

FCC Radio Test Report

FCC ID: ZMOSC138NA

This report concerns: Original Grant

Project No. : 2111C042
Equipment : LTE Module
Brand Name : Fibocom
Test Model : SC138-NA
Series Model : N/A
Applicant : Fibocom Wireless Inc.
Address : 1101,Tower A, Building 6, Shenzhen International Innovation Valley, Dashi 1st Rd, Nanshan,Shenzhen,China
Manufacturer : Fibocom Wireless Inc.
Address : 1101,Tower A, Building 6, Shenzhen International Innovation Valley, Dashi 1st Rd, Nanshan,Shenzhen,China
Factory : Huizhou HYE Technology Co., Ltd.
Address : No. 237, Sanhe group, Sanhe village, Tonghu Town, Zhongkai hi tech Zone, Huizhou
Date of Receipt : Nov. 03, 2021
Date of Test : Nov. 15, 2021 ~ Dec. 07, 2021
Issued Date : Dec. 23, 2021
Report Version : R01
Test Sample : Engineering Sample No.: DG20211115162
Standard(s) : 47 CFR FCC Part 22 Subpart H
 47 CFR FCC Part 2
 ANSI/TIA/EIA-603-E-2016
 FCC KDB 971168 D01 Power Meas License Digital Systems v03r01

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc.

Edward Li

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Approved by : Steven Lu



TESTING CERT #5123.02

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Declaration

BTL represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with standards traceable to international standard(s) and/or national standard(s).

BTL's reports apply only to the specific samples tested under conditions. It is manufacture's responsibility to ensure that additional production units of this model are manufactured with the identical electrical and mechanical components. **BTL** shall have no liability for any declarations, inferences or generalizations drawn by the client or others from **BTL** issued reports.

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BTL's laboratory quality assurance procedures are in compliance with the **ISO/IEC 17025** requirements, and accredited by the conformity assessment authorities listed in this test report.

BTL is not responsible for the sampling stage, so the results only apply to the sample as received.

The information, data and test plan are provided by manufacturer which may affect the validity of results, so it is manufacturer's responsibility to ensure that the apparatus meets the essential requirements of applied standards and in all the possible configurations as representative of its intended use.

Limitation

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.

Please note that the measurement uncertainty is provided for informational purpose only and is not use in determining the Pass/Fail results.

Table of Contents	Page
REPORT ISSUED HISTORY	5
1 . SUMMARY OF TEST RESULTS	6
1.1 TEST FACILITY	7
1.2 MEASUREMENT UNCERTAINTY	7
1.3 TEST ENVIRONMENT CONDITIONS	8
2 . GENERAL INFORMATION	9
2.1 GENERAL DESCRIPTION OF EUT	9
2.2 DESCRIPTION OF TEST MODES	12
2.3 BLOCK DIGRAM SHOWING THE CONFIGURATIONOFSYSTEMTESTED	14
2.4 DESCRIPTION OF SUPPORT UNITS	14
3 . TEST RESULT	15
3.1 OUTPUT POWER MEASUREMENT	15
3.1.1 LIMIT	15
3.1.2 TEST PROCEDURE	15
3.1.3 TEST SETUP LAYOUT	15
3.1.4 TEST DEVIATION	15
3.1.5 TEST RESULTS	15
3.2 OCCUPIED BANDWIDTH MEASUREMENT	16
3.2.1 TEST PROCEDURE	16
3.2.2 TEST SETUP LAYOUT	16
3.2.3 TEST DEVIATION	16
3.2.4 TEST RESULTS	16
3.3 CONDUCTED SPURIOUS EMISSIONS MEASUREMENT	17
3.3.1 LIMIT	17
3.3.2 TEST PROCEDURES	17
3.3.3 TEST SETUP LAYOUT	17
3.3.4 TEST DEVIATION	17
3.3.5 TEST RESULTS	17
3.4 RADIATED SPURIOUS EMISSIONS MEASUREMENT	18
3.4.1 LIMIT	18
3.4.2 TEST PROCEDURES	18
3.4.3 TEST SETUP LAYOUT	19
3.4.4 TEST DEVIATION	20
3.4.5 TEST RESULTS (9KHZ TO 30MHZ)	20
3.4.6 TEST RESULTS (30MHZ TO 1000MHZ)	20
3.4.7 TEST RESULTS (ABOVE 1000MHZ)	20
3.5 BAND EDGE MEASUREMENT	21
3.5.1 LIMIT	21

Table of Contents	Page
3.5.2 TEST PROCEDURES	21
3.5.3 TEST SETUP LAYOUT	21
3.5.4 TEST DEVIATION	21
3.5.5 TEST RESULTS	21
3.6 PEAK TO AVERAGE RATIO MEASUREMENT	22
3.6.1 LIMIT	22
3.6.2 TEST PROCEDURES	22
3.6.3 TEST SETUP LAYOUT	22
3.6.4 TEST DEVIATION	22
3.6.5 TEST RESULTS	22
3.7 FREQUENCY STABILITY MEASUREMENT	23
3.7.1 LIMIT	23
3.7.2 TEST PROCEDURES	23
3.7.3 TEST SETUP LAYOUT	23
3.7.4 TEST DEVIATION	23
3.7.5 TEST RESULTS	23
4. LIST OF MEASUREMENT EQUIPMENTS	24
5. EUT TEST PHOTO	26
APPENDIX A - OUTPUT POWER	30
APPENDIX B - OCCUPIED BANDWIDTH	43
APPENDIX C - CONDUCTED SPURIOUS EMISSIONS	54
APPENDIX D - RADIATED SPURIOUS EMISSIONS (9KHZ TO 30MHZ)	58
APPENDIX E - RADIATED SPURIOUS EMISSIONS (30MHZ TO 1000MHZ)	60
APPENDIX F - RADIATED SPURIOUS EMISSIONS (ABOVE 1000MHZ)	65
APPENDIX G - BAND EDGE	70
APPENDIX H - PEAK TO AVERAGE RATIO	81
APPENDIX I - FREQUENCY STABILITY	92

REPORT ISSUED HISTORY

Report Version	Description	Issued Date
R00	Original Issue.	Dec. 15, 2021
R01	Modified the comments of TCB.	Dec. 23, 2021

1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

FCC Part 22 Subpart H & Part 2			
Standard(s) Section	Test Item	Judgment	Remark
2.1046 22.913(a)(5)	Effective Radiated Power	PASS	-----
2.1049	Occupied Bandwidth	PASS	-----
2.1051 22.917(a)	Conducted Spurious Emissions	PASS	-----
2.1053 22.917(a)	Radiated Spurious Emissions	PASS	-----
22.917(a)	Band Edge Measurements	PASS	-----
-	Peak To Average Ratio	PASS	Record Only
2.1055 22.355	Frequency Stability	PASS	-----

Note:

(1) "N/A" denotes test is not applicable in this test report.

1.1 TEST FACILITY

The test facilities used to collect the test data of radiated in this report is at the location of No. 3 Jinshagang 1st Rd. Shixia, Dalang Town, Dongguan City, Guangdong, People's Republic of China.

The test facilities used to collect the test data of conducted in this report is at the location of Room 108, Building 2, No.1, Yile Road, Songshan Lake Zone, Dongguan City, Guangdong, People's Republic of China.

BTL's Test Firm Registration Number for FCC: 357015

BTL's Designation Number for FCC: CN1240

1.2 MEASUREMENT UNCERTAINTY

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2))

The BTL measurement uncertainty as below table:

A. Radiated Measurement:

Test Site	Method	Measurement Frequency Range	U,(dB)
DG-CB01	CISPR	9kHz ~ 30MHz	2.36

Test Site	Method	Measurement Frequency Range	Ant. H / V	U,(dB)
DG-CB03	CISPR	30MHz ~ 200MHz	V	4.36
		30MHz ~ 200MHz	H	3.32
		200MHz ~ 1,000MHz	V	4.08
		200MHz ~ 1,000MHz	H	3.96
		1GHz ~ 6GHz	-	3.80
		6GHz ~ 18GHz	-	4.82

B. Other Measurement:

Parameter	Uncertainty
Spectrum Bandwidth	±3.8 %
Maximum Output Power	±0.95 dB
Power Spectral Density	±0.86 dB
Frequency Stability	±0.16 dB
Temperature	±0.08 °C
Time	±0.58 %
Supply voltages	±0.3 %

Note: Unless specifically mentioned, the uncertainty of measurement has not been taken into account to declare the compliance or non-compliance to the specification.

1.3 TEST ENVIRONMENT CONDITIONS

Test Item	Temperature	Humidity	Test Voltage	Tested By
Output Power & ERP	24°C	57%	DC 3.8V	Rick Liao
Occupied Bandwidth	24°C	57%	DC 3.8V	Rick Liao
Conducted Spurious Emissions	24°C	57%	DC 3.8V	Rick Liao
Radiated Spurious Emissions	22°C	55%	DC 3.8V	Kwok Guo
Band Edge	24°C	57%	DC 3.8V	Rick Liao
Peak To Average Ratio	24°C	57%	DC 3.8V	Rick Liao
Frequency Stability	Normal & Extreme	57%	Normal & Extreme	Rick Liao

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	LTE Module				
Brand Name	Fibocom				
Test Model	SC138-NA				
Series Model	N/A				
Model Difference(s)	N/A				
Hardware Version	SC138-NA				
Software Version	SC138-NA-Q62.00.104				
Power Source	DC Voltage supplied from external power supply.				
Power Rating	DC 3.5V ~ 4.2V				
IEMI No.	866280050002329				
Modulation Type	WCDMA/HSDPA/HSUPA		UL: QPSK,16QAM DL: QPSK,16QAM,64QAM		
	LTE		UL: QPSK,16QAM,64QAM DL: QPSK,16QAM,64QAM		
Max. ERP	WCDMA Band V		QPSK	22.44	dBm
	HSDPA Band V		QPSK	21.25	dBm
	HSUPA Band V		QPSK	21.24	dBm
	LTE	Channel Bandwidth (MHz)	QPSK (dBm)	16QAM (dBm)	64QAM (dBm)
	Band 5	1.4	20.87	20.24	19.34
		3	20.89	20.35	19.32
		5	20.95	20.46	19.29
		10	20.89	20.31	19.32
	Band 26	1.4	20.87	20.28	19.39
		3	20.94	20.40	19.34
		5	21.02	20.56	19.33
		10	20.92	20.37	19.30
		15	21.00	20.51	19.68

Note:

- For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.

2. Channel List:

WCDMA Band V				
Test Frequency ID	UARFCN	Frequency of Uplink (MHz)	UARFCN	Frequency of Downlink (MHz)
Low Range	4132	826.4	4357	871.4
Mid Range	4182	836.4	4407	881.4
High Range	4233	846.6	4458	891.6

LTE Band 5					
Test Frequency ID	Bandwidth (MHz)	N _{UL}	Frequency of Uplink (MHz)	N _{DL}	Frequency of Downlink (MHz)
Low Range	1.4	20407	824.7	2407	869.7
	3	20415	825.5	2415	870.5
	5	20425	826.5	2425	871.5
	10	20450	829	2450	874
Mid Range	1.4/3/5/10	20525	836.5	2525	881.5
High Range	1.4	20643	848.3	2643	893.3
	3	20635	847.5	2635	892.5
	5	20625	846.5	2625	891.5
	10	20600	844	2600	889

LTE Band 26					
Test Frequency ID	Bandwidth (MHz)	N _{UL}	Frequency of Uplink (MHz)	N _{DL}	Frequency of Downlink (MHz)
Low Range	1.4	26797	824.7	8797	869.7
	3	26805	825.5	8805	870.5
	5	26815	826.5	8815	871.5
	10	26840	829	8840	874
	15	26865	831.5	8865	876.5
Mid Range	1.4/3/5/10/15	26915	836.5	8915	881.5
High Range	1.4	27033	848.3	9033	893.3
	3	27025	847.5	9025	892.5
	5	27015	846.5	9015	891.5
	10	26990	844	8990	889
	15	26965	841.5	8965	886.5

3. Table for Filed Antenna:

Brand	Model Name	Antenna Type	Connector	Gain (dBi)	Note
N/A	N/A	Dipole	SMA	0.5	WCDMA Band V
N/A	N/A	Dipole	SMA	0.5	LTE Band 5
N/A	N/A	Dipole	SMA	0.5	LTE Band 26

Note: The antenna gain is provided by the manufacturer.

2.2 DESCRIPTION OF TEST MODES

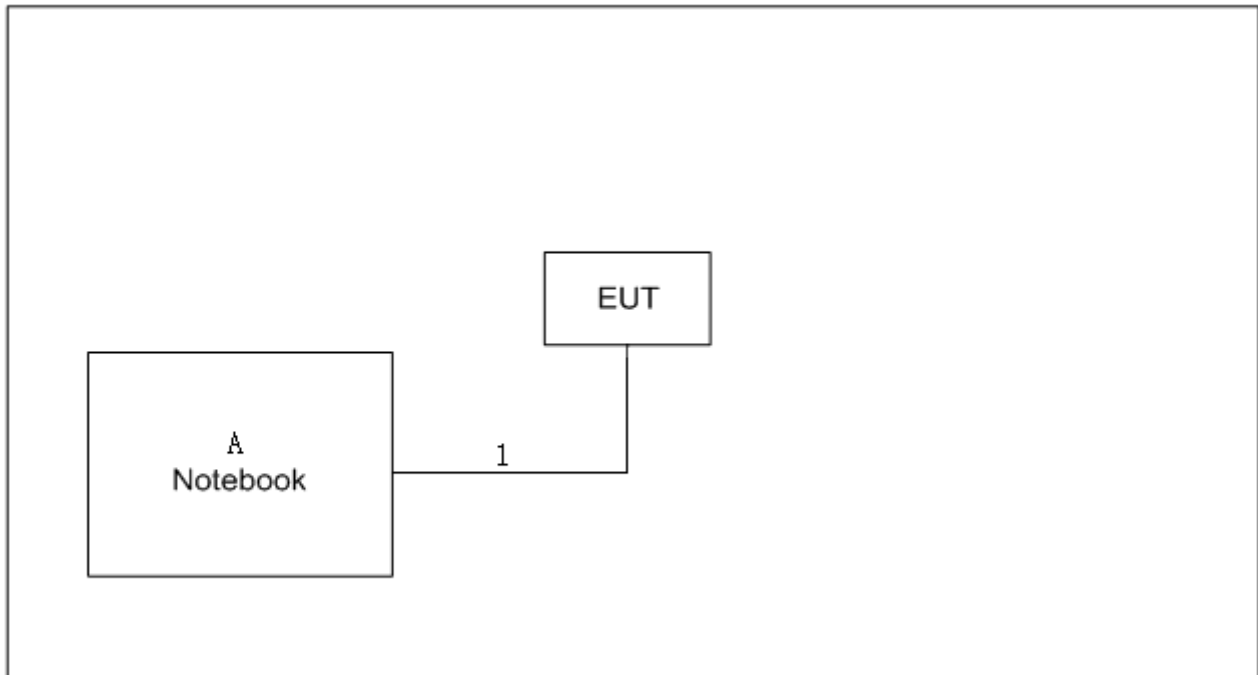
Following mode(s) is (were) found to be the worst case(s) and selected for the final test.

WCDMA BAND V MODE			
Test Item	Available Channel	Tested Channel	Mode
Output Power & ERP	4132 to 4233	4132, 4182, 4233	WCDMA, HSDPA, HSUPA
Occupied Bandwidth	4132 to 4233	4132, 4182, 4233	WCDMA
Conducted Spurious Emissions	4132 to 4233	4182	WCDMA
Radiated Spurious Emissions	4132 to 4233	4182	WCDMA
Band Edge	4132 to 4233	4132, 4233	WCDMA
Peak To Average Ratio	4132 to 4233	4132, 4182, 4233	WCDMA
Frequency Stability	4132 to 4233	4182	WCDMA

LTE BAND 5 MODE					
Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
Output Power & ERP	20407 to 20643	20407, 20525, 20643	1.4MHz	QPSK, 16QAM,64QAM	1RB/3RB/6RB
	20415 to 20635	20415, 20525, 20635	3MHz	QPSK, 16QAM,64QAM	1RB/8RB/15RB
	20425 to 20625	20425, 20525, 20625	5MHz	QPSK, 16QAM,64QAM	1RB/12RB/25RB
	20450 to 20600	20450, 20525, 20600	10MHz	QPSK, 16QAM,64QAM	1RB/25RB/50RB
Occupied Bandwidth	20407 to 20643	20407, 20525, 20643	1.4MHz	QPSK, 16QAM,64QAM	6RB
	20415 to 20635	20415, 20525, 20635	3MHz	QPSK, 16QAM,64QAM	15RB
	20425 to 20625	20425, 20525, 20625	5MHz	QPSK, 16QAM,64QAM	25RB
	20450 to 20600	20450, 20525, 20600	10MHz	QPSK, 16QAM,64QAM	50RB
Conducted Spurious Emissions	20407 to 20643	20525	1.4MHz	QPSK	1RB
	20425 to 20625	20525	5MHz	QPSK	1RB
	20450 to 20600	20525	10MHz	QPSK	1RB
Radiated Spurious Emissions	20407 to 20643	20525	1.4MHz	QPSK	1RB
	20425 to 20625	20525	5MHz	QPSK	1RB
	20450 to 20600	20525	10MHz	QPSK	1RB
Band Edge	20407 to 20643	20407, 20643	1.4MHz	QPSK	1RB/6RB
	20415 to 20635	20415, 20635	3MHz	QPSK	1RB/15RB
	20425 to 20625	20425, 20625	5MHz	QPSK	1RB/25RB
	20450 to 20600	20450, 20600	10MHz	QPSK	1RB/50RB
Peak To Average Ratio	20407 to 20643	20407, 20525, 20643	1.4MHz	QPSK, 16QAM,64QAM	1RB
	20415 to 20635	20415, 20525, 20635	3MHz	QPSK, 16QAM,64QAM	1RB
	20425 to 20625	20425, 20525, 20625	5MHz	QPSK, 16QAM,64QAM	1RB
	20450 to 20600	20450, 20525, 20600	10MHz	QPSK, 16QAM,64QAM	1RB
Frequency Stability	20450 to 20600	20525	10MHz	QPSK	1RB

LTE BAND 26 MODE					
Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
Output Power & ERP	26797 to 27033	26797, 26915, 27033	1.4MHz	QPSK, 16QAM, 64QAM	1RB/3RB/6RB
	26805 to 27025	26805, 26915, 27025	3MHz	QPSK, 16QAM, 64QAM	1RB/8RB/15RB
	26815 to 27015	26815, 26915, 27015	5MHz	QPSK, 16QAM, 64QAM	1RB/12RB/25RB
	26840 to 26990	26840, 26915, 26990	10MHz	QPSK, 16QAM, 64QAM	1RB/25RB/50RB
	26865 to 26965	26865, 26915, 26965	15MHz	QPSK, 16QAM, 64QAM	1RB/36RB/75RB
Occupied Bandwidth	26797 to 27033	26797, 26915, 27033	1.4MHz	QPSK, 16QAM, 64QAM	6RB
	26805 to 27025	26805, 26915, 27025	3MHz	QPSK, 16QAM, 64QAM	15RB
	26815 to 27015	26815, 26915, 27015	5MHz	QPSK, 16QAM, 64QAM	25RB
	26840 to 26990	26840, 26915, 26990	10MHz	QPSK, 16QAM, 64QAM	50RB
	26865 to 26965	26865, 26915, 26965	15MHz	QPSK, 16QAM, 64QAM	75RB
Conducted Spurious Emissions	26815 to 27015	226915	1.4MHz	QPSK	1RB
	26815 to 27015	226915	5MHz	QPSK	1RB
	26865 to 26965	226915	15MHz	QPSK	1RB
Radiated Spurious Emissions	26815 to 27015	226915	1.4MHz	QPSK	1RB
	26815 to 27015	226915	5MHz	QPSK	1RB
	26865 to 26965	226915	15MHz	QPSK	1RB
Band Edge	26797 to 27033	26797, 27033	1.4MHz	QPSK	1RB
					6RB
	26805 to 27025	26805, 27025	3MHz	QPSK	1RB
					15RB
	26815 to 27015	26815, 27015	5MHz	QPSK	1RB
					25RB
	26840 to 26990	26840, 26990	10MHz	QPSK	1RB
Peak To Average Ratio	26865 to 26965	26865, 26965	15MHz	QPSK	50RB
					1RB
					75RB
	26797 to 27033	26797, 26915, 27033	1.4MHz	QPSK, 16QAM, 64QAM	1RB
	26805 to 27025	26805, 26915, 27025	3MHz	QPSK, 16QAM, 64QAM	1RB
Frequency Stability	26815 to 27015	26815, 26915, 27015	5MHz	QPSK, 16QAM, 64QAM	1RB
	26840 to 26990	26840, 26915, 26990	10MHz	QPSK, 16QAM, 64QAM	1RB
	26865 to 26965	26865, 26915, 26965	15MHz	QPSK, 16QAM, 64QAM	1RB

2.3 BLOCK DIGRAM SHOWING THE CONFIGURATIONOFSYSTEMTESTED



2.4 DESCRIPTION OF SUPPORT UNITS

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

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.
A	Notebook	Lenovo	V310-14ISK	LR07GZNB

Item	Cable Type	Shielded Type	Ferrite Core	Length
1	USB Cable	NO	NO	0.8m

3. TEST RESULT

3.1 OUTPUT POWER MEASUREMENT

3.1.1 LIMIT

Mobile / Portable station are limited to 7 watts e.r.p.

3.1.2 TEST PROCEDURE

The testing follows FCC KDB 971168 v03r01 Section 5.

EIRP / ERP:

$EIRP = \text{Output Power} + \text{Antenan gain}$

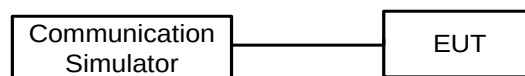
$ERP = EIPR - 2.15\text{dBi}$

Output Power:

The EUT was set up for the maximum power with GSM, GPRS, EDGE, WCDMA and LTE link data modulation and link up with simulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

3.1.3 TEST SETUP LAYOUT

Output Power Measurement



3.1.4 TEST DEVIATION

No deviation

3.1.5 TEST RESULTS

Please refer to the APPENDIX A.

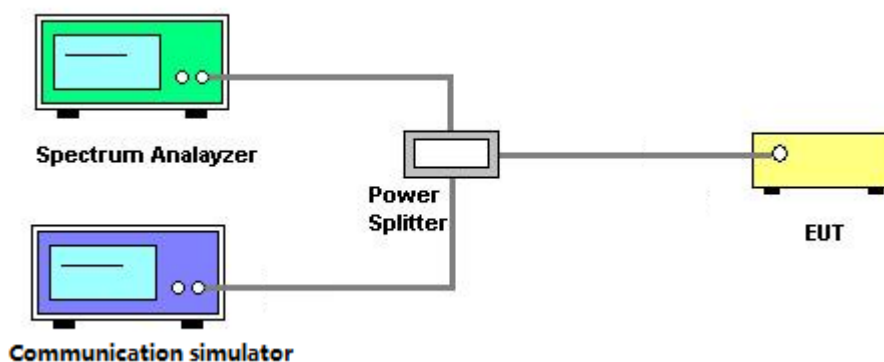
3.2 OCCUPIED BANDWIDTH MEASUREMENT

3.2.1 TEST PROCEDURE

The testing follows FCC KDB 971168 v03r01 Section 4.

1. The EUT makes a call to the communication simulator. All measurements were done at low, middle and high operational frequency range. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth and 26dB bandwidth.
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. $RBW = (1\% \sim 5\%) \cdot EBW$
 $VBW \geq 3 \cdot RBW$
4. Set spectrum analyzer with Peak detector.

3.2.2 TEST SETUP LAYOUT



3.2.3 TEST DEVIATION

No deviation

3.2.4 TEST RESULTS

Please refer to the APPENDIX B.

3.3 CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

3.3.1 LIMIT

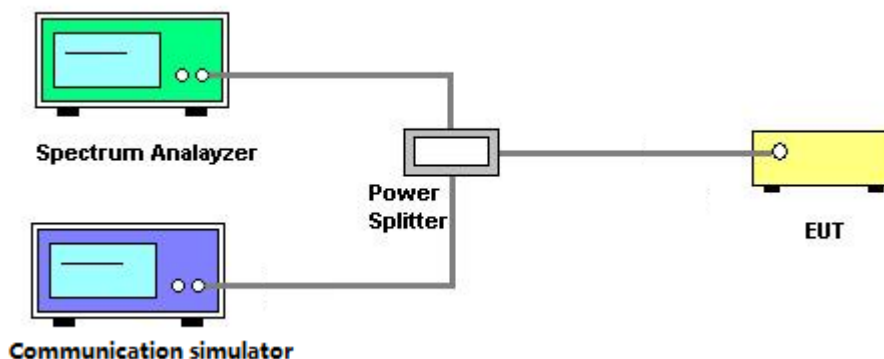
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB. The emission limit equal to -13dBm.

3.3.2 TEST PROCEDURES

The testing follows FCC KDB 971168 v03r01 Section 6.

1. The EUT was connected to spectrum analyzer and system simulator via a power divider.
2. The band edges of low and high channels for the highest RF powers were measured. Set RBW $\geq 1\%$ EBW in the 1MHz band immediately outside and adjacent to the band edge.
3. Set spectrum analyzer with Peak detector.
4. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

3.3.3 TEST SETUP LAYOUT



3.3.4 TEST DEVIATION

No deviation

3.3.5 TEST RESULTS

Please refer to the APPENDIX C.

3.4 RADIATED SPURIOUS EMISSIONS MEASUREMENT

3.4.1 LIMIT

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. The emission limit equal to -13dBm.

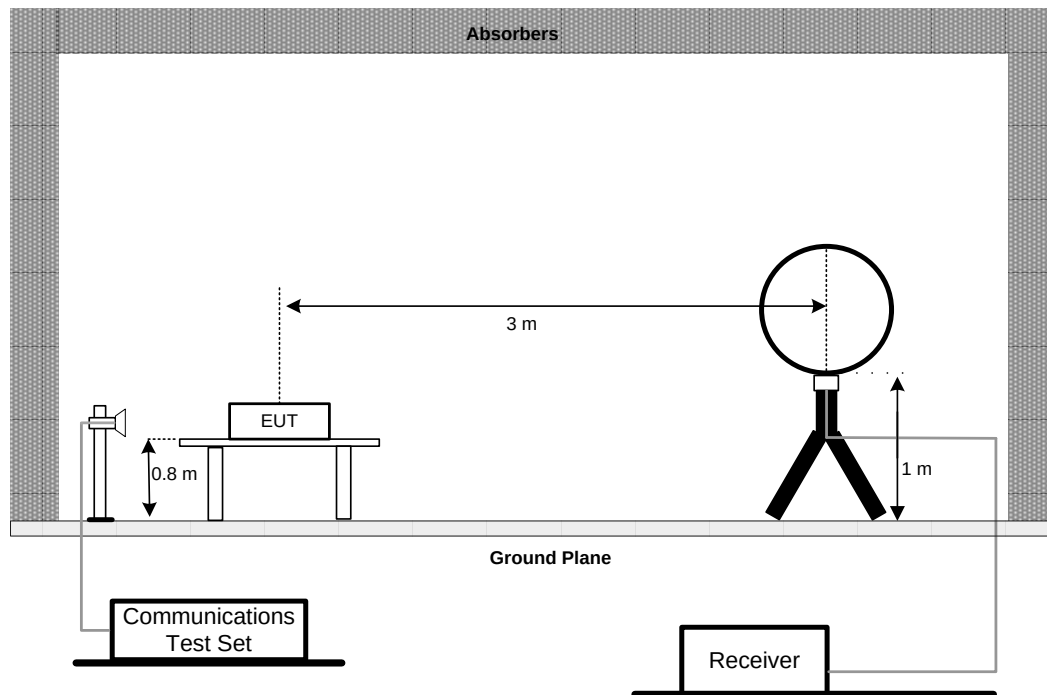
3.4.2 TEST PROCEDURES

The testing follows FCC KDB 971168 v03r01 Section 6.2.

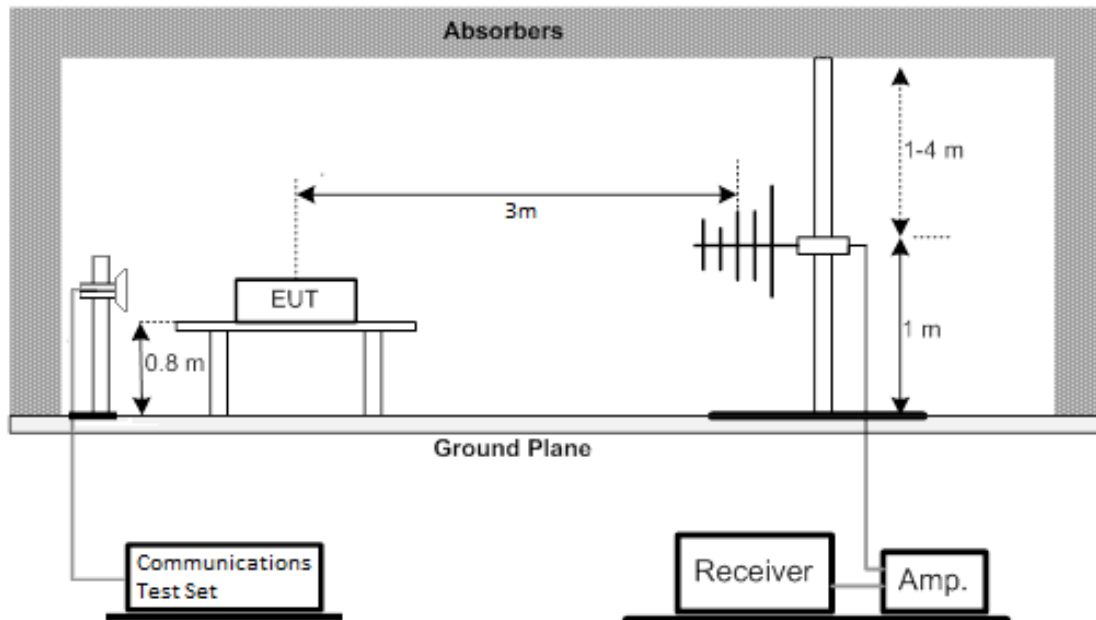
1. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
2. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value " of step a. Record the power level of S.G
3. $EIRP = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}.$
4. ERP can be calculated form EIRP by subtracting the gain of dipole, $ERP = EIPR - 2.15\text{dBi}.$
5. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

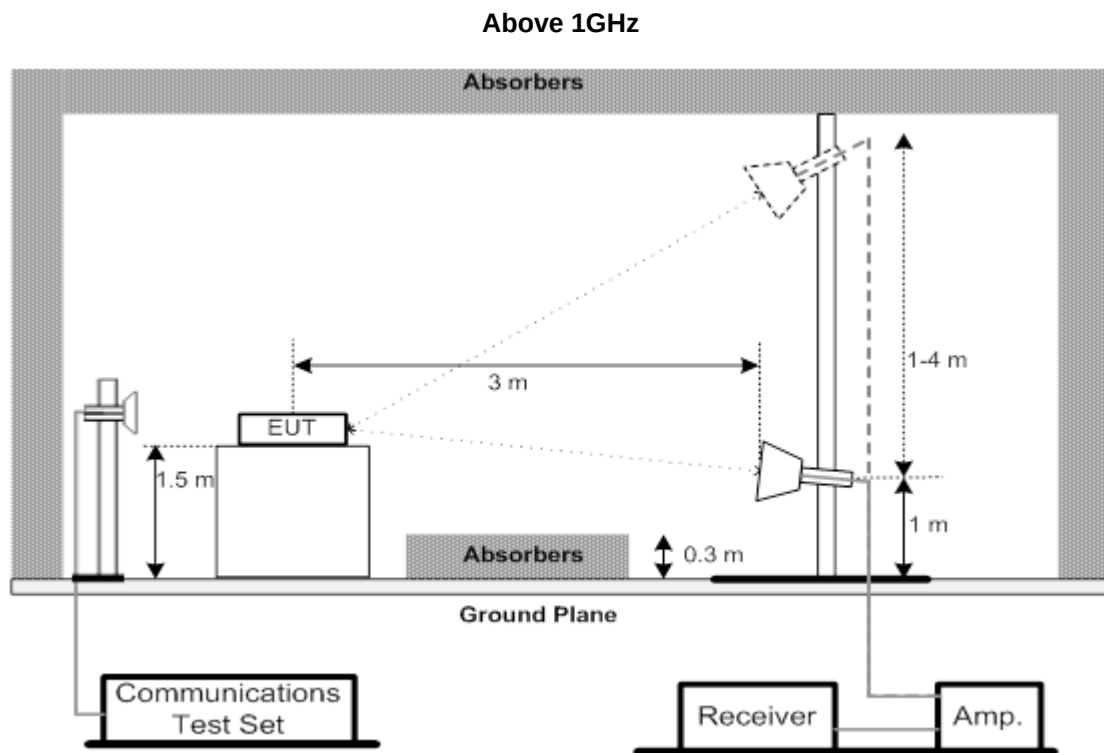
3.4.3 TEST SETUP LAYOUT

Below 30MHz



30MHz to 1000MHz





3.4.4 TEST DEVIATION

No deviation

3.4.5 TEST RESULTS (9KHZ TO 30MHZ)

Please refer to the APPENDIX D.

3.4.6 TEST RESULTS (30MHZ TO 1000MHZ)

Please refer to the APPENDIX E.

3.4.7 TEST RESULTS (ABOVE 1000MHZ)

Please refer to the APPENDIX F.

3.5 BAND EDGE MEASUREMENT

3.5.1 LIMIT

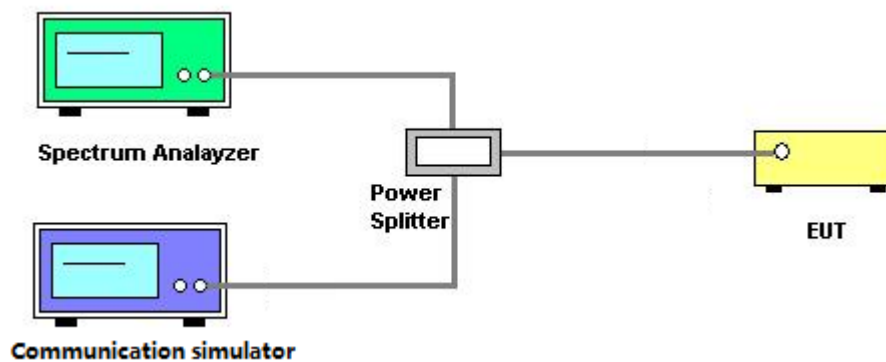
A Power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

3.5.2 TEST PROCEDURES

The testing follows FCC KDB 971168 v03r01 Section 6.

1. All measurements were done at low and high operational frequency range.
2. Record the max trace plot into the test report.

3.5.3 TEST SETUP LAYOUT



3.5.4 TEST DEVIATION

No deviation

3.5.5 TEST RESULTS

Please refer to the APPENDIX G.

3.6 PEAK TO AVERAGE RATIO MEASUREMENT

3.6.1 LIMIT

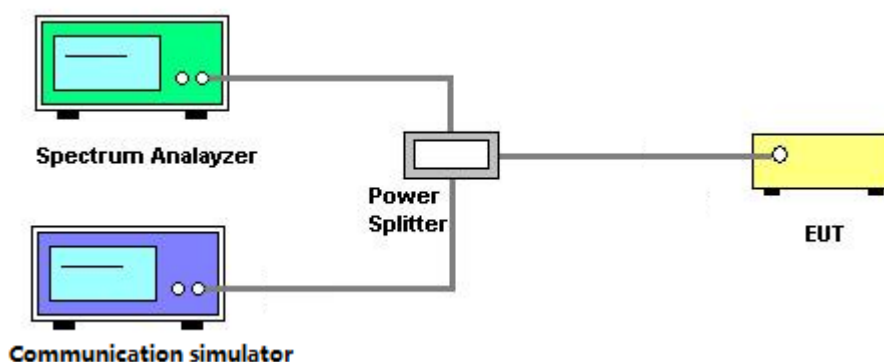
In measuring transmissions in this band using an average power technique, the peak to-average ratio (PAR) of the transmission may not exceed 13 dB.

3.6.2 TEST PROCEDURES

The testing follows FCC KDB 971168 v03r01 Section 5.7.

1. Set resolution/measurement bandwidth $\geq$ signal's occupied bandwidth;
2. Set the number of counts to a value that stabilizes the measured CCDF curve;
3. Record the maximum PAPR level associated with a probability of 0.1%.

3.6.3 TEST SETUP LAYOUT



3.6.4 TEST DEVIATION

No deviation

3.6.5 TEST RESULTS

Please refer to the APPENDIX H.

3.7 FREQUENCY STABILITY MEASUREMENT

3.7.1 LIMIT

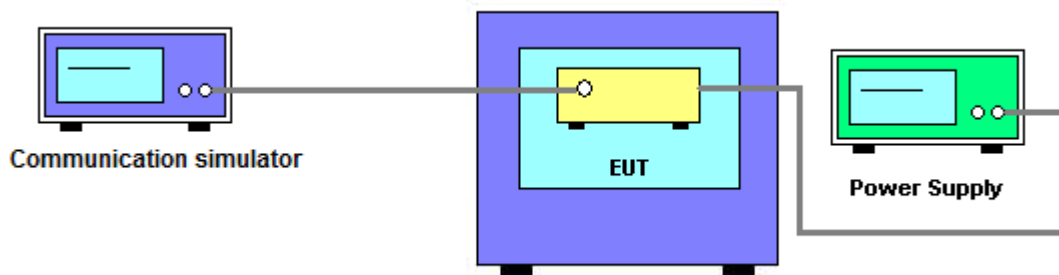
± 1.5 ppm is for base and fixed station. ± 2.5 ppm is for mobile station.

3.7.2 TEST PROCEDURES

The testing follows FCC KDB 971168 v03r01 Section 9.

1. Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.
2. EUT is connected the external power supply to control the DC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.
3. The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the $\pm 0.5^{\circ}\text{C}$ during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.
4. The frequency error was recorded frequency error from the communication simulator.

3.7.3 TEST SETUP LAYOUT



3.7.4 TEST DEVIATION

No deviation

3.7.5 TEST RESULTS

Please refer to the APPENDIX I.

4. LIST OF MEASUREMENT EQUIPMENTS

Radiated Emissions - 9 kHz to 30 MHz					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	MXE EMI Receiver	Keysight	N9038A	MY56400091	Feb. 27, 2022
2*	Active Loop Antenna	R&S	HFH2-Z2	830749/020	Aug. 23, 2024
3	Cable	N/A	RG 213/U (9kHz~1GHz)	N/A	May 27, 2022
4	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
5	wideband radio communication tester	R&S	CMW500	152372	Feb. 27, 2022
6	Wireless Communication Test SET	Agilent	E5515C	MY48364183	Feb. 28, 2022
7	966 Chamber Room	ETS	9*6*6	N/A	Jul. 17, 2022

Radiated Emissions - 30 MHz to 1 GHz					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Antenna	Schwarzbeck	VULB9160	9160-3232	Mar. 15, 2022
2	Amplifier	HP	8447D	2944A08742	Feb. 28, 2022
3	Cable	emci	LMR-400	N/A	May 20, 2022
4	Controller	CT	SC100	N/A	N/A
5	Controller	MF	MF-7802	MF780208416	N/A
6	Receiver	Agilent	N9038A	MY52130039	Mar. 19, 2022
7	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
8	wideband radio communication tester	R&S	CMW500	152372	Feb. 27, 2022
9	Wireless Communication Test SET	Agilent	E5515C	MY48364183	Feb. 28, 2022
10	966 Chamber Room	RM	9*6*6	N/A	Jul. 24, 2022

Radiated Emissions - Above 1 GHz					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Double Ridged Horn Antenna	ARA	DRG-118A	16554	Apr. 21, 2022
2	Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170319	Jun. 30, 2022
3	Amplifier	Agilent	8449B	3008A02584	Jul. 10, 2022
4	Controller	CT	SC100	N/A	N/A
5	Controller	MF	MF-7802	MF780208416	N/A
6	Receiver	Agilent	N9038A	MY52130039	Mar. 19, 2022
7	EXA Spectrum Analyzer	Keysight	N9010A	MY56480488	Feb. 28, 2022
8	Low Noise Amplifier	CONNPHY	CLN-18G40G -4330-K	619413	Jul. 16, 2022
9	Cable	N/A	A81-SMAMSMAM -12.5M	N/A	Oct. 15, 2022
10	Cable	Talent microwave	A40-2.92M2.92M -2.5M	N/A	Nov. 29, 2021 Nov. 30, 2022
11	Filter	STI	STI15-9912	N/A	Jul. 10, 2022
12	Measurement Software	Farad	EZ-EMC Ver.NB -03A1-01	N/A	N/A
13	wideband radio communication tester	R&S	CMW500	152372	Feb. 27, 2022
14	Wireless Communication Test SET	Agilent	E5515C	MY48364183	Feb. 28, 2022
15	966 Chamber Room	RM	9*6*6	N/A	Jul. 24, 2022

Conducted Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	8960 Series 10 Wireless Com Test set	Agilent	E5515E	MY52112163	Jul. 24, 2022
2	MXA Signal Analyzer	Keysight	N9020A	MY49100060	Jul. 24, 2022
3	Power Splitter	Mini-Circuits	ZFRSC-183-S+	SF103501511S	Jul. 24, 2022
4	wideband radio communication tester	R&S	CMW500	104462	Jul. 24, 2022
5	Const Temp. & Humidity Chamber	Bell	BTH-50C	20170306001	Feb. 27, 2022
6*	Multi-output DC Power Supply	GW Instek	GPC-3030DN	EK880675	Jul. 25, 2023

Remark: "N/A" denotes no model name, serial no. or calibration specified.

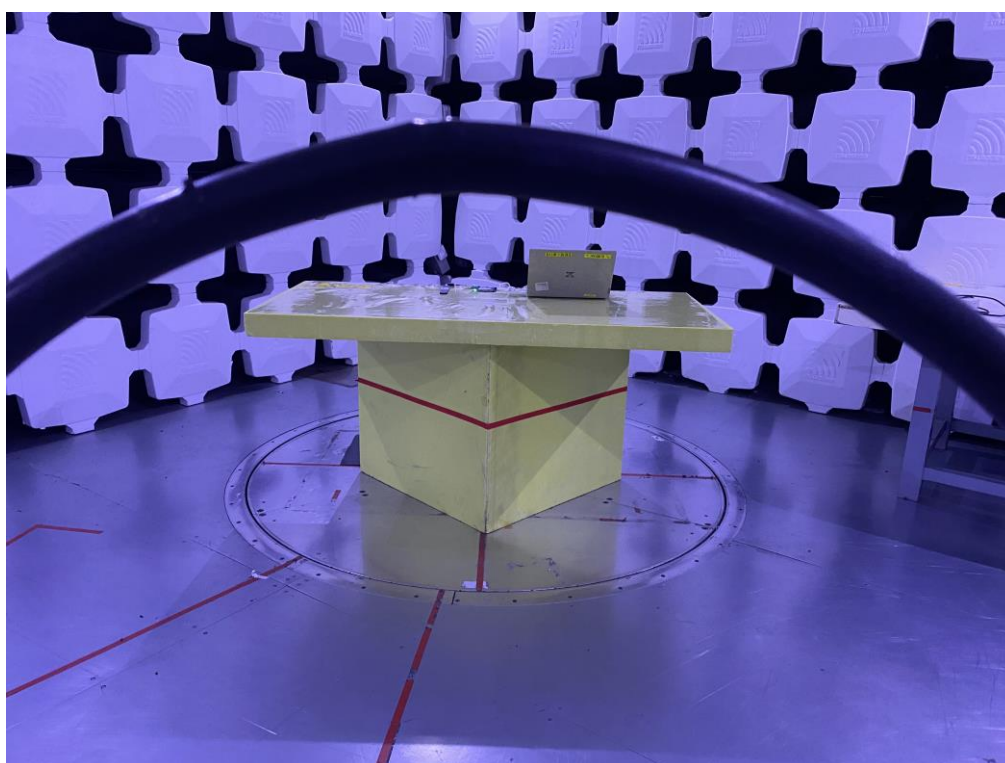
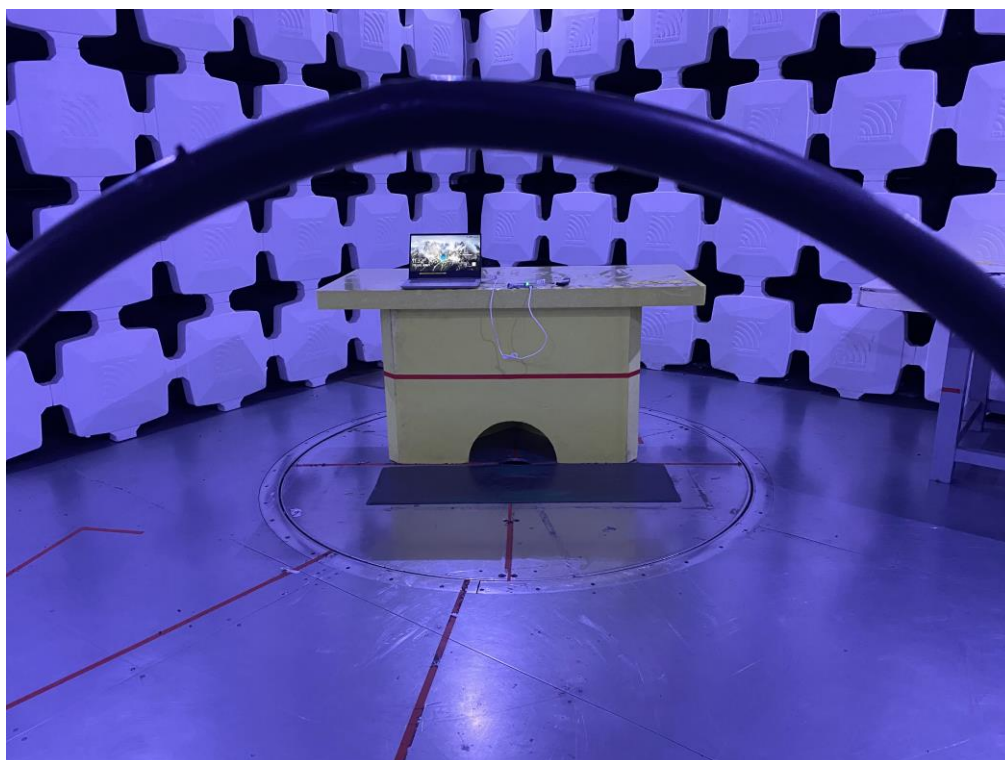
Except * item, all calibration period of equipment list is one year.

"**" calibration period of equipment list is three year.

5. EUT TEST PHOTO

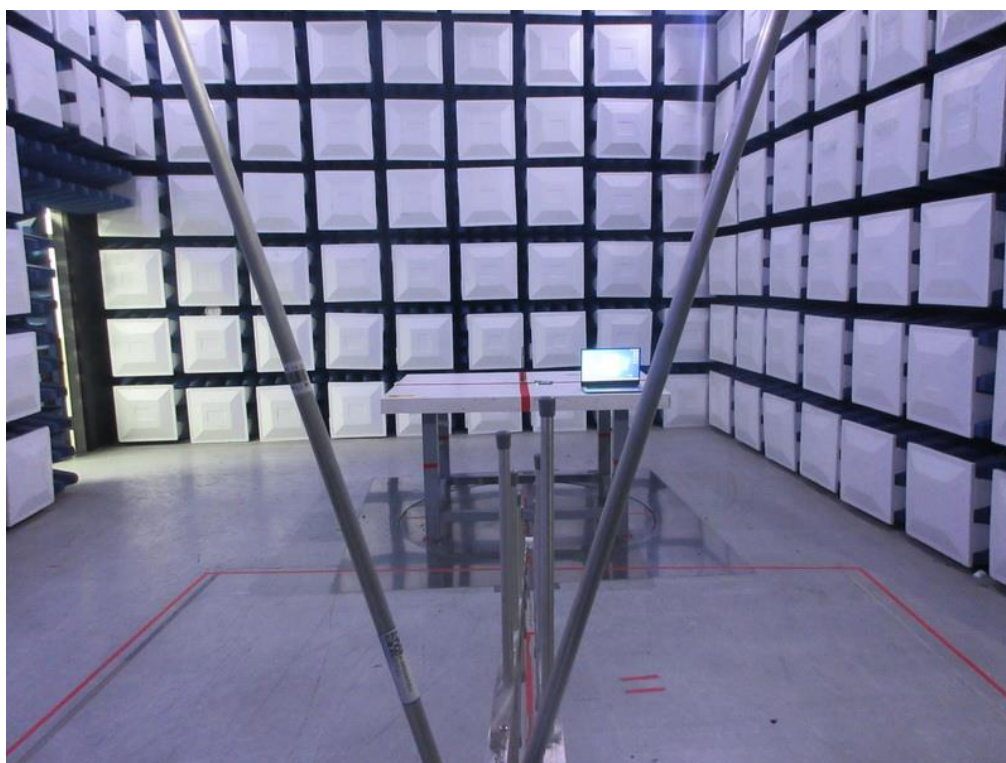
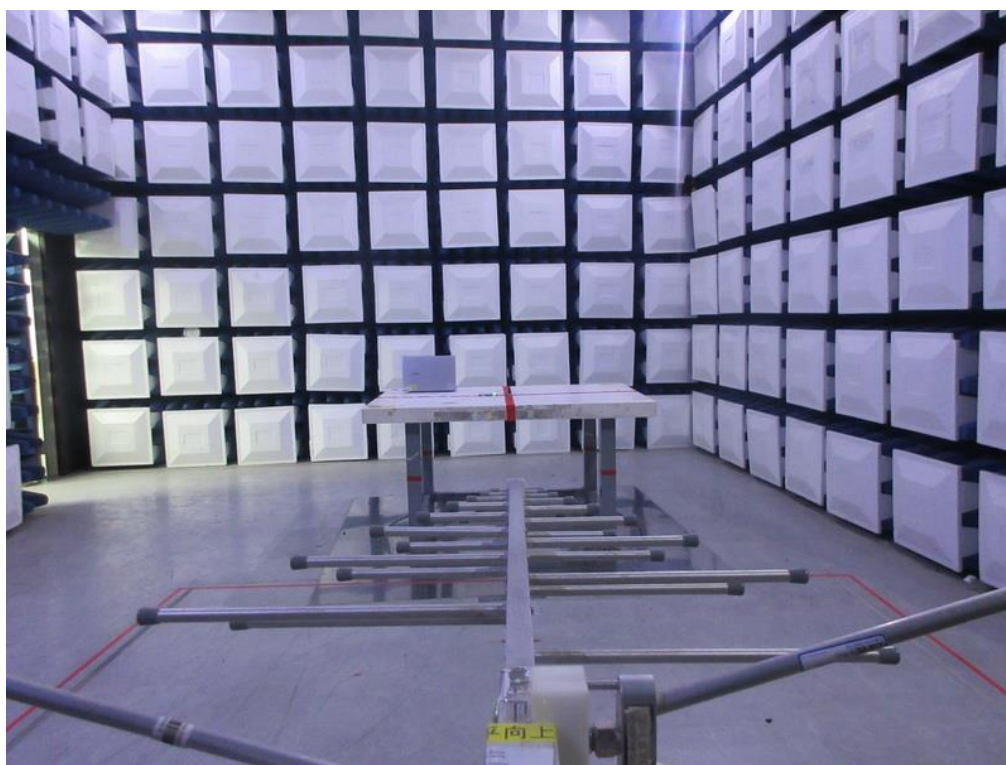
Radiated Emissions Test Photos

9 kHz to 30 MHz

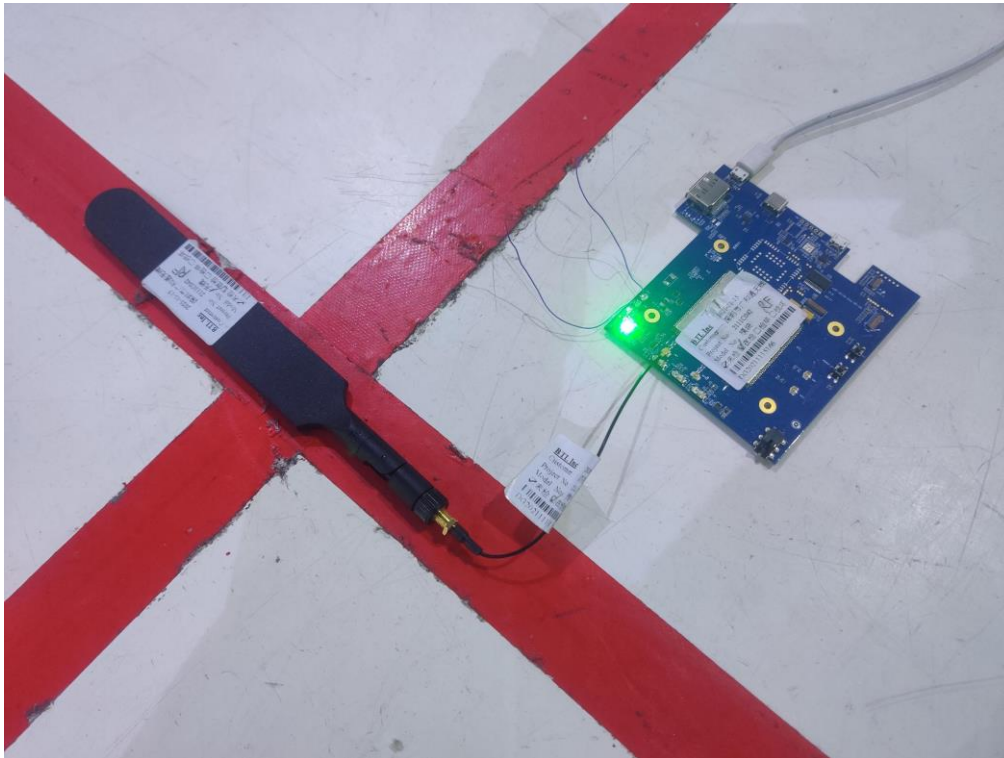


Radiated Emissions Test Photos

30 MHz to 1 GHz



Radiated Emissions Test Photos**Above 1 GHz**

Radiated Emissions Test Photos

APPENDIX A - OUTPUT POWER

Output Power (dBm)

Modulation	Band	WCDMA Band V		
	Tx Channel	4132CH	4182CH	4233CH
	Frequency	826.4MHz	836.4MHz	846.6MHz
QPSK	RMC 12.2K	23.96	23.95	24.06
	RMC 64K	23.97	23.97	24.09
	RMC 144K	23.95	23.98	24.06
	RMC 384K	23.97	23.95	24.09
	HSDPA Subtest-1	22.67	22.7	22.88
	HSDPA Subtest-2	22.67	22.69	22.9
	HSDPA Subtest-3	22.22	22.25	22.37
	HSDPA Subtest-4	22.19	22.22	22.03
	HSUPA Subtest-1	22.68	22.73	22.89
	HSUPA Subtest-2	20.7	20.72	20.86
	HSUPA Subtest-3	21.69	21.74	21.87
	HSUPA Subtest-4	20.68	20.75	20.87
	HSUPA Subtest-5	22.71	22.74	22.85

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20407CH	20525CH	20643CH
				824.7MHz	836.5MHz	848.3MHz
5 / 1.4M	QPSK	1	0	22.33	22.44	22.40
		1	2	22.39	22.43	22.43
		1	5	22.35	22.40	22.39
		3	0	22.38	22.42	22.46
		3	1	22.43	22.45	22.52
		3	2	22.40	22.39	22.46
		6	0	21.34	21.34	21.35
	16QAM	1	0	21.49	21.60	21.85
		1	2	21.55	21.68	21.89
		1	5	21.55	21.61	21.84
		3	0	21.66	21.58	21.76
		3	1	21.74	21.66	21.81
		3	2	21.68	21.61	21.71
		6	0	20.62	20.64	20.39
	64QAM	1	0	20.58	20.63	20.97
		1	2	20.67	20.70	20.99
		1	5	20.58	20.72	20.88
		3	0	20.64	20.49	20.91
		3	1	20.71	20.55	20.98
		3	2	20.65	20.50	20.90
		6	0	19.77	19.61	19.51

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20415CH	20525CH	20635CH
				825.5MHz	836.5MHz	847.5MHz
5 / 3M	QPSK	1	0	22.42	22.46	22.42
		1	7	22.49	22.54	22.48
		1	14	22.42	22.43	22.39
		8	0	21.44	21.44	21.45
		8	4	21.45	21.47	21.48
		8	7	21.43	21.47	21.44
		15	0	21.48	21.46	21.48
	16QAM	1	0	21.49	21.96	21.59
		1	7	21.54	22.00	21.64
		1	14	21.43	21.91	21.55
		8	0	20.64	20.64	20.60
		8	4	20.68	20.67	20.64
		8	7	20.60	20.60	20.59
		15	0	20.58	20.61	20.56
	64QAM	1	0	20.89	20.67	20.79
		1	7	20.97	20.78	20.83
		1	14	20.87	20.68	20.75
		8	0	19.62	19.64	19.57
		8	4	19.66	19.69	19.61
		8	7	19.61	19.61	19.56
		15	0	19.58	19.67	19.69

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20425CH	20525CH	20625CH
				826.5MHz	836.5MHz	846.5MHz
5 / 5M	QPSK	1	0	22.55	22.47	22.56
		1	13	22.60	22.48	22.54
		1	24	22.52	22.44	22.50
		12	0	21.46	21.52	21.54
		12	6	21.48	21.52	21.55
		12	11	21.46	21.51	21.55
		25	0	21.48	21.53	21.54
	16QAM	1	0	21.77	22.08	21.70
		1	13	21.74	22.11	21.72
		1	24	21.66	22.08	21.70
		12	0	20.63	20.76	20.70
		12	6	20.64	20.76	20.71
		12	11	20.62	20.72	20.69
		25	0	20.61	20.64	20.57
	64QAM	1	0	20.50	20.91	20.88
		1	13	20.55	20.94	20.90
		1	24	20.46	20.88	20.85
		12	0	19.61	19.60	19.73
		12	6	19.60	19.60	19.76
		12	11	19.59	19.60	19.72
		25	0	19.55	19.61	19.70

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20450CH	20525CH	20600CH
				829.0MHz	836.5MHz	844.0MHz
5 / 10M	QPSK	1	0	22.45	22.54	22.42
		1	25	22.38	22.44	22.44
		1	49	22.46	22.43	22.38
		25	0	21.50	21.54	21.45
		25	13	21.58	21.52	21.55
		25	25	21.53	21.50	21.50
		50	0	21.57	21.51	21.44
	16QAM	1	0	21.50	21.96	21.49
		1	25	21.43	21.89	21.46
		1	49	21.46	21.82	21.47
		25	0	20.56	20.65	20.63
		25	13	20.69	20.68	20.67
		25	25	20.68	20.59	20.66
		50	0	20.63	20.62	20.56
	64QAM	1	0	20.79	20.97	20.74
		1	25	20.71	20.91	20.71
		1	49	20.72	20.80	20.68
		25	0	19.67	19.74	19.65
		25	13	19.78	19.72	19.77
		25	25	19.79	19.69	19.77
		50	0	19.68	19.68	19.66

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				CH26797	CH26915	CH27033
				824.7MHz	836.5MHz	848.3MHz
26 / 1.4M	QPSK	1	0	22.45	22.37	22.44
		1	2	22.48	22.46	22.47
		1	5	22.43	22.38	22.41
		3	0	22.47	22.41	22.48
		3	1	22.52	22.52	22.51
		3	2	22.46	22.45	22.43
		6	0	21.37	21.42	21.39
	16QAM	1	0	21.64	21.89	21.50
		1	2	21.71	21.93	21.56
		1	5	21.64	21.87	21.53
		3	0	21.62	21.77	21.75
		3	1	21.68	21.84	21.84
		3	2	21.60	21.75	21.74
		6	0	20.65	20.44	20.67
	64QAM	1	0	20.65	20.72	20.93
		1	2	20.74	20.78	21.02
		1	5	20.59	20.75	20.90
		3	0	20.68	20.56	20.96
		3	1	20.78	20.60	21.04
		3	2	20.68	20.53	20.93
		6	0	19.84	19.67	19.56

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				CH26805	CH26915	CH27025
				825.5MHz	836.5MHz	847.5MHz
26 / 3M	QPSK	1	0	22.54	22.51	22.49
		1	7	22.59	22.53	22.55
		1	14	22.51	22.43	22.51
		8	0	21.48	21.51	21.50
		8	4	21.52	21.54	21.54
		8	7	21.44	21.46	21.50
		15	0	21.45	21.54	21.55
	16QAM	1	0	22.00	21.66	21.49
		1	7	22.05	21.69	21.55
		1	14	21.95	21.59	21.50
		8	0	20.67	20.67	20.73
		8	4	20.70	20.67	20.75
		8	7	20.61	20.60	20.69
		15	0	20.61	20.58	20.73
	64QAM	1	0	20.68	20.81	20.94
		1	7	20.81	20.84	20.99
		1	14	20.72	20.79	20.93
		8	0	19.64	19.57	19.71
		8	4	19.69	19.63	19.73
		8	7	19.63	19.59	19.70
		15	0	19.63	19.67	19.67

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				CH26815	CH26915	CH27015
				826.5MHz	836.5MHz	846.5MHz
26 / 5M	QPSK	1	0	22.52	22.58	22.67
		1	13	22.49	22.60	22.64
		1	24	22.57	22.52	22.59
		12	0	21.55	21.58	21.60
		12	6	21.61	21.58	21.58
		12	11	21.59	21.56	21.58
		25	0	21.66	21.56	21.59
	16QAM	1	0	22.15	21.70	21.82
		1	13	22.14	21.74	21.79
		1	24	22.21	21.72	21.77
		12	0	20.79	20.72	20.76
		12	6	20.85	20.70	20.77
		12	11	20.83	20.70	20.76
		25	0	20.80	20.60	20.70
	64QAM	1	0	20.94	20.86	20.63
		1	13	20.96	20.91	20.63
		1	24	20.98	20.87	20.56
		12	0	19.58	19.75	19.78
		12	6	19.67	19.74	19.78
		12	11	19.65	19.74	19.76
		25	0	19.72	19.70	19.71

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				CH26840	CH26915	CH26990
				829MHz	836.5MHz	844MHz
26 / 10M	QPSK	1	0	22.52	22.52	22.49
		1	25	22.57	22.47	22.48
		1	49	22.50	22.53	22.48
		25	0	21.65	21.56	21.51
		25	13	21.64	21.57	21.61
		25	25	21.59	21.53	21.56
		50	0	21.63	21.58	21.51
	16QAM	1	0	21.95	21.68	21.53
		1	25	22.02	21.62	21.50
		1	49	21.95	21.68	21.51
		25	0	20.80	20.77	20.60
		25	13	20.78	20.75	20.74
		25	25	20.73	20.74	20.70
		50	0	20.76	20.71	20.63
	64QAM	1	0	20.74	20.85	20.95
		1	25	20.80	20.80	20.93
		1	49	20.74	20.84	20.94
		25	0	19.83	19.80	19.74
		25	13	19.85	19.82	19.81
		25	25	19.79	19.78	19.77
		50	0	19.82	19.70	19.66

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				CH26865	CH26915	CH26965
				831.5MHz	836.5MHz	841.5MHz
26 / 15M	QPSK	1	0	22.55	22.65	22.56
		1	38	22.57	22.58	22.54
		1	74	22.50	22.59	22.47
		36	0	21.61	21.57	21.56
		36	18	21.61	21.60	21.52
		36	39	21.54	21.53	21.54
		75	0	21.60	21.53	21.52
	16QAM	1	0	22.02	22.16	21.59
		1	38	22.03	22.07	21.59
		1	74	21.96	22.08	21.50
		36	0	20.81	20.68	20.63
		36	18	20.79	20.66	20.64
		36	39	20.70	20.57	20.67
		75	0	20.67	20.65	20.65
	64QAM	1	0	20.79	21.33	20.99
		1	38	20.80	21.24	21.02
		1	74	20.72	21.27	20.90
		36	0	19.84	19.71	19.73
		36	18	19.84	19.70	19.70
		36	39	19.75	19.66	19.74
		75	0	19.74	19.70	19.66

ERP (dBm)				
Modulation	Band	WCDMA Band V		
	Tx Channel	4132CH	4182CH	4233CH
	Frequency	826.4MHz	836.4MHz	846.6MHz
QPSK	RMC 12.2K	22.31	22.30	22.41
	RMC 64K	22.32	22.32	22.44
	RMC 144K	22.30	22.33	22.41
	RMC 384K	22.32	22.30	22.44
	HSDPA Subtest-1	21.02	21.05	21.23
	HSDPA Subtest-2	21.02	21.04	21.25
	HSDPA Subtest-3	20.57	20.60	20.72
	HSDPA Subtest-4	20.54	20.57	20.38
	HSUPA Subtest-1	21.03	21.08	21.24
	HSUPA Subtest-2	19.05	19.07	19.21
	HSUPA Subtest-3	20.04	20.09	20.22
	HSUPA Subtest-4	19.03	19.10	19.22
	HSUPA Subtest-5	21.06	21.09	21.20

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20407CH	20525CH	20643CH
				824.7MHz	836.5MHz	848.3MHz
5 / 1.4M	QPSK	1	0	20.68	20.79	20.75
		1	2	20.74	20.78	20.78
		1	5	20.70	20.75	20.74
		3	0	20.73	20.77	20.81
		3	1	20.78	20.80	20.87
		3	2	20.75	20.74	20.81
		6	0	19.69	19.69	19.70
	16QAM	1	0	19.84	19.95	20.20
		1	2	19.90	20.03	20.24
		1	5	19.90	19.96	20.19
		3	0	20.01	19.93	20.11
		3	1	20.09	20.01	20.16
		3	2	20.03	19.96	20.06
		6	0	18.97	18.99	18.74
	64QAM	1	0	18.93	18.98	19.32
		1	2	19.02	19.05	19.34
		1	5	18.93	19.07	19.23
		3	0	18.99	18.84	19.26
		3	1	19.06	18.90	19.33
		3	2	19.00	18.85	19.25
		6	0	18.12	17.96	17.86

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20415CH	20525CH	20635CH
				825.5MHz	836.5MHz	847.5MHz
5 / 3M	QPSK	1	0	20.77	20.81	20.77
		1	7	20.84	20.89	20.83
		1	14	20.77	20.78	20.74
		8	0	19.79	19.79	19.80
		8	4	19.80	19.82	19.83
		8	7	19.78	19.82	19.79
		15	0	19.83	19.81	19.83
	16QAM	1	0	19.84	20.31	19.94
		1	7	19.89	20.35	19.99
		1	14	19.78	20.26	19.90
		8	0	18.99	18.99	18.95
		8	4	19.03	19.02	18.99
		8	7	18.95	18.95	18.94
		15	0	18.93	18.96	18.91
	64QAM	1	0	19.24	19.02	19.14
		1	7	19.32	19.13	19.18
		1	14	19.22	19.03	19.10
		8	0	17.97	17.99	17.92
		8	4	18.01	18.04	17.96
		8	7	17.96	17.96	17.91
		15	0	17.93	18.02	18.04

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20425CH	20525CH	20625CH
				826.5MHz	836.5MHz	846.5MHz
5 / 5M	QPSK	1	0	20.90	20.82	20.91
		1	13	20.95	20.83	20.89
		1	24	20.87	20.79	20.85
		12	0	19.81	19.87	19.89
		12	6	19.83	19.87	19.90
		12	11	19.81	19.86	19.90
		25	0	19.83	19.88	19.89
	16QAM	1	0	20.12	20.43	20.05
		1	13	20.09	20.46	20.07
		1	24	20.01	20.43	20.05
		12	0	18.98	19.11	19.05
		12	6	18.99	19.11	19.06
		12	11	18.97	19.07	19.04
		25	0	18.96	18.99	18.92
	64QAM	1	0	18.85	19.26	19.23
		1	13	18.90	19.29	19.25
		1	24	18.81	19.23	19.20
		12	0	17.96	17.95	18.08
		12	6	17.95	17.95	18.11
		12	11	17.94	17.95	18.07
		25	0	17.90	17.96	18.05

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20450CH	20525CH	20600CH
				829.0MHz	836.5MHz	844.0MHz
5 / 10M	QPSK	1	0	20.80	20.89	20.77
		1	25	20.73	20.79	20.79
		1	49	20.81	20.78	20.73
		25	0	19.85	19.89	19.80
		25	13	19.93	19.87	19.90
		25	25	19.88	19.85	19.85
		50	0	19.92	19.86	19.79
	16QAM	1	0	19.85	20.31	19.84
		1	25	19.78	20.24	19.81
		1	49	19.81	20.17	19.82
		25	0	18.91	19.00	18.98
		25	13	19.04	19.03	19.02
		25	25	19.03	18.94	19.01
		50	0	18.98	18.97	18.91
	64QAM	1	0	19.14	19.32	19.09
		1	25	19.06	19.26	19.06
		1	49	19.07	19.15	19.03
		25	0	18.02	18.09	18.00
		25	13	18.13	18.07	18.12
		25	25	18.14	18.04	18.12
		50	0	18.03	18.03	18.01

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				CH26797	CH26915	CH27033
				824.7MHz	836.5MHz	848.3MHz
26 / 1.4M	QPSK	1	0	20.80	20.72	20.79
		1	2	20.83	20.81	20.82
		1	5	20.78	20.73	20.76
		3	0	20.82	20.76	20.83
		3	1	20.87	20.87	20.86
		3	2	20.81	20.80	20.78
		6	0	19.72	19.77	19.74
	16QAM	1	0	19.99	20.24	19.85
		1	2	20.06	20.28	19.91
		1	5	19.99	20.22	19.88
		3	0	19.97	20.12	20.10
		3	1	20.03	20.19	20.19
		3	2	19.95	20.10	20.09
		6	0	19.00	18.79	19.02
	64QAM	1	0	19.00	19.07	19.28
		1	2	19.09	19.13	19.37
		1	5	18.94	19.10	19.25
		3	0	19.03	18.91	19.31
		3	1	19.13	18.95	19.39
		3	2	19.03	18.88	19.28
		6	0	18.19	18.02	17.91

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				CH26805	CH26915	CH27025
				825.5MHz	836.5MHz	847.5MHz
26 / 3M	QPSK	1	0	20.89	20.86	20.84
		1	7	20.94	20.88	20.90
		1	14	20.86	20.78	20.86
		8	0	19.83	19.86	19.85
		8	4	19.87	19.89	19.89
		8	7	19.79	19.81	19.85
		15	0	19.80	19.89	19.90
	16QAM	1	0	20.35	20.01	19.84
		1	7	20.40	20.04	19.90
		1	14	20.30	19.94	19.85
		8	0	19.02	19.02	19.08
		8	4	19.05	19.02	19.10
		8	7	18.96	18.95	19.04
		15	0	18.96	18.93	19.08
	64QAM	1	0	19.03	19.16	19.29
		1	7	19.16	19.19	19.34
		1	14	19.07	19.14	19.28
		8	0	17.99	17.92	18.06
		8	4	18.04	17.98	18.08
		8	7	17.98	17.94	18.05
		15	0	17.98	18.02	18.02

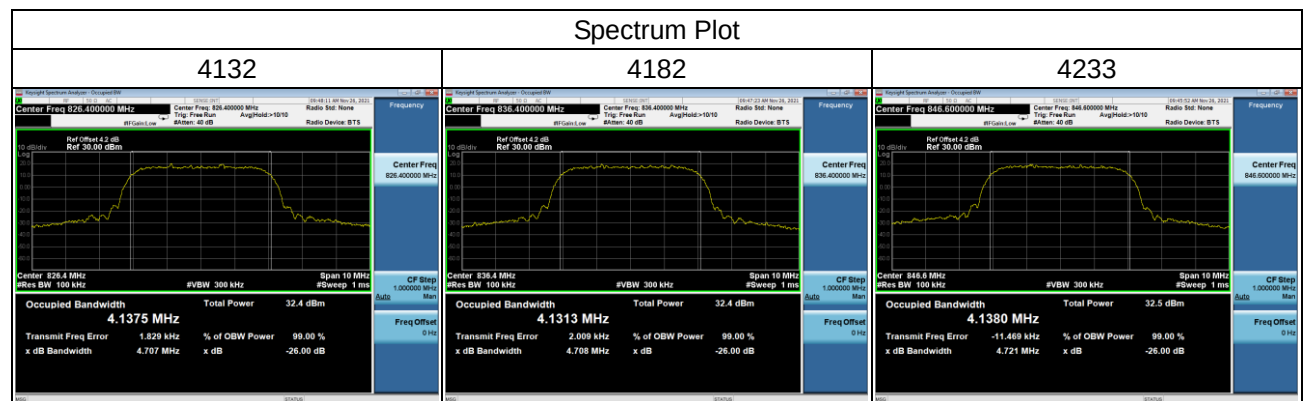
LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				CH26815	CH26915	CH27015
				826.5MHz	836.5MHz	846.5MHz
26 / 5M	QPSK	1	0	20.87	20.93	21.02
		1	13	20.84	20.95	20.99
		1	24	20.92	20.87	20.94
		12	0	19.90	19.93	19.95
		12	6	19.96	19.93	19.93
		12	11	19.94	19.91	19.93
		25	0	20.01	19.91	19.94
	16QAM	1	0	20.50	20.05	20.17
		1	13	20.49	20.09	20.14
		1	24	20.56	20.07	20.12
		12	0	19.14	19.07	19.11
		12	6	19.20	19.05	19.12
		12	11	19.18	19.05	19.11
		25	0	19.15	18.95	19.05
	64QAM	1	0	19.29	19.21	18.98
		1	13	19.31	19.26	18.98
		1	24	19.33	19.22	18.91
		12	0	17.93	18.10	18.13
		12	6	18.02	18.09	18.13
		12	11	18.00	18.09	18.11
		25	0	18.07	18.05	18.06

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				CH26840	CH26915	CH26990
				829MHz	836.5MHz	844MHz
26 / 10M	QPSK	1	0	20.87	20.87	20.84
		1	25	20.92	20.82	20.83
		1	49	20.85	20.88	20.83
		25	0	20.00	19.91	19.86
		25	13	19.99	19.92	19.96
		25	25	19.94	19.88	19.91
		50	0	19.98	19.93	19.86
	16QAM	1	0	20.30	20.03	19.88
		1	25	20.37	19.97	19.85
		1	49	20.30	20.03	19.86
		25	0	19.15	19.12	18.95
		25	13	19.13	19.10	19.09
		25	25	19.08	19.09	19.05
		50	0	19.11	19.06	18.98
	64QAM	1	0	19.09	19.20	19.30
		1	25	19.15	19.15	19.28
		1	49	19.09	19.19	19.29
		25	0	18.18	18.15	18.09
		25	13	18.20	18.17	18.16
		25	25	18.14	18.13	18.12
		50	0	18.17	18.05	18.01

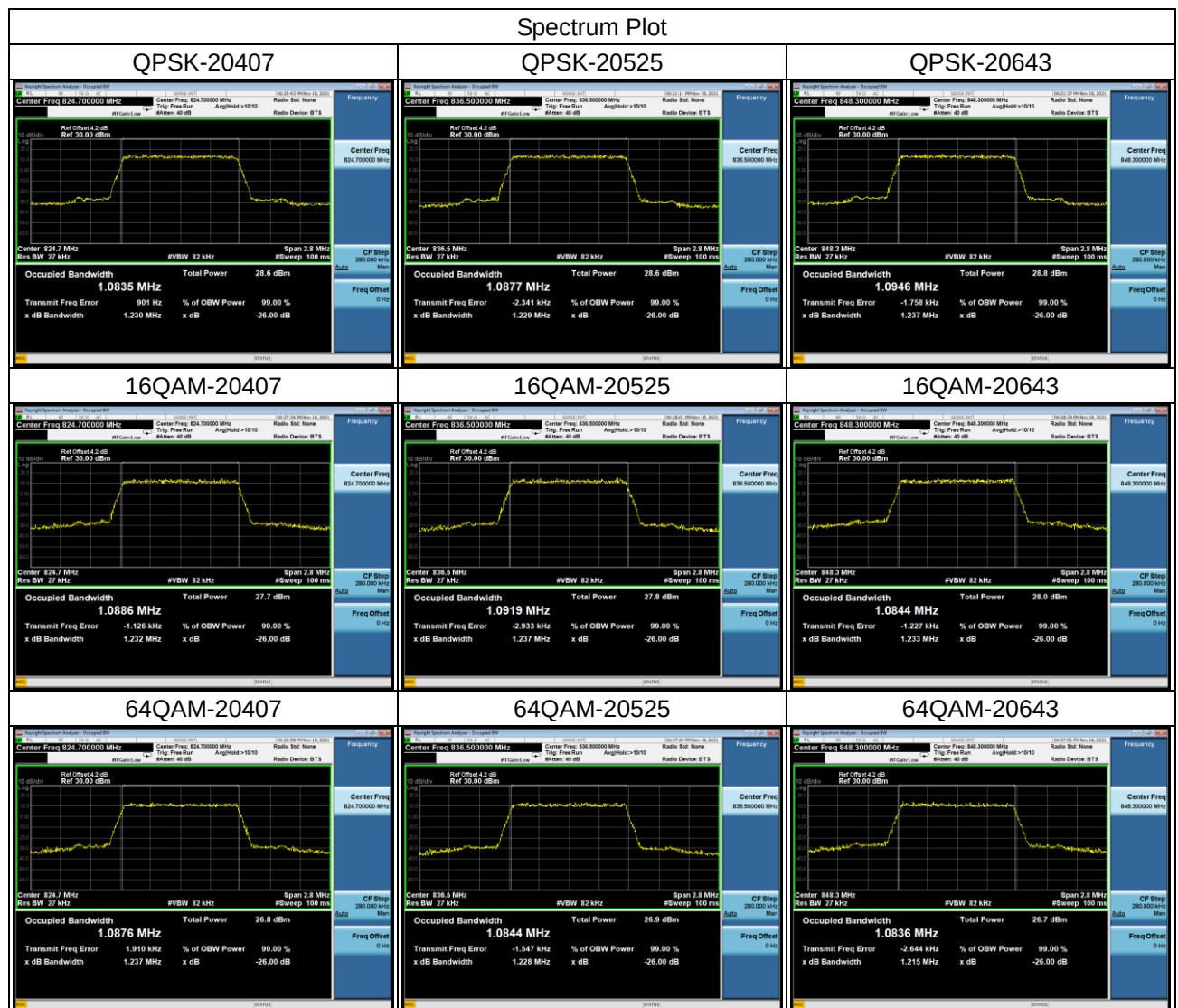
LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				CH26865	CH26915	CH26965
				831.5MHz	836.5MHz	841.5MHz
26 / 15M	QPSK	1	0	20.90	21.00	20.91
		1	38	20.92	20.93	20.89
		1	74	20.85	20.94	20.82
		36	0	19.96	19.92	19.91
		36	18	19.96	19.95	19.87
		36	39	19.89	19.88	19.89
		75	0	19.95	19.88	19.87
	16QAM	1	0	20.37	20.51	19.94
		1	38	20.38	20.42	19.94
		1	74	20.31	20.43	19.85
		36	0	19.16	19.03	18.98
		36	18	19.14	19.01	18.99
		36	39	19.05	18.92	19.02
		75	0	19.02	19.00	19.00
	64QAM	1	0	19.14	19.68	19.34
		1	38	19.15	19.59	19.37
		1	74	19.07	19.62	19.25
		36	0	18.19	18.06	18.08
		36	18	18.19	18.05	18.05
		36	39	18.10	18.01	18.09
		75	0	18.09	18.05	18.01

APPENDIX B - OCCUPIED BANDWIDTH

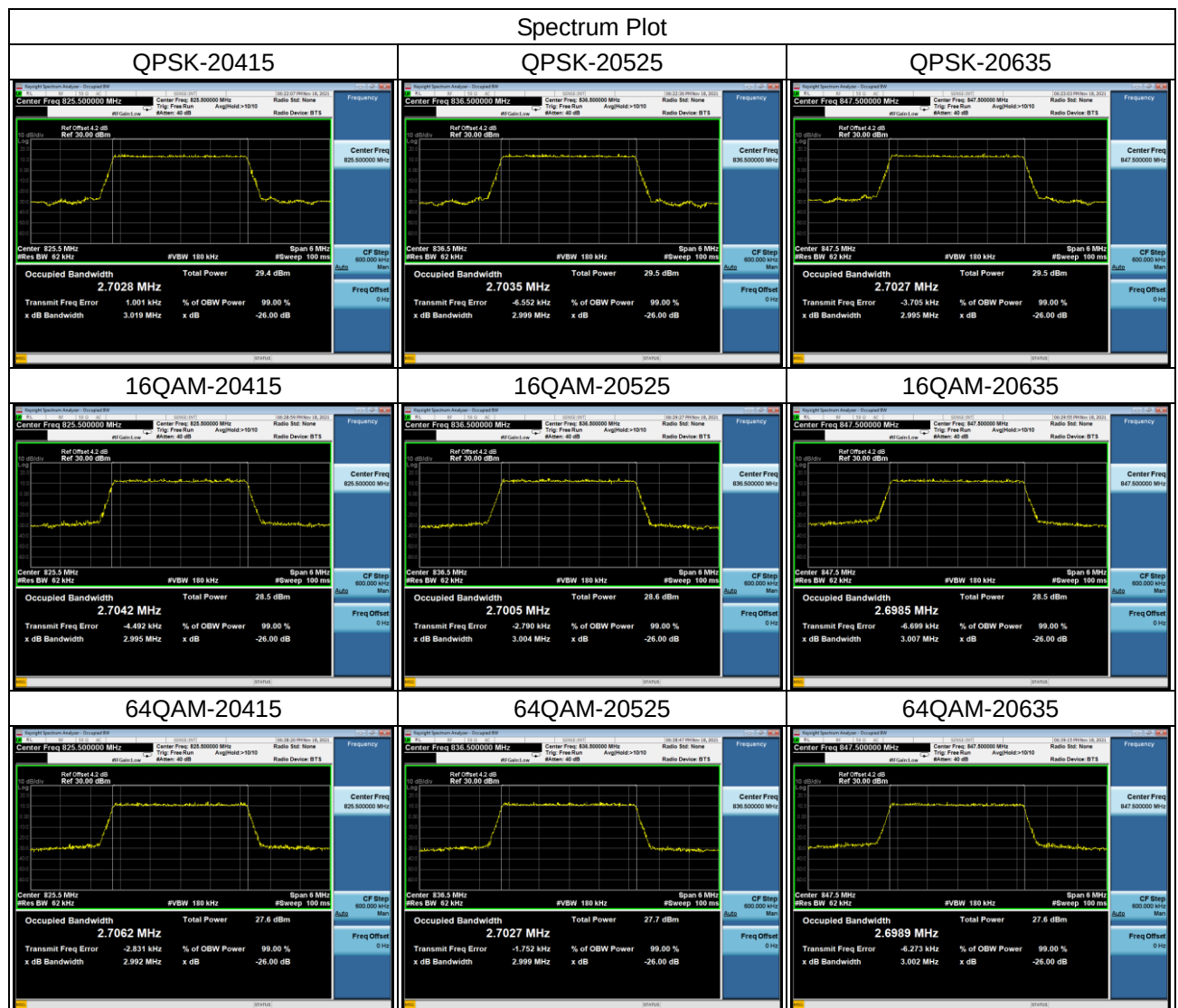
WCDMA Band V_WCDMA			
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
		QPSK	QPSK
4132	826.4	4.1375	4.707
4182	836.4	4.1313	4.708
4233	846.6	4.1380	4.721



LTE Band 5_1.4MHz							
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			26dB Bandwidth (MHz)		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
20407	824.7	1.0835	1.0886	1.0876	1.230	1.232	1.237
20525	836.5	1.0877	1.0919	1.0844	1.229	1.237	1.228
20643	848.3	1.0946	1.0844	1.0836	1.237	1.233	1.215



LTE Band 5_3MHz							
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			26dB Bandwidth (MHz)		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
20415	825.5	2.7028	2.7042	2.7062	3.019	2.995	2.992
20525	836.5	2.7035	2.7005	2.7027	2.999	3.004	2.999
20635	847.5	2.7027	2.6985	2.6989	2.995	3.007	3.002



LTE Band 5_5MHz							
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			26dB Bandwidth (MHz)		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
20425	826.5	4.5078	4.5021	4.5142	4.982	4.980	4.987
20525	836.5	4.5058	4.5062	4.5079	4.934	4.956	4.980
20625	846.5	4.5116	4.5027	4.5073	4.943	4.921	4.952



LTE Band 5_10MHz							
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			26dB Bandwidth (MHz)		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
20450	829.0	8.9758	8.9767	8.9795	9.870	9.885	9.821
20525	836.5	8.9809	8.9471	8.9712	9.787	9.792	9.854
20600	844.0	8.9689	8.9812	8.9654	9.793	9.811	9.792



LTE Band 26_1.4MHz							
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			26dB Bandwidth (MHz)		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
26797	824.7	1.0980	1.0838	1.0871	1.230	1.227	1.230
26915	836.5	1.0853	1.0898	1.0838	1.229	1.228	1.217
27033	848.3	1.0859	1.0924	1.0866	1.233	1.236	1.217

