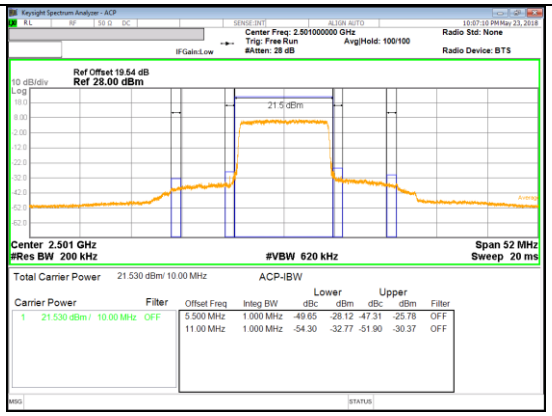
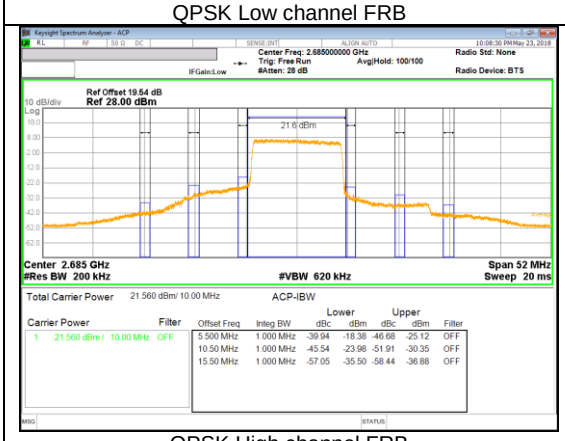
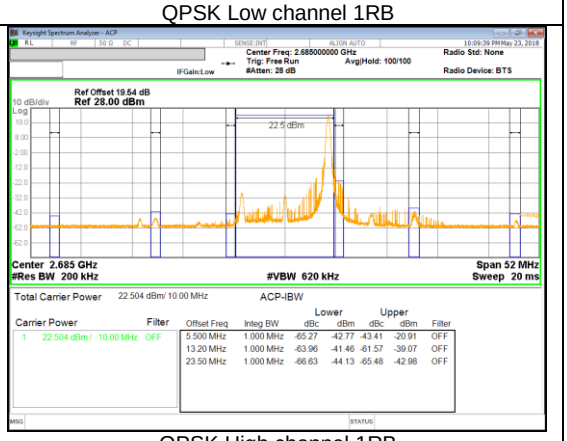
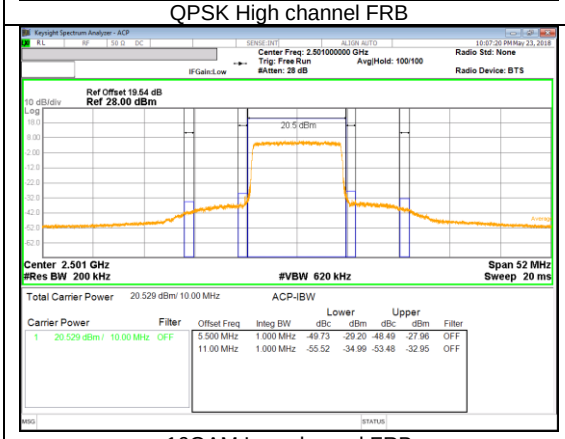
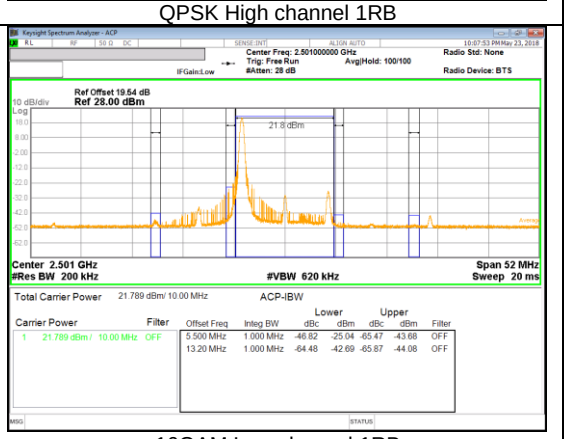
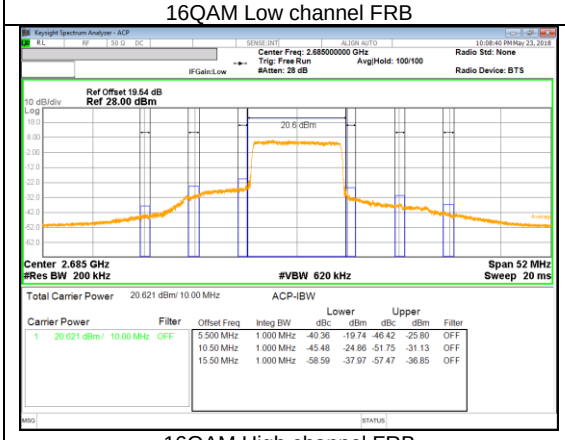
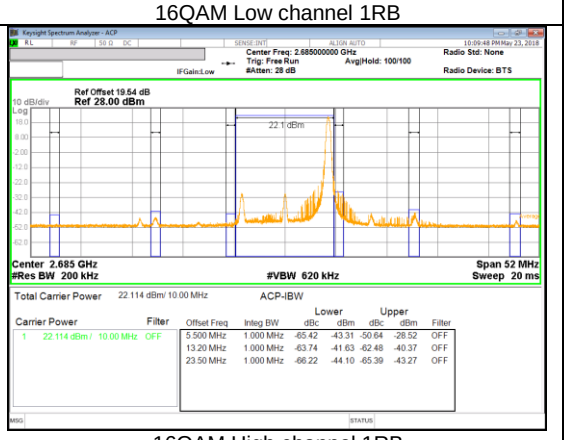
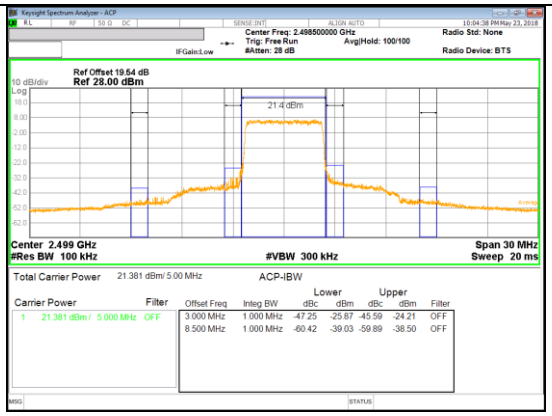
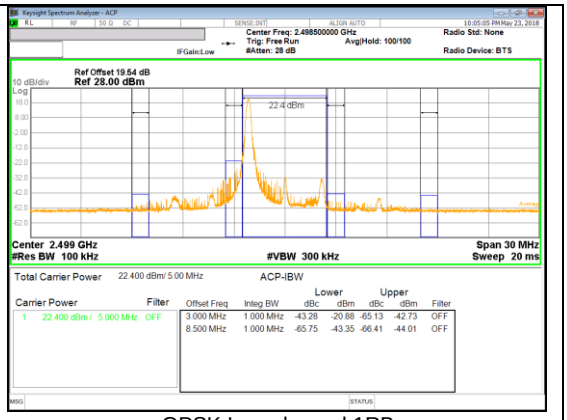
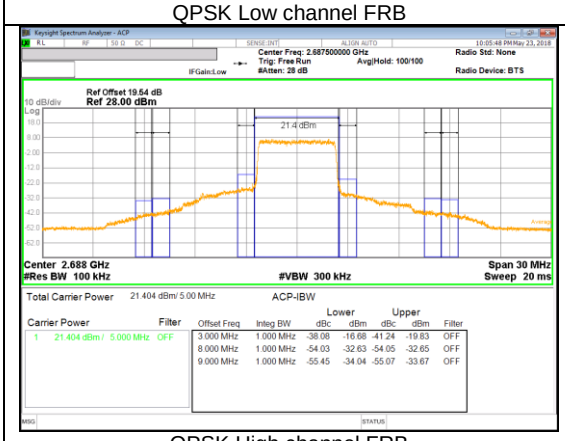
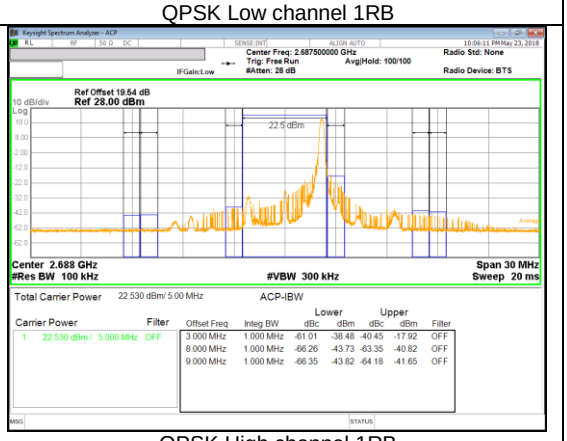
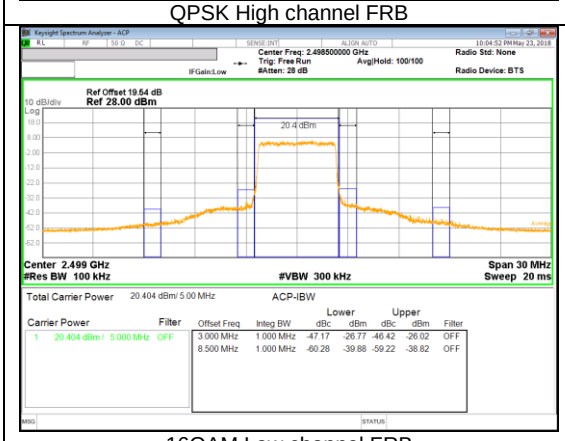
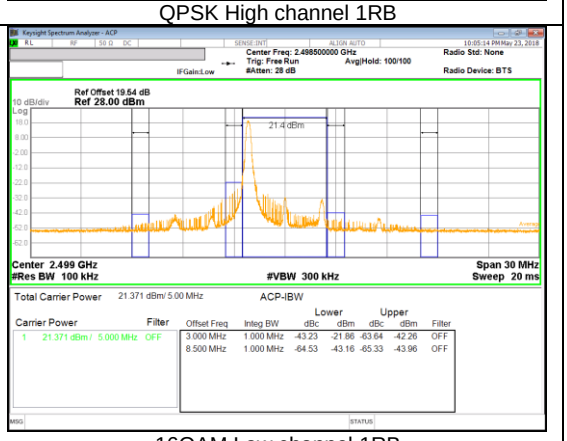
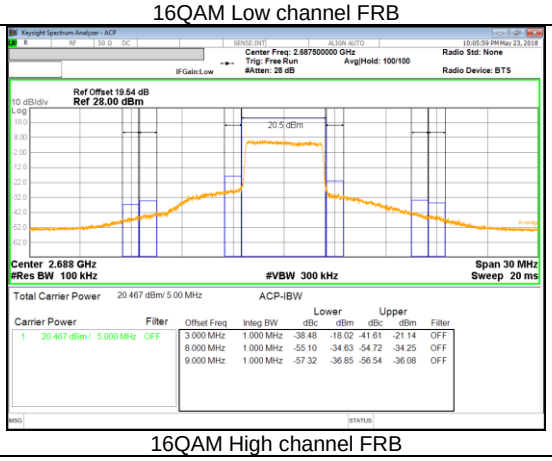
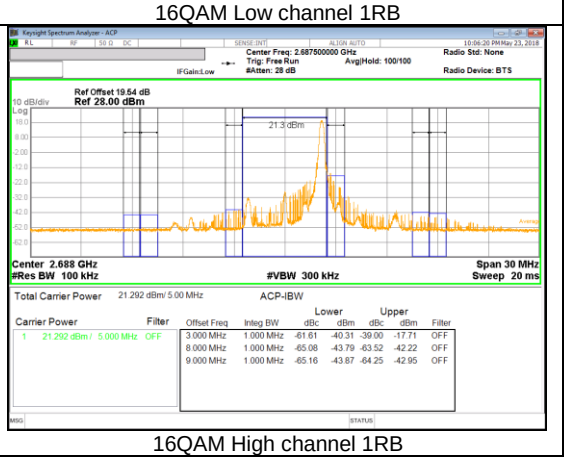
Band 41 10MHz	 QPSK Low channel FRB	 QPSK Low channel 1RB
	 QPSK High channel FRB	 QPSK High channel 1RB
	 16QAM Low channel FRB	 16QAM Low channel 1RB
	 16QAM High channel FRB	 16QAM High channel 1RB

Band 41 5MHz	 QPSK Low channel FRB	 QPSK Low channel 1RB
	 QPSK High channel FRB	 QPSK High channel 1RB
	 16QAM Low channel FRB	 16QAM Low channel 1RB
	 16QAM High channel FRB	 16QAM High channel 1RB

9.3. OUT OF BAND EMISSIONS

RULE PART(S)

FCC: §2.1051, §22.901, §22.917, §24.238 and §27. 53

LIMITS

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 log (P) dB.

Part 27: (m)(4) For mobile station, the attenuation factor shall be not less than 43 + 10 log (P) dB at the channel edge and (55 + 10 log (P)dB) at the 5.5 MHz from the channel edges.

TEST PROCEDURE

Per KDB 971168 D01 Power Meas License Digital Systems v03r01
The RF output of the transmitter was connected to a spectrum analyzer through a calibrated coaxial cable. Sufficient scans were taken to show the out-of-band Emissions, if any, up to 10th harmonic. Multiple sweeps were recorded in maximum hold mode using a peak detector to ensure that the worst-case emissions were caught.

a) Set the RBW = 100KHz for emission below 1GHz and 1MHz for emissions above 1GHz (Tests were performed 1MHz [Worst case], to sweep 1 time for all frequency range)

b) Set VBW ≥ 3 × RBW;

c) Set span ≥ 1.5 times the OBW;

d) Sweep time = auto couple;

e) Detector = peak(WCDMA Band 5, LTE Band 5),

rms(GSM1900, WCDMA Band 2, LTE Band17, Band41);

f) Ensure that the number of measurement points = Max (40001);

g) Trace mode = Maxhold(GSM, WCDMA Band 5, LTE Band 5, LTE Band41),

Average(WCDMA Band2, LTE Band17);

RESULTS

GSM

Band	Mode	f [MHz]	Spurious [dBm]	Limit [dBm]
GSM1900	GPRS	1850.2	-24.24	-13.00
		1880.0	-24.05	
		1909.8	-24.09	
	EGPRS	1850.2	-24.39	
		1880.0	-24.13	
		1909.8	-24.36	

WCDMA

Band	Mode	f [MHz]	Spurious [dBm]	Limit [dBm]
Band 5	REL99	826.4	-32.66	-13.00
		836.6	-32.79	
		846.6	-32.55	
	HSDPA	826.4	-32.38	
		836.6	-32.86	
		846.6	-32.42	
Band 2	REL99	1852.4	-42.347	
		1880.0	-42.426	
		1907.6	-42.290	
	HSDPA	1852.4	-42.336	
		1880.0	-42.419	
		1907.6	-42.480	

LTE 5

Bandwidth	Mode	f [MHz]	Spurious [dBm]	Limit [dBm]
10 MHz	QPSK	829.0	-30.88	-13.00
		836.5	-31.13	
		844.0	-30.65	
	16QAM	829.0	-31.12	
		836.5	-31.18	
		844.0	-31.51	
5 MHz	QPSK	826.5	-31.07	
		836.5	-30.38	
		846.5	-30.49	
	16QAM	826.5	-30.86	
		836.5	-30.82	
		846.5	-31.15	
3 MHz	QPSK	825.5	-31.17	
		836.5	-30.65	
		847.5	-31.64	
	16QAM	825.5	-31.14	
		836.5	-31.42	
		847.5	-30.43	
1.4 MHz	QPSK	824.7	-31.76	
		836.5	-29.54	
		848.3	-30.50	
	16QAM	824.7	-31.49	
		836.5	-30.76	
		848.3	-30.68	

LTE 17

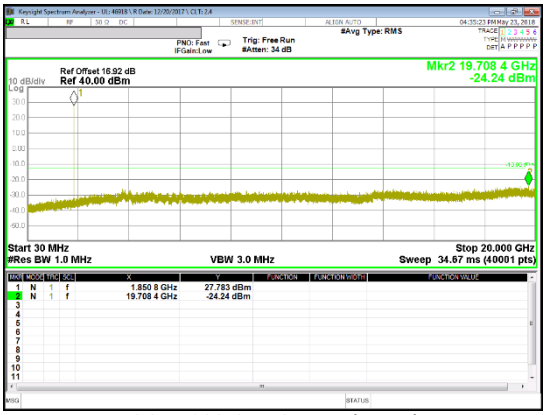
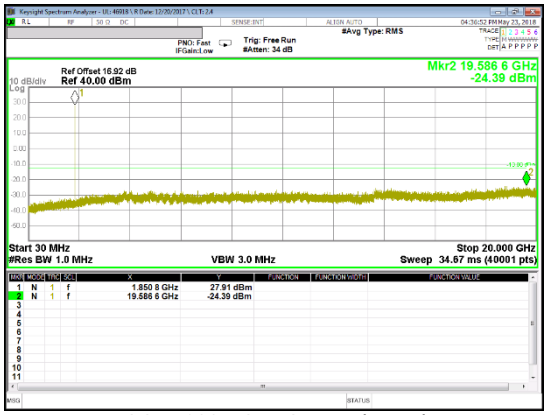
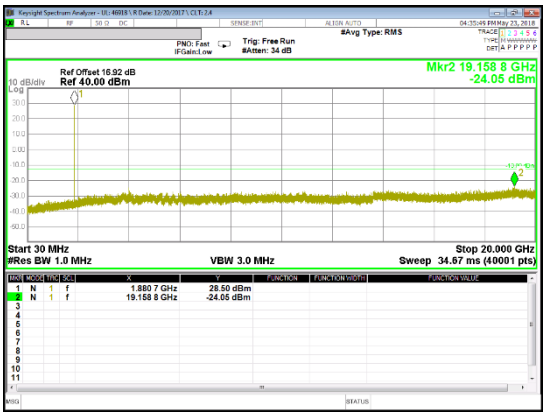
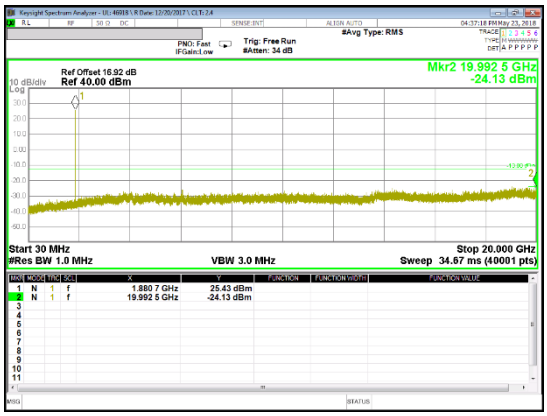
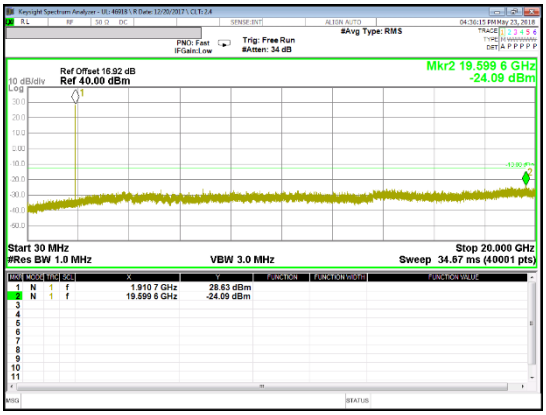
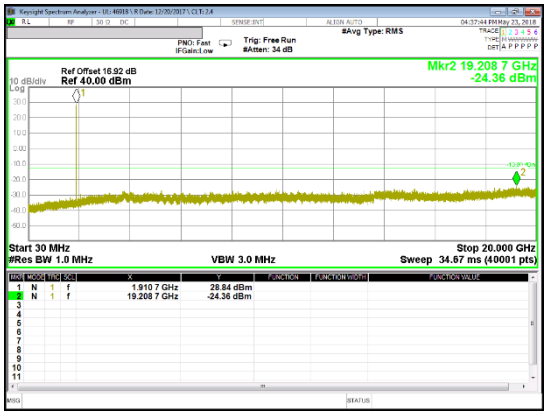
Bandwidth	Mode	f [MHz]	Spurious [dBm]	Limit [dBm]
10 MHz	QPSK	709.0	-44.707	-13.00
		710.0	-44.728	
		711.0	-44.744	
	16QAM	709.0	-44.290	
		710.0	-44.700	
		711.0	-44.334	
5 MHz	QPSK	706.5	-44.734	
		710.0	-44.513	
		713.5	-44.875	
	16QAM	706.5	-44.950	
		710.0	-44.579	
		713.5	-44.879	

LTE 41

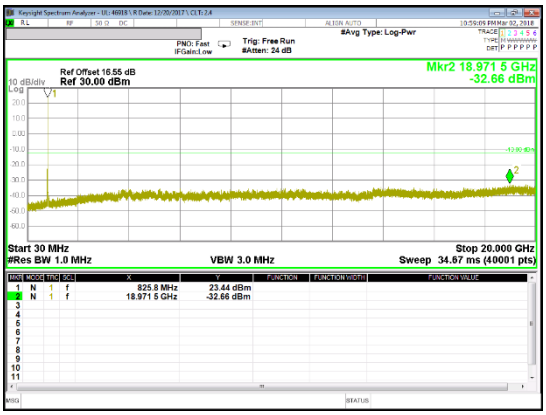
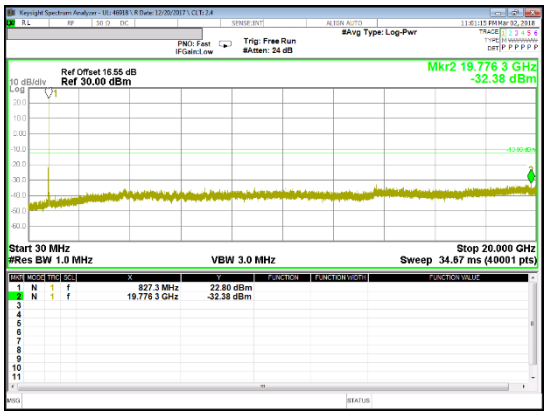
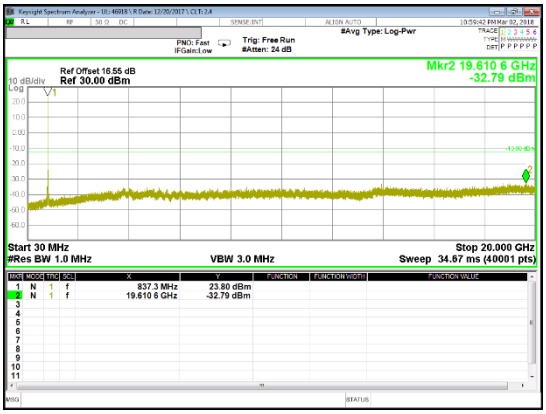
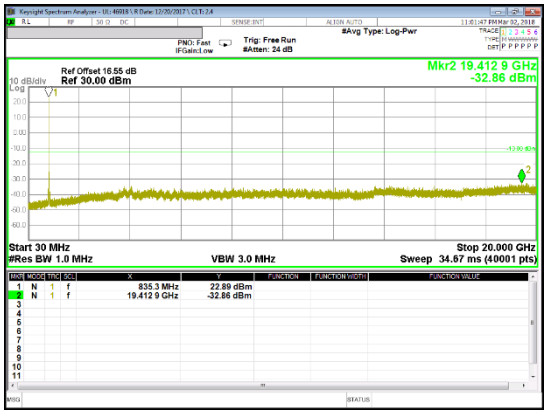
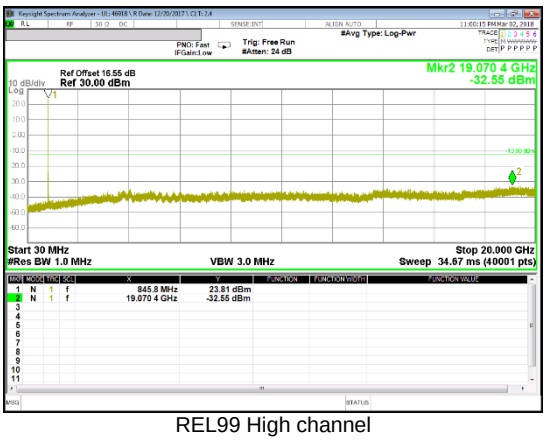
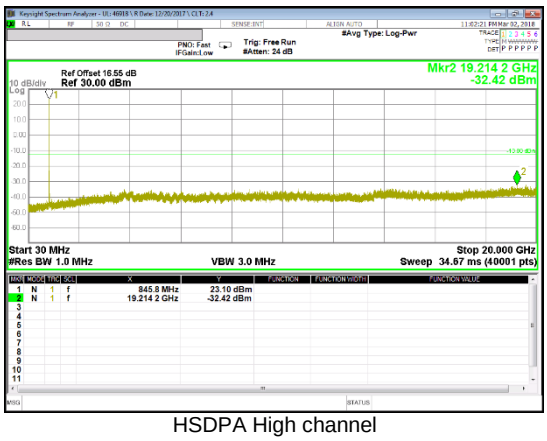
Bandwidth	Mode	f [MHz]	Spurious [dBm]	Limit [dBm]
20 MHz	QPSK	2506.0	-33.027	-25.00
		2593.0	-32.990	
		2680.0	-33.065	
	16QAM	2506.0	-32.260	
		2593.0	-32.958	
		2680.0	-32.688	
15 MHz	QPSK	2503.5	-31.790	
		2593.0	-32.187	
		2682.5	-33.031	
	16QAM	2503.5	-31.208	
		2593.0	-32.090	
		2682.5	-32.346	
10 MHz	QPSK	2501.0	-31.609	
		2593.0	-32.878	
		2685.0	-32.028	
	16QAM	2501.0	-32.152	
		2593.0	-32.643	
		2685.0	-32.898	
5 MHz	QPSK	2498.5	-32.388	
		2593.0	-32.733	
		2687.5	-38.257	
	16QAM	2498.5	-31.895	
		2593.0	-32.919	
		2687.5	-32.778	

9.3.1. OUT OF BAND EMISSIONS PLOTS

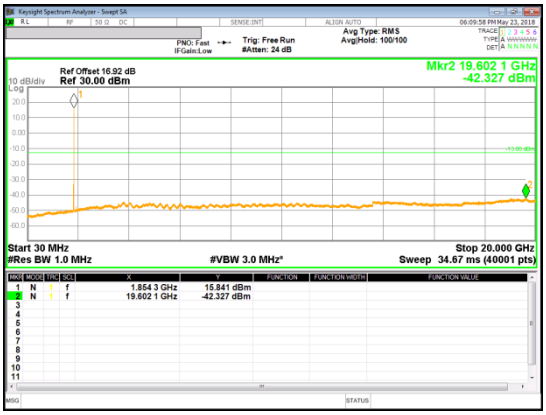
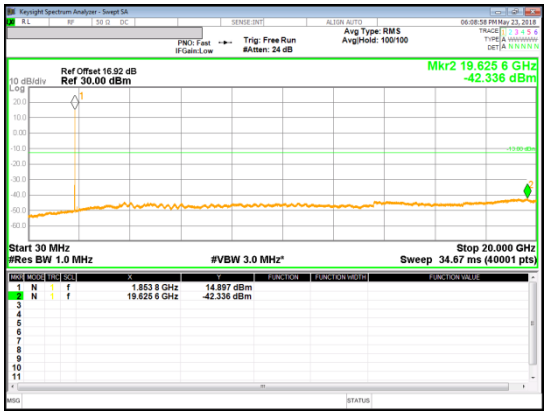
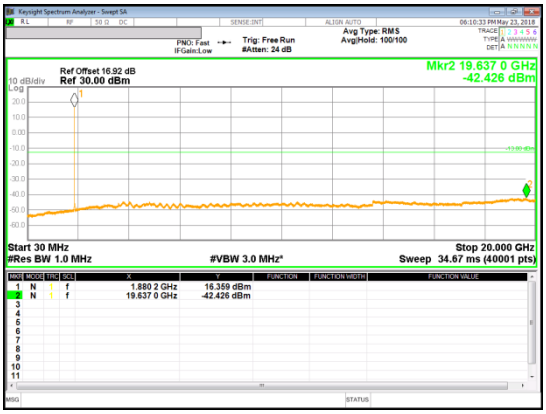
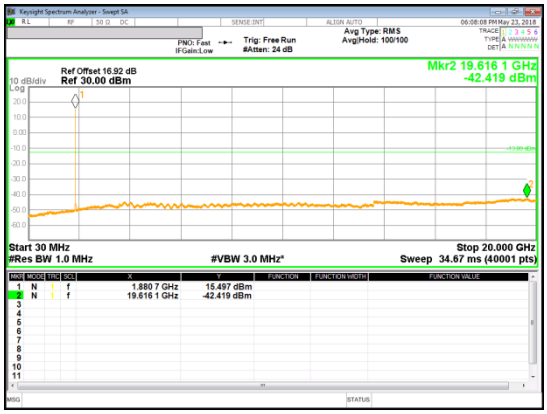
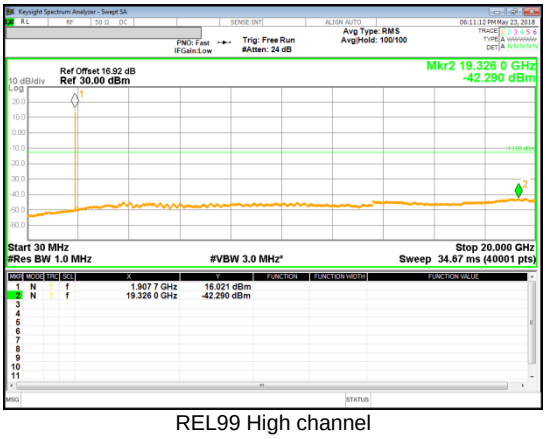
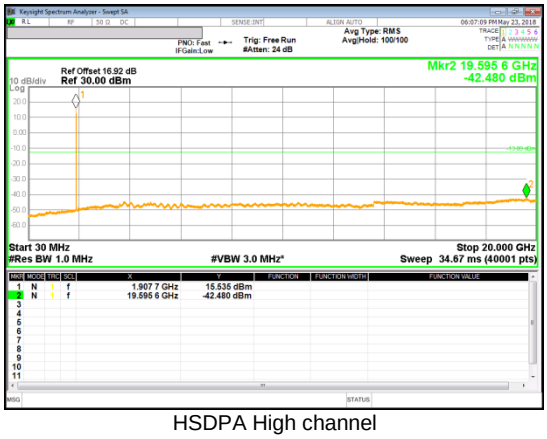
GSM 1900

GSM 1900	 GSM1900 GPRS Low channel	 GSM1900 EGPRS Low channel
	 GSM1900 GPRS Mid channel	 GSM1900 EGPRS Mid channel
	 GSM1900 GPRS High channel	 GSM1900 EGPRS High channel

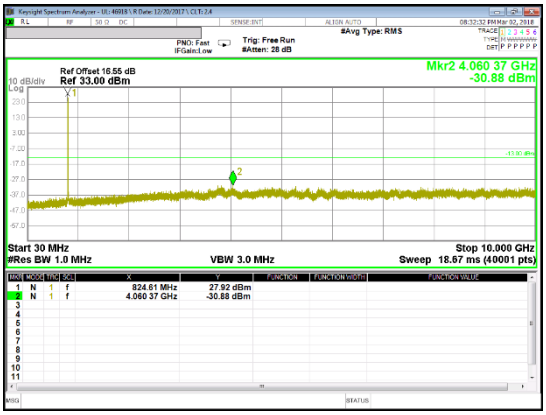
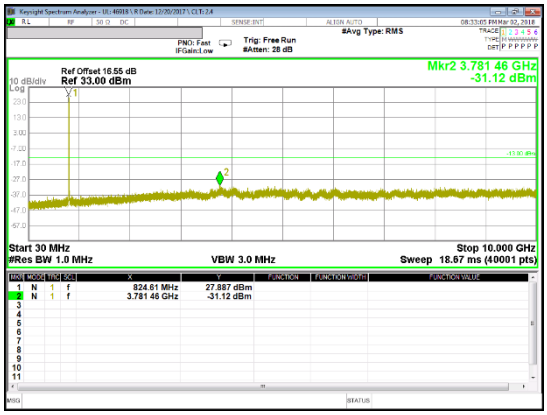
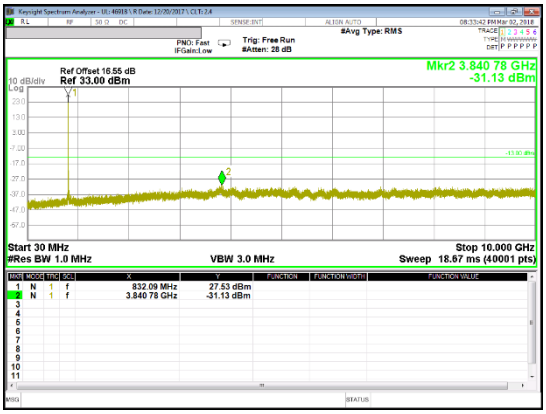
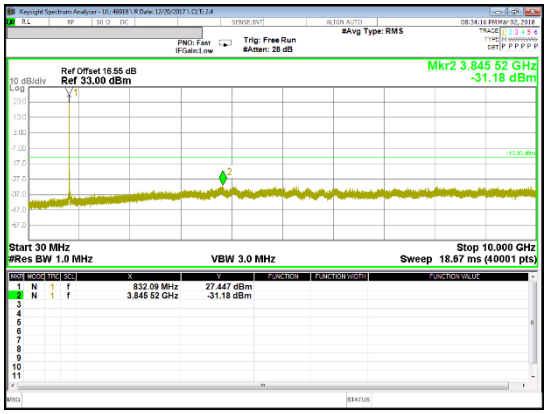
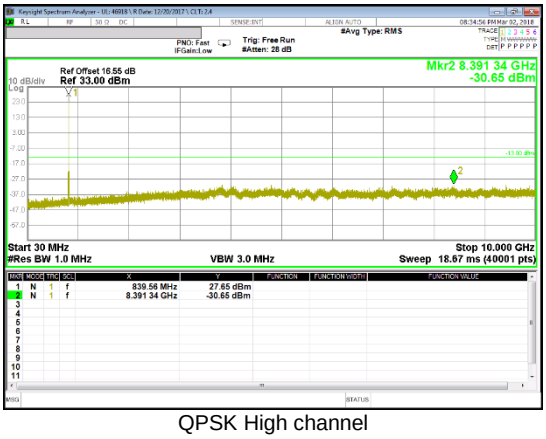
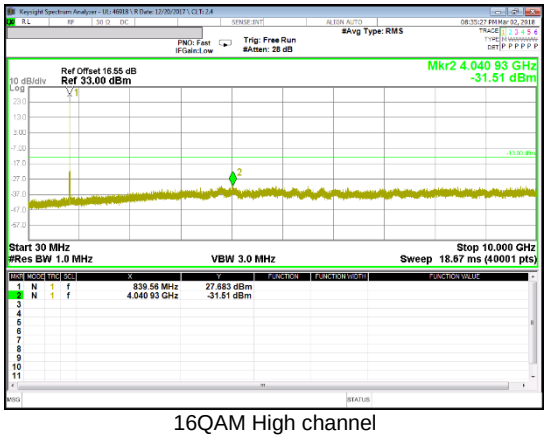
WCDMA Band 5

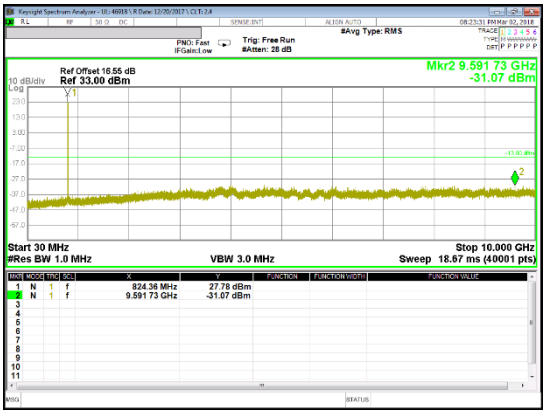
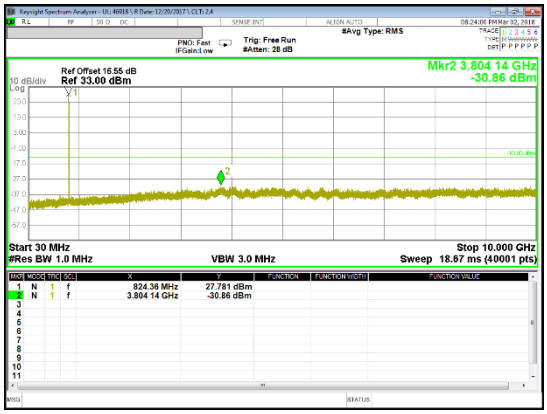
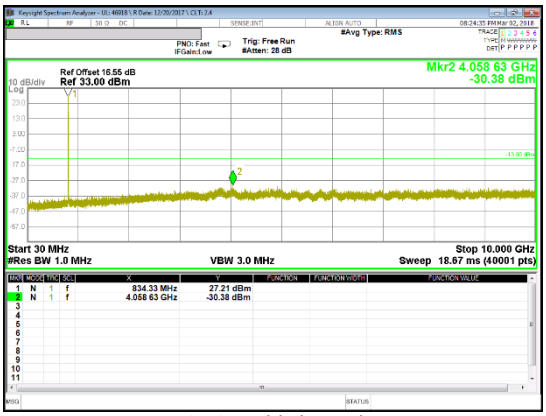
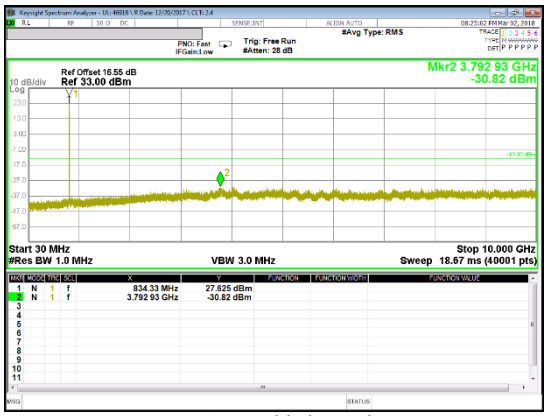
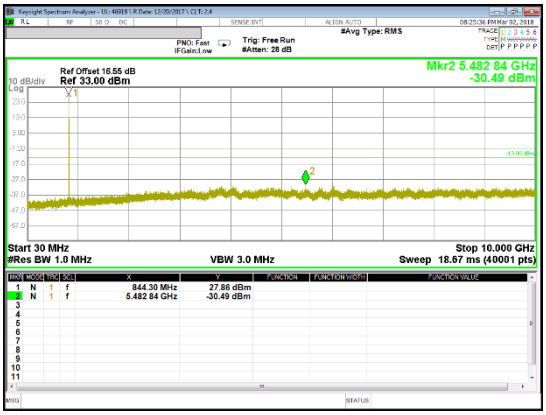
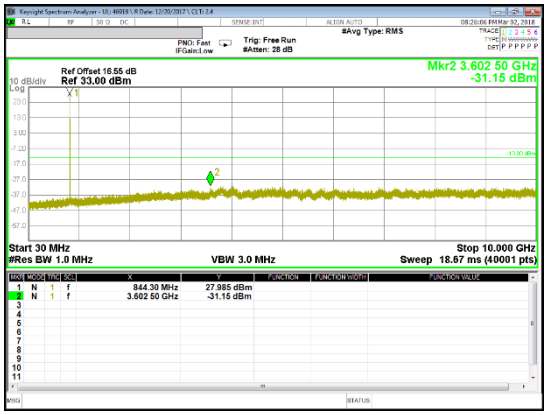
Band 5	 REL99 Low channel	 HSDPA Low channel
	 REL99 Mid channel	 HSDPA Mid channel
	 REL99 High channel	 HSDPA High channel

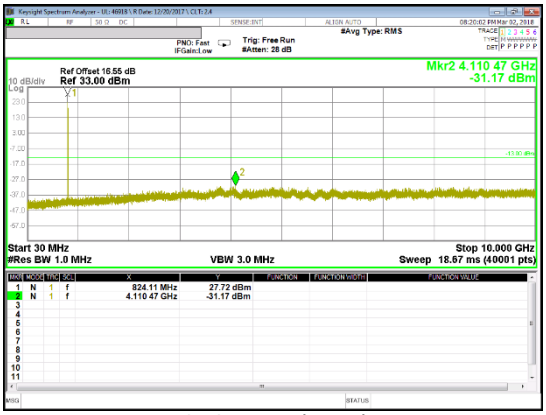
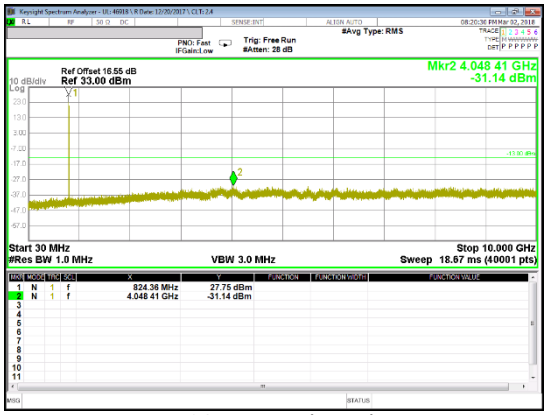
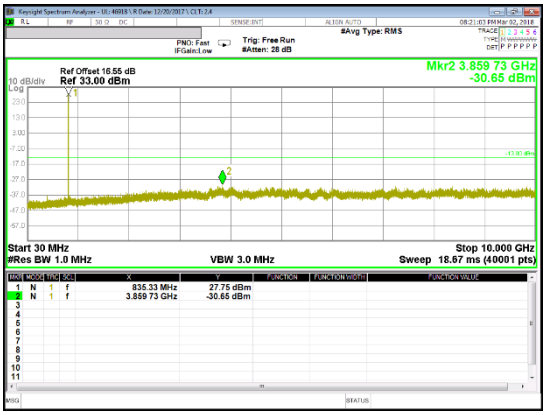
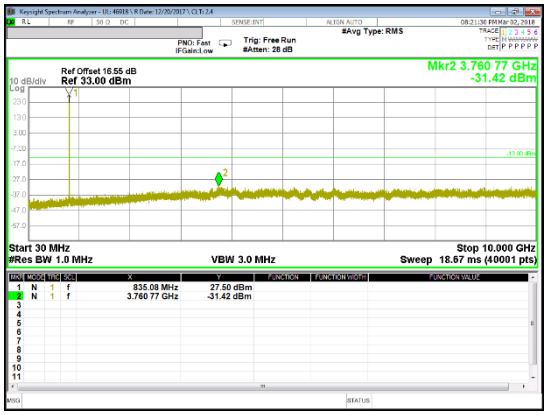
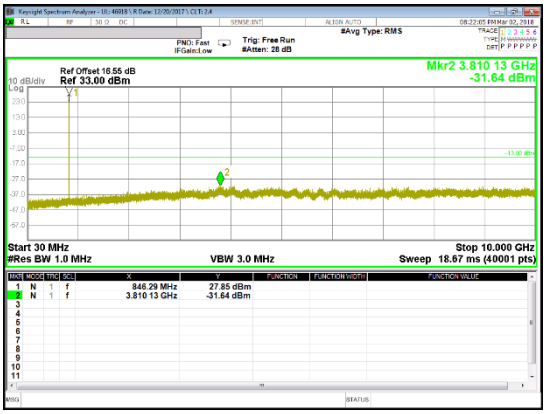
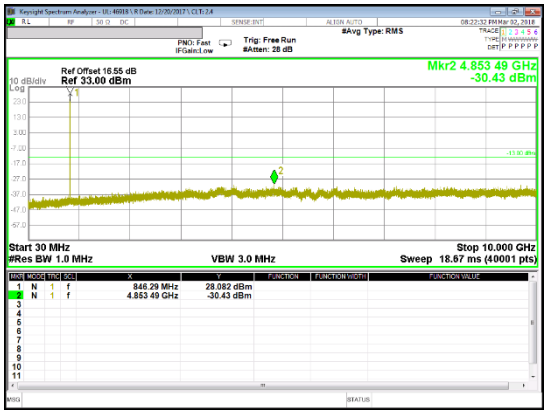
WCDMA Band 2

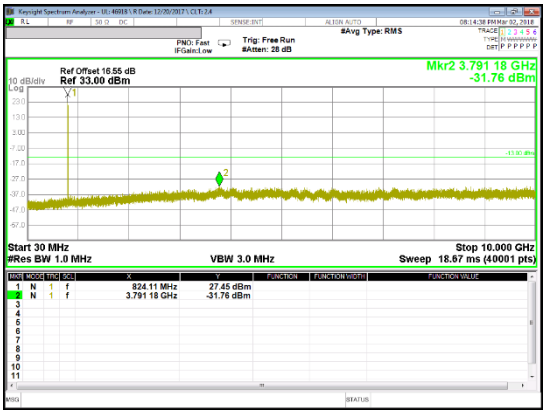
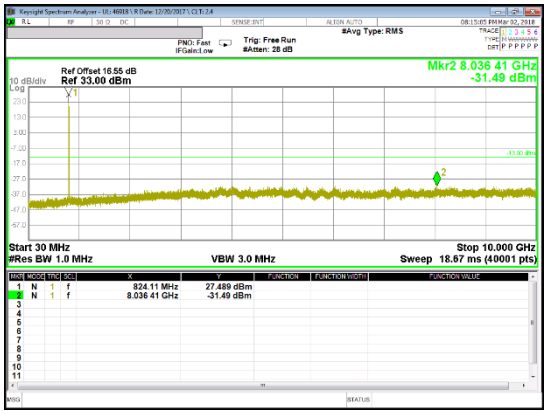
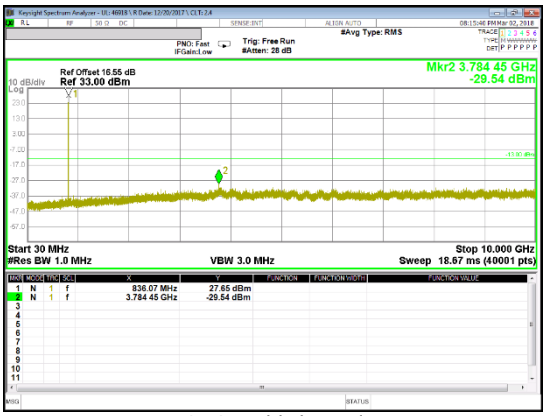
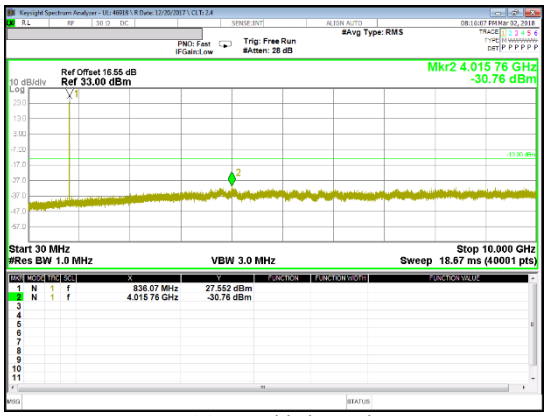
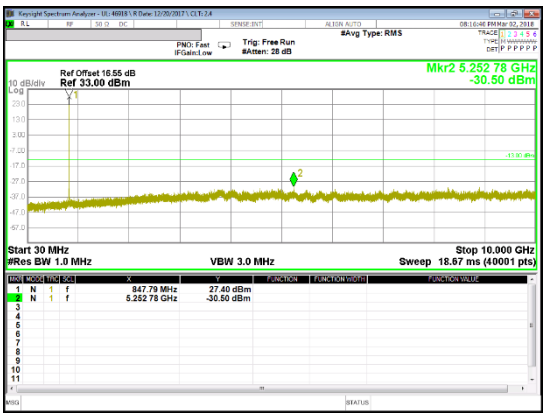
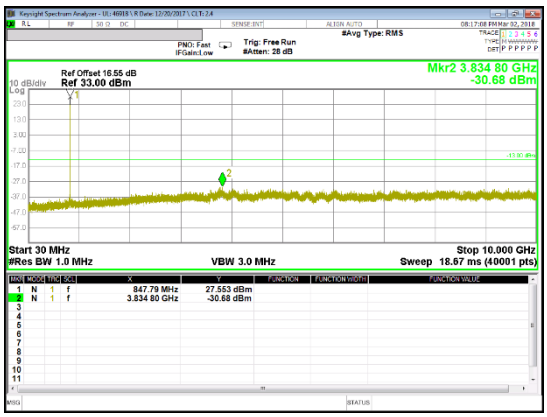
Band 2	 REL99 Low channel	 HSDPA Low channel
	 REL99 Mid channel	 HSDPA Mid channel
	 REL99 High channel	 HSDPA High channel

LTE Band 5

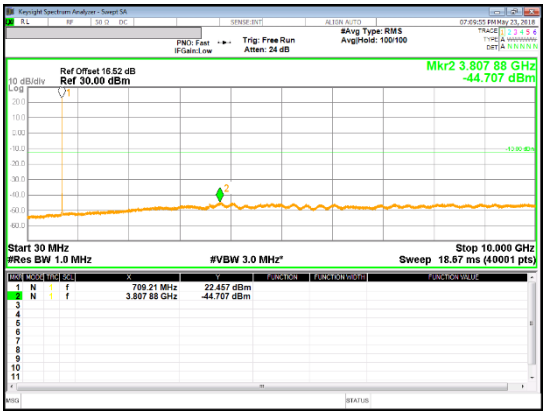
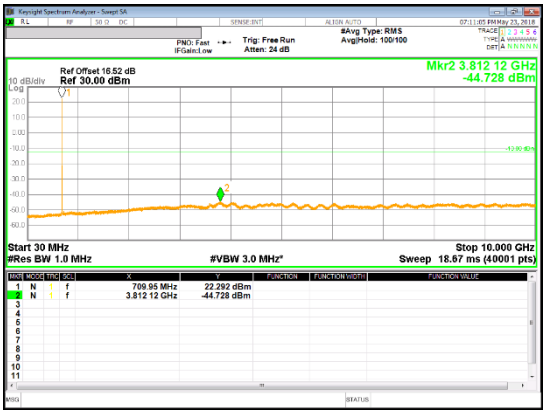
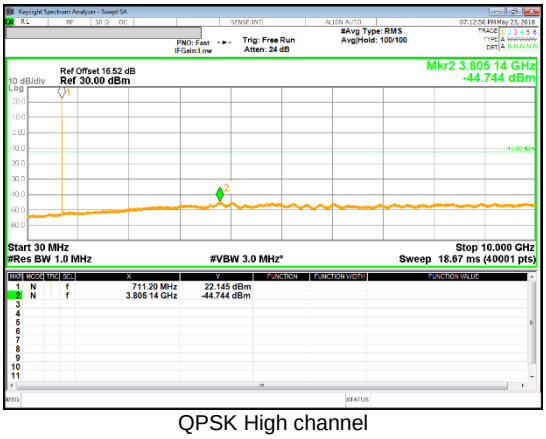
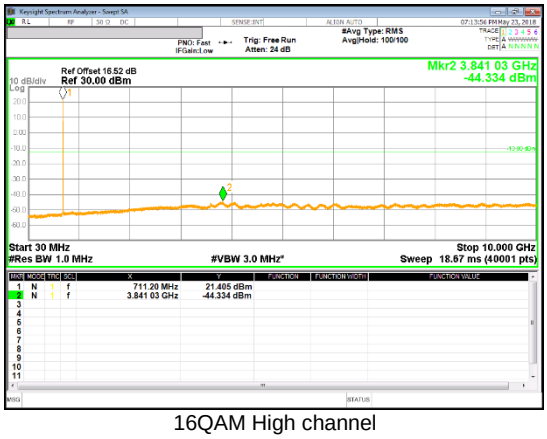
Band 5 10MHz	 QPSK Low channel	 16QAM Low channel
	 QPSK Mid channel	 16QAM Mid channel
	 QPSK High channel	 16QAM High channel

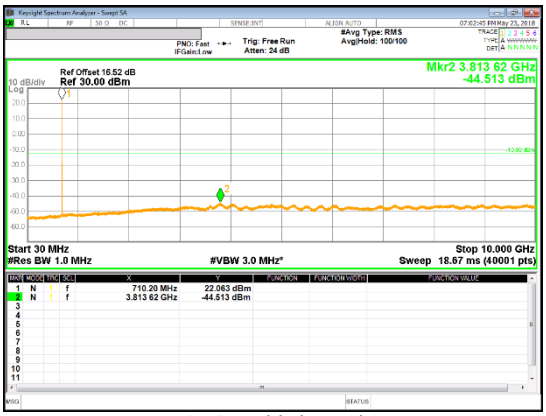
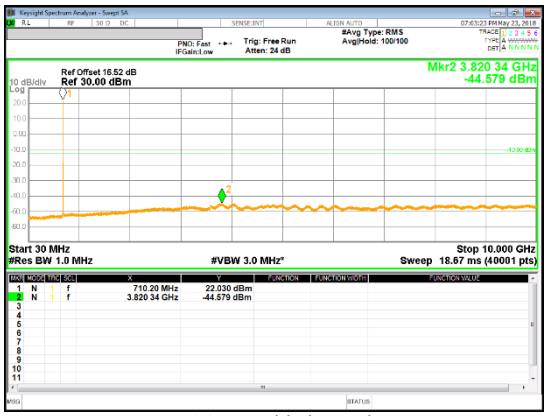
	 QPSK Low channel	 16QAM Low channel
Band 5 5MHz	 QPSK Mid channel	 16QAM Mid channel
	 QPSK High channel	 16QAM High channel

Band 5 3MHz	 QPSK Low channel	 16QAM Low channel
	 QPSK Mid channel	 16QAM Mid channel
	 QPSK High channel	 16QAM High channel

Band 5 1.4MHz	 QPSK Low channel	 16QAM Low channel
	 QPSK Mid channel	 16QAM Mid channel
	 QPSK High channel	 16QAM High channel

LTE Band 17

Band 17 10MHz	 QPSK Low channel	 16QAM Low channel
	 QPSK Mid channel	 16QAM Mid channel
	 QPSK High channel	 16QAM High channel

Band 17 5MHz	 QPSK Low channel	 16QAM Low channel
	 QPSK Mid channel	 16QAM Mid channel
	 QPSK High channel	 16QAM High channel

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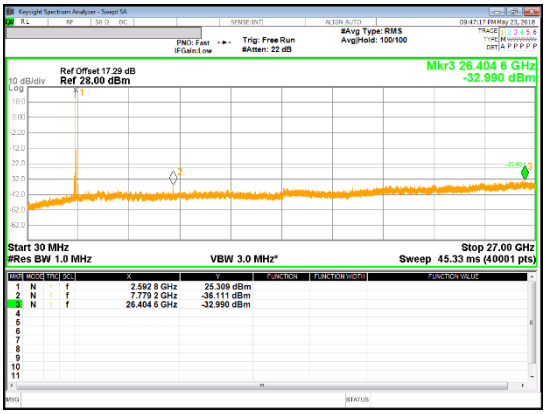
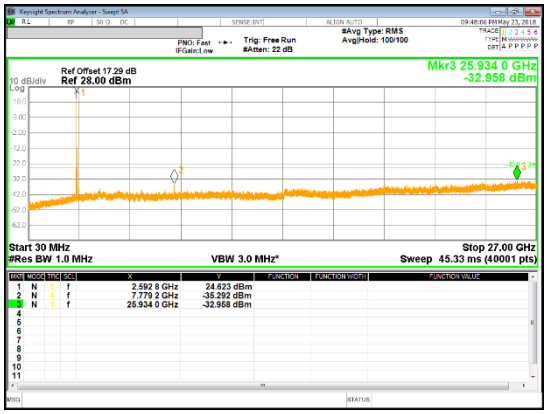
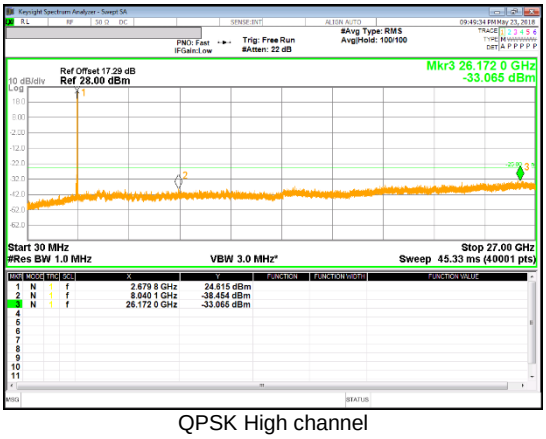
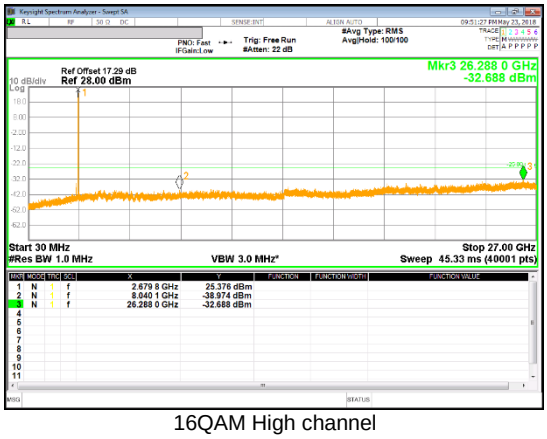
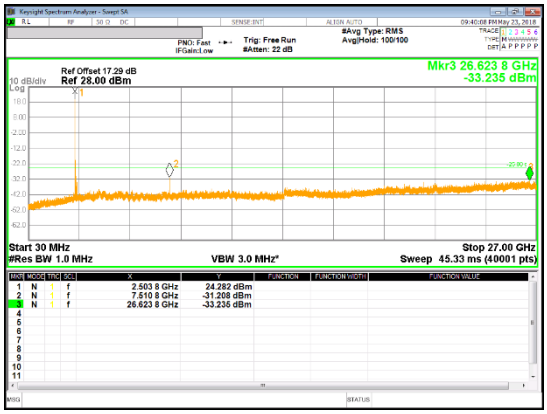
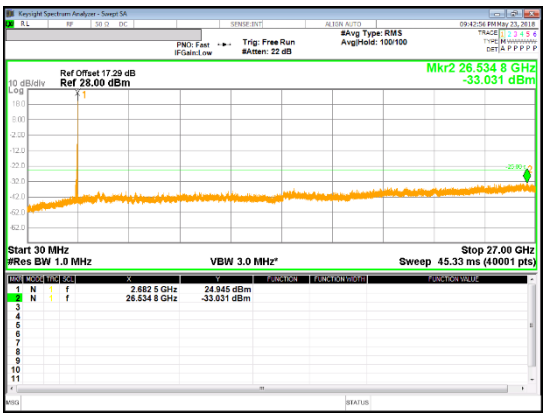
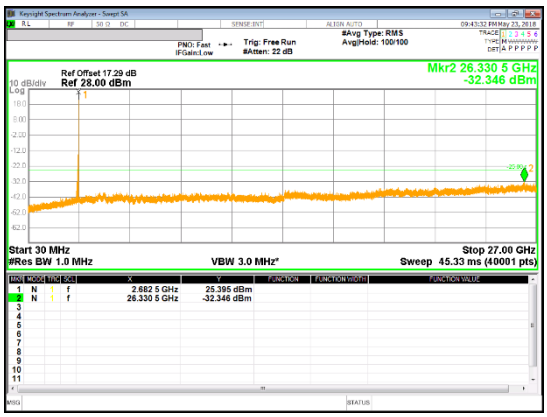
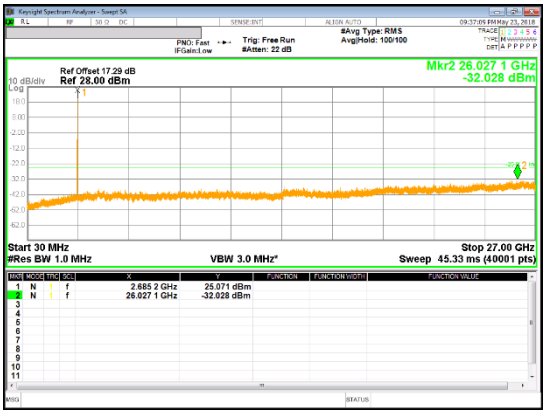
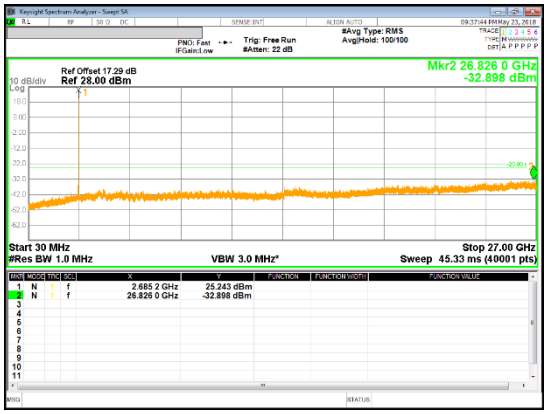
LTE Band 41

Band 41 20MHz	 QPSK Low channel	 16QAM Low channel
	 QPSK Mid channel	 16QAM Mid channel
	 QPSK High channel	 16QAM High channel

	 QPSK Low channel	 16QAM Low channel
Band 41 15MHz	 QPSK Mid channel	 16QAM Mid channel
	 QPSK High channel	 16QAM High channel

Band 41 10MHz	 QPSK Low channel	 16QAM Low channel
	 QPSK Mid channel	 16QAM Mid channel
	 QPSK High channel	 16QAM High channel

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	 QPSK Low channel	 16QAM Low channel
Band 41 5MHz	 QPSK Mid channel	 16QAM Mid channel
	 QPSK High channel	 16QAM High channel

9.4. FREQUENCY STABILITY

RULE PART(S)

FCC: §2.1055, §22.355, §24.235 and §27.54

LIMITS

§22.355 - The carrier frequency shall not depart from the reference frequency in excess of ±2.5 ppm for mobile stations.

§24.235 - The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

§27.54 - The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

TEST PROCEDURE

Per KDB 971168 D01 Power Meas License Digital Systems v03r01

RESULTS

See the following pages.

9.4.1. FREQUENCY STABILITY RESULTS

GSM 1900, Channel 661, Frequency 1880.0 MHz

Reference Frequency: GSM1900 Mid Channel 1880.0 MHz @ 20ºC Limit: +- 2.5 ppm = 4700.000 Hz				
Power Supply	**Environment**	**Frequency Deviation Measureed with Time Elapse**		
[Vdc]	**Temperature [*C]**	**[MHz]**	**Delta [ppm]**	**Limit [ppm]**
3.85	50	1879.99997991	-0.001	2.5
3.85	40	1879.99997717	0.001	2.5
3.85	30	1879.99997796	0.000	2.5
3.85	***20***	1879.99997825	***0***	***2.5***
3.85	10	1879.99998224	-0.002	2.5
3.85	0	1879.99998135	-0.002	2.5
3.85	-10	1879.99998109	-0.002	2.5
3.85	-20	1879.99997992	-0.001	2.5
3.85	-30	1879.99998396	-0.003	2.5

Reference Frequency: GSM1900 Mid Channel 1880.0 MHz @ 20ºC Limit: +- 2.5 ppm = 4700.000 Hz				
Power Supply	**Environment**	**Frequency Deviation Measureed with Time Elapse**		
[Vdc]	**Temperature [*C]**	**[MHz]**	**Delta [ppm]**	**Limit [ppm]**
3.85	***20***	**1879.99997825**	***0***	***2.5***
4.40	20	1879.99997702	0.001	2.5
3.60	20	1879.99997581	0.001	2.5

WCDMA Band 5 , Channel 4183, Frequency 836.6 MHz

Reference Frequency: WCDMA Band 5 Mid Channel 836.6 MHz @ 20ºC Limit: +- 2.5 ppm = 2091.500 Hz				
Power Supply	**Environment**	**Frequency Deviation Measureed with Time Elapse**		
[Vdc]	**Temperature [*C]**	**[MHz]**	**Delta [ppm]**	**Limit [ppm]**
3.85	50	836.60001509	0.001	2.5
3.85	40	836.60001702	-0.002	2.5
3.85	30	836.60001061	0.006	2.5
3.85	***20***	836.60001558	***0***	***2.5***
3.85	10	836.60001471	0.001	2.5
3.85	0	836.60000956	0.007	2.5
3.85	-10	836.60001194	0.004	2.5
3.85	-20	836.60001620	-0.001	2.5
3.85	-30	836.60001574	0.000	2.5

Reference Frequency: WCDMA Band 5 Mid Channel 836.6 MHz @ 20ºC Limit: +- 2.5 ppm = 2091.500 Hz				
Power Supply	**Environment**	**Frequency Deviation Measureed with Time Elapse**		
[Vdc]	**Temperature [*C]**	**[MHz]**	**Delta [ppm]**	**Limit [ppm]**
3.85	***20***	**836.60001558**	***0***	***2.5***
4.40	20	836.60001907	-0.004	2.5
3.60	20	836.60001322	0.003	2.5

WCDMA Band 2 , Channel 9400, Frequency 1880.0 MHz

Reference Frequency: WCDMA Band 2 Mid Channel 1880 MHz @ 20ºC Limit: +- 2.5 ppm = 4700.000 Hz				
Power Supply	**Environment**	**Frequency Deviation Measureed with Time Elapse**		
[Vdc]	**Temperature [*C]**	**[MHz]**	**Delta [ppm]**	**Limit [ppm]**
3.85	50	1879.99998600	-0.004	2.5
3.85	40	1879.99998004	-0.001	2.5
3.85	30	1879.99998516	-0.003	2.5
3.85	***20***	1879.99997858	***0***	***2.5***
3.85	10	1879.99998481	-0.003	2.5
3.85	0	1879.99998475	-0.003	2.5
3.85	-10	1879.99998005	-0.001	2.5
3.85	-20	1879.99997974	-0.001	2.5
3.85	-30	1879.99998534	-0.004	2.5

Reference Frequency: WCDMA Band 2 Mid Channel 1880 MHz @ 20ºC Limit: +- 2.5 ppm = 4700.000 Hz				
Power Supply	**Environment**	**Frequency Deviation Measureed with Time Elapse**		
[Vdc]	**Temperature [*C]**	**[MHz]**	**Delta [ppm]**	**Limit [ppm]**
3.85	***20***	**1879.99997858**	***0***	***2.5***
4.40	20	1879.99997648	0.001	2.5
3.60	20	1879.99997543	0.002	2.5

LTE Band 5 , Channel 20524, Frequency 836.5 MHz

Reference Frequency: LTE Band 5 Mid Channel 836.5 MHz @ 20ºC Limit: +- 2.5 ppm = 2091.250 Hz				
Power Supply	**Environment**	**Frequency Deviation Measureed with Time Elapse**		
[Vdc]	**Temperature [*C]**	**[MHz]**	**Delta [ppm]**	**Limit [ppm]**
3.85	50	836.49997515	-0.001	2.5
3.85	40	836.49997189	0.003	2.5
3.85	30	836.49996726	0.009	2.5
3.85	***20***	836.49997463	***0***	***2.5***
3.85	10	836.49997574	-0.001	2.5
3.85	0	836.49996854	0.007	2.5
3.85	-10	836.49997573	-0.001	2.5
3.85	-20	836.49996624	0.010	2.5
3.85	-30	836.49996737	0.009	2.5

Reference Frequency: LTE Band 5 Mid Channel 836.5 MHz @ 20ºC Limit: +- 2.5 ppm = 2091.250 Hz				
Power Supply	**Environment**	**Frequency Deviation Measureed with Time Elapse**		
[Vdc]	**Temperature [*C]**	**[MHz]**	**Delta [ppm]**	**Limit [ppm]**
3.85	***20***	**836.49997463**	***0***	***2.5***
4.40	20	836.49997578	-0.001	2.5
3.60	20	836.49996556	0.011	2.5

LTE Band 17 , Channel 23790, Frequency 710.0 MHz

Reference Frequency: LTE Band 17 Mid Channel 710 MHz @ 20ºC Limit: +- 2.5 ppm = 1775.000 Hz				
Power Supply	**Environment**	**Frequency Deviation Measureed with Time Elapse**		
[Vdc]	**Temperature [*C]**	**[MHz]**	**Delta [ppm]**	**Limit [ppm]**
3.85	50	709.99998077	-0.007	2.5
3.85	40	709.99997301	0.004	2.5
3.85	30	709.99997290	0.004	2.5
3.85	***20***	709.99997550	***0***	***2.5***
3.85	10	709.99997815	-0.004	2.5
3.85	0	709.99997353	0.003	2.5
3.85	-10	709.99998057	-0.007	2.5
3.85	-20	709.99997244	0.004	2.5
3.85	-30	709.99997314	0.003	2.5

Reference Frequency: LTE Band 17 Mid Channel 710 MHz @ 20ºC Limit: +- 2.5 ppm = 1775.000 Hz				
Power Supply	**Environment**	**Frequency Deviation Measureed with Time Elapse**		
[Vdc]	**Temperature [*C]**	**[MHz]**	**Delta [ppm]**	**Limit [ppm]**
3.85	***20***	**709.99997550**	***0***	***2.5***
4.40	20	709.99997472	0.001	2.5
3.60	20	709.99997096	0.006	2.5

LTE Band 41 , Channel 406230, Frequency 2593.0 MHz

Reference Frequency: LTE Band 41 Mid Channel 2593 MHz @ 20ºC Limit: +- 2.5 ppm = 6482.500 Hz				
Power Supply	**Environment**	**Frequency Deviation Measureed with Time Elapse**		
[Vdc]	**Temperature [*C]**	**[MHz]**	**Delta [ppm]**	**Limit [ppm]**
3.85	50	2593.00002240	-0.001	2.5
3.85	40	2593.00002476	-0.002	2.5
3.85	30	2593.00002548	-0.002	2.5
3.85	***20***	2593.00001926	***0***	***2.5***
3.85	10	2593.00001585	0.001	2.5
3.85	0	2593.00002142	-0.001	2.5
3.85	-10	2593.00002457	-0.002	2.5
3.85	-20	2593.00001739	0.001	2.5
3.85	-30	2593.00001985	0.000	2.5

Reference Frequency: LTE Band 41 Mid Channel 2593 MHz @ 20ºC Limit: +- 2.5 ppm = 6482.500 Hz				
Power Supply	**Environment**	**Frequency Deviation Measureed with Time Elapse**		
[Vdc]	**Temperature [*C]**	**[MHz]**	**Delta [ppm]**	**Limit [ppm]**
3.85	***20***	**2593.00001926**	***0***	***2.5***
4.40	20	2593.00002375	-0.002	2.5
3.60	20	2593.00001615	0.001	2.5

10. RADIATED TEST RESULTS

10.1. RADIATED POWER (ERP & EIRP)

RULE PART(S)

FCC: §2.1046, §22.913, §24.232 and §27.50

LIMITS

22.913(a) - The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.

24.232(c) - Mobile/portable stations are limited to 2 watts e.i.r.p. peak power and the equipment must employ means to limit the power to the minimum necessary for successful communications.

27.50(c) (10) - Portable stations (hand-held devices) in the 600 MHz uplink band and the 698-746 MHz band, and fixed and mobile stations in the 600 MHz uplink band are limited to 3 watts ERP.

27.50(h) - (2) Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

TEST PROCEDURE

ANSI / TIA / EIA 603 E Clause 2.2.17; ESU40 setting reference to 971168 D01 v03r01

For radiated output power LTE B5 measurement with a ESU40:

a) Set span to at least 1.5 times the OBW; b) Set number of points in sweep ≥ 2 × span / RBW; c) Sweep time = auto-couple; d) Detector = RMS (power averaging); e) Use free run trigger If burst duty cycle ≥ 98; f) Use trigger to capture bursts If burst duty cycle < 98; i) Trace average at least 100 traces in power averaging (*i.e.*, RMS) mode. g) Compute the power by integrating the spectrum across the OBW of the signal using the instrument's band power measurement function. (RBW/VBW are automatically set)

For radiated output power GSM/WCDMA/ LTE B17/LTE B41 measurement with a ESU40:

a) Set the RBW ≥ OBW; b) Set VBW ≥ 3 × RBW; c) Set span ≥ 2 x RBW; d) Sweep time = auto couple; e) Detector = rms; f) Ensure that the number of measurement points ≥ span/RBW; g) Trace mode = max hold(GSM,WCDMA), average(LTE);

TEST RESULTS

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10.1.1. ERP/EIRP Results

GSM

Band	Mode	Channel	f [MHz]	ERP / EIRP	
				[dBm]	[mW]
GSM1900	GPRS	512	1850.2	28.50	707.95
		661	1880.0	27.98	628.06
		810	1909.8	27.71	590.20
	EGPRS	512	1850.2	25.02	317.69
		661	1880.0	24.09	256.45
		810	1909.8	24.31	269.77

WCDMA

Band	Mode	Channel	f [MHz]	ERP / EIRP	
				[dBm]	[mW]
Band 5	REL99	4132	826.4	17.93	62.09
		4183	836.6	17.48	55.98
		4233	846.6	16.64	46.13
	HSDPA	4132	826.4	17.43	55.34
		4183	836.6	17.09	51.17
		4233	846.6	16.35	43.15
Band 2	REL99	9262	1852.4	18.36	68.55
		9400	1880.0	20.70	117.49
		9538	1907.6	20.05	101.16
	HSDPA	9262	1852.4	17.38	54.70
		9400	1880.0	19.82	95.94
		9538	1907.6	18.59	72.28

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LTE Band 5

Band	BW [MHz]	Mode	RB/RB Size	f [MHz]	ERP / EIRP	
			Full RB		[dBm]	[mW]
Band 5	10	QPSK	50/0	829.0	16.32	42.85
			50/0	836.5	16.02	39.99
			50/0	844.0	15.57	36.06
		16QAM	50/0	829.0	15.50	35.48
			50/0	836.5	15.05	31.99
			50/0	844.0	14.39	27.48
	5	QPSK	25/0	826.5	16.08	40.55
			25/0	836.5	15.69	37.07
			25/0	846.5	14.76	29.92
		16QAM	25/0	826.5	15.07	32.14
			25/0	836.5	14.77	29.99
			25/0	846.5	13.83	24.15
	3	QPSK	15/0	825.5	16.45	44.16
			15/0	836.5	15.57	36.06
			15/0	847.5	14.48	28.05
		16QAM	15/0	825.5	15.42	34.83
			15/0	836.5	14.59	28.77
			15/0	847.5	13.51	22.44
	1.4	QPSK	6/0	824.7	13.98	25.00
			6/0	836.5	12.45	17.58
			6/0	848.3	12.33	17.10
		16QAM	6/0	824.7	13.14	20.61
			6/0	836.5	11.51	14.16
			6/0	848.3	11.40	13.80

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LTE Band 17

Band	BW [MHz]	Mode	RB/RB Offset	f [MHz]	ERP / EIRP	
			1 RB		[dBm]	[mW]
Band 17	10	QPSK	1 / 0	709.0	17.33	54.08
			1 / 0	710.0	17.55	56.89
			1 / 0	711.0	16.46	44.26
		16QAM	1 / 0	709.0	16.26	42.27
			1 / 49	710.0	16.62	45.92
			1 / 0	711.0	15.51	35.56
	5	QPSK	1 / 0	706.5	17.17	52.12
			1 / 0	710.0	17.38	54.70
			1 / 0	713.5	17.73	59.29
		16QAM	1 / 0	706.5	16.25	42.17
			1 / 12	710.0	16.61	45.81
			1 / 12	713.5	16.26	42.27

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LTE Band 41

Band	BW [MHz]	Mode	RB/RB Offset	f [MHz]	ERP / EIRP	
			1 RB		[dBm]	[mW]
Band 41	20	QPSK	1 / 49	2506.0	20.70	117.49
			1 / 49	2593.0	21.63	145.55
			1 / 99	2680.0	22.58	181.13
		16QAM	1 / 49	2506.0	19.31	85.31
			1 / 99	2593.0	22.12	162.93
			1 / 99	2680.0	21.44	139.32
	15	QPSK	1 / 0	2503.5	22.29	169.43
			1 / 74	2593.0	21.15	130.32
			1 / 74	2682.5	22.37	172.58
		16QAM	1 / 0	2503.5	20.86	121.90
			1 / 0	2593.0	22.21	166.34
			1 / 74	2682.5	21.74	149.28
	10	QPSK	1 / 0	2501.0	21.38	137.40
			1 / 49	2593.0	23.03	200.91
			1 / 49	2685.0	22.28	169.04
		16QAM	1 / 0	2501.0	21.46	139.96
			1 / 49	2593.0	21.73	148.94
			1 / 49	2685.0	22.43	174.98
	5	QPSK	1 / 24	2498.5	21.53	142.23
			1 / 0	2593.0	23.20	208.93
			1 / 0	2687.5	22.11	162.55
		16QAM	1 / 0	2498.5	21.20	131.83
			1 / 0	2593.0	22.34	171.40
			1 / 0	2687.5	21.44	139.32

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10.1.2. ERP/EIRP DATA

GSM 1900

GSM

GSM1900
GPRS

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480738
Date: 2018-05-14
Test Engineer: 51072
Configuration: EUT
Location: Chamber 1
Mode: GPRS 1900 MHz Fundamentals

Test Equpment:
Receiving: Horn 3117[00168717], and Chamber 1 SMA Cables
Substitution: Horn 3115[00161451], 3m N-type Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1850.20	19.60	V	4.5	9.5	24.61	33.0	-8.4	
1850.20	23.49	H	4.5	9.5	28.50	33.0	-4.5	
Mid Ch								
1880.00	19.75	V	4.5	9.2	24.43	33.0	-8.6	
1880.00	23.30	H	4.5	9.2	27.98	33.0	-5.0	
High Ch								
1909.80	19.76	V	4.6	8.9	24.06	33.0	-8.9	
1909.80	23.41	H	4.6	8.9	27.71	33.0	-5.3	

GSM

GSM1900
EGPRS

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480738
Date: 2018-05-14
Test Engineer: 51072
Configuration: EUT
Location: Chamber 1
Mode: EGPRS 1900 MHz Fundamentals

Test Equpment:
Receiving: Horn 3117[00168717], and Chamber 1 SMA Cables
Substitution: Horn 3115[00161451], 3m N-type Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1850.20	15.92	V	4.5	9.5	20.93	33.0	-12.1	
1850.20	20.01	H	4.5	9.5	25.02	33.0	-8.0	
Mid Ch								
1880.00	17.27	V	4.5	9.2	21.95	33.0	-11.1	
1880.00	19.41	H	4.5	9.2	24.09	33.0	-8.9	
High Ch								
1909.80	16.55	V	4.6	8.9	20.85	33.0	-12.2	
1909.80	20.01	H	4.6	8.9	24.31	33.0	-8.7	

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