

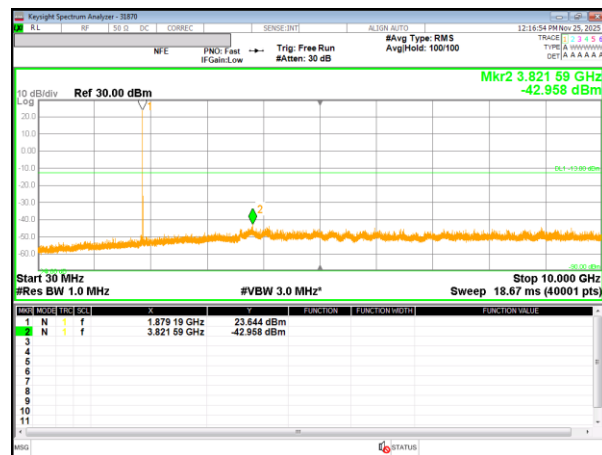
LTE Band 25 (ANT F)

20 MHz QPSK

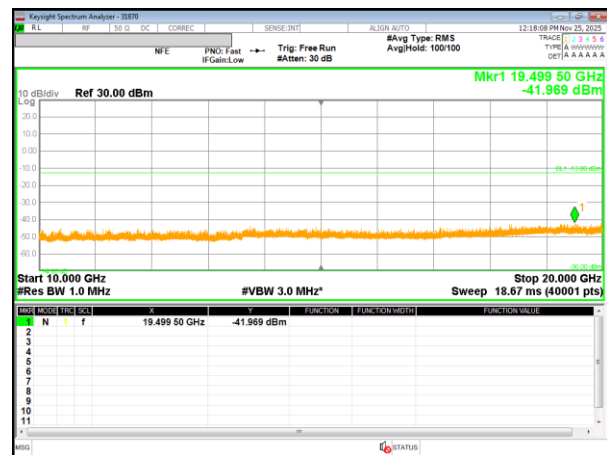


NR Band n25 DFT-s OFDM (ANT F)

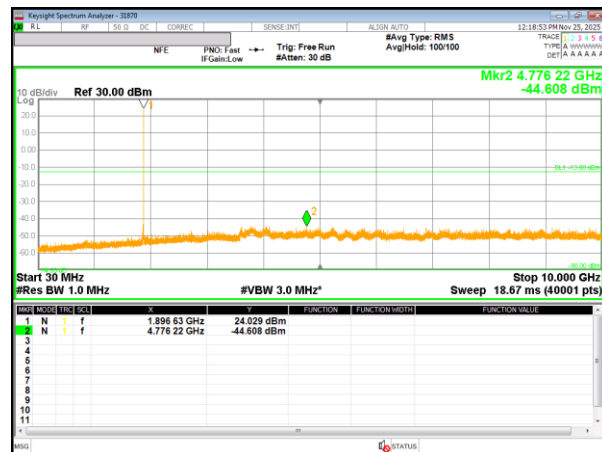
30 MHz QPSK



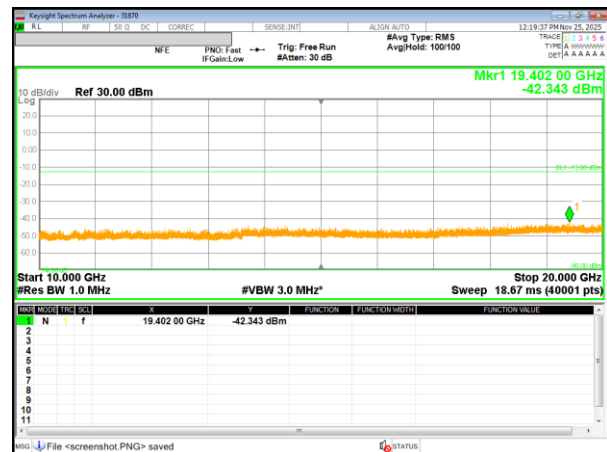
Low channel



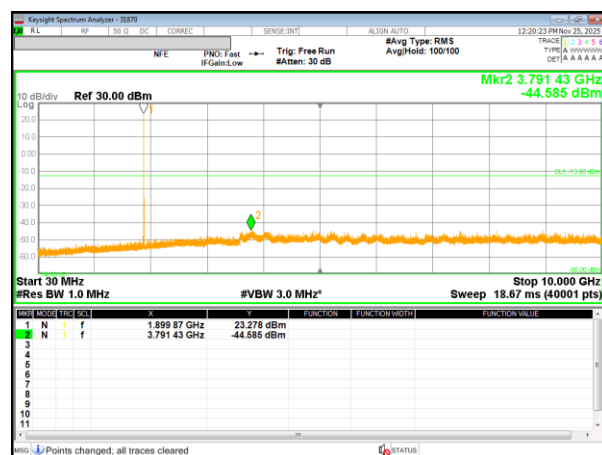
Low channel



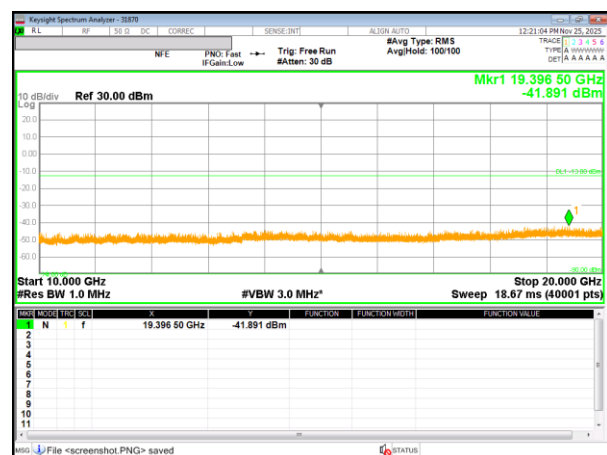
Mid channel



Mid channel



High channel



High channel

8.6. FREQUENCY STABILITY

RULE PART(S)

FCC: §2.1055, §24.235

LIMITS

§24.235

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

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 1900, Channel 512/810, Frequency 1850.0/1910.0 MHz **(Lowest Frequency: GPRS / Highest Frequency: GPRS)**

Test Date	2025-11-14
Test Engineer	22933

Limit		1850	1910	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ End of OBW	F high @ End of OBW		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	1850.0784	1909.9237		
Extreme (50C)		1850.0784	1909.9237	28.3	0.015
Extreme (40C)		1850.0784	1909.9237	26.0	0.014
Extreme (30C)		1850.0784	1909.9237	27.5	0.015
Extreme (10C)		1850.0784	1909.9237	29.4	0.016
Extreme (0C)		1850.0784	1909.9237	28.1	0.015
Extreme (-10C)		1850.0784	1909.9237	29.1	0.015
Extreme (-20C)		1850.0784	1909.9237	28.2	0.015
Extreme (-30C)		1850.0784	1909.9237	30.1	0.016
20C	15%	1850.0784	1909.9237	25.8	0.014
	-15%	1850.0784	1909.9237	31.2	0.017
	End Point	1850.0784	1909.9237	30.0	0.016

WCDMA Band 2 (Lowest Frequency: Rel99/ Highest Frequency: Rel99)

Test Date	2025-11-11
Test Engineer	22933

Limit		1850	1910	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ End of OBW	F high @ End of OBW		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	1850.3165	1909.6792		
Extreme (50C)		1850.3165	1909.6792	5.2	0.003
Extreme (40C)		1850.3165	1909.6792	5.3	0.003
Extreme (30C)		1850.3165	1909.6792	5.2	0.003
Extreme (10C)		1850.3165	1909.6792	5.4	0.003
Extreme (0C)		1850.3165	1909.6792	5.2	0.003
Extreme (-10C)		1850.3165	1909.6792	4.0	0.002
Extreme (-20C)		1850.3165	1909.6792	4.9	0.003
Extreme (-30C)		1850.3165	1909.6792	4.6	0.002
20C	15%	1850.3165	1909.6792	7.2	0.004
	-15%	1850.3165	1909.6792	6.3	0.003
	End Point	1850.3165	1909.6792	6.1	0.003

LTE Band 25 (Lowest Frequency: QPSK / Highest Frequency: 16QAM)

Test Date	2025-11-12
Test Engineer	22933

Limit		1850	1915	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ End of OBW	F high @ End of OBW		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	1850.1528	1914.8463		
Extreme (50C)		1850.1528	1914.8463	7.0	0.004
Extreme (40C)		1850.1528	1914.8463	6.9	0.004
Extreme (30C)		1850.1528	1914.8463	6.9	0.004
Extreme (10C)		1850.1528	1914.8463	7.2	0.004
Extreme (0C)		1850.1528	1914.8463	7.6	0.004
Extreme (-10C)		1850.1528	1914.8463	7.4	0.004
Extreme (-20C)		1850.1528	1914.8463	7.6	0.004
Extreme (-30C)		1850.1528	1914.8463	7.7	0.004
20C	15%	1850.1528	1914.8463	8.4	0.004
	-15%	1850.1528	1914.8463	6.2	0.003
	End Point	1850.1528	1914.8463	8.7	0.005

NR Band n25 (Lowest Frequency: 16QAM / Highest Frequency: 16QAM)

Test Date	2025-11-11
Test Engineer	22933

Limit		1850	1915	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ End of OBW	F high @ End of OBW		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	1850.2571	1914.7460		
Extreme (50C)		1850.2571	1914.7460	7.3	0.004
Extreme (40C)		1850.2571	1914.7460	7.0	0.004
Extreme (30C)		1850.2571	1914.7460	7.5	0.004
Extreme (10C)		1850.2571	1914.7460	7.2	0.004
Extreme (0C)		1850.2571	1914.7460	6.3	0.003
Extreme (-10C)		1850.2571	1914.7460	6.7	0.004
Extreme (-20C)		1850.2571	1914.7460	9.2	0.005
Extreme (-30C)		1850.2571	1914.7460	9.1	0.005
20C	15%	1850.2571	1914.7460	9.3	0.005
	-15%	1850.2571	1914.7460	9.1	0.005
	End Point	1850.2571	1914.7460	7.8	0.004

9. RADIATED RESULTS

9.1. RADIATED POWER (EIRP)

RULE PART(S)

FCC: §2.1046, §24.232

LIMITS

§24.232(c)

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

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 $\geq 1\%$ to 5% of the OBW;
- b) Set VBW $\geq 3 \times$ RBW;
- c) Set span $\geq 2 \times$ to $3 \times$ the OBW.;
- d) Sweep time = auto couple or Set $\geq [10 \times (\text{number of points in sweep}) \times (\text{transmission period})]$ for single sweep (automation-compatible) measurement. Transmission period is the on and off time of the transmitter.;
- e) Detector = rms;
- f) Ensure that the number of measurement points $\geq 2 \times \text{span/RBW}$;
- g) Trace mode = average;
- h) If the EUT can be configured to transmit continuously, then set the trigger to free run.
- i) If the EUT cannot be configured to transmit continuously, then use a sweep trigger with the level set to enable triggering only on full power bursts and configure the EUT to transmit at full power for the entire duration of each sweep. Verify that the sweep time is less than or equal to the transmission burst duration. Time gating can also be used under similar constraints (i.e., configured such that measurement data is collected only during active full-power transmissions).
- j) Trace average at least 100 traces in power averaging (rms) mode if sweep is set to auto-couple. To accurately determine the average power over multiple symbols, it can be necessary to increase the number of traces to be averaged above 100 or, if using a manually configured sweep time, increase the sweep time.
- k) Compute the power by integrating the spectrum across the OBW of the signal using the instrument's band or channel power measurement function, with the band/channel limits set equal to the OBW band edges. If the instrument does not have a band or channel power function, then sum the spectrum levels (in linear power units) at intervals equal to the RBW extending across the entire OBW of the spectrum.

NOTE

LTE, 5G NR : The OBW value corresponding to the total channel bandwidth is the OBW of FullRB. Measurements were made with a 1RB configuration (Worst case) over the entire channel bandwidth, and FRB configurations were also reported for the worst BW.

TEST RESULTS

See the following pages.

9.1.1. EIRP RESULT

GSM 1900

Band	Mode	Frequency (MHz)	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Limit (dBm)	Delta (dB)
GSM 1900	GPRS	1850.20	24.65	V	4.46	9.48	29.67	0.927	33.00	-3.33
		1880.00	24.62	H	4.50	9.20	29.32	0.855	33.00	-3.68
		1909.80	25.47	H	4.53	8.86	29.80	0.955	33.00	-3.20
	EGPRS	1850.20	24.57	V	4.46	9.48	29.59	0.910	33.00	-3.41
		1880.00	24.58	H	4.50	9.20	29.28	0.847	33.00	-3.72
		1909.80	25.40	H	4.53	8.86	29.73	0.940	33.00	-3.27

WCDMA Band 2

Band	Mode	Frequency (MHz)	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Limit (dBm)	Delta (dB)
Band 2	REL99	1852.40	18.59	H	4.46	9.46	23.59	0.229	33.00	-9.41
		1880.00	19.82	H	4.50	9.20	24.52	0.283	33.00	-8.48
		1907.60	21.21	H	4.53	8.89	25.58	0.361	33.00	-7.42
	HSDPA	1852.40	17.57	H	4.46	9.46	22.57	0.181	33.00	-10.43
		1880.00	18.79	H	4.50	9.20	23.49	0.223	33.00	-9.51
		1907.60	20.23	H	4.53	8.89	24.60	0.288	33.00	-8.40

LTE Band 25 (ANT A)

BW (MHz)	Modulation	Frequency (MHz)	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Limit (dBm)	Delta (dB)	RB
20	QPSK	1860.00	19.96	H	4.48	9.39	24.87	0.307	33.00	-8.13	1 / 0
		1882.50	21.12	H	4.50	9.17	25.79	0.379	33.00	-7.21	1 / 49
		1905.00	21.71	H	4.52	8.93	26.12	0.409	33.00	-6.88	1 / 49
	16-QAM	1860.00	18.95	H	4.48	9.39	23.86	0.243	33.00	-9.14	1 / 99
		1882.50	20.15	H	4.50	9.17	24.82	0.303	33.00	-8.18	1 / 99
		1905.00	20.72	H	4.52	8.93	25.13	0.326	33.00	-7.87	1 / 49
15	QPSK	1857.50	19.72	H	4.48	9.41	24.65	0.292	33.00	-8.35	1 / 37
		1882.50	21.14	H	4.50	9.17	25.81	0.381	33.00	-7.19	1 / 74
		1907.50	21.91	H	4.53	8.89	26.27	0.424	33.00	-6.73	1 / 0
	16-QAM	1857.50	18.84	H	4.48	9.41	23.77	0.238	33.00	-9.23	1 / 0
		1882.50	19.77	H	4.50	9.17	24.44	0.278	33.00	-8.56	1 / 74
		1907.50	21.14	H	4.53	8.89	25.50	0.355	33.00	-7.50	1 / 37
10	QPSK	1855.00	19.74	H	4.47	9.43	24.70	0.295	33.00	-8.30	1 / 0
		1882.50	21.19	H	4.50	9.17	25.86	0.385	33.00	-7.14	1 / 25
		1910.00	21.98	H	4.53	8.85	26.31	0.428	33.00	-6.69	1 / 25
	16-QAM	1855.00	18.62	H	4.47	9.43	23.58	0.228	33.00	-9.42	1 / 0
		1882.50	20.12	H	4.50	9.17	24.79	0.301	33.00	-8.21	1 / 25
		1910.00	21.38	H	4.53	8.85	25.71	0.372	33.00	-7.29	1 / 25
5	QPSK	1852.50	19.67	H	4.46	9.46	24.66	0.292	33.00	-8.34	1 / 0
		1882.50	21.26	H	4.50	9.17	25.93	0.392	33.00	-7.07	1 / 12
		1912.50	21.93	H	4.53	8.82	26.21	0.418	33.00	-6.79	1 / 12
	16-QAM	1852.50	18.80	H	4.46	9.46	23.79	0.239	33.00	-9.21	1 / 24
		1882.50	20.07	H	4.50	9.17	24.74	0.298	33.00	-8.26	1 / 0
		1912.50	21.02	H	4.53	8.82	25.30	0.339	33.00	-7.70	1 / 12
3	QPSK	1851.50	19.42	H	4.46	9.47	24.43	0.277	33.00	-8.57	1 / 14
		1882.50	21.11	H	4.50	9.17	25.78	0.378	33.00	-7.22	1 / 0
		1913.50	21.28	H	4.54	8.80	25.55	0.359	33.00	-7.45	1 / 0
	16-QAM	1851.50	18.65	H	4.46	9.47	23.66	0.232	33.00	-9.34	1 / 14
		1882.50	19.90	H	4.50	9.17	24.57	0.286	33.00	-8.43	1 / 14
		1913.50	20.34	H	4.54	8.80	24.61	0.289	33.00	-8.39	1 / 8
1.4	QPSK	1850.70	19.35	H	4.46	9.48	24.36	0.273	33.00	-8.64	1 / 0
		1882.50	21.19	H	4.50	9.17	25.86	0.385	33.00	-7.14	1 / 5
		1914.30	21.90	H	4.54	8.79	26.15	0.412	33.00	-6.85	1 / 0
	16-QAM	1850.70	18.64	H	4.46	9.48	23.65	0.232	33.00	-9.35	1 / 3
		1882.50	20.00	H	4.50	9.17	24.67	0.293	33.00	-8.33	1 / 0
		1914.30	20.92	H	4.54	8.79	25.17	0.329	33.00	-7.83	1 / 5
10	QPSK	1855.00	18.63	H	4.47	9.43	23.59	0.229	33.00	-9.41	50/0
		1882.50	19.85	H	4.50	9.17	24.52	0.283	33.00	-8.48	50/0
		1910.00	21.10	H	4.53	8.85	25.43	0.349	33.00	-7.57	50/0
15	16-QAM	1857.50	18.21	H	4.48	9.41	23.14	0.206	33.00	-9.86	75/0
		1882.50	19.03	H	4.50	9.17	23.70	0.234	33.00	-9.30	75/0
		1907.50	20.49	H	4.53	8.89	24.85	0.305	33.00	-8.15	75/0

LTE Band 25 (ANT F)

BW (MHz)	Modulation	Frequency (MHz)	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	ERP (dBm)	EIRP (W)	Limit (dBm)	Delta (dB)	RB
20	QPSK	1860.00	19.15	V	4.48	9.39	24.06	0.255	33.00	-8.94	1 / 49
		1882.50	19.62	V	4.50	9.17	24.29	0.269	33.00	-8.71	1 / 0
		1905.00	20.10	V	4.52	8.93	24.51	0.282	33.00	-8.49	1 / 0
	16-QAM	1860.00	18.20	V	4.48	9.39	23.11	0.205	33.00	-9.89	1 / 49
		1882.50	18.67	V	4.50	9.17	23.34	0.216	33.00	-9.66	1 / 99
		1905.00	19.17	V	4.52	8.93	23.58	0.228	33.00	-9.42	1 / 49
15	QPSK	1857.50	19.04	V	4.48	9.41	23.98	0.250	33.00	-9.02	1 / 37
		1882.50	19.59	V	4.50	9.17	24.26	0.267	33.00	-8.74	1 / 0
		1907.50	20.14	V	4.53	8.89	24.50	0.282	33.00	-8.50	1 / 0
	16-QAM	1857.50	18.23	V	4.48	9.41	23.17	0.207	33.00	-9.83	1 / 0
		1882.50	18.87	V	4.50	9.17	23.54	0.226	33.00	-9.46	1 / 0
		1907.50	18.89	V	4.53	8.89	23.25	0.211	33.00	-9.75	1 / 74
10	QPSK	1855.00	19.04	V	4.47	9.43	24.01	0.252	33.00	-8.99	1 / 25
		1882.50	19.61	V	4.50	9.17	24.28	0.268	33.00	-8.72	1 / 0
		1910.00	20.02	V	4.53	8.85	24.35	0.272	33.00	-8.65	1 / 25
	16-QAM	1855.00	18.21	V	4.47	9.43	23.18	0.208	33.00	-9.82	1 / 49
		1882.50	18.72	V	4.50	9.17	23.39	0.218	33.00	-9.61	1 / 49
		1910.00	19.22	V	4.53	8.85	23.55	0.226	33.00	-9.45	1 / 49
5	QPSK	1852.50	18.77	V	4.46	9.46	23.77	0.238	33.00	-9.23	1 / 0
		1882.50	19.69	V	4.50	9.17	24.36	0.273	33.00	-8.64	1 / 12
		1912.50	20.05	V	4.53	8.82	24.33	0.271	33.00	-8.67	1 / 0
	16-QAM	1852.50	18.00	V	4.46	9.46	23.00	0.200	33.00	-10.00	1 / 0
		1882.50	18.84	V	4.50	9.17	23.51	0.224	33.00	-9.49	1 / 0
		1912.50	19.32	V	4.53	8.82	23.60	0.229	33.00	-9.40	1 / 24
3	QPSK	1851.50	18.26	V	4.46	9.47	23.27	0.212	33.00	-9.73	1 / 8
		1882.50	18.90	V	4.50	9.17	23.57	0.228	33.00	-9.43	1 / 8
		1913.50	19.64	V	4.54	8.80	23.91	0.246	33.00	-9.09	1 / 14
	16-QAM	1851.50	17.41	V	4.46	9.47	22.42	0.175	33.00	-10.58	1 / 14
		1882.50	18.12	V	4.50	9.17	22.79	0.190	33.00	-10.21	1 / 14
		1913.50	18.78	V	4.54	8.80	23.05	0.202	33.00	-9.95	1 / 14
1.4	QPSK	1850.70	18.50	V	4.46	9.48	23.51	0.224	33.00	-9.49	1 / 0
		1882.50	19.06	V	4.50	9.17	23.73	0.236	33.00	-9.27	1 / 3
		1914.30	19.59	V	4.54	8.79	23.84	0.242	33.00	-9.16	1 / 3
	16-QAM	1850.70	17.44	V	4.46	9.48	22.45	0.176	33.00	-10.55	1 / 3
		1882.50	18.15	V	4.50	9.17	22.82	0.191	33.00	-10.18	1 / 0
		1914.30	19.00	V	4.54	8.79	23.25	0.211	33.00	-9.75	1 / 5
20	QPSK	1860.00	18.45	V	4.48	9.39	23.36	0.217	33.00	-9.64	100/0
		1882.50	18.70	V	4.50	9.17	23.37	0.217	33.00	-9.63	100/0
		1905.00	19.02	V	4.52	8.93	23.43	0.220	33.00	-9.57	100/0
	16-QAM	1860.00	17.07	V	4.48	9.39	21.98	0.158	33.00	-11.02	100/0
		1882.50	17.62	V	4.50	9.17	22.29	0.169	33.00	-10.71	100/0
		1905.00	18.20	V	4.52	8.93	22.61	0.182	33.00	-10.39	100/0

NR Band n25 DFT-s OFDM (ANT A)

BW (MHz)	Modulation	Frequency (MHz)	SG reading (dBm)	Ant. Pol (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	ERP (dBm)	EIRP (W)	Limit (dBm)	Delta (dB)	RB
40	QPSK	1870.00	19.69	H	4.49	9.29	24.49	0.281	33.00	-8.51	1 / 1
		1882.50	20.29	H	4.50	9.17	24.96	0.313	33.00	-8.04	1 / 1
		1895.00	21.27	H	4.52	9.05	25.81	0.381	33.00	-7.19	1 / 214
	16-QAM	1870.00	18.61	H	4.49	9.29	23.41	0.219	33.00	-9.59	1 / 1
		1882.50	19.35	H	4.50	9.17	24.02	0.252	33.00	-8.98	1 / 107
		1895.00	20.28	H	4.52	9.05	24.82	0.303	33.00	-8.18	1 / 214
35	QPSK	1867.50	19.57	H	4.49	9.32	24.39	0.275	33.00	-8.61	1 / 1
		1882.50	20.33	H	4.50	9.17	25.00	0.316	33.00	-8.00	1 / 186
		1897.50	21.43	H	4.52	9.03	25.94	0.393	33.00	-7.06	1 / 93
	16-QAM	1867.50	18.57	H	4.49	9.32	23.39	0.218	33.00	-9.61	1 / 1
		1882.50	19.45	H	4.50	9.17	24.12	0.258	33.00	-8.88	1 / 93
		1897.50	20.57	H	4.52	9.03	25.08	0.322	33.00	-7.92	1 / 1
30	QPSK	1865.00	19.37	H	4.48	9.34	24.23	0.265	33.00	-8.77	1 / 1
		1882.50	20.55	H	4.50	9.17	25.22	0.333	33.00	-7.78	1 / 158
		1900.00	21.55	H	4.52	9.01	26.04	0.402	33.00	-6.96	1 / 158
	16-QAM	1865.00	18.40	H	4.48	9.34	23.26	0.212	33.00	-9.74	1 / 1
		1882.50	19.65	H	4.50	9.17	24.32	0.270	33.00	-8.68	1 / 1
		1900.00	20.53	H	4.52	9.01	25.02	0.318	33.00	-7.98	1 / 158
25	QPSK	1862.50	19.37	H	4.48	9.36	24.25	0.266	33.00	-8.75	1 / 1
		1882.50	20.27	H	4.50	9.17	24.94	0.312	33.00	-8.06	1 / 131
		1902.50	21.75	H	4.52	8.97	26.19	0.416	33.00	-6.81	1 / 131
	16-QAM	1862.50	18.40	H	4.48	9.36	23.28	0.213	33.00	-9.72	1 / 1
		1882.50	19.33	H	4.50	9.17	24.00	0.251	33.00	-9.00	1 / 1
		1902.50	20.79	H	4.52	8.97	25.23	0.333	33.00	-7.77	1 / 131
20	QPSK	1860.00	19.24	H	4.48	9.39	24.15	0.260	33.00	-8.85	1 / 1
		1882.50	20.18	H	4.50	9.17	24.85	0.305	33.00	-8.15	1 / 104
		1905.00	21.74	H	4.52	8.93	26.15	0.412	33.00	-6.85	1 / 52
	16-QAM	1860.00	18.16	H	4.48	9.39	23.07	0.203	33.00	-9.93	1 / 1
		1882.50	19.22	H	4.50	9.17	23.89	0.245	33.00	-9.11	1 / 52
		1905.00	20.97	H	4.52	8.93	25.38	0.345	33.00	-7.62	1 / 52
15	QPSK	1857.50	19.19	H	4.48	9.41	24.12	0.258	33.00	-8.88	1 / 1
		1882.50	20.32	H	4.50	9.17	24.99	0.316	33.00	-8.01	1 / 1
		1907.50	21.87	H	4.53	8.89	26.23	0.420	33.00	-6.77	1 / 1
	16-QAM	1857.50	18.02	H	4.48	9.41	22.95	0.197	33.00	-10.05	1 / 1
		1882.50	19.34	H	4.50	9.17	24.01	0.252	33.00	-8.99	1 / 1
		1907.50	21.01	H	4.53	8.89	25.37	0.344	33.00	-7.63	1 / 1
10	QPSK	1855.00	19.13	H	4.47	9.43	24.09	0.256	33.00	-8.91	1 / 25
		1882.50	20.13	H	4.50	9.17	24.80	0.302	33.00	-8.20	1 / 25
		1910.00	21.95	H	4.53	8.85	26.28	0.425	33.00	-6.72	1 / 1
	16-QAM	1855.00	18.07	H	4.47	9.43	23.03	0.201	33.00	-9.97	1 / 25
		1882.50	19.28	H	4.50	9.17	23.95	0.248	33.00	-9.05	1 / 25
		1910.00	21.13	H	4.53	8.85	25.46	0.352	33.00	-7.54	1 / 1
5	QPSK	1852.50	19.14	H	4.46	9.46	24.13	0.259	33.00	-8.87	1 / 1
		1882.50	20.24	H	4.50	9.17	24.91	0.310	33.00	-8.09	1 / 1
		1912.50	21.89	H	4.53	8.82	26.17	0.414	33.00	-6.83	1 / 1
	16-QAM	1852.50	18.03	H	4.46	9.46	23.02	0.200	33.00	-9.98	1 / 1
		1882.50	19.29	H	4.50	9.17	23.96	0.249	33.00	-9.04	1 / 1
		1912.50	20.94	H	4.53	8.82	25.22	0.333	33.00	-7.78	1 / 1
10	QPSK	1855.00	18.05	H	4.47	9.43	23.01	0.200	33.00	-9.99	500
		1882.50	19.05	H	4.50	9.17	23.72	0.236	33.00	-9.28	500
		1910.00	20.94	H	4.53	8.85	25.27	0.337	33.00	-7.73	500
	16-QAM	1855.00	17.09	H	4.47	9.43	22.05	0.160	33.00	-10.95	500
		1882.50	18.26	H	4.50	9.17	22.93	0.196	33.00	-10.07	500
		1910.00	20.07	H	4.53	8.85	24.40	0.275	33.00	-8.60	500

NR Band n25 DFT-s OFDM (ANT F)

BW (MHz)	Modulation	Frequency (MHz)	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	ERP (dBm)	EIRP (W)	Limit (dBm)	Delta (dB)	RB
40	QPSK	1870.00	19.43	V	4.49	9.29	24.23	0.265	33.00	-8.77	1 / 1
		1882.50	19.65	V	4.50	9.17	24.32	0.270	33.00	-8.68	1 / 1
		1895.00	20.25	V	4.52	9.05	24.79	0.301	33.00	-8.21	1 / 1
	16-QAM	1870.00	18.37	V	4.49	9.29	23.17	0.207	33.00	-9.83	1 / 1
		1882.50	18.60	V	4.50	9.17	23.27	0.212	33.00	-9.73	1 / 107
		1895.00	19.24	V	4.52	9.05	23.78	0.239	33.00	-9.22	1 / 1
35	QPSK	1867.50	19.24	V	4.49	9.32	24.07	0.255	33.00	-8.93	1 / 93
		1882.50	19.80	V	4.50	9.17	24.47	0.280	33.00	-8.53	1 / 93
		1897.50	20.04	V	4.52	9.03	24.55	0.285	33.00	-8.45	1 / 1
	16-QAM	1867.50	18.17	V	4.49	9.32	23.00	0.200	33.00	-10.00	1 / 1
		1882.50	18.64	V	4.50	9.17	23.31	0.214	33.00	-9.69	1 / 186
		1897.50	19.20	V	4.52	9.03	23.71	0.235	33.00	-9.29	1 / 93
30	QPSK	1865.00	19.14	V	4.48	9.34	24.00	0.251	33.00	-9.00	1 / 158
		1882.50	19.75	V	4.50	9.17	24.42	0.277	33.00	-8.58	1 / 158
		1900.00	20.29	V	4.52	9.01	24.77	0.300	33.00	-8.23	1 / 79
	16-QAM	1865.00	18.10	V	4.48	9.34	22.96	0.198	33.00	-10.04	1 / 158
		1882.50	18.66	V	4.50	9.17	23.33	0.215	33.00	-9.67	1 / 158
		1900.00	19.34	V	4.52	9.01	23.82	0.241	33.00	-9.18	1 / 79
25	QPSK	1862.50	18.98	V	4.48	9.36	23.87	0.244	33.00	-9.13	1 / 1
		1882.50	19.77	V	4.50	9.17	24.44	0.278	33.00	-8.56	1 / 66
		1902.50	20.36	V	4.52	8.97	24.81	0.303	33.00	-8.19	1 / 1
	16-QAM	1862.50	17.95	V	4.48	9.36	22.84	0.192	33.00	-10.16	1 / 1
		1882.50	18.71	V	4.50	9.17	23.38	0.218	33.00	-9.62	1 / 1
		1902.50	19.41	V	4.52	8.97	23.86	0.243	33.00	-9.14	1 / 66
20	QPSK	1860.00	18.86	V	4.48	9.39	23.77	0.238	33.00	-9.23	1 / 1
		1882.50	19.75	V	4.50	9.17	24.42	0.277	33.00	-8.58	1 / 52
		1905.00	20.48	V	4.52	8.93	24.89	0.308	33.00	-8.11	1 / 52
	16-QAM	1860.00	17.87	V	4.48	9.39	22.78	0.190	33.00	-10.22	1 / 1
		1882.50	18.64	V	4.50	9.17	23.31	0.214	33.00	-9.69	1 / 1
		1905.00	19.53	V	4.52	8.93	23.94	0.248	33.00	-9.06	1 / 52
15	QPSK	1857.50	18.90	V	4.48	9.41	23.84	0.242	33.00	-9.16	1 / 1
		1882.50	19.78	V	4.50	9.17	24.45	0.279	33.00	-8.55	1 / 1
		1907.50	20.60	V	4.53	8.89	24.96	0.313	33.00	-8.04	1 / 1
	16-QAM	1857.50	17.96	V	4.48	9.41	22.90	0.195	33.00	-10.10	1 / 1
		1882.50	18.74	V	4.50	9.17	23.41	0.219	33.00	-9.59	1 / 1
		1907.50	19.65	V	4.53	8.89	24.01	0.252	33.00	-8.99	1 / 1
10	QPSK	1855.00	18.93	V	4.47	9.43	23.90	0.245	33.00	-9.10	1 / 1
		1882.50	19.74	V	4.50	9.17	24.41	0.276	33.00	-8.59	1 / 1
		1910.00	20.52	V	4.53	8.85	24.85	0.305	33.00	-8.15	1 / 1
	16-QAM	1855.00	17.87	V	4.47	9.43	22.84	0.192	33.00	-10.16	1 / 1
		1882.50	18.62	V	4.50	9.17	23.29	0.213	33.00	-9.71	1 / 25
		1910.00	19.54	V	4.53	8.85	23.87	0.244	33.00	-9.13	1 / 1
5	QPSK	1852.50	18.67	V	4.46	9.46	23.67	0.233	33.00	-9.33	1 / 1
		1882.50	19.78	V	4.50	9.17	24.45	0.279	33.00	-8.55	1 / 1
		1912.50	20.50	V	4.53	8.82	24.78	0.301	33.00	-8.22	1 / 12
	16-QAM	1852.50	17.71	V	4.46	9.46	22.71	0.187	33.00	-10.29	1 / 1
		1882.50	18.73	V	4.50	9.17	23.40	0.219	33.00	-9.60	1 / 1
		1912.50	19.45	V	4.53	8.82	23.73	0.236	33.00	-9.27	1 / 1
15	QPSK	1857.50	17.88	V	4.48	9.41	22.82	0.191	33.00	-10.18	75/0
		1882.50	18.71	V	4.50	9.17	23.38	0.218	33.00	-9.62	75/0
		1907.50	19.52	V	4.53	8.89	23.88	0.244	33.00	-9.12	75/0
	16-QAM	1857.50	16.93	V	4.48	9.41	21.87	0.154	33.00	-11.13	75/0
		1882.50	17.83	V	4.50	9.17	22.50	0.178	33.00	-10.50	75/0
		1907.50	19.65	V	4.53	8.89	24.01	0.252	33.00	-8.99	75/0

9.2. RADIATED SPURIOUS EMISSION

RULE PART(S)

FCC: §2.1053, §24.238

LIMIT

24.238(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.

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 = 1 MHz for emissions above 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 $\geq 2 \times$ 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

GSM1900

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement										
Company:		Samsung								
Project #:		4791921958								
Date:		2025-11-18								
Test Engineer:		33535								
Configuration:		EUT / AC Adapter, Z-Position								
Location:		Chamber 1								
Mode:		GPRS 1900 MHz Harmonics								
Test Voltage:		AC 120 V, 60 Hz								
GPRS ANT A	f MHz	SA reading (dBm)	Ant. Pol. (H/V)	Distance (m)	AFCL (dB/m)	Conversion Factor(dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	Low Ch, 1850.2MHz									
	3700.40	-73.0	V	3.0	-0.3	11.74	-61.6	-13.0	-48.6	
	5550.60	-75.2	V	3.0	2.4	11.74	-61.0	-13.0	-48.0	
	7400.80	-75.6	V	3.0	5.3	11.74	-58.6	-13.0	-45.6	NF
	9251.00	-78.1	V	3.0	9.4	11.74	-56.9	-13.0	-43.9	NF
	Mid Ch, 1880MHz									
	3760.00	-71.1	V	3.0	-0.1	11.74	-59.5	-13.0	-46.5	
	5640.00	-74.8	V	3.0	2.5	11.74	-60.5	-13.0	-47.5	
	7520.00	-76.0	V	3.0	5.7	11.74	-58.6	-13.0	-45.6	NF
	9400.00	-78.8	V	3.0	9.6	11.74	-57.4	-13.0	-44.4	NF
	3760.00	-71.5	H	3.0	-0.1	11.74	-59.9	-13.0	-46.9	
	5640.00	-74.7	H	3.0	2.5	11.74	-60.4	-13.0	-47.4	
	7520.00	-76.1	H	3.0	5.7	11.74	-58.6	-13.0	-45.6	NF
	9400.00	-78.6	H	3.0	9.6	11.74	-57.3	-13.0	-44.3	NF
	High Ch, 1909.8MHz									
	3819.60	-72.8	V	3.0	0.0	11.74	-61.1	-13.0	-48.1	
	5729.40	-74.2	V	3.0	2.7	11.74	-59.7	-13.0	-46.7	
	7639.20	-75.9	V	3.0	6.0	11.74	-58.2	-13.0	-45.2	NF
	9549.00	-78.7	V	3.0	10.1	11.74	-56.9	-13.0	-43.9	NF
	NF : Noise Floor									

WCDMA Band 2

REL99

ANT A

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement										
Company:		Samsung								
Project #:		4791921958								
Date:		2025-11-21								
Test Engineer:		33535								
Configuration:		EUT / AC Adapter, X-Position								
Location:		Chamber 1								
Mode:		Rel99 Band 2 Harmonics								
Test Votage:		AC 120 V, 60 Hz								
f MHz	SA reading (dBm)	Ant. Pol. (H/V)	Distance (m)	AFCL (dB/m)	Conversion Factor(dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	
Low Ch, 1852.4MHz										
3704.80	-74.4	H	3.0	-0.3	11.74	-62.9	-13.0	-49.9	NF	
5557.20	-74.4	H	3.0	2.4	11.74	-60.2	-13.0	-47.2	NF	
7409.60	-74.9	H	3.0	5.4	11.74	-57.8	-13.0	-44.8	NF	
Mid Ch, 1880MHz										
3760.00	-74.3	H	3.0	-0.1	11.74	-62.7	-13.0	-49.7	NF	
5640.00	-74.3	H	3.0	2.5	11.74	-60.0	-13.0	-47.0	NF	
7520.00	-75.2	H	3.0	5.7	11.74	-57.8	-13.0	-44.8	NF	
High Ch, 1907.6MHz										
3815.20	-74.2	V	3.0	0.0	11.74	-62.5	-13.0	-49.5	NF	
5722.80	-74.6	V	3.0	2.7	11.74	-60.1	-13.0	-47.1	NF	
7630.40	-75.1	V	3.0	6.0	11.74	-57.3	-13.0	-44.3	NF	
3815.20	-74.1	H	3.0	0.0	11.74	-62.4	-13.0	-49.4	NF	
5722.80	-74.6	H	3.0	2.7	11.74	-60.1	-13.0	-47.1	NF	
7630.40	-74.8	H	3.0	6.0	11.74	-57.1	-13.0	-44.1	NF	
NF : Noise Floor										

LTE Band 25

10 MHz QPSK ANT A	UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
	Company: Samsung									
	Project #: 4791921958									
	Date: 2025-11-25									
	Test Engineer: 26087									
	Configuration: EUT / AC Adapter, X-Position									
	Location: Chamber 1									
	Mode: LTE_QPSK Band 25 Harmonics, 10MHz Bandwidth									
	Test Votage: AC 120 V, 60 Hz									
	f MHz	SA reading (dBm)	Ant. Pol. (H/V)	Distance (m)	AFCL (dB/m)	Conversion Factor(dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	Low Ch, 1855MHz									
	3710.00	-74.0	H	3.0	-0.3	11.74	-62.5	-13.0	-49.5	
	5565.00	-74.5	H	3.0	2.4	11.74	-60.3	-13.0	-47.3	
	7420.00	-75.2	H	3.0	5.4	11.74	-58.1	-13.0	-45.1	
	9275.00	-76.5	H	3.0	9.5	11.74	-55.3	-13.0	-42.3	
	Mid Ch, 1882.5MHz									
	3765.00	-73.5	V	3.0	-0.1	11.74	-61.9	-13.0	-48.9	
	5647.50	-73.1	V	3.0	2.6	11.74	-58.8	-13.0	-45.8	
	7530.00	-75.3	V	3.0	5.8	11.74	-57.7	-13.0	-44.7	
	9412.50	-76.4	V	3.0	9.7	11.74	-55.0	-13.0	-42.0	
	3765.00	-73.9	H	3.0	-0.1	11.74	-62.3	-13.0	-49.3	
5647.50	-71.4	H	3.0	2.6	11.74	-57.1	-13.0	-44.1		
7530.00	-75.3	H	3.0	5.8	11.74	-57.8	-13.0	-44.8		
9412.50	-76.4	H	3.0	9.7	11.74	-54.9	-13.0	-41.9		
High Ch, 1910MHz										
3820.00	-74.1	H	3.0	0.0	11.74	-62.3	-13.0	-49.3		
5730.00	-74.0	H	3.0	2.8	11.74	-59.5	-13.0	-46.5		
7640.00	-75.2	H	3.0	6.0	11.74	-57.4	-13.0	-44.4		
9550.00	-76.5	H	3.0	10.1	11.74	-54.7	-13.0	-41.7		
NF : Noise Floor										

20 MHz QPSK ANT F	UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
	Company: Samsung									
	Project #: 4791921958									
	Date: 2025-11-21									
	Test Engineer: 26087									
	Configuration: EUT / AC Adapter, Y-Position									
	Location: Chamber 1									
	Mode: LTE_QPSK Band 25 Harmonics, 20MHz Bandwidth									
	Test Votage: AC 120 V, 60 Hz									
	f MHz	SA reading (dBm)	Ant. Pol. (H/V)	Distance (m)	AFCL (dB/m)	Conversion Factor(dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	Low Ch, 1860MHz									
	3720.00	-74.4	H	3.0	-0.2	11.74	-62.9	-13.0	-49.9	NF
	5580.00	-74.3	H	3.0	2.4	11.74	-60.1	-13.0	-47.1	NF
	7440.00	-74.8	H	3.0	5.5	11.74	-57.6	-13.0	-44.6	NF
	Mid Ch, 1882.5MHz									
	3765.00	-74.3	H	3.0	-0.1	11.74	-62.7	-13.0	-49.7	NF
	5647.50	-74.5	H	3.0	2.6	11.74	-60.2	-13.0	-47.2	NF
	7530.00	-75.2	H	3.0	5.8	11.74	-57.7	-13.0	-44.7	NF
	High Ch, 1905MHz									
	3810.00	-74.1	V	3.0	0.0	11.74	-62.4	-13.0	-49.4	NF
	5715.00	-74.6	V	3.0	2.7	11.74	-60.1	-13.0	-47.1	NF
7620.00	-75.0	V	3.0	6.0	11.74	-57.3	-13.0	-44.3	NF	
3810.00	-74.1	H	3.0	0.0	11.74	-62.4	-13.0	-49.4	NF	
5715.00	-74.5	H	3.0	2.7	11.74	-60.0	-13.0	-47.0	NF	
7620.00	-75.0	H	3.0	6.0	11.74	-57.3	-13.0	-44.3	NF	
NF : Noise Floor										

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

Company:	Samsung
Project #:	4791921958
Date:	2025-11-28
Test Engineer:	28775
Configuration:	EUT / AC Adapter, Y-Position
Location:	Chamber 2
Mode:	5G NR_QPSK NR n25 Harmonics, 10MHz Bandwidth
Test Voltage:	AC 120 V, 60 Hz

		f MHz	SA reading (dBm)	Ant. Pol. (H/V)	Distance (m)	AFCL (dB/m)	Conversion Factor(dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
10 MHz QPSK ANT A	Low Ch, 1855MHz										
	3710.00	-76.8	V	3.0	0.7	11.74	-64.4	-13.0	-51.4	NF	
	5565.00	-77.7	V	3.0	4.3	11.74	-61.6	-13.0	-48.6		
	7420.00	-80.0	V	3.0	8.1	11.74	-60.2	-13.0	-47.2		
	9275.00	-82.4	V	3.0	11.9	11.74	-58.7	-13.0	-45.7	NF	
	11130.00	-83.6	V	3.0	15.6	11.74	-56.3	-13.0	-43.3	NF	
	Mid Ch, 1882.5MHz										
	3765.00	-76.8	V	3.0	1.0	11.74	-64.1	-13.0	-51.1		
	5647.50	-76.9	V	3.0	4.4	11.74	-60.7	-13.0	-47.7		
	7530.00	-79.6	V	3.0	8.3	11.74	-59.6	-13.0	-46.6		
9412.50	-82.3	V	3.0	12.4	11.74	-58.2	-13.0	-45.2	NF		
11295.00	-83.8	V	3.0	15.8	11.74	-56.2	-13.0	-43.2	NF		
3765.00	-77.0	H	3.0	1.0	11.74	-64.2	-13.0	-51.2	NF		
5647.50	-77.8	H	3.0	4.4	11.74	-61.6	-13.0	-48.6			
7530.00	-79.9	H	3.0	8.3	11.74	-59.8	-13.0	-46.8			
9412.50	-82.3	H	3.0	12.4	11.74	-58.2	-13.0	-45.2	NF		
11295.00	-83.9	H	3.0	15.8	11.74	-56.4	-13.0	-43.4	NF		
High Ch, 1910MHz											
3820.00	-76.6	V	3.0	1.2	11.74	-63.7	-13.0	-50.7			
5730.00	-78.4	V	3.0	4.7	11.74	-61.9	-13.0	-48.9	NF		
7640.00	-79.9	V	3.0	8.5	11.74	-59.7	-13.0	-46.7			
9550.00	-82.7	V	3.0	12.7	11.74	-58.3	-13.0	-45.3	NF		
11460.00	-83.8	V	3.0	16.3	11.74	-55.8	-13.0	-42.8	NF		

NF : Noise Floor

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

Company:	Samsung
Project #:	4791921958
Date:	2025-11-25
Test Engineer:	28775
Configuration:	EUT / AC Adapter, Y-Position
Location:	Chamber 1
Mode:	5G NR_QPSK NR n25 Harmonics, 15MHz Bandwidth
Test Voltage:	AC 120 V, 60 Hz

15 MHz QPSK ANT F	f MHz	SA reading (dBm)	Ant. Pol. (H/V)	Distance (m)	AFCL (dB/m)	Conversion Factor(dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	Low Ch, 1857.5MHz									
	3715.00	-75.8	V	3.0	-0.2	11.74	-64.3	-13.0	-51.3	NF
	5572.50	-76.8	V	3.0	2.4	11.74	-62.6	-13.0	-49.6	NF
	7430.00	-78.0	V	3.0	5.4	11.74	-60.8	-13.0	-47.8	NF
	Mid Ch, 1882.5MHz									
	3765.00	-75.9	V	3.0	-0.1	11.74	-64.3	-13.0	-51.3	NF
	5647.50	-76.7	V	3.0	2.6	11.74	-62.4	-13.0	-49.4	NF
	7530.00	-77.8	V	3.0	5.8	11.74	-60.3	-13.0	-47.3	NF
	High Ch, 1907.5MHz									
	3815.00	-75.7	V	3.0	0.0	11.74	-64.0	-13.0	-51.0	NF
	5722.50	-76.7	V	3.0	2.7	11.74	-62.2	-13.0	-49.2	NF
	7630.00	-77.8	V	3.0	6.0	11.74	-60.0	-13.0	-47.0	NF
	3815.00	-75.7	H	3.0	0.0	11.74	-64.0	-13.0	-51.0	NF
	5722.50	-76.7	H	3.0	2.7	11.74	-62.2	-13.0	-49.2	NF
7630.00	-77.9	H	3.0	6.0	11.74	-60.1	-13.0	-47.1	NF	

NF : Noise Floor

END OF REPORT