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TESTING LABORATORY
CERTIFICATE # 4821.01

BACL
Bay Area Compliance Labs Corp.

FCC PART 15B, CLASS B

TEST REPORT

For

Grandstream Networks, Inc.

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

FCC ID: YZZDP752

Report Type:	**Product Type:**
Original Report	DECT Cordless VoIP Base Station

Report Number:	RSZ181016009-00A
Report Date:	2018-11-08
Reviewed By:	Rocky Kang RF Engineer
Prepared By:	Bay Area Compliance Laboratories Corp. (Shenzhen) 6/F., West Wing, Third Phase of Wanli Industrial Building, Shihua Road, Futian Free Trade Zone, Shenzhen, Guangdong, China Tel: +86-755-33320018 Fax: +86-755-33320008 www.baclcorp.com.cn

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *Grandstream Networks, Inc.'s* product, model number: *DP752 (FCC ID: YZZDP752)* or the "EUT" in this report was a *DECT Cordless VoIP Base Station,* which was measured approximately: 105 mm (L) x 64.98 mm (W) x 140.31 mm (H), rated input voltage: DC 5.0V from adapter or DC 48V from POE. The highest operating frequency is 1928.448MHz.

Adapter 1 Information (FRECOM):
Model: F05L5-050100SPAU
Input: 100-240V~50/60Hz, 0.2A
Output: 5V, 1A

Adapter 2 Information (MASS POWER):
Model: NBS05B050100VU
Input: 100-240V~50/60Hz, 0.2A
Output: 5.0V, 1A

Adapter 3 Information (Sunlight):
Model: F06US0500100A
Input: 100-240V~50/60Hz, 0.2A max
Output: 5.0V, 1A

**All measurement and test data in this report was gathered from production sample serial number: 181016009. (Assigned by BACL, Shenzhen). The EUT supplied by the applicant was received on 2018-10-16.*

Objective

This test report is prepared on behalf of *Grandstream Networks, Inc.* in accordance with Part 2-Subpart J, Part 15-Subparts A, B of the Federal Charging & Talking Commissions rules.

The objective of the manufacturer is to determine the compliance of the EUT with FCC Part 15 B.

Related Submittal(s)/Grant(s)

Submitted with the handset units of a system with FCC ID: YZZDP722 & YZZDP730 and FCC Part 15D PUB submissions with FCC ID: YZZDP752.

Test Methodology

All measurements contained in this report were conducted with 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.

All emissions measurement was performed at Bay Area Compliance Laboratories Corp. (Shenzhen). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Measurement Uncertainty

Parameter		uncertainty
Conducted Emissions		±1.95dB
Emissions, radiated	Below 1GHz	±4.75dB
	Above 1GHz	±4.88dB

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located on the 6/F., West Wing, Third Phase of Wanli Industrial Building, Shihua Road, Futian Free Trade Zone, Shenzhen, Guangdong, China.

The test site has been approved by the FCC under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No.: 342867, the FCC Designation No.: CN1221.

The test site has been registered with ISED Canada under ISED Canada Registration Number 3062B.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in a manufacturer testing fashion.

EUT Exercise Software

No exercise software was used.

Special Accessories

No special accessory.

Equipment Modifications

No modification was made to the EUT tested.

Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
NETGEAR	POE	GS108PEv3	3UU5685700E47
LINKSYS	Router	WRT54G	CDFE1GC12571

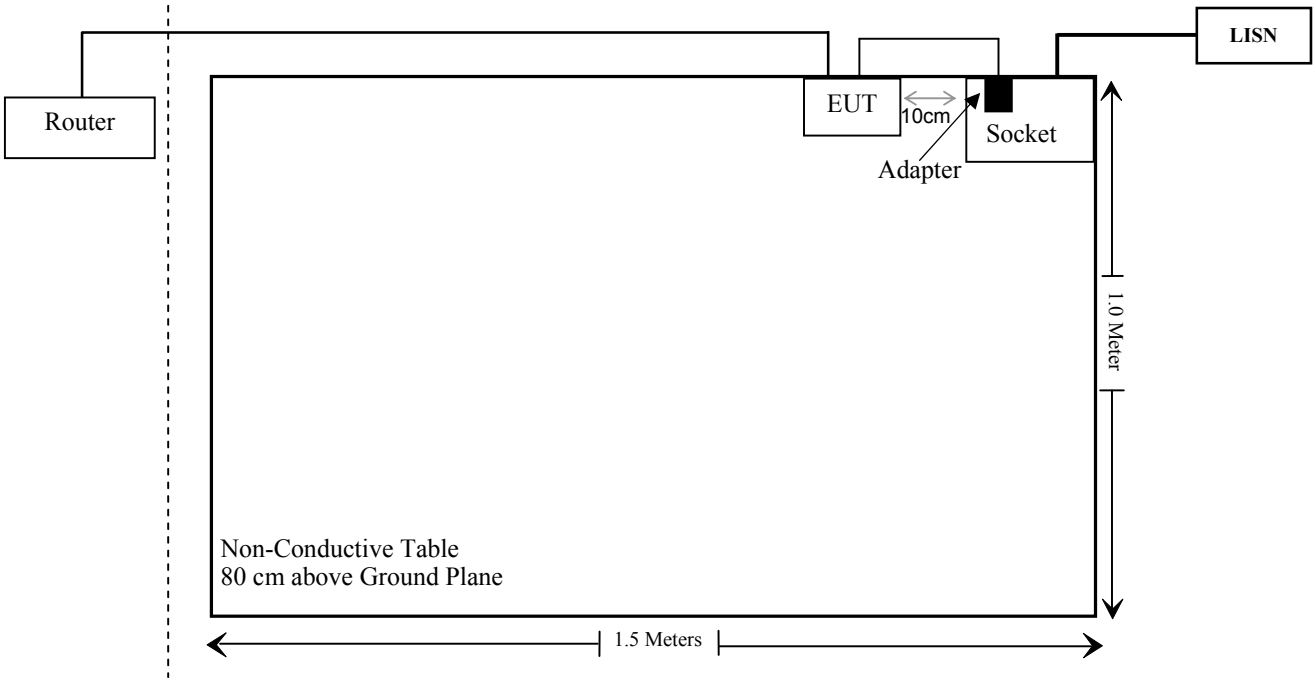
External I/O Cable

Cable Description	Length (m)	From/Port	To
Un-Shielding Detachable DC Cable	1.5	EUT	Adapter
Un-shielding detachable RJ45 Cable	1.2	EUT	POE
Un-shielding Un-detachable AC Cable	1.0	POE	LISN
Un-shielding Detachable AC Cable	1.0	Socket	LISN
Un-shielded detachable RJ45 Cable	2.0	EUT	Router

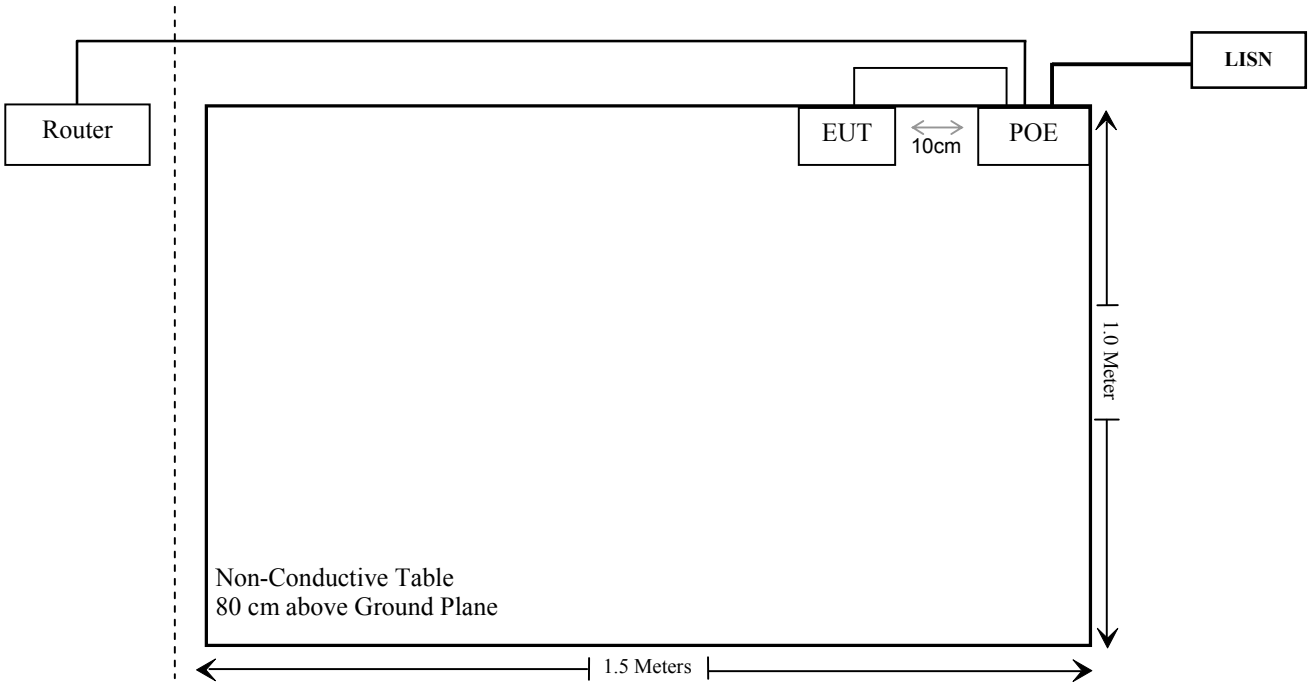
Block Diagram of Test Setup

For conducted emissions:

Powered by adapter:



Powered by POE:



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Results
§15.107	AC Line Conducted Emissions	Compliance
§15.109	Radiated Spurious Emissions	Compliance

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
AC Line Conducted Emission Test					
Rohde & Schwarz	EMI Test Receiver	ESCS30	100176	2018-07-11	2019-07-11
Rohde & Schwarz	LISN	ENV216	3560.6650.12-101613-Yb	2017-12-21	2018-12-21
Rohde & Schwarz	Transient Limiter	ESH3Z2	DE25985	2018-05-21	2018-11-19
Rohde & Schwarz	CE Test software	EMC 32	V8.53.0	NCR	NCR
Unknown	Conducted Emission Cable	78652	UF A210B-1-0720-504504	2018-05-12	2018-11-12
Radiated Emission Test					
A.H.System	Horn Antenna	SAS-200/571	135	2018-08-18	2021-08-17
Rohde & Schwarz	Signal Analyzer	FSEM	845987/005	2018-06-23	2019-06-23
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2017-12-22	2020-12-21
COM-POWER	Pre-amplifier	PA-122	181919	2018-05-22	2018-11-22
Sonoma instrument	Amplifier	310N	186238	2018-05-12	2018-11-12
Rohde & Schwarz	EMI Test Receiver	ESCI	101120	2018-01-11	2019-01-11
Ducommun technologies	RF Cable	UFA147A-2362-100100	MFR64639 231029-003	2018-08-01	2019-02-01
Ducommun technologies	RF Cable	104PEA	218124002	2018-05-21	2018-11-21
Ducommun technologies	RF Cable	RG-214	1	2018-05-21	2018-11-19
Ducommun technologies	RF Cable	RG-214	2	2018-05-22	2018-11-22
Rohde & Schwarz	Auto test software	EMC 32	V9.10	NCR	NCR

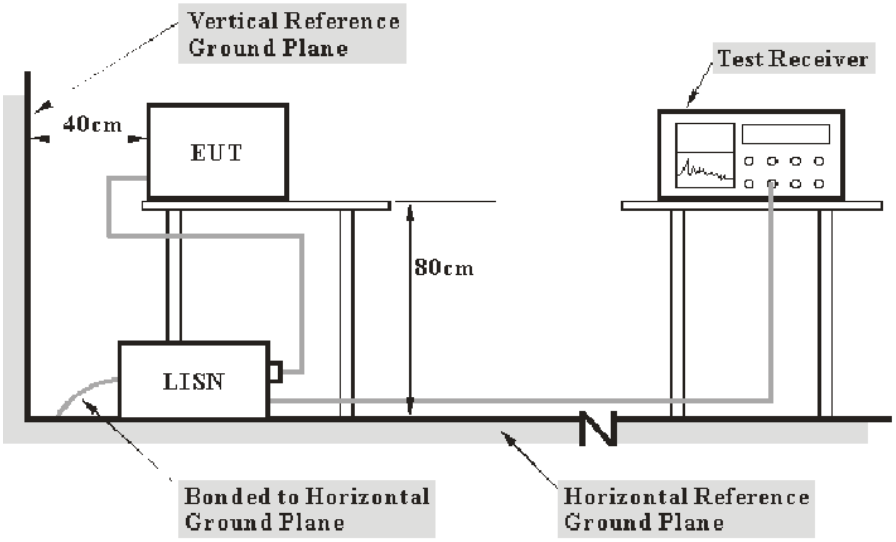
*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

FCC §15.107 – AC LINE CONDUCTED EMISSIONS

Applicable Standard

According to FCC §15.107

EUT Setup



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The measurement procedure of EUT setup is according with per ANSI C63.4-2014. The related limit was specified in FCC Part 15.107 Class B.

The spacing between the peripherals was 10 cm.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

Test Procedure

During the conducted emission test, the adapter was connected to the first LISN and the other relevant equipments were conncected to the second LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-peak and average detection mode.

Corrected Factor & Margin Calculation

The Corrected factor is calculated by adding LISN/ISN VDF (Voltage Division Factor), Cable Loss and Transient Limiter Attenuation. The basic equation is as follows:

Correction Factor = LISN VDF + Cable Loss + Transient Limiter Attenuation

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7 dB means the emission is 7 dB below the limit. The equation for margin calculation is as follows:

Margin = Limit – Corrected Amplitude

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Part 15.107,

Refer to CISPR16-4-2:2011 and CISPR 16-4-1:2009, the measured level is in compliance with the limit if

$$L_m + U_{(Lm)} \leq L_{lim} + U_{cispr}$$

In BACL., $U_{(Lm)}$ is less than U_{cispr}, if L_m is less than L_{lim}, it implies that the EUT complies with the limit.

Test Data

Environmental Conditions

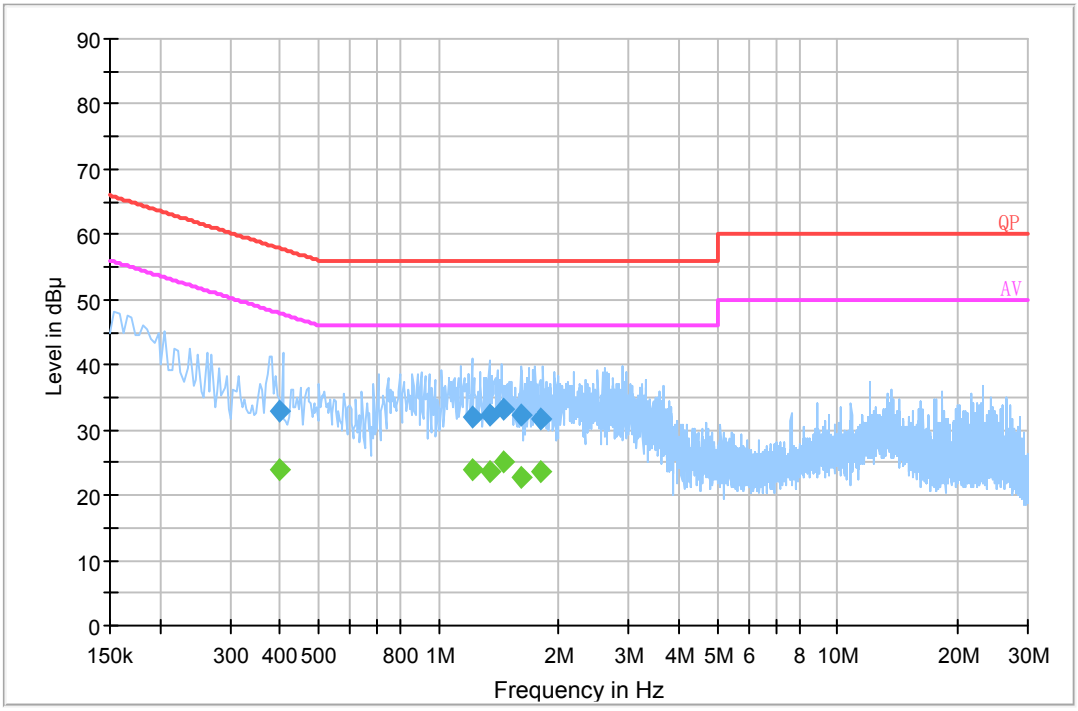
Temperature:	24 ℃
Relative Humidity:	60 %
ATM Pressure:	101.0 kPa

The testing was performed by Haiguo Li on 2018-11-05.

EUT Operation Mode: working

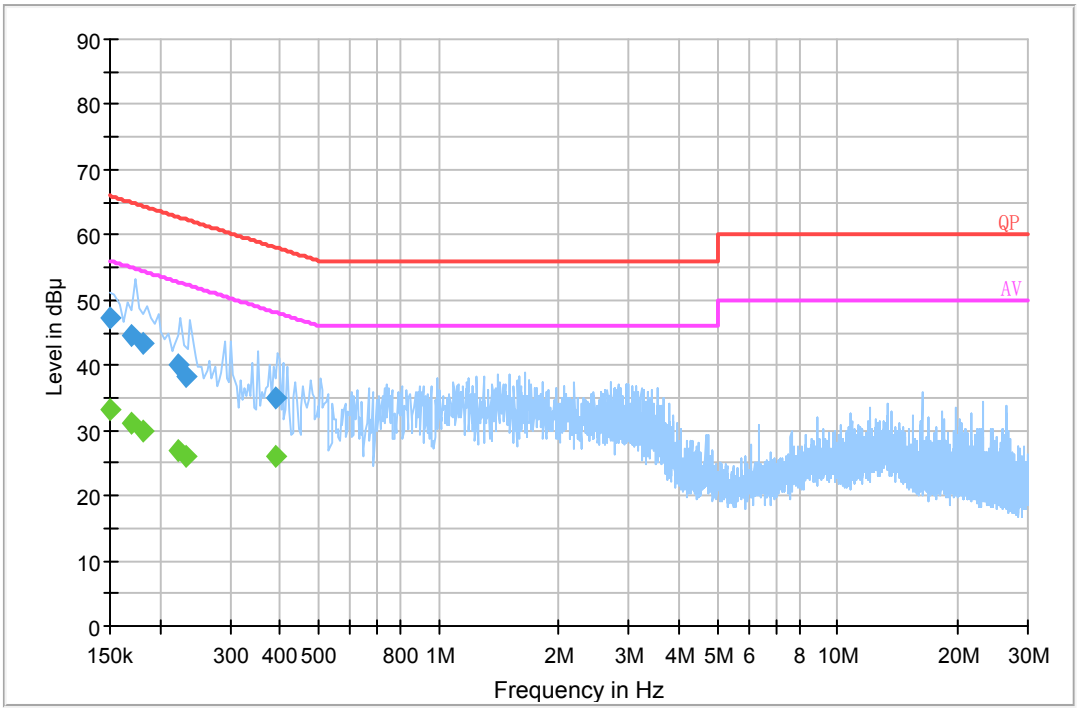
Power by Adapter 1(FRECOM):

AC 120V/60 Hz, Line



Frequency (MHz)	Corrected Amplitude (dBµV)	Correction Factor (dB)	Limit (dBµV)	Margin (dB)	Detector (PK/Ave./QP)
0.399910	32.9	19.7	57.9	25	QP
1.215850	32.1	19.7	56.0	23.9	QP
1.337930	32.3	19.8	56.0	23.7	QP
1.456370	33.3	19.8	56.0	22.7	QP
1.601730	32.2	19.9	56.0	23.8	QP
1.802550	31.7	19.9	56.0	24.3	QP
0.399910	23.8	19.7	47.9	24.1	Ave.
1.215850	23.9	19.7	46.0	22.1	Ave.
1.337930	23.5	19.8	46.0	22.5	Ave.
1.456370	25.2	19.8	46.0	20.8	Ave.
1.601730	22.8	19.9	46.0	23.2	Ave.
1.802550	23.5	19.9	46.0	22.5	Ave.

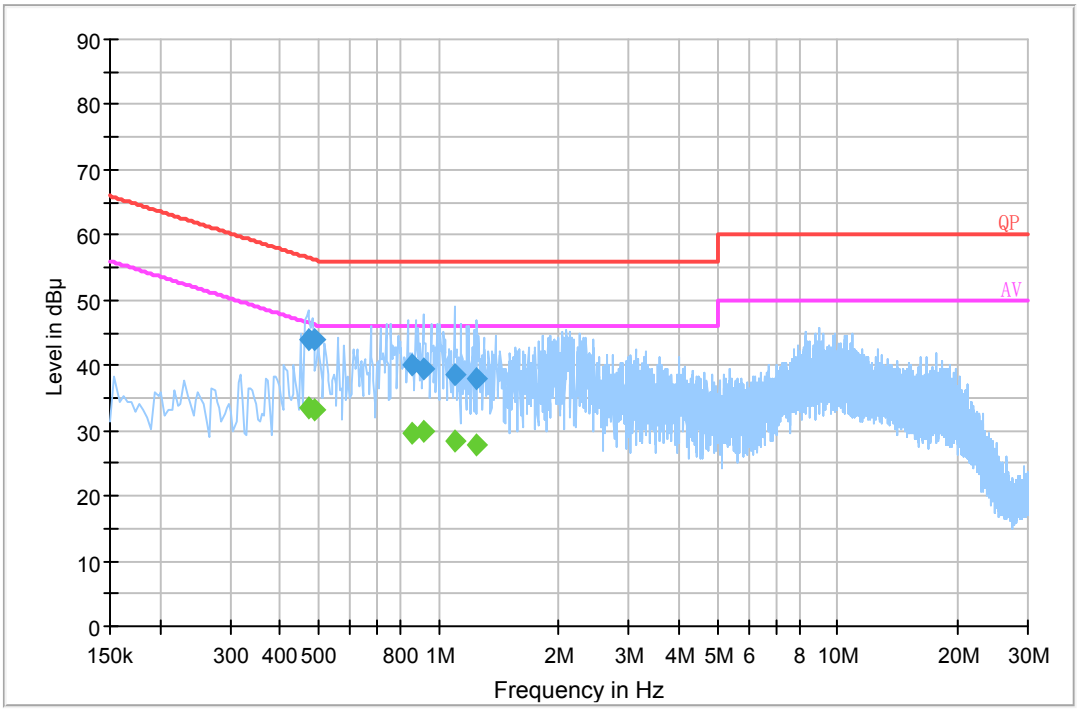
AC 120V/60 Hz, Neutral



Frequency (MHz)	Corrected Amplitude (dBµV)	Correction Factor (dB)	Limit (dBµV)	Margin (dB)	Detector (PK/Ave./QP)
0.150000	47.1	19.8	66.0	18.9	QP
0.169500	44.6	19.7	65.0	20.4	QP
0.181500	43.4	19.7	64.4	21	QP
0.221500	40.0	19.7	62.8	22.8	QP
0.233500	38.4	19.7	62.3	23.9	QP
0.392090	35.0	19.7	58.0	23	QP
0.150000	33.3	19.8	56.0	22.7	Ave.
0.169500	31.2	19.7	55.0	23.8	Ave.
0.181500	29.8	19.7	54.4	24.6	Ave.
0.221500	27.0	19.7	52.8	25.8	Ave.
0.233500	26.1	19.7	52.3	26.2	Ave.
0.392090	26.1	19.7	48.0	21.9	Ave.

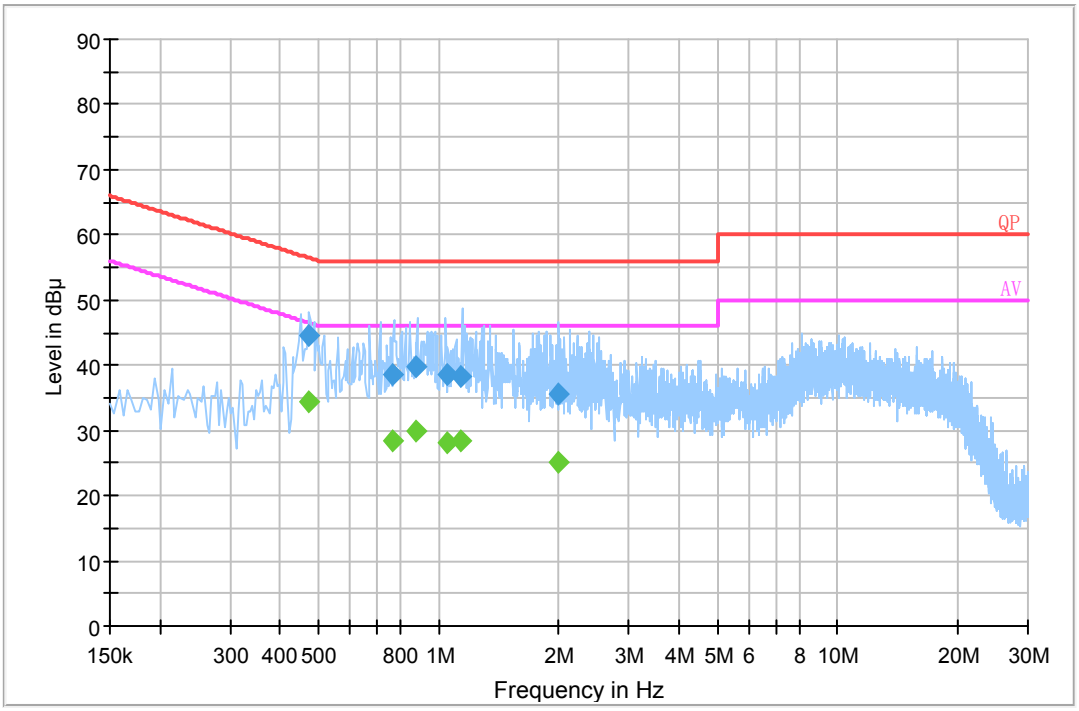
Power by Adapter 2(MASS POWER):

AC 120V/60 Hz, Line



Frequency (MHz)	Corrected Amplitude (dBµV)	Correction Factor (dB)	Limit (dBµV)	Margin (dB)	Detector (PK/Ave./QP)
0.474770	44.1	19.8	56.4	12.3	QP
0.487050	43.8	19.8	56.4	12.6	QP
0.860890	39.9	19.7	56.0	16.1	QP
0.920290	39.4	19.7	56.0	16.6	QP
1.101590	38.6	19.8	56.0	17.4	QP
1.239250	38.1	19.8	56.0	17.9	QP
0.474770	33.6	19.8	46.4	12.8	Ave.
0.487050	33.3	19.8	46.4	13.1	Ave.
0.860890	29.6	19.7	46.0	16.4	Ave.
0.920290	29.8	19.7	46.0	16.2	Ave.
1.101590	28.3	19.8	46.0	17.7	Ave.
1.239250	27.7	19.8	46.0	18.3	Ave.

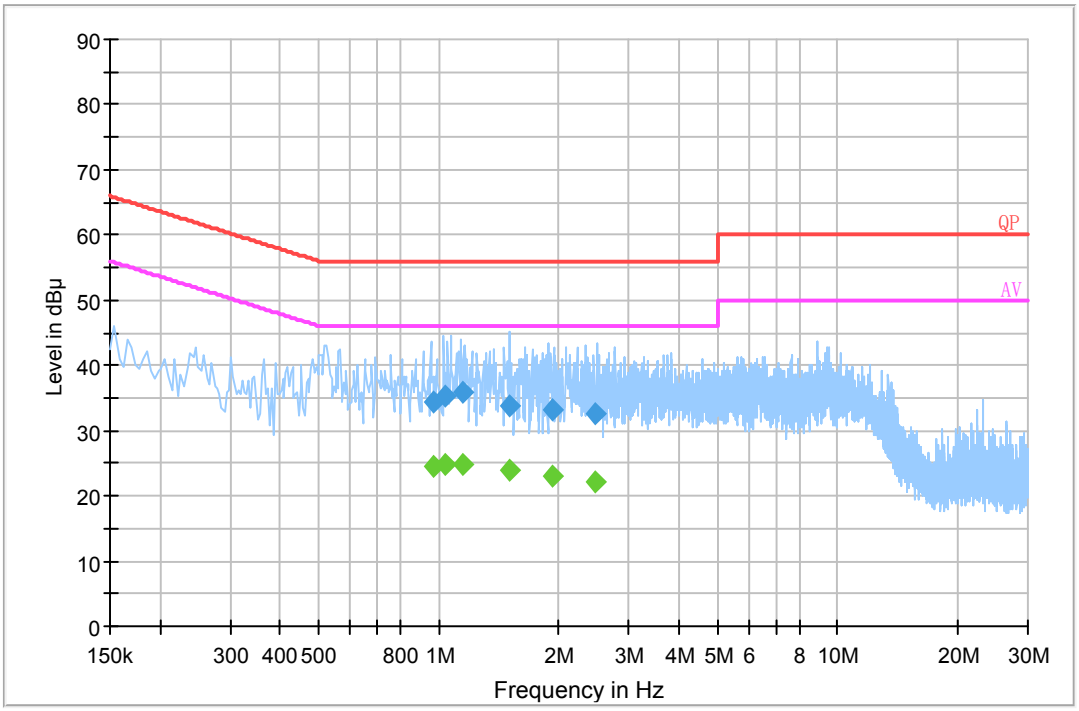
AC 120V/60 Hz, Neutral



Frequency (MHz)	Corrected Amplitude (dBµV)	Correction Factor (dB)	Limit (dBµV)	Margin (dB)	Detector (PK/Ave./QP)
0.474890	44.5	19.8	56.4	11.9	QP
0.762390	38.4	19.8	56.0	17.6	QP
0.880710	39.7	19.7	56.0	16.3	QP
1.050370	38.4	19.8	56.0	17.6	QP
1.140810	38.3	19.8	56.0	17.7	QP
2.003970	35.7	19.9	56.0	20.3	QP
0.474890	34.3	19.8	46.4	12.1	Ave.
0.762390	28.5	19.8	46.0	17.5	Ave.
0.880710	29.8	19.7	46.0	16.2	Ave.
1.050370	28.0	19.8	46.0	18	Ave.
1.140810	28.5	19.8	46.0	17.5	Ave.
2.003970	25.2	19.9	46.0	20.8	Ave.

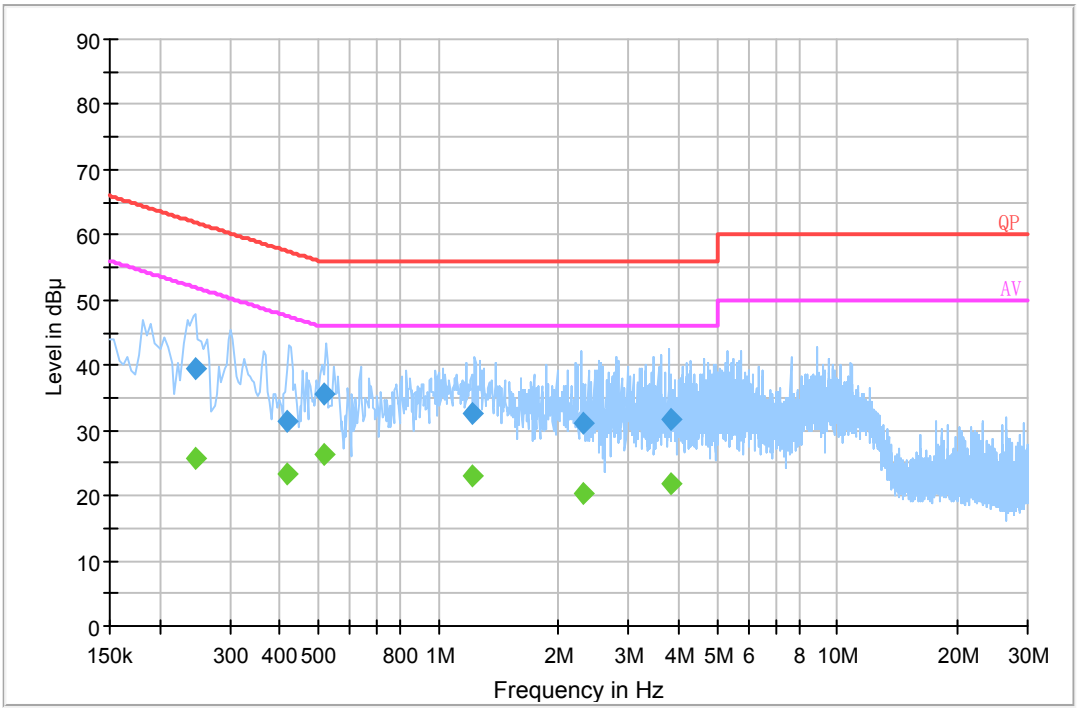
Power by Adapter 3(Sunlight):

AC 120V/60 Hz, Line



Frequency (MHz)	Corrected Amplitude (dBµV)	Correction Factor (dB)	Limit (dBµV)	Margin (dB)	Detector (PK/Ave./QP)
0.971630	34.5	19.8	56.0	21.5	QP
1.042550	35.2	19.8	56.0	20.8	QP
1.148990	35.9	19.8	56.0	20.1	QP
1.503470	33.9	19.9	56.0	22.1	QP
1.918350	33.1	19.9	56.0	22.9	QP
2.464590	32.7	19.9	56.0	23.3	QP
0.971630	24.6	19.8	46.0	21.4	Ave.
1.042550	24.8	19.8	46.0	21.2	Ave.
1.148990	24.9	19.8	46.0	21.1	Ave.
1.503470	23.9	19.9	46.0	22.1	Ave.
1.918350	23.0	19.9	46.0	23.0	Ave.
2.464590	22.0	19.9	46.0	24.0	Ave.

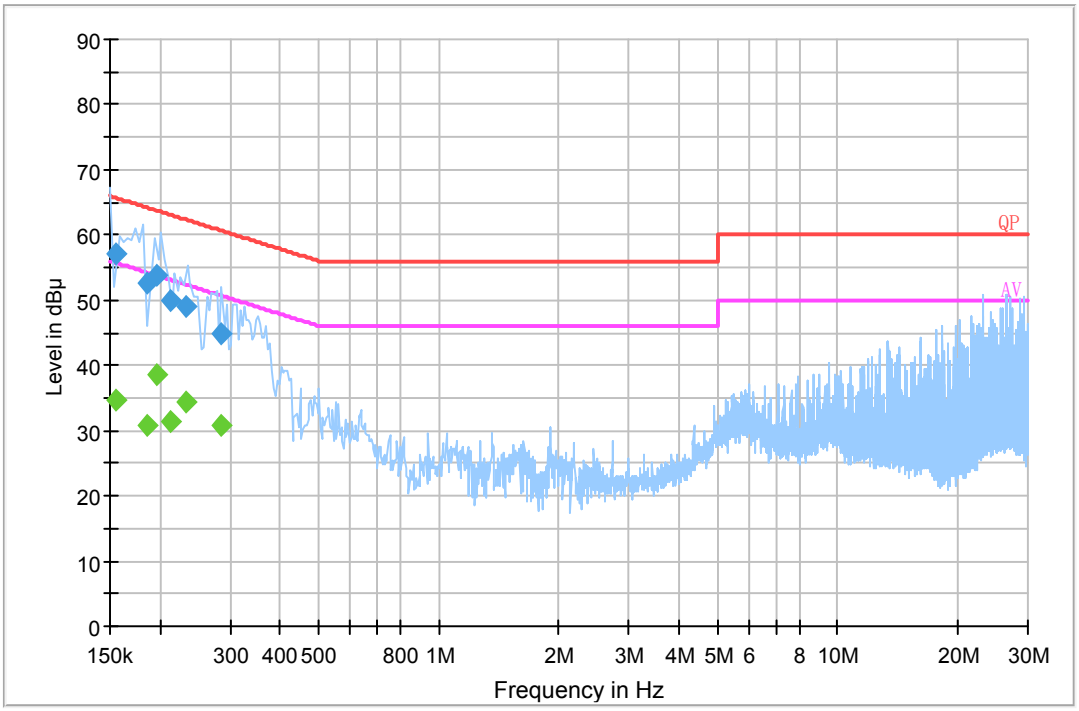
AC 120V/60 Hz, Neutral



Frequency (MHz)	Corrected Amplitude (dBµV)	Correction Factor (dB)	Limit (dBµV)	Margin (dB)	Detector (PK/Ave./QP)
0.245500	39.4	19.7	61.9	22.5	QP
0.415670	31.5	19.7	57.5	26	QP
0.514170	35.6	19.8	56.0	20.4	QP
1.215490	32.7	19.7	56.0	23.3	QP
2.303830	31.2	19.9	56.0	24.8	QP
3.825270	31.6	19.9	56.0	24.4	QP
0.245500	25.7	19.7	51.9	26.2	Ave.
0.415670	23.4	19.7	47.5	24.1	Ave.
0.514170	26.4	19.8	46.0	19.6	Ave.
1.215490	23.1	19.7	46.0	22.9	Ave.
2.303830	20.4	19.9	46.0	25.6	Ave.
3.825270	21.7	19.9	46.0	24.3	Ave.

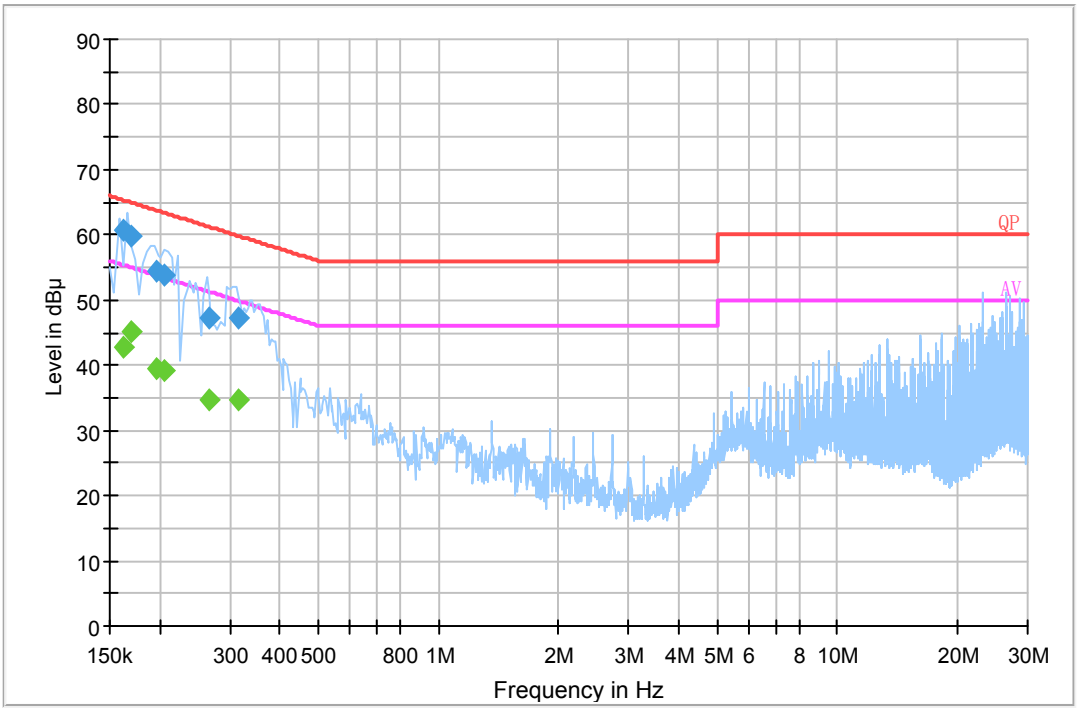
Power by POE:

AC 120V/60 Hz, Line



Frequency (MHz)	Corrected Amplitude (dBµV)	Correction Factor (dB)	Limit (dBµV)	Margin (dB)	Detector (PK/Ave./QP)
0.154500	57.0	19.8	65.8	8.8	QP
0.185500	52.6	19.8	64.2	11.6	QP
0.197500	53.8	19.8	63.7	9.9	QP
0.213500	50.1	19.7	63.1	13	QP
0.233500	49.0	19.7	62.3	13.3	QP
0.285500	44.8	19.8	60.7	15.9	QP
0.154500	34.6	19.8	55.8	21.2	Ave.
0.185500	30.7	19.8	54.2	23.5	Ave.
0.197500	38.5	19.8	53.7	15.2	Ave.
0.213500	31.5	19.7	53.1	21.6	Ave.
0.233500	34.5	19.7	52.3	17.8	Ave.
0.285500	30.8	19.8	50.7	19.9	Ave.

AC 120V/60 Hz, Neutral



Frequency (MHz)	Corrected Amplitude (dBµV)	Correction Factor (dB)	Limit (dBµV)	Margin (dB)	Detector (PK/Ave./QP)
0.161500	60.8	19.7	65.4	4.6	QP
0.169500	59.8	19.7	65.0	5.2	QP
0.197500	54.4	19.7	63.7	9.3	QP
0.205500	53.7	19.7	63.4	9.7	QP
0.265500	47.3	19.7	61.3	14	QP
0.314650	47.3	19.8	59.8	12.5	QP
0.161500	42.7	19.7	55.4	12.7	Ave.
0.169500	45.1	19.7	55.0	9.9	Ave.
0.197500	39.3	19.7	53.7	14.4	Ave.
0.205500	39.1	19.7	53.4	14.3	Ave.
0.265500	34.8	19.7	51.3	16.5	Ave.
0.314650	34.6	19.8	49.8	15.2	Ave.

Note:
1) Correction Factor =LISN VDF (Voltage Division Factor) + Cable Loss + Transient Limiter Attenuation
2) Corrected Amplitude = Reading + Correction Factor
3) Margin = Limit – Corrected Amplitude

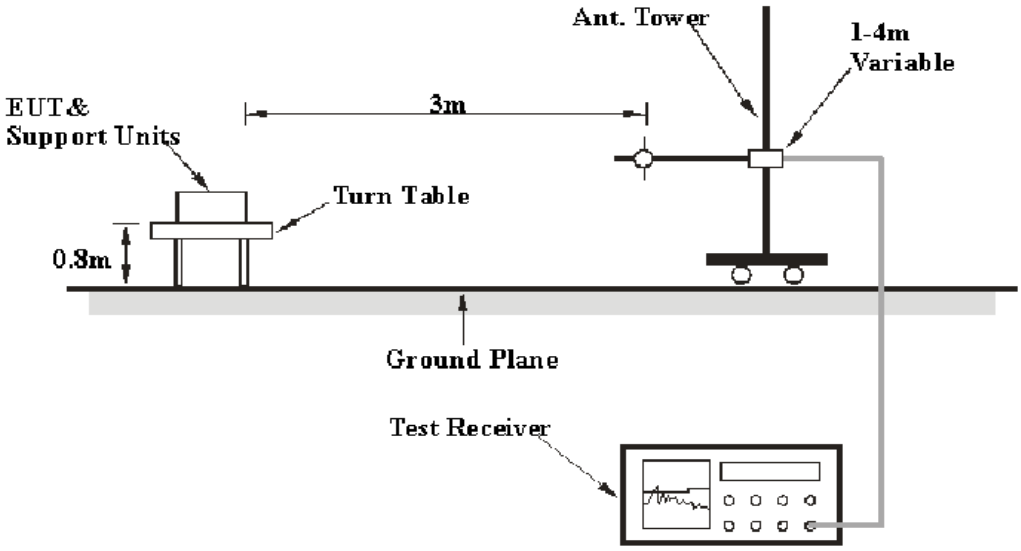
FCC §15.109 - RADIATED SPURIOUS EMISSIONS

Applicable Standard

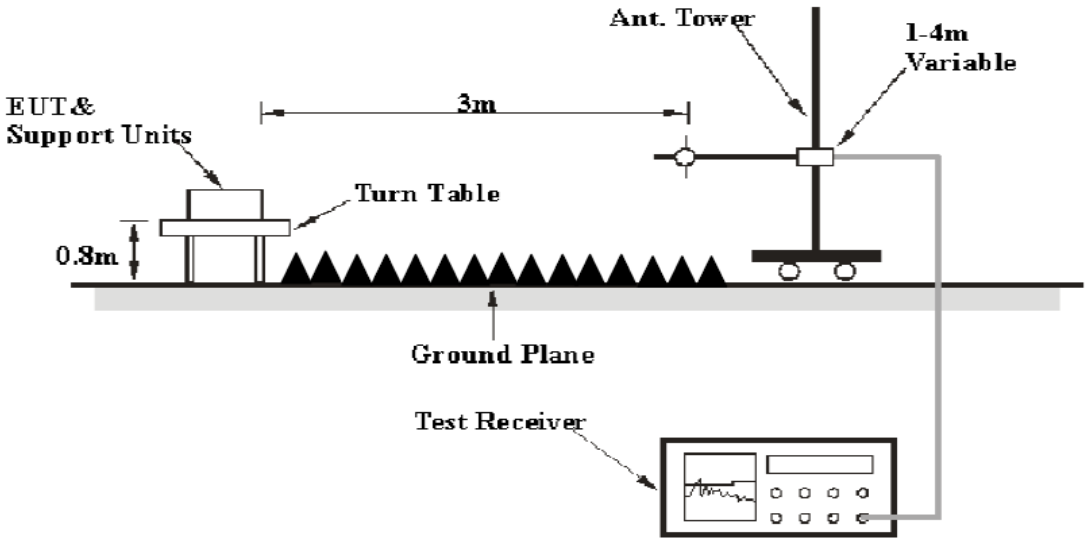
FCC §15.109

EUT Setup

Below 1GHz:



Above 1GHz:



The radiated emission tests were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.4-2014. The specification used was the FCC Part 15.109 Class B limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

EMI Test Receiver Setup

The system was investigated from 30 MHz to 10 GHz.

During the radiated emission test, the EMI test receiver was set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Measurment
30 MHz – 1000 MHz	100 kHz	300 kHz	120 kHz	QP
Above 1 GHz	1MHz	3 MHz	/	PK
	1MHz	10 Hz	/	Ave.

Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

All data was recorded in the Quasi-peak detector mode from 30 MHz to 1 GHz and PK and average detector modes for frequencies above 1 GHz.

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

Corrected Amplitude = Meter Reading + Antenna Factor + Cable Loss - Amplifier Gain

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7 dB means the emission is 7 dB below the limit. The equation for margin calculation is as follows:

Margin = Limit – Corrected Amplitude

Test Results Summary

According to the data in the following table, the EUT complied with the FCC §15.109 Class B,

Refer to CISPR16-4-2:2011 and CISPR 16-4-1:2009, the measured level is in compliance with the limit if

$$L_m + U_{(Lm)} \leq L_{lim} + U_{cispr}$$

In BACL, $U_{(Lm)}$ is less than U_{cispr}, if L_m is less than L_{lim}, it implies that the EUT complies with the limit.

Test Data

Environmental Conditions

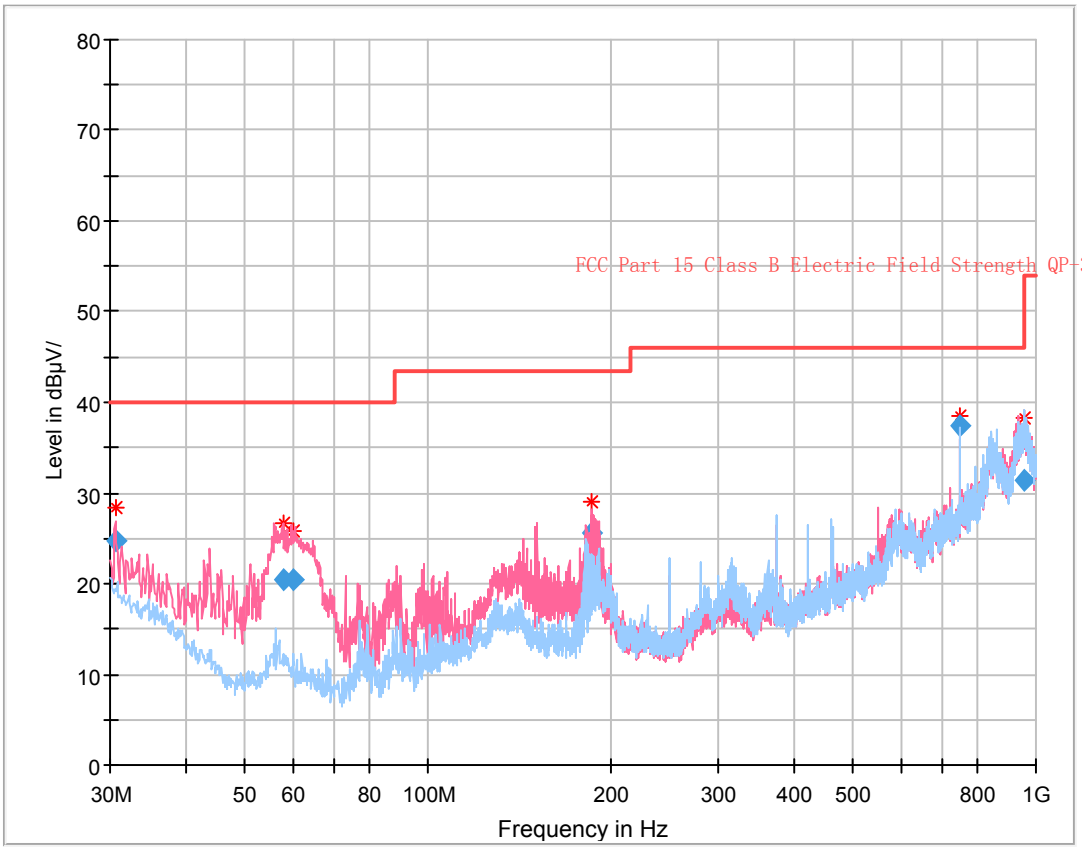
Temperature:	25 ℃
Relative Humidity:	52 %
ATM Pressure:	101.0 kPa

The testing was performed by Hill He on 2018-11-03.

EUT Operation Mode: working

Power by Adapter 1(FREECOM):

30 MHz~1 GHz:



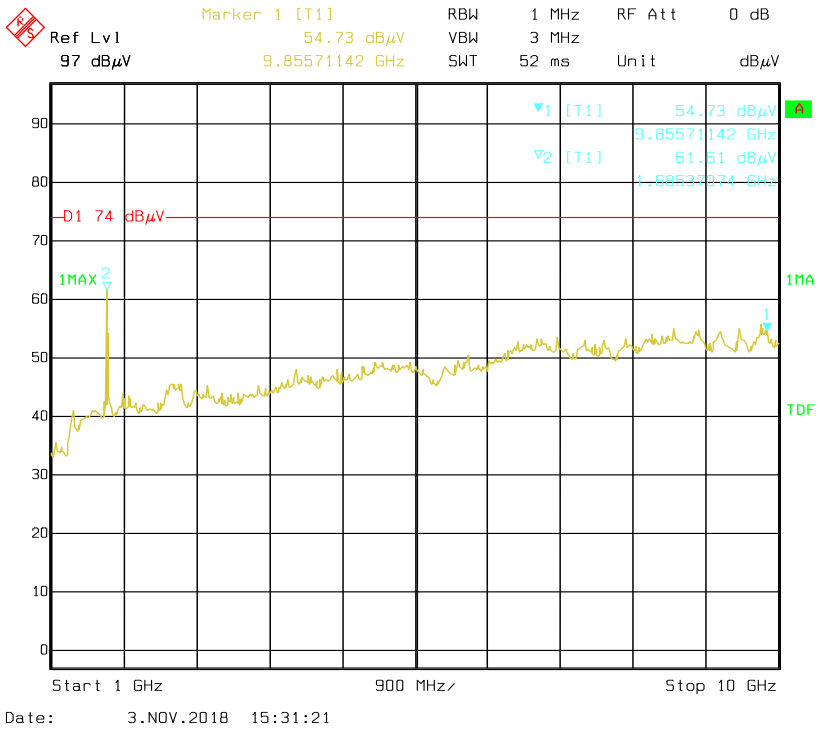
Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna height (cm)	Antenna Polarity	Turntable position (degree)	Correction Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
30.643375	24.74	100.0	V	121.0	-8.0	40.00	15.26
57.893125	20.40	108.0	V	73.0	-20.1	40.00	19.60
60.200250	20.47	119.0	V	106.0	-20.2	40.00	19.53
186.148375	25.55	107.0	V	119.0	-15.2	43.50	17.95
750.009875	37.46	121.0	H	134.0	-0.4	46.00	8.54
954.627875	31.31	323.0	H	191.0	9.6	46.00	14.69

1 GHz – 10 GHz:

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBuV/m)	FCC Part 15B	
	Reading (dBµV)	PK/QP/Ave.		Height (m)	Polar (H / V)			Limit (dBuV/m)	Margin (dB)
1691.00	62.38	PK	1	1.1	H	-1.87	60.51	74	13.49
1691.00	32.50	Ave.	1	1.1	H	-1.87	30.63	54	23.37
1691.00	57.20	PK	333	2.5	V	-1.87	55.33	74	18.67
1691.00	31.81	Ave.	333	2.5	V	-1.87	29.94	54	24.06
2112.00	43.25	PK	112	1.1	H	-0.98	42.27	74	31.73
2112.00	28.26	Ave.	112	1.1	H	-0.98	27.28	54	26.72
2112.00	42.51	PK	185	1.1	V	-0.98	41.53	74	32.47
2112.00	28.04	Ave.	185	1.1	V	-0.98	27.06	54	26.94

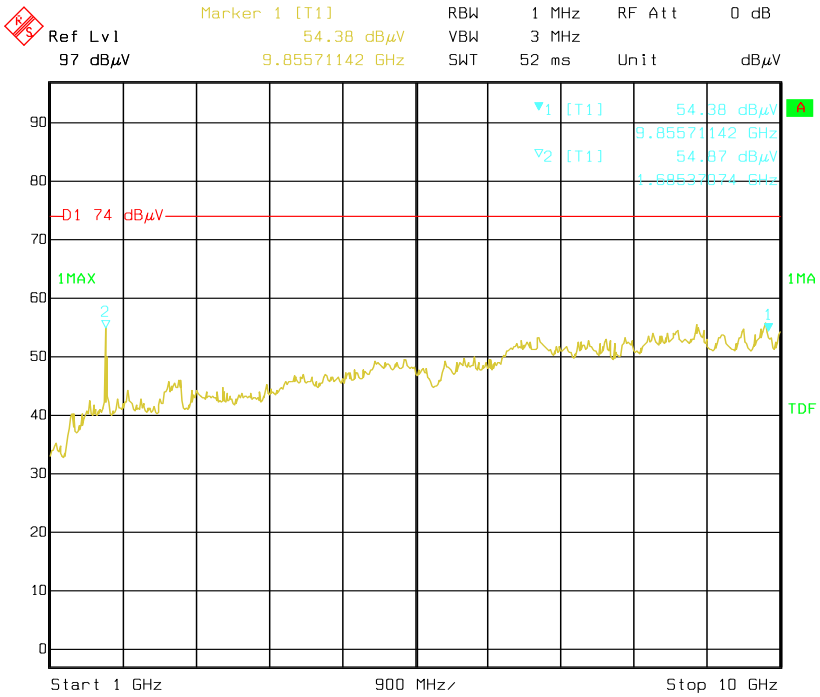
Pre-scan for peak

Horizontal – Peak (1-10 GHz)



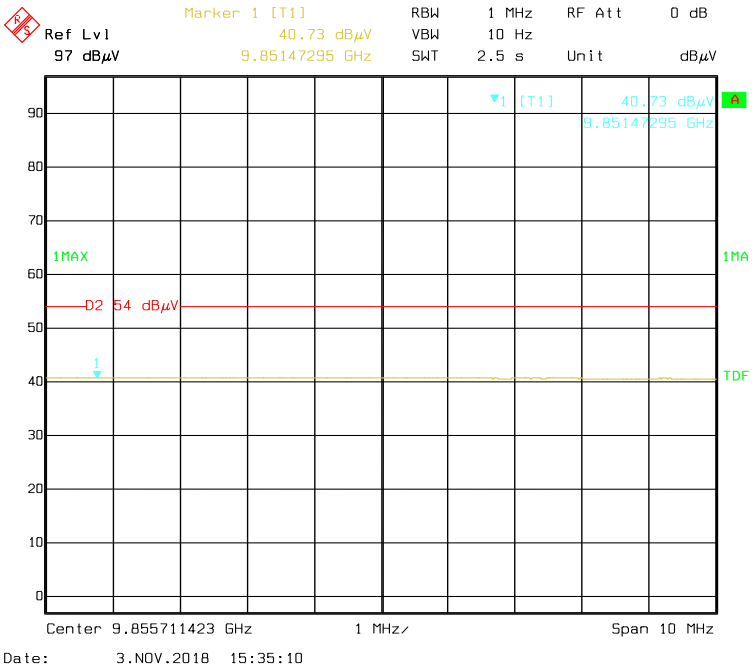
Date: 3.NOV.2018 15:31:21

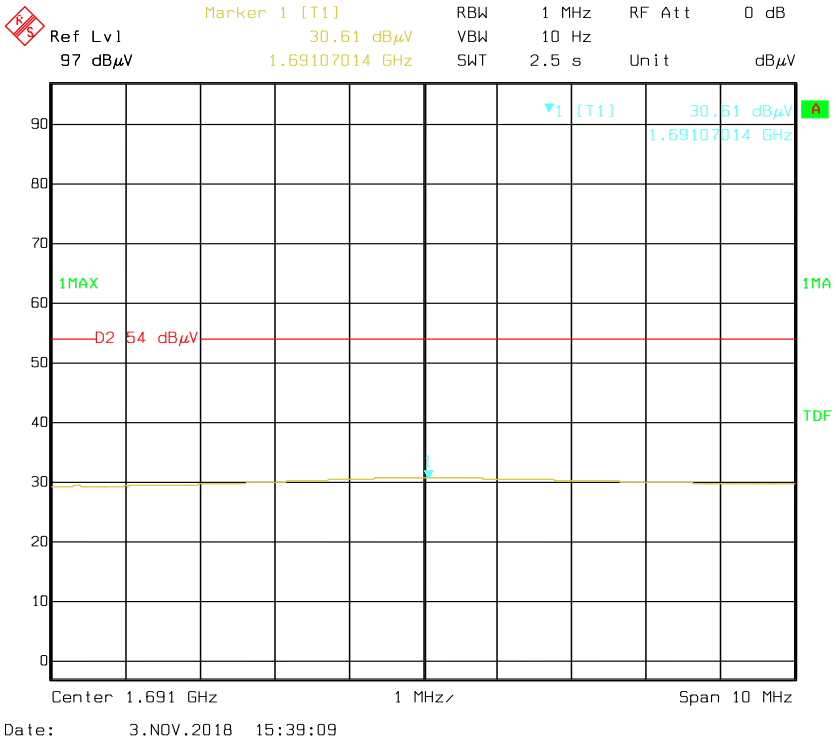
Vertical - Peak (1-10 GHz)



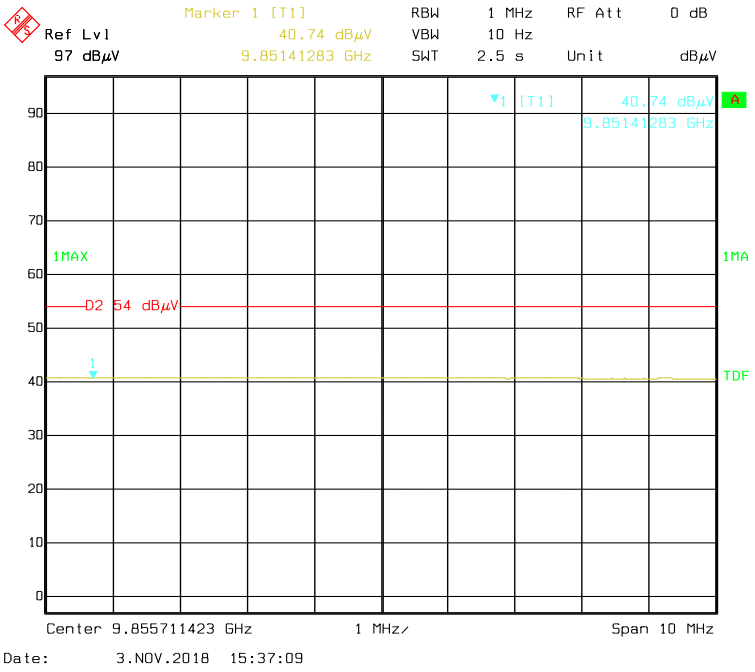
Date: 3.NOV.2018 15:33:21

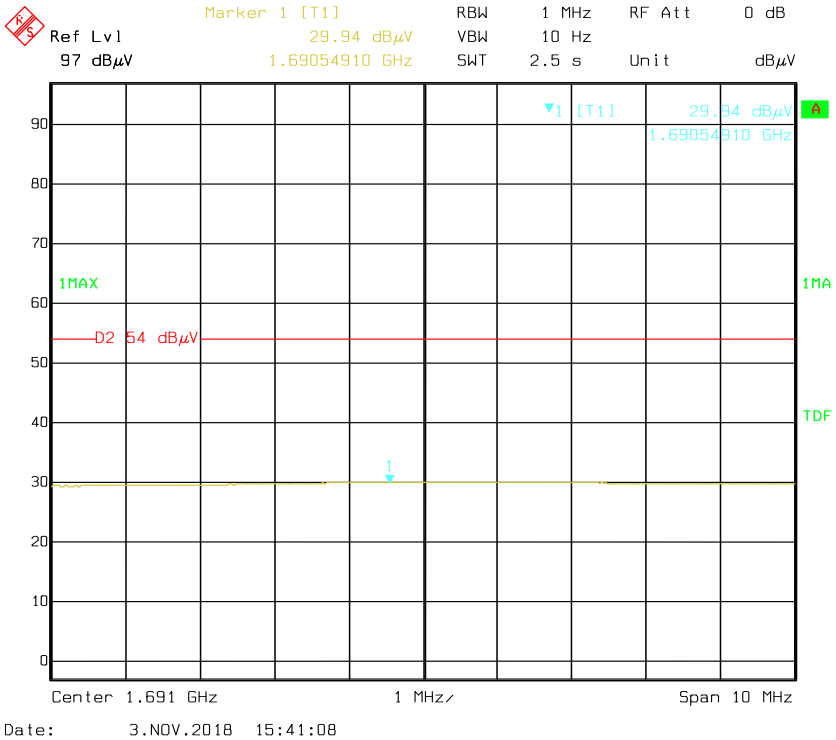
Horizontal – Average





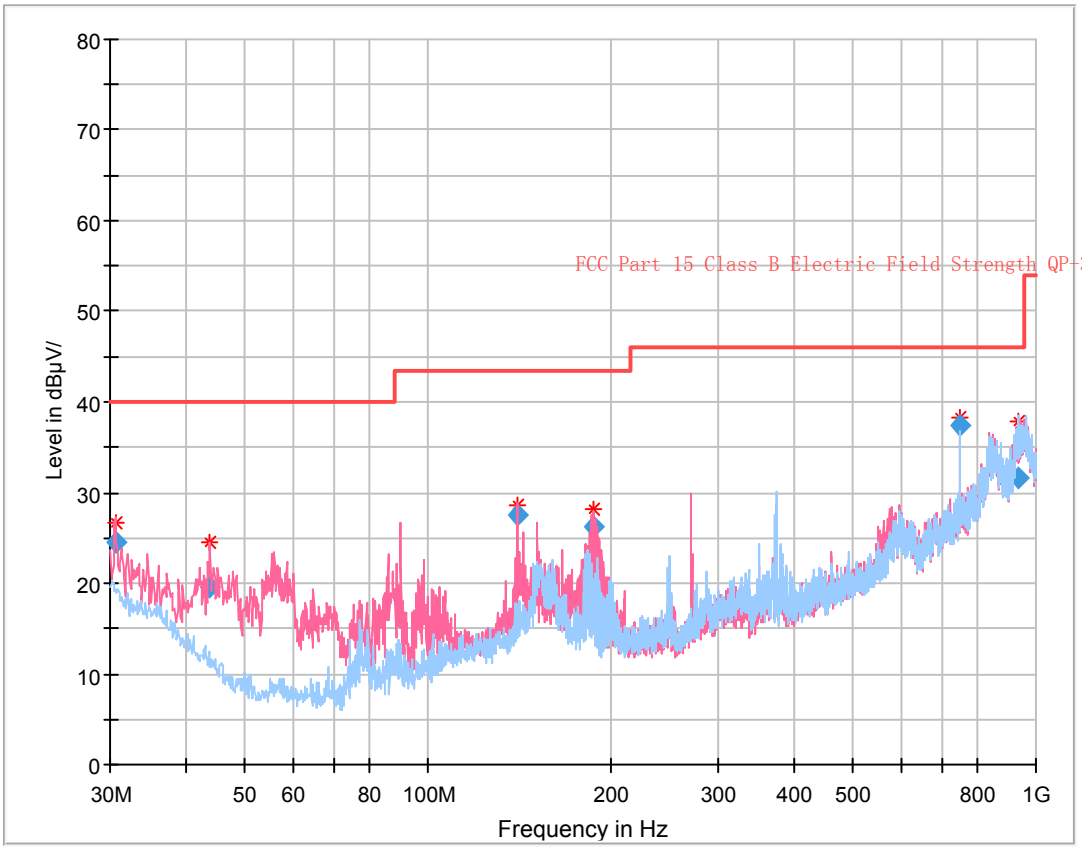
Vertical - Average





Power by Adapter 2(MASS POWER):

30 MHz~1 GHz:



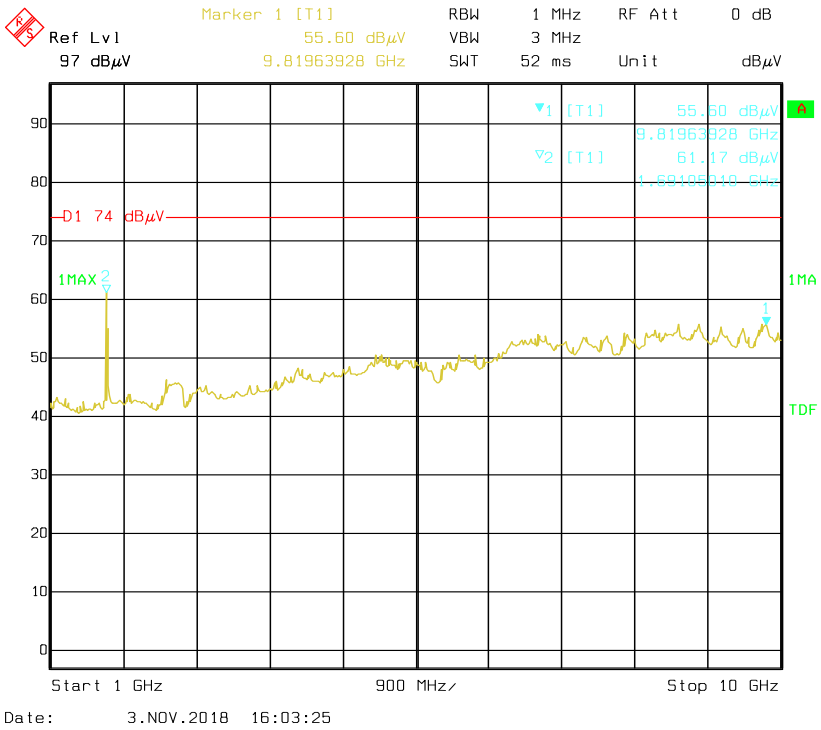
Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna height (cm)	Antenna Polarity	Turntable position (degree)	Correction Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
30.634375	24.50	107.0	V	202.0	-8.0	40.00	15.50
43.792500	19.56	100.0	V	157.0	-16.4	40.00	20.44
140.595125	27.57	100.0	V	131.0	-14.2	43.50	15.93
186.742125	26.32	100.0	V	153.0	-15.2	43.50	17.18
750.011125	37.32	115.0	H	313.0	-0.4	46.00	8.68
937.566000	31.67	347.0	H	36.0	8.5	46.00	14.33

1 GHz – 10 GHz:

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBuV/m)	FCC Part 15B	
	Reading (dBµV)	PK/QP/Ave.		Height (m)	Polar (H / V)			Limit (dBuV/m)	Margin (dB)
1691.00	63.20	PK	105	1.4	H	-1.87	61.33	74	12.67
1691.00	32.71	Ave.	105	1.4	H	-1.87	30.84	54	23.16
1691.00	56.37	PK	169	1.4	V	-1.87	54.50	74	19.50
1691.00	31.74	Ave.	169	1.4	V	-1.87	29.87	54	24.13
2009.60	42.38	PK	327	1.3	H	-1.50	40.88	74	33.12
2009.60	28.20	Ave.	327	1.3	H	-1.50	26.70	54	27.30
2009.60	42.16	PK	222	2.2	V	-1.50	40.66	74	33.34
2009.60	27.95	Ave.	222	2.2	V	-1.50	26.45	54	27.55

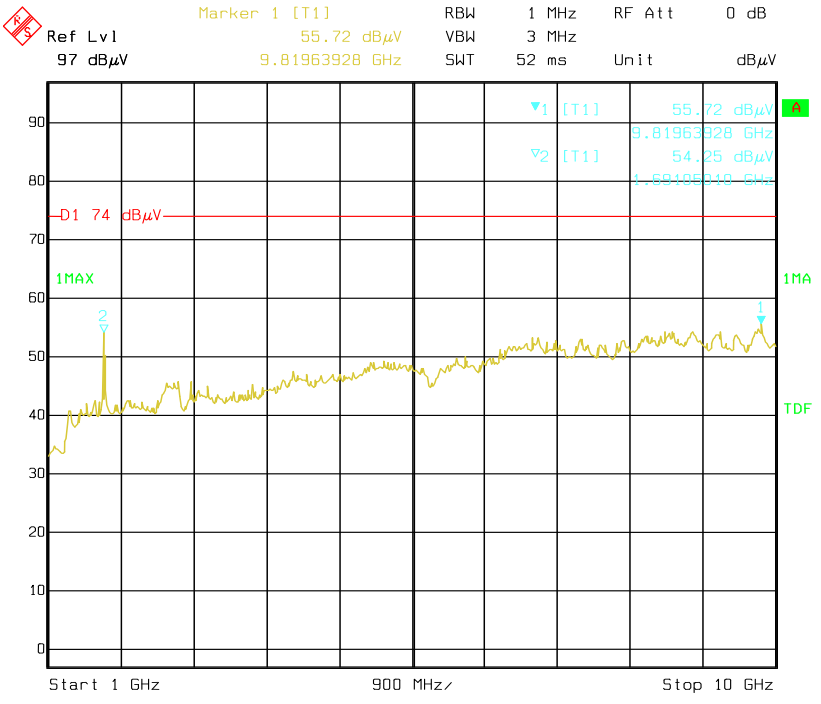
Pre-scan for peak

Horizontal – Peak (1-10 GHz)



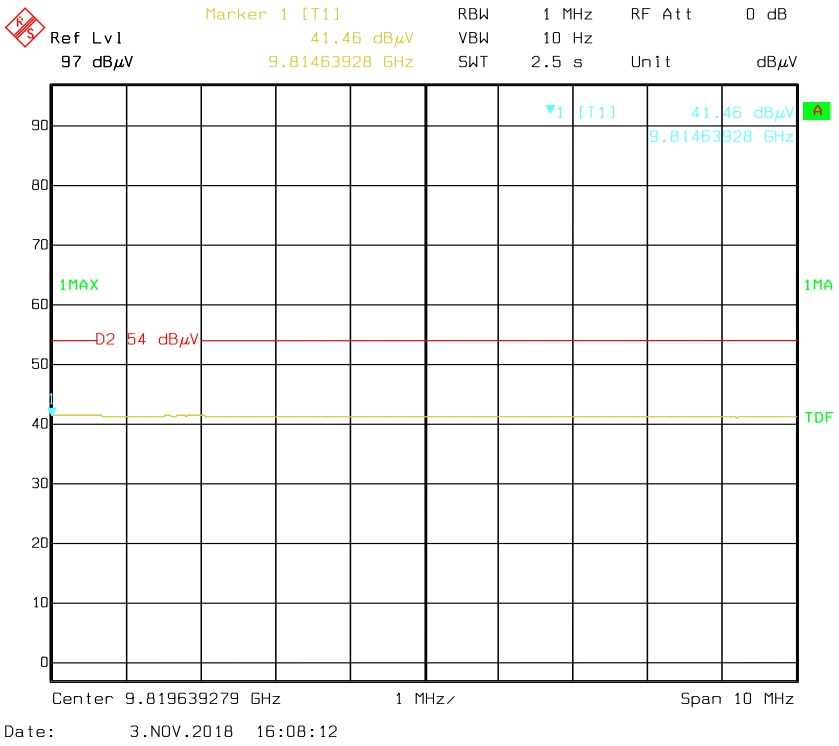
Date: 3.NOV.2018 16:03:25

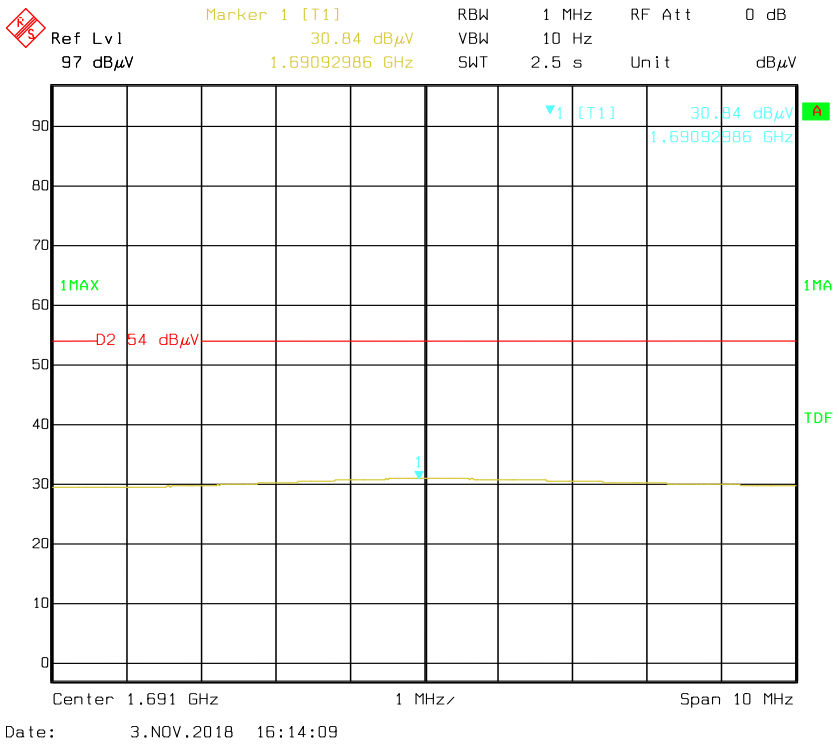
Vertical - Peak (1-10 GHz)



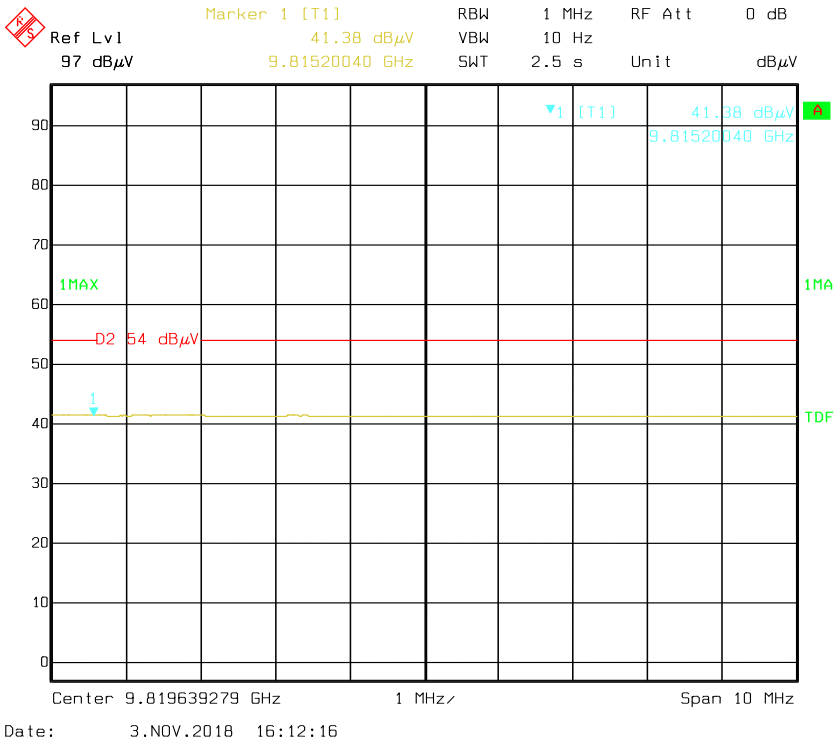
Date: 3.NOV.2018 16:06:29

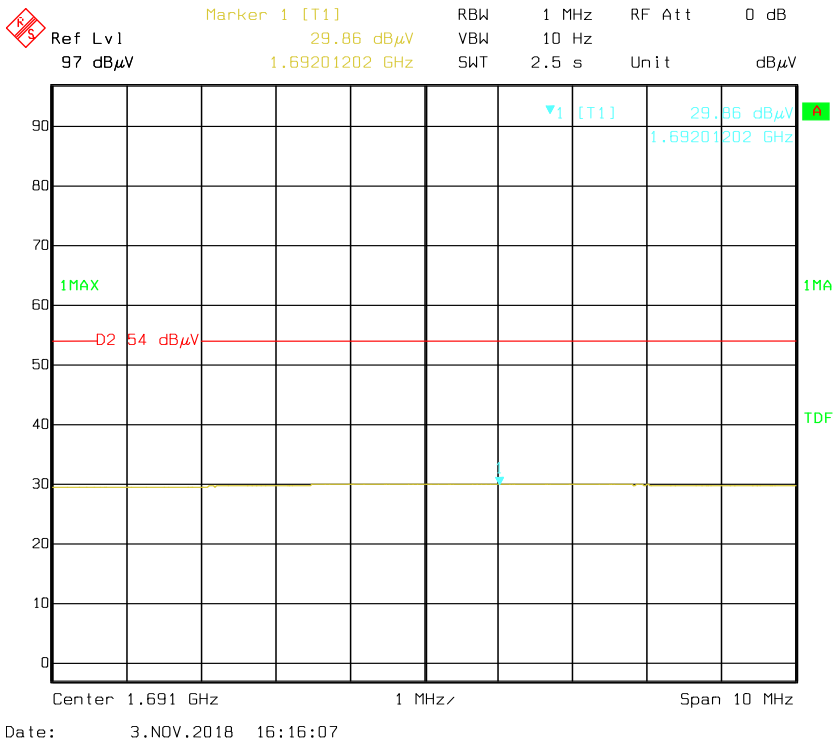
Horizontal – Average





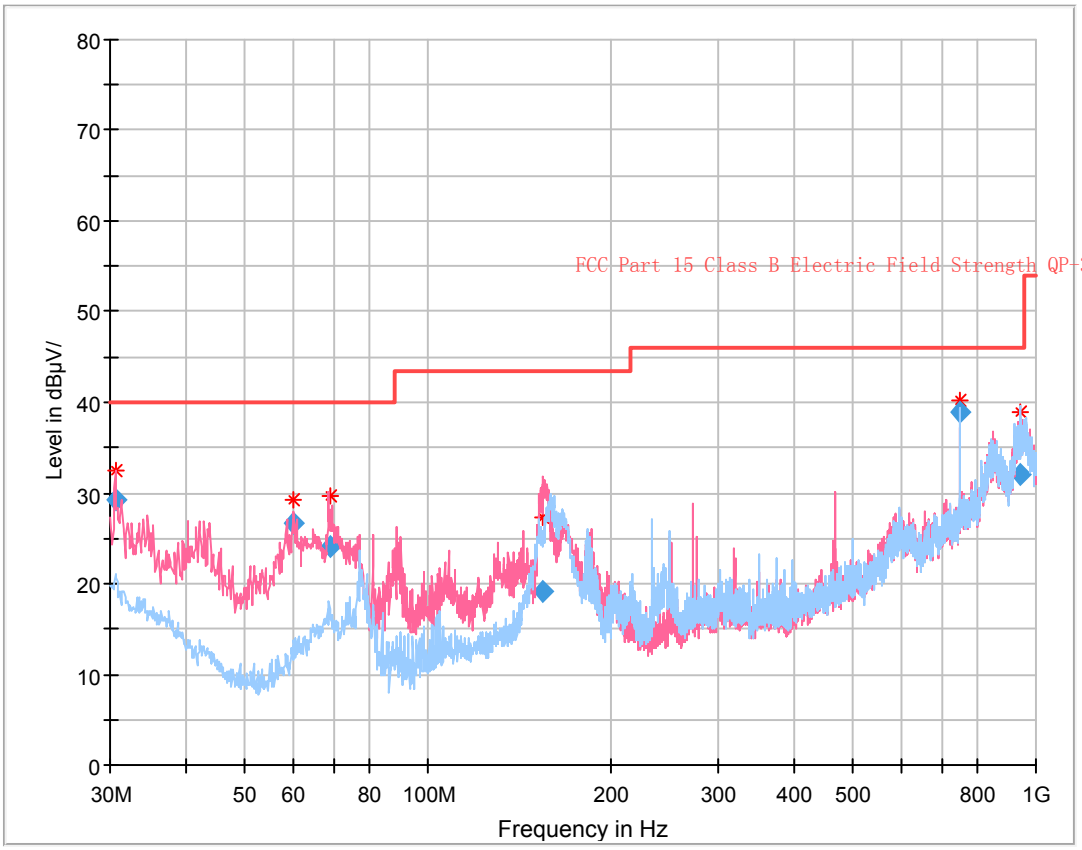
Vertical - Average





Power by Adapter 3(Sunlight):

30 MHz~1 GHz:



Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna height (cm)	Antenna Polarity	Turntable position (degree)	Correction Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
30.632000	29.26	106.0	V	16.0	-8.0	40.00	10.74
60.203375	26.65	106.0	V	0.0	-20.2	40.00	13.35
69.098625	24.08	109.0	V	0.0	-20.6	40.00	15.92
154.937250	19.13	154.0	V	298.0	-14.3	43.50	24.37
750.004375	38.93	207.0	H	318.0	-0.4	46.00	7.07
941.645750	32.05	156.0	H	141.0	9.0	46.00	13.95

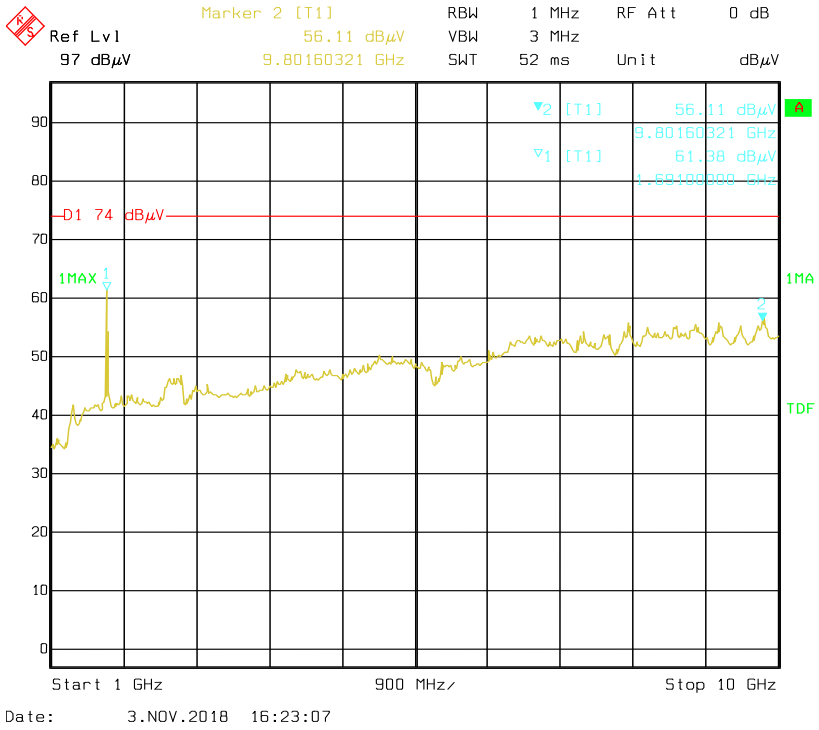
1 GHz – 10 GHz:

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBuV/m)	FCC Part 15B	
	Reading (dBμV)	PK/QP/Ave.		Height (m)	Polar (H / V)			Limit (dBuV/m)	Margin (dB)
1691.00	64.00	PK	306	1.3	H	-1.87	62.13	74	11.87
1691.00	32.55	Ave.	306	1.3	H	-1.87	30.68	54	23.32
1691.00	56.98	PK	330	1.0	V	-1.87	55.11	74	18.89
1691.00	31.77	Ave.	330	1.0	V	-1.87	29.90	54	24.10
2041.00	43.16	PK	120	1.9	H	-1.40	41.76	74	32.24
2041.00	28.50	Ave.	120	1.9	H	-1.40	27.10	54	26.90
2041.00	42.85	PK	254	1.8	V	-1.40	41.45	74	32.55
2041.00	28.24	Ave.	254	1.8	V	-1.40	26.84	54	27.16

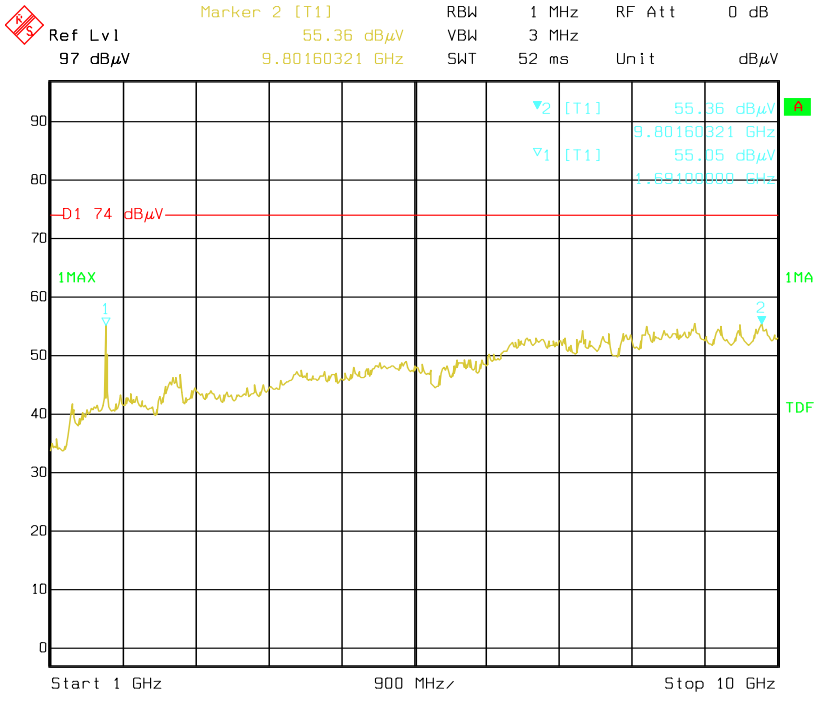
Note:
1) Correction Factor=Antenna factor (RX) + cable loss – amplifier factor
2) Corrected Amplitude = Correction Factor + Reading
3) Margin = Limit - Corrected Amplitude

Pre-scan for peak

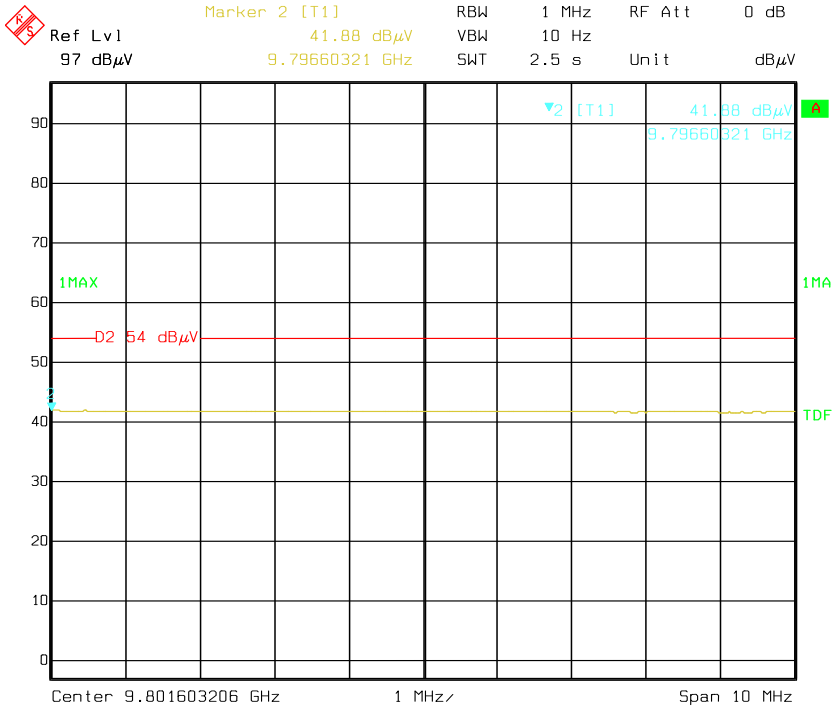
Horizontal – Peak (1-10 GHz)

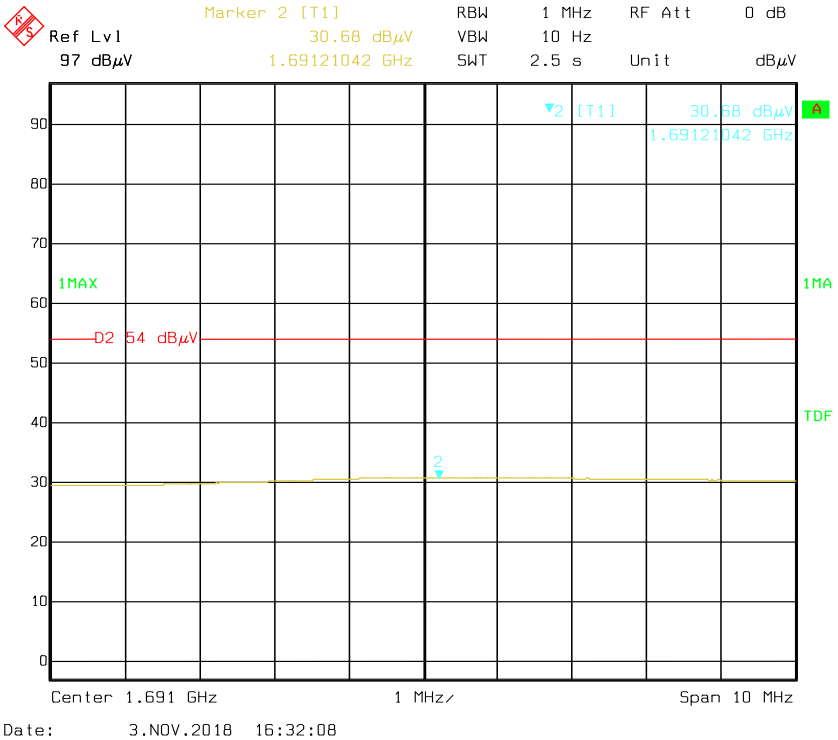


Vertical - Peak (1-10 GHz)

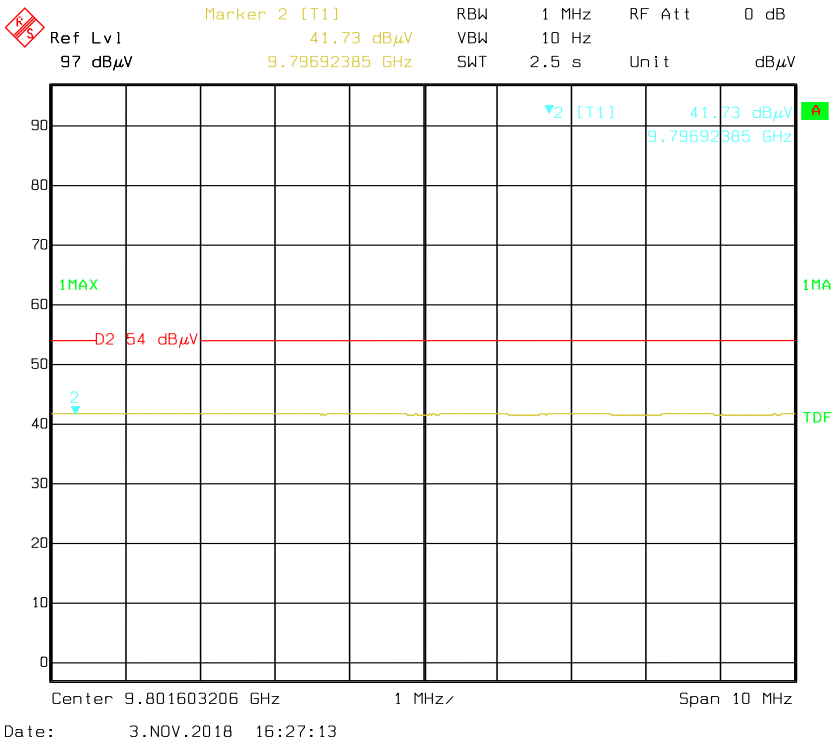


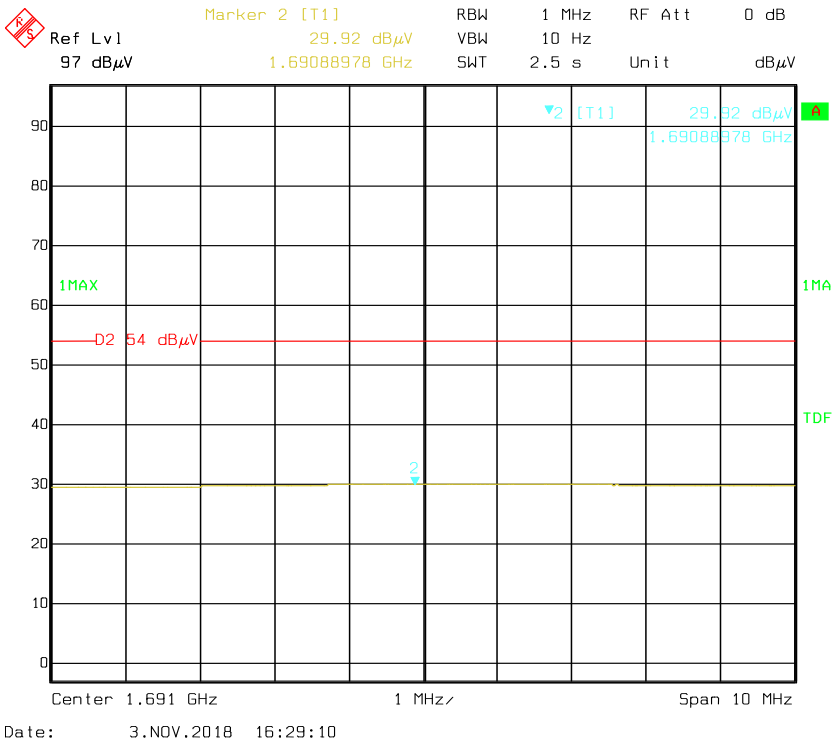
Horizontal – Average





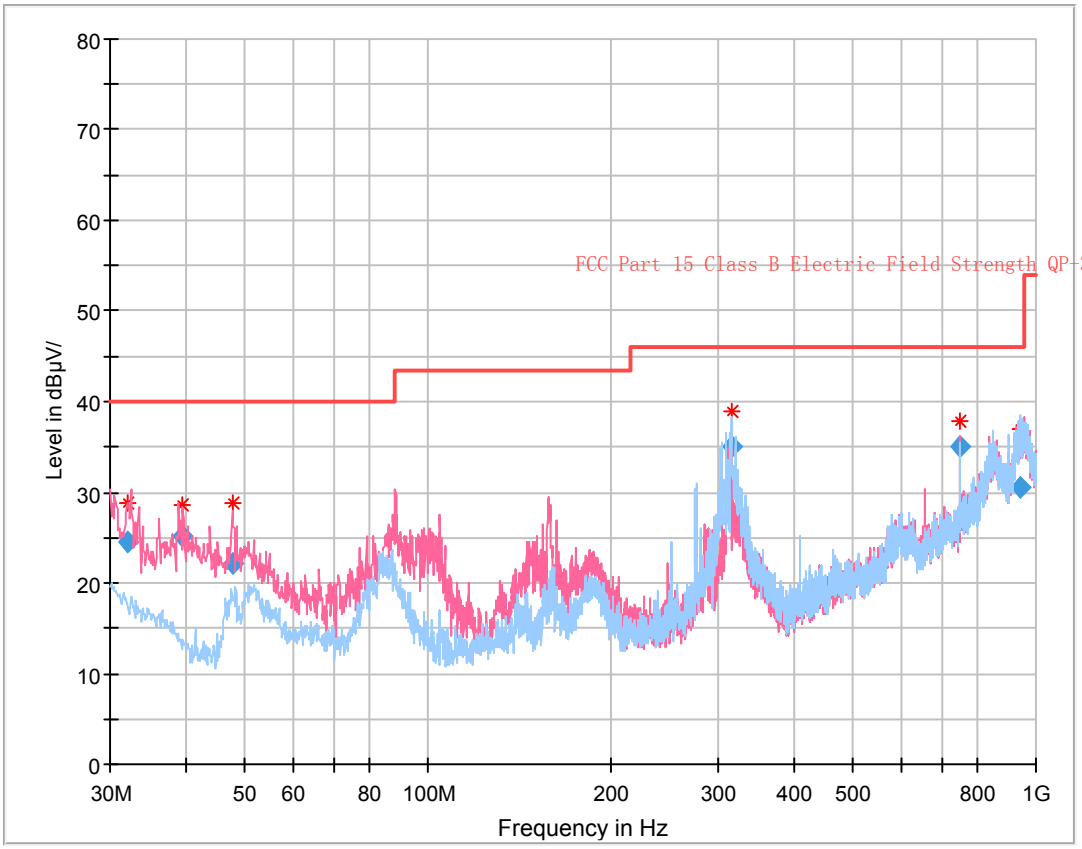
Vertical - Average





Power by POE:

30 MHz~1 GHz:



Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna height (cm)	Antenna Polarity	Turntable position (degree)	Correction Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
32.129000	24.54	106.0	V	146.0	-8.9	40.00	15.46
39.448875	25.16	107.0	V	343.0	-13.4	40.00	14.84
47.740500	22.10	110.0	V	350.0	-18.6	40.00	17.90
315.574750	34.98	124.0	H	93.0	-10.7	46.00	11.02
750.003000	35.00	107.0	V	93.0	-0.4	46.00	11.00
943.011500	30.54	181.0	H	226.0	9.1	46.00	15.46

1 GHz – 10 GHz:

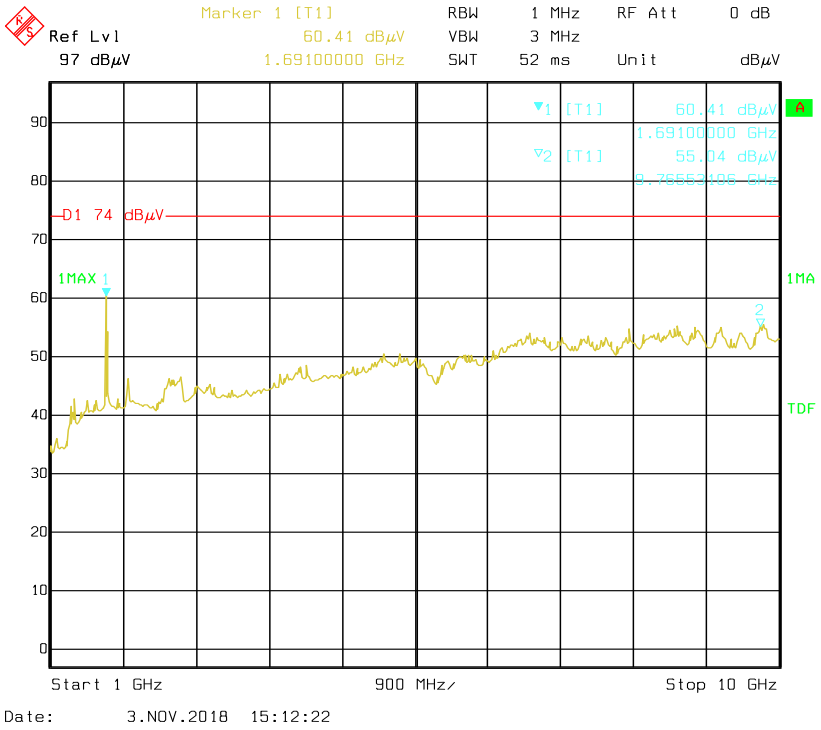
Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBuV/m)	FCC Part 15B	
	Reading (dBμV)	PK/QP/Ave.		Height (m)	Polar (H / V)			Limit (dBuV/m)	Margin (dB)
1691.00	62.40	PK	341	1.4	H	-1.87	60.53	74	13.47
1691.00	32.33	Ave.	341	1.4	H	-1.87	30.46	54	23.54
1691.00	57.59	PK	320	2.0	V	-1.87	55.72	74	18.28
1691.00	31.45	Ave.	320	2.0	V	-1.87	29.58	54	24.42
2005.30	43.56	PK	326	1.4	H	-1.50	42.06	74	31.94
2005.30	28.40	Ave.	326	1.4	H	-1.50	26.90	54	27.10
2005.30	42.94	PK	169	1.5	V	-1.50	41.44	74	32.56
2005.30	28.16	Ave.	169	1.5	V	-1.50	26.66	54	27.34

Note:

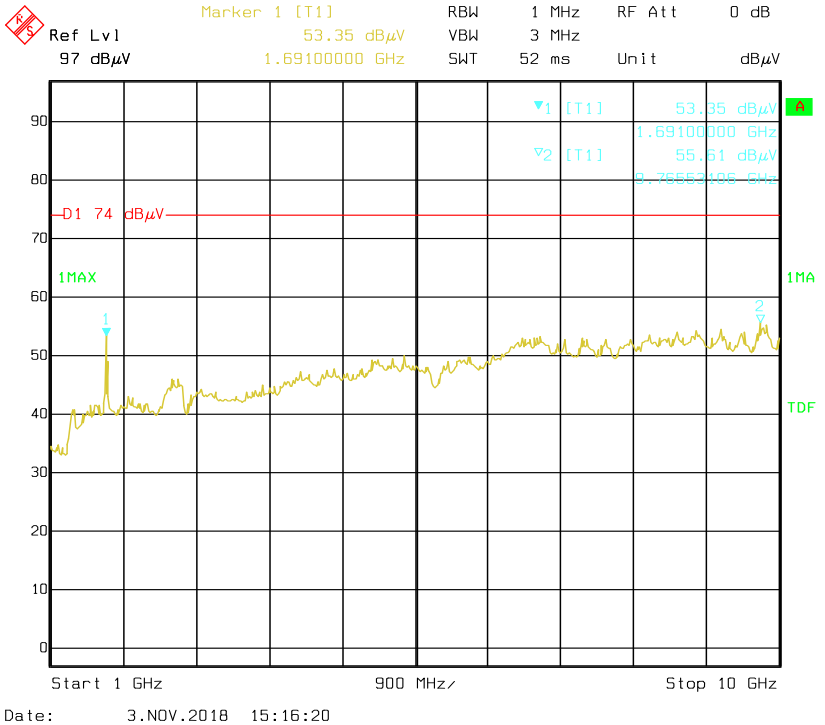
4) Correction Factor=Antenna factor (RX) + cable loss – amplifier factor
5) Corrected Amplitude = Correction Factor + Reading
6) Margin = Limit - Corrected Amplitude

Pre-scan for peak

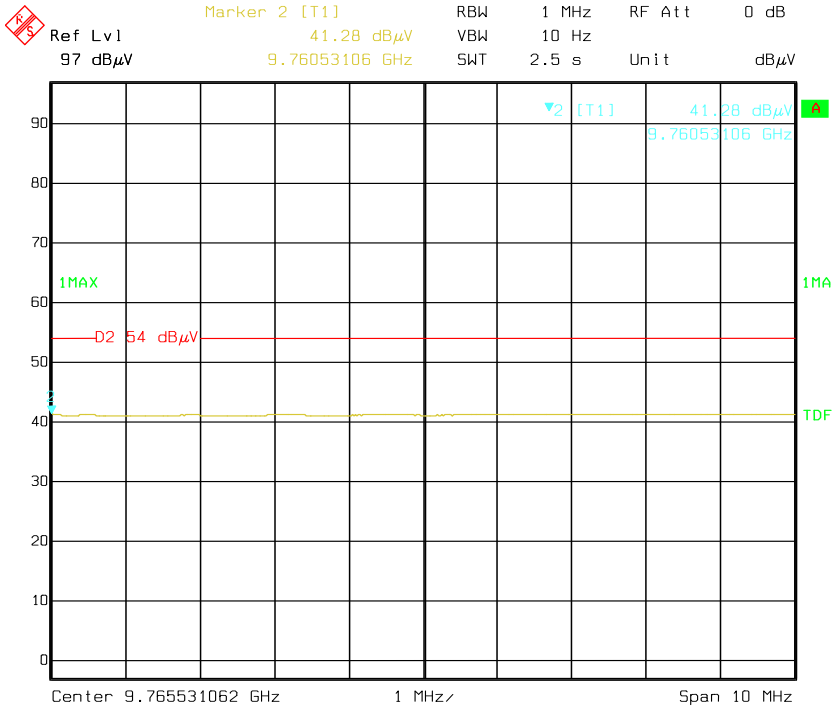
Horizontal – Peak (1-10 GHz)

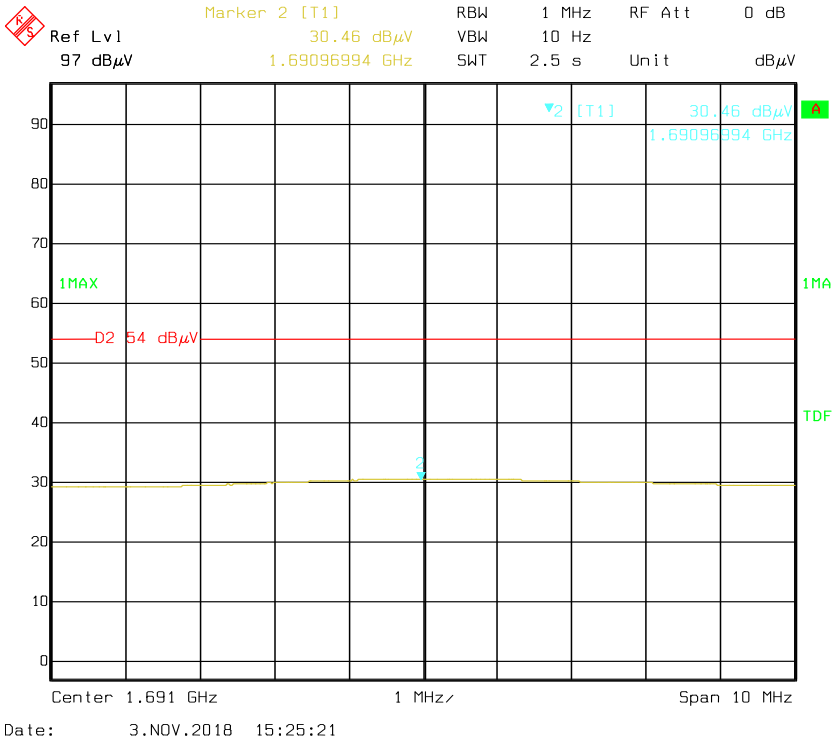


Vertical - Peak (1-10 GHz)

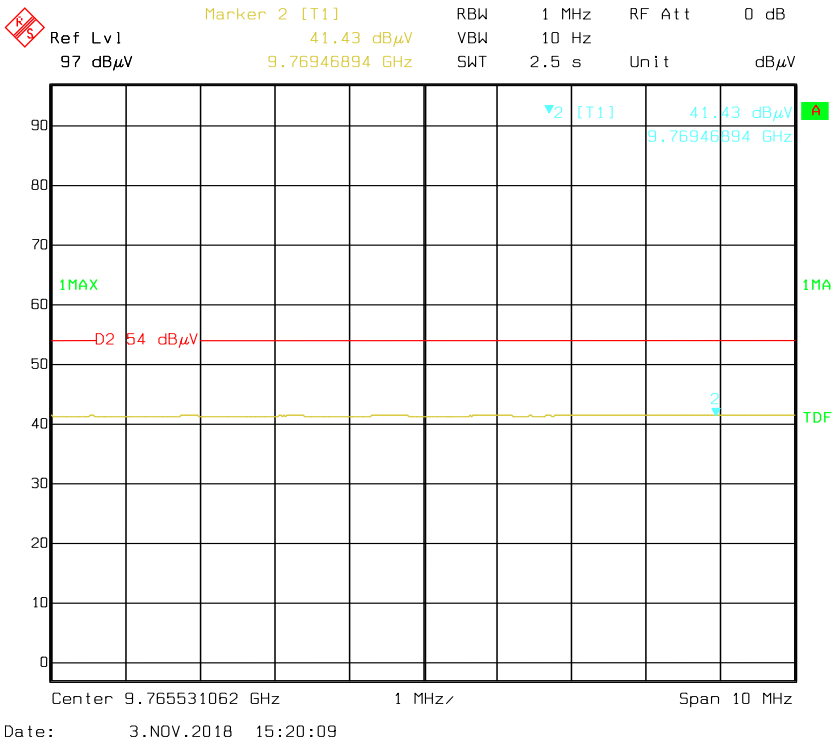


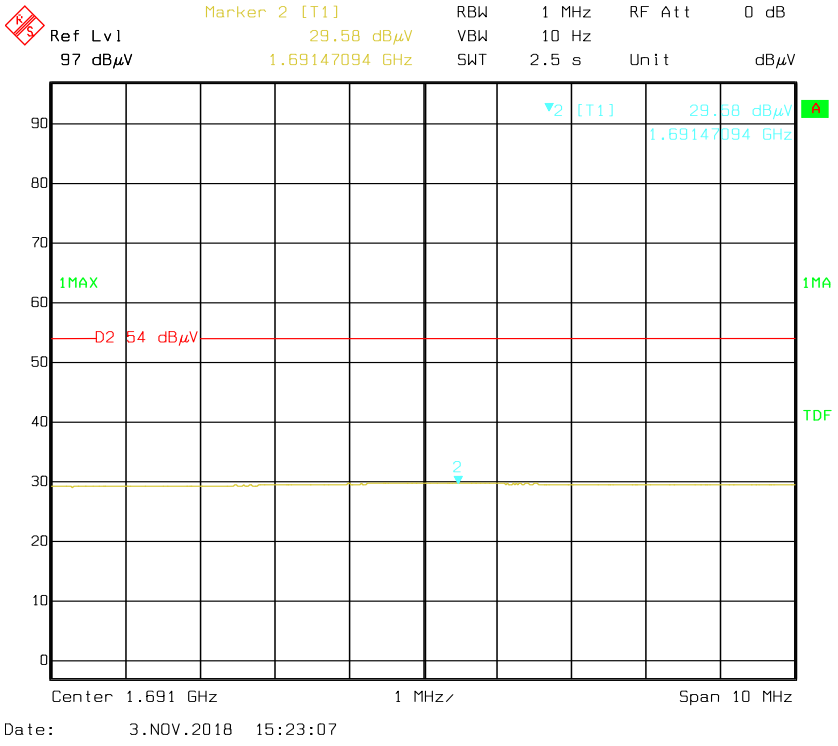
Horizontal – Average





Vertical - Average





******* END OF REPORT *******