result (dBUV)	Limit (dBUV)	Margin (dB)	Detector
1	0.342	27.06	9.18	36.24	49.15	-12.91	Average
2	0.342	38.41	9.18	47.59	59.15	-11.56	QP
3	0.646	14.00	9.38	23.38	46.00	-22.62	Average
4	0.646	30.00	9.38	39.38	56.00	-16.62	QP
5	16.229	22.05	9.92	31.97	50.00	-18.03	Average
6	16.229	34.14	9.92	44.06	60.00	-15.94	QP

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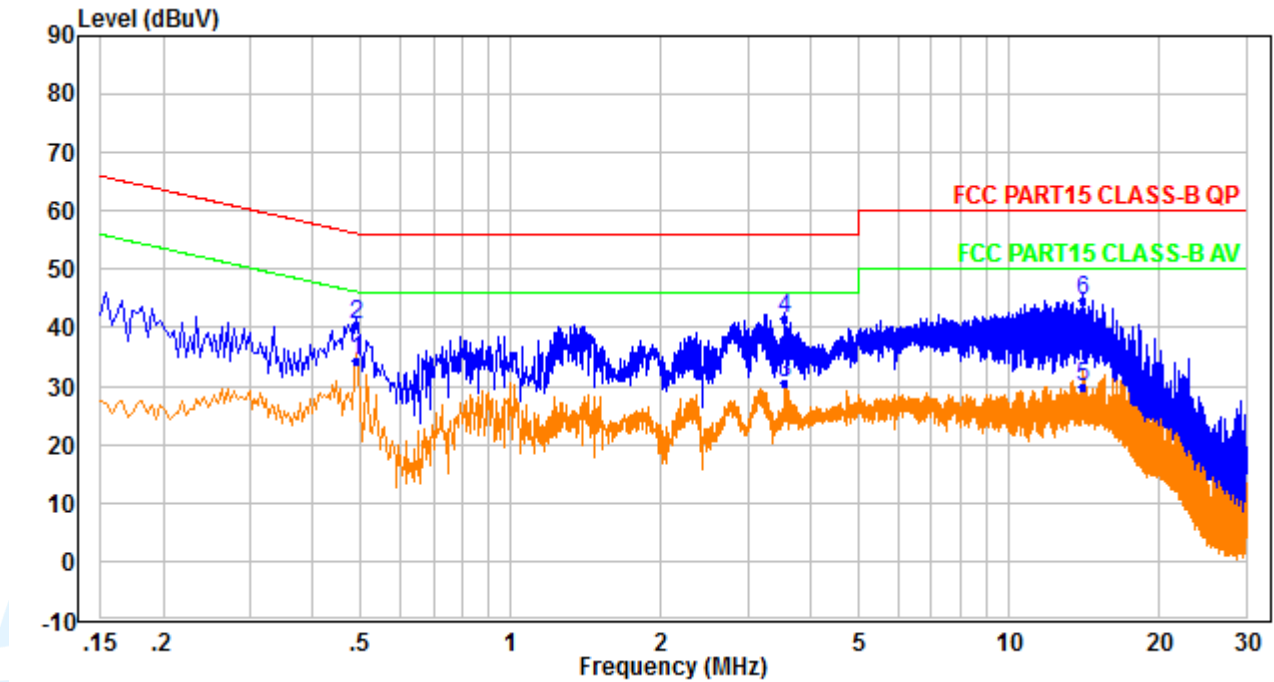
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Quasi Peak and Average: TM9

Live Line



No.	Frequency (MHz)	Reading (dBuV)	Correction factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.490	25.05	9.32	34.37	46.17	-11.80	Average
2	0.490	31.09	9.32	40.41	56.17	-15.76	QP
3	3.550	21.12	9.60	30.72	46.00	-15.28	Average
4	3.550	31.87	9.60	41.47	56.00	-14.53	QP
5	14.153	20.11	9.86	29.97	50.00	-20.03	Average
6	14.153	34.88	9.86	44.74	60.00	-15.26	QP

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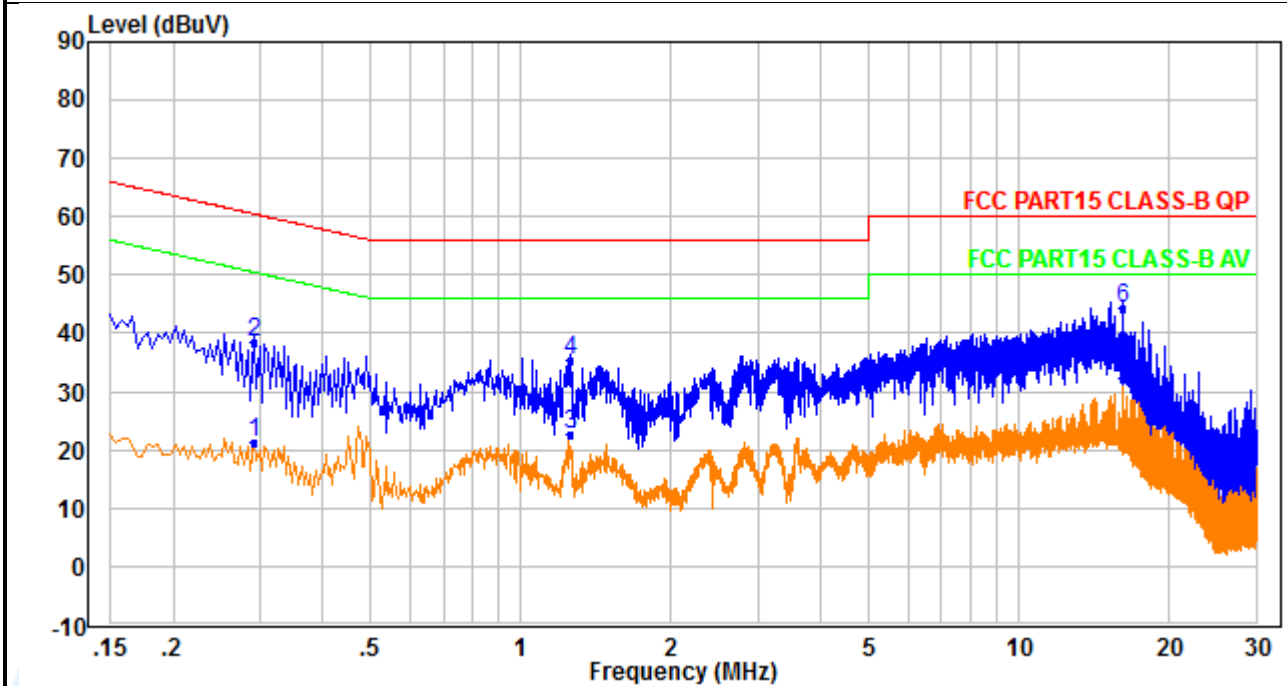
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Neutral Line



No.	Frequency (MHz)	Reading (dBUV)	Correction factor (dB)	Result (dBUV)	Limit (dBUV)	Margin (dB)	Detector
1	0.290	12.16	9.18	21.34	50.52	-29.18	Average
2	0.290	29.32	9.18	38.50	60.52	-22.02	QP
3	1.262	13.01	9.47	22.48	46.00	-23.52	Average
4	1.262	26.03	9.47	35.50	56.00	-20.50	QP
5	16.229	22.23	9.92	32.15	50.00	-17.85	Average
6	16.229	34.50	9.92	44.42	60.00	-15.58	QP

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Fax: +86-755-28230886

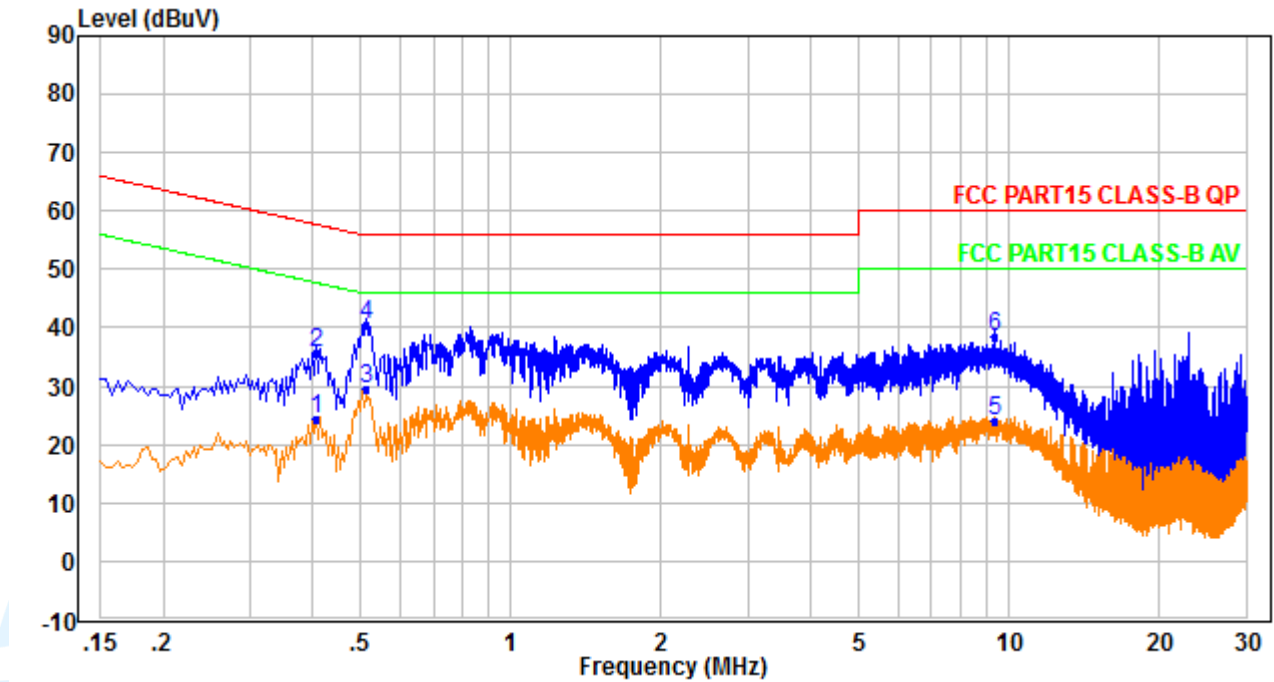
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Quasi Peak and Average: TM10

Live Line



No.	Frequency (MHz)	Reading (dBuV)	Correction factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.406	15.03	9.21	24.24	47.73	-23.49	Average
2	0.406	26.44	9.21	35.65	57.73	-22.08	QP
3	0.510	20.17	9.33	29.50	46.00	-16.50	Average
4	0.510	31.23	9.33	40.56	56.00	-15.44	QP
5	9.389	14.37	9.67	24.04	50.00	-25.96	Average
6	9.389	28.84	9.67	38.51	60.00	-21.49	QP

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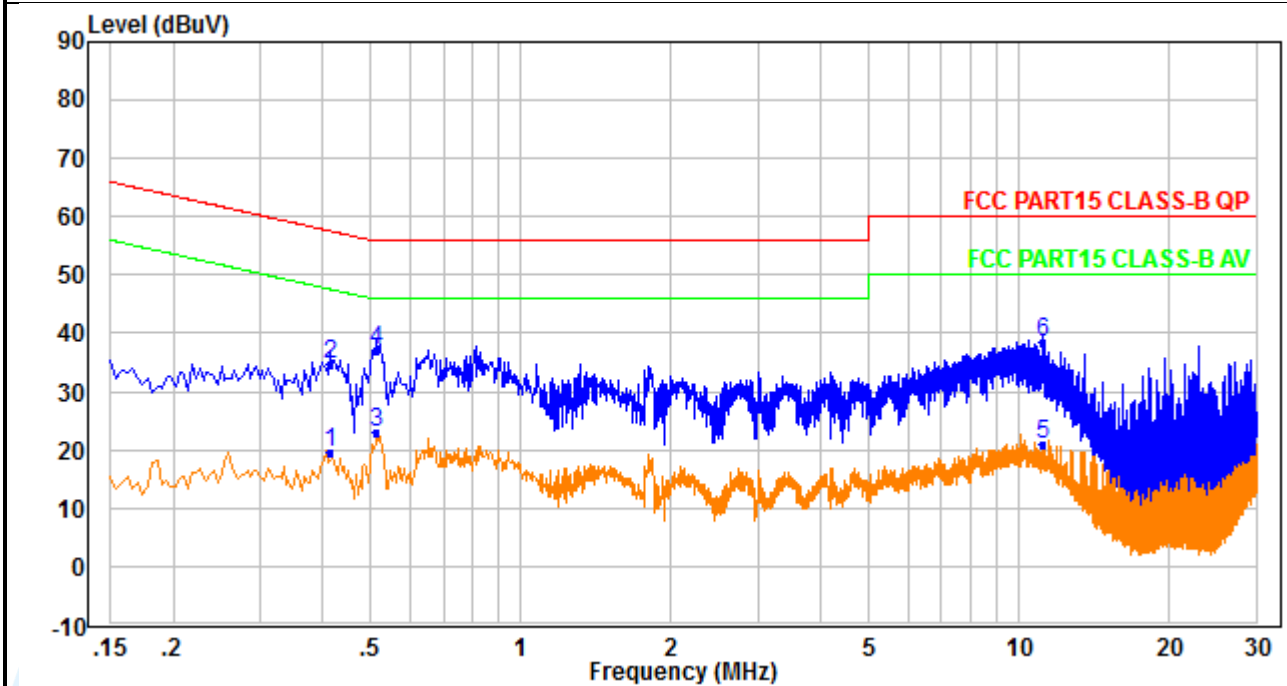
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Neutral Line



No.	Frequency (MHz)	Reading (dBUV)	Correction factor (dB)	Result (dBUV)	Limit (dBUV)	Margin (dB)	Detector
1	0.414	10.26	9.21	19.47	47.57	-28.10	Average
2	0.414	25.54	9.21	34.75	57.57	-22.82	QP
3	0.514	13.48	9.36	22.84	46.00	-23.16	Average
4	0.514	27.64	9.36	37.00	56.00	-19.00	QP
5	11.213	11.06	9.74	20.80	50.00	-29.20	Average
6	11.213	28.70	9.74	38.44	60.00	-21.56	QP

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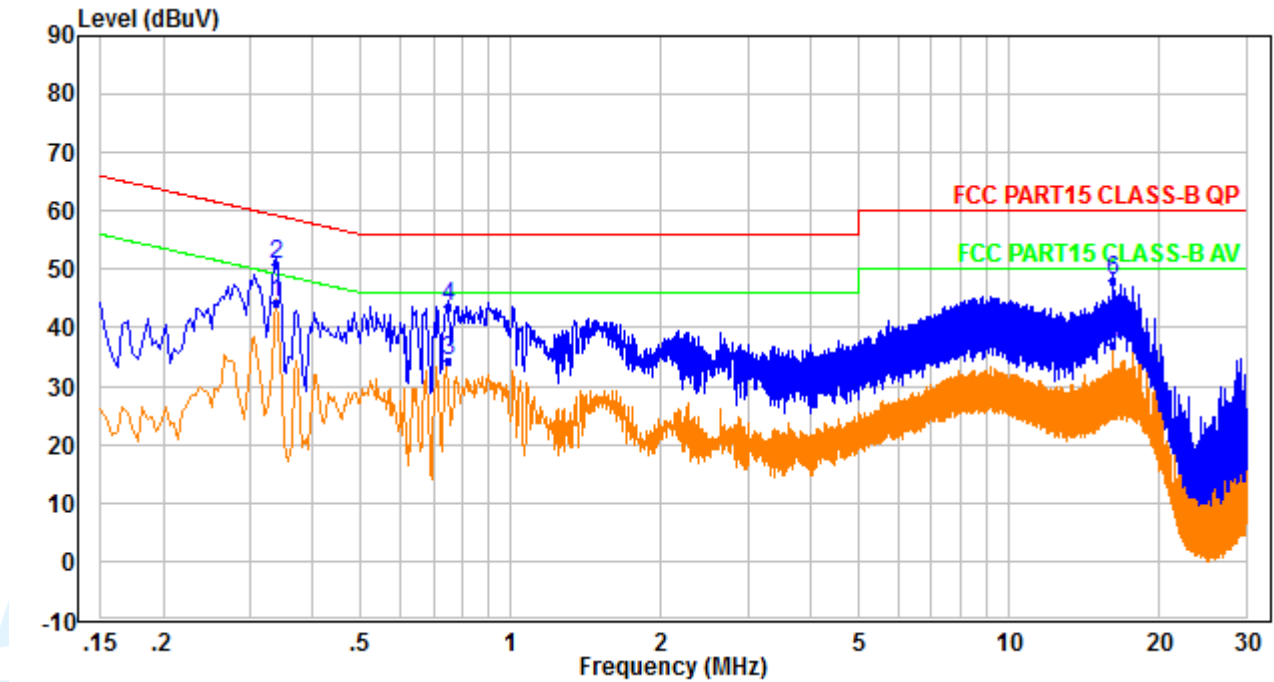
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Quasi Peak and Average: TM15

Live Line



No.	Frequency (MHz)	Reading (dBuV)	Correction factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.338	35.21	9.20	44.41	49.25	-4.84	Average
2	0.338	41.53	9.20	50.73	59.25	-8.52	QP
3	0.750	25.02	9.42	34.44	46.00	-11.56	Average
4	0.750	34.09	9.42	43.51	56.00	-12.49	QP
5	16.229	27.10	9.92	37.02	50.00	-12.98	Average
6	16.229	38.14	9.92	48.06	60.00	-11.94	QP

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Tel: +86-755-28230888

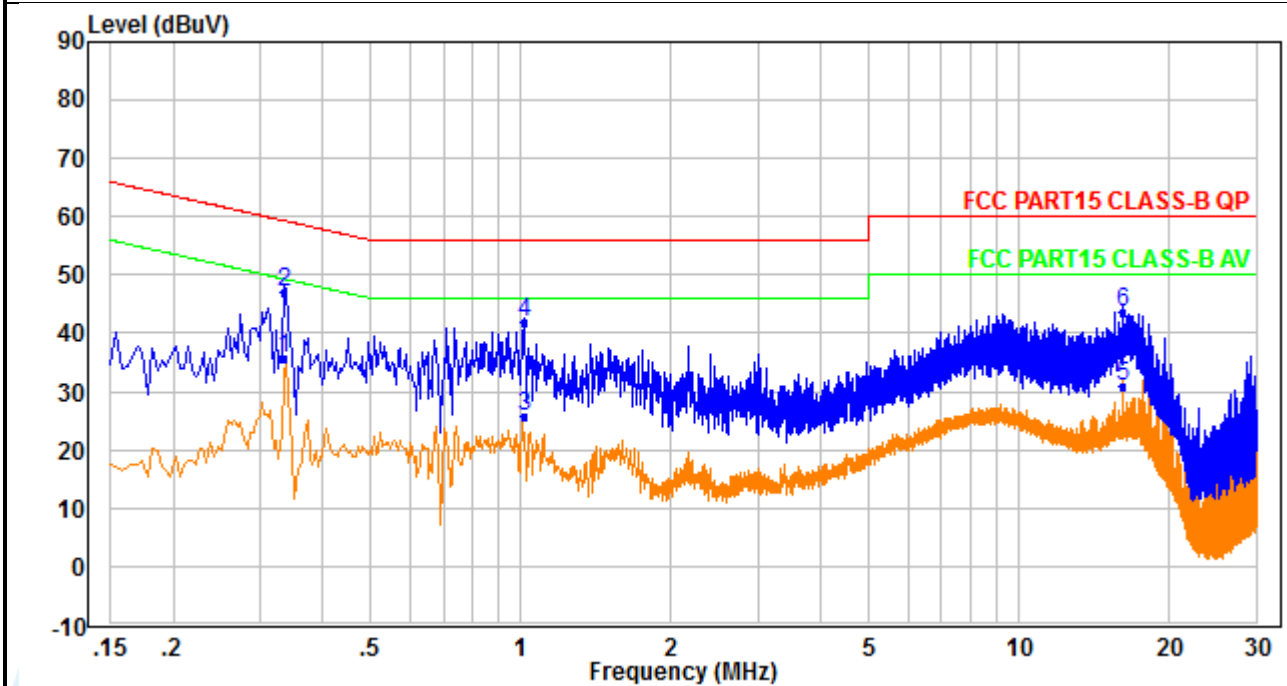
Fax: +86-755-28230886

E-mail: info@uttlab.com

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Neutral Line



No.	Frequency (MHz)	Reading (dBUV)	Correction factor (dB)	Result (dBUV)	Limit (dBUV)	Margin (dB)	Detector
1	0.334	26.38	9.18	35.56	49.35	-13.79	Average
2	0.334	37.94	9.18	47.12	59.35	-12.23	QP
3	1.014	16.17	9.42	25.59	46.00	-20.41	Average
4	1.014	32.32	9.42	41.74	56.00	-14.26	QP
5	16.233	20.84	9.92	30.76	50.00	-19.24	Average
6	16.233	33.79	9.92	43.71	60.00	-16.29	QP

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Fax: +86-755-28230886

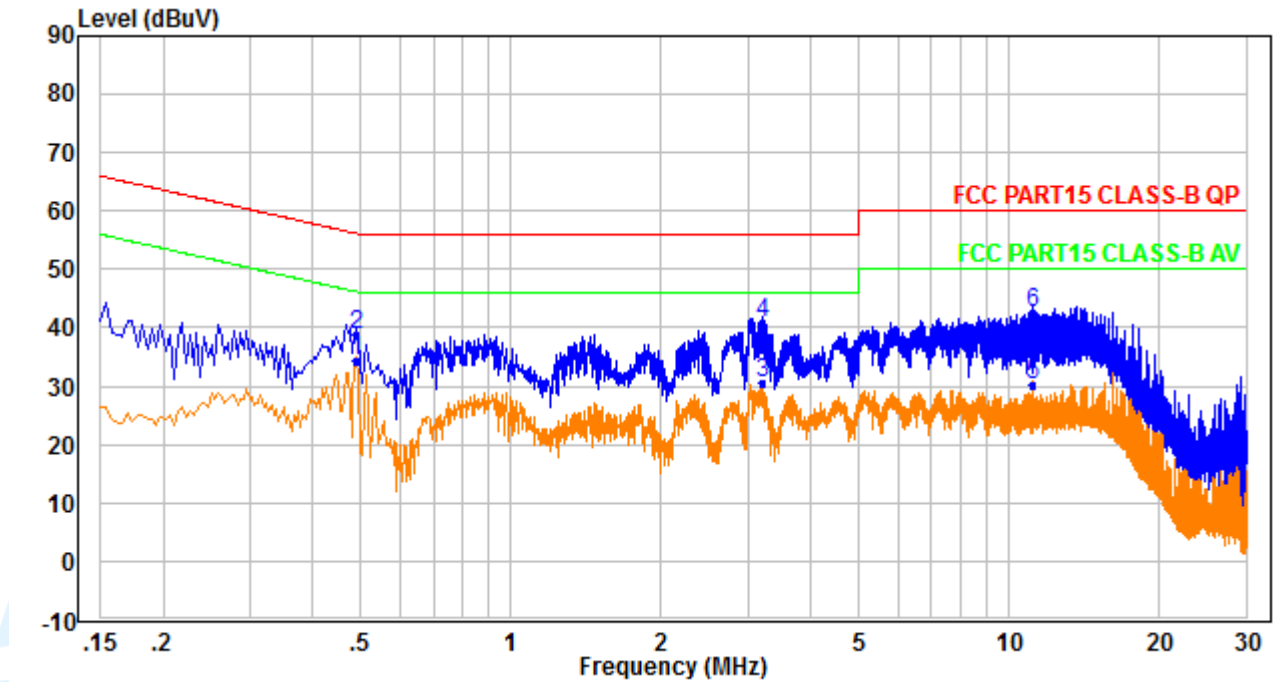
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Quasi Peak and Average: TM16

Live Line



No.	Frequency (MHz)	Reading (dBuV)	Correction factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.490	25.09	9.32	34.41	46.17	-11.76	Average
2	0.490	29.48	9.32	38.80	56.17	-17.37	QP
3	3.210	21.00	9.60	30.60	46.00	-15.40	Average
4	3.210	31.35	9.60	40.95	56.00	-15.05	QP
5	11.233	20.49	9.74	30.23	50.00	-19.77	Average
6	11.233	32.79	9.74	42.53	60.00	-17.47	QP

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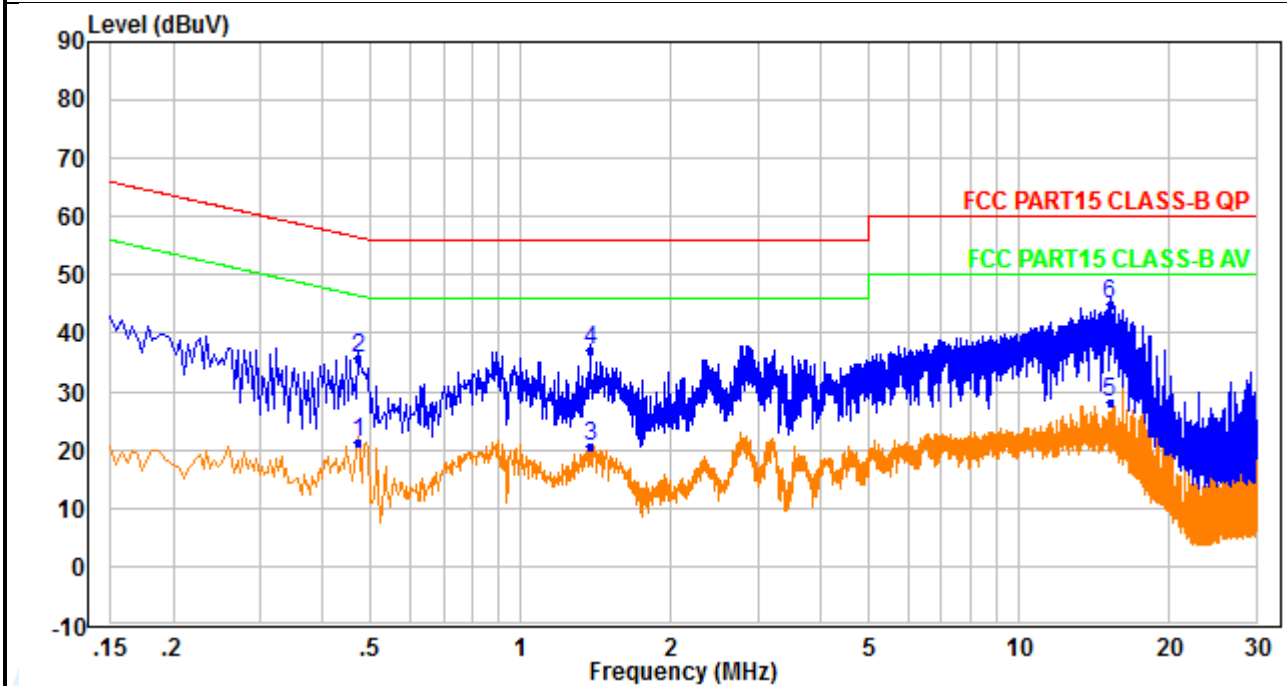
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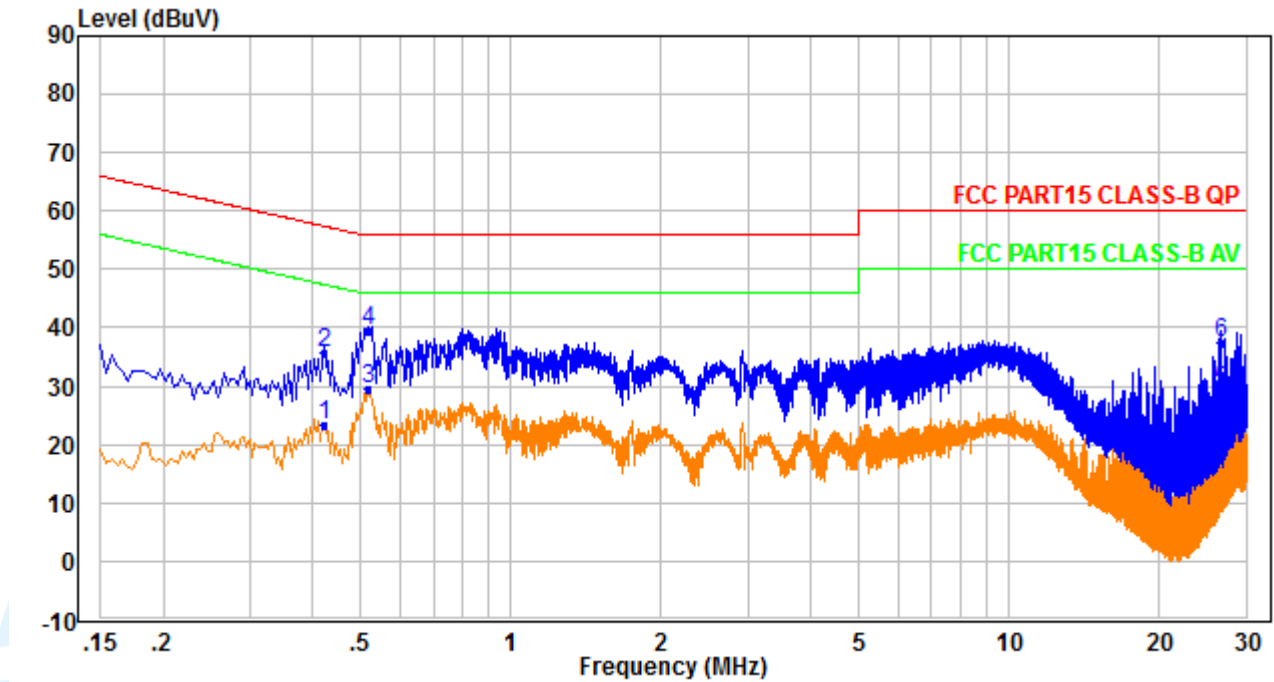
Neutral Line



No.	Frequency (MHz)	Reading (dBUV)	Correction factor (dB)	Result (dBUV)	Limit (dBUV)	Margin (dB)	Detector
1	0.470	12.12	9.31	21.43	46.51	-25.08	Average
2	0.470	26.41	9.31	35.72	56.51	-20.79	QP
3	1.374	11.23	9.50	20.73	46.00	-25.27	Average
4	1.374	27.57	9.50	37.07	56.00	-18.93	QP
5	15.253	18.38	9.90	28.28	50.00	-21.72	Average
6	15.253	34.97	9.90	44.87	60.00	-15.13	QP

Quasi Peak and Average: TM17

Live Line



No.	Frequency (MHz)	Reading (dBuV)	Correction factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.422	14.22	9.23	23.45	47.41	-23.96	Average
2	0.422	26.43	9.23	35.66	57.41	-21.75	QP
3	0.518	20.05	9.33	29.38	46.00	-16.62	Average
4	0.518	30.01	9.33	39.34	56.00	-16.66	QP
5	26.608	19.07	10.00	29.07	50.00	-20.93	Average
6	26.608	27.33	10.00	37.33	60.00	-22.67	QP

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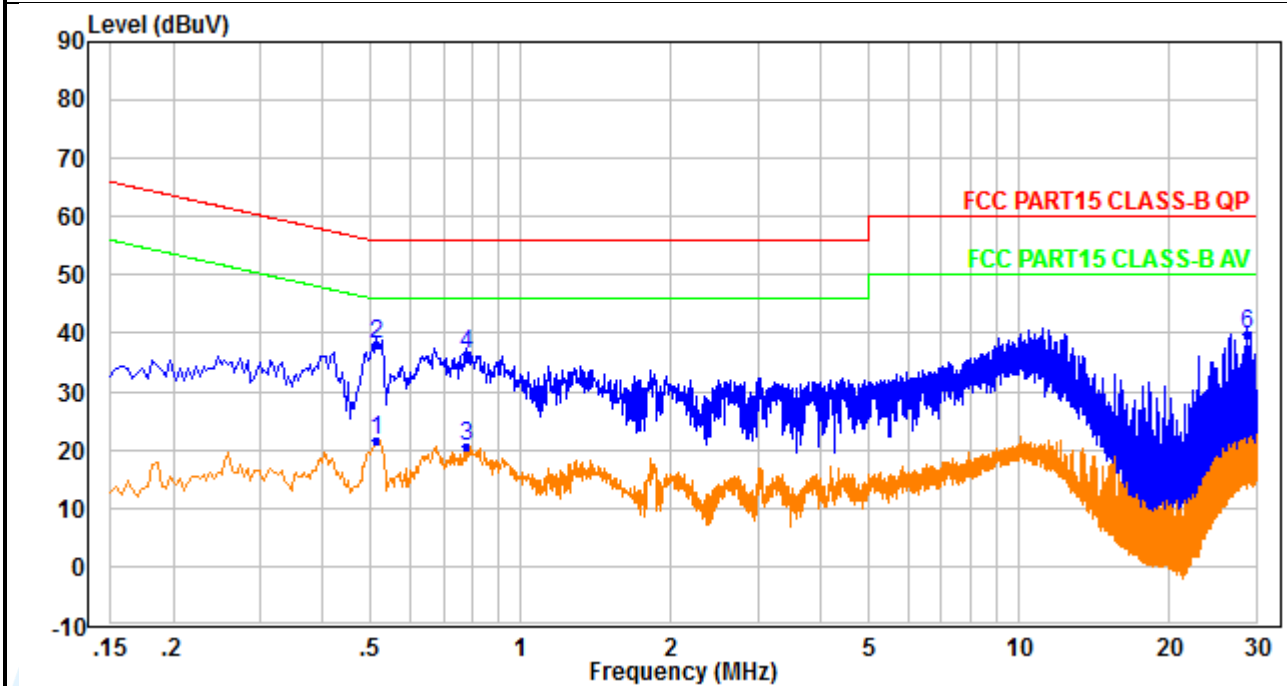
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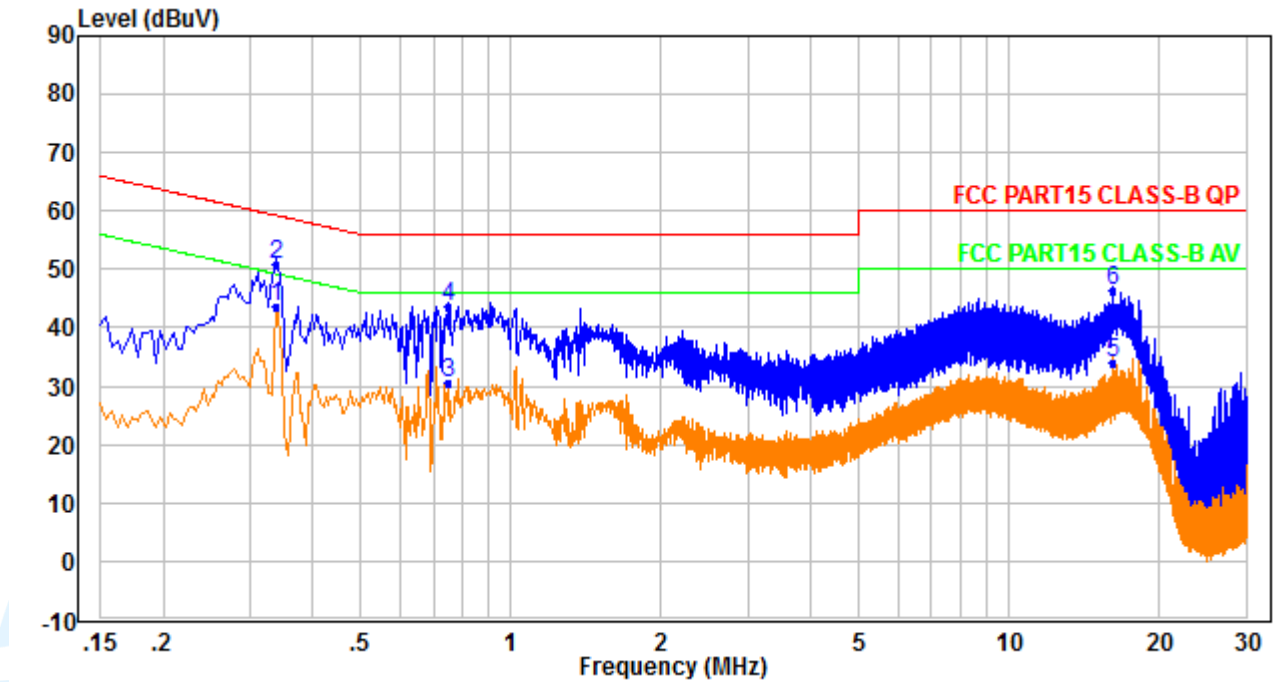
Neutral Line



No.	Frequency (MHz)	Reading (dBUV)	Correction factor (dB)	Result (dBUV)	Limit (dBUV)	Margin (dB)	Detector
1	0.510	12.16	9.36	21.52	46.00	-24.48	Average
2	0.510	28.71	9.36	38.07	56.00	-17.93	QP
3	0.774	11.00	9.42	20.42	46.00	-25.58	Average
4	0.774	27.08	9.42	36.50	56.00	-19.50	QP
5	28.684	20.21	10.01	30.22	50.00	-19.78	Average
6	28.684	29.92	10.01	39.93	60.00	-20.07	QP

Quasi Peak and Average: TM18

Live Line



No.	Frequency (MHz)	Reading (dBuV)	Correction factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.338	34.34	9.20	43.54	49.25	-5.71	Average
2	0.338	41.77	9.20	50.97	59.25	-8.28	QP
3	0.746	21.02	9.42	30.44	46.00	-15.56	Average
4	0.746	34.05	9.42	43.47	56.00	-12.53	QP
5	16.229	24.12	9.92	34.04	50.00	-15.96	Average
6	16.229	36.27	9.92	46.19	60.00	-13.81	QP

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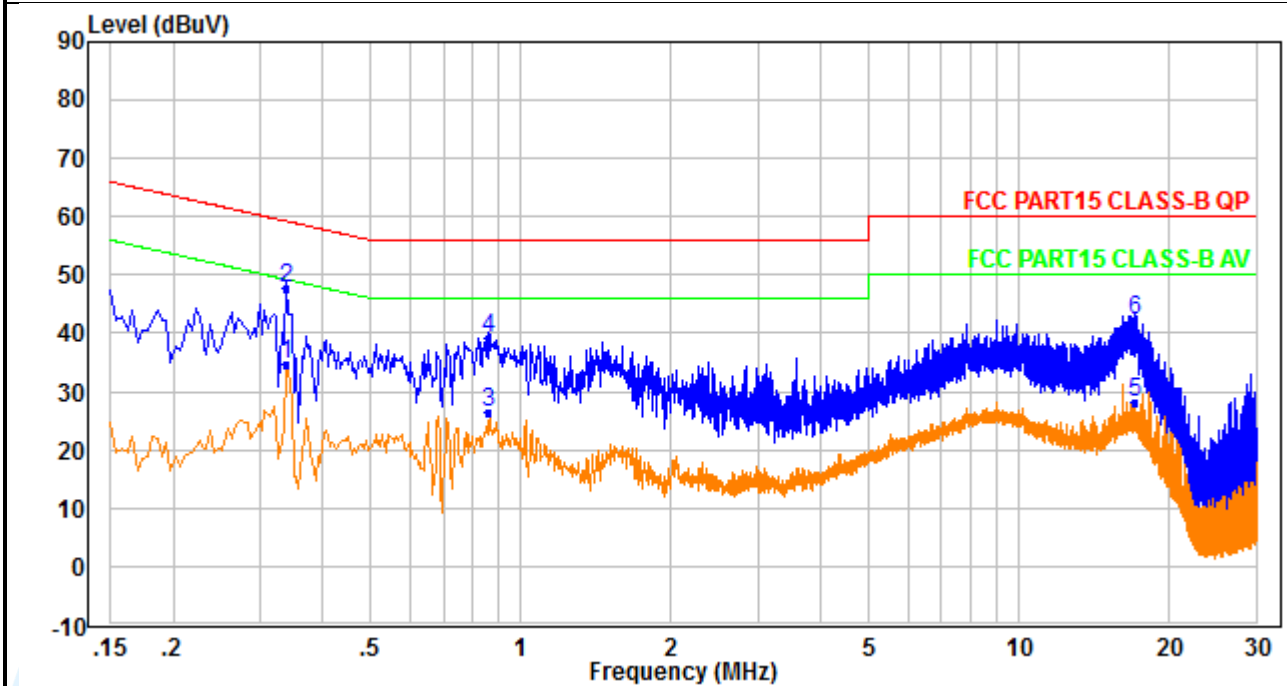
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Neutral Line



No.	Frequency (MHz)	Reading (dBUV)	Correction factor (dB)	Result (dBUV)	Limit (dBUV)	Margin (dB)	Detector
1	0.338	25.34	9.18	34.52	49.25	-14.73	Average
2	0.338	38.48	9.18	47.66	59.25	-11.59	QP
3	0.858	17.15	9.42	26.57	46.00	-19.43	Average
4	0.858	29.61	9.42	39.03	56.00	-16.97	QP
5	17.081	18.15	9.94	28.09	50.00	-21.91	Average
6	17.081	32.30	9.94	42.24	60.00	-17.76	QP

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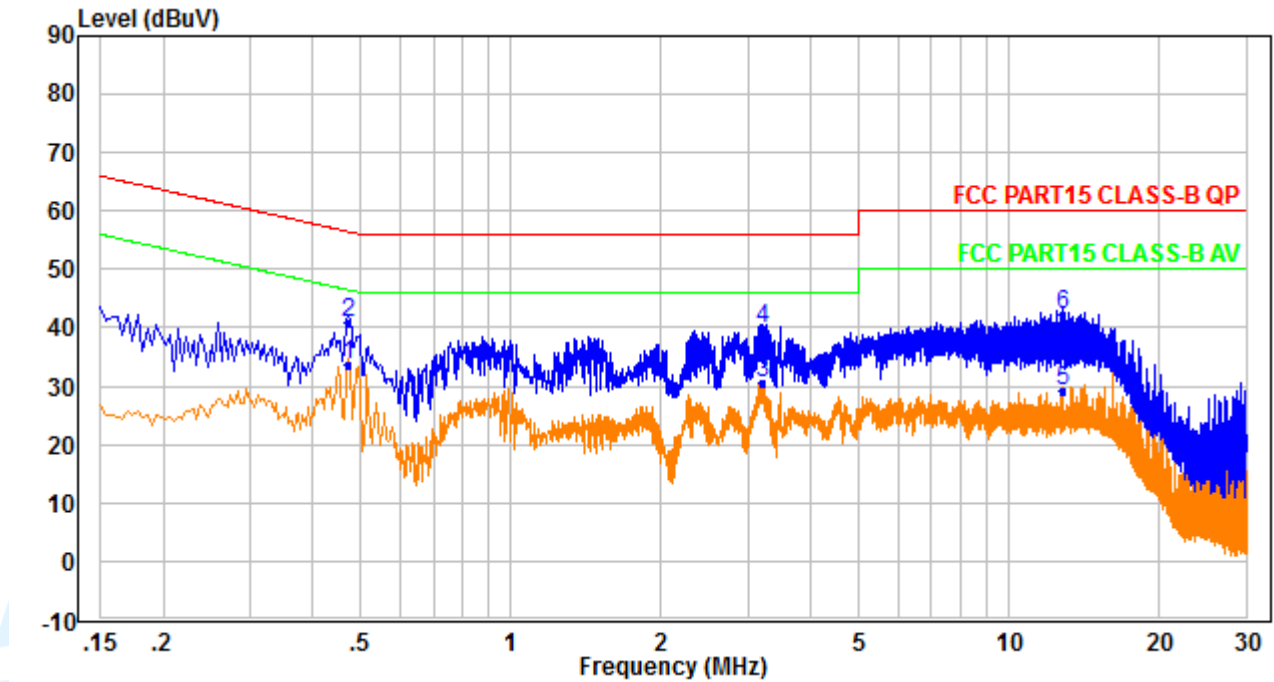
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Quasi Peak and Average: TM19

Live Line



No.	Frequency (MHz)	Reading (dBuV)	Correction factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.470	24.37	9.29	33.66	46.51	-12.85	Average
2	0.470	31.46	9.29	40.75	56.51	-15.76	QP
3	3.190	21.00	9.60	30.60	46.00	-15.40	Average
4	3.190	30.06	9.60	39.66	56.00	-16.34	QP
5	12.809	19.23	9.80	29.03	50.00	-20.97	Average
6	12.809	32.34	9.80	42.14	60.00	-17.86	QP

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Tel: +86-755-28230888

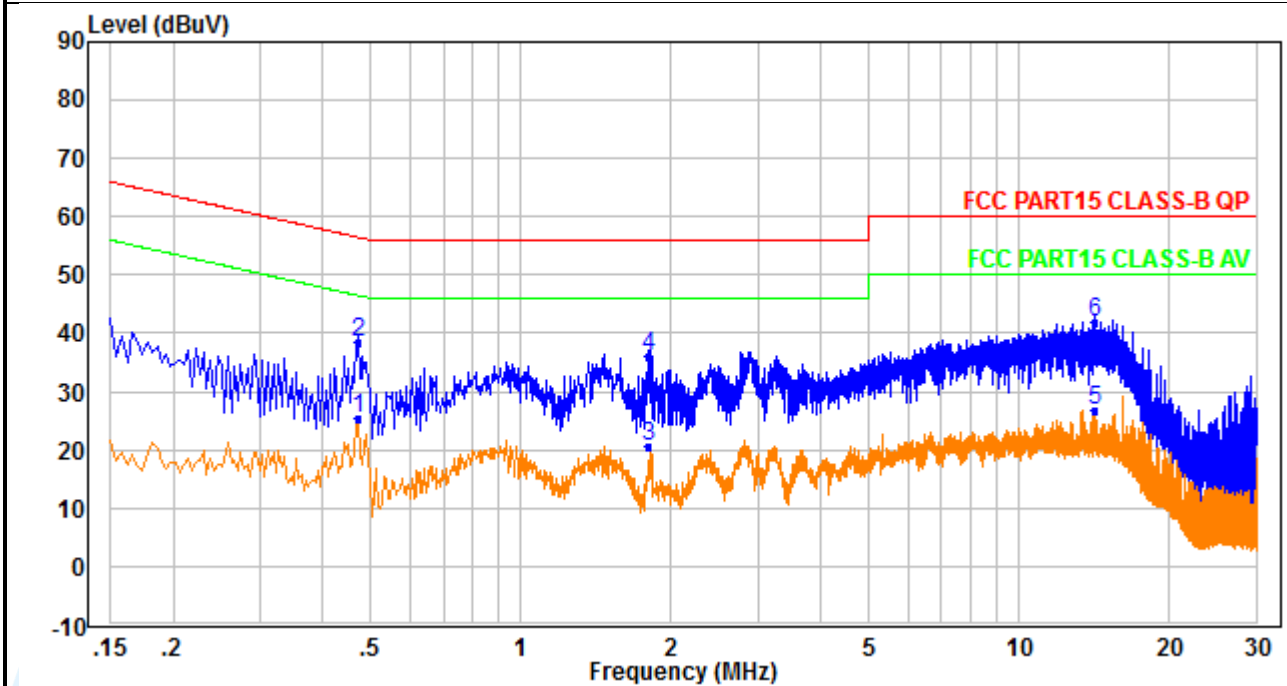
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Neutral Line



No.	Frequency (MHz)	Reading (dBUV)	Correction factor (dB)	Result (dBUV)	Limit (dBUV)	Margin (dB)	Detector
1	0.470	16.01	9.31	25.32	46.51	-21.19	Average
2	0.470	29.08	9.31	38.39	56.51	-18.12	QP
3	1.810	11.05	9.56	20.61	46.00	-25.39	Average
4	1.810	26.59	9.56	36.15	56.00	-19.85	QP
5	14.213	17.01	9.86	26.87	50.00	-23.13	Average
6	14.213	32.19	9.86	42.05	60.00	-17.95	QP

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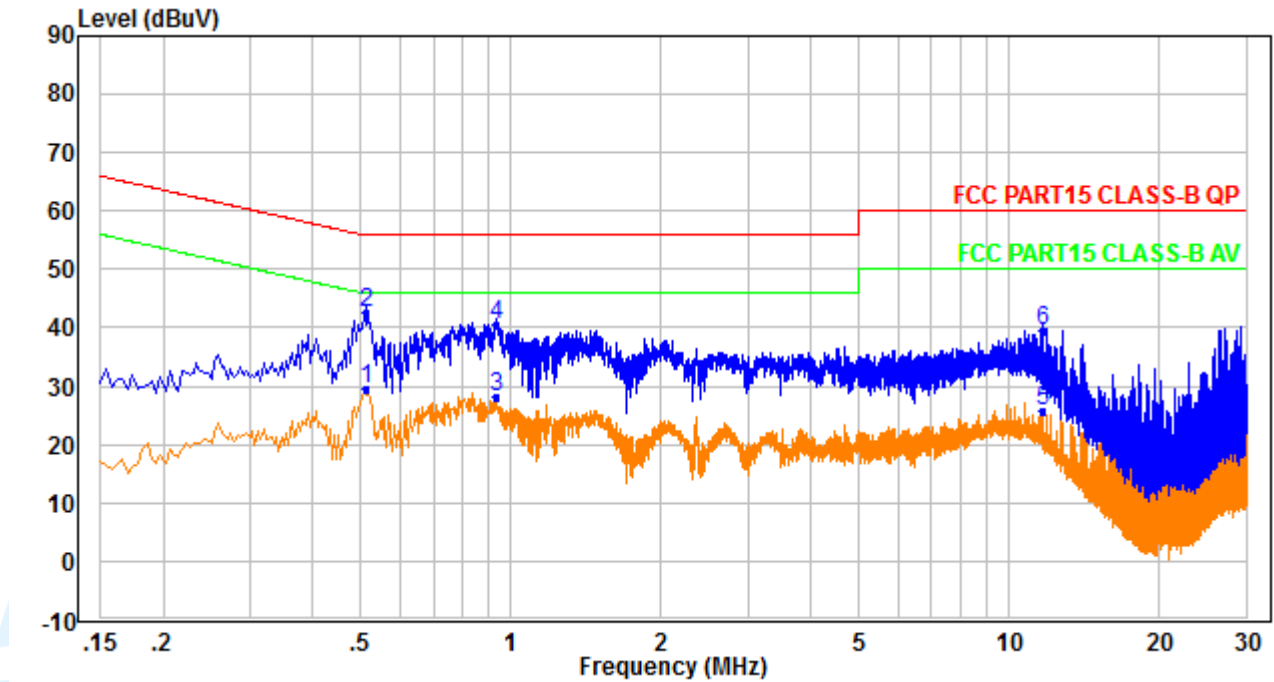
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Quasi Peak and Average: TM20

Live Line



No.	Frequency (MHz)	Reading (dBuV)	Correction factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.514	20.03	9.33	29.36	46.00	-16.64	Average
2	0.514	33.14	9.33	42.47	56.00	-13.53	QP
3	0.938	18.66	9.42	28.08	46.00	-17.92	Average
4	0.938	30.97	9.42	40.39	56.00	-15.61	QP
5	11.709	16.14	9.76	25.90	50.00	-24.10	Average
6	11.709	29.82	9.76	39.58	60.00	-20.42	QP

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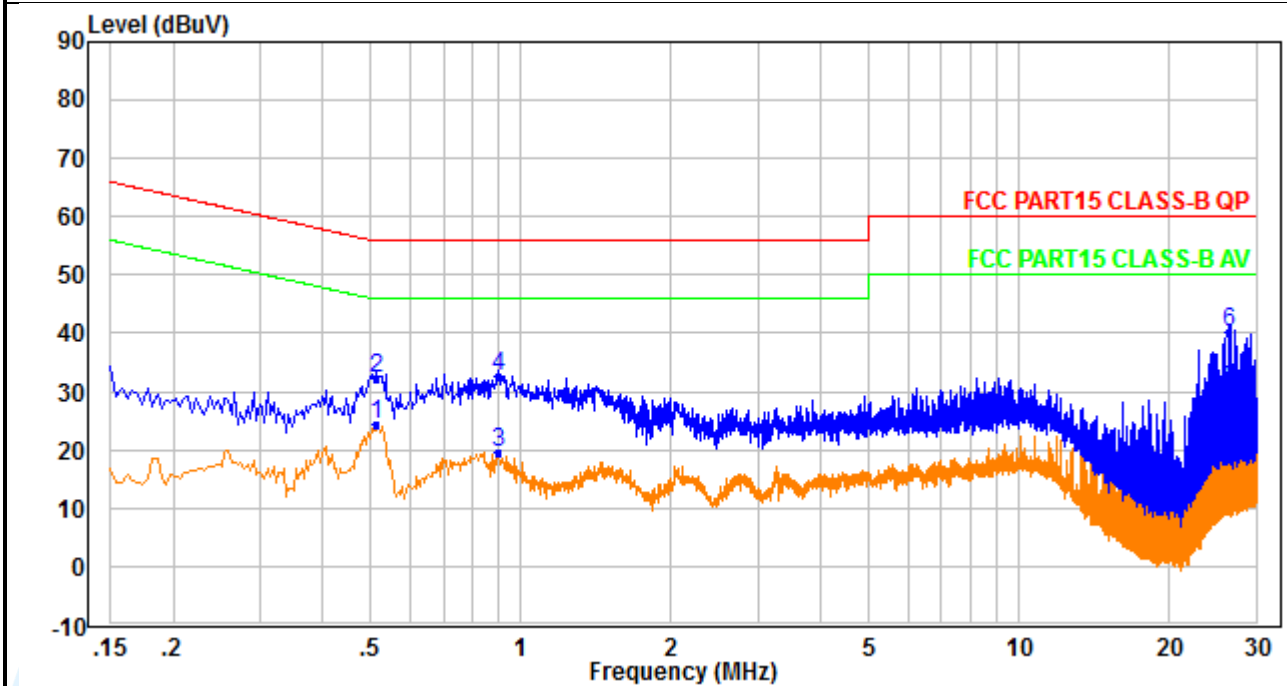
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Neutral Line



No.	Frequency (MHz)	Reading (dBUV)	Correction factor (dB)	Result (dBUV)	Limit (dBUV)	Margin (dB)	Detector
1	0.514	15.00	9.36	24.36	46.00	-21.64	Average
2	0.514	23.05	9.36	32.41	56.00	-23.59	QP
3	0.898	10.12	9.42	19.54	46.00	-26.46	Average
4	0.898	23.27	9.42	32.69	56.00	-23.31	QP
5	26.488	20.07	10.03	30.10	50.00	-19.90	Average
6	26.488	30.09	10.03	40.12	60.00	-19.88	QP

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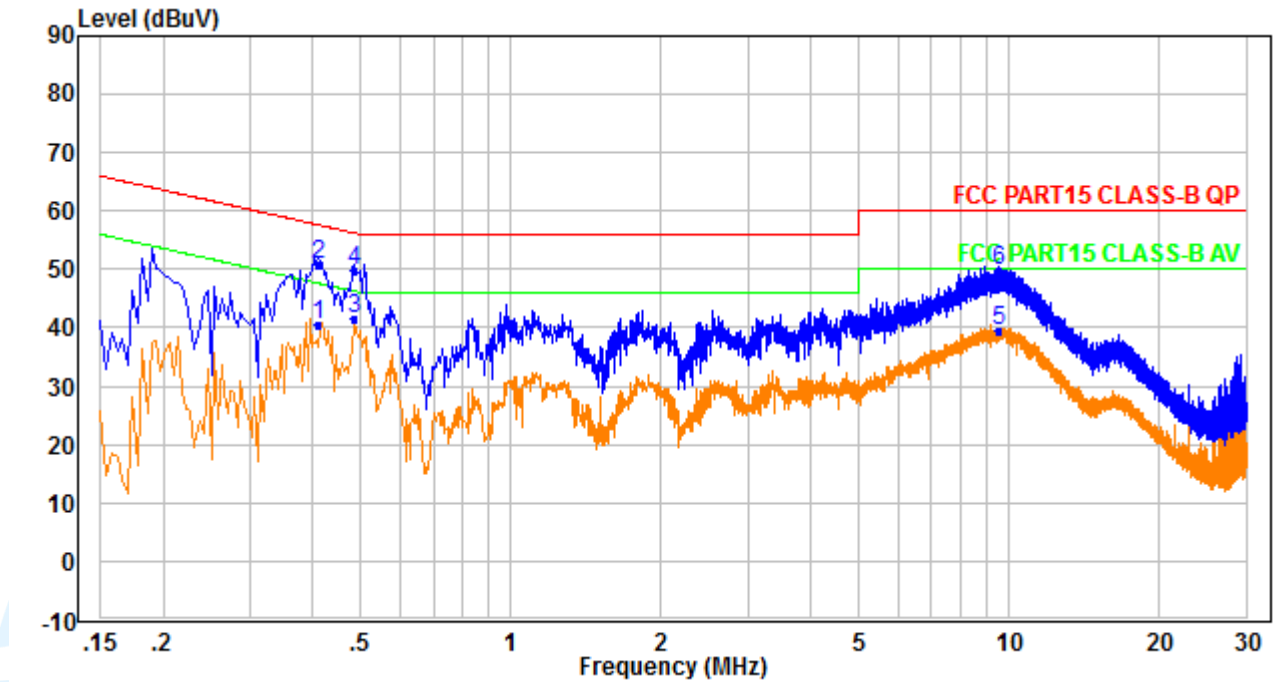
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Quasi Peak and Average: TM21

Live Line



No.	Frequency (MHz)	Reading (dBuV)	Correction factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.410	31.47	9.21	40.68	47.65	-6.97	Average
2	0.410	41.75	9.21	50.96	57.65	-6.69	QP
3	0.486	32.32	9.31	41.63	46.24	-4.61	Average
4	0.486	40.39	9.31	49.70	56.24	-6.54	QP
5	9.525	29.86	9.67	39.53	50.00	-10.47	Average
6	9.525	39.97	9.67	49.64	60.00	-10.36	QP

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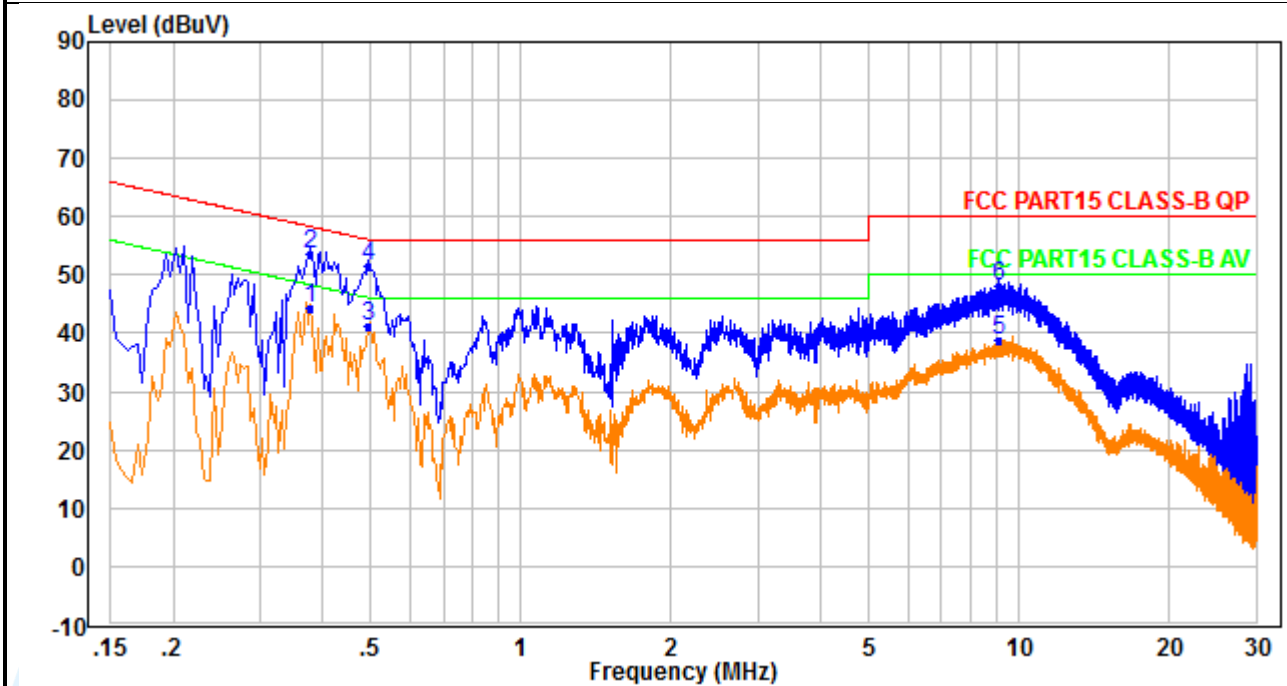
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Neutral Line



No.	Frequency (MHz)	Reading (dBUV)	Correction factor (dB)	Result (dBUV)	Limit (dBUV)	Margin (dB)	Detector
1	0.378	35.22	9.18	44.40	48.32	-3.92	Average
2	0.378	44.49	9.18	53.67	58.32	-4.65	QP
3	0.494	32.00	9.35	41.35	46.10	-4.75	Average
4	0.494	42.07	9.35	51.42	56.10	-4.68	QP
5	9.129	29.19	9.68	38.87	50.00	-11.13	Average
6	9.129	38.41	9.68	48.09	60.00	-11.91	QP

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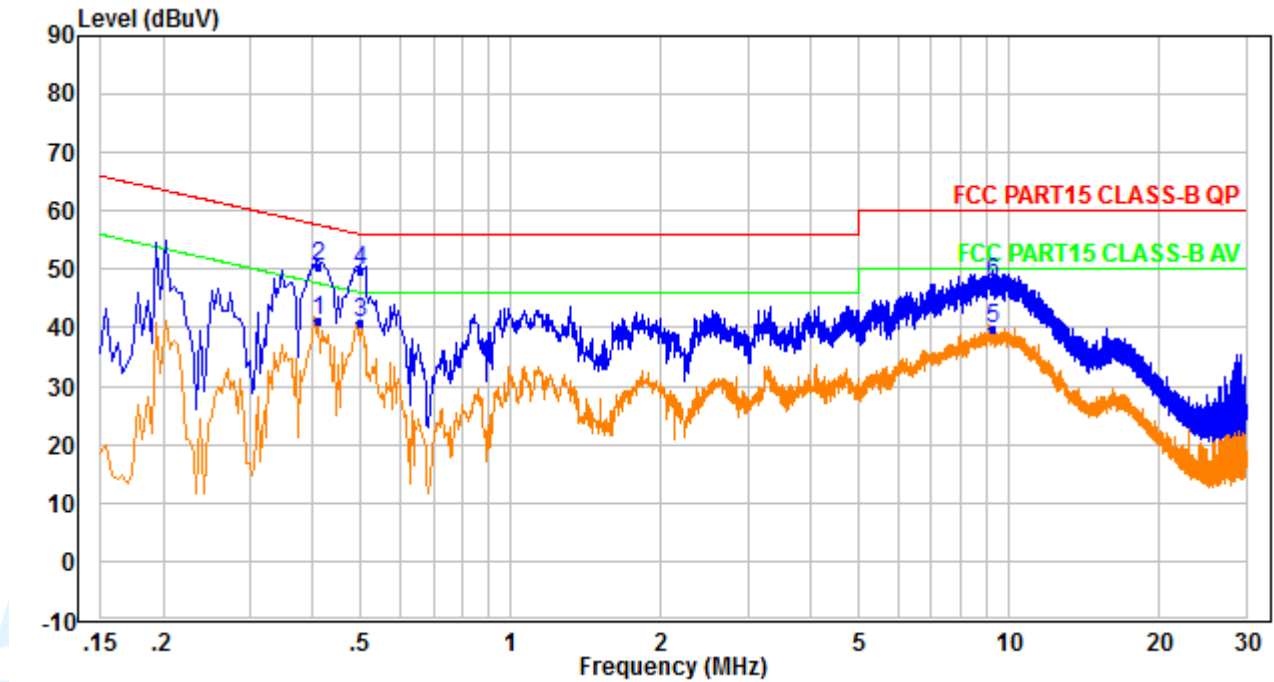
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Quasi Peak and Average: TM22

Live Line



No.	Frequency (MHz)	Reading (dBuV)	Correction factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.410	32.15	9.21	41.36	47.65	-6.29	Average
2	0.410	41.42	9.21	50.63	57.65	-7.02	QP
3	0.498	31.45	9.33	40.78	46.03	-5.25	Average
4	0.498	40.54	9.33	49.87	56.03	-6.16	QP
5	9.317	30.03	9.67	39.70	50.00	-10.30	Average
6	9.317	38.01	9.67	47.68	60.00	-12.32	QP

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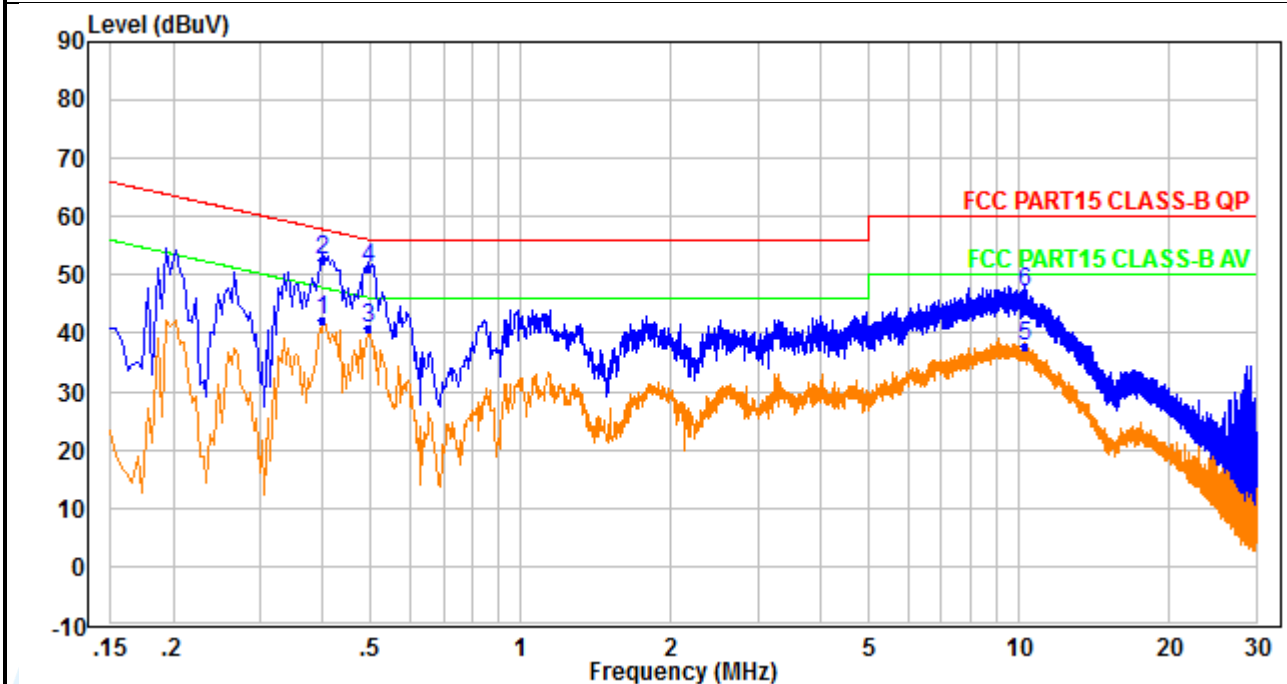
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Neutral Line



No.	Frequency (MHz)	Reading (dBuV)	Correction factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.398	33.07	9.18	42.25	47.90	-5.65	Average
2	0.398	43.50	9.18	52.68	57.90	-5.22	QP
3	0.494	31.37	9.35	40.72	46.10	-5.38	Average
4	0.494	41.83	9.35	51.18	56.10	-4.92	QP
5	10.245	28.22	9.69	37.91	50.00	-12.09	Average
6	10.245	37.36	9.69	47.05	60.00	-12.95	QP

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.

***** End of Report *****

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