FCC Radio Test Report

FCC ID: 2AYVV-PHD20

Original Grant

Report No.	:	TB-FCC178596
Applicant	:	INNOVATIVE CONCEPTS GROUP SAC
Equipment Under Test (EUT)		
EUT Name	:	Tablet PC
Model No.	:	PHD20
Series Model No.	:	N/A
Brand Name	:	Blackline
Sample ID	:	20201217-21-1#& 20201217-21-2#
Receipt Date	:	2021-01-26
Test Date	:	2021-01-26 to 2021-02-27
Issue Date	:	2021-03-03
Standards	:	47 CFR Part 2, 22(H), 24(E), 27
Test Method	:	ANSI C63.26 2015
Conclusions	:	**PASS**

In the configuration tested, the EUT complied with the standards specified above,

Test/Witness Engineer	:	Rebeca	Rebeca
Engineer Supervisor	:	IVAN SU	Ivan Su
Engineer Manager	:	Ray Lai	Ray Lai

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in the report.

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Revision History

Report No.	Version	Description	Issued Date
TB-FCC178596	Rev.01	Initial issue of report	2021-03-03

1. General Information about EUT

1.1 Client Information

Applicant	:	INNOVATIVE CONCEPTS GROUP SAC
Address	:	Av. El Derby 254 Of. 1603, Santiago de Surco, Lima, Peru
Manufacturer	:	Shenzhen Ployer Electronics Co., Ltd.
Address	:	6F and 7F, Building 8, Rundongsheng Industrial Area, Longzhu Community, Xixiang Street, Bao'an District, Shenzhen, China

1.2 General Description of EUT (Equipment Under Test)

EUT Name	:	Tablet PC	
Models No.	:	PHD20	
Model Difference	:	N/A	
Product Description	:	Frequency Bands: LTE Band 2:TX: 1850MHz-1910MHz, RX: 1930MHz-1990MHz LTE Band 4:TX: 1710MHz-1755MHz, RX: 2110MHz-2155MHz LTE Band 7:TX: 2500MHz~2570MHz, RX: 2620MHz~2690MHz	
		Antenna Type:	1.42dBi FPC Antenna
		Modulation Type:	QPSK, 16QAM
		Bandwidth:	LTE Band 2 :1.4MHz/3MHz/5MHz/10MHz/15MHz/20MHz LTE Band 4 :1.4MHz/3MHz/5MHz/10MHz/15MHz/20MHz LTE Band 7 :5MHz/10MHz/15MHz/20MHz
Power Rating	:	DC 5V from Adapter(EE-0502500UZ) Input: AC 100-240V, 50/60Hz, 0.5A Output: DC 5V 2.5A DC 3.8V by 6000mAh rechargeable Li-ion battery	
Software Version	:	V01	
Hardware Version	:	V01	
Connecting I/O Port(S)	:	Please refer to the User's Manual	
Remark	:	The antenna gain and adapter provided by the applicant, the verified for the RF conduction test provided by TOBY test lab.	

Note:

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

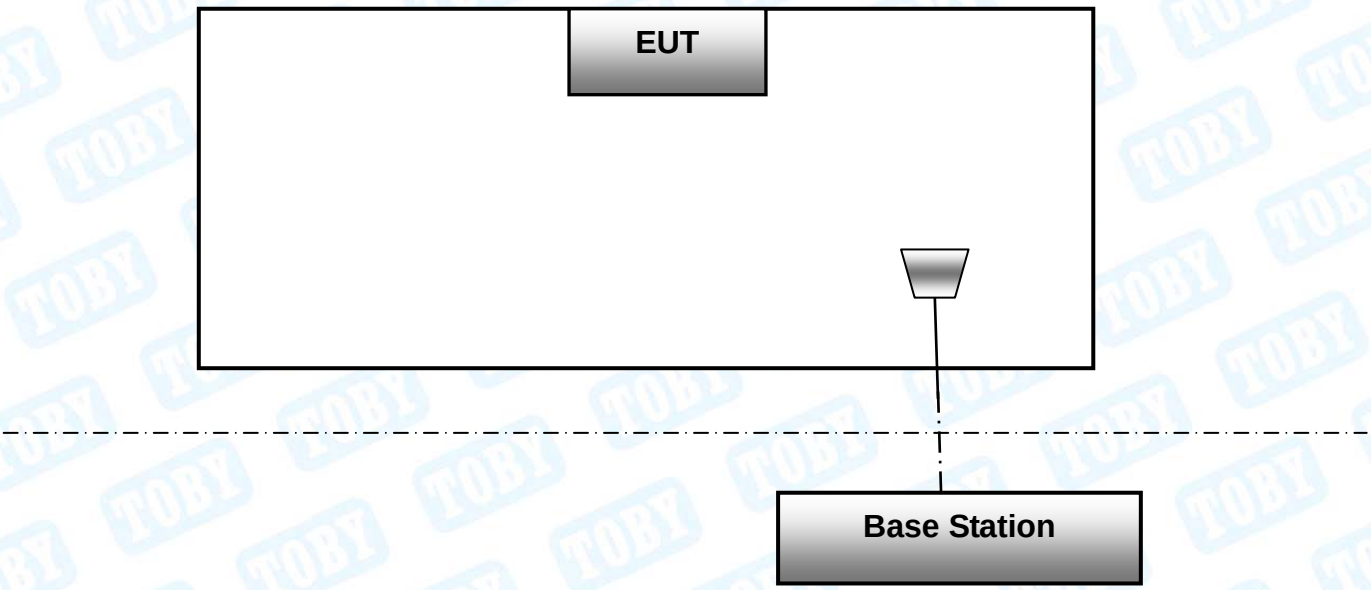
(2) Channel List

LTE Band 2(1.4MHz)		LTE Band 2(3MHz)	
Channel	**Frequency (MHz)**	**Channel**	**Frequency (MHz)**
18607	**1850.70**	**18615**	**1851.50**
18608	1850.80	18616	1851.60
……	……	……	……
18899	1879.90	18899	1879.90
18900	**1880.00**	**18900**	**1880.00**
18901	1880.10	18901	1880.10
……	…..	……	…..
19192	1909.20	19184	1905.40
19193	**1909.30**	**19185**	**1908.50**
LTE Band 2(5MHz)		**LTE Band 2(10MHz)**	
Channel	**Frequency (MHz)**	**Channel**	**Frequency (MHz)**
18625	**1852.50**	**18650**	**1855.00**
18616	1853.60	18626	1854.90
……	……	……	……
18899	1879.90	18899	1879.90
18900	**1880.00**	**18900**	**1880.00**
18901	1880.10	18901	1880.10
……	…..	……	…..
19174	1908.40	19149	1907.90
19175	**1907.50**	**19150**	**1905.00**
LTE Band 2(15MHz)		**LTE Band 2(20MHz)**	
Channel	**Frequency (MHz)**	**Channel**	**Frequency (MHz)**
18675	**1857.50**	**18700**	**1860.00**
18676	1857.60	18701	1860.10
……	……	……	……
18899	1879.90	18899	1879.90
18900	**1880.00**	**18900**	**1880.00**
18901	1880.10	18901	1880.10
……	…..	……	…..
19124	1902.40	19099	1899.90
19125	**1902.50**	**19100**	**1900.00**

LTE Band 4(1.4MHz)		LTE Band 4(3MHz)	
Channel	**Frequency (MHz)**	**Channel**	**Frequency (MHz)**
19957	**1710.70**	**19965**	**1711.50**
19958	1710.80	19966	1711.60
…...	……	…...	……
20174	1732.40	20174	1732.40
20175	**1732.50**	**20175**	**1732.50**
20176	1732.60	20176	1732.60
……	…..	……	…..
20392	1754.20	20384	1753.40
20393	**1754.30**	**20385**	**1753.50**
LTE Band 4(5MHz)		**LTE Band 4(10MHz)**	
Channel	**Frequency (MHz)**	**Channel**	**Frequency (MHz)**
19975	**1712.50**	**20000**	**1715.00**
19976	1712.60	20001	1715.10
…...	……	…...	……
20174	1732.40	20174	1732.40
20175	**1732.50**	**20175**	**1732.50**
20176	1732.60	20176	1732.60
……	…..	……	…..
20374	1752.40	20349	1749.90
20375	**1752.50**	**20350**	**1750.00**
LTE Band 4(15MHz)		**LTE Band 4(20MHz)**	
Channel	**Frequency (MHz)**	**Channel**	**Frequency (MHz)**
20025	**1717.50**	**20050**	**1720.00**
20026	1717.60	20051	1720.10
…...	……	…...	……
20174	1732.40	20174	1732.40
20175	**1732.50**	**20175**	**1732.50**
20176	1732.60	20176	1732.60
……	…..	……	…..
20324	1747.40	20299	1744.90
20325	**1747.50**	**20300**	**1745.00**

LTE Band 7(5MHz)		LTE Band 7(10MHz)	
Channel	**Frequency (MHz)**	**Channel**	**Frequency (MHz)**
20775	**2502.50**	**20800**	**2505.00**
20776	2502.60	20801	2505.10
…...	……	…...	……
21099	2534.90	21099	2534.90
21100	**2535.00**	**21100**	**2535.00**
21101	2535.10	21101	2535.10
……	…..	……	…..
21424	2567.40	21399	2561.90
21425	**2567.50**	**21400**	**2565.00**
LTE Band 7(15MHz)		**LTE Band 7(20MHz)**	
Channel	**Frequency (MHz)**	**Channel**	**Frequency (MHz)**
20825	**2505.70**	**20850**	**2510.00**
20826	2505.80	20851	2510.10
…...	……	…...	……
21099	2534.90	21099	2534.90
21100	**2535.00**	**21100**	**2535.00**
21101	2535.10	21101	2535.10
……	…..	……	…..
21374	2562.40	21349	2559.90
21375	**2562.50**	**21350**	**2560.00**

1.3 Block Diagram Showing the Configuration of System Tested



The above block diagram of setup is the normal mode. And more detail please refer to the test setup of each test item of bellow.

1.4 Description of Support Units

The EUT has been tested as an independent unit.

1.5 Description of Test Mode

Antenna port conducted and radiated test items listed below are performed according to KDB 971168 D01 v03r01 and ANSI C63.26 2015 Power Meas. License Digital Systems with maximum output power. Radiated measurements are performed by rotating the EUT in three different or tho-gonal test planes to find the maximum emission.

Remark:

1. The mark “v “ means that this configuration is chosen for testing
2. The mark “--“ means that this bandwidth is not supported.
3. The device is investigated from 30MHz to 10 times of fundamental signal for radiated

ITEMS	Band	Bandwidth (MHz)						Modulation		RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	1	Half	Full	L	M	H
RF Output Power	2	V	V	V	V	V	V	V	V	V	V	V	V	V	V
	4	V	V	V	V	V	V	V	V	V	V	V	V	V	V
	7	--	--	V	V	V	V	V	V	V	V	V	V	V	V
Peak-to-Average Ratio	2	--	--	--	--	--	V	V	V			V	V	V	V
	4	--	--	--	--	--	V	V	V			V	V	V	V
	7	--	--	--	--	--	V	V	V			V	V	V	V
99% & -26 dB Occupied Bandwidth	2	V	V	V	V	V	V	V	V	V			V	V	V
	4	V	V	V	V	V	V	V	V	V			V	V	V
	7	--	--	V	V	V	V	V	V	V			V	V	V
Spurious Emissions at Antenna Terminal	2	V	V	V	V	V	V	V	V	V		V	V	V	V
	4	V	V	V	V	V	V	V	V	V		V	V	V	V
	7	--	--	V	V	V	V	V	V	V		V	V	V	V
Field Strength of Spurious Radiation	2	V	V	V	V	V	V	V	V	V				V	
	4	V	V	V	V	V	V	V	V	V				V	
	7	--	--	V	V	V	V	V	V	V				V	
Out of band emission, Band Edge	2	V	V	V	V	V	V	V	V	V		V	V		V
	4	V	V	V	V	V	V	V	V	V		V	V		V
	7	--	--	V	V	V	V	V	V	V		V	V		V
Frequency stability	2	V	V	V	V	V	V	V	V	V				V	
	4	V	V	V	V	V	V	V	V	V				V	
	7	--	--	V	V	V	V	V	V	V				V	

For the Conducted Emission and Radiated test used the EUT-1(20201217-21-1#).
For the RF Conduction test used the EUT-2(20201217-21-2#).

Note: (1) During the testing procedure, the EUT is in link mode with base station emulator at maximum power level in each test mode.

(2) The EUT is considered a portable unit; it was pre-tested on the positioned of each 3 axis, X-plane, Y-plane and Z-plane. The worst case was found positioned on Z-plane as the normal use. Therefore only the test data of this Z-plane was used for radiated emission measurement test.

(3) For the Conducted Emission and Radiated test used the EUT-1(TBBJ-20200916-08-3#). For the RF Conduction test used the EUT-2(TBBJ-20200916-08-3#).

1.6 Measurement Uncertainty

Test Item	Parameters	Expanded Uncertainty (U_{Lab})
RF Power, conducted	/	±0.82 dB
Radiated Emission	Level Accuracy: 9kHz to 30 MHz	±4.60 dB
Radiated Emission	Level Accuracy: 30MHz to 1000 MHz	±4.40 dB
Radiated Emission	Level Accuracy: Above 1000MHz	±4.20 dB

1.7 Test Facility

The testing report were performed by the Shenzhen Toby Technology Co., Ltd., in their facilities located at 1/F.,Building 6, Rundongsheng Industrial Zone, Longzhu, Xixiang, Bao'an District, Shenzhen, Guangdong, China. At the time of testing, the following bodies accredited the Laboratory:

CNAS (L5813)

The Laboratory has been accredited by CNAS to ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories for the competence in the field of testing. And the Registration No.: CNAS L5813.

A2LA Certificate No.: 4750.01

The laboratory has been accredited by American Association for Laboratory Accreditation(A2LA) to ISO/IEC 17025：2017 General Requirements for the Competence of Testing and Calibration Laboratories for the technical competence in the field of Electrical Testing. And the A2LA Certificate No.: 4750.01.FCC Accredited Test Site Number: 854351. Designation Number: CN1223.

IC Registration No.: (11950A)

The Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing. The site registration: Site# 11950A.

2. Test Summary

Test Item	Section in CFR 47	Result
RF Output Power	Part 2.1046 Part 22.913(a)(2) Part 24.232(c) Part 27.50 (b)(10) Part 27.50 (d)(4) Part 27.50 (h)(2)	**PASS**
Peak-to-Average Ratio	Part 24.232(d) Part 27.50(d)(5)	**PASS**
99% & -26 dB Occupied Bandwidth	Part 2.1049 Part 22.917(a) Part 24.238(b) Part 27.53(h) Part 27.53(m)	**PASS**
Spurious Emissions at Antenna Terminal	Part 2.1051 Part 24.238(a) Part 27.53 (h) Part 27.53(m)	**PASS**
Field Strength of Spurious Radiation	Part 2.1053 Part 22.917(a) Part 24.238(a) Part 27.53 (h) Part 27.53(m)	**PASS**
Out of band emission, Band Edge	Part 24.238(a) Part 22.917(a) Part 27.53 (h) Part 27.53(m)	**PASS**
Frequency stability vs. temperature	Part 27.54 Part 24.235 Part 22.355 Part 2.1055(a)(1)(b)	**PASS**
Frequency stability vs. voltage	Part 27.54 Part 24.235 Part 22.355 Part 2.1055(d)(2)	**PASS**
Pass: The EUT complies with the essential requirements in the standard.		

3. Test Equipment

Radiation Emission Test					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Last Cal.**	**Cal. Due Date**
Spectrum Analyzer	Agilent	E4407B	MY45106456	Jul. 06, 2020	Jul. 05, 2021
EMI Test Receiver	Rohde & Schwarz	ESPI	100010/007	Jul. 06, 2020	Jul. 05, 2021
Spectrum Analyzer	Rohde & Schwarz	FSV40-N	102197	Jul. 06, 2020	Jul. 05, 2021
Wideband Radio Comunication Tester	Rohde & Schwarz	CMW500	144382	Sep. 11, 2020	Sep. 10, 2021
Universal Radio Communication Tester	Rohde&Schwarz	CMU200	103903	Jul. 06, 2020	Jul. 05, 2021
Bilog Antenna	ETS-LINDGREN	3142E	00117537	Mar.01, 2020	Feb. 28, 2022
Horn Antenna	ETS-LINDGREN	3117	00143207	Mar.01, 2020	Feb. 28, 2022
Horn Antenna	ETS-LINDGREN	BBHA 9170	BBHA9170582	Mar.01, 2020	Feb. 28, 2022
Loop Antenna	SCHWARZBECK	FMZB 1519 B	1519B-059	Jul. 07, 2020	Jul. 06, 2021
Pre-amplifier	Sonoma	310N	185903	Mar.01, 2020	Feb. 28, 2021
Pre-amplifier	HP	8449B	3008A00849	Mar.01, 2020	Feb. 28, 2021
Pre-amplifier	SKET	LNPA_1840G-50	SK201904032	Mar.01, 2020	Feb. 28, 2021
Cable	HUBER+SUHNER	100	SUCOFLEX	Mar.01, 2020	Feb. 28, 2021
Positioning Controller	ETS-LINDGREN	2090	N/A	N/A	N/A
Antenna Conducted Emission					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Last Cal.**	**Cal. Due Date**
Spectrum Analyzer	Agilent	E4407B	MY45106456	Jul. 06, 2020	Jul. 05, 2021
Wideband Radio Comunication Tester	Rohde & Schwarz	CMW500	144382	Sep. 11, 2020	Sep. 10, 2021
Universal Radio Communication Tester	Rohde&Schwarz	CMU200	103903	Jul. 06, 2020	Jul. 05, 2021
Spectrum Analyzer	Rohde & Schwarz	ESPI	100010/007	Jul. 06, 2020	Jul. 05, 2021
MXA Signal Analyzer	Agilent	N9020A	MY49100060	Sep. 11, 2020	Sep. 10, 2021
Vector Signal Generator	Agilent	N5182A	MY50141294	Sep. 11, 2020	Sep. 10, 2021
Analog Signal Generator	Agilent	N5181A	MY50141953	Sep. 11, 2020	Sep. 10, 2021
RF Power Sensor	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO26	Sep. 11, 2020	Sep. 10, 2021
	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO29	Sep. 11, 2020	Sep. 10, 2021
	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO31	Sep. 11, 2020	Sep. 10, 2021
	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO33	Sep. 11, 2020	Sep. 10, 2021

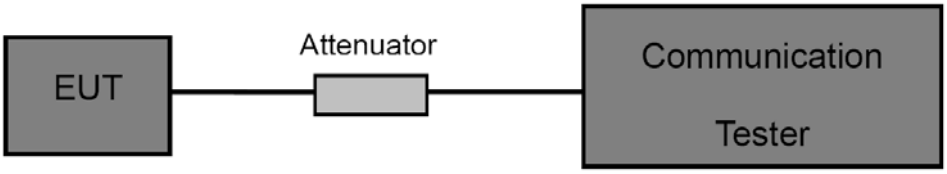
4. Conducted RF Output Power

4.1 Test Standard and Limit

4.1.1 Test Standard

FCC part 2.1046, FCC part 22.913(a)(2),
FCC part 24.232(c), FCC Part 27.50(b)&(d),
FCC Part 27.50 (h)

4.2 Test Setup



4.3 Test Procedure

(1) The EUT is coupled to the Base Station with the suitable Attenuator, the path loss is calibrated to correct the reading.
(2) A call is set up by the Base Station to the generic call set up procedure.
(3) Set EUT at maximum power level through base station by power level command.
(4) Then read record the power value from the Base Station in dBm.

4.4 EUT Operating Condition

The EUT was continuously connected with the Base station and transmitting in the max power during the test.

4.5 Deviation From Test Standard

No deviation

4.6 Test Data

Please refer to the Attachment A.

5. Peak-Average Ratio

5.1 Test Standard and Limit

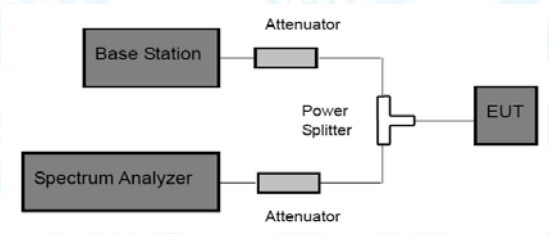
5.1.1 Test Standard

FCC part 24.232(d)
FCC Part 27.50(d), FCC Part 27.50 (h)

5.1.2 Test Limit

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

5.2 Test Setup



5.3 Test Procedure

According with KDB 971168
(1) The signal analyzer's CCDF measurement profile is enabled.
(2) Frequency = carrier center frequency.
(3) Measurement BW>Emission bandwidth of signal.
(4) The signal analyzer was set to collect one million samples to generate the CCDF curve.
(5) Set the EUT working in highest power level, measured and recorded the 0.1% as PAPR level.
(6) The measurement interval was set depending on the type of signal analyzed. For continuous signals (>98% duty cycle), the measurement interval was set to 1ms. For burst transmissions, the spectrum analyzer is set to use an internal "RF Burst" trigger that is synced with an incoming pulse and the measurement interval is set to less than the duration of the "on time" of one burst to ensure that energy is only captured during a time in which of the transmitter is operating at maximum power.

5.4 EUT Operating Condition

The EUT was continuously connected with the Base station and transmitting in the max power during the test.

5.5 Deviation From Test Standard

No deviation

5.6 Test Data

Please refer to the Attachment B.

6. Occupied Bandwidth

6.1 Test Standard and Limit

6.1.1 Test Standard

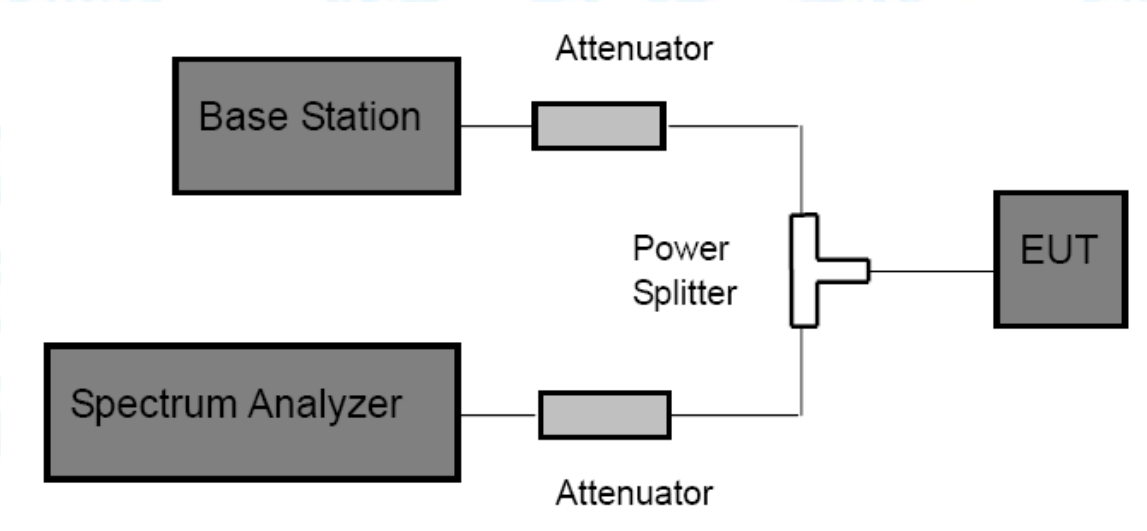
FCC Part 2: 2.1049, FCC Part 22.917(a),
FCC part 24.238(b)
FCC Part 27.53(h)
FCC Part 27.53(m)

6.1.2 Test Requirement

According to FCC section 2.1049, the occupied bandwidth is the frequency bandwidth such that below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission.

Occupied bandwidth is also known as 99% power and -26dBC occupied bandwidths.

6.2 Test Setup



6.3 Test Procedure

(1) The EUT was directly connected to the spectrum analyzer and Base station via power splitter as show in the block diagram above.
(2) The resolution bandwidth of the Spectrum Analyzer is set to at least 1% of the occupied bandwidth. VBW= 3 times RBW.
(3) The low, middle and the high channels are selected to perform tests respectively.
(4) Set the frequency range of the Spectrum Analyzer suitably to capture the waveform; search peak; make a line whose value is 26dB lower than the peak; mark two points which the line intersected the waveform at; finally record the delta of the two points as the occupied bandwidth and the plot.
(5) Set the Spectrum Analyzer Occupied bandwidth function to measure the 99% occupied bandwidth.

6.4 EUT Operating Condition

The EUT was continuously connected with the Base station and transmitting in the max power during the test.

6.5 Deviation From Test Standard

No deviation

6.6 Test Data

Please refer to the Attachment C.

7. Out of Band Emission at Antenna Terminals

7.1 Test Standard and Limit

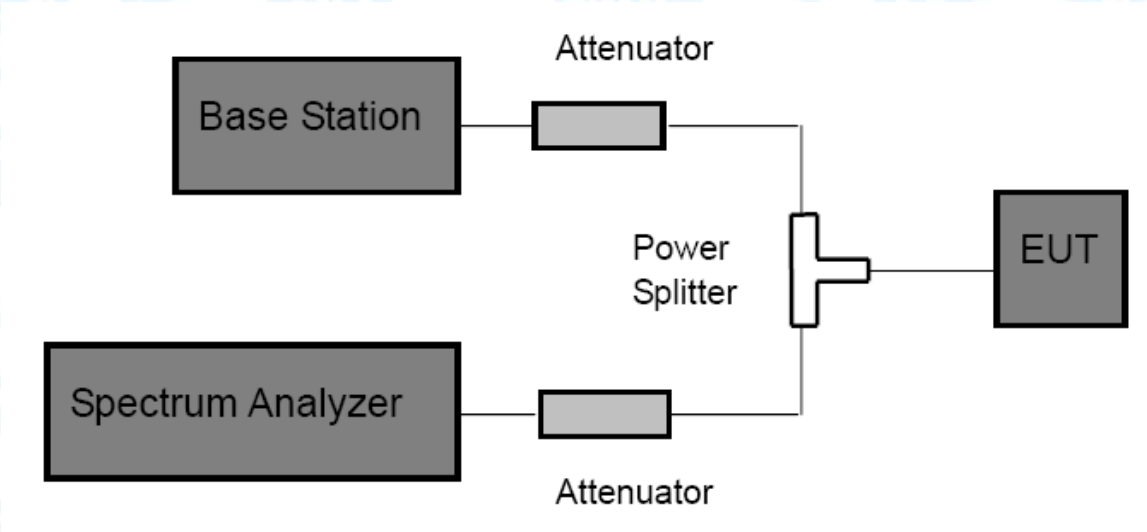
7.1.1 Test Standard

FCC Part 2: 2.1051, 2.1057
FCC Part 22.917(a), FCC part 24.238(a)
FCC Part 27.53 (h),FCC Part 27.53(m)

7.1.2 Test Limit

Band 7: For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz.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+10log(P) dB. For all power levels +30 dBm to 0 dBm, this becomes a constant specification limit of -13 dBm.

7.2 Test Setup



7.3 Test Procedure

1 The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation.

2 The resolution bandwidth of the spectrum analyzer was set at 100 kHz when below 1GHz, 1MHz when above 1 GHz; sufficient scans were taken to show the out of band Emissions if any up to 10th harmonic.

3 For the out of band: Set the RBW=100 kHz, VBW=300 kHz when below 1 GHz, RBW =1 MHz, VBW=3 MHz when above 1 GHz, Start=30MHz, Stop= 10th harmonic.

4 Band Edge Requirements: In the 1 MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 1 percent of the emission bandwidth of the fundamental emission of the transmitter.

7.4 EUT Operating Condition

The EUT was continuously connected with the Base station and transmitting in the max power during the test.

7.5 Deviation From Test Standard

No deviation

7.6 Test Data

Please refer to the Attachment D.

8. Band Edge Test

8.1 Test Standard and Limit

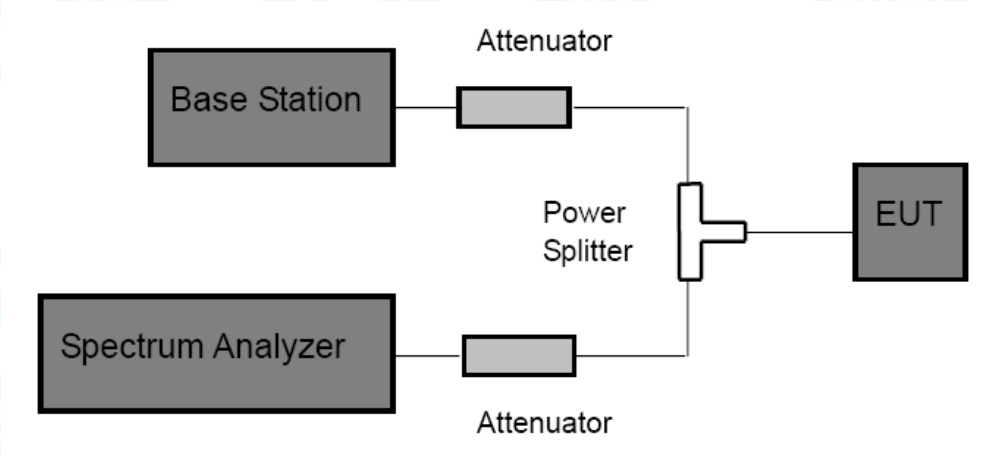
8.1.1 Test Standard

FCC Part 2: 2.1051, 2.1057
FCC Part 22.917(a), FCC part 24.238(a)
FCC Part 27.53 (h),FCC Part 27.53(m)

8.1.2 Test Limit

Band 7: For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz.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+10log(P) dB. For all power levels +30 dBm to 0 dBm, this becomes a constant specification limit of -13 dBm.

8.2 Test Setup



8.3 Test Procedure

(1) The EUT was directly connected to the spectrum analyzer and Base station via power splitter as show in the block diagram above.
(2) Band Edge Requirements: In the 1 MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 1 percent of the emission bandwidth of the fundamental emission of the transmitter.

8.4 EUT Operating Condition

The EUT was continuously connected with the Base station and transmitting in the max power during the test.

8.5 Deviation From Test Standard

No deviation

8.6 Test Data

Please refer to the Attachment E.

9. Radiated Output Power

9.1 Test Standard and Limit

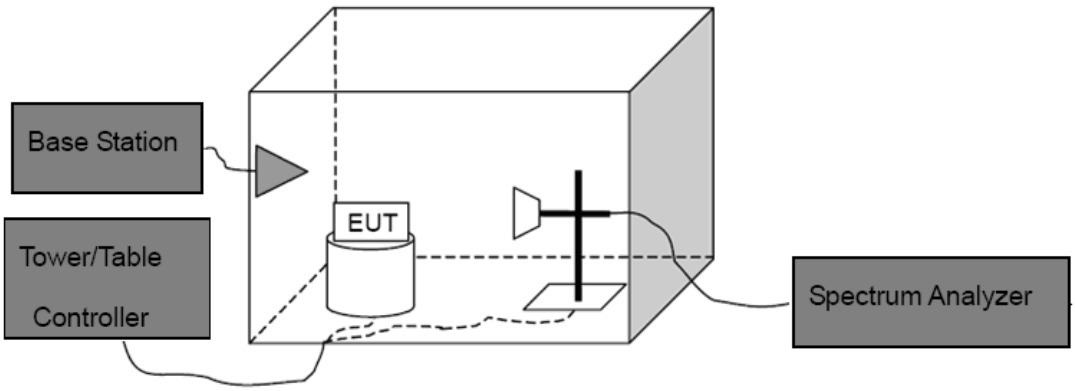
9.1.1 Test Standard

FCC Part 2.1046, FCC Part 22.913(a)(2),
FCC part 24.232(c)
FCC part 27.50(c), FCC part 27.50(d)

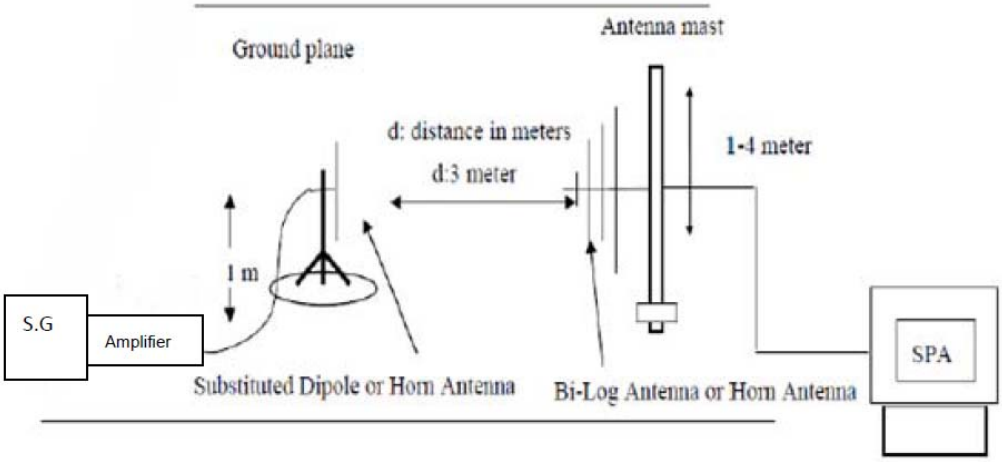
9.1.2 Test Limit

E.I.R.P	E.I.R.P	E.R.P	E.I.R.P
LTE Band 2	**LTE Band 4**	**LTE Band 5**	**LTE Band 7**
2W(33 dBm)	1W(30 dBm)	7W(38.45dBm)	2W(33 dBm)
E.R.P	**E.I.R.P**	**E.I.R.P**	**E.R.P**
LTE Band 12	**LTE Band 13**	**LTE Band 25**	**LTE Band 26**
3W(34.77dBm)	3W(34.77dBm)	2W(33 dBm)	7W(38.45dBm)

9.2 Test Setup



Above 1G



Substituted Method

9.3 Test Procedure

(1) The EUT was placed on an non-conductive rotating platform with 0.8 meter height in an anechoic chamber. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and a spectrum analyzer with RBW=3 MHz, VBW=3 MHz and peak detector settings.

(2) During the measurement, the EUT was enforced in maximum power and linked with the Base Station. The highest was recorded from analyzer power level (LVT) from the 360 degrees rotation of the turntable and the test antenna raised and lowered over a range from 1 to 4 meters in both horizontally and vertically polarized orientations.

(3) Effective Isotropic Radiated Power (EIRP) was measured by substitution method according to C63.26. The EUT was replaced by dipole antenna (for frequency below 1 GHz) or Horn antenna (for frequency above 1 GHz) at same location with same polarize of receiver antenna and then a known power of each measure frequency from S.G. was applied into the dipole antenna or Horn antenna through a TX cable, and then recorded the maximum Analyzer reading through raised and lowered the test antenna.

Note: In test, the S.G Connect the Pre-amplifier(Sonoma 310N Pre-amplifier for frequency below 1 GHz, HP 8449B Pre-amplifier for frequency above 1 GHz)

Then the EUT's EIRP and ERP was calculated with the correction factor:

ERP=S.G.Level +Antenna Gain Cord.(dBd)-Cable Loss(dB)

EIRP=S.G.Level+Antenna Gain Cord.(dBi)-Cable Loss(dB)

9.4 EUT Operating Condition

The EUT was continuously connected with the Base station and transmitting in the max power during the test.

9.5 Deviation From Test Standard

No deviation

9.6 Test Data

Please refer to the Attachment F.
Measurement Data (worst case)

10. Radiated Out Band of Emissions

10.1 Test Standard and Limit

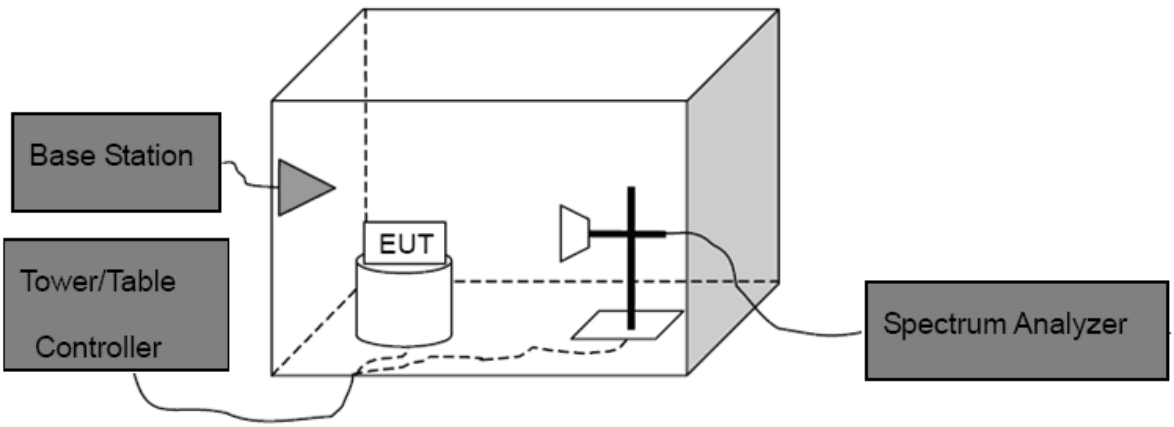
10.1.1 Test Standard

FCC Part 2: 2.1053, FCC Part 22.917(a)
FCC part 24.238(a)
FCC Part 27.53 (h),FCC Part 27.53(m)

10.1.2 Test 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+10log(P) dB. For all power levels +30 dBm to 0 dBm, this becomes a constant specification limit of -13 dBm.

10.2 Test Setup



10.3 Test Procedure

(1) The test system setup as show in the block diagram above.
(2) The EUT was placed on an non-conductive rotating platform in an anechoic chamber. The radiated spurious emissions from 30MHz to 10th harmonious of fundamental frequency were measured at 3 m with a test antenna and a spectrum analyzer with RBW=1 MHz, VBW=1 MHz, peak detector settings.
(3) During the measurement, the EUT was enforced in maximum power and linked with a base station. All the spurious emissions at 3m were measured by rotation of the turntable and the test antenna raised and lowered over a range from 1 to 4 meters in both horizontally and vertically polarized orientations.
(4) When found the maximum level of emissions from the EUT. Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.

Spurious emissions in dB=10 log(TX power in Watts/0.001)-the absolute level
Spurious attenuation limit in dB=43+10 log(power out in Watts)

10.4 EUT Operating Condition

The EUT was continuously connected with the Base station and transmitting in the max power during the test.

10.5 Deviation From Test Standard

No deviation

10.6 Test Data

Please refer to the Attachment G.
Measurement Data (worst case)

11. Frequency Stability

11.1 Test Standard and Limit

11.1.1 Test Standard

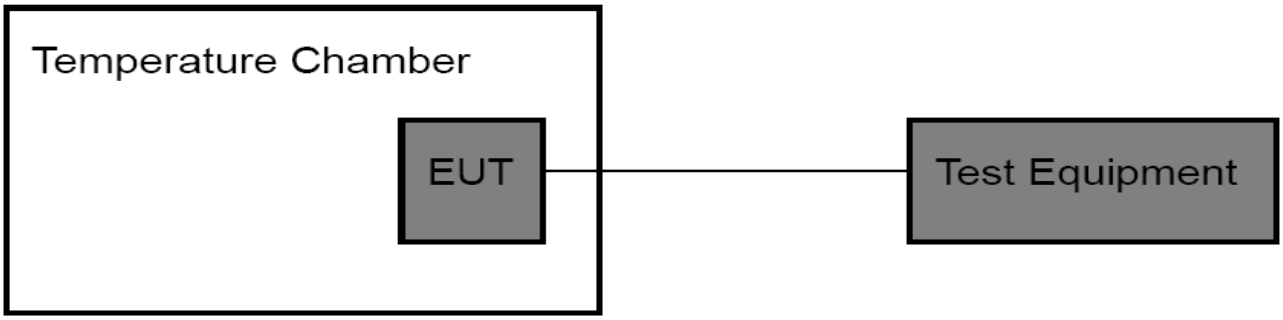
FCC Part 2.1055(a)(1)(b) FCC Part 22.355
FCC Part 24.235, Part 27.54

11.1.2 Limit

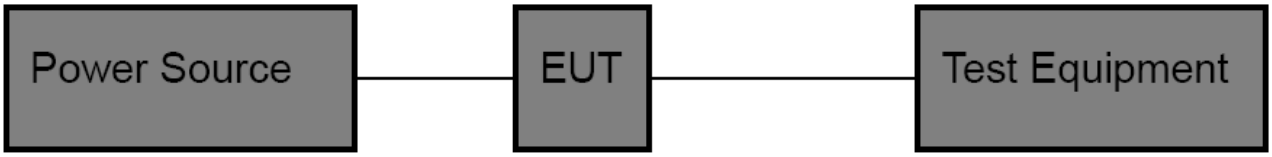
Limit
±2.5ppm

11.2 Test Setup

For Temperature Test:



For Voltage Test:



11.3 Test Procedure

Test Procedures for Temperature Variation:

(1) The EUT was set up in the thermal chamber and connected with the base station.

(2) With power off, the temperature was decreased to -30℃ and the EUT was stabilized for three hours. Power was applied and the maximum change in frequency was recorded within one minute.

(3) With power off, the temperature was raised in 10℃ set up to 50℃ and the EUT was stabilized for three hours. Power was applied and the maximum change in frequency was recorded within one minute.

(4) If the EUT cannot be turned on at -30℃, the testing lowest temperature will be raised in 10℃ step until the EUT can be turned on.

Test Procedures for Voltage Variation:

(1) The EUT was placed in a temperature chamber at 25±5℃ and connected with the base station.

(2) Reduce the input voltage to specify extreme voltage variation (+/- 15%) and endpoint, record the maximum frequency change.

(3) The variation in frequency was measured for the worst case.

11.4 EUT Operating Condition

The Equipment Under Test was set to Communication with the Base Station.

11.5 Deviation From Test Standard

No deviation

11.6 Test Data

Please refer to the Attachment H.

ATTACHMENT A--CONDUCTED RF OUTPUT POWER

FDD-LTE Band 2						
Channel Bandwidth: 1.4 MHz						
Modulation	RB Size	RB Offset	Conducted Power (dBm)			Result
			Low CH	Middle CH	High CH	
QPSK	1	0	22.24	22.24	22.06	PASS
	1	3	22.26	22.27	22.15	PASS
	1	5	22.26	22.23	22.12	PASS
	3	0	22.28	22.39	22.27	PASS
	3	1	22.29	22.31	22.21	PASS
	3	3	22.17	22.21	22.27	PASS
	6	0	21.17	21.25	21.29	PASS
16QAM	1	0	21.76	20.96	21.44	PASS
	1	3	21.79	20.90	21.49	PASS
	1	5	21.80	20.89	21.54	PASS
	3	0	21.52	21.09	21.69	PASS
	3	1	21.54	21.07	21.63	PASS
	3	3	21.50	21.02	21.58	PASS
	6	0	20.46	20.38	20.36	PASS
Channel Bandwidth: 3 MHz						
Modulation	RB Size	RB Offset	Conducted Power (dBm)			Result
			Low CH	Middle CH	High CH	
QPSK	1	0	22.21	22.31	22.21	PASS
	1	7	22.22	22.26	22.12	PASS
	1	14	22.17	22.21	22.19	PASS
	8	0	21.17	21.43	21.30	PASS
	8	4	21.18	21.29	21.14	PASS
	8	7	21.27	21.28	21.23	PASS
	15	0	21.23	21.35	21.25	PASS
16QAM	1	0	21.52	20.95	21.72	PASS
	1	7	21.53	20.89	21.68	PASS
	1	14	21.50	20.89	21.71	PASS
	8	0	20.50	20.44	20.49	PASS
	8	4	20.46	20.39	20.51	PASS
	8	7	20.51	20.47	20.48	PASS
	15	0	20.35	20.27	20.31	PASS

FDD-LTE Band 2						
Channel Bandwidth: 5 MHz						
Modulation	RB Size	RB Offset	Conducted Power (dBm)			Result
			Low CH	Middle CH	High CH	
QPSK	1	0	22.20	22.42	22.09	PASS
	1	12	22.22	22.42	22.11	PASS
	1	24	22.18	22.40	22.05	PASS
	12	0	21.26	21.30	21.16	PASS
	12	6	21.22	21.31	21.19	PASS
	12	11	21.26	21.25	21.18	PASS
	25	0	21.22	21.29	21.29	PASS
16QAM	1	0	21.25	21.03	20.78	PASS
	1	12	21.26	21.00	20.71	PASS
	1	24	21.33	21.00	20.74	PASS
	12	0	20.38	20.28	20.06	PASS
	12	6	20.39	20.25	20.03	PASS
	12	11	20.42	20.28	20.05	PASS
	25	0	20.31	20.26	20.36	PASS
Channel Bandwidth: 10 MHz						
Modulation	RB Size	RB Offset	Conducted Power (dBm)			Result
			Low CH	Middle CH	High CH	
QPSK	1	0	22.12	22.19	22.24	PASS
	1	24	22.11	22.29	22.21	PASS
	1	49	22.13	22.26	22.10	PASS
	25	0	21.21	21.35	21.26	PASS
	25	12	21.27	21.27	21.30	PASS
	25	24	21.27	21.35	21.29	PASS
	50	0	21.26	21.23	21.30	PASS
16QAM	1	0	20.98	21.45	21.54	PASS
	1	24	21.06	21.56	21.53	PASS
	1	49	21.06	21.55	21.53	PASS
	25	0	20.46	20.37	20.48	PASS
	25	12	20.48	20.37	20.46	PASS
	25	24	20.34	20.33	20.44	PASS
	50	0	20.38	20.28	20.29	PASS

FDD-LTE Band 2						
Channel Bandwidth: 15 MHz						
Modulation	RB Size	RB Offset	Conducted Power (dBm)			Result
			Low CH	Middle CH	High CH	
QPSK	1	0	22.22	22.25	22.16	PASS
	1	37	22.15	22.28	22.09	PASS
	1	74	22.13	22.18	22.04	PASS
	36	0	21.30	21.25	21.28	PASS
	36	16	21.32	21.19	21.20	PASS
	36	35	21.29	21.21	21.20	PASS
	75	0	21.30	21.22	21.30	PASS
16QAM	1	0	21.01	22.00	21.47	PASS
	1	37	21.06	21.96	21.40	PASS
	1	74	21.08	21.93	21.43	PASS
	36	0	20.51	20.36	20.40	PASS
	36	16	20.41	20.39	20.45	PASS
	36	35	20.72	20.38	20.34	PASS
	75	0	20.36	20.37	20.24	PASS
Channel Bandwidth: 20 MHz						
Modulation	RB Size	RB Offset	Conducted Power (dBm)			Result
			Low CH	Middle CH	High CH	
QPSK	1	0	22.26	22.43	22.27	PASS
	1	49	22.26	22.49	22.38	PASS
	1	99	22.32	22.43	22.26	PASS
	50	0	21.37	21.41	21.25	PASS
	50	24	21.34	21.46	21.30	PASS
	50	49	21.36	21.28	21.35	PASS
	100	0	21.38	21.36	21.29	PASS
16QAM	1	0	21.26	21.45	22.23	PASS
	1	49	21.25	21.49	22.25	PASS
	1	99	21.23	21.39	22.21	PASS
	50	0	20.48	20.39	20.38	PASS
	50	24	20.45	20.41	20.37	PASS
	50	49	20.37	20.36	20.24	PASS
	100	0	20.44	20.45	20.47	PASS

FDD-LTE Band 4						
Channel Bandwidth: 1.4 MHz						
Modulation	RB Size	RB Offset	Conducted Power (dBm)			Result
			Low CH	Middle CH	High CH	
QPSK	1	0	22.17	22.13	22.29	PASS
	1	2	22.16	22.20	22.25	PASS
	1	5	22.17	22.19	22.29	PASS
	3	0	22.08	22.14	22.21	PASS
	3	1	22.12	22.18	22.26	PASS
	3	2	22.17	22.20	22.22	PASS
	6	0	21.17	21.29	21.22	PASS
16QAM	1	0	21.77	21.97	21.89	PASS
	1	2	21.76	21.95	21.86	PASS
	1	5	21.78	21.96	21.85	PASS
	3	0	21.34	21.38	21.62	PASS
	3	1	21.34	21.32	21.57	PASS
	3	2	21.32	21.37	21.53	PASS
	6	0	20.35	20.50	20.45	PASS
Channel Bandwidth: 3 MHz						
Modulation	RB Size	RB Offset	Conducted Power (dBm)			Result
			Low CH	Middle CH	High CH	
QPSK	1	0	22.05	22.21	22.30	PASS
	1	7	22.11	22.25	22.32	PASS
	1	14	22.09	22.26	22.28	PASS
	8	0	21.14	21.26	21.23	PASS
	8	4	21.22	21.26	21.32	PASS
	8	7	21.22	21.17	21.32	PASS
	15	0	21.16	21.23	21.26	PASS
16QAM	1	0	21.44	21.99	21.91	PASS
	1	7	21.43	21.92	21.93	PASS
	1	14	21.42	21.97	21.96	PASS
	8	0	20.36	20.31	20.32	PASS
	8	4	20.39	20.30	20.28	PASS
	8	7	20.39	20.28	20.29	PASS
	15	0	20.23	20.22	20.17	PASS

FDD-LTE Band 4						
Channel Bandwidth: 5 MHz						
Modulation	RB Size	RB Offset	Conducted Power (dBm)			Result
			Low CH	Middle CH	High CH	
QPSK	1	0	22.16	22.27	21.96	PASS
	1	12	22.19	22.26	22.01	PASS
	1	24	22.08	22.30	21.93	PASS
	12	0	21.20	21.24	21.19	PASS
	12	6	21.17	21.20	21.19	PASS
	12	11	21.18	21.25	21.31	PASS
	25	0	21.26	21.20	21.26	PASS
16QAM	1	0	21.19	21.08	20.55	PASS
	1	12	21.19	21.13	20.63	PASS
	1	24	21.17	21.08	20.73	PASS
	12	0	20.28	20.23	20.07	PASS
	12	6	20.20	20.16	20.04	PASS
	12	11	20.19	20.23	20.07	PASS
	25	0	20.19	20.19	20.24	PASS
Channel Bandwidth: 10 MHz						
Modulation	RB Size	RB Offset	Conducted Power (dBm)			Result
			Low CH	Middle CH	High CH	
QPSK	1	0	22.14	22.19	22.37	PASS
	1	24	22.05	22.30	22.40	PASS
	1	49	22.15	22.29	22.41	PASS
	25	0	21.22	21.19	21.14	PASS
	25	12	21.12	21.21	21.22	PASS
	25	24	21.27	21.18	21.33	PASS
	50	0	21.26	21.25	21.20	PASS
16QAM	1	0	21.47	21.95	21.66	PASS
	1	24	21.47	22.03	21.59	PASS
	1	49	21.44	22.03	21.66	PASS
	25	0	20.37	20.19	20.49	PASS
	25	12	20.35	20.19	20.46	PASS
	25	24	20.31	20.22	20.50	PASS
	50	0	20.12	20.31	20.35	PASS

FDD-LTE Band 4						
Channel Bandwidth: 15 MHz						
Modulation	RB Size	RB Offset	Conducted Power (dBm)			Result
			Low CH	Middle CH	High CH	
QPSK	1	0	22.08	22.14	22.36	PASS
	1	37	22.05	22.23	22.22	PASS
	1	74	22.15	22.27	22.31	PASS
	36	0	21.18	21.23	21.27	PASS
	36	16	21.18	21.23	21.23	PASS
	36	35	21.13	21.32	21.30	PASS
	75	0	21.22	21.24	21.26	PASS
16QAM	1	0	21.44	21.40	21.68	PASS
	1	37	21.40	21.56	21.73	PASS
	1	74	21.44	21.65	21.74	PASS
	36	0	20.22	20.22	20.35	PASS
	36	16	20.22	20.27	20.37	PASS
	36	35	20.20	20.36	20.33	PASS
	75	0	20.29	20.24	20.24	PASS
Channel Bandwidth: 20 MHz						
Modulation	RB Size	RB Offset	Conducted Power (dBm)			Result
			Low CH	Middle CH	High CH	
QPSK	1	0	22.11	22.39	22.15	PASS
	1	49	22.22	22.36	22.20	PASS
	1	99	22.23	22.45	22.27	PASS
	50	0	21.08	21.22	21.18	PASS
	50	24	21.18	21.20	21.23	PASS
	50	49	21.16	21.24	21.15	PASS
	100	0	21.17	21.20	21.27	PASS
16QAM	1	0	22.18	20.86	20.92	PASS
	1	49	22.13	20.90	20.92	PASS
	1	99	22.18	20.95	21.08	PASS
	50	0	20.14	20.21	20.28	PASS
	50	24	20.21	20.21	20.31	PASS
	50	49	20.13	20.29	20.36	PASS
	100	0	20.30	20.21	20.32	PASS

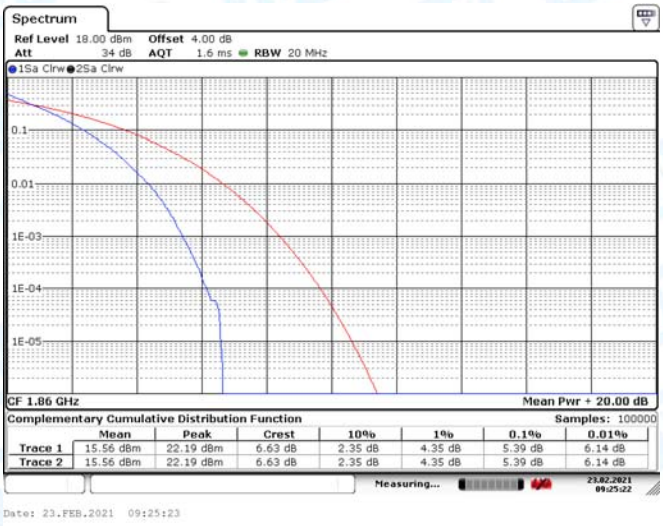
FDD-LTE Band 7						
Channel Bandwidth: 5 MHz						
Modulation	RB Size	RB Offset	Conducted Power (dBm)			Result
			Low CH	Middle CH	High CH	
QPSK	1	0	21.74	21.77	21.69	PASS
	1	12	21.75	21.81	21.62	PASS
	1	24	21.74	21.81	21.64	PASS
	12	0	20.76	20.67	20.89	PASS
	12	6	20.80	20.77	20.86	PASS
	12	11	20.87	20.76	20.82	PASS
	25	0	20.79	20.80	20.81	PASS
16QAM	1	0	20.44	20.47	20.85	PASS
	1	12	20.42	20.49	20.83	PASS
	1	24	20.45	20.46	20.85	PASS
	12	0	19.74	19.78	19.79	PASS
	12	6	19.76	19.75	19.79	PASS
	12	11	19.74	20.01	19.92	PASS
	25	0	19.78	19.76	19.89	PASS
Channel Bandwidth: 10 MHz						
Modulation	RB Size	RB Offset	Conducted Power (dBm)			Result
			Low CH	Middle CH	High CH	
QPSK	1	0	21.63	21.65	21.82	PASS
	1	24	21.69	21.71	21.80	PASS
	1	49	21.66	21.82	21.97	PASS
	25	0	20.76	20.70	20.85	PASS
	25	12	20.81	20.85	20.85	PASS
	25	24	20.86	20.71	20.77	PASS
	50	0	20.88	20.78	20.89	PASS
16QAM	1	0	21.11	21.06	21.27	PASS
	1	24	21.04	21.08	21.36	PASS
	1	49	21.22	21.07	21.34	PASS
	25	0	19.88	19.88	20.12	PASS
	25	12	19.94	19.81	20.22	PASS
	25	24	19.90	20.09	20.10	PASS
	50	0	19.79	19.76	20.09	PASS

FDD-LTE Band 7						
Channel Bandwidth: 15 MHz						
Modulation	RB Size	RB Offset	Conducted Power (dBm)			Result
			Low CH	Middle CH	High CH	
QPSK	1	0	21.76	21.66	21.77	PASS
	1	37	21.72	21.77	21.82	PASS
	1	74	21.70	21.84	21.72	PASS
	36	0	20.83	20.74	20.83	PASS
	36	16	20.74	20.76	20.91	PASS
	36	35	20.88	20.83	20.89	PASS
	75	0	20.81	20.83	20.77	PASS
16QAM	1	0	20.40	21.08	21.19	PASS
	1	37	20.47	21.29	21.26	PASS
	1	74	20.58	21.27	21.28	PASS
	36	0	20.04	20.03	19.95	PASS
	36	16	19.90	19.85	19.96	PASS
	36	35	20.01	19.86	19.95	PASS
	75	0	19.86	19.75	19.89	PASS
Channel Bandwidth: 20 MHz						
Modulation	RB Size	RB Offset	Conducted Power (dBm)			Result
			Low CH	Middle CH	High CH	
QPSK	1	0	21.87	21.98	21.93	PASS
	1	49	21.86	21.95	21.96	PASS
	1	99	21.88	21.93	22.06	PASS
	50	0	20.82	20.83	20.88	PASS
	50	24	20.98	20.71	20.87	PASS
	50	49	20.76	20.75	20.87	PASS
	100	0	20.96	20.89	20.86	PASS
16QAM	1	0	20.64	20.71	21.60	PASS
	1	49	20.81	20.73	21.65	PASS
	1	99	20.65	20.78	21.72	PASS
	50	0	19.99	20.12	19.84	PASS
	50	24	20.03	19.86	19.87	PASS
	50	49	19.99	19.93	20.03	PASS
	100	0	20.05	19.94	20.05	PASS

ATTACHMENT B--PEAK-AVERAGE RATIO

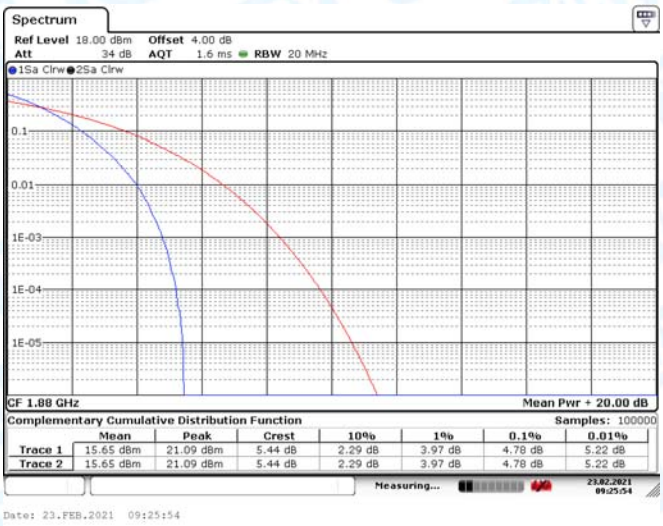
Test Mode	Modulation	RB Size	RB Offset	PAPR with 0.1% probability (dB)	Limit (dB)	Result
LTE BAND 2 20MHz (Low Channel)	QPSK	100	0	**5.39**	≤13	PASS
	16QAM	100	0	**6.29**	≤13	PASS
LTE BAND 2 20MHz (Middle Channel)	QPSK	100	0	**4.78**	≤13	PASS
	16QAM	100	0	**5.71**	≤13	PASS
LTE BAND 2 20MHz (High Channel)	QPSK	100	0	**5.01**	≤13	PASS
	16QAM	100	0	**5.94**	≤13	PASS
LTE BAND 4 20MHz (Low Channel)	QPSK	100	0	**5.36**	≤13	PASS
	16QAM	100	0	**6.23**	≤13	PASS
LTE BAND 4 20MHz (Middle Channel)	QPSK	100	0	**5.01**	≤13	PASS
	16QAM	100	0	**5.97**	≤13	PASS
LTE BAND 4 20MHz (High Channel)	QPSK	100	0	**5.62**	≤13	PASS
	16QAM	100	0	**6.41**	≤13	PASS
LTE BAND 7 20MHz (Low Channel)	QPSK	100	0	**4.90**	≤13	PASS
	16QAM	100	0	**5.74**	≤13	PASS
LTE BAND 7 20MHz (Middle Channel)	QPSK	100	0	**5.16**	≤13	PASS
	16QAM	100	0	**6.06**	≤13	PASS
LTE BAND 7 20MHz (High Channel)	QPSK	100	0	**4.96**	≤13	PASS
	16QAM	100	0	**5.91**	≤13	PASS
Note: Only show the worst case data.						

LTE Band 2 20MHz (Low Channel)-QPSK

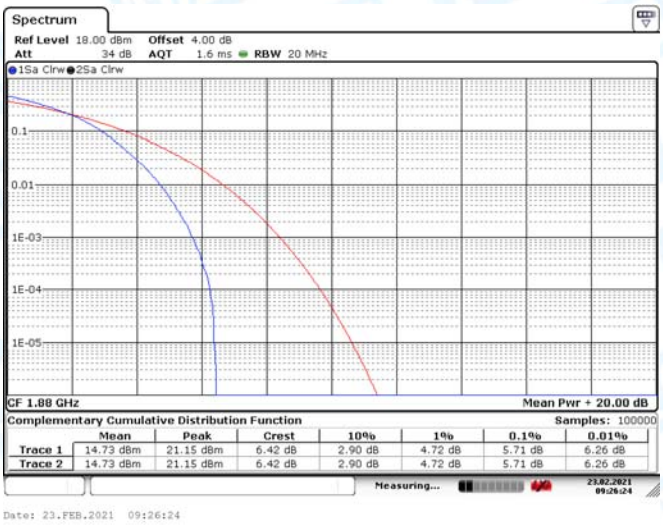


LTE Band 2 20MHz (Low Channel)-16QAM

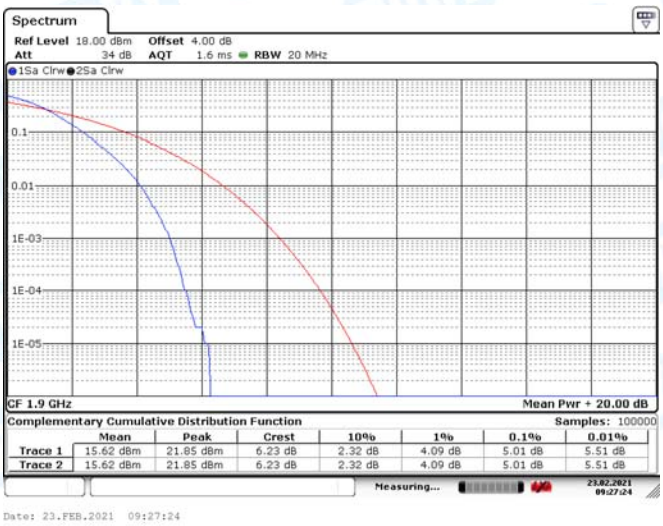
LTE Band 2 20MHz (Middle Channel)-QPSK



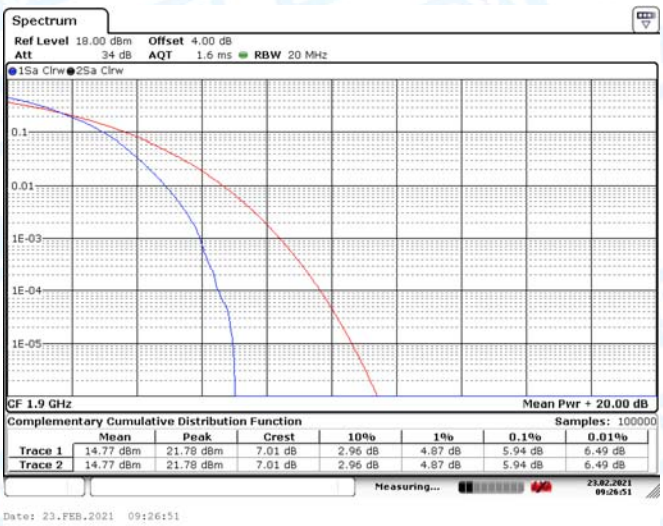
LTE Band 2 20MHz (Middle Channel)-16QAM



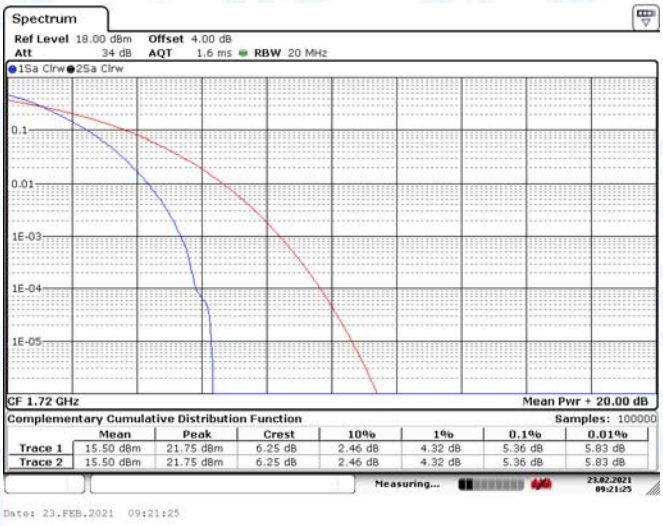
LTE Band 2 20MHz (High Channel)-QPSK



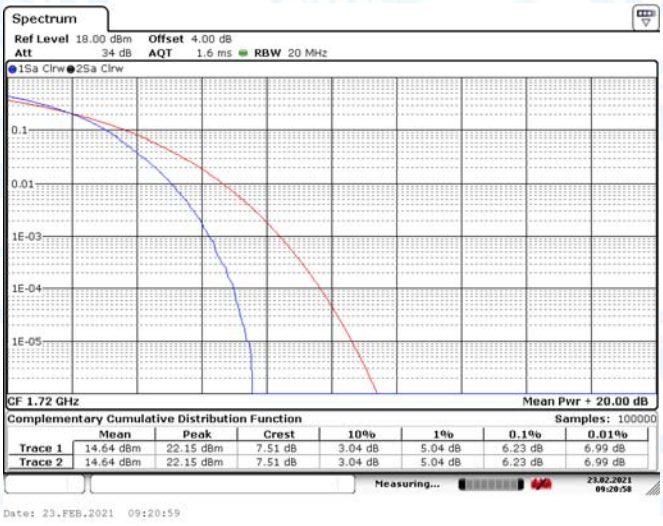
LTE Band 2 20MHz (High Channel)-16QAM



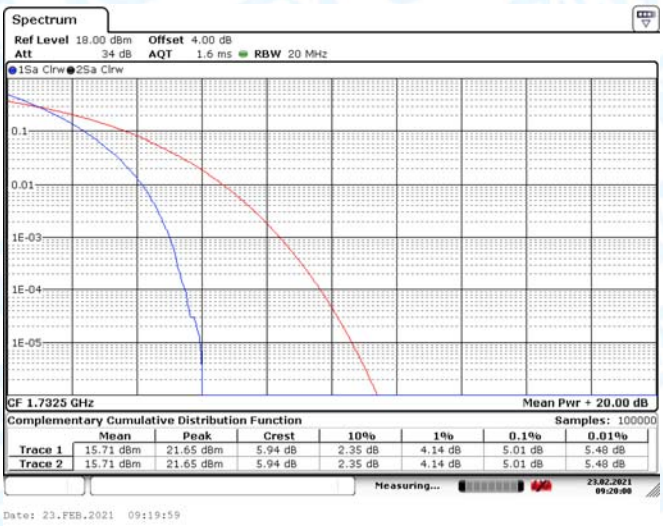
LTE Band 4 20MHz (Low Channel)-QPSK



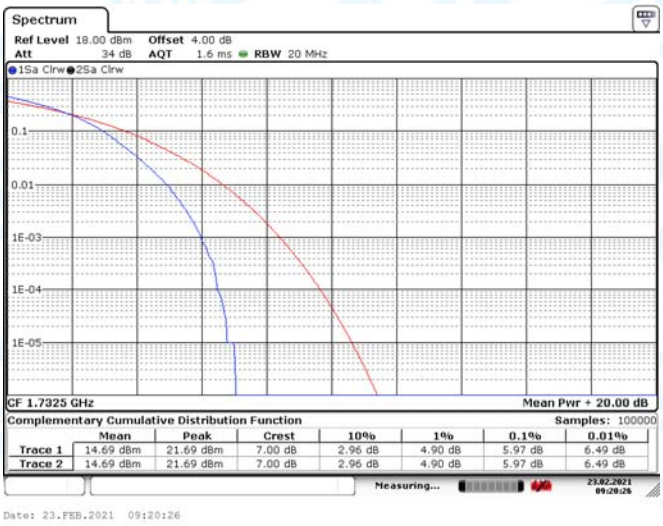
LTE Band 4 20MHz (Low Channel)-16QAM



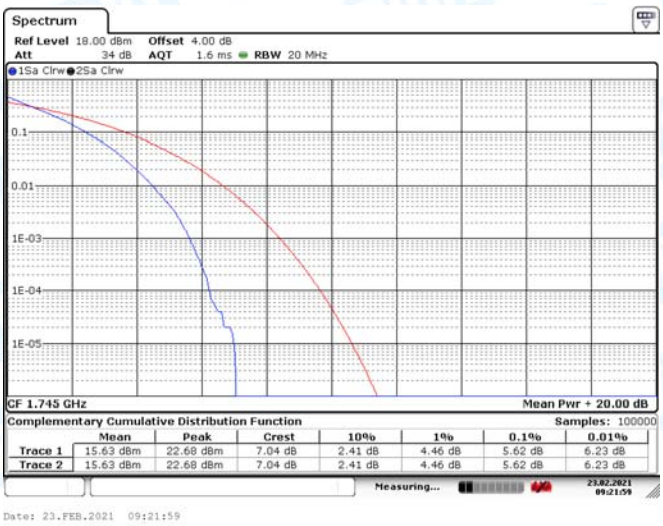
LTE Band 4 20MHz (Middle Channel)-QPSK



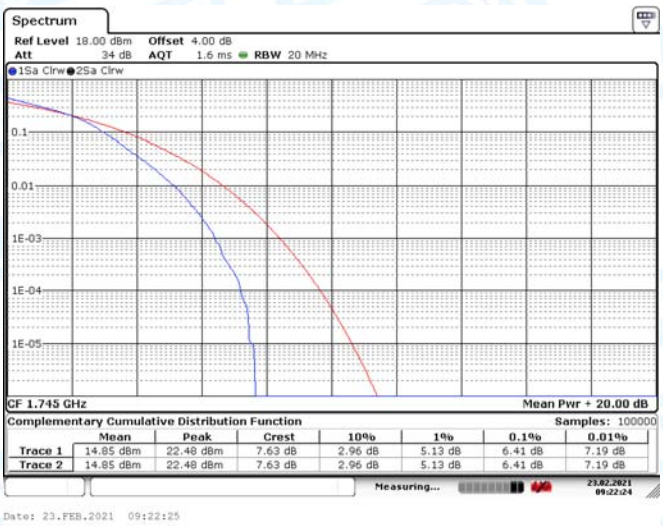
LTE Band 4 20MHz (Middle Channel)-16QAM



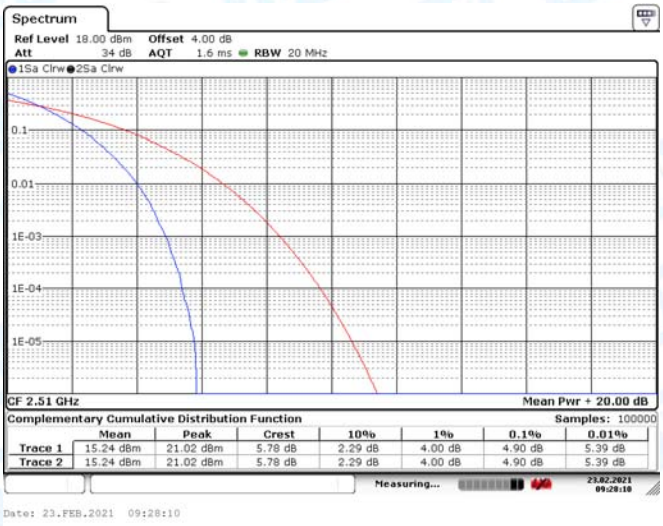
LTE Band 4 20MHz (High Channel)-QPSK



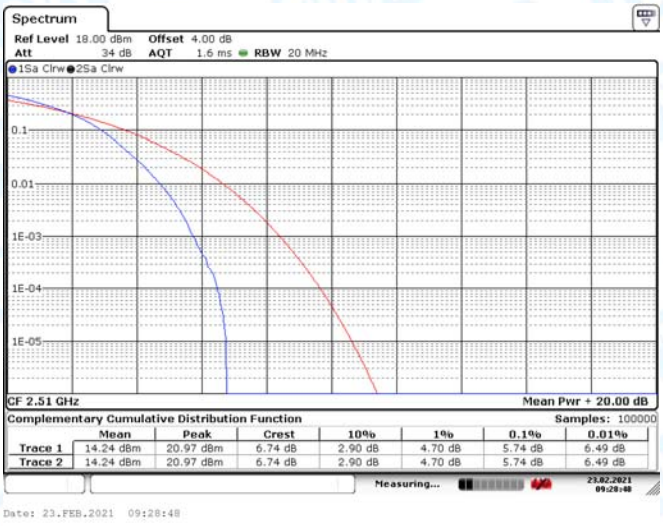
LTE Band 4 20MHz (High Channel)-16QAM



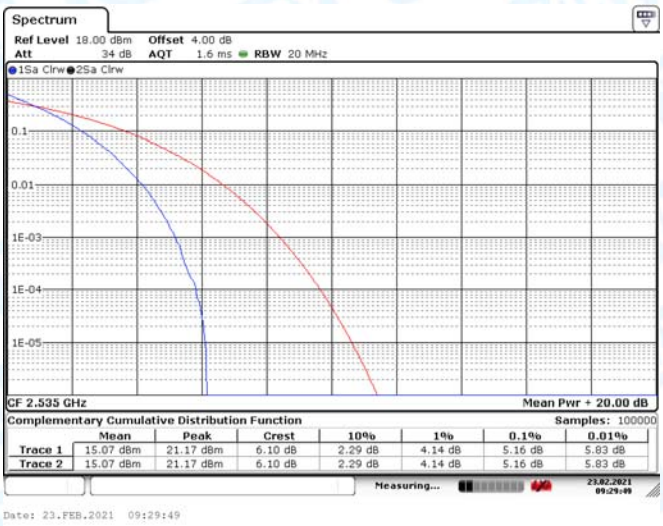
LTE Band 7 20MHz (Low Channel)-QPSK



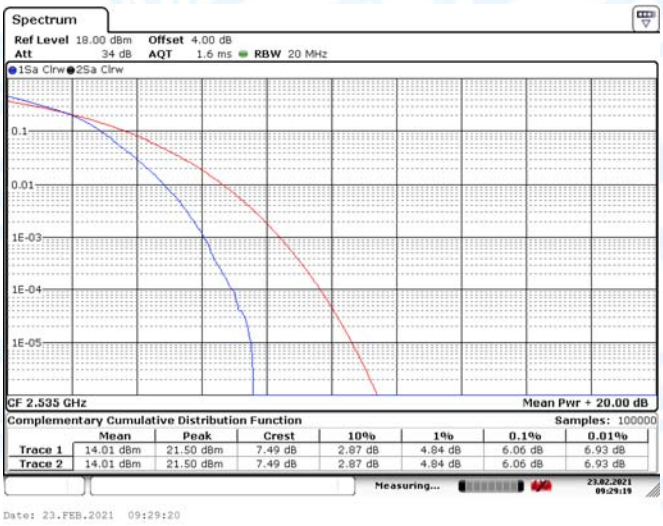
LTE Band 7 20MHz (Low Channel)-16QAM



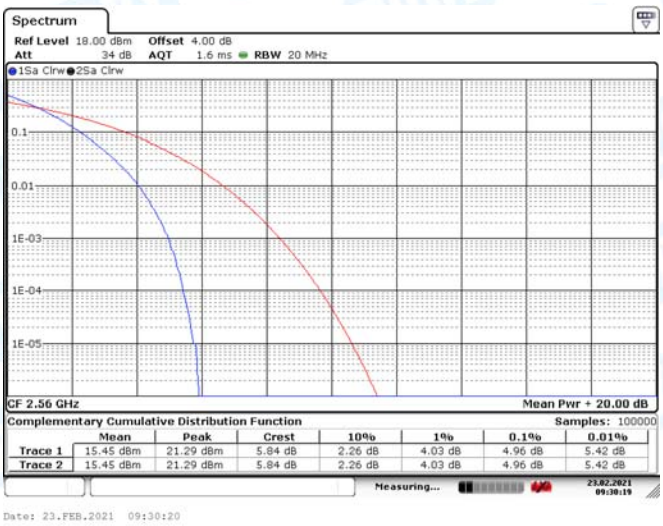
LTE Band 7 20MHz (Middle Channel)-QPSK



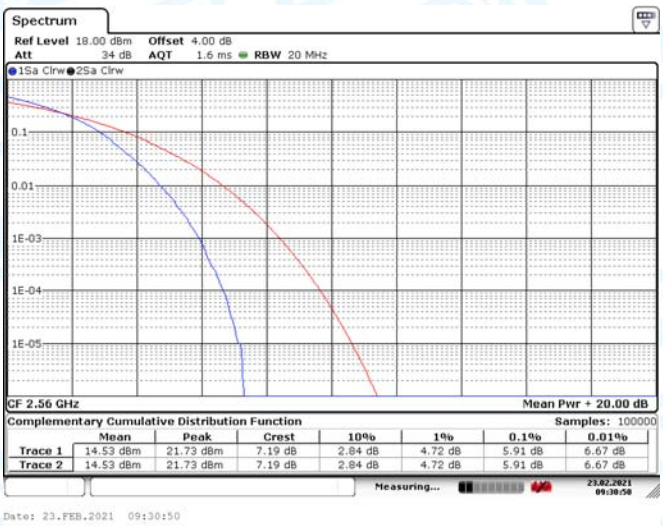
LTE Band 7 20MHz (Middle Channel)-16QAM



LTE Band 7 20MHz (High Channel)-QPSK



LTE Band 7 20MHz (High Channel)-16QAM



ATTACHMENT C--OCCUPY BANDWIDTH

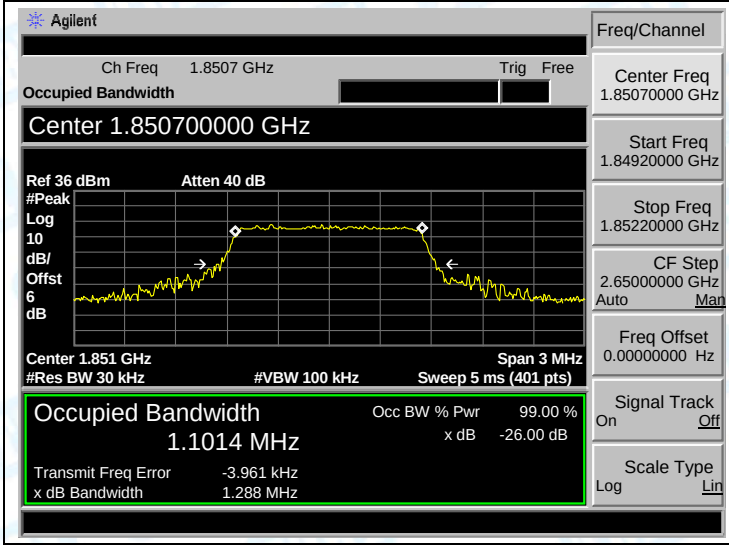
LTE Band 2					
Mode	Channel	Frequency (MHz)	Modulation	99% OBW (MHz)	-26dB Bandwidth (MHz)
1.4MHz	18607	1850.70	QPSK	1.1014	1.288
			16QAM	1.0942	1.275
	18900	1880.00	QPSK	1.1068	1.287
			16QAM	1.0890	1.264
	19193	1909.30	QPSK	1.1003	1.268
			16QAM	1.0966	1.266
3MHz	18615	1851.50	QPSK	2.6951	3.045
			16QAM	2.6786	2.989
	18900	1880.00	QPSK	2.6867	3.013
			16QAM	2.6851	3.017
	19185	1908.50	QPSK	2.6794	2.981
			16QAM	2.6889	3.011
5MHz	18625	1852.50	QPSK	4.5106	5.056
			16QAM	4.5271	5.235
	18900	1880.00	QPSK	4.5113	5.436
			16QAM	4.5148	5.313
	19175	1907.50	QPSK	4.5051	4.962
			16QAM	4.5222	5.261
10MHz	18650	1855.00	QPSK	8.9490	9.698
			16QAM	8.9395	9.815
	18900	1880.00	QPSK	8.9427	9.755
			16QAM	8.9367	9.635
	19150	1905.00	QPSK	8.9137	9.562
			16QAM	8.9361	9.696
15MHz	18675	1857.50	QPSK	13.4740	15.398
			16QAM	13.5489	15.376
	18900	1880.00	QPSK	13.4511	15.228
			16QAM	13.4727	15.047
	19125	1902.50	QPSK	13.4072	15.060
			16QAM	13.3809	15.026
20MHz	18700	1860.00	QPSK	17.9774	19.492
			16QAM	17.9502	19.756
	18900	1880.00	QPSK	17.9391	19.898
			16QAM	17.8565	19.763
	19100	1900.00	QPSK	17.8747	19.340
			16QAM	17.8485	19.326

LTE Band 4					
Mode	Channel	Frequency (MHz)	Modulation	99% OBW (MHz)	-26dB Bandwidth (MHz)
1.4MHz	19957	1710.70	QPSK	1.1014	1.288
			16QAM	1.0942	1.275
	20175	1732.50	QPSK	1.1068	1.287
			16QAM	1.0890	1.264
	20393	1754.30	QPSK	1.1003	1.268
			16QAM	1.0966	1.266
3MHz	19965	1711.50	QPSK	2.6951	3.045
			16QAM	2.6786	2.989
	20175	1732.50	QPSK	2.6867	3.013
			16QAM	2.6851	3.017
	20385	1753.50	QPSK	2.6794	2.981
			16QAM	2.6889	3.011
5MHz	19975	1712.50	QPSK	4.5106	5.056
			16QAM	4.5271	5.235
	20175	1732.50	QPSK	4.5113	5.436
			16QAM	4.5148	5.313
	20375	1752.50	QPSK	4.5051	4.962
			16QAM	4.5222	5.261
10MHz	20000	1715.00	QPSK	8.9490	9.698
			16QAM	8.9395	9.815
	20175	1732.50	QPSK	8.9427	9.755
			16QAM	8.9367	9.635
	20350	1750.00	QPSK	8.9137	9.652
			16QAM	8.9361	9.696
15MHz	20025	1717.50	QPSK	13.4740	15.398
			16QAM	13.5459	15.376
	20175	1732.50	QPSK	13.4511	15.226
			16QAM	13.4727	15.047
	20325	1747.50	QPSK	13.4072	15.060
			16QAM	13.3809	15.026
20MHz	20050	1720.00	QPSK	17.9774	19.492
			16QAM	17.9502	19.756
	20175	1732.50	QPSK	17.9391	19.898
			16QAM	17.8565	19.763
	20300	1745.00	QPSK	17.8747	19.340
			16QAM	17.8485	19.328

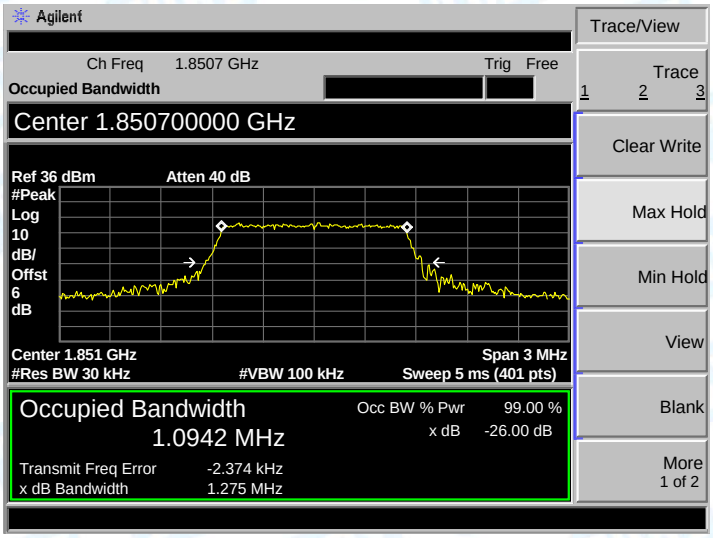
LTE Band 7					
Mode	Channel	Frequency (MHz)	Modulation	99% OBW (MHz)	-26dB Bandwidth (MHz)
5MHz	20775	2502.50	QPSK	4.5225	5.012
			16QAM	4.5241	5.234
	21100	2535.00	QPSK	4.5184	5.203
			16QAM	4.5329	5.220
	21425	2567.50	QPSK	4.5087	5.099
			16QAM	4.5044	5.457
10MHz	20800	2505.00	QPSK	8.9245	9.706
			16QAM	8.9492	9.822
	21100	2535.00	QPSK	8.9551	9.729
			16QAM	8.9315	9.846
	21400	2565.00	QPSK	8.9553	9.718
			16QAM	8.9615	9.807
15MHz	20825	2507.50	QPSK	13.4524	15.113
			16QAM	13.5359	15.054
	21100	2535.00	QPSK	13.4920	15.072
			16QAM	13.5126	14.901
	21375	2562.50	QPSK	13.4602	15.030
			16QAM	13.4759	15.201
20MHz	20850	2510.00	QPSK	17.9199	20.274
			16QAM	17.9693	19.711
	21100	2535.00	QPSK	17.9711	19.894
			16QAM	17.9373	20.071
	21350	2560.00	QPSK	17.8866	19.629
			16QAM	17.9015	19.745

Occupy Bandwidth Test Plot

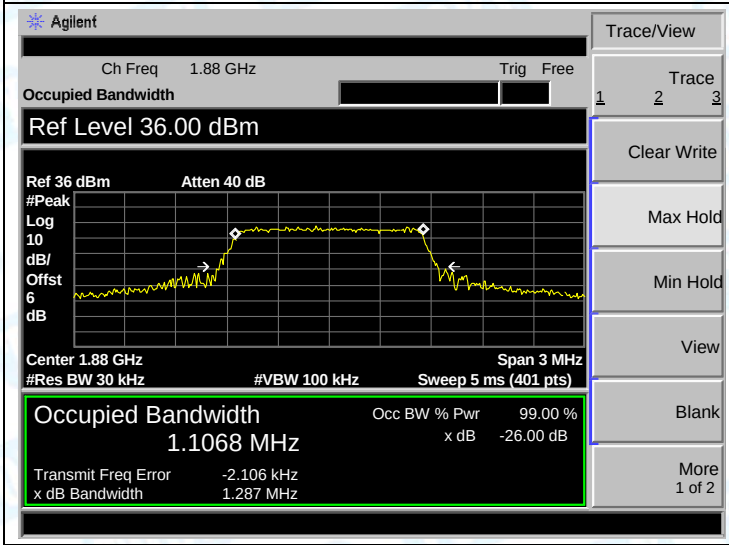
LTE BAND 2 (1.4MHz QPSK-Low CH)



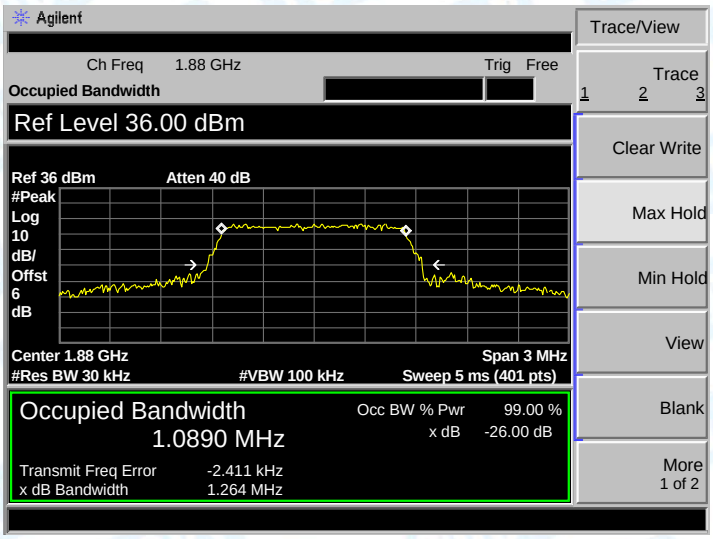
LTE BAND 2 (1.4MHz 16QAM-Low CH)



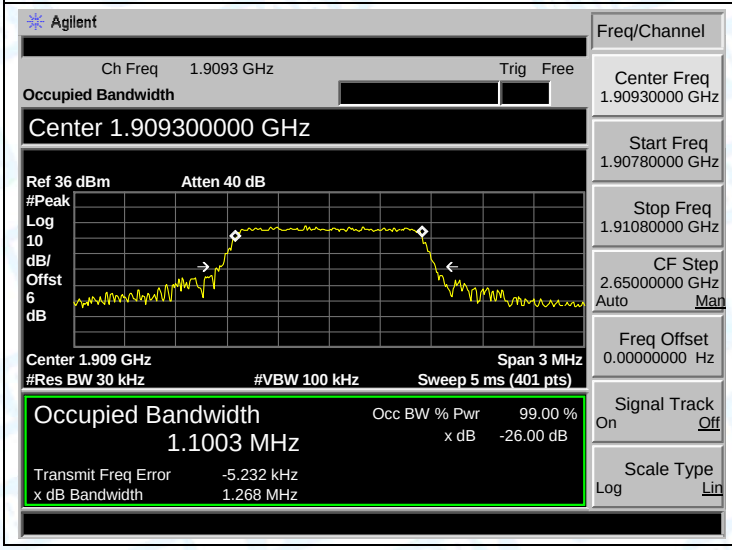
LTE BAND 2 (1.4MHz QPSK-Middle CH)



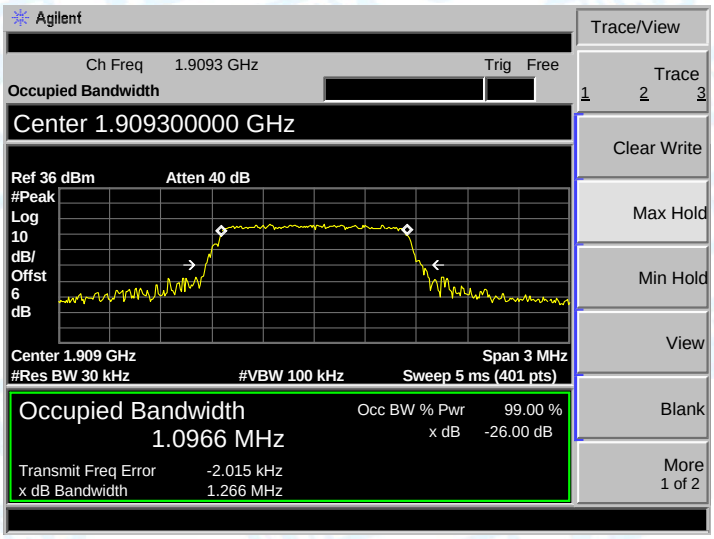
LTE BAND 2 (1.4MHz 16QAM- Middle CH)



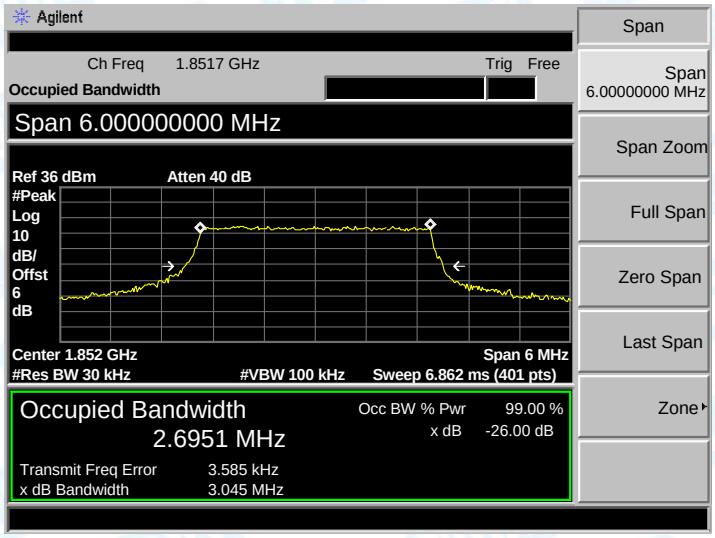
LTE BAND 2 (1.4MHz QPSK-High CH)



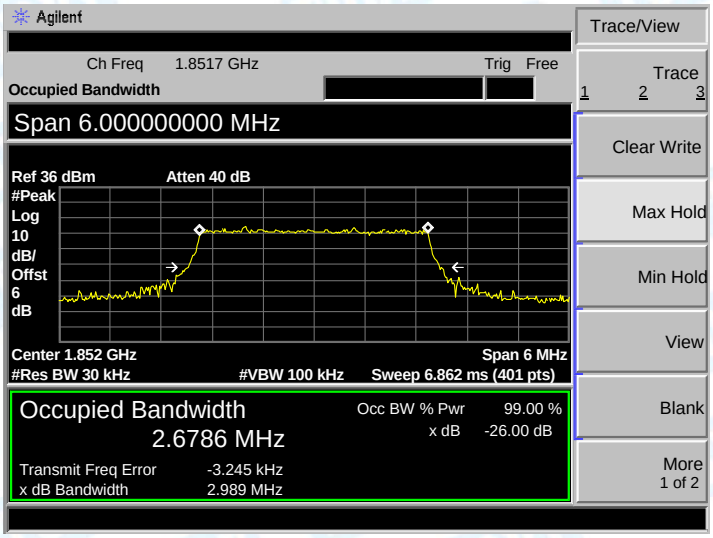
LTE BAND 2 (1.4MHz 16QAM-High CH)



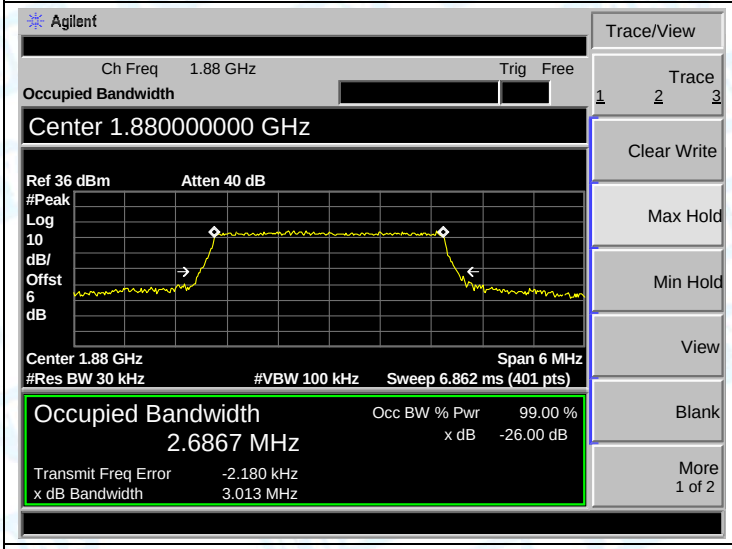
LTE BAND 2 (3MHz QPSK-Low CH)



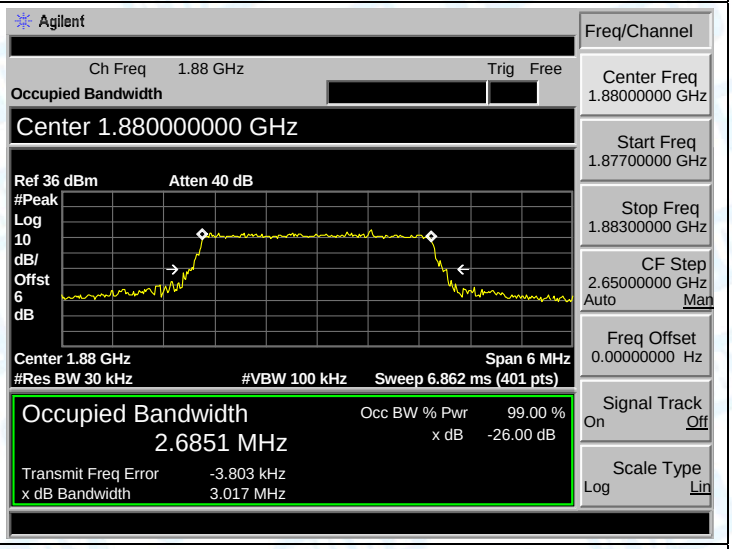
LTE BAND 2 (3MHz 16QAM-Low CH)



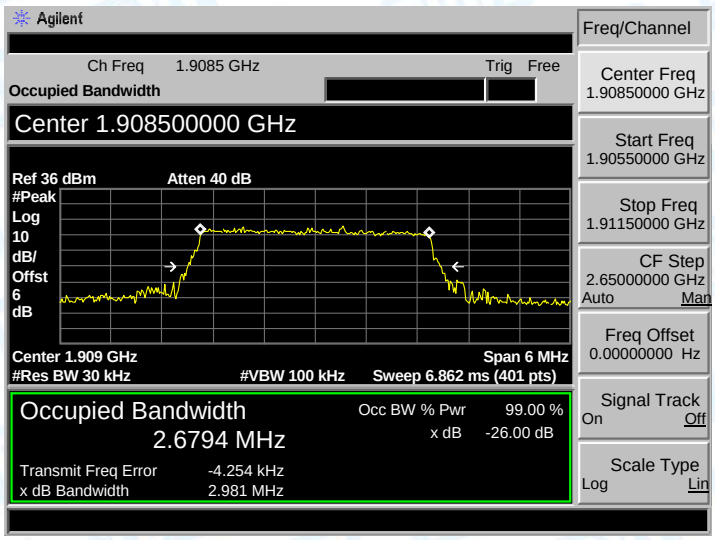
LTE BAND 2 (3MHz QPSK-Middle CH)



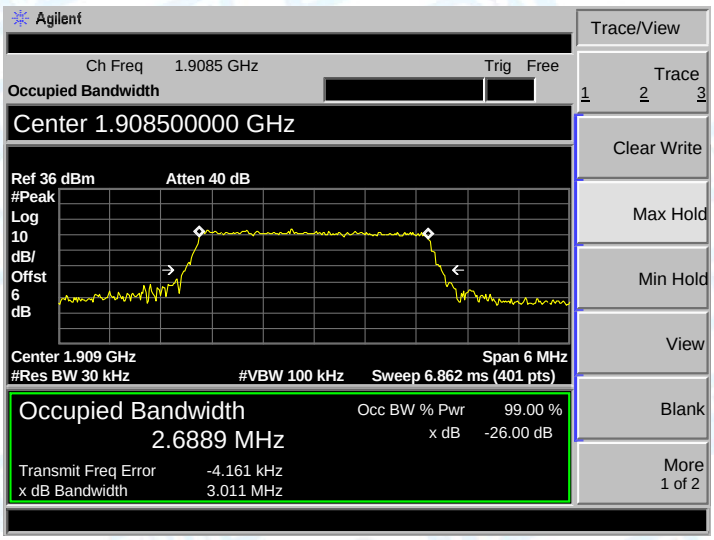
LTE BAND 2 (3MHz 16QAM- Middle CH)



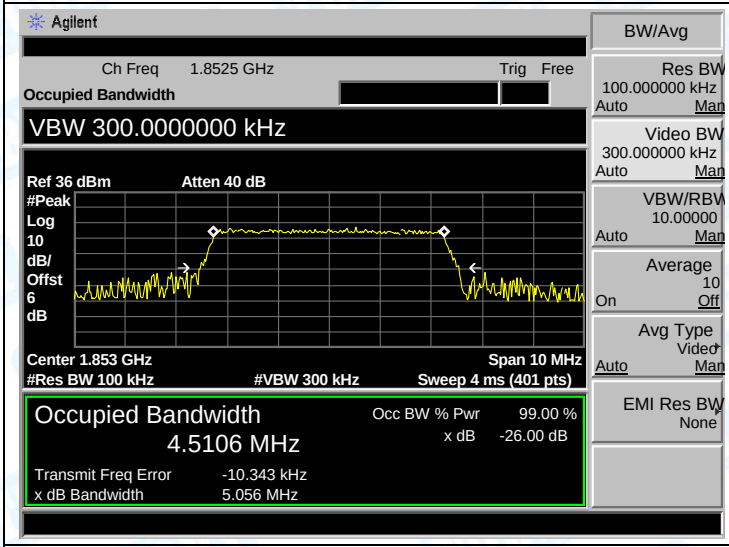
LTE BAND 2 (3MHz QPSK-High CH)



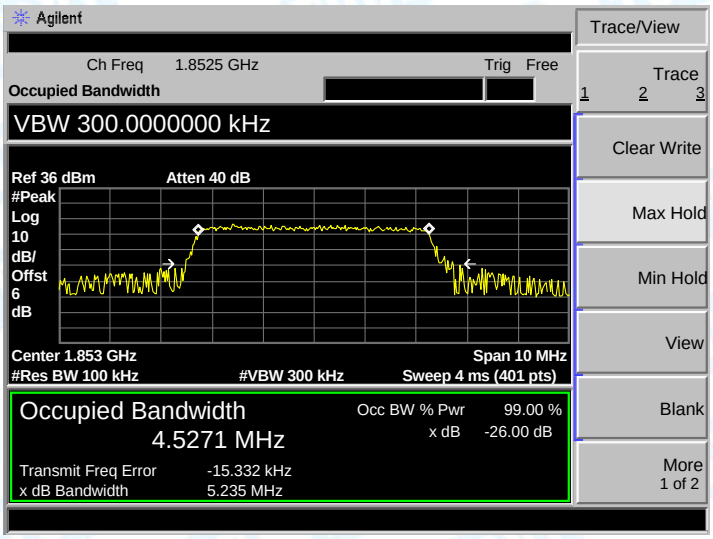
LTE BAND 2 (3MHz 16QAM-High CH)



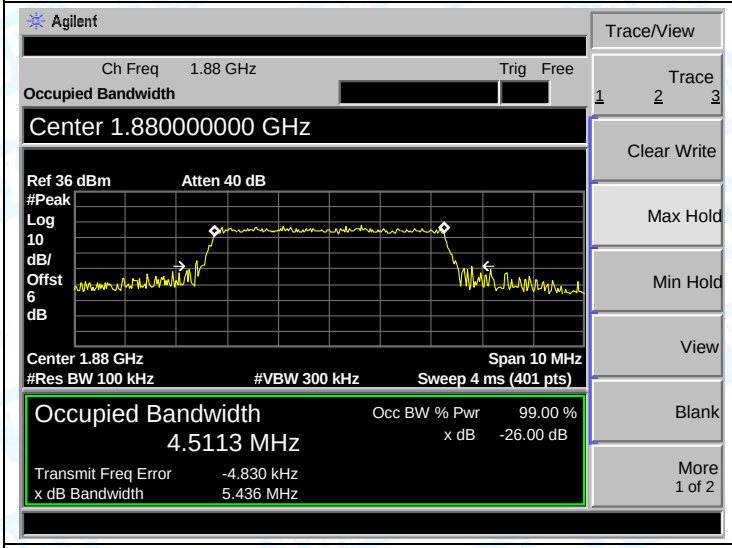
LTE BAND 2 (5MHz QPSK-Low CH)



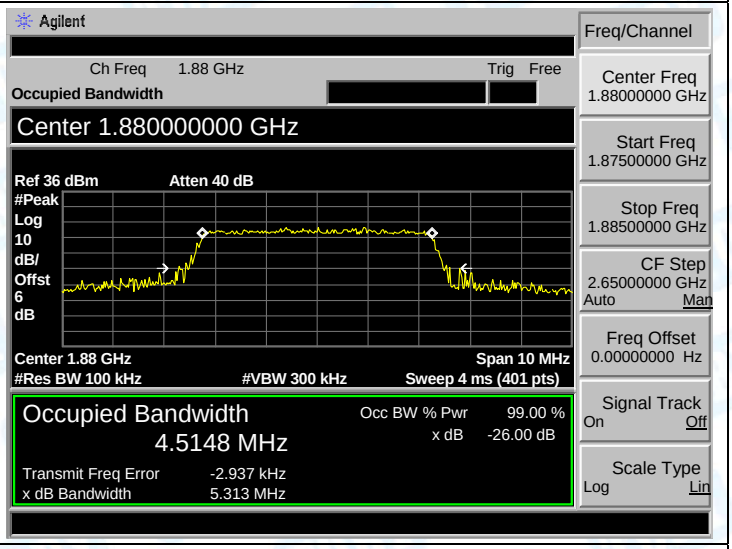
LTE BAND 2 (5MHz 16QAM-Low CH)



LTE BAND 2 (5MHz QPSK-Middle CH)



LTE BAND 2 (5MHz 16QAM- Middle CH)



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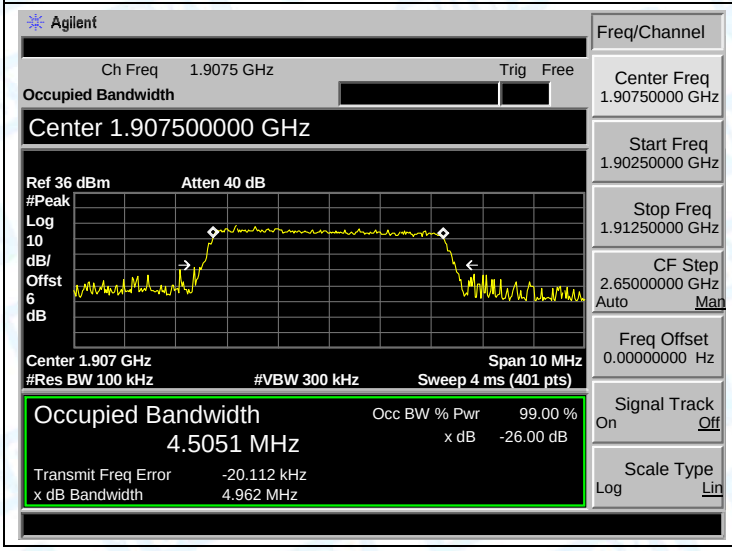
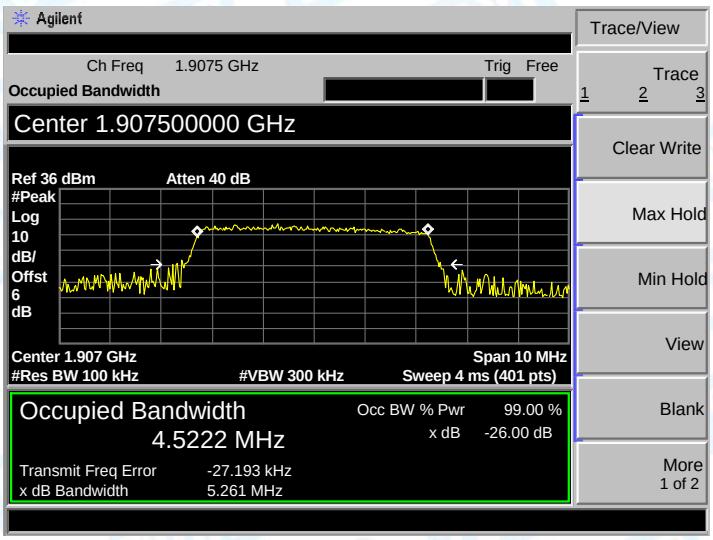


LTE BAND 2 (5MHz 16QAM-High CH)



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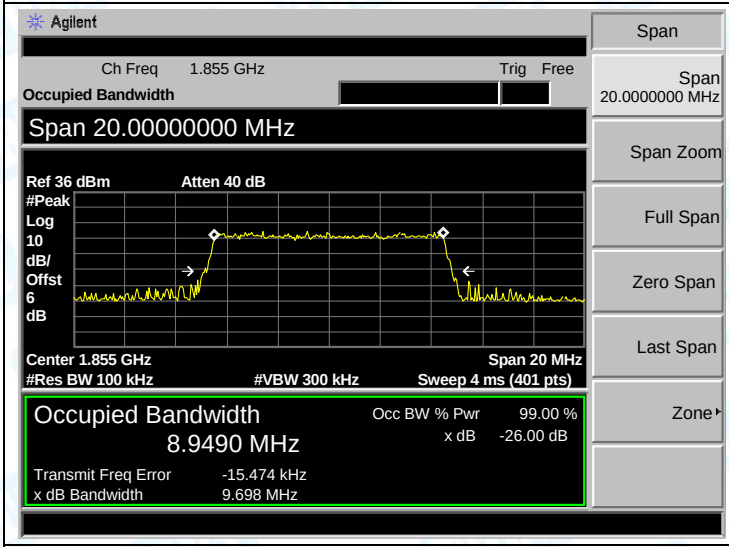
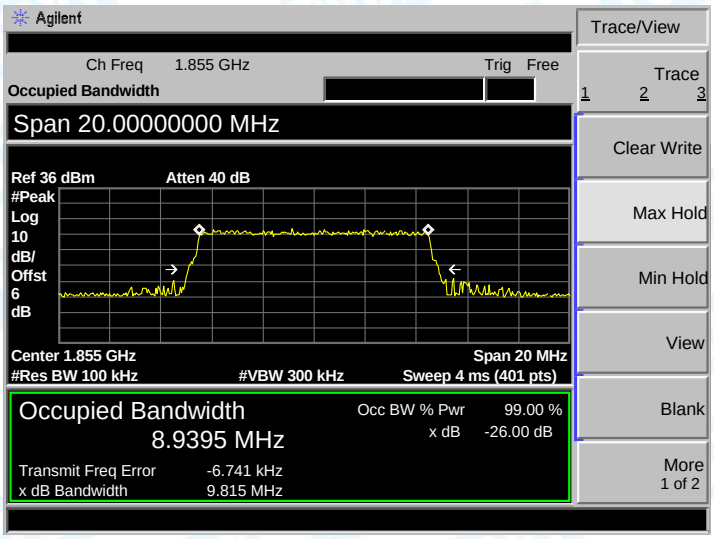


LTE BAND 2 (10MHz 16QAM-Low CH)



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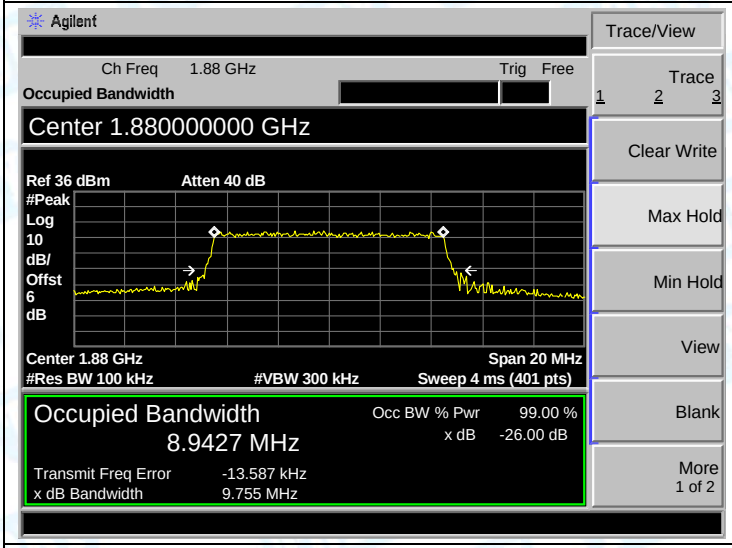

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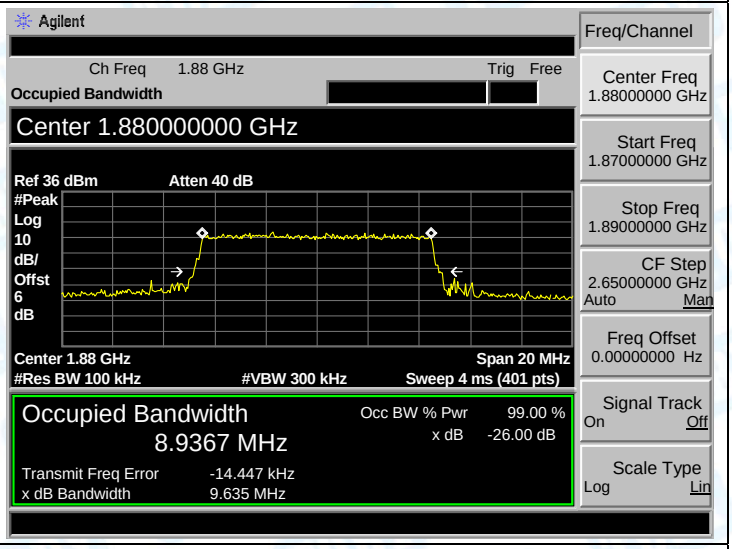

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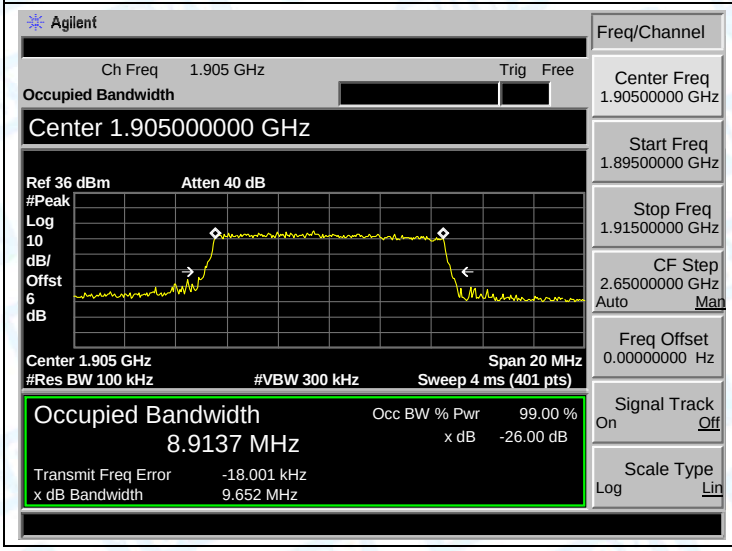
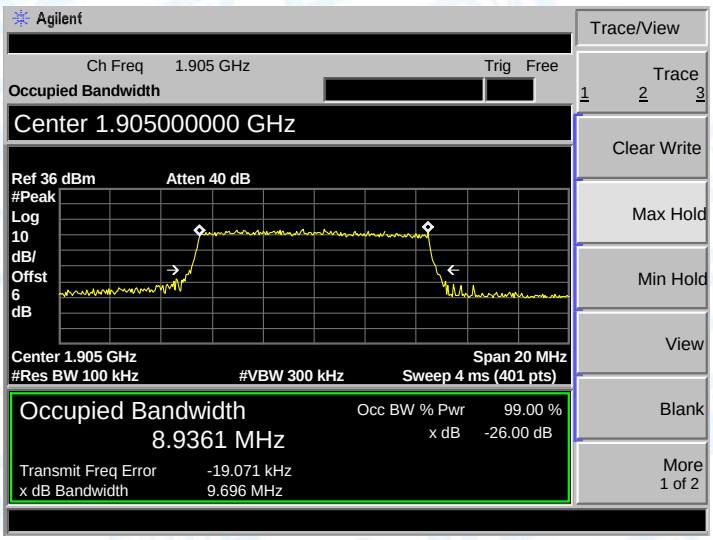
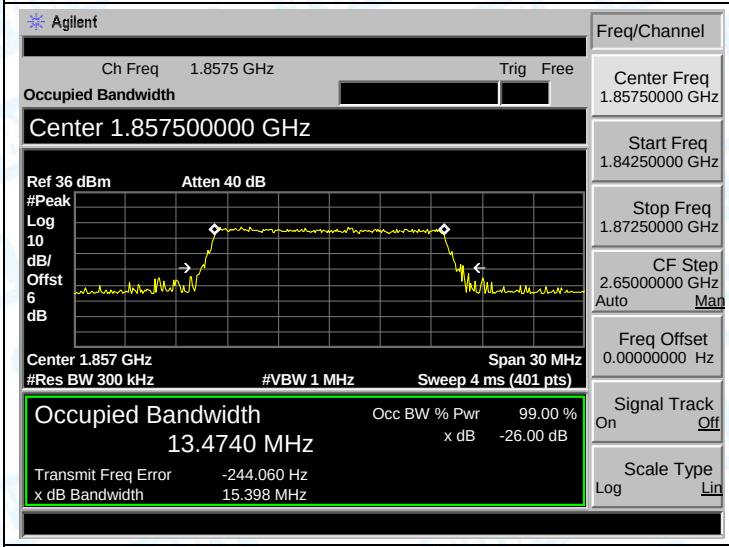


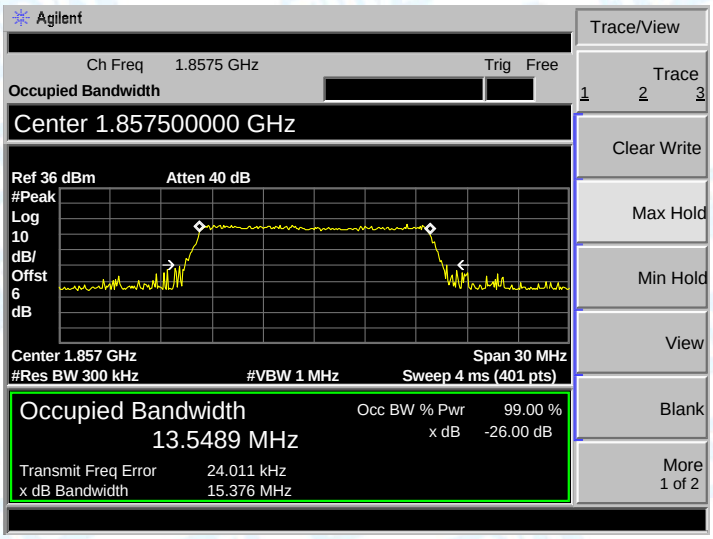
LTE BAND 2 (10MHz 16QAM-High CH)



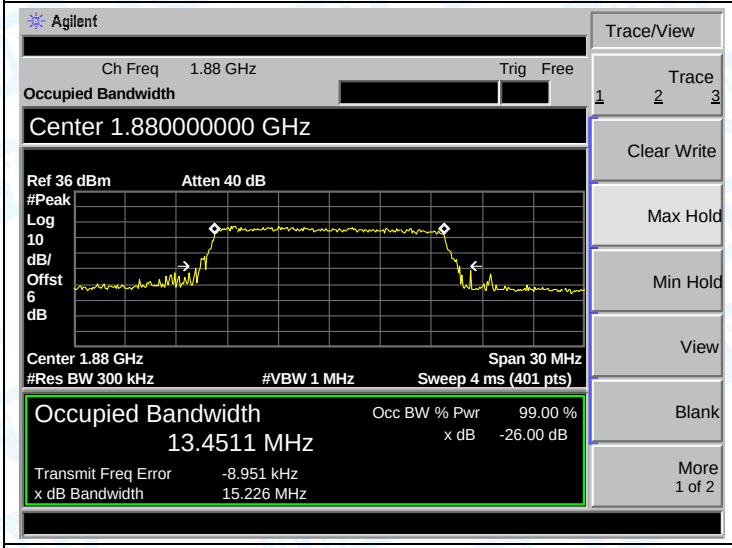
LTE BAND 2 (15MHz QPSK-Low CH)



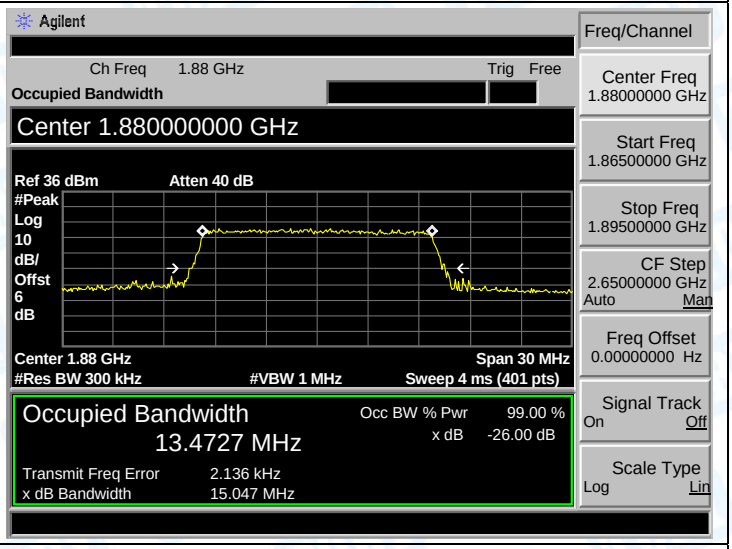
LTE BAND 2 (15MHz 16QAM-Low CH)



LTE BAND 2 (15MHz QPSK-Middle CH)



LTE BAND 2 (15MHz 16QAM- Middle CH)



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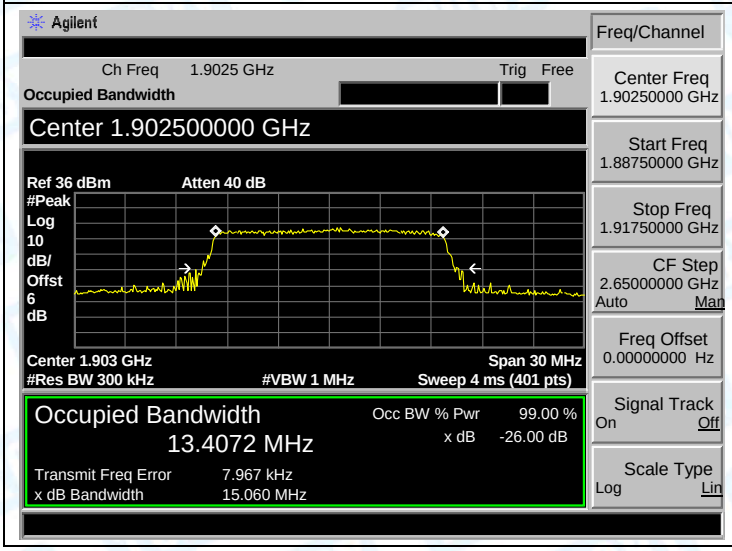
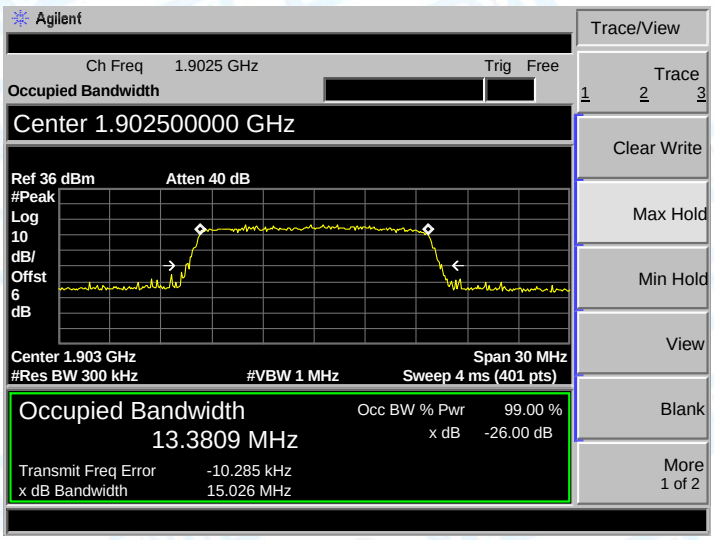
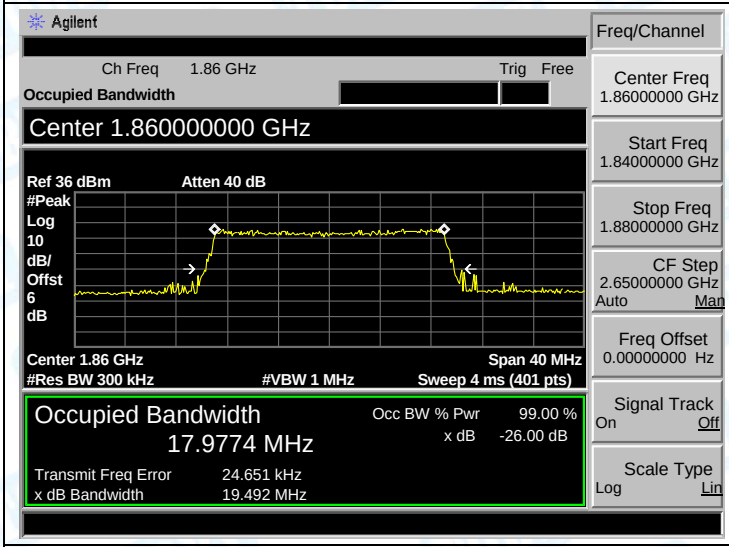


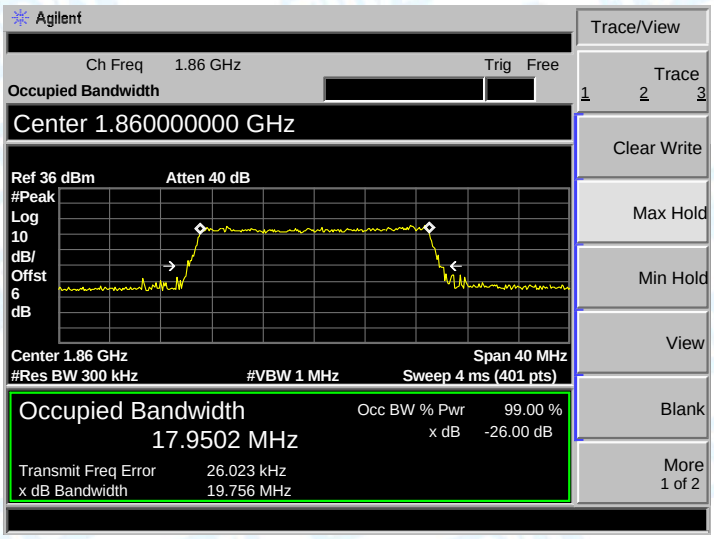
LTE BAND 2 (15MHz 16QAM-High CH)



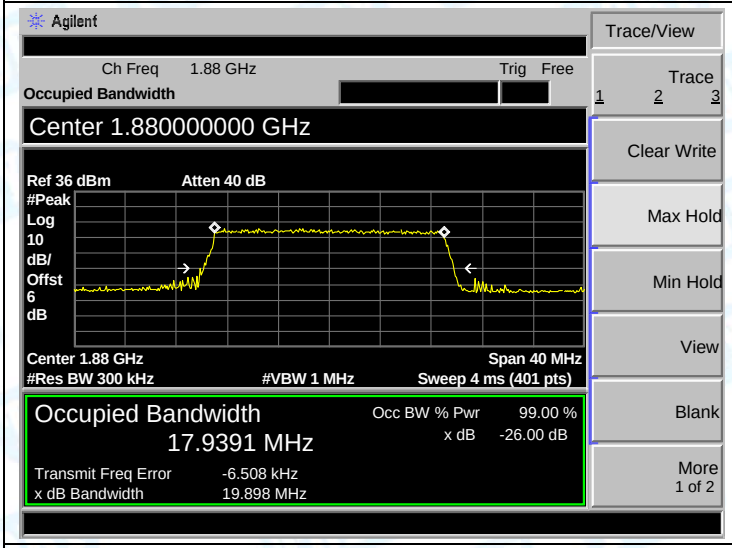
LTE BAND 2 (20MHz QPSK-Low CH)



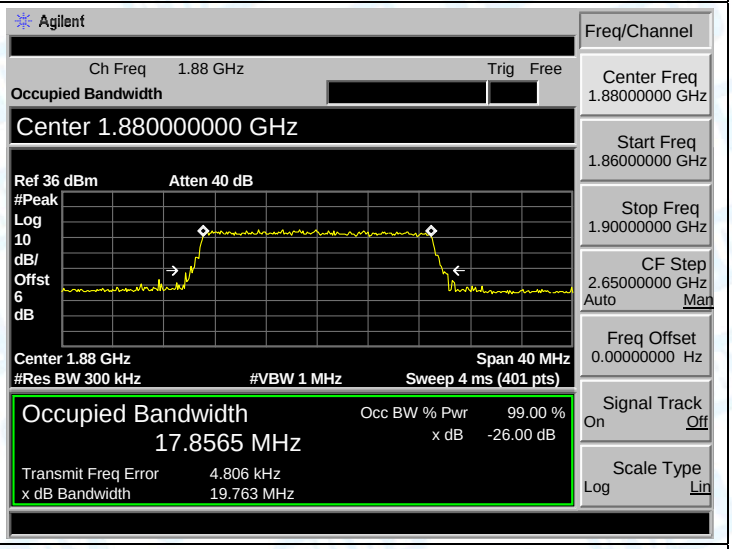
LTE BAND 2 (20MHz 16QAM-Low CH)



LTE BAND 2 (20MHz QPSK-Middle CH)



LTE BAND 2 (20MHz 16QAM- Middle CH)



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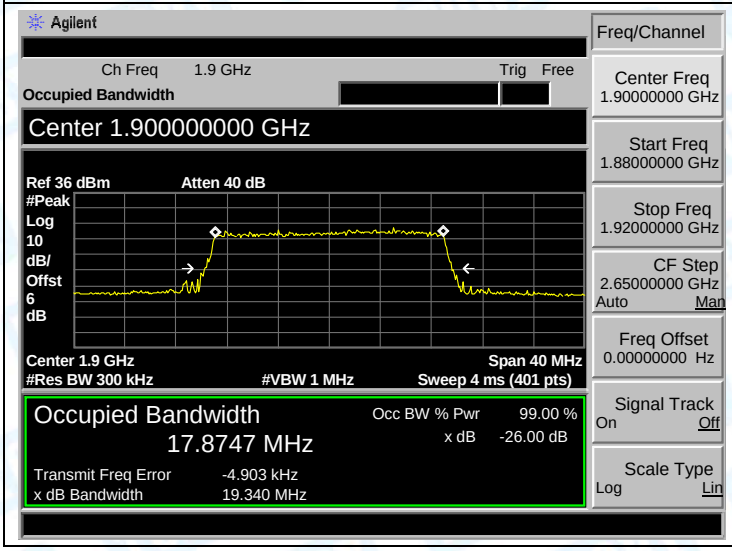

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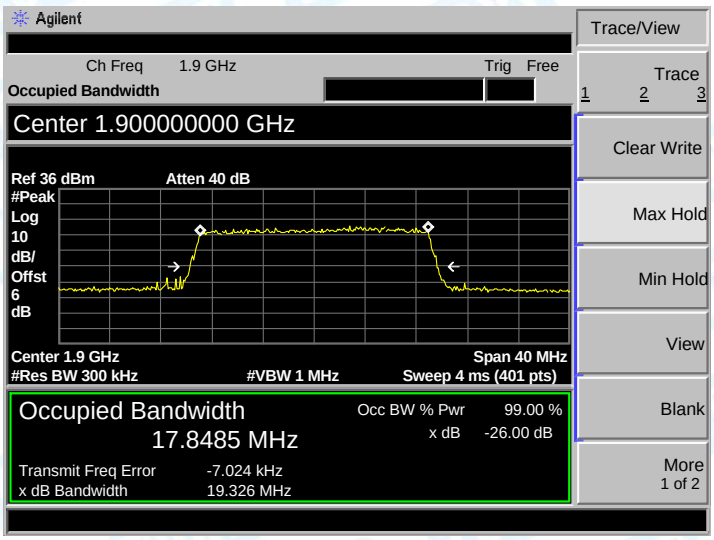
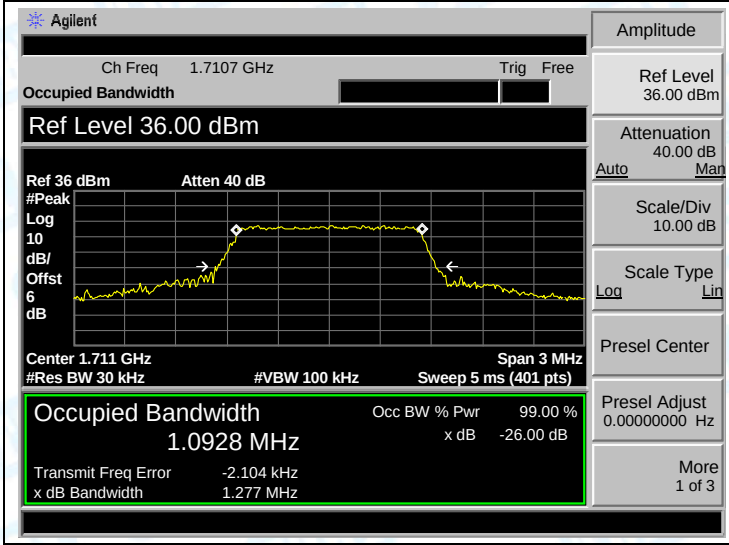
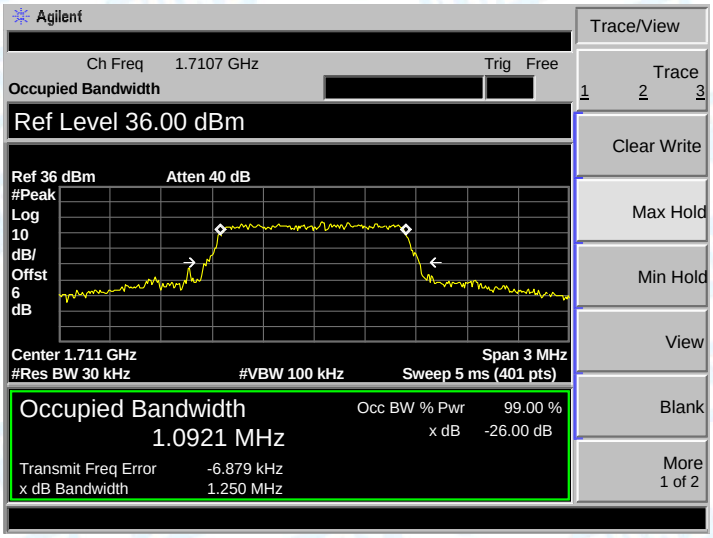


Occupy Bandwidth Test Plot

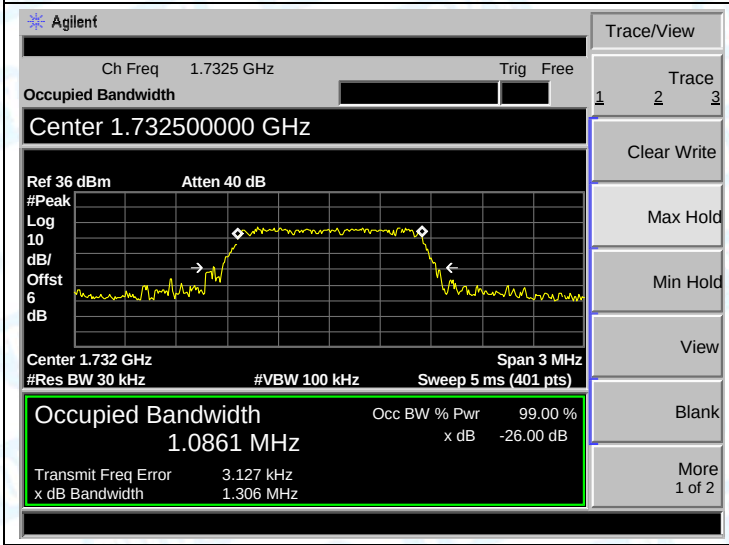
LTE BAND 4 (1.4MHz QPSK-Low CH)



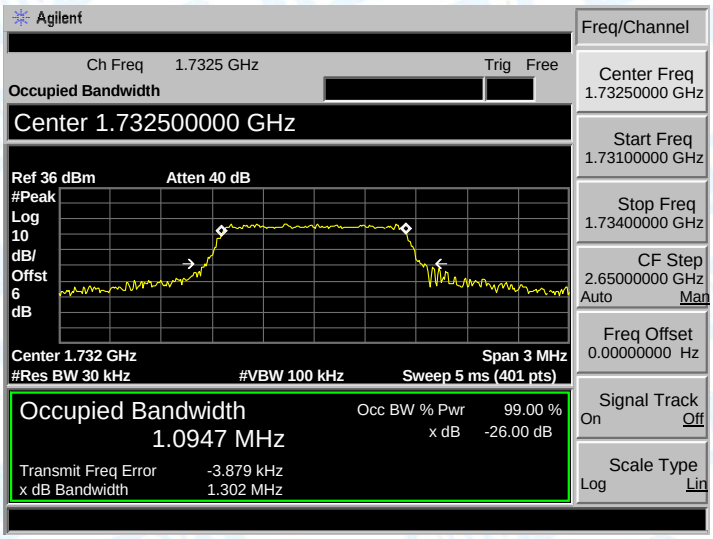
LTE BAND 4 (1.4MHz 16QAM-Low CH)



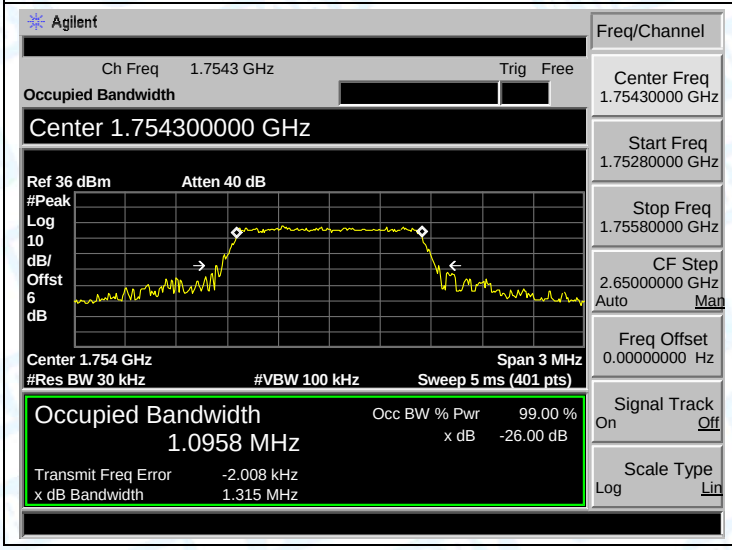
LTE BAND 4 (1.4MHz QPSK-Middle CH)



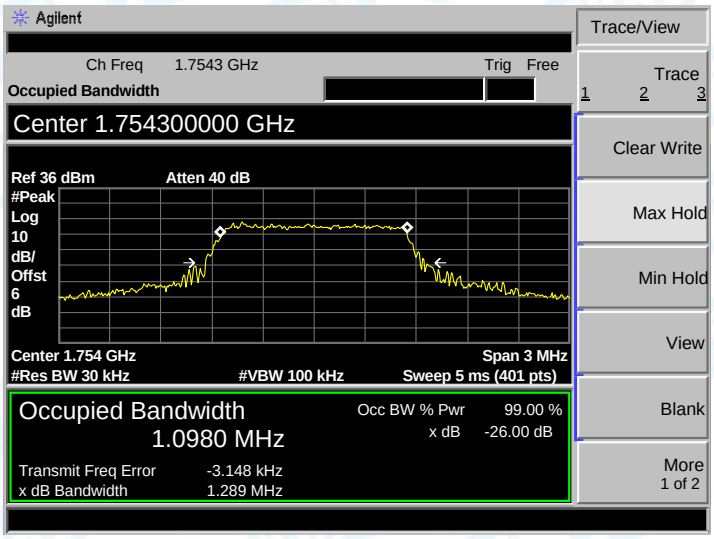
LTE BAND 4 (1.4MHz 16QAM- Middle CH)



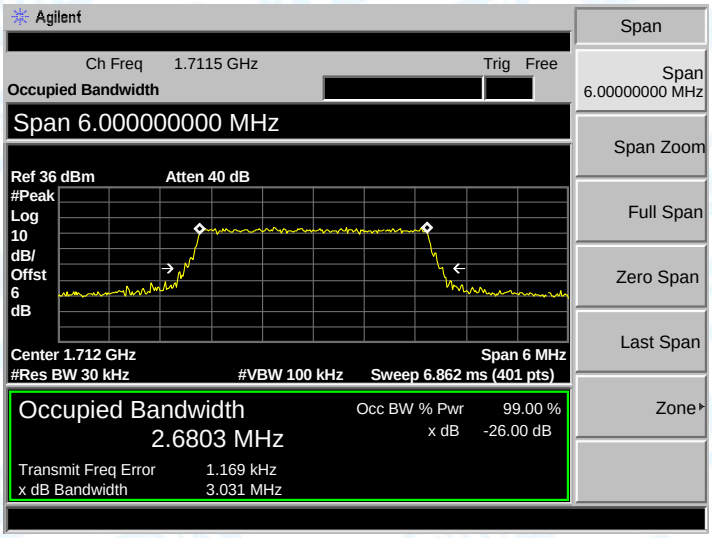
LTE BAND 4 (1.4MHz QPSK-High CH)



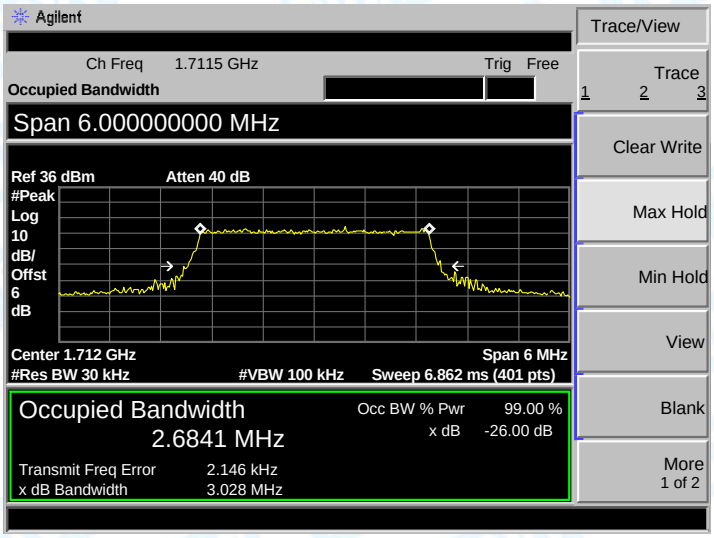
LTE BAND 4 (1.4MHz 16QAM-High CH)



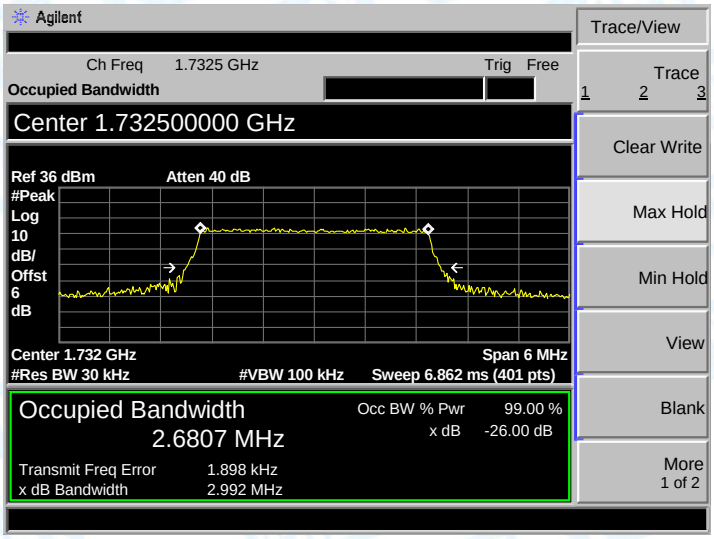
LTE BAND 4 (3MHz QPSK-Low CH)



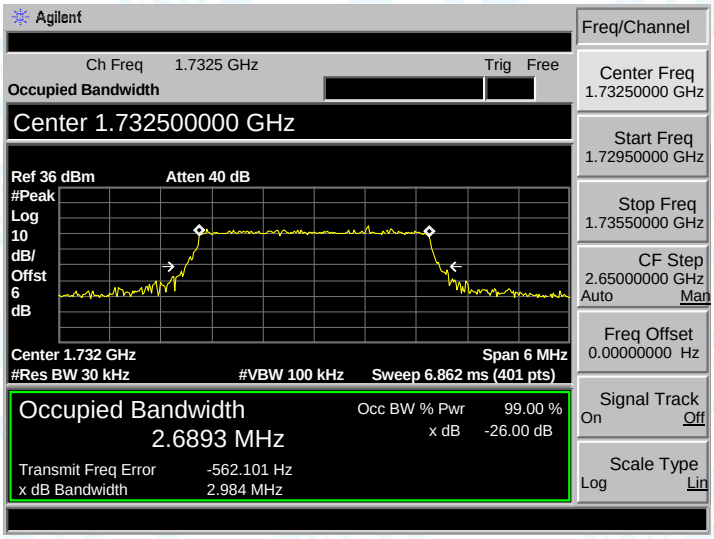
LTE BAND 4 (3MHz 16QAM-Low CH)



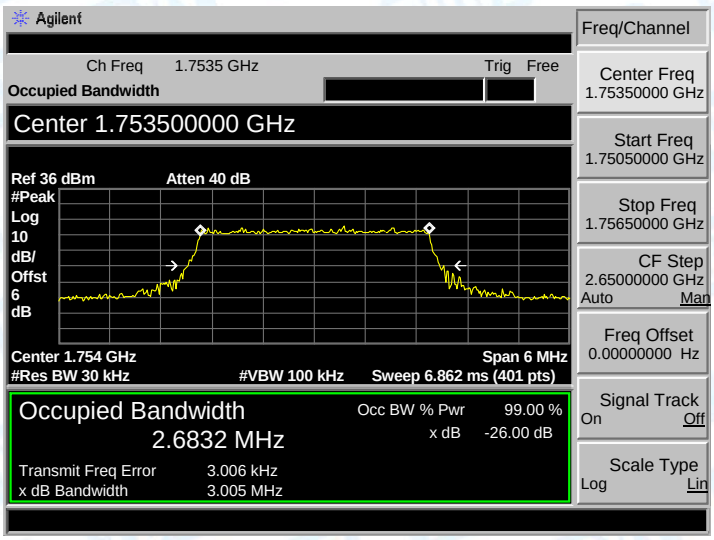
LTE BAND 4 (3MHz QPSK-Middle CH)



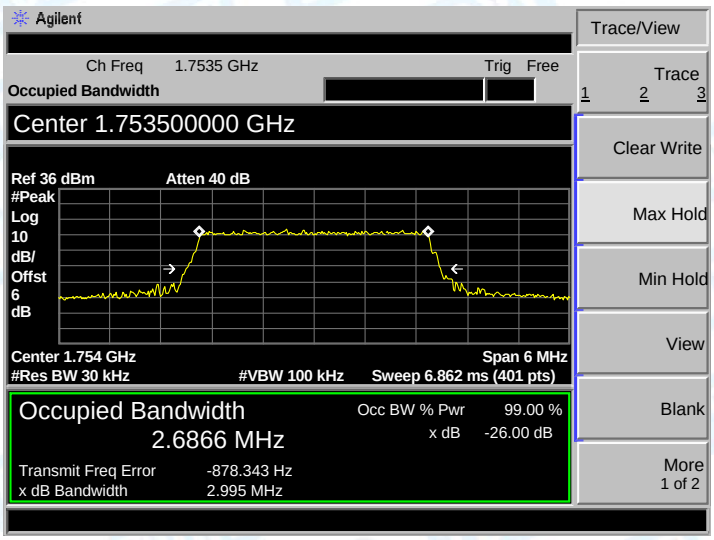
LTE BAND 4 (3MHz 16QAM- Middle CH)



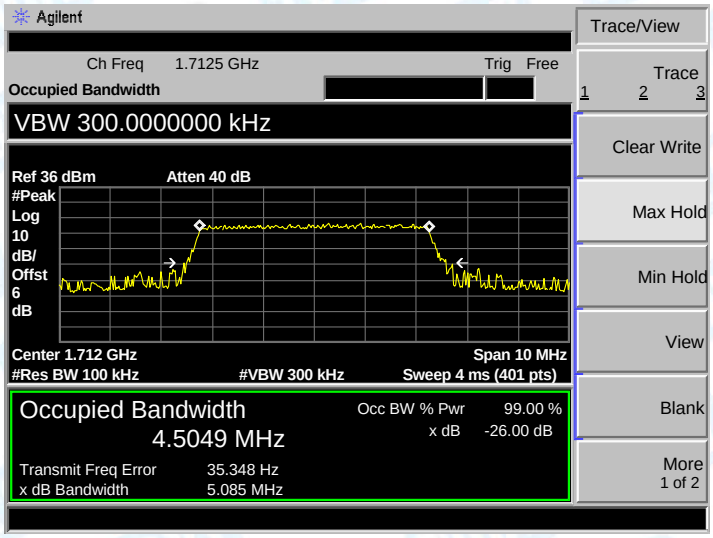
LTE BAND 4 (3MHz QPSK-High CH)



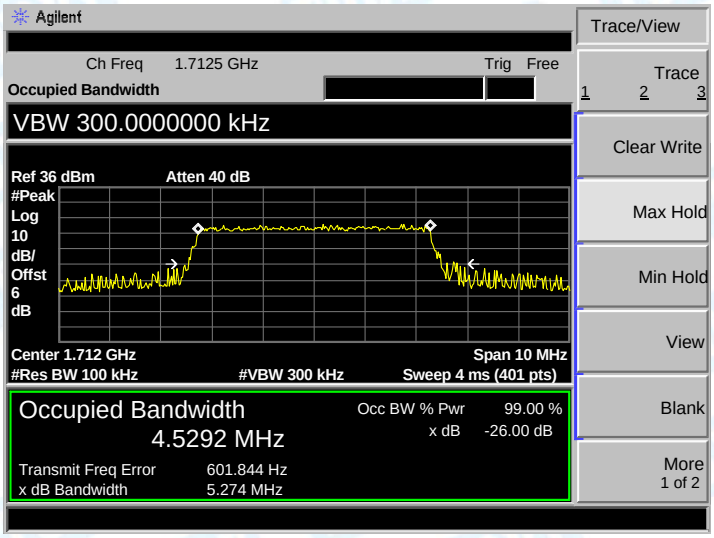
LTE BAND 4 (3MHz 16QAM-High CH)



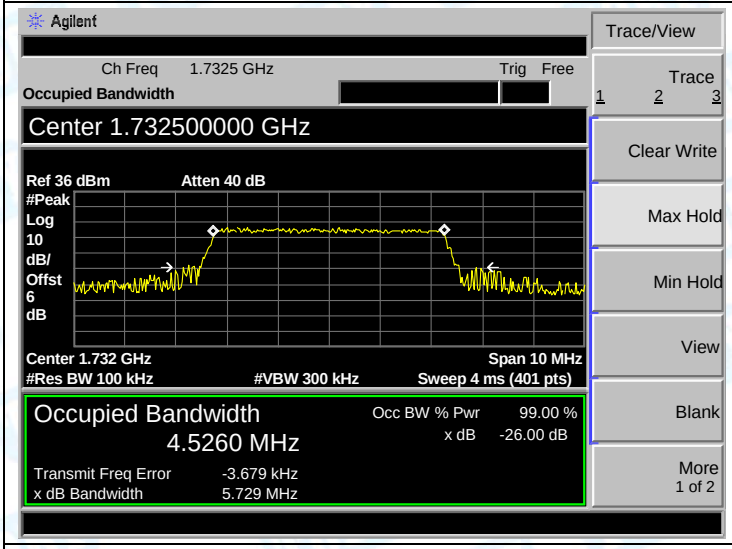
LTE BAND 4 (5MHz QPSK-Low CH)



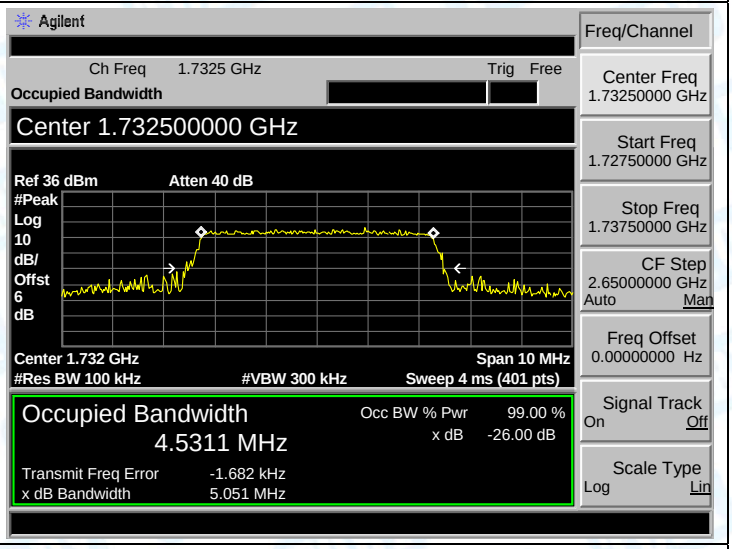
LTE BAND 4 (5MHz 16QAM-Low CH)



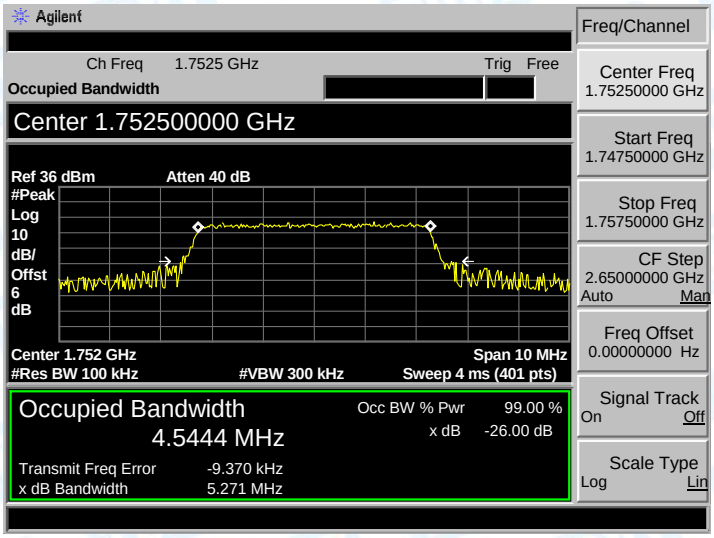
LTE BAND 4 (5MHz QPSK-Middle CH)



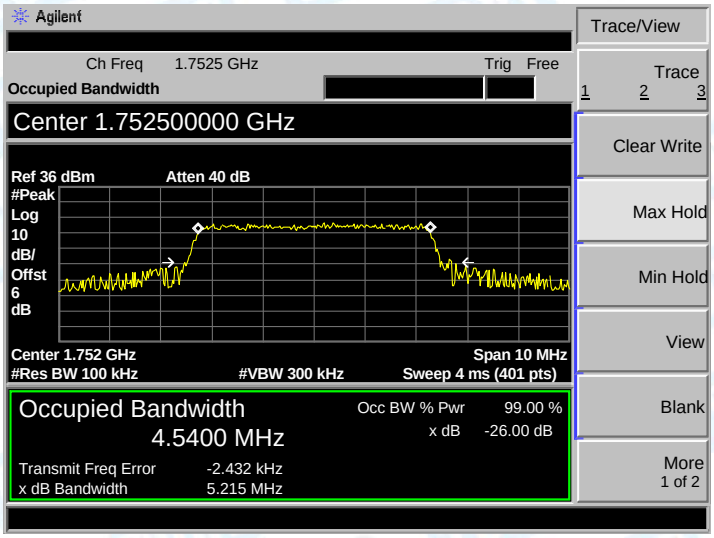
LTE BAND 4 (5MHz 16QAM- Middle CH)



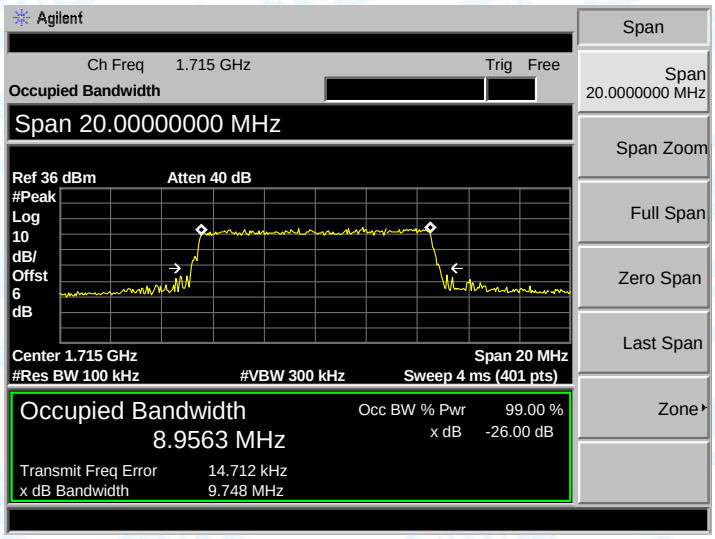
LTE BAND 4 (5MHz QPSK-High CH)



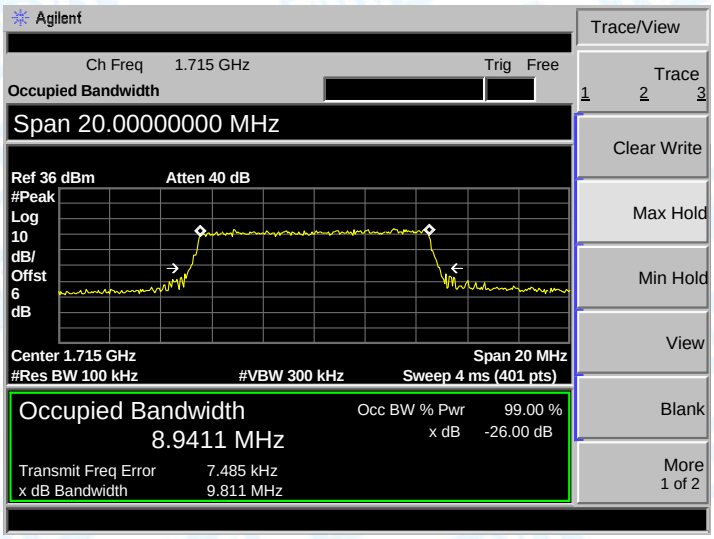
LTE BAND 4 (5MHz 16QAM-High CH)



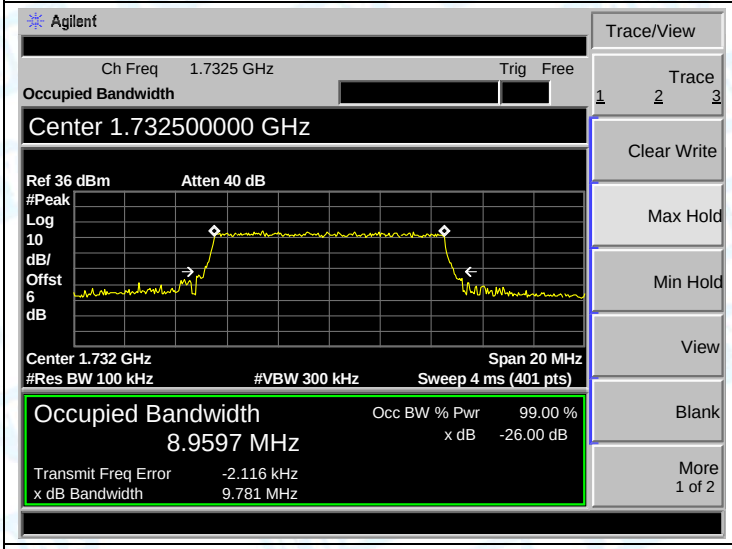
LTE BAND 4 (10MHz QPSK-Low CH)



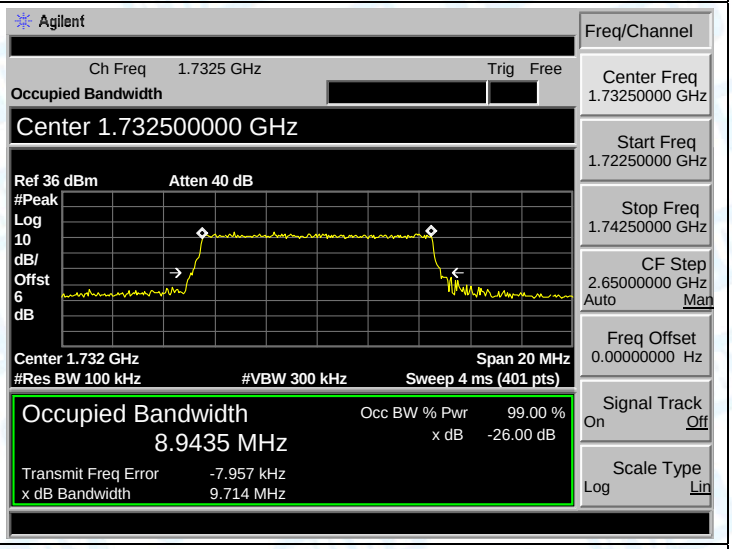
LTE BAND 4 (10MHz 16QAM-Low CH)



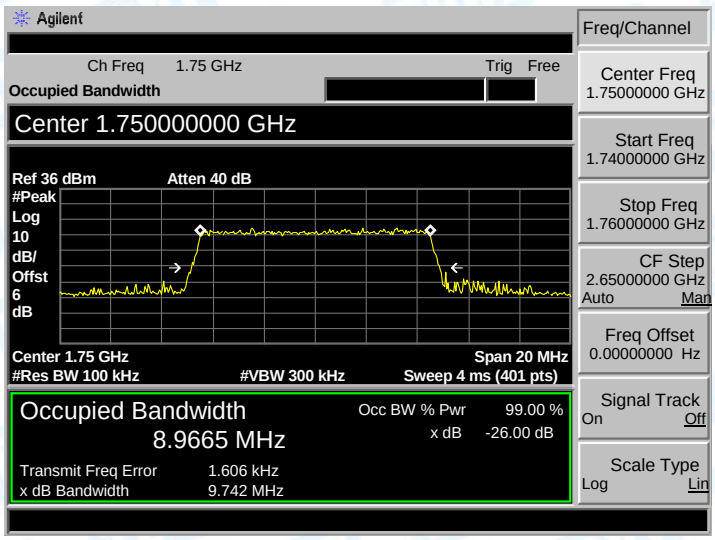
LTE BAND 4 (10MHz QPSK-Middle CH)



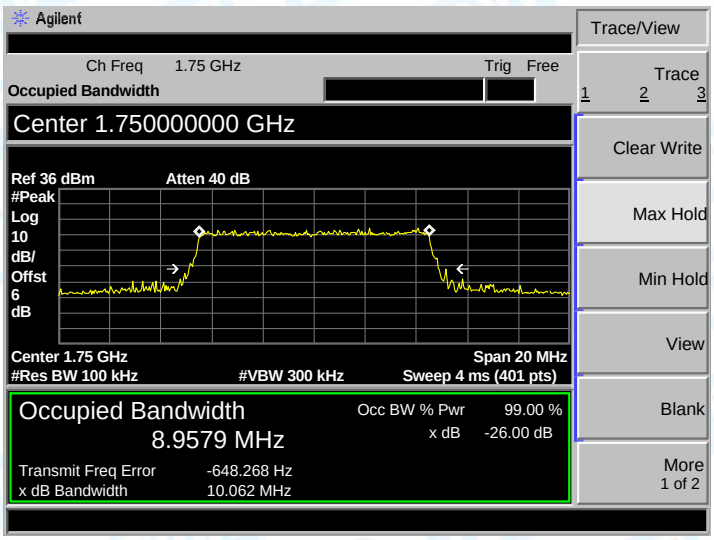
LTE BAND 4 (10MHz 16QAM- Middle CH)



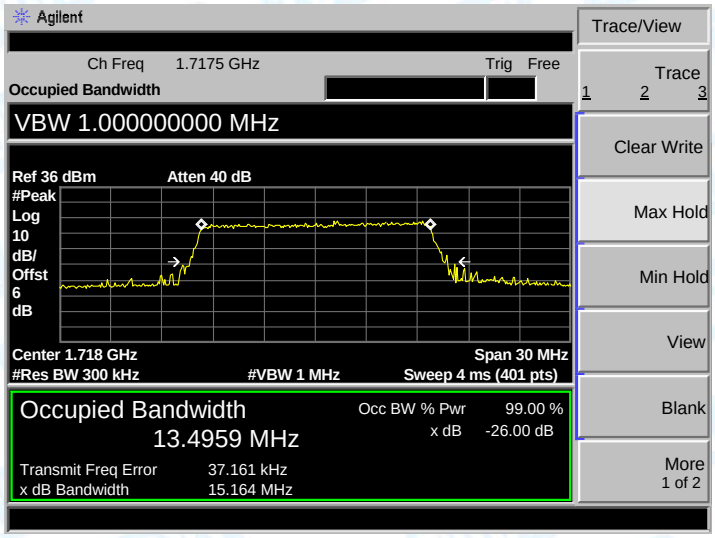
LTE BAND 4 (10MHz QPSK-High CH)



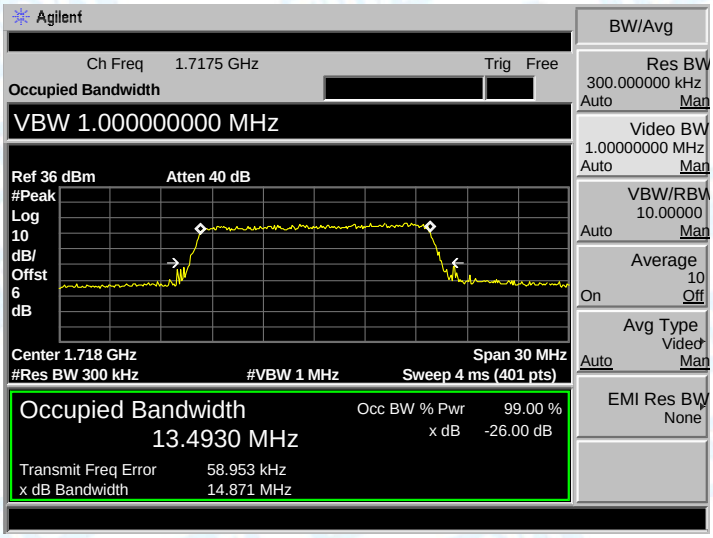
LTE BAND 4 (10MHz 16QAM-High CH)



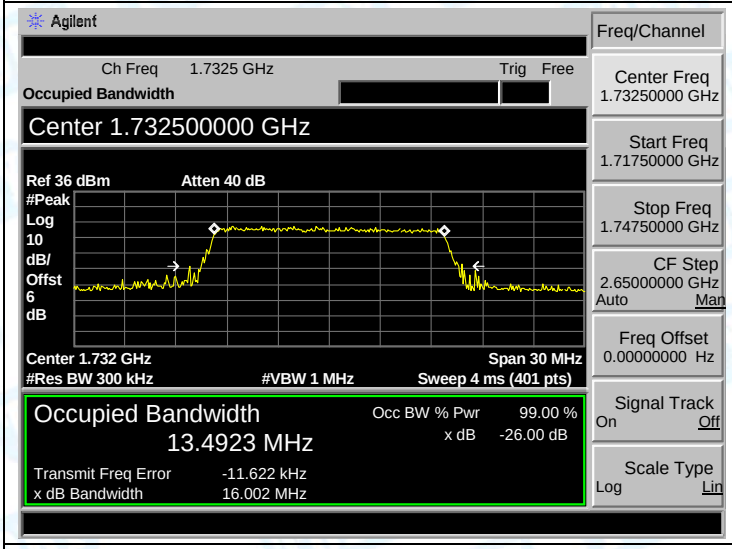
LTE BAND 4 (15MHz QPSK-Low CH)



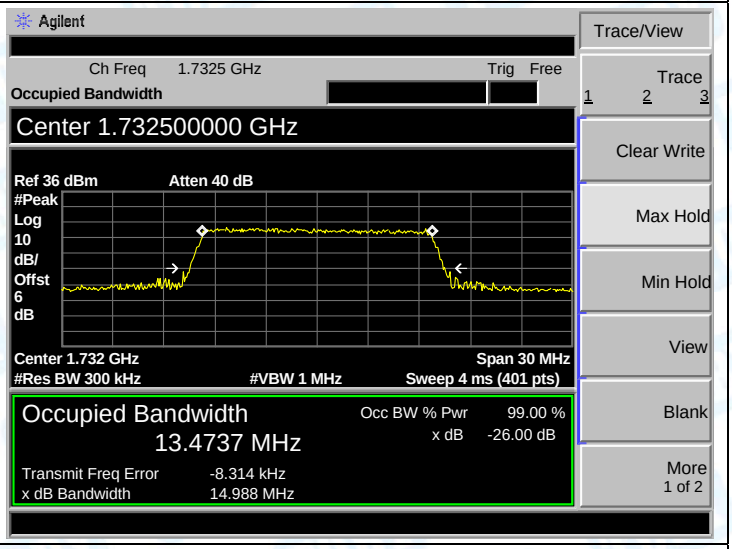
LTE BAND 4 (15MHz 16QAM-Low CH)



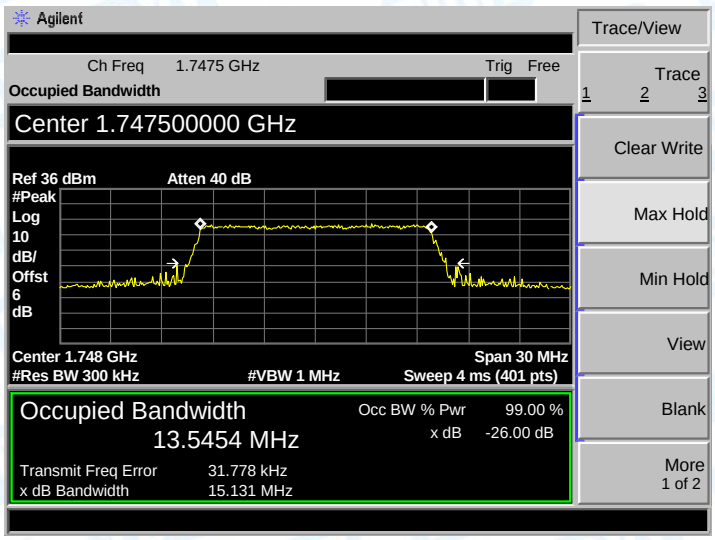
LTE BAND 4 (15MHz QPSK-Middle CH)



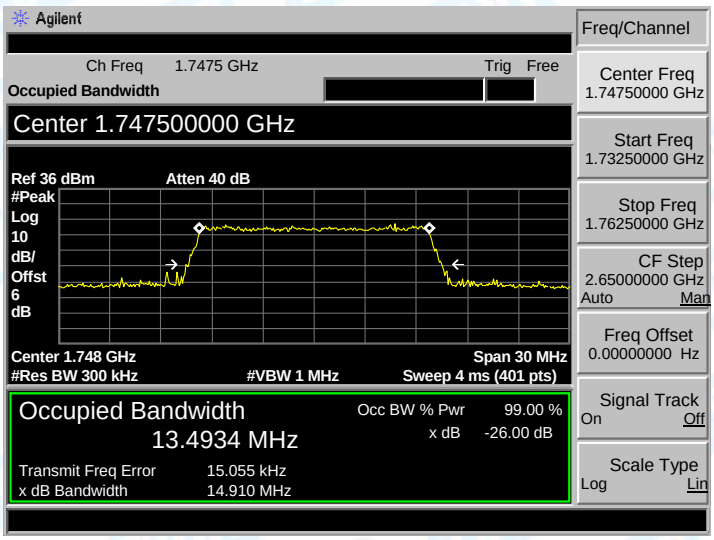
LTE BAND 4 (15MHz 16QAM- Middle CH)



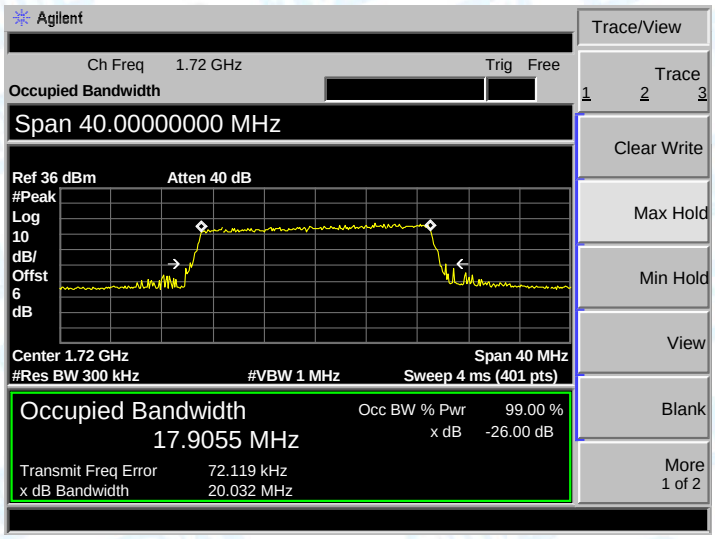
LTE BAND 4 (15MHz QPSK-High CH)



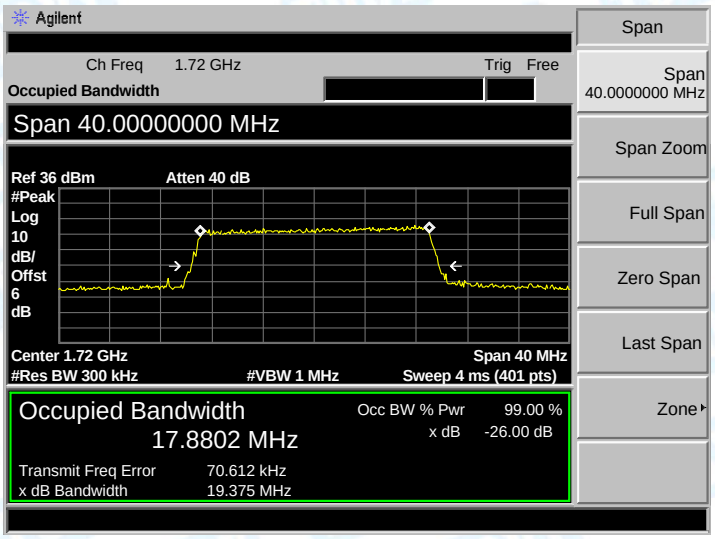
LTE BAND 4 (15MHz 16QAM-High CH)



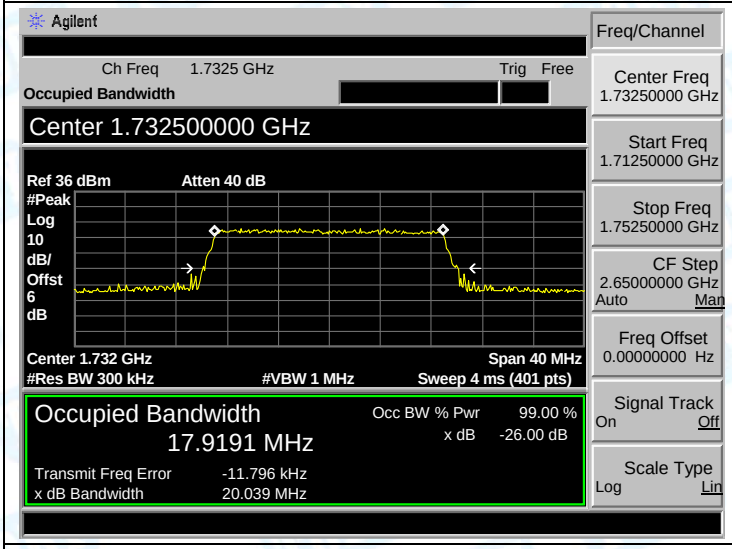
LTE BAND 4 (20MHz QPSK-Low CH)



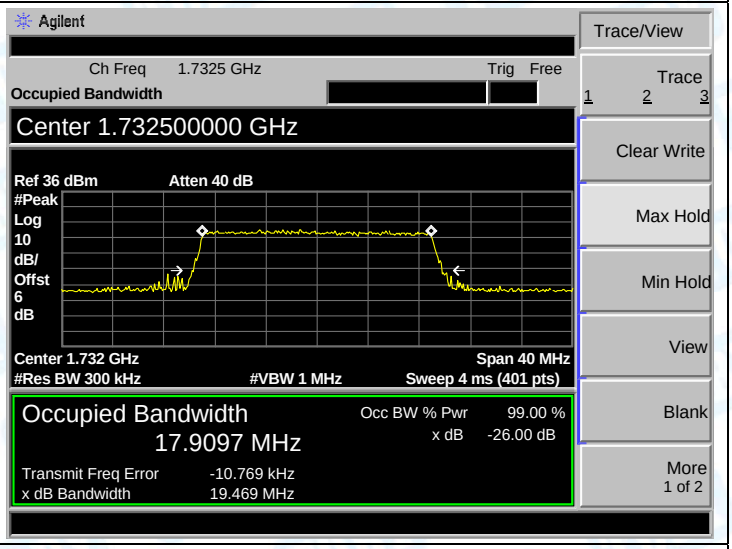
LTE BAND 4 (20MHz 16QAM-Low CH)



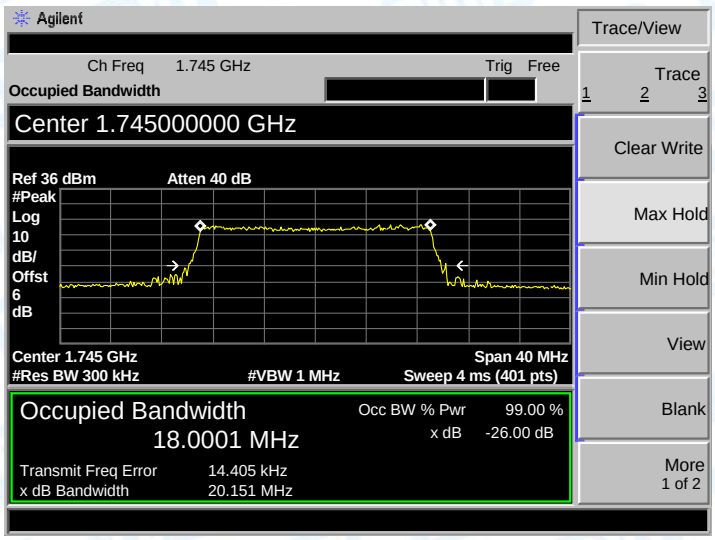
LTE BAND 4 (20MHz QPSK-Middle CH)



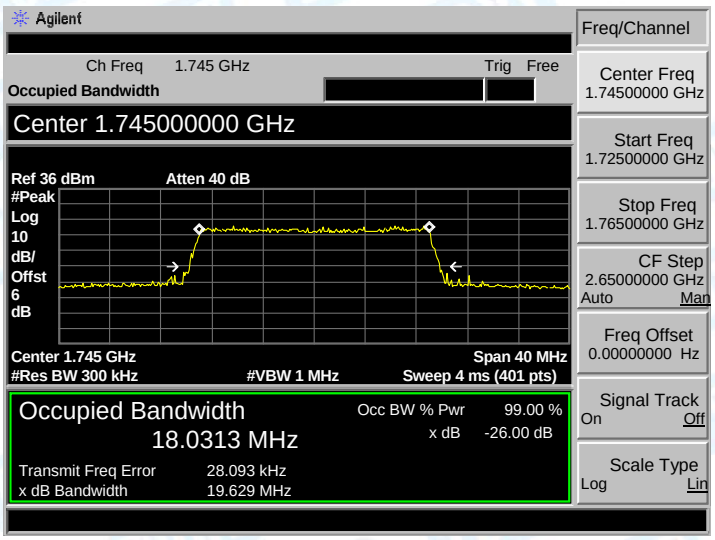
LTE BAND 4 (20MHz 16QAM- Middle CH)



LTE BAND 4 (20MHz QPSK-High CH)

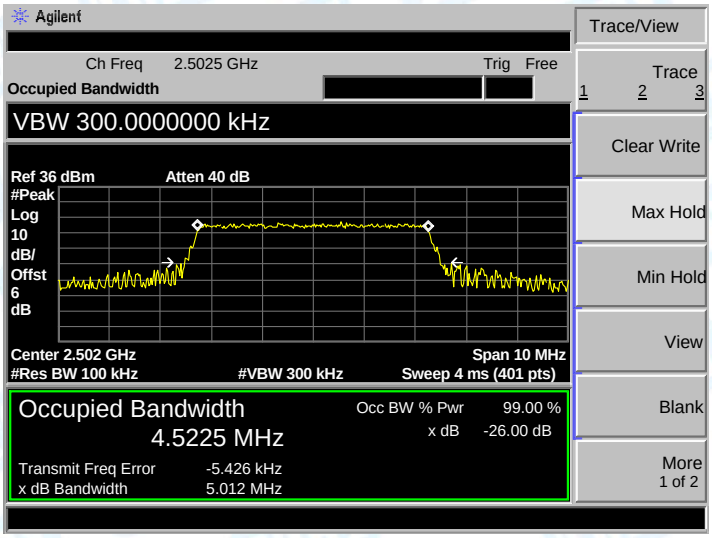


LTE BAND 4 (20MHz 16QAM-High CH)

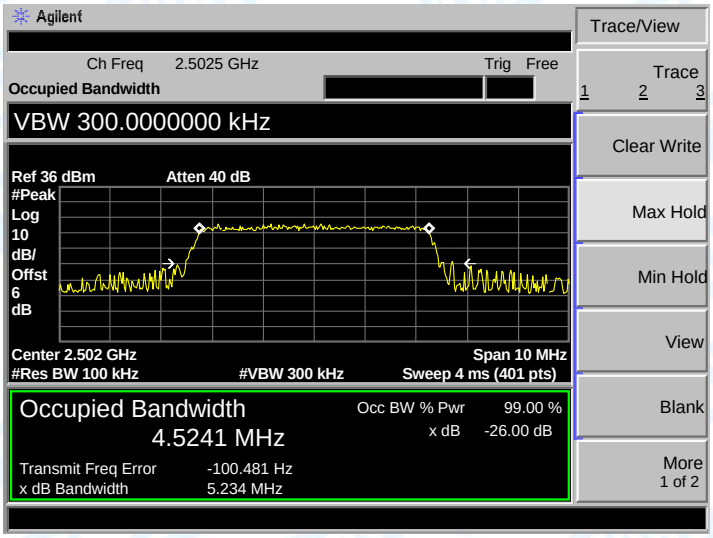


Occupy Bandwidth Test Plot

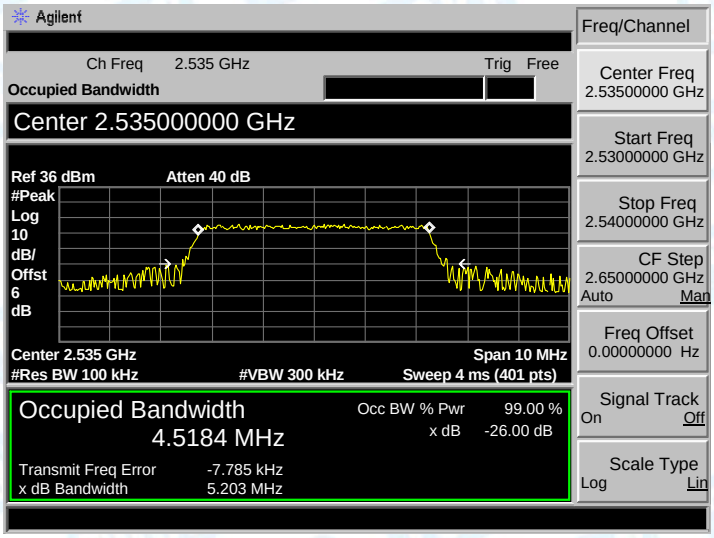
LTE BAND 7 (5MHz QPSK-Low CH)



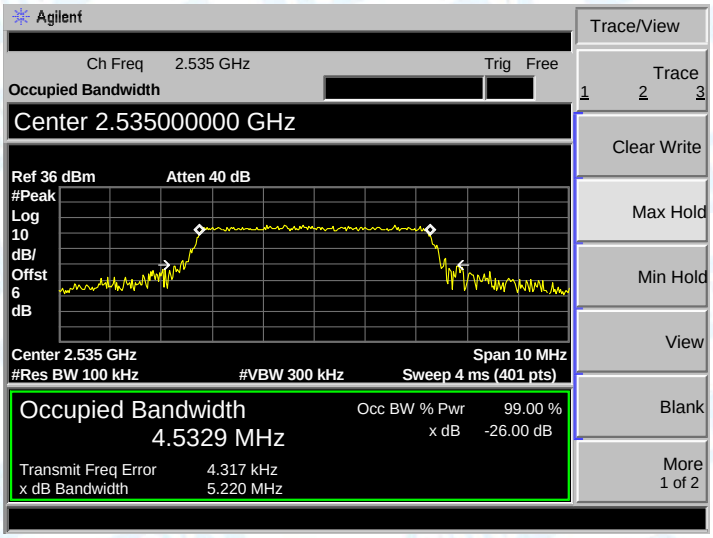
LTE BAND 7 (5MHz 16QAM-Low CH)



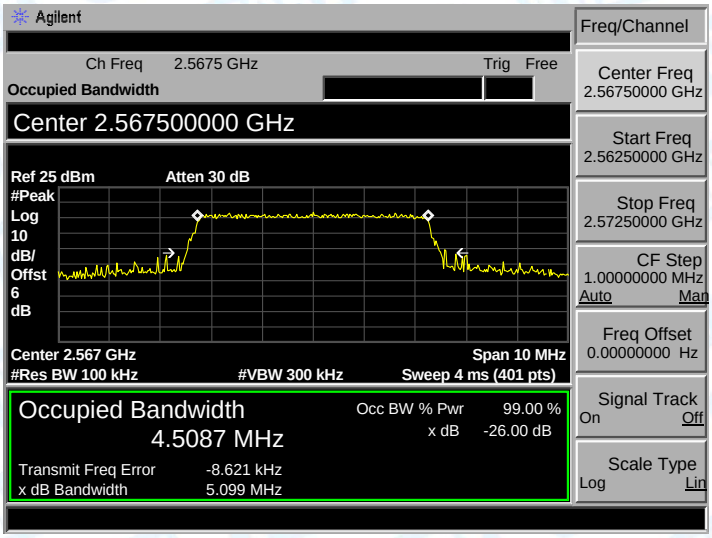
LTE BAND 7 (5MHz QPSK-Middle CH)



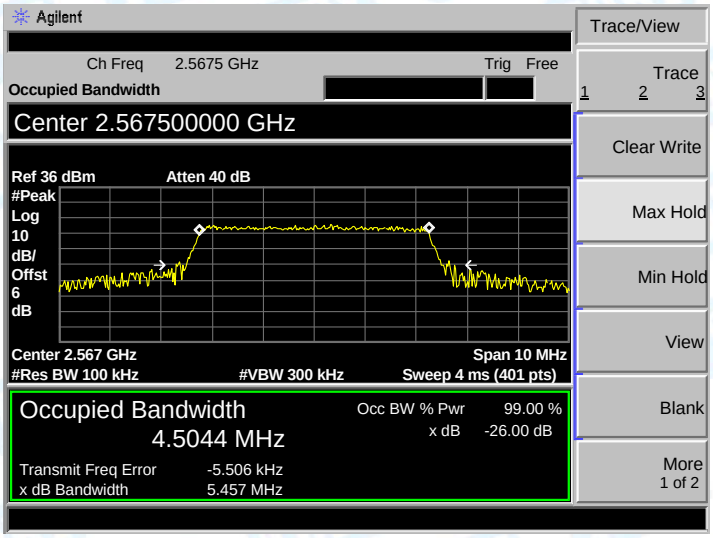
LTE BAND 7 (5MHz 16QAM- Middle CH)



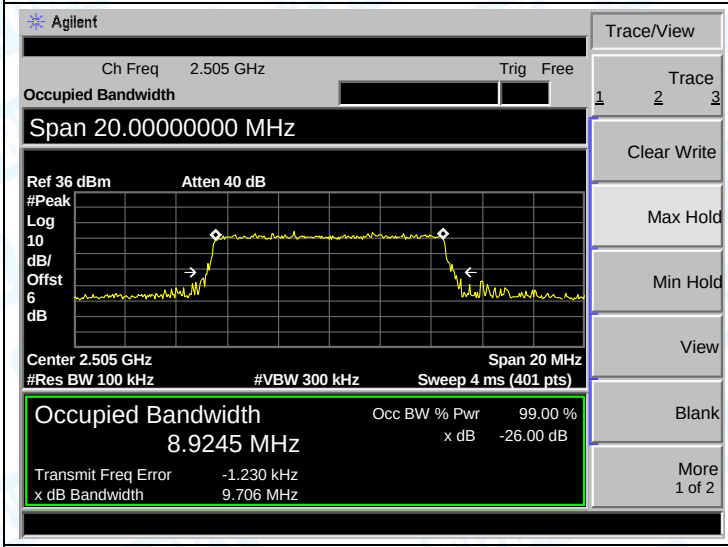
LTE BAND 7 (5MHz QPSK-High CH)



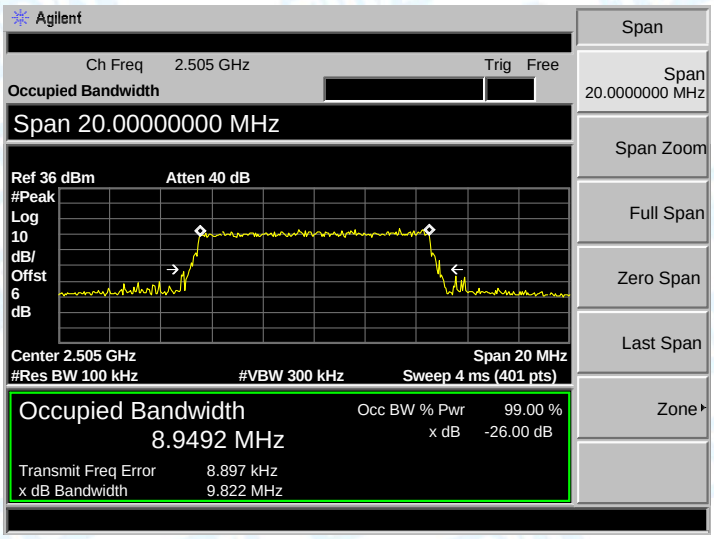
LTE BAND 7 (5MHz 16QAM-High CH)



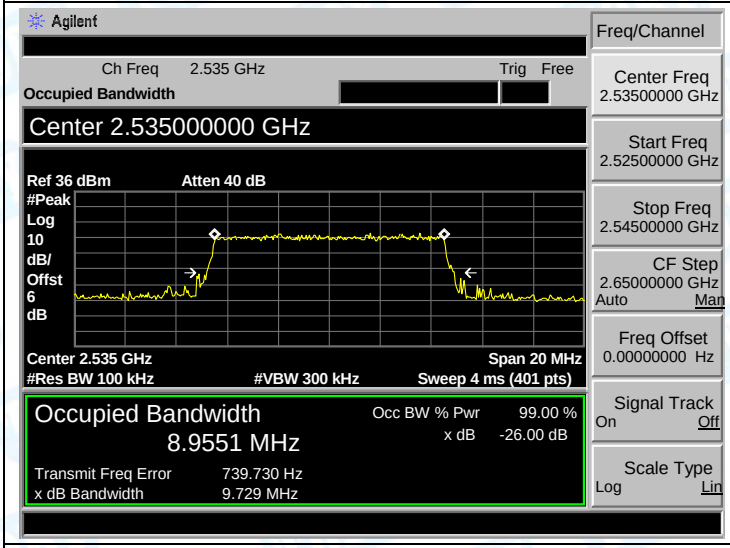
LTE BAND 7 (10MHz QPSK-Low CH)



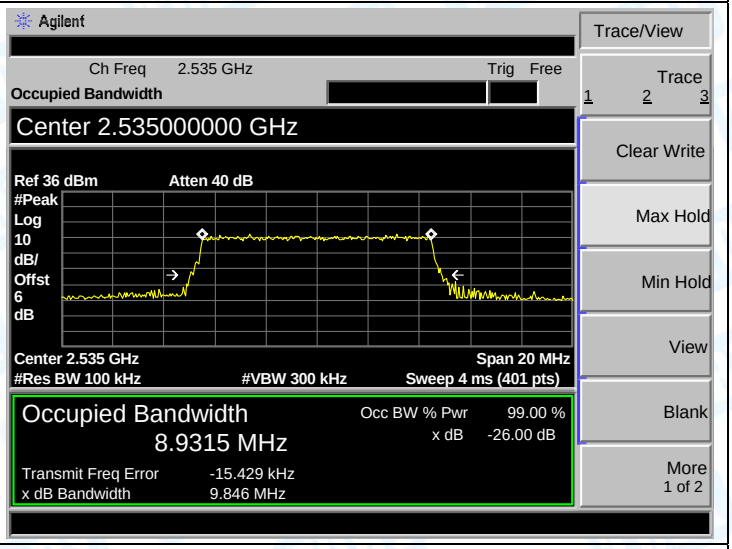
LTE BAND 7 (10MHz 16QAM-Low CH)



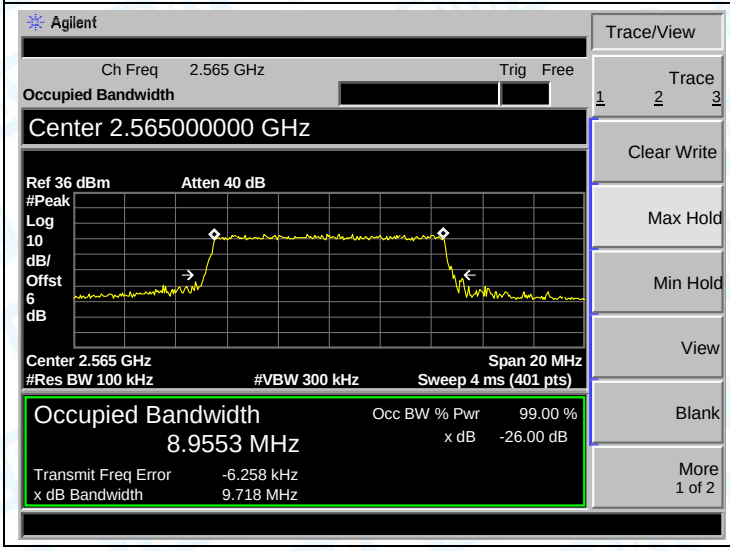
LTE BAND 7 (10MHz QPSK-Middle CH)



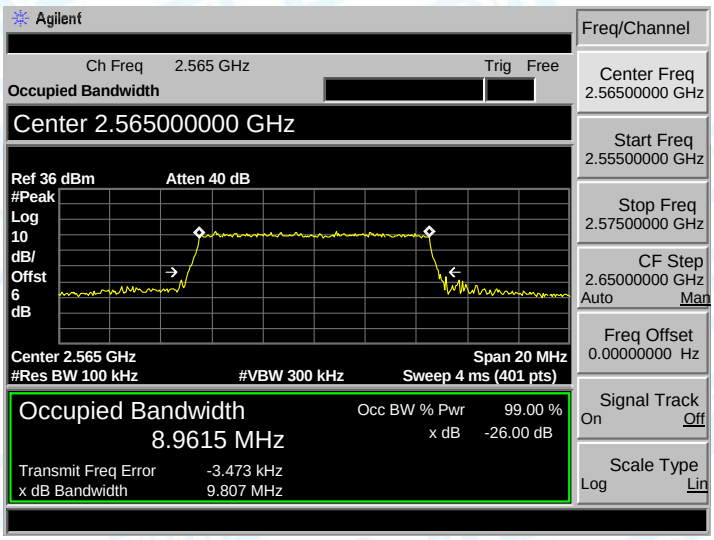
LTE BAND 7 (10MHz 16QAM- Middle CH)



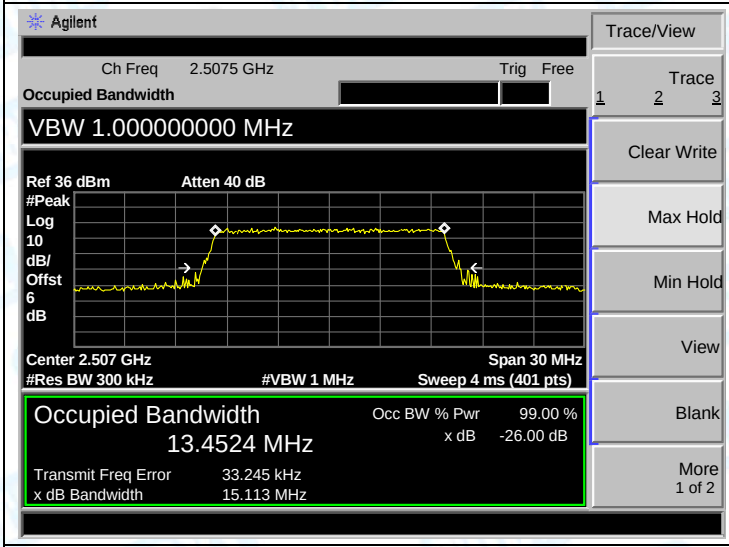
LTE BAND 7 (10MHz QPSK-High CH)



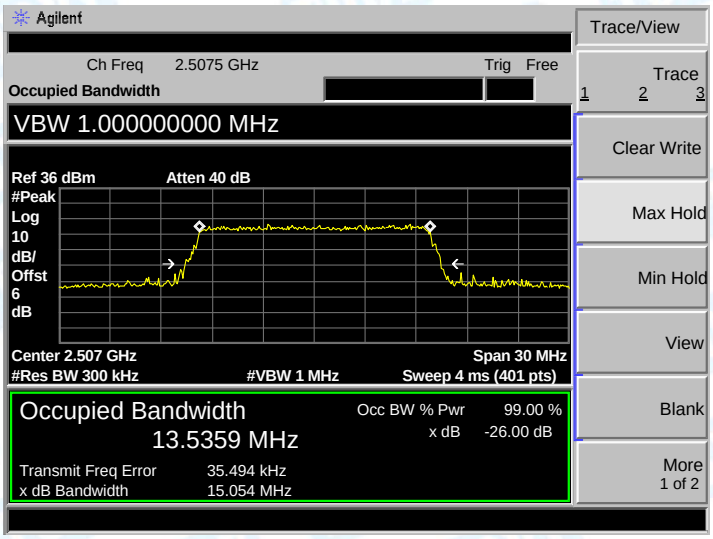
LTE BAND 7 (10MHz 16QAM-High CH)



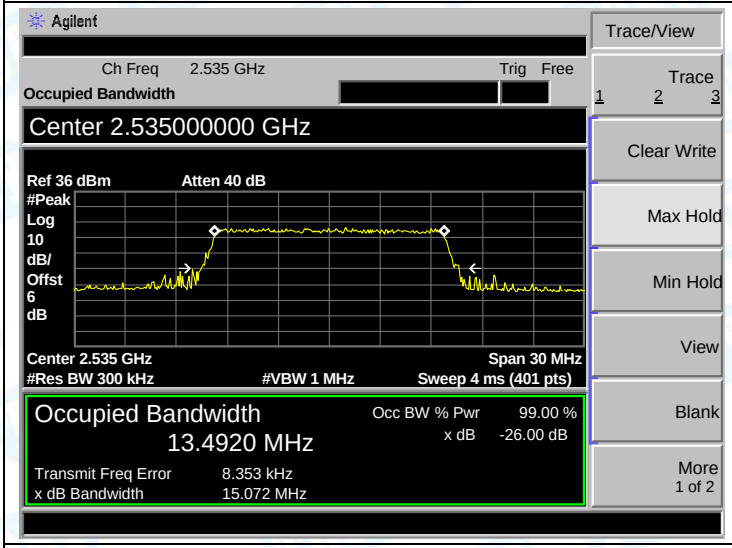
LTE BAND 7 (15MHz QPSK-Low CH)



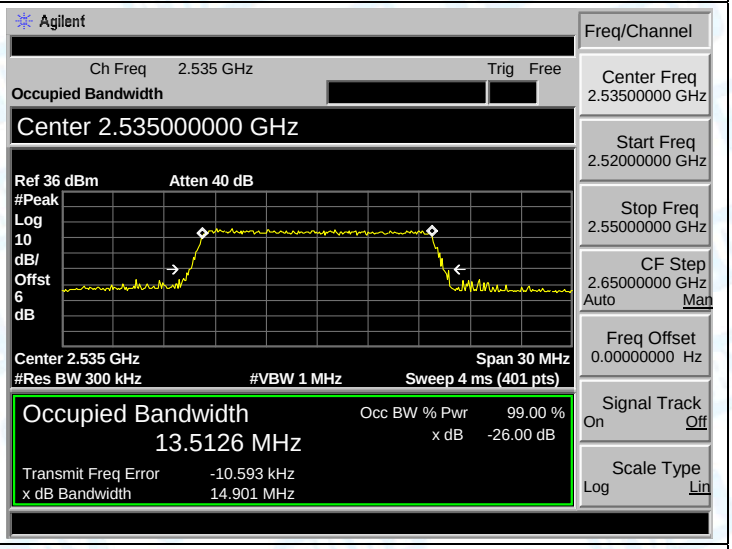
LTE BAND 7 (15MHz 16QAM-Low CH)



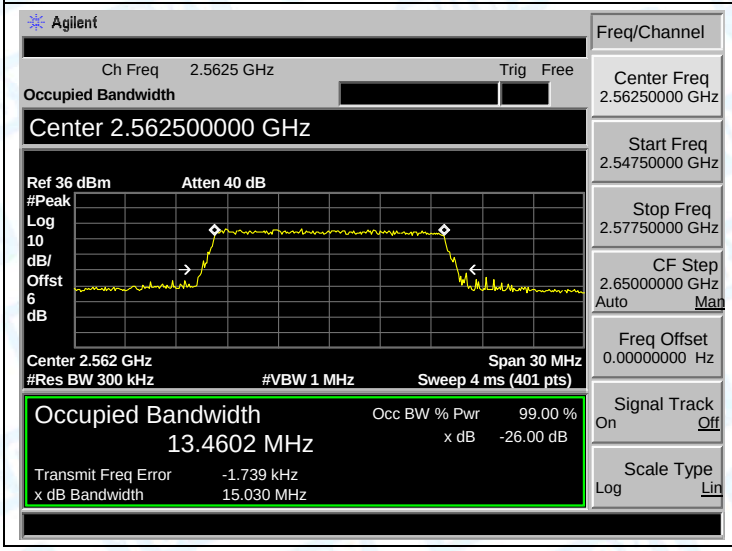
LTE BAND 7 (15MHz QPSK-Middle CH)



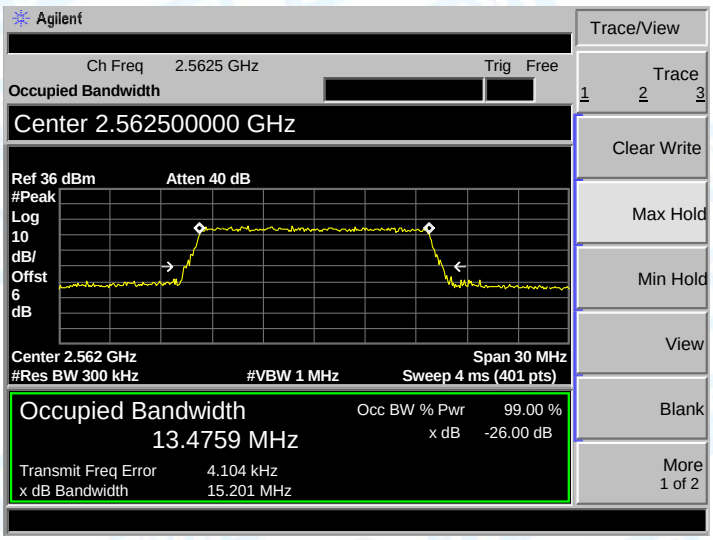
LTE BAND 7 (15MHz 16QAM- Middle CH)



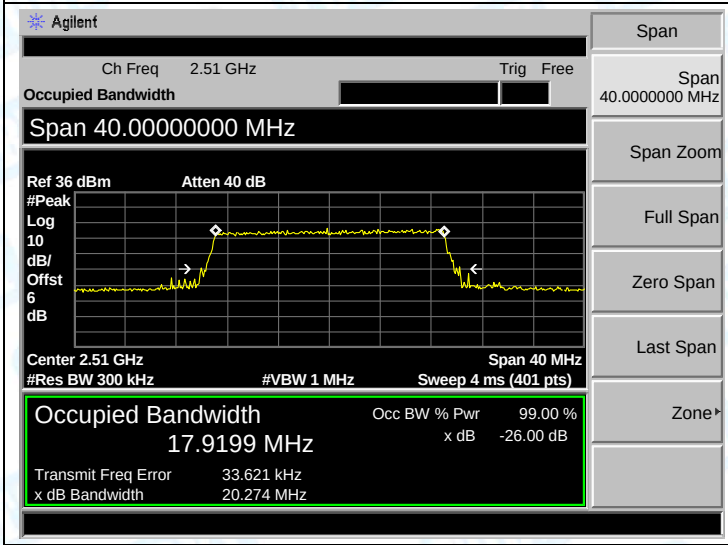
LTE BAND 7 (15MHz QPSK-High CH)



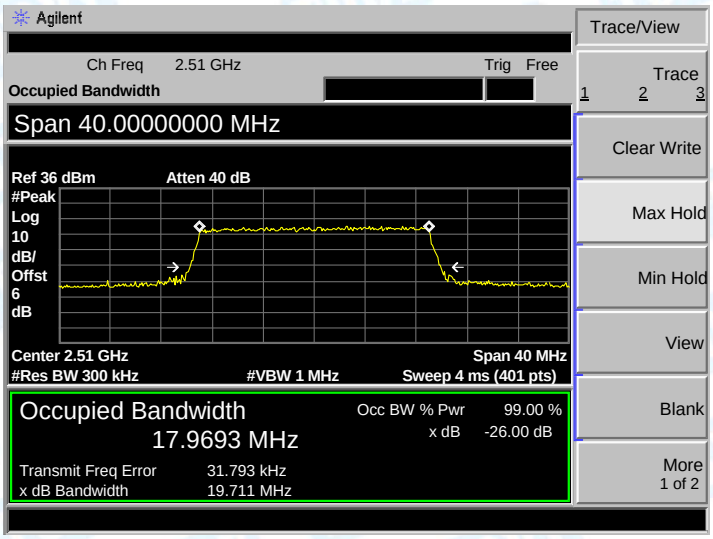
LTE BAND 7 (15MHz 16QAM-High CH)



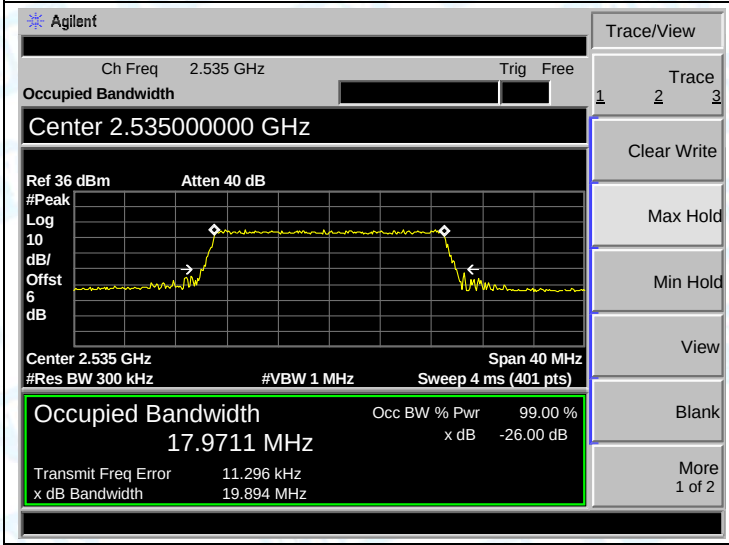
LTE BAND 7 (20MHz QPSK-Low CH)



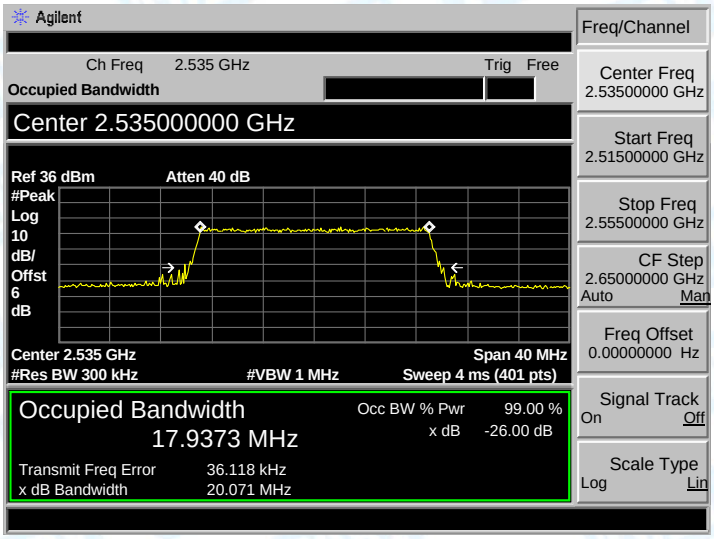
LTE BAND 7 (20MHz 16QAM-Low CH)



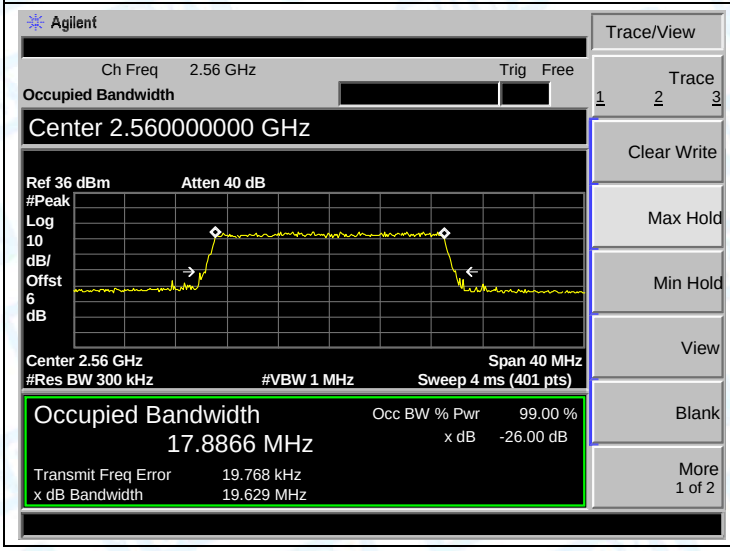
LTE BAND 7 (20MHz QPSK-Middle CH)



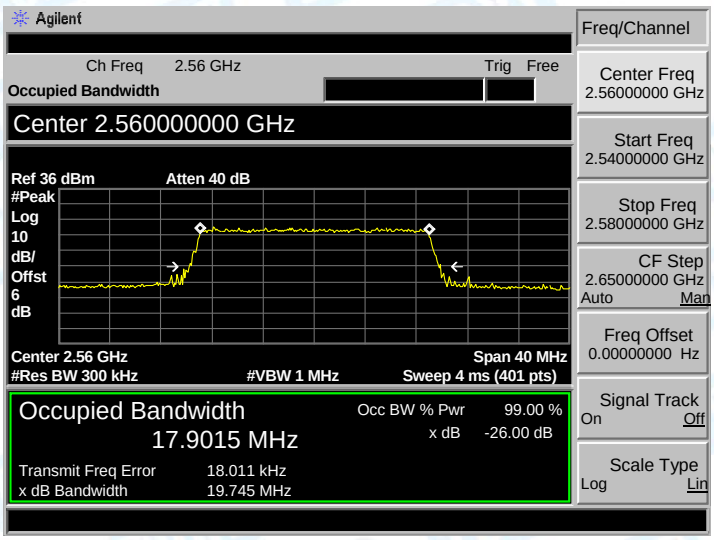
LTE BAND 7 (20MHz 16QAM- Middle CH)



LTE BAND 7 (20MHz QPSK-High CH)

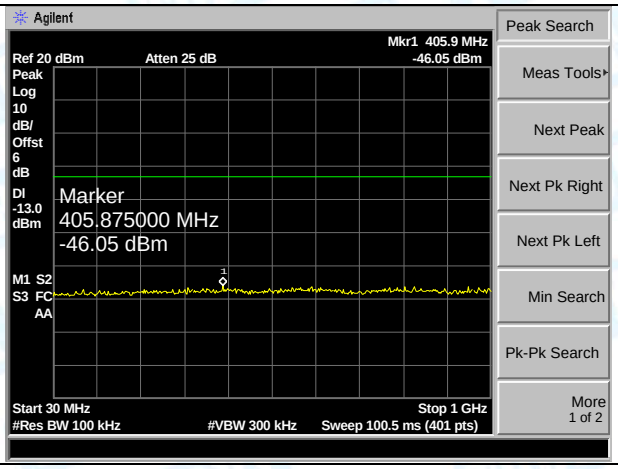
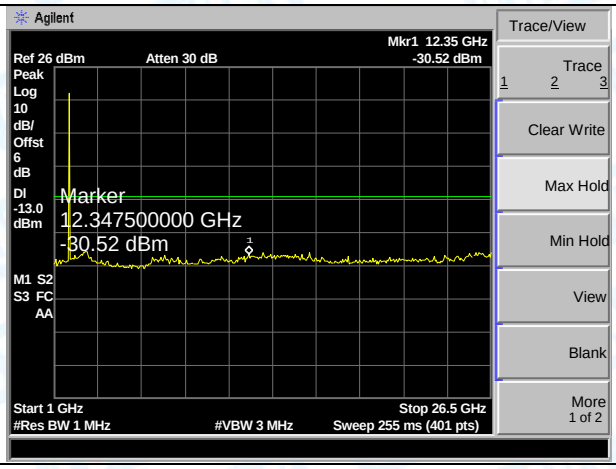
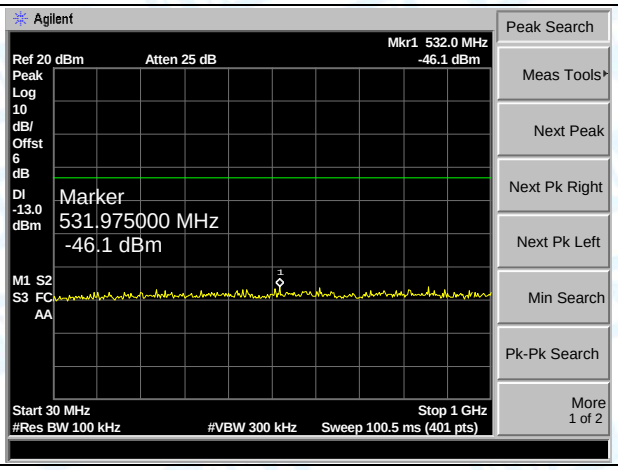
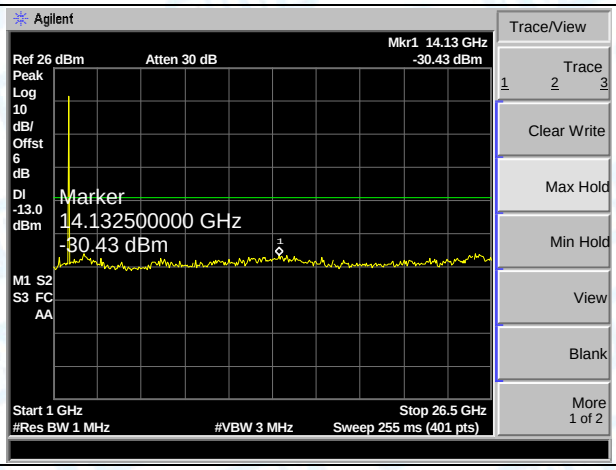
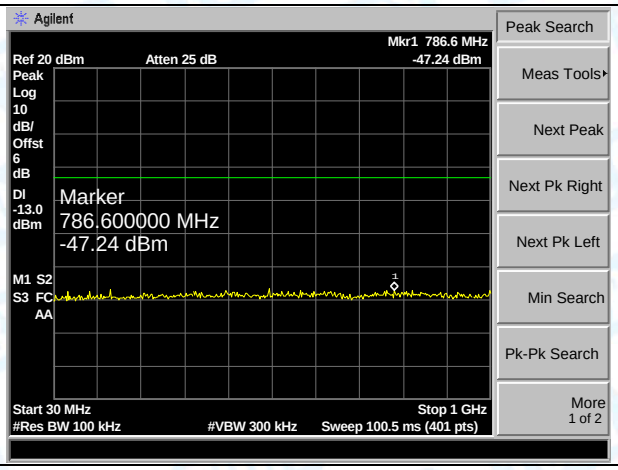
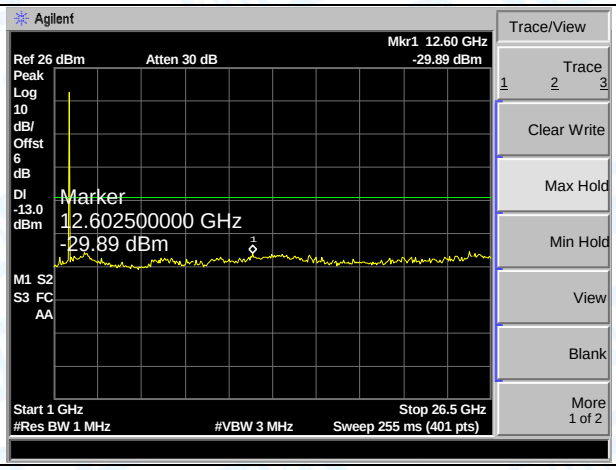


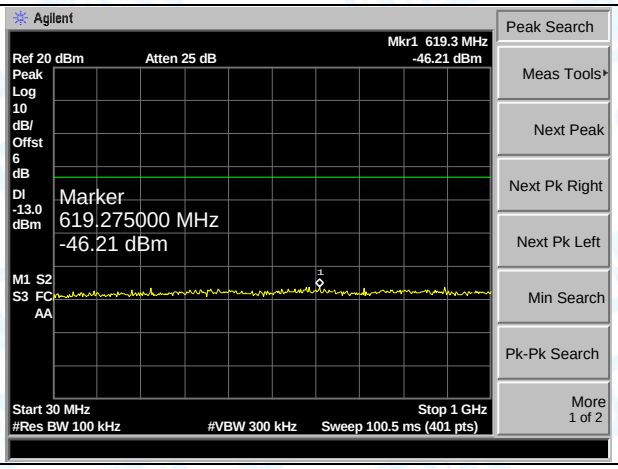
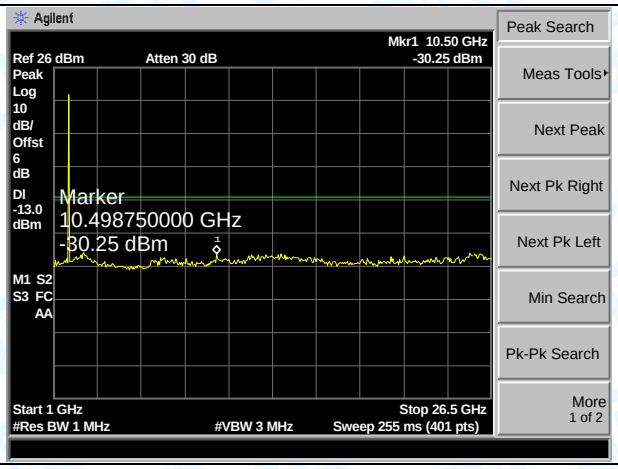
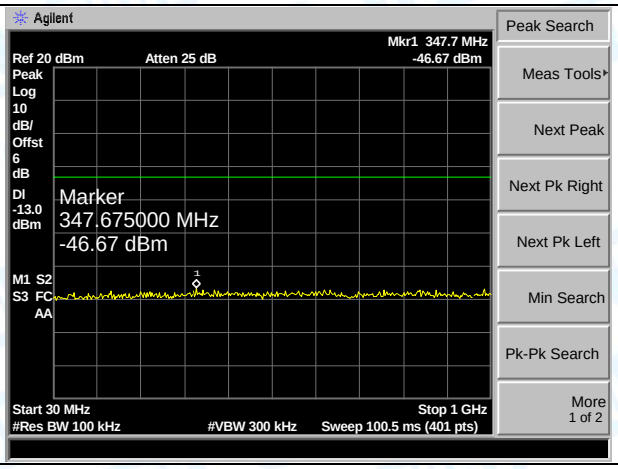
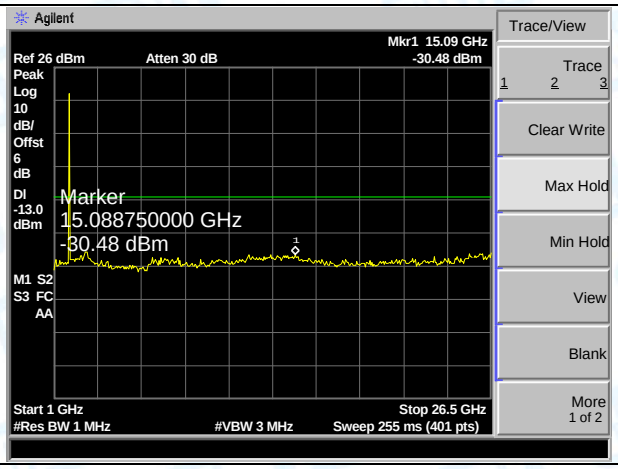
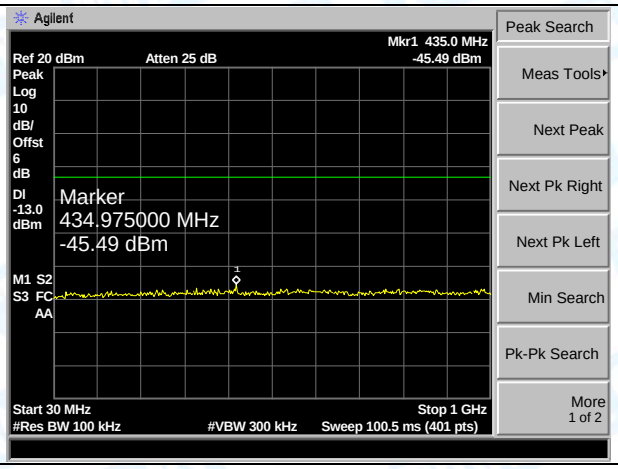
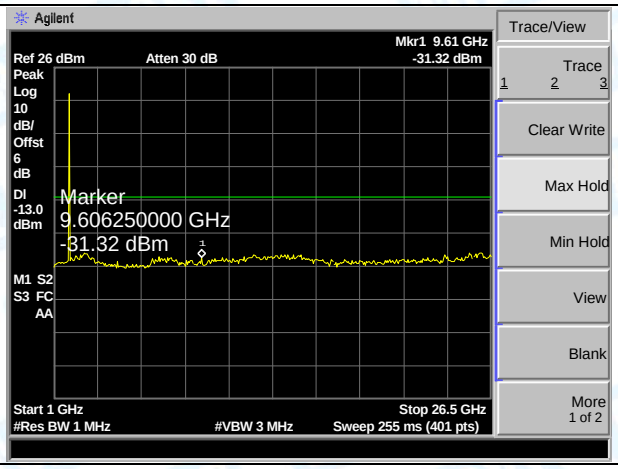
LTE BAND 7 (20MHz 16QAM-High CH)



ATTACHMENT D--OUT OF BAND EMISSION AT ANTENNA TERMINALS

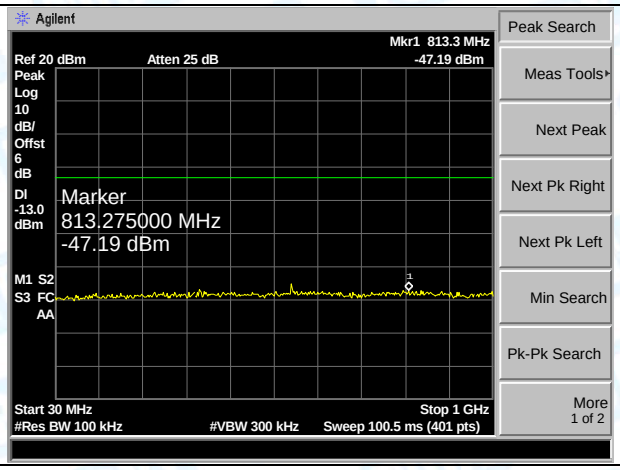
Only show the worst case(LTE BAND 2/4/7 QPSK Mode)

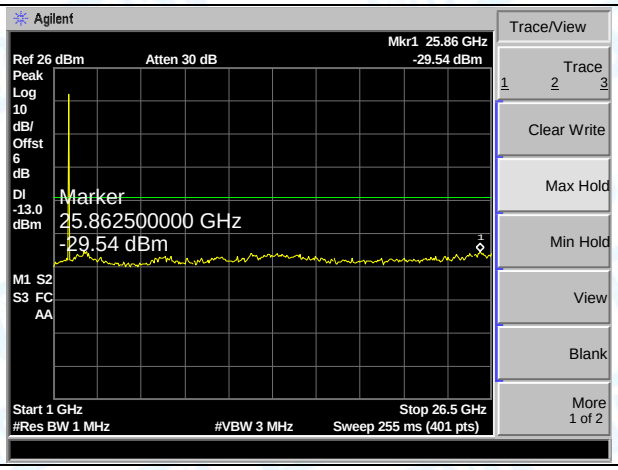
30MHz-1GHz	1GHz-26.5GHz
LTE BAND 2 (1.4MHz RB Size 6& RB Offset 0 QPSK-Low CH)	
	
LTE BAND 2 (1.4MHz RB Size 6& RB Offset 0 QPSK-Middle CH)	
	
LTE BAND 2 (1.4MHz RB Size 6& RB Offset 0 QPSK-High CH)	
	

30MHz-1GHz	1GHz-26.5GHz
LTE BAND 2 (3MHz RB Size 15& RB Offset 0 QPSK-Low CH)	
	
LTE BAND 2 (3MHz RB Size 15& RB Offset 0 QPSK-Middle CH)	
	
LTE BAND 2 (3MHz RB Size 15& RB Offset 0 QPSK-High CH)	
	

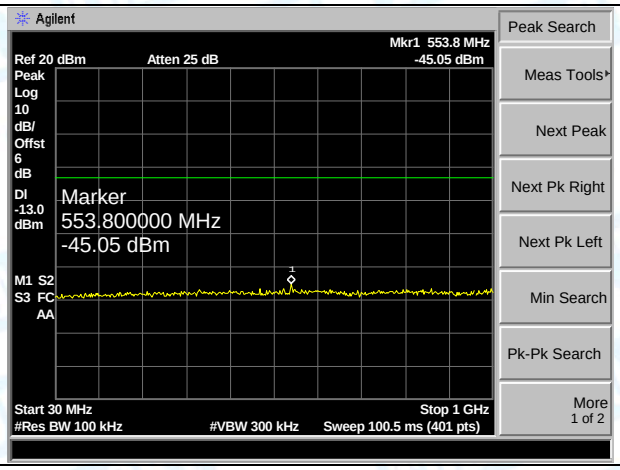
30MHz-1GHz	1GHz-26.5GHz

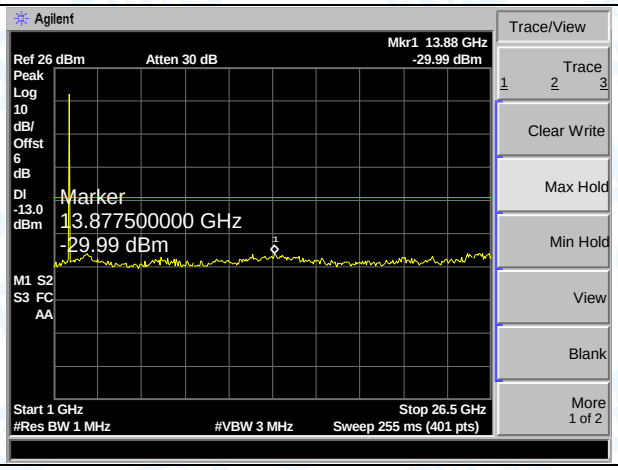
LTE BAND 2 (5MHz RB Size 25& RB Offset 0 QPSK-Low CH)



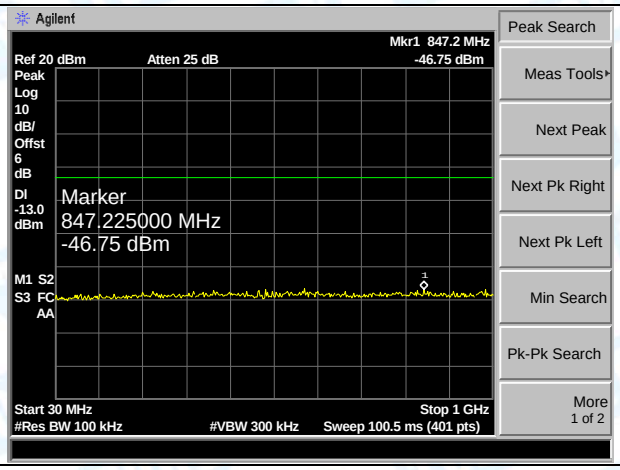


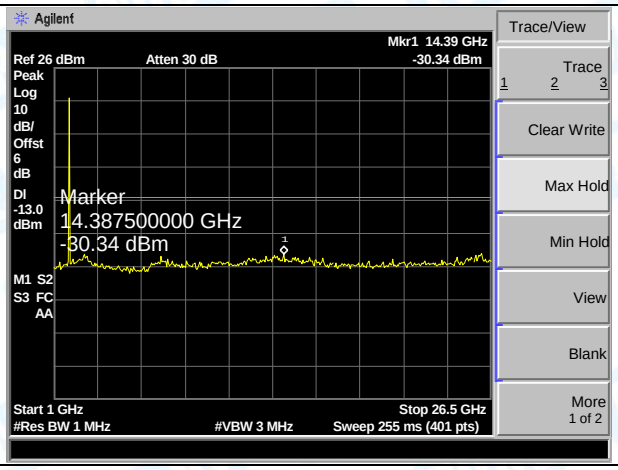
LTE BAND 2 (5MHz RB Size 25& RB Offset 0 QPSK-Middle CH)

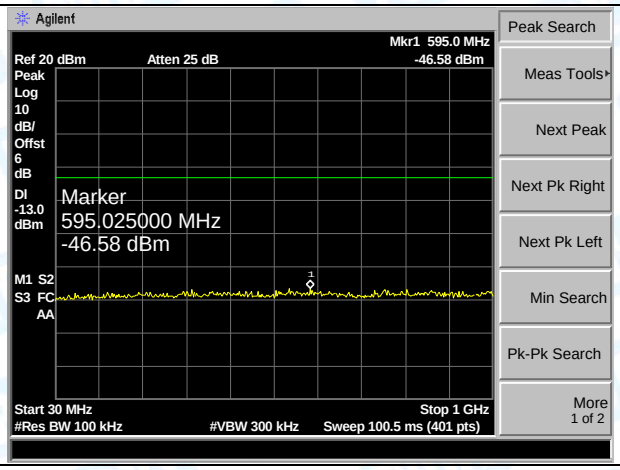
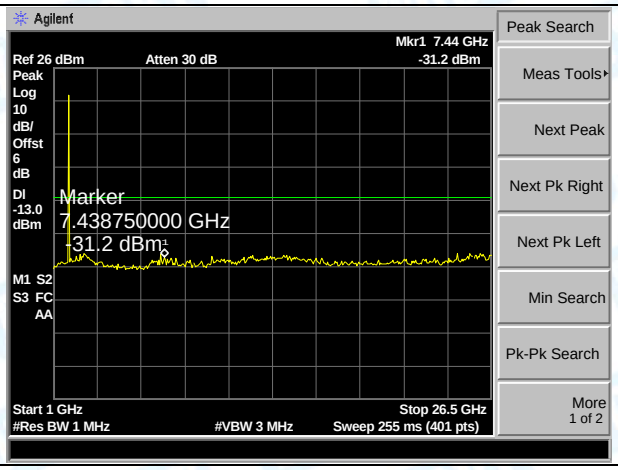
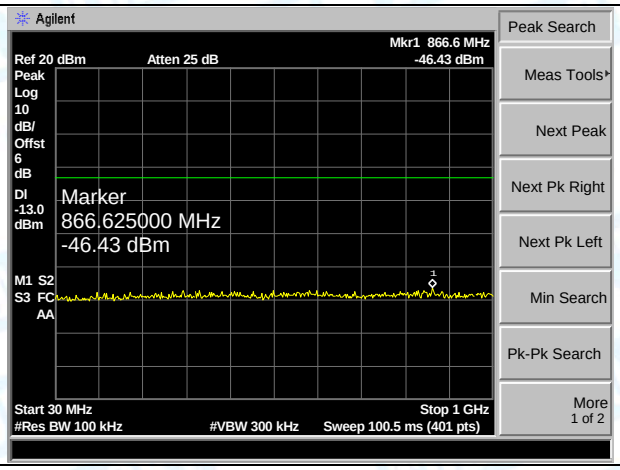
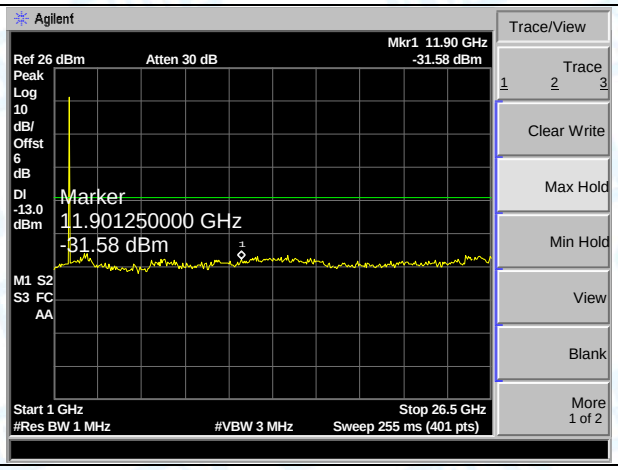
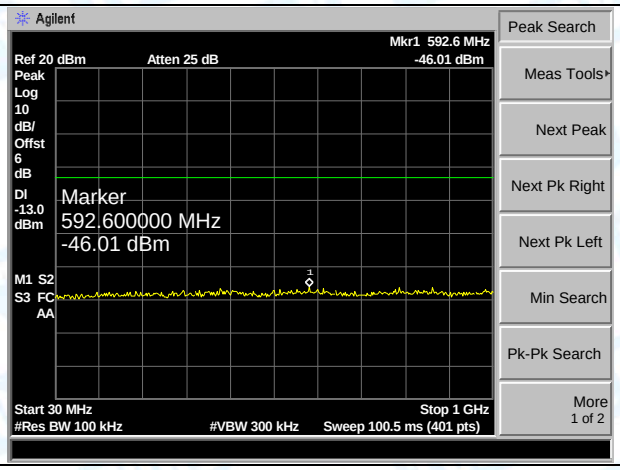
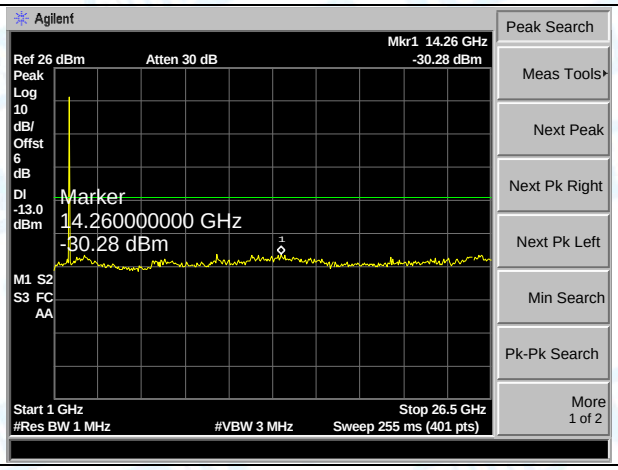




LTE BAND 2 (5MHz RB Size 25& RB Offset 0 QPSK-High CH)

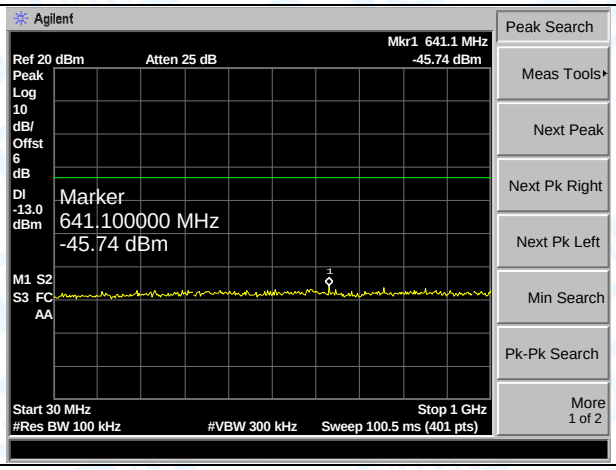


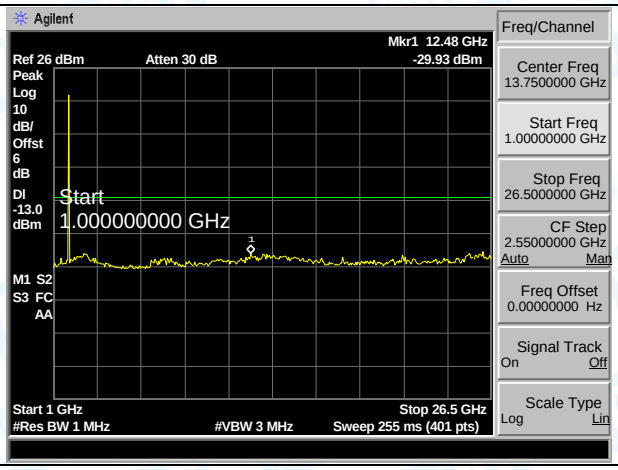


30MHz-1GHz	1GHz-26.5GHz
LTE BAND 2 (10MHz RB Size 50& RB Offset 0 QPSK-Low CH)	
	
LTE BAND 2 (10MHz RB Size 50& RB Offset 0 QPSK-Middle CH)	
	
LTE BAND 2 (10MHz RB Size 50& RB Offset 0 QPSK-High CH)	
	

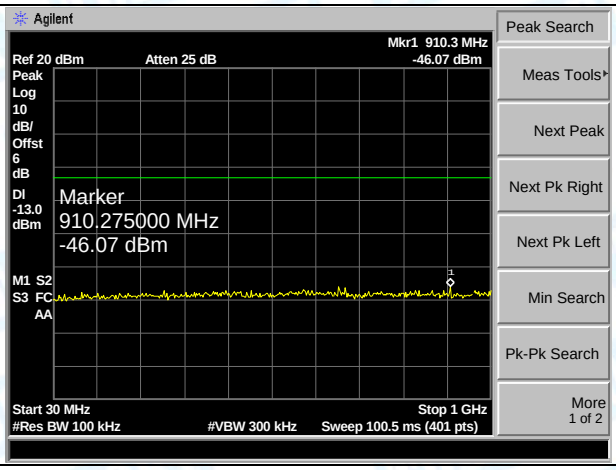
30MHz-1GHz	1GHz-26.5GHz

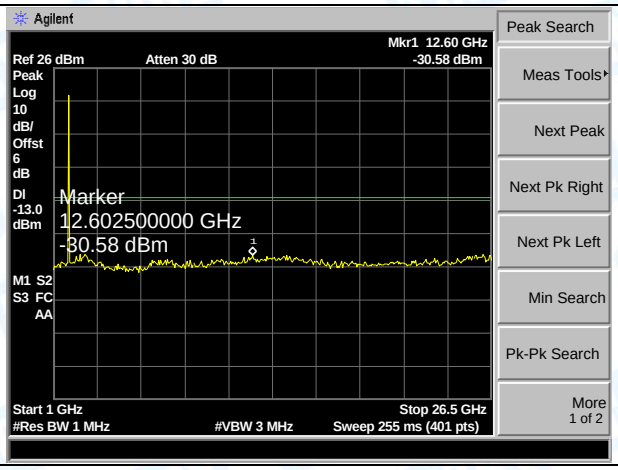
LTE BAND 2 (15MHz RB Size 75& RB Offset 0 QPSK-Low CH)



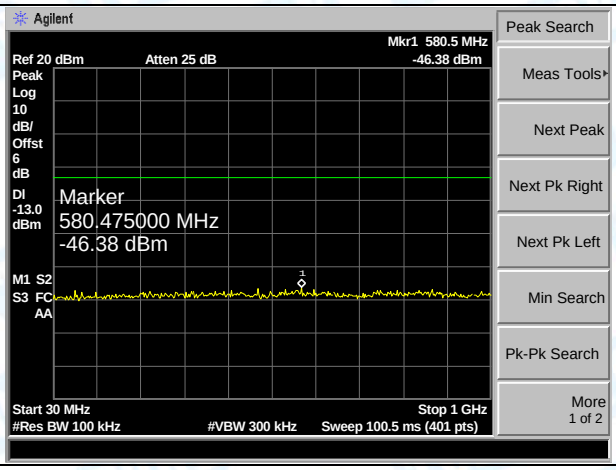


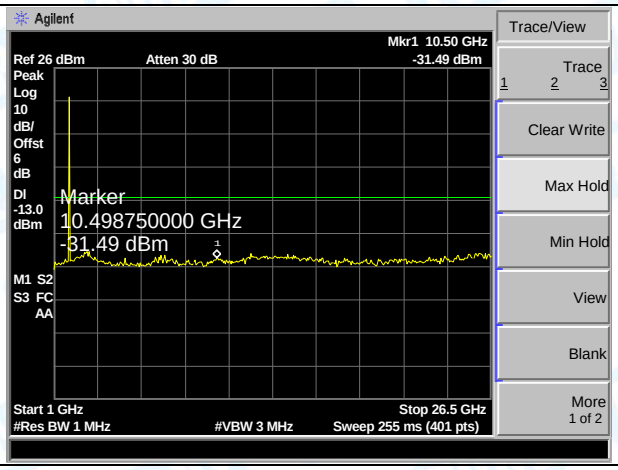
LTE BAND 2 (15MHz RB Size 75& RB Offset 0 QPSK-Middle CH)

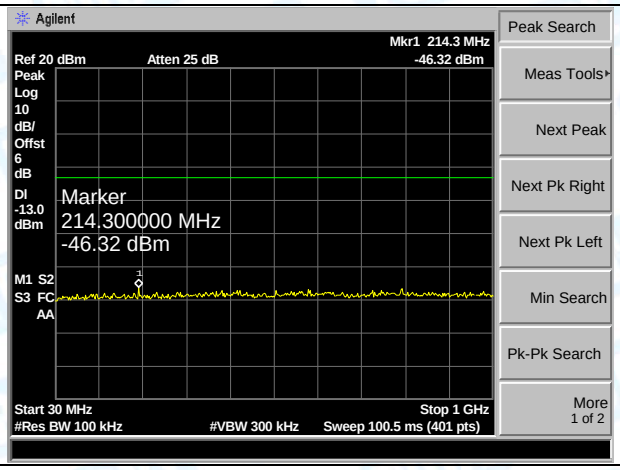
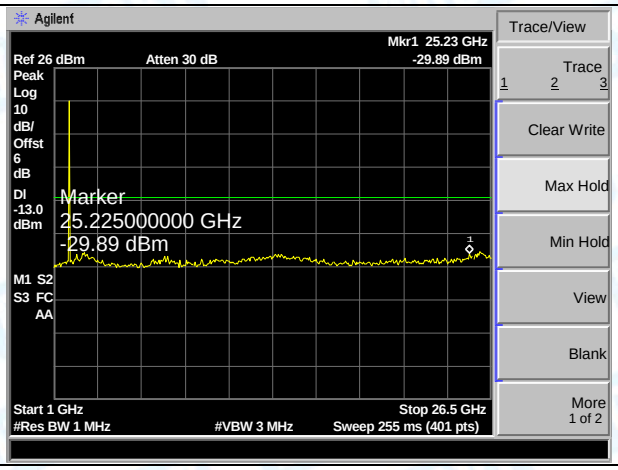
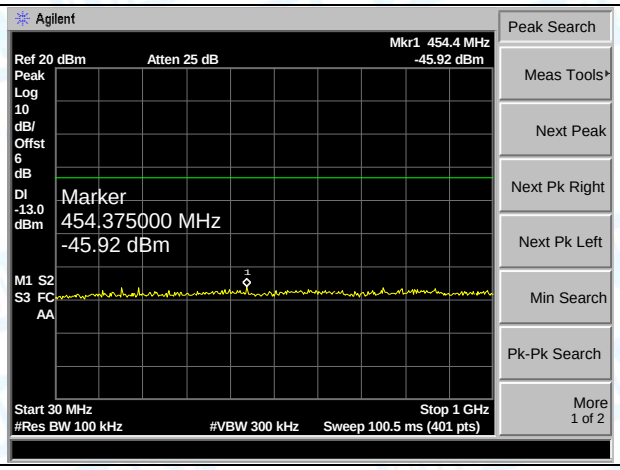
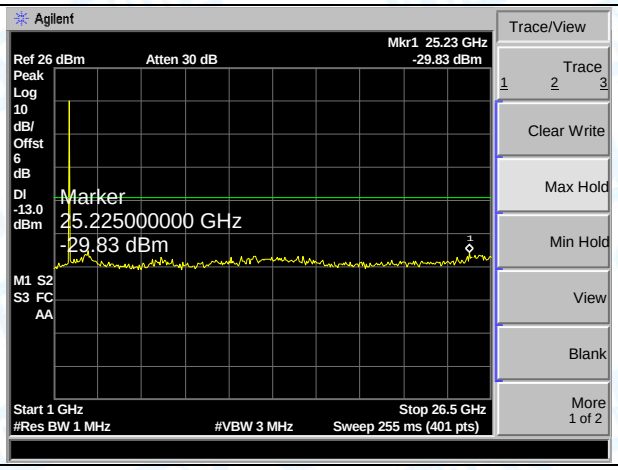
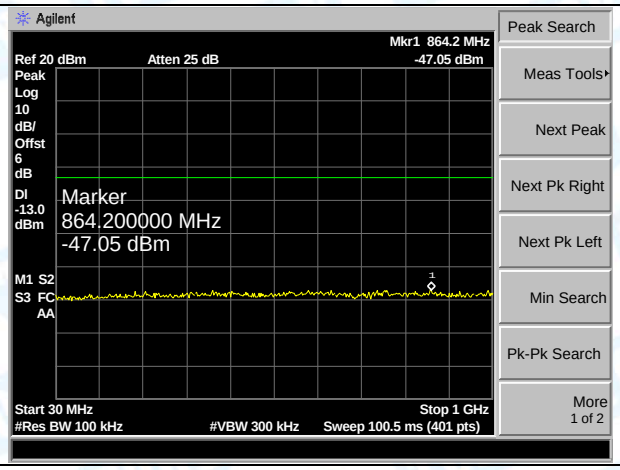
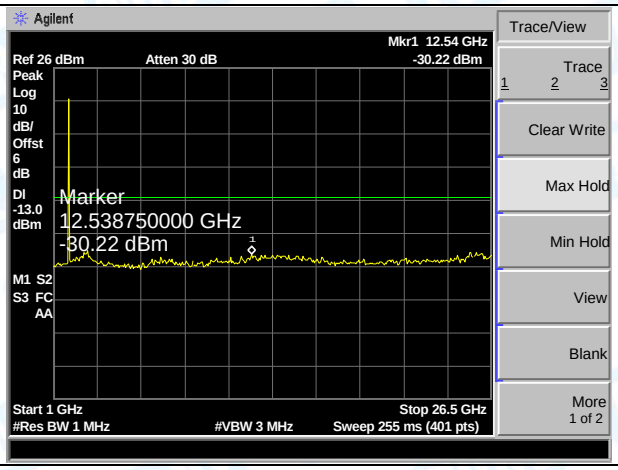


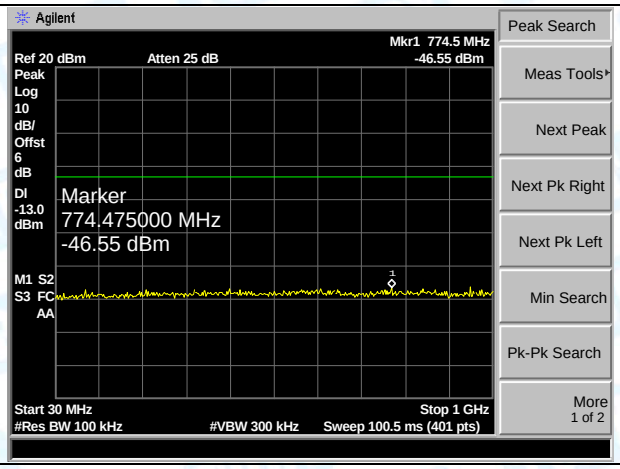
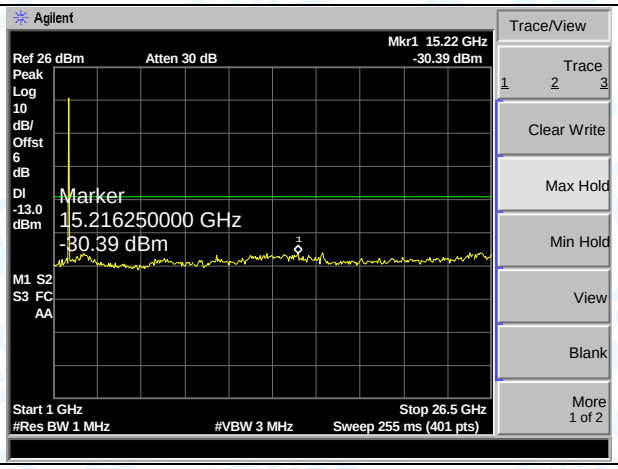
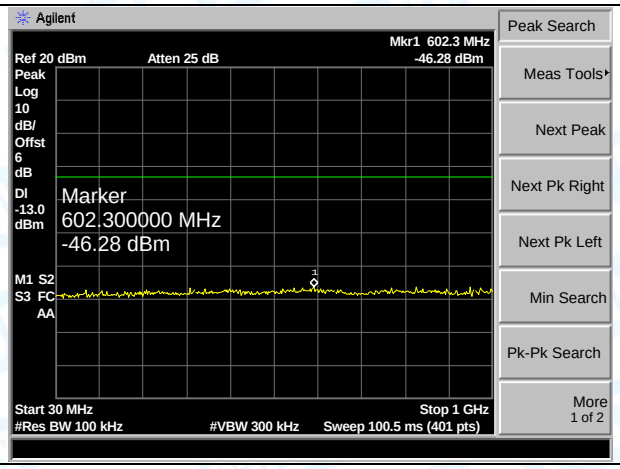
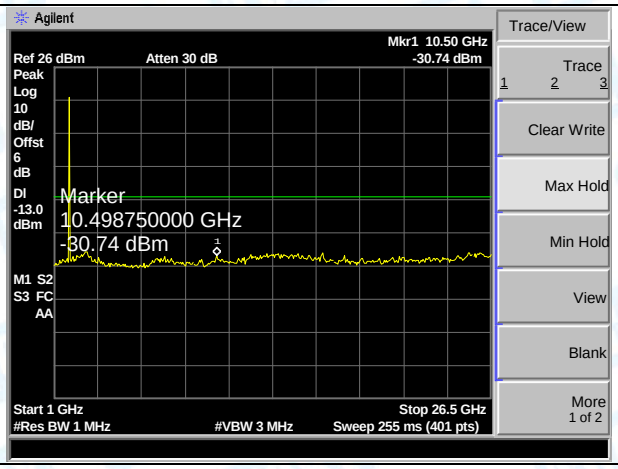
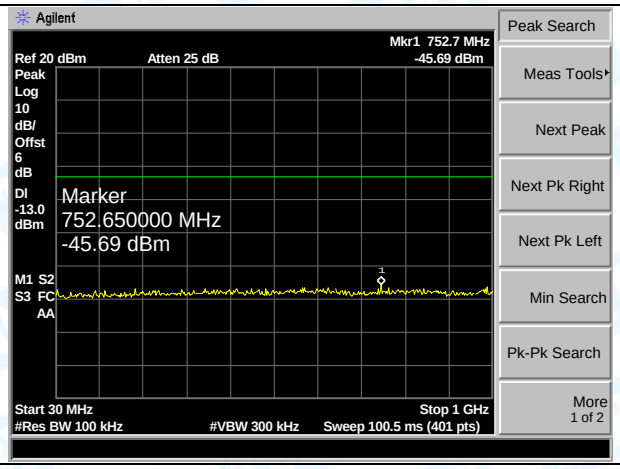
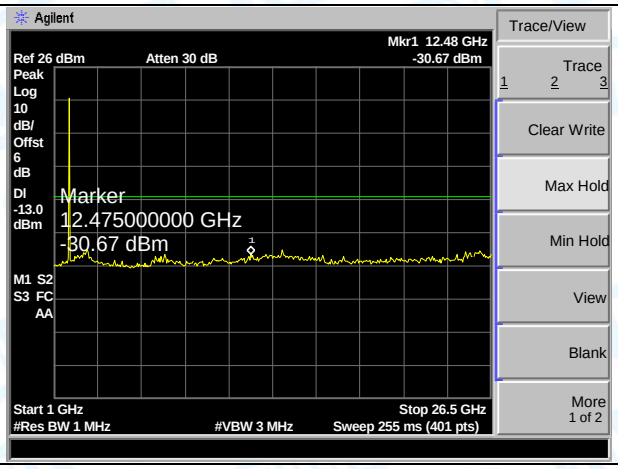


LTE BAND 2 (15MHz RB Size 75& RB Offset 0 QPSK-High CH)



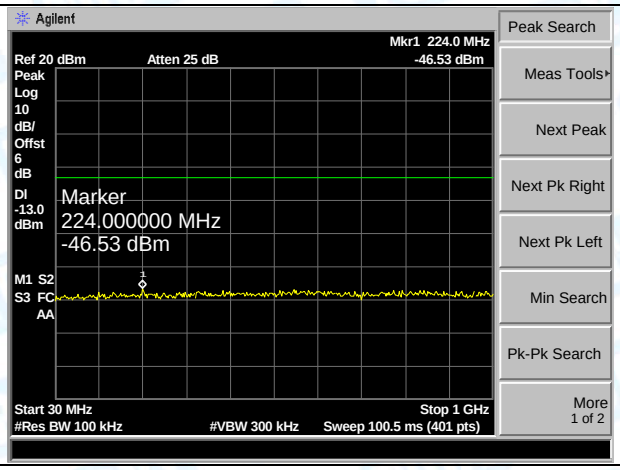


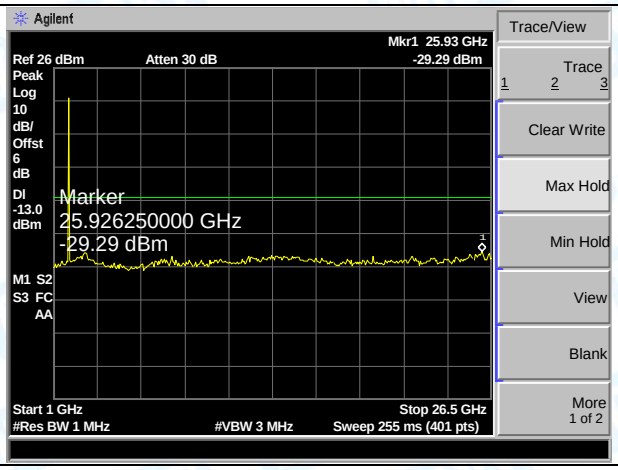
30MHz-1GHz	1GHz-26.5GHz
LTE BAND 2 (20MHz RB Size 100& RB Offset 0 QPSK-Low CH)	
	
LTE BAND 2 (20MHz RB Size 100& RB Offset 0 QPSK-Middle CH)	
	
LTE BAND 2 (20MHz RB Size 100& RB Offset 0 QPSK-High CH)	
	

30MHz-1GHz	1GHz-26.5GHz
LTE BAND 4 (1.4MHz RB Size 6& RB Offset 0 QPSK-Low CH)	
	
LTE BAND 4 (1.4MHz RB Size 6& RB Offset 0 QPSK-Middle CH)	
	
LTE BAND 4 (1.4MHz RB Size 6& RB Offset 0 QPSK-High CH)	
	

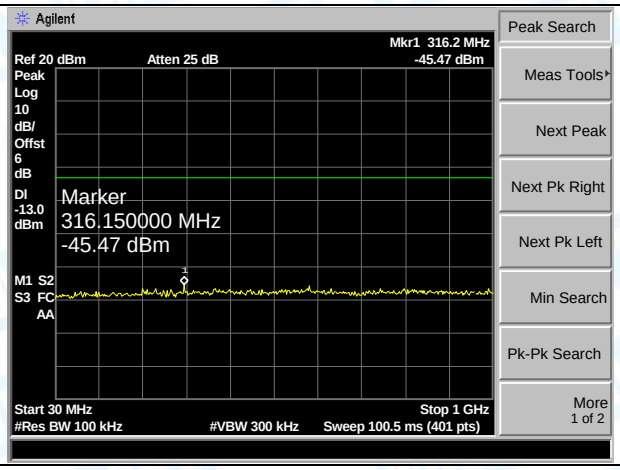
30MHz-1GHz	1GHz-26.5GHz

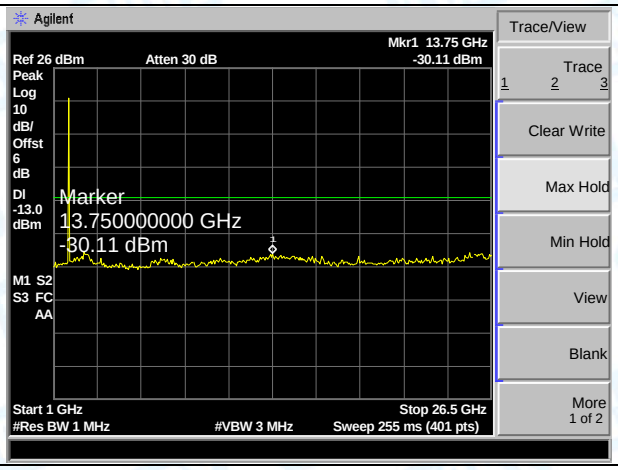
LTE BAND 4 (3MHz RB Size 15& RB Offset 0 QPSK-Low CH)



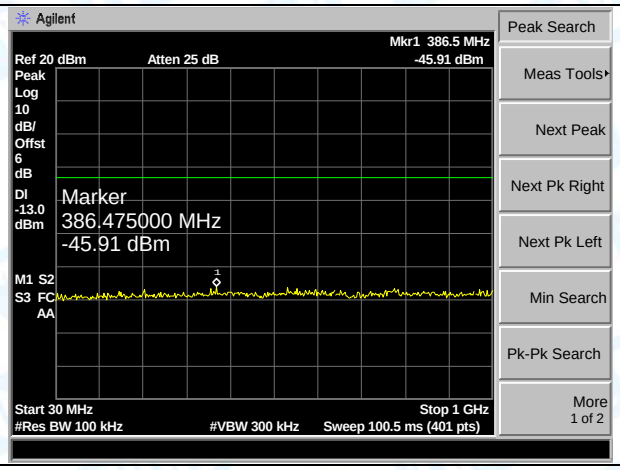


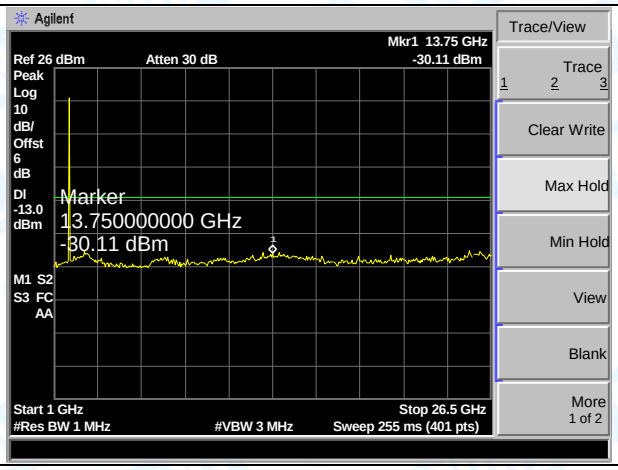
LTE BAND 4 (3MHz RB Size 15& RB Offset 0 QPSK-Middle CH)

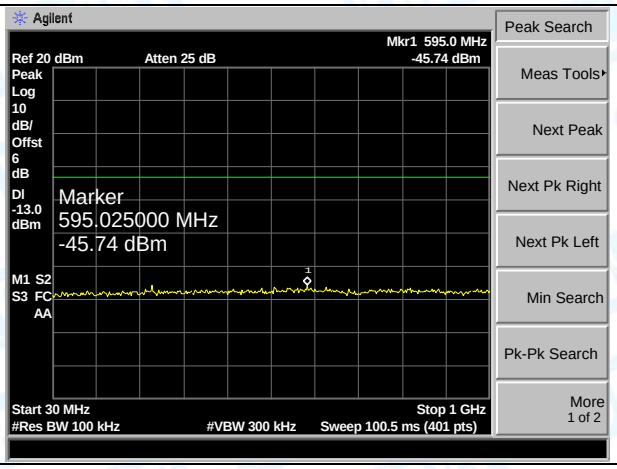
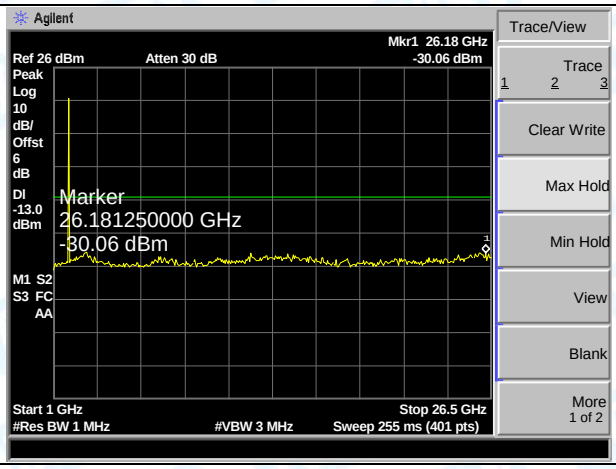
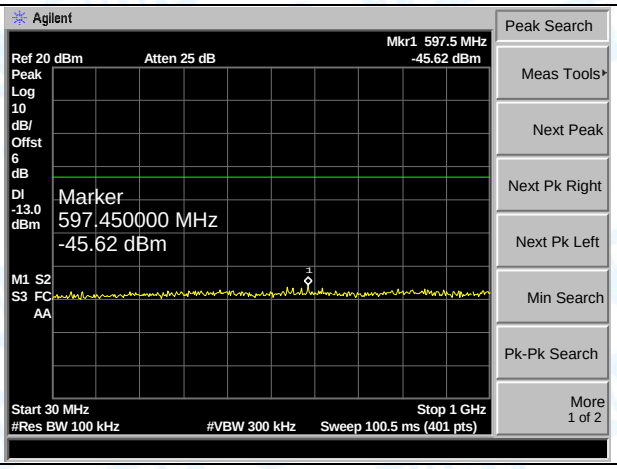
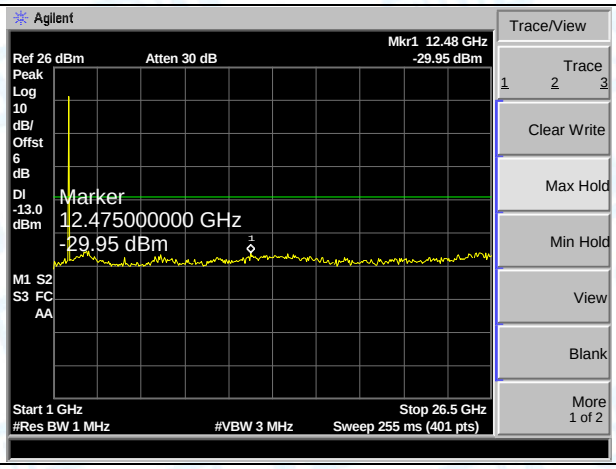
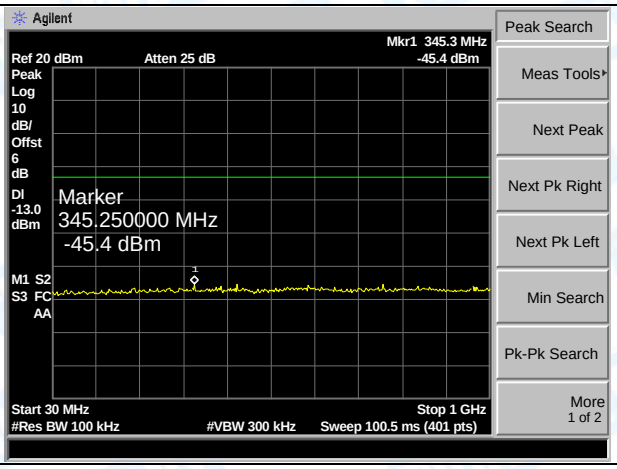
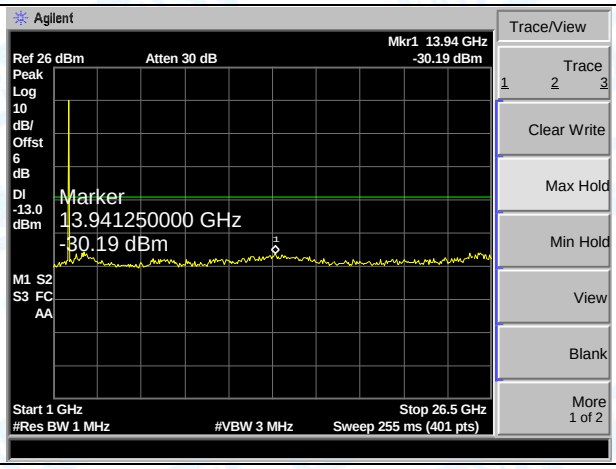


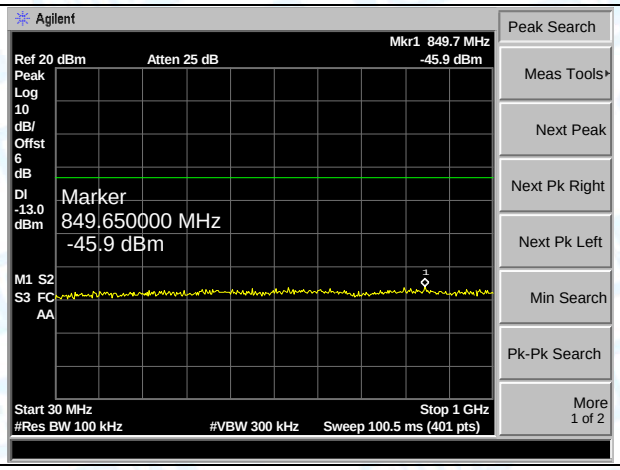
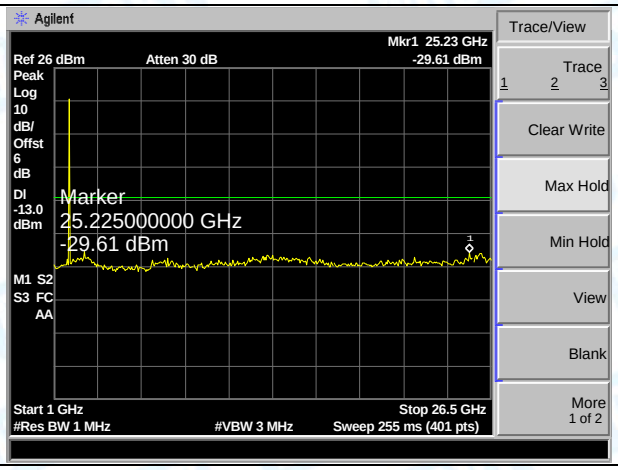
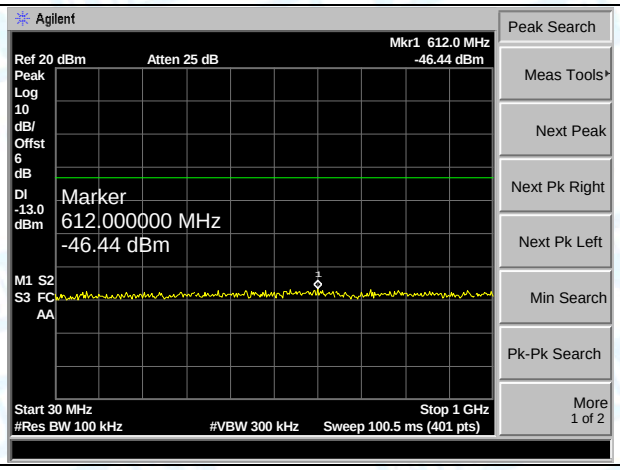
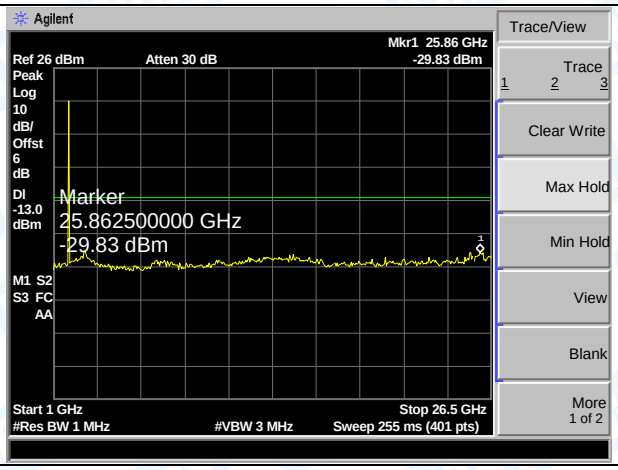
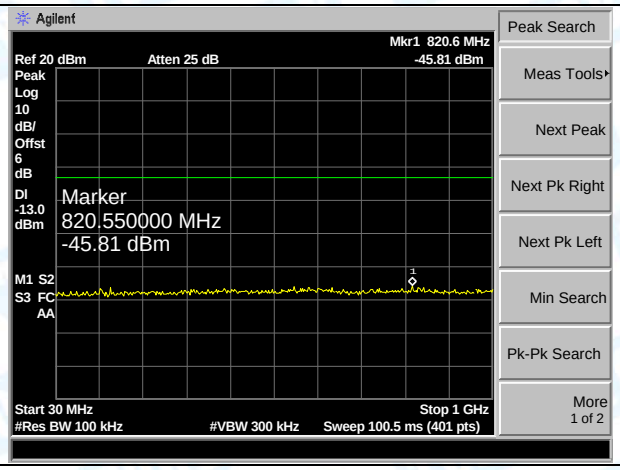
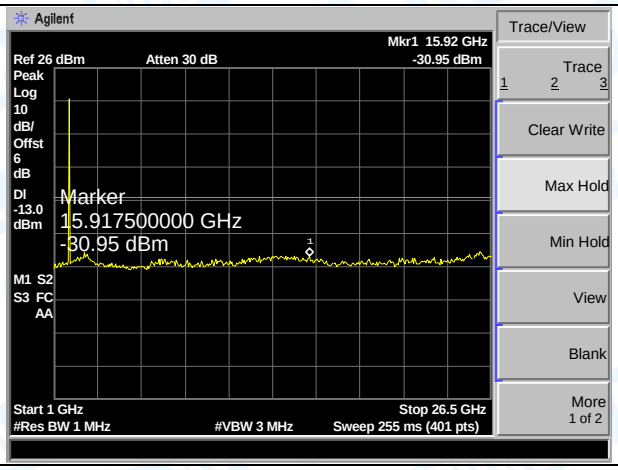


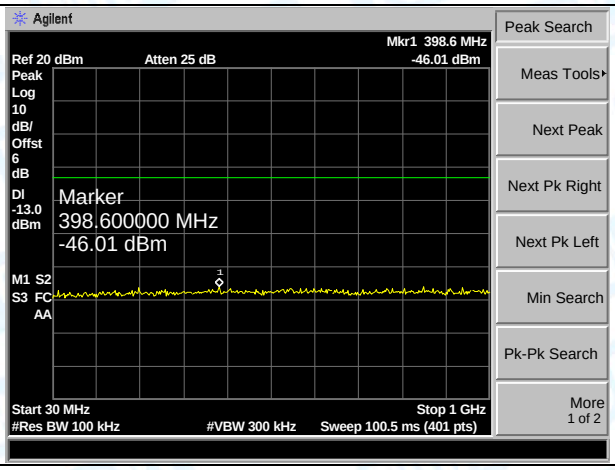
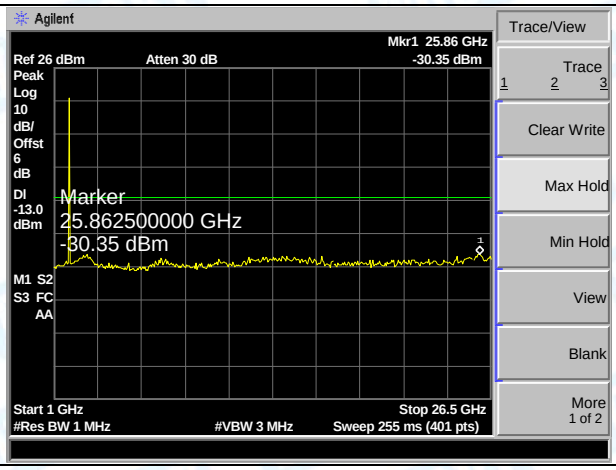
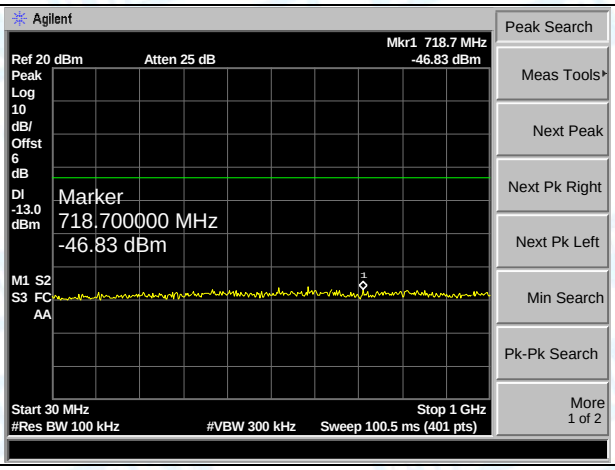
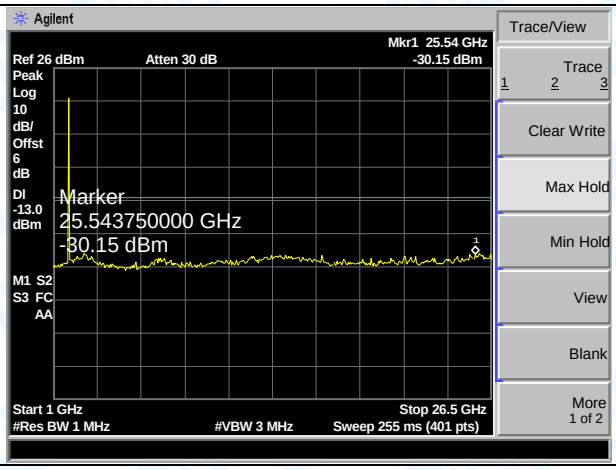
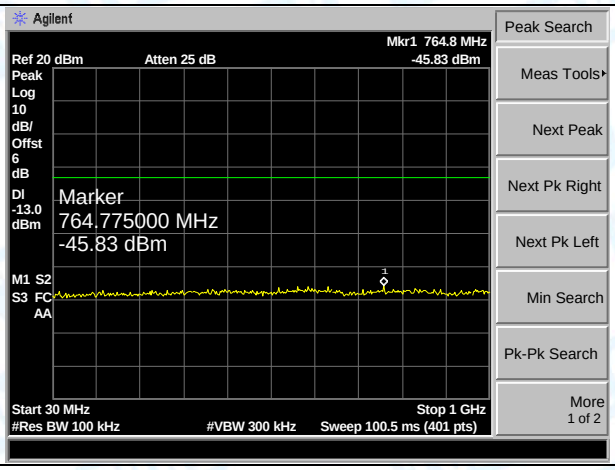
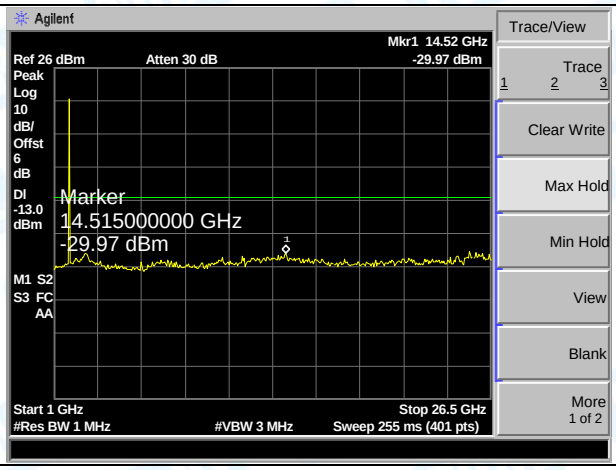
LTE BAND 4 (3MHz RB Size 15& RB Offset 0 QPSK-High CH)

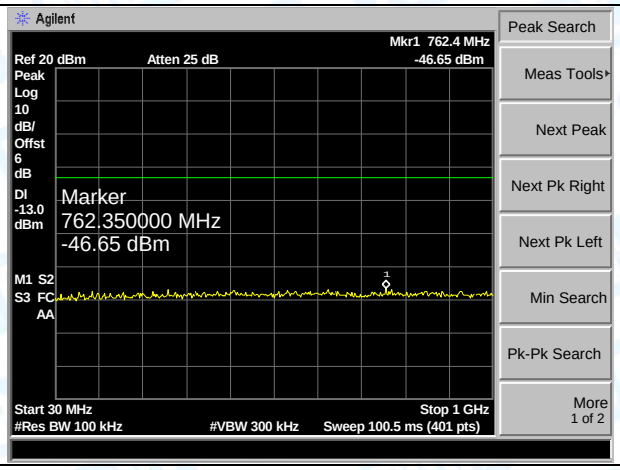
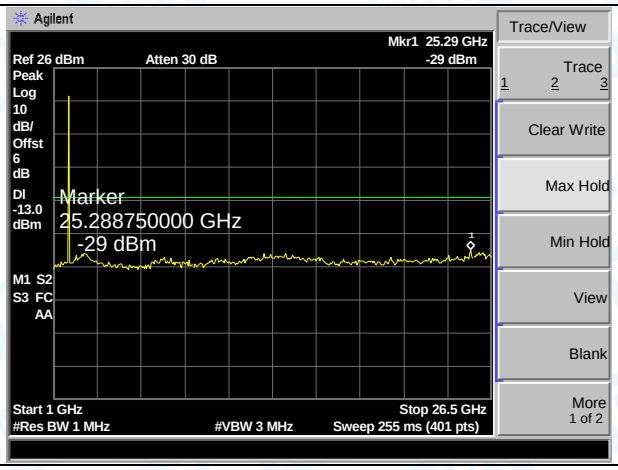
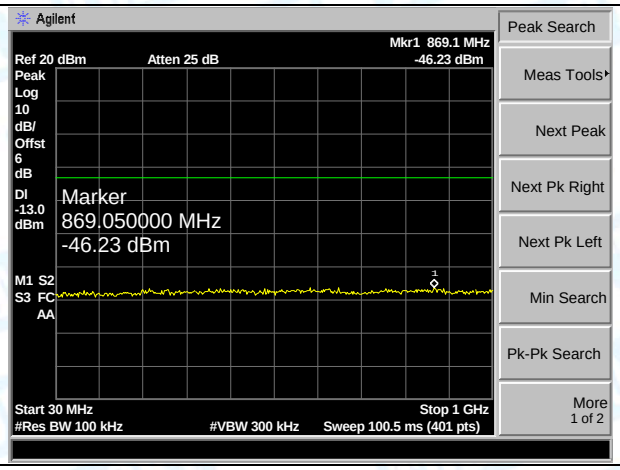
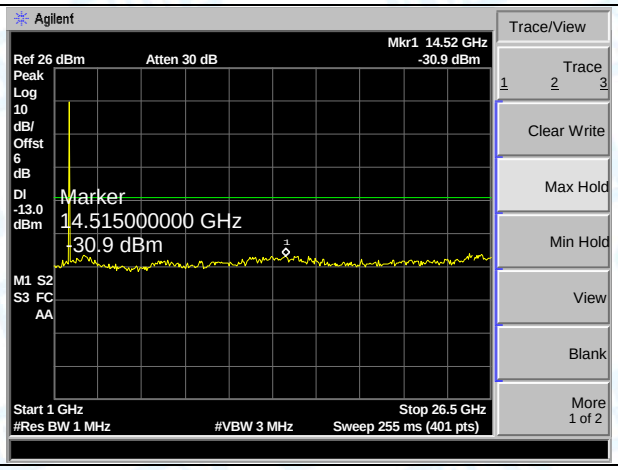
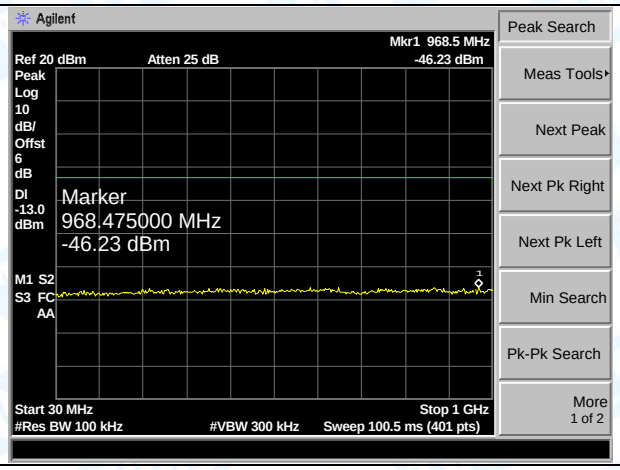
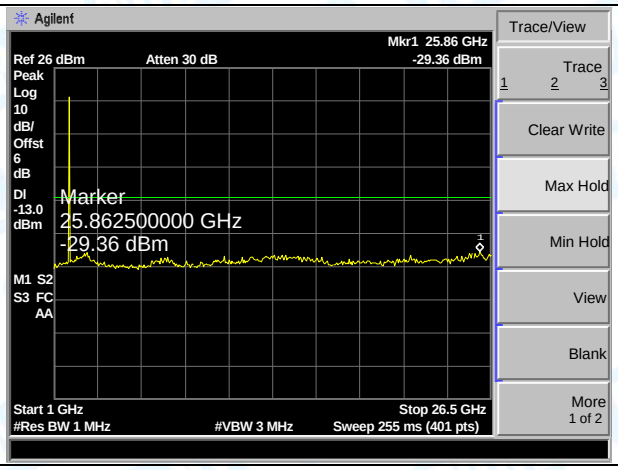




30MHz-1GHz	1GHz-26.5GHz
LTE BAND 4 (5MHz RB Size 25& RB Offset 0 QPSK-Low CH)	
	
LTE BAND 4 (5MHz RB Size 25& RB Offset 0 QPSK-Middle CH)	
	
LTE BAND 4 (5MHz RB Size 25& RB Offset 0 QPSK-High CH)	
	

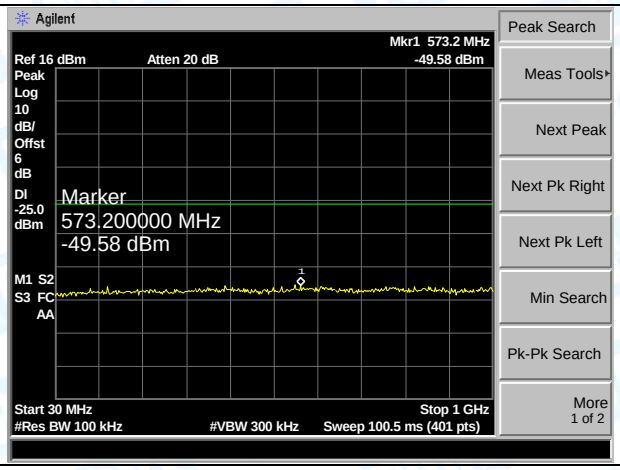
30MHz-1GHz	1GHz-26.5GHz
LTE BAND 4 (10MHz RB Size 50& RB Offset 0 QPSK-Low CH)	
	
LTE BAND 4 (10MHz RB Size 50& RB Offset 0 QPSK-Middle CH)	
	
LTE BAND 4 (10MHz RB Size 50& RB Offset 0 QPSK-High CH)	
	

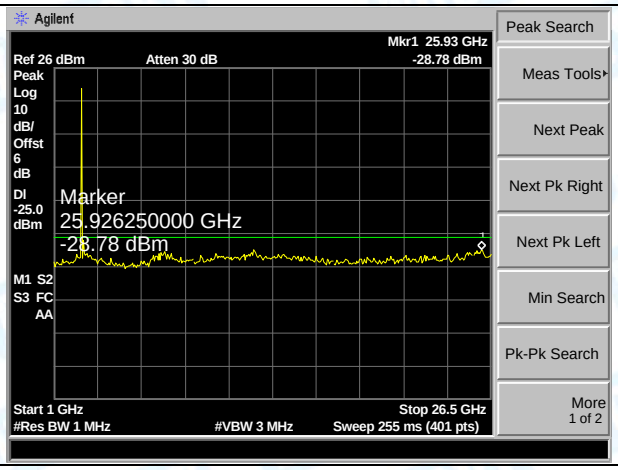
30MHz-1GHz	1GHz-26.5GHz
LTE BAND 4 (15MHz RB Size 75& RB Offset 0 QPSK-Low CH)	
	
LTE BAND 4 (15MHz RB Size 75& RB Offset 0 QPSK-Middle CH)	
	
LTE BAND 4 (15MHz RB Size 75& RB Offset 0 QPSK-High CH)	
	

30MHz-1GHz	1GHz-26.5GHz
LTE BAND 4 (20MHz RB Size 100& RB Offset 0 QPSK-Low CH)	
	
LTE BAND 4 (20MHz RB Size 100& RB Offset 0 QPSK-Middle CH)	
	
LTE BAND 4 (20MHz RB Size 100& RB Offset 0 QPSK-High CH)	
	

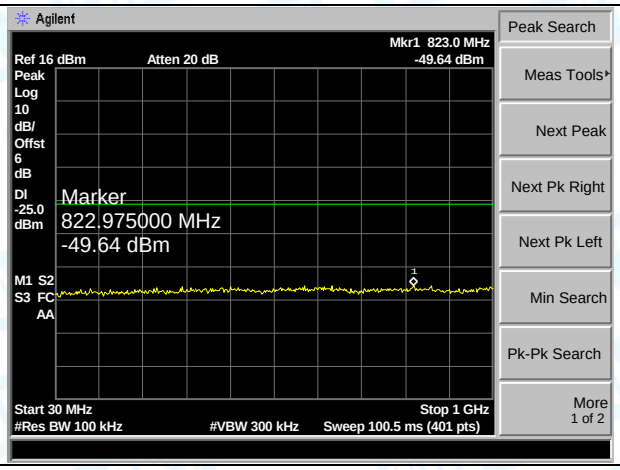
30MHz-1GHz	1GHz-26.5GHz

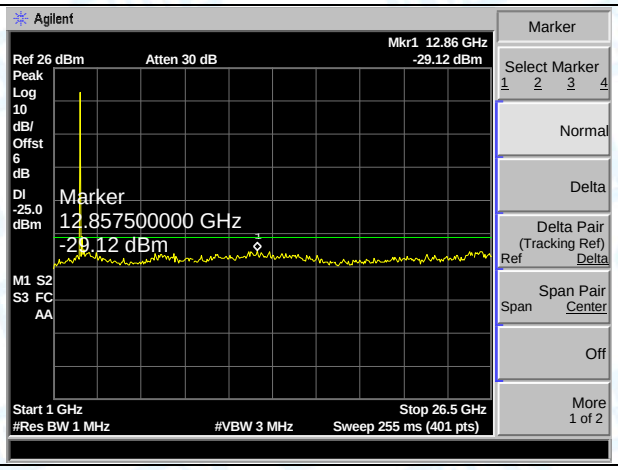
LTE BAND 7 (5MHz RB Size 25& RB Offset 0 QPSK-Low CH)



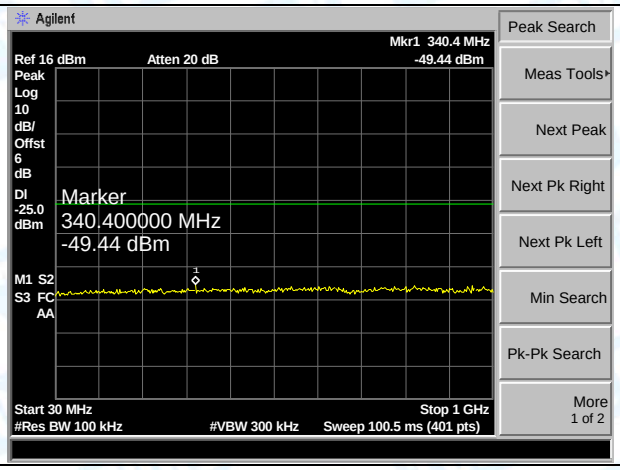


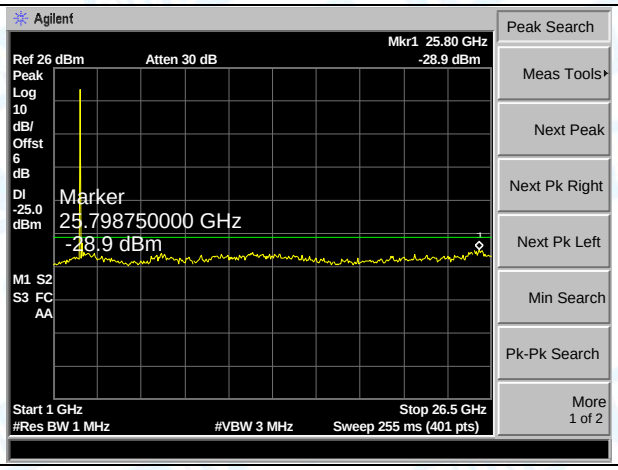
LTE BAND 7 (5MHz RB Size 25& RB Offset 0 QPSK-Middle CH)





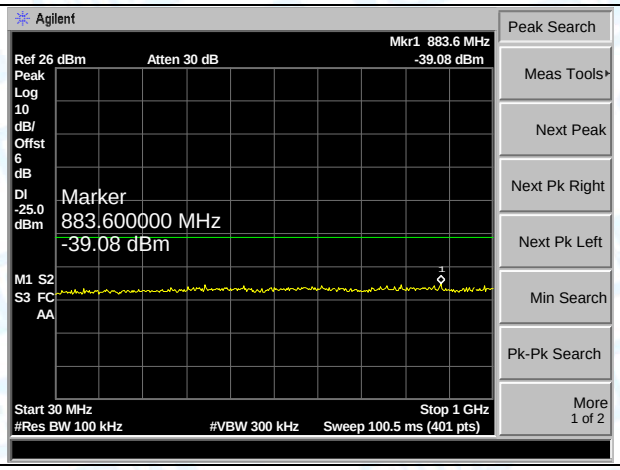
LTE BAND 7 (5MHz RB Size 25& RB Offset 0 QPSK-High CH)

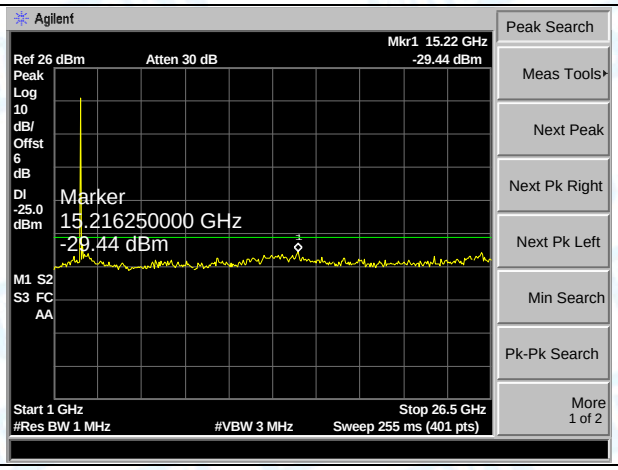




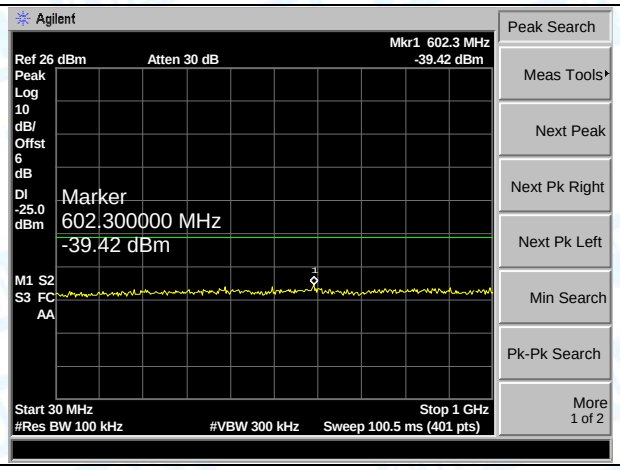
30MHz-1GHz	1GHz-26.5GHz

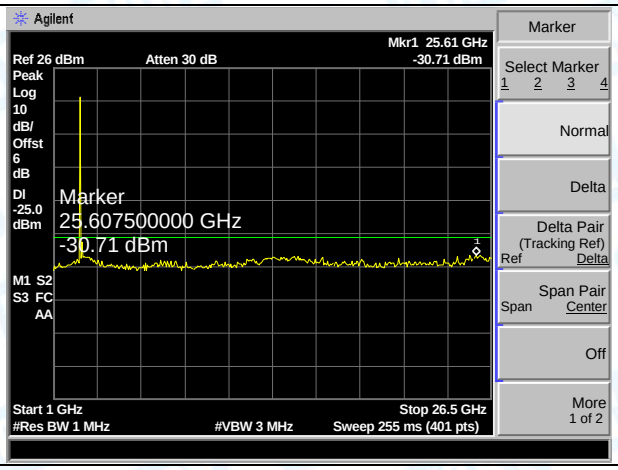
LTE BAND 7 (10MHz RB Size 50& RB Offset 0 QPSK-Low CH)



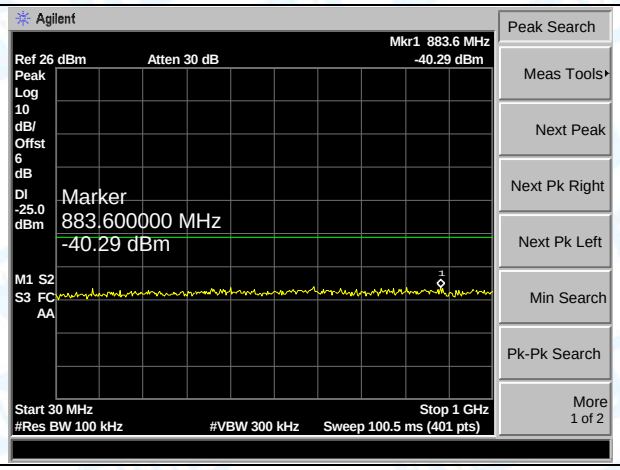


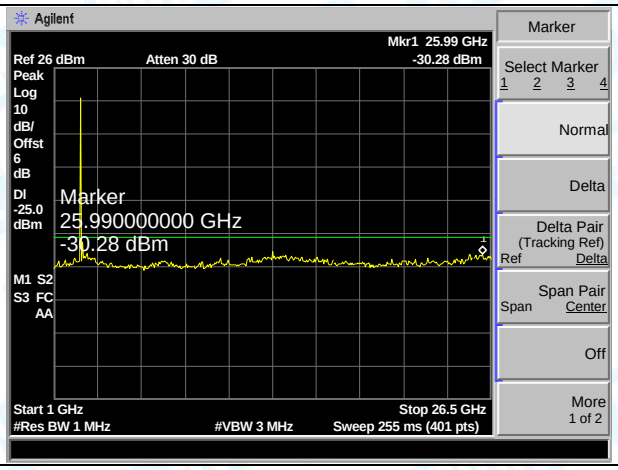
LTE BAND 7 (10MHz RB Size 50& RB Offset 0 QPSK-Middle CH)





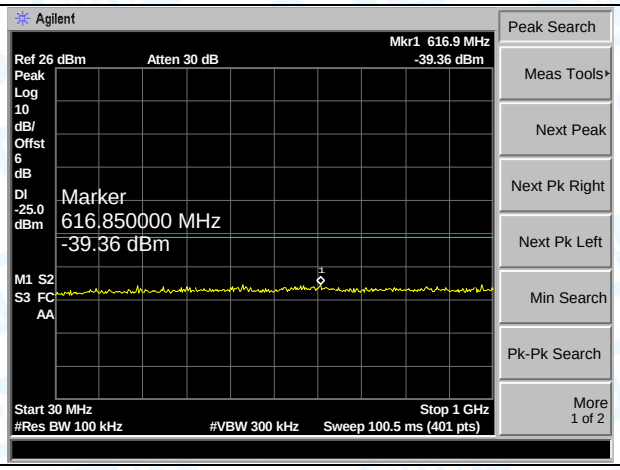
LTE BAND 7 (10MHz RB Size 50& RB Offset 0 QPSK-High CH)

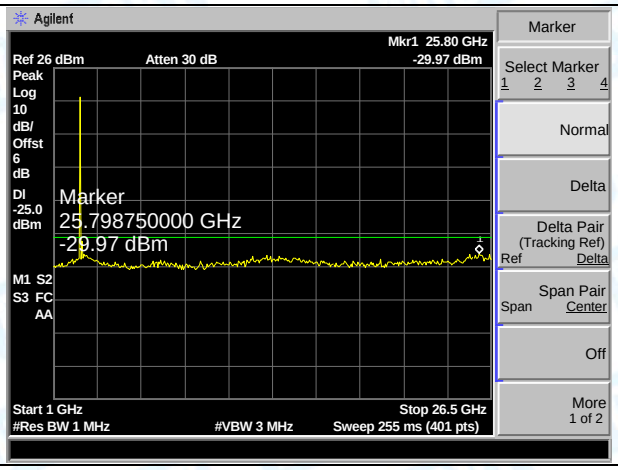




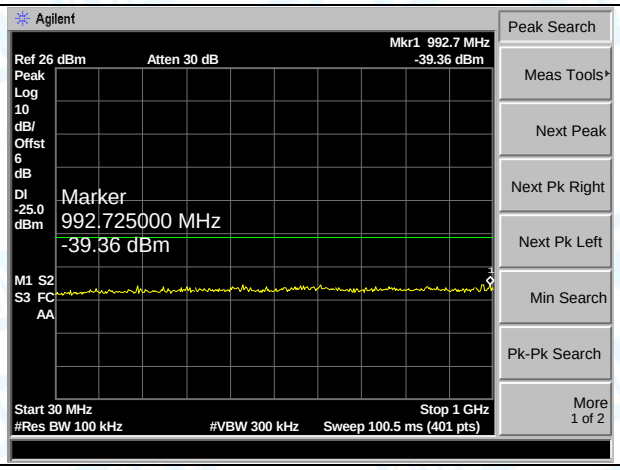
30MHz-1GHz	1GHz-26.5GHz

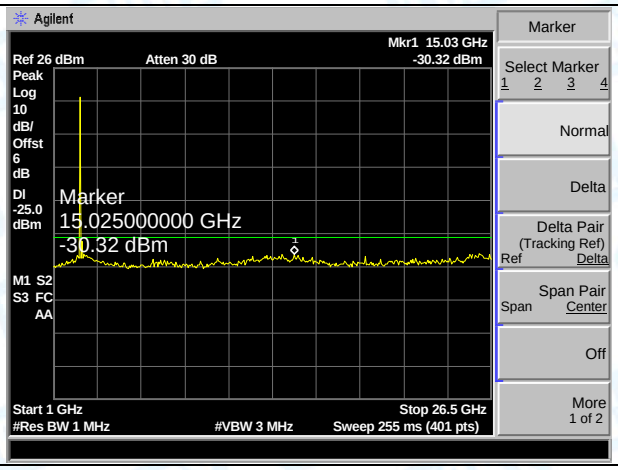
LTE BAND 7 (15MHz RB Size 75& RB Offset 0 QPSK-Low CH)



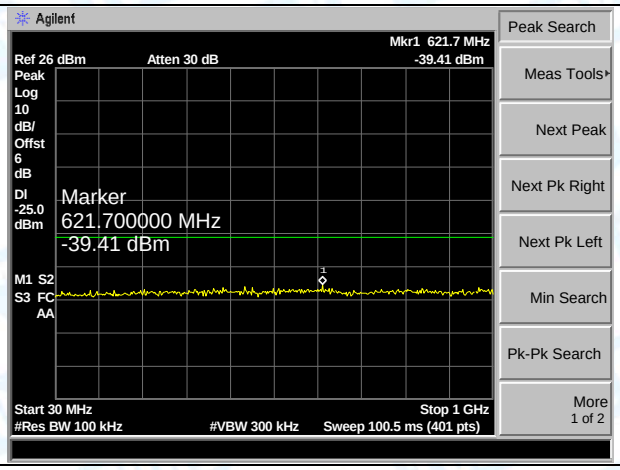


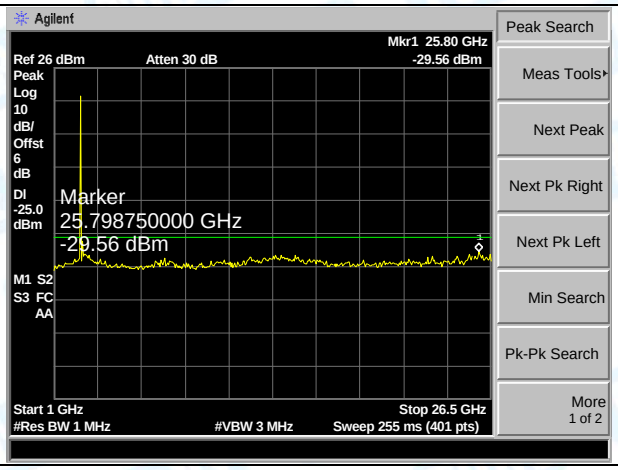
LTE BAND 7 (15MHz RB Size 75& RB Offset 0 QPSK-Middle CH)

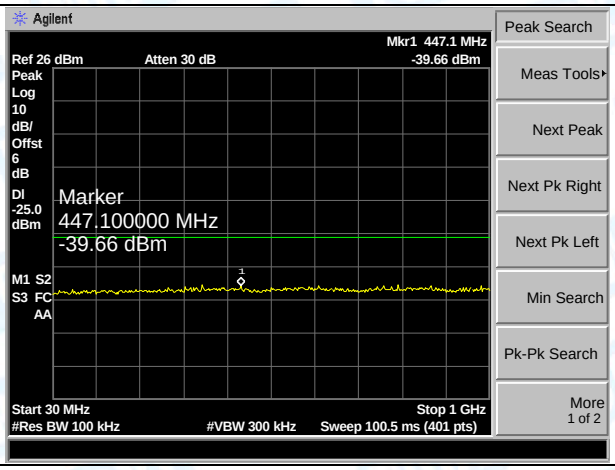
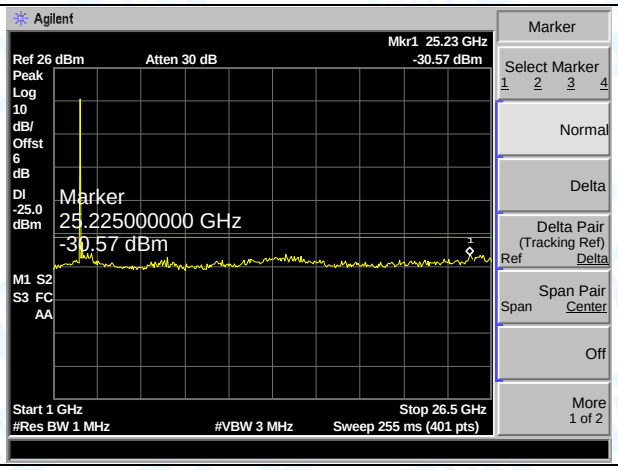
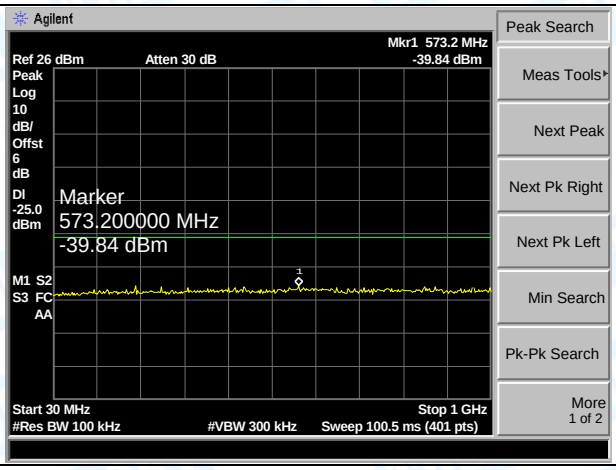
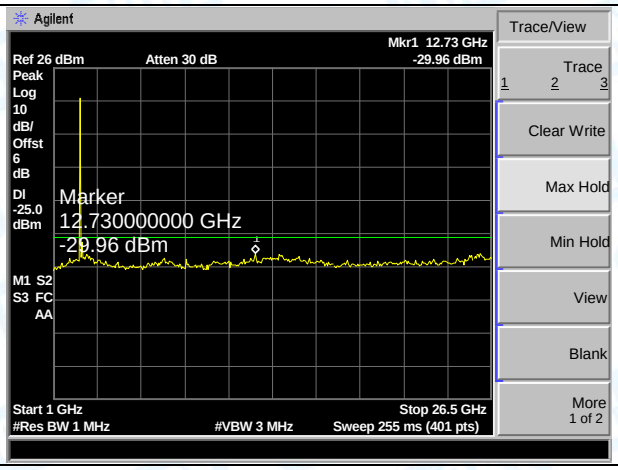
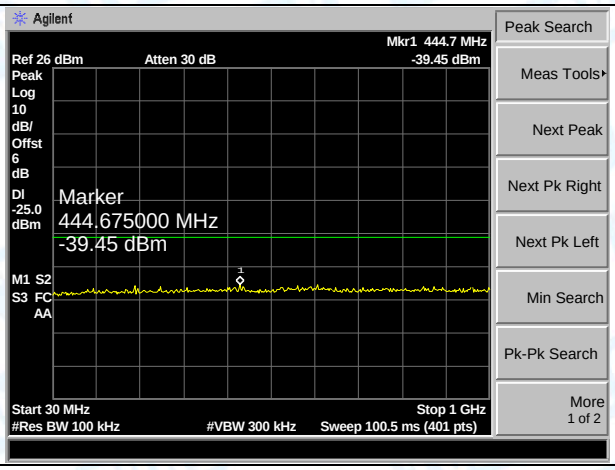
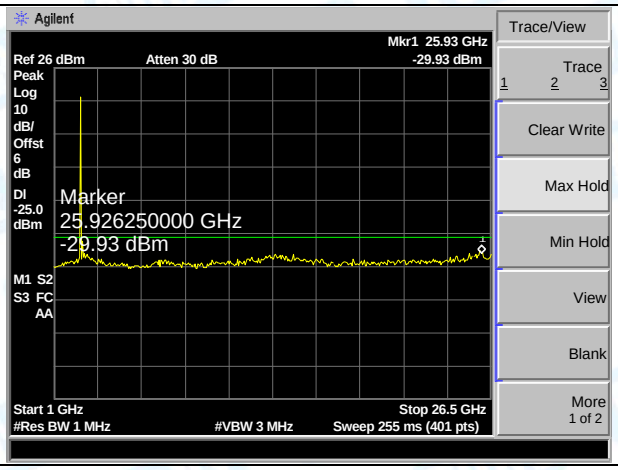




LTE BAND 7 (15MHz RB Size 75& RB Offset 0 QPSK-High CH)

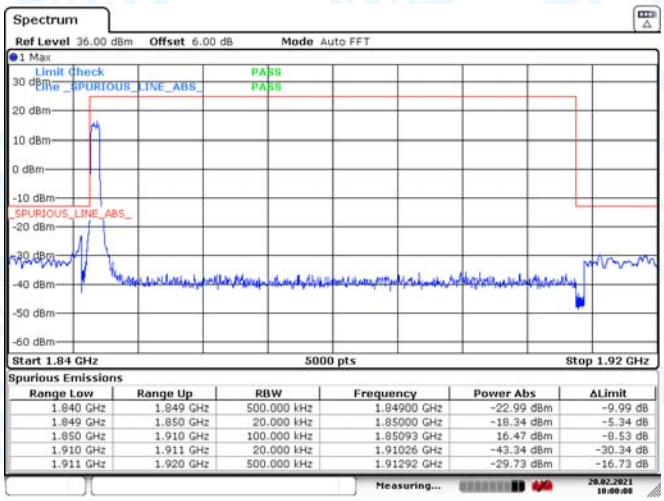
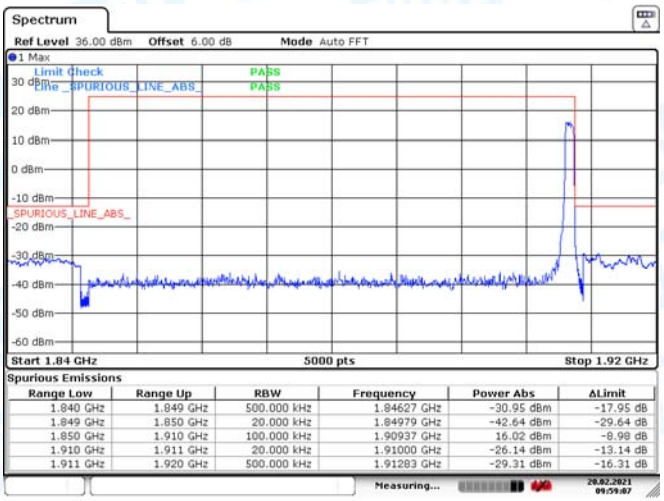
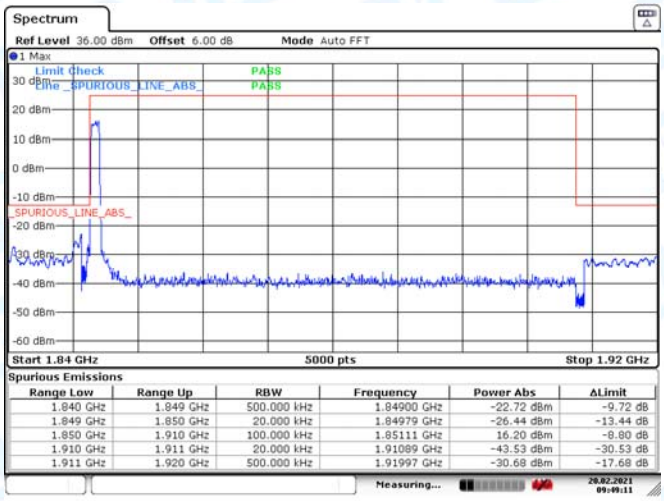
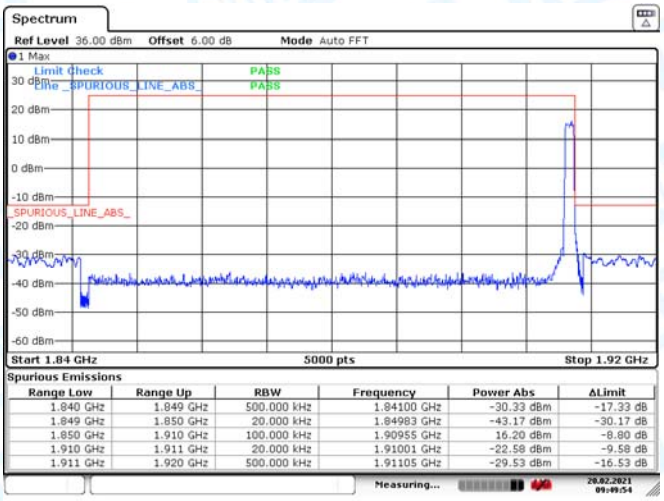




30MHz-1GHz	1GHz-26.5GHz
LTE BAND 7 (20MHz RB Size 100& RB Offset 0 QPSK-Low CH)	
	
LTE BAND 7 (20MHz RB Size 100& RB Offset 0 QPSK-Middle CH)	
	
LTE BAND 7 (20MHz RB Size 100& RB Offset 0 QPSK-High CH)	
	

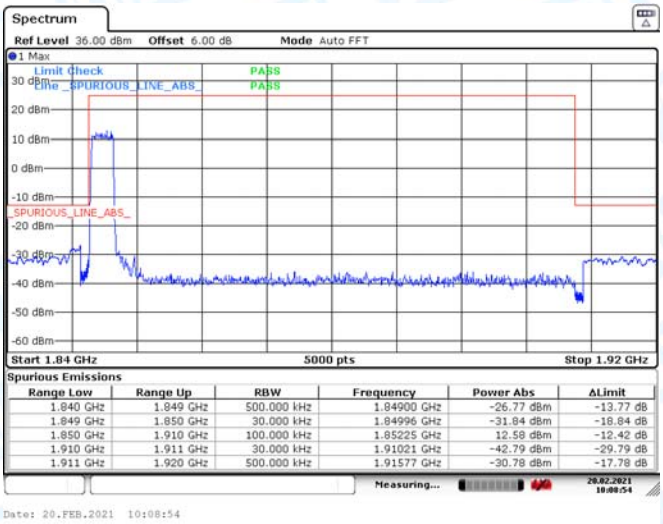
ATTACHMENT E--BAND EDGE TEST

Only show the worst case(max RB size).

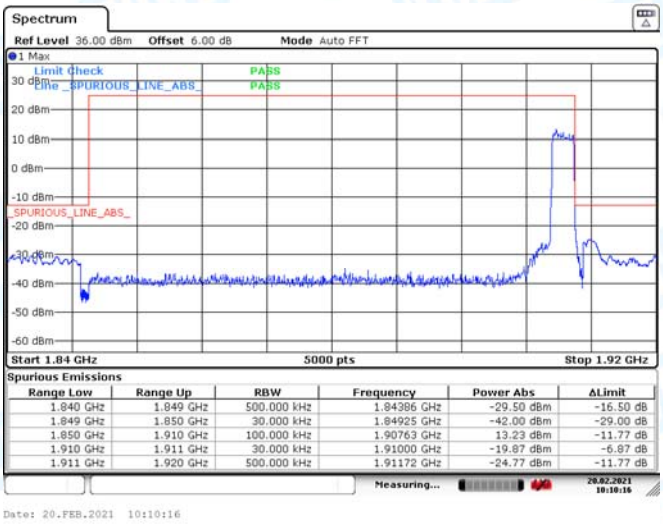
Low Channel	High Channel
LTE BAND 2 (1.4MHz RB Size 6& RB Offset 0 QPSK)	
 Spectrum Ref Level 36.00 dBm Offset 6.00 dB Mode Auto FFT 1 Max Limit Check PASS Line _SPURIOUS_LINE_ABS_ PASS Start 1.84 GHz 5000 pts Stop 1.92 GHz Spurious Emissions Range Low / Range Up / RBW / Frequency / Power Abs / ΔLimit 1.840 GHz / 1.849 GHz / 500.000 kHz / 1.84900 GHz / -22.99 dBm / -9.99 dB 1.849 GHz / 1.850 GHz / 20.000 kHz / 1.85000 GHz / -18.34 dBm / -5.34 dB 1.850 GHz / 1.910 GHz / 100.000 kHz / 1.85093 GHz / 16.47 dBm / -8.53 dB 1.910 GHz / 1.911 GHz / 20.000 kHz / 1.91026 GHz / -43.34 dBm / -30.34 dB 1.911 GHz / 1.920 GHz / 500.000 kHz / 1.91292 GHz / -29.73 dBm / -16.73 dB Date: 20.FEB.2021 10:00:08	 Spectrum Ref Level 36.00 dBm Offset 6.00 dB Mode Auto FFT 1 Max Limit Check PASS Line _SPURIOUS_LINE_ABS_ PASS Start 1.84 GHz 5000 pts Stop 1.92 GHz Spurious Emissions Range Low / Range Up / RBW / Frequency / Power Abs / ΔLimit 1.840 GHz / 1.849 GHz / 500.000 kHz / 1.84627 GHz / -30.95 dBm / -17.95 dB 1.849 GHz / 1.850 GHz / 20.000 kHz / 1.84979 GHz / -42.64 dBm / -29.64 dB 1.850 GHz / 1.910 GHz / 100.000 kHz / 1.90937 GHz / 16.02 dBm / -8.98 dB 1.910 GHz / 1.911 GHz / 20.000 kHz / 1.91000 GHz / -26.14 dBm / -13.14 dB 1.911 GHz / 1.920 GHz / 500.000 kHz / 1.91283 GHz / -29.31 dBm / -16.31 dB Date: 20.FEB.2021 09:59:07
LTE BAND 2 (1.4MHz RB Size 6& RB Offset 0 16QAM)	
 Spectrum Ref Level 36.00 dBm Offset 6.00 dB Mode Auto FFT 1 Max Limit Check PASS Line _SPURIOUS_LINE_ABS_ PASS Start 1.84 GHz 5000 pts Stop 1.92 GHz Spurious Emissions Range Low / Range Up / RBW / Frequency / Power Abs / ΔLimit 1.840 GHz / 1.849 GHz / 500.000 kHz / 1.84900 GHz / -22.72 dBm / -9.72 dB 1.849 GHz / 1.850 GHz / 20.000 kHz / 1.84979 GHz / -26.44 dBm / -13.44 dB 1.850 GHz / 1.910 GHz / 100.000 kHz / 1.85111 GHz / 16.20 dBm / -8.80 dB 1.910 GHz / 1.911 GHz / 20.000 kHz / 1.91089 GHz / -43.53 dBm / -30.53 dB 1.911 GHz / 1.920 GHz / 500.000 kHz / 1.91997 GHz / -30.68 dBm / -17.68 dB Date: 20.FEB.2021 09:49:10	 Spectrum Ref Level 36.00 dBm Offset 6.00 dB Mode Auto FFT 1 Max Limit Check PASS Line _SPURIOUS_LINE_ABS_ PASS Start 1.84 GHz 5000 pts Stop 1.92 GHz Spurious Emissions Range Low / Range Up / RBW / Frequency / Power Abs / ΔLimit 1.840 GHz / 1.849 GHz / 500.000 kHz / 1.84100 GHz / -30.33 dBm / -17.33 dB 1.849 GHz / 1.850 GHz / 20.000 kHz / 1.84983 GHz / -43.17 dBm / -30.17 dB 1.850 GHz / 1.910 GHz / 100.000 kHz / 1.90955 GHz / 16.20 dBm / -8.80 dB 1.910 GHz / 1.911 GHz / 20.000 kHz / 1.91001 GHz / -22.58 dBm / -9.58 dB 1.911 GHz / 1.920 GHz / 500.000 kHz / 1.91105 GHz / -29.53 dBm / -16.53 dB Date: 20.FEB.2021 09:49:54

Low Channel	High Channel

LTE BAND 2 (3MHz RB Size 15& RB Offset 0 QPSK)

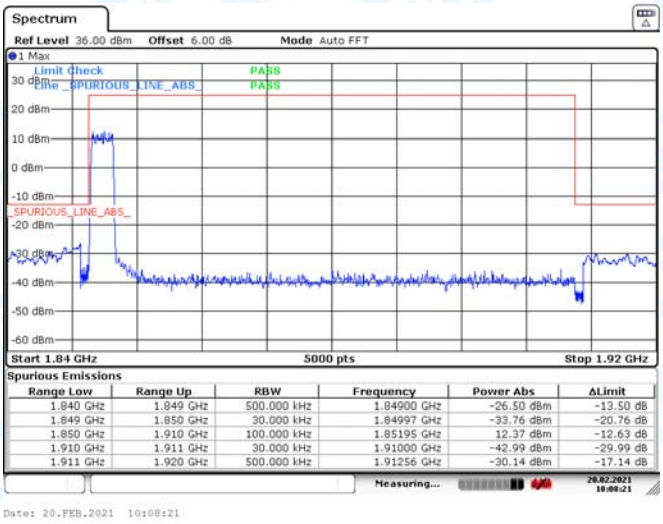


Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	500.000 kHz	1.84900 GHz	-26.77 dBm	-13.77 dB
1.849 GHz	1.850 GHz	30.000 kHz	1.84996 GHz	-31.84 dBm	-18.84 dB
1.850 GHz	1.910 GHz	100.000 kHz	1.85225 GHz	12.58 dBm	-12.42 dB
1.910 GHz	1.911 GHz	30.000 kHz	1.91021 GHz	-42.79 dBm	-29.79 dB
1.911 GHz	1.920 GHz	500.000 kHz	1.91577 GHz	-30.78 dBm	-17.78 dB

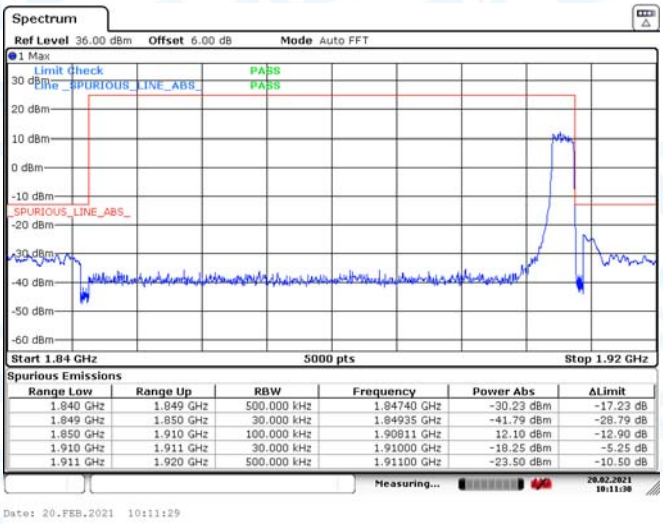


Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	500.000 kHz	1.84386 GHz	-29.50 dBm	-16.50 dB
1.849 GHz	1.850 GHz	30.000 kHz	1.84925 GHz	-42.00 dBm	-29.00 dB
1.850 GHz	1.910 GHz	100.000 kHz	1.90763 GHz	13.23 dBm	-11.77 dB
1.910 GHz	1.911 GHz	30.000 kHz	1.91000 GHz	-19.87 dBm	-6.87 dB
1.911 GHz	1.920 GHz	500.000 kHz	1.91172 GHz	-24.77 dBm	-11.77 dB

LTE BAND 2 (3MHz RB Size 15& RB Offset 0 16QAM)



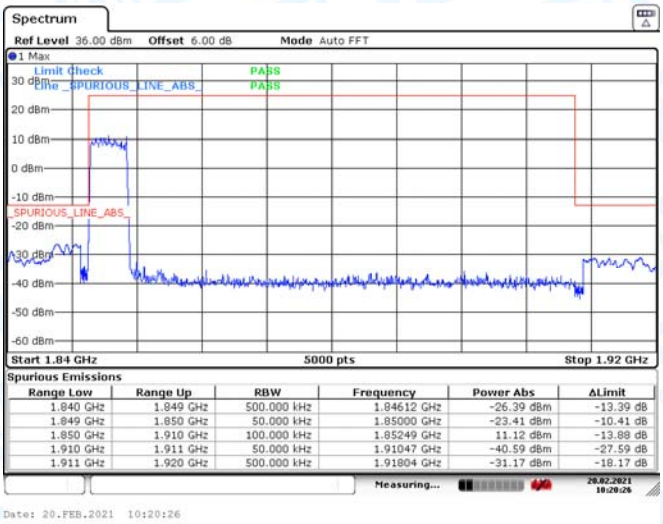
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	500.000 kHz	1.84900 GHz	-26.50 dBm	-13.50 dB
1.849 GHz	1.850 GHz	30.000 kHz	1.84997 GHz	-33.76 dBm	-20.76 dB
1.850 GHz	1.910 GHz	100.000 kHz	1.85195 GHz	12.37 dBm	-12.63 dB
1.910 GHz	1.911 GHz	30.000 kHz	1.91000 GHz	-42.99 dBm	-29.99 dB
1.911 GHz	1.920 GHz	500.000 kHz	1.91256 GHz	-30.14 dBm	-17.14 dB

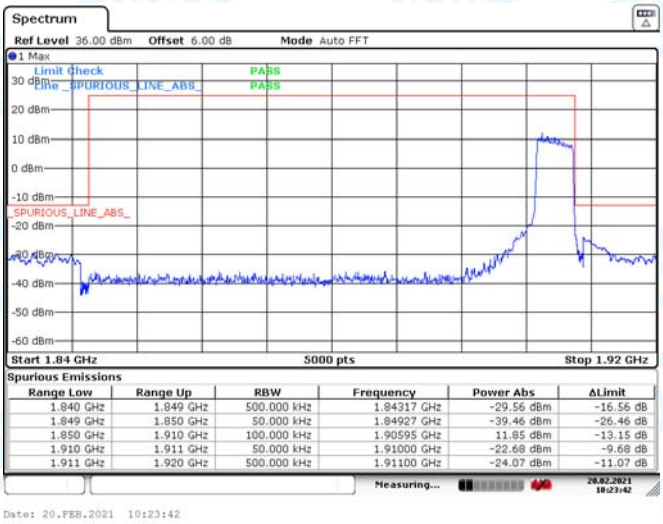


Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	500.000 kHz	1.84740 GHz	-30.23 dBm	-17.23 dB
1.849 GHz	1.850 GHz	30.000 kHz	1.84935 GHz	-41.79 dBm	-28.79 dB
1.850 GHz	1.910 GHz	100.000 kHz	1.90811 GHz	12.10 dBm	-12.90 dB
1.910 GHz	1.911 GHz	30.000 kHz	1.91000 GHz	-18.25 dBm	-5.25 dB
1.911 GHz	1.920 GHz	500.000 kHz	1.91100 GHz	-23.50 dBm	-10.50 dB

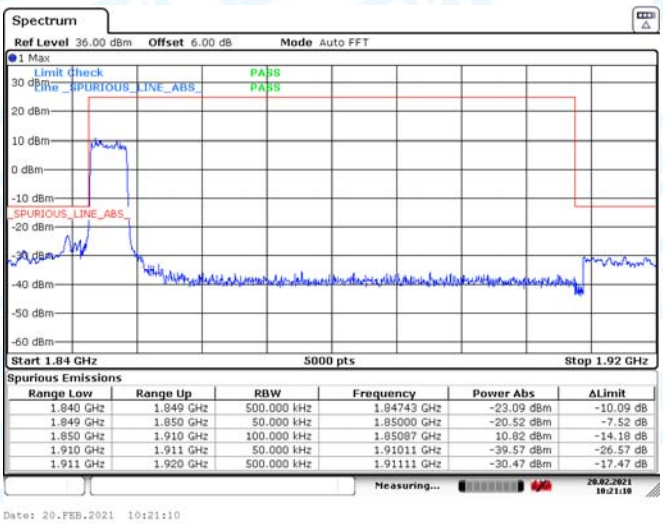
Low Channel	High Channel

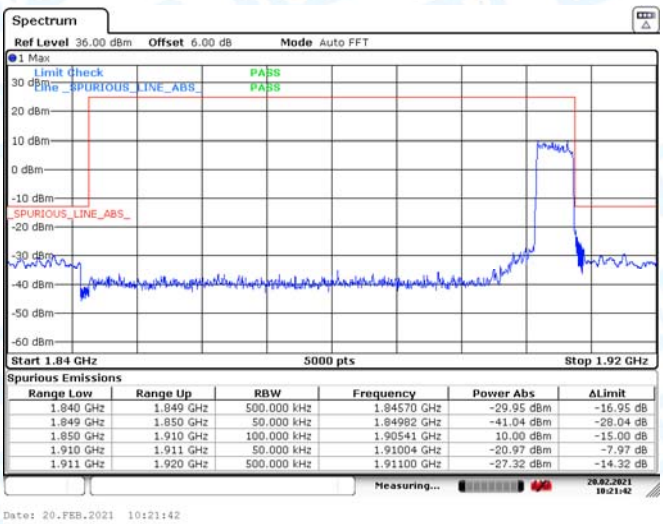
LTE BAND 2 (5MHz RB Size 25& RB Offset 0 QPSK)





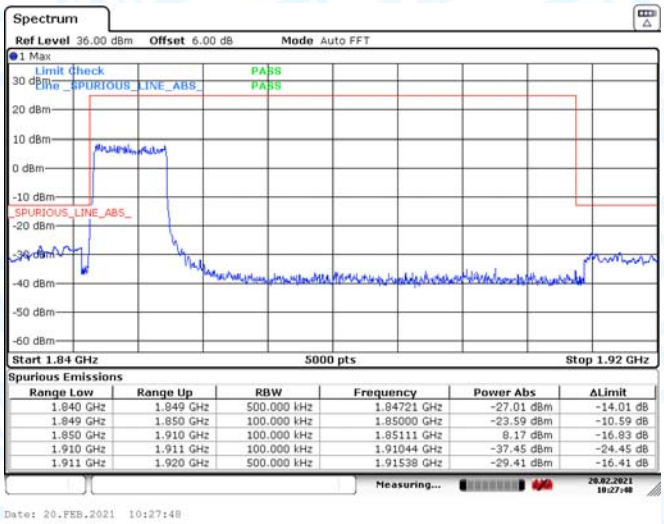
LTE BAND 2 (5MHz RB Size 25& RB Offset 0 16QAM)

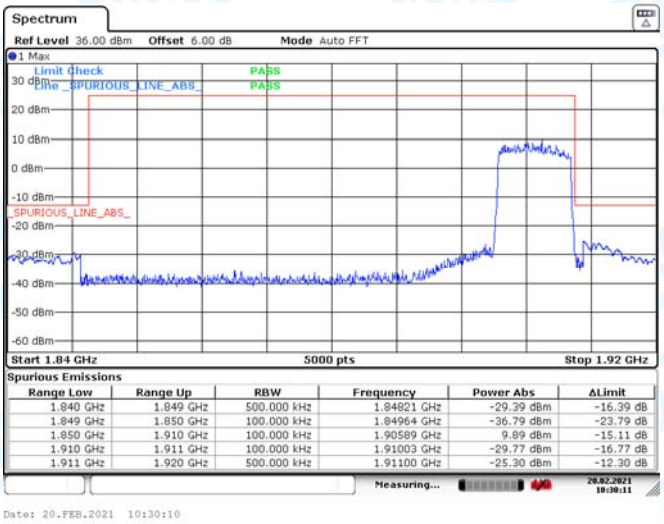




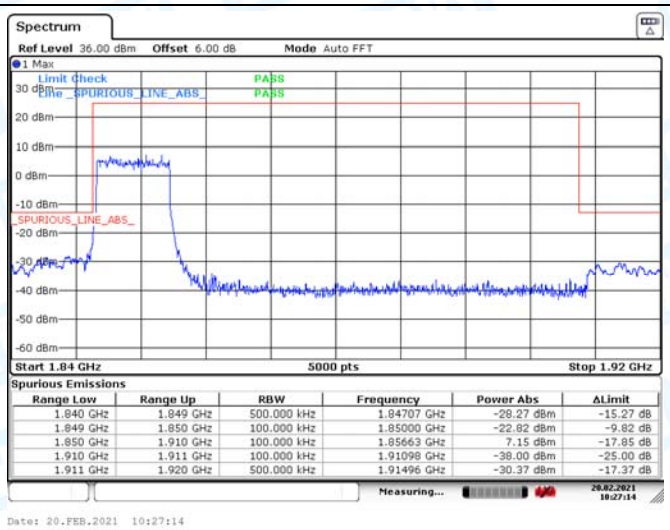
Low Channel	High Channel

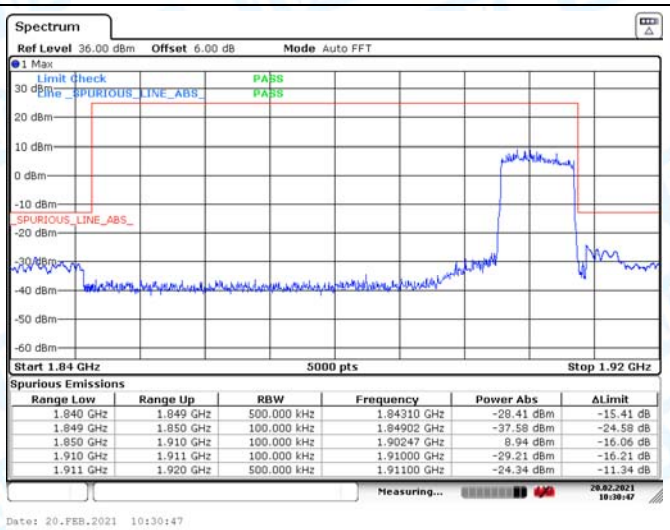
LTE BAND 2 (10MHz RB Size 50& RB Offset 0 QPSK)

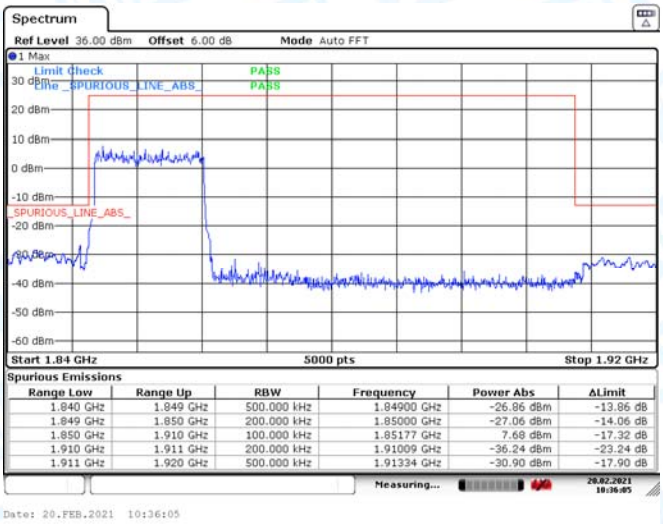
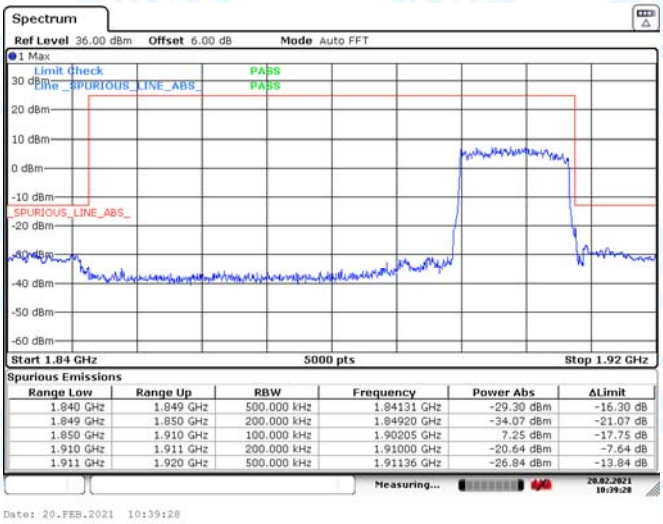
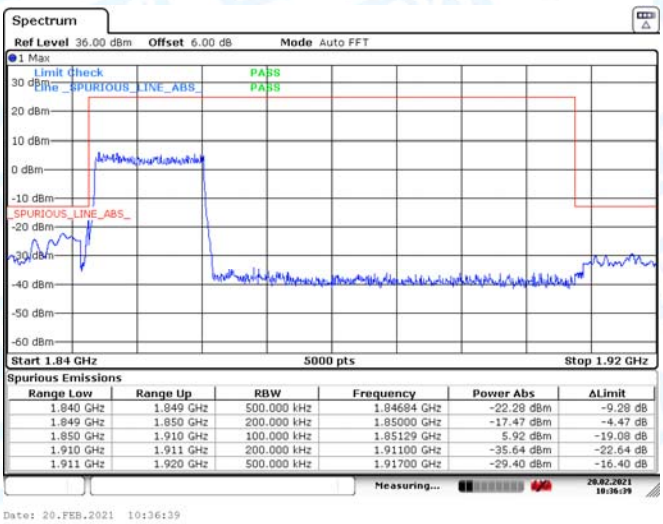
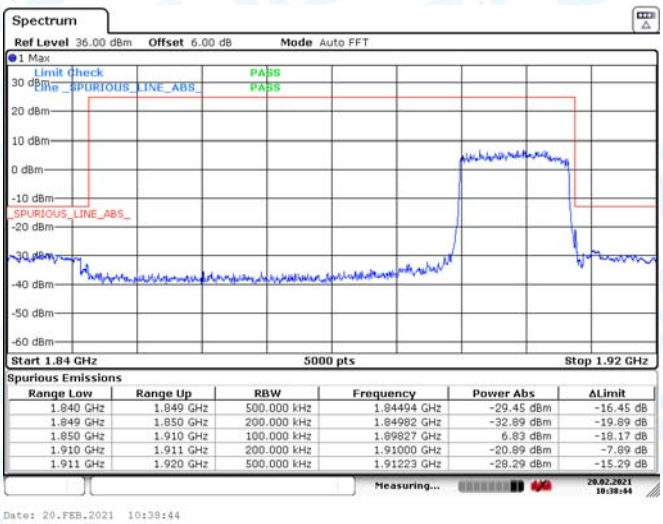




LTE BAND 2 (10MHz RB Size 50& RB Offset 0 16QAM)





Low Channel	High Channel
LTE BAND 2 (15MHz RB Size 75& RB Offset 0 QPSK)	
	
LTE BAND 2 (15MHz RB Size 75& RB Offset 0 16QAM)	
	

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	500.000 kHz	1.84900 GHz	-26.86 dBm	-13.86 dB
1.849 GHz	1.850 GHz	200.000 kHz	1.85000 GHz	-27.06 dBm	-14.06 dB
1.850 GHz	1.910 GHz	100.000 kHz	1.85177 GHz	7.68 dBm	-17.32 dB
1.910 GHz	1.911 GHz	200.000 kHz	1.91009 GHz	-36.24 dBm	-23.24 dB
1.911 GHz	1.920 GHz	500.000 kHz	1.91334 GHz	-30.90 dBm	-17.90 dB

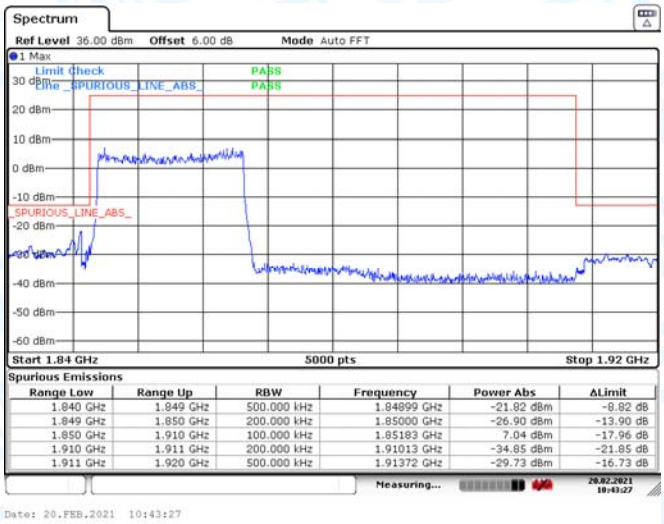
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	500.000 kHz	1.84131 GHz	-29.30 dBm	-16.30 dB
1.849 GHz	1.850 GHz	200.000 kHz	1.84920 GHz	-34.07 dBm	-21.07 dB
1.850 GHz	1.910 GHz	100.000 kHz	1.90205 GHz	7.25 dBm	-17.75 dB
1.910 GHz	1.911 GHz	200.000 kHz	1.91000 GHz	-20.64 dBm	-7.64 dB
1.911 GHz	1.920 GHz	500.000 kHz	1.91136 GHz	-26.84 dBm	-13.84 dB

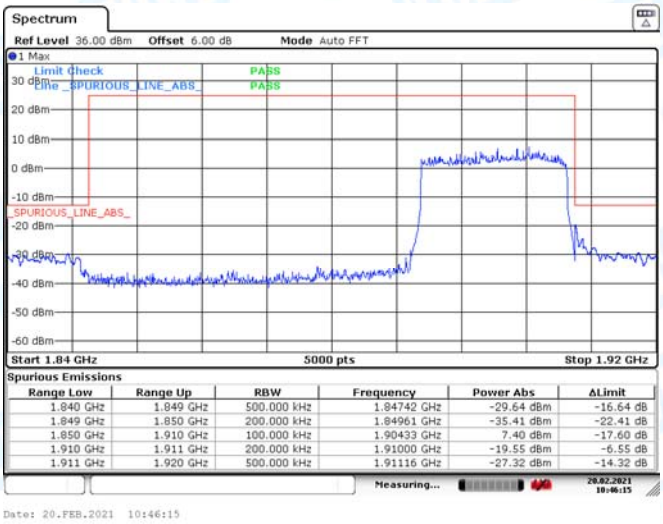
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	500.000 kHz	1.84684 GHz	-22.28 dBm	-9.28 dB
1.849 GHz	1.850 GHz	200.000 kHz	1.85000 GHz	-17.47 dBm	-4.47 dB
1.850 GHz	1.910 GHz	100.000 kHz	1.85129 GHz	5.92 dBm	-19.08 dB
1.910 GHz	1.911 GHz	200.000 kHz	1.91100 GHz	-35.64 dBm	-22.64 dB
1.911 GHz	1.920 GHz	500.000 kHz	1.91700 GHz	-29.40 dBm	-16.40 dB

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	500.000 kHz	1.84494 GHz	-29.45 dBm	-16.45 dB
1.849 GHz	1.850 GHz	200.000 kHz	1.84982 GHz	-32.89 dBm	-19.89 dB
1.850 GHz	1.910 GHz	100.000 kHz	1.89827 GHz	6.83 dBm	-18.17 dB
1.910 GHz	1.911 GHz	200.000 kHz	1.91000 GHz	-20.89 dBm	-7.89 dB
1.911 GHz	1.920 GHz	500.000 kHz	1.91223 GHz	-28.29 dBm	-15.29 dB

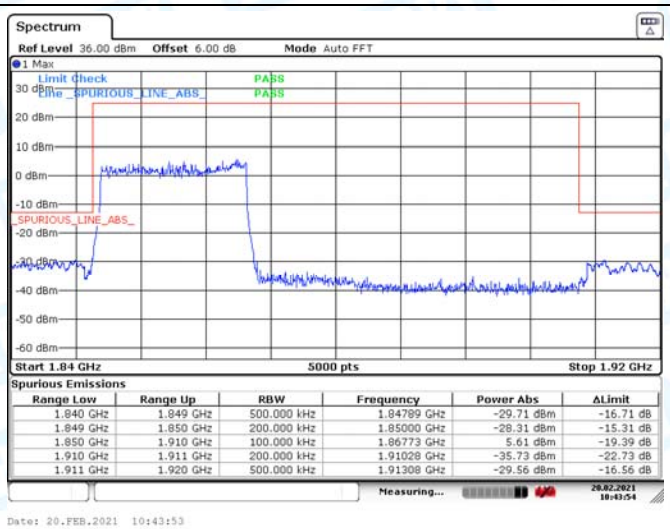
Low Channel	High Channel

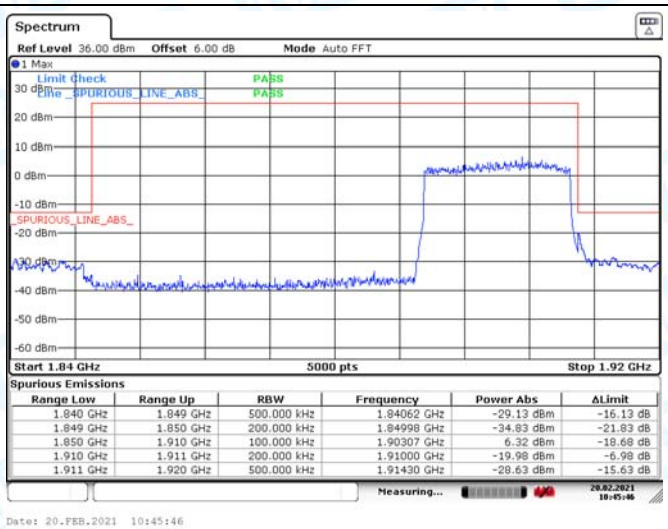
LTE BAND 2 (20MHz RB Size 100& RB Offset 0 QPSK)

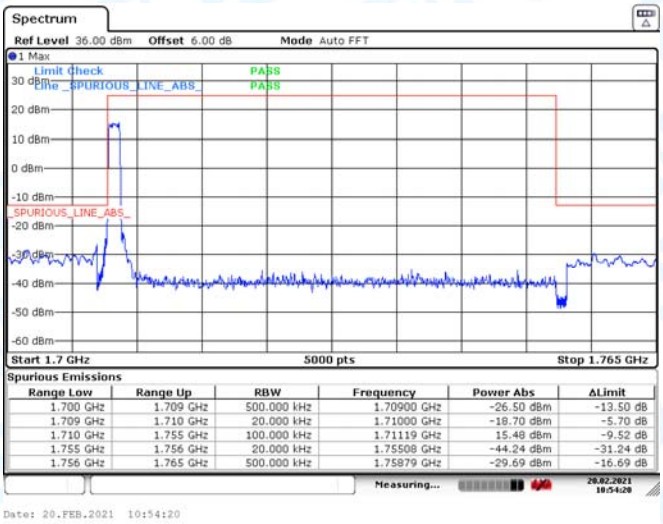
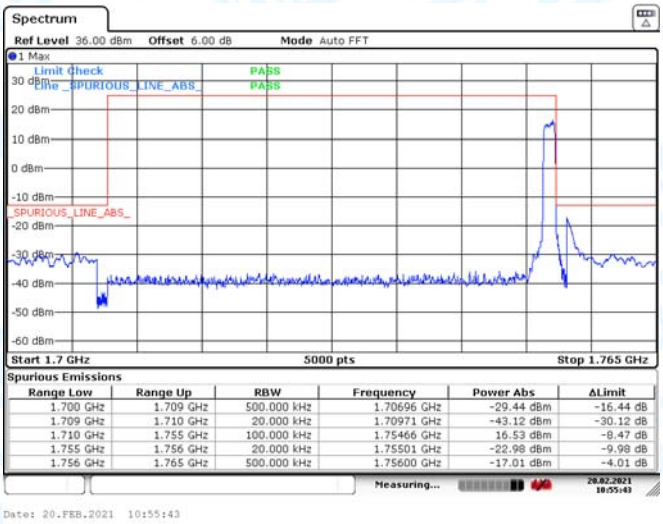
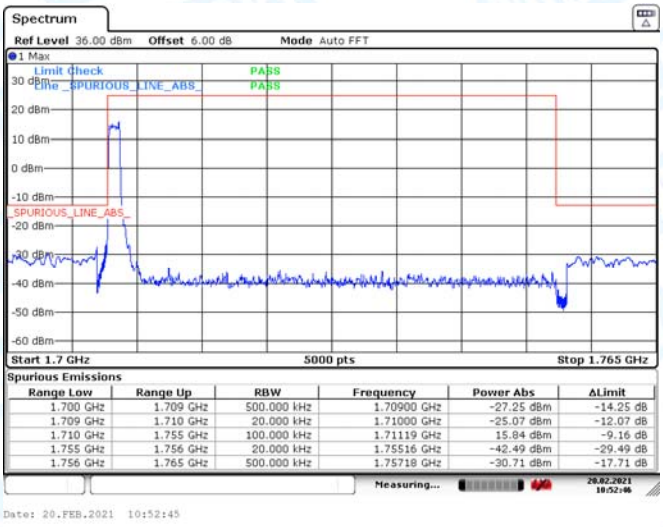
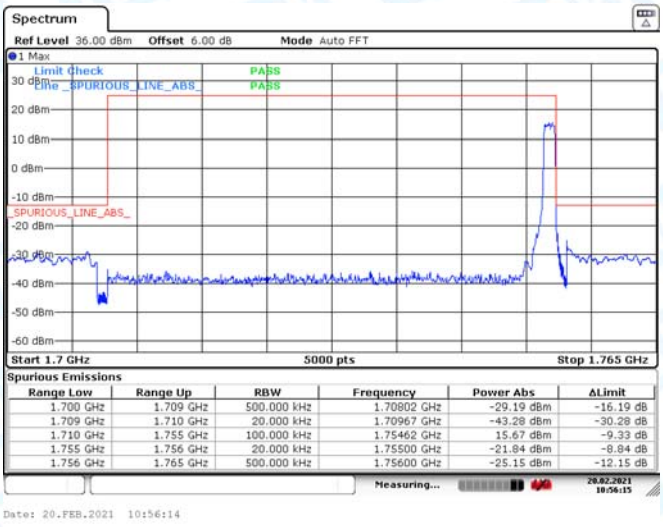


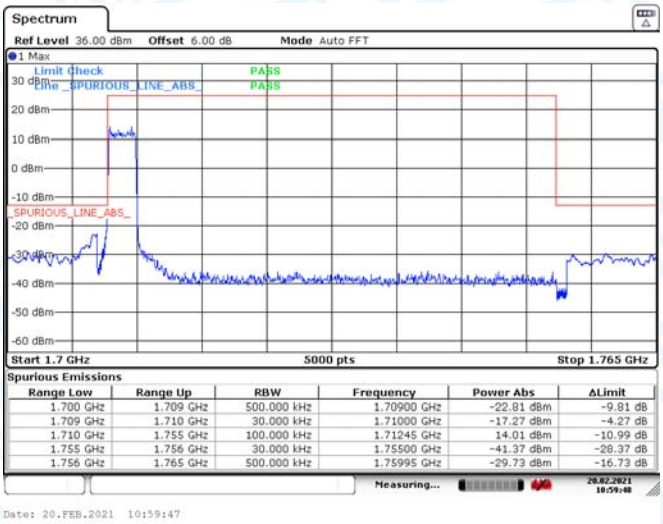
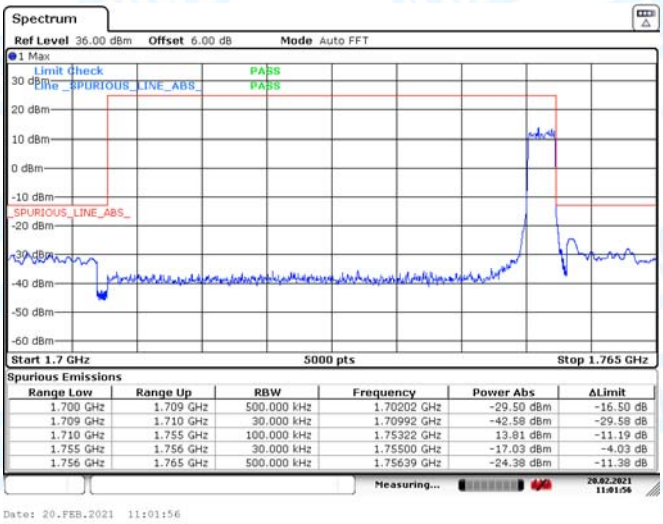
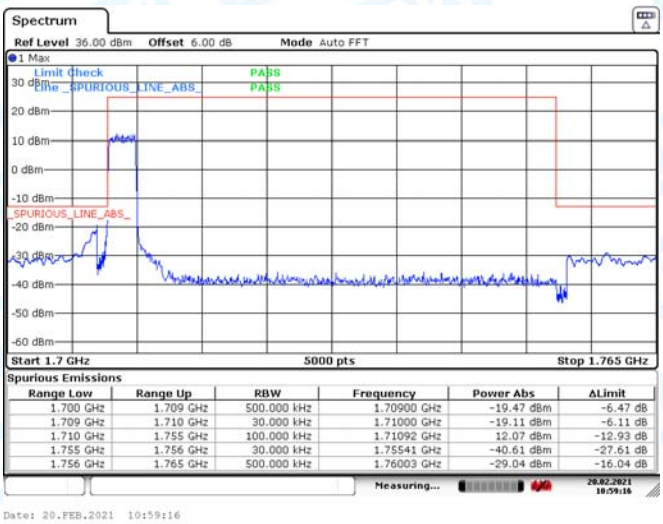
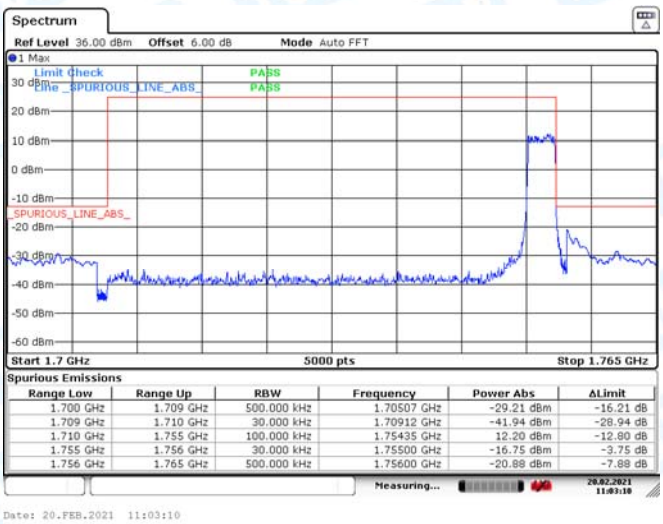


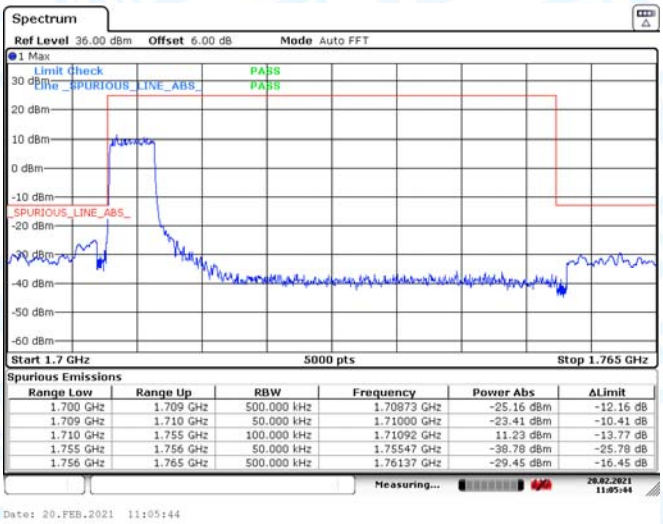
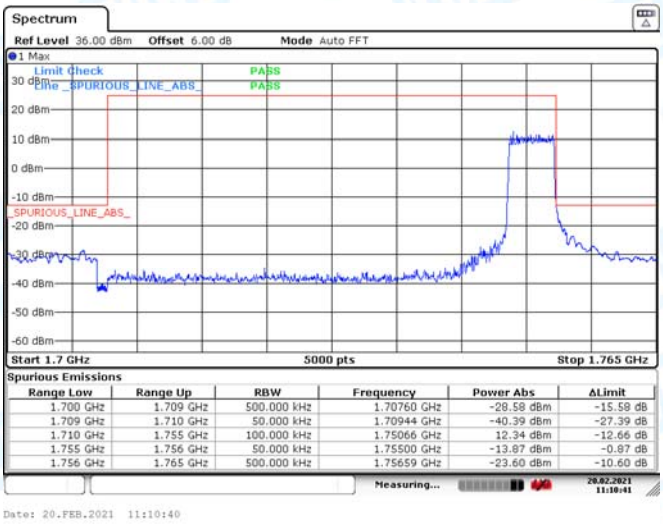
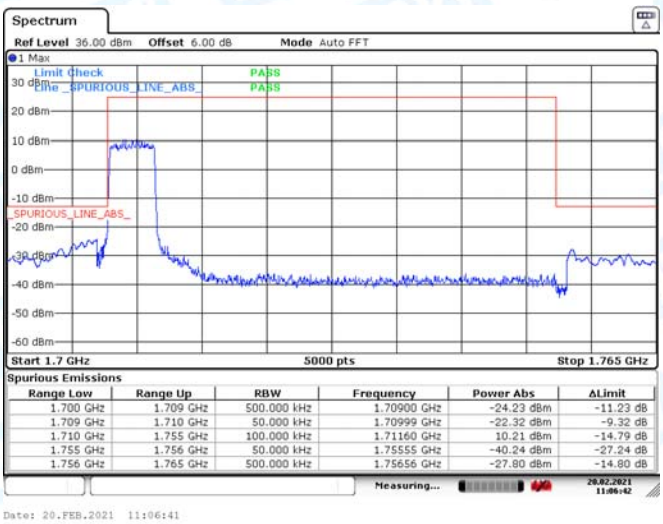
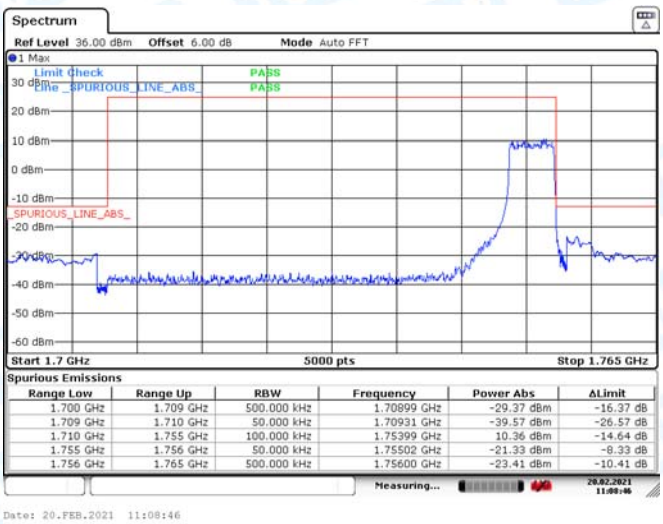
LTE BAND 2 (20MHz RB Size 100& RB Offset 0 16QAM)

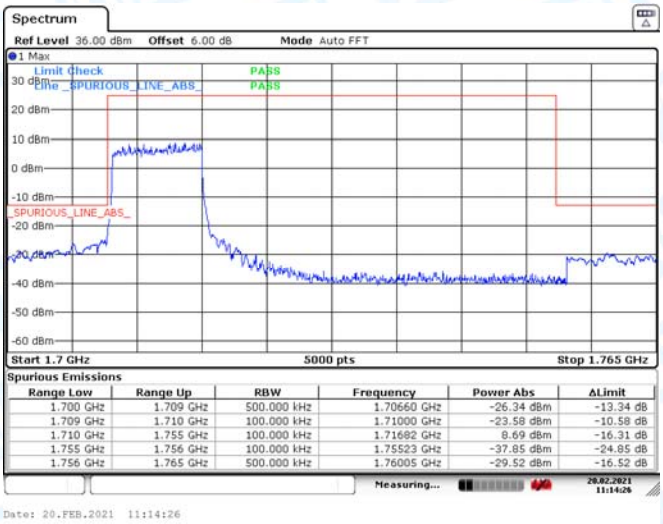
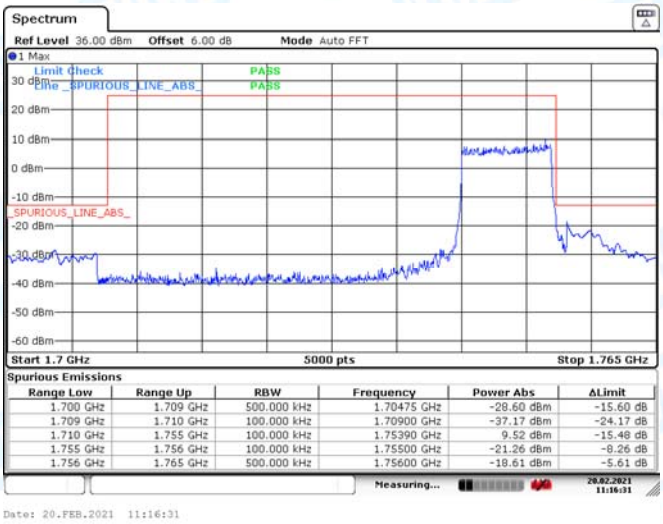
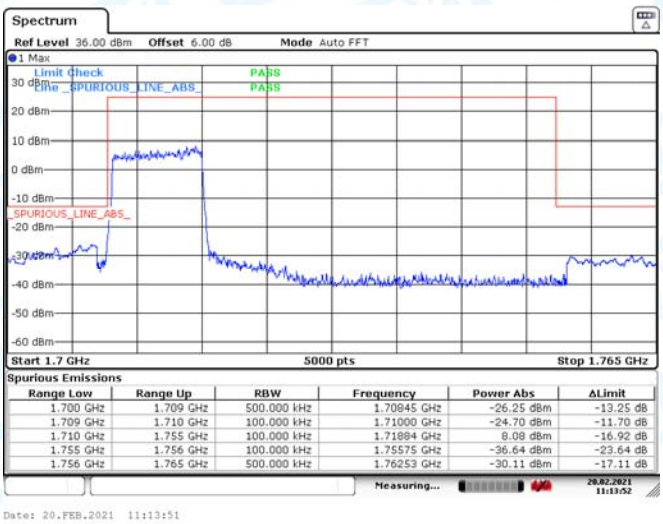
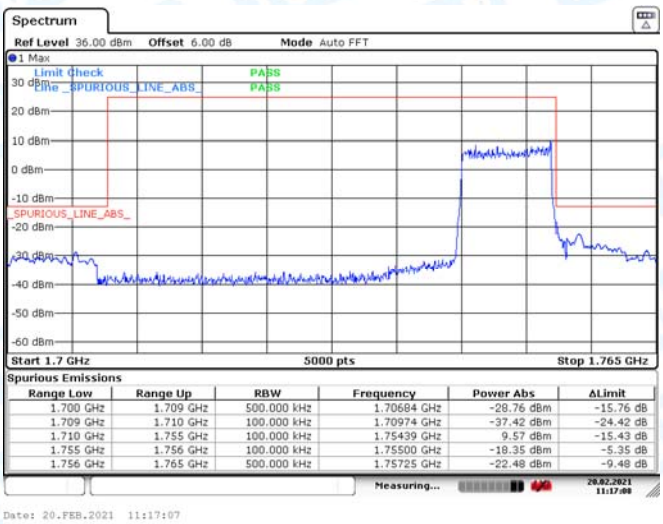


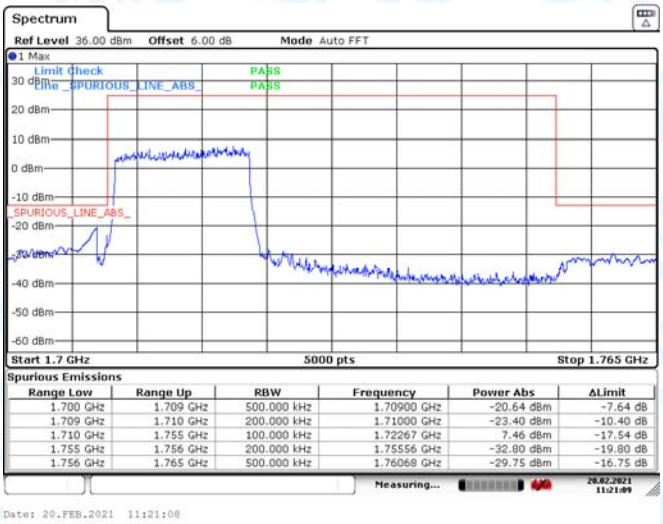
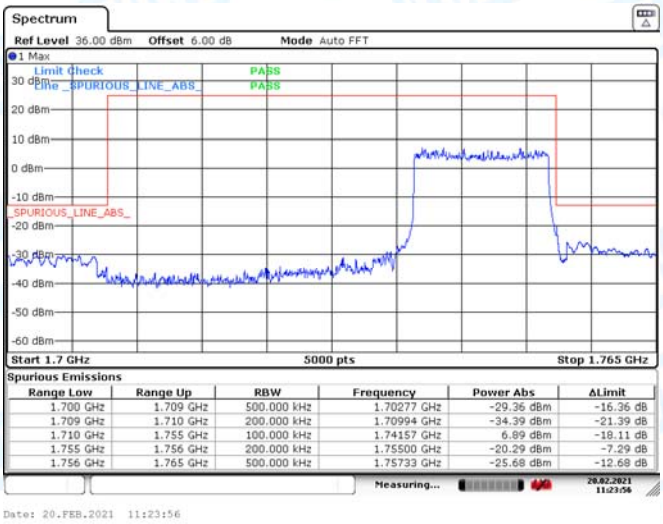
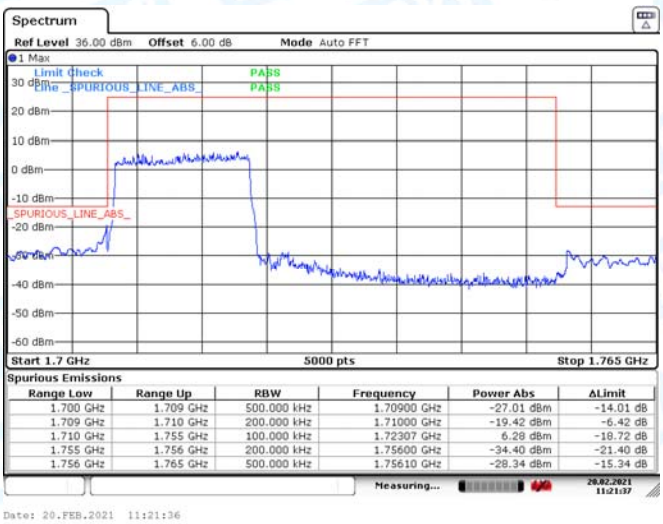
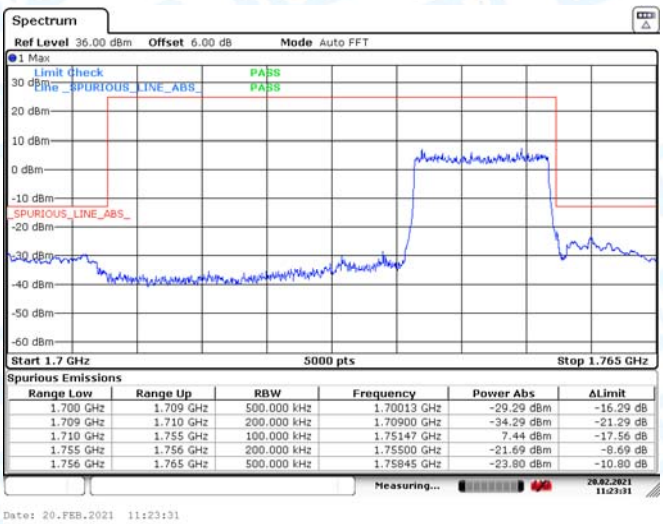


Low Channel	High Channel
LTE BAND 4 (1.4MHz RB Size 6& RB Offset 0 QPSK)	
	
LTE BAND 4 (1.4MHz RB Size 6& RB Offset 0 16QAM)	
	

Low Channel	High Channel
LTE BAND 4 (3MHz RB Size 15& RB Offset 0 QPSK)	
	
LTE BAND 4 (3MHz RB Size 15& RB Offset 0 16QAM)	
	

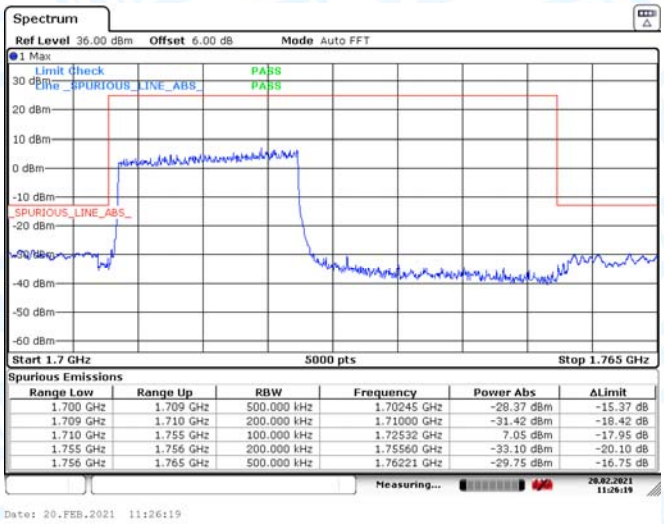
Low Channel	High Channel
LTE BAND 4 (5MHz RB Size 25& RB Offset 0 QPSK)	
	
LTE BAND 4 (5MHz RB Size 25& RB Offset 0 16QAM)	
	

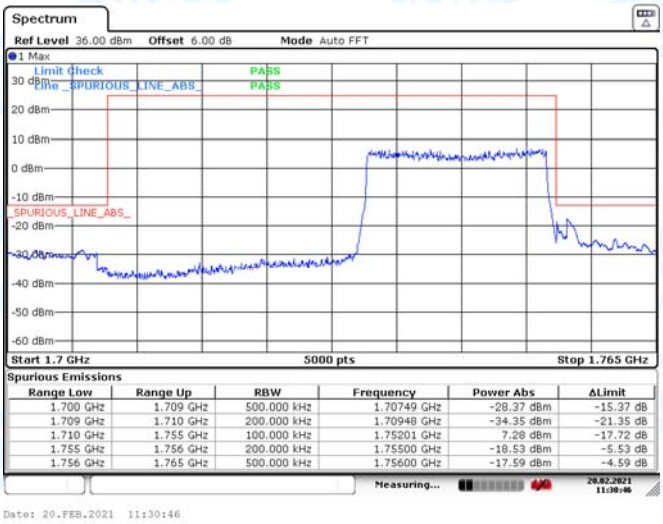
Low Channel	High Channel
LTE BAND 4 (10MHz RB Size 50& RB Offset 0 QPSK)	
	
LTE BAND 4 (10MHz RB Size 50& RB Offset 0 16QAM)	
	

Low Channel	High Channel
LTE BAND 4 (15MHz RB Size 75& RB Offset 0 QPSK)	
	
LTE BAND 4 (15MHz RB Size 75& RB Offset 0 QPSK)	
	

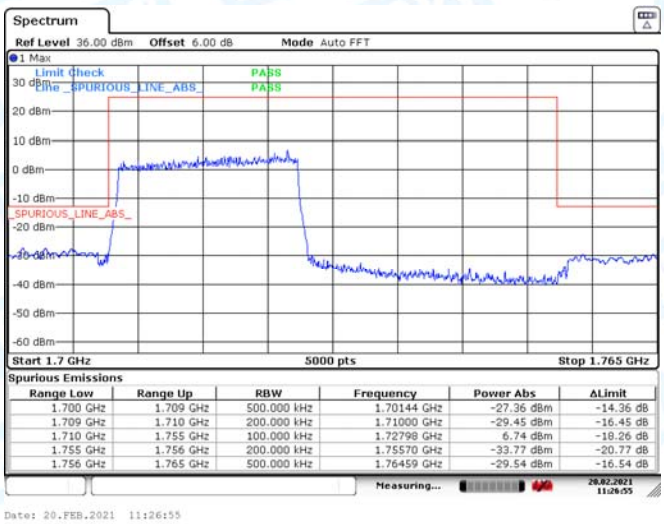
Low Channel	High Channel

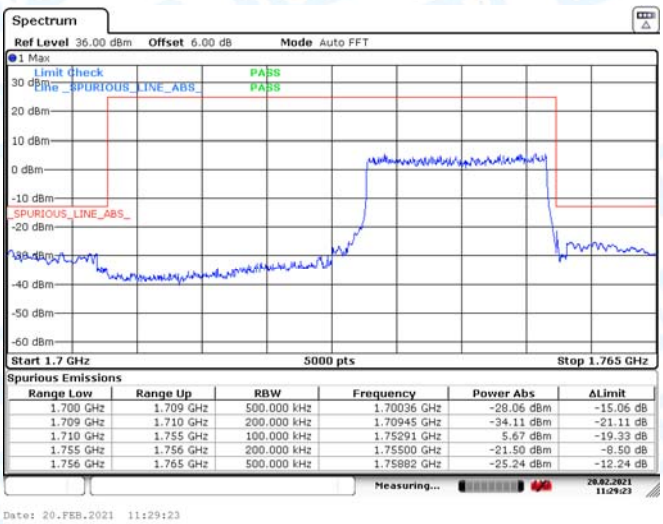
LTE BAND 4 (20MHz RB Size 100& RB Offset 0 QPSK)





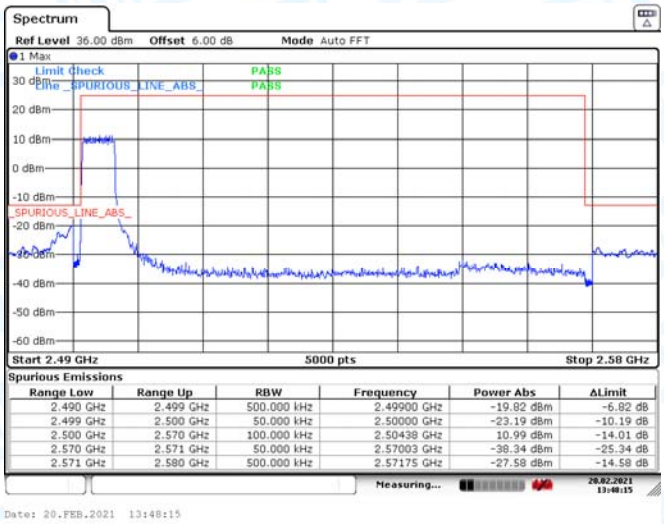
LTE BAND 4 (20MHz RB Size 100& RB Offset 0 16QAM)

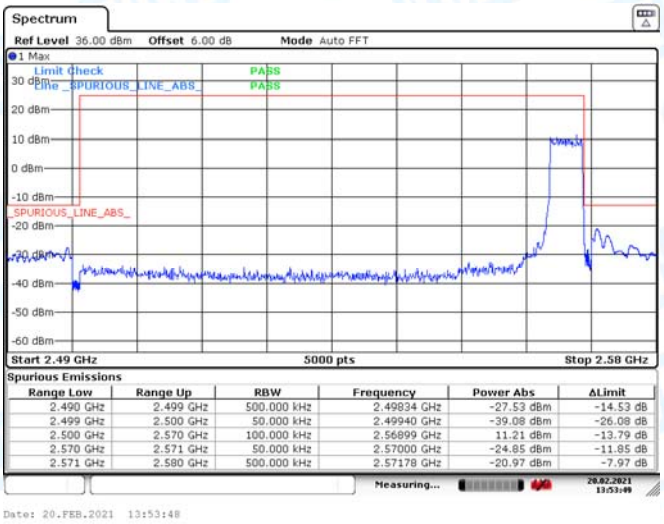




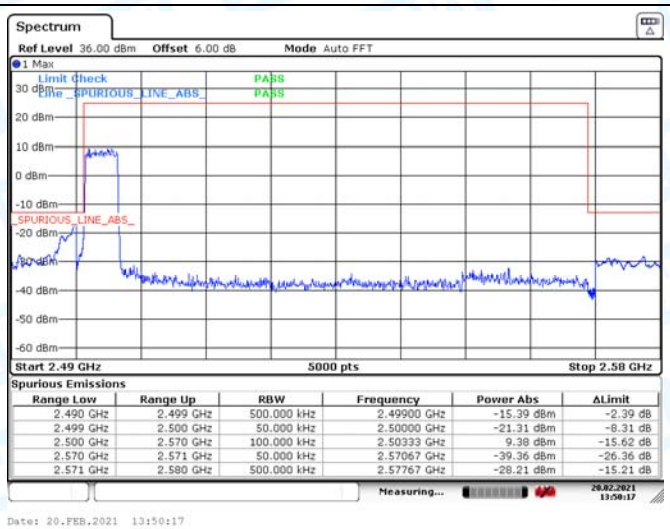
Low Channel	High Channel

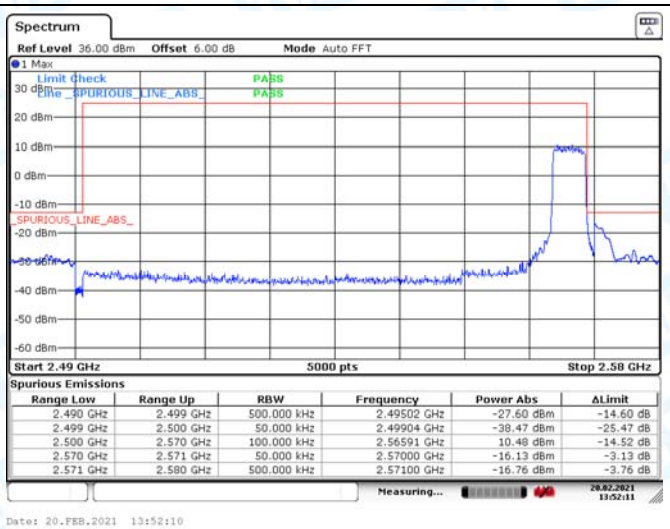
LTE BAND 7 (5MHz RB Size 25& RB Offset 0 QPSK)





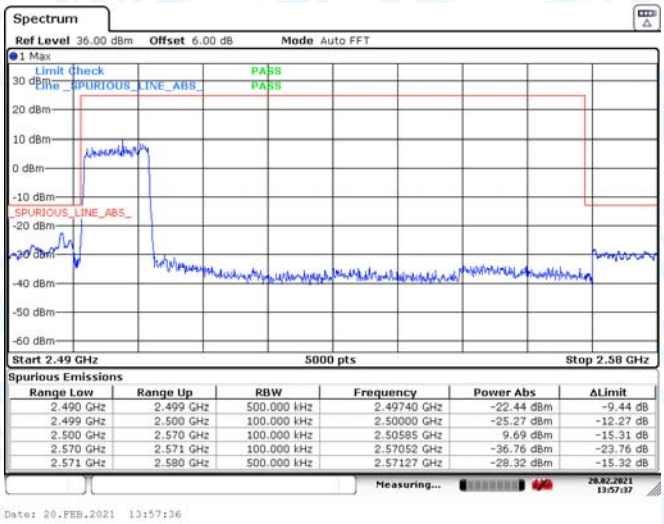
LTE BAND 7 (5MHz RB Size 25& RB Offset 0 16QAM)

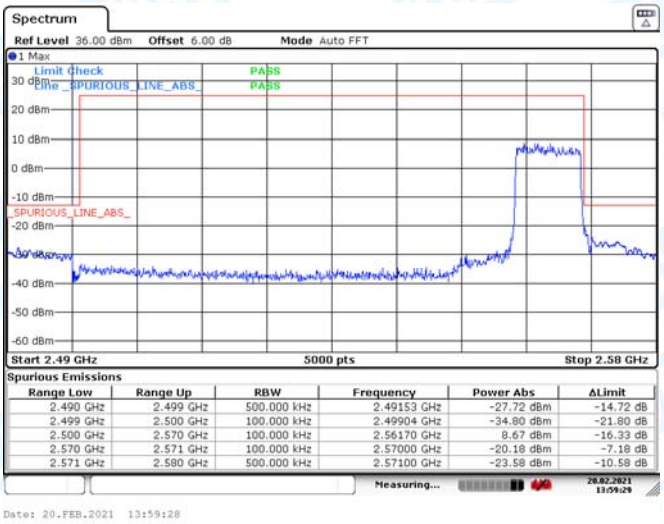




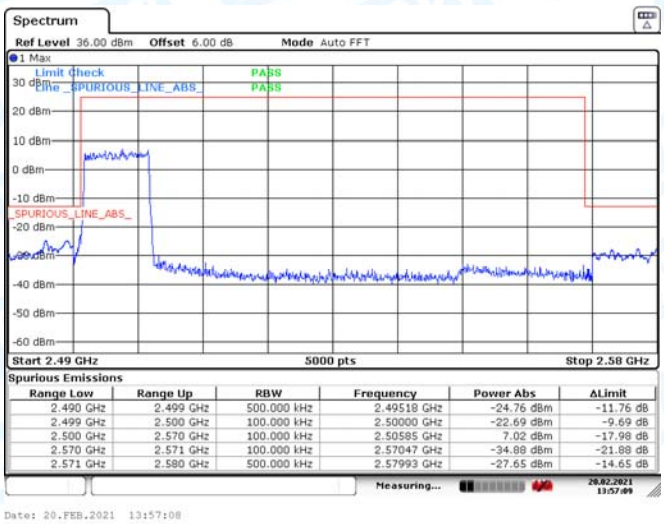
Low Channel	High Channel

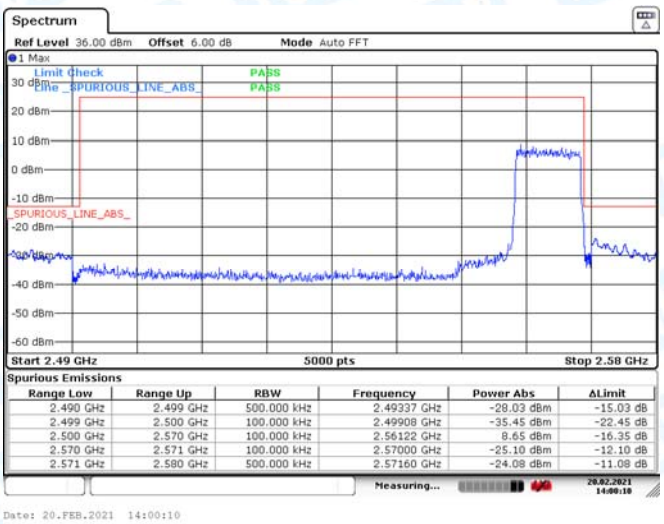
LTE BAND 7 (10MHz RB Size 50& RB Offset 0 QPSK)

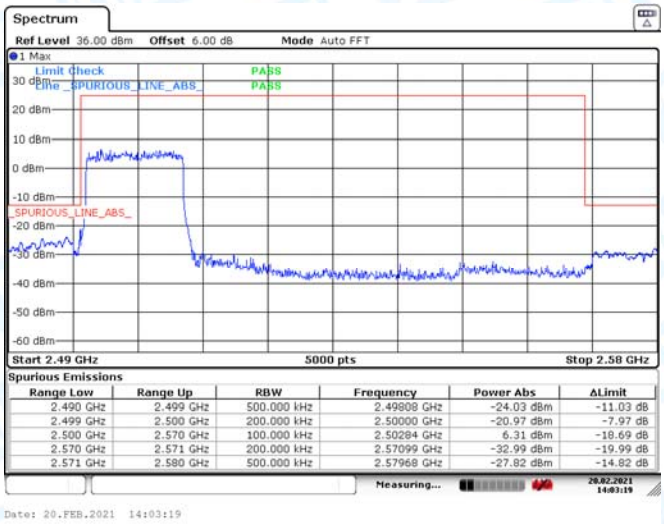
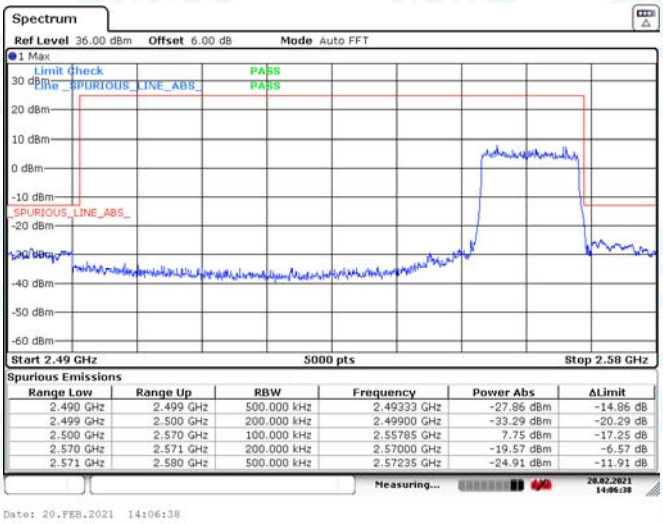
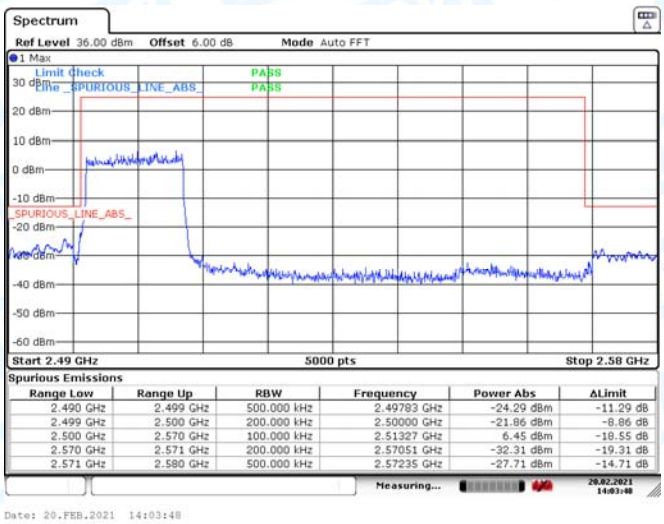
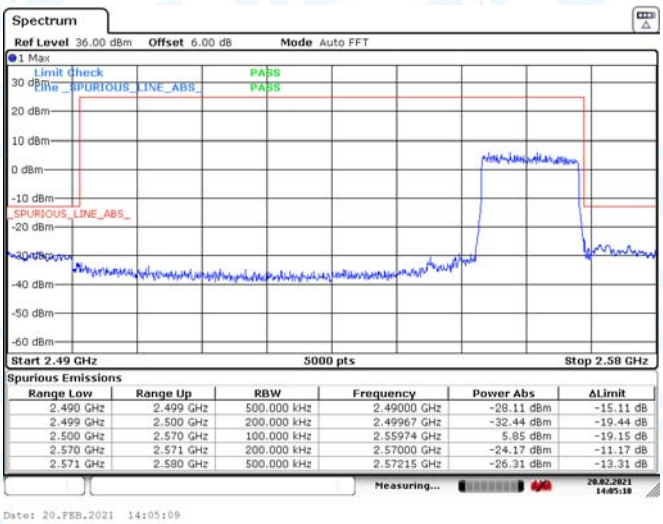




LTE BAND 7 (10MHz RB Size 50& RB Offset 0 QPSK)





Low Channel	High Channel
LTE BAND 7 (15MHz RB Size 75& RB Offset 0 QPSK)	
	
LTE BAND 7 (15MHz RB Size 75& RB Offset 0 16QAM)	
	

Low Channel	High Channel
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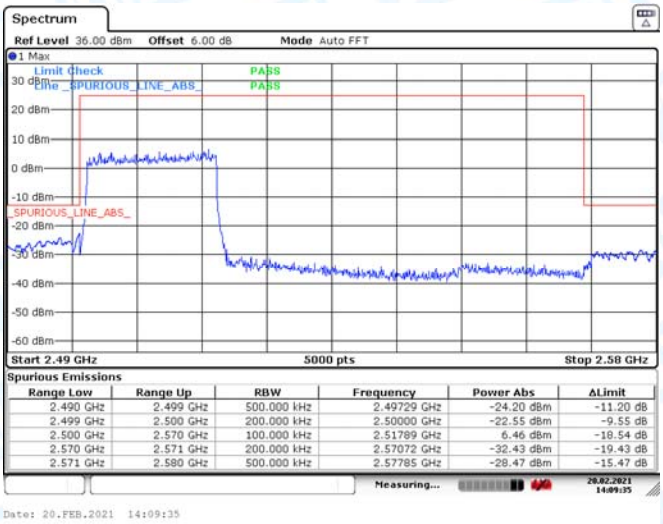
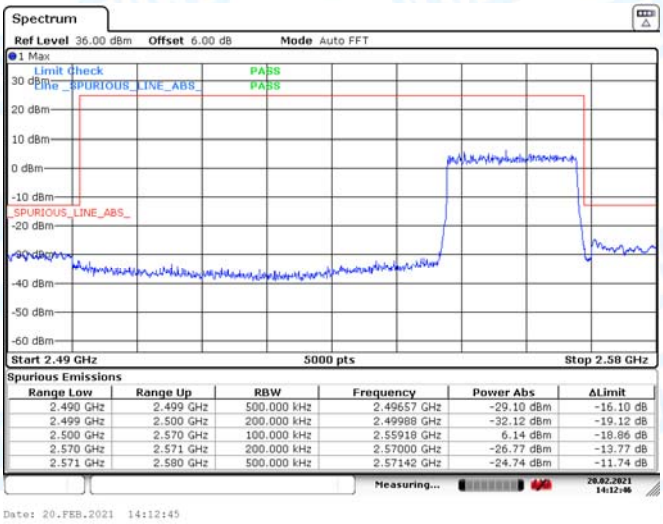
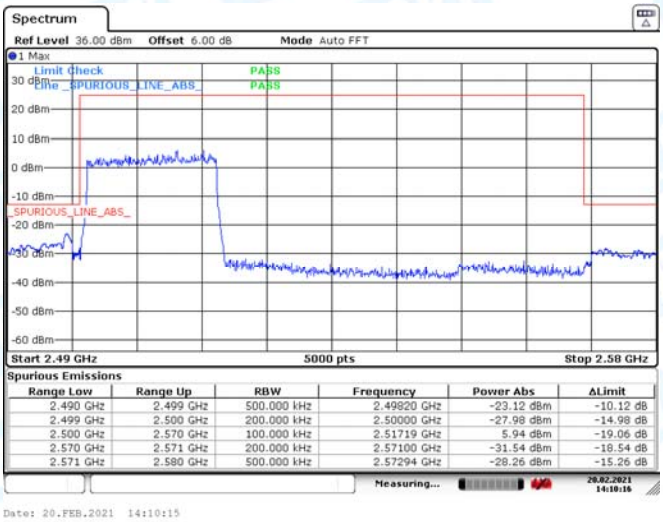
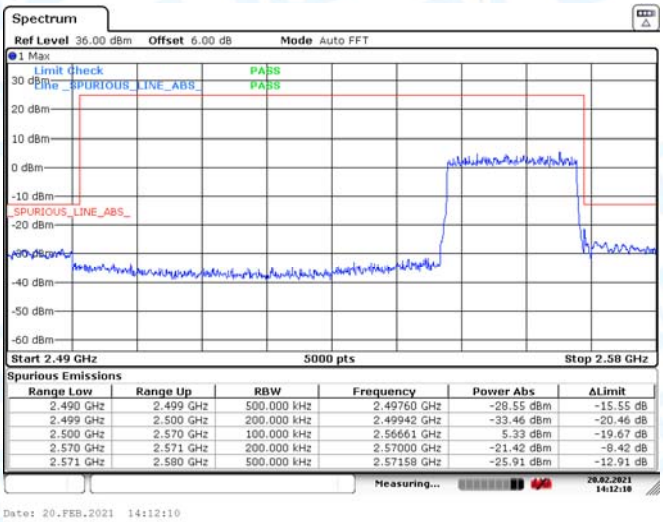
	
LTE BAND 7 (20MHz RB Size 100& RB Offset 0 QPSK)	
	

ATTACHMENT F--RADIATED OUTPUT POWER

Radiated Power (EIRP) for LTE Band 2 / 1.4M									
Modulation	RB		Channel	Antenna (H&V)	SG Level (dBm)	Antenna Factor (dBd)	Cable Loss (dB)	EIRP (dBm)	EIRP (W)
	Size	offset							
QPSK	1	0	Lowest	H	19.27	5.01	2.59	21.69	0.148
				V	16.27	5.01	2.59	18.69	0.074
	1	0	Middle	H	19.89	4.82	2.59	22.12	0.163
				V	16.73	4.82	2.59	18.96	0.079
	1	0	Highest	H	20.48	4.45	2.59	22.34	0.171
				V	17.26	4.45	2.59	19.12	0.082
16QAM	1	0	Lowest	H	18.94	5.01	2.59	21.36	0.137
				V	16.27	5.01	2.59	18.69	0.074
	1	0	Middle	H	19.64	4.82	2.59	21.87	0.154
				V	16.46	4.82	2.59	18.69	0.074
	1	0	Highest	H	19.60	4.45	2.59	21.46	0.140
				V	16.40	4.45	2.59	18.26	0.067
Limit								33	2

Radiated Power (EIRP) for LTE Band 2 / 3M									
Modulation	RB		Channel	Antenna (H&V)	SG Level (dBm)	Antenna Factor (dBd)	Cable Loss (dB)	EIRP (dBm)	EIRP (W)
	Size	offset							
QPSK	1	0	Lowest	H	19.12	5.01	2.59	21.54	0.143
				V	16.23	5.01	2.59	18.65	0.073
	1	0	Middle	H	19.92	4.82	2.59	22.15	0.164
				V	16.41	4.82	2.59	18.64	0.073
	1	0	Highest	H	19.83	4.45	2.59	21.69	0.148
				V	16.73	4.45	2.59	18.59	0.072
16QAM	1	0	Lowest	H	19.66	5.01	2.59	22.08	0.161
				V	16.24	5.01	2.59	18.66	0.073
	1	0	Middle	H	19.10	4.82	2.59	21.33	0.136
				V	16.16	4.82	2.59	18.39	0.069
	1	0	Highest	H	19.93	4.45	2.59	21.79	0.151
				V	16.88	4.45	2.59	18.74	0.075
Limit								33	2

Radiated Power (EIRP) for LTE Band 2 / 5M									
Modulation	RB		Channel	Antenna (H&V)	SG Level (dBm)	Antenna Factor (dBd)	Cable Loss (dB)	EIRP (dBm)	EIRP (W)
	Size	offset							
QPSK	1	0	Lowest	H	19.61	5.01	2.59	22.03	0.160
				V	16.52	5.01	2.59	18.94	0.078
	1	0	Middle	H	19.81	4.82	2.59	22.04	0.160
				V	15.99	4.82	2.59	18.22	0.066
	1	0	Highest	H	20.28	4.45	2.59	22.14	0.164
				V	17.68	4.45	2.59	19.54	0.090
16QAM	1	0	Lowest	H	19.26	5.01	2.59	21.68	0.147
				V	16.36	5.01	2.59	18.78	0.076
	1	0	Middle	H	19.33	4.82	2.59	21.56	0.143
				V	16.43	4.82	2.59	18.66	0.073
	1	0	Highest	H	19.89	4.45	2.59	21.75	0.150
				V	16.73	4.45	2.59	18.59	0.072
Limit								**33**	**2**

Radiated Power (EIRP) for LTE Band 2 / 10M									
Modulation	RB		Channel	Antenna (H&V)	SG Level (dBm)	Antenna Factor (dBd)	Cable Loss (dB)	EIRP (dBm)	EIRP (W)
	Size	offset							
QPSK	1	0	Lowest	H	19.26	5.01	2.59	21.68	0.147
				V	15.82	5.01	2.59	18.24	0.067
	1	0	Middle	H	19.64	4.82	2.59	21.87	0.154
				V	16.42	4.82	2.59	18.65	0.073
	1	0	Highest	H	19.91	4.45	2.59	21.77	0.150
				V	16.49	4.45	2.59	18.35	0.068
16QAM	1	0	Lowest	H	19.17	5.01	2.59	21.59	0.144
				V	16.23	5.01	2.59	18.65	0.073
	1	0	Middle	H	19.65	4.82	2.59	21.88	0.154
				V	16.01	4.82	2.59	18.24	0.067
	1	0	Highest	H	20.16	4.45	2.59	22.02	0.159
				V	17.38	4.45	2.59	19.24	0.084
Limit								**33**	**2**

Radiated Power (EIRP) for LTE Band 2 / 15M									
Modulation	RB		Channel	Antenna (H&V)	SG Level (dBm)	Antenna Factor (dBd)	Cable Loss (dB)	EIRP (dBm)	EIRP (W)
	Size	offset							
QPSK	1	0	Lowest	H	19.17	5.01	2.59	21.59	0.144
				V	15.91	5.01	2.59	18.33	0.068
	1	0	Middle	H	19.44	4.82	2.59	21.67	0.147
				V	16.03	4.82	2.59	18.26	0.067
	1	0	Highest	H	20.03	4.45	2.59	21.89	0.155
				V	16.80	4.45	2.59	18.66	0.073
16QAM	1	0	Lowest	H	19.05	5.01	2.59	21.47	0.140
				V	15.91	5.01	2.59	18.33	0.068
	1	0	Middle	H	19.63	4.82	2.59	21.86	0.153
				V	16.36	4.82	2.59	18.59	0.072
	1	0	Highest	H	20.08	4.45	2.59	21.94	0.156
				V	17.02	4.45	2.59	18.88	0.077
Limit								**33**	**2**

Radiated Power (EIRP) for LTE Band 2 / 20M									
Modulation	RB		Channel	Antenna (H&V)	SG Level (dBm)	Antenna Factor (dBd)	Cable Loss (dB)	EIRP (dBm)	EIRP (W)
	Size	offset							
QPSK	1	0	Lowest	H	19.26	5.01	2.59	21.68	0.147
				V	15.91	5.01	2.59	18.33	0.068
	1	0	Middle	H	19.64	4.82	2.59	21.87	0.154
				V	16.31	4.82	2.59	18.54	0.071
	1	0	Highest	H	19.72	4.45	2.59	21.58	0.144
				V	16.70	4.45	2.59	18.56	0.072
16QAM	1	0	Lowest	H	19.23	5.01	2.59	21.65	0.146
				V	15.91	5.01	2.59	18.33	0.068
	1	0	Middle	H	19.19	4.82	2.59	21.42	0.139
				V	16.38	4.82	2.59	18.61	0.073
	1	0	Highest	H	19.58	4.45	2.59	21.44	0.139
				V	16.48	4.45	2.59	18.34	0.068
Limit								**33**	**2**

Radiated Power (EIRP) for LTE Band 4 / 1.4M									
Modulation	RB		Channel	Antenna (H&V)	SG Level (dBm)	Antenna Factor (dBd)	Cable Loss (dB)	EIRP (dBm)	EIRP (W)
	Size	offset							
QPSK	1	0	Lowest	H	19.54	5.01	2.43	22.12	0.163
				V	16.11	5.01	2.43	18.69	0.074
	1	0	Middle	H	19.96	4.82	2.43	22.35	0.172
				V	16.57	4.82	2.43	18.96	0.079
	1	0	Highest	H	20.12	4.45	2.43	22.14	0.164
				V	16.34	4.45	2.43	18.36	0.069
16QAM	1	0	Lowest	H	19.47	5.01	2.43	22.05	0.160
				V	15.56	5.01	2.43	18.14	0.065
	1	0	Middle	H	19.74	4.82	2.43	22.13	0.163
				V	16.30	4.82	2.43	18.69	0.074
	1	0	Highest	H	20.21	4.45	2.43	22.23	0.167
				V	16.67	4.45	2.43	18.69	0.074
Limit								**30**	**1**

Radiated Power (EIRP) for LTE Band 4 / 3M									
Modulation	RB		Channel	Antenna (H&V)	SG Level (dBm)	Antenna Factor (dBd)	Cable Loss (dB)	EIRP (dBm)	EIRP (W)
	Size	offset							
QPSK	1	0	Lowest	H	19.66	5.01	2.43	22.24	0.167
				V	16.39	5.01	2.43	18.97	0.079
	1	0	Middle	H	19.79	4.82	2.43	22.18	0.165
				V	16.34	4.82	2.43	18.73	0.075
	1	0	Highest	H	20.07	4.45	2.43	22.09	0.162
				V	16.64	4.45	2.43	18.66	0.073
16QAM	1	0	Lowest	H	19.50	5.01	2.43	22.08	0.161
				V	15.80	5.01	2.43	18.38	0.069
	1	0	Middle	H	19.67	4.82	2.43	22.06	0.161
				V	16.00	4.82	2.43	18.39	0.069
	1	0	Highest	H	20.12	4.45	2.43	22.14	0.164
				V	16.45	4.45	2.43	18.47	0.070
Limit								**30**	**1**

Radiated Power (EIRP) for LTE Band 4 / 5M									
Modulation	RB		Channel	Antenna (H&V)	SG Level (dBm)	Antenna Factor (dBd)	Cable Loss (dB)	EIRP (dBm)	EIRP (W)
	Size	offset							
QPSK	1	0	Lowest	H	19.31	5.01	2.43	21.89	0.155
				V	15.77	5.01	2.43	18.35	0.068
	1	0	Middle	H	19.75	4.82	2.43	22.14	0.164
				V	16.62	4.82	2.43	19.01	0.080
	1	0	Highest	H	19.86	4.45	2.43	21.88	0.154
				V	16.52	4.45	2.43	18.54	0.071
16QAM	1	0	Lowest	H	19.53	5.01	2.43	22.11	0.163
				V	16.07	5.01	2.43	18.65	0.073
	1	0	Middle	H	19.46	4.82	2.43	21.85	0.153
				V	15.85	4.82	2.43	18.24	0.067
	1	0	Highest	H	19.94	4.45	2.43	21.96	0.157
				V	16.21	4.45	2.43	18.23	0.067
Limit								**30**	**1**

Radiated Power (EIRP) for LTE Band 4 / 10M									
Modulation	RB		Channel	Antenna (H&V)	SG Level (dBm)	Antenna Factor (dBd)	Cable Loss (dB)	EIRP (dBm)	EIRP (W)
	Size	offset							
QPSK	1	0	Lowest	H	19.66	5.01	2.43	22.24	0.167
				V	16.66	5.01	2.43	19.24	0.084
	1	0	Middle	H	19.40	4.82	2.43	21.79	0.151
				V	16.26	4.82	2.43	18.65	0.073
	1	0	Highest	H	20.40	4.45	2.43	22.42	0.175
				V	16.69	4.45	2.43	18.71	0.074
16QAM	1	0	Lowest	H	19.58	5.01	2.43	22.16	0.164
				V	16.11	5.01	2.43	18.69	0.074
	1	0	Middle	H	19.58	4.82	2.43	21.97	0.157
				V	16.17	4.82	2.43	18.56	0.072
	1	0	Highest	H	19.85	4.45	2.43	21.87	0.154
				V	16.51	4.45	2.43	18.53	0.071
Limit								**30**	**1**

Radiated Power (EIRP) for LTE Band 4 / 15M									
Modulation	RB		Channel	Antenna (H&V)	SG Level (dBm)	Antenna Factor (dBd)	Cable Loss (dB)	EIRP (dBm)	EIRP (W)
	Size	offset							
QPSK	1	0	Lowest	H	19.56	5.01	2.43	22.14	0.164
				V	16.11	5.01	2.43	18.69	0.074
	1	0	Middle	H	20.02	4.82	2.43	22.41	0.174
				V	16.67	4.82	2.43	19.06	0.081
	1	0	Highest	H	19.85	4.45	2.43	21.87	0.154
				V	16.93	4.45	2.43	18.95	0.079
16QAM	1	0	Lowest	H	19.21	5.01	2.43	21.79	0.151
				V	16.06	5.01	2.43	18.64	0.073
	1	0	Middle	H	20.03	4.82	2.43	22.42	0.175
				V	16.13	4.82	2.43	18.52	0.071
	1	0	Highest	H	19.54	4.45	2.43	21.56	0.143
				V	16.50	4.45	2.43	18.52	0.071
Limit								**30**	**1**

Radiated Power (EIRP) for LTE Band 4 / 20M									
Modulation	RB		Channel	Antenna (H&V)	SG Level (dBm)	Antenna Factor (dBd)	Cable Loss (dB)	EIRP (dBm)	EIRP (W)
	Size	offset							
QPSK	1	0	Lowest	H	19.31	5.01	2.43	21.89	0.155
				V	15.65	5.01	2.43	18.23	0.067
	1	0	Middle	H	19.57	4.82	2.43	21.96	0.157
				V	15.85	4.82	2.43	18.24	0.067
	1	0	Highest	H	20.14	4.45	2.43	22.16	0.164
				V	17.01	4.45	2.43	19.03	0.080
16QAM	1	0	Lowest	H	19.20	5.01	2.43	21.78	0.151
				V	16.09	5.01	2.43	18.67	0.074
	1	0	Middle	H	19.66	4.82	2.43	22.05	0.160
				V	16.60	4.82	2.43	18.99	0.079
	1	0	Highest	H	19.74	4.45	2.43	21.76	0.150
				V	16.44	4.45	2.43	18.46	0.070
Limit								**30**	**1**

Radiated Power (EIRP) for LTE Band 7 / 5M									
Modulation	RB		Channel	Antenna (H&V)	SG Level (dBm)	Antenna Factor (dBd)	Cable Loss (dB)	EIRP (dBm)	EIRP (W)
	Size	offset							
QPSK	1	0	Lowest	H	19.67	5.01	2.65	22.03	0.160
				V	16.65	5.01	2.65	19.01	0.080
	1	0	Middle	H	19.98	4.82	2.65	22.15	0.164
				V	16.86	4.82	2.65	19.03	0.080
	1	0	Highest	H	20.09	4.45	2.65	21.89	0.155
				V	16.56	4.45	2.65	18.36	0.069
16QAM	1	0	Lowest	H	19.21	5.01	2.65	21.57	0.144
				V	15.20	5.01	2.65	17.56	0.057
	1	0	Middle	H	19.52	4.82	2.65	21.69	0.148
				V	16.32	4.82	2.65	18.49	0.071
	1	0	Highest	H	20.28	4.45	2.65	22.08	0.161
				V	17.27	4.45	2.65	19.07	0.081
Limit								**33**	**2**

Radiated Power (EIRP) for LTE Band 7 / 10M									
Modulation	RB		Channel	Antenna (H&V)	SG Level (dBm)	Antenna Factor (dBd)	Cable Loss (dB)	EIRP (dBm)	EIRP (W)
	Size	offset							
QPSK	1	0	Lowest	H	19.78	5.01	2.65	22.14	0.164
				V	16.69	5.01	2.65	19.05	0.080
	1	0	Middle	H	20.08	4.82	2.65	22.25	0.168
				V	17.06	4.82	2.65	19.23	0.084
	1	0	Highest	H	20.16	4.45	2.65	21.96	0.157
				V	17.17	4.45	2.65	18.97	0.079
16QAM	1	0	Lowest	H	19.72	5.01	2.65	22.08	0.161
				V	16.63	5.01	2.65	18.99	0.079
	1	0	Middle	H	20.18	4.82	2.65	22.35	0.172
				V	17.07	4.82	2.65	19.24	0.084
	1	0	Highest	H	20.19	4.45	2.65	21.99	0.158
				V	16.98	4.45	2.65	18.78	0.076
Limit								**33**	**2**

Radiated Power (EIRP) for LTE Band 7 / 15M									
Modulation	RB		Channel	Antenna (H&V)	SG Level (dBm)	Antenna Factor (dBd)	Cable Loss (dB)	EIRP (dBm)	EIRP (W)
	Size	offset							
QPSK	1	0	Lowest	H	19.52	5.01	2.65	21.88	0.154
				V	16.33	5.01	2.65	18.69	0.074
	1	0	Middle	H	19.87	4.82	2.65	22.04	0.160
				V	16.77	4.82	2.65	18.94	0.078
	1	0	Highest	H	20.24	4.45	2.65	22.04	0.160
				V	16.99	4.45	2.65	18.79	0.076
16QAM	1	0	Lowest	H	19.32	5.01	2.65	21.68	0.147
				V	16.43	5.01	2.65	18.79	0.076
	1	0	Middle	H	19.97	4.82	2.65	22.14	0.164
				V	16.91	4.82	2.65	19.08	0.081
	1	0	Highest	H	20.25	4.45	2.65	22.05	0.160
				V	17.32	4.45	2.65	19.12	0.082
Limit								**33**	**2**

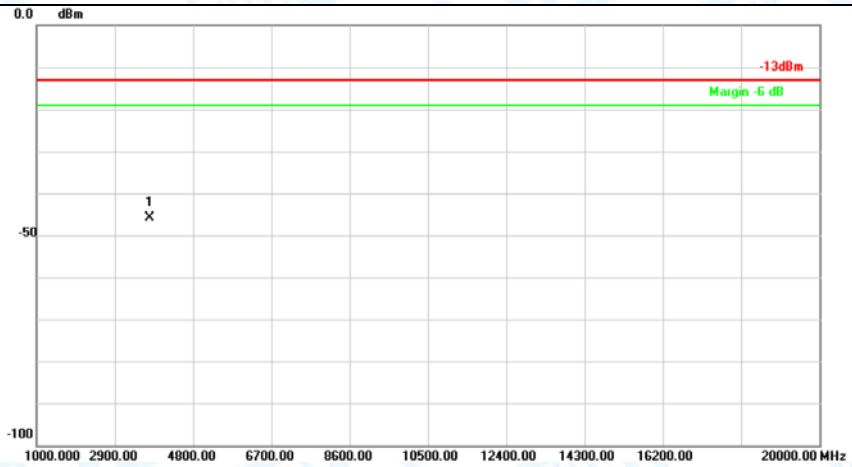
Radiated Power (EIRP) for LTE Band 7 / 20M									
Modulation	RB		Channel	Antenna (H&V)	SG Level (dBm)	Antenna Factor (dBd)	Cable Loss (dB)	EIRP (dBm)	EIRP (W)
	Size	offset							
QPSK	1	0	Lowest	H	19.60	5.01	2.65	21.96	0.157
				V	16.99	5.01	2.65	19.35	0.086
	1	0	Middle	H	19.69	4.82	2.65	21.86	0.153
				V	16.52	4.82	2.65	18.69	0.074
	1	0	Highest	H	20.08	4.45	2.65	21.88	0.154
				V	16.86	4.45	2.65	18.66	0.073
16QAM	1	0	Lowest	H	19.71	5.01	2.65	22.07	0.161
				V	16.43	5.01	2.65	18.79	0.076
	1	0	Middle	H	20.00	4.82	2.65	22.17	0.165
				V	16.88	4.82	2.65	19.05	0.080
	1	0	Highest	H	20.27	4.45	2.65	22.07	0.161
				V	17.44	4.45	2.65	19.24	0.084
Limit								**33**	**2**

ATTACHMENT G--RADIATED OUT BAND OF EMISSIONS

Measurement Data (worst case)

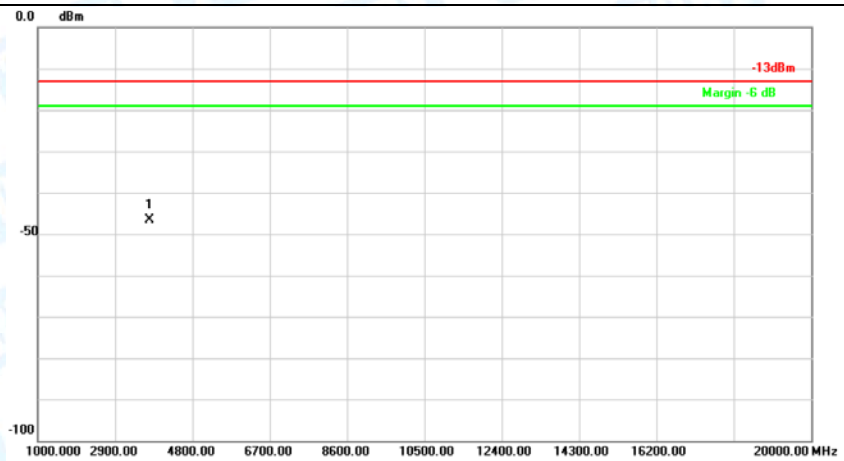
Test mode:	LTE BAND 2 20MHz(RB size 1 & RB offset 0) for QPSK		
Channel:	Middle	Date of Test:	2021-02-23

Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBm	dB	dBm	dBm	dB	Detector
1	*	3760.000	-66.81	20.93	-45.88	-13.00	-32.88	peak

Vertical

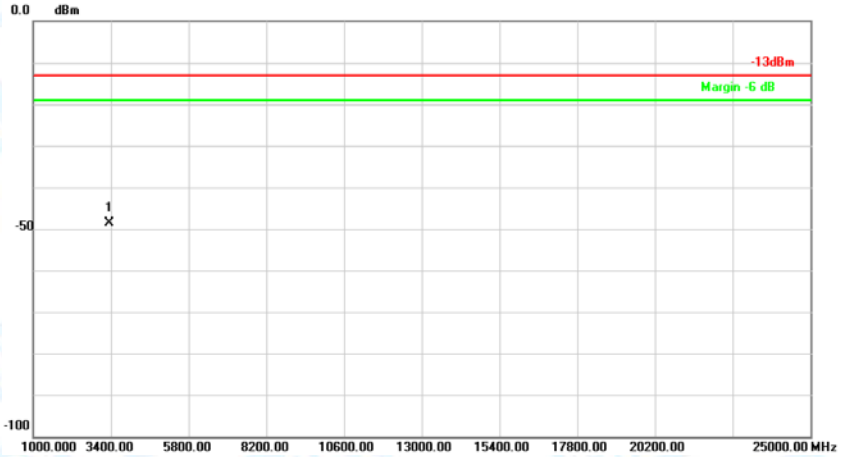


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBm	dB	dBm	dBm	dB	Detector
1	*	3760.000	-66.73	20.19	-46.54	-13.00	-33.54	peak

Remark: 1, The testing has been conformed to 10*1880MHz=18800MHz.
2, All other emissions more than 30 dB below the limit.
3, Emission Level= Read Level+ Antenna Correct Factor +Cable Loss

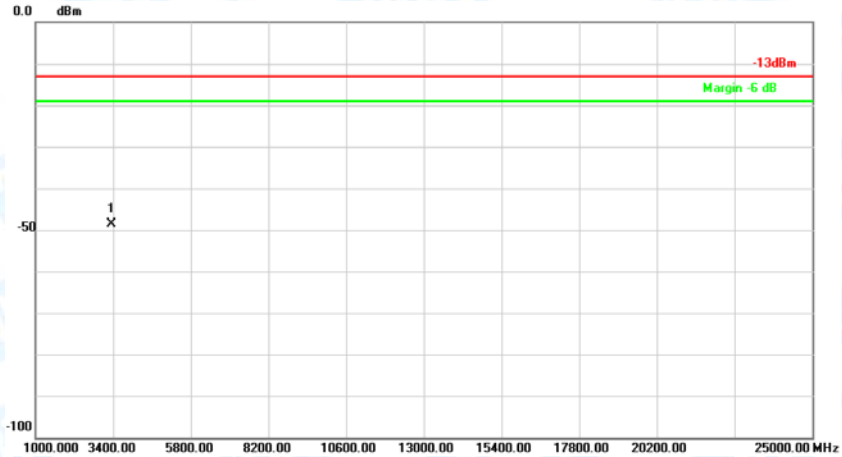
Test mode:	LTE BAND 4 20MHz(RB size 1 & RB offset 0) for QPSK		
Channel:	Middle	Date of Test:	2021-02-23

Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBm	dB	dBm	dBm	dB	Detector
1	*	3360.000	-66.70	18.04	-48.66	-13.00	-35.66	peak

Vertical

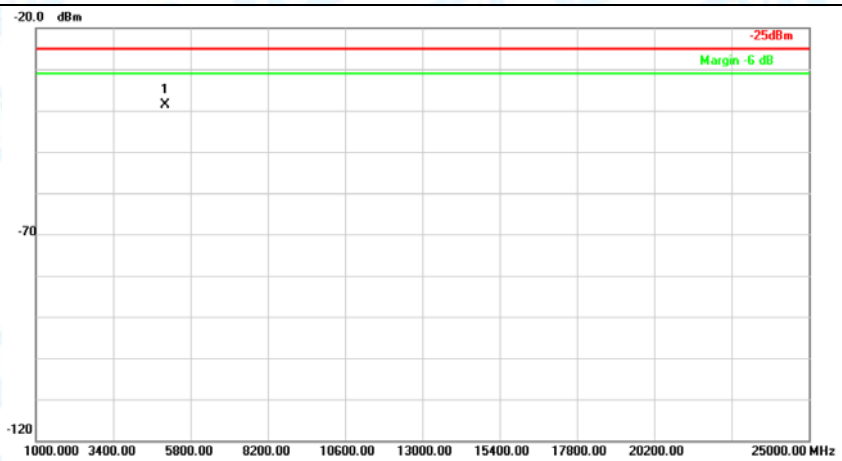


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBm	dB	dBm	dBm	dB	Detector
1	*	3360.000	-68.37	19.81	-48.56	-13.00	-35.56	peak

Remark: 1, The testing has been conformed to 10*1732.5MHz=17325MHz.
2, All other emissions more than 30 dB below the limit.
3, Emission Level= Read Level+ Antenna Correct Factor +Cable Loss

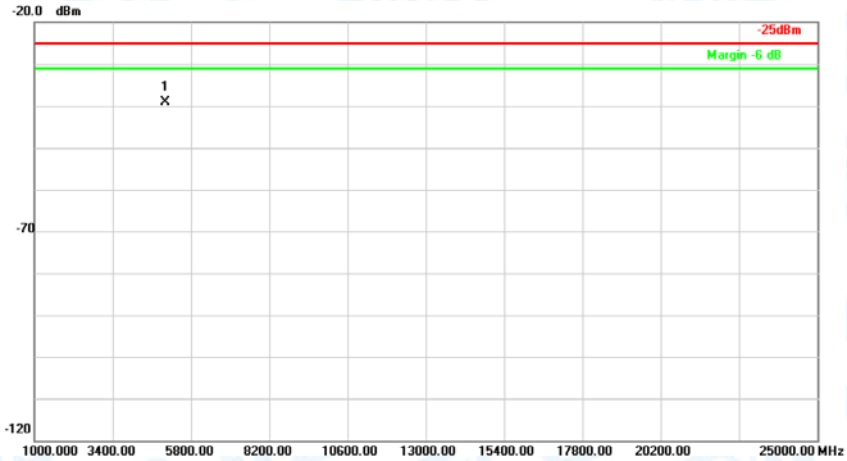
Test mode:	LTE BAND 7 20MHz(RB size 1 & RB offset 0) for QPSK		
Channel:	Middle	Date of Test:	2021-02-23

Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBm	dB	dBm	dBm	dB	Detector
1	*	5030.000	-64.99	26.34	-38.65	-25.00	-13.65	peak

Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBm	dB	dBm	dBm	dB	Detector
1	*	5030.000	-67.51	28.34	-39.17	-25.00	-14.17	peak

Remark: 1, The testing has been conformed to 10*2535.0MHz=25350MHz.
2, All other emissions more than 30 dB below the limit.
3, Emission Level= Read Level+ Antenna Correct Factor +Cable Loss

ATTACHMENT H--FREQUENCY STABILITY

Remark: We were tested all RB Configuration refer 3GPP TS136 521 for each Channel Bandwidth of LTE FDD Band 2, LTE FDD Band 4, LTE FDD Band 7. recorded worst case for each Channel Bandwidth of LTE FDD Band 2, LTE FDD Band 4, LTE FDD Band 7.

Temperature Variation					
Reference Frequency: LTE Band 2 QPSK(20MHz) Middle channel=18900 Frequency=1880.0MHz					
Power supplied (Vdc)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	30	0.0160	±2.5	Pass
	-20	5	0.0027		
	-10	55	0.0292		
	0	13	0.0067		
	10	28	0.0147		
	20	64	0.0340		
	30	45	0.0239		
	40	22	0.0118		
	50	38	0.0204		
Reference Frequency: LTE Band 2 16QAM(20MHz) Middle channel=18900 Frequency=1880.0MHz					
Power supplied (Vdc)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	79	0.0420	±2.5	Pass
	-20	63	0.0338		
	-10	39	0.0209		
	0	60	0.0321		
	10	75	0.0397		
	20	69	0.0369		
	30	103	0.0550		
	40	71	0.0379		
	50	107	0.0568		

Temperature Variation					
Reference Frequency: LTE Band 4 QPSK(20MHz) Middle channel=20175 Frequency=1732.5MHz					
Power supplied (Vdc)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	56	0.0323	±2.5	Pass
	-20	82	0.0476		
	-10	58	0.0333		
	0	28	0.0163		
	10	81	0.0470		
	20	45	0.0260		
	30	94	0.0540		
	40	92	0.0531		
	50	95	0.0550		
Reference Frequency: LTE Band 4 16QAM(20MHz) Middle channel=20175 Frequency=1732.5MHz					
Power supplied (Vdc)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	46	0.0266	±2.5	Pass
	-20	23	0.0131		
	-10	36	0.0209		
	0	7	0.0039		
	10	72	0.0417		
	20	28	0.0162		
	30	26	0.0150		
	40	29	0.0169		
	50	18	0.0102		

Temperature Variation					
Reference Frequency: LTE Band 7 QPSK(20MHz) Middle channel=21100 Frequency=2535.0MHz					
Power supplied (Vdc)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	63	0.0249	±2.5	Pass
	-20	76	0.0301		
	-10	30	0.0119		
	0	52	0.0204		
	10	53	0.0208		
	20	93	0.0367		
	30	90	0.0354		
	40	70	0.0277		
	50	27	0.0107		
Reference Frequency: LTE Band 7 16QAM(20MHz) Middle channel=21100 Frequency=2535.0MHz					
Power supplied (Vdc)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	59	0.0233	±2.5	Pass
	-20	97	0.0381		
	-10	97	0.0383		
	0	66	0.0259		
	10	54	0.0214		
	20	63	0.0248		
	30	53	0.0210		
	40	28	0.0111		
	50	45	0.0176		

Voltage Variation					
Reference Frequency: LTE Band 2 QPSK(20MHz) Middle channel=18900 Frequency=1880.0MHz					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	3.50	96	0.0508	±2.5	Pass
	3.85	85	0.0453		
	4.20	110	0.0587		
Reference Frequency: LTE Band 2 16QAM(20MHz) Middle channel=18900 Frequency=1880.0MHz					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	3.50	121	0.0641	±2.5	Pass
	3.80	104	0.0553		
	4.20	66	0.0350		
Voltage Variation					
Reference Frequency: LTE Band 4 QPSK(20MHz) Middle channel=20175 Frequency=1732.5MHz					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	3.50	102	0.0587	±2.5	Pass
	3.80	89	0.0516		
	4.20	37	0.0215		
Reference Frequency: LTE Band 4 16QAM(20MHz) Middle channel=20175 Frequency=1732.5MHz					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	3.50	94	0.0543	±2.5	Pass
	3.80	57	0.0331		
	4.20	71	0.0409		
Voltage Variation					
Reference Frequency: LTE Band 7 QPSK(20MHz) Middle channel=21100 Frequency=2535.0MHz					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	3.50	79	0.0313	±2.5	Pass
	3.80	76	0.0299		
	4.20	74	0.0293		
Reference Frequency: LTE Band 7 16QAM(20MHz) Middle channel=21100 Frequency=2535.0MHz					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	3.50	38	0.0148	±2.5	Pass
	3.80	101	0.0400		
	4.20	87	0.0344		

------End of Report------