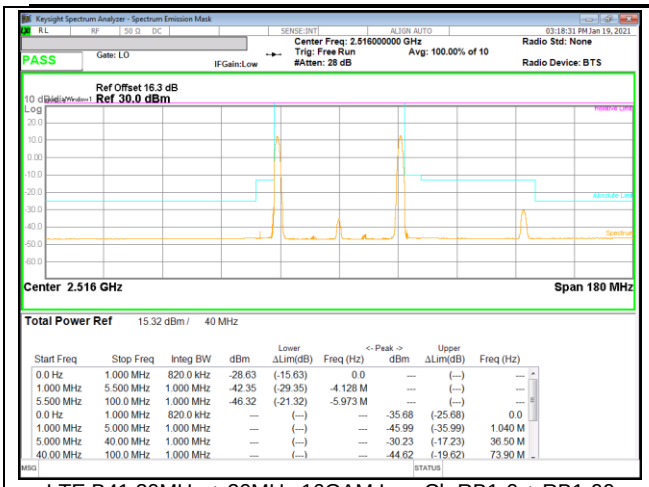
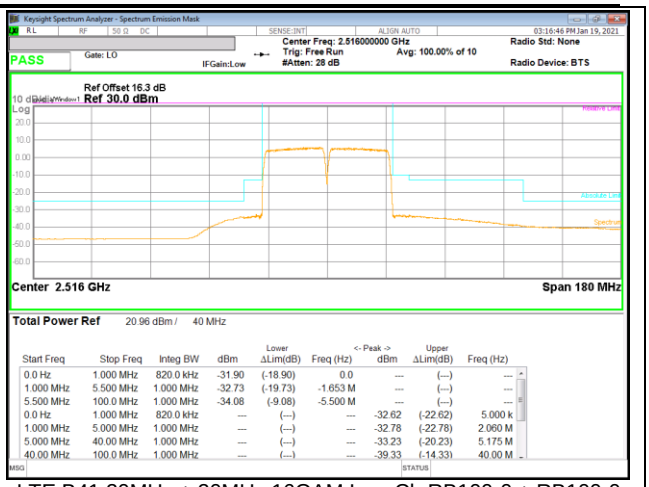


LTE B41 20MHz + 20MHz 16QAM Low Ch RB1-0 + RB1-99

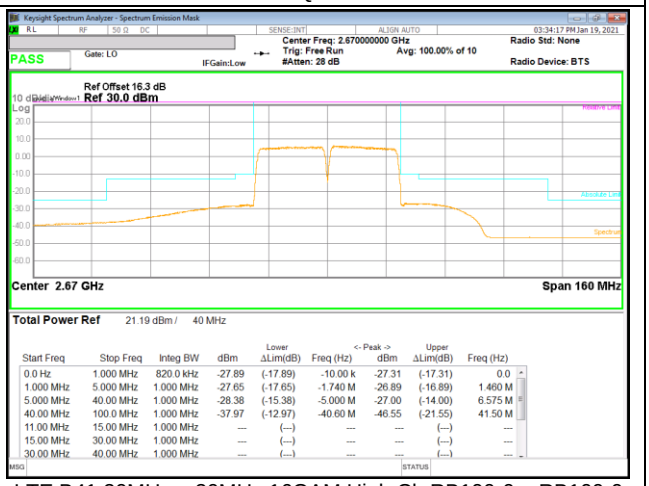


LTE B41 20MHz + 20MHz 16QAM Low Ch RB100-0 + RB100-0

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

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

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



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

8.4. OUT OF BAND EMISSIONS

RULE PART(S)

FCC: §27.53

LIMITS

Part 27.53:

(m) (4) 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 that 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 ≥ 3 × 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 = Max (40001);

g) Trace mode = Max hold(LTE TDD);

RESULTS

See the following pages.

NOTE : Please refer to section 5.4 for bandwidth and RB setting about LTE bands.

UL Korea, Ltd. Suwon Laboratory FORM ID: FCC_22/24/27(04)
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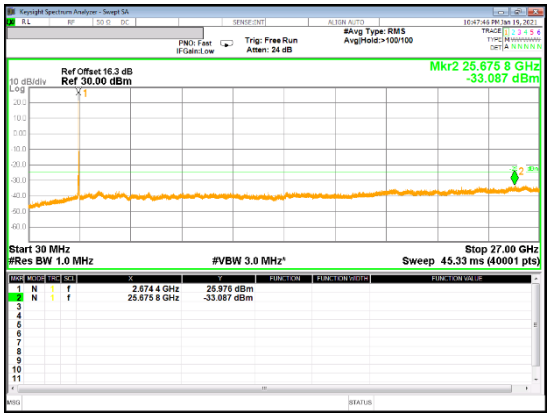
8.4.1. OUT OF BAND EMISSIONS RESULT

LTE Band 41

Band 41 20MHz – 15MHz	 QPSK Low channel RB 1-99 + RB 1-0	 QPSK Mid channel RB 1-99 + RB 1-0
	 QPSK High channel RB 1-99 + RB 1-0	

9. RADIATED TEST RESULTS

9.1. FIELD STRENGTH OF SPURIOUS RADIATION

RULE PART(S)

FCC: §2.1053, §27. 53

LIMIT

Part 27.53:
(m) (4) 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 that 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

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 ≥ 3 × 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 ≥ span/RBW;
g) Trace mode = average(LTE Band 7C), Maxhold(LTE Band 38C);;

RESULTS

See the following pages.

NOTE : Please refer to section 5.5 for bandwidth and RB setting about LTE bands.

9.1.1. SPURIOUS RADIATION

LTE Band 41

LTE

Band 41

20MHz – 15MHz

QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company:	Samsung
Project #:	4789754174
Date:	2021-01-22
Test Engineer:	20881
Configuration:	EUT / AC Adapter, Y-Position
Location:	Chamber 1
Mode:	LTE_QPSK Band 41 Uplink CA Harmonics, 20MHz/15MHz Bandwidth
Test Votage:	AC 120 V, 60 Hz

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, PCC : 2506MHz SCC : 2523.1MHz									
5031.60	-16.3	V	3.0	45.5	1.0	-60.8	-25.0	-35.8	
7547.40	-14.9	V	3.0	44.1	1.0	-58.1	-25.0	-33.1	
10063.20	-11.9	V	3.0	42.3	1.0	-53.2	-25.0	-28.2	
12579.00	-9.2	V	3.0	43.4	1.0	-51.6	-25.0	-26.6	
15094.80	-7.3	V	3.0	45.3	1.0	-51.5	-25.0	-26.5	
5031.60	-16.1	H	3.0	45.5	1.0	-60.5	-25.0	-35.5	
7547.40	-14.9	H	3.0	44.1	1.0	-58.1	-25.0	-33.1	
10063.20	-12.5	H	3.0	42.3	1.0	-53.7	-25.0	-28.7	
12579.00	-9.8	H	3.0	43.4	1.0	-52.2	-25.0	-27.2	
15094.80	-8.1	H	3.0	45.3	1.0	-52.4	-25.0	-27.4	
Mid Ch, PCC : 2585.6MHz SCC : 2602.7MHz									
5190.80	5.8	V	3.0	45.4	1.0	-38.7	-25.0	-13.7	
7786.20	7.2	V	3.0	44.0	1.0	-35.8	-25.0	-10.8	
10381.60	-6.0	V	3.0	42.4	1.0	-47.3	-25.0	-22.3	
12977.00	-5.5	V	3.0	43.7	1.0	-48.2	-25.0	-23.2	
15572.40	-6.0	V	3.0	44.7	1.0	-49.7	-25.0	-24.7	
5190.80	3.8	H	3.0	45.4	1.0	-40.7	-25.0	-15.7	
7786.20	10.0	H	3.0	44.0	1.0	-33.0	-25.0	-8.0	
10381.60	-3.1	H	3.0	42.4	1.0	-44.4	-25.0	-19.4	
12977.00	-4.8	H	3.0	43.7	1.0	-47.5	-25.0	-22.5	
15572.40	-6.6	H	3.0	44.7	1.0	-50.3	-25.0	-25.3	
High Ch, PCC : 2665.1MHz SCC : 2682.2MHz									
5349.80	-15.9	V	3.0	45.4	1.0	-60.3	-25.0	-35.3	
8024.70	-9.5	V	3.0	43.9	1.0	-52.3	-25.0	-27.3	
10699.60	-11.5	V	3.0	42.5	1.0	-53.0	-25.0	-28.0	
13374.50	-9.1	V	3.0	44.0	1.0	-52.2	-25.0	-27.2	
16049.40	-6.9	V	3.0	44.1	1.0	-50.1	-25.0	-25.1	
5349.80	-16.0	H	3.0	45.4	1.0	-60.4	-25.0	-35.4	
8024.70	-8.9	H	3.0	43.9	1.0	-51.8	-25.0	-26.8	
10699.60	-11.5	H	3.0	42.5	1.0	-52.9	-25.0	-27.9	
13374.50	-8.7	H	3.0	44.0	1.0	-51.8	-25.0	-26.8	
16049.40	-7.2	H	3.0	44.1	1.0	-50.4	-25.0	-25.4	

END OF TEST REPORT