

TEST REPORT

Product Name : Q.HOME CORE Cellular
Model Number : Q.HOME CORE Cellular
FCC ID : 2BAVH-QCELLS4GV1

Prepared for : HANWHA Q CELLS AMERICA INC.
Address : 400 SPECTRUM CENTER DRIVE SUITE#1400, IRVINE,
CA 92618

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Report Number : ENS2304200211W00102R
Date(s) of Tests : February 13 , 2023 to February 17, 2023
Date of Issue : May 18, 2023

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Modified Information

Version	Report No.	Revision Date	Summary
Ver.1.0	ENS2304200211W00102R	/	Original Report

1 TEST RESULT CERTIFICATION

Applicant : HANWHA Q CELLS AMERICA INC.
Address : 400 SPECTRUM CENTER DRIVE SUITE#1400, IRVINE, CA 92618
Manufacturer : SolaX Power Network Technology (Zhejiang) Co. ,Ltd.
Address : No.288,Shizhu Road, Tonglu Economic Development Zone, Tonglu City,
Zhejiang Province, 310000 P. R. CHINA
Product Name : Q.HOME CORE Cellular
Model Number : Q.HOME CORE Cellular
Trademark : **qcells**

Measurement Procedure Used:

APPLICABLE STANDARDS	
STANDARD	TEST RESULT
FCC 47 CFR Part 2 , Subpart J FCC 47 CFR Part 22, Subpart H FCC 47 CFR Part 24, Subpart E FCC 47 CFR Part 27 FCC 47 CFR Part 90	PASS

The device described above is tested by EMTEK (Shenzhen) Co., Ltd. to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and EMTEK (Shenzhen) Co., Ltd. is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the above table standards requirement.

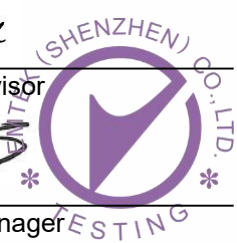
This report applies to above tested sample only and shall not be reproduced in part without written approval of EMTEK (Shenzhen) Co., Ltd.

Date of Test : February 13 , 2023 to February 17, 2023

Prepared by : 
Una Yu/Editor

Reviewer : 
Joe Xia/Supervisor

Approved & Authorized Signer : 
Lisa Wang/Manager



2 EUT TECHNICAL DESCRIPTION

Product Name:	Q.HOME CORE Cellular
Model Number:	Q.HOME CORE Cellular
Operation Band:	LTE B2/B4/B5/B12/B13/B25/B26/B66/B85 NB-IOT B2/B4/B5/B12/B13/B25/B66/B71/B85
Modulation:	QPSK/16QAM for LTE BPSK, QPSK for NB-IOT
Operating Frequency Range(s):	LTE Band 2: Tx: 1850-1910MHz, Rx: 1930-1990MHz LTE Band 4: Tx:1710-1755MHz, Rx: 2110-2155MHz LTE Band 5: Tx: 824-849MHz, Rx: 875-885MHz LTE Band 12: Tx: 699-716MHz, Rx: 729-746MHz LTE Band 13: Tx: 777-787MHz, Rx: 746-756MHz LTE Band 25: Tx: 1850-1915MHz, Rx: 1930-1995MHz LTE Band 26: Tx: 814-849MHz, Rx: 859-894MHz LTE Band 66: Tx/Rx: 1710-1780MHz LTE Band 85: Tx: 698-716MHz, Rx: 728-746MHz NB-IOT Band 2: Tx: 1850-1910MHz, Rx: 1930-1990MHz NB-IOT Band 4: Tx:1710-1755MHz, Rx: 2110-2155MHz NB-IOT Band 5: Tx: 824-849MHz, Rx: 875-885MHz NB-IOT Band 12: Tx: 699-716MHz, Rx: 729-746MHz NB-IOT Band 13: Tx: 777-787MHz, Rx: 746-756MHz NB-IOT Band 25: Tx: 1850-1915MHz, Rx: 1930-1995MHz NB-IOT Band 66: Tx/Rx: 1710-1780MHz NB-IOT Band 71: Tx/Rx: 663-698MHz NB-IOT Band 85: Tx: 698-716MHz, Rx: 728-746MHz
Antenna Type:	External Antenna
Antenna Gain:	LTE Band 2: 1.49dBi LTE Band 4: 1.28dBi LTE Band 5: 1.16dBi LTE Band 12: 2.87dBi LTE Band 13: 1.95dBi LTE Band 25: 1.49dBi LTE Band 26: 1.26dBi LTE Band 66: 1.28dBi LTE Band 85: 2.87dBi NB-IOT Band 2: 1.49dBi NB-IOT Band 4: 1.28dBi NB-IOT Band 5: 1.16dBi NB-IOT Band 12: 2.87dBi NB-IOT Band 13: 1.95dBi NB-IOT Band 25: 1.49dBi NB-IOT Band 66: 1.28dBi NB-IOT Band 71: 2.87dBi NB-IOT Band 85: 2.87dBi
Power Supply:	DC 5V
Temperature Extreme Range:	-35°C ~ 60°C

Note: for more details, please refer to the user's manual of the EUT.

3 SUMMARY OF TEST RESULT

3.1 TEST ITEMS

FCC Rule	Test Parameter	Verdict	Remark
2.1046	RF Power Output	PASS	*
22.913, 24.232, 27.50, 90.635	Equivalent (Isotropic) Radiated Power	PASS	*
2.1047	Modulation Characteristics	PASS	*
2.1049	Occupied Bandwidth	PASS	*
2.1051, 22.917, 24.238, 27.53, 90.691	Out of Band Emissions at Antenna Terminals	PASS	*
	Band Edge Compliance	PASS	*
2.1053, 22.917, 24.238, 27.53, 90.691	Field Strength of Spurious Radiation	PASS	
2.1055, 22.355, 24.235, 27.54, 90.213	Frequency Stability versus Temperature	PASS	*
	Frequency Stability versus Voltage	PASS	*
24.232, 27.50	Peak to Average Ratio	PASS	*

Note1: N/A (Not Applicable).

Note2: *: these modules have been tested and comply with FCC 47 CFR Part 2, 22(H), 24(E), 27, 90 requirements, according to technical characteristic, only spurious radiation needs retest for this device. For all other items' test results please reference original module's test report No.: R1907A0448-R1V2, R1907A0448-R2V2, R1907A0448-R3V2, R1907A0448-R4V2, R1907A0448-R5V2, R1907A0448-R6V2, R1907A0448-R7V2, R1907A0448-R8V2.

Note3: This report only update the report number, applicant, product name, model number and trademark, all test data refer to report No.ENS2302080120W00102R.

RELATED SUBMITTAL(S) / GRANT(S):

This submittal(s) (test report) is intended for FCC ID: 2BAVH-QCELLS4GV1 filing to comply with FCC 47 CFR Part 2, 22(H), 24(E), 27, 90.

4 TEST METHODOLOGY

4.1 GENERAL DESCRIPTION OF APPLIED STANDARDS

According to its specifications, the EUT must comply with the requirements of the following standards:

FCC 47 CFR Part 2 , Subpart J

FCC 47 CFR Part 22H

FCC 47 CFR Part 24E

FCC 47 CFR Part 27

FCC 47 CFR Part 90

KDB971168 D01:v02r02

ANSI/TIA-603-D-2010

ANSI C63.26:2015

4.2 MEASUREMENT EQUIPMENT USED

For Spurious Emissions Test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
EMI Test Receiver	Rohde & Schwarz	ESU 26	100154	2022/5/14	1Year
Spectrum Analyzer	Rohde & Schwarz	FSV40	100967	2022/5/14	1Year
Pre-Amplifie	Lunar EM	LNA30M3G-25	J1010000007 0	2022/5/14	1Year
Pre-Amplifier	HP	8447F	2944A07999	2022/5/14	1Year
Pre-Amplifie	SKET	LNPA_0118G-45	SK20190518 01	2022/5/14	1Year
Pre-Amplifie	Lunar EM	LNA1G18-48	J1011131010 001	2022/5/14	1Year
Loop Antenna	Schwarzbeck	FMZB1519	1519-012	2021/6/12	2 Year
Bilog Antenna	Schwarzbeck	VULB9163	659	2021/8/22	2 Year
Bilog Antenna	Schwarzbeck	VULB9163	712	2021/7/5	2 Year
Horn antenna	Schwarzbeck	BBHA9120D	9120D-1177	2021/6/12	2 Year
Horn antenna	Schwarzbeck	BBHA9170	9170-399	2021/6/12	2 Year
Wideband Radio Communication Tester	R&S	CMW500	140822	2022/5/15	1Year
Thermometer	Hegao	HTC-1	\	2022/5/17	1Year

For Other Test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
5G Wireless Test Platform	KEYSIGHT	E7515B	MY60101197	2022/9/17	1Year
Wideband Radio Communication Tester	R&S	CMW500	147366	2022/5/14	1Year
Signal Analyzer	KEYSIGHT	N9010B	MY60240204	2022/9/26	1Year
Vector Signal Generator	KEYSIGHT	N5182B	MY59100922	2022/9/26	1Year
Analog Signal Generator	KEYSIGHT	N5173B	MY59100520	2022/9/30	1Year
DC Power Supply	KEYSIGHT	E3642A	MY60266212	2022/9/26	1Year
RF Control Unit	Tonscend	JS0806-1	20H8060306	N/A	N/A
Band Reject Filter Group	Tonscend	JS0806-F	20H8060310	N/A	N/A
Thermometer	Hegao	HTC-1	\	2022/5/17	1Year

4.3 DESCRIPTION OF TEST MODES

The EUT has been tested under its typical operating condition. The CMU200 and CMW500 used to control the EUT staying in continuous transmitting and receiving mode for testing.

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

During all testing, EUT is in link mode with base station emulator at maximum power level.

The Transmitter was operated in the normal operating mode. The TX frequency was fixed which was for the purpose of the measurements.

Test of channel included the lowest and middle and highest frequency to perform the test, then record on this report.

Pre-defined engineering program for regulatory testing used to control the EUT for staying in continuous transmitting and receiving mode is programmed.



■ Test Environment

Environment Parameter	Selected Values During Tests	
Relative Humidity	Ambient	
Temperature	TN	Ambient
Ambient	VL	4.5V
	VN	5.0V
	VH	5.5V
NOTE: VL= Lower Extreme Test Voltage. VN= Nominal Voltage. VH= Upper Extreme Test Voltage. TN= Normal Temperature.		

■ Test Channel and Frequency

Test Mode	Bandwidth	TX / RX	RF Channel		
			Low (L)	Middle (M)	High (H)
LTE Band 2	1.4MHz	TX	Channel 18607 1850.7 MHz	Channel 18900 1880 MHz	Channel 19193 1909.3 MHz
		RX	Channel 607 1930.7 MHz	Channel 900 1960 MHz	Channel 1193 1989.3 MHz
	3MHz	TX	Channel 18615 1851.5 MHz	Channel 18900 1880 MHz	Channel 19185 1908.5 MHz
		RX	Channel 615 1931.5 MHz	Channel 900 1960 MHz	Channel 1185 1988.5 MHz
	5MHz	TX	Channel 18625 1852.5 MHz	Channel 18900 1880 MHz	Channel 19175 1907.5 MHz
		RX	Channel 625 1932.5 MHz	Channel 900 1960 MHz	Channel 1175 1987.5 MHz
	10MHz	TX	Channel 18650 1855 MHz	Channel 18900 1880 MHz	Channel 19150 1905 MHz
		RX	Channel 650 1935 MHz	Channel 900 1960 MHz	Channel 1150 1985 MHz
	15MHz	TX	Channel 18675 1857.5 MHz	Channel 18900 1880 MHz	Channel 19125 1902.5 MHz
		RX	Channel 675 1937.5 MHz	Channel 900 1960 MHz	Channel 1125 1982.5 MHz
	20MHz	TX	Channel 18700 1860 MHz	Channel 18900 1880 MHz	Channel 19100 1900 MHz
		RX	Channel 700 1940 MHz	Channel 900 1960 MHz	Channel 1100 1980 MHz

Test Mode	Bandwidth	TX / RX	RF Channel		
			Low (L)	Middle (M)	High (H)
LTE Band 4	1.4MHz	TX	Channel 19957 1710.7 MHz	Channel 20175 1732.5 MHz	Channel 20393 1754.3 MHz
		RX	Channel 1975 2112.5 MHz	Channel 2175 2132.5MHz	Channel 2375 2152.5 MHz
	3MHz	TX	Channel 19965 1711.5 MHz	Channel 20175 1732.5 MHz	Channel 20385 1753.5 MHz
		RX	Channel 2000 2115 MHz	Channel 2175 2132.5MHz	Channel 2350 2150 MHz
	5MHz	TX	Channel 19975 1712.5 MHz	Channel 20175 1732.5 MHz	Channel 20375 1752.5 MHz

	10MHz	RX	Channel 1975	Channel 2175	Channel 2375
			2112.5 MHz	2132.5MHz	2152.5 MHz
		TX	Channel 20000	Channel 20175	Channel 20350
			1715 MHz	1732.5 MHz	1750 MHz
		RX	Channel 2000	Channel 2175	Channel 2350
			2115 MHz	2132.5MHz	2150 MHz
	15MHz	TX	Channel 20025	Channel 20175	Channel 20325
			1717.5 MHz	1732.5 MHz	1747.5 MHz
		RX	Channel 2025	Channel 2175	Channel 2325
			2117.5 MHz	2132.5MHz	2147.5 MHz
	20MHz	TX	Channel 20050	Channel 20175	Channel 20300
			1720 MHz	1732.5 MHz	1745 MHz
		RX	Channel 2050	Channel 2175	Channel 2300
			2120 MHz	2132.5MHz	2145 MHz

Test Mode	Bandwidth	TX / RX	RF Channel		
			Low (L)	Middle (M)	High (H)
LTE Band 5	1.4MHz	TX	Channel 20407	Channel 20525	Channel 20643
			824.7 MHz	836.5 MHz	848.3 MHz
		RX	Channel 2407	Channel 2525	Channel 2643
			869.7 MHz	881.5 MHz	893.3 MHz
	3MHz	TX	Channel 20415	Channel 20525	Channel 20635
			825.5 MHz	836.5 MHz	847.5 MHz
		RX	Channel 2415	Channel 2525	Channel 2635
			870.5 MHz	881.5 MHz	892.5 MHz
	5MHz	TX	Channel 20425	Channel 20525	Channel 20625
			826.5 MHz	836.5 MHz	846.5 MHz
		RX	Channel 2425	Channel 2525	Channel 2625
			871.5 MHz	881.5 MHz	891.5 MHz
	10MHz	TX	Channel 20450	Channel 20525	Channel 20600
			829 MHz	836.5 MHz	844 MHz
		RX	Channel 2450	Channel 2525	Channel 2600
			874 MHz	881.5 MHz	889 MHz

Test Mode	Bandwidth	TX / RX	RF Channel		
			Low (L)	Middle (M)	High (H)
LTE Band 12	1.4MHz	TX	Channel 23017	Channel 23095	Channel 23173
			699.7 MHz	707.5 MHz	715.3 MHz
		RX	Channel 5017	Channel 5095	Channel 5173
			729.7 MHz	737.5 MHz	745.3 MHz
	3MHz	TX	Channel 23025	Channel 23095	Channel 23165
			700.5 MHz	707.5 MHz	714.5 MHz
		RX	Channel 5025	Channel 5095	Channel 5165
			730.5 MHz	737.5 MHz	744.5 MHz
	5MHz	TX	Channel 23035	Channel 23095	Channel 23155
			701.5 MHz	707.5 MHz	713.5 MHz
		RX	Channel 5035	Channel 5095	Channel 5155
			731.5 MHz	737.5 MHz	743.5 MHz
	10MHz	TX	Channel 23060	Channel 23095	Channel 23130
			704 MHz	707.5 MHz	711 MHz
		RX	Channel 5060	Channel 5095	Channel 5130
			734 MHz	737.5 MHz	741 MHz

Test Mode	Bandwidth	TX / RX	RF Channel		
			Low (L)	Middle (M)	High (H)
LTE Band 13	5MHz	TX	Channel 23025	Channel 23230	Channel 23255
			779.5 MHz	782 MHz	784.5 MHz
		RX	Channel 5205	Channel 5230	Channel 5255
			748.5 MHz	751 MHz	753.5 MHz
	10MHz	TX	Channel 23230	Channel 23230	Channel 23230
			782 MHz	782 MHz	782 MHz
		RX	Channel 5230	Channel 5230	Channel 5230
			751 MHz	751 MHz	751 MHz

Test Mode	Bandwidth	TX / RX	RF Channel		
			Low (L)	Middle (M)	High (H)
LTE Band 25	1.4MHz	TX	Channel 26047	Channel 26365	Channel 26683
			1850.7 MHz	1882.5 MHz	1914.3 MHz
		RX	Channel 8047	Channel 8365	Channel 8683
			1930.7 MHz	1962.5 MHz	1994.3 MHz
	3MHz	TX	Channel 26055	Channel 26365	Channel 26675
			1851.5 MHz	1882.5 MHz	1913.5 MHz
		RX	Channel 8055	Channel 8365	Channel 8675
			1931.5 MHz	1962.5 MHz	1993.5 MHz
	5MHz	TX	Channel 26065	Channel 26365	Channel 26665
			1852.5 MHz	1882.5 MHz	1912.5 MHz
		RX	Channel 8065	Channel 8365	Channel 8665
			1932.5 MHz	1962.5 MHz	1992.5 MHz
	10MHz	TX	Channel 26090	Channel 26365	Channel 26640
			1855 MHz	1882.5 MHz	1910 MHz
		RX	Channel 8090	Channel 8365	Channel 8640
			1935 MHz	1962.5 MHz	1990 MHz
	15MHz	TX	Channel 26115	Channel 26365	Channel 26615
			1857.5 MHz	1882.5 MHz	1907.5 MHz
		RX	Channel 8115	Channel 8365	Channel 8615
			1937.5 MHz	1962.5 MHz	1987.5 MHz
	20MHz	TX	Channel 26140	Channel 26365	Channel 26590
			1860 MHz	1882.5 MHz	1905 MHz
		RX	Channel 8140	Channel 8365	Channel 8590
			1940 MHz	1962.5 MHz	1985 MHz

Test Mode	Bandwidth	TX / RX	RF Channel		
			Low (L)	Middle (M)	High (H)
LTE Band 26 (814-824)	1.4MHz	TX	Channel 26697	Channel 26740	Channel 26783
			814.7 MHz	819 MHz	823.3 MHz
		RX	Channel 8697	Channel 8740	Channel 8783
			859.7 MHz	864MHz	868.3 MHz
	3MHz	TX	Channel 26705	Channel 26740	Channel 26775
			815.5 MHz	819 MHz	822.5 MHz
		RX	Channel 8705	Channel 8740	Channel 8775
			860.5 MHz	864MHz	867.5 MHz
	5MHz	TX	Channel 26715	Channel 26740	Channel 26765
			816.5 MHz	819 MHz	821.5 MHz
		RX	Channel 8715	Channel 8740	Channel 8755
			861.5 MHz	864MHz	866.5 MHz
	10MHz	TX	Channel 26740	Channel 26740	Channel 26740
			819 MHz	819 MHz	819 MHz
		RX	Channel 8740	Channel 8740	Channel 8740
			864MHz	864MHz	864MHz

Test Mode	Bandwidth	TX / RX	RF Channel		
			Low (L)	Middle (M)	High (H)
LTE Band26 (824-849)	1.4MHz	TX	Channel 26797	Channel 26915	Channel 27033
			824.7 MHz	836.5 MHz	848.3 MHz
		RX	Channel 8697	Channel 8915	Channel 9033
			859.7 MHz	881.5 MHz	893.3 MHz
	3MHz	TX	Channel 26805	Channel 26915	Channel 27025
			825.5 MHz	836.5 MHz	847.5 MHz
		RX	Channel 8805	Channel 8915	Channel 9025
			860.5 MHz	881.5 MHz	892.5 MHz
	5MHz	TX	Channel 26815	Channel 26915	Channel 27015
			826.5 MHz	836.5 MHz	846.5 MHz
		RX	Channel 8815	Channel 8915	Channel 9015
			871.5 MHz	881.5 MHz	891.5 MHz
	10MHz	TX	Channel 26840	Channel 26915	Channel 26990
			829 MHz	836.5 MHz	844 MHz
		RX	Channel 8840	Channel 8915	Channel 8990
			874 MHz	881.5 MHz	889 MHz
	15MHz	TX	Channel 26865	Channel 26915	Channel 26965
			831.5 MHz	836.5 MHz	841.5 MHz
		RX	Channel 8865	Channel 8915	Channel 8965
			876.5 MHz	881.5 MHz	886.5 MHz

Test Mode	Bandwidth	TX / RX	RF Channel		
			Low (L)	Middle (M)	High (H)
LTE Band66	1.4MHz	TX	Channel 131979	Channel 132322	Channel 132665
			1710.7 MHz	1745 MHz	1779.3 MHz
		RX	Channel 66443	Channel 66786	Channel 67329
			2110.7 MHz	2145MHz	2199.3 MHz
	3MHz	TX	Channel 131987	Channel 132322	Channel 132657
			1711.5 MHz	1745 MHz	1778.5MHz
		RX	Channel 66451	Channel 66786	Channel 67121
			2111.5 MHz	2145MHz	2198.5MHz
	5MHz	TX	Channel 131997	Channel 132322	Channel 132647
			1712.5 MHz	1745 MHz	1777.5 MHz
		RX	Channel 66461	Channel 66786	Channel 67311
			2112.5 MHz	2145MHz	2197.5 MHz
	10MHz	TX	Channel 132022	Channel 132322	Channel 132622
			1715 MHz	1745 MHz	1775 MHz
		RX	Channel 66486	Channel 66786	Channel 67286
			2115 MHz	2145MHz	2195 MHz
	15MHz	TX	Channel 132047	Channel 132322	Channel 132597
			1717.5 MHz	1745 MHz	1772.5 MHz
		RX	Channel 66511	Channel 66786	Channel 67261
			2117.5 MHz	2145MHz	2192.5 MHz
	20MHz	TX	Channel 132072	Channel 132322	Channel 132572
			1720 MHz	1745 MHz	1770 MHz
		RX	Channel 66536	Channel 66786	Channel 67236
			2120 MHz	2145MHz	2190 MHz

Test Mode	Bandwidth	TX / RX	RF Channel		
			Low (L)	Middle (M)	High (H)
LTE Band71	1.4MHz	TX	Channel 133147	Channel 133297	Channel 133447
			665.5 MHz	680.5 MHz	695.5 MHz
		RX	Channel 68611	Channel 68761	Channel 68911
			619.5 MHz	634.5 MHz	649.5 MHz
	3MHz	TX	Channel 133172	Channel 133297	Channel 133422
			668 MHz	680.5 MHz	693 MHz
		RX	Channel 68636	Channel 68761	Channel 68886
			622 MHz	634.5 MHz	647 MHz
	5MHz	TX	Channel 133197	Channel 133297	Channel 133397
			670.5 MHz	680.5 MHz	690.5 MHz
		RX	Channel 68661	Channel 68761	Channel 68861
			624.5 MHz	634.5 MHz	644.5 MHz
	10MHz	TX	Channel 133222	Channel 133297	Channel 133372
			673 MHz	680.5 MHz	688 MHz
		RX	Channel 68686	Channel 68761	Channel 68836
			627 MHz	634.5 MHz	642 MHz
	15MHz	TX	Channel 133147	Channel 133297	Channel 133447
			665.5 MHz	680.5 MHz	695.5 MHz
		RX	Channel 68611	Channel 68761	Channel 68911
			619.5 MHz	634.5 MHz	649.5 MHz
	20MHz	TX	Channel 133172	Channel 133297	Channel 133422
			668 MHz	680.5 MHz	693 MHz
		RX	Channel 68636	Channel 68761	Channel 68886
			622 MHz	634.5 MHz	647 MHz

Test Mode	Bandwidth	TX / RX	RF Channel		
			Low (L)	Middle (M)	High (H)
LTE Band85	5MHz	TX	Channel 134027	Channel 134092	Channel 134157
			700.5 MHz	707 MHz	713.5 MHz
	10MHz	TX	Channel 134052	Channel 134092	Channel 133422
			703 MHz	707 MHz	711 MHz

Test Mode	Modulation	Sub-carrier spacing (KHz)	RF Channel		
			Low (L)	Middle (M)	High (H)
NB-IoT Band 2	BPSK	3.75	Channel 18602 /1850.2MHz	Channel 18900 /1880.0MHz	Channel 19198 /1909.8MHz
		15			
	QPSK	3.75			
		15			
		15			

Test Mode	Modulation	Sub-carrier spacing (KHz)	RF Channel		
			Low (L)	Middle (M)	High (H)
NB-IoT Band 4	BPSK	3.75	Channel 19952 /1710.2MHz	Channel 20175 /1732.5MHz	Channel 20398 /1754.8MHz
		15			
	QPSK	3.75			
		15			
		15			

Test Mode	Modulation	Sub-carrier spacing (KHz)	RF Channel		
			Low (L)	Middle (M)	High (H)
NB-IoT Band 5	BPSK	3.75	Channel 20402 /824.2MHz	Channel 20525 /836.5MHz	Channel 20648 /848.8MHz
		15			
	QPSK	3.75			
		15			
		15			

Test Mode	Modulation	Sub-carrier spacing (KHz)	RF Channel		
			Low (L)	Middle (M)	High (H)
NB-IoT Band 12	BPSK	3.75	Channel 23012 /699.2MHz	Channel 23095 /707.5MHz	Channel 23178 /715.8MHz
		15			
	QPSK	3.75			
		15			
		15			

Test Mode	Modulation	Sub-carrier spacing (KHz)	RF Channel		
			Low (L)	Middle (M)	High (H)
NB-IoTBand 13	BPSK	3.75	Channel 23182 /777.2MHz	Channel 23230 /782MHz	Channel 23278 /786.8MHz
		15			
	QPSK	3.75			
		15			
		15			

Test Mode	Modulation	Sub-carrier spacing (KHz)	RF Channel		
			Low (L)	Middle (M)	High (H)
NB-IoTBand 25	BPSK	3.75	Channel 26042 /1850.2MHz	Channel 26365 /1882.5MHz	Channel 26688 /1914.8MHz
		15			
	QPSK	3.75			
		15			
		15			

Test Mode	Modulation	Sub-carrier spacing (KHz)	RF Channel		
			Low (L)	Middle (M)	High (H)
NB-IoTBand 66	BPSK	3.75	Channel131974 /1710.2MHz	Channel132322 /1745MHz	Channel132670 /1779.8MHz
		15			
	QPSK	3.75			
		15			
		15			

Test Mode	Modulation	Sub-carrier spacing (KHz)	RF Channel		
			Low (L)	Middle (M)	High (H)
NB-IoTBand 71	BPSK	3.75	Channel133124 /663.2MHz	Channel133297 /680.5MHz	Channel133470 /697.8MHz
		15			
	QPSK	3.75			
		15			
		15			

Test Mode	Modulation	Sub-carrier spacing (KHz)	RF Channel		
			Low (L)	Middle (M)	High (H)
NB-IoTBand 85	BPSK	3.75	Channel134004 /698.2MHz	Channel134092 /707MHz	Channel134180 /715.8MHz
		15			
	QPSK	3.75			
		15			
		15			

5 FACILITIES AND ACCREDITATIONS

5.1 FACILITIES

All measurement facilities used to collect the measurement data are located at:

Bldg 69, Majialong Industry Zone District, Nanshan District, Shenzhen, China.

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.26 and CISPR Publication 22.

5.2 LABORATORY ACCREDITATIONS AND LISTINGS

Site Description

EMC Lab. : **Accredited by CNAS**
The Certificate Registration Number is L2291
The Laboratory has been assessed and proved to be in compliance with
CNAS-CL01 (identical to ISO/IEC 17025:2017)

Accredited by FCC

Designation Number: CN1204

Test Firm Registration Number: 882943

Accredited by A2LA

The Certificate Number is 4321.01

Accredited by Industry Canada

The Conformity Assessment Body Identifier is CN0008

Name of Firm

: EMTEK (SHENZHEN) CO., LTD.

Site Location

: Building 69, Majialong Industry Zone, Nanshan District, Shenzhen, Guangdong, China

6 TEST SYSTEM UNCERTAINTY

The following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Parameter	Uncertainty
Radio Frequency	$\pm 1 \times 10^{-5}$
RF Power Output	$\pm 1.0\text{dB}$
Radiated Emission Test	$\pm 2.0\text{dB}$
Occupied Bandwidth Test	$\pm 1.0\text{dB}$
Band Edge Test	$\pm 3\text{dB}$
All emission, radiated	$\pm 3\text{dB}$
Antenna Port Emission	$\pm 3\text{dB}$
Temperature	$\pm 0.5^{\circ}\text{C}$
Humidity	$\pm 3\%$

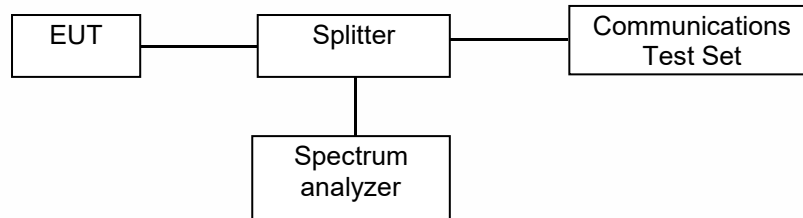
Measurement Uncertainty for a level of Confidence of 95%.



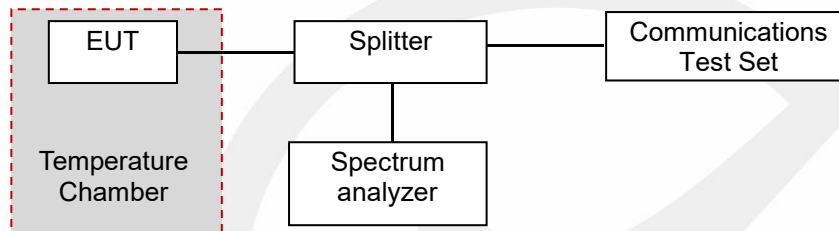
7 SETUP OF EQUIPMENT UNDER TEST

7.1 RADIO FREQUENCY TEST SETUP 1

The sample component's antenna ports(s) of the EUT are connected to the measurement instrument per an appropriate attenuator. The EUT is controlled by PC/software to emit the specified signals for the purpose of measurements.



7.2 RADIO FREQUENCY TEST SETUP 2



7.3 RADIO FREQUENCY TEST SETUP 3

The test site semi-anechoic chamber has met the requirement of NSA tolerance 4 dB according to the standards: ANSI C63.10. The test distance is 3m. The setup is according to the requirements in Section 13.1.4.1 of ANSI C63.26-2015 and CAN/CSA-CEI/IEC CISPR 22.

Below 30MHz:

The EUT is placed on a turntable 0.8 meters above the ground in the chamber, 3 meter away from the antenna (loop antenna). The Antenna should be positioned with its plane vertical at the specified distance from the EUT and rotated about its vertical axis for maximum response at each azimuth about the EUT. The center of the loop shall be 1 m above the ground. For certain applications, the loop antenna plane may also need to be positioned horizontally at the specified distance from the EUT.

Above 30MHz:

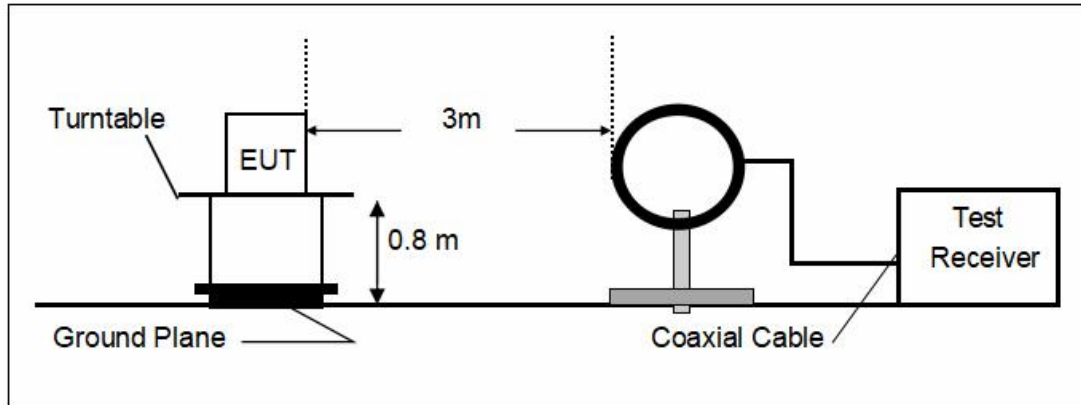
The EUT is placed on a turntable 0.8 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H).

Above 1GHz:

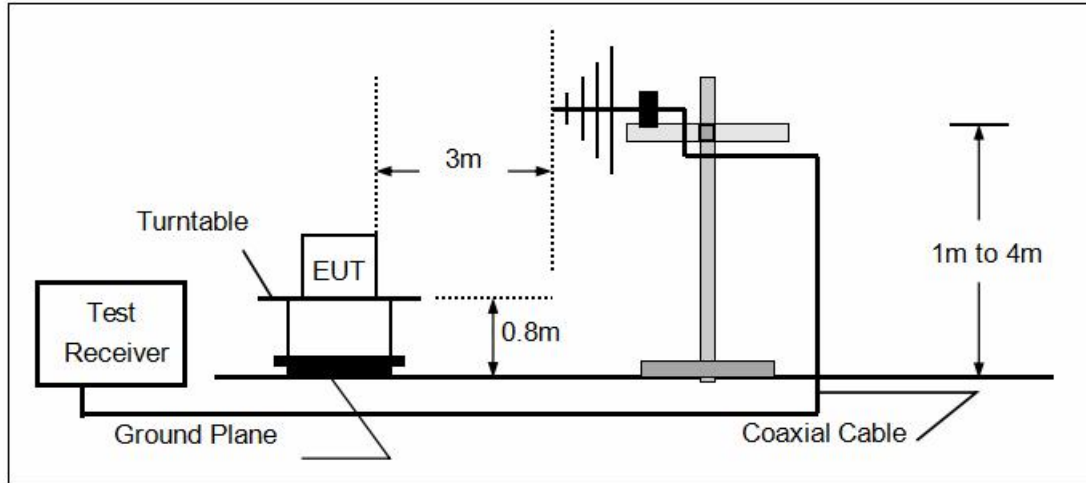
(Note: the FCC's permission to use 1.5m as an alternative per TCBC Conf call of Dec. 2, 2014.)

The EUT is placed on a turntable 1.5 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H).

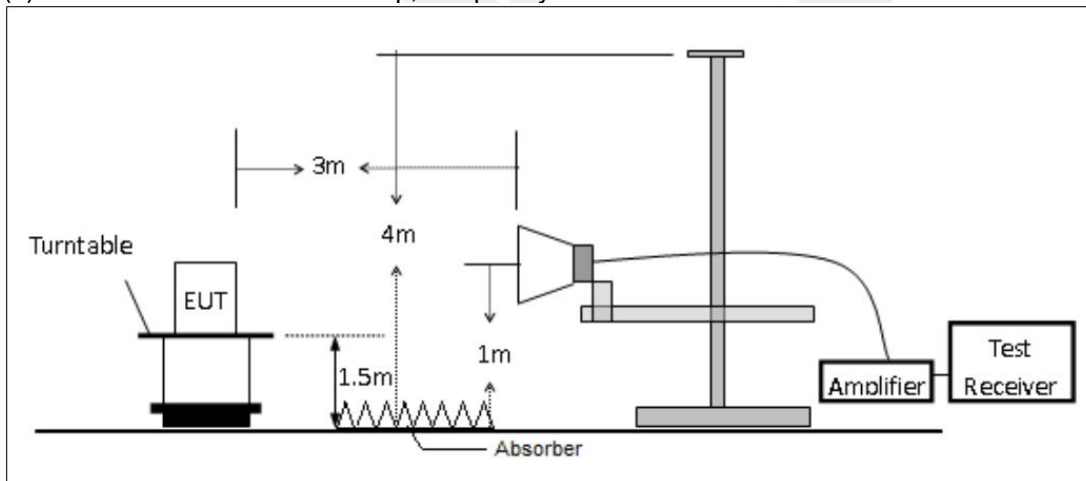
(a) Radiated Emission Test Set-Up, Frequency Below 30MHz



(b) Radiated Emission Test Set-Up, Frequency Below 1000MHz



(c) Radiated Emission Test Set-Up, Frequency above 1000MHz



7.4 SUPPORT EQUIPMENT

EUT Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite

Auxiliary Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite

Auxiliary Equipment List and Details			
Description	Manufacturer	Model	Serial Number

Notes:

- 1.All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
- 2.Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.
- 3.Unless otherwise denoted as EUT in 『Remark』 column , device(s) used in tested system is a support equipment.

8 TEST REQUIREMENTS

8.1 FIELD STRENGTH OF SPURIOUS RADIATION

8.1.1 Conformance Limit

LTE BAND2 (25)	FCC Part 24.238
Out of band emissions. 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.	
LTE BAND4(66)	FCC Part 27.53(h)
Out of band emissions. 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.	
LTE BAND5(26)	FCC Part 22.917
Out of band emissions. 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.	
LTE BAND7 (41)	FCC Part 27.53(m)
For mobile digital stations, the attenuation factor shall be not less than $40 + 10 \log(P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10 \log(P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10 \log(P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less than $43 + 10 \log(P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log(P)$ dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees	
LTE BAND12	FCC Part 27.53(g)
Out of band emissions. 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.	
LTE BAND13	FCC Part 27.53(c)
Out of band emissions. 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.	
LTE BAND30	FCC Part 27.53(a)
By a factor of not less than $43 + 10 \log(P)$ dB on all frequencies between 2360 and 2365 MHz, and not less than $70 + 10 \log(P)$ dB above 2365 MHz.	

The specification that emissions shall be attenuated below the transmitter power (P) by at least $43 + 10 \log(P)$ dB, translates in the relevant power range (1 to 0.001 W) to -13 dBm. At 1 W the specified minimum attenuation becomes 43 dB and relative to a 30 dBm (1 W) carrier becomes a limit of -13 dBm. At 0.001 W (0 dBm) the minimum attenuation is 13 dB, which again yields a limit of -13 dBm. In this way a translation of the specification from relative to absolute terms is carried out.

8.1.2 Test Configuration

Test according to clause 7.3 radio frequency test setup 3.

8.1.3 Test Procedure

Connect the EUT to Universal Radio Communication Tester CMU200 or CMU500 via the antenna connector. A call is set up by the SS according to the generic call set up procedure on a channel with ARFCN in the Mid ARFCN range, power control level set to Max power. MS TXPWR_MAX_CCH is set to the maximum value supported by the Power Class of the Mobile under test.

Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 100 kHz or 1 percent of emission bandwidth, as

specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power, then the following procedure can be used to determine spurious emission.

- a) RBW = 1 MHz for $f \geq 1$ GHz(1GHz to 25GHz), 100 kHz for $f < 1$ GHz(30MHz to 1GHz), 200Hz for $f < 150$ KHz(9KHz to 150KHz), 9KHz for $f < 30$ MHz(150KHz to 30KHz).
- b) Set VBW $\geq 3 \times$ RBW.
- c) Set span wide enough to fully capture the emission being measured.
- d) Sweep time = auto couple.
- e) Detector = peak.
- f) Ensure that the number of measurement points $\geq$ span/RBW.
- g) Trace mode = max hold.
- h) Allow trace to fully stabilize.
- i) Use the peak marker function to determine the peak amplitude level.

Step1. The EUT was placed on a rotatable wooden table with 0.8 meter above ground.

Step2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.

Step3. The table was rotated 360 degrees to determine the position of the highest spurious emission.

Step4. The height of the receiving antenna is varied between one meter and four meters to search the maximum spurious emission for both horizontal and vertical polarizations.

Step5. Make the measurement with the spectrum analyzer's RBW , VBW , taking the record of maximum spurious emission.

Step6. A horn antenna was substituted in place of the EUT and was driven by a signal generator.

Step7. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.

Step8. Taking the record of output power at antenna port.

Step9. Repeat step 7 to step 8 for another polarization.

Step10. Emission level (dBm) = output power + substitution Gain.

8.1.4 Test Results

PASS

All modes have been tested, and the worst result recorded was report as below:

■ Spurious Emission below 30MHz (9KHz to 30MHz)

Temperature:	25°C	Test By:	ZXR
Humidity:	60%		
Test mode:	TX Mode		

Freq. (MHz)	Ant.Pol. H/V	Emission Level(dBuV/m) PK	Limit 3m(dBuV/m) PK	Over(dB) PK
--	--	--	--	--

Note: Data of measurement within this frequency range shown “ -- ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

■ Spurious Emission Above 30MHz (30MHz to 1 GHz)

Temperature: 25°C		Mode		LTE Band 2		
Humidity: 60%						
Air Pressure 106kPa						
Frequency (MHz)	Antenna Polarization	RBW (kHz)	Emission level (dBm)	Limit (dBm)	Over (dB)	Verdict
36.2083	V	100	-55.74	-13.00	42.74	PASS
52.9902	V	100	-58.15	-13.00	45.15	PASS
83.6437	V	100	-60.70	-13.00	47.70	PASS
164.0607	V	100	-61.33	-13.00	48.33	PASS
216.6373	V	100	-58.13	-13.00	45.13	PASS
410.841	V	100	-58.67	-13.00	45.67	PASS
34.4622	H	100	-55.20	-13.00	42.20	PASS
53.6207	H	100	-59.44	-13.00	46.44	PASS
81.7036	H	100	-55.06	-13.00	42.06	PASS
203.7842	H	100	-53.08	-13.00	40.08	PASS
409.5315	H	100	-59.27	-13.00	46.27	PASS
600.0975	H	100	-54.96	-13.00	41.96	PASS

Temperature: 25°C		Mode		LTE Band 4		
Humidity: 60%						
Air Pressure 106kPa						
Frequency (MHz)	Antenna Polarization	RBW (kHz)	Emission level (dBm)	Limit (dBm)	Over (dB)	Verdict
31.9401	V	100	-56.21	-13.00	43.21	PASS
50.3225	V	100	-57.00	-13.00	44.00	PASS
82.6736	V	100	-56.77	-13.00	43.77	PASS
188.6999	V	100	-58.82	-13.00	45.82	PASS
352.2501	V	100	-60.51	-13.00	47.51	PASS
661.5986	V	100	-56.19	-13.00	43.19	PASS
32.3766	H	100	-59.42	-13.00	46.42	PASS
51.7776	H	100	-64.51	-13.00	51.51	PASS
96.8363	H	100	-53.00	-13.00	40.00	PASS
194.5687	H	100	-51.70	-13.00	38.70	PASS
429.9995	H	100	-58.96	-13.00	45.96	PASS
752.6376	H	100	-53.54	-13.00	40.54	PASS

Temperature: 25°C		Mode		LTE Band 5		
Humidity: 60%						
Air Pressure 106kPa						
Frequency (MHz)	Antenna Polarization	RBW (kHz)	Emission level (dBm)	Limit (dBm)	Over (dB)	Verdict
48.6249	V	100	-56.02	-13.00	43.02	PASS
81.9461	V	100	-55.70	-13.00	42.70	PASS
205.2393	V	100	-52.69	-13.00	39.69	PASS
508.5249	V	100	-57.59	-13.00	44.59	PASS
630.4115	V	100	-57.12	-13.00	44.12	PASS
994.2767	V	100	-51.93	-13.00	38.93	PASS

41.0586	H	100	-66.93	-13.00	53.93	PASS
81.0246	H	100	-57.82	-13.00	44.82	PASS
189.379	H	100	-54.13	-13.00	41.13	PASS
402.6441	H	100	-58.96	-13.00	45.96	PASS
602.9106	H	100	-54.92	-13.00	41.92	PASS
753.7047	H	100	-53.05	-13.00	40.05	PASS

Temperature:	25℃	Mode		LTE Band 12		
Humidity:	60%					
Air Pressure	106kPa					
Frequency (MHz)	Antenna Polarization	RBW (kHz)	Emission level (dBm)	Limit (dBm)	Over (dB)	Verdict
55.4153	V	100	-55.19	-13.00	42.19	PASS
86.9904	V	100	-53.50	-13.00	40.50	PASS
202.4261	V	100	-53.07	-13.00	40.07	PASS
498.7759	V	100	-57.58	-13.00	44.58	PASS
732.4121	V	100	-53.34	-13.00	40.34	PASS
958.2879	V	100	-52.42	-13.00	39.42	PASS
80.7335	H	100	-57.82	-13.00	44.82	PASS
172.8881	H	100	-51.80	-13.00	38.80	PASS
202.1351	H	100	-53.37	-13.00	40.37	PASS
397.8909	H	100	-59.03	-13.00	46.03	PASS
607.6154	H	100	-55.31	-13.00	42.31	PASS
758.1669	H	100	-52.77	-13.00	39.77	PASS

Temperature:	25℃	Mode		LTE Band 13		
Humidity:	60%					
Air Pressure	106kPa					
Frequency (MHz)	Antenna Polarization	RBW (kHz)	Emission level (dBm)	Limit (dBm)	Over (dB)	Verdict
50.9045	V	100	-56.72	-13.00	43.72	PASS
82.2856	V	100	-56.30	-13.00	43.30	PASS
130.012	V	100	-57.40	-13.00	44.40	PASS
343.8592	V	100	-60.50	-13.00	47.50	PASS
766.0728	V	100	-55.39	-13.00	42.39	PASS
990.445	V	100	-51.73	-13.00	38.73	PASS
79.909	H	100	-61.98	-13.00	48.98	PASS
186.2263	H	100	-56.16	-13.00	43.16	PASS
397.7939	H	100	-60.53	-13.00	47.53	PASS
590.3	H	100	-56.86	-13.00	43.86	PASS
779.896	H	100	-54.40	-13.00	41.40	PASS
967.5034	H	100	-52.82	-13.00	39.82	PASS

Temperature:	25℃	Mode			LTE Band 25	
Humidity:	60%					
Air Pressure	106kPa					
Frequency (MHz)	Antenna Polarization	RBW (kHz)	Emission level (dBm)	Limit (dBm)	Over (dB)	Verdict
81.8976	V	100	-56.40	-13.00	43.40	PASS

192.5801	V	100	-57.34	-13.00	44.34	PASS
346.5268	V	100	-60.24	-13.00	47.24	PASS
492.9556	V	100	-57.57	-13.00	44.57	PASS
776.5978	V	100	-54.10	-13.00	41.10	PASS
968.3279	V	100	-50.80	-13.00	37.80	PASS
36.1113	H	100	-61.71	-13.00	48.71	PASS
80.685	H	100	-58.75	-13.00	45.75	PASS
191.9981	H	100	-55.43	-13.00	42.43	PASS
603.1532	H	100	-55.88	-13.00	42.88	PASS
763.5507	H	100	-53.05	-13.00	40.05	PASS
991.9971	H	100	-50.91	-13.00	37.91	PASS

Temperature:	25℃	Mode		LTE Band 26		
Humidity:	60%					
Air Pressure	106kPa					
Frequency (MHz)	Antenna Polarization	RBW (kHz)	Emission level (dBm)	Limit (dBm)	Over (dB)	Verdict
34.3167	V	100	-53.93	-13.00	40.93	PASS
59.053	V	100	-58.51	-13.00	45.51	PASS
81.4126	V	100	-56.23	-13.00	43.23	PASS
203.2992	V	100	-55.95	-13.00	42.95	PASS
880.6355	V	100	-50.71	-13.00	37.71	PASS
990.5905	V	100	-51.34	-13.00	38.34	PASS
60.5565	H	100	-61.86	-13.00	48.86	PASS
80.9275	H	100	-58.46	-13.00	45.46	PASS
198.1579	H	100	-52.30	-13.00	39.30	PASS
609.701	H	100	-54.94	-13.00	41.94	PASS
778.5379	H	100	-53.19	-13.00	40.19	PASS
991.2696	H	100	-49.87	-13.00	36.87	PASS

Temperature:	25℃	Mode		LTE Band 66		
Humidity:	60%					
Air Pressure	106kPa					
Frequency (MHz)	Antenna Polarization	RBW (kHz)	Emission level (dBm)	Limit (dBm)	Over (dB)	Verdict
30.097	V	100	-57.45	-13.00	44.45	PASS
59.1015	V	100	-53.55	-13.00	40.55	PASS
81.4126	V	100	-55.70	-13.00	42.70	PASS
206.7428	V	100	-53.44	-13.00	40.44	PASS
418.4559	V	100	-61.33	-13.00	48.33	PASS
998.3509	V	100	-51.49	-13.00	38.49	PASS
39.652	H	100	-55.31	-13.00	42.31	PASS
80.5395	H	100	-57.74	-13.00	44.74	PASS
198.3519	H	100	-51.96	-13.00	38.96	PASS
403.2262	H	100	-59.07	-13.00	46.07	PASS
782.6121	H	100	-54.87	-13.00	41.87	PASS
971.4806	H	100	-51.40	-13.00	38.40	PASS

Temperature:	25℃	Mode		LTE Band 85		
Humidity:	60%					
Air Pressure	106kPa					
Frequency (MHz)	Antenna Polarization	RBW (kHz)	Emission level (dBm)	Limit (dBm)	Over (dB)	Verdict
31.4066	V	100	-56.07	-13.00	43.07	PASS
60.12	V	100	-58.16	-13.00	45.16	PASS
81.2671	V	100	-56.23	-13.00	43.23	PASS
209.556	V	100	-56.39	-13.00	43.39	PASS
426.7983	V	100	-60.72	-13.00	47.72	PASS
896.3018	V	100	-52.37	-13.00	39.37	PASS
55.5123	H	100	-65.71	-13.00	52.71	PASS
86.2143	H	100	-61.84	-13.00	48.84	PASS
185.8868	H	100	-53.69	-13.00	40.69	PASS
405.6513	H	100	-59.73	-13.00	46.73	PASS
737.8444	H	100	-56.61	-13.00	43.61	PASS
991.2696	H	100	-50.95	-13.00	37.95	PASS

Temperature:	25℃	Mode		NB-IOT Band 2		
Humidity:	60%					
Air Pressure	106kPa					
Frequency (MHz)	Antenna Polarization	RBW (kHz)	Emission level (dBm)	Limit (dBm)	Over (dB)	Verdict
31.9401	V	100	-56.05	-13.00	43.05	PASS
52.2626	V	100	-56.30	-13.00	43.30	PASS
74.7677	V	100	-53.51	-13.00	40.51	PASS
203.2992	V	100	-53.30	-13.00	40.30	PASS
560.9075	V	100	-58.54	-13.00	45.54	PASS
996.7503	V	100	-51.33	-13.00	38.33	PASS
56.1428	H	100	-65.34	-13.00	52.34	PASS
80.879	H	100	-57.73	-13.00	44.73	PASS
200.583	H	100	-52.13	-13.00	39.13	PASS
596.7023	H	100	-54.69	-13.00	41.69	PASS
763.8417	H	100	-53.13	-13.00	40.13	PASS
984.8672	H	100	-50.54	-13.00	37.54	PASS

Temperature:	25℃	Mode		NB-IOT Band 4		
Humidity:	60%					
Air Pressure	106kPa					
Frequency (MHz)	Antenna Polarization	RBW (kHz)	Emission level (dBm)	Limit (dBm)	Over (dB)	Verdict
57.6949	V	100	-55.98	-13.00	42.98	PASS
74.5737	V	100	-58.93	-13.00	45.93	PASS
196.1693	V	100	-58.70	-13.00	45.70	PASS
360.835	V	100	-61.26	-13.00	48.26	PASS
749.5335	V	100	-54.54	-13.00	41.54	PASS
995.4408	V	100	-52.84	-13.00	39.84	PASS
31.2611	H	100	-65.05	-13.00	52.05	PASS
55.9003	H	100	-65.28	-13.00	52.28	PASS

80.685	H	100	-57.42	-13.00	44.42	PASS
196.7513	H	100	-52.88	-13.00	39.88	PASS
600.8735	H	100	-54.80	-13.00	41.80	PASS
809.4825	H	100	-53.69	-13.00	40.69	PASS

Temperature: 25°C

Humidity: 60%

Air Pressure 106kPa

Mode

NB-IOT Band 5

Frequency (MHz)	Antenna Polarization	RBW (kHz)	Emission level (dBm)	Limit (dBm)	Over (dB)	Verdict
31.0671	V	100	-54.04	-13.00	41.04	PASS
53.4752	V	100	-58.21	-13.00	45.21	PASS
81.7521	V	100	-56.22	-13.00	43.22	PASS
206.2093	V	100	-53.37	-13.00	40.37	PASS
510.5135	V	100	-58.18	-13.00	45.18	PASS
994.1312	V	100	-51.12	-13.00	38.12	PASS
55.4153	H	100	-64.92	-13.00	51.92	PASS
82.2371	H	100	-58.72	-13.00	45.72	PASS
202.7656	H	100	-51.25	-13.00	38.25	PASS
588.4569	H	100	-57.69	-13.00	44.69	PASS
748.4179	H	100	-54.95	-13.00	41.95	PASS
934.4247	H	100	-52.64	-13.00	39.64	PASS

Temperature:	25°C	Mode		NB-IOT Band 12		
Humidity:	60%					
Air Pressure	106kPa					
Frequency (MHz)	Antenna Polarization	RBW (kHz)	Emission level (dBm)	Limit (dBm)	Over (dB)	Verdict
30.388	V	100	-57.96	-13.00	44.96	PASS
49.9345	V	100	-58.16	-13.00	45.16	PASS
79.9575	V	100	-56.59	-13.00	43.59	PASS
323.7307	V	100	-61.68	-13.00	48.68	PASS
479.86	V	100	-58.20	-13.00	45.20	PASS
913.2292	V	100	-49.23	-13.00	36.23	PASS
55.4638	H	100	-65.19	-13.00	52.19	PASS
80.976	H	100	-61.48	-13.00	48.48	PASS
194.7142	H	100	-53.65	-13.00	40.65	PASS
595.7323	H	100	-55.13	-13.00	42.13	PASS
781.4481	H	100	-53.41	-13.00	40.41	PASS
939.7115	H	100	-52.50	-13.00	39.50	PASS

Temperature:	25°C	Mode		NB-IOT Band 13		
Humidity:	60%					
Air Pressure	106kPa					
Frequency (MHz)	Antenna Polarization	RBW (kHz)	Emission level (dBm)	Limit (dBm)	Over (dB)	Verdict
51.6806	V	100	-57.09	-13.00	44.09	PASS
80.2	V	100	-56.56	-13.00	43.56	PASS
144.7082	V	100	-61.56	-13.00	48.56	PASS
171.4816	V	100	-60.32	-13.00	47.32	PASS

340.949	V	100	-60.17	-13.00	47.17	PASS
500.5705	V	100	-57.94	-13.00	44.94	PASS
81.2671	H	100	-60.71	-13.00	47.71	PASS
167.8924	H	100	-56.81	-13.00	43.81	PASS
202.9111	H	100	-54.93	-13.00	41.93	PASS
405.4573	H	100	-58.67	-13.00	45.67	PASS
599.0305	H	100	-55.69	-13.00	42.69	PASS
915.6543	H	100	-53.17	-13.00	40.17	PASS

Temperature: 25°C

Humidity: 60%

Air Pressure 106kPa

Mode

NB-IOT Band 25

Frequency (MHz)	Antenna Polarization	RBW (kHz)	Emission level (dBm)	Limit (dBm)	Over (dB)	Verdict
80.2485	V	100	-57.29	-13.00	44.29	PASS
143.6412	V	100	-61.65	-13.00	48.65	PASS
198.6914	V	100	-60.79	-13.00	47.79	PASS
363.2602	V	100	-60.17	-13.00	47.17	PASS
516.8673	V	100	-57.32	-13.00	44.32	PASS
904.8867	V	100	-49.95	-13.00	36.95	PASS
55.0273	H	100	-65.59	-13.00	52.59	PASS
80.2	H	100	-61.27	-13.00	48.27	PASS
190.058	H	100	-53.65	-13.00	40.65	PASS
400.7525	H	100	-59.07	-13.00	46.07	PASS
602.1346	H	100	-55.20	-13.00	42.20	PASS
806.1843	H	100	-53.43	-13.00	40.43	PASS

Temperature:	25°C	Mode		NB-IOT Band 66		
Humidity:	60%					
Air Pressure	106kPa					
Frequency (MHz)	Antenna Polarization	RBW (kHz)	Emission level (dBm)	Limit (dBm)	Over (dB)	Verdict
53.5722	V	100	-57.73	-13.00	44.73	PASS
80.491	V	100	-56.95	-13.00	43.95	PASS
172.3546	V	100	-60.83	-13.00	47.83	PASS
346.2358	V	100	-60.38	-13.00	47.38	PASS
507.2639	V	100	-58.29	-13.00	45.29	PASS
911.8226	V	100	-46.53	-13.00	33.53	PASS
55.9488	H	100	-65.34	-13.00	52.34	PASS
79.9575	H	100	-61.03	-13.00	48.03	PASS
181.9581	H	100	-55.88	-13.00	42.88	PASS
193.1137	H	100	-53.41	-13.00	40.41	PASS
611.6896	H	100	-55.05	-13.00	42.05	PASS
904.6442	H	100	-45.57	-13.00	32.57	PASS

Temperature: 25°C		Mode		NB-IOT Band 71		
Humidity: 60%						
Air Pressure 106kPa						
Frequency (MHz)	Antenna Polarization	RBW (kHz)	Emission level (dBm)	Limit (dBm)	Over (dB)	Verdict

52.8446	V	100	-57.55	-13.00	44.55	PASS
80.976	V	100	-56.30	-13.00	43.30	PASS
173.6157	V	100	-60.75	-13.00	47.75	PASS
351.4256	V	100	-59.88	-13.00	46.88	PASS
667.2734	V	100	-54.72	-13.00	41.72	PASS
887.8624	V	100	-51.94	-13.00	38.94	PASS
54.9787	H	100	-65.26	-13.00	52.26	PASS
80.1515	H	100	-60.80	-13.00	47.80	PASS
189.379	H	100	-52.99	-13.00	39.99	PASS
408.1249	H	100	-59.06	-13.00	46.06	PASS
606.9363	H	100	-54.36	-13.00	41.36	PASS
780.8175	H	100	-53.56	-13.00	40.56	PASS

Temperature:	25℃	Mode		NB-IOT Band 85		
Humidity:	60%					
Air Pressure	106kPa					
Frequency (MHz)	Antenna Polarization	RBW (kHz)	Emission level (dBm)	Limit (dBm)	Over (dB)	Verdict
30.194	V	100	-57.09	-13.00	44.09	PASS
52.6506	V	100	-56.87	-13.00	43.87	PASS
80.2485	V	100	-56.90	-13.00	43.90	PASS
185.5958	V	100	-60.25	-13.00	47.25	PASS
502.9956	V	100	-58.03	-13.00	45.03	PASS
912.5501	V	100	-43.68	-13.00	30.68	PASS
54.9302	H	100	-65.58	-13.00	52.58	PASS
81.5581	H	100	-61.24	-13.00	48.24	PASS
160.229	H	100	-56.92	-13.00	43.92	PASS
194.4717	H	100	-53.01	-13.00	40.01	PASS
608.3914	H	100	-55.00	-13.00	42.00	PASS
778.8289	H	100	-53.34	-13.00	40.34	PASS

Note:(1) Emission Level= Reading Level+ Correct Factor +Cable Loss.

(2) Correct Factor= Ant_F + Cab_L - Preamp.

(3) The reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Spurious Emission Above 1GHz (1GHz to 10th harmonics)

Temperature: 25℃		Mode		LTE Band 2		
Humidity: 60%						
Air Pressure 106kPa						
Frequency (MHz)	Antenna Polarization	RBW (kHz)	Emission level (dBm)	Limit (dBm)	Over (dB)	Verdict
8725.145	V	1000	-31.37	-13.00	18.37	PASS
10042.40	V	1000	-28.84	-13.00	15.84	PASS
10540.50	V	1000	-28.79	-13.00	15.79	PASS
11446.68	V	1000	-28.38	-13.00	15.38	PASS
14597.31	V	1000	-22.00	-13.00	9.00	PASS
17993.99	V	1000	-18.17	-13.00	5.17	PASS
8788.157	H	1000	-31.48	-13.00	18.48	PASS
10171.43	H	1000	-29.48	-13.00	16.48	PASS
11494.69	H	1000	-27.99	-13.00	14.99	PASS
13229.04	H	1000	-26.69	-13.00	13.69	PASS
14594.31	H	1000	-22.77	-13.00	9.77	PASS
17987.99	H	1000	-17.78	-13.00	4.78	PASS

Temperature: 25℃		Mode		LTE Band 4		
Humidity: 60%						
Air Pressure 106kPa						
Frequency (MHz)	Antenna Polarization	RBW (kHz)	Emission level (dBm)	Limit (dBm)	Over (dB)	Verdict
6498.699	V	1000	-37.67	-13.00	24.67	PASS
9238.247	V	1000	-30.31	-13.00	17.31	PASS
10498.49	V	1000	-28.86	-13.00	15.86	PASS
12376.87	V	1000	-28.03	-13.00	15.03	PASS
14636.32	V	1000	-21.75	-13.00	8.75	PASS
18000	V	1000	-18.17	-13.00	5.17	PASS
7485.897	H	1000	-35.72	-13.00	22.72	PASS
8698.139	H	1000	-30.01	-13.00	17.01	PASS
10480.49	H	1000	-29.76	-13.00	16.76	PASS
13205.04	H	1000	-26.50	-13.00	13.50	PASS
14603.32	H	1000	-21.68	-13.00	8.68	PASS
17984.99	H	1000	-17.86	-13.00	4.86	PASS

Temperature: 25℃		Mode		LTE Band 5		
Humidity: 60%						
Air Pressure 106kPa						
Frequency (MHz)	Antenna Polarization	RBW (kHz)	Emission level (dBm)	Limit (dBm)	Over (dB)	Verdict
8686.137	V	1000	-31.31	-13.00	18.31	PASS
10291.45	V	1000	-29.69	-13.00	16.69	PASS
11488.69	V	1000	-28.37	-13.00	15.37	PASS
13196.03	V	1000	-26.23	-13.00	13.23	PASS
14603.32	V	1000	-21.36	-13.00	8.36	PASS
18000	V	1000	-17.17	-13.00	4.17	PASS
7227.845	H	1000	-36.53	-13.00	23.53	PASS

8761.152	H	1000	-30.74	-13.00	17.74	PASS
10219.44	H	1000	-28.89	-13.00	15.89	PASS
11473.69	H	1000	-28.24	-13.00	15.24	PASS
14624.32	H	1000	-22.77	-13.00	9.77	PASS
17966.99	H	1000	-18.47	-13.00	5.47	PASS

Temperature: 25°C

Humidity: 60%

Air Pressure 106kPa

Mode

LTE Band 12

Frequency (MHz)	Antenna Polarization	RBW (kHz)	Emission level (dBm)	Limit (dBm)	Over (dB)	Verdict
4923.384	V	1000	-41.33	-13.00	28.33	PASS
6504.700	V	1000	-37.76	-13.00	24.76	PASS
9295.259	V	1000	-30.35	-13.00	17.35	PASS
11509.70	V	1000	-27.56	-13.00	14.56	PASS
14678.33	V	1000	-22.23	-13.00	9.23	PASS
17993.99	V	1000	-17.91	-13.00	4.91	PASS
2516.303	H	1000	-42.12	-13.00	29.12	PASS
6495.699	H	1000	-39.15	-13.00	26.15	PASS
8674.134	H	1000	-30.98	-13.00	17.98	PASS
11494.69	H	1000	-28.31	-13.00	15.31	PASS
14603.32	H	1000	-21.84	-13.00	8.84	PASS
18000	H	1000	-18.13	-13.00	5.13	PASS

Temperature:	25°C	Mode		LTE Band 13		
Humidity:	60%					
Air Pressure	106kPa					
Frequency (MHz)	Antenna Polarization	RBW (kHz)	Emission level (dBm)	Limit (dBm)	Over (dB)	Verdict
6969.794	V	1000	-37.69	-13.00	24.69	PASS
8101.020	V	1000	-34.79	-13.00	21.79	PASS
9292.258	V	1000	-30.20	-13.00	17.20	PASS
11476.69	V	1000	-28.40	-13.00	15.40	PASS
14600.32	V	1000	-21.72	-13.00	8.72	PASS
17984.99	V	1000	-18.57	-13.00	5.57	PASS
7383.876	H	1000	-35.69	-13.00	22.69	PASS
8692.138	H	1000	-31.56	-13.00	18.56	PASS
10057.41	H	1000	-30.08	-13.00	17.08	PASS
11500.70	H	1000	-27.64	-13.00	14.64	PASS
14597.31	H	1000	-21.82	-13.00	8.82	PASS
17987.99	H	1000	-17.78	-13.00	4.78	PASS

Temperature:	25°C	Mode		LTE Band 25		
Humidity:	60%					
Air Pressure	106kPa					
Frequency (MHz)	Antenna Polarization	RBW (kHz)	Emission level (dBm)	Limit (dBm)	Over (dB)	Verdict
4923.384	V	1000	-41.05	-13.00	28.05	PASS
7287.857	V	1000	-36.57	-13.00	23.57	PASS
8932.186	V	1000	-30.65	-13.00	17.65	PASS

11494.69	V	1000	-26.73	-13.00	13.73	PASS
14594.31	V	1000	-22.52	-13.00	9.52	PASS
18000	V	1000	-18.08	-13.00	5.08	PASS
8014.002	H	1000	-35.44	-13.00	22.44	PASS
10084.41	H	1000	-29.72	-13.00	16.72	PASS
11554.71	H	1000	-28.78	-13.00	15.78	PASS
13202.04	H	1000	-26.55	-13.00	13.55	PASS
14594.31	H	1000	-21.96	-13.00	8.96	PASS
17966.99	H	1000	-18.20	-13.00	5.20	PASS

Temperature:	25°C	Mode		LTE Band 26		
Humidity:	60%					
Air Pressure	106kPa					
Frequency (MHz)	Antenna Polarization	RBW (kHz)	Emission level (dBm)	Limit (dBm)	Over (dB)	Verdict
7497.899	V	1000	-35.90	-13.00	22.90	PASS
8599.119	V	1000	-31.20	-13.00	18.20	PASS
10138.42	V	1000	-29.35	-13.00	16.35	PASS
11491.69	V	1000	-27.99	-13.00	14.99	PASS
14600.32	V	1000	-20.81	-13.00	7.81	PASS
17975.99	V	1000	-18.20	-13.00	5.20	PASS
8071.014	H	1000	-35.18	-13.00	22.18	PASS
9667.333	H	1000	-30.87	-13.00	17.87	PASS
11491.69	H	1000	-28.24	-13.00	15.24	PASS
13187.03	H	1000	-25.69	-13.00	12.69	PASS
14606.32	H	1000	-21.89	-13.00	8.89	PASS
17957.99	H	1000	-18.26	-13.00	5.26	PASS

Temperature:	25°C	Mode		LTE Band 66		
Humidity:	60%					
Air Pressure	106kPa					
Frequency (MHz)	Antenna Polarization	RBW (kHz)	Emission level (dBm)	Limit (dBm)	Over (dB)	Verdict
8107.021	V	1000	-33.98	-13.00	20.98	PASS
9223.244	V	1000	-30.80	-13.00	17.80	PASS
11491.69	V	1000	-28.05	-13.00	15.05	PASS
13199.03	V	1000	-26.34	-13.00	13.34	PASS
14633.32	V	1000	-21.76	-13.00	8.76	PASS
17996.99	V	1000	-16.98	-13.00	3.98	PASS
9208.241	H	1000	-30.41	-13.00	17.41	PASS
10099.41	H	1000	-29.37	-13.00	16.37	PASS
11476.69	H	1000	-28.06	-13.00	15.06	PASS
13175.03	H	1000	-26.34	-13.00	13.34	PASS
14609.32	H	1000	-22.40	-13.00	9.40	PASS
17987.99	H	1000	-17.55	-13.00	4.55	PASS

Temperature:	25°C	Mode		LTE Band 85		
Humidity:	60%					
Air Pressure	106kPa					
Frequency (MHz)	Antenna Polarization	RBW (kHz)	Emission level (dBm)	Limit (dBm)	Over (dB)	Verdict
6501.700	V	1000	-38.55	-13.00	25.55	PASS
7449.89	V	1000	-36.56	-13.00	23.56	PASS
8785.157	V	1000	-31.06	-13.00	18.06	PASS
11500.70	V	1000	-26.56	-13.00	13.56	PASS
14588.31	V	1000	-22.34	-13.00	9.34	PASS
17981.99	V	1000	-17.99	-13.00	4.99	PASS
5769.553	H	1000	-36.49	-13.00	23.49	PASS
8473.094	H	1000	-34.36	-13.00	21.36	PASS
10060.41	H	1000	-29.30	-13.00	16.30	PASS
11512.70	H	1000	-28.18	-13.00	15.18	PASS
14600.32	H	1000	-22.85	-13.00	9.85	PASS
17966.99	H	1000	-18.45	-13.00	5.45	PASS

Temperature:	25°C	Mode		NB-IOT Band 2		
Humidity:	60%					
Air Pressure	106kPa					
Frequency (MHz)	Antenna Polarization	RBW (kHz)	Emission level (dBm)	Limit (dBm)	Over (dB)	Verdict
7443.888	V	1000	-36.46	-13.00	23.46	PASS
8656.131	V	1000	-31.06	-13.00	18.06	PASS
10345.46	V	1000	-29.03	-13.00	16.03	PASS
11446.68	V	1000	-28.04	-13.00	15.04	PASS
14591.31	V	1000	-21.67	-13.00	8.67	PASS
17981.99	V	1000	-18.26	-13.00	5.26	PASS
7479.896	H	1000	-35.72	-13.00	22.72	PASS
10177.43	H	1000	-30.19	-13.00	17.19	PASS
11509.70	H	1000	-27.72	-13.00	14.72	PASS
13142.02	H	1000	-26.46	-13.00	13.46	PASS
14606.32	H	1000	-20.28	-13.00	7.28	PASS
17981.99	H	1000	-18.42	-13.00	5.42	PASS

Temperature:	25℃	Mode		NB-IOT Band 4		
Humidity:	60%					
Air Pressure	106kPa					
Frequency (MHz)	Antenna Polarization	RBW (kHz)	Emission level (dBm)	Limit (dBm)	Over (dB)	Verdict
7266.853	V	1000	-36.61	-13.00	23.61	PASS
8659.131	V	1000	-31.43	-13.00	18.43	PASS
10054.41	V	1000	-29.95	-13.00	16.95	PASS
11515.70	V	1000	-28.45	-13.00	15.45	PASS
14630.32	V	1000	-22.07	-13.00	9.07	PASS
17969.99	V	1000	-17.66	-13.00	4.66	PASS
8719.143	H	1000	-31.23	-13.00	18.23	PASS
10237.44	H	1000	-29.55	-13.00	16.55	PASS
11494.69	H	1000	-28.28	-13.00	15.28	PASS
13196.03	H	1000	-27.12	-13.00	14.12	PASS
14615.32	H	1000	-22.30	-13.00	9.30	PASS
17978.99	H	1000	-18.09	-13.00	5.09	PASS

Temperature:	25℃	Mode		NB-IOT Band 5		
Humidity:	60%					
Air Pressure	106kPa					
Frequency (MHz)	Antenna Polarization	RBW (kHz)	Emission level (dBm)	Limit (dBm)	Over (dB)	Verdict
7449.89	V	1000	-36.67	-13.00	23.67	PASS
8698.139	V	1000	-30.07	-13.00	17.07	PASS
10078.41	V	1000	-29.84	-13.00	16.84	PASS
11512.70	V	1000	-28.10	-13.00	15.10	PASS
14603.32	V	1000	-21.95	-13.00	8.95	PASS
17987.99	V	1000	-17.43	-13.00	4.43	PASS
8089.017	H	1000	-34.79	-13.00	21.79	PASS
9241.248	H	1000	-30.71	-13.00	17.71	PASS
10741.54	H	1000	-29.22	-13.00	16.22	PASS
11503.70	H	1000	-28.41	-13.00	15.41	PASS
14615.32	H	1000	-22.11	-13.00	9.11	PASS
17945.98	H	1000	-17.23	-13.00	4.23	PASS

Temperature:	25℃	Mode		NB-IOT Band 12		
Humidity:	60%					
Air Pressure	106kPa					
Frequency (MHz)	Antenna Polarization	RBW (kHz)	Emission level (dBm)	Limit (dBm)	Over (dB)	Verdict
2525.505	V	1000	-45.64	-13.00	32.64	PASS
6498.699	V	1000	-38.01	-13.00	25.01	PASS
9253.250	V	1000	-30.43	-13.00	17.43	PASS
11473.69	V	1000	-28.11	-13.00	15.11	PASS
14621.32	V	1000	-21.79	-13.00	8.79	PASS
17978.99	V	1000	-18.66	-13.00	5.66	PASS
2637.127	H	1000	-44.45	-13.00	31.45	PASS

5769.553	H	1000	-37.88	-13.00	24.88	PASS
9229.245	H	1000	-30.50	-13.00	17.50	PASS
11494.69	H	1000	-28.70	-13.00	15.70	PASS
14639.32	H	1000	-22.45	-13.00	9.45	PASS
17978.99	H	1000	-18.68	-13.00	5.68	PASS

Temperature:	25°C	Mode		NB-IOT Band 13		
Humidity:	60%					
Air Pressure	106kPa					
Frequency (MHz)	Antenna Polarization	RBW (kHz)	Emission level (dBm)	Limit (dBm)	Over (dB)	Verdict
1063.612	V	1000	-46.70	-13.00	33.70	PASS
2261.652	V	1000	-45.57	-13.00	32.57	PASS
4923.384	V	1000	-41.67	-13.00	28.67	PASS
9298.259	V	1000	-30.02	-13.00	17.02	PASS
14600.32	V	1000	-21.60	-13.00	8.60	PASS
17996.99	V	1000	-17.44	-13.00	4.44	PASS
2633.526	H	1000	-44.74	-13.00	31.74	PASS
6453.690	H	1000	-38.98	-13.00	25.98	PASS
8827.165	H	1000	-30.63	-13.00	17.63	PASS
11509.70	H	1000	-28.39	-13.00	15.39	PASS
14603.32	H	1000	-22.48	-13.00	9.48	PASS
17981.99	H	1000	-18.10	-13.00	5.10	PASS

Temperature:	25°C	Mode		NB-IOT Band 25		
Humidity:	60%					
Air Pressure	106kPa					
Frequency (MHz)	Antenna Polarization	RBW (kHz)	Emission level (dBm)	Limit (dBm)	Over (dB)	Verdict
3801.160	V	1000	-46.73	-13.00	33.73	PASS
6480.696	V	1000	-38.84	-13.00	25.84	PASS
9280.256	V	1000	-30.65	-13.00	17.65	PASS
11491.69	V	1000	-28.36	-13.00	15.36	PASS
14615.32	V	1000	-21.45	-13.00	8.45	PASS
17996.99	V	1000	-17.88	-13.00	4.88	PASS
2631.326	H	1000	-44.70	-13.00	31.70	PASS
6504.700	H	1000	-38.35	-13.00	25.35	PASS
9331.266	H	1000	-30.89	-13.00	17.89	PASS
11548.70	H	1000	-28.24	-13.00	15.24	PASS
14597.31	H	1000	-22.06	-13.00	9.06	PASS
17990.99	H	1000	-18.45	-13.00	5.45	PASS

Temperature:	25°C	Mode		NB-IOT Band 66		
Humidity:	60%					
Air Pressure	106kPa					
Frequency (MHz)	Antenna Polarization	RBW (kHz)	Emission level (dBm)	Limit (dBm)	Over (dB)	Verdict
2994.799	V	1000	-45.22	-13.00	32.22	PASS
6387.677	V	1000	-38.18	-13.00	25.18	PASS
9259.251	V	1000	-30.44	-13.00	17.44	PASS

11482.69	V	1000	-27.97	-13.00	14.97	PASS
14609.32	V	1000	-21.82	-13.00	8.82	PASS
17984.99	V	1000	-18.22	-13.00	5.22	PASS
2654.730	H	1000	-44.23	-13.00	31.23	PASS
6492.698	H	1000	-38.92	-13.00	25.92	PASS
9304.260	H	1000	-30.45	-13.00	17.45	PASS
11449.68	H	1000	-28.52	-13.00	15.52	PASS
14669.33	H	1000	-22.18	-13.00	9.18	PASS
17990.99	H	1000	-17.74	-13.00	4.74	PASS

Temperature: 25°C		Mode		NB-IOT Band 71		
Humidity: 60%						
Air Pressure 106kPa						
Frequency (MHz)	Antenna Polarization	RBW (kHz)	Emission level (dBm)	Limit (dBm)	Over (dB)	Verdict
2263.652	V	1000	-45.51	-13.00	32.51	PASS
6474.694	V	1000	-38.38	-13.00	25.38	PASS
8941.188	V	1000	-30.55	-13.00	17.55	PASS
11500.70	V	1000	-28.17	-13.00	15.17	PASS
14609.32	V	1000	-21.98	-13.00	8.98	PASS
17990.99	V	1000	-17.78	-13.00	4.78	PASS
3411.082	H	1000	-45.91	-13.00	32.91	PASS
6489.697	H	1000	-38.80	-13.00	25.80	PASS
9325.265	H	1000	-30.92	-13.00	17.92	PASS
11488.69	H	1000	-29.03	-13.00	16.03	PASS
14579.31	H	1000	-22.77	-13.00	9.77	PASS
18000	H	1000	-18.38	-13.00	5.38	PASS

Temperature: 25°C		Mode		NB-IOT Band 85		
Humidity: 60%						
Air Pressure 106kPa						
Frequency (MHz)	Antenna Polarization	RBW (kHz)	Emission level (dBm)	Limit (dBm)	Over (dB)	Verdict
2195.039	V	1000	-44.99	-13.00	31.99	PASS
6465.693	V	1000	-38.83	-13.00	25.83	PASS
9298.259	V	1000	-30.72	-13.00	17.72	PASS
11455.69	V	1000	-28.45	-13.00	15.45	PASS
14681.33	V	1000	-22.09	-13.00	9.09	PASS
18000	V	1000	-18.28	-13.00	5.28	PASS
3810.162	H	1000	-45.44	-13.00	32.44	PASS
6462.692	H	1000	-38.83	-13.00	25.83	PASS
9298.259	H	1000	-31.06	-13.00	18.06	PASS
11506.70	H	1000	-28.08	-13.00	15.08	PASS
14615.32	H	1000	-21.43	-13.00	8.43	PASS
17975.99	H	1000	-18.47	-13.00	5.47	PASS

Note: (1) Emission Level= Reading Level+ Correct Factor +Cable Loss.

(2) Correct Factor= Ant_F + Cab_L - Preamp.

(3) The reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Detail of factor for radiated emission:

Frequency(MHz)	Ant F(dB)	Cab L(dB)	Preamp(dB)	Correct Factor(dB)
0.009	20.6	0.03	\	20.63
0.15	20.7	0.1	\	20.8
1	20.9	0.15	\	21.05
10	20.1	0.28	\	20.38
30	18.8	0.45	\	19.25
30	11.7	0.62	27.9	-15.58
100	12.5	1.02	27.8	-14.28
300	12.9	1.91	27.5	-12.69
600	19.2	2.92	27	-4.88
800	21.1	3.54	26.6	-1.96
1000	22.3	4.17	26.2	0.27
1000	25.6	1.76	41.4	-14.04
3000	28.9	3.27	43.2	-11.03
5000	31.1	4.2	44.6	-9.3
8000	36.2	5.95	44.7	-2.55
10000	38.4	6.3	43.9	0.8
12000	38.5	7.14	42.3	3.34
15000	40.2	8.15	41.4	6.95
18000	45.4	9.02	41.3	13.12
18000	37.9	1.81	47.9	-8.19
21000	37.9	1.95	48.7	-8.85
25000	39.3	2.01	42.8	-1.49
28000	39.6	2.16	46.0	-4.24
31000	41.2	2.24	44.5	-1.06
34000	41.5	2.29	46.6	-2.81
37000	43.8	2.30	46.4	-0.3
40000	43.2	2.50	42.2	3.5

--- End of Report ---