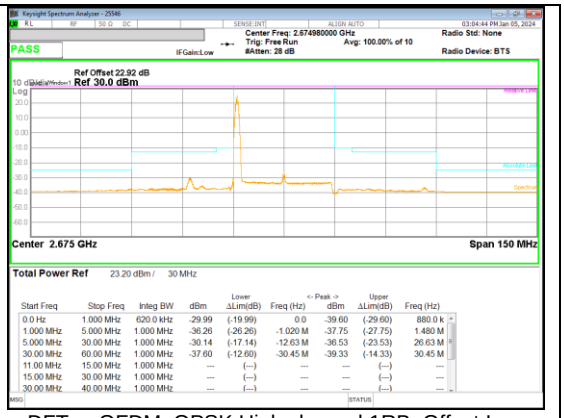
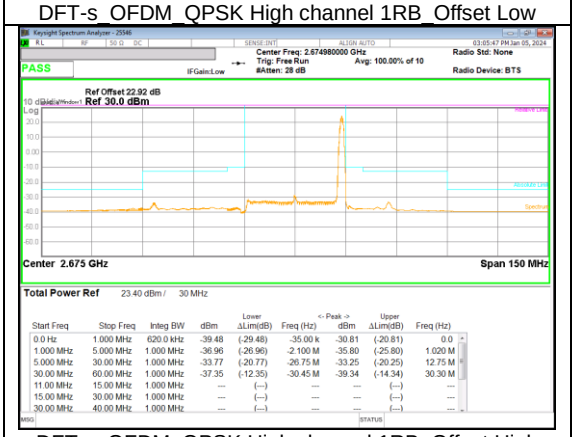
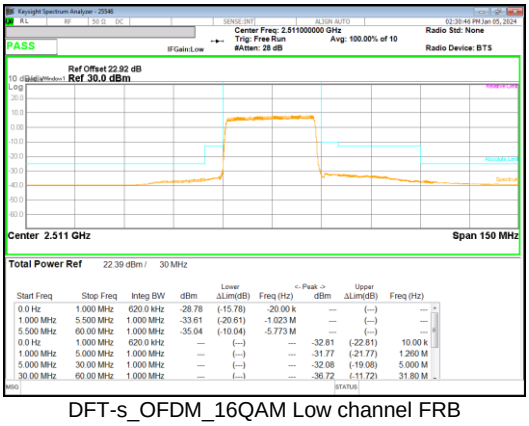
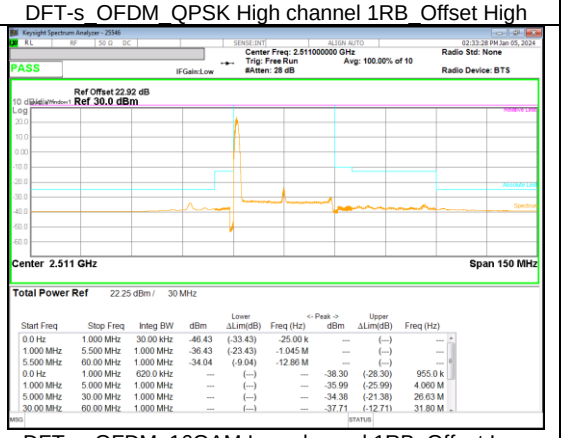
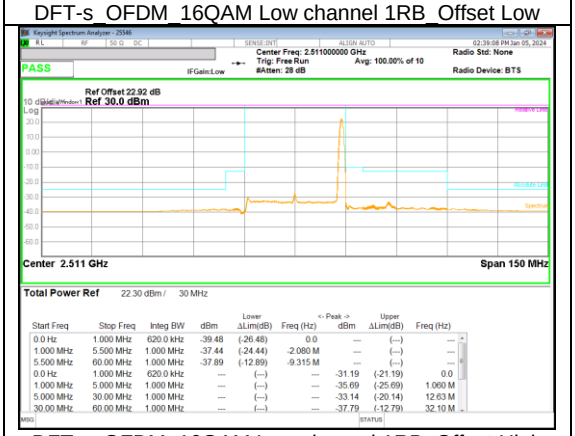
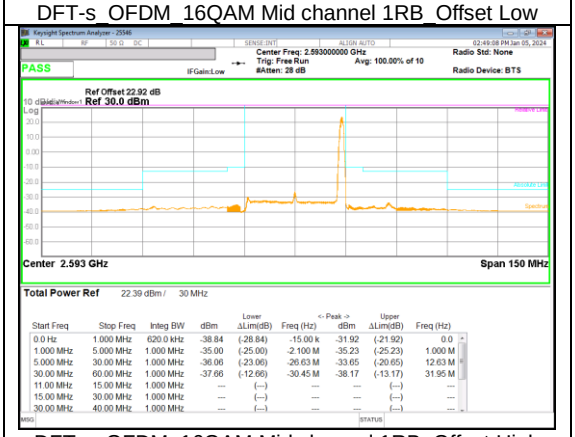
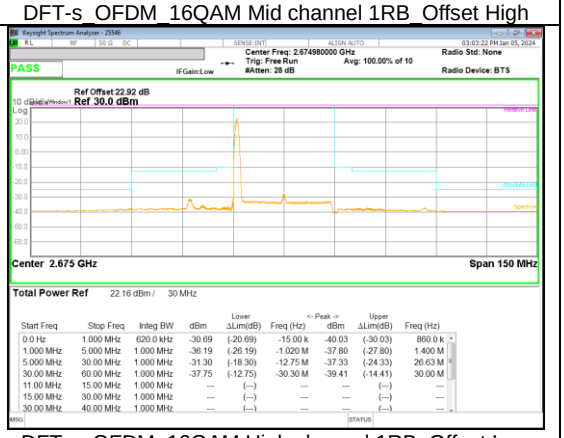
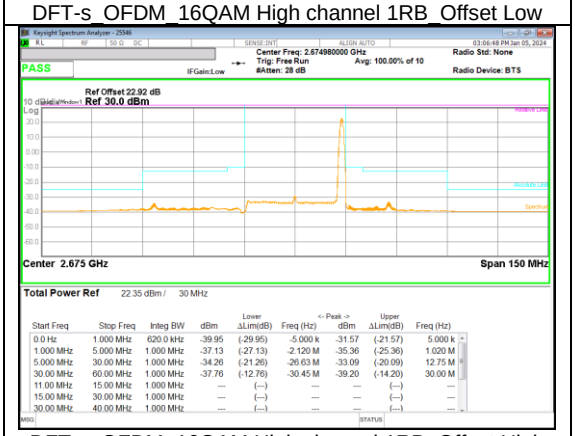
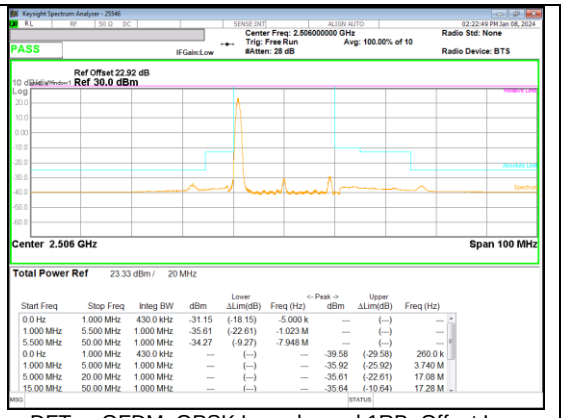
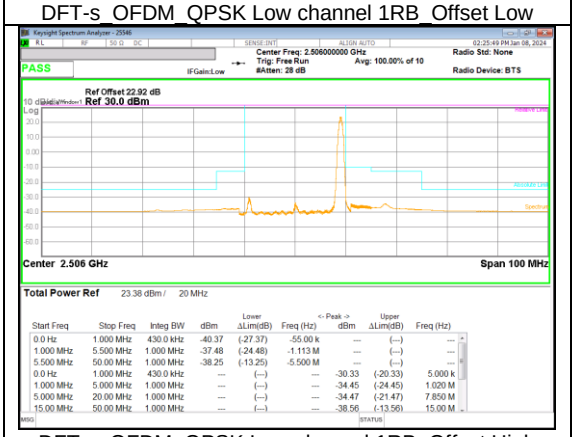
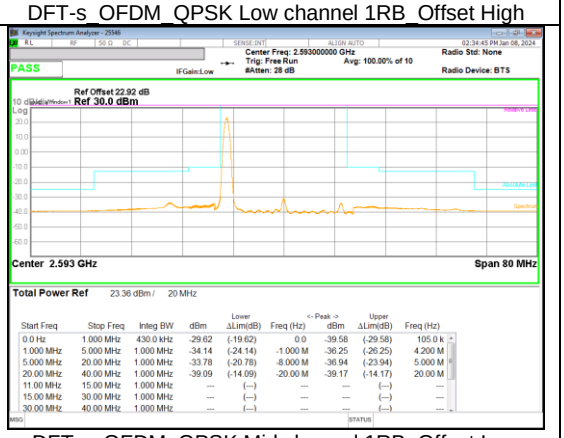
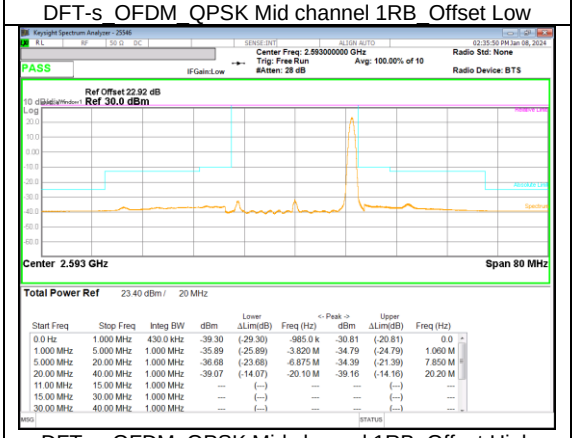
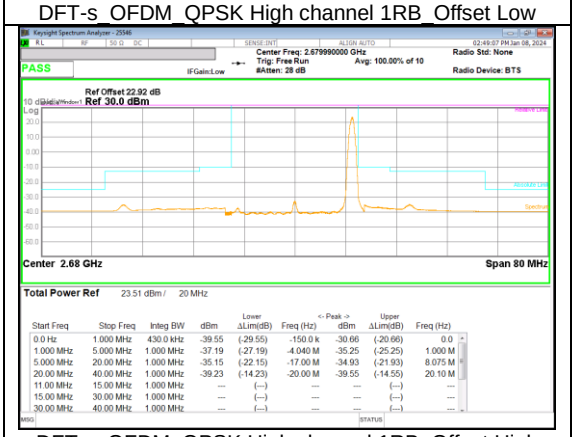
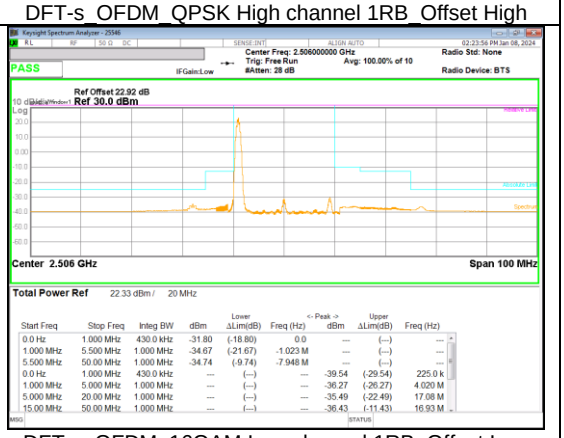
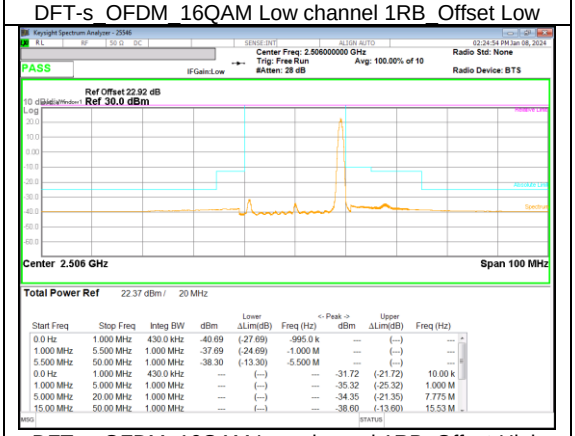
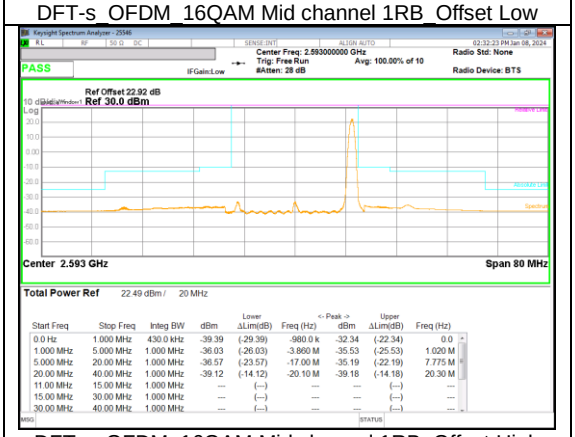
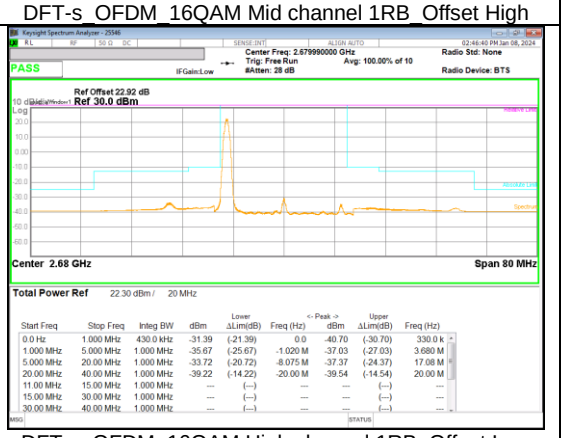
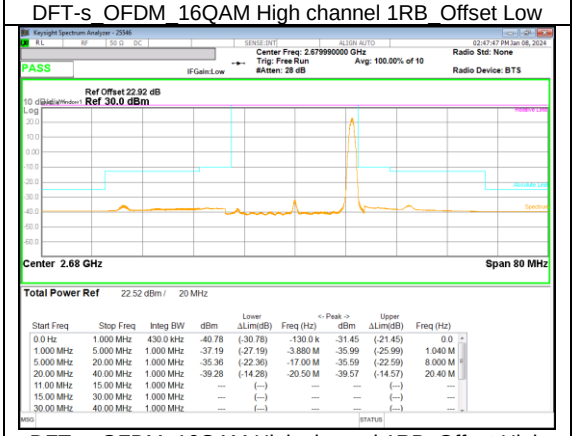
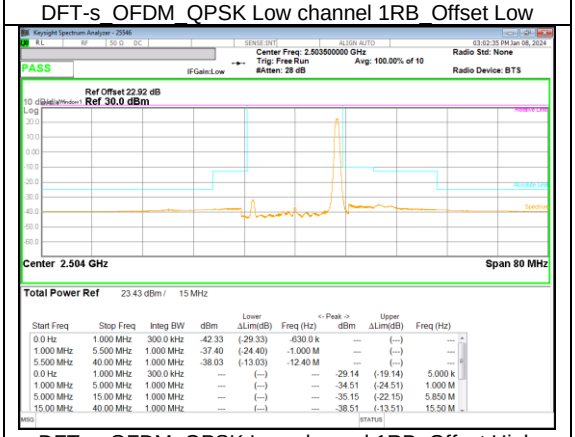
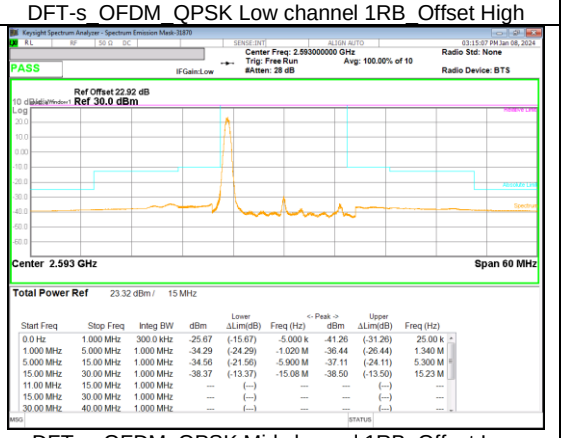
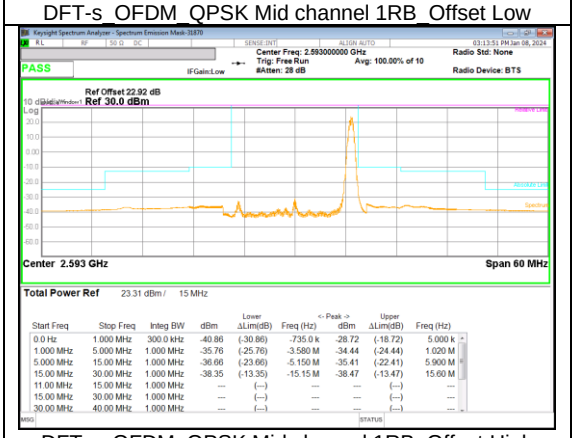
30MHz	 DFT-s_OFDM_QPSK High channel FRB	 DFT-s_OFDM_QPSK High channel 1RB_Offset Low  DFT-s_OFDM_QPSK High channel 1RB_Offset High
30MHz	 DFT-s_OFDM_16QAM Low channel FRB	 DFT-s_OFDM_16QAM Low channel 1RB_Offset Low  DFT-s_OFDM_16QAM Low channel 1RB_Offset High

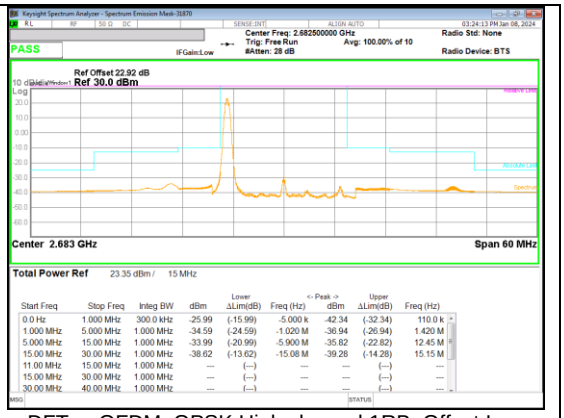
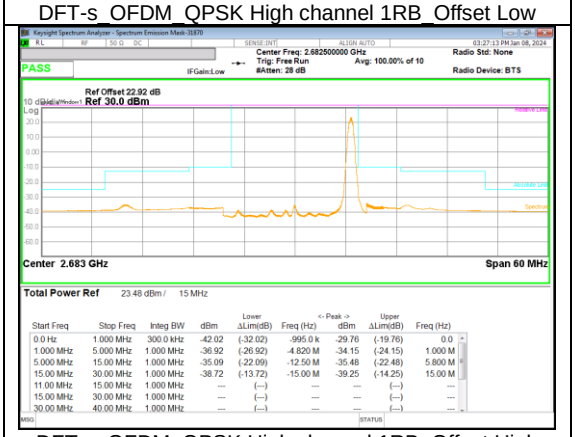
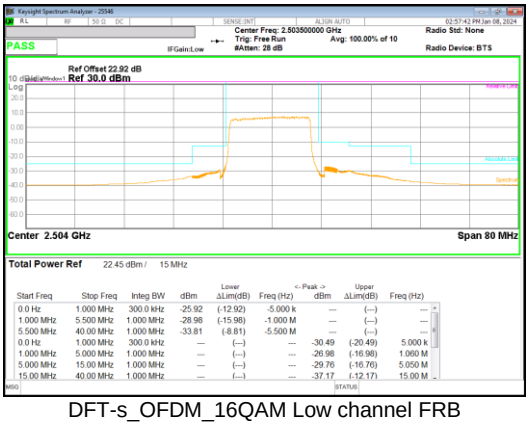
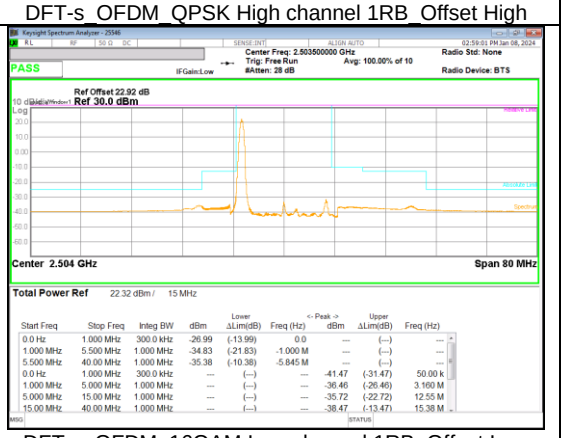
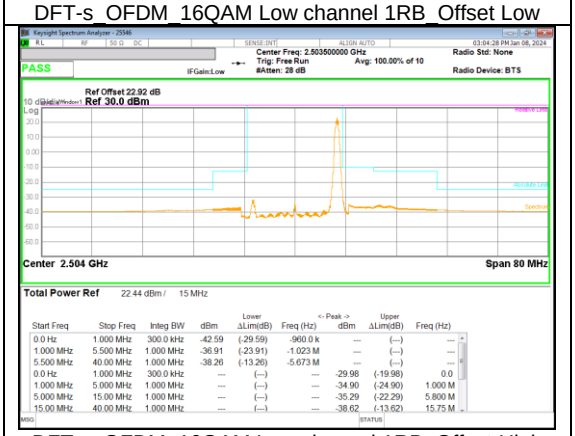
30MHz	 DFT-s_OFDM_16QAM Mid channel FRB	 DFT-s_OFDM_16QAM Mid channel 1RB_Offset Low  DFT-s_OFDM_16QAM Mid channel 1RB_Offset High
	 DFT-s_OFDM_16QAM High channel FRB	 DFT-s_OFDM_16QAM High channel 1RB_Offset Low  DFT-s_OFDM_16QAM High channel 1RB_Offset High

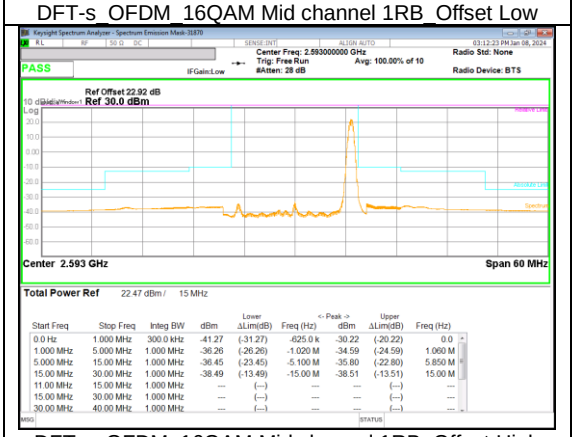
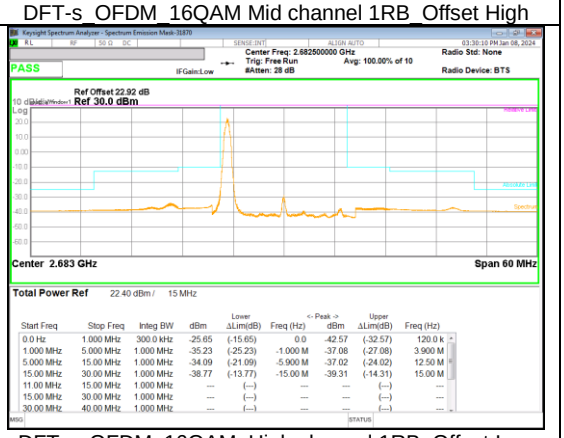
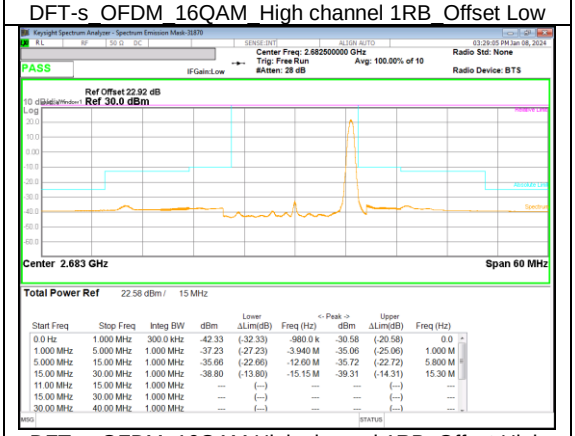
20MHz	 DFT-s_OFDM_QPSK Low channel FRB	 DFT-s_OFDM_QPSK Low channel 1RB_Offset Low
		 DFT-s_OFDM_QPSK Low channel 1RB_Offset High
	 DFT-s_OFDM_QPSK Mid channel FRB	 DFT-s_OFDM_QPSK Mid channel 1RB_Offset Low
		 DFT-s_OFDM_QPSK Mid channel 1RB_Offset High

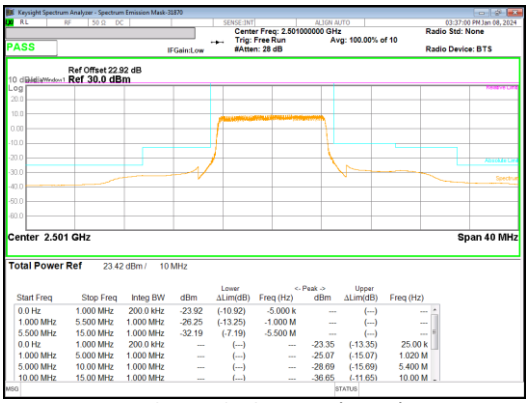
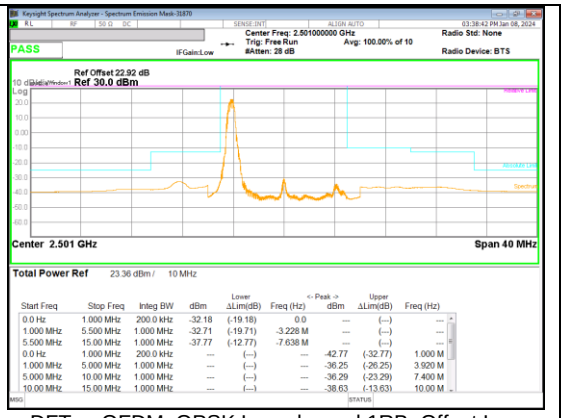
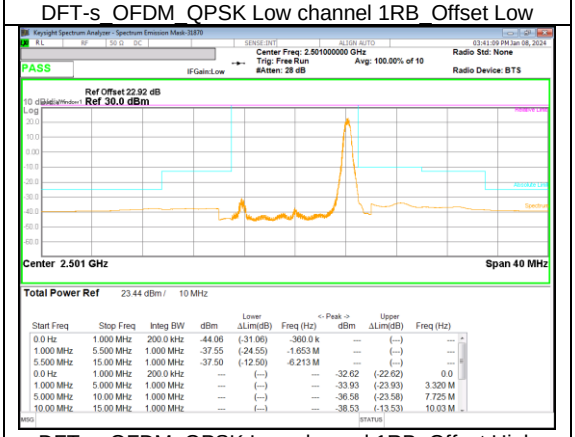
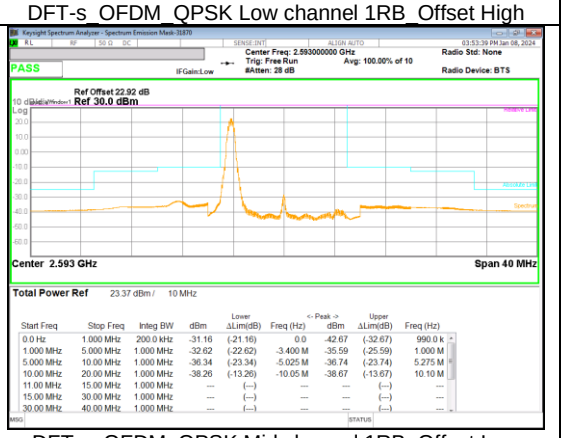
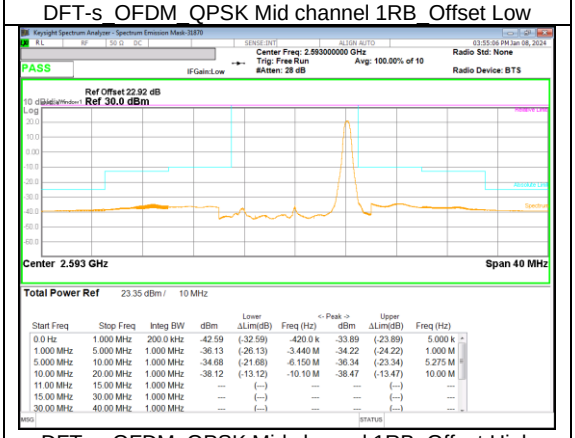
20MHz	 DFT-s_OFDM_QPSK High channel FRB	 DFT-s_OFDM_QPSK High channel 1RB_Offset Low  DFT-s_OFDM_QPSK High channel 1RB_Offset High
20MHz	 DFT-s_OFDM_16QAM Low channel FRB	 DFT-s_OFDM_16QAM Low channel 1RB_Offset Low  DFT-s_OFDM_16QAM Low channel 1RB_Offset High

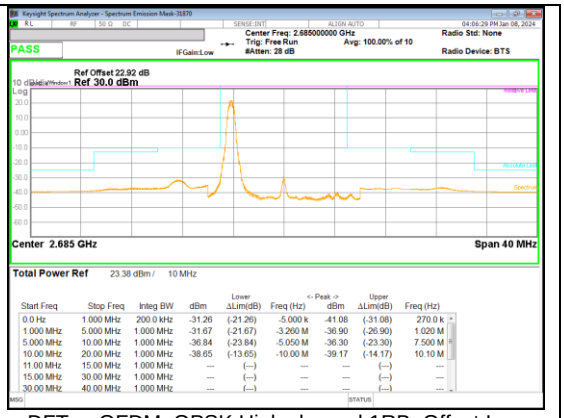
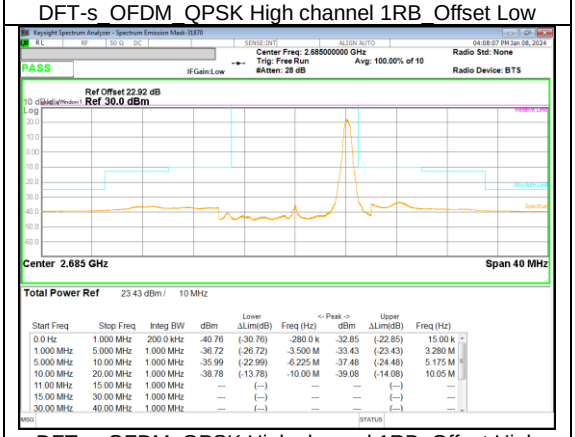
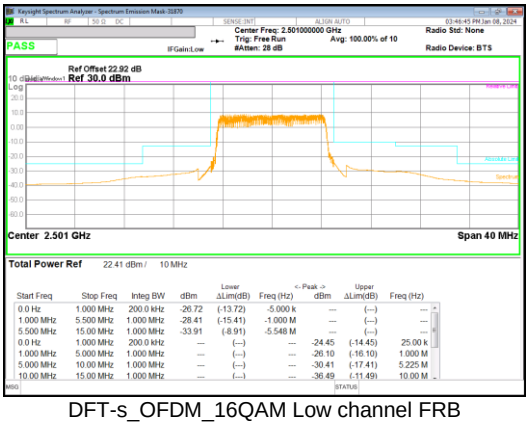
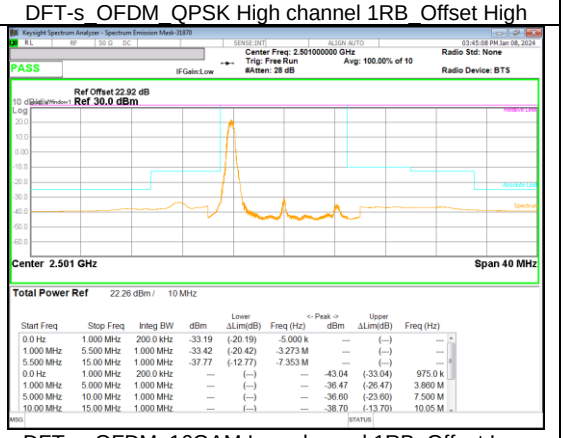
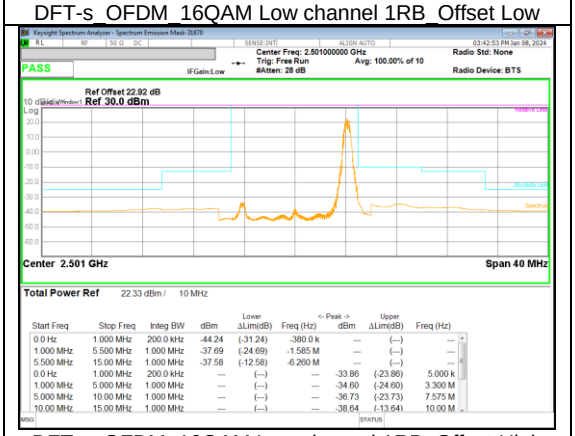
20MHz	 DFT-s_OFDM_16QAM Mid channel FRB	 DFT-s_OFDM_16QAM Mid channel 1RB_Offset Low  DFT-s_OFDM_16QAM Mid channel 1RB_Offset High
	 DFT-s_OFDM_16QAM High channel FRB	 DFT-s_OFDM_16QAM High channel 1RB_Offset Low  DFT-s_OFDM_16QAM High channel 1RB_Offset High

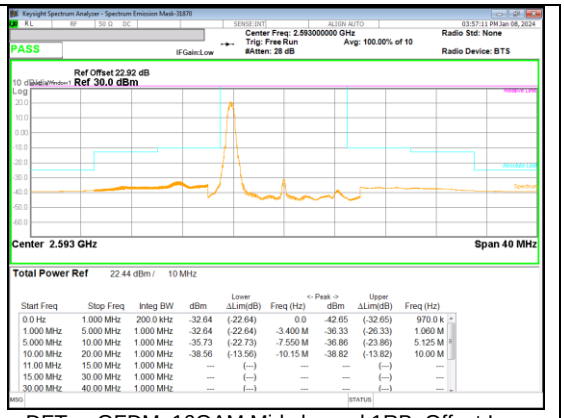
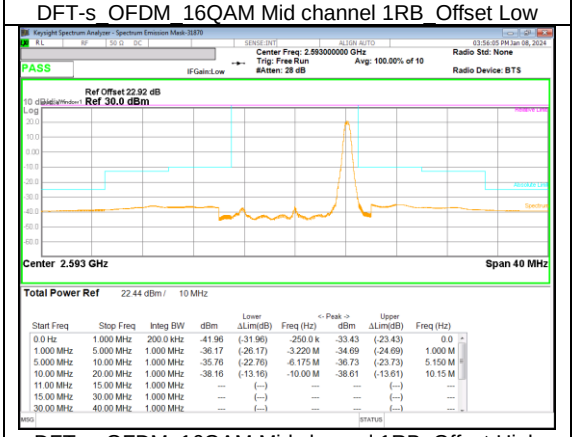
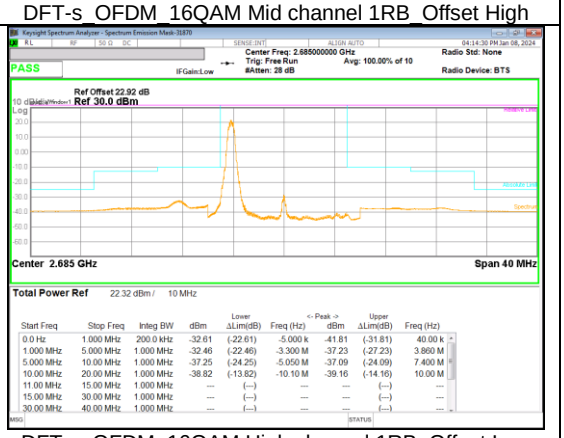
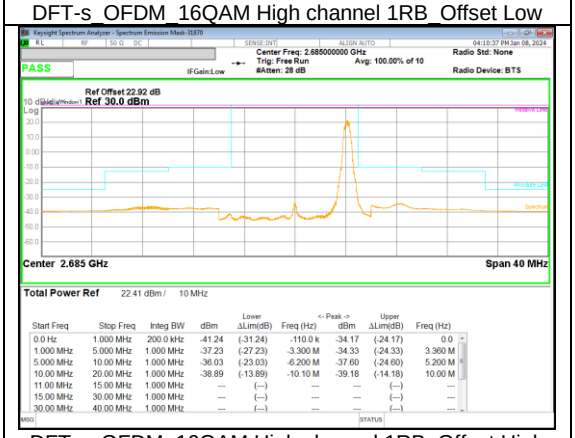
15MHz	 DFT-s_OFDM_QPSK Low channel FRB	 DFT-s_OFDM_QPSK Low channel 1RB_Offset Low
		 DFT-s_OFDM_QPSK Low channel 1RB_Offset High
	 DFT-s_OFDM_QPSK Mid channel FRB	 DFT-s_OFDM_QPSK Mid channel 1RB_Offset Low
		 DFT-s_OFDM_QPSK Mid channel 1RB_Offset High

15MHz	 DFT-s_OFDM_QPSK High channel FRB	 DFT-s_OFDM_QPSK High channel 1RB_Offset Low  DFT-s_OFDM_QPSK High channel 1RB_Offset High
15MHz	 DFT-s_OFDM_16QAM Low channel FRB	 DFT-s_OFDM_16QAM Low channel 1RB_Offset Low  DFT-s_OFDM_16QAM Low channel 1RB_Offset High

15MHz	 DFT-s_OFDM_16QAM Mid channel FRB	 DFT-s_OFDM_16QAM Mid channel 1RB_Offset Low  DFT-s_OFDM_16QAM Mid channel 1RB_Offset High
	 DFT-s_OFDM_16QAM High channel FRB	 DFT-s_OFDM_16QAM High channel 1RB_Offset Low  DFT-s_OFDM_16QAM High channel 1RB_Offset High

10MHz	 DFT-s_OFDM QPSK Low channel FRB	 DFT-s_OFDM_QPSK Low channel 1RB_Offset Low
		 DFT-s_OFDM_QPSK Low channel 1RB_Offset High
	 DFT-s_OFDM_QPSK Mid channel FRB	 DFT-s_OFDM_QPSK Mid channel 1RB_Offset Low
		 DFT-s_OFDM_QPSK Mid channel 1RB_Offset High

10MHz	 DFT-s_OFDM_QPSK High channel FRB	 DFT-s_OFDM_QPSK High channel 1RB_Offset Low  DFT-s_OFDM_QPSK High channel 1RB_Offset High
10MHz	 DFT-s_OFDM_16QAM Low channel FRB	 DFT-s_OFDM_16QAM Low channel 1RB_Offset Low  DFT-s_OFDM_16QAM Low channel 1RB_Offset High

10MHz	 DFT-s_OFDM_16QAM Mid channel FRB	 DFT-s_OFDM_16QAM Mid channel 1RB_Offset Low
		 DFT-s_OFDM_16QAM Mid channel 1RB_Offset High
	 DFT-s_OFDM_16QAM High channel FRB	 DFT-s_OFDM_16QAM High channel 1RB_Offset Low
		 DFT-s_OFDM_16QAM High channel 1RB_Offset High

8.5. CONDUCTED SPURIOUS EMISSIONS

RULE PART(S)

FCC: §27.53

LIMITS

Part 27.53:
(g) For operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB.

(h) The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}$ (P) dB.

(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 = 100 kHz for emission below 1 GHz and 1 MHz for emissions above 1 GHz
(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 = average(LTE FDD), Max hold(LTE TDD, 5G NR TDD);

NOTE1

5G NR: All Waveforms (CP-OFDM vs DFT-s_OFDM) and modulations (π/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM) were investigated to determine the worst case configuration. All Modes of operation were investigated and the worst case configuration results are reported in this section.

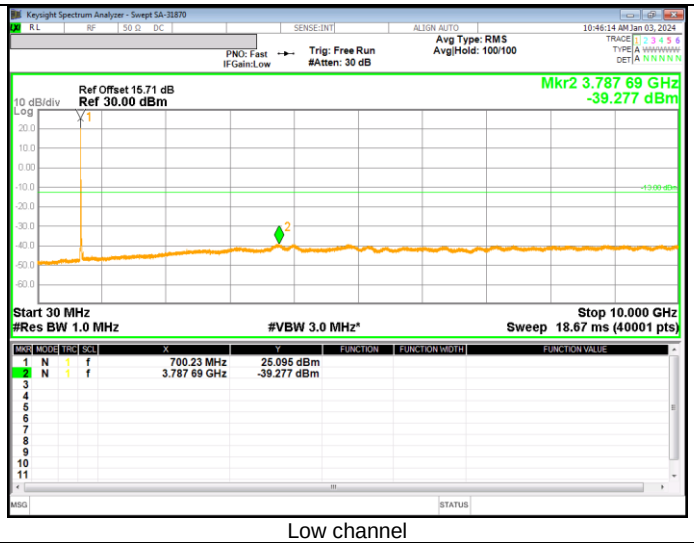
NOTE2

Please refer to section 5.4 for bandwidth and RB setting about LTE, 5G NR bands.

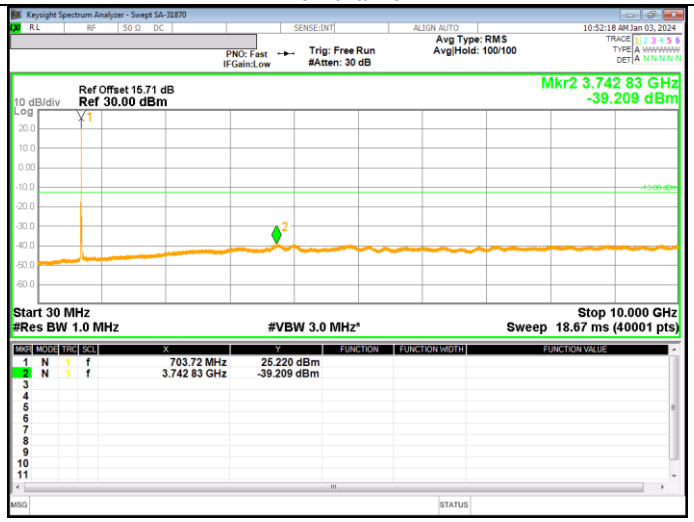
8.5.1. OUT OF BAND EMISSIONS RESULT

LTE Band 12

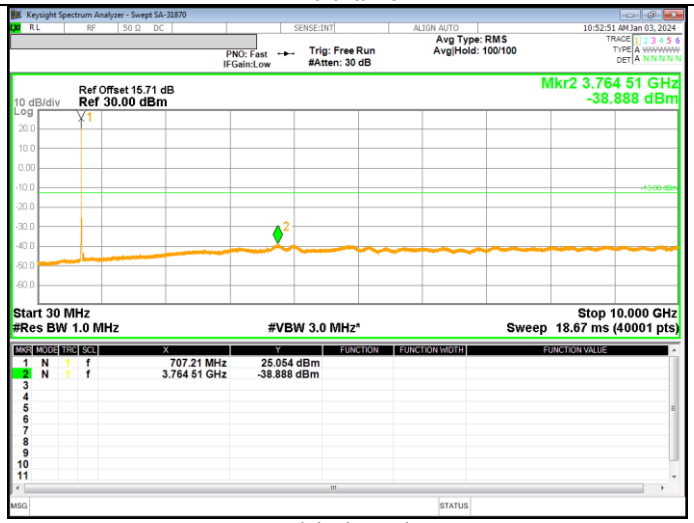
10 MHz QPSK



Low channel



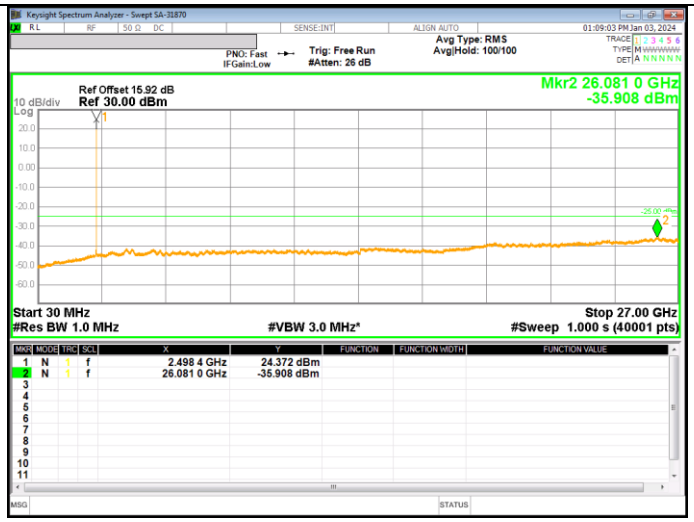
Mid channel



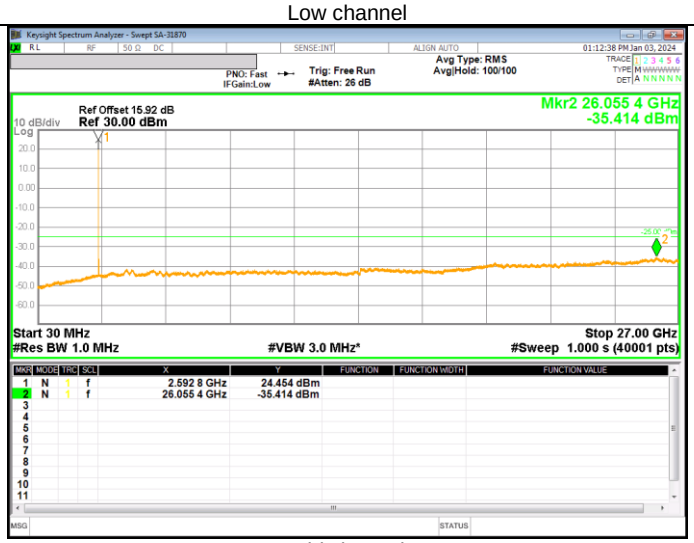
High channel

LTE Band 41

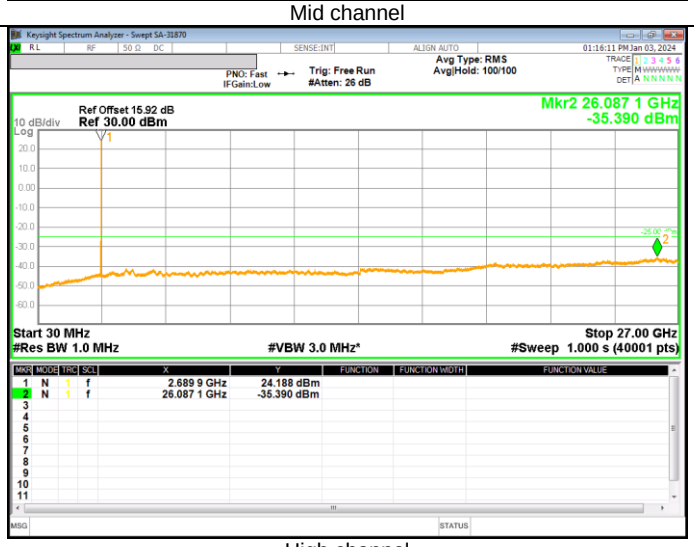
5 MHz QPSK



Low channel



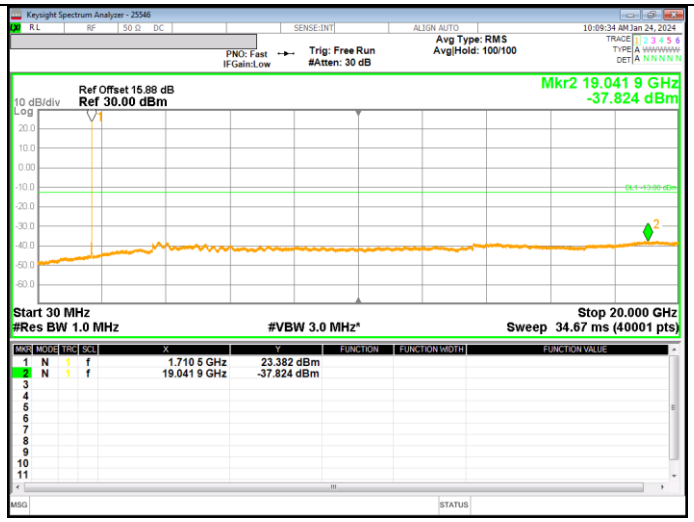
Mid channel



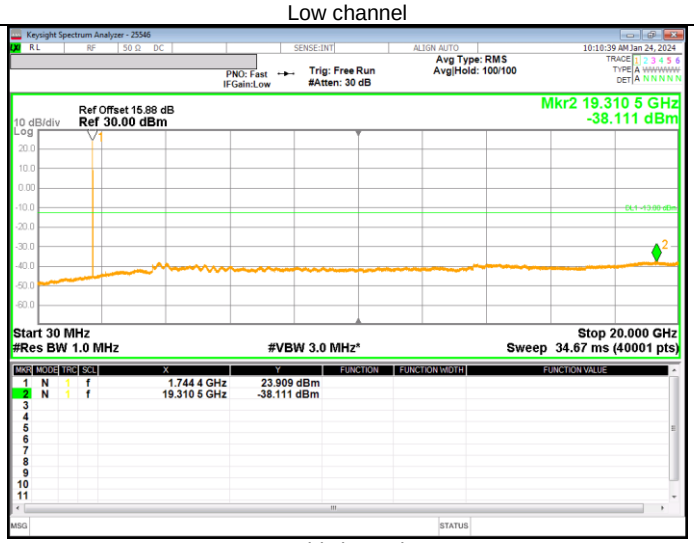
High channel

LTE Band 66

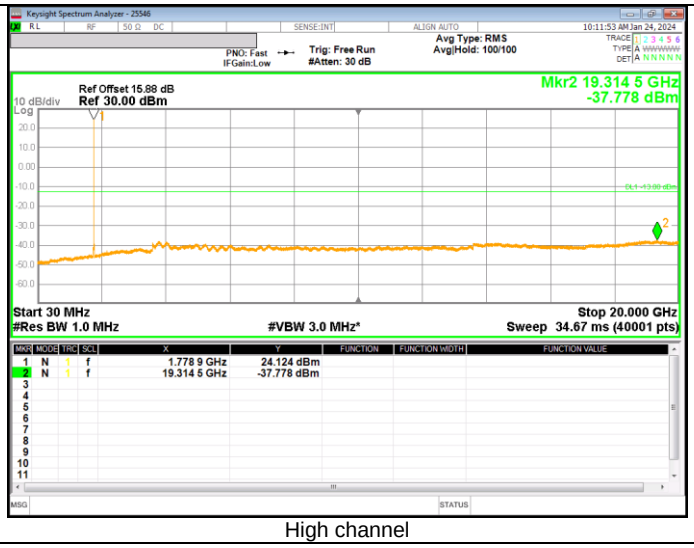
1.4 MHz QPSK



Low channel

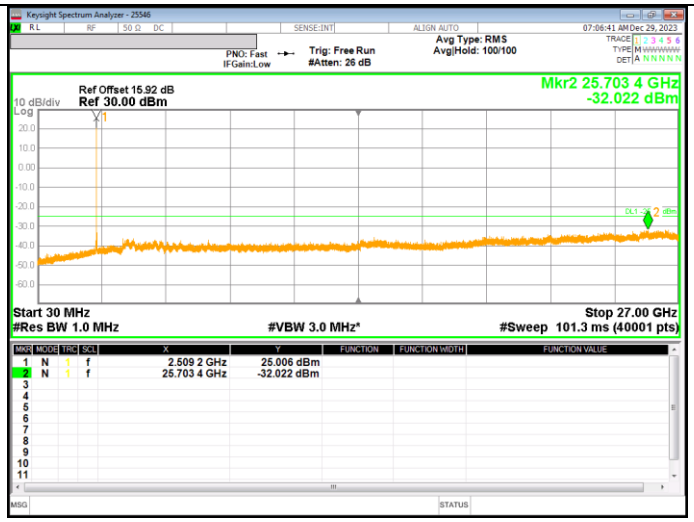
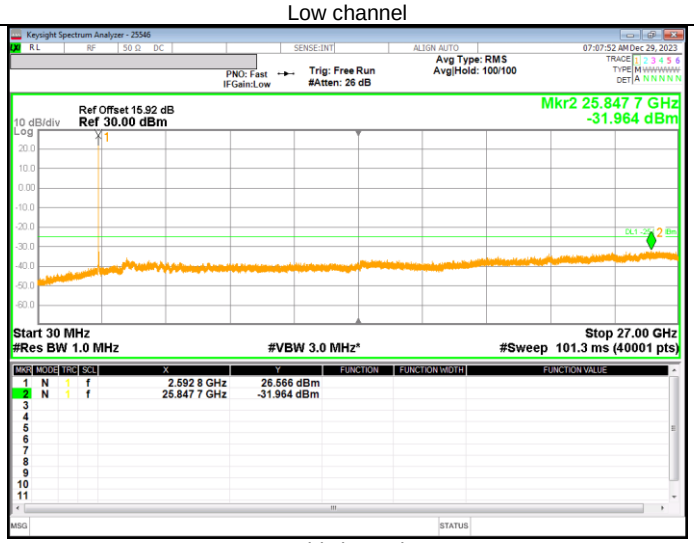
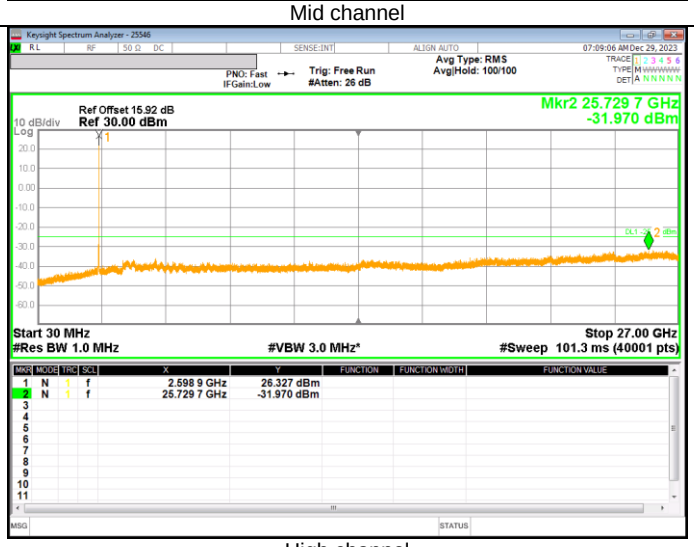


Mid channel



High channel

NR Band n41

15MHz QPSK DFT-s_OFDM

Low channel

Mid channel

High channel

8.6. FREQUENCY STABILITY

RULE PART(S)

FCC: §2.1055, §27.54

LIMITS

Part 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

NOTE

Test were performed each lowest or highest frequency on the modulation condition of more wide bandwidth.(Please refer to section 9.1.1 OBW results)

RESULTS

See the following pages.

8.6.1. FREQUENCY STABILITY RESULTS

LTE Band 12 (Lowest Frequency: QPSK / Highest Frequency: 16QAM)

Test Date	2024-01-04
Test Engineer	25546

Limit		699	716	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ End of OBW	F high @ End of OBW		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	699.1557	715.8453		
Extreme (50C)		699.1557	715.8453	5.1	0.007
Extreme (40C)		699.1557	715.8453	3.5	0.005
Extreme (30C)		699.1557	715.8453	4.0	0.006
Extreme (10C)		699.1557	715.8453	6.4	0.009
Extreme (0C)		699.1557	715.8453	4.1	0.006
Extreme (-10C)		699.1557	715.8453	7.6	0.011
Extreme (-20C)		699.1557	715.8453	5.1	0.007
Extreme (-30C)		699.1557	715.8453	3.4	0.005
20C	15%	699.1557	715.8453	2.4	0.003
	-15%	699.1557	715.8453	4.6	0.006
	End Point	699.1557	715.8453	5.1	0.007

LTE Band 41 (Lowest Frequency: QPSK / Highest Frequency: QPSK)

Test Date	2024-01-05
Test Engineer	25546

Limit		2496	2690	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ End of OBW	F high @ End of OBW		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	2496.2486	2689.7524		
Extreme (50C)		2496.2486	2689.7524	13.8	0.005
Extreme (40C)		2496.2486	2689.7524	14.9	0.006
Extreme (30C)		2496.2486	2689.7524	16.1	0.006
Extreme (10C)		2496.2486	2689.7524	10.2	0.004
Extreme (0C)		2496.2486	2689.7524	16.8	0.006
Extreme (-10C)		2496.2486	2689.7524	17.3	0.007
Extreme (-20C)		2496.2486	2689.7524	11.3	0.004
Extreme (-30C)		2496.2486	2689.7524	13.8	0.005
20C	15%	2496.2486	2689.7524	12.1	0.005
	-15%	2496.2486	2689.7524	14.3	0.006
	End Point	2496.2486	2689.7524	15.3	0.006

LTE Band 66 (Lowest Frequency: 16QAM / Highest Frequency: 16QAM)

Test Date	2024-01-08
Test Engineer	25546

Limit		1710	1780	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ End of OBW	F high @ End of OBW		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	1710.1514	1779.8467		
Extreme (50C)		1710.1514	1779.8467	6.6	0.004
Extreme (40C)		1710.1514	1779.8467	10.2	0.006
Extreme (30C)		1710.1514	1779.8467	7.1	0.004
Extreme (10C)		1710.1514	1779.8467	4.4	0.002
Extreme (0C)		1710.1514	1779.8467	5.4	0.003
Extreme (-10C)		1710.1514	1779.8467	3.3	0.002
Extreme (-20C)		1710.1514	1779.8467	5.1	0.003
Extreme (-30C)		1710.1514	1779.8467	6.5	0.004
20C	15%	1710.1514	1779.8467	3.2	0.002
	-15%	1710.1514	1779.8467	1.3	0.001
	End Point	1710.1514	1779.8467	5.5	0.003

NR Band n41 (Lowest Frequency: 16QAM / Highest Frequency: QPSK)

Test Date	2024-01-09
Test Engineer	25546

Normal (20C)		2496	2690	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ End of OBW	F high @ End of OBW		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	2496.7164	2689.3034		
Extreme (50C)		2496.7164	2689.3034	7.3	0.003
Extreme (40C)		2496.7164	2689.3034	9.2	0.004
Extreme (30C)		2496.7164	2689.3034	11.3	0.004
Extreme (10C)		2496.7164	2689.3034	6.4	0.002
Extreme (0C)		2496.7164	2689.3034	4.3	0.002
Extreme (-10C)		2496.7164	2689.3034	9.0	0.003
Extreme (-20C)		2496.7164	2689.3034	10.1	0.004
Extreme (-30C)		2496.7164	2689.3034	5.9	0.002
20C	15%	2496.7164	2689.3034	10.1	0.004
	-15%	2496.7164	2689.3034	7.2	0.003
	End Point	2496.7164	2689.3034	8.3	0.003

9. RADIATED RESULTS

9.1. RADIATED POWER (ERP & EIRP)

RULE PART(S)

FCC: §2.1046, §27.50

LIMITS

Part 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.

(d)(4) Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP.

(h) The following power limits shall apply in the BRS and EBS:

(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 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 or 1 second;
e) Detector = rms;
f) Ensure that the number of measurement points ≥ span/RBW;
g) Trace Mode = average(LTE, 5G NR);

TEST RESULTS

See the following pages.

UL KOREA LTD. Suwon Laboratory FORM ID: FCC_27(05)
218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea TEL: (031) 337-9902 FAX: (031) 213-5433

9.1.1. ERP/EIRP Results

LTE Band 12 (Antenna A, Main 1)

BW (MHz)	Modulation	Frequency (MHz)	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	ERP (mW)	Limit (dBm)	Delta (dB)	RB
10	QPSK	704.00	22.61	V	2.79	-1.34	18.48	70.47	34.77	-16.29	1/25
		707.50	22.01	V	2.79	-1.34	17.88	61.38	34.77	-16.89	1/0
		711.00	22.63	V	2.80	-1.33	18.50	70.79	34.77	-16.27	1/0
	16-QAM	704.00	21.31	V	2.79	-1.34	17.18	52.24	34.77	-17.59	1/0
		707.50	21.01	V	2.79	-1.34	16.88	48.75	34.77	-17.89	1/0
		711.00	21.55	V	2.80	-1.33	17.42	55.21	34.77	-17.35	1/0
5	QPSK	701.50	22.11	V	2.78	-1.35	17.98	62.81	34.77	-16.79	1/0
		707.50	21.80	V	2.79	-1.34	17.67	58.48	34.77	-17.10	1/0
		713.50	22.47	V	2.81	-1.32	18.35	68.39	34.77	-16.42	1/0
	16-QAM	701.50	21.02	V	2.78	-1.35	16.89	48.87	34.77	-17.88	1/0
		707.50	20.75	V	2.79	-1.34	16.62	45.92	34.77	-18.15	1/0
		713.50	21.52	V	2.81	-1.32	17.40	54.95	34.77	-17.37	1/0
3	QPSK	700.50	20.90	V	2.78	-1.35	16.77	47.53	34.77	-18.00	1/0
		707.50	21.52	V	2.79	-1.34	17.39	54.83	34.77	-17.38	1/0
		714.50	21.60	V	2.81	-1.32	17.47	55.85	34.77	-17.30	1/0
	16-QAM	700.50	21.08	V	2.78	-1.35	16.95	49.55	34.77	-17.82	1/14
		707.50	21.25	V	2.79	-1.34	17.12	51.52	34.77	-17.65	1/0
		714.50	21.45	V	2.81	-1.32	17.32	53.95	34.77	-17.45	1/0
1.4	QPSK	699.70	21.04	V	2.78	-1.35	16.91	49.09	34.77	-17.86	1/0
		707.50	21.62	V	2.79	-1.34	17.49	56.10	34.77	-17.28	1/0
		715.30	21.65	V	2.81	-1.32	17.52	56.49	34.77	-17.25	1/0
	16-QAM	699.70	20.97	V	2.78	-1.35	16.84	48.31	34.77	-17.93	1/3
		707.50	21.35	V	2.79	-1.34	17.22	52.72	34.77	-17.55	1/3
		715.30	21.65	V	2.81	-1.32	17.52	56.49	34.77	-17.25	1/3

LTE Band 41 (Antenna B, Main 2)

BW (MHz)	MoHulation	Frequency (MHz)	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (mW)	Limit (dBm)	Delta (dB)	RB
20	QPSK	2506.00	17.68	H	5.25	9.99	22.42	174.58	33.00	-10.58	1/49
		2593.00	18.93	H	5.34	9.91	23.51	224.39	33.00	-9.49	1/99
		2680.00	20.33	H	5.43	9.87	24.77	299.92	33.00	-8.23	1/99
	16-QAM	2506.00	17.01	H	5.25	9.99	21.75	149.62	33.00	-11.25	1/49
		2593.00	17.52	H	5.34	9.91	22.09	161.81	33.00	-10.91	1/0
		2680.00	19.03	H	5.43	9.87	23.47	222.33	33.00	-9.53	1/0
15	QPSK	2503.50	17.73	H	5.24	9.99	22.48	177.01	33.00	-10.52	1/37
		2593.00	18.94	H	5.34	9.91	23.52	224.91	33.00	-9.48	1/0
		2682.50	20.45	H	5.43	9.87	24.89	308.32	33.00	-8.11	1/74
	16-QAM	2503.50	16.71	H	5.24	9.99	21.46	139.96	33.00	-11.54	1/0
		2593.00	17.36	H	5.34	9.91	21.94	156.31	33.00	-11.06	1/0
		2682.50	19.09	H	5.43	9.87	23.53	225.42	33.00	-9.47	1/74
10	QPSK	2501.00	17.48	H	5.24	10.00	22.24	167.49	33.00	-10.76	1/0
		2593.00	18.99	H	5.34	9.91	23.57	227.51	33.00	-9.43	1/49
		2685.00	20.64	H	5.43	9.87	25.08	322.11	33.00	-7.92	1/0
	16-QAM	2501.00	17.06	H	5.24	10.00	21.82	152.05	33.00	-11.18	1/25
		2593.00	17.38	H	5.34	9.91	21.96	157.04	33.00	-11.04	1/25
		2685.00	19.30	H	5.43	9.87	23.74	236.59	33.00	-9.26	1/0
5	QPSK	2498.50	17.46	H	5.23	10.00	22.23	167.11	33.00	-10.77	1/12
		2593.00	19.03	H	5.34	9.91	23.61	229.61	33.00	-9.39	1/12
		2687.50	20.54	H	5.44	9.87	24.98	314.77	33.00	-8.02	1/24
	16-QAM	2498.50	16.74	H	5.23	10.00	21.51	141.58	33.00	-11.49	1/12
		2593.00	17.30	H	5.34	9.91	21.88	154.17	33.00	-11.12	1/24
		2687.50	19.28	H	5.44	9.87	23.72	235.50	33.00	-9.28	1/12

LTE Band 41 (Antenna E, Sub 2)

BW (MHz)	MoHulation	Frequency (MHz)	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (mW)	Limit (dBm)	Delta (dB)	RB
20	QPSK	2506.00	17.26	H	5.25	9.99	22.00	158.49	33.00	-11.00	1/49
		2593.00	17.03	H	5.34	9.91	21.61	144.88	33.00	-11.39	1/99
		2680.00	17.06	H	5.43	9.87	21.50	141.25	33.00	-11.50	1/99
	16-QAM	2506.00	16.21	H	5.25	9.99	20.96	124.74	33.00	-12.04	1/49
		2593.00	16.06	H	5.34	9.91	20.63	115.61	33.00	-12.37	1/49
		2680.00	16.24	H	5.43	9.87	20.68	116.95	33.00	-12.32	1/99
15	QPSK	2503.50	17.30	H	5.24	9.99	22.05	160.32	33.00	-10.95	1/37
		2593.00	17.11	H	5.34	9.91	21.69	147.57	33.00	-11.31	1/37
		2682.50	17.37	H	5.43	9.87	21.81	151.71	33.00	-11.19	1/37
	16-QAM	2503.50	15.87	H	5.24	9.99	20.62	115.35	33.00	-12.38	1/0
		2593.00	15.52	H	5.34	9.91	20.10	102.33	33.00	-12.90	1/74
		2682.50	15.87	H	5.43	9.87	20.31	107.40	33.00	-12.69	1/0
10	QPSK	2501.00	17.14	H	5.24	10.00	21.90	154.88	33.00	-11.10	1/0
		2593.00	17.04	H	5.34	9.91	21.62	145.21	33.00	-11.38	1/0
		2685.00	17.29	H	5.43	9.87	21.73	148.94	33.00	-11.27	1/49
	16-QAM	2501.00	16.28	H	5.24	10.00	21.04	127.06	33.00	-11.96	1/25
		2593.00	15.99	H	5.34	9.91	20.57	114.02	33.00	-12.43	1/25
		2685.00	16.14	H	5.43	9.87	20.58	114.29	33.00	-12.42	1/25
5	QPSK	2498.50	17.11	H	5.23	10.00	21.88	154.17	33.00	-11.12	1/12
		2593.00	17.22	H	5.34	9.91	21.80	151.36	33.00	-11.20	1/12
		2687.50	17.42	H	5.44	9.87	21.86	153.46	33.00	-11.14	1/12
	16-QAM	2498.50	15.73	H	5.23	10.00	20.50	112.20	33.00	-12.50	1/24
		2593.00	15.83	H	5.34	9.91	20.41	109.90	33.00	-12.59	1/24
		2687.50	16.25	H	5.44	9.87	20.69	117.22	33.00	-12.31	1/12

LTE Band 66 (Antenna A, Main 1)

BW (MHz)	Modulation	Frequency (MHz)	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (mW)	Limit (dBm)	Delta (dB)	RB
20	QPSK	1720.00	18.81	H	4.32	9.55	24.04	253.51	30.00	-5.96	1/0
		1745.00	18.29	H	4.35	9.66	23.60	229.09	30.00	-6.40	1/49
		1770.00	16.93	H	4.38	9.68	22.24	167.49	30.00	-7.76	1/0
	16-QAM	1720.00	17.74	H	4.32	9.55	22.97	198.15	30.00	-7.03	1/49
		1745.00	17.42	H	4.35	9.66	22.73	187.50	30.00	-7.27	1/49
		1770.00	16.11	H	4.38	9.68	21.42	138.68	30.00	-8.58	1/49
15	QPSK	1717.50	18.07	H	4.31	9.53	23.29	213.30	30.00	-6.71	1/37
		1745.00	17.95	H	4.35	9.66	23.26	211.84	30.00	-6.74	1/74
		1772.50	16.50	H	4.38	9.68	21.80	151.36	30.00	-8.20	1/37
	16-QAM	1717.50	17.26	H	4.31	9.53	22.48	177.01	30.00	-7.52	1/0
		1745.00	16.95	H	4.35	9.66	22.26	168.27	30.00	-7.74	1/0
		1772.50	15.57	H	4.38	9.68	20.87	122.18	30.00	-9.13	1/0
10	QPSK	1715.00	18.31	H	4.31	9.52	23.52	224.91	30.00	-6.48	1/49
		1745.00	18.28	H	4.35	9.66	23.59	228.56	30.00	-6.41	1/0
		1775.00	16.86	H	4.38	9.68	22.16	164.44	30.00	-7.84	1/0
	16-QAM	1715.00	17.20	H	4.31	9.52	22.41	174.18	30.00	-7.59	1/0
		1745.00	17.05	H	4.35	9.66	22.36	172.19	30.00	-7.64	1/0
		1775.00	15.68	H	4.38	9.68	20.98	125.31	30.00	-9.02	1/0
5	QPSK	1712.50	18.38	H	4.31	9.51	23.59	228.56	30.00	-6.41	1/0
		1745.00	18.18	H	4.35	9.66	23.49	223.36	30.00	-6.51	1/24
		1777.50	16.81	H	4.39	9.68	22.11	162.55	30.00	-7.89	1/24
	16-QAM	1712.50	17.38	H	4.31	9.51	22.59	181.55	30.00	-7.41	1/24
		1745.00	17.04	H	4.35	9.66	22.35	171.79	30.00	-7.65	1/0
		1777.50	15.75	H	4.39	9.68	21.05	127.35	30.00	-8.95	1/0
3	QPSK	1711.50	18.64	H	4.31	9.51	23.84	242.10	30.00	-6.16	1/14
		1745.00	18.18	H	4.35	9.66	23.49	223.36	30.00	-6.51	1/0
		1778.50	16.96	H	4.39	9.68	22.25	167.88	30.00	-7.75	1/14
	16-QAM	1711.50	17.43	H	4.31	9.51	22.63	183.23	30.00	-7.37	1/0
		1745.00	17.06	H	4.35	9.66	22.37	172.58	30.00	-7.63	1/14
		1778.50	15.67	H	4.39	9.68	20.96	124.74	30.00	-9.04	1/0
1.4	QPSK	1710.70	18.68	H	4.31	9.50	23.88	244.34	30.00	-6.12	1/0
		1745.00	18.33	H	4.35	9.66	23.64	231.21	30.00	-6.36	1/0
		1779.30	16.89	H	4.39	9.68	22.18	165.20	30.00	-7.82	1/0
	16-QAM	1710.70	17.39	H	4.31	9.50	22.59	181.55	30.00	-7.41	1/3
		1745.00	17.15	H	4.35	9.66	22.46	176.20	30.00	-7.54	1/3
		1779.30	15.82	H	4.39	9.68	21.11	129.12	30.00	-8.89	1/3

LTE Band 66 (Antenna E, Sub 2)

BW (MHz)	Modulation	Frequency (MHz)	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (mW)	Limit (dBm)	Delta (dB)	RB
20	QPSK	1720.00	16.86	H	4.32	9.55	22.09	161.81	30.00	-7.91	1/0
		1745.00	16.61	H	4.35	9.66	21.92	155.60	30.00	-8.08	1/49
		1770.00	16.89	H	4.38	9.68	22.20	165.96	30.00	-7.80	1/0
	16-QAM	1720.00	15.79	H	4.32	9.55	21.02	126.47	30.00	-8.98	1/49
		1745.00	15.67	H	4.35	9.66	20.98	125.31	30.00	-9.02	1/0
		1770.00	16.01	H	4.38	9.68	21.32	135.52	30.00	-8.68	1/0
15	QPSK	1717.50	16.24	H	4.31	9.53	21.46	139.96	30.00	-8.54	1/37
		1745.00	16.54	H	4.35	9.66	21.85	153.11	30.00	-8.15	1/74
		1772.50	16.81	H	4.38	9.68	22.11	162.55	30.00	-7.89	1/37
	16-QAM	1717.50	15.08	H	4.31	9.53	20.30	107.15	30.00	-9.70	1/74
		1745.00	15.54	H	4.35	9.66	20.85	121.62	30.00	-9.15	1/0
		1772.50	16.04	H	4.38	9.68	21.34	136.14	30.00	-8.66	1/0
10	QPSK	1715.00	15.79	H	4.31	9.52	21.00	125.89	30.00	-9.00	1/49
		1745.00	16.74	H	4.35	9.66	22.05	160.32	30.00	-7.95	1/25
		1775.00	16.92	H	4.38	9.68	22.22	166.72	30.00	-7.78	1/0
	16-QAM	1715.00	14.52	H	4.31	9.52	19.73	93.97	30.00	-10.27	1/49
		1745.00	15.58	H	4.35	9.66	20.89	122.74	30.00	-9.11	1/0
		1775.00	16.02	H	4.38	9.68	21.32	135.52	30.00	-8.68	1/49
5	QPSK	1712.50	16.74	H	4.31	9.51	21.95	156.68	30.00	-8.05	1/24
		1745.00	16.61	H	4.35	9.66	21.92	155.60	30.00	-8.08	1/24
		1777.50	16.96	H	4.39	9.68	22.26	168.27	30.00	-7.74	1/24
	16-QAM	1712.50	15.56	H	4.31	9.51	20.77	119.40	30.00	-9.23	1/0
		1745.00	15.54	H	4.35	9.66	20.85	121.62	30.00	-9.15	1/0
		1777.50	16.07	H	4.39	9.68	21.37	137.09	30.00	-8.63	1/0
3	QPSK	1711.50	16.00	H	4.31	9.51	21.20	131.83	30.00	-8.80	1/8
		1745.00	16.48	H	4.35	9.66	21.79	151.01	30.00	-8.21	1/0
		1778.50	17.00	H	4.39	9.68	22.29	169.43	30.00	-7.71	1/14
	16-QAM	1711.50	14.86	H	4.31	9.51	20.06	101.39	30.00	-9.94	1/8
		1745.00	15.50	H	4.35	9.66	20.81	120.50	30.00	-9.19	1/14
		1778.50	16.08	H	4.39	9.68	21.37	137.09	30.00	-8.63	1/0
1.4	QPSK	1710.70	16.58	H	4.31	9.50	21.78	150.66	30.00	-8.22	1/5
		1745.00	16.56	H	4.35	9.66	21.87	153.82	30.00	-8.13	1/0
		1779.30	16.94	H	4.39	9.68	22.23	167.11	30.00	-7.77	1/0
	16-QAM	1710.70	15.27	H	4.31	9.50	20.47	111.43	30.00	-9.53	1/3
		1745.00	15.35	H	4.35	9.66	20.66	116.41	30.00	-9.34	1/3
		1779.30	16.00	H	4.39	9.68	21.29	134.59	30.00	-8.71	1/3

NR Band n41 (DFT-OFDM) (Antenna B, Main 2)

BW (MHz)	Modulation	Frequency (MHz)	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (mW)	Limit (dBm)	Delta (dB)	RB
100	QSK	2546.01	19.04	H	5.29	9.91	23.67	232.60	33.00	-9.33	1/271
		2592.99	18.35	H	5.34	9.91	22.93	196.14	33.00	-10.07	1/137
		2640.00	19.01	H	5.39	9.88	23.49	223.37	33.00	-9.51	1/1
	16-QAM	2546.01	18.23	H	5.29	9.91	22.86	193.02	33.00	-10.14	1/271
		2592.99	17.51	H	5.34	9.91	22.09	161.65	33.00	-10.91	1/137
		2640.00	18.10	H	5.39	9.88	22.58	181.15	33.00	-10.42	1/1
90	QSK	2541.00	19.23	H	5.28	9.92	23.87	243.80	33.00	-9.13	1/243
		2592.99	18.40	H	5.34	9.91	22.98	198.41	33.00	-10.02	1/123
		2644.98	19.20	H	5.40	9.87	23.68	233.11	33.00	-9.32	1/1
	16-QAM	2541.00	18.16	H	5.28	9.92	22.80	190.56	33.00	-10.20	1/1
		2592.99	17.44	H	5.34	9.91	22.02	159.06	33.00	-10.98	1/1
		2644.98	18.51	H	5.40	9.87	22.99	198.87	33.00	-10.01	1/1
80	QPSK	2536.02	19.22	H	5.28	9.93	23.88	244.15	33.00	-9.12	1/215
		2592.99	18.41	H	5.34	9.91	22.99	198.87	33.00	-10.01	1/109
		2649.99	19.25	H	5.41	9.87	23.71	235.12	33.00	-9.29	1/1
	16-QAM	2536.02	17.84	H	5.28	9.93	22.50	177.69	33.00	-10.50	1/1
		2592.99	17.40	H	5.34	9.91	21.98	157.60	33.00	-11.02	1/1
		2649.99	18.50	H	5.41	9.87	22.96	197.83	33.00	-10.04	1/1
70	QPSK	2531.02	19.12	H	5.28	9.94	23.79	239.15	33.00	-9.21	1/95
		2593.99	18.39	H	5.34	9.91	22.97	198.09	33.00	-10.03	1/187
		2654.98	19.45	H	5.41	9.87	23.91	245.81	33.00	-9.09	1/1
	16-QAM	2531.02	17.79	H	5.28	9.94	22.46	176.07	33.00	-10.54	1/1
		2593.99	17.27	H	5.34	9.91	21.85	153.06	33.00	-11.15	1/1
		2654.98	18.50	H	5.41	9.87	22.96	197.52	33.00	-10.04	1/1
60	QPSK	2526.00	18.98	H	5.27	9.95	23.66	232.39	33.00	-9.34	1/81
		2592.99	18.44	H	5.34	9.91	23.02	200.25	33.00	-9.98	1/81
		2659.98	19.36	H	5.41	9.87	23.81	240.57	33.00	-9.19	1/1
	16-QAM	2526.00	17.89	H	5.27	9.95	22.57	180.81	33.00	-10.43	1/1
		2592.99	17.38	H	5.34	9.91	21.96	156.88	33.00	-11.04	1/1
		2659.98	18.66	H	5.41	9.87	23.11	204.76	33.00	-9.89	1/1
50	QPSK	2521.01	18.86	H	5.26	9.96	23.56	226.90	33.00	-9.44	1/131
		2592.99	18.47	H	5.34	9.91	23.05	201.63	33.00	-9.95	1/131
		2665.00	19.30	H	5.42	9.87	23.75	236.91	33.00	-9.25	1/1
	16-QAM	2521.01	17.76	H	5.26	9.96	22.46	176.13	33.00	-10.54	1/1
		2592.99	17.40	H	5.34	9.91	21.98	157.60	33.00	-11.02	1/1
		2665.00	18.65	H	5.42	9.87	23.10	203.98	33.00	-9.90	1/1
40	QPSK	2516.01	18.87	H	5.26	9.97	23.58	228.17	33.00	-9.42	1/104
		2592.99	18.44	H	5.34	9.91	23.02	200.25	33.00	-9.98	1/104
		2670.00	19.35	H	5.43	9.87	23.80	239.86	33.00	-9.20	1/104
	16-QAM	2516.01	17.75	H	5.26	9.97	22.46	176.30	33.00	-10.54	1/1
		2592.99	17.50	H	5.34	9.91	22.08	161.27	33.00	-10.92	1/1
		2670.00	18.38	H	5.43	9.87	22.83	191.85	33.00	-10.17	1/1
30	QPSK	2511.00	18.72	H	5.25	9.98	23.45	221.36	33.00	-9.55	1/39
		2592.99	18.47	H	5.34	9.91	23.05	201.63	33.00	-9.95	1/39
		2675.00	19.55	H	5.43	9.87	24.00	250.92	33.00	-9.00	1/76
	16-QAM	2511.00	17.67	H	5.25	9.98	22.40	173.82	33.00	-10.60	1/1
		2592.99	17.65	H	5.34	9.91	22.23	166.94	33.00	-10.77	1/1
		2675.00	18.56	H	5.43	9.87	23.01	199.77	33.00	-9.99	1/1
20	QPSK	2506.02	18.66	H	5.25	9.99	23.40	218.81	33.00	-9.60	1/26
		2592.99	18.47	H	5.34	9.91	23.05	201.63	33.00	-9.95	1/1
		2679.99	19.63	H	5.43	9.87	24.07	255.09	33.00	-8.93	1/49
	16-QAM	2506.02	17.74	H	5.25	9.99	22.48	177.04	33.00	-10.52	1/1
		2592.99	17.70	H	5.34	9.91	22.28	168.87	33.00	-10.72	1/1
		2679.99	18.46	H	5.43	9.87	22.90	194.84	33.00	-10.10	1/1
15	QPSK	2503.50	18.60	H	5.24	9.99	23.35	216.32	33.00	-9.65	1/36
		2592.99	18.49	H	5.34	9.91	23.07	202.57	33.00	-9.93	1/19
		2682.48	19.75	H	5.43	9.87	24.19	262.54	33.00	-8.81	1/36
	16-QAM	2503.50	17.72	H	5.24	9.99	22.47	176.64	33.00	-10.53	1/1
		2592.99	17.64	H	5.34	9.91	22.22	166.56	33.00	-10.78	1/1
		2682.48	18.77	H	5.43	9.87	23.21	209.51	33.00	-9.79	1/1
10	QPSK	2501.01	18.55	H	5.24	10.00	23.31	214.29	33.00	-9.69	1/12
		2592.99	18.46	H	5.34	9.91	23.04	201.17	33.00	-9.96	1/12
		2685.00	19.82	H	5.43	9.87	24.26	266.66	33.00	-8.74	1/12
	16-QAM	2501.01	17.40	H	5.24	10.00	22.16	164.44	33.00	-10.84	1/1
		2592.99	17.56	H	5.34	9.91	22.14	163.52	33.00	-10.86	1/1
		2685.00	19.14	H	5.43	9.87	23.58	228.01	33.00	-9.42	1/1

NR Band n41 (DFT-OFDM) (Antenna E, Sub 2)

BW (MHz)	Modulation	Frequency (MHz)	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (mW)	Limit (dBm)	Delta (dB)	RB
100	QSK	2546.01	17.76	H	5.29	9.91	22.39	173.22	33.00	-10.61	1/1
		2592.99	18.35	H	5.34	9.91	22.93	196.14	33.00	-10.07	1/137
		2640.00	16.81	H	5.39	9.88	21.29	134.60	33.00	-11.71	1/271
	16-QAM	2546.01	16.94	H	5.29	9.91	21.57	143.42	33.00	-11.43	1/1
		2592.99	17.51	H	5.34	9.91	22.09	161.65	33.00	-10.91	1/137
		2640.00	15.96	H	5.39	9.88	20.44	110.67	33.00	-12.56	1/271
90	QSK	2541.00	17.78	H	5.28	9.92	22.42	174.60	33.00	-10.58	1/1
		2592.99	18.39	H	5.34	9.91	22.97	197.95	33.00	-10.03	1/123
		2644.98	17.12	H	5.40	9.87	21.60	144.40	33.00	-11.40	1/243
	16-QAM	2541.00	16.96	H	5.28	9.92	21.60	144.56	33.00	-11.40	1/1
		2592.99	17.10	H	5.34	9.91	21.68	147.08	33.00	-11.32	1/1
		2644.98	16.06	H	5.40	9.87	20.54	113.13	33.00	-12.46	1/1
80	QPSK	2536.02	17.56	H	5.28	9.93	22.22	166.59	33.00	-10.78	1/1
		2592.99	18.39	H	5.34	9.91	22.97	197.95	33.00	-10.03	1/109
		2649.99	17.04	H	5.41	9.87	21.50	141.35	33.00	-11.50	1/215
	16-QAM	2536.02	16.61	H	5.28	9.93	21.27	133.86	33.00	-11.73	1/1
		2592.99	17.14	H	5.34	9.91	21.72	148.44	33.00	-11.28	1/1
		2649.99	16.20	H	5.41	9.87	20.66	116.49	33.00	-12.34	1/1
70	QPSK	2531.02	17.39	H	5.28	9.94	22.06	160.58	33.00	-10.94	1/1
		2593.99	18.12	H	5.34	9.91	22.70	186.15	33.00	-10.30	1/95
		2654.98	16.86	H	5.41	9.87	21.32	135.40	33.00	-11.68	1/187
	16-QAM	2531.02	16.54	H	5.28	9.94	21.21	132.03	33.00	-11.79	1/1
		2593.99	16.79	H	5.34	9.91	21.37	137.04	33.00	-11.63	1/1
		2654.98	15.96	H	5.41	9.87	20.42	110.05	33.00	-12.58	1/1
60	QPSK	2526.00	17.26	H	5.27	9.95	21.94	156.40	33.00	-11.06	1/1
		2592.99	18.16	H	5.34	9.91	22.74	187.74	33.00	-10.26	1/81
		2659.98	16.80	H	5.41	9.87	21.25	133.43	33.00	-11.75	1/160
	16-QAM	2526.00	16.36	H	5.27	9.95	21.04	127.12	33.00	-11.96	1/1
		2592.99	16.84	H	5.34	9.91	21.42	138.54	33.00	-11.58	1/1
		2659.98	16.01	H	5.41	9.87	20.46	111.23	33.00	-12.54	1/1
50	QPSK	2521.01	17.18	H	5.26	9.96	21.88	154.11	33.00	-11.12	1/1
		2592.99	18.12	H	5.34	9.91	22.70	186.02	33.00	-10.30	1/67
		2665.00	16.88	H	5.42	9.87	21.33	135.70	33.00	-11.67	1/131
	16-QAM	2521.01	16.43	H	5.26	9.96	21.13	129.67	33.00	-11.87	1/1
		2592.99	17.00	H	5.34	9.91	21.58	143.74	33.00	-11.42	1/1
		2665.00	15.89	H	5.42	9.87	20.34	108.04	33.00	-12.66	1/1
40	QPSK	2516.01	17.13	H	5.26	9.97	21.84	152.85	33.00	-11.16	1/1
		2592.99	18.12	H	5.34	9.91	22.70	186.02	33.00	-10.30	1/53
		2670.00	16.96	H	5.43	9.87	21.41	138.34	33.00	-11.59	1/104
	16-QAM	2516.01	16.32	H	5.26	9.97	21.03	126.84	33.00	-11.97	1/1
		2592.99	17.05	H	5.34	9.91	21.63	145.40	33.00	-11.37	1/1
		2670.00	15.98	H	5.43	9.87	20.43	110.40	33.00	-12.57	1/1
30	QPSK	2511.00	17.10	H	5.25	9.98	21.83	152.44	33.00	-11.17	1/39
		2592.99	18.10	H	5.34	9.91	22.68	185.17	33.00	-10.32	1/39
		2675.00	17.16	H	5.43	9.87	21.61	144.72	33.00	-11.39	1/76
	16-QAM	2511.00	16.20	H	5.25	9.98	20.93	123.91	33.00	-12.07	1/1
		2592.99	17.15	H	5.34	9.91	21.73	148.79	33.00	-11.27	1/1
		2675.00	15.92	H	5.43	9.87	20.37	108.78	33.00	-12.63	1/1
20	QPSK	2506.02	17.05	H	5.25	9.99	21.79	151.03	33.00	-11.21	1/1
		2592.99	18.09	H	5.34	9.91	22.67	184.74	33.00	-10.33	1/1
		2679.99	17.22	H	5.43	9.87	21.66	146.45	33.00	-11.34	1/49
	16-QAM	2506.02	16.15	H	5.25	9.99	20.89	122.76	33.00	-12.11	1/1
		2592.99	17.16	H	5.34	9.91	21.74	149.13	33.00	-11.26	1/1
		2679.99	16.09	H	5.43	9.87	20.53	112.90	33.00	-12.47	1/1
15	QPSK	2503.50	16.99	H	5.24	9.99	21.74	149.31	33.00	-11.26	1/19
		2592.99	18.13	H	5.34	9.91	22.71	186.45	33.00	-10.29	1/1
		2682.48	17.28	H	5.43	9.87	21.72	148.66	33.00	-11.28	1/36
	16-QAM	2503.50	16.04	H	5.24	9.99	20.79	119.98	33.00	-12.21	1/1
		2592.99	16.97	H	5.34	9.91	21.55	142.75	33.00	-11.45	1/1
		2682.48	16.37	H	5.43	9.87	20.81	120.56	33.00	-12.19	1/1
10	QPSK	2501.01	16.98	H	5.24	10.00	21.74	149.28	33.00	-11.26	1/12
		2592.99	18.14	H	5.34	9.91	22.72	186.88	33.00	-10.28	1/1
		2685.00	17.35	H	5.43	9.87	21.79	151.00	33.00	-11.21	1/22
	16-QAM	2501.01	16.24	H	5.24	10.00	21.00	125.89	33.00	-12.00	1/1
		2592.99	17.41	H	5.34	9.91	21.99	157.97	33.00	-11.01	1/1
		2685.00	16.46	H	5.43	9.87	20.90	123.02	33.00	-12.10	1/1

9.2. RADIATIED SPURIOUS EMISSION

RULE PART(S)

FCC: §2.1053, §27. 53

LIMIT

Part 27.53:
(g) For operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB.

(h) The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 $\log_{10}$ (P) dB.

(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 1 GHz and 1 MHz for emissions above 1 GHz
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 FDD), Maxhold(LTE TDD, 5G NR TDD);

NOTE1

5G NR: All Waveforms (CP-OFDM vs DFT-s_OFDM) and modulations (π/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM) were investigated to determine the worst case configuration. All Modes of operation were investigated and the worst case configuration results are reported in this section.

NOTE2

Please refer to section 5.4 for bandwidth and RB setting about LTE, 5G NR bands.

RESULTS

See the following pages.

9.2.1. SPURIOUS RADIATION PLOTS

LTE Band 12

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

Company:	Samsung
Project #:	4791083081
Date:	2023-12-28
Test Engineer:	28775
Configuration:	EUT / AC Adapter, Z-Position
Location:	Chamber 2
Mode:	LTE_QPSK Band 12 Harmonics, 10MHz Bandwidth
Test Votage:	AC 120 V, 60 Hz

10 MHz

QPSK

Antenna A
Main 1

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 704MHz									
1408.00	-16.1	V	3.0	40.9	1.0	-56.0	-13.0	-43.0	
2112.00	-12.9	V	3.0	40.9	1.0	-52.8	-13.0	-39.8	
2816.00	-10.5	V	3.0	41.9	1.0	-51.4	-13.0	-38.4	
1408.00	-17.2	H	3.0	40.9	1.0	-57.0	-13.0	-44.0	
2112.00	-13.5	H	3.0	40.9	1.0	-53.4	-13.0	-40.4	
2816.00	-9.9	H	3.0	41.9	1.0	-50.8	-13.0	-37.8	
Mid Ch, 707.5MHz									
1415.00	-16.1	V	3.0	40.9	1.0	-55.9	-13.0	-42.9	
2122.50	-12.9	V	3.0	40.9	1.0	-52.8	-13.0	-39.8	
2830.00	-10.5	V	3.0	41.9	1.0	-51.4	-13.0	-38.4	
1415.00	-17.1	H	3.0	40.9	1.0	-57.0	-13.0	-44.0	
2122.50	-13.5	H	3.0	40.9	1.0	-53.4	-13.0	-40.4	
2830.00	-9.8	H	3.0	41.9	1.0	-50.7	-13.0	-37.7	
High Ch, 711MHz									
1422.00	-16.0	V	3.0	40.9	1.0	-55.9	-13.0	-42.9	
2133.00	-12.9	V	3.0	40.9	1.0	-52.8	-13.0	-39.8	
2844.00	-10.4	V	3.0	42.0	1.0	-51.3	-13.0	-38.3	
1422.00	-17.1	H	3.0	40.9	1.0	-56.9	-13.0	-43.9	
2133.00	-13.5	H	3.0	40.9	1.0	-53.4	-13.0	-40.4	
2844.00	-9.7	H	3.0	42.0	1.0	-50.7	-13.0	-37.7	

LTE Band 41

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

Company:	Samsung
Project #:	4791083081
Date:	2024-01-03
Test Engineer:	28775
Configuration:	EUT / AC Adapter, Y-Position
Location:	Chamber 1
Mode:	LTE_QPSK Band 41 Harmonics, 10MHz Bandwidth
Test Votage:	AC 120 V, 60 Hz

10 MHz

QPSK

Antenna B
Main 2

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2501MHz									
5002.00	-2.8	V	3.0	44.8	1.0	-46.6	-25.0	-21.6	
7503.00	-10.9	V	3.0	45.0	1.0	-54.9	-25.0	-29.9	
10004.00	-4.3	V	3.0	43.6	1.0	-46.9	-25.0	-21.9	
5002.00	3.6	H	3.0	44.8	1.0	-40.2	-25.0	-15.2	
7503.00	-11.5	H	3.0	45.0	1.0	-55.5	-25.0	-30.5	
10004.00	-2.7	H	3.0	43.6	1.0	-45.3	-25.0	-20.3	
Mid Ch, 2593MHz									
5186.00	2.8	V	3.0	44.8	1.0	-41.1	-25.0	-16.1	
7779.00	-10.6	V	3.0	44.8	1.0	-54.4	-25.0	-29.4	
10372.00	-9.1	V	3.0	43.5	1.0	-51.7	-25.0	-26.7	
5186.00	5.5	H	3.0	44.8	1.0	-38.4	-25.0	-13.4	
7779.00	-7.3	H	3.0	44.8	1.0	-51.2	-25.0	-26.2	
10372.00	-10.3	H	3.0	43.5	1.0	-52.8	-25.0	-27.8	
High Ch, 2685MHz									
5370.00	-1.3	V	3.0	44.9	1.0	-45.2	-25.0	-20.2	
8055.00	-7.3	V	3.0	44.7	1.0	-51.0	-25.0	-26.0	
10740.00	-9.9	V	3.0	43.5	1.0	-52.4	-25.0	-27.4	
5370.00	3.9	H	3.0	44.9	1.0	-40.0	-25.0	-15.0	
8055.00	-7.4	H	3.0	44.7	1.0	-51.1	-25.0	-26.1	
10740.00	-9.5	H	3.0	43.5	1.0	-52.0	-25.0	-27.0	

15 MHz

QPSK

Antenna E
Sub 2

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

Company: Samsung
Project #: 4791083081
Date: 2024-01-03
Test Engineer: 26460
Configuration: EUT / AC Adapter, Z-Position
Location: Chamber 1
Mode: LTE_QPSK Band 41 Harmonics, 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, 2503.5MHz									
5007.00	-7.8	V	3.0	44.8	1.0	-51.5	-25.0	-26.5	
7510.50	-10.9	V	3.0	44.9	1.0	-54.8	-25.0	-29.8	
10014.00	-7.4	V	3.0	43.6	1.0	-50.0	-25.0	-25.0	
12517.50	-7.9	V	3.0	43.5	1.0	-50.3	-25.0	-25.3	
15021.00	-4.0	V	3.0	44.8	1.0	-47.9	-25.0	-22.9	
5007.00	-4.0	H	3.0	44.8	1.0	-47.8	-25.0	-22.8	
7510.50	-8.9	H	3.0	44.9	1.0	-52.9	-25.0	-27.9	
10014.00	-4.4	H	3.0	43.6	1.0	-47.0	-25.0	-22.0	
12517.50	-4.9	H	3.0	43.5	1.0	-47.4	-25.0	-22.4	
15021.00	-0.2	H	3.0	44.8	1.0	-44.0	-25.0	-19.0	
Mid Ch, 2593MHz									
5186.00	-8.1	V	3.0	44.8	1.0	-52.0	-25.0	-27.0	
7779.00	-10.8	V	3.0	44.8	1.0	-54.6	-25.0	-29.6	
10372.00	-9.5	V	3.0	43.5	1.0	-52.1	-25.0	-27.1	
12965.00	-8.0	V	3.0	43.7	1.0	-50.7	-25.0	-25.7	
15558.00	-4.6	V	3.0	44.7	1.0	-48.2	-25.0	-23.2	
5186.00	-5.5	H	3.0	44.8	1.0	-49.3	-25.0	-24.3	
7779.00	-8.4	H	3.0	44.8	1.0	-52.3	-25.0	-27.3	
10372.00	-8.2	H	3.0	43.5	1.0	-50.8	-25.0	-25.8	
12965.00	-6.8	H	3.0	43.7	1.0	-49.5	-25.0	-24.5	
15558.00	-2.1	H	3.0	44.7	1.0	-45.7	-25.0	-20.7	
High Ch, 2682.5MHz									
5365.00	-13.7	V	3.0	44.9	1.0	-57.6	-25.0	-32.6	
8047.50	-10.9	V	3.0	44.7	1.0	-54.7	-25.0	-29.7	
10730.00	-7.2	V	3.0	43.5	1.0	-49.7	-25.0	-24.7	
13412.50	-7.9	V	3.0	44.0	1.0	-50.9	-25.0	-25.9	
16095.00	-5.6	V	3.0	44.5	1.0	-49.1	-25.0	-24.1	
5365.00	-13.3	H	3.0	44.9	1.0	-57.2	-25.0	-32.2	
8047.50	-9.0	H	3.0	44.7	1.0	-52.7	-25.0	-27.7	
10730.00	-5.9	H	3.0	43.5	1.0	-48.4	-25.0	-23.4	
13412.50	-7.4	H	3.0	44.0	1.0	-50.4	-25.0	-25.4	
16095.00	-5.3	H	3.0	44.5	1.0	-48.8	-25.0	-23.8	