TEST REPORT

Report No.:	BCTC2309367965-2E
Applicant:	Arize Corporation
Product Name:	Smart Hub
Model/Type reference:	ASH120
Tested Date:	2023-09-26 to 2023-11-03
Issued Date:	2023-11-03

Shenzhen BCTC Testing Co., Ltd.

FCC ID: 2AWPP-ASH120

Product Name:	Smart Hub
Trademark:	ARIZE
Model/Type reference:	ASH120
Prepared For:	Arize Corporation
Address:	1065 N Pacificenter Drive, Suite 410, Anaheim, CA 92806, USA
Manufacturer:	Dusun Electron Ltd.
Address:	No. 640 FengQing Street, Deqing, Huzhou, zhejing, China
Prepared By:	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
Sample Received Date:	2023-09-26
Sample tested Date:	2023-09-26 to 2023-11-03
Issue Date:	2023-11-03
Report No.:	BCTC2309367965-2E
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
Test Results:	PASS
Remark:	This is radio test report for 4G in US full bands.

Tested by:

Lei Chen

Lei Chen/Project Handler

Approved by:

Zero Zhou/Reviewer

Table Of Content

(Note: N/A Means Not Applicable)

1. Version

Report No.	Issue Date	Description	Approved
BCTC2309367965-2E	2023-11-03	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; §24.232(c); §27.50(d); §27.50(c); §27.50(b);	PASS
3	Peak-to-average Ratio(PAR) of Transmitter	§2.1046; §24.232(d) §27.50(d);§27.50(c); §27.50(b);	PASS
4	Emission Bandwidth	§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)	PASS
6	Spurious Radiation Emissions	§2.1051; §22.917(a); §27.53(h); §27.53(g); §27.53(c); §24.238(a);	PASS
7	Out of Band Emissions	§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;	PASS

3. Measurement Uncertainty

The reported uncertainty of measurement y ± U, where expended 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℃

4. Product Information And Test Setup

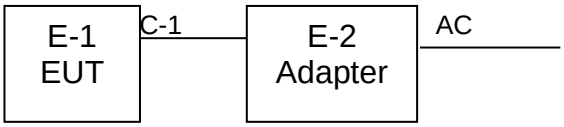
4.1 Product Information

Model/Type reference:	ASH120
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 12: 699 MHz ~ 716 MHz LTE Band 13: 777MHz~787MHz LTE Band 25: 1850MHz~1915MHz LTE Band 26: 824MHz-849MHz
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 12: 729 MHz ~ 746 MHz LTE Band 13: 746MHz~756MHz LTE Band 25: 1930MHz~1995MHz LTE Band 26: 869MHz-894MHz
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 12: 1.4MHz /3MHz /5MHz /10MHz LTE Band 13: 5MHz /10MHz LTE Band 25: 1.4MHz /3MHz /5MHz /10MHz /15MHz /20MHz LTE Band 26: 1.4MHz /3MHz /5MHz /10MHz /15MHz
Maximum Output Power to Antenna:	LTE Band 2: 25.27 dBm LTE Band 4: 23.55 dBm LTE Band 5: 24.37 dBm LTE Band 12: 24.02 dBm LTE Band 13: 26.58 dBm LTE Band 25: 25.95 dBm LTE Band 26: 24.58 dBm
99% Occupied Bandwidth:	LTE Band 2: 18M0G7D LTE Band 4: 17M9G7D LTE Band 5: 9M04G7D LTE Band 12: 8M99G7D LTE Band 13: 8M99G7D LTE Band 25: 17M9G7D LTE Band 26: 13M4G7D
Type of Modulation:	QPSK/16QAM
Antenna installation:	External antenna
Antenna Gain:	LTE Band 2: 2.27 dBi LTE Band 4: 1.32 dBi LTE Band 5: 3.61 dBi LTE Band 12:3.64 dBi LTE Band 13: 3.64 dBi LTE Band 25: 2.27 dBi LTE Band 26: 3.61 dBi
Ratings:	DC 5V from adapter

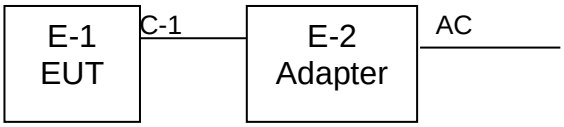
Adapter:	Model: KA1801A-0503000US Input: AC 100-240V 50/60Hz 0.55A Max Output: DC 5V 3A

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



4.3 Support Equipment

No.	Device Type	Brand	Model	Series No.	Note
E-1	Smart Hub	ARIZE	ASH120	N/A	EUT
E-2	Adapter	N/A	KA1801A-05030 00US	N/A	Auxiliary

Item	Shielded Type	Ferrite Core	Length	Note
C-1	N/A	N/A	0.5M	DC cable unshielded

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.

4.4 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	1M10G7D	0.314	1M10W7D	0.235
3	2M71G7D	0.310	2M71W7D	0.239
5	4M54G7D	0.295	4M53W7D	0.269
10	9M00G7D	0.337		
15	13M5G7D	0.317		
20	18M0G7D	0.315		

LTE Band 4	QPSK		16QAM	
BW(MHz)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)
1.4	1M10G7D	0.213	1M10W7D	0.175
3	2M71G7D	0.206	2M71W7D	0.192
5	4M53G7D	0.215	4M53W7D	0.169
10	8M98G7D	0.225		
15	13M4G7D	0.209		
20	17M9G7D	0.226		

LTE Band 5	QPSK		16QAM	
BW(MHz)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)
1.4	1M10G7D	0.251	1M10W7D	0.204
3	2M71G7D	0.252	2M61W7D	0.233
5	4M54G7D	0.253	4M53W7D	0.199
10	9M04G7D	0.274		

LTE Band 12	QPSK		16QAM	
BW(MHz)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)
1.4	1M11G7D	0.243	1M10W7D	0.195
3	2M71G7D	0.242	2M70W7D	0.200
5	4M52G7D	0.252	4M53W7D	0.186
10	8M99G7D	0.252		

LTE Band 13	QPSK		16QAM	
BW(MHz)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)
5	4M55G7D	0.455	4M53W7D	0.378
10	8M99G7D	0.435		

LTE Band 25	QPSK		16QAM	
BW(MHz)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)
1.4	1M11G7D	0.273	1M10W7D	0.221
3	2M72G7D	0.275	2M71W7D	0.237
5	4M54G7D	0.273	4M53W7D	0.221
10	8M98G7D	0.278		
15	13M5G7D	0.287		
20	17M9G7D	0.287		

LTE Band 26	QPSK		16QAM	
BW(MHz)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)
1.4	1M11G7D	0.282	1M11W7D	0.238
3	2M71G7D	0.268	2M71W7D	0.230
5	4M51G7D	0.280	4M54W7D	0.230
10	8M97G7D	0.273		
15	13M4G7D	0.287		

4.5 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 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	23230	782
23255	784.5	23230	782

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(1.4MHz)		LTE Band 26(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(5MHz)		**LTE Band 26(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(15MHz)			
Channel	**Frequency (MHz)**		
26865	831.5		
26915	836.5		
26965	841.5		

4.6 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)
LTE Band 4	QPSK Link (1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz)	16QAM Link (1.4MHz / 3MHz / 5MHz)
LTE Band 5	QPSK Link (1.4MHz / 3MHz / 5MHz / 10MHz)	16QAM Link (1.4MHz / 3MHz / 5MHz)
LTE Band 12	QPSK Link (1.4MHz / 3MHz / 5MHz / 10MHz)	16QAM Link (1.4MHz / 3MHz / 5MHz)
LTE Band 13	QPSK Link (5MHz /10MHz)	16QAM Link (5MHz)
LTE Band 25	QPSK Link (1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz)	16QAM Link (1.4MHz / 3MHz / 5MHz)
LTE Band 26	QPSK Link (1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz)	16QAM Link (1.4MHz / 3MHz / 5MHz)
Note : All modes and data rates and positions were investigated.		

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**
	12	**v**	**v**	**v**	**v**	**-**	**-**	**v**	**v**	**v**	**v**	**v**	**v**	**v**	**v**
	13	**-**	**-**	**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**
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**
	12	**v**	**v**	**v**	**v**	**-**	**-**	**v**	**v**	**v**	**v**	**v**	**v**	**v**	**v**
	13	**-**	**-**	**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**
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**
	12	**v**	**v**	**v**	**v**	**-**	**-**	**v**	**v**	**v**	**v**	**v**	**v**	**v**	**v**
	13	**-**	**-**	**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**
Conducted Band Edge	2	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**
	5	**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**	**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**
Conducted Spurious Emission	2	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**
	5	**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**	**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**
Frequency stability	2	v	-	-	-	-	-	v	v	v	-	-	v	v	v
	4	**v**	**-**	**-**	**-**	**-**	**-**	**v**	**v**	**v**	**-**	**-**	**v**	**v**	**v**
	5	**v**	**-**	**-**	**-**	**-**	**-**	**v**	**v**	**v**	**-**	**-**	**v**	**v**	**v**
	12	**v**	**-**	**-**	**-**	**-**	**-**	**v**	**v**	**v**	**-**	**-**	**v**	**v**	**v**
	13	**v**	**-**	**-**	**-**	**-**	**-**	**v**	**v**	**v**	**-**	**-**	**v**	**v**	**v**
	25	**v**	**-**	**-**	**-**	**-**	**-**	**v**	**v**	**v**	**-**	**-**	**v**	**v**	**v**
	26	**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**
	12	**v**	**v**	**v**	**v**	**-**	**-**	**v**	**v**	**v**	**v**	**v**	**v**	**v**	**v**
	13	**-**	**-**	**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**
Radiated Spurious Emission	2	v	-	-	-	-	-	v	v	v	-	-	v	v	v
	4	**v**	**-**	**-**	**-**	**-**	**-**	**v**	**v**	**v**	**-**	**-**	**v**	**v**	**v**
	5	**v**	**-**	**-**	**-**	**-**	**-**	**v**	**v**	**v**	**-**	**-**	**v**	**v**	**v**
	12	**v**	**-**	**-**	**-**	**-**	**-**	**v**	**v**	**v**	**-**	**-**	**v**	**v**	**v**
	13	**v**	**-**	**-**	**-**	**-**	**-**	**v**	**v**	**v**	**-**	**-**	**v**	**v**	**v**
	25	**v**	**-**	**-**	**-**	**-**	**-**	**v**	**v**	**v**	**-**	**-**	**v**	**v**	**v**
	26	**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.														

4.7 Support Equipment

No.	Device Type	Brand	Model	Series No.	Note
E-1	Smart Hub	ARIZE	ASH120	N/A	EUT
E-2	N/A	N/A	N/A	N/A	Auxiliary

Item	Shielded Type	Ferrite Core	Length	Note
C-1	N/A	N/A	0M	DC cable unshielded

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.

4.8 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

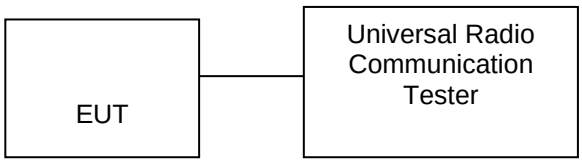
5.2 Test Instrument Used

Radiated Emissions Test (966 Chamber01)					
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 15, 2023	May 14, 2024
Receiver	R&S	ESRP	101154	May 15, 2023	May 14, 2024
Amplifier	Schwarzbeck	BBV9744	9744-0037	May 15, 2023	May 14, 2024
TRILOG Broadband Antenna	Schwarzbeck	VULB9163	942	May 29, 2023	May 28, 2024
Loop Antenna(9KHz -30MHz)	Schwarzbeck	FMZB1519B	00014	May 31, 2023	May 30, 2024
Amplifier	SKET	LAPA_01G18G-45dB	SK2021040901	May 15, 2023	May 14, 2024
Horn Antenna	Schwarzbeck	BBHA9120D	1541	May 31, 2023	May 30, 2024
Amplifier(18GHz-40GHz)	MITEQ	TTA1840-35-HG	2034381	May 15, 2023	May 14, 2024
Horn Antenna(18GHz-40GHz)	Schwarzbeck	BBHA9170	00822	May 31, 2023	May 30, 2024
Spectrum Analyzer9kHz-40GHz	R&S	FSP40	100363	May 15, 2023	May 14, 2024
Software	Frad	EZ-EMC	FA-03A2 RE	\	\

6. RF Output Power

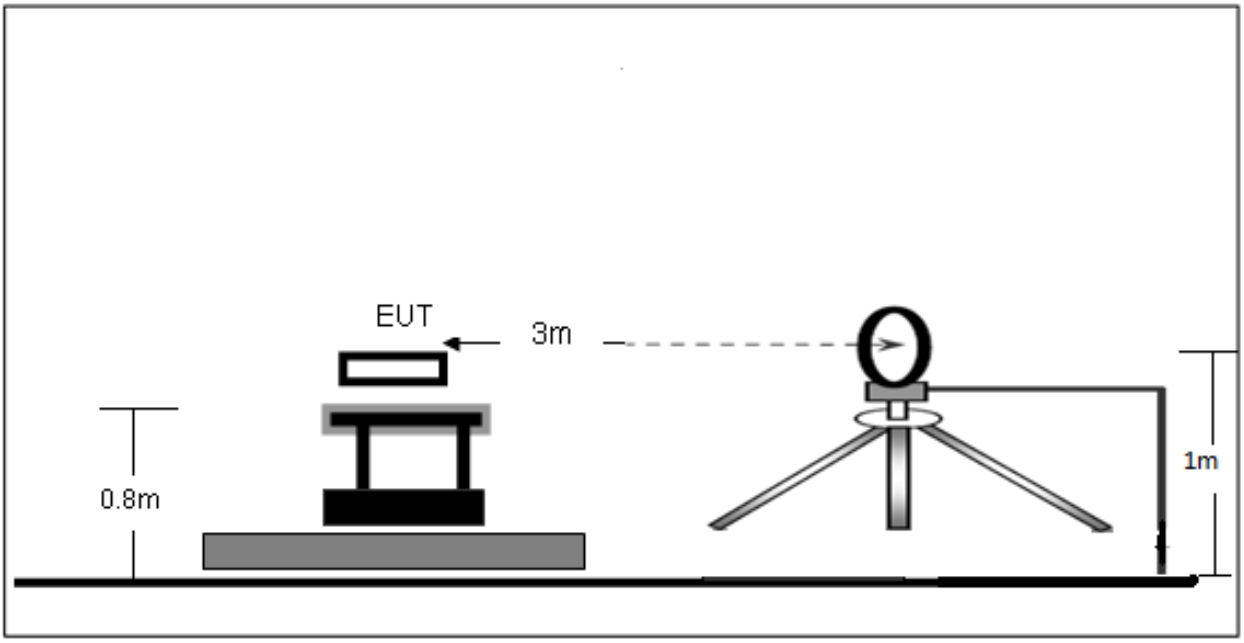
6.1 Block Diagram Of Test Setup

Conducted output power test method:

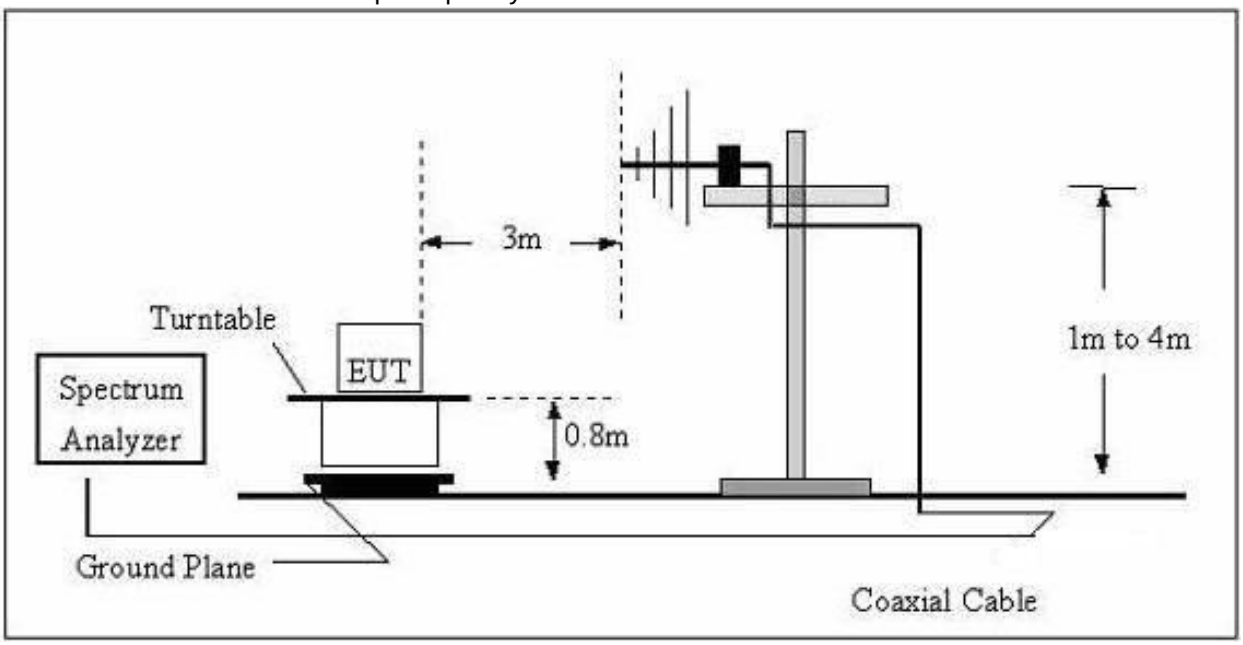


Radiated power test method:

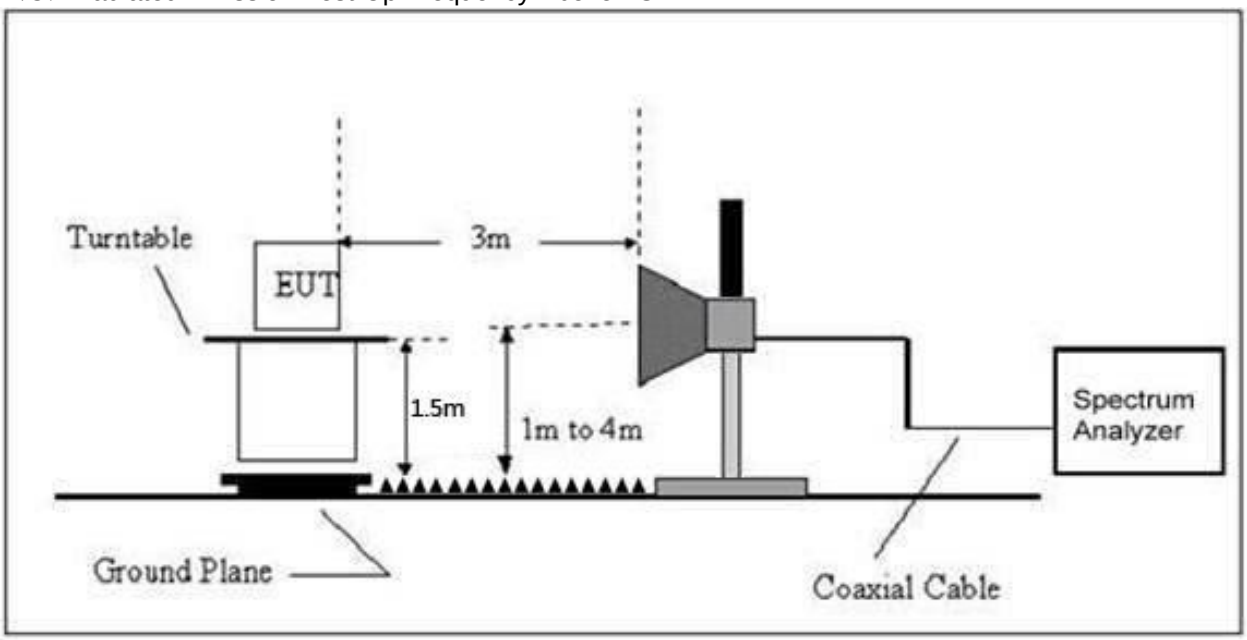
（A）Radiated Emission Test-Up Frequency Below 30MHz



（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 mobileand 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.I.R.P(dBm)**	**Verdict**
QPSK	LCH	24.34	PASS
	MCK	24.97	PASS
	HCH	24.76	PASS
16QAM	LCH	23.39	PASS
	MCK	23.5	PASS
	HCH	23.71	PASS
Channel Bandwidth: 3MHz			
Modulation	**Channel**	**E.I.R.P(dBm)**	**Verdict**
QPSK	LCH	24.28	PASS
	MCK	24.92	PASS
	HCH	24.78	PASS
16QAM	LCH	23.78	PASS
	MCK	23.67	PASS
	HCH	23.67	PASS
Channel Bandwidth: 5MHz			
Modulation	**Channel**	**E.I.R.P(dBm)**	**Verdict**
QPSK	LCH	24.59	PASS
	MCK	24.7	PASS
	HCH	24.69	PASS
16QAM	LCH	23.72	PASS
	MCK	23.73	PASS
	HCH	24.29	PASS
Channel Bandwidth: 10MHz			
Modulation	**Channel**	**E.I.R.P(dBm)**	**Verdict**
QPSK	LCH	24.63	PASS
	MCK	24.72	PASS
	HCH	25.27	PASS
Channel Bandwidth: 15MHz			
Modulation	**Channel**	**E.I.R.P(dBm)**	**Verdict**
QPSK	LCH	24.91	PASS
	MCK	25.01	PASS
	HCH	24.84	PASS
Channel Bandwidth: 20MHz			
Modulation	**Channel**	**E.I.R.P(dBm)**	**Verdict**
QPSK	LCH	24.91	PASS
	MCK	24.9	PASS
	HCH	24.98	PASS

FDD-LTE Band 4

Channel Bandwidth: 1.4MHz			
Modulation	**Channel**	**E.I.R.P(dBm)**	**Verdict**
QPSK	LCH	23.28	PASS
	MCK	23.22	PASS
	HCH	23.27	PASS
16QAM	LCH	22.33	PASS
	MCK	22.2	PASS
	HCH	22.42	PASS
Channel Bandwidth: 3MHz			
Modulation	**Channel**	**E.I.R.P(dBm)**	**Verdict**
QPSK	LCH	23.13	PASS
	MCK	23.11	PASS
	HCH	23.14	PASS
16QAM	LCH	22.83	PASS
	MCK	22.13	PASS
	HCH	21.7	PASS
Channel Bandwidth: 5MHz			
Modulation	**Channel**	**E.I.R.P(dBm)**	**Verdict**
QPSK	LCH	23.18	PASS
	MCK	23.13	PASS
	HCH	23.33	PASS
16QAM	LCH	22.27	PASS
	MCK	22.1	PASS
	HCH	22.15	PASS
Channel Bandwidth: 10MHz			
Modulation	**Channel**	**E.I.R.P(dBm)**	**Verdict**
QPSK	LCH	23.2	PASS
	MCK	23.08	PASS
	HCH	23.53	PASS
Channel Bandwidth: 15MHz			
Modulation	**Channel**	**E.I.R.P(dBm)**	**Verdict**
QPSK	LCH	23.21	PASS
	MCK	23.19	PASS
	HCH	23.2	PASS
Channel Bandwidth: 20MHz			
Modulation	**Channel**	**E.I.R.P(dBm)**	**Verdict**
QPSK	LCH	23.05	PASS
	MCK	23.55	PASS
	HCH	23.32	PASS

FDD-LTE Band 5

Channel Bandwidth: 1.4MHz			
Modulation	**Channel**	**E.R.P(dBm)**	**Verdict**
QPSK	LCH	23.87	PASS
	MCK	23.97	PASS
	HCH	23.99	PASS
16QAM	LCH	22.98	PASS
	MCK	23.10	PASS
	HCH	22.74	PASS
Channel Bandwidth: 3MHz			
Modulation	**Channel**	**E.R.P(dBm)**	**Verdict**
QPSK	LCH	23.93	PASS
	MCK	24.02	PASS
	HCH	24.02	PASS
16QAM	LCH	23.68	PASS
	MCK	22.92	PASS
	HCH	22.77	PASS
Channel Bandwidth: 5MHz			
Modulation	**Channel**	**E.R.P(dBm)**	**Verdict**
QPSK	LCH	23.99	PASS
	MCK	23.82	PASS
	HCH	24.03	PASS
16QAM	LCH	22.93	PASS
	MCK	22.58	PASS
	HCH	22.98	PASS
Channel Bandwidth: 10MHz			
Modulation	**Channel**	**E.R.P(dBm)**	**Verdict**
QPSK	LCH	23.93	PASS
	MCK	23.97	PASS
	HCH	24.37	PASS

FDD-LTE Band 12

Channel Bandwidth: 1.4MHz			
Modulation	**Channel**	**E.R.P(dBm)**	**Verdict**
QPSK	LCH	23.85	PASS
	MCK	23.72	PASS
	HCH	23.83	PASS
16QAM	LCH	22.82	PASS
	MCK	22.55	PASS
	HCH	22.91	PASS
Channel Bandwidth: 3MHz			
Modulation	**Channel**	**E.R.P(dBm)**	**Verdict**
QPSK	LCH	23.73	PASS
	MCK	23.83	PASS
	HCH	23.80	PASS
16QAM	LCH	23.01	PASS
	MCK	22.34	PASS
	HCH	22.65	PASS
Channel Bandwidth: 5MHz			
Modulation	**Channel**	**E.R.P(dBm)**	**Verdict**
QPSK	LCH	24.02	PASS
	MCK	23.95	PASS
	HCH	23.71	PASS
16QAM	LCH	22.67	PASS
	MCK	22.69	PASS
	HCH	22.68	PASS
Channel Bandwidth: 10MHz			
Modulation	**Channel**	**E.R.P(dBm)**	**Verdict**
QPSK	LCH	23.51	PASS
	MCK	23.81	PASS
	HCH	24.02	PASS

FDD-LTE Band 13

Channel Bandwidth: 5MHz			
Modulation	**Channel**	**E.R.P(dBm)**	**Verdict**
QPSK	LCH	26.49	PASS
	MCK	26.58	PASS
	HCH	26.57	PASS
16QAM	LCH	25.4	PASS
	MCK	25.58	PASS
	HCH	25.77	PASS

Channel Bandwidth: 10MHz			
Modulation	**Channel**	**E.R.P(dBm)**	**Verdict**
QPSK	23230	26.38	PASS

FDD-LTE Band 25

Channel Bandwidth: 1.4MHz			
Modulation	**Channel**	**E.I.R.P(dBm)**	**Verdict**
QPSK	LCH	24.35	PASS
	MCK	24.36	PASS
	HCH	24.19	PASS
16QAM	LCH	22.81	PASS
	MCK	23.45	PASS
	HCH	23.38	PASS
Channel Bandwidth: 3MHz			
Modulation	**Channel**	**E.I.R.P(dBm)**	**Verdict**
QPSK	LCH	24.33	PASS
	MCK	24.40	PASS
	HCH	24.01	PASS
16QAM	LCH	23.74	PASS
	MCK	22.91	PASS
	HCH	23.07	PASS
Channel Bandwidth: 5MHz			
Modulation	**Channel**	**E.I.R.P(dBm)**	**Verdict**
QPSK	LCH	24.36	PASS
	MCK	24.24	PASS
	HCH	24.15	PASS
16QAM	LCH	23.44	PASS
	MCK	22.98	PASS
	HCH	23.01	PASS
Channel Bandwidth: 10MHz			
Modulation	**Channel**	**E.I.R.P(dBm)**	**Verdict**
QPSK	LCH	24.34	PASS
	MCK	24.36	PASS
	HCH	24.44	PASS
Channel Bandwidth: 15MHz			
Modulation	**Channel**	**E.I.R.P(dBm)**	**Verdict**
QPSK	LCH	24.55	PASS
	MCK	24.58	PASS
	HCH	24.33	PASS
Channel Bandwidth: 20MHz			
Modulation	**Channel**	**E.I.R.P(dBm)**	**Verdict**
QPSK	LCH	24.43	PASS
	MCK	24.58	PASS
	HCH	24.30	PASS

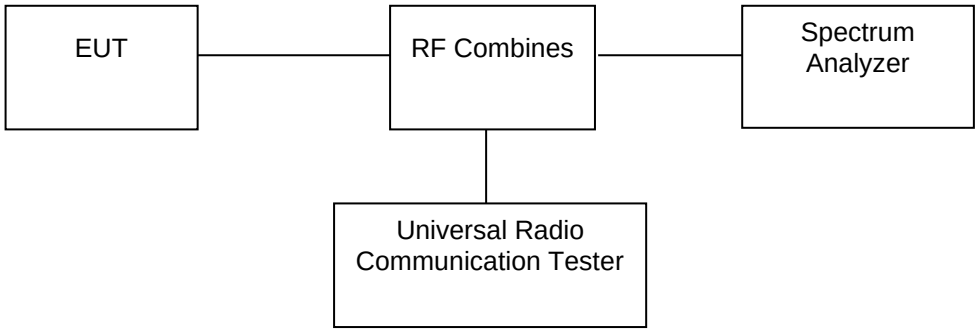
FDD-LTE Band 26

Channel Bandwidth: 1.4MHz			
Modulation	**Channel**	**E.R.P(dBm)**	**Verdict**
QPSK	LCH	24.50	PASS
	MCK	24.12	PASS
	HCH	24.02	PASS
16QAM	LCH	23.77	PASS
	MCK	23.14	PASS
	HCH	23.27	PASS
Channel Bandwidth: 3MHz			
Modulation	**Channel**	**E.R.P(dBm)**	**Verdict**
QPSK	LCH	24.28	PASS
	MCK	24.23	PASS
	HCH	24.10	PASS
16QAM	LCH	23.61	PASS
	MCK	23.10	PASS
	HCH	23.03	PASS
Channel Bandwidth: 5MHz			
Modulation	**Channel**	**E.R.P(dBm)**	**Verdict**
QPSK	LCH	24.47	PASS
	MCK	24.00	PASS
	HCH	24.15	PASS
16QAM	LCH	23.60	PASS
	MCK	23.06	PASS
	HCH	22.94	PASS
Channel Bandwidth: 10MHz			
Modulation	**Channel**	**E.R.P(dBm)**	**Verdict**
QPSK	LCH	24.36	PASS
	MCK	24.13	PASS
	HCH	24.31	PASS
Channel Bandwidth: 15MHz			
Modulation	**Channel**	**E.R.P(dBm)**	**Verdict**
QPSK	LCH	24.58	PASS
	MCK	24.24	PASS
	HCH	24.24	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

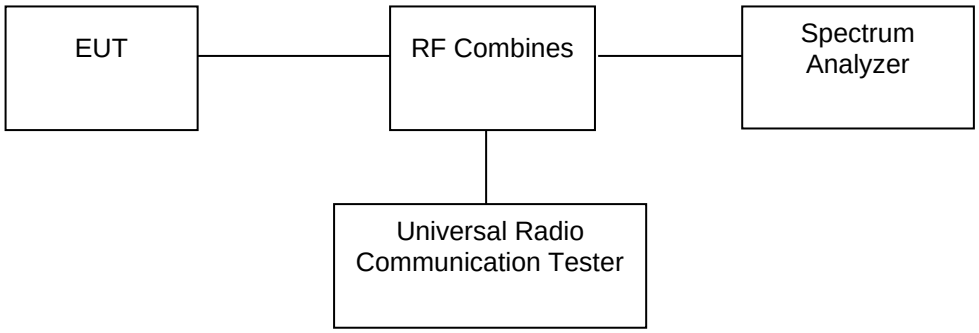
The RF output terminal of the transmitter was connected to the input of the spectrum analyzer via a suitable attenuation. The RBW of the spectrum analyzer was set to 30kHz and the peak-to-average ratio (PAR) of the transmission was recorded.Record the maximum PAPR level associated with a probability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

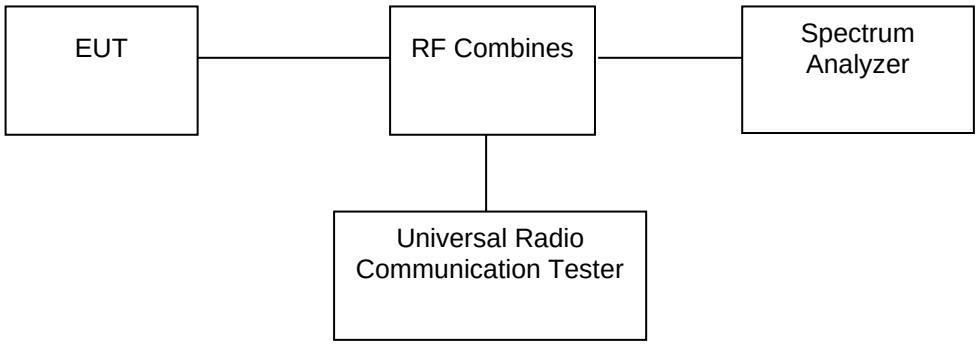
1. The testing follows FCC KDB 971168 D01v03 Section 4.2.
2. The EUT was connected to the spectrum analyzer and system simulator via a power divider.
3. The RF output of the EUT was connected to the spectrum analyzer by RF cable and attenuator.The path loss was compensated to the results for each measurement.
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 log10 (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.

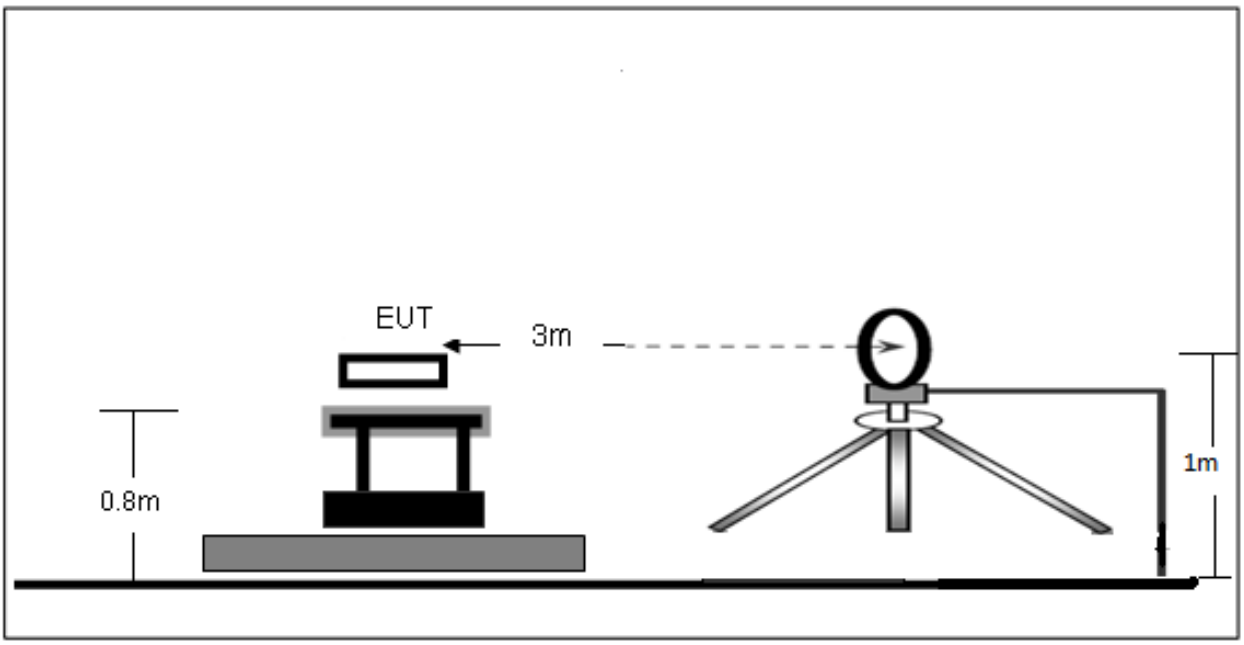
9.4 Test Result

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

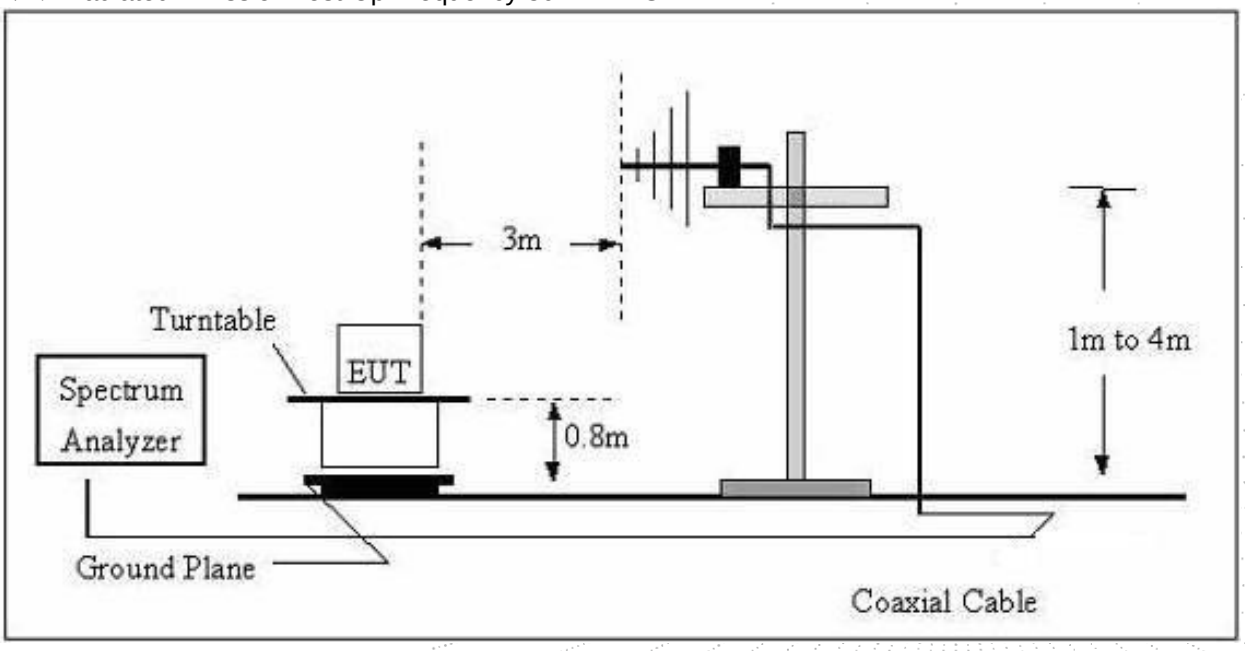
10. Spurious Radiated Emissions

10.1 Block Diagram Of Test Setup

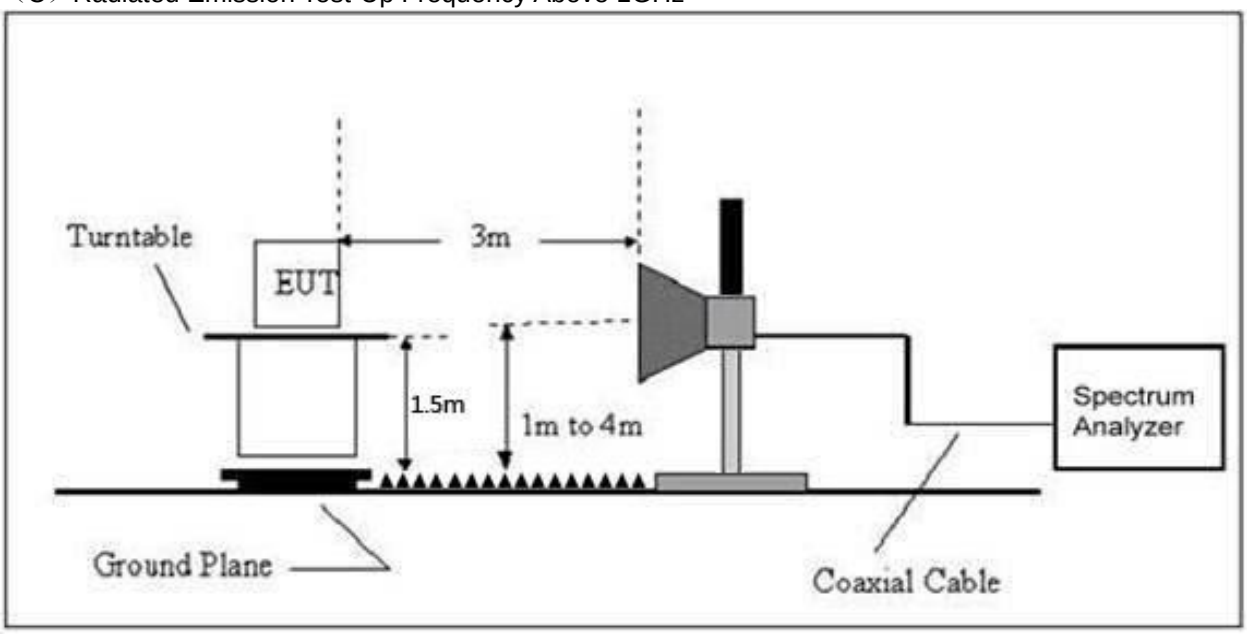
（A）Radiated Emission Test-Up Frequency Below 30MHz



（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 log10 (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} (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)						
77.21	-44.58	-30.53	-75.11	-13.00	-62.11	H
3705.00	-20.47	-22.19	-42.66	-13.00	-29.66	H
5557.50	-23.33	-19.32	-42.65	-13.00	-29.65	H
77.21	-42.98	-30.53	-73.51	-13.00	-60.51	V
3705.00	-20.17	-22.19	-42.36	-13.00	-29.36	V
5557.50	-23.05	-19.32	-42.37	-13.00	-29.37	V
Middle Channel (1880MHz)						
77.21	-41.56	-30.53	-72.09	-13.00	-59.09	H
3760.00	-20.99	-22.08	-43.07	-13.00	-30.07	H
5640.00	-23.15	-19.28	-42.43	-13.00	-29.43	H
77.21	-42.29	-30.53	-72.82	-13.00	-59.82	V
3760.00	-18.05	-22.08	-40.13	-13.00	-27.13	V
5640.00	-25.62	-19.28	-44.90	-13.00	-31.90	V
High Channel (1907.5MHz)						
77.21	-41.17	-30.53	-71.70	-13.00	-58.70	H
3815.00	-18.83	-21.97	-40.80	-13.00	-27.80	H
5722.50	-23.37	-19.24	-42.61	-13.00	-29.61	H
77.21	-43.35	-30.53	-73.88	-13.00	-60.88	V
3815.00	-20.05	-21.97	-42.02	-13.00	-29.02	V
5722.50	-25.55	-19.24	-44.79	-13.00	-31.79	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)						
77.21	-44.91	-30.53	-75.44	-13.00	-62.44	H
3421.40	-24.07	-22.76	-46.83	-13.00	-33.83	H
5132.10	-31.10	-19.53	-50.63	-13.00	-37.63	H
77.21	-43.93	-30.53	-74.46	-13.00	-61.46	V
3421.40	-29.41	-22.76	-52.17	-13.00	-39.17	V
5132.10	-28.82	-19.53	-48.35	-13.00	-35.35	V
Middle Channel (1732.5MHz)						
77.21	-42.71	-30.53	-73.24	-13.00	-60.24	H
3465.00	-27.63	-22.67	-50.30	-13.00	-37.30	H
5197.50	-32.69	-19.51	-52.20	-13.00	-39.20	H
77.21	-43.57	-30.53	-74.10	-13.00	-61.10	V
3465.00	-27.23	-22.67	-49.90	-13.00	-36.90	V
5197.50	-30.56	-19.51	-50.07	-13.00	-37.07	V
High Channel (1754.3MHz)						
77.21	-41.02	-30.53	-71.55	-13.00	-58.55	H
3508.60	-25.06	-14.99	-40.05	-13.00	-27.05	H
5262.90	-30.18	-9.95	-40.13	-13.00	-27.13	H
77.21	-41.06	-30.53	-71.59	-13.00	-58.59	V
3508.60	-26.84	-14.99	-41.83	-13.00	-28.83	V
5262.90	-29.11	-9.95	-39.06	-13.00	-26.06	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)						
77.21	-43.60	-30.53	-74.13	-13.00	-61.13	H
1649.40	-27.98	-27.37	-55.35	-13.00	-42.35	H
2474.10	-31.79	-25.18	-56.97	-13.00	-43.97	H
77.21	-43.92	-30.53	-74.45	-13.00	-61.45	V
1649.40	-29.72	-27.37	-57.09	-13.00	-44.09	V
2474.10	-29.19	-25.18	-54.37	-13.00	-41.37	V
Middle Channel (836.5MHz)						
77.21	-44.30	-30.53	-74.83	-13.00	-61.83	H
1673.00	-24.23	-27.32	-51.55	-13.00	-38.55	H
2509.50	-32.92	-25.07	-57.99	-13.00	-44.99	H
77.21	-41.93	-30.53	-72.46	-13.00	-59.46	V
1673.00	-26.79	-27.32	-54.11	-13.00	-41.11	V
2509.50	-28.13	-25.07	-53.20	-13.00	-40.20	V
High Channel (848.3MHz)						
77.21	-44.30	-30.53	-74.83	-13.00	-61.83	H
1696.60	-24.80	-27.27	-52.07	-13.00	-39.07	H
2544.90	-32.39	-24.97	-57.36	-13.00	-44.36	H
77.21	-41.57	-30.53	-72.10	-13.00	-59.10	V
1696.60	-26.94	-27.27	-54.21	-13.00	-41.21	V
2544.90	-28.84	-24.97	-53.81	-13.00	-40.81	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)						
77.21	-42.40	-30.53	-72.93	-13.00	-59.93	H
1399.40	-24.00	-27.92	-51.92	-13.00	-38.92	H
2099.10	-29.47	-26.30	-55.77	-13.00	-42.77	H
77.21	-41.85	-30.53	-72.38	-13.00	-59.38	V
1399.40	-26.53	-27.92	-54.45	-13.00	-41.45	V
2099.10	-30.44	-26.30	-56.74	-13.00	-43.74	V
Middle Channel (707.5MHz)						
77.21	-43.95	-30.53	-74.48	-13.00	-61.48	H
1415.00	-26.94	-27.89	-54.83	-13.00	-41.83	H
2122.50	-30.47	-26.23	-56.70	-13.00	-43.70	H
77.21	-41.89	-30.53	-72.42	-13.00	-59.42	V
1415.00	-26.16	-27.89	-54.05	-13.00	-41.05	V
2122.50	-30.66	-26.23	-56.89	-13.00	-43.89	V
High Channel (715.3MHz)						
77.21	-43.25	-30.53	-73.78	-13.00	-60.78	H
1430.60	-27.35	-27.85	-55.20	-13.00	-42.20	H
2145.90	-31.74	-26.16	-57.90	-13.00	-44.90	H
77.21	-43.92	-30.53	-74.45	-13.00	-61.45	V
1430.60	-28.87	-27.85	-56.72	-13.00	-43.72	V
2145.90	-30.58	-26.16	-56.74	-13.00	-43.74	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)						
77.21	-41.61	-30.53	-72.14	-13.00	-59.14	H
1559.00	-25.57	-27.57	-53.14	-13.00	-40.14	H
2338.50	-31.88	-25.58	-57.46	-13.00	-44.46	H
77.21	-41.82	-30.53	-72.35	-13.00	-59.35	V
1559.00	-27.67	-27.57	-55.24	-13.00	-42.24	V
2338.50	-31.38	-25.58	-56.96	-13.00	-43.96	V
Middle Channel (782MHz)						
77.21	-42.02	-30.53	-72.55	-13.00	-59.55	H
1564.00	-24.62	-27.56	-52.18	-13.00	-39.18	H
2346.00	-33.00	-25.56	-58.56	-13.00	-45.56	H
77.21	-43.63	-30.53	-74.16	-13.00	-61.16	V
1564.00	-29.47	-27.56	-57.03	-13.00	-44.03	V
2346.00	-29.44	-25.56	-55.00	-13.00	-42.00	V
High Channel (784.5MHz)						
77.21	-43.17	-30.53	-73.70	-13.00	-60.70	H
1569.00	-26.74	-27.55	-54.29	-13.00	-41.29	H
2353.50	-31.82	-25.54	-57.36	-13.00	-44.36	H
77.21	-41.02	-30.53	-71.55	-13.00	-58.55	V
1569.00	-27.34	-27.55	-54.89	-13.00	-41.89	V
2353.50	-31.04	-25.54	-56.58	-13.00	-43.58	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)						
77.21	-43.40	-30.53	-73.93	-13.00	-60.93	H
3701.40	-25.57	-22.20	-47.77	-13.00	-34.77	H
5552.10	-31.74	-19.32	-51.06	-13.00	-38.06	H
77.21	-43.91	-30.53	-74.44	-13.00	-61.44	V
3701.40	-27.43	-22.20	-49.63	-13.00	-36.63	V
5552.10	-28.24	-19.32	-47.56	-13.00	-34.56	V
Middle Channel (1882.5MHz)						
77.21	-43.91	-30.53	-74.44	-13.00	-61.44	H
3765.00	-25.22	-22.07	-47.29	-13.00	-34.29	H
5647.50	-32.82	-19.28	-52.10	-13.00	-39.10	H
77.21	-42.93	-30.53	-73.46	-13.00	-60.46	V
3765.00	-26.98	-22.07	-49.05	-13.00	-36.05	V
5647.50	-29.98	-19.28	-49.26	-13.00	-36.26	V
High Channel (1914.3MHz)						
77.21	-42.77	-30.53	-73.30	-13.00	-60.30	H
3828.60	-26.75	-21.94	-48.69	-13.00	-35.69	H
5742.90	-30.18	-19.23	-49.41	-13.00	-36.41	H
77.21	-42.63	-30.53	-73.16	-13.00	-60.16	V
3828.60	-28.23	-21.94	-50.17	-13.00	-37.17	V
5742.90	-31.04	-19.23	-50.27	-13.00	-37.27	V

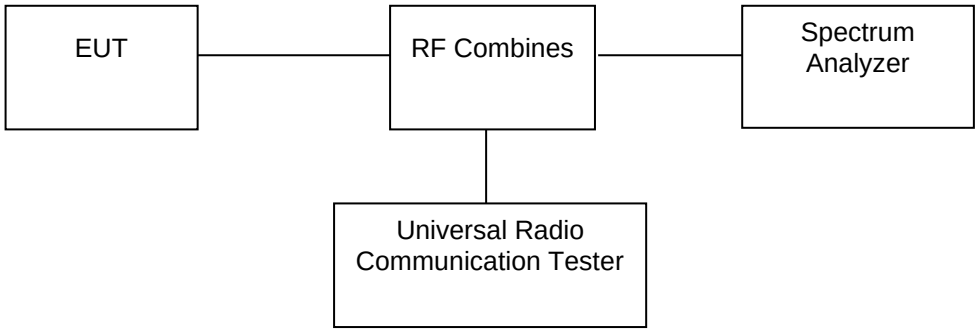
For FDD-LTE Band 26 Mode

Frequency (MHz)	Reading (dBm)	Correct dB	Result (dBm)	Limit (dBm)	Margin (dB)	Polar H/V
Low Channel (824.7MHz)						
77.21	-41.04	-19.23	-60.27	-13.00	-47.27	H
1649.40	-24.09	-27.42	-51.51	-13.00	-38.51	H
2474.10	-32.28	-25.27	-57.55	-13.00	-44.55	H
77.21	-41.73	-19.23	-60.96	-13.00	-47.96	V
1649.40	-28.03	-27.42	-55.45	-13.00	-42.45	V
2474.10	-29.57	-25.27	-54.84	-13.00	-41.84	V
Middle Channel (836.5MHz)						
77.21	-41.08	-19.23	-60.31	-13.00	-47.31	H
1673.00	-24.16	-27.34	-51.50	-13.00	-38.50	H
2509.50	-29.37	-25.12	-54.49	-13.00	-41.49	H
77.21	-43.84	-19.23	-63.07	-13.00	-50.07	V
1673.00	-29.87	-27.34	-57.21	-13.00	-44.21	V
2509.50	-31.08	-25.12	-56.20	-13.00	-43.20	V
High Channel (848.3MHz)						
77.21	-43.78	-19.23	-63.01	-13.00	-50.01	H
1696.60	-25.31	-27.27	-52.58	-13.00	-39.58	H
2544.90	-29.61	-24.97	-54.58	-13.00	-41.58	H
77.21	-41.64	-19.23	-60.87	-13.00	-47.87	V
1696.60	-29.08	-27.27	-56.35	-13.00	-43.35	V
2544.90	-29.36	-24.97	-54.33	-13.00	-41.33	V

Note: Result=Reading+ Correct, Margin= Result- Limit
Note: Testing is carried out with frequency rang 9kHz to the tenth harmonics, other than listedin 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.
   The worst bandwidth is as follow:
   1.4M is for LTE Band 2, 1.4M is for LTE Band 4,
   1.4M is for LTE Band 5, 1.4M is for LTE Band 12,
   5M is for LTE Band 13, 1.4M is for LTE Band 66, 5M is for LTE Band 71

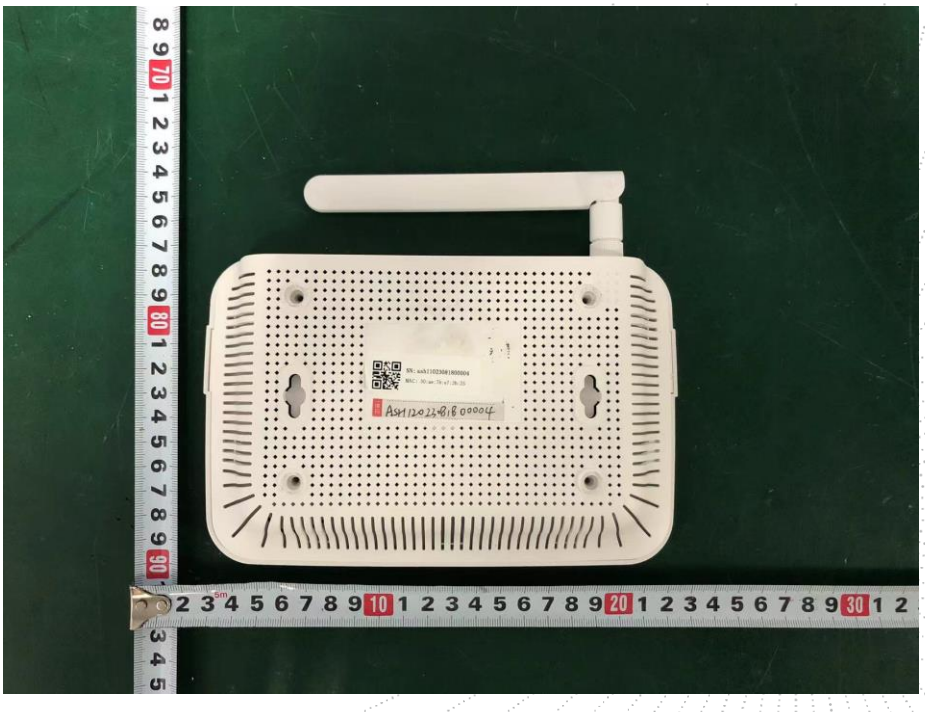
11.4 Test Result

Please refer to Appendix 2: Frequency Stability
Test Result: Pass

12. EUT Photographs

EUT Photo 1

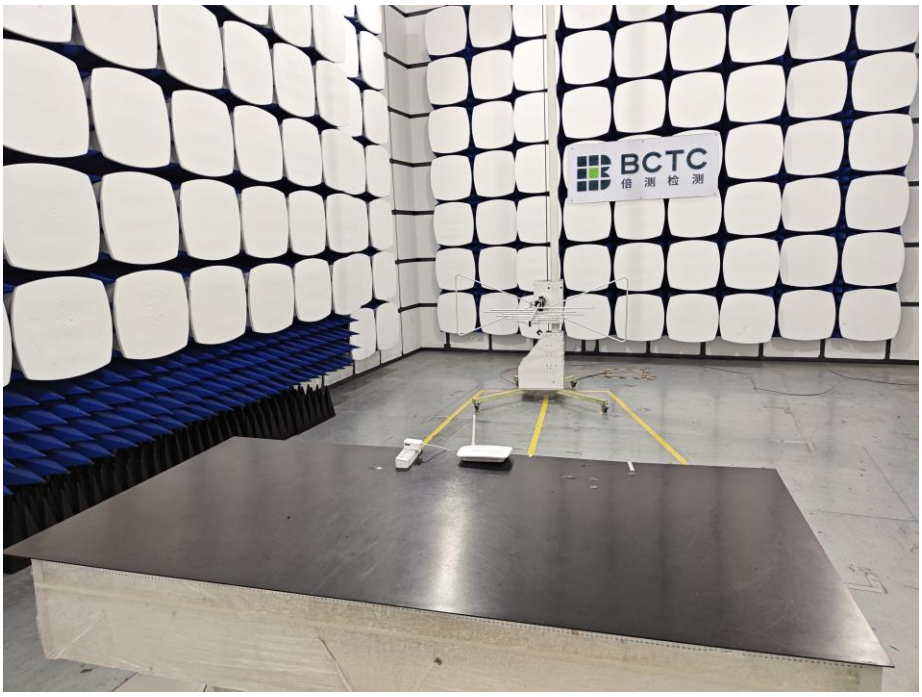
EUT Photo 2

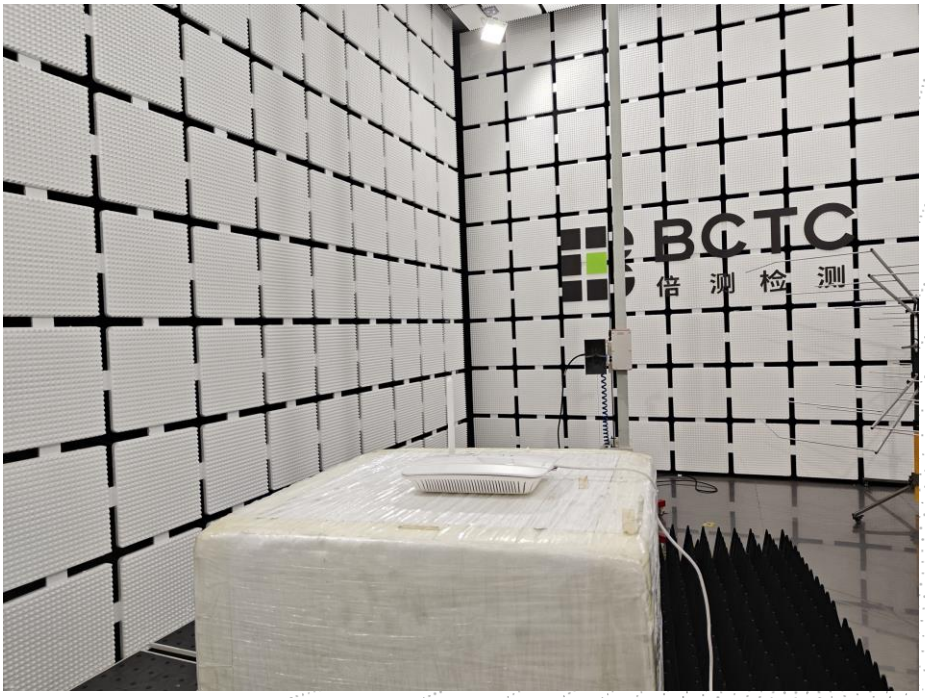


NOTE: Appendix-Photographs Of EUT Constructional Details

13. 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.

Address:
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