



TESTING LABORATORY
CERTIFICATE#4323.01



FCC PART 15B TEST REPORT

For

Shanghai Sunmi Technology Co.,Ltd.

Room 605, Block 7, KIC Plaza, No.388 Song Hu Road, Yang Pu District, Shanghai 200433 China

FCC ID: 2AH25TF700

Report Type: Original Report	Product Type: WIRELESS DATA TERMINAL
Test Engineer:	Jett Zhao
Report Number:	RKSA200706002-00A
Report Date:	2020-10-27
Reviewed By:	Oscar Ye EMC Manager
Prepared By:	Bay Area Compliance Laboratories Corp. (Kunshan) No.248 Chenghu Road, Kunshan, Jiangsu province, China Tel: +86-0512-86175000 Fax: +86-0512-88934268 www.baclcorp.com.cn

TABLE OF CONTENTS

GENERAL INFORMATION.....	3
PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT)	3
OBJECTIVE	3
RELATED SUBMITTAL(S)/GRANT(S).....	3
TEST METHODOLOGY	3
TEST FACILITY	4
SYSTEM TEST CONFIGURATION.....	5
JUSTIFICATION	5
EUT EXERCISE SOFTWARE	5
SPECIAL ACCESSORIES.....	5
EQUIPMENT MODIFICATIONS	5
SUPPORT EQUIPMENT LIST AND DETAILS	5
BLOCK DIAGRAM OF RADIATED TEST SETUP.....	6
SUMMARY OF TEST RESULTS	7
FCC §15.107 –CONDUCTED EMISSIONS	8
APPLICABLE STANDARD	8
MEASUREMENT UNCERTAINTY.....	8
EUT SETUP	8
EMI TEST RECEIVER SETUP.....	9
TEST PROCEDURE	9
TEST EQUIPMENT LIST AND DETAILS.....	9
TEST DATA	10
FCC §15.109 - RADIATED EMISSIONS	20
APPLICABLE STANDARD	20
MEASUREMENT UNCERTAINTY.....	20
EUT SETUP	20
EMI TEST RECEIVER SETUP.....	21
TEST PROCEDURE	21
TEST EQUIPMENT LIST AND DETAILS.....	22
CORRECTED AMPLITUDE & MARGIN CALCULATION	23
TEST DATA	23

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Applicant:	Shanghai Sunmi Technology Co.,Ltd.
Test Model:	TF700
Product:	WIRELESS DATA TERMINAL
Rate Voltage:	DC 5.0/9.0/12.0/3.6~6.0/6.0~9.0/9.0~12.0V from adapter
Highest Operation Frequency:	5825MHz

*Adapter-1 Information:**Model: CK18W02U**Input: AC 100-240V 50/60Hz 0.5A**Output: 5.0V, 3.0A/9.0V, 2.0A/12.0V, 1.5A**Adapter-2 Information:**Model: TPA-10120150UU**Input: AC 100-240V 50/60Hz 0.6A**Output: 3.6~6.0V, 3.0A, /6.0~9.0V, 2.0A/9.0~12.0V, 1.5A**Adapter-3 Information:**Model: TPA-23A050200UU01**Input: AC100-240V 50/60Hz 0.3A**Output: 5.0V, 2000mA**Adapter-4 Information:**Model: UC13US**Input: AC100-240V 50/60Hz 0.35A**Output: 5.0V, 2000mA*

**All measurement and test data in this report was gathered from production sample serial number: 20200706002.
(Assigned by the BACL. The EUT supplied by the applicant was received on 2020-07-06)*

Objective

This report is prepared on behalf of *Shanghai Sunmi Technology Co.,Ltd.* in accordance with Part 2-Subpart J, and Part 15-Subparts A and B of the Federal Communication Commission's rules.

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

Related Submittal(s)/Grant(s)

FCC Part 15.247 DTS submissions with FCC ID: 2AH25TF700

FCC Part 15.247 DSS Submittal with FCC ID: 2AH25TF700

FCC Part 15.407 NII submissions with FCC ID: 2AH25TF700

FCC Part 15.225 DXX submissions with FCC ID: 2AH25TF700

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

Test Facility

The test site used by Bay Area Compliance Laboratories Corp. (Kunshan) to collect test data is located on the No.248 Chenghu Road, Kunshan, Jiangsu province, China.

Bay Area Compliance Laboratories Corp. (Kunshan) Lab is accredited to ISO/IEC 17025 by A2LA (Lab code: 4323.01) and the FCC designation No. CN1185 under the FCC KDB 974614 D01 and CAB identifier CN0004 under the ISED requirement. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2014.

SYSTEM TEST CONFIGURATION

Justification

The system was configured for testing in a typical mode (as normally used by a typical user).

Test Mode 1: Display + Camera on +Charging by Adapter 1

Test Mode 2: Display + Camera on +Charging by Adapter 2

Test Mode 3: Display + Camera on +Charging by Adapter 3

Test Mode 4: Display + Camera on +Charging by Adapter 4

Test Mode5: Data transmission by USB port

EUT Exercise Software

No software was used to test.

Special Accessories

No special accessory was used.

Equipment Modifications

No modification was made to the EUT tested.

Support Equipment List and Details

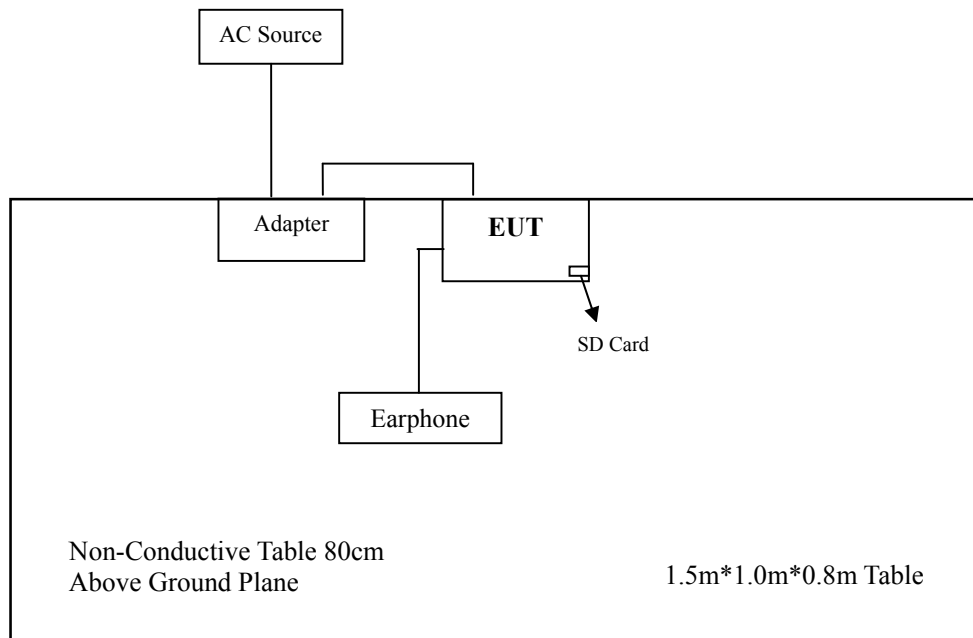
Manufacturer	Description	Model	Serial Number
Logitech	Mouse	M-U0026	HS529HB
DELL	Notebook	GX620	D65874152
DELL	Adapter	LA65NS0-00	DF263
BOLD	Earphone	/	/
TP-LINK	Router	TL-WDR5620	1188431022424
Sandisk	SD Card	/	/

External I/O Cable

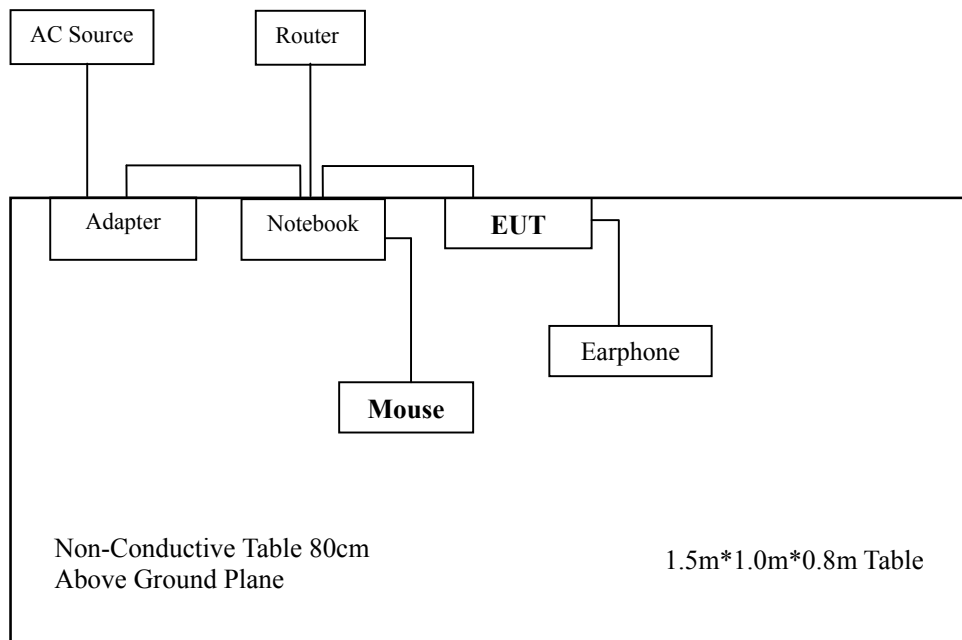
Cable Description	Length (m)	From/Port	To
USB Cable1	1.0	Notebook	Mouse
USB Cable 2	1.0	EUT	Notebook
Power cable1	1.2	Notebook	Adapter
Power cable2	1.2	EUT	Adapter
Power cable3	1.0	Adapter	AC Source

Block Diagram of Radiated Test Setup

Test Mode 1~4:



Test Mode 5:



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Results
§15.107	Conducted Emissions	Compliant
§15.109	Radiated Emissions	Compliant

FCC §15.107 –CONDUCTED EMISSIONS

Applicable Standard

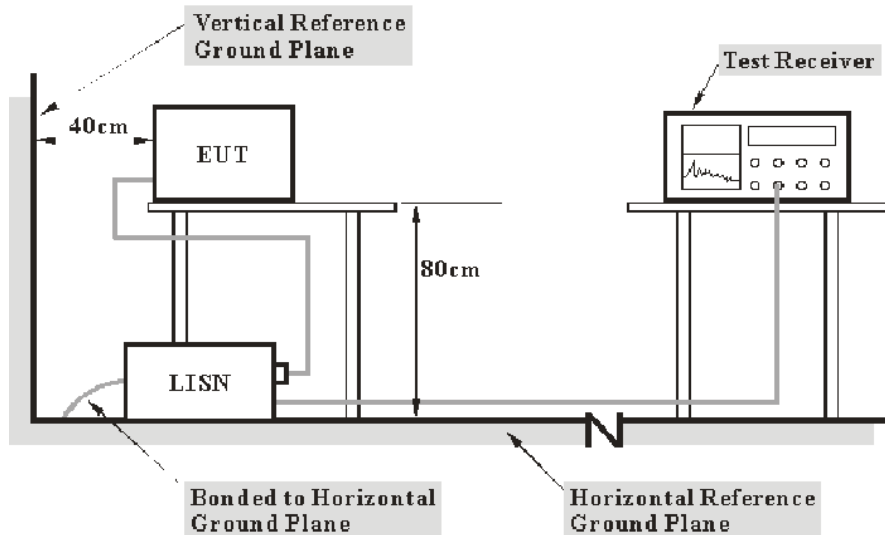
According to FCC§15.107

Measurement Uncertainty

Input quantities to be considered for conducted disturbance measurements maybe receiver reading, attenuation of the connection between LISN and receiver, LISN voltage division factor, LISN VDF frequency interpolation and receiver related input quantities, etc.

Item		Terminal	Measurement Uncertainty	U_{cispr}
Conducted Emission	150kHz~30MHz	AC Mains	3.19 dB	3.4 dB

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 ANSI C63.4-2014. The related limit was specified in FCC Part 15.107 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 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 outlet of the LISN.

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

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

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESR	1316.3003K0 3-101746-zn	2019-08-05	2020-08-04
Rohde & Schwarz	EMI Test Receiver	ESR	1316.3003K0 3-101746-zn	2020-08-05	2021-08-04
ROHDE&SCHWARZ	LISN	ENV216	3560655016	2019-11-30	2020-11-29
Audix	Test Software	e3	V9	--	--
MICRO-COAX	Coaxial Cable	Cable-6	006	2019-12-12	2020-12-11
Rohde & Schwarz	Pluse limiter	ESH3-Z2	100552	2020-03-01	2021-02-28

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

Corrected Factor & Over Limit Calculation

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

$$\text{Factor (dB)} = \text{LISN VDF (dB)} + \text{Cable Loss (dB)} + \text{Transient Limiter Attenuation (dB)}$$

The “**Over Limit**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, an Over Limit of 7 dB means the emission is 7 dB above the limit. The equation for Over Limit calculation is as follows:

$$\text{Over Limit (dB)} = \text{Read level (dB}\mu\text{V)} + \text{Factor (dB)} - \text{Limit (dB}\mu\text{V)}$$

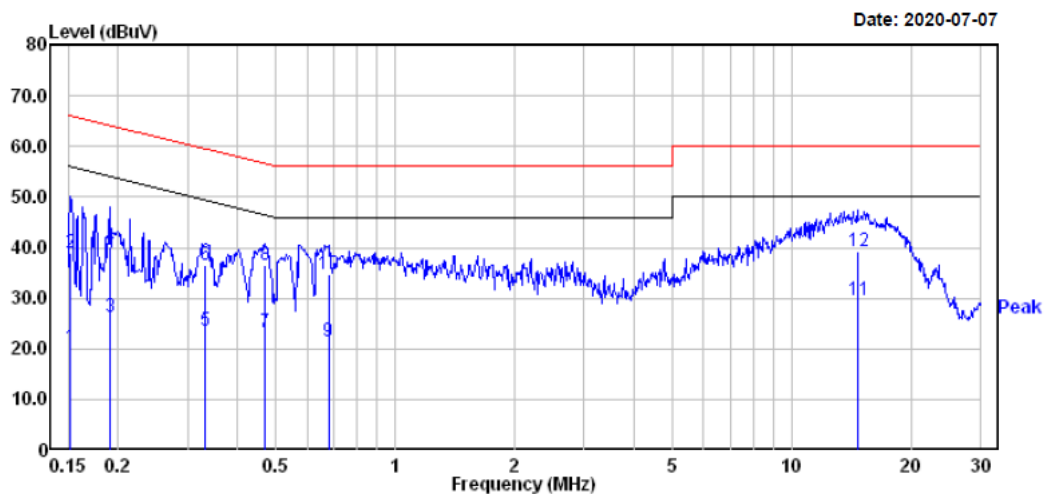
Test Data**Environmental Conditions**

Temperature:	24.9~25.6 °C
Relative Humidity:	50~52 %
ATM Pressure:	101.3~102.9 kPa

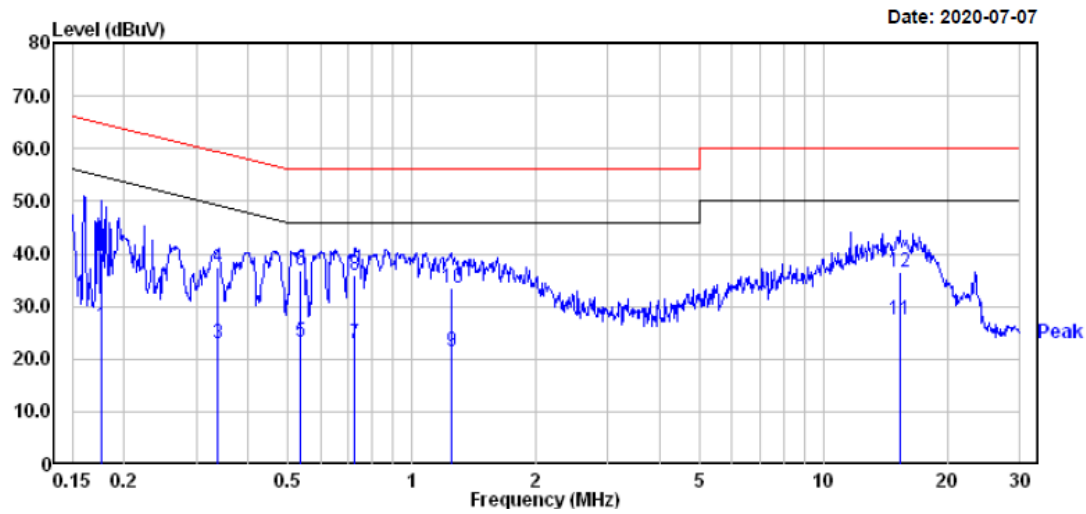
The testing was performed by Jett Zhao from 2020-07-07 to 2020-10-15.

Test mode1:

Line:



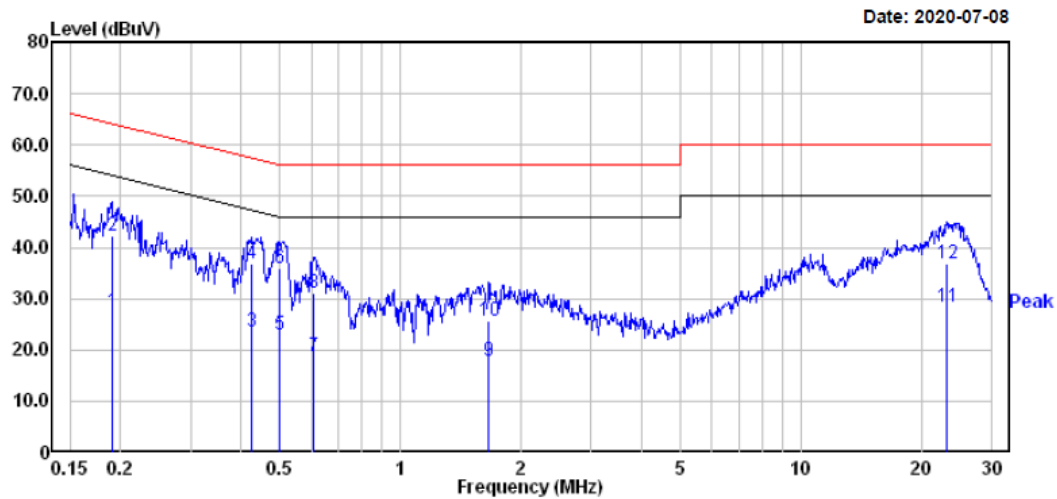
	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.152	0.30	19.82	20.12	55.91	-35.79	Average
2	0.152	19.20	19.82	39.02	65.91	-26.89	QP
3	0.190	6.40	19.82	26.22	54.02	-27.80	Average
4	0.190	20.20	19.82	40.02	64.02	-24.00	QP
5	0.330	3.59	19.82	23.41	49.44	-26.03	Average
6	0.330	16.69	19.82	36.51	59.44	-22.93	QP
7	0.469	3.51	19.75	23.26	46.54	-23.28	Average
8	0.469	16.81	19.75	36.56	56.54	-19.98	QP
9	0.679	1.70	19.75	21.45	46.00	-24.55	Average
10	0.679	15.10	19.75	34.85	56.00	-21.15	QP
11	14.672	10.00	19.63	29.63	50.00	-20.37	Average
12	14.672	19.60	19.63	39.23	60.00	-20.77	QP

Neutral:

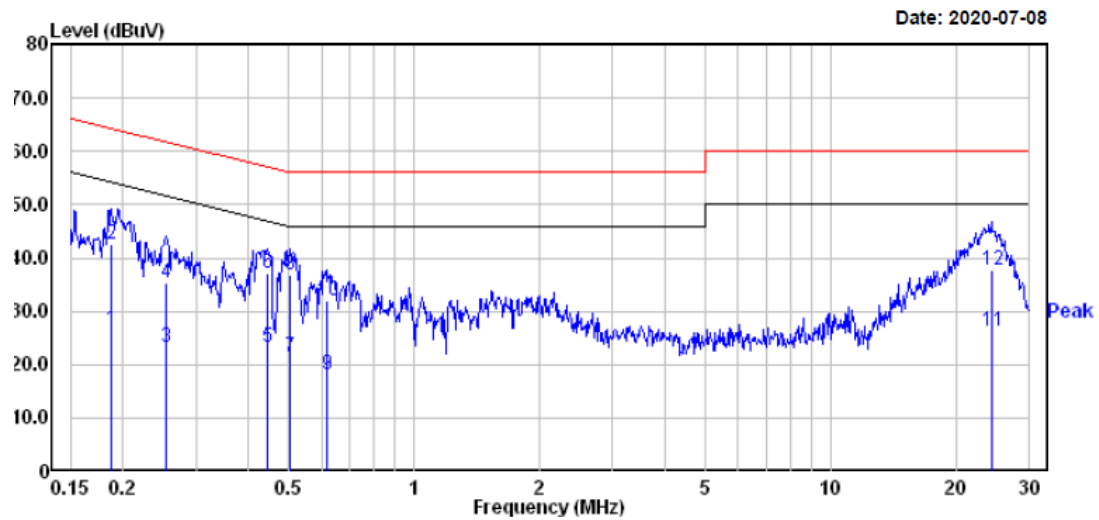
	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.177	6.50	19.83	26.33	54.64	-28.31	Average
2	0.177	20.40	19.83	40.23	64.64	-24.41	QP
3	0.337	3.10	19.81	22.91	49.27	-26.36	Average
4	0.337	17.50	19.81	37.31	59.27	-21.96	QP
5	0.535	3.41	19.75	23.16	46.00	-22.84	Average
6	0.535	17.01	19.75	36.76	56.00	-19.24	QP
7	0.727	3.30	19.74	23.04	46.00	-22.96	Average
8	0.727	16.10	19.74	35.84	56.00	-20.16	QP
9	1.249	1.70	19.82	21.52	46.00	-24.48	Average
10	1.249	13.70	19.82	33.52	56.00	-22.48	QP
11	15.307	7.80	19.65	27.45	50.00	-22.55	Average
12	15.307	16.80	19.65	36.45	60.00	-23.55	QP

Test mode2:

Line:



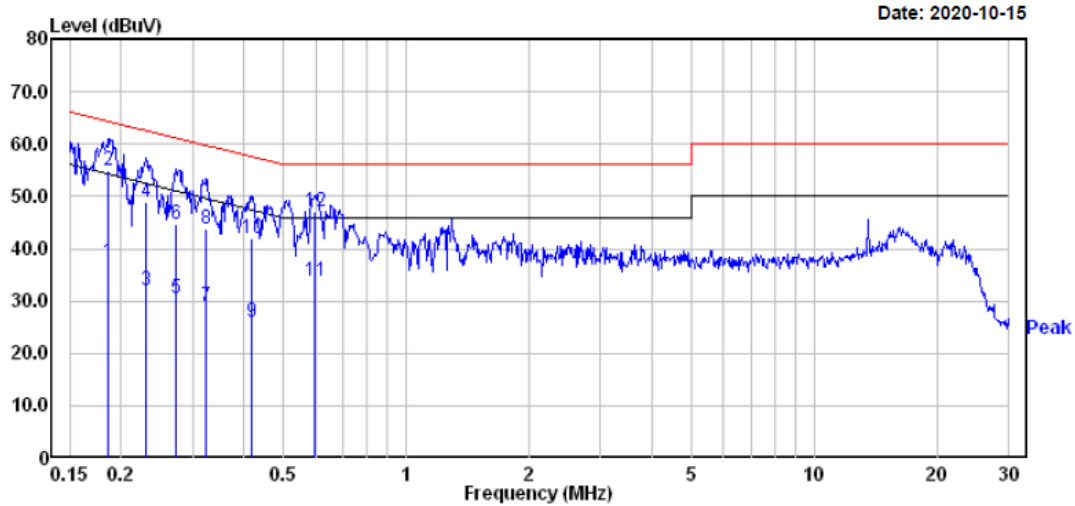
	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.190	7.70	19.82	27.52	54.02	-26.50	Average
2	0.190	22.50	19.82	42.32	64.02	-21.70	QP
3	0.424	3.89	19.75	23.64	47.37	-23.73	Average
4	0.424	17.19	19.75	36.94	57.37	-20.43	QP
5	0.499	3.20	19.76	22.96	46.01	-23.05	Average
6	0.499	16.10	19.76	35.86	56.01	-20.15	QP
7	0.608	-1.00	19.75	18.75	46.00	-27.25	Average
8	0.608	11.20	19.75	30.95	56.00	-25.05	QP
9	1.662	-2.00	19.84	17.84	46.00	-28.16	Average
10	1.662	5.80	19.84	25.64	56.00	-30.36	QP
11	23.140	8.69	19.79	28.48	50.00	-21.52	Average
12	23.140	17.19	19.79	36.98	60.00	-23.02	QP

Neutral:

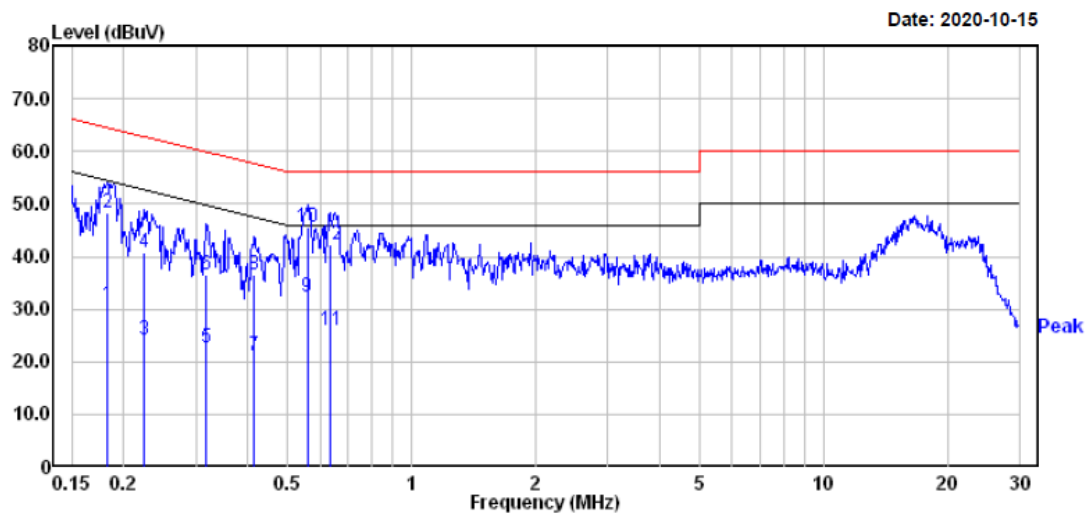
	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.187	6.71	19.82	26.53	54.15	-27.62	Average
2	0.187	22.81	19.82	42.63	64.15	-21.52	QP
3	0.253	3.50	19.82	23.32	51.64	-28.32	Average
4	0.253	15.50	19.82	35.32	61.64	-26.32	QP
5	0.444	3.50	19.75	23.25	46.98	-23.73	Average
6	0.444	17.50	19.75	37.25	56.98	-19.73	QP
7	0.505	1.70	19.76	21.46	46.00	-24.54	Average
8	0.505	17.20	19.76	36.96	56.00	-19.04	QP
9	0.617	-1.60	19.75	18.15	46.00	-27.85	Average
10	0.617	12.40	19.75	32.15	56.00	-23.85	QP
11	24.400	6.60	19.72	26.32	50.00	-23.68	Average
12	24.400	18.00	19.72	37.72	60.00	-22.28	QP

Test mode3:

Line:



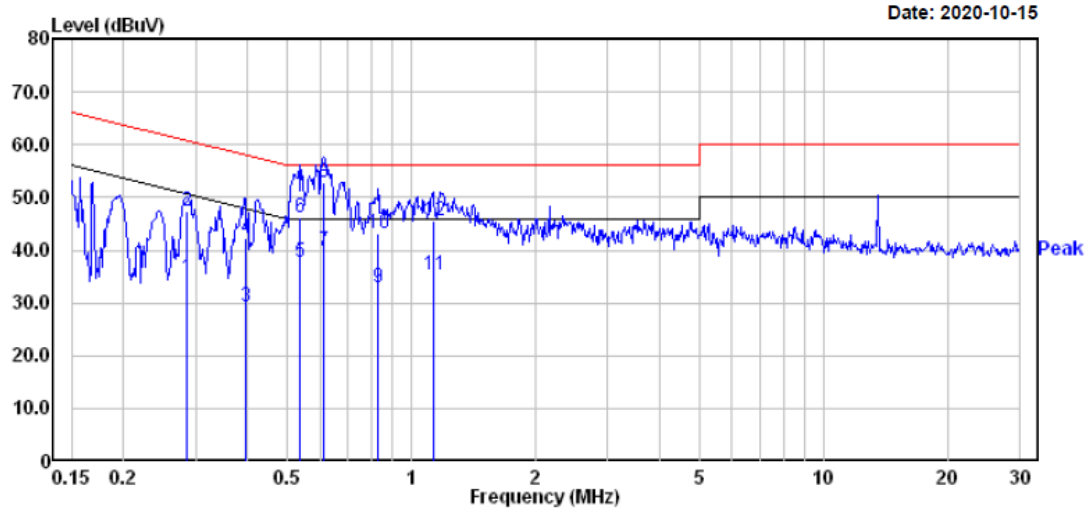
	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.186	17.61	19.82	37.43	54.20	-16.77	Average
2	0.186	35.01	19.82	54.83	64.20	-9.37	QP
3	0.230	12.10	19.82	31.92	52.44	-20.52	Average
4	0.230	29.20	19.82	49.02	62.44	-13.42	QP
5	0.272	10.80	19.82	30.62	51.07	-20.45	Average
6	0.272	25.00	19.82	44.82	61.07	-16.25	QP
7	0.323	9.10	19.82	28.92	49.62	-20.70	Average
8	0.323	24.00	19.82	43.82	59.62	-15.80	QP
9	0.419	6.10	19.74	25.84	47.46	-21.62	Average
10	0.419	22.10	19.74	41.84	57.46	-15.62	QP
11	0.598	14.00	19.75	33.75	46.00	-12.25	Average
12	0.598	27.20	19.75	46.95	56.00	-9.05	QP

Neutral:

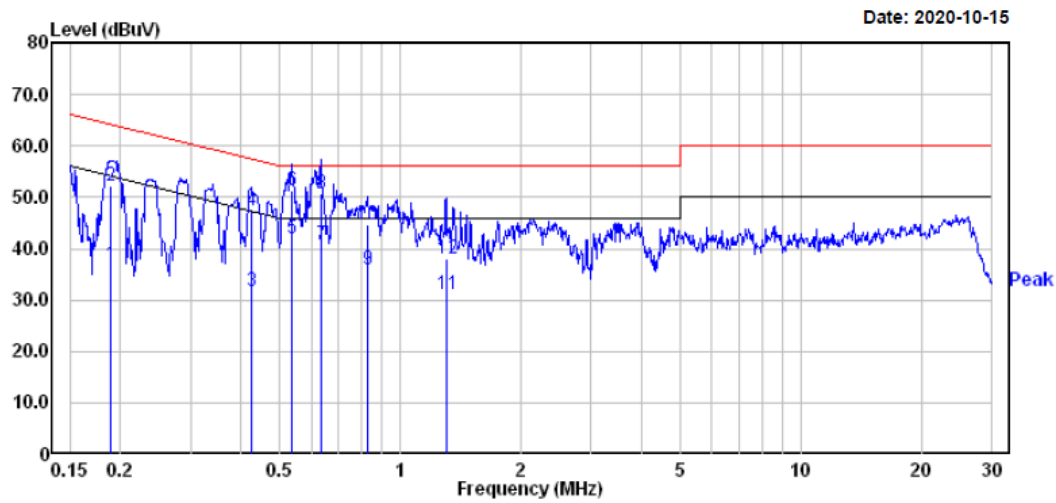
	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.182	11.00	19.83	30.83	54.37	-23.54	Average
2	0.182	28.60	19.83	48.43	64.37	-15.94	QP
3	0.223	4.40	19.82	24.22	52.70	-28.48	Average
4	0.223	21.00	19.82	40.82	62.70	-21.88	QP
5	0.318	2.90	19.82	22.72	49.75	-27.03	Average
6	0.318	16.70	19.82	36.52	59.75	-23.23	QP
7	0.415	1.50	19.74	21.24	47.55	-26.31	Average
8	0.415	16.90	19.74	36.64	57.55	-20.91	QP
9	0.558	12.60	19.75	32.35	46.00	-13.65	Average
10	0.558	25.70	19.75	45.45	56.00	-10.55	QP
11	0.634	6.20	19.75	25.95	46.00	-20.05	Average
12	0.634	22.60	19.75	42.35	56.00	-13.65	QP

Test mode4:

Line:



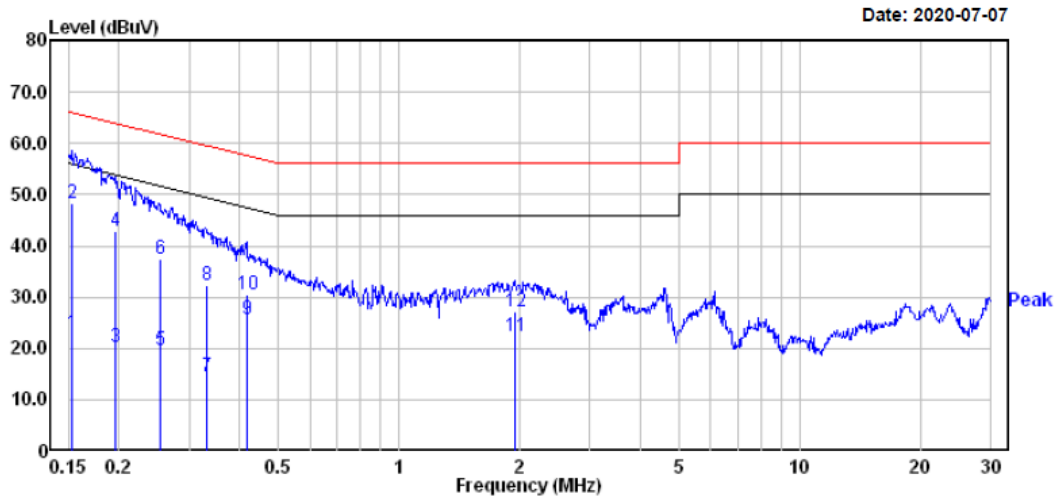
	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.285	15.00	19.82	34.82	50.68	-15.86	Average
2	0.285	27.50	19.82	47.32	60.68	-13.36	QP
3	0.396	9.59	19.75	29.34	47.95	-18.61	Average
4	0.396	22.39	19.75	42.14	57.95	-15.81	QP
5	0.535	17.91	19.75	37.66	46.00	-8.34	Average
6	0.535	26.51	19.75	46.26	56.00	-9.74	QP
7	0.611	20.10	19.75	39.85	46.00	-6.15	Average
8	0.611	33.20	19.75	52.95	56.00	-3.05	QP
9	0.830	13.10	19.71	32.81	46.00	-13.19	Average
10	0.830	23.40	19.71	43.11	56.00	-12.89	QP
11	1.129	15.60	19.81	35.41	46.00	-10.59	Average
12	1.129	25.90	19.81	45.71	56.00	-10.29	QP

Neutral:

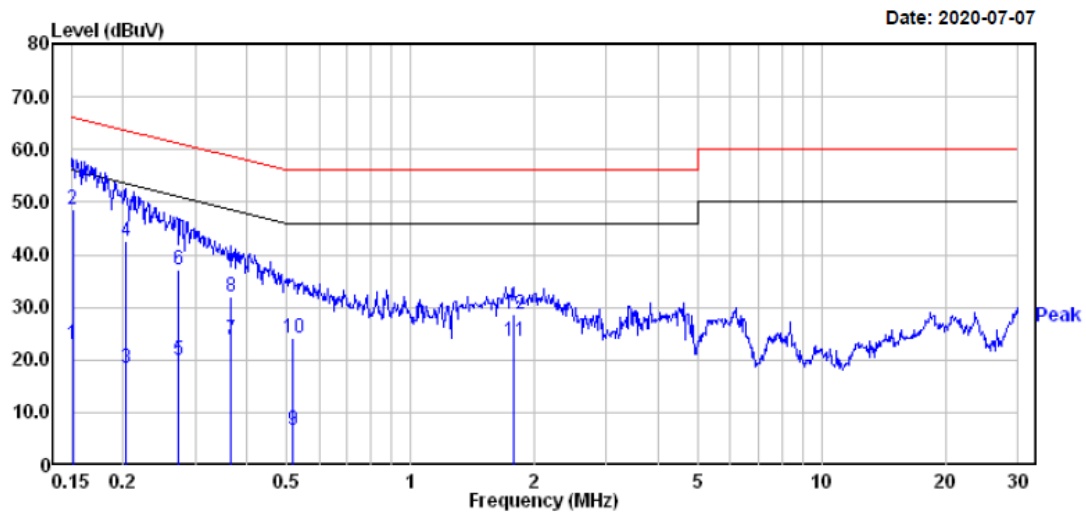
	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.189	17.00	19.82	36.82	54.06	-17.24	Average
2	0.189	32.40	19.82	52.22	64.06	-11.84	QP
3	0.424	11.99	19.75	31.74	47.37	-15.63	Average
4	0.424	27.69	19.75	47.44	57.37	-9.93	QP
5	0.535	22.21	19.75	41.96	46.00	-4.04	Average
6	0.535	31.71	19.75	51.46	56.00	-4.54	QP
7	0.634	21.00	19.75	40.75	46.00	-5.25	Average
8	0.634	31.00	19.75	50.75	56.00	-5.25	QP
9	0.826	16.20	19.71	35.91	46.00	-10.09	Average
10	0.826	25.00	19.71	44.71	56.00	-11.29	QP
11	1.303	11.40	19.82	31.22	46.00	-14.78	Average
12	1.303	18.20	19.82	38.02	56.00	-17.98	QP

Test mode5:

Line:



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.152	3.20	19.82	23.02	55.87	-32.85	Average
2	0.152	28.40	19.82	48.22	65.87	-17.65	QP
3	0.196	0.30	19.82	20.12	53.80	-33.68	Average
4	0.196	23.10	19.82	42.92	63.80	-20.88	QP
5	0.253	-0.30	19.82	19.52	51.64	-32.12	Average
6	0.253	17.50	19.82	37.32	61.64	-24.32	QP
7	0.330	-5.41	19.82	14.41	49.44	-35.03	Average
8	0.330	12.39	19.82	32.21	59.44	-27.23	QP
9	0.417	5.80	19.74	25.54	47.51	-21.97	Average
10	0.417	10.60	19.74	30.34	57.51	-27.17	QP
11	1.949	2.50	19.83	22.33	46.00	-23.67	Average
12	1.949	7.30	19.83	27.13	56.00	-28.87	QP

Neutral:

	Freq	Read		Limit	Over	
	MHz	Level	Factor	Level	Line	Limit
	MHz	dBuV	dB	dBuV	dBuV	dB
1	0.151	3.10	19.82	22.92	55.96	-33.04
2	0.151	28.80	19.82	48.62	65.96	-17.34
3	0.203	-1.50	19.82	18.32	53.49	-35.17
4	0.203	22.70	19.82	42.52	63.49	-20.97
5	0.272	0.20	19.82	20.02	51.07	-31.05
6	0.272	17.30	19.82	37.12	61.07	-23.95
7	0.367	4.20	19.78	23.98	48.56	-24.58
8	0.367	12.10	19.78	31.88	58.56	-26.68
9	0.518	-13.20	19.76	6.56	46.00	-39.44
10	0.518	4.30	19.76	24.06	56.00	-31.94
11	1.781	3.70	19.84	23.54	46.00	-22.46
12	1.781	8.80	19.84	28.64	56.00	-27.36

Note:

1) Factor (dB) = LISN VDF (dB) + Cable Loss (dB) + Transient Limiter Attenuation (dB)

2) Over Limit (dB) = Read level (dBuV) + Factor (dB) - Limit (dBuV)

FCC §15.109 - RADIATED EMISSIONS

Applicable Standard

FCC §15.109

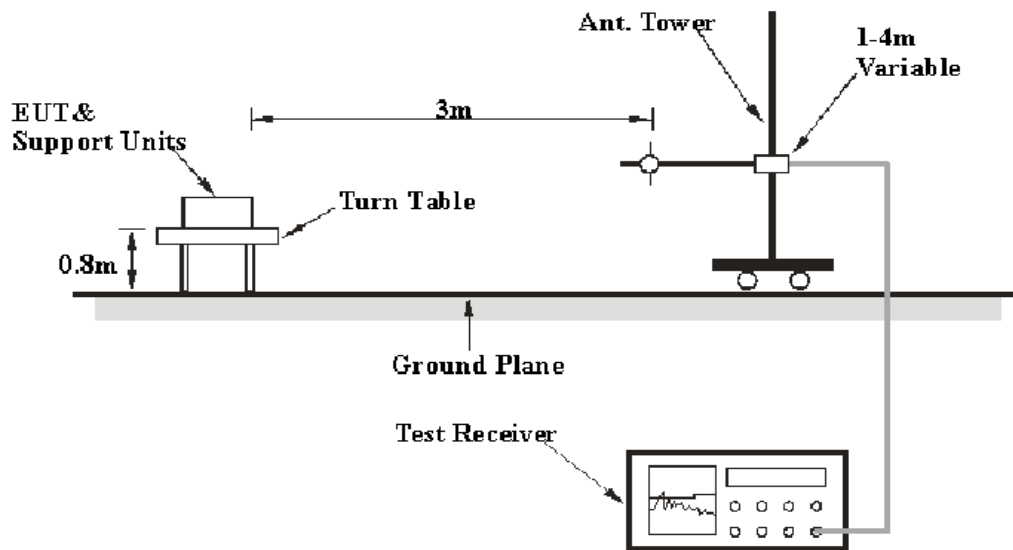
Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average) and system repeatability.

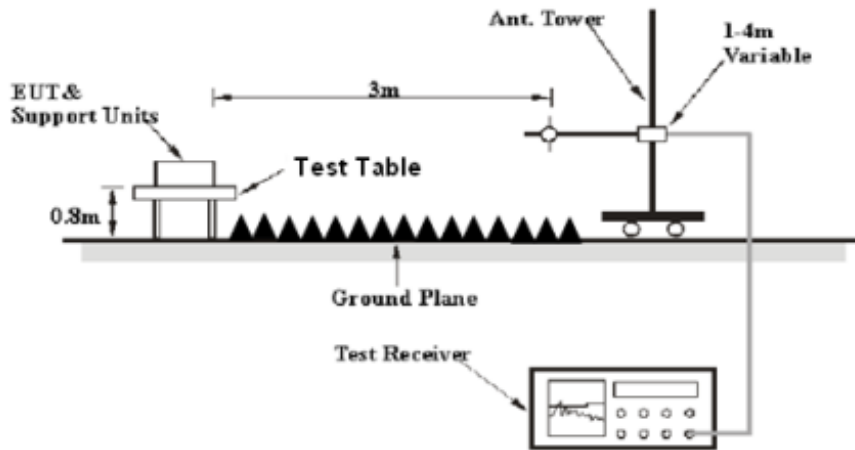
Item		Measurement Uncertainty	U_{cispr}
Radiated Emission	30MHz~1GHz	6.11dB	6.3 dB
	1GHz~6GHz	4.45dB	5.2 dB
	6 GHz ~18 GHz	5.23dB	5.5 dB

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 30 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	Detector
30MHz – 1000 MHz	120 kHz	300 kHz	120kHz	QP
Above 1 GHz	1MHz	3 MHz	/	Peak
	1MHz	3 MHz	1MHz	AVG

Test Procedure

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

In addition to testing mode 1, all the other final data was recorded in the peak detector mode from 30 MHz to 1 GHz, Peak and average detection mode above 1 GHz.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Sonoma Instrument	Amplifier	310N	185700	2019-08-14	2020-08-13
Sonoma Instrument	Amplifier	310N	185700	2020-08-14	2021-08-13
Rohde & Schwarz	EMI Test Receiver	ESCI	100195	2019-12-14	2020-12-13
Sunol Sciences	Broadband Antenna	JB3	A090413-1	2017-12-26	2020-12-25
Champrotek	Chamber 1#	3m-SAC 966	NA	2020-05-08	2022-05-07
Albatross	Chamber 2#	3m-SAC 966	NA	2019-05-08	2022-05-07
R&S	Auto test Software	EMC32	100361	-	-
ETS	Horn Antenna	3115	6229	2020-01-10	2023-01-09
ETS	Horn Antenna	3116	2516	2020-0-07	2023-01-06
Rohde & Schwarz	EMI Receiver	ESU40	100207	2020-04-01	2021-03-31
A.H.Systems,inc	Amplifier	PAM-0118P	512	2020-02-20	2021-02-19
SELECTOR	Amplifier	EM18G40G	060726	2019-08-15	2020-08-14
SELECTOR	Amplifier	EM18G40G	060726	2020-08-15	2021-08-14
MICRO-COAX	Coaxial Cable	Cable-8	008	2019-08-15	2020-08-14
MICRO-COAX	Coaxial Cable	Cable-8	008	2020-08-15	2021-08-14
MICRO-COAX	Coaxial Cable	Cable-9	009	2019-08-15	2020-08-14
MICRO-COAX	Coaxial Cable	Cable-9	009	2020-08-15	2021-08-14
MICRO-COAX	Coaxial Cable	Cable-10	010	2019-08-15	2020-08-14
MICRO-COAX	Coaxial Cable	Cable-10	010	2020-08-15	2021-08-14
MICRO-COAX	Coaxial Cable	Cable-4	004	2019-12-11	2020-12-10
MICRO-COAX	Coaxial Cable	Cable-5	005	2019-12-11	2020-12-10

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

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 (dB μ V/m) = Meter Reading (dB μ V) + Antenna Factor (dB/m) + Cable Loss (dB) - Amplifier Gain (dB)

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

Margin (dB) = Limit (dB μ V/m) – Corrected Amplitude (dB μ V/m)

Test Data

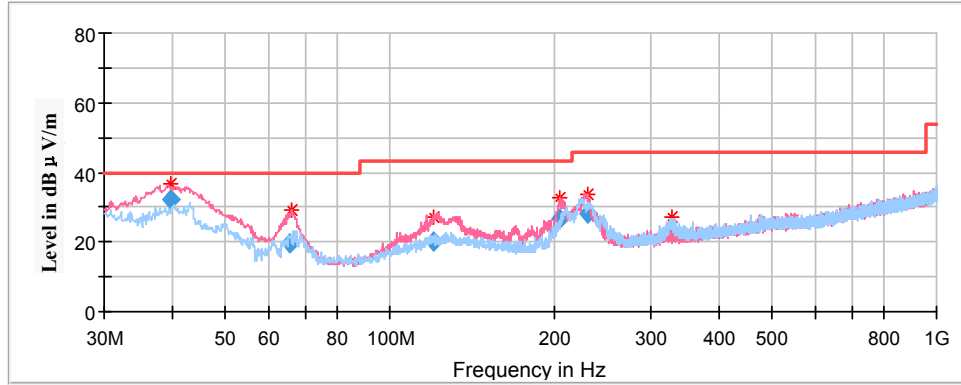
Environmental Conditions

Temperature:	24.7~25.6 °C
Relative Humidity:	50~52 %
ATM Pressure:	101.3~102.3 kPa

The testing was performed by Jett Zhao from 2020-07-10 to 2020-10-27.

Test mode1:

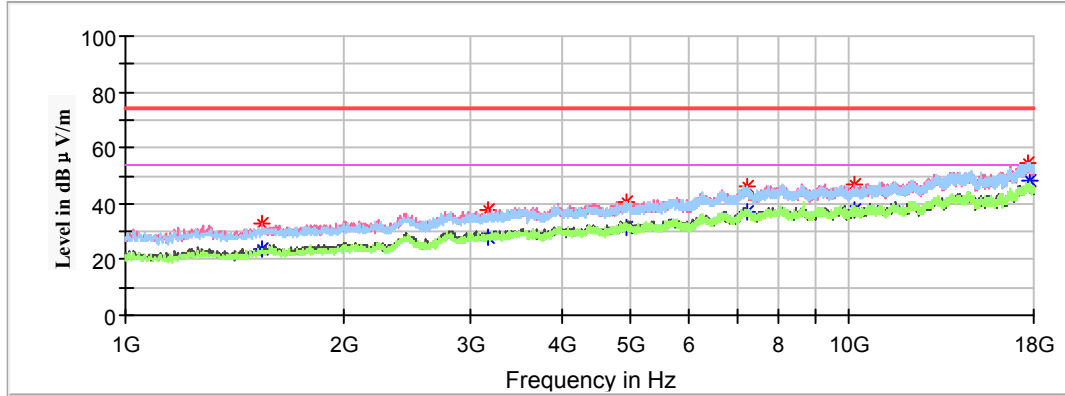
30MHz ~ 1GHz:



Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
39.588000	32.14	40.00	7.86	100.0	V	181.0	-10.9
65.482950	19.75	40.00	20.25	100.0	V	104.0	-18.0
120.398650	20.06	43.50	23.44	100.0	V	233.0	-11.6
205.023800	26.52	43.50	16.98	100.0	V	238.0	-12.8
229.540600	28.27	46.00	17.73	100.0	V	294.0	-12.7
328.021200	22.52	46.00	23.48	100.0	H	139.0	-10.3

Above 1 GHz:

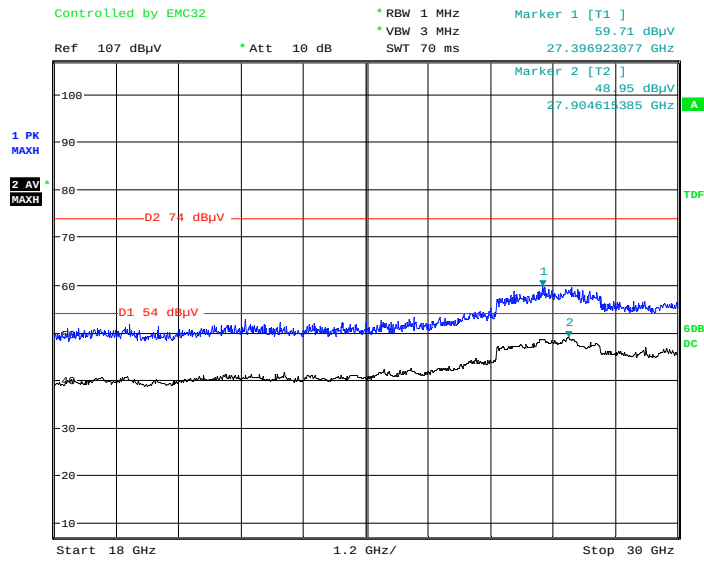
Full Spectrum



Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1542.300000	---	23.74	54.00	30.26	100.0	V	49.0	-16.2
1542.300000	32.58	---	74.00	41.42	100.0	V	49.0	-16.2
3170.900000	---	28.11	54.00	25.89	100.0	V	203.0	-9.7
3170.900000	37.69	---	74.00	36.31	100.0	V	203.0	-9.7
4911.700000	40.65	---	74.00	33.35	100.0	H	351.0	-5.4
4911.700000	---	31.61	54.00	22.39	100.0	H	351.0	-5.4
7213.500000	46.18	---	74.00	27.82	200.0	V	311.0	0.4
7213.500000	---	37.40	54.00	16.60	200.0	V	311.0	0.4
10203.800000	---	38.08	54.00	15.92	200.0	V	198.0	2.1
10203.800000	47.18	---	74.00	26.82	200.0	V	198.0	2.1
17746.700000	54.88	---	74.00	19.12	200.0	H	154.0	8.9
17746.700000	---	48.00	54.00	6.00	200.0	H	154.0	8.8

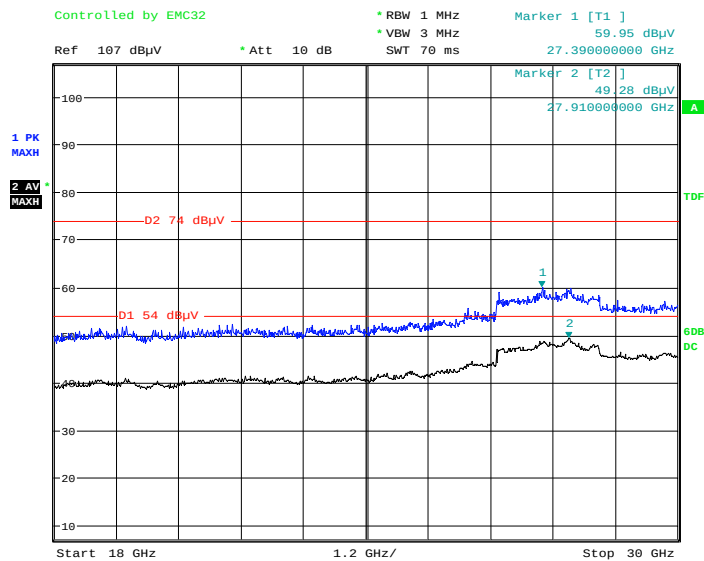
18GHz ~ 30GHz:

Horizontal:



Date: 14.JUL.2020 22:00:35

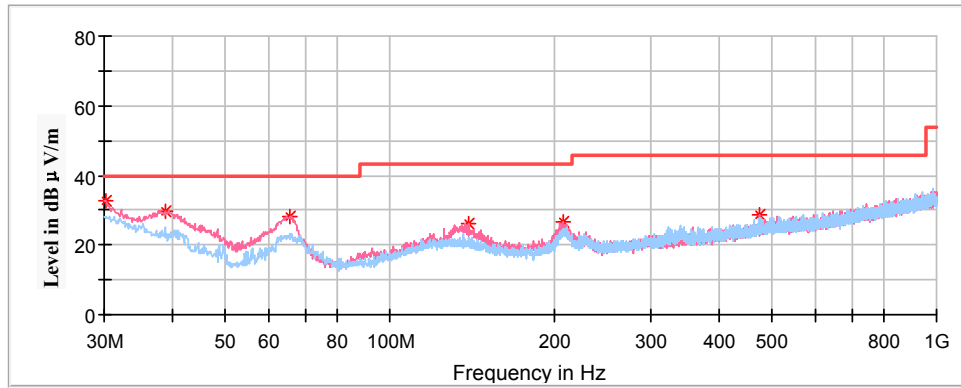
Vertical:



Date: 14.JUL.2020 21:59:25

Test mode2:

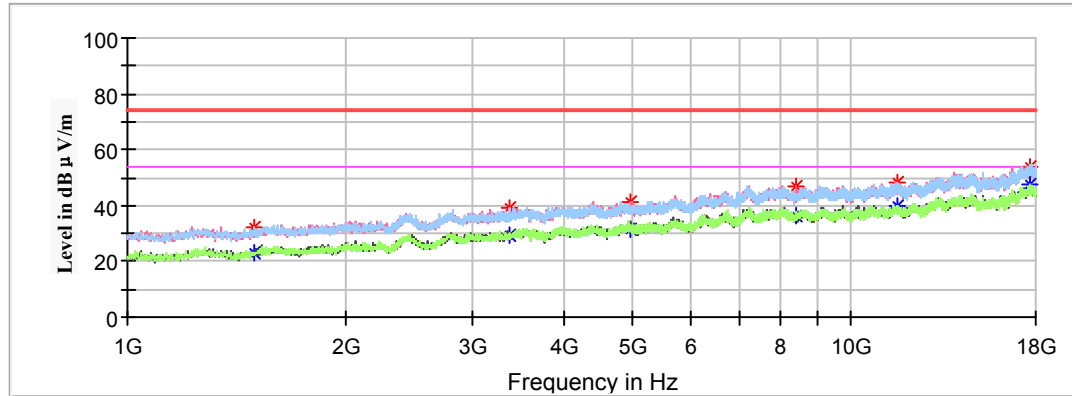
30MHz ~ 1GHz:



Frequency (MHz)	MaxPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
30.121250	32.79	40.00	7.21	100.0	V	147.0	-4.5
38.851250	29.59	40.00	10.41	100.0	V	137.0	-10.4
65.526250	28.33	40.00	11.67	100.0	V	116.0	-18.0
139.003750	26.25	43.50	17.25	100.0	V	319.0	-12.4
207.146250	26.47	43.50	17.03	100.0	V	247.0	-12.7
475.593750	28.80	46.00	17.20	100.0	V	142.0	-6.7

Above 1 GHz:

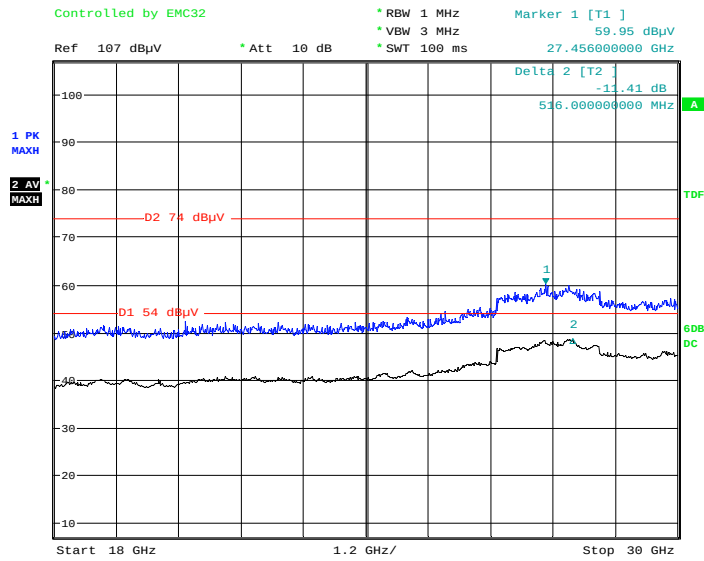
Full Spectrum



Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1494.700000	---	22.87	54.00	31.13	200.0	V	349.0	-16.4
1494.700000	32.31	---	74.00	41.69	200.0	V	349.0	-16.4
3364.700000	---	29.23	54.00	24.77	100.0	H	16.0	-9.2
3364.700000	39.31	---	74.00	34.69	100.0	H	16.0	-9.2
4959.300000	---	31.51	54.00	22.49	200.0	H	131.0	-5.3
4959.300000	41.20	---	74.00	32.80	200.0	H	131.0	-5.3
8383.100000	---	36.30	54.00	17.70	200.0	V	156.0	1.4
8383.100000	46.82	---	74.00	27.18	200.0	V	156.0	1.4
11553.600000	---	39.54	54.00	14.46	100.0	V	189.0	2.9
11553.600000	47.99	---	74.00	26.01	100.0	V	189.0	2.9
17682.100000	54.09	---	74.00	19.91	200.0	H	80.0	8.9
17682.100000	---	47.54	54.00	6.46	200.0	H	80.0	8.9

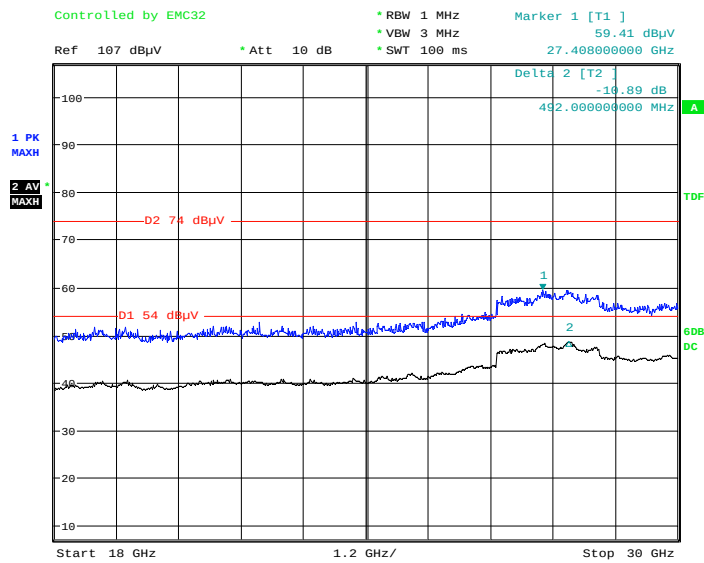
18GHz ~ 30GHz:

Horizontal:



Date: 22.OCT.2020 22:15:43

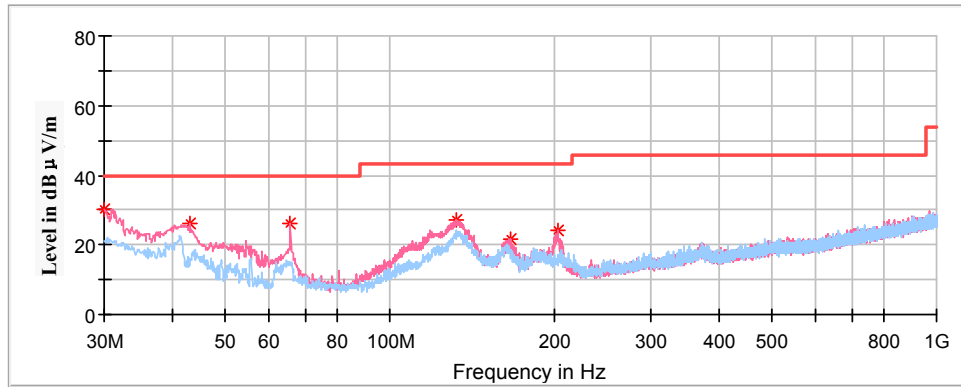
Vertical:



Date: 22.OCT.2020 22:12:33

Test mode3:

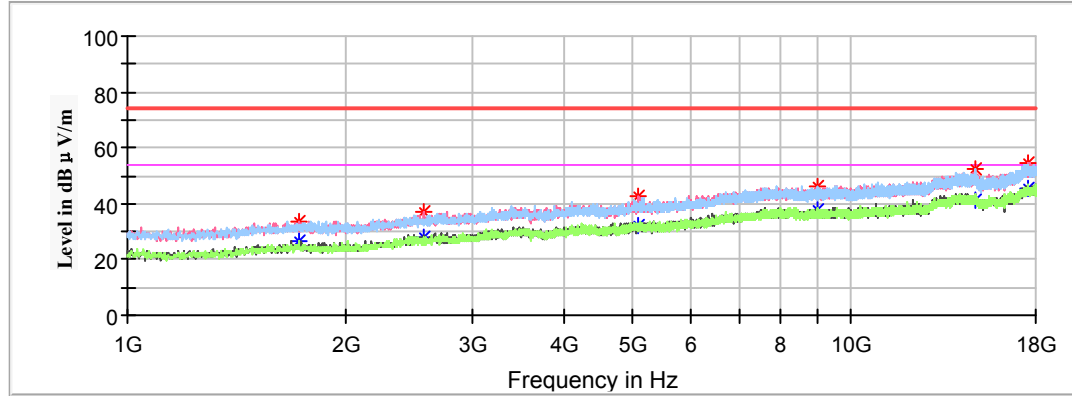
30MHz ~ 1GHz:



Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
30.000000	30.26	40.00	9.74	100.0	V	49.0	-10.6
42.973750	26.15	40.00	13.85	100.0	V	197.0	-19.3
65.768750	26.00	40.00	14.00	100.0	V	285.0	-23.4
132.335000	27.16	43.50	16.34	100.0	V	197.0	-17.5
165.921250	21.56	43.50	21.94	100.0	V	216.0	-19.0
203.508750	24.17	43.50	19.33	100.0	V	132.0	-17.8

Above 1 GHz:

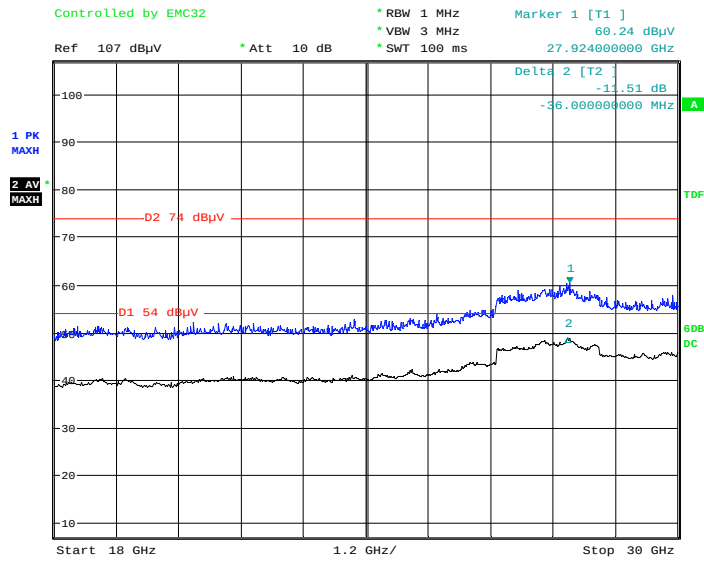
Full Spectrum



Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1724.200000	---	26.34	54.00	27.66	200.0	H	305.0	-15.5
1724.200000	33.26	---	74.00	40.74	200.0	H	305.0	-15.5
2562.300000	---	28.11	54.00	25.89	100.0	V	15.0	-12.1
2562.300000	36.74	---	74.00	37.26	100.0	V	15.0	-12.1
5093.600000	---	32.15	54.00	21.85	200.0	V	116.0	-4.9
5093.600000	42.42	---	74.00	31.58	200.0	V	116.0	-4.9
8959.400000	---	37.52	54.00	16.48	100.0	H	358.0	1.8
8959.400000	46.13	---	74.00	27.87	100.0	H	358.0	1.8
14838.000000	---	41.54	54.00	12.46	100.0	H	72.0	5.6
14838.000000	52.24	---	74.00	21.76	100.0	H	72.0	5.6
17541.000000	---	45.66	54.00	8.34	200.0	V	300.0	8.9
17541.000000	54.70	---	74.00	19.30	200.0	V	300.0	8.9

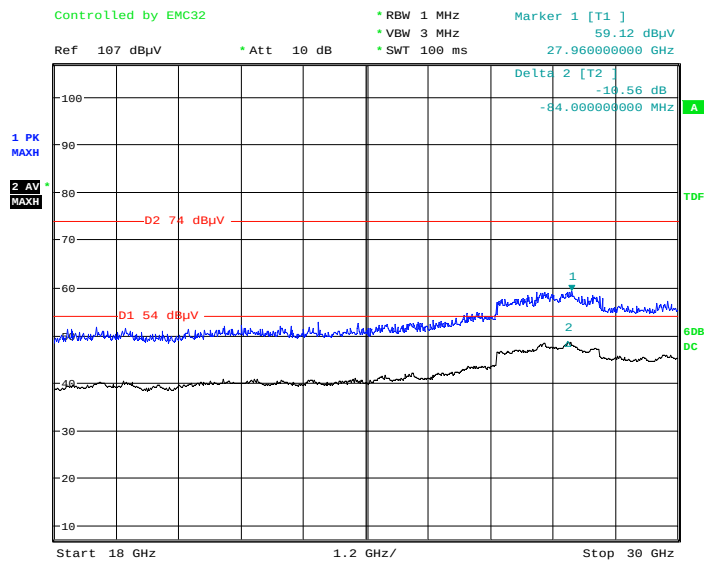
18GHz ~ 30GHz:

Horizontal:



Date: 22.OCT.2020 22:09:31

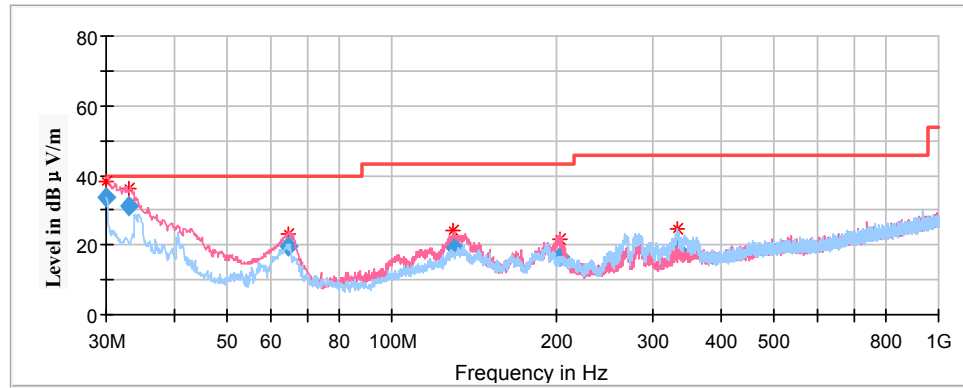
Vertical:



Date: 22.OCT.2020 22:06:30

Test mode4:

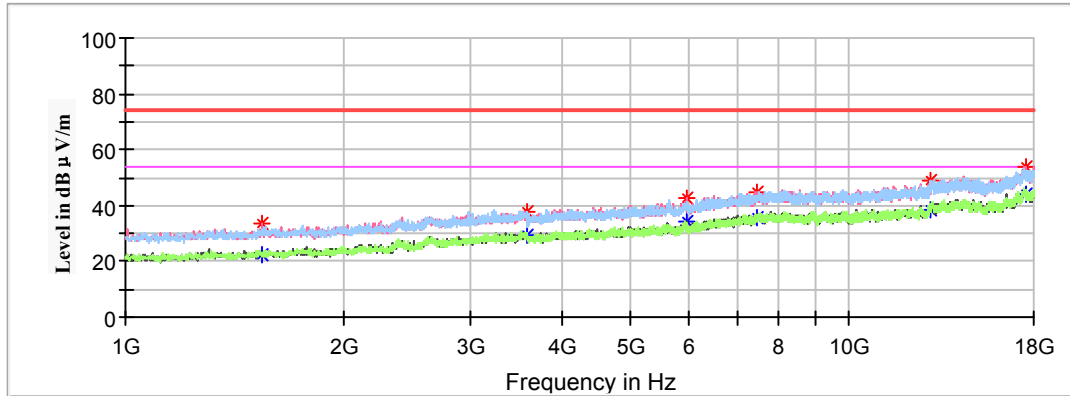
30MHz ~ 1GHz:



Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
30.080960	33.62	40.00	6.38	100.0	V	118.0	-10.6
33.094350	31.29	40.00	8.71	100.0	V	150.0	-12.7
64.712050	19.43	40.00	20.57	100.0	V	202.0	-23.5
128.931950	19.57	43.50	23.93	100.0	V	176.0	-17.4
202.670650	16.43	43.50	27.07	100.0	V	67.0	-17.7
333.737600	18.55	46.00	27.45	100.0	H	179.0	-16.2

Above 1 GHz:

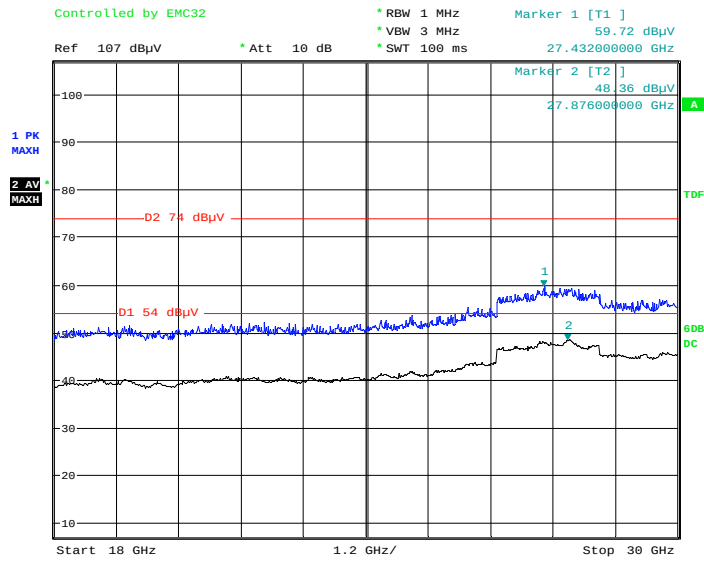
Full Spectrum



Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1544.000000	33.27	---	74.00	40.73	200.0	H	315.0	-16.2
1544.000000	---	22.14	54.00	31.86	200.0	H	315.0	-16.2
3590.800000	38.06	---	74.00	35.94	200.0	H	358.0	-8.5
3590.800000	---	29.24	54.00	24.76	200.0	H	358.0	-8.5
5955.500000	42.47	---	74.00	31.53	150.0	V	154.0	-3.1
5955.500000	---	33.92	54.00	20.08	150.0	V	154.0	-3.1
7473.600000	---	35.56	54.00	18.44	150.0	V	217.0	1.0
7473.600000	44.76	---	74.00	29.24	150.0	V	217.0	1.0
12928.900000	---	38.42	54.00	15.58	200.0	H	52.0	4.9
12928.900000	48.79	---	74.00	25.21	200.0	H	52.0	4.9
17578.400000	---	44.16	54.00	9.84	200.0	V	290.0	8.9
17578.400000	53.79	---	74.00	20.21	200.0	V	290.0	8.9

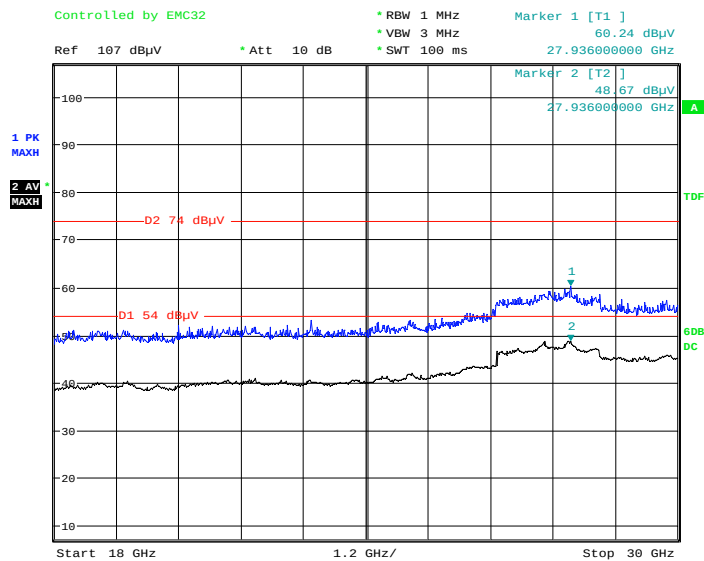
18GHz ~ 30GHz:

Horizontal:



Date: 22.OCT.2020 21:55:36

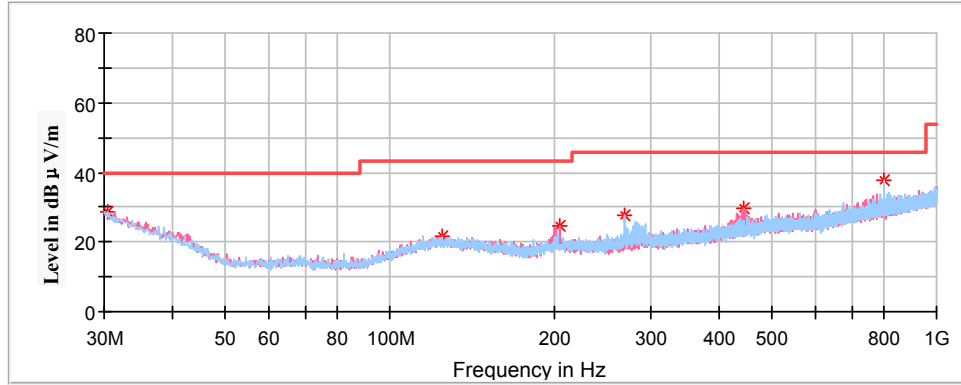
Vertical:



Date: 22.OCT.2020 21:53:36

Test mode5:

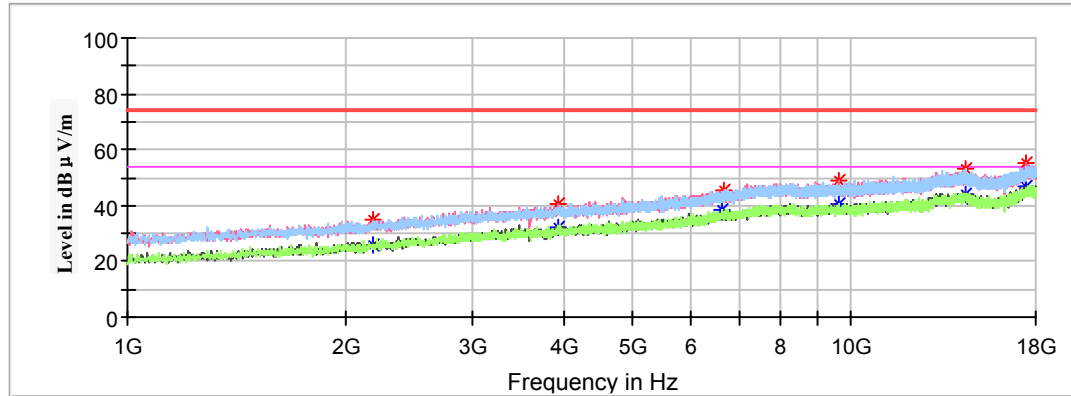
30MHz ~ 1GHz:



Frequency (MHz)	MaxPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
30.363750	28.83	40.00	11.17	100.0	H	174.0	-4.6
124.817500	21.73	43.50	21.77	100.0	V	256.0	-11.8
204.721250	24.82	43.50	18.68	100.0	V	39.0	-12.8
268.135000	27.43	46.00	18.57	100.0	H	336.0	-12.0
445.160000	29.71	46.00	16.29	100.0	V	0.0	-7.5
799.937500	37.50	46.00	8.50	100.0	H	100.0	-1.4

Above 1 GHz:

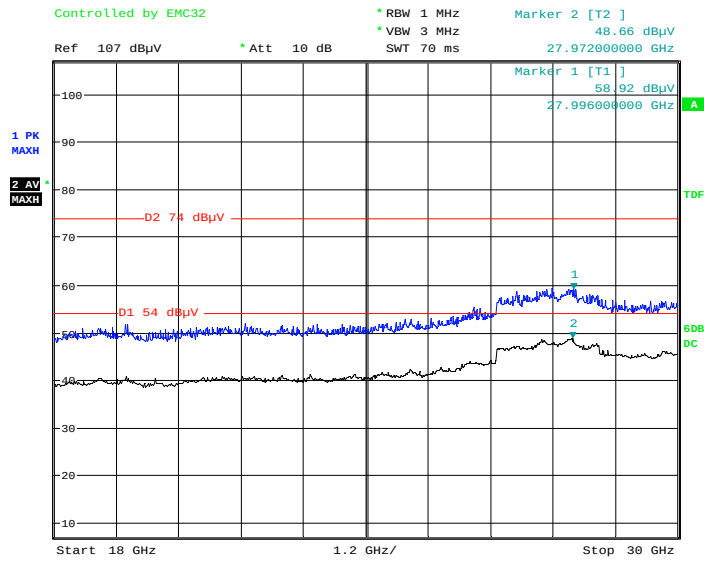
Full Spectrum



Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2178.100000	---	25.79	54.00	28.21	100.0	H	328.0	-13.7
2178.100000	35.10	---	74.00	38.90	100.0	H	328.0	-13.7
3944.400000	---	32.23	54.00	21.77	100.0	V	353.0	-7.2
3944.400000	40.61	---	74.00	33.39	100.0	V	353.0	-7.2
6632.100000	---	38.55	54.00	15.45	200.0	H	256.0	-0.9
6632.100000	45.73	---	74.00	28.27	200.0	H	256.0	-0.8
9607.100000	---	40.69	54.00	13.31	100.0	V	50.0	2.1
9607.100000	48.94	---	74.00	25.06	100.0	V	50.0	2.1
14355.200000	---	44.22	54.00	9.78	200.0	H	132.0	6.4
14355.200000	53.27	---	74.00	20.73	200.0	H	132.0	6.4
17490.000000	---	47.15	54.00	6.85	100.0	V	161.0	8.9
17490.000000	54.95	---	74.00	19.05	100.0	V	161.0	8.9

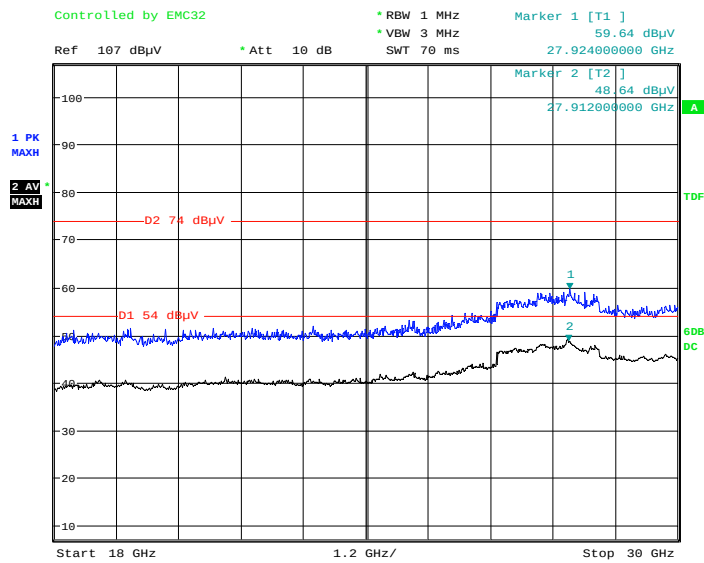
18GHz ~ 30GHz:

Horizontal:



Date: 27.OCT.2020 15:57:49

Vertical:



Date: 27.OCT.2020 15:53:59

Declarations

- 1: BACL is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with an asterisk '*'. Customer model name, addresses, names, trademarks etc. are not considered data.
- 2: Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
- 3: Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.
- 4: The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval.
- 5: This report cannot be reproduced except in full, without prior written approval of the Company.
- 6: This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.

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