



中认信通
CHINA CERTIFICATION ICT CO., LTD (DONGGUAN)



TEST REPORT

Applicant: Quanshun Communication Technology Co., Ltd

Address: Quanshun Bldg., Daxiamei, Nan'an, Quanzhou, Fujian, China

FCC ID: 2ADQZGMRS1

Product Name: Mult Band Transceiver

**Standard(s): 47 CFR Part 15 Subpart B
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: CR221047779-00A

Date Of Issue: 2023/1/5

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Title: Manager

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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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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
1.0	CR221047779-00A	Original Report	2023/1/5

1. GENERAL INFORMATION

1.1 Product Description for Equipment under Test (EUT)

EUT Name:	Mulit Band Transceiver
EUT Model:	A36plus
Multiple Models:	A36,A36P,A361,A37,A371,UV-37,UV-A37,EP-UVA37,UV36,UV37
Highest Operation Frequency:	520MHz
Rated Input Voltage:	DC 7.4V from battery or DC 5V charging from Adapter
Serial Number:	1MOG-8
EUT Received Date:	2022/10/24
EUT Received Status:	Good

Note: The Multiple models are electrically identical with test model, please refer to the declaration letter for more detail, which was provided by manufacturer.

Accessory Information:

Accessory Description	Manufacturer	Model	Parameters
Adapter	Quanshun Communication Technology Co., Ltd	JZ001M-0520UU	Input: AC 100-240V 50/60Hz 0.3A Output: DC 5V 1000mA

Operation Frequency And Test Channel:

Operation Modes	Operation Frequency Range (MHz)	Test Frequency
FM Broadcast Receiving	65-108	65.1MHz, 86.5MHz, 107.9MHz
AM Receiving	108-136	108MHz,122MHz, 135.9875MHz
NOAA Receiving	161.65-163.275	161.65MHz, 163.275 MHz
VHF Receiving	136-260	136 MHz, 220 MHz, 260 MHz
UHF Receiving	350-520	350MHz, 435 MHz, 520 MHz
Scanning	136-520	/

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: M1: FM Broadcast Receiving(65.1MHz, 86.5MHz, 107.9MHz) M2: AM Receiving(108MHz, 122MHz, 135.9875MHz) M3: VHF Receiving(136MHz, 220MHz, 260 MHz) M4: UHF Receiving(350MHz, 435MHz, 520 MHz) M5: NOAA Receiving(161.65MHz, 163.275MHz) M6: Scanning
Equipment Modifications:	No
EUT Exercise Software:	No

1.2.2 Support Equipment List and Details

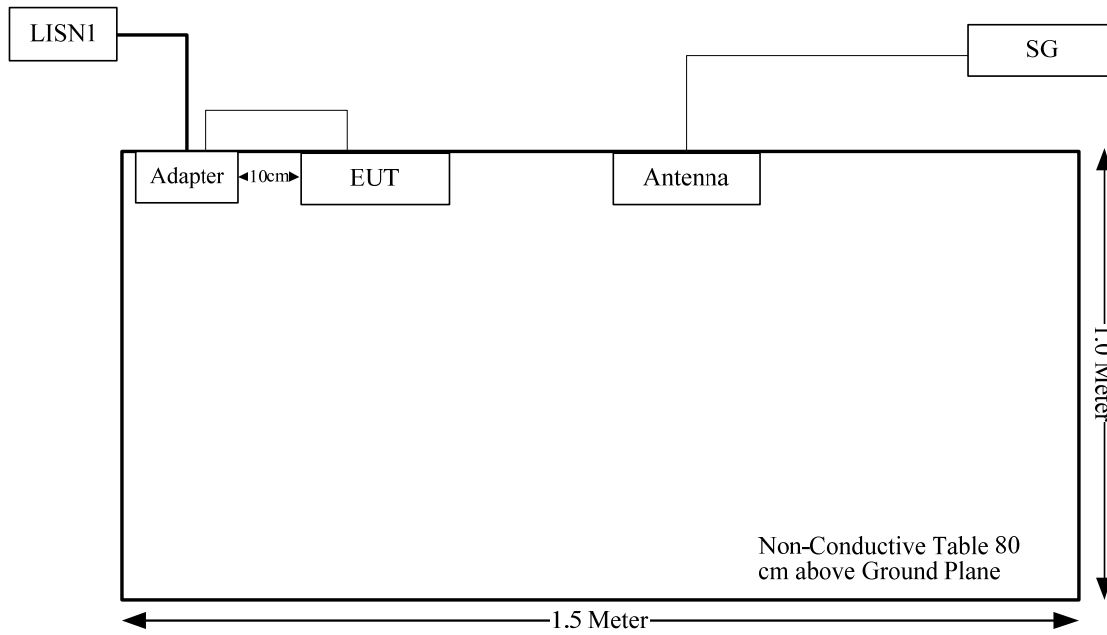
Manufacturer	Description	Model	Serial Number
HP	RF Communications Test Set	8920A	3438A05201

1.2.3 Support Cable List and Details

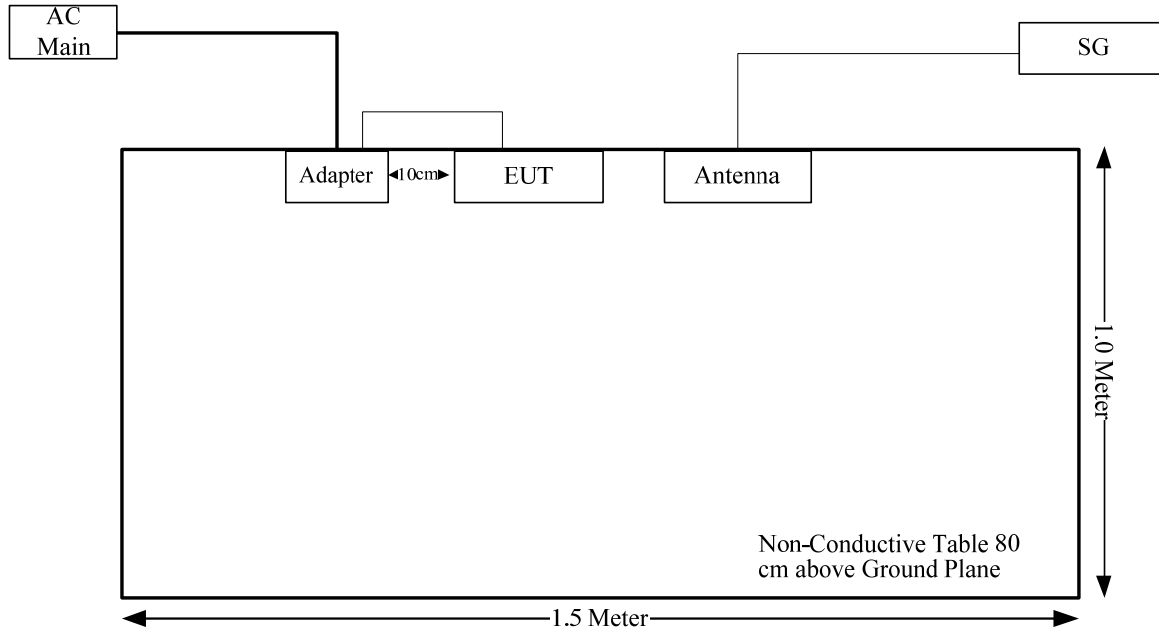
Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
USB Cable	Yes	No	0.8	Adapter	EUT

1.2.4 Block Diagram of Test Setup

AC line 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)

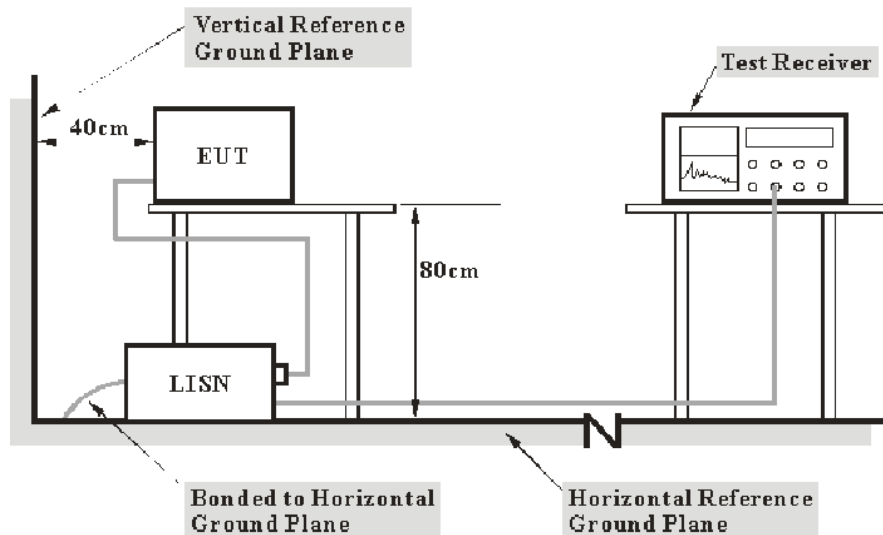
2. SUMMARY OF TEST RESULTS

Standard(s) Section	Description of Test	Result
§15.107	Conducted emissions	Compliant
§15.109	Radiated emissions	Compliant
§15.111	Antenna power conduction limits for receivers	Compliant
§15.121(b)	Scanning receivers and frequency converters used with scanning receivers	Compliant

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 or EUT 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

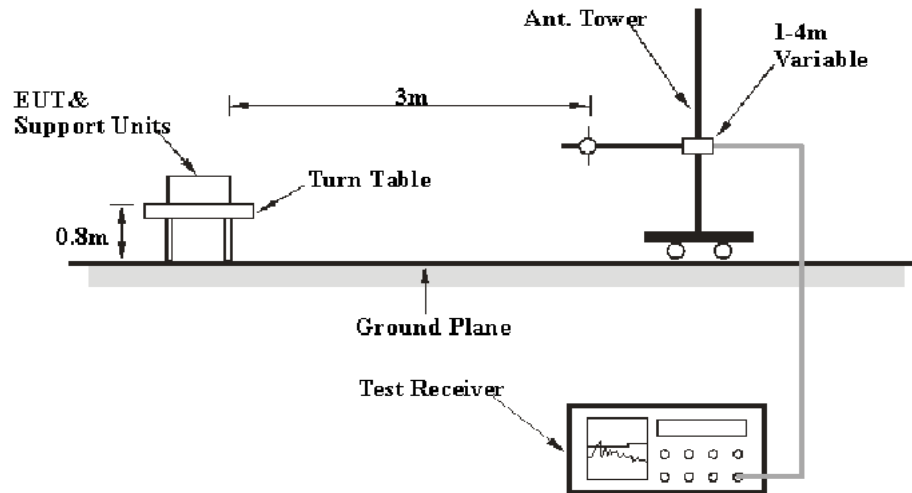
The “**Margin**” column of the following data tables indicates the degree of compliance within the applicable limit. The equation for margin calculation is as follows:

Margin = Limit – Result

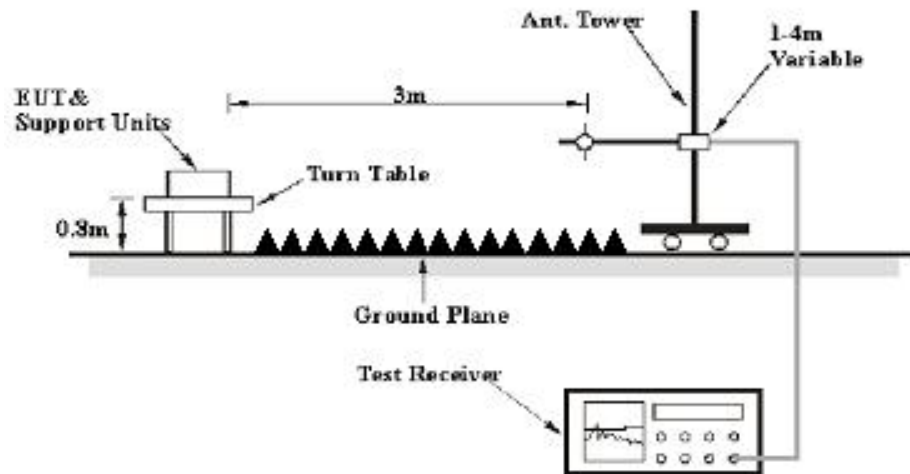
3.2 Radiation Spurious Emissions

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 Equipment Setup

The system was investigated from 30 MHz to 5 GHz.

During the radiated emission test, the test equipment 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	10Hz	/	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.

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

3.3 Antenna Power Conduction Limits for Receivers

3.3.1 Applicable Standard

FCC§15.111.

(a) In addition to the radiated emission limits, receivers that operate (tune) in the frequency range 30 to 960 MHz and CB receivers that provide terminals for the connection of an external receiving antenna may be tested to demonstrate compliance with the provisions of § 15.109 with the antenna terminals shielded and terminated with a resistive termination equal to the impedance specified for the antenna, provided these receivers also comply with the following: With the receiver antenna terminal connected to a resistive termination equal to the impedance specified or employed for the antenna, the power at the antenna terminal at any frequency within the range of measurements specified in § 15.33 shall not exceed 2.0 nanowatts.

Test Procedure

EUT antenna port connected to a spectrum analyzer, the traces were recorded as shown on the data pages.

3.4 Scanning Receivers and Frequency Converters Used with Scanning Receivers

Applicable Standard

FCC §15.121(b).

(b) Except as provided in paragraph (c) of this section, scanning receivers shall reject any signals from the Cellular Radiotelephone Service frequency bands that are 38 dB or lower based upon a 12 dB SINAD measurement, which is considered the threshold where a signal can be clearly discerned from any interference that may be present.

Test Procedure

1. Connected the EUT as the below block diagram;



2. Apply a signal to the EUT antenna port at lowest, middle, highest channel frequencies of the operating band;
3. Adjust the audio output level of the EUT to it's rated value with the distortion less than 10%;
4. Adjust the Signal Generator output power to produce 12 dB SINAD without the audio output power dropping by more than 3 dB; These output level of the Signal Generator at each channel frequency is the sensitivity of the EUT;
5. Select the lowest or worst case sensitivity level for all of the bands as the reference sensitivity;
6. Adjust the Signal Generator output to a level of +60 dB above the reference sensitivity obtained in step 5 and its frequency to the frequency point in the Cellular Band;
7. Set the EUT squelch to threshold, the signal required to open the squelch must be lower than the reference sensitivity level;
8. Set the EUT in a scanning mode and allow it to scan through it's complete receiving range;
9. If the EUT un-squelched or stopped on any frequency, receiving at this frequency, then adjust the signal generator output level until 12 dB SINAD is produced, this level is the spurious value and the difference between the reference sensitivity and the spurious value is the rejection ratio and must be at least 38 dB;
10. Repeat above procedure at the frequencies 824, 836, 849 MHz for the mobile band, and 869, 881.5 and 894 MHz for the Cellular Base Band.

4. TEST DATA AND RESULTS

4.1 AC Line Conducted Emissions

Serial Number:	1MOG-8	Test Date:	2022/11/17
Test Site:	CE	Test Mode:	M1~M6
Tester:	Vic Du	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	25.2	Relative Humidity: (%)	68	ATM Pressure: (kPa)	100.8
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Test Equipment List and Details:

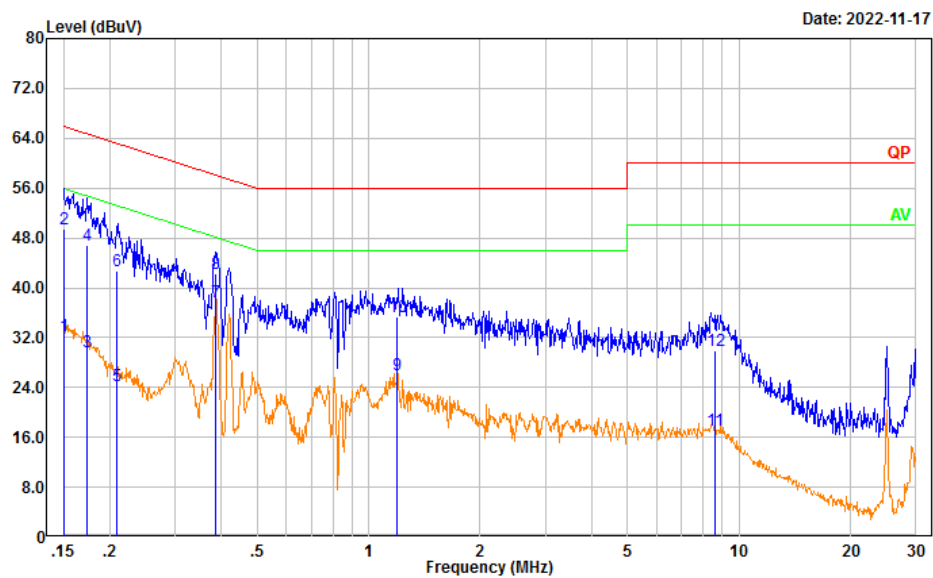
Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	LISN	ENV216	101134	2022/04/01	2023/03/31
R&S	EMI Test Receiver	ESR3	102726	2022/07/15	2023/07/14
MICRO-COAX	Coaxial Cable	UTIFLEX	C-0200-01	2022/08/07	2023/08/06
Audix	Test Software	E3	190306 (V9)	N/A	N/A

* 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).

FM Broadcast Receiving(86.5MHz was worst):**Line:**

Port: Line

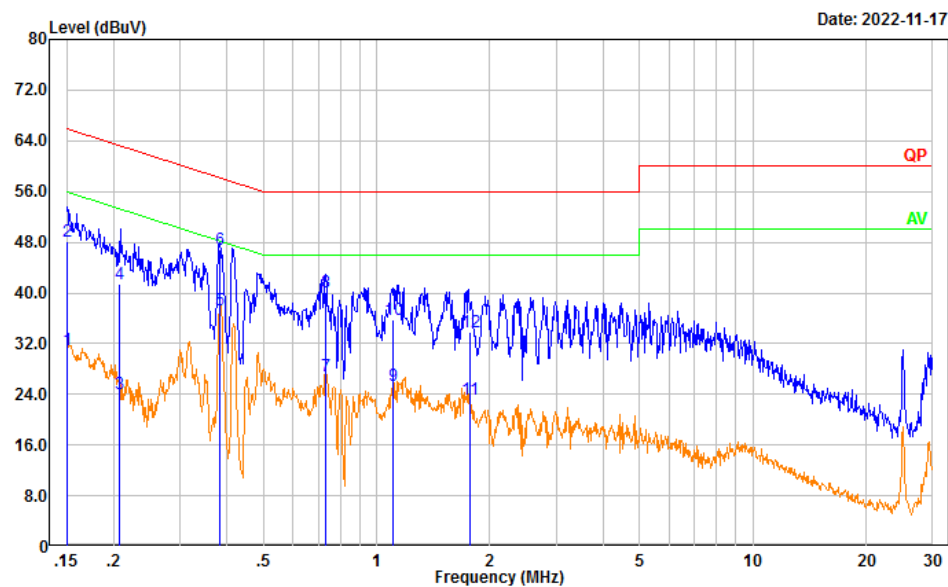
Note:



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.151	22.61	9.61	32.22	55.97	23.75	Average
2	0.151	39.83	9.61	49.44	65.97	16.53	QP
3	0.174	20.13	9.61	29.74	54.75	25.01	Average
4	0.174	37.20	9.61	46.81	64.75	17.94	QP
5	0.210	14.66	9.61	24.27	53.22	28.95	Average
6	0.210	32.99	9.61	42.60	63.22	20.62	QP
7	0.385	28.15	9.61	37.76	48.17	10.41	Average
8	0.385	32.77	9.61	42.38	58.17	15.79	QP
9	1.190	16.41	9.62	26.03	46.00	19.97	Average
10	1.190	25.70	9.62	35.32	56.00	20.68	QP
11	8.579	7.35	9.67	17.02	50.00	32.98	Average
12	8.579	20.22	9.67	29.89	60.00	30.11	QP

Neutral:

Port: neutral
Note:

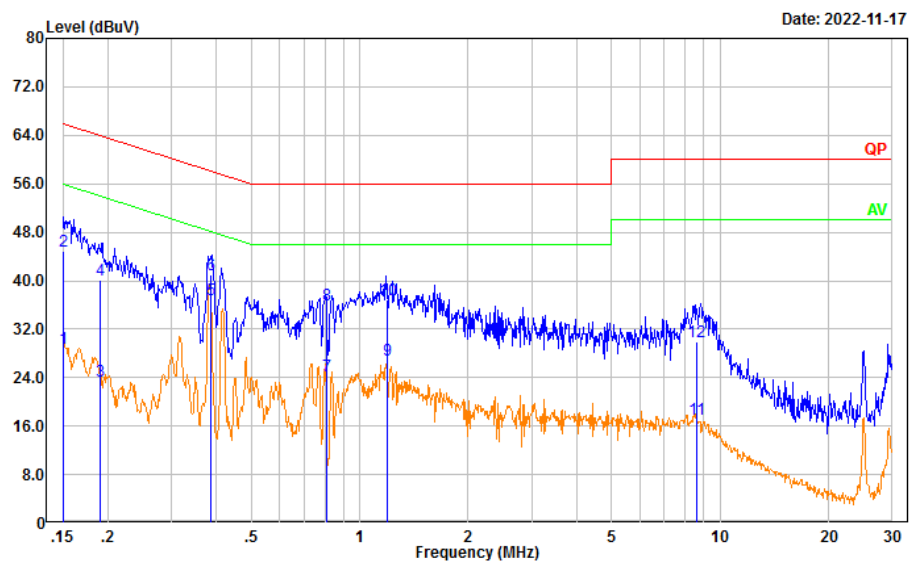


No.	Frequency (MHz)	Reading (dBμV)	Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Detector
1	0.150	21.36	9.61	30.97	56.00	25.03	Average
2	0.150	38.54	9.61	48.15	66.00	17.85	QP
3	0.208	14.42	9.61	24.03	53.29	29.26	Average
4	0.208	31.89	9.61	41.50	63.29	21.79	QP
5	0.382	27.59	9.61	37.20	48.23	11.03	Average
6	0.382	37.25	9.61	46.86	58.23	11.37	QP
7	0.730	17.18	9.62	26.80	46.00	19.20	Average
8	0.730	30.49	9.62	40.11	56.00	15.89	QP
9	1.107	15.74	9.62	25.36	46.00	20.64	Average
10	1.107	26.14	9.62	35.76	56.00	20.24	QP
11	1.769	13.53	9.63	23.16	46.00	22.84	Average
12	1.769	24.09	9.63	33.72	56.00	22.28	QP

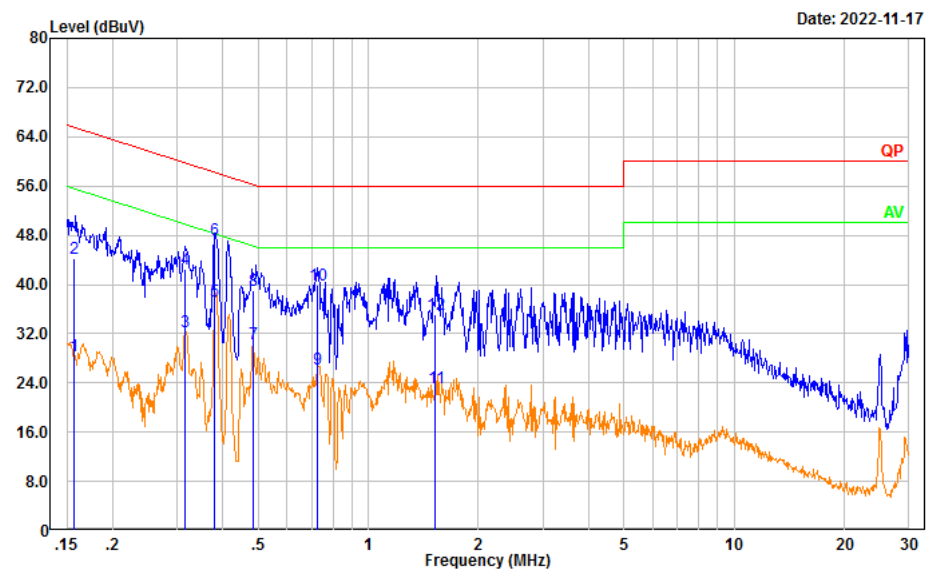
AM Receiving(122MHz was the worst):**Line:**

Port: Line

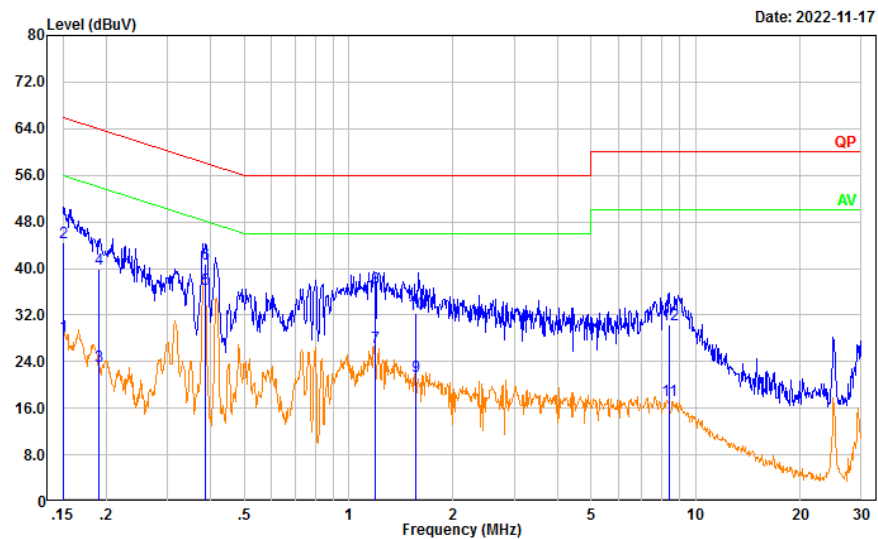
Note:



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.150	19.12	9.61	28.73	55.99	27.26	Average
2	0.150	35.31	9.61	44.92	65.99	21.07	QP
3	0.191	13.85	9.61	23.46	54.00	30.54	Average
4	0.191	30.44	9.61	40.05	64.00	23.95	QP
5	0.387	27.15	9.61	36.76	48.14	11.38	Average
6	0.387	31.34	9.61	40.95	58.14	17.19	QP
7	0.807	14.65	9.62	24.27	46.00	21.73	Average
8	0.807	26.31	9.62	35.93	56.00	20.07	QP
9	1.190	17.29	9.62	26.91	46.00	19.09	Average
10	1.190	27.32	9.62	36.94	56.00	19.06	QP
11	8.574	7.49	9.67	17.16	50.00	32.84	Average
12	8.574	20.26	9.67	29.93	60.00	30.07	QP

Neutral:Port: neutral
Note:

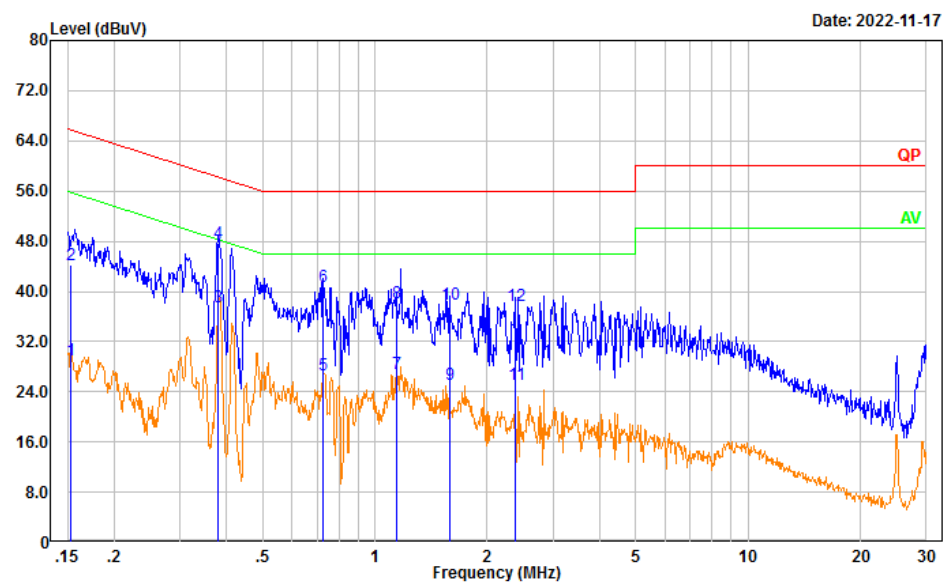
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.157	18.68	9.61	28.29	55.64	27.35	Average
2	0.157	34.65	9.61	44.26	65.64	21.38	QP
3	0.315	22.61	9.61	32.22	49.83	17.61	Average
4	0.315	32.83	9.61	42.44	59.83	17.39	QP
5	0.381	27.69	9.61	37.30	48.26	10.96	Average
6	0.381	37.70	9.61	47.31	58.26	10.95	QP
7	0.484	20.80	9.61	30.41	46.26	15.85	Average
8	0.484	29.42	9.61	39.03	56.26	17.23	QP
9	0.727	16.67	9.62	26.29	46.00	19.71	Average
10	0.727	30.19	9.62	39.81	56.00	16.19	QP
11	1.527	13.47	9.63	23.10	46.00	22.90	Average
12	1.527	25.56	9.63	35.19	56.00	20.81	QP

VHF Receiving(220MHz was worst):**Line:**Port: Line
Note:

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.150	18.78	9.61	28.39	55.99	27.60	Average
2	0.150	34.79	9.61	44.40	65.99	21.59	QP
3	0.191	13.67	9.61	23.28	54.01	30.73	Average
4	0.191	30.32	9.61	39.93	64.01	24.08	QP
5	0.387	26.80	9.61	36.41	48.14	11.73	Average
6	0.387	31.16	9.61	40.77	58.14	17.37	QP
7	1.189	16.91	9.62	26.53	46.00	19.47	Average
8	1.189	27.11	9.62	36.73	56.00	19.27	QP
9	1.562	11.94	9.63	21.57	46.00	24.43	Average
10	1.562	22.63	9.63	32.26	56.00	23.74	QP
11	8.382	7.73	9.67	17.40	50.00	32.60	Average
12	8.382	20.74	9.67	30.41	60.00	29.59	QP

Neutral:

Port: neutral
Note:

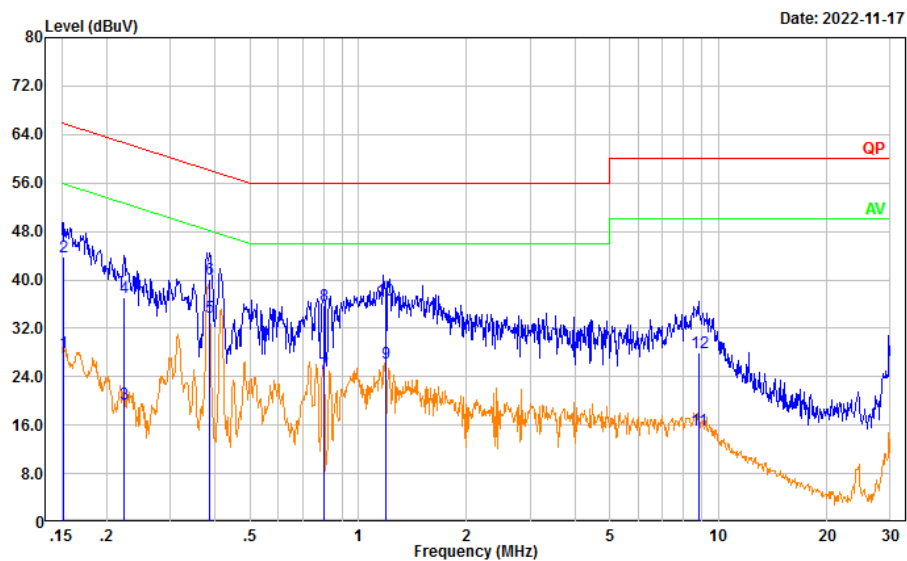


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.153	19.52	9.61	29.13	55.85	26.72	Average
2	0.153	34.51	9.61	44.12	65.85	21.73	QP
3	0.380	27.81	9.61	37.42	48.28	10.86	Average
4	0.380	38.05	9.61	47.66	58.28	10.62	QP
5	0.726	17.15	9.62	26.77	46.00	19.23	Average
6	0.726	31.12	9.62	40.74	56.00	15.26	QP
7	1.140	17.29	9.62	26.91	46.00	19.09	Average
8	1.140	28.47	9.62	38.09	56.00	17.91	QP
9	1.587	15.61	9.63	25.24	46.00	20.76	Average
10	1.587	28.30	9.63	37.93	56.00	18.07	QP
11	2.382	15.42	9.64	25.06	46.00	20.94	Average
12	2.382	28.08	9.64	37.72	56.00	18.28	QP

UHF Receiving(435MHz was worst):**Line:**

Port: Line

Note:

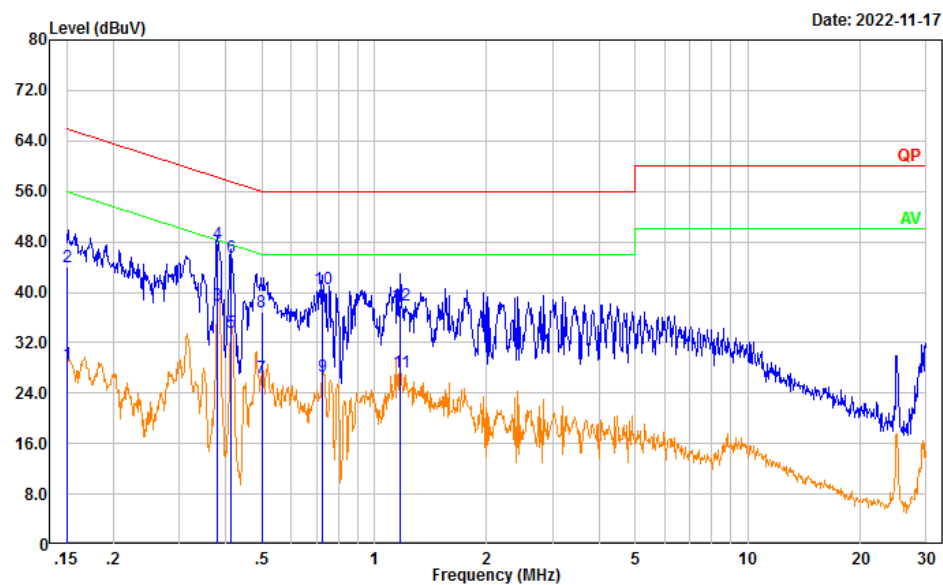


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.152	18.40	9.61	28.01	55.91	27.90	Average
2	0.152	34.10	9.61	43.71	65.91	22.20	QP
3	0.224	9.89	9.61	19.50	52.67	33.17	Average
4	0.224	27.46	9.61	37.07	62.67	25.60	QP
5	0.388	24.20	9.61	33.81	48.11	14.30	Average
6	0.388	30.48	9.61	40.09	58.11	18.02	QP
7	0.806	14.82	9.62	24.44	46.00	21.56	Average
8	0.806	26.25	9.62	35.87	56.00	20.13	QP
9	1.188	16.55	9.62	26.17	46.00	19.83	Average
10	1.188	26.97	9.62	36.59	56.00	19.41	QP
11	8.809	5.57	9.67	15.24	50.00	34.76	Average
12	8.809	18.25	9.67	27.92	60.00	32.08	QP

Neutral:

Port: neutral

Note:

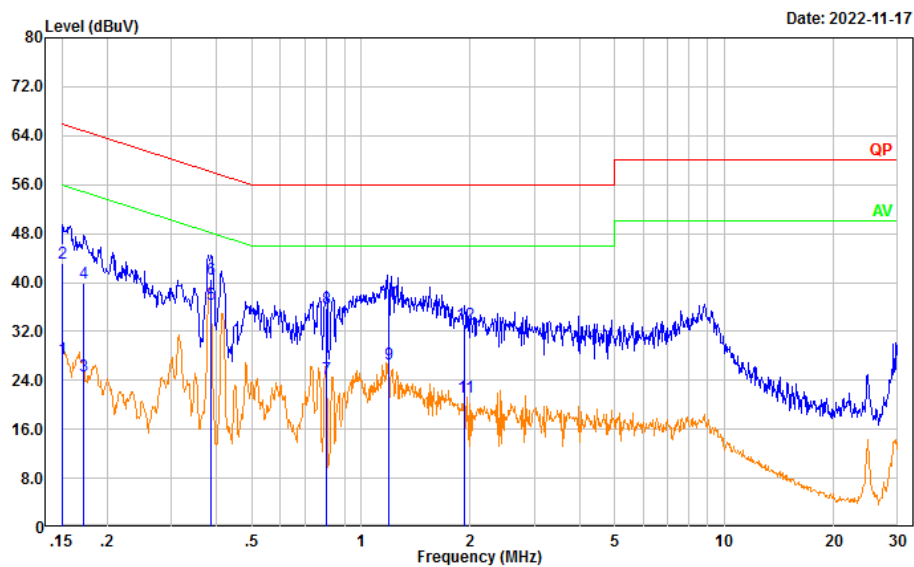


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.150	18.98	9.61	28.59	55.99	27.40	Average
2	0.150	34.51	9.61	44.12	65.99	21.87	QP
3	0.380	28.31	9.61	37.92	48.27	10.35	Average
4	0.380	38.05	9.61	47.66	58.27	10.61	QP
5	0.413	23.95	9.61	33.56	47.59	14.03	Average
6	0.413	35.96	9.61	45.57	57.59	12.02	QP
7	0.499	16.77	9.61	26.38	46.01	19.63	Average
8	0.499	27.30	9.61	36.91	56.01	19.10	QP
9	0.725	17.14	9.62	26.76	46.00	19.24	Average
10	0.725	30.86	9.62	40.48	56.00	15.52	QP
11	1.176	17.64	9.62	27.26	46.00	18.74	Average
12	1.176	28.37	9.62	37.99	56.00	18.01	QP

NOAA Receiving(161.65MHz was worst):**Line:**

Port: Line

Note:

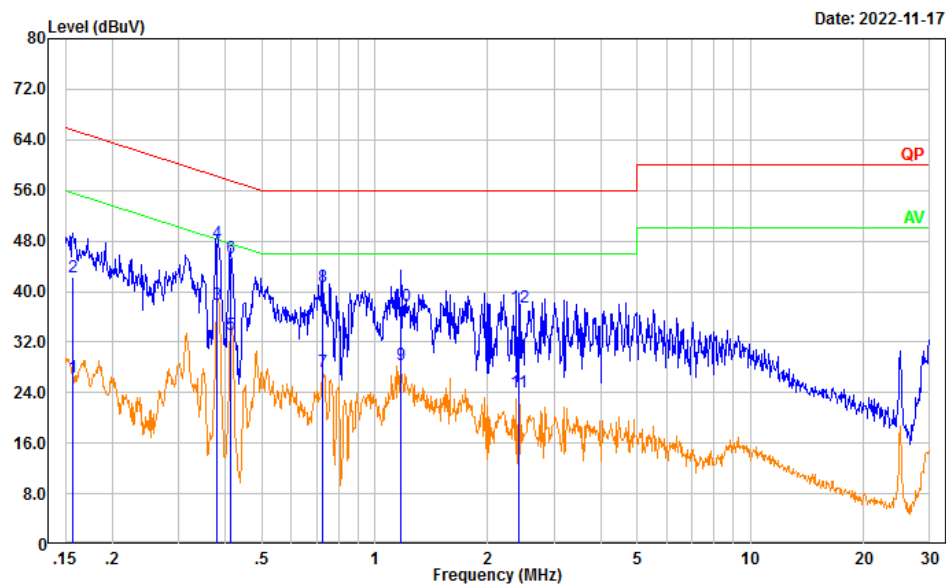


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.151	17.87	9.61	27.48	55.97	28.49	Average
2	0.151	33.63	9.61	43.24	65.97	22.73	QP
3	0.173	15.09	9.61	24.70	54.82	30.12	Average
4	0.173	30.29	9.61	39.90	64.82	24.92	QP
5	0.386	26.83	9.61	36.44	48.15	11.71	Average
6	0.386	30.95	9.61	40.56	58.15	17.59	QP
7	0.806	14.64	9.62	24.26	46.00	21.74	Average
8	0.806	26.20	9.62	35.82	56.00	20.18	QP
9	1.190	16.98	9.62	26.60	46.00	19.40	Average
10	1.190	27.09	9.62	36.71	56.00	19.29	QP
11	1.931	11.53	9.63	21.16	46.00	24.84	Average
12	1.931	23.56	9.63	33.19	56.00	22.81	QP

Neutral:

Port: neutral

Note:



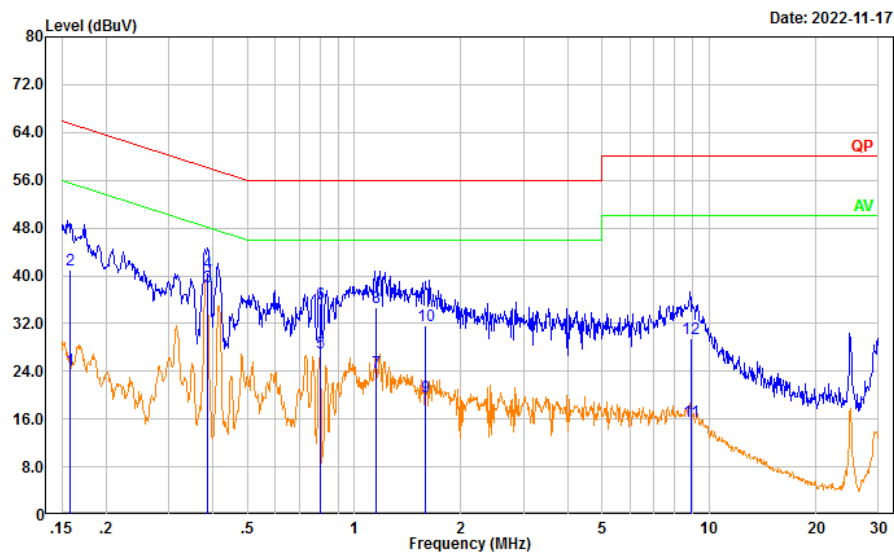
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.157	16.89	9.61	26.50	55.63	29.13	Average
2	0.157	32.69	9.61	42.30	65.63	23.33	QP
3	0.380	28.23	9.61	37.84	48.27	10.43	Average
4	0.380	38.17	9.61	47.78	58.27	10.49	QP
5	0.413	23.57	9.61	33.18	47.60	14.42	Average
6	0.413	35.81	9.61	45.42	57.60	12.18	QP
7	0.727	17.69	9.62	27.31	46.00	18.69	Average
8	0.727	31.23	9.62	40.85	56.00	15.15	QP
9	1.177	18.85	9.62	28.47	46.00	17.53	Average
10	1.177	28.08	9.62	37.70	56.00	18.30	QP
11	2.415	14.42	9.64	24.06	46.00	21.94	Average
12	2.415	27.90	9.64	37.54	56.00	18.46	QP

Scanning:

Line:

Port: Line

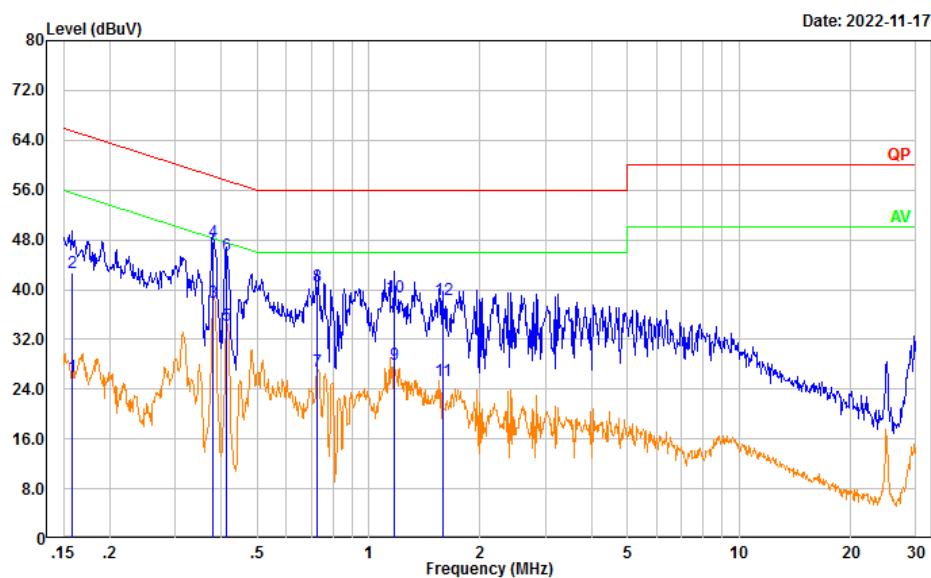
Note:



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Detector
1	0.158	14.67	9.61	24.28	55.58	31.30	Average
2	0.158	31.43	9.61	41.04	65.58	24.54	QP
3	0.386	28.57	9.61	38.18	48.14	9.96	Average
4	0.386	31.01	9.61	40.62	58.14	17.52	QP
5	0.805	17.54	9.62	27.16	46.00	18.84	Average
6	0.805	25.70	9.62	35.32	56.00	20.68	QP
7	1.151	14.31	9.62	23.93	46.00	22.07	Average
8	1.151	25.09	9.62	34.71	56.00	21.29	QP
9	1.587	10.13	9.63	19.76	46.00	26.24	Average
10	1.587	22.00	9.63	31.63	56.00	24.37	QP
11	8.867	5.88	9.67	15.55	50.00	34.45	Average
12	8.867	19.79	9.67	29.46	60.00	30.54	QP

Neutral:

Port: neutral
Note:



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.158	16.30	9.61	25.91	55.57	29.66	Average
2	0.158	33.14	9.61	42.75	65.57	22.82	QP
3	0.380	28.36	9.61	37.97	48.27	10.30	Average
4	0.380	38.17	9.61	47.78	58.27	10.49	QP
5	0.414	24.71	9.61	34.32	47.57	13.25	Average
6	0.414	35.97	9.61	45.58	57.57	11.99	QP
7	0.725	17.24	9.62	26.86	46.00	19.14	Average
8	0.725	30.98	9.62	40.60	56.00	15.40	QP
9	1.175	18.42	9.62	28.04	46.00	17.96	Average
10	1.175	29.27	9.62	38.89	56.00	17.11	QP
11	1.588	15.64	9.63	25.27	46.00	20.73	Average
12	1.588	28.80	9.63	38.43	56.00	17.57	QP

4.2 Radiation Spurious Emissions

Serial Number:	1MOG-8	Test Date:	2022/11/10 (Below 1GHz) 2022/11/09(Above 1GHz)
Test Site:	966-2, 966-1	Test Mode:	M1~M6
Tester:	Mack Huang, Carl Xue	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	24.9~25.9	Relative Humidity: (%)	57~67	ATM Pressure: (kPa)	100.9~101.2
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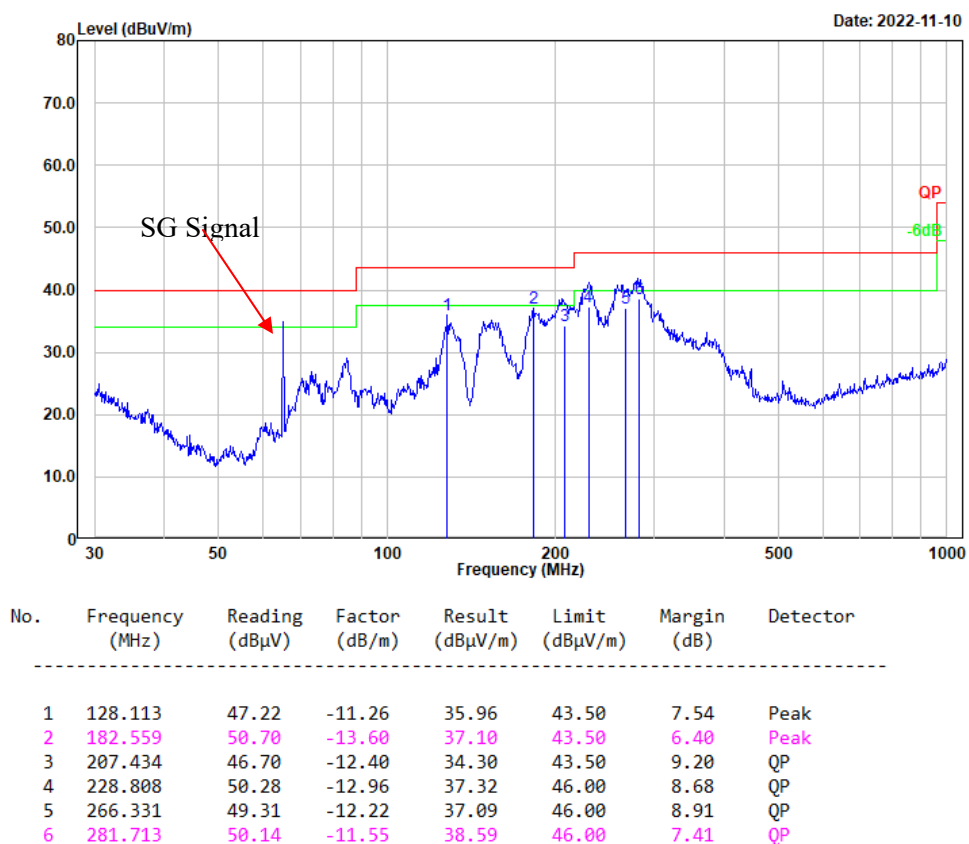
Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Below 1GHz					
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
Above 1GHz					
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	2021/11/10	2022/11/09
Audix	Test Software	E3	201021 (V9)	N/A	N/A

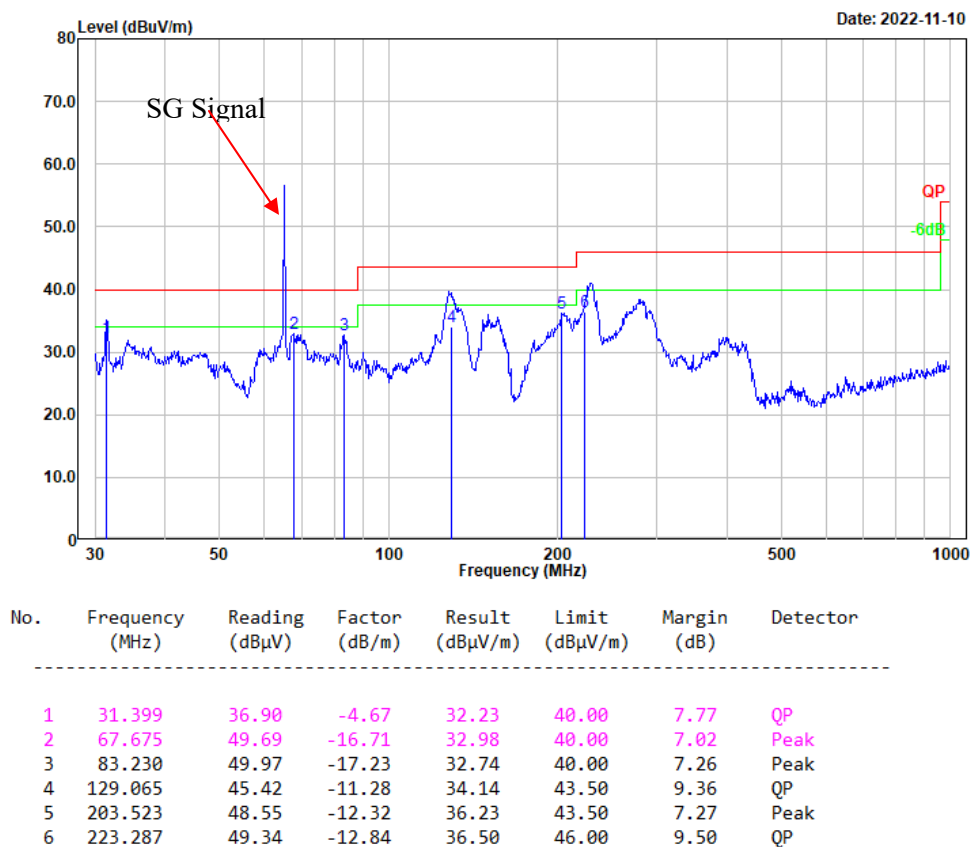
* Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

1) 30MHz-1GHz:
FM Broadcast Receiving 65.1 MHz:

Polarization: horizontal
Note:



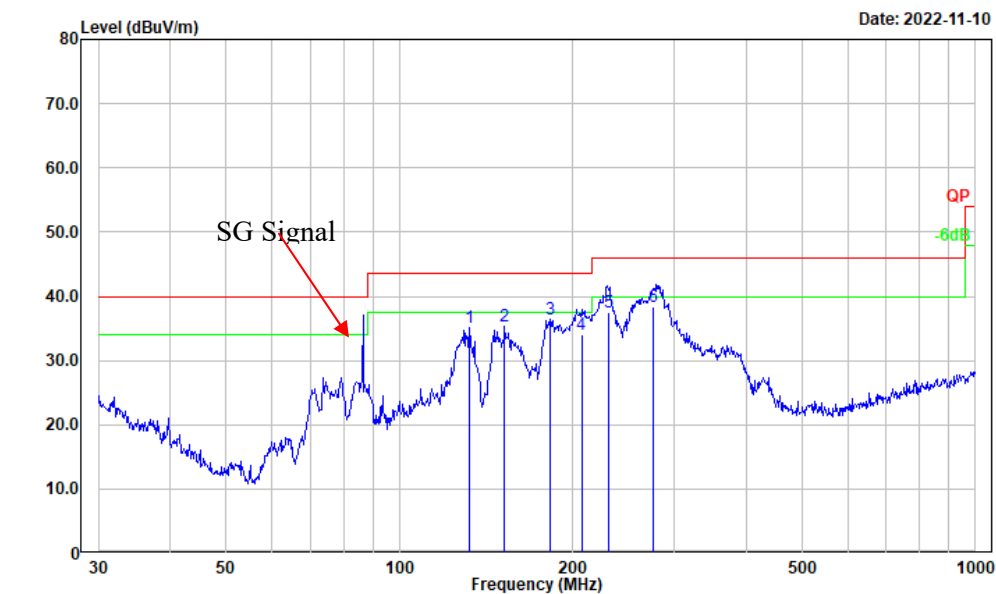
Polarization: vertical
Note:



FM Broadcast Receiving 86.5 MHz:

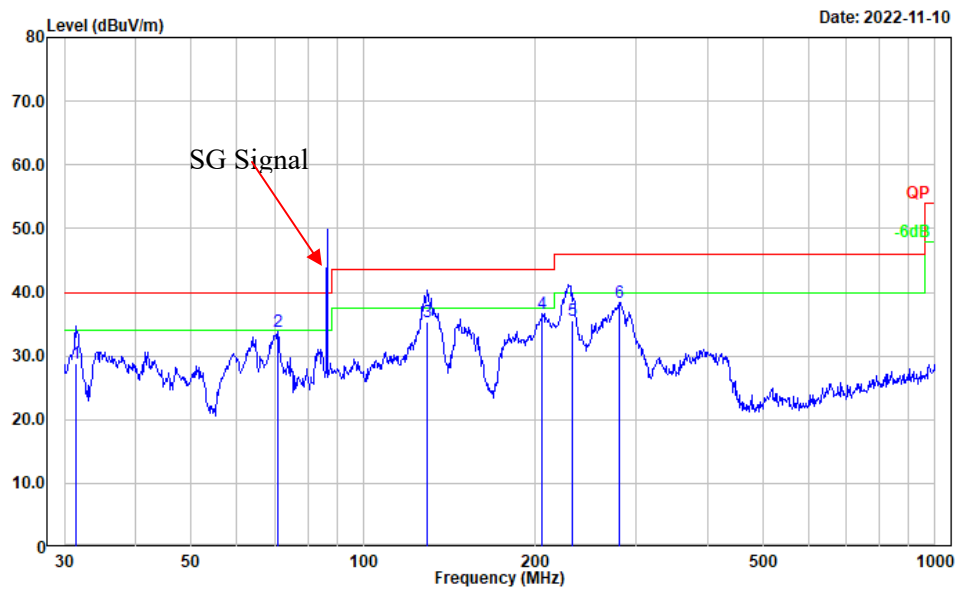
Polarization: horizontal

Note:



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	132.221	46.47	-11.42	35.05	43.50	8.45	Peak
2	152.130	47.32	-12.02	35.30	43.50	8.20	Peak
3	182.559	50.07	-13.60	36.47	43.50	7.03	Peak
4	206.998	46.47	-12.40	34.07	43.50	9.43	QP
5	230.750	50.50	-13.00	37.50	46.00	8.50	QP
6	276.234	50.26	-11.84	38.42	46.00	7.58	QP

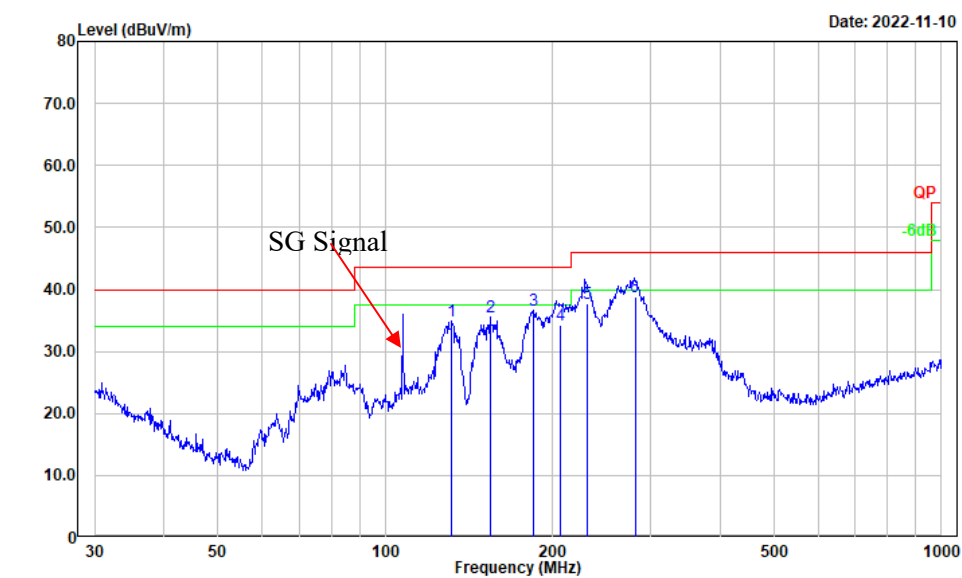
Polarization: vertical
Note:



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	31.518	33.69	-4.75	28.94	40.00	11.06	QP
2	70.832	50.35	-16.55	33.80	40.00	6.20	Peak
3	129.376	46.59	-11.28	35.31	43.50	8.19	QP
4	205.675	49.01	-12.37	36.64	43.50	6.86	Peak
5	231.476	48.60	-13.01	35.59	46.00	10.41	QP
6	281.008	49.99	-11.60	38.39	46.00	7.61	Peak

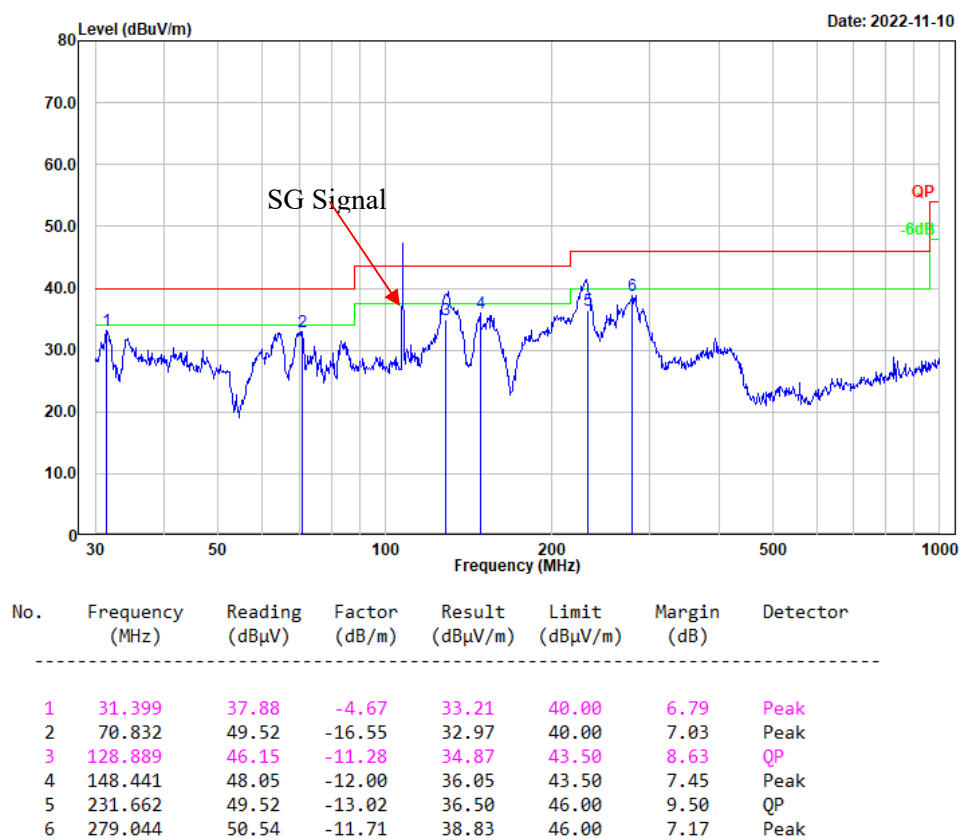
FM Broadcast Receiving 107.9 MHz:

Polarization: horizontal
Note:



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	131.758	46.40	-11.39	35.01	43.50	8.49	Peak
2	154.279	47.50	-12.03	35.47	43.50	8.03	Peak
3	184.490	50.25	-13.58	36.67	43.50	6.83	Peak
4	205.947	46.74	-12.38	34.36	43.50	9.14	QP
5	230.380	50.65	-13.00	37.65	46.00	8.35	QP
6	281.176	50.36	-11.58	38.78	46.00	7.22	QP

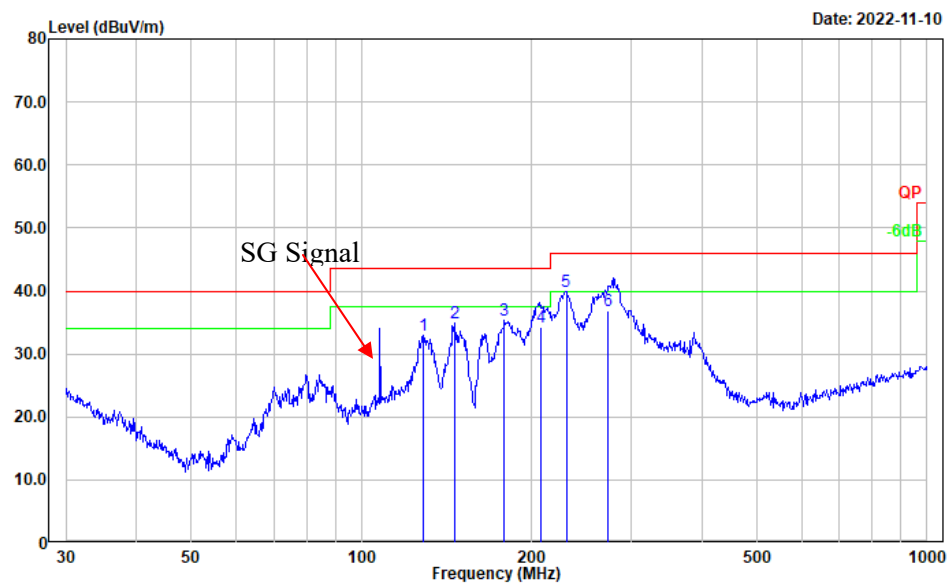
Polarization: vertical
Note:



AM Receiving 108MHz:

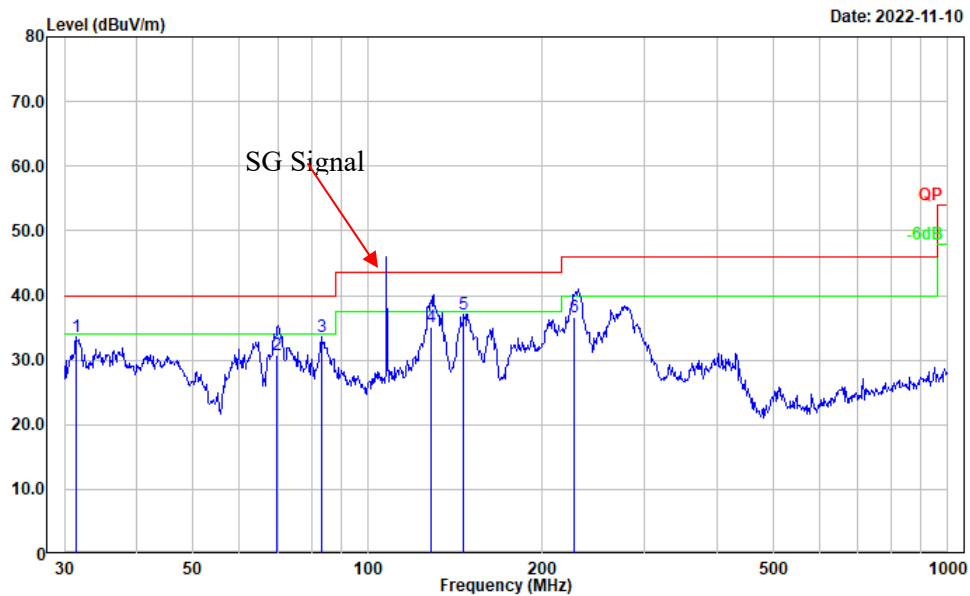
Polarization: horizontal

Note:



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	128.563	44.33	-11.28	33.05	43.50	10.45	Peak
2	146.374	46.85	-11.98	34.87	43.50	8.63	Peak
3	178.758	48.80	-13.55	35.25	43.50	8.25	Peak
4	207.932	46.66	-12.43	34.23	43.50	9.27	QP
5	230.099	52.98	-12.99	39.99	46.00	6.01	Peak
6	272.723	48.82	-11.99	36.83	46.00	9.17	QP

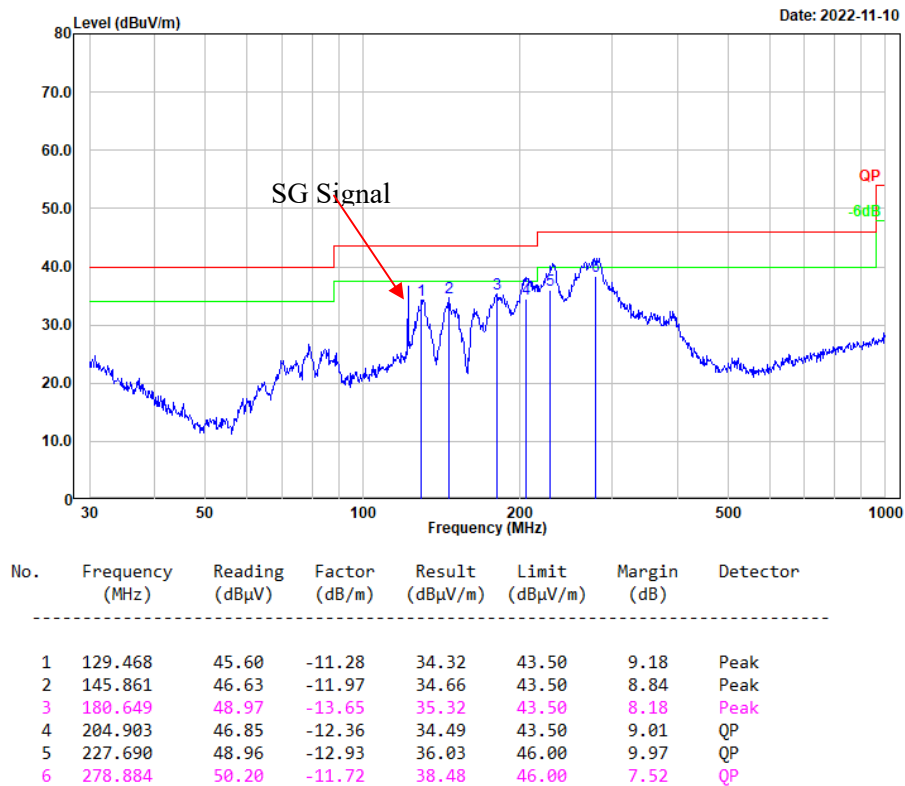
Polarization: vertical
Note:



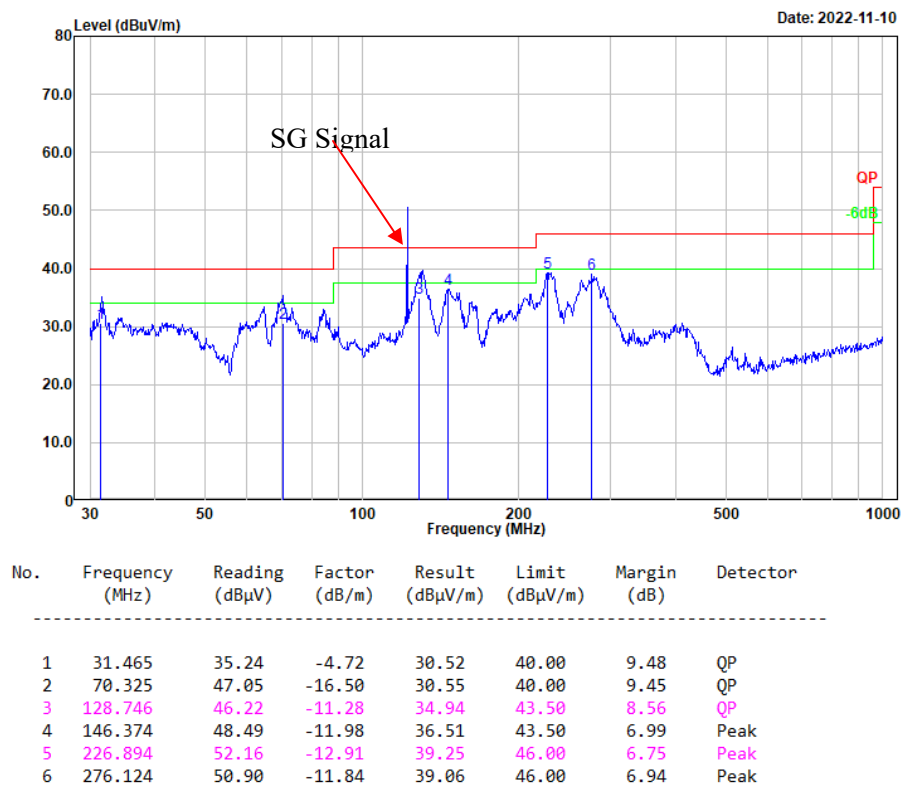
No.	Frequency (MHz)	Reading (dB μ V)	Factor (dB/m)	Result (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector
1	31.399	38.23	-4.67	33.56	40.00	6.44	Peak
2	69.768	47.22	-16.49	30.73	40.00	9.27	QP
3	83.230	50.77	-17.23	33.54	40.00	6.46	Peak
4	128.895	46.35	-11.28	35.07	43.50	8.43	QP
5	146.374	49.09	-11.98	37.11	43.50	6.39	Peak
6	227.151	49.47	-12.92	36.55	46.00	9.45	QP

AM Receiving 122MHz:

Polarization: horizontal
Note:

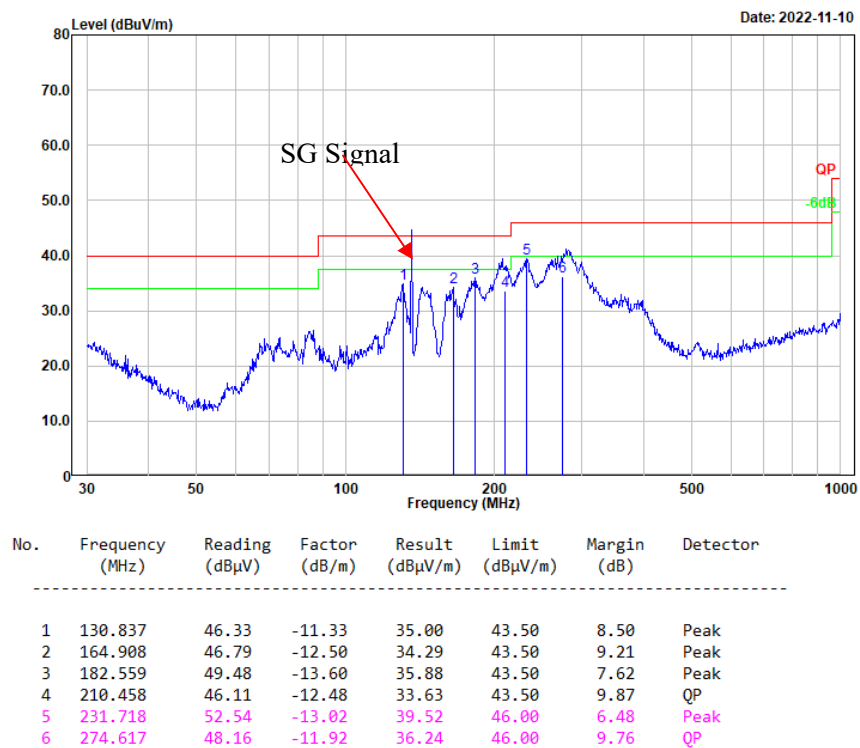


Polarization: vertical
Note:

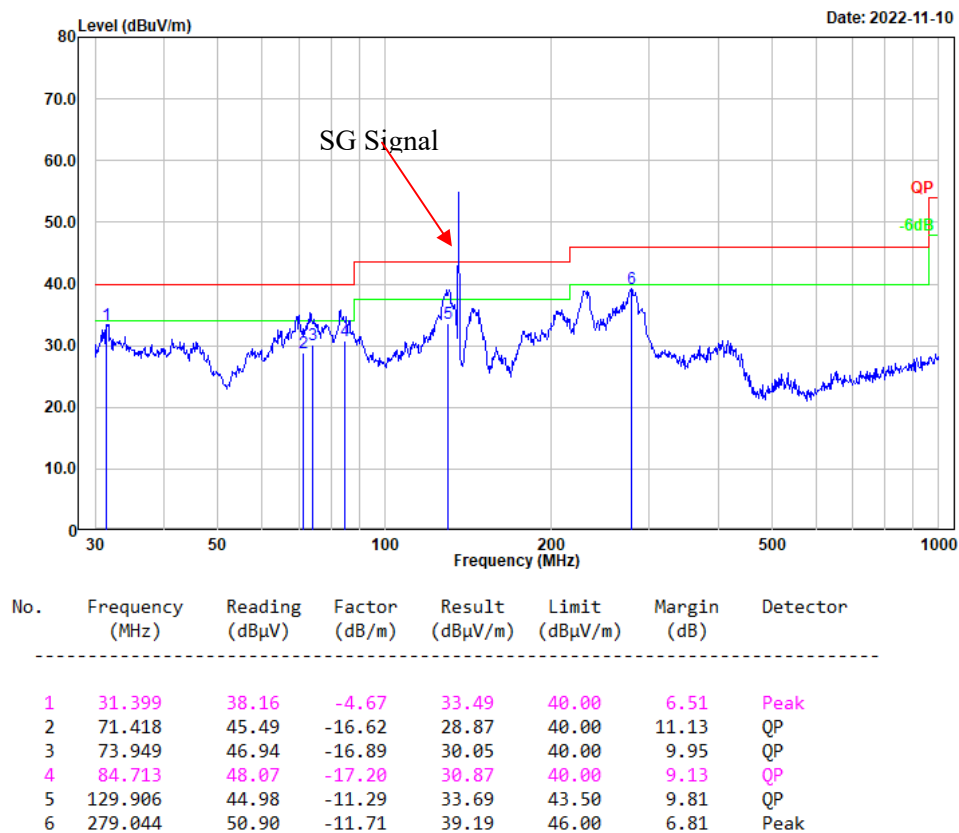


AM Receiving 135.9875MHz:

Polarization: horizontal
Note:

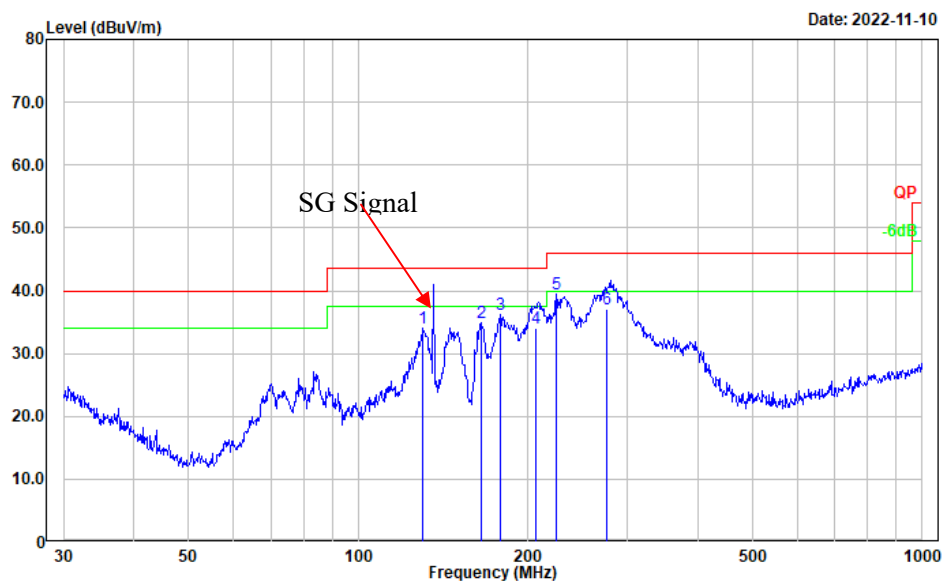


Polarization: vertical
Note:



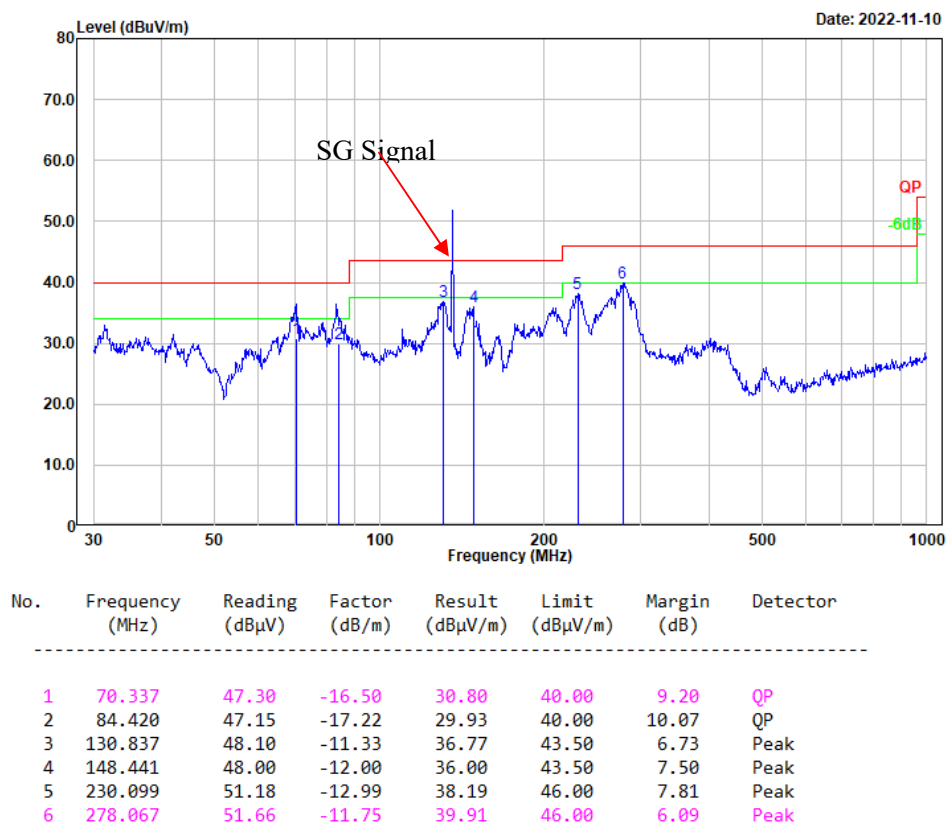
VHF Receiving 136MHz:

Polarization: horizontal
Note:



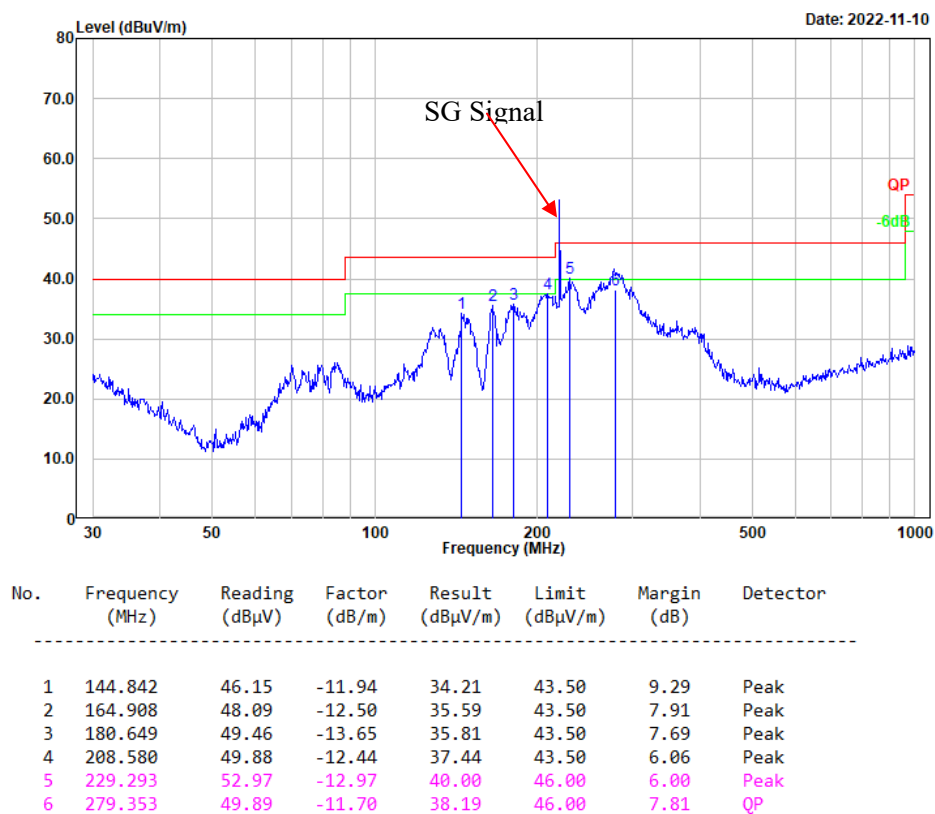
No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBUV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	130.379	45.32	-11.31	34.01	43.50	9.49	Peak
2	164.908	47.31	-12.50	34.81	43.50	8.69	Peak
3	178.758	49.69	-13.55	36.14	43.50	7.36	Peak
4	205.988	46.47	-12.38	34.09	43.50	9.41	QP
5	224.519	52.22	-12.85	39.37	46.00	6.63	Peak
6	276.118	48.85	-11.84	37.01	46.00	8.99	QP

Polarization: vertical
Note:

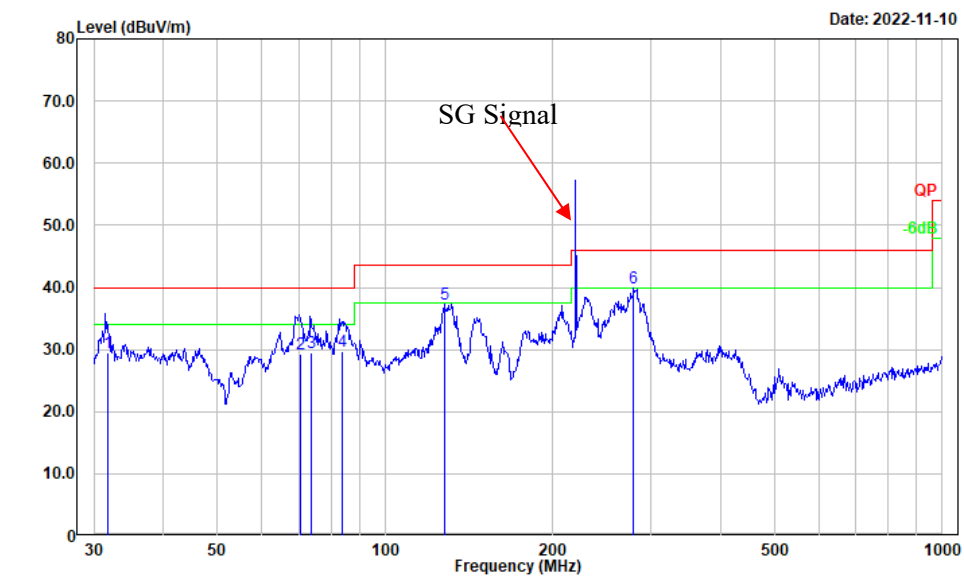


VHF Receiving 220MHz:

Polarization: horizontal
Note:



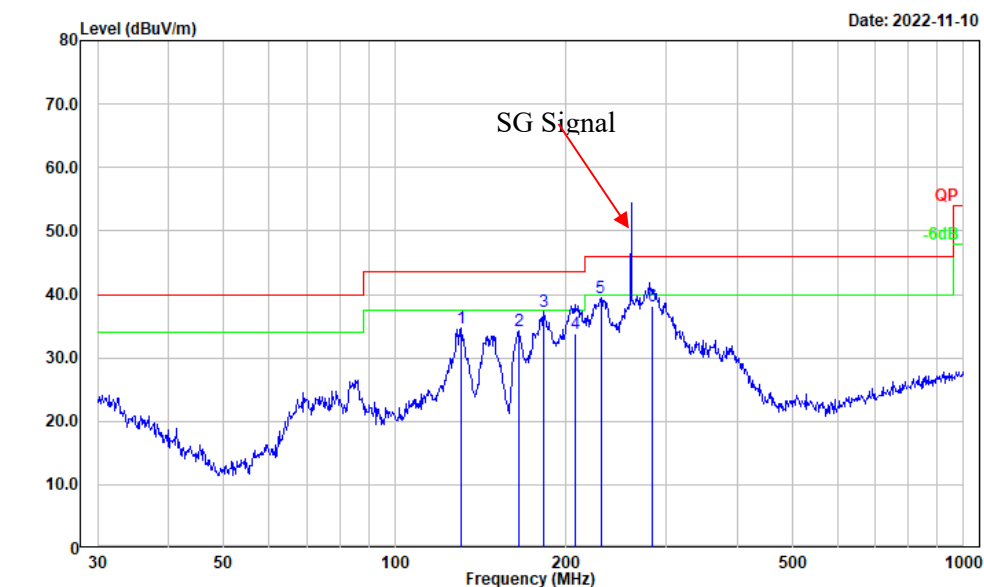
Polarization: vertical
Note:



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	31.823	34.37	-4.99	29.38	40.00	10.62	QP
2	70.404	45.78	-16.51	29.27	40.00	10.73	QP
3	73.808	46.36	-16.87	29.49	40.00	10.51	QP
4	83.754	47.05	-17.24	29.81	40.00	10.19	QP
5	127.665	48.52	-11.30	37.22	43.50	6.28	Peak
6	279.044	51.71	-11.71	40.00	46.00	6.00	Peak

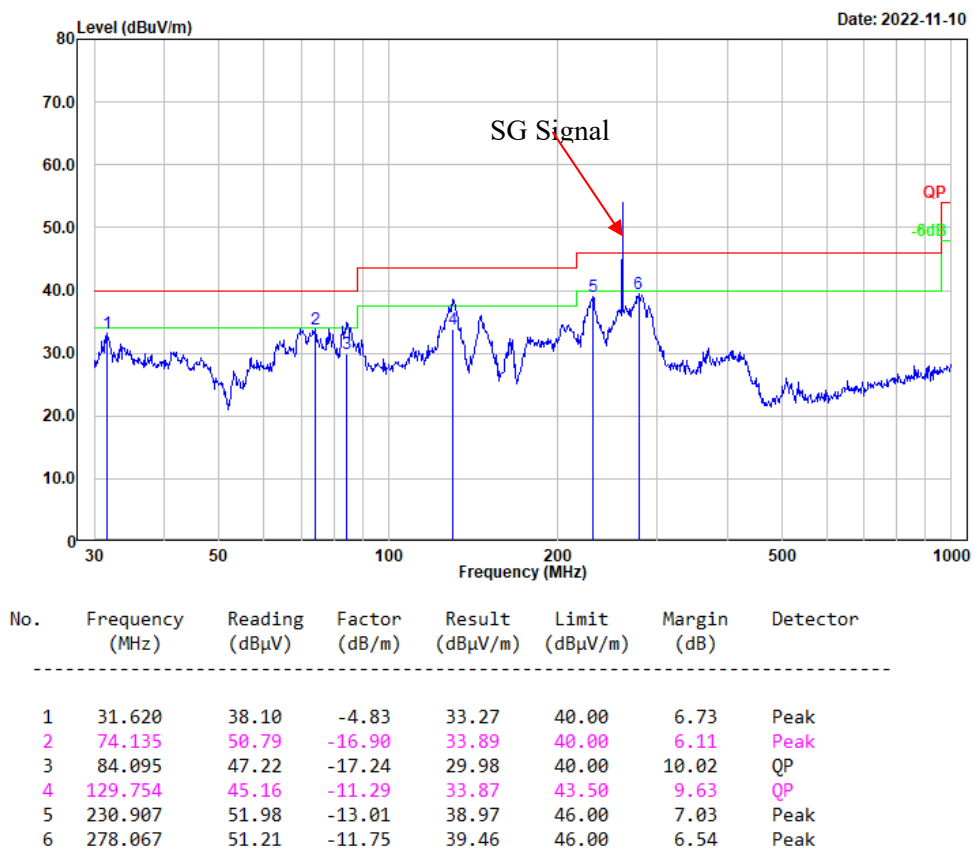
VHF Receiving 260MHz:

Polarization: horizontal
Note:



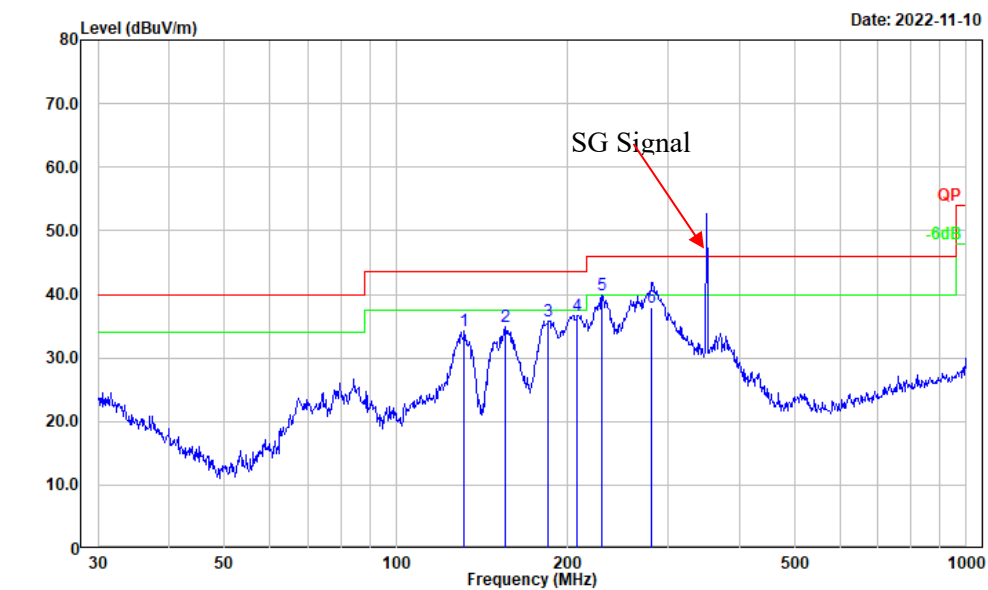
No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	130.837	46.01	-11.33	34.68	43.50	8.82	Peak
2	165.487	46.74	-12.51	34.23	43.50	9.27	Peak
3	182.559	50.86	-13.60	37.26	43.50	6.24	Peak
4	207.917	46.24	-12.43	33.81	43.50	9.69	QP
5	230.099	52.40	-12.99	39.41	46.00	6.59	Peak
6	282.995	49.55	-11.47	38.08	46.00	7.92	QP

Polarization: vertical
Note:



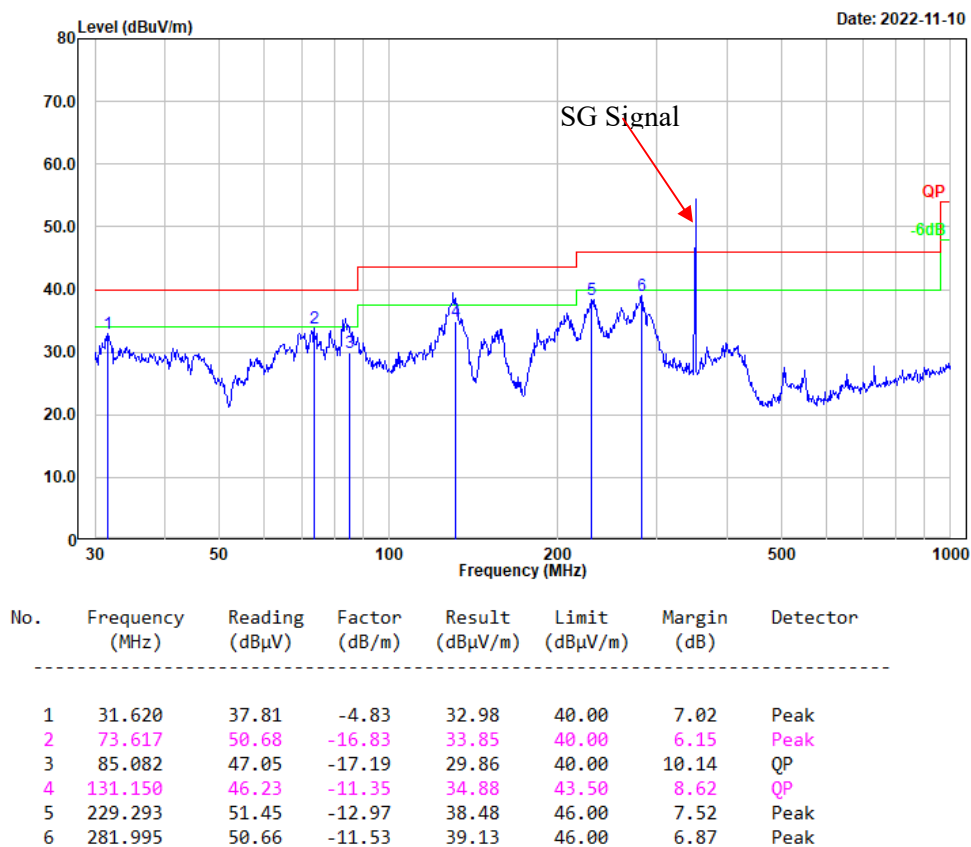
UHF Receiving 350MHz:

Polarization: horizontal
Note:



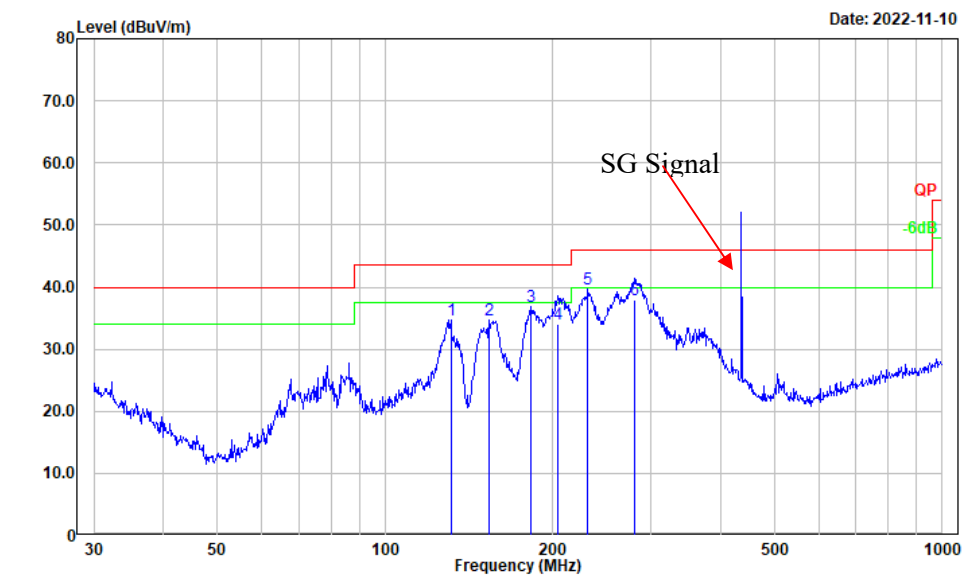
No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	131.758	45.71	-11.39	34.32	43.50	9.18	Peak
2	155.364	47.05	-12.06	34.99	43.50	8.51	Peak
3	185.138	49.41	-13.56	35.85	43.50	7.65	Peak
4	207.850	49.11	-12.43	36.68	43.50	6.82	Peak
5	229.293	52.79	-12.97	39.82	46.00	6.18	Peak
6	280.277	49.50	-11.65	37.85	46.00	8.15	QP

Polarization: vertical
Note:



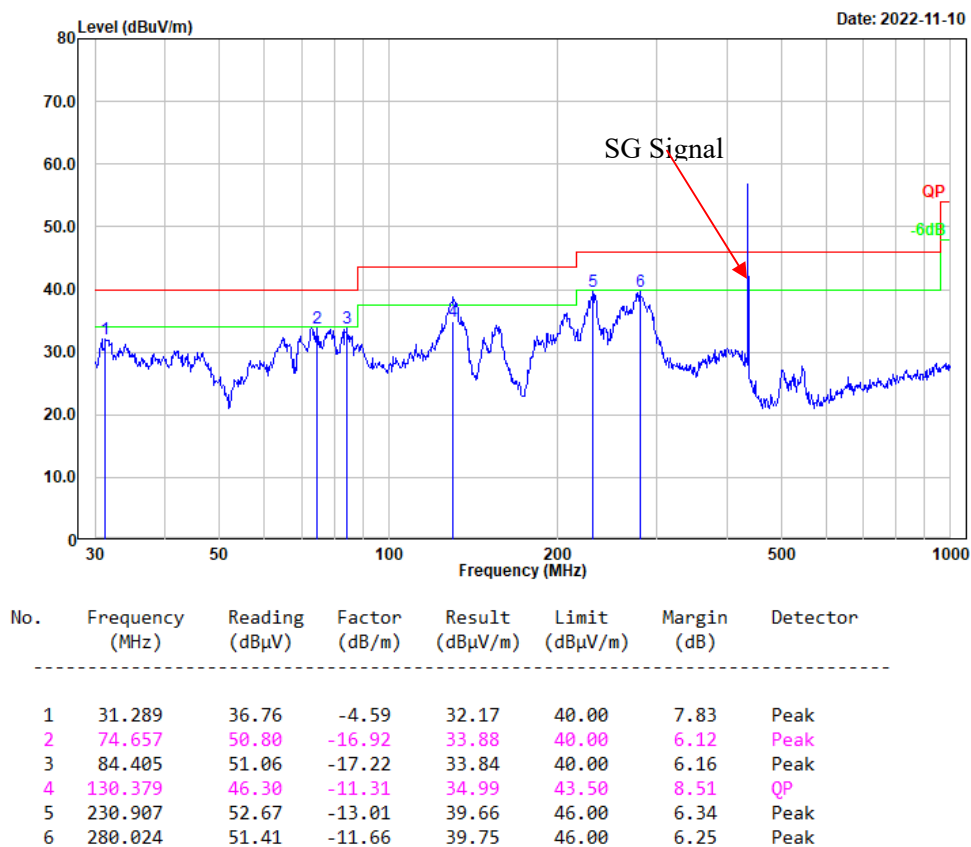
UHF Receiving 435MHz:

Polarization: horizontal
Note:



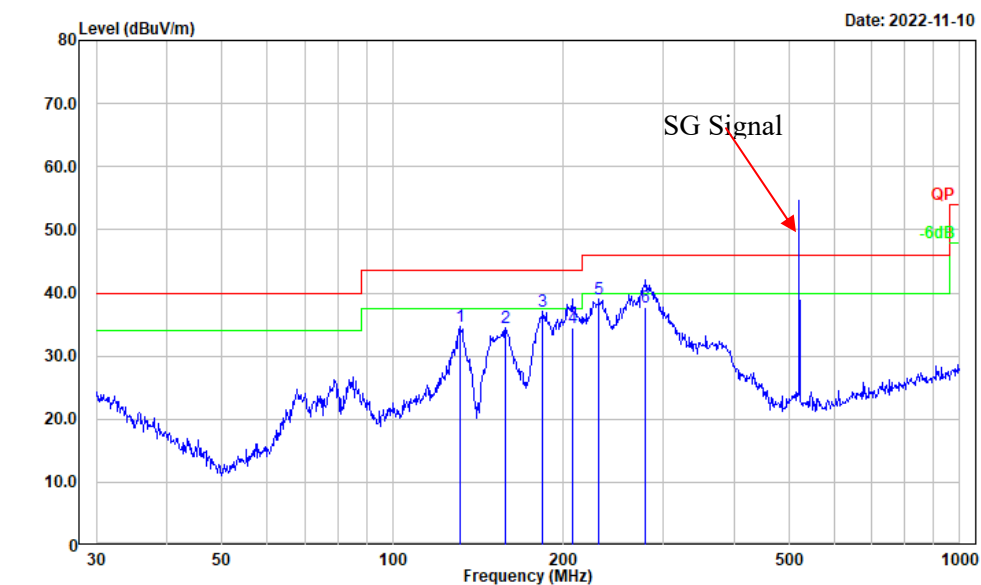
No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	131.297	46.06	-11.36	34.70	43.50	8.80	Peak
2	153.739	46.77	-12.01	34.76	43.50	8.74	Peak
3	182.559	50.47	-13.60	36.87	43.50	6.63	Peak
4	204.238	46.34	-12.33	34.01	43.50	9.49	QP
5	230.907	52.69	-13.01	39.68	46.00	6.32	Peak
6	280.024	49.68	-11.66	38.02	46.00	7.98	QP

Polarization: vertical
Note:



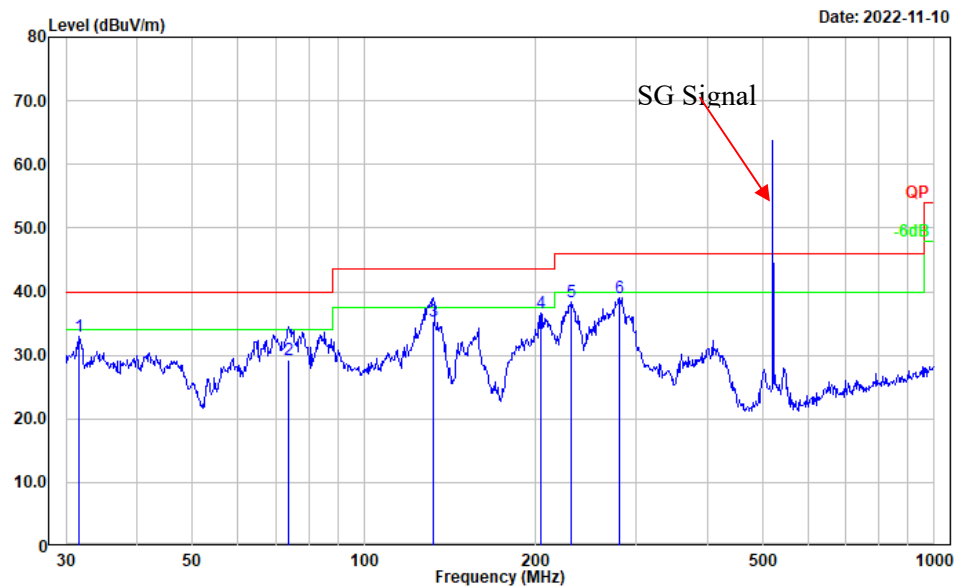
UHF Receiving 520MHz:

Polarization: horizontal
Note:



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	131.758	46.16	-11.39	34.77	43.50	8.73	Peak
2	158.112	46.55	-12.06	34.49	43.50	9.01	Peak
3	183.844	50.63	-13.58	37.05	43.50	6.45	Peak
4	207.123	46.91	-12.40	34.51	43.50	8.99	QP
5	230.907	52.11	-13.01	39.10	46.00	6.90	Peak
6	279.044	49.34	-11.71	37.63	46.00	8.37	QP

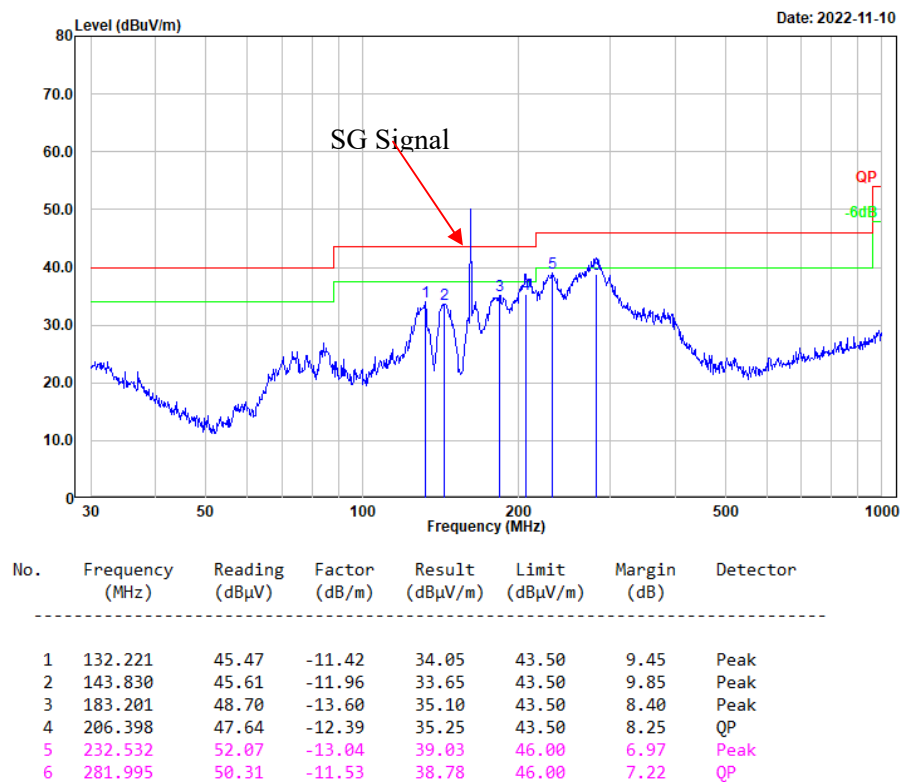
Polarization: vertical
Note:



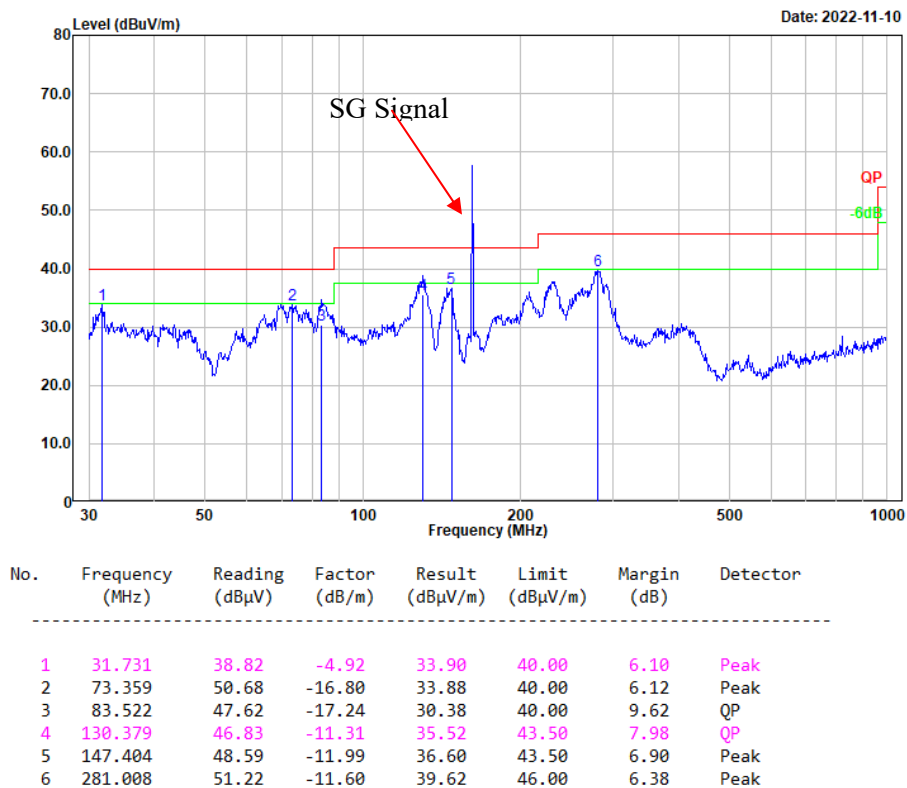
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	31.620	37.77	-4.83	32.94	40.00	7.06	Peak
2	73.617	46.13	-16.83	29.30	40.00	10.70	QP
3	132.221	46.73	-11.42	35.31	43.50	8.19	QP
4	204.238	49.05	-12.33	36.72	43.50	6.78	Peak
5	230.907	51.33	-13.01	38.32	46.00	7.68	Peak
6	280.024	50.79	-11.66	39.13	46.00	6.87	Peak

NOAA Receiving 161.65MHz:

Polarization: horizontal
Note:

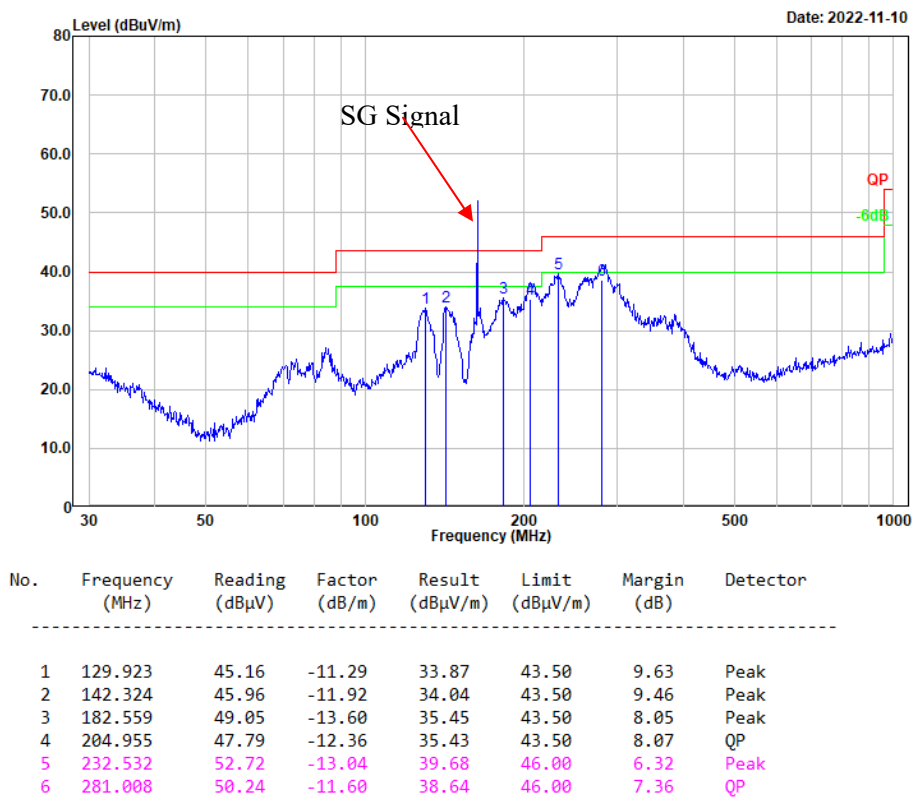


Polarization: vertical
Note:

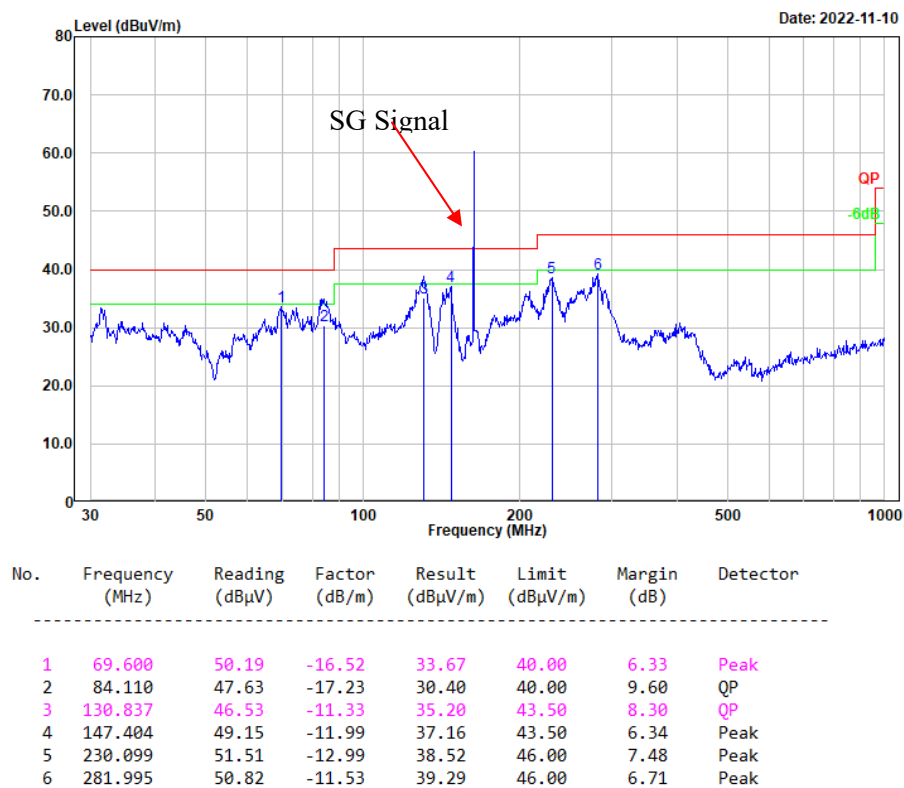


NOAA Receiving 163.275MHz:

Polarization: horizontal
Note:

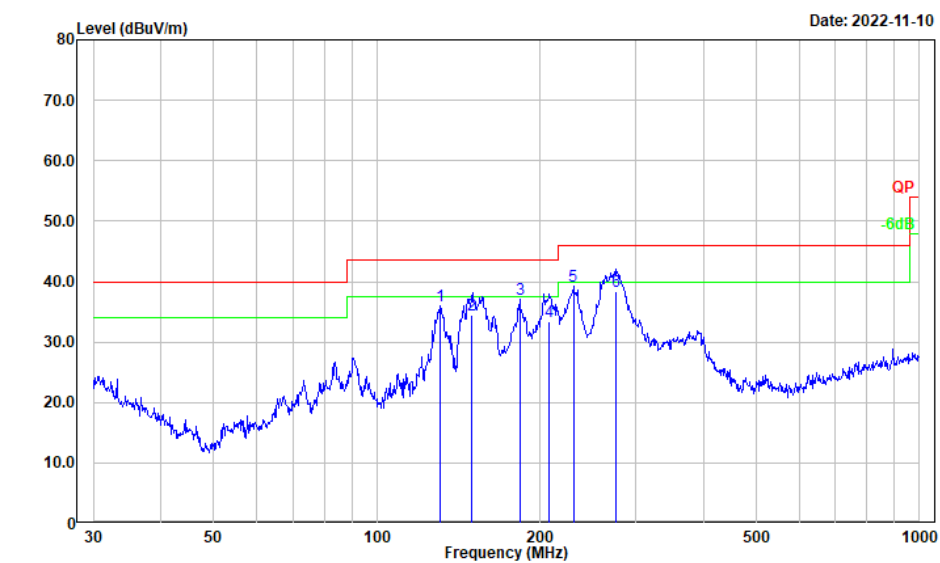


Polarization: vertical
Note:



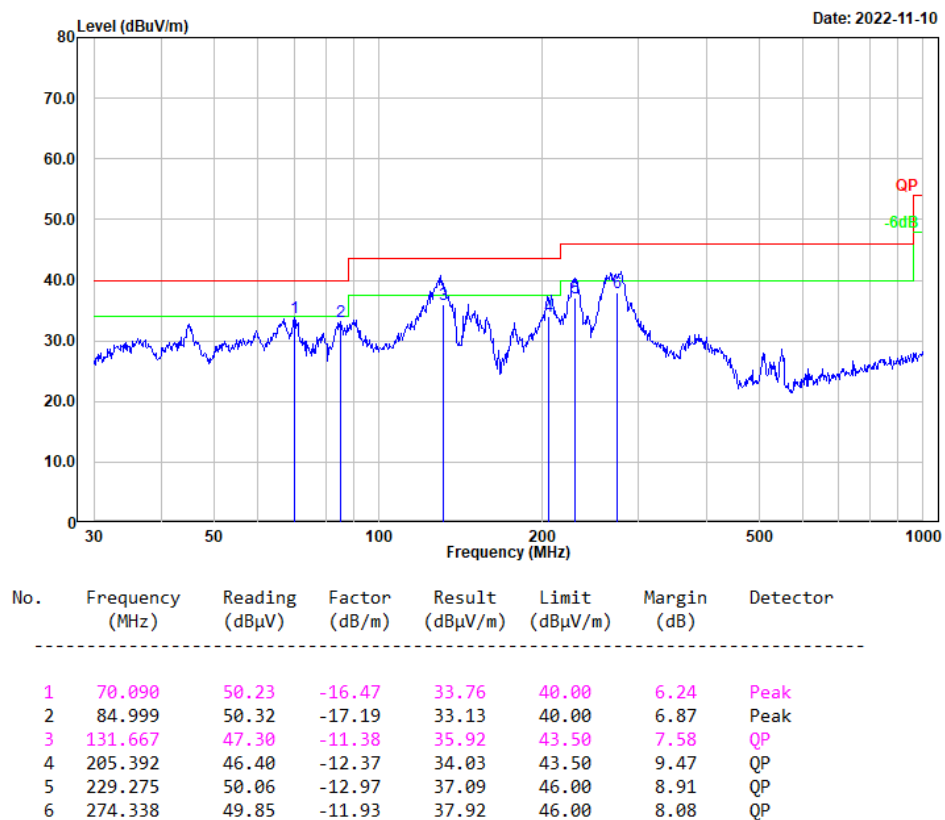
Scanning:

Polarization: horizontal
Note:



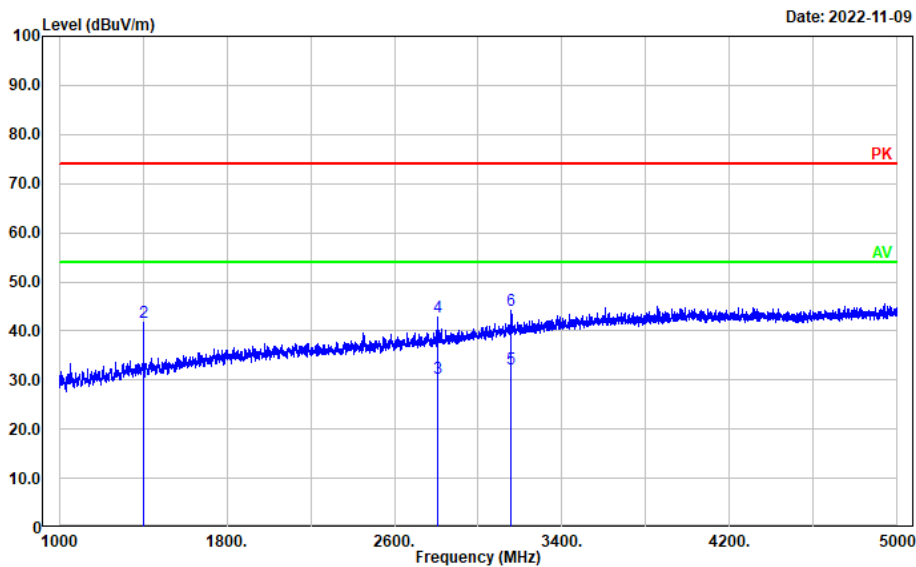
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	130.837	47.28	-11.33	35.95	43.50	7.55	Peak
2	149.765	46.43	-12.00	34.43	43.50	9.07	QP
3	183.201	50.64	-13.60	37.04	43.50	6.46	Peak
4	207.634	45.88	-12.43	33.45	43.50	10.05	QP
5	230.099	52.32	-12.99	39.33	46.00	6.67	Peak
6	276.388	50.29	-11.84	38.45	46.00	7.55	QP

Polarization: vertical
Note:



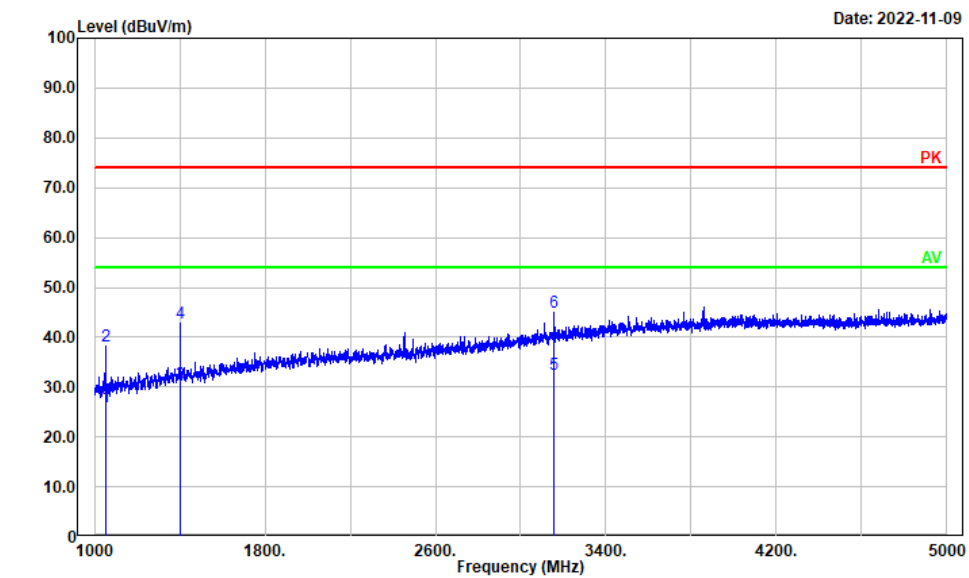
2) Above 1GHz(Worst mode is Scanning):

Polarization: horizontal
Note:



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	1403.281	30.26	-0.69	29.57	54.00	24.43	Average
2	1403.281	42.52	-0.69	41.83	74.00	32.17	Peak
3	2805.961	25.28	5.20	30.48	54.00	23.52	Average
4	2805.961	37.56	5.20	42.76	74.00	31.24	Peak
5	3155.631	25.10	7.09	32.19	54.00	21.81	Average
6	3155.631	37.20	7.09	44.29	74.00	29.71	Peak

Polarization: vertical
Note:



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	1052.010	28.30	-2.40	25.90	54.00	28.10	Average
2	1052.010	40.61	-2.40	38.21	74.00	35.79	Peak
3	1402.480	31.23	-0.69	30.54	54.00	23.46	Average
4	1402.480	43.45	-0.69	42.76	74.00	31.24	Peak
5	3157.231	25.42	7.09	32.51	54.00	21.49	Average
6	3157.231	37.85	7.09	44.94	74.00	29.06	Peak

4.3 Antenna Power Conduction Limits for Receivers

Serial Number:	1MOG-8	Test Date:	2022/11/30-2023/1/4
Test Site:	RF	Test Mode:	M1~M6
Tester:	Rinka Li	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	20.9~26.2	Relative Humidity: (%)	55~68	ATM Pressure: (kPa)	100.9~101.1
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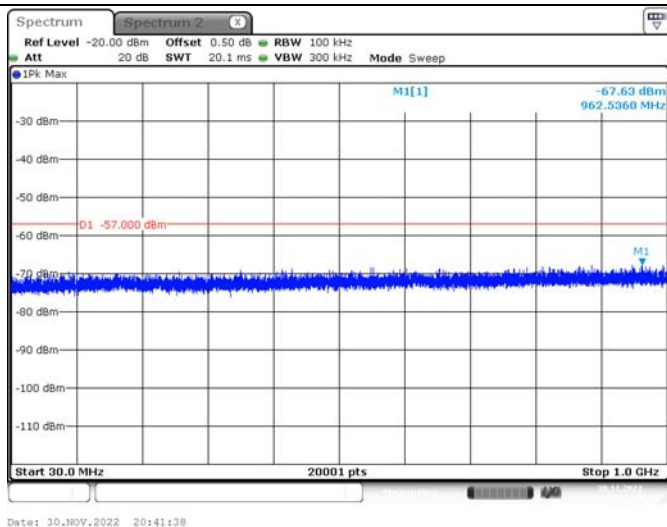
Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101474	2022/07/15	2023/07/14
Mini-Circuits	DC Block	BLK-18-S+	1554403	Each time	N/A

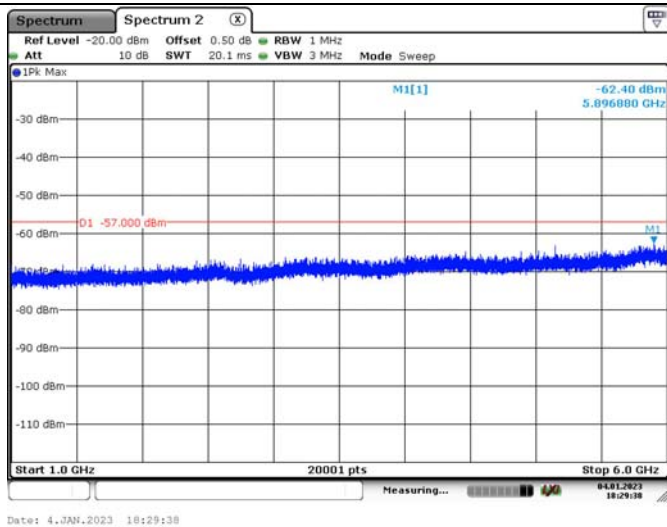
** Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

FM Broadcast Receiving 65.1MHz

30MHz -1GHz

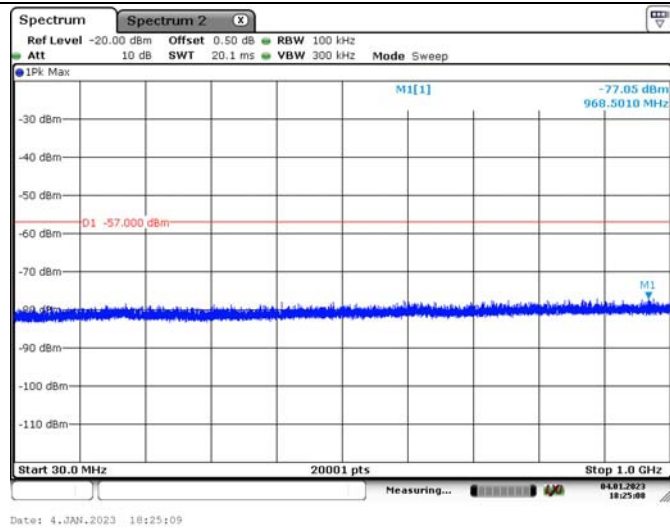


1GHz -6GHz

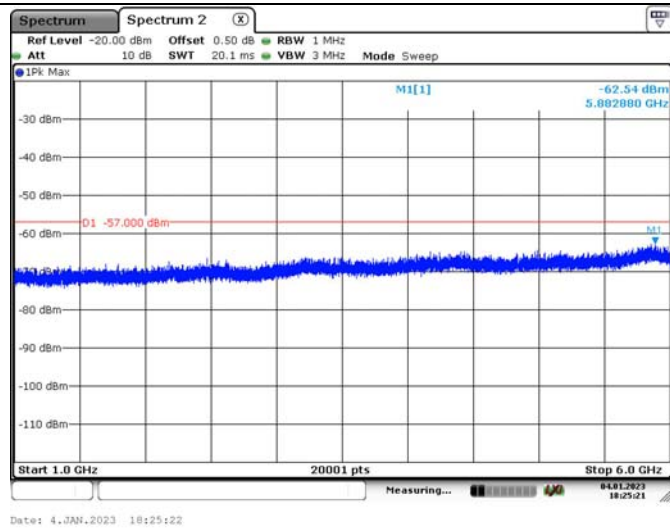


FM Broadcast Receiving 86.5MHz

30MHz -1GHz

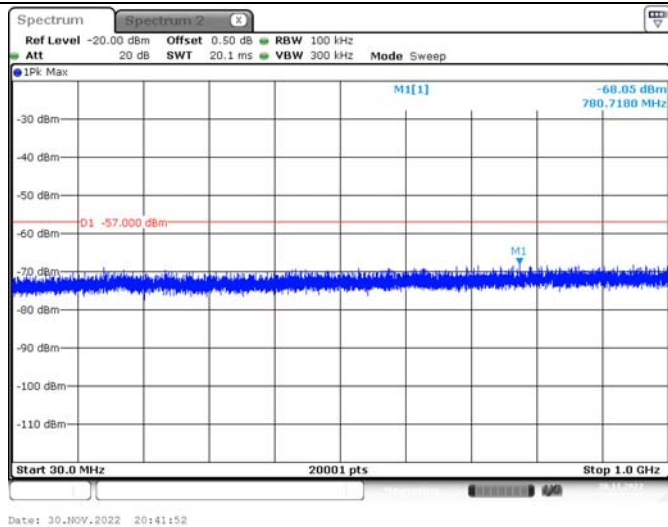


1GHz -6GHz

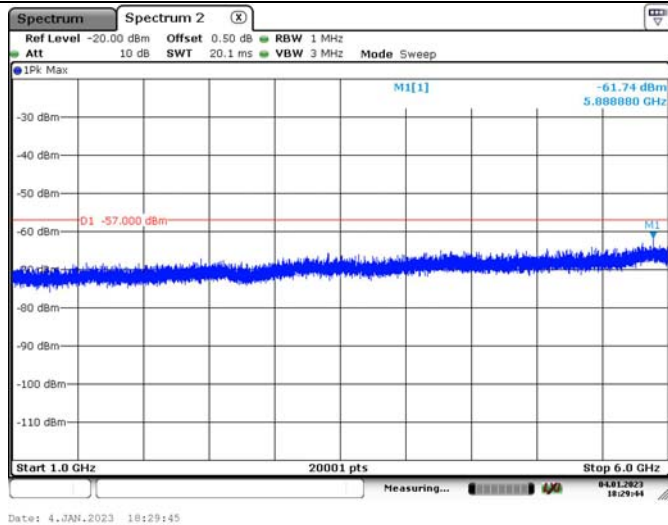


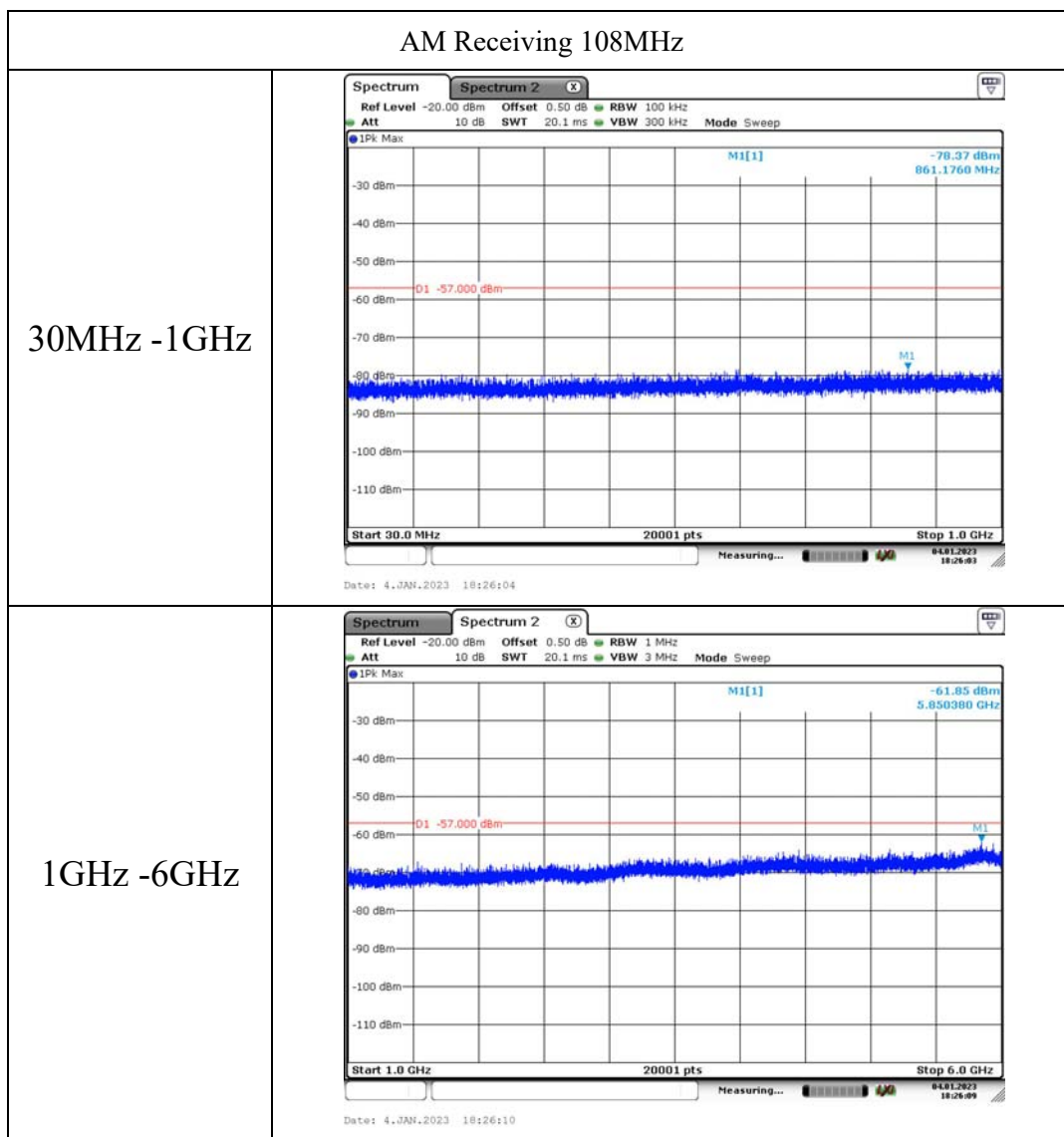
FM Broadcast Receiving 107.9MHz

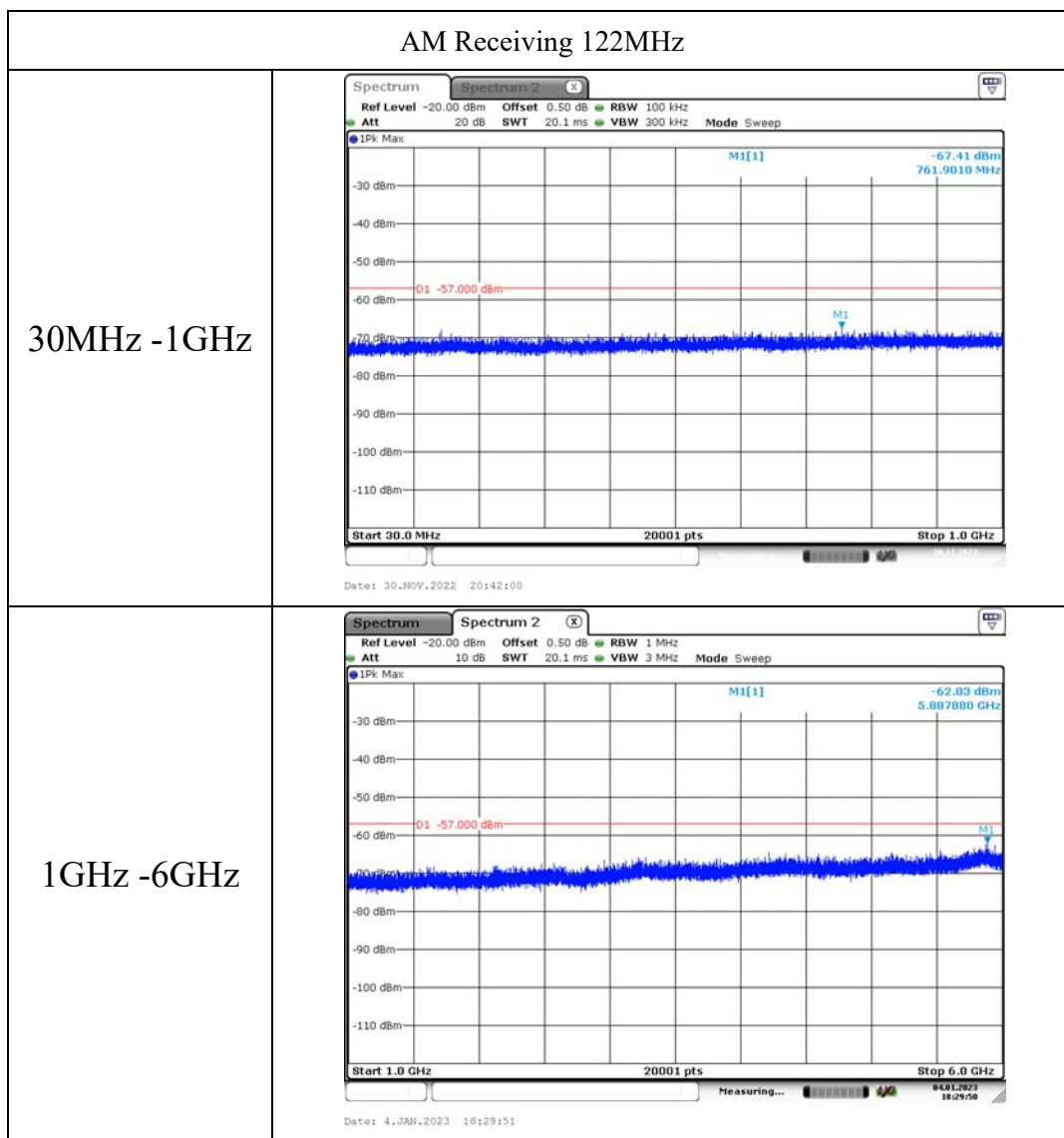
30MHz -1GHz

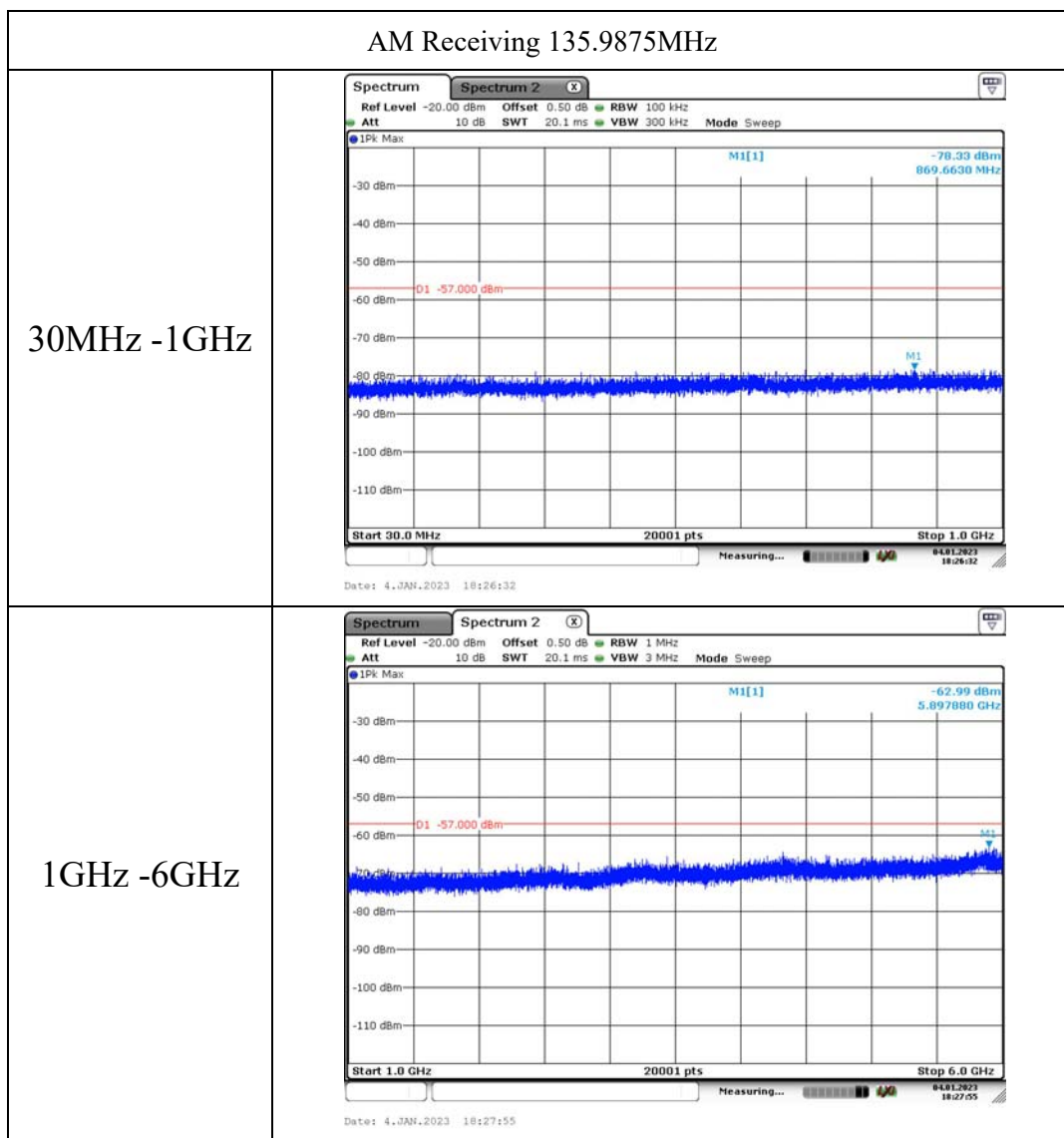


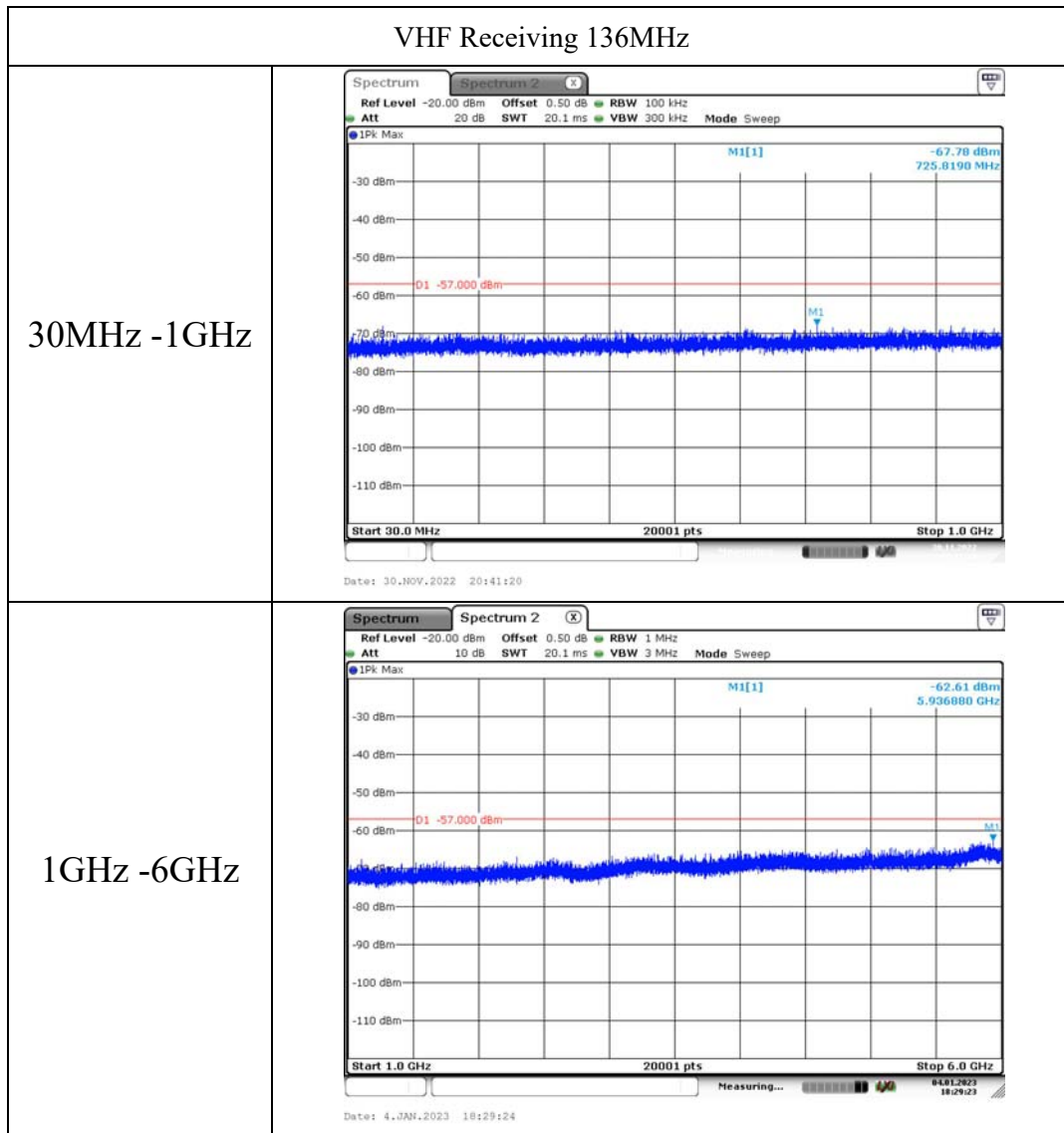
1GHz -6GHz

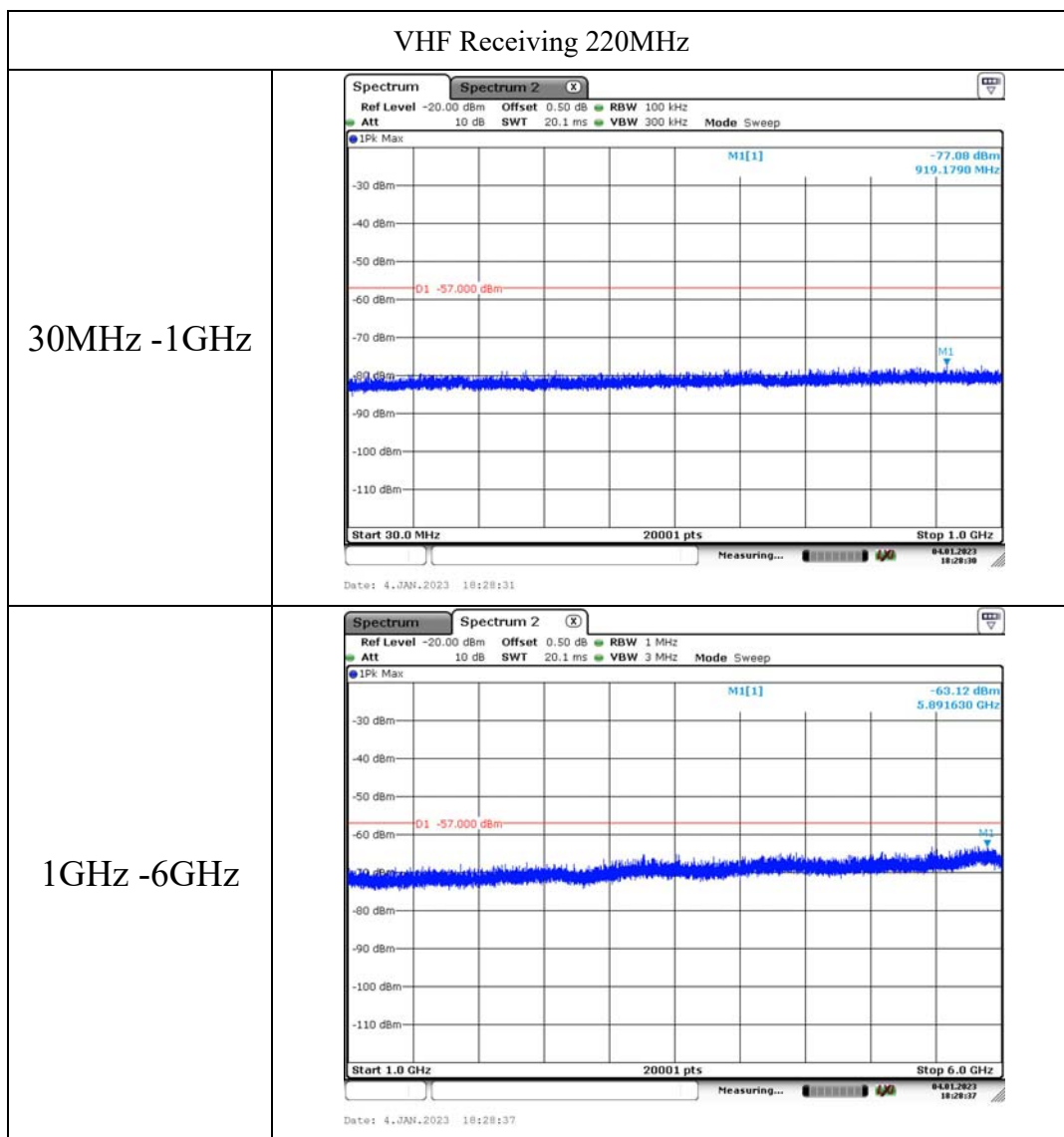


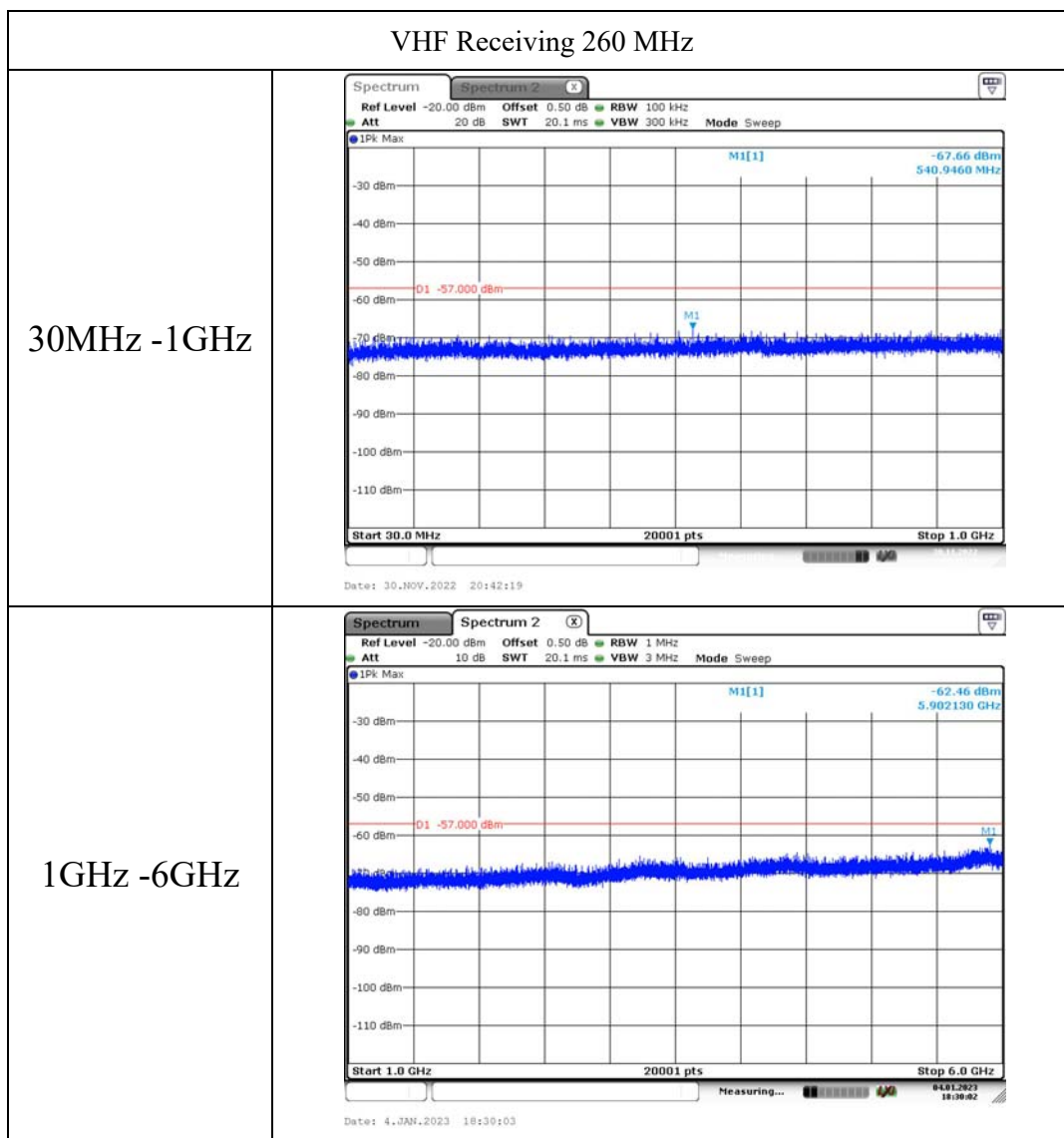


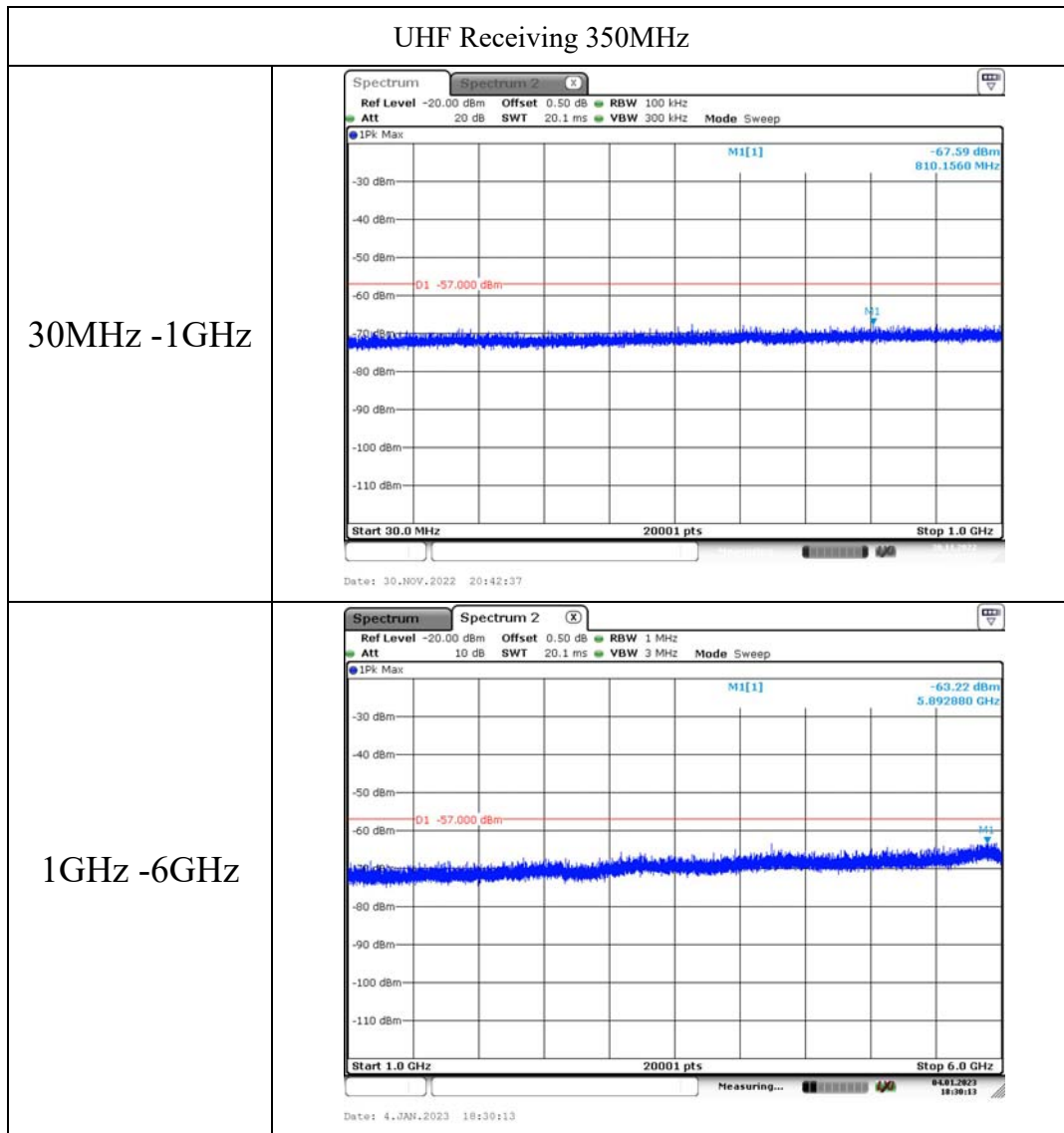


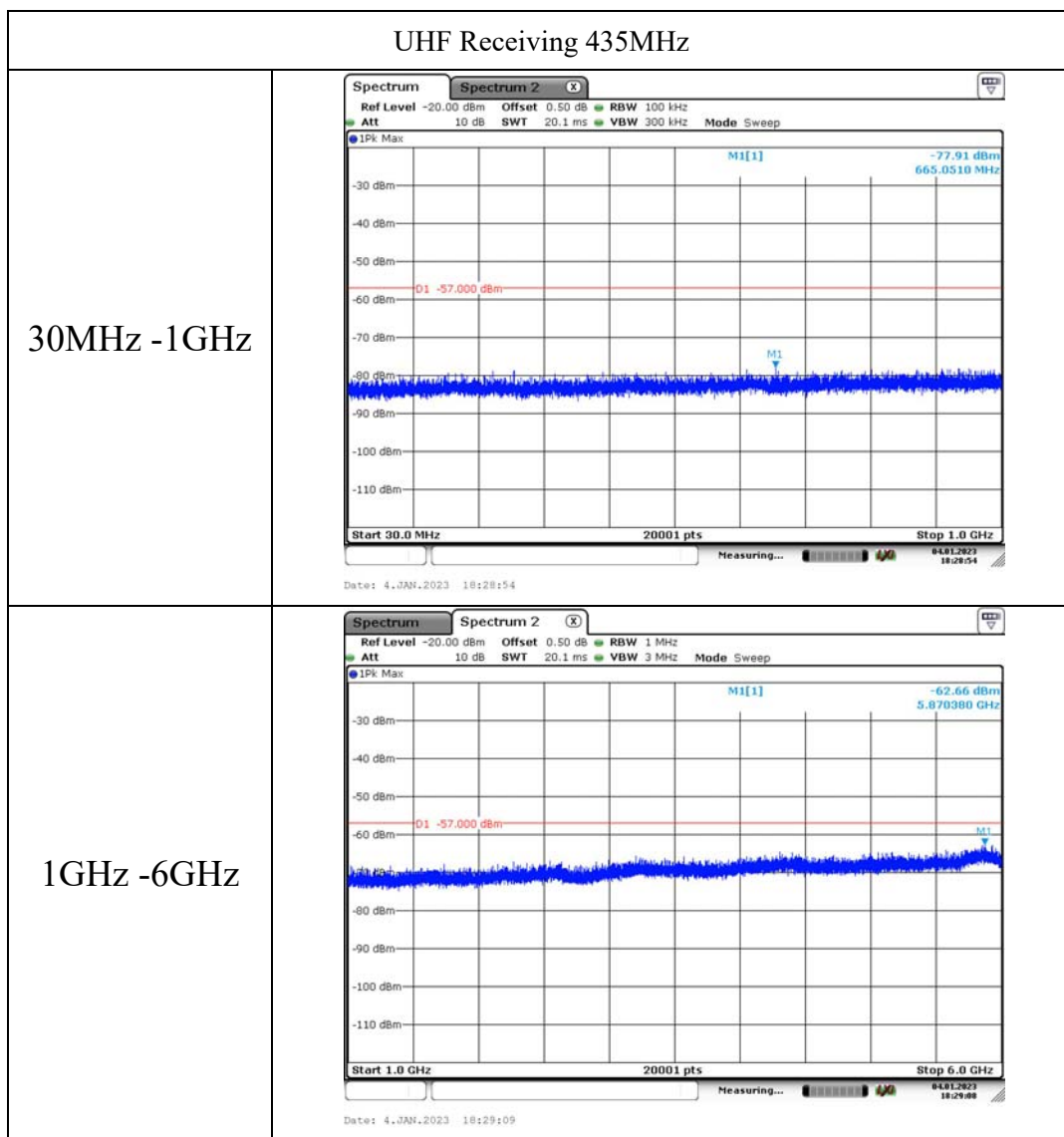


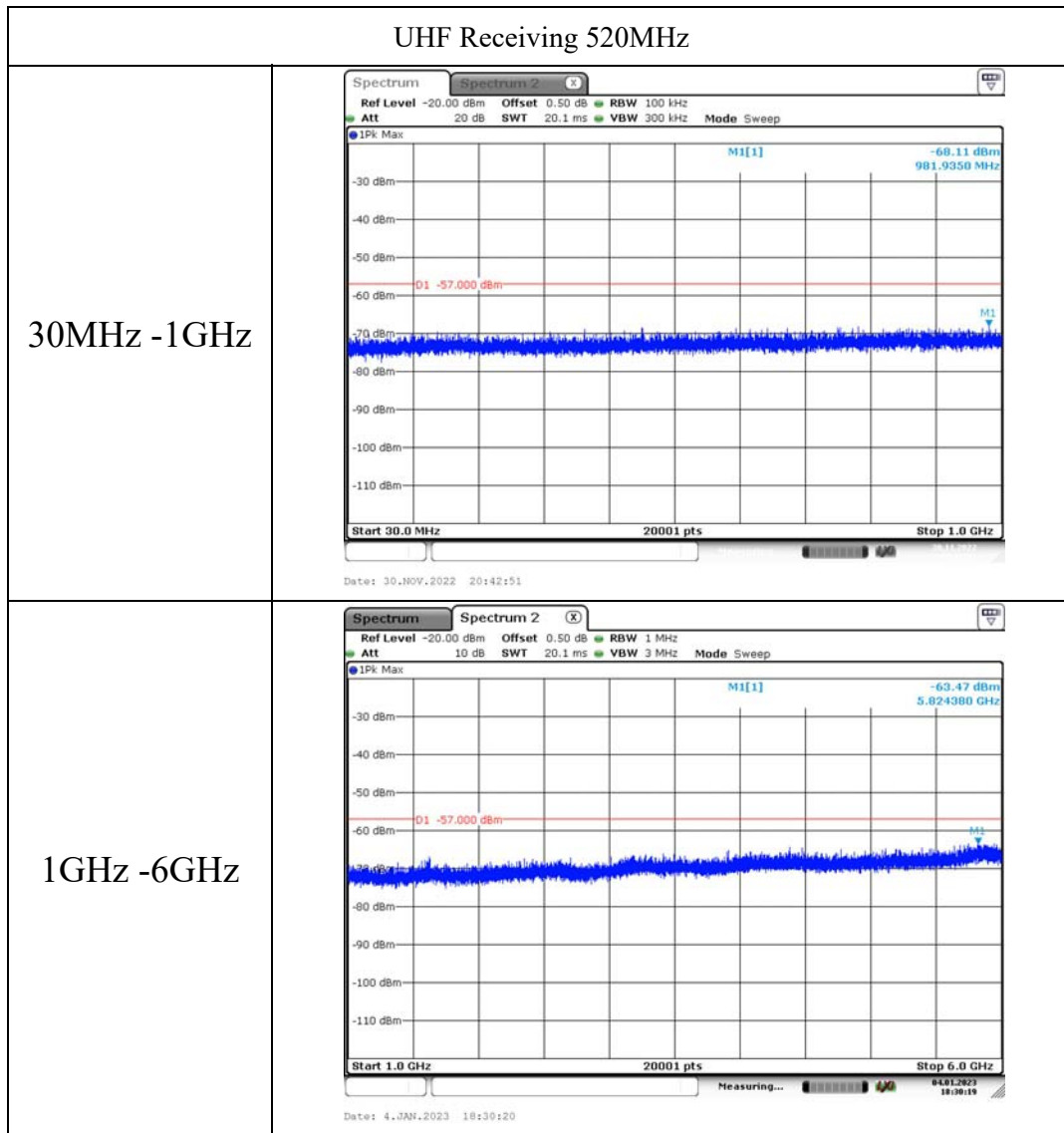


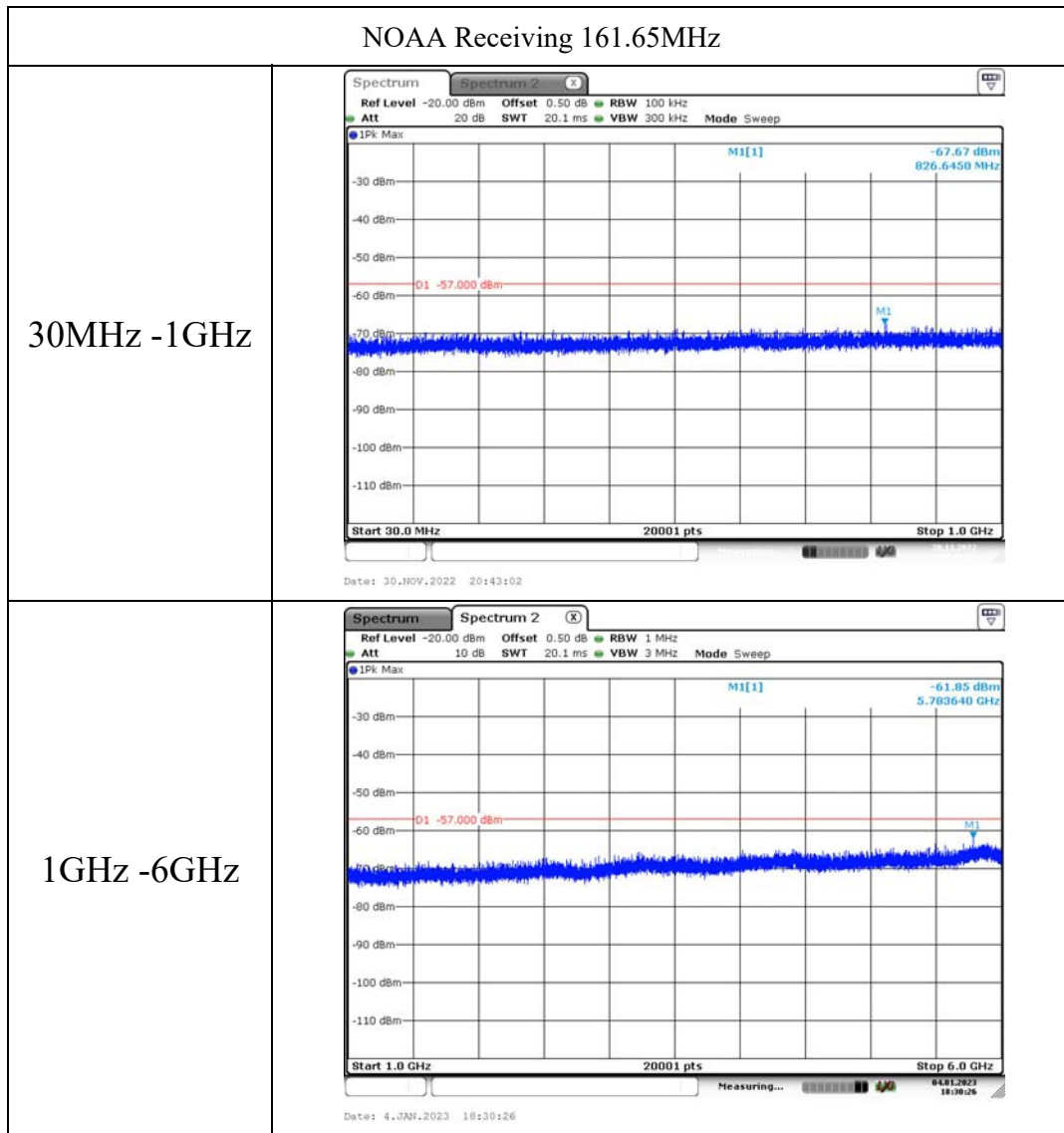






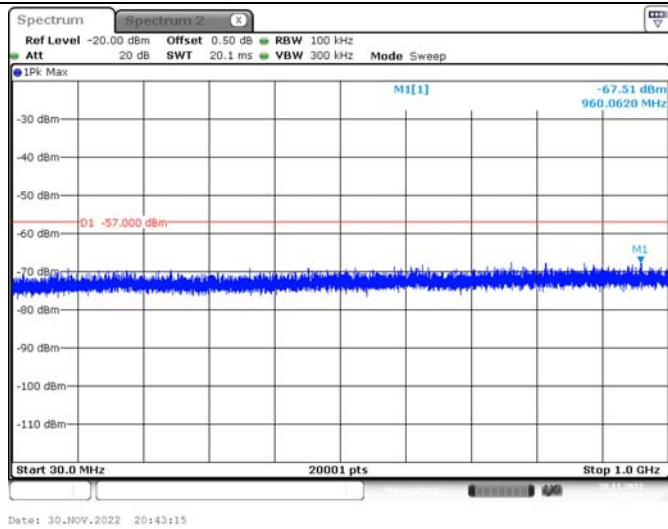




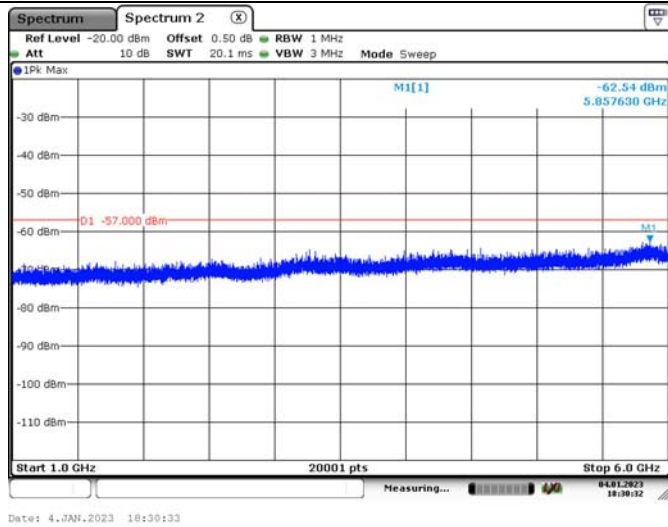


NOAA Receiving 163.275MHz

30MHz -1GHz

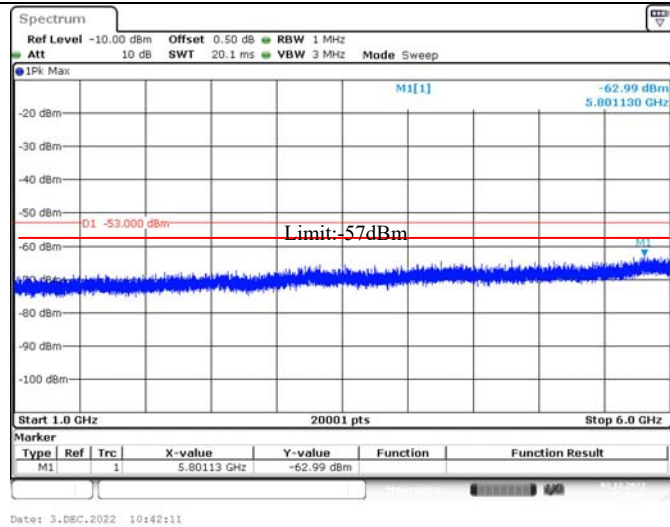


1GHz -6GHz

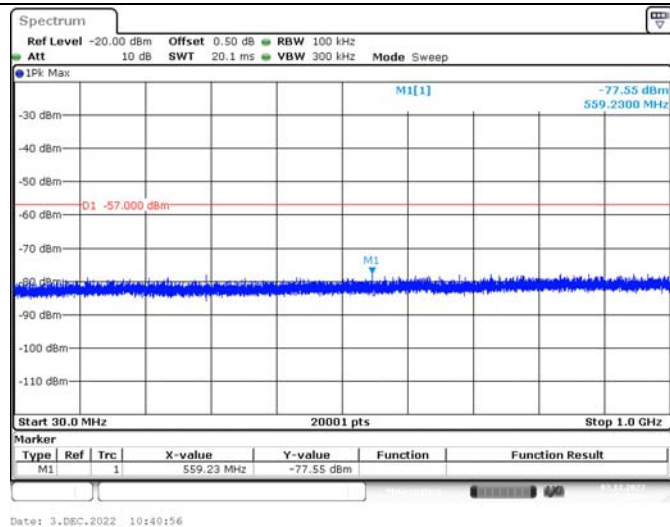


Scanning

30MHz -1GHz



1GHz -6GHz



4.3 Scanning Receivers and Frequency Converters Used with Scanning Receivers

Serial Number:	1MOG-8	Test Date:	2022/11/30
Test Site:	RF	Test Mode:	Scanning
Tester:	Rinka Li	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	26.2	Relative Humidity: (%)	68	ATM Pressure: (kPa)	101.1
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
HP	RF Communications Test Set	8920A	3438A05209	2022/07/15	2023/07/14
Agilent	Signal Generator	E8247C	MY43321352	2022/04/01	2023/03/31
zhuoxiang	Coaxial Cable	SMA-178	211002	Each time	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).*

Test Data:

Scanning Frequency Range	Test Frequency	Measurement Result (Worst Case)	Limit
MHz	MHz	dB	dB
136-520	824, 836, 849, 869, 881.5, 894	45.92	>38

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