

TEST REPORT

Reference No...... : WTX25X09240785W
FCC ID : 2BOGL-PT100MSR
Applicant : Merlos LLC
Address : 2106 Gardenia Drive, Houston, TX, 77018
Manufacturer : The same as Applicant
Address : The same as Applicant
Product Name : Pocket Tester Relay Board
Model No...... : PT-100-MSR
Standards : **47 CFR FCC Part 15, Subpart B**
Date of Receipt sample ... : 2025-09-08
Date of Test..... : 2025-09-08 to 2025-09-27
Date of Issue : 2025-09-27
Test Report Form No. : WTX_FCC PART15B_001
Test Result..... : **Pass**

Remarks:

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 approver.

Prepared By:

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Tested by:



Mike Shi/Project Engineer

Approved by:



Jason Su/Manager

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Report version

Version No.	Date of issue	Description
Rev.00	2025-09-27	Original
/	/	/

1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

General Description of EUT	
Product Name:	Pocket Tester Relay Board
Trade Name:	/
Model No.:	PT-100-MSR
Adding Model(s):	/
<i>Note: The test data is gathered from a production sample, provided by the manufacturer.</i>	

Technical Characteristics of EUT	
Rated Voltage:	Charging Port:DC15V. Battery:DC11.1V
Battery Capacity:	2500mAh
Rated Power:	/
Power Adapter Model:	MODEL:LY-01500200 INPUT:AC100-240V 50-60Hz OUTPUT:DC15V,2000mA
Lowest Internal Frequency:	32MHz
Highest Internal Frequency:	927.35MHz
Classification of ITE:	Class B

1.2 Test Standards

The tests were performed according to following standards:

47 CFR FCC Part 15, Subpart B:Unintentional Radiators.

ANSI C63.4-2014:American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

ANSI C63.4a-2017:American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

Amendment 1:Test Site Validation

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product, which result in lowering the emission, should be checked to ensure compliance has been maintained.

1.3 Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2014, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

1.4 Test Facility

Address of the test laboratory

Laboratory: Waltek Testing Group (Shenzhen) Co., Ltd.

Address: 1/F., Room 101, Building 1, Hongwei Industrial Park, Liuxian 2nd Road, Block 70 Bao'an District, Shenzhen, Guangdong, China

FCC – Registration No.: 125990

Waltek Testing Group (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. The Designation Number is CN5010, and Test Firm Registration Number is 125990.

Industry Canada (IC) Registration No.: 11464A

The 3m Semi-anechoic chamber of Waltek Testing Group (Shenzhen) Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 11464A.

1.5 EUT Setup and Operation Mode

The equipment under test (EUT) was configured to measure its highest possible emission. The test modes were provided by the manufacturer, more detailed description as follows:

Test Mode List			
Test Mode	Description	Remark	Power Supply Mode
TM1	charging and receive mode	The EUT was connected to the adapter	AC120V 60Hz for adapter; DC5V
TM2	Normal working	/	Battery:DC11.1V

EUT Cable List and Details				
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite	With / Without Chip
DC Cable	1.1	Unshielded	Without Ferrite	Without Chip

Special Cable List and Details				
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite	With / Without Chip
/	/	/	/	/

Auxiliary Equipment List and Details			
Description	Manufacturer	Model	Serial Number
/	/	/	/

1.6 Measurement Uncertainty

Measurement uncertainty		
Parameter	Conditions	Uncertainty
Conducted Emissions	Conducted	9-150kHz, 3.74dB
		0.15-30MHz, 3.34dB
Radiated Emissions	Radiated	30-200MHz, 4.52dB
		0.2-1GHz, 5.56dB
		1-6GHz, 3.84dB
		6-18GHz, 3.92dB

1.7 Test Equipment List and Details

Description	Manufacturer	Model	Serial No.	Cal Date	Due Date
☐ Chamber A: Below 1GHz					
Spectrum Analyzer	Rohde & Schwarz	FSP30	836079/035	2025-02-23	2026-02-22
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2025-02-23	2026-02-22
Amplifier	HP	8447F	2805A03475	2025-02-23	2026-02-22
Loop Antenna	Schwarz beck	FMZB 1516	9773	2024-02-26	2026-02-25
Trilog Broadband Antenna	Schwarz beck	VULB9163	9163-333	2025-02-23	2026-02-22
Coaxial Cable	/	RC_6G-N-M	/	2025-02-23	2026-02-22
Coaxial Cable	/	RC_6G-N-M	/	2025-02-23	2026-02-22
Coaxial Cable	/	RC_6G-N-M	/	2025-02-23	2026-02-22
☐ Chamber A: Above 1GHz					
Amplifier	C&D	PAP-1.0G18	14918	2025-02-23	2026-02-22
Horn Antenna	ETS	3117	00086197	2025-02-23	2026-02-22
Coaxial Cable	/	C16-07-07	/	2025-02-23	2026-02-22
Coaxial Cable	/	C16-07-07	/	2025-02-23	2026-02-22
Coaxial Cable	/	C16-07-07	/	2025-02-23	2026-02-22
☐ Chamber B: Below 1GHz					
EMI Test Receiver	Rohde & Schwarz	ESPI	101391	2025-02-23	2026-02-22
Trilog Broadband Antenna	Schwarz beck	VULB9163(B)	9163-635	2024-03-17	2027-03-16
Amplifier	Agilent	8447D	2944A10457	2025-02-23	2026-02-22
Coaxial Cable	/	1.5MRFC-LWB3	/	2025-02-23	2026-02-22
Coaxial Cable	/	RG 316	/	2025-02-23	2026-02-22
Coaxial Cable	/	RG 316	/	2025-02-23	2026-02-22
☒ Chamber C: Below 1GHz					
EMI Test Receiver	Rohde & Schwarz	ESIB 26	100401	2025-02-23	2026-02-22
Trilog Broadband Antenna	Schwarz beck	VULB 9168	1194	2024-04-18	2027-04-17
Loop Antenna	Schwarz beck	FMZB 1516	9773	2024-02-26	2026-02-25
Amplifier	HP	8447F	2944A03869	2025-02-23	2026-02-22
Coaxial Cable	/	RC_6G-N-M	/	2025-02-23	2026-02-22
Coaxial Cable	/	RC_6G-N-M	/	2025-02-23	2026-02-22
Coaxial Cable	/	RC_6G-N-M	/	2025-02-23	2026-02-22
☒ Chamber C: Above 1GHz					

EMI Test Receiver	Rohde & Schwarz	ESIB 26	100401	2025-02-23	2026-02-22
Horn Antenna	POAM	RTF-118A	1820	2025-06-13	2027-06-12
Amplifier	Tonscend	TAP010180 50	AP22E80623 5	2025-02-23	2026-02-22
DRG Horn Antenna	A.H. SYSTEMS	SAS-574	571	2024-03-17	2026-03-16
Pre-amplifier	Schwarzbeck	BBV 9721	9721-031	2025-02-23	2026-02-22
Coaxial Cable	/	RC-18G-N-M	/	2025-02-23	2026-02-22
Coaxial Cable	/	RC-18G-N-M	/	2025-02-23	2026-02-22
Coaxial Cable	/	RC-18G-N-M	/	2025-02-23	2026-02-22
☐ Conducted Room 1#					
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2025-02-23	2026-02-22
EMI Test Receiver	Rohde & Schwarz	ESCI	100525	2024-12-08	2025-12-07
AC LISN	Schwarz beck	NSLK8126	8126-279	2025-02-23	2026-02-22
Coaxial Cable	/	RG 316	/	2025-02-23	2026-02-22
Coaxial Cable	/	6MRFC-DP	/	2025-02-23	2026-02-22
☒ Conducted Room 2#					
EMI Test Receiver	Rohde & Schwarz	ESPI	101259	2025-02-23	2026-02-22
LISN	Rohde & Schwarz	ENV 216	100097	2025-02-23	2026-02-22
Coaxial Cable	/	RG 316	/	2025-02-23	2026-02-22

Software List			
Description	Manufacturer	Model	Version
EMI Test Software (Radiated Emission A)	Farad	EZ-EMC	RA-03A1 (1.1.4.2)
EMI Test Software (Radiated Emission B)	Farad	EZ-EMC	RA-03A1 (1.1.4.2)
EMI Test Software (Radiated Emission C)	Farad	EZ-EMC	RA-03A1-2 (1.1.4.2)
EMI Test Software (Conducted Emission Room 1#)	Farad	EZ-EMC	3A1*CE-RE 1.1.4.3
EMI Test Software (Conducted Emission Room 2#)	Farad	EZ-EMC	3A1*CE-RE 1.1.4.3

*Remark: indicates software version used in the compliance certification testing.

2. SUMMARY OF TEST RESULTS

Description of Test	Result
§15.107(a) Conducted Emission	Compliant
§15.109(a) Radiated Emission	Compliant

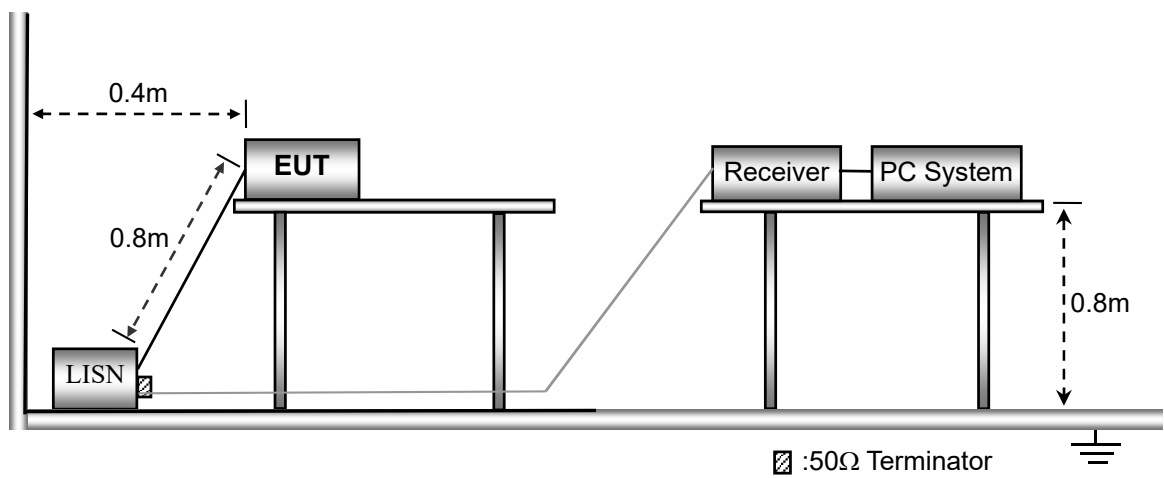
N/A: not applicable

3. Conducted Emissions

3.1 Test Procedure

The test is conducted under the description of ANSI C63.4-2014, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

3.2 Basic Test Setup Block Diagram



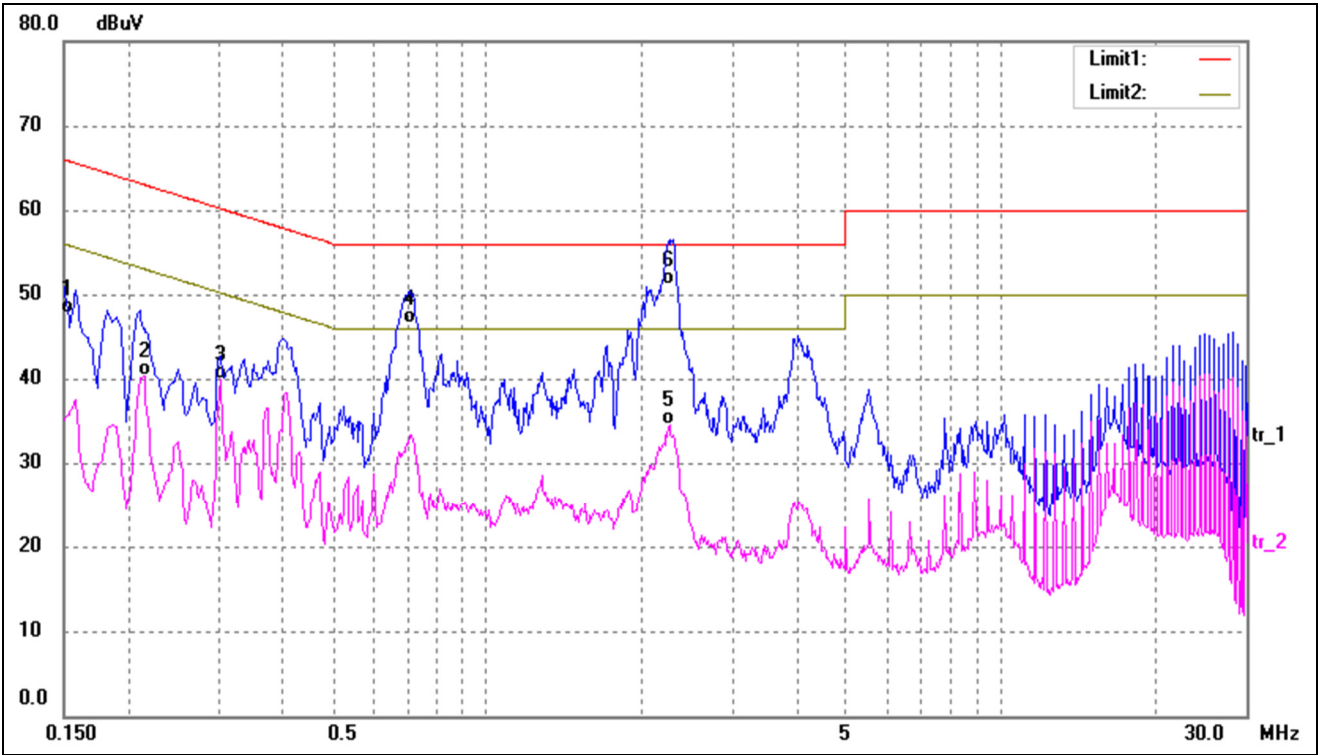
3.3 Environmental Conditions

Temperature:	23.5 °C
Relative Humidity:	54 %
ATM Pressure:	1014 mbar

3.4 Summary of Test Results

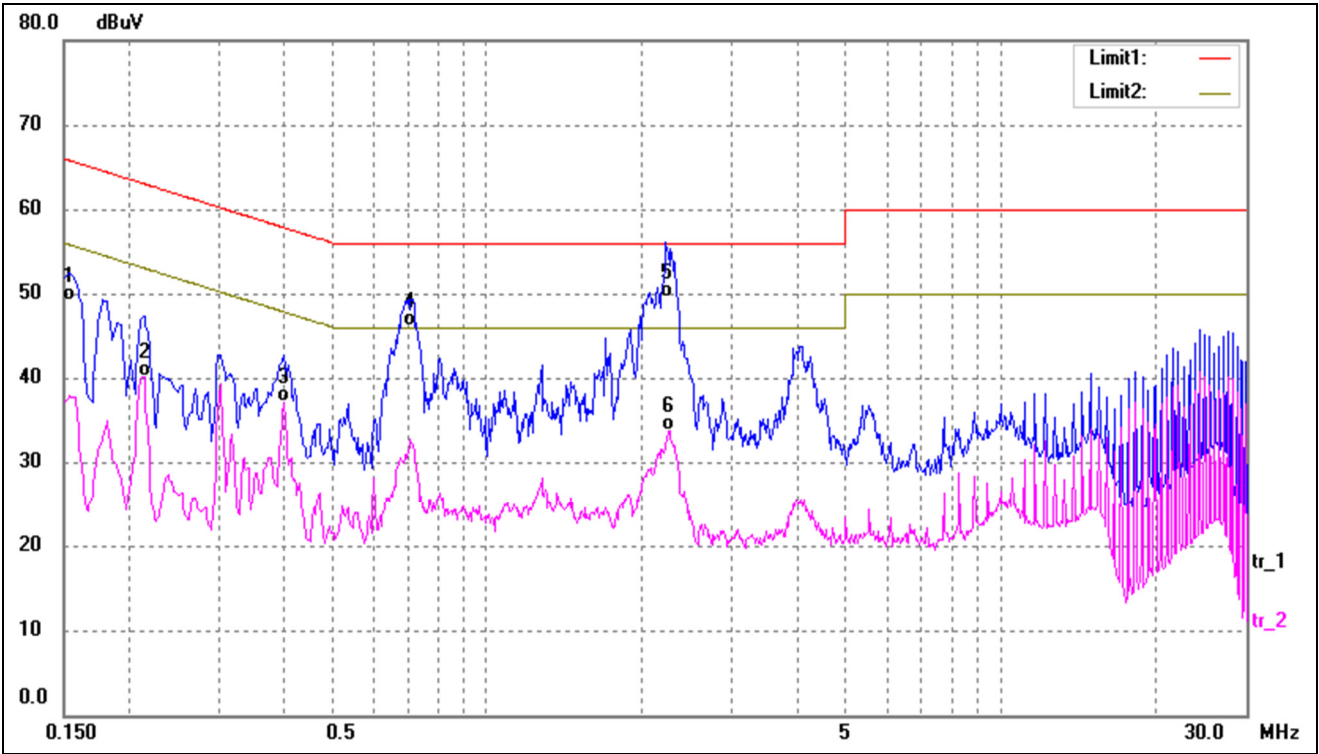
Please find the results below:

Test mode:	TM1	Polarity:	Line
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No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1500	38.27	9.44	47.71	66.00	-18.29	QP
2	0.2140	30.64	9.63	40.27	53.05	-12.78	AVG
3	0.3020	30.21	9.63	39.84	50.19	-10.35	AVG
4	0.7060	36.83	9.74	46.57	56.00	-9.43	QP
5	2.2660	25.20	9.37	34.57	46.00	-11.43	AVG
6*	2.2740	41.71	9.37	51.08	56.00	-4.92	QP

Test mode:	TM1	Polarity:	Neutral
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No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1540	39.73	9.45	49.18	65.78	-16.60	QP
2	0.2140	30.44	9.63	40.07	53.05	-12.98	AVG
3	0.4020	27.43	9.64	37.07	47.81	-10.74	AVG
4	0.7100	36.37	9.74	46.11	56.00	-9.89	QP
5*	2.2340	40.06	9.37	49.43	56.00	-6.57	QP
6	2.2660	24.42	9.37	33.79	46.00	-12.21	AVG

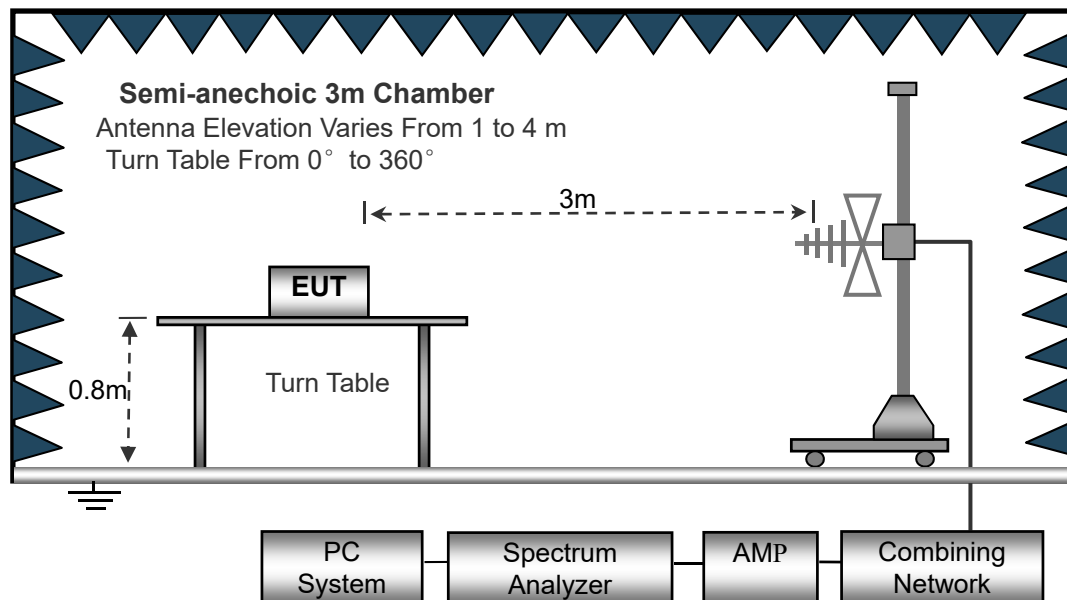
4. RADIATED EMISSION

4.1 Test Procedure

The setup of EUT is according with per ANSI C63.4-2014 measurement procedure. The specification used was with the FCC Part 15.109 Limit.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle. The spacing between the peripherals was 10 cm.

4.2 Block Diagram of Test Setup



4.3 Test Receiver Setup

Frequency :9kHz-30MHz	Frequency :30MHz-1GHz	Frequency :Above 1GHz
RBW=10kHz,	RBW=120kHz,	RBW=1MHz,
VBW =30kHz	VBW=300kHz	VBW=3MHz(Peak), 10Hz(AV)
Sweep time= Auto	Sweep time= Auto	Sweep time= Auto
Trace = max hold	Trace = max hold	Trace = max hold
Detector function = peak	Detector function = peak, QP	Detector function = peak, AV

4.4 Corrected Amplitude & Margin Calculation

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

$$\text{Corr. Ampl.} = \text{Indicated Reading} + \text{Correct} \\ \text{Correct} = \text{Ant. Factor} + \text{Cable Loss} - \text{Ampl. Gain}$$

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

$$\text{Margin} = \text{Corr. Ampl.} - \text{FCC Part 15.109(a) Limit}$$

4.5 Environmental Conditions

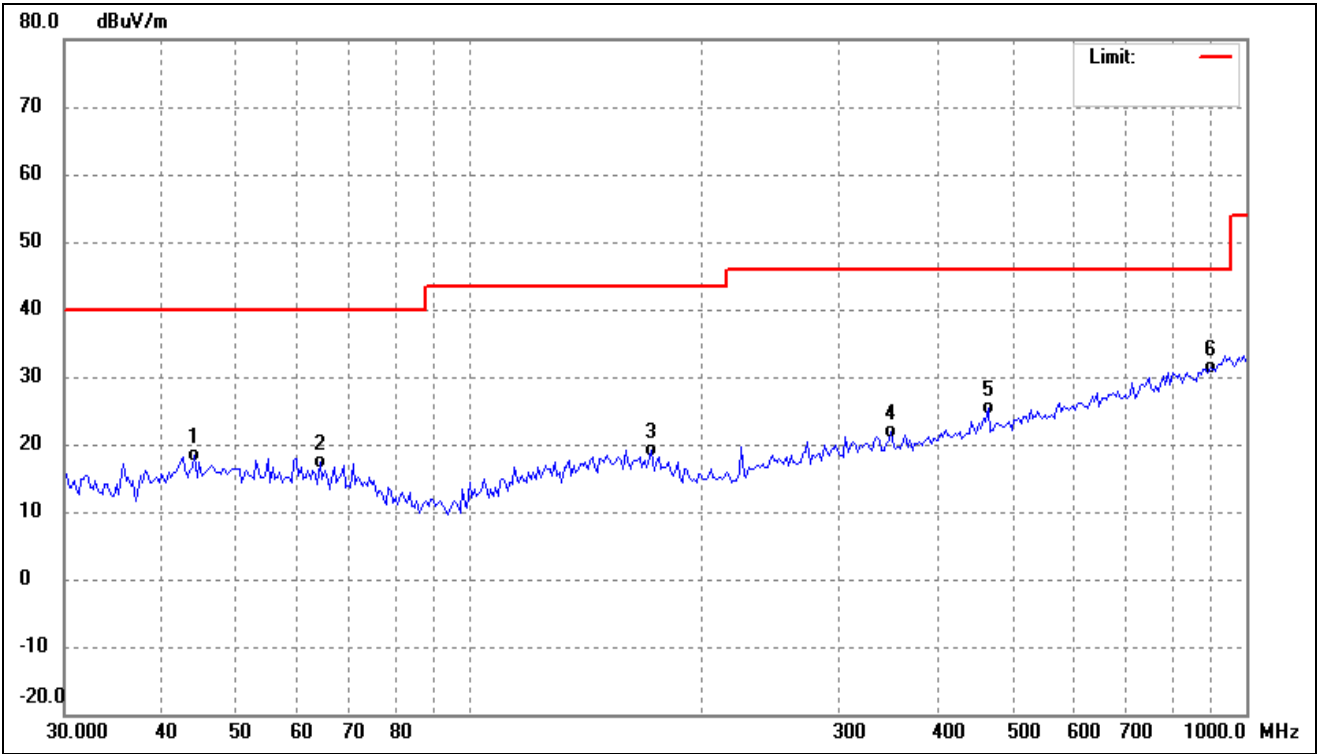
Temperature:	25.5°C
Relative Humidity:	54 %
ATM Pressure:	1011 mbar

4.6 Summary of Test Results

Please find the results below:

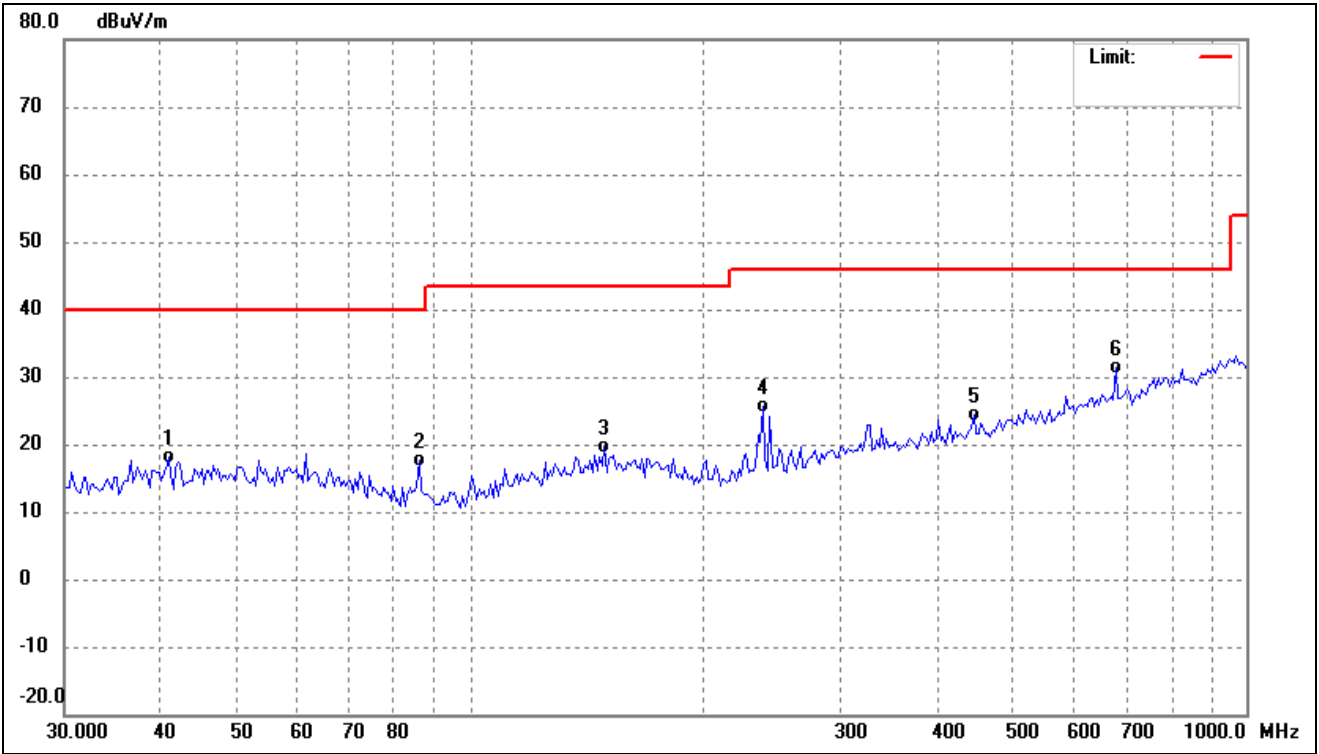
Below 1GHz

Test mode:	TM1	Polarity:	Horizontal
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	44.1544	27.46	-9.13	18.33	40.00	-21.67	-	-	QP
2	64.0800	27.42	-10.08	17.34	40.00	-22.66	-	-	QP
3	171.3890	28.00	-8.98	19.02	43.50	-24.48	-	-	QP
4	348.5145	28.96	-7.04	21.92	46.00	-24.08	-	-	QP
5	464.8867	30.39	-4.90	25.49	46.00	-20.51	-	-	QP
6	899.9577	29.35	1.96	31.31	46.00	-14.69	-	-	QP

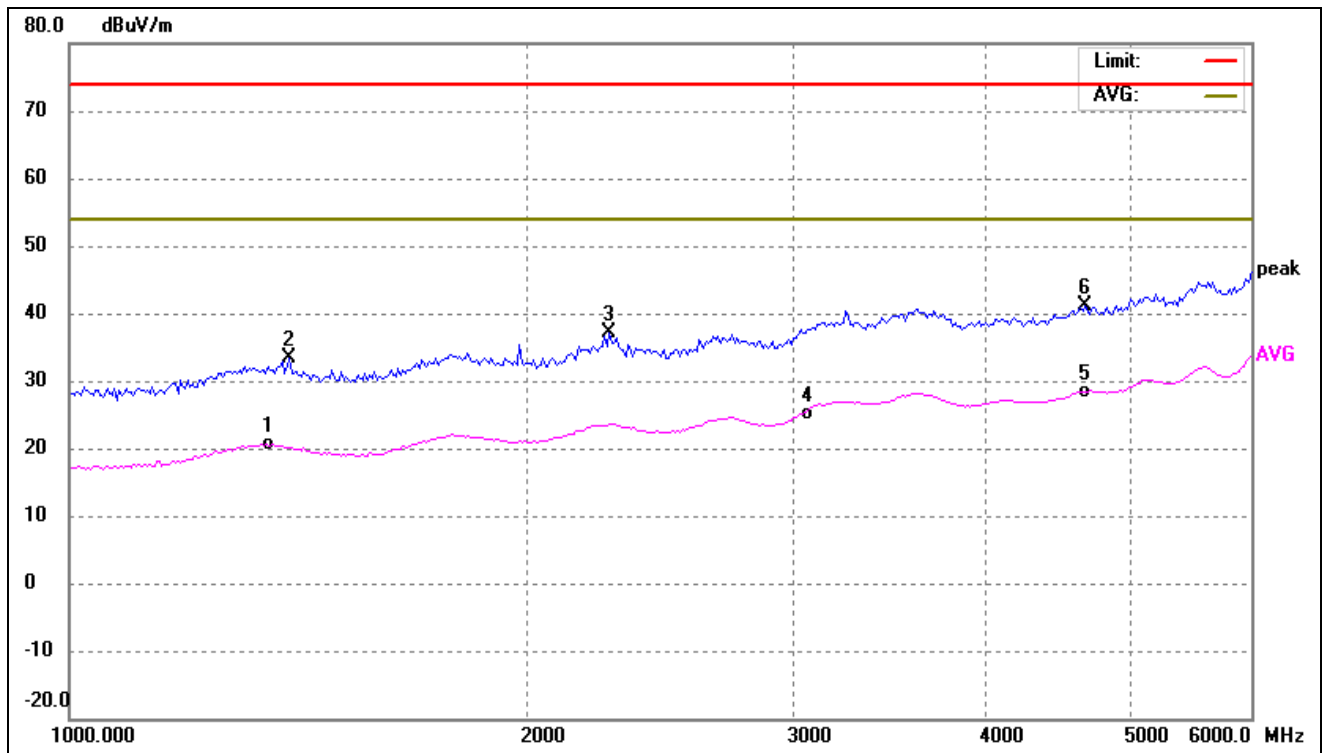
Test mode:	TM1	Polarity:	Vertical
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	40.8699	27.63	-9.51	18.12	40.00	-21.88	-	-	QP
2	86.0796	31.82	-14.07	17.75	40.00	-22.25	-	-	QP
3	148.9175	28.56	-8.91	19.65	43.50	-23.85	-	-	QP
4	238.4626	35.74	-10.08	25.66	46.00	-20.34	-	-	QP
5	445.6932	29.55	-5.11	24.44	46.00	-21.56	-	-	QP
6	679.4346	32.40	-1.11	31.29	46.00	-14.71	-	-	QP

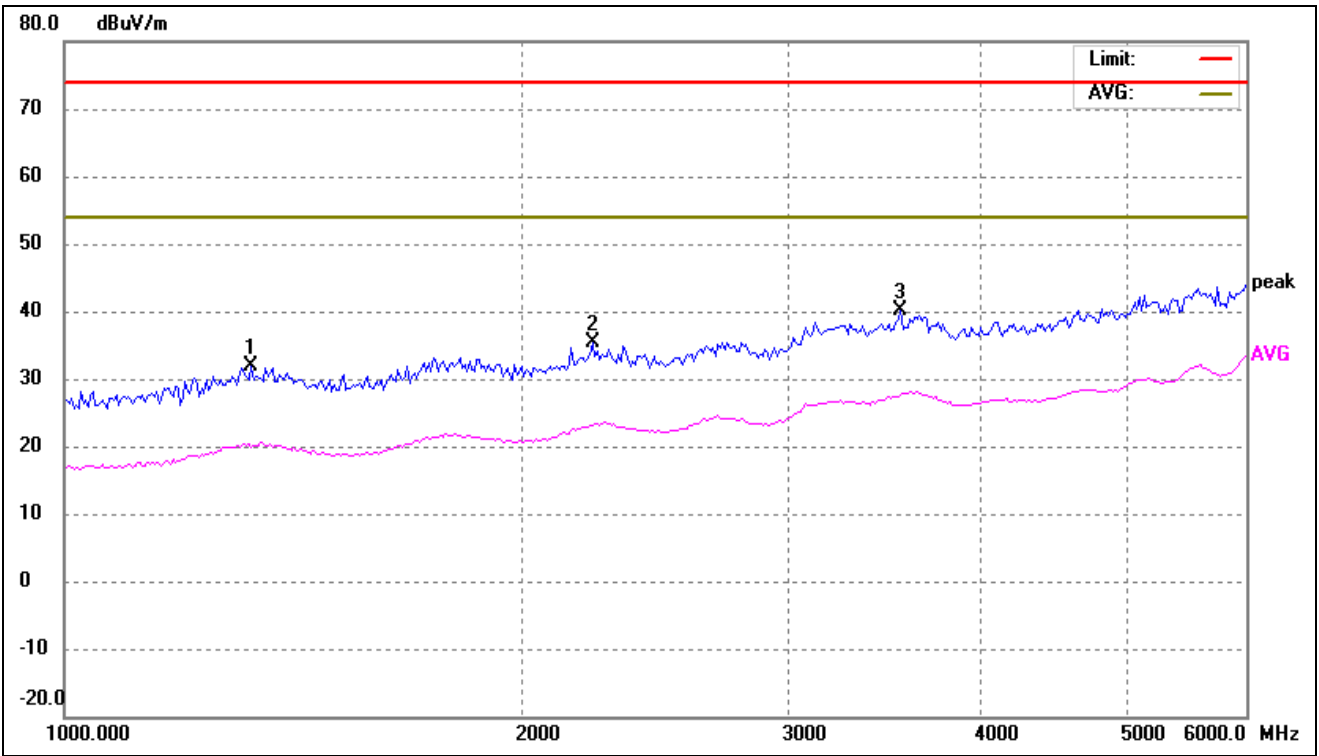
Above 1GHz

Test mode:	TM1	Polarity:	Horizontal
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	1347.200	43.88	-23.15	20.73	54.00	-33.27	-	-	AVG
2	1396.453	56.33	-23.00	33.33	74.00	-40.67	-	-	peak
3	2267.504	56.81	-19.60	37.21	74.00	-36.79	-	-	peak
4	3032.922	42.68	-17.62	25.06	54.00	-28.94	-	-	AVG
5	4616.507	41.78	-13.46	28.32	54.00	-25.68	-	-	AVG
6	4666.505	54.45	-13.39	41.06	74.00	-32.94	-	-	peak

Test mode:	TM1	Polarity:	Vertical
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	1327.988	55.14	-23.22	31.92	74.00	-42.08	-	-	peak
2	2227.158	55.17	-19.69	35.48	74.00	-38.52	-	-	peak
3	3552.023	54.59	-14.56	40.03	74.00	-33.97	-	-	peak

Remark: '-' Means' the test Degree and Height are not recorded by the test software and only show the worst case in the test report.

APPENDIX PHOTOGRAPHS

Please refer to “ANNEX”

***** END OF REPORT *****