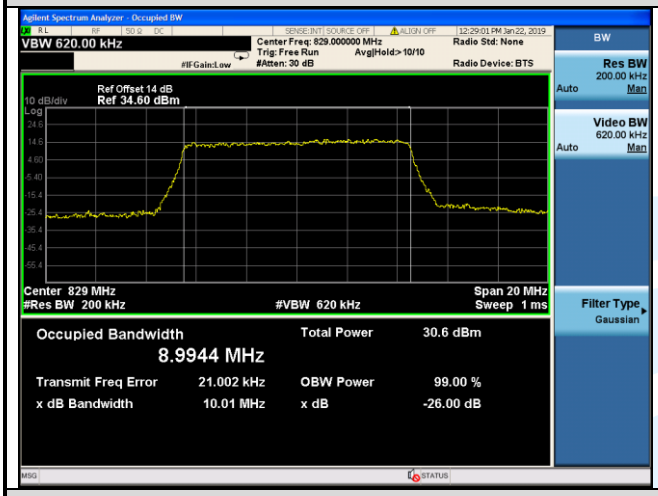
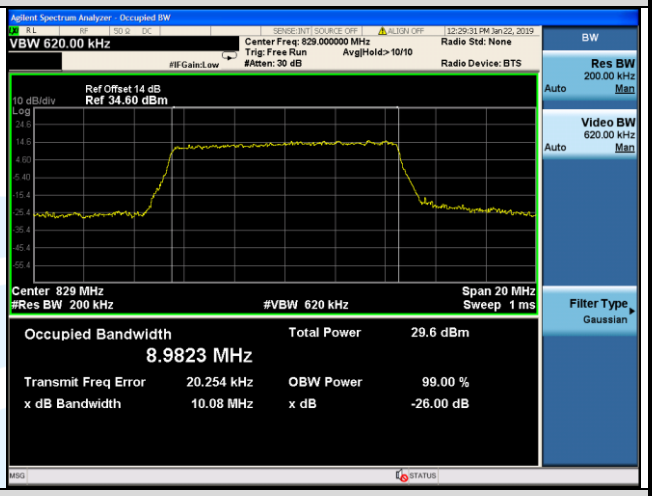
LTE Band 5_ Channel Bandwidth: 10 MHz

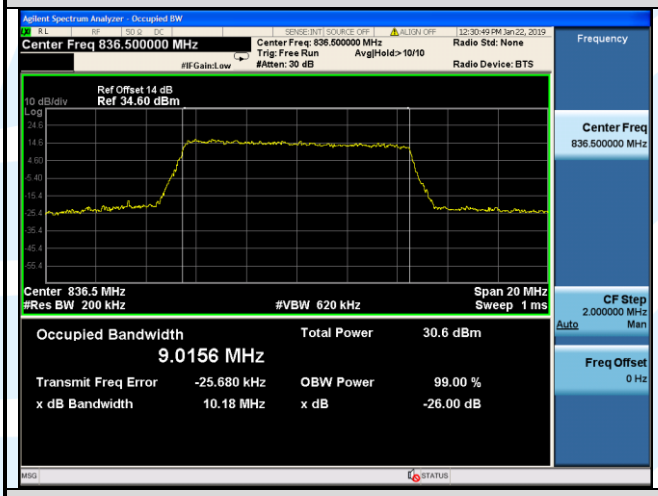
QPSK	16QAM

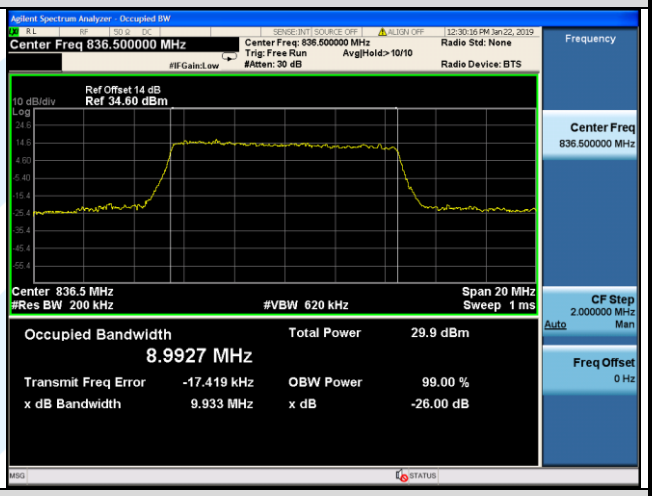
Lowest Channel



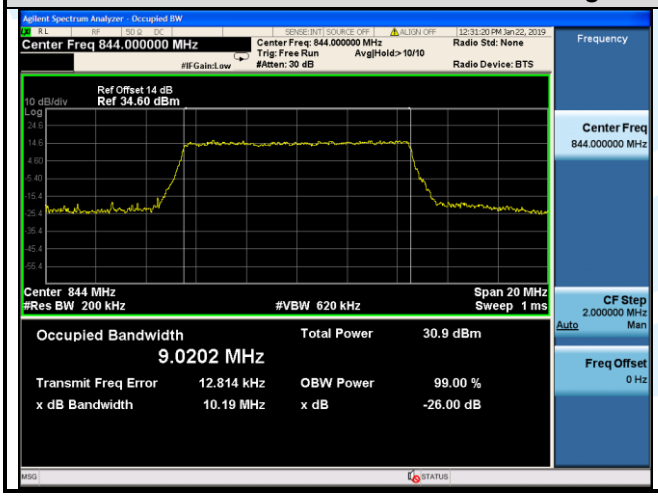


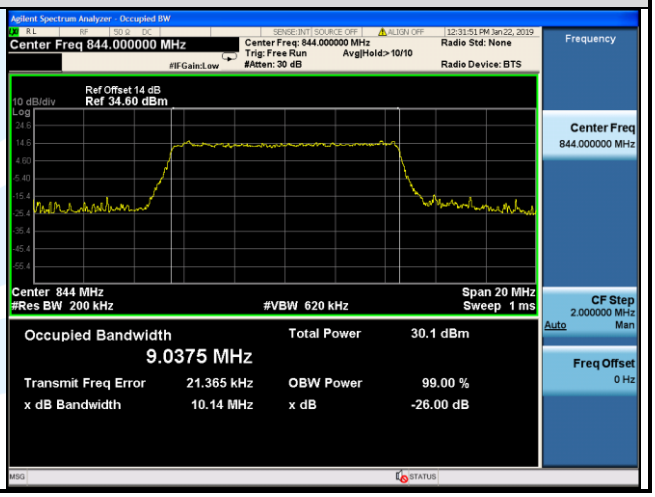
Middle Channel





Highest Channel





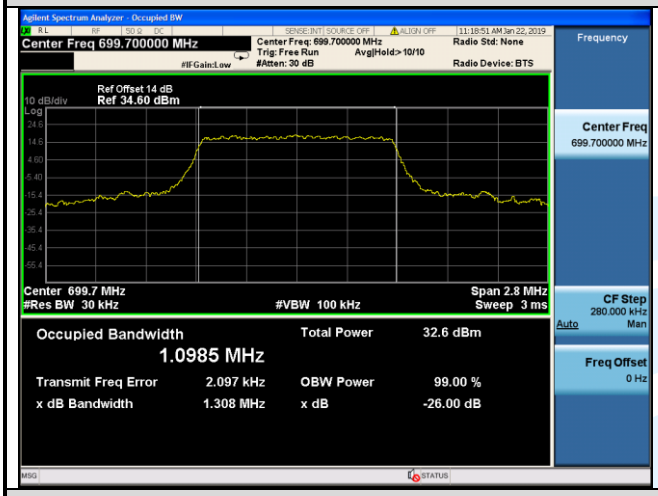
LTE Band 12

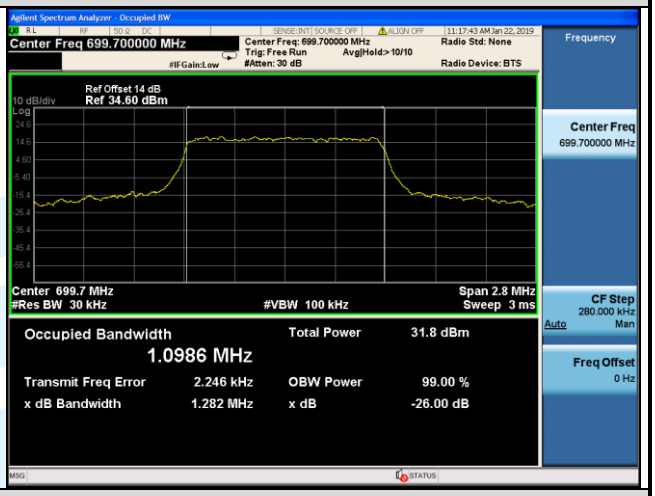
LTE Band 12								
Channel	RB Configuration		26 dB BW (MHz)			99% BW (MHz)		
	Size	Offset	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
Channel Bandwidth: 1.4 MHz								
Lowest	6	0	1.308	1.282	N/A	1.0985	1.0986	N/A
Middle	6	0	1.289	1.299	N/A	1.1027	1.0975	N/A
Highest	6	0	1.308	1.314	N/A	1.0976	1.1025	N/A
Channel Bandwidth: 3 MHz								
Lowest	15	0	2.929	2.931	N/A	2.6990	2.6873	N/A
Middle	15	0	2.932	2.949	N/A	2.6976	2.6953	N/A
Highest	15	0	2.942	2.926	N/A	2.7051	2.6973	N/A
Channel Bandwidth: 5 MHz								
Lowest	25	0	5.206	5.186	N/A	4.5165	4.5423	N/A
Middle	25	0	5.207	5.185	N/A	4.5286	4.5375	N/A
Highest	25	0	5.180	5.163	N/A	4.5499	4.5221	N/A
Channel Bandwidth: 10 MHz								
Lowest	50	0	10.25	10.14	N/A	9.0267	9.0144	N/A
Middle	50	0	10.23	10.28	N/A	9.0307	9.0323	N/A
Highest	50	0	10.01	10.11	N/A	8.9780	8.9910	N/A

LTE Band 12_ Channel Bandwidth: 1.4 MHz

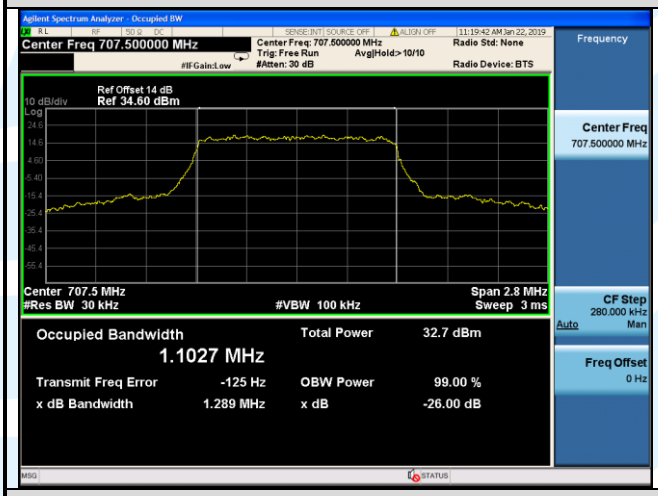
QPSK	16QAM

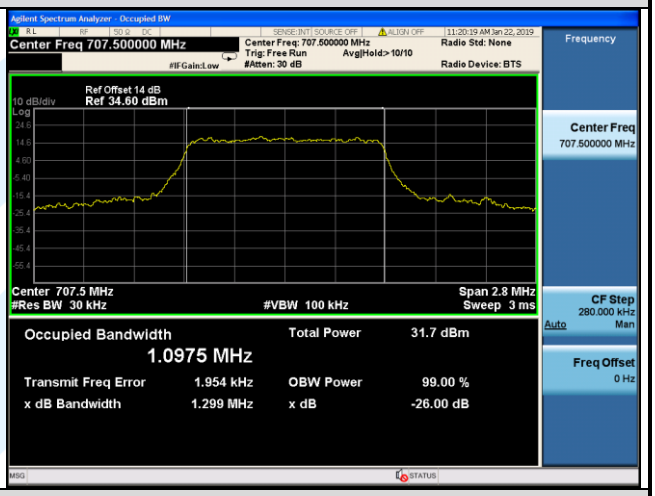
Lowest Channel



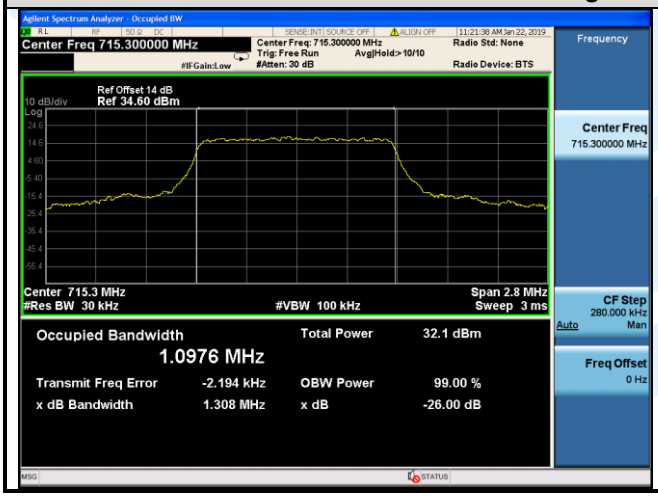


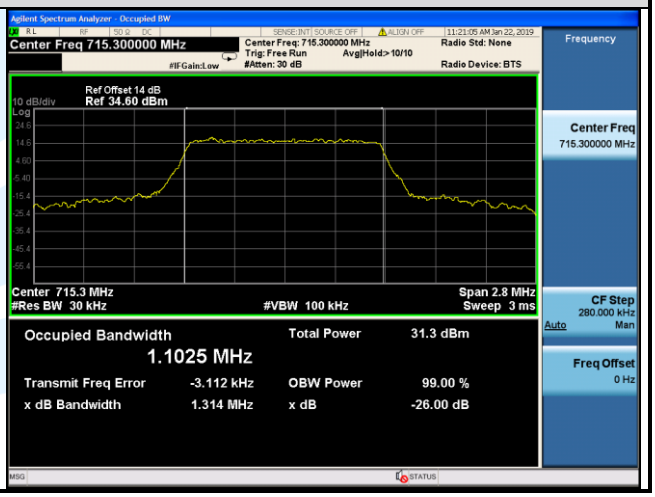
Middle Channel





Highest Channel

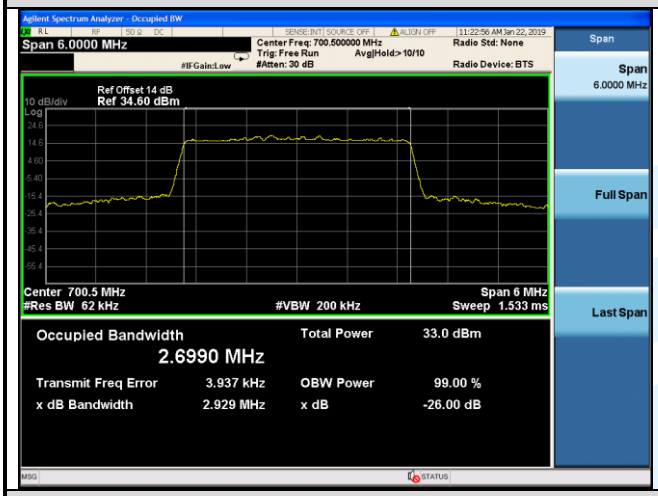


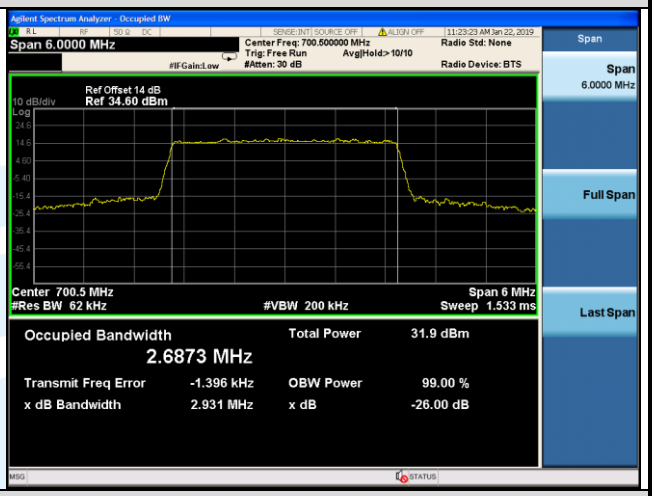


LTE Band 12_ Channel Bandwidth: 3 MHz

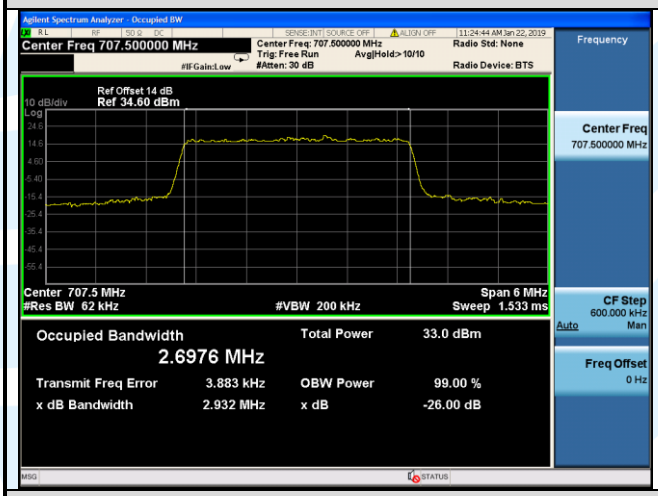
QPSK	16QAM

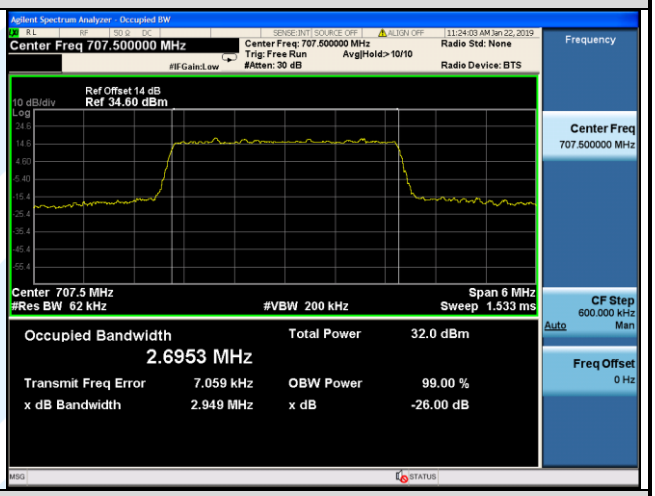
Lowest Channel



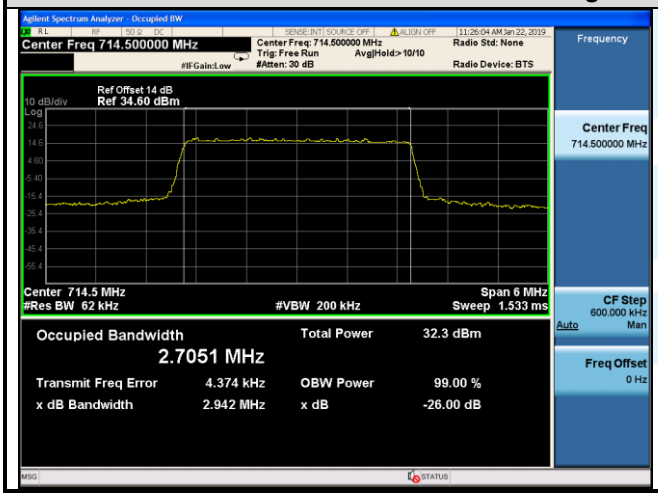


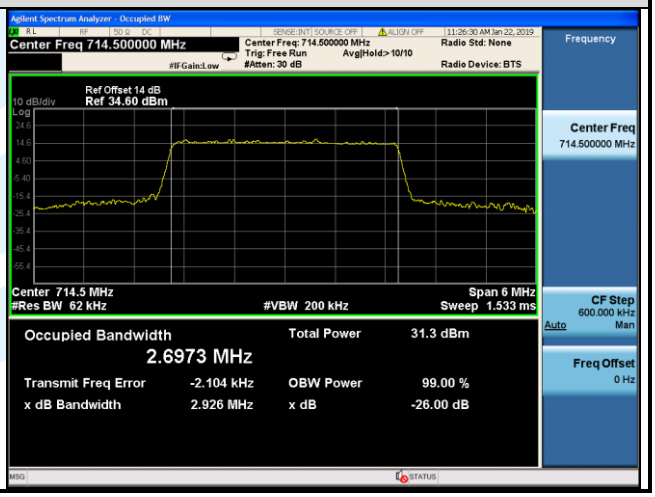
Middle Channel

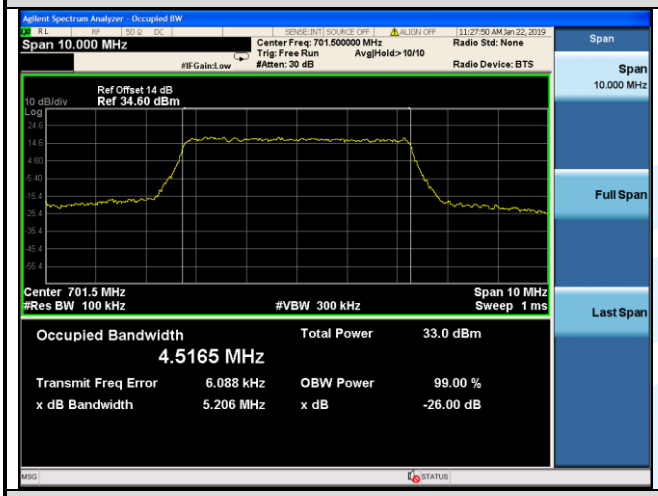
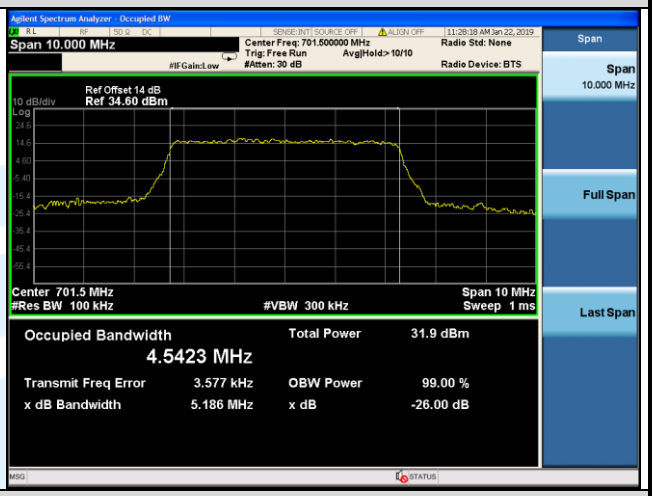
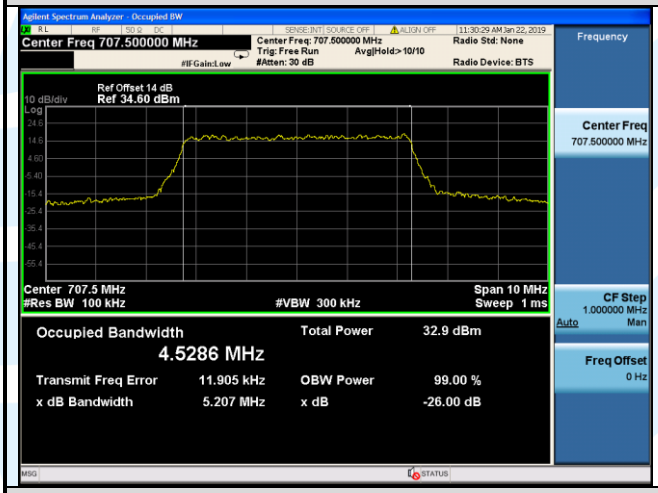
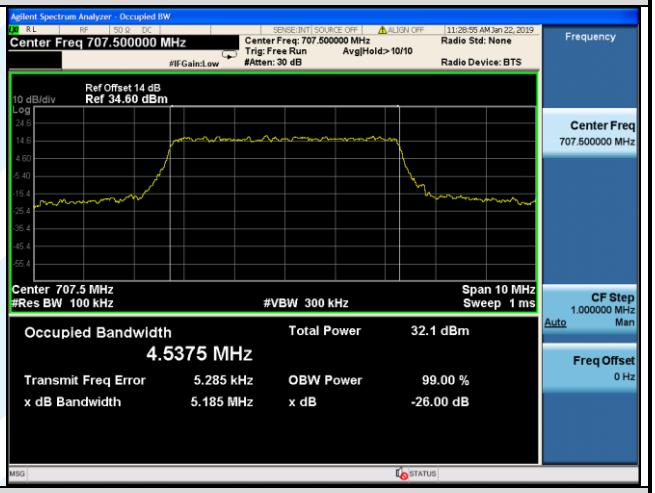
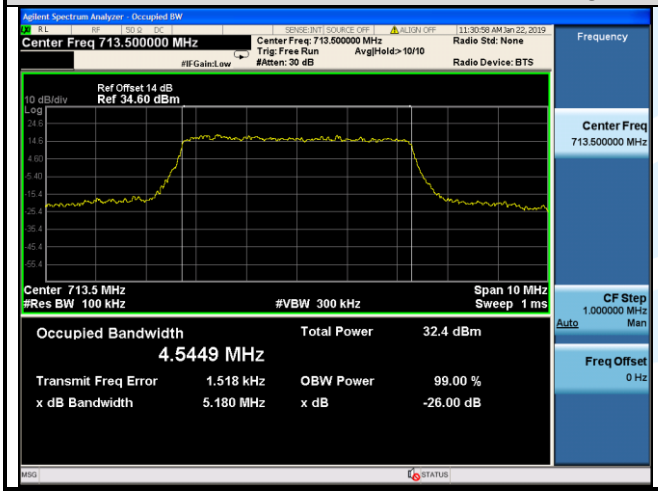
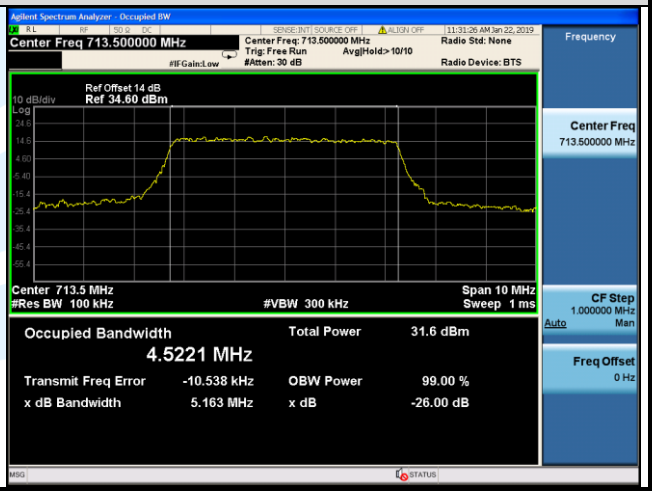




Highest Channel



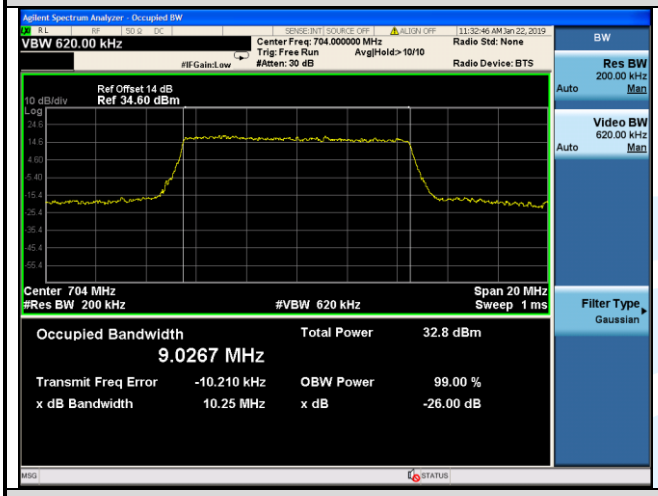


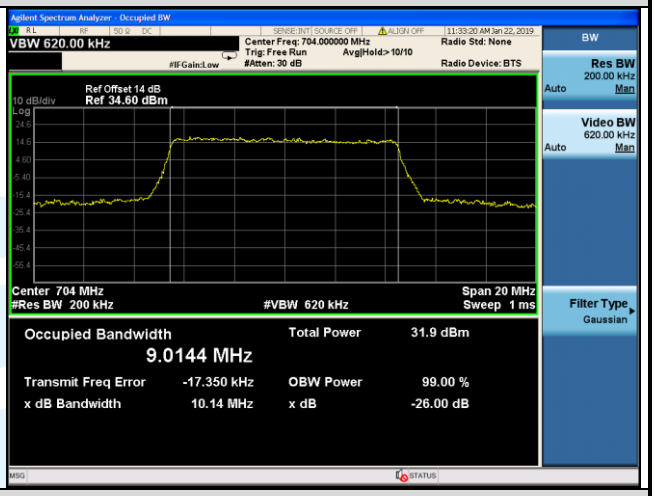
LTE Band 12_ Channel Bandwidth: 5 MHz	
QPSK	16QAM
Lowest Channel	
	
Middle Channel	
	
Highest Channel	
	

LTE Band 12_ Channel Bandwidth: 10 MHz

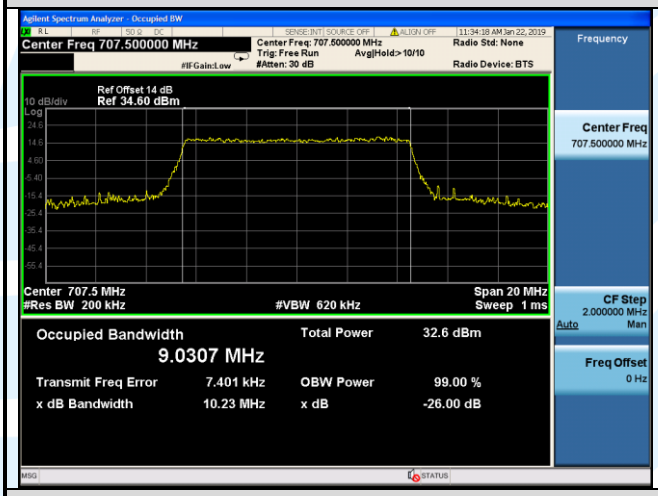
QPSK	16QAM

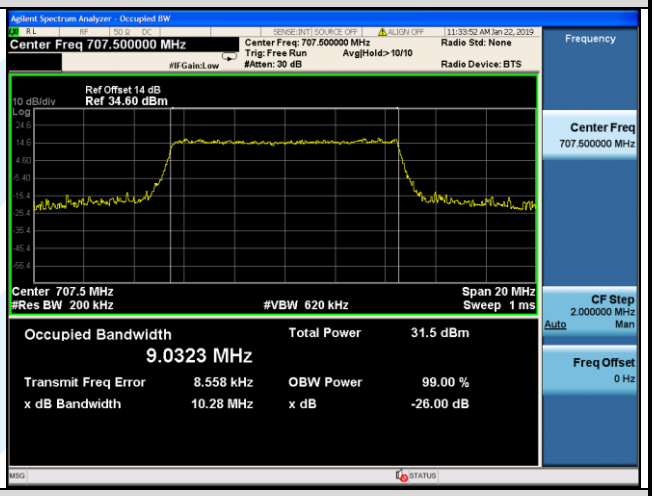
Lowest Channel



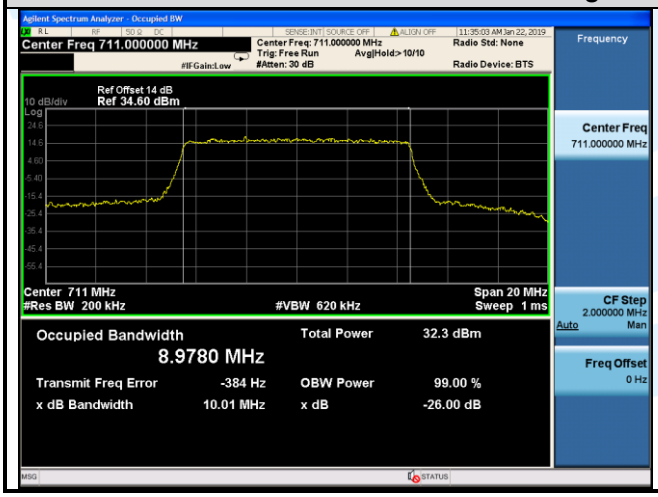


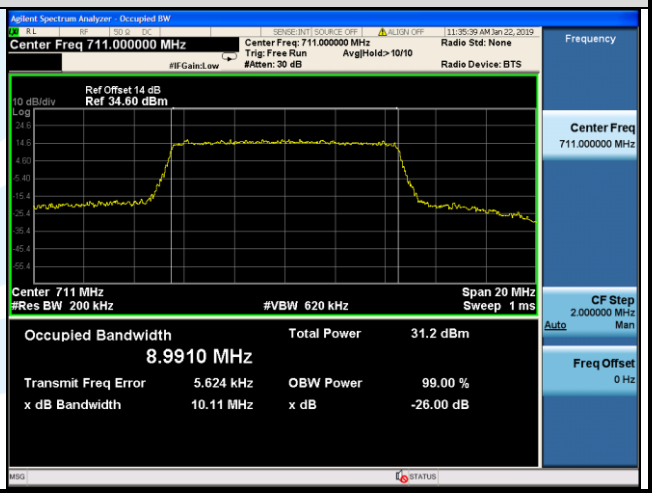
Middle Channel





Highest Channel





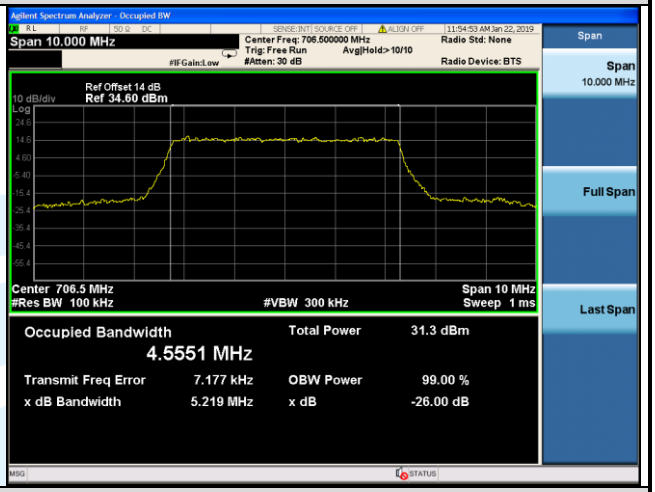
LTE Band 17

LTE Band 17								
Channel	RB Configuration		26 dB BW (MHz)			99% BW (MHz)		
	Size	Offset	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
Channel Bandwidth: 5 MHz								
Lowest	25	0	5.221	5.219	N/A	4.5359	4.5551	N/A
Middle	25	0	5.210	5.187	N/A	4.5129	4.5484	N/A
Highest	25	0	5.180	5.145	N/A	4.5365	4.5208	N/A
Channel Bandwidth: 10 MHz								
Lowest	50	0	10.23	10.19	N/A	9.0165	9.0105	N/A
Middle	50	0	10.22	10.02	N/A	9.0031	8.9845	N/A
Highest	50	0	10.07	10.02	N/A	8.9637	8.9825	N/A

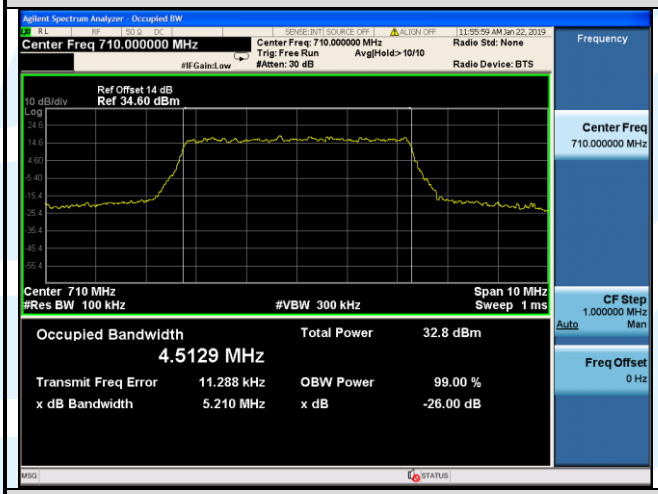
LTE Band 17_ Channel Bandwidth: 5 MHz

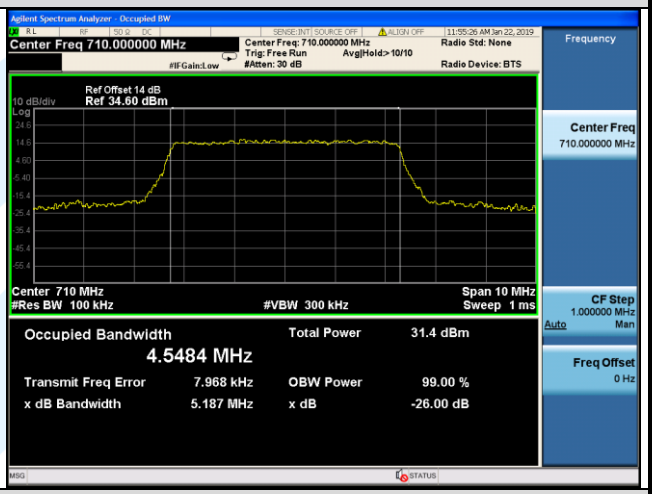
QPSK	16QAM

Lowest Channel

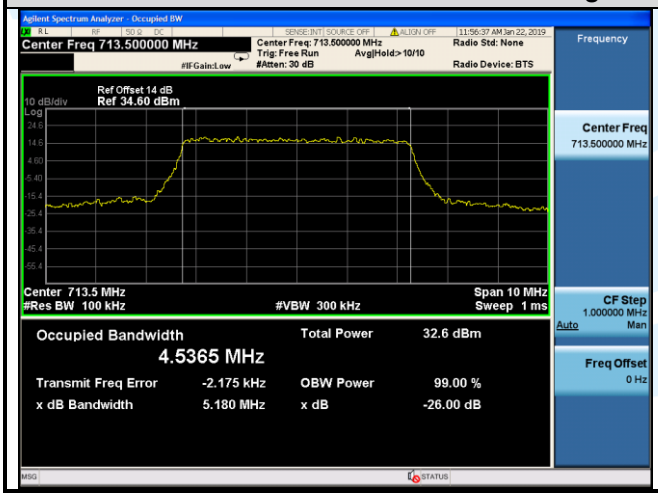


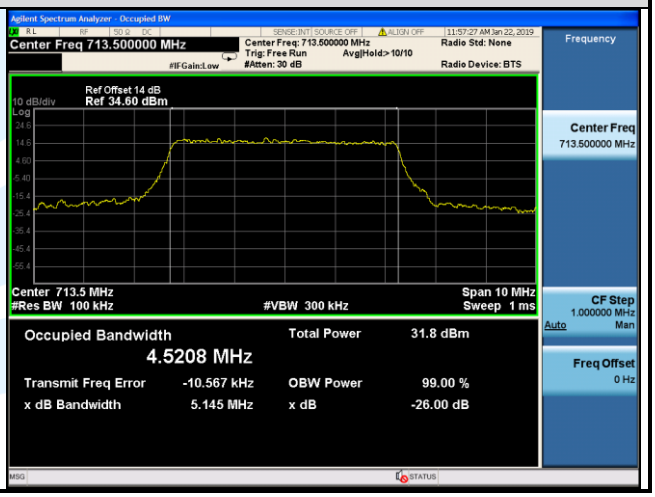
Middle Channel



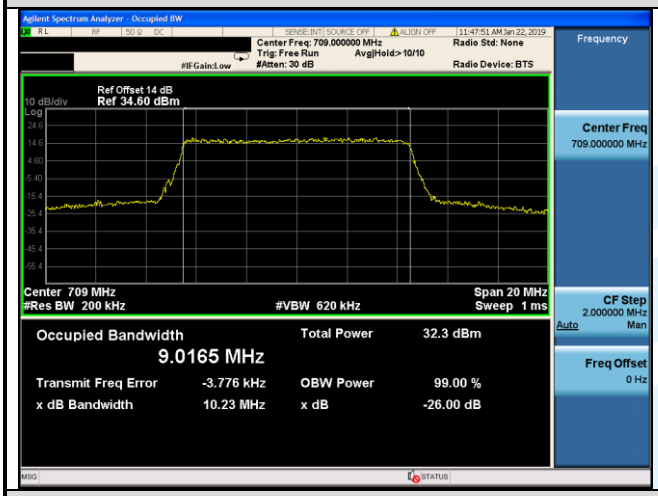
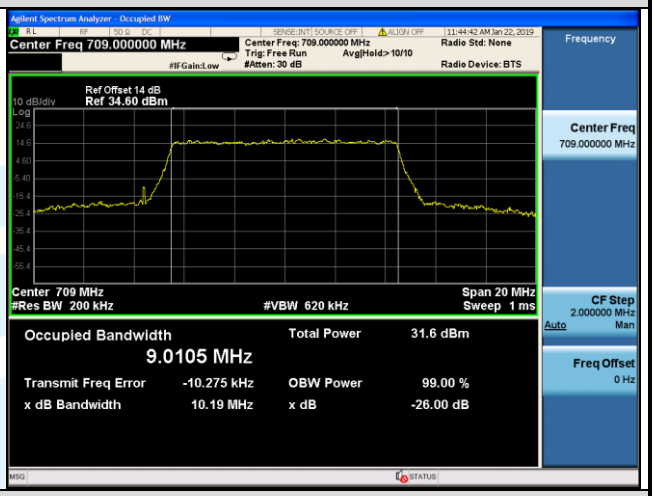
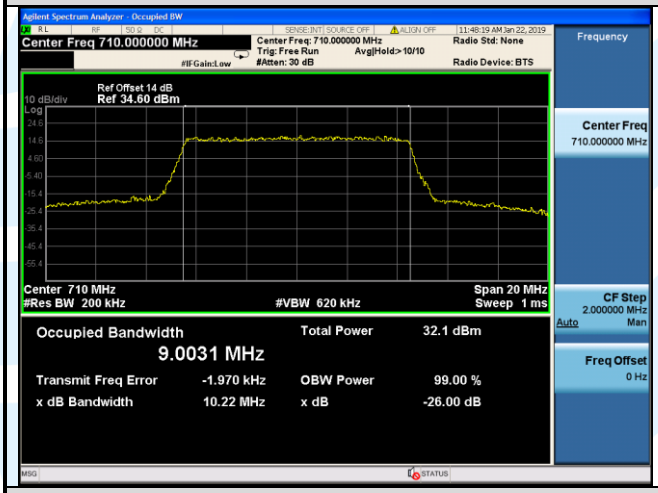
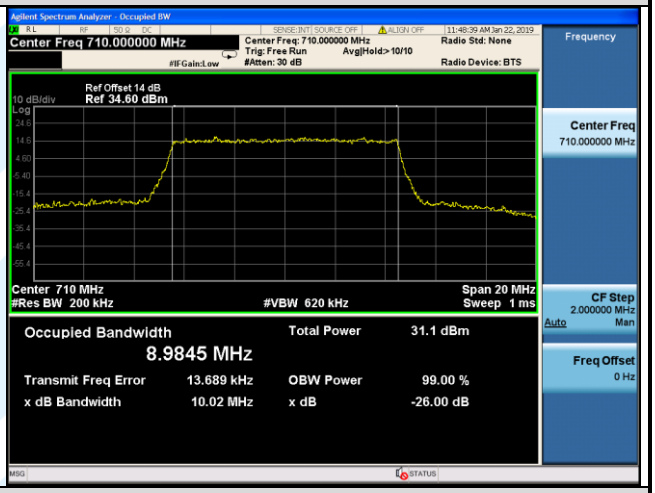
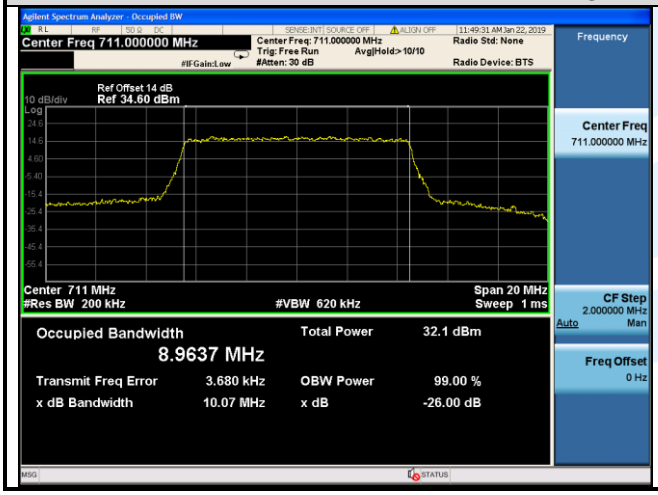
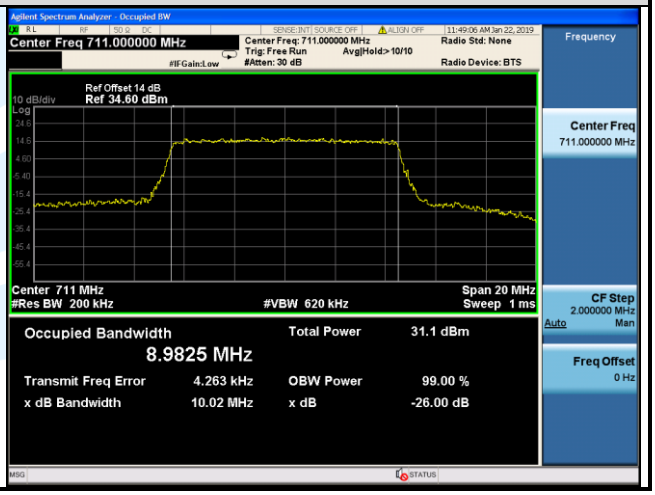


Highest Channel





LTE Band 17_ Channel Bandwidth: 10 MHz

QPSK	16QAM
Lowest Channel	
	
Middle Channel	
	
Highest Channel	
	

5.6 BAND EDGE AT ANTENNA TERMINALS

Test Requirement: FCC 47 CFR Part 2.1051,
GSM 850 & WCDMA Band V & LTE Band 5: FCC 47 CFR Part 22.917(a),
GSM 1900 & WCDMA Band II & LTE Band 2: FCC 47 CFR Part 24.238(a),
WCDMA Band IV & LTE Band 4: FCC 47 CFR Part 27.53(h)(1),
LTE Band 12 & Band 17: FCC 47 CFR Part 27.53(g)

Test Method: ANSI/TIA-603-E-2016 & KDB 971168 D01v03r01

Limit:

FCC 47 CFR Part 22 & FCC 47 CFR Part 24: The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. The emission limit equal to -13 dBm.

FCC 47 CFR Part 27.53(g): For operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

FCC 47 CFR Part 27.53(h)(1): Except as otherwise specified below, for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 log10 (P) dB. The emission limit equal to –13 dBm.

Test Procedure:

The transmitter output was connected to a calibrated coaxial cable and coupler, the other end of which was connected to a spectrum analyzer.
For each band edge measurement:

1) Set the spectrum analyzer span to include the block edge frequency.
2) Set a marker to point the corresponding band edge frequency in each test case.
3) Set display line at -13 dBm
4) Set resolution bandwidth to at least 1% of emission bandwidth.
5) Set spectrum analyzer with RMS detector.
6) Record the max trace plot into the test report

Note: The cable loss and attenuator loss were offset into measure device as an amplitude offset.

Test Setup: Refer to section 4.2.2 for details.

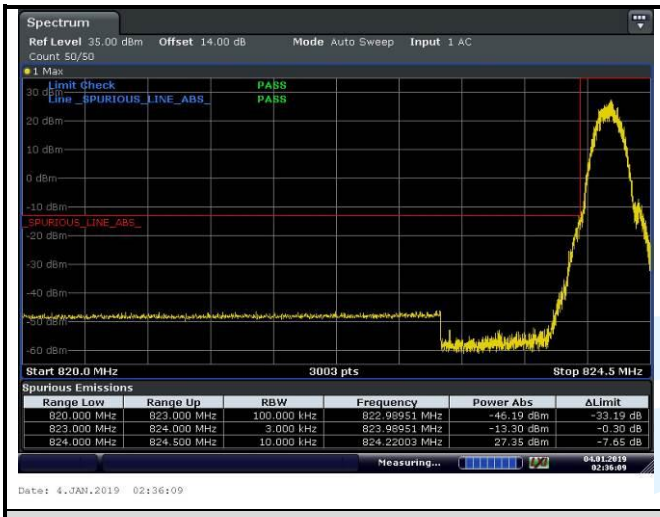
Instruments Used: Refer to section 3 for details

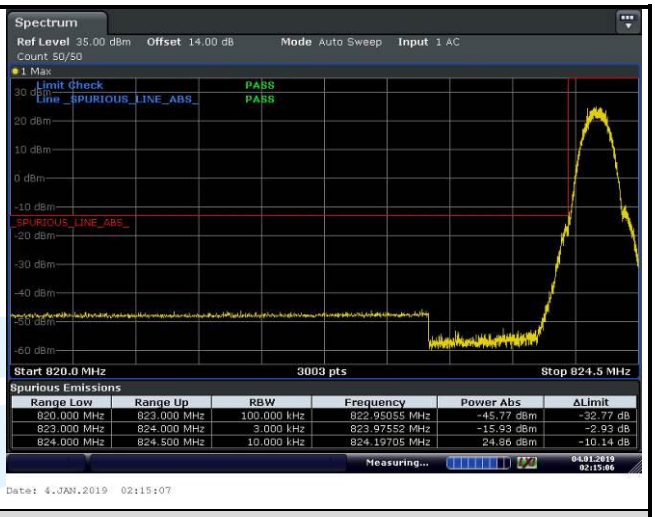
Test Mode: Link mode

Test Results: Pass

The test plots as follows:

GSM 850 1Tx-slot	EDGE 850 1Tx-slot
Lowest Channel	

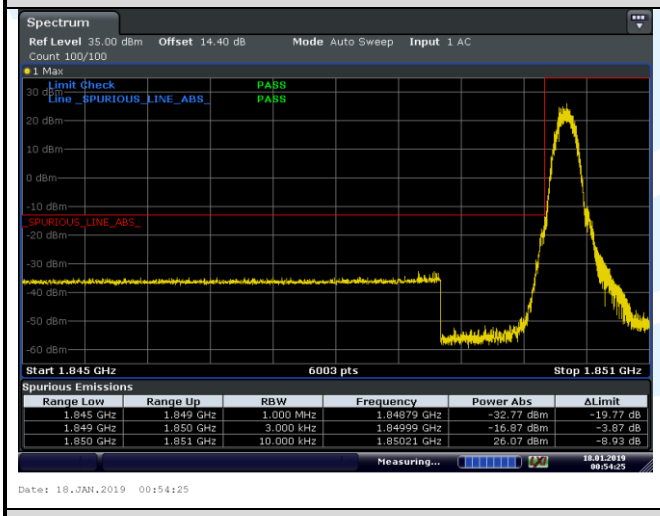


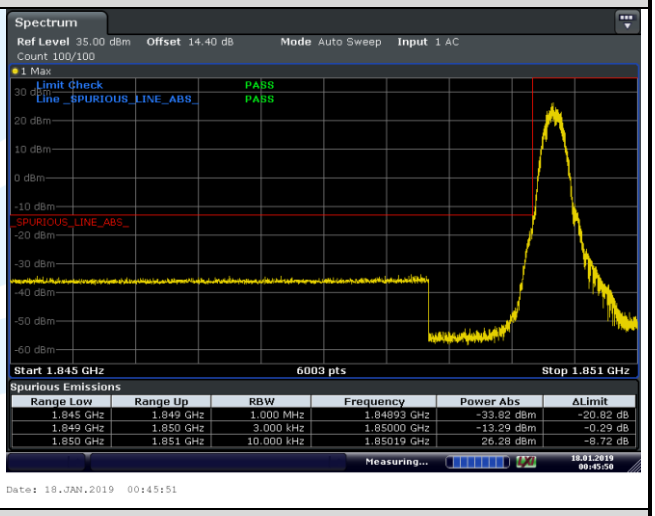


Highest Channel

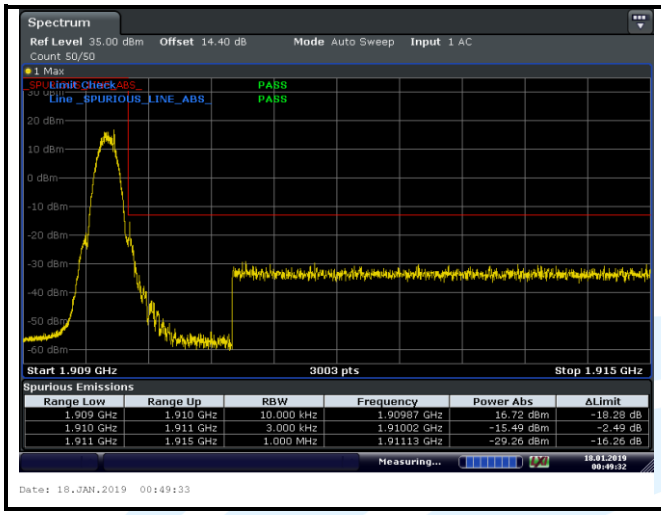
GSM 1900 1Tx-slot	EDGE 1900 1Tx-slot

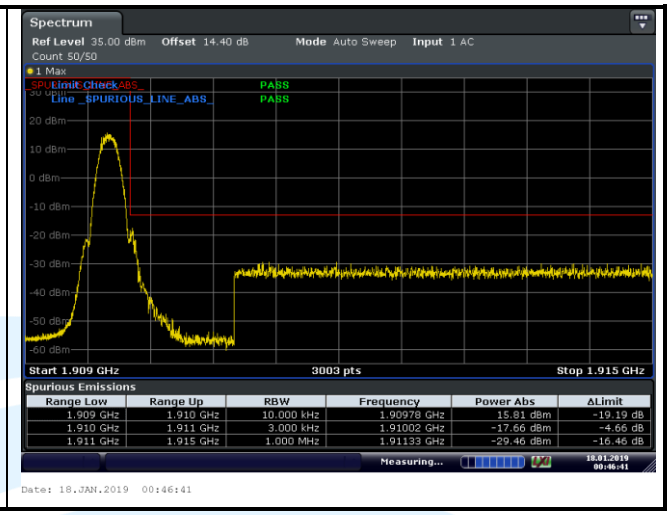
Lowest Channel





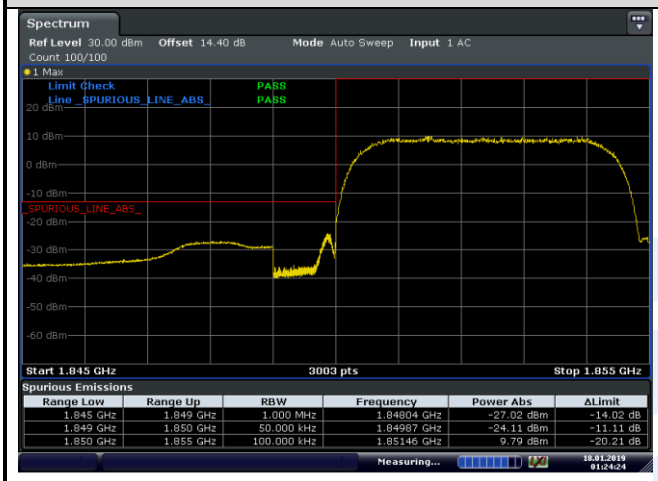
Highest Channel


Spectrum
Ref Level 35.00 dBm Offset 14.40 dB Mode Auto Sweep Input 1 AC
Count 50/50
1 Max
Limit Check PASS
Line _SPURIOUS_LINE_ABS_ PASS
20 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
Start 1.909 GHz 3003 pts Stop 1.915 GHz
Spurious Emissions
Range Low Range Up RBW Frequency Power Abs ΔLimit
1.909 GHz 1.910 GHz 10.000 kHz 1.90987 GHz -16.72 dBm -18.28 dB
1.910 GHz 1.911 GHz 3.000 kHz 1.91002 GHz -15.49 dBm -2.49 dB
1.911 GHz 1.915 GHz 1.000 MHz 1.91113 GHz -29.26 dBm -16.26 dB
Measuring...
18.01.2019 00:49:32
Date: 18.JAN.2019 00:49:33


Spectrum
Ref Level 35.00 dBm Offset 14.40 dB Mode Auto Sweep Input 1 AC
Count 50/50
1 Max
Limit Check PASS
Line _SPURIOUS_LINE_ABS_ PASS
20 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
Start 1.909 GHz 3003 pts Stop 1.915 GHz
Spurious Emissions
Range Low Range Up RBW Frequency Power Abs ΔLimit
1.909 GHz 1.910 GHz 10.000 kHz 1.90978 GHz 15.81 dBm -19.19 dB
1.910 GHz 1.911 GHz 3.000 kHz 1.91002 GHz -17.66 dBm -4.66 dB
1.911 GHz 1.915 GHz 1.000 MHz 1.91133 GHz -29.46 dBm -16.46 dB
Measuring...
18.01.2019 00:46:41
Date: 18.JAN.2019 00:46:41

WCDMA Band II

Lowest Channel



Highest Channel

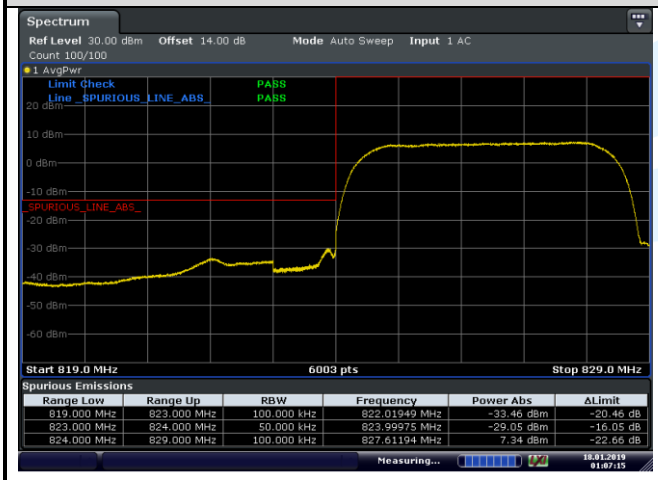
WCDMA Band IV

Lowest Channel

Highest Channel

WCDMA Band V

Lowest Channel



Highest Channel

LTE Band 2

LTE Band 2 / 1.4 MHz / QPSK

1 RB	Full RB

Lowest Channel

Highest Channel