

Bandwidth=20MHz – QPSK

ANT 0



ANT 1



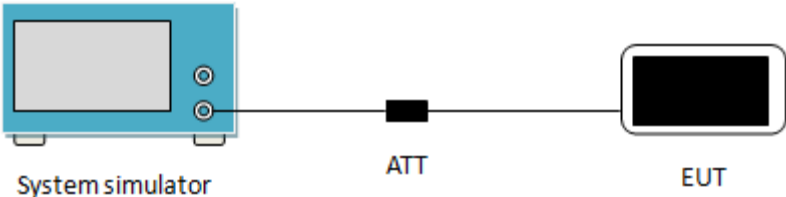
ANT 2



ANT 3



6.3 Occupy Bandwidth

Test Requirement:	FCC part 96.41(E)(3)
Test setup:	 The diagram illustrates the test setup for occupying bandwidth. It shows a 'System simulator' (represented by a blue box with a screen and buttons) connected via a cable to an 'ATT' (Attenuator, represented by a black box). The 'ATT' is then connected via another cable to an 'EUT' (Equipment Under Test, represented by a black box with a screen).
Test Procedure:	1. The EUT's output RF connector was connected with a short cable to the spectrum analyzer 2. The transmitter shall be operated at its maximum carrier power measured under normal test conditions. 3. The span of the analyzer shall be set to capture all products of the modulation process, including the emission skirts. 4. The resolution bandwidth (RBW) shall be in the range of 1% to 5% of the occupied bandwidth (OBW) and video bandwidth (VBW) shall be approximately 3x RBW.
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

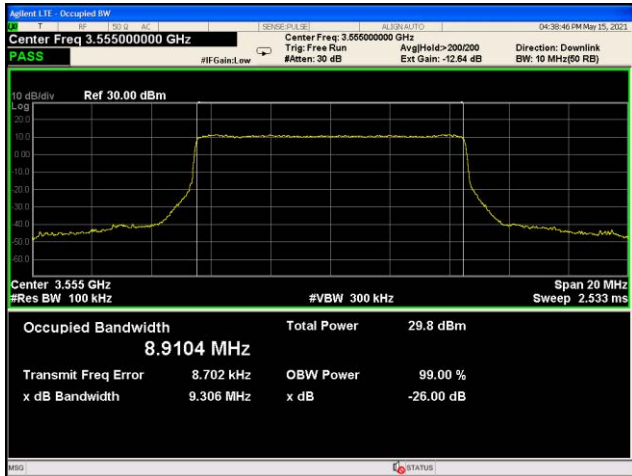
Measurement Data:

Test Channel	Bandwidth (MHz)	Modulation	Ant. Port	26dB Occupy bandwidth (MHz)	99% Occupy bandwidth (MHz)
Lowest	10	QPSK	ANT 0	9.306	8.910
			ANT 1	9.300	8.915
			ANT 2	9.300	8.911
			ANT 3	9.314	8.914
		64QAM	ANT 0	9.296	8.913
			ANT 1	9.311	8.912
			ANT 2	9.298	8.906
			ANT 3	9.310	8.911
Middle	10	QPSK	ANT 0	9.314	8.915
			ANT 1	9.310	8.923
			ANT 2	9.317	8.911
			ANT 3	9.335	8.924
		64QAM	ANT 0	9.298	8.915
			ANT 1	9.305	8.917
			ANT 2	9.300	8.904
			ANT 3	9.331	8.911
Highest	10	QPSK	ANT 0	9.317	8.902
			ANT 1	9.332	8.917
			ANT 2	9.299	8.912
			ANT 3	9.482	8.916
		64QAM	ANT 0	9.287	8.907
			ANT 1	9.313	8.912
			ANT 2	9.300	8.908
			ANT 3	9.452	8.916
Lowest	20	QPSK	ANT 0	18.510	17.788
			ANT 1	18.510	17.817
			ANT 2	18.500	17.784
			ANT 3	18.510	17.783
		64QAM	ANT 0	18.480	17.782
			ANT 1	18.500	17.787
			ANT 2	18.500	17.776
			ANT 3	18.490	17.796
Middle	20	QPSK	ANT 0	18.510	17.815
			ANT 1	18.510	17.802
			ANT 2	18.50	17.792
			ANT 3	18.510	17.811
		64QAM	ANT 0	18.500	17.809
			ANT 1	18.510	17.826
			ANT 2	18.490	17.802
			ANT 3	18.500	17.789
Highest	20	QPSK	ANT 0	18.500	17.808
			ANT 1	18.510	17.812
			ANT 2	18.490	17.771
			ANT 3	18.510	17.808
		64QAM	ANT 0	18.500	17.802
			ANT 1	18.500	17.810
			ANT 2	18.490	17.788
			ANT 3	18.510	17.815

Test plot as follows:

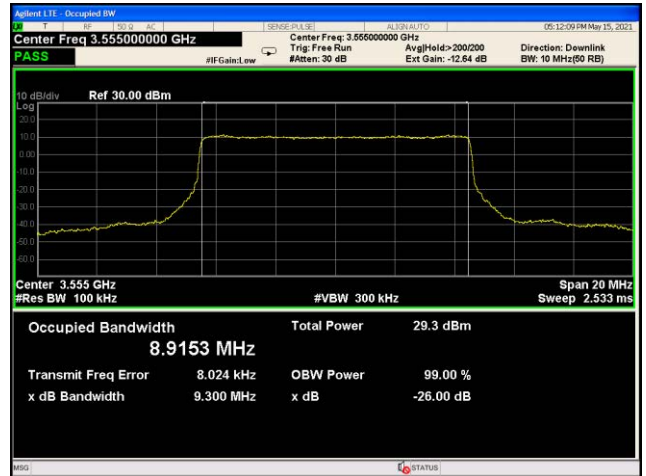
LTE Band 48
BW: 10MHz, QPSK

ANT 0

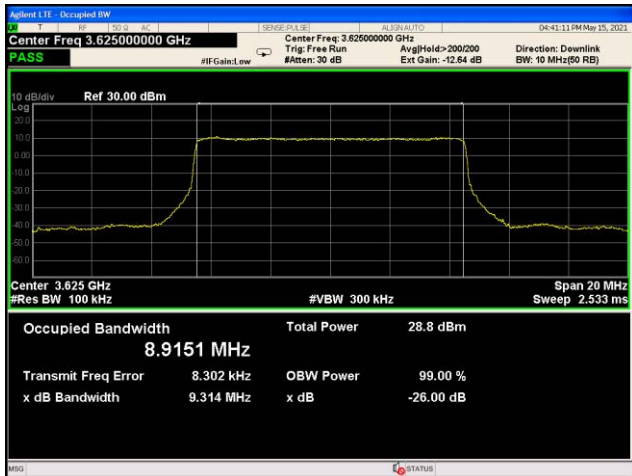


Lowest channel

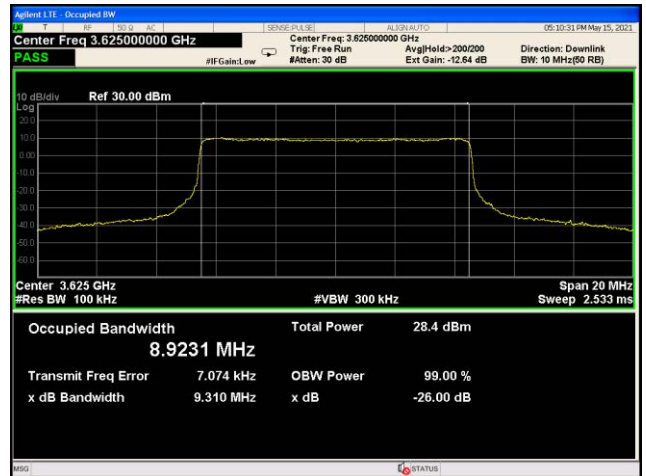
ANT 1



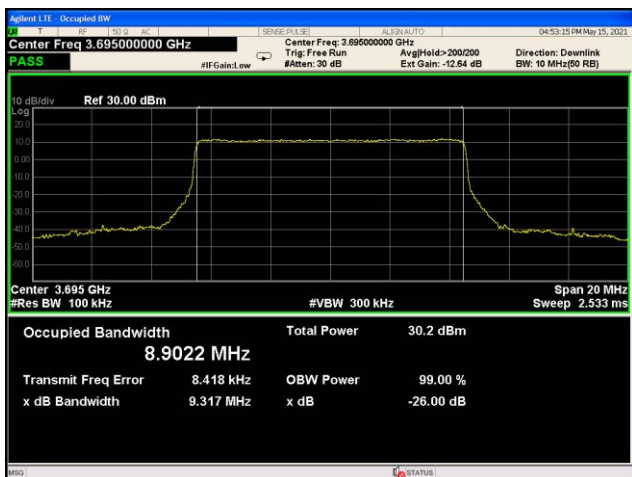
Lowest channel



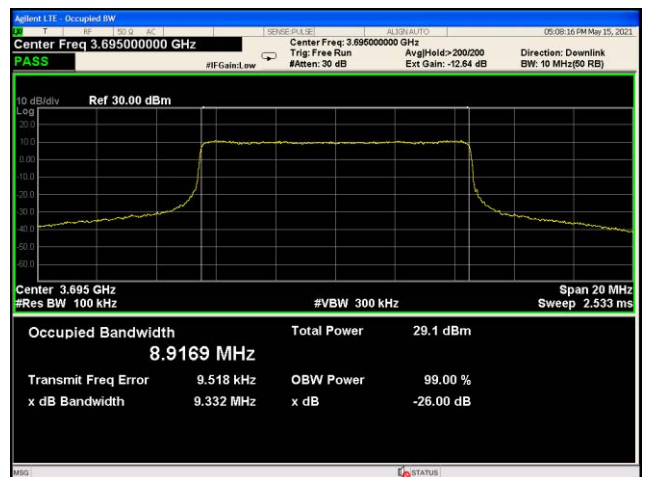
Middle channel



Middle channel

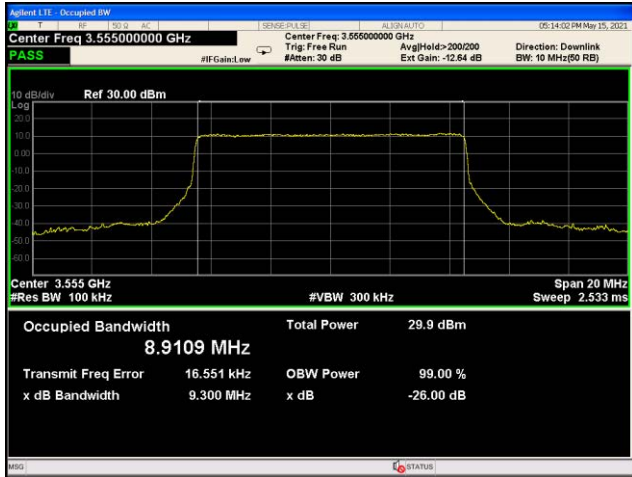


Highest channel



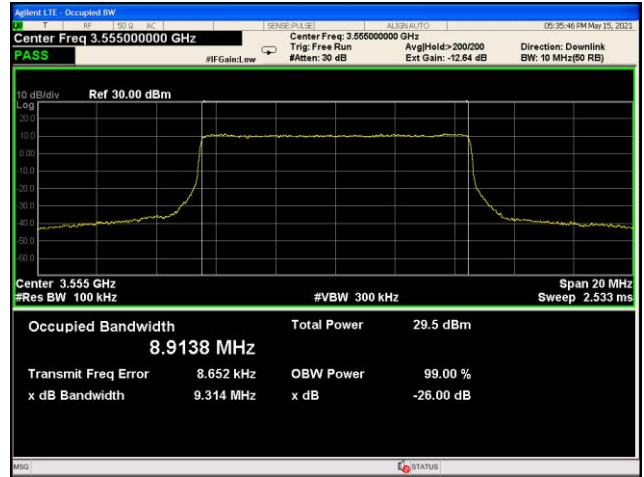
Highest channel

ANT 2

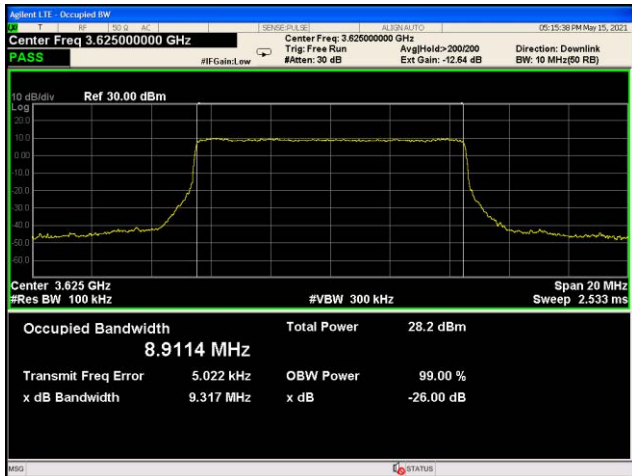


Lowest channel

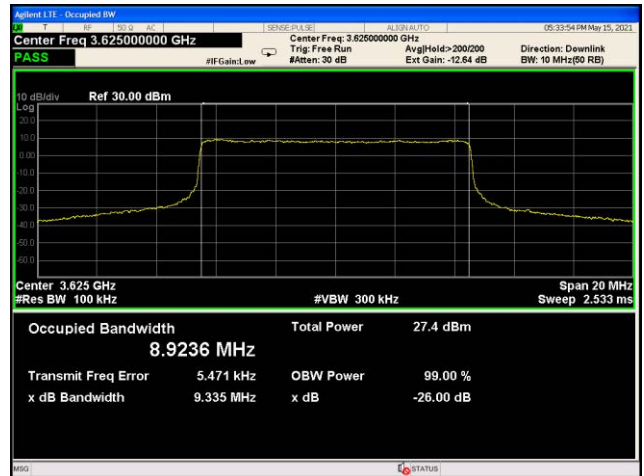
ANT 3



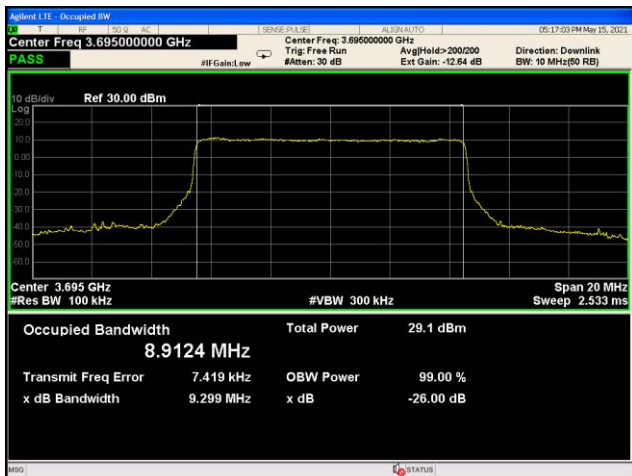
Lowest channel



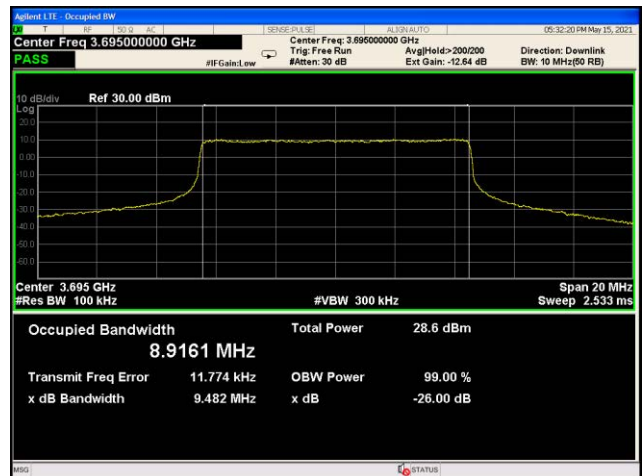
Middle channel



Middle channel



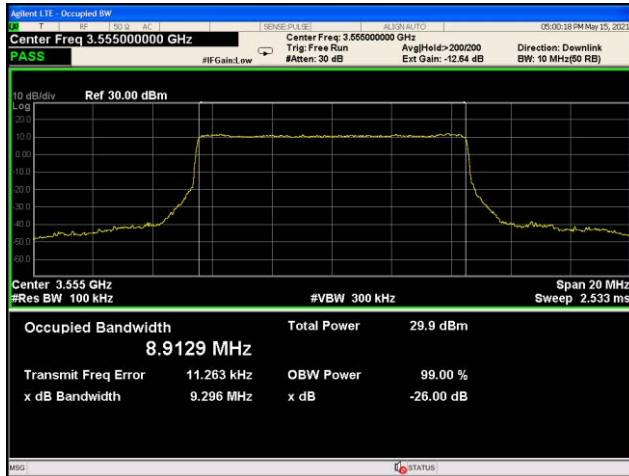
Highest channel



Highest channel

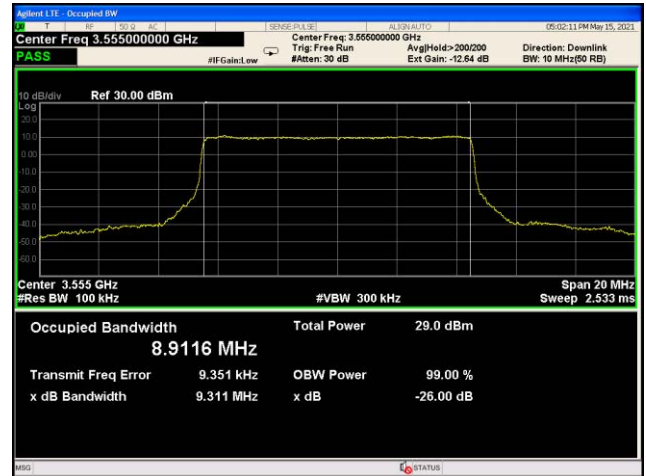
LTE Band 48
BW: 10MHz, 64QAM

ANT 0

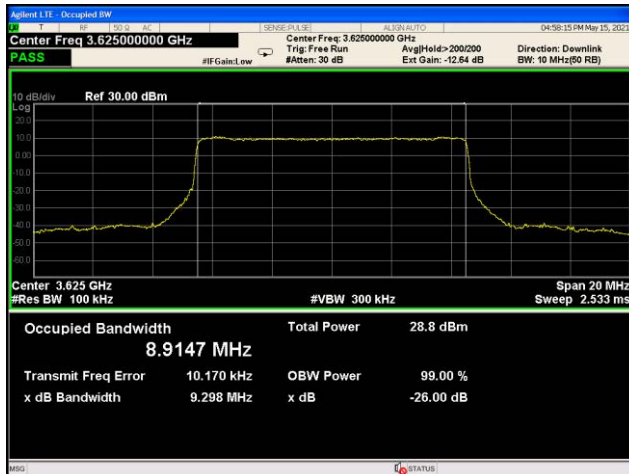


Lowest channel

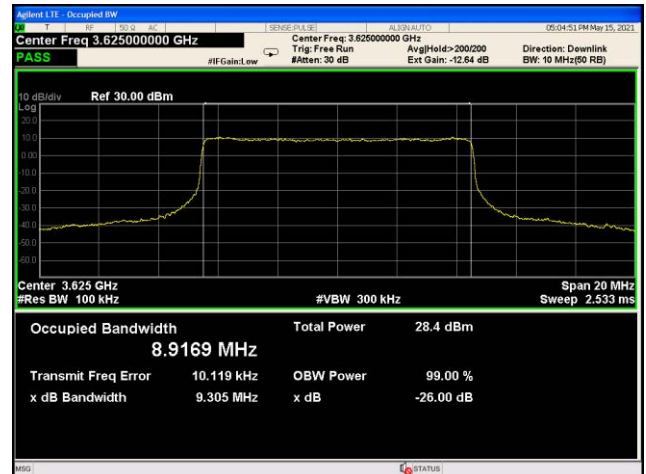
ANT 1



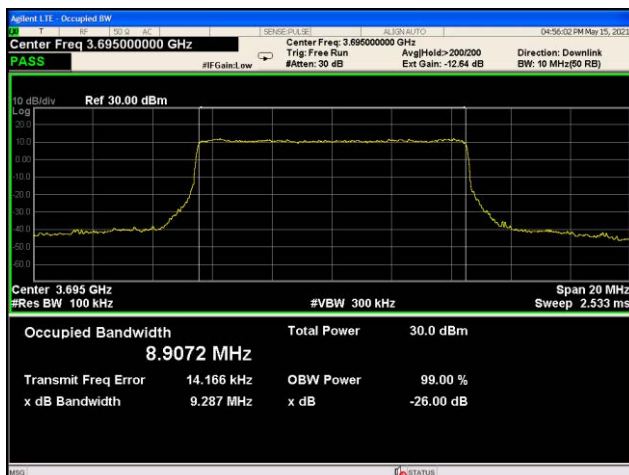
Lowest channel



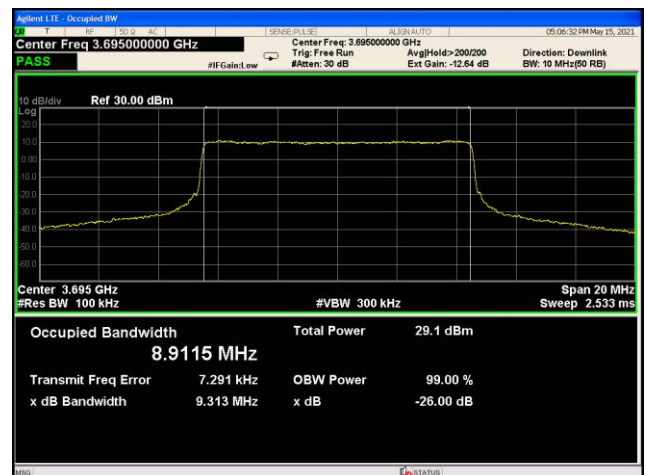
Middle channel



Middle channel

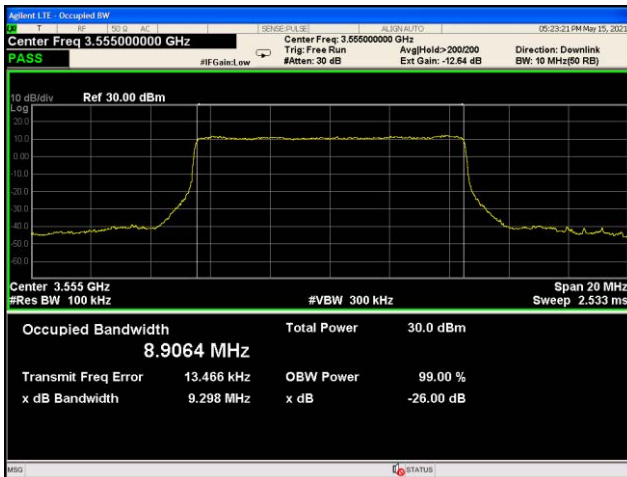


Highest channel



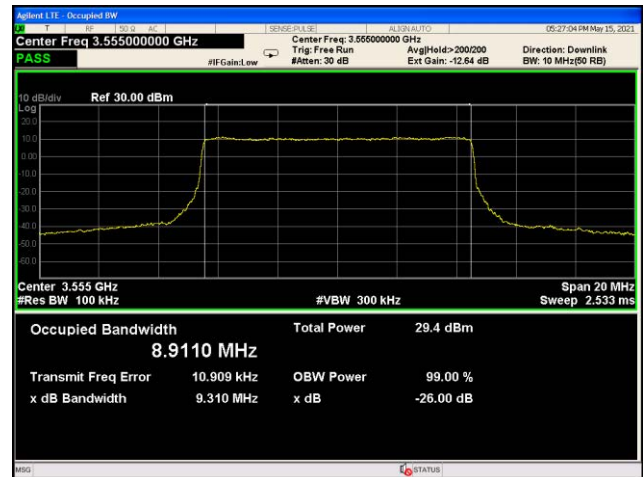
Highest channel

ANT 2

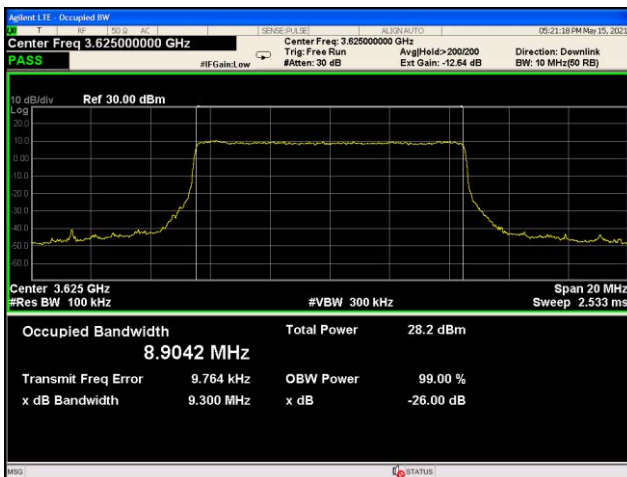


Lowest channel

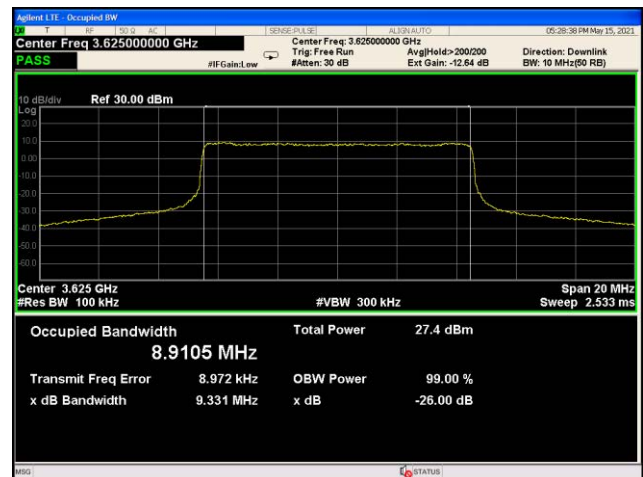
ANT 3



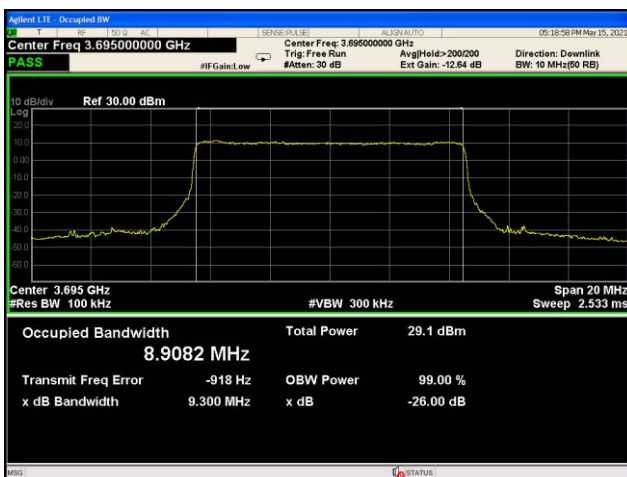
Lowest channel



Middle channel



Middle channel



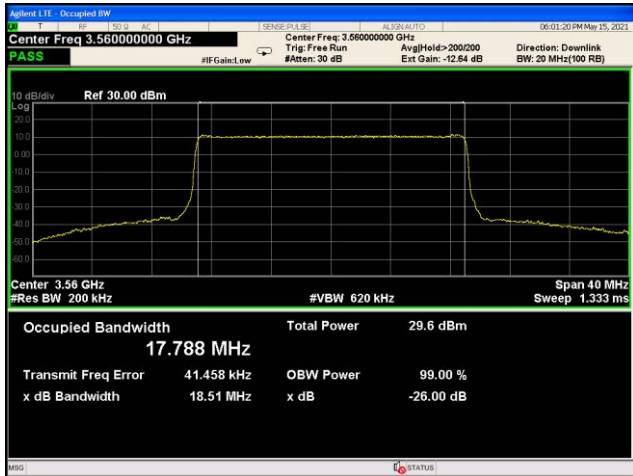
Highest channel



Highest channel

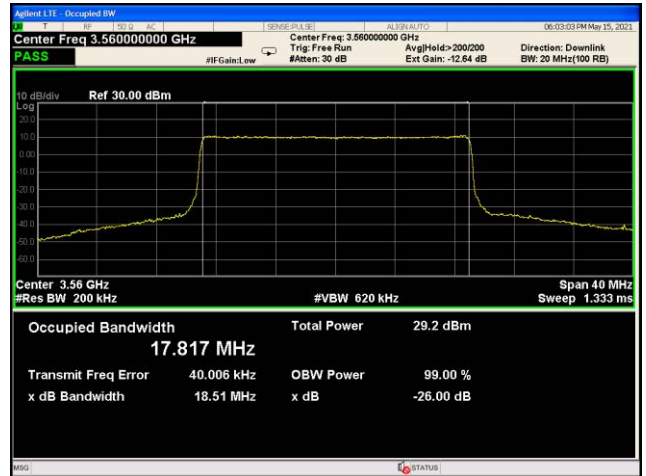
LTE Band 48:
BW: 20MHz QPSK

ANT 0

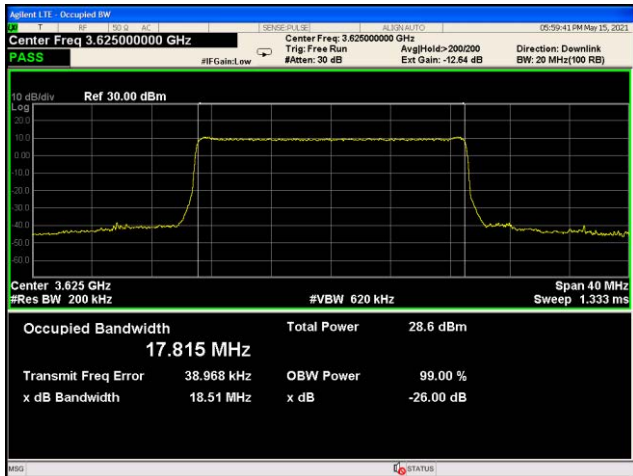


Lowest channel

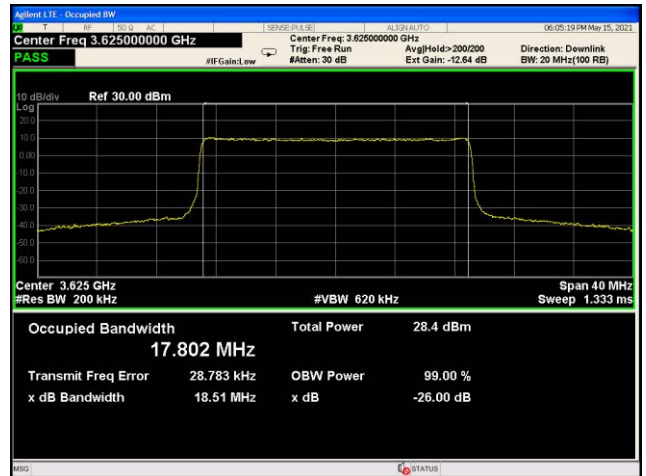
ANT 1



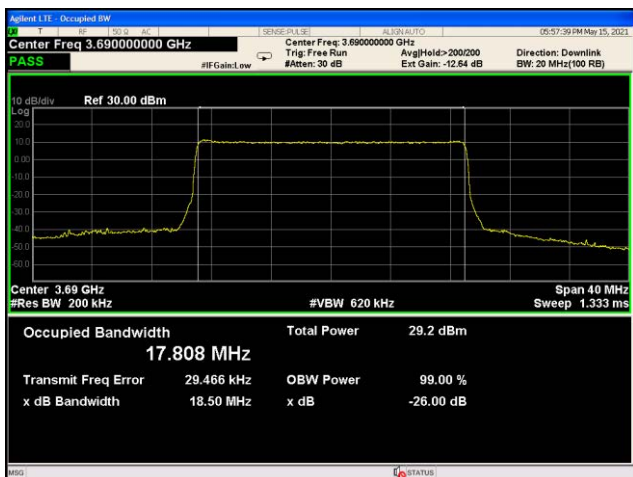
Lowest channel



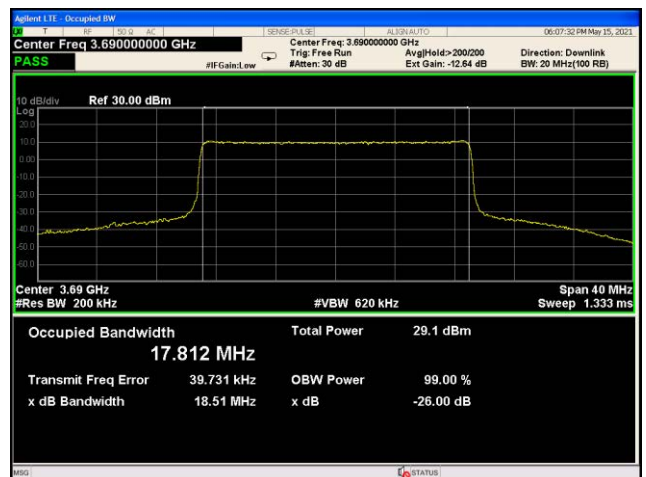
Middle channel



Middle channel

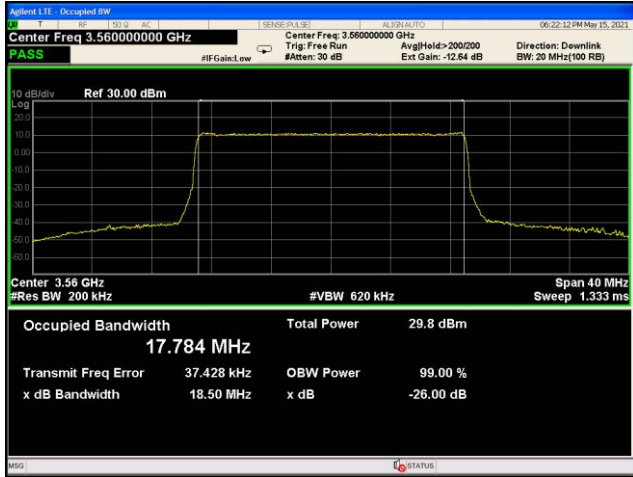


Highest channel



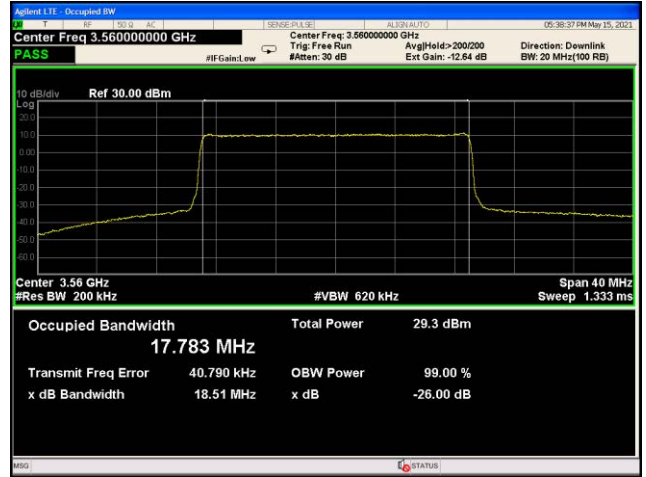
Highest channel

ANT 2

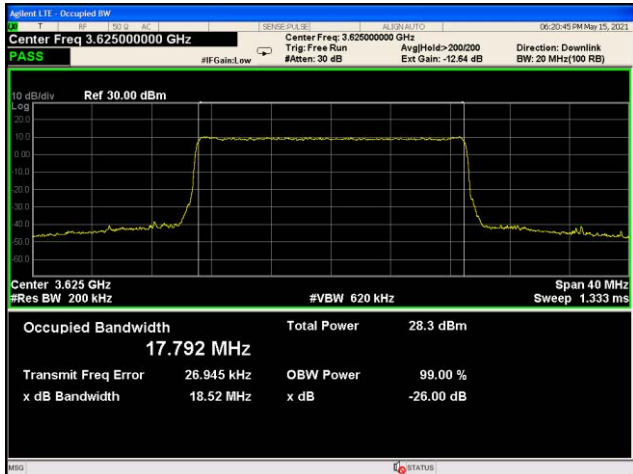


Lowest channel

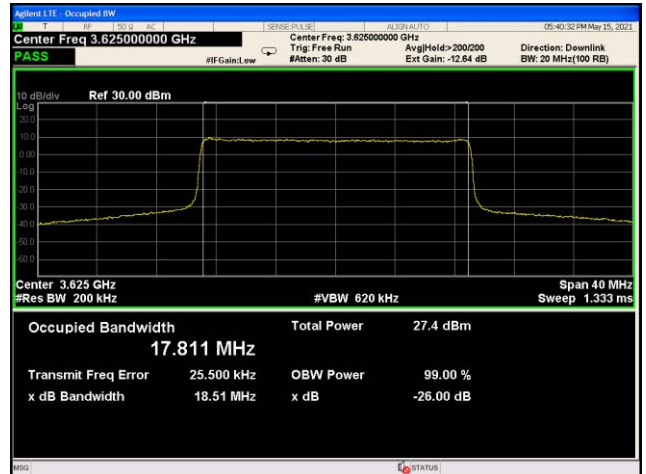
ANT 3



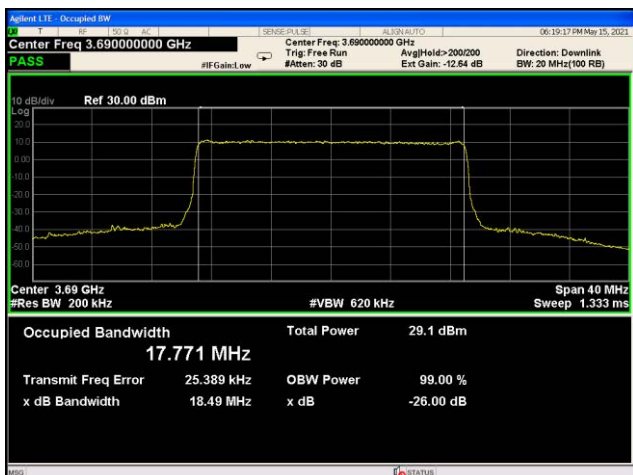
Lowest channel



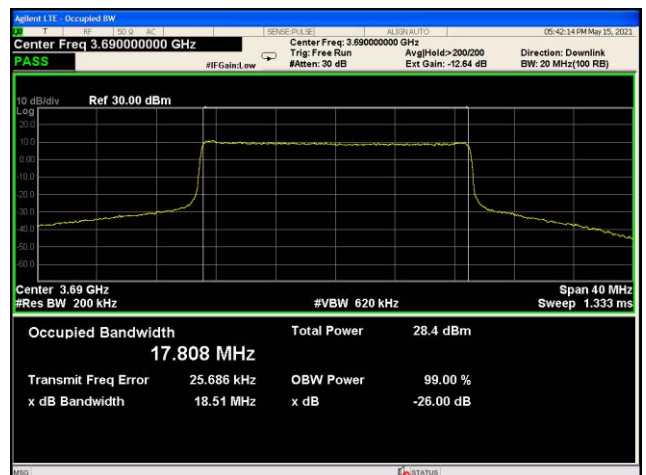
Middle channel



Middle channel



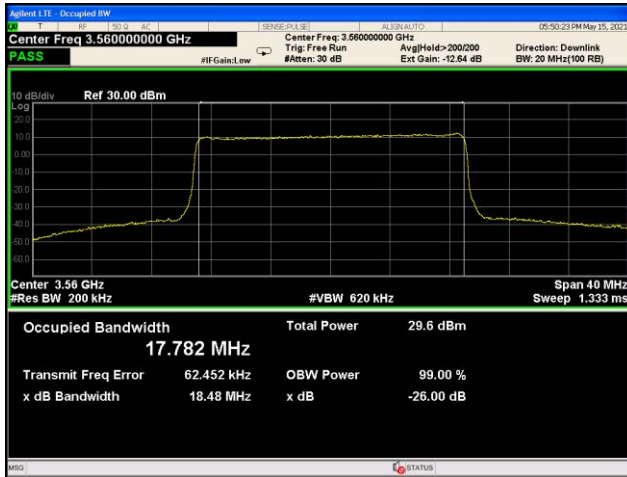
Highest channel



Highest channel

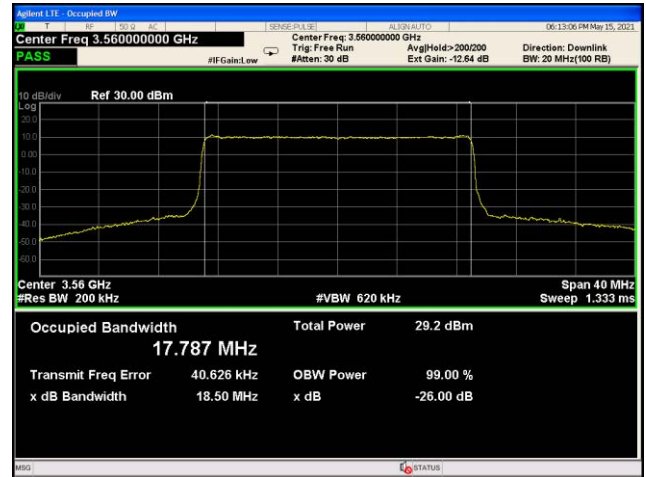
LTE Band 48
BW: 20MHz, 64QAM

ANT 0

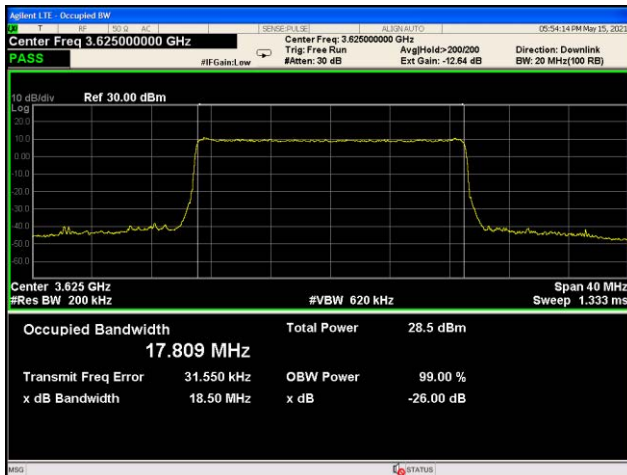


Lowest channel

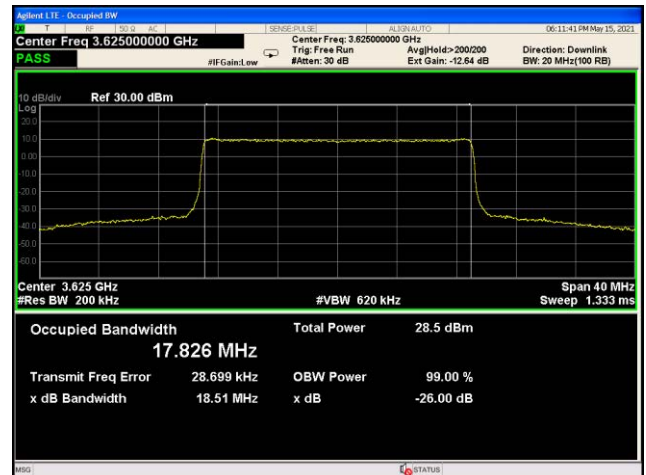
ANT 1



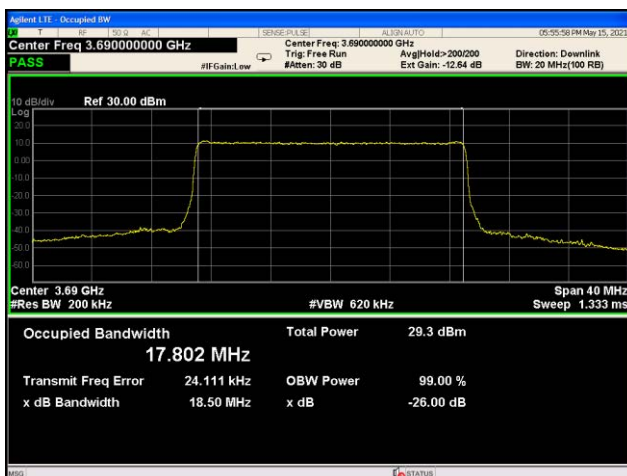
Lowest channel



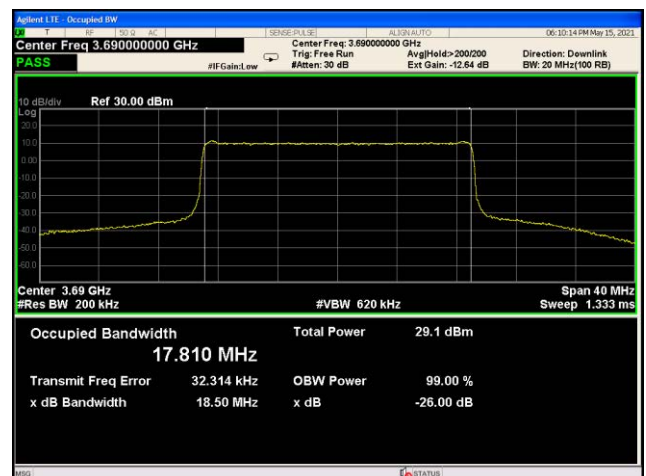
Middle channel



Middle channel

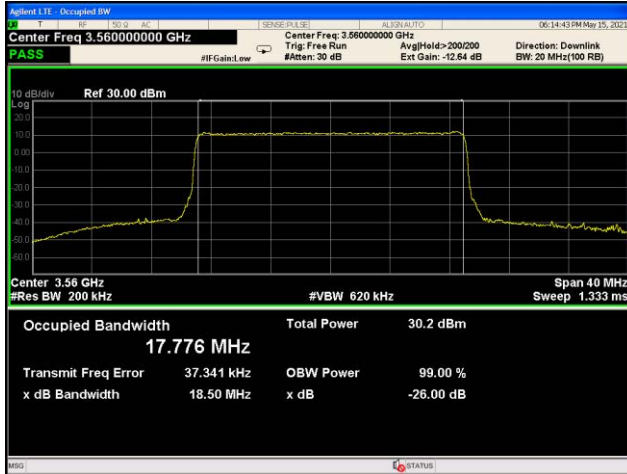


Highest channel



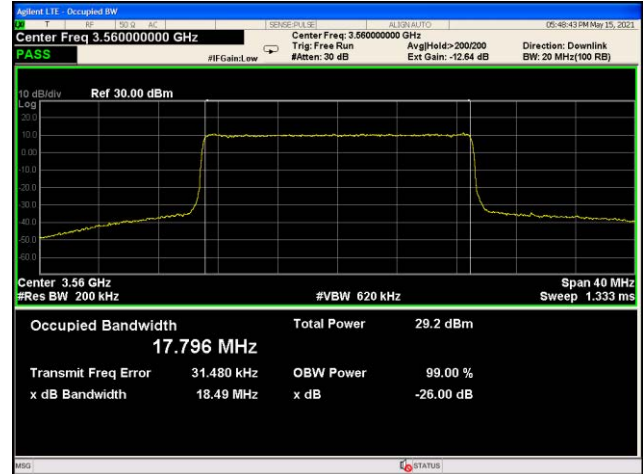
Highest channel

ANT 2

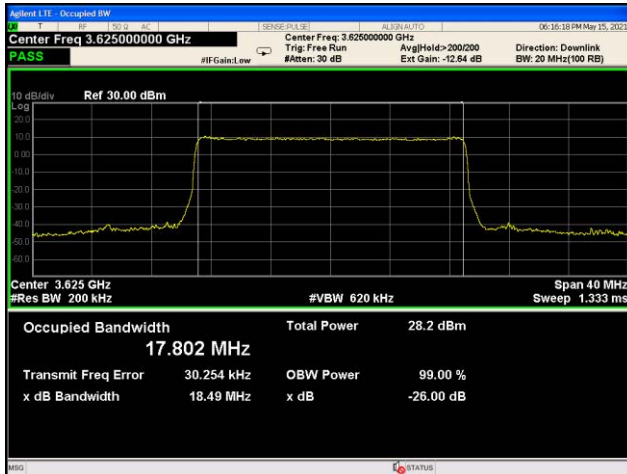


Lowest channel

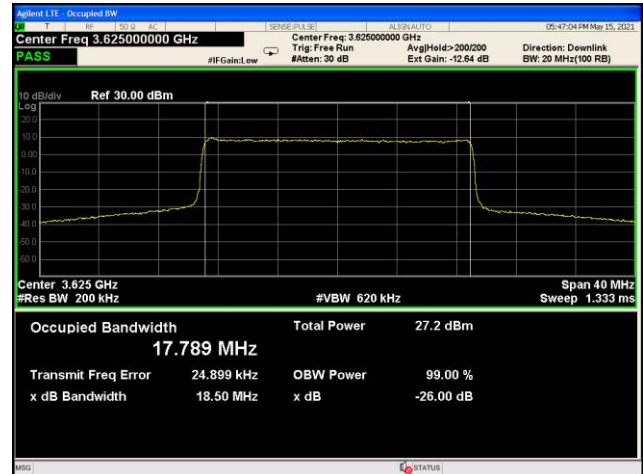
ANT 3



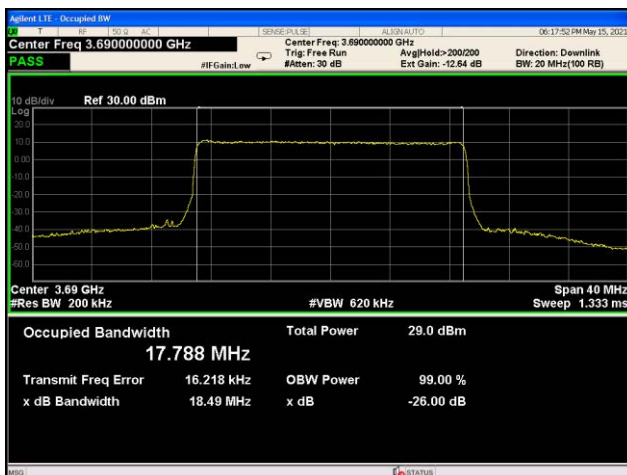
Lowest channel



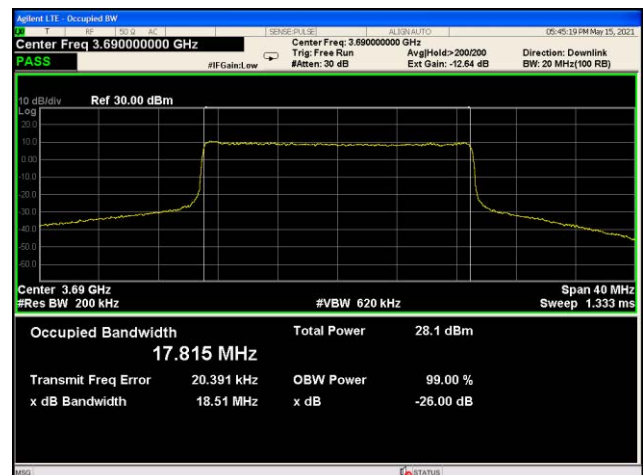
Middle channel



Middle channel

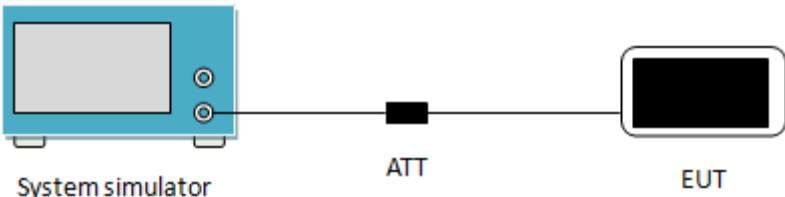


Highest channel



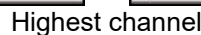
Highest channel

6.4 Emission Mask

Test Requirement:	FCC part 96.41(e)(1)(2)
Limit:	-13 dBm/MHz at frequencies within 0-10MHz of channel edge -25 dBm/MHz at frequencies greater than 10MHz above and below channel edge -40 dBm/MHz at frequencies below 3530 MHz and above 3720 MHz
Test setup:	 The diagram illustrates the test setup. On the left is a blue box labeled 'System simulator'. A line connects it to a black box labeled 'ATT' (attenuator). Another line connects the 'ATT' box to a black box labeled 'EUT' (Equipment Under Test).
Test Procedure:	1. The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation. Measurements must be performed for low, mid, and high channels. 2. RBW=1% of fundamental for measurements within 1 MHz immediately outside the authorized channel; and 1 MHz for beyond 1 MHz outside the authorized channel. (eg.For 5MHz, RBW=51KHz within 1 MHz immediately outside the authorized channel) 3. Trace average at least 100 traces
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.3 for details
Test results:	PASS

Test plots as below:

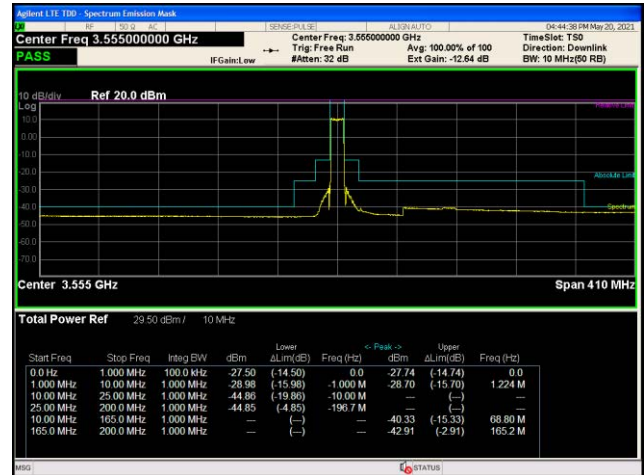
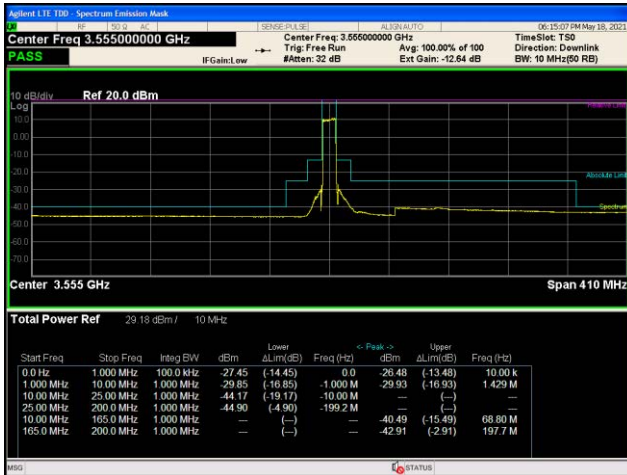




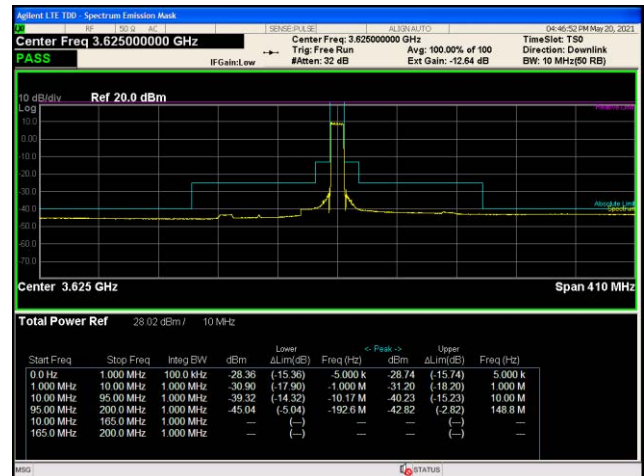
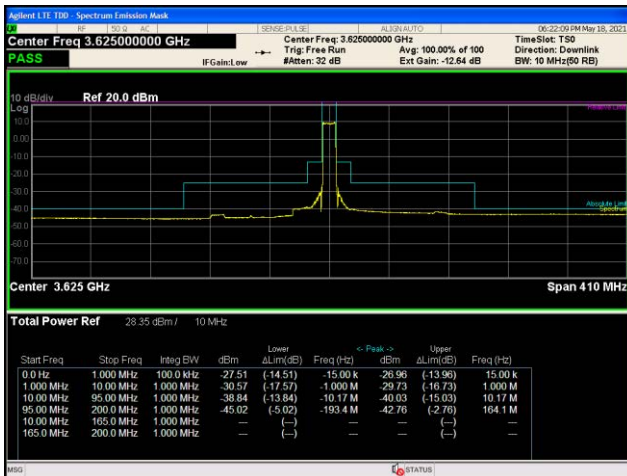
QPKS

10MHz bandwidth-ANT 2

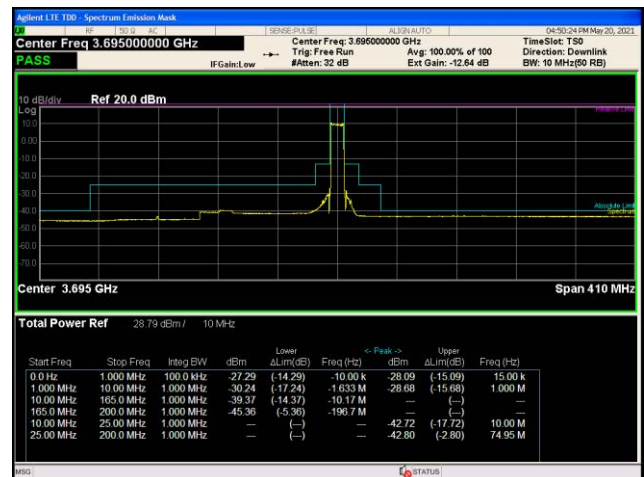
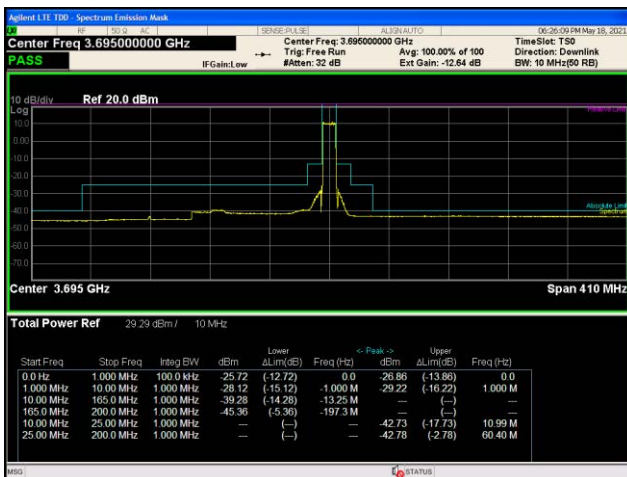
64QAM



Lowest channel



Middle channel

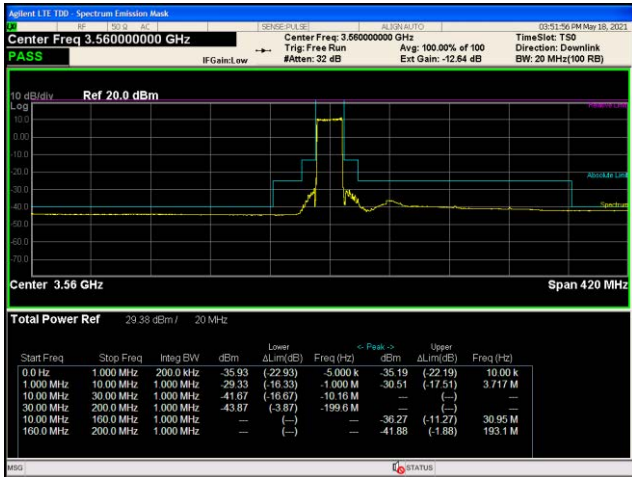


Highest channel

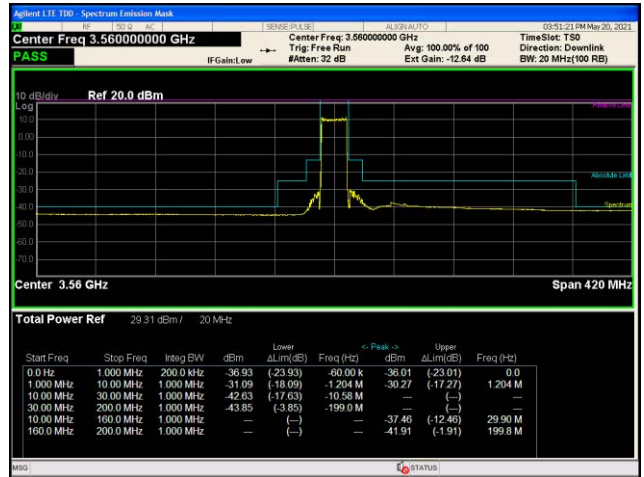


20MHz bandwidth-ANT 0

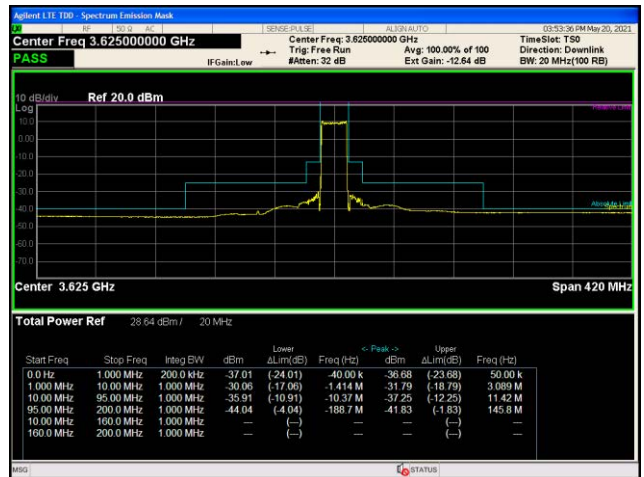
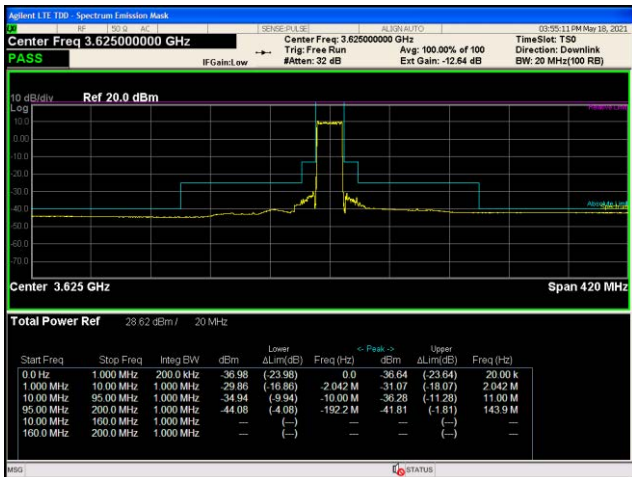
QPKS



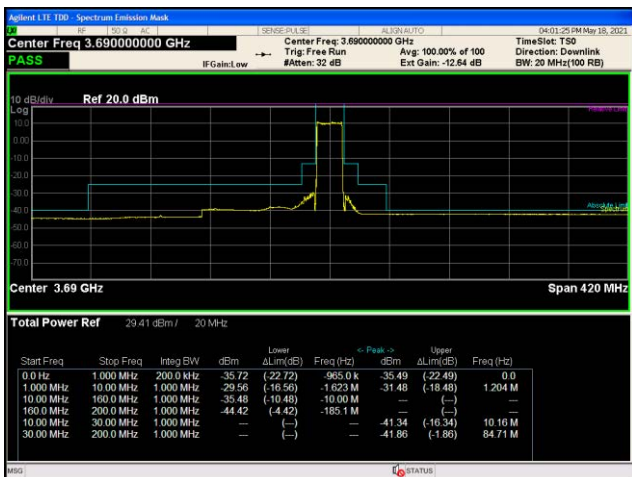
64QAM



Lowest channel



Middle channel

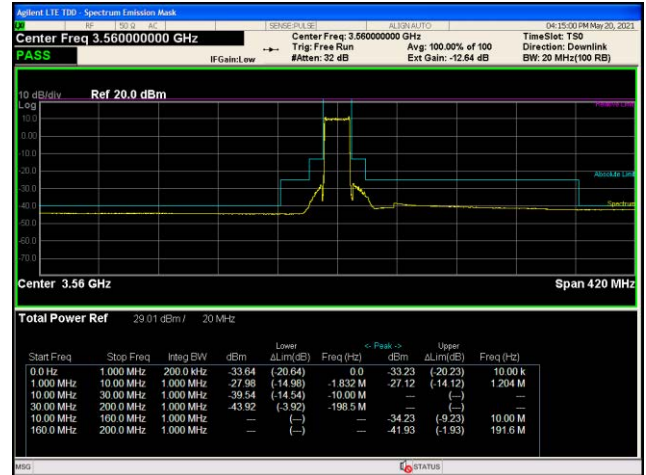
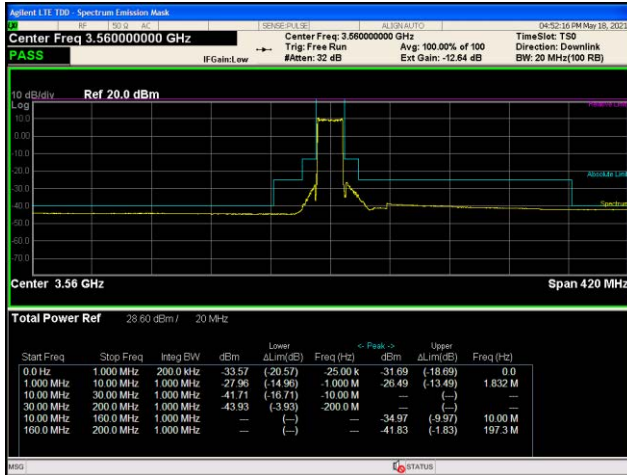


Highest channel

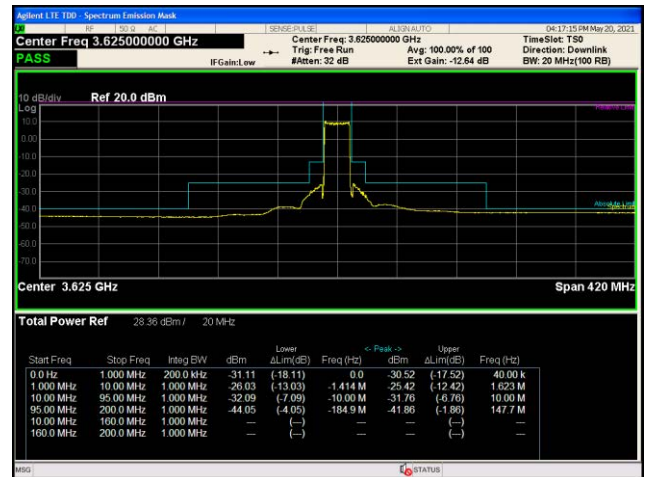
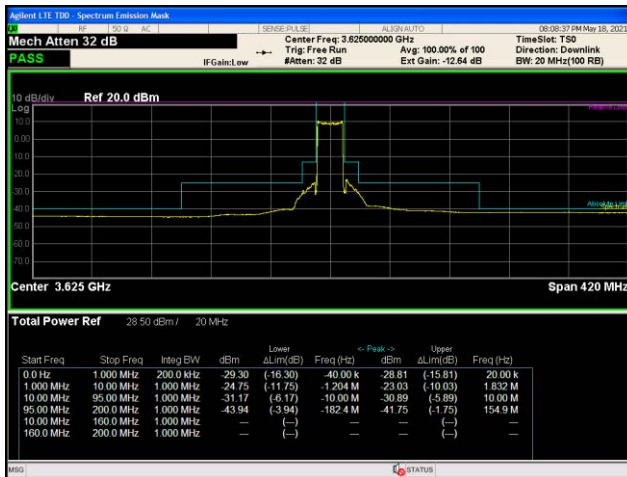
20MHz bandwidth-ANT 1

QPKS

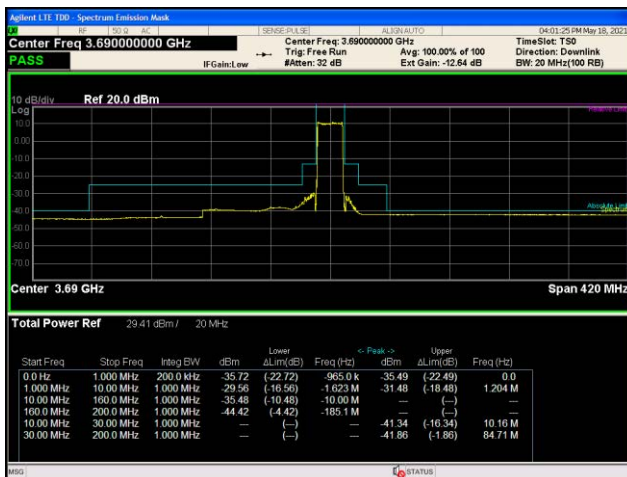
64QAM



Lowest channel



Middle channel

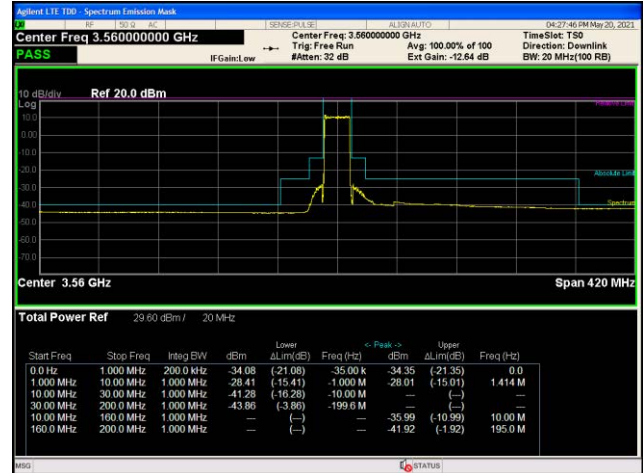
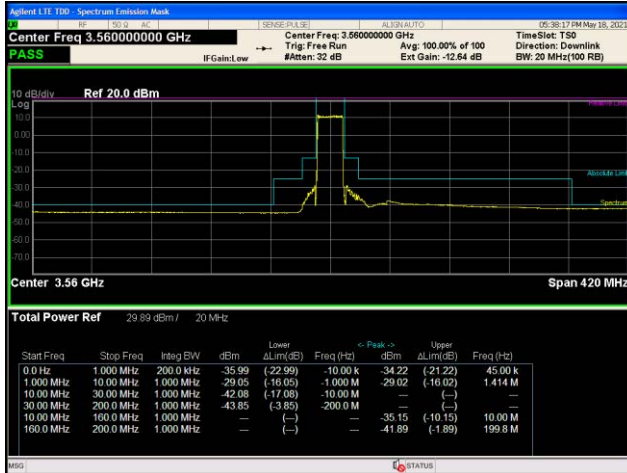


Highest channel

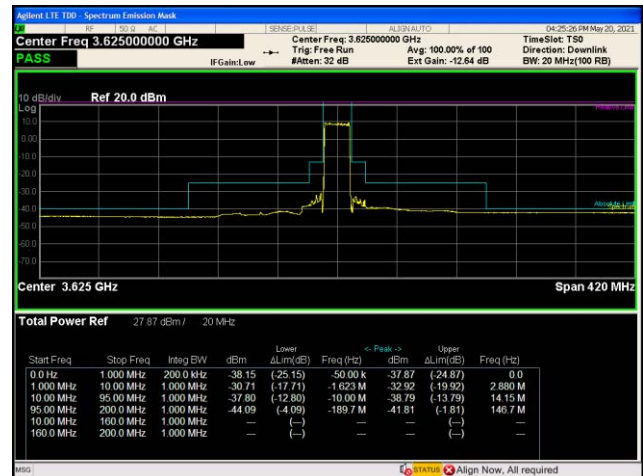
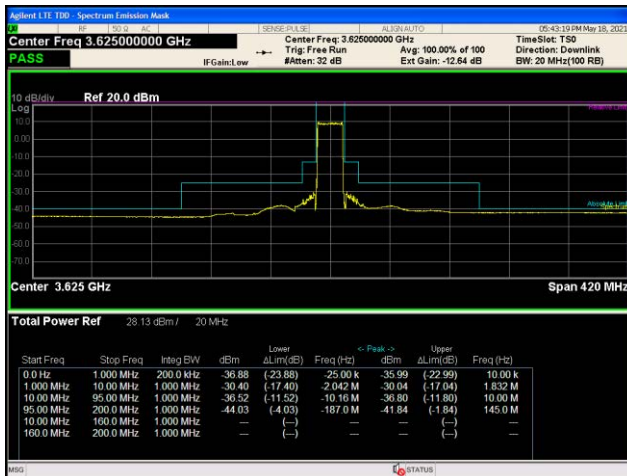
QPKS

20MHz bandwidth-ANT 2

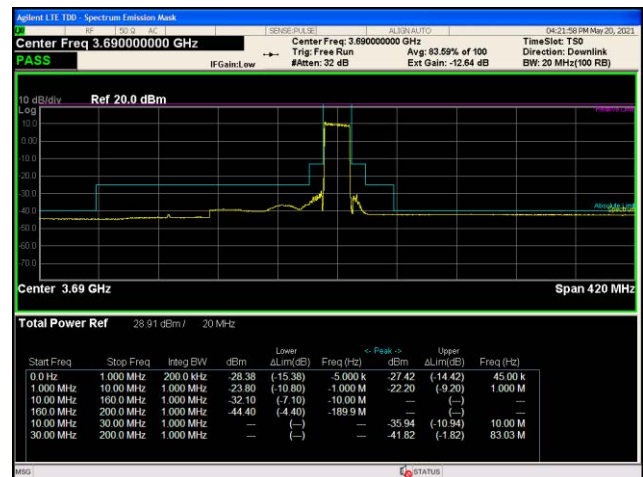
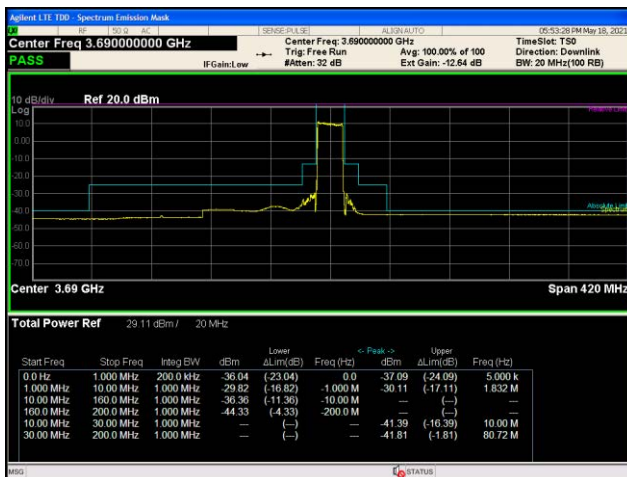
64QAM



Lowest channel



Middle channel



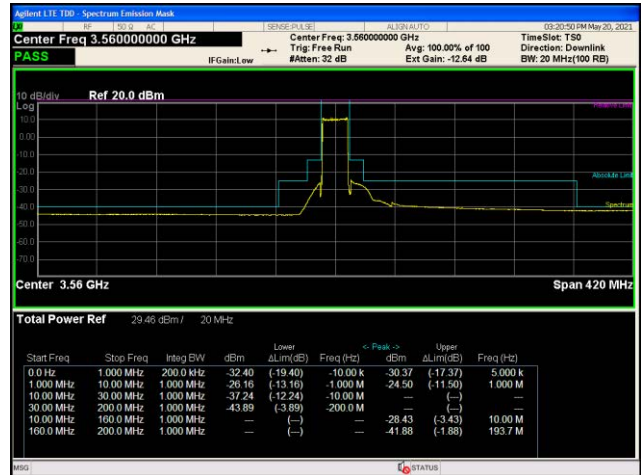
Highest channel

QPKS

20MHz bandwidth-ANT 3



64QAM



Lowest channel



Middle channel



Highest channel