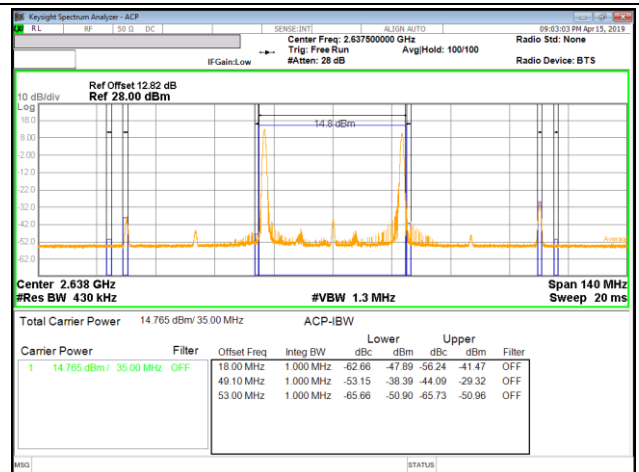
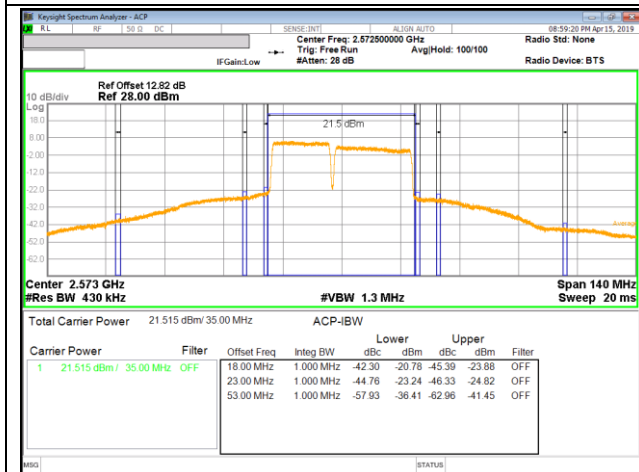


LTE B41 15MHz + 20MHz QPSK Low Ch RB1-0 + RB1-99



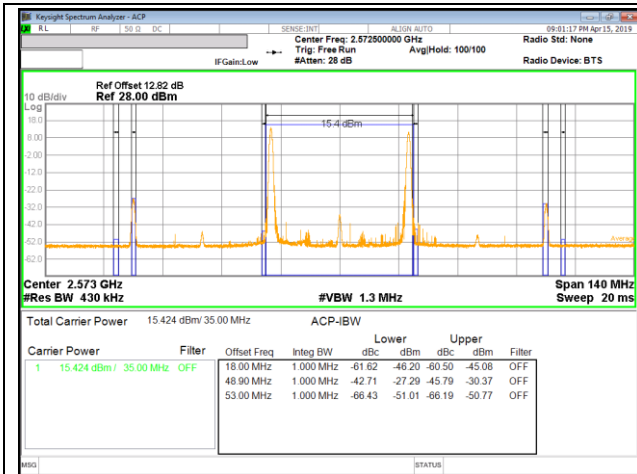
LTE B41 15MHz + 20MHz QPSK High Ch RB1-0 + RB1-99



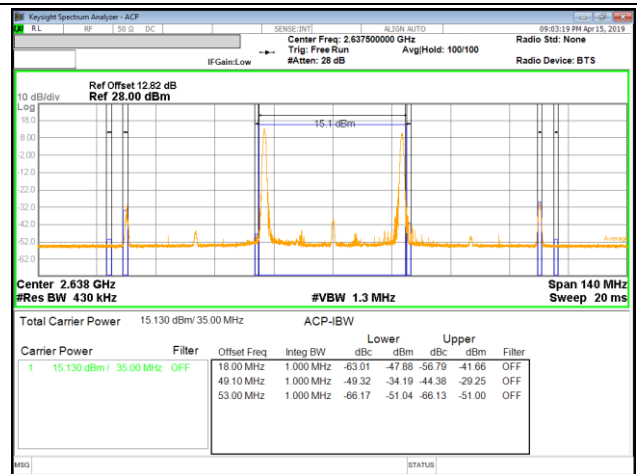
LTE B41 15MHz + 20MHz QPSK Low Ch RB75-0 + RB100-0



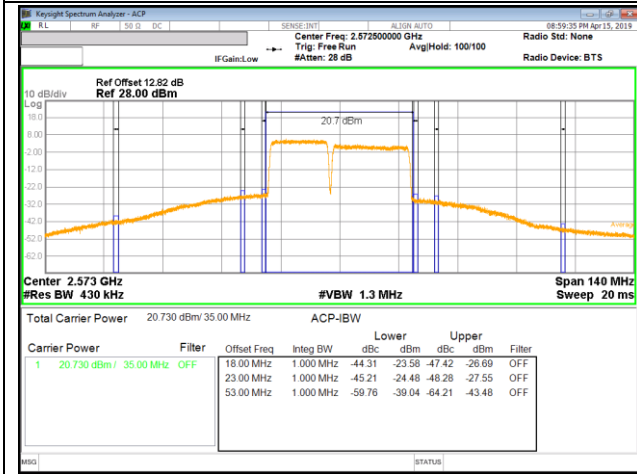
LTE B41 15MHz + 20MHz QPSK High Ch RB75-0 + RB100-0



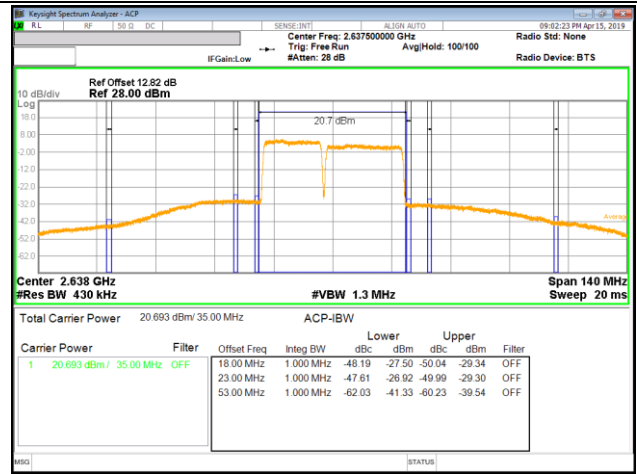
LTE B41 15MHz + 20MHz 16QAM Low Ch RB1-0 + RB1-99



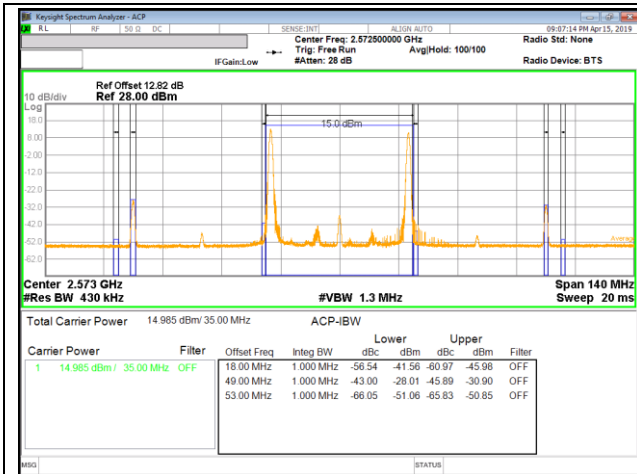
LTE B41 15MHz + 20MHz 16QAM High Ch RB1-0 + RB1-99



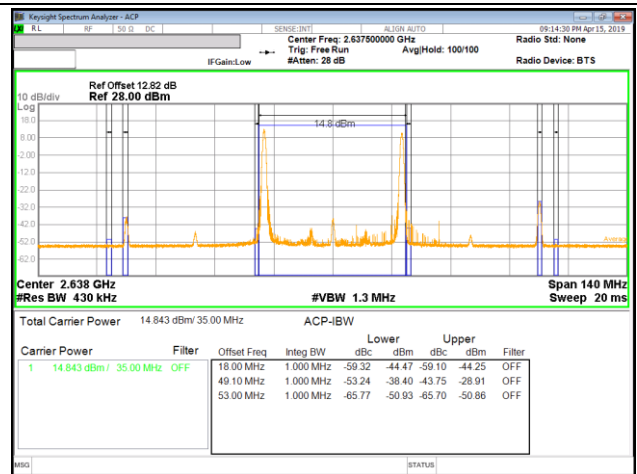
LTE B41 15MHz + 20MHz 16QAM Low Ch RB75-0 + RB100-0



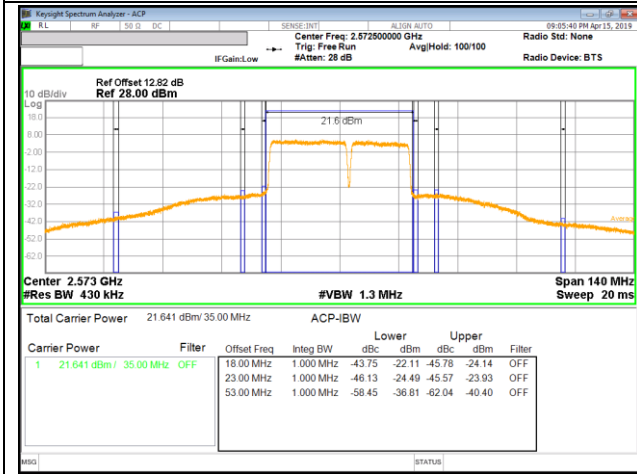
LTE B41 15MHz + 20MHz 16QAM High Ch RB75-0 + RB100-0



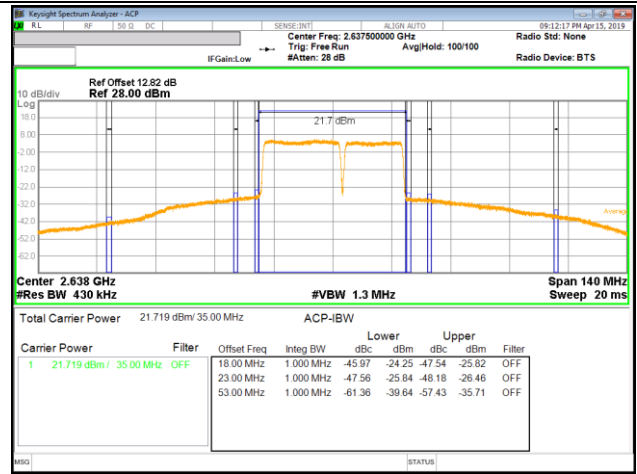
LTE B41 20MHz + 15MHz QPSK Low Ch RB1-0 + RB1-74



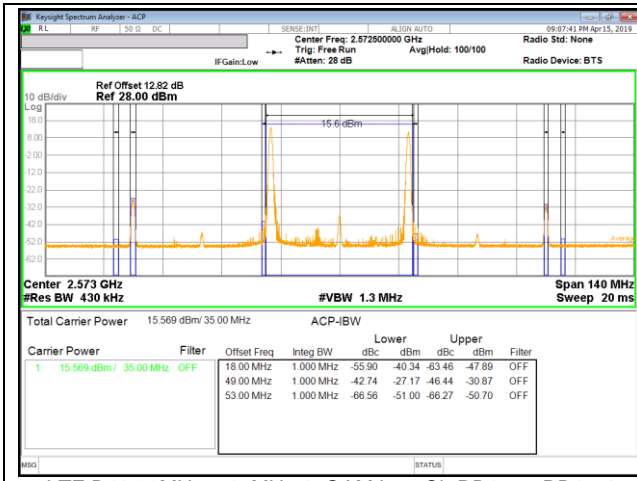
LTE B41 20MHz + 15MHz QPSK High Ch RB1-0 + RB1-74



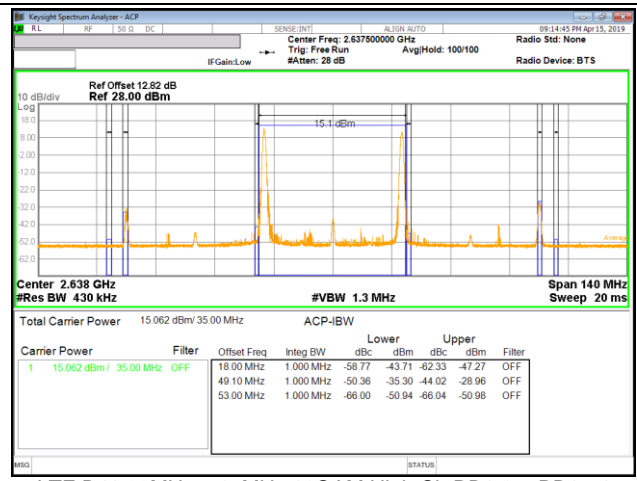
LTE B41 20MHz + 15MHz QPSK Low Ch RB100-0 + RB75-0



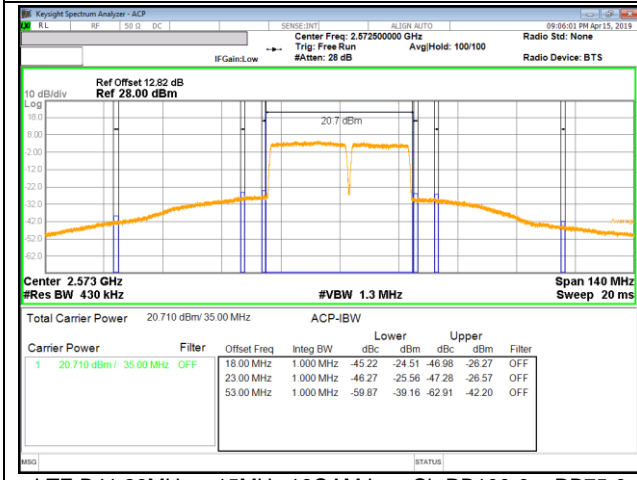
LTE B41 20MHz + 15MHz QPSK High Ch RB100-0 + RB75-0



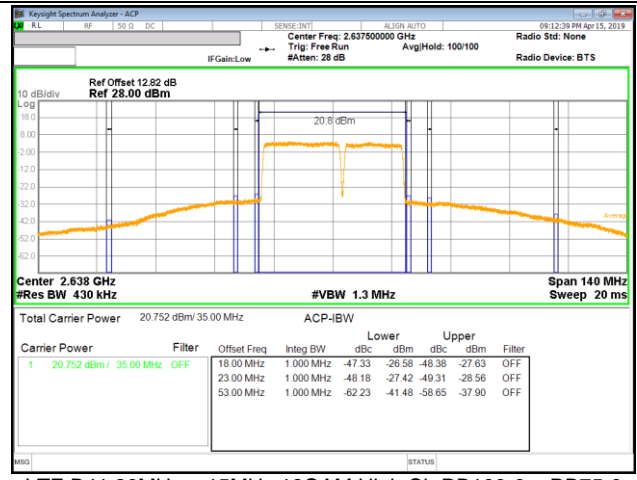
LTE B41 20MHz + 15MHz 16QAM Low Ch RB1-0 + RB1-74



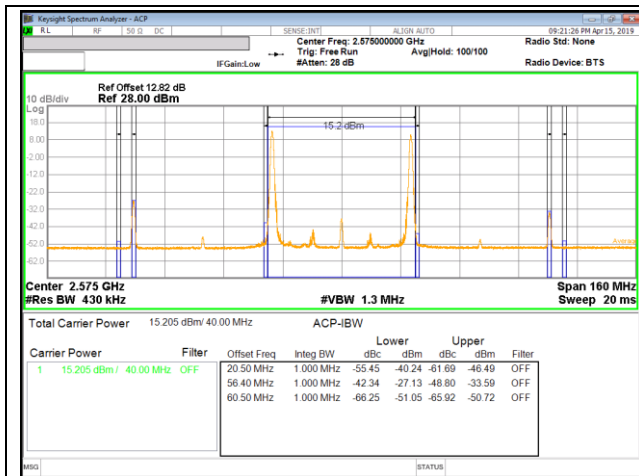
LTE B41 20MHz + 15MHz 16QAM High Ch RB1-0 + RB1-74



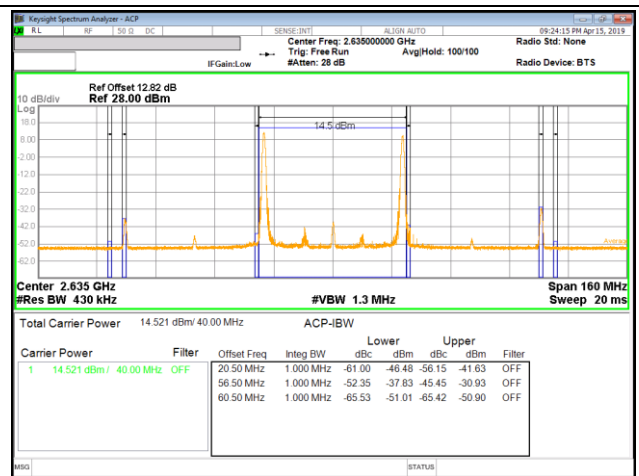
LTE B41 20MHz + 15MHz 16QAM Low Ch RB100-0 + RB75-0



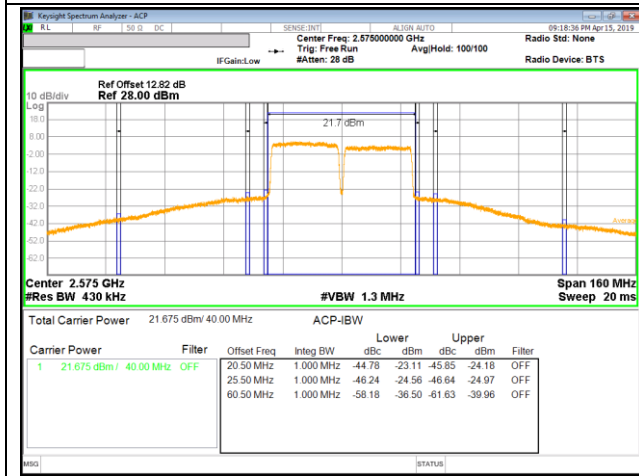
LTE B41 20MHz + 15MHz 16QAM High Ch RB100-0 + RB75-0



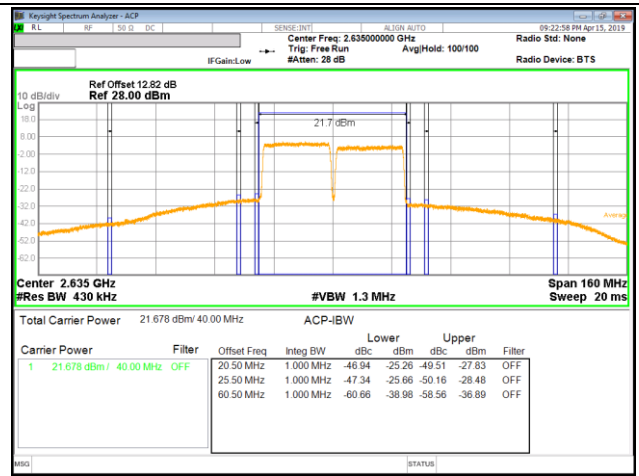
LTE B41 20MHz + 20MHz QPSK Low Ch RB1-0 + RB1-99



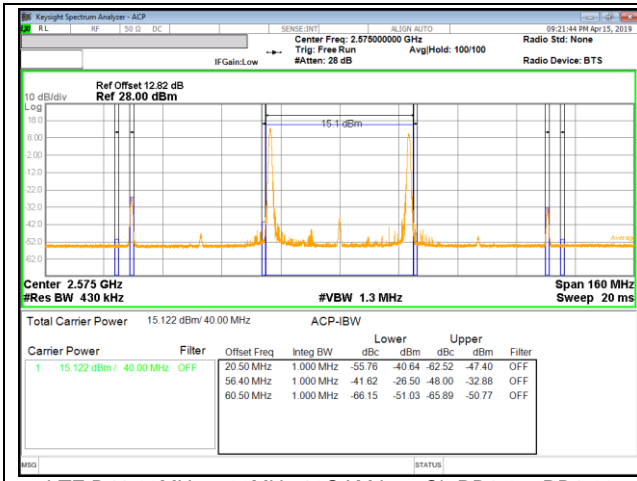
LTE B41 20MHz + 20MHz QPSK High Ch RB1-0 + RB1-99



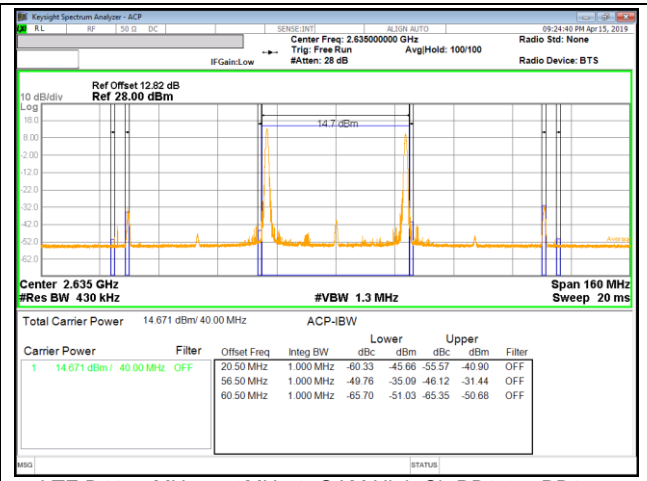
LTE B41 20MHz + 20MHz QPSK Low Ch RB100-0 + RB100-0



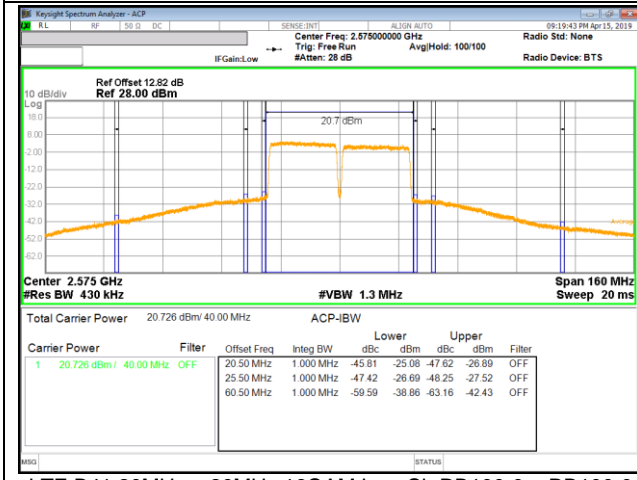
LTE B41 20MHz + 20MHz QPSK High Ch RB100-0 + RB100-0



LTE B41 20MHz + 20MHz 16QAM Low Ch RB1-0 + RB1-99



LTE B41 20MHz + 20MHz 16QAM High Ch RB1-0 + RB1-99



LTE B41 20MHz + 20MHz 16QAM Low Ch RB100-0 + RB100-0



LTE B41 20MHz + 20MHz 16QAM High Ch RB100-0 + RB100-0

8.3. OUT OF BAND EMISSIONS

RULE PART(S)

FCC: §2.1051 and §27.53

LIMITS

Part 27.53(m) For mobile digital stations, the attenuation factor shall be not less than $40 + 10 \log (P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10 \log (P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10 \log (P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less than $43 + 10 \log (P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log (P)$ dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

TEST PROCEDURE

Per KDB 971168 D01 Power Meas License Digital Systems v03r01

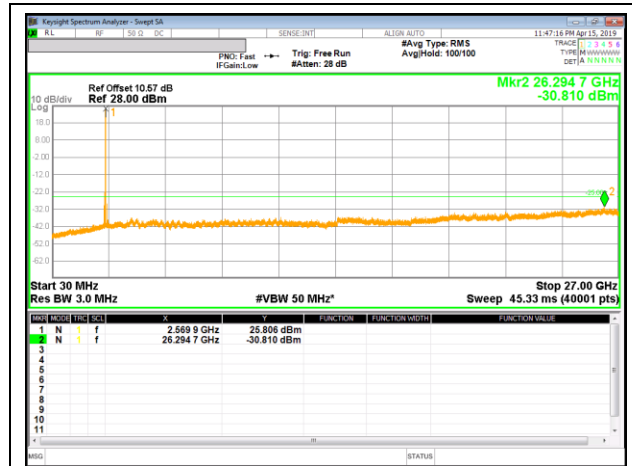
The RF output of the transmitter was connected to a spectrum analyzer through a calibrated coaxial cable. Sufficient scans were taken to show the out-of-band Emissions, if any, up to 10th harmonic. Multiple sweeps were recorded in maximum hold mode using a peak detector to ensure that the worst-case 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 $\geq 3 \times$ RBW;
- c) Set span ≥ 1.5 times the OBW;
- d) Sweep time = auto couple;
- e) Detector = peak;
- f) Ensure that the number of measurement points = Max (40001);
- g) Trace mode = max hold;

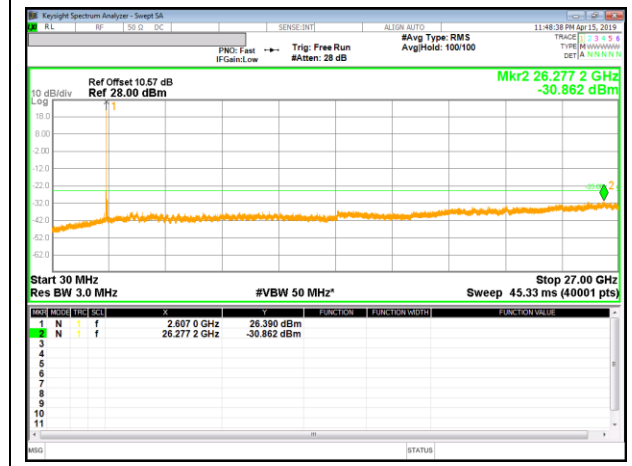
RESULTS

8.3.1. OUT OF BAND EMISSIONS PLOTS

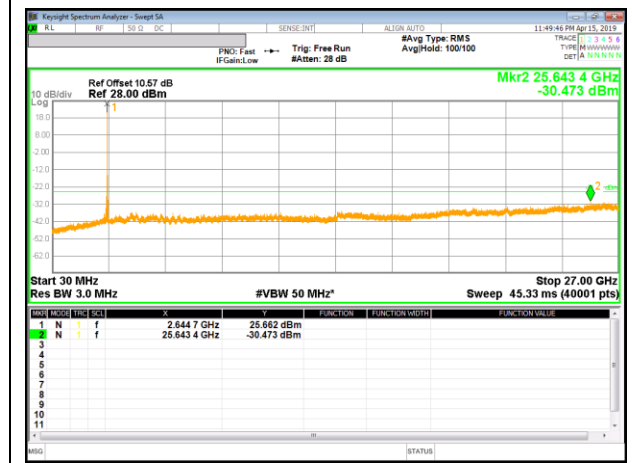
LTE Band 41



LTE B41 20MHz + 15MHz QPSK Low Ch RB1-99 + RB1-0



LTE B41 20MHz + 15MHz QPSK Middle Ch RB1-99 + RB1-0



LTE B41 20MHz + 15MHz QPSK High Ch RB1-99 + RB1-0

9. RADIATED TEST RESULTS

9.1. FIELD STRENGTH OF SPURIOUS RADIATION

RULE PART(S)

FCC: §2.1053 and §27.53

LIMIT

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

ANSI / TIA / EIA 603 E Clause 2.2.12; ESU40 setting reference to 971168 D01 v03r01

For peak power measurement with a ESU40:

- a) Set the RBW = 100 KHz for emission below 1GHz and 1MHz for emissions above 1GHz
- b) Set VBW $\geq 3 \times$ RBW;
- c) Set span ≥ 1.5 times the OBW;
- d) Sweep time = auto couple;
- e) Detector = rms;
- f) Ensure that the number of measurement points \geq span/RBW;
- g) Trace mode = max hold;

RESULTS

9.1.1. SPURIOUS RADIATION PLOTS

LTE Band 41

		UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement								
		Company:	Samsung							
		Project #:	4788886237							
		Date:	2019-04-16							
		Test Engineer:	45585							
		Configuration:	EUT / AC Adapter, Y-Position							
		Location:	Chamber 1							
		Mode:	LTE_QPSK_ULCA Band 41 Harmonics, 15MHz/10MHz Bandwidth							
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	
Low Ch, 2570MHz										
5140.00	-4.0	V	3.0	43.8	1.0	-46.8	-25.0	-21.8		
7710.00	-4.2	V	3.0	42.4	1.0	-45.6	-25.0	-20.6		
10280.00	-10.1	V	3.0	40.6	1.0	-49.8	-25.0	-24.8		
5140.00	-3.6	H	3.0	43.8	1.0	-46.3	-25.0	-21.3		
7710.00	-5.7	H	3.0	42.4	1.0	-47.1	-25.0	-22.1		
10280.00	-10.9	H	3.0	40.6	1.0	-50.5	-25.0	-25.5		
Mid Ch, 2607MHz										
5214.00	-2.0	V	3.0	43.8	1.0	-44.8	-25.0	-19.8		
7821.00	-1.5	V	3.0	42.3	1.0	-42.8	-25.0	-17.8		
10428.00	-8.3	V	3.0	40.7	1.0	-48.0	-25.0	-23.0		
5214.00	-3.5	H	3.0	43.8	1.0	-46.2	-25.0	-21.2		
7821.00	-6.8	H	3.0	42.3	1.0	-48.1	-25.0	-23.1		
10428.00	-10.0	H	3.0	40.7	1.0	-49.7	-25.0	-24.7		
High Ch, 2645MHz										
5290.00	-2.0	V	3.0	43.7	1.0	-44.8	-25.0	-19.8		
7935.00	5.2	V	3.0	42.2	1.0	-36.1	-25.0	-11.1		
10580.00	-5.1	V	3.0	40.7	1.0	-44.8	-25.0	-19.8		
5290.00	-4.2	H	3.0	43.7	1.0	-46.9	-25.0	-21.9		
7935.00	0.5	H	3.0	42.2	1.0	-40.7	-25.0	-15.7		
10580.00	-7.3	H	3.0	40.7	1.0	-47.1	-25.0	-22.1		

LTE
 Band 41
 PCC
 15MHz
 SCC
 10MHz
 QPSK