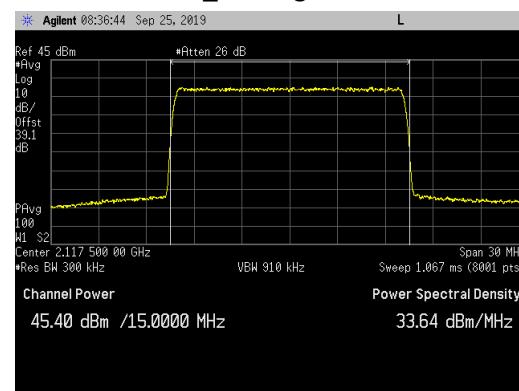
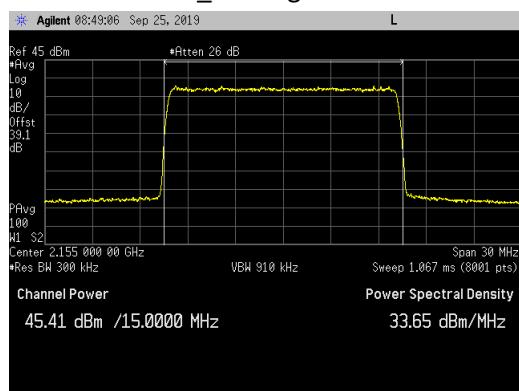
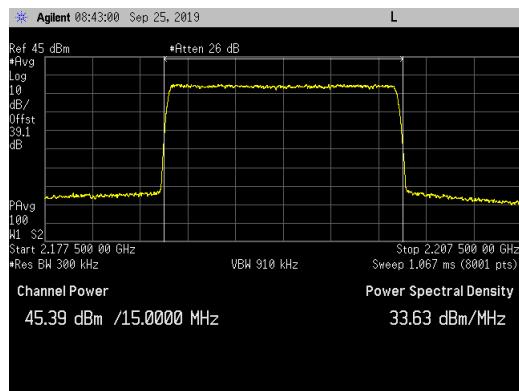


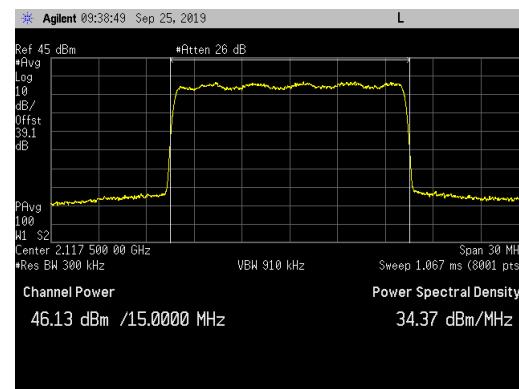
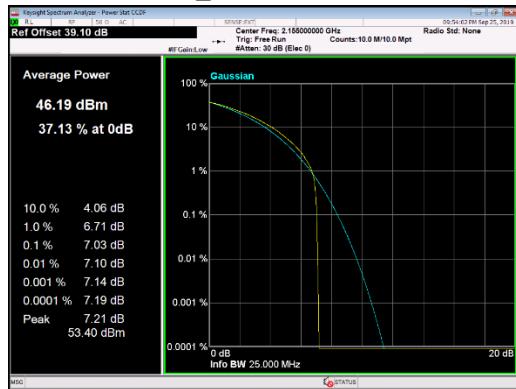
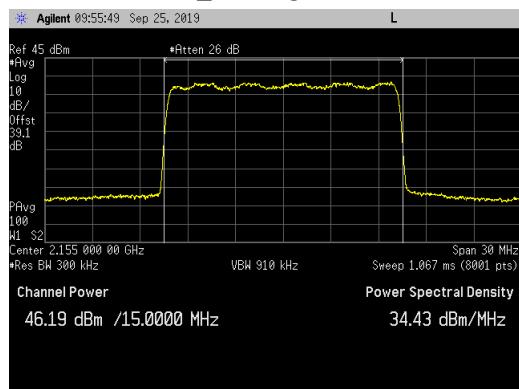
**5G NR 15MHz Channel Power Plots for the QPSK Modulation Type for Antenna Port 3:**
**Bottom Channel\_CCDF**

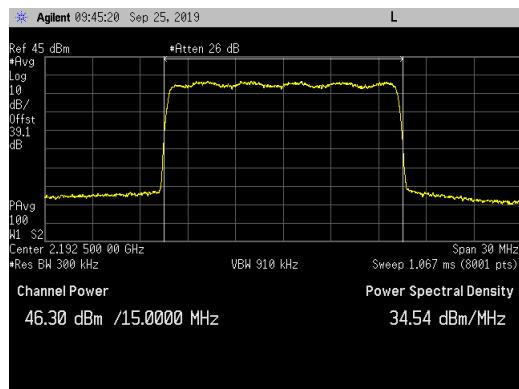
**Bottom Channel\_Average**

**Middle Channel\_CCDF**

**Middle Channel\_Average**

**Top Channel\_CCDF**

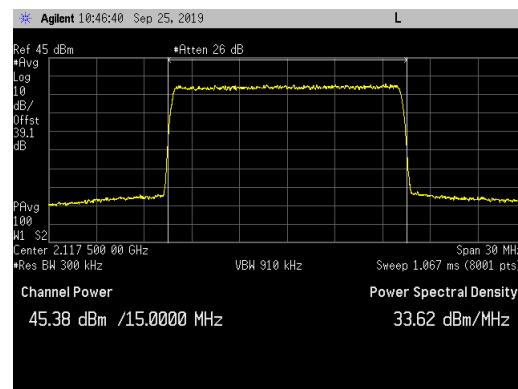
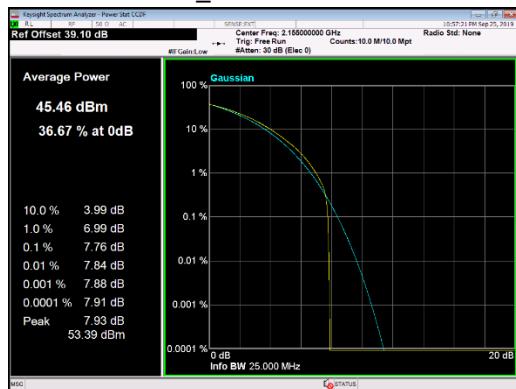
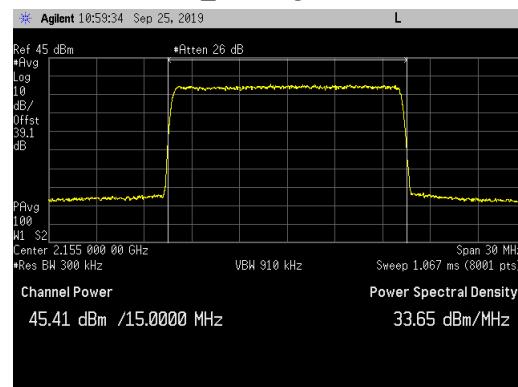
**Top Channel\_Average**


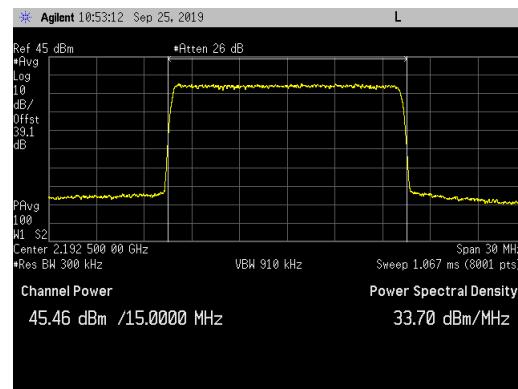
**5G NR 15MHz Channel Power Plots for the 16QAM Modulation Type for Antenna Port 3:**
**Bottom Channel\_CCDF**

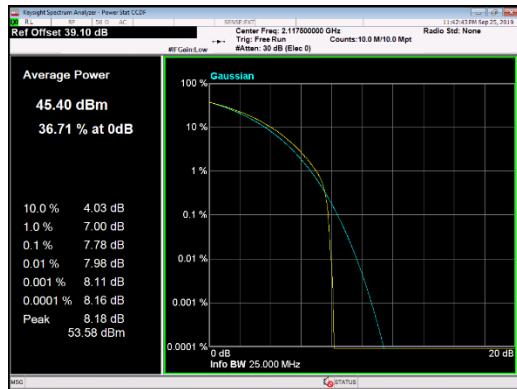
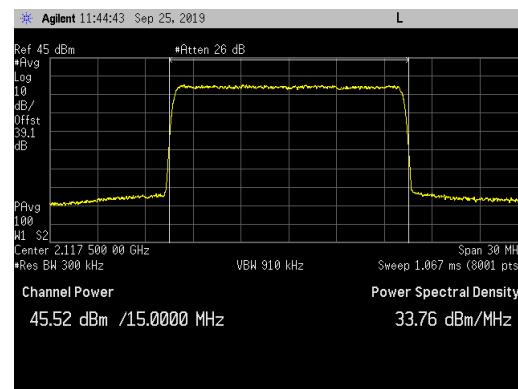
**Bottom Channel\_Average**

**Middle Channel\_CCDF**

**Middle Channel\_Average**

**Top Channel\_CCDF**

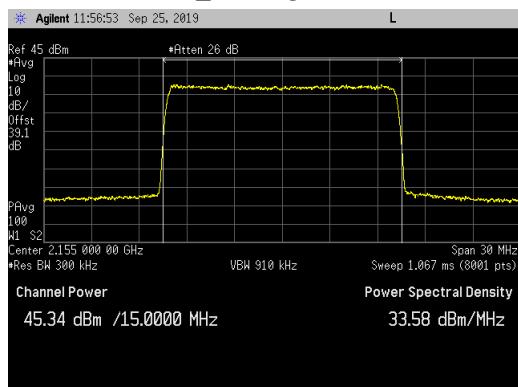
**Top Channel\_Average**


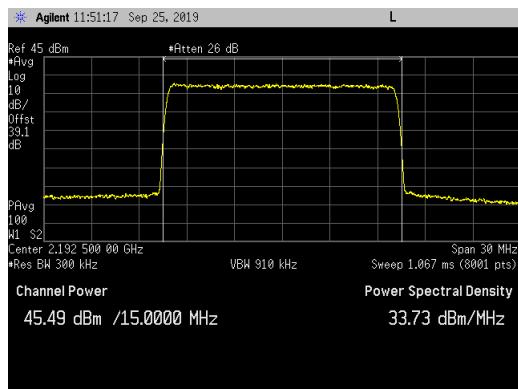
**5G NR 15MHz Channel Power Plots for the 64QAM Modulation Type for Antenna Port 3:**
**Bottom Channel\_CCDF**

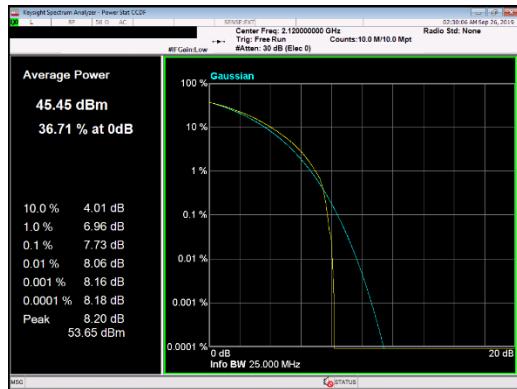
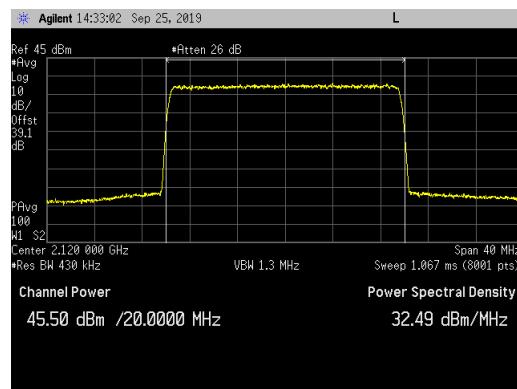
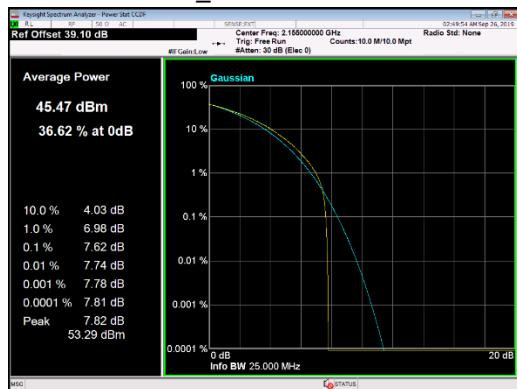
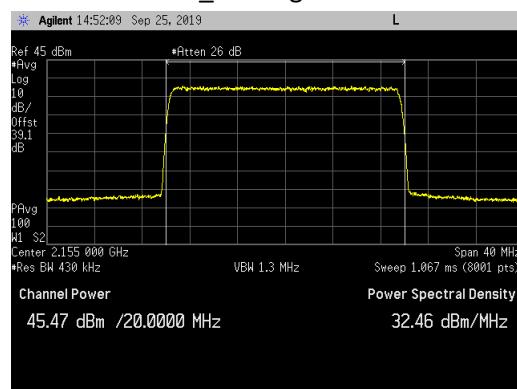
**Bottom Channel\_Average**

**Middle Channel\_CCDF**

**Middle Channel\_Average**

**Top Channel\_CCDF**

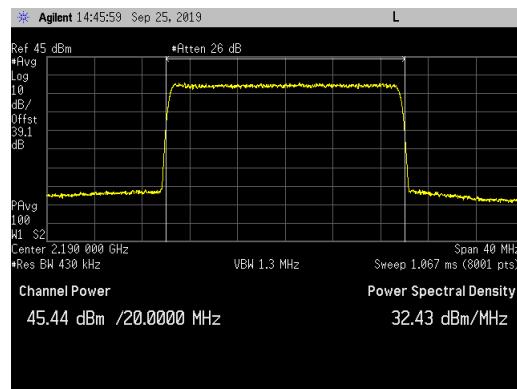
**Top Channel\_Average**


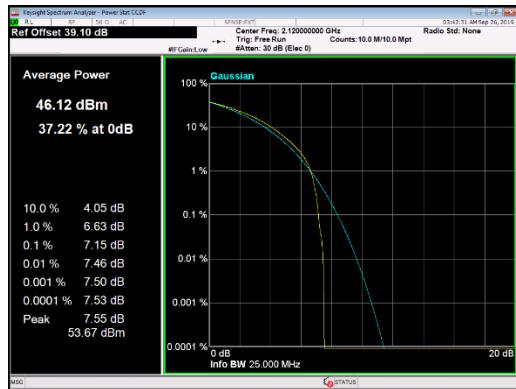
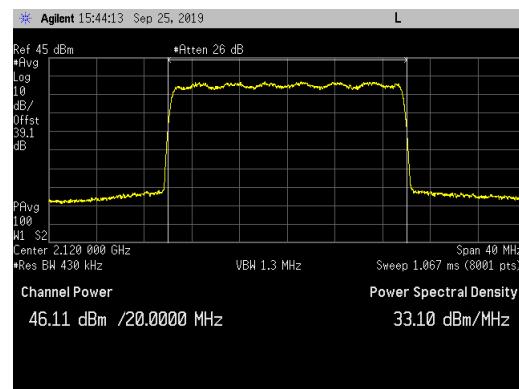
**5G NR 15MHz Channel Power Plots for the 256QAM Modulation Type for Antenna Port 3:**
**Bottom Channel\_CCDF**

**Bottom Channel\_Average**

**Middle Channel\_CCDF**

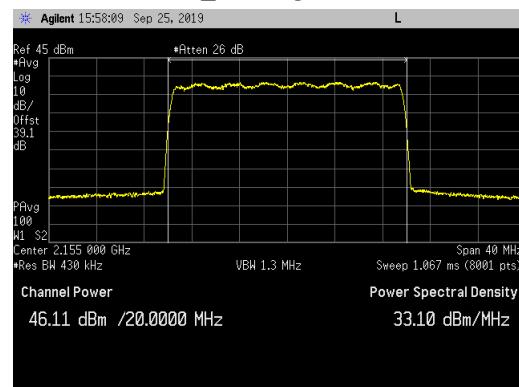
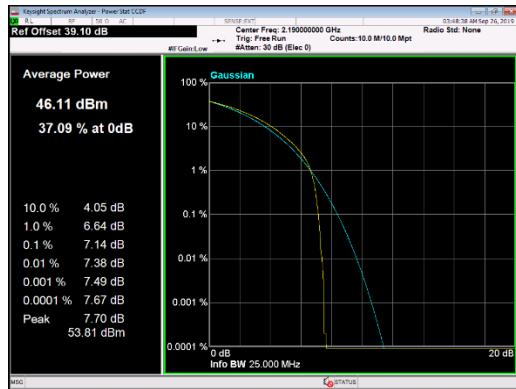
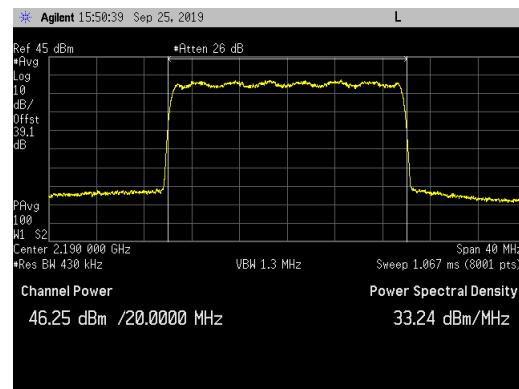
**Middle Channel\_Average**

**Top Channel\_CCDF**

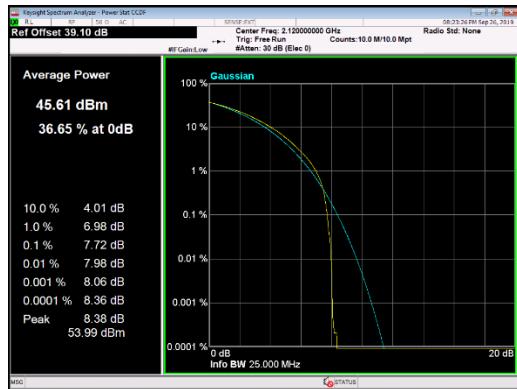
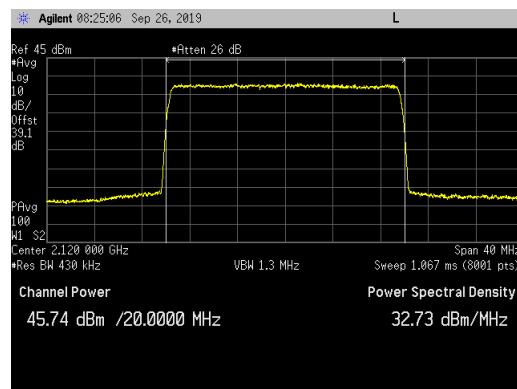
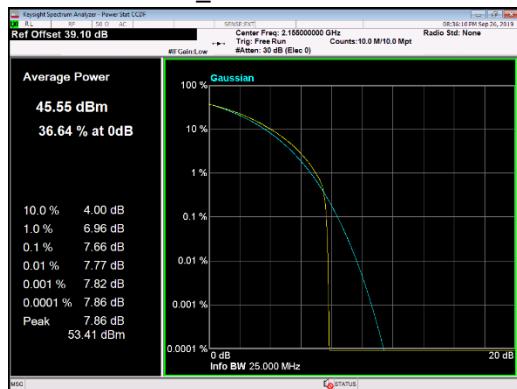
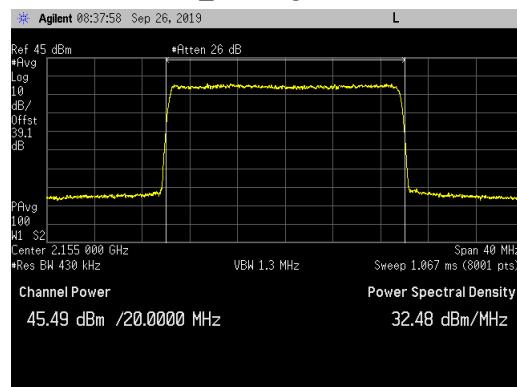
**Top Channel\_Average**


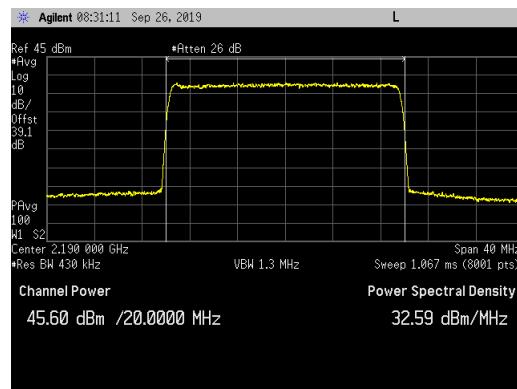
**5G NR 20MHz Channel Power Plots for the QPSK Modulation Type for Antenna Port 3:**
**Bottom Channel\_CCDF**

**Bottom Channel\_Average**

**Middle Channel\_CCDF**

**Middle Channel\_Average**

**Top Channel\_CCDF**

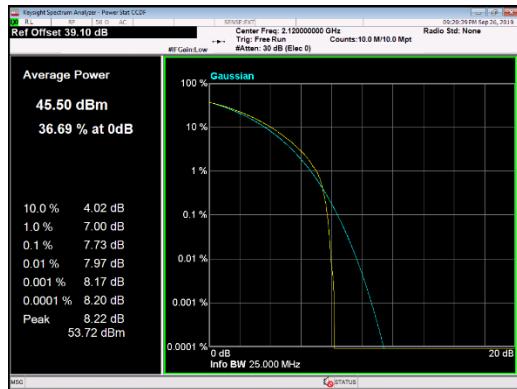
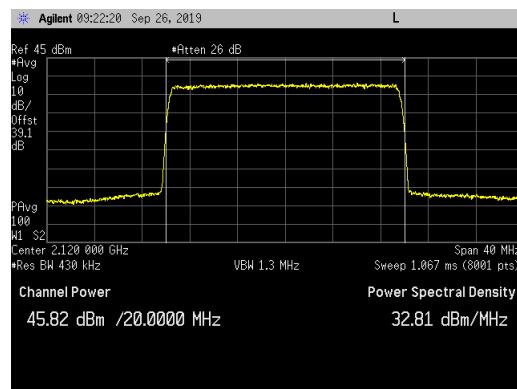
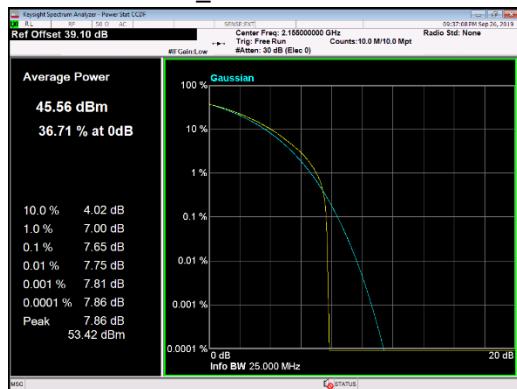
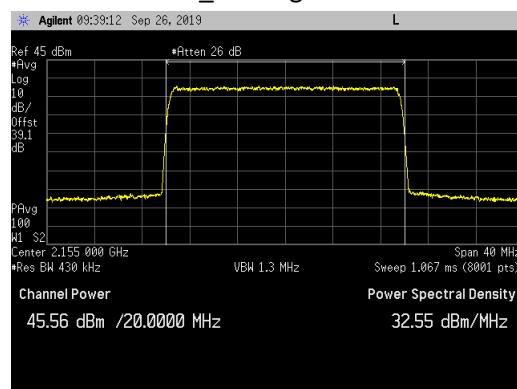
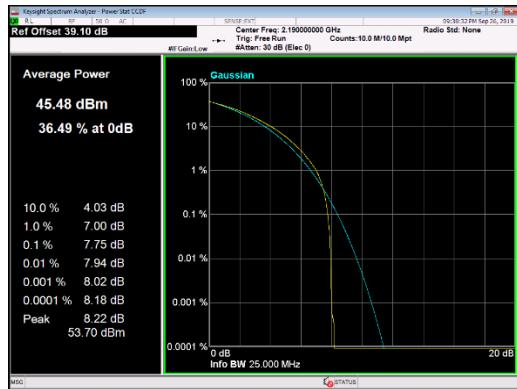
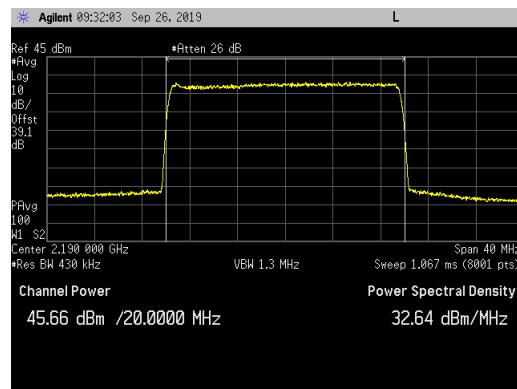
**Top Channel\_Average**


**5G NR 20MHz Channel Power Plots for the 16QAM Modulation Type for Antenna Port 3:**
**Bottom Channel\_CCDF**

**Bottom Channel\_Average**

**Middle Channel\_CCDF**

**Middle Channel\_Average**

**Top Channel\_CCDF**

**Top Channel\_Average**


**5G NR 20MHz Channel Power Plots for the 64QAM Modulation Type for Antenna Port 3:**
**Bottom Channel\_CCDF**

**Bottom Channel\_Average**

**Middle Channel\_CCDF**

**Middle Channel\_Average**

**Top Channel\_CCDF**

**Top Channel\_Average**


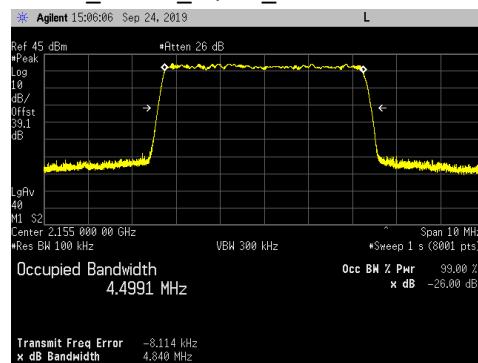
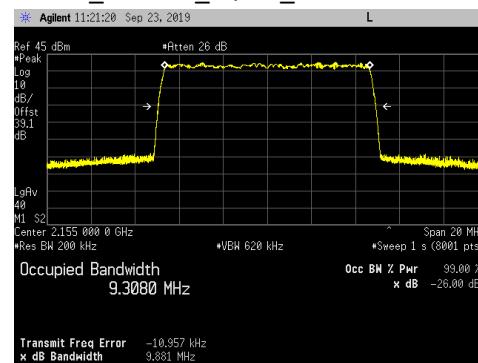
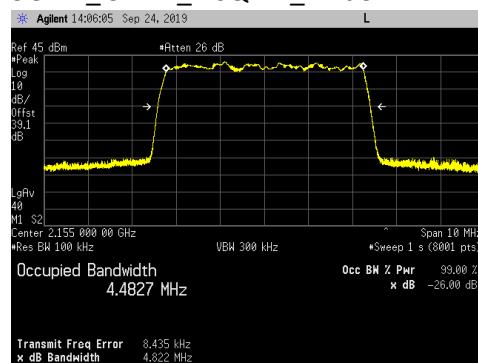
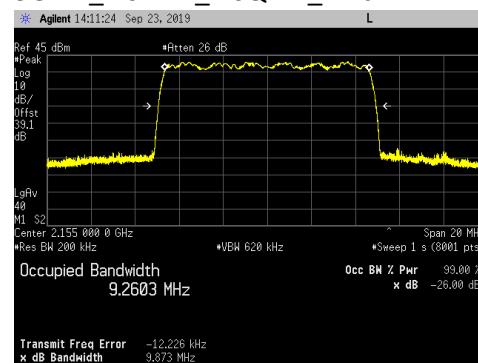
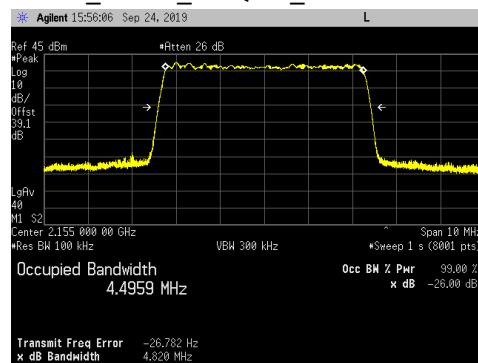
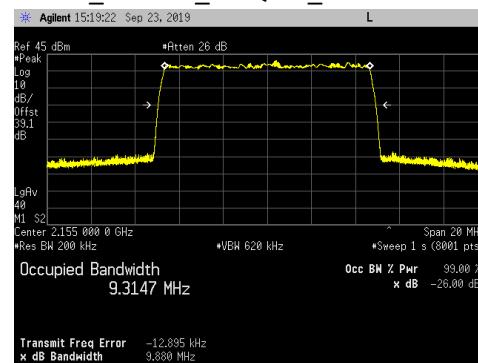
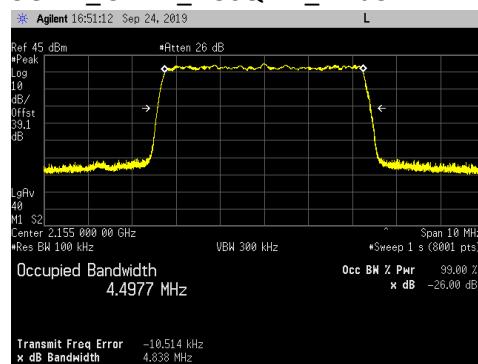
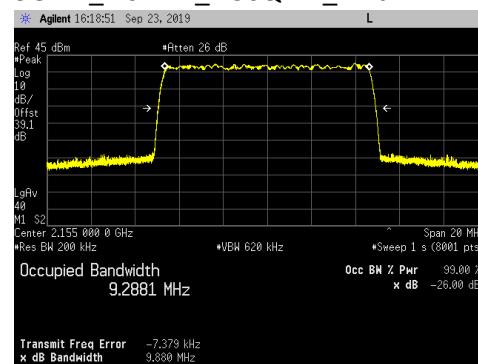
**5G NR 20MHz Channel Power Plots for the 256QAM Modulation Type for Antenna Port 3:**
**Bottom Channel\_CCDF**

**Bottom Channel\_Average**

**Middle Channel\_CCDF**

**Middle Channel\_Average**

**Top Channel\_CCDF**

**Top Channel\_Average**


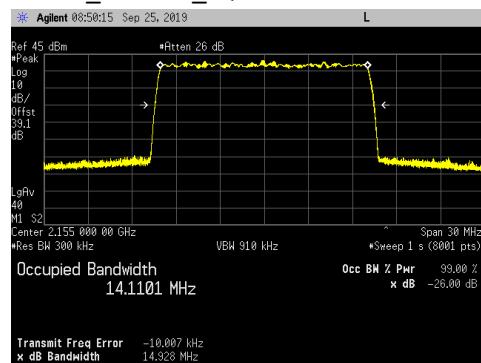
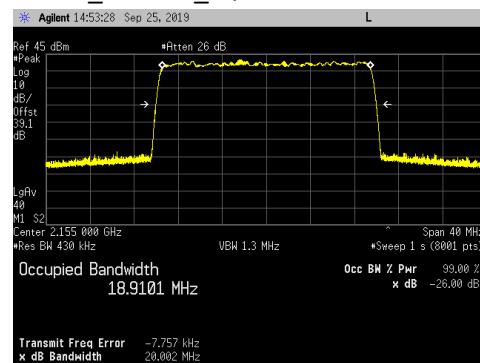
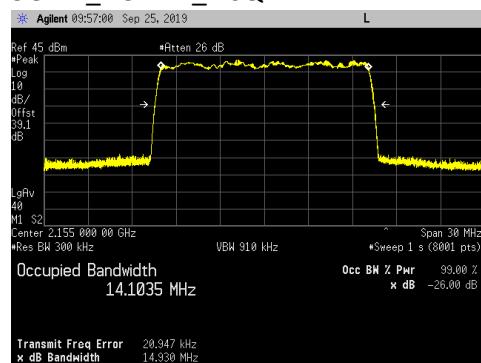
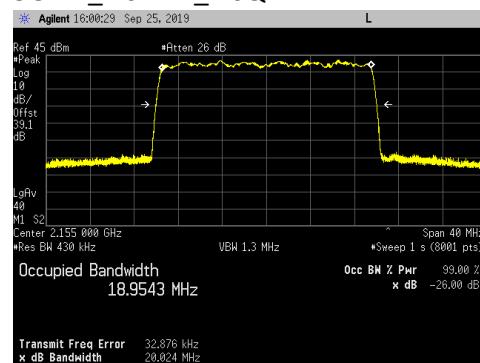
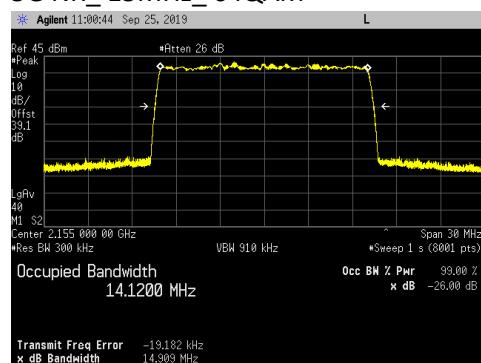
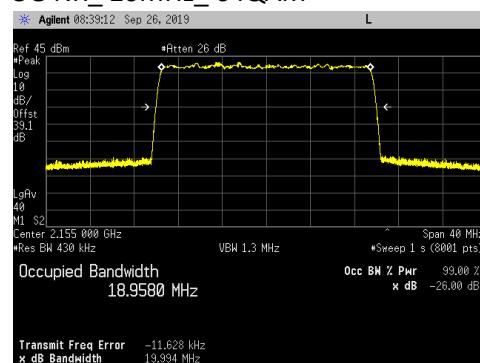
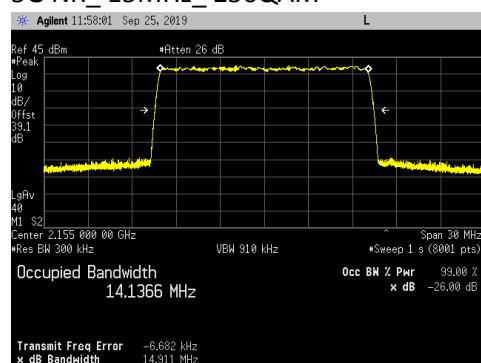
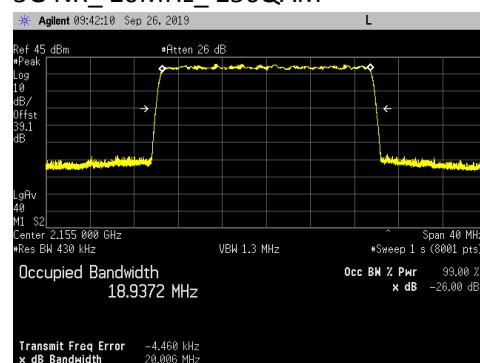
**Emission Bandwidth (26 dB down and 99%)**

Emission bandwidth measurements were made at antenna port 2/3 on the middle channel with maximum RF output power. All available 5G NR modulations (QPSK, 16QAM, 64QAM, and 256QAM) were used. All available 5G NR channel bandwidths (5MHz, 10MHz, 15MHz and 20MHz) were used. The results are provided in the following table. The 26dB emission bandwidth was measured in accordance with section 4 of FCC KDB 971168 D01v03r01 and ANSI C63.26 section 5.4. The 99% occupied bandwidth was measured in accordance with section 6.7 of RSS-Gen Issue 5. For both measurements, an occupied bandwidth built-in function in the spectrum analyzer was used. The results are provided in the following table. The largest emission bandwidths are highlighted.

5G NR Channel Bandwidth	5G NR Modulation Type							
	QPSK		16QAM		64QAM		256QAM	
	26dB (MHz)	99% (MHz)	26dB (MHz)	99% (MHz)	26dB (MHz)	99% (MHz)	26dB (MHz)	99% (MHz)
5 MHz	<b>4.840</b>	<b>4.4991</b>	4.822	4.4827	4.820	4.4959	4.838	4.4977
10 MHz	<b>9.881</b>	9.3080	9.873	9.2603	9.880	<b>9.3147</b>	9.880	9.2881
15 MHz	14.928	14.1101	<b>14.930</b>	14.1035	14.909	<b>14.1200</b>	14.911	14.1366
20 MHz	20.002	18.9101	<b>20.024</b>	18.9543	19.994	<b>18.9580</b>	20.006	18.9372

Emission bandwidth measurement data are provided in the following pages.

**5G NR\_ 5 and 10MHz Ch BW Emission Bandwidth Plots on the Middle Channel:**
**5G NR\_ 5MHz\_ QPSK\_Ant 3**

**5G NR\_ 10MHz\_ QPSK\_Ant 2**

**5G NR\_ 5MHz\_ 16QAM\_Ant 3**

**5G NR\_ 10MHz\_ 16QAM\_Ant 2**

**5G NR\_ 5MHz\_ 64QAM\_Ant 3**

**5G NR\_ 10MHz\_ 64QAM\_Ant 2**

**5G NR\_ 5MHz\_ 256QAM\_Ant 3**

**5G NR\_ 10MHz\_ 256QAM\_Ant 2**


**5G NR\_ 15 and 20MHz Ch BW Emission Bandwidth Plots on the Middle Channel for Antenna Port 3:**
**5G NR\_ 15MHz\_ QPSK**

**5G NR\_ 20MHz\_ QPSK**

**5G NR\_ 15MHz\_ 16QAM**

**5G NR\_ 20MHz\_ 16QAM**

**5G NR\_ 15MHz\_ 64QAM**

**5G NR\_ 20MHz\_ 64QAM**

**5G NR\_ 15MHz\_ 256QAM**

**5G NR\_ 20MHz\_ 256QAM**


### Antenna Port Conducted Band Edge

Conducted band edge measurements were made at RRH antenna port 2/3.

The RRH was operated with a single carrier at the band edge frequencies with all modulation types (QPSK, 16QAM, 64QAM and 256QAM) for all 5G NR channel bandwidths (5MHz, 10MHz, 15MHz and 20MHz) at maximum carrier power (40 watts/carrier).

The limit of -19dBm was used in the certification testing. The limit is adjusted to -19dBm [-13dBm -10 log (4)] per FCC KDB 662911D01 v02r01 because the BTS may operate as a 4 port MIMO transmitter.

Measurements were performed with the spectrum analyzer in the RMS average mode over  $\geq 100$  traces. In the 1MHz bands outside and adjacent to the frequency block, a resolution bandwidth of 1% of the emission bandwidth was used. In the 1 to 2MHz frequency range outside the band edge (i.e.: 2108 to 2109MHz and 2201 to 2202MHz bands) the RBW was again reduced to 1% of the emission bandwidth and the power integrated over 1MHz. In the 2 to 22MHz frequency range outside the band edge (i.e.: 2088 to 2108MHz and 2202 to 2222MHz bands) a 1MHz RBW and 3MHz VBW was used.

The results are summarized in the following table. The highest (worst case) emissions from the measurement data are provided.

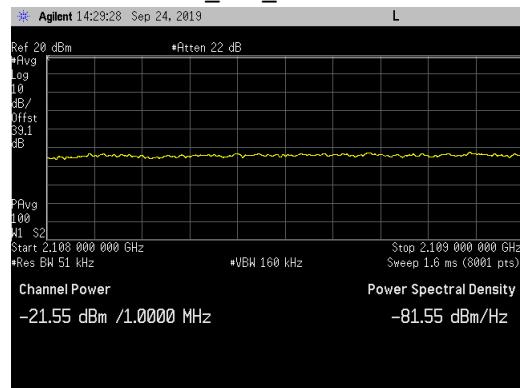
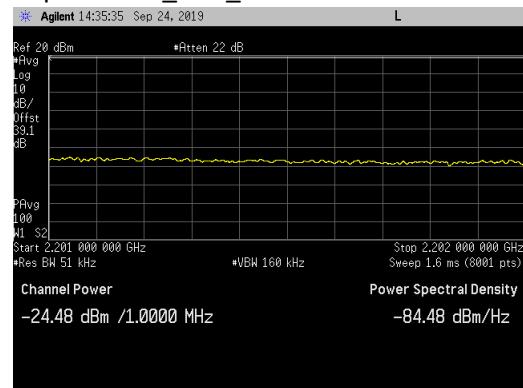
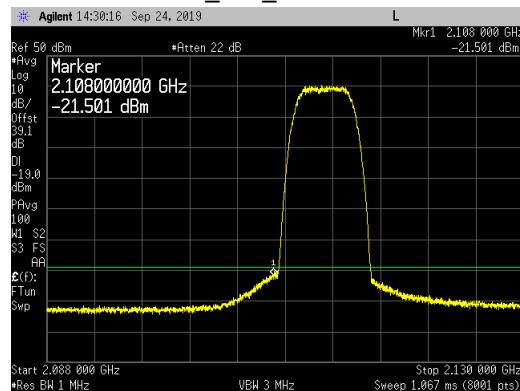
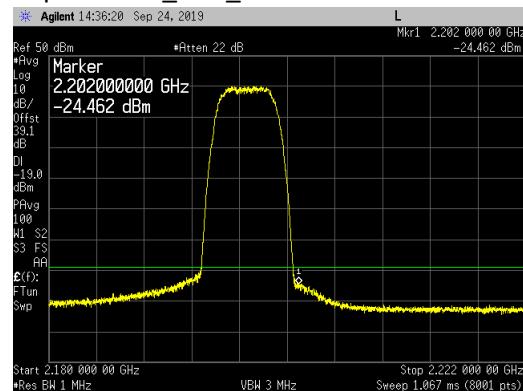
Ch BW, Carrier Freq, Carrier Pwr		QPSK (dBm)		16QAM (dBm)		64QAM (dBm)		256QAM (dBm)	
PCS Band	AWS Band	LBE	UBE	LBE	UBE	LBE	UBE	LBE	UBE
5MHz, BC, 40W	Carrier Off	-21.501	N/A	-19.767	N/A	-21.052	N/A	-22.02	N/A
10MHz, BC, 40W	Carrier Off	-22.755	N/A	-22.11	N/A	-22.904	N/A	-21.901	N/A
15MHz, BC, 40W	Carrier Off	-26.062	N/A	-24.631	N/A	-25.183	N/A	-26.11	N/A
20MHz, BC, 40W	Carrier Off	-25.147	N/A	-20.522	N/A	-21.712	N/A	-24.121	N/A
5MHz, TC, 40W	Carrier Off	N/A	-22.567	N/A	-20.726	N/A	-22.705	N/A	-21.725
10MHz TC, 40W	Carrier Off	N/A	-20.791	N/A	<b>-19.52</b>	N/A	-21.62	N/A	-21.96
15MHz, TC, 40W	Carrier Off	N/A	-26.04	N/A	-24.801	N/A	-26.257	N/A	-25.99
20MHz, TC, 40W	Carrier Off	N/A	-22.358	N/A	-23.870	N/A	-24.944	N/A	-26.32

The total measurement RF path loss of the test setup (attenuator and test cables) was 39.1 dB and is accounted for by the spectrum analyzer reference level offset.

Conducted band edge measurements are provided in the following pages.

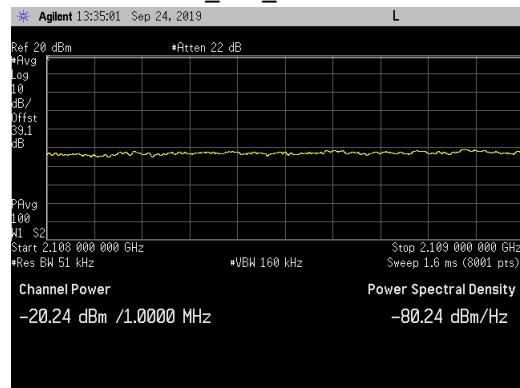
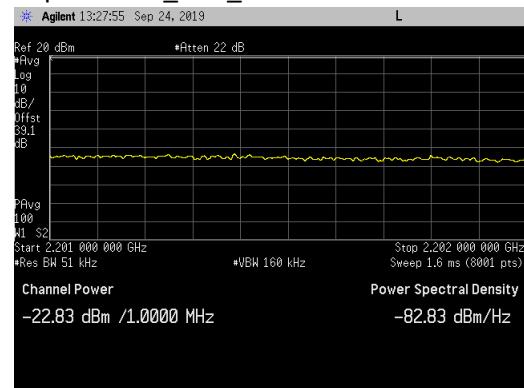
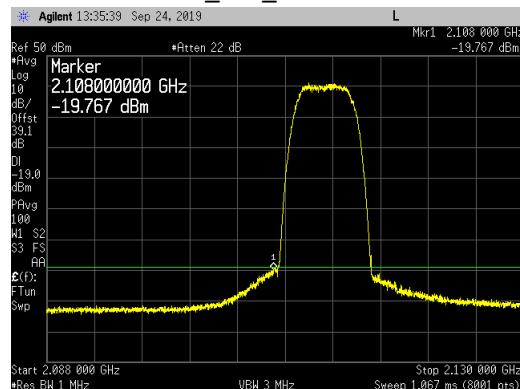
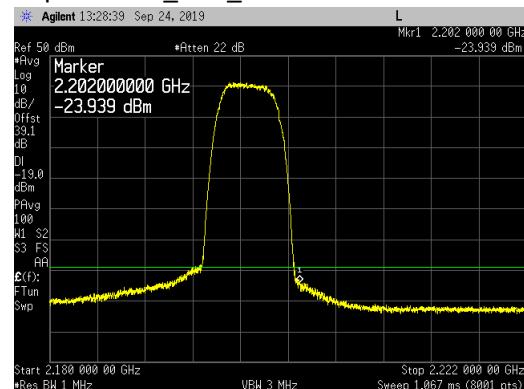
**5G NR\_ 5MHz Channel Bandwidth\_ Band Edge Plots\_ QPSK Modulation for Antenna Port 3:**
**Bottom Channel\_LBE\_ 2109 to 2111MHz**

**Top Channel\_UBE\_ 2199 to 2201MHz**

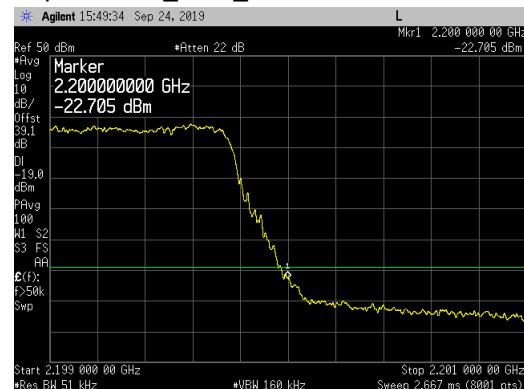
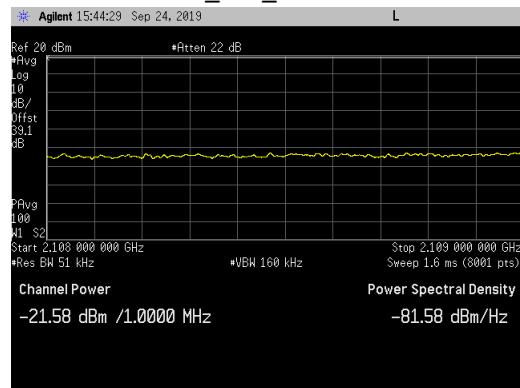
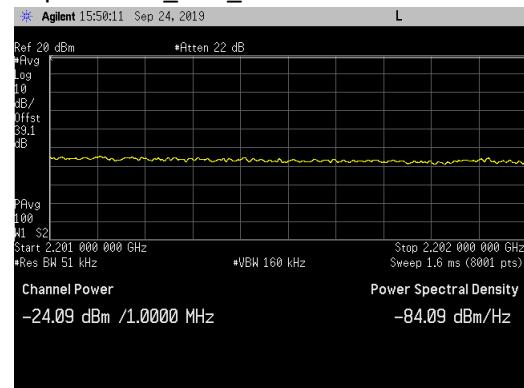
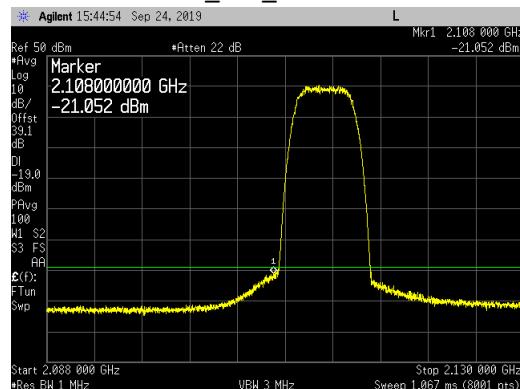
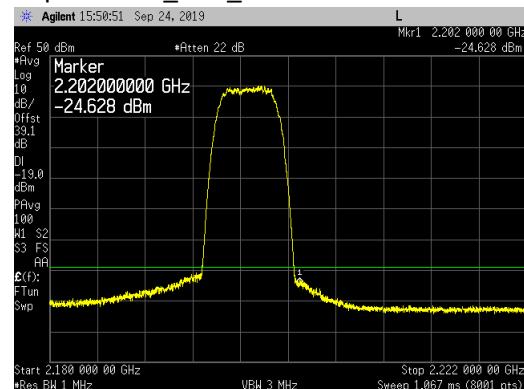
**Bottom Channel\_LBE\_ 2108 to 2109MHz**

**Top Channel\_UBE\_ 2201 to 2202MHz**

**Bottom Channel\_LBE\_ 2088 to 2130MHz**

**Top Channel\_UBE\_ 2180 to 2222MHz**


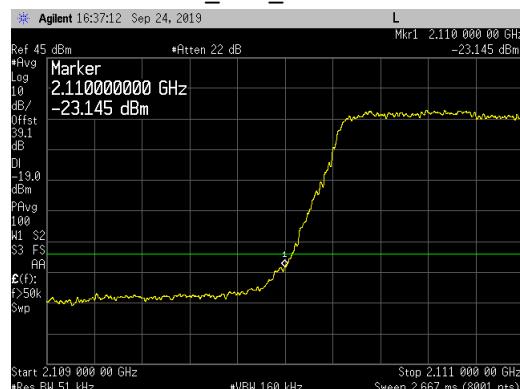
**5G NR\_ 5MHz Channel Bandwidth\_ Band Edge Plots\_ 16QAM Modulation for Antenna Port 3:**
**Bottom Channel\_LBE\_ 2109 to 2111MHz**

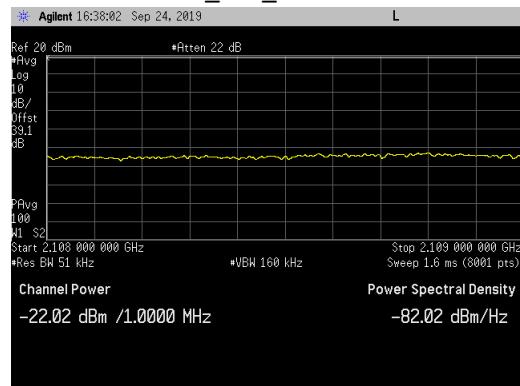
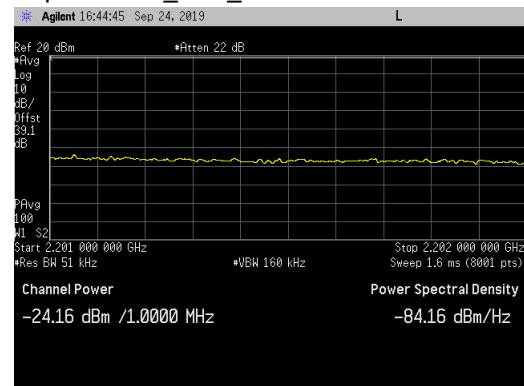
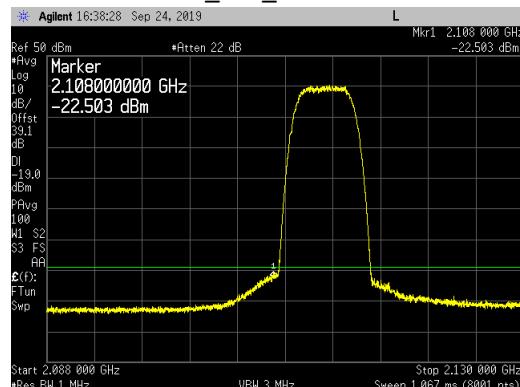
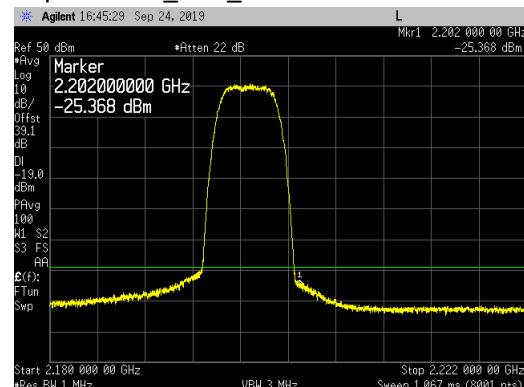
**Top Channel\_UBE\_ 2199 to 2201MHz**

**Bottom Channel\_LBE\_ 2108 to 2109MHz**

**Top Channel\_UBE\_ 2201 to 2202MHz**

**Bottom Channel\_LBE\_ 2088 to 2130MHz**

**Top Channel\_UBE\_ 2180 to 2222MHz**


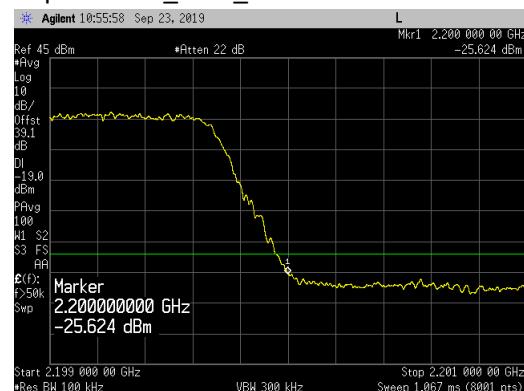
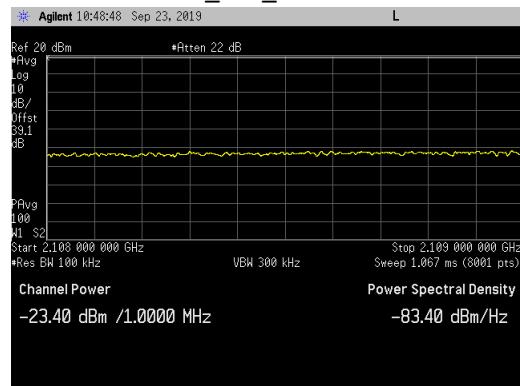
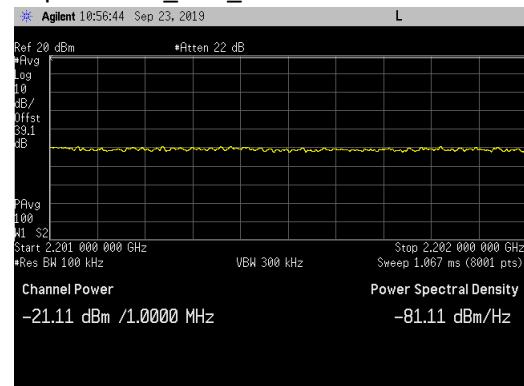
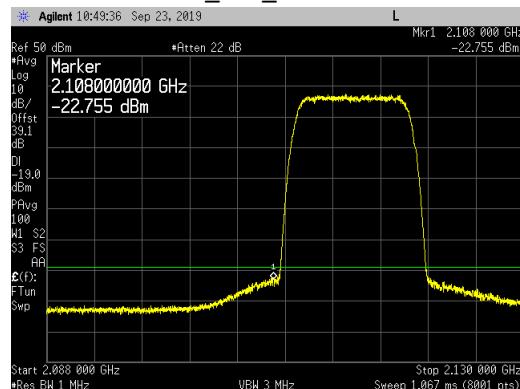
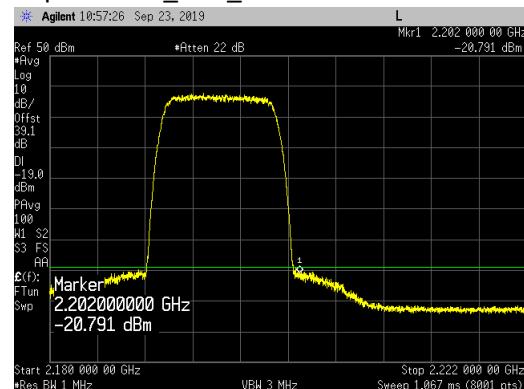
**5G NR\_ 5MHz Channel Bandwidth\_ Band Edge Plots\_ 64QAM Modulation for Antenna Port 3:**
**Bottom Channel\_LBE\_ 2109 to 2111MHz**

**Top Channel\_UBE\_ 2199 to 2201MHz**

**Bottom Channel\_LBE\_ 2108 to 2109MHz**

**Top Channel\_UBE\_ 2201 to 2202MHz**

**Bottom Channel\_LBE\_ 2088 to 2130MHz**

**Top Channel\_UBE\_ 2180 to 2222MHz**


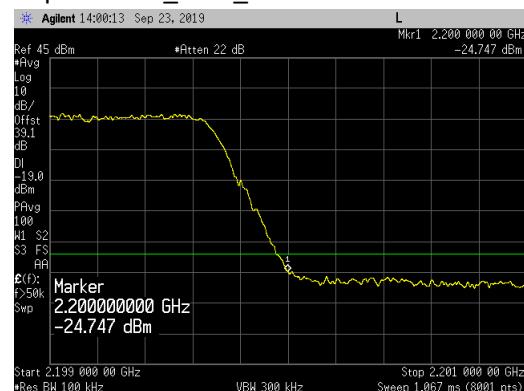
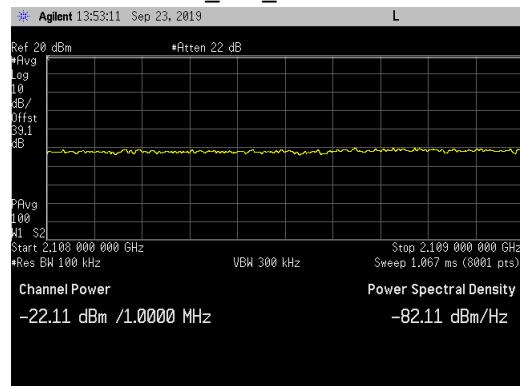
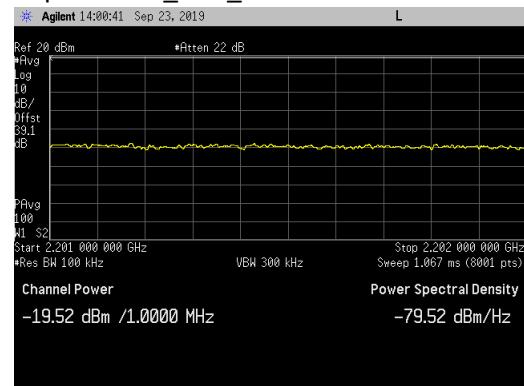
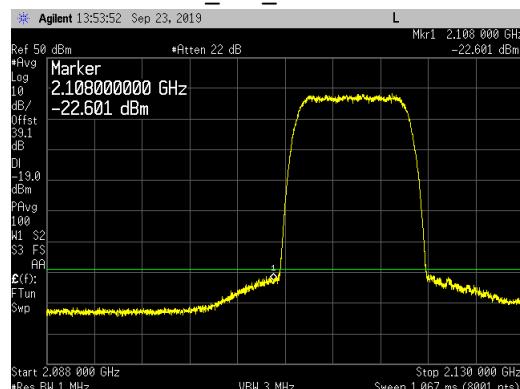
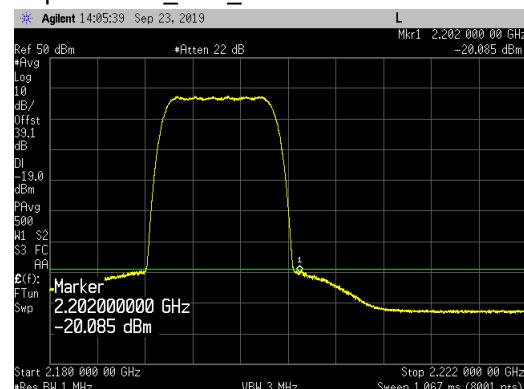
**5G NR\_ 5MHz Channel Bandwidth\_ Band Edge Plots\_ 256QAM Modulation for Antenna Port 3:**
**Bottom Channel\_LBE\_ 2109 to 2111MHz**

**Top Channel\_UBE\_ 2199 to 2201MHz**

**Bottom Channel\_LBE\_ 2108 to 2109MHz**

**Top Channel\_UBE\_ 2201 to 2202MHz**

**Bottom Channel\_LBE\_ 2088 to 2130MHz**

**Top Channel\_UBE\_ 2180 to 2222MHz**


**5G NR\_ 10MHz Channel Bandwidth\_ Band Edge Plots\_ QPSK Modulation for Antenna Port 2:**
**Bottom Channel\_LBE\_ 2109 to 2111MHz**

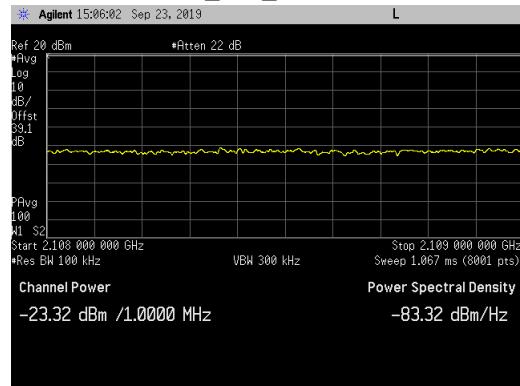
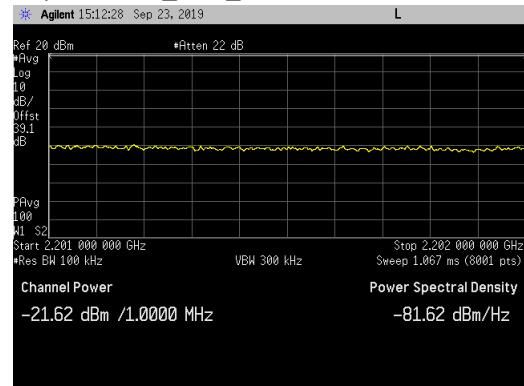
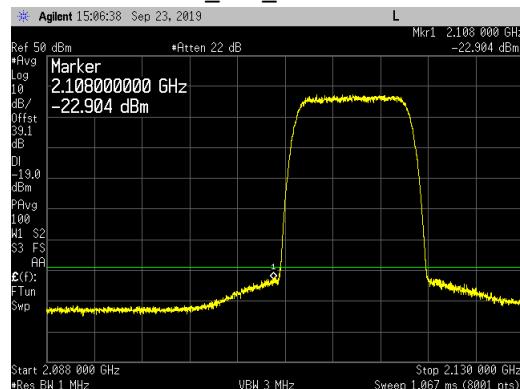
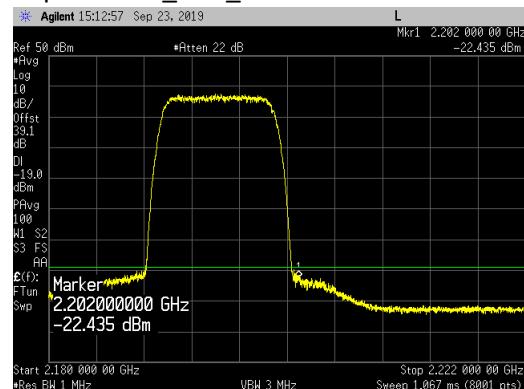
**Top Channel\_UBE\_ 2199 to 2201MHz**

**Bottom Channel\_LBE\_ 2108 to 2109MHz**

**Top Channel\_UBE\_ 2201 to 2202MHz**

**Bottom Channel\_LBE\_ 2088 to 2130MHz**

**Top Channel\_UBE\_ 2180 to 2222MHz**


**5G NR\_ 10MHz Channel Bandwidth\_ Band Edge Plots\_ 16QAM Modulation for Antenna Port 2:**
**Bottom Channel\_LBE\_ 2109 to 2111MHz**

**Top Channel\_UBE\_ 2199 to 2201MHz**

**Bottom Channel\_LBE\_ 2108 to 2109MHz**

**Top Channel\_UBE\_ 2201 to 2202MHz**

**Bottom Channel\_LBE\_ 2088 to 2130MHz**

**Top Channel\_UBE\_ 2180 to 2222MHz**


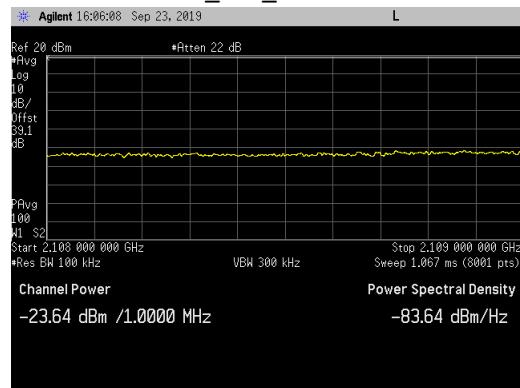
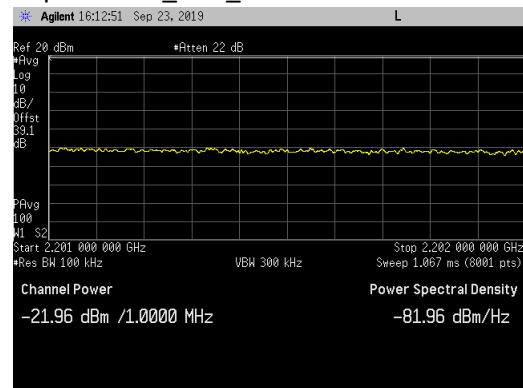
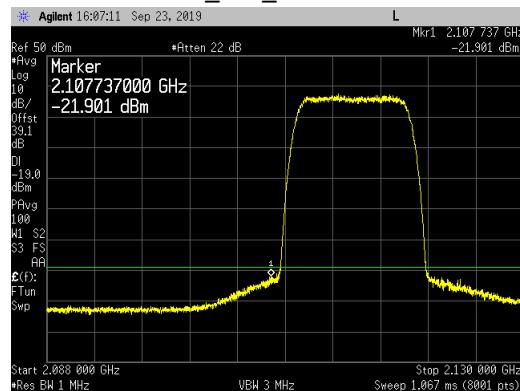
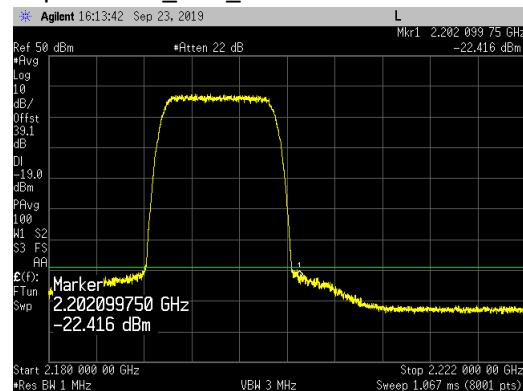
**5G NR\_ 10MHz Channel Bandwidth\_ Band Edge Plots\_ 64QAM Modulation for Antenna Port 2:**
**Bottom Channel\_LBE\_ 2109 to 2111MHz**

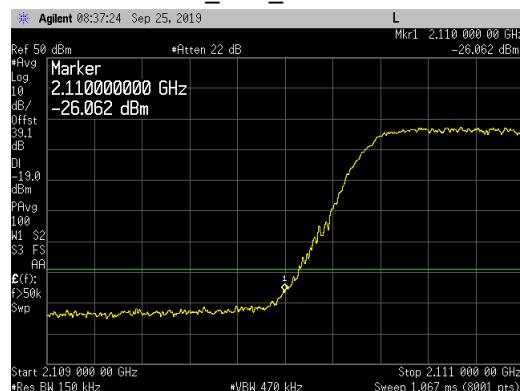
**Top Channel\_UBE\_ 2199 to 2201MHz**

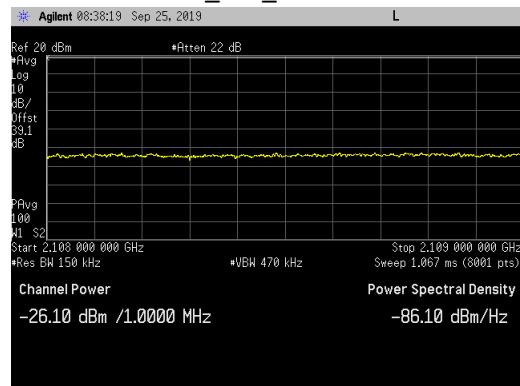
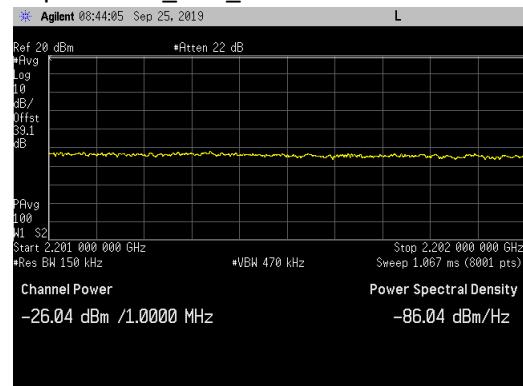
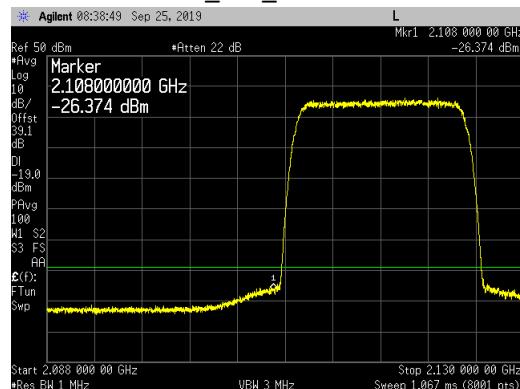
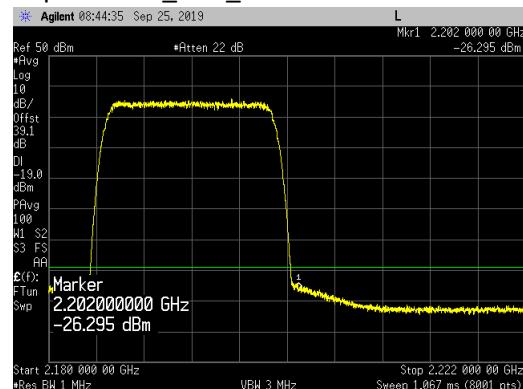
**Bottom Channel\_LBE\_ 2108 to 2109MHz**

**Top Channel\_UBE\_ 2201 to 2202MHz**

**Bottom Channel\_LBE\_ 2088 to 2130MHz**

**Top Channel\_UBE\_ 2180 to 2222MHz**


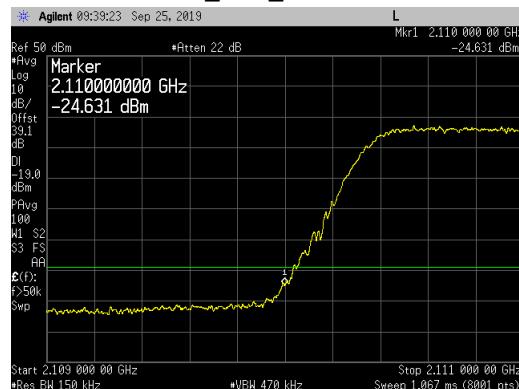
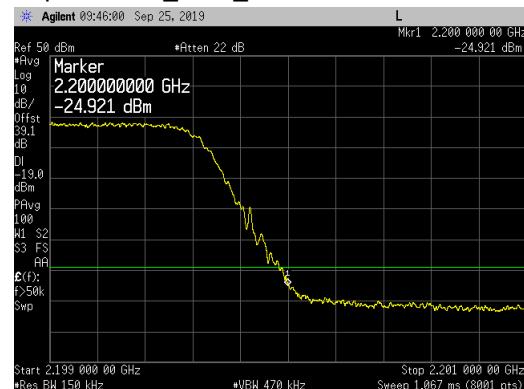
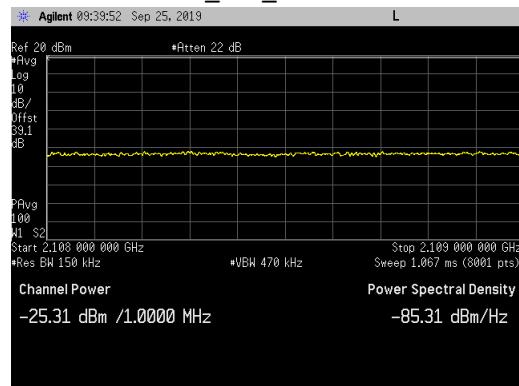
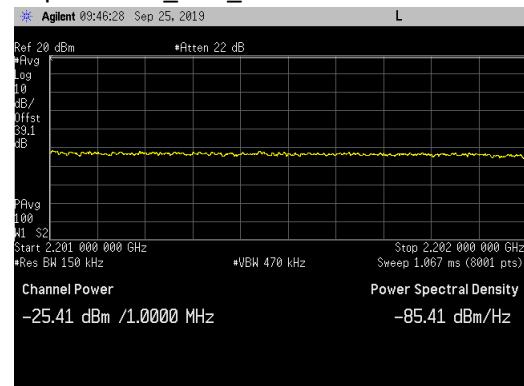
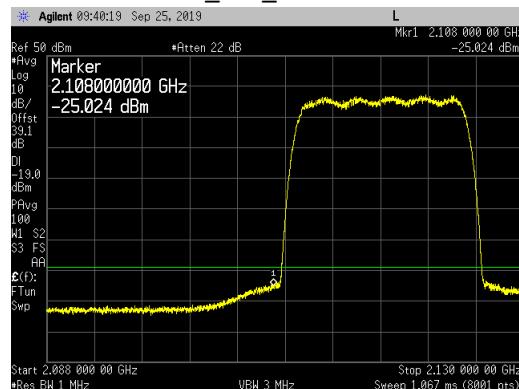
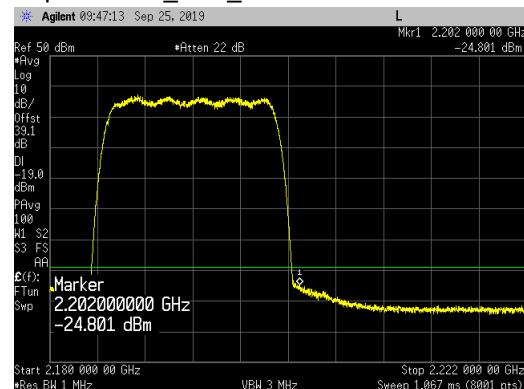
**5G NR\_ 10MHz Channel Bandwidth\_ Band Edge Plots\_ 256QAM Modulation for Antenna Port 2:**
**Bottom Channel\_LBE\_ 2109 to 2111MHz**

**Top Channel\_UBE\_ 2199 to 2201MHz**

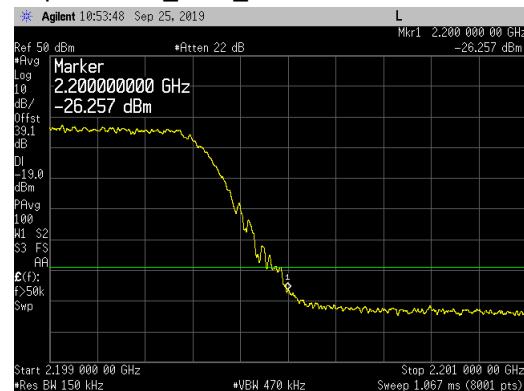
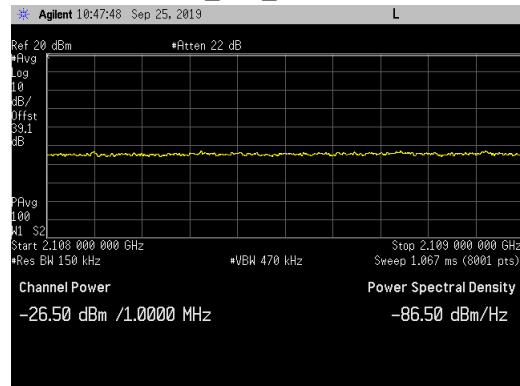
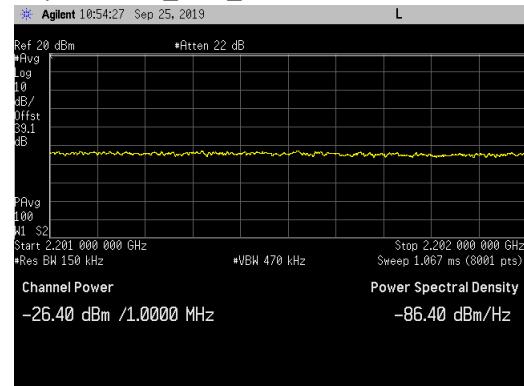
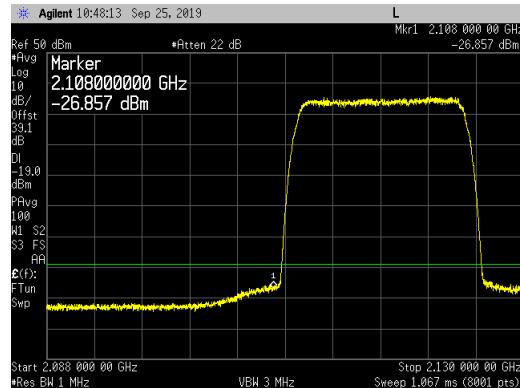
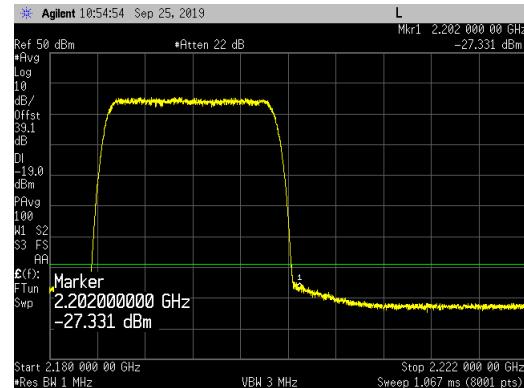
**Bottom Channel\_LBE\_ 2108 to 2109MHz**

**Top Channel\_UBE\_ 2201 to 2202MHz**

**Bottom Channel\_LBE\_ 2088 to 2130MHz**

**Top Channel\_UBE\_ 2180 to 2222MHz**


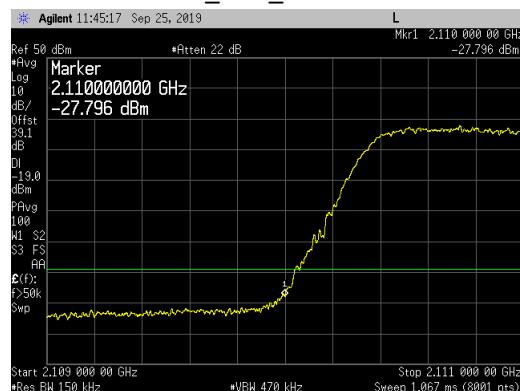
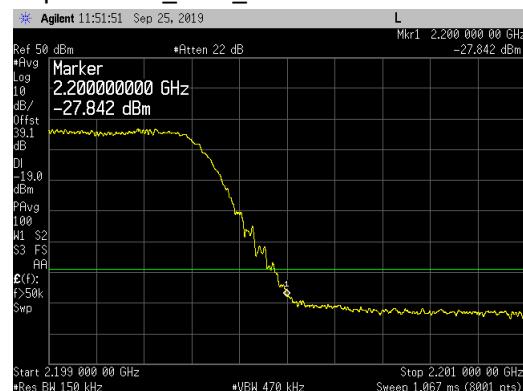
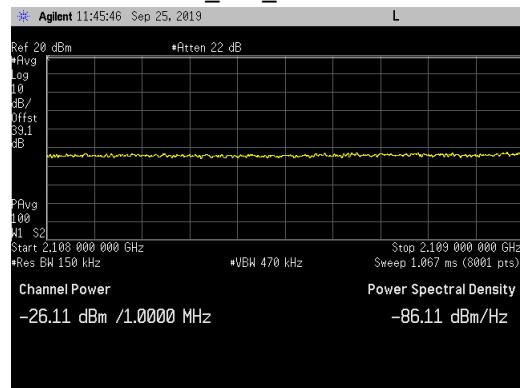
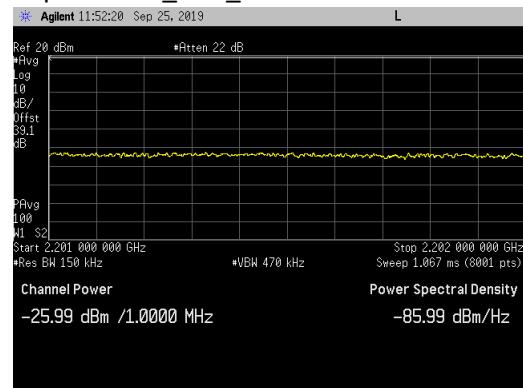
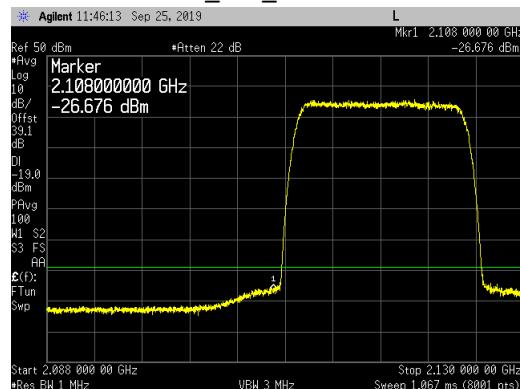
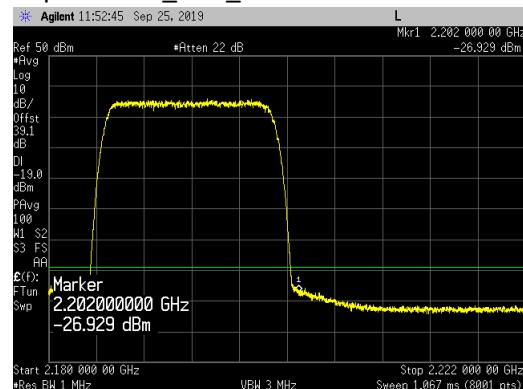
**5G NR\_ 15MHz Channel Bandwidth\_ Band Edge Plots\_ QPSK Modulation for Antenna Port 3:**
**Bottom Channel\_LBE\_ 2109 to 2111MHz**

**Top Channel\_UBE\_ 2199 to 2201MHz**

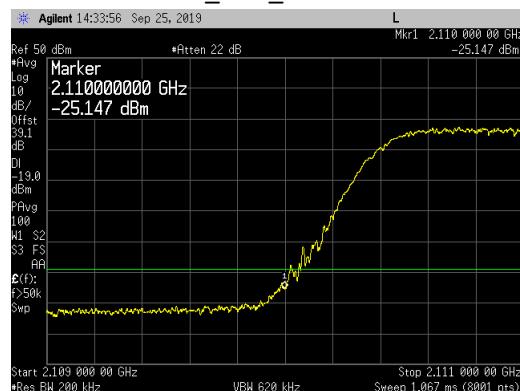
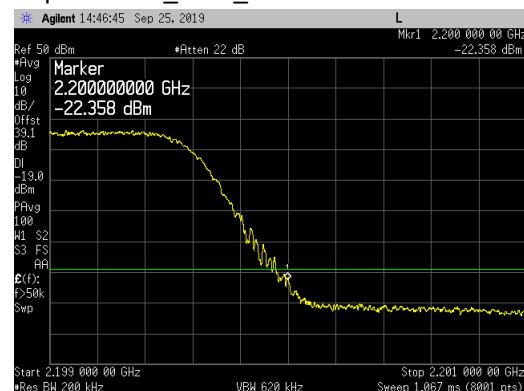
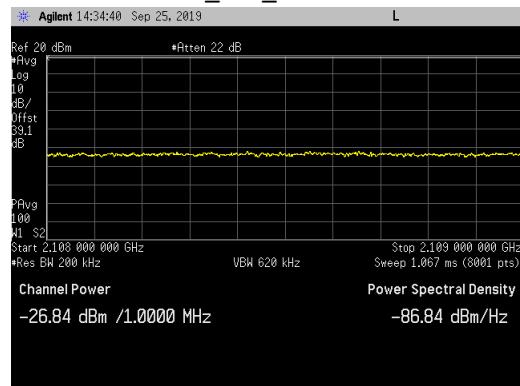
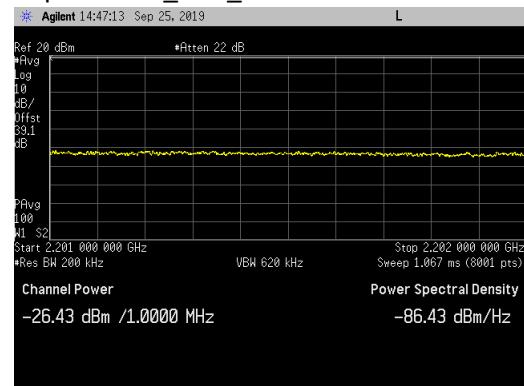
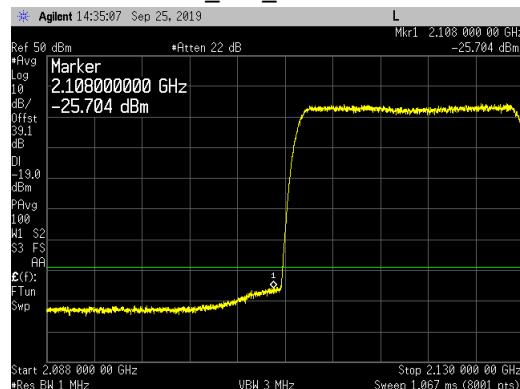
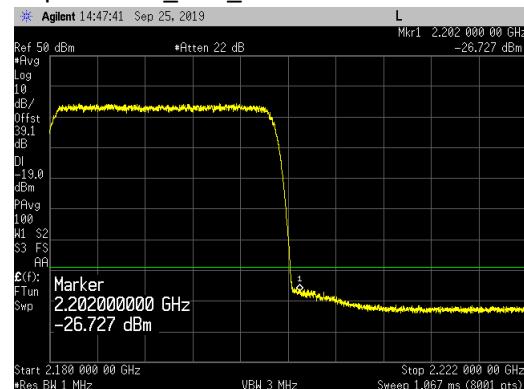
**Bottom Channel\_LBE\_ 2108 to 2109MHz**

**Top Channel\_UBE\_ 2201 to 2202MHz**

**Bottom Channel\_LBE\_ 2088 to 2130MHz**

**Top Channel\_UBE\_ 2180 to 2222MHz**


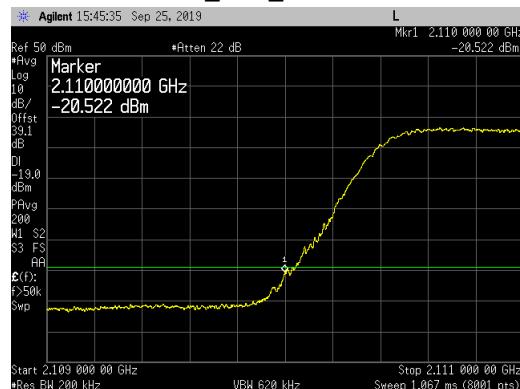
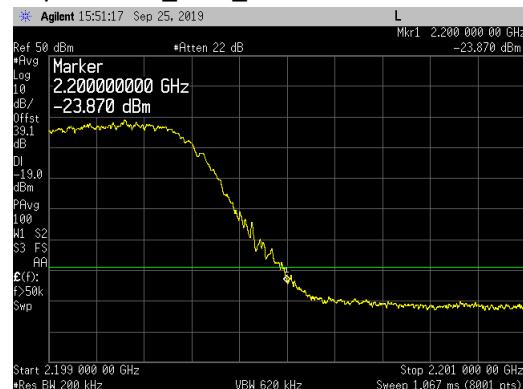
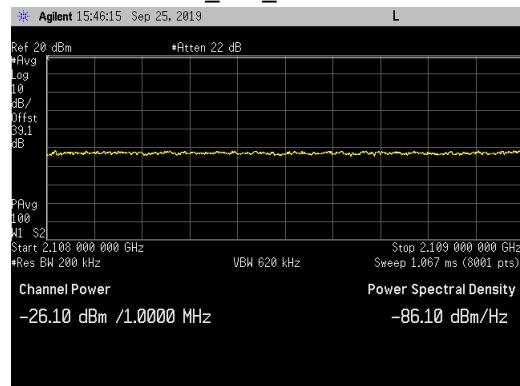
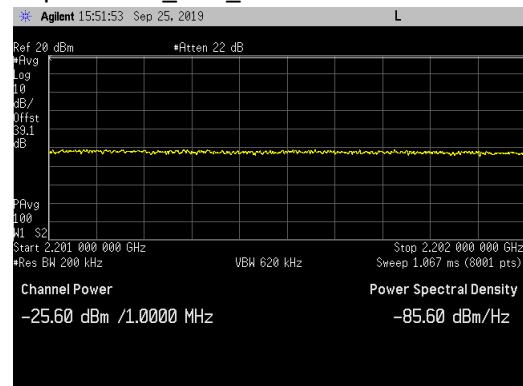
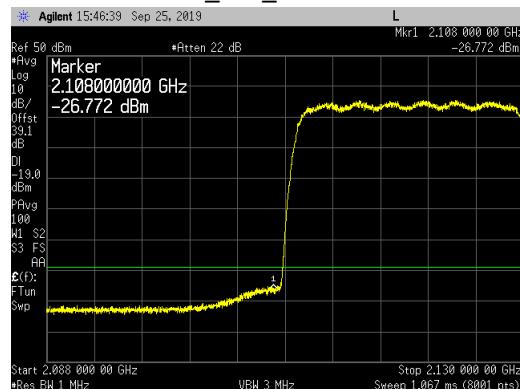
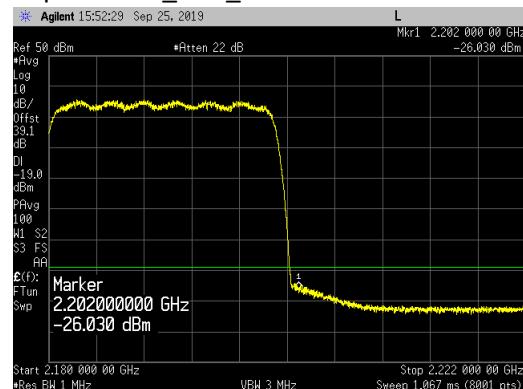
**5G NR\_ 15MHz Channel Bandwidth\_Band Edge Plots\_ 16QAM Modulation for Antenna Port 3:**
**Bottom Channel\_LBE\_ 2109 to 2111MHz**

**Top Channel\_UBE\_ 2199 to 2201MHz**

**Bottom Channel\_LBE\_ 2108 to 2109MHz**

**Top Channel\_UBE\_ 2201 to 2202MHz**

**Bottom Channel\_LBE\_ 2088 to 2130MHz**

**Top Channel\_UBE\_ 2180 to 2222MHz**


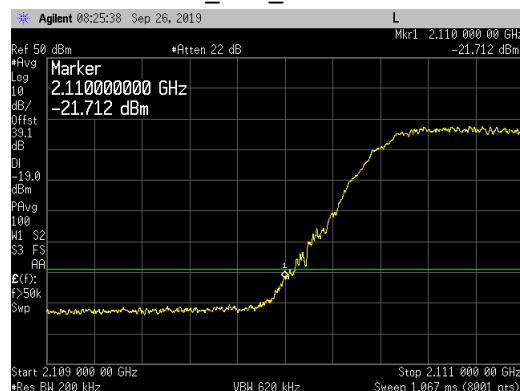
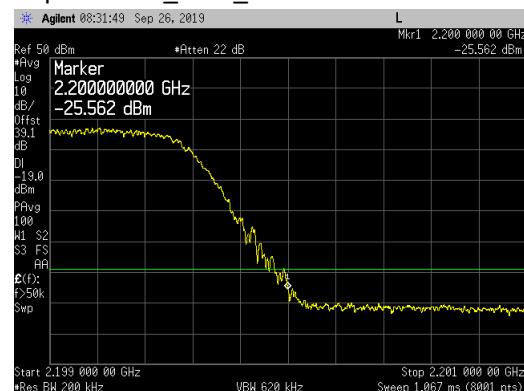
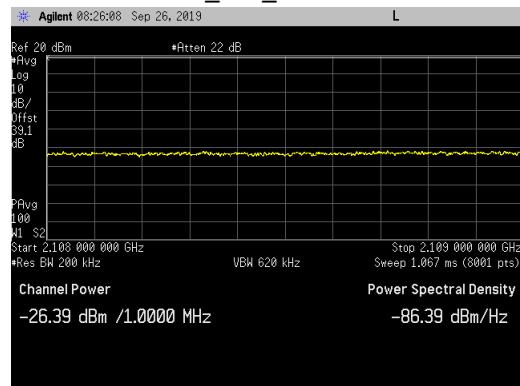
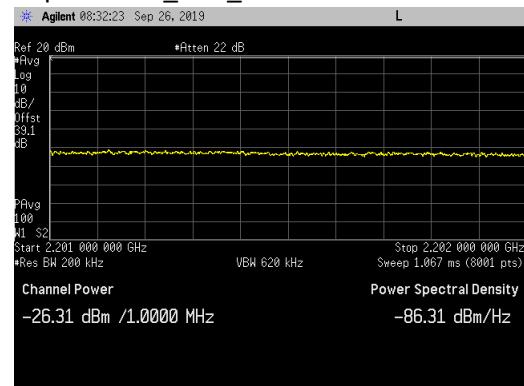
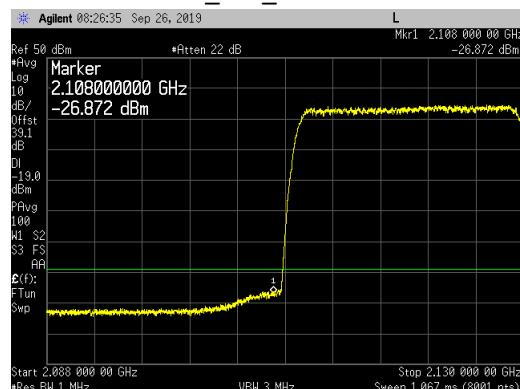
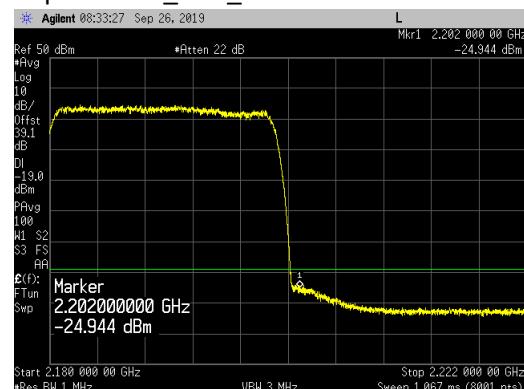
**5G NR\_ 15MHz Channel Bandwidth\_Band Edge Plots\_ 64QAM Modulation for Antenna Port 3:**
**Bottom Channel\_LBE\_ 2109 to 2111MHz**

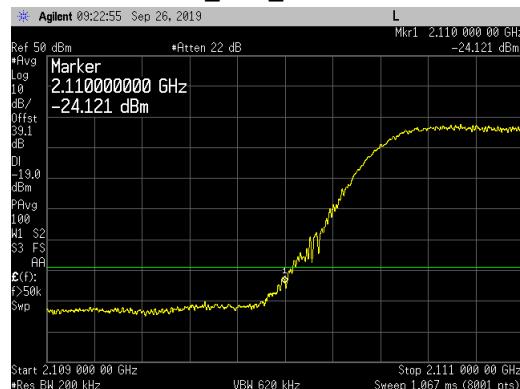
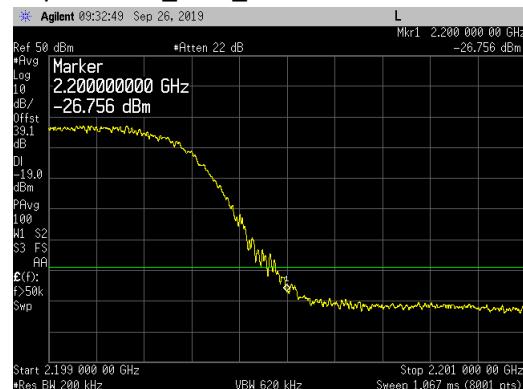
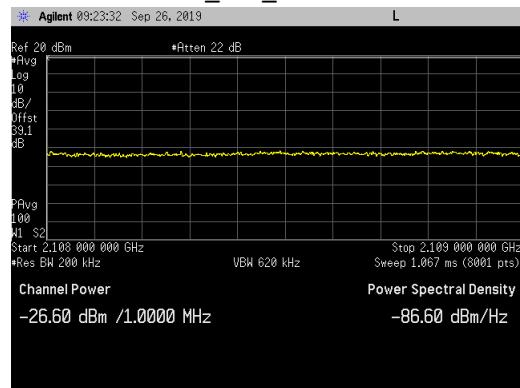
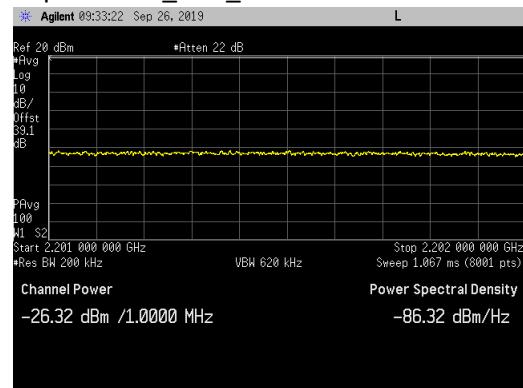
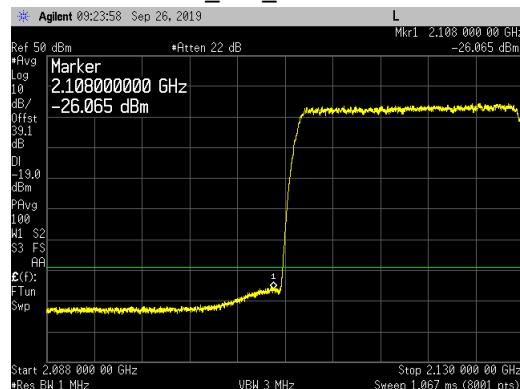
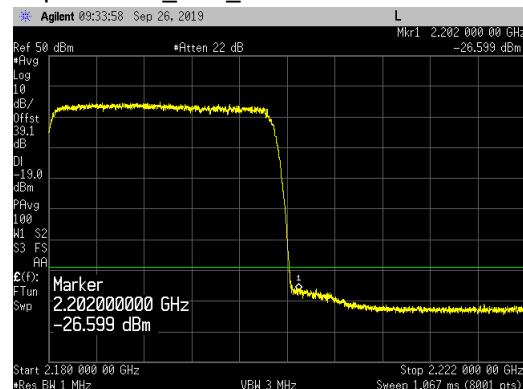
**Top Channel\_UBE\_ 2199 to 2201MHz**

**Bottom Channel\_LBE\_ 2108 to 2109MHz**

**Top Channel\_UBE\_ 2201 to 2202MHz**

**Bottom Channel\_LBE\_ 2088 to 2130MHz**

**Top Channel\_UBE\_ 2180 to 2222MHz**


**5G NR\_ 15MHz Channel Bandwidth\_Band Edge Plots\_ 256QAM Modulation for Antenna Port 3:**
**Bottom Channel\_LBE\_ 2109 to 2111MHz**

**Top Channel\_UBE\_ 2199 to 2201MHz**

**Bottom Channel\_LBE\_ 2108 to 2109MHz**

**Top Channel\_UBE\_ 2201 to 2202MHz**

**Bottom Channel\_LBE\_ 2088 to 2130MHz**

**Top Channel\_UBE\_ 2180 to 2222MHz**


**5G NR\_ 20MHz Channel Bandwidth\_ Band Edge Plots\_ QPSK Modulation for Antenna Port 3:**
**Bottom Channel\_LBE\_ 2109 to 2111MHz**

**Top Channel\_UBE\_ 2199 to 2201MHz**

**Bottom Channel\_LBE\_ 2108 to 2109MHz**

**Top Channel\_UBE\_ 2201 to 2202MHz**

**Bottom Channel\_LBE\_ 2088 to 2130MHz**

**Top Channel\_UBE\_ 2180 to 2222MHz**


**5G NR\_ 20MHz Channel Bandwidth\_ Band Edge Plots\_ 16QAM Modulation for Antenna Port 3:**
**Bottom Channel\_LBE\_ 2109 to 2111MHz**

**Top Channel\_UBE\_ 2199 to 2201MHz**

**Bottom Channel\_LBE\_ 2108 to 2109MHz**

**Top Channel\_UBE\_ 2201 to 2202MHz**

**Bottom Channel\_LBE\_ 2088 to 2130MHz**

**Top Channel\_UBE\_ 2180 to 2222MHz**


**5G NR\_ 20MHz Channel Bandwidth\_Band Edge Plots\_ 64QAM Modulation for Antenna Port 3:**
**Bottom Channel\_LBE\_ 2109 to 2111MHz**

**Top Channel\_UBE\_ 2199 to 2201MHz**

**Bottom Channel\_LBE\_ 2108 to 2109MHz**

**Top Channel\_UBE\_ 2201 to 2202MHz**

**Bottom Channel\_LBE\_ 2088 to 2130MHz**

**Top Channel\_UBE\_ 2180 to 2222MHz**


**5G NR\_ 20MHz Channel Bandwidth\_Band Edge Plots\_ 256QAM Modulation for Antenna Port 3:**
**Bottom Channel\_LBE\_ 2109 to 2111MHz**

**Top Channel\_UBE\_ 2199 to 2201MHz**

**Bottom Channel\_LBE\_ 2108 to 2109MHz**

**Top Channel\_UBE\_ 2201 to 2202MHz**

**Bottom Channel\_LBE\_ 2088 to 2130MHz**

**Top Channel\_UBE\_ 2180 to 2222MHz**


### Transmitter Antenna Port Conducted Emissions

Transmitter conducted emission measurements were made at RRH antenna port 2/3. Measurements were performed over the 9 kHz to 22GHz frequency range.

The testing was performed with the RRH operating on the AWS middle channel (2155.0MHz) with all modulation types (QPSK, 16QAM, 64QAM and 256QAM) for all 5G NR channel bandwidths (5MHz, 10MHz, 15MHz and 20MHz) at maximum carrier power (40 watts/carrier).

The power of any emission outside of the authorized operating frequency range cannot exceed -13 dBm as specified in section 24.238(a), 27.53(h)(1), RSS 133 6.5(i) and RSS 139 6.6. The limit of -19dBm was used in the certification testing. The limit is adjusted to -19dBm [-13dBm -10 log (4)] per FCC KDB 662911D01 v02r01 because the BTS may operate as a 4 port MIMO transmitter. The required measurement parameters include a 1MHz bandwidth with power measured in average value (since transmitter power was measured in average value).

Measurements were performed with a spectrum analyzer using a peak detector with max hold over 50 sweeps (except for the 20MHz to 3GHz frequency range). Measurements for the 20MHz to 3GHz frequency range were performed with the spectrum analyzer in the RMS average mode over 100 traces.

The limit for the 9kHz to 150kHz frequency range was adjusted to -49dBm to correct for a spectrum analyzer RBW of 1kHz versus required RBW of 1MHz [i.e.:  $-49\text{dBm} = -19\text{dBm} - 10\log(1\text{MHz}/1\text{kHz})$ ]. The limit for the 150kHz to 20MHz frequency range was adjusted to -39dBm to correct for a spectrum analyzer RBW of 10kHz versus required RBW of 1MHz [i.e.:  $-39\text{dBm} = -19\text{dBm} - 10\log(1\text{MHz}/10\text{kHz})$ ]. The required limit of -19dBm with a RBW of  $\geq 1\text{MHz}$  was used for all other frequency ranges.

The spectrum analyzer settings that were used for this test are summarized in the following table.

Frequency Range	RBW	VBW	Number of Data Points	Detector	Sweep Time	Max Hold over	Offset Note (1)
9kHz to 150kHz	1kHz	3kHz	8001	Peak	Auto	50 Sweeps	18.8dB
150kHz to 20MHz	10kHz	30kHz	8001	Peak	Auto	50 Sweeps	18.9dB
20MHz to 3GHz	1MHz	3MHz	8001	Average	Auto	Note (2)	39.1dB
3GHz to 6GHz	1MHz	3MHz	8001	Peak	Auto	50 Sweeps	39.3dB
6GHz to 18GHz	2MHz	6MHz	8192	Peak	Auto	50 Sweeps	27.3dB
18GHz to 22GHz	1MHz	3MHz	8001	Peak	Auto	50 Sweeps	33.6dB

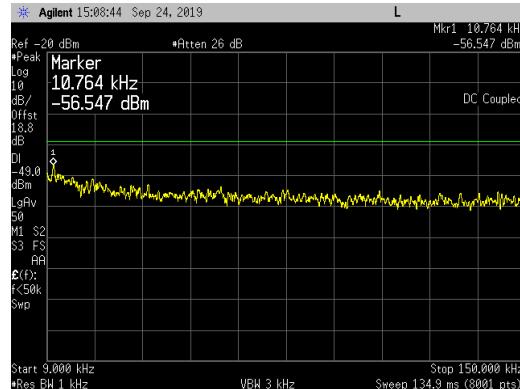
Note 1: The total measurement RF path loss of the test setup (attenuators, test cables and filters) is accounted for by the spectrum analyzer reference level offset.

Note 2: Max Hold not used and instead measurements were performed with the spectrum analyzer in the RMS average mode over 100 traces.

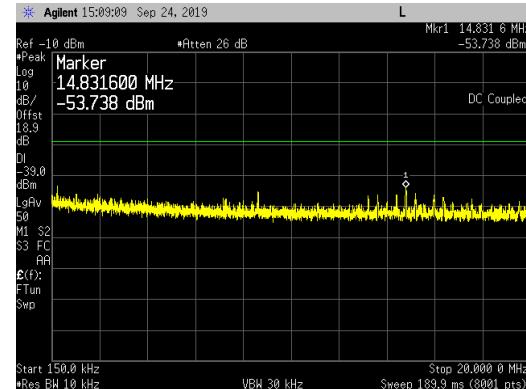
A low pass filter was used to reduce measurement instrumentation noise floor for the frequency ranges less than 20MHz. A high pass filter was used to reduce measurement instrumentation noise floor for the frequency ranges above 6GHz. The total measurement RF path loss of the test setup (attenuators, low pass filter, high pass filter and test cables) as shown in the table is accounted for by the spectrum analyzer reference level offset. The display line on the plots reflects the required limit. Conducted spurious emission plots/measurements are provided in the following pages.

### 5G NR\_5MHz Channel Bandwidth\_QPSK\_AWS Middle Channel (2155MHz)\_Ant 3:

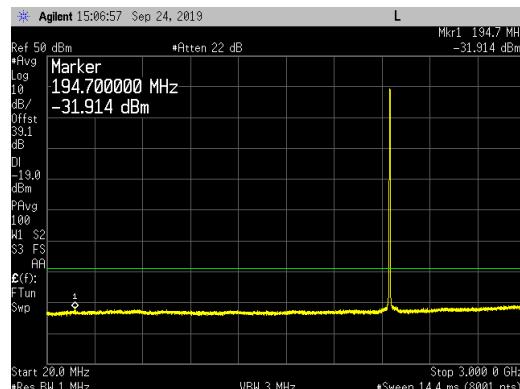
9 kHz to 150 kHz



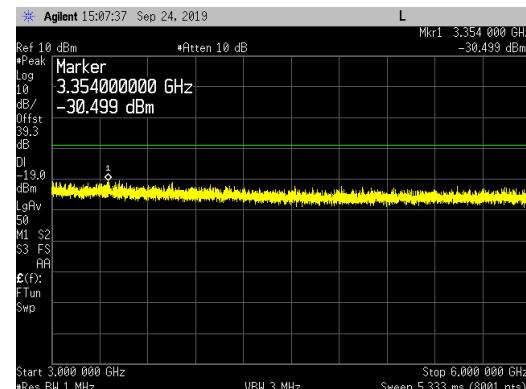
150 kHz to 20MHz



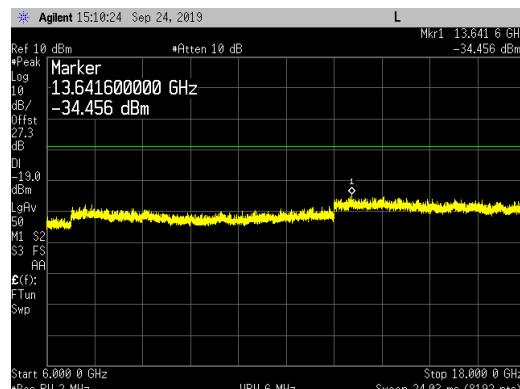
20MHz to 3GHz



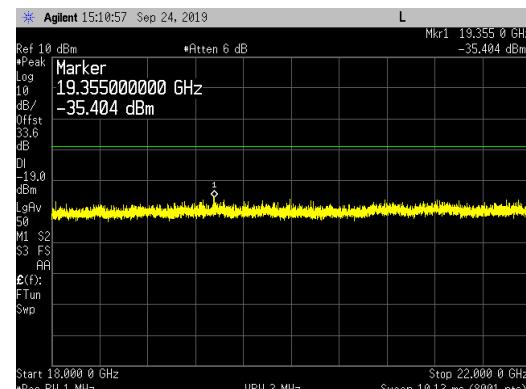
3GHz to 6GHz



6GHz to 18GHz

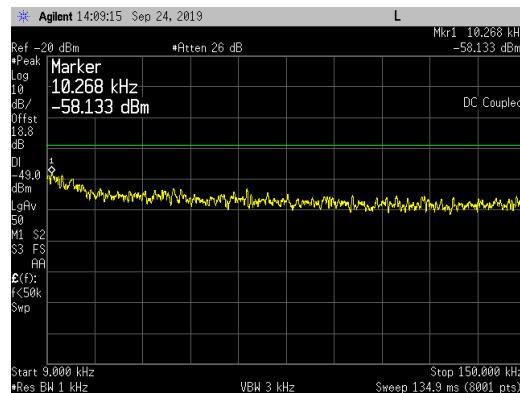


18GHz to 22GHz

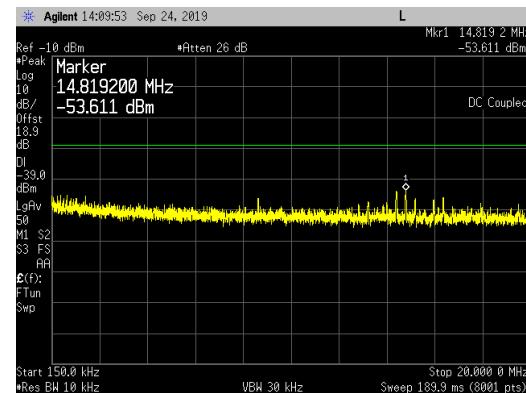


### 5G NR\_ 5MHz Channel Bandwidth \_ 16QAM \_ AWS Middle Channel (2155MHz) \_ Ant 3:

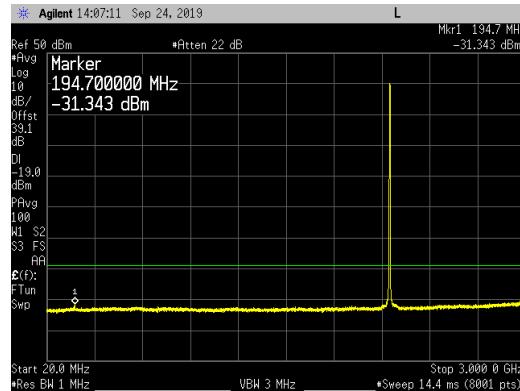
#### 9 kHz to 150 kHz



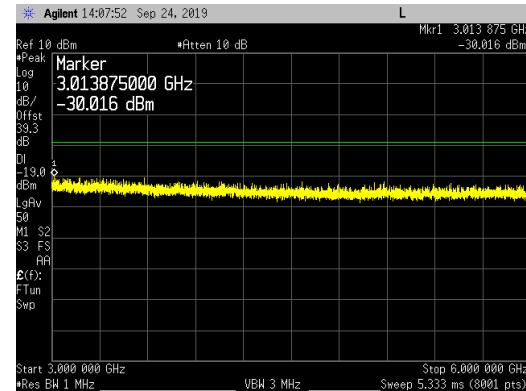
#### 150 kHz to 20MHz



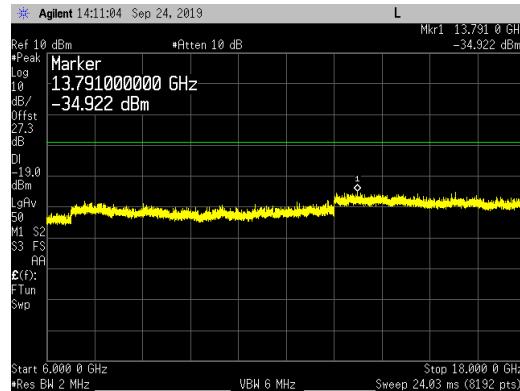
#### 20MHz to 3GHz



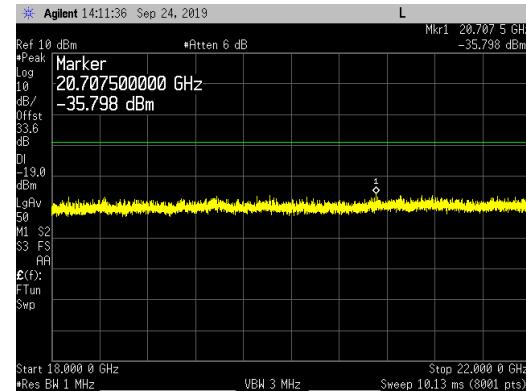
#### 3GHz to 6GHz



#### 6GHz to 18GHz

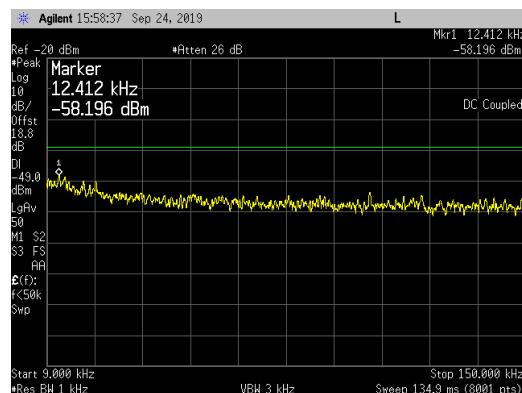


#### 18GHz to 22GHz

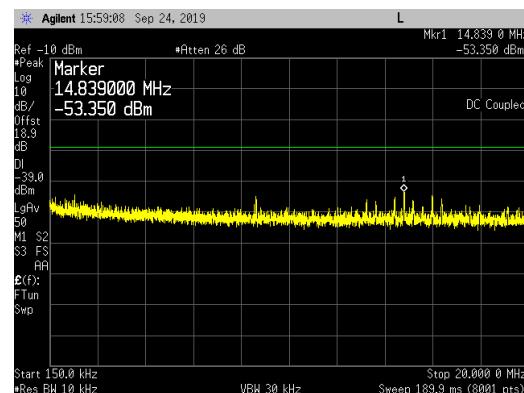


### 5G NR\_ 5MHz Channel Bandwidth \_ 64QAM \_ AWS Middle Channel (2155MHz) \_ Ant 3:

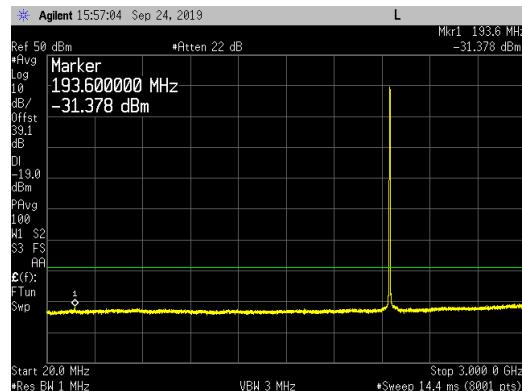
#### 9 kHz to 150 kHz



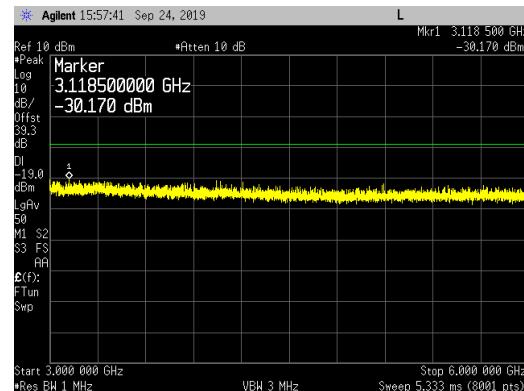
#### 150 kHz to 20MHz



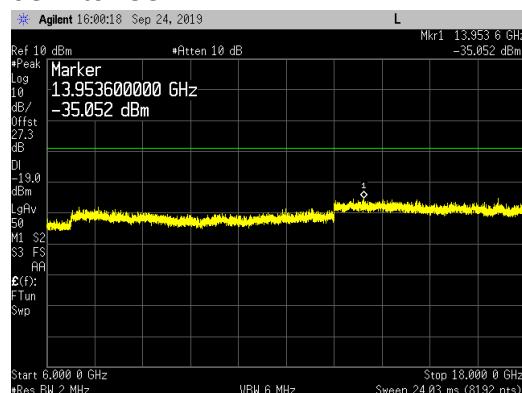
#### 20MHz to 3GHz



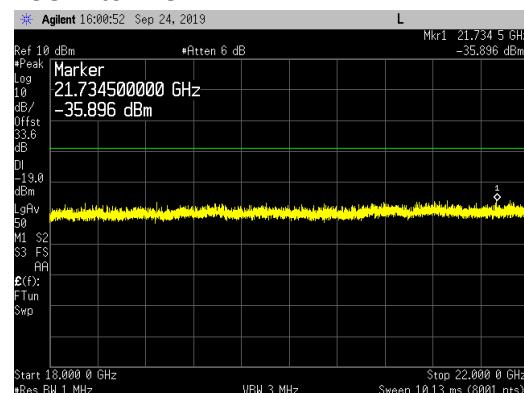
#### 3GHz to 6GHz



#### 6GHz to 18GHz

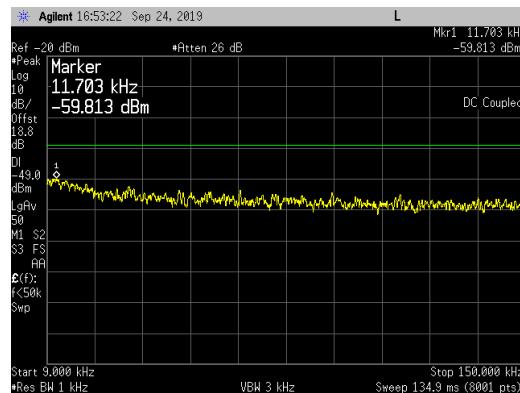


#### 18GHz to 22GHz

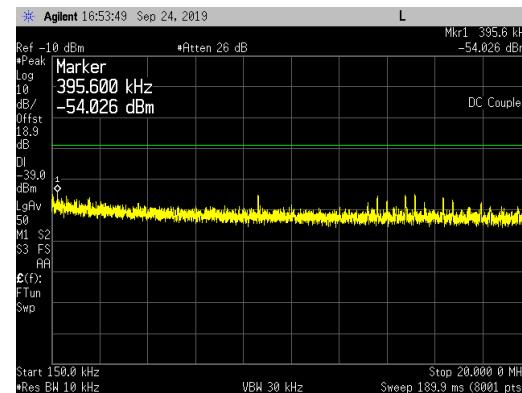


### 5G NR\_ 5MHz Channel Bandwidth \_ 256QAM \_ AWS Middle Channel (2155MHz) \_ Ant 3:

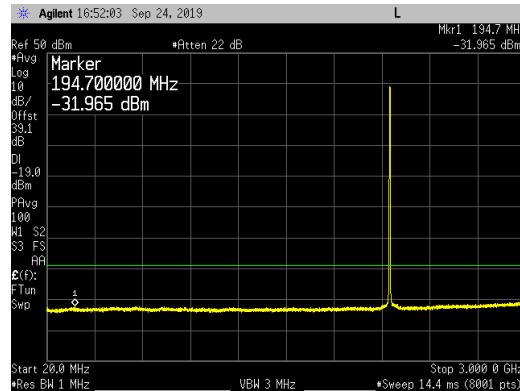
9 kHz to 150 kHz



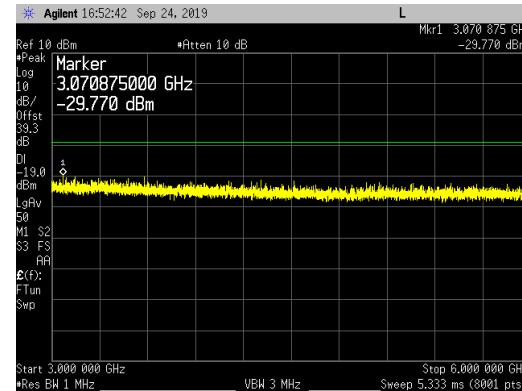
150 kHz to 20MHz



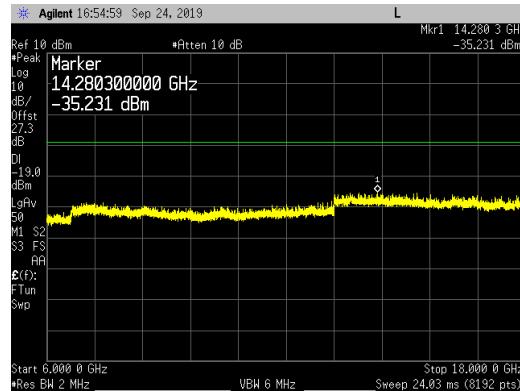
20MHz to 3GHz



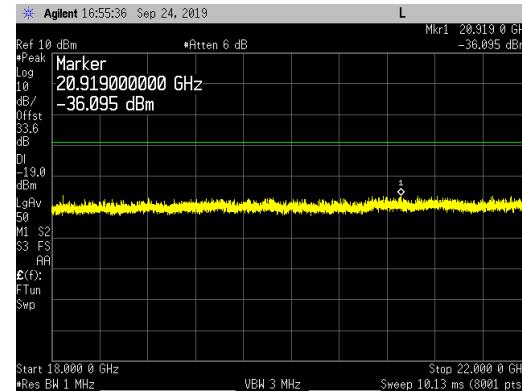
3GHz to 6GHz



6GHz to 18GHz

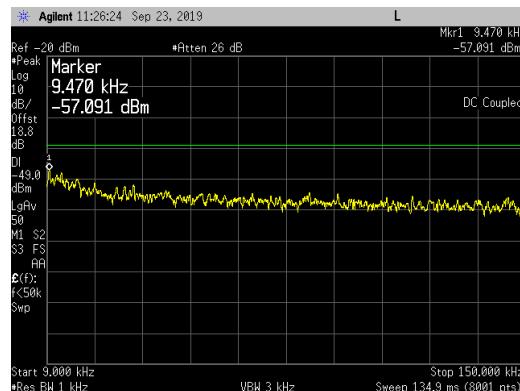


18GHz to 22GHz

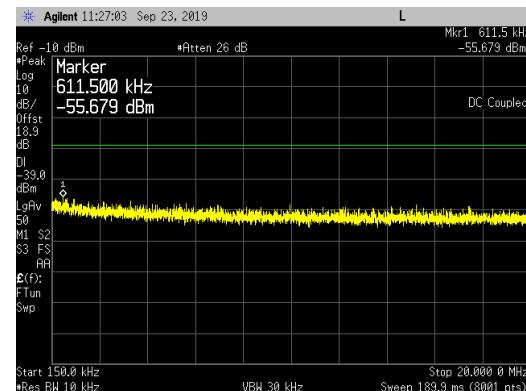


### 5G NR\_ 10MHz Channel Bandwidth \_ QPSK \_ AWS Middle Channel (2155MHz) \_ Ant 2:

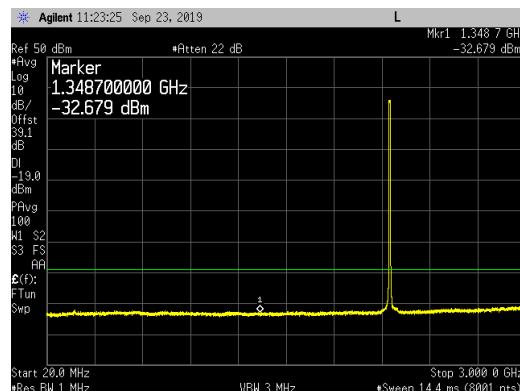
#### 9 kHz to 150 kHz



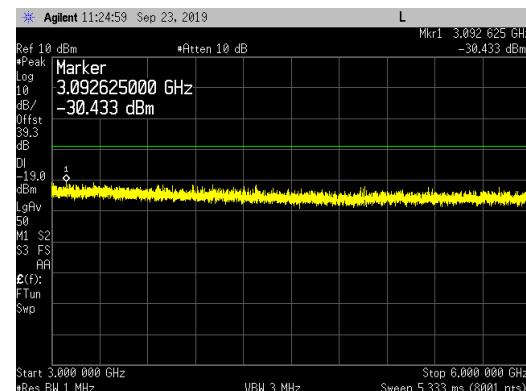
#### 150 kHz to 20MHz



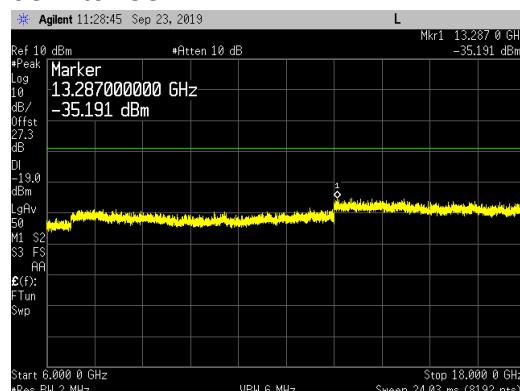
#### 20MHz to 3GHz



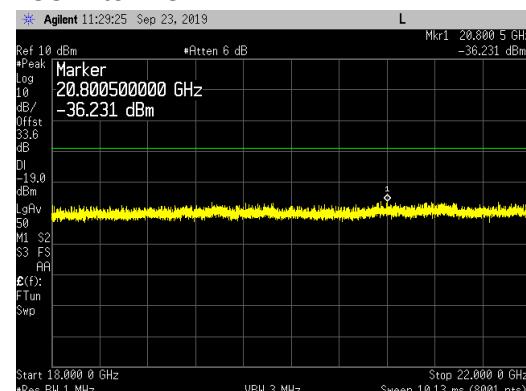
#### 3GHz to 6GHz



#### 6GHz to 18GHz

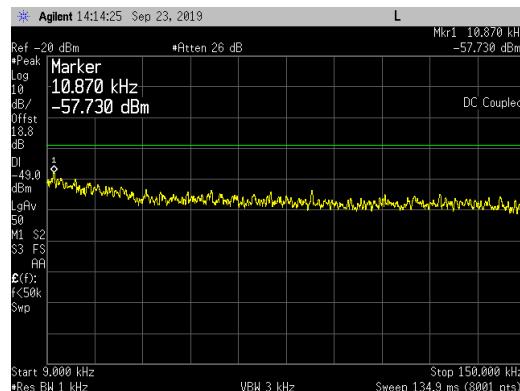


#### 18GHz to 22GHz

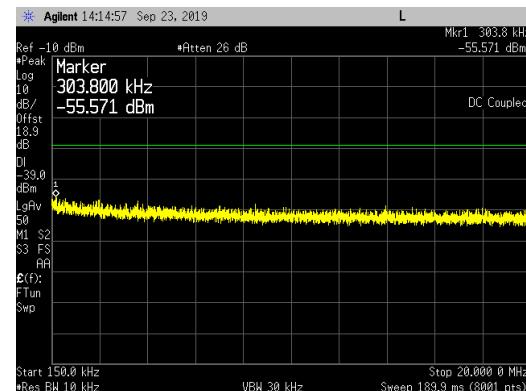


### 5G NR\_ 10MHz Channel Bandwidth \_ 16QAM \_ AWS Middle Channel (2155MHz) \_ Ant 2:

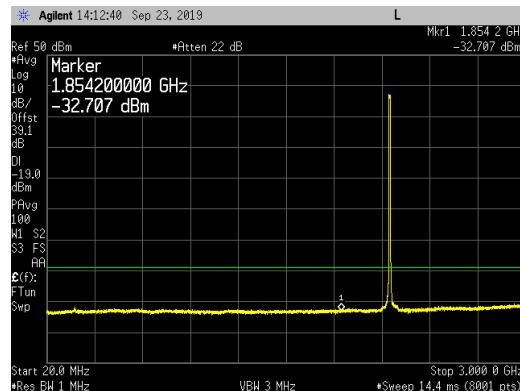
9 kHz to 150 kHz



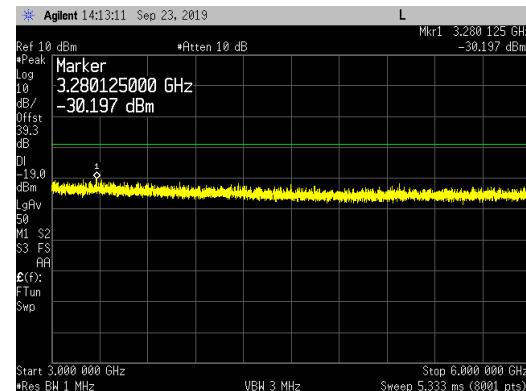
150 kHz to 20MHz



20MHz to 3GHz



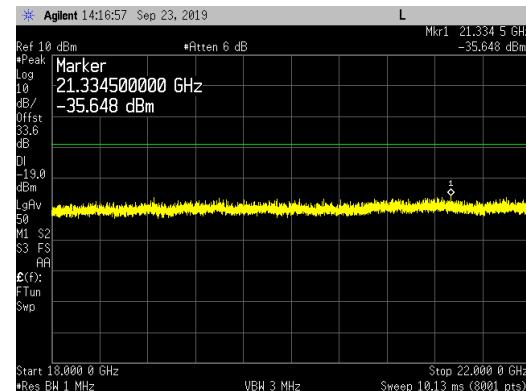
3GHz to 6GHz



6GHz to 18GHz

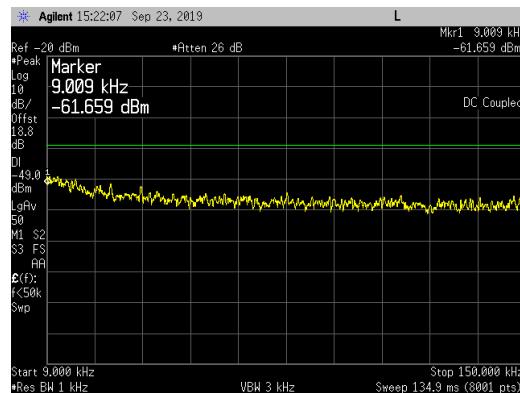


18GHz to 22GHz

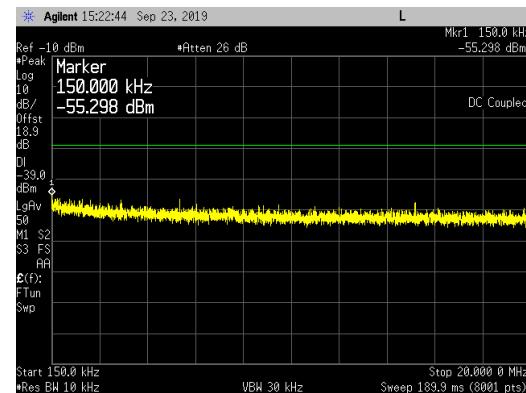


### 5G NR\_ 10MHz Channel Bandwidth \_ 64QAM \_ AWS Middle Channel (2155MHz) \_ Ant 2:

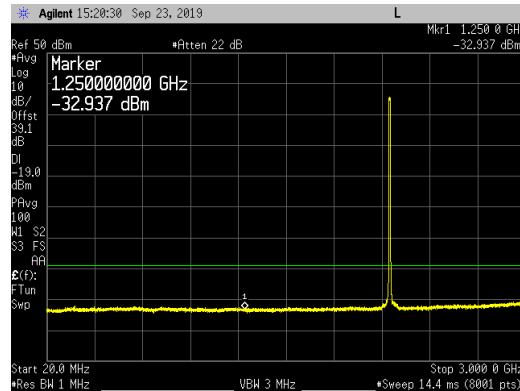
#### 9 kHz to 150 kHz



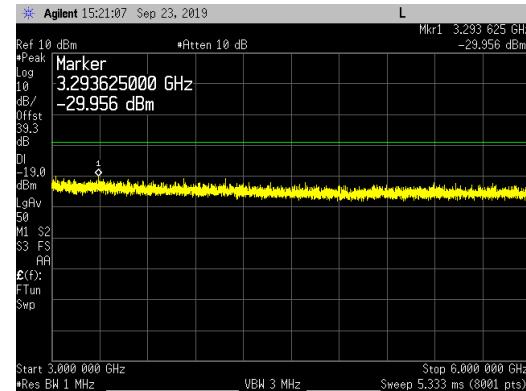
#### 150 kHz to 20MHz



#### 20MHz to 3GHz



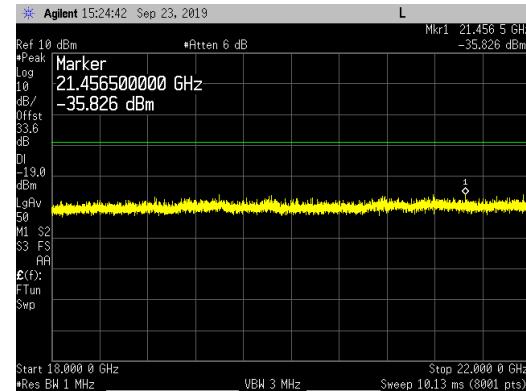
#### 3GHz to 6GHz



#### 6GHz to 18GHz

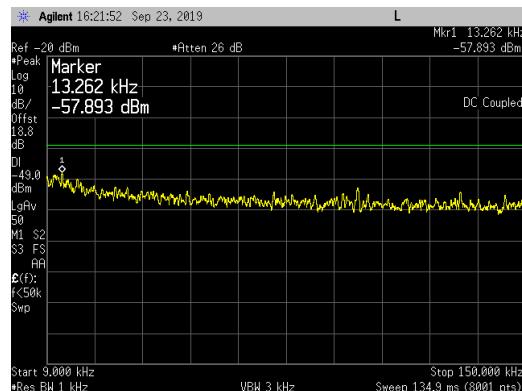


#### 18GHz to 22GHz

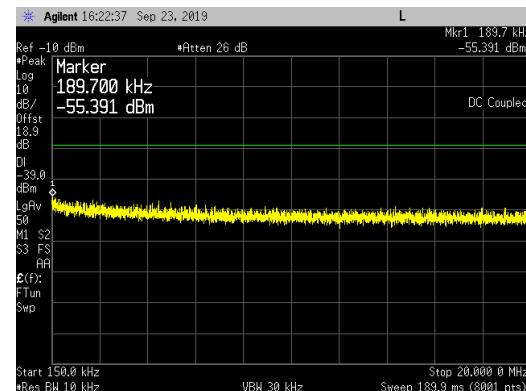


### 5G NR\_ 10MHz Channel Bandwidth \_ 256QAM \_ AWS Middle Channel (2155MHz) \_ Ant 2:

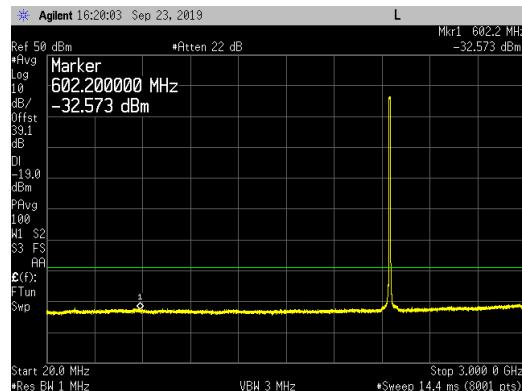
#### 9 kHz to 150 kHz



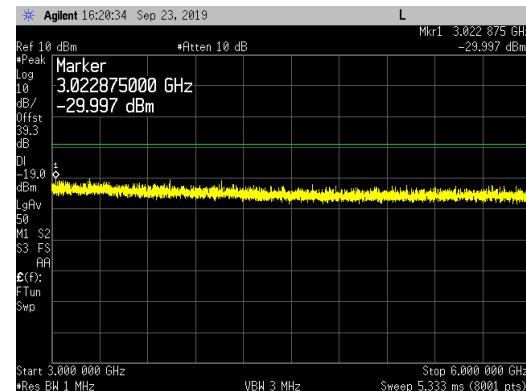
#### 150 kHz to 20MHz



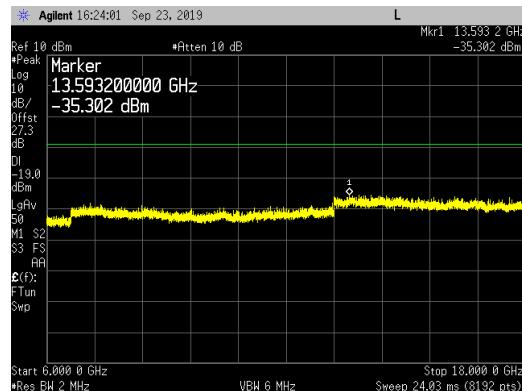
#### 20MHz to 3GHz



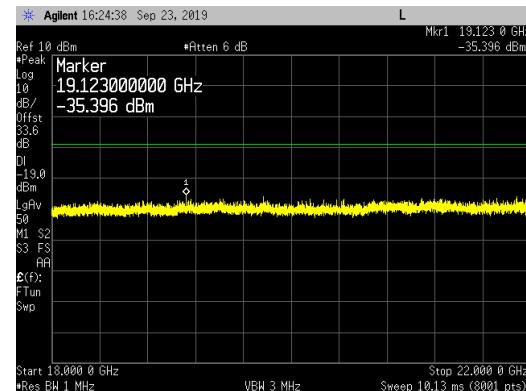
#### 3GHz to 6GHz



#### 6GHz to 18GHz

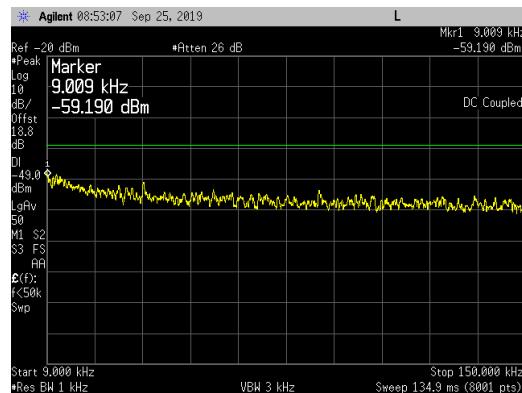


#### 18GHz to 22GHz

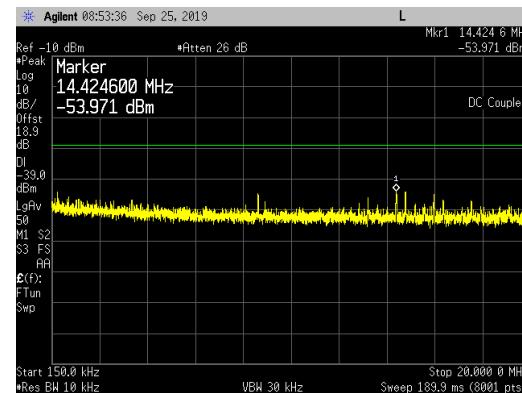


### 5G NR\_ 15MHz Channel Bandwidth \_ QPSK \_ AWS Middle Channel (2155MHz) \_ Ant 3:

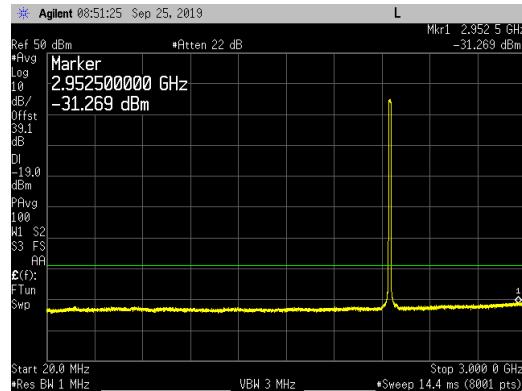
9 kHz to 150 kHz



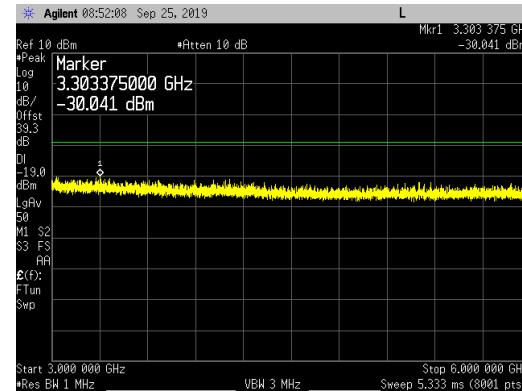
150 kHz to 20MHz



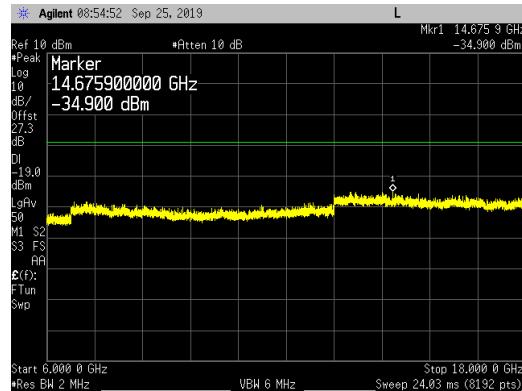
20MHz to 3GHz



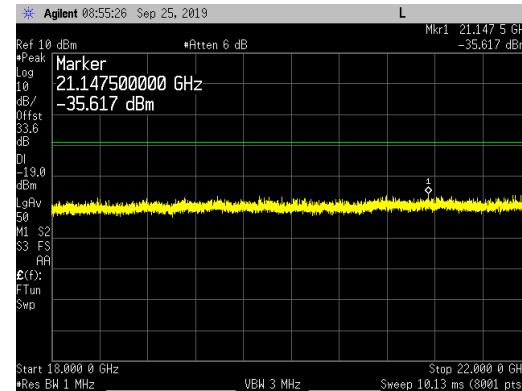
3GHz to 6GHz



6GHz to 18GHz

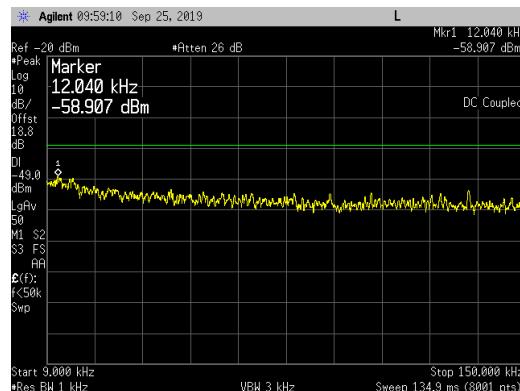


18GHz to 22GHz

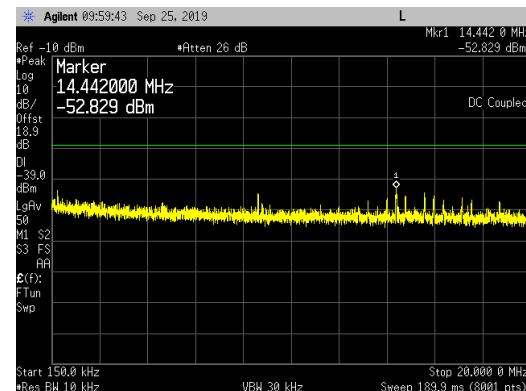


### 5G NR\_ 15MHz Channel Bandwidth \_ 16QAM \_ AWS Middle Channel (2155MHz) \_ Ant 3:

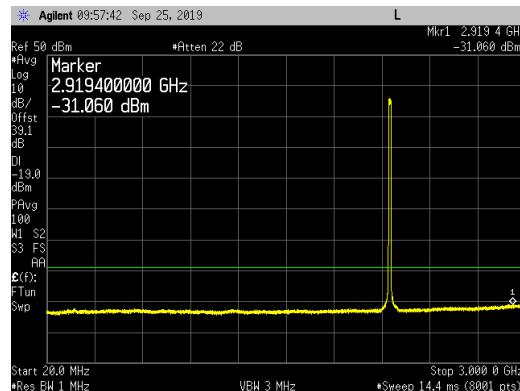
#### 9 kHz to 150 kHz



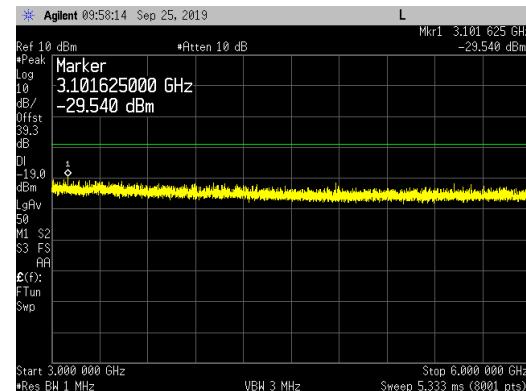
#### 150 kHz to 20MHz



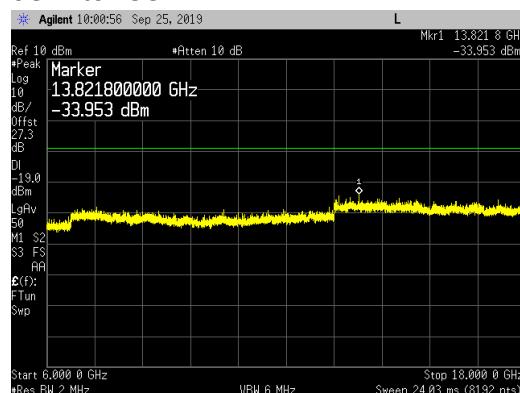
#### 20MHz to 3GHz



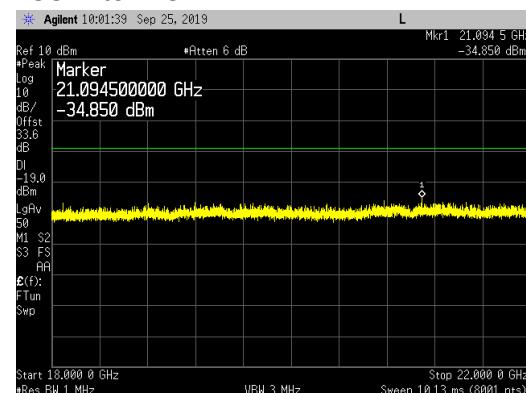
#### 3GHz to 6GHz



#### 6GHz to 18GHz

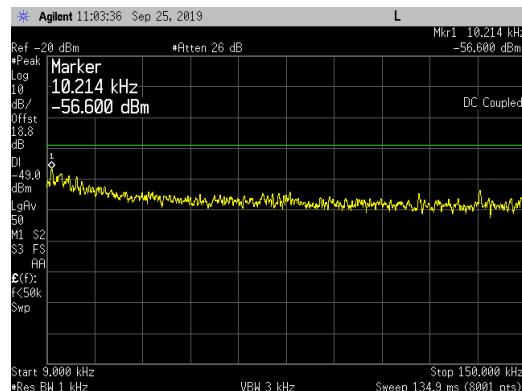


#### 18GHz to 22GHz

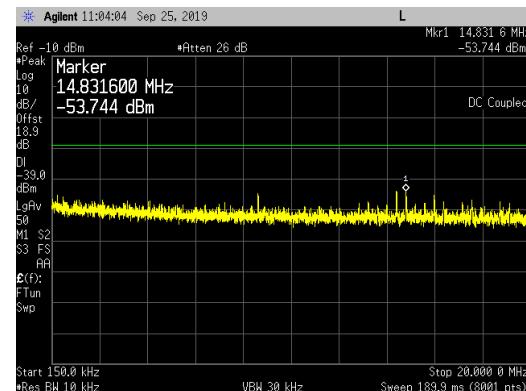


### 5G NR\_ 15MHz Channel Bandwidth \_ 64QAM \_ AWS Middle Channel (2155MHz) \_ Ant 3:

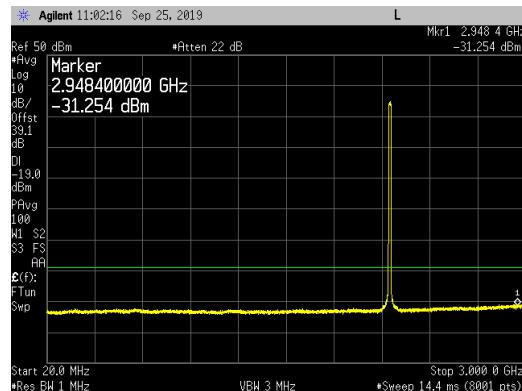
#### 9 kHz to 150 kHz



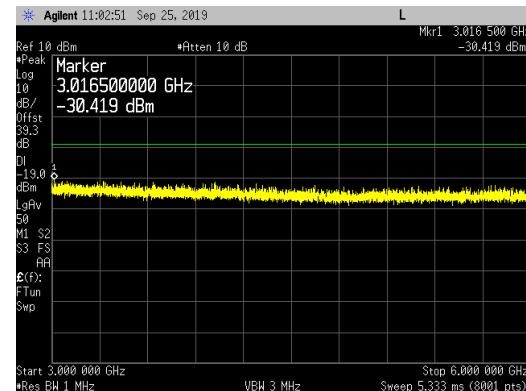
#### 150 kHz to 20MHz



#### 20MHz to 3GHz



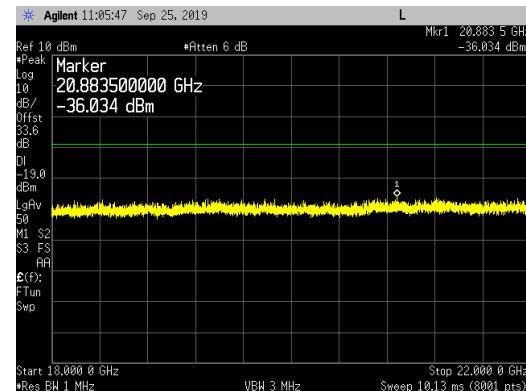
#### 3GHz to 6GHz



#### 6GHz to 18GHz

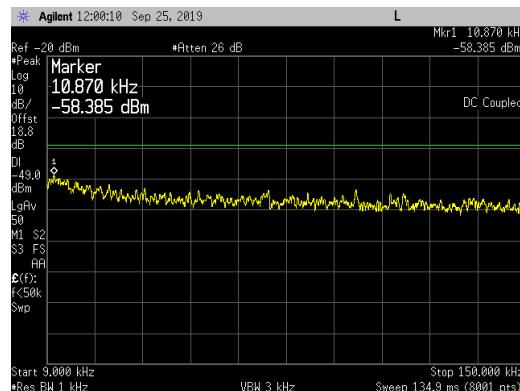


#### 18GHz to 22GHz

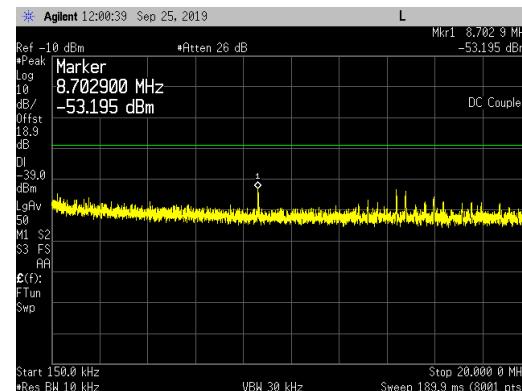


### 5G NR\_ 15MHz Channel Bandwidth \_ 256QAM \_ AWS Middle Channel (2155MHz) \_ Ant 3:

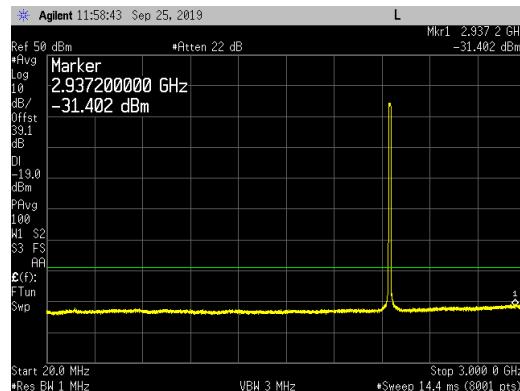
9 kHz to 150 kHz



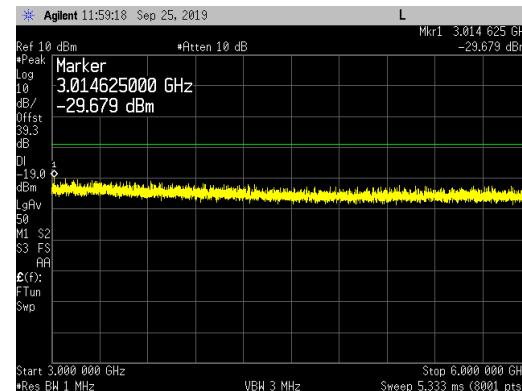
150 kHz to 20MHz



20MHz to 3GHz



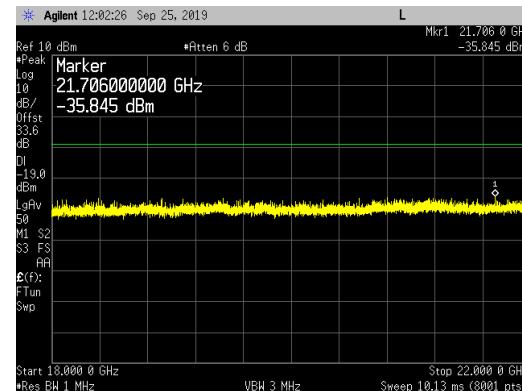
3GHz to 6GHz



6GHz to 18GHz

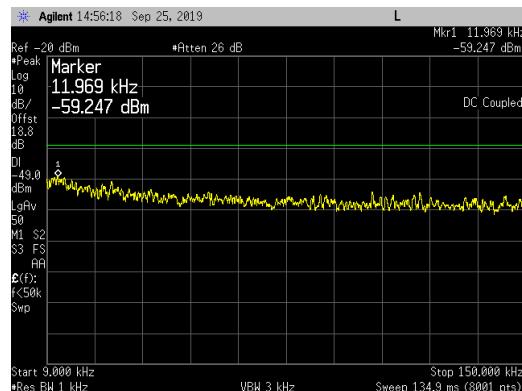


18GHz to 22GHz

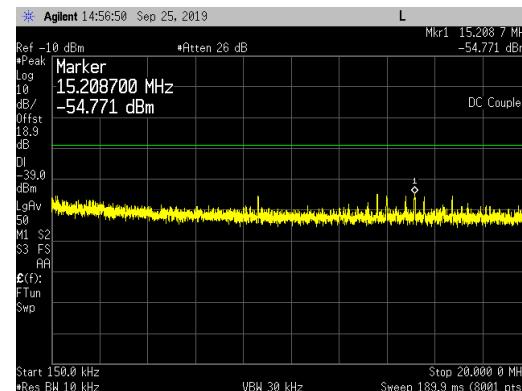


### 5G NR\_ 20MHz Channel Bandwidth \_ QPSK \_ AWS Middle Channel (2155MHz) \_ Ant 3:

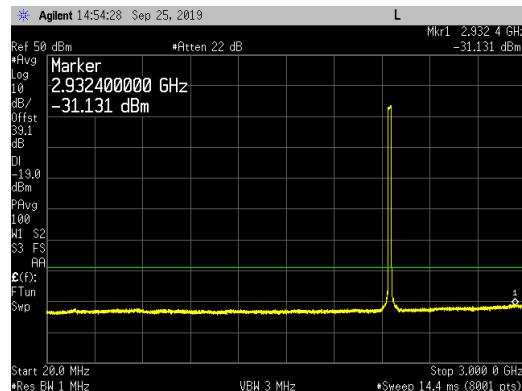
9 kHz to 150 kHz



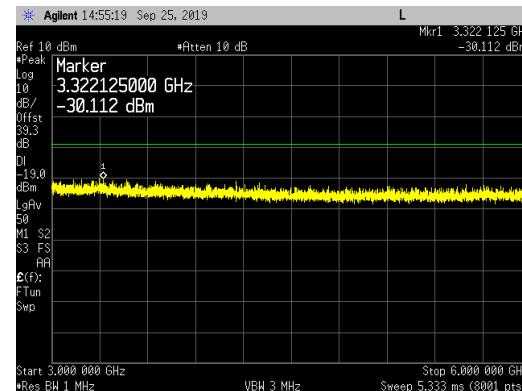
150 kHz to 20MHz



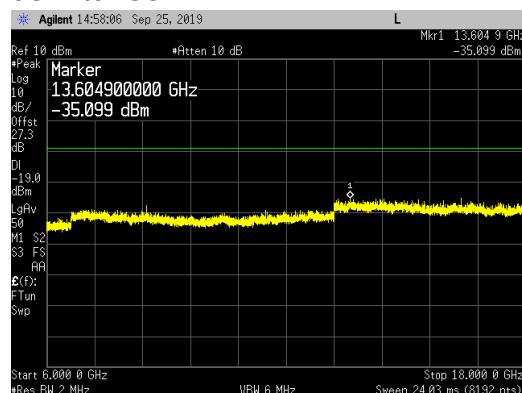
20MHz to 3GHz



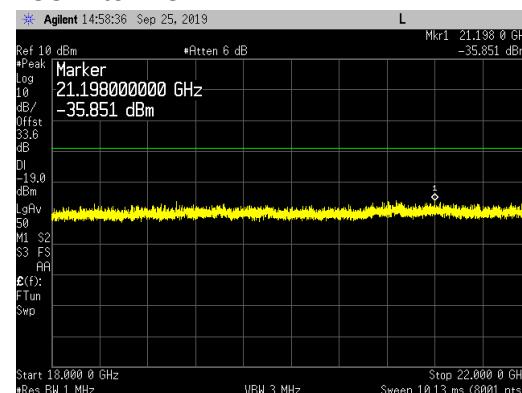
3GHz to 6GHz



6GHz to 18GHz

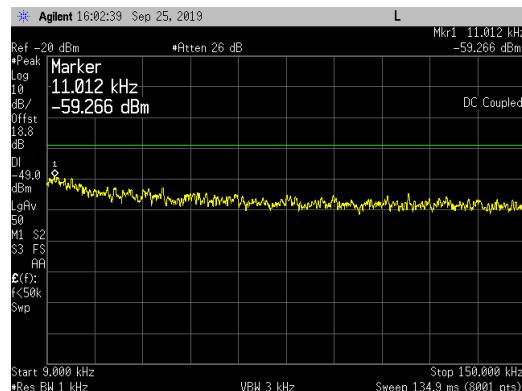


18GHz to 22GHz

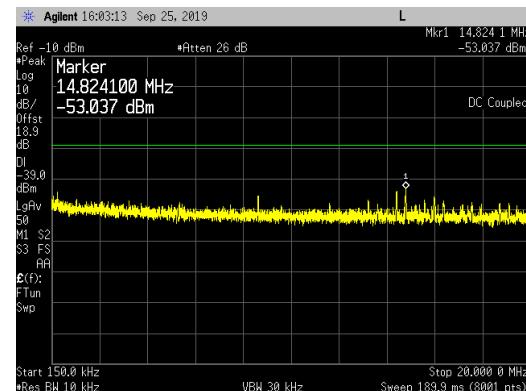


### 5G NR\_ 20MHz Channel Bandwidth \_ 16QAM \_ AWS Middle Channel (2155MHz) \_ Ant 3:

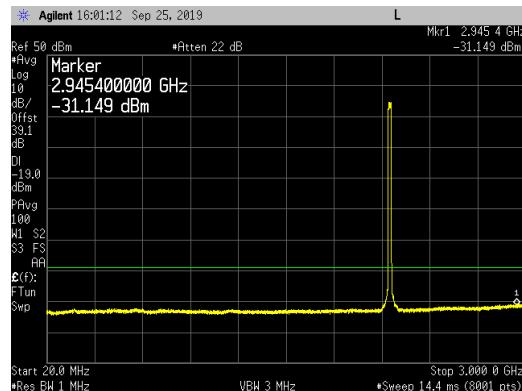
#### 9 kHz to 150 kHz



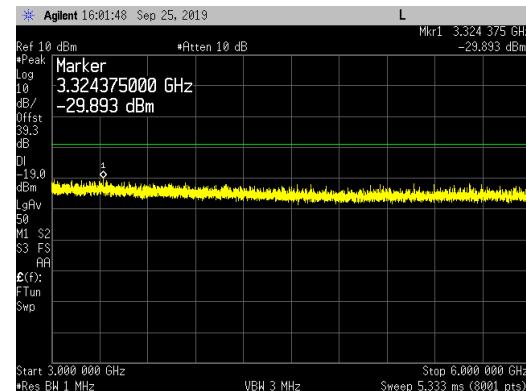
#### 150 kHz to 20MHz



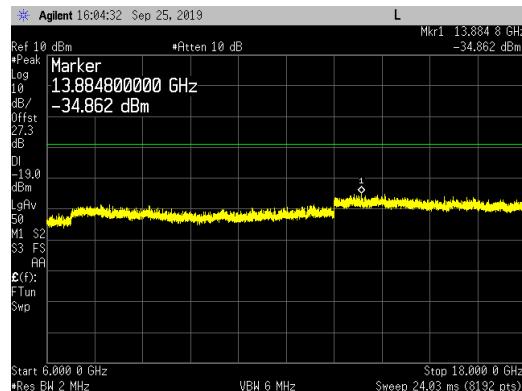
#### 20MHz to 3GHz



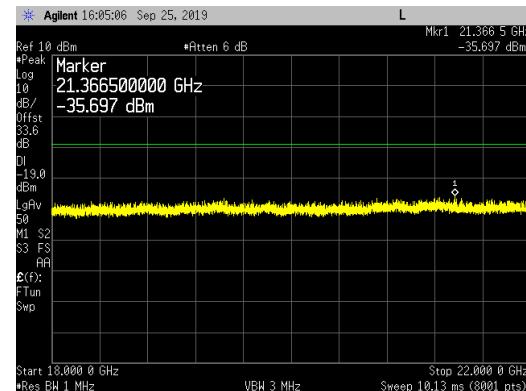
#### 3GHz to 6GHz



#### 6GHz to 18GHz

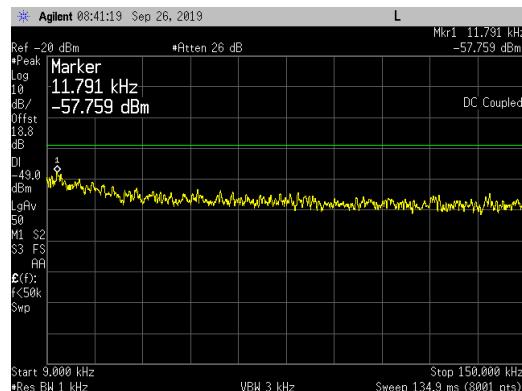


#### 18GHz to 22GHz

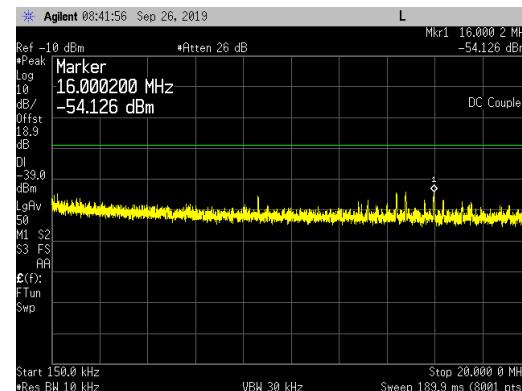


### 5G NR\_ 20MHz Channel Bandwidth \_ 64QAM \_ AWS Middle Channel (2155MHz) \_ Ant 3:

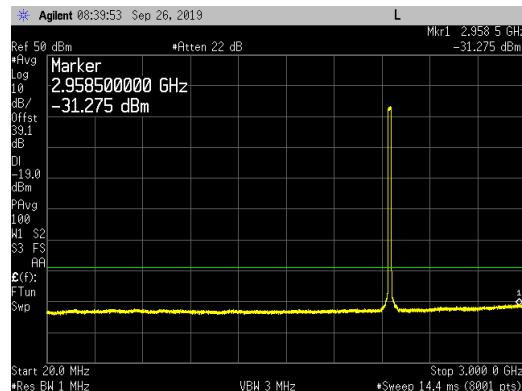
#### 9 kHz to 150 kHz



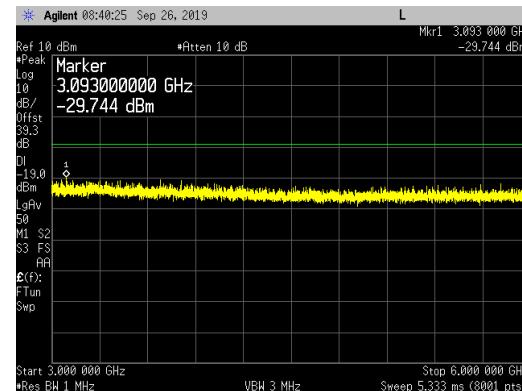
#### 150 kHz to 20MHz



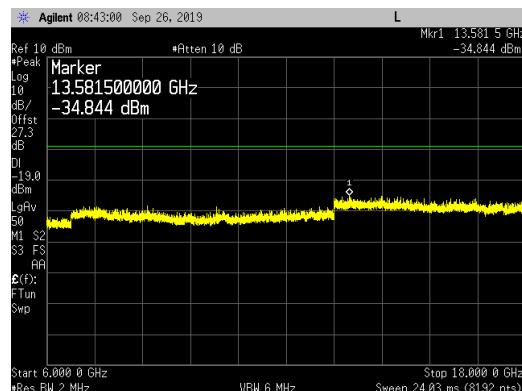
#### 20MHz to 3GHz



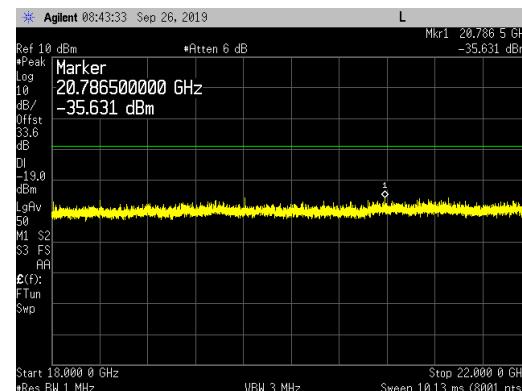
#### 3GHz to 6GHz



#### 6GHz to 18GHz

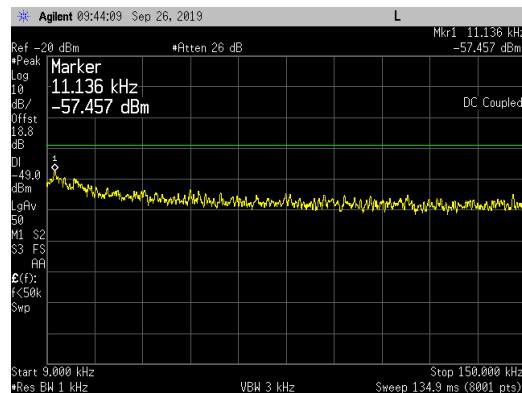


#### 18GHz to 22GHz

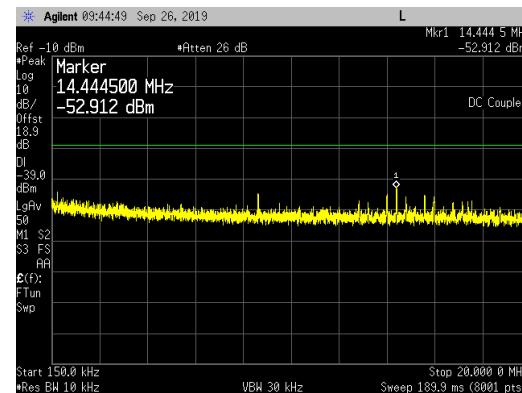


### 5G NR\_ 20MHz Channel Bandwidth \_ 256QAM \_ AWS Middle Channel (2155MHz) \_ Ant 3:

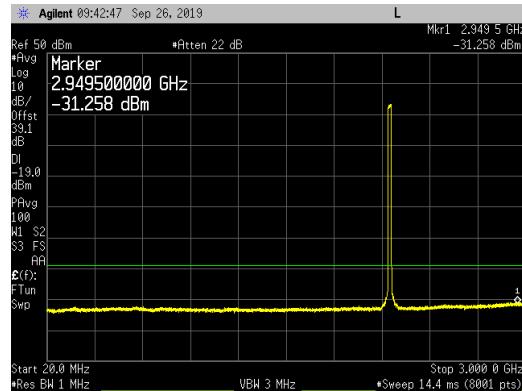
#### 9 kHz to 150 kHz



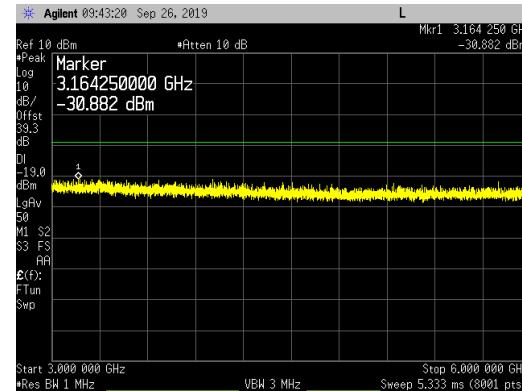
#### 150 kHz to 20MHz



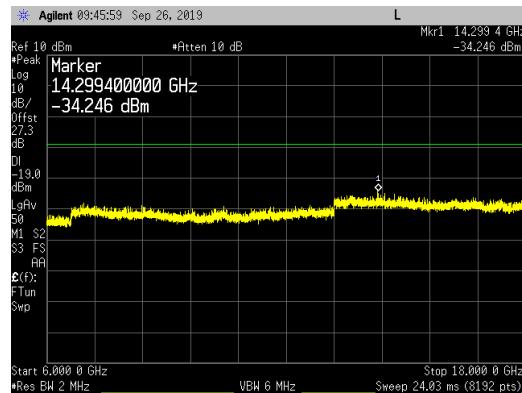
#### 20MHz to 3GHz



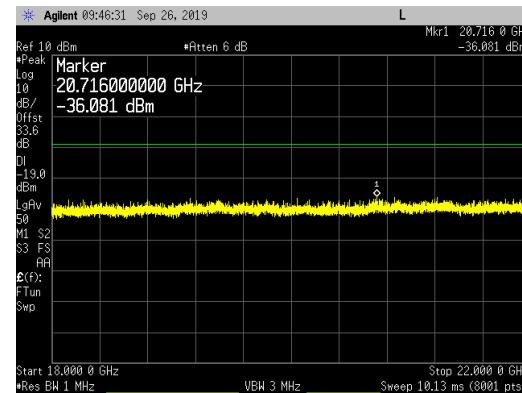
#### 3GHz to 6GHz



#### 6GHz to 18GHz



#### 18GHz to 22GHz





#### **Transmitter Radiated Spurious Emissions**

Radiated spurious emission plots/measurement results are in the original FCC radio certification submittal (NTS Test Report Number PR072254 Revision 1 dated March 16, 2018).

#### **Frequency Stability/Accuracy**

Frequency Stability/Accuracy measurement results are in the original FCC radio certification submittal (NTS Test Report Number PR072254 Revision 1 dated March 16, 2018).



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**END OF REPORT**