

TEST REPORT

Reference No..... : WTX25X05139192W003
FCC ID : 2ATT5-AC02CS
Applicant : Dnake (Xiamen) Intelligent Technology Co., Ltd.
Address : No.8, Haijing North 2nd Road, Haicang District, Xiamen, Fujian, China
Manufacturer : The same as Applicant
Address : The same as Applicant
Product Name : Access Control
Model No..... : AC02C/S
Standards : FCC Part 15.207&15.209
Date of Receipt sample : 2025-05-29
Date of Test..... : 2025-05-29 to 2025-07-08
Date of Issue : 2025-07-08
Test Report Form No. : WTX_Part 15_207_209W
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.

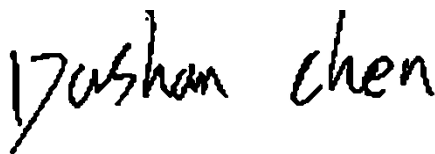
Prepared By:

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Tested by:



Dashan Chen/Project Engineer

Approved by:



Jason Su/Manager

TABLE OF CONTENTS

1. GENERAL INFORMATION	4
1.1 PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT)	4
1.2 TEST STANDARDS.....	5
1.3 TEST METHODOLOGY	5
1.4 TEST FACILITY	5
1.5 EUT SETUP AND OPERATION MODE	6
1.6 MEASUREMENT UNCERTAINTY	7
1.7 TEST EQUIPMENT LIST AND DETAILS	8
2. SUMMARY OF TEST RESULTS.....	12
3. ANTENNA REQUIREMENT	13
3.1 STANDARD APPLICABLE	13
3.2 TEST RESULT.....	13
4. CONDUCTED EMISSIONS	14
4.1 TEST PROCEDURE	14
4.2 BASIC TEST SETUP BLOCK DIAGRAM	14
4.3 ENVIRONMENTAL CONDITIONS	14
4.4 SUMMARY OF TEST RESULTS/PLOTS.....	14
5. RADIATED EMISSION.....	17
5.1 STANDARD APPLICABLE	17
5.2 TEST PROCEDURE	17
5.3 TEST RECEIVER SETUP	19
5.4 CORRECTED AMPLITUDE & MARGIN CALCULATION.....	19
5.5 ENVIRONMENTAL CONDITIONS	19
5.6 SUMMARY OF TEST RESULTS/PLOTS.....	19
6. OCCUPIED BANDWIDTH	23
6.1 STANDARD APPLICABLE	23
6.2 TEST PROCEDURE	23
6.3 ENVIRONMENTAL CONDITIONS	23
6.4 SUMMARY OF TEST RESULTS/PLOTS.....	23
APPENDIX PHOTOGRAPHS.....	25

Report version

Version No.	Date of issue	Description
Rev.00	2025-07-08	Original
/	/	/

1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

General Description of EUT	
Product Name:	Access Control
Trade Name:	DNAKE
Model No.:	AC02C/S
Adding Model(s):	AC01/S, AC01/F, AC02/S, AC02/F, AC02C/F, AC01C/S, AC01C/F, AC01P/S, AC01P/F, AC02P/S, AC02P/F, AC02PC/S, AC02PC/F, AC01CP/S, AC01CP/F
Rated Voltage:	DC12V
Power Adapter Model:	/
<i>Note: The test data is gathered from a production sample, provided by the manufacturer. The appearance of others models listed in the report is different from main-test model AC02C/S, but the circuit and the electronic construction do not change, declared by the manufacturer.</i>	

Technical Characteristics of EUT	
Frequency Range:	125kHz
Antenna Type:	Coil Antenna
Modulation Type:	BPSK
Antenna Gain:	0dBi

1.2 Test Standards

The tests were performed according to following standards:

FCC Rules Part 15.207: Conducted limits.

FCC Rules Part 15.209: Radiated emission limits; general requirements.

ANSI C63.10-2013: American National Standard for Testing Unlicensed Wireless Devices.

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 C63.10-2013, the equipment under test (EUT) was configured to measure its highest possible emission level. The test modes were adapted accordingly in reference to the Operating Instructions.

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 and the CAB identifier is CN0057.

1.5 EUT Setup and Operation Mode

The equipment under test (EUT) was configured to measure its highest possible emission. The test modes were adapted according to the operation manual for use, more detailed description as follows:

Test Mode List			
Test Mode	Description	Remark	Power Supply Mode
TM1	Transmitting	125kHz	DC12V

Special Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
Network Cable	1.0	Unshielded	Without Ferrite

Auxiliary Equipment List and Details			
Description	Manufacturer	Model	Serial Number
Adapter	KELI	AB-700P2	/
Wireless Router	MERCURY	MS08CP	/
Notebook	Lenovo	TianYi 100-14IBD	PF0F4ABV

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

Fixed asset Number	Description	Manufacturer	Model	Serial No.	Cal Date	Due. Date
WTXE1005A 1005	Spectrum Analyzer	Agilent	N9020A	US471401 02	2025-02-23	2026-02-22
WTXE1004A 1-001	Spectrum Analyzer	Rohde & Schwarz	FSP40	100612	2025-02-23	2026-02-22
WTXE1103A 1003	Attenuator	Pasternack	PE4007-4	/	2025-02-23	2026-02-22
WTXE1003A 1-005	Coaxial Cable	/	0M4RFC	/	2025-02-23	2026-02-22
☐ Chamber A: Below 1GHz						
WTXE1005A 1003	Spectrum Analyzer	Rohde & Schwarz	FSP30	836079/03 5	2025-02-23	2026-02-22
WTXE1001A 1001	EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2025-02-23	2026-02-22
WTXE1007A 1001	Amplifier	HP	8447F	2805A034 75	2025-02-23	2026-02-22
WTXE1010A 1007	Loop Antenna	Schwarz beck	FMZB 1516	9773	2024-02-26	2026-02-25
WTXE1010A 1006	Broadband Antenna	Schwarz beck	VULB9163	9163-333	2025-02-23	2026-02-22
WTXE1104A 1032-1	Coaxial Cable	/	RC_6G-N-M	/	2025-02-23	2026-02-22
WTXE1104A 1032-2	Coaxial Cable	/	RC_6G-N-M	/	2025-02-23	2026-02-22
WTXE1104A 1032-3	Coaxial Cable	/	RC_6G-N-M	/	2025-02-23	2026-02-22
☐ Chamber A: Above 1GHz						
WTXE1005A 1003	Spectrum Analyzer	Rohde & Schwarz	FSP30	836079/03 5	2025-02-23	2026-02-22
WTXE1001A 1001	EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2025-02-23	2026-02-22
WTXE1065A 1001	Amplifier	C&D	PAP-1G18	2002	2025-02-23	2026-02-22
WTXE1010A 1005	Horn Antenna	ETS	3117	00086197	2025-02-23	2026-02-22
WTXE1010A 1010	DRG Horn Antenna	A.H. SYSTEMS	SAS-574	571	2024-03-17	2026-03-16
WTXE1003A	Pre-amplifier	Schwarzbeck	BBV 9721	9721-031	2025-02-23	2026-02-22

1001						
WTXE1104A 1033-1	Coaxial Cable	/	C16-07-07	/	2025-02-23	2026-02-22
WTXE1104A 1033-2	Coaxial Cable	/	C16-07-07	/	2025-02-23	2026-02-22
WTXE1104A 1033-3	Coaxial Cable	/	C16-07-07	/	2025-02-23	2026-02-22
☐ Chamber B:Below 1GHz						
WTXE1010A 1006	Trilog Broadband Antenna	Schwarz beck	VULB9163(B)	9163-635	2024-03-17	2027-03-16
WTXE1038A 1001	Amplifier	Agilent	8447D	2944A104 57	2025-02-23	2026-02-22
WTXE1001A 1002	EMI Test Receiver	Rohde & Schwarz	ESPI	101391	2025-02-23	2026-02-22
WTXE1104A 1031-1	Coaxial Cable	/	1.5MRFC-LWB3	/	2025-02-23	2026-02-22
WTXE1104A 1031-2	Coaxial Cable	/	RG 316	/	2025-02-23	2026-02-22
WTXE1104A 1031-3	Coaxial Cable	/	RG 316	/	2025-02-23	2026-02-22
☒ Chamber C:Below 1GHz						
WTXE1093A 1001	EMI Test Receiver	Rohde & Schwarz	ESIB 26	100401	2025-02-23	2026-02-22
WTXE1010A 1013-1	Trilog Broadband Antenna	Schwarz beck	VULB 9168	1194	2024-04-18	2027-04-17
WTXE1007A 1002	Amplifier	HP	8447F	2944A038 69	2025-02-23	2026-02-22
WTXE1010A 1007	Loop Antenna	Schwarz beck	FMZB 1516	9773	2024-02-26	2026-02-25
WTXE1104A 1034-1	Coaxial Cable	/	RC_6G-N-M	/	2025-02-23	2026-02-22
WTXE1104A 1034-2	Coaxial Cable	/	RC_6G-N-M	/	2025-02-23	2026-02-22
WTXE1104A 1034-3	Coaxial Cable	/	RC_6G-N-M	/	2025-02-23	2026-02-22
☒ Chamber C: Above 1GHz						
WTXE1093A 1001	EMI Test Receiver	Rohde & Schwarz	ESIB 26	100401	2025-02-23	2026-02-22
WTXE1103A 1005	Horn Antenna	POAM	RTF-118A	1820	2023-03-10	2026-03-09
					2025-06-13	2027-06-12

WTXE1103A 1006	Amplifier	Tonscend	TAP01018050	AP22E806 235	2025-02-23	2026-02-22
WTXE1010A 1010	DRG Horn Antenna	A.H. SYSTEMS	SAS-574	571	2024-03-17	2026-03-16
WTXE1003A 1001	Pre-amplifier	Schwarzbeck	BBV 9721	9721-031	2025-02-23	2026-02-22
WTXE1104A 1035-1	Coaxial Cable	/	RC-18G-N-M	/	2025-02-23	2026-02-22
WTXE1104A 1035-2	Coaxial Cable	/	RC-18G-N-M	/	2025-02-23	2026-02-22
WTXE1104A 1035-3	Coaxial Cable	/	RC-18G-N-M	/	2025-02-23	2026-02-22
☐ Conducted Room 1#						
WTXE1104A 1029	EMI Test Receiver	Rohde & Schwarz	ESCI	100525	2024-12-08	2025-12-07
WTXE1002A 1001	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2025-02-23	2026-02-22
WTXE1003A 1001	AC LISN	Schwarz beck	NSLK8126	8126-279	2025-02-23	2026-02-22
WTXE1104A 1036	Coaxial Cable	/	RG 316	/	2025-02-23	2026-02-22
WTXE1104A 1038	Coaxial Cable	/	6MRFC-DP	/	2025-02-23	2026-02-22
☒ Conducted Room 2#						
WTXE1001A 1004	EMI Test Receiver	Rohde & Schwarz	ESPI	101259	2025-02-23	2026-02-22
WTXE1003A 1003	LISN	Rohde & Schwarz	ENV 216	100097	2025-02-23	2026-02-22
WTXE1104A 1037	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
§15.203 Antenna Requirement	Compliant
§15.207 (a) Conducted Emission	Compliant
§15.209 Radiated Emission	Compliant

N/A: not applicable.

3. Antenna Requirement

3.1 Standard Applicable

According to FCC Part 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

3.2 Test Result

This product has a Coil Antenna, fulfill the requirement of this section.

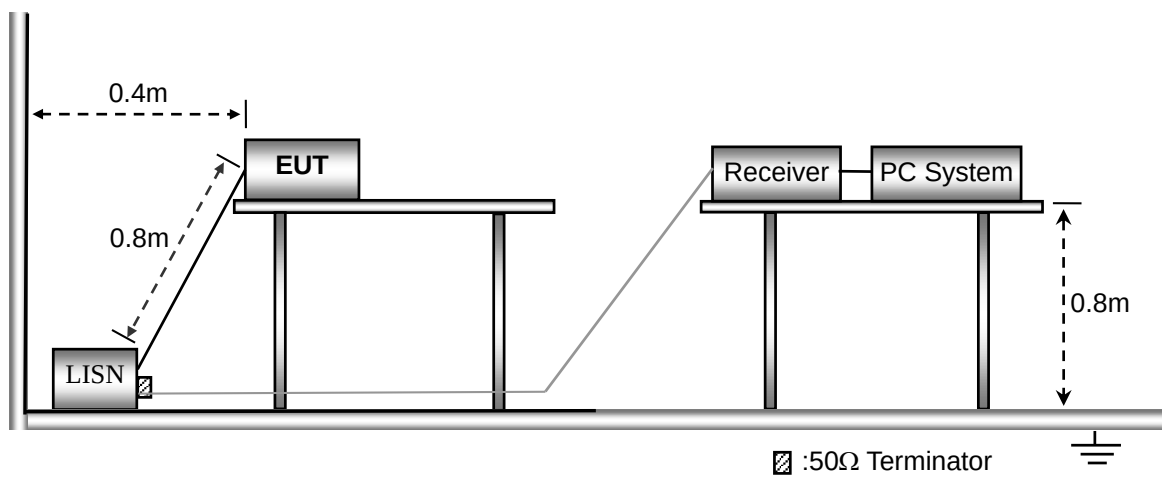
4. Conducted Emissions

4.1 Test Procedure

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.207 Limit.

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

4.2 Basic Test Setup Block Diagram

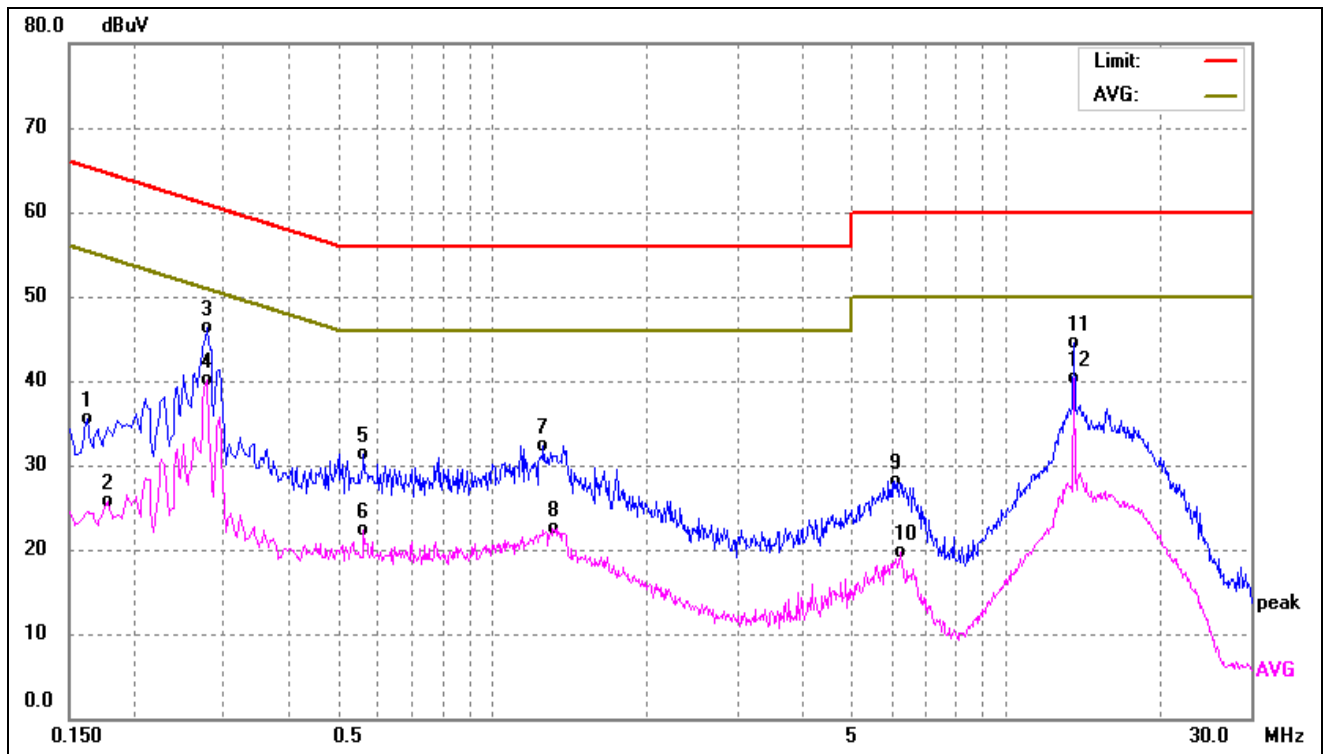


4.3 Environmental Conditions

Temperature:	25 °C
Relative Humidity:	55 %
ATM Pressure:	1011 mbar

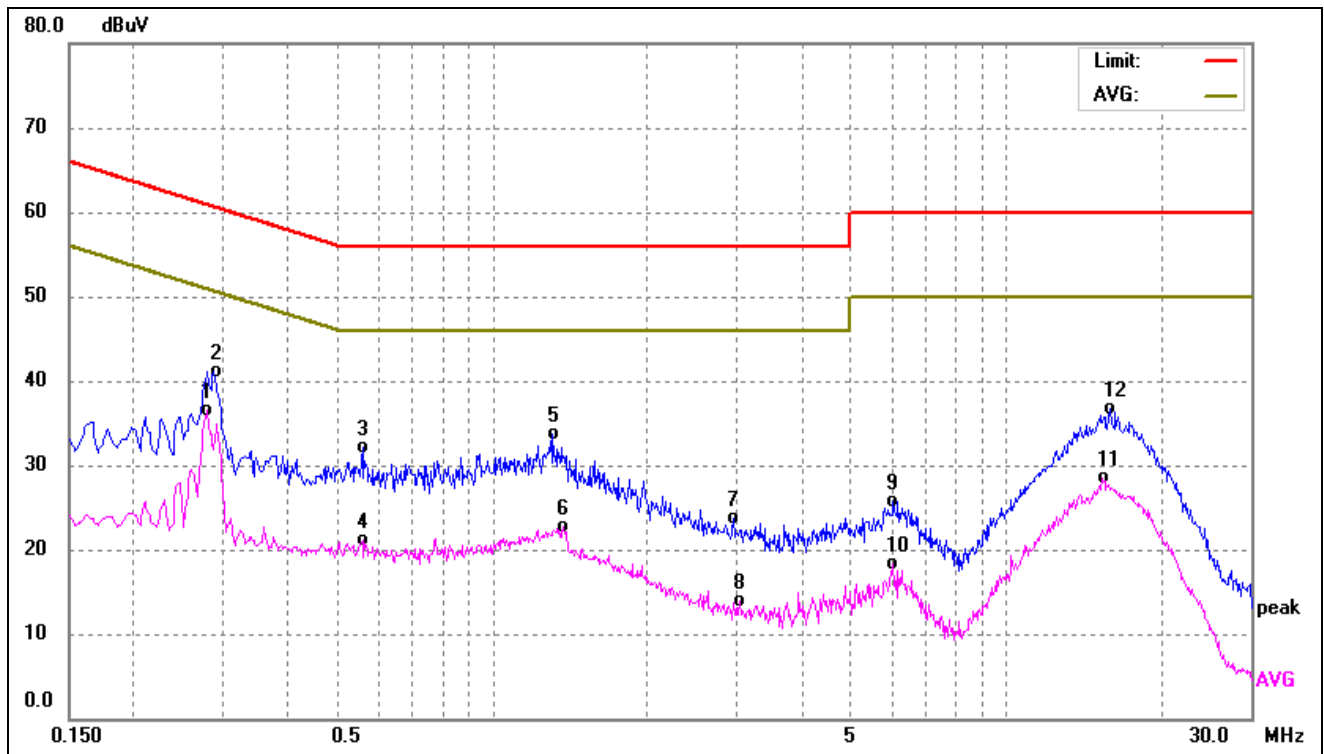
4.4 Summary of Test Results/Plots

Test mode:	TM1	Polarity:	Line
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No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1620	25.96	9.48	35.44	65.36	-29.92	QP
2	0.1780	16.26	9.54	25.80	54.57	-28.77	AVG
3	0.2779	36.70	9.63	46.33	60.88	-14.55	QP
4	0.2779	30.41	9.63	40.04	50.88	-10.84	AVG
5	0.5620	21.61	9.68	31.29	56.00	-24.71	QP
6	0.5620	12.59	9.68	22.27	46.00	-23.73	AVG
7	1.2620	22.73	9.65	32.38	56.00	-23.62	QP
8	1.3140	12.95	9.63	22.58	46.00	-23.42	AVG
9	6.0700	18.38	9.69	28.07	60.00	-31.93	QP
10	6.2420	9.93	9.70	19.63	50.00	-30.37	AVG
11	13.5509	34.93	9.60	44.53	60.00	-15.47	QP
12	13.5509	30.72	9.60	40.32	50.00	-9.68	AVG

Test mode:	TM1	Polarity:	Neutral
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No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.2779	26.90	9.63	36.53	50.88	-14.35	AVG
2	0.2860	31.39	9.63	41.02	60.64	-19.62	QP
3	0.5580	22.38	9.68	32.06	56.00	-23.94	QP
4	0.5580	11.34	9.68	21.02	46.00	-24.98	AVG
5	1.3140	24.02	9.63	33.65	56.00	-22.35	QP
6	1.3740	13.00	9.61	22.61	46.00	-23.39	AVG
7	2.9539	14.29	9.40	23.69	56.00	-32.31	QP
8	3.0300	4.55	9.40	13.95	46.00	-32.05	AVG
9	6.0460	16.01	9.68	25.69	60.00	-34.31	QP
10	6.0460	8.59	9.68	18.27	50.00	-31.73	AVG
11	15.4660	18.93	9.51	28.44	50.00	-21.56	AVG
12	15.9540	27.17	9.52	36.69	60.00	-23.31	QP

5. RADIATED EMISSION

5.1 Standard Applicable

According to 15.209(a), radiated emission limits; general requirements.

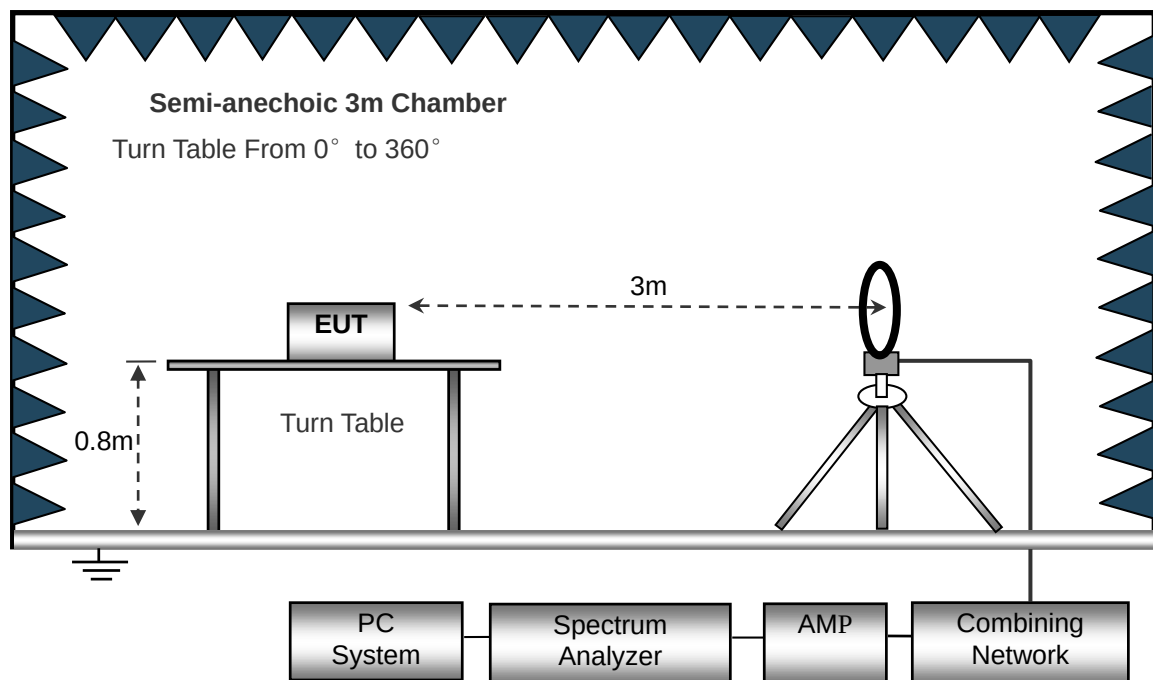
Frequency (MHz)	Field Strength		Field Strength Limit at 3m Measurement Dist	
	uV/m	Distance (m)	uV/m	dBuV/m
0.009 ~ 0.490	2400/F(kHz)	300	10000 * 2400/F(kHz)	$20\log^{(2400/F(kHz))} + 80$
0.490 ~ 1.705	24000/F(kHz)	30	100 * 24000/F(kHz)	$20\log^{(24000/F(kHz))} + 40$
1.705 ~ 30	30	30	100 * 30	$20\log^{(30)} + 40$
30 ~ 88	100	3	100	$20\log^{(100)}$
88 ~ 216	150	3	150	$20\log^{(150)}$
216 ~ 960	200	3	200	$20\log^{(200)}$
Above 960	500	3	500	$20\log^{(500)}$

5.2 Test Procedure

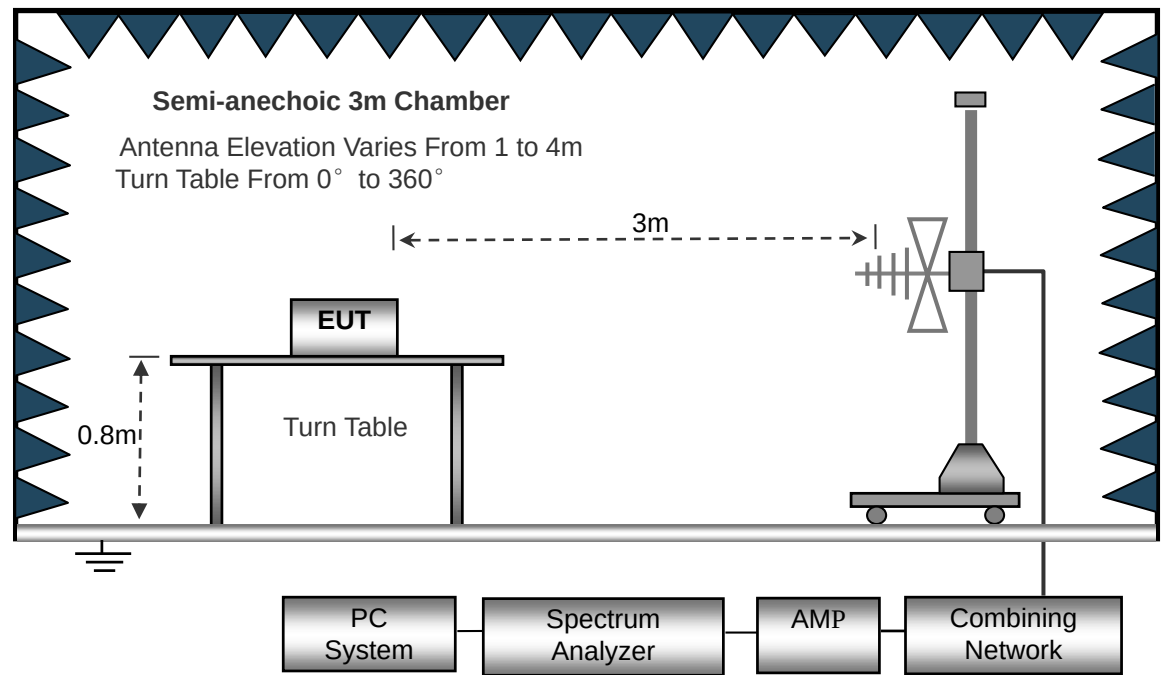
The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.209 Limit.

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

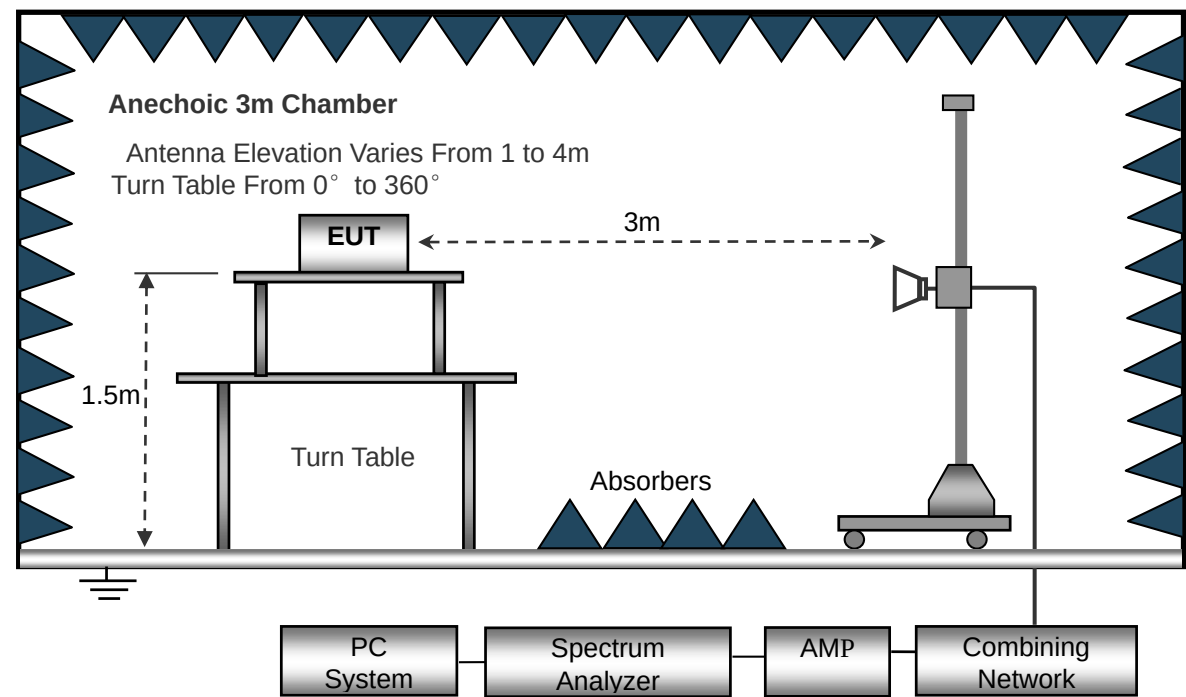
The test setup for emission measurement below 30MHz.



The test setup for emission measurement from 30MHz to 1GHz.



The test setup for emission measurement above 1GHz.



5.3 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

5.4 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:

$$\text{Corr. Ampl.} = \text{Indicated Reading} - \text{Corr. Factor}$$

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:

$$\text{Margin} = \text{Corr. Ampl.} - \text{FCC Part 15.209(a) Limit}$$

5.5 Environmental Conditions

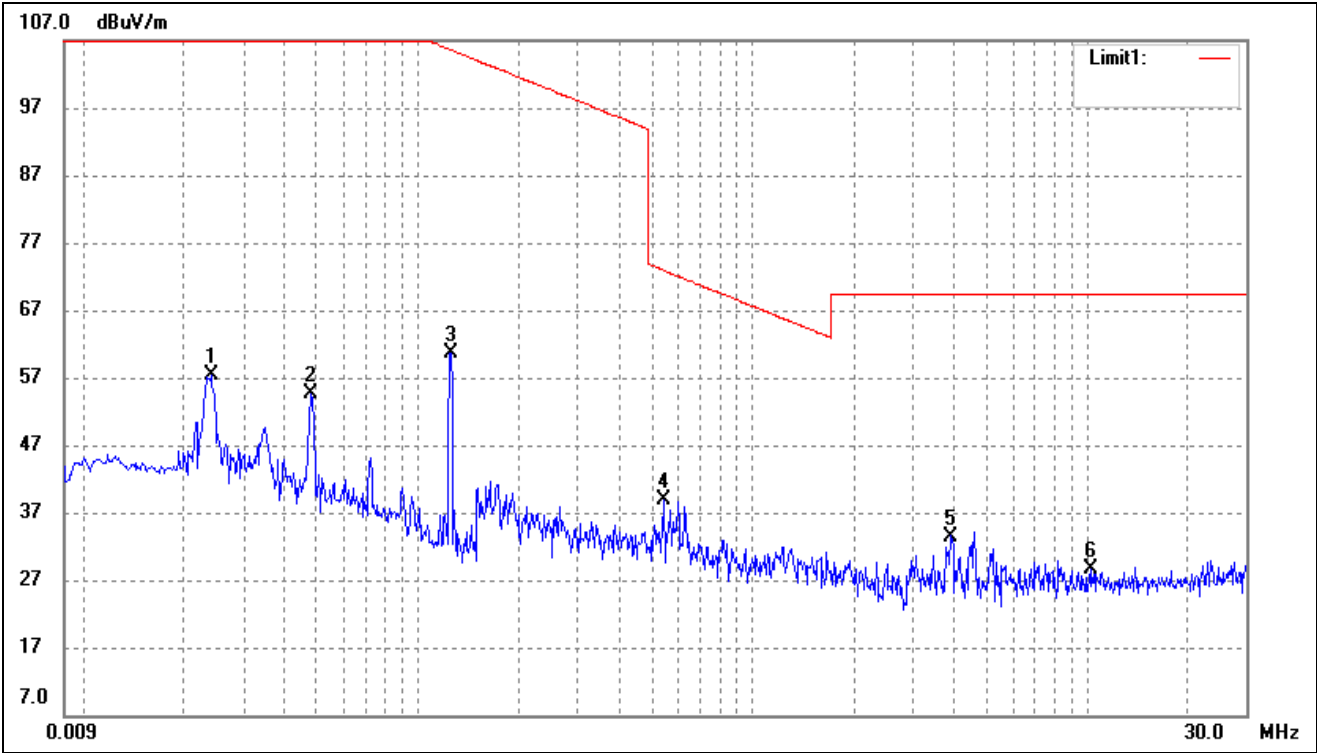
Temperature:	25 °C
Relative Humidity:	55 %
ATM Pressure:	1011 mbar

5.6 Summary of Test Results/Plots

Note: this EUT was tested in 3 orthogonal positions and the worst case position data was reported.

➤ Below 30MHz

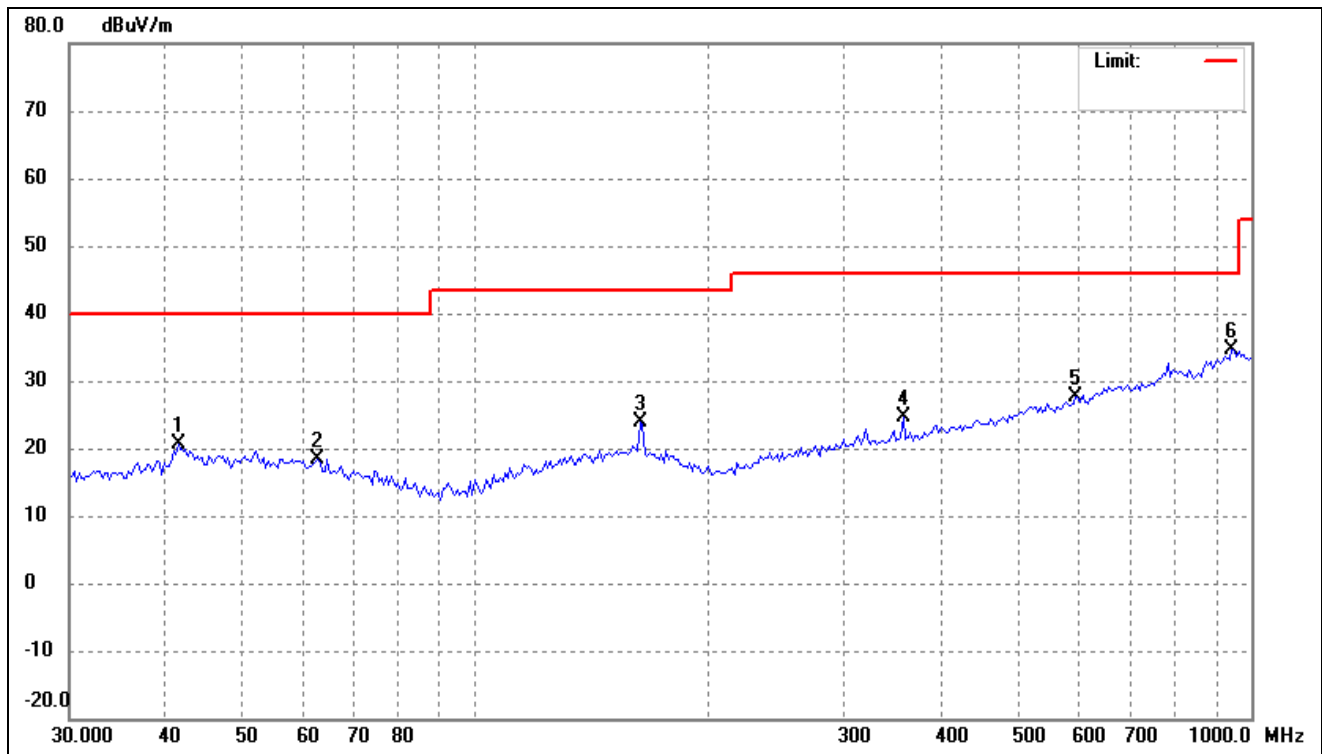
Test mode:	TM1	Polarity:	Horizontal
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	0.0240	64.80	-7.41	57.39	119.99	-62.60	-	-	peak
2	0.0481	62.35	-7.70	54.65	113.95	-59.30	-	-	peak
3	0.1253	68.52	-7.90	60.62	105.64	-45.02	-	-	peak
4	0.5435	47.03	-8.19	38.84	72.90	-34.06	-	-	peak
5	3.9222	41.01	-7.51	33.50	69.50	-36.00	-	-	peak
6	10.1791	36.48	-7.82	28.66	69.50	-40.84	-	-	peak

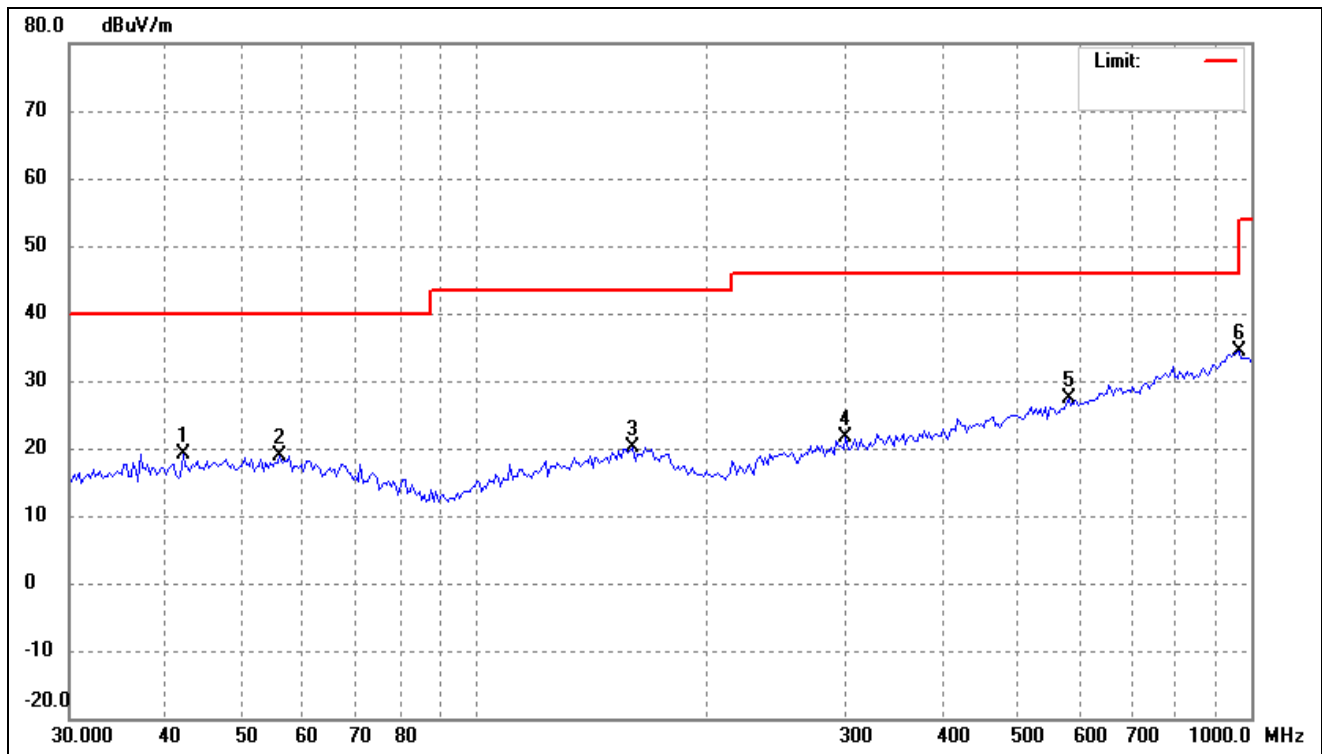
➤ 30MHz-1GHz

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	41.4483	30.16	-9.45	20.71	40.00	-19.29	-	-	peak
2	62.7432	28.27	-9.92	18.35	40.00	-21.65	-	-	peak
3	163.1622	32.35	-8.58	23.77	43.50	-19.73	-	-	peak
4	355.9396	31.51	-6.92	24.59	46.00	-21.41	-	-	peak
5	594.5142	29.92	-2.23	27.69	46.00	-18.31	-	-	peak
6	945.3336	31.74	2.85	34.59	46.00	-11.41	-	-	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	42.0350	28.62	-9.39	19.23	40.00	-20.77	-	-	peak
2	56.0708	28.16	-9.26	18.90	40.00	-21.10	-	-	peak
3	159.7586	28.76	-8.53	20.23	43.50	-23.27	-	-	peak
4	300.6988	29.33	-7.73	21.60	46.00	-24.40	-	-	peak
5	582.1122	29.99	-2.62	27.37	46.00	-18.63	-	-	peak
6	965.4742	31.28	2.98	34.26	54.00	-19.74	-	-	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.

6. Occupied Bandwidth

6.1 Standard Applicable

According to 15.215,20dB emission bandwidth.

6.2 Test Procedure

- The transmitter shall be operated at its maximum carrier power measured under normal test conditions.
- The span of the analyzer shall be set to capture all products of the modulation process, including the emission skirts.
- The resolution bandwidth (RBW) shall be in the range of 1% to 5% of the occupied bandwidth (OBW) and video bandwidth (VBW) shall be approximately 3x RBW.

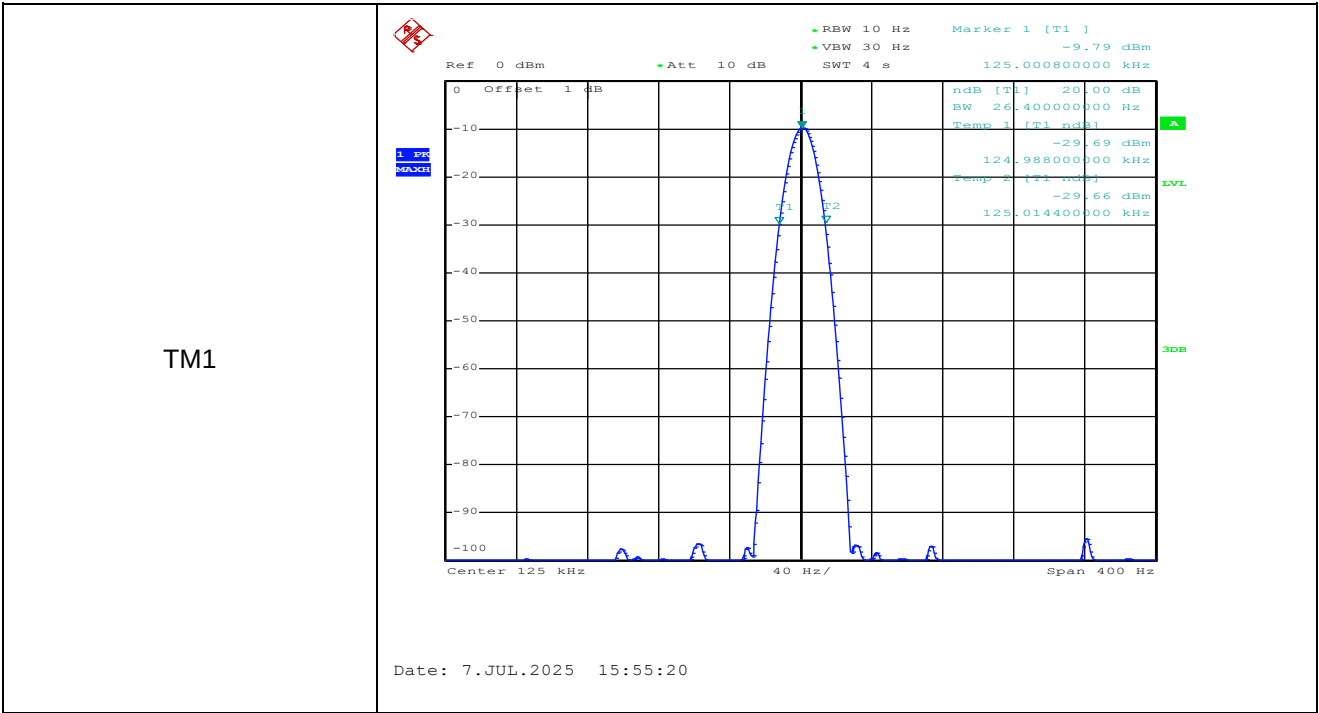
6.3 Environmental Conditions

Temperature:	25 °C
Relative Humidity:	53%
ATM Pressure:	1018 mbar

6.4 Summary of Test Results/Plots

Test mode	Test Channel(kHz)	20dB Bandwidth(Hz)
TM1	112.0210	26.40

Please refer to the attached plots.



Note: The RBW of the analyzer measuring Bandwidth cannot be adjusted to 1%-5% OBW, the RBW of the test setting is the closest value.

APPENDIX PHOTOGRAPHS

Please refer to “ANNEX”

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