



中认信通

CHINA CERTIFICATION ICT CO., LTD (DONGGUAN)



TEST REPORT

Applicant: Fujian Newland Payment Technology Co.,Ltd.

Address: No. B602, Building #1, HaixiaJingmao Plaza, Fuzhou Bonded Area
350015, Fuzhou, Fujian, China

FCC ID: 2AM6U-SP880G

Product Name: SP880

Model Number: B9G-HB76V70000, B9G-HB76W70000

Standard(s): FCC Part 15B
ANSI C63.4-2014

The above equipment has been tested and found compliant with the requirement of the relative standards by China Certification ICT Co., Ltd (Dongguan)

Report Number: CR22080025-00BA1

Date Of Issue: 2022-11-14

Reviewed By: Sun Zhong *Sun Zhong*

Title: Manager

Test Laboratory: China Certification ICT Co., Ltd (Dongguan)

No. 113, Pingkang Road, Dalang Town, Dongguan,

Guangdong, China

Tel: +86-769-82016888

Test Facility

The Test site used by China Certification ICT Co., Ltd (Dongguan) to collect test data is located on the No. 113, Pingkang Road, Dalang Town, Dongguan, Guangdong, China.

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 442868, the FCC Designation No. : CN1314.

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier: CN0123.

Declarations

China Certification ICT Co., Ltd (Dongguan) 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 a triangle symbol “▲”. Customer model name, addresses, names, trademarks etc. are not considered data.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

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This report may contain data that are not covered by the accreditation scope and shall be marked with an asterisk “★”.

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1. GENERAL INFORMATION

1.1 Product Description for Equipment under Test (EUT)

EUT Name:	SP880
EUT Model:	B9G-HB76V70000
Multiple Model:	B9G-HB76W70000
Highest Operation Frequency:	2462 MHz
Rated Input Voltage:	DC 9V from adapter
Serial Number:	CR22080025-RF-A1-S1
EUT Received Date:	2022.08.20
EUT Received Status:	Good
Note: The Multiple model and test model have the same electromagnetic emissions and electromagnetic compatibility characteristics, for difference please refer to the declaration letter for more detail, which was provided by manufacturer. And the test model B9G-HB76V70000 was the worst case.	

Accessory Information:

Accessory Description	Manufacturer	Model	Parameters
Adapter #1	SHENZHEN HONOR ELECTRONIC CO., LTD.	ADS-25SGP-12 09023E	Input: AC 100-240V~50/60Hz Max 0.7A Output: DC 9.0V 2.5A
Adapter #2	Dong Guan Royal Intelligent Co., Ltd	BI24L-090250-I	Input: AC 100-240V~50/60Hz 0.8A Output: DC 9.0V 2.5A 22.5W

1.2 Description of Test Configuration

1.2.1 EUT Operation Condition:

EUT Operation Mode:	The system was configured for testing in Typical Use Mode, which was provided by the manufacturer. Test Mode: Downloading
Equipment Modifications:	No
EUT Exercise Software:	Winthrax.exe

1.2.2 Support Equipment List and Details

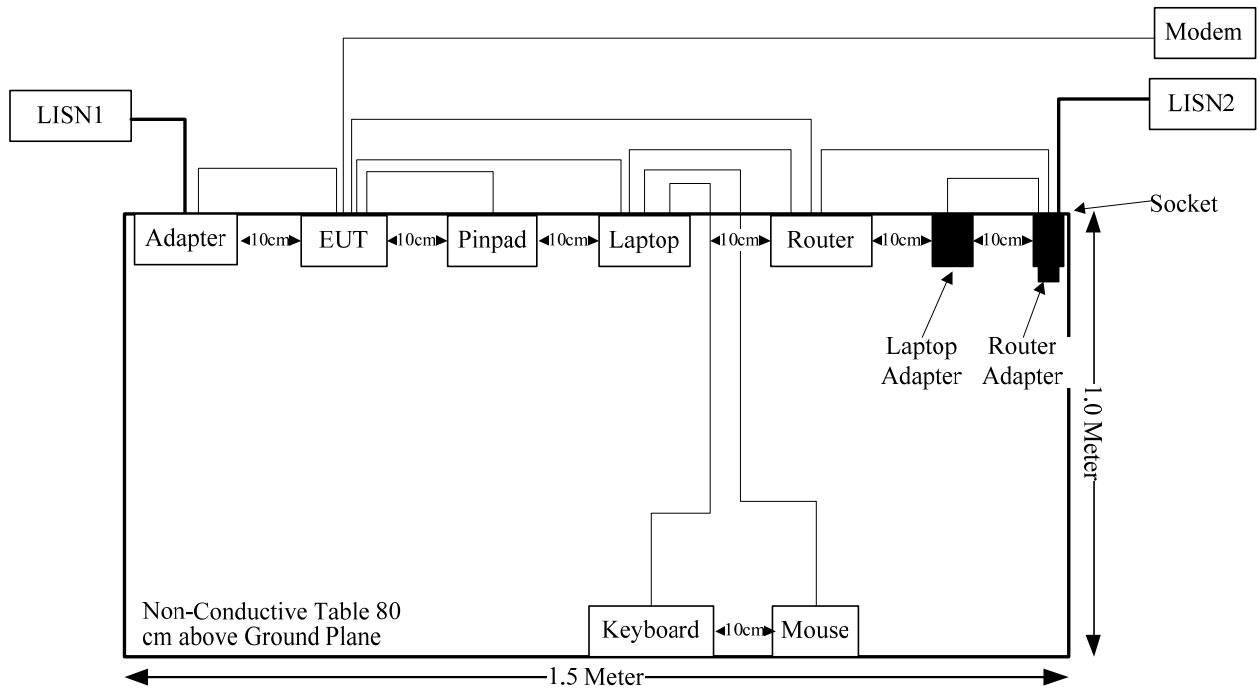
Manufacturer	Description	Model	Serial Number
SANDisk	USB Flash Disk	16G	16-1
TOTOLINK	Router	LR1200	LR1200155P00167
Newland	Pinpad	ME51	CR22080025-RF-A1-S2
Lenovo	Laptop	E450	PF-OMR8KV
PHILIPS	Keyboard	SPK6234	K234210510742
PHILIPS	Mouse	SPK7214	M214BQ210411113
TP-Link	Modem	TD-8620T	STDF8620

1.2.3 Support Cable List and Details

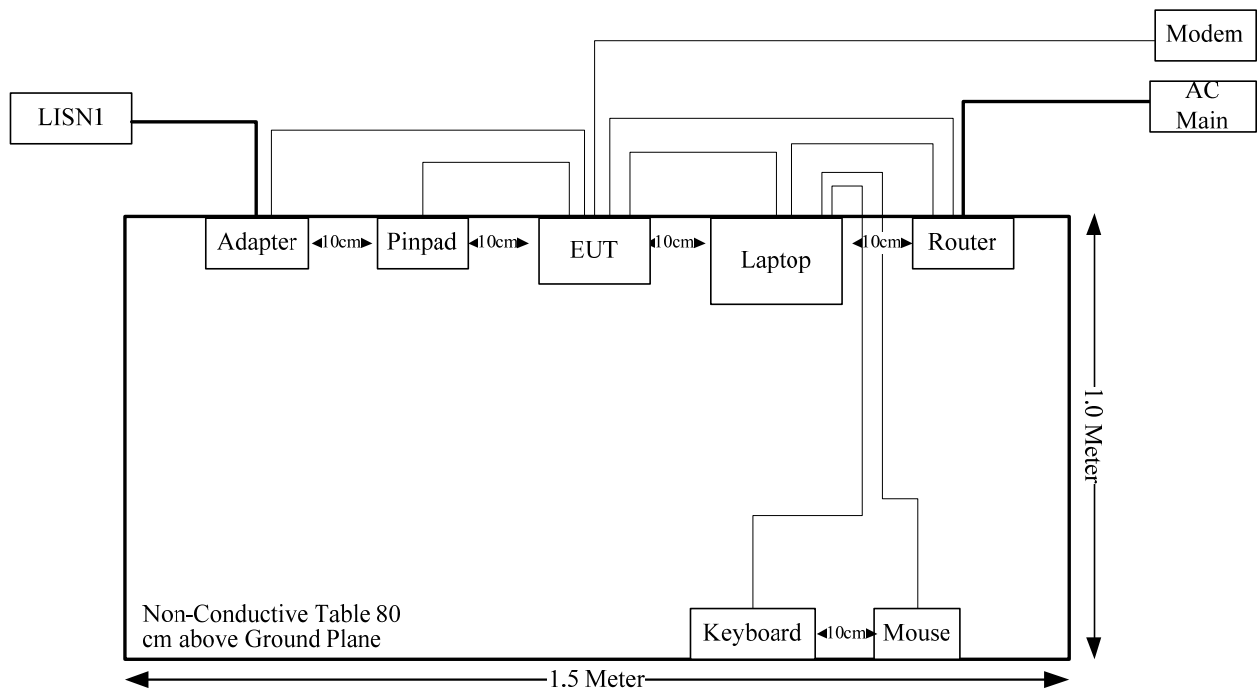
Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
RJ45 Cable	No	No	1.5	EUT	Router
RJ11 Cable	No	No	5	EUT	Modem
Adapter Cable	No	No	1.2	Adapter	EUT
Pinpad Cable	Yes	No	1.0	EUT	Pinpad
USB Cable	No	No	1.2	Laptop	EUT
Keyboard Cable	No	No	1.8	Keyboard	Laptop
Mouse Cable	No	No	2	Mouse	Laptop
RJ45 Cable	No	No	1.2	Router	Laptop

1.2.4 Block Diagram of Test Setup

AC line conducted emissions:



Spurious Emissions:



1.3 Measurement Uncertainty

Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval.

Parameter	Measurement Uncertainty
Unwanted Emissions, radiated	30M~200MHz: 4.15 dB, 200M~1GHz: 5.61 dB, 1G~6GHz: 5.14 dB, 6G~18GHz: 5.93 dB, 18G~26.5G: 5.47 dB, 26.5G~40G: 5.63 dB
Temperature	$\pm 1^{\circ}\text{C}$
Humidity	$\pm 5\%$
AC Power Lines Conducted Emission	2.8 dB (150 kHz to 30 MHz)

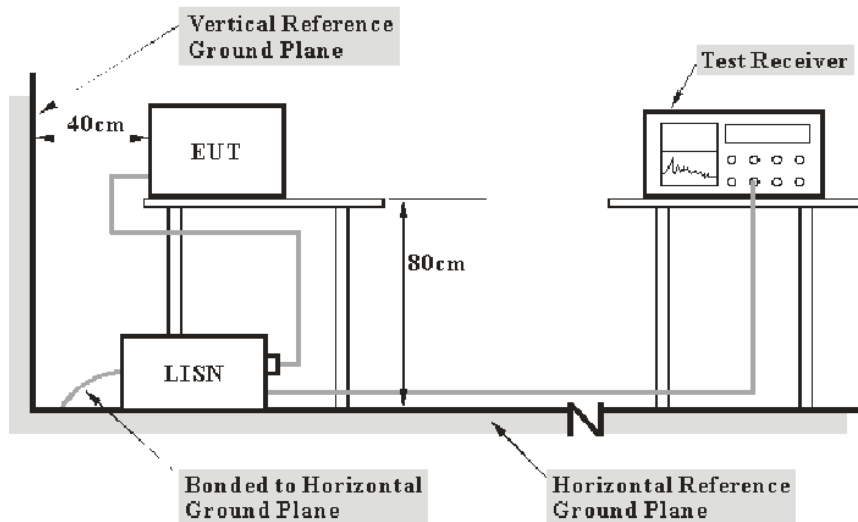
2. SUMMARY OF TEST RESULTS

Standard(s) Section	Description of Test	Result
§15.107	Conducted emissions	Compliance
§15.109	Radiated emissions	Compliance

3. REQUIREMENTS AND TEST PROCEDURES

3.1 AC Line Conducted Emissions

3.1.1 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 setup of EUT is according with per ANSI C63.4-2014 measurement procedure. The specification used was with the FCC Part 15 B 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 adapter was connected to the main LISN with a 120 V/60 Hz AC power source.

3.1.2 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

3.1.3 Test Procedure

During the conducted emission test, the adapter was connected to the outlet of the first LISN and the other support equipments were connected to the outlet of the second LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT, the report shall list the six emissions with the smallest margin relative to the limit, unless the margin is greater than 20 dB.

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

The report shall list the six emissions with the smallest margin relative to the limit, unless the margin is greater than 20 dB.

3.1.4 Corrected Amplitude & Margin Calculation

The basic equation is as follows:

Result = Reading + Factor

Factor = attenuation caused by cable loss + voltage division factor of AMN

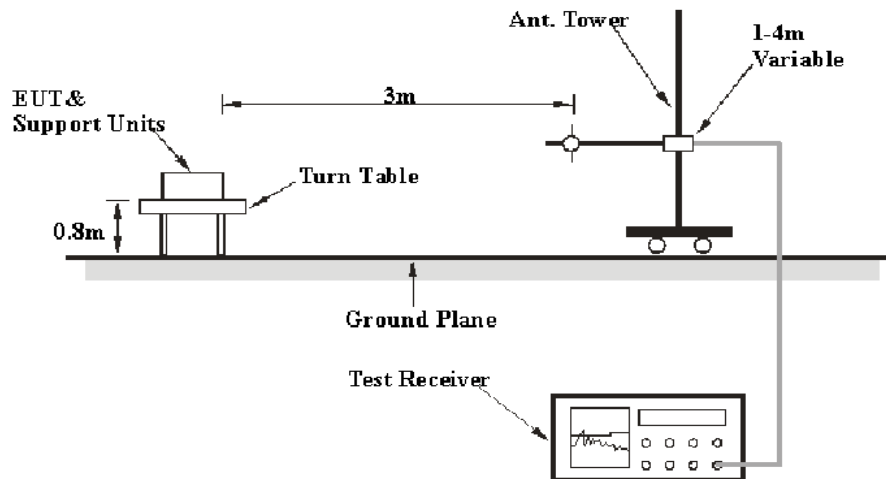
The “**Margin**” column of the following data tables indicates the degree of compliance within the applicable limit. The equation for margin calculation is as follows:

Margin = Limit – Result

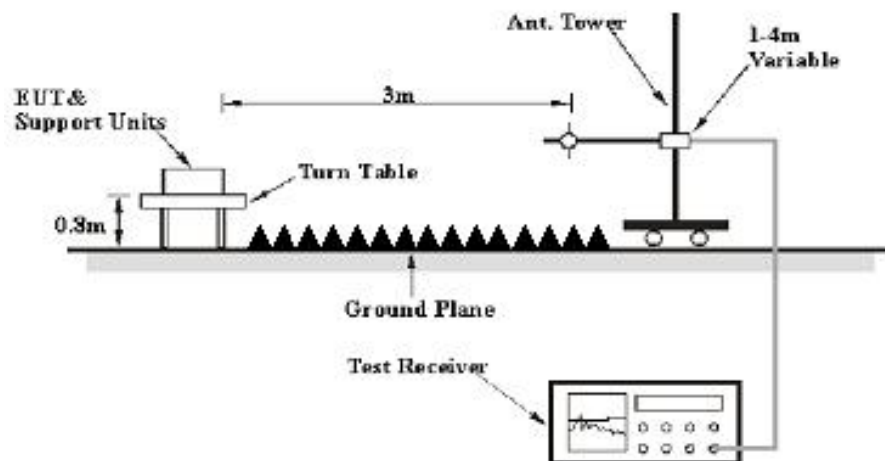
3.2 Radiation Spurious Emissions

3.2.1 EUT Setup

Below 1GHz:



Above 1GHz:



The radiated emission was performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.4-2014. The specification used was with the FCC Part 15 B Class B limits.

3.2.2 EMI Test Receiver Setup

The system was investigated from 30 MHz to 13 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	Measurement
30 MHz – 1000 MHz	120 kHz	300 kHz	120 kHz	QP
Above 1 GHz	1 MHz	3 MHz	/	Peak
	1 MHz	Reduced video bandwidth	/	AVG

If the maximized peak measured value complies with under the limit more than 6dB, then it is unnecessary to perform an QP/Average measurement.

3.2.3 Test Procedure

During the radiated emissions, the adapter was connected to the first AC floor outlet and the other support equipments were connected to the second AC floor outlet.

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

The data was recorded in the Quasi-peak detection mode for below 1 GHz, peak and average detection mode above 1 GHz.

All emissions under the average limit and under the noise floor have not recorded in the report.

3.2.4 Corrected Amplitude & Margin Calculation

The basic equation is as follows:

Result = Reading + Factor

Factor = Antenna Factor + Cable Loss- Amplifier Gain

The “**Margin**” column of the following data tables indicates the degree of compliance within the applicable limit. The equation for margin calculation is as follows:

Margin = Limit – Result

4. TEST DATA AND RESULTS

4.1 AC Line Conducted Emissions

Serial Number:	CR22080025-RF-A1-S1	Test Date:	2022-11-12
Test Site:	CE	Test Mode:	Downloading
Tester:	Vic Du	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	25.1~27.6	Relative Humidity: (%)	63~65	ATM Pressure: (kPa)	100.4~101.4
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Test Equipment List and Details:

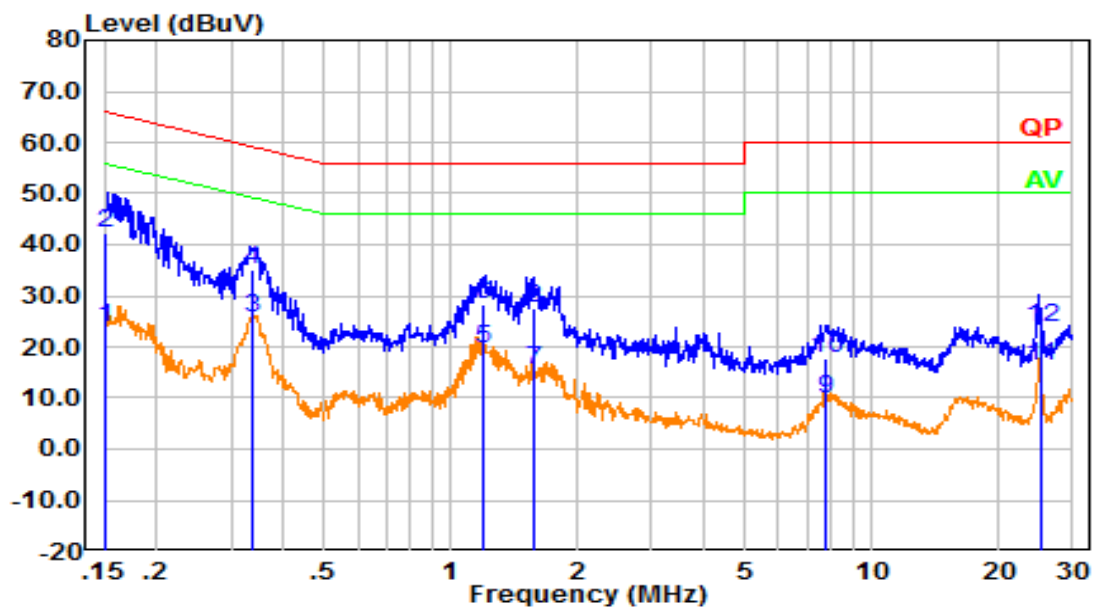
Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	LISN	ENV216	101134	2022-04-01	2023-03-31
R&S	LISN	ENV216	101132	2022-04-01	2023-03-31
R&S	EMI Test Receiver	ESR3	102726	2022-07-15	2023-07-14
MICRO-COAX	Coaxial Cable	UTIFLEX	C-0200-01	2022-08-07	2023-08-06
Audix	Test Software	E3	190306 (V9)	N/A	N/A

* Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Downloading

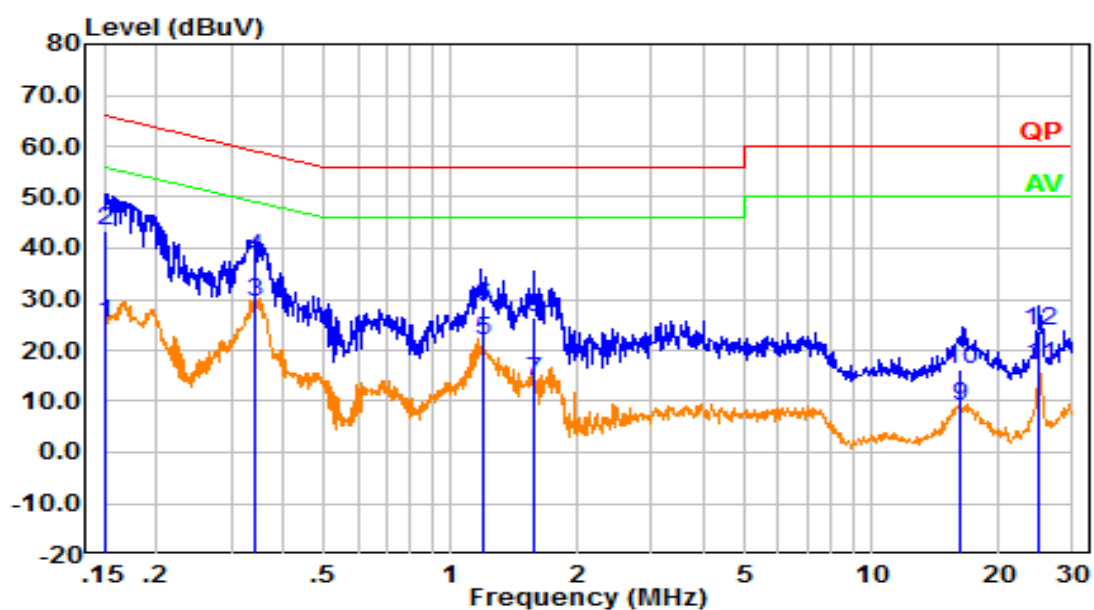
Adapter #1

Line:



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Detector
1	0.150	14.23	9.61	23.84	55.98	32.14	Average
2	0.150	32.75	9.61	42.36	65.98	23.62	QP
3	0.337	15.93	9.61	25.54	49.27	23.73	Average
4	0.337	25.51	9.61	35.12	59.27	24.15	QP
5	1.193	10.19	9.62	19.81	46.00	26.19	Average
6	1.193	18.83	9.62	28.45	56.00	27.55	QP
7	1.566	5.94	9.63	15.57	46.00	30.43	Average
8	1.566	17.84	9.63	27.47	56.00	28.53	QP
9	7.816	0.24	9.67	9.90	50.00	40.10	Average
10	7.816	8.12	9.67	17.79	60.00	42.21	QP
11	25.182	6.32	9.81	16.13	50.00	33.87	Average
12	25.182	13.77	9.81	23.59	60.00	36.41	QP

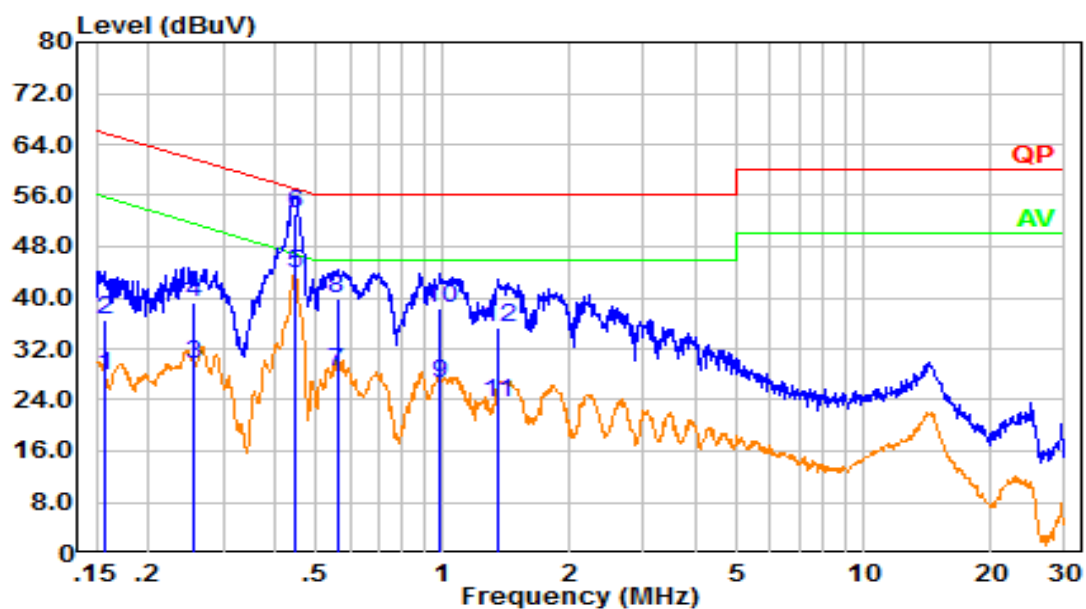
Neutral:



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Detector
1	0.151	15.67	9.61	25.28	55.94	30.66	Average
2	0.151	33.72	9.61	43.33	65.94	22.61	QP
3	0.344	19.85	9.61	29.46	49.10	19.64	Average
4	0.344	28.32	9.61	37.93	59.10	21.17	QP
5	1.190	12.14	9.62	21.77	46.00	24.23	Average
6	1.190	19.14	9.62	28.76	56.00	27.24	QP
7	1.576	4.37	9.63	13.99	46.00	32.01	Average
8	1.576	16.64	9.63	26.27	56.00	29.73	QP
9	16.132	-0.70	9.69	8.99	50.00	41.01	Average
10	16.132	6.72	9.69	16.41	60.00	43.59	QP
11	25.037	7.07	9.76	16.83	50.00	33.17	Average
12	25.037	14.13	9.76	23.89	60.00	36.11	QP

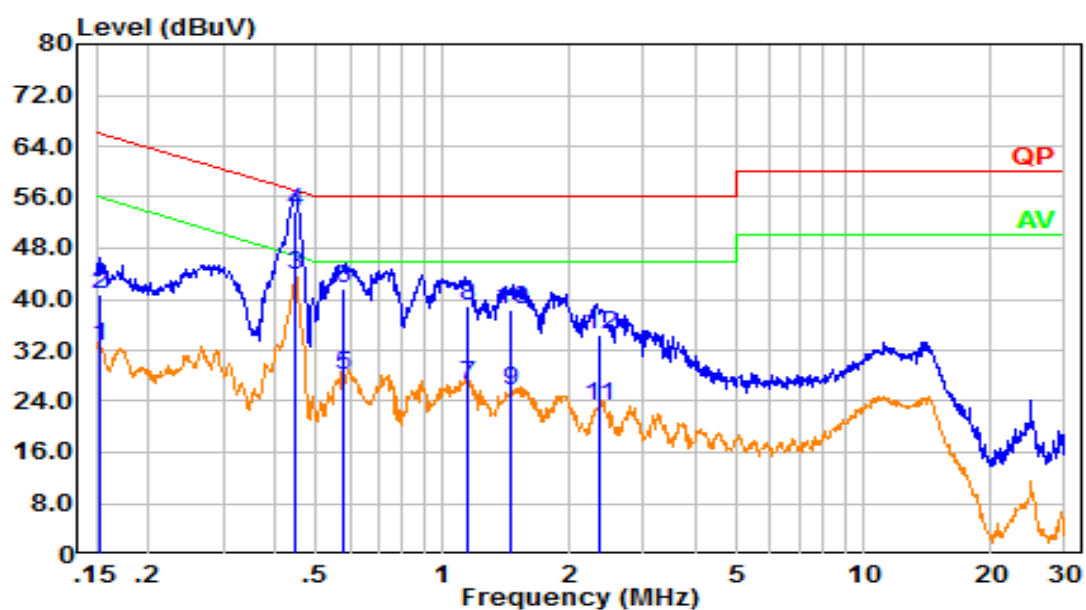
Adapter #2

Line:



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Detector
1	0.157	18.08	9.61	27.69	55.60	27.91	Average
2	0.157	26.77	9.61	36.38	65.60	29.22	QP
3	0.256	20.11	9.61	29.72	51.58	21.86	Average
4	0.256	29.65	9.61	39.26	61.58	22.32	QP
5	0.445	34.22	9.61	43.83	46.97	3.14	Average
6	0.445	43.56	9.61	53.17	56.97	3.80	QP
7	0.560	18.79	9.62	28.40	46.00	17.60	Average
8	0.560	30.23	9.62	39.85	56.00	16.15	QP
9	0.982	16.95	9.62	26.57	46.00	19.43	Average
10	0.982	28.59	9.62	38.21	56.00	17.79	QP
11	1.353	13.84	9.62	23.47	46.00	22.53	Average
12	1.353	25.82	9.62	35.44	56.00	20.56	QP

Neutral:



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Detector
1	0.153	23.07	9.61	32.68	55.83	23.15	Average
2	0.153	31.29	9.61	40.90	65.83	24.93	QP
3	0.445	34.12	9.61	43.73	46.96	3.23	Average
4	0.445	44.19	9.61	53.80	56.96	3.16	QP
5	0.583	18.44	9.62	28.06	46.00	17.94	Average
6	0.583	32.00	9.62	41.62	56.00	14.38	QP
7	1.138	16.93	9.62	26.55	46.00	19.45	Average
8	1.138	29.23	9.62	38.86	56.00	17.14	QP
9	1.456	16.01	9.62	25.64	46.00	20.36	Average
10	1.456	28.61	9.62	38.24	56.00	17.76	QP
11	2.344	13.60	9.64	23.24	46.00	22.76	Average
12	2.344	24.75	9.64	34.39	56.00	21.61	QP

4.2 Radiation Spurious Emissions

Serial Number:	CR22080025-RF-A1-S1	Test Date:	2022-11-11
Test Site:	966-1, 966-2	Test Mode:	operating
Tester:	Gary Ling, Nick Tang	Test Result:	Pass

Environmental Conditions:

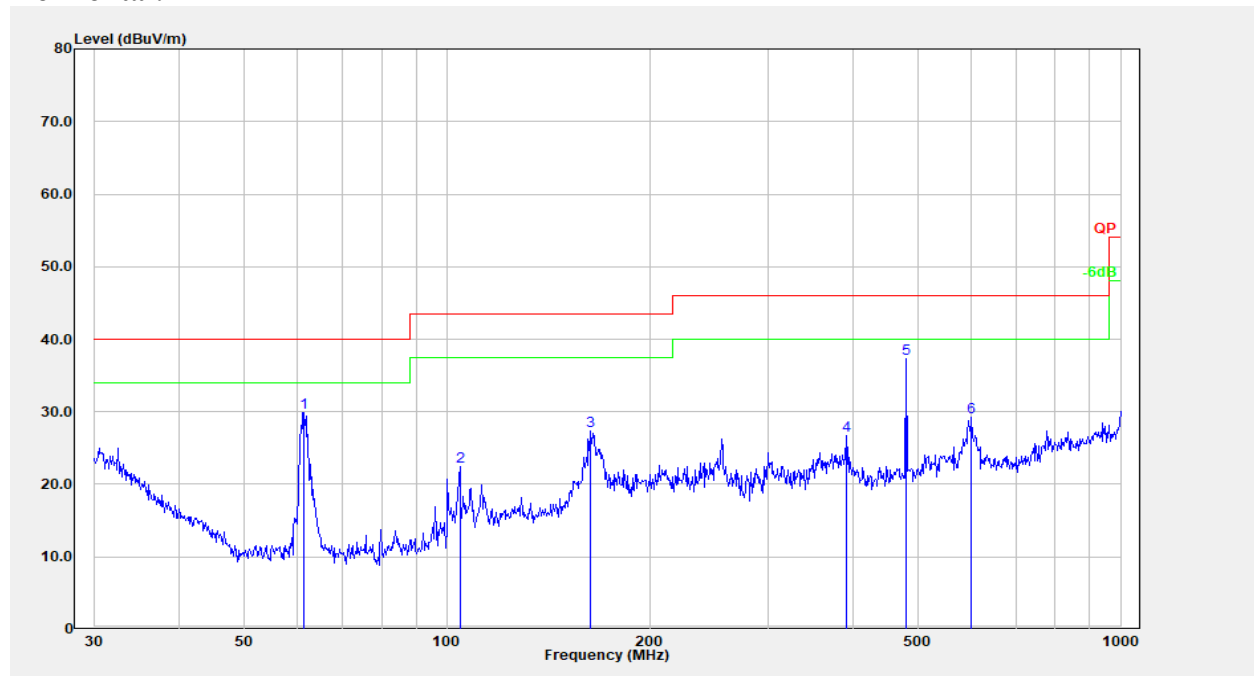
Temperature: (°C)	26.5~28.3	Relative Humidity: (%)	55~59	ATM Pressure: (kPa)	99.9~101.1
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Test Equipment List and Details:

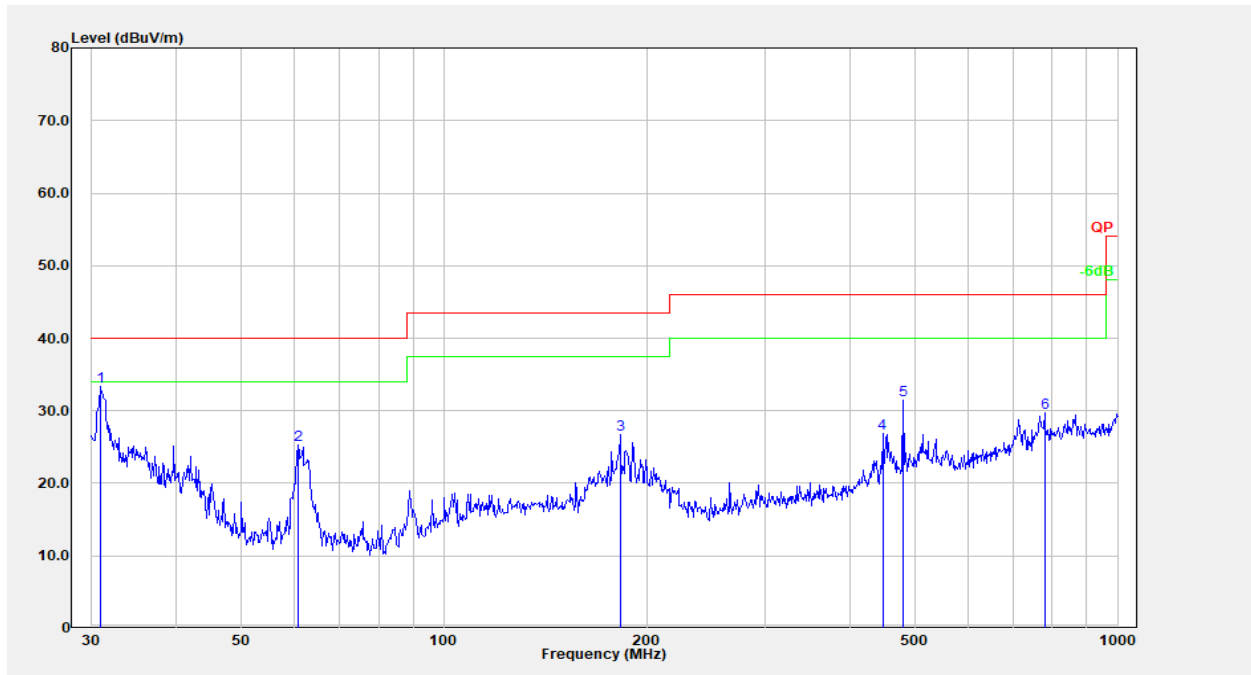
Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Sunol Sciences	Antenna	JB6	A082520-5	2020-10-19	2023-10-18
R&S	EMI Test Receiver	ESR3	102724	2022-07-15	2023-07-14
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0470-02	2022-07-17	2023-07-16
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0780-01	2022-07-17	2023-07-16
Sonoma	Amplifier	310N	186165	2022-07-17	2023-07-16
Audix	Test Software	E3	201021 (V9)	N/A	N/A
ETS-Lindgren	Horn Antenna	3115	9912-5985	2020-10-13	2023-10-12
R&S	Spectrum Analyzer	FSV40	101591	2022-07-15	2023-07-14
MICRO-COAX	Coaxial Cable	UFA210A-1-1200-70U300	217423-008	2022-08-07	2023-08-06
MICRO-COAX	Coaxial Cable	UFA210A-1-2362-300300	235780-001	2022-08-07	2023-08-06
Mini	Pre-amplifier	ZVA-183-S+	5969001149	2022-11-09	2023-11-08
Mini Circuits	High Pass Filter	VHF-6010+	31119	2022-08-07	2023-08-06

* Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

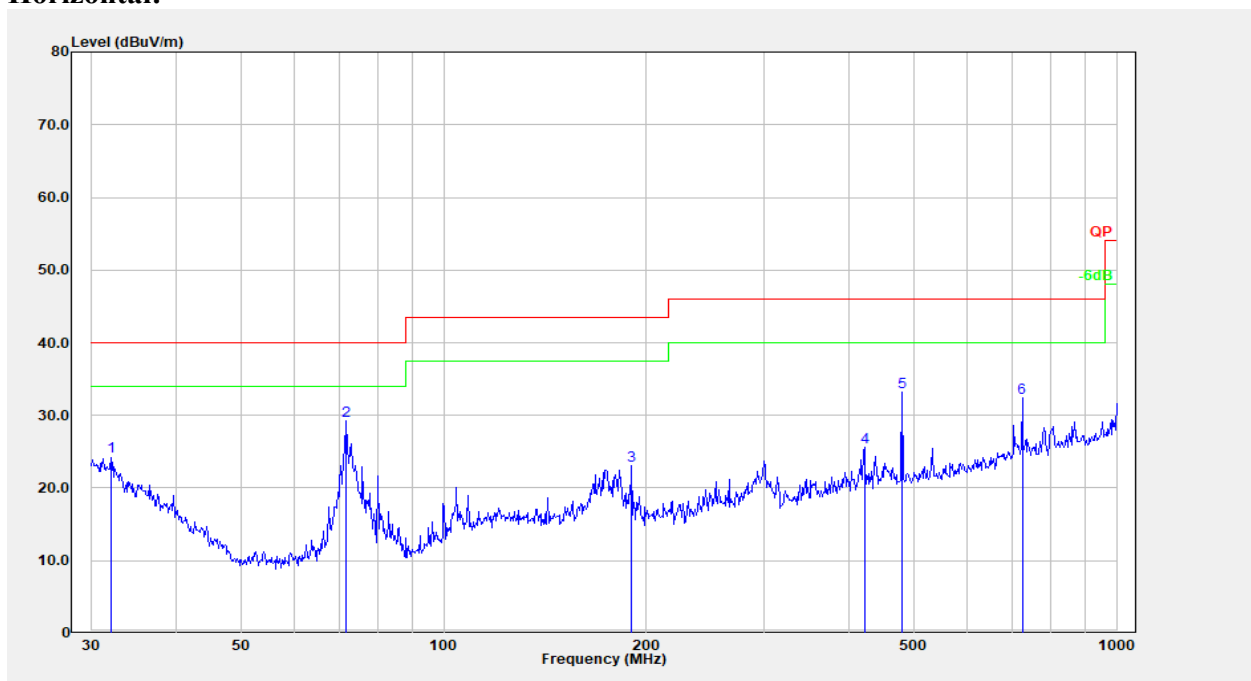
1) 30MHz-1GHz:

Downloading**Adapter #1****Horizontal:**

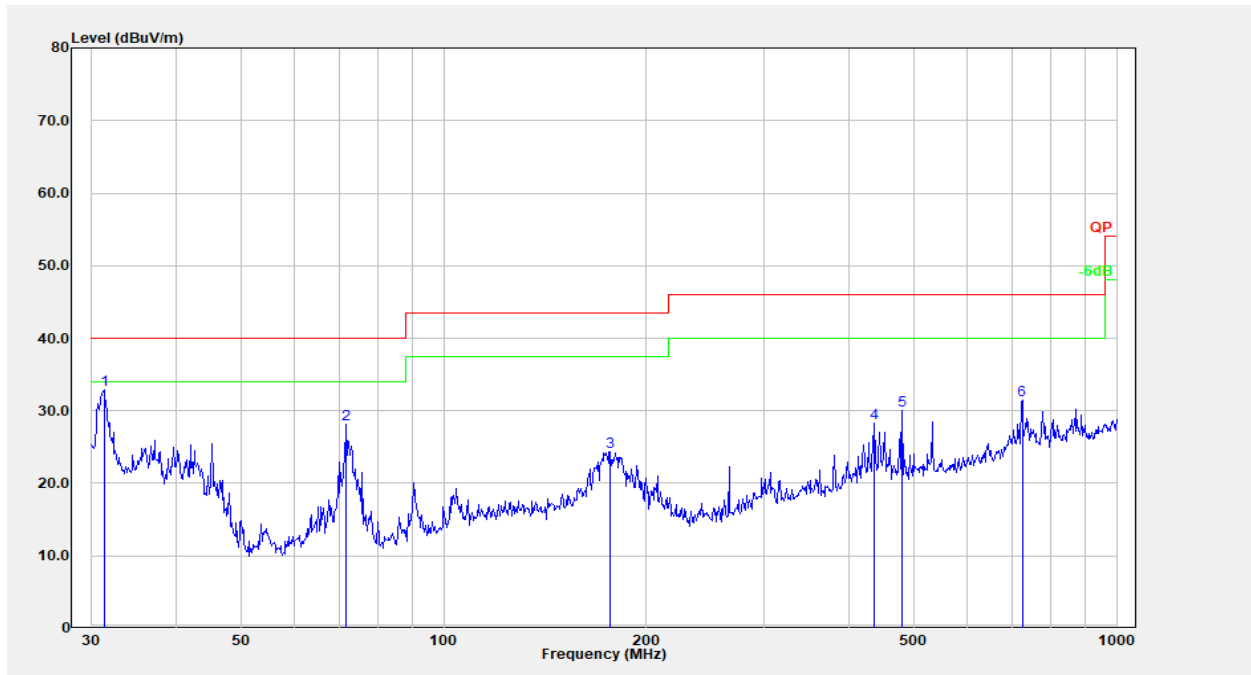
No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	61.346	47.23	-17.32	29.91	40.00	10.09	Peak
2	104.536	35.88	-13.44	22.44	43.50	21.06	Peak
3	163.182	39.74	-12.35	27.39	43.50	16.11	Peak
4	392.095	35.52	-8.86	26.66	46.00	19.34	Peak
5	480.528	43.63	-6.25	37.38	46.00	8.62	Peak
6	601.427	34.23	-5.02	29.21	46.00	16.79	Peak

Vertical:

No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	30.853	37.58	-4.26	33.32	40.00	6.68	Peak
2	60.704	42.61	-17.37	25.23	40.00	14.77	Peak
3	182.559	40.39	-13.61	26.78	43.50	16.72	Peak
4	447.982	33.96	-7.02	26.94	46.00	19.06	Peak
5	480.528	37.78	-6.25	31.54	46.00	14.46	Peak
6	779.607	31.99	-2.29	29.69	46.00	16.31	Peak

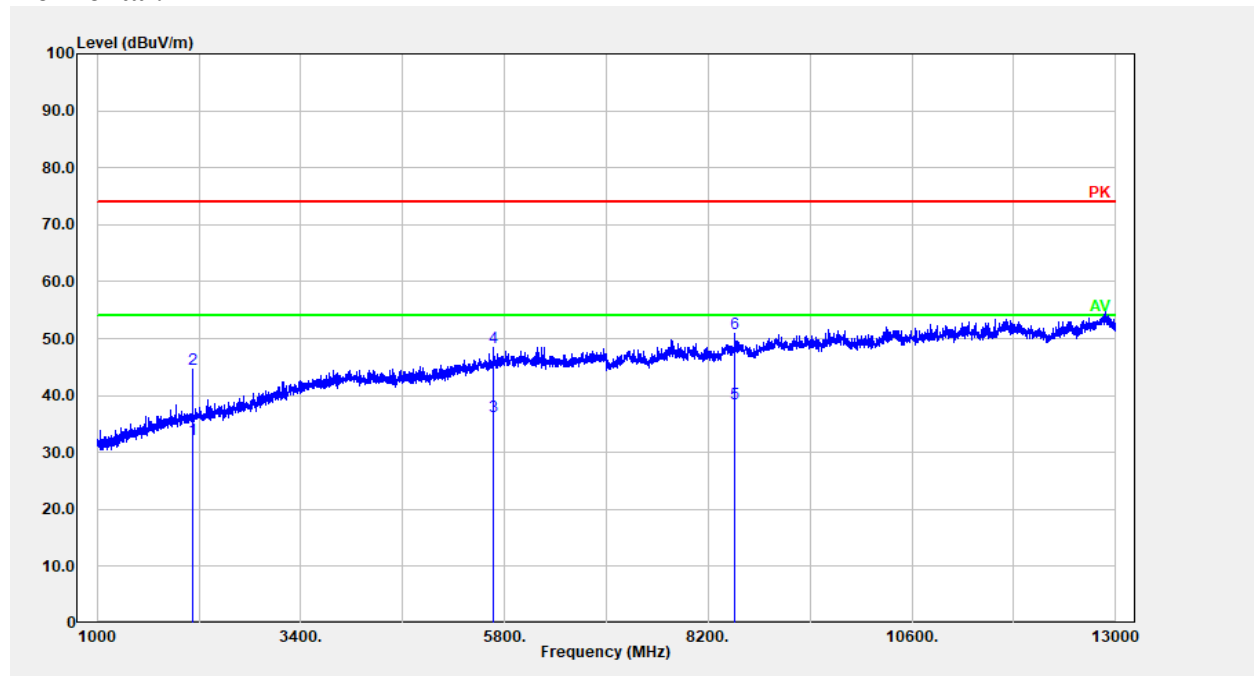
Adapter #2**Horizontal:**

No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	32.067	29.44	-5.17	24.27	40.00	15.73	Peak
2	71.581	45.92	-16.64	29.28	40.00	10.72	Peak
3	190.405	36.53	-13.41	23.12	43.50	20.38	Peak
4	422.058	33.51	-7.83	25.68	46.00	20.32	Peak
5	480.528	39.44	-6.25	33.19	46.00	12.81	Peak
6	724.261	35.59	-3.10	32.49	46.00	13.51	Peak

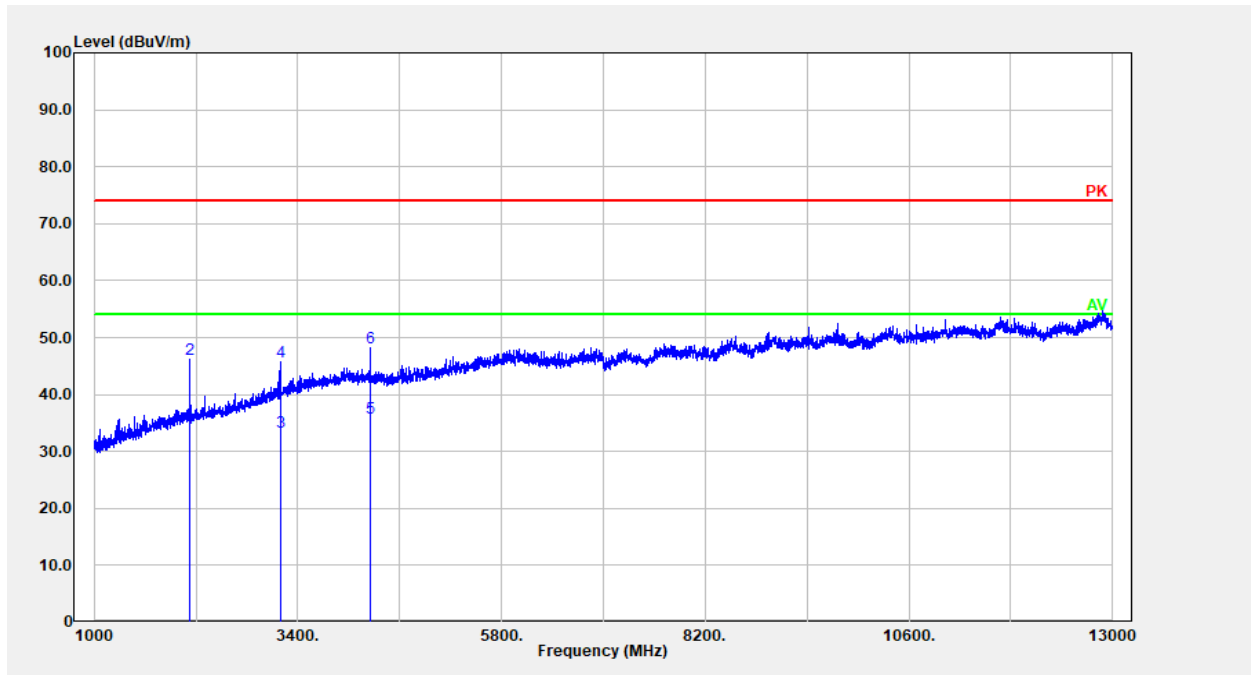
Vertical:

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	31.289	37.40	-4.59	32.81	40.00	7.19	Peak
2	71.581	44.78	-16.64	28.14	40.00	11.86	Peak
3	176.888	37.75	-13.41	24.34	43.50	19.16	Peak
4	437.120	35.63	-7.32	28.31	46.00	17.69	Peak
5	480.528	36.31	-6.25	30.06	46.00	15.94	Peak
6	724.261	34.59	-3.10	31.49	46.00	14.51	Peak

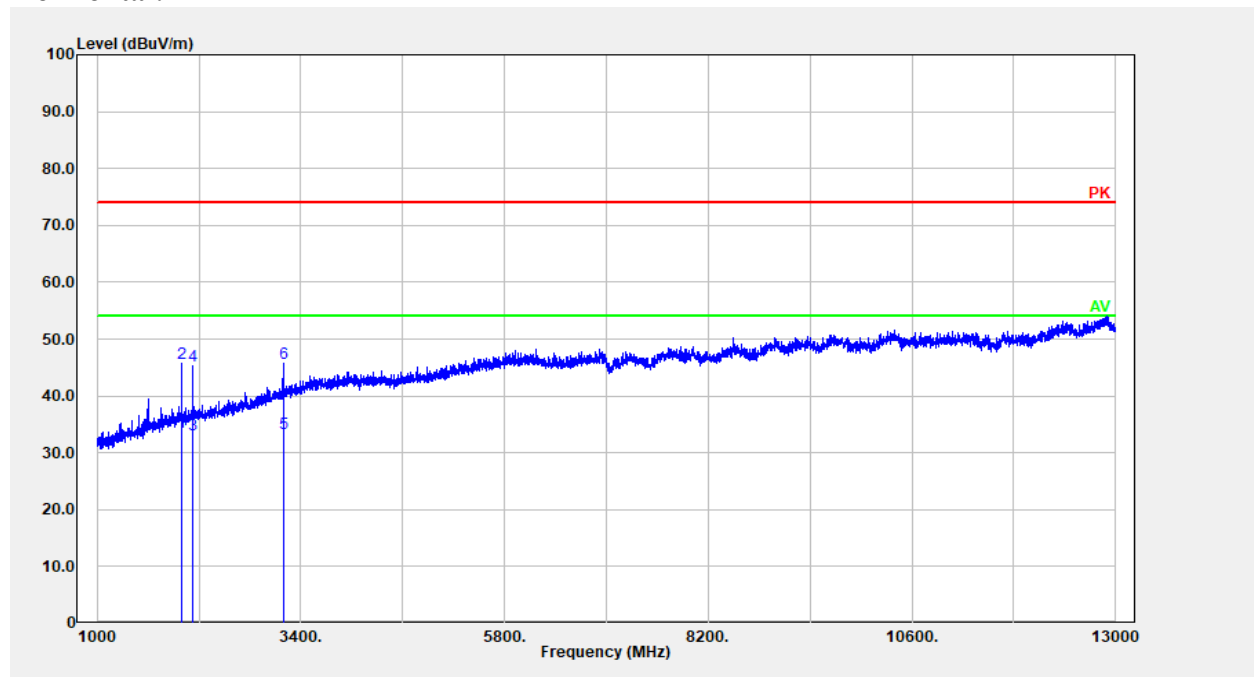
1) Above 1GHz:

Downloading**Adapter #1****Horizontal:**

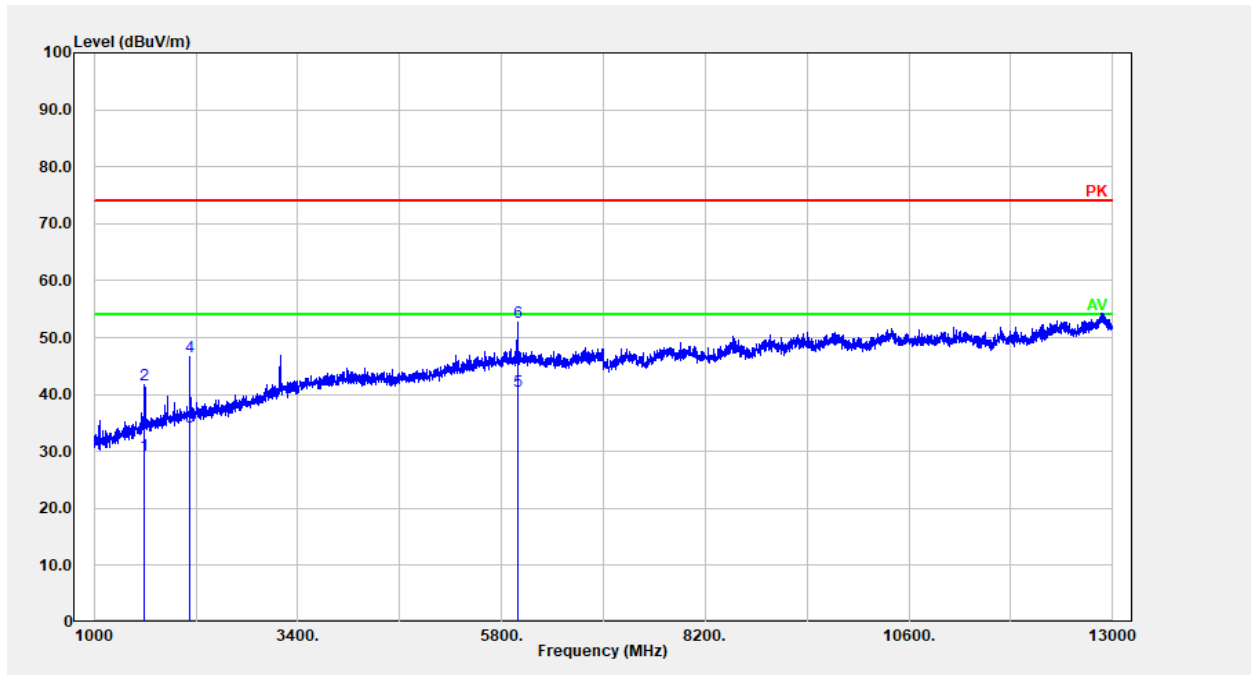
No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	2128.226	29.41	2.81	32.22	54.00	21.78	Average
2	2128.226	41.81	2.81	44.62	74.00	29.38	Peak
3	5673.735	23.26	13.02	36.28	54.00	17.72	Average
4	5673.735	35.51	13.02	48.53	74.00	25.47	Peak
5	8515.903	22.15	16.50	38.65	54.00	15.35	Average
6	8515.903	34.29	16.50	50.79	74.00	23.21	Peak

Vertical:

No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	2130.626	31.24	2.82	34.06	54.00	19.94	Average
2	2130.626	43.47	2.82	46.29	74.00	27.71	Peak
3	3198.840	26.27	7.18	33.45	54.00	20.55	Average
4	3198.840	38.54	7.18	45.72	74.00	28.28	Peak
5	4255.051	26.24	9.73	35.97	54.00	18.03	Average
6	4255.051	38.48	9.73	48.21	74.00	25.79	Peak

Adapter #2**Horizontal:**

No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	1993.799	31.22	2.34	33.56	54.00	20.44	Average
2	1993.799	43.44	2.34	45.78	74.00	28.22	Peak
3	2128.226	30.27	2.81	33.08	54.00	20.92	Average
4	2128.226	42.53	2.81	45.34	74.00	28.66	Peak
5	3191.638	26.33	7.16	33.49	54.00	20.51	Average
6	3191.638	38.66	7.16	45.82	74.00	28.18	Peak

Vertical:

No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	1595.319	29.16	0.28	29.44	54.00	24.56	Average
2	1595.319	41.33	0.28	41.61	74.00	32.39	Peak
3	2125.825	31.47	2.80	34.27	54.00	19.73	Average
4	2125.825	43.94	2.80	46.74	74.00	27.26	Peak
5	5995.399	27.05	13.50	40.55	54.00	13.45	Average
6	5995.399	39.10	13.50	52.60	74.00	21.40	Peak

=====END OF REPORT=====