

TEST REPORT

Product : AI Dash Camera
Trade mark : 
Model/Type reference : VT-DCAI-02
Serial Number : N/A
Report Number : EED32P81173402
FCC ID : 2BB6C-VT-DCAI-02
Date of Issue : Aug. 28, 2023
47 CFR Part 2
47 CFR Part 22 subpart H
Test Standards : 47 CFR Part 24 subpart E
47 CFR Part 27
Test result : PASS

Prepared for:

Velocitor Solutions**851 Blairhill Rd Charlotte, NC 28217 United States**

Prepared by:

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Date:

Aug. 28, 2023



Check No.: 7306280723

2 Version

Version No.	Date	Description
00	Aug. 28, 2023	Original

3 Test Summary

LTE band 2			
Test Item	Test Requirement	Test method	Result
Field strength of spurious radiation	Part 2.1053 /Part 2.1057 / Part 24.238(a)(b)	TIA-603-E-2016&KDB 971168 D01v03r01	PASS
Conducted output power	Part 2.1046(a) /Part 24.232(c)	TIA-603-E-2016&KDB 971168 D01v03r01	Note1
Effective Radiated Power of Transmitter(EIRP)	Part 2.1046(a) / Part 24.232(c)	TIA-603-E-2016&KDB 971168 D01v03r01	PASS
peak-to-average ratio	Part 24.232(d)	KDB 971168 D01v03r01	Note1
99% &26dBOccupied Bandwidth	Part 2.1049(h)	Part 24.238(b) &KDB 971168 D01v03r01	Note1
Band Edge at antenna terminals	Part 2.1051/ Part 24.238(a)	Part 24.238(b) &KDB 971168 D01v03r01	Note1
Spurious emissions at antenna terminals	Part 2.1051/ Part 2.1057/ Part 24.238(a)(b)	TIA-603-E-2016&KDB 971168 D01v03r01	Note1
Frequency stability	Part 2.1055/Part 24.235	TIA-603-E-2016&KDB 971168 D01v03r01	Note1

Note1:Refer to the report of Report No.:R2007A0434-R2,(LTE module' s FCC ID:XMR202008EC25AFXD) and Report No.:R1907A0408-R2,(LTE module' s FCC ID:XMR201909EC25AFX)

This test report (Ref. No.:EED32O80680302) is only valid with the original test report (Ref. No.: Report No.:R2007A0434-R2 and Report No.:R1907A0408-R2).

Review this report and original report,the module without changes in circuit and product function, therefore in this report the Radiated Spurious Emission were retested and shown the data in this report, other tests data please refer to original Report No.:R2007A0434-R2 and Report No.:R1907A0408-R2.

LTE band 4			
Test Item	Test Requirement	Test method	Result
Field strength of spurious radiation	Part 2.1053/ Part 27.53(h)	TIA-603-E-2016&KDB 971168 D01v03r01	PASS
Conducted output power	Part 2.1046(a) /Part 27.50(d)	TIA-603-E-2016&KDB 971168 D01v03r01	Note2
Effective Radiated Power of Transmitter(EIRP)	Part 2.1046(a) / Part 27.50(d)	TIA-603-E-2016&KDB 971168 D01v03r01	PASS
peak-to-average ratio	Part 27.50(d)	KDB 971168 D01v03r01	Note2
99% &26dBOccupied Bandwidth	Part 2.1049(h)	Part 27.53(h) &KDB 971168 D01v03r01	Note2
Band Edge at antenna terminals	Part 2.1051/ Part 27.53(h)	Part 27.53(h) &KDB 971168 D01v03r01	Note2
Spurious emissions at antenna terminals	Part 2.1051/ Part 27.53(h)	TIA-603-E-2016&KDB 971168 D01v03r01	Note2
Frequency stability	Part 2.1055/Part 27.54	TIA-603-E-2016&KDB 971168 D01v03r01	Note2

Note2:Refer to the report of Report No.:R2007A0434-R3,(LTE module' s FCC ID:XMR202008EC25AFXD) and Report No.:R1907A0408-R3,(LTE module' s FCC ID:XMR201909EC25AFX).

This test report (Ref. No.:EED32O80680302) is only valid with the original test report (Ref. No.: Report No.:R2007A0434-R3 and Report No.:R1907A0408-R3).

Review this report and original report,the module without changes in circuit and product function, therefore in this report the Radiated Spurious Emission were retested and shown the data in this report, other tests data please refer to original Report No.:R2007A0434-R3 and Report No.:R1907A0408-R3.

LTE Band 5			
Test Item	Test Requirement	Test method	Result
Field strength of spurious radiation	Part 2.1053/ Part 2.1057/ Part 22.917(a)(b)	TIA-603-E-2016&KDB 971168 D01v03r01	PASS
Conducted output power	Part 2.1046(a)/Part 22.913(a)	TIA-603-E-2016&KDB 971168 D01v03r01	Note3
Effective Radiated Power of Transmitter(ERP)	Part 2.1046(a)/Part 22.913(a)	TIA-603-E-2016&KDB 971168 D01v03r01	PASS
99%&26dB Occupied Bandwidth	Part 2.1049(h)	Part 22.917(b) &KDB 971168 D01v03r01	Note3
Band Edge at antenna terminals	Part 2.1051/Part 22.917(a)	Part 22.917(b) &KDB 971168 D01v03r01	Note3
Spurious emissions at antenna terminals	Part 2.1051/ Part 2.1057/ Part 22.917(a)(b)	TIA-603-E-2016&KDB 971168 D01v03r01	Note3
Frequency stability	Part 2.1055/ Part 22.355	TIA-603-E-2016&KDB 971168 D01v03r01	Note3

Note3:Refer to the report of Report No.:R2007A0434-R1,(LTE module' s FCC ID:XMR202008EC25AFXD) and Report No.:R1907A0408-R1,(LTE module' s FCC ID:XMR201909EC25AFX).

This test report (Ref. No.:EED32O80680302) is only valid with the original test report (Ref. No.: Report No.:R2007A0434-R1 and Report No.:R1907A0408-R1).

Review this report and original report,the module without changes in circuit and product function, therefore in this report the Radiated Spurious Emission were retested and shown the data in this report, other tests data please refer to original Report No.:R2007A0434-R1 and Report No.:R1907A0408-R1.

LTE Band 12			
Test Item	Test Requirement	Test method	Result
Field strength of spurious radiation	Part 2.1053/ Part 27.53(g)	TIA-603-E-2016 & KDB 971168 D01v03r01	PASS
Conducted output power	Part 2.1046(a) /Part 27.50(c)	TIA-603-E-2016 & KDB 971168 D01v03r01	Note4
Effective Radiated Power of Transmitter(EIRP)	Part 2.1046(a) / Part 27.50(c)	TIA-603-E-2016 & KDB 971168 D01v03r01	PASS
99% & 26dB Occupied Bandwidth	Part 2.1049(h)	KDB 971168 D01v03r01	Note4
Band Edge at antenna terminals	Part 2.1051/ Part 27.53(g)	KDB 971168 D01v03r01	Note4
Spurious emissions at antenna terminals	Part 2.1051/ Part 27.53(g)	TIA-603-E-2016 & KDB 971168 D01v03r01	Note4
Frequency stability	Part 2.1055/Part 27.54	TIA-603-E-2016 & KDB 971168 D01v03r01	Note4

Note4:Refer to the report of Report No.:R2007A0434-R3,(LTE module' s FCC ID:XMR202008EC25AFXD) and Report No.:R1907A0408-R3,(LTE module' s FCC ID:XMR201909EC25AFX).

This test report (Ref. No.:EED32O80680302) is only valid with the original test report (Ref. No.: Report No.:R2007A0434-R3 and Report No.:R1907A0408-R3).

Review this report and original report,the module without changes in circuit and product function, therefore in this report the Radiated Spurious Emission were retested and shown the data in this report, other tests data please refer to original Report No.:R2007A0434-R3 and Report No.:R1907A0408-R3.

LTE Band 13			
Test Item	Test Requirement	Test method	Result
Field strength of spurious radiation	Part 2.1053/ Part 27.53(g)	TIA-603-E-2016 & KDB 971168 D01v03r01	PASS
Conducted output power	Part 2.1046(a) /Part 27.50(c)	TIA-603-E-2016 & KDB 971168 D01v03r01	Note5
Effective Radiated Power of Transmitter(EIRP)	Part 2.1046(a) / Part 27.50(c)	TIA-603-E-2016 & KDB 971168 D01v03r01	PASS
99% & 26dB Occupied Bandwidth	Part 2.1049(h)	KDB 971168 D01v03r01	Note5
Band Edge at antenna terminals	Part 2.1051/ Part 27.53(g)	KDB 971168 D01v03r01	Note5
Spurious emissions at antenna terminals	Part 2.1051/ Part 27.53(g)	TIA-603-E-2016 & KDB 971168 D01v03r01	Note5
Frequency stability	Part 2.1055/Part 27.54	TIA-603-E-2016 & KDB 971168 D01v03r01	Note5

Note5:Refer to the report of Report No.:R2007A0434-R3,(LTE module' s FCC ID:XMR202008EC25AFXD) and Report No.:R1907A0408-R3,(LTE module' s FCC ID:XMR201909EC25AFX).

This test report (Ref. No.:EED32O80680302) is only valid with the original test report (Ref. No.: Report No.:R2007A0434-R3 and Report No.:R1907A0408-R3).

Review this report and original report,the module without changes in circuit and product function, therefore in this report the Radiated Spurious Emission were retested and shown the data in this report, other tests data please refer to original Report No.:R2007A0434-R3 and Report No.:R1907A0408-R3.

LTE Band 66			
Test Item	Test Requirement	Test method	Result
Field strength of spurious radiation	Part 2.1053/ Part 27.53(g)	TIA-603-E-2016 & KDB 971168 D01v03r01	PASS
Conducted output power	Part 2.1046(a) /Part 27.50(c)	TIA-603-E-2016 & KDB 971168 D01v03r01	Note6
Effective Radiated Power of Transmitter(EIRP)	Part 2.1046(a) / Part 27.50(c)	TIA-603-E-2016 & KDB 971168 D01v03r01	PASS
99% & 26dB Occupied Bandwidth	Part 2.1049(h)	KDB 971168 D01v03r01	Note6
Band Edge at antenna terminals	Part 2.1051/ Part 27.53(g)	KDB 971168 D01v03r01	Note6
Spurious emissions at antenna terminals	Part 2.1051/ Part 27.53(g)	TIA-603-E-2016 & KDB 971168 D01v03r01	Note6
Frequency stability	Part 2.1055/Part 27.54	TIA-603-E-2016 & KDB 971168 D01v03r01	Note6

Note6:Refer to the report of Report No.:R2007A0434-R3,(LTE module' s FCC ID:XMR202008EC25AFXD) and Report No.:R1907A0408-R3,(LTE module' s FCC ID:XMR201909EC25AFX).

This test report (Ref. No.:EED32O80680302) is only valid with the original test report (Ref. No.: Report No.:R2007A0434-R3 and Report No.:R1907A0408-R3).

Review this report and original report,the module without changes in circuit and product function, therefore in this report the Radiated Spurious Emission were retested and shown the data in this report, other tests data please refer to original Report No.:R2007A0434-R3 and Report No.:R1907A0408-R3.

LTE Band 71			
Test Item	Test Requirement	Test method	Result
Field strength of spurious radiation	Part 2.1053/ Part 27.53(g)	TIA-603-E-2016 & KDB 971168 D01v03r01	PASS
Conducted output power	Part 2.1046(a) /Part 27.50(c)	TIA-603-E-2016 & KDB 971168 D01v03r01	Note7
Effective Radiated Power of Transmitter(EIRP)	Part 2.1046(a) / Part 27.50(c)	TIA-603-E-2016 & KDB 971168 D01v03r01	PASS
99% & 26dB Occupied Bandwidth	Part 2.1049(h)	KDB 971168 D01v03r01	Note7
Band Edge at antenna terminals	Part 2.1051/ Part 27.53(g)	KDB 971168 D01v03r01	Note7
Spurious emissions at antenna terminals	Part 2.1051/ Part 27.53(g)	TIA-603-E-2016 & KDB 971168 D01v03r01	Note7
Frequency stability	Part 2.1055/Part 27.54	TIA-603-E-2016 & KDB 971168 D01v03r01	Note7

Note7:Refer to the report of Report No.:R2007A0434-R3,(LTE module' s FCC ID:XMR202008EC25AFXD) and Report No.:R1907A0408-R3,(LTE module' s FCC ID:XMR201909EC25AFX).

This test report (Ref. No.:EED32O80680302) is only valid with the original test report (Ref. No.: Report No.:R2007A0434-R3 and Report No.:R1907A0408-R3).

Review this report and original report,the module without changes in circuit and product function, therefore in this report the Radiated Spurious Emission were retested and shown the data in this report, other tests data please refer to original Report No.:R2007A0434-R3 and Report No.:R1907A0408-R3.

Remark:

The module only applies LTE band 2,LTE band 4,LTE Band 5,LTE Band 12,LTE Band 13,LTE Band 66 and LTE Band 71,Other frequency bands are not in use.

Company Name and Address shown on Report, the sample(s) and sample Information was/ were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified.

Tx: In this whole report Tx (or tx) means Transmitter.

Rx: In this whole report Rx (or rx) means Receiver.

RF: In this whole report RF means Radiated Frequency.

Volt: In this whole report Volt means Voltage.

Temp: In this whole report Temp means Temperature.

Humid: In this whole report Humid means humidity.

Press: In this whole report Press means Pressure.

N/A: In this whole report not application

4 Content

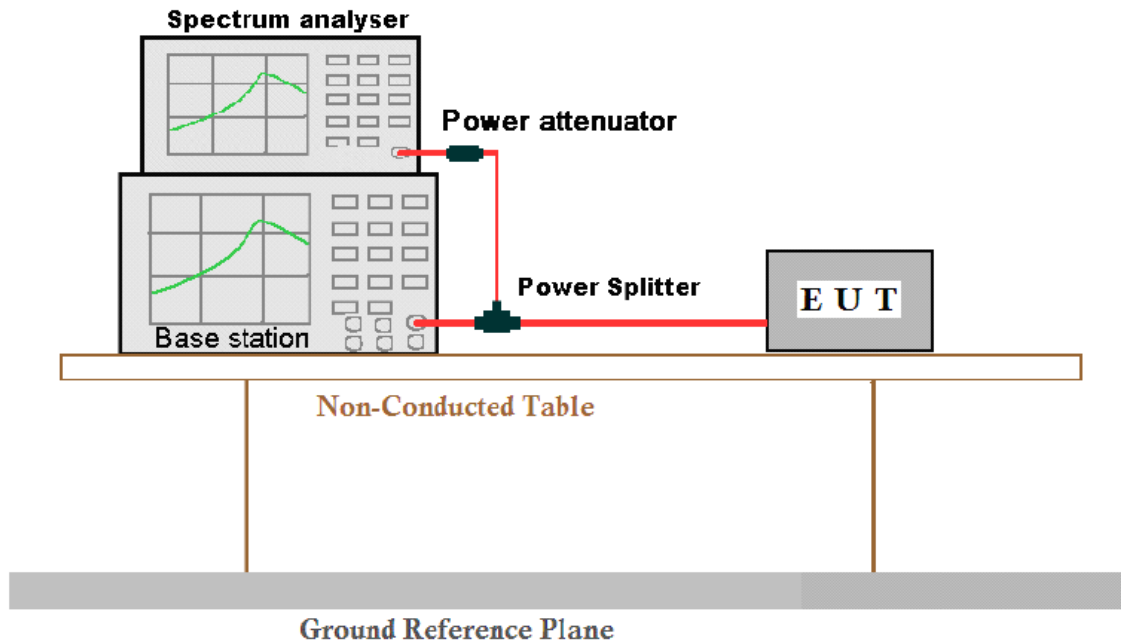
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5 Test Requirement

5.1 Test setup

5.1.1 For Radiated Emissions test setup

Test setup 1:



Radiated Emissions setup:

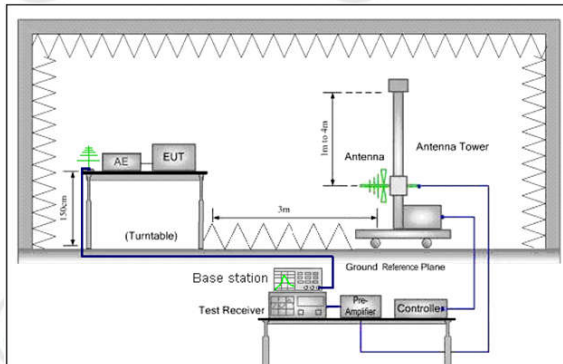


Figure 1.30MHz to 1GHz

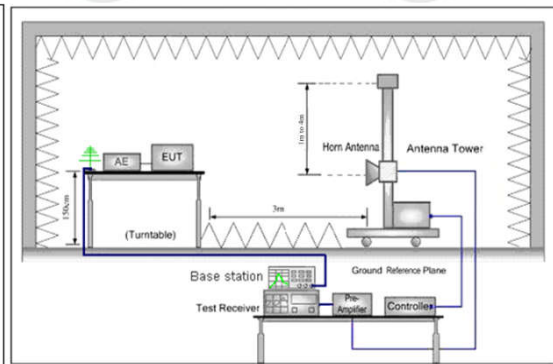


Figure 2. above 1GHz

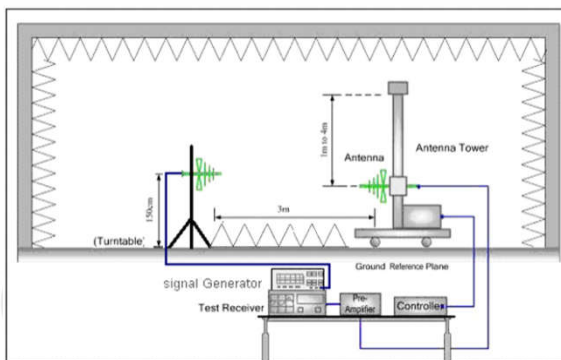


Figure 1. 30MHz to 1GHz

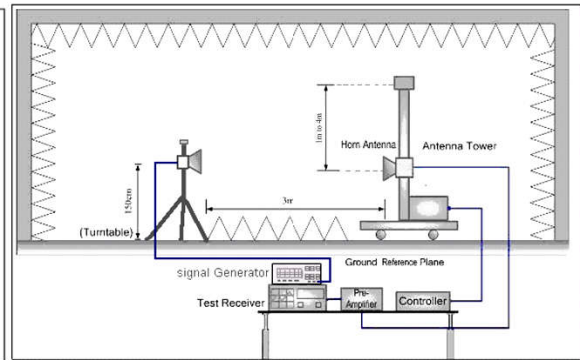


Figure 2. above 1GHz

5.2 Test Environment

Operating Environment:	
Radiated Spurious Emissions:	
Temperature:	22~25.0 °C
Humidity:	50~56 % RH
Atmospheric Pressure:	1010mbar

5.3 Test Condition

Test channel:

Test Mode	Test Frequency ID	Bandwidth (MHz)	Number [UL]	Frequency of Uplink(MHz)
LTE band2 TX:1850-1910MHz	Low Range	1.4	18607	1850.7
		3	18615	1851.5
		5	18625	1852.5
		10	18650	1855
		15	18675	1857.5
		20	18700	1860
	Mid Range	1.4/3/5/10/15/20	18900	1880
	High Range	1.4	19193	1909.3
		3	19185	1908.5
		5	19175	1907.5
		10	19150	1905
		15	19125	1902.5
		20	19100	1900

Test Mode	Test Frequency ID	Bandwidth (MHz)	Number [UL]	Frequency of Uplink(MHz)
LTE band 4 TX:1710-1755 MHz	Low Range	1.4	19957	1710.7
		3	19965	1711.5
		5	19976	1712.5
		10	20000	1715
		15	20025	1717.5
		20	20050	1720
	Mid Range	1.4/3/5/10/15/20	20175	1732.5
	High Range	1.4	20393	1754.3
		3	20385	1753.5
		5	20375	1752.5
		10	20350	1750
		15	20325	1747.5
		20	20300	1745

Test Mode	Test Frequency ID	Bandwidth (MHz)	Number [UL]	Frequency of Uplink(MHz)
LTE band 5 TX:824-849 MHz	Low Range	1.4	20407	824.7
		3	20415	825.5
		5	20425	826.5
		10	20450	829
	Mid Range	1.4/3/5/10	20525	836.5
	High Range	1.4	20643	848.3
		3	20635	847.5
		5	20625	846.5
		10	20600	844

Test Mode	Test Frequency ID	Bandwidth (MHz)	Number [UL]	Frequency of Uplink(MHz)
LTE band 12 TX:699 to 716 MHz	Low Range	1.4	23017	699.7
		3	23025	700.5
		5	23035	701.5
		10	23060	704
	Mid Range	1.4/3/5/10	23095	707.5
	High Range	1.4	23173	715.3
		3	23165	714.5
		5	23155	713.5
		10	23130	711

Test Mode	Test Frequency ID	Bandwidth (MHz)	Number [UL]	Frequency of Uplink(MHz)
LTE band 13 TX:777 to 787 MHz	Low Range	5	23205	779.5
		10	23230	782
	Mid Range	5/10	23230	782
	High Range	5	23255	784.5
		10	23230	782

Test Mode	Test Frequency ID	Bandwidth (MHz)	Number [UL]	Frequency of Uplink(MHz)
LTEband66 Tx: 1710- 1780MHz	Low Range	1.4	131979	1710.7
		3	131987	1711.5
		5	131997	1712.5
		10	132022	1715
		15	132047	1717.5
		20	132072	1720
	Mid Range	1.4/3/5/10/15/20	132322	1745
	High Range	1.4	132665	1779.3
		3	132657	1778.5
		5	132647	1777.5
		10	132622	1775
		15	132597	1772.5
		20	132572	1770

Test Mode	Test Frequency ID	Bandwidth (MHz)	Number [UL]	Frequency of Uplink(MHz)
LTEband71 Tx: 663- 698MHz	Low Range	5	133147	665.5
		10	133172	668
		15	133197	670.5
		20	133222	673
	Mid Range	5/10/15/20	133297	680.5
	High Range	5	133447	695.5
		10	133422	693
		15	133397	690.5
		20	133372	688

6 General Information

6.1 Client Information

Applicant:	Velocitor Solutions
Address of Applicant:	851 Blairhill Rd Charlotte, NC 28217 United States
Manufacturer:	Velocitor Solutions
Address of Manufacturer:	851 Blairhill Rd Charlotte, NC 28217 United States

6.2 General Description of EUT

Product Name:	AI Dash Camera
Model No.(EUT):	VT-DCAI-02
Trade mark:	
Power Supply:	9-36V 2A
Sample Received Date:	Aug. 03, 2022
Sample tested Date:	Aug. 03, 2022 to Aug. 12, 2022

6.3 Product Specification subjective to this standard

Frequency Band:	LTE Band 2: Tx: 1850-1910MHz; LTE Band 4: Tx: 1710-1755 MHz; LTE Band 5: Tx: 824-849 MHz; LTE Band 12: Tx: 699-716 MHz; LTE Band 13: TX:777 -787 MHz; LTE Band 66: Tx: 1710- 1780MHz; LTE Band 71: Tx: 663- 698MHz;
Modulation Type:	QPSK, 16QAM
Antenna Type	FPC antenna
Antenna Gain:	LTE Band 5 & Band 12 & Band 13 & Band 71: 7.98dBi; LTE Band 2 & Band 4 & Band 66: 2.88dBi

6.4 Description of Support Units

The EUT has been tested with associated equipment below.

1) support equipment

Description	Manufacturer	Model No.	Certification	Supplied by
/	/	/	/	/

6.5 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd

Building C, Hongwei Industrial Park Block 70, Bao'an District, Shenzhen, China

Telephone: +86 (0) 755 33683668 Fax:+86 (0) 755 33683385

No tests were sub-contracted.

FCC Designation No.: CN1164

6.6 Deviation from Standards

None.

6.7 Abnormalities from Standard Conditions

None.

6.8 Other Information Requested by the Customer

None.

6.9 Measurement Uncertainty (95% confidence levels, k=2)

No.	Item	Measurement Uncertainty
1	Radio Frequency	7.9×10^{-8}
2	RF power, conducted	0.46dB (30MHz-1GHz)
		0.55dB (1GHz-18GHz)
3	Radiated Spurious emission test	4.3dB (30MHz-1GHz)
		4.5dB (1GHz-12.75GHz)
4	Conduction emission	3.5dB (9kHz to 150kHz)
		3.1dB (150kHz to 30MHz)
5	Temperature test	0.64°C
6	Humidity test	3.8%
7	DC power voltages	0.026%

7 Equipment List

3M full-anechoic Chamber					
Equipment	Manufacturer	Model No.	Serial Number	Cal. Date (mm-dd-yyyy)	Cal. Due date (mm-dd-yyyy)
RSE Automatic test software	JS Tonscend	JS36-RSE	10166	---	---
Receiver	Keysight	N9038A	MY57290136	02-27-2023	02-26-2024
Spectrum Analyzer	Keysight	N9020B	MY57111112	02-21-2023	02-20-2024
Spectrum Analyzer	Keysight	N9030B	MY57140871	02-21-2023	02-20-2024
TRILOG Broadband Antenna	Schwarzbeck	VULB 9163	9163-1148	04-28-2021	04-27-2024
Horn Antenna	Schwarzbeck	BBHA 9170	9170-832	04-15-2021	04-14-2024
Horn Antenna	ETS-LINDGREN	3117	57407	07-04-2021	07-03-2024
Preamplifier	EMCI	EMC184055SE	980597	04-13-2023	04-12-2024
Preamplifier	EMCI	EMC001330	980563	03-28-2023	03-27-2024
Preamplifier	JS Tonscend	TAP-011858	AP21B806112	07-25-2023	07-24-2024
Communication test set	R&S	CMW500	102898	12-23-2022	12-22-2023
Temperature/Humidity Indicator	biaozhi	GM1360	EE1186631	04-11-2023	04-10-2024
Fully Anechoic Chamber	TDK	FAC-3	---	01-09-2021	01-08-2024
Cable line	Times	SFT205-NMSM-2.50M	394812-0001	---	---
Cable line	Times	SFT205-NMSM-2.50M	394812-0002	---	---
Cable line	Times	SFT205-NMSM-2.50M	394812-0003	---	---
Cable line	Times	SFT205-NMSM-2.50M	393495-0001	---	---
Cable line	Times	EMC104-NMNM-1000	SN160710	---	---
Cable line	Times	SFT205-NMSM-3.00M	394813-0001	---	---
Cable line	Times	SFT205-NMNM-1.50M	381964-0001	---	---
Cable line	Times	SFT205-NMSM-7.00M	394815-0001	---	---
Cable line	Times	HF160-KMKM-3.00M	393493-0001	---	---

7.1 Effective Radiated Power of Transmitter(EIRP)

Band	Conducted power (dBm)	Antenna gain (dBi)	EIRP (dBm)	Limit (dBm)	Conclusion
LTE Band 2	23.84	2.88	26.72	33.00	Pass
LTE Band 4	23.72	2.88	26.60	30.00	Pass
LTE Band 5	24.19	7.98	32.17	38.45	Pass
LTE Band 12	23.74	7.98	31.72	34.77	Pass
LTE Band 13	23.85	7.98	31.83	34.77	Pass
LTE Band 66	23.82	2.88	26.70	30.00	Pass
LTE Band 71	23.47	7.98	31.45	34.77	Pass

Remark:

1.The Conducted power refer to the report of Report No.:R2007A0434-R1,R2007A0434-R2,R2007A0434-R3,R1907A0408-R1,R1907A0408-R2,R1907A0408-R3..Only the worst case was recorded in the report.

2.According to KDB 412172 D01 Power Approach,Calculate power in dBm by the following formula:

$ERP(dBm) = \text{Conducted output power}(dBm) + \text{antenna gain}(dBd)$

$EIRP(dBm) = \text{Conducted output power}(dBm) + \text{antenna gain}(dBi)$

$EIRP=ERP+2.15dB$

7.2 Field strength of spurious radiation

Receiver Setup:	<table><tr><th>Frequency</th><th>Detector</th><th>RBW</th><th>VBW</th><th>Remark</th></tr><tr><td>0.009MHz-30MHz</td><td>Peak</td><td>10kHz</td><td>30kHz</td><td>Peak</td></tr><tr><td>30MHz-1GHz</td><td>Peak</td><td>120kHz</td><td>300kHz</td><td>Peak</td></tr><tr><td>Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak</td></tr></table>	Frequency	Detector	RBW	VBW	Remark	0.009MHz-30MHz	Peak	10kHz	30kHz	Peak	30MHz-1GHz	Peak	120kHz	300kHz	Peak	Above 1GHz	Peak	1MHz	3MHz	Peak
Frequency	Detector	RBW	VBW	Remark																	
0.009MHz-30MHz	Peak	10kHz	30kHz	Peak																	
30MHz-1GHz	Peak	120kHz	300kHz	Peak																	
Above 1GHz	Peak	1MHz	3MHz	Peak																	
Measurement Procedure:	1. Scan up to 10th harmonic, find the maximum radiation frequency to measure. 2. The technique used to find the Spurious Emissions of the transmitter was the antenna substitution method. Substitution method was performed to determine the actual ERP/EIRP emission levels of the EUT. Test procedure as below: The EUT was powered ON and placed on a 1.5m high table at a 3 meter fully Anechoic Chamber. The antenna of the transmitter was extended to its maximum length. modulation mode and the measuring receiver shall be tuned to the frequency of the transmitter under test. The EUT was set 3 meters(above 18GHz the distance is 1 meter) away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. The disturbance of the transmitter was maximized on the test receiver display by raising and lowering from 1m to 4m the receive antenna and by rotating through 360° the turntable. After the fundamental emission was maximized, a field strength measurement was made. Steps 1) to 3) were performed with the EUT and the receive antenna in both vertical and horizontal polarization. The transmitter was then removed and replaced with another antenna. The center of the antenna was approximately at the same location as the center of the transmitter. A signal at the disturbance was fed to the substitution antenna by means of a non-radiating cable. With both the substitution and the receive antennas horizontally polarized, the receive antenna was raised and lowered to obtain a maximum reading at the test receiver. The level of the signal generator was adjusted until the measured field strength level in step 3) is obtained for this set of conditions. The output power into the substitution antenna was then measured. Steps 6) and 7) were repeated with both antennas polarized. Calculate power in dBm by the following formula: ERP(dBm) = Pg(dBm) – cable loss (dB) + antenna gain (dBd) EIRP(dBm) = Pg(dBm) – cable loss (dB) + antenna gain (dBi) EIRP=ERP+2.15dB where: Pg is the generator output power into the substitution antenna. Test the EUT in the lowest channel, the middle channel the Highest channel The radiation measurements are performed in X, Y, Z axis positioning for EUT operation mode, And found the X axis positioning which it is worse case. Repeat above procedures until all frequencies measured was complete.																				
Limit:	Attenuated at least 43+10log(P)																				

Measurement Data

Remark: Only the worst case was recorded in the report.

QPSK:

Mode:		LTE Traffic						
Band:		2		Channel:			18900	
Remark:		20MHz						
NO.	Freq. [MHz]	Height [cm]	Azimuth [deg]	Level [dBm]	Limit [dBm]	Margin [dB]	Result	Polarity
1	105.8692	150	75	-63.01	-13.00	50.01	PASS	Horizontal
2	116.9294	150	91	-56.95	-13.00	43.95	PASS	Horizontal
3	381.7924	150	270	-67.72	-13.00	54.72	PASS	Horizontal
4	1303.8304	150	110	-48.38	-13.00	35.38	PASS	Horizontal
5	5001.8501	150	342	-55.95	-13.00	42.95	PASS	Horizontal
6	25242.5297	150	39	-52.62	-13.00	39.62	PASS	Horizontal
7	57.7476	150	21	-52.46	-13.00	39.46	PASS	Vertical
8	265.175	150	93	-62.21	-13.00	49.21	PASS	Vertical
9	726.4053	150	357	-56.96	-13.00	43.96	PASS	Vertical
10	1283.6284	150	58	-48.40	-13.00	35.40	PASS	Vertical
11	10208.6104	150	3	-50.40	-13.00	37.40	PASS	Vertical
12	24712.9085	150	77	-53.01	-13.00	40.01	PASS	Vertical

Mode:		LTE Traffic						
Band:		4		Channel:			20175	
Remark:		20MHz						
NO.	Freq. [MHz]	Height [cm]	Azimuth [deg]	Level [dBm]	Limit [dBm]	Margin [dB]	Result	Polarity
1	120.034	150	357	-58.94	-13.00	45.94	PASS	Horizontal
2	177.0814	150	290	-64.33	-13.00	51.33	PASS	Horizontal
3	265.5631	150	252	-65.17	-13.00	52.17	PASS	Horizontal
4	1273.4273	150	164	-48.63	-13.00	35.63	PASS	Horizontal
5	14408.8204	150	358	-46.68	-13.00	33.68	PASS	Horizontal
6	21769.1108	150	129	-53.53	-13.00	40.53	PASS	Horizontal
7	65.5091	150	93	-54.49	-13.00	41.49	PASS	Vertical
8	160.006	150	357	-62.19	-13.00	49.19	PASS	Vertical
9	208.9038	150	307	-64.71	-13.00	51.71	PASS	Vertical
10	1305.0305	150	272	-48.59	-13.00	35.59	PASS	Vertical
11	14412.5706	150	101	-46.94	-13.00	33.94	PASS	Vertical
12	21746.7099	150	77	-53.95	-13.00	40.95	PASS	Vertical

Mode:		LTE Traffic						
Band:		5		Channel:			20525	
Remark:		10MHz						
NO.	Freq. [MHz]	Height [cm]	Azimuth [deg]	Level [dBm]	Limit [dBm]	Margin [dB]	Result	Polarity
1	119.4519	150	74	-59.62	-13.00	46.62	PASS	Horizontal
2	183.2907	150	273	-62.27	-13.00	49.27	PASS	Horizontal
3	464.0648	150	202	-66.17	-13.00	53.17	PASS	Horizontal
4	1315.4315	150	92	-47.32	-13.00	34.32	PASS	Horizontal
5	9705.3353	150	358	-49.94	-13.00	36.94	PASS	Horizontal
6	21211.0084	150	185	-53.21	-13.00	40.21	PASS	Horizontal
7	36.7914	150	219	-47.03	-13.00	34.03	PASS	Vertical
8	63.9568	150	219	-52.34	-13.00	39.34	PASS	Vertical
9	266.3393	150	199	-62.46	-13.00	49.46	PASS	Vertical
10	1318.8319	150	271	-48.21	-13.00	35.21	PASS	Vertical
11	4786.5893	150	221	-54.01	-13.00	41.01	PASS	Vertical
12	21714.3886	150	40	-53.35	-13.00	40.35	PASS	Vertical

Mode:		LTE Traffic						
Band:		12		Channel:			23095	
Remark:		10MHz						
NO.	Freq. [MHz]	Height [cm]	Azimuth [deg]	Level [dBm]	Limit [dBm]	Margin [dB]	Result	Polarity
1	91.3163	150	8	-60.76	-13.00	47.76	PASS	Horizontal
2	120.034	150	357	-59.52	-13.00	46.52	PASS	Horizontal
3	169.5139	150	253	-65.83	-13.00	52.83	PASS	Horizontal
4	1316.0316	150	181	-48.93	-13.00	35.93	PASS	Horizontal
5	9741.3371	150	307	-49.99	-13.00	36.99	PASS	Horizontal
6	22156.3263	150	357	-53.85	-13.00	40.85	PASS	Horizontal
7	39.3139	150	182	-45.56	-13.00	32.56	PASS	Vertical
8	50.9562	150	182	-50.32	-13.00	37.32	PASS	Vertical
9	170.6781	150	219	-62.33	-13.00	49.33	PASS	Vertical
10	1291.8292	150	0	-48.49	-13.00	35.49	PASS	Vertical
11	11869.9435	150	243	-49.78	-13.00	36.78	PASS	Vertical
12	24813.7125	150	326	-54.45	-13.00	41.45	PASS	Vertical

Mode:		LTE Traffic						
Band:		13		Channel:			23230	
Remark:		10M						
NO.	Freq. [MHz]	Height [cm]	Azimuth [deg]	Level [dBm]	Limit [dBm]	Margin [dB]	Result	Polarity
1	120.034	150	357	-61.34	-13.00	48.34	PASS	Horizontal
2	173.9768	150	129	-65.60	-13.00	52.60	PASS	Horizontal
3	345.119	150	272	-67.35	-13.00	54.35	PASS	Horizontal
4	1275.6276	150	58	-48.65	-13.00	35.65	PASS	Horizontal
5	5046.1023	150	177	-55.87	-13.00	42.87	PASS	Horizontal
6	21772.9509	150	113	-53.65	-13.00	40.65	PASS	Horizontal
7	63.7628	150	272	-52.15	-13.00	39.15	PASS	Vertical
8	138.8558	150	326	-52.32	-13.00	39.32	PASS	Vertical
9	223.4567	150	307	-56.64	-13.00	43.64	PASS	Vertical
10	1306.4306	150	291	-48.99	-13.00	35.99	PASS	Vertical
11	14380.319	150	100	-45.82	-13.00	32.82	PASS	Vertical
12	23607.5843	150	0	-53.98	-13.00	40.98	PASS	Vertical

Mode:		LTE Traffic						
Band:		66			Channel:		132322	
Remark:		20M						
NO.	Freq. [MHz]	Height [cm]	Azimuth [deg]	Level [dBm]	Limit [dBm]	Margin [dB]	Result	Polarity
1	82.3905	150	302	-52.68	-13.00	39.68	PASS	Horizontal
2	144.2889	150	281	-58.98	-13.00	45.98	PASS	Horizontal
3	255.8612	150	302	-63.68	-13.00	50.68	PASS	Horizontal
4	1279.828	150	302	-48.48	-13.00	35.48	PASS	Horizontal
5	9735.3368	150	57	-50.51	-13.00	37.51	PASS	Horizontal
6	14415.5708	150	298	-46.18	-13.00	33.18	PASS	Horizontal
7	36.7914	150	236	-53.25	-13.00	40.25	PASS	Vertical
8	64.5389	150	307	-48.18	-13.00	35.18	PASS	Vertical
9	139.4379	150	326	-56.95	-13.00	43.95	PASS	Vertical
10	1319.632	150	0	-49.06	-13.00	36.06	PASS	Vertical
11	10276.8638	150	13	-50.25	-13.00	37.25	PASS	Vertical
12	21410.0564	150	343	-54.65	-13.00	41.65	PASS	Vertical

Mode:		LTE Traffic						
Band:		71		Channel:			133322	
Remark:		20M						
NO.	Freq. [MHz]	Height [cm]	Azimuth [deg]	Level [dBm]	Limit [dBm]	Margin [dB]	Result	Polarity
1	84.1368	150	278	-52.40	-13.00	39.40	Pass	Horizontal
2	153.9908	150	278	-59.85	-13.00	46.85	Pass	Horizontal
3	271.3843	150	313	-62.13	-13.00	49.13	Pass	Horizontal
4	1281.4281	150	100	-48.74	-13.00	35.74	Pass	Horizontal
5	14411.0706	150	100	-45.91	-13.00	32.91	Pass	Horizontal
6	21531.6613	150	313	-54.01	-13.00	41.01	Pass	Horizontal
7	65.3151	150	55	-51.06	-13.00	38.06	Pass	Vertical
8	83.9428	150	307	-54.63	-13.00	41.63	Pass	Vertical
9	133.6167	150	326	-58.36	-13.00	45.36	Pass	Vertical
10	1313.4313	150	326	-48.54	-13.00	35.54	Pass	Vertical
11	8896.7948	150	343	-53.28	-13.00	40.28	Pass	Vertical
12	16507.4254	150	232	-45.70	-13.00	32.70	Pass	Vertical

Mode:		2.4G WiFi+LTE						
NO.	Freq. [MHz]	Height [cm]	Azimuth [deg]	Level [dBm]	Limit [dBm]	Margin [dB]	Result	Polarity
1	120.034	150	357	-62.83	-13.00	49.83	Pass	Horizontal
2	171.8424	150	256	-64.59	-13.00	51.59	Pass	Horizontal
3	407.5995	150	236	-66.14	-13.00	53.14	Pass	Horizontal
4	1312.6313	150	22	-48.98	-13.00	35.98	Pass	Horizontal
5	5000.35	150	67	-55.72	-13.00	42.72	Pass	Horizontal
6	9782.5891	150	309	-50.32	-13.00	37.32	Pass	Horizontal
7	37.7616	150	235	-51.06	-13.00	38.06	Pass	Vertical
8	84.3309	150	342	-51.26	-13.00	38.26	Pass	Vertical
9	139.2438	150	342	-56.56	-13.00	43.56	Pass	Vertical
10	1279.828	150	235	-47.91	-13.00	34.91	Pass	Vertical
11	5334.1167	150	178	-56.77	-13.00	43.77	Pass	Vertical
12	13854.5427	150	199	-48.12	-13.00	35.12	Pass	Vertical

Note:

- 1.Scan from 9kHz to 25GHz, the disturbance above 18GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.
- 2.All modulation and all Bandwidth had been tested, but only the worst case data displayed in this report.
- 3.Since 2.4G WiFi and LTE can transmit simultaneously, therefore have provided the test result of Radiated spurious emission under co-location condition.