5G NR n66

BW (MHz)	Modulation	f (MHz)	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (mW)	Limit (dBm)	Delta (dB)	RB
5	QPSK	1712.50	17.37	V	4.44	9.51	22.45	175.79	30.00	-7.55	1/1
		1745.00	18.30	V	4.47	9.66	23.48	222.84	30.00	-6.52	1/23
		1777.50	16.81	V	4.52	9.68	21.97	157.40	30.00	-8.03	1/23
	16-QAM	1712.50	16.90	V	4.44	9.51	21.98	157.76	30.00	-8.02	1/1
		1745.00	17.83	V	4.47	9.66	23.01	199.99	30.00	-6.99	1/23
		1777.50	16.27	V	4.52	9.68	21.43	139.00	30.00	-8.57	1/23
10	QPSK	1715.00	18.64	V	4.44	9.52	23.73	236.05	30.00	-6.27	1/1
		1745.00	18.67	V	4.47	9.66	23.85	242.66	30.00	-6.15	1/50
		1775.00	18.71	V	4.51	9.68	23.88	244.34	30.00	-6.12	1/1
	16-QAM	1715.00	17.81	V	4.44	9.52	22.90	194.98	30.00	-7.10	1/1
		1745.00	17.49	V	4.47	9.66	22.67	184.93	30.00	-7.33	1/50
		1775.00	17.81	V	4.51	9.68	22.98	198.61	30.00	-7.02	1/1
15	QPSK	1717.50	16.73	V	4.44	9.53	21.82	152.05	30.00	-8.18	1/1
		1745.00	18.57	V	4.47	9.66	23.75	237.14	30.00	-6.25	1/77
		1772.50	18.00	V	4.51	9.68	23.17	207.49	30.00	-6.83	1/1
	16-QAM	1717.50	15.98	V	4.44	9.53	21.07	127.94	30.00	-8.93	1/1
		1745.00	17.55	V	4.47	9.66	22.73	187.50	30.00	-7.27	1/77
		1772.50	17.25	V	4.51	9.68	22.42	174.58	30.00	-7.58	1/1
20	QPSK	1720.00	18.01	V	4.44	9.55	23.11	204.64	30.00	-6.89	1/104
		1745.00	17.12	V	4.47	9.66	22.30	169.82	30.00	-7.70	1/104
		1770.00	16.50	V	4.51	9.68	21.68	147.23	30.00	-8.32	1/104
	16-QAM	1720.00	17.47	V	4.44	9.55	22.57	180.72	30.00	-7.43	1/104
		1745.00	16.51	V	4.47	9.66	21.69	147.57	30.00	-8.31	1/104
		1770.00	15.74	V	4.51	9.68	20.91	123.31	30.00	-9.09	1/104
25	QPSK	1722.50	17.68	V	4.45	9.56	22.79	190.11	30.00	-7.21	1/1
		1745.00	17.67	V	4.47	9.66	22.85	192.75	30.00	-7.15	1/131
		1767.50	18.91	V	4.51	9.68	24.08	255.86	30.00	-5.92	1/1
	16-QAM	1722.50	17.15	V	4.45	9.56	22.26	168.27	30.00	-7.74	1/1
		1745.00	16.97	V	4.47	9.66	22.16	164.44	30.00	-7.84	1/131
		1767.50	17.70	V	4.51	9.68	22.87	193.64	30.00	-7.13	1/1
30	QPSK	1725.00	17.27	V	4.45	9.57	22.39	173.38	30.00	-7.61	1/158
		1745.00	18.13	V	4.47	9.66	23.31	214.29	30.00	-6.69	1/158
		1765.00	18.57	V	4.50	9.68	23.75	237.14	30.00	-6.25	1/80
	16-QAM	1725.00	16.66	V	4.45	9.57	21.78	150.66	30.00	-8.22	1/158
		1745.00	17.49	V	4.47	9.66	22.67	184.93	30.00	-7.33	1/158
		1765.00	17.90	V	4.50	9.68	23.08	203.24	30.00	-6.92	1/80
40	QPSK	1730.00	19.26	V	4.46	9.59	24.40	275.42	30.00	-5.60	1/214
		1745.00	18.47	V	4.47	9.66	23.65	231.74	30.00	-6.35	1/214
		1760.00	18.32	V	4.49	9.68	23.51	224.39	30.00	-6.49	1/108
	16-QAM	1730.00	18.53	V	4.46	9.59	23.67	232.81	30.00	-6.33	1/214
		1745.00	17.89	V	4.47	9.66	23.07	202.77	30.00	-6.93	1/214
		1760.00	17.69	V	4.49	9.68	22.88	194.09	30.00	-7.12	1/108

5G NR n71

BW (MHz)	Modulation	f (MHz)	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	ERP (mW)	Limit (dBm)	Delta (dB)	RB
5	QPSK	665.50	23.31	H	2.79	-0.70	19.82	95.90	34.77	-14.95	1/13
		680.50	24.37	H	2.83	-0.74	20.80	120.18	34.77	-13.97	1/13
		695.50	24.33	H	2.86	-0.79	20.68	117.00	34.77	-14.09	1/13
	16-QAM	665.50	22.39	H	2.79	-0.70	18.90	77.60	34.77	-15.87	1/13
		680.50	23.35	H	2.83	-0.74	19.78	95.03	34.77	-14.99	1/13
		695.50	23.24	H	2.86	-0.79	19.59	91.03	34.77	-15.18	1/13
10	QPSK	668.00	23.18	H	2.81	-0.70	19.67	92.59	34.77	-15.10	1/26
		680.50	23.74	H	2.83	-0.74	20.17	103.96	34.77	-14.60	1/26
		693.00	24.22	H	2.86	-0.78	20.58	114.33	34.77	-14.19	1/26
	16-QAM	668.00	22.19	H	2.81	-0.70	18.68	73.72	34.77	-16.09	1/26
		680.50	22.73	H	2.83	-0.74	19.16	82.38	34.77	-15.61	1/26
		693.00	23.10	H	2.86	-0.78	19.46	88.34	34.77	-15.31	1/26
15	QPSK	670.50	23.28	H	2.81	-0.71	19.76	94.57	34.77	-15.01	1/40
		680.50	23.66	H	2.83	-0.74	20.09	102.06	34.77	-14.68	1/40
		690.50	23.45	H	2.85	-0.77	19.83	96.18	34.77	-14.94	1/40
	16-QAM	670.50	22.13	H	2.81	-0.71	18.61	72.57	34.77	-16.16	1/40
		680.50	22.64	H	2.83	-0.74	19.07	80.69	34.77	-15.70	1/40
		690.50	22.03	H	2.85	-0.77	18.41	69.36	34.77	-16.36	1/40
20	QPSK	673.00	23.49	H	2.81	-0.72	19.96	99.05	34.77	-14.81	1/53
		680.50	23.80	H	2.83	-0.74	20.23	105.40	34.77	-14.54	1/53
		688.00	23.59	H	2.85	-0.76	19.98	99.63	34.77	-14.79	1/53
	16-QAM	673.00	22.32	H	2.81	-0.72	18.79	75.66	34.77	-15.98	1/53
		680.50	22.78	H	2.83	-0.74	19.21	83.34	34.77	-15.56	1/53
		688.00	22.69	H	2.85	-0.76	19.08	80.98	34.77	-15.69	1/53

5G NR n77(PC2) (3450 - 3550 MHz)

BW (MHz)	Modulation	f (MHz)	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (mW)	Limit (dBm)	Delta (dB)	RB
10	QPSK	3455.01	20.70	H	6.31	10.61	25.01	316.71	30.00	-4.99	1/22
		3499.98	19.81	H	6.36	10.67	24.12	258.35	30.00	-5.88	1/22
		3544.98	20.19	H	6.40	10.75	24.54	284.27	30.00	-5.46	1/1
	16-QAM	3455.01	19.67	H	6.31	10.61	23.98	249.84	30.00	-6.02	1/22
		3499.98	18.77	H	6.36	10.67	23.08	203.34	30.00	-6.92	1/22
		3544.98	19.19	H	6.40	10.75	23.54	225.80	30.00	-6.46	1/1
15	QPSK	3457.50	20.38	H	6.31	10.62	24.68	293.87	30.00	-5.32	1/36
		3499.98	19.69	H	6.36	10.67	24.00	251.31	30.00	-6.00	1/36
		3542.49	20.23	H	6.40	10.74	24.58	287.17	30.00	-5.42	1/1
	16-QAM	3457.50	19.49	H	6.31	10.62	23.79	239.42	30.00	-6.21	1/36
		3499.98	18.63	H	6.36	10.67	22.94	196.89	30.00	-7.06	1/36
		3542.49	19.36	H	6.40	10.74	23.71	235.04	30.00	-6.29	1/1
20	QPSK	3460.01	20.31	H	6.32	10.62	24.61	289.17	30.00	-5.39	1/49
		3499.98	20.11	H	6.36	10.67	24.42	276.83	30.00	-5.58	1/49
		3540.00	20.74	H	6.39	10.74	25.09	322.70	30.00	-4.91	1/1
	16-QAM	3460.01	19.43	H	6.32	10.62	23.73	236.13	30.00	-6.27	1/49
		3499.98	19.23	H	6.36	10.67	23.54	226.06	30.00	-6.46	1/49
		3540.00	19.70	H	6.39	10.74	24.05	253.98	30.00	-5.95	1/1
25	QPSK	3462.51	19.62	H	6.33	10.62	23.92	246.34	30.00	-6.08	1/32
		3499.98	19.29	H	6.36	10.67	23.60	229.20	30.00	-6.40	1/32
		3537.48	20.35	H	6.38	10.74	24.70	295.16	30.00	-5.30	1/32
	16-QAM	3462.51	18.42	H	6.33	10.62	22.72	186.87	30.00	-7.28	1/32
		3499.98	18.47	H	6.36	10.67	22.78	189.77	30.00	-7.22	1/32
		3537.48	19.25	H	6.38	10.74	23.60	229.11	30.00	-6.40	1/32
30	QPSK	3465.00	20.37	V	6.32	10.63	24.67	293.07	30.00	-5.33	1/76
		3499.98	19.96	V	6.36	10.67	24.27	267.42	30.00	-5.73	1/76
		3535.02	20.02	H	6.38	10.73	24.37	273.83	30.00	-5.63	1/1
	16-QAM	3465.00	19.64	V	6.32	10.63	23.94	247.72	30.00	-6.06	1/76
		3499.98	18.99	V	6.36	10.67	23.30	213.89	30.00	-6.70	1/76
		3535.02	19.09	H	6.38	10.73	23.44	221.04	30.00	-6.56	1/1
40	QPSK	3470.01	20.37	H	6.33	10.63	24.67	293.19	30.00	-5.33	1/53
		3499.98	19.82	H	6.36	10.67	24.13	258.95	30.00	-5.87	1/104
		3529.98	19.49	H	6.39	10.72	23.82	241.05	30.00	-6.18	1/1
	16-QAM	3470.01	19.48	H	6.33	10.63	23.78	238.86	30.00	-6.22	1/53
		3499.98	18.87	H	6.36	10.67	23.18	208.07	30.00	-6.82	1/104
		3529.98	18.59	H	6.39	10.72	22.92	195.93	30.00	-7.08	1/1
50	QPSK	3475.02	20.27	H	6.34	10.64	24.57	286.69	30.00	-5.43	1/67
		3499.98	19.94	H	6.36	10.67	24.25	266.21	30.00	-5.75	1/131
		3525.00	18.42	H	6.37	10.71	22.76	188.76	30.00	-7.24	1/67
	16-QAM	3475.02	19.28	H	6.34	10.64	23.58	228.25	30.00	-6.42	1/67
		3499.98	19.12	H	6.36	10.67	23.43	220.40	30.00	-6.57	1/131
		3525.00	17.49	H	6.37	10.71	21.83	152.37	30.00	-8.17	1/67
60	QPSK	3480.00	20.63	H	6.34	10.65	24.93	311.48	30.00	-5.07	1/160
		3499.98	21.04	H	6.36	10.67	25.35	342.94	30.00	-4.65	1/160
		3519.99	21.17	H	6.37	10.70	25.50	354.77	30.00	-4.50	1/81
	16-QAM	3480.00	19.48	H	6.34	10.65	23.78	239.02	30.00	-6.22	1/160
		3499.98	20.08	H	6.36	10.67	24.39	274.93	30.00	-5.61	1/160
		3519.99	20.24	H	6.37	10.70	24.57	286.38	30.00	-5.43	1/81
70	QPSK	3485.01	19.69	H	6.35	10.65	24.00	251.21	30.00	-6.00	1/95
		3499.98	19.52	H	6.36	10.67	23.83	241.44	30.00	-6.17	1/95
		3514.98	19.89	H	6.37	10.69	24.21	263.84	30.00	-5.79	1/95
	16-QAM	3485.01	18.67	H	6.35	10.65	22.98	198.58	30.00	-7.02	1/95
		3499.98	18.75	H	6.36	10.67	23.06	202.50	30.00	-6.94	1/95
		3514.98	18.94	H	6.37	10.69	23.26	212.05	30.00	-6.74	1/95
80	QPSK	3490.02	19.75	H	6.35	10.66	24.06	254.83	30.00	-5.94	1/215
		3499.98	19.40	H	6.36	10.67	23.71	235.13	30.00	-6.29	1/109
		3510.00	19.48	H	6.37	10.69	23.80	239.68	30.00	-6.20	1/109
	16-QAM	3490.02	18.83	H	6.35	10.66	23.14	206.04	30.00	-6.86	1/215
		3499.98	18.43	H	6.36	10.67	22.74	187.85	30.00	-7.26	1/109
		3510.00	18.63	H	6.37	10.69	22.94	196.85	30.00	-7.06	1/109
90	QPSK	3495.00	19.32	H	6.35	10.66	23.64	231.00	30.00	-6.36	1/123
		3499.98	19.69	H	6.36	10.67	24.01	251.60	30.00	-5.99	1/243
		3504.99	19.32	H	6.37	10.68	23.64	230.96	30.00	-6.36	1/123
	16-QAM	3495.00	18.26	H	6.35	10.66	22.58	180.93	30.00	-7.42	1/123
		3499.98	18.15	H	6.36	10.67	22.46	176.24	30.00	-7.54	1/243
		3504.99	18.39	H	6.37	10.68	22.70	186.27	30.00	-7.30	1/123
100	QPSK	3499.98	19.21	H	6.36	10.67	23.52	225.07	30.00	-6.48	1/137
	16-QAM	3499.98	18.32	H	6.36	10.67	22.63	183.32	30.00	-7.37	1/137

5G NR n77(PC2) (3450 - 3550 MHz, SRS1)

BW (MHz)	f (MHz)	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (mW)	Limit (dBm)	Delta (dB)
10	3455.01	1.53	H	6.31	10.61	5.84	3.83	30.00	-24.16
	3499.98	1.34	H	6.36	10.67	5.65	3.67	30.00	-24.35
	3544.98	3.01	H	6.40	10.75	7.36	5.44	30.00	-22.64
15	3457.50								
	3499.98								
	3542.49								
20	3460.02								
	3499.98								
	3540.00								
25	3462.51								
	3499.98								
	3537.48								
30	3465.00								
	3499.98								
	3535.02								
40	3470.01								
	3499.98								
	3529.98								
50	3475.02								
	3499.98								
	3525.00								
60	3480.00								
	3499.98								
	3519.99								
70	3485.01								
	3499.98								
	3514.98								
80	3490.02								
	3499.98								
	3510.00								
90	3495.00								
	3499.98								
	3504.99								
100	3499.98								

5G NR n77(PC2,3450-3550 MHz, SRS2)

BW (MHz)	f (MHz)	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (mW)	Limit (dBm)	Delta (dB)
10	3455.01								
	3499.98								
	3544.98								
15	3457.50								
	3499.98								
	3542.49								
20	3460.02								
	3499.98								
	3540.00								
25	3462.51								
	3499.98								
	3537.48								
30	3465.00								
	3499.98								
	3535.02								
40	3470.01								
	3499.98								
	3529.98								
50	3475.02								
	3499.98								
	3525.00								
60	3480.00	17.38	H	6.34	10.65	21.68	147.38	30.00	-8.32
	3499.98	17.14	H	6.36	10.67	21.45	139.71	30.00	-8.55
	3519.99	16.87	H	6.37	10.70	21.20	131.81	30.00	-8.80
70	3485.01								
	3499.98								
	3514.98								
80	3490.02								
	3499.98								
	3510.00								
90	3495.00								
	3499.98								
	3504.99								
100	3499.98								

5G NR n77(PC2,3450-3550 MHz, SRS3)

BW (MHz)	f (MHz)	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (mW)	Limit (dBm)	Delta (dB)
10	3455.01								
	3499.98								
	3544.98								
15	3457.50								
	3499.98								
	3542.49								
20	3460.02								
	3499.98								
	3540.00								
25	3462.51								
	3499.98								
	3537.48								
30	3465.00								
	3499.98								
	3535.02								
40	3470.01								
	3499.98								
	3529.98								
50	3475.02	3.58	H	6.34	10.64	7.88	6.14	30.00	-22.12
	3499.98	3.50	H	6.36	10.67	7.81	6.04	30.00	-22.19
	3525.00	4.46	H	6.37	10.71	8.80	7.58	30.00	-21.20
60	3480.00								
	3499.98								
	3519.99								
70	3485.01								
	3499.98								
	3514.98								
80	3490.02								
	3499.98								
	3510.00								
90	3495.00								
	3499.98								
	3504.99								
100	3499.98								

5G NR n77(PC2,3700-3980 MHz)

BW (MHz)	Modulation	f (MHz)	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (mW)	Limit (dBm)	Delta (dB)	RB
10	QPSK	3705.00	21.02	H	6.54	10.74	25.23	333.21	30.00	-4.77	1/22
		3840.00	24.55	H	6.65	10.58	28.47	703.74	30.00	-1.53	1/22
		3975.00	25.04	H	6.77	10.46	28.73	746.32	30.00	-1.27	1/1
	16-QAM	3705.00	20.01	H	6.54	10.74	24.22	264.07	30.00	-5.78	1/22
		3840.00	23.59	H	6.65	10.58	27.51	564.17	30.00	-2.49	1/22
		3975.00	24.25	H	6.77	10.46	27.94	622.19	30.00	-2.06	1/1
15	QPSK	3707.52	21.30	V	6.55	10.74	25.49	354.24	30.00	-4.51	1/36
		3840.00	24.60	H	6.65	10.58	28.52	711.89	30.00	-1.48	1/36
		3972.48	24.91	H	6.78	10.46	28.60	724.07	30.00	-1.40	1/1
	16-QAM	3707.52	20.39	V	6.55	10.74	24.58	287.28	30.00	-5.42	1/36
		3840.00	23.21	H	6.65	10.58	27.13	516.91	30.00	-2.87	1/36
		3972.48	23.56	H	6.78	10.46	27.25	530.61	30.00	-2.75	1/1
20	QPSK	3710.01	21.08	V	6.54	10.74	25.27	336.55	30.00	-4.73	1/49
		3840.00	24.67	H	6.65	10.58	28.59	723.45	30.00	-1.41	1/49
		3969.99	24.98	H	6.77	10.46	28.68	737.27	30.00	-1.32	1/1
	16-QAM	3710.01	20.17	V	6.54	10.74	24.36	272.93	30.00	-5.64	1/49
		3840.00	23.40	H	6.65	10.58	27.32	540.02	30.00	-2.68	1/49
		3969.99	23.80	H	6.77	10.46	27.50	561.86	30.00	-2.50	1/1
25	QPSK	3712.50	21.38	H	6.55	10.74	25.57	360.78	30.00	-4.43	1/32
		3840.00	24.46	H	6.65	10.58	28.38	689.30	30.00	-1.62	1/64
		3967.50	24.99	H	6.76	10.46	28.68	738.60	30.00	-1.32	1/1
	16-QAM	3712.50	20.18	H	6.55	10.74	24.37	273.68	30.00	-5.63	1/32
		3840.00	23.06	H	6.65	10.58	26.98	499.36	30.00	-3.02	1/64
		3967.50	23.89	H	6.76	10.46	27.58	573.34	30.00	-2.42	1/1
30	QPSK	3715.02	21.06	H	6.55	10.73	25.25	334.87	30.00	-4.75	1/76
		3840.00	24.71	H	6.65	10.58	28.63	730.15	30.00	-1.37	1/76
		3964.98	25.10	H	6.77	10.46	28.79	756.71	30.00	-1.21	1/1
	16-QAM	3715.02	20.21	H	6.55	10.73	24.40	275.35	30.00	-5.60	1/76
		3840.00	22.89	H	6.65	10.58	26.81	480.19	30.00	-3.19	1/76
		3964.98	23.24	H	6.77	10.46	26.93	493.10	30.00	-3.07	1/1
40	QPSK	3720.02	21.85	H	6.55	10.73	26.02	400.10	30.00	-3.98	1/53
		3840.00	23.65	H	6.65	10.58	27.57	572.02	30.00	-2.43	1/104
		3960.00	23.91	H	6.77	10.47	27.61	576.15	30.00	-2.39	1/53
	16-QAM	3720.02	20.93	H	6.55	10.73	25.10	323.72	30.00	-4.90	1/53
		3840.00	22.77	H	6.65	10.58	26.69	467.10	30.00	-3.31	1/104
		3960.00	23.10	H	6.77	10.47	26.80	478.12	30.00	-3.20	1/53
50	QPSK	3725.01	21.29	H	6.56	10.72	25.45	351.09	30.00	-4.55	1/67
		3840.00	23.61	H	6.65	10.58	27.54	567.17	30.00	-2.46	1/131
		3954.99	24.61	H	6.75	10.47	28.33	680.27	30.00	-1.67	1/67
	16-QAM	3725.01	20.39	H	6.56	10.72	24.55	285.31	30.00	-5.45	1/67
		3840.00	22.81	H	6.65	10.58	26.74	471.64	30.00	-3.26	1/131
		3954.99	23.54	H	6.75	10.47	27.26	531.72	30.00	-2.74	1/67
60	QPSK	3730.02	21.63	H	6.56	10.72	25.79	378.93	30.00	-4.21	1/81
		3840.00	23.83	H	6.65	10.58	27.75	595.81	30.00	-2.25	1/160
		3949.98	24.47	H	6.75	10.47	28.19	659.65	30.00	-1.81	1/81
	16-QAM	3730.02	20.67	H	6.56	10.72	24.82	303.57	30.00	-5.18	1/81
		3840.00	22.78	H	6.65	10.58	26.71	468.50	30.00	-3.29	1/160
		3949.98	23.46	H	6.75	10.47	27.18	522.41	30.00	-2.82	1/81
70	QPSK	3735.00	21.46	H	6.57	10.71	25.60	362.91	30.00	-4.40	1/95
		3840.00	23.30	H	6.65	10.58	27.22	527.49	30.00	-2.78	1/95
		3945.00	24.43	H	6.75	10.47	28.15	653.40	30.00	-1.85	1/95
	16-QAM	3735.00	20.51	H	6.57	10.71	24.65	291.81	30.00	-5.35	1/95
		3840.00	22.36	H	6.65	10.58	26.28	424.73	30.00	-3.72	1/95
		3945.00	23.43	H	6.75	10.47	27.16	519.85	30.00	-2.84	1/95
80	QPSK	3740.01	21.44	H	6.58	10.70	25.57	360.70	30.00	-4.43	1/1
		3840.00	24.03	H	6.65	10.58	27.95	623.75	30.00	-2.05	1/215
		3939.99	24.45	H	6.74	10.47	28.18	657.26	30.00	-1.82	1/109
	16-QAM	3740.01	20.43	H	6.58	10.70	24.55	285.39	30.00	-5.45	1/1
		3840.00	23.19	H	6.65	10.58	27.11	514.41	30.00	-2.89	1/215
		3939.99	23.48	H	6.74	10.47	27.21	525.94	30.00	-2.79	1/109
90	QPSK	3745.02	21.51	H	6.57	10.70	25.65	366.94	30.00	-4.35	1/1
		3840.00	24.05	H	6.65	10.58	27.97	627.06	30.00	-2.03	1/243
		3934.98	24.62	H	6.75	10.48	28.35	683.90	30.00	-1.65	1/243
	16-QAM	3745.02	20.52	H	6.57	10.70	24.65	291.67	30.00	-5.35	1/1
		3840.00	23.15	H	6.65	10.58	27.07	509.11	30.00	-2.93	1/243
		3934.98	23.72	H	6.75	10.48	27.45	555.64	30.00	-2.55	1/243
100	QPSK	3750.00	21.61	H	6.58	10.69	25.73	373.78	30.00	-4.27	1/1
		3840.00	24.02	H	6.65	10.58	27.94	622.46	30.00	-2.06	1/271
		3930.00	24.51	H	6.75	10.48	28.23	665.99	30.00	-1.77	1/271
	16-QAM	3750.00	20.68	H	6.58	10.69	24.80	301.73	30.00	-5.20	1/1
		3840.00	23.08	H	6.65	10.58	27.01	501.89	30.00	-2.99	1/271
		3930.00	23.55	H	6.75	10.48	27.28	534.89	30.00	-2.72	1/271

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5G NR n77(PC2,3700-3980 MHz, SRS1)

BW (MHz)	f (MHz)	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (mW)	Limit (dBm)	Delta (dB)
10	3705.00								
	3840.00								
	3975.00								
15	3707.52								
	3840.00								
	3972.48								
20	3710.01								
	3840.00								
	3969.99								
25	3712.50								
	3840.00								
	3967.50								
30	3715.02								
	3840.00								
	3964.98								
40	3720.00								
	3840.00								
	3960.00								
50	3725.01								
	3840.00								
	3954.99								
60	3730.02								
	3840.00								
	3949.98								
70	3735.02	12.23	H	6.57	10.71	16.37	43.32	30.00	-13.63
	3840.00	10.84	H	6.65	10.58	14.76	29.95	30.00	-15.24
	3944.98	8.84	H	6.75	10.47	12.56	18.04	30.00	-17.44
80	3740.01								
	3840.00								
	3939.99								
90	3745.02								
	3840.00								
	3934.98								
100	3750.00								
	3840.00								
	3930.00								

5G NR n77(PC2,3700-3980 MHz, SRS2)

BW (MHz)	f (MHz)	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (mW)	Limit (dBm)	Delta (dB)
10	3705.00								
	3840.00								
	3975.00								
15	3707.52								
	3840.00								
	3972.48								
20	3710.01								
	3840.00								
	3969.99								
25	3712.50								
	3840.00								
	3967.50								
30	3715.02	13.64	H	6.55	10.73	17.83	60.66	30.00	-12.17
	3840.00	12.96	H	6.65	10.58	16.88	48.80	30.00	-13.12
	3964.98	12.82	H	6.77	10.46	16.51	44.76	30.00	-13.49
40	3720.00								
	3840.00								
	3960.00								
50	3725.01								
	3840.00								
	3954.99								
60	3730.02								
	3840.00								
	3949.98								
70	3735.02								
	3840.00								
	3944.98								
80	3740.01								
	3840.00								
	3939.99								
90	3745.02								
	3840.00								
	3934.98								
100	3750.00								
	3840.00								
	3930.00								

5G NR n77(PC2,3700-3980 MHz, SRS3)

BW (MHz)	f (MHz)	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (mW)	Limit (dBm)	Delta (dB)
10	3705.00								
	3840.00								
	3975.00								
15	3707.52								
	3840.00								
	3972.48								
20	3710.01								
	3840.00								
	3969.99								
25	3712.50								
	3840.00								
	3967.50								
30	3715.02								
	3840.00								
	3964.98								
40	3720.00								
	3840.00								
	3960.00								
50	3725.01								
	3840.00								
	3954.99								
60	3730.02								
	3840.00								
	3949.98								
70	3735.02								
	3840.00								
	3944.98								
80	3740.01								
	3840.00								
	3939.99								
90	3745.02	7.25	V	6.57	10.70	11.39	13.76	30.00	-18.61
	3840.00	4.98	V	6.65	10.58	8.90	7.76	30.00	-21.10
	3934.98	3.66	V	6.75	10.48	7.39	5.48	30.00	-22.61
100	3750.00								
	3840.00								
	3930.00								

9.6. RADIATIED SPURIOUS EMISSION

RULE PART(S)

FCC: §2.1053, §22.917, §24.238, §27. 53 and §90.691

LIMIT

Part 22.917(a) & Part 24.238(a) & Part 27.53(h) 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 27.53:
(c)(2) On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB.

(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.

(l)(2) For mobile operations in the 3700-3980 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed −13 dBm/MHz. Compliance with this paragraph (l)(2) is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be either one percent of the emission bandwidth of the fundamental emission of the transmitter or 350 kHz. In the bands between 1 and 5 MHz removed from the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be 500 kHz. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

(n)(2) For mobile operations in the 3450-3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed −13 dBm/MHz. Compliance with this paragraph (n)(2) is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed, but limited to a maximum of 200 kHz. In the bands between 1 and 5 MHz removed from the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be 500 kHz. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

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 Log10(f/6.1) decibels or 50 + 10 Log10(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 $43 + 10\text{Log}_{10}(P)$ 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 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(WCDMA, LTE FDD, 5G NR FDD), Maxhold(GSM, LTE TDD, 5G NR TDD);

RESULTS

See the following pages.

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.

9.6.1. SPURIOUS RADIATION PLOTS

GSM850

GSM850

GPRS

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

Company:	Samsung
Project #:	4790632299
Date:	2022-11-22
Test Engineer:	26087
Configuration:	EUT / AC Adapter, Z-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	18.3	V	3.0	46.4	1.0	-27.1	-13.0	-14.1	
2472.60	4.7	V	3.0	46.9	1.0	-41.1	-13.0	-28.1	
3296.80	10.3	V	3.0	46.6	1.0	-35.3	-13.0	-22.3	
4121.00	-6.1	V	3.0	45.7	1.0	-50.8	-13.0	-37.8	
4945.20	-3.3	V	3.0	46.2	1.0	-48.5	-13.0	-35.5	
1648.40	16.5	H	3.0	46.4	1.0	-28.9	-13.0	-15.9	
2472.60	3.7	H	3.0	46.9	1.0	-42.2	-13.0	-29.2	
3296.80	7.8	H	3.0	46.6	1.0	-37.8	-13.0	-24.8	
4121.00	-4.8	H	3.0	45.7	1.0	-49.5	-13.0	-36.5	
4945.20	-0.1	H	3.0	46.2	1.0	-45.3	-13.0	-32.3	
Mid Ch, 836.6MHz									
1673.20	17.9	V	3.0	46.4	1.0	-27.5	-13.0	-14.5	
2509.80	-1.0	V	3.0	46.9	1.0	-46.8	-13.0	-33.8	
3346.40	4.2	V	3.0	46.6	1.0	-41.3	-13.0	-28.3	
4183.00	-3.9	V	3.0	45.7	1.0	-48.6	-13.0	-35.6	
5019.60	-2.9	V	3.0	46.2	1.0	-48.1	-13.0	-35.1	
1673.20	16.9	H	3.0	46.4	1.0	-28.6	-13.0	-15.6	
2509.80	-2.2	H	3.0	46.9	1.0	-48.1	-13.0	-35.1	
3346.40	4.9	H	3.0	46.6	1.0	-40.6	-13.0	-27.6	
4183.00	-2.6	H	3.0	45.7	1.0	-47.3	-13.0	-34.3	
5019.60	-1.7	H	3.0	46.2	1.0	-46.9	-13.0	-33.9	
High Ch, 848.8MHz									
1697.60	18.5	V	3.0	46.5	1.0	-26.9	-13.0	-13.9	
2546.40	6.3	V	3.0	46.9	1.0	-39.6	-13.0	-26.6	
3395.20	6.3	V	3.0	46.5	1.0	-39.2	-13.0	-26.2	
4244.00	-1.0	V	3.0	45.8	1.0	-45.8	-13.0	-32.8	
5092.80	-3.4	V	3.0	46.2	1.0	-48.5	-13.0	-35.5	
1697.60	14.1	H	3.0	46.5	1.0	-31.4	-13.0	-18.4	
2546.40	5.1	H	3.0	46.9	1.0	-40.8	-13.0	-27.8	
3395.20	7.7	H	3.0	46.5	1.0	-37.8	-13.0	-24.8	
4244.00	1.1	H	3.0	45.8	1.0	-43.6	-13.0	-30.6	
5092.80	-2.2	H	3.0	46.2	1.0	-47.4	-13.0	-34.4	

GSM850

EGPRS

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

Company: Samsung
Project #: 4790632299
Date: 2022-11-23
Test Engineer: 26087
Configuration: EUT / AC Adapter, Z-Position
Location: Chamber 1
Mode: EGPRS 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	8.0	V	3.0	46.4	1.0	-37.4	-13.0	-24.4	
2472.60	-1.1	V	3.0	46.9	1.0	-47.0	-13.0	-34.0	
3296.80	-3.8	V	3.0	46.6	1.0	-49.4	-13.0	-36.4	
4121.00	-6.9	V	3.0	45.7	1.0	-51.6	-13.0	-38.6	
4945.20	-5.7	V	3.0	46.2	1.0	-50.9	-13.0	-37.9	
1648.40	12.1	H	3.0	46.4	1.0	-33.3	-13.0	-20.3	
2472.60	-0.5	H	3.0	46.9	1.0	-46.4	-13.0	-33.4	
3296.80	-3.6	H	3.0	46.6	1.0	-49.2	-13.0	-36.2	
4121.00	-7.2	H	3.0	45.7	1.0	-51.9	-13.0	-38.9	
4945.20	-5.4	H	3.0	46.2	1.0	-50.6	-13.0	-37.6	
Mid Ch, 836.6MHz									
1673.20	5.2	V	3.0	46.4	1.0	-40.3	-13.0	-27.3	
2509.80	0.0	V	3.0	46.9	1.0	-45.9	-13.0	-32.9	
3346.40	-3.3	V	3.0	46.6	1.0	-48.9	-13.0	-35.9	
4183.00	-6.8	V	3.0	45.7	1.0	-51.5	-13.0	-38.5	
5019.60	-6.0	V	3.0	46.2	1.0	-51.3	-13.0	-38.3	
1673.20	3.2	H	3.0	46.4	1.0	-42.3	-13.0	-29.3	
2509.80	-2.8	H	3.0	46.9	1.0	-48.7	-13.0	-35.7	
3346.40	-2.5	H	3.0	46.6	1.0	-48.0	-13.0	-35.0	
4183.00	-7.1	H	3.0	45.7	1.0	-51.8	-13.0	-38.8	
5019.60	-5.9	H	3.0	46.2	1.0	-51.1	-13.0	-38.1	
High Ch, 848.8MHz									
1697.60	5.9	V	3.0	46.5	1.0	-39.6	-13.0	-26.6	
2546.40	1.1	V	3.0	46.9	1.0	-44.8	-13.0	-31.8	
3395.20	-2.2	V	3.0	46.5	1.0	-47.7	-13.0	-34.7	
4244.00	-6.7	V	3.0	45.8	1.0	-51.4	-13.0	-38.4	
5092.80	-5.4	V	3.0	46.2	1.0	-50.5	-13.0	-37.5	
1697.60	7.7	H	3.0	46.5	1.0	-37.8	-13.0	-24.8	
2546.40	-3.7	H	3.0	46.9	1.0	-49.6	-13.0	-36.6	
3395.20	-3.2	H	3.0	46.5	1.0	-48.6	-13.0	-35.6	
4244.00	-6.1	H	3.0	45.8	1.0	-50.9	-13.0	-37.9	
5092.80	-5.4	H	3.0	46.2	1.0	-50.6	-13.0	-37.6	

GSM1900

GSM1900

GPRS

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

Company: Samsung
Project #: 4790632299
Date: 2022-12-02
Test Engineer: 26087
Configuration: EUT / AC Adapter, X-Position
Location: Chamber 1
Mode: GPRS 1900 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, 1850.2MHz									
3700.40	19.7	V	3.0	46.0	1.0	-25.4	-13.0	-12.4	
5550.60	14.2	V	3.0	45.8	1.0	-30.5	-13.0	-17.5	
7400.80	6.1	V	3.0	45.5	1.0	-38.5	-13.0	-25.5	
9251.00	0.3	V	3.0	45.5	1.0	-44.2	-13.0	-31.2	
11101.20	2.6	V	3.0	46.5	1.0	-43.0	-13.0	-30.0	
3700.40	26.1	H	3.0	46.0	1.0	-18.9	-13.0	-5.9	
5550.60	16.1	H	3.0	45.8	1.0	-28.7	-13.0	-15.7	
7400.80	2.2	H	3.0	45.5	1.0	-42.3	-13.0	-29.3	
9251.00	-0.8	H	3.0	45.5	1.0	-45.4	-13.0	-32.4	
11101.20	2.6	H	3.0	46.5	1.0	-42.9	-13.0	-29.9	
Mid Ch, 1880MHz									
3760.00	24.9	V	3.0	46.0	1.0	-20.1	-13.0	-7.1	
5640.00	16.4	V	3.0	45.7	1.0	-28.3	-13.0	-15.3	
7520.00	9.1	V	3.0	45.5	1.0	-35.4	-13.0	-22.4	
9400.00	3.0	V	3.0	45.5	1.0	-41.6	-13.0	-28.6	
11280.00	4.6	V	3.0	46.7	1.0	-41.1	-13.0	-28.1	
3760.00	25.9	H	3.0	46.0	1.0	-19.1	-13.0	-6.1	
5640.00	18.9	H	3.0	45.7	1.0	-25.8	-13.0	-12.8	
7520.00	4.9	H	3.0	45.5	1.0	-39.6	-13.0	-26.6	
9400.00	1.7	H	3.0	45.5	1.0	-42.8	-13.0	-29.8	
11280.00	4.7	H	3.0	46.7	1.0	-41.0	-13.0	-28.0	
High Ch, 1909.8MHz									
3819.60	22.7	V	3.0	45.9	1.0	-22.1	-13.0	-9.1	
5729.40	16.7	V	3.0	45.6	1.0	-27.9	-13.0	-14.9	
7639.20	11.8	V	3.0	45.6	1.0	-32.7	-13.0	-19.7	
9549.00	3.7	V	3.0	45.5	1.0	-40.9	-13.0	-27.9	
11458.80	3.1	V	3.0	46.8	1.0	-42.8	-13.0	-29.8	
3819.60	28.4	H	3.0	45.9	1.0	-16.5	-13.0	-3.5	
5729.40	21.5	H	3.0	45.6	1.0	-23.1	-13.0	-10.1	
7639.20	6.9	H	3.0	45.6	1.0	-37.6	-13.0	-24.6	
9549.00	1.6	H	3.0	45.5	1.0	-43.0	-13.0	-30.0	
11458.80	3.0	H	3.0	46.8	1.0	-42.8	-13.0	-29.8	

GSM1900

EGPRS

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

Company: Samsung
Project #: 4790632108
Date: 2022-12-05
Test Engineer: 26087
Configuration: EUT / AC Adapter, X-Position
Location: Chamber 1
Mode: EGPRS 1900 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, 1850.2MHz									
3700.40	2.0	V	3.0	46.0	1.0	-43.0	-13.0	-30.0	
5550.60	0.0	V	3.0	45.8	1.0	-44.7	-13.0	-31.7	
7400.80	2.2	V	3.0	45.5	1.0	-42.3	-13.0	-29.3	
9251.00	-0.9	V	3.0	45.5	1.0	-45.4	-13.0	-32.4	
11101.20	4.9	V	3.0	46.5	1.0	-40.6	-13.0	-27.6	
3700.40	12.2	H	3.0	46.0	1.0	-32.9	-13.0	-19.9	
5550.60	2.8	H	3.0	45.8	1.0	-41.9	-13.0	-28.9	
7400.80	-0.5	H	3.0	45.5	1.0	-45.1	-13.0	-32.1	
9251.00	-0.9	H	3.0	45.5	1.0	-45.5	-13.0	-32.5	
11101.20	4.9	H	3.0	46.5	1.0	-40.6	-13.0	-27.6	
Mid Ch, 1880MHz									
3760.00	14.5	V	3.0	46.0	1.0	-30.4	-13.0	-17.4	
5640.00	9.1	V	3.0	45.7	1.0	-35.5	-13.0	-22.5	
7520.00	4.5	V	3.0	45.5	1.0	-40.1	-13.0	-27.1	
9400.00	-0.2	V	3.0	45.5	1.0	-44.8	-13.0	-31.8	
11280.00	3.7	V	3.0	46.7	1.0	-41.9	-13.0	-28.9	
3760.00	15.1	H	3.0	46.0	1.0	-29.9	-13.0	-16.9	
5640.00	2.9	H	3.0	45.7	1.0	-41.8	-13.0	-28.8	
7520.00	-1.7	H	3.0	45.5	1.0	-46.2	-13.0	-33.2	
9400.00	-0.1	H	3.0	45.5	1.0	-44.7	-13.0	-31.7	
11280.00	4.3	H	3.0	46.7	1.0	-41.3	-13.0	-28.3	
High Ch, 1909.8MHz									
3819.60	0.9	V	3.0	45.9	1.0	-44.0	-13.0	-31.0	
5729.40	7.4	V	3.0	45.6	1.0	-37.2	-13.0	-24.2	
7639.20	5.5	V	3.0	45.6	1.0	-39.1	-13.0	-26.1	
9549.00	2.3	V	3.0	45.5	1.0	-42.3	-13.0	-29.3	
11458.80	4.4	V	3.0	46.8	1.0	-41.5	-13.0	-28.5	
3819.60	13.0	H	3.0	45.9	1.0	-31.8	-13.0	-18.8	
5729.40	7.8	H	3.0	45.6	1.0	-36.8	-13.0	-23.8	
7639.20	-0.5	H	3.0	45.6	1.0	-45.0	-13.0	-32.0	
9549.00	0.2	H	3.0	45.5	1.0	-44.3	-13.0	-31.3	
11458.80	4.2	H	3.0	46.8	1.0	-41.6	-13.0	-28.6	

WCDMA Band 5

Band 5 REL99

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

Company: Samsung
Project #: 4790632299
Date: 2022-12-02
Test Engineer: 25770
Configuration: EUT / AC Adapter, Z-Position
Location: Chamber 2
Mode: Rel99 Band 5 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, 826.4MHz									
1652.80	-11.5	V	3.0	40.9	1.0	-51.4	-13.0	-38.4	
2479.20	-12.9	V	3.0	41.6	1.0	-53.4	-13.0	-40.4	
3305.60	-10.0	V	3.0	42.3	1.0	-51.3	-13.0	-38.3	
1652.80	-13.4	H	3.0	40.9	1.0	-53.3	-13.0	-40.3	
2479.20	-13.3	H	3.0	41.6	1.0	-53.9	-13.0	-40.9	
3305.60	-10.1	H	3.0	42.3	1.0	-51.4	-13.0	-38.4	
Mid Ch, 836.6MHz									
1673.20	-13.0	V	3.0	40.9	1.0	-52.9	-13.0	-39.9	
2509.80	-13.0	V	3.0	41.6	1.0	-53.6	-13.0	-40.6	
3346.40	-9.8	V	3.0	42.3	1.0	-51.1	-13.0	-38.1	
1673.20	-14.1	H	3.0	40.9	1.0	-54.0	-13.0	-41.0	
2509.80	-13.2	H	3.0	41.6	1.0	-53.8	-13.0	-40.8	
3346.40	-9.7	H	3.0	42.3	1.0	-51.0	-13.0	-38.0	
High Ch, 846.6MHz									
1693.20	-11.9	V	3.0	40.9	1.0	-51.8	-13.0	-38.8	
2539.80	-12.8	V	3.0	41.6	1.0	-53.4	-13.0	-40.4	
3386.40	-9.7	V	3.0	42.3	1.0	-51.0	-13.0	-38.0	
1693.20	-13.9	H	3.0	40.9	1.0	-53.9	-13.0	-40.9	
2539.80	-13.1	H	3.0	41.6	1.0	-53.7	-13.0	-40.7	
3386.40	-9.4	H	3.0	42.3	1.0	-50.7	-13.0	-37.7	

Band 5 HSDPA

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

Company: Samsung
Project #: 4790632299
Date: 2022-12-02
Test Engineer: 25770
Configuration: EUT / AC Adapter, Z-Position
Location: Chamber 2
Mode: HSDPA Band 5 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, 826.4MHz									
1652.80	-13.9	V	3.0	40.9	1.0	-53.9	-13.0	-40.9	
2479.20	-13.0	V	3.0	41.6	1.0	-53.6	-13.0	-40.6	
3305.60	-10.1	V	3.0	42.3	1.0	-51.4	-13.0	-38.4	
1652.80	-15.7	H	3.0	40.9	1.0	-55.6	-13.0	-42.6	
2479.20	-13.4	H	3.0	41.6	1.0	-53.9	-13.0	-40.9	
3305.60	-10.0	H	3.0	42.3	1.0	-51.3	-13.0	-38.3	
Mid Ch, 836.6MHz									
1673.20	-14.7	V	3.0	40.9	1.0	-54.6	-13.0	-41.6	
2509.80	-12.9	V	3.0	41.6	1.0	-53.5	-13.0	-40.5	
3346.40	-9.7	V	3.0	42.3	1.0	-51.0	-13.0	-38.0	
1673.20	-15.6	H	3.0	40.9	1.0	-55.5	-13.0	-42.5	
2509.80	-13.2	H	3.0	41.6	1.0	-53.8	-13.0	-40.8	
3346.40	-10.4	H	3.0	42.3	1.0	-51.7	-13.0	-38.7	
High Ch, 846.6MHz									
1693.20	-15.2	V	3.0	40.9	1.0	-55.1	-13.0	-42.1	
2539.80	-12.7	V	3.0	41.6	1.0	-53.3	-13.0	-40.3	
3386.40	-9.5	V	3.0	42.3	1.0	-50.8	-13.0	-37.8	
1693.20	-15.2	H	3.0	40.9	1.0	-55.1	-13.0	-42.1	
2539.80	-13.1	H	3.0	41.6	1.0	-53.7	-13.0	-40.7	
3386.40	-9.7	H	3.0	42.3	1.0	-51.0	-13.0	-38.0	

WCDMA Band 4

Band 4 REL99

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

Company: Samunsg
Project #: 4790632108
Date: 2022-12-23
Test Engineer: 19568
Configuration: EUT / AC Adapter, Z-Position
Location: Chamber 1
Mode: Rel99 Band 4 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, 1712.4MHz									
3424.80	-6.3	V	3.0	46.4	1.0	-51.8	-13.0	-38.8	
5137.20	-7.1	V	3.0	46.1	1.0	-52.3	-13.0	-39.3	
6849.60	-4.0	V	3.0	45.5	1.0	-48.4	-13.0	-35.4	
3424.80	-6.1	H	3.0	46.4	1.0	-51.5	-13.0	-38.5	
5137.20	-7.1	H	3.0	46.1	1.0	-52.2	-13.0	-39.2	
6849.60	-4.1	H	3.0	45.5	1.0	-48.6	-13.0	-35.6	
Mid Ch, 1732.6MHz									
3465.20	-5.6	V	3.0	46.4	1.0	-50.9	-13.0	-37.9	
5197.80	-6.9	V	3.0	46.1	1.0	-52.0	-13.0	-39.0	
6930.40	-3.7	V	3.0	45.5	1.0	-48.2	-13.0	-35.2	
3465.20	-5.5	H	3.0	46.4	1.0	-50.9	-13.0	-37.9	
5197.80	-6.7	H	3.0	46.1	1.0	-51.8	-13.0	-38.8	
6930.40	-4.0	H	3.0	45.5	1.0	-48.5	-13.0	-35.5	
High Ch, 1752.6MHz									
3505.20	-5.7	V	3.0	46.3	1.0	-51.0	-13.0	-38.0	
5257.80	-6.8	V	3.0	46.0	1.0	-51.8	-13.0	-38.8	
7010.40	-3.6	V	3.0	45.5	1.0	-48.1	-13.0	-35.1	
3505.20	-5.5	H	3.0	46.3	1.0	-50.8	-13.0	-37.8	
5257.80	-6.7	H	3.0	46.0	1.0	-51.7	-13.0	-38.7	
7010.40	-3.8	H	3.0	45.5	1.0	-48.3	-13.0	-35.3	

Band 4 HSDPA

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

Company: Samunsg
Project #: 4790632108
Date: 2022-12-23
Test Engineer: 19568
Configuration: EUT / AC Adapter, Z-Position
Location: Chamber 1
Mode: HSDPA Band 4 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, 1712.4MHz									
3424.80	-8.3	V	3.0	46.4	1.0	-53.7	-13.0	-40.7	
5137.20	-7.0	V	3.0	46.1	1.0	-52.1	-13.0	-39.1	
6849.60	-3.9	V	3.0	45.5	1.0	-48.3	-13.0	-35.3	
3424.80	0.0	H	3.0	46.4	1.0	-45.4	-13.0	-32.4	
5137.20	-6.6	H	3.0	46.1	1.0	-51.7	-13.0	-38.7	
6849.60	-3.8	H	3.0	45.5	1.0	-48.2	-13.0	-35.2	
Mid Ch, 1732.6MHz									
3465.20	-7.9	V	3.0	46.4	1.0	-53.3	-13.0	-40.3	
5197.80	-6.8	V	3.0	46.1	1.0	-51.8	-13.0	-38.8	
6930.40	-3.7	V	3.0	45.5	1.0	-48.2	-13.0	-35.2	
3465.20	-8.0	H	3.0	46.4	1.0	-53.4	-13.0	-40.4	
5197.80	-6.6	H	3.0	46.1	1.0	-51.7	-13.0	-38.7	
6930.40	-4.1	H	3.0	45.5	1.0	-48.6	-13.0	-35.6	
High Ch, 1752.6MHz									
3505.20	-7.8	V	3.0	46.3	1.0	-53.2	-13.0	-40.2	
5257.80	-6.7	V	3.0	46.0	1.0	-51.8	-13.0	-38.8	
7010.40	-3.8	V	3.0	45.5	1.0	-48.3	-13.0	-35.3	
3505.20	-7.6	H	3.0	46.3	1.0	-52.9	-13.0	-39.9	
5257.80	-6.3	H	3.0	46.0	1.0	-51.3	-13.0	-38.3	
7010.40	-3.8	H	3.0	45.5	1.0	-48.3	-13.0	-35.3	

WCDMA Band 2

Band 2 REL99

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

Company: Samsung
Project #: 4790632299
Date: 2022-12-02
Test Engineer: 26087
Configuration: EUT / AC Adpater, X-Position
Location: Chamber 1
Mode: Rel99 Band 2 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, 1852.4MHz									
3704.80	-0.3	V	3.0	46.0	1.0	-45.4	-13.0	-32.4	
5557.20	-7.7	V	3.0	45.8	1.0	-52.4	-13.0	-39.4	
7409.60	-5.1	V	3.0	45.5	1.0	-49.6	-13.0	-36.6	
3704.80	1.7	H	3.0	46.0	1.0	-43.3	-13.0	-30.3	
5557.20	-6.4	H	3.0	45.8	1.0	-51.2	-13.0	-38.2	
7409.60	-5.1	H	3.0	45.5	1.0	-49.6	-13.0	-36.6	
Mid Ch, 1880MHz									
3760.00	0.6	V	3.0	46.0	1.0	-44.3	-13.0	-31.3	
5640.00	-6.3	V	3.0	45.7	1.0	-51.0	-13.0	-38.0	
7520.00	-5.2	V	3.0	45.5	1.0	-49.7	-13.0	-36.7	
3760.00	4.0	H	3.0	46.0	1.0	-41.0	-13.0	-28.0	
5640.00	-6.7	H	3.0	45.7	1.0	-51.4	-13.0	-38.4	
7520.00	-5.2	H	3.0	45.5	1.0	-49.7	-13.0	-36.7	
High Ch, 1907.6MHz									
3815.20	0.5	V	3.0	45.9	1.0	-44.4	-13.0	-31.4	
5722.80	-3.6	V	3.0	45.6	1.0	-48.2	-13.0	-35.2	
7630.40	-4.8	V	3.0	45.6	1.0	-49.4	-13.0	-36.4	
3815.20	5.5	H	3.0	45.9	1.0	-39.4	-13.0	-26.4	
5722.80	-2.0	H	3.0	45.6	1.0	-46.7	-13.0	-33.7	
7630.40	-4.8	H	3.0	45.6	1.0	-49.4	-13.0	-36.4	

Band 2 HSDPA

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

Company: Samsung
Project #: 4790632299
Date: 2022-12-02
Test Engineer: 26087
Configuration: EUT / AC Adpater, X-Position
Location: Chamber 1
Mode: HSDPA Band 2 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, 1852.4MHz									
3704.80	-3.6	V	3.0	46.0	1.0	-48.6	-13.0	-35.6	
5557.20	-7.6	V	3.0	45.8	1.0	-52.4	-13.0	-39.4	
7409.60	-5.1	V	3.0	45.5	1.0	-49.6	-13.0	-36.6	
3704.80	0.0	H	3.0	46.0	1.0	-45.0	-13.0	-32.0	
5557.20	-7.2	H	3.0	45.8	1.0	-51.9	-13.0	-38.9	
7409.60	-5.1	H	3.0	45.5	1.0	-49.7	-13.0	-36.7	
Mid Ch, 1880MHz									
3760.00	-2.1	V	3.0	46.0	1.0	-47.1	-13.0	-34.1	
5640.00	-6.7	V	3.0	45.7	1.0	-51.4	-13.0	-38.4	
7520.00	-5.2	V	3.0	45.5	1.0	-49.8	-13.0	-36.8	
3760.00	-0.5	H	3.0	46.0	1.0	-45.4	-13.0	-32.4	
5640.00	-6.0	H	3.0	45.7	1.0	-50.7	-13.0	-37.7	
7520.00	-5.3	H	3.0	45.5	1.0	-49.8	-13.0	-36.8	
High Ch, 1907.6MHz									
3815.20	-2.4	V	3.0	45.9	1.0	-47.3	-13.0	-34.3	
5722.80	-7.1	V	3.0	45.6	1.0	-51.7	-13.0	-38.7	
7630.40	-4.8	V	3.0	45.6	1.0	-49.4	-13.0	-36.4	
3815.20	2.1	H	3.0	45.9	1.0	-42.8	-13.0	-29.8	
5722.80	-5.5	H	3.0	45.6	1.0	-50.1	-13.0	-37.1	
7630.40	-4.9	H	3.0	45.6	1.0	-49.4	-13.0	-36.4	

LTE Band 2 (Sub ANT)

LTE Band 2

20MHz

QPSK

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

Company: Samsung
Project #: 4790632108
Date: 2023-01-19
Test Engineer: 26087
Configuration: EUT / AC Adapter, Z-Position
Location: Chamber 2
Mode: LTE_QPSK Band 2 Harmonics, 20MHz 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, 1860MHz									
3720.00	-6.6	V	3.0	42.3	1.0	-47.9	-13.0	-34.9	
5580.00	-8.1	V	3.0	43.1	1.0	-50.2	-13.0	-37.2	
7440.00	-6.0	V	3.0	42.7	1.0	-47.8	-13.0	-34.8	
9300.00	-3.2	V	3.0	41.7	1.0	-44.0	-13.0	-31.0	
11160.00	0.9	V	3.0	41.6	1.0	-39.7	-13.0	-26.7	
3720.00	-5.6	H	3.0	42.3	1.0	-46.9	-13.0	-33.9	
5580.00	-8.2	H	3.0	43.1	1.0	-50.3	-13.0	-37.3	
7440.00	-6.2	H	3.0	42.7	1.0	-47.9	-13.0	-34.9	
9300.00	-2.0	H	3.0	41.7	1.0	-42.7	-13.0	-29.7	
11160.00	0.9	H	3.0	41.6	1.0	-39.7	-13.0	-26.7	
Mid Ch, 1880MHz									
3760.00	-6.4	V	3.0	42.3	1.0	-47.8	-13.0	-34.8	
5640.00	-7.9	V	3.0	43.2	1.0	-50.0	-13.0	-37.0	
7520.00	-6.2	V	3.0	42.7	1.0	-47.8	-13.0	-34.8	
9400.00	-2.7	V	3.0	41.7	1.0	-43.3	-13.0	-30.3	
11280.00	1.2	V	3.0	41.7	1.0	-39.5	-13.0	-26.5	
3760.00	-5.5	H	3.0	42.3	1.0	-46.9	-13.0	-33.9	
5640.00	-8.0	H	3.0	43.2	1.0	-50.2	-13.0	-37.2	
7520.00	-6.1	H	3.0	42.7	1.0	-47.8	-13.0	-34.8	
9400.00	-1.4	H	3.0	41.7	1.0	-42.0	-13.0	-29.0	
11280.00	1.1	H	3.0	41.7	1.0	-39.5	-13.0	-26.5	
High Ch, 1900MHz									
3800.00	-7.0	V	3.0	42.3	1.0	-48.3	-13.0	-35.3	
5700.00	-7.7	V	3.0	43.2	1.0	-49.9	-13.0	-36.9	
7600.00	-6.1	V	3.0	42.6	1.0	-47.7	-13.0	-34.7	
9500.00	-2.5	V	3.0	41.6	1.0	-43.1	-13.0	-30.1	
11400.00	1.1	V	3.0	41.7	1.0	-39.6	-13.0	-26.6	
3800.00	-6.5	H	3.0	42.3	1.0	-47.8	-13.0	-34.8	
5700.00	-7.9	H	3.0	43.2	1.0	-50.1	-13.0	-37.1	
7600.00	-5.5	H	3.0	42.6	1.0	-47.1	-13.0	-34.1	
9500.00	-1.0	H	3.0	41.6	1.0	-41.6	-13.0	-28.6	
11400.00	1.0	H	3.0	41.7	1.0	-39.7	-13.0	-26.7	

LTE Band 7

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

Company:	Samsung
Project #:	4790632299
Date:	2022-11-23
Test Engineer:	26087
Configuration:	EUT / AC Adapter, Z-Position
Location:	Chamber 1
Mode:	LTE_QPSK Band 7 Harmonics, 15MHz Bandwidth
Test Votage:	AC 120 V, 60 Hz

LTE Band 7

15MHz

QPSK

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2507.5MHz									
5015.00	-3.6	V	3.0	46.2	1.0	-48.8	-25.0	-23.8	
7522.50	-9.0	V	3.0	45.5	1.0	-53.5	-25.0	-28.5	
10030.00	-10.9	V	3.0	45.6	1.0	-55.5	-25.0	-30.5	
5015.00	1.5	H	3.0	46.2	1.0	-43.7	-25.0	-18.7	
7522.50	-7.2	H	3.0	45.5	1.0	-51.8	-25.0	-26.8	
10030.00	-11.1	H	3.0	45.6	1.0	-55.7	-25.0	-30.7	
Mid Ch, 2535MHz									
5070.00	4.1	V	3.0	46.2	1.0	-41.1	-25.0	-16.1	
7605.00	-8.6	V	3.0	45.6	1.0	-53.1	-25.0	-28.1	
10140.00	-10.9	V	3.0	45.7	1.0	-55.6	-25.0	-30.6	
5070.00	5.9	H	3.0	46.2	1.0	-39.3	-25.0	-14.3	
7605.00	-6.7	H	3.0	45.6	1.0	-51.2	-25.0	-26.2	
10140.00	-11.1	H	3.0	45.7	1.0	-55.8	-25.0	-30.8	
High Ch, 2562.5MHz									
5125.00	1.1	V	3.0	46.1	1.0	-44.0	-25.0	-19.0	
7687.50	-8.2	V	3.0	45.6	1.0	-52.8	-25.0	-27.8	
10250.00	-10.8	V	3.0	45.8	1.0	-55.6	-25.0	-30.6	
5125.00	5.8	H	3.0	46.1	1.0	-39.3	-25.0	-14.3	
7687.50	-5.1	H	3.0	45.6	1.0	-49.6	-25.0	-24.6	
10250.00	-10.9	H	3.0	45.8	1.0	-55.7	-25.0	-30.7	

LTE Band 12

LTE Band 12

10MHz

QPSK

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

Company: Samsung
Project #: 4790632299
Date: 2022-11-23
Test Engineer: 25770
Configuration: EUT / AC Adapter, Y-Position
Location: Chamber 2
Mode: LTE_QPSK Band 12 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, 704MHz									
1408.00	-16.8	V	3.0	41.0	1.0	-56.7	-13.0	-43.7	
2112.00	-14.5	V	3.0	41.0	1.0	-54.5	-13.0	-41.5	
2816.00	-11.8	V	3.0	42.0	1.0	-52.8	-13.0	-39.8	
1408.00	-17.6	H	3.0	41.0	1.0	-57.6	-13.0	-44.6	
2112.00	-15.0	H	3.0	41.0	1.0	-55.0	-13.0	-42.0	
2816.00	-11.9	H	3.0	42.0	1.0	-53.0	-13.0	-40.0	
Mid Ch, 707.5MHz									
1415.00	-15.2	V	3.0	41.0	1.0	-55.2	-13.0	-42.2	
2122.50	-14.4	V	3.0	41.0	1.0	-54.4	-13.0	-41.4	
2830.00	-11.6	V	3.0	42.0	1.0	-52.7	-13.0	-39.7	
1415.00	-17.0	H	3.0	41.0	1.0	-56.9	-13.0	-43.9	
2122.50	-14.9	H	3.0	41.0	1.0	-54.9	-13.0	-41.9	
2830.00	-11.9	H	3.0	42.0	1.0	-52.9	-13.0	-39.9	
High Ch, 711MHz									
1422.00	-15.3	V	3.0	41.0	1.0	-55.2	-13.0	-42.2	
2133.00	-14.4	V	3.0	41.1	1.0	-54.5	-13.0	-41.5	
2844.00	-11.6	V	3.0	42.1	1.0	-52.7	-13.0	-39.7	
1422.00	-17.1	H	3.0	41.0	1.0	-57.0	-13.0	-44.0	
2133.00	-14.7	H	3.0	41.1	1.0	-54.8	-13.0	-41.8	
2844.00	-11.8	H	3.0	42.1	1.0	-52.9	-13.0	-39.9	

LTE Band 13

LTE Band 13

10 MHz

QPSK

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

Company: Samsung
Project #: 4790632299
Date: 2022-11-28
Test Engineer: 19568
Configuration: EUT / AC Adapter, Y-Position
Location: Chamber 2
Mode: LTE_QPSK Band 13 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
Mid Ch, 782MHz									
1564.00	-21.9	V	3.0	40.9	1.0	-61.8	-40.0	-21.8	
2346.00	-29.0	V	3.0	41.4	1.0	-69.3	-13.0	-56.3	
3128.00	-27.0	V	3.0	42.3	1.0	-68.3	-13.0	-55.3	
1564.00	-14.6	H	3.0	40.9	1.0	-54.5	-40.0	-14.5	
2346.00	-29.4	H	3.0	41.4	1.0	-69.7	-13.0	-56.7	
3128.00	-27.1	H	3.0	42.3	1.0	-68.4	-13.0	-55.4	

LTE Band 14

LTE Band 14

5 MHz

QPSK

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

Company: Samsung
Project #: 4790632108
Date: 2022-12-14
Test Engineer: 25770
Configuration: EUT / AC Adapter, Y-Position
Location: Chamber 2
Mode: LTE_QPSK Band 14 Harmonics, 5MHz 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, 790.5MHz									
1581.00	-26.8	V	3.0	40.9	1.0	-66.7	-40.0	-26.7	
2371.50	-13.1	V	3.0	41.4	1.0	-53.5	-13.0	-40.5	
3162.00	-10.1	V	3.0	42.3	1.0	-51.4	-13.0	-38.4	
1581.00	-26.4	H	3.0	40.9	1.0	-66.3	-40.0	-26.3	
2371.50	-13.6	H	3.0	41.4	1.0	-54.0	-13.0	-41.0	
3162.00	-10.3	H	3.0	42.3	1.0	-51.6	-13.0	-38.6	
Mid Ch, 793MHz									
1586.00	-25.9	V	3.0	40.9	1.0	-65.8	-40.0	-25.8	
2379.00	-13.4	V	3.0	41.4	1.0	-53.8	-13.0	-40.8	
3172.00	-10.3	V	3.0	42.3	1.0	-51.6	-13.0	-38.6	
1586.00	-27.0	H	3.0	40.9	1.0	-66.9	-40.0	-26.9	
2379.00	-13.8	H	3.0	41.4	1.0	-54.2	-13.0	-41.2	
3172.00	-10.4	H	3.0	42.3	1.0	-51.7	-13.0	-38.7	
High Ch, 795.5MHz									
1591.00	-29.4	V	3.0	40.9	1.0	-69.4	-40.0	-29.4	
2386.50	-30.1	V	3.0	41.4	1.0	-70.5	-13.0	-57.5	
3182.00	-27.6	V	3.0	42.3	1.0	-68.9	-13.0	-55.9	
1591.00	-27.0	H	3.0	40.9	1.0	-66.9	-40.0	-26.9	
2386.50	-29.3	H	3.0	41.4	1.0	-69.7	-13.0	-56.7	
3182.00	-27.7	H	3.0	42.3	1.0	-69.0	-13.0	-56.0	

LTE Band 25

LTE Band 25

20 MHz

QPSK

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

Company: Samsung
Project #: 4790632108
Date: 2022-12-07
Test Engineer: 25770
Configuration: EUT / AC Adapter, Z-Position
Location: Chamber 2
Mode: LTE_QPSK Band 25 Harmonics, 20MHz 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, 1860MHz									
3720.00	-8.2	V	3.0	42.3	1.0	-49.5	-13.0	-36.5	
5580.00	-7.2	V	3.0	43.1	1.0	-49.3	-13.0	-36.3	
7440.00	-5.7	V	3.0	42.7	1.0	-47.4	-13.0	-34.4	
3720.00	-5.4	H	3.0	42.3	1.0	-46.8	-13.0	-33.8	
5580.00	-7.9	H	3.0	43.1	1.0	-50.0	-13.0	-37.0	
7440.00	-6.3	H	3.0	42.7	1.0	-48.0	-13.0	-35.0	
Mid Ch, 1882.5MHz									
3765.00	2.0	V	3.0	42.3	1.0	-39.4	-13.0	-26.4	
5647.50	-4.8	V	3.0	43.2	1.0	-47.0	-13.0	-34.0	
7530.00	-5.7	V	3.0	42.7	1.0	-47.4	-13.0	-34.4	
3765.00	5.8	H	3.0	42.3	1.0	-35.5	-13.0	-22.5	
5647.50	-6.3	H	3.0	43.2	1.0	-48.5	-13.0	-35.5	
7530.00	-5.7	H	3.0	42.7	1.0	-47.4	-13.0	-34.4	
High Ch, 1905MHz									
3810.00	-2.3	V	3.0	42.3	1.0	-43.6	-13.0	-30.6	
5715.00	-5.0	V	3.0	43.2	1.0	-47.2	-13.0	-34.2	
7620.00	-5.6	V	3.0	42.6	1.0	-47.2	-13.0	-34.2	
3810.00	1.6	H	3.0	42.3	1.0	-39.7	-13.0	-26.7	
5715.00	-6.0	H	3.0	43.2	1.0	-48.1	-13.0	-35.1	
7620.00	-5.7	H	3.0	42.6	1.0	-47.4	-13.0	-34.4	

LTE Band 26 (Part 90)

LTE Band 26

1.4 MHz

QPSK

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

Company: Samsung
Project #: 4790632108
Date: 2022-12-28
Test Engineer: 19568
Configuration: EUT / AC Adapter, X-Position
Location: Chamber 2
Mode: LTE_QPSK Band 26 Harmonics, 1.4MHz 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, 814.7MHz									
1629.40	-4.9	V	3.0	40.9	1.0	-44.8	-13.0	-31.8	
2444.10	-10.7	V	3.0	41.5	1.0	-51.2	-13.0	-38.2	
3258.80	-9.7	V	3.0	42.3	1.0	-51.0	-13.0	-38.0	
1629.40	-2.5	H	3.0	40.9	1.0	-42.4	-13.0	-29.4	
2444.10	-10.1	H	3.0	41.5	1.0	-50.6	-13.0	-37.6	
3258.80	-8.3	H	3.0	42.3	1.0	-49.6	-13.0	-36.6	
Mid Ch, 823.3MHz									
1646.60	-8.5	V	3.0	40.9	1.0	-48.4	-13.0	-35.4	
2469.90	-9.9	V	3.0	41.5	1.0	-50.4	-13.0	-37.4	
3293.20	-9.9	V	3.0	42.3	1.0	-51.2	-13.0	-38.2	
1646.60	-4.2	H	3.0	40.9	1.0	-44.2	-13.0	-31.2	
2469.90	-9.6	H	3.0	41.5	1.0	-50.2	-13.0	-37.2	
3293.20	-8.9	H	3.0	42.3	1.0	-50.2	-13.0	-37.2	

LTE Band 26 (Straddle)

LTE Band 26

5 MHz

QPSK

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

Company: Samsung
Project #: 4790632108
Date: 2022-12-29
Test Engineer: 19568
Configuration: EUT / AC Adapter, X-Position
Location: Chamber 2
Mode: LTE_QPSK Band 26 Harmonics, 5MHz 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	-9.7	V	3.0	40.9	1.0	-49.6	-13.0	-36.6	
2472.00	-12.8	V	3.0	41.5	1.0	-53.4	-13.0	-40.4	
3296.00	-10.3	V	3.0	42.3	1.0	-51.6	-13.0	-38.6	
1648.00	-5.4	H	3.0	40.9	1.0	-45.3	-13.0	-32.3	
2472.00	-13.2	H	3.0	41.5	1.0	-53.7	-13.0	-40.7	
3296.00	-10.3	H	3.0	42.3	1.0	-51.6	-13.0	-38.6	

LTE Band 26 (Part 22)

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

Company: Samsung
Project #: 4790632108
Date: 2022-12-29
Test Engineer: 19568
Configuration: EUT / AC Adapter, X-Position
Location: Chamber 2
Mode: LTE_QPSK Band 26 Harmonics, 5MHz Bandwidth
Test Votage: AC 120 V, 60 Hz

LTE Band 26

5 MHz

QPSK

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 826.5MHz									
1653.00	-8.6	V	3.0	40.9	1.0	-48.5	-13.0	-35.5	
2479.50	-5.6	V	3.0	41.6	1.0	-46.2	-13.0	-33.2	
3306.00	-9.5	V	3.0	42.3	1.0	-50.8	-13.0	-37.8	
1653.00	-1.6	H	3.0	40.9	1.0	-41.5	-13.0	-28.5	
2479.50	-0.1	H	3.0	41.6	1.0	-40.7	-13.0	-27.7	
3306.00	-8.6	H	3.0	42.3	1.0	-49.9	-13.0	-36.9	
Mid Ch, 831.5MHz									
1663.00	-8.1	V	3.0	40.9	1.0	-48.1	-13.0	-35.1	
2494.50	-5.6	V	3.0	41.6	1.0	-46.2	-13.0	-33.2	
3326.00	-9.8	V	3.0	42.3	1.0	-51.1	-13.0	-38.1	
1663.00	-1.4	H	3.0	40.9	1.0	-41.4	-13.0	-28.4	
2494.50	1.4	H	3.0	41.6	1.0	-39.2	-13.0	-26.2	
3326.00	-9.1	H	3.0	42.3	1.0	-50.4	-13.0	-37.4	
High Ch, 846.5MHz									
1693.00	-11.8	V	3.0	40.9	1.0	-51.8	-13.0	-38.8	
2539.50	-4.8	V	3.0	41.6	1.0	-45.4	-13.0	-32.4	
3386.00	-9.7	V	3.0	42.3	1.0	-51.0	-13.0	-38.0	
1693.00	-9.6	H	3.0	40.9	1.0	-49.5	-13.0	-36.5	
2539.50	-0.3	H	3.0	41.6	1.0	-41.0	-13.0	-28.0	
3386.00	-9.7	H	3.0	42.3	1.0	-51.0	-13.0	-38.0	

LTE Band 30

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

Company: Samsung
Project #: 4790632108
Date: 2023-01-04
Test Engineer: 25770
Configuration: EUT / AC Adapter, X-Position
Location: Chamber 1
Mode: LTE_QPSK Band 30 Harmonics, 5MHz Bandwidth
Test Votage: AC 120 V, 60 Hz

LTE Band 30

5 MHz

QPSK

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2307.5MHz									
4615.00	-8.2	V	3.0	46.0	1.0	-53.2	-40.0	-13.2	
6922.50	-14.2	V	3.0	45.5	1.0	-58.7	-40.0	-18.7	
9230.00	-15.3	V	3.0	45.5	1.0	-59.8	-40.0	-19.8	
4615.00	-9.0	H	3.0	46.0	1.0	-54.0	-40.0	-14.0	
6922.50	-14.4	H	3.0	45.5	1.0	-58.9	-40.0	-18.9	
9230.00	-15.3	H	3.0	45.5	1.0	-59.8	-40.0	-19.8	
Mid Ch, 2310MHz									
4620.00	-7.5	V	3.0	46.0	1.0	-52.5	-40.0	-12.5	
6930.00	-14.1	V	3.0	45.5	1.0	-58.6	-40.0	-18.6	
9240.00	-15.0	V	3.0	45.5	1.0	-59.5	-40.0	-19.5	
4620.00	-8.6	H	3.0	46.0	1.0	-53.6	-40.0	-13.6	
6930.00	-14.6	H	3.0	45.5	1.0	-59.1	-40.0	-19.1	
9240.00	-15.2	H	3.0	45.5	1.0	-59.8	-40.0	-19.8	
High Ch, 2312.5MHz									
4625.00	-9.6	V	3.0	46.0	1.0	-54.6	-40.0	-14.6	
6937.50	-14.3	V	3.0	45.5	1.0	-58.8	-40.0	-18.8	
9250.00	-14.8	V	3.0	45.5	1.0	-59.4	-40.0	-19.4	
4625.00	-10.2	H	3.0	46.0	1.0	-55.2	-40.0	-15.2	
6937.50	-14.8	H	3.0	45.5	1.0	-59.2	-40.0	-19.2	
9250.00	-14.9	H	3.0	45.5	1.0	-59.4	-40.0	-19.4	

UL Korea, Ltd. Suwon Laboratory FORM ID: FCC_22/24/27/90(04)
218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea TEL: (031) 337-9902 FAX: (031) 213-5433

LTE Band 40 (2307.5 - 2312.5 MHz)

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

Company: Samsung
Project #: 4790632108
Date: 2023-01-06
Test Engineer: 25770
Configuration: EUT / AC Adapter, Z-Position
Location: Chamber 1
Mode: LTE_QPSK Band 40(5M_LO) Harmonics, 5MHz Bandwidth
Test Votage: AC 120 V, 60 Hz

LTE Band 40

5 MHz

256QAM

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2307.5MHz									
4615.00	-11.2	V	3.0	46.0	1.0	-56.2	-40.0	-16.2	
6922.50	-12.7	V	3.0	45.5	1.0	-57.2	-40.0	-17.2	
9230.00	-12.6	V	3.0	45.5	1.0	-57.2	-40.0	-17.2	
4615.00	-10.0	H	3.0	46.0	1.0	-55.0	-40.0	-15.0	
6922.50	-13.0	H	3.0	45.5	1.0	-57.5	-40.0	-17.5	
9230.00	-12.5	H	3.0	45.5	1.0	-57.0	-40.0	-17.0	
Mid Ch, 2310MHz									
4620.00	-11.6	V	3.0	46.0	1.0	-56.6	-40.0	-16.6	
6930.00	-12.6	V	3.0	45.5	1.0	-57.1	-40.0	-17.1	
9240.00	-12.1	V	3.0	45.5	1.0	-56.7	-40.0	-16.7	
4620.00	-9.4	H	3.0	46.0	1.0	-54.4	-40.0	-14.4	
6930.00	-13.0	H	3.0	45.5	1.0	-57.5	-40.0	-17.5	
9240.00	-12.0	H	3.0	45.5	1.0	-56.6	-40.0	-16.6	
High Ch, 2312.5MHz									
4625.00	-11.0	V	3.0	46.0	1.0	-56.0	-40.0	-16.0	
6937.50	-13.3	V	3.0	45.5	1.0	-57.8	-40.0	-17.8	
9250.00	-12.2	V	3.0	45.5	1.0	-56.7	-40.0	-16.7	
4625.00	-10.4	H	3.0	46.0	1.0	-55.4	-40.0	-15.4	
6937.50	-13.2	H	3.0	45.5	1.0	-57.7	-40.0	-17.7	
9250.00	-12.1	H	3.0	45.5	1.0	-56.6	-40.0	-16.6	

LTE Band 40 (2357.5 - 2357.5 MHz)

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

Company: Samsung
Project #: 4790632108
Date: 2023-01-06
Test Engineer: 25770
Configuration: EUT / AC Adapter, X-Position
Location: Chamber 1
Mode: LTE_QPSK Band 40(5M_UP) Harmonics, 5MHz Bandwidth
Test Votage: AC 120 V, 60 Hz

LTE Band 40

5 MHz

256QAM

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2352.5MHz									
4705.00	-12.1	V	3.0	46.1	1.0	-57.1	-40.0	-17.1	
7057.50	-12.4	V	3.0	45.5	1.0	-56.9	-40.0	-16.9	
9410.00	-11.3	V	3.0	45.5	1.0	-55.9	-40.0	-15.9	
4705.00	-12.8	H	3.0	46.1	1.0	-57.9	-40.0	-17.9	
7057.50	-12.5	H	3.0	45.5	1.0	-57.0	-40.0	-17.0	
9410.00	-11.1	H	3.0	45.5	1.0	-55.6	-40.0	-15.6	
Mid Ch, 2355MHz									
4710.00	-11.2	V	3.0	46.1	1.0	-56.3	-40.0	-16.3	
7065.00	-12.2	V	3.0	45.5	1.0	-56.6	-40.0	-16.6	
9420.00	-11.0	V	3.0	45.5	1.0	-55.5	-40.0	-15.5	
4710.00	-12.0	H	3.0	46.1	1.0	-57.1	-40.0	-17.1	
7065.00	-12.3	H	3.0	45.5	1.0	-56.8	-40.0	-16.8	
9420.00	-11.2	H	3.0	45.5	1.0	-55.7	-40.0	-15.7	
High Ch, 2357.5MHz									
4715.00	-12.0	V	3.0	46.1	1.0	-57.1	-40.0	-17.1	
7072.50	-12.8	V	3.0	45.5	1.0	-57.3	-40.0	-17.3	
9430.00	-11.4	V	3.0	45.5	1.0	-55.9	-40.0	-15.9	
4715.00	-12.7	H	3.0	46.1	1.0	-57.8	-40.0	-17.8	
7072.50	-12.7	H	3.0	45.5	1.0	-57.2	-40.0	-17.2	
9430.00	-11.2	H	3.0	45.5	1.0	-55.7	-40.0	-15.7	

LTE Band 41(PC2)

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

Company: Samsung
Project #: 4790632108
Date: 2022-12-26
Test Engineer: 25770
Configuration: EUT / AC Adapter, Z-Position
Location: Chamber 1
Mode: LTE_QPSK Band 41 Harmonics, 10MHz Bandwidth
Test Votage: AC 120 V, 60 Hz

LTE Band 41(PC2)

10 MHz

QPSK

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	8.5	V	3.0	46.2	1.0	-36.7	-25.0	-11.7	
7503.00	6.8	V	3.0	45.5	1.0	-37.8	-25.0	-12.8	
10004.00	-3.1	V	3.0	45.6	1.0	-47.6	-25.0	-22.6	
5002.00	11.3	H	3.0	46.2	1.0	-34.0	-25.0	-9.0	
7503.00	10.2	H	3.0	45.5	1.0	-34.3	-25.0	-9.3	
10004.00	-3.1	H	3.0	45.6	1.0	-47.6	-25.0	-22.6	
Mid Ch, 2593MHz									
5186.00	14.9	V	3.0	46.1	1.0	-30.1	-25.0	-5.1	
7779.00	6.3	V	3.0	45.6	1.0	-38.2	-25.0	-13.2	
10372.00	-1.2	V	3.0	45.9	1.0	-46.1	-25.0	-21.1	
5186.00	16.4	H	3.0	46.1	1.0	-28.7	-25.0	-3.7	
7779.00	12.2	H	3.0	45.6	1.0	-32.4	-25.0	-7.4	
10372.00	-1.1	H	3.0	45.9	1.0	-45.9	-25.0	-20.9	
High Ch, 2685MHz									
5370.00	8.2	V	3.0	45.9	1.0	-36.7	-25.0	-11.7	
8055.00	-2.4	V	3.0	45.6	1.0	-47.0	-25.0	-22.0	
10740.00	-6.0	V	3.0	46.2	1.0	-51.2	-25.0	-26.2	
5370.00	8.1	H	3.0	45.9	1.0	-36.8	-25.0	-11.8	
8055.00	3.9	H	3.0	45.6	1.0	-40.7	-25.0	-15.7	
10740.00	-5.3	H	3.0	46.2	1.0	-50.5	-25.0	-25.5	

LTE Band 41(UL CA)

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

Company: Samsung
Project #: 4790632108
Date: 2023-01-11
Test Engineer: 25770
Configuration: EUT / AC Adapter, X-Position
Location: Chamber 1
Mode: LTE_QPSK Band 41 Harmonics, 20MHz Bandwidth
Test Votage: AC 120 V, 60 Hz

LTE Band 41 (UL CA)

20+20 MHz

QPSK

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, PCC : 2506MHz SCC : 2525.8MHz									
5031.80	7.6	V	3.0	46.2	1.0	-37.6	-25.0	-12.6	
7547.70	-6.3	V	3.0	45.5	1.0	-50.8	-25.0	-25.8	
10063.60	-6.6	V	3.0	45.6	1.0	-51.2	-25.0	-26.2	
5031.80	12.5	H	3.0	46.2	1.0	-32.7	-25.0	-7.7	
7547.70	-3.1	H	3.0	45.5	1.0	-47.7	-25.0	-22.7	
10063.60	-6.8	H	3.0	45.6	1.0	-51.4	-25.0	-26.4	
Mid Ch, PCC : 2583.1MHz SCC : 2602.9MHz									
5186.00	2.6	V	3.0	46.1	1.0	-42.5	-25.0	-17.5	
7779.00	-6.5	V	3.0	45.6	1.0	-51.1	-25.0	-26.1	
10372.00	-6.5	V	3.0	45.9	1.0	-51.4	-25.0	-26.4	
5186.00	7.6	H	3.0	46.1	1.0	-37.5	-25.0	-12.5	
7779.00	-4.2	H	3.0	45.6	1.0	-48.8	-25.0	-23.8	
10372.00	-6.8	H	3.0	45.9	1.0	-51.6	-25.0	-26.6	
High Ch, PCC : 2660.2MHz SCC : 2680MHz									
5340.20	-0.5	V	3.0	45.9	1.0	-45.5	-25.0	-20.5	
8010.30	-4.9	V	3.0	45.6	1.0	-49.5	-25.0	-24.5	
10680.40	-3.1	V	3.0	46.1	1.0	-48.2	-25.0	-23.2	
5340.20	5.8	H	3.0	45.9	1.0	-39.1	-25.0	-14.1	
8010.30	-7.8	H	3.0	45.6	1.0	-52.4	-25.0	-27.4	
10680.40	-4.7	H	3.0	46.1	1.0	-49.8	-25.0	-24.8	

LTE Band 66 (Main ANT)

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

Company: Samsung
Project #: 4790632299
Date: 2022-11-22
Test Engineer: 26087
Configuration: EUT / AC Adapter, Y-Position
Location: Chamber 1
Mode: LTE_QPSK Band 66 Harmonics, 5MHz Bandwidth
Test Votage: AC 120 V, 60 Hz

LTE Band 66

5MHz

QPSK

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1712.5MHz									
3425.00	-5.1	V	3.0	46.4	1.0	-50.6	-13.0	-37.6	
5137.50	-8.7	V	3.0	46.1	1.0	-53.8	-13.0	-40.8	
6850.00	-5.5	V	3.0	45.5	1.0	-49.9	-13.0	-36.9	
3425.00	-6.7	H	3.0	46.4	1.0	-52.2	-13.0	-39.2	
5137.50	-8.7	H	3.0	46.1	1.0	-53.8	-13.0	-40.8	
6850.00	-5.6	H	3.0	45.5	1.0	-50.0	-13.0	-37.0	
Mid Ch, 1745MHz									
3490.00	-3.3	V	3.0	46.3	1.0	-48.6	-13.0	-35.6	
5235.00	-8.3	V	3.0	46.0	1.0	-53.3	-13.0	-40.3	
6980.00	-5.4	V	3.0	45.5	1.0	-49.9	-13.0	-36.9	
3490.00	-0.9	H	3.0	46.3	1.0	-46.3	-13.0	-33.3	
5235.00	-8.2	H	3.0	46.0	1.0	-53.2	-13.0	-40.2	
6980.00	-5.5	H	3.0	45.5	1.0	-50.0	-13.0	-37.0	
High Ch, 1777.5MHz									
3555.00	0.0	V	3.0	46.3	1.0	-45.3	-13.0	-32.3	
5332.50	-8.0	V	3.0	46.0	1.0	-52.9	-13.0	-39.9	
7110.00	-5.3	V	3.0	45.5	1.0	-49.8	-13.0	-36.8	
3555.00	0.3	H	3.0	46.3	1.0	-44.9	-13.0	-31.9	
5332.50	-8.0	H	3.0	46.0	1.0	-52.9	-13.0	-39.9	
7110.00	-5.2	H	3.0	45.5	1.0	-49.7	-13.0	-36.7	

LTE Band 66 (Sub ANT)

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

Company: Samsung
Project #: 4790632299
Date: 2023-01-09
Test Engineer: 25570
Configuration: EUT / AC Adapter, Z-Position
Location: Chamber 2
Mode: LTE_QPSK Band 66 Harmonics, 5MHz Bandwidth
Test Votage: AC 120 V, 60 Hz

LTE Band 66

5MHz

QPSK

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1712.5MHz									
3425.00	-9.6	V	3.0	42.3	1.0	-50.9	-13.0	-37.9	
5137.50	-9.2	V	3.0	43.1	1.0	-51.2	-13.0	-38.2	
6850.00	-6.5	V	3.0	43.0	1.0	-48.5	-13.0	-35.5	
8562.50	-5.5	V	3.0	42.2	1.0	-46.7	-13.0	-33.7	
10275.00	-0.8	V	3.0	41.2	1.0	-41.0	-13.0	-28.0	
3425.00	-9.5	H	3.0	42.3	1.0	-50.8	-13.0	-37.8	
5137.50	-9.0	H	3.0	43.1	1.0	-51.0	-13.0	-38.0	
6850.00	-6.5	H	3.0	43.0	1.0	-48.5	-13.0	-35.5	
8562.50	-5.8	H	3.0	42.2	1.0	-47.0	-13.0	-34.0	
10275.00	-0.6	H	3.0	41.2	1.0	-40.8	-13.0	-27.8	
Mid Ch, 1745MHz									
3490.00	-8.4	V	3.0	42.3	1.0	-49.7	-13.0	-36.7	
5235.00	-8.5	V	3.0	43.1	1.0	-50.5	-13.0	-37.5	
6980.00	-6.6	V	3.0	42.9	1.0	-48.5	-13.0	-35.5	
8725.00	-4.3	V	3.0	42.1	1.0	-45.5	-13.0	-32.5	
10470.00	-0.4	V	3.0	41.3	1.0	-40.7	-13.0	-27.7	
3490.00	-7.4	H	3.0	42.3	1.0	-48.7	-13.0	-35.7	
5235.00	-8.3	H	3.0	43.1	1.0	-50.4	-13.0	-37.4	
6980.00	-6.4	H	3.0	42.9	1.0	-48.3	-13.0	-35.3	
8725.00	-5.2	H	3.0	42.1	1.0	-46.3	-13.0	-33.3	
10470.00	-0.2	H	3.0	41.3	1.0	-40.5	-13.0	-27.5	
High Ch, 1777.5MHz									
3555.00	-7.3	V	3.0	42.3	1.0	-48.6	-13.0	-35.6	
5332.50	-7.8	V	3.0	43.1	1.0	-49.9	-13.0	-36.9	
7110.00	-6.3	V	3.0	42.9	1.0	-48.1	-13.0	-35.1	
8887.50	-4.1	V	3.0	42.1	1.0	-45.2	-13.0	-32.2	
10665.00	-0.1	V	3.0	41.4	1.0	-40.5	-13.0	-27.5	
3555.00	-7.2	H	3.0	42.3	1.0	-48.5	-13.0	-35.5	
5332.50	-7.5	H	3.0	43.1	1.0	-49.6	-13.0	-36.6	
7110.00	-6.1	H	3.0	42.9	1.0	-48.0	-13.0	-35.0	
8887.50	-4.9	H	3.0	42.1	1.0	-45.9	-13.0	-32.9	
10665.00	0.1	H	3.0	41.4	1.0	-40.3	-13.0	-27.3	

LTE Band 71

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

Company: Samsung
Project #: 4790632108
Date: 2022-12-28
Test Engineer: 26087
Configuration: EUT / AC Adapter, Y-Position
Location: Chamber 1
Mode: LTE_QPSK Band 71 Harmonics, 5MHz Bandwidth
Test Votage: AC 120 V, 60 Hz

LTE Band 71

5 MHz

QPSK

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 665.5MHz									
1331.00	-9.9	V	3.0	46.1	1.0	-55.0	-13.0	-42.0	
1996.50	-13.1	V	3.0	46.7	1.0	-58.8	-13.0	-45.8	
2662.00	-11.0	V	3.0	46.9	1.0	-56.9	-13.0	-43.9	
1331.00	-9.9	H	3.0	46.1	1.0	-55.0	-13.0	-42.0	
1996.50	-14.1	H	3.0	46.7	1.0	-59.8	-13.0	-46.8	
2662.00	-11.3	H	3.0	46.9	1.0	-57.3	-13.0	-44.3	
Mid Ch, 680.5MHz									
1361.00	-12.8	V	3.0	46.2	1.0	-58.0	-13.0	-45.0	
2041.50	-12.8	V	3.0	46.7	1.0	-58.6	-13.0	-45.6	
2722.00	-10.7	V	3.0	47.0	1.0	-56.7	-13.0	-43.7	
1361.00	-15.5	H	3.0	46.2	1.0	-60.6	-13.0	-47.6	
2041.50	-13.8	H	3.0	46.7	1.0	-59.5	-13.0	-46.5	
2722.00	-10.9	H	3.0	47.0	1.0	-56.9	-13.0	-43.9	
High Ch, 695.5MHz									
1391.00	-14.2	V	3.0	46.2	1.0	-59.4	-13.0	-46.4	
2086.50	-12.8	V	3.0	46.8	1.0	-58.5	-13.0	-45.5	
2782.00	-10.4	V	3.0	47.0	1.0	-56.4	-13.0	-43.4	
1391.00	-13.5	H	3.0	46.2	1.0	-58.7	-13.0	-45.7	
2086.50	-13.6	H	3.0	46.8	1.0	-59.4	-13.0	-46.4	
2782.00	-10.5	H	3.0	47.0	1.0	-56.5	-13.0	-43.5	

NR Band n5

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

Company: Samsung
Project #: 4790632299
Date: 2023-01-10
Test Engineer: 25770
Configuration: EUT, Y-Position
Location: Chamber 1
Mode: 5G NR_QPSK NR n5 Harmonics, 20MHz Bandwidth
Test Votage: AC 120 V, 60 Hz

20MHz

QPSK

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 834MHz									
1668.00	-13.1	V	3.0	46.4	1.0	-58.5	-13.0	-45.5	
2502.00	-11.4	V	3.0	46.9	1.0	-57.2	-13.0	-44.2	
3336.00	-9.1	V	3.0	46.6	1.0	-54.7	-13.0	-41.7	
1668.00	-14.8	H	3.0	46.4	1.0	-60.3	-13.0	-47.3	
2502.00	-11.8	H	3.0	46.9	1.0	-57.7	-13.0	-44.7	
3336.00	-9.1	H	3.0	46.6	1.0	-54.6	-13.0	-41.6	
Mid Ch, 836.5MHz									
1673.00	-13.3	V	3.0	46.4	1.0	-58.7	-13.0	-45.7	
2509.50	-11.3	V	3.0	46.9	1.0	-57.2	-13.0	-44.2	
3346.00	-9.1	V	3.0	46.6	1.0	-54.6	-13.0	-41.6	
1673.00	-14.9	H	3.0	46.4	1.0	-60.4	-13.0	-47.4	
2509.50	-11.8	H	3.0	46.9	1.0	-57.7	-13.0	-44.7	
3346.00	-9.0	H	3.0	46.6	1.0	-54.5	-13.0	-41.5	
High Ch, 839MHz									
1678.00	-13.6	V	3.0	46.4	1.0	-59.0	-13.0	-46.0	
2517.00	-11.2	V	3.0	46.9	1.0	-57.1	-13.0	-44.1	
3356.00	-8.9	V	3.0	46.5	1.0	-54.4	-13.0	-41.4	
1678.00	-15.0	H	3.0	46.4	1.0	-60.5	-13.0	-47.5	
2517.00	-11.5	H	3.0	46.9	1.0	-57.4	-13.0	-44.4	
3356.00	-8.9	H	3.0	46.5	1.0	-54.4	-13.0	-41.4	

NR Band n12

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

Company: Samsung
Project #: 4790632108
Date: 2022-12-27
Test Engineer: 26087
Configuration: EUT / AC Adapter, X-Position
Location: Chamber 1
Mode: 5G NR_QPSK NR n12 Harmonics, 5MHz 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, 701.5MHz									
5MHz	1403.00	-15.5	V	3.0	46.2	1.0	-60.7	-13.0	-47.7	
	2104.50	-12.5	V	3.0	46.8	1.0	-58.2	-13.0	-45.2	
QPSK	2806.00	-10.4	V	3.0	47.0	1.0	-56.4	-13.0	-43.4	
	1403.00	-14.9	H	3.0	46.2	1.0	-60.1	-13.0	-47.1	
	2104.50	-13.3	H	3.0	46.8	1.0	-59.1	-13.0	-46.1	
	2806.00	-10.6	H	3.0	47.0	1.0	-56.5	-13.0	-43.5	
	Mid Ch, 707.5MHz									
	1415.00	-15.2	V	3.0	46.2	1.0	-60.4	-13.0	-47.4	
	2122.50	-12.5	V	3.0	46.8	1.0	-58.3	-13.0	-45.3	
	2830.00	-10.3	V	3.0	47.0	1.0	-56.3	-13.0	-43.3	
	1415.00	-13.4	H	3.0	46.2	1.0	-58.6	-13.0	-45.6	
	2122.50	-13.4	H	3.0	46.8	1.0	-59.2	-13.0	-46.2	
	2830.00	-10.4	H	3.0	47.0	1.0	-56.4	-13.0	-43.4	
	High Ch, 713.5MHz									
	1427.00	-14.7	V	3.0	46.2	1.0	-59.9	-13.0	-46.9	
	2140.50	-12.4	V	3.0	46.8	1.0	-58.2	-13.0	-45.2	
	2854.00	-10.1	V	3.0	47.0	1.0	-56.1	-13.0	-43.1	
	1427.00	-15.2	H	3.0	46.2	1.0	-60.5	-13.0	-47.5	
	2140.50	-13.2	H	3.0	46.8	1.0	-59.0	-13.0	-46.0	
	2854.00	-10.3	H	3.0	47.0	1.0	-56.3	-13.0	-43.3	

NR Band n25

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

Company: Samsung
Project #: 4790632108
Date: 2023-01-04
Test Engineer: 25770
Configuration: EUT / AC Adapter, Z-Position
Location: Chamber 2
Mode: 5G NR_QPSK NR n25 Harmonics, 25MHz 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, 1862.5MHz									
25 MHz	3725.00	-7.4	V	3.0	42.3	1.0	-48.7	-13.0	-35.7	
	5587.50	-5.6	V	3.0	43.1	1.0	-47.7	-13.0	-34.7	
QPSK	7450.00	-6.4	V	3.0	42.7	1.0	-48.2	-13.0	-35.2	
	3725.00	-4.3	H	3.0	42.3	1.0	-45.6	-13.0	-32.6	
	5587.50	-7.5	H	3.0	43.1	1.0	-49.6	-13.0	-36.6	
	7450.00	-6.4	H	3.0	42.7	1.0	-48.1	-13.0	-35.1	
	Mid Ch, 1882.5MHz									
	3765.00	-7.1	V	3.0	42.3	1.0	-48.4	-13.0	-35.4	
	5647.50	-5.2	V	3.0	43.2	1.0	-47.4	-13.0	-34.4	
	7530.00	-6.5	V	3.0	42.7	1.0	-48.2	-13.0	-35.2	
	3765.00	-3.9	H	3.0	42.3	1.0	-45.2	-13.0	-32.2	
	5647.50	-7.1	H	3.0	43.2	1.0	-49.3	-13.0	-36.3	
	7530.00	-6.5	H	3.0	42.7	1.0	-48.2	-13.0	-35.2	
	High Ch, 1902.5MHz									
	3805.00	-7.5	V	3.0	42.3	1.0	-48.8	-13.0	-35.8	
	5707.50	-5.8	V	3.0	43.2	1.0	-48.0	-13.0	-35.0	
	7610.00	-6.4	V	3.0	42.6	1.0	-48.1	-13.0	-35.1	
	3805.00	-3.4	H	3.0	42.3	1.0	-44.8	-13.0	-31.8	
	5707.50	-6.6	H	3.0	43.2	1.0	-48.8	-13.0	-35.8	
	7610.00	-6.4	H	3.0	42.6	1.0	-48.0	-13.0	-35.0	

NR Band n30

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

Company:	Samsung
Project #:	4790632108
Date:	2023-01-04
Test Engineer:	26087
Configuration:	EUT / AC Adapter, X-Position
Location:	Chamber 1
Mode:	5G NR_QPSK NR n30 Harmonics, 5MHz Bandwidth
Test Votage:	AC 120 V, 60 Hz

5MHz

QPSK

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2307.5MHz									
4615.00	-6.8	V	3.0	46.0	1.0	-51.8	-40.0	-11.8	
6922.50	-15.3	V	3.0	45.5	1.0	-59.8	-40.0	-19.8	
9230.00	-15.3	V	3.0	45.5	1.0	-59.8	-40.0	-19.8	
4615.00	-8.4	H	3.0	46.0	1.0	-53.4	-40.0	-13.4	
6922.50	-15.4	H	3.0	45.5	1.0	-59.9	-40.0	-19.9	
9230.00	-15.2	H	3.0	45.5	1.0	-59.7	-40.0	-19.7	
Mid Ch, 2310MHz									
4620.00	-9.8	V	3.0	46.0	1.0	-54.8	-40.0	-14.8	
6930.00	-15.5	V	3.0	45.5	1.0	-60.0	-40.0	-20.0	
9240.00	-15.1	V	3.0	45.5	1.0	-59.6	-40.0	-19.6	
4620.00	-5.8	H	3.0	46.0	1.0	-50.8	-40.0	-10.8	
6930.00	-15.6	H	3.0	45.5	1.0	-60.1	-40.0	-20.1	
9240.00	-15.1	H	3.0	45.5	1.0	-59.6	-40.0	-19.6	
High Ch, 2312.5MHz									
4625.00	-10.2	V	3.0	46.0	1.0	-55.2	-40.0	-15.2	
6937.50	-15.4	V	3.0	45.5	1.0	-59.9	-40.0	-19.9	
9250.00	-14.9	V	3.0	45.5	1.0	-59.5	-40.0	-19.5	
4625.00	-9.9	H	3.0	46.0	1.0	-54.9	-40.0	-14.9	
6937.50	-15.8	H	3.0	45.5	1.0	-60.2	-40.0	-20.2	
9250.00	-15.0	H	3.0	45.5	1.0	-59.5	-40.0	-19.5	

NR Band n41(PC2)

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

Company: Samsung
Project #: 4790632108
Date: 2023-01-06
Test Engineer: 25770
Configuration: EUT, Z-Position
Location: Chamber 2
Mode: 5G NR_QPSK NR n41 Harmonics, 60MHz Bandwidth
Test Votage: AC 120 V, 60 Hz

60MHz
QPSK

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2526.01MHz									
5052.02	-6.9	V	3.0	43.0	1.0	-48.9	-25.0	-23.9	
7578.03	-12.8	V	3.0	42.6	1.0	-54.5	-25.0	-29.5	
10104.04	-11.8	V	3.0	41.1	1.0	-51.9	-25.0	-26.9	
5052.02	-8.2	H	3.0	43.0	1.0	-50.2	-25.0	-25.2	
7578.03	-8.1	H	3.0	42.6	1.0	-49.7	-25.0	-24.7	
10104.04	-11.7	H	3.0	41.1	1.0	-51.9	-25.0	-26.9	
Mid Ch, 2592.99MHz									
5185.98	3.6	V	3.0	43.1	1.0	-38.5	-25.0	-13.5	
7778.97	-10.9	V	3.0	42.5	1.0	-52.5	-25.0	-27.5	
10371.96	-12.2	V	3.0	41.3	1.0	-52.5	-25.0	-27.5	
5185.98	4.1	H	3.0	43.1	1.0	-37.9	-25.0	-12.9	
7778.97	-8.4	H	3.0	42.5	1.0	-50.0	-25.0	-25.0	
10371.96	-12.0	H	3.0	41.3	1.0	-52.3	-25.0	-27.3	
High Ch, 2660MHz									
5320.00	5.7	V	3.0	43.1	1.0	-36.4	-25.0	-11.4	
7980.00	-9.2	V	3.0	42.4	1.0	-50.6	-25.0	-25.6	
10640.00	-10.7	V	3.0	41.4	1.0	-51.1	-25.0	-26.1	
5320.00	3.2	H	3.0	43.1	1.0	-38.9	-25.0	-13.9	
7980.00	-5.3	H	3.0	42.4	1.0	-46.7	-25.0	-21.7	
10640.00	-10.1	H	3.0	41.4	1.0	-50.5	-25.0	-25.5	

NR Band n66

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

Company: Samsung
Project #: 4790632299
Date: 2022-12-14
Test Engineer: 26087
Configuration: EUT / AC Adapter, X-Position
Location: Chamber 1
Mode: 5G NR_QPSK NR n66 Harmonics, 40MHz Bandwidth
Test Votage: AC 120 V, 60 Hz

30 MHz
QPSK

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1730MHz									
3460.00	-4.8	V	3.0	46.4	1.0	-50.2	-13.0	-37.2	
5190.00	-6.9	V	3.0	46.1	1.0	-52.0	-13.0	-39.0	
6920.00	-3.7	V	3.0	45.5	1.0	-48.2	-13.0	-35.2	
3460.00	-2.3	H	3.0	46.4	1.0	-47.7	-13.0	-34.7	
5190.00	-6.7	H	3.0	46.1	1.0	-51.8	-13.0	-38.8	
6920.00	-4.0	H	3.0	45.5	1.0	-48.5	-13.0	-35.5	
Mid Ch, 1745MHz									
3490.00	8.9	V	3.0	46.3	1.0	-36.4	-13.0	-23.4	
5235.00	-6.8	V	3.0	46.0	1.0	-51.9	-13.0	-38.9	
6980.00	-3.7	V	3.0	45.5	1.0	-48.2	-13.0	-35.2	
3490.00	9.8	H	3.0	46.3	1.0	-35.6	-13.0	-22.6	
5235.00	-6.7	H	3.0	46.0	1.0	-51.7	-13.0	-38.7	
6980.00	-3.9	H	3.0	45.5	1.0	-48.4	-13.0	-35.4	
High Ch, 1760MHz									
3520.00	-4.4	V	3.0	46.3	1.0	-49.7	-13.0	-36.7	
5280.00	-6.7	V	3.0	46.0	1.0	-51.7	-13.0	-38.7	
7040.00	-3.8	V	3.0	45.5	1.0	-48.3	-13.0	-35.3	
3520.00	-0.1	H	3.0	46.3	1.0	-45.5	-13.0	-32.5	
5280.00	-6.8	H	3.0	46.0	1.0	-51.8	-13.0	-38.8	
7040.00	-3.8	H	3.0	45.5	1.0	-48.3	-13.0	-35.3	

NR Band n71

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

Company: Samsung
Project #: 4790632108
Date: 2023-01-03
Test Engineer: 24542
Configuration: EUT,
Location: Chamber 2
Mode: 5G NR_QPSK NR n71 Harmonics, 5MHz Bandwidth
Test Votage: AC 120 V, 60 Hz

5MHz

QPSK

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 665.5MHz									
1331.00	-17.4	V	3.0	41.0	1.0	-57.4	-13.0	-44.4	
1996.50	-14.8	V	3.0	40.9	1.0	-54.6	-13.0	-41.6	
2662.00	-12.3	V	3.0	41.8	1.0	-53.1	-13.0	-40.1	
1331.00	-18.3	H	3.0	41.0	1.0	-58.3	-13.0	-45.3	
1996.50	-15.4	H	3.0	40.9	1.0	-55.3	-13.0	-42.3	
2662.00	-12.5	H	3.0	41.8	1.0	-53.3	-13.0	-40.3	
Mid Ch, 680.5MHz									
1361.00	-17.2	V	3.0	41.0	1.0	-57.2	-13.0	-44.2	
2041.50	-14.6	V	3.0	40.9	1.0	-54.5	-13.0	-41.5	
2722.00	-12.0	V	3.0	41.9	1.0	-52.9	-13.0	-39.9	
1361.00	-18.0	H	3.0	41.0	1.0	-58.0	-13.0	-45.0	
2041.50	-15.2	H	3.0	40.9	1.0	-55.1	-13.0	-42.1	
2722.00	-12.3	H	3.0	41.9	1.0	-53.2	-13.0	-40.2	
High Ch, 695.5MHz									
1391.00	-17.0	V	3.0	41.0	1.0	-57.0	-13.0	-44.0	
2086.50	-14.4	V	3.0	41.0	1.0	-54.4	-13.0	-41.4	
2782.00	-11.8	V	3.0	42.0	1.0	-52.8	-13.0	-39.8	
1391.00	-17.8	H	3.0	41.0	1.0	-57.7	-13.0	-44.7	
2086.50	-15.0	H	3.0	41.0	1.0	-55.0	-13.0	-42.0	
2782.00	-12.0	H	3.0	42.0	1.0	-53.0	-13.0	-40.0	

NR Band n77(PC2) (3450 – 3550 MHz)

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

Company: Samsung
Project #: 4790632299
Date: 2023-01-04
Test Engineer: 25770
Configuration: EUT / AC Adapter, Y-Position
Location: Chamber 1
Mode: 5G NR_QPSK NR n77 LO Harmonics, 60MHz Bandwidth
Test Votage: AC 120 V, 60 Hz

60MHz

QPSK

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 3480MHz									
6960.00	0.5	V	3.0	45.5	1.0	-44.0	-13.0	-31.0	
10440.00	4.5	V	3.0	45.9	1.0	-40.4	-13.0	-27.4	
13920.00	7.1	V	3.0	46.6	1.0	-38.5	-13.0	-25.5	
6960.00	0.3	H	3.0	45.5	1.0	-44.2	-13.0	-31.2	
10440.00	4.8	H	3.0	45.9	1.0	-40.1	-13.0	-27.1	
13920.00	7.0	H	3.0	46.6	1.0	-38.5	-13.0	-25.5	
Mid Ch, 3499.98MHz									
6999.96	2.7	V	3.0	45.5	1.0	-41.8	-13.0	-28.8	
10499.94	4.5	V	3.0	46.0	1.0	-40.5	-13.0	-27.5	
13999.92	7.1	V	3.0	46.5	1.0	-38.5	-13.0	-25.5	
6999.96	1.2	H	3.0	45.5	1.0	-43.3	-13.0	-30.3	
10499.94	5.2	H	3.0	46.0	1.0	-39.8	-13.0	-26.8	
13999.92	6.9	H	3.0	46.5	1.0	-38.6	-13.0	-25.6	
High Ch, 3519MHz									
7038.00	1.5	V	3.0	45.5	1.0	-43.0	-13.0	-30.0	
10557.00	5.2	V	3.0	46.0	1.0	-39.8	-13.0	-26.8	
14076.00	7.0	V	3.0	46.5	1.0	-38.5	-13.0	-25.5	
7038.00	-0.1	H	3.0	45.5	1.0	-44.6	-13.0	-31.6	
10557.00	4.7	H	3.0	46.0	1.0	-40.3	-13.0	-27.3	
14076.00	7.2	H	3.0	46.5	1.0	-38.3	-13.0	-25.3	

NR Band n77(PC2) (3450 – 3550 MHz, SRS1)

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

Company: Samsung
Project #: 4790632299
Date: 2023-01-13
Test Engineer: 26087
Configuration: EUT, X-Position
Location: Chamber 2
Mode: 5G NR_QPSK NR n77 LO Harmonics, 10MHz Bandwidth
Test Votage: AC 120 V, 60 Hz

10MHz

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 3455MHz									
6910.00	-3.5	V	3.0	43.0	1.0	-45.5	-13.0	-32.5	
10365.00	1.9	V	3.0	41.3	1.0	-38.4	-13.0	-25.4	
13820.00	5.9	V	3.0	43.2	1.0	-36.2	-13.0	-23.2	
6910.00	-3.2	H	3.0	43.0	1.0	-45.2	-13.0	-32.2	
10365.00	2.2	H	3.0	41.3	1.0	-38.0	-13.0	-25.0	
13820.00	6.4	H	3.0	43.2	1.0	-35.8	-13.0	-22.8	
Mid Ch, 3499.98MHz									
6999.96	-3.5	V	3.0	42.9	1.0	-45.4	-13.0	-32.4	
10499.94	2.3	V	3.0	41.3	1.0	-38.0	-13.0	-25.0	
13999.92	5.9	V	3.0	43.3	1.0	-36.3	-13.0	-23.3	
6999.96	-3.3	H	3.0	42.9	1.0	-45.2	-13.0	-32.2	
10499.94	2.7	H	3.0	41.3	1.0	-37.6	-13.0	-24.6	
13999.92	6.1	H	3.0	43.3	1.0	-36.2	-13.0	-23.2	
High Ch, 3544MHz									
7088.00	-5.3	V	3.0	42.9	1.0	-47.1	-13.0	-34.1	
10632.00	1.1	V	3.0	41.4	1.0	-39.3	-13.0	-26.3	
14176.00	5.0	V	3.0	43.4	1.0	-37.4	-13.0	-24.4	
7088.00	-5.0	H	3.0	42.9	1.0	-46.9	-13.0	-33.9	
10632.00	1.3	H	3.0	41.4	1.0	-39.1	-13.0	-26.1	
14176.00	5.0	H	3.0	43.4	1.0	-37.4	-13.0	-24.4	

NR Band n77(PC2) (3450 – 3550 MHz, SRS2)

60MHz

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

Company: Samsung
Project #: 4790632299
Date: 2023-01-13
Test Engineer: 26087
Configuration: EUT, X-Position
Location: Chamber 2
Mode: 5G NR_QPSK NR n77 LO Harmonics, 60MHz 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, 3480MHz									
6960.00	-5.5	V	3.0	42.9	1.0	-47.5	-13.0	-34.5	
10440.00	0.4	V	3.0	41.3	1.0	-39.9	-13.0	-26.9	
13920.00	4.6	V	3.0	43.2	1.0	-37.6	-13.0	-24.6	
6960.00	-5.2	H	3.0	42.9	1.0	-47.2	-13.0	-34.2	
10440.00	0.5	H	3.0	41.3	1.0	-39.7	-13.0	-26.7	
13920.00	4.8	H	3.0	43.2	1.0	-37.4	-13.0	-24.4	
Mid Ch, 3499.98MHz									
6999.96	-5.1	V	3.0	42.9	1.0	-47.0	-13.0	-34.0	
10499.94	1.8	V	3.0	41.3	1.0	-38.5	-13.0	-25.5	
13999.92	4.6	V	3.0	43.3	1.0	-37.7	-13.0	-24.7	
6999.96	-5.1	H	3.0	42.9	1.0	-47.0	-13.0	-34.0	
10499.94	0.9	H	3.0	41.3	1.0	-39.4	-13.0	-26.4	
13999.92	4.6	H	3.0	43.3	1.0	-37.7	-13.0	-24.7	
High Ch, 3519MHz									
7038.00	-5.2	V	3.0	42.9	1.0	-47.1	-13.0	-34.1	
10557.00	0.8	V	3.0	41.3	1.0	-39.5	-13.0	-26.5	
14076.00	4.8	V	3.0	43.3	1.0	-37.5	-13.0	-24.5	
7038.00	-5.1	H	3.0	42.9	1.0	-47.0	-13.0	-34.0	
10557.00	1.1	H	3.0	41.3	1.0	-39.2	-13.0	-26.2	
14076.00	5.3	H	3.0	43.3	1.0	-37.1	-13.0	-24.1	

NR Band n77(PC2) (3450 – 3550 MHz, SRS3)

50MHz

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

Company: Samsung
Project #: 4790632299
Date: 2023-01-13
Test Engineer: 26087
Configuration: EUT
Location: Chamber 2
Mode: 5G NR_QPSK NR n77 LO Harmonics, 50MHz 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, 3475MHz									
6950.00	-3.7	V	3.0	42.9	1.0	-45.6	-13.0	-32.6	
10425.00	1.7	V	3.0	41.3	1.0	-38.6	-13.0	-25.6	
13900.00	6.2	V	3.0	43.2	1.0	-36.0	-13.0	-23.0	
6950.00	-3.9	H	3.0	42.9	1.0	-45.9	-13.0	-32.9	
10425.00	1.7	H	3.0	41.3	1.0	-38.6	-13.0	-25.6	
13900.00	6.2	H	3.0	43.2	1.0	-36.0	-13.0	-23.0	
Mid Ch, 3499.98MHz									
6999.96	-3.7	V	3.0	42.9	1.0	-45.6	-13.0	-32.6	
10499.94	2.7	V	3.0	41.3	1.0	-37.6	-13.0	-24.6	
13999.92	6.0	V	3.0	43.3	1.0	-36.2	-13.0	-23.2	
6999.96	-3.4	H	3.0	42.9	1.0	-45.3	-13.0	-32.3	
10499.94	2.4	H	3.0	41.3	1.0	-38.0	-13.0	-25.0	
13999.92	6.3	H	3.0	43.3	1.0	-35.9	-13.0	-22.9	
High Ch, 3524MHz									
7048.00	-3.2	V	3.0	42.9	1.0	-45.1	-13.0	-32.1	
10572.00	2.0	V	3.0	41.3	1.0	-38.3	-13.0	-25.3	
14096.00	6.2	V	3.0	43.3	1.0	-36.1	-13.0	-23.1	
7048.00	-3.7	H	3.0	42.9	1.0	-45.6	-13.0	-32.6	
10572.00	2.1	H	3.0	41.3	1.0	-38.3	-13.0	-25.3	
14096.00	6.9	H	3.0	43.3	1.0	-35.5	-13.0	-22.5	

UL Korea, Ltd. Suwon Laboratory FORM ID: FCC_22/24/27/90(04)
218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea TEL: (031) 337-9902 FAX: (031) 213-5433

NR Band n77(PC2,3700-3980 MHz)

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

Company: Samsung
Project #: 4790632299
Date: 2023-01-03
Test Engineer: 26087
Configuration: EUT / AC Adapter, Y-Position
Location: Chamber 1
Mode: 5G NR_QPSK NR n77 UP Harmonics, 30MHz Bandwidth
Test Votage: AC 120 V, 60 Hz

30MHz

QPSK

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 3715MHz									
7430.00	3.2	V	3.0	45.5	1.0	-41.3	-13.0	-28.3	
11145.00	6.0	V	3.0	46.5	1.0	-39.5	-13.0	-26.5	
14860.00	7.5	V	3.0	46.2	1.0	-37.7	-13.0	-24.7	
7430.00	8.2	H	3.0	45.5	1.0	-36.4	-13.0	-23.4	
11145.00	6.1	H	3.0	46.5	1.0	-39.4	-13.0	-26.4	
14860.00	7.7	H	3.0	46.2	1.0	-37.5	-13.0	-24.5	
Mid Ch, 3840MHz									
7680.00	14.5	V	3.0	45.6	1.0	-30.0	-13.0	-17.0	
11520.00	6.0	V	3.0	46.9	1.0	-39.9	-13.0	-26.9	
15360.00	8.1	V	3.0	46.0	1.0	-36.9	-13.0	-23.9	
7680.00	17.3	H	3.0	45.6	1.0	-27.2	-13.0	-14.2	
11520.00	6.2	H	3.0	46.9	1.0	-39.6	-13.0	-26.6	
15360.00	8.3	H	3.0	46.0	1.0	-36.7	-13.0	-23.7	
High Ch, 3965MHz									
7930.00	18.9	V	3.0	45.6	1.0	-25.7	-13.0	-12.7	
11895.00	6.4	V	3.0	47.2	1.0	-39.8	-13.0	-26.8	
15860.00	8.9	V	3.0	45.7	1.0	-35.8	-13.0	-22.8	
7930.00	22.4	H	3.0	45.6	1.0	-22.2	-13.0	-9.2	
11895.00	6.9	H	3.0	47.2	1.0	-39.3	-13.0	-26.3	
15860.00	9.3	H	3.0	45.7	1.0	-35.4	-13.0	-22.4	

NR Band n77(PC2,3700-3980 MHz, SRS1)

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

Company: Samsung
Project #: 4790632299
Date: 2023-01-13
Test Engineer: 26087
Configuration: EUT, Z-Position
Location: Chamber 1
Mode: 5G NR_QPSK NR n77 UP Harmonics, 70MHz Bandwidth
Test Votage: AC 120 V, 60 Hz

70MHz

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 3735MHz									
7470.00	-0.6	V	3.0	45.5	1.0	-45.1	-13.0	-32.1	
11205.00	-8.4	V	3.0	46.6	1.0	-54.0	-13.0	-41.0	
14940.00	-11.3	V	3.0	46.2	1.0	-56.5	-13.0	-43.5	
7470.00	-0.6	H	3.0	45.5	1.0	-45.2	-13.0	-32.2	
11205.00	-8.7	H	3.0	46.6	1.0	-54.3	-13.0	-41.3	
14940.00	-9.6	H	3.0	46.2	1.0	-54.8	-13.0	-41.8	
Mid Ch, 3840MHz									
7680.00	8.4	V	3.0	45.6	1.0	-36.2	-13.0	-23.2	
11520.00	6.1	V	3.0	46.9	1.0	-39.7	-13.0	-26.7	
15360.00	-9.4	V	3.0	46.0	1.0	-54.4	-13.0	-41.4	
7680.00	6.2	H	3.0	45.6	1.0	-38.3	-13.0	-25.3	
11520.00	6.1	H	3.0	46.9	1.0	-39.7	-13.0	-26.7	
15360.00	-9.9	H	3.0	46.0	1.0	-54.8	-13.0	-41.8	
High Ch, 3945MHz									
7890.00	18.1	V	3.0	45.6	1.0	-26.5	-13.0	-13.5	
11835.00	6.5	V	3.0	47.1	1.0	-39.6	-13.0	-26.6	
15780.00	8.4	V	3.0	45.7	1.0	-36.4	-13.0	-23.4	
7890.00	18.1	H	3.0	45.6	1.0	-26.5	-13.0	-13.5	
11835.00	6.6	H	3.0	47.1	1.0	-39.5	-13.0	-26.5	
15780.00	8.3	H	3.0	45.7	1.0	-36.4	-13.0	-23.4	

NR Band n77(PC2,3700-3980 MHz, SRS2)

30MHz

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

Company: Samsung
Project #: 4790632299
Date: 2023-01-13
Test Engineer: 26087
Configuration: EUT, Y-Position
Location: Chamber 1
Mode: 5G NR_QPSK NR n77 UP Harmonics, 30MHz 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, 3715MHz									
7430.00	-0.9	V	3.0	45.5	1.0	-45.5	-13.0	-32.5	
11145.00	5.7	V	3.0	46.5	1.0	-39.9	-13.0	-26.9	
14860.00	7.3	V	3.0	46.2	1.0	-37.9	-13.0	-24.9	
7430.00	-0.8	H	3.0	45.5	1.0	-45.4	-13.0	-32.4	
11145.00	6.0	H	3.0	46.5	1.0	-39.5	-13.0	-26.5	
14860.00	7.7	H	3.0	46.2	1.0	-37.5	-13.0	-24.5	
Mid Ch, 3840MHz									
7680.00	-1.1	V	3.0	45.6	1.0	-45.7	-13.0	-32.7	
11520.00	6.4	V	3.0	46.9	1.0	-39.5	-13.0	-26.5	
15360.00	7.9	V	3.0	46.0	1.0	-37.1	-13.0	-24.1	
7680.00	-1.1	H	3.0	45.6	1.0	-45.7	-13.0	-32.7	
11520.00	6.5	H	3.0	46.9	1.0	-39.4	-13.0	-26.4	
15360.00	8.0	H	3.0	46.0	1.0	-37.0	-13.0	-24.0	
High Ch, 3965MHz									
7930.00	-0.7	V	3.0	45.6	1.0	-45.3	-13.0	-32.3	
11895.00	6.9	V	3.0	47.2	1.0	-39.3	-13.0	-26.3	
15860.00	8.7	V	3.0	45.7	1.0	-36.0	-13.0	-23.0	
7930.00	-0.7	H	3.0	45.6	1.0	-45.3	-13.0	-32.3	
11895.00	6.6	H	3.0	47.2	1.0	-39.5	-13.0	-26.5	
15860.00	8.7	H	3.0	45.7	1.0	-36.0	-13.0	-23.0	

NR Band n77(PC2,3700-3980 MHz, SRS3)

90MHz

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

Company: Samsung
Project #: 4790632299
Date: 2023-01-13
Test Engineer: 26087
Configuration: EUT, Y-Position
Location: Chamber 1
Mode: 5G NR_QPSK NR n77 UP Harmonics, 90MHz 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, 3745MHz									
7490.00	-0.9	V	3.0	45.5	1.0	-45.4	-13.0	-32.4	
11235.00	5.9	V	3.0	46.6	1.0	-39.7	-13.0	-26.7	
14980.00	7.5	V	3.0	46.2	1.0	-37.6	-13.0	-24.6	
7490.00	-1.2	H	3.0	45.5	1.0	-45.7	-13.0	-32.7	
11235.00	5.7	H	3.0	46.6	1.0	-39.9	-13.0	-26.9	
14980.00	7.7	H	3.0	46.2	1.0	-37.4	-13.0	-24.4	
Mid Ch, 3840MHz									
7680.00	-1.0	V	3.0	45.6	1.0	-45.6	-13.0	-32.6	
11520.00	5.9	V	3.0	46.9	1.0	-40.0	-13.0	-27.0	
15360.00	7.8	V	3.0	46.0	1.0	-37.1	-13.0	-24.1	
7680.00	-1.1	H	3.0	45.6	1.0	-45.6	-13.0	-32.6	
11520.00	6.1	H	3.0	46.9	1.0	-39.8	-13.0	-26.8	
15360.00	8.1	H	3.0	46.0	1.0	-36.8	-13.0	-23.8	
High Ch, 3935MHz									
7870.00	-1.0	V	3.0	45.6	1.0	-45.6	-13.0	-32.6	
11805.00	6.5	V	3.0	47.1	1.0	-39.6	-13.0	-26.6	
15740.00	8.6	V	3.0	45.8	1.0	-36.2	-13.0	-23.2	
7870.00	-0.9	H	3.0	45.6	1.0	-45.5	-13.0	-32.5	
11805.00	6.5	H	3.0	47.1	1.0	-39.6	-13.0	-26.6	
15740.00	8.5	H	3.0	45.8	1.0	-36.3	-13.0	-23.3	

END OF REPORT