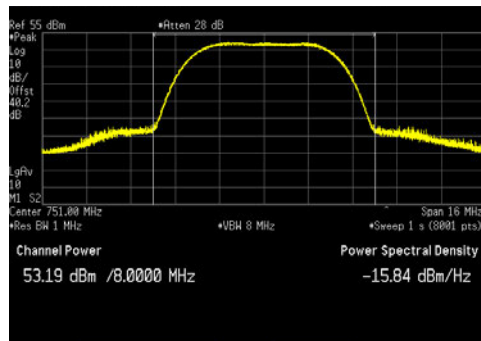
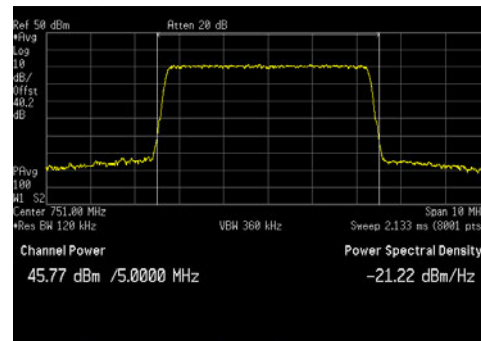


LTE5 Channel Power Plots at Middle Channel and 256QAM Modulation:

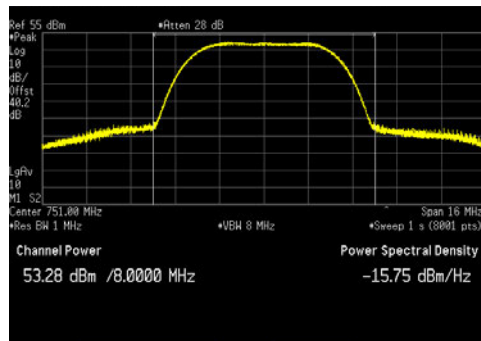
Port 1 - LTE5_ Middle Channel_Peak



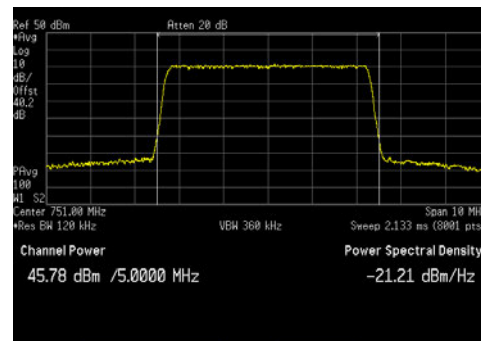
Port 1 - LTE5_ Middle Channel_Average



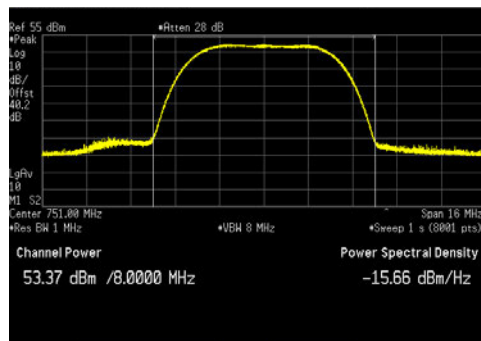
Port 2 - LTE5_ Middle Channel_Peak



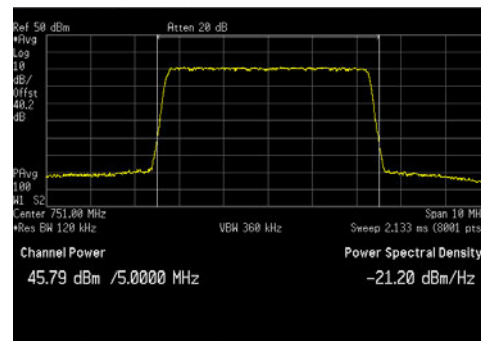
Port 2 - LTE5_ Middle Channel_Average



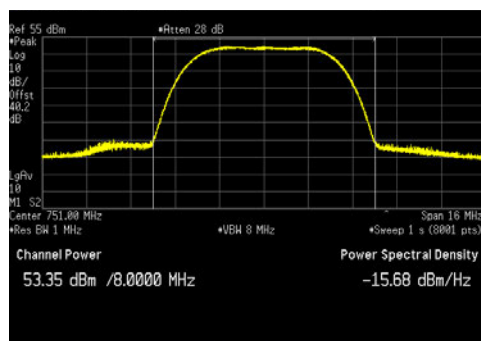
Port 3 - LTE5_ Middle Channel_Peak



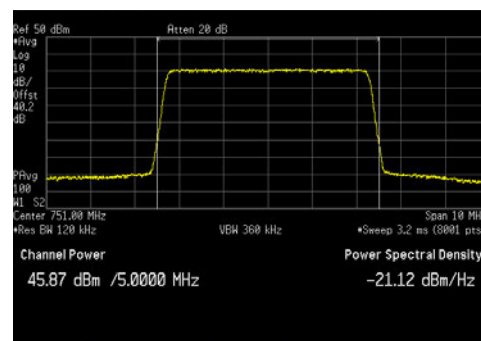
Port 3 - LTE5_ Middle Channel_Average



Port 4 - LTE5_ Middle Channel_Peak

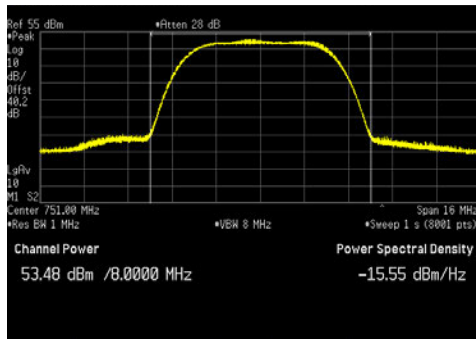


Port 4 - LTE5_ Middle Channel_Average

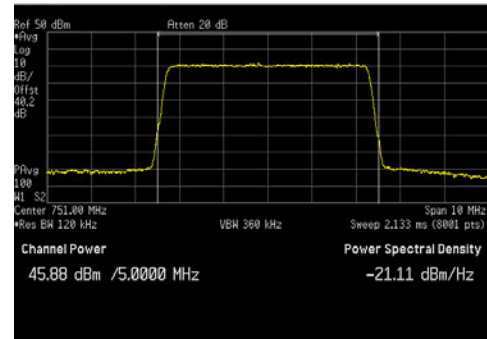


LTE5 Channel Power Plots for Antenna Port 4 at Middle Channel and all Modulation Types:

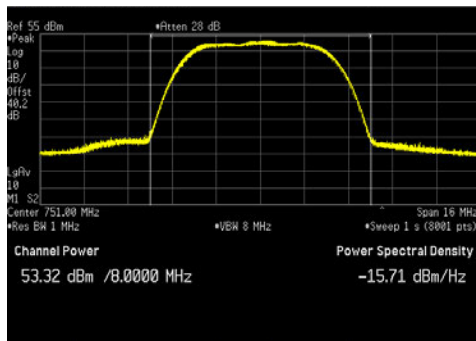
LTE5_ Middle Channel_QPSK_Peak



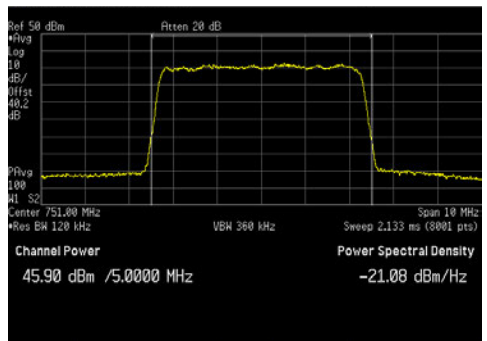
LTE5_ Middle Channel_QPSK_Average



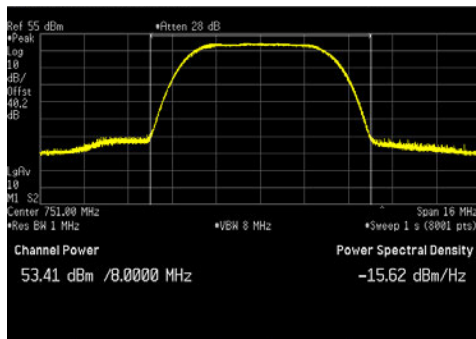
LTE5_ Middle Channel_16QAM_Peak



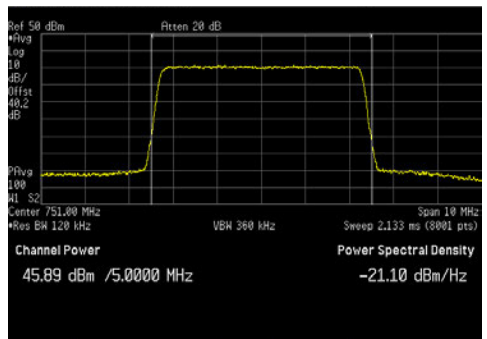
LTE5_ Middle Channel_16QAM_Average



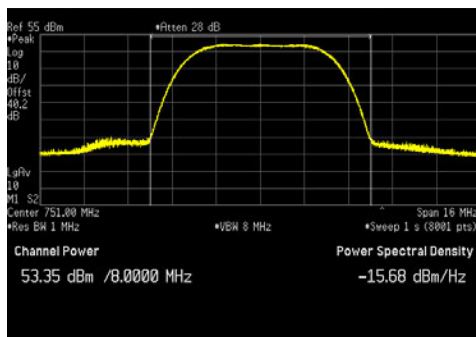
LTE5_ Middle Channel_64QAM_Peak



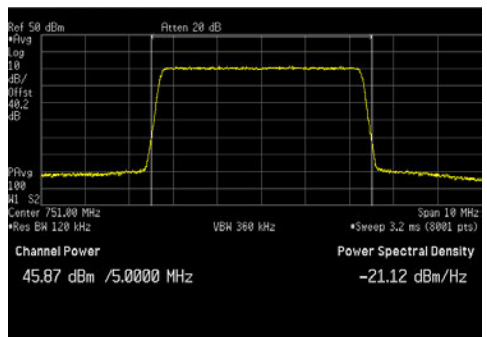
LTE5_ Middle Channel_64QAM_Average



LTE5_ Middle Channel_256QAM_Peak

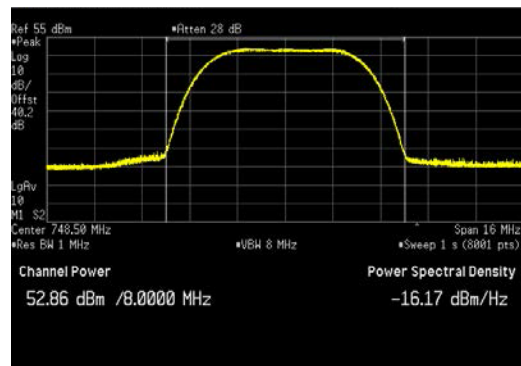


LTE5_ Middle Channel_256QAM_Average

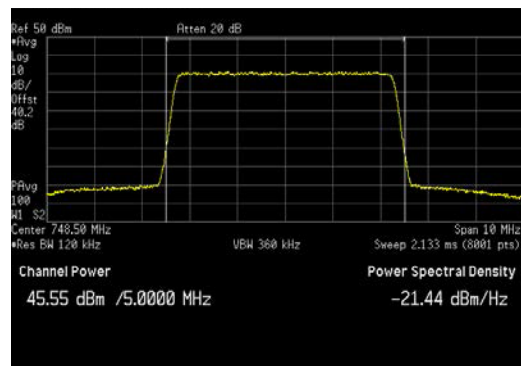


LTE5 Channel Power Plots for Antenna Port 4 and 256QAM Modulation:

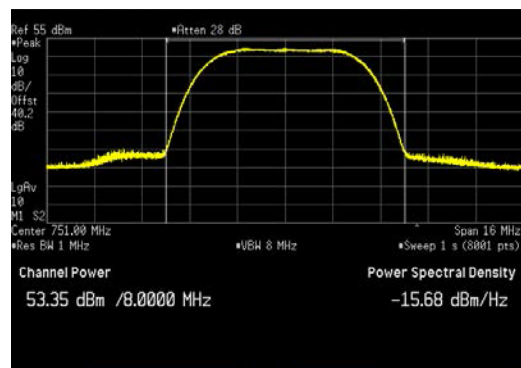
LTE5_Bottom Channel_Peak



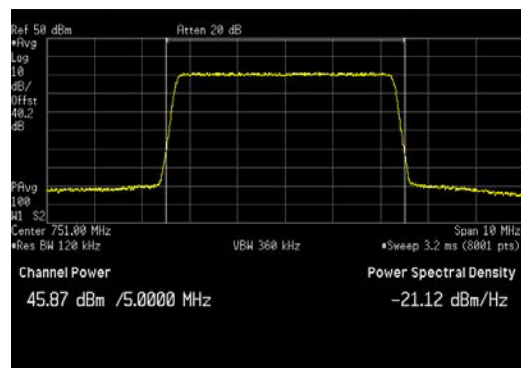
LTE5_Bottom Channel_Average



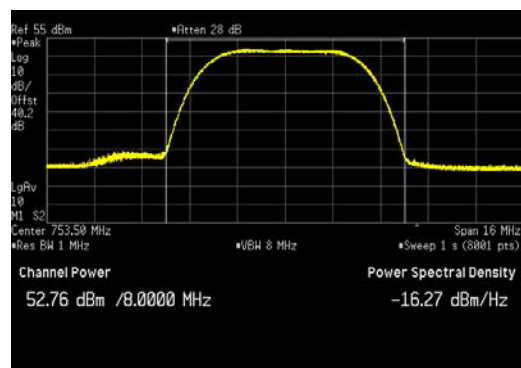
LTE5_Middle Channel_Peak



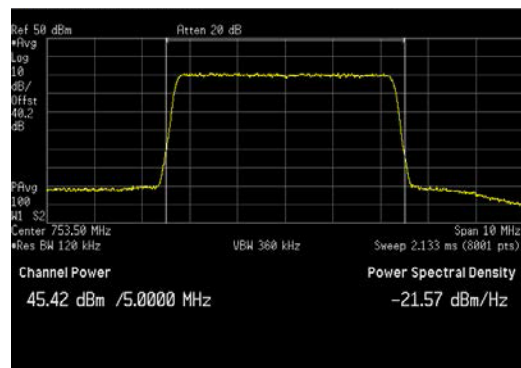
LTE5_Middle Channel_Average



LTE5_Top Channel_Peak

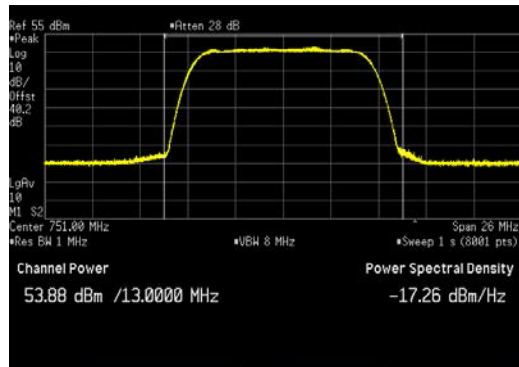


LTE5_Top Channel_Average

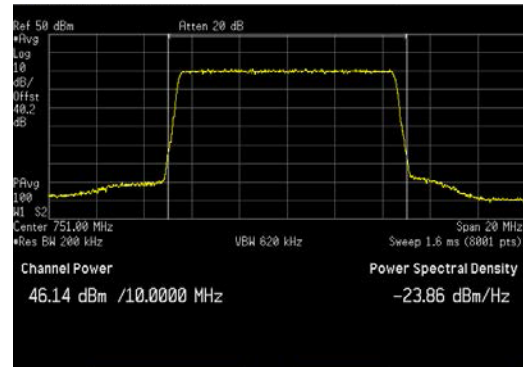


LTE10 Channel Power Plots for Antenna Port 4 and 256QAM Modulation:

LTE10_Bot_Mid_Top Channel_Peak



LTE10_Bot_Mid_Top Channel_Average



Emission Bandwidth (26 dB down and 99%)

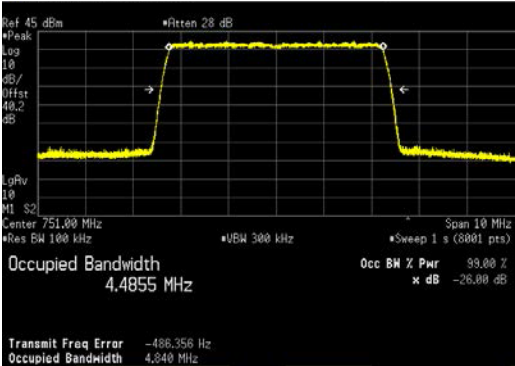
Emission bandwidth measurements were made at antenna port 4 on the middle channel with maximum RF output power. All available LTE modulations (QPSK, 16QAM, 64QAM, 256QAM) were used. All available LTE channel bandwidths (5MHz and 10MHz) were used. The results are provided in the following table (largest value in each channel type is highlighted).

LTE Ch BW	Modulation Type							
	QPSK		16QAM		64QAM		256QAM	
	26dB (MHz)	99% (MHz)	26dB (MHz)	99% (MHz)	26dB (MHz)	99% (MHz)	26dB (MHz)	99% (MHz)
5M	4.840	4.4855	4.833	4.4785	4.841	4.4942	4.848	4.4932
10M	9.643	8.9714	9.653	8.9887	9.682	8.9837	9.644	8.9694

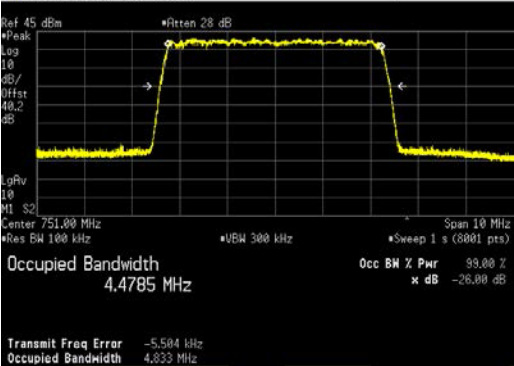
Emission bandwidth measurement data are provided in the following pages.

LTE5 Emission Bandwidth Plots on the Middle Channel for Antenna Port 4:

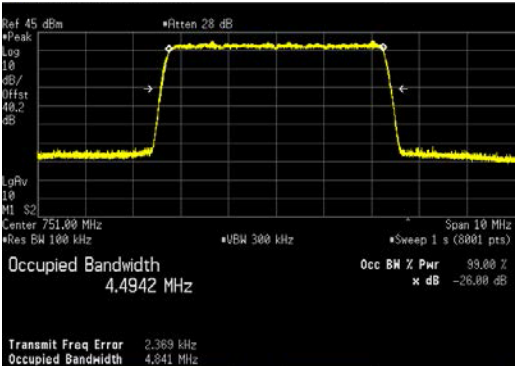
LTE5_QPSK



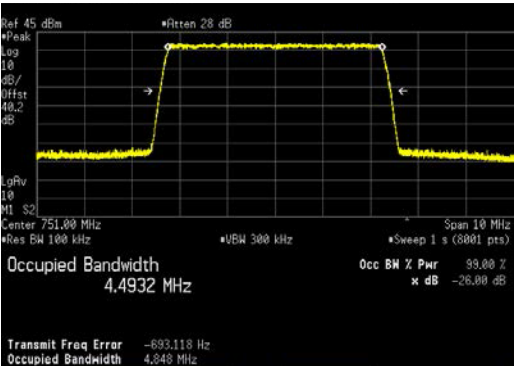
LTE5_16QAM



LTE5_64QAM

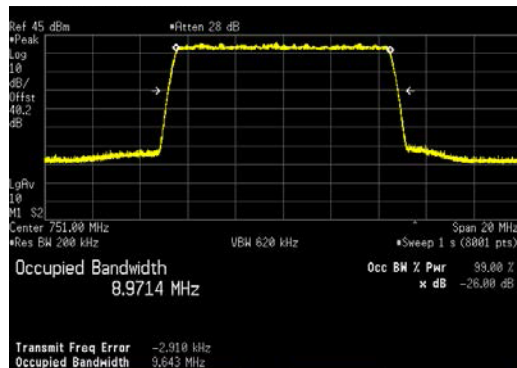


LTE5_256QAM

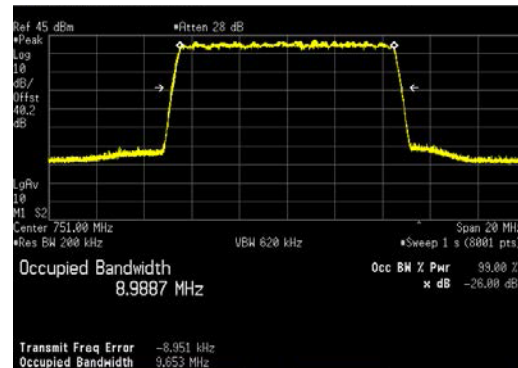


LTE10 Emission Bandwidth Plots on the Middle Channel for Antenna Port 4:

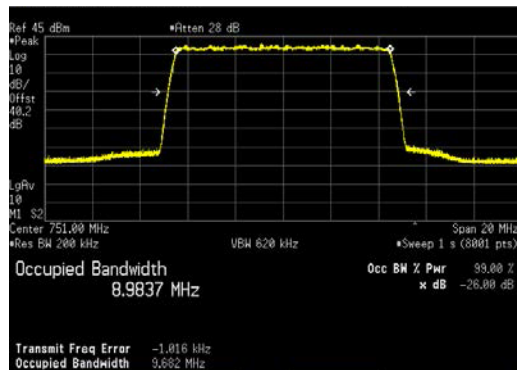
LTE10_QPSK



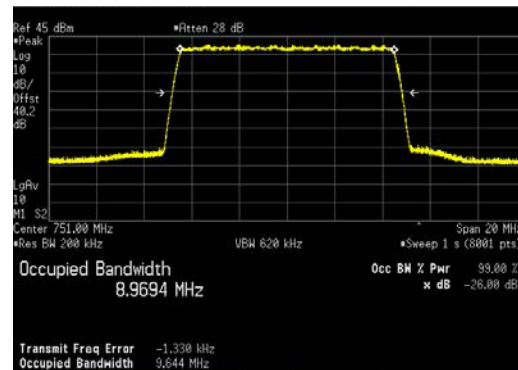
LTE10_16QAM



LTE10_64QAM



LTE10_256QAM



Antenna Port Conducted Band Edge

Conducted band edge measurements were made at RRH antenna port 4. The RRH was operated at the band edge frequencies with all modulation types (QPSK, 16QAM, 64QAM, 256QAM) for 5MHz and 10MHz LTE bandwidths. The AHBCC Band 13 configured for LTE10 may operate only on the middle channel since the operational bandwidth is 10MHz wide.

In the frequency ranges below 746MHz, 756MHz to 763MHz, 775MHz to 793MHz and above 806MHz the limit of (-19dBm) is used for this 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 100 traces. In the 100kHz bands outside and adjacent to the frequency block, a resolution bandwidth of 30kHz as allowed by FCC 27.53(f) was used. Outside the 100kHz band edge noted above, a 100kHz RBW and 300kHz VBW was used.

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

Frequency ranges below 746MHz, 756MHz to 763MHz, 775MHz to 793MHz and above 806MHz:

Frequency Ranges below 746MHz, 756MHz to 763MHz, 775MHz to 793MHz and above 806MHz								
LTE Channel BW	QPSK (dBm)		16QAM (dBm)		64QAM (dBm)		256QAM (dBm)	
	Bottom Channel	Top Channel	Bottom Channel	Top Channel	Bottom Channel	Top Channel	Bottom Channel	Top Channel
5M	-25.481	-26.023	-26.836	-26.117	-26.343	-26.228	-26.585	-26.136
10M	-25.740	-24.747	-25.536	-24.788	-25.467	-25.429	-25.240	-24.498
Dual 5M	-22.051	-22.725	-21.348	-22.530	-22.787	-22.558	-23.039	-22.076

Section 27.53(c)(3) and RSS-130 4.6.2 requires an emission limit of -46dBm for any 6.25 kHz bandwidth between frequency bands 763-775 MHz and 793-806MHz. Adjusting for the four port MIMO requirement the emission limit in these frequency ranges is -52dBm [i.e.: Limit = -46 dBm/6.25kHz (FCC/IC Limit) – 6dB (4 port MIMO)]. A RBW of 6.8kHz was used for these frequency ranges because a 6.25kHz bandwidth was not available on the spectrum analyzer (a RBW>6.25kHz was selected). Measurements were performed with the spectrum analyzer in the RMS average mode over 100 traces. The results are summarized in the following table.

The worst case (highest) measurement is -56.636 dBm.

Frequency ranges of 763MHz to 775MHz and 793MHz to 806MHz:

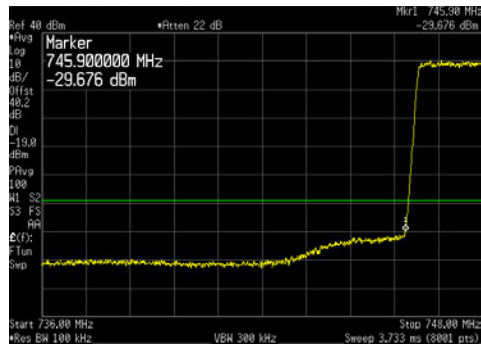
Frequency Ranges of 763MHz to 775MHz and 793MHz to 806MHz								
LTE Channel BW	QPSK (dBm)		16QAM (dBm)		64QAM (dBm)		256QAM (dBm)	
	763MHz to 775MHz	793MHz to 806MHz	763MHz to 775MHz	793MHz to 806MHz	763MHz to 775MHz	793MHz to 806MHz	763MHz to 775MHz	793MHz to 806MHz
5M	-62.756	-63.126	-63.062	-63.170	-63.037	-63.287	-63.037	-63.285
10M	-57.190	-63.421	-57.548	-63.268	-57.166	-63.289	-56.782	-63.089
Dual 5M	-57.098	-63.135	-57.452	-63.054	-56.915	-63.210	-56.636	-63.234

The total measurement RF path loss of the test setup (attenuator and test cables) was 40.2 dB and is accounted for by the spectrum analyzer reference level offset. The display line on the plots reflects the required limit.

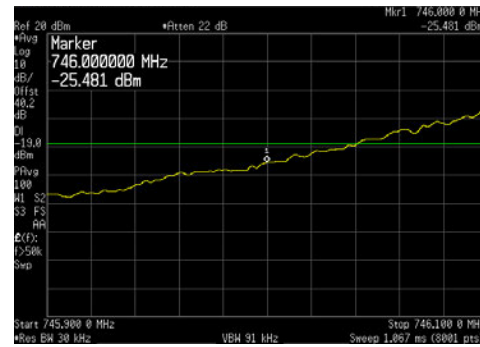
Conducted band edge measurements are provided in the following pages.

LTE5 Lower Band Edge Plots for Antenna Port 4:

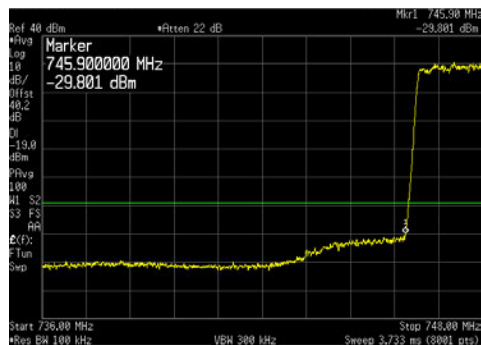
LTE5_QPSK_Bot Ch_LBE_736MHz to 748MHz



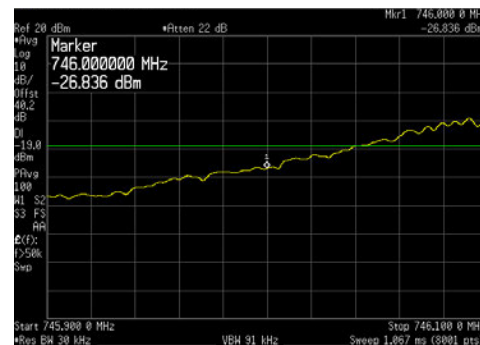
LTE5_QPSK_Bot Ch_LBE_745.9MHz to 746.1MHz



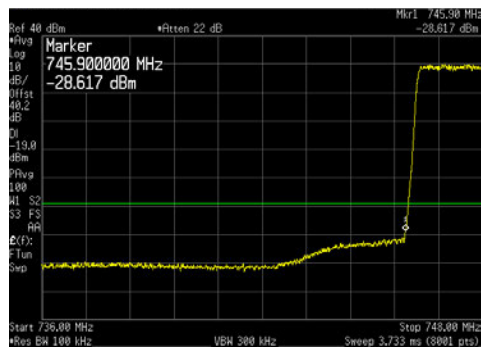
LTE5_16QAM_Bot Ch_LBE_736MHz to 748MHz



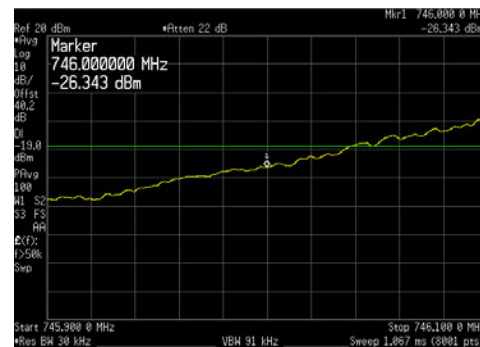
LTE5_16QAM_Bot Ch_LBE_745.9MHz to 746.1MHz



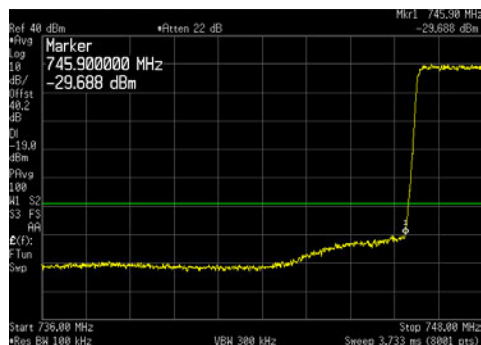
LTE5_64QAM_Bot Ch_LBE_736MHz to 748MHz



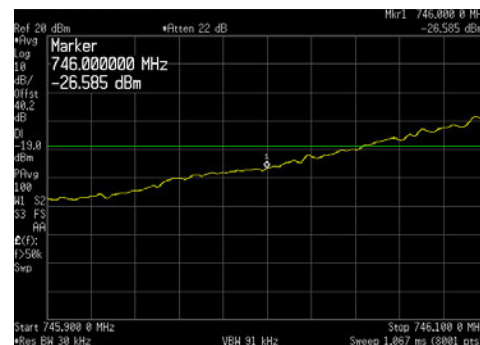
LTE5_64QAM_Bot Ch_LBE_745.9MHz to 746.1MHz



LTE5_256QAM_Bot Ch_LBE_736MHz to 748MHz

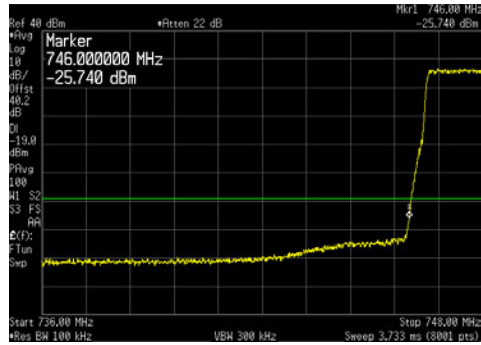


LTE5_256QAM_Bot Ch_LBE_745.9MHz to 746.1MHz

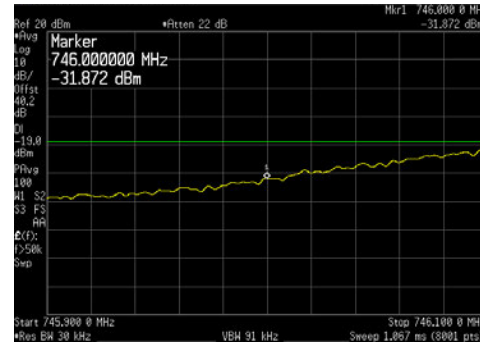


LTE10 Lower Band Edge Plots for Antenna Port 4:

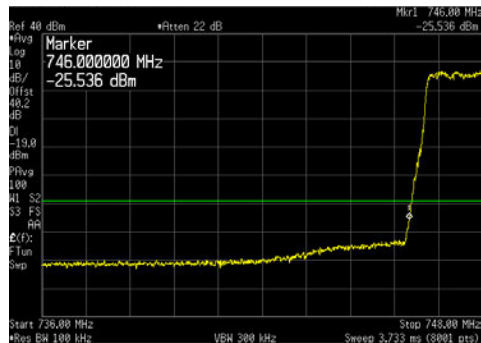
LTE10_QPSK_LBE_736MHz to 748MHz



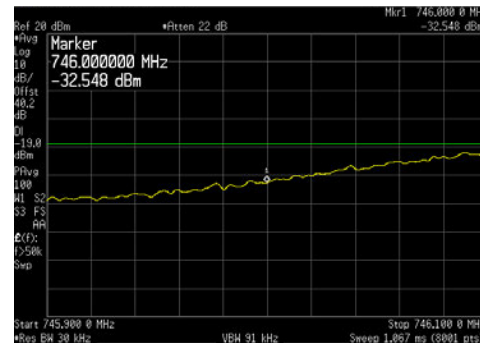
LTE10_QPSK_LBE_745.9Mz to 746.1MHz



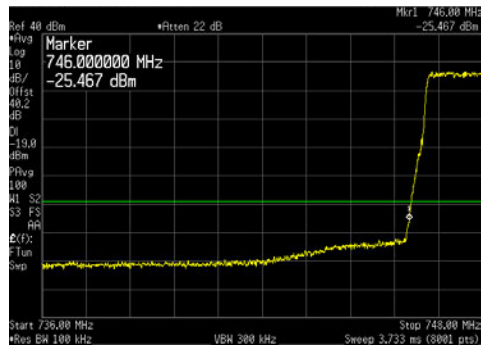
LTE5_16QAM_LBE_736MHz to 748MHz



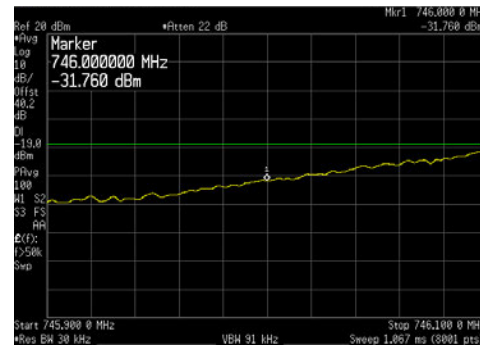
LTE10_16QAM_LBE_745.9Mz to 746.1MHz



LTE10_64QAM_LBE_736MHz to 748MHz



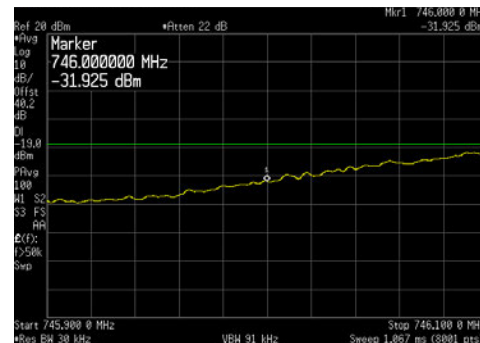
LTE10_64QAM_LBE_745.9Mz to 746.1MHz



LTE10_256QAM_LBE_736MHz to 748MHz

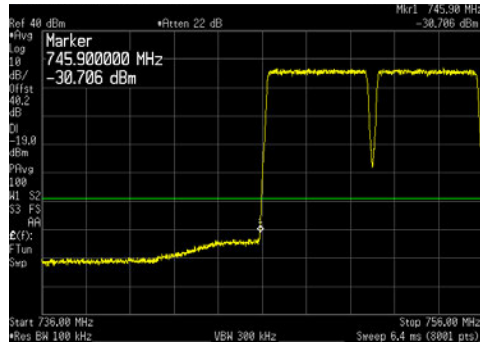


LTE10_256QAM_LBE_745.9Mz to 746.1MHz

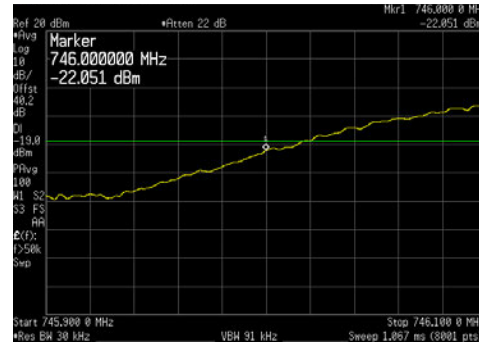


Dual LTE5 Lower Band Edge Plots for Antenna Port 4:

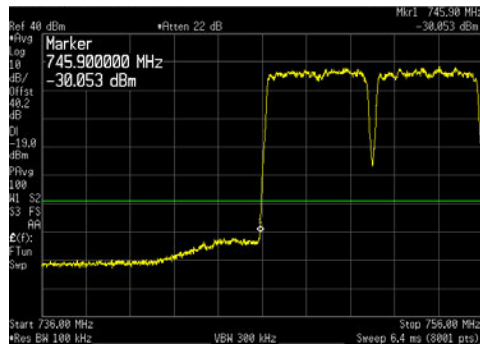
Dual LTE5_QPSK_LBE_736MHz to 756MHz



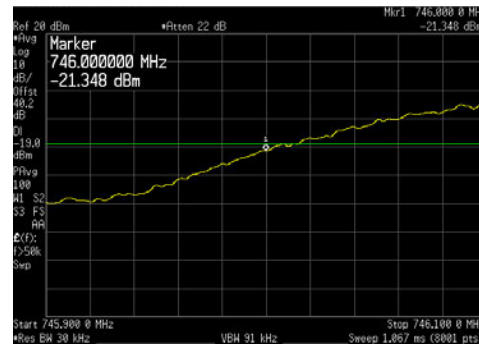
Dual LTE5_QPSK_LBE_745.9MHz to 746.1MHz



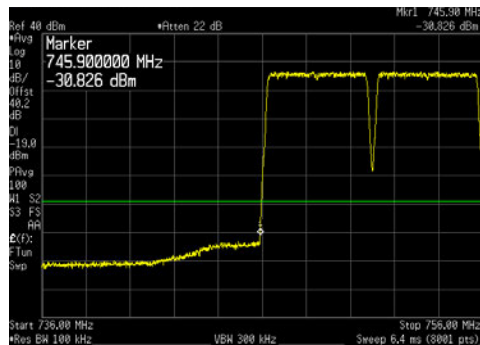
Dual LTE5_16QAM_LBE_736MHz to 756MHz



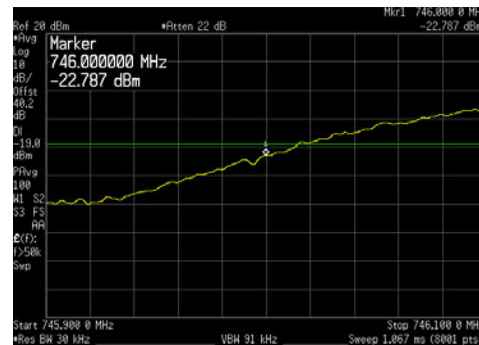
Dual LTE5_16QAM_LBE_745.9MHz to 746.1MHz



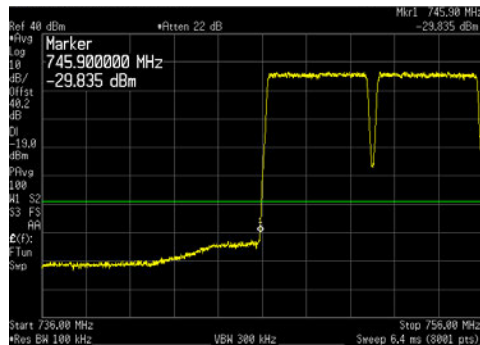
Dual LTE5_64QAM_LBE_736MHz to 756MHz



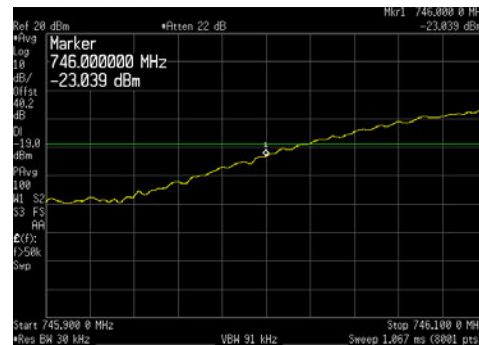
Dual LTE5_64QAM_LBE_745.9MHz to 746.1MHz



Dual LTE5_256QAM_LBE_736MHz to 756MHz

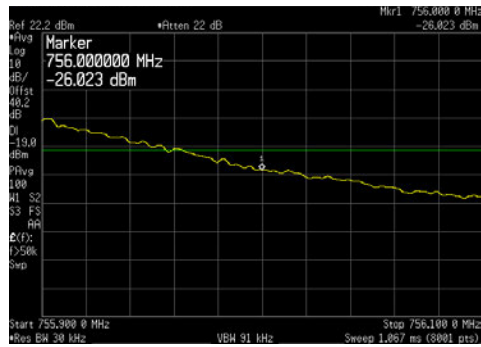


Dual LTE5_256QAM_LBE_745.9MHz to 746.1MHz

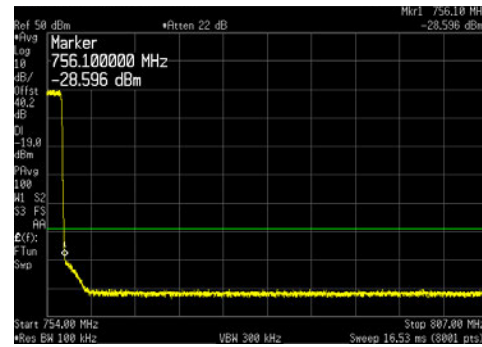


LTE5 Upper Band Edge Plots for Antenna Port 4:

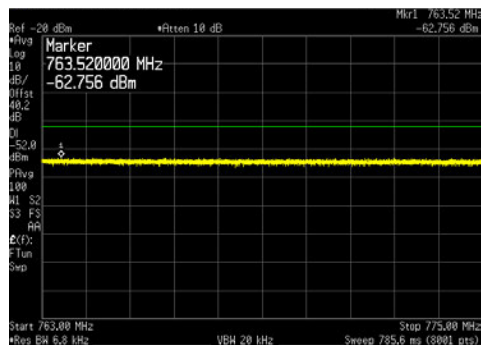
LTE5_QPSK_Top Ch_UBE_755.9MHz to 756.1MHz



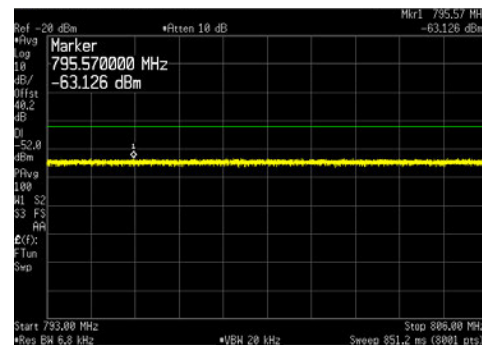
LTE5_QPSK_Top Ch_UBE_754MHz to 807MHz



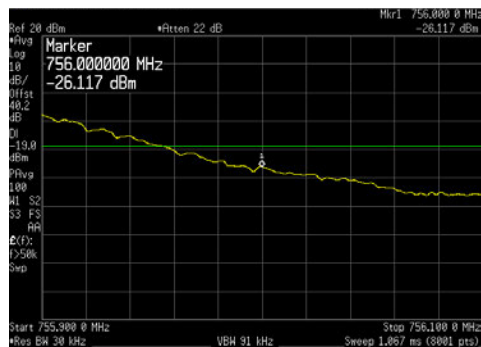
LTE5_QPSK_Top Ch_UBE_763MHz to 775MHz



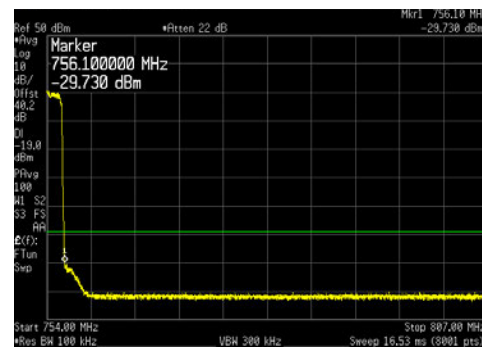
LTE5_QPSK_Top Ch_UBE_793MHz to 806MHz



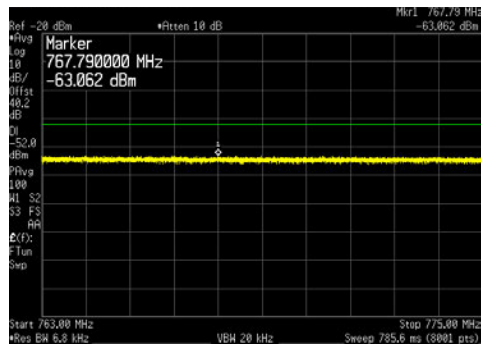
LTE5_16QAM_Top Ch_UBE_755.9MHz to 756.1MHz



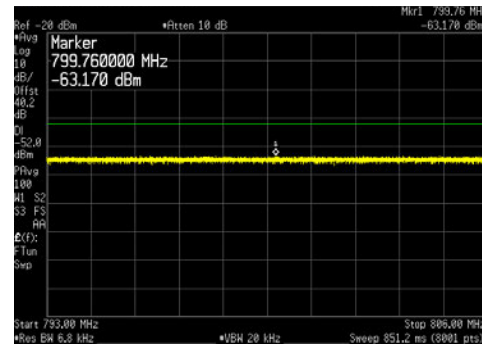
LTE5_16QAM_Top Ch_UBE_754MHz to 807MHz



LTE5_16QAM_Top Ch_UBE_763MHz to 775MHz

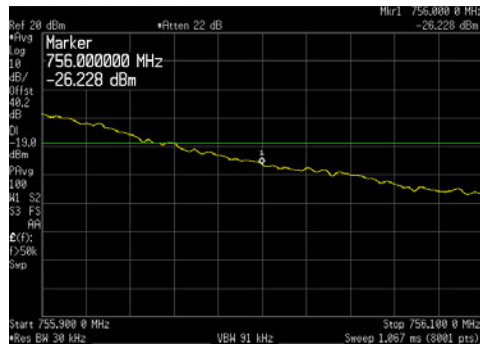


LTE5_16QAM_Top Ch_UBE_793MHz to 806MHz

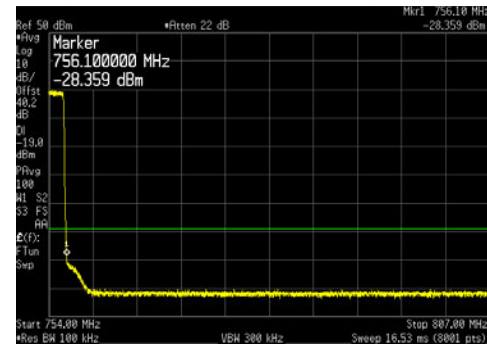


LTE5 Upper Band Edge Plots for Antenna Port 4:

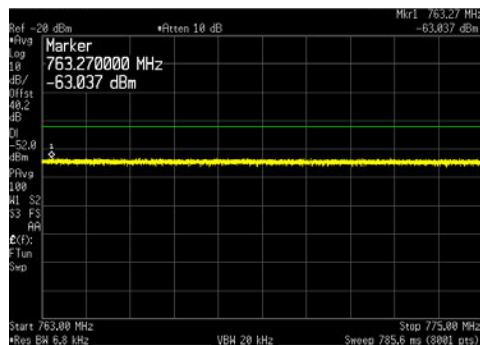
LTE5_64QAM_Top Ch_UBE_755.9MHz to 756.1MHz



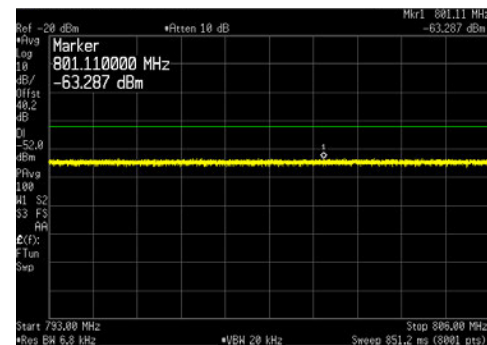
LTE5_64QAM_Top Ch_UBE_754MHz to 807MHz



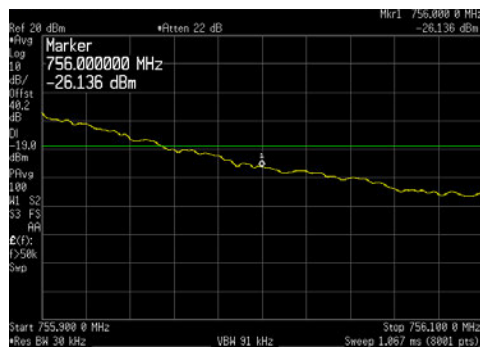
LTE5_64QAM_Top Ch_UBE_763MHz to 775MHz



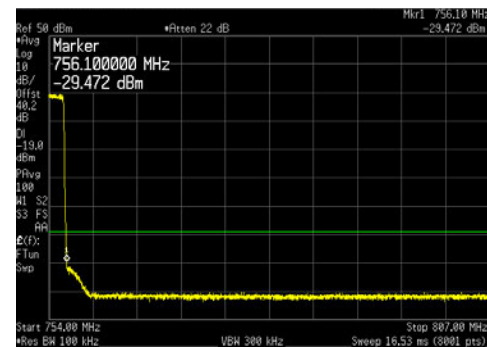
LTE5_64QAM_Top Ch_UBE_793MHz to 806MHz



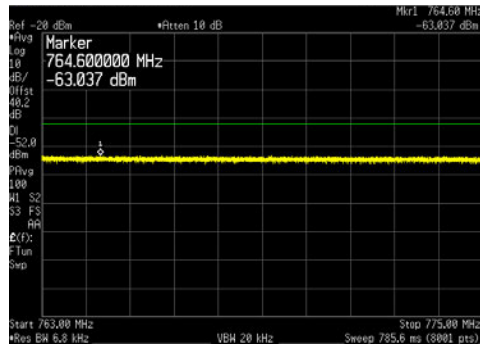
LTE5_256QAM_Top Ch_UBE_755.9MHz to 756.1MHz



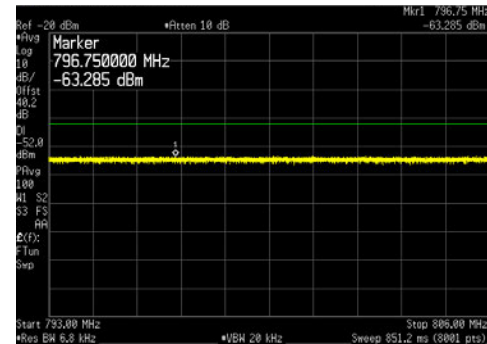
LTE5_256QAM_Top Ch_UBE_754MHz to 807MHz



LTE5_256QAM_Top Ch_UBE_763MHz to 775MHz

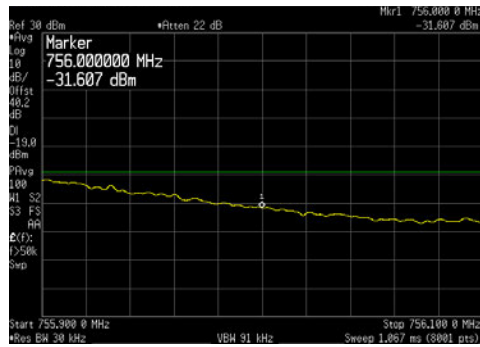


LTE5_256QAM_Top Ch_UBE_793MHz to 806MHz

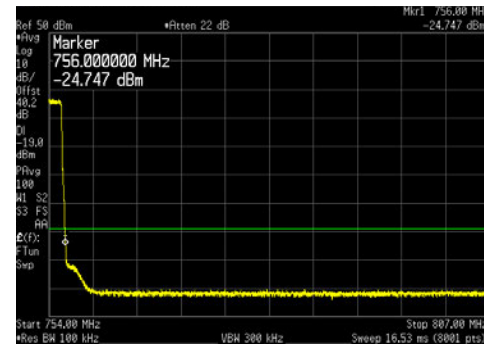


LTE10 Upper Band Edge Plots for Antenna Port 4:

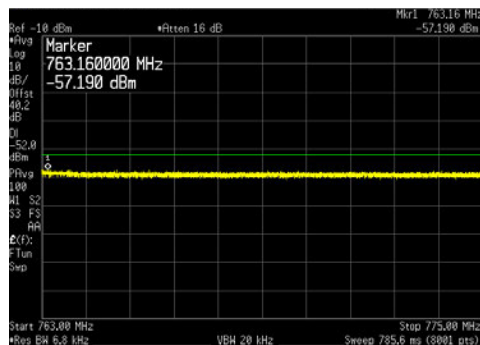
LTE10_QPSK_Top Ch_UBE_755.9MHz to 756.1MHz



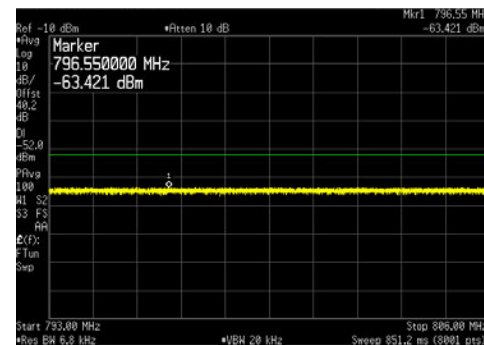
LTE10_QPSK_Top Ch_UBE_754Mhz to 807MHz



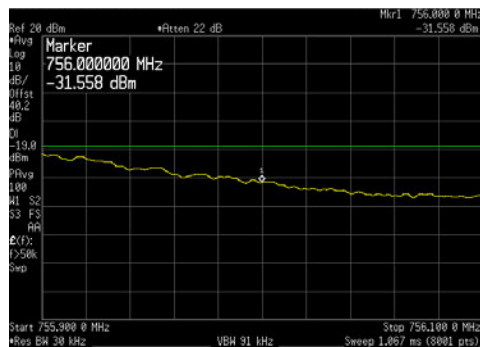
LTE10_QPSK_Top Ch_UBE_763MHz to 775MHz



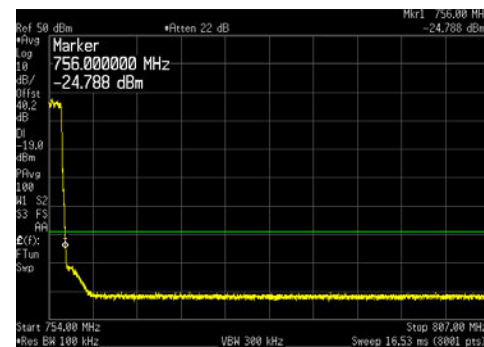
LTE10_QPSK_Top Ch_UBE_793MHz to 806MHz



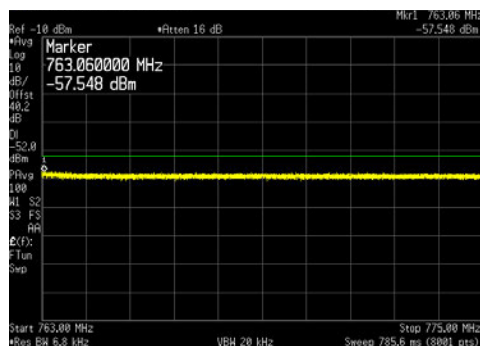
LTE10_16QAM_Top Ch_UBE_755.9MHz to 756.1MHz



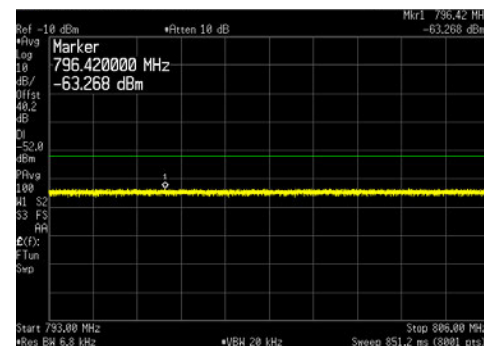
LTE10_16QAM_Top Ch_UBE_754Mhz to 807MHz



LTE10_16QAM_Top Ch_UBE_763MHz to 775MHz

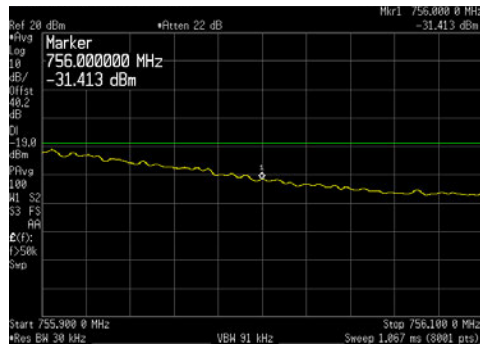


LTE10_16QAM_Top Ch_UBE_793MHz to 806MHz

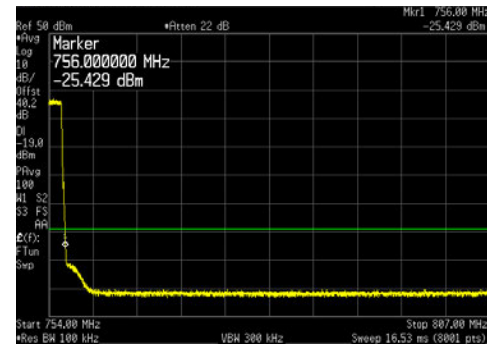


LTE10 Upper Band Edge Plots for Antenna Port 4:

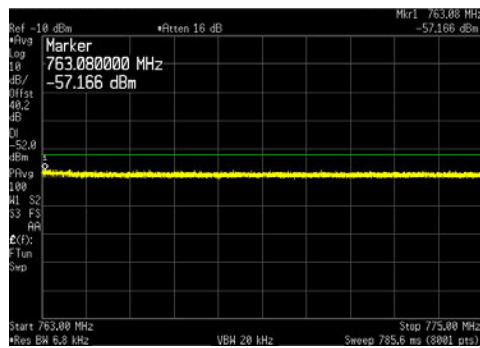
LTE10_64QAM_Top Ch_UBE_755.9MHz to 756.1MHz



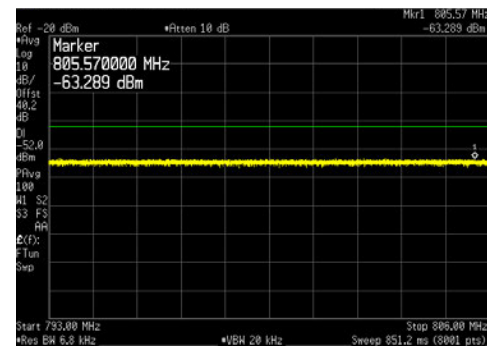
LTE10_64QAM_Top Ch_UBE_754Mz to 807MHz



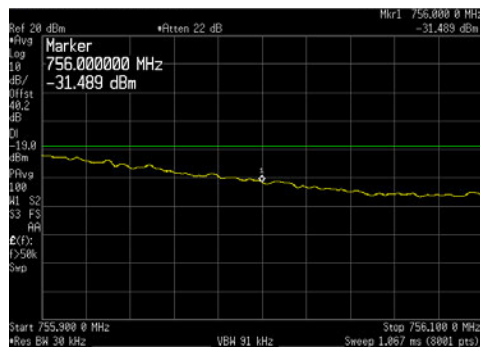
LTE10_64QAM_Top Ch_UBE_763MHz to 775MHz



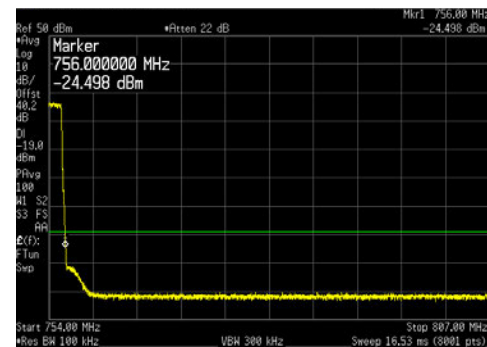
LTE10_64QAM_Top Ch_UBE_793MHz to 806MHz



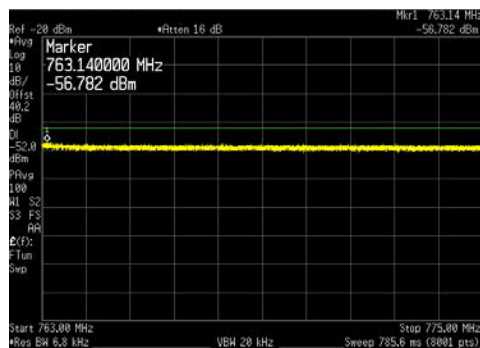
LTE10_256QAM_Top Ch_UBE_755.9MHz to 756.1MHz



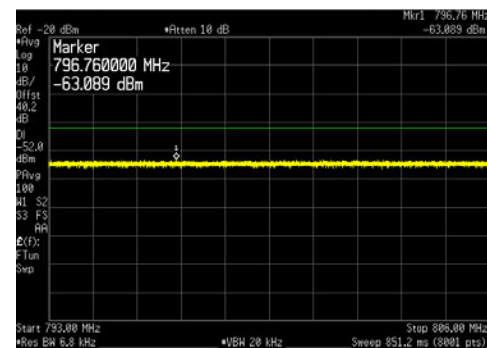
LTE10_256QAM_Top Ch_UBE_754Mz to 807MHz



LTE10_256QAM_Top Ch_UBE_763MHz to 775MHz

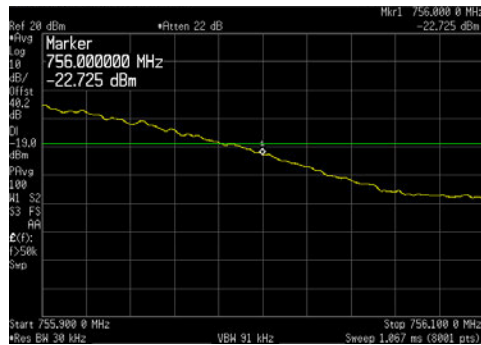


LTE10_256QAM_Top Ch_UBE_793MHz to 806MHz

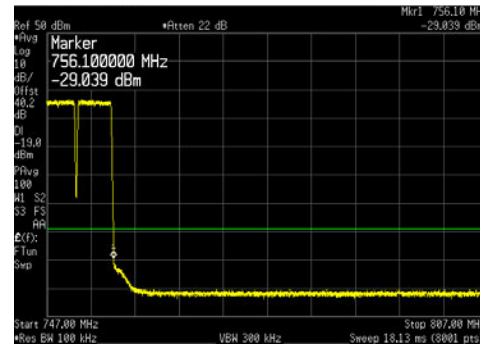


Dual LTE5 Upper Band Edge Plots for Antenna Port 4:

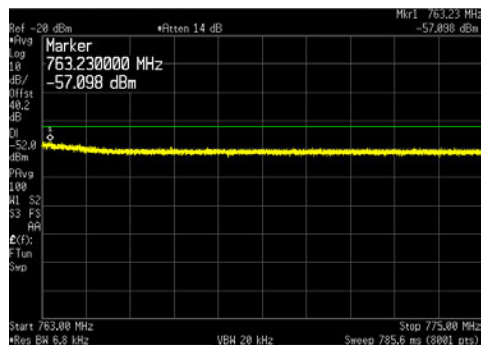
Dual LTE5_QPSK_Top Ch_UBE_755.9-756.1MHz



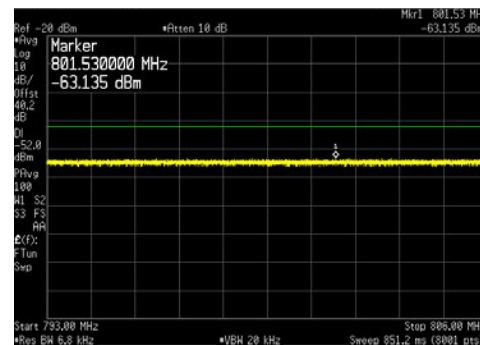
Dual LTE5_QPSK_Top Ch_UBE_747MHz to 807MHz



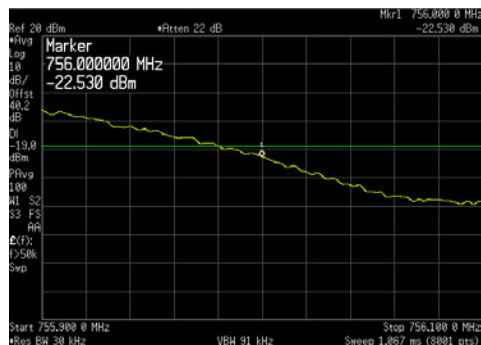
Dual LTE5_QPSK_Top Ch_UBE_763MHz to 775MHz



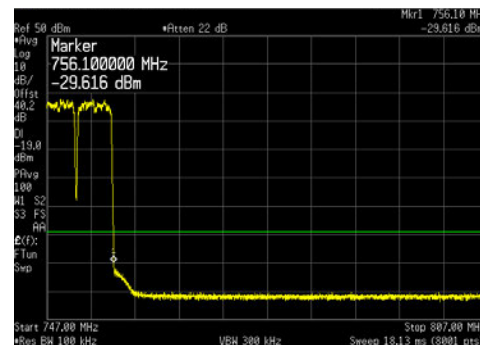
Dual LTE5_QPSK_Top Ch_UBE_793MHz to 806MHz



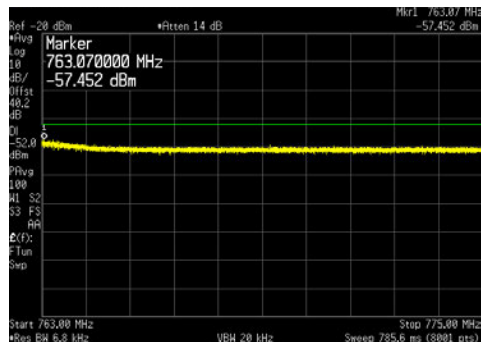
Dual LTE5_16QAM_Top Ch_UBE_755.9-756.1MHz



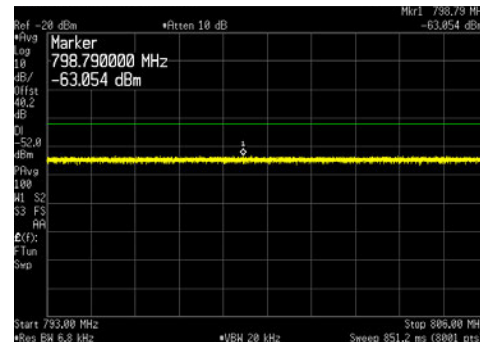
Dual LTE5_16QAM_Top Ch_UBE_747MHz to 807MHz



Dual LTE5_16QAM_Top Ch_UBE_763MHz to 775MHz

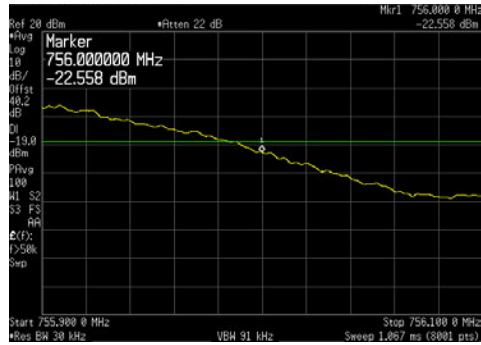


Dual LTE5_16QAM_Top Ch_UBE_793MHz to 806MHz

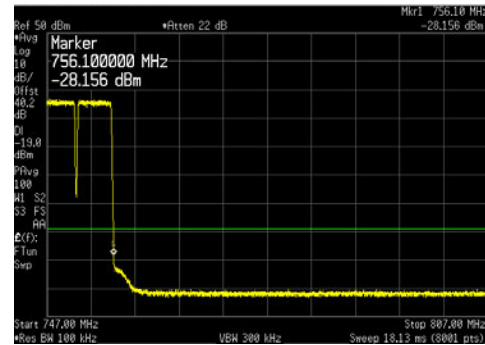


Dual LTE5 Upper Band Edge Plots for Antenna Port 4:

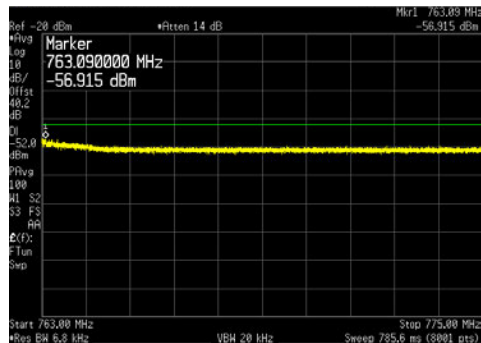
Dual LTE5_64QAM_Top Ch_UBE_755.9-756.1MHz



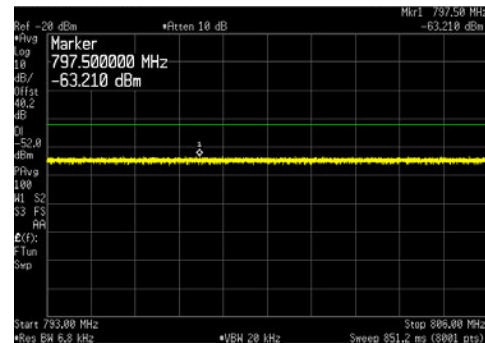
Dual LTE5_64QAM_Top Ch_UBE_747MHz to 807MHz



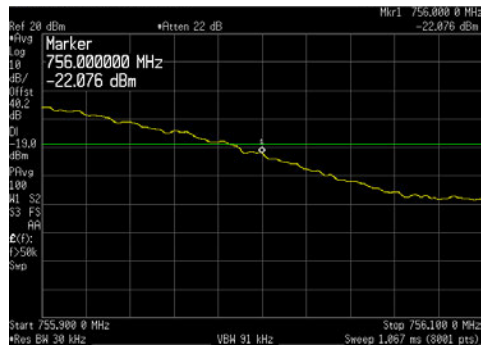
Dual LTE5_64QAM_Top Ch_UBE_763MHz to 775MHz



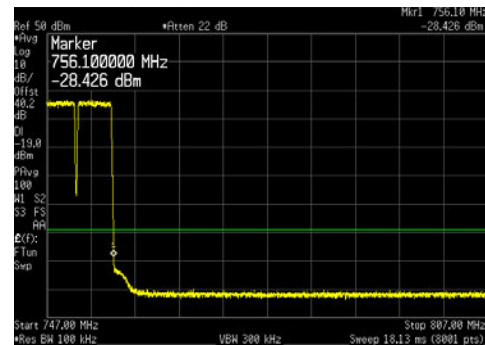
Dual LTE5_64QAM_Top Ch_UBE_793MHz to 806MHz



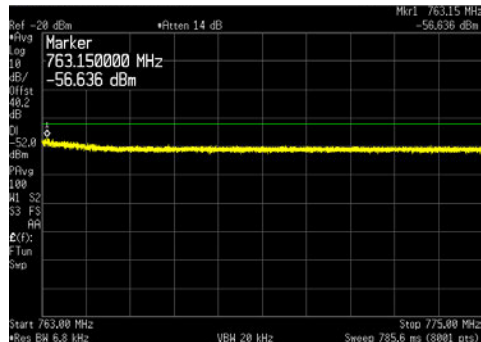
Dual LTE5_256QAM_Top Ch_UBE_755.9-756.1MHz



Dual LTE5_256QAM_Top Ch_UBE_747MHz to 807MHz



Dual LTE5_256QAM_Top Ch_UBE_763MHz to 775MHz



Dual LTE5_256QAM_Top Ch_UBE_793MHz to 806MHz

