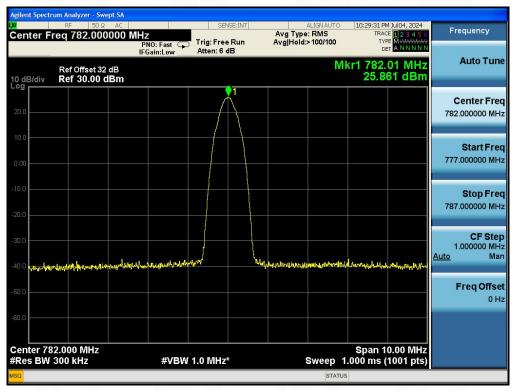


700 MHz Upper C Block CW, UL

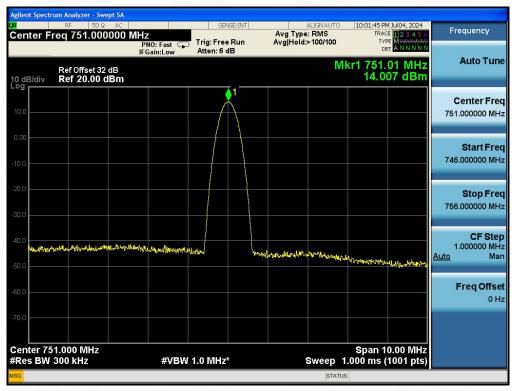






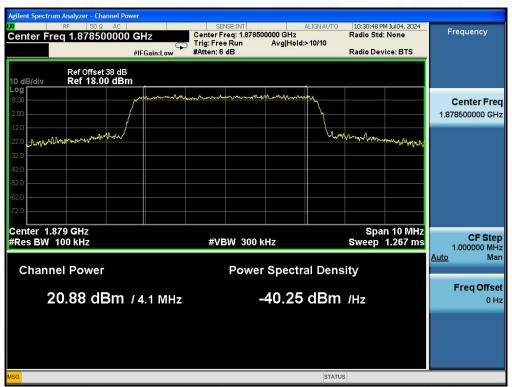


700 MHz Upper C Block CW, DL

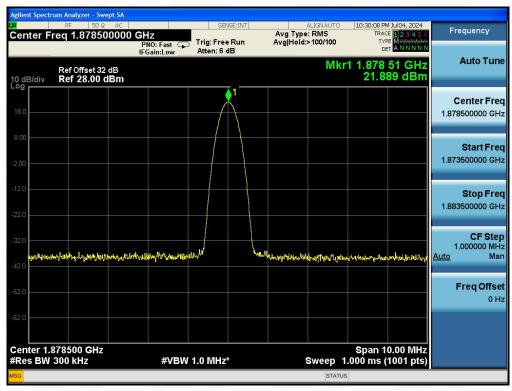




Broadband PCS AWGN, UL



Broadband PCS CW, UL

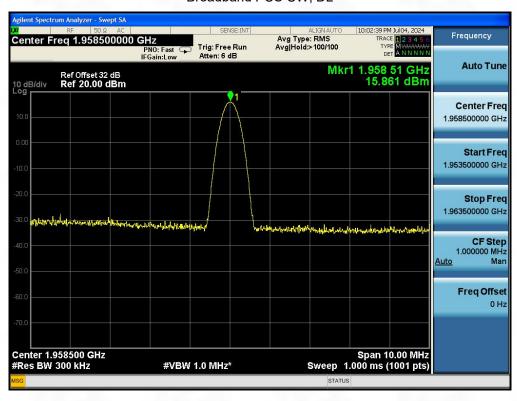




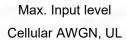
Broadband PCS AWGN, DL

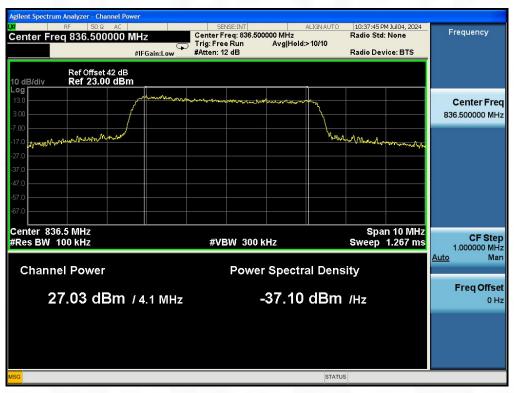


Broadband PCS CW, DL

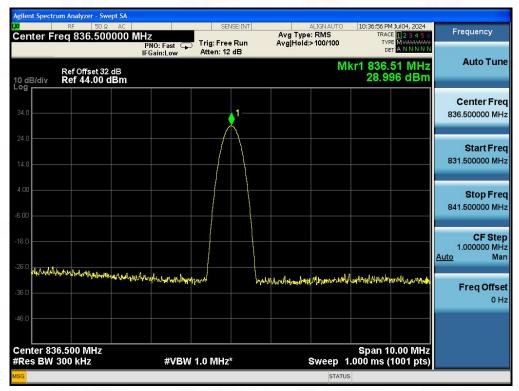






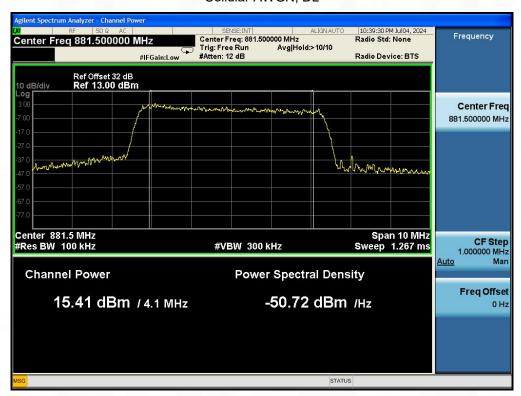


Cellular CW, UL

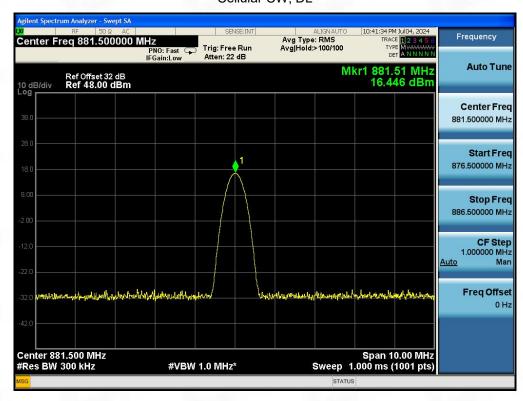




Cellular AWGN, DL

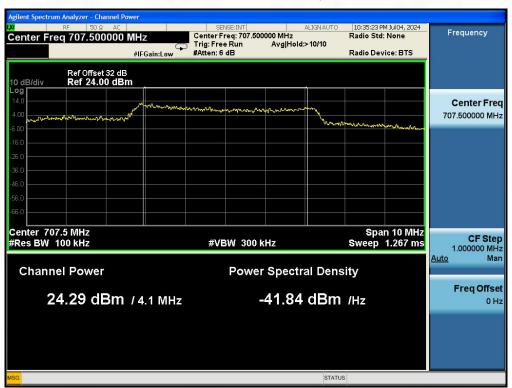


Cellular CW, DL

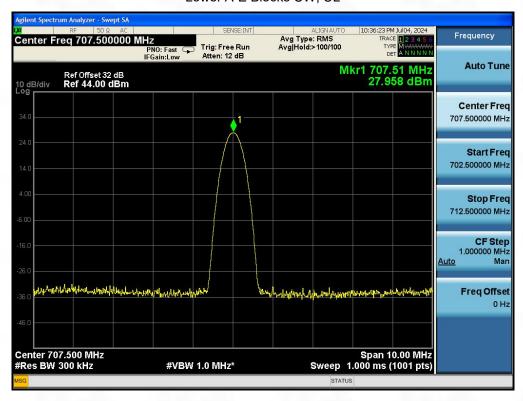






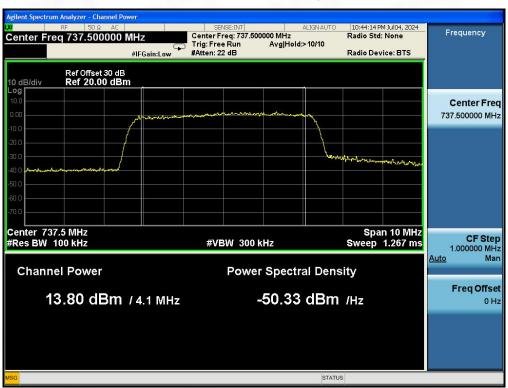


Lower A-E Blocks CW, UL

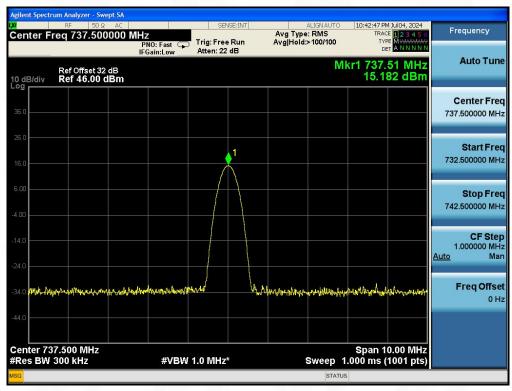






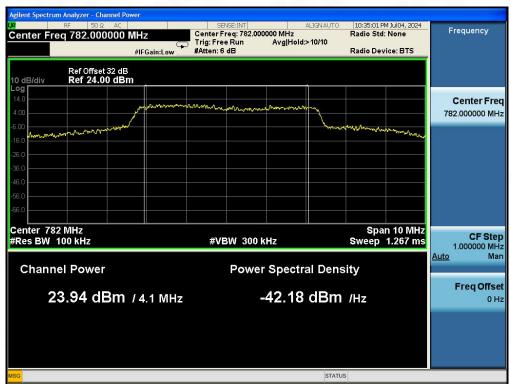


Lower A-E Blocks CW, DL

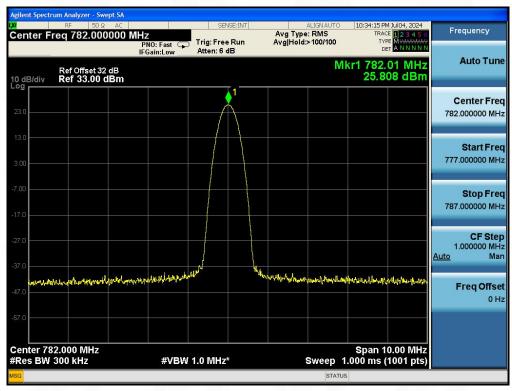






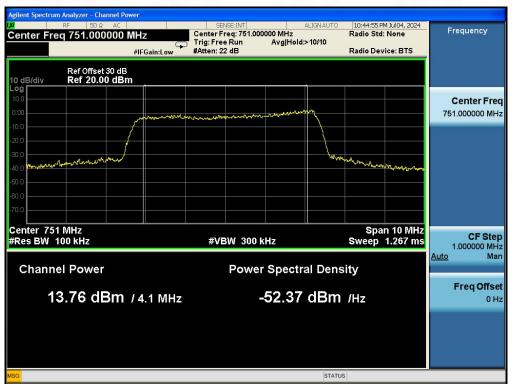


700 MHz Upper C Block CW, UL

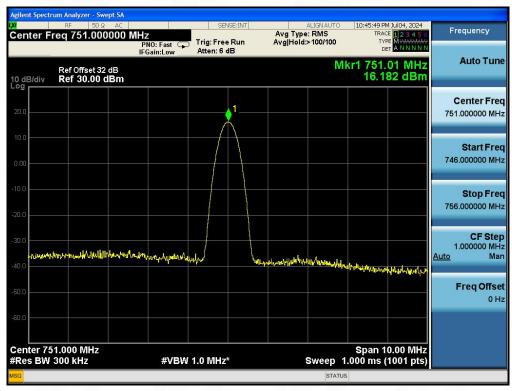






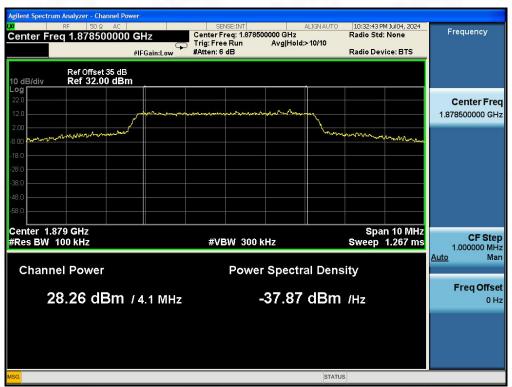


700 MHz Upper C Block CW, DL

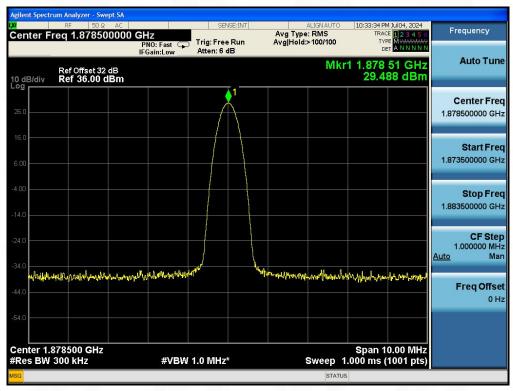




Broadband PCS AWGN, UL

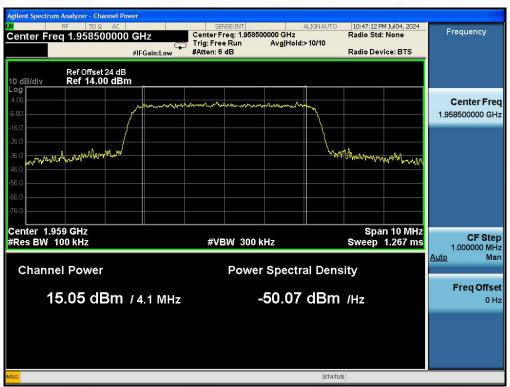


Broadband PCS CW, UL

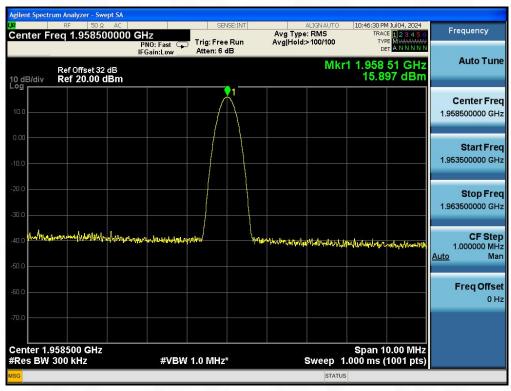


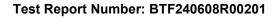


Broadband PCS AWGN, DL



Broadband PCS CW, DL







5.3 Maximum Booster Gian Computation

Test Requirement:	This section provides guidance on the computation of the maximum gain based on the results obtained from previous measurements. The NPS limits on maximum gain for fixed and mobile Wideband Consumer Signal Boosters are provided in §20.21(e)(8)(i)(C)(2). Additionally, §20.21(e)(8)(i)(B) requires that Wideband Consumer Signal Boosters be able to provide equivalent uplink and downlink gain (within 9 dB).
Procedure:	 a) Compute the maximum gain of the booster as follows to demonstrate compliance to the applicable gain limits as specified. b) For both the uplink and downlink in each supported frequency band, use each of the POUT and PIN value pairs determined in 7.2 in the following equation to determine the maximum gain (G) of the booster: G (dB) = P_{OUT}(dBm) - P_{IN}(dBm). c) Record the maximum gain of the uplink and downlink paths for each supported frequency band and verify that the each gain value complies with the applicable limit.

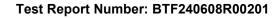
5.3.1 E.U.T. Operation:

Operating Environment:	
Temperature:	25.8 °C
Humidity:	49.9 %
Atmospheric Pressure:	1010 mbar

5.3.2 Test Data:

Uplink Gain VS Downlink Gain

Band	Signal Type	Uplink Gain (dB)	Downlink Gain(dB)	D-value	Limit (dBm)
Cellular	CW	56.77	62.29	-5.52	
	AWGN	56.59	61.72	-5.13	
Lower A-E	CW	59.56	58.59	0.97	
Blocks	AWGN	58.89	56.94	1.95	9
700 MHz	CW	60.86	61.00	-0.14	
Upper C Block	AWGN	60.37	58.98	1.39	
Broadband	CW	59.89	63.86	-3.97	
PCS	AWGN	58.88	61.61	-2.73	





5.4 Intermodulation Product

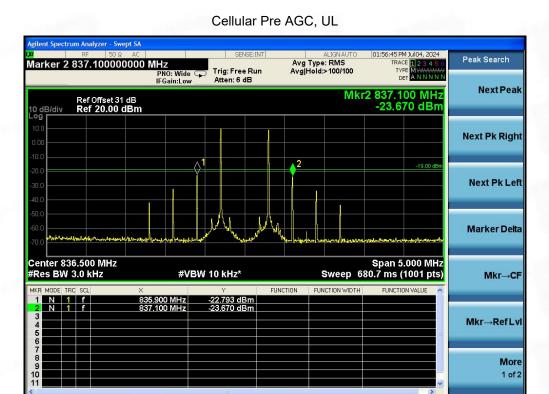
3.4 intermodulation	The following procedures shall be used to demonstrate compliance to the		
Test Requirement:	intermodulation limit specified in §20.21(e)(8)(i)(F) for Wideband Consumer Signal Boosters (i.e., -19 dBm).		
Limit:	-19dBm		
Test Setup:	Spectrum Analyzer Signal Generator #1		
	Signal Generator #2		
	Figure 2 – Intermodulation product instrumentation test setup		
Procedure:	 a) Connect the signal booster to the test equipment as shown in Figure 2. Begin with the uplink output connected to the spectrum analyzer. b) Set the spectrum analyzer RBW = 3 kHz. c) Set the VBW ≥ 3 X the RBW. d) Select the RMS detector. e) Set the spectrum analyzer center frequency to the center of the supported operational band under test. f) Set the span to 5 MHz. g) Configure the two signal generators for CW operation with generator 1 tuned 300 kHz below the operational band center frequency and generator 2 tuned 300 kHz above the operational band center frequency. h) Set the signal generator amplitudes so that the power from each into the RF combiner is equivalent and turn on the RF output. ii) Increase the signal generators' amplitudes equally until just before the EUT begins AGC and ensure that all intermodulation products (if any exist), are below the specified limit of -19 dBm. j) Utilize the MAX HOLD function of the spectrum analyzer and wait for the trace to stabilize. Place a marker at the highest amplitude intermodulation product. k) Record the maximum intermodulation product amplitude level that is observed. l) Capture the spectrum analyzer trace for inclusion in the test report. m) Repeat steps 7.4.5 to 7.4.12 for all uplink and downlink operational bands. Note: If using a single signal generator with dual outputs, ensure that intermodulation products are not the result of the generator. 		

5.4.1 E.U.T. Operation:

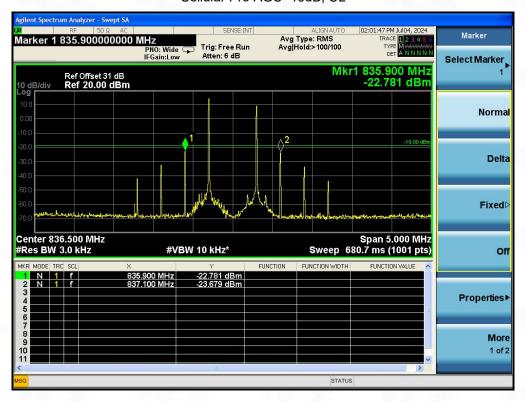
· · · · · · · · · · · · · · · · · · ·			
Operating Environment:			
Temperature:	25.8 °C		
Humidity:	49.9 %		
Atmospheric Pressure:	1010 mbar		

5.4.2 Test Data:

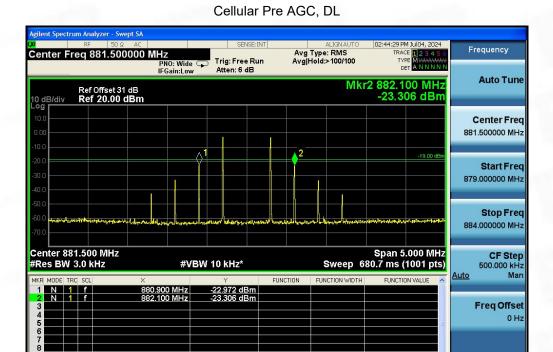




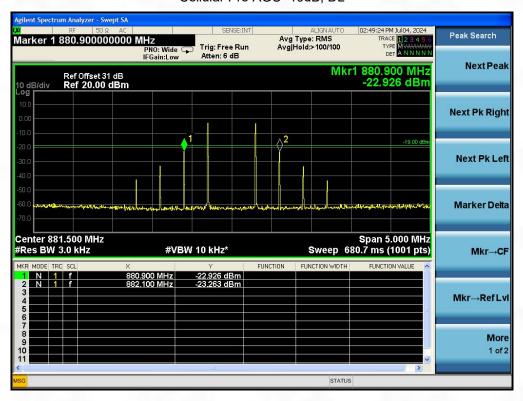
Cellular Pre AGC+10dB, UL



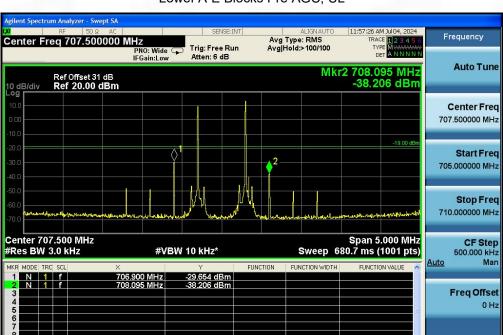




Cellular Pre AGC+10dB, DL

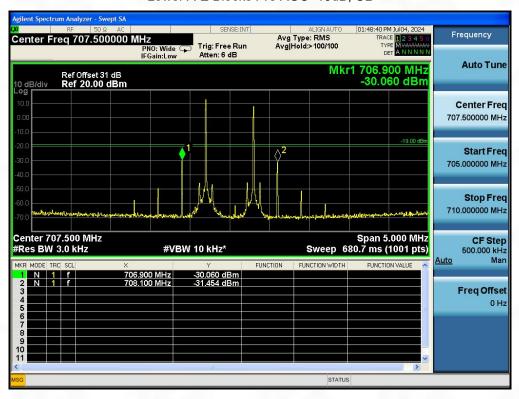




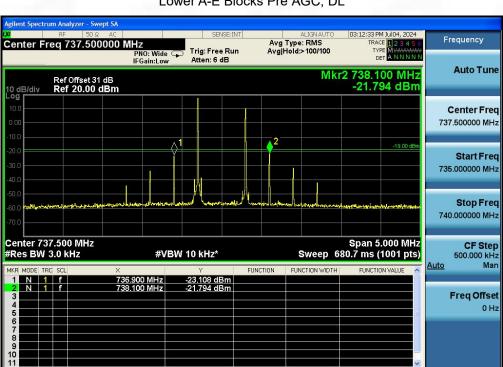


Lower A-E Blocks Pre AGC, UL



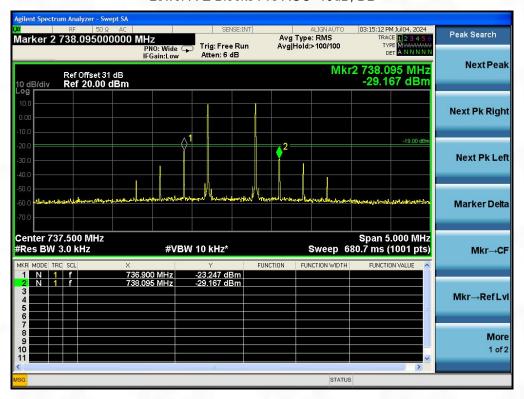






Lower A-E Blocks Pre AGC, DL



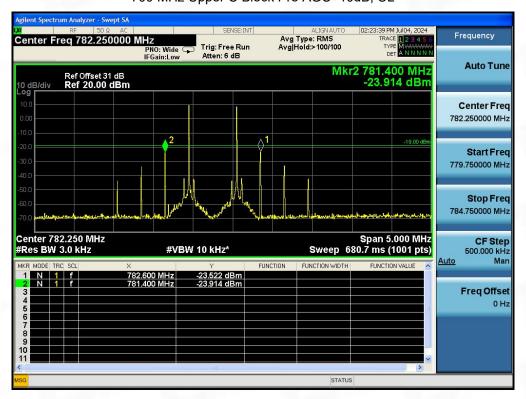






700 MHz Upper C Block Pre AGC, UL

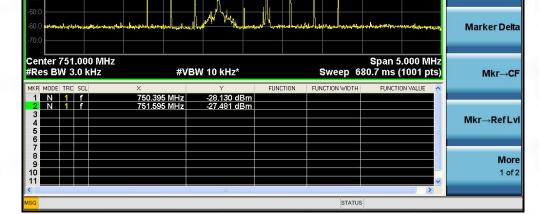
700 MHz Upper C Block Pre AGC+10dB, UL



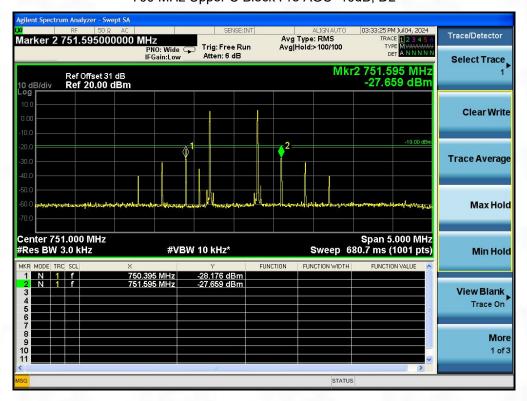
Next Pk Left





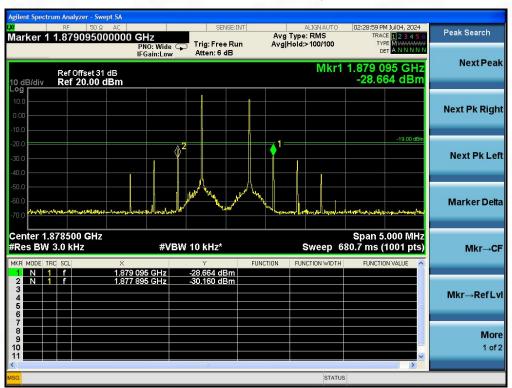


700 MHz Upper C Block Pre AGC+10dB, DL

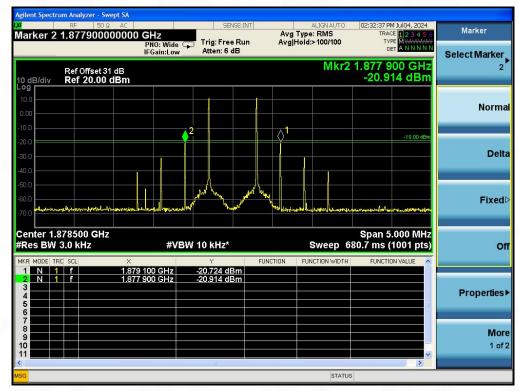






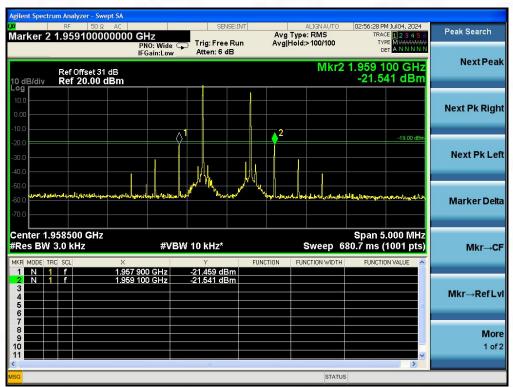


Broadband PCS Pre AGC+10dB, UL

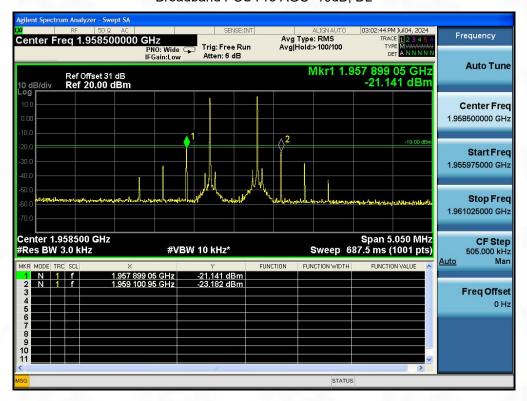








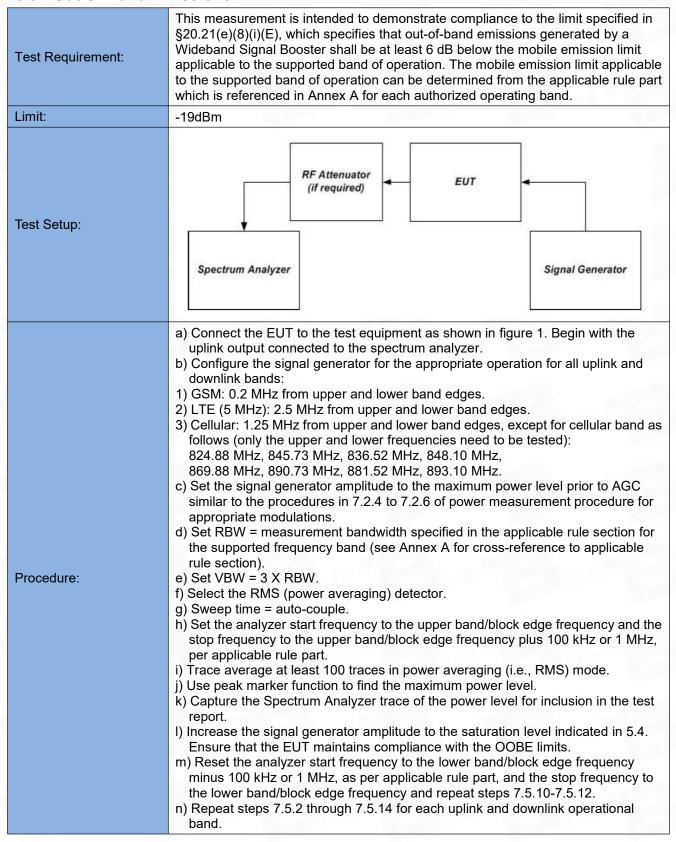
Broadband PCS Pre AGC+10dB, DL

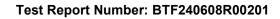






5.5 Out Of Band Emissions





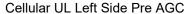


5.5.1 E.U.T. Operation:

Operating Environment:		
Temperature:	22.1 °C	
Humidity:	46.3 %	
Atmospheric Pressure:	1010 mbar	

5.5.2 Test Data:







Cellular UL Left Side Max Input

