

FCC Radio Test Report

FCC ID: N7NRC76C

Report No. : BTL-FCCP-2-2203T030
Equipment : Module
Model Name : RC7612, RC7612-1
Brand Name : AirPrime
Applicant : Sierra Wireless, Inc.
Address : 13811 Wireless Way, Richmond, BC V6V 3A4, Canada
Manufacturer : Sierra Wireless, Inc.
Address : 13811 Wireless Way, Richmond, BC V6V 3A4, Canada

Radio Function : WCDMA Band II, LTE Band 2

FCC Rule Part(s) : FCC CFR Title 47, Part 24, Subpart E
Measurement : ANSI C63.26-2015
Procedure(s) : ANSI/TIA-603-E-2016
FCC KDB 971168 D01 Power Meas License Digital Systems v03r01

Date of Receipt : 2022/3/4
Date of Test : 2022/3/4 ~ 2022/4/26
Issued Date : 2022/6/21

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

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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.

This report is the confidential property of the client. As a mutual protection to the clients, the public and ourselves, the test report shall not be reproduced, except in full, without our written approval.

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 are not use in determining the Pass/Fail results.

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REVISION HISTORY

Report No.	Version	Description	Issued Date	Note
BTL-FCCP-2-2203T030	R00	Original Report.	2022/6/21	Valid

1 SUMMARY OF TEST RESULTS

Test procedures according to the technical standards.

FCC Clause No	Description	Test Result	Judgement	Remark
15.207	AC Power Line Conducted Emissions	-----	N/A	NOTE (3)
2.1046 24.232(c)	Conducted Output Power Equivalent Isotropic Radiated Power (EIRP)	APPENDIX A	Pass	-----
2.1049	Occupied Bandwidth	APPENDIX B	Pass	-----
2.1051 24.238(a)	Conducted Spurious Emissions	APPENDIX C	Pass	-----
2.1053 24.238(a)	Radiated Spurious Emissions	APPENDIX D	Pass	-----
24.238(a)	Band Edge Measurements	APPENDIX E	Pass	-----
24.232(d)	Peak To Average Ratio	APPENDIX F	Pass	-----
2.1055 24.235	Frequency Stability	APPENDIX G	Pass	-----

NOTE:

- (1) "N/A" denotes test is not applicable in this Test Report.
- (2) The report format version is TP.1.1.1.
- (3) This is a DC input device.

1.1 TEST FACILITY

The test facilities used to collect the test data in this report:

No. 68-1, Ln. 169, Sec. 2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan

The test sites and facilities are covered under FCC RN: 674415 and DN: TW0659.

☐ C05 ☐ CB08 ☐ CB11 ☒ CB15 ☐ CB16
☒ SR05

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k = 2$, providing a level of confidence of approximately **95 %**.

The measurement instrumentation uncertainty considerations contained in CISPR 16-4-2. The BTL measurement uncertainty is less than the CISPR 16-4-2 U_{CISPR} requirement.

A. Radiated Spurious Emissions test:

Test Site	Measurement Frequency Range	U_{dB}
CB15	0.03 GHz ~ 0.2 GHz	4.17
	0.2 GHz ~ 1 GHz	4.72
	1 GHz ~ 6 GHz	5.21
	6 GHz ~ 18 GHz	5.51
	18 GHz ~ 26 GHz	3.69
	26 GHz ~ 40 GHz	4.23

NOTE:

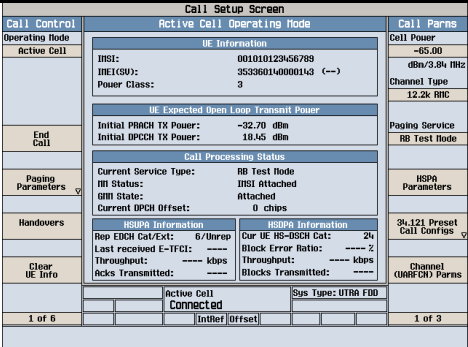
Unless specifically mentioned, the uncertainty of measurement has not been taken into account to declare the compliance or non-compliance to the specification.

1.3 TEST ENVIRONMENT CONDITIONS

Test Item	Environment Condition	Test Voltage	Tested by
Conducted Output Power	24.6 °C, 67 %	DC 3.7V	Paul Shen
Occupied Bandwidth	24.6 °C, 67 %	DC 3.7V	Paul Shen
Conducted Spurious Emissions	24.6 °C, 67 %	DC 3.7V	Paul Shen
Radiated Spurious Emissions and Effective Isotropic Radiated Power	Refer to data	DC 3.7V	Vincent Lee
Band Edge	24.6 °C, 67 %	DC 3.7V	Paul Shen
Peak to Average Ratio	24.6 °C, 67 %	DC 3.7V	Paul Shen
Frequency Stability	Normal and Extreme		Paul Shen

2 GENERAL INFORMATION

2.1 DESCRIPTION OF EUT

Equipment	Module			
Model Name	RC7612, RC7612-1			
Brand Name	AirPrime			
Model Difference	The hardware of the two models is the same, only the software is different. RC7612 is LTE Category 4 RC7612-1 is LTE Category 1			
Power Source	DC Voltage supplied from host equipment.			
Power Rating	DC 3.7V			
Products Covered	N/A			
IEMI No.	WCDMA		LTE	
				
Operation Frequency	Band	UL Frequency (MHz)		DL Frequency (MHz)
	WCDMA II	1850 ~ 1910		1930 ~ 1990
	LTE 2	1850 ~ 1910		1930 ~ 1990
Maximum EIRP	Band	BW (MHz)	Mode	Power (W)
	LTE 2	1.4	-	0.303
			QPSK	0.212
		3	16QAM	0.175
			QPSK	0.215
		5	16QAM	0.177
			QPSK	0.217
		10	16QAM	0.179
			QPSK	0.220
		15	16QAM	0.181
			QPSK	0.222
		20	16QAM	0.183
			QPSK	0.224
		16QAM	0.184	
Test Model	RC7612			
Sample Status	Engineering Sample			
EUT Modification(s)	N/A			

NOTE:

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

(2) Channel List:

WCDMA Band II				
Test Frequency ID	UARFCN	Frequency of Uplink (MHz)	UARFCN	Frequency of Downlink (MHz)
Low Range	9262	1852.4	9662	1932.4
Mid Range	9400	1880.0	9800	1960.0
High Range	9538	1907.6	9938	1987.6

LTE Band 2					
Test Frequency ID	Bandwidth (MHz)	N _{UL}	Frequency of Uplink (MHz)	N _{DL}	Frequency of Downlink (MHz)
Low Range	1.4	18607	1850.7	607	1930.7
	3	18615	1851.5	615	1931.5
	5	18625	1852.5	625	1932.5
	10	18650	1855	650	1935
	15	18675	1857.5	675	1937.5
	20	18700	1860	700	1940
Mid Range	1.4/3/5/10/15/20	18900	1880	900	1960
High Range	1.4	19193	1909.3	1193	1989.3
	3	19185	1908.5	1185	1988.5
	5	19175	1907.5	1175	1987.5
	10	19150	1905	1150	1985
	15	19125	1902.5	1125	1982.5
	20	19100	1900	1100	1980

(3) Table for Filed Antenna:

Antenna	Manufacture	Part Number	Type	Connector	Gain (dBi)	Note
1		SPDA24617/3900	Dipole	SMA-M	2.5	WCDMA Band II
					2.5	LTE Band 2

2.2 TEST MODES

WCDMA BAND II MODE			
Test Item	Available Channel	Tested Channel	Mode
Conducted Output Power and Effective Isotropic Radiated Power	9262 to 9538	9262, 9400, 9538	WCDMA, HSDPA, HSUPA, HSPA+
Occupied Bandwidth	9262 to 9538	9262, 9400, 9538	WCDMA
Conducted Spurious Emissions	9262 to 9538	9400	WCDMA
Radiated Spurious Emissions	9262 to 9538	9400	WCDMA
Band Edge	9262 to 9538	9262, 9538	WCDMA
Peak to Average Ratio	9262 to 9538	9262, 9400, 9538	WCDMA
Frequency Stability	9262 to 9538	9400	WCDMA

LTE BAND 2 MODE					
Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
Conducted Output Power	18607 to 19193	18607, 18900, 19193	1.4MHz	QPSK, 16QAM	1RB/3RB/6RB
	18615 to 19185	18615, 18900, 19185	3MHz	QPSK, 16QAM	1RB/8RB/15RB
	18625 to 19175	18625, 18900, 19175	5MHz	QPSK, 16QAM	1RB/12RB/25RB
	18650 to 19150	18650, 18900, 19150	10MHz	QPSK, 16QAM	1RB/25RB/50RB
	18675 to 19125	18675, 18900, 19125	15MHz	QPSK, 16QAM	1RB/36RB/75RB
	18700 to 19100	18700, 18900, 19100	20MHz	QPSK, 16QAM	1RB/50RB/100RB
Effective Isotropic Radiated Power	18700 to 19100	18700, 18900, 19100	20MHz	QPSK	1RB/50RB/100RB
Occupied Bandwidth	18607 to 19193	18607, 18900, 19193	1.4MHz	QPSK, 16QAM	6RB
	18615 to 19185	18615, 18900, 19185	3MHz	QPSK, 16QAM	15RB
	18625 to 19175	18625, 18900, 19175	5MHz	QPSK, 16QAM	25RB
	18650 to 19150	18650, 18900, 19150	10MHz	QPSK, 16QAM	50RB
	18675 to 19125	18675, 18900, 19125	15MHz	QPSK, 16QAM	75 RB
	18700 to 19100	18700, 18900, 19100	20MHz	QPSK, 16QAM	100RB

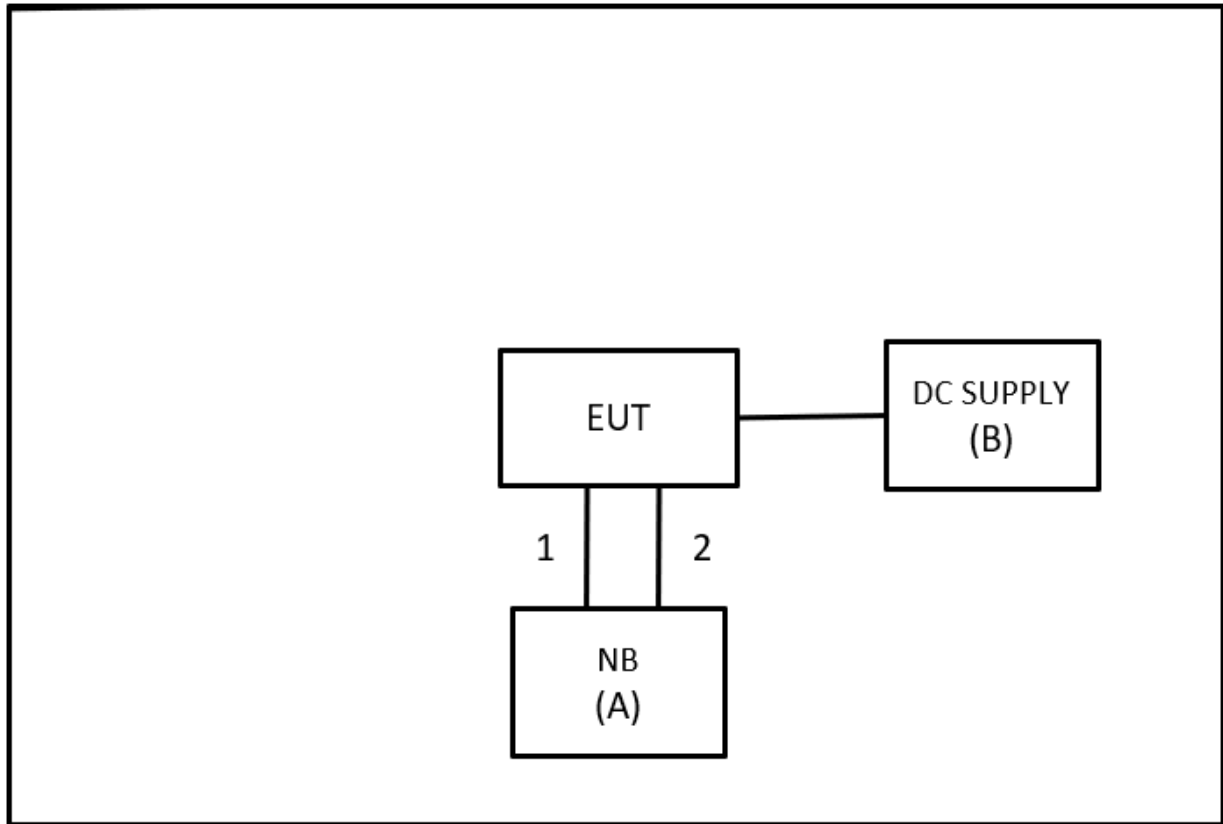
LTE BAND 2 MODE					
Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
Conducted Spurious Emissions	18607 to 19193	18900	1.4MHz	QPSK	1RB
	18615 to 19185	18900	3MHz	QPSK	1RB
	18625 to 19175	18900	5MHz	QPSK	1RB
	18650 to 19150	18900	10MHz	QPSK	1RB
	18675 to 19125	18900	15MHz	QPSK	1RB
	18700 to 19100	18900	20MHz	QPSK	1RB
Radiated Spurious Emissions	18607 to 19193	18900	1.4MHz	QPSK	1RB
	18615 to 19185	18900	3MHz	QPSK	1RB
	18625 to 19175	18900	5MHz	QPSK	1RB
	18650 to 19150	18900	10MHz	QPSK	1RB
	18675 to 19125	18900	15MHz	QPSK	1RB
	18700 to 19100	18900	20MHz	QPSK	1RB
Band Edge	18607 to 19193	18607, 19193	1.4MHz	QPSK	1RB/6RB
	18615 to 19185	18615, 19185	3MHz	QPSK	1RB/15RB
	18625 to 19175	18625, 19175	5MHz	QPSK	1RB/25RB
	18650 to 19150	18650, 19150	10MHz	QPSK	1RB/50RB
	18675 to 19125	18675, 19125	15MHz	QPSK	1RB/75RB
	18700 to 19100	18700, 19100	20MHz	QPSK	1RB/100RB
Peak To Average Ratio	18607 to 19193	18607, 18900, 19193	1.4MHz	QPSK, 16QAM	1RB
	18615 to 19185	18615, 18900, 19185	3MHz	QPSK, 16QAM	1RB
	18625 to 19175	18625, 18900, 19175	5MHz	QPSK, 16QAM	1RB
	18650 to 19150	18650, 18900, 19150	10MHz	QPSK, 16QAM	1RB
	18675 to 19125	18675, 18900, 19125	15MHz	QPSK, 16QAM	1RB
	18700 to 19100	18700, 18900, 19100	20MHz	QPSK, 16QAM	1RB
Frequency Stability	18607 to 19193	18900	1.4MHz	QPSK	1RB
	18615 to 19185	18900	3MHz	QPSK	1RB
	18625 to 19175	18900	5MHz	QPSK	1RB
	18650 to 19150	18900	10MHz	QPSK	1RB
	18675 to 19125	18900	15MHz	QPSK	1RB
	18700 to 19100	18900	20MHz	QPSK	1RB

NOTE:

- (1) The Radiated emissions test was verified based on the worst conducted power and Bandwidth test results reported in the original report.
- (2) All X, Y and Z axes are evaluated, but only the worst case (Y axis) is recorded.
- (3) For Radiated Spurious Emissions both QPSK and 16QAM are evaluated, but only the worst case (QPSK) is recorded.

2.3 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Equipment letters and Cable numbers refer to item numbers described in the tables of clause 2.4.



2.4 SUPPORT UNITS

Item	Equipment	Brand	Model No.	Series No.	Remarks
A	NB	HP	TPN-I119	N/A	Furnished by test lab.
B	DC Power Supply	ABM	8303D	N/A	Furnished by test lab.

Item	Shielded	Ferrite Core	Length	Cable Type	Remarks
1	N/A	N/A	0.5m	Micro USB Cable	Furnished by test lab.
2	N/A	N/A	1m	Micro USB Cable	Furnished by test lab.

3 CONDUCTED OUTPUT POWER AND EFFECTIVE ISOTROPIC RADIATED POWER MEASUREMENT

3.1 LIMIT

Mobile / Portable station are limited to 2 watts e.i.r.p.

NOTE:

(1) The test result calculated as following:

Measurement Value = Reading Level + Correct Factor

Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain(if use)

Margin Level = Measurement Value - Limit Value

Calculation example:

Reading Level		Correct Factor		Measurement Value
-29.66	+	34.26	=	4.60

Measurement Value		Limit Value		Margin Level
4.60	-	38.45	=	-33.85

3.2 TEST PROCEDURE

The testing follows FCC KDB 971168 v03r01 Section 5.

EIRP / ERP Power Measurement:

EIRP = Conducted Power + Antenna gain.

ERP power = EIPR power - 2.15 dBi.

Conducted Measurement:

The EUT was set up for the maximum power with 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.

Radiated Measurement:

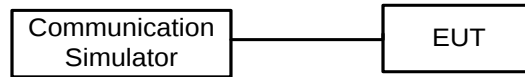
- Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- 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
- EIRP = Output power level of S.G – TX cable loss + Antenna gain of substitution horn.
- ERP can be calculated form EIRP by subtracting the gain of dipole, ERP = EIPR - 2.15dBi..
- The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

3.3 DEVIATION FROM TEST STANDARD

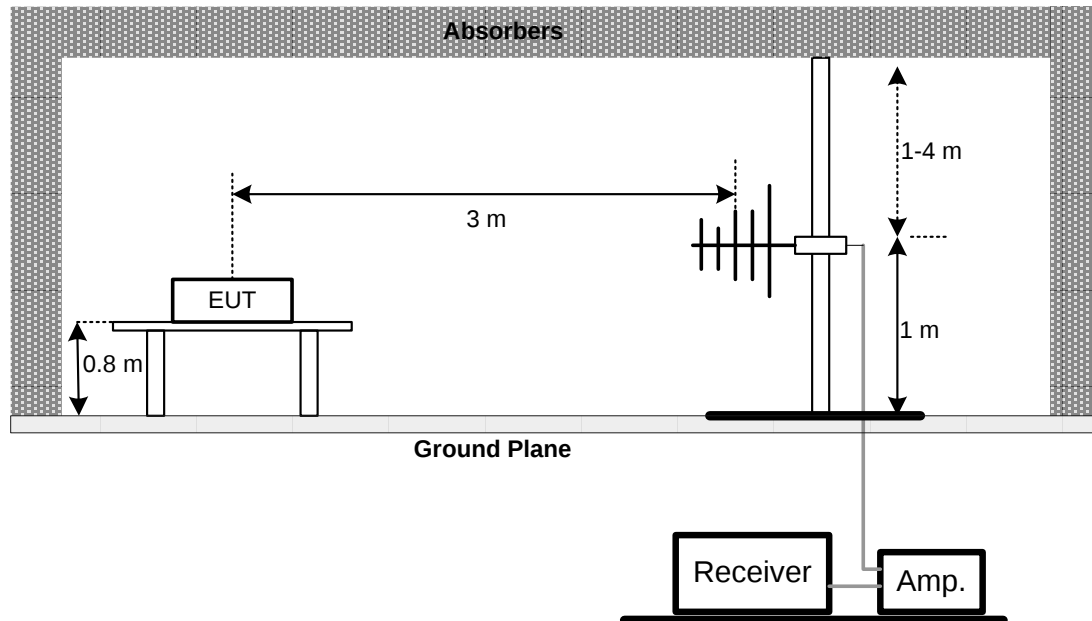
No deviation.

3.4 TEST SETUP

Conducted Measurement:



Radiated Measurement:



3.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

3.6 TEST RESULT

Please refer to the APPENDIX A.

4 OCCUPIED BANDWIDTH MEASUREMENT

4.1 TEST PROCEDURE

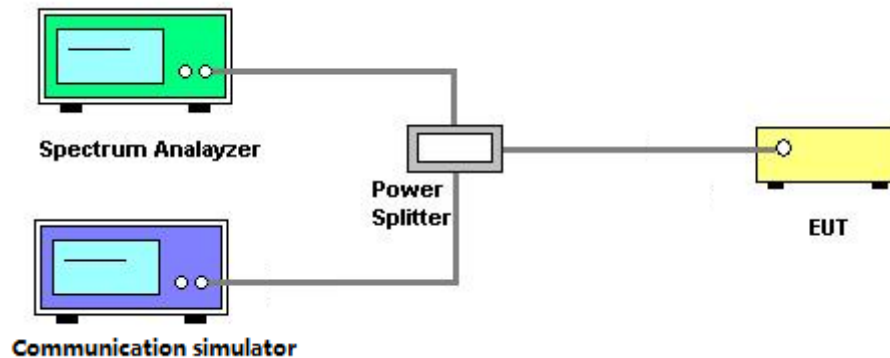
The testing follows FCC KDB 971168 v03r01 Section 4.

- 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.
- The EUT was connected to spectrum analyzer and system simulator via a power divider.
- $RBW = (1\% \sim 5\%) * EBW$
 $VBW \geq 3 * RBW$.
- Set spectrum analyzer with Peak detector.

4.2 DEVIATION FROM TEST STANDARD

No deviation.

4.3 TEST SETUP



4.4 TEST RESULT

Please refer to the APPENDIX B

5 CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

5.1 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.

5.2 TEST PROCEDURE

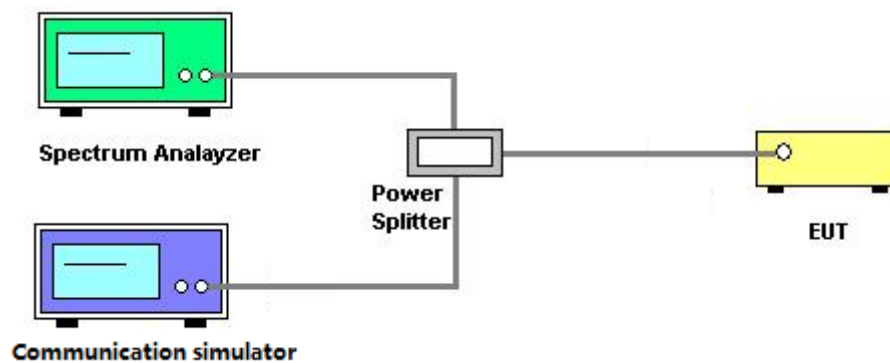
The testing follows FCC KDB 971168 v03r01 Section 6.

- The EUT was connected to spectrum analyzer and system simulator via a power divider.
- 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.
- Set spectrum analyzer with Peak detector.
- The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

5.3 DEVIATION FROM TEST STANDARD

No deviation.

5.4 TEST SETUP



5.5 TEST RESULT

Please refer to the APPENDIX C.

6 RADIATED SPURIOUS EMISSIONS TEST

6.1 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.

NOTE:

(1) The test result calculated as following:

Measurement Value = Reading Level + Correct Factor

Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain(if use)

Margin Level = Measurement Value - Limit Value

Calculation example:

Reading Level		Correct Factor		Measurement Value
-50.43	+	-2.11	=	-52.54

Measurement Value		Limit Value		Margin Level
-52.54	-	-13	=	-39.54

6.2 TEST PROCEDURE

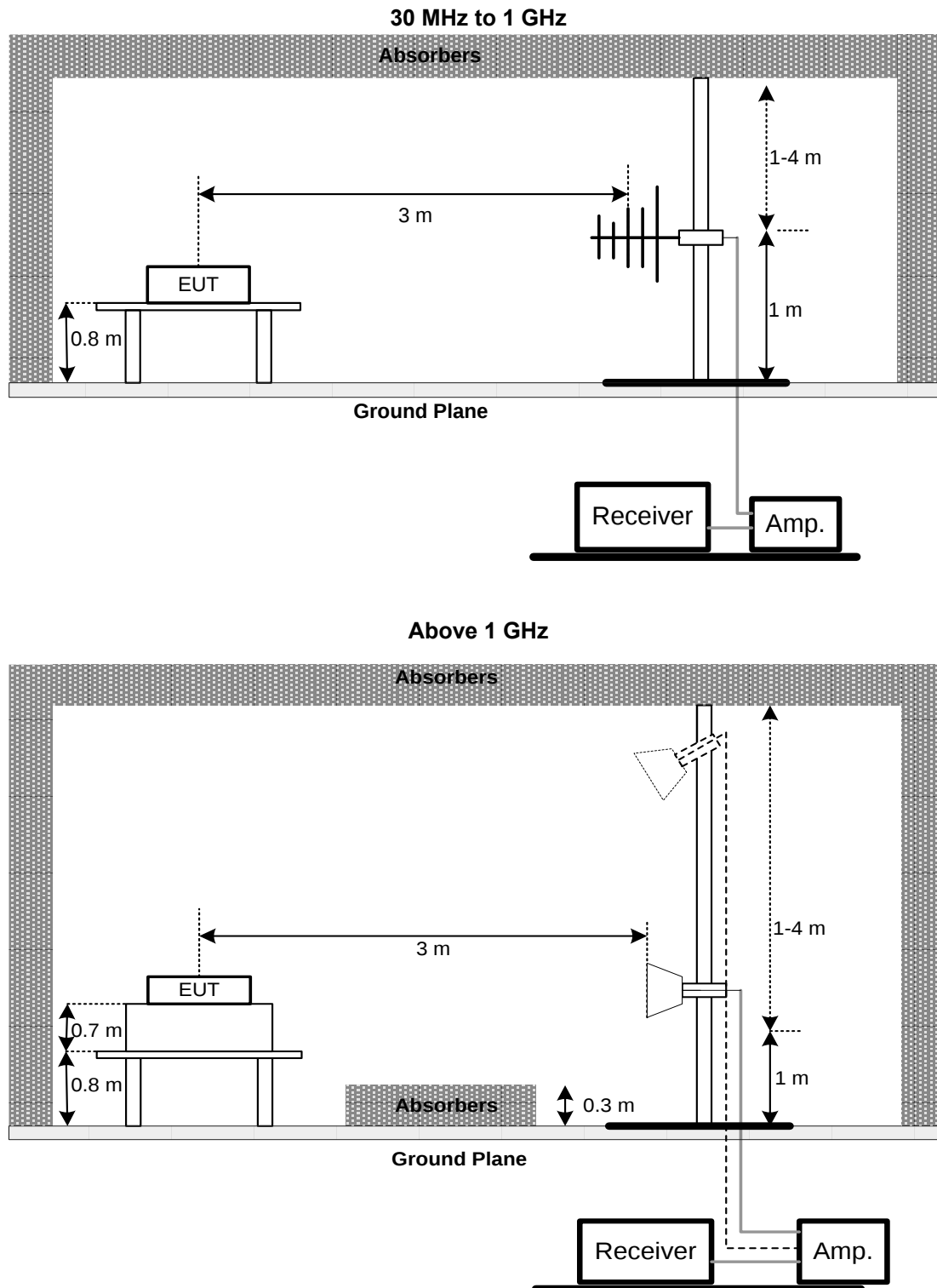
The testing follows FCC KDB 971168 v03r01 Section 6.2.

- 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.
- 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
- $EIRP = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}.$
- ERP can be calculated form EIRP by subtracting the gain of dipole, $ERP = EIPR - 2.15\text{dBi}.$
- The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

6.3 DEVIATION FROM TEST STANDARD

No deviation.

6.4 TEST SETUP



6.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

6.6 TEST RESULT

Please refer to the APPENDIX D.

7 BAND EDGE MEASUREMENT

7.1 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.

7.2 TEST PROCEDURE

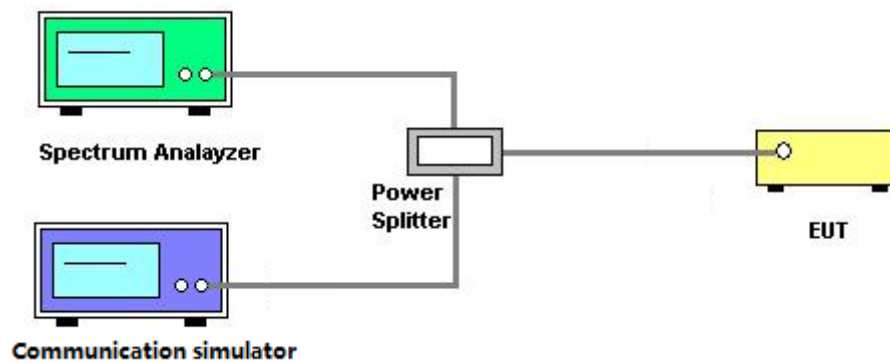
The testing follows FCC KDB 971168 v03r01 Section 6.

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

7.3 DEVIATION FROM TEST STANDARD

No deviation.

7.4 TEST SETUP



7.5 TEST RESULT

Please refer to the APPENDIX E

8 PEAK TO AVERAGE RATIO MEASUREMENT

8.1 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.

8.2 TEST PROCEDURE

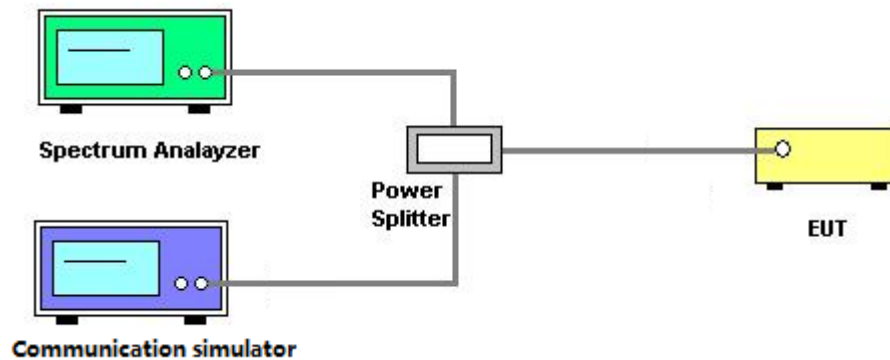
The testing follows FCC KDB 971168 v03r01 Section 5.7.

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

8.3 DEVIATION FROM TEST STANDARD

No deviation.

8.4 TEST SETUP



8.5 TEST RESULT

Please refer to the APPENDIX F.

9 FREQUENCY STABILITY MEASUREMENT

9.1 LIMIT

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

9.2 TEST PROCEDURE

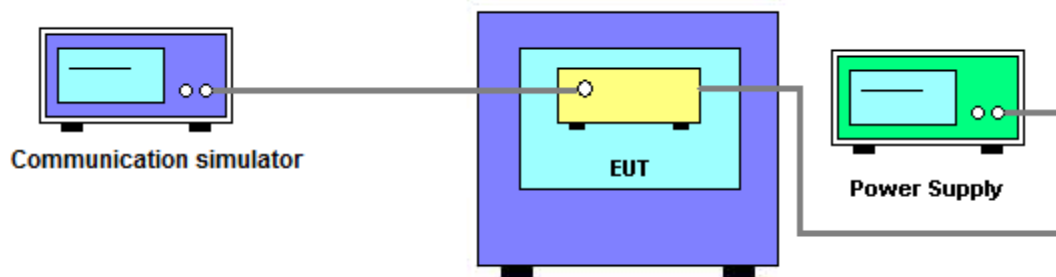
The testing follows FCC KDB 971168 v03r01 Section 9.

- 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.
- 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.
- 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.
- The frequency error was recorded frequency error from the communication simulator.

9.3 DEVIATION FROM TEST STANDARD

No deviation.

9.4 TEST SETUP



9.5 TEST RESULT

Please refer to the APPENDIX G

10 LIST OF MEASURING EQUIPMENTS

Conducted Output Power						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	8960 Series 10 Wireless Com Test Set	Agilent	E5515C	GB47390193	2021/7/23	2022/7/22
2	Radio Communication Analyzer	Anritsu	MT8820C	6201381608	2021/12/15	2022/12/14

Effective Radiated Power and Radiated Spurious Emissions						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Preamplifier	EMCI	EMC02325	980217	2021/4/8	2022/4/7
2	Preamplifier	EMCI	EMC012645B	980222	2021/4/8	2022/4/7
3	Test Cable	EMCI	EMC104-SM-1000	180809	2021/4/8	2022/4/7
4	Test Cable	EMCI	EMC104-SM-SM-3000	151205	2021/4/8	2022/4/7
5	Test Cable	EMCI	EMC-SM-SM-7000	180408	2021/4/8	2022/4/7
6	MXE EMI Receiver	Agilent	N9038A	MY56400087	2021/5/27	2022/5/26
7	Signal Analyzer	Agilent	N9010A	MY56480554	2021/8/25	2022/8/24
8	Horn Ant	SCHWARZBECK	BBHA 9120D	9120D-1342	2021/6/2	2022/6/1
9	Horn Ant	Schwarzbeck	BBHA 9170	340	2021/7/9	2022/7/8
10	Trilog-Broadband Antenna	Schwarzbeck	VULB 9168	9168-352	2021/8/11	2022/8/10
11	5dB Attenuator	EMCI	EMCI-N-6-05	AT-N0625	2021/8/11	2022/8/10
12	Measurement Software	EZ	EZ EMC (Version NB-03A1-01)	N/A	N/A	N/A
13	8960 Series 10 Wireless Com Test Set	Agilent	E5515C	GB47390193	2021/7/23	2022/7/22
14	Radio Communication Analyzer (LTE)	Anritsu	MT8821C	6262044728	2021/11/28	2022/11/27

Frequency Stability Measurement						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	8960 Series 10 Wireless Com Test Set	Agilent	E5515C	GB47390193	2021/7/23	2022/7/22
2	Radio Communication Analyzer	Anritsu	MT8820C	6201381608	2021/5/27	2022/5/26
3	Thermal Chamber	HOLINK	H-T-1F-D	BA03101701	2021/6/28	2022/6/27

Others Conducted Measurement						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	8960 Series 10 Wireless Com Test Set	Agilent	E5515C	GB47390193	2021/6/8	2022/6/7
2	Radio Communication Analyzer	Anritsu	MT8820C	6201381608	2021/5/27	2022/5/26
3	Spectrum Analyzer	Agilent	N9010A	MY54200240	2021/5/27	2022/5/26

Remark: "N/A" denotes no model name, no serial no. or no calibration specified.
All calibration period of equipment list is one year.

11 EUT TEST PHOTO

Please refer to document Appendix No.: TP-2203T030-FCCP-1 (APPENDIX-TEST PHOTOS).

12 EUT PHOTOS

Please refer to document Appendix No.: EP-2203T030-2 (APPENDIX-EUT PHOTOS).

APPENDIX A CONDUCTED OUTPUT POWER AND EFFECTIVE RADIATED POWER

Conducted Output Power:

Band	Mode	UL/DL Channel No.	Frequency(MHz)	Average power(dBm)	EIRP power (dBm)	EIRP power (W)
WCDMA Band II	Rel 99	9262/9662	1852.4	22.28	24.78	0.301
		9400/9800	1880.0	22.30	24.80	0.302
		9538/9938	1907.6	22.31	24.81	0.303

Band	Sub-test	UL/DL Channel No.	Frequency(MHz)	Average power(dBm)	EIRP power (dBm)	EIRP power (W)
HSDPA II	1	9262/9662	1852.4	22.22	24.72	0.296
		9400/9800	1880.0	22.24	24.74	0.298
		9538/9938	1907.6	22.29	24.79	0.301
	2	9262/9662	1852.4	21.94	24.44	0.278
		9400/9800	1880.0	21.76	24.26	0.267
		9538/9938	1907.6	21.81	24.31	0.270
	3	9262/9662	1852.4	21.52	24.02	0.252
		9400/9800	1880.0	21.34	23.84	0.242
		9538/9938	1907.6	21.39	23.89	0.245
	4	9262/9662	1852.4	22.33	24.83	0.304
		9400/9800	1880.0	22.15	24.65	0.292
		9538/9938	1907.6	22.20	24.70	0.295

Band	Sub-test	UL/DL Channel No.	Frequency(MHz)	Average power(dBm)	EIRP power (dBm)	EIRP power (W)
HSUPA II	1	9262/9662	1852.4	22.21	24.71	0.296
		9400/9800	1880.0	22.23	24.73	0.297
		9538/9938	1907.6	22.24	24.74	0.298
	2	9262/9662	1852.4	20.27	22.77	0.189
		9400/9800	1880.0	20.29	22.79	0.190
		9538/9938	1907.6	20.30	22.80	0.191
	3	9262/9662	1852.4	21.33	23.83	0.242
		9400/9800	1880.0	21.35	23.85	0.243
		9538/9938	1907.6	21.36	23.86	0.243
	4	9262/9662	1852.4	20.21	22.71	0.187
		9400/9800	1880.0	20.23	22.73	0.187
		9538/9938	1907.6	20.24	22.74	0.188
	5	9262/9662	1852.4	22.12	24.62	0.290
		9400/9800	1880.0	22.14	24.64	0.291
		9538/9938	1907.6	22.15	24.65	0.292

Band	UL/DL Channel No.	Frequency(MHz)	Average power(dBm)	EIRP power (dBm)	EIRP power (W)
HSPA+ II	9262/9662	1852.4	22.21	24.71	0.296
	9400/9800	1880.0	22.22	24.72	0.296
	9538/9938	1907.6	22.27	24.77	0.300

NOTE:

- (1) EIRP = Average power + Antenna gain.
- (2) ERP = EIRP - 2.15.
- (3) $P(W) = 1 W \cdot 10^{(P(dBm) / 10)} / 1000$
- (4) The maximum antenna gain is applied.

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	EIRP power (dBm)	EIRP power (W)
2	1.4	18607	1850.7	QPSK	1	0	0	22.37	23.1	0.202
					1	2	0	22.56	23.3	0.211
					1	5	0	22.28	23.0	0.198
					3	0	0	22.37	23.1	0.202
					3	1	0	22.56	23.3	0.211
					3	2	0	22.28	23.0	0.198
				16QAM	6	0	1	21.38	22.1	0.161
					1	0	1	21.59	22.3	0.169
					1	2	1	21.74	22.4	0.175
					1	5	1	21.39	22.1	0.161
					3	0	1	21.59	22.3	0.169
					3	1	1	21.74	22.4	0.175
		18900	1880.0	QPSK	3	2	1	21.39	22.1	0.161
					6	0	2	20.47	21.2	0.131
					1	0	0	22.41	23.1	0.204
					1	2	0	22.58	23.3	0.212
					1	5	0	22.05	22.7	0.188
					3	0	0	22.41	23.1	0.204
				16QAM	3	1	0	22.58	23.3	0.212
					3	2	0	22.05	22.7	0.188
					6	0	1	21.47	22.2	0.164
					1	0	1	21.59	22.3	0.169
					1	2	1	21.65	22.3	0.171
					1	5	1	21.12	21.8	0.152
		19193	1909.3	QPSK	3	0	1	21.59	22.3	0.169
					3	1	1	21.65	22.3	0.171
					3	2	1	21.12	21.8	0.152
					6	0	2	20.50	21.2	0.132
				16QAM	1	0	0	22.31	23.0	0.200
					1	2	0	22.33	23.0	0.200
					1	5	0	22.11	22.8	0.191
					3	0	0	22.31	23.0	0.200
					3	1	0	22.33	23.0	0.200
					3	2	0	22.11	22.8	0.191
					6	0	1	21.37	22.1	0.161
				16QAM	1	0	1	21.49	22.2	0.165
					1	2	1	21.45	22.1	0.164
					1	5	1	21.18	21.9	0.154
					3	0	1	21.49	22.2	0.165
					3	1	1	21.45	22.1	0.164
					3	2	1	21.18	21.9	0.154
					6	0	2	20.60	21.3	0.135

NOTE:

- (1) EIRP = Average power + Antenna gain.
- (2) ERP = EIRP - 2.15.
- (3) $P(W) = 1 W \cdot 10^{(P(dBm) / 10) / 1000}$
- (4) The maximum antenna gain is applied.

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	EIRP power (dBm)	EIRP power (W)
2	3	18615	1851.5	QPSK	1	0	0	22.42	23.1	0.205
					1	7	0	22.61	23.3	0.214
					1	14	0	22.33	23.0	0.200
					8	0	1	21.57	22.3	0.168
					8	4	1	21.69	22.4	0.173
					8	7	1	21.55	22.2	0.167
					15	0	1	21.43	22.1	0.163
				16QAM	1	0	1	21.64	22.3	0.171
					1	7	1	21.79	22.5	0.177
					1	14	1	21.44	22.1	0.163
					8	0	2	20.47	21.2	0.131
					8	4	2	20.79	21.5	0.141
					8	7	2	20.40	21.1	0.129
					15	0	2	20.52	21.2	0.132
		18900	1880.0	QPSK	1	0	0	22.46	23.2	0.207
					1	7	0	22.63	23.3	0.215
					1	14	0	22.10	22.8	0.190
					8	0	1	21.57	22.3	0.168
					8	4	1	21.67	22.4	0.172
					8	7	1	21.28	22.0	0.157
					15	0	1	21.52	22.2	0.166
				16QAM	1	0	1	21.64	22.3	0.171
					1	7	1	21.70	22.4	0.173
					1	14	1	21.17	21.9	0.153
					8	0	2	20.47	21.2	0.131
					8	4	2	20.77	21.5	0.140
					8	7	2	20.13	20.8	0.121
					15	0	2	21.30	22.0	0.158
		19185	1908.5	QPSK	1	0	0	22.36	23.1	0.202
					1	7	0	22.38	23.1	0.203
					1	14	0	22.16	22.9	0.193
					8	0	1	21.47	22.2	0.164
					8	4	1	21.42	22.1	0.163
					8	7	1	21.34	22.0	0.160
					15	0	1	21.42	22.1	0.163
				16QAM	1	0	1	21.54	22.2	0.167
					1	7	1	21.50	22.2	0.166
					1	14	1	21.23	21.9	0.156
					8	0	2	20.37	21.1	0.128
					8	4	2	20.52	21.2	0.132
					8	7	2	20.19	20.9	0.122
					15	0	2	21.10	21.8	0.151

NOTE:

- (1) EIRP = Average power + Antenna gain.
- (2) ERP = EIRP - 2.15.
- (3) $P(W) = 1 W \cdot 10^{(P(dBm) / 10)} / 1000$
- (4) The maximum antenna gain is applied.

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	EIRP power (dBm)	EIRP power (W)
2	5	18625	1852.5	QPSK	1	0	0	22.47	23.2	0.207
					1	12	0	22.66	23.4	0.216
					1	24	0	22.38	23.1	0.203
					12	0	1	21.62	22.3	0.170
					12	6	1	21.74	22.4	0.175
					12	11	1	21.60	22.3	0.169
					25	0	1	21.48	22.2	0.165
				16QAM	1	0	1	21.69	22.4	0.173
					1	12	1	21.84	22.5	0.179
					1	24	1	21.49	22.2	0.165
					12	0	2	20.52	21.2	0.132
					12	6	2	20.84	21.5	0.142
					12	11	2	20.45	21.1	0.130
					25	0	2	20.57	21.3	0.134
		18900	1880.0	QPSK	1	0	0	22.51	23.2	0.209
					1	12	0	22.68	23.4	0.217
					1	24	0	22.15	22.8	0.192
					12	0	1	21.62	22.3	0.170
					12	6	1	21.72	22.4	0.174
					12	11	1	21.33	22.0	0.159
					25	0	1	21.57	22.3	0.168
				16QAM	1	0	1	21.69	22.4	0.173
					1	12	1	21.75	22.4	0.175
					1	24	1	21.22	21.9	0.155
					12	0	2	20.52	21.2	0.132
					12	6	2	20.82	21.5	0.142
					12	11	2	20.18	20.9	0.122
					25	0	2	20.66	21.4	0.136
		19175	1907.5	QPSK	1	0	0	22.41	23.1	0.204
					1	12	0	22.43	23.1	0.205
					1	24	0	22.21	22.9	0.195
					12	0	1	21.52	22.2	0.166
					12	6	1	21.47	22.2	0.164
					12	11	1	21.39	22.1	0.161
					25	0	1	21.47	22.2	0.164
				16QAM	1	0	1	21.59	22.3	0.169
					1	12	1	21.55	22.2	0.167
					1	24	1	21.28	22.0	0.157
					12	0	2	20.42	21.1	0.129
					12	6	2	20.57	21.3	0.134
					12	11	2	20.24	20.9	0.124
					25	0	2	20.56	21.3	0.133

NOTE:

- (1) EIRP = Average power + Antenna gain.
- (2) ERP = EIRP - 2.15.
- (3) $P(W) = 1 W \cdot 10^{(P(dBm) / 10)} / 1000$
- (4) The maximum antenna gain is applied.

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	EIRP power (dBm)	EIRP power (W)
2	10	18650	1855.0	QPSK	1	0	0	22.52	23.2	0.209
					1	24	0	22.71	23.4	0.219
					1	49	0	22.43	23.1	0.205
					25	0	1	21.67	22.4	0.172
					25	12	1	21.79	22.5	0.177
					25	24	1	21.65	22.3	0.171
					50	0	1	21.53	22.2	0.167
				16QAM	1	0	1	21.74	22.4	0.175
					1	24	1	21.89	22.6	0.181
					1	49	1	21.54	22.2	0.167
					25	0	2	20.57	21.3	0.134
					25	12	2	20.89	21.6	0.144
					25	24	2	20.50	21.2	0.132
					50	0	2	20.62	21.3	0.135
		18900	1880.0	QPSK	1	0	0	22.56	23.3	0.211
					1	24	0	22.73	23.4	0.220
					1	49	0	22.20	22.9	0.195
					25	0	1	21.67	22.4	0.172
					25	12	1	21.77	22.5	0.176
					25	24	1	21.38	22.1	0.161
					50	0	1	21.62	22.3	0.170
				16QAM	1	0	1	21.74	22.4	0.175
					1	24	1	21.80	22.5	0.177
					1	49	1	21.27	22.0	0.157
					25	0	2	20.57	21.3	0.134
					25	12	2	20.87	21.6	0.143
					25	24	2	20.23	20.9	0.124
					50	0	2	20.71	21.4	0.138
		19150	1905.0	QPSK	1	0	0	22.46	23.2	0.207
					1	24	0	22.48	23.2	0.207
					1	49	0	22.26	23.0	0.197
					25	0	1	21.57	22.3	0.168
					25	12	1	21.52	22.2	0.166
					25	24	1	21.44	22.1	0.163
					50	0	1	21.52	22.2	0.166
				16QAM	1	0	1	21.64	22.3	0.171
					1	24	1	21.60	22.3	0.169
					1	49	1	21.33	22.0	0.159
					25	0	2	20.47	21.2	0.131
					25	12	2	20.62	21.3	0.135
					25	24	2	20.29	21.0	0.125
					50	0	2	20.61	21.3	0.135

NOTE:

- (1) EIRP = Average power + Antenna gain.
- (2) ERP = EIRP - 2.15.
- (3) $P(W) = 1 W \cdot 10^{(P(dBm) / 10)} / 1000$
- (4) The maximum antenna gain is applied.

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	EIRP power (dBm)	EIRP power (W)
2	15	18675	1857.5	QPSK	1	0	0	22.57	23.3	0.212
					1	37	0	22.76	23.5	0.221
					1	74	0	22.48	23.2	0.207
					36	0	1	21.72	22.4	0.174
					36	18	1	21.84	22.5	0.179
					36	35	1	21.70	22.4	0.173
				16QAM	75	0	1	21.58	22.3	0.169
					1	0	1	21.79	22.5	0.177
					1	37	1	21.94	22.6	0.183
					1	74	1	21.59	22.3	0.169
					36	0	2	20.62	21.3	0.135
					36	18	2	20.94	21.6	0.146
					36	35	2	20.55	21.2	0.133
					75	0	2	20.67	21.4	0.137
					1	37	0	22.78	23.5	0.222
		1	74	0	22.25	22.9	0.197			
		36	0	1	21.72	22.4	0.174			
		36	18	1	21.82	22.5	0.178			
		36	35	1	21.43	22.1	0.163			
		16QAM	75	0	1	21.67	22.4	0.172		
			1	0	1	21.79	22.5	0.177		
			1	37	1	21.85	22.5	0.179		
			1	74	1	21.32	22.0	0.159		
			36	0	2	20.62	21.3	0.135		
			36	18	2	20.92	21.6	0.145		
			36	35	2	20.28	21.0	0.125		
			75	0	2	20.76	21.5	0.140		
			1	37	0	22.53	23.2	0.210		
		1	74	0	22.31	23.0	0.200			
		36	0	1	21.62	22.3	0.170			
		36	18	1	21.57	22.3	0.168			
		36	35	1	21.49	22.2	0.165			
		16QAM	75	0	1	21.57	22.3	0.168		
			1	0	1	21.69	22.4	0.173		
			1	37	1	21.65	22.3	0.171		
			1	74	1	21.38	22.1	0.161		
			36	0	2	20.52	21.2	0.132		
			36	18	2	20.67	21.4	0.137		
			36	35	2	20.34	21.0	0.127		
			75	0	2	20.66	21.4	0.136		

NOTE:

- (1) EIRP = Average power + Antenna gain.
- (2) ERP = EIRP - 2.15.
- (3) $P(W) = 1 W \cdot 10^{(P(dBm) / 10) / 1000}$
- (4) The maximum antenna gain is applied.

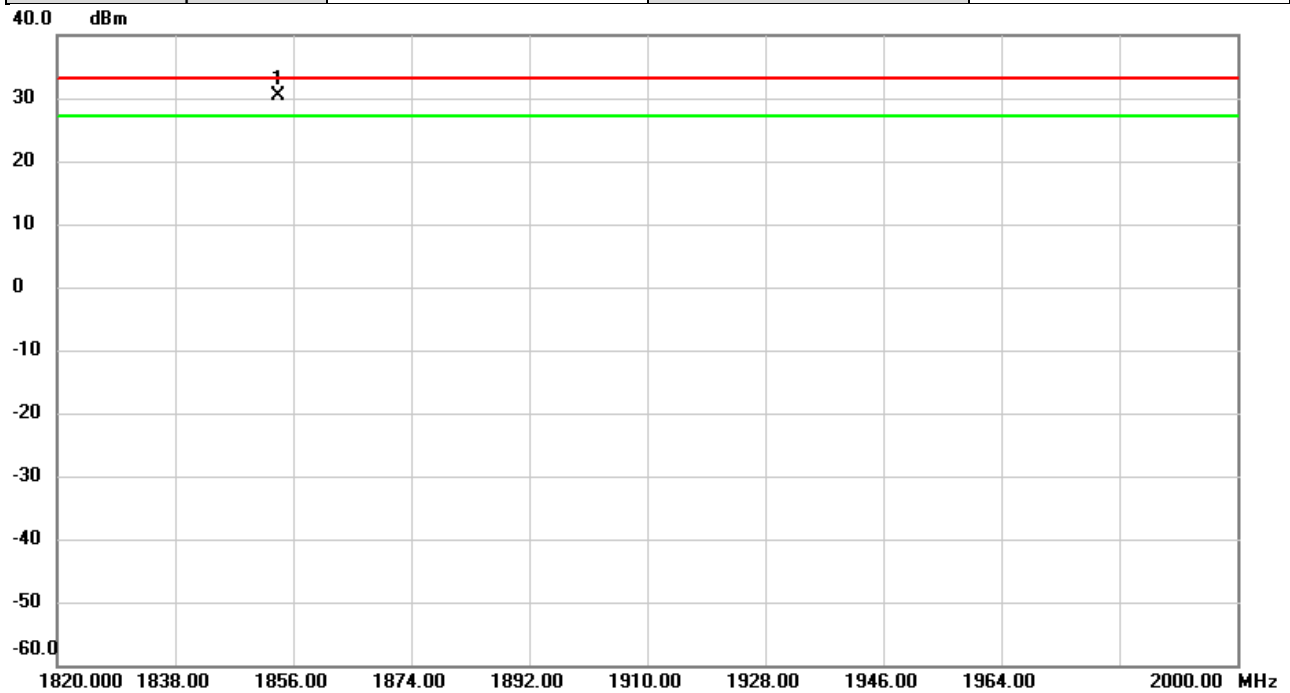
Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	EIRP power (dBm)	EIRP power (W)
2	20	18700	1860.0	QPSK	1	0	0	22.62	23.3	0.214
					1	49	0	22.81	23.5	0.224
					1	99	0	22.53	23.2	0.210
					50	0	1	21.73	22.4	0.175
					50	24	1	21.85	22.5	0.179
					50	49	1	21.71	22.4	0.174
				16QAM	100	0	1	21.59	22.3	0.169
					1	0	1	21.80	22.5	0.177
					1	49	1	21.95	22.6	0.184
					1	99	1	21.60	22.3	0.169
					50	0	2	20.63	21.3	0.136
					50	24	2	20.95	21.6	0.146
					50	49	2	20.56	21.3	0.133
					100	0	2	20.68	21.4	0.137
		18900	1880.0	QPSK	1	0	0	22.62	23.3	0.214
					1	49	0	22.79	23.5	0.223
					1	99	0	22.26	23.0	0.197
					50	0	1	21.73	22.4	0.175
					50	24	1	21.83	22.5	0.179
					50	49	1	21.44	22.1	0.163
				16QAM	100	0	1	21.68	22.4	0.173
					1	0	1	21.80	22.5	0.177
					1	49	1	21.86	22.6	0.180
					1	99	1	21.33	22.0	0.159
					50	0	2	20.63	21.3	0.136
					50	24	2	20.93	21.6	0.145
					50	49	2	20.29	21.0	0.125
					100	0	2	20.77	21.5	0.140
		19100	1900.0	QPSK	1	0	0	22.52	23.2	0.209
					1	49	0	22.54	23.2	0.210
					1	99	0	22.32	23.0	0.200
					50	0	1	21.63	22.3	0.171
					50	24	1	21.58	22.3	0.169
					50	49	1	21.50	22.2	0.166
				16QAM	100	0	1	21.58	22.3	0.169
					1	0	1	21.70	22.4	0.173
					1	49	1	21.66	22.4	0.172
					1	99	1	21.39	22.1	0.161
					50	0	2	20.53	21.2	0.132
					50	24	2	20.68	21.4	0.137
					50	49	2	20.35	21.0	0.127
					100	0	2	20.67	21.4	0.137

NOTE:

- (1) EIRP = Average power + Antenna gain.
- (2) ERP = EIRP - 2.15.
- (3) $P(W) = 1 W \cdot 10^{(P(dBm) / 10) / 1000}$
- (4) The maximum antenna gain is applied.

Effective Isotropic Radiated Power:

Test Mode	WCDMA Band II	Test Date	2022/3/10
Test Channel	CH9262	Polarization	Vertical
Temp	21°C	Hum.	64%

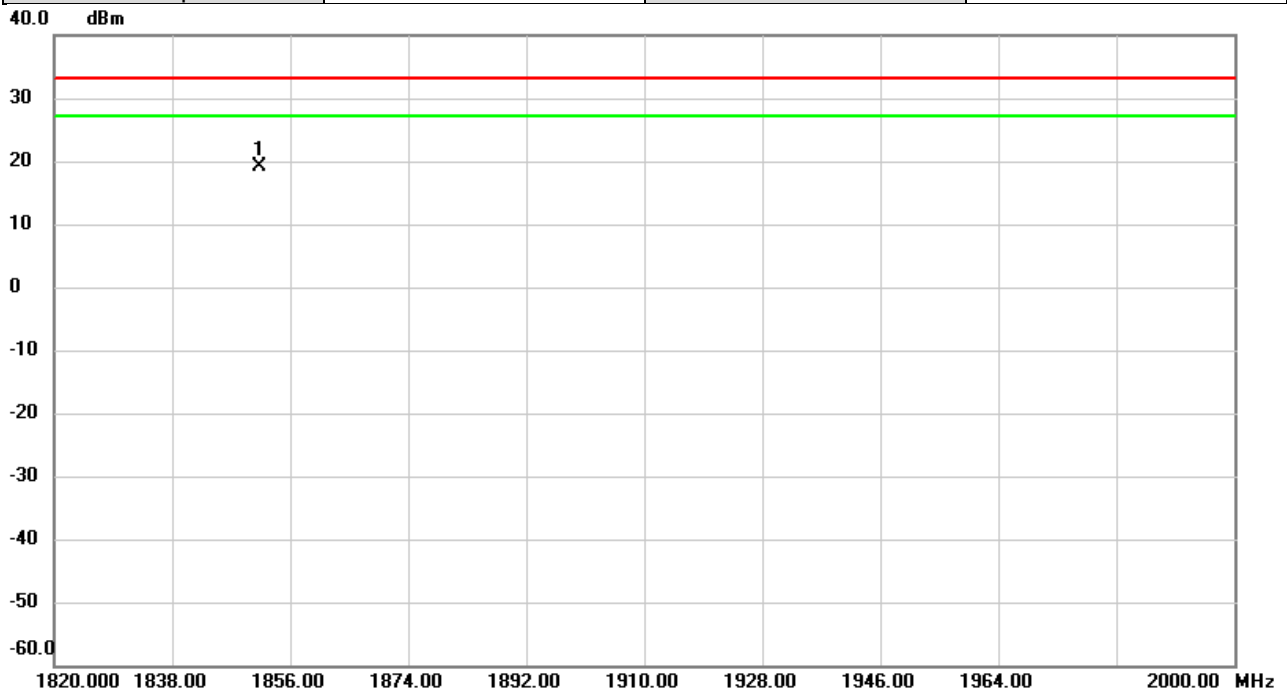


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	1853.636	-9.24	39.68	30.44	33.01	-2.57	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	WCDMA Band II	Test Date	2022/3/10
Test Channel	CH9262	Polarization	Horizontal
Temp	21°C	Hum.	64%

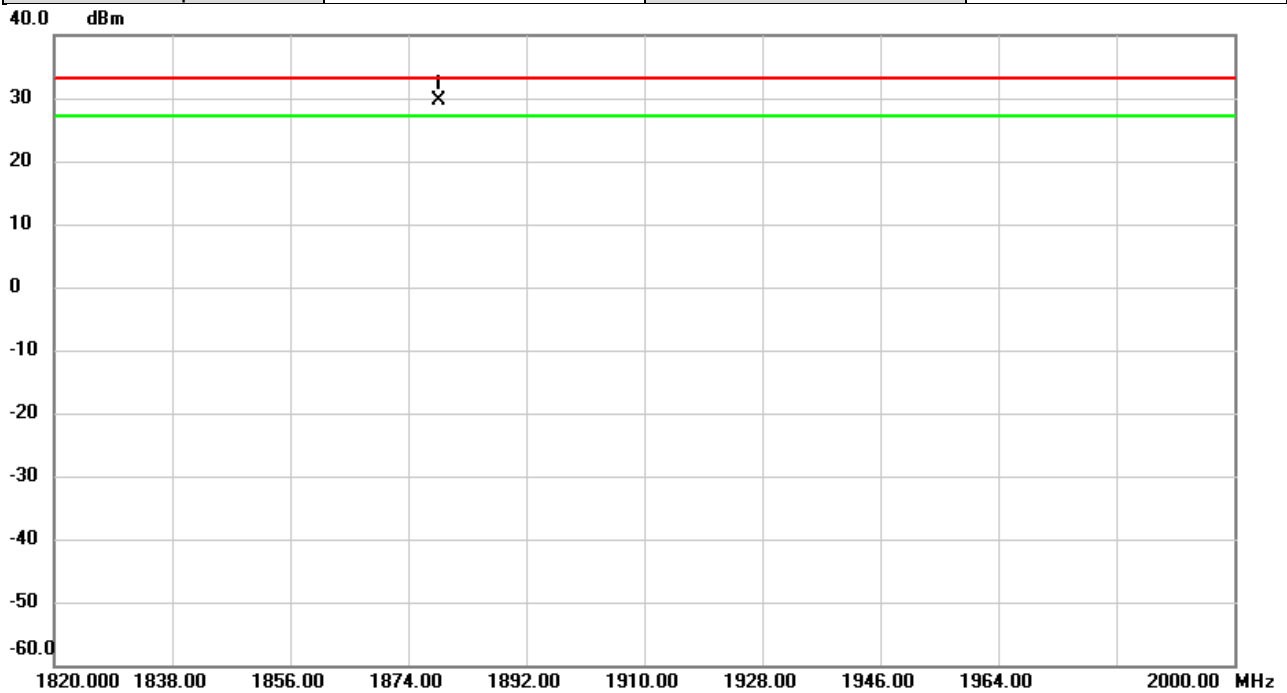


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBm	dB	dBm	dBm	dB		
1	*	1851.314	-21.56	40.59	19.03	33.01	-13.98	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	WCDMA Band II	Test Date	2022/3/10
Test Channel	CH9400	Polarization	Vertical
Temp	21°C	Hum.	64%

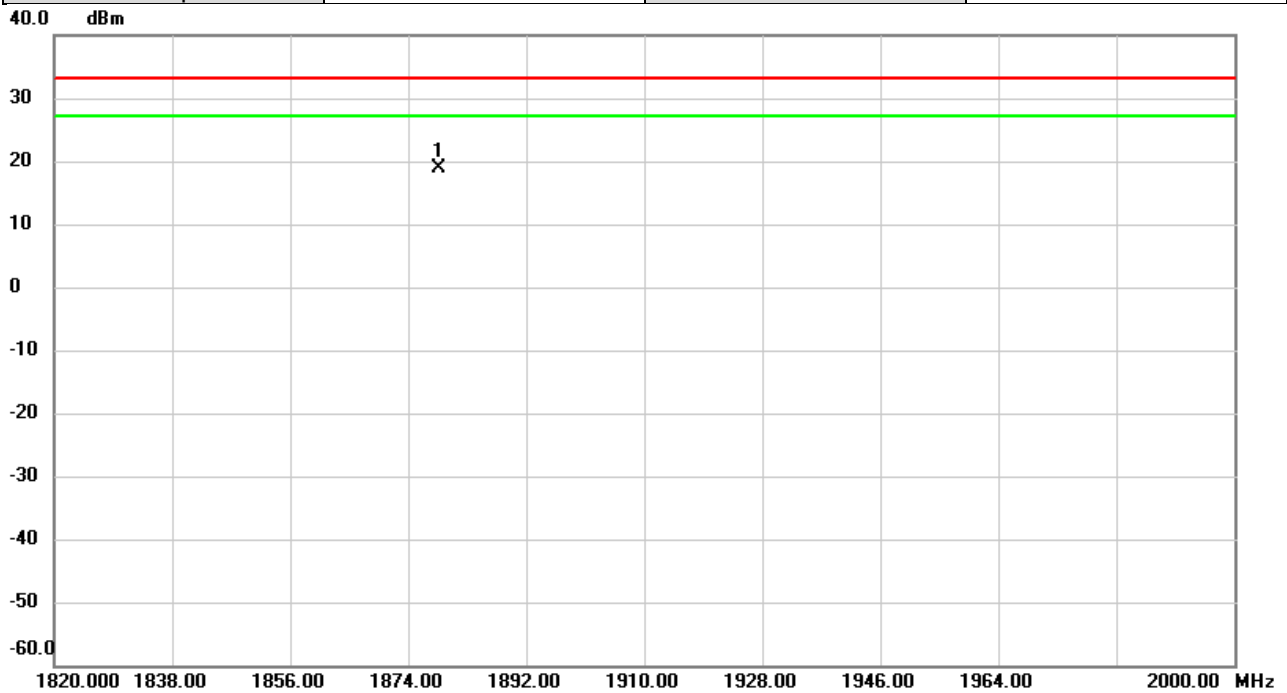


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Detector	Comment
		MHz	dBm	dB	dBm	dBm	dB		
1	*	1878.776	-10.21	39.78	29.57	33.01	-3.44	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	WCDMA Band II	Test Date	2022/3/10
Test Channel	CH9400	Polarization	Horizontal
Temp	21°C	Hum.	64%

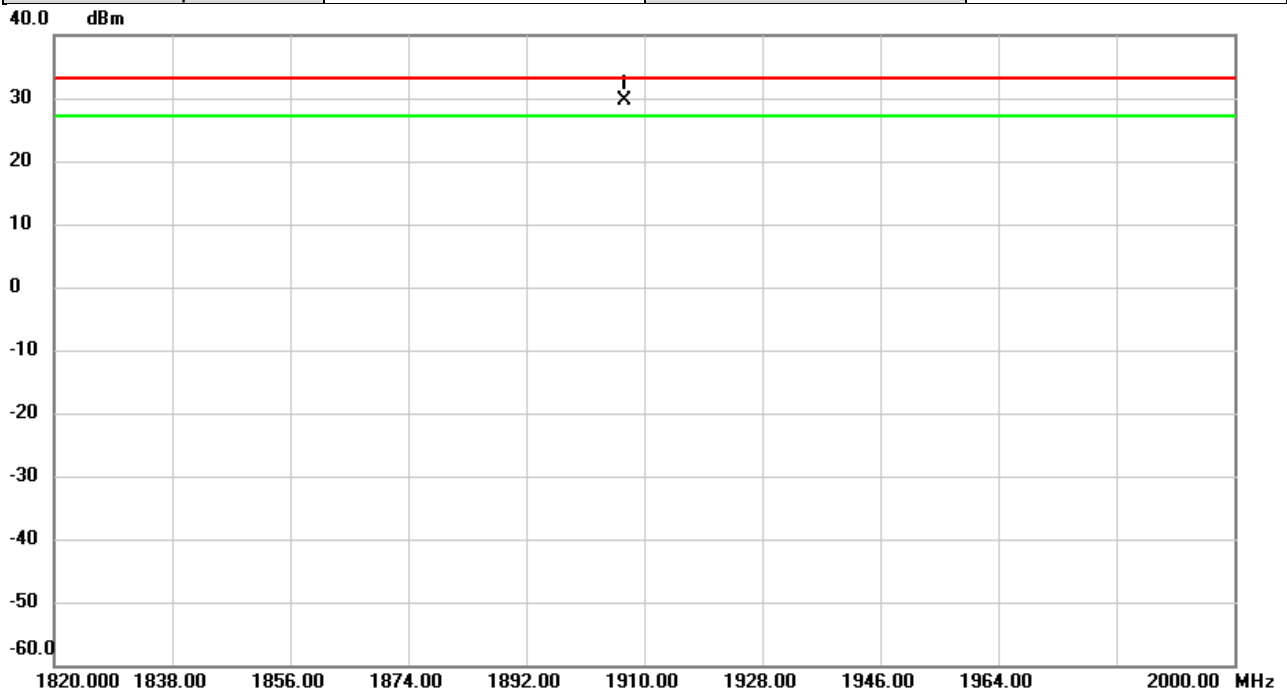


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	1878.776	-21.92	40.73	18.81	33.01	-14.20	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	WCDMA Band II	Test Date	2022/3/10
Test Channel	CH9538	Polarization	Vertical
Temp	21°C	Hum.	64%

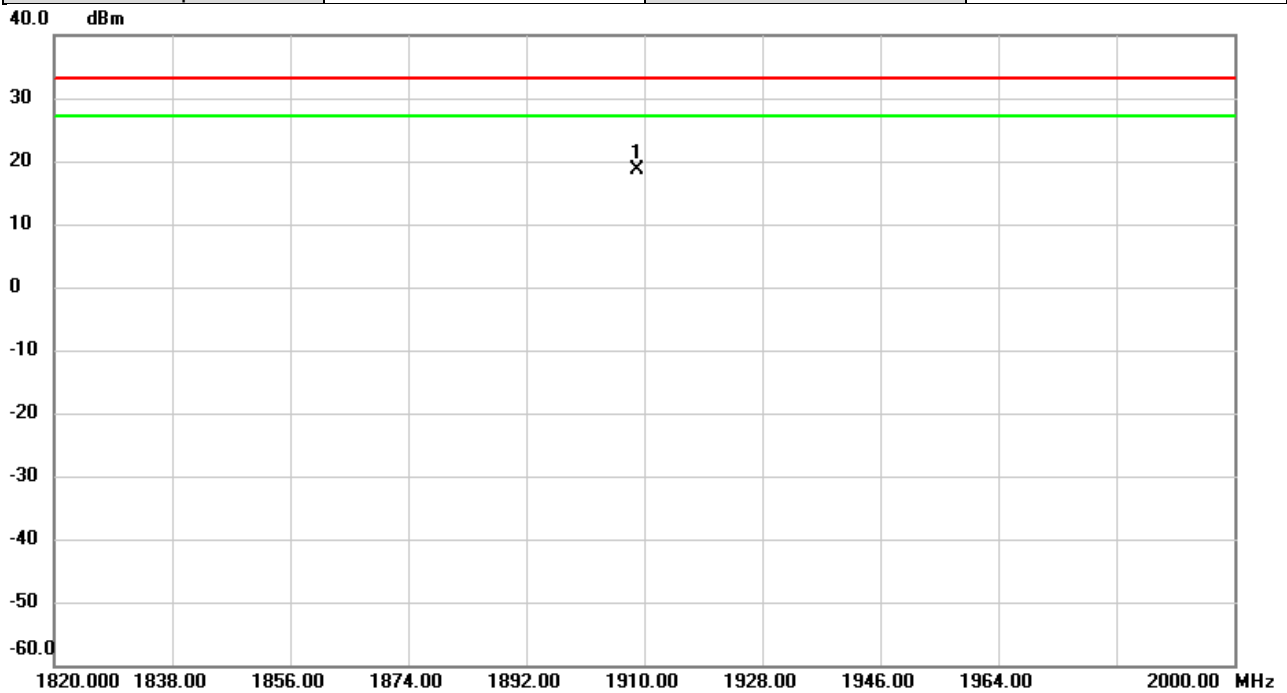


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	1906.940	-10.17	39.89	29.72	33.01	-3.29	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	WCDMA Band II	Test Date	2022/3/10
Test Channel	CH9538	Polarization	Horizontal
Temp	21°C	Hum.	64%

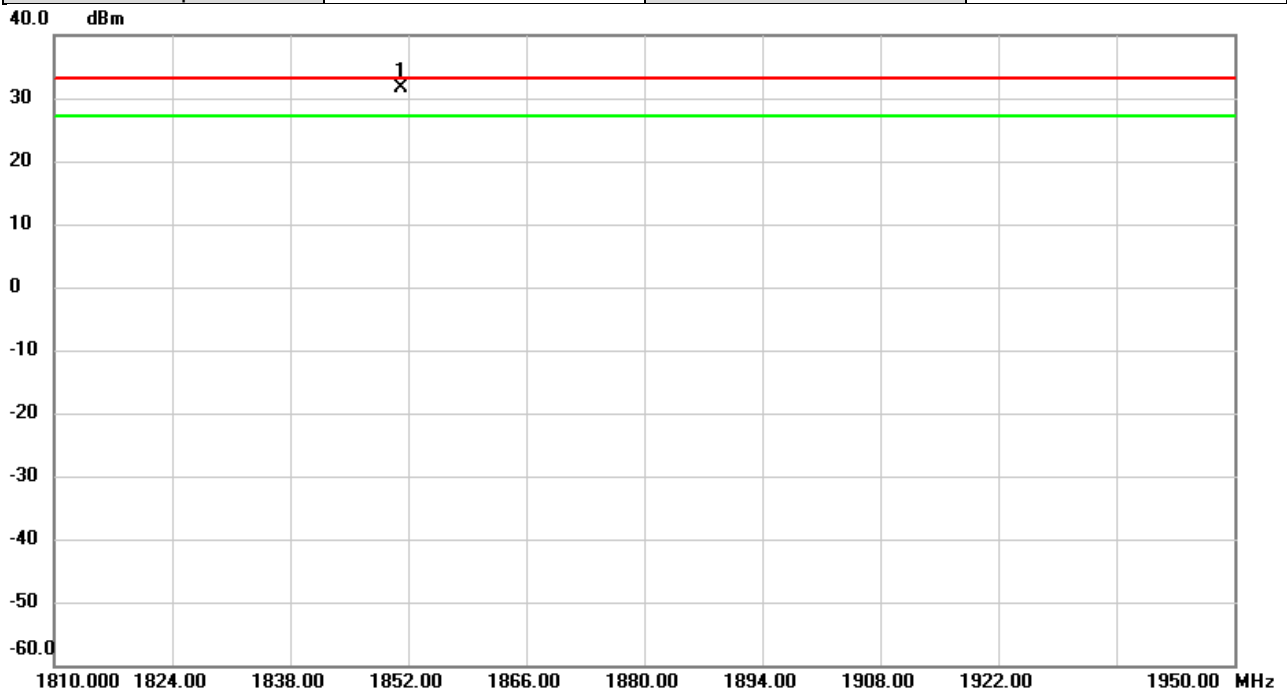


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	1908.920	-22.20	40.89	18.69	33.01	-14.32	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	LTE Band 2	Test Date	2022/3/10
Test Channel	CH18700	Polarization	Vertical
Temp	21°C	Hum.	64%

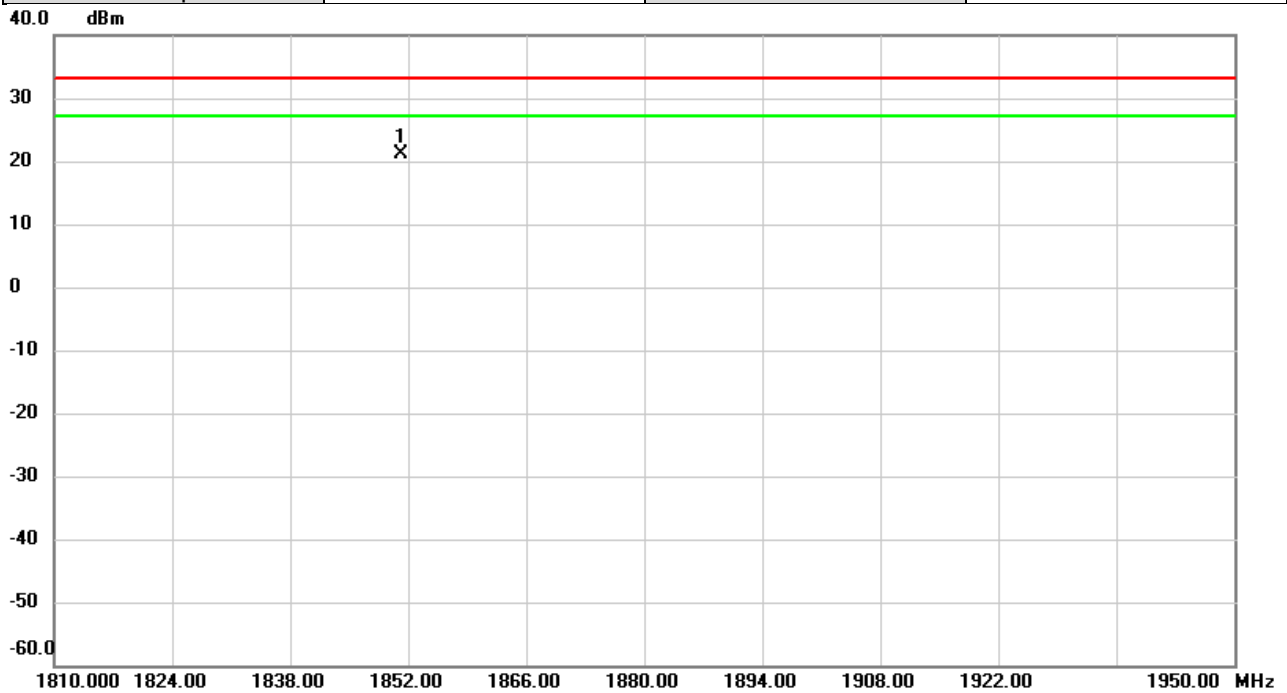


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	1851.076	-7.99	39.67	31.68	33.01	-1.33	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	LTE Band 2	Test Date	2022/3/10
Test Channel	CH18700	Polarization	Horizontal
Temp	21°C	Hum.	64%

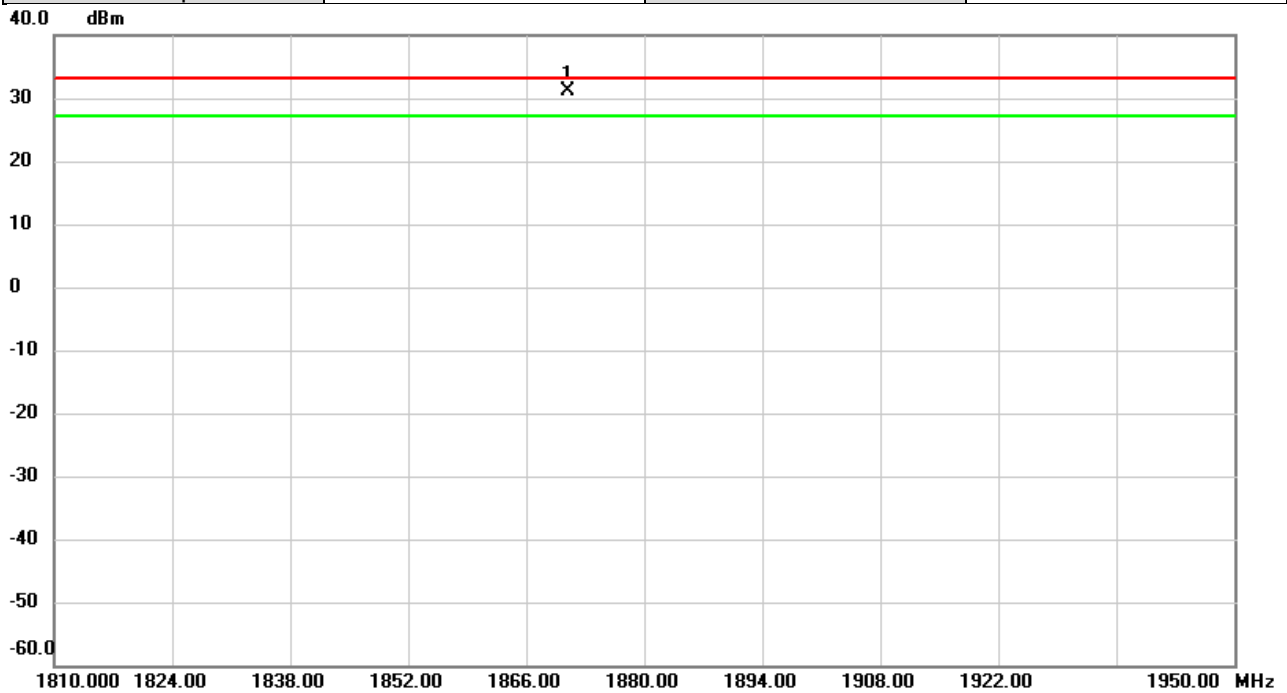


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	1851.090	-19.38	40.59	21.21	33.01	-11.80	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	LTE Band 2	Test Date	2022/3/10
Test Channel	CH18900	Polarization	Vertical
Temp	21°C	Hum.	64%

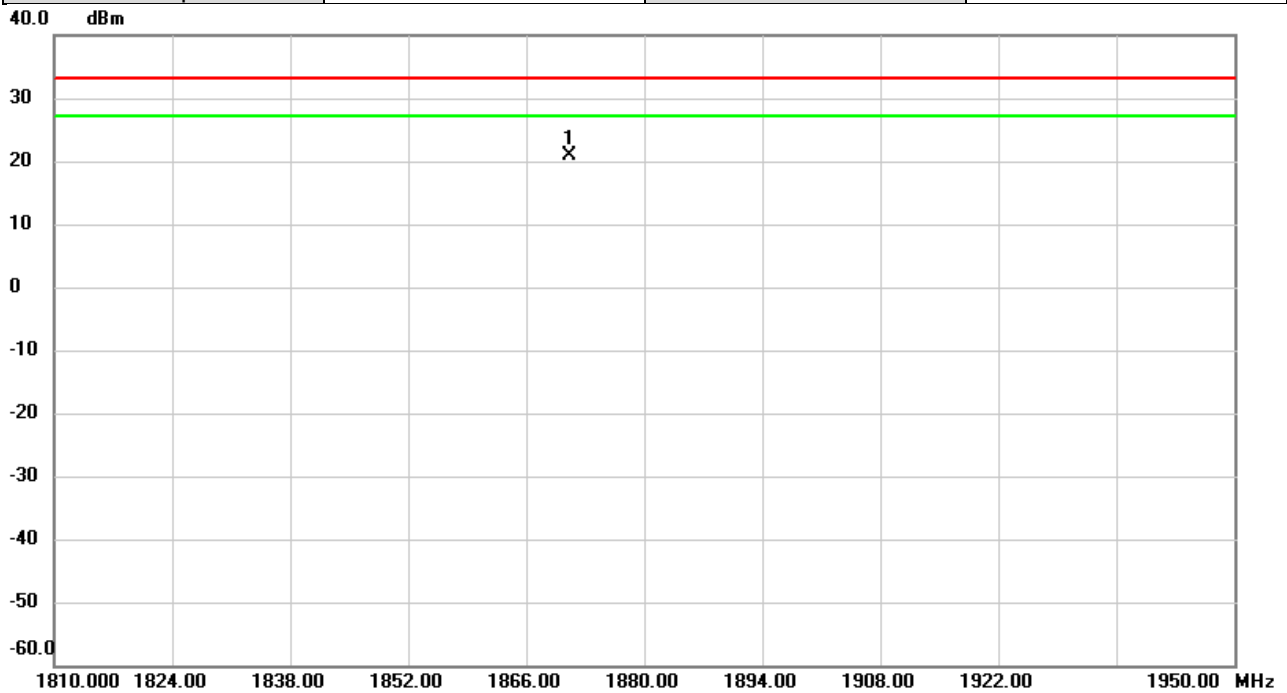


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	1870.895	-8.60	39.75	31.15	33.01	-1.86	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	LTE Band 2	Test Date	2022/3/10
Test Channel	CH18900	Polarization	Horizontal
Temp	21°C	Hum.	64%

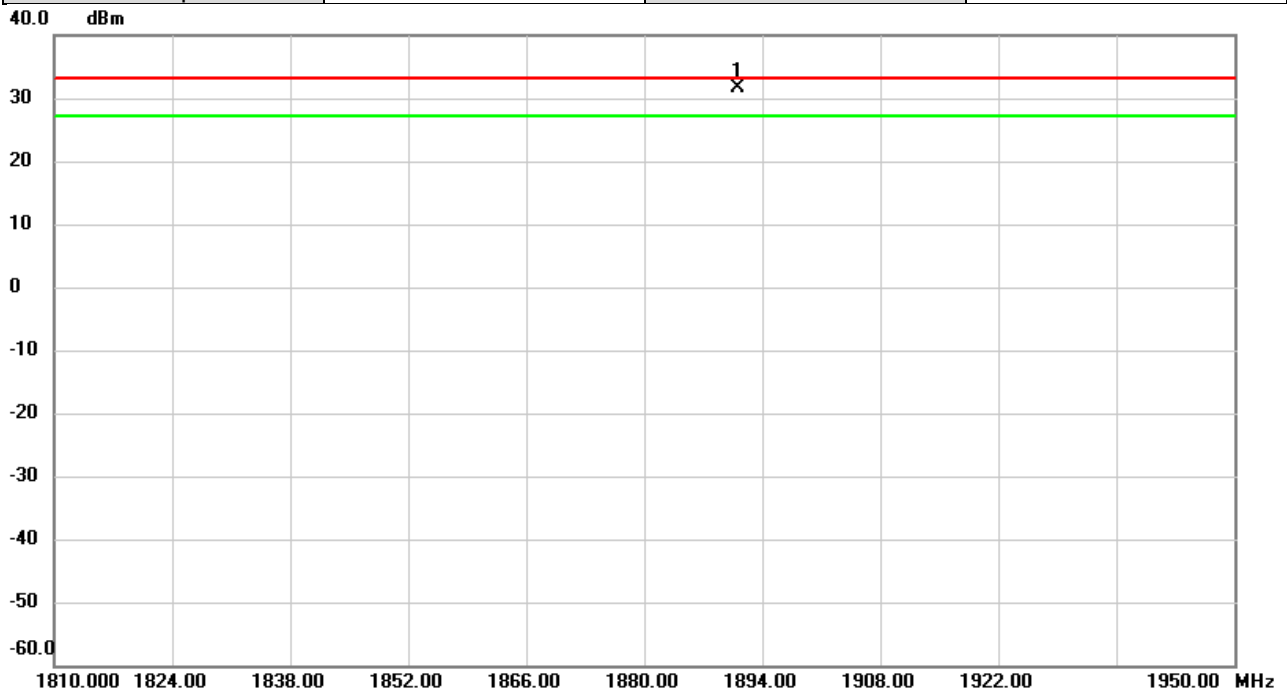


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	1871.059	-19.83	40.69	20.86	33.01	-12.15	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	LTE Band 2	Test Date	2022/3/10
Test Channel	CH19100	Polarization	Vertical
Temp	21°C	Hum.	64%

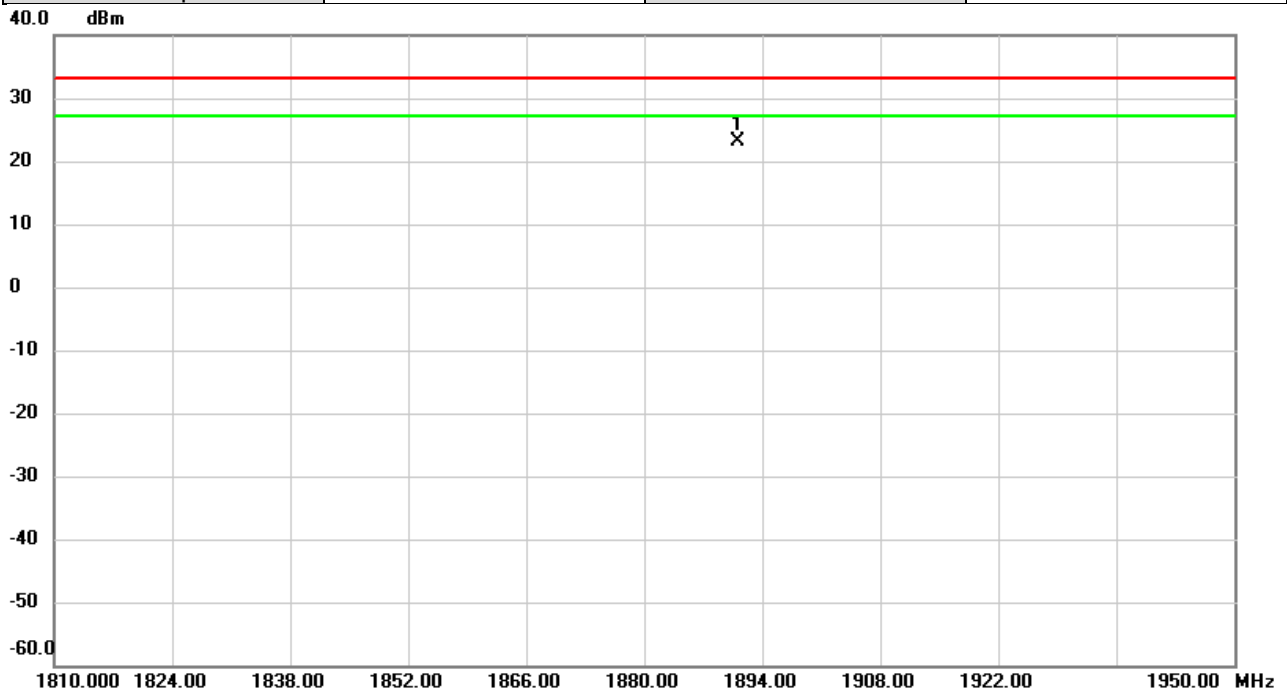


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	1891.037	-8.26	39.83	31.57	33.01	-1.44	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	LTE Band 2	Test Date	2022/3/10
Test Channel	CH19100	Polarization	Horizontal
Temp	21°C	Hum.	64%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	1891.083	-17.58	40.79	23.21	33.01	-9.80	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

APPENDIX B OCCUPIED BANDWIDTH

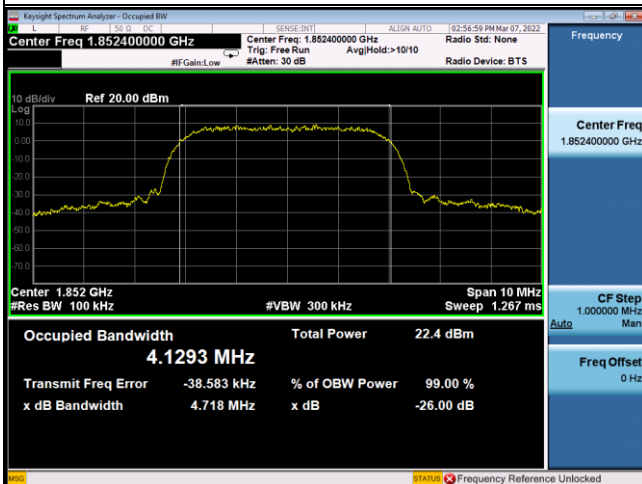
WCDMA Band II_WCDMA

QPSK

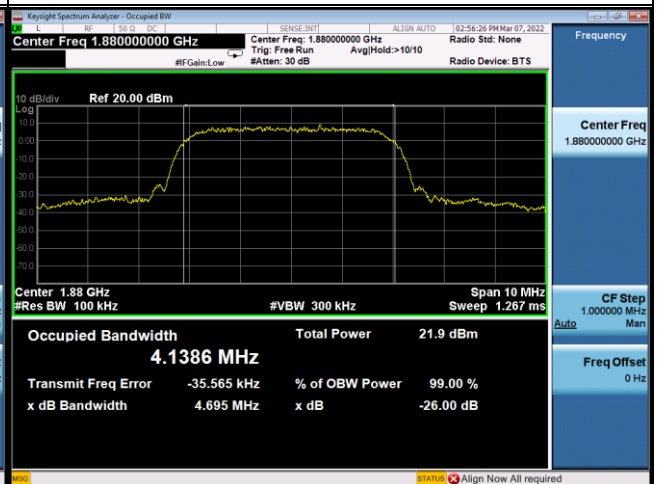
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
9262	1852.4	4.1293	9262	1852.4	4.718
9400	1880	4.1386	9400	1880	4.695
9538	1907.6	4.1244	9538	1907.6	4.745

Spectrum Plot

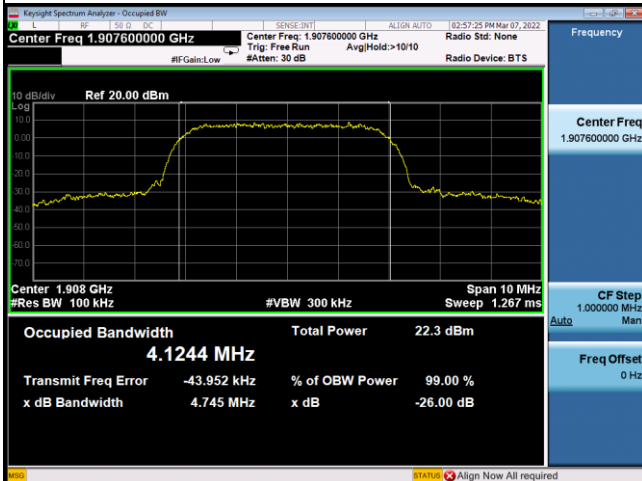
9262



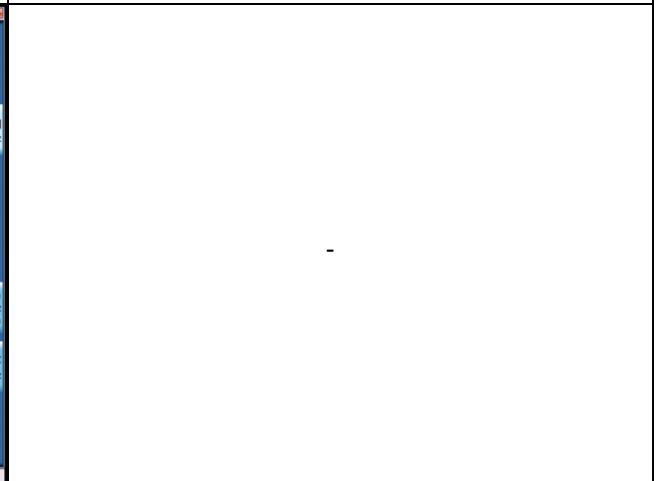
9400



9538



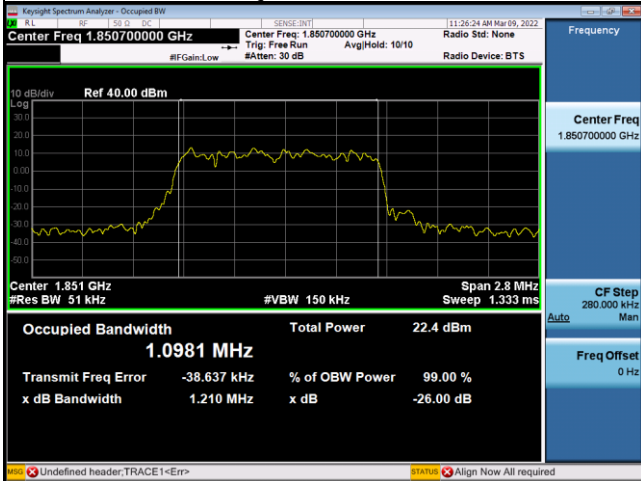
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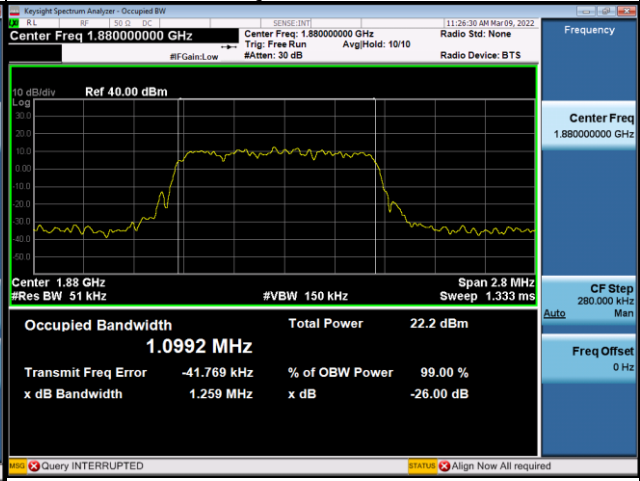
LTE Band 2_1.4M					
QPSK					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
18607	1850.7	1.0981	18607	1850.7	1.210
18900	1880	1.0992	18900	1880	1.259
19193	1909.3	1.0995	19193	1909.3	1.199
16QAM					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
18607	1850.7	1.0949	18607	1850.7	1.194
18900	1880	1.1004	18900	1880	1.269
19193	1909.3	1.1141	19193	1909.3	1.272
64QAM					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
18607	1850.7	1.0993	18607	1850.7	1.226
18900	1880	1.1053	18900	1880	1.204
19193	1909.3	1.0999	19193	1909.3	1.234

Spectrum Plot

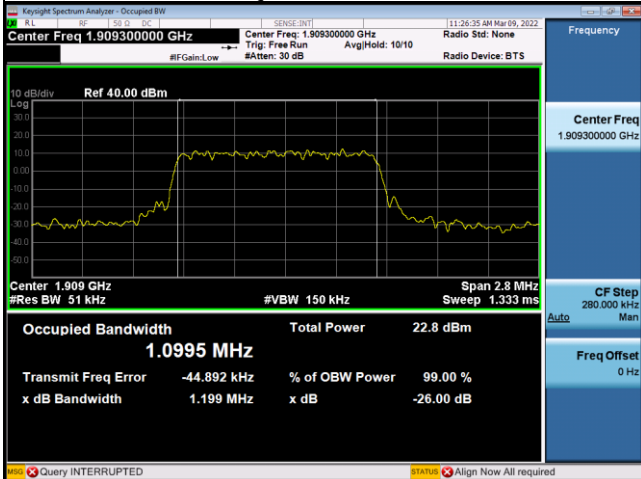
QPSK-18607



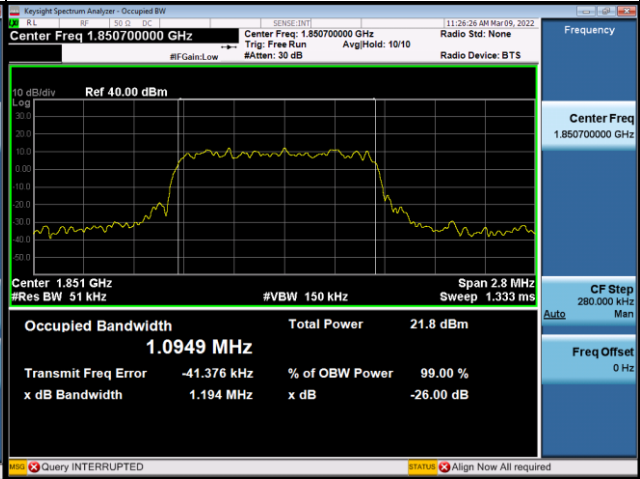
QPSK-18900



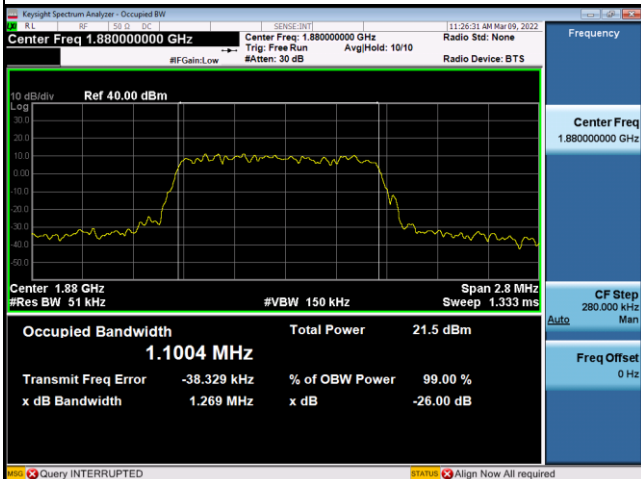
QPSK-19193



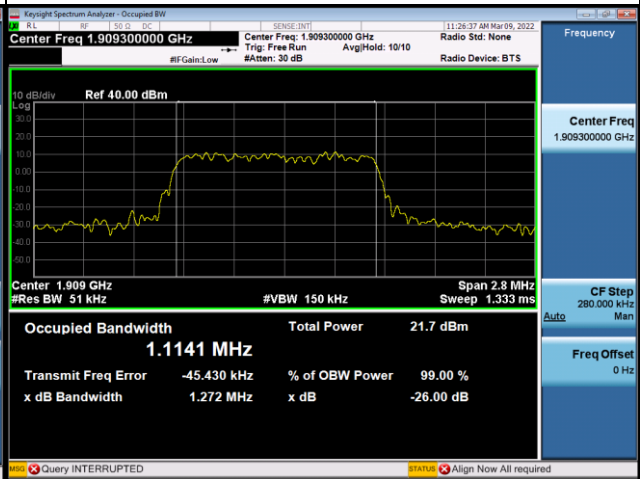
16QAM-18607



16QAM-18900



16QAM-19193

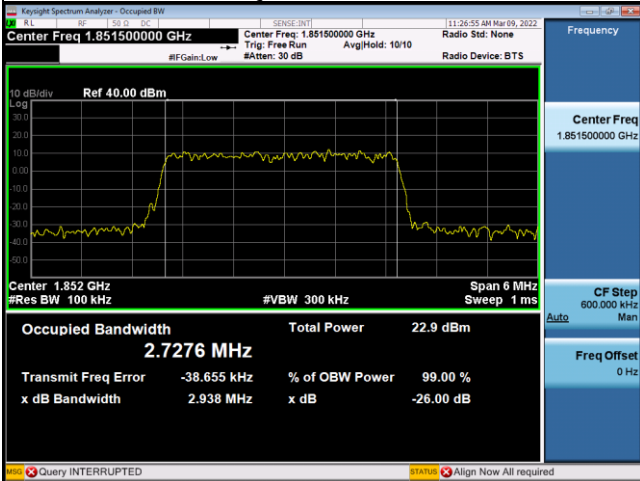




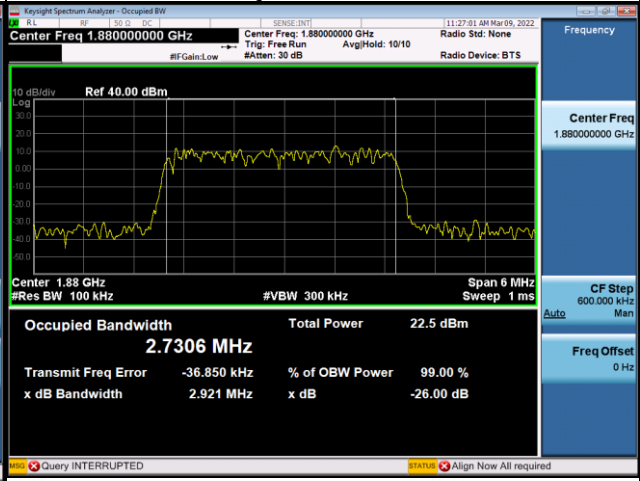
LTE Band 2_3M					
QPSK					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
18615	1851.5	2.7276	18615	1851.5	2.938
18900	1880	2.7306	18900	1880	2.921
19185	1908.5	2.7178	19185	1908.5	2.956
16QAM					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
18615	1851.5	2.7158	18615	1851.5	2.914
18900	1880	2.6921	18900	1880	2.928
19185	1908.5	2.7168	19185	1908.5	2.941
64QAM					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
18615	1851.5	2.7216	18615	1851.5	2.961
18900	1880	2.7020	18900	1880	2.942
19185	1908.5	2.7071	19185	1908.5	2.911

Spectrum Plot

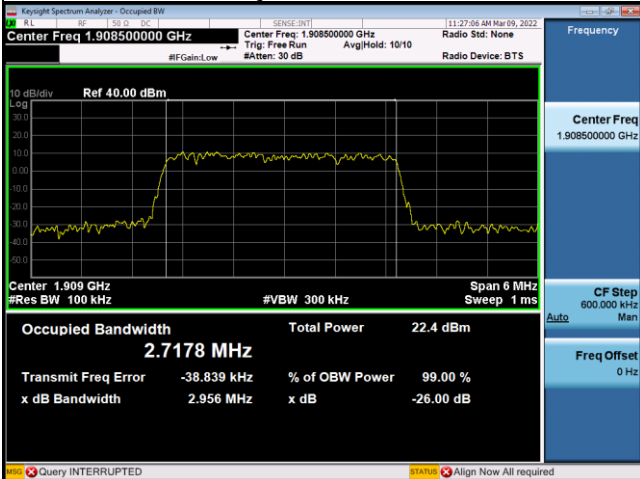
QPSK-18615



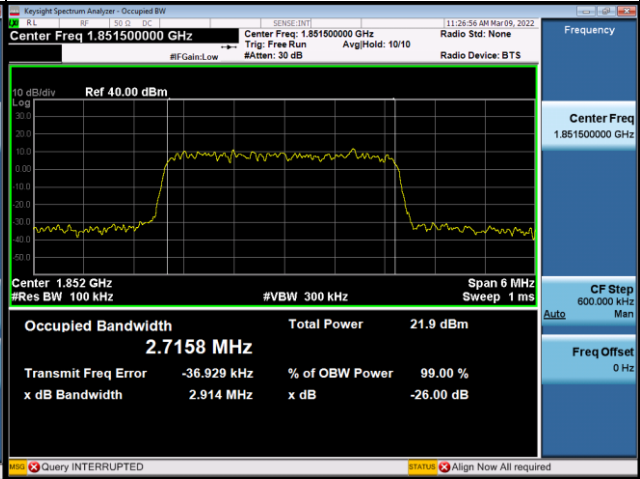
QPSK-18900



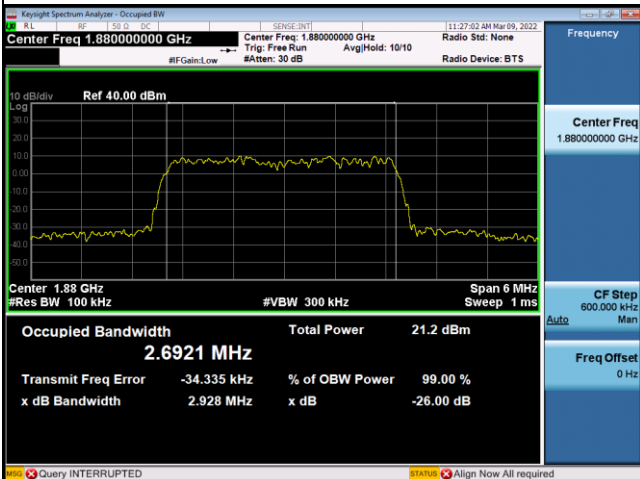
QPSK-19185



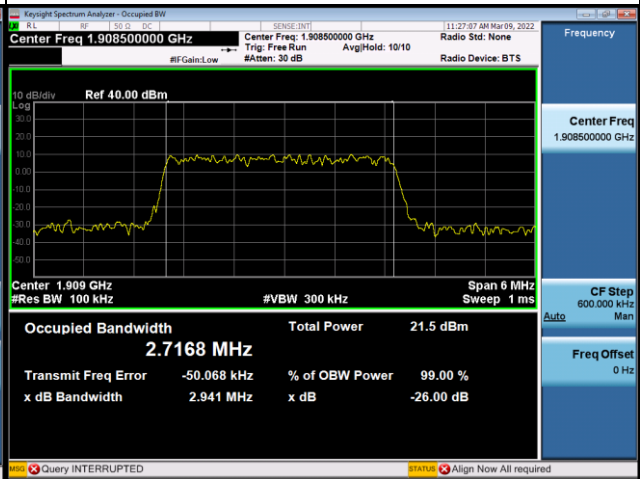
16QAM-18615



16QAM-18900



16QAM-19185

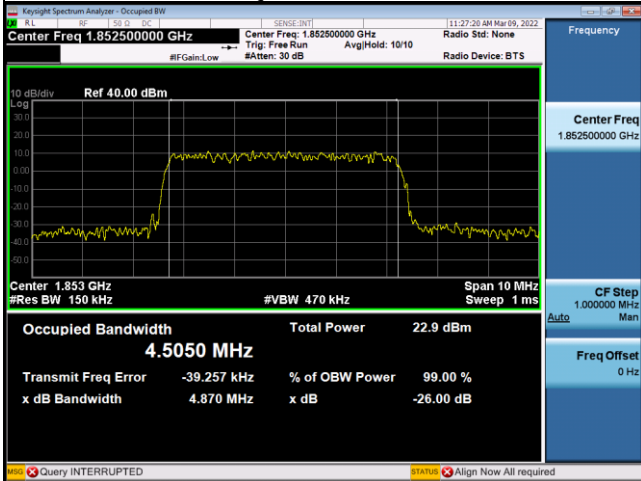




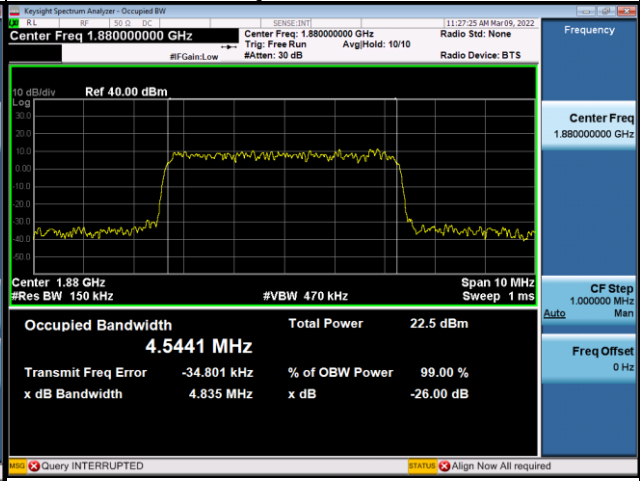
LTE Band 2_5M					
QPSK					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
18625	1852.5	4.5050	18625	1852.5	4.870
18900	1880	4.5441	18900	1880	4.835
19175	1907.5	4.5190	19175	1907.5	4.810
16QAM					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
18625	1852.5	4.5145	18625	1852.5	4.853
18900	1880	4.5308	18900	1880	4.873
19175	1907.5	4.4997	19175	1907.5	4.831
64QAM					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
18625	1852.5	4.5230	18625	1852.5	4.862
18900	1880	4.5058	18900	1880	4.892
19175	1907.5	4.5115	19175	1907.5	4.803

Spectrum Plot

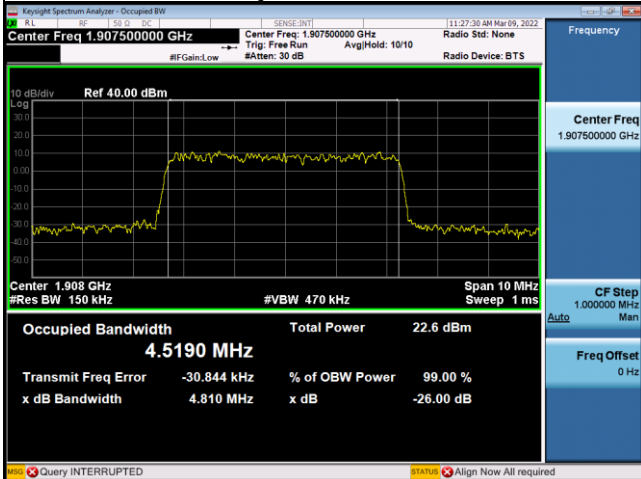
QPSK-18625



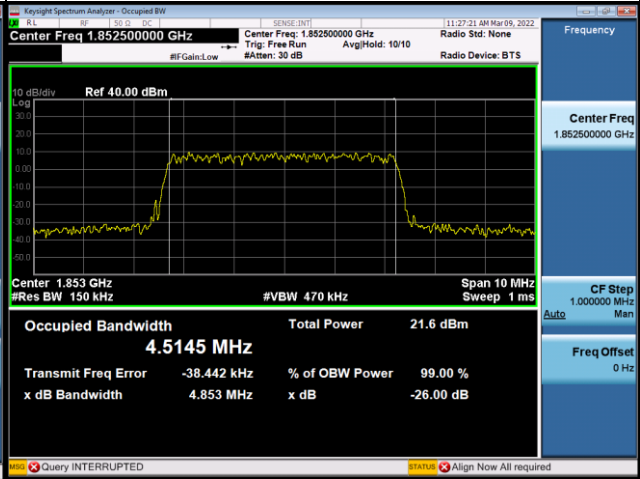
QPSK-18900



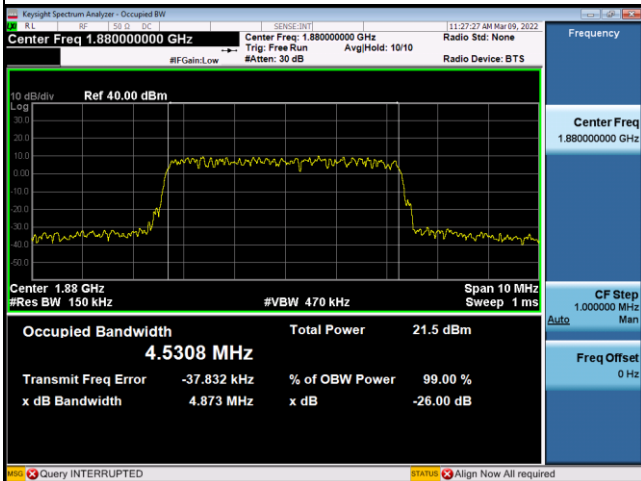
QPSK-19175



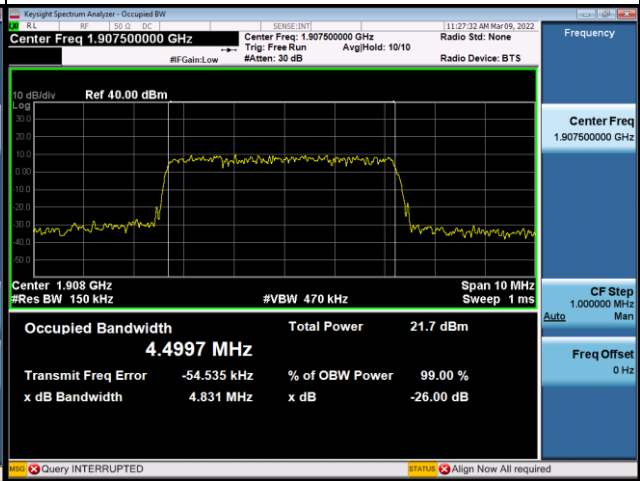
16QAM-18625



16QAM-18900



16QAM-19175





LTE Band 2_10M					
QPSK					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
18650	1855	8.9538	18650	1855	9.464
18900	1880	8.9449	18900	1880	9.448
19150	1905	8.9350	19150	1905	9.579
16QAM					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
18650	1855	8.9294	18650	1855	9.523
18900	1880	8.9007	18900	1880	9.572
19150	1905	8.9777	19150	1905	9.502
64QAM					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
18650	1855	8.9271	18650	1855	9.499
18900	1880	8.9235	18900	1880	9.472
19150	1905	8.9315	19150	1905	9.417