



中认信通

CHINA CERTIFICATION ICT CO., LTD (DONGGUAN)



TEST REPORT

Applicant: MAXWEST COMMUNICATION LIMITED

Address: ROOM 1802B FORTRESS TOWER 250 KING'S ROAD, NORTH POINT HONG KONG

FCC ID: 2ASP8ASTRO55R

Product Name: Phone

Model Number: ASTRO 55R

**Standard(s): 47 CFR Part 15 Subpart B
ANSI C63.4-2014**

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

Report Number: CR21110024-00B

Date Of Issue: 2022-01-17

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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1. GENERAL INFORMATION

1.1 Product Description for Equipment under Test (EUT)

EUT Name:	Phone
EUT Model:	ASTRO 55R
Highest Operation Frequency:	5825 MHz
Rated Input Voltage:	DC 3.8V from battery or DC 5V from adapter
Serial Number:	CR21110024-RF-S4
EUT Received Date:	2021.11.22
EUT Received Status:	Good

Accessory Information:

Accessory Description	Manufacturer	Model	Parameters
Adapter 1#	Maxwest	ASTRO 55R	Input: 100-240V~50/60Hz 0.15A Output: 5V 1000mA
Adapter 2#	Maxwest	SC/5WM500100-US	Input: 100-240V~50/60Hz 0.4A Output: 5V 1000mA

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

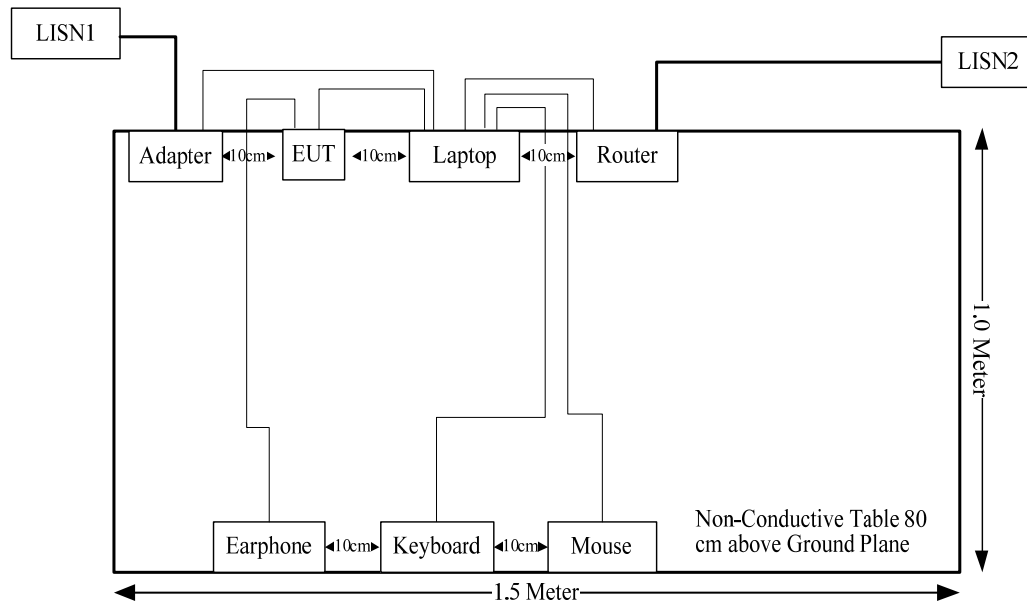
Manufacturer	Description	Model	Serial Number
Lenovo	Laptop	E480	PF-1QQYYP 19/06
PHILIPS	Keyboard	SPK6234	K234210510742
PHILIPS	Mouse	SPK7214	M214BQ210411113
FAST	Router	FS05	11923811054

1.2.3 Support Cable List and Details

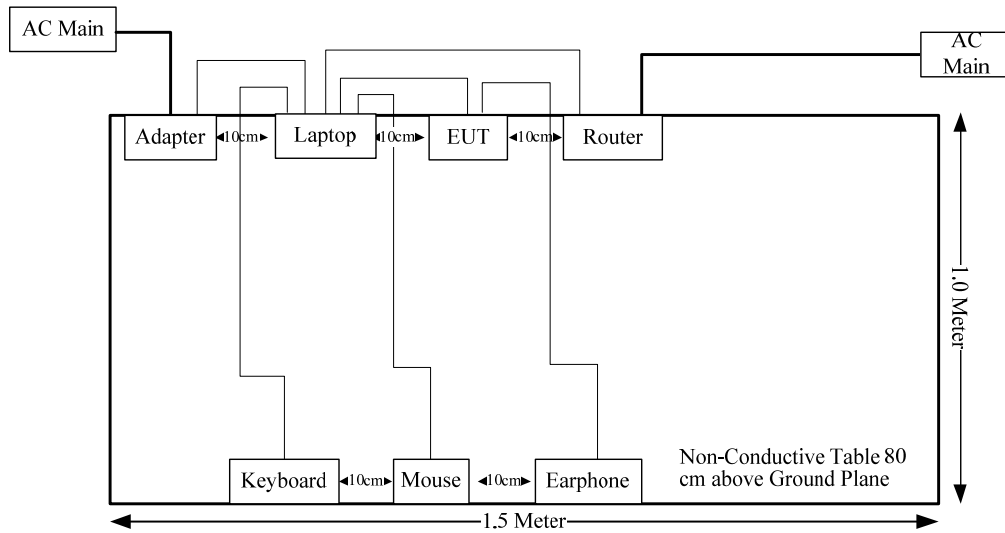
Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
Keyboard Cable	No	No	1.8	Keyboard	Laptop
Mouse Cable	No	No	2	Mouse	Laptop
Earphone Cable	No	No	2	EUT	Earphone
RJ45 Cable	No	No	1.2	Router	Laptop

1.2.4 Block Diagram of Test Setup

Conducted emissions:



Radiated 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)

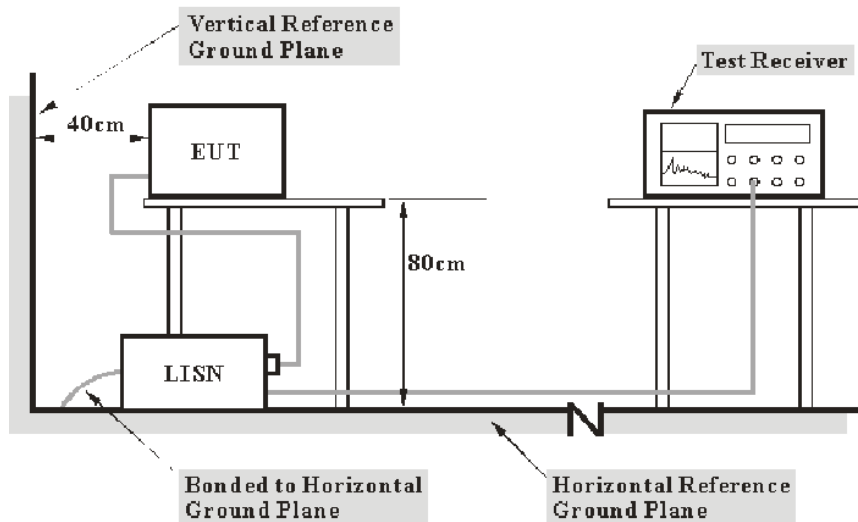
2. SUMMARY OF TEST RESULTS

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

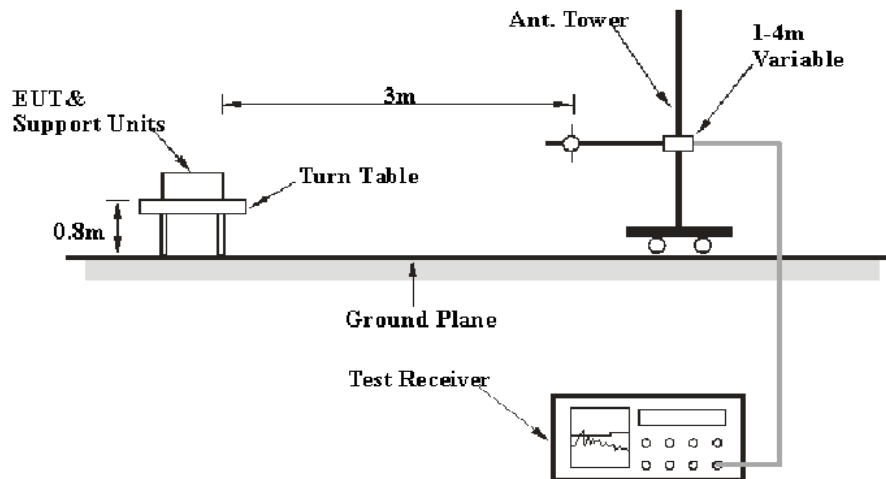
The “**Margin**” column of the following data tables indicates the degree of compliance within the applicable limit. The equation for margin calculation is as follows:

Margin = Limit – Result

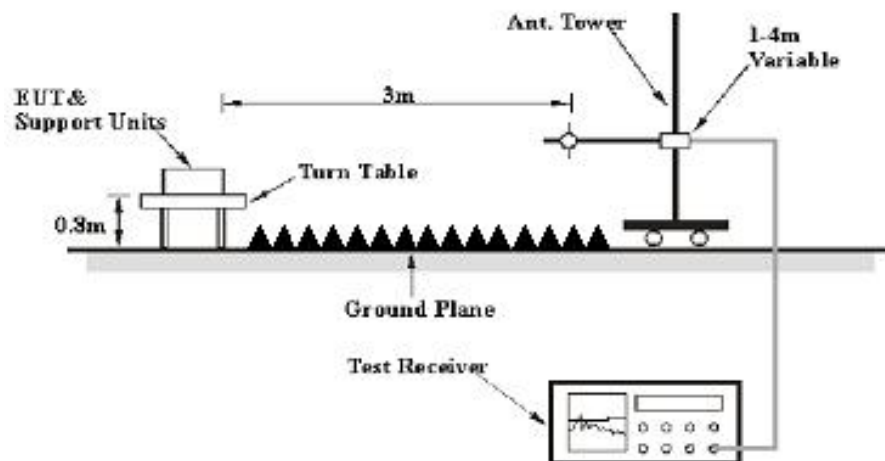
3.2 Radiation Spurious Emissions

3.2.1 EUT Setup

Below 1GHz:



Above 1GHz:



The radiated emission were 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 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	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:	CR21110024-RF-S4	Test Date:	2021-11-25
Test Site:	CE	Test Mode:	Downloading
Tester:	Nick Tang	Test Result:	Pass

Environmental Conditions:

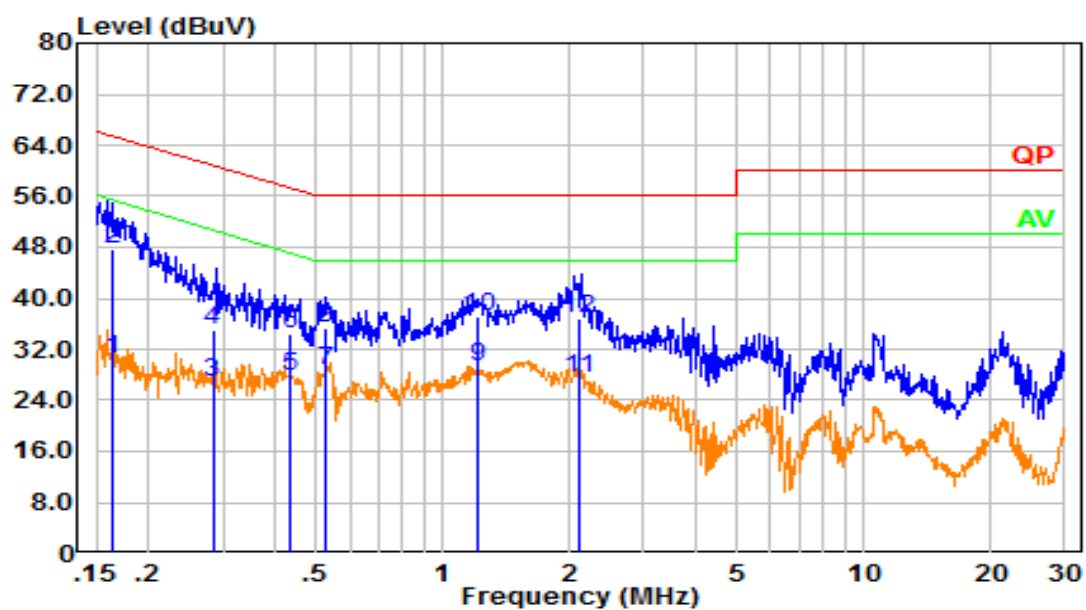
Temperature: (°C)	19.8	Relative Humidity: (%)	57	ATM Pressure: (kPa)	101.4
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	LISN	ENV216	101132	2021-04-25	2022-04-24
R&S	LISN	ENV216	101134	2021-04-25	2022-04-24
R&S	EMI Test Receiver	ESR3	102726	2021-07-22	2022-07-21
MICRO-COAX	Coaxial Cable	UTIFLEX	C-0200-01	2021-08-08	2022-08-07
Audix	Test Software	E3	190306 (V9)	N/A	N/A

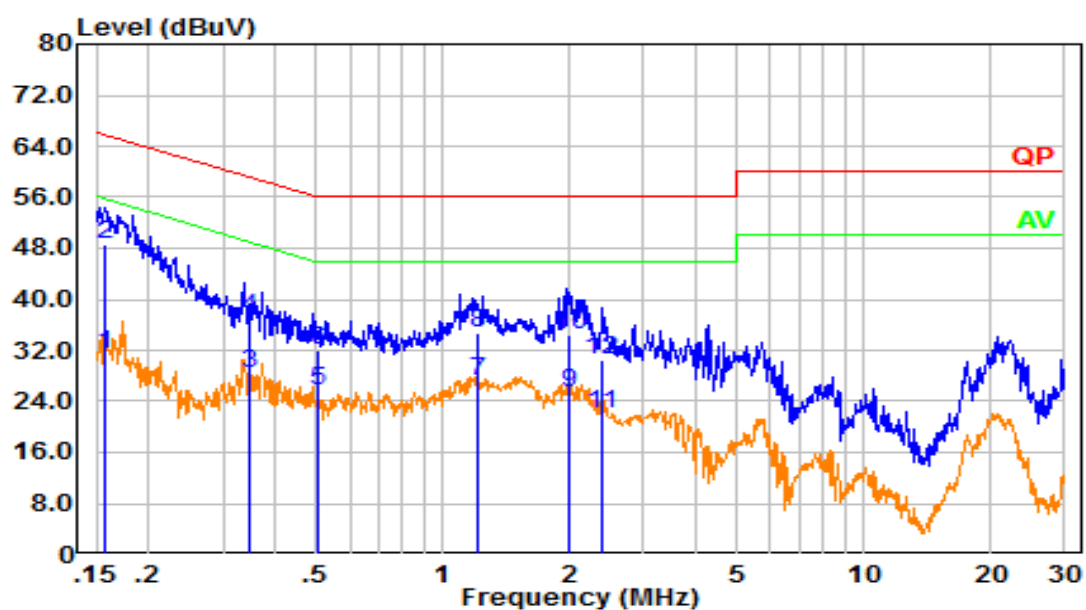
* Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Line:



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Detector
1	0.163	20.89	9.61	30.50	55.31	24.81	Average
2	0.163	38.08	9.61	47.69	65.31	17.62	QP
3	0.284	17.33	9.61	26.94	50.71	23.77	Average
4	0.284	25.31	9.61	34.92	60.71	25.79	QP
5	0.431	18.03	9.61	27.64	47.23	19.59	Average
6	0.431	24.94	9.61	34.55	57.23	22.68	QP
7	0.528	19.18	9.61	28.79	46.00	17.21	Average
8	0.528	25.59	9.61	35.20	56.00	20.80	QP
9	1.202	19.74	9.62	29.36	46.00	16.64	Average
10	1.202	27.43	9.62	37.05	56.00	18.95	QP
11	2.094	17.98	9.63	27.62	46.00	18.38	Average
12	2.094	27.13	9.63	36.76	56.00	19.24	QP

Neutral:



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Detector
1	0.158	21.71	9.61	31.32	55.58	24.26	Average
2	0.158	39.02	9.61	48.63	65.58	16.95	QP
3	0.345	18.73	9.61	28.34	49.07	20.73	Average
4	0.345	27.44	9.61	37.05	59.07	22.02	QP
5	0.504	16.16	9.61	25.77	46.00	20.23	Average
6	0.504	22.31	9.61	31.92	56.00	24.08	QP
7	1.205	17.68	9.62	27.30	46.00	18.70	Average
8	1.205	25.21	9.62	34.83	56.00	21.17	QP
9	1.994	15.62	9.63	25.25	46.00	20.75	Average
10	1.994	24.86	9.63	34.49	56.00	21.51	QP
11	2.371	12.53	9.64	22.17	46.00	23.83	Average
12	2.371	20.88	9.64	30.52	56.00	25.48	QP

4.2 Radiation Spurious Emissions

Serial Number:	CR21110024-RF-S4	Test Date:	2021-11-24~2021-11-26
Test Site:	966-1, 966-2	Test Mode:	Downloading
Tester:	Great Qiao, Carl Liang	Test Result:	Pass

Environmental Conditions:

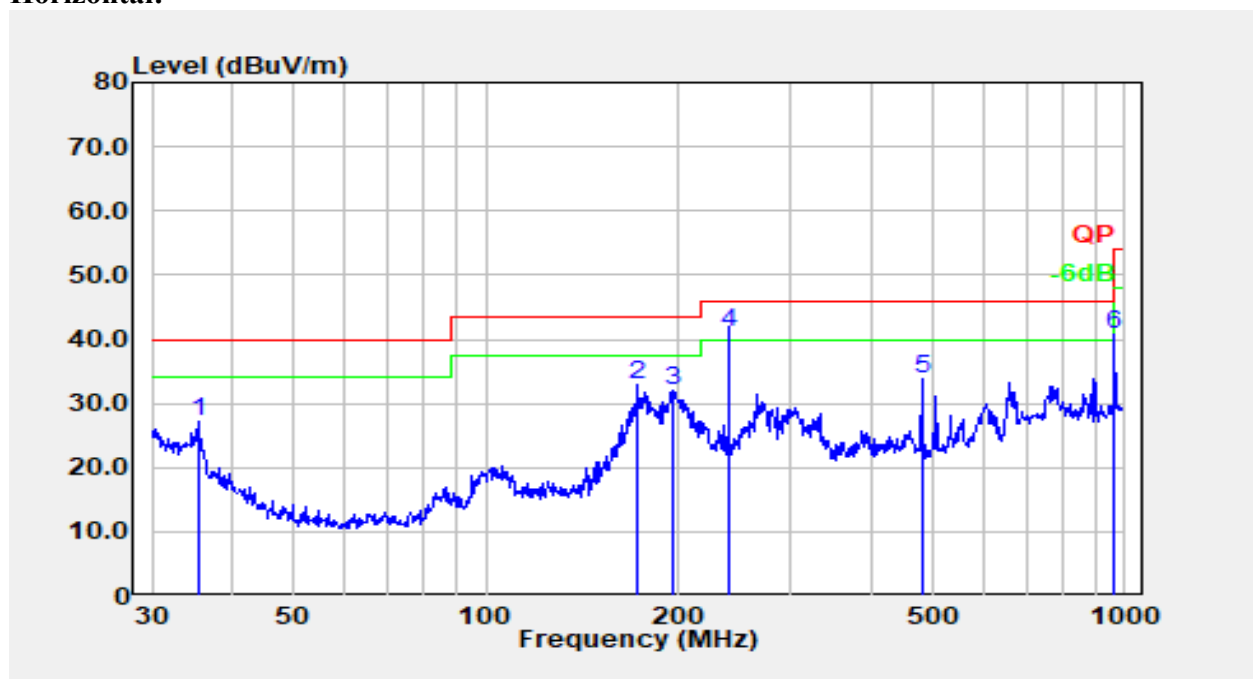
Temperature: (°C)	19.9~20.3	Relative Humidity: (%)	55~57	ATM Pressure: (kPa)	101.4~101.7
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Test Equipment List and Details:

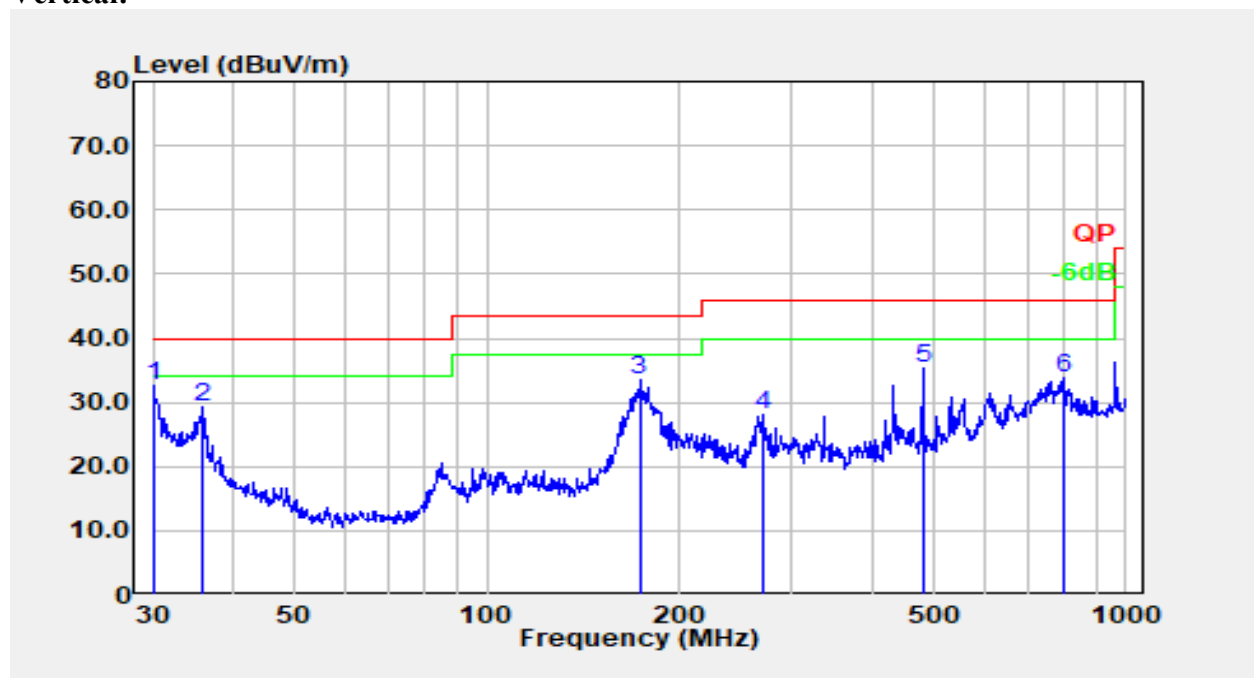
Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Sunol Sciences	Antenna	JB6	A082520-5	2020-10-19	2023-10-18
R&S	EMI Test Receiver	ESR3	102724	2021-07-22	2022-07-21
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0470-02	2021-07-18	2022-07-17
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0780-01	2021-07-18	2022-07-17
Sonoma	Amplifier	310N	186165	2021-07-18	2022-07-17
ETS-Lindgren	Horn Antenna	3115	9912-5985	2020-10-13	2023-10-12
R&S	Spectrum Analyzer	FSV40	101591	2021-07-22	2022-07-21
MICRO-COAX	Coaxial Cable	UFA210A-1-1200-70U300	217423-008	2021-08-08	2022-08-07
MICRO-COAX	Coaxial Cable	UFA210A-1-2362-300300	235780-001	2021-08-08	2022-08-07
Mini	Pre-amplifier	ZVA-183-S+	5969001149	2021-11-10	2022-11-09
Audix	Test Software	E3	201021 (V9)	N/A	N/A
PASTERNAK	Horn Antenna	PE9852/2F-20	112002	2021-02-05	2024-02-04
AH	Preamplifier	PAM-1840VH	190	2021-11-19	2022-11-18
MICRO-COAX	Coaxial Cable	UFB142A-1-2362-200200	235772-001	2021-08-08	2022-08-07

* 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:

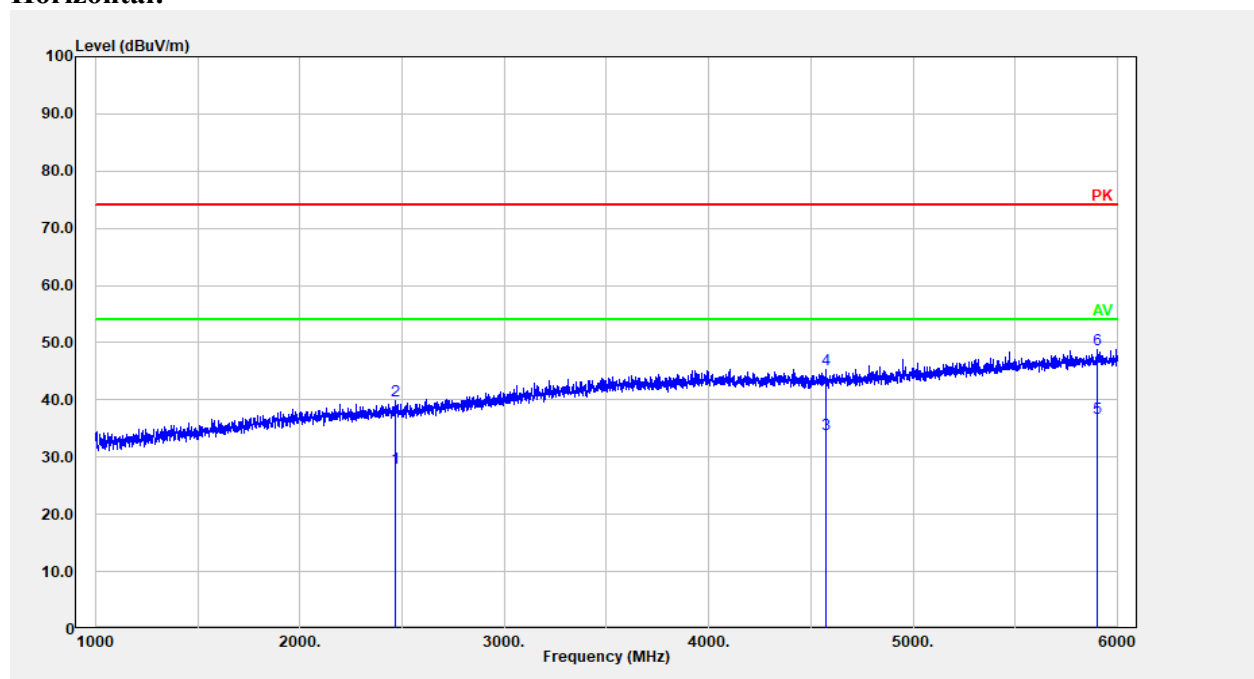
Horizontal:

No.	Frequency (MHz)	Reading (dBUV)	Factor (dB/m)	Result (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Detector
1	35.375	35.20	-7.95	27.25	40.00	12.75	Peak
2	172.599	46.36	-13.34	33.02	43.50	10.48	Peak
3	195.822	44.72	-12.82	31.90	43.50	11.60	Peak
4	239.987	54.10	-13.17	40.93	46.00	5.07	QP
5	480.528	40.45	-6.49	33.96	46.00	12.04	Peak
6	962.162	40.86	-0.09	40.77	54.00	13.23	Peak

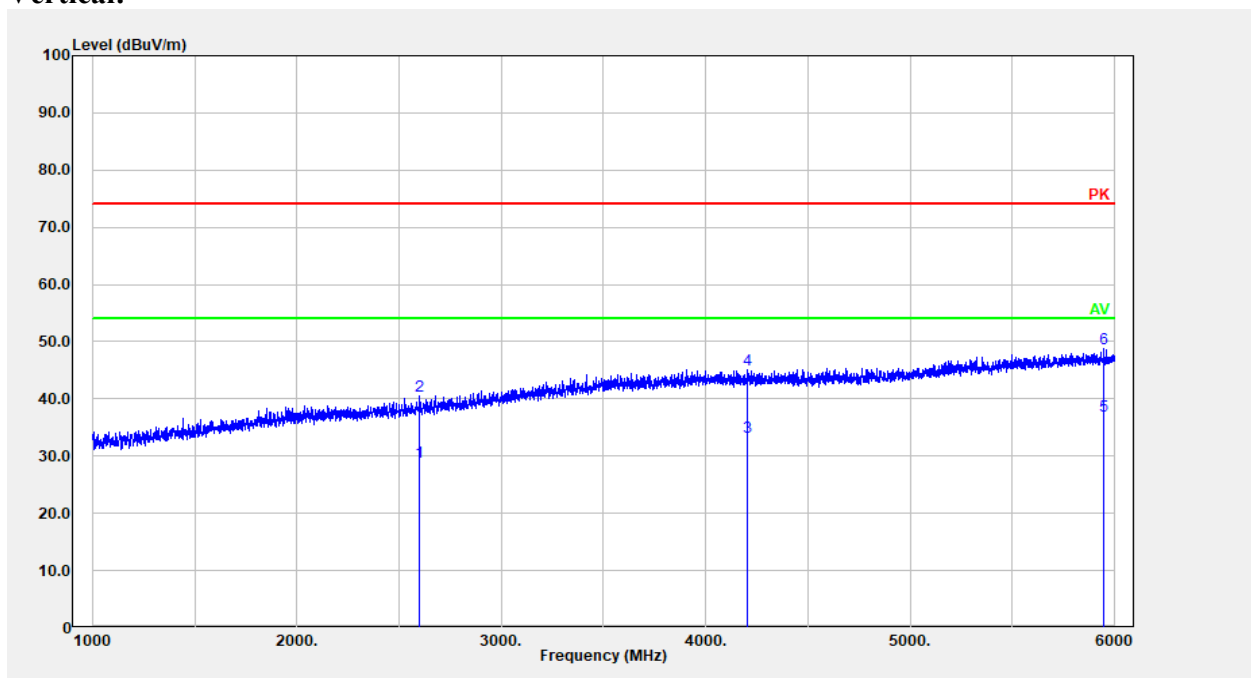
Vertical:

No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	30.000	36.39	-3.79	32.60	40.00	7.40	Peak
2	36.001	37.77	-8.42	29.35	40.00	10.65	Peak
3	173.205	46.85	-13.38	33.47	43.50	10.03	Peak
4	270.375	40.47	-12.28	28.19	46.00	17.81	Peak
5	480.528	41.93	-6.49	35.44	46.00	10.56	Peak
6	801.786	36.32	-2.45	33.87	46.00	12.13	Peak

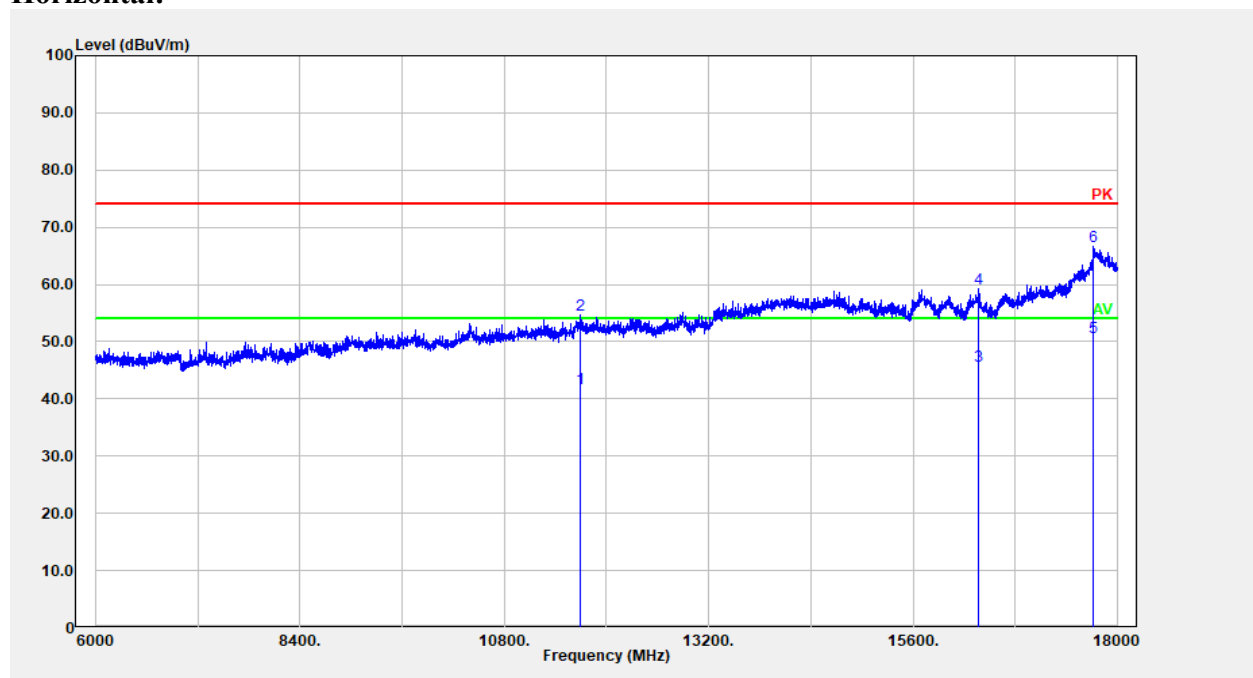
2) Above 1GHz

Horizontal:

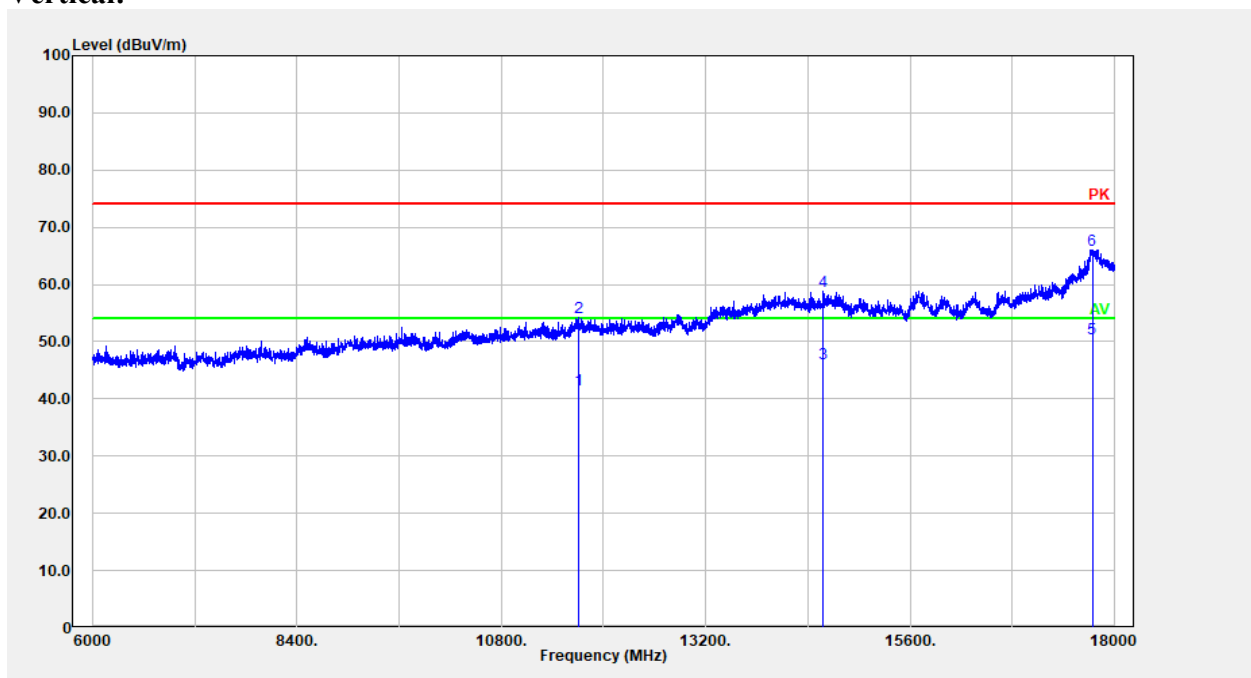
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2463.293	24.35	3.70	28.05	54.00	25.95	Average
2	2463.293	36.27	3.70	39.97	74.00	34.03	Peak
3	4574.715	23.99	10.02	34.01	54.00	19.99	Average
4	4574.715	35.32	10.02	45.34	74.00	28.66	Peak
5	5904.981	23.51	13.27	36.78	54.00	17.22	Average
6	5904.981	35.48	13.27	48.75	74.00	25.25	Peak

Vertical:

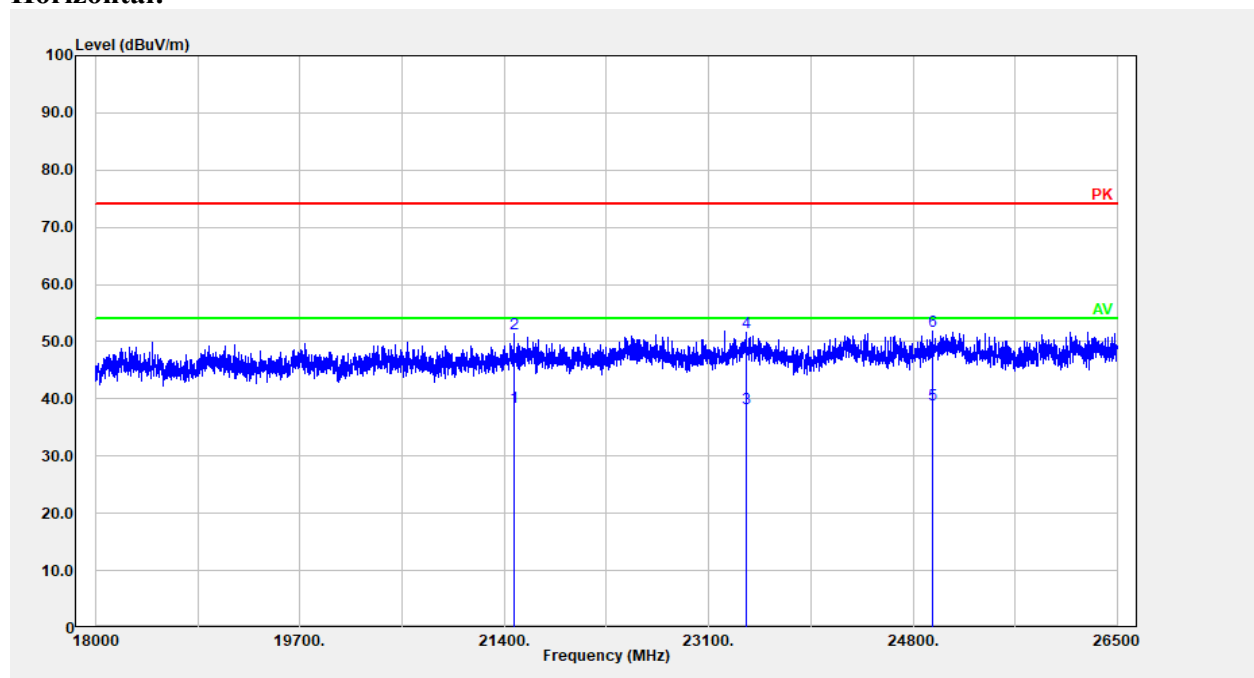
No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	2599.320	24.58	4.34	28.92	54.00	25.08	Average
2	2599.320	36.20	4.34	40.54	74.00	33.46	Peak
3	4204.641	23.51	9.76	33.27	54.00	20.73	Average
4	4204.641	35.33	9.76	45.09	74.00	28.91	Peak
5	5945.989	23.66	13.30	36.96	54.00	17.04	Average
6	5945.989	35.42	13.30	48.72	74.00	25.28	Peak

Horizontal:

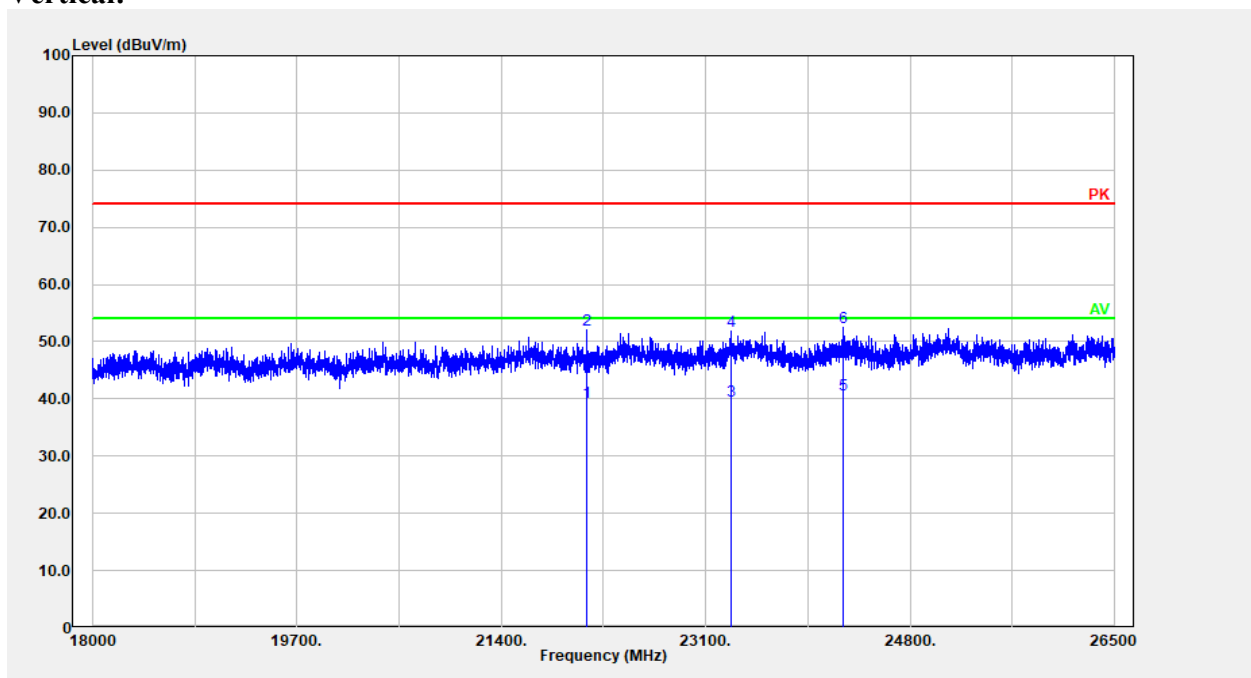
No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	11696.340	21.30	20.54	41.84	54.00	12.16	Average
2	11696.340	34.22	20.54	54.76	74.00	19.24	Peak
3	16370.070	24.35	21.46	45.81	54.00	8.19	Average
4	16370.070	37.79	21.46	59.25	74.00	14.75	Peak
5	17716.740	21.12	29.59	50.71	54.00	3.29	Average
6	17716.740	36.99	29.59	66.58	74.00	7.42	Peak

Vertical:

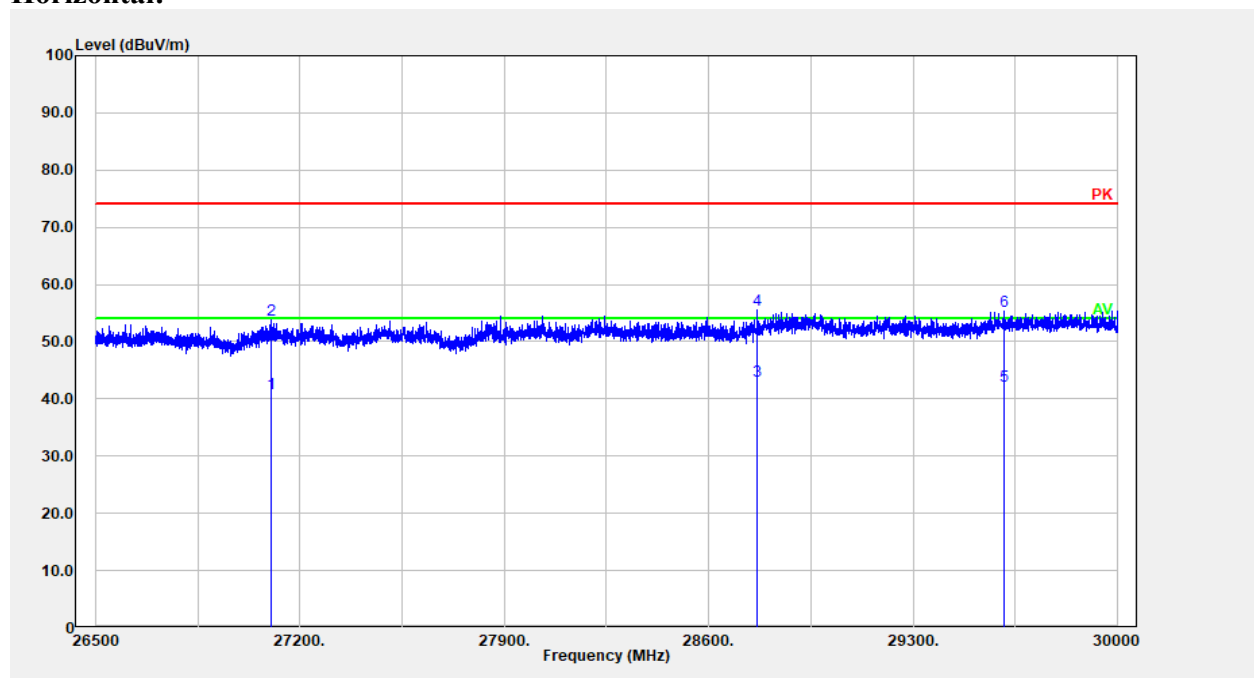
No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	11705.940	21.01	20.54	41.55	54.00	12.45	Average
2	11705.940	33.61	20.54	54.15	74.00	19.85	Peak
3	14584.120	21.97	24.26	46.23	54.00	7.77	Average
4	14584.120	34.50	24.26	58.76	74.00	15.24	Peak
5	17740.750	20.99	29.58	50.57	54.00	3.43	Average
6	17740.750	36.52	29.58	66.10	74.00	7.90	Peak

Horizontal:

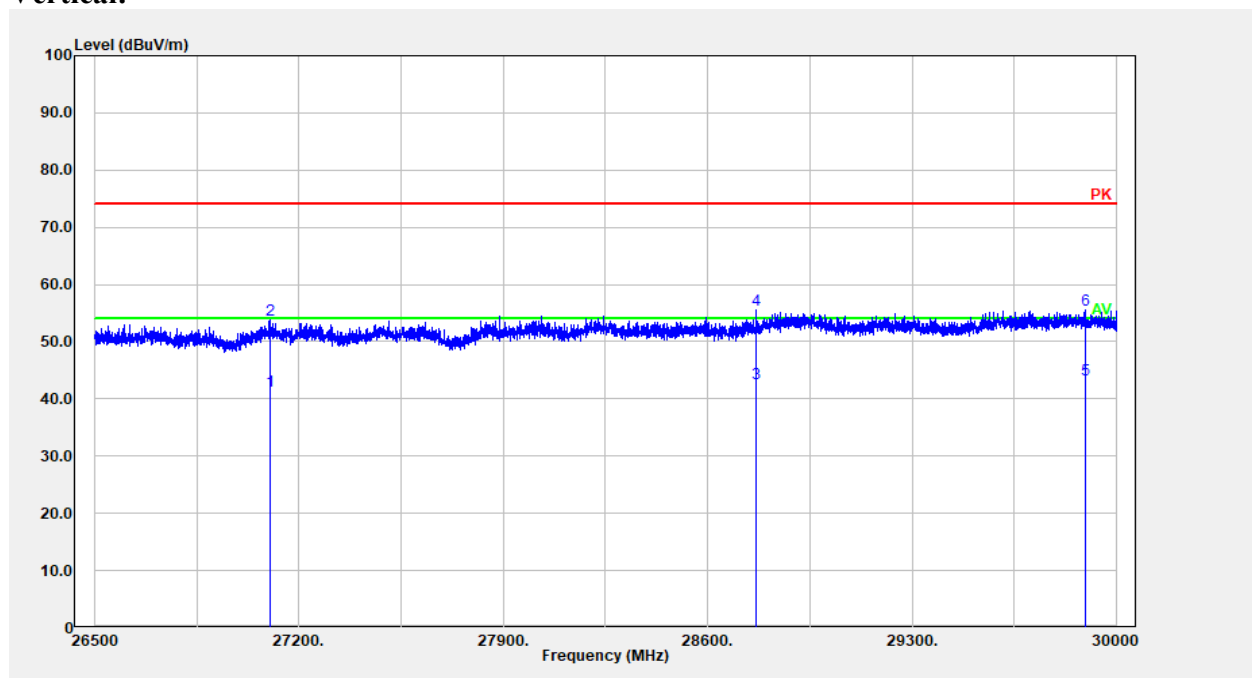
No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	21475.490	29.74	8.73	38.47	54.00	15.53	Average
2	21475.490	42.59	8.73	51.32	74.00	22.68	Peak
3	23408.780	27.20	11.13	38.33	54.00	15.67	Average
4	23408.780	40.49	11.13	51.62	74.00	22.38	Peak
5	24961.190	27.23	11.84	39.07	54.00	14.93	Average
6	24961.190	39.97	11.84	51.81	74.00	22.19	Peak

Vertical:

No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	22113.120	30.64	8.77	39.41	54.00	14.59	Average
2	22113.120	43.28	8.77	52.05	74.00	21.95	Peak
3	23310.160	28.78	10.84	39.62	54.00	14.38	Average
4	23310.160	41.04	10.84	51.88	74.00	22.12	Peak
5	24248.750	29.33	11.36	40.69	54.00	13.31	Average
6	24248.750	41.10	11.36	52.46	74.00	21.54	Peak

Horizontal:

No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	27100.720	26.86	14.09	40.95	54.00	13.05	Average
2	27100.720	39.66	14.09	53.75	74.00	20.25	Peak
3	28766.350	28.10	15.08	43.18	54.00	10.82	Average
4	28766.350	40.49	15.08	55.57	74.00	18.43	Peak
5	29613.520	27.49	14.72	42.21	54.00	11.79	Average
6	29613.520	40.57	14.72	55.29	74.00	18.71	Peak

Vertical:

No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	27100.720	27.36	14.09	41.45	54.00	12.55	Average
2	27100.720	39.66	14.09	53.75	74.00	20.25	Peak
3	28766.350	27.72	15.08	42.80	54.00	11.20	Average
4	28766.350	40.49	15.08	55.57	74.00	18.43	Peak
5	29895.680	28.82	14.44	43.26	54.00	10.74	Average
6	29895.680	41.05	14.44	55.49	74.00	18.51	Peak

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