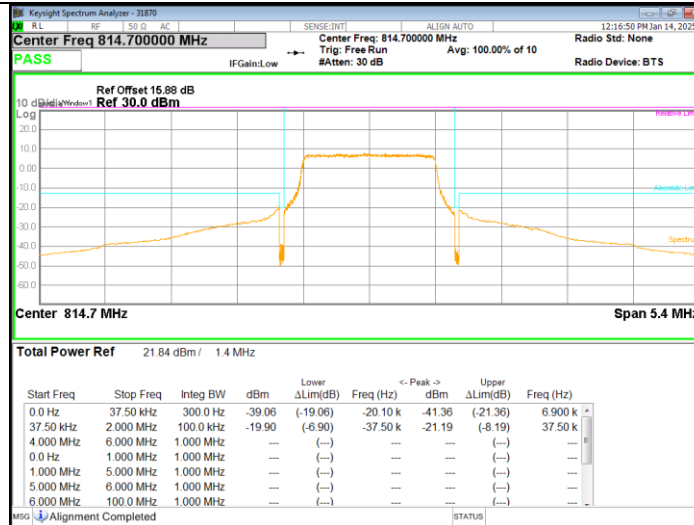
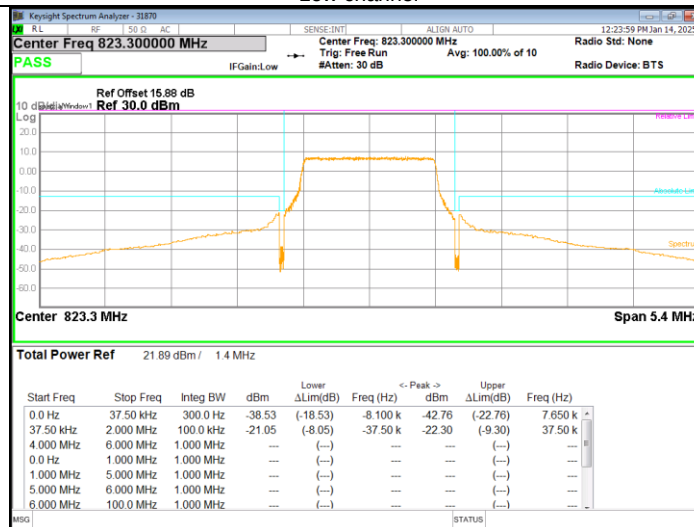




1.4 MHz
16QAM
FRB

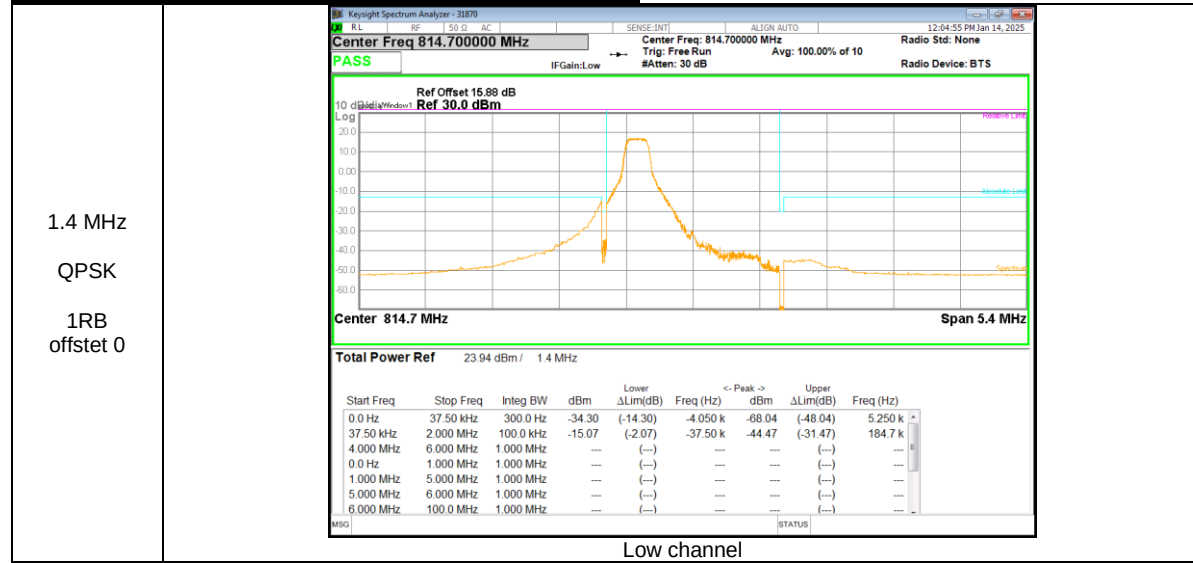


Low channel



High channel

LTE Band 26 (Part 90) 1 RB (Worst Case) (ANT E)



LTE Band 26 (Straddle) Full RB (ANT E)



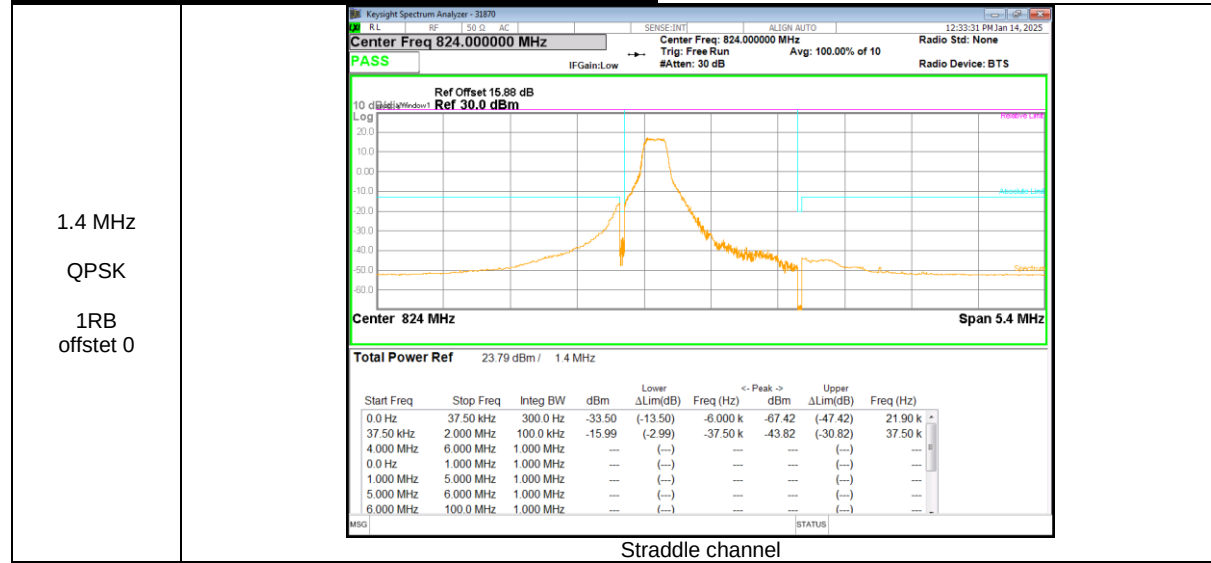
10 MHz QPSK FRB	Keyight Spectrum Analyzer - 3280 RL RF 150.0 AC SENSE:INT ALIGN AUTO 10:21:51 AM Jan 14, 2025 Center Freq 824.000000 MHz Center Freq: 824.000000 MHz Trig: Free Run #Atten: 30 dB Avg: 100.00% of 10 Radio Std: None PASS IFGain:Low #Atten: 30 dB Radio Device: BTS Ref Offset 15.88 dB Ref 30.0 dBm 10 dBm 30.0 0.00 10.00 30.00 40.00 50.00 60.00 Log dBm dBm dBm dBm dBm dBm dBm 10.00 30.00 40.00 50.00 60.00 10.00 30.00 40.00
--	--



3 MHz QPSK FRB	Keyight Spectrum Analyzer - 3270 RL RF 150.0 AC SENSE:INT ALIGN AUTO 11:48:01 AM Jan 14, 2025 Center Freq 824.000000 MHz Center Freq: 824.000000 MHz Trig: Free Run Avg: 100.00% of 10 Radio Std: None PASS IF Gain: Low #Atten: 30 dB Radio Device: BTS Ref Offset 15.88 dB Ref 30.0 dBm 10 dBm Log 30.0 0.00 -10.0 -30.0 -40.0 -60.0 30.0 0.00 -1
---	---

1.4 MHz QPSK FRB	Keyight Spectrum Analyzer - 3820 RL RF 150.0 AC Center Freq 824.000000 MHz PASS IFGain:Low SENSE:INT ALIGN AUTO Center Freq: 824.000000 MHz Trig: Free Run #Atten: 30 dB Avg: 100.00% of 10 Radio Std: None Radio Device: BTS 12:31:58 PM Jan 14, 2025 Ref Offset 15.88 dB Ref 30.0 dBm 10 0 -10 -20 -30 -40 -50 -60 Log dBm 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 30.0 20.0 10.0 0.0 -10.0 -20
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LTE Band 26 (Straddle) 1 RB (Worst Case) (ANT E)



8.5. CONDUCTED SPURIOUS EMISSIONS

RULE PART(S)

FCC: §2.1051, §22.901, §22.917 and §90.691.

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 90.691(a):

(1) For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least $116 \log_{10}(f/6.1)$ decibels or $50 + 10 \log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.

(2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.(NOTE : Use 100kHz reference bandwidth)

(b) When an emission outside of the authorized bandwidth causes harmful interference, the Commission may, at its discretion, require greater attenuation than specified in this section.

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
(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 = rms;
- f) Ensure that the number of measurement points = Max (40001);
- g) Trace mode = average(WCDMA, LTE, 5G NR), Max hold(GSM);

NOTE1

GSM : It was tested at GPRS as worst case (the highest output power and density).

UMTS: It was tested at REL 99 as worst case (the highest output power and density).

LTE: It was tested at 1RB QPSK as worst case (the highest output power and density).

5G NR: All Waveforms (CP-OFDM vs DFT-s_OFDM) and modulations ($\pi/2$ 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.

8.5.1. OUT OF BAND EMISSIONS RESULT

GSM 850 (ANT A)



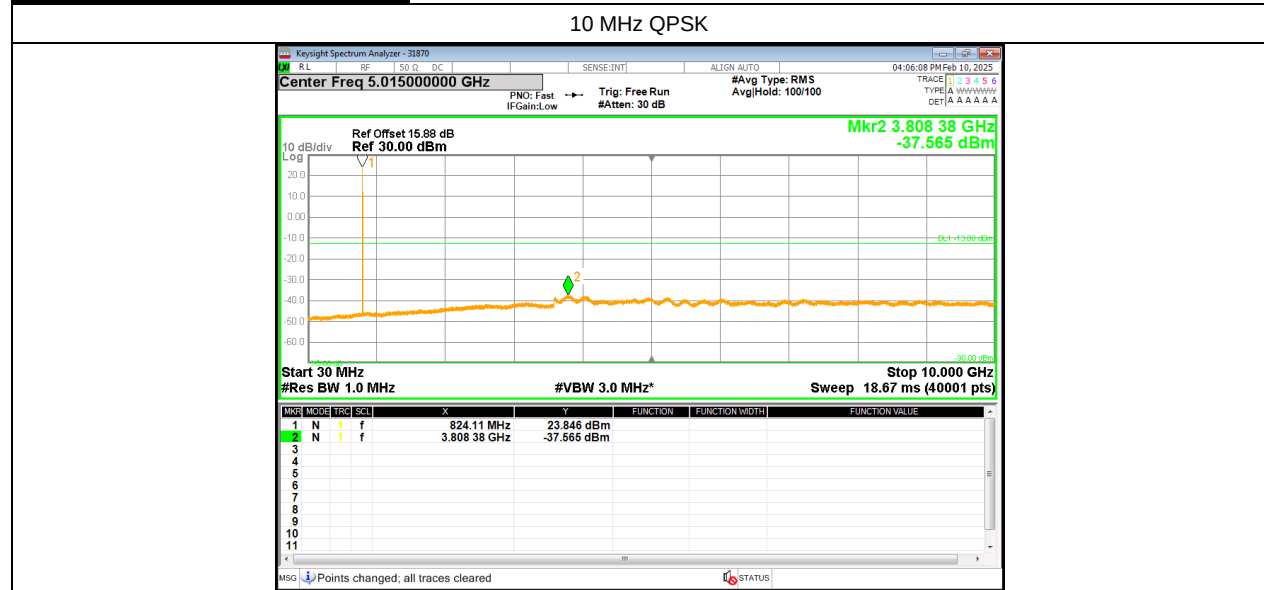
WCDMA Band 5 (ANT A)



LTE Band 26 (Part 90) (ANT E)

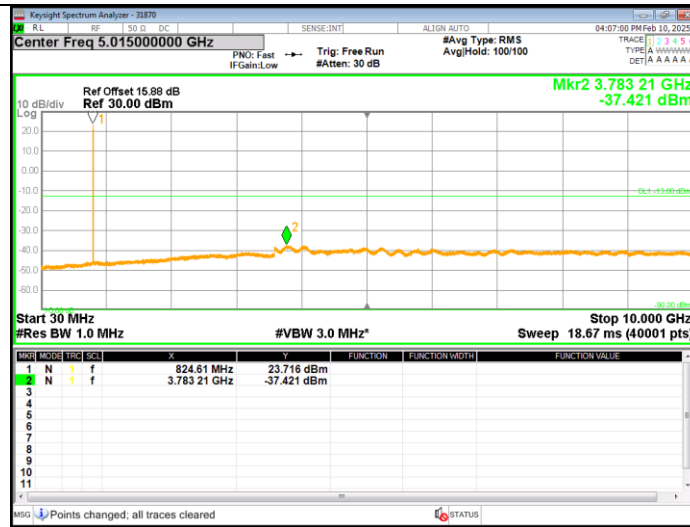


LTE Band 26 (Straddle) (ANT E)

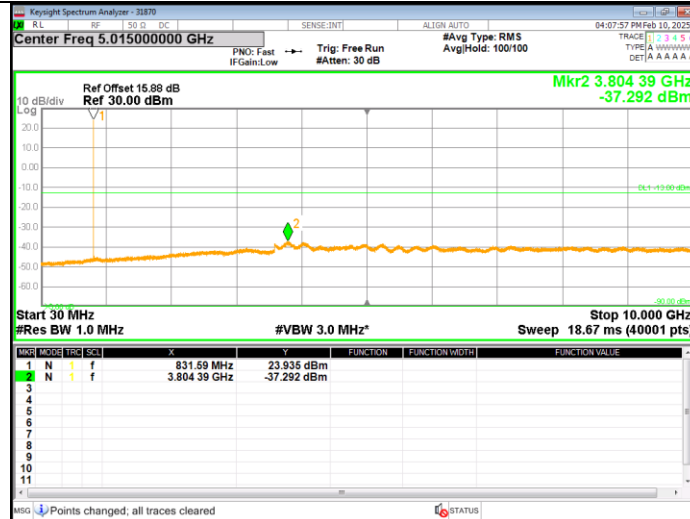


LTE Band 26 (Part 22) (ANT E)

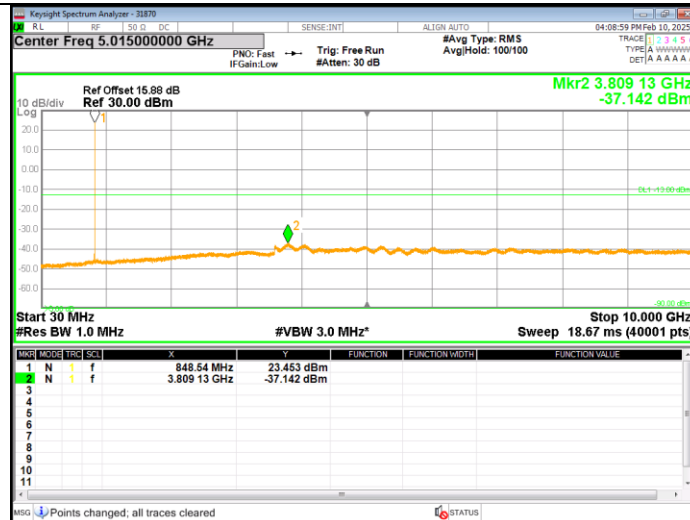
10 MHz QPSK



Low channel



Mid channel



High channel

NR Band n5 DFT-s OFDM (ANT E)



8.6. FREQUENCY STABILITY

RULE PART(S)

FCC: §2.1055, §22.355 and §90.213

LIMITS

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

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

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 OBW results)

RESULTS

See the following pages.

8.6.1. FREQUENCY STABILITY RESULT

GSM 850, Channel 128/251, Frequency 824.2/848.8 MHz (ANT A)

Test Date	2025-01-24
Test Engineer	47989

Reference Frequency : GSM850 Low Channel 824.2 MHz / High Channel 848.8 MHz @ 20°C						
Limit: +- 2.5 ppm =	Low Channel	2060.500	Hz	High Channel	2122.000	Hz
Power Supply [Vdc]	Environment Temperature [°C]	Frequency Deviation Measured with Time Elapse				Limit [ppm]
		Low Channel		High Channel		
		[MHz]	Delta [ppm]	[MHz]	Delta [ppm]	
3.88	50	824.20004830	-0.024	848.80004410	-0.025	2.5
3.88	40	824.20004250	-0.017	848.80003830	-0.018	2.5
3.88	30	824.20003610	-0.009	848.80003180	-0.011	2.5
3.88	20	824.20002860	0.000	848.80002270	0.000	2.5
3.88	10	824.20002910	-0.001	848.80002530	-0.003	2.5
3.88	0	824.20002450	0.005	848.80002090	0.002	2.5
3.88	-10	824.20002210	0.008	848.80002336	-0.001	2.5
3.88	-20	824.20001850	0.012	848.80001610	0.008	2.5
3.88	-30	824.20001580	0.016	848.80001410	0.010	2.5

Reference Frequency : GSM850 Low Channel 824.2 MHz / High Channel 848.8 MHz @ 20°C						
Limit: +- 2.5 ppm =	Low Channel	2060.500	Hz	High Channel	2122.000	Hz
Power Supply [Vdc]	Environment Temperature [°C]	Frequency Deviation Measured with Time Elapse				Limit [ppm]
		Low Channel		High Channel		
		[MHz]	Delta [ppm]	[MHz]	Delta [ppm]	
3.88	20	824.20002860	0	848.80002270	0	2.5
4.45	20	824.20004160	-0.016	848.80003910	-0.019	2.5
3.70	20	824.20001622	0.015	848.80001430	0.010	2.5

WCDMA Band 5 (ANT A)

Test Date	2025-02-05
Test Engineer	47989

	Reference Frequency : WCDMA Band 5 Low Channel 826.4 MHz / High Channel 846.6 MHz @ 20°C					
Limit: +- 2.5 ppm =	Low Channel	2066.000	Hz	High Channel	2116.500	Hz
Power Supply [Vdc]	Environment Temperature [°C]	Frequency Deviation Measured with Time Elapse				Limit [ppm]
		Low Channel		High Channel		
		[MHz]	Delta [ppm]	[MHz]	Delta [ppm]	
3.88	50	826.40004425	-0.013	846.60004628	-0.011	2.5
3.88	40	826.40004174	-0.010	846.60004225	-0.007	2.5
3.88	30	826.40003769	-0.006	846.60003952	-0.003	2.5
3.88	20	826.40003314	0.000	846.60003671	0.000	2.5
3.88	10	826.40002859	0.006	846.60003124	0.006	2.5
3.88	0	826.40002681	0.008	846.60002852	0.010	2.5
3.88	-10	826.40002413	0.011	846.60002652	0.012	2.5
3.88	-20	826.40002311	0.012	846.60002523	0.014	2.5
3.88	-30	826.40002415	0.011	846.60002313	0.016	2.5

		Reference Frequency : WCDMA Band 5 Low Channel 826.4 MHz / High Channel 846.6 MHz @ 20°C					
Limit: +/- 2.5 ppm =		Low Channel	2066.000	Hz	High Channel	2116.500	Hz
Power Supply [Vdc]	Environment Temperature [°C]	Frequency Deviation Measured with Time Elapse					
		Low Channel		High Channel		Limit [ppm]	
		[MHz]	Delta [ppm]	[MHz]	Delta [ppm]		
3.88	20	826.40003314	0	846.60003671	0	2.5	
4.45	20	826.40003158	0.002	846.60003471	0.002	2.5	
3.70	20	826.40001852	0.018	846.60001914	0.021	2.5	

LTE Band 26 (ANT E)

Test Date	2025-01-14
Test Engineer	47989

Reference Frequency : Low Channel 814.7 MHz / High Channel 848.3 MHz @ 20°C						
Limit: +/- 2.5 ppm =		Low Channel	2036.750	Hz	High Channel	2120.750
		Frequency Deviation Measured with Time Elapse				
Power Supply [Vdc]	Environment Temperature [°C]	Low Channel		High Channel		Limit [ppm]
		[MHz]	Delta [ppm]	[MHz]	Delta [ppm]	
3.88	50	814.70003850	-0.008	848.30004130	-0.009	2.5
3.88	40	814.70003623	-0.005	848.30003941	-0.007	2.5
3.88	30	814.70003312	-0.001	848.30003552	-0.002	2.5
3.88	20	814.70003191	0.000	848.30003358	0.000	2.5
3.88	10	814.70002856	0.004	848.30003112	0.003	2.5
3.88	0	814.70002671	0.006	848.30002893	0.005	2.5
3.88	-10	814.70002423	0.009	848.30002652	0.008	2.5
3.88	-20	814.70002275	0.011	848.30002541	0.010	2.5
3.88	-30	814.70002185	0.012	848.30002361	0.012	2.5

Reference Frequency : Low Channel 814.7 MHz / High Channel 848.3 MHz @ 20°C						
Limit: +/- 2.5 ppm =		Low Channel	2036.750	Hz	High Channel	2120.750
		Frequency Deviation Measured with Time Elapse				
Power Supply [Vdc]	Environment Temperature [°C]	Low Channel		High Channel		Limit [ppm]
		[MHz]	Delta [ppm]	[MHz]	Delta [ppm]	
3.88	20	814.70003191	0	848.30003358	0	2.5
4.45	20	814.70003658	-0.006	848.30003860	-0.006	2.5
3.70	20	814.70002412	0.010	848.30002436	0.011	2.5

NR Band n5 (ANT E)

Test Date	2025-01-17
Test Engineer	47989

Reference Frequency : Low Channel 826.5 MHz / High Channel 846.5 MHz @ 20°C						
Limit: +/- 2.5 ppm =		Low Channel	2066.250	Hz	High Channel	2116.250
		Frequency Deviation Measured with Time Elapse				
Power Supply [Vdc]	Environment Temperature [°C]	Low Channel		High Channel		Limit [ppm]
		[MHz]	Delta [ppm]	[MHz]	Delta [ppm]	
3.88	50	826.50003180	-0.007	846.50003350	-0.003	2.5
3.88	40	826.50002810	-0.003	846.50003070	0.000	2.5
3.88	30	826.50002760	-0.002	846.50002950	0.002	2.5
3.88	20	826.50002586	0.000	846.50003085	0.000	2.5
3.88	10	826.50002371	0.003	846.50002641	0.005	2.5
3.88	0	826.50002513	0.001	846.50002585	0.006	2.5
3.88	-10	826.50002212	0.005	846.50002441	0.008	2.5
3.88	-20	826.50002018	0.007	846.50002163	0.011	2.5
3.88	-30	826.50001852	0.009	846.50002041	0.012	2.5

Reference Frequency : Low Channel 826.5 MHz / High Channel 846.5 MHz @ 20°C						
Limit: +/- 2.5 ppm =		Low Channel	2066.250	Hz	High Channel	2116.250
		Frequency Deviation Measured with Time Elapse				
Power Supply [Vdc]	Environment Temperature [°C]	Low Channel		High Channel		Limit [ppm]
		[MHz]	Delta [ppm]	[MHz]	Delta [ppm]	
3.88	20	826.50002586	0	846.50003085	0	2.5
4.45	20	826.50003074	-0.006	846.50003214	-0.002	2.5
3.70	20	826.50002163	0.005	846.50002385	0.008	2.5

9. RADIATED RESULTS

9.1. RADIATED POWER (ERP)

RULE PART(S)

FCC: §2.1046, §22.913, §90.542 and §90.635

LIMITS

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

90.542(a)(7) - Portable stations (hand-held devices) transmitting in the 758-768 MHz band and the 788-798 MHz band are limited to 3 watts ERP.

90.635(b) The maximum output power of the transmitter for mobile stations is 100 watts (20dBw).

In addition, when the transmitter power is measured in terms of average value, the peak-to-average ratio of the power shall not exceed 13dB.

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 $\geq$ OBW;
- b) Set VBW $\geq 3 \times$ RBW;
- c) Set span $\geq 2 \times$ RBW;
- d) Sweep time = auto couple or 1 second;
- e) Detector = rms;
- f) Ensure that the number of measurement points $\geq$ span/RBW;
- g) Trace mode = max hold(GSM, WCDMA), average(LTE, 5G NR);

TEST RESULTS

See the following pages.

9.1.1. ERP RESULT

GSM (ANT A)

Band	Mode	Frequency (MHz)	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	ERP (mW)	Limit (dBm)	Delta (dB)
GSM 850	GPRS	824.20	30.27	V	3.02	-1.03	26.23	419.76	38.50	-12.27
		836.60	31.64	V	3.04	-0.97	27.63	579.43	38.50	-10.87
		848.80	31.80	V	3.06	-0.91	27.83	606.74	38.50	-10.67
	EGPRS	824.20	24.37	V	3.02	-1.03	20.33	107.89	38.50	-18.17
		836.60	26.20	V	3.04	-0.97	22.19	165.58	38.50	-16.31
		848.80	25.48	V	3.06	-0.91	21.51	141.58	38.50	-16.99

GSM (ANT E)

Band	Mode	Frequency (MHz)	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	ERP (mW)	Limit (dBm)	Delta (dB)
GSM 850	GPRS	824.20	33.10	V	3.02	-1.03	29.06	805.38	38.50	-9.44
		836.60	34.72	V	3.04	-0.97	30.71	1177.61	38.50	-7.79
		848.80	34.30	V	3.06	-0.91	30.33	1078.95	38.50	-8.17
	EGPRS	824.20	27.58	V	3.02	-1.03	23.54	225.94	38.50	-14.96
		836.60	28.36	V	3.04	-0.97	24.35	272.27	38.50	-14.15
		848.80	28.80	V	3.06	-0.91	24.83	304.09	38.50	-13.67

WCDMA (ANT A)

Band	Mode	Frequency (MHz)	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	ERP (mW)	Limit (dBm)	Delta (dB)
Band 5	REL99	826.40	20.21	V	3.02	-1.02	16.17	41.40	38.50	-22.33
		836.60	21.55	V	3.04	-0.97	17.54	56.75	38.50	-20.96
		846.60	22.12	V	3.06	-0.92	18.15	65.31	38.50	-20.35
	HSDPA	826.40	18.06	V	3.02	-1.02	14.02	25.23	38.50	-24.48
		836.60	19.61	V	3.04	-0.97	15.60	36.31	38.50	-22.90
		846.60	19.60	V	3.06	-0.92	15.63	36.56	38.50	-22.87

WCDMA (ANT E)

Band	Mode	Frequency (MHz)	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	ERP (mW)	Limit (dBm)	Delta (dB)
Band 5	REL99	826.40	22.32	V	3.02	-1.02	18.28	67.30	38.50	-20.22
		836.60	22.97	V	3.04	-0.97	18.96	78.70	38.50	-19.54
		846.60	23.39	V	3.06	-0.92	19.42	87.50	38.50	-19.08
	HSDPA	826.40	21.05	V	3.02	-1.02	17.01	50.23	38.50	-21.49
		836.60	22.00	V	3.04	-0.97	17.99	62.95	38.50	-20.51
		846.60	22.26	V	3.06	-0.92	18.29	67.45	38.50	-20.21

LTE Band 26 (ANT A)

BW (MHz)	Modulation	Frequency (MHz)	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	ERP (dBm)	ERP (mW)	Limit (dBm)	Delta (dB)	RB
15	QPSK	821.50	20.43	V	3.01	-1.04	16.37	43.35	50.00	-33.63	1/0
		824.00	20.06	V	3.02	-1.03	16.01	39.90	38.50	-22.49	1/0
		831.50	20.04	V	3.03	-0.99	16.02	39.99	38.50	-22.48	1/74
		836.50	21.20	V	3.04	-0.97	17.20	52.48	38.50	-21.30	1/74
		841.50	21.06	V	3.05	-0.94	17.07	50.93	38.50	-21.43	1/74
	16-QAM	821.50	19.62	V	3.01	-1.04	15.56	35.97	50.00	-34.44	1/0
		824.00	19.23	V	3.02	-1.03	15.18	32.96	38.50	-23.32	1/0
		831.50	19.16	V	3.03	-0.99	15.14	32.66	38.50	-23.36	1/74
		836.50	20.39	V	3.04	-0.97	16.39	43.55	38.50	-22.11	1/74
		841.50	20.24	V	3.05	-0.94	16.25	42.17	38.50	-22.25	1/74
10	QPSK	819.00	20.51	V	3.01	-1.06	16.44	44.06	50.00	-33.56	1/49
		824.00	20.11	V	3.02	-1.03	16.06	40.36	38.50	-22.44	1/49
		829.00	19.95	V	3.03	-1.01	15.92	39.08	38.50	-22.58	1/0
		831.50	20.55	V	3.03	-0.99	16.53	44.98	38.50	-21.97	1/25
		844.00	20.89	V	3.05	-0.93	16.91	49.09	38.50	-21.59	1/25
	16-QAM	819.00	19.36	V	3.01	-1.06	15.29	33.81	50.00	-34.71	1/49
		824.00	19.15	V	3.02	-1.03	15.10	32.36	38.50	-23.40	1/49
		829.00	18.88	V	3.03	-1.01	14.85	30.55	38.50	-23.65	1/0
		831.50	19.85	V	3.03	-0.99	15.83	38.28	38.50	-22.67	1/25
		844.00	20.32	V	3.05	-0.93	16.34	43.05	38.50	-22.16	1/25
5	QPSK	816.50	20.47	V	3.00	-1.07	16.40	43.65	50.00	-33.60	1/12
		821.50	20.46	V	3.01	-1.04	16.40	39.81	50.00	-34.00	1/0
		824.00	20.05	V	3.02	-1.03	16.00	36.22	38.50	-22.91	1/12
		826.50	19.63	V	3.02	-1.02	15.59	45.08	38.50	-21.96	1/0
		831.50	20.56	V	3.03	-0.99	16.54	44.98	38.50	-21.97	1/0
		846.50	20.51	V	3.06	-0.92	16.53	33.96	38.50	-23.19	1/12
	16-QAM	816.50	19.38	V	3.00	-1.07	15.31	35.65	50.00	-34.48	1/12
		821.50	19.58	V	3.01	-1.04	15.52	34.12	50.00	-34.67	1/0
		824.00	19.38	V	3.02	-1.03	15.33	28.44	38.50	-23.96	1/12
		826.50	18.58	V	3.02	-1.02	14.54	38.82	38.50	-22.61	1/0
		831.50	19.91	V	3.03	-0.99	15.89	40.09	38.50	-22.47	1/0
		846.50	20.01	V	3.06	-0.92	16.03	40.09	38.50	-22.47	1/12
	QPSK	815.50	20.47	V	3.00	-1.07	16.39	43.55	50.00	-33.61	1/8
		822.50	20.60	V	3.01	-1.04	16.55	45.19	50.00	-33.45	1/0
		824.00	20.10	V	3.02	-1.03	16.05	40.27	38.50	-22.45	1/8
		825.50	19.48	V	3.02	-1.02	15.44	34.99	38.50	-23.06	1/8
		831.50	20.53	V	3.03	-0.99	16.51	44.77	38.50	-21.99	1/8
		847.50	20.44	V	3.06	-0.91	16.46	44.26	38.50	-22.04	1/0
3	16-QAM	815.50	19.46	V	3.00	-1.07	15.38	34.51	50.00	-34.62	1/8
		822.50	19.55	V	3.01	-1.04	15.50	35.48	50.00	-34.50	1/0
		824.00	19.11	V	3.02	-1.03	15.06	32.06	38.50	-23.44	1/8
		825.50	18.74	V	3.02	-1.02	14.70	29.51	38.50	-23.80	1/8
		831.50	19.87	V	3.03	-0.99	15.85	38.46	38.50	-22.65	1/8
		847.50	19.77	V	3.06	-0.91	15.79	37.93	38.50	-22.71	1/0
	QPSK	814.70	20.45	V	3.00	-1.08	16.37	43.35	50.00	-33.63	1/5
		823.30	20.59	V	3.01	-1.03	16.54	45.08	50.00	-33.46	1/5
		824.00	20.03	V	3.02	-1.03	15.98	39.63	38.50	-22.52	1/3
		824.70	19.27	V	3.02	-1.03	15.23	33.34	38.50	-23.27	1/5
1.4	QPSK	831.50	20.47	V	3.03	-0.99	16.45	44.16	38.50	-22.05	1/3
		848.30	20.41	V	3.06	-0.91	16.44	44.06	38.50	-22.06	1/0
	16-QAM	814.70	19.54	V	3.00	-1.08	15.46	35.16	50.00	-34.54	1/5
		823.30	19.60	V	3.01	-1.03	15.55	35.89	50.00	-34.45	1/5
		824.00	19.22	V	3.02	-1.03	15.17	32.89	38.50	-23.33	1/3
		824.70	18.33	V	3.02	-1.03	14.29	26.85	38.50	-24.21	1/5
	QPSK	831.50	19.78	V	3.03	-0.99	15.76	37.67	38.50	-22.74	1/3
		848.30	20.11	V	3.06	-0.91	16.14	41.11	38.50	-22.36	1/0

LTE Band 26 (ANT E)

BW (MHz)	Modulation	Frequency (MHz)	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	ERP (dBm)	ERP (mW)	Limit (dBm)	Delta (dB)	RB
15	QPSK	821.50	23.76	V	3.01	-1.04	19.70	93.33	50.00	-30.30	1/0
		824.00	23.78	V	3.02	-1.03	19.73	93.97	38.50	-18.77	1/38
		831.50	23.48	V	3.03	-0.99	19.46	88.31	38.50	-19.04	1/0
		836.50	25.21	V	3.04	-0.97	21.21	132.13	38.50	-17.29	1/74
		841.50	25.29	V	3.05	-0.94	21.30	134.90	38.50	-17.20	1/74
	16-QAM	821.50	23.02	V	3.01	-1.04	18.96	78.70	50.00	-31.04	1/0
		824.00	22.83	V	3.02	-1.03	18.78	75.51	38.50	-19.72	1/38
		831.50	22.49	V	3.03	-0.99	18.47	70.31	38.50	-20.03	1/0
		836.50	24.36	V	3.04	-0.97	20.36	108.64	38.50	-18.14	1/74
		841.50	24.53	V	3.05	-0.94	20.54	113.24	38.50	-17.96	1/74
10	QPSK	819.00	23.77	V	3.01	-1.06	19.70	93.33	50.00	-30.30	1/49
		824.00	23.86	V	3.02	-1.03	19.81	95.72	38.50	-18.69	1/25
		829.00	23.33	V	3.03	-1.01	19.30	85.11	38.50	-19.20	1/0
		831.50	24.60	V	3.03	-0.99	20.58	114.29	38.50	-17.92	1/25
		844.00	25.13	V	3.05	-0.93	21.15	130.32	38.50	-17.35	1/49
	16-QAM	819.00	23.09	V	3.01	-1.06	19.02	79.80	50.00	-30.98	1/49
		824.00	22.88	V	3.02	-1.03	18.83	76.38	38.50	-19.67	1/25
		829.00	22.45	V	3.03	-1.01	18.42	69.50	38.50	-20.08	1/0
		831.50	23.78	V	3.03	-0.99	19.76	94.62	38.50	-18.74	1/25
		844.00	24.32	V	3.05	-0.93	20.34	108.14	38.50	-18.16	1/49
5	QPSK	816.50	23.77	V	3.00	-1.07	19.70	95.28	50.00	-30.21	1/24
		821.50	23.85	V	3.01	-1.04	19.79	95.06	50.00	-30.22	1/12
		824.00	23.83	V	3.02	-1.03	19.78	78.16	38.50	-19.57	1/12
		826.50	22.97	V	3.02	-1.02	18.93	113.24	38.50	-17.96	1/12
		831.50	24.56	V	3.03	-0.99	20.54	122.46	38.50	-17.62	1/12
		846.50	24.86	V	3.06	-0.92	20.88	74.82	38.50	-19.76	1/12
	16-QAM	816.50	22.81	V	3.00	-1.07	18.74	80.17	50.00	-30.96	1/24
		821.50	23.10	V	3.01	-1.04	19.04	77.45	50.00	-31.11	1/12
		824.00	22.94	V	3.02	-1.03	18.89	61.66	38.50	-20.60	1/12
		826.50	21.94	V	3.02	-1.02	17.90	91.83	38.50	-18.87	1/12
		831.50	23.65	V	3.03	-0.99	19.63	104.95	38.50	-18.29	1/12
		846.50	24.19	V	3.06	-0.92	20.21	104.95	38.50	-18.29	1/12
3	QPSK	815.50	23.72	V	3.00	-1.07	19.64	92.04	50.00	-30.36	1/8
		822.50	23.95	V	3.01	-1.04	19.90	97.72	50.00	-30.10	1/8
		824.00	23.80	V	3.02	-1.03	19.75	94.41	38.50	-18.75	1/8
		825.50	22.77	V	3.02	-1.02	18.73	74.64	38.50	-19.77	1/8
		831.50	24.56	V	3.03	-0.99	20.54	113.24	38.50	-17.96	1/8
		847.50	24.82	V	3.06	-0.91	20.84	121.34	38.50	-17.66	1/8
	16-QAM	815.50	23.23	V	3.00	-1.07	19.15	82.22	50.00	-30.85	1/8
		822.50	23.36	V	3.01	-1.04	19.31	85.31	50.00	-30.69	1/8
		824.00	22.84	V	3.02	-1.03	18.79	75.68	38.50	-19.71	1/8
		825.50	21.88	V	3.02	-1.02	17.84	60.81	38.50	-20.66	1/8
		831.50	23.82	V	3.03	-0.99	19.80	95.50	38.50	-18.70	1/8
		847.50	24.09	V	3.06	-0.91	20.11	102.57	38.50	-18.39	1/8
1.4	QPSK	814.70	23.71	V	3.00	-1.08	19.63	91.83	50.00	-30.37	1/0
		823.30	23.95	V	3.01	-1.03	19.90	97.72	50.00	-30.10	1/3
		824.00	23.71	V	3.02	-1.03	19.66	92.47	38.50	-18.84	1/5
		824.70	22.61	V	3.02	-1.03	18.57	71.94	38.50	-19.93	1/3
		831.50	24.53	V	3.03	-0.99	20.51	112.46	38.50	-17.99	1/5
		848.30	24.61	V	3.06	-0.91	20.64	115.88	38.50	-17.86	1/5
	16-QAM	814.70	22.99	V	3.00	-1.08	18.91	77.80	50.00	-31.09	1/0
		823.30	23.24	V	3.01	-1.03	19.19	82.99	50.00	-30.81	1/3
		824.00	22.99	V	3.02	-1.03	18.94	78.34	38.50	-19.56	1/5
		824.70	21.63	V	3.02	-1.03	17.59	57.41	38.50	-20.91	1/3
		831.50	23.80	V	3.03	-0.99	19.78	95.06	38.50	-18.72	1/5
		848.30	24.00	V	3.06	-0.91	20.03	100.69	38.50	-18.47	1/5

NR Band n5 DFT-s OFDM (ANT A)

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
20	QPSK	834.00	21.77	V	3.04	-0.98	17.75	59.57	38.50	-20.75	1/53
		836.50	21.79	V	3.04	-0.97	17.79	60.12	38.50	-20.71	1/53
		839.00	21.94	V	3.04	-0.96	17.94	62.23	38.50	-20.56	1/53
	16-QAM	834.00	21.13	V	3.04	-0.98	17.11	51.40	38.50	-21.39	1/53
		836.50	20.52	V	3.04	-0.97	16.52	44.87	38.50	-21.98	1/53
		839.00	20.85	V	3.04	-0.96	16.85	48.42	38.50	-21.65	1/53
15	QPSK	831.50	21.53	V	3.03	-0.99	17.51	56.36	38.50	-20.99	1/1
		836.50	21.72	V	3.04	-0.97	17.72	59.16	38.50	-20.78	1/1
		841.50	21.93	V	3.05	-0.94	17.94	62.23	38.50	-20.56	1/1
	16-QAM	831.50	20.73	V	3.03	-0.99	16.71	46.88	38.50	-21.79	1/1
		836.50	20.59	V	3.04	-0.97	16.59	45.60	38.50	-21.91	1/1
		841.50	20.97	V	3.05	-0.94	16.98	49.89	38.50	-21.52	1/1
10	QPSK	829.00	21.16	V	3.03	-1.01	17.13	51.64	38.50	-21.37	1/50
		836.50	21.82	V	3.04	-0.97	17.82	60.53	38.50	-20.68	1/1
		844.00	21.74	V	3.05	-0.93	17.76	59.70	38.50	-20.74	1/1
	16-QAM	829.00	20.42	V	3.03	-1.01	16.39	43.55	38.50	-22.11	1/50
		836.50	20.59	V	3.04	-0.97	16.59	45.60	38.50	-21.91	1/1
		844.00	20.71	V	3.05	-0.93	16.73	47.10	38.50	-21.77	1/1
5	QPSK	826.50	20.90	V	3.02	-1.02	16.86	48.53	38.50	-21.64	1/23
		836.50	21.70	V	3.04	-0.97	17.70	58.88	38.50	-20.80	1/23
		846.50	21.41	V	3.06	-0.92	17.43	55.34	38.50	-21.07	1/23
	16-QAM	826.50	20.20	V	3.02	-1.02	16.16	41.30	38.50	-22.34	1/23
		836.50	20.54	V	3.04	-0.97	16.54	45.08	38.50	-21.96	1/23
		846.50	20.40	V	3.06	-0.92	16.42	43.85	38.50	-22.08	1/23

NR Band n5 DFT-s OFDM (ANT E)

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
20	QPSK	834.00	26.48	V	3.04	-0.98	22.46	176.20	38.50	-16.04	1/1
		836.50	27.01	V	3.04	-0.97	23.01	199.99	38.50	-15.49	1/1
		839.00	26.71	V	3.04	-0.96	22.71	186.64	38.50	-15.79	1/1
	16-QAM	834.00	25.88	V	3.04	-0.98	21.86	153.46	38.50	-16.64	1/1
		836.50	25.65	V	3.04	-0.97	21.65	146.22	38.50	-16.85	1/1
		839.00	25.60	V	3.04	-0.96	21.60	144.54	38.50	-16.90	1/1
15	QPSK	831.50	26.13	V	3.03	-0.99	22.11	162.55	38.50	-16.39	1/39
		836.50	27.12	V	3.04	-0.97	23.12	205.12	38.50	-15.38	1/1
		841.50	26.60	V	3.05	-0.94	22.61	182.39	38.50	-15.89	1/76
	16-QAM	831.50	25.73	V	3.03	-0.99	21.71	148.25	38.50	-16.79	1/39
		836.50	25.75	V	3.04	-0.97	21.75	149.62	38.50	-16.75	1/1
		841.50	25.81	V	3.05	-0.94	21.82	152.05	38.50	-16.68	1/76
10	QPSK	829.00	25.75	V	3.03	-1.01	21.72	148.59	38.50	-16.78	1/50
		836.50	27.18	V	3.04	-0.97	23.18	207.97	38.50	-15.32	1/1
		844.00	26.47	V	3.05	-0.93	22.49	177.42	38.50	-16.01	1/25
	16-QAM	829.00	25.47	V	3.03	-1.01	21.44	139.32	38.50	-17.06	1/50
		836.50	25.96	V	3.04	-0.97	21.96	157.04	38.50	-16.54	1/1
		844.00	25.44	V	3.05	-0.93	21.46	139.96	38.50	-17.04	1/25
5	QPSK	826.50	25.48	V	3.02	-1.02	21.44	139.32	38.50	-17.06	1/1
		836.50	27.14	V	3.04	-0.97	23.14	206.06	38.50	-15.36	1/1
		846.50	26.13	V	3.06	-0.92	22.15	164.06	38.50	-16.35	1/12
	16-QAM	826.50	25.05	V	3.02	-1.02	21.01	126.18	38.50	-17.49	1/1
		836.50	25.85	V	3.04	-0.97	21.85	153.11	38.50	-16.65	1/1
		846.50	25.12	V	3.06	-0.92	21.14	130.02	38.50	-17.36	1/12

9.2. RADIATED SPURIOUS EMISSION

RULE PART(S)

FCC: §2.1053, §22.917, §90.543 and §90.691

LIMIT

§22.917(a)

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

§90.543(c)

On any frequency outside of the frequency ranges covered by the ACP tables in this section, the power of any emission must be reduced below the mean output power (P) by at least $43 + 10 \log(P)$ dB measured in a 100 kHz bandwidth for frequencies less than 1 GHz, and in a 1 MHz bandwidth for frequencies greater than 1 GHz

§90.691(a):

(1) For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least $116 \log_{10}(f/6.1)$ decibels or $50 + 10 \log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.

(2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz. (NOTE : Use 100kHz reference bandwidth)

(b) When an emission outside of the authorized bandwidth causes harmful interference, the Commission may, at its discretion, require greater attenuation than specified in this section.

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.
- 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 = average(WCDMA, LTE, 5G NR), Maxhold(GSM);

NOTE1

GSM : It was tested at GPRS as worst case (the highest output power and density).

UMTS: It was tested at REL 99 as worst case (the highest output power and density).

LTE: It was tested at 1RB QPSK as worst case (the highest output power and density).

5G NR: All Waveforms (CP-OFDM vs DFT-s_OFDM) and modulations ($\pi/2$ 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 RESULT

GSM850

GPRS ANT A	UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
	Company: Samsung									
	Project #: 4791615638									
	Date: 2025-01-23									
	Test Engineer: 26087									
	Configuration: EUT / AC Adapter, X-Position									
	Location: Chamber 1									
	Mode: GPRS 850 MHz Harmonics									
	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, 824.2MHz									
	1648.40	-14.3	V	3.0	43.5	1.0	-56.7	-13.0	-43.7	
	2472.60	-11.1	V	3.0	43.8	1.0	-53.9	-13.0	-40.9	
	3296.80	-8.6	V	3.0	43.8	1.0	-51.4	-13.0	-38.4	
	1648.40	-15.0	H	3.0	43.5	1.0	-57.5	-13.0	-44.5	
	2472.60	-11.4	H	3.0	43.8	1.0	-54.2	-13.0	-41.2	
	3296.80	-8.7	H	3.0	43.8	1.0	-51.4	-13.0	-38.4	
	Mid Ch, 836.6MHz									
	1673.20	-13.3	V	3.0	43.5	1.0	-55.8	-13.0	-42.8	
2509.80	-11.0	V	3.0	43.7	1.0	-53.7	-13.0	-40.7		
3346.40	-8.3	V	3.0	43.8	1.0	-51.1	-13.0	-38.1		
1673.20	-12.5	H	3.0	43.5	1.0	-55.0	-13.0	-42.0		
2509.80	-10.8	H	3.0	43.7	1.0	-53.5	-13.0	-40.5		
3346.40	-8.3	H	3.0	43.8	1.0	-51.1	-13.0	-38.1		
High Ch, 848.8MHz										
1697.60	-15.4	V	3.0	43.5	1.0	-58.0	-13.0	-45.0		
2546.40	-10.7	V	3.0	43.7	1.0	-53.4	-13.0	-40.4		
3395.20	-8.1	V	3.0	43.9	1.0	-51.0	-13.0	-38.0		
1697.60	-14.8	H	3.0	43.5	1.0	-57.3	-13.0	-44.3		
2546.40	-10.7	H	3.0	43.7	1.0	-53.4	-13.0	-40.4		
3395.20	-8.1	H	3.0	43.9	1.0	-51.0	-13.0	-38.0		
GPRS ANT E	UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
	Company: Samsung									
	Project #: 4791615638									
	Date: 2025-01-23									
	Test Engineer: 26087									
	Configuration: EUT / AC Adapter, X-Position									
	Location: Chamber 1									
	Mode: GPRS 850 MHz Harmonics									
	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, 824.2MHz									
	1648.40	-0.5	V	3.0	43.5	1.0	-43.0	-13.0	-30.0	
	2472.60	-6.3	V	3.0	43.8	1.0	-49.1	-13.0	-36.1	
	3296.80	-9.1	V	3.0	43.8	1.0	-51.9	-13.0	-38.9	
	1648.40	-3.0	H	3.0	43.5	1.0	-45.5	-13.0	-32.5	
	2472.60	-10.8	H	3.0	43.8	1.0	-53.5	-13.0	-40.5	
	3296.80	-9.2	H	3.0	43.8	1.0	-52.0	-13.0	-39.0	
	Mid Ch, 836.6MHz									
	1673.20	-4.6	V	3.0	43.5	1.0	-47.1	-13.0	-34.1	
2509.80	-11.1	V	3.0	43.7	1.0	-53.9	-13.0	-40.9		
3346.40	-8.5	V	3.0	43.8	1.0	-51.3	-13.0	-38.3		
1673.20	-8.0	H	3.0	43.5	1.0	-50.5	-13.0	-37.5		
2509.80	-9.3	H	3.0	43.7	1.0	-52.0	-13.0	-39.0		
3346.40	-8.4	H	3.0	43.8	1.0	-51.2	-13.0	-38.2		
High Ch, 848.8MHz										
1697.60	-3.1	V	3.0	43.5	1.0	-45.7	-13.0	-32.7		
2546.40	-10.6	V	3.0	43.7	1.0	-53.3	-13.0	-40.3		
3395.20	-8.0	V	3.0	43.9	1.0	-50.8	-13.0	-37.8		
1697.60	-6.4	H	3.0	43.5	1.0	-49.0	-13.0	-36.0		
2546.40	-6.9	H	3.0	43.7	1.0	-49.6	-13.0	-36.6		
3395.20	-8.1	H	3.0	43.9	1.0	-51.0	-13.0	-38.0		

WCDMA Band 5

		UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
		Company: Samsung Project #: 4791615638 Date: 2025-01-23 Test Engineer: 26087 Configuration: EUT / AC Adapter, Z-Position Location: Chamber 1 Mode: Rel99 Band 5 Harmonics Test Voltage: 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
REL99 ANT A		Low Ch, 826.4MHz									
		1652.80	-15.7	V	3.0	43.5	1.0	-58.1	-13.0	-45.1	
		2479.20	-12.3	V	3.0	43.8	1.0	-55.0	-13.0	-42.0	
		3305.60	-9.7	V	3.0	43.8	1.0	-52.5	-13.0	-39.5	
		1652.80	-16.5	H	3.0	43.5	1.0	-59.0	-13.0	-46.0	
		2479.20	-12.7	H	3.0	43.8	1.0	-55.5	-13.0	-42.5	
		3305.60	-9.8	H	3.0	43.8	1.0	-52.5	-13.0	-39.5	
		Mid Ch, 836.6MHz									
		1673.20	-15.4	V	3.0	43.5	1.0	-57.9	-13.0	-44.9	
		2509.80	-12.2	V	3.0	43.7	1.0	-55.0	-13.0	-42.0	
		3346.40	-10.2	V	3.0	43.8	1.0	-53.0	-13.0	-40.0	
		1673.20	-16.4	H	3.0	43.5	1.0	-58.9	-13.0	-45.9	
		2509.80	-12.7	H	3.0	43.7	1.0	-55.4	-13.0	-42.4	
		3346.40	-10.2	H	3.0	43.8	1.0	-53.1	-13.0	-40.1	
		High Ch, 846.6MHz									
		1693.20	-15.4	V	3.0	43.5	1.0	-57.9	-13.0	-44.9	
		2539.80	-12.2	V	3.0	43.7	1.0	-54.9	-13.0	-41.9	
		3386.40	-9.2	V	3.0	43.9	1.0	-52.1	-13.0	-39.1	
		1693.20	-16.3	H	3.0	43.5	1.0	-58.9	-13.0	-45.9	
		2539.80	-12.6	H	3.0	43.7	1.0	-55.3	-13.0	-42.3	
		3386.40	-9.3	H	3.0	43.9	1.0	-52.1	-13.0	-39.1	
REL99 ANT E		UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
		Company: Samsung Project #: 4791615638 Date: 2025-01-23 Test Engineer: 26087 Configuration: EUT / AC Adapter, X-Position Location: Chamber 1 Mode: Rel99 Band 5 Harmonics Test Voltage: 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, 826.4MHz									
		1652.80	-15.3	V	3.0	43.5	1.0	-57.8	-13.0	-44.8	
		2479.20	-12.3	V	3.0	43.8	1.0	-55.1	-13.0	-42.1	
		3305.60	-9.7	V	3.0	43.8	1.0	-52.4	-13.0	-39.4	
		1652.80	-16.2	H	3.0	43.5	1.0	-58.7	-13.0	-45.7	
		2479.20	-12.7	H	3.0	43.8	1.0	-55.5	-13.0	-42.5	
		3305.60	-9.7	H	3.0	43.8	1.0	-52.5	-13.0	-39.5	
		Mid Ch, 836.6MHz									
		1673.20	-15.3	V	3.0	43.5	1.0	-57.8	-13.0	-44.8	
		2509.80	-12.3	V	3.0	43.7	1.0	-55.0	-13.0	-42.0	
		3346.40	-9.5	V	3.0	43.8	1.0	-52.3	-13.0	-39.3	
		1673.20	-15.9	H	3.0	43.5	1.0	-58.4	-13.0	-45.4	
		2509.80	-12.7	H	3.0	43.7	1.0	-55.4	-13.0	-42.4	
		3346.40	-9.5	H	3.0	43.8	1.0	-52.3	-13.0	-39.3	
		High Ch, 846.6MHz									
		1693.20	-15.2	V	3.0	43.5	1.0	-57.7	-13.0	-44.7	
		2539.80	-12.2	V	3.0	43.7	1.0	-54.9	-13.0	-41.9	
		3386.40	-9.2	V	3.0	43.9	1.0	-52.1	-13.0	-39.1	
		1693.20	-15.9	H	3.0	43.5	1.0	-58.5	-13.0	-45.5	
		2539.80	-12.6	H	3.0	43.7	1.0	-55.3	-13.0	-42.3	
		3386.40	-9.3	H	3.0	43.9	1.0	-52.1	-13.0	-39.1	

LTE Band 26 (Part 90)

3 MHz QPSK ANT A	UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
	Company: Samsung Project #: 4791615638 Date: 2025-02-12 Test Engineer: 28183 Configuration: EUT / AC Adapter, X-Position Location: Chamber 2 Mode: LTE_QPSK Band 26(Part90) Harmonics, 3MHz 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, 815.5MHz									
	1631.00	-15.6	V	3.0	42.0	1.0	-56.6	-13.0	-43.6	
	2446.50	-12.4	V	3.0	42.3	1.0	-53.7	-13.0	-40.7	
	3262.00	-10.0	V	3.0	42.9	1.0	-51.8	-13.0	-38.8	
	1631.00	-15.9	H	3.0	42.0	1.0	-56.9	-13.0	-43.9	
	2446.50	-12.9	H	3.0	42.3	1.0	-54.2	-13.0	-41.2	
	3262.00	-9.8	H	3.0	42.9	1.0	-51.7	-13.0	-38.7	
	Mid Ch, 822.5MHz									
	1645.00	-15.7	V	3.0	42.0	1.0	-56.6	-13.0	-43.6	
	2467.50	-12.6	V	3.0	42.3	1.0	-53.9	-13.0	-40.9	
	3290.00	-9.8	V	3.0	42.9	1.0	-51.7	-13.0	-38.7	
	1645.00	-16.0	H	3.0	42.0	1.0	-57.0	-13.0	-44.0	
	2467.50	-12.8	H	3.0	42.3	1.0	-54.2	-13.0	-41.2	
	3290.00	-9.7	H	3.0	42.9	1.0	-51.6	-13.0	-38.6	
	3 MHz QPSK ANT E	UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement								
Company: Samsung Project #: 4791615638 Date: 2025-01-31 Test Engineer: 26087 Configuration: EUT / AC Adapter, Z-Position Location: Chamber 1 Mode: LTE_QPSK Band 26(Part90) Harmonics, 3MHz 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, 815.5MHz										
1631.00		-14.7	V	3.0	43.4	1.0	-57.1	-13.0	-44.1	
2446.50		-11.6	V	3.0	43.8	1.0	-54.4	-13.0	-41.4	
3262.00		-9.0	V	3.0	43.7	1.0	-51.8	-13.0	-38.8	
1631.00		-15.5	H	3.0	43.4	1.0	-58.0	-13.0	-45.0	
2446.50		-12.0	H	3.0	43.8	1.0	-54.8	-13.0	-41.8	
3262.00		-9.1	H	3.0	43.7	1.0	-51.8	-13.0	-38.8	
Mid Ch, 822.5MHz										
1645.00		-14.8	V	3.0	43.4	1.0	-57.2	-13.0	-44.2	
2467.50		-11.5	V	3.0	43.8	1.0	-54.3	-13.0	-41.3	
3290.00		-9.1	V	3.0	43.7	1.0	-51.8	-13.0	-38.8	
1645.00		-15.6	H	3.0	43.4	1.0	-58.1	-13.0	-45.1	
2467.50		-11.9	H	3.0	43.8	1.0	-54.7	-13.0	-41.7	
3290.00		-9.1	H	3.0	43.7	1.0	-51.8	-13.0	-38.8	

LTE Band 26 (Straddle)

10 MHz QPSK ANT A	UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement Company: Samsung Project #: 4791615638 Date: 2025-02-12 Test Engineer: 28183 Configuration: EUT / AC Adapter, X-Position Location: Chamber 2 Mode: LTE_QPSK Band 26 Harmonics, 10MHz 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, 824MHz									
	1648.00	-15.5	V	3.0	42.0	1.0	-56.5	-13.0	-43.5	
	2472.00	-12.5	V	3.0	42.3	1.0	-53.8	-13.0	-40.8	
	3296.00	-9.7	V	3.0	42.9	1.0	-51.6	-13.0	-38.6	
	1648.00	-15.9	H	3.0	42.0	1.0	-56.9	-13.0	-43.9	
	2472.00	-12.6	H	3.0	42.3	1.0	-54.0	-13.0	-41.0	
	3296.00	-9.6	H	3.0	42.9	1.0	-51.5	-13.0	-38.5	
10 MHz QPSK ANT E	UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement Company: Samsung Project #: 4791615638 Date: 2025-01-31 Test Engineer: 26087 Configuration: EUT / AC Adapter, Z-Position Location: Chamber 1 Mode: LTE_QPSK Band 26 Harmonics, 10MHz 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
	Straddle Ch, 824MHz									
	1648.00	-14.8	V	3.0	43.5	1.0	-57.3	-13.0	-44.3	
	2472.00	-11.4	V	3.0	43.8	1.0	-54.2	-13.0	-41.2	
	3296.00	-9.0	V	3.0	43.8	1.0	-51.8	-13.0	-38.8	
	1648.00	-15.6	H	3.0	43.5	1.0	-58.0	-13.0	-45.0	
	2472.00	-11.9	H	3.0	43.8	1.0	-54.6	-13.0	-41.6	
	3296.00	-9.1	H	3.0	43.8	1.0	-51.9	-13.0	-38.9	

LTE Band 26 (Part 22)

15 MHz QPSK ANT A	UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
	Company: Samsung									
	Project #: 4791615638									
	Date: 2025-02-12									
	Test Engineer: 28183									
	Configuration: EUT / AC Adapter, X-Position									
	Location: Chamber 2									
	Mode: LTE_QPSK Band 26 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, 831.5MHz									
	1663.00	-15.5	V	3.0	42.0	1.0	-56.5	-13.0	-43.5	
	2494.50	-12.6	V	3.0	42.4	1.0	-54.0	-13.0	-41.0	
	3326.00	-9.6	V	3.0	42.9	1.0	-51.5	-13.0	-38.5	
	1663.00	-15.8	H	3.0	42.0	1.0	-56.7	-13.0	-43.7	
	2494.50	-12.8	H	3.0	42.4	1.0	-54.1	-13.0	-41.1	
	3326.00	-9.4	H	3.0	42.9	1.0	-51.4	-13.0	-38.4	
	Mid Ch, 836.5MHz									
	1673.00	-15.6	V	3.0	42.0	1.0	-56.6	-13.0	-43.6	
	2509.50	-11.4	V	3.0	42.4	1.0	-52.8	-13.0	-39.8	
3346.00	-9.4	V	3.0	42.9	1.0	-51.3	-13.0	-38.3		
1673.00	-15.9	H	3.0	42.0	1.0	-56.8	-13.0	-43.8		
2509.50	-10.5	H	3.0	42.4	1.0	-51.9	-13.0	-38.9		
3346.00	-9.2	H	3.0	42.9	1.0	-51.1	-13.0	-38.1		
High Ch, 841.5MHz										
1683.00	-15.5	V	3.0	42.0	1.0	-56.5	-13.0	-43.5		
2524.50	-12.5	V	3.0	42.4	1.0	-53.9	-13.0	-40.9		
3366.00	-9.2	V	3.0	42.9	1.0	-51.1	-13.0	-38.1		
1683.00	-15.9	H	3.0	42.0	1.0	-56.8	-13.0	-43.8		
2524.50	-12.7	H	3.0	42.4	1.0	-54.1	-13.0	-41.1		
3366.00	-9.0	H	3.0	42.9	1.0	-50.9	-13.0	-37.9		
15 MHz QPSK ANT E	UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
	Company: Samsung									
	Project #: 4791615638									
	Date: 2025-01-31									
	Test Engineer: 26087									
	Configuration: EUT / AC Adapter, Z-Position									
	Location: Chamber 1									
	Mode: LTE_QPSK Band 26 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, 831.5MHz									
	1663.00	-14.6	V	3.0	43.5	1.0	-57.1	-13.0	-44.1	
	2494.50	-11.4	V	3.0	43.8	1.0	-54.2	-13.0	-41.2	
	3326.00	-9.0	V	3.0	43.8	1.0	-51.8	-13.0	-38.8	
	1663.00	-15.7	H	3.0	43.5	1.0	-58.2	-13.0	-45.2	
	2494.50	-11.8	H	3.0	43.8	1.0	-54.6	-13.0	-41.6	
	3326.00	-9.0	H	3.0	43.8	1.0	-51.8	-13.0	-38.8	
	Mid Ch, 836.5MHz									
	1673.00	-14.1	V	3.0	43.5	1.0	-56.6	-13.0	-43.6	
	2509.50	-11.5	V	3.0	43.7	1.0	-54.2	-13.0	-41.2	
3346.00	-8.7	V	3.0	43.8	1.0	-51.5	-13.0	-38.5		
1673.00	-15.4	H	3.0	43.5	1.0	-57.9	-13.0	-44.9		
2509.50	-11.9	H	3.0	43.7	1.0	-54.7	-13.0	-41.7		
3346.00	-8.7	H	3.0	43.8	1.0	-51.5	-13.0	-38.5		
High Ch, 841.5MHz										
1683.00	-14.0	V	3.0	43.5	1.0	-56.5	-13.0	-43.5		
2524.50	-11.4	V	3.0	43.7	1.0	-54.1	-13.0	-41.1		
3366.00	-8.6	V	3.0	43.8	1.0	-51.4	-13.0	-38.4		
1683.00	-15.2	H	3.0	43.5	1.0	-57.8	-13.0	-44.8		
2524.50	-11.8	H	3.0	43.7	1.0	-54.5	-13.0	-41.5		
3366.00	-8.6	H	3.0	43.8	1.0	-51.5	-13.0	-38.5		

NR Band n5 DFT-s OFDM

15 MHz DFT-s-OFDM QPSK ANT A	UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement										
	Company:		Samsung								
	Project #:		4791615638								
	Date:		2025-01-20								
	Test Engineer:		26087								
	Configuration:		EUT / AC Adapter, Z-Position								
	Location:		Chamber 2								
	Mode:		5G NR_QPSK NR n5 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, 831.5MHz										
	1663.00		-15.2	V	3.0	42.0	1.0	-56.1	-13.0	-43.1	
	2494.50		-11.8	V	3.0	42.4	1.0	-53.2	-13.0	-40.2	
	3326.00		-9.0	V	3.0	42.9	1.0	-50.9	-13.0	-37.9	
	1663.00		-15.6	H	3.0	42.0	1.0	-56.6	-13.0	-43.6	
	2494.50		-12.1	H	3.0	42.4	1.0	-53.4	-13.0	-40.4	
	3326.00		-9.0	H	3.0	42.9	1.0	-50.9	-13.0	-37.9	
	Mid Ch, 836.5MHz										
	1673.00		-15.2	V	3.0	42.0	1.0	-56.2	-13.0	-43.2	
	2509.50		-11.7	V	3.0	42.4	1.0	-53.1	-13.0	-40.1	
	3346.00		-9.0	V	3.0	42.9	1.0	-50.9	-13.0	-37.9	
	1673.00		-15.7	H	3.0	42.0	1.0	-56.7	-13.0	-43.7	
	2509.50		-12.0	H	3.0	42.4	1.0	-53.3	-13.0	-40.3	
	3346.00		-9.0	H	3.0	42.9	1.0	-50.9	-13.0	-37.9	
	High Ch, 841.5MHz										
	1683.00		-15.2	V	3.0	42.0	1.0	-56.2	-13.0	-43.2	
	2524.50		-11.8	V	3.0	42.4	1.0	-53.2	-13.0	-40.2	
	3366.00		-8.8	V	3.0	42.9	1.0	-50.8	-13.0	-37.8	
	1683.00		-15.6	H	3.0	42.0	1.0	-56.6	-13.0	-43.6	
	2524.50		-12.0	H	3.0	42.4	1.0	-53.4	-13.0	-40.4	
	3366.00		-8.8	H	3.0	42.9	1.0	-50.7	-13.0	-37.7	
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