

# FCC RF Test Report

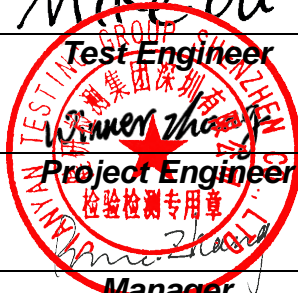
## (LTE)

**Applicant:** Advanced Sport Instruments SA  
**Address of Applicant:** Avenue de Beaumont 5, 1012 Lausanne, Switzerland

### Equipment Under Test (EUT)

**Product Name:** ASI5010  
**Model No.:** ASI5010  
**Trade Mark:** ASI  
**FCC ID:** 2AZLFASI5010  
**Applicable Standards:** FCC CFR Title 47 Part 2, 24E, 27L&F& H  
**Date of Sample Receipt:** 19 May, 2021  
**Date of Test:** 20 Aug, 2021 to 27 Sep., 2022  
**Date of Report Issued:** 28 Sep., 2022  
**Test Result:** PASS

**Tested by:** Mike Du **Date:** 28 Sep., 2022  
**Reviewed by:** Wenwen Zhang **Date:** 28 Sep., 2022  
**Approved by:** Wenwen Zhang **Date:** 28 Sep., 2022  
**Manager**



This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in above the application standard version. Test results reported herein relate only to the item(s) tested.

This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

## 1 Version

Version No.	Date	Description
00	07 Sep., 2022	Original
01	28 Sep., 2022	<ol style="list-style-type: none"><li>1. Updated ERP/EIRP on page Appendix – LTE.</li><li>2. Updated gain on page 4.</li><li>3. Updated page 12.</li></ol>

## 2 Contents

Page

Cover Page .....	1
1 Version .....	2
2 Contents .....	3
3 General Information .....	4
3.1 Client Information .....	4
3.2 General Description of E.U.T. ....	4
3.3 Test Mode and Environment .....	5
3.4 Description of Test Auxiliary Equipment .....	5
3.5 Measurement Uncertainty .....	5
3.6 Additions to, Deviations, or Exclusions from the Method .....	5
3.7 Laboratory Facility .....	5
3.8 Laboratory Location .....	6
3.9 Test Instruments List .....	6
4 Measurement Setup and Procedure .....	8
4.1 Test Channel .....	8
4.2 Test Setup .....	10
4.3 Test Procedure .....	11
5 Test Results .....	12
5.1 Summary .....	12
5.1.1 Clause and Data Summary .....	12
5.1.2 Test Limit .....	13
5.2 Field Strength of Spurious Radiation Measurement .....	14

### 3 General Information

#### 3.1 Client Information

Applicant:	Advanced Sport Instruments SA
Address:	Avenue de Beaumont 5, 1012 Lausanne, Switzerland
Manufacturer:	Advanced Sport Instruments SA
Address:	Avenue de Beaumont 5, 1012 Lausanne, Switzerland
Factory:	Optima International Inc.
Address:	4F, No. 51, Wugong 6th Road, Wugu, Taipei 24891 Taiwan ROC

#### 3.2 General Description of E.U.T.

Product Name:	ASI5010		
Model No.:	ASI5010		
Operation Frequency Range:	LTE Cat-M1:		
	Band 2:	Tx: 1850 MHz - 1910 MHz	Rx: 1930 MHz - 1990 MHz
	Band 4:	Tx: 1710 MHz - 1755 MHz	Rx: 2110 MHz - 2155 MHz
	Band 12:	Tx: 699 MHz - 716 MHz	Rx: 729 MHz - 746 MHz
	Band 13:	Tx: 777 MHz - 787 MHz	Rx: 746 MHz - 756 MHz
Modulation Type:	<input checked="" type="checkbox"/> QPSK <input checked="" type="checkbox"/> 16QAM		
Antenna Type:	Internal Antenna		
Antenna Gain:	Band 2:	0.7 dBi (declare by Applicant)	
	Band 4:	0.7 dBi (declare by Applicant)	
	Band 12:	-5.5 dBi (declare by Applicant)	
	Band 13:	-5.5 dBi (declare by Applicant)	
Power Supply:	Rechargeable Li-ion Battery DC3.7V, 1600mAh		
Test Sample Condition:	The test samples were provided in good working order with no visible defects.		

### 3.3 Test Mode and Environment

Test Mode:	
QPSK mode:	Keep the EUT communication with simulated station in QPSK mode
16QAM mode:	Keep the EUT communication with simulated station in 16QAM mode
<i>Remark: The EUT has been tested under continuous transmitting mode. Channel Low, Mid and High for each type band with rated data rate were chosen for full testing. The field strength of spurious radiation emission was measured as EUT stand-up position (H mode) and lie down position (E1, E2 mode) for these modes. Just the worst case position (H mode) shown in report.</i>	
Operating Environment:	
Temperature:	Normal: 15°C ~ 35°C, Extreme: -30°C ~ +50°C
Humidity:	20 % ~ 75 % RH
Atmospheric Pressure:	1008 mbar
Voltage:	Nominal: 3.70 Vdc, Extreme: Low 3.50 Vdc, High 4.20 Vdc

### 3.4 Description of Test Auxiliary Equipment

Test Equipment	Manufacturer	Model No.	Serial No.
Simulated Station	Anritsu	MT8820C	6201026545

### 3.5 Measurement Uncertainty

Parameter	Expanded Uncertainty (Confidence of 95%(U = 2Uc(y)))
Radiated Emission (30MHz ~ 1GHz) (3m SAC)	±4.45 dB
Radiated Emission (1GHz ~ 18GHz) (3m SAC)	±5.34 dB
Radiated Emission (18GHz ~ 40GHz) (3m SAC)	±5.34 dB
<i>Note: All the measurement uncertainty value were shown with a coverage k=2 to indicate 95% level of confidence. The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.</i>	

### 3.6 Additions to, Deviations, or Exclusions from the Method

No
----

### 3.7 Laboratory Facility

<p>The test facility is recognized, certified, or accredited by the following organizations:</p> <ul style="list-style-type: none"> <li>● <b>FCC - Designation No.: CN1211</b> JianYan Testing Group Shenzhen Co., Ltd. has been accredited as a testing laboratory by FCC(Federal Communications Commission). The test firm Registration No. is 727551.</li> <li>● <b>ISED – CAB identifier.: CN0021</b> The 3m Semi-anechoic chamber and 10m Semi-anechoic chamber of JianYan Testing Group Shenzhen Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.</li> <li>● <b>CNAS - Registration No.: CNAS L15527</b> JianYan Testing Group Shenzhen Co., Ltd. is accredited to ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L15527.</li> <li>● <b>A2LA - Registration No.: 4346.01</b> This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: <a href="https://portal.a2la.org/scopepdf/4346-01.pdf">https://portal.a2la.org/scopepdf/4346-01.pdf</a></li> </ul>
--

### 3.8 Laboratory Location

JianYan Testing Group Shenzhen Co., Ltd.  
 Address: No.101, Building 8, Innovation Wisdom Port, No.155 Hongtian Road, Huangpu Community, Xinqiao Street, Bao'an District, Shenzhen, Guangdong, People's Republic of China.  
 Tel: +86-755-23118282, Fax: +86-755-23116366  
 Email: info-JYTee@lets.com, Website: <http://jyt.lets.com>

### 3.9 Test Instruments List

Radiated Emission(3m SAC):					
Test Equipment	Manufacturer	Model No.	Manage No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
3m SAC	ETS	9m*6m*6m	WXJ001-1	04-14-2021	04-13-2024
BiConiLog Antenna	Schwarzbeck	VULB9163	WXJ002	03-11-2021	03-10-2022
				03-08-2022	03-07-2023
Biconical Antenna	Schwarzbeck	VUBA9117	WXJ002-1	07-08-2020	07-07-2021
				07-02-2021	07-01-2024
Horn Antenna	Schwarzbeck	BBHA9120D	WXJ002-2	03-11-2021	03-10-2022
				03-08-2022	03-07-2023
Horn Antenna	Schwarzbeck	BBHA9120D	WXJ002-3	04-13-2021	04-12-2022
				04-07-2022	04-06-2023
Horn Antenna	Schwarzbeck	BBHA9170	WXJ002-5	04-13-2021	04-12-2022
				04-07-2022	04-06-2023
Horn Antenna	Schwarzbeck	BBHA9170	WXJ002-6	04-13-2021	04-12-2022
				04-07-2022	04-06-2023
Pre-amplifier (30MHz ~ 1GHz)	Schwarzbeck	BBV9743B	WXJ001-2	03-07-2021	03-06-2022
				01-20-2022	01-19-2023
Pre-amplifier (1GHz ~ 18GHz)	SKET	LNPA_0118G-50	WXJ001-3	03-07-2021	03-06-2022
				01-20-2022	01-19-2023
Pre-amplifier (18GHz ~ 40GHz)	RF System	TRLA-180400G45B	WXJ002-7	04-10-2021	04-09-2022
				03-30-2022	03-29-2023
EMI Test Receiver	Rohde & Schwarz	ESRP7	WXJ003-1	03-11-2021	03-10-2022
				03-05-2022	03-04-2023
Spectrum Analyzer	Rohde & Schwarz	FSP 30	WXJ004	03-03-2021	03-02-2022
				01-20-2022	01-19-2023
Spectrum Analyzer	KEYSIGHT	N9010B	WXJ004-2	11-27-2020	11-26-2021
				10-27-2021	10-26-2022
Coaxial Cable (30MHz ~ 1GHz)	JYTSZ	JYT3M-1G-NN-8M	WXG001-4	03-07-2021	03-06-2022
				01-20-2022	01-19-2023
Coaxial Cable (1GHz ~ 18GHz)	JYTSZ	JYT3M-18G-NN-8M	WXG001-5	03-07-2021	03-06-2022
				01-20-2022	01-19-2023
Coaxial Cable (18GHz ~ 40GHz)	JYTSZ	JYT3M-40G-SS-8M	WXG001-7	04-02-2021	04-01-2022
				01-20-2022	01-19-2023
Band Reject Filter Group	Tonscend	JS0806-F	WXJ089	N/A	
Test Software	Tonscend	TS+	Version: 3.0.0.1		

<b>Conducted Method:</b>					
<b>Test Equipment</b>	<b>Manufacturer</b>	<b>Model No.</b>	<b>Manage No.</b>	<b>Cal. Date (mm-dd-yy)</b>	<b>Cal. Due date (mm-dd-yy)</b>
Spectrum Analyzer	Keysight	N9020B	WXJ081-1	07-02-2021	07-01-2022
				06-29-2022	06-28-2023
Simulated Station	Rohde & Schwarz	CMW500	WXJ081	07-02-2021	07-01-2022
				06-29-2022	06-28-2023
Temperature Humidity Chamber	ZHONG ZHI	CZ-A-80D	WXJ032-3	03-19-2021	03-18-2023
DC Power Supply	Keysight	E3642A	WXJ025-2	N/A	
RF Control Unit	Tonscend	JS0806-1	WXG010	N/A	
Band Reject Filter Group	Tonscend	JS0806-F	WXG010-1	N/A	
Test Software	Tonscend	TS+	Version: 2.6.9.0526		

## 4 Measurement Setup and Procedure

### 4.1 Test Channel

According to ANSI C63.26-2015 chapter 5.1.2.1 Table 2 requirement, select lowest channel, middle channel, and highest channel in the frequency range in which device operates for testing. The detailed frequency points are as follows:

LTE band 2					
Channels		Frequency (MHz)	Channels		Frequency (MHz)
<b>1.4 MHz</b>			<b>3 MHz</b>		
Lowest channel	18607	1850.7	Lowest channel	18915	1851.5
Middle channel	18900	1880.0	Middle channel	18900	1880.0
Highest channel	19193	1909.3	Highest channel	19185	1908.5
<b>5 MHz</b>			<b>10 MHz</b>		
Lowest channel	18625	1852.5	Lowest channel	18650	1855.0
Middle channel	18900	1880.0	Middle channel	18900	1880.0
Highest channel	19175	1907.5	Highest channel	19150	1905.0
<b>15 MHz</b>			<b>20 MHz</b>		
Lowest channel	18675	1857.5	Lowest channel	18700	1860.0
Middle channel	18900	1880.0	Middle channel	18900	1880.0
Highest channel	19125	1902.5	Highest channel	19100	1900.0
LTE band 4					
Channels		Frequency (MHz)	Channels		Frequency (MHz)
<b>1.4 MHz</b>			<b>3 MHz</b>		
Lowest channel	19957	1710.7	Lowest channel	19965	1711.5
Middle channel	20175	1732.5	Middle channel	20175	1732.5
Highest channel	20393	1754.3	Highest channel	20385	1753.5
<b>5 MHz</b>			<b>10 MHz</b>		
Lowest channel	19975	1712.5	Lowest channel	20000	1715.0
Middle channel	20175	1732.5	Middle channel	20175	1732.5
Highest channel	20375	1752.5	Highest channel	20350	1750.0
<b>15 MHz</b>			<b>20 MHz</b>		
Lowest channel	20025	1717.5	Lowest channel	20050	1720.0
Middle channel	20175	1732.5	Middle channel	20175	1732.5
Highest channel	20325	1747.5	Highest channel	20300	1745.0
LTE band 12					
Channels		Frequency (MHz)	Channels		Frequency (MHz)
<b>1.4 MHz</b>			<b>3 MHz</b>		
Lowest channel	23017	699.70	Lowest channel	23025	700.50
Middle channel	23095	707.50	Middle channel	23095	707.50
Highest channel	23173	715.30	Highest channel	23165	714.50
<b>5 MHz</b>			<b>10 MHz</b>		
Lowest channel	23035	701.50	Lowest channel	23060	704.00
Middle channel	23095	707.50	Middle channel	23095	707.50
Highest channel	23155	713.50	Highest channel	23130	711.00

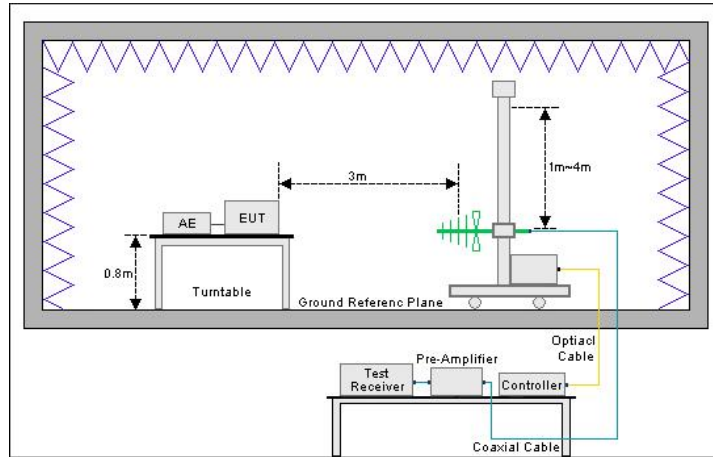


LTE band 13					
5 MHz			10 MHz		
Lowest channel	23205	779.5	Lowest channel	/	/
Middle channel	23230	782.0	Middle channel	23230	782.00
Highest channel	23255	784.5	Highest channel	/	/

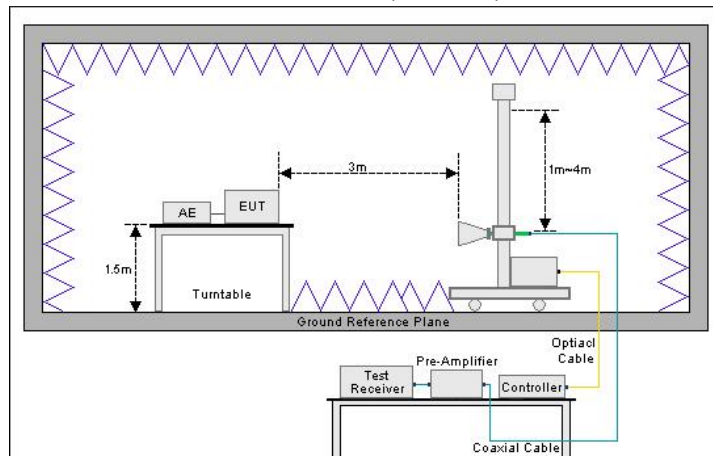
## 4.2 Test Setup

### 1) Radiated emission measurement:

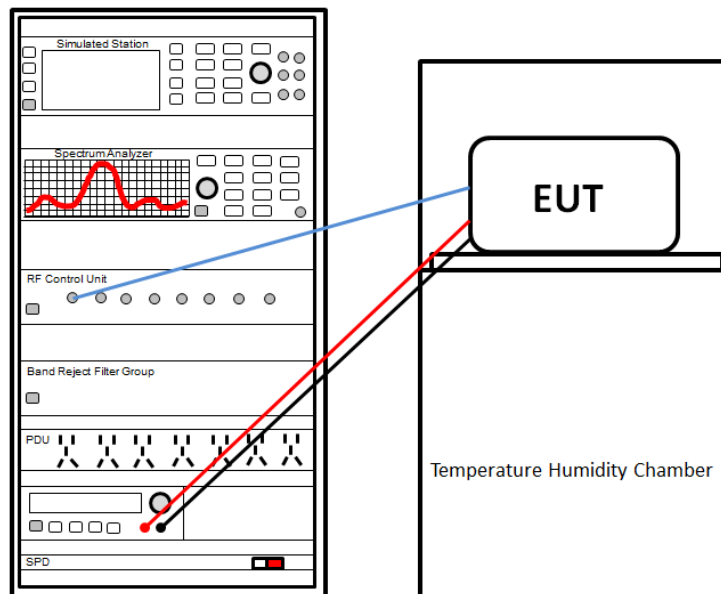
Below 1GHz (3m SAC)



Above 1GHz (3m SAC)



### 2) Conducted test method



### 4.3 Test Procedure

Test method	Test step
Radiated emission	<p><b>For below 1GHz:</b></p> <ol style="list-style-type: none"> <li>The EUT was placed on the tabletop of a rotating table 0.8 m the ground at a 3 m semi anechoic chamber. The measurement distance from the EUT to the receiving antenna is 3 m.</li> <li>EUT works in each mode of operation that needs to be tested , and having the EUT continuously working, respectively on 3 axis (X, Y &amp; Z) and considered typical configuration to obtain worst position. The highest signal levels relative to the limit shall be determined by rotating the EUT from 0° to 360° and with varying the measurement antenna height between 1 m and 4 m in vertical and horizontal polarizations.</li> <li>Open the test software to control the test antenna and test turntable. Perform the test, save the test results, and export the test data.</li> </ol> <p><b>For above 1GHz:</b></p> <ol style="list-style-type: none"> <li>The EUT was placed on the tabletop of a rotating table 1.5 m the ground at a 3 m fully anechoic room. The measurement distance from the EUT to the receiving antenna is 3 m.</li> <li>EUT works in each mode of operation that needs to be tested , and having the EUT continuously working, respectively on 3 axis (X, Y &amp; Z) and considered typical configuration to obtain worst position. The highest signal levels relative to the limit shall be determined by rotating the EUT from 0° to 360° and with varying the measurement antenna height between 1 m and 4 m in vertical and horizontal polarizations.</li> <li>Open the test software to control the test antenna and test turntable. Perform the test, save the test results, and export the test data.</li> </ol>
Conducted test method	<ol style="list-style-type: none"> <li>The LTE antenna port of EUT was connected to the test port of the test system through an RF cable.</li> <li>The EUT is keeping in continuous transmission mode and tested in all modulation modes.</li> <li>Open the test software, prepare a test plan, and control the system through the software. After the test is completed, the test report is exported through the test software.</li> </ol>

## 5 Test Results

### 5.1 Summary

#### 5.1.1 Clause and Data Summary

Test items	Standard clause	Test data	Result
RF Exposure (SAR)	Part 1.1307 Part 2.1093	See SAR Report	Pass
RF Output Power	Part 2.1046 Part 24.232 (c) Part 27.50 (c)(10) Part 27.50 (d)(4) Part 27.50 (b)(10)	Appendix – LTE	Pass
Peak-to-Average Power Ratio	Part 24.232 (d) Part 27.50 (d)(5)	Please refer to R2006A0361-R2V1 report and R2006A0361-R3V1 report	Pass*
Modulation Characteristics	Part 2.1047	Please refer to R2006A0361-R2V1 report and R2006A0361-R3V1 report	Pass*
26dB Emission Bandwidth 99% Occupied Bandwidth	Part 2.1049	Please refer to R2006A0361-R2V1 report and R2006A0361-R3V1 report	Pass*
Out of Band Emission at Antenna Terminals	Part 2.1051 Part 24.238 (a) Part 27.53 (g) Part 27.53 (h) Part 27.53 (c)	Please refer to R2006A0361-R2V1 report and R2006A0361-R3V1 report	Pass*
Field Strength of Spurious Radiation	Part 2.1053 Part 24.238 (a) Part 27.53 (g) Part 27.53 (h) Part 27.53 (c)	See Section 6.2	Pass
Frequency Stability vs. Temperature	Part 2.1055 (a)(1)(b) Part 22.355 Part 24.235 Part 27.54	Please refer to R2006A0361-R2V1 report and R2006A0361-R3V1 report	Pass*
Frequency Stability vs. Voltage	Part 2.1055 (d)(2) Part 22.355 Part 24.235 Part 27.54	Please refer to R2006A0361-R2V1 report and R2006A0361-R3V1 report	Pass*
<b>Remark:</b> <ol style="list-style-type: none"> <li>1. Pass: The EUT complies with the essential requirements in the standard.</li> <li>2. The cable insertion loss used by "RF Output Power" and other conduction measurement items is 0.5dB (Fundamental Frequency below 1GHz)/1.0dB (Fundamental Frequency above 1GHz).</li> <li>3. The LTE Cat-M1 Band 5/25/26/66/85 were permanently closed. LTE NB-IOT was permanently closed.</li> <li>4. Pass*: Please refer to R2006A0361-R2V1 report and R2006A0361-R3V1 report, FCC ID: XMR201910BG95M3, which is issued by TA Technology (Shanghai) Co., Ltd.</li> </ol>			
<b>Test Method:</b>	ANSI/TIA-603-E-2016 ANSI C63.26-2015		

**5.1.2 Test Limit**

Test items	Limit																																
RF Output Power	<p><b>LTE band 2:</b> 2W EIRP  <b>LTE band 4:</b> 1W EIRP  <b>LTE band 12/13:</b> 3W ERP</p>																																
Peak-to-Average Power Ratio	<p><b>LTE band 2/4:</b>The peak-to-average ratio (PAR) of the transmission may not exceed 13 dB  <b>Other bands:</b> N/A report only</p>																																
Modulation Characteristics	N/A																																
26dB Emission Bandwidth 99% Occupied Bandwidth	N/A																																
Out of Band Emission at Antenna Terminals  Field Strength of Spurious Radiation	<p><b>LTE band 2, 4, 12, 13:</b>  The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.</p>																																
Frequency Stability vs. Temperature  Frequency Stability vs. Voltage	<p><b>LTE band 2:</b>  The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.</p> <p><b>LTE band 4, 12, 13:</b>  The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.</p> <p style="text-align: center;"><b>TABLE C-1—FREQUENCY TOLERANCE FOR TRANSMITTERS IN THE PUBLIC MOBILE SERVICES</b></p> <table border="1"> <thead> <tr> <th>Frequency range (MHz)</th> <th>Base, fixed (ppm)</th> <th>Mobile &gt;3 watts (ppm)</th> <th>Mobile ≤3 watts (ppm)</th> </tr> </thead> <tbody> <tr> <td>25 to 50</td> <td>20.0</td> <td>20.0</td> <td>50.0</td> </tr> <tr> <td>50 to 450</td> <td>5.0</td> <td>5.0</td> <td>50.0</td> </tr> <tr> <td>450 to 512</td> <td>2.5</td> <td>5.0</td> <td>5.0</td> </tr> <tr> <td>821 to 896</td> <td>1.5</td> <td>2.5</td> <td>2.5</td> </tr> <tr> <td>928 to 929</td> <td>5.0</td> <td>n/a</td> <td>n/a</td> </tr> <tr> <td>929 to 960</td> <td>1.5</td> <td>n/a</td> <td>n/a</td> </tr> <tr> <td>2110 to 2220</td> <td>10.0</td> <td>n/a</td> <td>n/a</td> </tr> </tbody> </table>	Frequency range (MHz)	Base, fixed (ppm)	Mobile >3 watts (ppm)	Mobile ≤3 watts (ppm)	25 to 50	20.0	20.0	50.0	50 to 450	5.0	5.0	50.0	450 to 512	2.5	5.0	5.0	821 to 896	1.5	2.5	2.5	928 to 929	5.0	n/a	n/a	929 to 960	1.5	n/a	n/a	2110 to 2220	10.0	n/a	n/a
Frequency range (MHz)	Base, fixed (ppm)	Mobile >3 watts (ppm)	Mobile ≤3 watts (ppm)																														
25 to 50	20.0	20.0	50.0																														
50 to 450	5.0	5.0	50.0																														
450 to 512	2.5	5.0	5.0																														
821 to 896	1.5	2.5	2.5																														
928 to 929	5.0	n/a	n/a																														
929 to 960	1.5	n/a	n/a																														
2110 to 2220	10.0	n/a	n/a																														

## 5.2 Field Strength of Spurious Radiation Measurement

LTE band 2 – 1.4 MHz bandwidth						
Lowest channel						
Frequency (MHz)	Reading Level (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Polarization
3701.40	-52.61	-1.36	-53.97	-13.00	40.97	Vertical
5552.10	-59.53	5.43	-54.10	-13.00	41.10	Vertical
7402.00	-62.30	12.61	-49.69	-13.00	36.69	Vertical
3701.40	-52.18	-1.85	-54.03	-13.00	41.03	Horizontal
5552.10	-60.17	3.80	-56.37	-13.00	43.37	Horizontal
7402.00	-61.67	10.88	-50.79	-13.00	37.79	Horizontal
Middle channel						
Frequency (MHz)	Reading Level (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Polarization
3760.00	-52.15	-1.06	-53.21	-13.00	40.21	Vertical
5640.00	-59.64	7.14	-52.50	-13.00	39.50	Vertical
7520.00	-61.95	11.47	-50.48	-13.00	37.48	Vertical
3760.00	-51.92	-1.55	-53.47	-13.00	40.47	Horizontal
5640.00	-59.83	4.45	-55.38	-13.00	42.38	Horizontal
7520.00	-61.77	9.98	-51.79	-13.00	38.79	Horizontal
Highest channel						
Frequency (MHz)	Reading Level (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Polarization
3816.60	-52.55	-0.76	-53.31	-13.00	40.31	Vertical
5724.90	-59.85	8.51	-51.34	-13.00	38.34	Vertical
7633.20	-62.00	11.11	-50.89	-13.00	37.89	Vertical
3816.60	-51.74	-1.24	-52.98	-13.00	39.98	Horizontal
5724.90	-59.35	5.85	-53.50	-13.00	40.50	Horizontal
7633.20	-62.13	9.95	-52.18	-13.00	39.18	Horizontal
<b>Remark:</b>						
1. The emission levels of below 1 GHz are lower than the limit 10dB, so not show in test report.						

LTE band 2 – 20 MHz bandwidth						
Lowest channel						
Frequency (MHz)	Reading Level (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Polarization
3720.00	-52.20	-1.26	-53.46	-13.00	40.46	Vertical
5580.00	-59.36	5.85	-53.51	-13.00	40.51	Vertical
7440.00	-61.53	12.18	-49.35	-13.00	36.35	Vertical
3720.00	-51.58	-1.76	-53.34	-13.00	40.34	Horizontal
5580.00	-59.48	4.00	-55.48	-13.00	42.48	Horizontal
7440.00	-61.36	10.51	-50.85	-13.00	37.85	Horizontal
Middle channel						
Frequency (MHz)	Reading Level (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Polarization
3760.00	-52.20	-1.06	-53.26	-13.00	40.26	Vertical
5640.00	-59.92	7.14	-52.78	-13.00	39.78	Vertical
7520.00	-62.24	11.47	-50.77	-13.00	37.77	Vertical
3760.00	-51.76	-1.55	-53.31	-13.00	40.31	Horizontal
5640.00	-60.30	4.45	-55.85	-13.00	42.85	Horizontal
7520.00	-61.82	9.98	-51.84	-13.00	38.84	Horizontal
Highest channel						
Frequency (MHz)	Reading Level (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Polarization
3800.00	-51.69	-0.85	-52.54	-13.00	39.54	Vertical
5700.00	-59.97	8.54	-51.43	-13.00	38.43	Vertical
7600.00	-61.75	11.24	-50.51	-13.00	37.51	Vertical
3800.00	-52.08	-1.35	-53.43	-13.00	40.43	Horizontal
5700.00	-59.37	4.93	-54.44	-13.00	41.44	Horizontal
7600.00	-61.92	10.06	-51.86	-13.00	38.86	Horizontal
<b>Remark:</b>						
1. The emission levels of below 1 GHz are lower than the limit 10dB, so not show in test report.						

LTE band 4 – 1.4 MHz bandwidth						
Lowest channel						
Frequency (MHz)	Reading Level (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Polarization
3421.40	-52.46	-4.19	-56.65	-13.00	43.65	Vertical
5132.10	-59.15	4.68	-54.47	-13.00	41.47	Vertical
6842.80	-60.09	10.63	-49.46	-13.00	36.46	Vertical
3421.40	-52.85	-4.29	-57.14	-13.00	44.14	Horizontal
5132.10	-59.59	4.21	-55.38	-13.00	42.38	Horizontal
6842.80	-60.43	9.58	-50.85	-13.00	37.85	Horizontal
Middle channel						
Frequency (MHz)	Reading Level (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Polarization
3465.00	-52.75	-3.00	-55.75	-13.00	42.75	Vertical
5197.50	-58.91	4.10	-54.81	-13.00	41.81	Vertical
6930.00	-60.28	11.18	-49.10	-13.00	36.10	Vertical
3465.00	-53.33	-3.11	-56.44	-13.00	43.44	Horizontal
5197.50	-59.35	3.60	-55.75	-13.00	42.75	Horizontal
6930.00	-60.21	9.86	-50.35	-13.00	37.35	Horizontal
Highest channel						
Frequency (MHz)	Reading Level (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Polarization
3508.60	-53.10	-1.98	-55.08	-13.00	42.08	Vertical
5262.90	-59.13	3.70	-55.43	-13.00	42.43	Vertical
7017.20	-59.96	11.17	-48.79	-13.00	35.79	Vertical
3508.60	-53.53	-2.15	-55.68	-13.00	42.68	Horizontal
5262.90	-59.25	3.31	-55.94	-13.00	42.94	Horizontal
7017.20	-60.40	9.63	-50.77	-13.00	37.77	Horizontal
<b>Remark:</b>						
1. The emission levels of below 1 GHz are lower than the limit 10dB, so not show in test report.						



LTE band 4 – 20 MHz bandwidth						
Lowest channel						
Frequency (MHz)	Reading Level (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Polarization
3440.00	-52.87	-3.66	-56.53	-13.00	43.53	Vertical
5160.00	-58.83	4.43	-54.40	-13.00	41.40	Vertical
6880.00	-60.31	11.05	-49.26	-13.00	36.26	Vertical
3440.00	-53.71	-3.77	-57.48	-13.00	44.48	Horizontal
5160.00	-59.81	3.95	-55.86	-13.00	42.86	Horizontal
6880.00	-59.77	9.87	-49.90	-13.00	36.90	Horizontal
Middle channel						
Frequency (MHz)	Reading Level (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Polarization
3465.00	-53.23	-3.00	-56.23	-13.00	43.23	Vertical
5197.50	-59.27	4.10	-55.17	-13.00	42.17	Vertical
6930.00	-60.48	11.18	-49.30	-13.00	36.30	Vertical
3465.00	-53.71	-3.11	-56.82	-13.00	43.82	Horizontal
5197.50	-59.80	3.60	-56.20	-13.00	43.20	Horizontal
6930.00	-59.83	9.86	-49.97	-13.00	36.97	Horizontal
Highest channel						
Frequency (MHz)	Reading Level (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Polarization
3490.00	-52.89	-2.31	-55.20	-13.00	42.20	Vertical
5235.00	-58.64	3.88	-54.76	-13.00	41.76	Vertical
6980.00	-60.70	11.02	-49.68	-13.00	36.68	Vertical
3490.00	-53.52	-2.42	-55.94	-13.00	42.94	Horizontal
5235.00	-59.54	3.44	-56.10	-13.00	43.10	Horizontal
6980.00	-60.64	9.59	-51.05	-13.00	38.05	Horizontal
<b>Remark:</b>						
1. The emission levels of below 1 GHz are lower than the limit 10dB, so not show in test report.						

LTE band 12 – 1.4 MHz bandwidth						
Lowest channel						
Frequency (MHz)	Reading Level (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Polarization
1399.40	-57.97	-7.91	-65.88	-13.00	52.88	Vertical
2099.10	-50.60	-7.51	-58.11	-13.00	45.11	Vertical
2798.80	-58.01	-5.52	-63.53	-13.00	50.53	Vertical
1399.40	-57.65	-8.39	-66.04	-13.00	53.04	Horizontal
2099.10	-54.59	-7.20	-61.79	-13.00	48.79	Horizontal
2798.80	-59.14	-5.52	-64.66	-13.00	51.66	Horizontal
Middle channel						
Frequency (MHz)	Reading Level (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Polarization
1415.00	-58.17	-8.25	-66.42	-13.00	53.42	Vertical
2122.50	-50.96	-7.08	-58.04	-13.00	45.04	Vertical
2830.00	-58.04	-5.39	-63.43	-13.00	50.43	Vertical
1415.00	-57.61	-8.68	-66.29	-13.00	53.29	Horizontal
2122.50	-54.87	-6.89	-61.76	-13.00	48.76	Horizontal
2830.00	-58.71	-5.44	-64.15	-13.00	51.15	Horizontal
Highest channel						
Frequency (MHz)	Reading Level (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Polarization
1430.60	-58.26	-8.59	-66.85	-13.00	53.85	Vertical
2145.90	-51.18	-6.60	-57.78	-13.00	44.78	Vertical
2861.20	-58.37	-5.25	-63.62	-13.00	50.62	Vertical
1430.60	-57.72	-8.98	-66.70	-13.00	53.70	Horizontal
2145.90	-54.45	-6.55	-61.00	-13.00	48.00	Horizontal
2861.20	-58.85	-5.37	-64.22	-13.00	51.22	Horizontal
<b>Remark:</b>						
1. The emission levels of below 1 GHz are lower than the limit 10dB, so not show in test report.						

LTE band 12 – 10 MHz bandwidth						
Lowest channel						
Frequency (MHz)	Reading Level (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Polarization
1408.00	-58.28	-8.09	-66.37	-13.00	53.37	Vertical
2112.00	-50.66	-7.25	-57.91	-13.00	44.91	Vertical
2816.00	-58.16	-5.45	-63.61	-13.00	50.61	Vertical
1408.00	-57.63	-8.54	-66.17	-13.00	53.17	Horizontal
2112.00	-54.39	-7.02	-61.41	-13.00	48.41	Horizontal
2816.00	-58.64	-5.47	-64.11	-13.00	51.11	Horizontal
Middle channel						
Frequency (MHz)	Reading Level (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Polarization
1415.00	-58.56	-8.25	-66.81	-13.00	53.81	Vertical
2122.50	-50.68	-7.08	-57.76	-13.00	44.76	Vertical
2830.00	-58.41	-5.39	-63.80	-13.00	50.80	Vertical
1415.00	-57.69	-8.68	-66.37	-13.00	53.37	Horizontal
2122.50	-55.22	-6.89	-62.11	-13.00	49.11	Horizontal
2830.00	-58.65	-5.44	-64.09	-13.00	51.09	Horizontal
Highest channel						
Frequency (MHz)	Reading Level (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Polarization
1422.00	-57.95	-8.09	-66.04	-13.00	53.04	Vertical
2133.00	-51.10	-7.25	-58.35	-13.00	45.35	Vertical
2844.00	-57.60	-5.45	-63.05	-13.00	50.05	Vertical
1422.00	-57.41	-8.82	-66.23	-13.00	53.23	Horizontal
2133.00	-54.49	-6.73	-61.22	-13.00	48.22	Horizontal
2844.00	-59.05	-5.41	-64.46	-13.00	51.46	Horizontal
<b>Remark:</b>						
1. The emission levels of below 1 GHz are lower than the limit 10dB, so not show in test report.						

LTE band 13 – 5 MHz bandwidth						
Lowest channel						
Frequency (MHz)	Reading Level (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Polarization
1559.00	-54.72	-10.78	-65.50	-13.00	52.50	Vertical
2338.50	-51.45	-6.06	-57.51	-13.00	44.51	Vertical
3118.00	-57.08	-3.68	-60.76	-13.00	47.76	Vertical
1559.00	-55.49	-10.76	-66.25	-13.00	53.25	Horizontal
2338.50	-55.95	-6.30	-62.25	-13.00	49.25	Horizontal
3118.00	-56.80	-3.72	-60.52	-13.00	47.52	Horizontal
Middle channel						
Frequency (MHz)	Reading Level (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Polarization
1564.00	-55.04	-10.83	-65.87	-13.00	52.87	Vertical
2346.00	-51.05	-6.11	-57.16	-13.00	44.16	Vertical
3128.00	-56.86	-3.71	-60.57	-13.00	47.57	Vertical
1564.00	-55.53	-10.80	-66.33	-13.00	53.33	Horizontal
2346.00	-55.96	-6.38	-62.34	-13.00	49.34	Horizontal
3128.00	-57.02	-3.73	-60.75	-13.00	47.75	Horizontal
Highest channel						
Frequency (MHz)	Reading Level (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Polarization
1569.00	-54.62	-10.90	-65.52	-13.00	52.52	Vertical
2353.50	-50.67	-6.16	-56.83	-13.00	43.83	Vertical
3138.00	-56.47	-3.75	-60.22	-13.00	47.22	Vertical
1569.00	-55.41	-10.85	-66.26	-13.00	53.26	Horizontal
2353.50	-56.10	-6.46	-62.56	-13.00	49.56	Horizontal
3138.00	-56.80	-3.75	-60.55	-13.00	47.55	Horizontal
<b>Remark:</b>						
1. The emission levels of below 1 GHz are lower than the limit 10dB, so not show in test report.						

LTE band 13 – 10 MHz bandwidth						
Middle channel						
Frequency (MHz)	Reading Level (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Polarization
1564.00	-54.73	-10.83	-65.56	-13.00	52.56	Vertical
2346.00	-50.66	-6.11	-56.77	-13.00	43.77	Vertical
3128.00	-56.66	-3.71	-60.37	-13.00	47.37	Vertical
1564.00	-55.46	-10.80	-66.26	-13.00	53.26	Horizontal
2346.00	-56.37	-6.38	-62.75	-13.00	49.75	Horizontal
3128.00	-57.21	-3.73	-60.94	-13.00	47.94	Horizontal

**Remark:**  
 1. The emission levels of below 1 GHz are lower than the limit 10dB, so not show in test report.

-----End of report-----