



RF TEST REPORT

Report No.: 20240417G06070X-W7

Product Name: AI Safety System

Model No.: Mobile360 M500-T

FCC ID: NCI-M360-M500-T

Applicant: VIA Technologies, Inc

Address: 8F., NO. 535, ZHONGZHENG RD., XINDIAN DIST., NEW TAIPEI
CITY 23148, TAIWAN

Dates of Testing: 04/12/2024 - 06/04/2024

Issued by: CCIC Southern Testing Co., Ltd.

Lab Location: Electronic Testing Building, No.43, Shahe Road, Xili Street,
Nanshan District, Shenzhen, Guangdong, China.

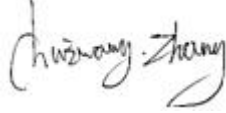
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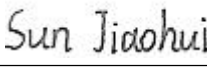


Test Report

Product.....: AI Safety System
Brand Name.....: VIA
Trade Name: VIA
Applicant.....: VIA Technologies, Inc
Applicant Address.....: 8F., NO. 535, ZHONGZHENG RD., XINDIAN DIST.,
NEW TAIPEI CITY 23148, TAIWAN
Manufacturer.....: VIA Technologies, Inc
Manufacturer Address.....: 8F., NO. 535, ZHONGZHENG RD., XINDIAN DIST.,
NEW TAIPEI CITY 23148, TAIWAN
Test Standards.....: 47 CFR Part 2/22/24/27/90
Test Result.....: Pass

Tested by:  2024.06.04

Chuiwang Zhang, Test Engineer

Reviewed by.....:  2024.06.04

Sun Jiaohui, Senior Engineer

Approved by.....:  2024.06.04

Chris You, Manager



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Change History		
Issue	Date	Reason for change
1.0	2024.06.04	First edition



1. GENERAL INFORMATION

1.1. EUT Description

Product Name	AI Safety System	
Model No.	Mobile360 M500-T	
Hardware Version	RA	
Software Version	v0.6.1	
EUT supports Radios application	LTE Band 2/4/5/7/12/13/26/38/41/66	
Frequency Range(Tx)	LTE Band 2: 1850MHz~1910MHz LTE Band 4: 1710MHz~1755MHz LTE Band 5: 824MHz~849MHz LTE Band 7: 2500MHz~2570MHz LTE Band 12: 699MHz~716MHz	LTE Band 13: 777MHz~787MHz LTE Band 26: 814MHz~849MHz LTE Band 38: 2570MHz~2620MHz LTE Band 41: 2535MHz~2655MHz LTE Band 66: 1710MHz~1780MHz
Channel Bandwidth	LTE Band 2/4/66: 1.4MHz/3MHz/5MHz/10MHz/15MHz/20MHz LTE Band 5/12/26(Part 90): 1.4MHz/3MHz/5MHz/10MHz LTE Band 13: 5MHz/10MHz LTE Band 26(Part 22): 1.4MHz/3MHz/5MHz/10MHz/15MHz LTE Band 7/38/41: 5MHz/10MHz/15MHz/20MHz	
Modulation Type	QPSK/16QAM/64QAM(downlink only)	
Maximum ERP/EIRP	LTE Band 2: 26.29dBm LTE Band 4: 24.28dBm LTE Band 5: 20.21dBm LTE Band 7: 25.07dBm LTE Band 12: 18.68dBm LTE Band 13: 18.14dBm	LTE Band 26(Part 22): 20.07dBm LTE Band 26(Part 90): 20.03dBm LTE Band 38: 24.80dBm LTE Band 41: 26.04dBm LTE Band 66: 24.78dBm
Antenna Type	External Antenna	
Antenna gain	LTE Band 2: 2.62dBi LTE Band 4: 1.12dBi LTE Band 5: -1.22dBi LTE Band 7: 1.92dBi LTE Band 12: -3.10dBi	LTE Band 13: -2.25dBi LTE Band 26: -1.22dBi LTE Band 38: 1.61dBi LTE Band 41: 2.48dBi LTE Band 66: 1.12dBi
Power supply	9~36V DC Power Supply	

Note 1: The information of antenna gain and cable loss is provided by the manufacturer and our lab is not responsible for the accuracy of the antenna gain and cable loss information.

1.2. Maximum ERP/EIRP, Frequency Tolerance and Emission Designator

Band	Type of Modulation	Bandwidth (MHz)	Emission Designator	Frequency Tolerance (ppm)	Maximum EIRP(W)
LTE Band 2	QPSK	1.4	1M10G7D	—	0.415
LTE Band 2	16QAM	1.4	1M10W7D	—	0.417
LTE Band 2	QPSK	3	2M71G7D	—	0.408
LTE Band 2	16QAM	3	2M70W7D	—	0.408
LTE Band 2	QPSK	5	4M54G7D	—	0.414
LTE Band 2	16QAM	5	4M53W7D	—	0.417
LTE Band 2	QPSK	10	8M97G7D	0.0037	0.425
LTE Band 2	16QAM	10	8M97W7D	—	0.408
LTE Band 2	QPSK	15	13M4G7D	—	0.421
LTE Band 2	16QAM	15	13M4W7D	—	0.416
LTE Band 2	QPSK	20	17M9G7D	—	0.426
LTE Band 2	16QAM	20	18M0W7D	—	0.423
LTE Band 4	QPSK	1.4	1M11G7D	—	0.268
LTE Band 4	16QAM	1.4	1M10W7D	—	0.221
LTE Band 4	QPSK	3	2M71G7D	—	0.257
LTE Band 4	16QAM	3	2M70W7D	—	0.223
LTE Band 4	QPSK	5	4M53G7D	—	0.252
LTE Band 4	16QAM	5	4M54W7D	—	0.224
LTE Band 4	QPSK	10	8M97G7D	0.0052	0.251
LTE Band 4	16QAM	10	8M98W7D	—	0.220
LTE Band 4	QPSK	15	13M5G7D	—	0.249
LTE Band 4	16QAM	15	13M5W7D	—	0.221
LTE Band 4	QPSK	20	18M0G7D	—	0.259
LTE Band 4	16QAM	20	17M9W7D	—	0.224
LTE Band 7	QPSK	5	4M54G7D	—	0.299
LTE Band 7	16QAM	5	4M53W7D	—	0.321
LTE Band 7	QPSK	10	8M98G7D	-0.0036	0.303
LTE Band 7	16QAM	10	8M98W7D	—	0.318
LTE Band 7	QPSK	15	13M5G7D	—	0.304
LTE Band 7	16QAM	15	13M5W7D	—	0.315
LTE Band 7	QPSK	20	18M0G7D	—	0.310
LTE Band 7	16QAM	20	17M9W7D	—	0.288
LTE Band 38	QPSK	5	4M52G7D	—	0.279
LTE Band 38	16QAM	5	4M52W7D	—	0.299
LTE Band 38	QPSK	10	9M02G7D	-0.0046	0.282
LTE Band 38	16QAM	10	9M00W7D	—	0.296
LTE Band 38	QPSK	15	13M5G7D	—	0.283
LTE Band 38	16QAM	15	13M5W7D	—	0.293



LTE Band 38	QPSK	20	18M0G7D	—	0.286
LTE Band 38	16QAM	20	18M0W7D	—	0.302
LTE Band 41	QPSK	5	4M53G7D	—	0.395
LTE Band 41	16QAM	5	4M52W7D	—	0.364
LTE Band 41	QPSK	10	9M00G7D	0.0039	0.385
LTE Band 41	16QAM	10	9M01W7D	—	0.368
LTE Band 41	QPSK	15	13M5G7D	—	0.396
LTE Band 41	16QAM	15	13M5W7D	—	0.361
LTE Band 41	QPSK	20	18M0G7D	—	0.402
LTE Band 41	16QAM	20	18M0W7D	—	0.372
LTE Band 66	QPSK	1.4	1M11G7D	—	0.294
LTE Band 66	16QAM	1.4	1M10W7D	—	0.295
LTE Band 66	QPSK	3	2M72G7D	—	0.289
LTE Band 66	16QAM	3	2M72W7D	—	0.289
LTE Band 66	QPSK	5	4M53G7D	—	0.293
LTE Band 66	16QAM	5	4M54W7D	—	0.295
LTE Band 66	QPSK	10	8M99G7D	-0.0080	0.301
LTE Band 66	16QAM	10	8M98W7D	—	0.289
LTE Band 66	QPSK	15	13M5G7D	—	0.298
LTE Band 66	16QAM	15	13M5W7D	—	0.294
LTE Band 66	QPSK	20	17M9G7D	—	0.261
LTE Band 66	16QAM	20	17M9W7D	—	0.246

Band	Type of Modulation	Bandwidth (MHz)	Emission Designator	Frequency Tolerance (ppm)	Maximum ERP(W)
LTE Band 5	QPSK	1.4	1M11G7D	—	0.101
LTE Band 5	16QAM	1.4	1M10W7D	—	0.087
LTE Band 5	QPSK	3	2M70G7D	—	0.104
LTE Band 5	16QAM	3	2M70W7D	—	0.090
LTE Band 5	QPSK	5	4M53G7D	—	0.105
LTE Band 5	16QAM	5	4M52W7D	—	0.086
LTE Band 5	QPSK	10	9M00G7D	-0.0179	0.105
LTE Band 5	16QAM	10	9M00W7D	—	0.090
LTE Band 12	QPSK	1.4	1M10G7D	—	0.074
LTE Band 12	16QAM	1.4	1M10W7D	—	0.068
LTE Band 12	QPSK	3	2M70G7D	—	0.070
LTE Band 12	16QAM	3	2M70W7D	—	0.067
LTE Band 12	QPSK	5	4M53G7D	—	0.070
LTE Band 12	16QAM	5	4M52W7D	—	0.067
LTE Band 12	QPSK	10	9M01G7D	-0.0240	0.072
LTE Band 12	16QAM	10	8M98W7D	—	0.067
LTE Band 13	QPSK	5	4M53G7D	—	0.064
LTE Band 13	16QAM	5	4M53W7D	—	0.061
LTE Band 13	QPSK	10	8M94G7D	-0.0166	0.065
LTE Band 13	16QAM	10	8M96W7D	—	0.061
LTE Band 26 (Part 90)	QPSK	1.4	1M11G7D	—	0.096
LTE Band 26 (Part 90)	16QAM	1.4	1M10W7D	—	0.100
LTE Band 26 (Part 90)	QPSK	3	2M70G7D	—	0.095
LTE Band 26 (Part 90)	16QAM	3	2M69W7D	—	0.101
LTE Band 26 (Part 90)	QPSK	5	4M51G7D	—	0.094
LTE Band 26 (Part 90)	16QAM	5	4M53W7D	—	0.101
LTE Band 26 (Part 90)	QPSK	10	8M95G7D	-0.0220	0.091
LTE Band 26 (Part 90)	16QAM	10	8M96W7D	—	0.091
LTE Band 26 (Part 22)	QPSK	1.4	1M11G7D	—	0.097
LTE Band 26 (Part 22)	16QAM	1.4	1M10W7D	—	0.101
LTE Band 26 (Part 22)	QPSK	3	2M71G7D	—	0.095
LTE Band 26 (Part 22)	16QAM	3	2M70W7D	—	0.101
LTE Band 26 (Part 22)	QPSK	5	4M53G7D	—	0.094
LTE Band 26 (Part 22)	16QAM	5	4M53W7D	—	0.101
LTE Band 26 (Part 22)	QPSK	10	8M99G7D	-0.0179	0.096
LTE Band 26 (Part 22)	16QAM	10	9M00W7D	—	0.099
LTE Band 26 (Part 22)	QPSK	15	13M5G7D	—	0.098
LTE Band 26 (Part 22)	16QAM	15	13M5W7D	—	0.102

1.3. Test Standards and Results

The purpose of the report is to conduct testing according to the following FCC certification standards:

No.	Identity	Document Title
1	47 CFR Part 2	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
2	47 CFR Part 22	Public Mobile Services
3	47 CFR Part 24	Personal Communications Services
4	47 CFR Part 27	Miscellaneous Wireless Communications Services
5	47 CFR Part 90	Private Land Mobile Radio Services
6	KDB 971168 D01 Power Meas License Digital Systems v03r01	Measurement Guidance For Certification of Licensed Digital Transmitters
7	KDB 412172 D01 Determining ERP and EIRP v01r01	Guidelines for Determining the Effective Radiated Power (ERP) and Equivalent Isotropic Radiated Power (EIRP) of an RF Transmitting Systems
8	ANSI/TIA-603-E-2016	Land Mobile FM or PM Communications Equipment Measurement and Performance Standards
9	ANSI C63.26-2015	American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services

Test detailed items/section required by FCC rules and results are as below:

No.	FCC Rule	Description	Result
1	2.1046	Conducted Output Power	PASS ^{Note 3}
2	22.913(d) 24.232 (d) 27.50 (d)(5)	Peak to Average Radio	PASS ^{Note 3}
3	24.232 (c) 22.913 (a)(5) 27.50 (b)(10) 27.50 (c)(10) 27.50 (d)(4) 27.50 (h)(2) 90.635 (b)	Equivalent Isotropic Radiated Power and Effective Radiated Power	PASS
4	2.1049	Occupied Bandwidth	PASS ^{Note 3}
5	2.1051 22.917 (a) 24.238 (a) 27.53 (c) 27.53 (g) 27.53 (h) 27.53 (m)(4) 90.691 (a)	Conducted Spurious Emission and Conducted Band	PASS ^{Note 3}



6	2.1053 22.917 (a) 24.238 (a) 27.53 (c) 27.53 (g) 27.53 (h) 27.53 (m)(4) 90.691 (a)	Radiated Spurious Emission	PASS
7	2.1055 22.335 24.235 27.54 90.213(a)	Frequency Stability	PASS ^{Note 3}

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, recorded in a separate test report.
3. Please refer to FCC ID: QIPPLS83-W, IC: 7830A-PLS83-W, Report number is 200722013RFM-2.

1.4. Test Configuration of Equipment Under Test

Antenna port conducted and radiated test items listed below are performed according to KDB 971168 D01 Power Meas License Digital Systems v03r01 with maximum output power.

Radiated measurements are performed by rotating the EUT in three(X: flat, Y: portrait, Z: landscape) different orthogonal test planes to find the maximum emission.

Test Items	Band	Bandwidth(MHz)						Modulation		RB Configuration			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	1	Half	Full	L	M	H
ERP/EIRP	2/4/66	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	5/12	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓
	13			✓	✓			✓	✓	✓	✓	✓	✓	✓	✓
	7/38/41			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	26 (Part 22)	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
	26 (Part 90)	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓
Radiated Spurious Emission	2	Worst case												✓	
	4	Worst case												✓	
	5	Worst case												✓	
	7	Worst case												✓	
	12	Worst case												✓	
	13	Worst case													
	26	Worst case												✓	
	38	Worst case												✓	
	41	Worst case												✓	
	66	Worst case													

Note 1: The mark “✓” means that this configuration is chosen for testing.

1.5. Laboratory Facilities

FCC-Registration No.: 406086

CCIC Southern Testing 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. Designation Number: CN1283, valid time is until Jun. 30th, 2025.

ISED Registration: 11185A

CCIC Southern Testing Co., Ltd. EMC Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 11185A on Aug. 04, 2016, valid time is until Jun. 30th, 2025.

CAB number: CN0064

A2LA Code: 5721.01

CCIC-SET is a third party testing organization accredited by A2LA according to ISO/IEC 17025. The accreditation certificate number is 5721.01.

1.6. Test Environment Conditions

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

Temperature (°C):	15°C - 35°C
Relative Humidity (%):	30% -60%
Atmospheric Pressure (kPa):	86kPa-106kPa

2. 47 CFR Part 2 and RSS-Gen Requirements

2.1. Conducted Output Power and ERP/EIRP

2.1.1. Requirement

According to FCC section 2.1046(a), for transmitters other than single sideband, independent sideband and controlled carrier radiotelephone, power output shall be measured at the RF output terminals when the transmitter is adjusted in accordance with the tune-up procedure to give the values of current and voltage on the circuit elements specified in FCC section 2.1033(c)(8).

The EIRP of mobile transmitters must not exceed 2 Watts for LTE Band 2/7/25/41.

The EIRP of mobile transmitters must not exceed 1 Watts for LTE Band 4/66.

The ERP of mobile transmitters must not exceed 7 Watts for LTE Band 5/26(Part 22).

The ERP of mobile transmitters must not exceed 100 Watts for LTE Band 26(Part 90).

The ERP of mobile transmitters must not exceed 3 Watts for LTE Band 12/13.

According to KDB 412172 D01 Determining ERP and EIRP v01r01.

$EIRP = P_T + G_T - L_C$, $ERP = EIRP - 2.15$, where

P_T = transmitter output power in dBm;

G_T = gain of the transmitting antenna in dBi;

L_C = signal attenuation in the connecting cable between the transmitter and antenna in dB.

2.1.2. Measuring Instruments

The measuring equipment is listed in the section 3 of this test report.

2.1.3. Test Setup



2.1.4. Test Procedures

1. The transmitter output port was connected to the system simulator.
2. Set EUT at maximum power through system simulator.
3. Select lowest, middle, and highest channels for each band and different modulation.
4. Measure and record the power level from the system simulator.

2.1.5. Test Results of Conducted Output Power and ERP/EIRP

Bands	BW (MHz)	Modulation	Frequency Range (MHz)	Max RF Output Power(dBm)		ERP/EIRP Limit (dBm)
				Conducted (Average)	ERP/EIRP (Average)	
2	1.4	QPSK	1850.7-1909.3	23.56	26.18	33.00
		16QAM		23.58	26.20	33.00
	3	QPSK	1851.5-1908.5	23.49	26.11	33.00
		16QAM		23.49	26.11	33.00
	5	QPSK	1852.5-1907.5	23.55	26.17	33.00
		16QAM		23.58	26.20	33.00
	10	QPSK	1855.0-1905.0	23.66	26.28	33.00
		16QAM		23.49	26.11	33.00
	15	QPSK	1857.5-1902.5	23.62	26.24	33.00
		16QAM		23.57	26.19	33.00
	20	QPSK	1860.0-1900.0	23.67	26.29	33.00
		16QAM		23.64	26.26	33.00
4	1.4	QPSK	1710.7-1754.3	23.16	24.28	30.00
		16QAM		22.33	23.45	30.00
	3	QPSK	1711.5-1753.5	22.98	24.10	30.00
		16QAM		22.36	23.48	30.00
	5	QPSK	1712.5-1752.5	22.90	24.02	30.00
		16QAM		22.38	23.50	30.00
	10	QPSK	1715-1750	22.87	23.99	30.00
		16QAM		22.31	23.43	30.00
	15	QPSK	1717.5-1747.5	22.84	23.96	30.00
		16QAM		22.33	23.45	30.00
	20	QPSK	1720-1745	23.01	24.13	30.00
		16QAM		22.38	23.50	30.00
5	1.4	QPSK	824.7-848.3	23.40	20.03	38.45
		16QAM		22.79	19.42	38.45
	3	QPSK	825.5-847.5	23.53	20.16	38.45
		16QAM		22.90	19.53	38.45
	5	QPSK	826.5-846.5	23.57	20.20	38.45
		16QAM		22.72	19.35	38.45
	10	QPSK	829-844	23.58	20.21	38.45
		16QAM		22.90	19.53	38.45
7	5	QPSK	2502.5-2567.5	22.84	24.76	33.00
		16QAM		23.15	25.07	33.00
	10	QPSK	2505-2565	22.90	24.82	33.00



	15	16QAM	2507.5-2562.5	23.11	25.03	33.00
		QPSK		22.91	24.83	33.00
		16QAM		23.06	24.98	33.00
	20	QPSK	2510-2560	23.00	24.92	33.00
		16QAM		22.68	24.60	33.00
12	1.4	QPSK	699.7-715.3	23.93	18.68	33.77
		16QAM		23.58	18.33	33.77
	3	QPSK	700.5-714.5	23.68	18.43	33.77
		16QAM		23.48	18.23	33.77
	5	QPSK	701.5-713.5	23.71	18.46	33.77
		16QAM		23.48	18.23	33.77
	10	QPSK	704-711	23.83	18.58	33.77
		16QAM		23.54	18.29	33.77
13	5	QPSK	779.5-784.5	23.34	18.09	33.77
		16QAM		23.11	17.86	33.77
	10	QPSK	782-782	23.39	18.14	33.77
		16QAM		23.11	17.86	33.77
26 (Part 22)	1.4	QPSK	824.7-848.3	23.24	19.87	38.45
		16QAM		23.41	20.04	38.45
	3	QPSK	825.5-847.5	23.16	19.79	38.45
		16QAM		23.43	20.06	38.45
	5	QPSK	826.5-846.5	23.12	19.75	38.45
		16QAM		23.43	20.06	38.45
	10	QPSK	829-844	23.20	19.83	38.45
		16QAM		23.33	19.96	38.45
	15	QPSK	831.5-841.5	23.29	19.92	38.45
		16QAM		23.44	20.07	38.45
26 (Part 90)	1.4	QPSK	814.7-823.3	23.21	19.84	50.00
		16QAM		23.38	20.01	50.00
	3	QPSK	815.5-822.5	23.13	19.76	50.00
		16QAM		23.40	20.03	50.00
	5	QPSK	816.5-821.5	23.09	19.72	50.00
		16QAM		23.40	20.03	50.00
	10	QPSK	819	22.94	19.57	50.00
		16QAM		22.96	19.59	50.00
38	5	QPSK	2572.5-2617.5	22.84	24.45	33.00
		16QAM		23.15	24.76	33.00
	10	QPSK	2575-2615	22.90	24.51	33.00
		16QAM		23.11	24.72	33.00
	15	QPSK	2577.5-2612.5	22.91	24.52	33.00
		16QAM		23.06	24.67	33.00



	20	QPSK	2580-2610	22.95	24.56	33.00
		16QAM		23.19	24.80	33.00
41	5	QPSK	2537.5-2652.5	23.49	25.97	33.00
		16QAM		23.13	25.61	33.00
	10	QPSK	2540-2650	23.38	25.86	33.00
		16QAM		23.18	25.66	33.00
	15	QPSK	2542.5-2647.5	23.50	25.98	33.00
		16QAM		23.10	25.58	33.00
	20	QPSK	2545-2645	23.56	26.04	33.00
		16QAM		23.22	25.70	33.00
66	1.4	QPSK	1710.7-1779.3	23.56	24.68	30.00
		16QAM		23.58	24.70	30.00
	3	QPSK	1711.5-1778.5	23.49	24.61	30.00
		16QAM		23.49	24.61	30.00
	5	QPSK	1712.5-1777.5	23.55	24.67	30.00
		16QAM		23.58	24.70	30.00
	10	QPSK	1715-1775	23.66	24.78	30.00
		16QAM		23.49	24.61	30.00
	15	QPSK	1717.5-1772.5	23.62	24.74	30.00
		16QAM		23.57	24.69	30.00
	20	QPSK	1720-1770	23.05	24.17	30.00
		16QAM		22.79	23.91	30.00

2.2. Radiated Spurious Emission

2.2.1. Requirement

The radiated spurious emission was measured by substitution method according to ANSI/TIA-603-E-2016.

For Band 2 & 4 & 5 & 12 & 13 & 26 & 66:

The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least $43 + 10 \log (P)$ dB.

For Band 7 & 38 & 41:

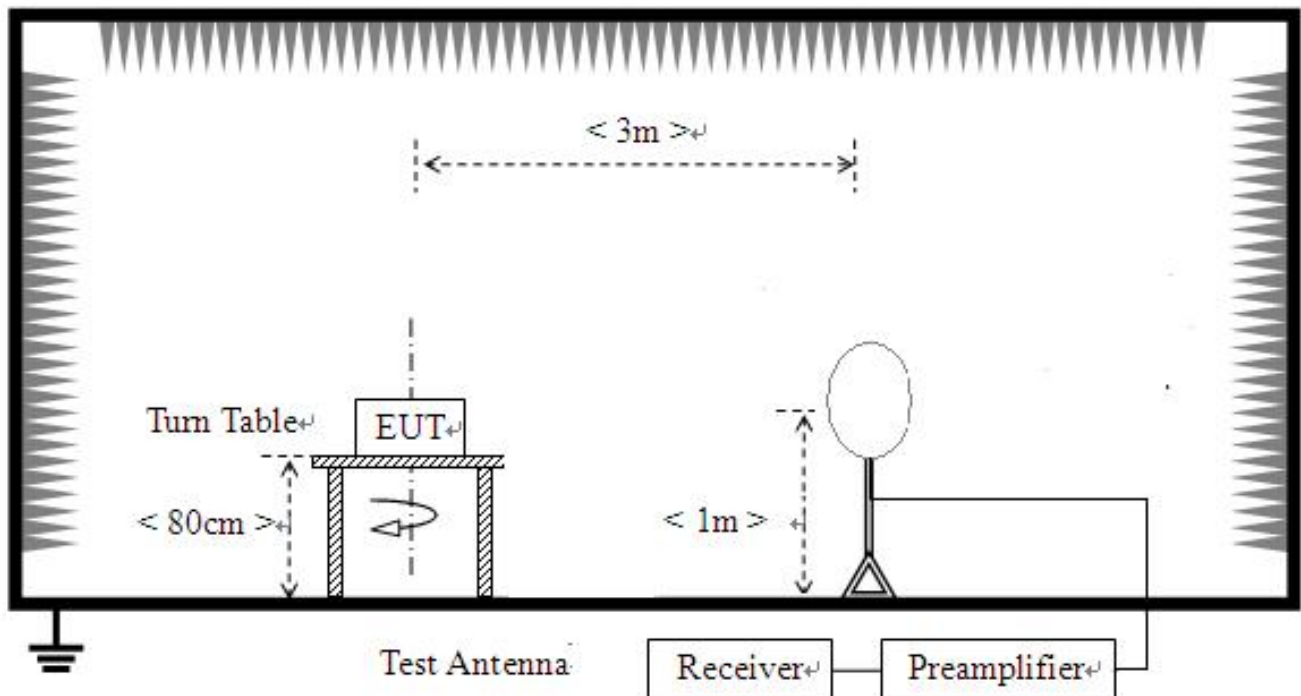
The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least $55 + 10 \log (P)$ dB.

2.2.2. Measuring Instruments

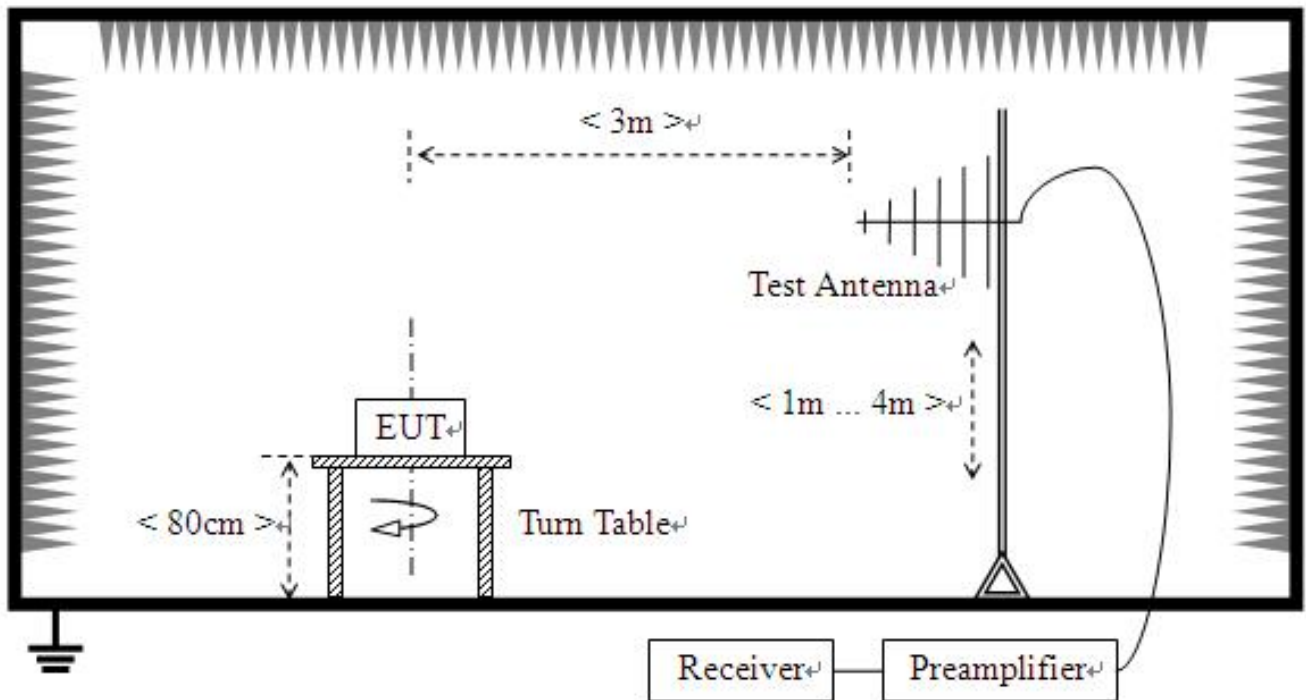
The measuring equipment is listed in the section 3 of this test report.

2.2.3. Test Setup

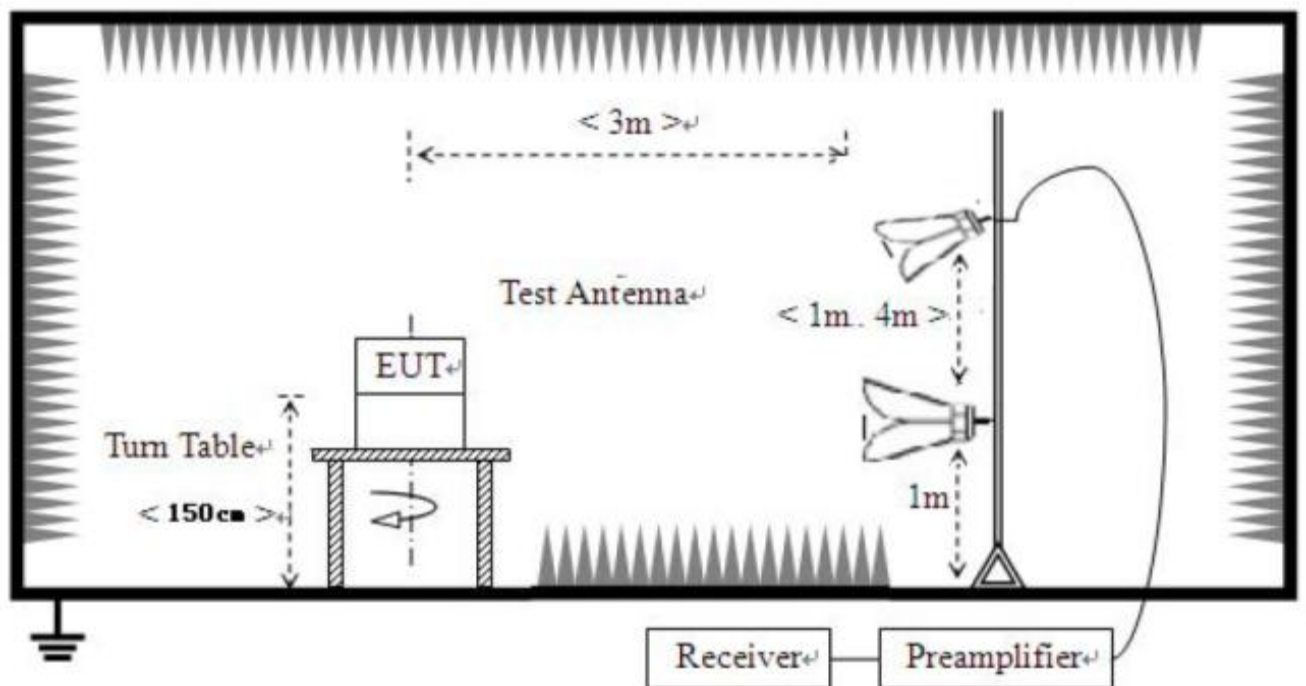
For radiated emissions from 9kHz to 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



2.2.4. Test Procedures

1. The EUT was placed on a rotatable wooden table with 0.8 meter (for below 1GHz) / 1.5 meters (for above 1GHz) above ground.
2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
4. The height of the receiving antenna is varied between one meter and four meters to search the maximum spurious emission for both horizontal and vertical polarizations.
5. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
6. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
7. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
8. Taking the record of output power at antenna port.
9. Repeat step 7 to step 8 for another polarization.
10. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
11. All Spurious Emission tests were performed in X, Y, Z axis direction and low, middle, high channel. And only the worst axis test condition was recorded in this test report.
12. The spectrum is measured from 9 kHz to the 10th harmonic of the fundamental frequency of the transmitter using CISPR quasi peak detector below 1GHz. The worst case emissions are reported however emissions whose levels were not within 20dB of the respective limits were not reported.
13. The maximum RB configurations of the Radiated Spurious Emissions as RB Size full, RB Offset 0.

2.2.5. Test Result of Radiated Spurious Emission

Note: 1. The emission levels of above 18GHz are lower than the limit 20dB and not show in test report.

Note: 2. Absolute Level = Reading Level + Factor.

LTE Band 2 QPSK 20MHz BW Middle Channel							
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	60.09	-95.49	-76.16	-13.00	63.16	19.33	Horizontal
2	294.46	-106.20	-80.81	-13.00	67.81	25.39	Horizontal
3	1014.60	-58.07	-59.37	-13.00	46.37	-1.30	Horizontal
4	3142.11	-58.08	-50.87	-13.00	37.87	7.21	Horizontal
5	7623.03	-60.51	-40.96	-13.00	27.96	19.55	Horizontal
6	12580.7	-62.61	-39.62	-13.00	26.62	22.99	Horizontal
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	73.67	-95.47	-73.93	-13.00	60.93	21.54	Vertical
2	186.25	-103.03	-83.04	-13.00	70.04	19.99	Vertical
3	514.27	-105.91	-75.04	-13.00	62.04	30.87	Vertical
4	1286.11	-56.96	-59.30	-13.00	46.30	-2.34	Vertical
5	4296.29	-59.34	-49.25	-13.00	36.25	10.09	Vertical
6	11110.0	-61.71	-38.89	-13.00	25.89	22.82	Vertical

LTE Band 4 QPSK 20MHz BW Middle Channel							
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	53.78	-99.06	-79.79	-13.00	66.79	19.27	Horizontal
2	187.70	-104.75	-81.92	-13.00	68.92	22.83	Horizontal
3	653.05	-105.39	-70.56	-13.00	57.56	34.83	Horizontal
4	1435.42	-57.53	-59.72	-13.00	46.72	-2.19	Horizontal
5	4246.24	-58.81	-49.00	-13.00	36.00	9.81	Horizontal
6	10166.3	-61.75	-40.05	-13.00	27.05	21.70	Horizontal
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	52.81	-94.69	-75.52	-13.00	62.52	19.17	Vertical
2	126.56	-101.26	-79.22	-13.00	66.22	22.04	Vertical
3	566.19	-104.95	-72.94	-13.00	59.94	32.01	Vertical
4	1355.72	-57.38	-59.71	-13.00	46.71	-2.33	Vertical
5	4901.82	-59.45	-44.71	-13.00	31.71	14.74	Vertical
6	12061.6	-61.65	-39.21	-13.00	26.21	22.44	Vertical

LTE Band 5 QPSK 10MHz BW Middle Channel							
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	52.81	-89.10	-69.84	-13.00	56.84	19.26	Horizontal
2	122.20	-98.06	-78.02	-13.00	65.02	20.04	Horizontal
3	494.38	-107.09	-74.86	-13.00	61.86	32.23	Horizontal
4	1557.13	-57.67	-59.21	-13.00	46.21	-1.54	Horizontal
5	4802.07	-59.26	-44.53	-13.00	31.53	14.73	Horizontal
6	14451.5	-64.06	-39.34	-13.00	26.34	24.72	Horizontal
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	61.06	-89.81	-69.63	-13.00	56.63	20.18	Vertical
2	167.81	-101.31	-81.37	-13.00	68.37	19.94	Vertical
3	521.07	-104.94	-74.00	-13.00	61.00	30.94	Vertical
4	2548.58	-59.12	-55.29	-13.00	42.29	3.83	Vertical
5	5410.57	-59.21	-45.39	-13.00	32.39	13.82	Vertical
6	12552.1	-62.27	-39.32	-13.00	26.32	22.95	Vertical

LTE Band 7 QPSK 20MHz BW Middle Channel							
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	52.81	-89.30	-70.04	-25.00	-45.04	19.26	Horizontal
2	137.24	-98.67	-78.13	-25.00	-53.13	20.54	Horizontal
3	665.67	-104.48	-69.73	-25.00	-44.73	34.75	Horizontal
4	1252.51	-56.99	-59.30	-25.00	-34.30	-2.31	Horizontal
5	4390.97	-58.89	-47.71	-25.00	-22.71	11.18	Horizontal
6	11894.3	-61.61	-37.81	-25.00	-12.81	23.80	Horizontal
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	70.28	-88.03	-66.79	-25.00	-41.79	21.24	Vertical
2	123.17	-99.08	-76.73	-25.00	-51.73	22.35	Vertical
3	445.85	-102.91	-73.65	-25.00	-48.65	29.26	Vertical
4	1022.7	-58.54	-59.93	-25.00	-34.93	-1.39	Vertical
5	4786.84	-58.83	-44.28	-25.00	-19.28	14.55	Vertical
6	14054.1	-63.33	-39.61	-25.00	-14.61	23.72	Vertical

LTE Band 12 QPSK 10MHz BW Middle Channel							
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	68.33	-87.80	-68.45	-13.00	55.45	19.35	Horizontal
2	184.79	-103.93	-81.20	-13.00	68.20	22.73	Horizontal
3	495.35	-105.01	-72.72	-13.00	59.72	32.29	Horizontal
4	1823.24	-58.12	-57.88	-13.00	44.88	0.24	Horizontal
5	4898.14	-59.37	-44.62	-13.00	31.62	14.75	Horizontal
6	10140.5	-60.21	-38.32	-13.00	25.32	21.89	Horizontal
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	47.95	-89.26	-70.16	-13.00	57.16	19.10	Vertical
2	122.20	-96.25	-73.82	-13.00	60.82	22.43	Vertical
3	523.01	-104.84	-73.85	-13.00	60.85	30.99	Vertical
4	1600.83	-57.94	-59.15	-13.00	46.15	-1.21	Vertical
5	4954.15	-58.42	-43.98	-13.00	30.98	14.44	Vertical
6	14242.7	-63.89	-39.48	-13.00	26.48	24.41	Vertical

LTE Band 13 QPSK 10MHz BW Middle Channel							
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	52.81	-91.11	-71.85	-13.00	58.85	19.26	Horizontal
2	126.56	-99.12	-78.92	-13.00	65.92	20.20	Horizontal
3	497.29	-107.10	-74.66	-13.00	61.66	32.44	Horizontal
4	1291.11	-56.89	-59.23	-13.00	46.23	-2.34	Horizontal
5	4763.04	-58.25	-44.03	-13.00	31.03	14.22	Horizontal
6	13129.5	-62.34	-39.10	-13.00	26.10	23.24	Horizontal
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	75.13	-85.69	-64.03	-13.00	51.03	21.66	Vertical
2	219.73	-104.50	-82.75	-13.00	69.75	21.75	Vertical
3	482.73	-106.15	-76.05	-13.00	63.05	30.10	Vertical
4	1819.84	-58.28	-58.06	-13.00	45.06	0.22	Vertical
5	4802.94	-58.43	-43.69	-13.00	30.69	14.74	Vertical
6	12456.1	-62.81	-39.98	-13.00	26.98	22.83	Vertical

LTE Band 26(Part 22) QPSK 15MHz BW Middle Channel							
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	54.26	-90.02	-70.74	-13.00	57.74	19.28	Horizontal
2	104.24	-97.38	-78.02	-13.00	65.02	19.36	Horizontal
3	344.44	-105.98	-77.27	-13.00	64.27	28.71	Horizontal
4	1633.03	-57.18	-58.20	-13.00	45.20	-1.02	Horizontal
5	4092.40	-58.43	-49.11	-13.00	36.11	9.32	Horizontal
6	10530.3	-61.78	-39.37	-13.00	26.37	22.41	Horizontal
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	57.66	-95.91	-76.14	-13.00	63.14	19.77	Vertical
2	222.16	-105.57	-83.59	-13.00	70.59	21.98	Vertical
3	520.58	-105.50	-74.57	-13.00	61.57	30.93	Vertical
4	1703.44	-57.04	-57.65	-13.00	44.65	-0.61	Vertical
5	4892.89	-59.03	-44.29	-13.00	31.29	14.74	Vertical
6	10617.7	-61.12	-38.48	-13.00	25.48	22.64	Vertical

LTE Band 26(Part 90) QPSK 10MHz BW Middle Channel							
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	47.95	-96.49	-76.78	-13.00	63.78	19.71	Horizontal
2	167.81	-103.20	-81.30	-13.00	68.30	21.90	Horizontal
3	594.34	-101.93	-71.15	-13.00	58.15	30.78	Horizontal
4	2375.37	-58.49	-55.35	-13.00	42.35	3.14	Horizontal
5	6068.08	-57.94	-43.89	-13.00	30.89	14.05	Horizontal
6	11095.0	-61.97	-39.08	-13.00	26.08	22.89	Horizontal
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	39.70	-100.71	-80.52	-13.00	67.52	20.19	Vertical
2	125.11	-100.23	-78.06	-13.00	65.06	22.17	Vertical
3	510.88	-104.00	-73.16	-13.00	60.16	30.84	Vertical
4	1570.73	-57.88	-59.31	-13.00	46.31	-1.43	Vertical
5	5039.38	-58.91	-44.56	-13.00	31.56	14.35	Vertical
6	10927.1	-61.56	-38.58	-13.00	25.58	22.98	Vertical

LTE Band 38 QPSK 20MHz BW Middle Channel							
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	68.82	-96.29	-76.93	-25.00	-51.93	19.36	Horizontal
2	125.11	-98.99	-78.85	-25.00	-53.85	20.14	Horizontal
3	508.93	-104.86	-72.26	-25.00	-47.26	32.60	Horizontal
4	1925.95	-58.28	-57.37	-25.00	-32.37	0.91	Horizontal
5	4877.84	-58.33	-43.59	-25.00	-18.59	14.74	Horizontal
6	10824.7	-61.98	-39.19	-25.00	-14.19	22.79	Horizontal
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	54.26	-98.25	-78.89	-25.00	-53.89	19.36	Vertical
2	125.11	-99.56	-77.39	-25.00	-52.39	22.17	Vertical
3	749.13	-105.62	-69.74	-25.00	-44.74	35.88	Vertical
4	1391.02	-57.52	-59.84	-25.00	-34.84	-2.32	Vertical
5	5124.61	-59.24	-44.69	-25.00	-19.69	14.55	Vertical
6	11804.6	-62.29	-38.76	-25.00	-13.76	23.53	Vertical

LTE Band 41 QPSK 20MHz BW Middle Channel							
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	38.25	-102.09	-80.09	-25.00	-55.09	22.00	Horizontal
2	103.27	-101.99	-82.66	-25.00	-57.66	19.33	Horizontal
3	463.32	-105.14	-75.32	-25.00	-50.32	29.82	Horizontal
4	1224.51	-57.65	-59.93	-25.00	-34.93	-2.28	Horizontal
5	4857.54	-58.69	-43.95	-25.00	-18.95	14.74	Horizontal
6	14223.7	-62.94	-38.67	-25.00	-13.67	24.27	Horizontal
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	54.75	-97.33	-77.91	-25.00	-52.91	19.42	Vertical
2	164.9	-103.35	-83.44	-25.00	-58.44	19.91	Vertical
3	530.77	-105.71	-74.53	-25.00	-49.53	31.18	Vertical
4	1573.43	-57.34	-58.76	-25.00	-33.76	-1.42	Vertical
5	5182.36	-58.19	-43.80	-25.00	-18.80	14.39	Vertical
6	13541.8	-63.27	-39.18	-25.00	-14.18	24.09	Vertical

LTE Band 66 QPSK 20MHz BW Middle Channel							
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	53.29	-98.17	-78.91	-13.00	65.91	19.26	Horizontal
2	103.76	-101.08	-81.74	-13.00	68.74	19.34	Horizontal
3	443.43	-105.70	-77.12	-13.00	64.12	28.58	Horizontal
4	1171.41	-57.66	-59.86	-13.00	46.86	-2.20	Horizontal
5	4888.52	-59.53	-44.78	-13.00	31.78	14.75	Horizontal
6	11300.3	-62.34	-39.64	-13.00	26.64	22.70	Horizontal
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	69.79	-92.83	-71.64	-13.00	58.64	21.19	Vertical
2	167.81	-103.42	-83.48	-13.00	70.48	19.94	Vertical
3	588.03	-104.43	-71.76	-13.00	58.76	32.67	Vertical
4	1118.91	-58.02	-60.14	-13.00	47.14	-2.12	Vertical
5	4875.92	-58.75	-44.00	-13.00	31.00	14.75	Vertical
6	14274.9	-63.41	-38.78	-13.00	25.78	24.63	Vertical

3. List of measuring equipment

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	EMI Test Receiver	ROHDE&SCHWARZ	ESW26	A180502935	2023.06.08	2024.06.07
2	5M Anechoic Chamber	Albatross	SAC-5MAC 12.8x6.8x6.4m	A0304210	2022.06.09	2026.06.08
3	Loop Antenna	Schwarz beck	HFH2-Z2	A0304220	2022.05.02	2025.05.01
4	Broadband antenna (30MHz~1GHz)	R&S	HL562	A0304224	2023.06.08	2024.06.07
5	EMI Horn Ant. (1-18G)	ETC	MCTD-1209	A150402241	2023.05.16	2026.05.15
6	Horn antenna (18GHz~26.5GHz)	AR	AT4510	A0804450	2023.06.01	2024.05.31
7	Amplifier 30M~1GHz	MILMEGA	80RF1000-1000	A140101634	2023.10.20	2024.10.19
8	Amplifier 1G~18GHz	MILMEGA	AS0104R-800/400	A160302517	2023.10.20	2024.10.19
9	Spectrum Analyzer	KEYSIGHT	N9030A	A160702554	2024.01.18	2025.01.17
10	Test Receiver	R&S	ESIB7	A0501375	2024.02.28	2025.02.27
11	Broadband Ant.	ETC	MCTD 2786	A150402240	2023.05.22	2026.05.21
12	3M Anechoic Chamber	Albatross	SAC-3MAC 9*6*6m	A0412375	2024.02.27	2027.02.26
13	Constant Temperature Humidity Chamber	ESPEC	SU-642	A150802409	2024.02.22	2025.02.21
14	Wideband Radio Communication tester	R&S	CMW500	A130101034	2023.07.13	2024.07.12
15	Wideband Radio Communication tester	R&S	CMW500	A150802214	2023.06.01	2024.05.31
16	Test Receiver	KEYSIGHT	N9038A	A141202036	2023.06.12	2024.06.11
17	LISN	ROHDE&SCHWARZ	ENV216	A140701847	2023.06.08	2024.06.07
18	Power Supply	R&S	WYJ-60100	A141102031	2023.07.12	2026.07.11

4. Uncertainty of Evaluation

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.10-2013. All the measurement uncertainty value were shown with a coverage $K=2$ to indicate 95% level of confidence. The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.

Uncertainty of Conducted Emission Measurement (150kHz~30MHz)

Measuring Uncertainty for a level of confidence of 95%($U=2U_c(y)$)	2.8dB
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Uncertainty of Radiated Emission Measurement (9kHz~30MHz)

Measuring Uncertainty for a level of confidence of 95%($U=2U_c(y)$)	3.5dB
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Uncertainty of Radiated Emission Measurement (30MHz~1GHz)

Measuring Uncertainty for a level of confidence of 95%($U=2U_c(y)$)	3.91dB
--	--------

Uncertainty of Radiated Emission Measurement (1GHz~18GHz)

Measuring Uncertainty for a level of confidence of 95%($U=2U_c(y)$)	4.5dB
--	-------

Uncertainty of Radiated Emission Measurement (18GHz~40GHz)

Measuring Uncertainty for a level of confidence of 95%($U=2U_c(y)$)	4.9dB
--	-------

Uncertainty of RF Conducted Measurement (9kHz~40GHz)

Measuring Uncertainty for a level of confidence of 95%($U=2U_c(y)$)	1.2dB
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**** END OF REPORT ****