




# TEST REPORT

<b>FCC ID</b> ..... :	2A5LO-ZLTM30SPRO	
<b>Test Report No</b> ..... :	TCT240801E046	
<b>Date of issue</b> ..... :	Sep. 14, 2024	
<b>Testing laboratory</b> .....	SHENZHEN TONGCE TESTING LAB	
<b>Testing location/ address:</b>	2101 & 2201, Zhenchang Factory, Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, 518103, People's Republic of China	
<b>Applicant's name</b> ..... :	Tozed Kangwei Tech Co., Ltd	
<b>Address</b> ..... :	Room 1301, NO. 37 Jinlong, Nansha Street, Xiangjiang Financial Business Center, Nansha District, Guangzhou, China	
<b>Manufacturer's name</b> ... :	Tozed Kangwei Tech Co., Ltd	
<b>Address</b> ..... :	Room 1301, NO. 37 Jinlong, Nansha Street, Xiangjiang Financial Business Center, Nansha District, Guangzhou, China	
<b>Standard(s)</b> .....	FCC CFR Title 47 Part 2 FCC CFR Title 47 Part22 FCC CFR Title 47 Part27	
<b>Product Name</b> ..... :	LTE Mobile WiFi	
<b>Trade Mark</b> .....	TOZED KANGWEI	
<b>Model/Type reference</b> ..... :	ZLT M30S PRO, ZLT M35	
<b>Rating(s)</b> ..... :	Rechargeable Li-ion Battery DC 3.7V	
<b>Date of receipt of test item</b> .....	Aug. 01, 2024	
<b>Date (s) of performance of test</b> ..... :	Aug. 01, 2024 ~ Sep. 14, 2024	
<b>Tested by (+signature)</b> ... :	Aaron MO	
<b>Check by (+signature)</b> ..... :	Beryl ZHAO	
<b>Approved by (+signature)</b> :	Tomsin	



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**Appendix B: Photographs of Test Setup**

**Appendix C: Photographs of EUT**

**Test Data: Refer to Appendix For LTE Band 4, Appendix For LTE Band 5,  
Appendix For LTE Band 7, Appendix For LTE Band 13,  
and Appendix For LTE Band 66**

## 1. General Product Information

### 1.1. EUT description

<b>Product Name</b> .....:	LTE Mobile WiFi
<b>Model/Type reference</b> .....:	ZLT M30S PRO
<b>Sample Number</b> .....:	TCT240801E014-0101
<b>Tx Frequency</b> .....:	LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 7: 2500 MHz ~ 2570 MHz LTE Band 13: 777 MHz ~ 787 MHz LTE Band 66: 1710 MHz ~ 1780 MHz
<b>Rx Frequency</b> .....:	LTE Band 4: 2110 MHz ~ 2155 MHz LTE Band 5: 869 MHz ~ 894 MHz LTE Band 7: 2620 MHz ~ 2690 MHz LTE Band 13: 746 MHz ~ 756 MHz LTE Band 66: 2110 MHz ~ 2180 MHz
<b>Bandwidth</b> .....:	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 13: 5MHz /10MHz LTE Band 66: 1.4MHz /3MHz /5MHz /10MHz /15MHz /20MHz
<b>Maximum Output Power to Antenna</b> .....:	LTE Band 4: 23.07dBm LTE Band 5: 23.39dBm LTE Band 7: 22.09dBm LTE Band 13: 23.47dBm LTE Band 66: 23.38dBm
<b>99% Occupied Bandwidth</b> .....:	LTE Band 4: 18M0G7D LTE Band 5: 8M99G7D LTE Band 7: 18M0G7D LTE Band 13: 8M96G7D LTE Band 66: 18M0G7D
<b>Type of Modulation</b> .....:	QPSK/16QAM
<b>Antenna Type</b> .....:	FPC Antenna
<b>Antenna Gain</b> .....:	LTE Band 4: 0.74dBi LTE Band 5: 0.04dBi LTE Band 7: 3.68dBi LTE Band 13: 0.05dBi LTE Band 66: 0.74dBi
<b>Rating(s)</b> .....:	Rechargeable Li-ion Battery DC 3.7V

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

No.	Model No.	Tested with
1	ZLT M30S PRO	<input checked="" type="checkbox"/>
Other models	ZLT M35	<input type="checkbox"/>

Note: ZLT M30S PRO is tested model, other models are derivative models. The models are identical in circuit and PCB layout, only different on the model names and appearance. So the test data of ZLT M30S PRO can represent the remaining models.



### 1.3. Emission Designator

LTE Band 4	QPSK		16QAM	
BW(MHz)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)
1.4	1M10G7D	0.232	1M10W7D	0.193
3	2M70G7D	0.240	2M70W7D	0.206
5	4M51G7D	0.228	4M51W7D	0.186
10	8M99G7D	0.188	8M99W7D	0.172
15	13M5G7D	0.226	13M5W7D	0.184
20	18M0G7D	0.199	18M0W7D	0.195

LTE Band 5	QPSK		16QAM	
BW(MHz)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)
1.4	1M10G7D	0.134	1M10W7D	0.104
3	2M70G7D	0.129	2M71W7D	0.103
5	4M51G7D	0.124	4M51W7D	0.097
10	8M99G7D	0.131	8M99W7D	0.105

LTE Band 7	QPSK		16QAM	
BW(MHz)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)
5	4M51G7D	0.343	4M51W7D	0.281
10	9M00G7D	0.378	8M99W7D	0.273
15	13M5G7D	0.377	13M5W7D	0.279
20	18M0G7D	0.298	18M0W7D	0.277

LTE Band 13	QPSK		16QAM	
BW(MHz)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)
5	4M50G7D	0.137	4M51W7D	0.128
10	8M96G7D	0.124	8M96W7D	0.118

LTE Band 66	QPSK		16QAM	
BW(MHz)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)
1.4	1M10G7D	0.245	1M10W7D	0.190
3	2M70G7D	0.258	2M70W7D	0.205
5	4M51G7D	0.231	4M51W7D	0.186
10	9M00G7D	0.256	8M99W7D	0.200
15	13M5G7D	0.222	13M5W7D	0.212
20	18M0G7D	0.192	18M0W7D	0.182

### 1.4. Test Frequency

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 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 66(1.4MHz)		LTE Band 66(3MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
131979	1710.7	131987	1711.5
132322	1745	132322	1745
132665	1779.3	132657	1778.5

LTE Band 66(5MHz)		LTE Band 66(10MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
131997	1712.5	132022	1715
132322	1745	132322	1745
132647	1777.5	132622	1775

LTE Band 66(15MHz)		LTE Band 66(20MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
132047	1717.5	132072	1720
132322	1745	132322	1745
132597	1772.5	132572	1770



## 2. Test Result Summary

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

### 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 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 13	QPSK Link (5MHz / 10MHz)	16QAM Link (5MHz / 10MHz)
LTE Band 66	QPSK Link (1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz)	16QAM Link (1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz)

Antenna port conducted and radiated test items were performed according to KDB 971168 D01 Power Meas License Digital Systems v03 with maximum output power. 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	4	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	5	√	√	√	√	-	-	√	√	√	√	√	√	√	√
	7	-	-	√	√	√	√	√	√	√	√	√	√	√	√
	13	-	-	√	√	-	-	√	√	√	√	√	√	√	√
	66	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Peak-to-Average Ratio	4	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	5	√	√	√	√	-	-	√	√	√	√	√	√	√	√
	7	-	-	√	√	√	√	√	√	√	√	√	√	√	√
	13	-	-	√	√	-	-	√	√	√	√	√	√	√	√
	66	√	√	√	√	√	√	√	√	√	√	√	√	√	√
26dB and 99% Bandwidth	4	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	5	√	√	√	√	-	-	√	√	√	√	√	√	√	√
	7	-	-	√	√	√	√	√	√	√	√	√	√	√	√
	13	-	-	√	√	-	-	√	√	√	√	√	√	√	√
	66	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Conducted Band Edge	4	√	√	√	√	√	√	√	√	√	√	√	√	-	√
	5	√	√	√	√	-	-	√	√	√	√	√	√	-	√
	7	-	-	√	√	√	√	√	√	√	√	√	√	-	√
	13	-	-	√	√	-	-	√	√	√	√	√	√	√	√
	66	√	√	√	√	√	√	√	√	√	√	√	√	-	√
Conducted Spurious Emission	4	√	√	√	√	√	√	√	√	√	-	-	√	√	√
	5	√	√	√	√	-	-	√	√	√	-	-	√	√	√
	7	-	-	√	√	√	√	√	√	√	-	-	√	√	√
	13	-	-	√	√	-	-	√	√	√	√	√	√	√	√
	66	√	√	√	√	√	√	√	√	√	-	-	√	√	√
Frequency Stability	4	√	-	-	-	-	-	√	√	√	-	-	√	√	√
	5	√	-	-	-	-	-	√	√	√	-	-	√	√	√
	7	-	-	√	-	-	-	√	√	√	-	-	√	√	√
	13	-	-	√	-	-	-	√	√	√	-	-	√	√	√
	66	√	-	-	-	-	-	√	√	√	-	-	√	√	√
E.R.P./E.I.R.P.	4	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	5	√	√	√	√	-	-	√	√	√	√	√	√	√	√
	7	-	-	√	√	√	√	√	√	√	√	√	√	√	√
	13	-	-	√	√	-	-	√	√	√	√	√	√	√	√

	66	v	v	v	v	v	v	v	v	v	v	v	v	v	v
Radiated Spurious Emission	4	-	-	-	-	-	v	v	v	v	-	-	v	v	v
	5	-	-	-	v	-	-	v	v	v	-	-	v	v	v
	7	-	-	v	-	-	-	v	v	v	-	-	v	v	v
	13	-	-	-	v	-	-	v	v	v	-	-	v	v	v
	66	-	-	-	-	-	v	v	v	v	-	-	v	v	v
Note	The mark "v" means that this configuration is chosen for testing The mark "-" means that this bandwidth is not supported.														



### 3.2. Description of Support Units

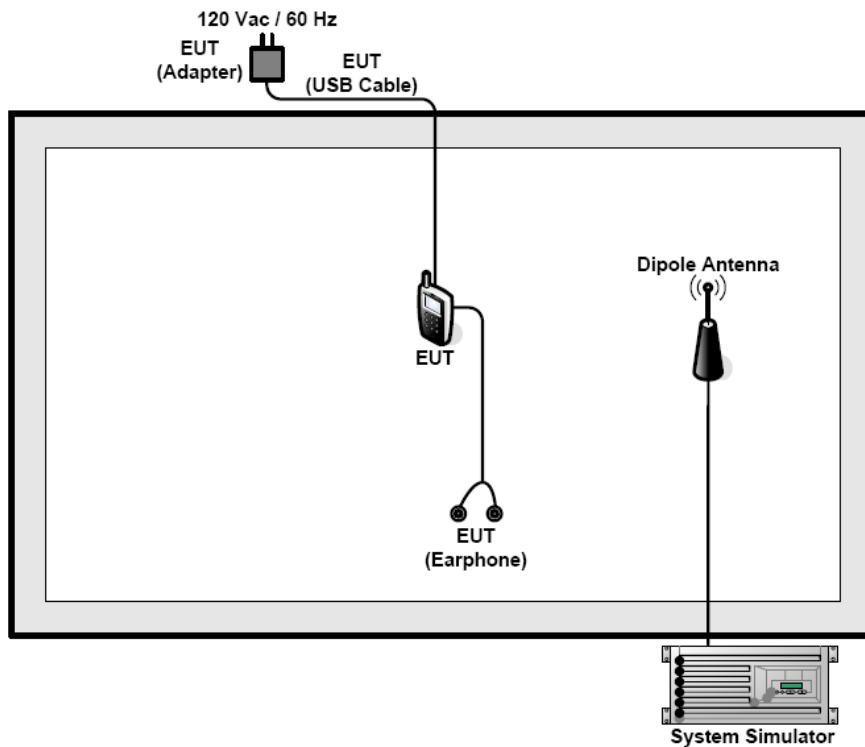
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

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.  
 $Offset = RF\ cable\ loss + attenuator\ factor.$

## 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

SHENZHEN TONGCE TESTING LAB

CAB identifier: CN0031

The testing lab has been registered by Innovation, Science and Economic Development 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 expanded uncertainty  $U$  is based on a standard uncertainty multiplied by a coverage factor of  $k=2$ , providing a level of confidence of approximately 95 %.

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

## 5. Test Results and Measurement Data

### 5.1. Effective Radiated Power and Effective Isotropic Radiated Power Measurement

#### 5.1.1. Test Specification

<b>Test Requirement:</b>	Refer to section 2
<b>Test Method:</b>	FCC part 2.1046
<b>Limit:</b>	LTE Band 4: 1W LTE Band 5: 7W LTE Band 7: 2W LTE Band 13: 3W LTE Band 66: 1W
<b>Test Setup:</b>	 <p>The diagram illustrates the test setup. On the left is a purple rectangular device labeled 'System Simulator' with a screen and two small circular indicators. A black cable connects it to a mobile phone on the right, labeled 'EUT'.</p>
<b>Test Procedure:</b>	<ol style="list-style-type: none"> <li>1. The transmitter output port was connected to the system simulator.</li> <li>2. Set EUT at maximum power through system simulator.</li> <li>3. Select lowest, middle, highest channels for each band and different modulation.</li> <li>4. Measure and record the power level from the system simulator.</li> <li>5. Calculate the ERP and EIRP</li> </ol> <p>The relevant equation for determining the ERP or EIRP from the conducted RF output power measured using the guidance provided above is:</p> $\text{ERP or EIRP} = P_{\text{Meas}} + G_{\text{T}} - L_{\text{C}}$ <p>where:</p> <p>ERP or EIRP = effective radiated power or equivalent isotropically radiated power, respectively (expressed in the same units as <math>P_{\text{Meas}}</math>, typically dBW or dBm);</p> <p><math>P_{\text{Meas}}</math> = measured transmitter output power or PSD, in dBm or dBW;</p> <p><math>G_{\text{T}}</math> = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);</p> <p><math>L_{\text{C}}</math> = signal attenuation in the connecting cable between the transmitter and antenna, in dB.</p> <p><i>Note: For personal/portable radios utilizing an integral</i></p>

	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.
<b>Test Result:</b>	PASS

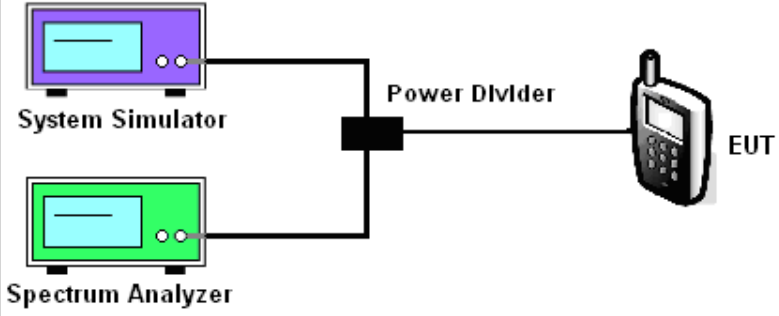
**5.1.2. Test Instruments**

Equipment	Manufacturer	Model	Serial Number	Calibration Due
Wideband Radio Communication Tester	R&S	CMW500	137557	Jan. 31, 2025
Combiner Box	Ascentest	AT890-RFB	/	/



## 5.2. Peak to Average Ratio

### 5.2.1. Test Specification

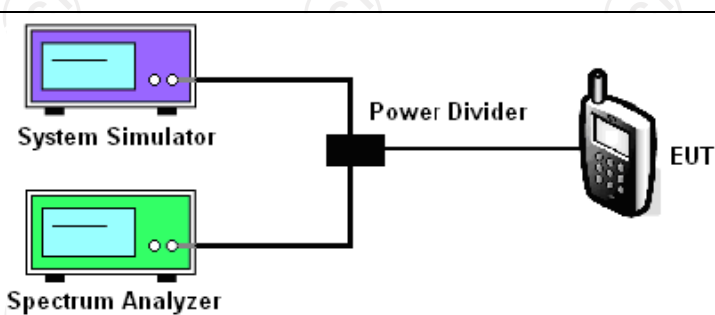
<b>Test Requirement:</b>	Refer to section 2
<b>Test Method:</b>	FCC KDB 971168 D01v03
<b>Limit:</b>	The peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.
<b>Test Setup:</b>	 <p>The diagram illustrates the test setup. On the left, there are two test instruments: a System Simulator (top) and a Spectrum Analyzer (bottom). Both are connected to a central Power Divider. The Power Divider is then connected to the EUT (Equipment Under Test), which is represented by a mobile phone icon on the right.</p>
<b>Test Procedure:</b>	<ol style="list-style-type: none"> <li>1. The testing follows FCC KDB 971168 D01v03 Section 5.7.1.</li> <li>2. The EUT was connected to spectrum analyzer and system simulator via a power divider.</li> <li>3. Set EUT to transmit at maximum output power.</li> <li>4. Set the CCDF (Complementary Cumulative Distribution Function) option of the spectrum analyzer.</li> </ol> <p>Record the maximum PAPR level associated with a probability of 0.1%.</p>
<b>Test Result:</b>	PASS

### 5.2.2. Test Instruments

Equipment	Manufacturer	Model	Serial Number	Calibration Due
Wideband Radio Communication Tester	R&S	CMW500	137557	Jan. 31, 2025
Spectrum Analyzer	Agilent	N9020A	MY49100619	Jun. 26, 2025
Combiner Box	Ascentest	AT890-RFB	/	/

### 5.3. 99% Occupied Bandwidth and 26dB Bandwidth Measurement

#### 5.3.1. Test Specification

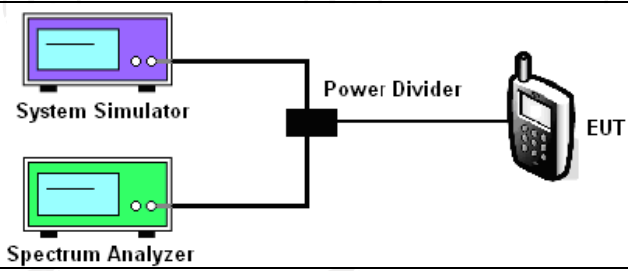
<b>Test Requirement:</b>	Refer to section 2
<b>Test Method:</b>	FCC part 2.1049
<b>Limit:</b>	N/A
<b>Test Setup:</b>	 <p>The diagram illustrates the test setup. On the left, there are two pieces of equipment: a System Simulator (top) and a Spectrum Analyzer (bottom). Both are connected to a central Power Divider. The Power Divider is then connected to the EUT (Equipment Under Test), which is represented by a mobile phone icon on the right.</p>
<b>Test Procedure:</b>	<ol style="list-style-type: none"> <li>1. The testing follows FCC KDB 971168 D01v03 Section 4.2.</li> <li>2. The EUT was connected to the spectrum analyzer and system simulator via a power divider.</li> <li>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.</li> <li>4. The 99% occupied bandwidth were measured, set RBW= 1% of OBW, VBW= 3*RBW, sample detector, trace maximum hold.</li> <li>5. The 26dB bandwidth were measured, set RBW= 1% of EBW, VBW= 3*RBW, peak detector, trace maximum hold.</li> </ol>
<b>Test Result:</b>	PASS

#### 5.3.2. Test Instruments

Equipment	Manufacturer	Model	Serial Number	Calibration Due
Wideband Radio Communication Tester	R&S	CMW500	137557	Jan. 31, 2025
Spectrum Analyzer	Agilent	N9020A	MY49100619	Jun. 26, 2025
Combiner Box	Ascentest	AT890-RFB	/	/

## 5.4. Band Edge and Conducted Spurious Emission Measurement

### 5.4.1. Test Specification

<b>Test Requirement:</b>	Refer to section 2
<b>Test Method:</b>	FCC part2.1051
<b>Limit:</b>	-13dbm Band 13: -13dBm/-35dbm/-40dbm
<b>Test Setup:</b>	 <p>The diagram illustrates the test setup. A System Simulator (top left) and a Spectrum Analyzer (bottom left) are connected to a central Power Divider. The Power Divider is then connected to the EUT (Equipment Under Test) on the right.</p>
<b>Test Procedure:</b>	<ol style="list-style-type: none"> <li>1. The testing follows FCC KDB 971168 D01v03 Section 6.0.</li> <li>2. The EUT was connected to the spectrum analyzer and system simulator via a power divider.</li> <li>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.</li> <li>4. The band edges of low and high channels for the highest RF powers were measured.</li> <li>5. The conducted spurious emission for the whole frequency range was taken.</li> <li>6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.</li> <li>7. The limit line is derived from <math>43 + 10\log(P)</math> dB below the transmitter power  <math>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}.</math>                      For Band 17, the limit line is derived from <math>55 + 10\log(P)</math> dB below the transmitter power</li> </ol>
<b>Test Result:</b>	PASS

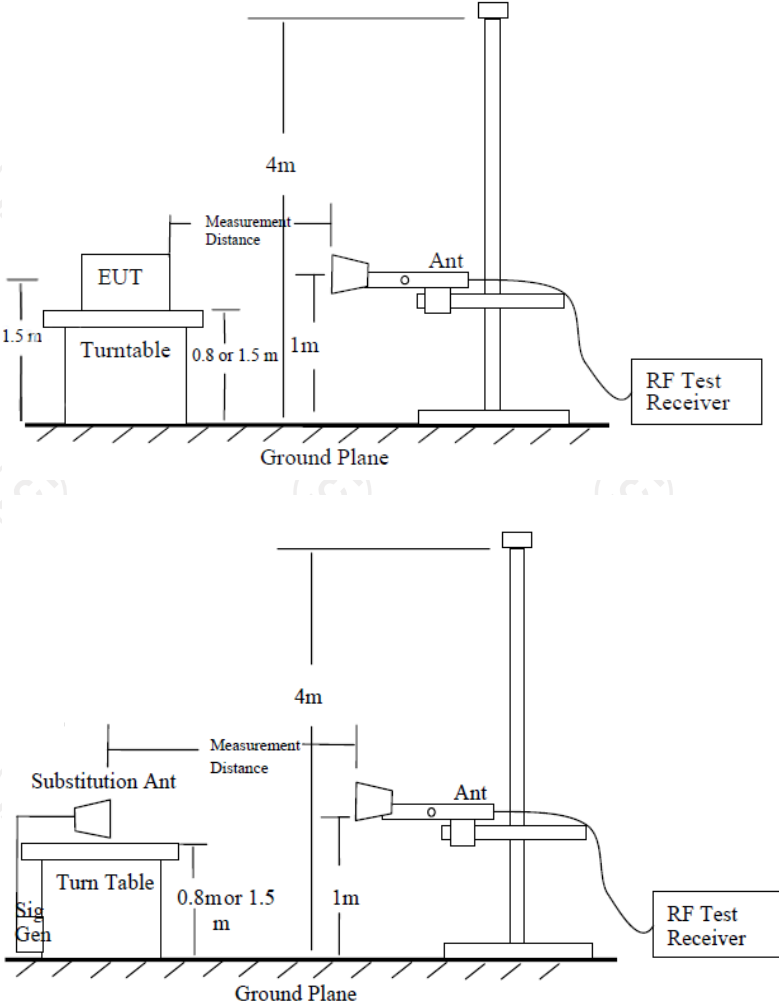
**5.4.2. Test Instruments**

Equipment	Manufacturer	Model	Serial Number	Calibration Due
Wideband Radio Communication Tester	R&S	CMW500	137557	Jan. 31, 2025
Spectrum Analyzer	Agilent	N9020A	MY49100619	Jun. 26, 2025
Combiner Box	Ascentest	AT890-RFB	/	/



## 5.5. Field Strength of Spurious Radiation Measurement

### 5.5.1. Test Specification

<b>Test Requirement:</b>	Refer to section 2
<b>Test Method:</b>	FCC part 2.1053
<b>Limit:</b>	For Band 4, 5, 66: -13dBm For Band 7: -25dBm For Band 13: -40dBm/-13dBm
<b>Test setup:</b>	
<b>Test Procedure:</b>	<ol style="list-style-type: none"> <li>1. The testing follows FCC KDB 971168 D01v03 Section 5.8 and ANSI / TIA-603-D-2010 Section 2.2.12.</li> <li>2. The EUT was placed on a rotatable wooden table 0.8 meters above the ground.</li> <li>3. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.</li> <li>4. The table was rotated 360 degrees to determine the position of the highest spurious emission.</li> <li>5. The height of the receiving antenna is varied between</li> </ol>

	<p>one meter and four meters to search for the maximum spurious emission for both horizontal and vertical polarizations.</p> <ol style="list-style-type: none"> <li>6. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking record of maximum spurious emission.</li> <li>7. A horn antenna was substituted in place of the EUT and was driven by a signal generator.</li> <li>8. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.</li> <li>9. Taking the record of output power at antenna port.</li> <li>10. Repeat step 7 to step 8 for another polarization.</li> <li>11. <math>EIRP (dBm) = S.G. Power - Tx Cable Loss + Tx Antenna Gain</math></li> <li>12. <math>ERP (dBm) = EIRP - 2.15</math></li> <li>13. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.</li> <li>14. The limit line is derived from <math>43 + 10\log(P)</math> dB below the transmitter power P(Watts) <ul style="list-style-type: none"> <li>= <math>P(W) - [43 + 10\log(P)] (dB)</math></li> <li>= <math>[30 + 10\log(P)] (dBm) - [43 + 10\log(P)] (dB)</math></li> <li>= <math>-13dBm</math>.</li> </ul> </li> </ol>
<b>Test results:</b>	PASS
<b>Remark:</b>	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
Wideband Radio Communication Tester	R&S	CMW500	137557	Jan. 31, 2025
Spectrum Analyzer	R&S	FSQ40	200061	Jun. 26, 2025
Signal Generator	Agilent	N5173B	MY58108823	Jan. 31, 2025
Broadband Antenna	Schwarzbeck	VULB9163	340	Jun. 28, 2025
Horn Antenna	Schwarzbeck	BBHA 9120D	631	Jun. 28, 2025
Broadband Antenna	Schwarzbeck	VULB9163	412	Jun. 28, 2025
Horn Antenna	Schwarzbeck	BBHA 9120D	1201	Jun. 28, 2025
Horn Antenna	Schwarzbeck	BBHA 9170	00956	Feb. 02, 2025
Coaxial cable	SKET	RE-03-D	/	Jun. 26, 2025
Coaxial cable	SKET	RE-03-M	/	Jun. 26, 2025
Coaxial cable	SKET	RE-03-L	/	Jun. 26, 2025
Coaxial cable	SKET	RE-04-D	/	Jun. 26, 2025
Coaxial cable	SKET	RE-04-M	/	Jun. 26, 2025
Coaxial cable	SKET	RE-04-L	/	Jun. 26, 2025
Antenna Mast	Keleto	RE-AM	/	/
EMI Test Software	EZ_EMCC	FA-03A2 RE+	1.1.4.2	/

**5.5.3. Test Data**

**Frequency Range (9 kHz-30MHz)**

Frequency (MHz)	Level@3m (dB $\mu$ V/m)	Limit@3m (dB $\mu$ 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



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

**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	-41.62	-0.48	-42.10	-13.00	PASS
5160.00	V	-45.68	6.15	-39.53		
6880.00	V	-61.26	9.78	-51.48		
3440.00	Horizontal	-39.68	-0.11	-39.79		
5160.00	H	-45.39	6.59	-38.80		
6880.00	H	-58.22	9.70	-48.52		

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

**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	-41.18	-0.46	-41.64	-13.00	PASS
5197.50	V	-51.15	6.21	-44.94		
6930.00	V	-61.29	9.99	-51.30		
3465.00	Horizontal	-38.69	-0.11	-38.80		
5197.50	H	-47.38	6.66	-40.72		
6930.00	H	-60.54	9.88	-50.66		

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

**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	-42.25	-0.45	-42.70	-13.00	PASS
5235.00	V	-53.10	6.27	-46.83		
6980.00	V	-59.37	10.21	-49.16		
3490.00	Horizontal	-39.11	-0.11	-39.22		
5235.00	H	-49.44	6.73	-42.71		
6980.00	H	-61.97	10.07	-51.90		

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

**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	-42.32	-0.48	-42.80	-13.00	PASS
5160.00	V	-48.22	6.15	-42.07		
6880.00	V	-60.58	9.78	-50.80		
3440.00	Horizontal	-41.23	-0.11	-41.34		
5160.00	H	-46.25	6.59	-39.66		
6880.00	H	-59.48	9.70	-49.78		

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

**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	-41.75	-0.46	-42.21	-13.00	PASS
5197.50	V	-52.88	6.21	-46.67		
6930.00	V	-60.22	9.99	-50.23		
3465.00	Horizontal	-40.09	-0.11	-40.20		
5197.50	H	-49.26	6.66	-42.60		
6930.00	H	-61.35	9.88	-51.47		

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

**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	-43.99	-0.45	-44.44	-13.00	PASS
5235.00	V	-51.74	6.27	-45.47		
6980.00	V	-61.93	10.21	-51.72		
3490.00	Horizontal	-39.62	-0.11	-39.73		
5235.00	H	-49.67	6.73	-42.94		
6980.00	H	-61.44	10.07	-51.37		

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

**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	-42.71	-6.46	-49.17	-13.00	PASS
2487.00	V	-46.53	-2.84	-49.37		
3316.00	V	-61.31	-0.48	-61.79		
1658.00	Horizontal	-41.43	-6.30	-47.73		
2487.00	H	-42.67	-2.95	-45.62		
3316.00	H	-59.75	-0.10	-59.85		

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

**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	-40.74	-6.46	-47.20	-13.00	PASS
2509.50	V	-53.44	-2.75	-56.19		
3346.00	V	-59.58	-0.47	-60.05		
1673.00	Horizontal	-39.37	-6.32	-45.69		
2509.50	H	-45.86	-2.86	-48.72		
3346.00	H	-60.42	-0.10	-60.52		

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

**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	-44.89	-6.45	-51.34	-13.00	PASS
2532.00	V	-53.73	-2.65	-56.38		
3376.00	V	-65.18	-0.47	-65.65		
1688.00	Horizontal	-39.73	-6.34	-46.07		
2532.00	H	-49.50	-2.74	-52.24		
3376.00	H	-65.19	-0.10	-65.29		

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

**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	-40.31	-6.46	-46.77	-13.00	PASS
2487.00	V	-46.91	-2.84	-49.75		
3316.00	V	-61.37	-0.48	-61.85		
1658.00	Horizontal	-40.33	-6.30	-46.63		
2487.00	H	-46.76	-2.95	-49.71		
3316.00	H	-59.66	-0.10	-59.76		

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

**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	-41.27	-6.46	-47.73	-13.00	PASS
2509.50	V	-53.43	-2.75	-56.18		
3346.00	V	-59.29	-0.47	-59.76		
1673.00	Horizontal	-37.14	-6.32	-43.46		
2509.50	H	-47.86	-2.86	-50.72		
3346.00	H	-60.29	-0.10	-60.39		

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

**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	-44.04	-6.45	-50.49	-13.00	PASS
2532.00	V	-52.01	-2.65	-54.66		
3376.00	V	-61.35	-0.47	-61.82		
1688.00	Horizontal	-40.63	-6.34	-46.97		
2532.00	H	-49.44	-2.74	-52.18		
3376.00	H	-63.81	-0.10	-63.91		

<b>Band</b>	<b>Band 7(QPSK, 20MHz)</b>	<b>Test channel:</b>	<b>Lowest</b>
<b>Test mode:</b>		<b>Temperature :</b>	<b>25°C</b>
		<b>Relative Humidity:</b>	<b>56%</b>

**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	-43.69	5.93	-37.76	-25.00	PASS
7530.00	V	-46.64	10.45	-36.19		
10040.00	V	-62.60	14.82	-47.78		
5020.00	Horizontal	-41.52	6.33	-35.19		
7530.00	H	-44.65	10.06	-34.59		
10040.00	H	-58.68	14.48	-44.20		

<b>Band</b>	<b>Band 7(QPSK, 20MHz)</b>	<b>Test channel:</b>	<b>Middle</b>
<b>Test mode:</b>		<b>Temperature :</b>	<b>25°C</b>
		<b>Relative Humidity:</b>	<b>56%</b>

**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	-40.18	6.01	-34.17	-25.00	PASS
7605.00	V	-52.72	10.54	-42.18		
10140.00	V	-60.44	14.88	-45.56		
5070.00	Horizontal	-38.32	6.42	-31.90		
7605.00	H	-46.94	10.24	-36.70		
10140.00	H	-60.28	14.65	-45.63		

<b>Band</b>	<b>Band 7(QPSK, 20MHz)</b>	<b>Test channel:</b>	<b>Highest</b>
<b>Test mode:</b>		<b>Temperature :</b>	<b>25°C</b>
		<b>Relative Humidity:</b>	<b>56%</b>

**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	-43.45	6.09	-37.36	-25.00	PASS
7680.00	V	-53.62	10.63	-42.99		
10240.00	V	-66.68	14.95	-51.73		
5120.00	Horizontal	-40.34	6.52	-33.82		
7680.00	H	-49.65	10.43	-39.22		
10240.00	H	-63.47	14.82	-48.65		

<b>Band</b>	<b>Band 7(16QAM, 20MHz)</b>	<b>Test channel:</b>	<b>Lowest</b>
<b>Test mode:</b>		<b>Temperature :</b>	<b>25°C</b>
		<b>Relative Humidity:</b>	<b>56%</b>

**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	-41.44	5.93	-35.51	-25.00	PASS
7530.00	V	-44.97	10.45	-34.52		
10040.00	V	-62.80	14.82	-47.98		
5020.00	Horizontal	-41.56	6.33	-35.23		
7530.00	H	-45.81	10.06	-35.75		
10040.00	H	-59.62	14.48	-45.14		

<b>Band</b>	<b>Band 7(16QAM, 20MHz)</b>	<b>Test channel:</b>	<b>Middle</b>
<b>Test mode:</b>		<b>Temperature :</b>	<b>25°C</b>
		<b>Relative Humidity:</b>	<b>56%</b>

**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	-41.14	6.01	-35.13	-25.00	PASS
7605.00	V	-52.28	10.54	-41.74		
10140.00	V	-62.49	14.88	-47.61		
5070.00	Horizontal	-38.46	6.42	-32.04		
7605.00	H	-47.61	10.24	-37.37		
10140.00	H	-60.70	14.65	-46.05		

<b>Band</b>	<b>Band 7(16QAM, 20MHz)</b>	<b>Test channel:</b>	<b>Highest</b>
<b>Test mode:</b>		<b>Temperature :</b>	<b>25°C</b>
		<b>Relative Humidity:</b>	<b>56%</b>

**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	-43.52	6.09	-37.43	-25.00	PASS
7680.00	V	-51.29	10.63	-40.66		
10240.00	V	-60.74	14.95	-45.79		
5120.00	Horizontal	-38.72	6.52	-32.20		
7680.00	H	-48.81	10.43	-38.38		
10240.00	H	-61.57	14.82	-46.75		

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

**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	-49.40	-6.29	-55.69	-40.00	PASS
2346.00	V	-46.74	-3.35	-50.09	-13.00	
3128.00	V	-62.47	-0.51	-62.98	-13.00	
1564.00	Horizontal	-49.37	-6.04	-55.41	-40.00	
2346.00	H	-44.45	-3.33	-47.78	-13.00	
3128.00	H	-59.28	-0.09	-59.37	-13.00	

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

**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	-49.93	-6.29	-56.22	-40.00	PASS
2346.00	V	-52.30	-3.35	-55.65	-13.00	
3128.00	V	-58.73	-0.51	-59.24	-13.00	
1564.00	Horizontal	-48.25	-6.04	-54.29	-40.00	
2346.00	H	-46.14	-3.33	-49.47	-13.00	
3128.00	H	-60.68	-0.09	-60.77	-13.00	

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

**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	-49.63	-6.29	-55.92	-40.00	PASS
2346.00	V	-51.74	-3.35	-55.09	-13.00	
3128.00	V	-63.95	-0.51	-64.46	-13.00	
1564.00	Horizontal	-49.00	-6.04	-55.04	-40.00	
2346.00	H	-47.77	-3.33	-51.10	-13.00	
3128.00	H	-62.64	-0.09	-62.73	-13.00	

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

**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	-49.86	-6.29	-56.15	-40.00	PASS
2346.00	V	-44.95	-3.35	-48.30	-13.00	
3128.00	V	-62.37	-0.51	-62.88	-13.00	
1564.00	Horizontal	-48.52	-6.04	-54.56	-40.00	
2346.00	H	-47.46	-3.33	-50.79	-13.00	
3128.00	H	-58.19	-0.09	-58.28	-13.00	

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

**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	-51.85	-6.29	-58.14	-40.00	PASS
2346.00	V	-51.13	-3.35	-54.48	-13.00	
3128.00	V	-59.27	-0.51	-59.78	-13.00	
1564.00	Horizontal	-50.83	-6.04	-56.87	-40.00	
2346.00	H	-45.14	-3.33	-48.47	-13.00	
3128.00	H	-60.58	-0.09	-60.67	-13.00	

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

**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	-50.16	-6.29	-56.45	-40.00	PASS
2346.00	V	-51.83	-3.35	-55.18	-13.00	
3128.00	V	-59.20	-0.51	-59.71	-13.00	
1564.00	Horizontal	-51.65	-6.04	-57.69	-40.00	
2346.00	H	-46.29	-3.33	-49.62	-13.00	
3128.00	H	-62.81	-0.09	-62.90	-13.00	



<b>Band</b>	<b>Band 66(QPSK, 20MHz)</b>	<b>Test channel:</b>	<b>Lowest</b>
<b>Test mode:</b>		<b>Temperature :</b>	<b>25°C</b>
		<b>Relative Humidity:</b>	<b>56%</b>

**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	-43.04	-0.46	-43.50	-13.00	PASS
5160.00	V	-47.24	6.15	-41.09		
6880.00	V	-62.52	9.78	-52.74		
3440.00	Horizontal	-42.43	-0.11	-42.54		
5160.00	H	-46.38	6.59	-39.79		
6880.00	H	-58.33	9.70	-48.63		

<b>Band</b>	<b>Band 66(QPSK, 20MHz)</b>	<b>Test channel:</b>	<b>Middle</b>
<b>Test mode:</b>		<b>Temperature :</b>	<b>25°C</b>
		<b>Relative Humidity:</b>	<b>56%</b>

**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	-40.49	-0.45	-40.94	-13.00	PASS
5235.00	V	-51.80	6.27	-45.53		
6980.00	V	-59.87	10.21	-49.66		
3490.00	Horizontal	-36.99	-0.11	-37.10		
5235.00	H	-47.32	6.73	-40.59		
6980.00	H	-59.48	10.07	-49.41		

<b>Band</b>	<b>Band 66(QPSK, 20MHz)</b>	<b>Test channel:</b>	<b>Highest</b>
<b>Test mode:</b>		<b>Temperature :</b>	<b>25°C</b>
		<b>Relative Humidity:</b>	<b>56%</b>

**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)		
3540.00	Vertical	-42.67	-0.18	-42.85	-13.00	PASS
5310.00	V	-53.05	6.38	-46.67		
7080.00	V	-64.70	10.31	-54.39		
3540.00	Horizontal	-37.92	0.29	-37.63		
5310.00	H	-47.96	6.87	-41.09		
7080.00	H	-62.86	10.11	-52.75		

<b>Band</b>	<b>Band 66(16QAM, 20MHz)</b>	<b>Test channel:</b>	<b>Lowest</b>
<b>Test mode:</b>		<b>Temperature :</b>	<b>25°C</b>
		<b>Relative Humidity:</b>	<b>56%</b>

**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	-41.59	-0.46	-42.05	-13.00	PASS
5160.00	V	-45.75	6.15	-39.60		
6880.00	V	-61.78	9.78	-52.00		
3440.00	Horizontal	-38.12	-0.11	-38.23		
5160.00	H	-45.91	6.59	-39.32		
6880.00	H	-59.08	9.70	-49.38		

<b>Band</b>	<b>Band 66(16QAM, 20MHz)</b>	<b>Test channel:</b>	<b>Middle</b>
<b>Test mode:</b>		<b>Temperature :</b>	<b>25°C</b>
		<b>Relative Humidity:</b>	<b>56%</b>

**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	-40.86	-0.45	-41.31	-13.00	PASS
5235.00	V	-53.44	6.27	-47.17		
6980.00	V	-62.06	10.21	-51.85		
3490.00	Horizontal	-38.11	-0.11	-38.22		
5235.00	H	-47.07	6.73	-40.34		
6980.00	H	-60.28	10.07	-50.21		

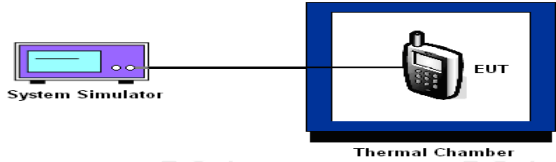
<b>Band</b>	<b>Band 66(16QAM, 20MHz)</b>	<b>Test channel:</b>	<b>Highest</b>
<b>Test mode:</b>		<b>Temperature :</b>	<b>25°C</b>
		<b>Relative Humidity:</b>	<b>56%</b>

**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)		
3540.00	Vertical	-43.08	-0.18	-43.26	-13.00	PASS
5310.00	V	-51.39	6.38	-45.01		
7080.00	V	-60.13	10.31	-49.82		
3540.00	Horizontal	-37.48	0.29	-37.19		
5310.00	H	-47.78	6.87	-40.91		
7080.00	H	-62.49	10.11	-52.38		

## 5.6. Frequency Stability Measurement

### 5.6.1. Test Specification

<b>Test Requirement:</b>	FCC part 27.54, FCC part 22.355
<b>Test Method:</b>	FCC Part 2.1055
<b>Limit:</b>	±2.5 ppm
<b>Test Setup:</b>	 <p>The diagram illustrates the test setup. On the left, a 'System Simulator' is connected via a cable to an 'EUT' (Equipment Under Test) which is housed inside a 'Thermal Chamber'.</p>
<b>Test Procedure:</b>	<p><b>Test Procedures for Temperature Variation</b></p> <ol style="list-style-type: none"> <li>1. The testing follows FCC KDB 971168 D01v03 Section 9.0.</li> <li>2. The EUT was set up in the thermal chamber and connected with the system simulator.</li> <li>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.</li> <li>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.</li> </ol> <p><b>Test Procedures for Voltage Variation</b></p> <ol style="list-style-type: none"> <li>1. The testing follows FCC KDB 971168 D01v03 Section 9.0.</li> <li>2. The EUT was placed in a temperature chamber at 25±5° C and connected with the system simulator.</li> <li>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.</li> <li>4. The variation in frequency was measured for the worst case.</li> <li>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 4, 1.4M is for LTE Band 5, 5M is for LTE Band 7, 5M is for LTE Band 13, 1.4M is for LTE Band 66</li> </ol>
<b>Test Result:</b>	PASS

**5.6.2. Test Instruments**

Equipment	Manufacturer	Model	Serial Number	Calibration Due
Wideband Radio Communication Tester	R&S	CMW500	137557	Jan. 31, 2025
Programable tempratuce and humidity chamber	JQ	JQ-2000	/	Jun. 26, 2025
DC power supply	Kingrang	KR3005K	/	Jun. 26, 2025
Combiner Box	AT890-RFB	Ascentest	/	/

## Appendix B: Photographs of Test Setup

Please refer to document Appendix No.: TCT240801E014-A

## Appendix C: Photographs of EUT

Please refer to document Appendix No.: TCT240801E014-B & TCT240801E014-C

**Test Data for Appendix Refer to Appendix For LTE Band 4, Appendix For LTE Band 5, Appendix For LTE Band 7, Appendix For LTE Band 13 and Appendix For LTE Band 66**

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