



TEST REPORT

Reference No. : WTD23D12265325W001
Manufacturer* : Coolr Group Inc
Address : 4451 Brookfield Corporate Dr Suite 111, Chantilly, VA 20151, US
Factory 1 : Suga Electronics (Dongguan) Co.,Ltd.
Address : Suga High-tech Industrial Park, No.8 Fulong Road, Sanzhong village, Qingxi Town, Dongguan City, Guangdong Province, China
Factory 2 : Suga International (Vietnam) Company Limited
Address : Lo so CN11-3, Que Vo 3 Industrial Park, Que Tan Commune, Que Vo District, Bac Ninh Province, Vietnam
Product : VistaZ
Model(s) : CVZ-0303, CVL-0303
Standards : EN 55032:2015+A1:2020
EN 55035:2017+A11:2020
Date of Receipt sample ... : 2023-12-14
Date of Test : 2023-12-21 to 2024-01-16
Date of Issue : 2024-01-23
Test Result : **Pass**

Remarks:

1. The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.
2. “*”**manufacturer** means any natural or legal person who manufactures radio equipment or has radio equipment designed or manufactured, and markets that equipment under his name or trade mark.

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2 Revision History

Test Report No.	Date of Receipt sample	Date of Test	Date of Issue	Purpose	Comment	Approved
WTD23D12265325W001	2023-12-14	2023-12-21 to 2024-01-16	2024-01-23	Original	-	Valid

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3 General Information

3.1 General Description of E.U.T.

Product : VistaZ
Model(s) : CVZ-0303, CVL-0303
Model Description : Only the model name and cellular modular are different. The model CVZ-0303 with cellular modular. The model CVL-0303 without cellular modular. The test sample model was CVZ-0303.
Remark : N/A

3.2 Details of E.U.T.

Ratings : DC 3.7V by battery
Battery : DC 3.7V, 2500mAh, 9.25Wh

3.3 Subcontracted

Whether parts of tests for the product have been subcontracted to other labs:

☐ Yes ☒ No

If Yes, list the related test items and lab information:

Test Lab: N/A

Lab address: N/A

Test items: N/A

3.4 Abnormalities from Standard Conditions

None.



4 Test Summary

EMISSION (EN 55032)		
Test Item	Test Standard	Result
Conducted Emissions from the AC mains power ports 150KHz to 30MHz	EN 55032	N/A
Asymmetric Mode Conducted Emissions 150KHz to 30MHz	EN 55032	N/A
Conducted Differential Voltage Emissions 30MHz to 2150MHz	EN 55032	N/A
Radiated Emissions, 30MHz to 1000MHz	EN 55032	Pass
Radiated Emissions, Above 1GHz	EN 55032	Pass
Harmonic Current	EN IEC 61000-3-2	N/A
Voltage Fluctuation and Flicker	EN 61000-3-3	N/A
IMMUNITY (EN 55035)		
Test Item	Test Method	Result
Electrostatic Discharge (ESD)	IEC 61000-4-2	Pass
Radiation Immunity	IEC 61000-4-3	Pass
Electrical Fast Transients (EFT)	IEC 61000-4-4	N/A
Surges	IEC 61000-4-5	N/A
Injected Currents	IEC 61000-4-6	N/A
Power-frequency magnetic fields	IEC 61000-4-8	N/A*
Voltage Dips and Voltage interruptions	IEC 61000-4-11	N/A

Remark:

Pass

Fail

N/A

*

Test item meets the requirement

Test item does not meet the requirement

Test case does not apply to the test object

Applicable only to equipment containing devices intrinsically susceptible to magnetic fields, such as CRT monitors, Hall effect elements, electro-dynamic microphones, magnetic field sensors or audio frequency transformers.



5 Equipment Used during Test

5.1 Equipment List

3m Semi-anechoic Chamber for Radiation (TDK)						
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Calibration Date	Calibration Due Date
1	Test Receiver	R&S	ESCI	101296	2023-04-24	2024-04-23
2	Trilog Broadband Antenna	SCHWARZBECK	VULB9160	9160-3325	2023-11-04	2024-11-03
3	Amplifier	ANRITSU	MH648A	M43381	2023-04-24	2024-04-23
4	Cable	HUBER+SUHNER	CBL2	525178	2023-04-24	2024-04-23
3m Fully Anechoic Room for Radiation (Above 1GHz)						
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Calibration Date	Calibration Due Date
1	Spectrum Analyzer	R&S	FSP	100091	2023-04-24	2024-04-23
2	Broad-bandHorn Antenna	SCHWARZBECK	BBHA 9120 D	667	2023-02-02	2024-02-01
3	Broadband Preamplifier	COMPLIANCE DIRECTION	PAP-1G18	2004	2023-07-27	2024-07-26
4	Coaxial Cable (above 1GHz)	Top	1GHz-25GHz	EW02014-7	2023-04-24	2024-04-23
Electrostatic Discharge						
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Calibration Date	Calibration Due Date
1	Electrostatic Discharge Simulator	SCHLODER	SESD 216	606144	2023-04-25	2024-04-24
Radio-frequency electromagnetic fields						
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Calibration Date	Calibration Due Date
1	Signal Generator	R&S	SMB100A	105942	2023-07-27	2024-07-26
2	RF Power Amplifier	BONN Elektronik	BLWA0830-160/100/40D	128740	2023-07-27	2024-07-26
3	GestockteBreitband (S tacked) Log.-per.Antenna	SCHWARZBECK	STLP9128D	043	2023-07-27	2024-07-26
4	Amplifier	NJNT	NTWPAS-2560025	2560025	2023-07-27	2024-07-26
5	Broad-band Horn Antenna	SCHWARZBECK	BBHA 9120 D	667	2023-02-02	2024-02-01
6	Microphone tuned amplifier	B&K	B&K 2690-A	NA	2023-08-06	2024-08-05
7	Microphone	B&K	B&K4192-L	2701123	2023-08-06	2024-08-05
8	Audio Analyzer	R&S	UPV	102011	2023-07-27	2024-07-26

**Test Software:**

Test Item	Software name	Software version
Radiated Emission(3m)	EZ-EMC	EZ-EMC(RA-03A1-1)
Radiation Immunity	BL	BL410-E V19.614

5.2 Description of Support Units

Equipment	Manufacturer	Model No.	Series No.
/	/	/	/

5.3 Measurement Uncertainty

Parameter	Uncertainty (Note 1)
Temperature	$\pm 1^{\circ}\text{C}$
Humidity	$\pm 5\%$
DC and low frequency voltages	$\pm 3\%$
Conducted Emission (150kHz-30MHz)	$\pm 3.64\text{dB}$
Radiated Emission_3m (30MHz-1000MHz)	$\pm 4.53\text{ dB}$
Radiated Emission_10m (30MHz-1000MHz)	$\pm 5.24\text{ dB}$
Radiated Emission(1GHz~18GHz)	$\pm 5.03\text{dB}$

Note 1: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.



5.4 Test Mode

Test Item	Test Mode	Test Voltage
EN 55032		
Radiated Emissions (30MHz-1GHz)	Charging mode	DC 3.7V
	Working mode*	DC 3.7V
Radiated Emissions (1GHz-6GHz)	Charging mode*	DC 3.7V
	Working mode	DC 3.7V
EN 55035		
Electrostatic Discharge(ESD) <input checked="" type="checkbox"/> Air Discharge: ±2,4,8kV <input checked="" type="checkbox"/> Contact Discharge: ±2,4kV <input checked="" type="checkbox"/> HCP & VCP: ±2,4kV Performance Criterion B	Charging mode	DC 3.7V
	Working mode	DC 3.7V
Radio-frequency electromagnetic fields (RS) 3V/m,80% AM(1kHz), 80MHz to 1GHz 1.8GHz, 2.6GHz, 3.5GHz, 5GHz Performance Criterion A	Charging mode	DC 3.7V
	Working mode	DC 3.7V
"*" shows the worst case mode which were recorded in this report.		



6 Emission Test Results

6.1 Radiated Emissions, 30-1000MHz

Test Requirement..... : EN 55032

Test Method..... : EN 55032

Frequency Range..... : 30MHz to 1000MHz

Class/Severity..... : Class B/ Table A.4 of EN 55032

Test Result : ☒ Pass ☐ Fail ☐ not applicable (Remark)

6.1.1 E.U.T. Operation

Operating Environment:

Temperature..... : 19.9°C

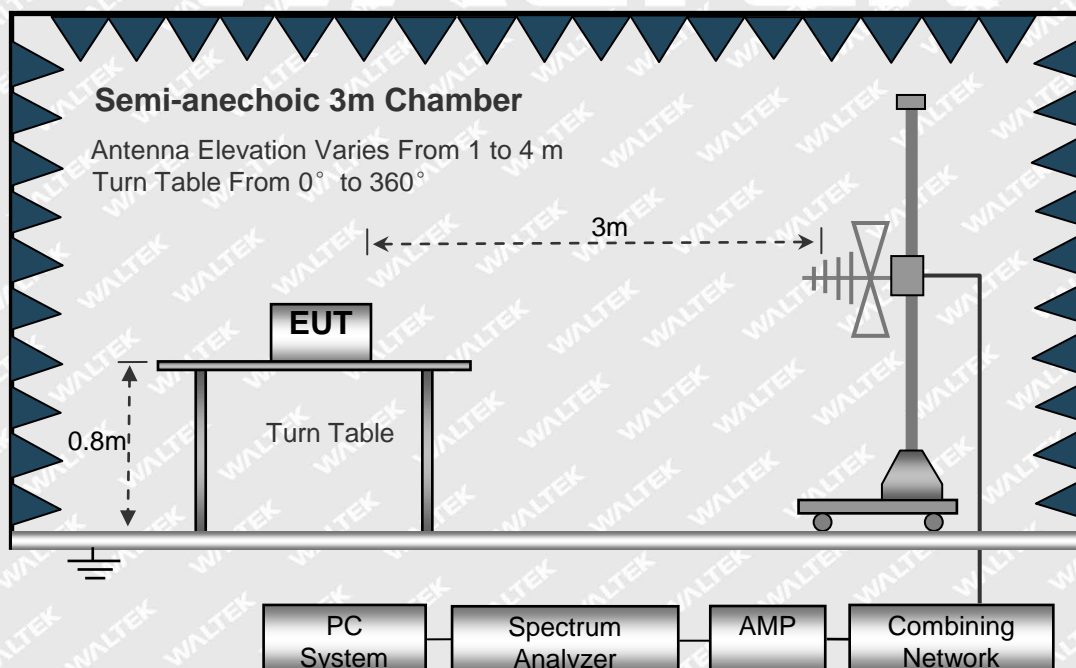
Humidity..... : 38.0%RH

Atmospheric Pressure..... : 101.4kPa

EUT Operation..... : Refer to section 5.4.

6.1.2 Block Diagram of Test Setup

The Radiation Emission test was performed in accordance with EN 55032.





6.1.3 Measurement Data

The maximised peak emissions from the EUT was scanned and measured for both the Antenna Vertical Polarization and Antenna Horizontal Polarization. Quasi-peak measurements were performed if peak emissions were within 6dB of the Quasi-peak limit line.

6.1.4 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:

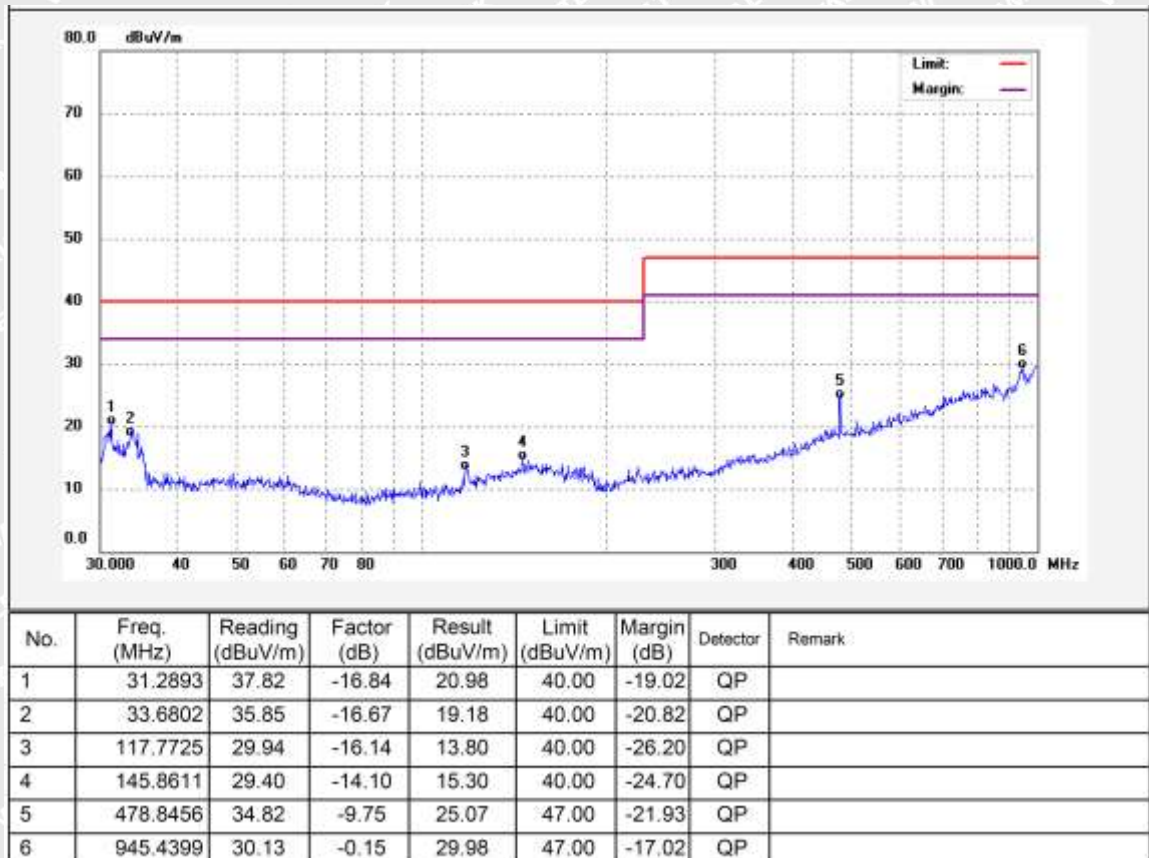
$$\text{Corr. Ampl.} = \text{Indicated Reading} + \text{Antenna Factor} + \text{Cable Factor} - \text{Amplifier Gain}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -6dB means the emission is 6dB below the maximum limit. The equation for margin calculation is as follows:

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

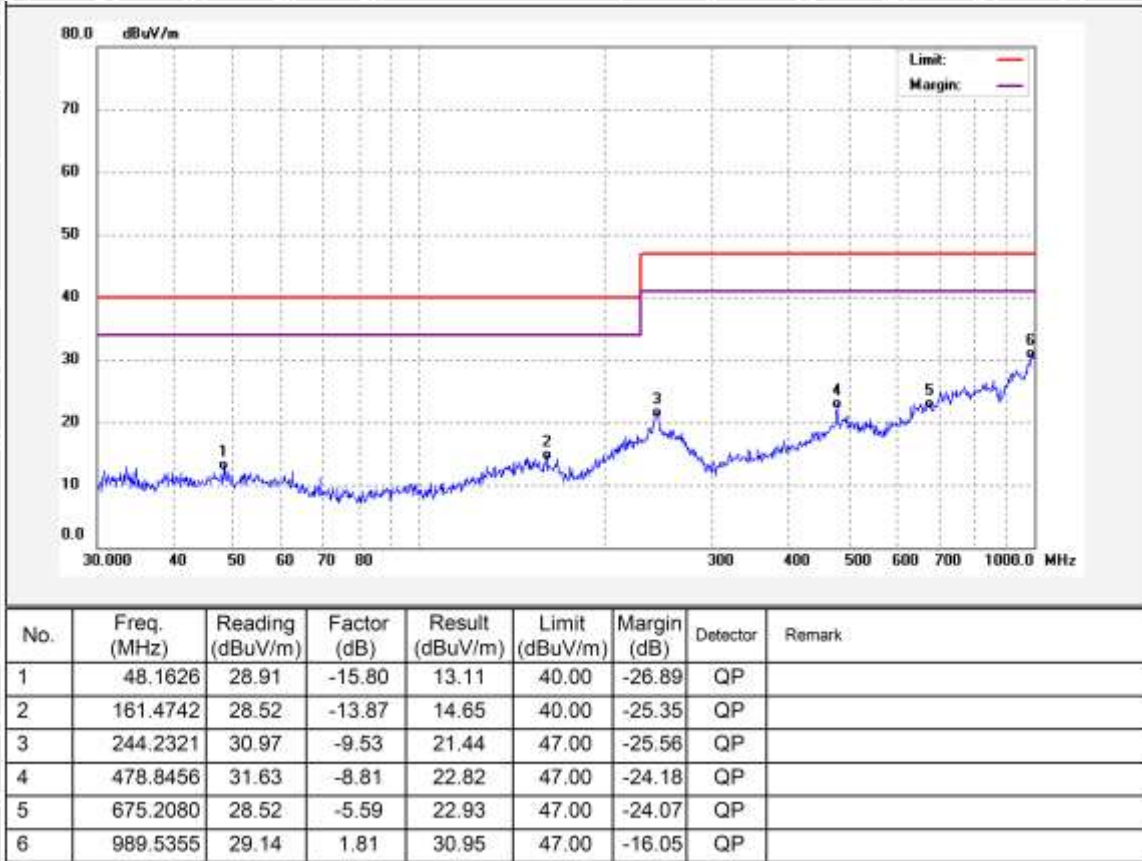
6.1.5 Test Data

Antenna Polarization: Vertical





Antenna Polarization: Horizontal





6.2 Radiation Emission, Above 1000MHz

Test Requirement..... : EN 55032
Test Method..... : EN 55032
Frequency Range..... : Above 1000MHz
Class/Severity..... : Class B/ Table A.5 of EN 55032
Test Result : ☒ Pass ☐ Fail ☐ not applicable (Remark)

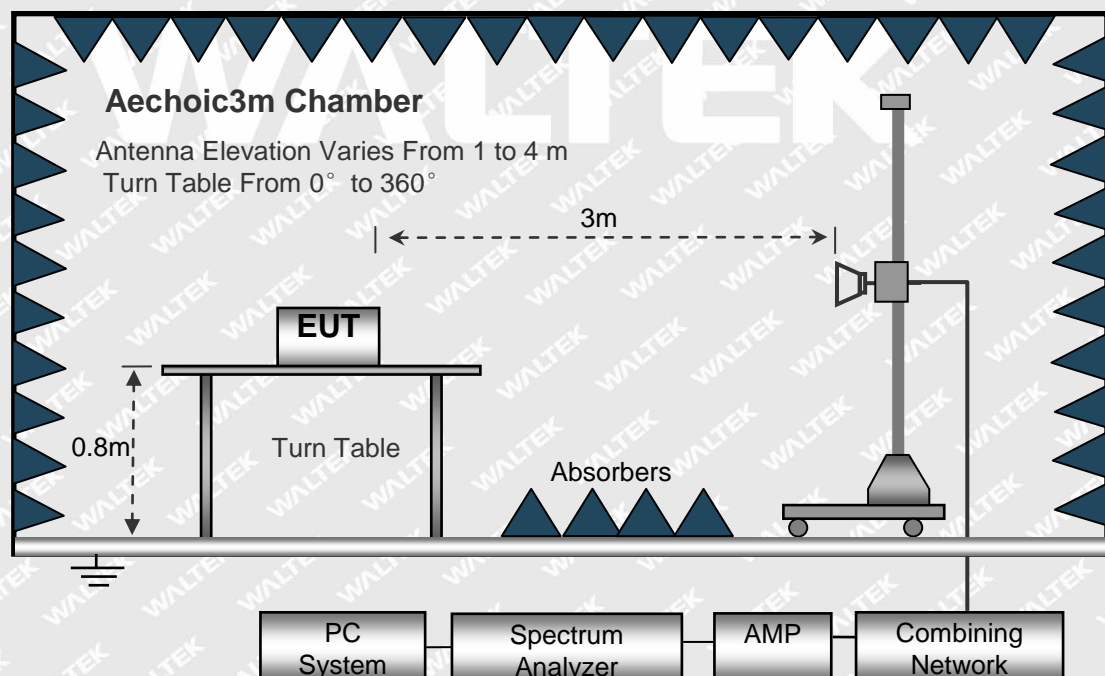
6.2.1 E.U.T. Operation

Operating Environment:

Temperature..... : 20.7°C
Humidity..... : 38.5%RH
Atmospheric Pressure..... : 101.2kPa
EUT Operation..... : Refer to section 5.4.

6.2.2 Block Diagram of Test Setup

The Radiation Emission test was performed in accordance with EN 55032.



6.2.3 Measurement Data

The maximised peak emissions from the EUT was scanned and measured for both the Antenna Vertical Polarization and Antenna Horizontal Polarization. Average measurements were performed if peak emissions were within 6dB of the average limit line.



The test Frequency range judgment basis:

If the highest frequency of the internal sources of the EUT is less than 108 MHz, the measurement shall only be made up to 1 GHz.

If the highest frequency of the internal sources of the EUT is between 108 MHz and 500 MHz, the measurement shall only be made up to 2 GHz.

If the highest frequency of the internal sources of the EUT is between 500 MHz and 1 GHz, the measurement shall only be made up to 5 GHz.

If the highest frequency of the internal sources of the EUT is above 1 GHz, the measurement shall be made up to 5 times the highest frequency or 6 GHz, whichever is less.

6.2.4 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:

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

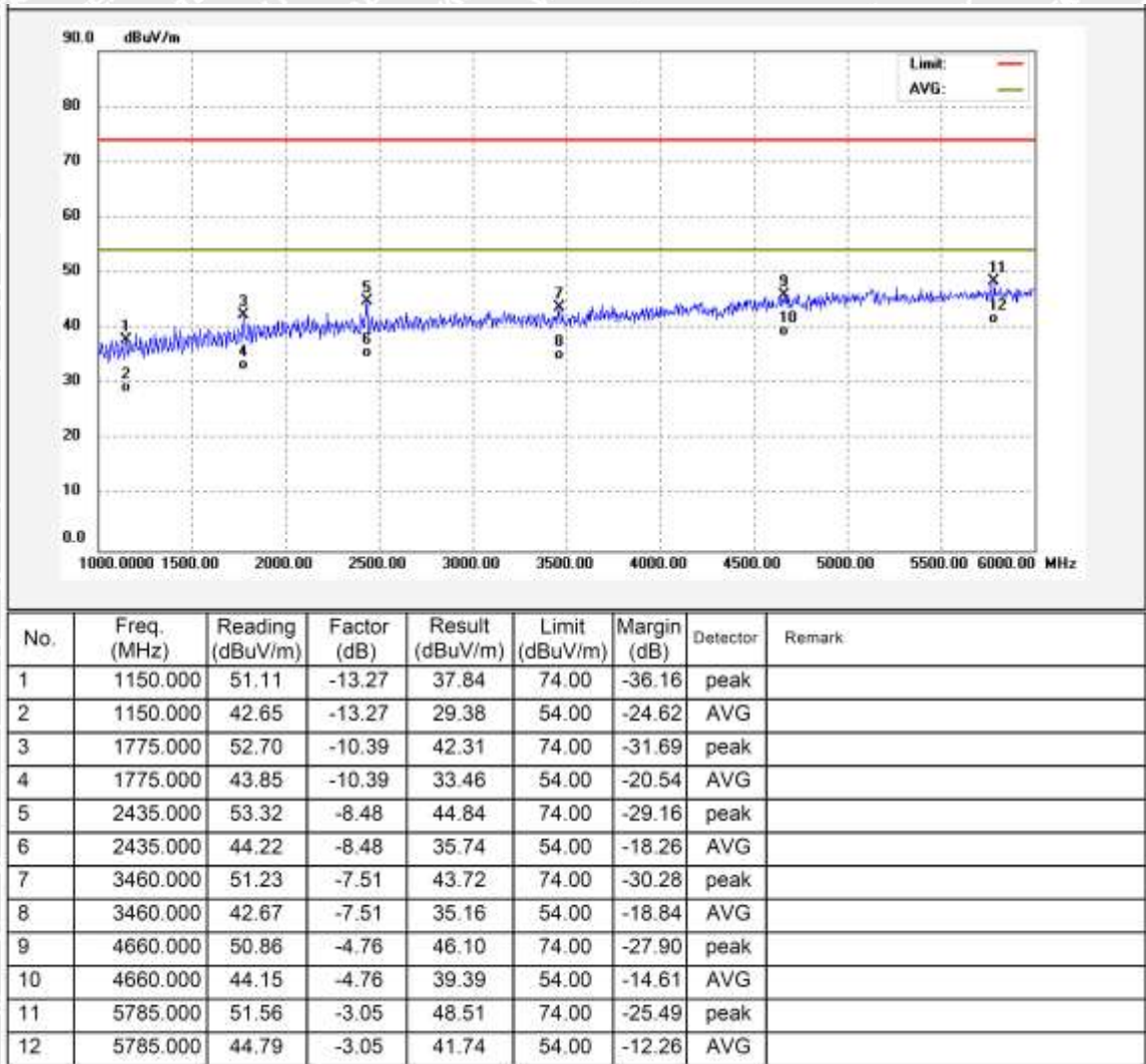
The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -6dB means the emission is 6dB below the maximum limit. The equation for margin calculation is as follows:

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



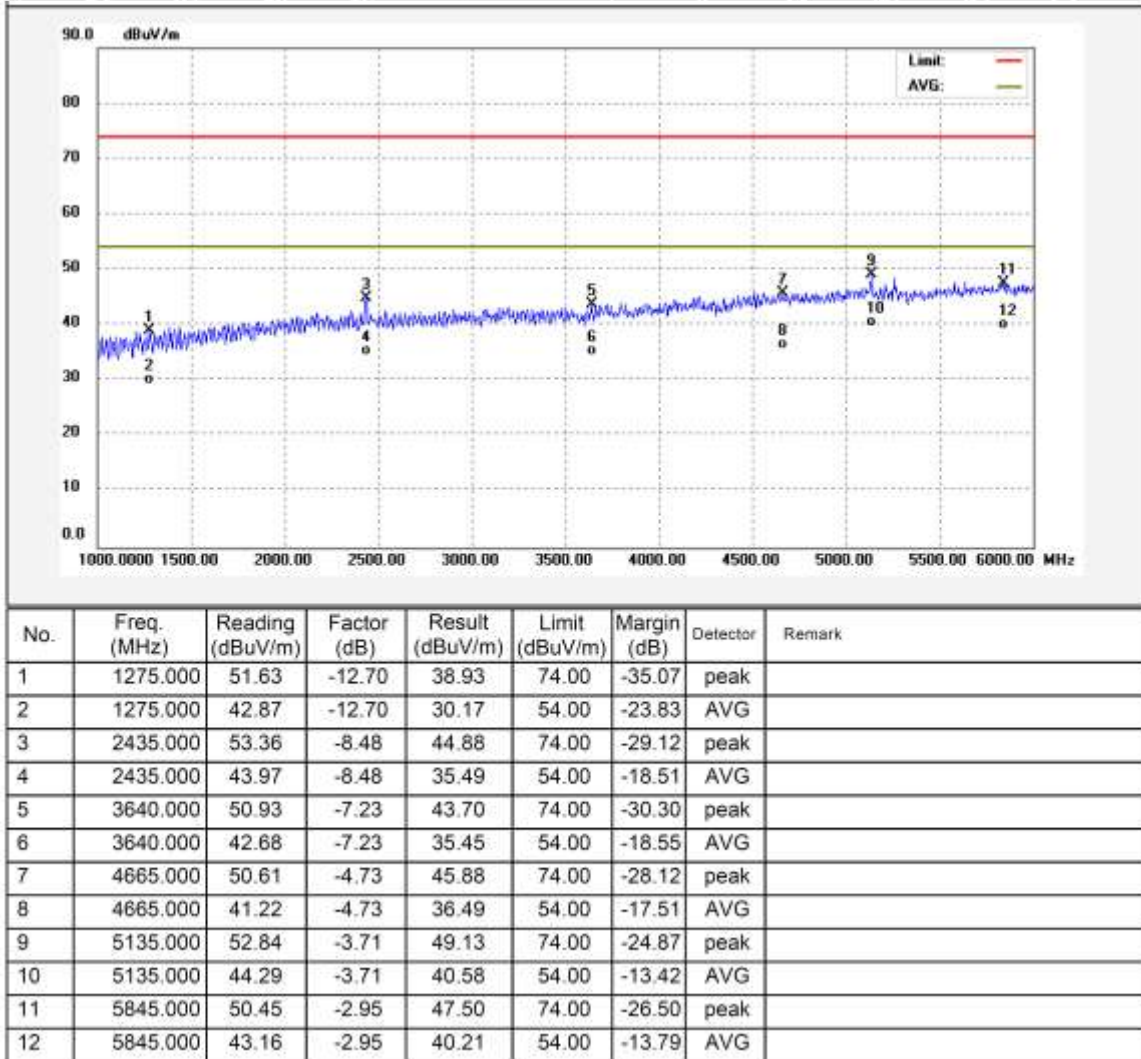
6.2.5 Test Data

Antenna Polarization: Vertical





Antenna Polarization: Horizontal





7 Immunity Test Results

7.1 Performance Criteria

Performance criterion A: The apparatus shall continue to operate as intended during the test.

No degradation of performance or loss of function is allowed below a performance level (or permissible loss of performance) specified by the manufacturer, when the apparatus is used as intended. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and from what the user may reasonably expect from the apparatus if used as intended.

Performance criterion B: The apparatus shall continue to operate as intended after the test.

No degradation of performance or loss of function is allowed below a performance level (or permissible loss of performance) specified by the manufacturer, when the apparatus is used as intended. During the test, degradation of performance is allowed, however, no change of actual operating state or stored data is allowed. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and from what the user may reasonably expect from the apparatus if used as intended.

Performance criterion C: Temporary loss of function is allowed, provided the function is self-recoverable or can be restored by the operation of the controls, or by any operations specified in the instructions for use. For further details, please refer to EN 55035.

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7.2 Electrostatic Discharge (ESD)

Test Requirement.....	: EN 55035
Test Method.....	: IEC 61000-4-2
Test Result	: Pass
Discharge Impedance	: 330Ω / 150pF
Discharge Voltage	Air Discharge: ±8kV Contact Discharge: ±4kV HCP & VCP: ±4kV
Polarity.....	: Positive & Negative
Number of Discharge	: Minimum 10 times at each test point
Discharge Mode	: Single Discharge
Discharge Period.....	: 1 second minimum

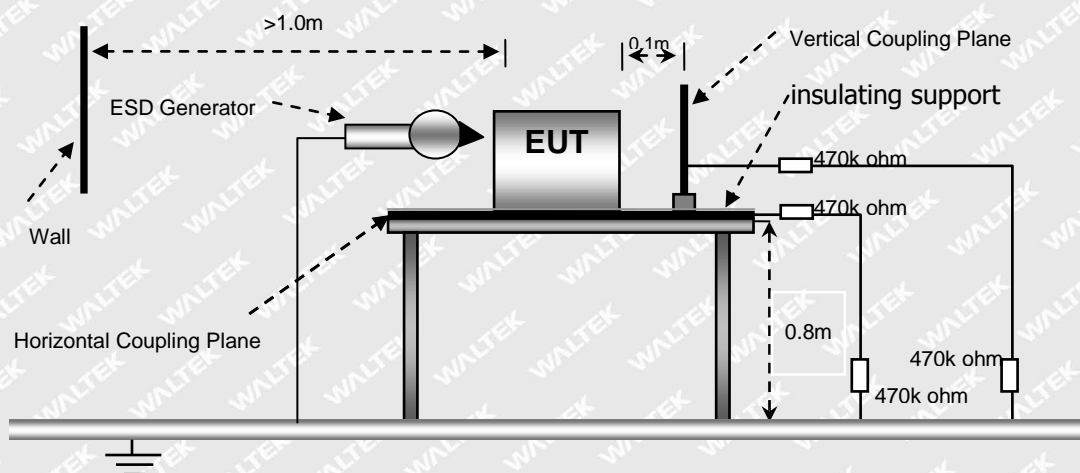
7.2.1 E.U.T. Operation

Operating Environment:

Temperature.....	: 23.4°C
Humidity.....	: 40.5%RH
Barometric Pressure.....	: 102.6kPa
EUT Operation.....	: Refer to section 5.4.

7.2.2 Block Diagram of Setup

The ESD test was performed in accordance with the IEC 61000-4-2.





7.2.3 Direct Discharge Test Results

Observations:

Test points:

1. All Exposed Surface & Seams;
2. All metallic part

Direct Discharge			Test Results	
Applied Voltage (kV)	Performance Criterion	Test Point	Contact Discharge	Air Discharge
±8	B	1	N/A	Pass
±4	B	2	Pass	N/A

7.2.4 Indirect Discharge Test Results

Observations:

Test points: 1. All sides.

Indirect Discharge			Test Results	
Applied Voltage (kV)	Performance Criterion	Test Point	Horizontal Coupling	Vertical Coupling
±4	B	1	Pass	Pass

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7.3 Radio-frequency electromagnetic fields

Test Requirement.....	EN 55035
Test Method.....	IEC 61000-4-3
Test Result	Pass
Frequency Range	80MHz to 1GHz 1.8GHz, 2.6GHz, 3.5GHz, 5GHz
Test level	3V/m
Modulation	80%, 1kHz Amplitude Modulation.
Face of EUT	Front, Back, Left, Right
Antenna polarisation.....	Horizontal&Vertical

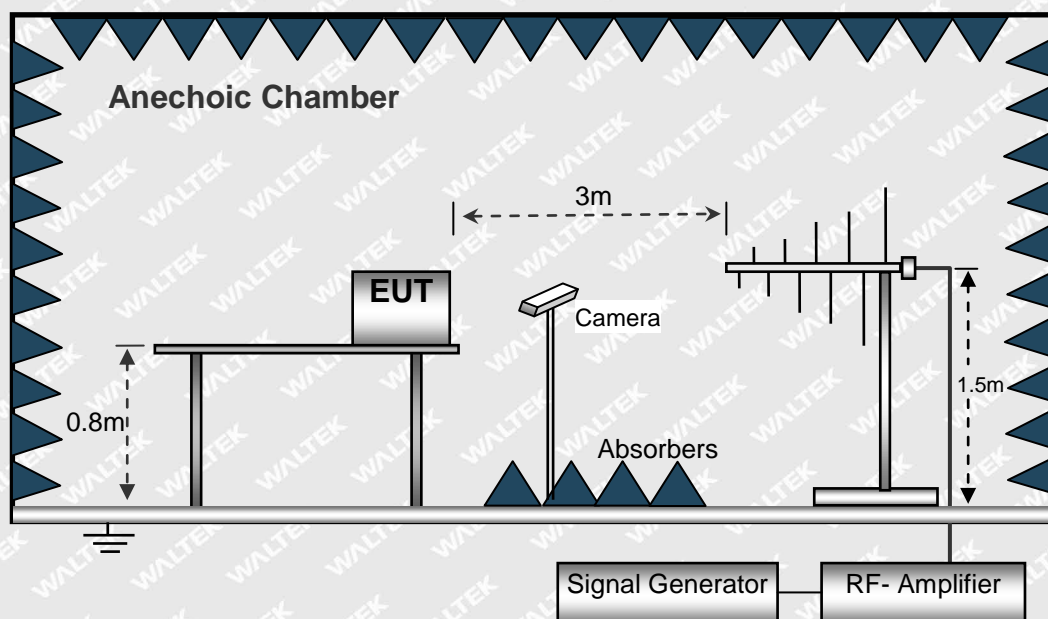
7.3.1 E.U.T. Operation

Operating Environment:

Temperature	23.6°C
Humidity.....	43.7% RH
Barometric Pressure.....	102.4kPa
EUT Operation.....	Refer to section 5.4.

7.3.2 Block Diagram of Setup

The Radio-frequency electromagnetic fields Immunity test was performed in accordance with the IEC 61000-4-3.





7.3.3 Test Results

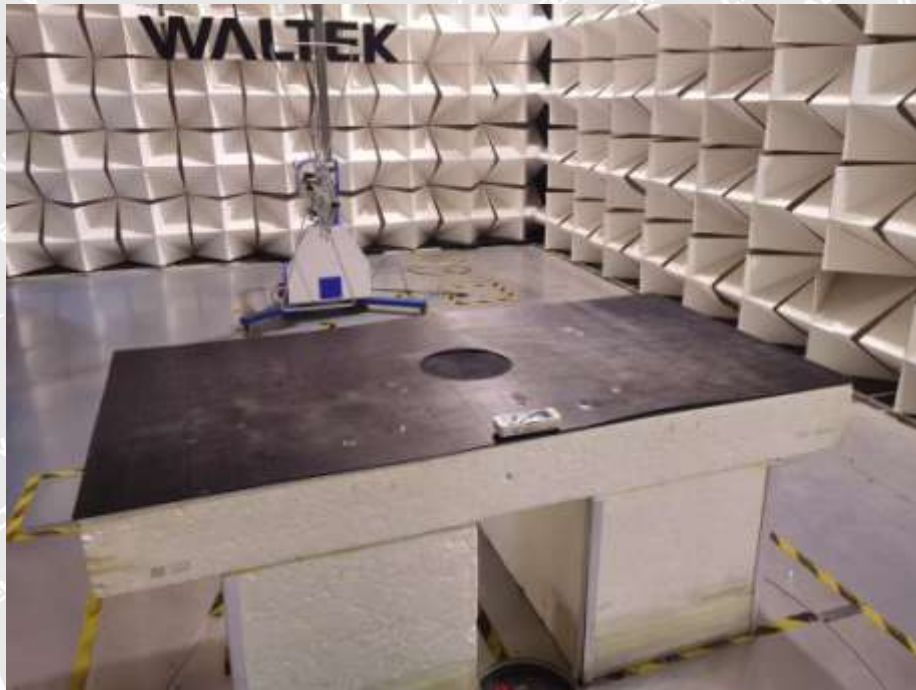
Test Frequency (MHz)	Face of EUT	Antenna polarisation	Test Level	Step Size	Dwell Time	Performance Criterion	Result
80-1000MHz, 1800MHz, 2600MHz, 3500MHz, 5000MHz	Front, Back, Left, Right	Horizontal	3V/m	1%	1s	A	Pass
	Front, Back, Left, Right	Vertical	3V/m	1%	1s	A	Pass

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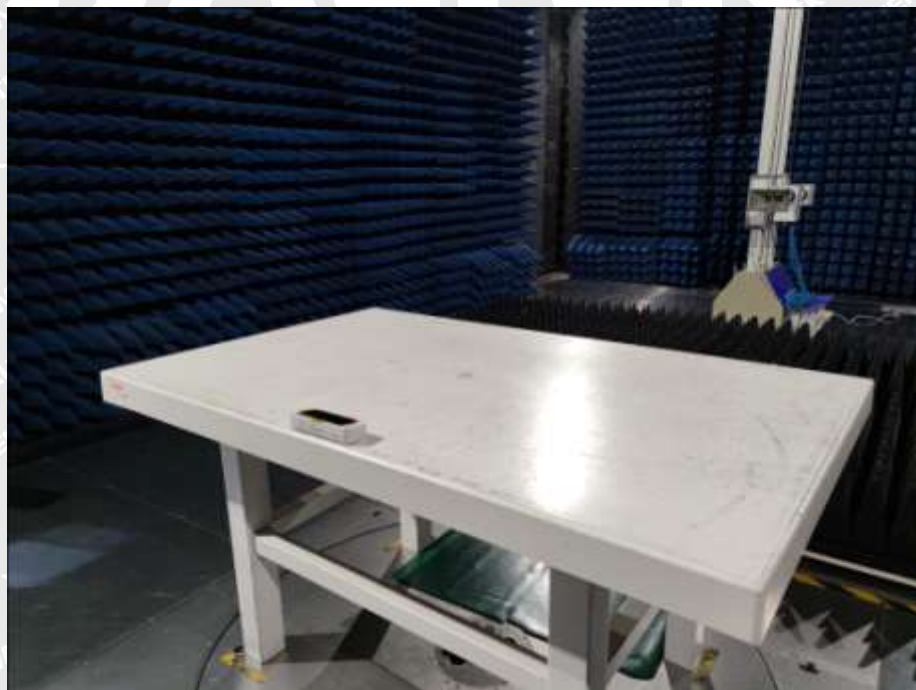


8 Photographs–Test Setup

8.1 Photograph–RadiationEmission Test Setup 30MHz-1000MHz



8.2 Photograph –Radiation Emission Test Setup for Above 1GHz

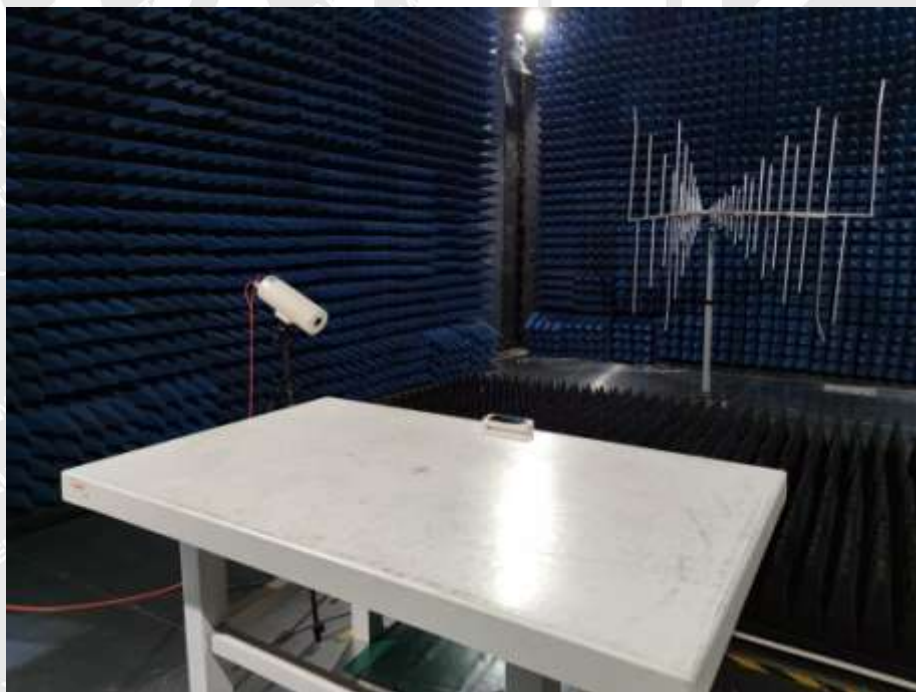


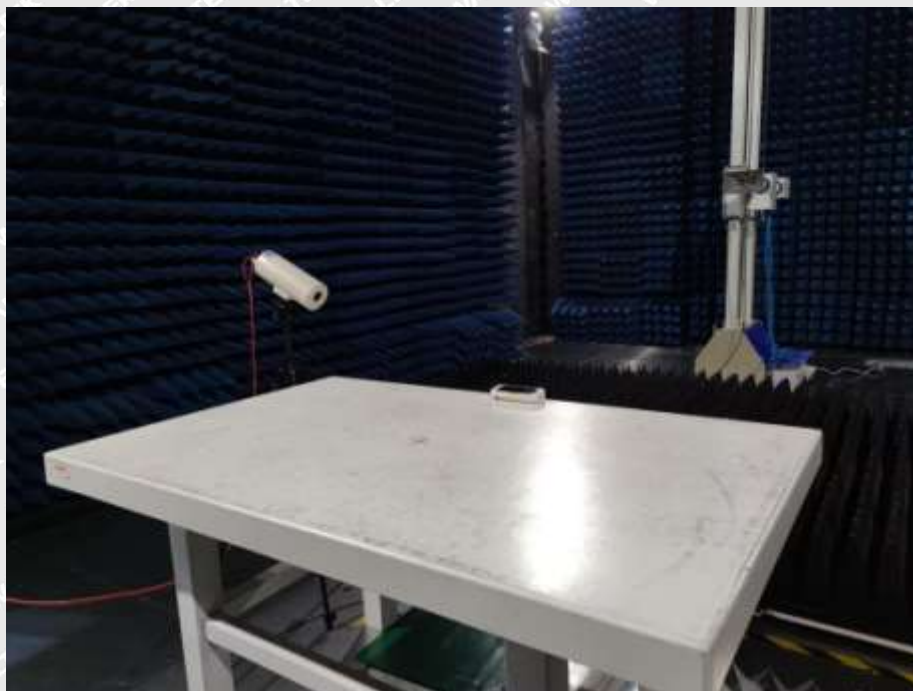


8.3 Photograph – ESD Immunity Test Setup



8.4 Photograph –Radio-frequency electromagnetic fields Test Setup





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9 Photographs—Constructional Details

Note: Please refer to appendix: Appendix-CVZ-0303-Photos.

=====End of Report=====

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