

Bandwidth=20MHz – QPSK

ANT 0



ANT 1



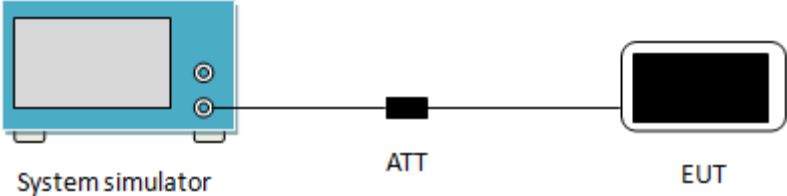
ANT 2



ANT 3



6.3 Occupy Bandwidth

Test Requirement:	FCC part 96.41(E)(3)
Test setup:	 <p>The diagram shows a test setup where a blue 'System simulator' is connected via a cable to a black 'ATT' (attenuator), which is then connected to a black 'EUT' (Equipment Under Test).</p>
Test Procedure:	<ol style="list-style-type: none"> 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

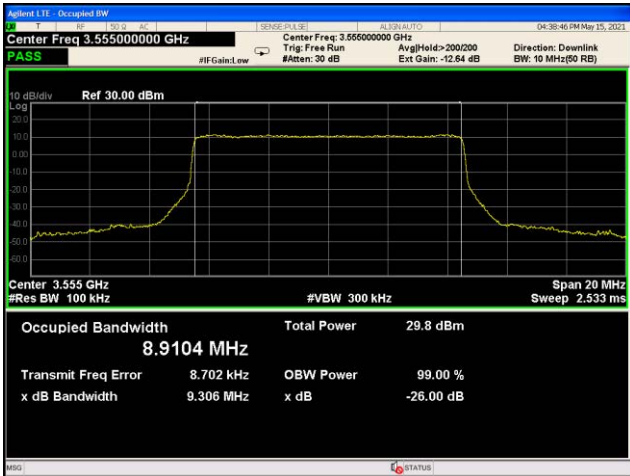
Measurement Data:

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
Middle	10	QPSK	ANT 3	9.310	8.911
			ANT 0	9.314	8.915
			ANT 1	9.310	8.923
			ANT 2	9.317	8.911
		64QAM	ANT 3	9.335	8.924
			ANT 0	9.298	8.915
			ANT 1	9.305	8.917
Highest	10	QPSK	ANT 2	9.300	8.904
			ANT 3	9.331	8.911
			ANT 0	9.317	8.902
			ANT 1	9.332	8.917
		64QAM	ANT 2	9.299	8.912
			ANT 3	9.482	8.916
			ANT 0	9.287	8.907
Lowest	20	QPSK	ANT 1	9.313	8.912
			ANT 2	9.300	8.908
			ANT 3	9.452	8.916
			ANT 0	9.317	8.902
		64QAM	ANT 1	9.480	17.782
			ANT 2	18.500	17.787
			ANT 3	18.500	17.776
Middle	20	QPSK	ANT 0	18.490	17.796
			ANT 1	18.510	17.815
			ANT 2	18.510	17.802
			ANT 3	18.510	17.792
		64QAM	ANT 0	18.510	17.811
			ANT 1	18.500	17.809
			ANT 2	18.510	17.826
Highest	20	QPSK	ANT 3	18.490	17.802
			ANT 0	18.500	17.789
			ANT 1	18.500	17.789
			ANT 2	18.500	17.789
		64QAM	ANT 3	18.510	17.808
			ANT 0	18.500	17.802
			ANT 1	18.500	17.810
Lowest	20	QPSK	ANT 2	18.490	17.771
			ANT 3	18.510	17.808
			ANT 0	18.500	17.808
			ANT 1	18.510	17.812
		64QAM	ANT 2	18.490	17.788
			ANT 3	18.510	17.815
			ANT 0	18.500	17.802

Test plot as follows:

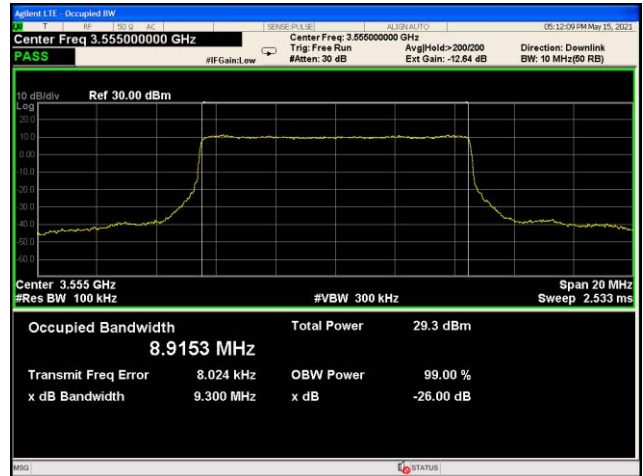
LTE Band 48
BW: 10MHz, QPSK

ANT 0

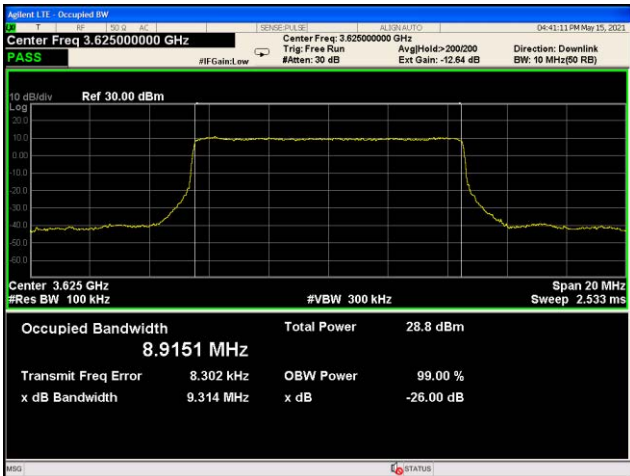


Lowest channel

ANT 1



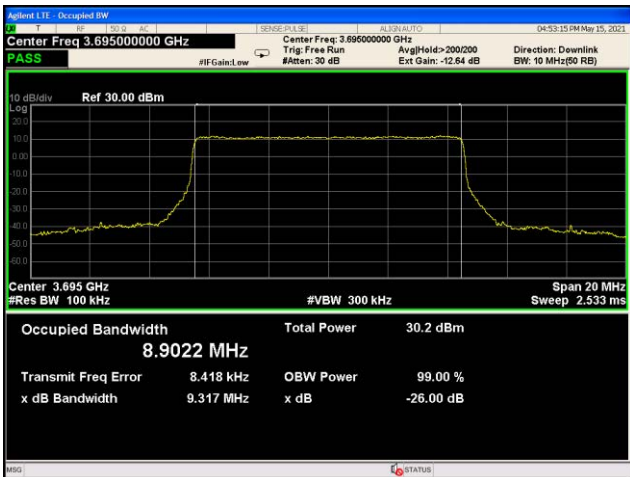
Lowest channel



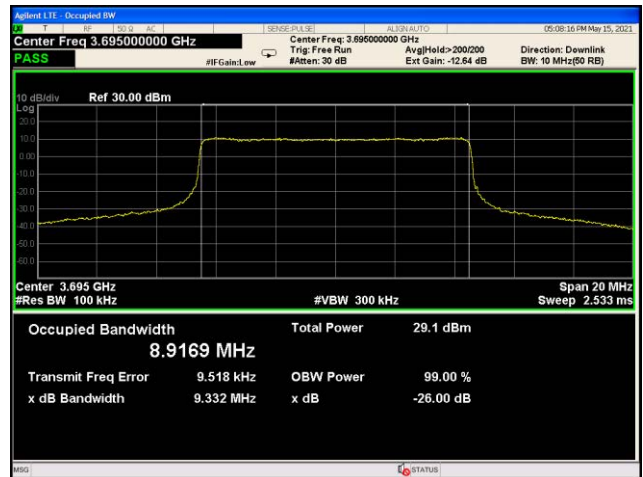
Middle channel



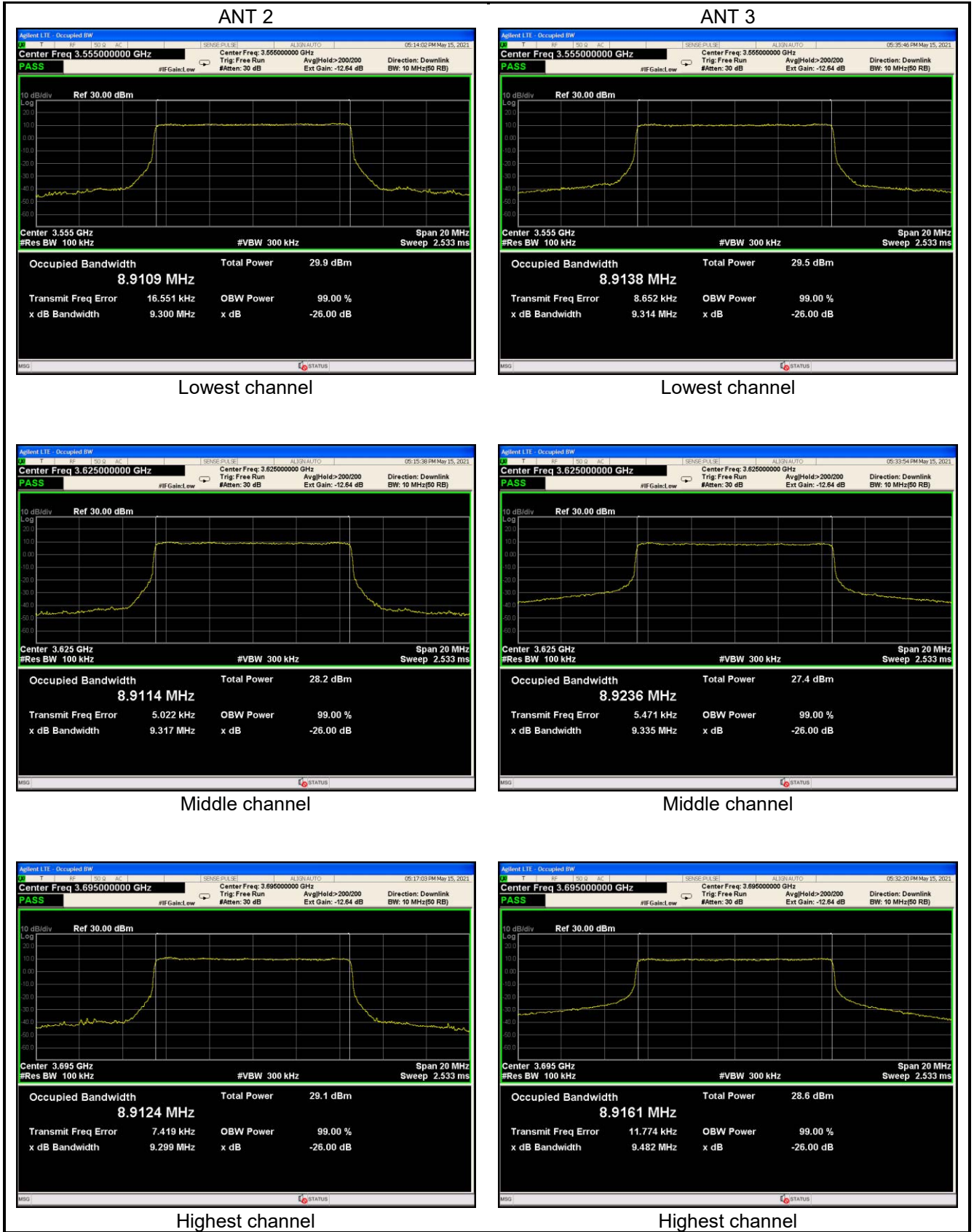
Middle channel



Highest channel



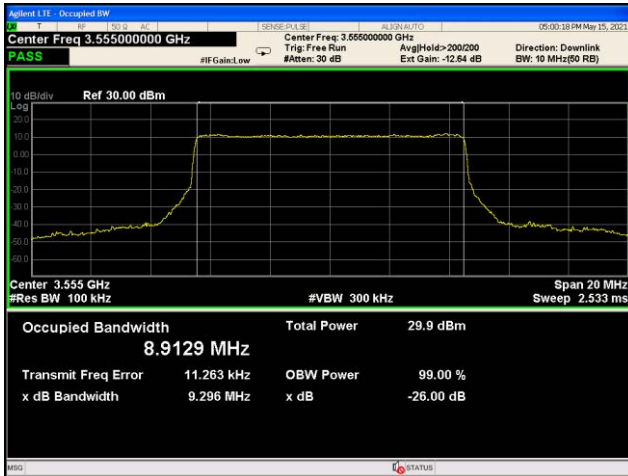
Highest channel



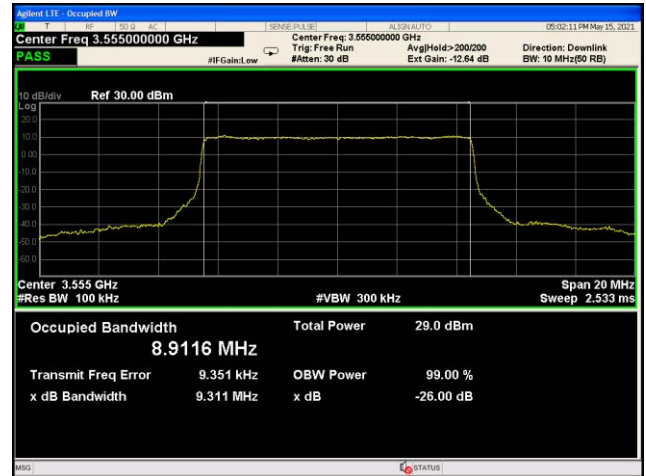
LTE Band 48
BW: 10MHz, 64QAM

ANT 0

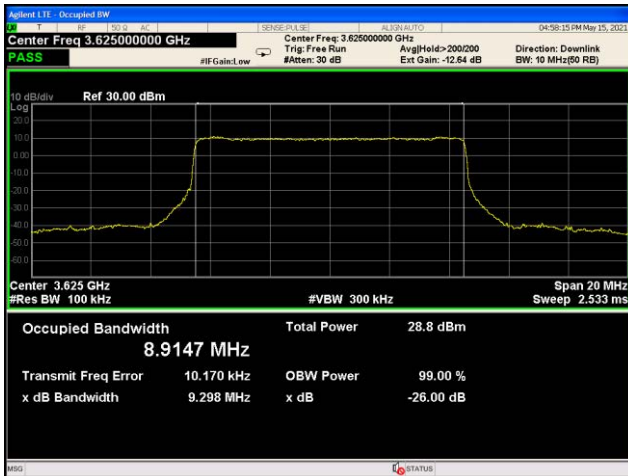
ANT 1



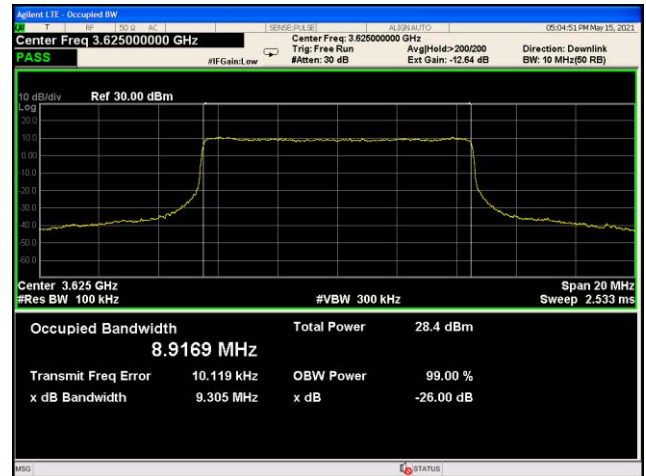
Lowest channel



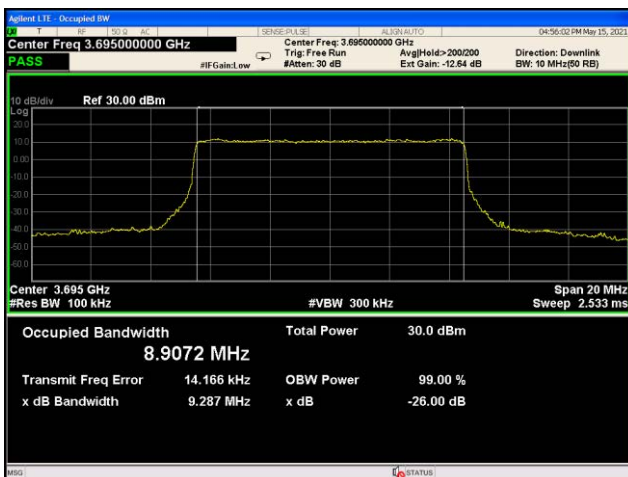
Lowest channel



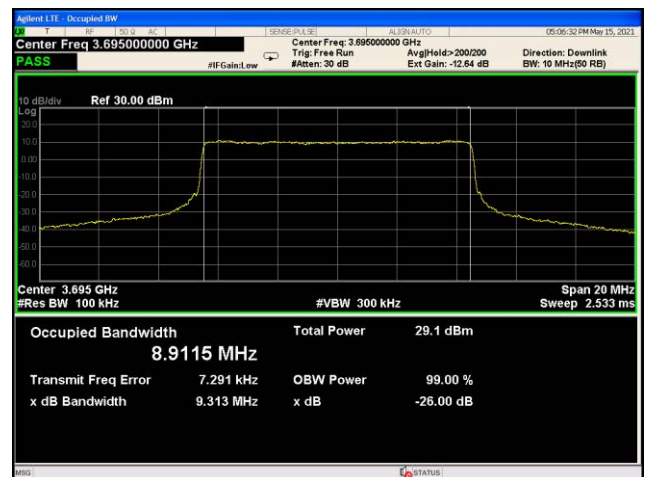
Middle channel



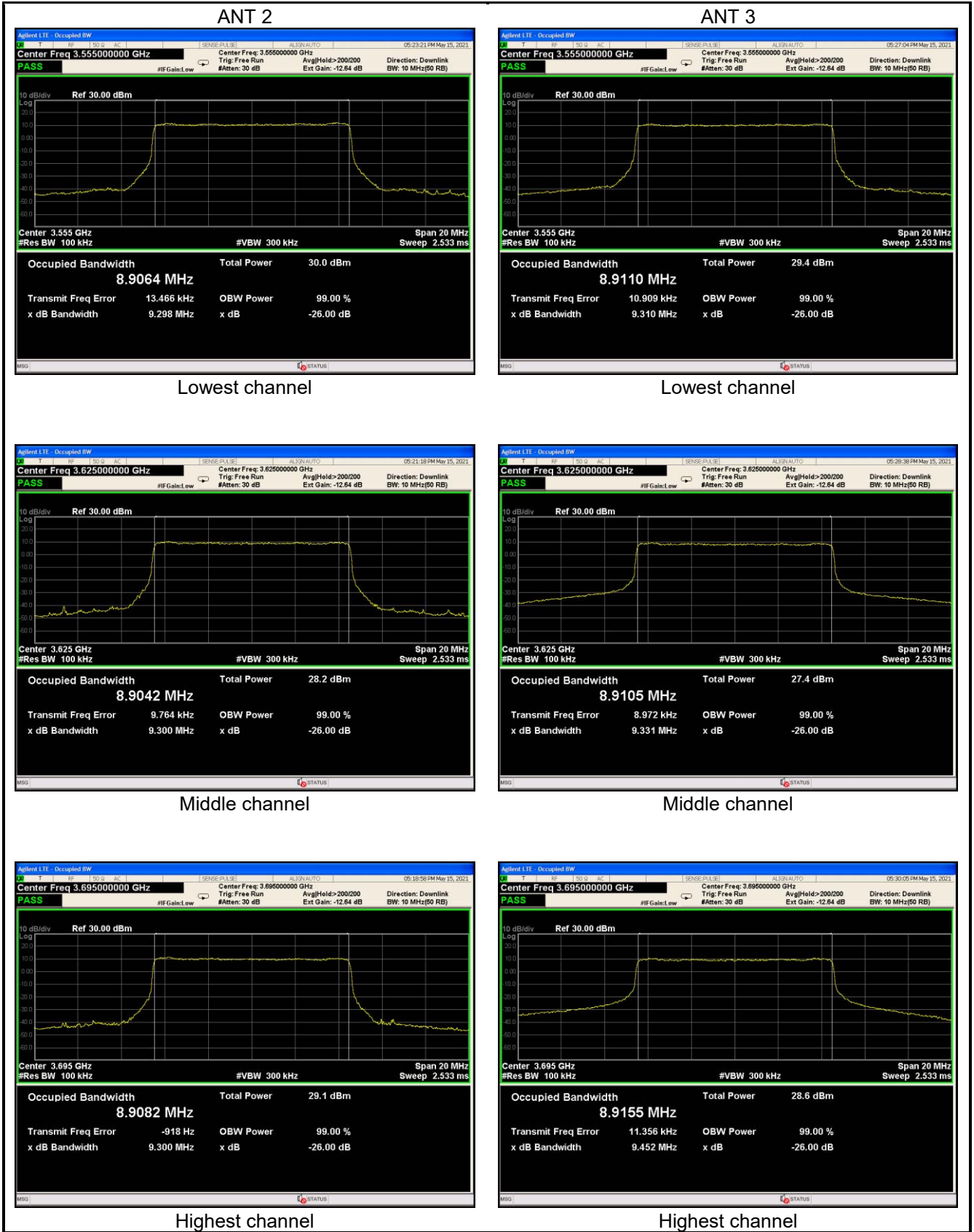
Middle channel



Highest channel



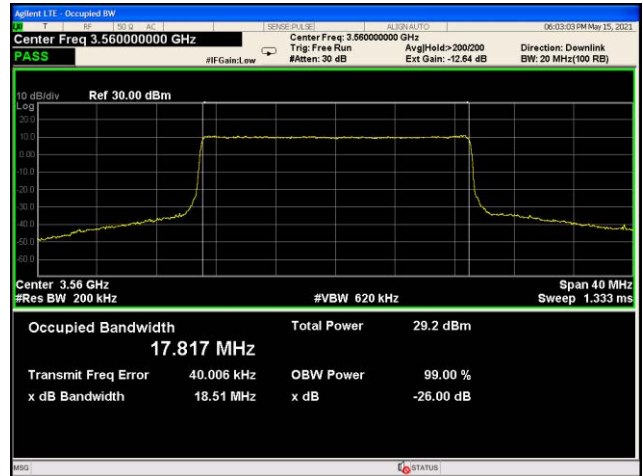
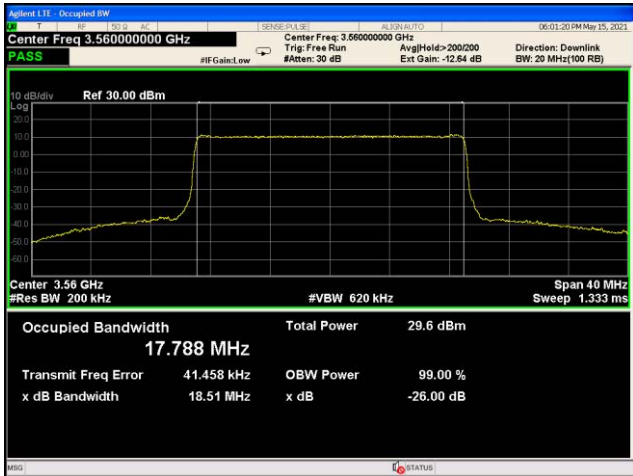
Highest channel



LTE Band 48:
BW: 20MHz QPSK

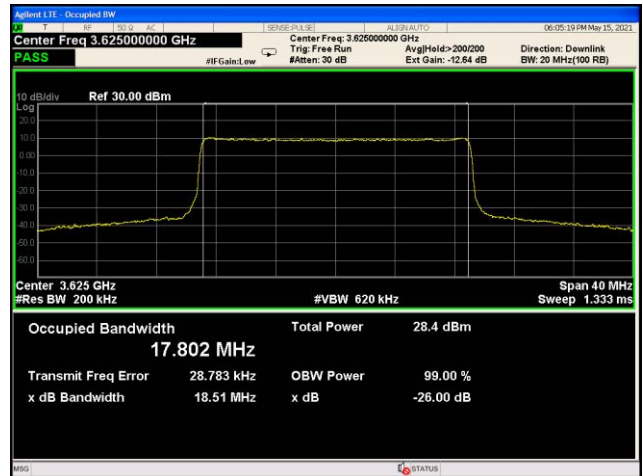
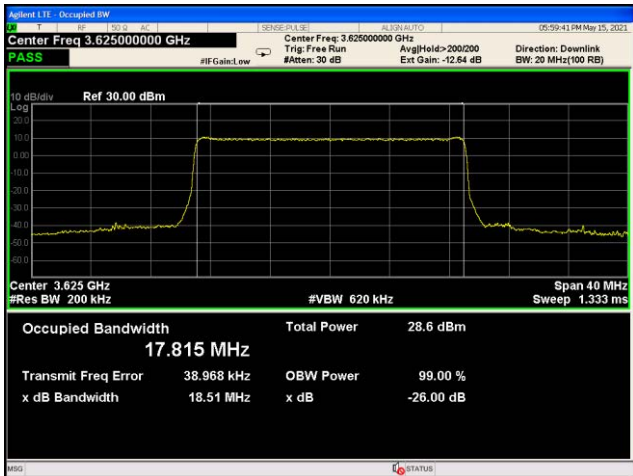
ANT 0

ANT 1



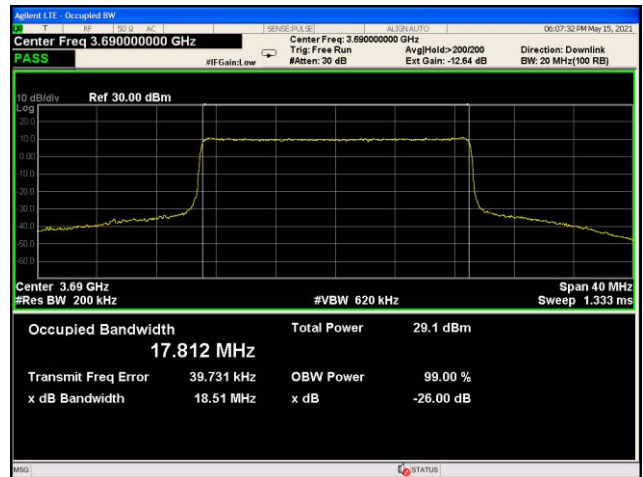
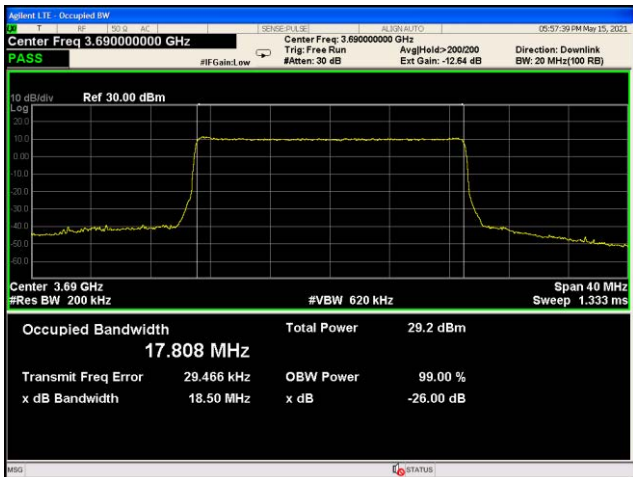
Lowest channel

Lowest channel



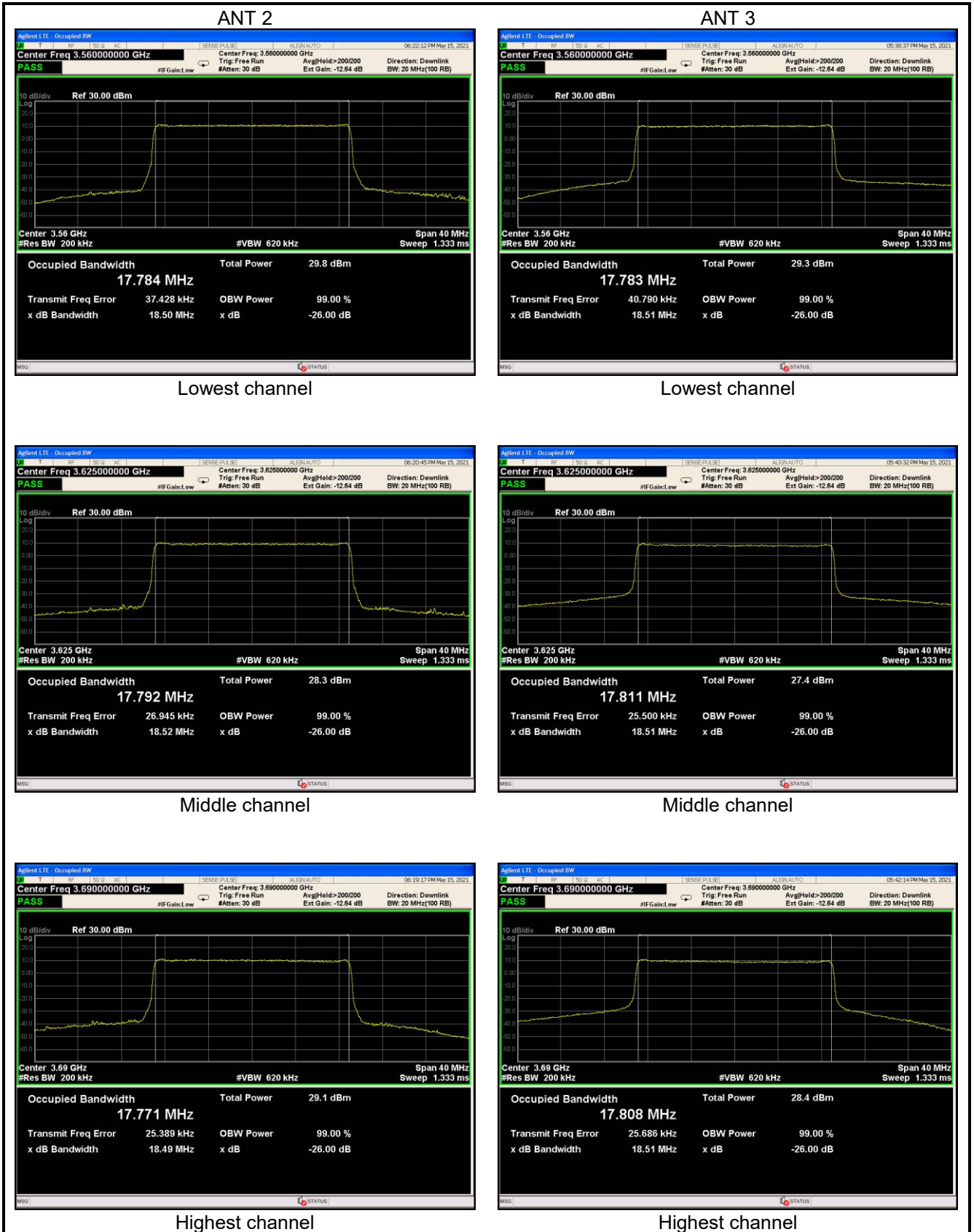
Middle channel

Middle channel



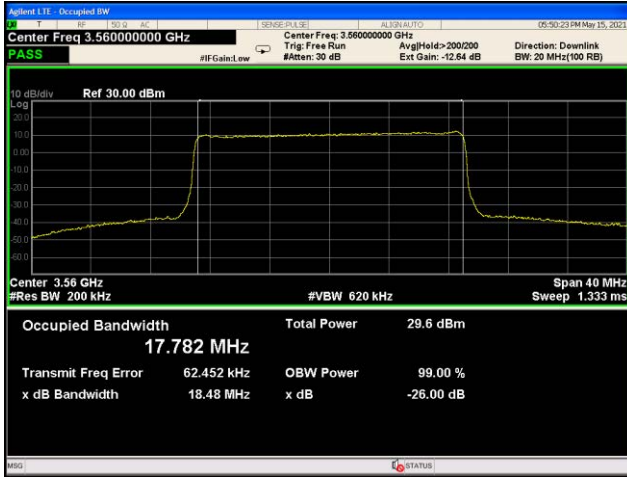
Highest channel

Highest channel



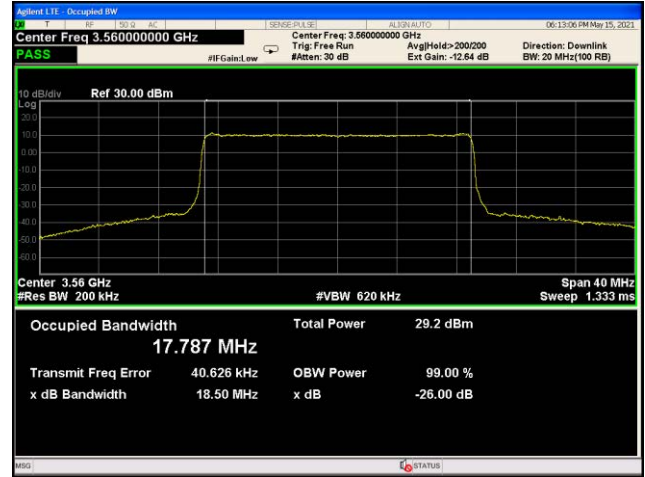
LTE Band 48
BW: 20MHz, 64QAM

ANT 0

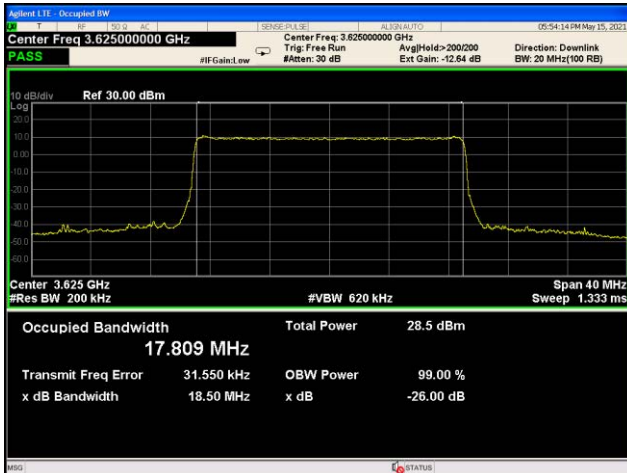


Lowest channel

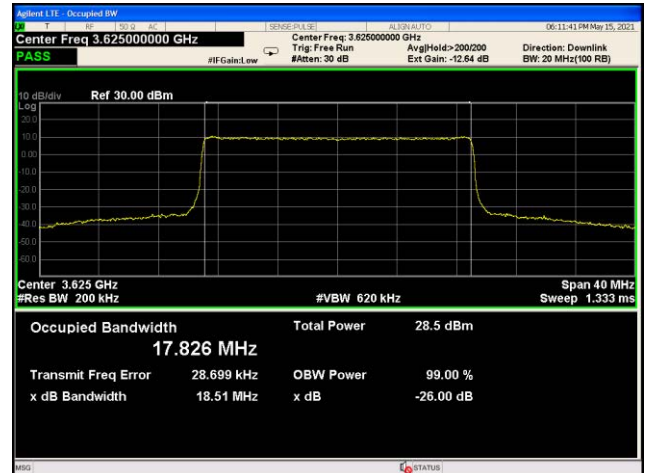
ANT 1



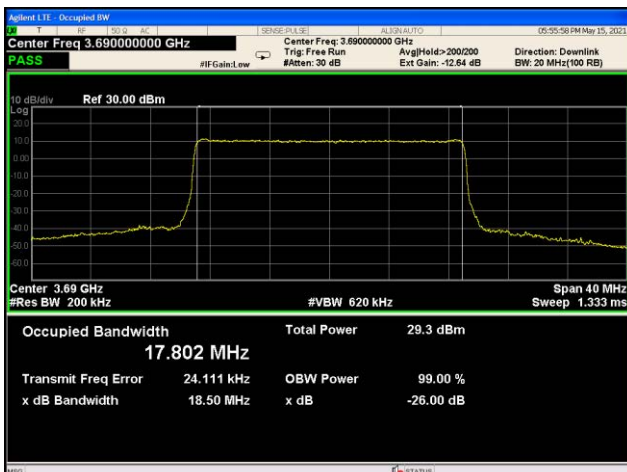
Lowest channel



Middle channel



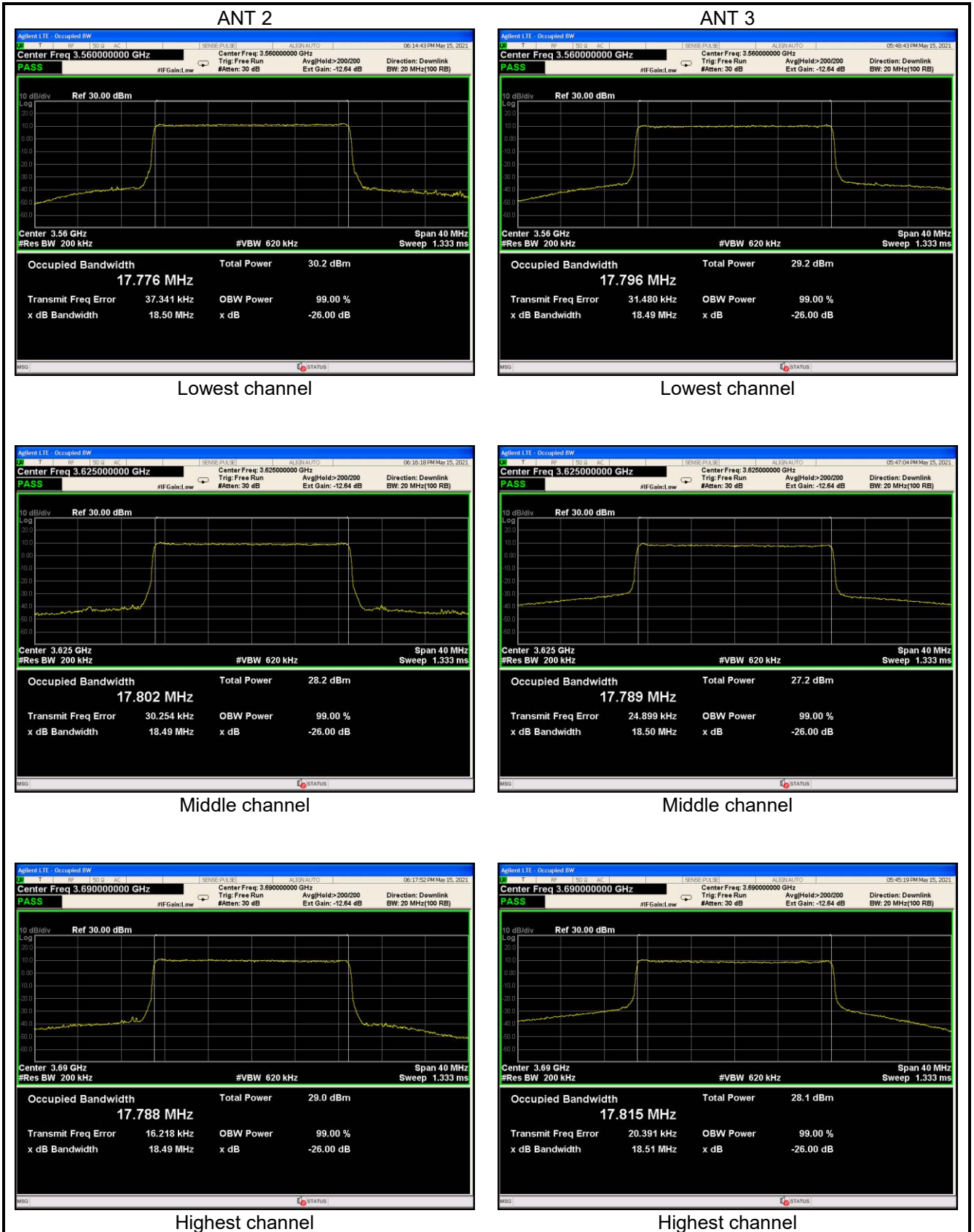
Middle channel



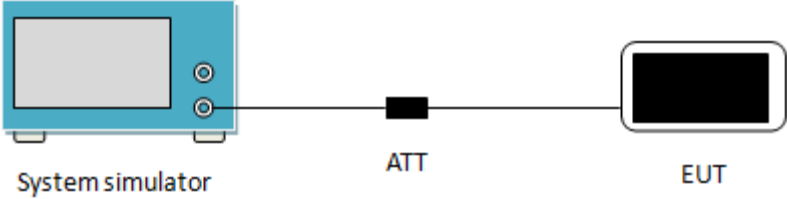
Highest channel



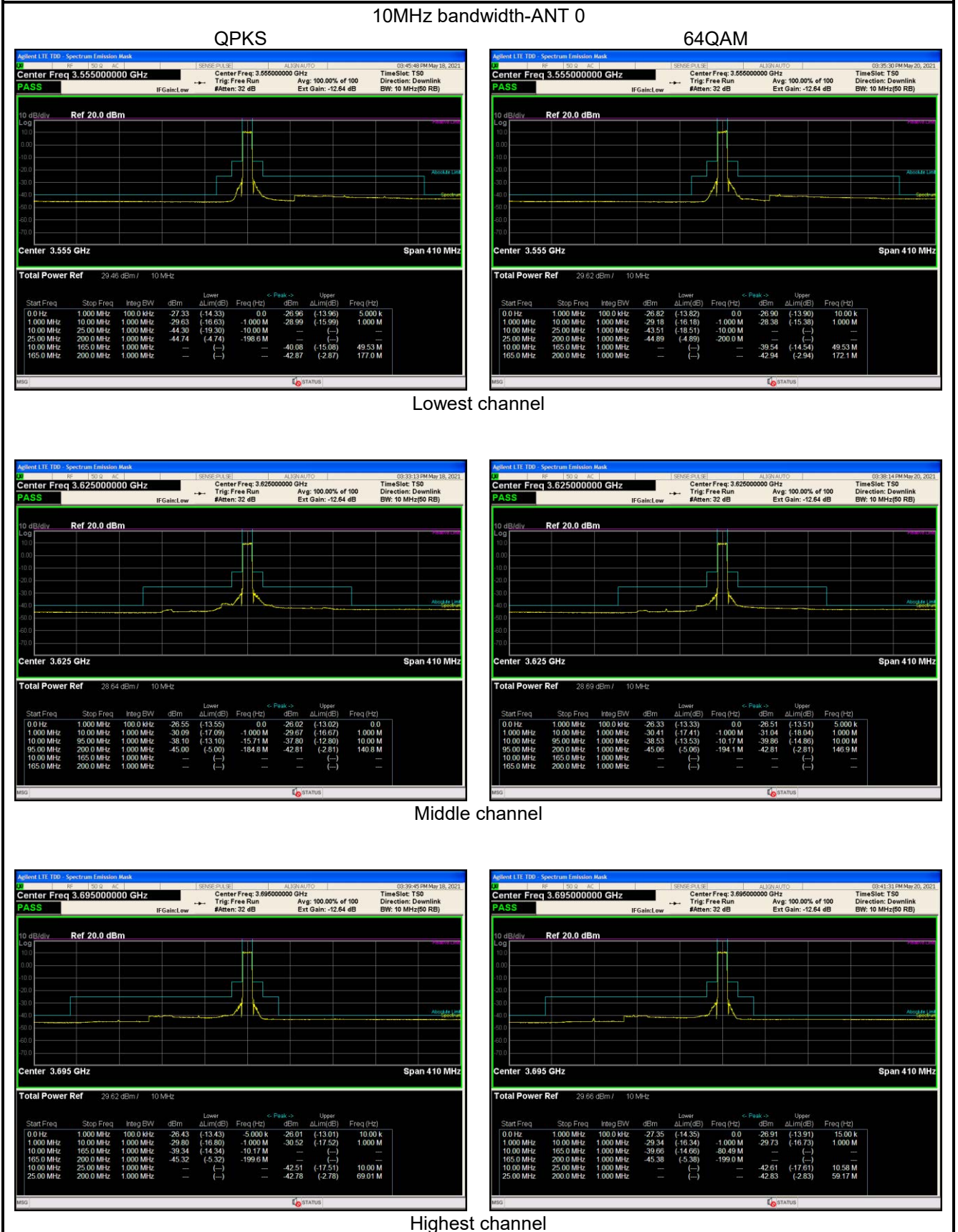
Highest channel



6.4 Emission Mask

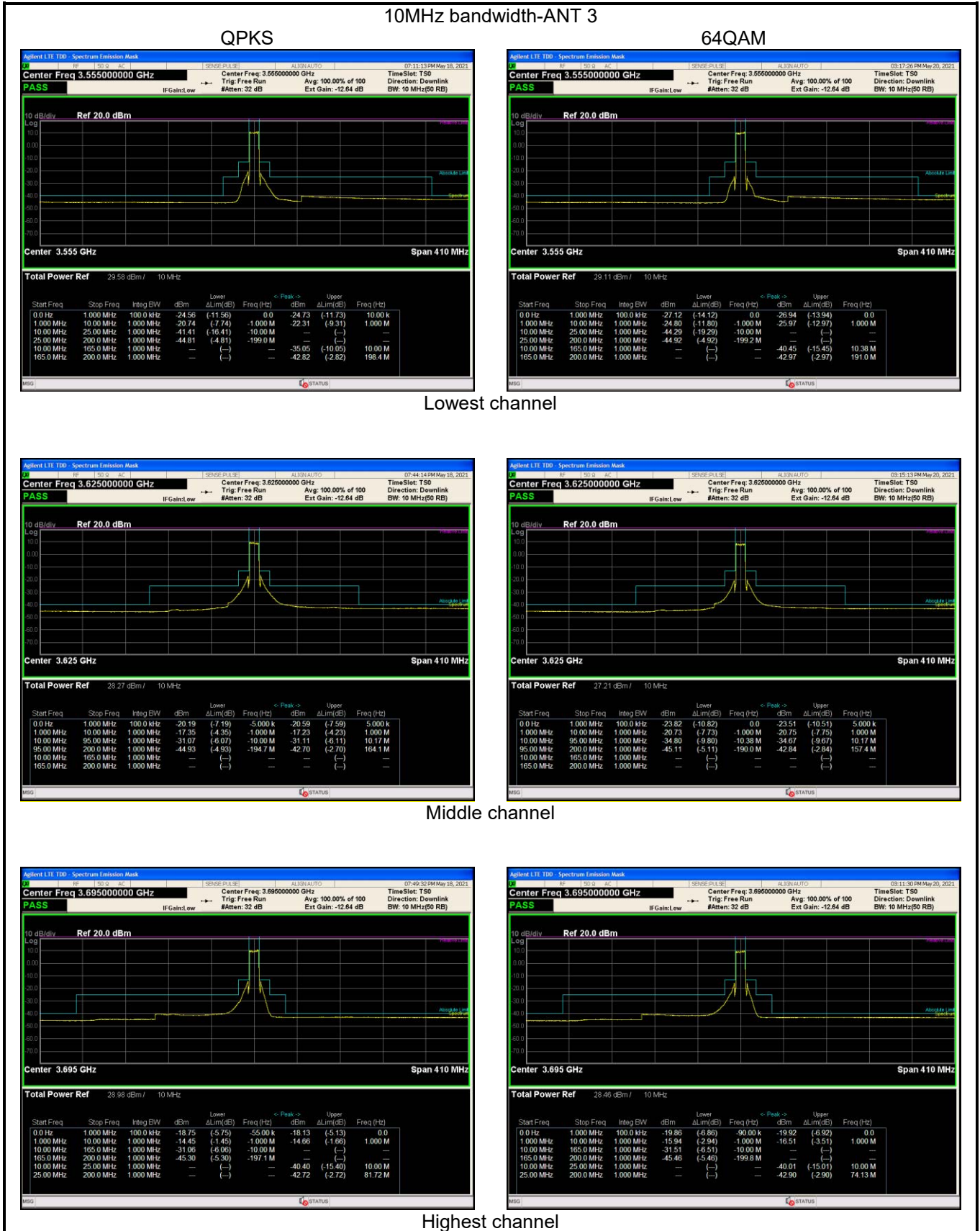
Test Requirement:	FCC part 96.41(e)(1)(2)
Limit:	-13 dBm/Mhz at frequencies within 0-10MHz of channel edge -25 dBm/MHz at frequencies greater than 10MHz above and below channel edge -40 dBm/MHz at frequencies below 3530 MHz and above 3720 MHz
Test setup:	 <p>The diagram shows a test setup where a blue 'System simulator' is connected via a cable to a black 'ATT' (attenuator), which is then connected to a black 'EUT' (Equipment Under Test).</p>
Test Procedure:	<ol style="list-style-type: none"> 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:





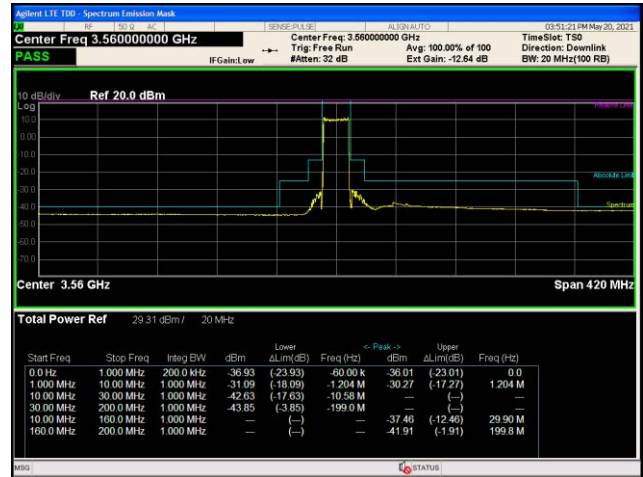
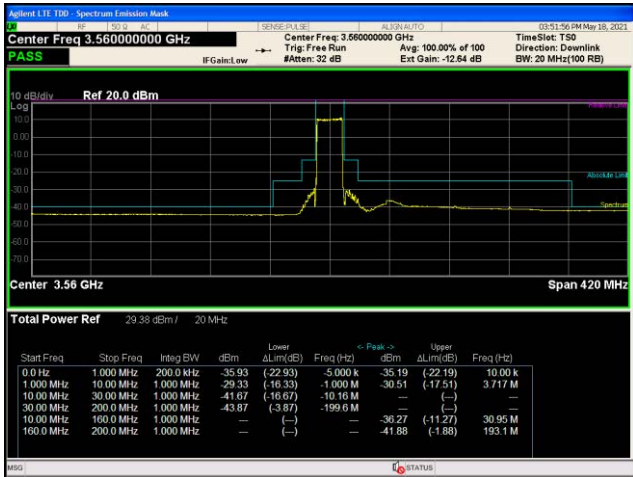




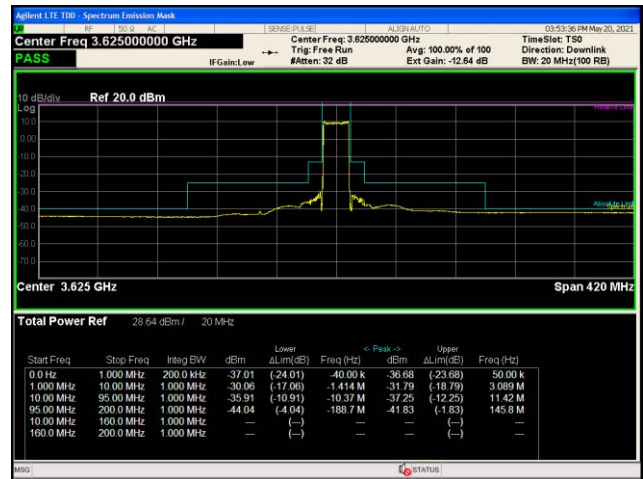
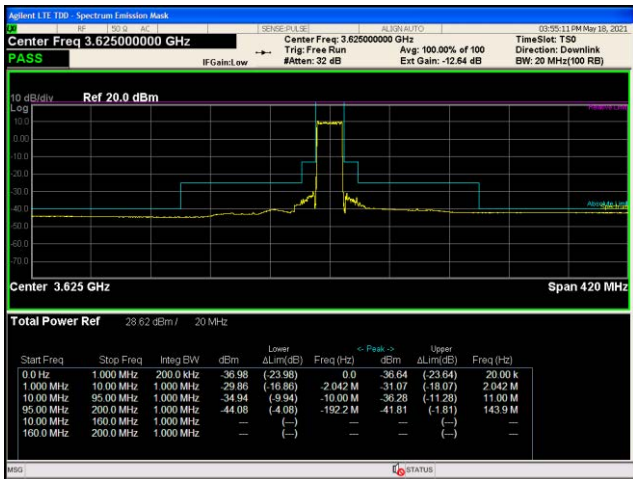
20MHz bandwidth-ANT 0

QPKS

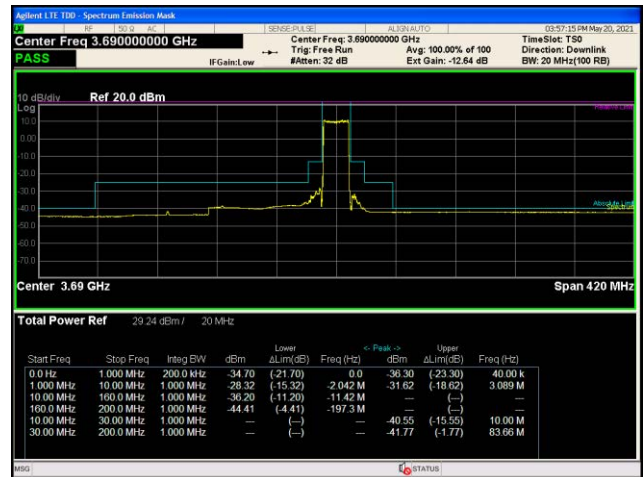
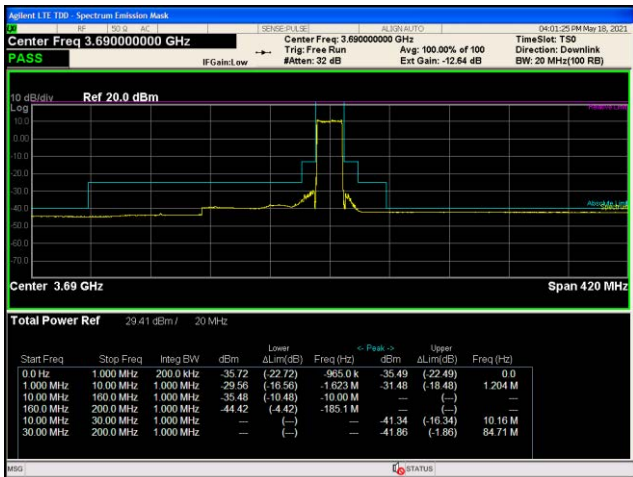
64QAM



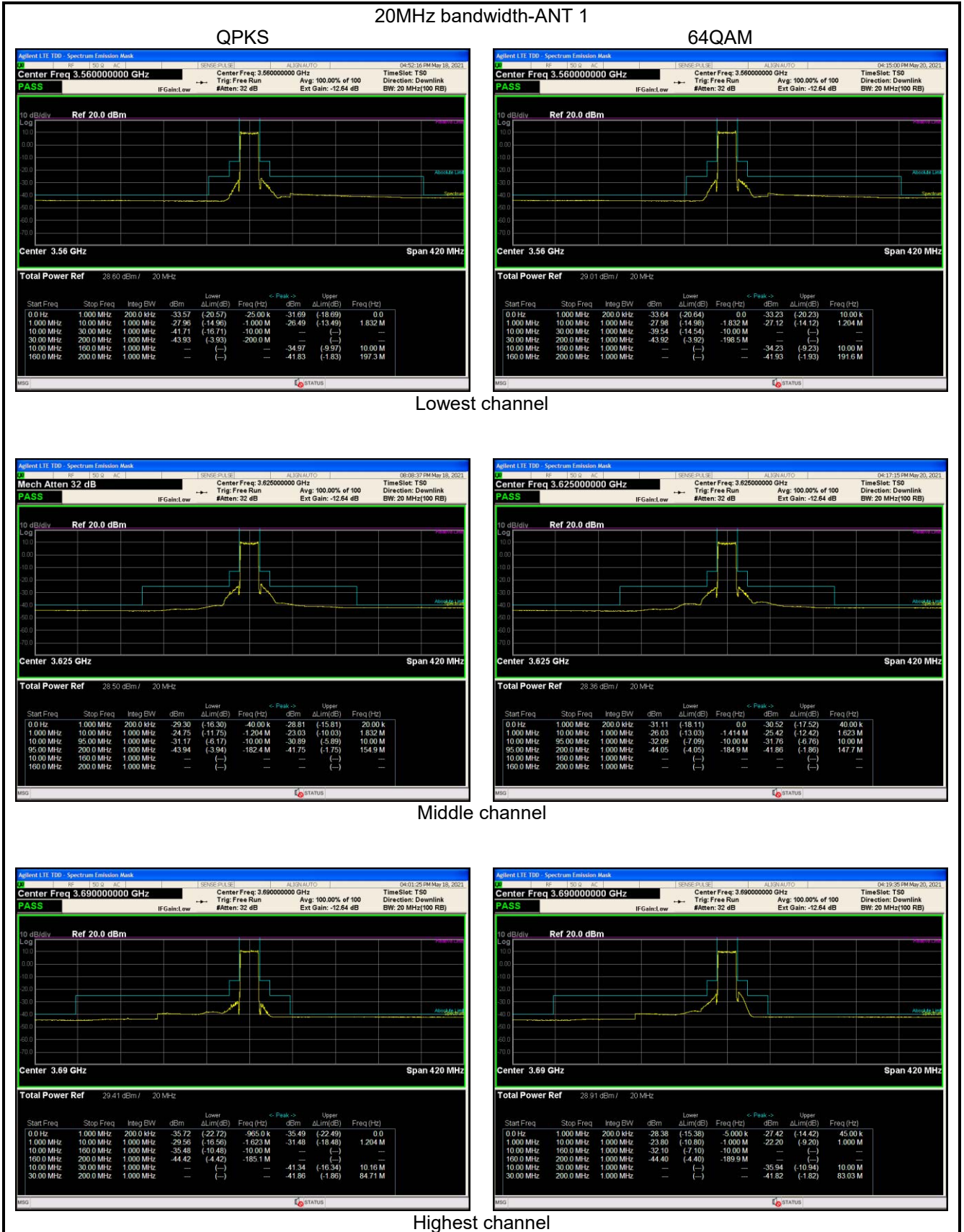
Lowest channel

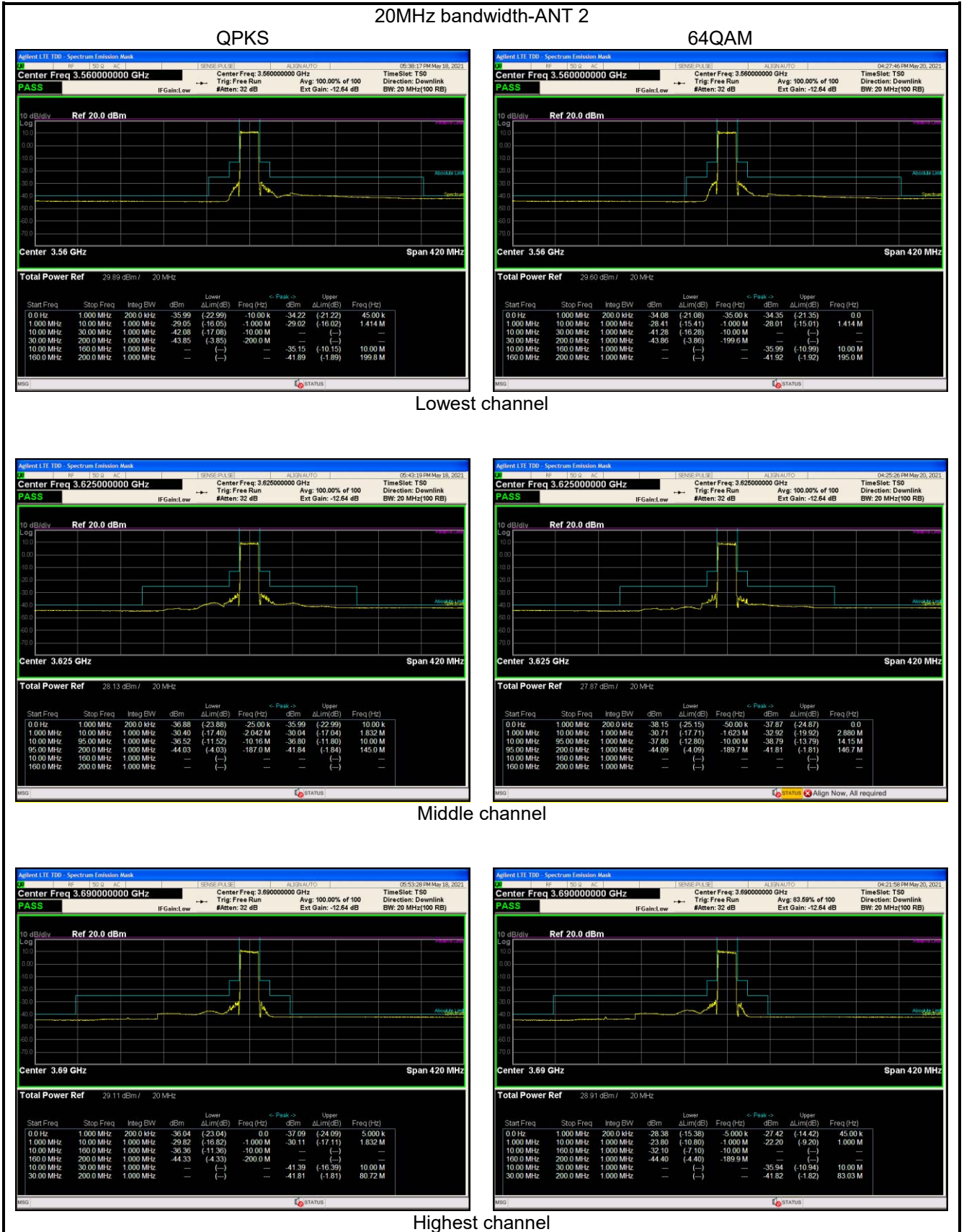


Middle channel



Highest channel

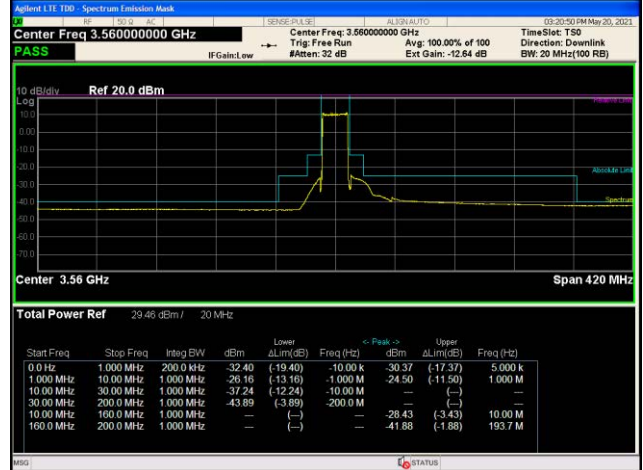
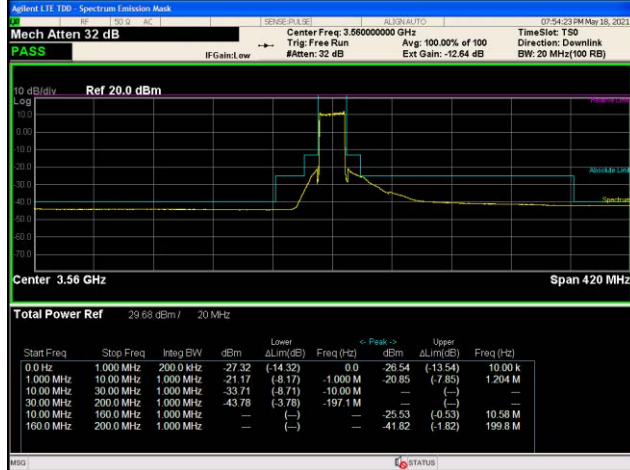




20MHz bandwidth-ANT 3

QPKS

64QAM



Lowest channel



Middle channel



Highest channel