



中认信通

CHINA CERTIFICATION ICT CO., LTD (DONGGUAN)



TEST REPORT

Applicant: PO FUNG ELECTRONIC (HK) INTERNATIONAL
GROUP COMPANY LIMITED

Address: Room 1508, 15/F, Office Tower II, Grand Plaza, 625 Nathan Road,
Kowloon, Hong Kong

FCC ID: 2AJGM-UV21R

Product Name: Amateur Radio

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: CR230633406-00A

Date Of Issue: 2023/9/19

Reviewed By: Julie Tan

Title: RF Engineer

Julie Tan

Approved By: Sun Zhong

Title: Manager

Sun Zhong

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.

This report cannot be reproduced except in full, without prior written approval of the Company.

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.

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

CONTENTS

TEST FACILITY	2
DECLARATIONS	2
DOCUMENT REVISION HISTORY	4
1. GENERAL INFORMATION	5
1.1 PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT)	5
1.2 DESCRIPTION OF TEST CONFIGURATION	6
1.2.2 Support Equipment List and Details	6
1.2.3 Support Cable List and Details	6
1.2.4 Block Diagram of Test Setup	7
1.3 MEASUREMENT UNCERTAINTY	9
2. SUMMARY OF TEST RESULTS	10
3. REQUIREMENTS AND TEST PROCEDURES	11
3.1 AC LINE CONDUCTED EMISSIONS	11
3.1.1 EUT Setup	11
3.1.2 EMI Test Receiver Setup	11
3.1.3 Test Procedure	12
3.1.4 Corrected Amplitude & Margin Calculation	12
3.2 RADIATION SPURIOUS EMISSIONS	13
3.2.1 EUT Setup	13
3.2.2 Equipment Setup	14
3.2.3 Test Procedure	14
3.2.4 Corrected Amplitude & Margin Calculation	14
3.3 ANTENNA POWER CONDUCTION LIMITS FOR RECEIVERS	15
3.3.1 Applicable Standard	15
Test Procedure	15
3.4 SCANNING RECEIVERS AND FREQUENCY CONVERTERS USED WITH SCANNING RECEIVERS	16
Applicable Standard	16
Test Procedure	16
4. TEST DATA AND RESULTS	17
4.1 AC LINE CONDUCTED EMISSIONS	17
4.2 RADIATION SPURIOUS EMISSIONS	32
4.3 ANTENNA POWER CONDUCTION LIMITS FOR RECEIVERS	61
4.4 SCANNING RECEIVERS AND FREQUENCY CONVERTERS USED WITH SCANNING RECEIVERS	76
5. EUT PHOTOGRAPHS	77
6. TEST SETUP PHOTOGRAPHS	78

DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
1.0	CR230633406-00A	Original Report	2023/9/19

1. GENERAL INFORMATION

1.1 Product Description for Equipment under Test (EUT)

Product Name:	Amateur Radio
Test Model:	UV-21R
Multiple Models:	BF-21R, UV-21H, UV-21M, UV-21L
Highest Operation Frequency:	520MHz
Rated Input Voltage:	DC 7.4V from battery, DC 5V charging from USB (Note: EUT only support USB charging)
Serial Number:	26TA-1
EUT Received Date:	2023/6/13
EUT Received Status:	Good
Note: The Multiple models are electrically identical with the test model. Please refer to the declaration letter for more detail, which was provided by manufacturer.	

Accessory Information:
No.

Operation Frequency And Test Channel:

Operation Modes	Operation Frequency Range (MHz)	Test Frequency (MHz)
VHF Receiving	136-174	136.0125, 155, 173.9875
UHF Receiving	400-520	400.0125, 460, 519.9875
Scanning	136-174 400-520	/

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: Charging & Scanning (136-520) M2: Charging & Receiving(136.0125;155;173.9875; 400.0125; 460;519.9875) (Note: EUT only support charging from USB)
Equipment Modifications:	No
EUT Exercise Software:	No

1.2.2 Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
Agilent	MXG Vector Signal Generator	N5182B	MY51350142
PO FUNG	earphone	480	4801

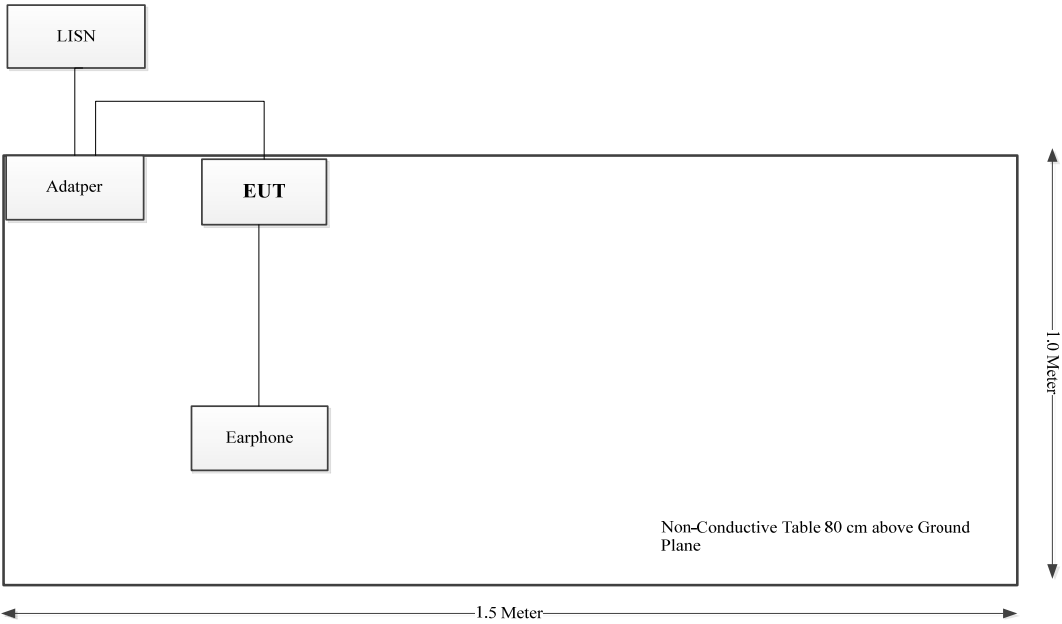
1.2.3 Support Cable List and Details

Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
antenna cable	No	No	1.5	antenna	N5182B
power cable	No	No	0.9	adapter	charging base
earphone cable	No	No	1	earphone	EUT

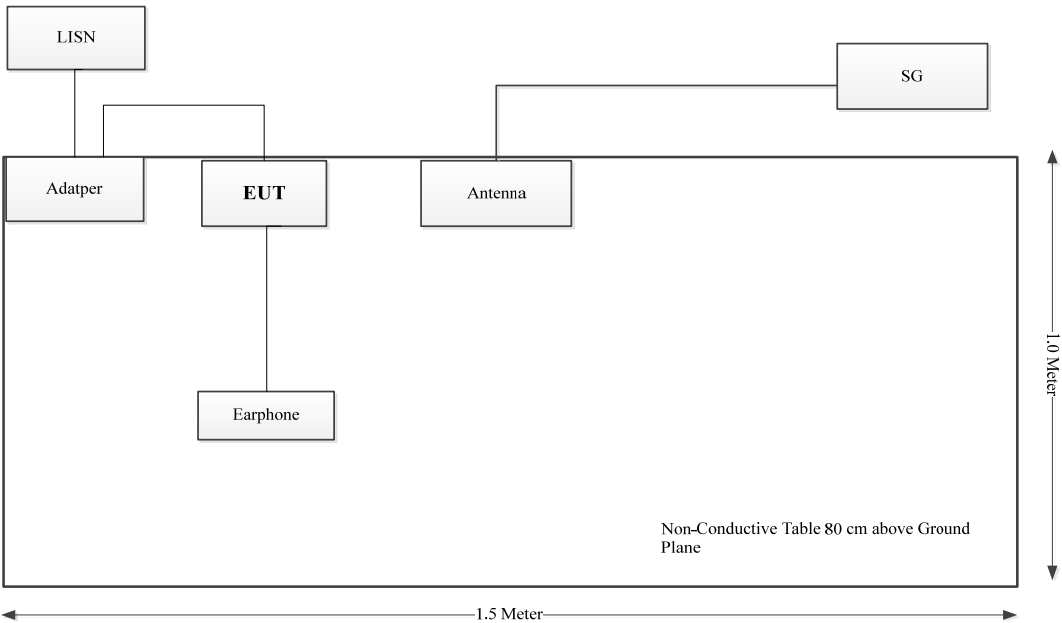
1.2.4 Block Diagram of Test Setup

CE:

M1:

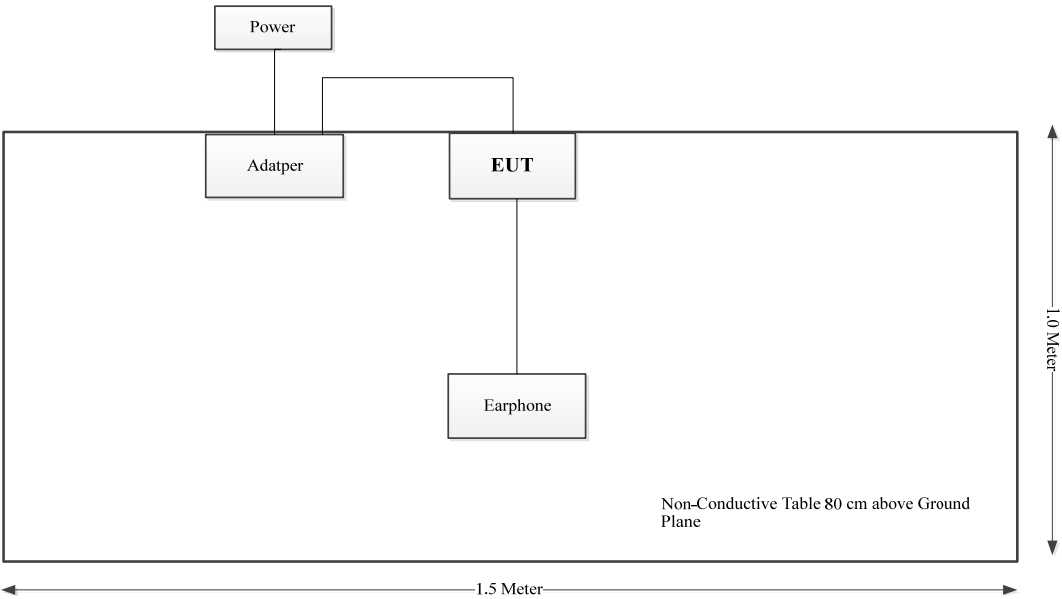


M2:

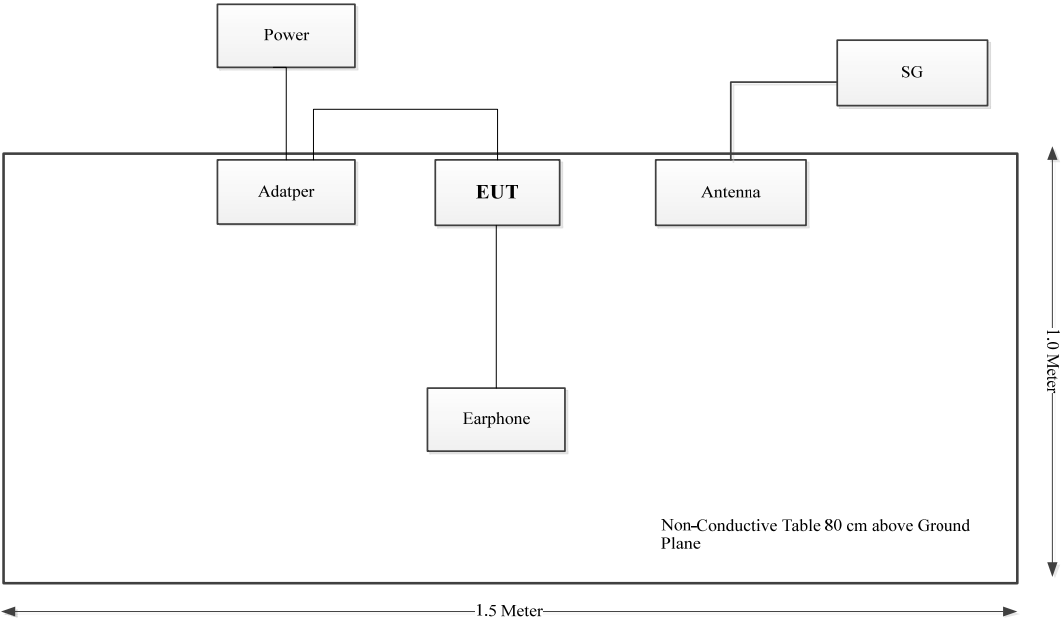


RE:

M1:



M2:



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)

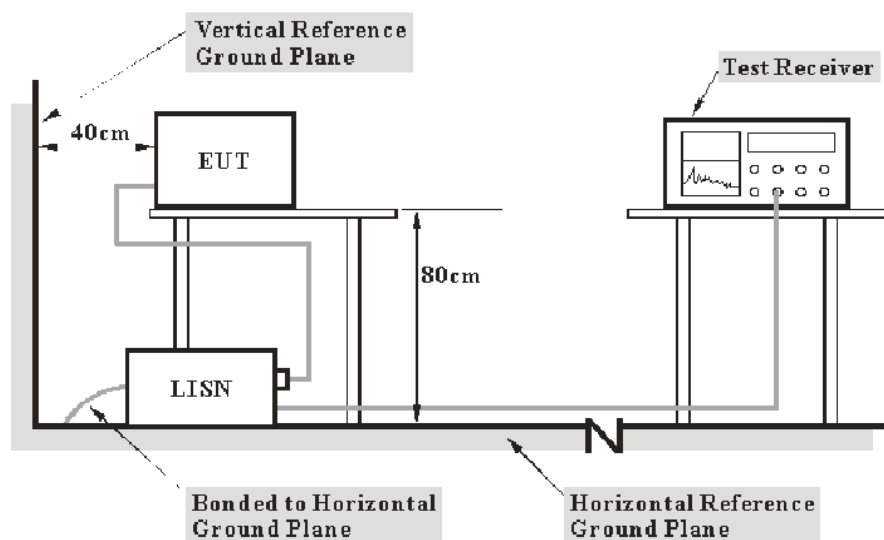
2. SUMMARY OF TEST RESULTS

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

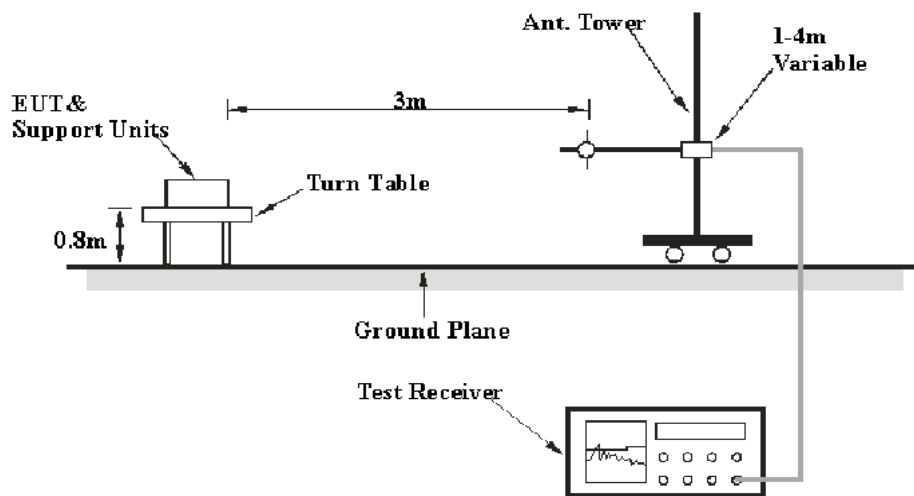
The “**Margin**” column of the following data tables indicates the degree of compliance within the applicable limit. The equation for margin calculation is as follows:

Margin = Limit – Result

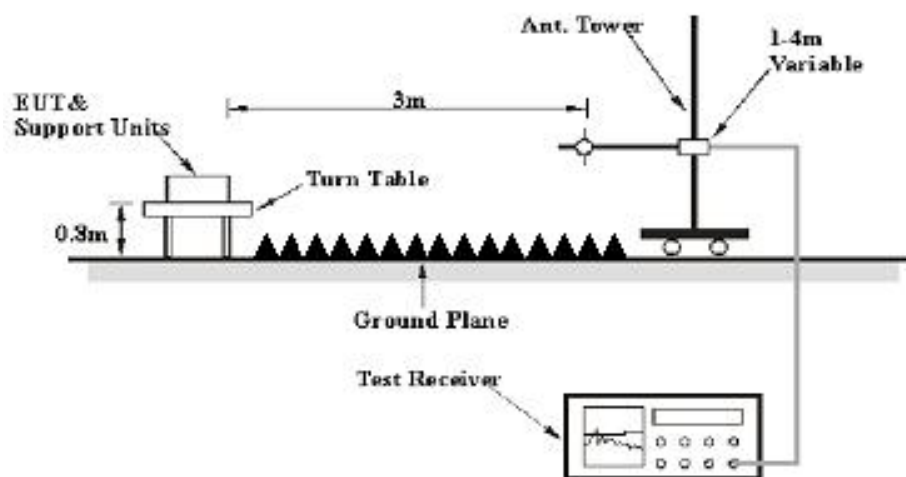
3.2 Radiation Spurious Emissions

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

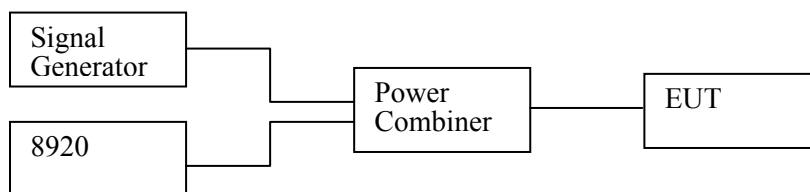
Applicable Standard

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 8920 output power to produce 12 dB SINAD without the audio output power dropping by more than 3 dB; These output level of the 8920 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:	26TA-1	Test Date:	2023/06/25
Test Site:	CE	Test Mode:	M1,M2
Tester:	David Huang	Test Result:	Pass

Environmental Conditions:					
Temperature: (°C)	25.5	Relative Humidity: (%)	65	ATM Pressure: (kPa)	100.8

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	LISN	ENV216	101134	2023/03/31	2024/03/30
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).

Test Mode: M1

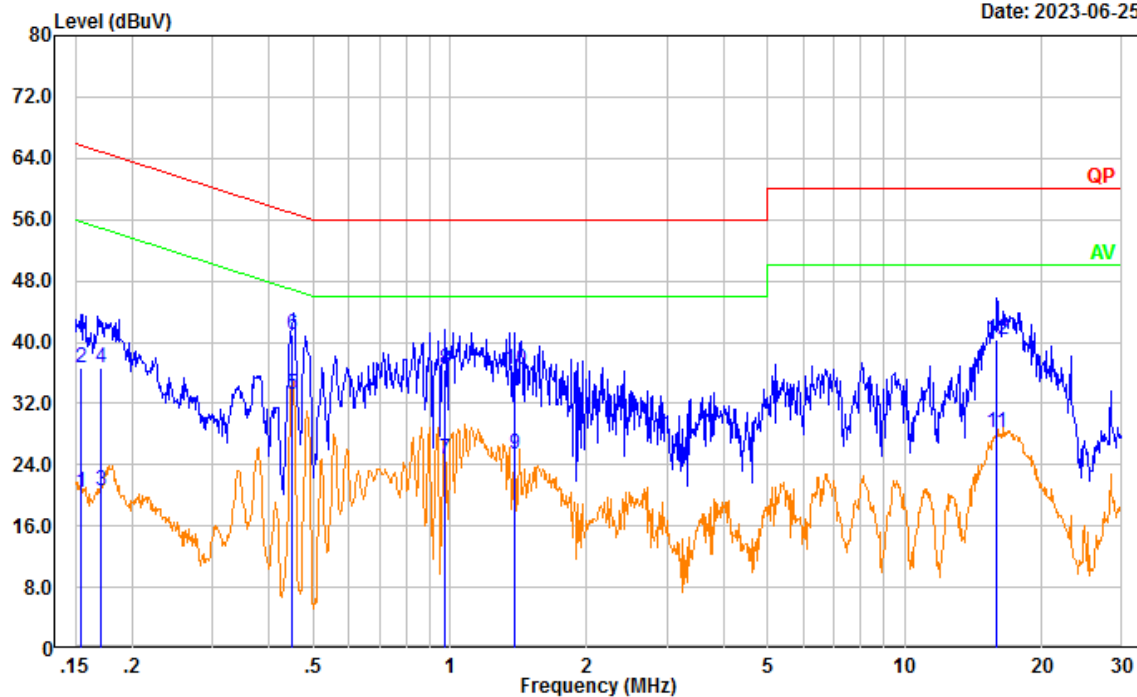
Project No.: CR230633406-RF

Tester: David Huang

Port: Line

Note:

Date: 2023-06-25



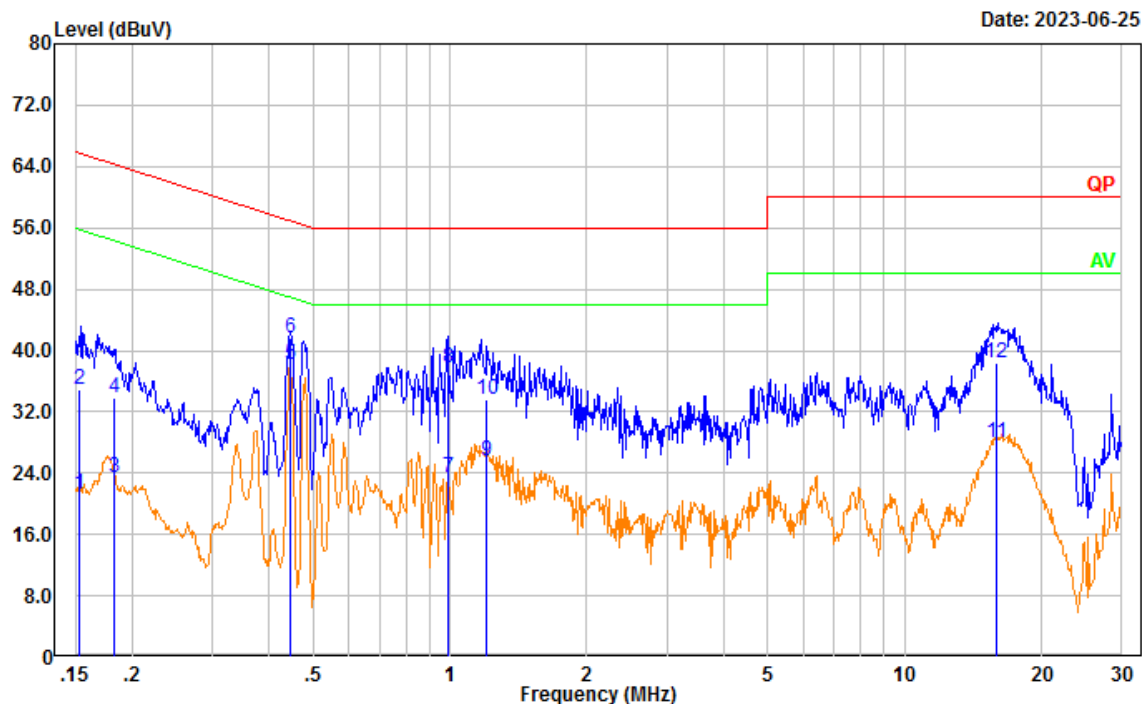
No.	Frequency (MHz)	Reading (dBμV)	Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Detector
1	0.154	10.69	9.61	20.30	55.79	35.49	Average
2	0.154	26.95	9.61	36.56	65.79	29.23	QP
3	0.171	11.00	9.61	20.61	54.91	34.30	Average
4	0.171	27.10	9.61	36.71	64.91	28.20	QP
5	0.451	23.66	9.61	33.27	46.86	13.59	Average
6	0.451	31.27	9.61	40.88	56.86	15.98	QP
7	0.973	15.16	9.62	24.78	46.00	21.22	Average
8	0.973	26.90	9.62	36.52	56.00	19.48	QP
9	1.385	15.82	9.62	25.44	46.00	20.56	Average
10	1.385	26.85	9.62	36.47	56.00	19.53	QP
11	15.856	18.56	9.71	28.27	50.00	21.73	Average
12	15.856	30.68	9.71	40.39	60.00	19.61	QP

Project No.: CR230633406-RF

Tester: David Huang

Port: neutral

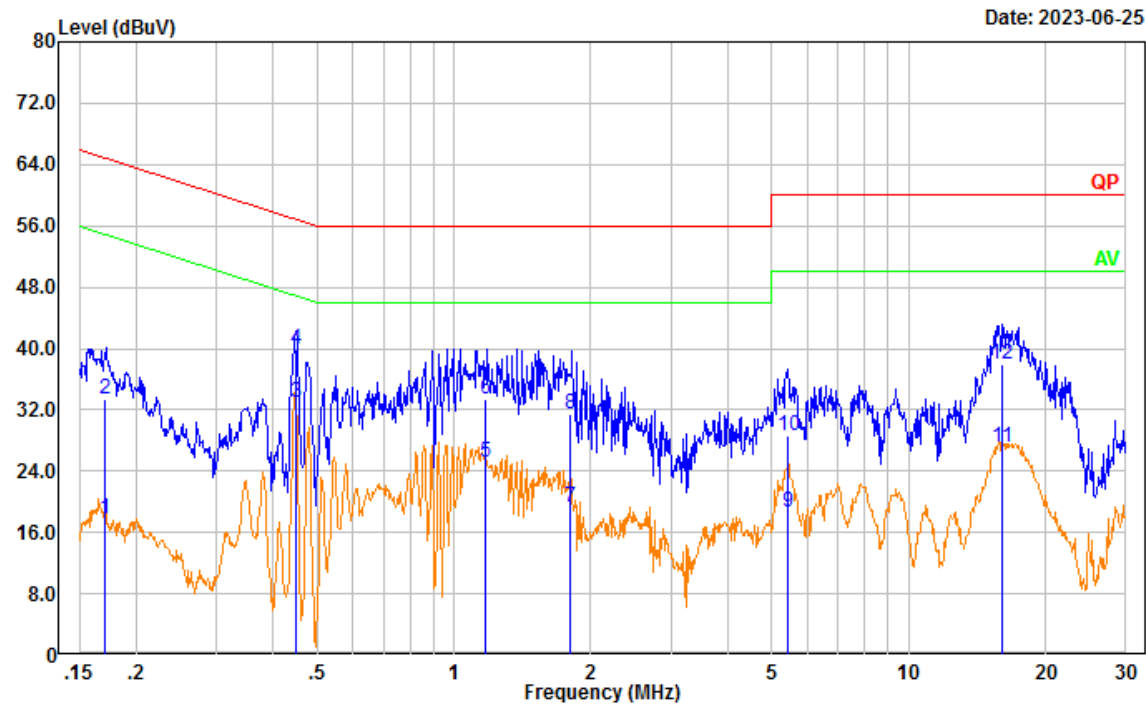
Note:



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Detector
1	0.153	11.69	9.61	21.30	55.81	34.51	Average
2	0.153	25.26	9.61	34.87	65.81	30.94	QP
3	0.183	13.72	9.61	23.33	54.35	31.02	Average
4	0.183	24.13	9.61	33.74	64.35	30.61	QP
5	0.445	28.56	9.61	38.17	46.96	8.79	Average
6	0.445	32.00	9.61	41.61	56.96	15.35	QP
7	0.988	13.77	9.62	23.39	46.00	22.61	Average
8	0.988	28.00	9.62	37.62	56.00	18.38	QP
9	1.204	15.86	9.62	25.48	46.00	20.52	Average
10	1.204	23.91	9.62	33.53	56.00	22.47	QP
11	15.844	18.25	9.69	27.94	50.00	22.06	Average
12	15.844	28.69	9.69	38.38	60.00	21.62	QP

Test Mode: M2 (RX 136.0125MHz)

Project No.: CR230633406-RF
Tester: David Huang
Port: Line
Note:



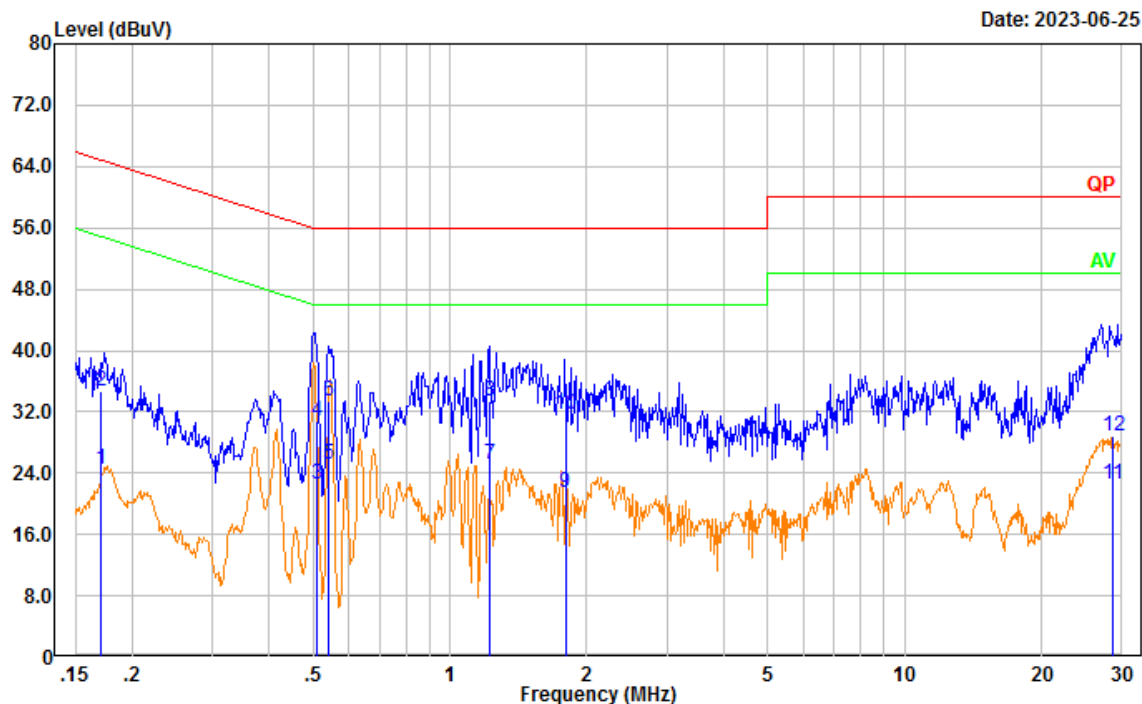
No.	Frequency (MHz)	Reading (dBμV)	Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Detector
1	0.170	8.15	9.61	17.76	54.94	37.18	Average
2	0.170	23.77	9.61	33.38	64.94	31.56	QP
3	0.450	23.32	9.61	32.93	46.88	13.95	Average
4	0.450	30.20	9.61	39.81	56.88	17.07	QP
5	1.173	15.62	9.62	25.24	46.00	20.76	Average
6	1.173	23.84	9.62	33.46	56.00	22.54	QP
7	1.799	9.74	9.63	19.37	46.00	26.63	Average
8	1.799	21.84	9.63	31.47	56.00	24.53	QP
9	5.402	8.95	9.66	18.61	50.00	31.39	Average
10	5.402	18.97	9.66	28.63	60.00	31.37	QP
11	15.985	17.42	9.71	27.13	50.00	22.87	Average
12	15.985	28.24	9.71	37.95	60.00	22.05	QP

Project No.: CR230633406-RF

Tester: David Huang

Port: neutral

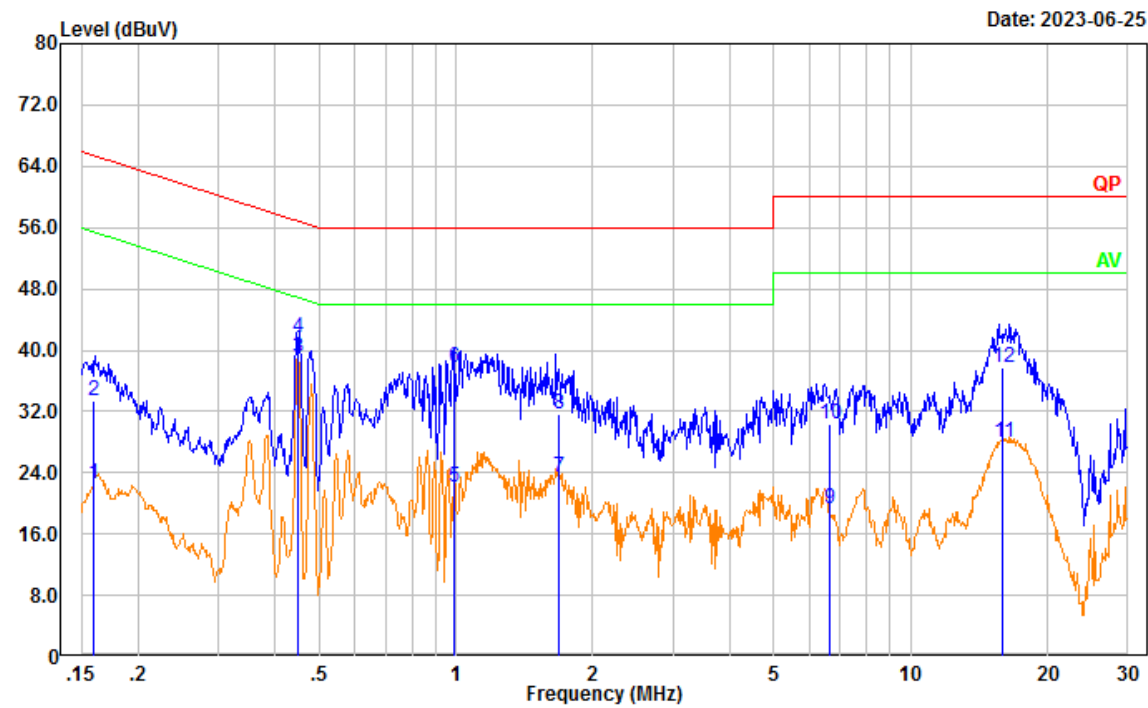
Note:



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Detector
1	0.171	14.93	9.61	24.54	54.93	30.39	Average
2	0.171	25.15	9.61	34.76	64.93	30.17	QP
3	0.509	12.85	9.61	22.46	46.00	23.54	Average
4	0.509	21.14	9.61	30.75	56.00	25.25	QP
5	0.541	15.49	9.61	25.10	46.00	20.90	Average
6	0.541	23.73	9.61	33.34	56.00	22.66	QP
7	1.225	15.49	9.62	25.11	46.00	20.89	Average
8	1.225	23.73	9.62	33.35	56.00	22.65	QP
9	1.793	11.83	9.63	21.46	46.00	24.54	Average
10	1.793	22.07	9.63	31.70	56.00	24.30	QP
11	28.593	12.65	9.81	22.46	50.00	27.54	Average
12	28.593	18.97	9.81	28.78	60.00	31.22	QP

Test Mode: M2 (RX 155MHz)

Project No.: CR230633406-RF
Tester: David Huang
Port: Line
Note:



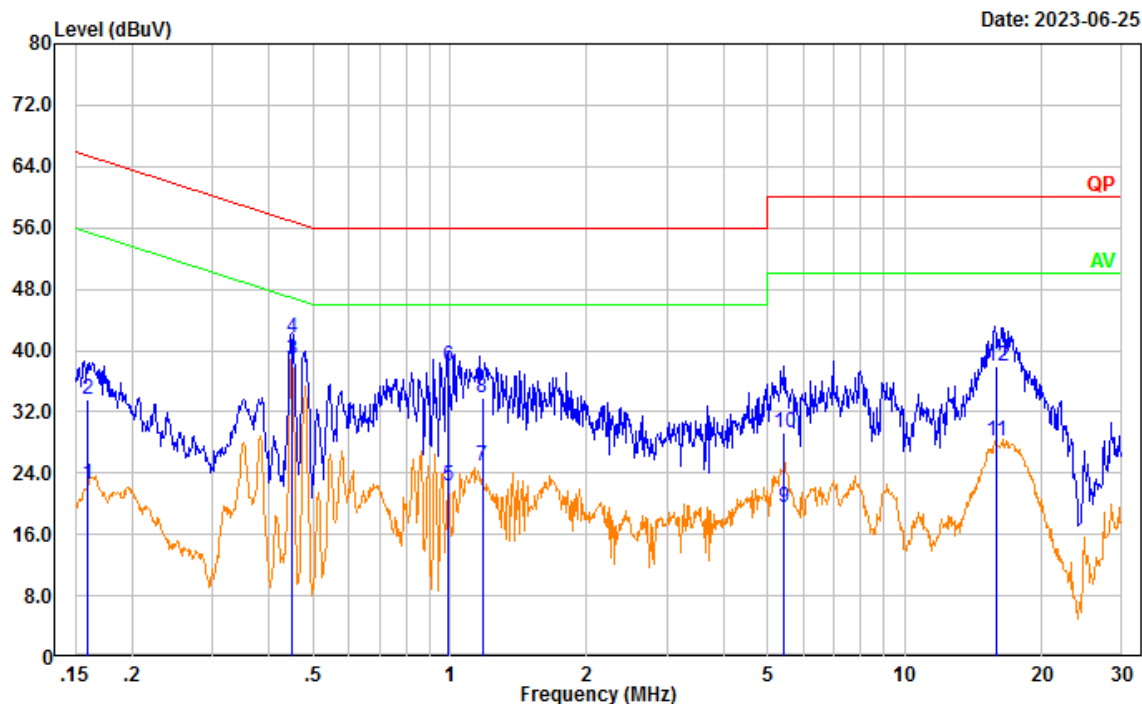
No.	Frequency (MHz)	Reading (dBμV)	Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Detector
1	0.160	12.86	9.61	22.47	55.46	32.99	Average
2	0.160	23.84	9.61	33.45	65.46	32.01	QP
3	0.449	29.49	9.61	39.10	46.89	7.79	Average
4	0.449	32.11	9.61	41.72	56.89	15.17	QP
5	0.989	12.56	9.62	22.18	46.00	23.82	Average
6	0.989	28.16	9.62	37.78	56.00	18.22	QP
7	1.686	13.72	9.63	23.35	46.00	22.65	Average
8	1.686	22.03	9.63	31.66	56.00	24.34	QP
9	6.633	9.65	9.66	19.31	50.00	30.69	Average
10	6.633	20.78	9.66	30.44	60.00	29.56	QP
11	15.950	18.23	9.71	27.94	50.00	22.06	Average
12	15.950	27.98	9.71	37.69	60.00	22.31	QP

Project No.: CR230633406-RF

Tester: David Huang

Port: neutral

Note:



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Detector
1	0.160	12.85	9.61	22.46	55.45	32.99	Average
2	0.160	23.97	9.61	33.58	65.45	31.87	QP
3	0.449	29.29	9.61	38.90	46.89	7.99	Average
4	0.449	32.12	9.61	41.73	56.89	15.16	QP
5	0.988	12.76	9.62	22.38	46.00	23.62	Average
6	0.988	28.36	9.62	37.98	56.00	18.02	QP
7	1.177	15.41	9.62	25.03	46.00	20.97	Average
8	1.177	24.26	9.62	33.88	56.00	22.12	QP
9	5.411	9.95	9.66	19.61	50.00	30.39	Average
10	5.411	19.65	9.66	29.31	60.00	30.69	QP
11	15.867	18.50	9.69	28.19	50.00	21.81	Average
12	15.867	28.22	9.69	37.91	60.00	22.09	QP

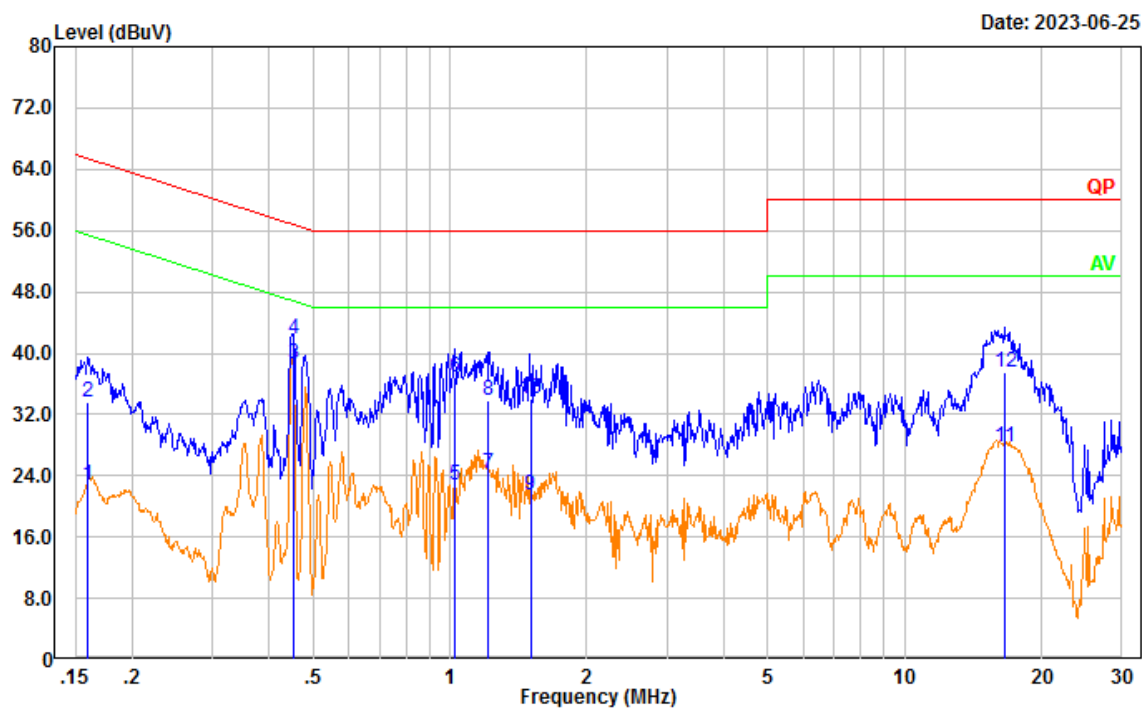
Test Mode: M2 (RX 173.9875MHz)

Project No.: CR230633406-RF

Tester: David Huang

Port: Line

Note:



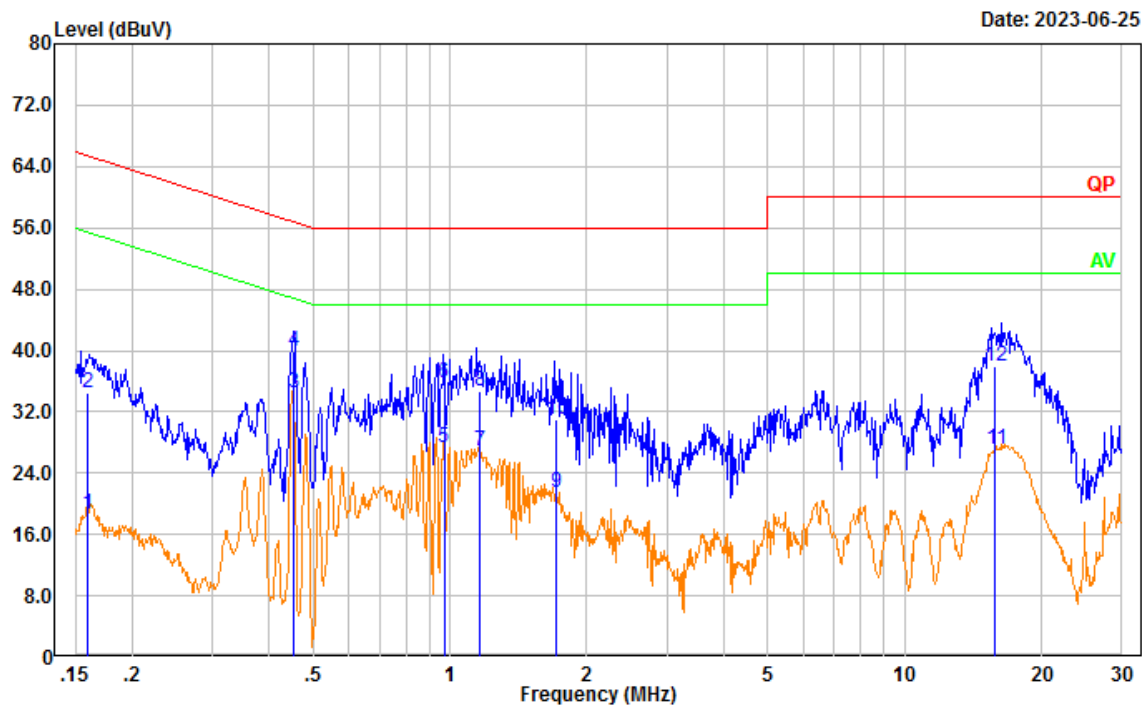
No.	Frequency (MHz)	Reading (dBμV)	Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Detector
1	0.160	13.06	9.61	22.67	55.48	32.81	Average
2	0.160	24.04	9.61	33.65	65.48	31.83	QP
3	0.452	28.95	9.61	38.56	46.84	8.28	Average
4	0.452	32.23	9.61	41.84	56.84	15.00	QP
5	1.022	13.16	9.62	22.78	46.00	23.22	Average
6	1.022	27.30	9.62	36.92	56.00	19.08	QP
7	1.213	14.64	9.62	24.26	46.00	21.74	Average
8	1.213	24.21	9.62	33.83	56.00	22.17	QP
9	1.502	11.73	9.63	21.36	46.00	24.64	Average
10	1.502	24.34	9.63	33.97	56.00	22.03	QP
11	16.570	18.13	9.72	27.85	50.00	22.15	Average
12	16.570	27.72	9.72	37.44	60.00	22.56	QP

Project No.: CR230633406-RF

Tester: David Huang

Port: neutral

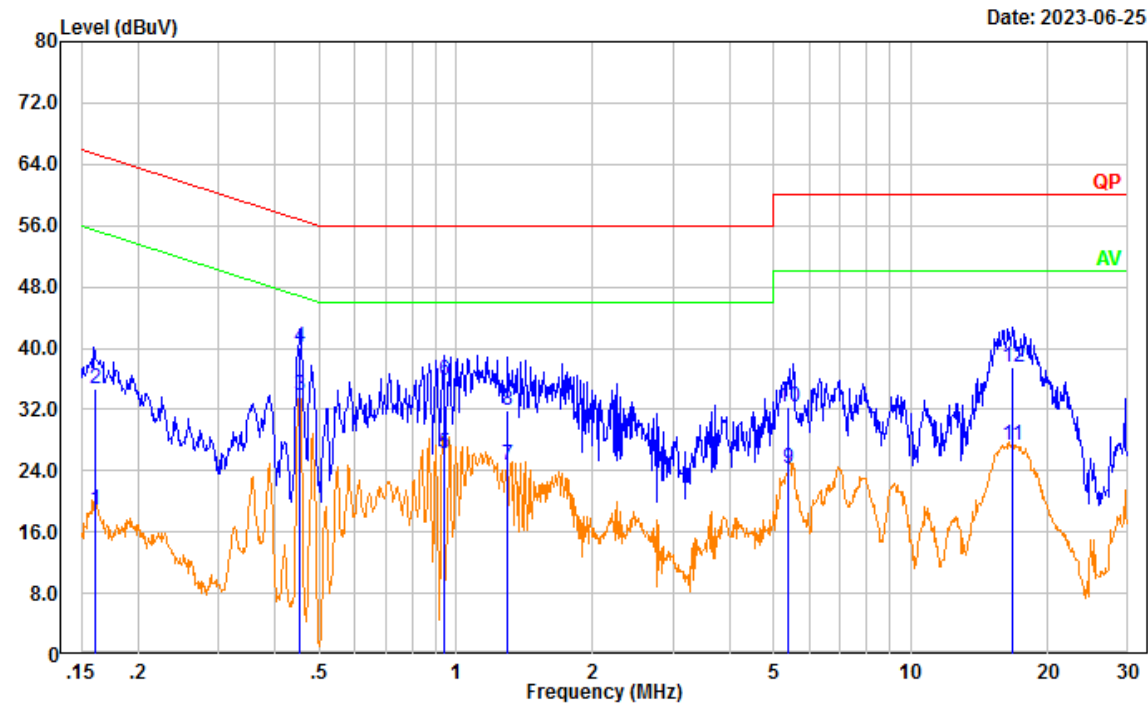
Note:



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Detector
1	0.160	8.99	9.61	18.60	55.48	36.88	Average
2	0.160	24.91	9.61	34.52	65.48	30.96	QP
3	0.453	24.76	9.61	34.37	46.83	12.46	Average
4	0.453	30.39	9.61	40.00	56.83	16.83	QP
5	0.970	17.74	9.62	27.36	46.00	18.64	Average
6	0.970	26.19	9.62	35.81	56.00	20.19	QP
7	1.165	17.21	9.62	26.83	46.00	19.17	Average
8	1.165	25.17	9.62	34.79	56.00	21.21	QP
9	1.718	11.92	9.63	21.55	46.00	24.45	Average
10	1.718	21.34	9.63	30.97	56.00	25.03	QP
11	15.840	17.45	9.69	27.14	50.00	22.86	Average
12	15.840	28.29	9.69	37.98	60.00	22.02	QP

Test Mode: M2 (RX 400.0125MHz)

Project No.: CR230633406-RF
Tester: David Huang
Port: Line
Note:



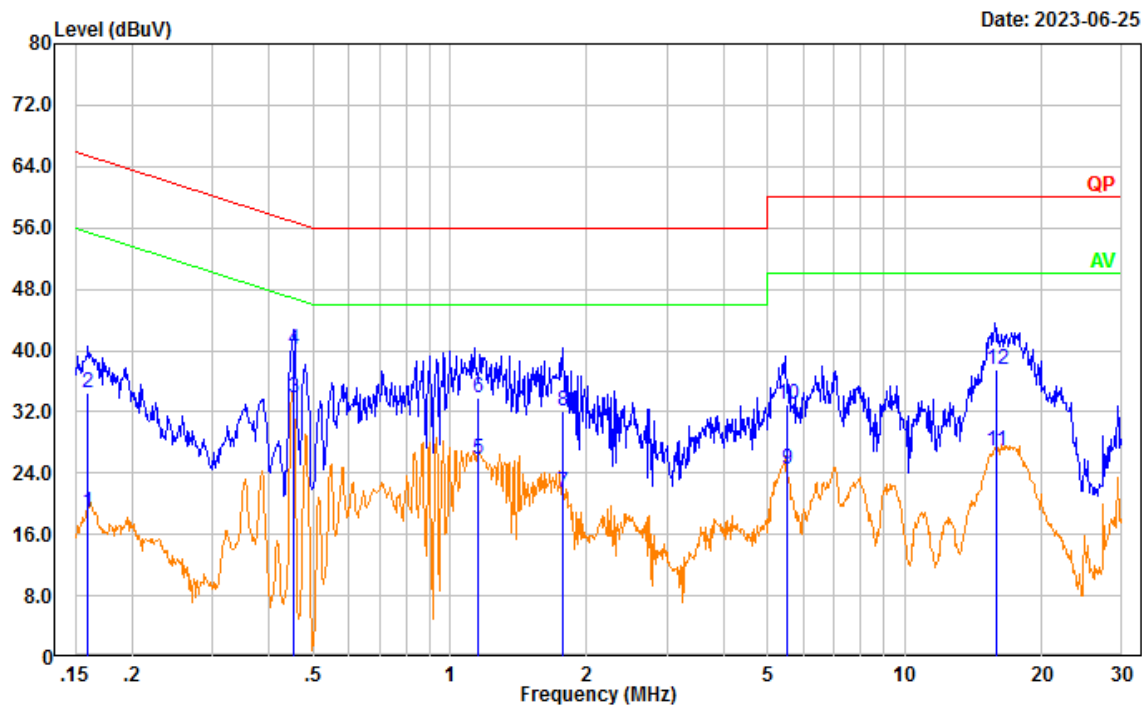
No.	Frequency (MHz)	Reading (dBμV)	Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Detector
1	0.162	9.16	9.61	18.77	55.38	36.61	Average
2	0.162	25.14	9.61	34.75	65.38	30.63	QP
3	0.455	24.16	9.61	33.77	46.78	13.01	Average
4	0.455	30.40	9.61	40.01	56.78	16.77	QP
5	0.942	16.67	9.62	26.29	46.00	19.71	Average
6	0.942	26.16	9.62	35.78	56.00	20.22	QP
7	1.297	15.02	9.62	24.64	46.00	21.36	Average
8	1.297	22.27	9.62	31.89	56.00	24.11	QP
9	5.365	14.71	9.66	24.37	50.00	25.63	Average
10	5.365	22.68	9.66	32.34	60.00	27.66	QP
11	16.746	17.56	9.72	27.28	50.00	22.72	Average
12	16.746	27.87	9.72	37.59	60.00	22.41	QP

Project No.: CR230633406-RF

Tester: David Huang

Port: neutral

Note:



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Detector
1	0.160	9.31	9.61	18.92	55.46	36.54	Average
2	0.160	24.96	9.61	34.57	65.46	30.89	QP
3	0.453	24.18	9.61	33.79	46.81	13.02	Average
4	0.453	30.44	9.61	40.05	56.81	16.76	QP
5	1.148	16.11	9.62	25.73	46.00	20.27	Average
6	1.148	24.17	9.62	33.79	56.00	22.21	QP
7	1.770	11.86	9.63	21.49	46.00	24.51	Average
8	1.770	22.42	9.63	32.05	56.00	23.95	QP
9	5.508	14.88	9.66	24.54	50.00	25.46	Average
10	5.508	23.22	9.66	32.88	60.00	27.12	QP
11	15.904	17.20	9.69	26.89	50.00	23.11	Average
12	15.904	27.89	9.69	37.58	60.00	22.42	QP

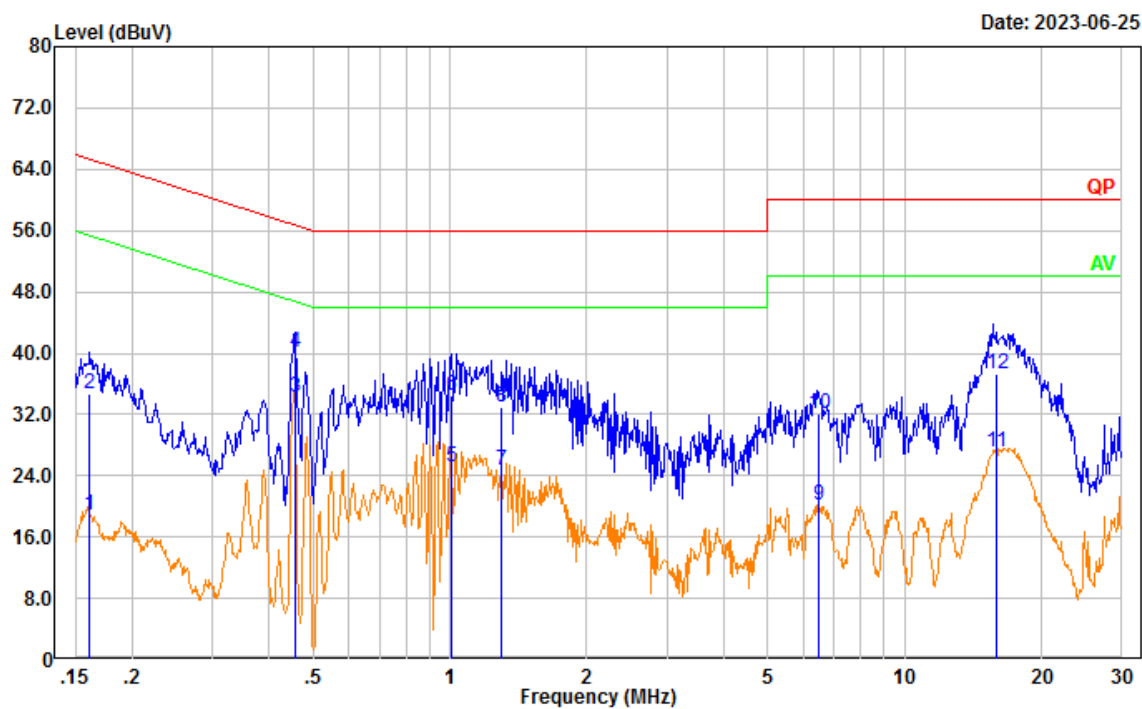
Test Mode: M2 (RX 460MHz)

Project No.: CR230633406-RF

Tester: David Huang

Port: Line

Note:



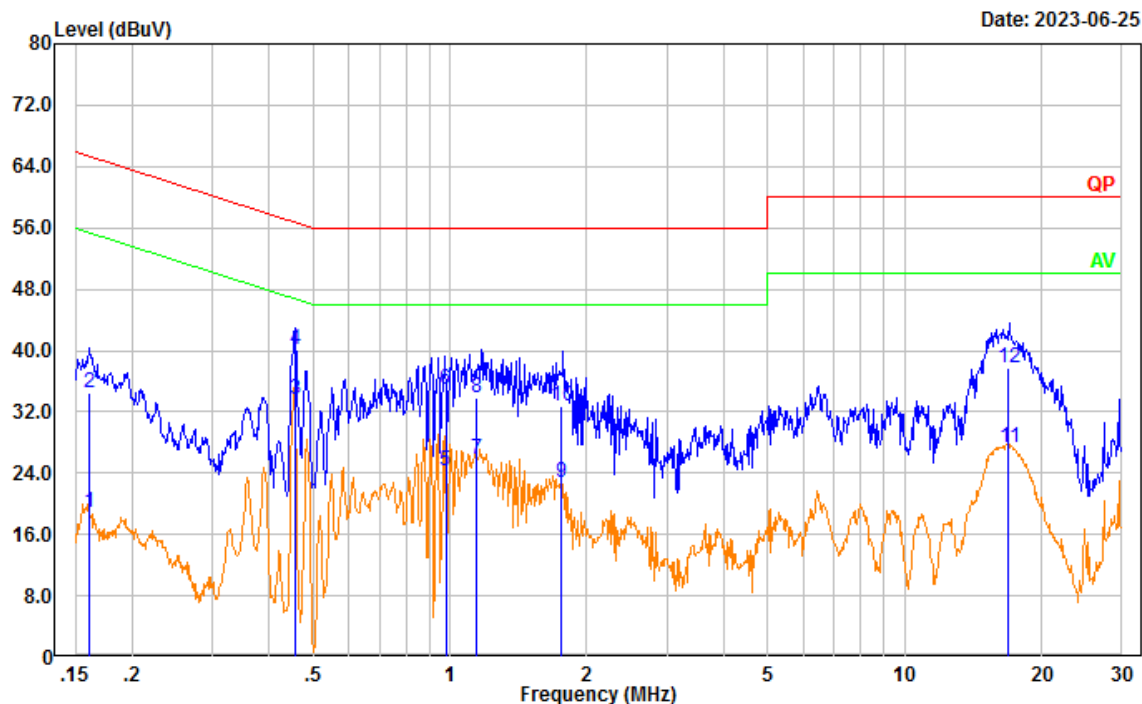
No.	Frequency (MHz)	Reading (dBμV)	Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Detector
1	0.161	9.31	9.61	18.92	55.44	36.52	Average
2	0.161	25.03	9.61	34.64	65.44	30.80	QP
3	0.455	24.56	9.61	34.17	46.78	12.61	Average
4	0.455	30.46	9.61	40.07	56.78	16.71	QP
5	1.009	15.50	9.62	25.12	46.00	20.88	Average
6	1.009	24.92	9.62	34.54	56.00	21.46	QP
7	1.302	15.11	9.62	24.73	46.00	21.27	Average
8	1.302	23.36	9.62	32.98	56.00	23.02	QP
9	6.481	10.48	9.66	20.14	50.00	29.86	Average
10	6.481	22.37	9.66	32.03	60.00	27.97	QP
11	15.884	17.32	9.71	27.03	50.00	22.97	Average
12	15.884	27.68	9.71	37.39	60.00	22.61	QP

Project No.: CR230633406-RF

Tester: David Huang

Port: neutral

Note:



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Detector
1	0.161	9.21	9.61	18.82	55.43	36.61	Average
2	0.161	24.76	9.61	34.37	65.43	31.06	QP
3	0.457	23.95	9.61	33.56	46.75	13.19	Average
4	0.457	30.43	9.61	40.04	56.75	16.71	QP
5	0.978	14.64	9.62	24.26	46.00	21.74	Average
6	0.978	25.29	9.62	34.91	56.00	21.09	QP
7	1.140	16.16	9.62	25.78	46.00	20.22	Average
8	1.140	24.10	9.62	33.72	56.00	22.28	QP
9	1.760	13.11	9.63	22.74	46.00	23.26	Average
10	1.760	23.11	9.63	32.74	56.00	23.26	QP
11	16.930	17.58	9.69	27.27	50.00	22.73	Average
12	16.930	27.95	9.69	37.64	60.00	22.36	QP

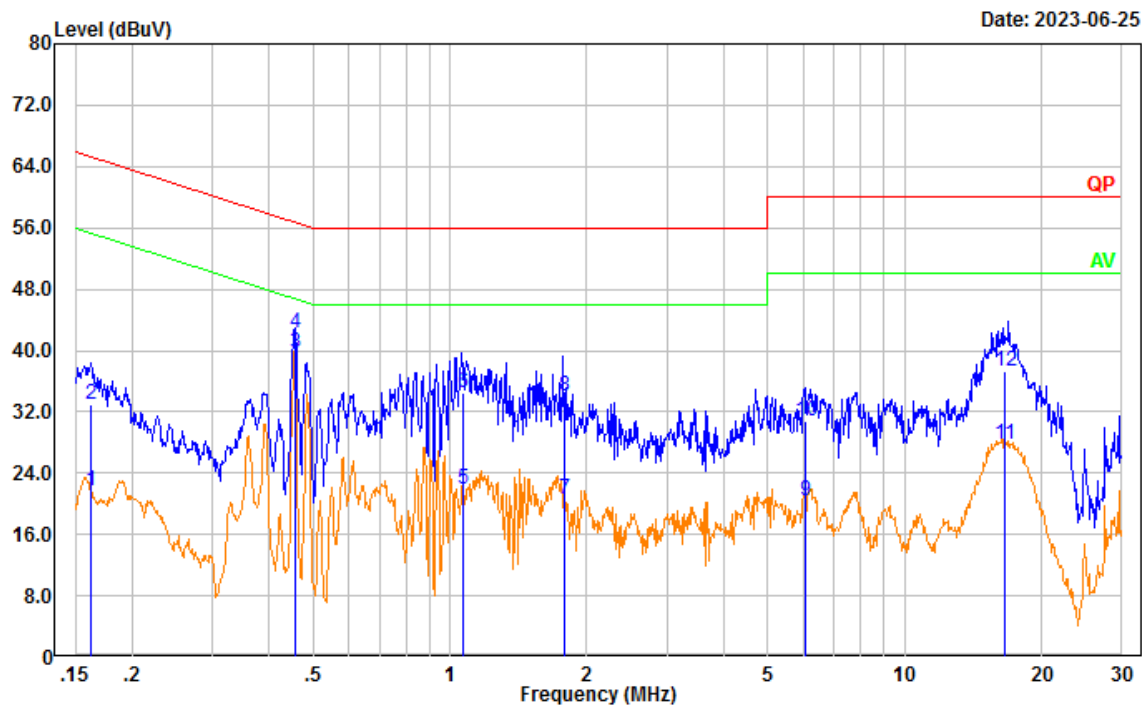
Test Mode: M2 (RX 519.9875MHz)

Project No.: CR230633406-RF

Tester: David Huang

Port: Line

Note:



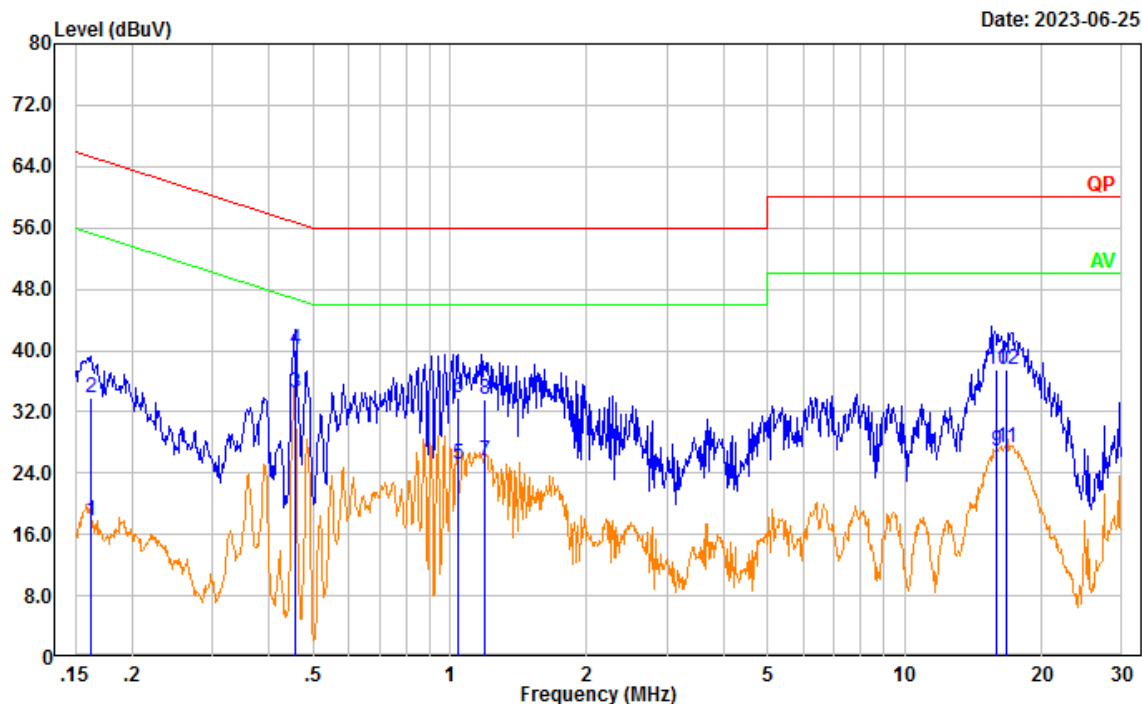
No.	Frequency (MHz)	Reading (dBμV)	Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Detector
1	0.162	12.08	9.61	21.69	55.34	33.65	Average
2	0.162	23.37	9.61	32.98	65.34	32.36	QP
3	0.456	30.11	9.61	39.72	46.76	7.04	Average
4	0.456	32.72	9.61	42.33	56.76	14.43	QP
5	1.066	12.36	9.62	21.98	46.00	24.02	Average
6	1.066	24.81	9.62	34.43	56.00	21.57	QP
7	1.778	10.95	9.63	20.58	46.00	25.42	Average
8	1.778	24.38	9.63	34.01	56.00	21.99	QP
9	6.046	10.82	9.66	20.48	50.00	29.52	Average
10	6.046	21.13	9.66	30.79	60.00	29.21	QP
11	16.600	17.94	9.72	27.66	50.00	22.34	Average
12	16.600	27.54	9.72	37.26	60.00	22.74	QP

Project No.: CR230633406-RF

Tester: David Huang

Port: neutral

Note:



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Detector
1	0.162	8.26	9.61	17.87	55.36	37.49	Average
2	0.162	24.31	9.61	33.92	65.36	31.44	QP
3	0.457	24.81	9.61	34.42	46.75	12.33	Average
4	0.457	30.51	9.61	40.12	56.75	16.63	QP
5	1.042	15.62	9.62	25.24	46.00	20.76	Average
6	1.042	24.17	9.62	33.79	56.00	22.21	QP
7	1.189	16.06	9.62	25.68	46.00	20.32	Average
8	1.189	24.01	9.62	33.63	56.00	22.37	QP
9	15.899	17.27	9.69	26.96	50.00	23.04	Average
10	15.899	27.90	9.69	37.59	60.00	22.41	QP
11	16.700	17.66	9.69	27.35	50.00	22.65	Average
12	16.700	27.90	9.69	37.59	60.00	22.41	QP

4.2 Radiation Spurious Emissions

Serial Number:	26TA-1	Test Date:	2023/06/22~2023/09/05
Test Site:	966-1/966-2	Test Mode:	M1-M2
Tester:	Carl Xue, Mack Huang	Test Result:	Pass

Environmental Conditions:					
Temperature: (°C)	24.2~25.6	Relative Humidity: (%)	60~61	ATM Pressure: (kPa)	99.7~100.1

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	2023/03/31	2024/03/30
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0470-02	2023/07/16	2024/07/15
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0780-01	2023/07/16	2024/07/15
Sonoma	Amplifier	310N	186165	2023/07/16	2024/07/15
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

* 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).

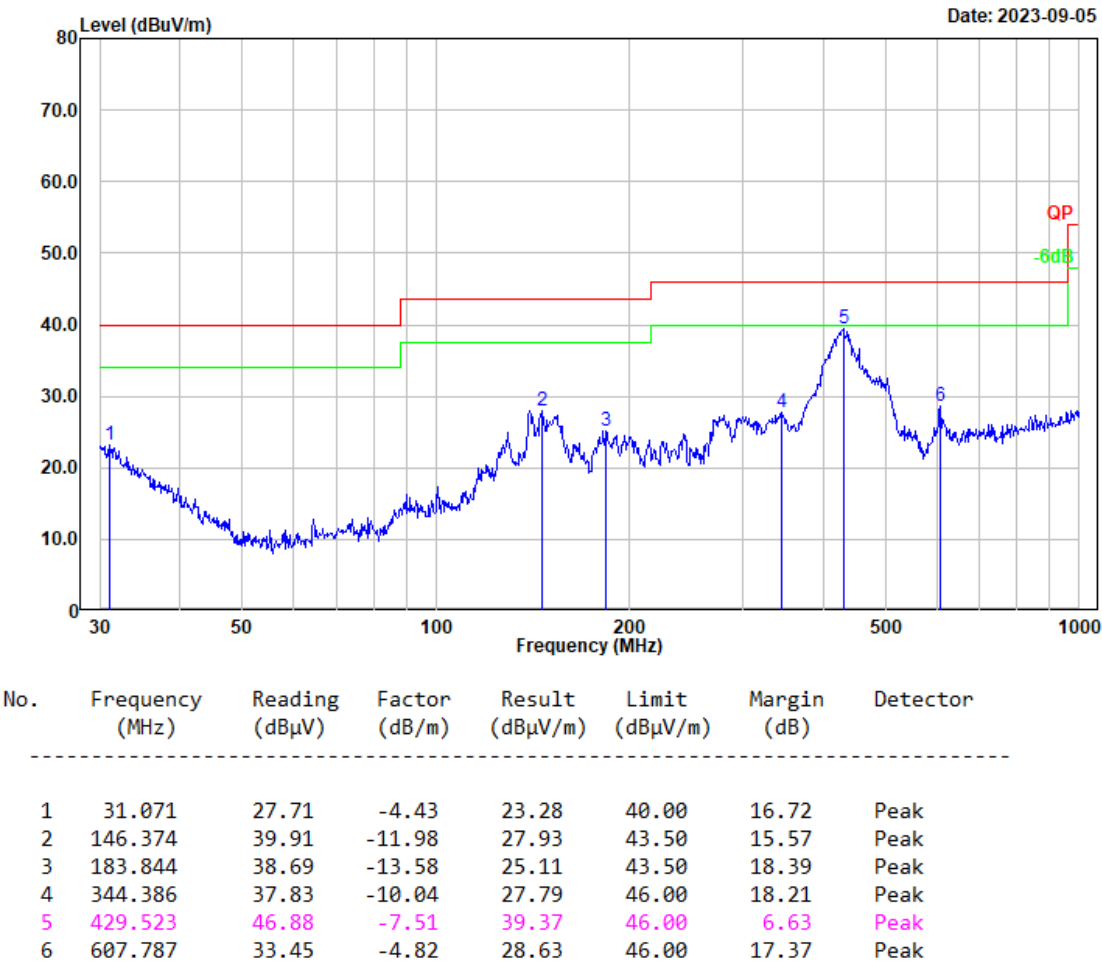
Test Data:

After pre-scan in the X, Y and Z axes of orientation, the worst case is below:

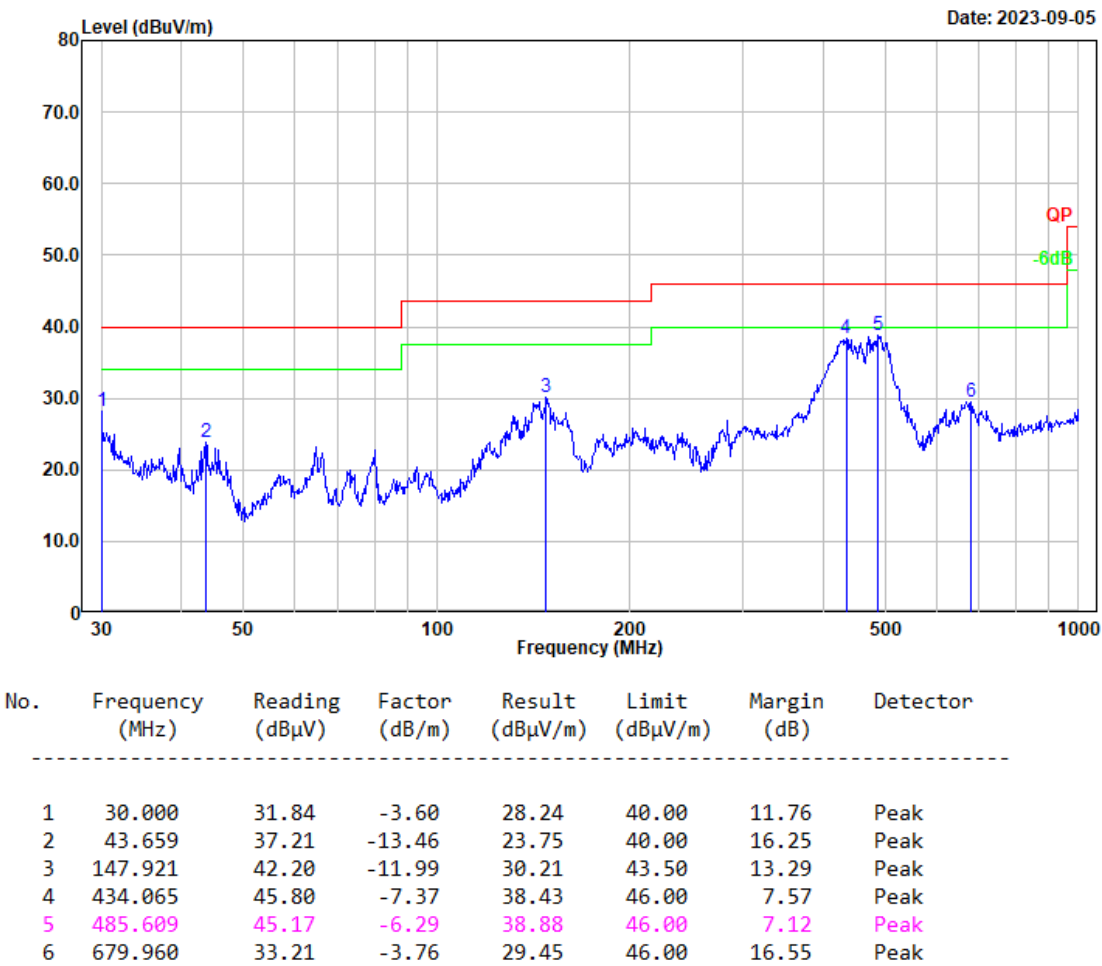
1) 30MHz-1GHz:

Test Mode: M1

Project No.: CR230633406-RF
Tester: Carl Xue
Test Mode: Charging& Scanning(136-520)
Polarization: horizontal
Note:

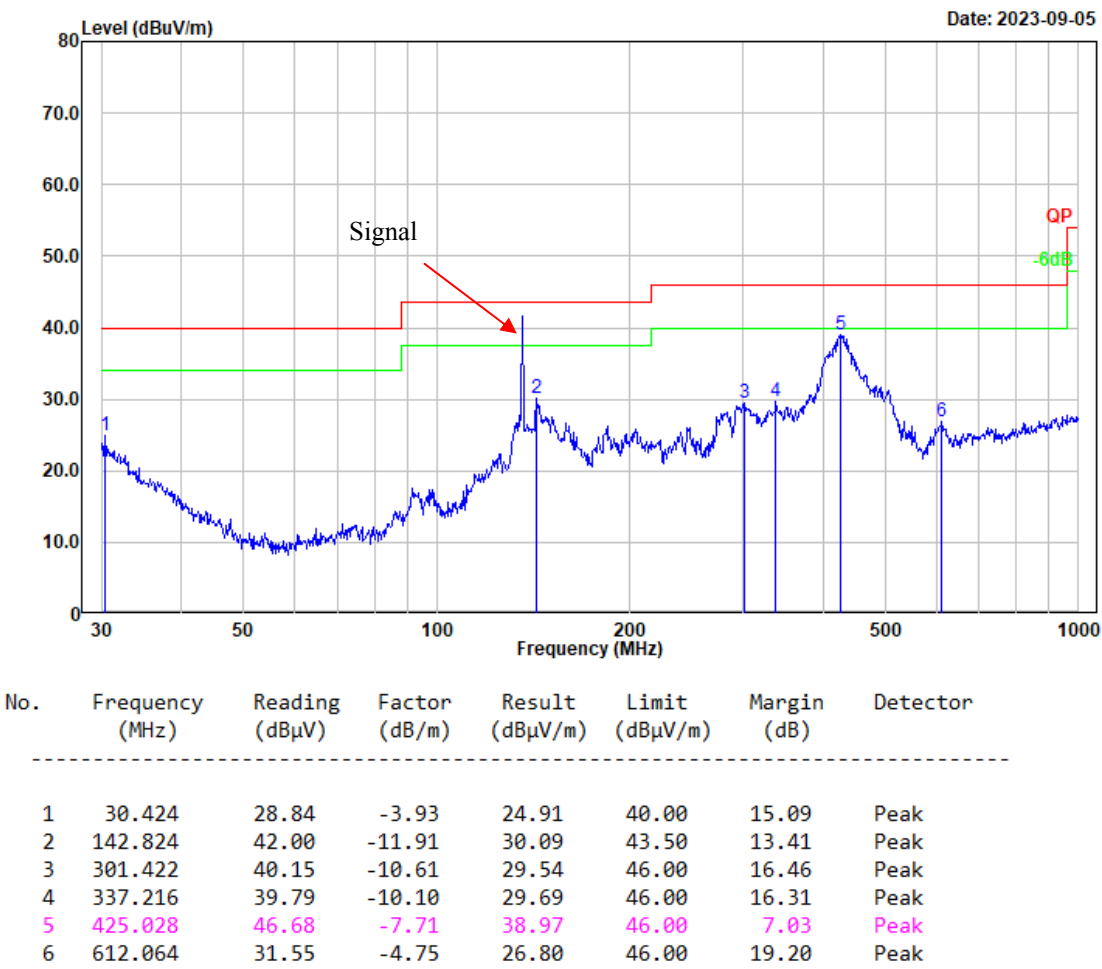


Project No.: CR230633406-RF
Tester: Carl Xue
Test Mode: Charging& Scanning(136-520)
Polarization: vertical
Note:

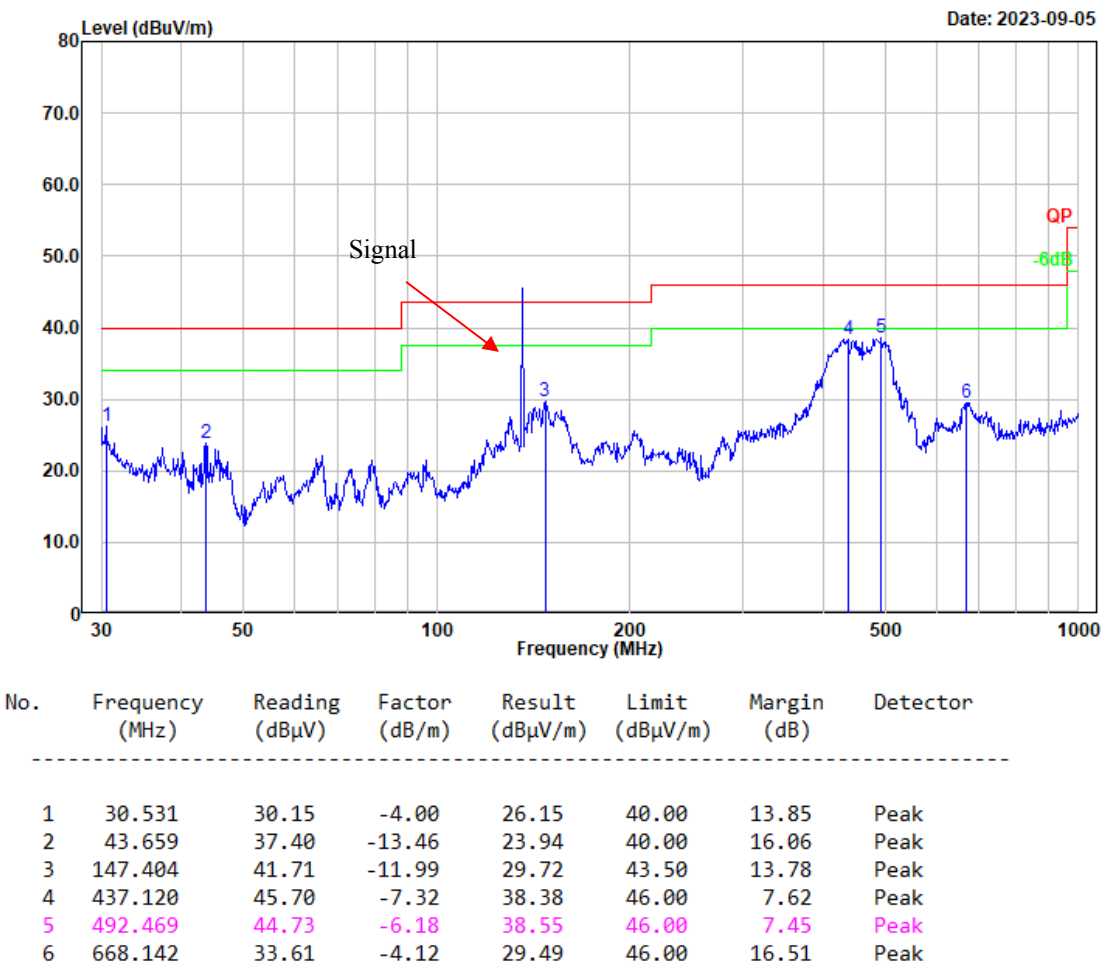


Test Mode: M2 (RX 136.0125MHz)

Project No.: CR230633406-RF
Tester: Carl Xue
Test Mode: Charging&Receiving(136.0125)
Polarization: horizontal
Note:



Project No.: CR230633406-RF
Tester: Carl Xue
Test Mode: Charging&Receiving(136.0125)
Polarization: vertical
Note:



Test Mode: M2 (RX 155MHz)

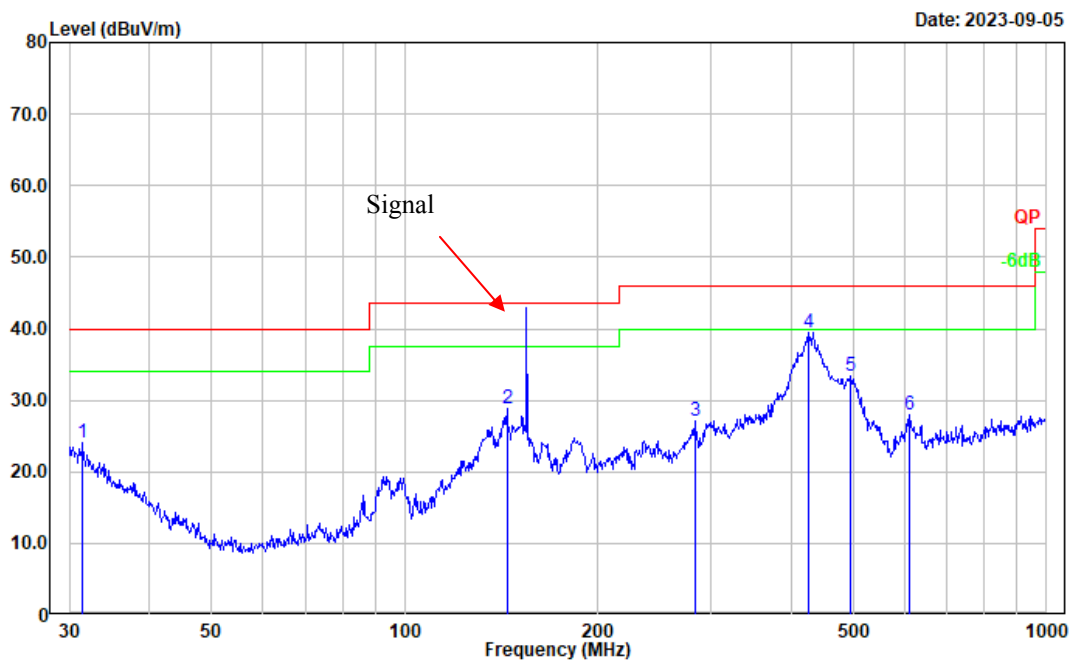
Project No.: CR230633406-RF

Tester: Carl Xue

Test Mode: Charging&Receiving(155)

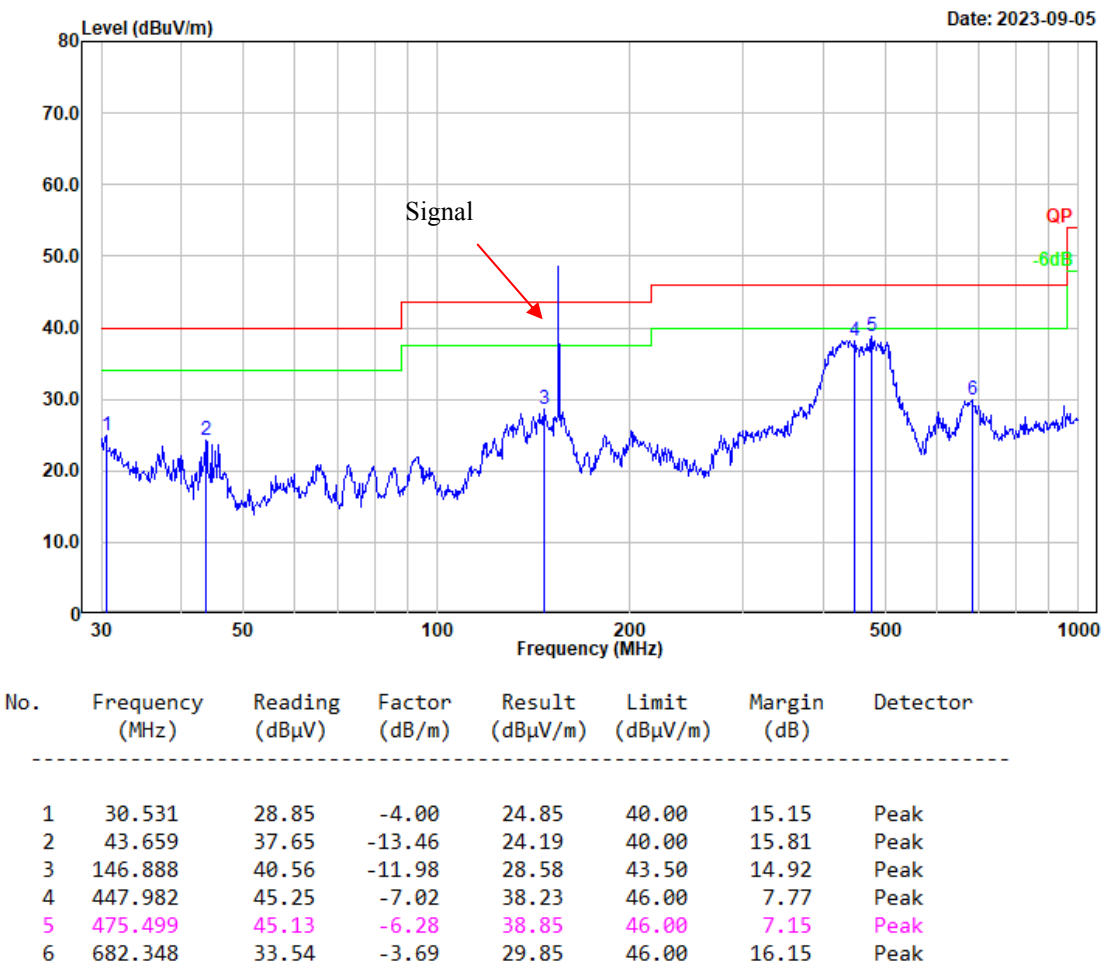
Polarization: horizontal

Note:



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	31.510	28.88	-4.75	24.13	40.00	15.87	Peak
2	144.335	40.87	-11.96	28.91	43.50	14.59	Peak
3	282.985	38.58	-11.47	27.11	46.00	18.89	Peak
4	425.028	47.08	-7.71	39.37	46.00	6.63	Peak
5	495.934	39.44	-6.14	33.30	46.00	12.70	Peak
6	609.922	32.70	-4.80	27.90	46.00	18.10	Peak

Project No.: CR230633406-RF
Tester: Carl Xue
Test Mode: Charging&Receiving(155)
Polarization: vertical
Note:



Test Mode: M2 (RX 173.9875 MHz)

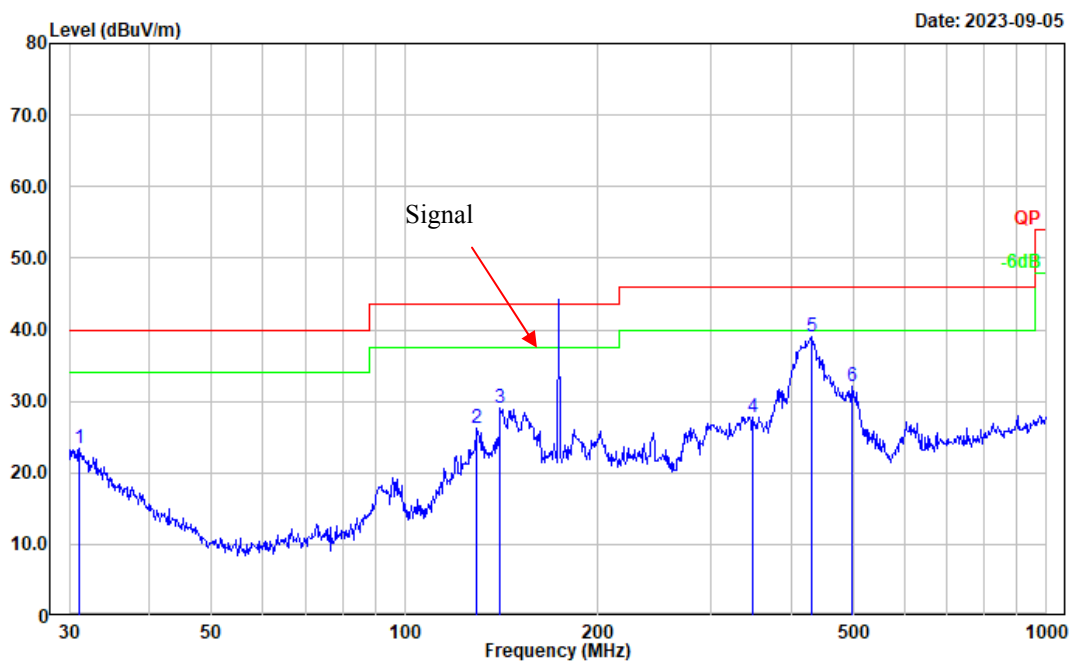
Project No.: CR230633406-RF

Tester: Carl Xue

Test Mode: Charging&Receiving(173.9875)

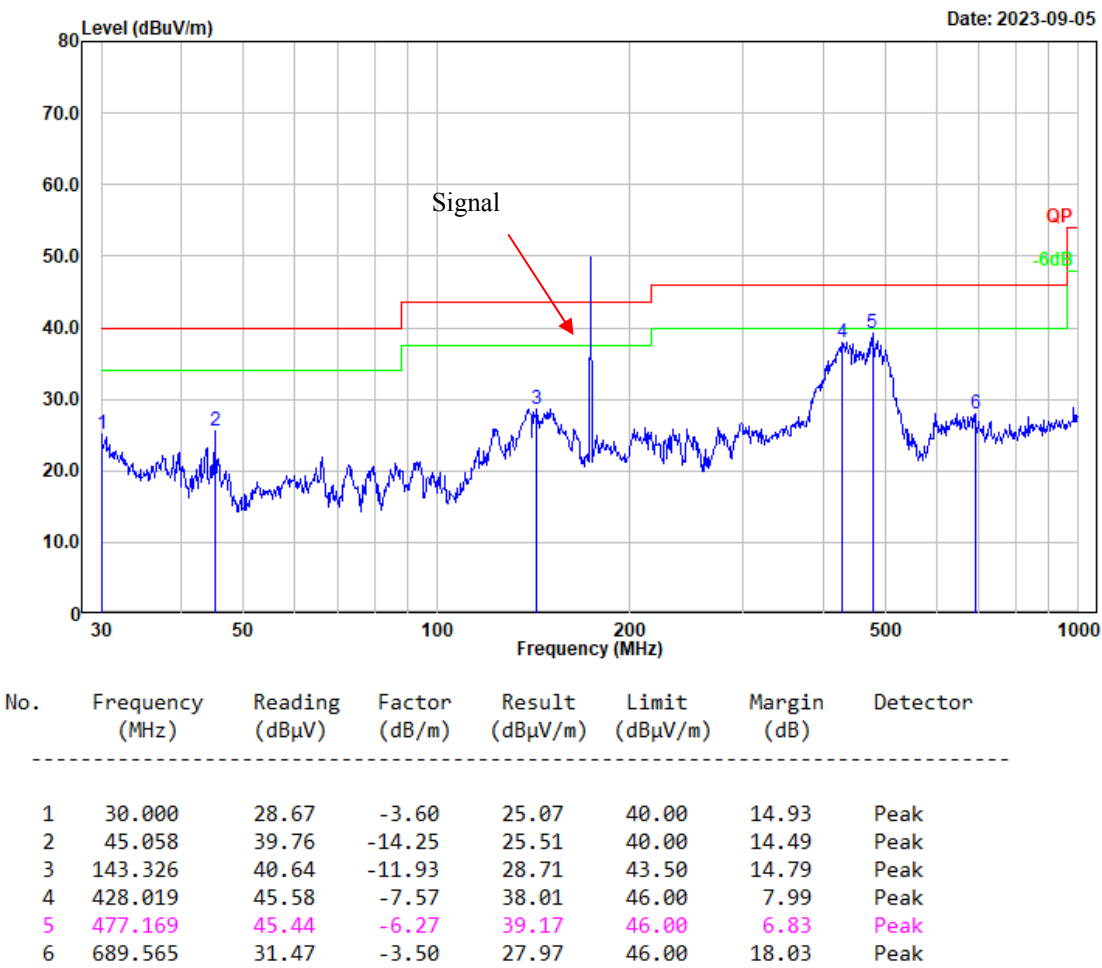
Polarization: horizontal

Note:



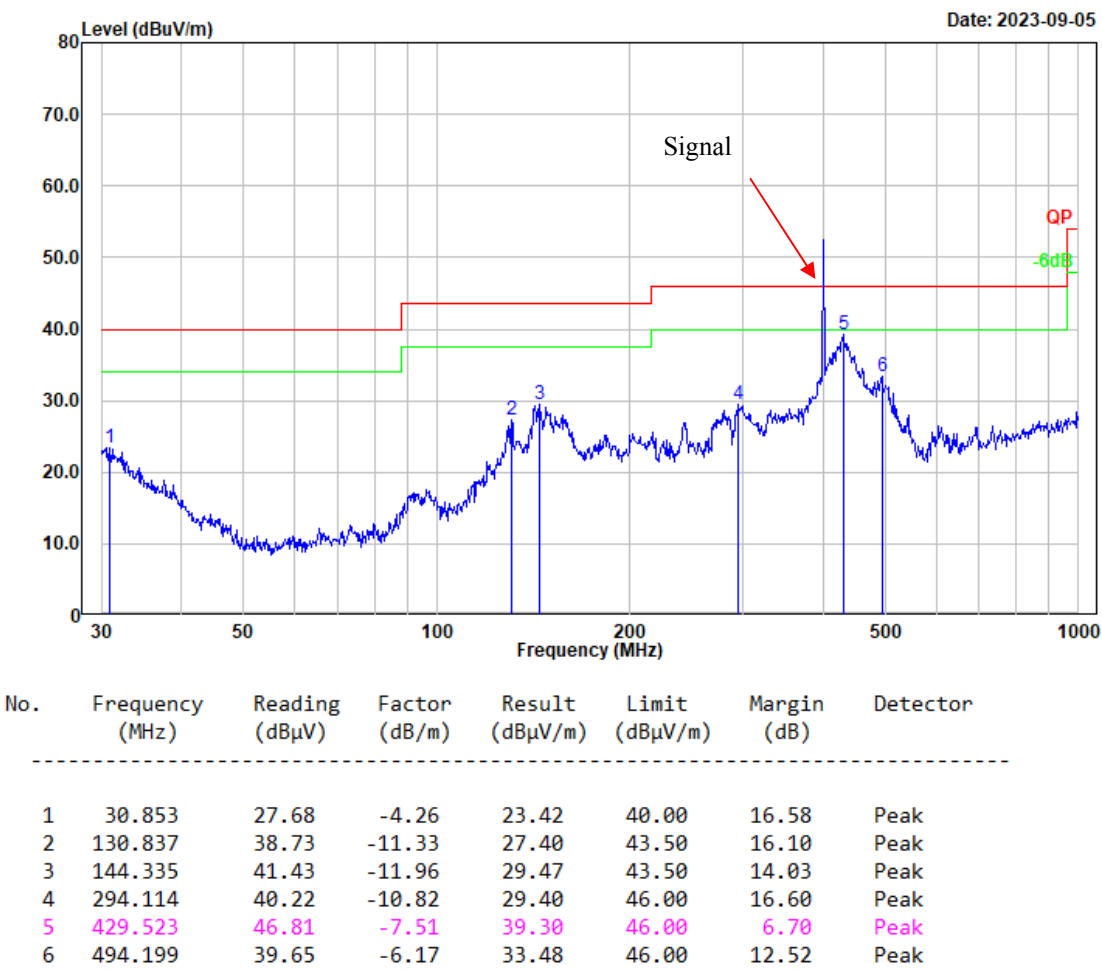
No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	31.071	27.91	-4.43	23.48	40.00	16.52	Peak
2	129.468	37.50	-11.28	26.22	43.50	17.28	Peak
3	140.835	40.95	-11.93	29.02	43.50	14.48	Peak
4	348.027	37.82	-10.03	27.79	46.00	18.21	Peak
5	429.523	46.54	-7.51	39.03	46.00	6.97	Peak
6	497.677	38.06	-6.07	31.99	46.00	14.01	Peak

Project No.: CR230633406-RF
Tester: Carl Xue
Test Mode: Charging&Receiving(173.9875)
Polarization: vertical
Note:

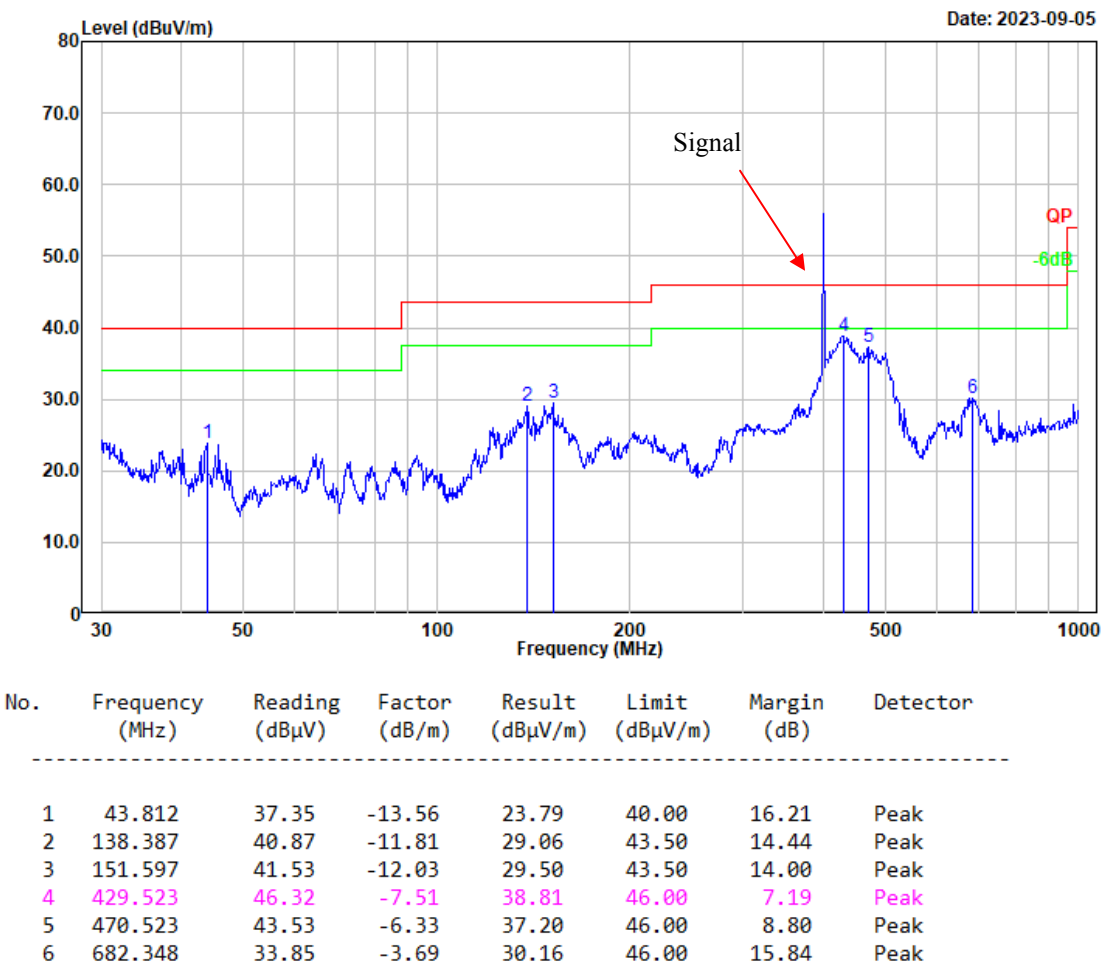


Test Mode: M2 (RX 400.0125MHz)

Project No.: CR230633406-RF
Tester: Carl Xue
Test Mode: Charging&Receiving(400.0125)
Polarization: horizontal
Note:

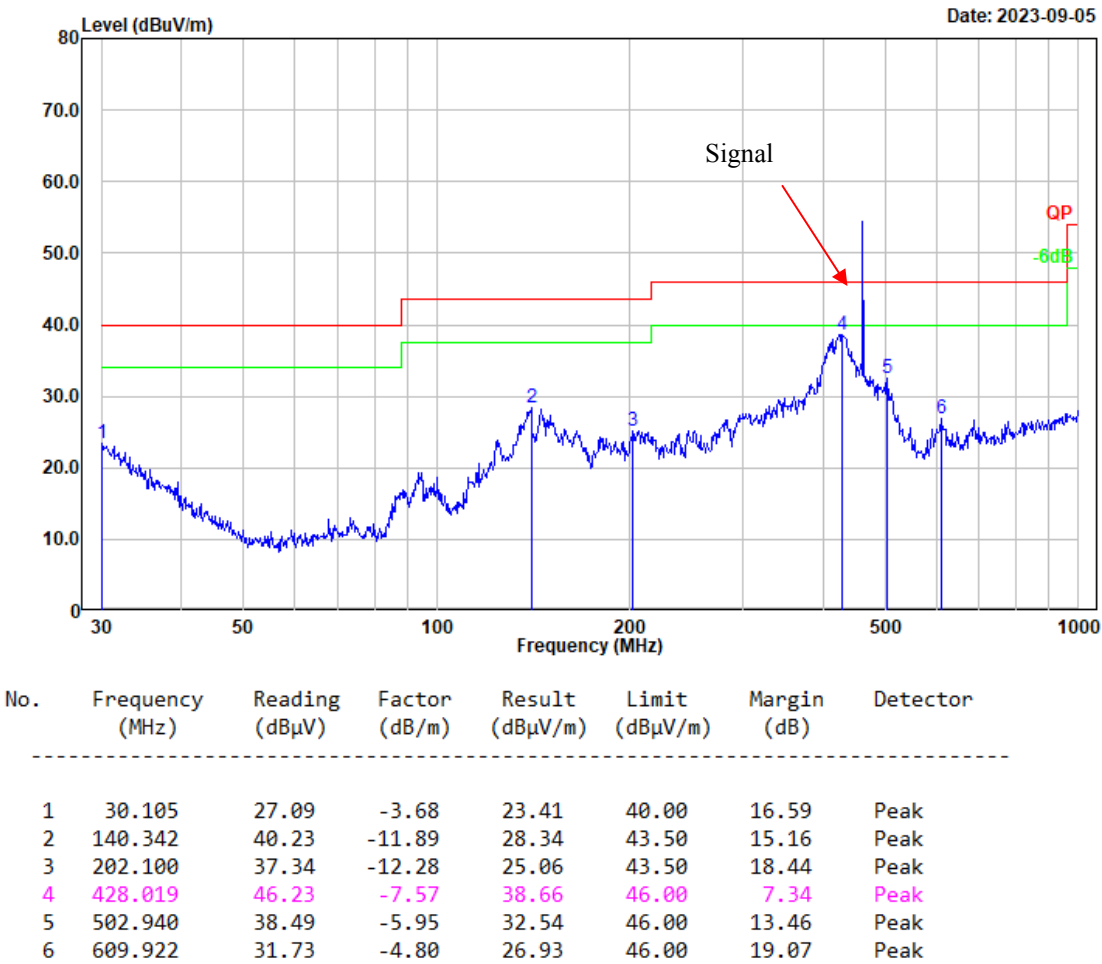


Project No.: CR230633406-RF
Tester: Carl Xue
Test Mode: Charging&Receiving(400.0125)
Polarization: vertical
Note:

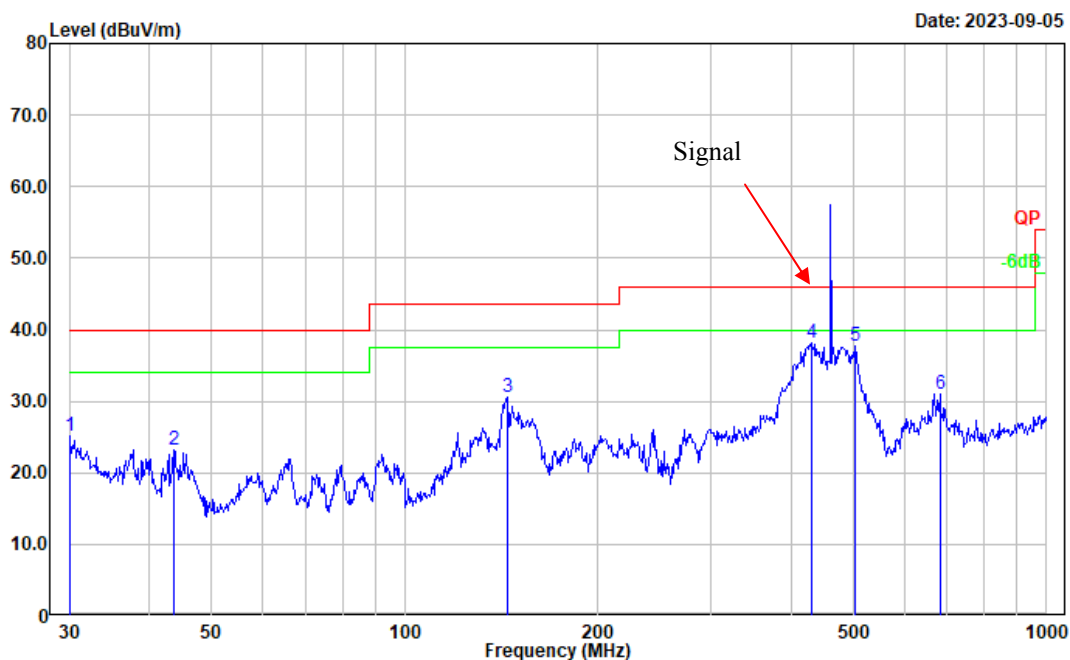


Test Mode: M2 (RX 460MHz)

Project No.: CR230633406-RF
Tester: Carl Xue
Test Mode: Charging&Receiving(460)
Polarization: horizontal
Note:



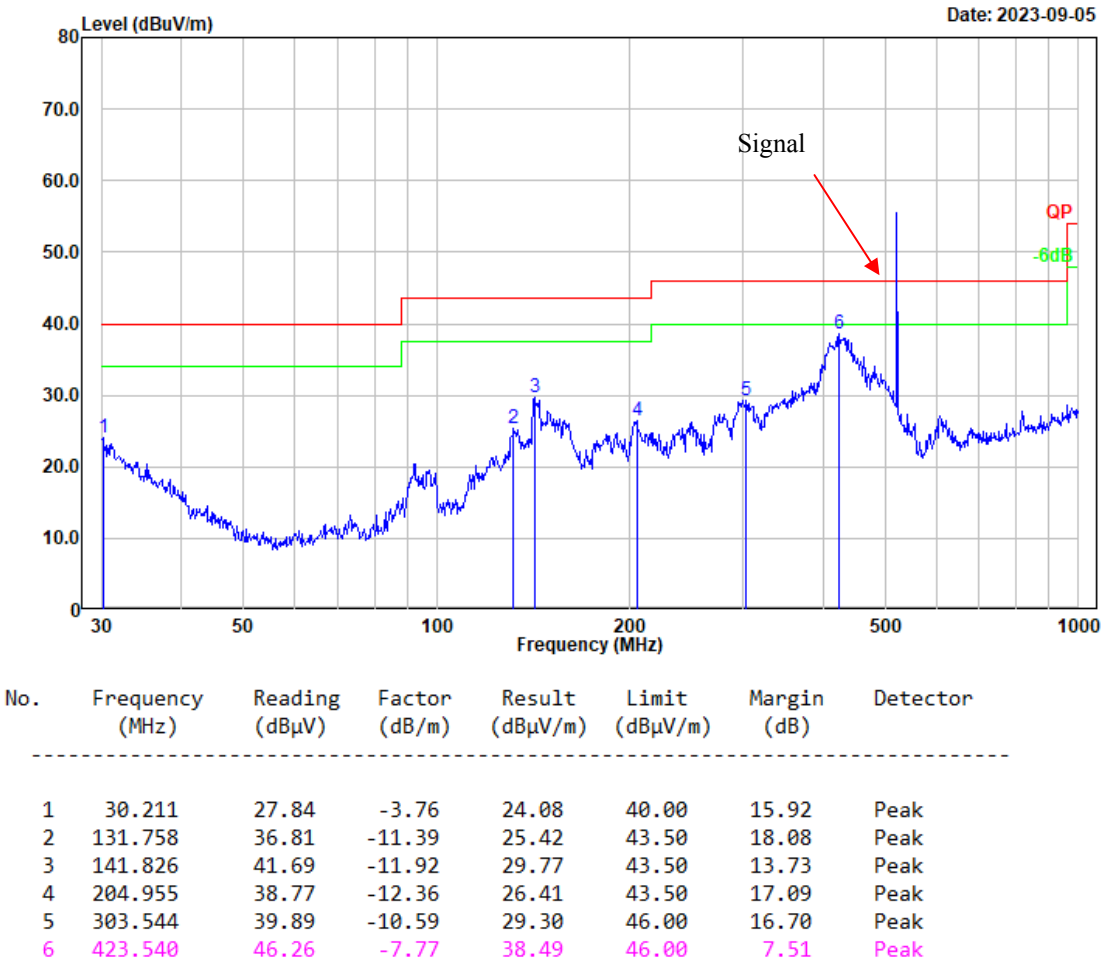
Project No.: CR230633406-RF
Tester: Carl Xue
Test Mode: Charging&Receiving(460)
Polarization: vertical
Note:



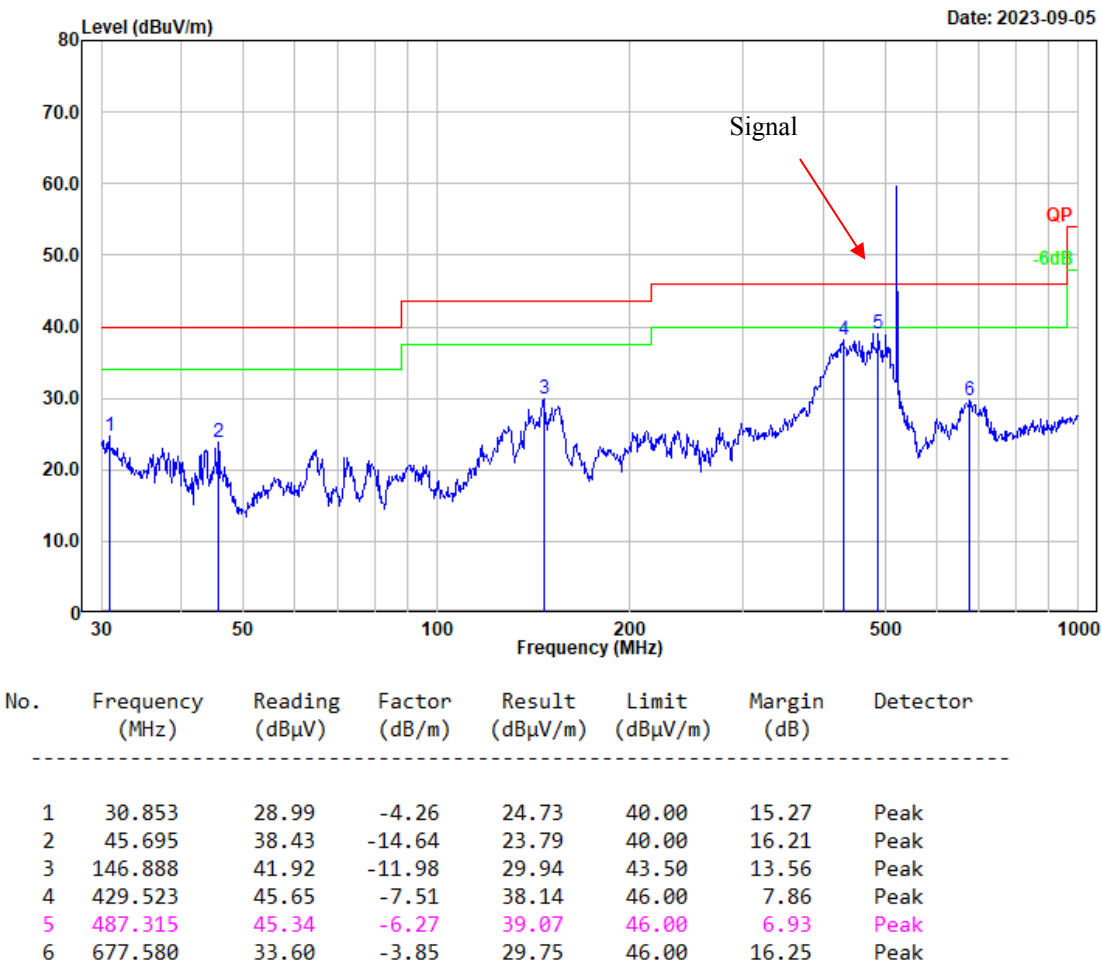
No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	30.000	28.77	-3.60	25.17	40.00	14.83	Peak
2	43.659	36.60	-13.46	23.14	40.00	16.86	Peak
3	144.842	42.54	-11.94	30.60	43.50	12.90	Peak
4	429.523	45.67	-7.51	38.16	46.00	7.84	Peak
5	502.940	43.64	-5.95	37.69	46.00	8.31	Peak
6	682.348	34.64	-3.69	30.95	46.00	15.05	Peak

Test Mode: M2 (RX 519.9875MHz)

Project No.: CR230633406-RF
Tester: Carl Xue
Test Mode: Charging&Receiving(519.9875)
Polarization: horizontal
Note:



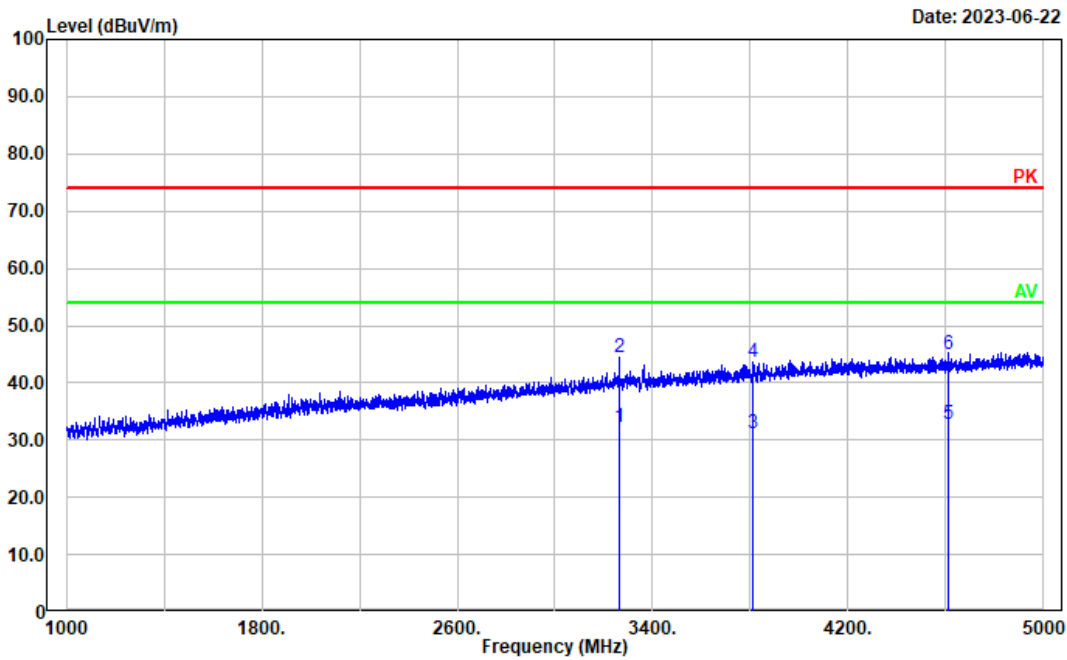
Project No.: CR230633406-RF
Tester: Carl Xue
Test Mode: Charging&Receiving(519.9875)
Polarization: vertical
Note:



2) Above 1GHz

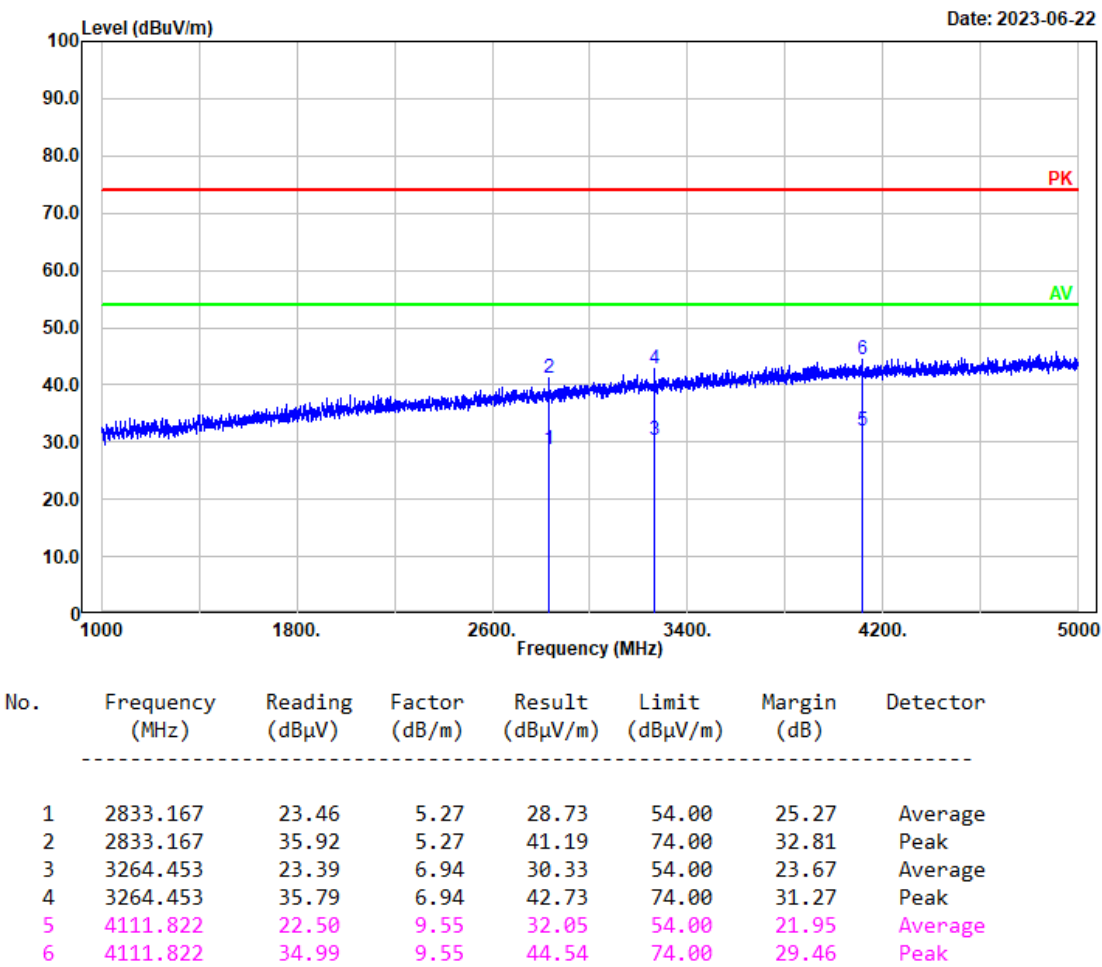
Test Mode: M1

Test Mode: Charging& Scanning
Polarization: horizontal
Note:



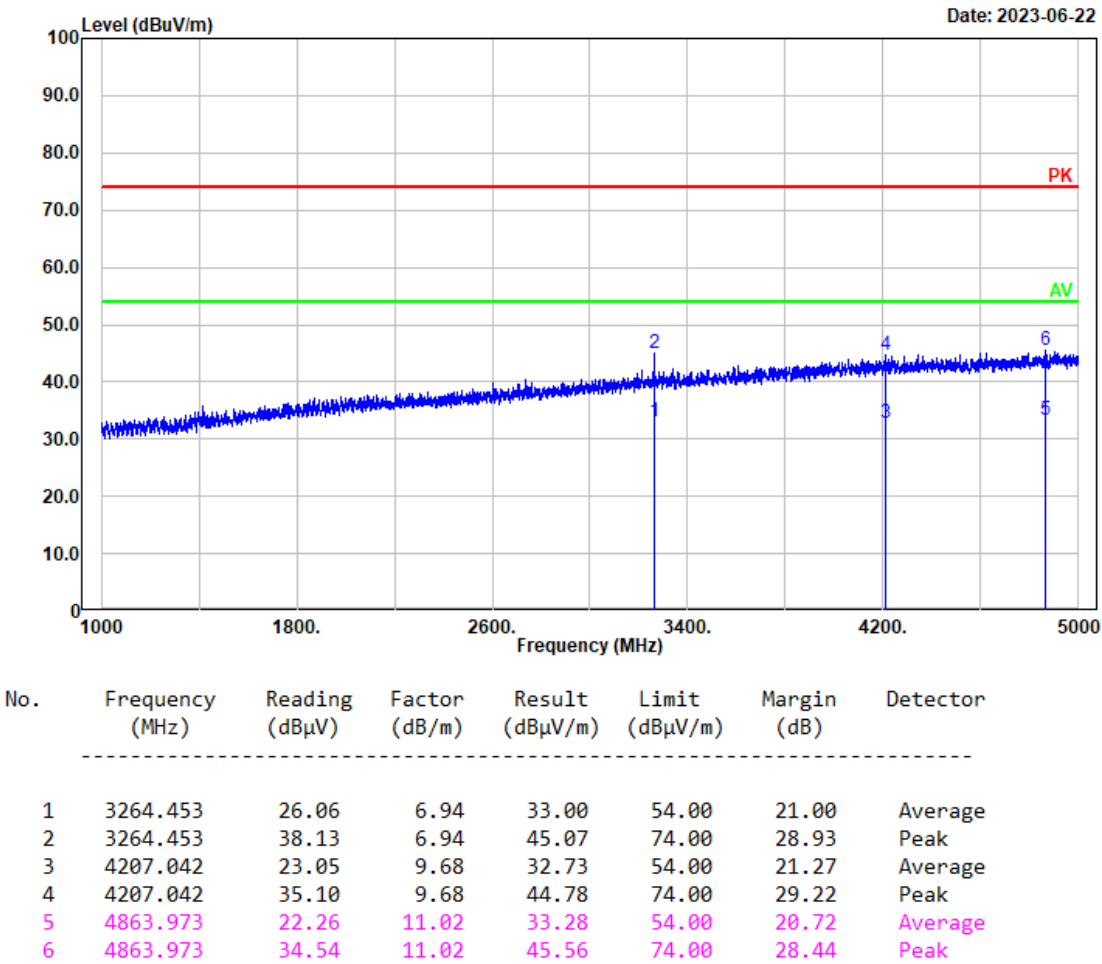
No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	3264.453	25.31	6.94	32.25	54.00	21.75	Average
2	3264.453	37.63	6.94	44.57	74.00	29.43	Peak
3	3810.162	22.49	8.78	31.27	54.00	22.73	Average
4	3810.162	34.97	8.78	43.75	74.00	30.25	Peak
5	4611.922	22.36	10.40	32.76	54.00	21.24	Average
6	4611.922	34.72	10.40	45.12	74.00	28.88	Peak

Test Mode: Charging& Scanning
Polarization: vertical
Note:

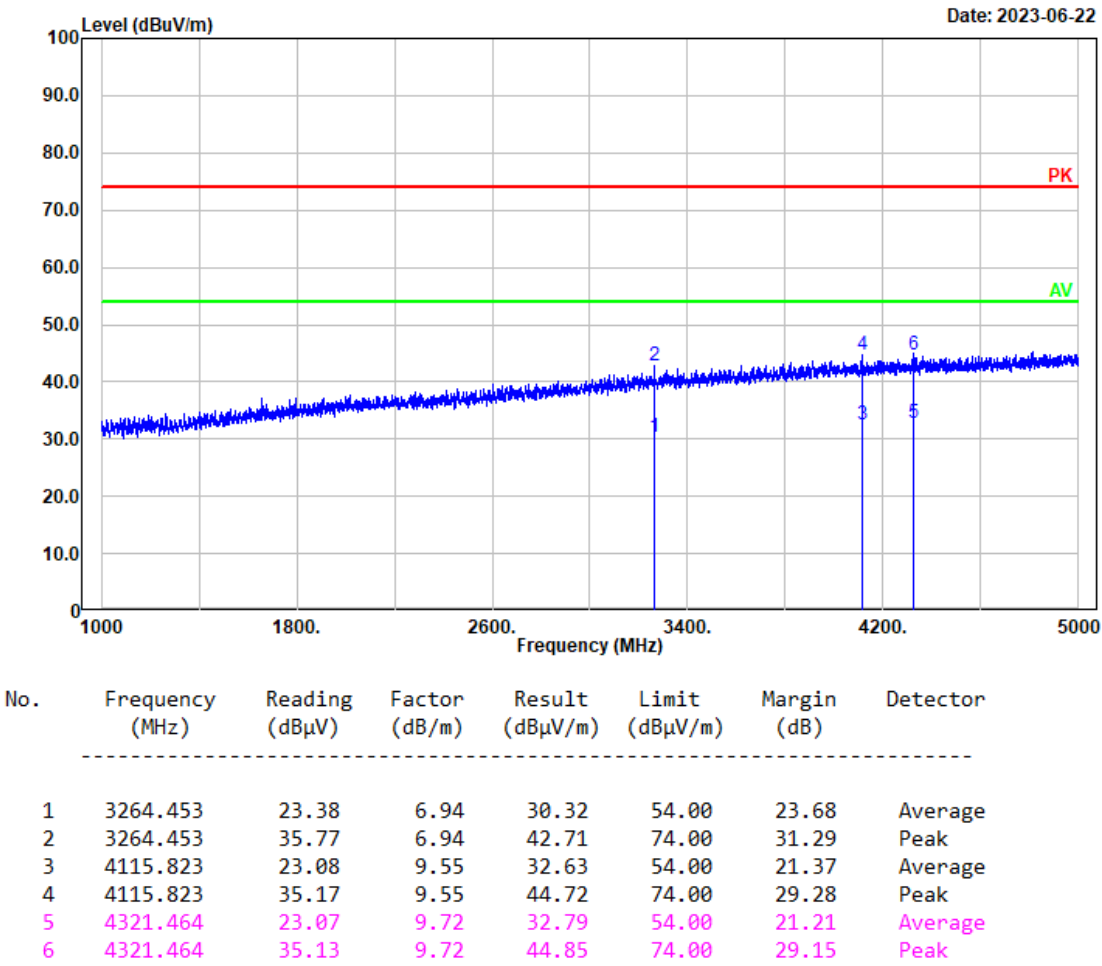


Test Mode: M2 (RX 136.0125MHz)

Test Mode: Charging&Receiving
Polarization: horizontal
Note:

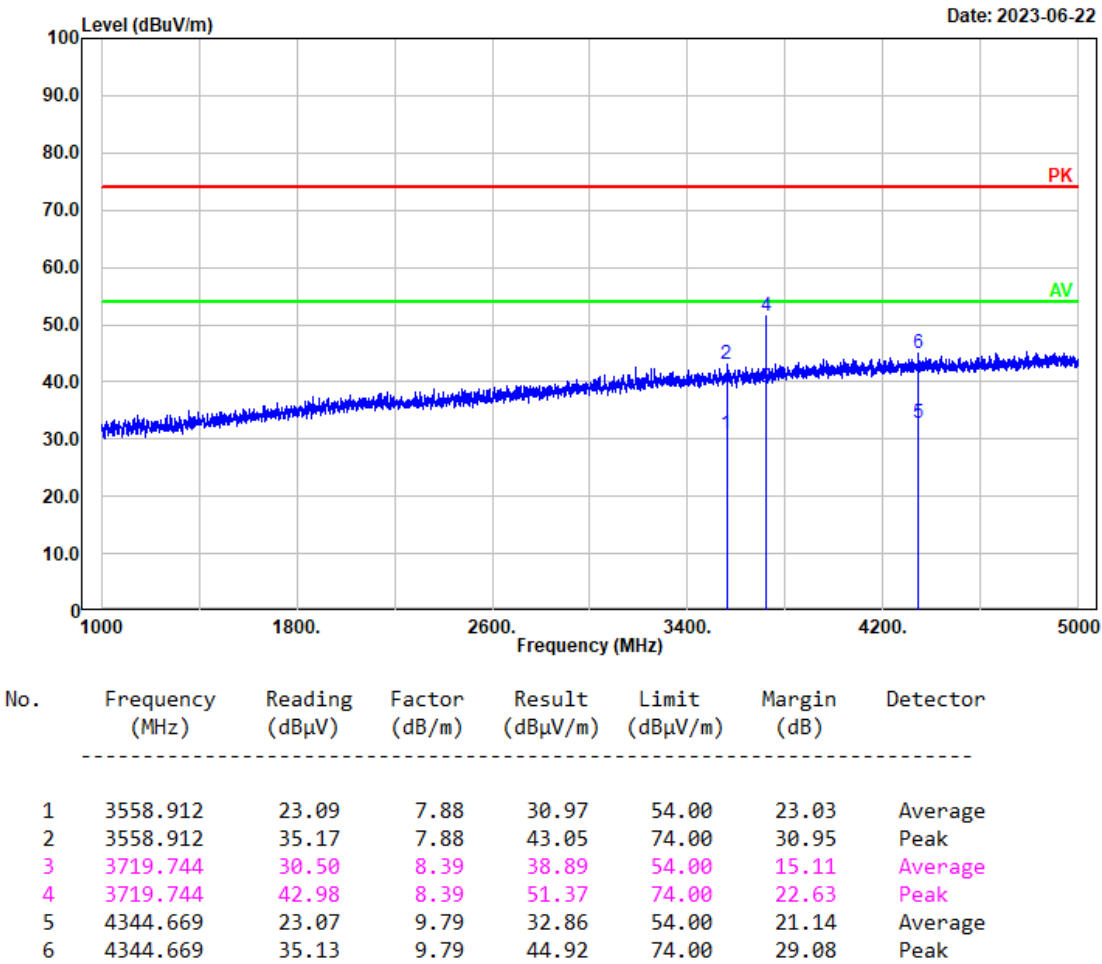


Test Mode: Charging&Receiving
Polarization: vertical
Note:

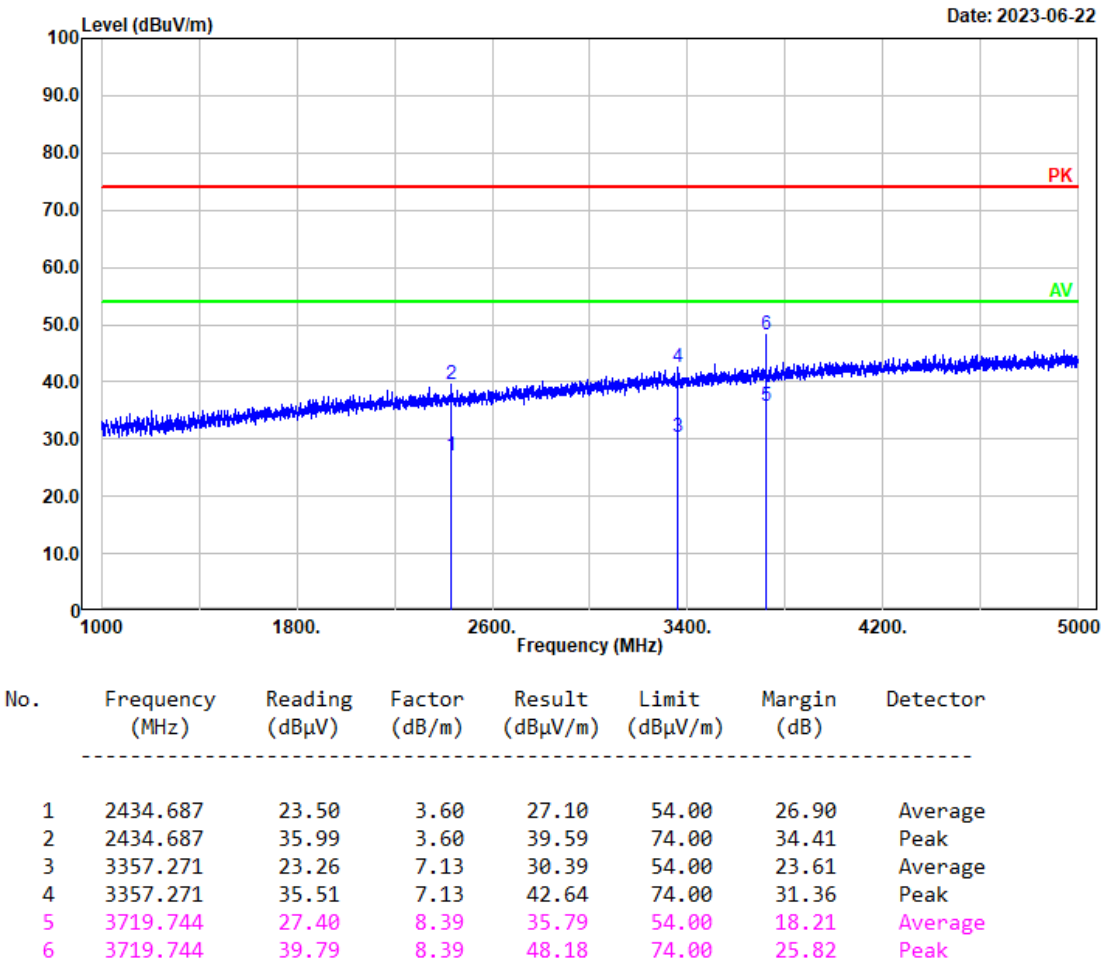


Test Mode: M2 (RX 155MHz)

Test Mode: Charging&Receiving
Polarization: horizontal
Note:

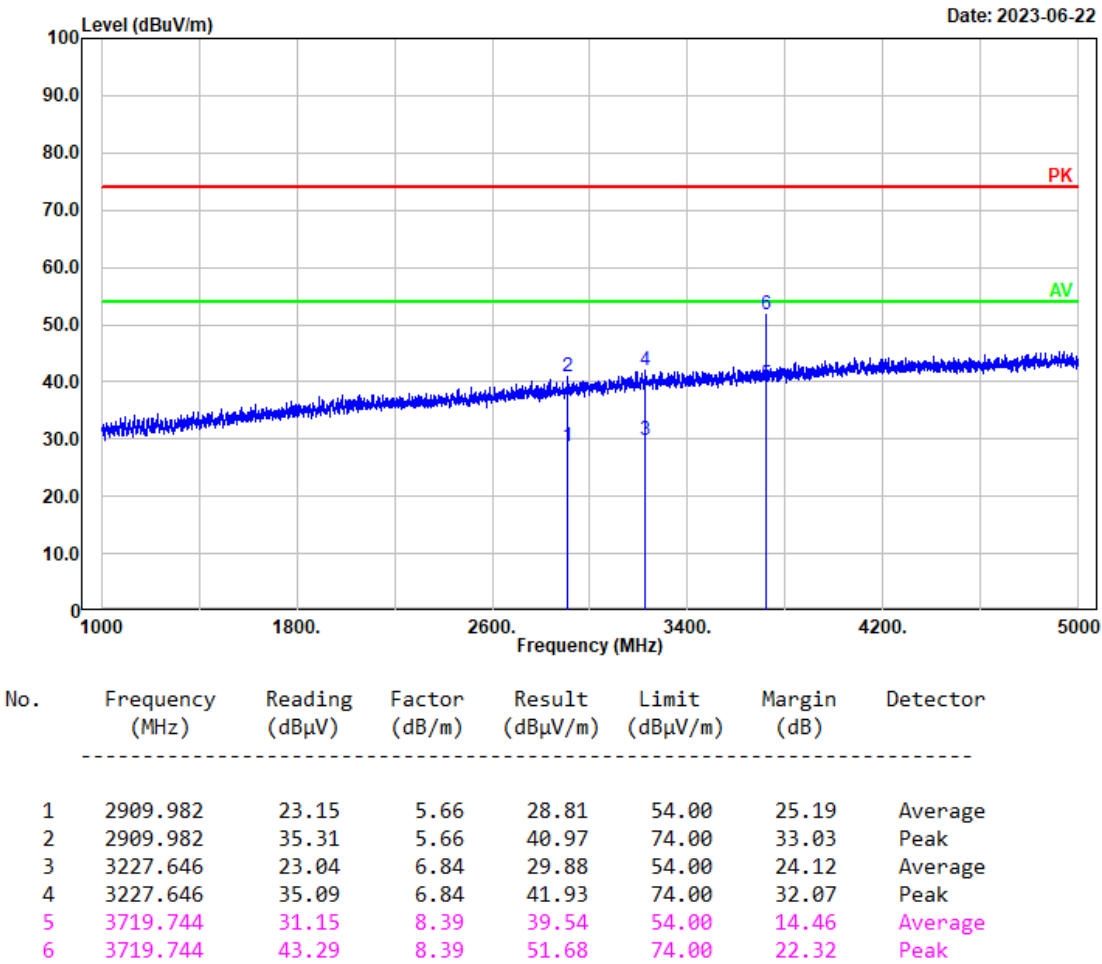


Test Mode: Charging&Receiving
Polarization: vertical
Note:

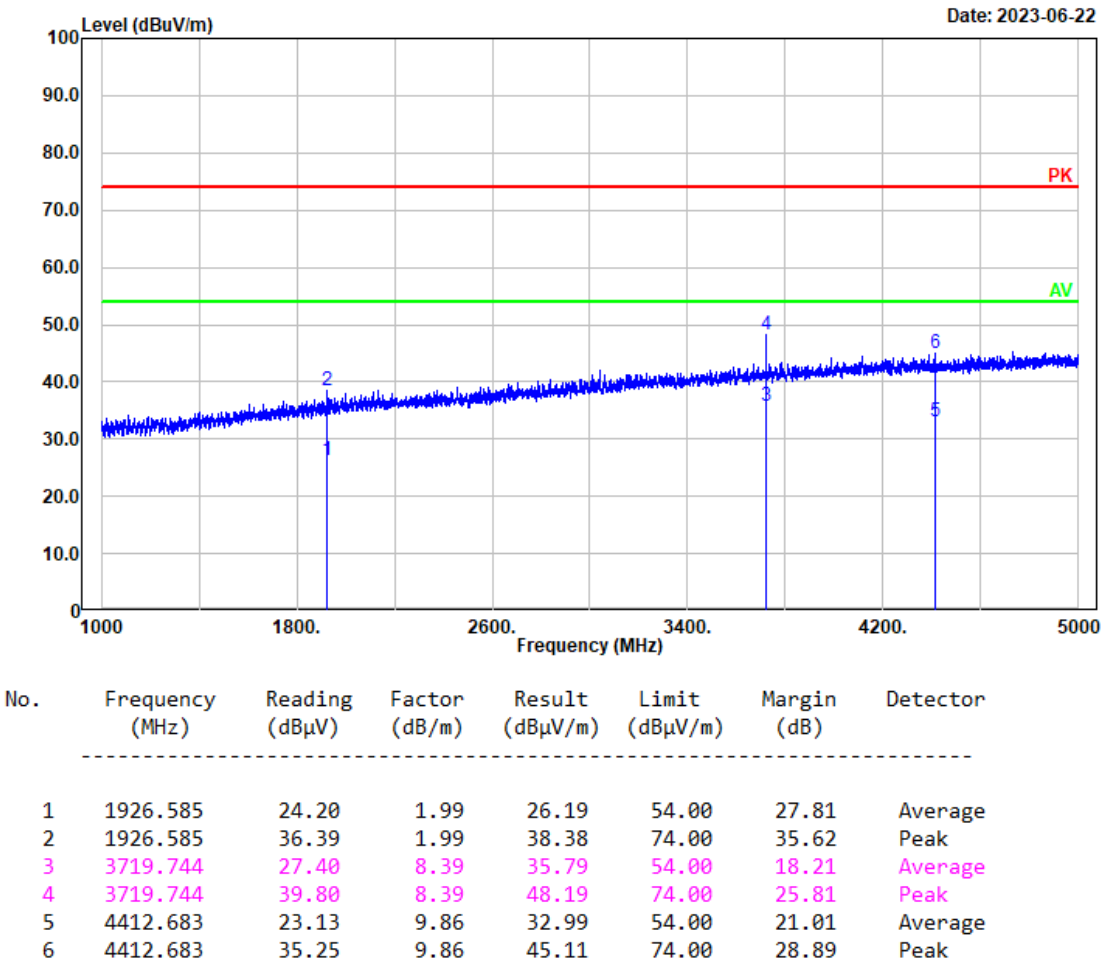


Test Mode: M2 (RX 173.9875MHz)

Test Mode: Charging&Receiving
Polarization: horizontal
Note:

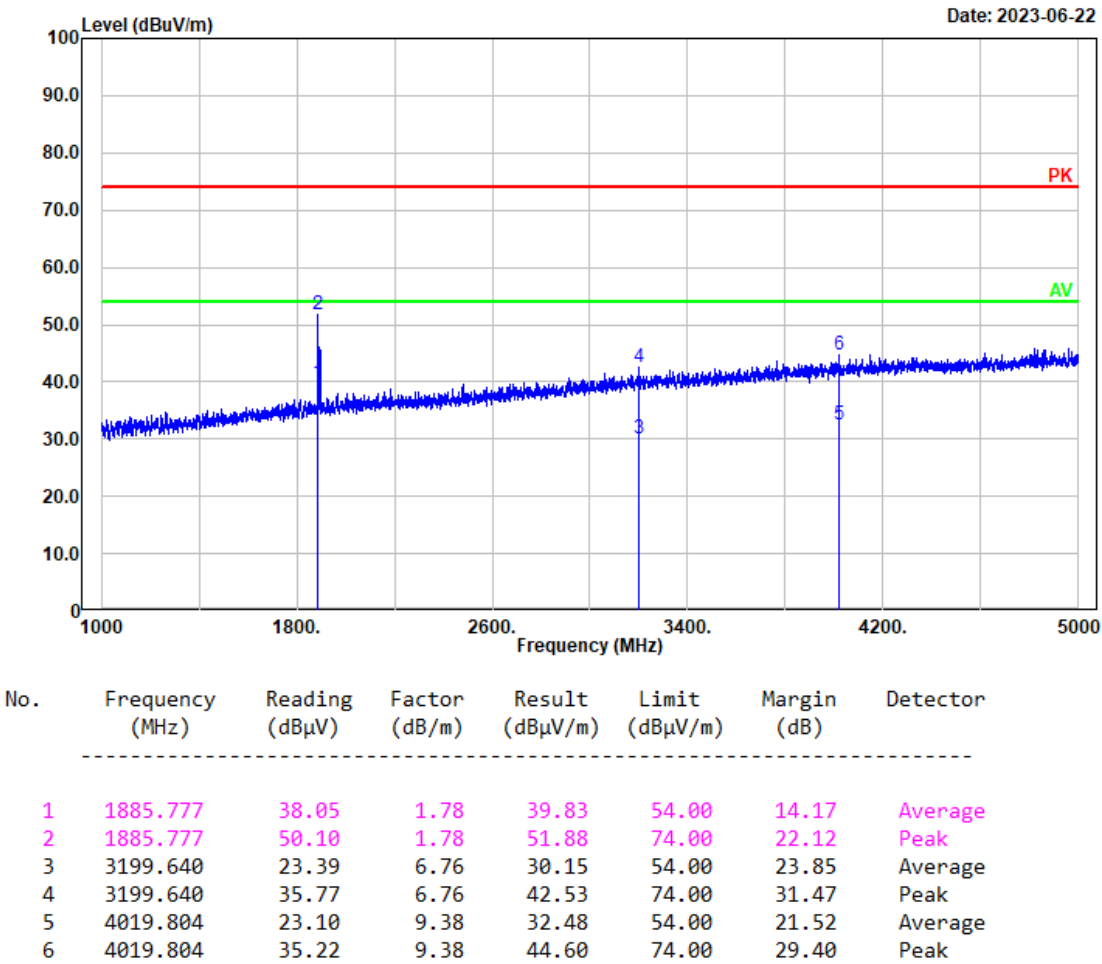


Test Mode: Charging&Receiving
Polarization: vertical
Note:

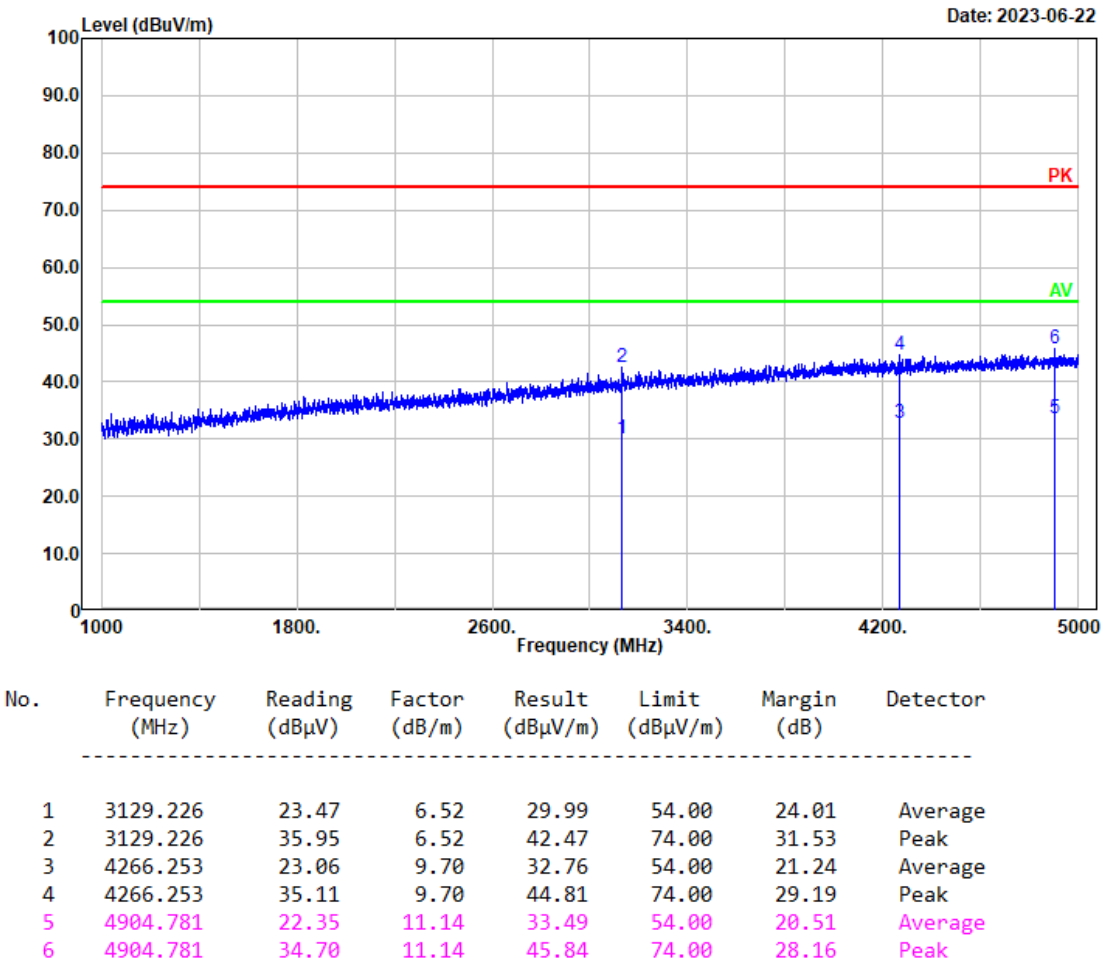


Test Mode: M2 (RX 400.0125MHz)

Test Mode: Charging&Receiving
Polarization: horizontal
Note:

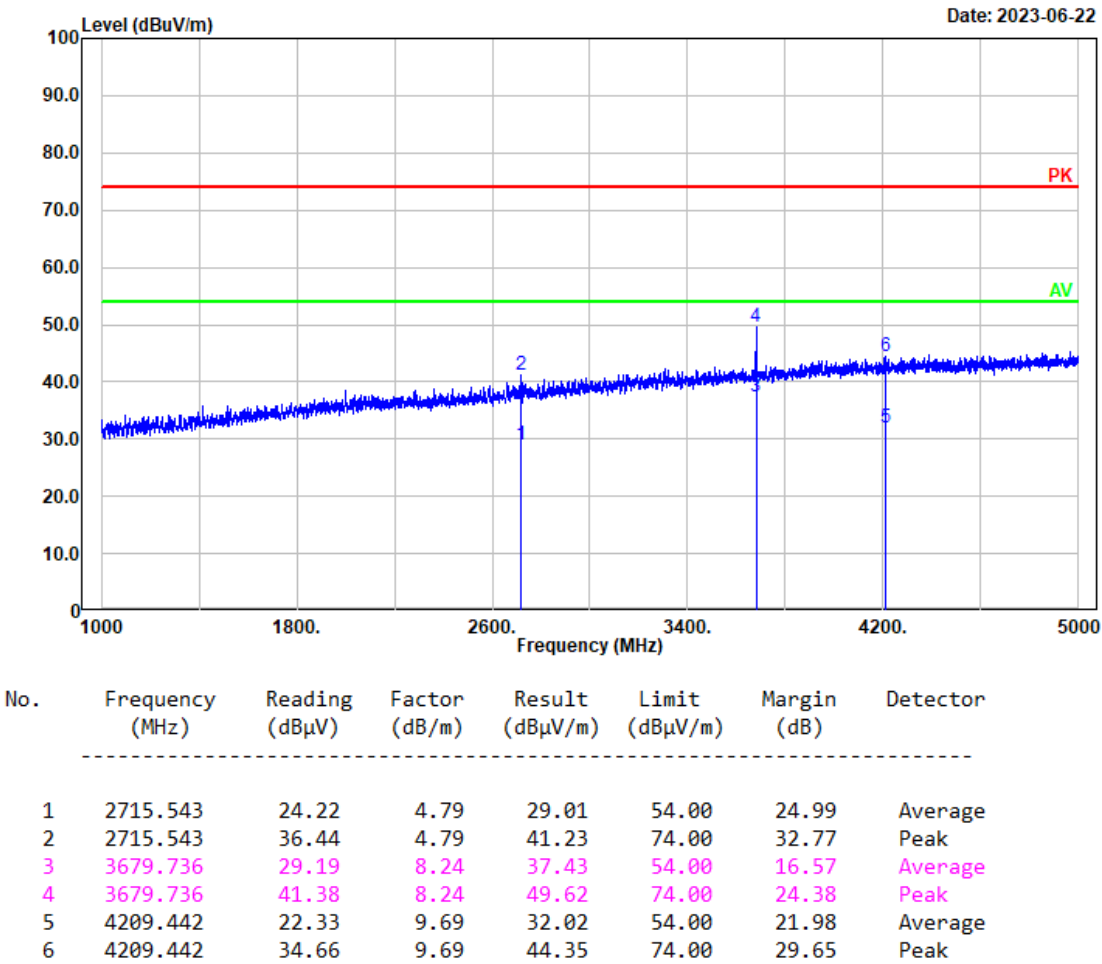


Test Mode: Charging&Receiving
Polarization: vertical
Note:

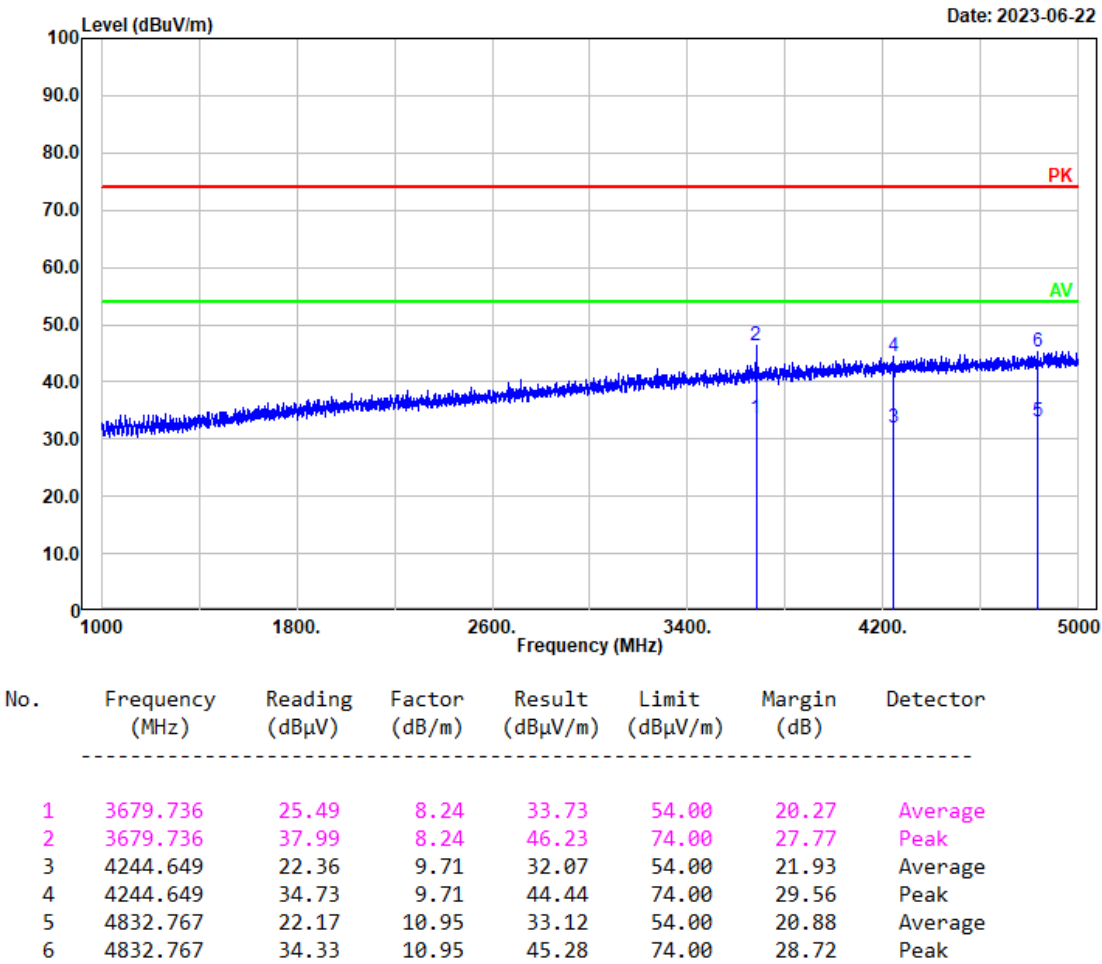


Test Mode: M2 (RX 460MHz)

Test Mode: Charging&Receiving
Polarization: horizontal
Note:

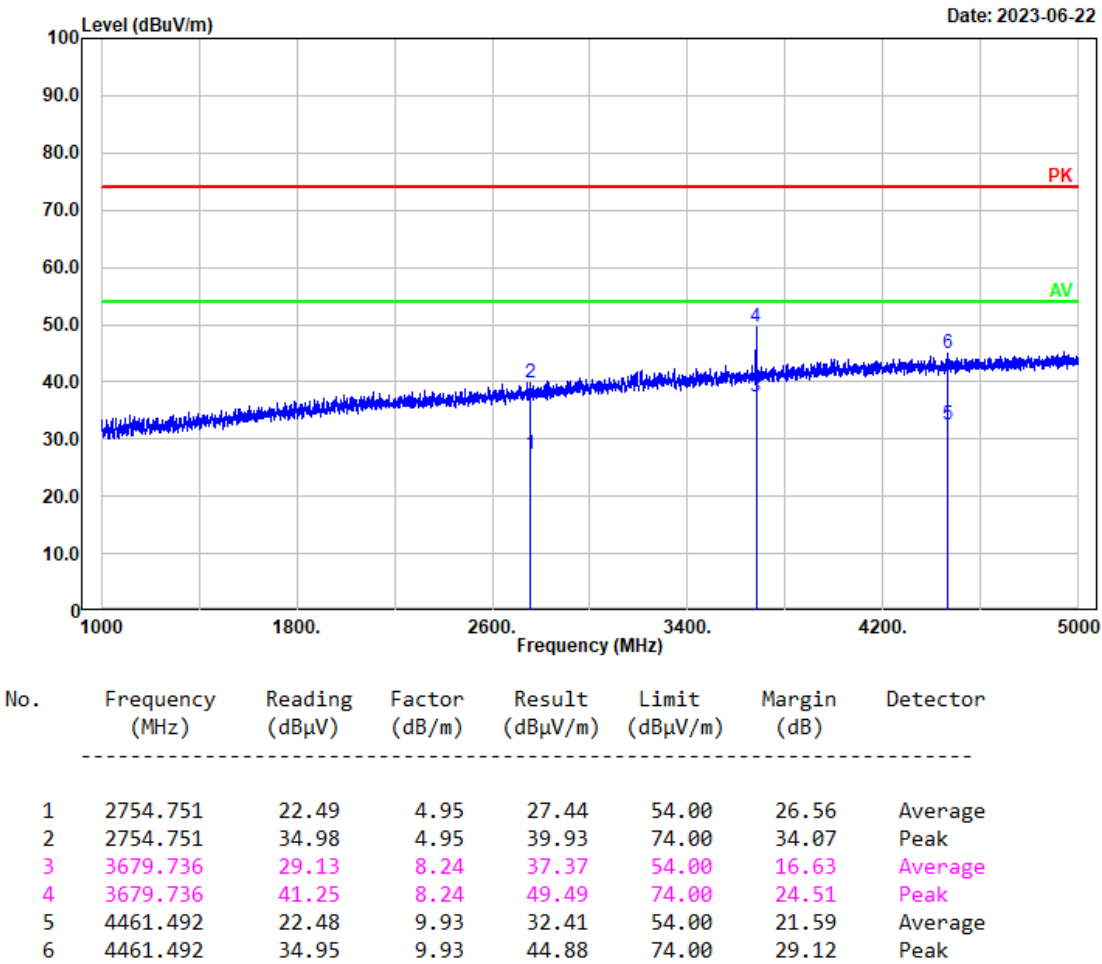


Test Mode: Charging&Receiving
Polarization: vertical
Note:

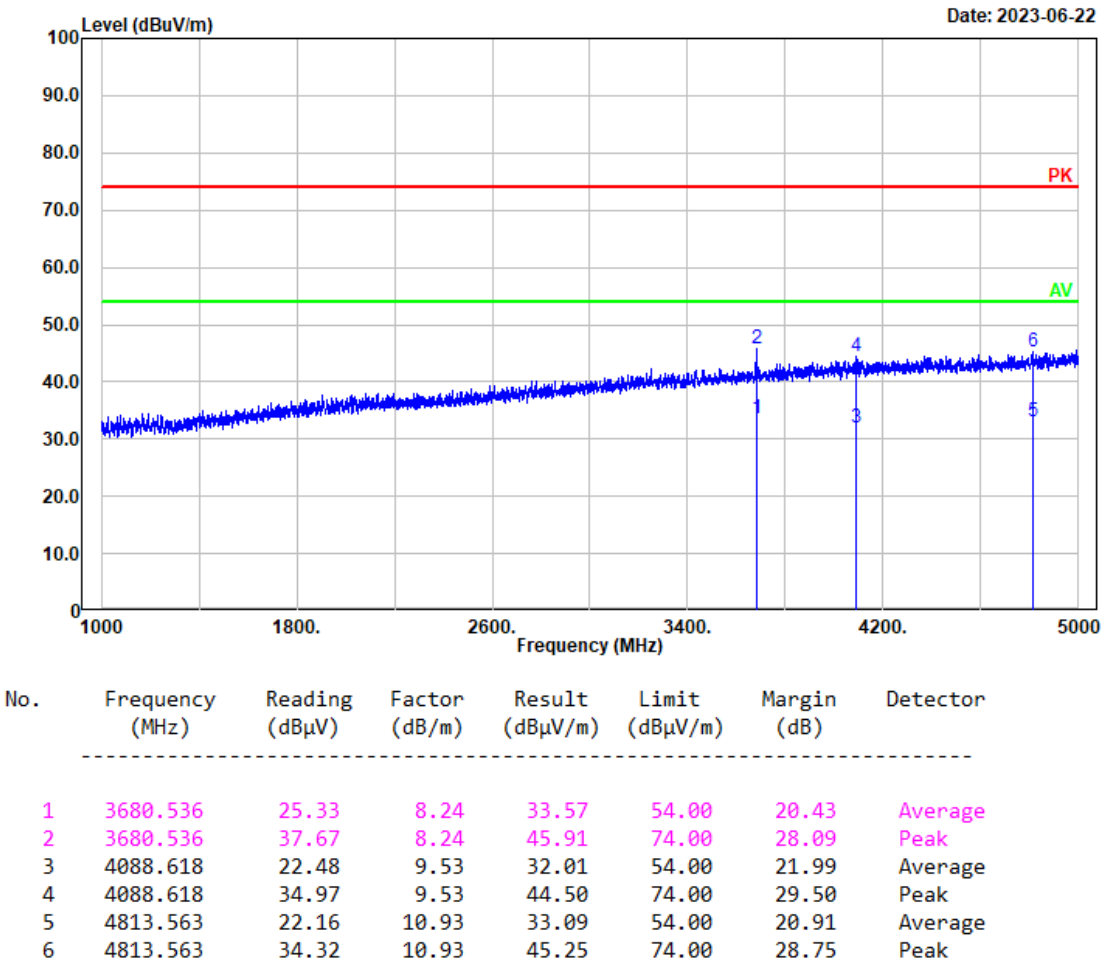


Test Mode: M2 (RX 519.9875MHz)

Test Mode: Charging&Receiving
Polarization: horizontal
Note:



Test Mode: Charging&Receiving
Polarization: vertical
Note:



4.3 Antenna Power Conduction Limits for Receivers

Serial Number:	26TA-1	Test Date:	2023/09/16
Test Site:	RF	Test Mode:	Scanning, Receiving
Tester:	Morpheus Shi	Test Result:	Pass

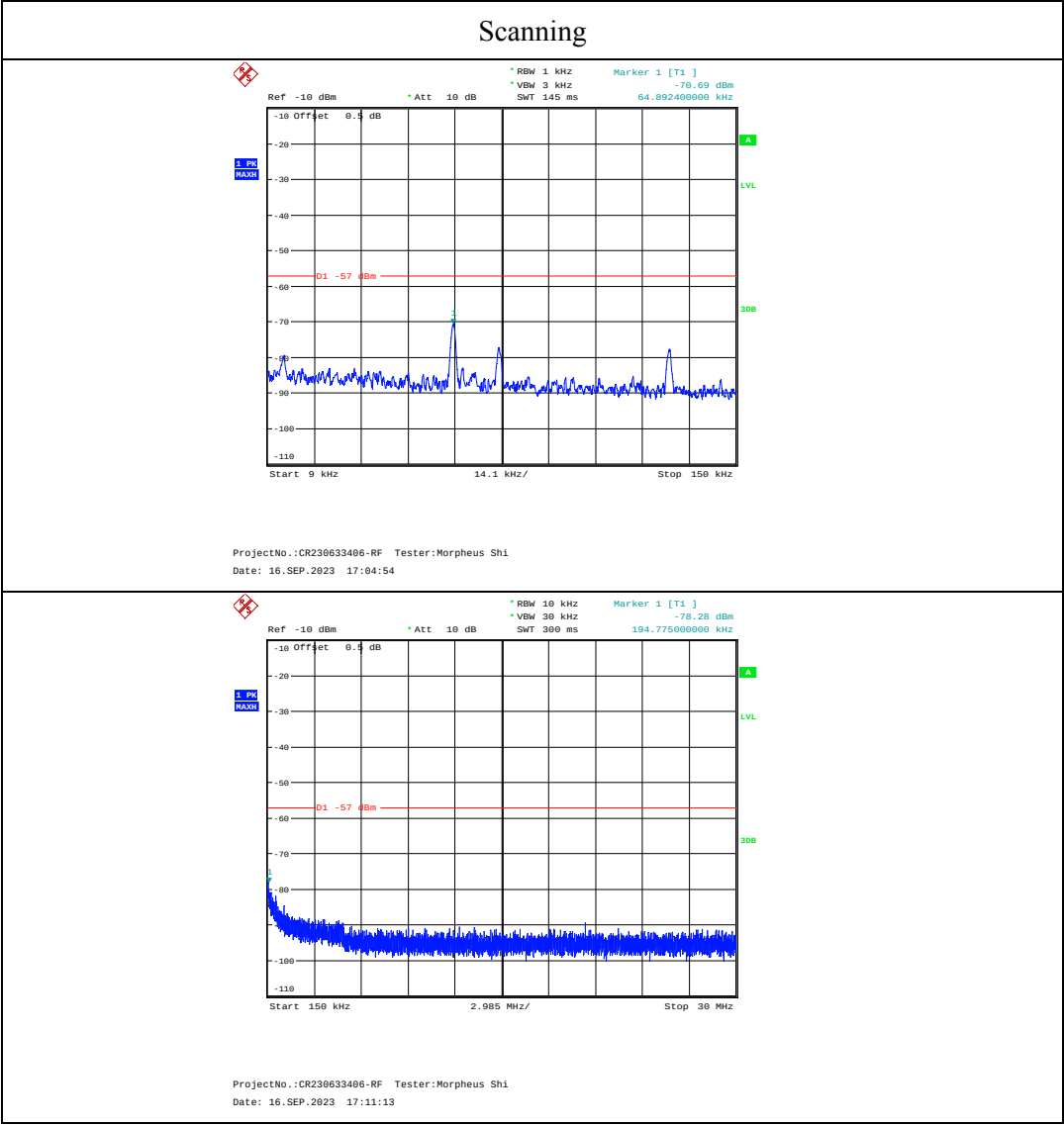
Environmental Conditions:					
Temperature: (°C)	26.3	Relative Humidity: (%)	47	ATM Pressure: (kPa)	100

Test Equipment List and Details:

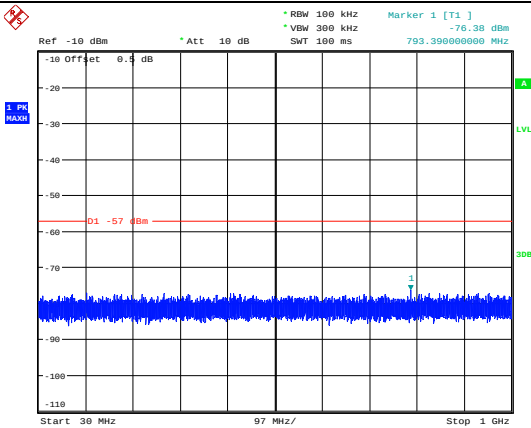
Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSU26	200445	2023/3/31	2024/3/30
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
Mini-Circuits	DC Block	BLK-18-S+	1554403	Each time	N/A

* 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).

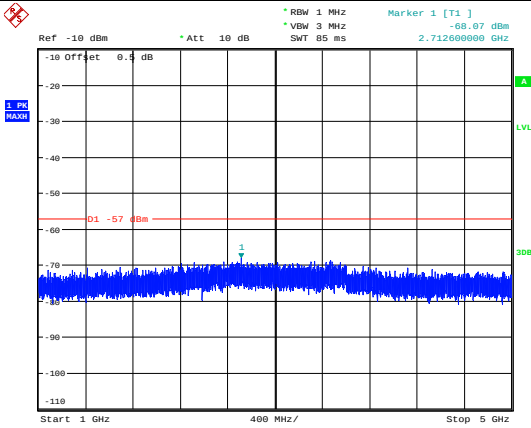
Test Mode: M1



Scanning

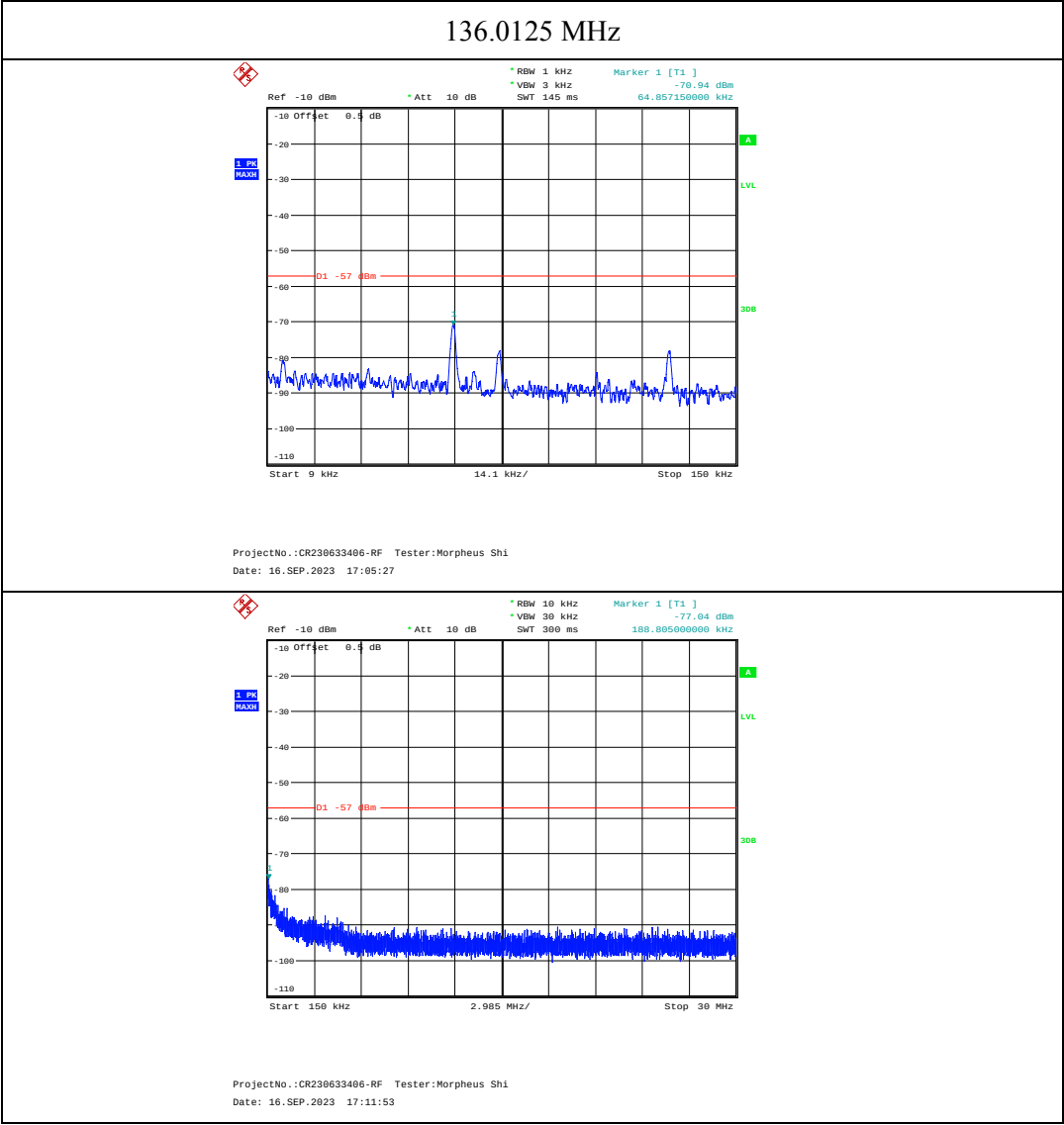


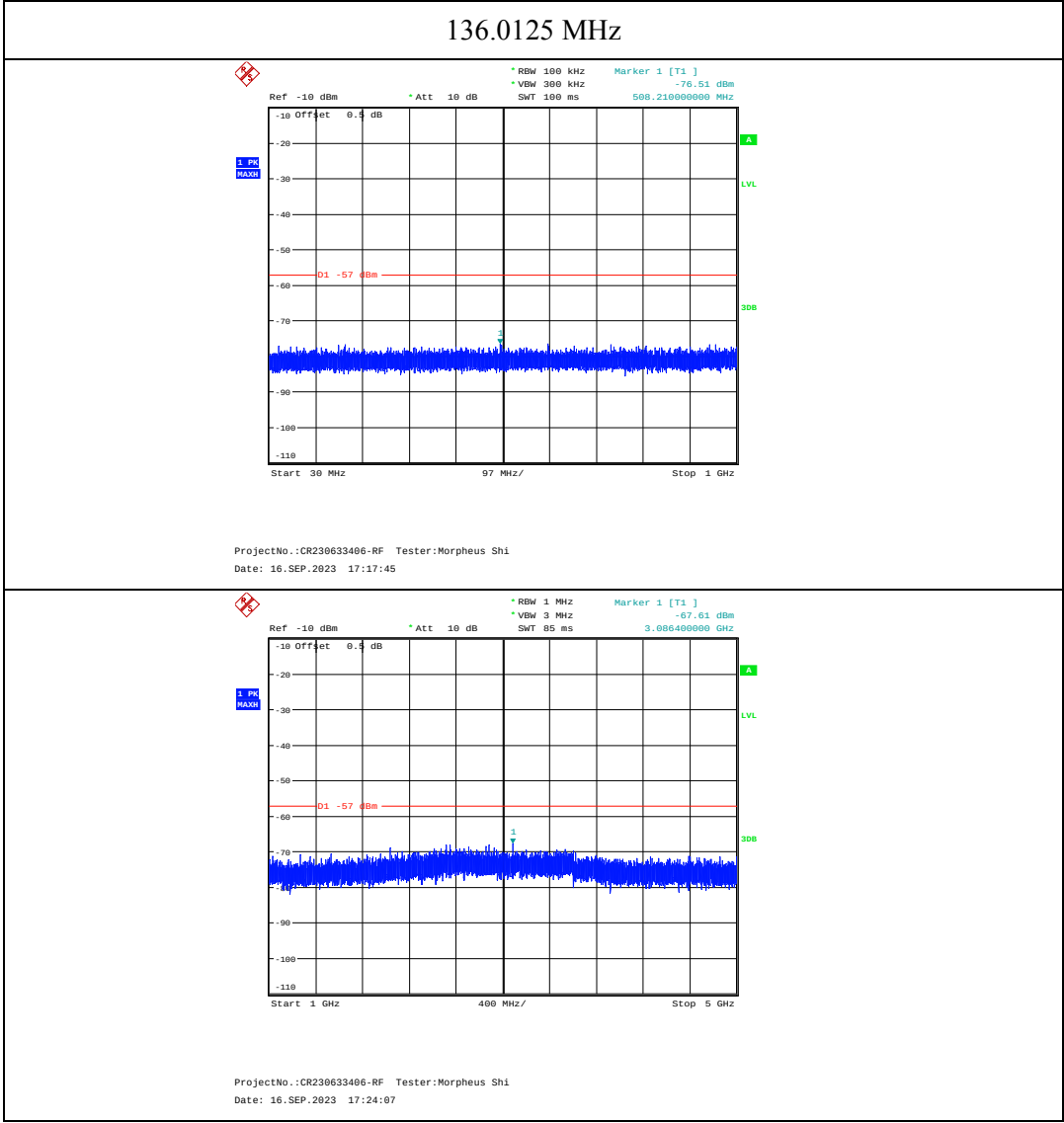
ProjectNo.:CR230633406-RF Tester:Morpheus Shi
Date: 16.SEP.2023 17:17:08

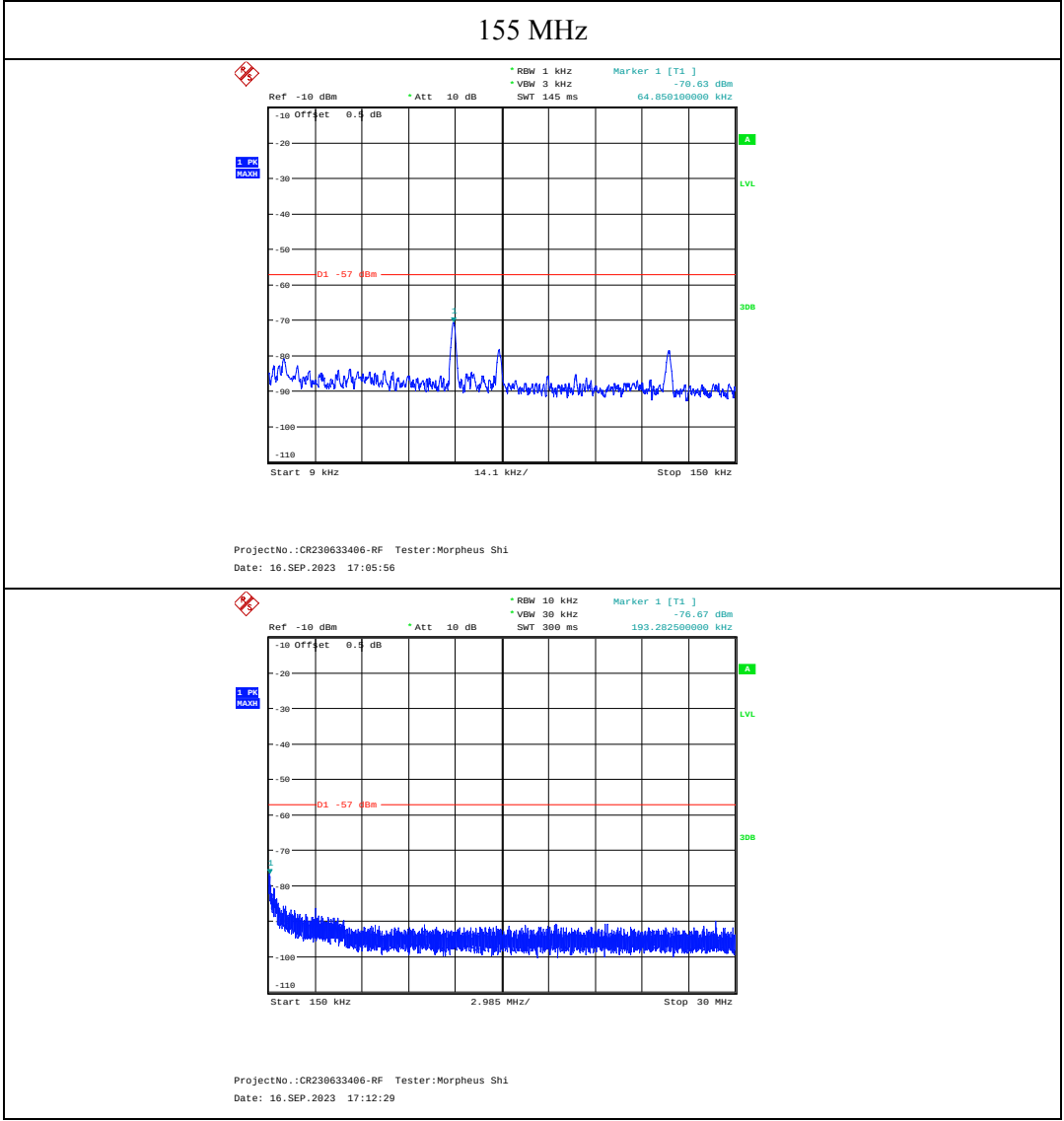


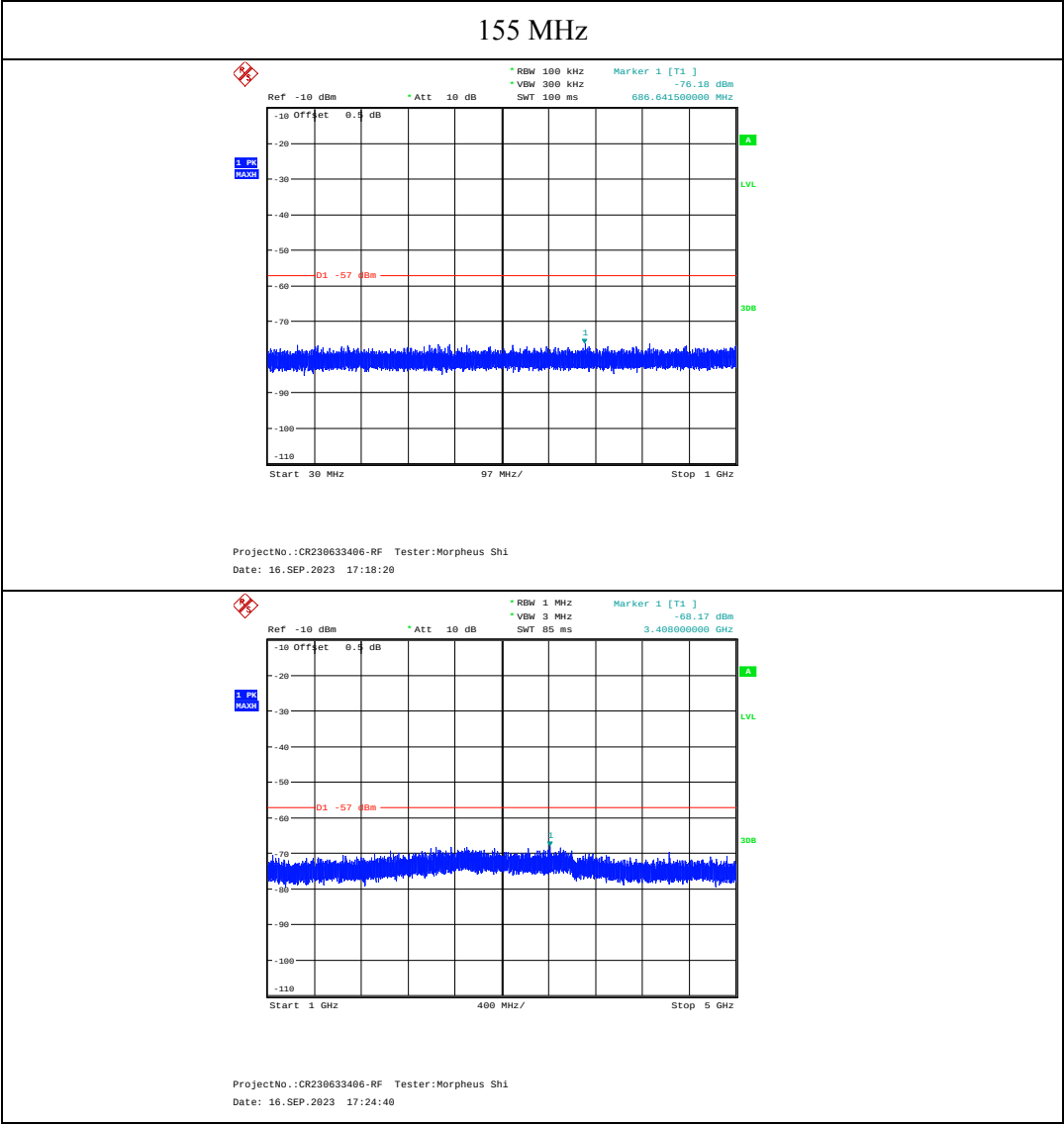
ProjectNo.:CR230633406-RF Tester:Morpheus Shi
Date: 16.SEP.2023 17:23:35

Test Mode: M2

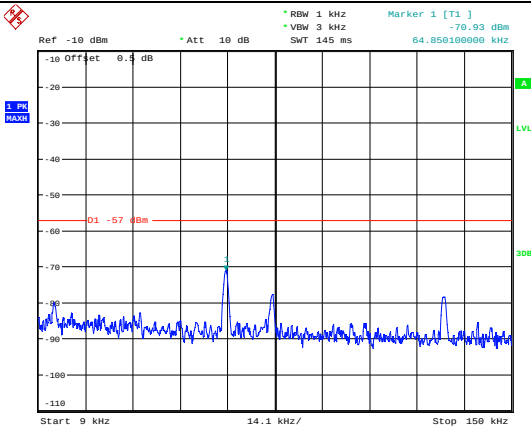




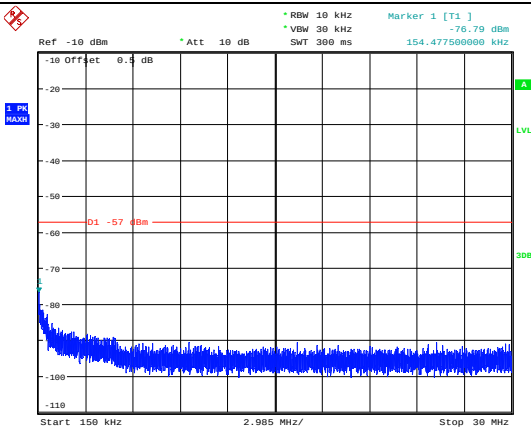




173.9875 MHz

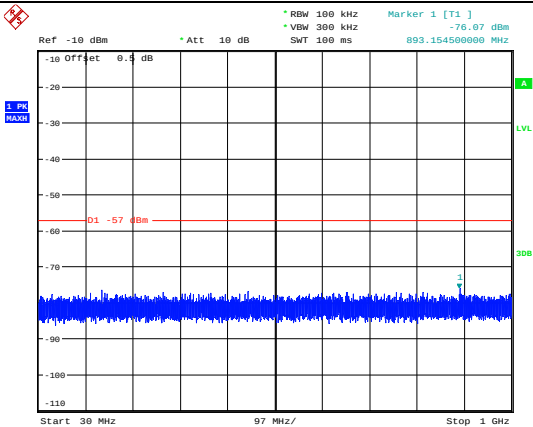


ProjectNo.:CR230633406-RF Tester:Morpheus Shi
Date: 16.SEP.2023 17:06:25

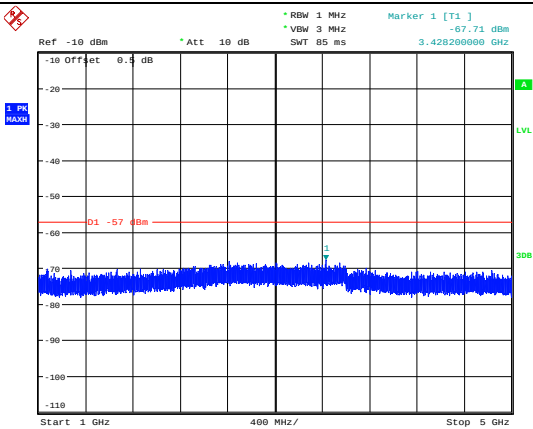


ProjectNo.:CR230633406-RF Tester:Morpheus Shi
Date: 16.SEP.2023 17:13:01

173.9875 MHz



ProjectNo.:CR230633406-RF Tester:Morpheus Shi
Date: 16.SEP.2023 17:19:14



ProjectNo.:CR230633406-RF Tester:Morpheus Shi
Date: 16.SEP.2023 17:25:25

Ref -10 dBm Att 10 dB

* RBW 1 kHz
* VBW 3 kHz
SMT 145 ms

Marker 1 [T1]
-70.84 dBm
64.857150000 kHz

1.00 W
100 kHz

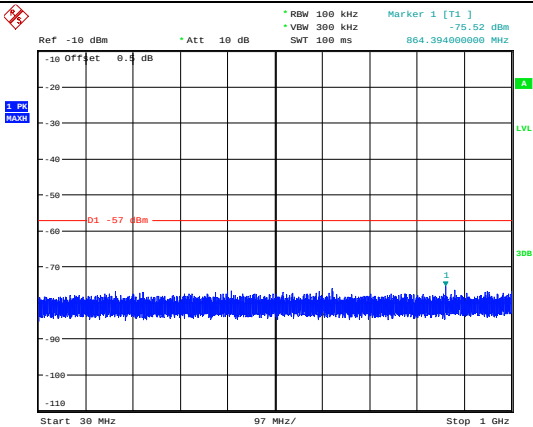
Start 9 kHz 14.1 kHz/ Stop 150 kHz

1.00 W
100 kHz

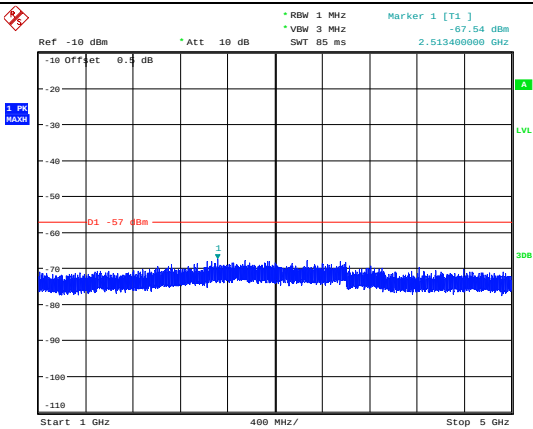
1.00 W
100 kHz

Page 70 of 78

400.0125MHz

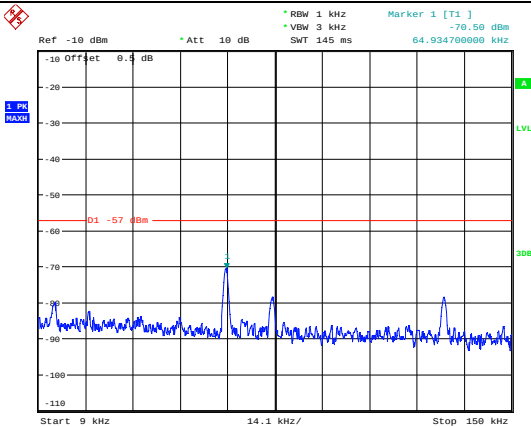


ProjectNo.:CR230633406-RF Tester:Morpheus Shi
Date: 16.SEP.2023 17:19:48

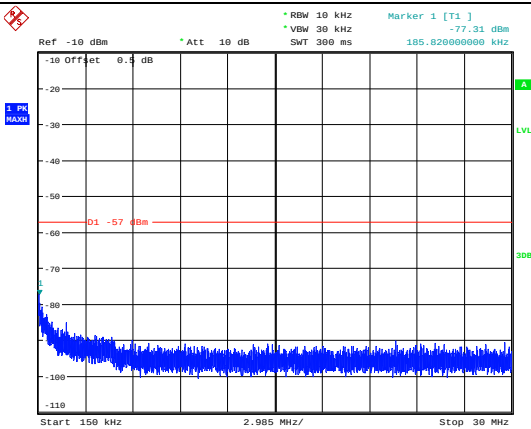


ProjectNo.:CR230633406-RF Tester:Morpheus Shi
Date: 16.SEP.2023 17:26:28

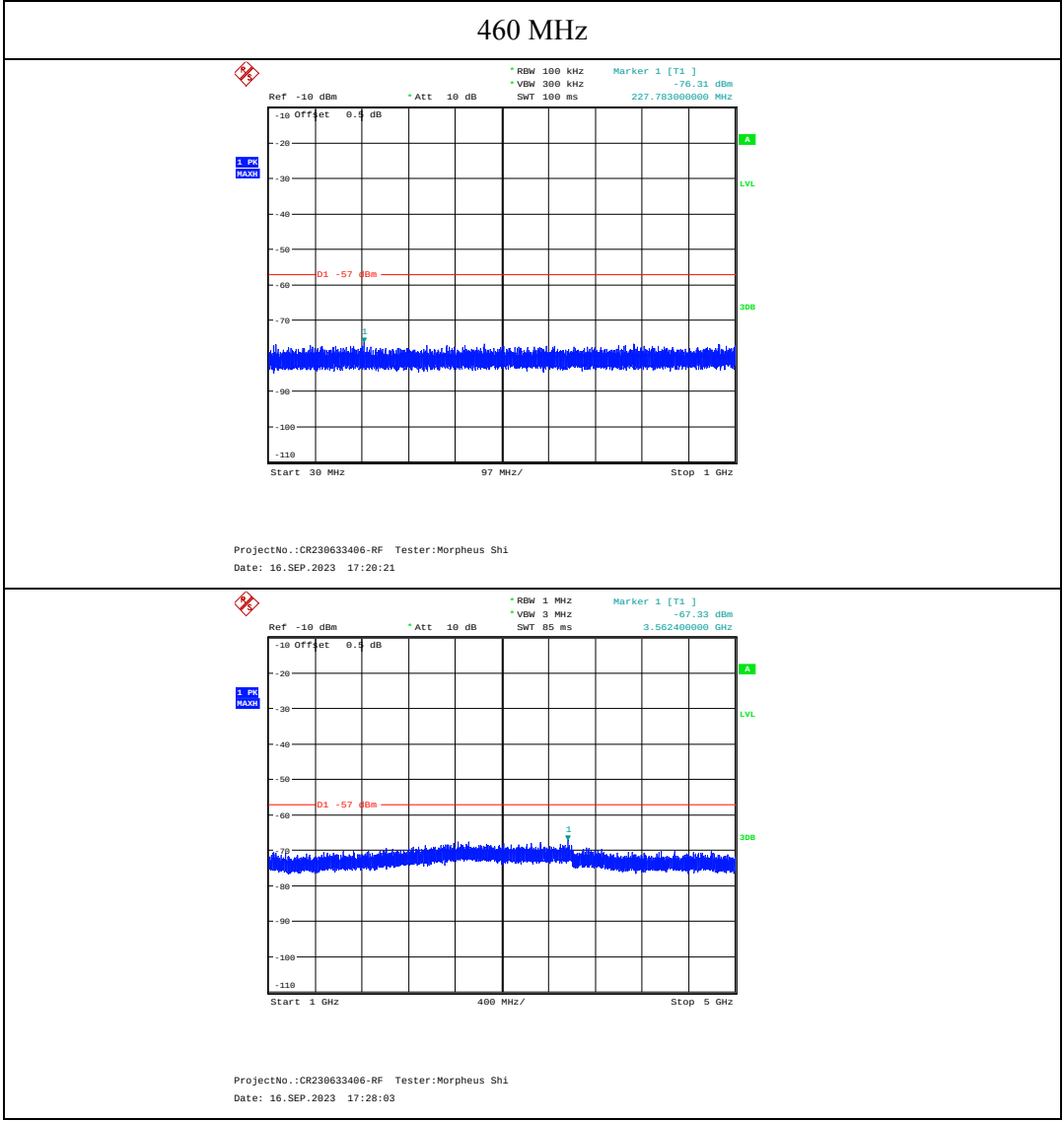
460 MHz



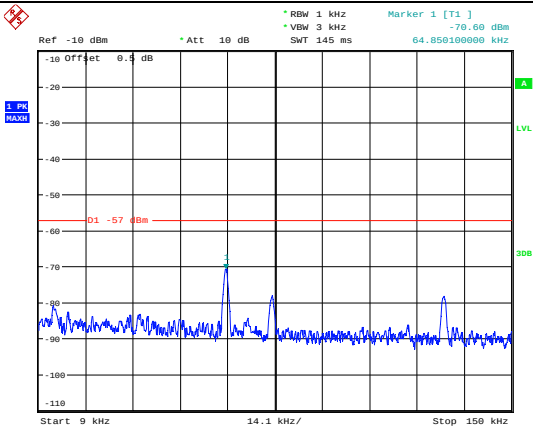
ProjectNo.:CR230633406-RF Tester:Morpheus Shi
Date: 16.SEP.2023 17:07:24



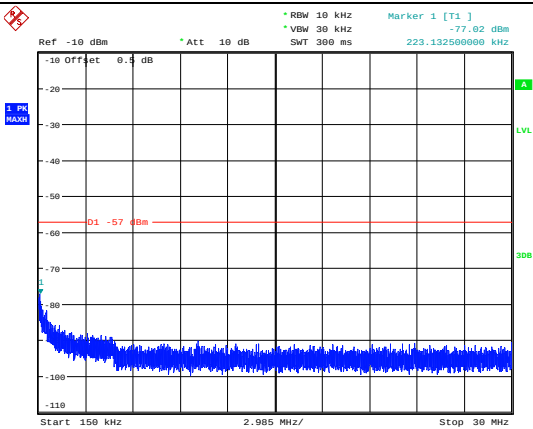
ProjectNo.:CR230633406-RF Tester:Morpheus Shi
Date: 16.SEP.2023 17:14:06



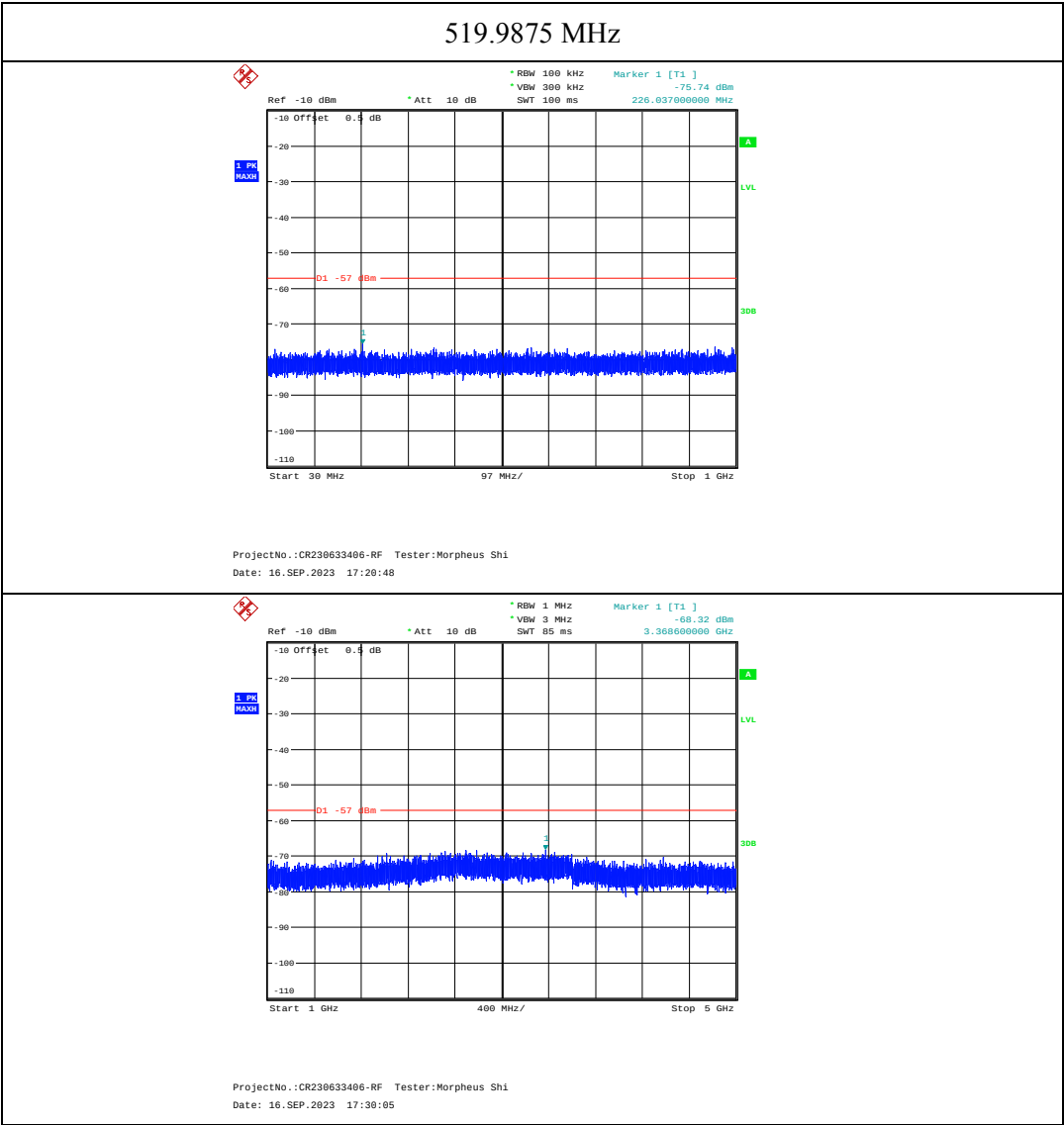
519.9875 MHz



ProjectNo.:CR230633406-RF Tester:Morpheus Shi
Date: 16.SEP.2023 17:07:52



ProjectNo.:CR230633406-RF Tester:Morpheus Shi
Date: 16.SEP.2023 17:14:46



4.4 Scanning Receivers and Frequency Converters Used with Scanning Receivers

Serial Number:	26TA-1	Test Date:	2023/09/16
Test Site:	RF	Test Mode:	Scanning
Tester:	Morpheus Shi	Test Result:	Pass

Environmental Conditions:					
Temperature: (°C)	26.3	Relative Humidity: (%)	47	ATM Pressure: (kPa)	100

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
YINSAIGE	Coaxial Cable	LMR300	NJ0100001	Each time	N/A
YINSAIGE	Coaxial Cable	LMR300	NJ0100002	Each time	N/A
Mini-Circuits	DC Block	BLK-18-S+	1554403	Each time	N/A
Agilent	MXG Vector Signal Generator	N5182B	MY51350144	2023/3/31	2024/3/30
HP	RF Communications Test Set	8920A	3438A05209	2023/3/31	2024/3/30
Mini-Circuits	Power Splitter	ZFRSC-183-S+	S F448201619	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).

Rated Output Power

Scanning Frequency Range	Test Frequency	Measurement Result	Limit
MHz	MHz	dB	dB
136-174/400-520	824, 836, 849, 869, 881.5, 894	49	>38

5. EUT PHOTOGRAPHS

Please refer to the attachment CR230633406-EXP EUT EXTERNAL PHOTOGRAPHS and CR230633406-INP EUT INTERNAL PHOTOGRAPHS

6. TEST SETUP PHOTOGRAPHS

Please refer to the attachment CR230633406-00A-TSP TEST SETUP PHOTOGRAPHS.

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