

TEST REPORT

Report No.: BCTC2504135595-3E

Applicant: Shanghai TUGE Data Technologies Co., Ltd.

Product Name: Smart IoT 4G Router

Test Model: TR40

Tested Date: 2025-04-03 to 2025-05-16

Issued Date: 2025-05-27

Shenzhen BCTC Testing Co., Ltd.



FCC ID:2AU4T-TR40

Product Name: Smart IoT 4G Router

Trademark: N/A

Model/Type reference: TR40

Prepared For: Shanghai TUGE Data Technologies Co., Ltd.

Address: Floor 1-2, Building 4, No.1628, Lingang New Area, China (Shanghai) Pilot Free Trade Zone

Manufacturer: Shanghai TUGE Data Technologies Co., Ltd.

Address: Floor 1-2, Building 4, No.1628, Lingang New Area, China (Shanghai) Pilot Free Trade Zone

Prepared By: Shenzhen BCTC Testing Co., Ltd.

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Sample Received Date: 2025-04-03

Sample tested Date: 2025-04-03 to 2025-05-16

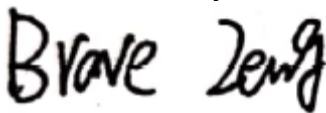
Report No.: BCTC2504135595-3E

Test Standards: FCC CFR Title 47 Part 2
FCC CFR Title 47 Part 22
FCC CFR Title 47 Part 24
FCC CFR Title 47 Part 27
FCC CFR Title 47 Part 90

Test Results: PASS

Remark: This is radio test report for 4G in US full bands.

Tested by:



Brave Zeng/ Project Handler

Approved by:



Zero Zhou/Reviewer

The test report is effective only with both signature and specialized stamp. This result(s) shown in this report refer only to the sample(s) tested. Without written approval of Shenzhen BCTC Testing Co., Ltd, this report can't be reproduced except in full. The tested sample(s) and the sample information are provided by the client.

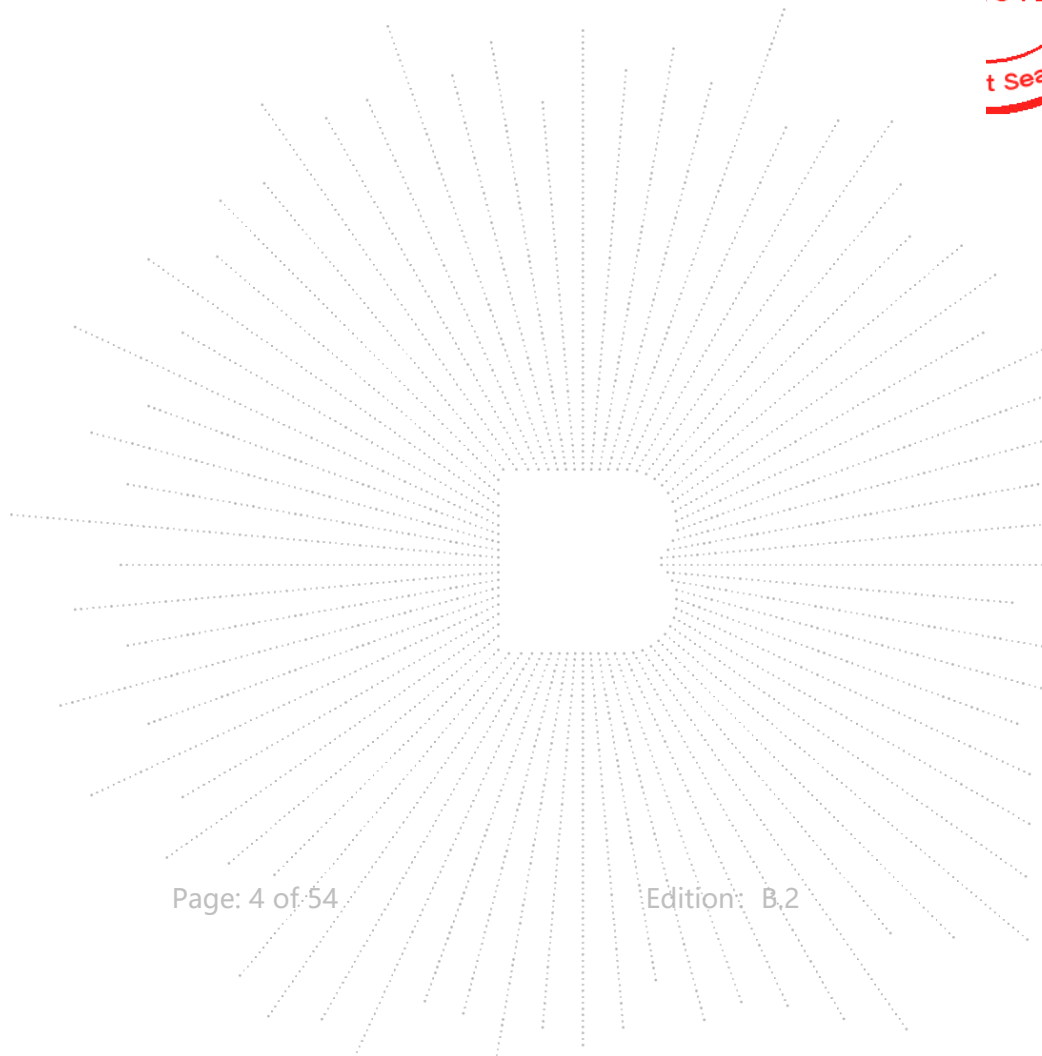
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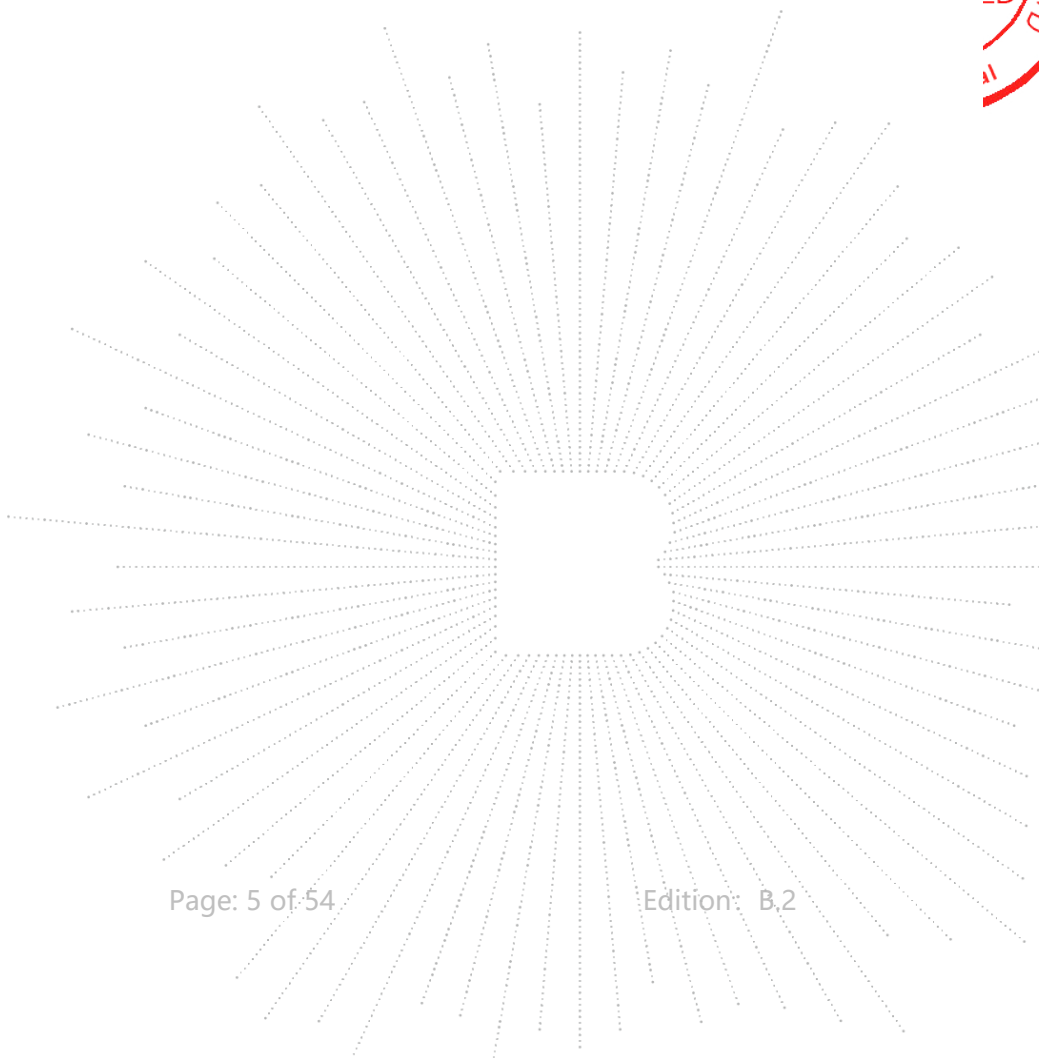
(Note: N/A Means Not Applicable)

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1. Version

Report No.	Issue Date	Description	Approved
BCTC2504135595-3E	2025-05-27	Original	Valid



2. Test Summary

The Product has been tested according to the following specifications:

No.	Test Parameter	Clause No	Results
1	RF Exposure	§1.1307, §2.1093	PASS
2	RF Output Power	§2.1046; §22.913; §22.913 (a) §24.232(c); §27.50(d); §27.50(c); §27.50(b); §90.635(b)	PASS
3	Peak-to-average Ratio(PAR) of Transmitter	§22.913 §2.1046; §24.232(d) §27.50(d); §27.50(c); §27.50(b);	PASS
4	Emission Bandwidth	§22.917 (b) §2.1049; §24.238(b); §27.53;	PASS
5	Spurious Emissions at Antenna Terminal	§22.917 (a), §24.238 (a), §27.53(g), §27.53(h); §2.1051; §90.691	PASS
6	Spurious Radiation Emissions	§22.917 (a) §2.1051; §22.917(a); §27.53(h); §27.53(g); §27.53(c); §24.238(a);	PASS
7	Out of Band Emissions	§22.917 (a) §2.1051; §22.917(a); §27.53(h); §27.53(c); §27.53(g); §24.238(a);	PASS
8	Frequency Stability	§2.1055; §22.355; §27.54; §24.235; §90.213	PASS
9	Emission Mask	§90.691(a)	PASS

3. Measurement Uncertainty

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 %.

No.	Item	Uncertainty
1	3m chamber Radiated spurious emission(30MHz-1GHz)	U=4.3dB
2	3m chamber Radiated spurious emission(9KHz-30MHz)	U=3.7dB
3	3m chamber Radiated spurious emission(1GHz-18GHz)	U=4.5dB
4	3m chamber Radiated spurious emission(18GHz-40GHz)	U=3.34dB
5	Conducted Emission (150kHz-30MHz)	U=3.20dB
6	Conducted Adjacent channel power	U=1.38dB
7	Conducted output power uncertainty Above 1G	U=1.576dB
8	Conducted output power uncertainty below 1G	U=1.28dB
9	humidity uncertainty	U=5.3%
10	Temperature uncertainty	U=0.59°C

4. Product Information And Test Setup

4.1 Product Information

Model/Type reference: TR40

Model differences: N/A

Hardware Version: N/A

Software Version: N/A

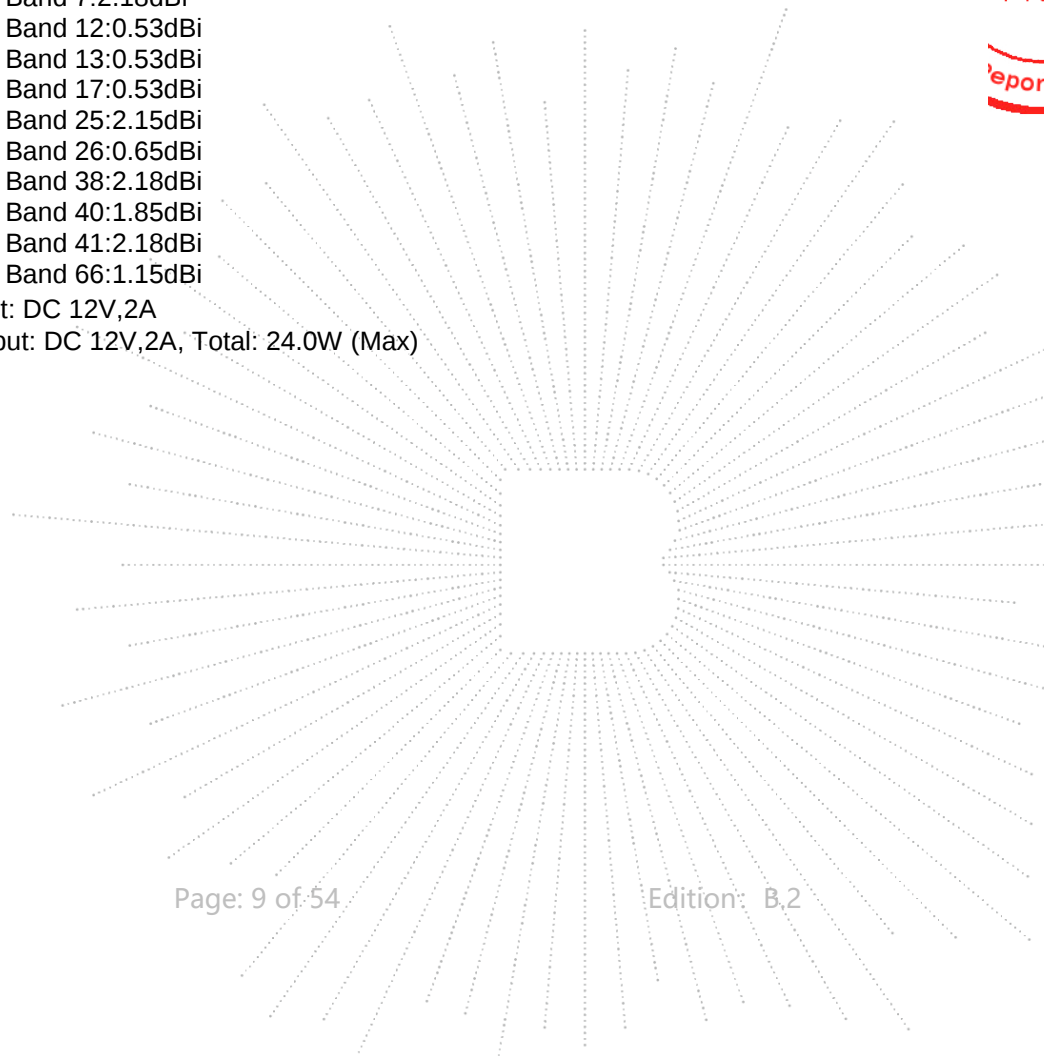
Tx Frequency: LTE Band 2: 1850 MHz ~ 1910 MHz
LTE Band 4: 1710 MHz ~ 1755 MHz
LTE Band 5: 824 MHz ~ 849 MHz
LTE Band 7: 2500 MHz ~ 2700 MHz
LTE Band 12: 699 MHz ~ 716 MHz
LTE Band 13: 777 MHz ~ 787 MHz
LTE Band 17: 704 MHz ~ 716 MHz
LTE Band 25: 1850 MHz ~ 1915 MHz
LTE Band 26: 814 MHz ~ 824 MHz
LTE Band 26: 824 MHz ~ 849 MHz
LTE Band 38: 2570 MHz ~ 2620 MHz
LTE Band 40: 2300 MHz ~ 2400 MHz
LTE Band 41: 2496 MHz ~ 2690 MHz
LTE Band 66: 1710 MHz ~ 1780 MHz

Rx Frequency: LTE Band 2: 1930 MHz ~ 1990 MHz
LTE Band 4: 2110 MHz ~ 2155 MHz
LTE Band 5: 869 MHz ~ 894 MHz
LTE Band 7: 2620 MHz ~ 2690 MHz
LTE Band 12: 729 MHz ~ 746 MHz
LTE Band 13: 746 MHz ~ 756 MHz
LTE Band 17: 734 MHz ~ 746 MHz
LTE Band 25: 1930 MHz ~ 1995 MHz
LTE Band 26: 859 MHz ~ 869 MHz
LTE Band 26: 869 MHz ~ 894 MHz
LTE Band 38: 2570 MHz ~ 2620 MHz
LTE Band 40: 2300 MHz ~ 2400 MHz
LTE Band 41: 2496 MHz ~ 2690 MHz
LTE Band 66: 2110 MHz ~ 2180 MHz

Bandwidth: LTE Band 2: 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz
LTE Band 4: 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz
LTE Band 5: 1.4MHz / 3MHz / 5MHz / 10MHz
LTE Band 7: 5MHz / 10MHz / 15MHz / 20MHz
LTE Band 12: 1.4MHz / 3MHz / 5MHz / 10MHz
LTE Band 13: 5MHz / 10MHz
LTE Band 17 : 5MHz / 10MHz
LTE Band 25 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz
LTE Band 26 (814-824) : 1.4MHz / 3MHz / 5MHz / 10MHz
LTE Band 26 (824-849) : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz
LTE Band 38 : 5MHz / 10MHz / 15MHz / 20MHz
LTE Band 40 : 5MHz / 10MHz
LTE Band 41 : 5MHz / 10MHz / 15MHz / 20MHz
LTE Band 66 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz

Maximum Output Power to Antenna: LTE Band 2: 23.33dBm
LTE Band 4: 23.41dBm
LTE Band 5: 23dBm
LTE Band 7: 24.45dBm

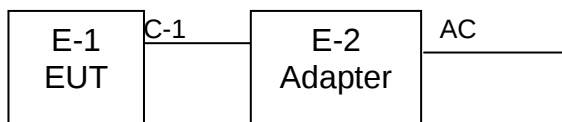
LTE Band 12: 23.1dBm
 LTE Band 13: 23.14dBm
 LTE Band 17: 23.01dBm
 LTE Band 25: 23.4dBm
 LTE Band 26(814-824): 23.61dBm
 LTE Band 26(824-849): 23.48dBm
 LTE Band 38: 23.97dBm
 LTE Band 40: 23.77dBm
 LTE Band 41: 24.39dBm
 LTE Band 66: 23.42dBm
 LTE Band 2: 18M07W7D
 LTE Band 4: 18M05G7D
 LTE Band 5: 9M02G7D
 LTE Band 7: 18M04G7D
 LTE Band 12: 9M9G7D
 LTE Band 13: 8M97W7D
 LTE Band 17: 9M89W7D
 LTE Band 25: 18M16W7D
 LTE Band 26 (814-824): 9M02W7D
 LTE Band 26 (824-849): 13M52W7D
 LTE Band 38: 18M05G7D
 LTE Band 40: 8M99W7D
 LTE Band 41: 18M04W7D
 LTE Band 66: 18M01G7D
 Type of Modulation: QPSK/16QAM
 Antenna Type: Internal antenna
 LTE Band 2:2.25dBi
 LTE Band 4:1.15dBi
 LTE Band 5:0.65dBi
 LTE Band 7:2.18dBi
 LTE Band 12:0.53dBi
 LTE Band 13:0.53dBi
 LTE Band 17:0.53dBi
 LTE Band 25:2.15dBi
 LTE Band 26:0.65dBi
 LTE Band 38:2.18dBi
 LTE Band 40:1.85dBi
 LTE Band 41:2.18dBi
 LTE Band 66:1.15dBi
 Ratings: Input: DC 12V,2A
 Output: DC 12V,2A, Total: 24.0W (Max)



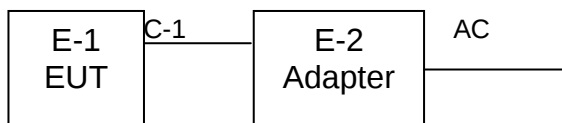
4.2 Test Setup Configuration

See test photographs attached in *EUT TEST SETUP PHOTOGRAPHS* for the actual connections between Product and support equipment.

Conducted Emission:



Radiated Spurious Emission



4.2 Emission Designator

LTE Band 2	QPSK		16QAM	
BW(MHz)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)
1.4	1M09G7D	0.215	1M09W7D	0.207
3	2M72G7D	0.209	2M71W7D	0.207
5	4M53G7D	0.207	4M51W7D	0.177
10	9M02G7D	0.209	9M03W7D	0.213
15	13M52G7D	0.209	13M49W7D	0.215
20	18M01G7D	0.210	18M07W7D	0.166

LTE Band 4	QPSK		16QAM	
BW(MHz)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)
1.4	1M09G7D	0.218	1M10W7D	0.207
3	2M71G7D	0.218	2M71W7D	0.207
5	4M53G7D	0.210	4M52W7D	0.180
10	8M99G7D	0.209	8M99W7D	0.215
15	13M47G7D	0.219	13M46W7D	0.218
20	18M05G7D	0.217	18M02W7D	0.176

LTE Band 5	QPSK		16QAM	
BW(MHz)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)
1.4	1M09G7D	0.200	1M10W7D	0.192
3	2M71G7D	0.188	2M71W7D	0.187
5	4M52G7D	0.187	4M51W7D	0.160
10	9M02G7D	0.191	9M00W7D	0.191

LTE Band 7	QPSK		16QAM	
BW(MHz)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)
5	4M98G7D	0.269	4M54W7D	0.251
10	9M04G7D	0.265	9M01W7D	0.261
15	13M51G7D	0.279	13M48W7D	0.266
20	18M04G7D	0.272	18M02W7D	0.239

LTE Band 12	QPSK		16QAM	
BW(MHz)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)
1.4	1M10G7D	0.201	1M10W7D	0.203
3	2M72G7D	0.194	2M73W7D	0.199
5	4M52G7D	0.193	4M55W7D	0.158
10	9M9G7D	0.195	9M01W7D	0.204

LE Band 13	QPSK		16QAM	
BW(MHz)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)
5	4M51G7D	0.206	4M52W7D	0.164
10	8M96G7D	0.201	8M97W7D	0.202

LE Band 17	QPSK		16QAM	
BW(MHz)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)
5	4M52G7D	0.190	4M97W7D	0.168
10	9M02G7D	0.195	9M89W7D	0.200

LTE Band 25	QPSK		16QAM	
BW(MHz)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)
1.4	1M10G7D	0.219	1M10W7D	0.213
3	2M72G7D	0.215	2M71W7D	0.210
5	4M52G7D	0.213	4M52W7D	0.179
10	9M01G7D	0.218	9M01W7D	0.206
15	13M52G7D	0.216	13M59W7D	0.216
20	18M06G7D	0.218	18M16W7D	0.169

LTE Band 26(814-824)	QPSK		16QAM	
BW(MHz)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)
1.4	1M09G7D	0.221	1M10W7D	0.230
3	2M71G7D	0.213	2M71W7D	0.228
5	4M51G7D	0.211	4M54W7D	0.195
10	9M01G7D	0.207	9M02W7D	0.226

LTE Band 26(824-849)	QPSK		16QAM	
BW(MHz)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)
1.4	1M10G7D	0.212	1M09W7D	0.223
3	2M71G7D	0.201	2M71W7D	0.215
5	4M52G7D	0.197	4M51W7D	0.222
10	8M99G7D	0.203	9M01W7D	0.180
15	13M5G7D	0.200	13M52W7D	0.222

LTE Band 38	QPSK		16QAM	
BW(MHz)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)
5	4M51G7D	0.243	4M51W7D	0.190
10	9M01G7D	0.248	9M0W7D	0.230
15	13M5G7D	0.250	13M5W7D	0.231
20	18M05G7D	0.245	17M96W7D	0.207

LTE Band 40	QPSK		16QAM	
BW(MHz)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)
5	4M51G7D	0.238	4M5W7D	0.196
10	8M98G7D	0.248	8M99W7D	0.205

LTE Band 41	QPSK		16QAM	
BW(MHz)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)
5	4M51G7D	0.254	4M51W7D	0.217
10	8M99G7D	0.273	9M01W7D	0.244
15	13M48G7D	0.275	13M53W7D	0.244
20	18M01G7D	0.267	18M04W7D	0.198

LTE Band 66	QPSK		16QAM	
BW(MHz)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)
1.4	1M1G7D	0.220	1M10W7D	0.211
3	2M71G7D	0.206	2M71W7D	0.214
5	4M52G7D	0.207	4M5W7D	0.181
10	9M01G7D	0.208	9M94W7D	0.218
15	13M48G7D	0.212	13M51W7D	0.216
20	18M01G7D	0.218	18M01W7D	0.197

4.3 Description Operation Frequency

LTE Band 2(1.4MHz)		LTE Band 2(3MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
18607	1850.7	18615	1851.5
18900	1880	18900	1880
19193	1909.3	19185	1908.5
LTE Band 2(5MHz)		LTE Band 2(10MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
18625	1852.5	18650	1855
18900	1880	18900	1880
19175	1907.5	19150	1905
LTE Band 2(15MHz)		LTE Band 2(20MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
18675	1857.5	18700	1860
18900	1880	18900	1880
19125	1902.5	19100	1900

LTE Band 4(1.4MHz)		LTE Band 4(3MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
19957	1710.7	19965	1711.5
20175	1732.5	20175	1732.5
20393	1754.3	20385	1753.5
LTE Band 4(5MHz)		LTE Band 4(10MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
19975	1712.5	20000	1715
20175	1732.5	20175	1732.5
20375	1752.5	20350	1750
LTE Band 4(15MHz)		LTE Band 4(20MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
20025	1717.5	20050	1720
20175	1732.5	20175	1732.5
20325	1747.5	20300	1745

LTE Band 5(1.4MHz)		LTE Band 5(3MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
20407	824.7	20415	825.5
20525	836.5	20525	836.5
20643	848.3	20635	847.5
LTE Band 5(5MHz)		LTE Band 5(10MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
20425	826.5	20450	829
20525	836.5	20525	836.5
20625	846.5	20600	844

LTE Band 7(5MHz)		LTE Band 7(10MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
20775	2502.5	20800	2505
21100	2535	21100	2535
21100	2535	21400	2565
LTE Band 7(15MHz)		LTE Band 7(20MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
20825	2507.5	20850	2510
21100	2535	21100	2535
21375	2562.5	21350	2560

LTE Band 12(1.4MHz)		LTE Band 12(3MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
23017	699.7	23025	700.5
23095	707.5	23095	707.5
23173	715.3	23165	714.5
LTE Band 12(5MHz)		LTE Band 12(10MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
23035	701.5	23060	704
23095	707.5	23095	707.5
23155	713.5	23130	711

LTE Band 13(5MHz)		LTE Band 13(10MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
23205	779.5	23230	782
23230	782		
23255	784.5		

LTE Band 17(5MHz)		LTE Band 17(10MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
23755	706.5	23780	709
23790	710	23790	710
23825	713.5	23800	711

LTE Band 25(1.4MHz)		LTE Band 25(3MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
26047	1850.7	26055	1851.5
26365	1882,5	26365	1882,5
26683	1914.3	26675	1913.5
LTE Band 25(5MHz)		LTE Band 25(10MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
26065	1852.5	26090	1855
26365	1882,5	26365	1882,5
26665	1912.5	26640	1910
LTE Band 25(15MHz)		LTE Band 25(20MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
26115	1857.5	26140	1860
26365	1882,5	26365	1882,5
26615	1907.5	26590	1905

LTE Band 26 (814-824)(1.4MHz)		LTE Band 26 (814-824)(3MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
26697	814.7	26705	815.5
26740	819	26740	819
26783	823.3	26775	822.5
LTE Band 26 (814-824)(5MHz)		LTE Band 26 (814-824)(10MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
26715	816.5	26740	819
26740	819		
26765	821.5		

LTE Band 26 (824-849)(1.4MHz)		LTE Band 26 (824-849)(3MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
26797	824.7	26805	825.5
26915	836.5	26915	836.5
27033	848.3	27025	847.5
LTE Band 26 (824-849)(5MHz)		LTE Band 26 (824-849)(10MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
26815	826.5	26840	829
26915	836.5	26915	836.5
27015	846.5	26990	844
LTE Band 26 (824-849)(15MHz)			
Channel	Frequency (MHz)		
26865	831.5		
26915	836.5		
26965	841.5		

LTE Band 38(5MHz)		LTE Band 38(10MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
37775	2572.5	37800	2575
38000	2595	38000	2595
38225	2617.5	38200	2615
LTE Band 38(15MHz)		LTE Band 38(20MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
37825	2577.5	37850	2580
38000	2595	38000	2595
38175	2612.5	38150	2610

LTE Band 40(5MHz)		LTE Band 40(10MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
38675	2302.5	38700	2305
39150	2350	39150	2350
39625	2397.5	39600	2395

LTE Band 41(5MHz)		LTE Band 41(10MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
39675	2498.5	39700	2501
40620	2593	40620	2593
41565	2687.5	41540	2685
LTE Band 41(15MHz)		LTE Band 41(20MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
39725	2503.5	39750	2506
40620	2593	40620	2593
41515	2682.5	41490	2680

LTE Band 66(1.4MHz)		LTE Band 66(3MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
131979	1710.7	131987	1711.5
132322	1745	132322	1745
132665	1779.3	132657	1778.5
LTE Band 66(5MHz)		LTE Band 66(10MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
131997	1712.5	132022	1715
132322	1745	132322	1745
132647	1777.5	132622	1775
LTE Band 66(15MHz)		LTE Band 66(20MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
132047	1717.5	132072	1720
132322	1745	132322	1745
132597	1772.5	132572	1770

4.4 Test Mode

Test modes are chosen to be reported as the worst case configuration below:

Test Mode		
Band	Radiated TCs	Conducted TCs
LTE Band 2	QPSK Link (1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz)	16QAM Link (1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz)
LTE Band 4	QPSK Link (1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz)	16QAM Link (1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz)
LTE Band 5	QPSK Link (1.4MHz / 3MHz / 5MHz / 10MHz)	16QAM Link (1.4MHz / 3MHz / 5MHz / 10MHz)
LTE Band 7	QPSK Link (5MHz / 10MHz / 15MHz / 20MHz)	16QAM Link (5MHz / 10MHz / 15MHz / 20MHz)
LTE Band 12	QPSK Link (1.4MHz / 3MHz / 5MHz / 10MHz)	16QAM Link (1.4MHz / 3MHz / 5MHz / 10MHz)
LTE Band 13	QPSK Link (5MHz / 10MHz)	16QAM Link (5MHz / 10MHz)
LTE Band 17	QPSK Link (5MHz / 10MHz)	16QAM Link (5MHz / 10MHz)
LTE Band 25	QPSK Link (1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz)	16QAM Link (1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz)
LTE Band 26 (814-824)	QPSK Link (1.4MHz / 3MHz / 5MHz / 10MHz)	16QAM Link (1.4MHz / 3MHz / 5MHz / 10MHz)
LTE Band 26 (824-849)	QPSK Link (1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz)	16QAM Link (1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz)
LTE Band 38	QPSK Link (5MHz / 10MHz / 15MHz / 20MHz)	16QAM Link (5MHz / 10MHz / 15MHz / 20MHz)
LTE Band 40	QPSK Link (5MHz / 10MHz)	16QAM Link (5MHz / 10MHz)
LTE Band 41	QPSK Link (5MHz / 10MHz / 15MHz / 20MHz)	16QAM Link (5MHz / 10MHz / 15MHz / 20MHz)
LTE Band 66	QPSK Link (1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz)	16QAM Link (1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz)

Antenna port conducted and radiated test items were performed according to KDB 971168 D01 Power Meas License Digital Systems v03 with maximum output power.

EUT Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
/	/	/	/
/	/	/	/

Auxiliary Equipment List and Details

Description	Manufacturer	Model	Serial Number
/	/	/	/

Special Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
/	/	/	/

Radiated measurements were performed with rotating EUT in different three orthogonal test planes to find the maximum emission.

Test Items	Band	Bandwidth (MHz)						Modulation		RB#			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	1	Half	Full	L	M	H
Max. Output Power	2	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	4	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	5	v	v	v	v	-	-	v	v	v	v	v	v	v	v
	7	-	-	v	v	v	v	v	v	v	v	v	v	v	v
	12	v	v	v	v	-	-	v	v	v	v	v	v	v	v
	13	-	-	v	v	-	-	v	v				-	v	-
	17	-	-	v	v	-	-	v	v	v	v	v	v	v	v
	25	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	26	v	v	v	v	v	-	v	v	v	v	v	v	v	v
	38	-	-	v	v	v	v	v	v	v	v	v	v	v	v
	40	-	-	v	v	v	v	v	v	v	v	v	v	v	v
	41	-	-	v	v	v	v	v	v	v	v	v	v	v	v
	66	v	v	v	v	v	v	v	v	v	v	v	v	v	v
Peak-to-Average Ratio	2	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	4	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	5	v	v	v	v	-	-	v	v	v	v	v	v	v	v
	7	-	-	v	v	v	v	v	v	v	v	v	v	v	v
	12	v	v	v	v	-	-	v	v	v	v	v	v	v	v
	13	-	-	v	v	-	-	v	v				-	v	-
	17	-	-	v	v	-	-	v	v	v	v	v	v	v	v
	25	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	26	v	v	v	v	v	-	v	v	v	v	v	v	v	v

	38	-	-	V	V	V	V	V	V	V	V	V	V	V	V
	40	-	-	V	V	V	V	V	V	V	V	V	V	V	V
	41	-	-	V	V	V	V	V	V	V	V	V	V	V	V
	66	V	V	V	V	V	V	V	V	V	V	V	V	V	V
26dB and 99% Bandwidth	2	V	V	V	V	V	V	V	V	V	V	V	V	V	V
	4	V	V	V	V	V	V	V	V	V	V	V	V	V	V
	5	V	V	V	V	-	-	V	V	V	V	V	V	V	V
	7	-	-	V	V	V	V	V	V	V	V	V	V	V	V
	12	V	V	V	V	-	-	V	V	V	V	V	V	V	V
	13	-	-	V	V	-	-	V	V				-	V	-
	17	-	-	V	V	-	-	V	V	V	V	V	V	V	-
	25	V	V	V	V	V	V	V	V	V	V	V	V	V	V
	26	V	V	V	V	V	-	V	V	V	V	V	V	V	V
	38	-	-	V	V	V	V	V	V	V	V	V	V	V	V
	40	-	-	V	V	V	V	V	V	V	V	V	V	V	V
	41	-	-	V	V	V	V	V	V	V	V	V	V	V	V
	66	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Conducted Band Edge	2	V	V	V	V	V	V	V	V	V	V	V	V	V	V
	4	V	V	V	V	V	V	V	V	V	V	V	V	V	V
	5	V	V	V	V	-	-	V	V	V	V	V	V	V	V
	7	-	-	V	V	V	V	V	V	V	V	V	V	V	V
	12	V	V	V	V	-	-	V	V	V	V	V	V	V	V
	13	-	-	V	V	-	-	V	V				-	V	-
	17	-	-	V	V	-	-	V	V	V	V	V	V	V	V
	25	V	V	V	V	V	V	V	V	V	V	V	V	V	V
	26	V	V	V	V	V	-	V	V	V	V	V	V	V	V
	38	-	-	V	V	V	V	V	V	V	V	V	V	V	V
	40	-	-	V	V	V	V	V	V	V	V	V	V	V	V
	41	-	-	V	V	V	V	V	V	V	V	V	V	V	V
	66	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Conducted Spurious Emission	2	V	V	V	V	V	V	V	V	V	V	V	V	V	V
	4	V	V	V	V	V	V	V	V	V	V	V	V	V	V
	5	V	V	V	V	-	-	V	V	V	V	V	V	V	V
	7	-	-	V	V	V	V	V	V	V	V	V	V	V	V
	12	V	V	V	V	-	-	V	V	V	V	V	V	V	V
	13	-	-	V	V	-	-	V	V				-	V	-

	17	-	-	V	V	-	-	V	V	V	V	V	V	V	V
	25	V	V	V	V	V	V	V	V	V	V	V	V	V	V
	26	V	V	V	V	V	-	V	V	V	V	V	V	V	V
	38	-	-	V	V	V	V	V	V	V	V	V	V	V	V
	40	-	-	V	V	V	V	V	V	V	V	V	V	V	V
	41	-	-	V	V	V	V	V	V	V	V	V	V	V	V
	66	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Frequency tability	2	V	V	V	V	V	V	V	V	V	V	V	V	V	V
	4	V	V	V	V	V	V	V	V	V	V	V	V	V	V
	5	V	V	V	V	-	-	V	V	V	V	V	V	V	V
	7	-	-	V	V	V	V	V	V	V	V	V	V	V	V
	12	V	V	V	V	-	-	V	V	V	V	V	V	V	V
	13	-	-	V	V	-	-	V	V				-	V	-
	17	-	-	V	V	-	-	V	V	V			V	V	V
	25	V	V	V	V	V	V	V	V	V	V	V	V	V	V
	26	V	V	V	V	V	-	V	V	V	V	V	V	V	V
	38	-	-	V	V	V	V	V	V	V	V	V	V	V	V
	40	-	-	V	V	V	V	V	V	V	V	V	V	V	V
	41	-	-	V	V	V	V	V	V	V	V	V	V	V	V
	66	V	-	-	-	-	-	V	V	V	-	-	V	V	V
E.R.P./ E.I.R.P.	2	V	V	V	V	V	V	V	V	V	V	V	V	V	V
	4	V	V	V	V	V	V	V	V	V	V	V	V	V	V
	5	V	V	V	V	-	-	V	V	V	V	V	V	V	V
	7	-	-	V	V	V	V	V	V	V	V	V	V	V	V
	12	V	V	V	V	-	-	V	V	V	V	V	V	V	V
	13	-	-	V	V	-	-	V	V				-	V	-
	17	-	-	V	V	-	-	V	V	V	V	V	V	V	V
	25	V	V	V	V	V	V	V	V	V	V	V	V	V	V
	26	V	V	V	V	V	-	V	V	V	V	V	V	V	V
	38	-	-	V	V	V	V	V	V	V	V	V	V	V	V
	40	-	-	V	V	V	V	V	V	V	V	V	V	V	V
	41	-	-	V	V	V	V	V	V	V	V	V	V	V	V
	66	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Radiated Spurious Emission	2	V	V	V	V	V	V	V	V	V	V	V	V	V	V
	4	V	V	V	V	V	V	V	V	V	V	V	V	V	V
	5	V	V	V	V	-	-	V	V	V	V	V	V	V	V

	7	-	-	v	v	v	v	v	v	v	v	v	v	v	v
	12	v	v	v	v	-	-	v	v	v	v	v	v	v	v
	13	-	-	v	v	-	-	v	v				-	v	-
	17	-	-	v	v	-	-	v	v	v	v	v	v	v	v
	25	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	26	v	v	v	v	v	-	v	v	v	v	v	v	v	v
	38	-	-	v	v	v	v	v	v	v	v	v	v	v	v
	40	-	-	v	v	v	v	v	v	v	v	v	v	v	v
	41	-	-	v	v	v	v	v	v	v	v	v	v	v	v
	66	v	-	-	-	-	-	v	v	v	-	-	v	v	v
Note	1.The mark "v " means that this configuration is chosen for testing 2.The mark "- " means that this bandwidth is not supported.														

4.5 Support Equipment

No.	Device Type	Brand	Model	Series No.	Note
E-1	Smart IoT 4G Router	N/A	TR40	N/A	EUT
E-2	Adapter	N/A	N/A	N/A	Auxiliary

Item	Shielded Type	Ferrite Core	Length	Note
C-1	N/A	N/A	N/A	N/A

Notes:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

4.6 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between RF conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level will be exactly the RF output level. The spectrum analyzer offset is derived from RF cable loss and attenuator factor. Offset = RF cable loss + attenuator factor.

5. Test Facility And Test Instrument Used

5.1 Test Facility

All measurement facilities used to collect the measurement data are located at Shenzhen BCTC Testing Co., Ltd. Address: 1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Zhancheng, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China. The site and apparatus are constructed in conformance with the requirements of ANSI C63.4 and CISPR 16-1-1 other equivalent standards.

FCC Test Firm Registration Number: 712850

A2LA certificate registration number is: CN1212

ISED Registered No.: 23583

ISED CAB identifier: CN0017

5.2 Test Instrument Used

Radiated Emissions Test (966 Chamber02)					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
966 chamber	SKET	966 Room	966	Oct. 31. 2024	Oct. 30. 2027
Receiver	R&S	ESR3	102075	May 16, 2024	May 15, 2025
Receiver	R&S	ESR17	100010	Oct. 31. 2024	Oct. 30. 2025
Amplifier	SKET	LNPA-30M01 G-30	SK2021082004	Oct. 31. 2024	Oct. 30. 2025
TRILOG Broadband Antenna	Schwarzbeck	VULB9168	1323	May 21, 2024	May 20, 2025
Loop Antenna(9KHz -30MHz)	Schwarzbeck	FMZB1519B	00014	May 21, 2024	May 20, 2025
Amplifier	SKET	LAPA_01G1 8G-45dB	SK202104090 1	May 16, 2024	May 15, 2025
Horn Antenna	Schwarzbeck	BBHA9120D	1541	May 21, 2024	May 20, 2025
Amplifier(18G Hz-40GHz)	MITEQ	TTA1840-35- HG	2034381	May 16, 2024	May 15, 2025
Horn Antenn(18GH z-40GHz)	Schwarzbeck	BBHA9170	00822	May 21, 2024	May 20, 2025
Spectrum Analyzer9kHz- 40GHz	R&S	FSP40	100363	May 16, 2024	May 15, 2025
Software	Frad	EZ-EMC	FA-03A2 RE	\	\

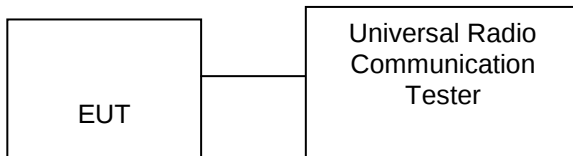
Radiated Emissions Test (966 Chamber)					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
966 chamber	ChengYu	966 Room	966	May 15, 2023	May 14, 2026
Receiver	R&S	ESR3	102075	May 08, 2025	May 07, 2026
Receiver	R&S	ESRP	101154	May 14, 2025	May 13, 2026
Amplifier	Schwarzbeck	BBV9744	9744-0037	May 14, 2025	May 13, 2026
TRILOG Broadband Antenna	Schwarzbeck	VULB9163	942	May 21, 2024	May 20, 2025
Loop Antenna(9KHz-30MHz)	Schwarzbeck	FMZB1519B	00014	May 21, 2024	May 20, 2025
Amplifier	SKET	LAPA_01G1 8G-45dB	SK202104090 1	May 14, 2025	May 13, 2026
Horn Antenna	Schwarzbeck	BBHA9120D	1541	May 14, 2025	May 13, 2026
Amplifier(18G Hz-40GHz)	MITEQ	TTA1840-35-HG	2034381	May 14, 2025	May 13, 2026
Horn Antenn(18GHz-40GHz)	Schwarzbeck	BBHA9170	00822	May 21, 2024	May 20, 2025
Spectrum Analyzer9kHz-40GHz	R&S	FSP40	100363	May 14, 2025	May 13, 2026
Software	Frad	EZ-EMC	FA-03A2 RE	\	\

CHENZHEN

6. RF Output Power

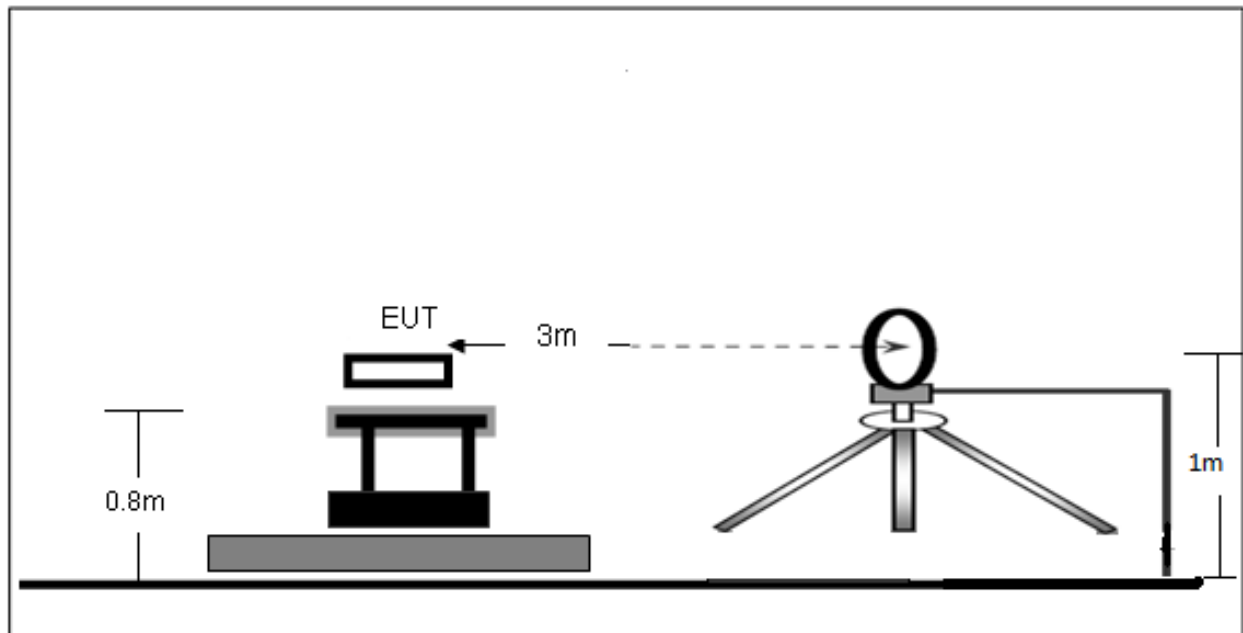
6.1 Block Diagram Of Test Setup

Conducted output power test method:

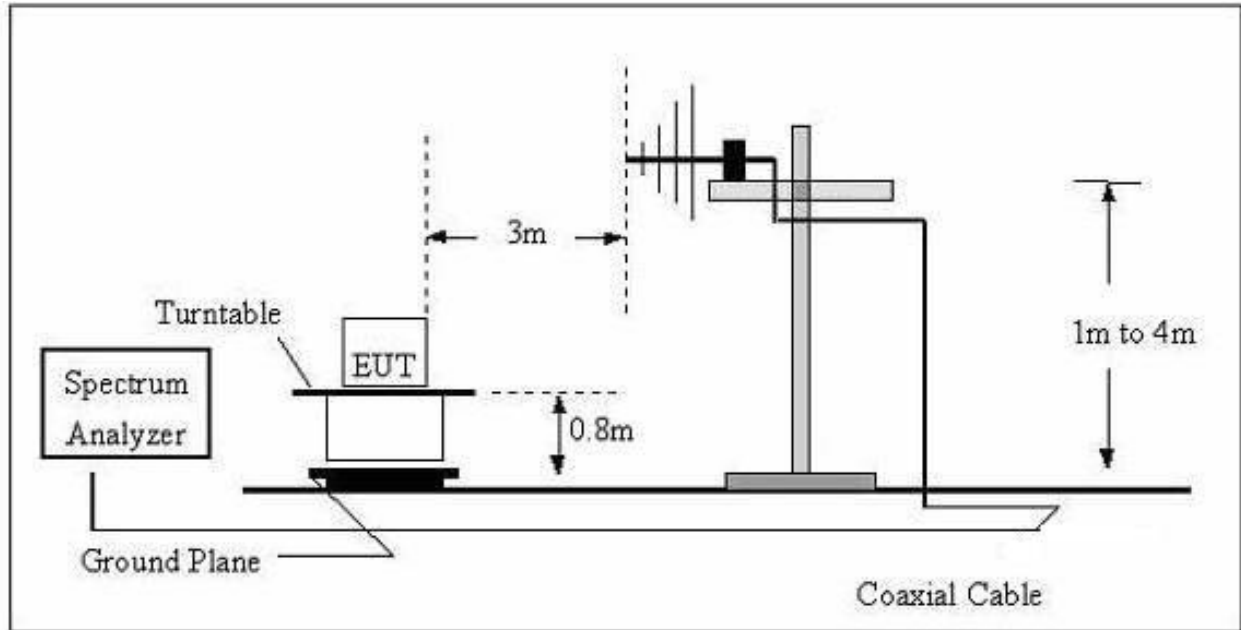


Radiated power test method:

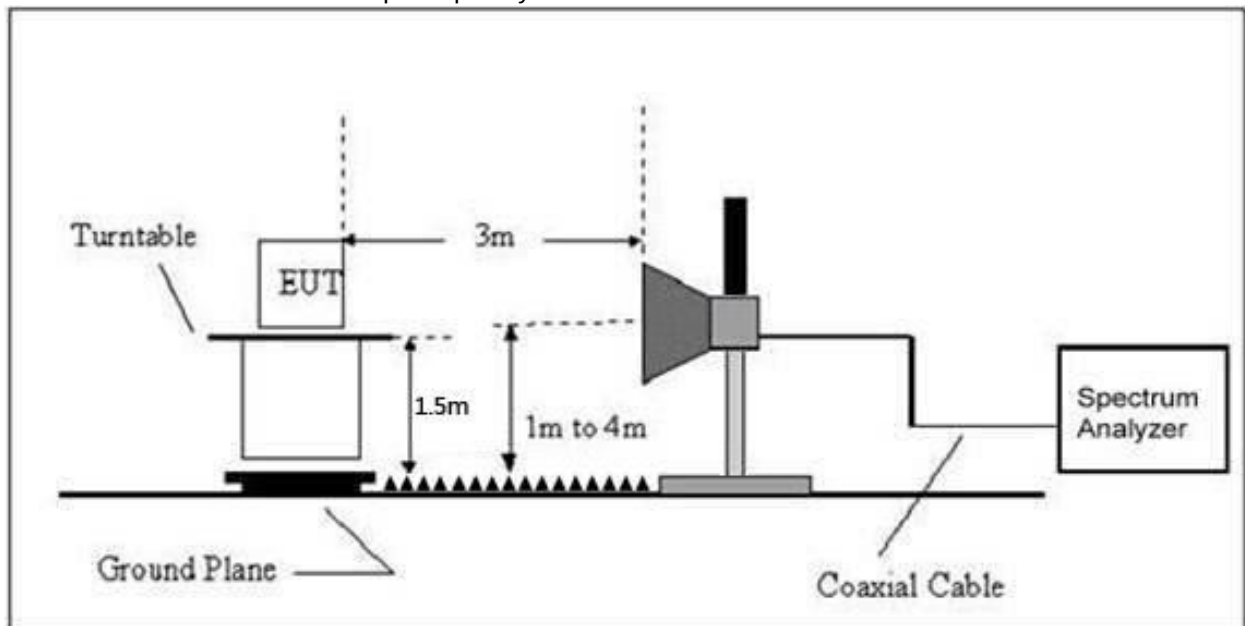
(A) Radiated Emission Test-Up Frequency Below 30MHz



(B) Radiated Emission Test-Up Frequency 30MHz~1GHz



(C) Radiated Emission Test-Up Frequency Above 1GHz



6.2 Limit

According to §22.913(a)(2), The ERP of mobile and portable stations transmitters and auxiliary test transmitters must not exceed 7 Watts.

According to §24.232 (c), Mobile and portable stations are limited to 2 watts EIRP and the equipment must employ a means for limiting power to the minimum necessary for successful communications.

According to §27.50(d)(4), Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP.

6.3 Test procedure

Radiated power test method:

1. The setup of EUT is according with per ANSI/TIA Standard 603D and ANSI C63.4-2014 measurement procedure.
2. The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.
3. The frequency range up to tenth harmonic of the fundamental frequency was investigated.
4. Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.

6.4 Test Result

Max Radiated Power:

FDD-LTE Band 2

Channel Bandwidth: 1.4MHz			
Modulation	Channel	E.R.P(dBm)	Verdict
QPSK	LCH	21.42	PASS
	MCK	22.07	PASS
	HCH	22.17	PASS
16QAM	LCH	22.56	PASS
	MCK	22.47	PASS
	HCH	22.53	PASS
Channel Bandwidth: 3MHz			
Modulation	Channel	E.R.P(dBm)	Verdict
QPSK	LCH	23.01	PASS
	MCK	22.25	PASS
	HCH	22.46	PASS
16QAM	LCH	22.78	PASS
	MCK	22.70	PASS
	HCH	23.22	PASS
Channel Bandwidth: 5MHz			
Modulation	Channel	E.R.P(dBm)	Verdict
QPSK	LCH	21.85	PASS
	MCK	22.47	PASS
	HCH	22.29	PASS
16QAM	LCH	22.36	PASS
	MCK	22.85	PASS
	HCH	22.44	PASS
Channel Bandwidth: 10MHz			
Modulation	Channel	E.R.P(dBm)	Verdict
QPSK	LCH	22.26	PASS
	MCK	22.08	PASS
	HCH	22.68	PASS
16QAM	LCH	22.89	PASS
	MCK	22.74	PASS
	HCH	21.93	PASS
Channel Bandwidth: 15MHz			
Modulation	Channel	E.R.P(dBm)	Verdict
QPSK	LCH	22.15	PASS
	MCK	22.24	PASS
	HCH	22.6	PASS
16QAM	LCH	22.87	PASS
	MCK	22.14	PASS
	HCH	22.53	PASS
Channel Bandwidth: 20MHz			
Modulation	Channel	E.R.P(dBm)	Verdict
QPSK	LCH	22.67	PASS
	MCK	21.95	PASS
	HCH	22.21	PASS
16QAM	LCH	22.46	PASS
	MCK	22.09	PASS
	HCH	22.83	PASS

FDD-LTE Band 4

Channel Bandwidth: 1.4MHz			
Modulation	Channel	E.I.R.P(dBm)	Verdict
QPSK	LCH	22.16	PASS
	MCK	22.56	PASS
	HCH	22.74	PASS
16QAM	LCH	22.23	PASS
	MCK	22.63	PASS
	HCH	22.14	PASS
Channel Bandwidth: 3MHz			
Modulation	Channel	E.I.R.P(dBm)	Verdict
QPSK	LCH	22.68	PASS
	MCK	22.41	PASS
	HCH	22.35	PASS
16QAM	LCH	22.86	PASS
	MCK	22.24	PASS
	HCH	22.31	PASS
Channel Bandwidth: 5MHz			
Modulation	Channel	E.I.R.P(dBm)	Verdict
QPSK	LCH	22.2	PASS
	MCK	23.04	PASS
	HCH	22.28	PASS
16QAM	LCH	22.34	PASS
	MCK	22.17	PASS
	HCH	22.69	PASS
Channel Bandwidth: 10MHz			
Modulation	Channel	E.I.R.P(dBm)	Verdict
QPSK	LCH	22.89	PASS
	MCK	22.34	PASS
	HCH	22.33	PASS
16QAM	LCH	22.14	PASS
	MCK	22.01	PASS
	HCH	22.47	PASS
Channel Bandwidth: 15MHz			
Modulation	Channel	E.I.R.P(dBm)	Verdict
QPSK	LCH	22.12	PASS
	MCK	22.68	PASS
	HCH	22.36	PASS
16QAM	LCH	22.7	PASS
	MCK	22.39	PASS
	HCH	22.85	PASS
Channel Bandwidth: 20MHz			
Modulation	Channel	E.I.R.P(dBm)	Verdict
QPSK	LCH	22.46	PASS
	MCK	22.98	PASS
	HCH	22.74	PASS
16QAM	LCH	22.36	PASS
	MCK	22.14	PASS
	HCH	22.65	PASS

FDD-LTE Band 5

Channel Bandwidth: 1.4MHz			
Modulation	Channel	E.R.P(dBm)	Verdict
QPSK	LCH	22.36	PASS
	MCK	22.14	PASS
	HCH	22.28	PASS
16QAM	LCH	22.97	PASS
	MCK	22.74	PASS
	HCH	22.25	PASS
Channel Bandwidth: 3MHz			
Modulation	Channel	E.R.P(dBm)	Verdict
QPSK	LCH	22.69	PASS
	MCK	22.14	PASS
	HCH	22.23	PASS
16QAM	LCH	22.25	PASS
	MCK	22.5	PASS
	HCH	22.07	PASS
Channel Bandwidth: 5MHz			
Modulation	Channel	E.R.P(dBm)	Verdict
QPSK	LCH	22.14	PASS
	MCK	22.36	PASS
	HCH	21.28	PASS
16QAM	LCH	22.49	PASS
	MCK	22.36	PASS
	HCH	21.99	PASS
Channel Bandwidth: 10MHz			
Modulation	Channel	E.R.P(dBm)	Verdict
QPSK	LCH	21.82	PASS
	MCK	22.65	PASS
	HCH	21.87	PASS
16QAM	LCH	22.40	PASS
	MCK	22.36	PASS
	HCH	22.15	PASS

FDD-LTE Band 7

Channel Bandwidth: 5MHz			
Modulation	Channel	E.I.R.P(dBm)	Verdict
QPSK	LCH	22.54	PASS
	MCK	22.12	PASS
	HCH	22.25	PASS
16QAM	LCH	22.89	PASS
	MCK	22.1	PASS
	HCH	22.25	PASS
Channel Bandwidth: 10MHz			
Modulation	Channel	E.I.R.P(dBm)	Verdict
QPSK	LCH	22.69	PASS
	MCK	22.78	PASS
	HCH	22.12	PASS
16QAM	LCH	22.30	PASS
	MCK	22.47	PASS
	HCH	22.36	PASS
Channel Bandwidth: 15MHz			
Modulation	Channel	E.I.R.P(dBm)	Verdict
QPSK	LCH	22.12	PASS
	MCK	22.13	PASS
	HCH	22.58	PASS
16QAM	LCH	22.26	PASS
	MCK	22.36	PASS
	HCH	22.78	PASS
Channel Bandwidth: 20MHz			
Modulation	Channel	E.I.R.P(dBm)	Verdict
QPSK	LCH	22.36	PASS
	MCK	21.99	PASS
	HCH	22.85	PASS
16QAM	LCH	22.13	PASS
	MCK	22.36	PASS
	HCH	22.67	PASS

FDD-LTE Band 12

Channel Bandwidth: 1.4MHz			
Modulation	Channel	E.R.P(dBm)	Verdict
QPSK	LCH	22.69	PASS
	MCK	22.47	PASS
	HCH	23.05	PASS
16QAM	LCH	23.12	PASS
	MCK	21.29	PASS
	HCH	22.98	PASS
Channel Bandwidth: 3MHz			
Modulation	Channel	E.R.P(dBm)	Verdict
QPSK	LCH	22.62	PASS
	MCK	22.17	PASS
	HCH	22.26	PASS
16QAM	LCH	22.89	PASS
	MCK	22.32	PASS
	HCH	22.15	PASS
Channel Bandwidth: 5MHz			
Modulation	Channel	E.R.P(dBm)	Verdict
QPSK	LCH	22.20	PASS
	MCK	22.46	PASS
	HCH	22.47	PASS
16QAM	LCH	22.25	PASS
	MCK	22.89	PASS
	HCH	23.11	PASS
Channel Bandwidth: 10MHz			
Modulation	Channel	E.R.P(dBm)	Verdict
QPSK	LCH	22.15	PASS
	MCK	22.46	PASS
	HCH	22.17	PASS
16QAM	LCH	21.98	PASS
	MCK	22.27	PASS
	HCH	22.44	PASS

FDD-LTE Band 13

Channel Bandwidth: 5MHz			
Modulation	Channel	E.R.P(dBm)	Verdict
QPSK	LCH	22.96	PASS
	MCK	22.78	PASS
	HCH	22.55	PASS
16QAM	LCH	22.47	PASS
	MCK	22.62	PASS
	HCH	22.17	PASS
Channel Bandwidth: 10MHz			
Modulation	Channel	E.R.P(dBm)	Verdict
QPSK	/	/	PASS
	MCK	22.84	PASS
	/	/	PASS
16QAM	/	/	PASS
	MCK	22.07	PASS
	/	/	PASS

FDD-LTE Band 17

Channel Bandwidth: 5MHz			
Modulation	Channel	E.R.P(dBm)	Verdict
QPSK	LCH	22.46	PASS
	MCK	22.39	PASS
	HCH	22.84	PASS
16QAM	LCH	22.55	PASS
	MCK	22.97	PASS
	HCH	22.82	PASS
Channel Bandwidth: 10MHz			
Modulation	Channel	E.R.P(dBm)	Verdict
QPSK	LCH	23.04	PASS
	MCK	22.95	PASS
	HCH	22.07	PASS
16QAM	LCH	21.96	PASS
	MCK	21.96	PASS
	HCH	22.84	PASS

FDD-LTE Band 25

Channel Bandwidth: 1.4MHz			
Modulation	Channel	E.R.P(dBm)	Verdict
QPSK	LCH	22.54	PASS
	MCK	22.28	PASS
	HCH	22.39	PASS
16QAM	LCH	22.87	PASS
	MCK	22.69	PASS
	HCH	22.15	PASS
Channel Bandwidth: 3MHz			
Modulation	Channel	E.R.P(dBm)	Verdict
QPSK	LCH	22.07	PASS
	MCK	21.94	PASS
	HCH	22.23	PASS
16QAM	LCH	22.65	PASS
	MCK	22.07	PASS
	HCH	22.5	PASS
Channel Bandwidth: 5MHz			
Modulation	Channel	E.R.P(dBm)	Verdict
QPSK	LCH	22.42	PASS
	MCK	21.85	PASS
	HCH	22.47	PASS
16QAM	LCH	22.64	PASS
	MCK	22.26	PASS
	HCH	22.28	PASS
Channel Bandwidth: 10MHz			
Modulation	Channel	E.R.P(dBm)	Verdict
QPSK	LCH	22.36	PASS
	MCK	22.14	PASS
	HCH	22.89	PASS
16QAM	LCH	22.14	PASS
	MCK	22.26	PASS
	HCH	22.27	PASS
Channel Bandwidth: 15MHz			
Modulation	Channel	E.R.P(dBm)	Verdict
QPSK	LCH	22.17	PASS

16QAM	MCK	22.63	PASS
	HCH	22.51	PASS
	LCH	22.25	PASS
	MCK	22.74	PASS
	HCH	22.26	PASS
Channel Bandwidth: 20MHz			
Modulation	Channel	E.R.P(dBm)	Verdict
QPSK	LCH	22.36	PASS
	MCK	22.74	PASS
	HCH	22.89	PASS
16QAM	LCH	22.12	PASS
	MCK	22.03	PASS
	HCH	21.47	PASS

FDD-LTE Band 26 (814 to 824 MHz)

Channel Bandwidth: 1.4MHz			
Modulation	Channel	E.R.P(dBm)	Verdict
QPSK	LCH	22.24	PASS
	MCK	22.69	PASS
	HCH	21.74	PASS
16QAM	LCH	22.85	PASS
	MCK	22.02	PASS
	HCH	22.3	PASS
Channel Bandwidth: 3MHz			
Modulation	Channel	E.R.P(dBm)	Verdict
QPSK	LCH	21.69	PASS
	MCK	22.47	PASS
	HCH	22.32	PASS
16QAM	LCH	22.05	PASS
	MCK	22.47	PASS
	HCH	22.36	PASS
Channel Bandwidth: 5MHz			
Modulation	Channel	E.R.P(dBm)	Verdict
QPSK	LCH	22.95	PASS
	MCK	22.15	PASS
	HCH	22.47	PASS
16QAM	LCH	22.7	PASS
	MCK	22.01	PASS
	HCH	22.64	PASS
Channel Bandwidth: 10MHz			
Modulation	Channel	E.R.P(dBm)	Verdict
QPSK	LCH	22.17	PASS
	MCK	22.23	PASS
	HCH	22.47	PASS
16QAM	LCH	22.15	PASS
	MCK	22.36	PASS
	HCH	22.75	PASS

FDD-LTE Band 26 (824 to 849 MHz)

Channel Bandwidth: 1.4MHz			
Modulation	Channel	E.R.P(dBm)	Verdict
QPSK	LCH	22.02	PASS
	MCK	22.14	PASS
	HCH	22.16	PASS
16QAM	LCH	22.14	PASS
	MCK	22.78	PASS
	HCH	22.12	PASS
Channel Bandwidth: 3MHz			
Modulation	Channel	E.R.P(dBm)	Verdict
QPSK	LCH	21.36	PASS
	MCK	22.89	PASS
	HCH	22.47	PASS
16QAM	LCH	22.69	PASS
	MCK	22.78	PASS
	HCH	22.15	PASS
Channel Bandwidth: 5MHz			
Modulation	Channel	E.R.P(dBm)	Verdict
QPSK	LCH	22.69	PASS
	MCK	21.97	PASS
	HCH	22.64	PASS
16QAM	LCH	22.84	PASS
	MCK	22.41	PASS
	HCH	22.37	PASS
Channel Bandwidth: 10MHz			
Modulation	Channel	E.R.P(dBm)	Verdict
QPSK	LCH	22.69	PASS
	MCK	22.26	PASS
	HCH	22.68	PASS
16QAM	LCH	22.94	PASS
	MCK	22.17	PASS
	HCH	22.25	PASS
Channel Bandwidth: 15MHz			
Modulation	Channel	E.R.P(dBm)	Verdict
QPSK	LCH	22.07	PASS
	MCK	22.69	PASS
	HCH	22.57	PASS
16QAM	LCH	22.24	PASS
	MCK	22.31	PASS
	HCH	22.96	PASS

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FDD-LTE Band 38

Channel Bandwidth: 5MHz			
Modulation	Channel	E.I.R.P(dBm)	Verdict
QPSK	LCH	22.30	PASS
	MCK	22.14	PASS
	HCH	22.78	PASS
16QAM	LCH	22.26	PASS
	MCK	22.78	PASS
	HCH	22.23	PASS
Channel Bandwidth: 10MHz			
Modulation	Channel	E.I.R.P(dBm)	Verdict
QPSK	LCH	22.36	PASS
	MCK	22.14	PASS
	HCH	22.78	PASS
16QAM	LCH	22.12	PASS
	MCK	22.26	PASS
	HCH	22.78	PASS
Channel Bandwidth: 15MHz			
Modulation	Channel	E.I.R.P(dBm)	Verdict
QPSK	LCH	22.36	PASS
	MCK	22.98	PASS
	HCH	22.25	PASS
16QAM	LCH	22.12	PASS
	MCK	22.78	PASS
	HCH	22.36	PASS
Channel Bandwidth: 20MHz			
Modulation	Channel	E.I.R.P(dBm)	Verdict
QPSK	LCH	22.02	PASS
	MCK	22.87	PASS
	HCH	22.25	PASS
16QAM	LCH	22.85	PASS
	MCK	22.14	PASS
	HCH	22.13	PASS

FDD-LTE Band 40

Channel Bandwidth: 5MHz			
Modulation	Channel	E.I.R.P(dBm)	Verdict
QPSK	LCH	22.85	PASS
	MCK	22.28	PASS
	HCH	22.17	PASS
16QAM	LCH	22.26	PASS
	MCK	22.27	PASS
	HCH	22.63	PASS
Channel Bandwidth: 10MHz			
Modulation	Channel	E.I.R.P(dBm)	Verdict
QPSK	LCH	22.64	PASS
	MCK	22.15	PASS
	HCH	22.89	PASS
16QAM	LCH	22.14	PASS
	MCK	22.55	PASS
	HCH	22.9	PASS

FDD-LTE Band 41

Channel Bandwidth: 5MHz			
Modulation	Channel	E.I.R.P(dBm)	Verdict
QPSK	LCH	22.49	PASS
	MCK	22.58	PASS
	HCH	22.14	PASS
16QAM	LCH	22.03	PASS
	MCK	22.69	PASS
	HCH	22.04	PASS
Channel Bandwidth: 10MHz			
Modulation	Channel	E.I.R.P(dBm)	Verdict
QPSK	LCH	22.8	PASS
	MCK	22.26	PASS
	HCH	22.25	PASS
16QAM	LCH	22.47	PASS
	MCK	22.69	PASS
	HCH	22.25	PASS
Channel Bandwidth: 15MHz			
Modulation	Channel	E.I.R.P(dBm)	Verdict
QPSK	LCH	22.03	PASS
	MCK	22.25	PASS
	HCH	22.78	PASS
16QAM	LCH	22.69	PASS
	MCK	22.8	PASS
	HCH	22.44	PASS
Channel Bandwidth: 20MHz			
Modulation	Channel	E.I.R.P(dBm)	Verdict
QPSK	LCH	22.21	PASS
	MCK	22.98	PASS
	HCH	22.47	PASS
16QAM	LCH	22.63	PASS
	MCK	22.32	PASS
	HCH	22.55	PASS

FDD-LTE Band 66

Channel Bandwidth: 1.4MHz			
Modulation	Channel	E.R.P(dBm)	Verdict
QPSK	LCH	22.63	PASS
	MCK	22.17	PASS
	HCH	22.98	PASS
16QAM	LCH	22.14	PASS
	MCK	22.91	PASS
	HCH	22.01	PASS
Channel Bandwidth: 3MHz			
Modulation	Channel	E.R.P(dBm)	Verdict
QPSK	LCH	21.44	PASS
	MCK	22.28	PASS
	HCH	22.24	PASS
16QAM	LCH	22.39	PASS
	MCK	22.14	PASS
	HCH	22.29	PASS
Channel Bandwidth: 5MHz			
Modulation	Channel	E.R.P(dBm)	Verdict
QPSK	LCH	22.17	PASS
	MCK	21.9	PASS
	HCH	22.47	PASS
16QAM	LCH	22.71	PASS
	MCK	22.69	PASS
	HCH	22.31	PASS
Channel Bandwidth: 10MHz			
Modulation	Channel	E.R.P(dBm)	Verdict
QPSK	LCH	22.02	PASS
	MCK	22.39	PASS
	HCH	22.71	PASS
16QAM	LCH	22.24	PASS
	MCK	22.95	PASS
	HCH	22.17	PASS
Channel Bandwidth: 15MHz			
Modulation	Channel	E.R.P(dBm)	Verdict
QPSK	LCH	22.39	PASS
	MCK	22.24	PASS
	HCH	22.68	PASS
16QAM	LCH	22.39	PASS
	MCK	22.14	PASS
	HCH	22.98	PASS
Channel Bandwidth: 20MHz			
Modulation	Channel	E.R.P(dBm)	Verdict
QPSK	LCH	22.02	PASS
	MCK	22.14	PASS
	HCH	22.26	PASS
16QAM	LCH	22.39	PASS
	MCK	22.24	PASS
	HCH	21.05	PASS

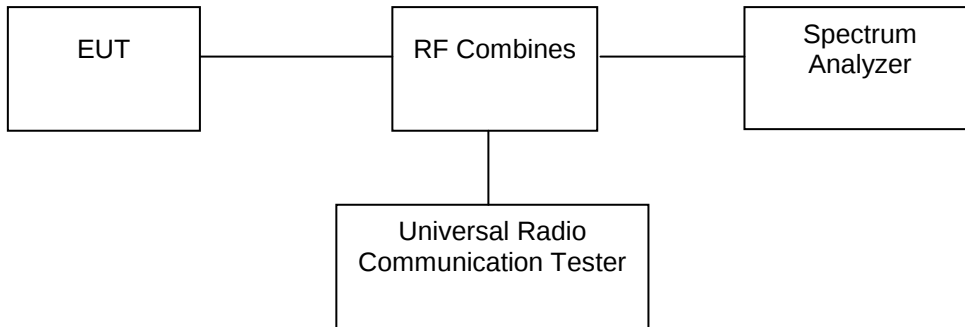
Max Conducted output Power:

Please refer to appendix A: Conducted Output Power

Test Result: Pass

7. Peak-To-Average Ratio(PAR) Of Transmitter

7.1 Block Diagram Of Test Setup



7.2 Limit

According to §24.232(d), Power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph (e) of this section. In both instances, equipment employed must be authorized in accordance with the provisions of §24.51. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

According to §27.50(B), the peak-to-average power ratio (PAPR) of the transmitter output power must not exceed 13 dB. The PAPR measurements should be made using either an instrument with complementary cumulative distribution function (CCDF) capabilities to determine that PAPR will not exceed 13 dB for more than 0.1 percent of the time or other Commission approved procedure. The measurement must be performed using a signal corresponding to the highest PAPR expected during periods of continuous transmission.

7.3 Test procedure

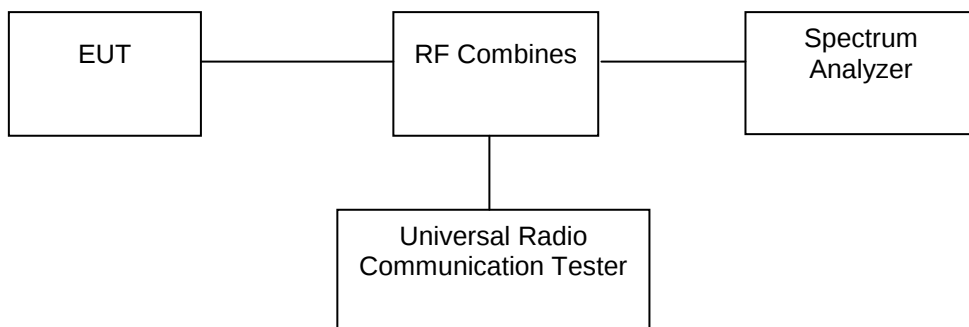
The RF output terminal of the transmitter was connected to the input of the spectrum analyzer via a suitable attenuation. The RBW of the spectrum analyzer was set to 30kHz and the peak-to-average ratio (PAR) of the transmission was recorded. Record the maximum PAPR level associated with a probability of 0.1%.

7.4 Test Result

Please refer to Appendix 3: Peak-to-Average Ratio
Test Result: Pass

8. Emission Bandwidth

8.1 Block Diagram Of Test Setup



8.2 Standard Applicable

According to §22.917(b), The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

According to §24.238(b), The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

According to §27.53, The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

8.3 Test procedure

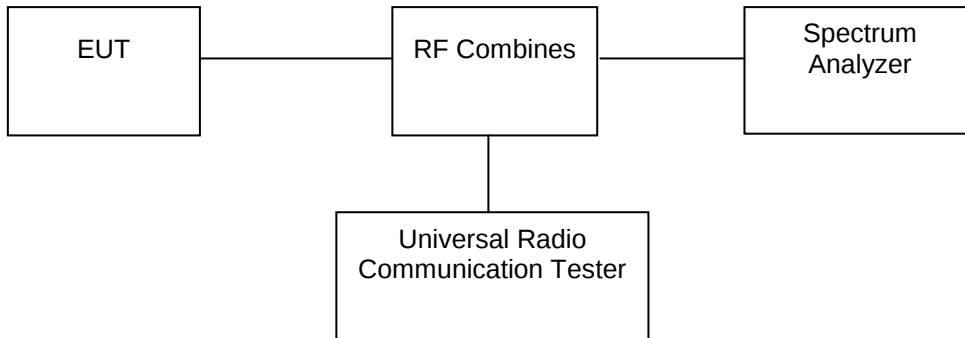
1. The testing follows FCC KDB 971168 D01v03 Section 4.2.
2. The EUT was connected to the spectrum analyzer and system simulator via a power divider.
3. The RF output of the EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
4. The 99% occupied bandwidth were measured, set RBW= 1% of OBW, VBW= 3*RBW, sample detector, trace maximum hold.
5. The 26dB bandwidth were measured, set RBW= 1% of EBW, VBW= 3*RBW, peak detector, trace maximum hold.

8.4 Test Result

Please refer to Appendix 4: Occupied BandWidth
Test Result: Pass

9. Out of Band Emissions at Antenna Terminal

9.1 Block Diagram Of Test Setup



9.2 Limit

According to §22.917(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

According to §24.238(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

According to §27.53 (h), the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ dB.

9.3 Test procedure

The RF output terminal of the transmitter was connected to the input of the spectrum analyzer via a suitable attenuation. The RBW of the spectrum analyzer was set to 100kHz and 1MHz for the scan frequency from 30MHz to 1GHz and the scan frequency from 1GHz to up to 10th harmonic.

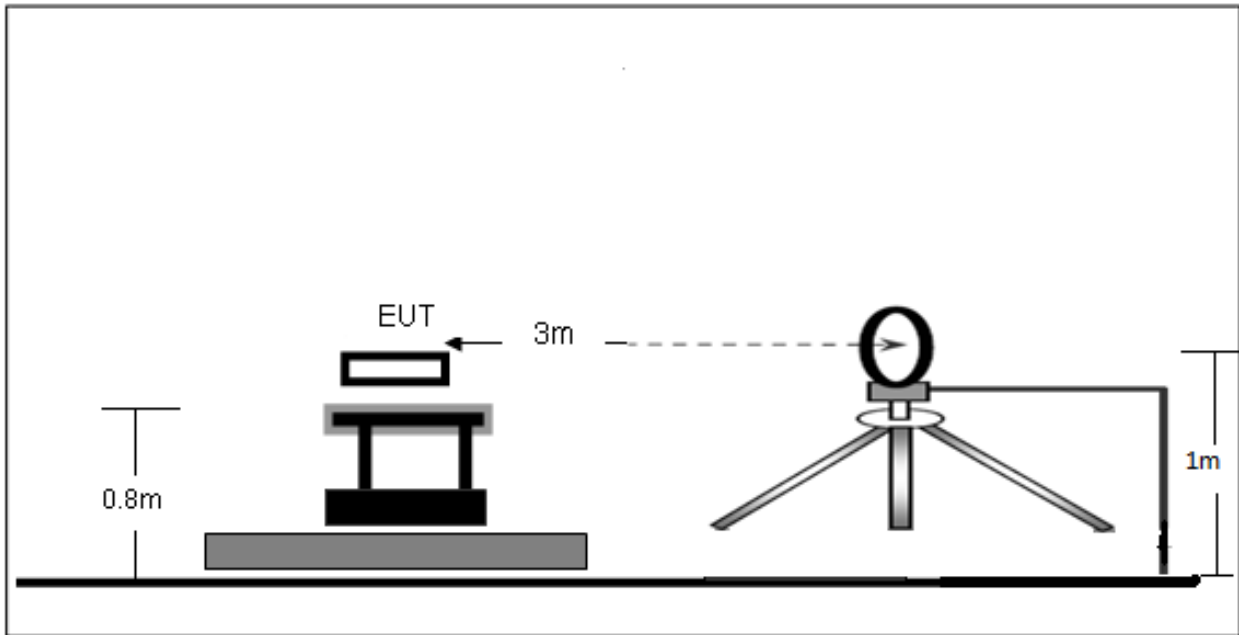
9.4 Test Result

Please refer to Appendix 5: Band Edge & Appendix 6: Out-of-band Emissions
Test Result: Pass

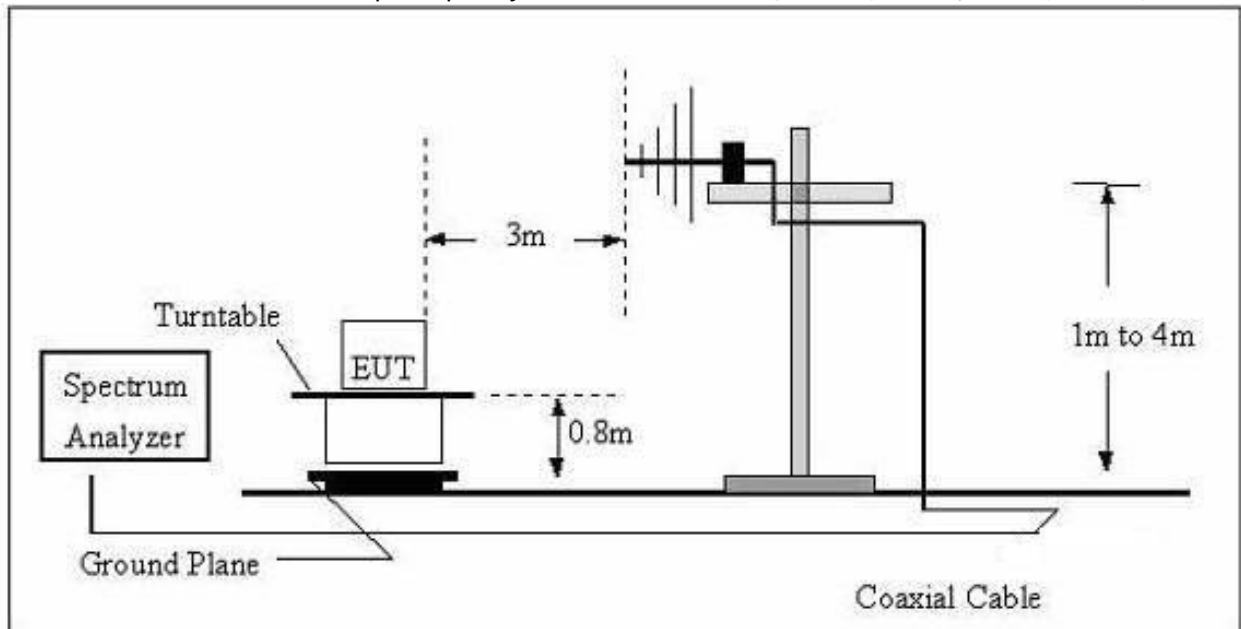
10. Spurious Radiated Emissions

10.1 Block Diagram Of Test Setup

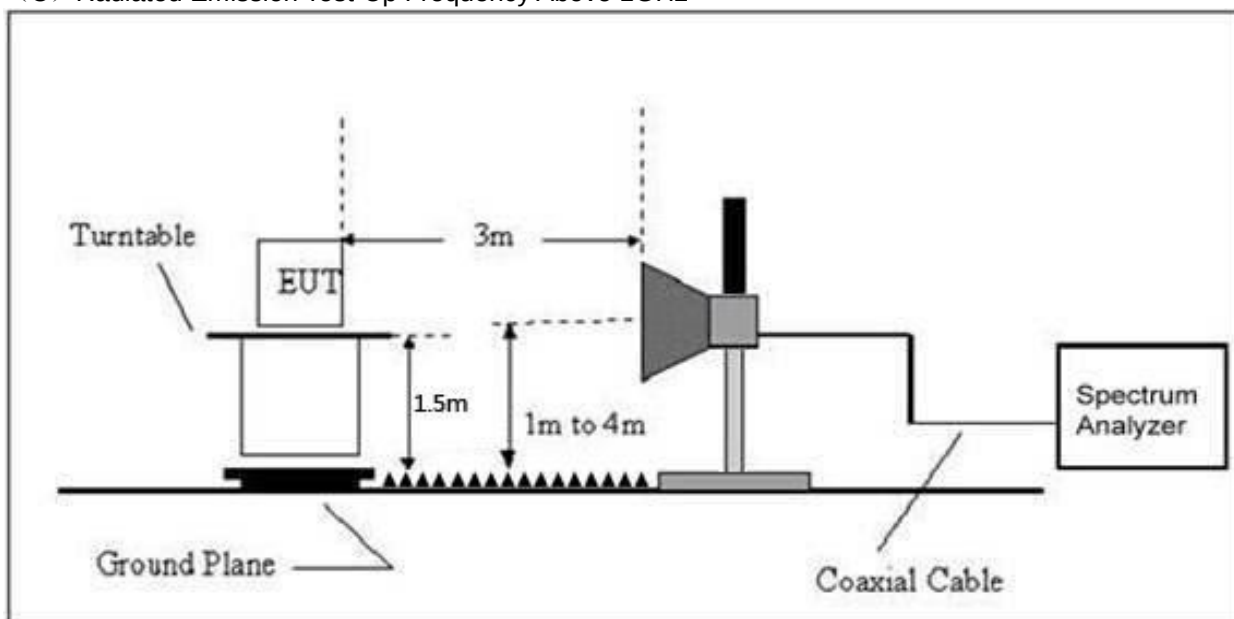
(A) Radiated Emission Test-Up Frequency Below 30MHz



(B) Radiated Emission Test-Up Frequency 30MHz~1GHz



(C) Radiated Emission Test-Up Frequency Above 1GHz



10.2 Limit

According to §22.917(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

According to §24.238(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

According to §27.53 (h), the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ dB.

10.3 Test procedure

1. The setup of EUT is according with per ANSI/TIA Standard 603D and ANSI C63.4-2014 measurement procedure.
2. The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.
3. The frequency range up to tenth harmonic of the fundamental frequency was investigated.
4. Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.

Spurious attenuation limit in dB
 $= 43 + 10 \log_{10}(\text{power out in Watts})$

10.4 Test Result

For FDD-LTE Band 2 Mode

Frequency (MHz)	Reading (dBm)	Correct dB	Result (dBm)	Limit (dBm)	Margin (dB)	Polar H/V
Low Channel (1852.5MHz)						
81.23	-13.83	-30.61	-44.44	-13.00	-31.44	H
3705.00	-20.09	-22.19	-42.28	-13.00	-29.28	H
5557.50	-26.91	-19.32	-46.23	-13.00	-33.23	H
81.23	-12.01	-30.61	-42.62	-13.00	-29.62	V
3705.00	-18.96	-22.19	-41.15	-13.00	-28.15	V
5557.50	-25.19	-19.32	-44.51	-13.00	-31.51	V
Middle Channel (1880MHz)						
81.23	-11.02	-30.61	-41.63	-13.00	-28.63	H
3760.00	-18.08	-22.08	-40.16	-13.00	-27.16	H
5640.00	-24.56	-19.28	-43.84	-13.00	-30.84	H
81.23	-13.14	-30.61	-43.75	-13.00	-30.75	V
3760.00	-18.82	-22.08	-40.90	-13.00	-27.90	V
5640.00	-23.14	-19.28	-42.42	-13.00	-29.42	V
High Channel (1907.5MHz)						
81.23	-14.91	-30.61	-45.52	-13.00	-32.52	H
3815.00	-18.50	-21.97	-40.47	-13.00	-27.47	H
5722.50	-23.15	-19.24	-42.39	-13.00	-29.39	H
81.23	-11.41	-30.61	-42.02	-13.00	-29.02	V
3815.00	-19.47	-21.97	-41.44	-13.00	-28.44	V
5722.50	-24.51	-19.24	-43.75	-13.00	-30.75	V

For FDD-LTE Band 4 Mode

Frequency (MHz)	Reading (dBm)	Correct dB	Result (dBm)	Limit (dBm)	Margin (dB)	Polar H/V
Low Channel (1710.7MHz)						
81.23	-13.10	-30.61	-43.71	-13.00	-30.71	H
3421.40	-26.25	-22.76	-49.01	-13.00	-36.01	H
5132.10	-29.97	-19.53	-49.50	-13.00	-36.50	H
81.23	-13.38	-30.61	-43.99	-13.00	-30.99	V
3421.40	-27.59	-22.76	-50.35	-13.00	-37.35	V
5132.10	-31.52	-19.53	-51.05	-13.00	-38.05	V
Middle Channel (1732.5MHz)						
81.23	-11.47	-30.61	-42.08	-13.00	-29.08	H
3465.00	-25.54	-22.67	-48.21	-13.00	-35.21	H
5197.50	-32.32	-19.51	-51.83	-13.00	-38.83	H
81.23	-11.61	-30.61	-42.22	-13.00	-29.22	V
3465.00	-27.13	-22.67	-49.80	-13.00	-36.80	V
5197.50	-29.54	-19.51	-49.05	-13.00	-36.05	V
High Channel (1754.3MHz)						
81.23	-13.49	-30.61	-44.10	-13.00	-31.10	H
3490.60	-25.20	-14.99	-40.19	-13.00	-27.19	H
5235.90	-29.74	-9.95	-39.69	-13.00	-26.69	H
81.23	-12.66	-30.61	-43.27	-13.00	-30.27	V
3490.60	-29.04	-14.99	-44.03	-13.00	-31.03	V
5235.90	-29.26	-9.95	-39.21	-13.00	-26.21	V

For FDD-LTE Band 5 Mode

Frequency (MHz)	Reading (dBm)	Correct dB	Result (dBm)	Limit (dBm)	Margin (dB)	Polar H/V
Low Channel (824.7MHz)						
81.23	-12.97	-30.61	-43.58	-13.00	-30.58	H
1649.40	-26.41	-27.37	-53.78	-13.00	-40.78	H
2474.10	-31.27	-25.18	-56.45	-13.00	-43.45	H
81.23	-13.11	-30.61	-43.72	-13.00	-30.72	V
1649.40	-29.37	-27.37	-56.74	-13.00	-43.74	V
2474.10	-29.60	-25.18	-54.78	-13.00	-41.78	V
Middle Channel (836.5MHz)						
81.23	-14.91	-30.61	-45.52	-13.00	-32.52	H
1673.00	-25.91	-27.32	-53.23	-13.00	-40.23	H
2509.50	-29.58	-25.07	-54.65	-13.00	-41.65	H
81.23	-11.73	-30.61	-42.34	-13.00	-29.34	V
1673.00	-28.98	-27.32	-56.30	-13.00	-43.30	V
2509.50	-30.45	-25.07	-55.52	-13.00	-42.52	V
High Channel (848.3MHz)						
81.23	-11.93	-30.61	-42.54	-13.00	-29.54	H
1696.60	-24.31	-27.27	-51.58	-13.00	-38.58	H
2544.90	-32.37	-24.97	-57.34	-13.00	-44.34	H
81.23	-12.89	-30.61	-43.50	-13.00	-30.50	V
1696.60	-28.10	-27.27	-55.37	-13.00	-42.37	V
2544.90	-29.01	-24.97	-53.98	-13.00	-40.98	V

For FDD-LTE Band 7 Mode

Frequency (MHz)	Reading (dBm)	Correct dB	Result (dBm)	Limit (dBm)	Margin (dB)	Polar H/V
Low Channel (2502.5MHz)						
81.23	-12.22	-30.61	-42.83	-25.00	-17.83	H
5005.00	-18.20	-19.60	-37.80	-25.00	-12.80	H
7507.50	-24.08	-13.38	-37.46	-25.00	-12.46	H
81.23	-11.36	-30.61	-41.97	-25.00	-16.97	V
5005.00	-18.37	-19.60	-37.97	-25.00	-12.97	V
7507.50	-25.13	-13.38	-38.51	-25.00	-13.51	V
Middle Channel (2535MHz)						
81.23	-11.75	-30.61	-42.36	-25.00	-17.36	H
5070.00	-19.10	-19.57	-38.67	-25.00	-13.67	H
7605.00	-26.82	-13.11	-39.93	-25.00	-14.93	H
81.23	-13.22	-30.61	-43.83	-25.00	-18.83	V
5070.00	-20.59	-19.57	-40.16	-25.00	-15.16	V
7605.00	-23.36	-13.11	-36.47	-25.00	-11.47	V
High Channel (2567.5MHz)						
81.23	-12.16	-30.61	-42.77	-25.00	-17.77	H
5135.00	-21.06	-19.53	-40.59	-25.00	-15.59	H
7702.50	-23.02	-12.83	-35.85	-25.00	-10.85	H
81.23	-13.67	-30.61	-44.28	-25.00	-19.28	V
5135.00	-18.69	-19.53	-38.22	-25.00	-13.22	V
7702.50	-26.19	-12.83	-39.02	-25.00	-14.02	V

For FDD-LTE Band 12 Mode

Frequency (MHz)	Reading (dBm)	Correct dB	Result (dBm)	Limit (dBm)	Margin (dB)	Polar H/V
Low Channel (699.7MHz)						
81.23	-14.73	-30.61	-45.34	-13.00	-32.34	H
1399.40	-24.34	-27.92	-52.26	-13.00	-39.26	H
2099.10	-30.62	-26.30	-56.92	-13.00	-43.92	H
81.23	-13.46	-30.61	-44.07	-13.00	-31.07	V
1399.40	-27.25	-27.92	-55.17	-13.00	-42.17	V
2099.10	-29.07	-26.30	-55.37	-13.00	-42.37	V
Middle Channel (707.5MHz)						
81.23	-14.64	-30.61	-45.25	-13.00	-32.25	H
1415.00	-26.83	-27.89	-54.72	-13.00	-41.72	H
2122.50	-30.64	-26.23	-56.87	-13.00	-43.87	H
81.23	-14.91	-30.61	-45.52	-13.00	-32.52	V
1415.00	-29.56	-27.89	-57.45	-13.00	-44.45	V
2122.50	-28.77	-26.23	-55.00	-13.00	-42.00	V
High Channel (715.3MHz)						
81.23	-12.77	-30.61	-43.38	-13.00	-30.38	H
1430.60	-25.28	-27.85	-53.13	-13.00	-40.13	H
2145.90	-31.99	-26.16	-58.15	-13.00	-45.15	H
81.23	-13.71	-30.61	-44.32	-13.00	-31.32	V
1430.60	-27.71	-27.85	-55.56	-13.00	-42.56	V
2145.90	-29.34	-26.16	-55.50	-13.00	-42.50	V

For FDD-LTE Band 13 Mode

Frequency (MHz)	Reading (dBm)	Correct dB	Result (dBm)	Limit (dBm)	Margin (dB)	Polar H/V
Low Channel (779.5MHz)						
81.23	-14.56	-30.61	-45.17	-13.00	-32.17	H
1559.00	-27.68	-27.57	-55.25	-13.00	-42.25	H
2338.50	-29.32	-25.58	-54.90	-13.00	-41.90	H
81.23	-14.22	-30.61	-44.83	-13.00	-31.83	V
1559.00	-29.35	-27.57	-56.92	-13.00	-43.92	V
2338.50	-31.33	-25.58	-56.91	-13.00	-43.91	V
Middle Channel (782MHz)						
81.23	-13.32	-30.61	-43.93	-13.00	-30.93	H
1564.00	-26.28	-27.56	-53.84	-13.00	-40.84	H
2346.00	-29.62	-25.56	-55.18	-13.00	-42.18	H
81.23	-14.41	-30.61	-45.02	-13.00	-32.02	V
1564.00	-29.93	-27.56	-57.49	-13.00	-44.49	V
2346.00	-29.02	-25.56	-54.58	-13.00	-41.58	V
High Channel (784.5MHz)						
81.23	-11.30	-30.61	-41.91	-13.00	-28.91	H
1569.00	-26.12	-27.55	-53.67	-13.00	-40.67	H
2353.50	-31.50	-25.54	-57.04	-13.00	-44.04	H
81.23	-11.56	-30.61	-42.17	-13.00	-29.17	V
1569.00	-28.31	-27.55	-55.86	-13.00	-42.86	V
2353.50	-28.81	-25.54	-54.35	-13.00	-41.35	V

For FDD-LTE Band 17 Mode

Frequency (MHz)	Reading (dBm)	Correct dB	Result (dBm)	Limit (dBm)	Margin (dB)	Polar H/V
Low Channel (706.5MHz)						
81.23	-14.00	-30.61	-44.61	-13.00	-31.61	H
1413.00	-26.92	-27.89	-54.81	-13.00	-41.81	H
2119.50	-29.84	-26.24	-56.08	-13.00	-43.08	H
81.23	-12.12	-30.61	-42.73	-13.00	-29.73	V
1413.00	-28.50	-27.89	-56.39	-13.00	-43.39	V
2119.50	-28.67	-26.24	-54.91	-13.00	-41.91	V
Middle Channel (710MHz)						
81.23	-11.03	-30.61	-41.64	-13.00	-28.64	H
1420.00	-27.82	-27.88	-55.70	-13.00	-42.70	H
2130.00	-30.33	-26.21	-56.54	-13.00	-43.54	H
81.23	-12.14	-30.61	-42.75	-13.00	-29.75	V
1420.00	-27.26	-27.88	-55.14	-13.00	-42.14	V
2130.00	-28.68	-26.21	-54.89	-13.00	-41.89	V
High Channel (713.5MHz)						
81.23	-13.44	-30.61	-44.05	-13.00	-31.05	H
1427.00	-27.43	-27.86	-55.29	-13.00	-42.29	H
2140.50	-30.55	-26.18	-56.73	-13.00	-43.73	H
81.23	-11.19	-30.61	-41.80	-13.00	-28.80	V
1427.00	-28.45	-27.86	-56.31	-13.00	-43.31	V
2140.50	-29.31	-26.18	-55.49	-13.00	-42.49	V

For FDD-LTE Band 25 Mode

Frequency (MHz)	Reading (dBm)	Correct dB	Result (dBm)	Limit (dBm)	Margin (dB)	Polar H/V
Low Channel (1850.7MHz)						
81.23	-14.75	-30.61	-45.36	-13.00	-32.36	H
3701.40	-25.19	-22.20	-47.39	-13.00	-34.39	H
5552.10	-29.00	-19.32	-48.32	-13.00	-35.32	H
81.23	-13.80	-30.61	-44.41	-13.00	-31.41	V
3701.40	-29.02	-22.20	-51.22	-13.00	-38.22	V
5552.10	-28.06	-19.32	-47.38	-13.00	-34.38	V
Middle Channel (1882.5MHz)						
81.23	-12.45	-30.61	-43.06	-13.00	-30.06	H
3765.00	-26.43	-22.07	-48.50	-13.00	-35.50	H
5647.50	-29.19	-19.28	-48.47	-13.00	-35.47	H
81.23	-13.18	-30.61	-43.79	-13.00	-30.79	V
3765.00	-28.15	-22.07	-50.22	-13.00	-37.22	V
5647.50	-30.02	-19.28	-49.30	-13.00	-36.30	V
High Channel (1914.3MHz)						
81.23	-11.47	-30.61	-42.08	-13.00	-29.08	H
3828.60	-26.63	-21.94	-48.57	-13.00	-35.57	H
5742.90	-29.15	-19.23	-48.38	-13.00	-35.38	H
81.23	-11.60	-30.61	-42.21	-13.00	-29.21	V
3828.60	-27.12	-21.94	-49.06	-13.00	-36.06	V
5742.90	-30.58	-19.23	-49.81	-13.00	-36.81	V

For FDD-LTE Band 26 (814-824) Mode

Frequency (MHz)	Reading (dBm)	Correct dB	Result (dBm)	Limit (dBm)	Margin (dB)	Polar H/V
Low Channel (814.7MHz)						
81.23	-12.23	-30.56	-42.79	-13.00	-29.79	H
1629.40	-27.97	-27.37	-55.34	-13.00	-42.34	H
2444.10	-29.51	-25.18	-54.69	-13.00	-41.69	H
81.23	-12.99	-30.56	-43.55	-13.00	-30.55	V
1629.40	-26.92	-27.37	-54.29	-13.00	-41.29	V
2444.10	-28.70	-25.18	-53.88	-13.00	-40.88	V
Middle Channel (819MHz)						
81.23	-11.57	-30.56	-42.13	-13.00	-29.13	H
1638.00	-26.95	-27.32	-54.27	-13.00	-41.27	H
2457.00	-32.01	-25.07	-57.08	-13.00	-44.08	H
81.23	-12.38	-30.56	-42.94	-13.00	-29.94	V
1638.00	-28.89	-27.32	-56.21	-13.00	-43.21	V
2457.00	-31.07	-25.07	-56.14	-13.00	-43.14	V
High Channel (823.3MHz)						
81.23	-12.99	-30.56	-43.55	-13.00	-30.55	H
1646.60	-25.51	-27.27	-52.78	-13.00	-39.78	H
2469.90	-31.90	-24.97	-56.87	-13.00	-43.87	H
81.23	-12.68	-30.56	FALSE	-13.00	13.00	V
1646.60	-28.80	-27.27	-56.07	-13.00	-43.07	V
2469.90	-31.03	-24.97	-56.00	-13.00	-43.00	V

For FDD-LTE Band 26 (824-849) Mode

Frequency (MHz)	Reading (dBm)	Correct dB	Result (dBm)	Limit (dBm)	Margin (dB)	Polar H/V
Low Channel (824.7MHz)						
81.23	-11.80	-30.56	-42.36	-13.00	-29.36	H
1649.80	-25.12	-27.37	-52.49	-13.00	-39.49	H
2474.70	-29.61	-25.18	-54.79	-13.00	-41.79	H
81.23	-12.26	-30.56	-42.82	-13.00	-29.82	V
1649.80	-29.46	-27.37	-56.83	-13.00	-43.83	V
2474.70	-28.68	-25.18	-53.86	-13.00	-40.86	V
Middle Channel (836.5MHz)						
81.23	-12.66	-30.56	-43.22	-13.00	-30.22	H
1673.00	-26.20	-27.32	-53.52	-13.00	-40.52	H
2509.50	-32.42	-25.07	-57.49	-13.00	-44.49	H
81.23	-13.39	-30.56	-43.95	-13.00	-30.95	V
1673.00	-28.32	-27.32	-55.64	-13.00	-42.64	V
2509.50	-29.00	-25.07	-54.07	-13.00	-41.07	V
High Channel (848.3MHz)						
81.23	-12.74	-30.56	-43.30	-13.00	-30.30	H
1696.60	-26.49	-27.27	-53.76	-13.00	-40.76	H
2544.90	-32.35	-24.97	-57.32	-13.00	-44.32	H
81.23	-12.08	-30.56	FALSE	-13.00	13.00	V
1696.60	-28.71	-27.27	-55.98	-13.00	-42.98	V
2544.90	-28.84	-24.97	-53.81	-13.00	-40.81	V

For FDD-LTE Band 38 Mode

Frequency (MHz)	Reading (dBm)	Correct dB	Result (dBm)	Limit (dBm)	Margin (dB)	Polar H/V
Low Channel (2572.5MHz)						
81.23	-12.12	-30.56	-42.68	-25.00	-17.68	H
5145.00	-27.38	-19.53	-46.91	-25.00	-21.91	H
7717.50	-32.65	-12.79	-45.44	-25.00	-20.44	H
81.23	-12.93	-30.56	-43.49	-25.00	-18.49	V
5145.00	-28.53	-19.53	-48.06	-25.00	-23.06	V
7717.50	-30.05	-12.79	-42.84	-25.00	-17.84	V
Middle Channel (2585MHz)						
81.23	-13.69	-30.56	-44.25	-25.00	-19.25	H
5170.00	-26.47	-19.51	-45.98	-25.00	-20.98	H
7755.00	-31.84	-12.60	-44.44	-25.00	-19.44	H
81.23	-12.85	-30.56	-43.41	-25.00	-18.41	V
5170.00	-26.60	-19.51	-46.11	-25.00	-21.11	V
7755.00	-29.42	-12.60	-42.02	-25.00	-17.02	V
High Channel (2617.5MHz)						
81.23	-11.85	-30.56	-42.41	-25.00	-17.41	H
5235.00	-25.80	-19.48	-45.28	-25.00	-20.28	H
7852.50	-32.21	-12.41	-44.62	-25.00	-19.62	H
81.23	-12.90	-30.56	-43.46	-25.00	-18.46	V
5235.00	-27.49	-19.48	-46.97	-25.00	-21.97	V
7852.50	-31.81	-12.41	-44.22	-25.00	-19.22	V

For FDD-LTE Band 40 Mode

Frequency (MHz)	Reading (dBm)	Correct dB	Result (dBm)	Limit (dBm)	Margin (dB)	Polar H/V
Low Channel (2302.5MHz)						
81.23	-13.79	-30.56	-44.35	-25.00	-19.35	H
4605.00	-27.15	-19.61	-46.76	-25.00	-21.76	H
6907.50	-29.59	-13.41	-43.00	-25.00	-18.00	H
81.23	-12.12	-30.56	-42.68	-25.00	-17.68	V
4605.00	-26.95	-19.61	-46.56	-25.00	-21.56	V
6907.50	-28.25	-13.41	-41.66	-25.00	-16.66	V
Middle Channel (2350MHz)						
81.23	-12.91	-30.56	-43.47	-25.00	-18.47	H
4700.00	-24.38	-19.51	-43.89	-25.00	-18.89	H
7050.00	-31.33	-12.62	-43.95	-25.00	-18.95	H
81.23	-12.30	-30.56	-42.86	-25.00	-17.86	V
4700.00	-26.67	-19.51	-46.18	-25.00	-21.18	V
7050.00	-30.64	-12.62	-43.26	-25.00	-18.26	V
High Channel (2397.5MHz)						
81.23	-11.89	-30.56	-42.45	-25.00	-17.45	H
4795.00	-25.25	-19.41	-44.66	-25.00	-19.66	H
7192.50	-32.03	-11.93	-43.96	-25.00	-18.96	H
81.23	-11.36	-30.56	-41.92	-25.00	-16.92	V
4795.00	-28.21	-19.41	-47.62	-25.00	-22.62	V
7192.50	-28.52	-11.93	-40.45	-25.00	-15.45	V

For FDD-LTE Band 41 Mode

Frequency (MHz)	Reading (dBm)	Correct dB	Result (dBm)	Limit (dBm)	Margin (dB)	Polar H/V
Low Channel (2498.5MHz)						
81.23	-13.06	-30.56	-43.62	-25.00	-18.62	81.23
4997.00	-26.28	-19.61	-45.89	-25.00	-20.89	4997.00
7495.50	-30.83	-13.41	-44.24	-25.00	-19.24	7495.50
81.23	-14.34	-30.56	-44.90	-25.00	-19.90	81.23
4997.00	-27.90	-19.61	-47.51	-25.00	-22.51	4997.00
7495.50	-30.63	-13.41	-44.04	-25.00	-19.04	7495.50
Middle Channel (2593MHz)						
81.23	-14.35	-30.56	-44.91	-25.00	-19.91	H
5186.00	-25.54	-19.51	-45.05	-25.00	-20.05	H
7779.00	-31.34	-12.62	-43.96	-25.00	-18.96	H
81.23	-13.21	-30.56	-43.77	-25.00	-18.77	V
5186.00	-28.76	-19.51	-48.27	-25.00	-23.27	V
7779.00	-28.04	-12.62	-40.66	-25.00	-15.66	V
High Channel (2687.5MHz)						
81.23	-14.01	-30.56	-44.57	-25.00	-19.57	H
5375.00	-25.40	-19.41	-44.81	-25.00	-19.81	H
8062.50	-29.51	-11.93	-41.44	-25.00	-16.44	H
81.23	-13.86	-30.56	-44.42	-25.00	-19.42	V
5375.00	-29.73	-19.41	-49.14	-25.00	-24.14	V
8062.50	-30.93	-11.93	-42.86	-25.00	-17.86	V

For FDD-LTE Band 66 Mode

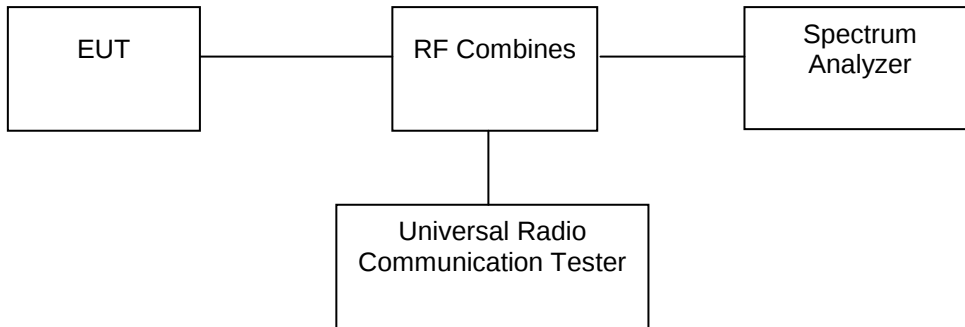
Frequency (MHz)	Reading (dBm)	Correct dB	Result (dBm)	Limit (dBm)	Margin (dB)	Polar H/V
Low Channel (1710.7MHz)						
81.23	-14.48	-30.56	-45.04	-13.00	-32.04	H
3421.40	-26.94	-22.76	-49.70	-13.00	-36.70	H
5132.10	-32.22	-19.53	-51.75	-13.00	-38.75	H
81.23	-11.93	-30.56	-42.49	-13.00	-29.49	V
3421.40	-26.28	-22.76	-49.04	-13.00	-36.04	V
5132.10	-28.31	-19.53	-47.84	-13.00	-34.84	V
Middle Channel (1745MHz)						
81.23	-12.76	-30.56	-43.32	-13.00	-30.32	H
3490.00	-27.38	-22.62	-50.00	-13.00	-37.00	H
5235.00	-31.22	-19.48	-50.70	-13.00	-37.70	H
81.23	-13.62	-30.56	-44.18	-13.00	-31.18	V
3490.00	-27.71	-22.62	-50.33	-13.00	-37.33	V
5235.00	-30.07	-19.48	-49.55	-13.00	-36.55	V
High Channel (1779.3MHz)						
81.23	-12.23	-30.56	-42.79	-13.00	-29.79	H
3558.60	-27.01	-22.48	-49.49	-13.00	-36.49	H
5337.90	-31.77	-19.43	-51.20	-13.00	-38.20	H
81.23	-12.02	-30.56	-42.58	-13.00	-29.58	V
3558.60	-26.72	-22.48	-49.20	-13.00	-36.20	V
5337.90	-30.01	-19.43	-49.44	-13.00	-36.44	V

Note: Result=Reading+ Correct, Margin= Result- Limit

Note: Testing is carried out with frequency rang 9kHz to the tenth harmonics, other than listed in the table above are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

11. Frequency Stability

11.1 Block Diagram Of Test Setup



11.2 Limit

±2.5 ppm

11.3 Test procedure

Test Procedures for Temperature Variation

1. The testing follows FCC KDB 971168 D01v03 Section 9.0.
2. The EUT was set up in the thermal chamber and connected with the system simulator.
3. With power OFF, the temperature was decreased to -30°C and the EUT was stabilized before testing. Power was applied and the maximum change in frequency was recorded within one minute.
4. With power OFF, the temperature was raised in 10°C steps up to 50°C. The EUT was stabilized at each step for at least half an hour. Power was applied and the maximum frequency change was recorded within one minute.

Test Procedures for Voltage Variation

1. The testing follows FCC KDB 971168 D01v03 Section 9.0.
2. The EUT was placed in a temperature chamber at 25±5° C and connected with the system simulator.
3. The power supply voltage to the EUT was varied from BEP to 115% of the nominal value measured at the input to the EUT.
4. The variation in frequency was measured for the worst case.
5. The worst case(worst bandwidth) for frequency stability reported in the Test Data.

11.4 Test Result

Please refer to Appendix 2: Frequency Stability

Test Result: Pass

12. EUT Test Setup Photographs

Radiated Measurement Photos



STATEMENT

1. The equipment lists are traceable to the national reference standards.
2. The test report can not be partially copied unless prior written approval is issued from our lab.
3. The test report is invalid without the "special seal for inspection and testing".
4. The test report is invalid without the signature of the approver.
5. The test process and test result is only related to the Unit Under Test.
6. Sample information is provided by the client and the laboratory is not responsible for its authenticity.
7. The quality system of our laboratory is in accordance with ISO/IEC17025.
8. If there is any objection to this test report, the client should inform issuing laboratory within 15 days from the date of receiving test report.

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***** END *****