CTC Laboratories, Inc.

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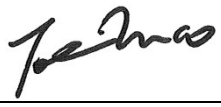
TEST REPORT

Report No. ·····:	**CTC20212153E09**
FCC ID·····:	**2AC88-GLMU21A01**
Applicant·····:	**HONGKONG UCLOUDLINK NETWORK TECHNOLOGY LIMITED**
Address·····:	Suite 603, 6/F, Laws Commercial Plaza, 788 Cheung Sha Wan Road, Kowloon, Hong Kong
Manufacturer·····:	HONGKONG UCLOUDLINK NETWORK TECHNOLOGY LIMITED
Address·····:	Suite 603, 6/F, Laws Commercial Plaza, 788 Cheung Sha Wan Road, Kowloon, Hong Kong
Product Name·····:	**5G Wireless Data Terminal**
Trade Mark·····:	GlocalMe
Model/Type reference·····:	GLMU21A01
Standard·····:	**CFR47 PART 22H, 24E, 27**
Date of receipt of test sample.:	Jan. 25, 2022
Date of testing……..:	Jan. 26, 2022 ~ Apr. 12, 2022
Date of issue……....:	Apr. 13, 2022
Result……:	**PASS**

Compiled by: (Printed name+signature)	Terry Su	
Supervised by: (Printed name+signature)	Miller Ma	
Approved by: (Printed name+signature)	Totti Zhao	

Testing Laboratory Name…:	**CTC Laboratories, Inc.**
Address……:	1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Shenzhen, Guangdong, China

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1. SUMMARY

1.1. Test Standards

FCC Rules Part 2: FREQUENCY ALLOCA-TIONS AND RADIO TREATY MAT-TERS; GENERAL RULES AND REG-ULATIONS
FCC Rules Part 22: PRIVATE LAND MOBILE RADIO SERVICES.
FCC Part 22 Subpart H: Cellular Radiotelephone Service.
FCC Rules Part 24: PUBLIC MOBILE SERVICES
FCC Rules Part 27: MISCELLANEOUS WIRDELESS COMMUNICATIONS SERVICES
ANSI C63.26: 2015: American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services
KDB 971168 D01 Power Meas License Digital Systems v03: MEASUREMENT GUIDANCE FOR CERTIFICATION OF LICENSED DIGITAL TRANSMITTERS

1.2. Report version

Revised No.	Date of issue	Description
01	Apr. 13, 2022	Original

1.3. Test Description

Test Item	Section in CFR 47	Result	Test Engineer
Effective (Isotropic) Radiated Power Output	Part 2.1046 Part 22.913(a) Part 24.232(c) Part 27.50	Pass	Zaki zhang
Peak-to-Average Ratio	Part 24.232 Part 27.50	Pass	Zaki zhang
99% Occupied Bandwidth & 26 dB Bandwidth	Part 2.1049 Part 22.917(b) Part 24.238(b) Part 27.53	Pass	Zaki zhang
Band Edge	Part 2.1051 Part 22.917 Part 24.238 Part 27.53	Pass	Zaki zhang
Conducted Spurious Emissions	Part 2.1051 Part 22.917 Part 24.238 Part 27.53	Pass	Zaki zhang
Frequency stability VS Temperature	Part 2.1055(a)(1)(b) Part 22.355 Part 24.235 Part 27.54	Pass	Zaki zhang
Frequency stability VS Voltage	Part 2.1055(d)(1)(2) Part 22.355 Part 24.235 Part 27.54	Pass	Zaki zhang
ERP and EIRP	Part 22.913(a) Part 24.232(b) Part 27.50	Pass	Zaki zhang
Radiated Spurious Emissions	Part 2.1053 Part 22.917 Part 24.238 Part 27.53	Pass	Zaki zhang

Note: The measurement uncertainty is not included in the test result.

1.4. Test Facility

Address of the report laboratory

CTC Laboratories, Inc.

Add: 1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Shenzhen, Guangdong, China

Laboratory accreditation

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

CNAS-Lab Code: L5365

CTC Laboratories, Inc. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation .Criteria for Testing and Calibration Laboratories (identical to ISO/IEC17025:2017 General Requirements) t he Competence of Testing and Calibration Laboratories.

A2LA-Lab Cert. No.: 4340.01

CTC Laboratories, Inc. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in th e identified field of testing.

Industry Canada (Registration No.: 9783A, CAB Identifier: CN0029)

CTC Laboratories, Inc. EMC Laboratory has been registered by Certification and Engineer Bureau of Industry Canada for the performance of with Registration NO.: 9783A on Jan, 2016.

FCC (Registration No.: 951311, Designation Number CN1208)

CTC Laboratories, Inc. EMC Laboratory has been registered and fully described in a report filed with the (FCC)Federal Communications Commission. The acceptance letter from the FCC is maintained inour fi les. Registration 951311, Aug 26, 2017.

1.5. Measurement Uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to TR-100028-01" Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics; Part 1" and TR-100028-02 "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics; Part 2 " and is documented in the CTC Laboratories, Inc. quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for CTC Laboratories, Inc. is reported:

Test Items	Measurement Uncertainty	Notes
Frequency stability	25 Hz	(1)
Transmitter power conducted	0.57 dB	(1)
Transmitter power Radiated	2.20 dB	(1)
Conducted spurious emission 9KHz-12.75 GHz	1.60 dB	(1)
Conducted Emission 9KHz-30MHz	3.39 dB	(1)
Radiated Emission 30~1000MHz	4.24 dB	(1)
Radiated Emission 1~18GHz	5.16 dB	(1)
Radiated Emission 18-40GHz	5.54 dB	(1)
Occupied Bandwidth	---------	(1)
Emission Mask	---------	(1)
Modulation Characteristic	---------	(1)
Transmitter Frequency Behavior	---------	(1)

Note: (1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=1.96.

1.6. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Normal Temperature:	20°C-25°C
Relative Humidity:	50 %-55 %
Air Pressure:	101kPa

2. GENERAL INFORMATION

2.1. Client Information

Applicant:	HONGKONG UCLOUDLINK NETWORK TECHNOLOGY LIMITED
Address:	Suite 603, 6/F, Laws Commercial Plaza, 788 Cheung Sha Wan Road, Kowloon, Hong Kong
Manufacturer:	HONGKONG UCLOUDLINK NETWORK TECHNOLOGY LIMITED
Address:	Suite 603, 6/F, Laws Commercial Plaza, 788 Cheung Sha Wan Road, Kowloon, Hong Kong
Factory:	Shenzhen uCloudlink Network Technology Co., Ltd.
Address:	3rd Floor, A part of Building 1, Shenzhen Software Industry Base, Nanshan District Xuefu Road, 518057 Shenzhen City, Guangdong, China

2.2. General Description of EUT

Product Name:	5G Wireless Data Terminal		
Trade Mark:	GlocalMe		
Model/Type reference:	GLMU21A01		
Power supply:	DC 9V 2A		
Hardware version:	U50_M_PCB_VB		
Software version:	U50_TVS1.0.100.004.211210		
NR			
Operation Band:	n2: UL: 1850MHz~1910MHz, DL: 1930MHz~1990MHz n5: UL: 824MHz~849MHz, DL: 869MHz~894MHz n12: UL: 699MHz~716MHz, DL: 729MHz~746MHz n25: UL: 1850MHz~1915MHz, DL: 1930MHz~1995MHz n41: UL: 2498.5MHz~2687.5MHz, DL: 2498.5MHz~2687.5MHz n66: UL: 1710MHz~1780MHz, DL: 2110MHz~2200MHz n77: UL & DL: 3700~3980MHz;		
Support Type:	☒SA ☒NSA		
Support bandwidth:	SA	n2(For SCS=15KHz)	☒5MHz ☒10MHz
			☒15MHz☒20MHz
		n5(For SCS=15KHz)	☒5MHz ☒10MHz
			☒15MHz☒20MHz
		n12(For SCS=15KHz)	☒5MHz ☒10MHz
			☒15MHz
		n25(For SCS=15KHz)	☒5MHz ☒10MHz
			☒15MHz☒20MHz
		n41(For SCS=30KHz)	☒20MHz ☒40MHz
			☒50MHz☒60MHz
			☒80MHz☒90MHz
			☒100MHz
		n66(For SCS=15KHz)	☒5MHz ☒10MHz
			☒15MHz☒20MHz
		n77(For SCS=30KHz)	☒20MHz ☒40MHz
			☐50MHz☒60MHz
			☒80MHz☒100MHz
	NSA(ENDC)	B2+n77	☒20MHz ☒40MHz

			☐50MHz☒60MHz
			☒80MHz☒100MHz
Modulation Type:	π/2-BPSK, QPSK, 16QAM, 64QAM, 256QAM		
Release Version:	Release 15		
Antenna Type:	FPC Antenna		
Antenna Gain:	n2: 0.34dBi Max n5: -0.94dBi Max n12: -4.9dBi Max n25: 0.34dBi Max n41:-0.46 dBi Max n66:-1.80 dBi Max n77:1.88 dBi Max		

RB allocation:

MPR is permanently implemented for this device by the manufacturer. The specific manufacturer target MPR is indicated alongside the RF results. MPR is enabled for this device, according to 3GPP TS 38.521-1 Section 6.2.2 – 6.2.2.3 under Table 6.2.2.3-1.

Modulation	MPR (dB)		
	Edge RB allocations	Outer RB allocations	Inr
DFT-s-OFDM PI/2 BPSK	≤ 3.5[1]	≤ 1.2[1]	
	≤ 0.5[2]		
DFT-s-OFDM QPSK	≤ 1		
DFT-s-OFDM 16 QAM	≤ 2		
DFT-s-OFDM 64 QAM	≤ 2.5		
DFT-s-OFDM 256 QAM	≤ 4.5		
CP-OFDM QPSK	≤ 3		
CP-OFDM 16 QAM	≤ 3		
CP-OFDM 64 QAM	≤ 3.5		
CP-OFDM 256 QAM	≤ 6.5		
NOTE 1: Applicable for UE operating in TDD mode with PI/2 BPSK modulation and support for UE capability *powerBoosting-pi2BPSK* and if the IE *powerBoos* 1 and 40 % or less slots in radio frame are used for UL transmission for ba			

2.3. Description of Test Modes and Test Frequency

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

Test Frequency:

n2			
Test channel	**Bandwidth(MHz)**	**N_{UL}**	**Frequency of Uplink (MHz)**
Low Range	5	370500	1852.50
	10	371000	1855.00
	15	371500	1857.50
	20	372000	1860.00
Mid Range	5/10/15/20	376000	1880.00
High Range	5	381500	1907.50
	10	381000	1905.00
	15	380500	1902.50
	20	380000	1900.00

n5			
Test channel	**Bandwidth(MHz)**	**N_{UL}**	**Frequency of Uplink (MHz)**
Low Range	5	165300	826.50
	10	165800	829.00
	15	166300	831.50
	20	166800	834.00
Mid Range	5/10/15/20	167300	836.50
High Range	5	169300	846.50
	10	168800	844.00
	15	168300	841.50
	20	167800	839.00

n12			
Test channel	**Bandwidth(MHz)**	**N_{UL}**	**Frequency of Uplink (MHz)**
Low Range	5	140300	701.50
	10	140800	704.00
	15	141300	706.50
Mid Range	5/10/15	141500	707.50
High Range	5	142700	713.50
	10	142200	711.00
	15	141700	708.5

n25			
Test channel	**Bandwidth(MHz)**	**N_{UL}**	**Frequency of Uplink (MHz)**
Low Range	5	370500	1852.50
	10	371000	1855.00
	15	371500	1857.50
	20	372000	1860.00
Mid Range	5/10/15/20	376500	1882.50
High Range	5	382500	1912.50
	10	382000	1910.00
	15	381500	1907.50
	20	381000	1905.00

n41			
Test channel	**Bandwidth(MHz)**	**N_{UL}**	**Frequency of Uplink (MHz)**
Low Range	20	501204	2506.02
	40	503202	2516.01
	50	504204	2521.02
	60	505200	2526.00
	80	507204	2536.02
	90	508200	2541.00
	100	509202	2546.01
Mid Range	20/40/50/60/80/90/100	518598	2592.99
High Range	20	535998	2679.99
	40	534000	2670.00
	50	532998	2664.99
	60	531996	2659.98
	80	529998	2649.99
	90	528996	2644.98
	100	528000	2640.00

n66			
Test channel	**Bandwidth(MHz)**	**N_{UL}**	**Frequency of Uplink (MHz)**
Low Range	5	342500	1712.50
	10	343000	1715.00
	15	343500	1717.50
	20	344000	1720.00
Mid Range	5/10/15/20	349000	1745.00
High Range	5	355500	1777.50
	10	355000	1765.00
	15	354500	1772.50
	20	354000	1770.00

n77			
Test channel	**Bandwidth(MHz)**	**N_{UL}**	**Frequency of Uplink (MHz)**
Low Range	20	647334	3710.01
	40	648000	3720.00
	50	648334	3725.01
	60	648668	3730.02
	80	649334	3740.01
	100	650000	3750.00
Mid Range	20/40/50/60/80/100	656000	3840.00
High Range	20	664666	3969.99
	40	664000	3960.00
	50	663666	3954.99
	60	663334	3950.01
	80	662666	3939.99
	100	662000	3930.00

2.4. Measurement Instruments List

Tonscend Test system					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	Spectrum Analyzer	KEYSIGHT	N9020A	100231	Dec. 23, 2022
2	Spectrum Analyzer	Rohde & Schwarz	FUV40-N	101331	Mar. 14, 2023
3	NR Analyzer	KEYSIGHT	E7515B	MY60101192	Dec. 23, 2022
4	MXG Vector Signal Generator	Agilent	N5182A	MY47420864	Dec. 23, 2022
5	Signal Generator	Agilent	E8257D	MY46521908	Dec. 23, 2022
6	Power Sensor	Agilent	U2021XA	MY5365004	Mar. 14, 2023
7	Power Sensor	Agilent	U2021XA	MY5365006	Mar. 14, 2023
8	Simultaneous Sampling DAQ	Agilent	U2531A	TW54493510	Mar. 14, 2023
9	Climate Chamber	TABAI	PR-4G	A8708055	Dec. 23, 2022
10	Climate Chamber	ESPEC	MT3065	/	Dec. 23, 2022
11	5G Test system	TONSCEND	V1.1	/	/

Radiated emission					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated Until
1	Trilog-Broadband Antenna	Schwarzbeck	VULB 9168	9168-759	Nov. 09, 2022
2	Horn Antenna	Schwarzbeck	BBHA 9120D	9120D-647	Dec. 23, 2022
3	Test Receiver	Keysight	N9038A	MY56400071	Dec. 23, 2022
4	Broadband Premplifier	SCHWARZBECK	BBV9743B	259	Dec. 23, 2022
5	Mirowave Broadband Amplifier	SCHWARZBECK	BBV9718C	111	Dec. 23, 2022
6	Loop Antenna	LAPLAC	RF300	9138	Dec. 23, 2022
7	Ultra-Broadband Antenna	Schwarzbeck	BBHA9170	25841	Dec. 23, 2022
8	Mirowave Broadband Amplifier	Schwarzbeck	BBV 9717	154	Dec. 23, 2022
9	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	116410	Dec. 23, 2022

Note: 1. The Cal. Interval was one year.
2. The cable loss has calculated in test result which connection between each test instruments.

3. TEST ITEM AND RESULTS

3.1. Effective (Isotropic) Radiated Power Output

LIMIT

The ERP of mobile transmitters must not exceed 7 watts for n5.

The ERP of mobile transmitters must not exceed 3 watts for n12 & n71.

The EIRP of mobile transmitters must not exceed 2 watts for n2 & n7 & n25 & n41.

The EIRP of mobile transmitters must not exceed 1 watt for n66 & n77.

TEST CONFIGURATION

- For Conducted output Power

Note: Measurement setup for testing on Antenna connector

TEST PROCEDURE

- For Conducted output Power

1. The transmitter output port was connected to base station.
2. The RF output of EUT was connected to the power meter by RF cable and attenuator, the path loss was compensated to the results for each measurement.
3. Set EUT at maximum power through base station.
4. Select lowest, middle, and highest channels for each band and different modulation.
5. Measure the maximum PK burst power and maximum Avg. burst power.

TEST RESULTS

Please see the appendix for every tested band.

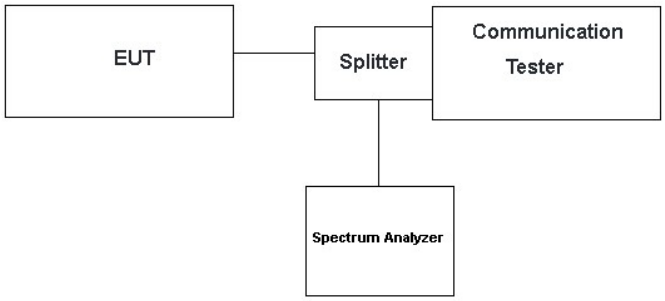
3.2. Peak-to-Average Ratio

LIMIT

The Peak-to-Average Ratio (PAR) of the transmission may not exceed 13dB.

TEST CONFIGURATION

- For Peak-to-Average Ratio



TEST PROCEDURE

- For Peak-to-Average Ratio

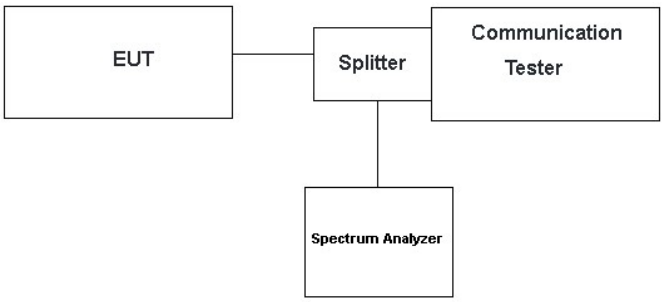
1. The testing follows FCC KDB 971168 v02r02 Section 5.7.1.
2. The EUT was connected to spectrum and communication tester via a splitter
3. Set the CCDF (Complementary Cumulative Distribution Function) option in spectrum analyzer.
4. The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1 %.
6. Record the deviation as Peak to Average Ratio.

TEST RESULTS

Please see the appendix for every tested band.

3.3. Occupy Bandwidth

TEST CONFIGURATION



TEST PROCEDURE

1. The EUT's output RF connector was connected with a short cable to the spectrum analyzer
2. RBW was set to about 1% of emission BW, VBW≥3 times RBW.
3. -26dBc display line was placed on the screen (or 99% bandwidth), the occupied bandwidth is the delta frequency between the two points where the display line intersects the signal trace.

TEST RESULTS

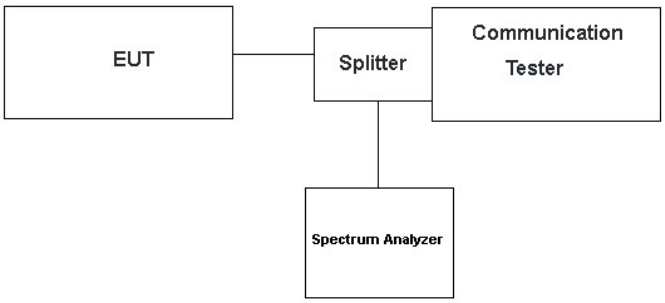
Please see the appendix for every tested band.

3.4. Out of band emission at antenna terminals

LIMIT

§ 22.917, §24.238, §27.53 (c), (g), (h), §90.691, §90.543
The minimum permissible attenuation level of any spurious emissions is 43 + 10 log (P) dB where transmitting power (P) in Watts.
§ 27.53 (a)
The minimum permissible attenuation level of any spurious emissions is 70 + 10 log (P) dB where transmitting power (P) in Watts.
§ 27.53 (m)
The minimum permissible attenuation level of any spurious emissions is 55 + 10 log (P) dB where transmitting power (P) in Watts.
§ 96.41
(e) 3.5 GHz Emissions and Interference Limits—
(2) Additional protection levels. Notwithstanding paragraph (d)(1) of this section, the conducted power of any emissions below 3530 MHz or above 3720 MHz shall not exceed −40dBm/MHz.

TEST CONFIGURATION



TEST PROCEDURE

1. The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation.
2. The resolution bandwidth of the spectrum analyzer was set at 1MHz; sufficient scans were taken to show the out of band Emissions if any up to 10th harmonic.
3. For the out of band: Set the RBW = 1MHz VBW≥3 times RBW, Start=30MHz, Stop= 10th harmonic.

TEST RESULTS

Please see the appendix for every tested band.

3.5. Band Edge compliance

LIMIT

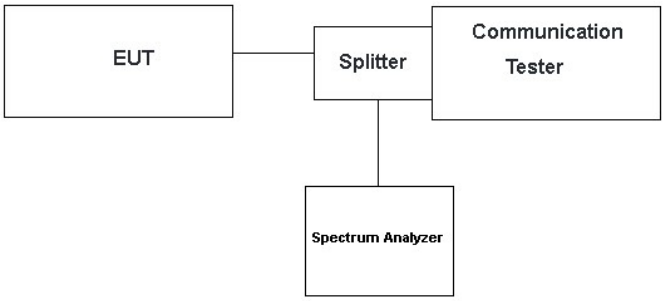
22.917(a), 24.238 (a), 27.53 (g) (h) (l)(2)

The FCC limit is 43 + 10log10(P[Watts]) dB below the transmitter power P(Watts) in a 1 MHz bandwidth. However, in the 1MHz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

27.53(m)(4)

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 that 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.

TEST CONFIGURATION



TEST PROCEDURE

1. The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation.
2. RBW was set to about 1% of emission BW, VBW≥3 times RBW.

TEST RESULTS

Please see the appendix for every tested band.

3.6. Radiated Spurious Emission

LIMIT

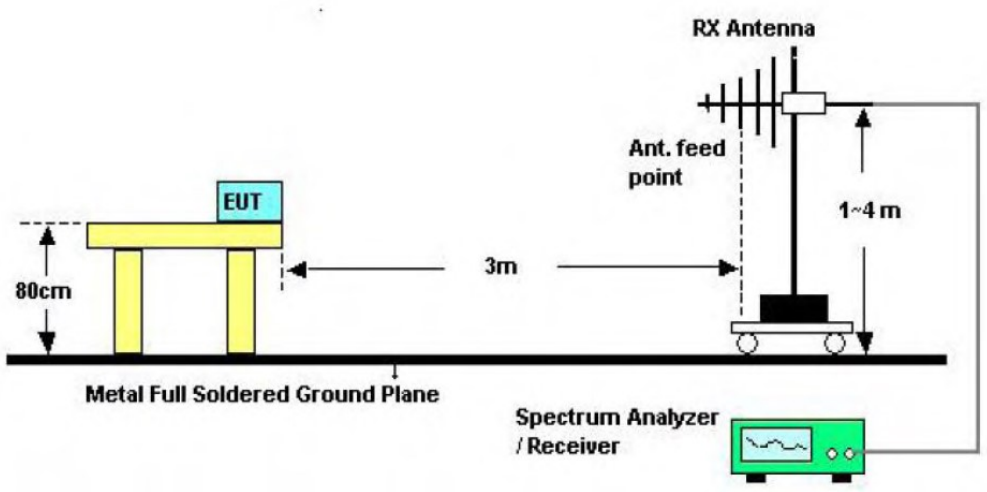
Out of band emissions: The powerof any emission outside of theauthorized operating frequency ranges must be attenuated below the transmitting power (P) by a factorof at least 43 + 10 log(P) dB. The emission limit equal to -13dBm.

For n7, n41, the powerof any emission outside of theauthorized operating frequency ranges must be attenuated below the transmitting power (P) by a factorof at least 55 + 10 log(P) dB. The emission limit equal to -25dBm.

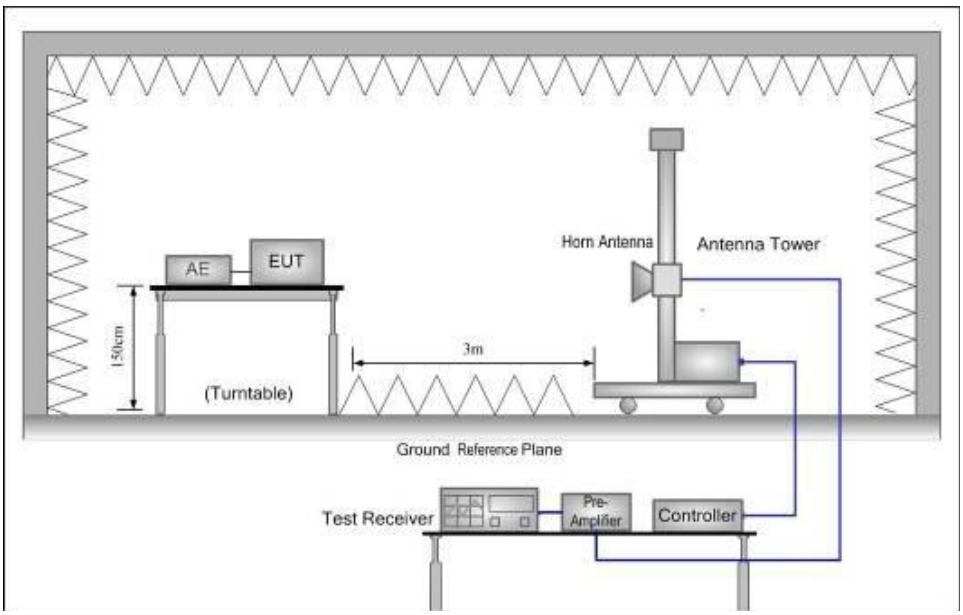
E (dBμV/m) = EIRP (dBm) - 20 log D + 104.8; where D is the measurement distance in meters. The emission limit equal to 82.3dBμV/m or 70.3dBμV/m.

TEST CONFIGURATION

For the actual test configuration, please refer to the related Item – EUT Test Photos.



Below 1GHz



Above 1GHz

TEST PROCEDURE

1. EUT was placed on a 1.50 meter high non-conductive stand at a 3 meter test distance from the receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT for emission measurements. The height of receiving antenna is 1.50m. Detected emissions were maximized at each frequency by rotating the EUT through 360° and adjusting the receiving antenna polarization. The radiated emission measurements of all transmit frequencies in three channels (High, Middle, Low) were measured with peak detector.
2. A log-periodic antenna or double-ridged waveguide horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator and the level will be adjusted till the same power value on the spectrum analyzer or receiver. The level of the spurious emissions can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.
3. The EUT is then put into continuously transmitting mode at its maximum power level during the test. Set Test Receiver or Spectrum RBW=1MHz, VBW=3MHz, and the maximum value of the receiver should be recorded as (Pr).
4. The EUT shall be replaced by a substitution antenna. In the chamber, an substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power (PMea) is applied to the input of the substitution antenna, and adjusts the level of the signal generator output until the value of the receiver reach the previously recorded (Pr). The power of signal source (PMea) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.
5. An amplifier should be connected to the Signal Source output port. And the cable should be connecting between the Amplifier and the Substitution Antenna. The cable loss (Pcl) ,the Substitution Antenna Gain (Ga) and the Amplifier Gain (PAg) should be recorded after test.
6. The measurement results are obtained as described below:

7. Power(EIRP)=PMea- PAg - Pcl + Ga

We used SMF100A microwave signal generator which signal level can up to 33dBm,so we not used power Amplifier for substitution test; The measurement results are amend as described below: Power(EIRP)=PMea- Pcl + Ga

8. This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15dBi) and known input power.
   ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP = EIRP-2.15dBi.
9. Test frequency range should extend to 10th harmonic of highest fundamental frequency.

TEST RESULTS

Remark:
1. By preliminary testing and verifying three axis (X, Y and Z) position of EUT transmitted status, it was found that “Z axis” position was the worst, and test data recorded in this report.
2. We test all modulation types, all bandwidths, and record the worst case at the maximum bandwidth of each modulation.

Measured data (worst case):

n2 Radiated Spurious Emissions							
Bandwidth	Modulation	Test Channel	Spurious Emission			Limit (dBm)	Result
			Frequency	Level (dBm)	Polarization		
20MHz	QPSK	L	3720	-42.57	Vertical	-13	Pass
			5580	-48.53	Vertical		
			3720	-42.06	Horizontal		
			5580	-53.34	Horizontal		
20MHz	QPSK	M	3760	-42.53	Vertical	-13	Pass
			5640	-49.49	Vertical		
			3760	-41.73	Horizontal		
			5640	-52.52	Horizontal		
20MHz	QPSK	H	3800	-41.33	Vertical	-13	Pass
			5700	-49.00	Vertical		
			3800	-42.59	Horizontal		
			5700	-54.97	Horizontal		

Remark:

1. The emission behavior belongs to narrowband spurious emission.
2. The emission levels of below 1 GHz are very lower than the limit above10dB and not show in test report.

n5 Radiated Spurious Emissions							
Bandwidth	Modulation	Test Channel	Spurious Emission			Limit (dBm)	Result
			Frequency	Level (dBm)	Polarization		
20MHz	QPSK	L	1668	-40.16	Vertical	-13.00	Pass
			2502	-47.54	Vertical		
			1668	-40.28	Horizontal		
			2502	-53.53	Horizontal		
20MHz	QPSK	M	1673	-40.06	Vertical	-13.00	Pass
			2509.5	-49.05	Vertical		
			1673	-40.25	Horizontal		
			2509.5	-54.16	Horizontal		
20MHz	QPSK	H	1678	-40.91	Vertical	-13.00	Pass
			2517	-49.90	Vertical		
			1678	-40.90	Horizontal		
			2517	-54.93	Horizontal		

Remark:

1. The emission behavior belongs to narrowband spurious emission.
2. The emission levels of below 1 GHz are very lower than the limit above10dB and not show in test report.

n12 Radiated Spurious Emissions							
Bandwidth	Modulation	Test Channel	Spurious Emission			Limit (dBm)	Result
			Frequency	Level (dBm)	Polarization		
15MHz	QPSK	L	1413	-40.32	Vertical	-13.00	Pass
			2119.5	-48.76	Vertical		
			1413	-40.78	Horizontal		
			2119.5	-52.64	Horizontal		
15MHz	QPSK	M	1415	-41.86	Vertical	-13.00	Pass
			2122.5	-48.78	Vertical		
			1415	-41.70	Horizontal		
			2122.5	-54.28	Horizontal		
15MHz	QPSK	H	1417	-41.90	Vertical	-13.00	Pass
			2125.5	-49.74	Vertical		
			1417	-42.92	Horizontal		
			2125.5	-52.75	Horizontal		

Remark:

1. The emission behavior belongs to narrowband spurious emission.
2. The emission levels of below 1 GHz are very lower than the limit above10dB and not show in test report.

n25 Radiated Spurious Emissions							
Bandwidth	Modulation	Test Channel	Spurious Emission			Limit (dBm)	Result
			Frequency	Level (dBm)	Polarization		
20MHz	QPSK	L	3720	-40.87	Vertical	-13	Pass
			5580	-49.56	Vertical		
			3720	-40.83	Horizontal		
			5580	-54.91	Horizontal		
20MHz	QPSK	M	3765	-42.90	Vertical	-13	Pass
			5647.5	-49.80	Vertical		
			3765	-41.92	Horizontal		
			5647.5	-53.19	Horizontal		
20MHz	QPSK	H	3810	-40.13	Vertical	-13	Pass
			5715	-48.44	Vertical		
			3810	-40.95	Horizontal		
			5715	-53.37	Horizontal		

Remark:

1. The emission behavior belongs to narrowband spurious emission.
2. The emission levels of below 1 GHz are very lower than the limit above10dB and not show in test report.

n41 Radiated Spurious Emissions							
Bandwidth	Modulation	Test Channel	Spurious Emission			Limit (dBm)	Result
			Frequency	Level (dBm)	Polarization		
100MHz	QPSK	L	5092.02	-40.50	Vertical	-25	Pass
			7638.03	-47.41	Vertical		
			1635.00	-47.19	Horizontal		
			2452.50	-54.21	Horizontal		
100MHz	QPSK	M	5185.98	-41.53	Vertical	-25	Pass
			7778.97	-48.91	Vertical		
			1645.00	-41.19	Horizontal		
			2467.50	-54.62	Horizontal		
100MHz	QPSK	H	5280.00	-40.48	Vertical	-25	Pass
			7920.00	-48.33	Vertical		
			1650.00	-41.96	Horizontal		
			2475.00	-53.90	Horizontal		

Remark:

1. The emission behavior belongs to narrowband spurious emission.
2. The emission levels of below 1 GHz are very lower than the limit above10dB and not show in test report.

n66 Radiated Spurious Emissions							
Bandwidth	Modulation	Test Channel	Spurious Emission			Limit (dBm)	Result
			Frequency	Level (dBm)	Polarization		
10MHz	QPSK	L	3440.00	-41.55	Vertical	-13	Pass
			5160.00	-48.87	Vertical		
			3440.00	-47.79	Horizontal		
			5160.00	-52.50	Horizontal		
10MHz	QPSK	M	3490.00	-40.32	Vertical	-13	Pass
			5235.00	-48.52	Vertical		
			3490.00	-40.24	Horizontal		
			5235.00	-54.60	Horizontal		
10MHz	QPSK	H	3540.00	-41.87	Vertical	-13	Pass
			5310.00	-49.54	Vertical		
			3540.00	-40.77	Horizontal		
			5310.00	-52.42	Horizontal		

Remark:

1. The emission behavior belongs to narrowband spurious emission.
2. The emission levels of below 1 GHz are very lower than the limit above10dB and not show in test report.

n77 Radiated Spurious Emissions							
Bandwidth	Modulation	Test Channel	Spurious Emission			Limit (dBm)	Result
			Frequency	Level (dBm)	Polarization		
100MHz	QPSK	L	7500	-42.01	Vertical	-13.00	Pass
			11250	-48.43	Vertical		
			7500	-45.90	Horizontal		
			11250	-53.12	Horizontal		
100MHz	QPSK	M	7680	-40.20	Vertical	-13.00	Pass
			11520	-49.00	Vertical		
			7680	-41.54	Horizontal		
			11520	-54.08	Horizontal		
100MHz	QPSK	H	7860	-41.20	Vertical	-13.00	Pass
			11790	-47.59	Vertical		
			7860	-42.72	Horizontal		
			11790	-54.22	Horizontal		

Remark:

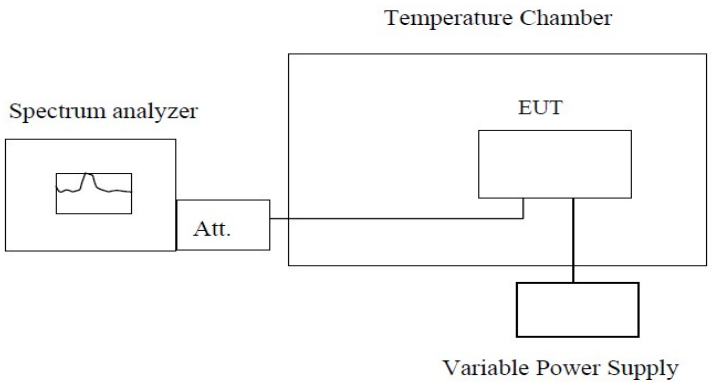
1. The emission behavior belongs to narrowband spurious emission.
2. The emission levels of below 1 GHz are very lower than the limit above10dB and not show in test report.

3.7. Frequency stability

LIMIT

Cellular Band: ±2.5ppm PCS Band: Within the authorized frequency block

TEST CONFIGURATION



Note : Measurement setup for testing on Antenna connector

TEST PROCEDURE

1. The equipment under test was connected to an external DC power supply and input rated voltage.
2. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators.
3. The EUT was placed inside the temperature chamber.
4. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 25℃ operating frequency as reference frequency.
5. Turn EUT off and set the chamber temperature to 0℃. After the temperature stabilized for approximately 30 minutes recorded the frequency.
6. Repeat step measure with 0℃ increased per stage until the highest temperature of +45℃ reached.
7. Reduce the input voltage to specified extreme voltage variation (+/- 10%) and endpoint, record the maximum frequency change.

TEST RESULTS

Please see the appendix for every tested band.

**************************THE END**************************