

FCC TEST REPORT

FCC ID: 2BNZL-GPS-A001F

Sample : GPS Active Antenna

Trade Mark : N/A

Main Model : GPS-A001F

Additional Model : N/A

Report No. : UNIA25031024ER-61

Prepared for

Shenzhen Hurryup Technology Co., Ltd.

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Prepared by

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Dalang Sub-District, Longhua District, Shenzhen, Guangdong, China

TEST RESULT CERTIFICATION

Applicant : Shenzhen Hurryup Technology Co., Ltd.
Address : D Room, 12 Floor, Block B, Huaqiang Plaza, Futian, Shenzhen, China
Manufacturer : Shenzhen Hurryup Technology Co., Ltd.
Address : D Room, 12 Floor, Block B, Huaqiang Plaza, Futian, Shenzhen, China
Product description
Product : GPS Active Antenna
Trade Mark : N/A
Model Name : GPS-A001F
Standards : FCC CFR Title 47 Part 15 Subpart B
 ANSI C63.4:2014

Date of Test

Date (s) of performance of tests : Jan. 08, 2025 ~ Jan. 08, 2025
Date of Issue : Jan. 10, 2025
Test Result : Pass

Edited by:

Jason Ye

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Reviewed by:

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Liuze

Liuze

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1 TEST SUMMARY

1.1 TEST PROCEDURES AND RESULTS

Standard	Test Item	Class	Result
FCC Part 15 Subpart B ANSI C63.4:2014	Conducted Emission	Class B	PASS
	Radiated Emission	Class B	PASS

Note: (1) "N/A" denotes test is not applicable in this test report.
(2) For client's request and manual description, the test will not be executed.
(3) "--" means "no" in this test report.

1.2 TEST LOCATION

Test Laboratory : Shenzhen United Testing Technology Co., Ltd.
Address : D101&D401, No. 107, Kaicheng High-Tech Park, Taoyuan Community,
Dalang Sub-District, Longhua District, Shenzhen, Guangdong, China

1.3 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95%.

A. Conducted Measurement:

Test Site	Measurement Frequency Range	U, (dB)	NOTE
UNI	9kHz ~ 150kHz	2.96	--
	150kHz ~ 30MHz	2.44	--

B. Radiated Measurement:

Test Site	Measurement Frequency Range	U, (dB)	NOTE
UNI	9kHz ~ 30MHz	2.50	--
	30MHz ~ 1000MHz	4.80	--
	1000MHz ~ 6000MHz	4.13	--

1.4 ENVIRONMENTAL CONDITIONS

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15~35 °C
Relative Humidity:	30~60 %
Air Pressure:	950~1050 hPa

2 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

The following information of EUT submitted and identified by applicant:

Product:	GPS Active Antenna
Trade Mark:	N/A
Main Model:	GPS-A001F
Additional Model:	N/A
FCC ID:	2BNZL-GPS-A001F
Operation Frequency:	1575.42MHz (Only RX)
Number of Channels:	1CH
Modulation Type:	OFDM
Antenna Type:	Ceramic Antenna
Antenna Gain:	31.73dBi
Power Source:	Spectrometer power supply DC 3-5V
Product Description:	The EUT is a GPS Active Antenna. Based on the application, features, or specification exhibited in User's Manual, more details of EUT technical specification, please refer to the User's Manual.

I/O Port Information (☒Applicable ☐Not Applicable)

I/O Port Type	Number
FAKRA-C	1

2.2 DESCRIPTION OF THE TEST MODES

No.	Test mode description
1	Working mode

Note: The test modes were carried out for all operation modes(include link and idle).

2.3 DESCRIPTION OF TEST SETUP



Note: The EUT tested system was configured as upper figure, unless otherwise a special operating condition is specified in the following during the testing.

2.4 DESCRIPTION TEST PERIPHERAL AND EUT PERIPHERAL

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	Power Cable Length	Note
E-1	GPS Active Antenna	N/A	GPS-A001F	--	EUT
E-2	Spectrometer	--	CMW 500	--	AE

Note:

1. The support equipment was authorized by Declaration of Confirmation.
2. All the above equipment/cables were placed in worse case positions to maximize emission signals during emission test.

2.5 MEASUREMENT INSTRUMENTS LIST

Item	Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
Conduction Emissions Measurement					
1	Conducted Emission Test Software	EZ-EMC	Ver.CCS-3A1-CE	N/A	N/A
2	AMN	Schwarzbeck	NNLK8121	8121370	2025.06.11
3	AAN	TESEQ	T8-Cat6	38888	2025.06.11
4	Pulse Limiter	CYBRTEK	EM5010	E115010056	2025.06.11
5	EMI Test Receiver	Rohde&Schwarz	ESCI	101210	2025.06.11
Radiated Emissions Measurement					
1	Radiated Emission Test Software	EZ-EMC	Ver.CCS-03A1	N/A	N/A
2	Horn Antenna	Sunol	DRH-118	A101415	2025.07.14
3	Broadband Hybrid Antenna	Sunol	JB1	A090215	2025.07.28
4	PREAMP	HP	8449B	3008A00160	2025.06.11
5	PREAMP	HP	8447D	2944A07999	2025.06.11
6	EMI Test Receiver	Rohde&Schwarz	ESR3	101891	2025.06.11
7	MXA Signal Analyzer	Keysight	N9020A	MY51110104	2025.06.11
8	Active Loop Antenna	Com-Power	AL-310R	10160009	2025.06.11
9	Horn Antenna	Schwarzbeck	BBHA9120D	9120D-1680	2025.07.14
10	Horn Antenna	A-INFOMW	LB-180400-KF	J211060660	2025.07.14
11	Loop Antenna	Beijing daze Technology	ZN30401	13015	2025.06.11
12	EM Clamp	Schwarzbeck	MDS21	03350	2025.07.14

3 CONDUCTED EMISSIONS MEASUREMENT

3.1 TEST LIMIT

Frequency (MHz)	Maximum RF Line Voltage(dBμV)			
	CLASS A		CLASS B	
	Q.P.	Ave.	Q.P.	Ave.
0.15~0.50	79	66	66~56*	56~46*
0.50~5.00	73	60	56	46
5.00~30.0	73	60	60	50

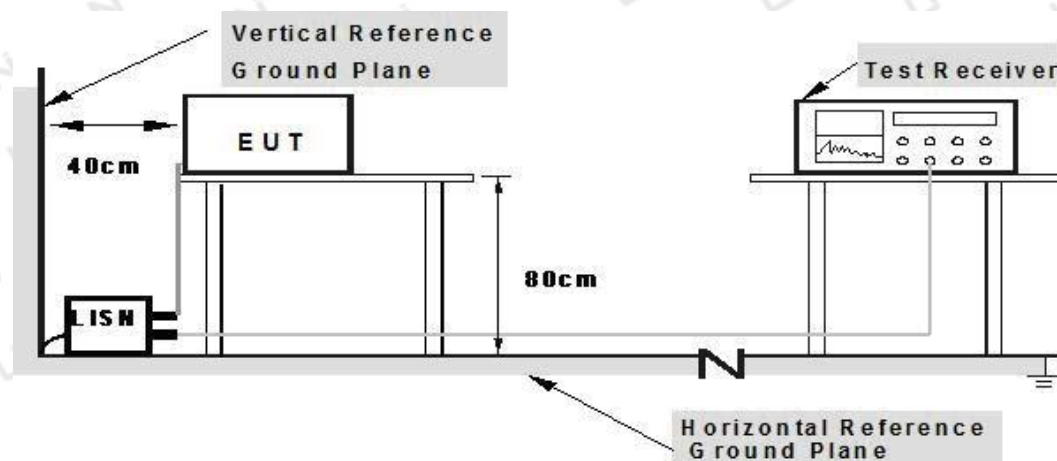
Note:

- 1.The tighter limit applies at the band edges.
- 2.The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver:

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

3.2 TEST SETUP



Note: 1.Support units were connected to second LISN.

2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

3.3 TEST PROCEDURE

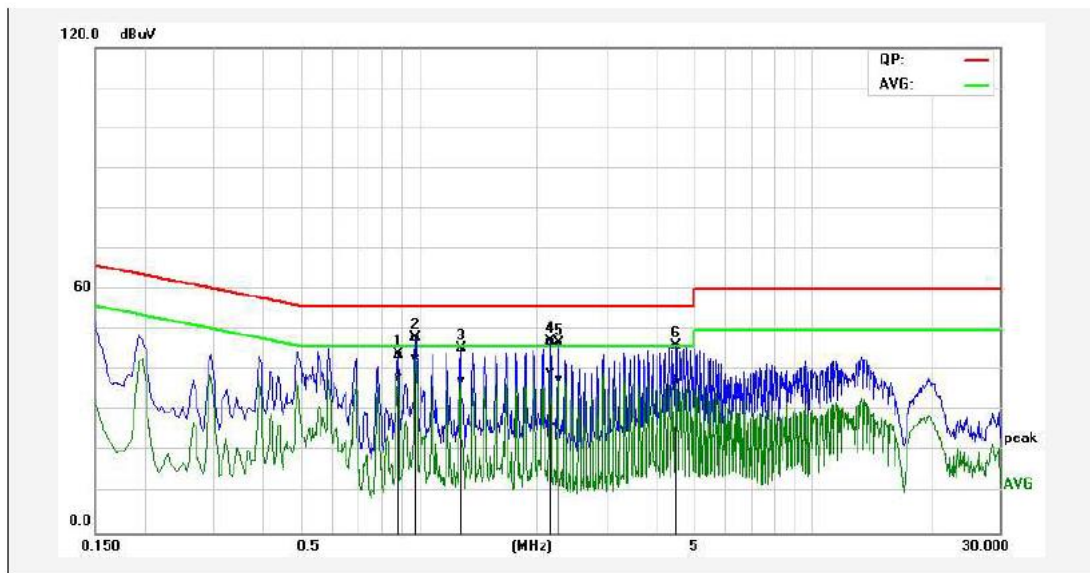
- 1.The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- 2.Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- 3.I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- 4.For the actual test configuration, please refer to the related Item EUT Test Photos.

3.4 TEST RESULT

PASS

Note: All modes were tested at AC 120V and 240V, only the worst result of AC 120V was reported.

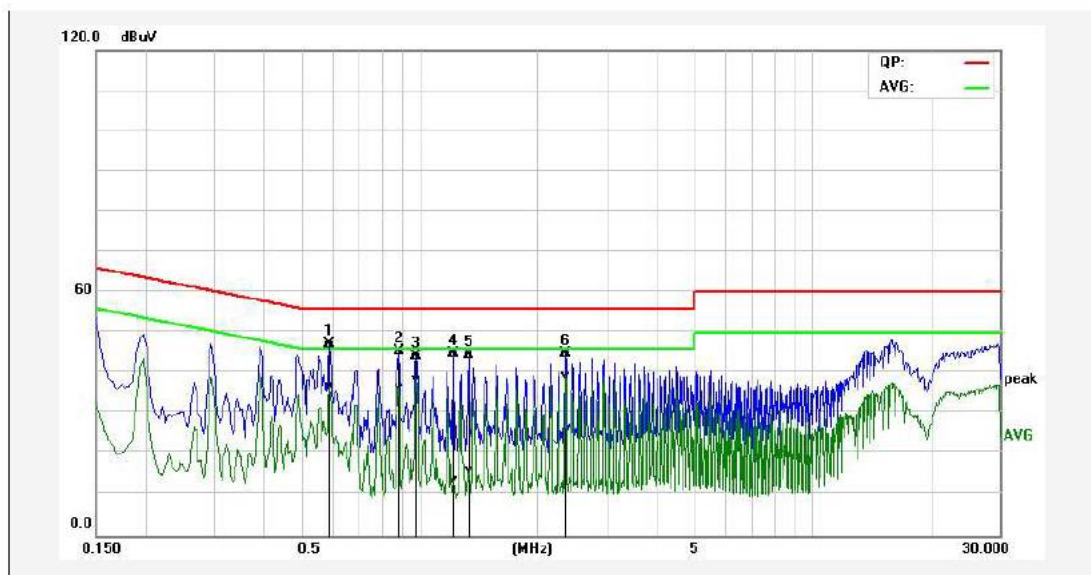
Temperature:	24°C	Relative Humidity:	48%
Test Voltage:	AC 120V, 60Hz	Pressure:	1010hPa
Test Mode:	Mode 1	Phase:	Line



No.	Frequency (MHz)	QuasiPeak reading (dBμV)	Average reading (dBμV)	Correction factor (dB)	QuasiPeak result (dBμV)	Average result (dBμV)	QuasiPeak limit (dBμV)	Average limit (dBμV)	QuasiPeak margin (dB)	Average margin (dB)	Remark
1P	0.8860	33.75	28.12	10.12	43.87	38.24	56.00	46.00	-12.13	-7.76	Pass
2*	0.9820	38.10	32.76	10.15	48.25	42.91	56.00	46.00	-7.75	-3.09	Pass
3P	1.2780	35.43	27.23	10.14	45.57	37.37	56.00	46.00	-10.43	-8.63	Pass
4P	2.1619	37.03	29.42	10.20	47.23	39.62	56.00	46.00	-8.77	-6.38	Pass
5P	2.2620	36.35	27.57	10.20	46.55	37.77	56.00	46.00	-9.45	-8.23	Pass
6P	4.5220	35.65	26.61	10.40	46.05	37.01	56.00	46.00	-9.95	-8.99	Pass

Remark: Factor = Insertion Loss + Cable Loss, Result = Reading + Factor, Margin = Result – Limit.

Temperature:	24°C	Relative Humidity:	48%
Test Voltage:	AC 120V, 60Hz	Pressure:	1010hPa
Test Mode:	Mode 1	Phase:	Neutral



No.	Frequency (MHz)	QuasiPeak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	QuasiPeak result (dBuV)	Average result (dBuV)	QuasiPeak limit (dBuV)	Average limit (dBuV)	QuasiPeak margin (dB)	Average margin (dB)	Remark
1P	0.5899	37.21	26.84	10.06	47.27	36.90	56.00	46.00	-8.73	-9.10	Pass
2P	0.8860	35.26	26.26	10.12	45.38	36.38	56.00	46.00	-10.62	-9.62	Pass
3P	0.9820	34.16	28.30	10.15	44.31	38.45	56.00	46.00	-11.69	-7.55	Pass
4P	1.2180	34.60	3.94	10.14	44.74	14.08	56.00	46.00	-11.26	-31.92	Pass
5P	1.3340	34.39	6.08	10.16	44.55	16.24	56.00	46.00	-11.45	-29.76	Pass
6*	2.3580	34.52	29.13	10.20	44.72	39.33	56.00	46.00	-11.28	-6.67	Pass

Remark: Factor = Insertion Loss + Cable Loss, Result = Reading + Factor, Margin = Result – Limit.

4 RADIATED EMISSION MEASUREMENT

4.1 TEST LIMIT

For unintentional device, according to § 15.109(a), except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

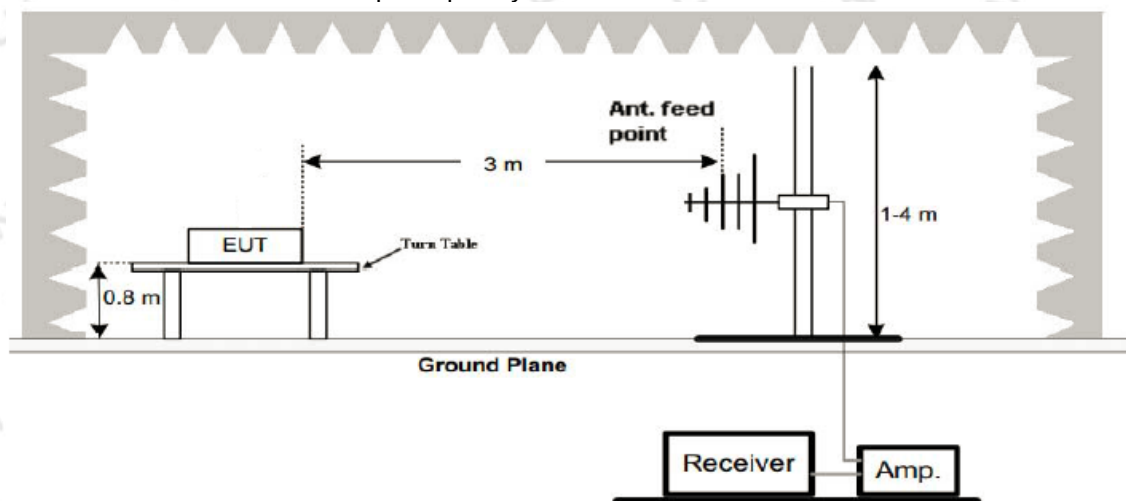
Frequency (MHz)	Class A (at 10m)	Class B (at 3m)
	dBuV/m	dBuV/m
30-88	39.0	40.0
88-216	43.5	43.5
216-960	46.5	46.0
Above 960	49.5	54.0

Notes:

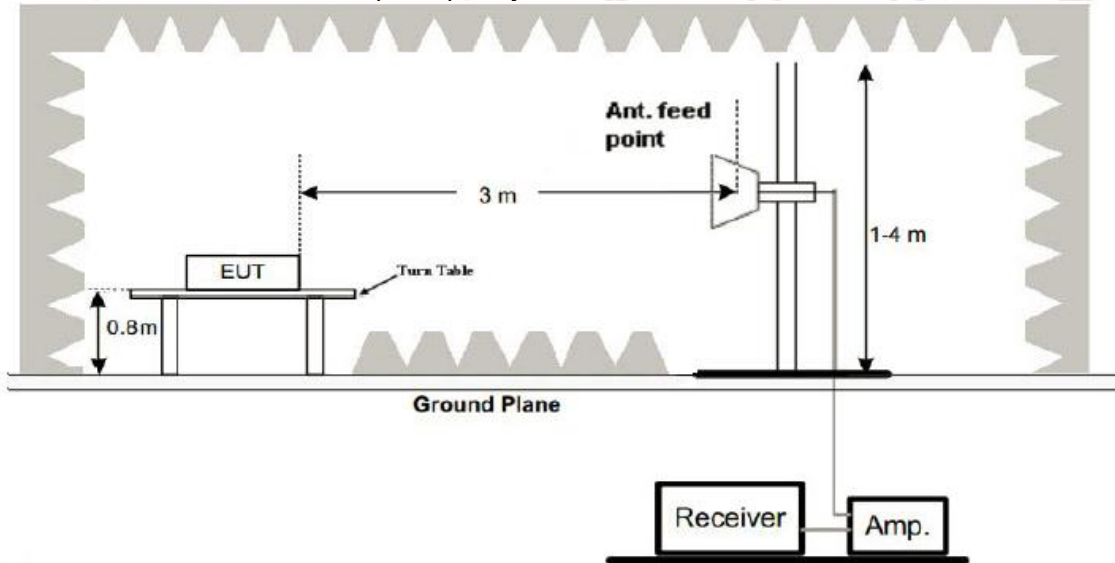
1. The limit for radiated test was performed according to as following: FCC PART 15B.
2. The tighter limit applies at the band edges.
3. Emission level (dBuV/m)=20log Emission level (uV/m).

4.2 TEST SETUP

1. Radiated Emission Test Set-Up Frequency Below 1000MHz



2. Radiated Emission Test Set-Up Frequency Above 1000MHz



4.3 TEST PROCEDURE

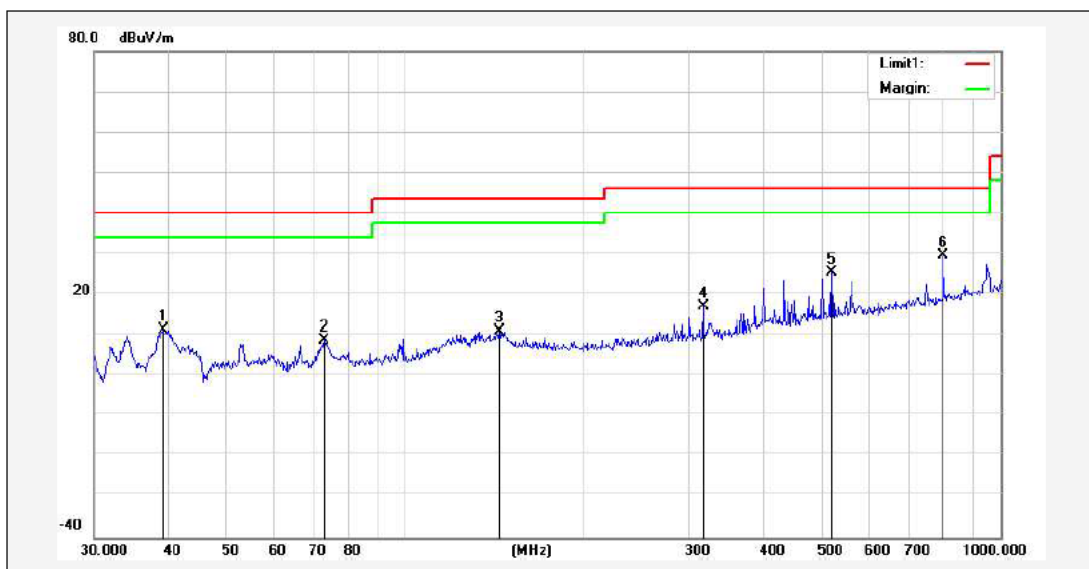
1. The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
2. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter anechoic chamber room test site. The table was rotated 360 degrees to determine the position of the highest radiation.
3. The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured, above 1G Average detector mode will be instead.
5. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP(AV) Limits and then no additional QP Mode measurement performed.
6. For the actual test configuration, please refer to the related Item EUT Test Photos.

4.4 TEST RESULT

PASS

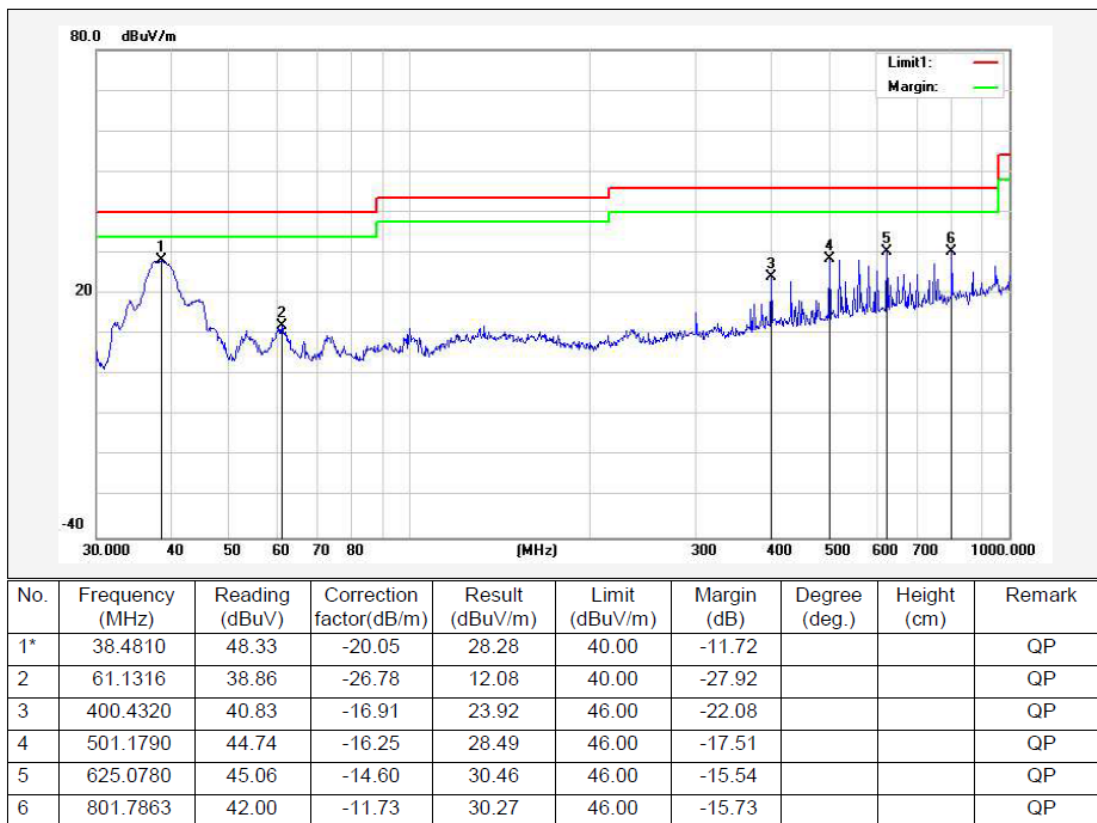
Below 1000MHz Test Results:

Temperature:	24°C	Relative Humidity:	48%
Test Voltage:	AC 120V, 60Hz	Pressure:	1010hPa
Test Mode:	Mode 1	Polarization:	Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1	39.1616	32.00	-20.80	11.20	40.00	-28.80			QP
2	73.1025	34.85	-26.17	8.68	40.00	-31.32			QP
3	143.8295	31.42	-20.49	10.93	43.50	-32.57			QP
4	316.5890	36.25	-19.51	16.74	46.00	-29.26			QP
5	520.8882	41.06	-15.68	25.38	46.00	-20.62			QP
6*	801.7863	41.17	-11.73	29.44	46.00	-16.56			QP

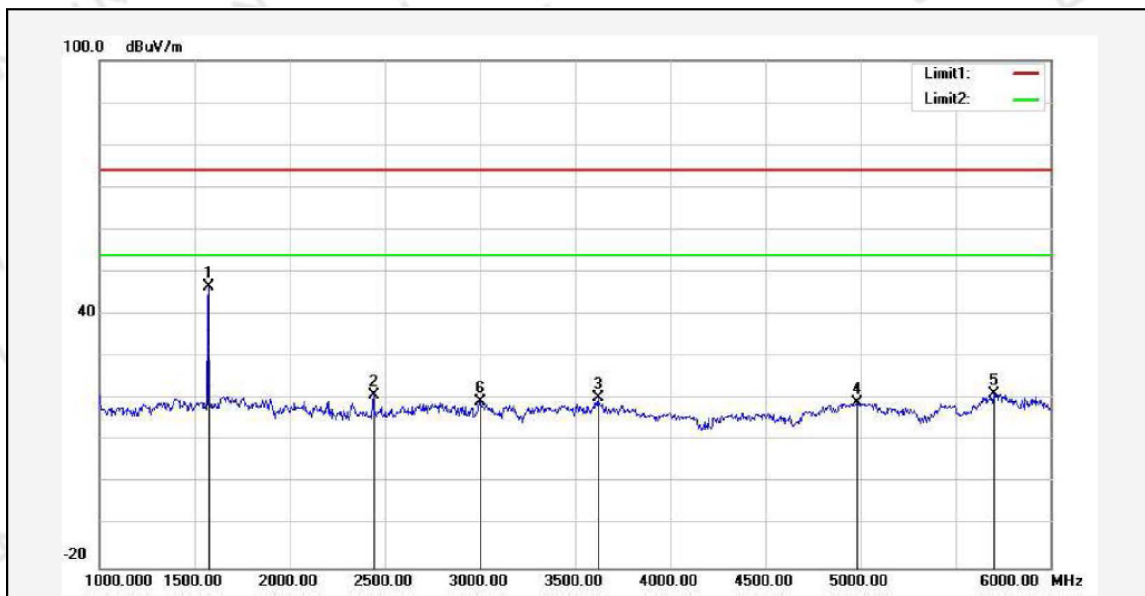
Temperature:	24°C	Relative Humidity:	48%
Test Voltage:	AC 120V, 60Hz	Pressure:	1010hPa
Test Mode:	Mode 1	Polarization:	Vertical



Remark: Result = Reading Level + Factor, Margin = Result – Limit
Factor = Ant. Factor + Cable Loss – Pre-amplifier

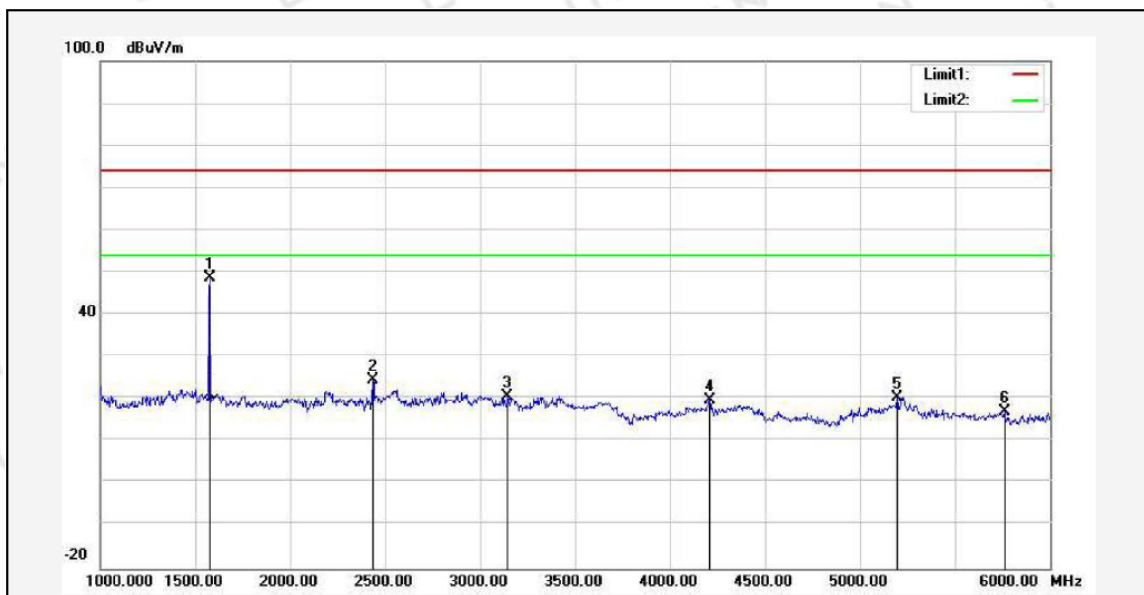
1G-6G:

Temperature:	24°C	Relative Humidity:	48%
Test Voltage:	AC 120V, 60Hz	Pressure:	1010hPa
Test Mode:	Mode 1	Polarization:	Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1	1575.420	71.93	-24.45	47.48	74.00	-26.52	115	100	peak
2	2440.000	45.38	-24.55	20.83	74.00	-53.17	164	100	peak
3	3620.000	44.85	-24.40	20.45	74.00	-53.55	133	100	peak
4	4985.000	43.18	-24.10	19.08	74.00	-54.92	124	100	peak
5*	5700.000	45.34	-24.02	21.32	74.00	-52.68	159	100	peak
6	3005.000	43.95	-24.50	19.45	74.00	-54.55	156	100	peak

Temperature:	24°C	Relative Humidity:	48%
Test Voltage:	AC 120V, 60Hz	Pressure:	1010hPa
Test Mode:	Mode 1	Polarization:	Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1	1575.420	73.62	-24.45	49.17	74.00	-24.83	120	100	peak
2*	2435.000	49.17	-24.55	24.62	74.00	-49.38	188	100	peak
3	3145.000	45.02	-24.47	20.55	74.00	-53.45	141	100	peak
4	4210.000	44.17	-24.27	19.90	74.00	-54.10	126	100	peak
5	5195.000	44.60	-24.10	20.50	74.00	-53.50	110	100	peak
6	5760.000	40.97	-24.00	16.97	74.00	-57.03	176	100	peak

Remark: Result = Reading Level + Factor, Margin = Result – Limit
Factor = Ant. Factor + Cable Loss – Pre-amplifier

5 PHOTO OF EUT



PHOTO 01



PHOTO 02



PHOTO 03



PHOTO 04



PHOTO 05



PHOTO 06



PHOTO 07



PHOTO 08

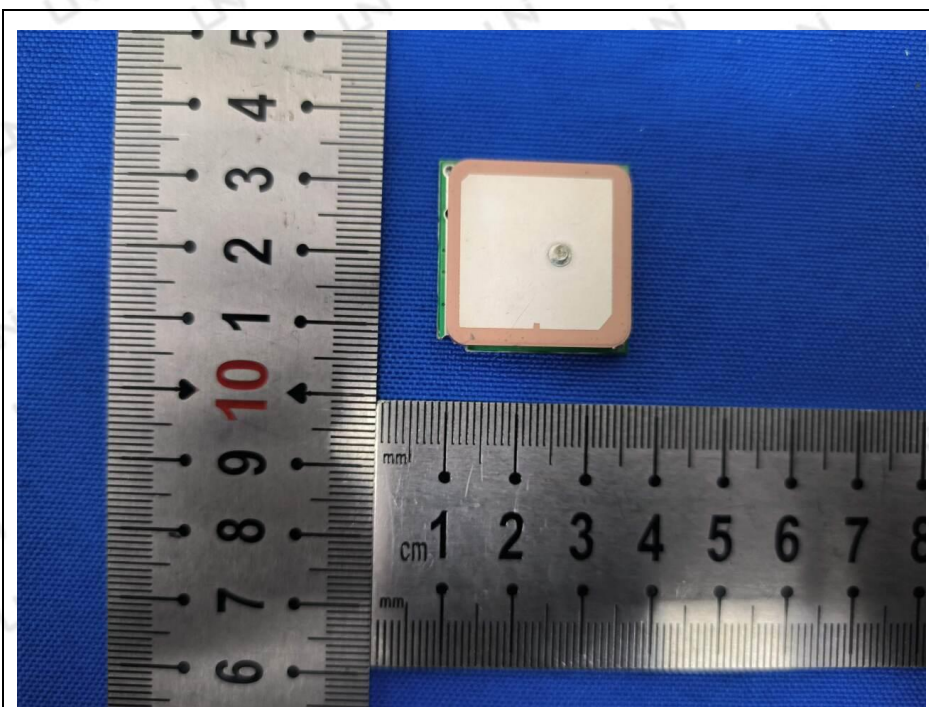


PHOTO 09

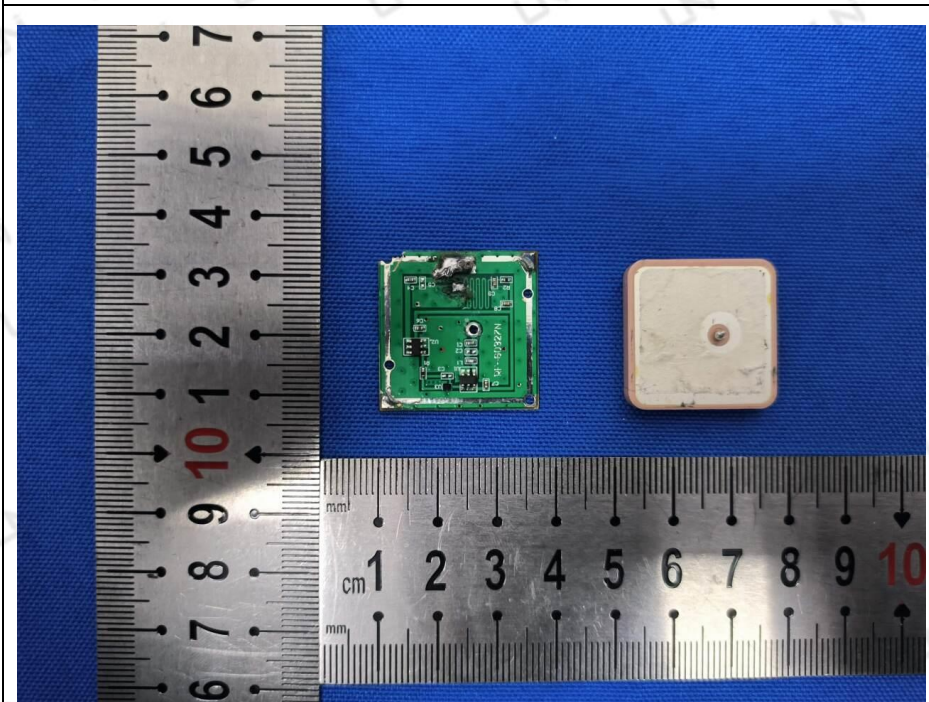


PHOTO 10

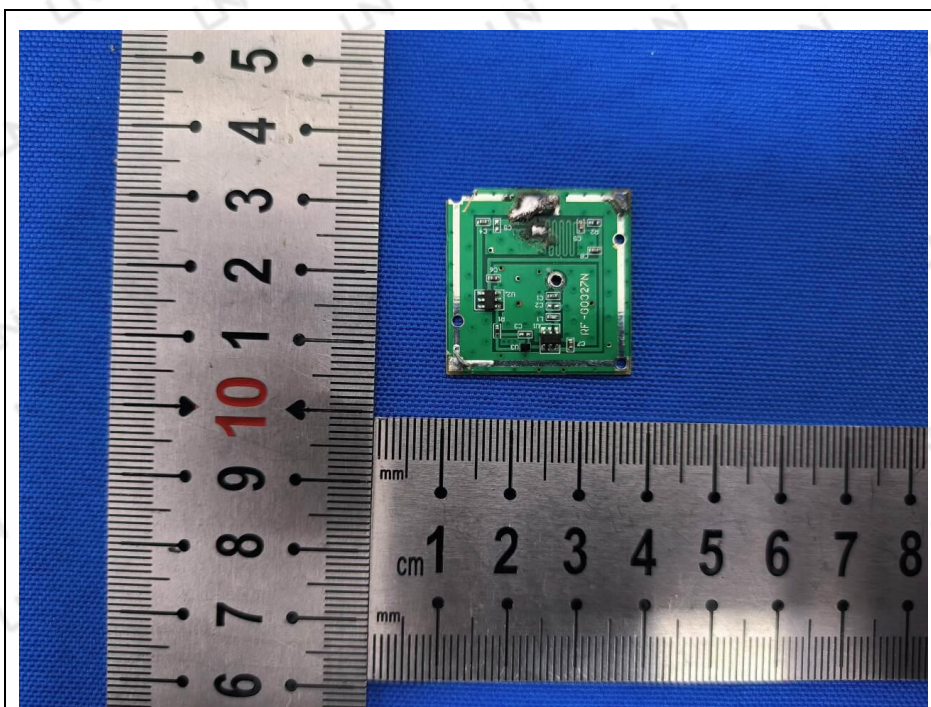


PHOTO 11

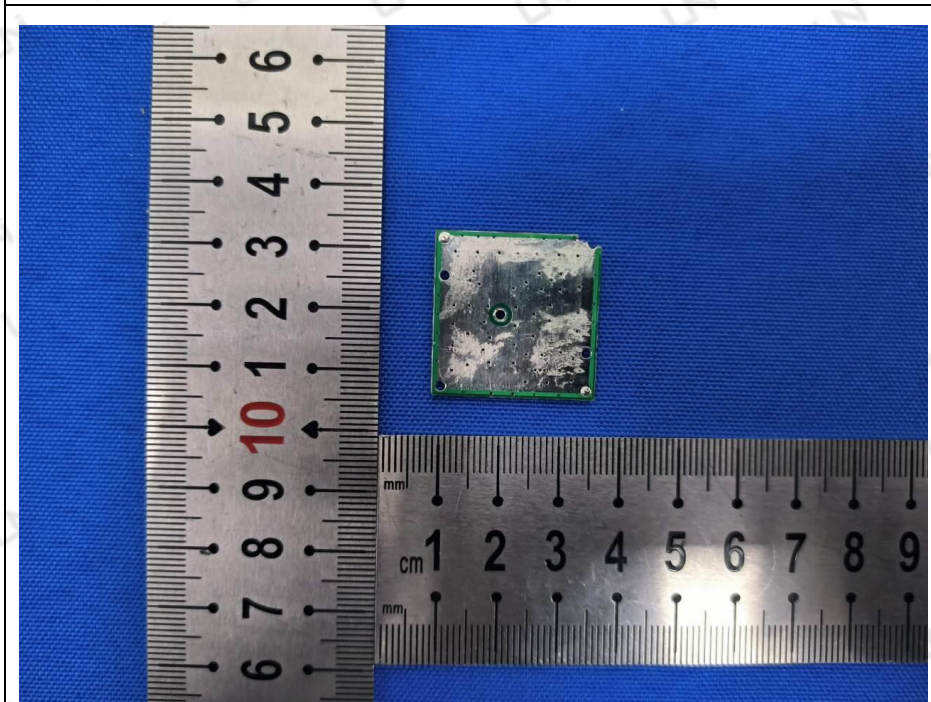
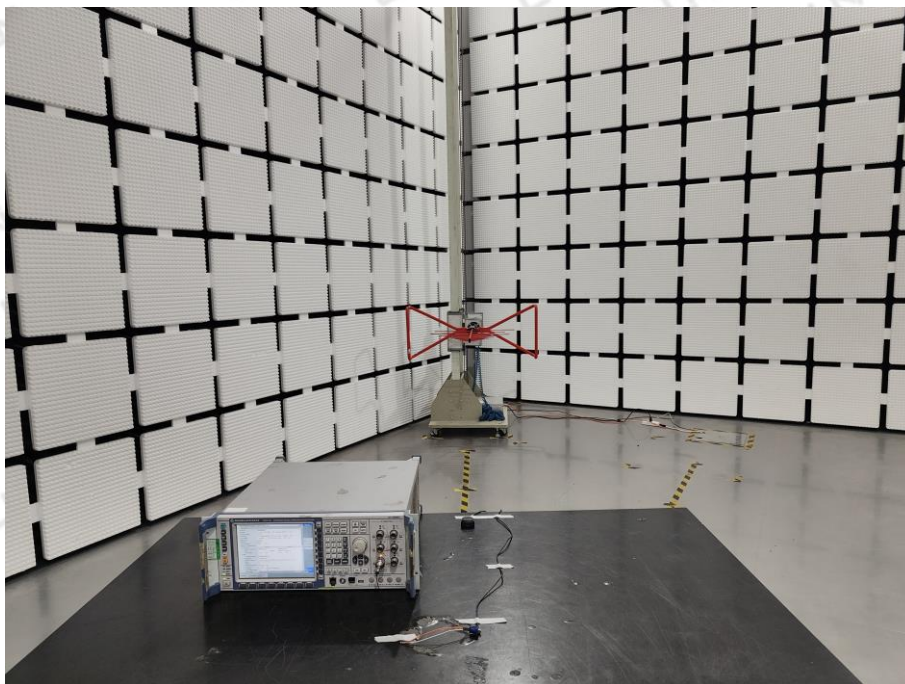


PHOTO 12

6 PHOTO OF TEST

RADIATED EMISSION



30MHz-1000MHz



Above 1GHz

CONDUCTED EMISSION



Statement

1. This report must have the signature of the authorized signatory and the special seal of the report, otherwise it will be considered invalid. If there is no anti-counterfeiting electronic seal of the laboratory in the report in PDF format or it is displayed as "x", the report is invalid.
2. This report shall not be modified, added or deleted without authorization.
3. The results of this report are only valid for the EUT provided by Applicant to our laboratory for inspection (That is,EUT received by our laboratory.Without special explanation, it refers to the samples presented in the report " PHOTO OF EUT").
4. If there is any objection to the test data and conclusions of this report, please submit it in writing within 10 working days after the date of issuance of the report.
5. Without the written consent of the laboratory, this report shall not be copied (except for full copy), nor shall it be used as publicity materials or advertising.
6. The cover of the report is for decoration only, not included in the body of the report.
7. The paper report issued by our laboratory has the same effect as the electronic report. In case of any difference between the two, the electronic report shall prevail.
8. The Chinese and English reports issued by our laboratory have the same effect. In case of any difference in understanding, the Chinese version shall prevail.
9. Please provide the complete report documents issued by our laboratory when inquiring the report.
10. For cases where compliance is determined based on test values, when relevant specifications, standards, documents, and customers have no relevant requirements and no other special instructions, the test report issued by this laboratory is carried out in full value and adopts ILAC-G8:09 /2019 "Simple Acceptance Rule" for judgment.
11. In the People's Republic of China, when there is no CMA Accredited Symbol in this report, the report is only for scientific research, teaching or internal quality control activities.

End of Report