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

ACCREDITED
TESTING LABORATORY
CERTIFICATE # 6356.01

TEST REPORT

Applicant: **Security Brands, Inc.**

Address: 2151 Eastglen Blvd, Mesquite, TX 75181 USA

FCC ID: **2AZ7D-14REC300**

Product Name: **300-MHz Receiver**

Model Number: **14-REC300**

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: **CR21110005-00**

Date Of Issue: **2021-12-21**

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.

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

1. GENERAL INFORMATION

1.1 Product Description for Equipment under Test (EUT)

EUT Name:	300-MHz Receiver
EUT Model:	14-REC300
Highest Operation Frequency:	300MHz
Rated Input Voltage:	DC 12/24V
Serial Number:	CR21110005-EM-S_7AA
EUT Received Date:	2021.11.01
EUT Received Status:	GOOD

Accessory Information:

No.

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: Test Mode 1(M1): Receiving DC 12V Test Mode 2(M2): Receiving DC 24V
Equipment Modifications:	No
EUT Exercise Software:	No

1.2.2 Support Equipment List and Details

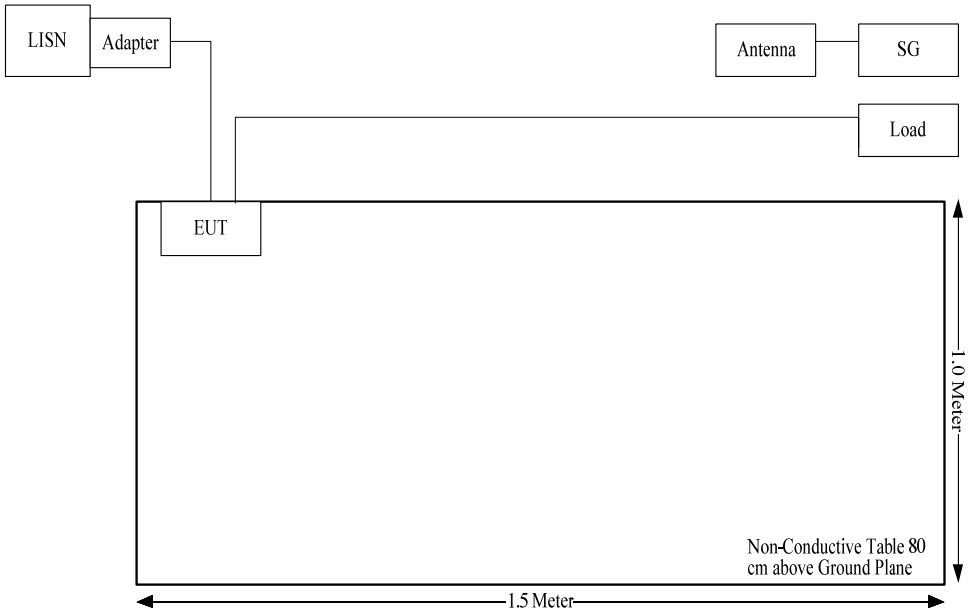
Manufacturer	Description	Model	Serial Number
EMCO	Antenna	3121C	9109-753
Agilent	Signal Generator	E8247C	MY43321350
Shenzhen Shi Grangkaiyuan	12V Adapter	GKYPS0120050	9109-753
Shenzhen Jiuzhoubao	24V Adapter	JZB024-120200CX	5228369QA33r
Security Brands, Inc.	Load	Un-known	CR21110005-EM-S_7AB

1.2.3 Support Cable List and Details

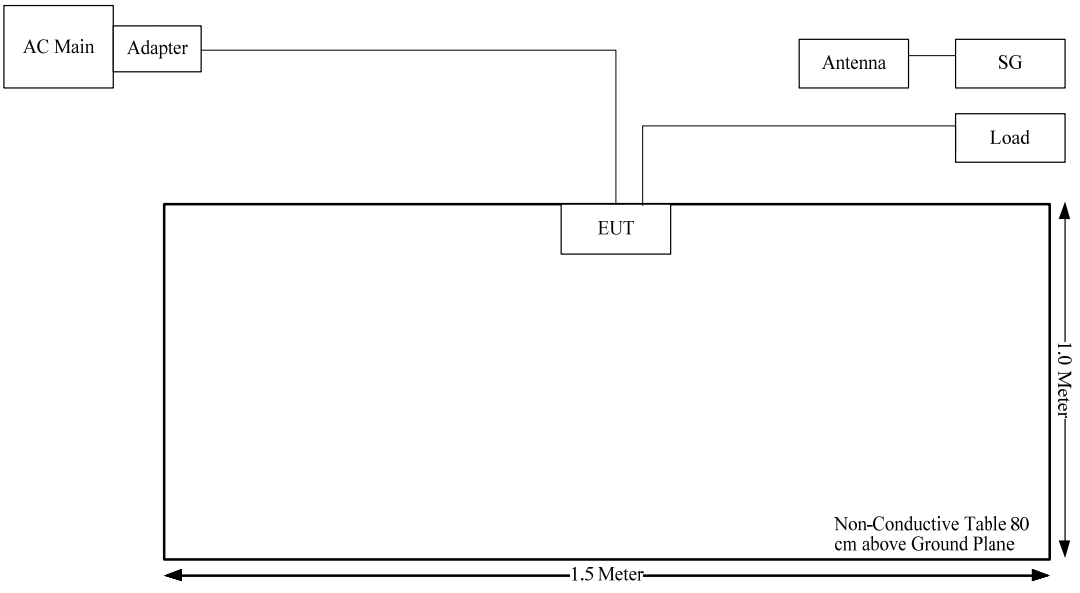
Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
DC Cable	No	No	2	Adapter	EUT
Signal Cable	No	No	10	EUT	Load
Coaxial Cable	Yes	No	1	Signal Generator	Antenna

1.2.4 Block Diagram of Test Setup

AC Line Conducted Emission Test:



Radiated Emissions Test:



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	±1℃
Humidity	±5%
AC Power Lines Conducted Emission	2.8 dB (150 kHz to 30 MHz)

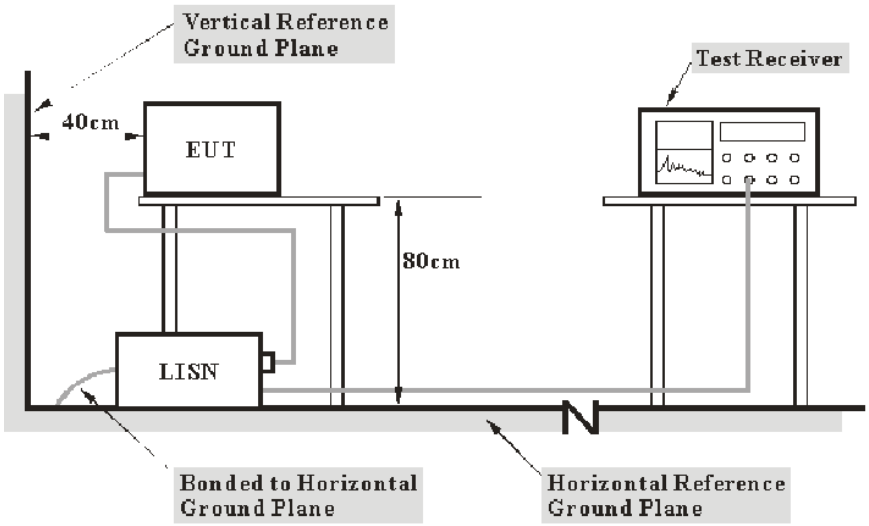
2. SUMMARY OF TEST RESULTS

Standard(s) Section	Description of Test	Result
§15.107	Conducted emissions	Compliance
§15.109	Radiated emissions	Compliance
§15.111	Antenna power conduction limits for receivers	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

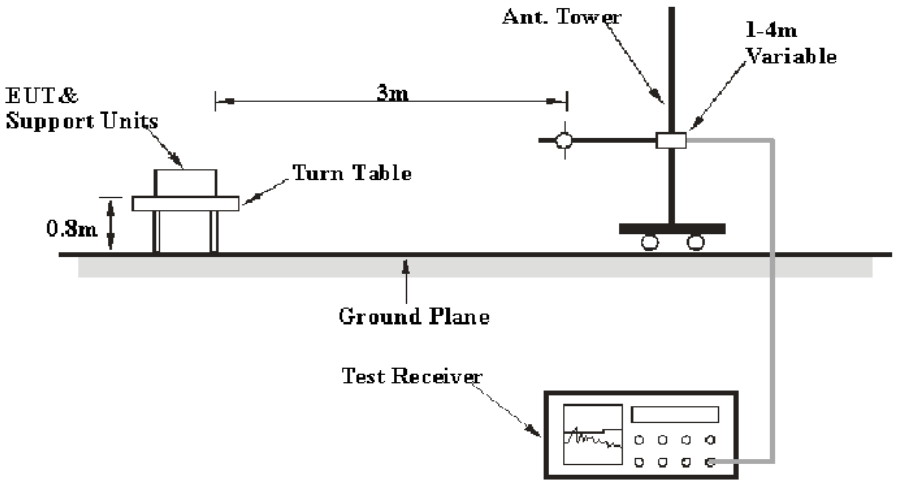
The "**Margin**" column of the following data tables indicates the degree of compliance within the applicable limit. The equation for margin calculation is as follows:

Margin = Limit – Result

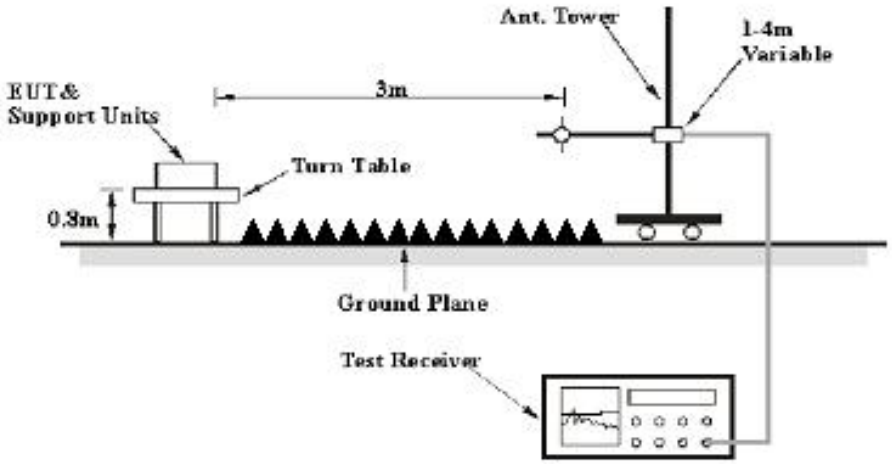
3.2 Radiation Emissions

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 2 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

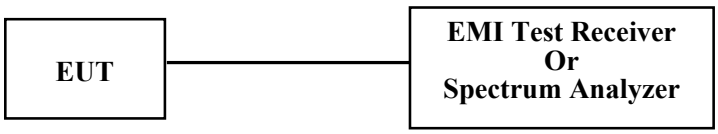
3.3 Antenna power conduction limits for receivers

3.2.1 Applicable Standard

(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.

(b) CB receivers and receivers that operate (tune) in the frequency range 30 to 960 MHz that are provided only with a permanently attached antenna shall comply with the radiated emission limitations in this part, as measured with the antenna attached

3.3.2 EUT Setup



3.6.3 Test Procedure

a) Set the center frequency and span to encompass frequency range to be measured.
b) Set the RBW = 100 kHz(30MHz-1GHz), 1MHz(Above 1GHz).
c) Set the VBW ≥ [3 × RBW].
d) Detector = peak.
e) Sweep time = auto couple.
f) Trace mode = max hold.
g) Allow trace to fully stabilize.
h) Use the peak marker function to determine the maximum amplitude level.

4. TEST DATA AND RESULTS

4.1 AC Line Conducted Emissions

Serial Number:	CR21110005-EM-S_7AA	Test Date:	2021-11-17
Test Site:	CE	Test Mode:	M1,M2
Tester:	Nick Tang	Test Result:	Pass

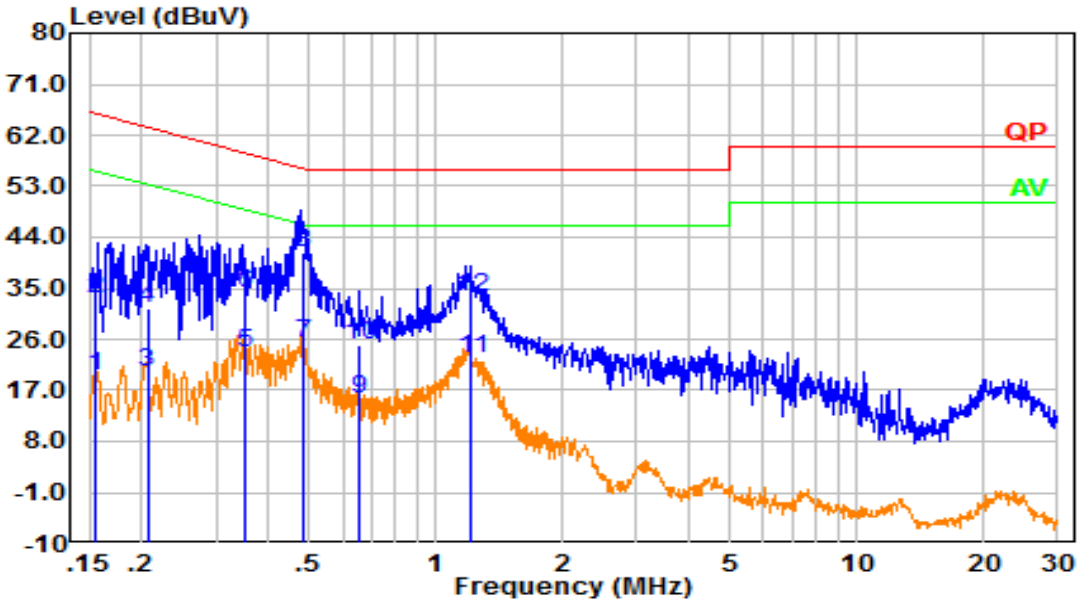
Environmental Conditions:					
Temperature: (℃)	24.1	Relative Humidity: (%)	64	ATM Pressure: (kPa)	101.5

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	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

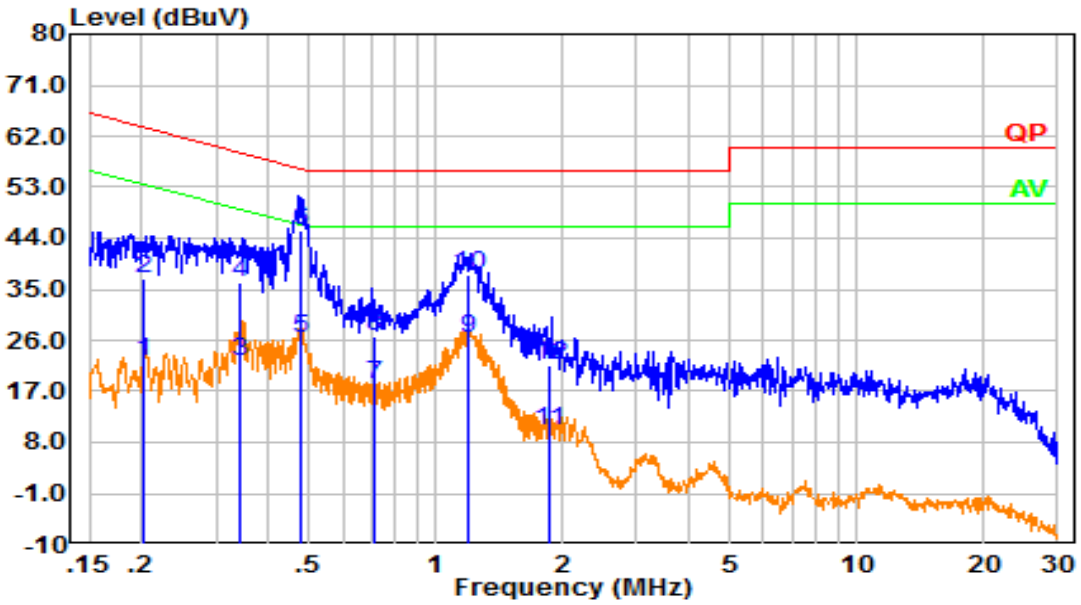
** Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

M1:
Line:



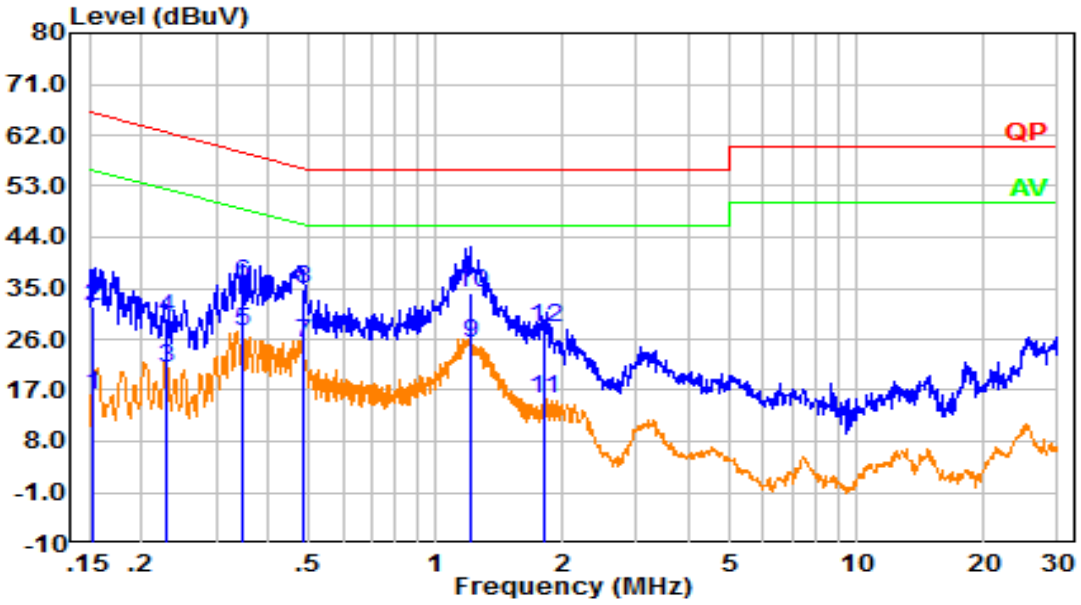
No.	Frequency (MHz)	Reading (dBµV)	Factor (dB)	Result (dBµV)	Limit (dBµV)	Margin (dB)	Detector
1	0.156	10.03	9.61	19.64	55.69	36.05	Average
2	0.156	23.40	9.61	33.01	65.69	32.68	QP
3	0.206	10.54	9.61	20.15	53.36	33.22	Average
4	0.206	21.85	9.61	31.46	63.36	31.90	QP
5	0.351	14.16	9.61	23.77	48.94	25.16	Average
6	0.351	24.45	9.61	34.06	58.94	24.87	QP
7	0.481	15.86	9.61	25.47	46.32	20.85	Average
8	0.481	31.80	9.61	41.41	56.32	14.91	QP
9	0.660	5.90	9.62	15.52	46.00	30.48	Average
10	0.660	15.21	9.62	24.83	56.00	31.17	QP
11	1.215	13.11	9.62	22.73	46.00	23.27	Average
12	1.215	23.99	9.62	33.61	56.00	22.39	QP

Neutral:



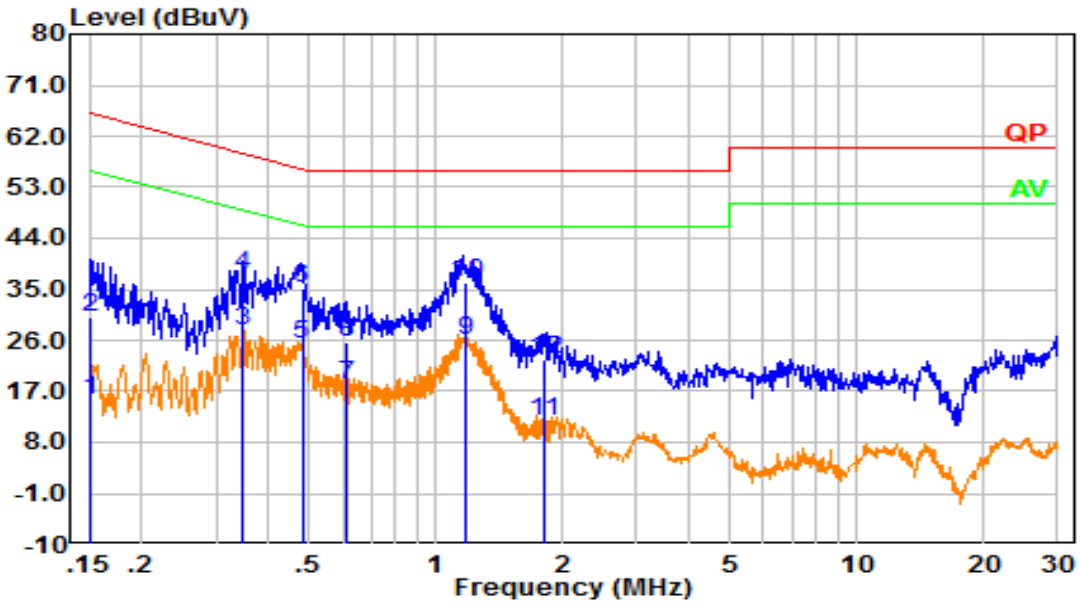
No.	Frequency (MHz)	Reading (dBµV)	Factor (dB)	Result (dBµV)	Limit (dBµV)	Margin (dB)	Detector
1	0.203	12.77	9.61	22.38	53.49	31.11	Average
2	0.203	27.14	9.61	36.75	63.49	26.73	QP
3	0.341	12.58	9.61	22.19	49.17	26.98	Average
4	0.341	26.58	9.61	36.19	59.17	22.98	QP
5	0.474	16.64	9.61	26.25	46.44	20.19	Average
6	0.474	35.83	9.61	45.44	56.44	11.00	QP
7	0.710	8.50	9.62	18.12	46.00	27.88	Average
8	0.710	17.22	9.62	26.84	56.00	29.16	QP
9	1.192	16.75	9.62	26.37	46.00	19.63	Average
10	1.192	27.76	9.62	37.39	56.00	18.61	QP
11	1.852	0.47	9.63	10.10	46.00	35.90	Average
12	1.852	11.99	9.63	21.62	56.00	34.38	QP

M2:
Line:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB)	Result (dBµV)	Limit (dBµV)	Margin (dB)	Detector
1	0.152	6.44	9.61	16.05	55.89	39.84	Average
2	0.152	22.13	9.61	31.74	65.89	34.14	QP
3	0.230	11.41	9.61	21.02	52.46	31.44	Average
4	0.230	20.20	9.61	29.81	62.46	32.64	QP
5	0.347	17.74	9.61	27.35	49.03	21.68	Average
6	0.347	26.36	9.61	35.97	59.03	23.06	QP
7	0.481	15.65	9.61	25.26	46.32	21.06	Average
8	0.481	25.30	9.61	34.91	56.32	21.40	QP
9	1.204	15.70	9.62	25.32	46.00	20.68	Average
10	1.204	24.61	9.62	34.23	56.00	21.77	QP
11	1.806	5.87	9.63	15.50	46.00	30.50	Average
12	1.806	18.45	9.63	28.08	56.00	27.92	QP

Neutral:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB)	Result (dBµV)	Limit (dBµV)	Margin (dB)	Detector
1	0.151	5.91	9.61	15.52	55.95	40.43	Average
2	0.151	20.45	9.61	30.06	65.95	35.89	QP
3	0.349	17.98	9.61	27.59	48.99	21.40	Average
4	0.349	27.77	9.61	37.38	58.99	21.61	QP
5	0.481	15.71	9.61	25.32	46.33	21.01	Average
6	0.481	25.70	9.61	35.31	56.33	21.02	QP
7	0.612	8.73	9.62	18.35	46.00	27.65	Average
8	0.612	16.20	9.62	25.82	56.00	30.18	QP
9	1.180	16.47	9.62	26.10	46.00	19.90	Average
10	1.180	26.54	9.62	36.16	56.00	19.84	QP
11	1.806	2.01	9.63	11.64	46.00	34.36	Average
12	1.806	12.93	9.63	22.56	56.00	33.44	QP

4.2 Radiation Spurious Emissions

Serial Number:	CR21110005-EM-S_7AA	Test Date:	2021-11-10
Test Site:	966-1, 966-2	Test Mode:	M1,M2
Tester:	Great Qiao, Carl Liang	Test Result:	Pass

Environmental Conditions:					
Temperature: (℃)	20~23.5	Relative Humidity: (%)	50~65	ATM Pressure: (kPa)	101.7

Test Equipment List and Details:

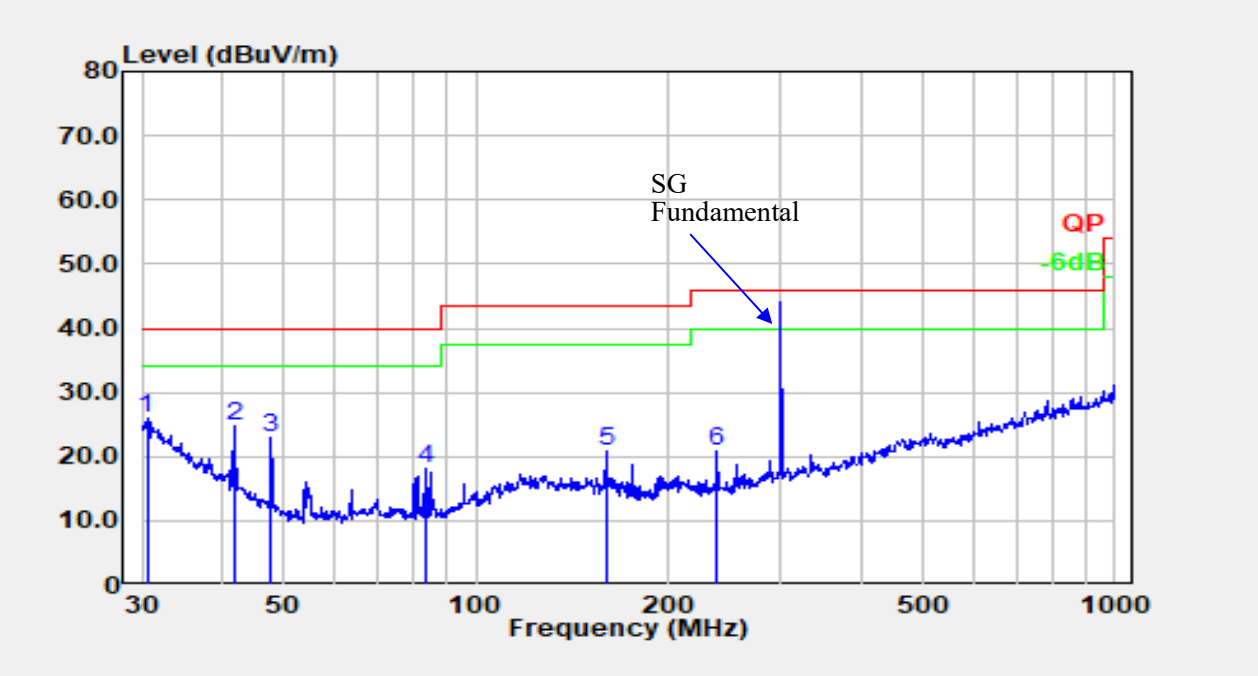
Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Sunol Sciences	Antenna	JB6	A082520-5	2020-10-19	2023-10-18
R&S	EMI Test Receiver	ESR3	102724	2021-07-22	2022-07-21
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0470-02	2021-07-18	2022-07-17
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0780-01	2021-07-18	2022-07-17
Sonoma	Amplifier	310N	186165	2021-07-18	2022-07-17
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	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
AH	Pre-amplifier	PAM-0118P	530	2021-11-04	2022-11-03

** 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:

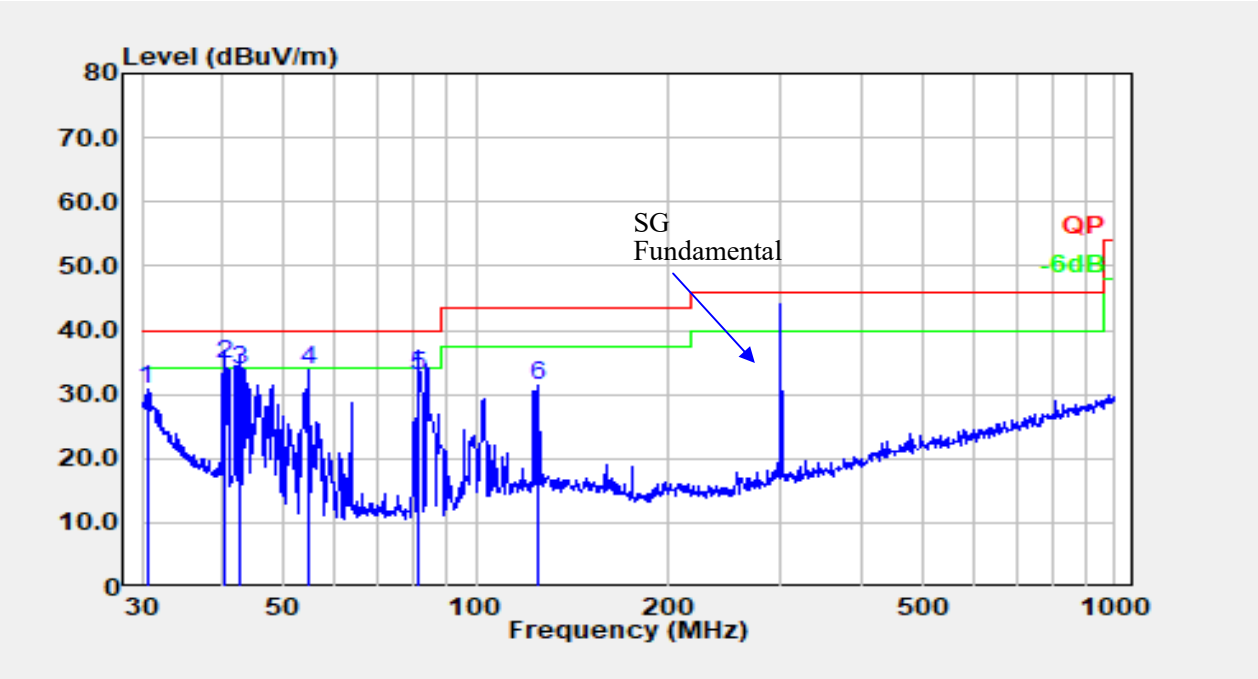
Horizontal:

M1:



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	30.531	30.27	-4.20	26.07	40.00	13.93	Peak
2	41.860	37.21	-12.59	24.61	40.00	15.39	Peak
3	47.826	39.01	-16.14	22.87	40.00	17.13	Peak
4	83.230	35.46	-17.49	17.97	40.00	22.03	Peak
5	159.784	33.03	-12.28	20.75	43.50	22.75	Peak
6	238.310	34.05	-13.20	20.86	46.00	25.14	Peak

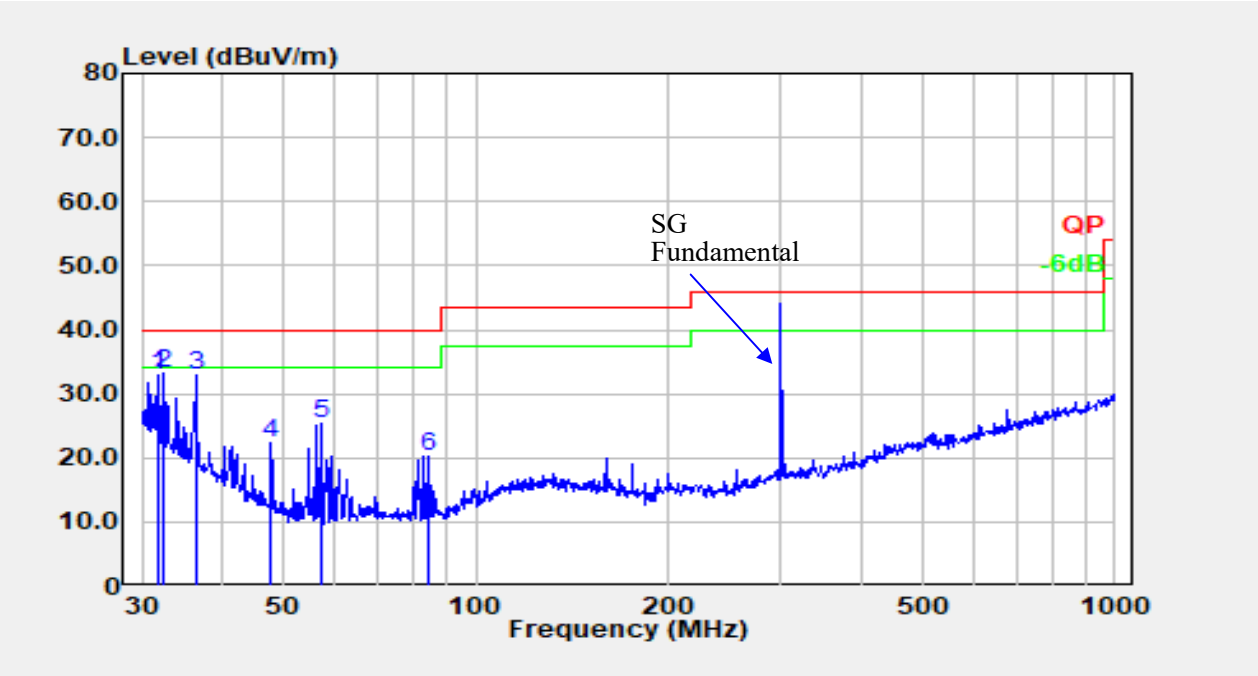
Vertical:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	30.531	35.09	-4.20	30.89	40.00	9.11	Peak
2	40.417	46.57	-11.77	34.80	40.00	5.20	QP
3	42.750	46.95	-13.14	33.81	40.00	6.19	QP
4	54.835	51.30	-17.50	33.80	40.00	6.20	Peak
5	81.497	50.58	-17.62	32.95	40.00	7.05	QP
6	125.446	42.98	-11.54	31.44	43.50	12.06	Peak

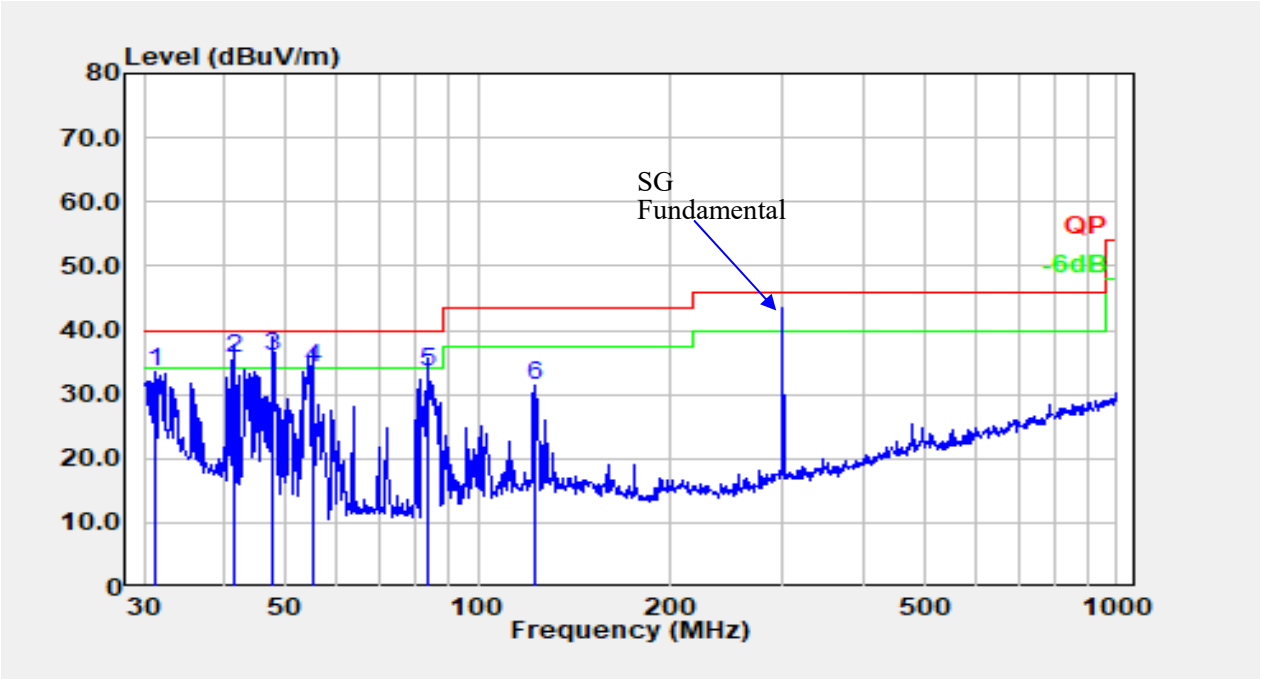
M2:

Horizontal:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	31.843	38.09	-5.20	32.89	40.00	7.11	Peak
2	32.520	38.89	-5.74	33.16	40.00	6.84	Peak
3	36.381	41.75	-8.71	33.03	40.00	6.97	Peak
4	47.826	38.54	-16.14	22.40	40.00	17.60	Peak
5	57.191	43.04	-17.54	25.50	40.00	14.50	Peak
6	84.405	37.65	-17.47	20.19	40.00	19.81	Peak

Vertical:

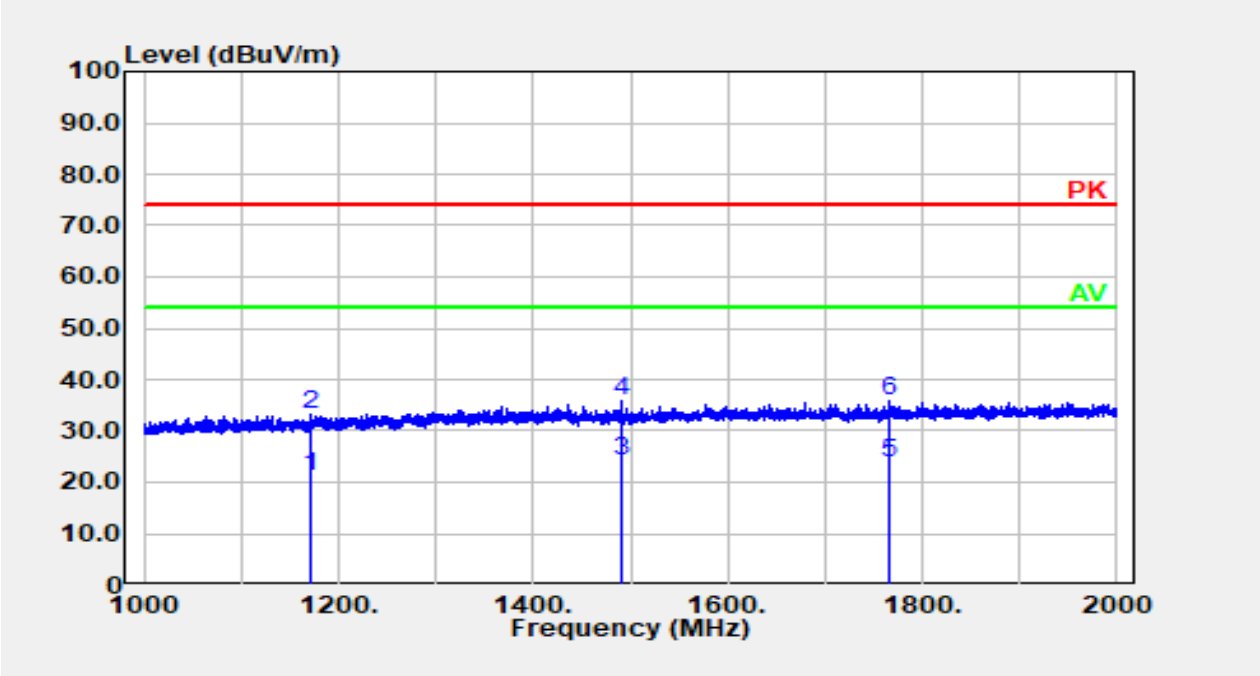


No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	31.289	38.35	-4.78	33.57	40.00	6.43	Peak
2	41.422	48.02	-12.35	35.67	40.00	4.33	QP
3	47.826	52.17	-16.14	36.03	40.00	3.97	QP
4	55.027	51.69	-17.50	34.19	40.00	5.81	QP
5	83.522	50.96	-17.49	33.47	40.00	6.53	QP
6	122.404	43.11	-11.67	31.44	43.50	12.06	Peak

2) Above 1GHz

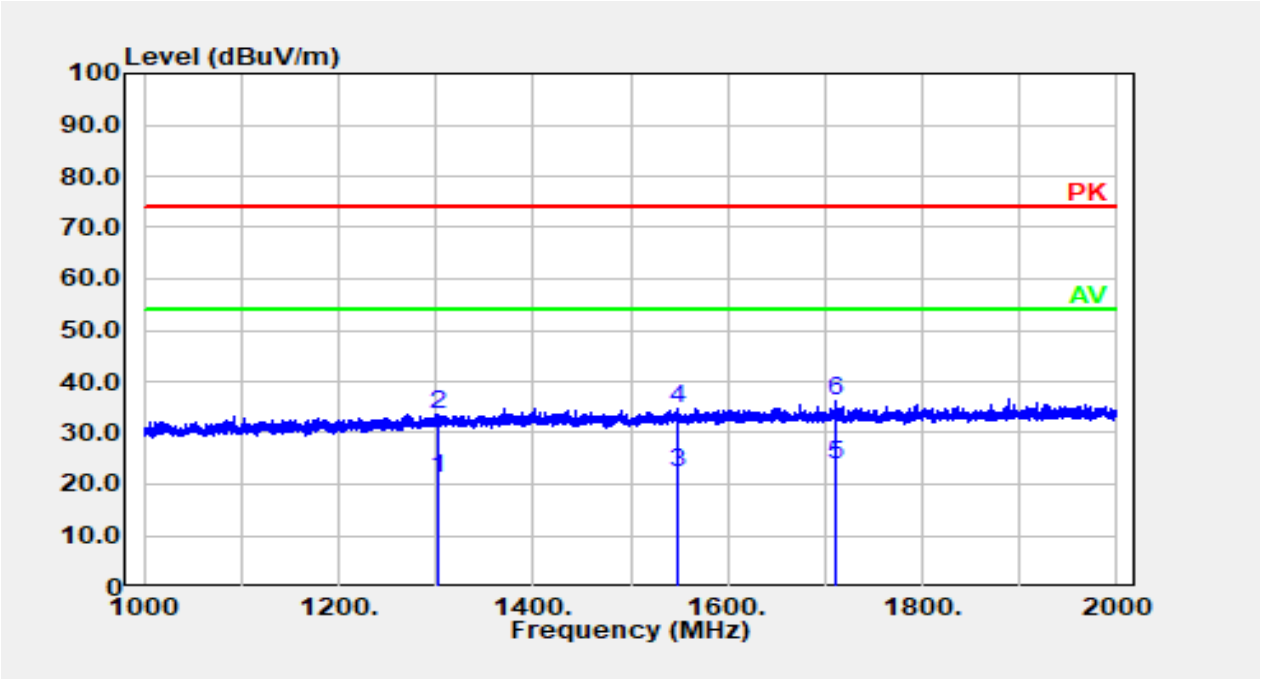
M1:

Horizontal:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	1170.634	31.36	-10.06	21.30	54.00	32.70	Average
2	1170.634	43.30	-10.06	33.24	74.00	40.76	Peak
3	1490.898	32.69	-8.70	23.99	54.00	30.01	Average
4	1490.898	44.44	-8.70	35.74	74.00	38.26	Peak
5	1765.953	30.57	-6.96	23.61	54.00	30.39	Average
6	1765.953	42.81	-6.96	35.85	74.00	38.15	Peak

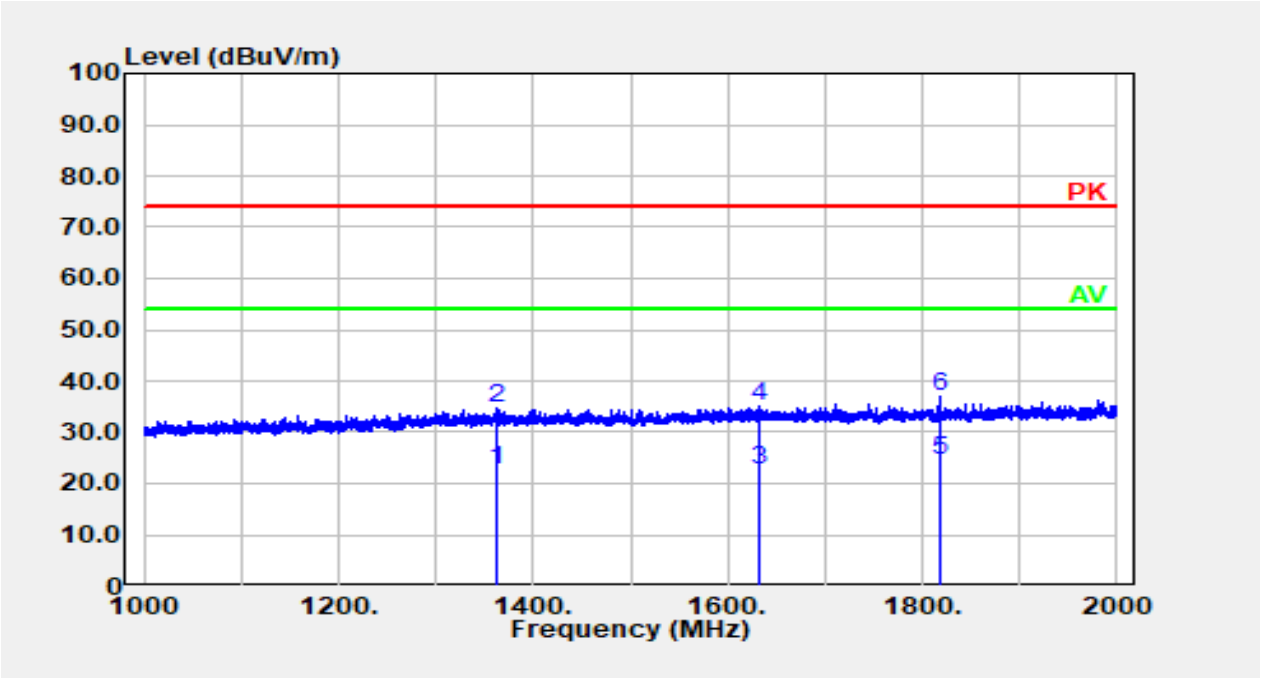
Vertical:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	1302.260	30.25	-9.18	21.07	54.00	32.93	Average
2	1302.260	42.86	-9.18	33.68	74.00	40.32	Peak
3	1547.309	30.47	-8.25	22.22	54.00	31.78	Average
4	1547.309	42.82	-8.25	34.57	74.00	39.43	Peak
5	1710.942	31.09	-7.21	23.88	54.00	30.12	Average
6	1710.942	43.33	-7.21	36.12	74.00	37.88	Peak

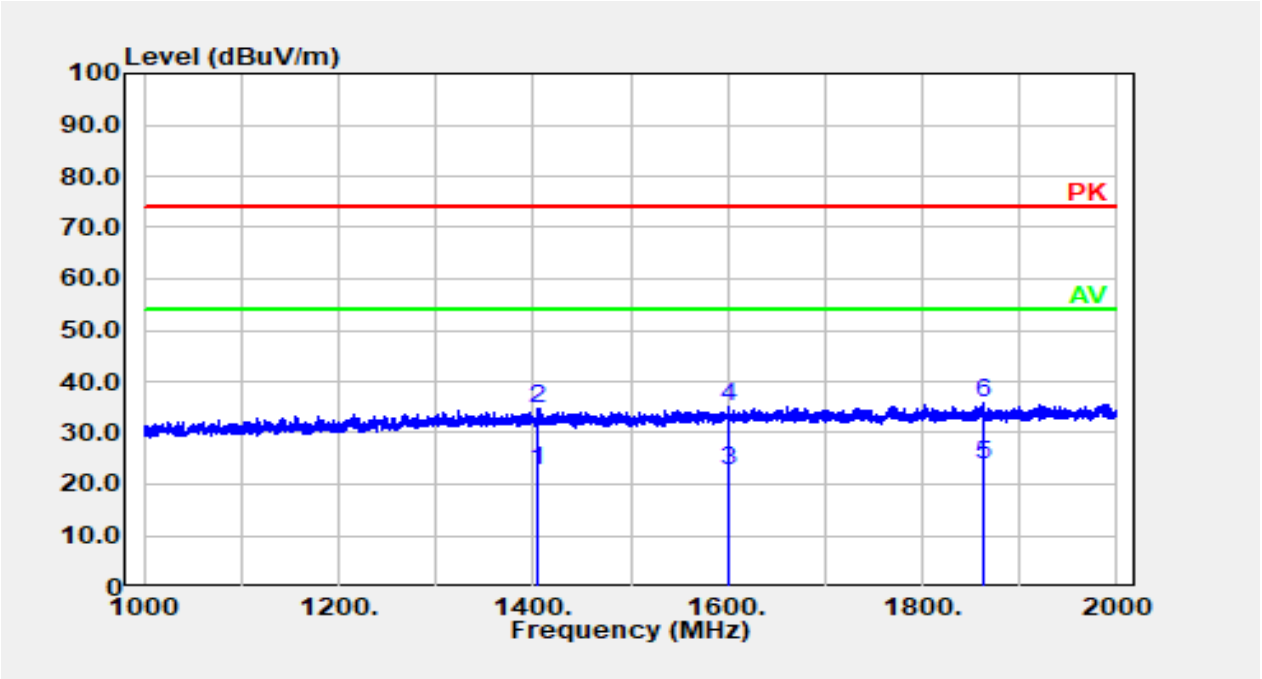
M2:

Horizontal:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	1363.673	31.47	-8.90	22.57	54.00	31.43	Average
2	1363.673	43.55	-8.90	34.65	74.00	39.35	Peak
3	1633.527	30.24	-7.57	22.67	54.00	31.33	Average
4	1633.527	42.82	-7.57	35.25	74.00	38.75	Peak
5	1817.163	31.20	-6.72	24.48	54.00	29.52	Average
6	1817.163	43.68	-6.72	36.96	74.00	37.04	Peak

Vertical:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	1403.481	31.62	-8.83	22.79	54.00	31.21	Average
2	1403.481	43.66	-8.83	34.83	74.00	39.17	Peak
3	1600.120	30.25	-7.71	22.54	54.00	31.46	Average
4	1600.120	42.85	-7.71	35.14	74.00	38.86	Peak
5	1863.373	30.47	-6.56	23.91	54.00	30.09	Average
6	1863.373	42.52	-6.56	35.96	74.00	38.04	Peak

4.3 Antenna power conduction limits for receivers

Serial Number:	CR21110005-EM-S_7AA	Test Date:	2021/12/21
Test Site:	RF	Test Mode:	Transmitting
Tester:	Will wei	Test Result:	Pass

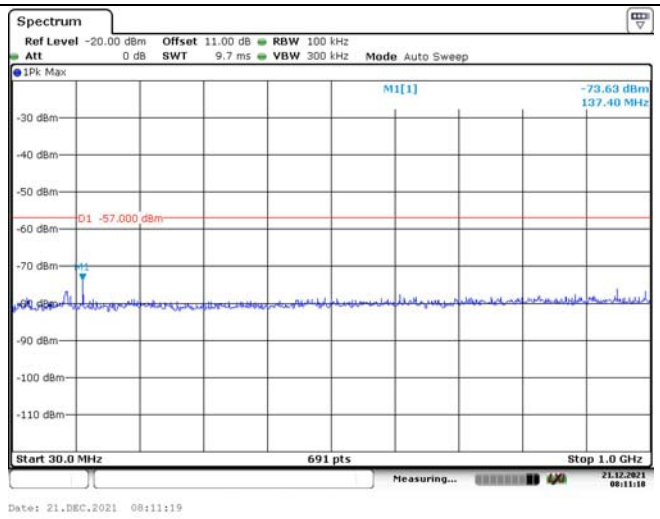
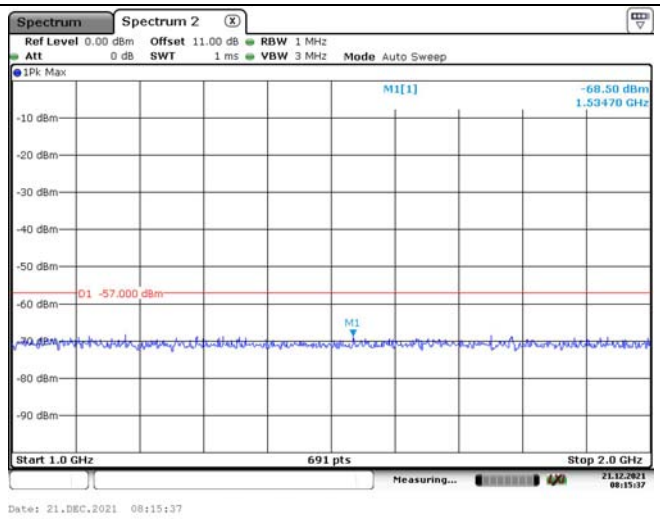
Environmental Conditions:					
Temperature: (℃)	23	Relative Humidity: (%)	41	ATM Pressure: (kPa)	101.2

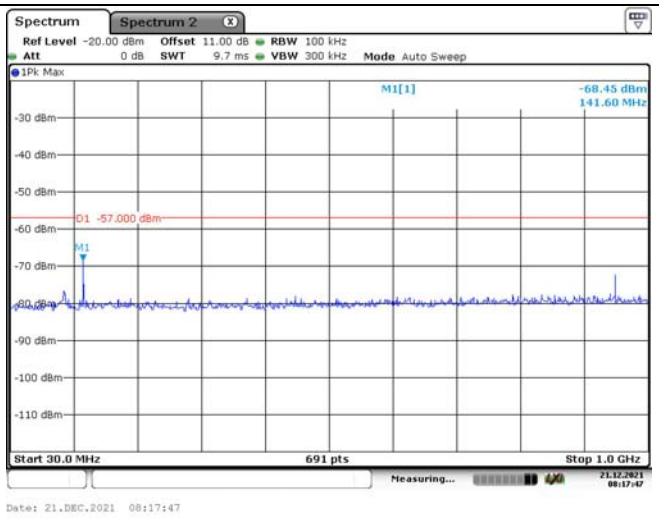
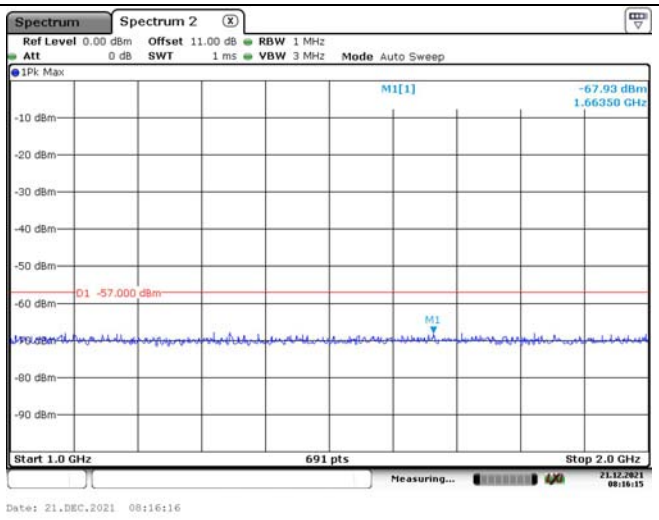
Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101474	2021/7/22	2022/7/21
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
YINSAIGE	Coaxial Cable	SS402	SJ0100001	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:

DC 12V	
30MHz-1GHz	
1GHz-2GHz	

DC 24V	
30MHz-1GHz	
1GHz-2GHz	

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