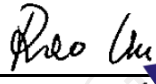


TEST REPORT

FCC ID. :	2A8TPKCCU-20	
Test Report No..... :	TCT220919E011	
Date of issue..... :	Nov. 10, 2022	
Testing laboratory	SHENZHEN TONGCE TESTING LAB	
Testing location/ address:	2101 & 2201, Zhenchang Factory Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, 518103, People's Republic of China	
Applicant's name..... :	Xiamen Hualian ELECTRONICS CORP., LTD.	
Address..... :	No.189, Fangyang South Road, high tech Industrial Park, Xiang'an District, Xiamen, Fujian, China	
Manufacturer's name ... :	Xiamen Hualian ELECTRONICS CORP., LTD.	
Address..... :	No.189, Fangyang South Road, high tech Industrial Park, Xiang'an District, Xiamen, Fujian, China	
Standard(s)	FCC CFR Title 47 Part 2 FCC CFR Title 47 Part22 FCC CFR Title 47 Part24 FCC CFR Title 47 Part27 FCC CFR Title 47 Part90	
Product Name..... :	KION China Connect Unit	
Trade Mark	N/A	
Model/Type reference..... :	KCCU-20	
Rating(s)..... :	DC 80V	
Date of receipt of test item	Sep. 19, 2022	
Date (s) of performance of test..... :	Sep. 19, 2022 - Nov. 10, 2022	
Tested by (+signature) ... :	Rleo LIU	
Check by (+signature).... :	Beryl ZHAO	
Approved by (+signature):	Tomsin	



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Appendix A: Photographs of Test Setup

Appendix B: Photographs of EUT

**Test Data: Refer to Appendix For LTE Band 2, Appendix For LTE Band 4,
Appendix For LTE Band 5, Appendix For LTE Band 7,
Appendix For LTE Band 12, Appendix For LTE Band 13,
Appendix For LTE Band 18, Appendix For LTE Band 19,
Appendix For LTE Band 25 and Appendix For LTE Band 26**

1. General Product Information

1.1. EUT description

Product Name.....:	KION China Connect Unit
Model/Type reference.....:	KCCU-20
Sample Number.....:	TCT220919E010-0101
Tx Frequency.....:	LTE Band 2: 1850MHz ~ 1910MHz LTE Band 4: 1710MHz ~ 1755MHz LTE Band 5: 824MHz ~ 849MHz LTE Band 7: 2500MHz ~ 2570MHz LTE Band 12: 699MHz ~ 716MHz LTE Band 13: 777MHz ~ 787MHz LTE Band 18: 815MHz ~ 830MHz LTE Band 19: 830MHz ~ 845MHz LTE Band 25: 1850MHz ~ 1915MHz LTE Band 26-1: 814MHz ~ 824MHz LTE Band 26-2: 824MHz ~ 849MHz
Rx Frequency	LTE Band 2: 1930MHz ~ 1990MHz LTE Band 4: 2110MHz ~ 2155MHz LTE Band 5: 869MHz ~ 894MHz LTE Band 7: 2620MHz ~ 2690MHz LTE Band 12: 729MHz ~ 746MHz LTE Band 13: 746MHz ~ 756MHz LTE Band 18: 860MHz ~ 875MHz LTE Band 19: 875MHz ~ 890MHz LTE Band 25: 1930MHz ~ 1995MHz LTE Band 26-1: 859MHz ~ 869MHz LTE Band 26-2: 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 7: 5MHz /10MHz/15MHz /20MHz LTE Band 12: 1.4MHz /3MHz /5MHz /10MHz LTE Band 13: 5MHz /10MHz LTE Band 18: 5MHz /10MHz/15MHz LTE Band 19: 5MHz /10MHz/15MHz LTE Band 25: 1.4MHz /3MHz /5MHz /10MHz /15MHz /20MHz LTE Band 26-1: 1.4MHz /3MHz /5MHz /10MHz LTE Band 26-2: 1.4MHz /3MHz /5MHz /10MHz /15MHz

Maximum Output Power to Antenna.....:	LTE Band 2: 23.62dBm LTE Band 4: 24.46dBm LTE Band 5: 24.08dBm LTE Band 7: 23.88dBm LTE Band 12: 24.32dBm LTE Band 13: 23.90dBm LTE Band 18: 23.78dBm LTE Band 19: 23.93dBm LTE Band 25: 23.94dBm LTE Band 26-1: 23.87dBm LTE Band 26-2: 19.76dBm
99% Occupied Bandwidth.....:	LTE Band 2: 17M9G7D LTE Band 4: 17M9G7D LTE Band 5: 8M97G7D LTE Band 7: 17M9G7D LTE Band 12: 8M98W7D LTE Band 13: 8M94G7D LTE Band 18: 13M5W7D LTE Band 19: 13M5W7D LTE Band 25: 17M9G7D LTE Band 26-1: 8M98G7D LTE Band 26-2: 13M4G7D
Type of Modulation.....:	QPSK/16QAM
Antenna Type.....:	Internal Antenna
Antenna Gain.....:	LTE Band 2: 0.95dBi LTE Band 4: 0.57dBi LTE Band 5: 0.41dBi LTE Band 7: 0.47dBi LTE Band 12: 0.02dBi LTE Band 13: 0.08dBi LTE Band 18: 0.27dBi LTE Band 19: 0.41dBi LTE Band 25: 0.95dBi LTE Band 26-1: 0.27dBi LTE Band 26-2: 0.41dBi
Rating(s).....:	DC 80V

Note: The antenna gain listed in this report is provided by applicant, and the test laboratory is not responsible for this parameter.

1.2. Model(s) list

None.

1.3. 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	0.285	1M09W7D	0.230
3	2M70G7D	0.279	2M70W7D	0.217
5	4M50G7D	0.269	4M51W7D	0.216
10	8M97G7D	0.286	8M97W7D	0.210
15	13M4G7D	0.275	13M4W7D	0.209
20	17M9G7D	0.278	17M9W7D	0.223
LTE Band 4	QPSK		16QAM	
BW(MHz)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)
1.4	1M09G7D	0.313	1M09W7D	0.254
3	2M70G7D	0.310	2M70W7D	0.244
5	4M50G7D	0.307	4M50W7D	0.243
10	8M97G7D	0.312	8M96W7D	0.245
15	13M4G7D	0.318	13M5W7D	0.245
20	17M9G7D	0.311	17M9W7D	0.249
LTE Band 5	QPSK		16QAM	
BW(MHz)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)
1.4	1M09G7D	0.171	1M09W7D	0.136
3	2M71G7D	0.171	2M70W7D	0.140
5	4M50G7D	0.162	4M50W7D	0.132
10	8M97G7D	0.170	8M96W7D	0.133
LTE Band 7	QPSK		16QAM	
BW(MHz)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)
5	4M50G7D	0.259	4M50W7D	0.207
10	8M97G7D	0.272	8M96W7D	0.210
15	13M5G7D	0.261	13M4W7D	0.197
20	17M9G7D	0.256	17M9W7D	0.208

LTE Band 12	QPSK		16QAM	
BW(MHz)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)
1.4	1M09G7D	0.157	1M09W7D	0.128
3	2M70G7D	0.153	2M70W7D	0.123
5	4M50G7D	0.160	4M50W7D	0.127
10	8M97G7D	0.166	8M98W7D	0.125
LTE Band 13	QPSK		16QAM	
BW(MHz)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)
5	4M51G7D	0.147	4M50W7D	0.117
10	8M94G7D	0.152	8M93W7D	0.119
LTE Band 18	QPSK		16QAM	
BW(MHz)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)
5	4M50G7D	0.150	4M50W7D	0.119
10	8M98G7D	0.152	8M97W7D	0.119
15	13M4G7D	0.155	13M5W7D	0.121
LTE Band 19	QPSK		16QAM	
BW(MHz)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)
5	4M50G7D	0.158	4M50W7D	0.125
10	8M97G7D	0.166	8M98W7D	0.129
15	13M4G7D	0.166	13M5W7D	0.124
LTE Band 25	QPSK		16QAM	
BW(MHz)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)
1.4	1M09G7D	0.295	1M09W7D	0.239
3	2M70G7D	0.306	2M70W7D	0.247
5	4M51G7D	0.308	4M50W7D	0.254
10	8M97G7D	0.304	8M96W7D	0.238
15	13M4G7D	0.307	13M4W7D	0.240

20	17M9G7D	0.303	17M9W7D	0.243
LTE Band 26-1	QPSK		16QAM	
BW(MHz)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)
1.4	1M09G7D	0.155	1M09W7D	0.127
3	2M70G7D	0.152	2M70W7D	0.119
5	4M50G7D	0.151	4M51W7D	0.123
10	8M98G7D	0.158	8M98W7D	0.124
LTE Band 26-2	QPSK		16QAM	
BW(MHz)	Emission Designator (99%OBW)	Maximum ERP(W)	BW(MHz)	Emission Designator (99%OBW)
1.4	1M09G7D	0.061	1M09W7D	0.048
3	2M70G7D	0.061	2M70W7D	0.047
5	4M50G7D	0.060	4M49W7D	0.048
10	8M97G7D	0.061	8M96W7D	0.046
15	13M4G7D	0.046	13M4W7D	0.045

1.4. Test 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	2505.0
21100	2535	21100	2535
21425	2567.5	21400	2565.0
LTE Band 7(15MHz)		LTE Band 7(20MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
20825	2507.5	20850	2510.0
21100	2535	21100	2535
21375	2562.5	21350	2560.0

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 18(5MHz)		LTE Band 18(10MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
23875	817.5	23900	820
23925	822.5	23925	822.5
23975	827.5	23950	825
LTE Band 18(15MHz)			
Channel	Frequency (MHz)		
23925	822.5		

LTE Band 19(5MHz)		LTE Band 19(10MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
24025	832.5	24050	835
24075	837.5	24075	837.5
24125	842.5	24100	840
LTE Band 19(15MHz)			
Channel	Frequency (MHz)		
24075	837.5		

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	26440	1910
LTE Band 25(15MHz)		LTE Band 25(20MHz)	
26115	1857.5	26140	1860
26365	1882.5	26365	1882.5
26615	1907.5	26590	1905

LTE Band 26-1(1.4MHz)		LTE Band 26-1(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 26-1(5MHz)		LTE Band 26-1(10MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
26715	816.5	26740	819
26740	819		
26765	821.5		

LTE Band 26-2(1.4MHz)		LTE Band 26-2(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 26-2(5MHz)		LTE Band 26-2(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 26-2(15MHz)			
26865	831.5		
26915	836.5		
26965	841.5		

2. Test Result Summary

Requirement	CFR 47 Section	Result
Conducted Output Power	§2.1046; §22.913; §24.232(c); §27.50(d); §27.50(c); §27.50(b); §90.542(a)	PASS
Peak-to-Average Ratio	§2.1046; §24.232(d) §27.50(d); §27.50(c); §27.50(b);	PASS
Effective Radiated Power	§2.1046; §22.913; §24.232(c); §27.50(d); §27.50(c); §27.50(b); §90.542(a)	PASS
Equivalent Isotropic Radiated Power	§2.1046; §22.913; §24.232(c); §27.50(d); §27.50(c); §27.50(b); §90.542(a)	PASS
Occupied Bandwidth	§2.1049; §24.238(b); §27.53; §90.209(a)	PASS
Band Edge	§2.1051; §22.917(a); §27.53(h); §27.53(c); §27.53(g); §24.238(a); §90.543(e)	PASS
Conducted Spurious Emission	§2.1051; §22.917(a); §27.53(h); §27.53(g); §27.53(c); §24.238(a); §90.543(c)	PASS
Field Strength of Spurious Radiation	§2.1053; §22.917(a); §27.53(g); §27.53(c); §27.53(h); §24.238(a); §90.543(c)	PASS
Frequency Stability for Temperature & Voltage	§2.1055; §22.355; §27.54; §24.235; §90.213	PASS

Note:

1. PASS: Test item meets the requirement.
2. Fail: Test item does not meet the requirement.
3. N/A: Test case does not apply to the test object.
4. The test result judgment is decided by the limit of test standard.
5. After pre-testing of two samples with different memory chip, we found that the one with ISOCOM memory chip is the worst case, so the results are recorded in this report.

3. General Information

3.1. Test environment and mode

Operating Environment:

Temperature:	25.0 °C
Humidity:	56 % RH
Atmospheric Pressure:	1010 mbar

Keep the EUT in communication with CMW500 and select channel with modulation
All modes and data rates and positions were investigated.
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 18	QPSK Link (5MHz / 10MHz / 15MHz)	16QAM Link (5MHz / 10MHz / 15MHz)
LTE Band 19	QPSK Link (5MHz / 10MHz / 15MHz)	16QAM Link (5MHz / 10MHz / 15MHz)
LTE Band 25	QPSK Link (1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz)	16QAM Link (1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz)
LTE Band 26-1	QPSK Link (1.4MHz / 3MHz / 5MHz / 10MHz)	16QAM Link (1.4MHz / 3MHz / 5MHz / 10MHz)

LTE Band 26-2	QPSK Link (1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz)	16QAM Link (1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz)
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Antenna port conducted and radiated test items were performed according to KDB 971168 D01 Power Meas License Digital Systems v03 with maximum output power. Radiated measurements were performed with rotating EUT in different three orthogonal test planes to find the maximum emission. The sample was placed 0.8m/1.5m above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarization. The emissions worst-case are shown in Test Results of the following pages.

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	v	v	v	v	v
	18	-	-	v	v	v	-	v	v	v	v	v	v	v	v
	19	-	-	v	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
	26-1	v	v	v	v	v	-	v	v	v	v	v	v	v	v
	26-2	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	v	v	v	v	v
	18	-	-	v	v	v	-	v	v	v	v	v	v	v	v
	19	-	-	v	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
	26-1	v	v	v	v	v	-	v	v	v	v	v	v	v	v
	26-2	v	v	v	v	v	-	v	v	v	v	v	v	v	v
26dB and 99%	2	v	v	v	v	v	v	v	v	v	v	v	v	v	v

Bandwidth	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	v	v	v	v	v
	18	-	-	v	v	v	-	v	v	v	v	v	v	v	v
	19	-	-	v	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
	26-1	v	v	v	v	v	-	v	v	v	v	v	v	v	v
	26-2	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
	7	-	-	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
	18	-	-	v	v	v	-	v	v	v	v	v	v	-	v
	19	-	-	v	v	v	-	v	v	v	v	v	v	-	v
	25	v	v	v	v	v	v	v	v	v	v	v	v	-	v
	26-1	v	v	v	v	v	-	v	v	v	v	v	v	-	v
	26-2	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
	7	-	-	v	v	v	v	v	v	v	-	-	v	v	v
	12	v	v	v	v	-	-	v	v	v	-	-	v	v	v
	13	-	-	v	v	-	-	v	v	v	-	-	v	v	v
	18	-	-	v	v	v	-	v	v	v	-	-	v	v	v
	19	-	-	v	v	v	-	v	v	v	-	-	v	v	v
	25	v	v	v	v	v	v	v	v	v	-	-	v	v	v
	26-1	v	v	v	v	v	-	v	v	v	-	-	v	v	v
	26-2	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
	7	-	-	v	-	-	-	v	v	v	-	-	v	v	v

	12	v	-	-	-	-	-	v	v	v	-	-	v	v	v
	13	-	-	v	-	-	-	v	v	v	-	-	v	v	v
	18	-	-	v	-	-	-	v	v	v	-	-	v	v	v
	19	-	-	v	-	-	-	v	v	v	-	-	v	v	v
	25	v	-	-	-	-	-	v	v	v	-	-	v	v	v
	26-1	v	-	-	-	-	-	v	v	v	-	-	v	v	v
	26-2	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	v	v	v	v	v
	18	-	-	v	v	v	-	v	v	v	v	v	v	v	v
	19	-	-	v	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
	26-1	v	v	v	v	v	-	v	v	v	v	v	v	v	v
	26-2	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
	7	-	-	v	-	-	-	v	v	v	-	-	v	v	v
	12	v	-	-	-	-	-	v	v	v	-	-	v	v	v
	13	-	-	v	-	-	-	v	v	v	-	-	v	v	v
	18	-	-	v	-	-	-	v	v	v	-	-	v	v	v
	19	-	-	v	-	-	-	v	v	v	-	-	v	v	v
	25	v	-	-	-	-	-	v	v	v	-	-	v	v	v
	26-1	v	-	-	-	-	-	v	v	v	-	-	v	v	v
	26-1	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.														

3.2. Description of Support Units

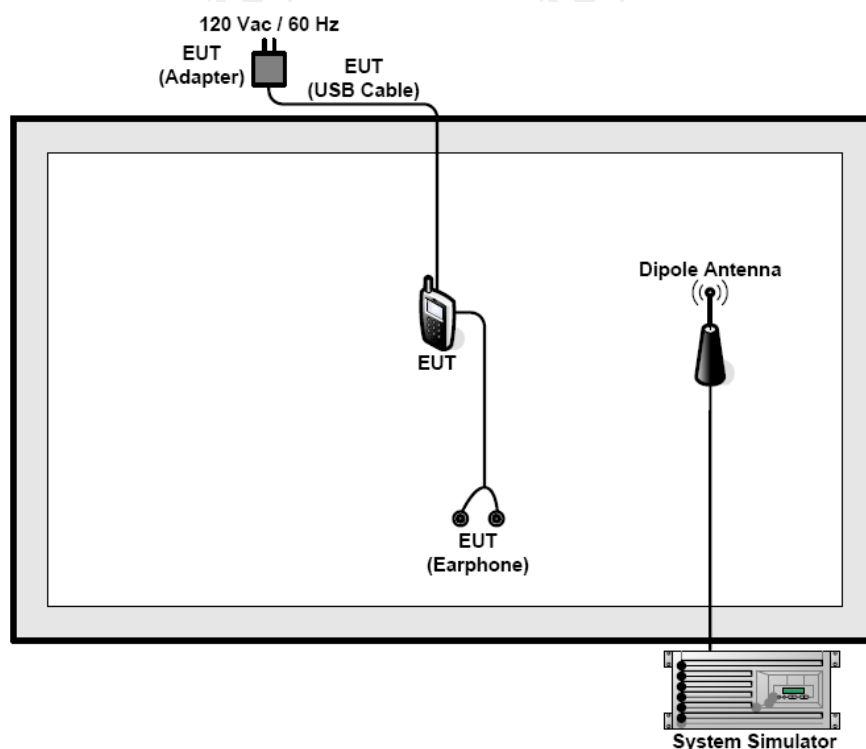
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Equipment	Model No.	Serial No.	FCC ID	Trade Name
/	/	/	/	/

Note:

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.

3.3. Configuration of Tested System



3.4. 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.

$$\text{Offset} = \text{RF cable loss} + \text{attenuator factor}.$$

4. Facilities and Accreditations

4.1. Facilities

The test facility is recognized, certified, or accredited by the following organizations:

- FCC - Registration No.: 645098

SHENZHEN TONGCE TESTING LAB

Designation Number: CN1205

The testing lab has been registered and fully described in a report with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.

- IC - Registration No.: 10668A-1

SHENZHEN TONGCE TESTING LAB

CAB identifier: CN0031

The testing lab has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing.

4.2. Location

SHENZHEN TONGCE TESTING LAB

Address: 2101 & 2201, Zhenchang Factory Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, 518103, People's Republic of China

TEL: +86-755-27673339

4.3. Measurement Uncertainty

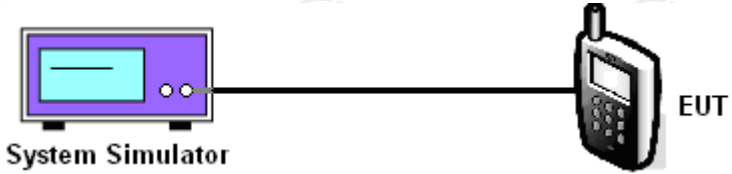
The reported uncertainty of measurement $y \pm U$, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 %.

No.	Item	MU
1	Conducted Emission	± 3.10 dB
2	RF power, conducted	± 0.12 dB
3	Spurious emissions, conducted	± 0.11 dB
4	All emissions, radiated(<1 GHz)	± 4.56 dB
5	All emissions, radiated(1 GHz - 18 GHz)	± 4.22 dB
6	All emissions, radiated(18 GHz- 40 GHz)	± 4.36 dB

5. Test Results and Measurement Data

5.1. Effective Radiated Power and Effective Isotropic Radiated Power Measurement

5.1.1. Test Specification

Test Requirement:	Refer to section 2
Test Method:	FCC part 2.1046
Limit:	LTE Band 2: 2W LTE Band 4: 1W LTE Band 5: 7W LTE Band 7: 2W LTE Band 12: 3W LTE Band 13: 3W LTE Band 18: 7W LTE Band 19: 7W LTE Band 25: 2W LTE Band 26-1: 100W LTE Band 26-2: 7W
Test Setup:	 The diagram illustrates the test setup. On the left, there is a 'System Simulator' represented by a purple rectangular box with a blue screen and two small circles. A black line connects the right side of the System Simulator to the left side of the 'EUT' (Equipment Under Test), which is depicted as a black mobile phone. The label 'EUT' is placed to the right of the phone.
Test Procedure:	1. The transmitter output port was connected to the system simulator. 2. Set EUT at maximum power through system simulator. 3. Select lowest, middle, highest channels for each band and different modulation. 4. Measure and record the power level from the system simulator. 5. Calculate the ERP and EIRP The relevant equation for determining the ERP or EIRP from the conducted RF output power measured using the guidance provided above is: $\text{ERP or EIRP} = P_{\text{Meas}} + G_T - L_C$ where: ERP or EIRP = effective radiated power or equivalent isotropically radiated power, respectively (expressed in the same units as P_{Meas}, typically dBW or dBm);

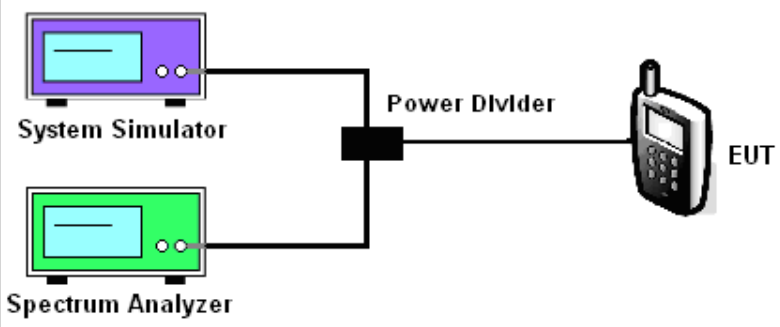
	P_{Meas} = measured transmitter output power or PSD, in dBm or dBW; G_T = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP); L_C = signal attenuation in the connecting cable between the transmitter and antenna, in dB. <i>Note: For personal/portable radios utilizing an integral antenna, the factor L_C is typically negligible. However, in a fixed station transmit system that utilizes a long cable run between the transmitter and the transmitting antenna, this factor can be significant.</i>
Test Result:	PASS

5.1.2. Test Instruments

Equipment	Manufacturer	Model	Serial Number	Calibration Due
Wideband Radio Communication Tester	R&S	CMW500	114220	Jul. 03, 2023
Combiner Box	Ascentest	AT890-RFB	/	/

5.2. Peak to Average Ratio

5.2.1. Test Specification

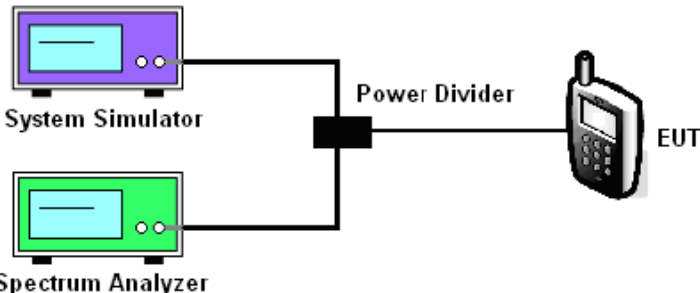
Test Requirement:	Refer to section 2
Test Method:	FCC KDB 971168 D01v03
Limit:	The peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.
Test Setup:	 The diagram illustrates the test setup. A System Simulator (represented by a purple monitor icon) and a Spectrum Analyzer (represented by a green monitor icon) are both connected to a central Power Divider (represented by a black square icon). The Power Divider is then connected to the EUT (Equipment Under Test, represented by a mobile phone icon).
Test Procedure:	1. The testing follows FCC KDB 971168 D01v03 Section 5.7.1. 2. The EUT was connected to spectrum analyzer and system simulator via a power divider. 3. Set EUT to transmit at maximum output power. 4. Set the CCDF (Complementary Cumulative Distribution Function) option of the spectrum analyzer. Record the maximum PAPR level associated with a probability of 0.1%.
Test Result:	PASS

5.2.2. Test Instruments

Equipment	Manufacturer	Model	Serial Number	Calibration Due
Wideband Radio Communication Tester	R&S	CMW500	114220	Jul. 03, 2023
Spectrum Analyzer	Agilent	N9020A	MY49100619	Jul. 04, 2023
Combiner Box	Ascentest	AT890-RFB	/	/

5.3. 99% Occupied Bandwidth and 26dB Bandwidth Measurement

5.3.1. Test Specification

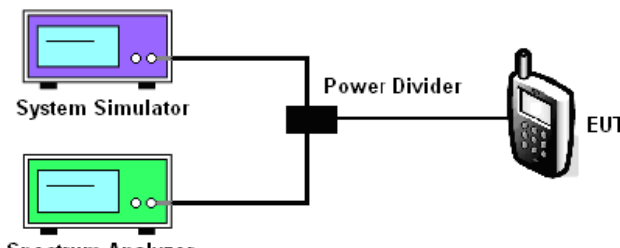
Test Requirement:	Refer to section 2
Test Method:	FCC part 2.1049
Limit:	N/A
Test Setup:	 The diagram shows a System Simulator (purple box) and a Spectrum Analyzer (green box) connected to a Power Divider (black box). The Power Divider is also connected to the EUT (Equipment Under Test, a mobile phone). The System Simulator and Spectrum Analyzer are connected to the Power Divider via cables.
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.
Test Result:	PASS

5.3.2. Test Instruments

Equipment	Manufacturer	Model	Serial Number	Calibration Due
Wideband Radio Communication Tester	R&S	CMW500	114220	Jul. 03, 2023
Spectrum Analyzer	Agilent	N9020A	MY49100619	Jul. 04, 2023
Combiner Box	Ascentest	AT890-RFB	/	/

5.4. Band Edge and Conducted Spurious Emission Measurement

5.4.1. Test Specification

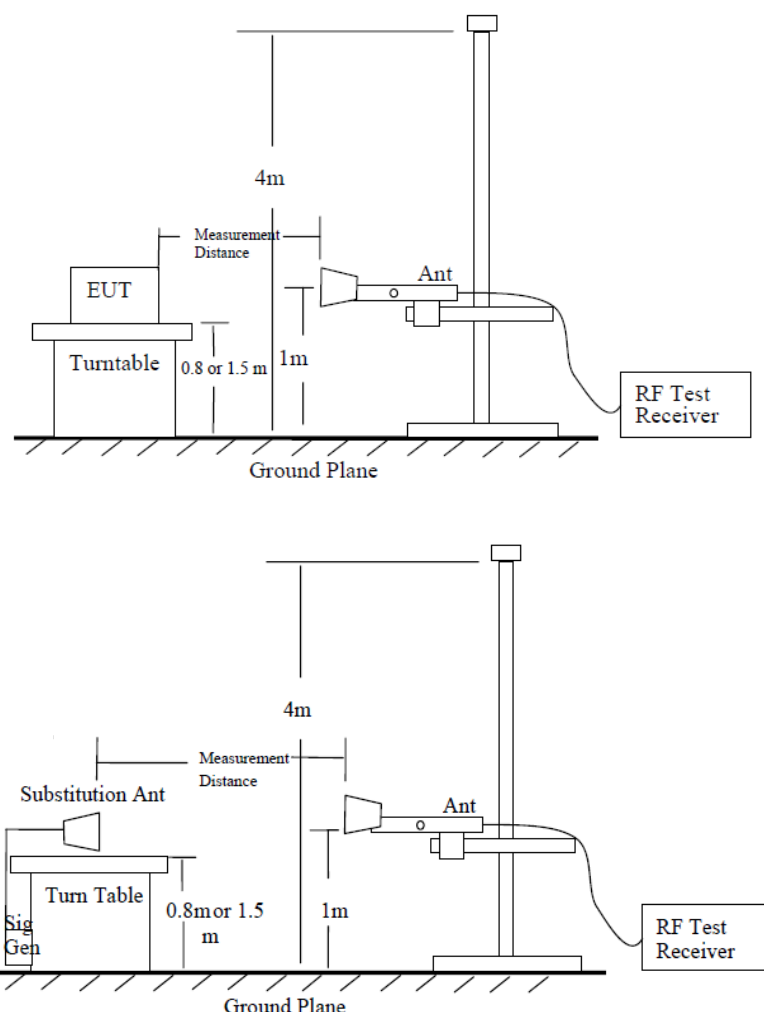
Test Requirement:	Refer to section 2
Test Method:	FCC part2.1051
Limit:	-13dBm
Test Setup:	 The diagram shows a System Simulator (purple box) and a Spectrum Analyzer (green box) connected to a Power Divider (black box). The Power Divider is also connected to the EUT (Equipment Under Test, represented by a mobile phone icon).
Test Procedure:	1. The testing follows FCC KDB 971168 D01v03 Section 6.0. 2. The EUT was connected to the spectrum analyzer and system simulator via a power divider. 3. The RF output of EUT was connected to the spectrum analyzer by an RF cable and attenuator. The path loss was compensated to the results for each measurement. 4. The band edges of low and high channels for the highest RF powers were measured. 5. The conducted spurious emission for the whole frequency range was taken. 6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band. 7. The limit line is derived from $43 + 10\log(P)$ dB below the transmitter power $P(\text{Watts}) = P(W) - [43 + 10\log(P)] \text{ (dB)} = [30 + 10\log(P)] \text{ (dBm)} - [43 + 10\log(P)] \text{ (dB)} = -13\text{dBm}$. For Band 17, the limit line is derived from $55 + 10\log(P)$ dB below the transmitter power
Test Result:	PASS

5.4.2. Test Instruments

Equipment	Manufacturer	Model	Serial Number	Calibration Due
Wideband Radio Communication Tester	R&S	CMW500	114220	Jul. 03, 2023
Spectrum Analyzer	Agilent	N9020A	MY49100619	Jul. 04, 2023
Combiner Box	Ascentest	AT890-RFB	/	/

5.5. Field Strength of Spurious Radiation Measurement

5.5.1. Test Specification

Test Requirement:	Refer to section 2
Test Method:	FCC part 2.1053
Limit:	30MHz~20GHz -13dBm
Test setup:	
Test Procedure:	1. The testing follows FCC KDB 971168 D01v03 Section 5.8 and ANSI / TIA-603-D-2010 Section 2.2.12. 2. The EUT was placed on a rotatable wooden table 0.8 meters above the ground. 3. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower. 4. The table was rotated 360 degrees to determine the position of the highest spurious emission. 5. The height of the receiving antenna is varied between one meter and four meters to search for the maximum spurious emission for both horizontal and vertical

	polarizations. 6. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking record of maximum spurious emission. 7. A horn antenna was substituted in place of the EUT and was driven by a signal generator. 8. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission. 9. Taking the record of output power at antenna port. 10. Repeat step 7 to step 8 for another polarization. 11. EIRP (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain 12. ERP (dBm) = EIRP - 2.15 13. The RF fundamental frequency should be excluded against the limit line in the operating frequency band. 14. The limit line is derived from 43 + 10log(P) dB below the transmitter power P(Watts) $= P(W) - [43 + 10\log(P)] \text{ (dB)}$ $= [30 + 10\log(P)] \text{ (dBm)} - [43 + 10\log(P)] \text{ (dB)}$ $= -13\text{dBm}.$
Test results:	PASS
Remark:	All modulations have been tested, but only the worst modulation show in this test item.

5.5.2. Test Instruments

Radiated Emission Test Site (966)				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Universal Radio Communication Tester	R&S	CMU200	110188	Jul. 04, 2023
Spectrum Analyzer	R&S	FSQ40	200061	Jul. 03, 2023
Signal Generator	HP	83623B	3614A00396	Feb. 24, 2023
Broadband Antenna	Schwarzbeck	VULB9163	340	Jul. 05, 2024
Horn Antenna	Schwarzbeck	BBHA 9120D	631	Jul. 05, 2024
Broadband Antenna	Schwarzbeck	VULB9163	412	Jul. 05, 2024
Horn Antenna	Schwarzbeck	BBHA 9120D	1201	Jul. 05, 2024
Horn Antenna	Schwarzbeck	BBHA 9170	00956	Apr. 10, 2023
Coaxial cable	SKET	RC-18G-N-M	/	Feb. 24, 2024
Coaxial cable	SKET	RC_40G-K-M	/	Feb. 24, 2024
Antenna Mast	Keleto	RE-AM	/	/
EMI Test Software	Shurple Technology	EZ-EMC	/	/

5.5.3. Test Data

Frequency Range (9 kHz-30MHz)

Frequency (MHz)	Level@3m (dB μ V/m)	Limit@3m (dB μ V/m)
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--	--	--
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Note: 1. Emission Level=Reading+ Cable loss+Antenna factor-Amp factor

2. The emission levels are 20 dB below the limit value, which are not reported. It is deemed to comply with the requirement

Band	Band 2(QPSK, 20MHz)	Test channel:	Lowest
Test mode:		Temperature :	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
3720.00	Vertical	-59.75	23.54	-36.21	-13.00	PASS
5580.00	V	-65.51	23.81	-41.70		
7440.00	V	-81.47	23.96	-57.51		
3720.00	Horizontal	-58.29	23.54	-34.75		
5580.00	H	-64.56	23.81	-40.75		
7440.00	H	-77.49	23.96	-53.53		

Band	Band 2(QPSK, 20MHz)	Test channel:	Middle
Test mode:		Temperature :	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
3760.00	Vertical	-59.27	23.58	-35.69	-13.00	PASS
5640.00	V	-70.44	23.85	-46.59		
7520.00	V	-77.62	23.99	-53.63		
3760.00	Horizontal	-58.85	23.58	-35.27		
5640.00	H	-64.48	23.85	-40.63		
7520.00	H	-78.63	23.99	-54.64		

Band	Band 2(QPSK, 20MHz)	Test channel:	Highest
Test mode:		Temperature :	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
3800.00	Vertical	-61.41	23.60	-37.81	-13.00	PASS
5700.00	V	-70.11	23.88	-46.23		
7600.00	V	-77.88	24.02	-53.86		
3800.00	Horizontal	-57.41	23.60	-33.81		
5700.00	H	-66.58	23.88	-42.70		
7600.00	H	-80.50	24.02	-56.48		

Band	Band 2(16QAM, 20MHz)	Test channel:	Lowest
Test mode:		Temperature :	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
3720.00	Vertical	-58.95	23.54	-35.41	-13.00	PASS
5580.00	V	-65.67	23.81	-41.86		
7440.00	V	-79.26	23.96	-55.30		
3720.00	Horizontal	-57.02	23.54	-33.48		
5580.00	H	-64.60	23.81	-40.79		
7440.00	H	-76.51	23.96	-52.55		

Band	Band 2(16QAM, 20MHz)	Test channel:	Middle
Test mode:		Temperature :	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
3760.00	Vertical	-59.68	23.58	-36.10	-13.00	PASS
5640.00	V	-69.67	23.85	-45.82		
7520.00	V	-78.18	23.99	-54.19		
3760.00	Horizontal	-58.20	23.58	-34.62		
5640.00	H	-65.53	23.85	-41.68		
7520.00	H	-79.45	23.99	-55.46		

Band	Band 2(16QAM, 20MHz)	Test channel:	Highest
Test mode:		Temperature :	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
3800.00	Vertical	-60.54	23.60	-36.94	-13.00	PASS
5700.00	V	-70.33	23.88	-46.45		
7600.00	V	-78.48	24.02	-54.46		
3800.00	Horizontal	-56.67	23.60	-33.07		
5700.00	H	-66.54	23.88	-42.66		
7600.00	H	-80.72	24.02	-56.70		

Band	Band 4(QPSK, 20MHz)	Test channel:	Lowest
Test mode:		Temperature :	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
3440.00	Vertical	-59.66	23.40	-36.26	-13.00	PASS
5160.00	V	-63.85	23.69	-40.16		
6880.00	V	-79.22	23.75	-55.47		
3440.00	Horizontal	-58.32	23.40	-34.92		
5160.00	H	-63.56	23.69	-39.87		
6880.00	H	-76.45	23.75	-52.70		

Band	Band 4(QPSK, 20MHz)	Test channel:	Middle
Test mode:		Temperature :	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
3465.00	Vertical	-58.96	23.42	-35.54	-13.00	PASS
5197.50	V	-69.62	23.73	-45.89		
6930.00	V	-78.35	23.79	-54.56		
3465.00	Horizontal	-56.73	23.42	-33.31		
5197.50	H	-64.66	23.73	-40.93		
6930.00	H	-78.24	23.79	-54.45		

Band	Band 4(QPSK, 20MHz)	Test channel:	Highest
Test mode:		Temperature :	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
3490.00	Vertical	-60.57	23.46	-37.11	-13.00	PASS
5235.00	V	-69.68	23.77	-45.91		
6980.00	V	-77.77	23.81	-53.96		
3490.00	Horizontal	-56.74	23.46	-33.28		
5235.00	H	-66.46	23.77	-42.69		
6980.00	H	-80.11	23.81	-56.30		

Band	Band 4(16QAM, 20MHz)	Test channel:	Lowest
Test mode:		Temperature :	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
3440.00	Vertical	-60.60	23.40	-37.20	-13.00	PASS
5160.00	V	-66.62	23.69	-42.93		
6880.00	V	-78.84	23.75	-55.09		
3440.00	Horizontal	-58.51	23.40	-35.11		
5160.00	H	-64.37	23.69	-40.68		
6880.00	H	-77.95	23.75	-54.20		

Band	Band 4(16QAM, 20MHz)	Test channel:	Middle
Test mode:		Temperature :	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
3465.00	Vertical	-59.62	23.42	-36.20	-13.00	PASS
5197.50	V	-70.34	23.73	-46.61		
6930.00	V	-78.66	23.79	-54.87		
3465.00	Horizontal	-57.59	23.42	-34.17		
5197.50	H	-66.76	23.73	-43.03		
6930.00	H	-79.25	23.79	-55.46		

Band	Band 4(16QAM, 20MHz)	Test channel:	Highest
Test mode:		Temperature :	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
3490.00	Vertical	-61.50	23.46	-38.04	-13.00	PASS
5235.00	V	-70.45	23.77	-46.68		
6980.00	V	-79.69	23.81	-55.88		
3490.00	Horizontal	-57.48	23.46	-34.02		
5235.00	H	-67.78	23.77	-44.01		
6980.00	H	-80.30	23.81	-56.49		

Band	Band 5(QPSK, 10MHz)	Test channel:	Lowest
Test mode:		Temperature :	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
1658.00	Vertical	-61.34	23.15	-38.19	-13.00	PASS
2487.00	V	-64.67	23.24	-41.43		
3316.00	V	-79.27	23.35	-55.92		
1658.00	Horizontal	-59.82	23.15	-36.67		
2487.00	H	-61.17	23.24	-37.93		
3316.00	H	-78.20	23.35	-54.85		

Band	Band 5(QPSK, 10MHz)	Test channel:	Middle
Test mode:		Temperature :	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
1673.00	Vertical	-58.52	23.17	-35.35	-13.00	PASS
2509.50	V	-69.86	23.26	-46.60		
3346.00	V	-77.29	23.38	-53.91		
1673.00	Horizontal	-58.50	23.17	-35.33		
2509.50	H	-63.51	23.26	-40.25		
3346.00	H	-77.96	23.38	-54.58		

Band	Band 5(QPSK, 10MHz)	Test channel:	Highest
Test mode:		Temperature :	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
1688.00	Vertical	-62.48	23.19	-39.29	-13.00	PASS
2532.00	V	-71.96	23.28	-48.68		
3376.00	V	-83.60	23.40	-60.20		
1688.00	Horizontal	-58.02	23.19	-34.83		
2532.00	H	-66.86	23.28	-43.58		
3376.00	H	-82.27	23.40	-58.87		

Band	Band 5(16QAM, 10MHz)	Test channel:	Lowest
Test mode:		Temperature :	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
1658.00	Vertical	-58.45	23.15	-35.30	-13.00	PASS
2487.00	V	-63.91	23.24	-40.67		
3316.00	V	-79.39	23.35	-56.04		
1658.00	Horizontal	-58.68	23.15	-35.53		
2487.00	H	-64.53	23.24	-41.29		
3316.00	H	-78.09	23.35	-54.74		

Band	Band 5(16QAM, 10MHz)	Test channel:	Middle
Test mode:		Temperature :	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
1673.00	Vertical	-59.26	23.17	-36.09	-13.00	PASS
2509.50	V	-70.87	23.26	-47.61		
3346.00	V	-78.20	23.38	-54.82		
1673.00	Horizontal	-55.72	23.17	-32.55		
2509.50	H	-65.69	23.26	-42.43		
3346.00	H	-78.39	23.38	-55.01		

Band	Band 5(16QAM, 10MHz)	Test channel:	Highest
Test mode:		Temperature :	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
1688.00	Vertical	-61.63	23.19	-38.44	-13.00	PASS
2532.00	V	-70.17	23.28	-46.89		
3376.00	V	-79.28	23.40	-55.88		
1688.00	Horizontal	-57.07	23.19	-33.88		
2532.00	H	-67.29	23.28	-44.01		
3376.00	H	-81.57	23.40	-58.17		

Band	Band 7(QPSK, 20MHz)				Test channel:	Lowest
Test mode:					Temperature :	25°C
					Relative Humidity:	56%
Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.						
Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
5020.00	Vertical	-61.37	23.11	-38.26	-25.00	PASS
7530.00	V	-64.94	23.25	-41.69		
10040.00	V	-80.20	23.38	-56.82		
5020.00	Horizontal	-59.17	23.11	-36.06		
7530.00	H	-62.14	23.25	-38.89		
10040.00	H	-77.08	23.38	-53.70		
Band	Band 7(QPSK, 20MHz)				Test channel:	Middle
Test mode:					Temperature :	25°C
					Relative Humidity:	56%
Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.						
Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
5070.00	Vertical	-58.09	23.14	-34.95	-25.00	PASS
7605.00	V	-70.30	23.23	-47.07		
10140.00	V	-78.86	23.34	-55.52		
5070.00	Horizontal	-57.56	23.14	-34.42		
7605.00	H	-64.67	23.23	-41.44		
10140.00	H	-78.43	23.34	-55.09		
Band	Band 7(QPSK, 20MHz)				Test channel:	Highest
Test mode:					Temperature :	25°C
					Relative Humidity:	56%
Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.						
Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
5120.00	Vertical	-61.44	23.17	-38.27	-25.00	PASS
7680.00	V	-71.03	23.25	-47.78		
10240.00	V	-84.33	23.40	-60.93		
5120.00	Horizontal	-57.76	23.17	-34.59		
7680.00	H	-67.25	23.25	-44.00		
10240.00	H	-81.29	23.40	-57.89		

Band	Band 7(16QAM, 20MHz)				Test channel:	Lowest
Test mode:					Temperature :	25°C
					Relative Humidity:	56%
Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.						
Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
5020.00	Vertical	-58.74	23.11	-35.63	-25.00	PASS
7530.00	V	-63.53	23.25	-40.28		
10040.00	V	-80.92	23.38	-57.54		
5020.00	Horizontal	-58.79	23.11	-35.68		
7530.00	H	-63.35	23.25	-40.10		
10040.00	H	-77.53	23.38	-54.15		
Band	Band 7(16QAM, 20MHz)				Test channel:	Middle
Test mode:					Temperature :	25°C
					Relative Humidity:	56%
Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.						
Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
5070.00	Vertical	-58.95	23.14	-35.81	-25.00	PASS
7605.00	V	-69.88	23.23	-46.65		
10140.00	V	-79.37	23.34	-56.03		
5070.00	Horizontal	-57.18	23.14	-34.04		
7605.00	H	-64.88	23.23	-41.65		
10140.00	H	-78.96	23.34	-55.62		
Band	Band 7(16QAM, 20MHz)				Test channel:	Highest
Test mode:					Temperature :	25°C
					Relative Humidity:	56%
Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.						
Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
5120.00	Vertical	-61.70	23.17	-38.53	-25.00	PASS
7680.00	V	-69.98	23.25	-46.73		
10240.00	V	-79.25	23.40	-55.85		
5120.00	Horizontal	-57.45	23.17	-34.28		
7680.00	H	-66.41	23.25	-43.16		
10240.00	H	-80.34	23.40	-56.94		

Band	Band 12(QPSK, 10MHz)				Test channel:	Lowest
Test mode:					Temperature :	25°C
					Relative Humidity:	56%
Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.						
Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
1408.00	Vertical	-59.82	23.03	-36.79	-13.00	PASS
2112.00	V	-65.72	23.16	-42.56		
2816.00	V	-80.69	23.25	-57.44		
1408.00	Horizontal	-59.74	23.03	-36.71		
2112.00	H	-62.67	23.16	-39.51		
2816.00	H	-77.88	23.25	-54.63		
Band	Band 12(QPSK, 10MHz)				Test channel:	Middle
Test mode:					Temperature :	25°C
					Relative Humidity:	56%
Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.						
Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
1415.00	Vertical	-59.38	23.05	-36.33	-13.00	PASS
2122.50	V	-70.02	23.18	-46.84		
2830.00	V	-78.89	23.28	-55.61		
1415.00	Horizontal	-56.67	23.05	-33.62		
2122.50	H	-63.26	23.18	-40.08		
2830.00	H	-77.22	23.28	-53.94		
Band	Band 12(QPSK, 10MHz)				Test channel:	Highest
Test mode:					Temperature :	25°C
					Relative Humidity:	56%
Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.						
Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
1422.00	Vertical	-62.97	23.08	-39.89	-13.00	PASS
2133.00	V	-71.76	23.20	-48.56		
2844.00	V	-82.98	23.31	-59.67		
1422.00	Horizontal	-57.50	23.08	-34.42		
2133.00	H	-65.82	23.20	-42.62		
2844.00	H	-81.45	23.31	-58.14		

Band	Band 12(16QAM, 10MHz)	Test channel:	Lowest
Test mode:		Temperature :	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
1408.00	Vertical	-59.73	23.03	-36.70	-13.00	PASS
2112.00	V	-62.95	23.16	-39.79		
2816.00	V	-80.41	23.25	-57.16		
1408.00	Horizontal	-58.65	23.03	-35.62		
2112.00	H	-63.54	23.16	-40.38		
2816.00	H	-77.75	23.25	-54.50		

Band	Band 12(16QAM, 10MHz)	Test channel:	Middle
Test mode:		Temperature :	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
1415.00	Vertical	-58.29	23.05	-35.24	-13.00	PASS
2122.50	V	-70.14	23.18	-46.96		
2830.00	V	-78.78	23.28	-55.50		
1415.00	Horizontal	-57.95	23.05	-34.90		
2122.50	H	-65.56	23.18	-42.38		
2830.00	H	-77.68	23.28	-54.40		

Band	Band 12(16QAM, 10MHz)	Test channel:	Highest
Test mode:		Temperature :	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
1422.00	Vertical	-61.14	23.08	-38.06	-13.00	PASS
2133.00	V	-70.35	23.20	-47.15		
2844.00	V	-78.17	23.31	-54.86		
1422.00	Horizontal	-57.10	23.08	-34.02		
2133.00	H	-66.86	23.20	-43.66		
2844.00	H	-80.66	23.31	-57.35		

Band	Band 13(QPSK, 10MHz)	Test channel:	Lowest
Test mode:		Temperature :	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
1564.00	Vertical	-67.90	23.06	-44.84	-40.00	PASS
2346.00	V	-65.27	23.17	-42.10	-13.00	
3128.00	V	-80.19	23.27	-56.92	-13.00	
1564.00	Horizontal	-68.69	23.05	-45.64	-40.00	
2346.00	H	-61.80	23.18	-38.62	-13.00	
3128.00	H	-77.63	23.28	-54.35	-13.00	

Band	Band 13(QPSK, 10MHz)	Test channel:	Middle
Test mode:		Temperature :	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
1564.00	Vertical	-68.34	23.07	-45.27	-40.00	PASS
2346.00	V	-70.33	23.19	-47.14	-13.00	
3128.00	V	-77.22	23.29	-53.93	-13.00	
1564.00	Horizontal	-66.38	23.07	-43.31	-40.00	
2346.00	H	-64.58	23.19	-41.39	-13.00	
3128.00	H	-79.46	23.30	-56.16	-13.00	

Band	Band 13(QPSK, 10MHz)	Test channel:	Highest
Test mode:		Temperature :	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
1564.00	Vertical	-67.42	23.08	-44.34	-40.00	PASS
2346.00	V	-70.21	23.20	-47.01	-13.00	
3128.00	V	-81.81	23.31	-58.50	-13.00	
1564.00	Horizontal	-68.24	23.08	-45.16	-40.00	
2346.00	H	-65.50	23.20	-42.30	-13.00	
3128.00	H	-80.07	23.31	-56.76	-13.00	

Band	Band 13(16QAM, 10MHz)	Test channel:	Lowest
Test mode:		Temperature :	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
1564.00	Vertical	-68.07	23.06	-45.01	-40.00	PASS
2346.00	V	-63.91	23.17	-40.74	-13.00	
3128.00	V	-79.99	23.27	-56.72	-13.00	
1564.00	Horizontal	-66.73	23.05	-43.68	-40.00	
2346.00	H	-65.20	23.18	-42.02	-13.00	
3128.00	H	-76.56	23.28	-53.28	-13.00	

Band	Band 13(16QAM, 10MHz)	Test channel:	Middle
Test mode:		Temperature :	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
1564.00	Vertical	-69.39	23.07	-46.32	-40.00	PASS
2346.00	V	-69.41	23.19	-46.22	-13.00	
3128.00	V	-77.26	23.29	-53.97	-13.00	
1564.00	Horizontal	-68.90	23.07	-45.83	-40.00	
2346.00	H	-63.47	23.19	-40.28	-13.00	
3128.00	H	-78.03	23.30	-54.73	-13.00	

Band	Band 13(16QAM, 10MHz)	Test channel:	Highest
Test mode:		Temperature :	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
1564.00	Vertical	-67.65	23.08	-44.57	-40.00	PASS
2346.00	V	-69.80	23.20	-46.60	-13.00	
3128.00	V	-76.96	23.31	-53.65	-13.00	
1564.00	Horizontal	-68.28	23.08	-45.20	-40.00	
2346.00	H	-65.06	23.20	-41.86	-13.00	
3128.00	H	-79.99	23.31	-56.68	-13.00	

Band	Band 18(QPSK, 10MHz)	Test channel:	Lowest
Test mode:		Temperature :	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
1640.00	Vertical	-60.46	23.06	-37.40	-13.00	PASS
2460.00	V	-64.82	23.17	-41.65		
3280.00	V	-81.03	23.27	-57.76		
1640.00	Horizontal	-60.35	23.05	-37.30		
2460.00	H	-63.03	23.18	-39.85		
3280.00	H	-77.49	23.28	-54.21		

Band	Band 18(QPSK, 10MHz)	Test channel:	Middle
Test mode:		Temperature :	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
1645.00	Vertical	-59.02	23.07	-35.95	-13.00	PASS
2467.50	V	-70.50	23.19	-47.31		
3290.00	V	-77.98	23.29	-54.69		
1645.00	Horizontal	-56.64	23.07	-33.57		
2467.50	H	-64.80	23.19	-41.61		
3290.00	H	-79.15	23.30	-55.85		

Band	Band 18(QPSK, 10MHz)	Test channel:	Highest
Test mode:		Temperature :	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
1650.00	Vertical	-71.29	23.08	-48.21	-13.00	PASS
2475.00	V	-82.71	23.20	-59.51		
3300.00	V	-56.46	23.31	-33.15		
1650.00	Horizontal	-65.73	23.08	-42.65		
2475.00	H	-80.59	23.20	-57.39		
3300.00	H	-70.97	23.31	-47.66		

Band	Band 18(16QAM, 10MHz)	Test channel:	Lowest
Test mode:		Temperature :	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
1640.00	Vertical	-59.39	23.06	-36.33	-13.00	PASS
2460.00	V	-64.37	23.17	-41.20		
3280.00	V	-80.71	23.27	-57.44		
1640.00	Horizontal	-56.30	23.05	-33.25		
2460.00	H	-65.23	23.18	-42.05		
3280.00	H	-76.63	23.28	-53.35		

Band	Band 18(16QAM, 10MHz)	Test channel:	Middle
Test mode:		Temperature :	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
1645.00	Vertical	-58.29	23.07	-35.22	-13.00	PASS
2467.50	V	-70.18	23.19	-46.99		
3290.00	V	-77.90	23.29	-54.61		
1645.00	Horizontal	-57.12	23.07	-34.05		
2467.50	H	-64.51	23.19	-41.32		
3290.00	H	-78.92	23.30	-55.62		

Band	Band 18(16QAM, 10MHz)	Test channel:	Highest
Test mode:		Temperature :	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
1650.00	Vertical	-61.36	23.08	-38.28	-13.00	PASS
2475.00	V	-70.11	23.20	-46.91		
3300.00	V	-78.36	23.31	-55.05		
1650.00	Horizontal	-57.64	23.08	-34.56		
2475.00	H	-66.16	23.20	-42.96		
3300.00	H	-79.20	23.31	-55.89		

Band	Band 19(QPSK, 10MHz)	Test channel:	Lowest
Test mode:		Temperature :	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
1670.00	Vertical	-60.67	22.49	-38.18	-13.00	PASS
2505.00	V	-65.04	22.57	-42.47		
3340.00	V	-80.96	22.82	-58.14		
1670.00	Horizontal	-60.16	22.78	-37.38		
2505.00	H	-62.73	22.63	-40.10		
3340.00	H	-77.19	22.93	-54.26		

Band	Band 19(QPSK, 10MHz)	Test channel:	Middle
Test mode:		Temperature :	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
1675.00	Vertical	-58.56	22.23	-36.33	-13.00	PASS
2512.50	V	-69.98	22.61	-47.37		
3350.00	V	-77.58	22.59	-54.99		
1675.00	Horizontal	-56.81	22.36	-34.45		
2512.50	H	-64.42	22.66	-41.76		
3350.00	H	-79.06	22.45	-56.61		

Band	Band 19(QPSK, 10MHz)	Test channel:	Highest
Test mode:		Temperature :	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
1680.00	Vertical	-70.81	22.25	-48.56	-13.00	PASS
2520.00	V	-82.54	23.09	-59.45		
3360.00	V	-56.60	23.04	-33.56		
1680.00	Horizontal	-65.59	22.39	-43.20		
2520.00	H	-81.03	22.89	-58.14		
3360.00	H	-70.90	23.02	-47.88		

Band	Band 19(16QAM, 10MHz)	Test channel:	Lowest
Test mode:		Temperature :	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
1670.00	Vertical	-59.61	22.49	-37.12	-13.00	PASS
2505.00	V	-64.22	22.57	-41.65		
3340.00	V	-80.90	22.82	-58.08		
1670.00	Horizontal	-56.23	22.78	-33.45		
2505.00	H	-65.30	22.63	-42.67		
3340.00	H	-76.16	22.93	-53.23		

Band	Band 19(16QAM, 10MHz)	Test channel:	Middle
Test mode:		Temperature :	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
1675.00	Vertical	-58.35	22.23	-36.12	-13.00	PASS
2512.50	V	-70.27	22.61	-47.66		
3350.00	V	-77.50	22.59	-54.91		
1675.00	Horizontal	-57.29	22.36	-34.93		
2512.50	H	-64.47	22.66	-41.81		
3350.00	H	-78.93	22.45	-56.48		

Band	Band 19(16QAM, 10MHz)	Test channel:	Highest
Test mode:		Temperature :	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
1680.00	Vertical	-61.46	22.25	-39.21	-13.00	PASS
2520.00	V	-69.95	23.09	-46.86		
3360.00	V	-78.28	23.04	-55.24		
1680.00	Horizontal	-57.54	22.39	-35.15		
2520.00	H	-66.12	22.89	-43.23		
3360.00	H	-79.13	23.02	-56.11		

Band	Band 25(QPSK, 20MHz)	Test channel:	Lowest
Test mode:		Temperature:	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
3720.00	Vertical	-61.56	22.16	-39.40	-13.00	PASS
5580.00	V	-67.69	22.99	-44.70		
7440.00	V	-82.12	23.04	-59.08		
3720.00	Horizontal	-62.50	22.16	-40.34		
5580.00	H	-63.54	22.99	-40.55		
7440.00	H	-79.87	23.04	-56.83		

Band	Band 25(QPSK, 20MHz)	Test channel:	Middle
Test mode:		Temperature:	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
3765.00	Vertical	-62.01	22.76	-39.25	-13.00	PASS
5647.50	V	-72.32	23.07	-49.25		
7530.00	V	-81.56	23.11	-58.45		
3765.00	Horizontal	-58.10	22.76	-35.34		
5647.50	H	-65.26	23.07	-42.19		
7530.00	H	-80.88	23.11	-57.77		

Band	Band 25(QPSK, 20MHz)	Test channel:	Highest
Test mode:		Temperature:	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
3810.00	Vertical	-63.63	22.42	-41.21	-13.00	PASS
5715.00	V	-73.62	22.33	-51.29		
7620.00	V	-83.72	23.00	-60.72		
3810.00	Horizontal	-58.58	22.42	-36.16		
5715.00	H	-66.87	22.33	-44.54		
7620.00	H	-83.16	23.00	-60.16		

Band	Band 25(16QAM, 20MHz)	Test channel:	Lowest
Test mode:		Temperature:	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
3720.00	Vertical	-61.01	22.16	-38.85	-13.00	PASS
5580.00	V	-64.65	22.99	-41.66		
7440.00	V	-82.67	23.04	-59.63		
3720.00	Horizontal	-60.05	22.16	-37.89		
5580.00	H	-65.94	22.99	-42.95		
7440.00	H	-80.07	23.04	-57.03		

Band	Band 25(16QAM, 20MHz)	Test channel:	Middle
Test mode:		Temperature:	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
3765.00	Vertical	-61.08	22.76	-38.32	-13.00	PASS
5647.50	V	-72.13	23.07	-49.06		
7530.00	V	-80.19	23.11	-57.08		
3765.00	Horizontal	-60.33	22.76	-37.57		
5647.50	H	-66.72	23.07	-43.65		
7530.00	H	-79.81	23.11	-56.70		

Band	Band 25(16QAM, 20MHz)	Test channel:	Highest
Test mode:		Temperature:	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
3810.00	Vertical	-62.34	22.42	-39.92	-13.00	PASS
5715.00	V	-72.03	22.33	-49.70		
7620.00	V	-79.70	23.00	-56.70		
3810.00	Horizontal	-59.18	22.42	-36.76		
5715.00	H	-68.30	22.33	-45.97		
7620.00	H	-82.14	23.00	-59.14		

Band	Band 26-1(QPSK, 5MHz)	Test channel:	Lowest
Test mode:		Temperature:	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
1633.00	Vertical	-61.97	21.97	-40.00	-13.00	PASS
2449.50	V	-68.06	22.63	-45.43		
3266.00	V	-82.07	22.83	-59.24		
1633.00	Horizontal	-61.82	21.89	-39.93		
2449.50	H	-63.65	22.54	-41.11		
3266.00	H	-79.92	22.30	-57.62		

Band	Band 26-1(QPSK, 5MHz)	Test channel:	Middle
Test mode:		Temperature:	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
1638.00	Vertical	-62.55	22.58	-39.97	-13.00	PASS
2457.00	V	-71.66	22.29	-49.37		
3276.00	V	-81.15	22.49	-58.66		
1638.00	Horizontal	-57.64	22.64	-35.00		
2457.00	H	-65.12	22.45	-42.67		
3276.00	H	-80.50	22.58	-57.92		

Band	Band 26-1(QPSK, 5MHz)	Test channel:	Highest
Test mode:		Temperature:	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
1643.00	Vertical	-63.57	21.95	-41.62	-13.00	PASS
2464.50	V	-73.24	21.50	-51.74		
3286.00	V	-84.01	22.23	-61.78		
1643.00	Horizontal	-59.28	22.06	-37.22		
2464.50	H	-66.99	21.79	-45.20		
3286.00	H	-83.79	22.37	-61.42		

Band	Band 26-1(16QAM, 5MHz)	Test channel:	Lowest
Test mode:		Temperature:	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
1633.00	Vertical	-61.77	21.97	-39.80	-13.00	PASS
2449.50	V	-65.18	22.63	-42.55		
3266.00	V	-82.98	22.83	-60.15		
1633.00	Horizontal	-59.33	21.89	-37.44		
2449.50	H	-66.35	22.54	-43.81		
3266.00	H	-79.34	22.30	-57.04		

Band	Band 26-1(16QAM, 5MHz)	Test channel:	Middle
Test mode:		Temperature:	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
1638.00	Vertical	-61.47	22.58	-38.89	-13.00	PASS
2457.00	V	-72.11	22.29	-49.82		
3276.00	V	-80.70	22.49	-58.21		
1638.00	Horizontal	-60.16	22.64	-37.52		
2457.00	H	-67.15	22.45	-44.70		
3276.00	H	-80.40	22.58	-57.82		

Band	Band 26-1(16QAM, 5MHz)	Test channel:	Highest
Test mode:		Temperature:	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
1643.00	Vertical	-62.16	21.95	-40.21	-13.00	PASS
2464.50	V	-71.52	21.50	-50.02		
3286.00	V	-80.30	22.23	-58.07		
1643.00	Horizontal	-58.95	22.06	-36.89		
2464.50	H	-68.36	21.79	-46.57		
3286.00	H	-82.10	22.37	-59.73		

Band	Band 26-2(QPSK, 15MHz)	Test channel:	Lowest
Test mode:		Temperature:	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
1663.00	Vertical	-63.19	21.17	-42.02	-13.00	PASS
2494.50	V	-68.20	22.03	-46.17		
3326.00	V	-83.01	22.12	-60.89		
1663.00	Horizontal	-62.26	21.01	-41.25		
2494.50	H	-64.64	22.07	-42.57		
3326.00	H	-80.18	21.65	-58.53		

Band	Band 26-2(QPSK, 15MHz)	Test channel:	Middle
Test mode:		Temperature:	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
1673.00	Vertical	-62.86	22.03	-40.83	-13.00	PASS
2509.50	V	-71.99	21.51	-50.48		
3346.00	V	-81.80	21.60	-60.20		
1673.00	Horizontal	-58.56	22.18	-36.38		
2509.50	H	-65.34	22.06	-43.28		
3346.00	H	-81.21	21.68	-59.53		

Band	Band 26-2(QPSK, 15MHz)	Test channel:	Highest
Test mode:		Temperature:	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
1683.00	Vertical	-63.20	21.09	-42.11	-13.00	PASS
2524.50	V	-73.75	20.92	-52.83		
3366.00	V	-84.15	21.56	-62.59		
1683.00	Horizontal	-59.69	21.65	-38.04		
2524.50	H	-67.35	21.22	-46.13		
3366.00	H	-84.06	21.74	-62.32		

Band	Band 26-2(16QAM, 15MHz)	Test channel:	Lowest
Test mode:		Temperature:	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
1663.00	Vertical	-61.87	21.17	-40.70	-13.00	PASS
2494.50	V	-65.43	22.03	-43.40		
3326.00	V	-83.84	22.12	-61.72		
1663.00	Horizontal	-59.70	21.01	-38.69		
2494.50	H	-67.49	22.07	-45.42		
3326.00	H	-80.20	21.65	-58.55		

Band	Band 26-2(16QAM, 15MHz)	Test channel:	Middle
Test mode:		Temperature:	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
1673.00	Vertical	-61.89	22.03	-39.86	-13.00	PASS
2509.50	V	-72.61	21.51	-51.10		
3346.00	V	-81.18	21.60	-59.58		
1673.00	Horizontal	-61.39	22.18	-39.21		
2509.50	H	-67.01	22.06	-44.95		
3346.00	H	-80.37	21.68	-58.69		

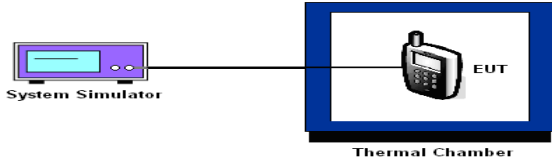
Band	Band 26-2(16QAM, 15MHz)	Test channel:	Highest
Test mode:		Temperature:	25°C
		Relative Humidity:	56%

Note: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
	Polarization	Level (dBm)	Correction Factor (dB)	Spurious emissions (dBm)		
1683.00	Vertical	-62.63	21.09	-41.54	-13.00	PASS
2524.50	V	-71.92	20.92	-51.00		
3366.00	V	-80.68	21.56	-59.12		
1683.00	Horizontal	-59.49	21.65	-37.84		
2524.50	H	-68.16	21.22	-46.94		
3366.00	H	-82.10	21.74	-60.36		

5.6. Frequency Stability Measurement

5.6.1. Test Specification

Test Requirement:	FCC part 27.54, FCC part 22.355, 24.235
Test Method:	FCC Part 2.1055
Limit:	±2.5 ppm
Test Setup:	 The diagram illustrates the test setup. On the left, a 'System Simulator' is connected by a cable to a 'Thermal Chamber'. Inside the 'Thermal Chamber', an 'EUT' (Equipment Under Test) is shown.
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, 5M is for LTE Band 7, 1.4M is for LTE Band 12, 5M is for LTE Band 13, 5M is for LTE Band 18, 5M is for LTE Band 19, 1.4M is for LTE Band 25, 1.4M is for LTE Band 26-1, 1.4M is for LTE Band 26-2
Test Result:	PASS

5.6.2. Test Instruments

Equipment	Manufacturer	Model	Serial Number	Calibration Due
Wideband Radio Communication Tester	R&S	CMW500	114220	Jul. 03, 2023
Programable tempratuce and humidity chamber	JQ	JQ-2000	/	Jul. 04, 2023
DC power supply	Kingrang	KR3005K	/	Jul. 04, 2023
Combiner Box	AT890-RFB	Ascentest	/	/

Appendix A: Photographs of Test Setup

Refer to the test report No. TCT220919E010

Appendix B: Photographs of EUT

Refer to the test report No. TCT220919E010

Test Data for Appendix Refer to Appendix For LTE Band 2, Appendix For LTE Band 4, Appendix For LTE Band 5, Appendix For LTE Band 7, Appendix For LTE Band 12, Appendix For LTE Band 13, Appendix For LTE Band 18, Appendix For LTE Band 19, Appendix For LTE Band 25 and Appendix For LTE Band 26

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