

FCC Radio Test Report

FCC ID: M82-DLTV6210LTE

Report No. : BTL-FCCP-1-1608T164C
Equipment : Computer
Model Name : DLT-V6210LTE, DLTV6210XXXXXXXXXXXXXXX (where X may be any alphanumeric character, blank or "-".)
Brand Name : ADVANTECH
Applicant : Advantech Co., Ltd.
Address : No.1, Alley 20, Lane 26, Rueiguang Road, Neihu District, Taipei 11491, Taiwan, R.O.C.
Manufacturer : Advantech Co., Ltd.
Address : No.1, Alley 20, Lane 26, Rueiguang Road, Neihu District, Taipei 11491, Taiwan, R.O.C.

Radio Function : WCDMA Band II+ LTE Band 2

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

Date of Receipt : 2019/10/18
Date of Test : 2019/10/18 ~ 2020/8/26
Issued Date : 2020/9/4

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

Prepared by


 Peter Chen, Engineer

Approved by


 Scott Hsu, Manager



BTL Inc.

No.18, Ln. 171, Sec. 2, Jiuzong Rd., Neihu Dist., Taipei City 114, Taiwan

Tel: +886-2-2657-3299

Fax: +886-2-2657-3331

Web: www.newbtl.com

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.

The report must not be used by the client to claim product certification, approval, or endorsement by NIST, A2LA, or any agency of the U.S. Government.

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.

CONTENTS

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	7
2 GENERAL INFORMATION	8
2.1 DESCRIPTION OF EUT	8
2.2 TEST MODES	10
2.3 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED	12
2.4 SUPPORT UNITS	12
3 RF POWER OUTPUT TEST	13
3.1 LIMIT	13
3.2 TEST PROCEDURE	13
3.3 DEVIATION FROM TEST STANDARD	13
3.4 TEST SETUP	13
3.5 TEST RESULT	13
4 OCCUPIED BANDWIDTH MEASUREMENT	14
4.1 TEST PROCEDURE	14
4.2 DEVIATION FROM TEST STANDARD	14
4.3 TEST SETUP	14
4.4 TEST RESULT	14
5 CONDUCTED SPURIOUS EMISSIONS MEASUREMENT	15
5.1 LIMIT	15
5.2 TEST PROCEDURE	15
5.3 DEVIATION FROM TEST STANDARD	15
5.4 TEST SETUP	15
5.5 TEST RESULT	15
6 RADIATED SPURIOUS EMISSIONS TEST	16
6.1 LIMIT	16
6.2 TEST PROCEDURE	16
6.3 DEVIATION FROM TEST STANDARD	16
6.4 TEST SETUP	17
6.5 EUT OPERATING CONDITIONS	17
6.6 TEST RESULT	17
7 BAND EDGE MEASUREMENT	18
7.1 LIMIT	18
7.2 TEST PROCEDURE	18
7.3 DEVIATION FROM TEST STANDARD	18
7.4 TEST SETUP	18
7.5 TEST RESULT	18
8 PEAK TO AVERAGE RATIO MEASUREMENT	19
8.1 LIMIT	19
8.2 TEST PROCEDURE	19
8.3 DEVIATION FROM TEST STANDARD	19
8.4 TEST SETUP	19
8.5 TEST RESULT	19
9 FREQUENCY STABILITY MEASUREMENT	20
9.1 LIMIT	20

9.2	TEST PROCEDURE	20
9.3	DEVIATION FROM TEST STANDARD	20
9.4	TEST SETUP	20
9.5	TEST RESULT	20
10	LIST OF MEASURING EQUIPMENTS	21
11	EUT TEST PHOTO	22
12	EUT PHOTOS	22
APPENDIX A	RF POWER OUTPUT TEST	23
APPENDIX B	OCCUPIED BANDWIDTH	28
APPENDIX C	CONDUCTED SPURIOUS EMISSION	42
APPENDIX D	RADIATED SPURIOUS EMISSIONS TEST	50
APPENDIX E	BAND EDGE	71
APPENDIX F	PEAK TO AVERAGE RATIO	79
APPENDIX G	FREQUENCY STABILITY	87

REPORT ISSUED HISTORY

Report Version	Description	Issued Date
R00	Original Issue.	2020/2/27
R01	Revised report to address TCB's comments.	2020/7/9
R02	Revised report to address TCB's comments.	2020/8/4
R03	Revised report to address TCB's comments.	2020/8/28
R04	Revised report to address TCB's comments.	2020/9/4

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	N/A	NOTE (3)
2.1046 24.232(c)	RF Power Output	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
☒ SR06

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

B. Conducted test:

Test Item	U,(dB)
Output power	1.06

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
RF Power Output	24.1 °C, 46 %	DC 60V	Jay Kao
Occupied Bandwidth	24.8 °C, 46 %	DC 60V	Jay Kao
Conducted Spurious Emissions	24.8 °C, 46 %	DC 60V	Jay Kao
Radiated Spurious Emissions	22 °C, 67 %	Refer to data	Hunter Chiang
Band Edge	24.8 °C, 46 %	DC 60V	Jay Kao
Peak to Average Ratio	24.8 °C, 46 %	DC 60V	Jay Kao
Frequency Stability	Normal and Extreme		Jay Kao

2 GENERAL INFORMATION

2.1 DESCRIPTION OF EUT

Equipment	Computer			
Model Name	DLT-V6210LTE, DLT-V6210XXXXXXXXXXXXXXX (where X may be any alphanumeric character, blank or "-".)			
Brand Name	ADVANTECH			
Model Difference	Different model distribute to different area.			
Power Source	Supplied from DC power.			
Power Rating	9-60V --- 3.6A			
Products Covered	1 * WWAN Card: Quectel / EC25-A			
Test Model	DLT-V6210LTE			
Sample Status	Engineering Sample			
Operation Frequency	Mode	Band	UL Frequency (MHz)	DL Frequency (MHz)
	WCDMA	II	1852.4 ~ 1907.6	1932.4 ~ 1987.6
	LTE	2	1850 ~ 1910	1930 ~ 1990
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:

Group 1(External):

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	Note
1	taoglas	TLS.01.305111	Dipole	SMA(M)	2.32	WCDMA Band II
					2.32	LTE Band 2
2	taoglas	TLS.01.305111	Dipole	SMA(M)	2.32	WCDMA Band II
					2.32	LTE Band 2

Group 2(Integrated):

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	Note
1	taoglas	MA540.A.ABICG.001	Dipole	IPEX MHF	2.4	WCDMA Band II
					2.4	LTE Band 2
2	taoglas	MA540.A.ABICG.001	Dipole	IPEX MHF	1.9	WCDMA Band II
					1.9	LTE Band 2

Note: Group 2 is found to be the worst case and used for final test.

2.2 TEST MODES

WCDMA BAND II MODE			
Test Item	Available Channel	Tested Channel	Mode
Output Power	9262 to 9538	9262, 9400, 9538	WCDMA, HSDPA, HSUPA
EIRP	9262 to 9538	9262, 9400, 9538	WCDMA
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
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
EIRP	18700 to 19100	18700, 18900, 19100	20MHz	QPSK, 16QAM	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

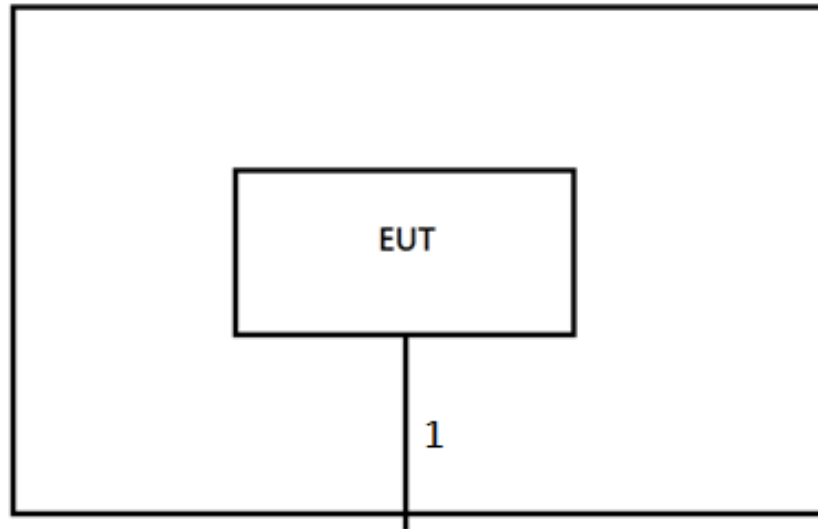
LTE BAND 2 MODE					
Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
Conducted Spurious Emissions	18607 to 19193	18900	1.4MHz	QPSK	1RB
	18615 to 19185	18900	3MHz	QPSK	1RB
	18625 to 19175	18900	5MHz	QPSK	1RB
	18650 to 19150	18900	10MHz	QPSK	1RB
	18675 to 19125	18900	15MHz	QPSK	1RB
	18700 to 19100	18900	20MHz	QPSK	1RB
Radiated Spurious Emissions	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 (WCDMA: Y axis, LTE: Z axis) 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
-	-	-	-	-	-

Item	Shielded	Ferrite Core	Length	Cable Type	Remarks
1	NO	NO	3m	DC Cable	-

3 RF POWER OUTPUT TEST

3.1 LIMIT

Mobile and portable stations are limited to 2 watts EIRP.

3.2 TEST PROCEDURE

EIRP / ERP Power Measurement:

EIRP = Conducted Power + Antenna gain.
ERP power = EIPR power - 2.15 dBi.

Conducted Power Measurement:

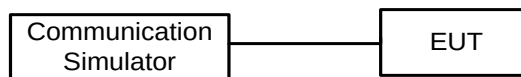
The EUT was set up for the maximum power with WCDMA and LTE link data modulation and link up with simulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

3.3 DEVIATION FROM TEST STANDARD

No deviation.

3.4 TEST SETUP

Conducted Power Measurement:



3.5 TEST RESULT

Please refer to the APPENDIX A.

4 OCCUPIED BANDWIDTH MEASUREMENT

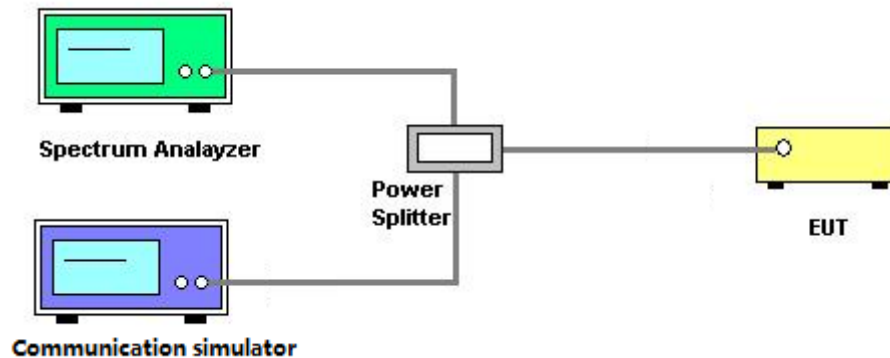
4.1 TEST PROCEDURE

- 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.
- $RBW = (1\% \sim 5\%) \cdot EBW$
 $VBW \geq 3 \cdot RBW$.
- 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.

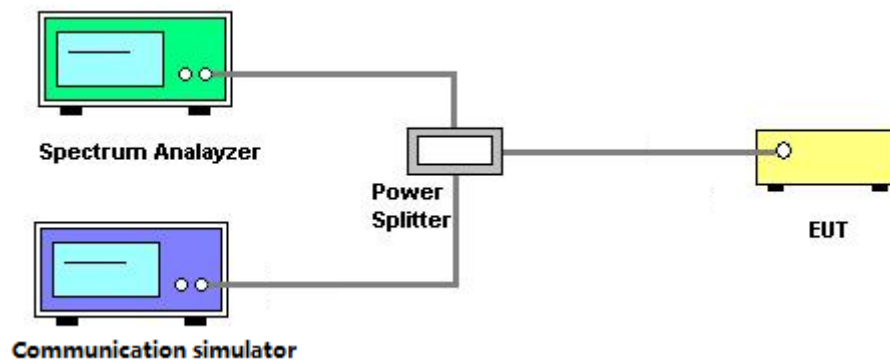
5.2 TEST PROCEDURE

- The 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

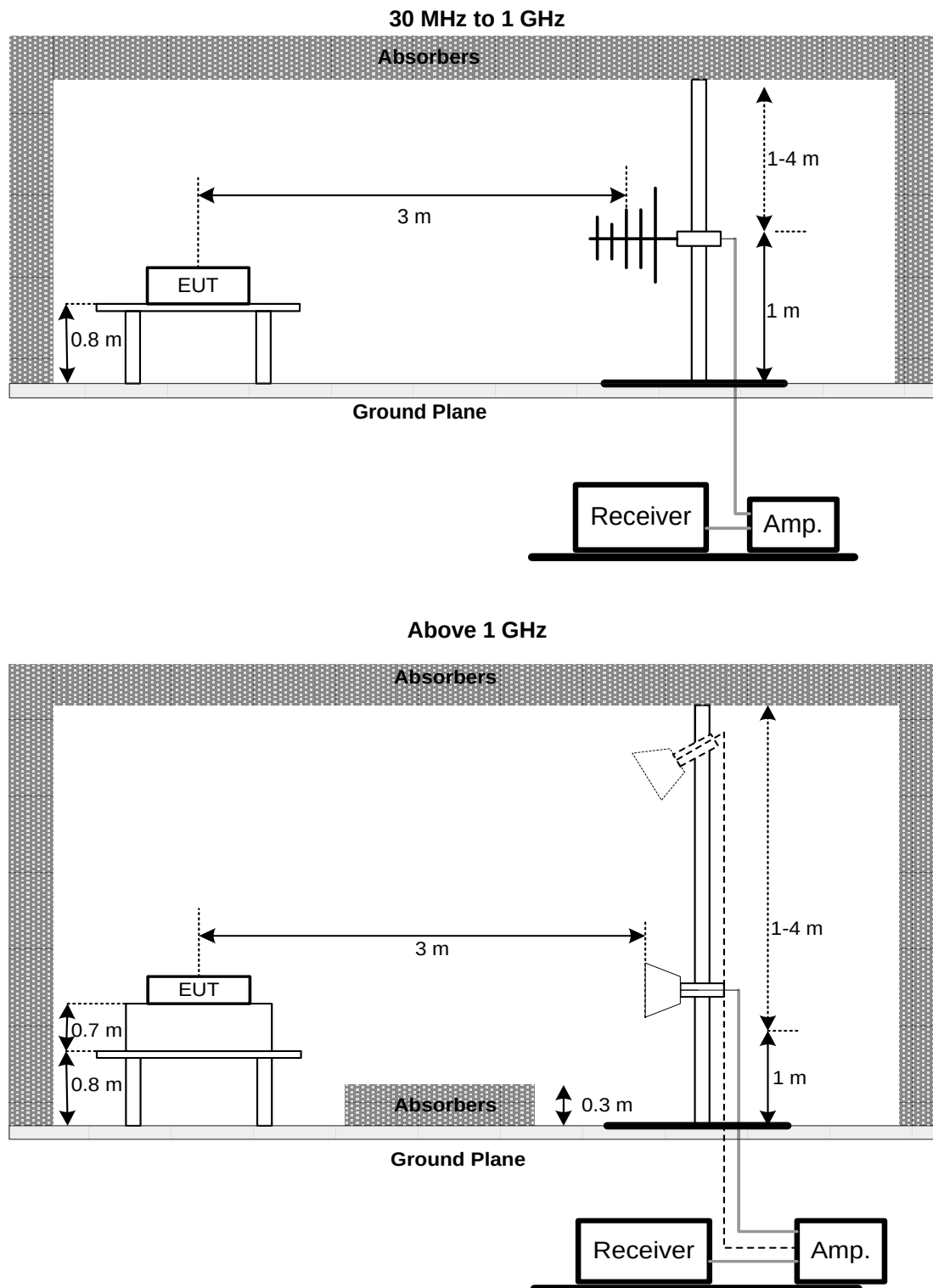
6.2 TEST PROCEDURE

- 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 power can be calculated form EIRP power by subtracting the gain of dipole,
 $ERP \text{ power} = EIRP \text{ power} - 2.15 \text{ dBi.}$
- The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz / 3 MHz.

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.

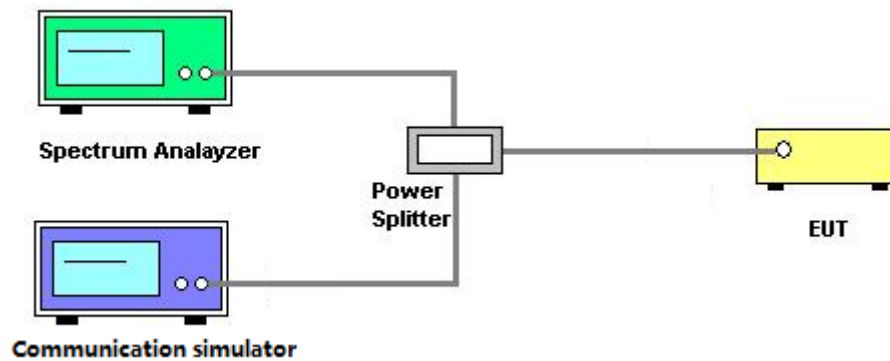
7.2 TEST PROCEDURE

- 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.

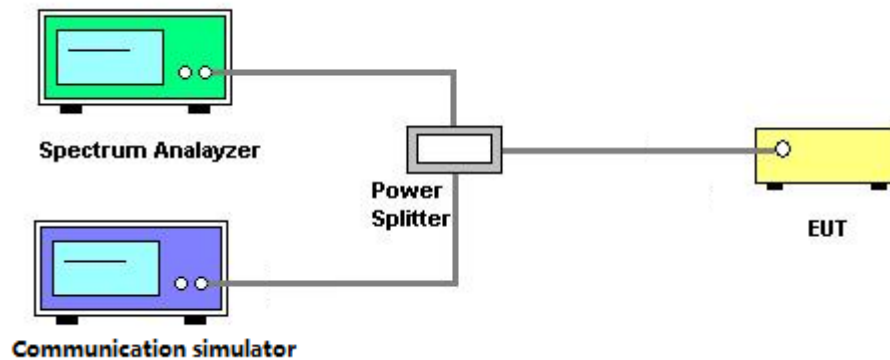
8.2 TEST PROCEDURE

- 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.

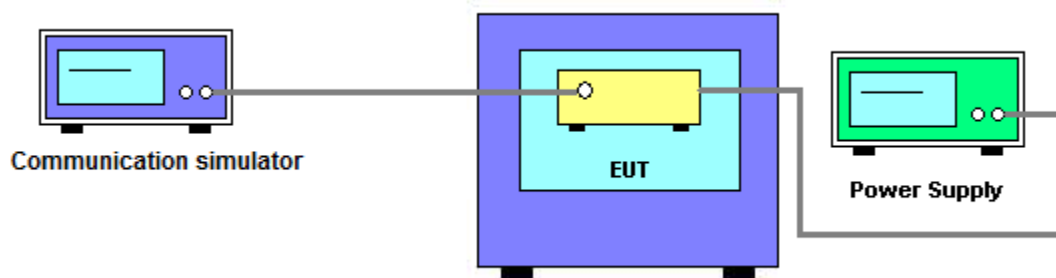
9.2 TEST PROCEDURE

- 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

RF Power Output						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Radio Communication Analyzer	Anritsu	MT8820C	6201525878	2020/6/19	2021/6/18
2	8960 Series 10 Wireless Com Test Set	Agilent	E5515C	GB47390193	2020/6/4	2021/6/3

Radiated Spurious Emissions						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Preamplifier	EMCI	EMC001340	980555	2019/4/12	2020/4/11
2	Preamplifier	EMCI	EMC02325B	980217	2019/4/12	2020/4/11
3	Preamplifier	EMCI	EMC012645B	980267	2019/4/12	2020/4/11
4	Test Cable	EMCI	EMC104-SM-SM-800	150207	2019/4/12	2020/4/11
5	Test Cable	EMCI	EMC104-SM-SM-3000	151205	2019/4/12	2020/4/11
6	Test Cable	EMCI	EMC-SM-SM-7000	180408	2019/4/12	2020/4/11
7	MXE EMI Receiver	Agilent	N9038A	MY55420127	2019/3/26	2020/3/25
8	Signal Analyzer	Agilent	N9010A	MY56480554	2019/6/6	2020/6/5
9	Horn Ant	SCHWARZBECK	BBHA 9120D	9120D-1342	2019/6/10	2020/6/9
10	Trilog-Broadband Antenna	Schwarzbeck	VULB 9168	000992	2019/5/29	2020/5/28
11	5dB Attenuator	EMCI	EMCI-N-6-05	AT-N0508	2019/5/29	2020/5/28
12	Preamplifier	EMCI	EMC2654045	980030	2019/2/2	2020/2/2

Frequency Stability Measurement						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Radio Communication Analyzer	Anritsu	MT8820C	6201525878	2020/6/19	2021/6/18
2	8960 Series 10 Wireless Com Test Set	Agilent	E5515C	GB47390193	2020/6/4	2021/6/3
3	Thermal Chamber	HOLINK	H-TH-2SP-B	EK04101902	2020/7/2	2021/7/1

Others Conducted Measurement						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Spectrum Analyzer	Agilent	N9010A	MY54200240	2019/11/19	2020/11/18

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-1608T164C-1 (APPENDIX-TEST PHOTOS).

12 EUT PHOTOS

Please refer to document Appendix No.: EP-1608T164C-2 (APPENDIX-EUT PHOTOS).

APPENDIX A RF POWER OUTPUT TEST

Band	WCDMA Band II					
Tx Channel	9262	9400	9538	9262	9400	9538
Rx Channel	9662	9800	9938	9662	9800	9938
Frequency (MHz)	1852.4	1880	1907.6	1852.4	1880	1907.6
Mode	Conducted Power (dBm)			EIRP (dBm)		
RMC 12.2K	22.91	22.87	22.84	25.31	25.27	25.24
HSDPA Subtest-1	22.89	22.75	22.82	25.29	25.15	25.22
HSDPA Subtest-2	22.72	22.69	22.71	25.12	25.09	25.11
HSDPA Subtest-3	22.52	22.47	22.52	24.92	24.87	24.92
HSDPA Subtest-4	22.47	22.41	22.42	24.87	24.81	24.82
HSUPA Subtest-1	22.87	22.72	22.74	25.27	25.12	25.14
HSUPA Subtest-2	22.77	22.68	22.72	25.17	25.08	25.12
HSUPA Subtest-3	22.73	22.59	22.67	25.13	24.99	25.07
HSUPA Subtest-4	22.68	22.63	22.64	25.08	25.03	25.04
HSUPA Subtest-5	22.74	22.62	22.71	25.14	25.02	25.11
HSPA+	22.87	22.69	22.76	25.27	25.09	25.16
				Antenna Gain	2.40	dBi

Band				LTE Band 2					
Channel				18607	18900	19192	18607	18900	19192
Frequency (MHz)				1850.7	1880	1909.2	1850.7	1880	1909.2
Channel Bandwidth (MHz)	Modulation	RB Size	RB Offset	Conducted Power (dBm)			EIRP (dBm)		
1.4	QPSK	1	0	23.17	23.27	23.30	25.57	25.67	25.70
		1	2	22.99	23.13	23.12	25.39	25.53	25.52
		1	5	23.07	23.19	23.26	25.47	25.59	25.66
		3	0	23.16	23.27	23.30	25.56	25.67	25.70
		3	1	22.99	23.13	23.12	25.39	25.53	25.52
		3	2	23.07	23.19	23.26	25.47	25.59	25.66
		6	0	22.12	22.31	22.31	24.52	24.71	24.71
	16QAM	1	0	22.21	22.32	22.37	24.61	24.72	24.77
		1	2	22.01	22.31	22.22	24.41	24.71	24.62
		1	5	22.16	22.22	22.31	24.56	24.62	24.71
		3	0	22.21	22.32	22.37	24.61	24.72	24.77
		3	1	22.01	22.31	22.22	24.41	24.71	24.62
		3	2	22.16	22.22	22.31	24.56	24.62	24.71
		6	0	21.12	21.36	21.47	23.52	23.76	23.87
							Antenna Gain	2.40	dB

Band				LTE Band 2					
Channel				18615	18900	19184	18615	18900	19184
Frequency (MHz)				1851.5	1880	1908.4	1851.5	1880	1908.4
Channel Bandwidth (MHz)	Modulation	RB Size	RB Offset	Conducted Power (dBm)			EIRP (dBm)		
3	QPSK	1	0	23.22	23.32	23.35	25.62	25.72	25.75
		1	7	23.04	23.18	23.17	25.44	25.58	25.57
		1	14	23.12	23.24	23.31	25.52	25.64	25.71
		8	0	22.29	22.39	22.36	24.69	24.79	24.76
		8	4	22.06	22.41	22.24	24.46	24.81	24.64
		8	7	22.17	22.26	22.37	24.57	24.66	24.77
		15	0	22.17	22.36	22.36	24.57	24.76	24.76
	16QAM	1	0	22.26	22.37	22.42	24.66	24.77	24.82
		1	7	22.06	22.36	22.27	24.46	24.76	24.67
		1	14	22.21	22.27	22.36	24.61	24.67	24.76
		8	0	21.26	21.37	21.48	23.66	23.77	23.88
		8	4	21.12	21.22	21.36	23.52	23.62	23.76
		8	7	21.13	21.24	21.34	23.53	23.64	23.74
		15	0	21.13	21.30	21.31	23.53	23.70	23.71
							Antenna Gain	2.40	dB

Band				LTE Band 2					
Channel				18615	18900	19184	18615	18900	19184
Frequency (MHz)				1851.5	1880	1908.4	1851.5	1880	1908.4
Channel Bandwidth (MHz)	Modulation	RB Size	RB Offset	Conducted Power (dBm)			EIRP (dBm)		
5	QPSK	1	0	23.27	23.37	23.40	25.67	25.77	25.80
		1	12	23.09	23.23	23.22	25.49	25.63	25.62
		1	24	23.17	23.29	23.36	25.57	25.69	25.76
		12	0	22.34	22.44	22.41	24.74	24.84	24.81
		12	6	22.11	22.46	22.29	24.51	24.86	24.69
		12	11	22.22	22.31	22.42	24.62	24.71	24.82
		25	0	22.22	22.41	22.41	24.62	24.81	24.81
	16QAM	1	0	22.31	22.42	22.47	24.71	24.82	24.87
		1	12	22.11	22.41	22.32	24.51	24.81	24.72
		1	24	22.26	22.32	22.41	24.66	24.72	24.81
		12	0	21.31	21.42	21.53	23.71	23.82	23.93
		12	6	21.17	21.27	21.41	23.57	23.67	23.81
		12	11	21.18	21.29	21.39	23.58	23.69	23.79
		25	0	21.18	21.36	21.37	23.58	23.76	23.77
							Antenna Gain	2.40	dBi

Band				LTE Band 2					
Channel				18650	18900	19150	18650	18900	19150
Frequency (MHz)				1855	1880	1905	1855	1880	1905
Channel Bandwidth (MHz)	Modulation	RB Size	RB Offset	Conducted Power (dBm)			EIRP (dBm)		
10	QPSK	1	0	23.32	23.42	23.45	25.72	25.82	25.85
		1	24	23.14	23.28	23.27	25.54	25.68	25.67
		1	49	23.22	23.34	23.41	25.62	25.74	25.81
		25	0	22.39	22.49	22.46	24.79	24.89	24.86
		25	12	22.16	22.51	22.34	24.56	24.91	24.74
		25	24	22.27	22.36	22.47	24.67	24.76	24.87
		50	0	22.27	22.46	22.46	24.67	24.86	24.86
	16QAM	1	0	22.36	22.47	22.52	24.76	24.87	24.92
		1	24	22.16	22.46	22.37	24.56	24.86	24.77
		1	49	22.31	22.37	22.46	24.71	24.77	24.86
		25	0	21.36	21.47	21.58	23.76	23.87	23.98
		25	12	21.22	21.32	21.46	23.62	23.72	23.86
		25	24	21.23	21.34	21.44	23.63	23.74	23.84
		50	0	21.23	21.41	21.42	23.63	23.81	23.82
							Antenna Gain	2.40	dBi

Band				LTE Band 2					
Channel				18675	18900	19125	18675	18900	19125
Frequency (MHz)				1857.5	1880	1902.5	1857.5	1880	1902.5
Channel Bandwidth (MHz)	Modulation	RB Size	RB Offset	Conducted Power (dBm)			EIRP (dBm)		
15	QPSK	1	0	23.37	23.47	23.50	25.77	25.87	25.90
		1	37	23.19	23.33	23.32	25.59	25.73	25.72
		1	74	23.27	23.39	23.46	25.67	25.79	25.86
		36	0	22.44	22.54	22.51	24.84	24.94	24.91
		36	18	22.21	22.56	22.39	24.61	24.96	24.79
		36	35	22.32	22.41	22.52	24.72	24.81	24.92
		75	0	22.32	22.51	22.51	24.72	24.91	24.91
	16QAM	1	0	22.41	22.52	22.57	24.81	24.92	24.97
		1	37	22.21	22.51	22.42	24.61	24.91	24.82
		1	74	22.36	22.42	22.51	24.76	24.82	24.91
		36	0	21.41	21.52	21.63	23.81	23.92	24.03
		36	18	21.27	21.37	21.51	23.67	23.77	23.91
		36	35	21.28	21.39	21.49	23.68	23.79	23.89
		75	0	21.28	21.46	21.47	23.68	23.86	23.87
							Antenna Gain	2.40	dB

Band				LTE Band 2					
Channel				18700	18900	19100	18700	18900	19100
Frequency (MHz)				1860	1880	1900	1860	1880	1900
Channel Bandwidth (MHz)	Modulation	RB Size	RB Offset	Conducted Power (dBm)			EIRP (dBm)		
20	QPSK	1	0	23.42	23.52	23.55	25.82	25.92	25.95
		1	49	23.24	23.38	23.37	25.64	25.78	25.77
		1	99	23.32	23.44	23.51	25.72	25.84	25.91
		50	0	22.49	22.59	22.56	24.89	24.99	24.96
		50	24	22.26	22.61	22.44	24.66	25.01	24.84
		50	49	22.37	22.46	22.57	24.77	24.86	24.97
		100	0	22.37	22.56	22.56	24.77	24.96	24.96
	16QAM	1	0	22.46	22.57	22.62	24.86	24.97	25.02
		1	49	22.26	22.56	22.47	24.66	24.96	24.87
		1	99	22.41	22.47	22.56	24.81	24.87	24.96
		50	0	21.46	21.57	21.68	23.86	23.97	24.08
		50	24	21.32	21.42	21.56	23.72	23.82	23.96
		50	49	21.33	21.44	21.54	23.73	23.84	23.94
		100	0	21.33	21.51	21.52	23.73	23.91	23.92
							Antenna Gain	2.40	dB

APPENDIX B OCCUPIED BANDWIDTH

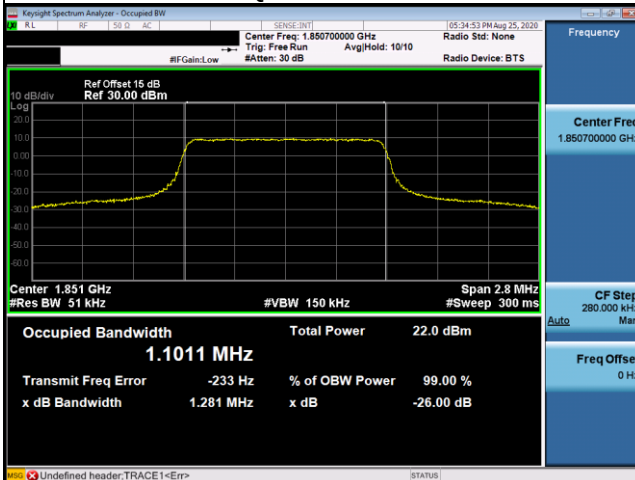
WCDMA Band II_WCDMA					
QPSK					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
9262	1852.4	4.1386	9262	1852.4	4.737
9400	1880	4.1283	9400	1880	4.716
9538	1907.6	4.1231	9538	1907.6	4.683



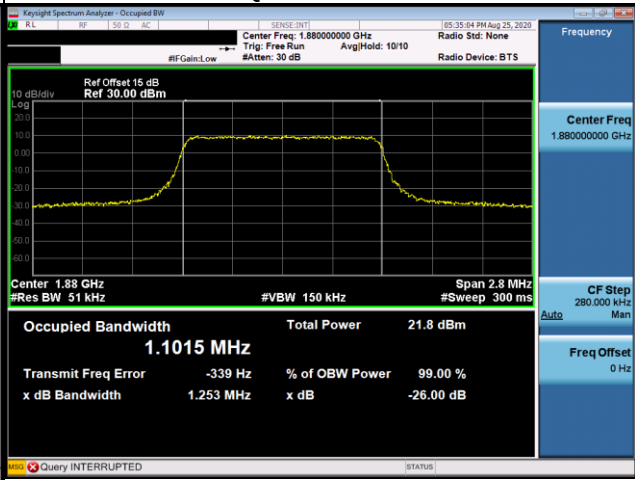
LTE Band 2_1.4M					
QPSK					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
18607	1850.7	1.1011	18607	1850.7	1.281
18900	1880	1.1015	18900	1880	1.253
19193	1909.3	1.1009	19193	1909.3	1.258
16QAM					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
18607	1850.7	1.1027	18607	1850.7	1.289
18900	1880	1.1001	18900	1880	1.274
19193	1909.3	1.1006	19193	1909.3	1.265

Spectrum Plot

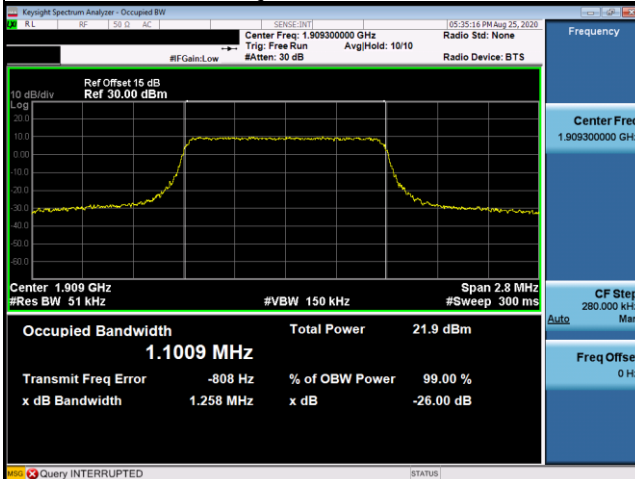
QPSK-18607



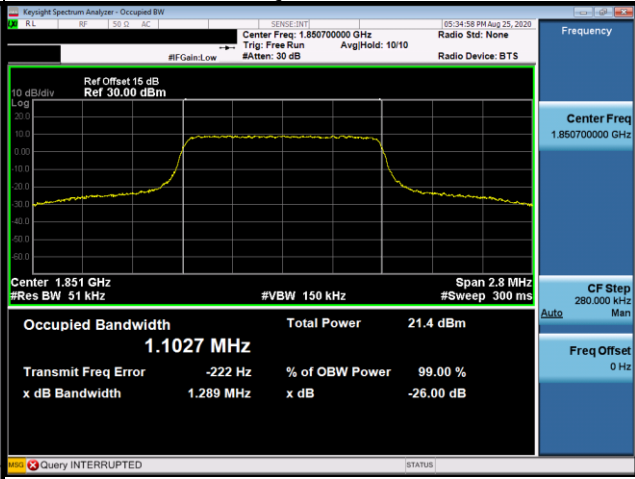
QPSK-18900



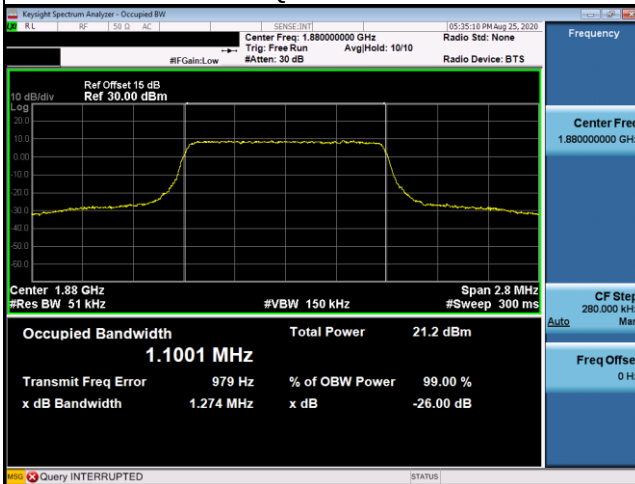
QPSK-19193



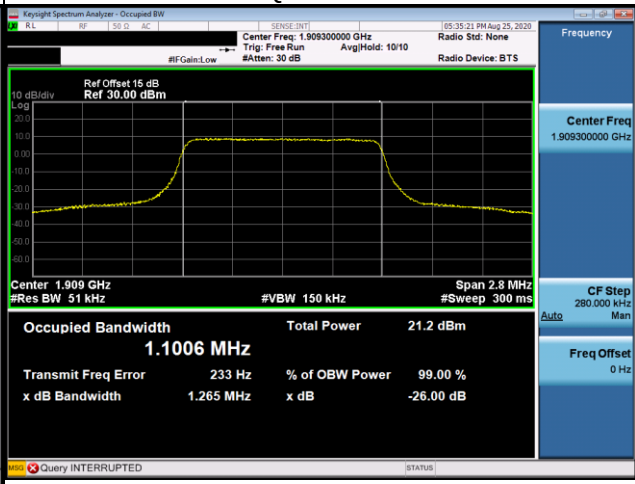
16QAM-18607



16QAM-18900



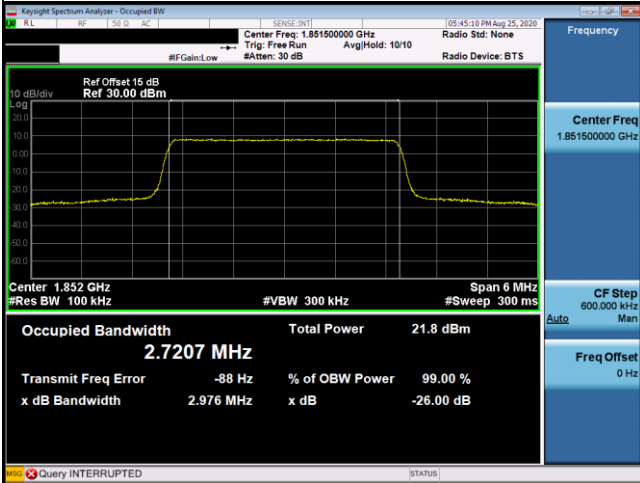
16QAM-19193



LTE Band 2_3M					
QPSK					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
18615	1851.5	2.7207	18615	1851.5	2.976
18900	1880	2.7196	18900	1880	2.962
19185	1908.5	2.7189	19185	1908.5	2.956
16QAM					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
18615	1851.5	2.7185	18615	1851.5	2.964
18900	1880	2.7188	18900	1880	2.959
19185	1908.5	2.7165	19185	1908.5	2.953

Spectrum Plot

QPSK-18615



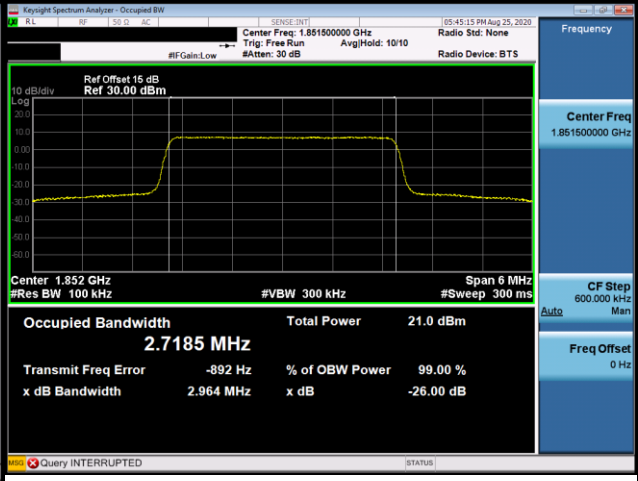
QPSK-18900



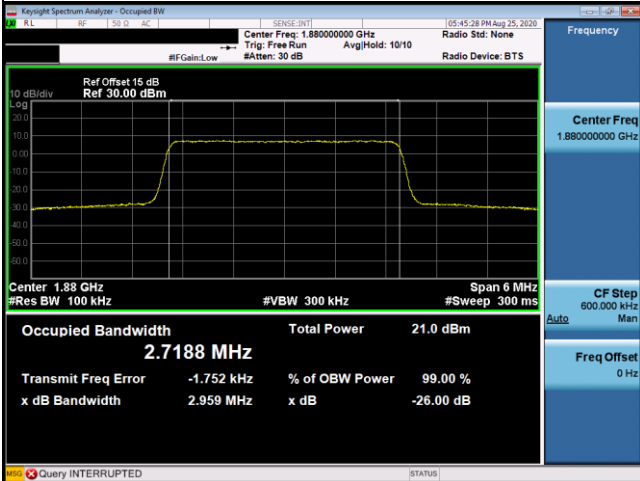
QPSK-19185



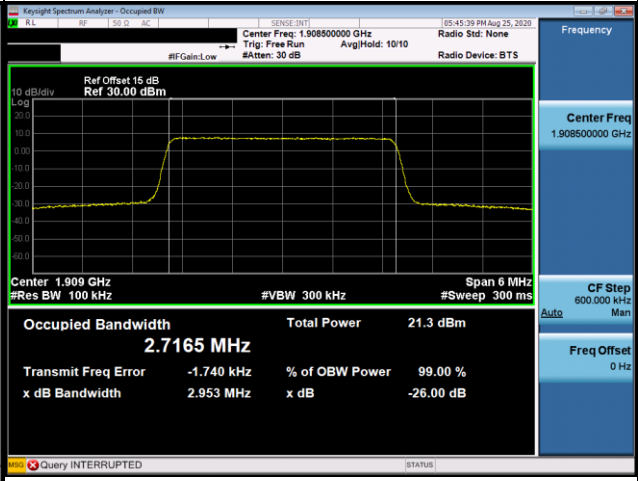
16QAM-18615



16QAM-18900



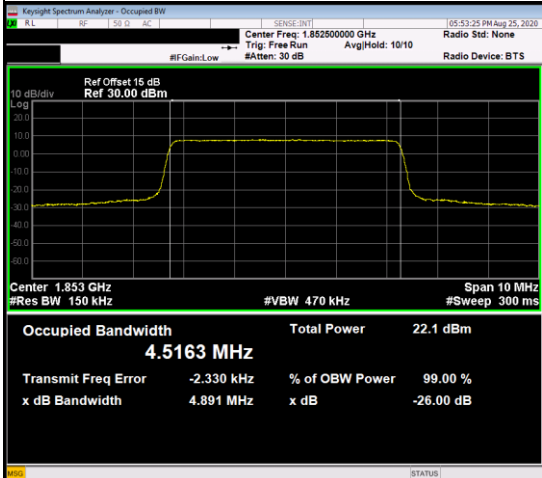
16QAM-19185



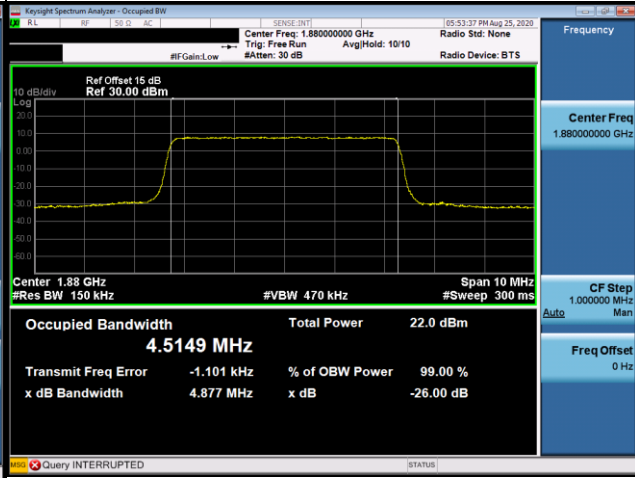
LTE Band 2_5M					
QPSK					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
18625	1852.5	4.5163	18625	1852.5	4.891
18900	1880	4.5149	18900	1880	4.877
19175	1907.5	4.5122	19175	1907.5	4.870
16QAM					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
18625	1852.5	4.5125	18625	1852.5	4.890
18900	1880	4.5087	18900	1880	4.878
19175	1907.5	4.5044	19175	1907.5	4.872

Spectrum Plot

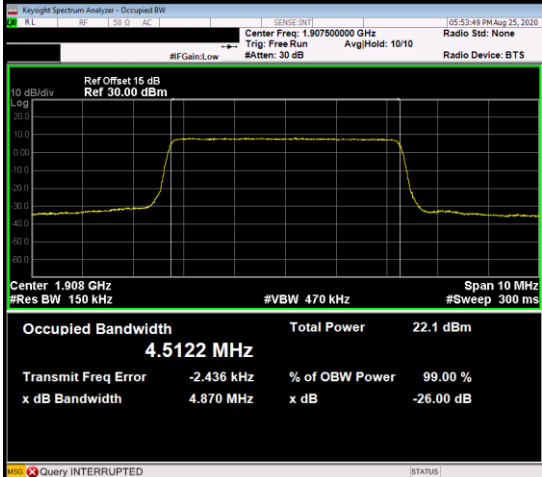
QPSK-18625



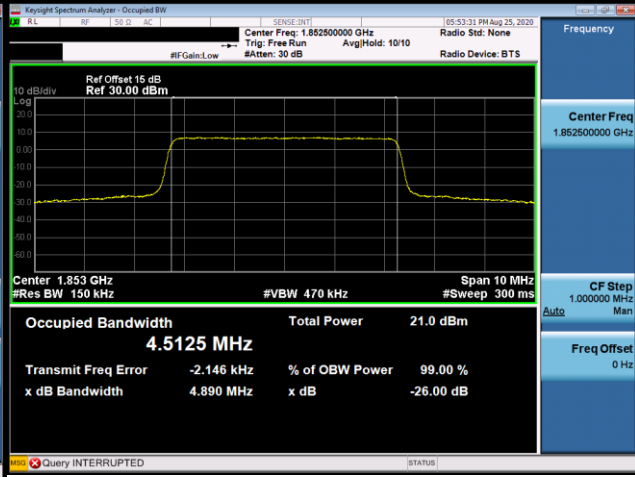
QPSK-18900



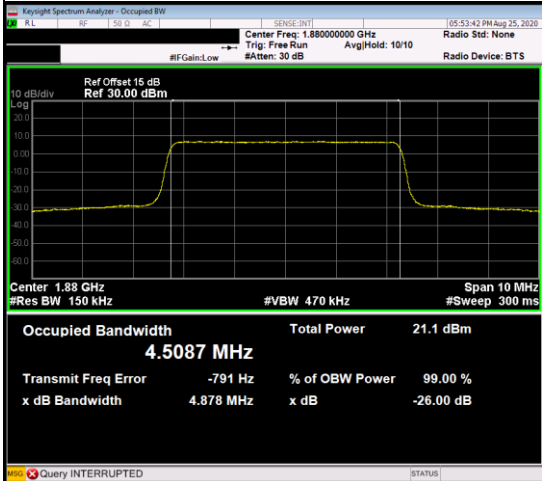
QPSK-19175



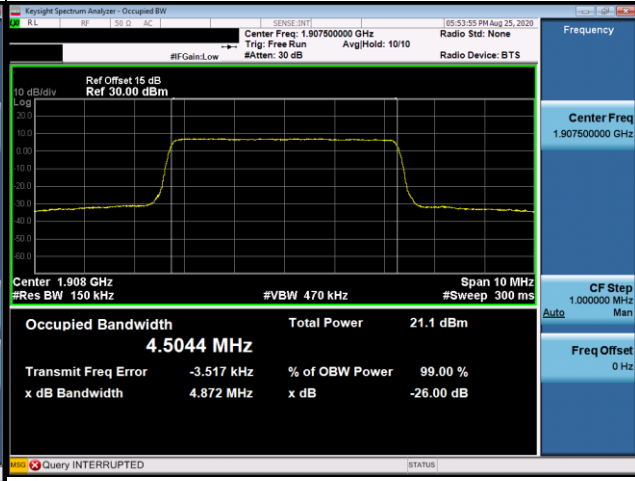
16QAM-18625



16QAM-18900



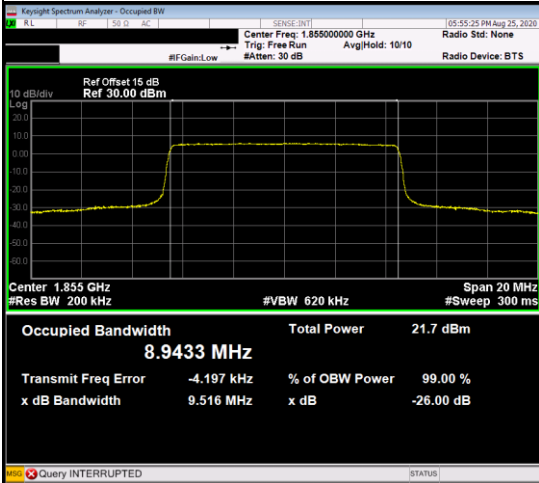
16QAM-19175



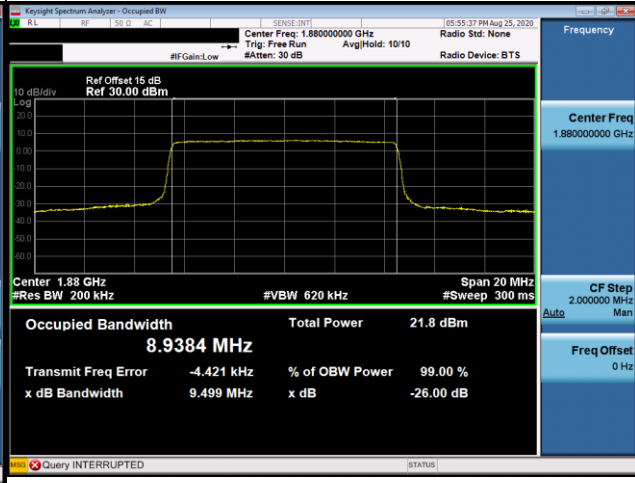
LTE Band 2_10M					
QPSK					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
18650	1855	8.9433	18650	1855	9.516
18900	1880	8.9384	18900	1880	9.499
19150	1905	8.9336	19150	1905	9.490
16QAM					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
18650	1855	8.9436	18650	1855	9.511
18900	1880	8.9371	18900	1880	9.494
19150	1905	8.9333	19150	1905	9.483

Spectrum Plot

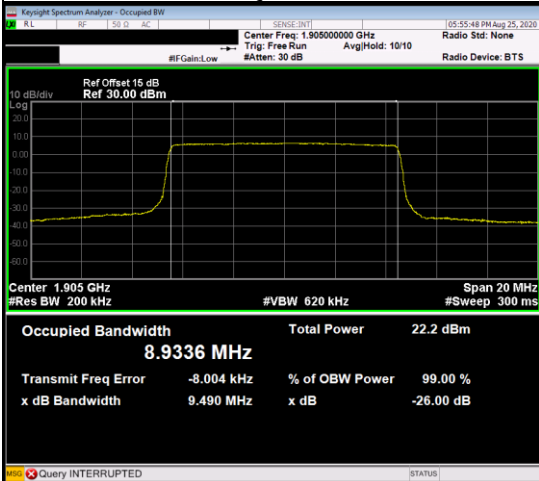
QPSK-18650



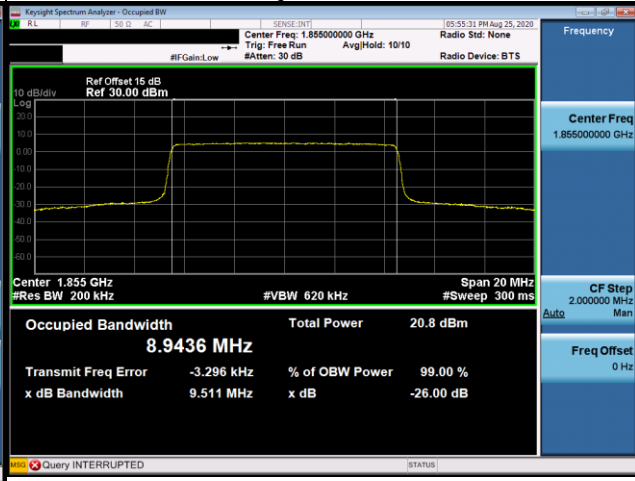
QPSK-18900



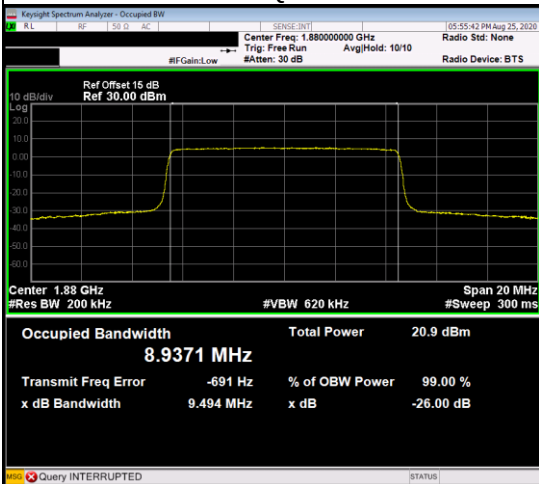
QPSK-19150



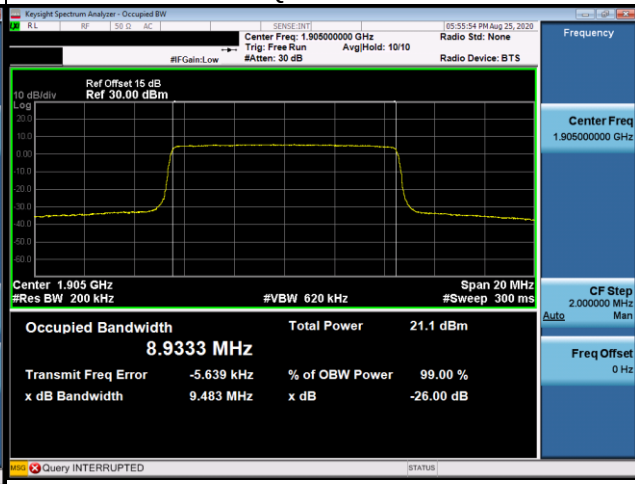
16QAM-18650



16QAM-18900



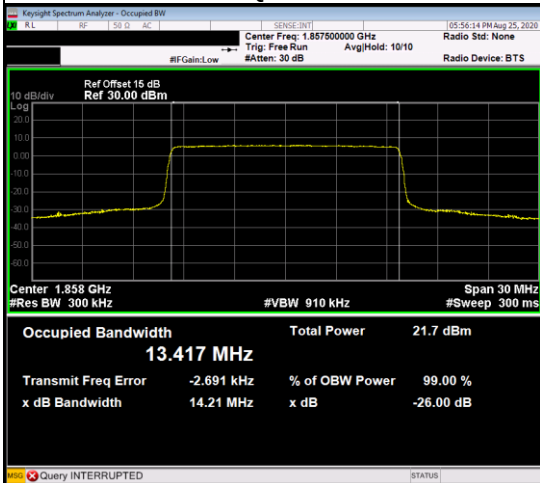
16QAM-19150



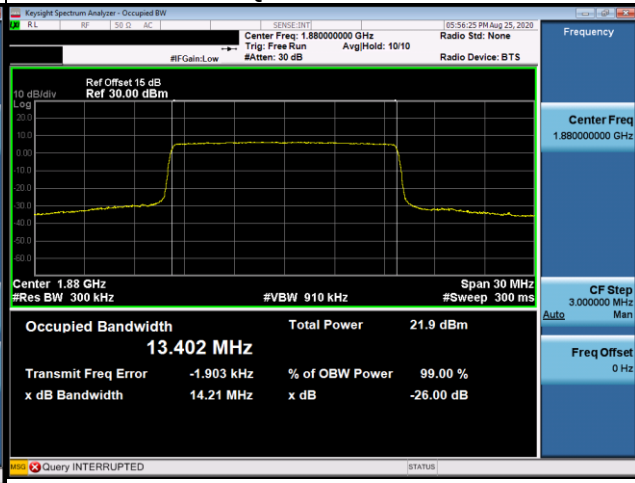
LTE Band 2_15M					
QPSK					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
18675	1857.5	13.417	18675	1857.5	14.21
18900	1880	13.402	18900	1880	14.21
19125	1902.5	13.400	19125	1902.5	14.21
16QAM					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
18675	1857.5	13.410	18675	1857.5	14.21
18900	1880	13.394	18900	1880	14.21
19125	1902.5	13.399	19125	1902.5	14.20

Spectrum Plot

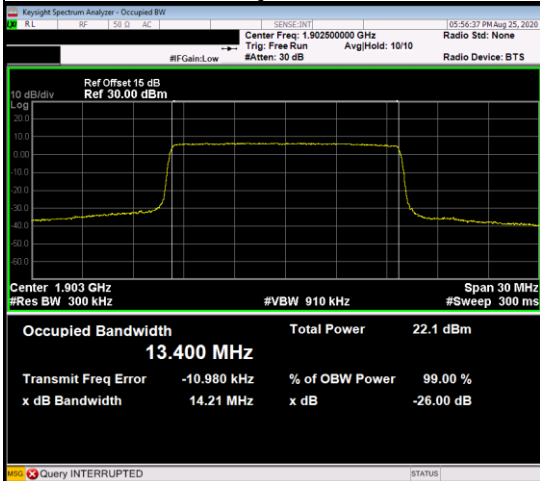
QPSK-18675



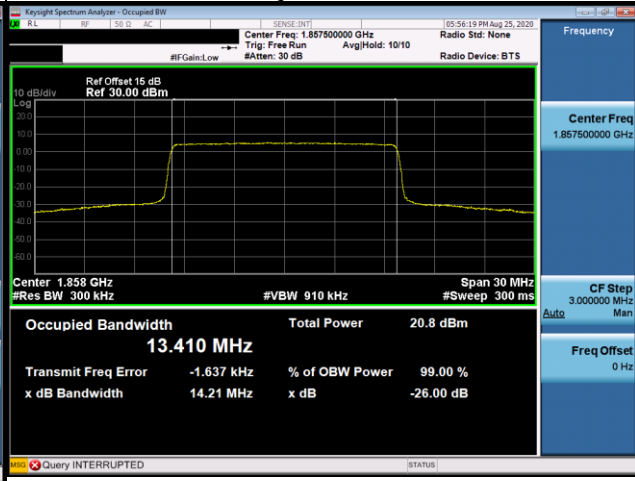
QPSK-18900



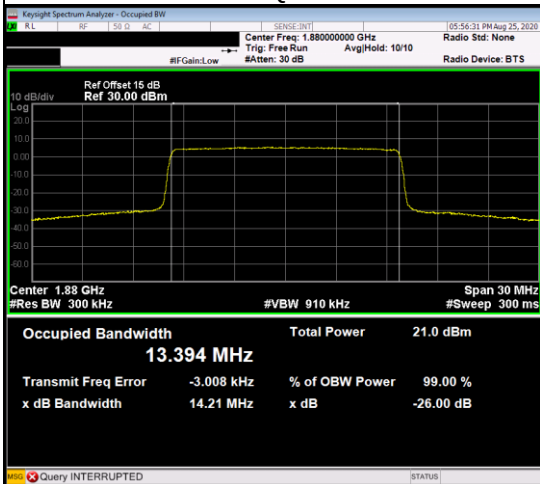
QPSK-19125



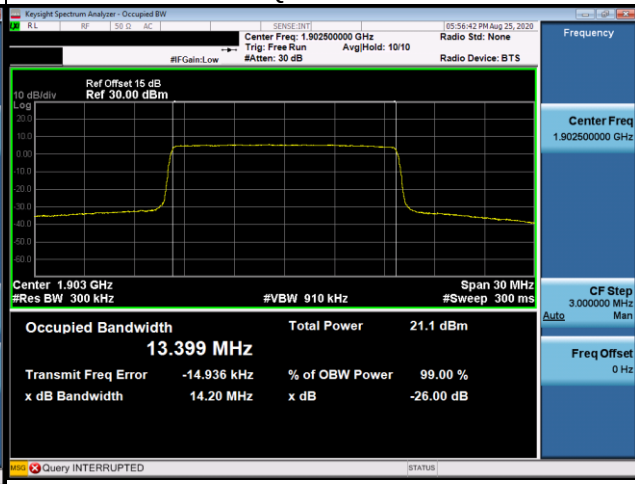
16QAM-18675



16QAM-18900



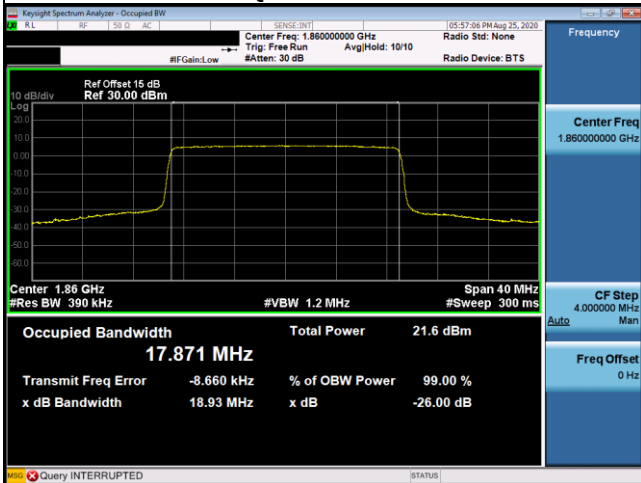
16QAM-19125



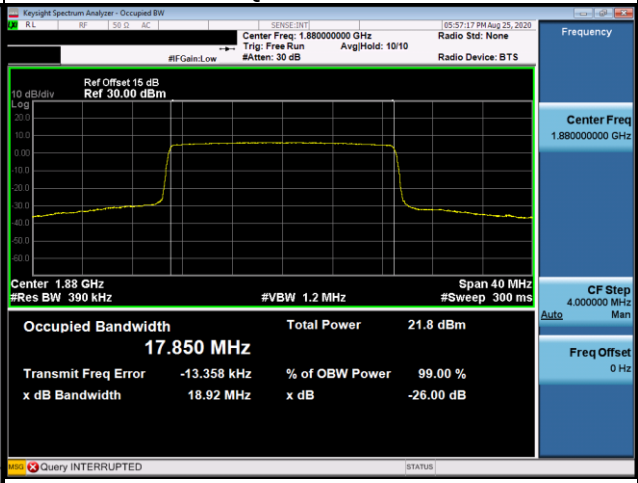
LTE Band 2_20M					
QPSK					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
18700	1860	17.871	18700	1860	18.93
18900	1880	17.850	18900	1880	18.92
19100	1900	17.868	19100	1900	18.92
16QAM					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
18700	1860	17.866	18700	1860	18.92
18900	1880	17.846	18900	1880	18.90
19100	1900	17.863	19100	1900	18.91

Spectrum Plot

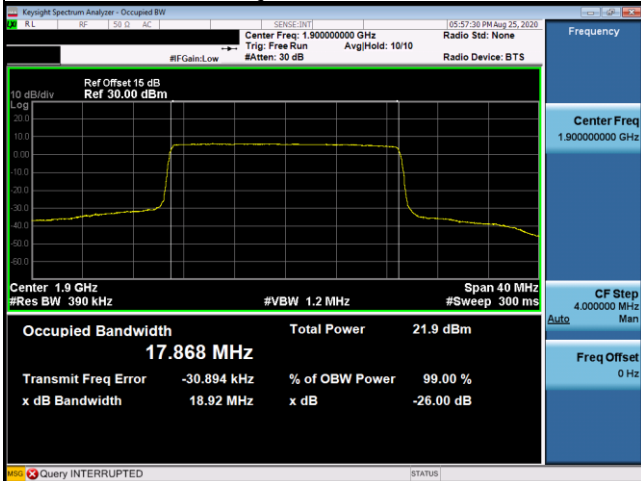
QPSK-18700



QPSK-18900



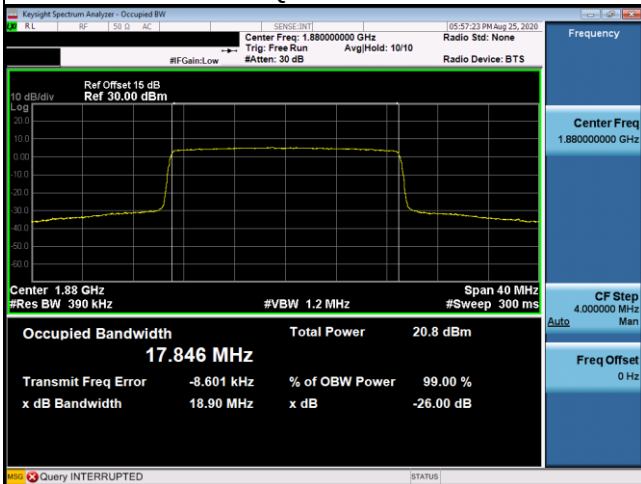
QPSK-19100



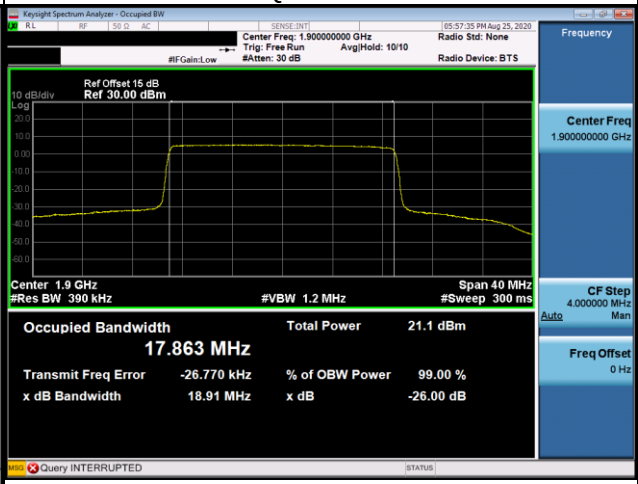
16QAM-18700



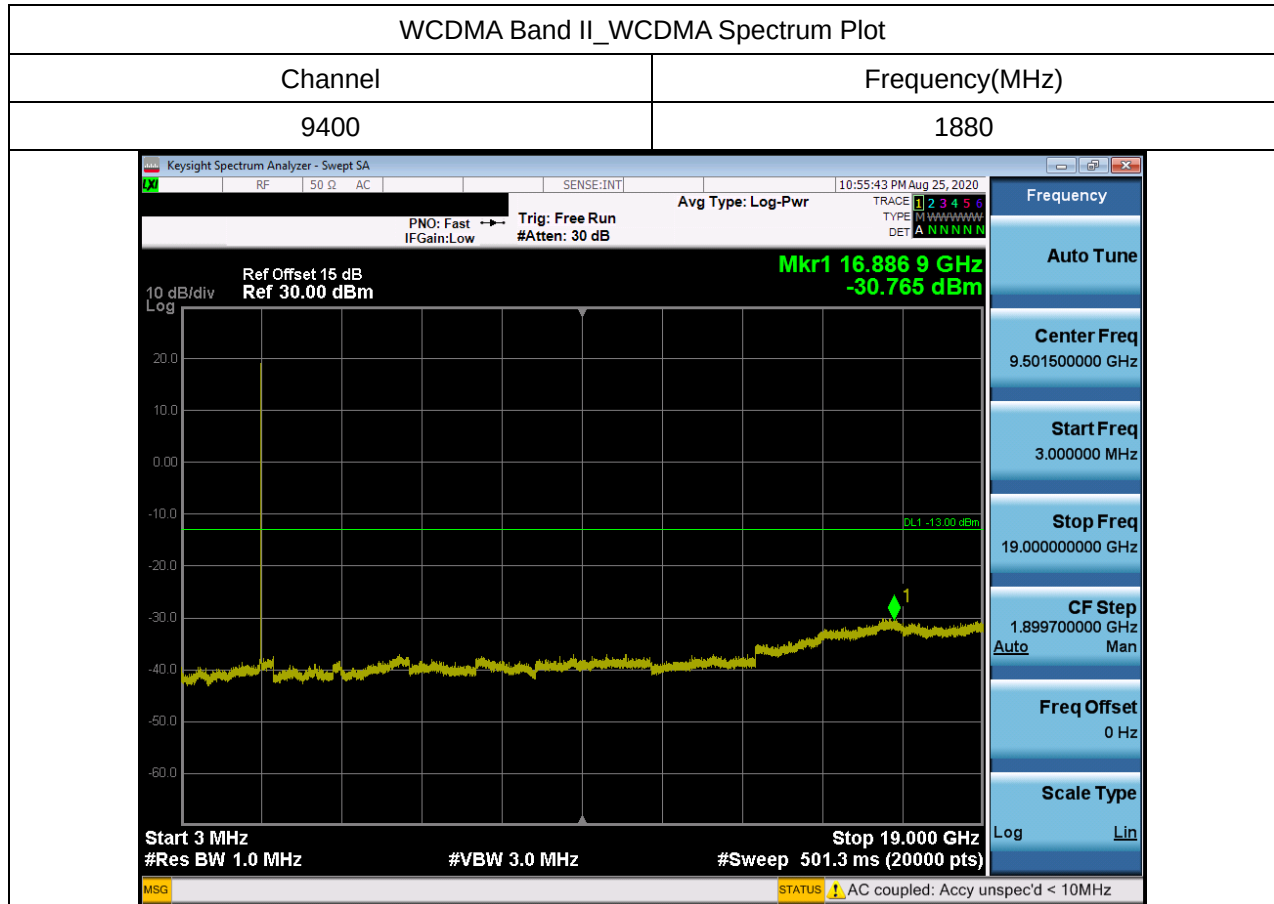
16QAM-18900

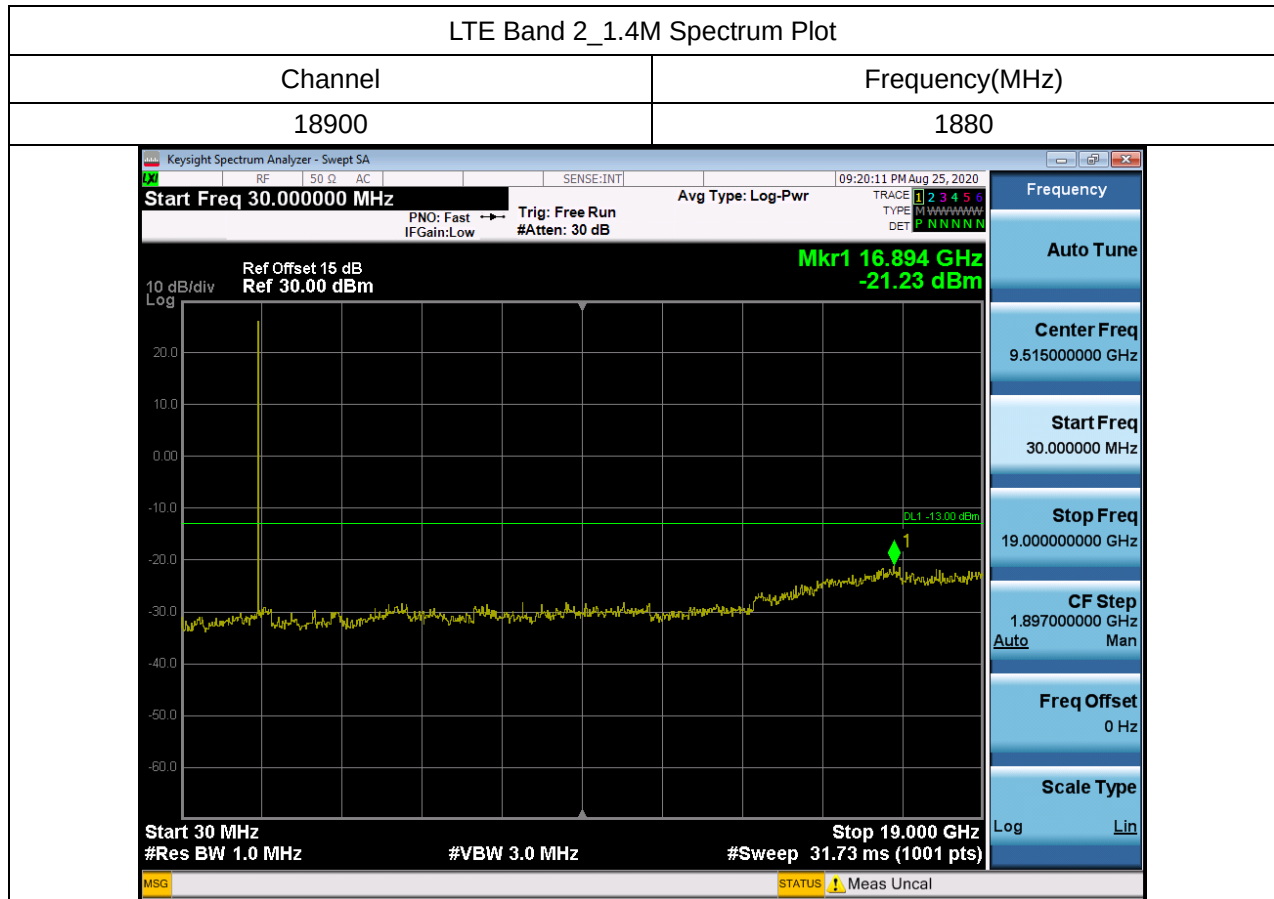


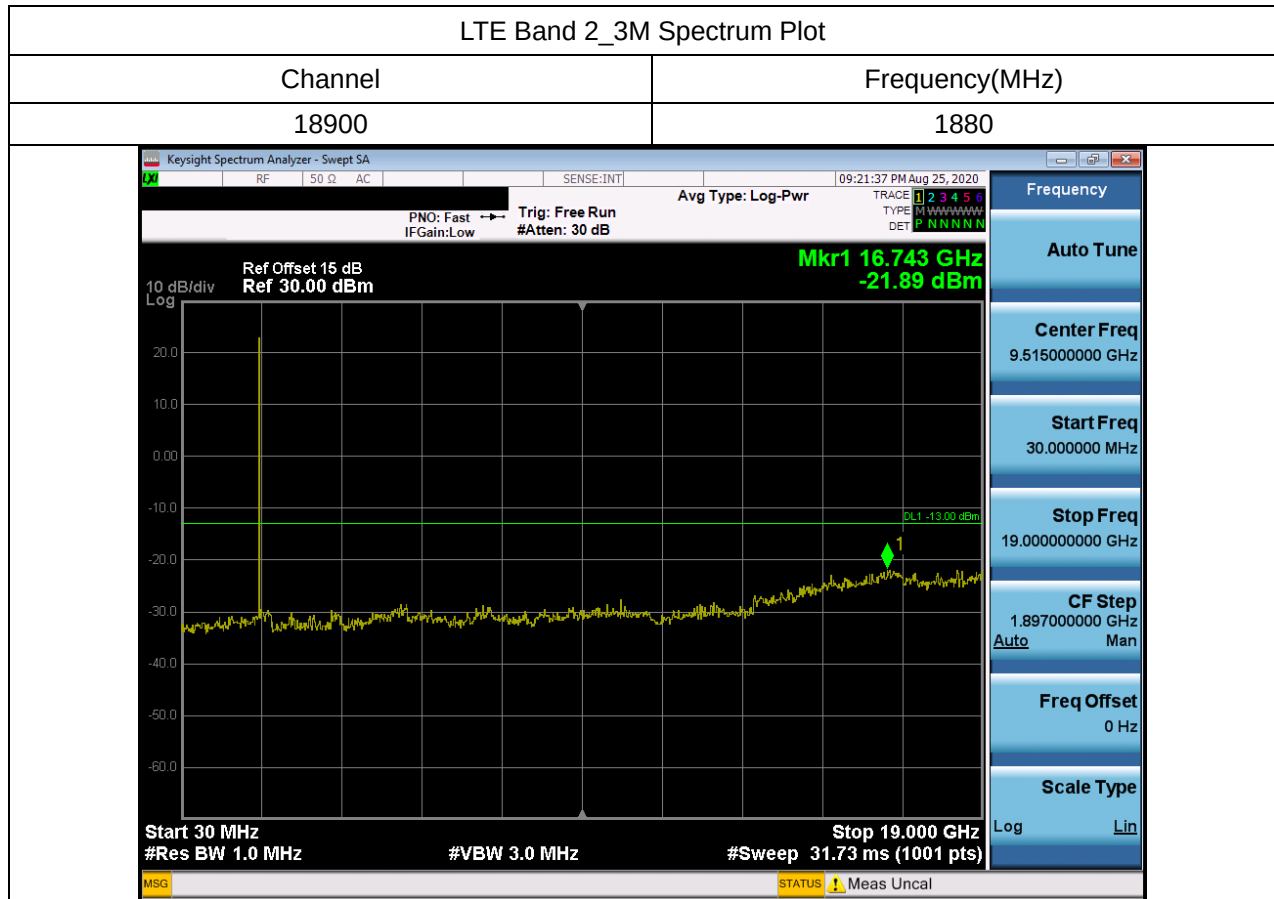
16QAM-19100

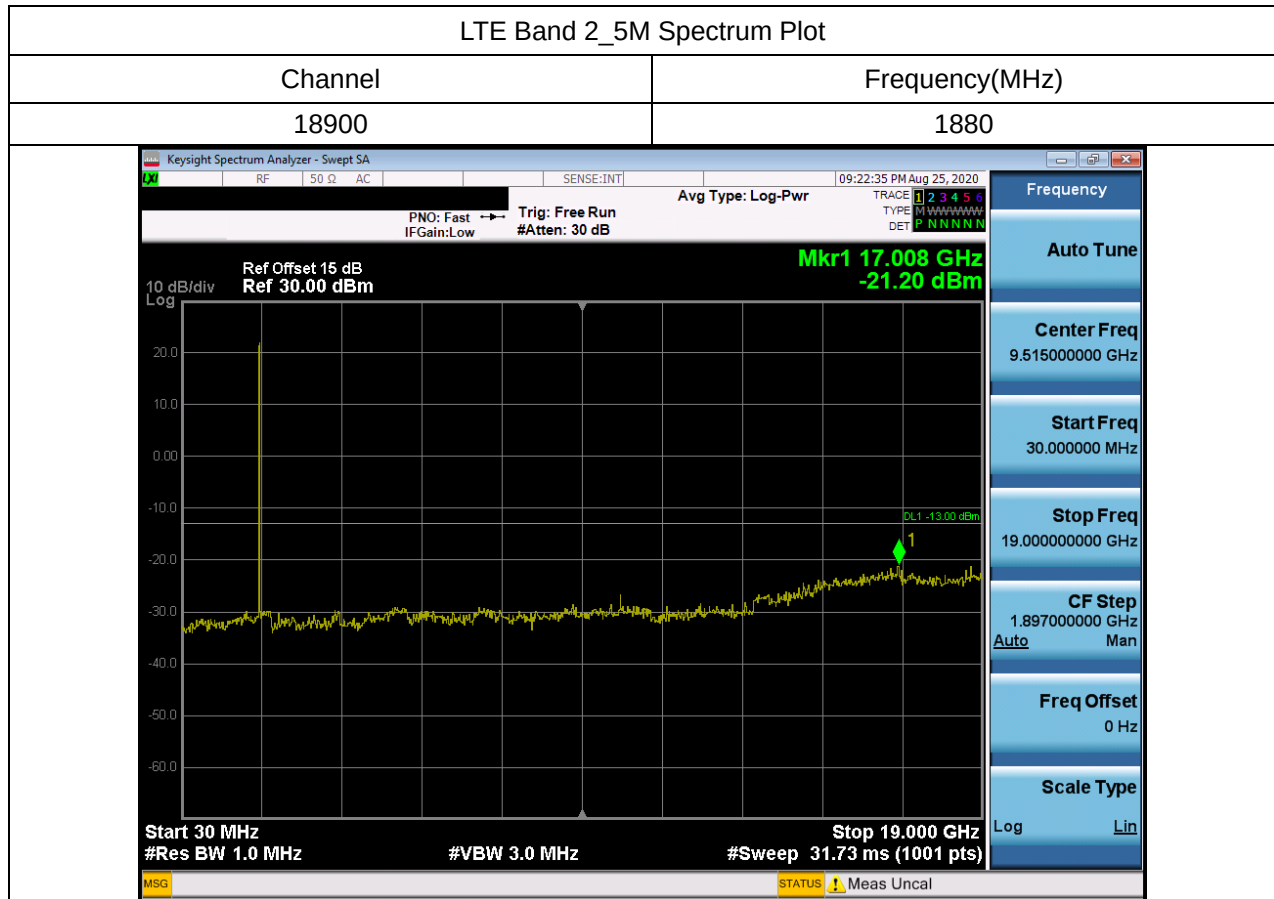


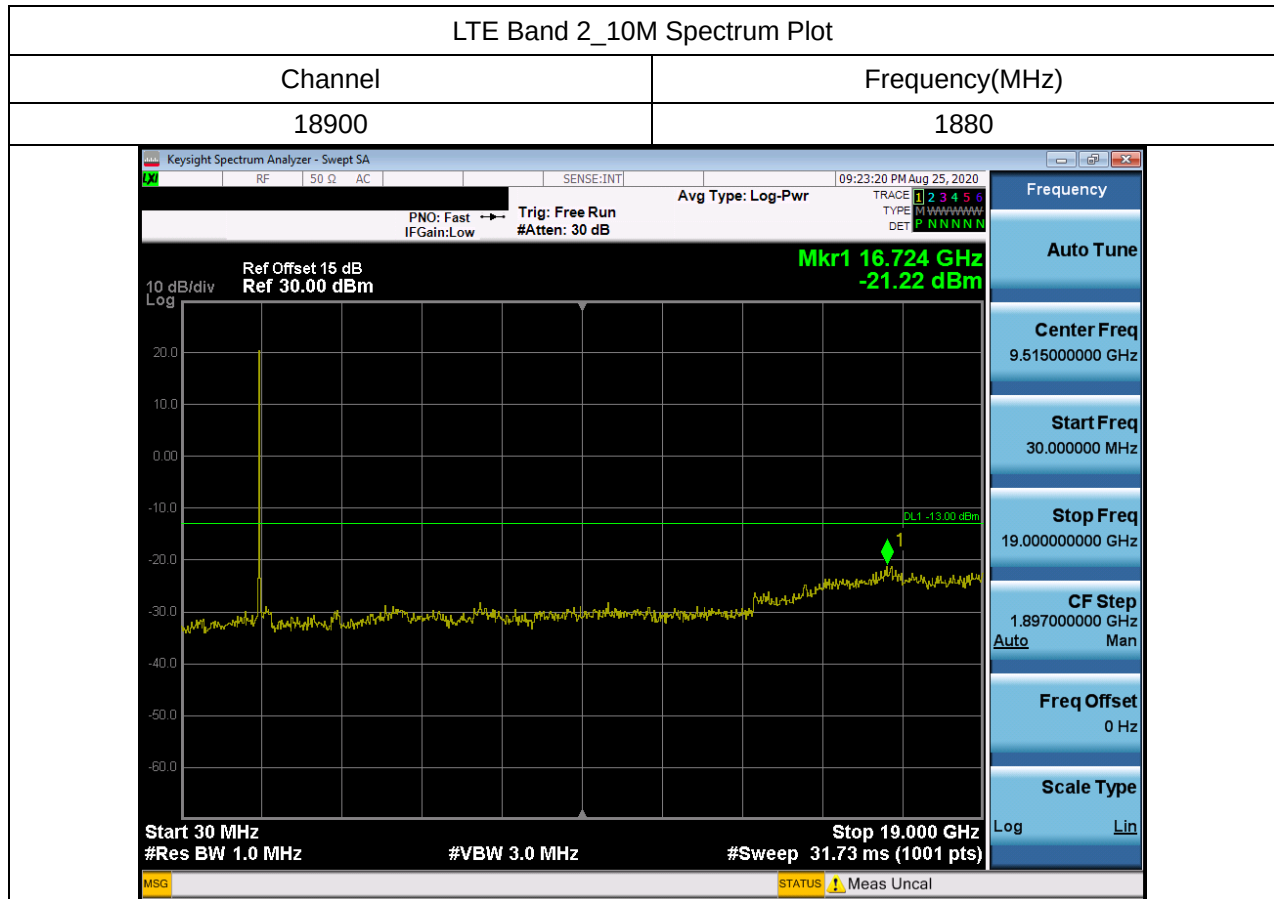
APPENDIX C CONDUCTED SPURIOUS EMISSION

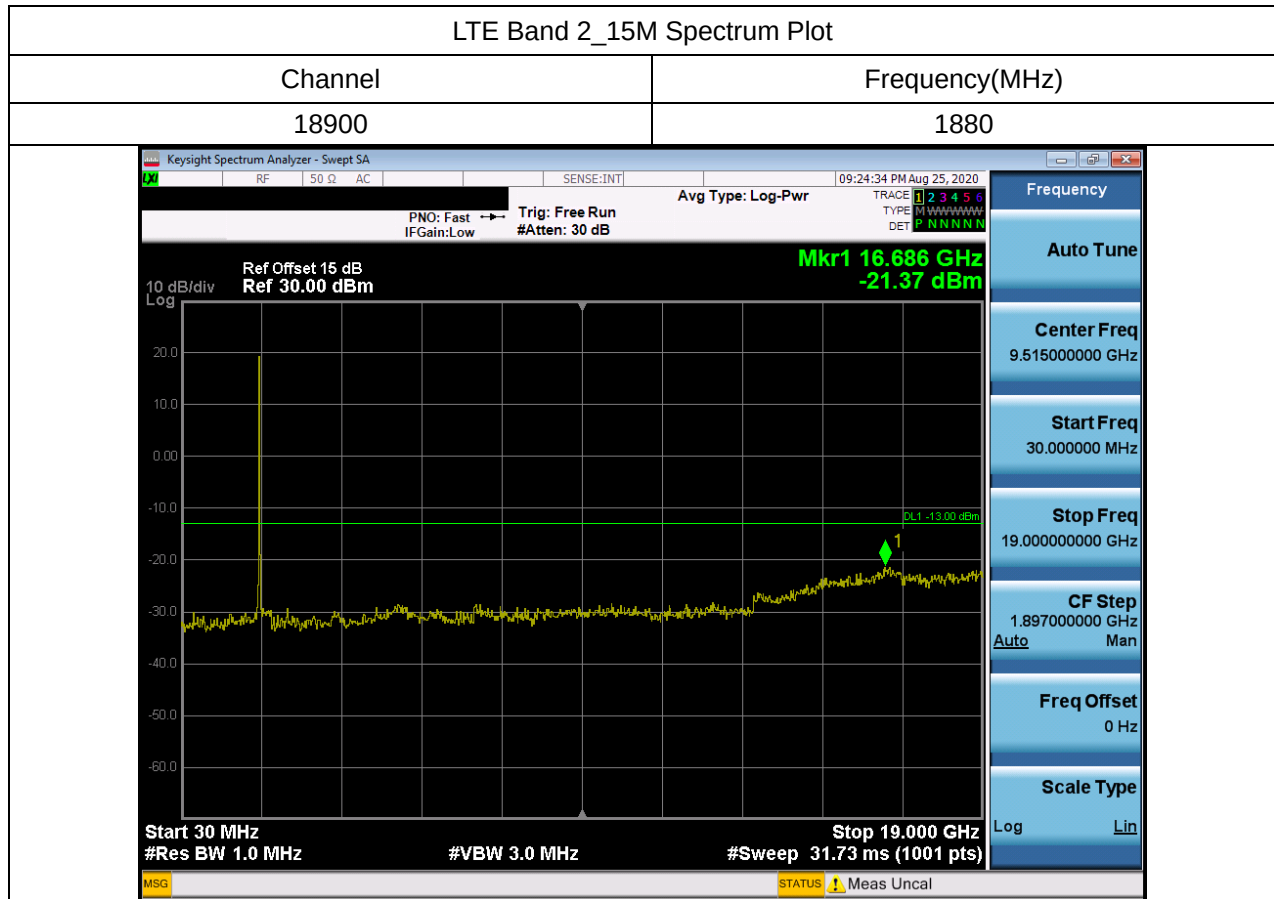


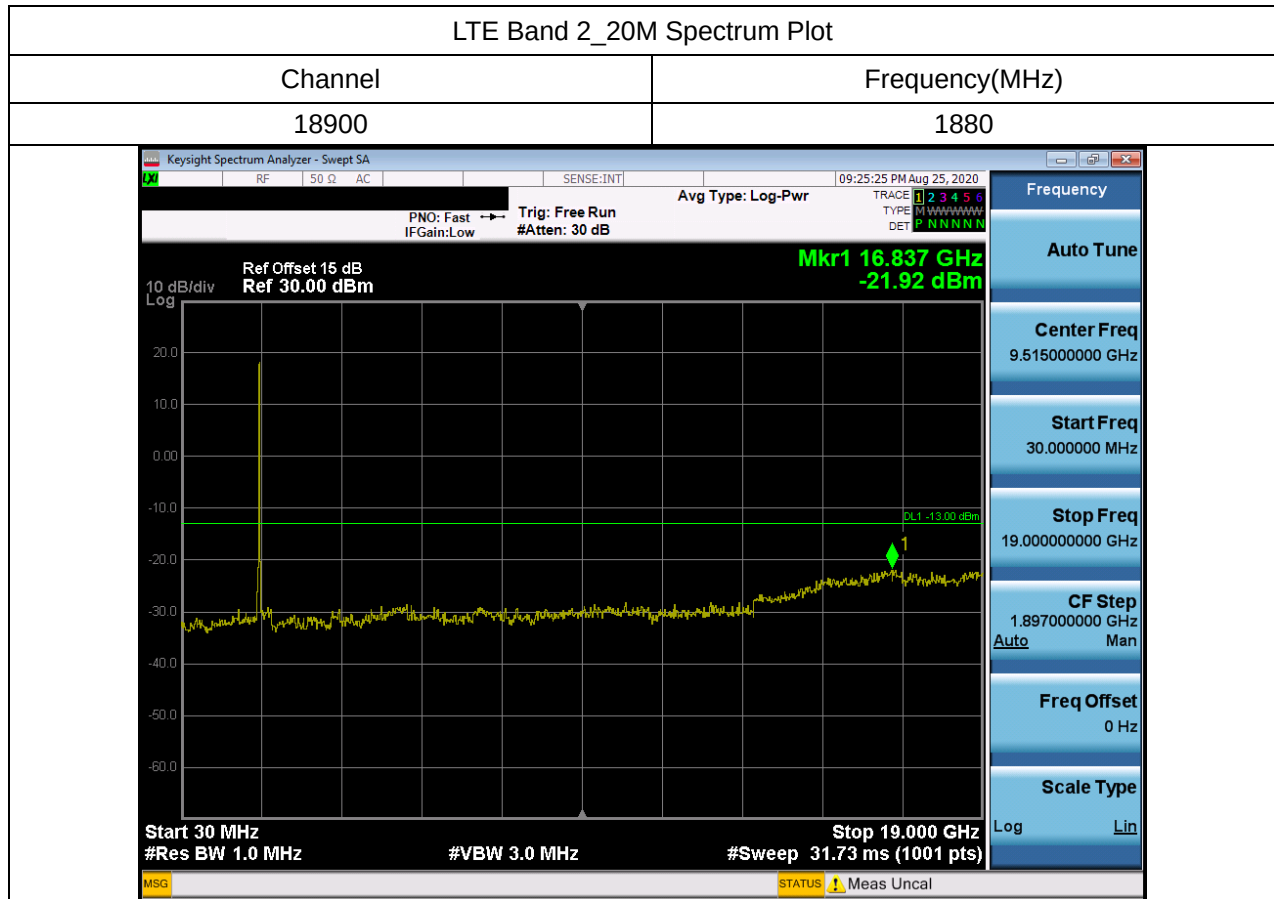






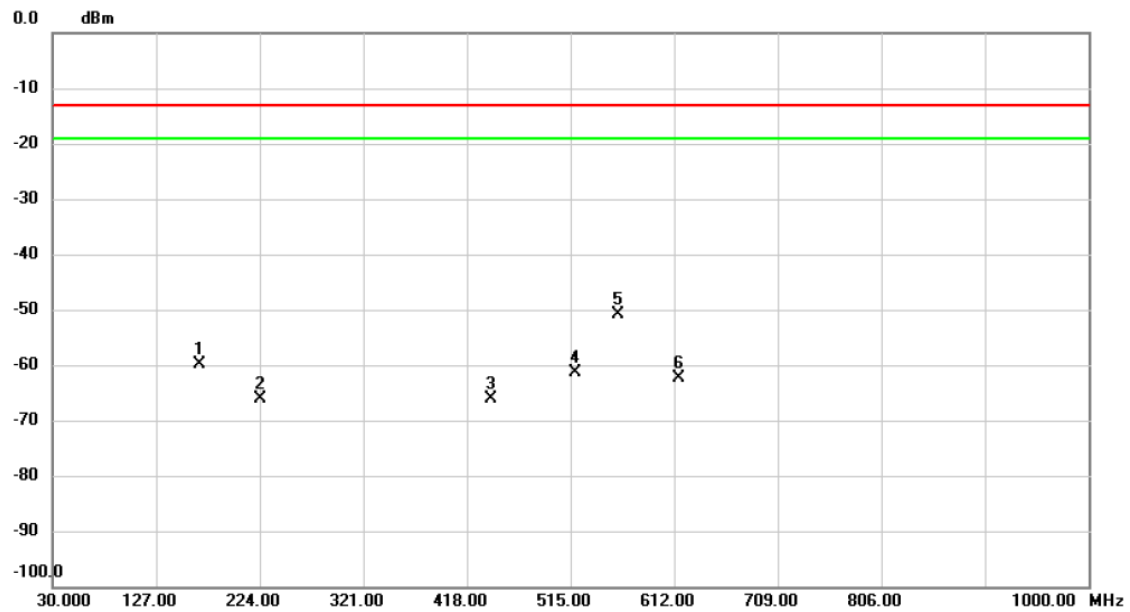






APPENDIX D RADIATED SPURIOUS EMISSIONS TEST

Test Mode	WCDMA Band II_Link CH9800	Tested Date	2019/10/28~29
Test Voltage	DC 60V	Polarization	Vertical

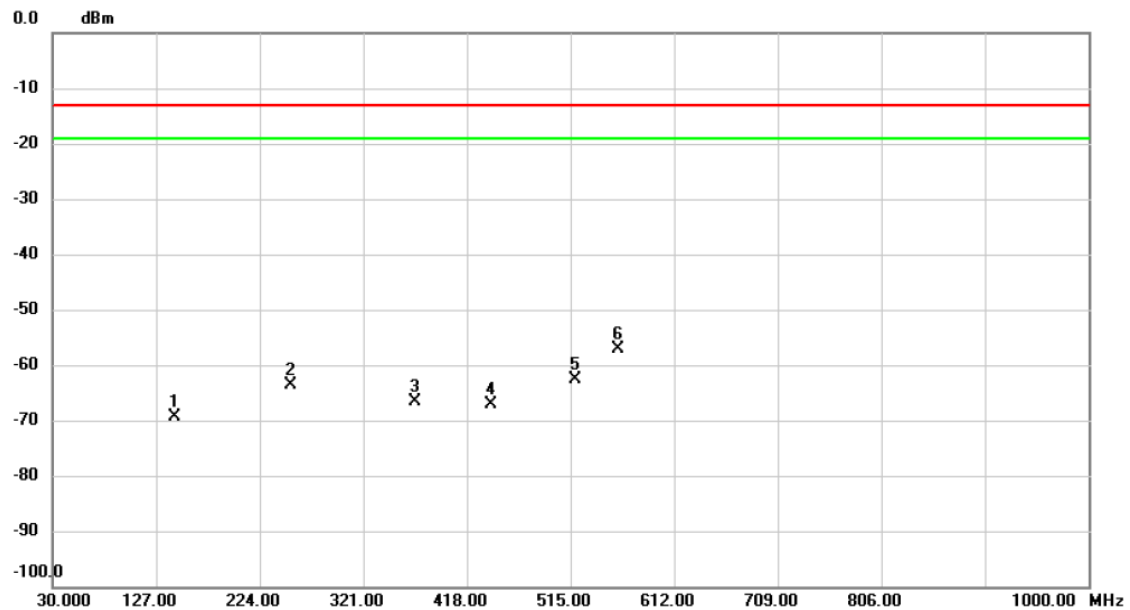


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1		167.7400	-64.89	4.93	-59.96	-13.00	-46.96	peak	
2		224.0000	-65.71	-0.34	-66.05	-13.00	-53.05	peak	
3		440.3100	-66.95	0.76	-66.19	-13.00	-53.19	peak	
4		519.8500	-64.47	3.17	-61.30	-13.00	-48.30	peak	
5	*	559.6200	-56.27	5.43	-50.84	-13.00	-37.84	peak	
6		615.8800	-68.01	5.76	-62.25	-13.00	-49.25	peak	

REMARKS:

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

Test Mode	WCDMA Band II_Link CH9800	Tested Date	2019/10/28~29
Test Voltage	DC 60V	Polarization	Horizontal

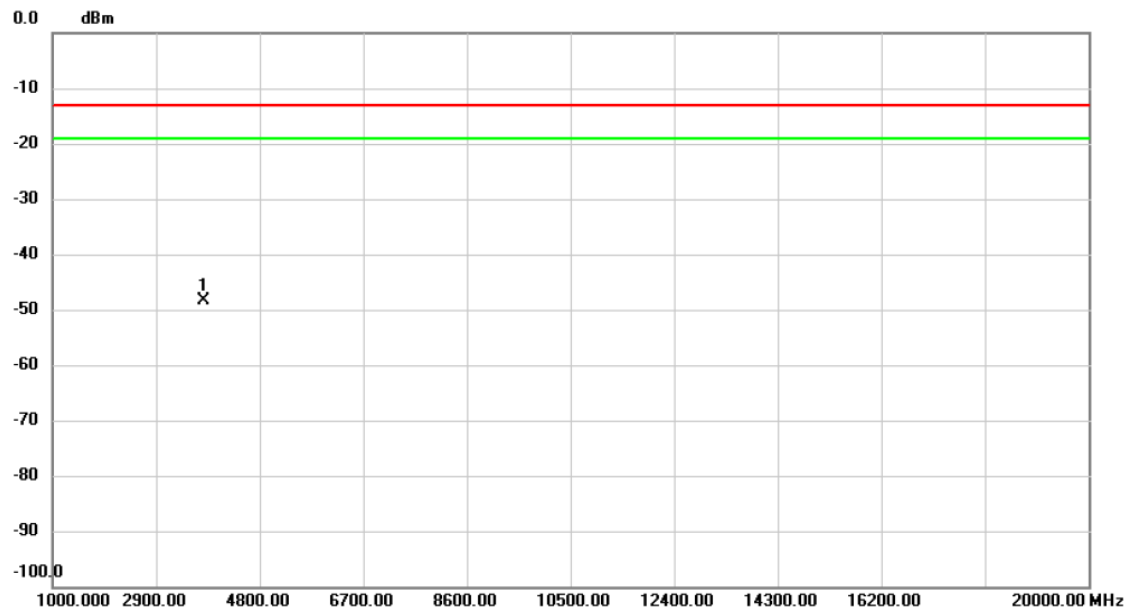


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBm	dB	dBm	dBm	dB		
1		144.4600	-68.38	-0.90	-69.28	-13.00	-56.28	peak	
2		253.1000	-58.01	-5.67	-63.68	-13.00	-50.68	peak	
3		369.5000	-66.62	-0.07	-66.69	-13.00	-53.69	peak	
4		440.3100	-68.18	0.96	-67.22	-13.00	-54.22	peak	
5		519.8500	-63.89	1.24	-62.65	-13.00	-49.65	peak	
6	*	559.6200	-59.05	1.92	-57.13	-13.00	-44.13	peak	

REMARKS:

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

Test Mode	WCDMA Band II_Link CH9800	Tested Date	2019/10/28~29
Test Voltage	DC 60V	Polarization	Vertical

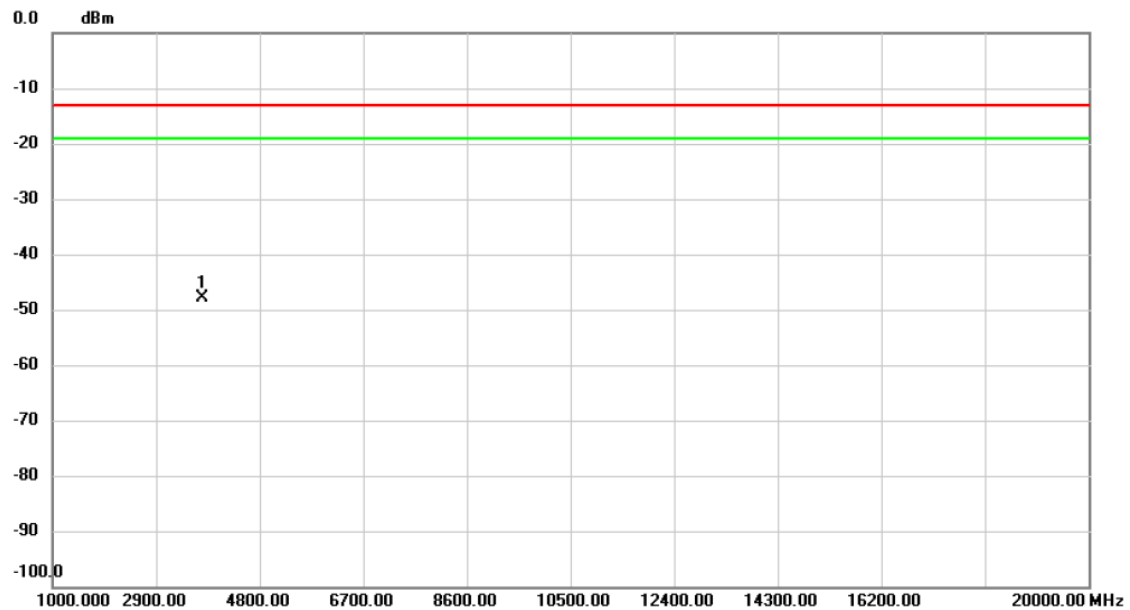


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	3762.025	-47.75	-0.74	-48.49	-13.00	-35.49	peak	

REMARKS:

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

Test Mode	WCDMA Band II_Link CH9800	Tested Date	2019/10/28~29
Test Voltage	DC 60V	Polarization	Horizontal

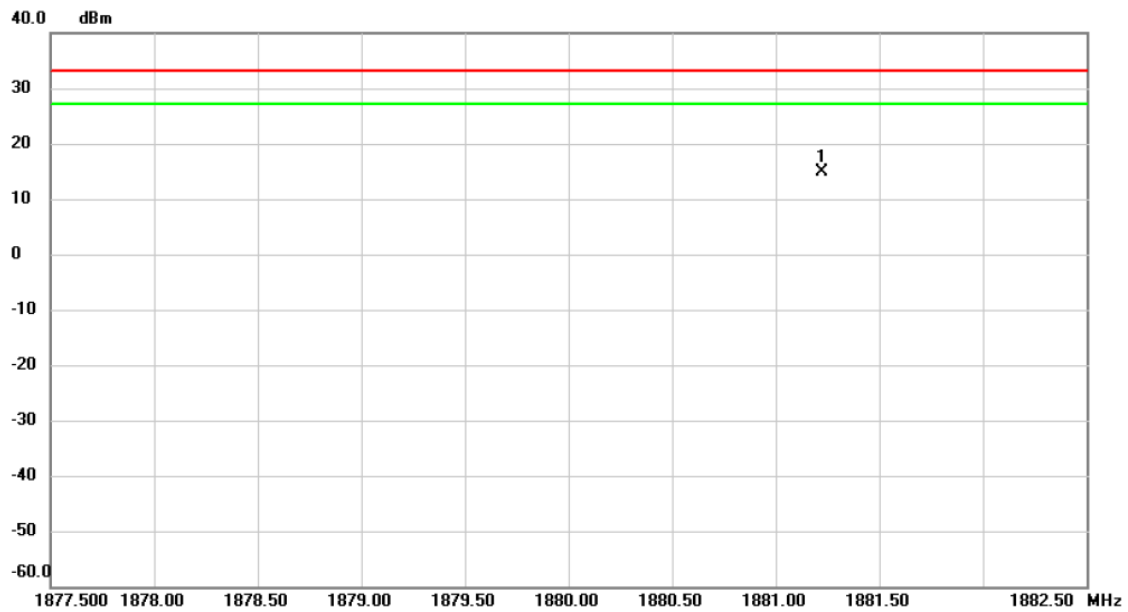


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	3758.585	-46.57	-1.25	-47.82	-13.00	-34.82	peak	

REMARKS:

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

Test Mode	WCDMA Band II_Link CH9800	Tested Date	2019/10/28~29
Test Voltage	DC 60V	Polarization	Vertical

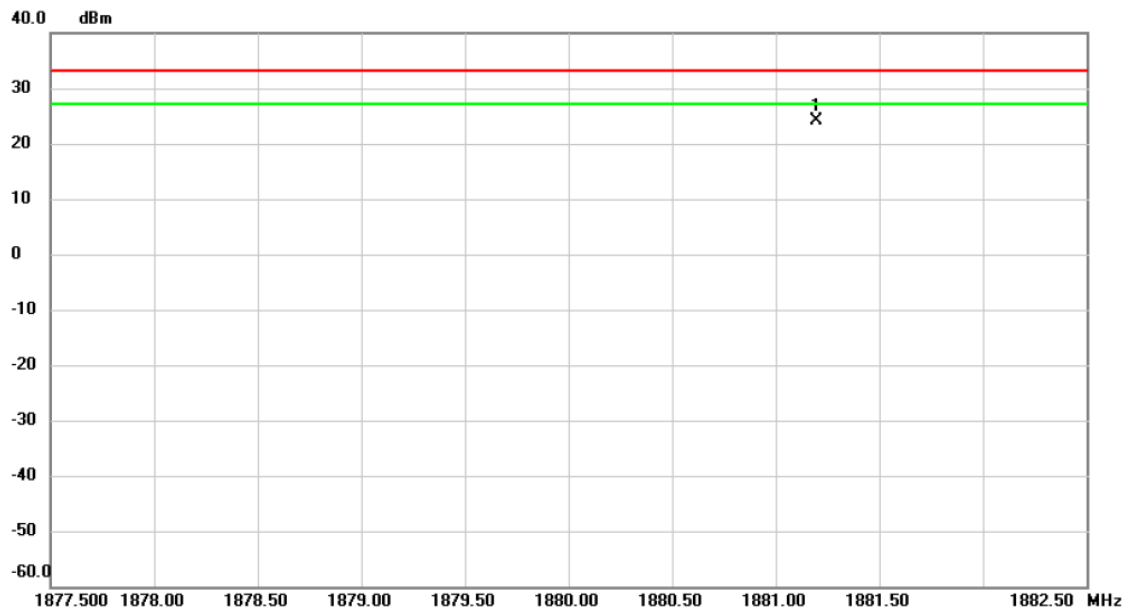


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	1881.220	-24.36	39.32	14.96	33.01	-18.05	peak	

REMARKS:

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

Test Mode	WCDMA Band II_Link CH9800	Tested Date	2019/10/28~29
Test Voltage	DC 60V	Polarization	Horizontal

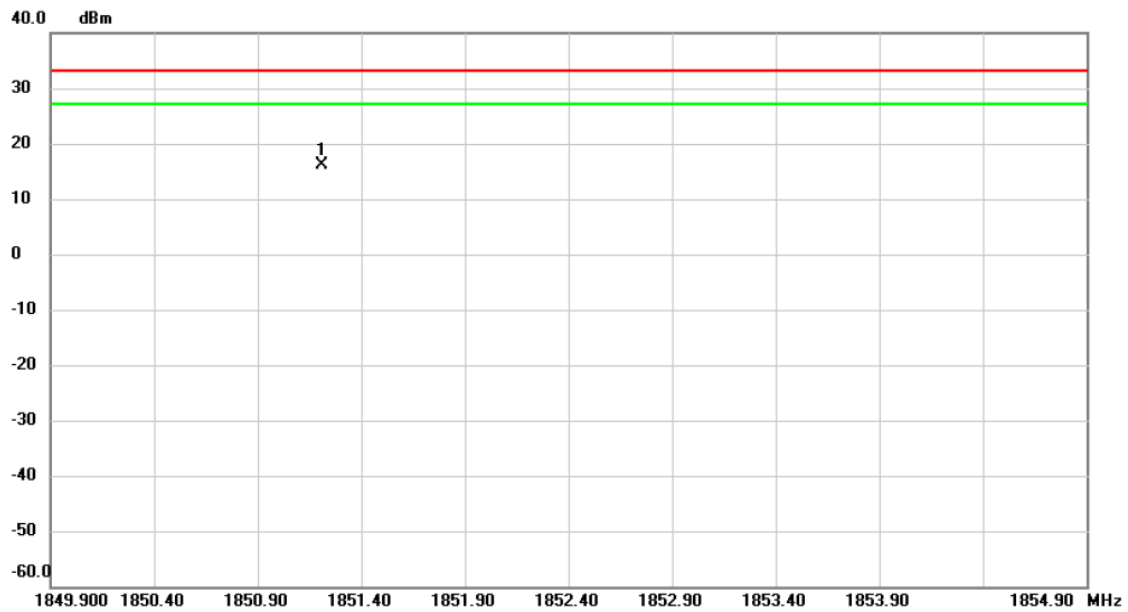


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBm	dB	dBm	dBm	dB	Detector Comment
1	*	1881.195	-15.69	39.91	24.22	33.01	-8.79	peak

REMARKS:

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

Test Mode	WCDMA Band II_Link CH9662	Tested Date	2019/10/28~29
Test Voltage	DC 60V	Polarization	Vertical

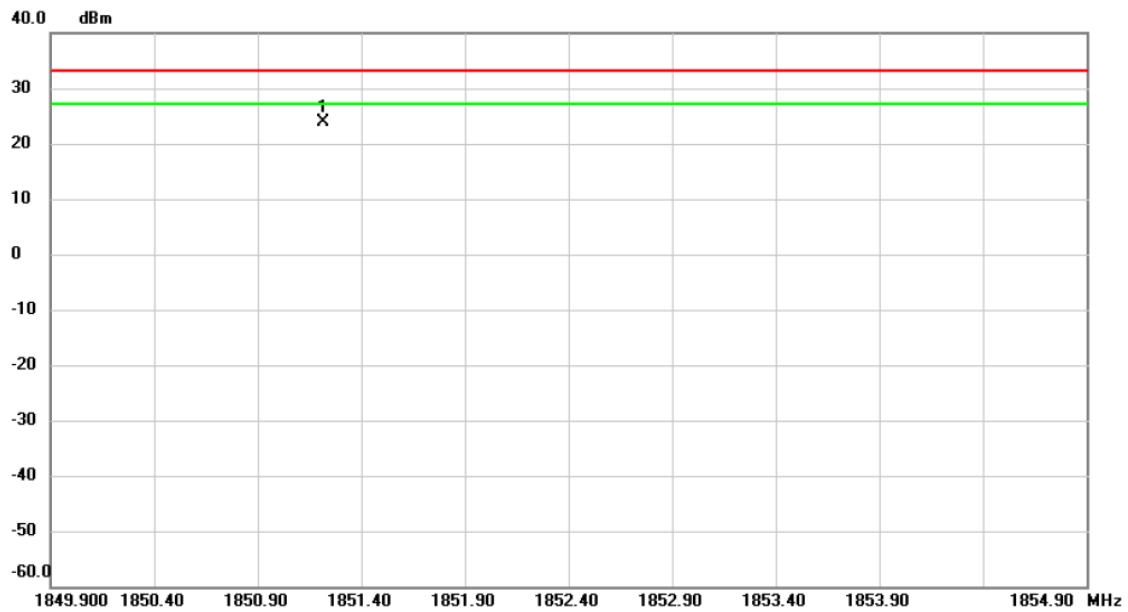


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	1851.210	-22.96	39.21	16.25	33.01	-16.76	peak	

REMARKS:

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

Test Mode	WCDMA Band II_Link CH9662	Tested Date	2019/10/28~29
Test Voltage	DC 60V	Polarization	Horizontal

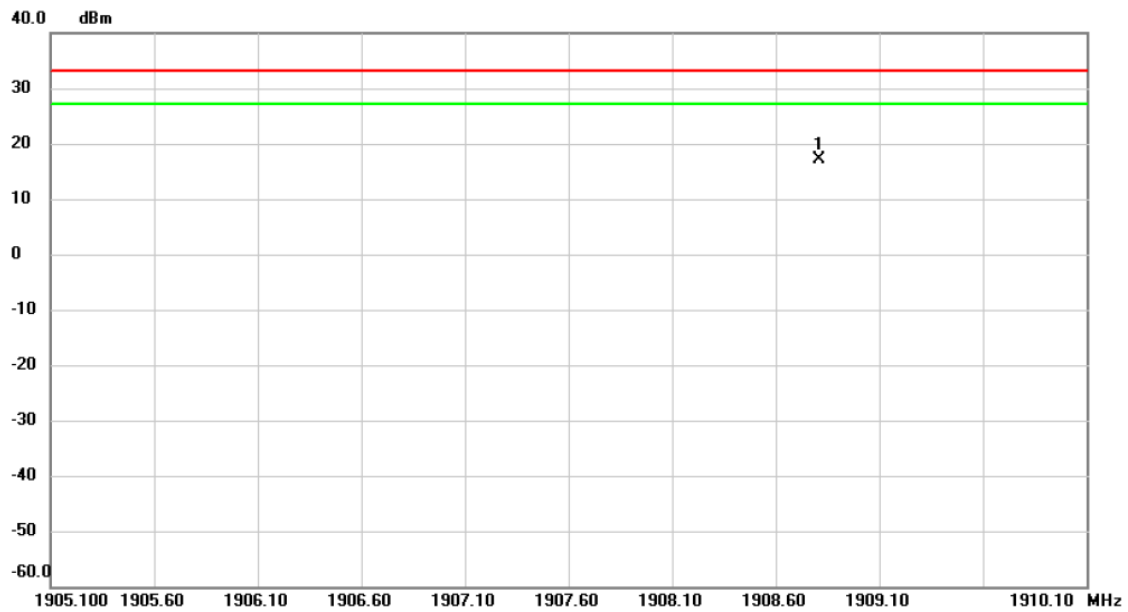


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	1851.215	-15.87	39.79	23.92	33.01	-9.09	peak	

REMARKS:

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

Test Mode	WCDMA Band II_Link CH9938	Tested Date	2019/10/28~29
Test Voltage	DC 60V	Polarization	Vertical

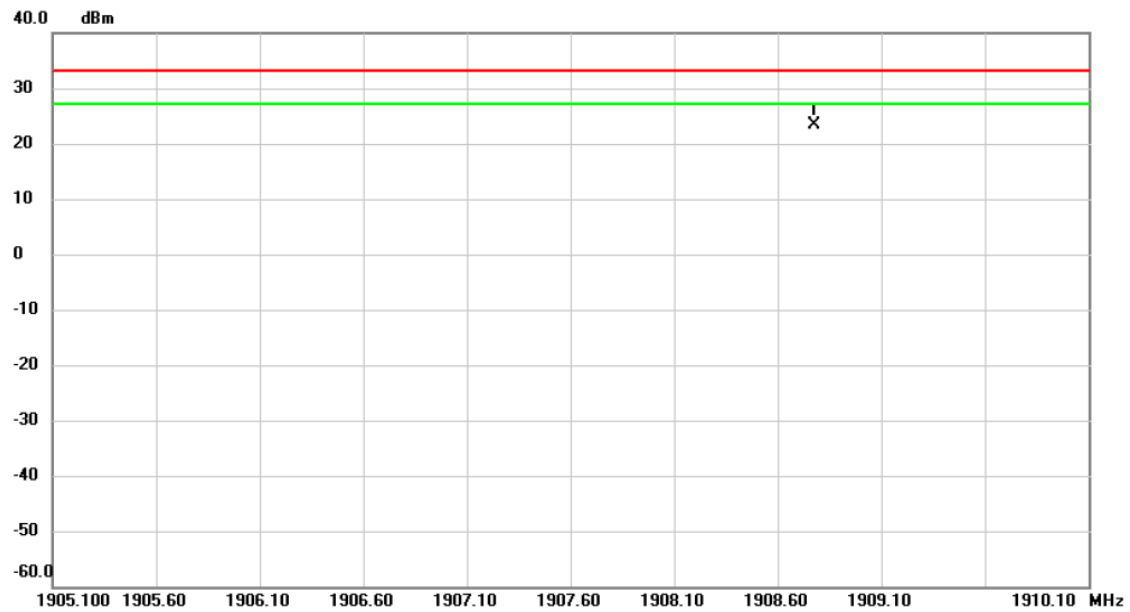


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	1908.810	-22.31	39.42	17.11	33.01	-15.90	peak	

REMARKS:

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

Test Mode	WCDMA Band II_Link CH9938	Tested Date	2019/10/28~29
Test Voltage	DC 60V	Polarization	Horizontal

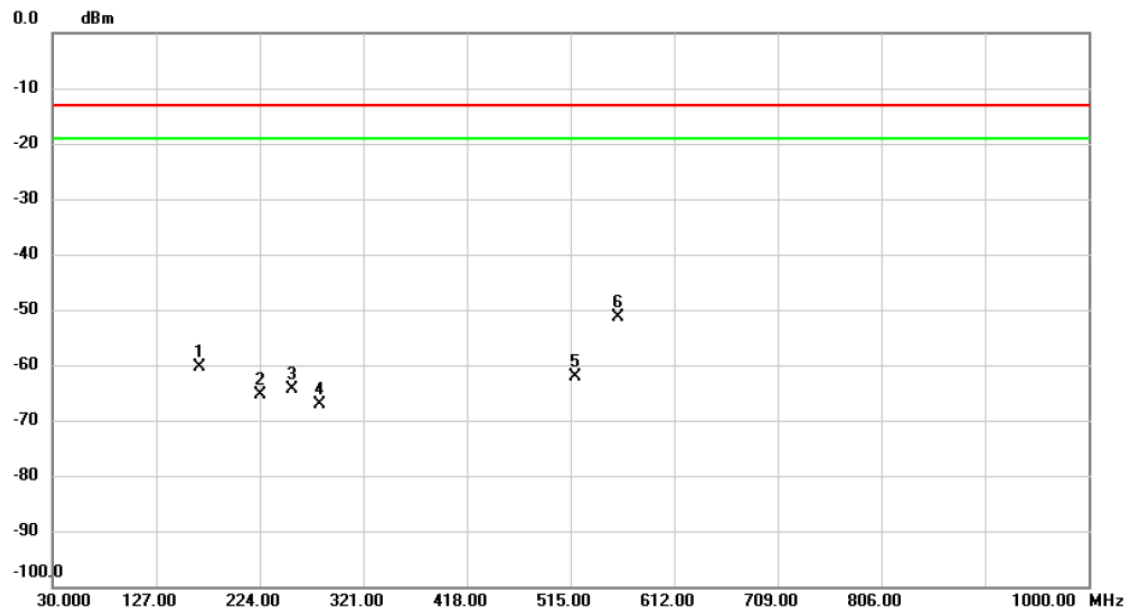


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	1908.775	-16.67	40.02	23.35	33.01	-9.66	peak	

REMARKS:

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

Test Mode	LTE Band 2_Link CH 18900	Tested Date	2019/10/28~29
Test Voltage	DC 60V	Polarization	Vertical

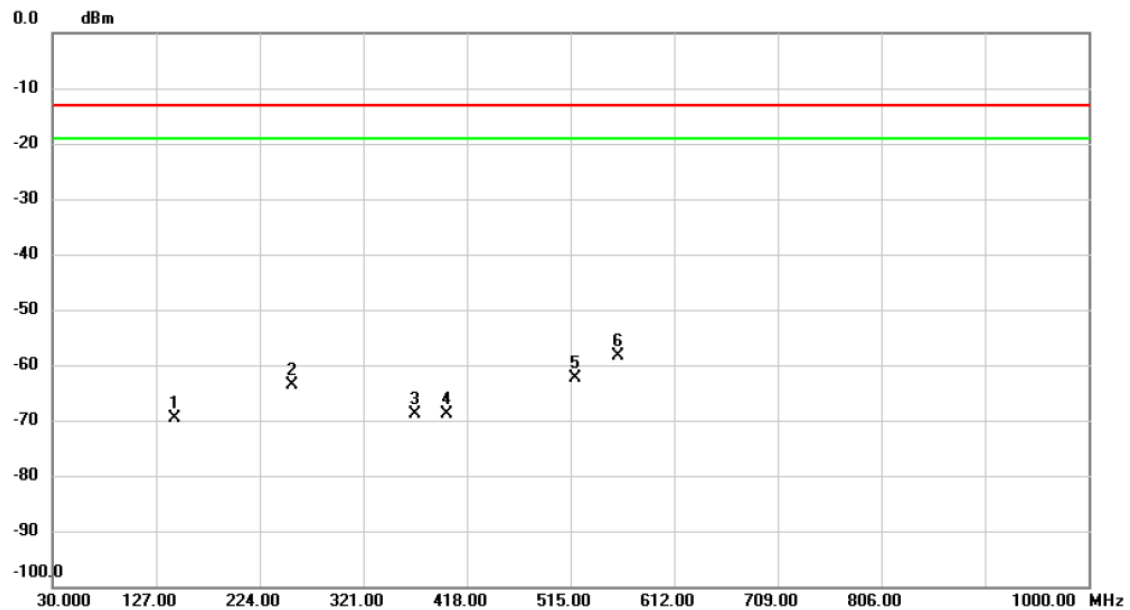


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBm	dB	dBm	dBm	dB		
1		167.7400	-65.31	4.93	-60.38	-13.00	-47.38	peak	
2		224.0000	-64.94	-0.34	-65.28	-13.00	-52.28	peak	
3		254.0700	-63.37	-1.02	-64.39	-13.00	-51.39	peak	
4		280.2600	-66.05	-0.98	-67.03	-13.00	-54.03	peak	
5		519.8500	-65.23	3.17	-62.06	-13.00	-49.06	peak	
6	*	559.6200	-56.76	5.43	-51.33	-13.00	-38.33	peak	

REMARKS:

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

Test Mode	LTE Band 2_Link CH 18900	Tested Date	2019/10/28~29
Test Voltage	DC 60V	Polarization	Horizontal

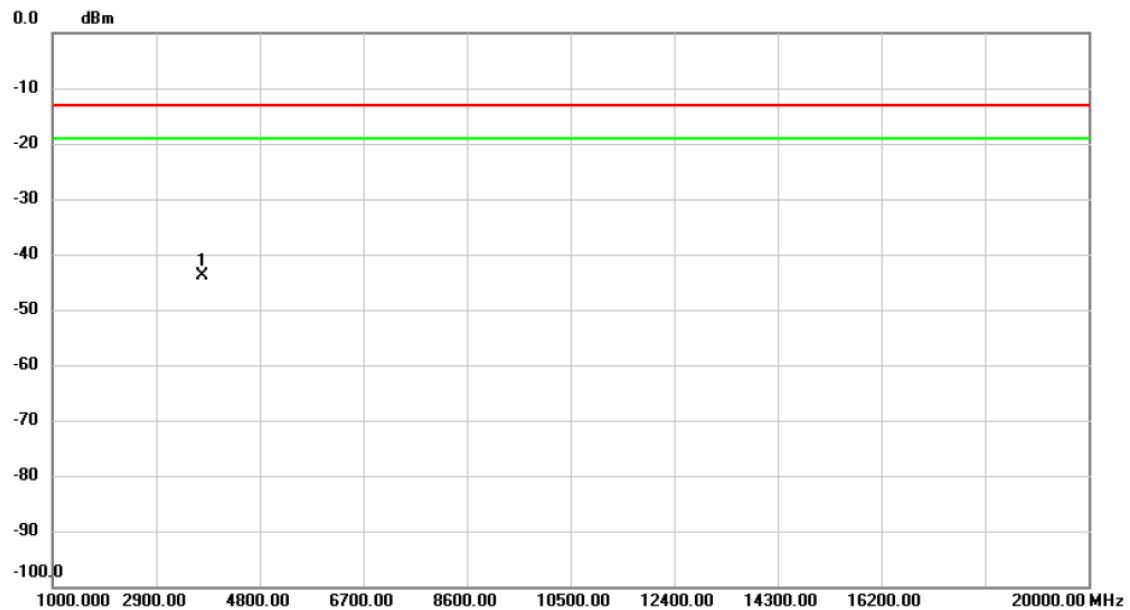


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBm	dB	dBm	dBm	dB		
1		144.4600	-68.65	-0.90	-69.55	-13.00	-56.55	peak	
2		254.0700	-58.05	-5.64	-63.69	-13.00	-50.69	peak	
3		369.5000	-68.77	-0.07	-68.84	-13.00	-55.84	peak	
4		399.5700	-69.45	0.47	-68.98	-13.00	-55.98	peak	
5		519.8500	-63.71	1.24	-62.47	-13.00	-49.47	peak	
6	*	559.6200	-60.34	1.92	-58.42	-13.00	-45.42	peak	

REMARKS:

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

Test Mode	LTE Band 2_Link CH 18900	Tested Date	2019/10/28~29
Test Voltage	DC 60V	Polarization	Vertical

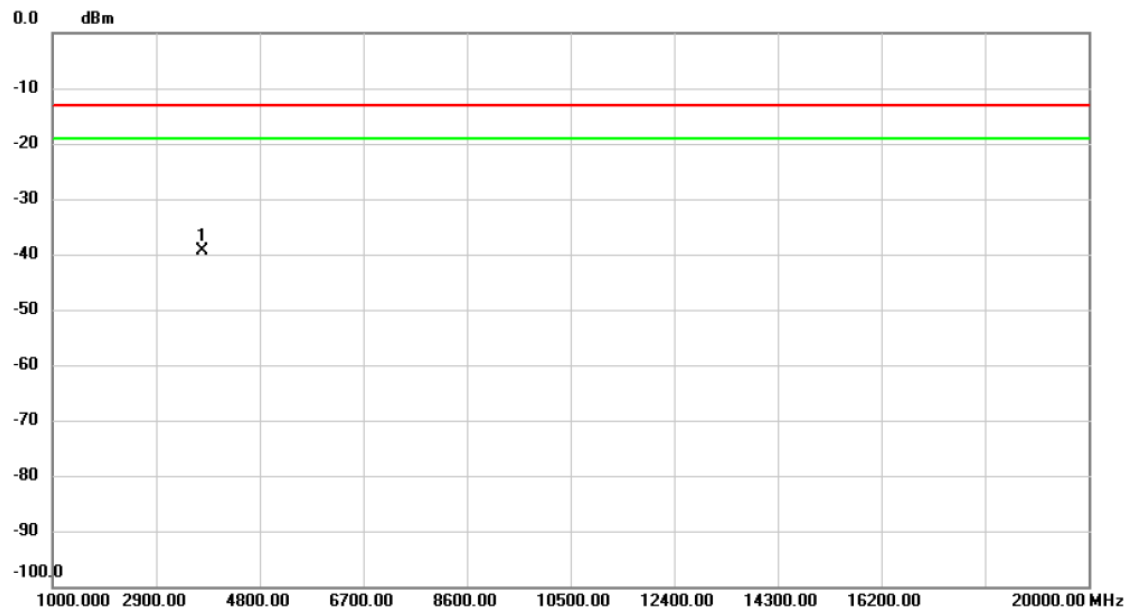


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	3742.175	-43.90	-0.06	-43.96	-13.00	-30.96	peak	

REMARKS:

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

Test Mode	LTE Band 2_Link CH 18900	Tested Date	2019/10/28~29
Test Voltage	DC 60V	Polarization	Horizontal

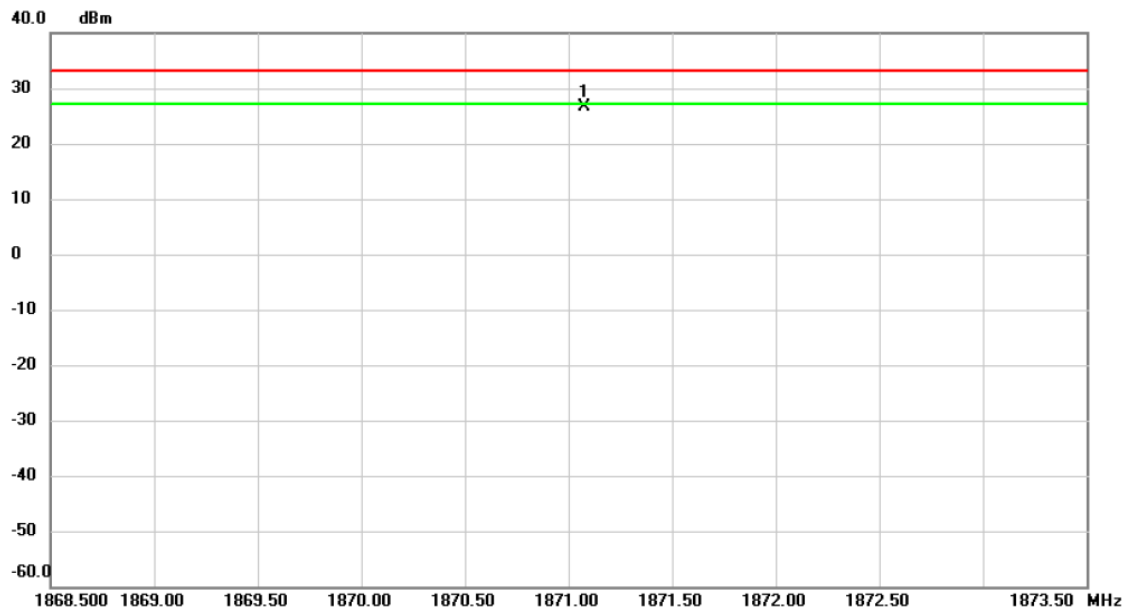


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	3742.165	-39.12	-0.23	-39.35	-13.00	-26.35	peak	

REMARKS:

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

Test Mode	LTE Band 2_Link CH 18900	Tested Date	2019/10/28~29
Test Voltage	DC 60V	Polarization	Vertical

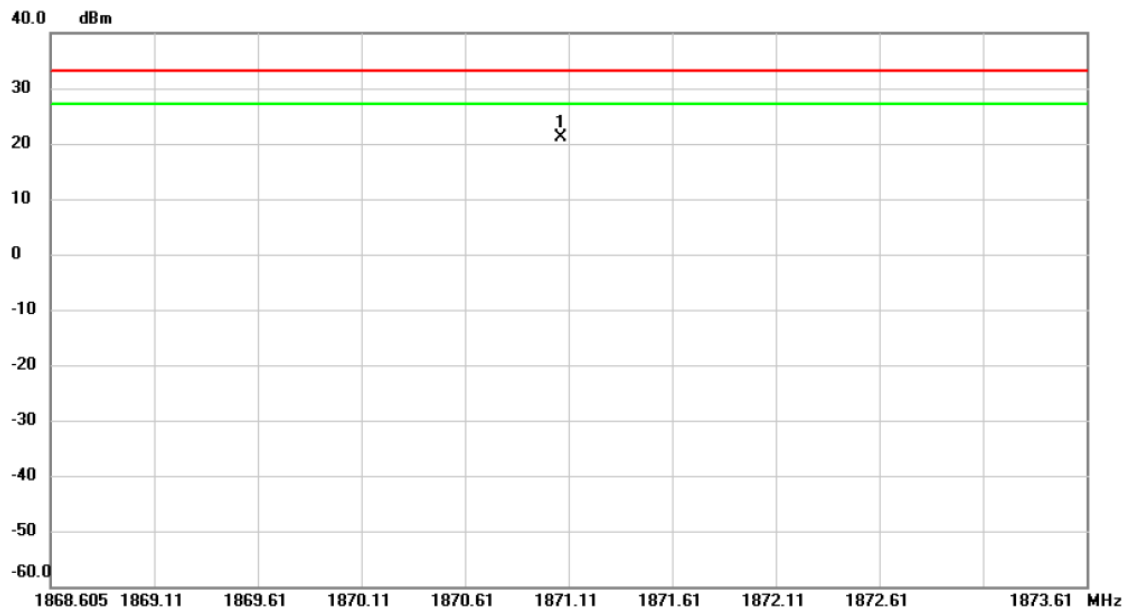


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	1871.075	-12.75	39.28	26.53	33.01	-6.48	peak	

REMARKS:

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

Test Mode	LTE Band 2_Link CH 18900	Tested Date	2019/10/28~29
Test Voltage	DC 60V	Polarization	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	1871.065	-18.82	39.87	21.05	33.01	-11.96	peak	

REMARKS:

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