



AS/NZS CISPR 32:2015+A1:2020 MEASUREMENT AND TEST REPORT

For

Fujian Youtong Industries Co.,Ltd.

North part of 1st, 2nd-3rd floor, Building 1#, M9511 industries Park, No.18, Majiang Road,
Mawei District, Fuzhou City, Fujian, China

Model: YT6077

March 13, 2023

This Report Concerns:

☒ Original Report

Equipment Type:

weather station

Test Engineer:

Beek Sun / *Beek Sun*

Report Number:

QCT23CR-1267E-01

Test Date:

March 01, 2023 ~ March 13, 2023

Reviewed By:

Gordon Tan / *Gordon Tan*

Approved By:

Kendy Wang / *Kendy Wang*



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1 - GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant: Fujian Youtong Industries Co.,Ltd.
Address of applicant: North part of 1st, 2nd-3rd floor, Building 1#, M9511 industries Park, No.18, Majiang Road, Mawei District, Fuzhou City, Fujian, China
Manufacturer: Fujian Youtong Industries Co.,Ltd.
Address of manufacturer: North part of 1st, 2nd-3rd floor, Building 1#, M9511 industries Park, No.18, Majiang Road, Mawei District, Fuzhou City, Fujian, China

General Description of E.U.T

Product Description: weather station
Trade Mark: N/A
Model No.: YT6077
Test Model No.: YT6077
Sample No.: Y23C1267E01YN
Rated Supply: Input: DC 4.5V (For Battery) or DC 5V (Powered by AC/DC Adaptor)
Highest internal frequency: >15MHz
Adapter Information: Model: IVP0500-0300WS
Input: 100-240V~, 50/60Hz, 0.5A
Output: 5.0V ---0.3A

Remark: * The test data gathered are from the production sample provided by the manufacturer.

General Description of Test Auxiliary

AUX Description:	Manufacturer	Model No.	Certificate	CABLE
/	/	/	/	/

1.2 Test Standards

The following Declaration of Conformity report of EUT is prepared in accordance with AS/NZS CISPR 32:2015+A1:2020

The objective of the manufacturer is to demonstrate compliance with the described above standards.

1.3 Test Summary

For the EUT described above. The standards used were AS/NZS CISPR 32: 2015+A1:2020 for Emissions

Tests Carried Out Under AS/NZS CISPR 32:2015+A1:2020

Standard	Test Items	Status
AS/NZS CISPR 32:2015+A1:2020	Disturbance Voltage (0.15MHz to 30MHz)	✓
AS/NZS CISPR 32:2015+A1:2020	Radiated Disturbances (30MHz to 1GHz)	✓
AS/NZS CISPR 32:2015+A1:2020	Radiated Disturbances (Above 1GHz)	✓

✓ Indicates that the test is applicable

✗ Indicates that the test is not applicable

1.4 Test Methodology

All measurements contained in this report were conducted with AS/NZS CISPR 32:2015+A1:2020 "Information technology equipment-Radio disturbance characteristics-Limits and Methods of Measurement."

The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the Operating Instructions.

The maximum emission levels emanating from the device are compared to the AS/NZS CISPR 32:2015+A1:2020 limits for radiation emissions and the measurement results contained in this test report show that EUT is to be technically compliant with AS/NZS CISPR 32:2015+A1:2020 requirements.

1.5 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

CNAS – Registration No.: L8464

A2LA-Registration NO.:6759.01

Shenzhen QC Testing Laboratory Co., Ltd. To ISO/IEC 17025:25 General Requirements for the Competence of Testing and Calibration Laboratories(CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).

2 - SYSTEM TEST CONFIGURATION

2.1 Justification

The system was configured for testing in a typical fashion (as only used by a typical user).

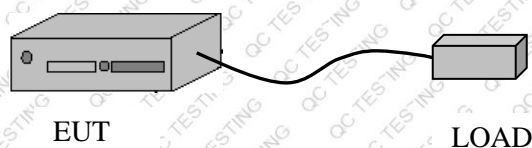
2.2 EUT Exercise Software

The EUT exercising program used during radiated and conducted testing was designed to exercise the various system components in a manner similar to a typical use. The software offered by manufacturer, can let the EUT being **CHARGING/ON Mode**.

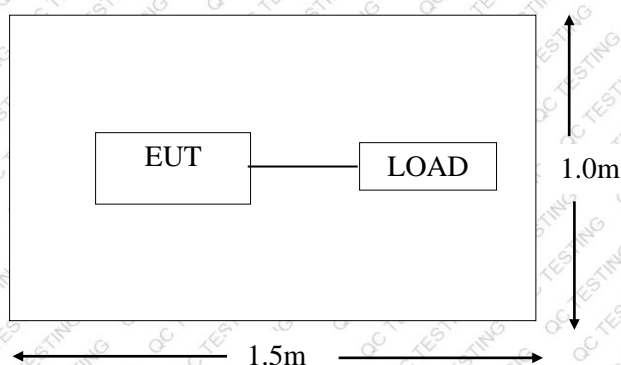
2.3 Special Accessories

As shown in section 2.5, interface cable used for compliance testing is shielded as normally supplied by **Fujian Youtong Industries Co.,Ltd.** and its respective support equipment manufacturers.

2.4 Equipment Modifications



2.5 Configuration of Test System



3 - DISTURBANCE VOLTAGE AT THE MAINS TERMINALS

3.1 Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, and LISN.

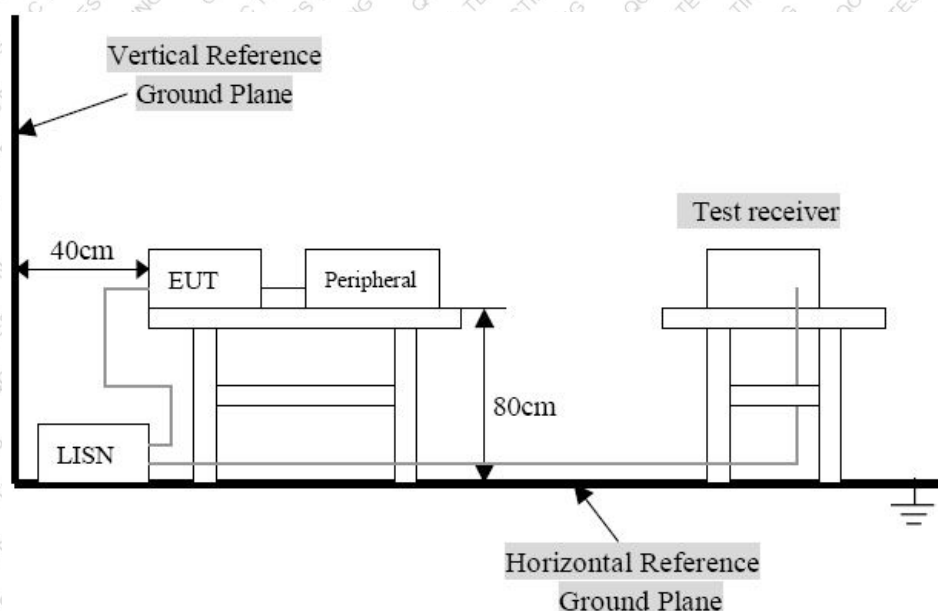
The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement is 2.46dB for Peak; 2.42dB for Average.

3.2 Limit of Disturbance Voltage at the Mains Terminals

Frequency Range(MHz)	Limits (dB μ V)	
	Quasi-Peak	Average
0.150~0.500	66~56	56~46
0.500~5.000	56	46
5.000~30.00	60	50

Note: (1) The tighter limit shall apply at the edge between two frequency bands.

3.3 EUT Setup



3.4 Instrument Setup

The test receiver was set with the following configurations:

Test Receiver Setting:

Frequency Range.....150 KHz to 30 MHz
 Detector.....Peak & Quasi-Peak & Average
 Sweep Speed.....Auto
 IF Band Width.....9 KHz



3.5 Test Procedure

During the conducted emission test, the EUT power cord was connected to the auxiliary outlet of the first Artificial Mains.

Maximizing procedure was performed on the six (6) highest emissions to ensure EUT compliance using all installation combination.

All data was recorded in the peak detection mode. Quasi-peak and Average readings were only performed when an emission was found to be marginal (within -10 dB μ V of specification limits). Quasi-peak readings are distinguished with a "QP". Average readings are distinguished with a "AV".

3.6 Summary of Test Results

According to the data in section 3.6, the EUT complied with the AS/NZS CISPR 32:2015+A1:2020 Conducted margin.

3.7 Disturbance Voltage Test Data

Temperature (°C)	25
Humidity (%RH)	56
Barometric Pressure (kpa)	101
EUT	weather station
M/N	YT6077
Operating Mode	CHARGING

Test data see following pages

Remark: (1) When PK reading is less than relevant limit 20dB, the QP reading and AV reading will not be recorded.
(2) Where QP reading is less than relevant AV limit, the AV reading will not be measured

3.8 Test Equipment List and Details

No.	Equipment	Manufacturer	Model	Serial No.	Last Cal.	Cal.Due
1	EMI Test Receiver	R&S	ESIB 7	2277573376	2023.03.01	2024.02.29
2	Artificial Mains Network	SCHWARZBECK	NSLK8126	8126200	2023.03.01	2024.02.29
3	PULSE LIMITER	R&S	ESH3-Z2	100058	2023.03.01	2024.02.29

3.9 Test Result

PASS

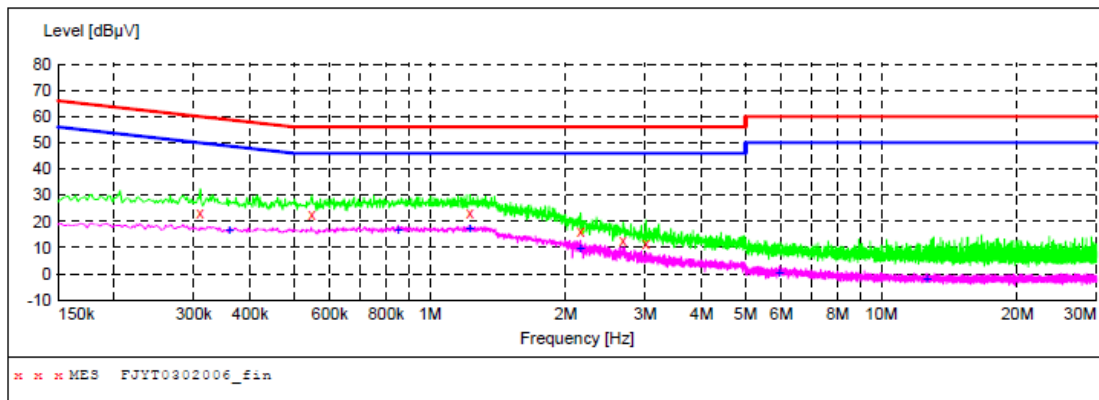


Conducted Emission Test Data

EUT:	weather station
M/N:	YT6077
Operating Condition:	CHARGING
Test Site:	Shielded Room
Operator:	Beek Sun
Test Voltage:	AC 120V/60Hz
Comment:	Live Line
Condition of Test:	Temperature:25°C Humidity:56%

SCAN TABLE: "Voltage (9K-30M)FIN"

Short Description: 150K-30M Voltage



MEASUREMENT RESULT: "FJYT0302006_fin"

2023-3-2 20:01

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.310000	23.50	10.2	60	36.5	QP	L1	GND
0.548000	22.70	10.4	56	33.3	QP	L1	GND
1.226000	23.50	10.3	56	32.5	QP	L1	GND
2.157500	16.00	10.2	56	40.0	QP	L1	GND
2.679500	13.00	10.3	56	43.0	QP	L1	GND
3.008000	11.60	10.3	56	44.4	QP	L1	GND

MEASUREMENT RESULT: "FJYT0302006_fin2"

2023-3-2 20:01

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.360000	16.90	10.3	49	31.8	AV	L1	GND
0.850000	17.00	10.3	46	29.0	AV	L1	GND
1.226000	17.20	10.3	46	28.8	AV	L1	GND
2.157500	10.00	10.2	46	36.0	AV	L1	GND
5.946500	0.60	10.4	50	49.4	AV	L1	GND
12.620000	-1.80	10.5	50	51.8	AV	L1	GND

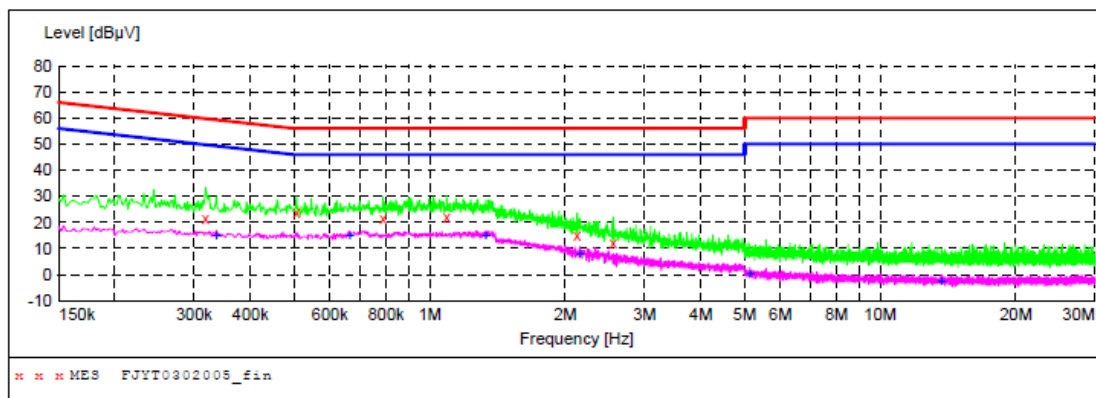


Conducted Emission Test Data

EUT:	weather station
M/N:	YT6077
Operating Condition:	CHARGING
Test Site:	Shielded Room
Operator:	Beek Sun
Test Voltage:	AC 120V/60Hz
Comment:	Neutral Line
Condition of Test:	Temperature:25℃ Humidity:56%

SCAN TABLE: "Voltage (9K-30M)FIN"

Short Description: 150K-30M Voltage



MEASUREMENT RESULT: "FJYT0302005_fin"

2023-3-2 19:58

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.318000	21.70	10.3	60	38.1	QP	N	GND
0.506000	23.80	10.4	56	32.2	QP	N	GND
0.788000	21.50	10.4	56	34.5	QP	N	GND
1.090000	21.90	10.3	56	34.1	QP	N	GND
2.126000	15.10	10.2	56	40.9	QP	N	GND
2.553500	12.10	10.2	56	43.9	QP	N	GND

MEASUREMENT RESULT: "FJYT0302005_fin2"

2023-3-2 19:58

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.336000	15.00	10.3	49	34.3	AV	N	GND
0.664000	15.10	10.4	46	30.9	AV	N	GND
1.332000	15.00	10.3	46	31.0	AV	N	GND
2.153000	8.30	10.2	46	37.7	AV	N	GND
5.136500	0.20	10.4	50	49.8	AV	N	GND
13.668500	-2.20	10.5	50	52.2	AV	N	GND

4 - RADIATED DISTURBANCES

4.1 Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiation emissions measurement is 3.1dB.

4.2 Limit of Radiated Disturbances

Frequency(MHz)	Distance(Meters)	Field Strengths Limits(dBμV/m)
30 ~ 230	3	40
230 ~ 1000	3	47

Note: (1) The tighter limit shall apply at the edge between two frequency bands.

(2) Distance refers to the distance in meters between the test instrument antenna and the closest point of any part of the E.U.T.

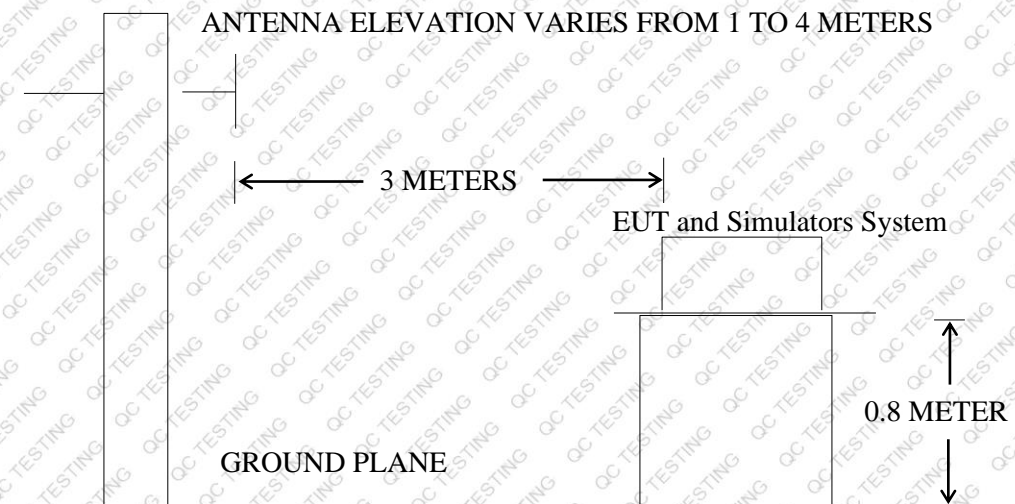
4.3 EUT Setup

The radiated emission tests were performed in the open area 3-meter test site, using the setup accordance with the CISPR 16-1-1 and CISPR16-2-3. The specification used was AS/NZS CISPR 32:2015+A1:2020 Class B limits.

The EUT was placed on the center of the test table.

Maximum emission emitted from EUT was determined by manipulating the EUT, support equipment, interconnecting cables and varying the mode of operation and the levels in the final result of the test were recorded with the EUT running in the operating mode that maximum emission was emitted.

Block diagram of test setup (In chamber)





4.4 Test Receiver Setup

According to AS/NZS CISPR 32:2015+A1:2020 rules, the frequency was investigated from 30 to 6000 MHz. During the radiated emission test, the test receiver was set with the following configurations:

Test Receiver Setting:

Detector.....Peak &Quasi-Peak &Average
IF Band Width.....120KHz/1MHz
Frequency Range.....30MHz to 1000MHz/Above 1GHz
Turntable Rotated.....0 to 360 degrees

Antenna Position:

Height.....1m to 4m
Polarity.....Horizontal and Vertical

4.5 Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

All data was recorded in the peak detection mode. Quasi-peak readings performed only when an emission was found to be marginal (within -10 dB μ V of specification limits), and are distinguished with a "QP" in the data table.

4.6 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

$$\text{Corr. Ampl.} = \text{Indicated Reading} + \text{Antenna Factor} + \text{Cable Factor} - \text{Amplifier Gain}$$

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB μ V means the emission is 7dB μ V below the maximum limit for Class B. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Class B Limit} - \text{Corr. Ampl.}$$

4.7 Radiated Emissions Test Result

Temperature (°C)	26
Humidity (%RH)	54
Barometric Pressure (kpa)	101
EUT	weather station
M/N	YT6077
Operating Mode	CHARGING/ON



4.8 Test Equipment List and Details

No.	Equipment	Manufacturer	Model	Serial No.	Last Cal.	Cal.Due
1	EMI Test Receiver	R&S	ESIB 7	2277573376	2023.03.01	2024.02.29
2	Spectrum analyzer	Agilent	N9020A	MY52134421	2023.03.01	2024.02.29
3	TRILOG Broadband Test-Antenna	SCHWARZBECK	VULB9168	VULB9168-588	2023.03.06	2025.03.05
4	horn antenna	SCHWARZBECK	BBHA9120 D	2069	2023.03.06	2025.03.05
5	High-frequency amplifier	SCHWARZBECK	BBV9743	9743-137	2023.03.01	2024.02.29
6	Broadband Preamplifier	HPX	BP-01G- 18G	210902	2023.03.01	2024.02.29
7	966 Chamber	ZhongYu	9*6*6	/	2022.07.25	2025.07.24

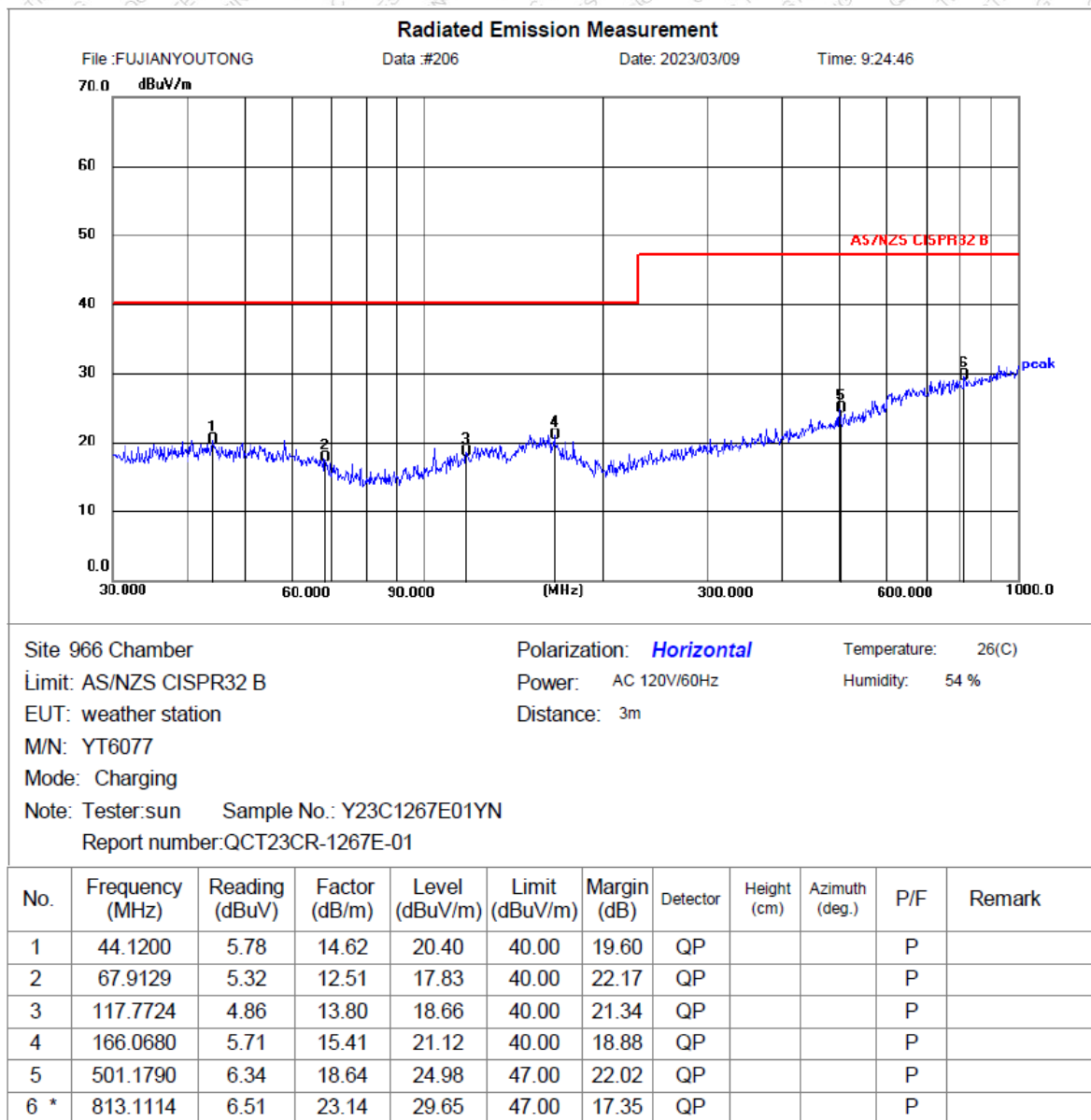
4.9 Test Result

PASS



Radiated Emission Test Data of Below 1GHz

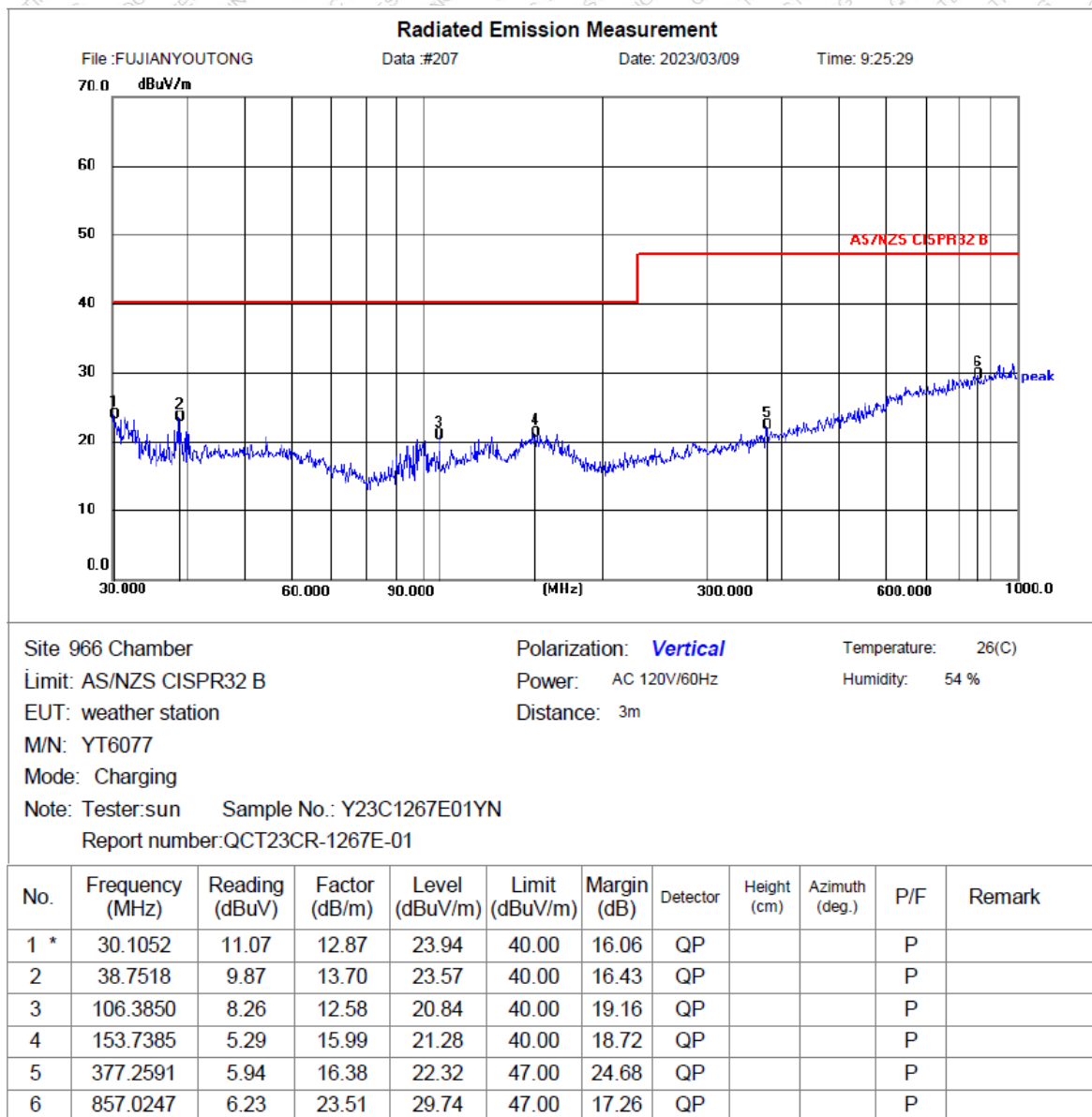
EUT:	weather station
M/N:	YT6077
Operating Condition:	CHARGING
Test Site:	3m CHAMBER
Operator:	Beek Sun
Test Voltage:	AC 120V/60Hz
Comment:	Polarization: Horizontal
Condition of Test:	Temperature:26°C Humidity:54%





Radiated Emission Test Data of Below 1GHz

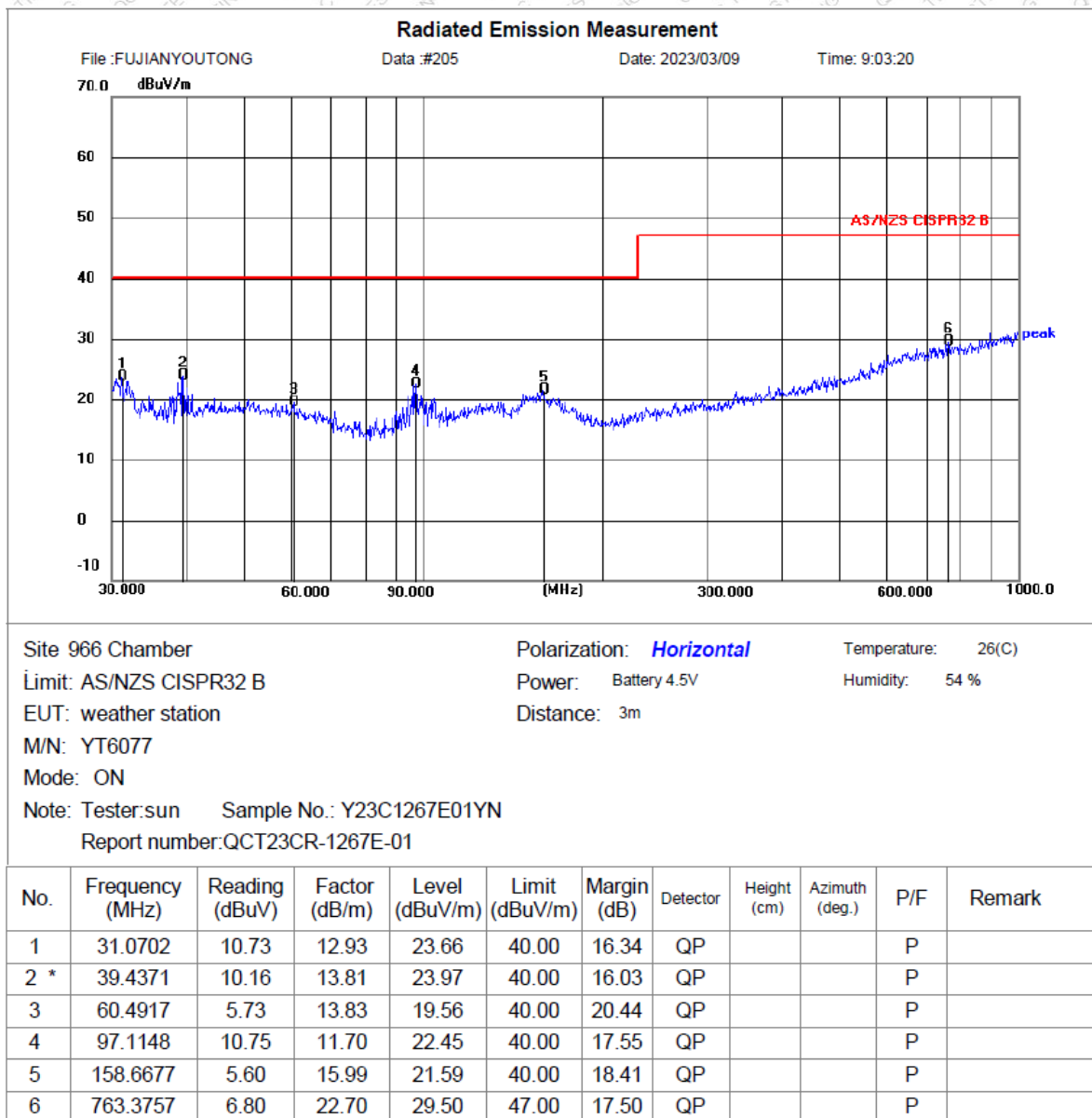
EUT:	weather station
M/N:	YT6077
Operating Condition:	CHARGING
Test Site:	3m CHAMBER
Operator:	Beek Sun
Test Voltage:	AC 120V/60Hz
Comment:	Polarization: Vertical
Condition of Test:	Temperature:26°C Humidity:54%





Radiated Emission Test Data of Below 1GHz

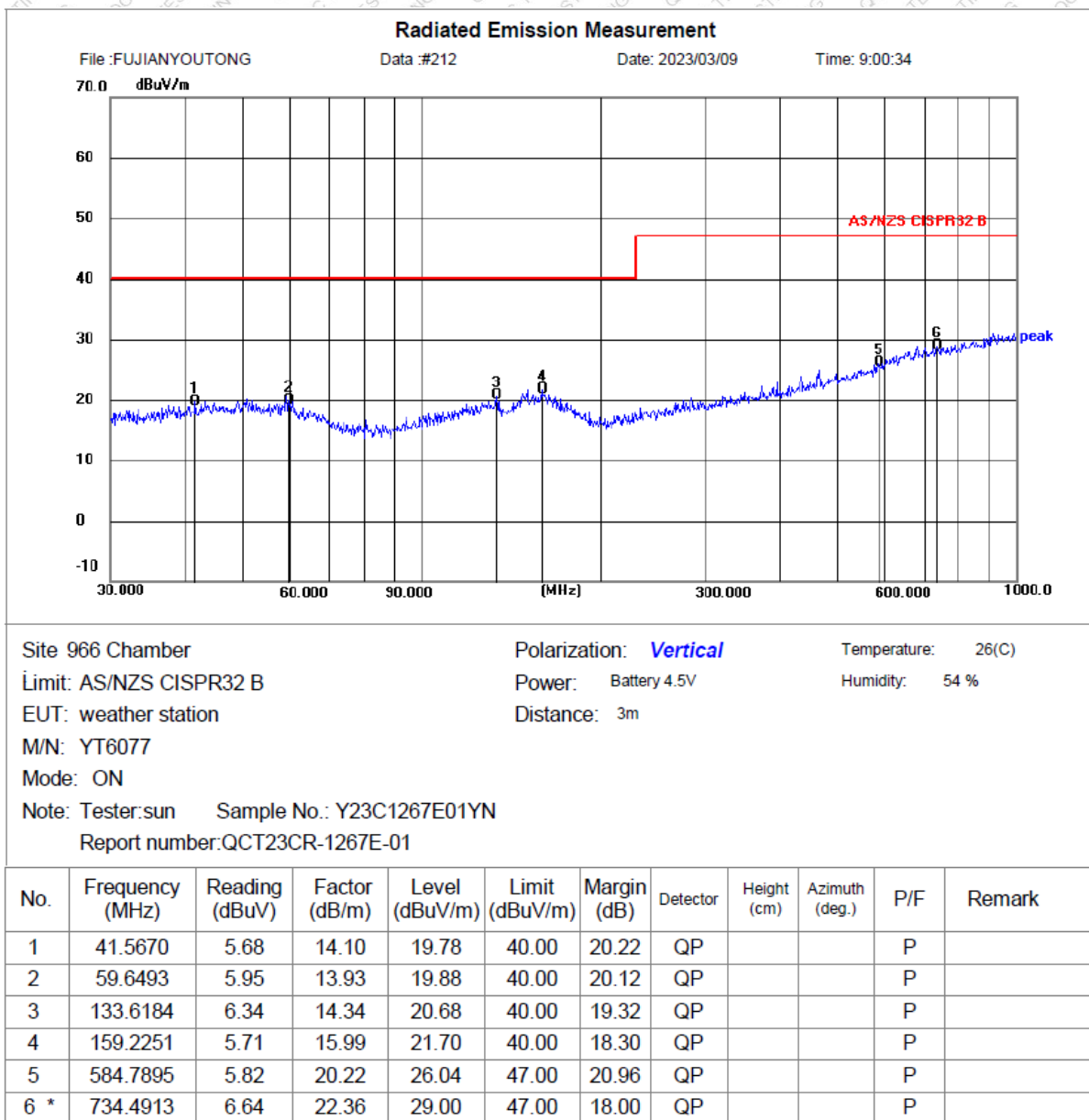
EUT:	weather station
M/N:	YT6077
Operating Condition:	ON
Test Site:	3m CHAMBER
Operator:	Beek Sun
Test Voltage:	Battery 4.5V
Comment:	Polarization: Horizontal
Condition of Test:	Temperature:26°C Humidity:54%





Radiated Emission Test Data of Below 1GHz

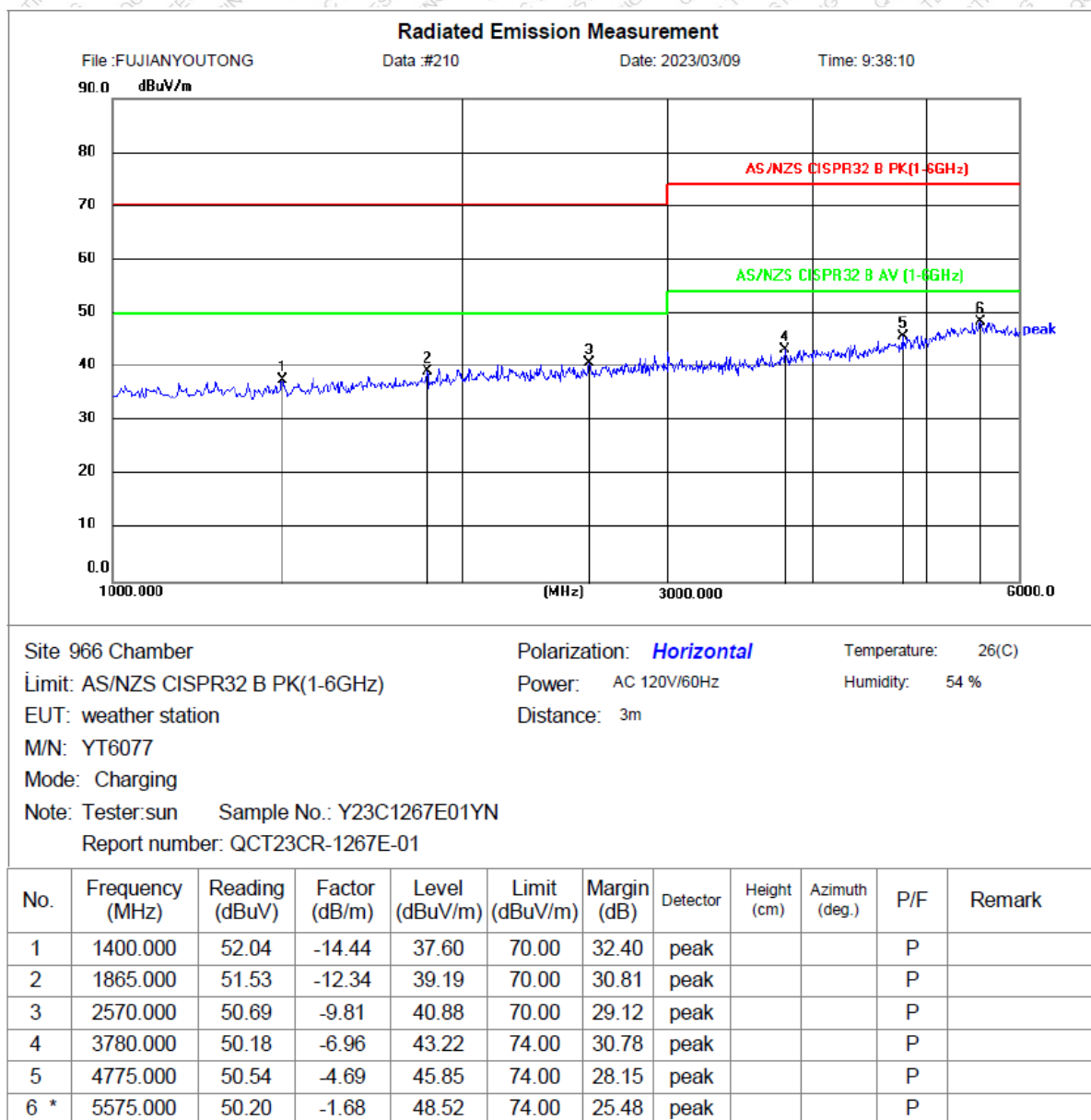
EUT:	weather station
M/N:	YT6077
Operating Condition:	ON
Test Site:	3m CHAMBER
Operator:	Beek Sun
Test Voltage:	Battery 4.5V
Comment:	Polarization: Vertical
Condition of Test:	Temperature:26°C Humidity:54%





Radiated Emission Test Data of Above 1GHz

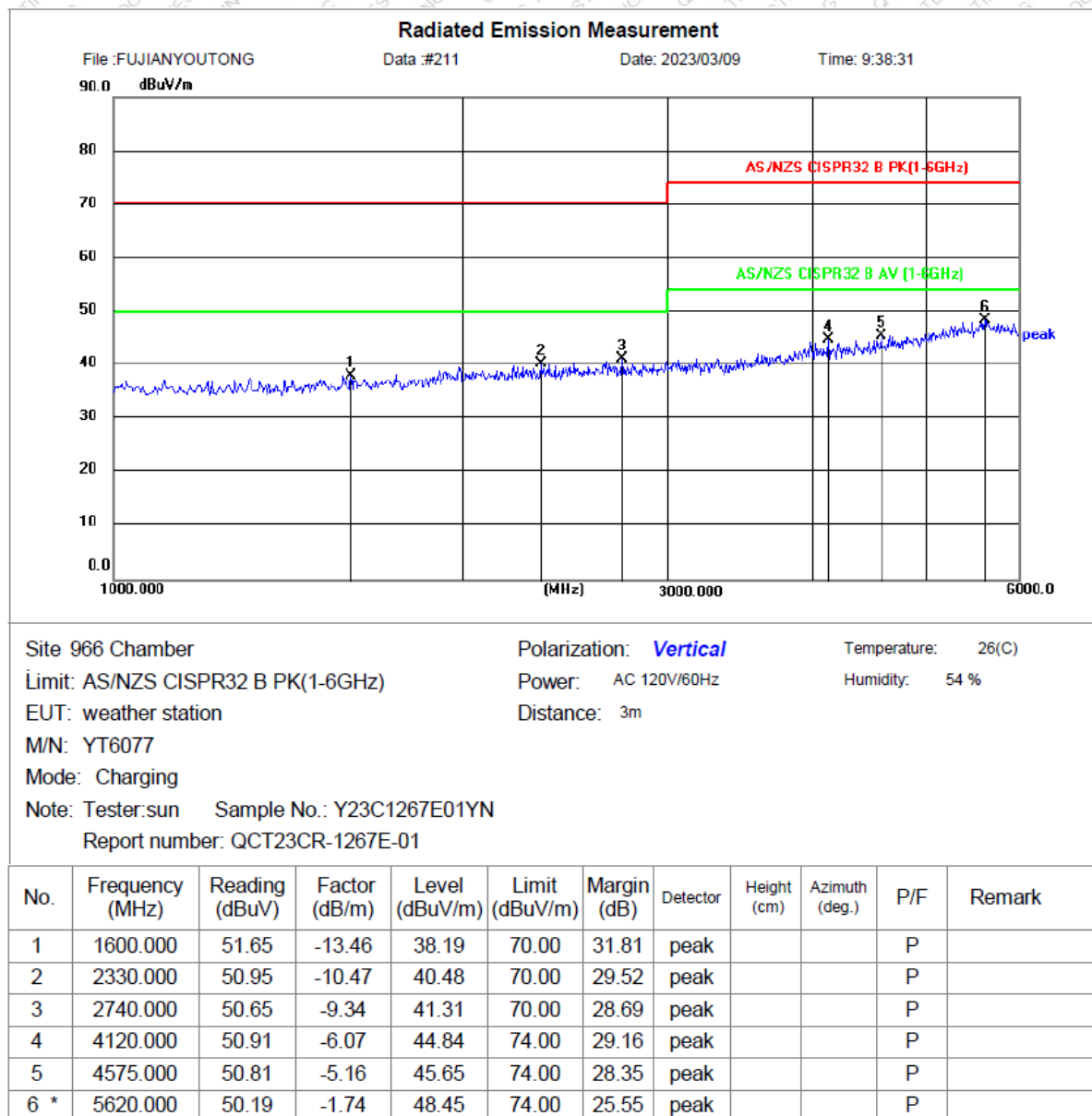
EUT:	weather station
M/N:	YT6077
Operating Condition:	CHARGING
Test Site:	3m CHAMBER
Operator:	Beek Sun
Test Voltage:	AC 120V/60Hz
Comment:	Polarization: Horizontal
Condition of Test:	Temperature:26℃ Humidity:54%





Radiated Emission Test Data of Above 1GHz

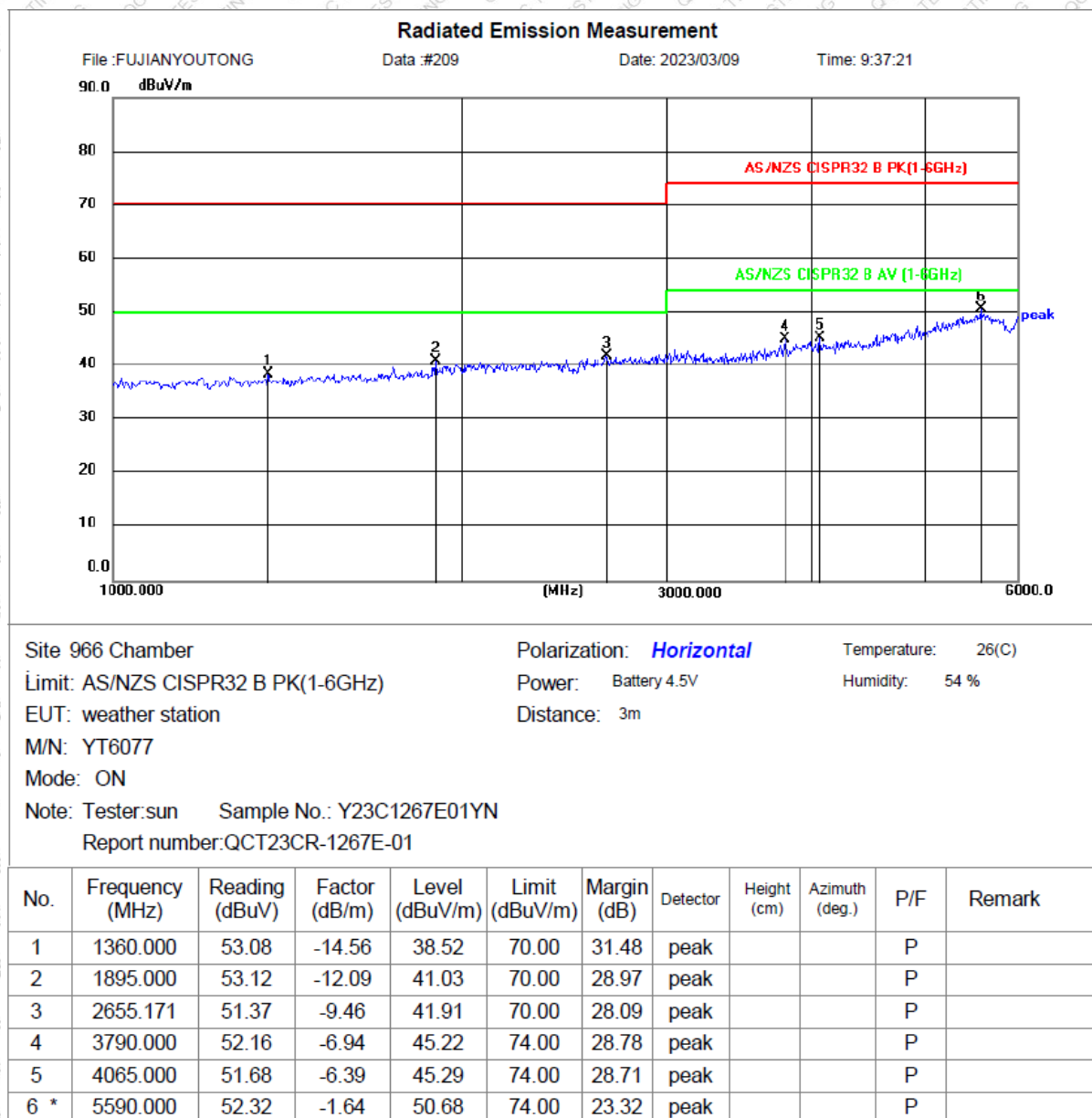
EUT:	weather station
M/N:	YT6077
Operating Condition:	CHARGING
Test Site:	3m CHAMBER
Operator:	Beek Sun
Test Voltage:	AC 120V/60Hz
Comment:	Polarization: Vertical
Condition of Test:	Temperature:26°C Humidity:54%





Radiated Emission Test Data of Above 1GHz

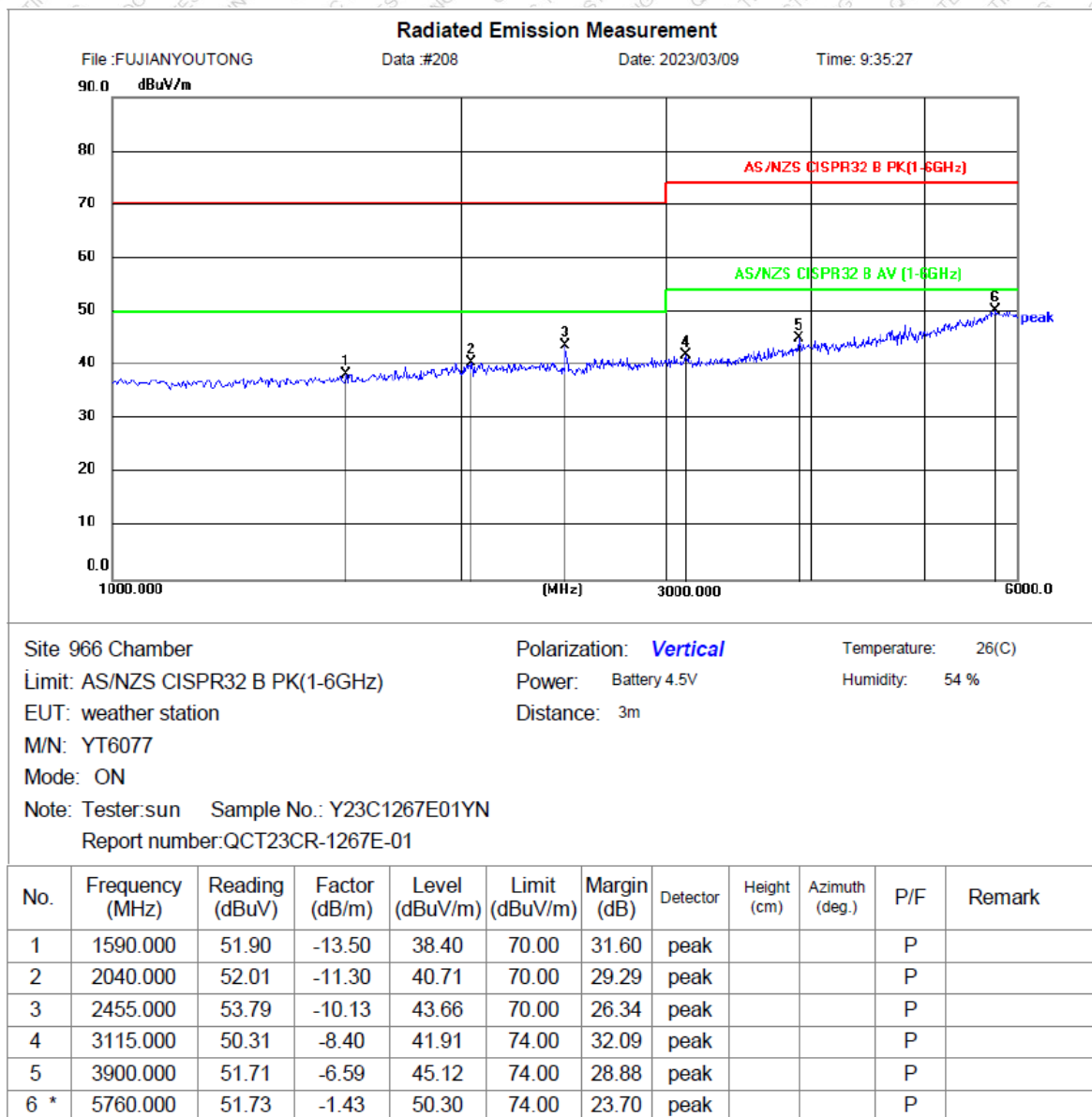
EUT:	weather station
M/N:	YT6077
Operating Condition:	ON
Test Site:	3m CHAMBER
Operator:	Beek Sun
Test Voltage:	Battery 4.5V
Comment:	Polarization: Horizontal
Condition of Test:	Temperature:26°C Humidity:54%





Radiated Emission Test Data of Above 1GHz

EUT:	weather station
M/N:	YT6077
Operating Condition:	ON
Test Site:	3m CHAMBER
Operator:	Beek Sun
Test Voltage:	Battery 4.5V
Comment:	Polarization: Vertical
Condition of Test:	Temperature:26°C Humidity:54%



APPENDIX A - EUT PHOTOGRAPHS

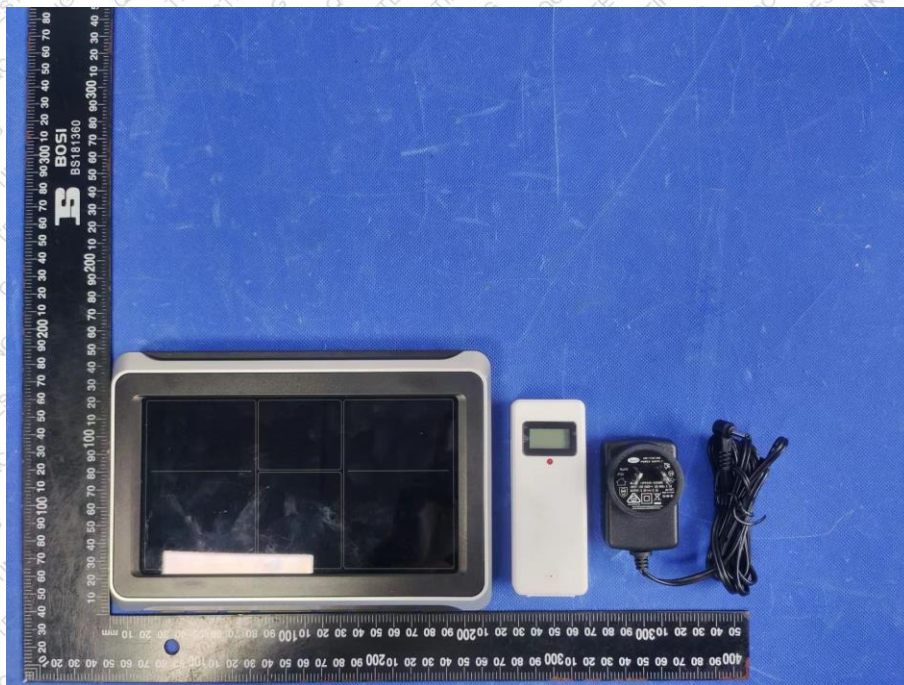


Figure 1



Figure 2

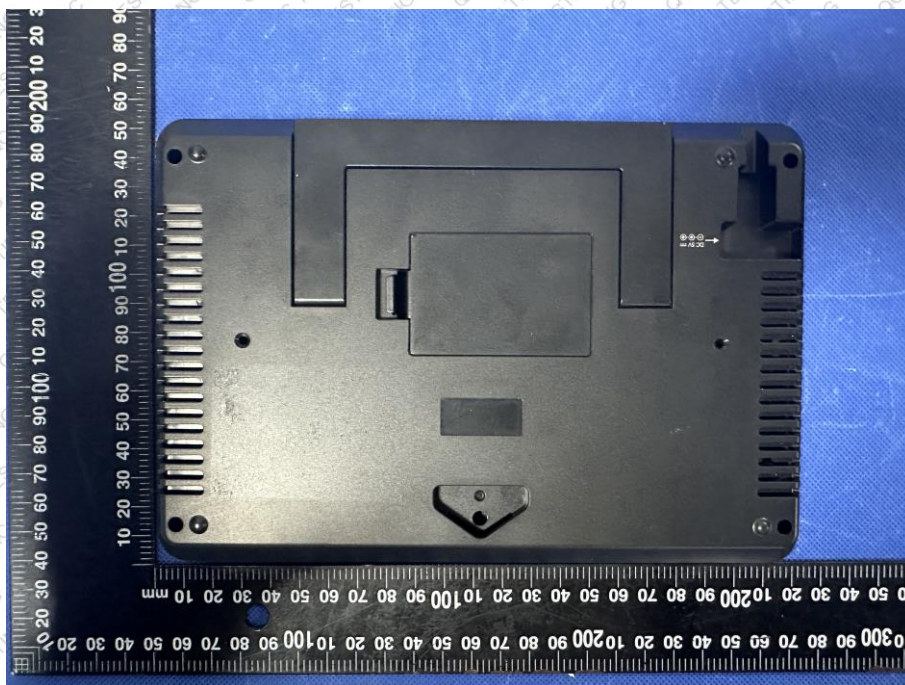


Figure 3



Figure 4

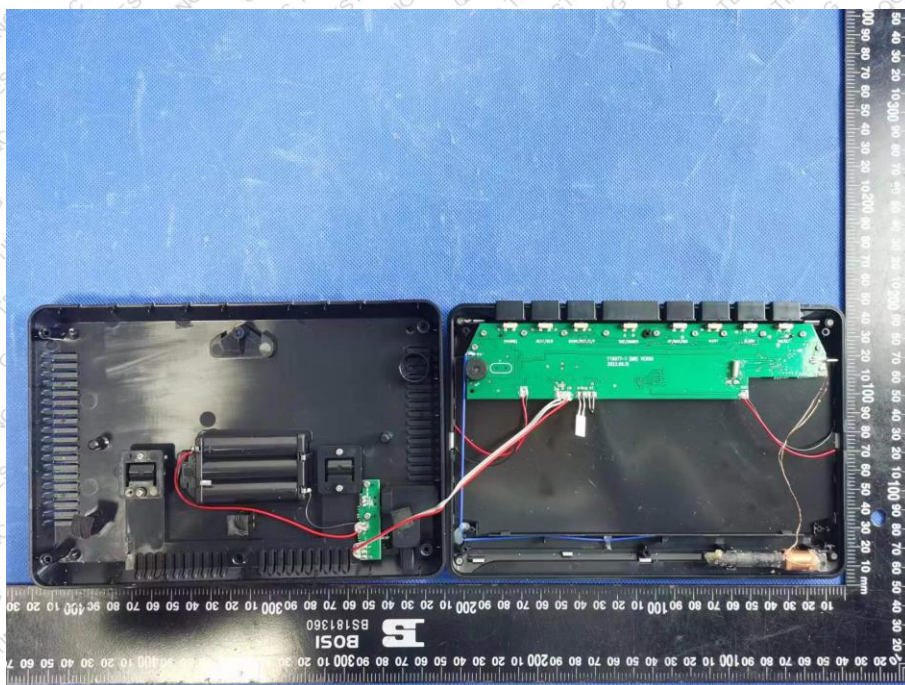


Figure 5

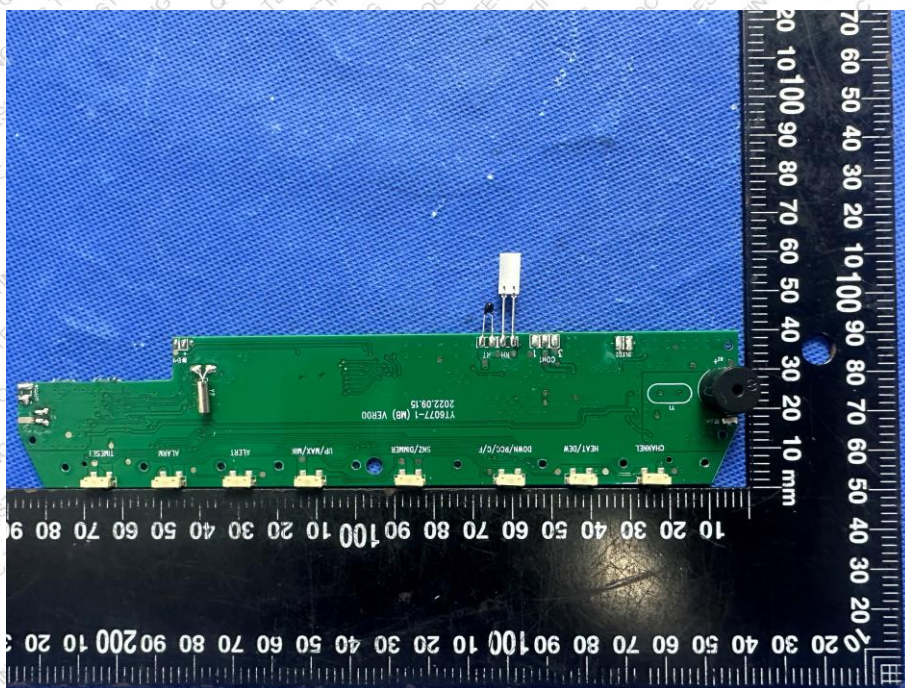


Figure 6

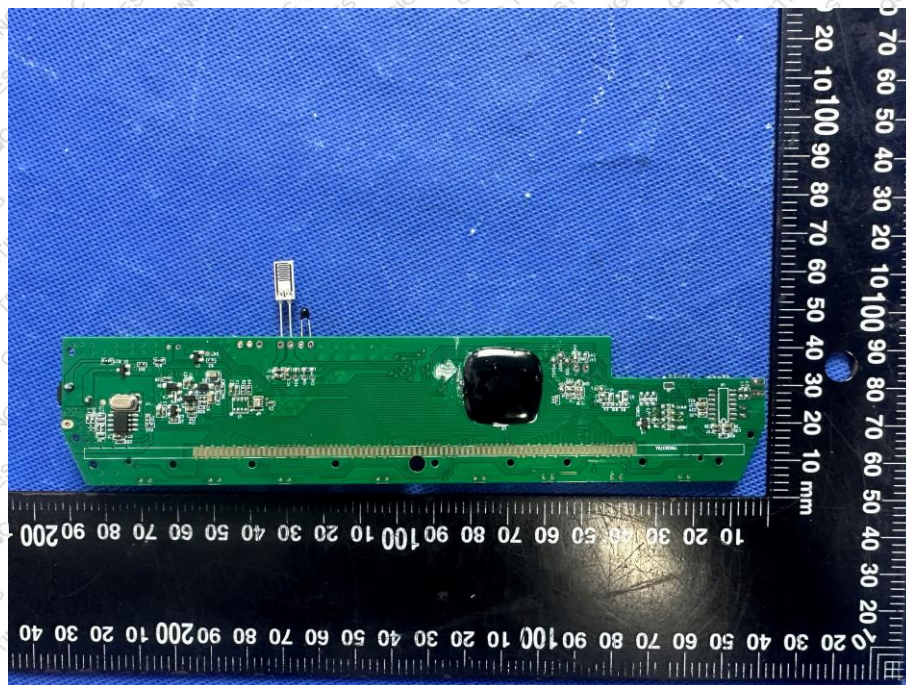


Figure 7

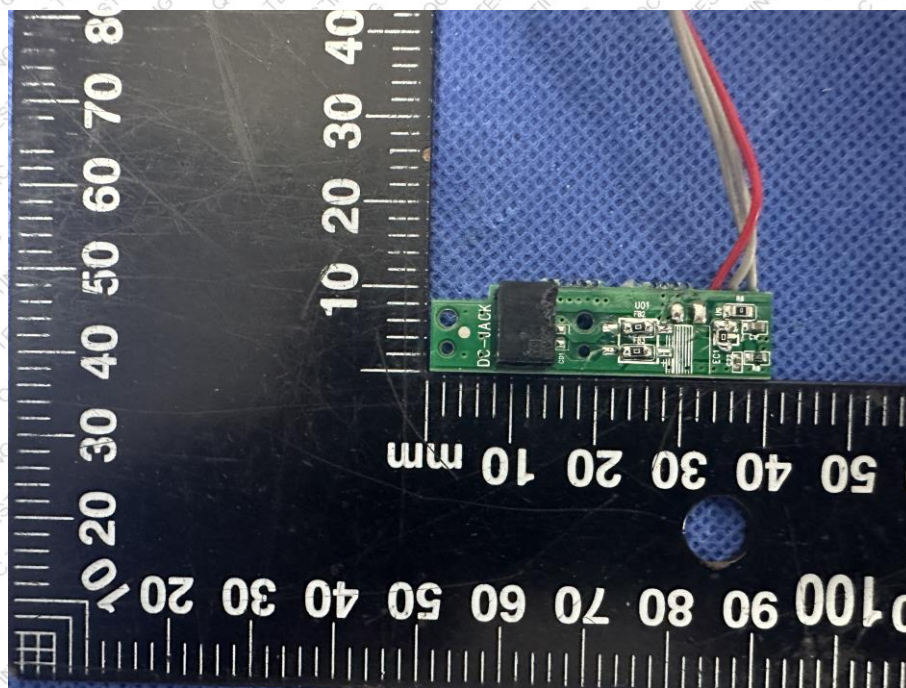


Figure 8

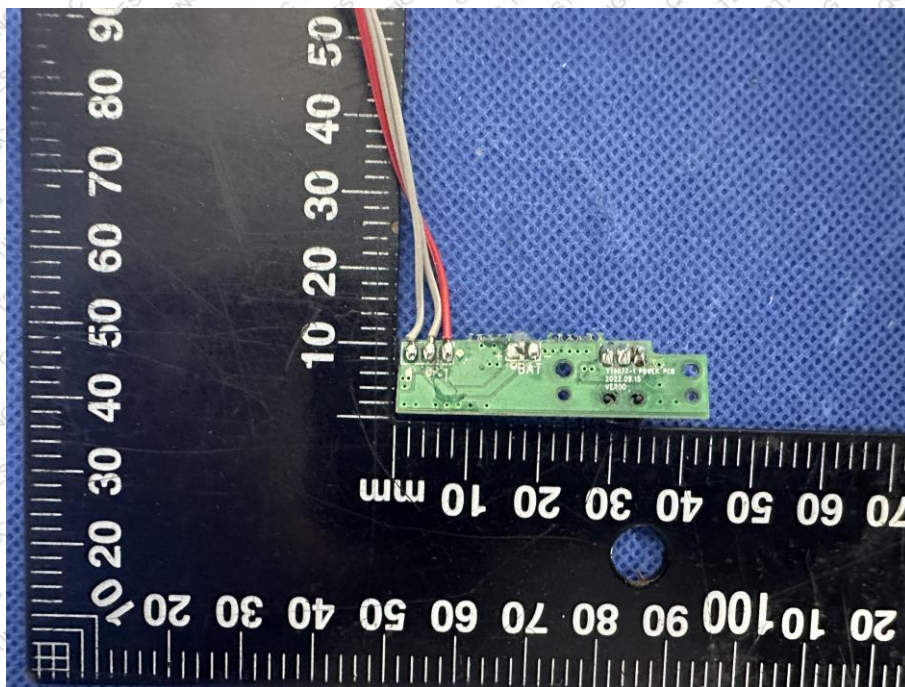


Figure 9

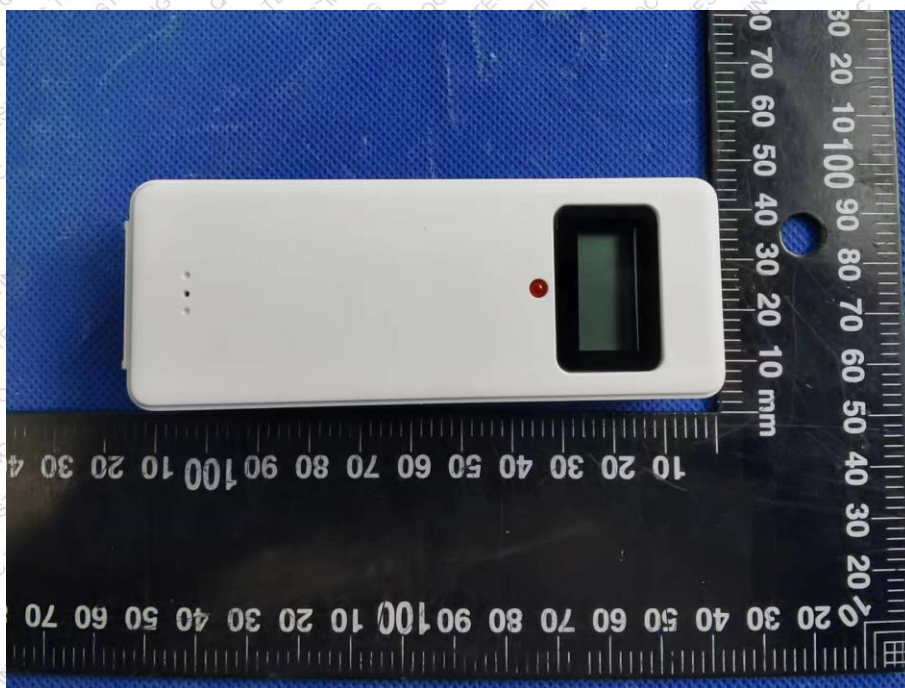


Figure 10

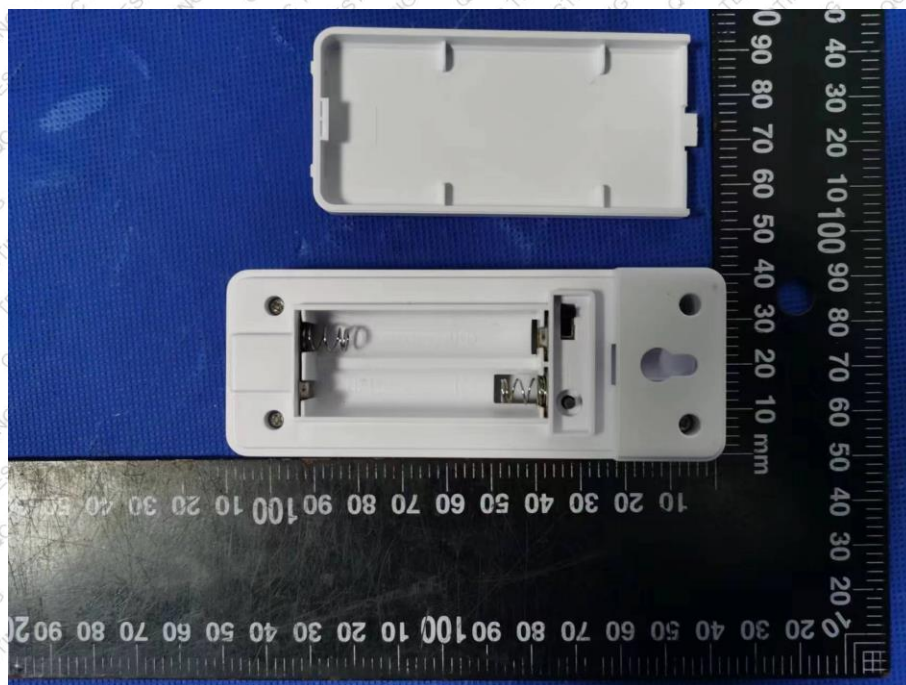


Figure 11

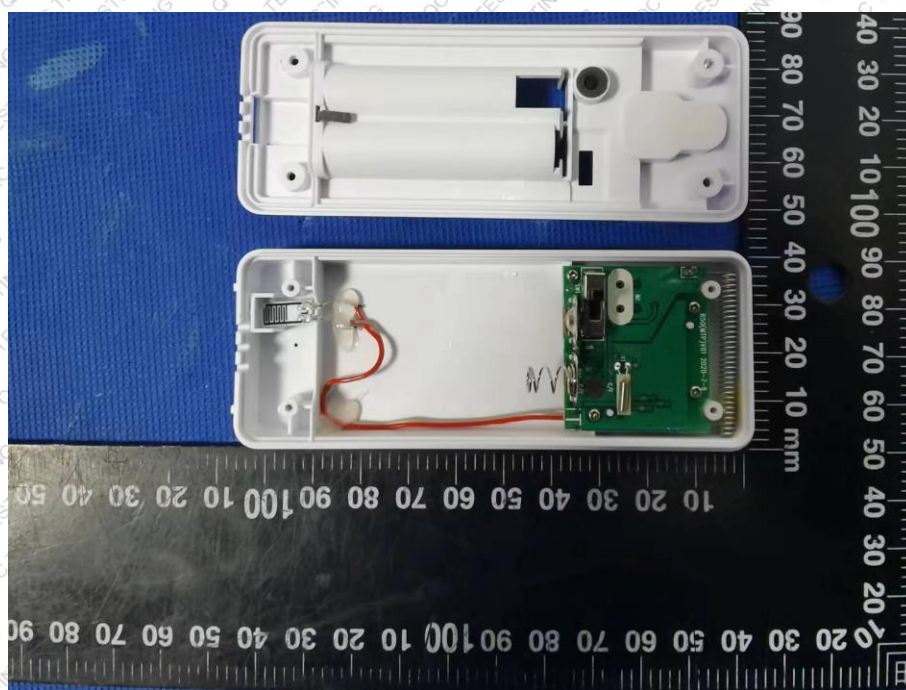


Figure 12

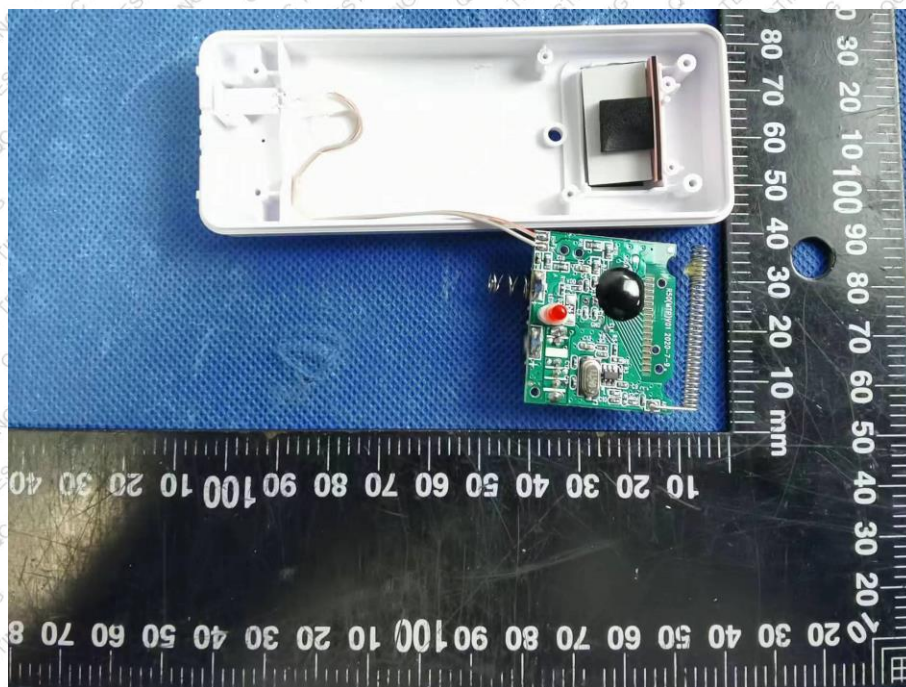


Figure 13

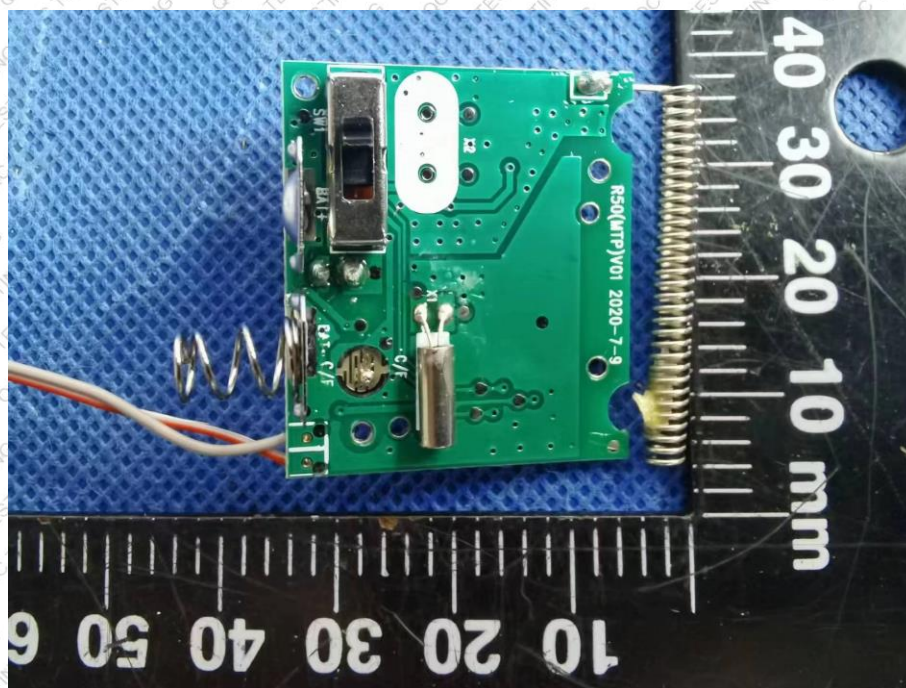


Figure 14

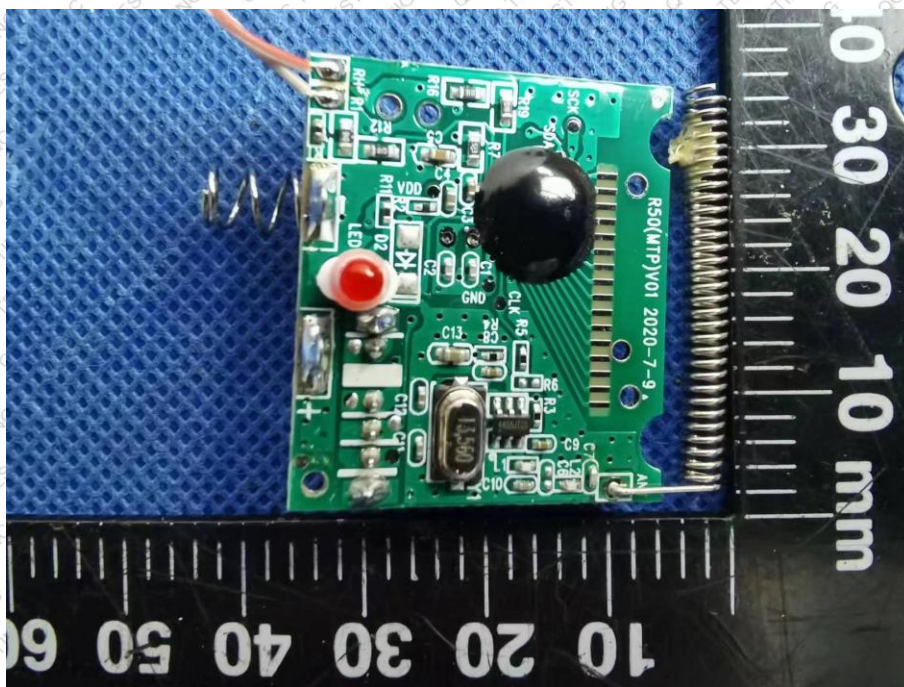


Figure 15



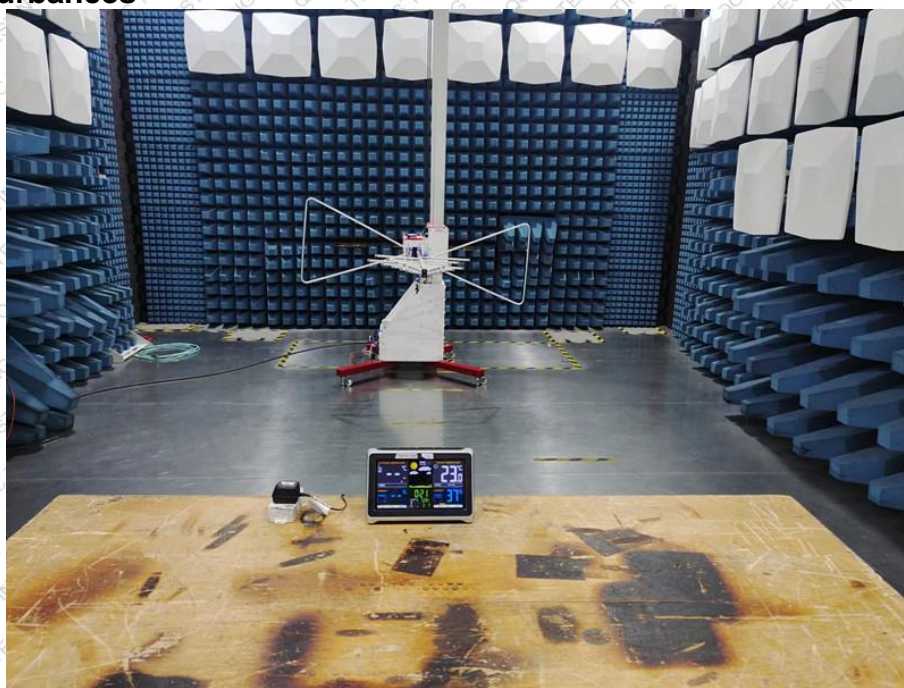
Figure 16

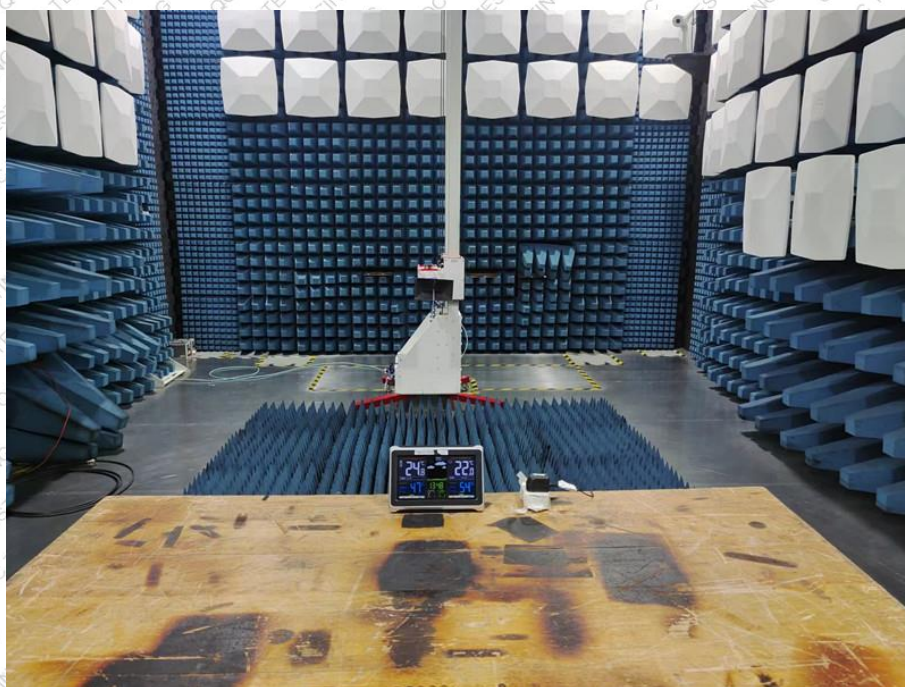
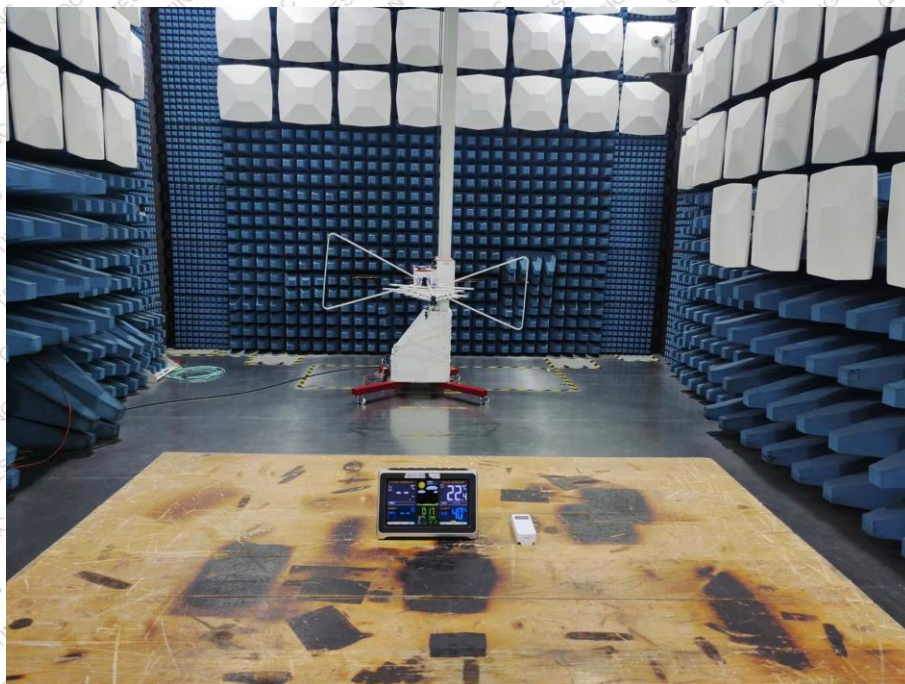
APPENDIX B- TEST SETUP PHOTOGRAPHS

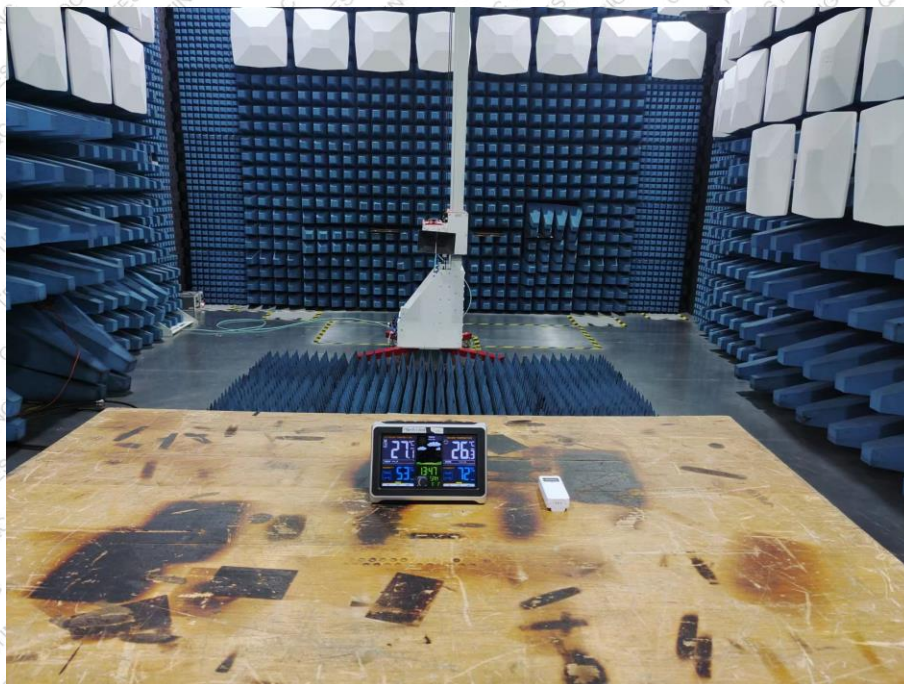
Disturbance Voltage



Radiated Disturbances







End of Test Report