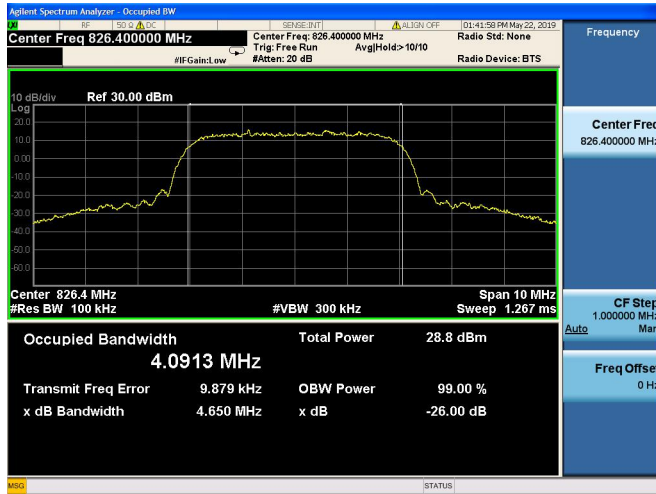
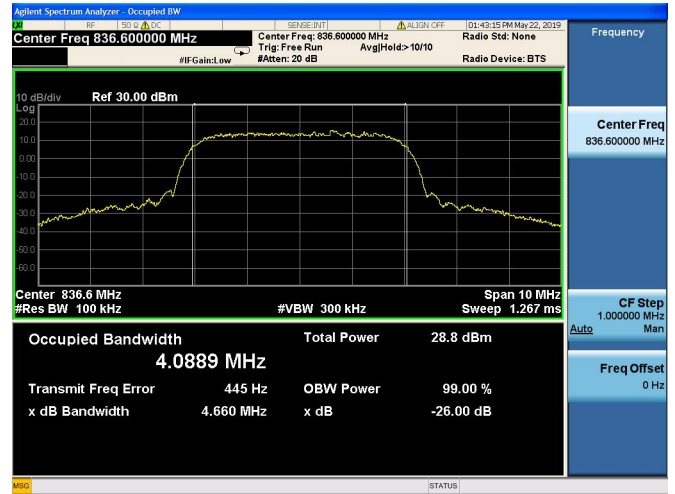
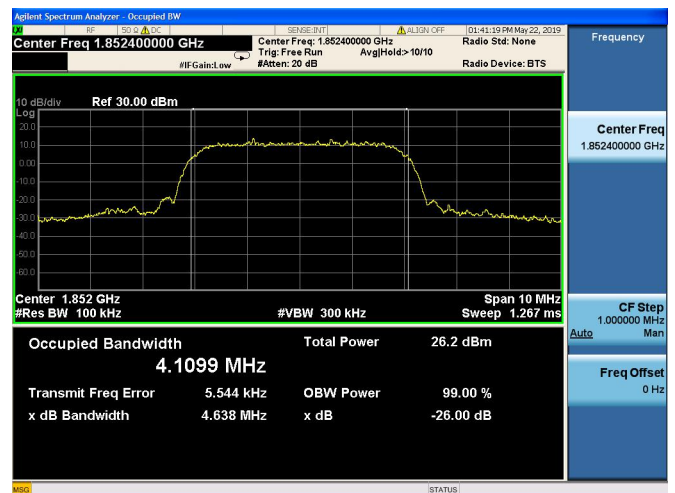
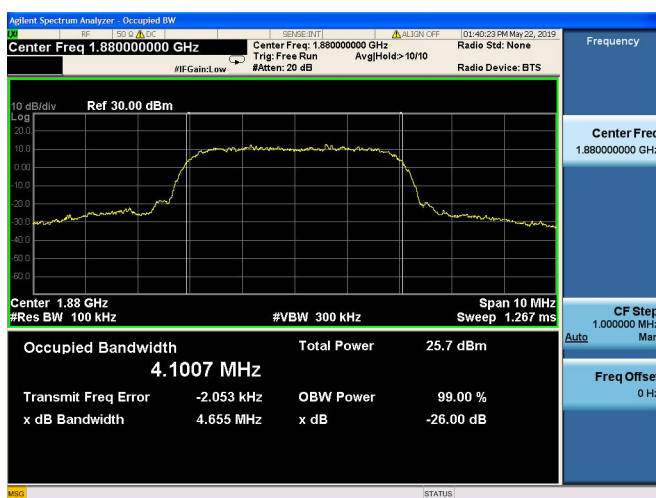


**WCDMA Band VCH4132 826.4MHz****WCDMA Band VCH4182 836.4MHz****WCDMA Band VCH4233 846.6MHz****WCDMA Band II CH9262 1852.4MHz****WCDMA Band II CH9400 1880.0MHz****WCDMA Band II CH9538 1907.6MHz**

2.4. Frequency Stability

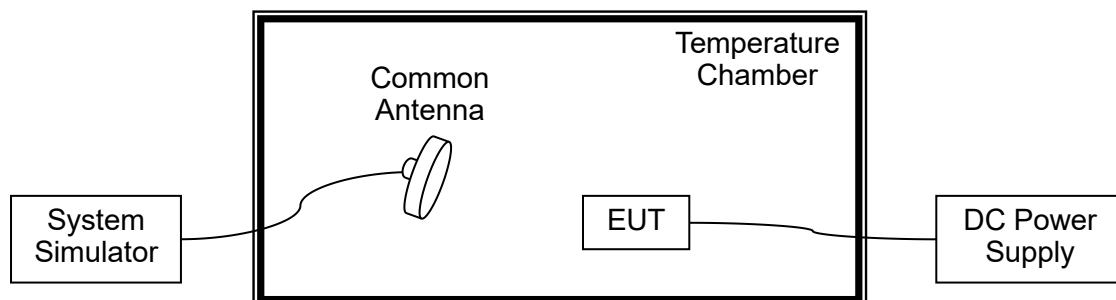
2.4.1. Requirement

According to FCC section 22.355, 24.235 and 27.54 the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. According to FCC section 2.1055, the test conditions are:

- (a) The temperature is varied from -30°C to $+50^{\circ}\text{C}$ at intervals of not more than 10°C .
- (b) For hand carried battery powered equipment, the primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacture. The supply voltage shall be measured at the input to the cable normally provided with the equipment, or at the power supply terminals if cables are not normally provided.

2.4.2. Test Description

Test Setup:



The EUT, which is powered by the DC Power Supply directly, is located in the Temperature Chamber. The EUT is commanded by the System Simulator (SS) to operate at the maximum output power i.e. Power Control Level (PCL) = 5 and Power Class = 4. A call is established between the EUT and the SS via a Common Antenna.

**2.4.3. Test Result****A. Test Verdict:**

GPRS 850MHz, Channel 190, Frequency 836.6MHz					
Limit = ± 2.5 ppm					
Voltage(%)	Power(V DC)	Temp($^{\circ}$ C)	Fre. Dev. (Hz)	Deviation (ppm)	Result
100	3.8	+20(Ref)	26	0.031	PASS
100		-30	-69	-0.082	
100		-20	-43	-0.051	
100		-10	-54	-0.065	
100		0	-73	-0.087	
100		+10	42	0.050	
100		+20	74	0.088	
100		+30	43	0.051	
100		+40	15	0.018	
100		+50	38	0.045	
115	4.35	+20	-59	-0.071	
85	3.5	+20	-53	-0.063	

GPRS 1900MHz, Channel 661, Frequency 1880.0MHz					
Limit =Within Authorized Band					
Voltage(%)	Power(V DC)	Temp($^{\circ}$ C)	Fre. Dev. (Hz)	Deviation (ppm)	Result
100	3.8	+20(Ref)	31	0.016	PASS
100		-30	46	0.024	
100		-20	-17	-0.009	
100		-10	47	0.025	
100		0	-27	-0.014	
100		+10	-57	-0.030	
100		+20	31	0.016	
100		+30	73	0.039	
100		+40	54	0.029	
100		+50	41	0.022	
115	4.35	+20	-37	-0.020	
85	3.5	+20	32	0.017	



EDGE 850MHz, Channel 190, Frequency 836.6MHz					
Limit = ± 2.5 ppm					
Voltage(%)	Power(V DC)	Temp($^{\circ}$ C)	Fre. Dev. (Hz)	Deviation (ppm)	Result
100	3.8	+20(Ref)	42	0.050	PASS
100		-30	-34	-0.041	
100		-20	-43	-0.051	
100		-10	-75	-0.090	
100		0	-73	-0.087	
100		+10	42	0.050	
100		+20	74	0.088	
100		+30	43	0.051	
100		+40	34	0.041	
100		+50	38	0.045	
115	4.35	+20	-21	-0.025	PASS
85	3.5	+20	-53	-0.063	

EDGE 1900MHz, Channel 661, Frequency 1880.0MHz					
Limit =Within Authorized Band					
Voltage(%)	Power(V DC)	Temp($^{\circ}$ C)	Fre. Dev. (Hz)	Deviation (ppm)	Result
100	3.8	+20(Ref)	52	0.028	PASS
100		-30	46	0.024	
100		-20	-84	-0.045	
100		-10	47	0.025	
100		0	-27	-0.014	
100		+10	-75	-0.040	
100		+20	31	0.016	
100		+30	56	0.030	
100		+40	54	0.029	
100		+50	32	0.017	
115	4.35	+20	-37	-0.020	PASS
85	3.5	+20	85	0.045	



WCDMA Band V, Channel 4182, Frequency 836.4MHz					
Limit = $\pm$ 2.5ppm					
Voltage(%)	Power(V DC)	Temp($^{\circ}$ C)	Fre. Dev. (Hz)	Deviation (ppm)	Result
100	3.8	+20(Ref)	24	0.029	PASS
100		-30	-74	-0.089	
100		-20	-55	-0.066	
100		-10	-13	-0.016	
100		0	-69	-0.083	
100		+10	42	0.050	
100		+20	52	0.062	
100		+30	42	0.050	
100		+40	15	0.018	
100		+50	53	0.063	
115	4.35	+20	-33	-0.040	
85	3.5	+20	-15	-0.018	

WCDMA Band II, Channel 9400, Frequency 1880.0MHz					
Limit =Within Authorized Band					
Voltage(%)	Power(V DC)	Temp($^{\circ}$ C)	Fre. Dev. (Hz)	Deviation (ppm)	Result
100	3.8	+20(Ref)	34	0.018	PASS
100		-30	46	0.024	
100		-20	-48	-0.026	
100		-10	47	0.025	
100		0	-13	-0.007	
100		+10	-75	-0.040	
100		+20	31	0.016	
100		+30	31	0.016	
100		+40	54	0.029	
100		+50	17	0.009	
115	4.35	+20	-37	-0.020	
85	3.5	+20	93	0.049	

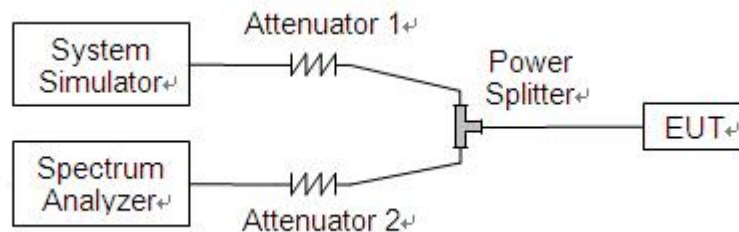
2.5. Conducted Out of Band Emissions

2.5.1. Requirement

According to FCC section 22.917(a), 24.238(a) the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \cdot \log(P)$ dB. This calculated to be -13dBm.

2.5.2. Test Description

Test Setup:



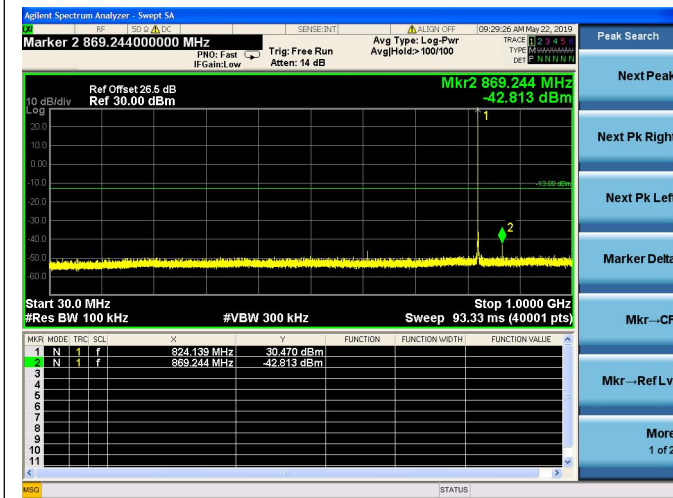
The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50 Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power i.e. Power Control Level (PCL) = 5 and Power Class = 4. A call is established between the EUT and the SS.

2.5.3. Test Result

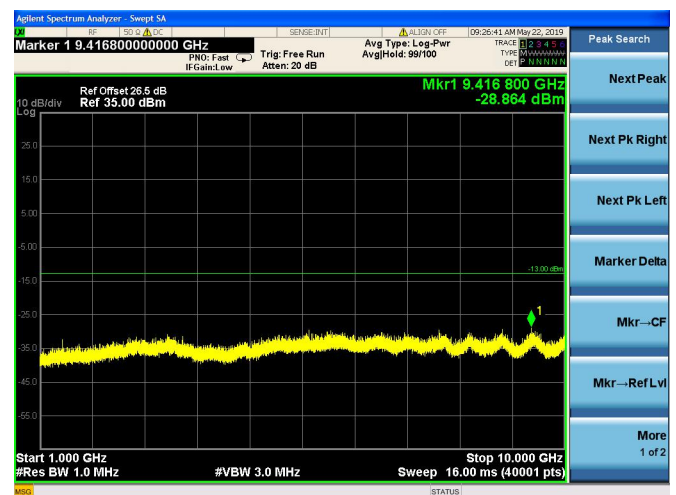
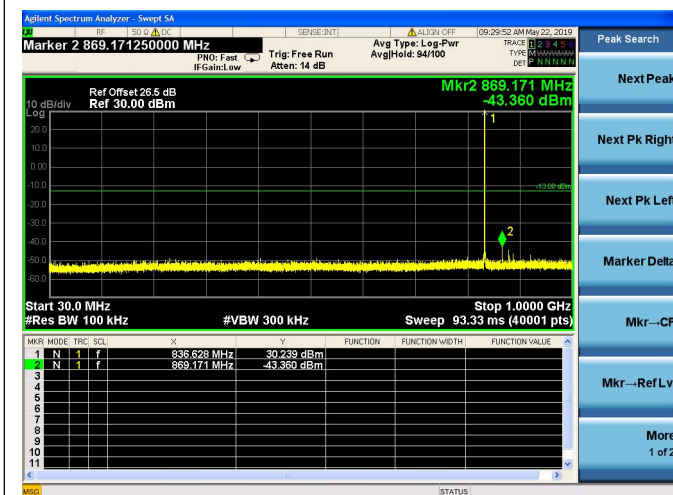
The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the out of band emissions.



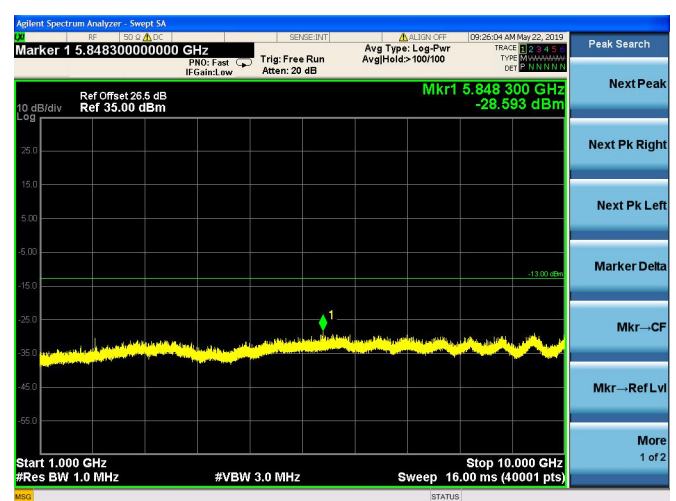
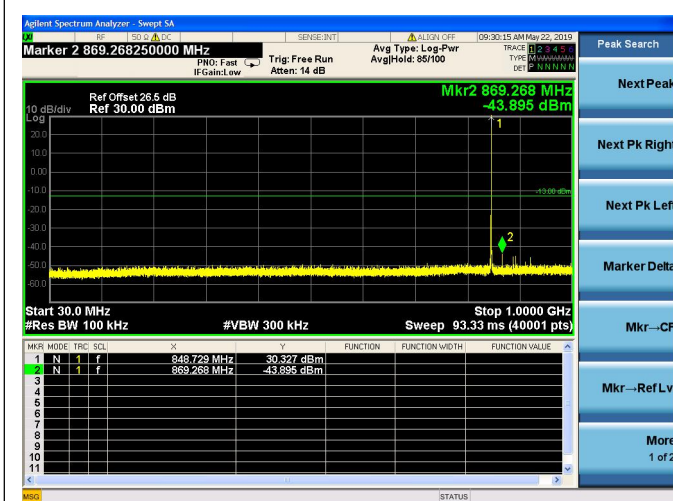
GPRS 850MHz CH128 824.2MHz



GRPS 850MHz CH190 836.6MHz

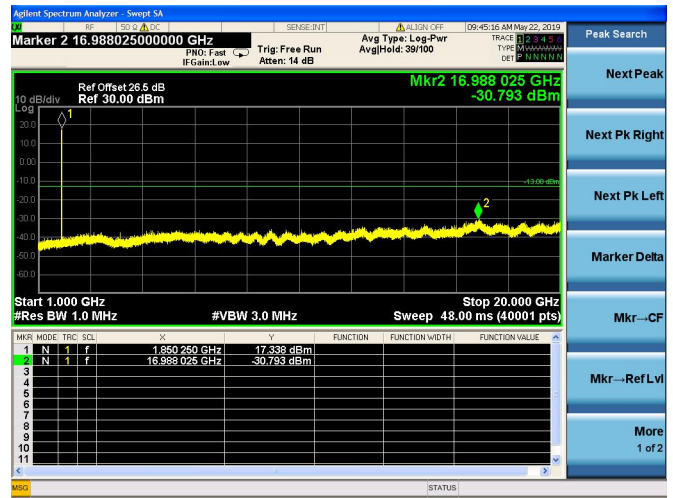
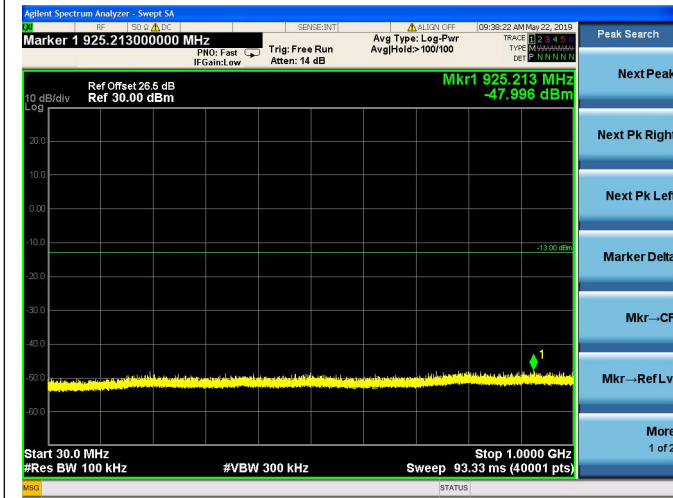


GRPS 850MHz CH251 848.8MHz

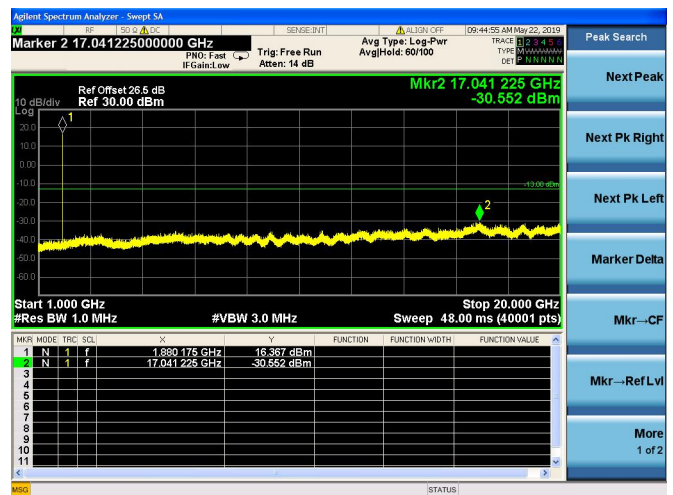
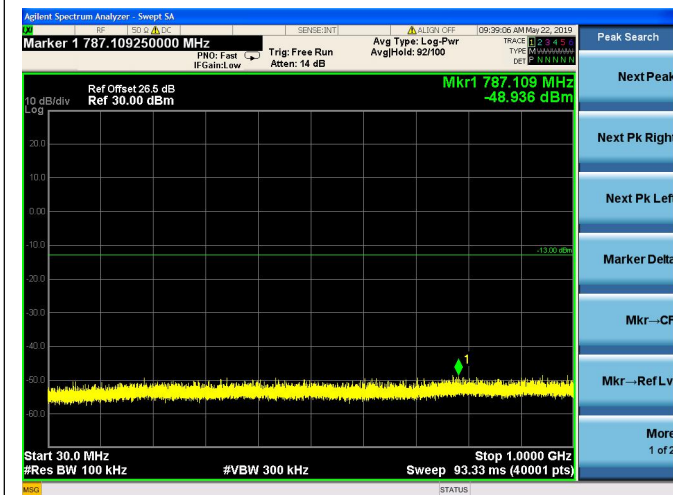




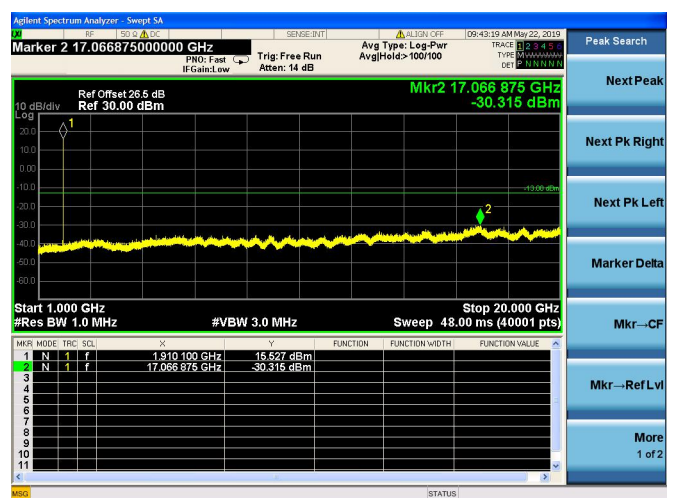
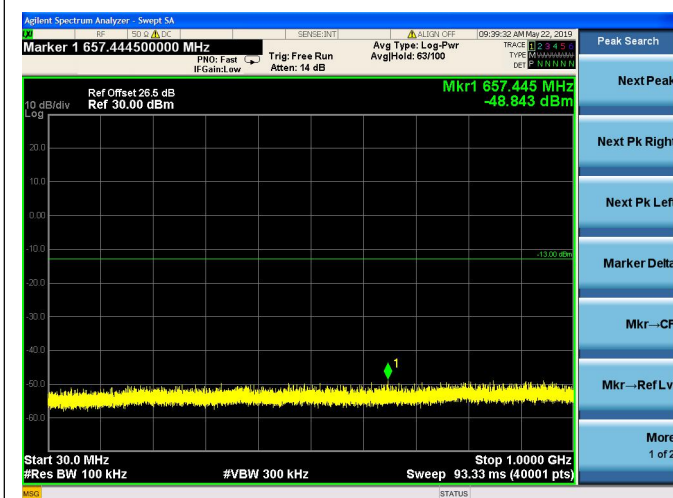
GRPS 1900MHz CH521 1850.2MHz



GRPS 1900MHz CH661 1880.0MHz

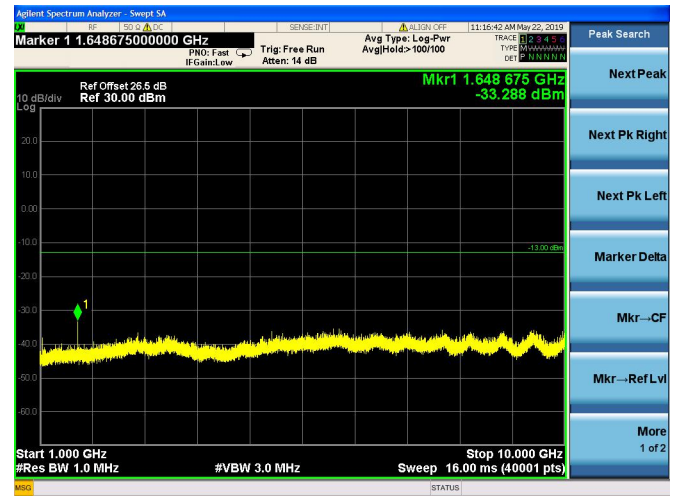
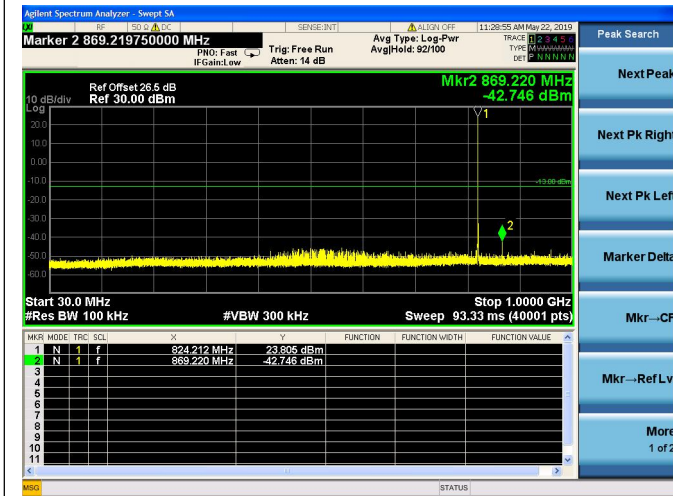


GRPS 1900MHz CH810 1909.8MHz

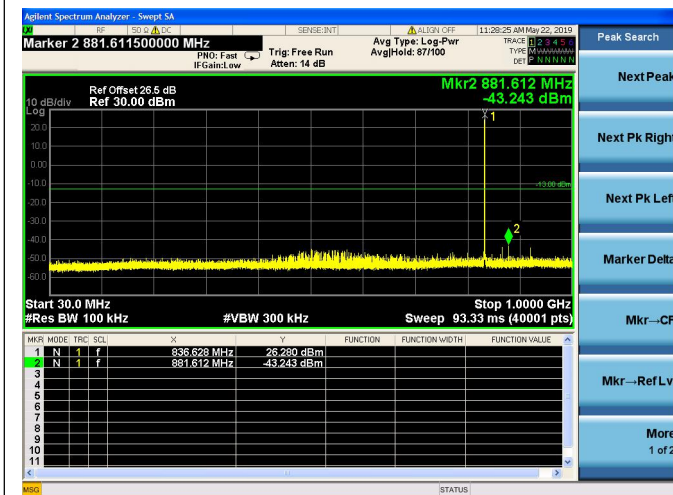




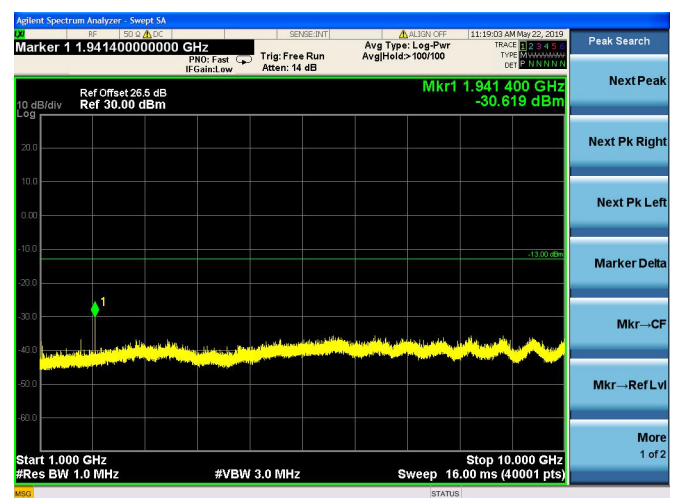
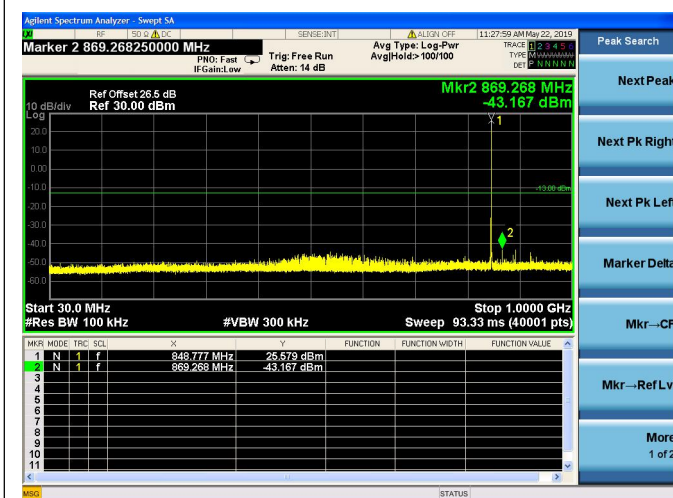
EDGE 850MHz CH128 824.2MHz



EDGE 850MHz CH190 836.6MHz

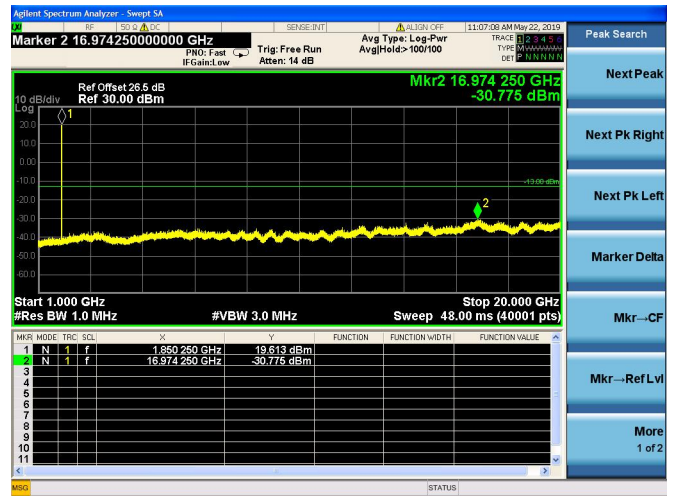
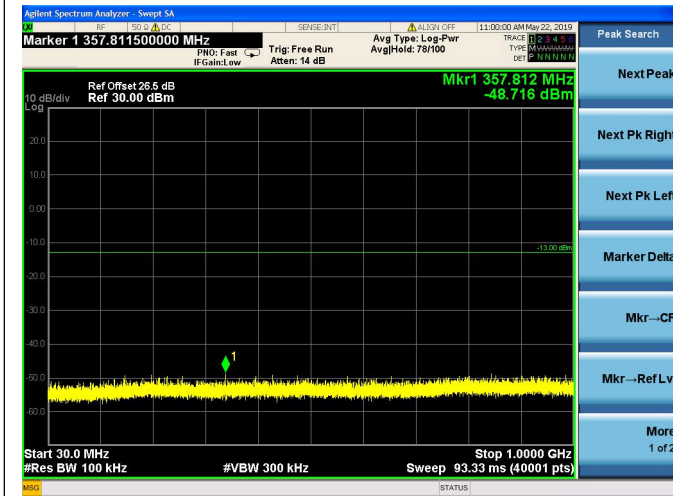


EDGE 850MHz CH251 848.8MHz

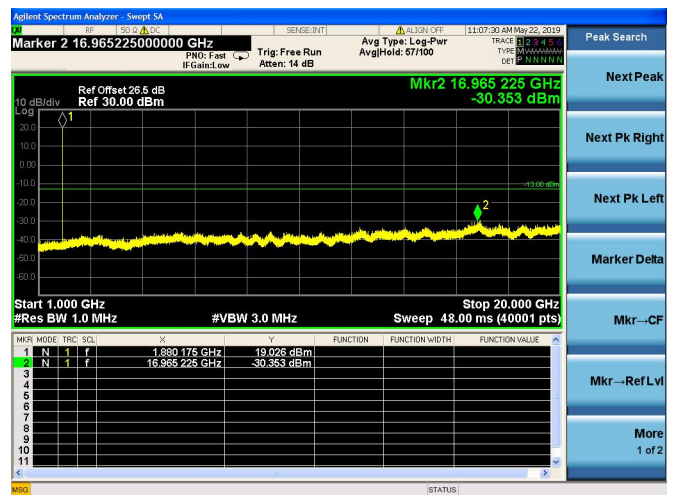
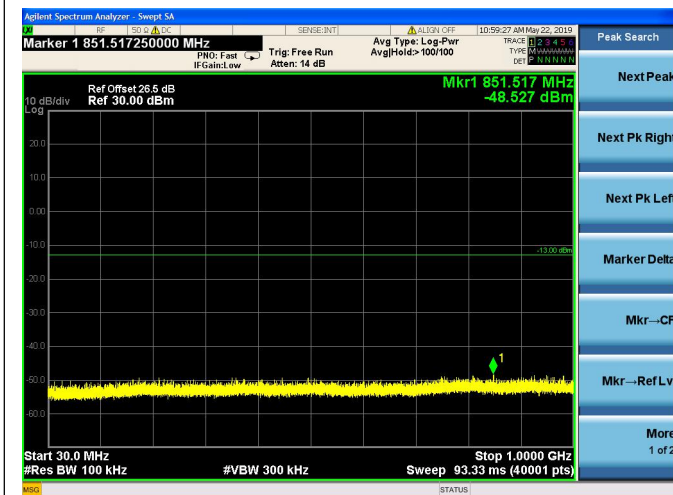




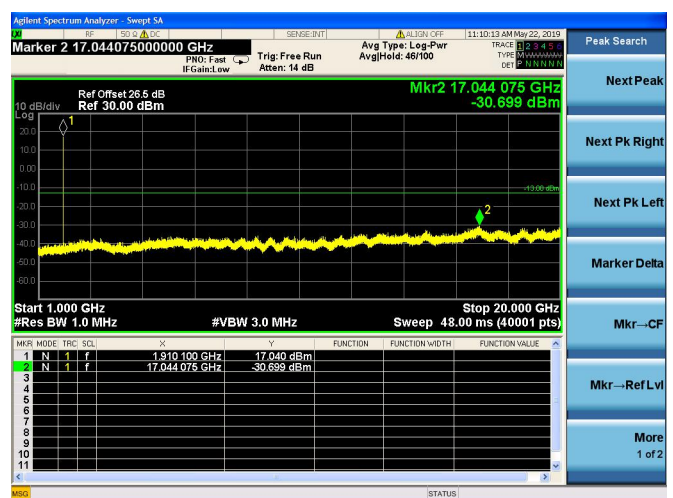
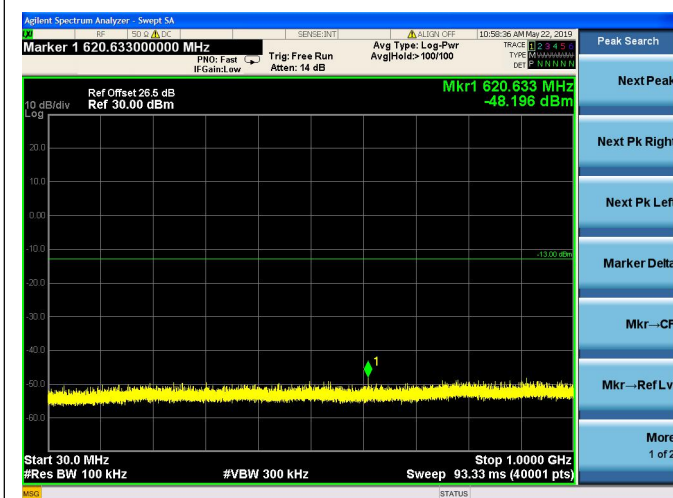
EDGE 1900MHz CH521 1850.2MHz



EDGE 1900MHz CH661 1880.0MHz

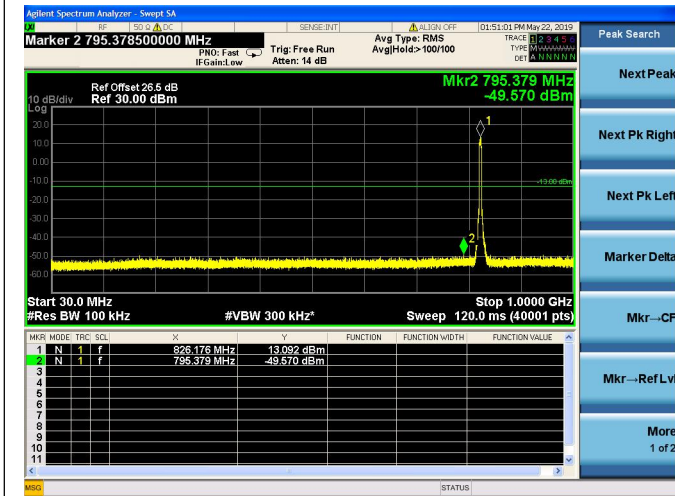


EDGE 1900MHz CH810 1909.8MHz

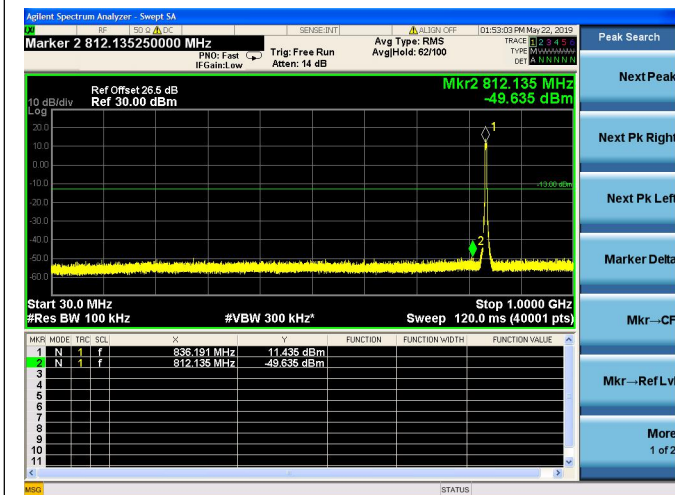




WCDMA Band V CH4132 826.4MHz



WCDMA Band V CH4182 836.4MHz



WCDMA Band V CH4233 846.6MHz

