

LTE Band 66



LTE Band 4

LTE Band 4 (Frequency range: 1710-1755 MHz) is covered by LTE Band 66 (Frequency range: 1710-1780 MHz) due to overlapping frequency range, same maximum tune-up limit and same channel bandwidth.

LTE Band 5

LTE Band 5 (Frequency range: 824-849 MHz) is covered by LTE Band 26 (Frequency range: 814-849 MHz) due to overlapping frequency range, same maximum tune-up limit and same channel bandwidth.

LTE Band 17

LTE Band 17 (Frequency range: 704-716 MHz) is covered by LTE Band 12 (Frequency range: 699-716 MHz) due to overlapping frequency range, same maximum tune-up limit and same channel bandwidth.

9.4. FREQUENCY STABILITY

RULE PART(S)

FCC: §2.1055, §22.355, §24.235, §27.54 and §90.213

LIMITS

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

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

§27.54 - The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

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

TEST PROCEDURE

Per KDB 971168 D01 Power Meas License Digital Systems v03r01

RESULTS

See the following pages.

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

9.4.1. FREQUENCY STABILITY RESULTS

GSM 850, Channel 128/251, Frequency 824.2/848.8 MHz

Reference Frequency : GSM850 Low Channel 824.2 MHz / High Channel 848.8 MHz @ 20°C							
Limit: +/- 2.5 ppm =		Low Channel	2060.500	Hz	High Channel	2122.000	Hz
Power Supply [Vdc]	Environment Temperature [°C]	Frequency Deviation Measured with Time Elapse				Limit [ppm]	
		Low Channel		High Channel			
		[MHz]	Delta [ppm]	[MHz]	Delta [ppm]		
3.85	50	824.20007038	-0.011	848.80003345	0.022	2.5	
3.85	40	824.20005466	0.008	848.80004727	0.006	2.5	
3.85	30	824.20006131	0.000	848.80004236	0.011	2.5	
3.85	20	824.20006093	0.000	848.80005205	0.000	2.5	
3.85	10	824.20009140	-0.037	848.80009098	-0.046	2.5	
3.85	0	824.20005947	0.002	848.80005853	-0.008	2.5	
3.85	-10	824.20006606	-0.006	848.80005870	-0.008	2.5	
3.85	-20	824.20005175	0.011	848.80005792	-0.007	2.5	
3.85	-30	824.20005773	0.004	848.80005941	-0.009	2.5	

Reference Frequency : GSM850 Low Channel 824.2 MHz / High Channel 848.8 MHz @ 20°C							
Limit: +/- 2.5 ppm =		Low Channel	2060.500	Hz	High Channel	2122.000	Hz
Power Supply [Vdc]	Environment Temperature [°C]	Frequency Deviation Measured with Time Elapse				Limit [ppm]	
		Low Channel		High Channel			
		[MHz]	Delta [ppm]	[MHz]	Delta [ppm]		
3.85	20	824.20006093	0	848.80005205	0	2.5	
4.40	20	824.20003203	0.035	848.80003103	0.025	2.5	
3.65	20	824.20003074	0.037	848.80004375	0.010	2.5	

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

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	1850.0783	1909.9217		
Extreme (50C)		1850.0784	1909.9218	64.9	0.035
Extreme (40C)		1850.0783	1909.9218	48.4	0.026
Extreme (30C)		1850.0783	1909.9218	49.0	0.026
Extreme (10C)		1850.0784	1909.9218	63.8	0.034
Extreme (0C)		1850.0784	1909.9218	62.0	0.033
Extreme (-10C)		1850.0784	1909.9218	68.1	0.036
Extreme (-20C)		1850.0783	1909.9218	50.5	0.027
Extreme (-30C)		1850.0783	1909.9218	55.3	0.029
20C	15%	1850.0784	1909.9218	35.4	0.019
	-15%	1850.0783	1909.9218	36.6	0.019
	End Point	1850.0783	1909.9218	36.7	0.020

WCDMA Band 5

Reference Frequency : WCDMA Band 5 Low Channel 826.4 MHz / High Channel 846.6 MHz @ 20°C							
Limit: +- 2.5 ppm =		Low Channel	2066.000	Hz	High Channel	2116.500	Hz
Power Supply [Vdc]	Environment Temperature [°C]	Frequency Deviation Measured with Time Elapse					Limit [ppm]
		Low Channel		High Channel			
		[MHz]	Delta [ppm]	[MHz]	Delta [ppm]		
3.85	50	826.40002525	0.009	846.60001212	0.028	2.5	
3.85	40	826.40001135	0.026	846.60001760	0.022	2.5	
3.85	30	826.40002126	0.014	846.60002005	0.019	2.5	
3.85	20	826.40003252	0.000	846.60003597	0.000	2.5	
3.85	10	826.40005998	-0.033	846.60003523	0.001	2.5	
3.85	0	826.40004555	-0.016	846.60004666	-0.013	2.5	
3.85	-10	826.40005453	-0.027	846.60004436	-0.010	2.5	
3.85	-20	826.40004982	-0.021	846.60003402	0.002	2.5	
3.85	-30	826.40004756	-0.018	846.60004399	-0.009	2.5	

Reference Frequency : WCDMA Band 5 Low Channel 826.4 MHz / High Channel 846.6 MHz @ 20°C							
Limit: +- 2.5 ppm =		Low Channel	2066.000	Hz	High Channel	2116.500	Hz
Power Supply [Vdc]	Environment Temperature [°C]	Frequency Deviation Measured with Time Elapse					Limit [ppm]
		Low Channel		High Channel			
		[MHz]	Delta [ppm]	[MHz]	Delta [ppm]		
3.85	20	826.40003252	0	846.60003597	0	2.5	
4.40	20	826.40000217	0.037	846.60000297	0.039	2.5	
3.65	20	826.40000236	0.036	846.60000305	0.039	2.5	

WCDMA Band 4 (Lowest Frequency: HSDPA / Highest Frequency: Rel99)

Limit		1710	1755	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ End of OBW (MHz)	F high @ End of OBW (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	1710.3231	1754.6728		
Extreme (50C)		1710.3231	1754.6728	38.3	0.022
Extreme (40C)		1710.3231	1754.6728	46.4	0.027
Extreme (30C)		1710.3231	1754.6728	47.6	0.027
Extreme (10C)		1710.3231	1754.6728	32.8	0.019
Extreme (0C)		1710.3231	1754.6728	49.0	0.028
Extreme (-10C)		1710.3231	1754.6728	52.4	0.030
Extreme (-20C)		1710.3231	1754.6728	46.4	0.027
Extreme (-30C)		1710.3231	1754.6728	48.9	0.028
20C	15%	1710.3231	1754.6728	13.4	0.008
	-15%	1710.3231	1754.6728	13.8	0.008
	End Point	1710.3231	1754.6728	13.9	0.008

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

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	1850.3211	1909.6770		
Extreme (50C)		1850.3211	1909.6770	28.2	0.015
Extreme (40C)		1850.3211	1909.6770	22.8	0.012
Extreme (30C)		1850.3211	1909.6770	22.5	0.012
Extreme (10C)		1850.3211	1909.6770	48.6	0.026
Extreme (0C)		1850.3212	1909.6771	67.7	0.036
Extreme (-10C)		1850.3212	1909.6771	62.2	0.033
Extreme (-20C)		1850.3211	1909.6770	43.2	0.023
Extreme (-30C)		1850.3211	1909.6770	44.3	0.024
20C	15%	1850.3211	1909.6770	16.1	0.009
	-15%	1850.3211	1909.6770	16.6	0.009
	End Point	1850.3211	1909.6770	16.9	0.009

LTE Band 2 (Lowest Frequency:QPSK / Highest Frequency: 16QAM)

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	1850.1530	1909.8424		
Extreme (50C)		1850.1531	1909.8424	50.2	0.027
Extreme (40C)		1850.1531	1909.8424	53.7	0.029
Extreme (30C)		1850.1531	1909.8424	65.1	0.035
Extreme (10C)		1850.1531	1909.8424	61.0	0.032
Extreme (0C)		1850.1531	1909.8424	60.5	0.032
Extreme (-10C)		1850.1531	1909.8424	65.4	0.035
Extreme (-20C)		1850.1530	1909.8424	43.1	0.023
Extreme (-30C)		1850.1530	1909.8424	47.0	0.025
20C	15%	1850.1531	1909.8424	18.9	0.010
	-15%	1850.1531	1909.8424	15.6	0.008
	End Point	1850.1531	1909.8424	15.5	0.008

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

Limit		699	716	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ End of OBW	F high @ End of OBW		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	699.1531	715.8463		
Extreme (50C)		699.1531	715.8463	20.9	0.030
Extreme (40C)		699.1531	715.8463	16.2	0.023
Extreme (30C)		699.1531	715.8463	17.9	0.025
Extreme (10C)		699.1531	715.8463	14.4	0.020
Extreme (0C)		699.1531	715.8463	9.0	0.013
Extreme (-10C)		699.1531	715.8463	16.0	0.023
Extreme (-20C)		699.1531	715.8463	10.1	0.014
Extreme (-30C)		699.1531	715.8463	15.7	0.022
20C	15%	699.1531	715.8463	11.8	0.017
	-15%	699.1531	715.8463	4.9	0.007
	End Point	699.1531	715.8463	2.7	0.004

LTE Band 26

Reference Frequency : LTE Band 26 Low Channel 814.7 MHz / High Channel 848.3 MHz @ 20°C							
Limit: +- 2.5 ppm =		Low Channel	2036.750	Hz	High Channel	2120.750	Hz
Power Supply [Vdc]	Environment Temperature [°C]	Frequency Deviation Measured with Time Elapse					Limit [ppm]
		Low Channel		High Channel			
		[MHz]	Delta [ppm]	[MHz]	Delta [ppm]		
3.85	50	814.70002781	-0.002	848.30001595	0.017	2.5	
3.85	40	814.70002694	-0.001	848.30002591	0.005	2.5	
3.85	30	814.70003520	-0.011	848.30002276	-0.009	2.5	
3.85	20	814.70002641	0.000	848.30003048	0.000	2.5	
3.85	10	814.70003682	-0.013	848.30002594	0.005	2.5	
3.85	0	814.70003039	-0.005	848.30003460	-0.005	2.5	
3.85	-10	814.70003958	-0.016	848.30004580	-0.018	2.5	
3.85	-20	814.70002961	-0.004	848.30003489	-0.005	2.5	
3.85	-30	814.70002287	0.004	848.30002504	0.006	2.5	

Reference Frequency : LTE Band 26 Low Channel 814.7 MHz / High Channel 848.3 MHz @ 20°C							
Limit: +- 2.5 ppm =		Low Channel	2036.750	Hz	High Channel	2120.750	Hz
Power Supply [Vdc]	Environment Temperature [°C]	Frequency Deviation Measured with Time Elapse					Limit [ppm]
		Low Channel		High Channel			
		[MHz]	Delta [ppm]	[MHz]	Delta [ppm]		
3.85	20	814.70002641	0	848.30003048	0	2.5	
4.40	20	814.70002465	0.002	848.30000894	0.025	2.5	
3.65	20	814.70000887	0.022	848.30000971	0.024	2.5	

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

Limit		2496	2690	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ End of OBW	F high @ End of OBW		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	2494.0121	2691.9996		
Extreme (50C)		2494.0122	2691.9997	66.5	0.026
Extreme (40C)		2494.0122	2691.9997	66.1	0.026
Extreme (30C)		2494.0122	2691.9997	69.6	0.027
Extreme (10C)		2494.0122	2691.9997	56.3	0.022
Extreme (0C)		2494.0121	2691.9996	48.1	0.019
Extreme (-10C)		2494.0121	2691.9996	40.3	0.016
Extreme (-20C)		2494.0121	2691.9996	33.1	0.013
Extreme (-30C)		2494.0121	2691.9996	22.3	0.009
20C	15%	2494.0122	2691.9996	17.2	0.007
	-15%	2494.0122	2691.9996	19.8	0.008
	End Point	2494.0122	2691.9996	19.3	0.007

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

Limit		1710	1780	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ End of OBW	F high @ End of OBW		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	1710.6995	1779.3005		
Extreme (50C)		1710.6995	1779.3006	48.3	0.028
Extreme (40C)		1710.6995	1779.3006	48.6	0.028
Extreme (30C)		1710.6995	1779.3006	47.6	0.027
Extreme (10C)		1710.6995	1779.3006	46.3	0.027
Extreme (0C)		1710.6995	1779.3006	32.3	0.019
Extreme (-10C)		1710.6995	1779.3006	31.3	0.018
Extreme (-20C)		1710.6995	1779.3006	29.0	0.017
Extreme (-30C)		1710.6995	1779.3006	35.1	0.020
20C	15%	1710.6995	1779.3006	13.3	0.008
	-15%	1710.6995	1779.3006	14.1	0.008
	End Point	1710.6995	1779.3006	12.0	0.007

LTE Band 4

LTE Band 4 (Frequency range: 1710-1755 MHz) is covered by LTE Band 66 (Frequency range: 1710-1780 MHz) due to overlapping frequency range, same maximum tune-up limit and same channel bandwidth.

LTE Band 5

LTE Band 5 (Frequency range: 824-849 MHz) is covered by LTE Band 26 (Frequency range: 814-849 MHz) due to overlapping frequency range, same maximum tune-up limit and same channel bandwidth.

LTE Band 17

LTE Band 17 (Frequency range: 704-716 MHz) is covered by LTE Band 12 (Frequency range: 699-716 MHz) due to overlapping frequency range, same maximum tune-up limit and same channel bandwidth.

9.5. RADIATED POWER (ERP & EIRP)

RULE PART(S)

FCC: §2.1046, §22.913, §24.232, §27.50, §27.53 and §90.635

LIMITS

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

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.

27.50:

(c) (10) - Portable stations (hand-held devices) in the 600 MHz uplink band and the 698-746 MHz band, and fixed and mobile stations in the 600 MHz uplink band are limited to 3 watts ERP.

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

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

(2) Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

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

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

TEST PROCEDURE

ANSI / TIA / EIA 603 E Clause 2.2.17; ESU40 setting reference to 971168 D01 v03r01

For radiated output power measurement with a ESU40:

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

TEST RESULTS

9.5.1. ERP/EIRP Results

GSM

Band	Mode	Channel	f [MHz]	ERP / EIRP	
				[dBm]	[mW]
GSM850	GPRS	128	824.2	27.35	543.25
		190	836.6	29.66	924.70
		251	848.8	30.30	1071.52
	EGPRS	128	824.2	21.14	130.02
		190	836.6	23.16	207.01
		251	848.8	22.09	161.81
GSM1900	GPRS	512	1850.2	29.94	986.28
		661	1880	30.00	1000.00
		810	1909.8	29.87	970.51
	EGPRS	512	1850.2	25.96	394.46
		661	1880	25.98	396.28
		810	1909.8	26.37	433.51

WCDMA

Band	Mode	Channel	f [MHz]	ERP / EIRP	
				[dBm]	[mW]
Band 5	REL99	4132	826.4	20.56	113.76
		4183	836.6	20.61	115.08
		4233	846.6	19.44	87.90
	HSDPA	4132	826.4	20.19	104.47
		4183	836.6	20.08	101.86
		4233	846.6	18.96	78.70
Band 4	REL99	1312	1712.4	21.65	146.22
		1413	1732.6	22.44	175.39
		1513	1752.6	22.16	164.44
	HSDPA	1312	1712.4	20.73	118.30
		1413	1732.6	21.47	140.28
		1513	1752.6	21.18	131.22
Band 2	REL99	9262	1852.4	21.91	155.24
		9400	1880.0	21.57	143.55
		9538	1907.6	22.02	159.22
	HSDPA	9262	1852.4	20.73	118.30
		9400	1880.0	21.47	140.28
		9538	1907.6	21.18	131.22

LTE Band 2

Band	BW [MHz]	Mode	RB Size/	f [MHz]	ERP / EIRP	
			RB Offset		[dBm]	[mW]
Band 2	20	QPSK	1/99	1860.0	23.05	201.84
			1/0	1880.0	22.60	181.97
			1/99	1900.0	22.38	172.98
		16QAM	1/49	1860.0	21.71	148.25
			1/0	1880.0	21.40	138.04
			1/99	1900.0	21.12	129.42
	15	QPSK	1/74	1857.5	22.66	184.50
			1/0	1880.0	22.64	183.65
			1/74	1902.5	22.74	187.93
		16QAM	1/37	1857.5	21.27	133.97
			1/0	1880.0	21.48	140.60
			1/74	1902.5	21.61	144.88
	10	QPSK	1/49	1855.0	22.41	174.18
			1/0	1880.0	22.71	186.64
			1/49	1905.0	23.00	199.53
		16QAM	1/49	1855.0	21.66	146.55
			1/0	1880.0	21.78	150.66
			1/49	1905.0	21.90	154.88
	5	QPSK	1/12	1852.5	22.25	167.88
			1/0	1880.0	22.61	182.39
			1/12	1907.5	22.08	161.44
		16QAM	1/12	1852.5	21.43	139.00
			1/0	1880.0	21.84	152.76
			1/0	1907.5	21.87	153.82
	3	QPSK	1/8	1851.5	22.21	166.34
			1/8	1880.0	22.60	181.97
			1/0	1908.5	22.26	168.27
		16QAM	1/14	1851.5	21.16	130.62
			1/8	1880.0	21.37	137.09
			1/8	1908.5	22.04	159.96
1.4	QPSK	1/3	1850.7	22.27	168.66	
		1/3	1880.0	22.39	173.38	
		1/3	1909.3	22.70	186.21	
	16QAM	1/3	1850.7	21.15	130.32	
		1/5	1880.0	20.80	120.23	
		1/3	1909.3	21.41	138.36	

LTE Band 12

Band	BW [MHz]	Mode	RB Size/	f [MHz]	ERP / EIRP	
			RB Offset		[dBm]	[mW]
Band 12	10	QPSK	1/25	704.0	20.20	104.71
			1/0	707.5	20.49	111.94
			1/0	711.0	20.56	113.76
		16QAM	1/25	704.0	19.66	92.47
			1/25	707.5	20.01	100.23
			1/0	711.0	20.03	100.69
	5	QPSK	1/24	701.5	19.85	96.61
			1/0	707.5	20.52	112.72
			1/12	713.5	20.86	121.90
		16QAM	1/24	701.5	19.46	88.31
			1/0	707.5	19.99	99.77
			1/24	713.5	20.69	117.22
	3	QPSK	1/8	700.5	19.84	96.38
			1/8	707.5	20.71	117.76
			1/8	714.5	20.95	124.45
		16QAM	1/8	700.5	19.14	82.04
			1/8	707.5	19.91	97.95
			1/8	714.5	20.25	105.93
	1.4	QPSK	1/3	699.7	19.72	93.76
			1/3	707.5	20.68	116.95
			1/3	715.3	20.91	123.31
		16QAM	1/3	699.7	19.09	81.10
			1/3	707.5	19.90	97.72
			1/3	715.3	20.31	107.40

LTE Band 26

Band	BW [MHz]	Mode	RB Size/	f [MHz]	ERP/EIRP	
			RB Offset		[dBm]	[mW]
Band 26	15	QPSK	1/37	821.5	20.63	115.61
			1/0	831.5	21.20	131.83
			1/0	841.5	19.96	99.08
		16QAM	1/37	821.5	20.10	102.33
			1/0	831.5	20.78	119.67
			1/0	841.5	19.36	86.30
	10	QPSK	1/49	819.0	19.08	80.91
			1/0	829.0	20.83	121.06
			1/0	831.5	21.16	130.62
			1/0	844.0	19.62	91.62
		16QAM	1/49	819.0	18.64	73.11
			1/0	829.0	20.26	106.17
			1/0	831.5	20.58	114.29
			1/0	844.0	18.94	78.34
	5	QPSK	1/24	816.5	19.55	90.16
			1/24	821.5	19.85	96.61
			1/12	826.5	20.49	111.94
			1/0	831.5	20.89	122.74
			1/0	846.5	19.07	80.72
		16QAM	1/24	816.5	18.87	77.09
			1/24	821.5	18.95	78.52
			1/24	826.5	20.00	100.00
			1/0	831.5	20.49	111.94
			1/0	846.5	18.98	79.07
	3	QPSK	1/8	815.5	19.58	90.78
			1/0	822.5	20.04	100.93
			1/8	825.5	20.20	104.71
			1/8	831.5	20.85	121.62
			1/8	847.5	18.99	79.25
		16QAM	1/14	815.5	19.06	80.54
			1/8	822.5	19.53	89.74
			1/8	825.5	19.76	94.62
			1/8	831.5	20.15	103.51
			1/8	847.5	18.39	69.02
	1.4	QPSK	1/3	814.7	19.36	86.30
			1/3	823.3	20.05	101.16
1/3			824.7	20.15	103.51	
1/3			831.5	20.92	123.59	
1/5			848.3	18.79	75.68	
16QAM		1/3	814.7	18.69	73.96	
		1/3	823.3	19.48	88.72	
		1/3	824.7	19.58	90.78	
		1/3	831.5	20.37	108.89	
		1/3	848.3	18.12	64.86	

LTE Band 26 (Straddle Channel)

Band	BW	Mode	RB Size/	f [MHz]	ERP/EIRP	
	[MHz]		RB Offset		[dBm]	[mW]
Band 26	15	QPSK	1/0	824.0	20.24	105.68
		16QAM	1/0	824.0	19.57	90.57
	10	QPSK	1/0	824.0	20.66	116.41
		16QAM	1/0	824.0	20.17	103.99
	5	QPSK	1/0	824.0	20.53	112.98
		16QAM	1/0	824.0	20.05	101.16
	3	QPSK	1/0	824.0	20.65	116.14
		16QAM	1/0	824.0	20.46	111.17
	1.4	QPSK	1/0	824.0	20.45	110.92
		16QAM	1/0	824.0	19.95	98.86

LTE Band 41

Band	BW [MHz]	Mode	RB Size/	f [MHz]	ERP / EIRP	
			RB Offset		[dBm]	[mW]
Band 41	20	QPSK	1/49	2506.0	20.29	106.91
			1/0	2593.0	21.64	145.88
			1/99	2680.0	20.85	121.62
		16QAM	1/99	2506.0	19.67	92.68
			1/0	2593.0	21.10	128.82
			1/99	2680.0	19.76	94.62
	15	QPSK	1/74	2503.5	20.51	112.46
			1/0	2593.0	21.61	144.88
			1/37	2682.5	21.01	126.18
		16QAM	1/74	2503.5	19.88	97.27
			1/0	2593.0	21.26	133.66
			1/74	2682.5	20.03	100.69
	10	QPSK	1/49	2501.0	20.32	107.65
			1/0	2593.0	21.64	145.88
			1/0	2685.0	21.24	133.05
		16QAM	1/49	2501.0	19.99	99.77
			1/0	2593.0	21.21	132.13
			1/0	2685.0	20.36	108.64
	5	QPSK	1/0	2498.5	19.82	95.94
			1/0	2593.0	21.87	153.82
1/0			2687.5	21.26	133.66	
16QAM		1/0	2498.5	19.59	90.99	
		1/0	2593.0	21.24	133.05	
		1/0	2687.5	20.54	113.24	

LTE Band 66

Band	BW [MHz]	Mode	RB Size/	f [MHz]	ERP / EIRP	
			RB Offset		[dBm]	[mW]
Band 66	20	QPSK	1/99	1720.0	23.04	201.37
			1/99	1745.0	23.59	228.56
			1/99	1770.0	20.62	115.35
		16QAM	1/0	1720.0	21.37	137.09
			1/99	1745.0	22.54	179.47
			1/99	1770.0	19.44	87.90
	15	QPSK	1/0	1717.5	22.64	183.65
			1/37	1747.5	23.07	202.77
			1/37	1772.5	21.81	151.71
		16QAM	1/0	1717.5	21.62	145.21
			1/37	1747.5	21.91	155.24
			1/37	1772.5	20.85	121.62
	10	QPSK	1/0	1715.0	22.46	176.20
			1/49	1745.0	23.51	224.39
			1/0	1775.0	21.68	147.23
		16QAM	1/0	1715.0	21.36	136.77
			1/0	1745.0	21.68	147.23
			1/0	1775.0	20.60	114.82
	5	QPSK	1/0	1712.5	22.43	174.98
			1/0	1745.0	23.00	199.53
			1/0	1777.5	21.68	147.23
		16QAM	1/24	1712.5	21.54	142.56
			1/0	1745.0	21.88	154.17
			1/0	1777.5	20.90	123.03
	3	QPSK	1/8	1711.5	22.38	172.98
			1/8	1745.0	23.29	213.30
			1/8	1778.5	20.73	118.30
		16QAM	1/8	1711.5	21.50	141.25
			1/8	1745.0	22.12	162.93
			1/8	1778.5	19.63	91.83
1.4	QPSK	1/3	1710.7	22.49	177.42	
		1/3	1745.0	22.99	199.07	
		1/3	1779.3	21.41	138.36	
	16QAM	1/3	1710.7	21.48	140.60	
		1/3	1745.0	21.82	152.05	
		1/3	1779.3	20.20	104.71	

LTE Band 4

LTE Band 4 (Frequency range: 1710-1755 MHz) is covered by LTE Band 66 (Frequency range: 1710-1780 MHz) due to overlapping frequency range, same maximum tune-up limit and same channel bandwidth.

LTE Band 5

LTE Band 5 (Frequency range: 824-849 MHz) is covered by LTE Band 26 (Frequency range: 814-849 MHz) due to overlapping frequency range, same maximum tune-up limit and same channel bandwidth.

LTE Band 17

LTE Band 17 (Frequency range: 704-716 MHz) is covered by LTE Band 12 (Frequency range: 699-716 MHz) due to overlapping frequency range, same maximum tune-up limit and same channel bandwidth.

9.5.2. ERP/EIRP DATA

GSM850

GSM850 GPRS	<p>UL Verification Services, Inc. High Frequency Substitution Measurement</p> <p>Company: Samsung Project #: 4789746830 Date: 2021-01-18 Test Engineer: 20882 Configuration: EUT, Z-Position Location: Chamber 2 Mode: GPRS 850 MHz Fundamentals</p> <p><u>Test Equipment:</u> Receiving: VULB9163-749, and Chamber 2 SMA Cables Substitution: Dipole 3121_DB4, 8.5m SMA-type Cable</p>																																																																																									
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GSM1900

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WCDMA Band 5

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
826.40	24.55	V	3.0	-0.9	20.56	38.5	-17.9	
826.40	6.72	H	3.0	-0.9	2.73	38.5	-35.8	
836.60	24.58	V	3.1	-0.9	20.61	38.5	-17.9	
836.60	4.51	H	3.1	-0.9	0.55	38.5	-38.0	
846.60	23.39	V	3.1	-0.9	19.44	38.5	-19.1	
846.60	2.91	H	3.1	-0.9	-1.04	38.5	-39.5	

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
826.40	24.18	V	3.0	-0.9	20.19	38.5	-18.3	
826.40	6.19	H	3.0	-0.9	2.20	38.5	-36.3	
836.60	24.05	V	3.1	-0.9	20.08	38.5	-18.4	
836.60	2.89	H	3.1	-0.9	-1.07	38.5	-39.6	
846.60	22.91	V	3.1	-0.9	18.96	38.5	-19.5	
846.60	1.93	H	3.1	-0.9	-2.02	38.5	-40.5	

WCDMA Band 4

WCDMA Band 4 REL99	UL Verification Services, Inc. High Frequency Substitution Measurement																																																																																																	
	Company:		Samsung																																																																																															
	Project #:		4789746830																																																																																															
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WCDMA Band 2

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
1852.40	13.89	V	4.5	9.6	18.93	33.0	-14.1	
1852.40	16.86	H	4.5	9.6	21.91	33.0	-11.1	
Mid Ch								
1880.00	14.86	V	4.6	9.4	19.67	33.0	-13.3	
1880.00	16.76	H	4.6	9.4	21.57	33.0	-11.4	
High Ch								
1907.60	15.00	V	4.6	9.2	19.55	33.0	-13.5	
1907.60	17.47	H	4.6	9.2	22.02	33.0	-11.0	

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
1852.40	10.88	V	4.5	9.6	15.92	33.0	-17.1	
1852.40	14.03	H	4.5	9.6	19.08	33.0	-13.9	
Mid Ch								
1880.00	11.61	V	4.6	9.4	16.42	33.0	-16.6	
1880.00	13.74	H	4.6	9.4	18.55	33.0	-14.5	
High Ch								
1907.60	11.98	V	4.6	9.2	16.53	33.0	-16.5	
1907.60	14.30	H	4.6	9.2	18.85	33.0	-14.2	

LTE Band 2

LTE Band 2 20MHz QPSK	UL Verification Services, Inc. High Frequency Substitution Measurement																																																																																																	
	Company: Samsung																																																																																																	
	Project #: 4789746830																																																																																																	
	Date: 2020-12-21																																																																																																	
	Test Engineer: 20881																																																																																																	
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	Low Ch								
	1855.00	14.55	V	4.5	9.6	19.60	33.0	-13.4	
	1855.00	17.36	H	4.5	9.6	22.41	33.0	-10.6	
	Mid Ch								
	1880.00	15.02	V	4.6	9.4	19.81	33.0	-13.2	
	1880.00	17.92	H	4.6	9.4	22.71	33.0	-10.3	
High Ch									
1905.00	15.75	V	4.6	9.1	20.27	33.0	-12.7		
1905.00	18.47	H	4.6	9.1	23.00	33.0	-10.0		
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	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	Low Ch								
	1855.00	13.44	V	4.5	9.6	18.49	33.0	-14.5	
	1855.00	16.61	H	4.5	9.6	21.66	33.0	-11.3	
	Mid Ch								
	1880.00	13.94	V	4.6	9.4	18.73	33.0	-14.3	
	1880.00	16.99	H	4.6	9.4	21.78	33.0	-11.2	
High Ch									
1905.00	14.54	V	4.6	9.1	19.06	33.0	-13.9		
1905.00	17.37	H	4.6	9.1	21.90	33.0	-11.1		

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LTE Band 2 1.4MHz QPSK	UL Verification Services, Inc. High Frequency Substitution Measurement								
	Company: Samsung Project #: 4789746830 Date: 2020-12-21 Test Engineer: 22943 Configuration: EUT, X-Position Location: Chamber 2 Mode: LTE_QPSK Band 2 Fundamentals, 1.4MHz Bandwidth								
	Test Equipment: Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables Substitution: Horn 3115[00161451], 8.5m SMA-type Cable								
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	Low Ch								
	1850.70	14.15	V	4.5	9.6	19.25	33.0	-13.8	
	1850.70	17.16	H	4.5	9.6	22.27	33.0	-10.7	
	Mid Ch								
	1880.00	14.93	V	4.6	9.4	19.72	33.0	-13.3	
	1880.00	17.60	H	4.6	9.4	22.39	33.0	-10.6	
High Ch									
1909.30	15.05	V	4.6	9.1	19.51	33.0	-13.5		
1909.30	18.24	H	4.6	9.1	22.70	33.0	-10.3		
LTE Band 2 1.4MHz 16QAM	UL Verification Services, Inc. High Frequency Substitution Measurement								
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	Test Equipment: Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables Substitution: Horn 3115[00161451], 8.5m SMA-type Cable								
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	Low Ch								
	1850.70	13.01	V	4.5	9.6	18.11	33.0	-14.9	
	1850.70	16.04	H	4.5	9.6	21.15	33.0	-11.9	
	Mid Ch								
	1880.00	13.71	V	4.6	9.4	18.50	33.0	-14.5	
	1880.00	16.01	H	4.6	9.4	20.80	33.0	-12.2	
High Ch									
1909.30	14.00	V	4.6	9.1	18.46	33.0	-14.5		
1909.30	16.95	H	4.6	9.1	21.41	33.0	-11.6		

LTE Band 12

LTE Band 12 10MHz QPSK	UL Verification Services, Inc. High Frequency Substitution Measurement																																																																																																
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	Test Engineer:		20882																																																																																														
	Configuration:		EUT, Z-Position																																																																																														
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	Mode:		LTE_QPSK Band 12 Fundamentals, 10MHz Bandwidth																																																																																														
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LTE Band 26 (Part 90)

LTE Band 26 15MHz QPSK	UL Verification Services, Inc. High Frequency Substitution Measurement																																				
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LTE Band 26 10MHz QPSK	UL Verification Services, Inc. High Frequency Substitution Measurement																																											
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LTE Band 26 5MHz QPSK	UL Verification Services, Inc. High Frequency Substitution Measurement								
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	MHz	(dBm)	(H/V)	(dB)	(dBd)	(dBm)	(dBm)	(dB)	
	Low Ch								
	816.50	23.56	V	3.0	-1.0	19.55	50.0	-30.5	Part 90
	816.50	5.73	H	3.0	-1.0	1.72	50.0	-48.3	Part 90
	Mid Ch								
	821.50	23.86	V	3.0	-1.0	19.85	50.0	-30.1	Part 90
	821.50	5.64	H	3.0	-1.0	1.63	50.0	-48.4	Part 90
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	MHz	(dBm)	(H/V)	(dB)	(dBd)	(dBm)	(dBm)	(dB)	
	Low Ch								
	816.50	22.88	V	3.0	-1.0	18.87	50.0	-31.1	Part 90
	816.50	5.32	H	3.0	-1.0	1.31	50.0	-48.7	Part 90
	Mid Ch								
	821.50	22.96	V	3.0	-1.0	18.95	50.0	-31.0	Part 90
	821.50	5.12	H	3.0	-1.0	1.11	50.0	-48.9	Part 90

LTE Band 26 3MHz QPSK	UL Verification Services, Inc. High Frequency Substitution Measurement																																																																						
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	MHz	(dBm)	(H/V)	(dB)	(dBd)	(dBm)	(dBm)	(dB)	
	Low Ch								
	814.70	23.38	V	3.0	-1.0	19.36	50.0	-30.6	Part 90
	814.70	5.87	H	3.0	-1.0	1.85	50.0	-48.2	Part 90
	Mid Ch								
	823.30	24.05	V	3.0	-1.0	20.05	50.0	-29.9	Part 90
	823.30	5.84	H	3.0	-1.0	1.84	50.0	-48.2	Part 90
LTE Band 26 1.4MHz 16QAM	UL Verification Services, Inc. High Frequency Substitution Measurement								
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	MHz	(dBm)	(H/V)	(dB)	(dBd)	(dBm)	(dBm)	(dB)	
	Low Ch								
	814.70	22.71	V	3.0	-1.0	18.69	50.0	-31.3	Part 90
	814.70	5.26	H	3.0	-1.0	1.24	50.0	-48.8	Part 90
	Mid Ch								
	823.30	23.48	V	3.0	-1.0	19.48	50.0	-30.5	Part 90
	823.30	4.96	H	3.0	-1.0	0.96	50.0	-49.0	Part 90

LTE Band 26 (Straddle Channel)

LTE Band 26 15MHz QPSK	UL Verification Services, Inc. High Frequency Substitution Measurement																																			
	<p> Company: Samsung Project #: 4789746830 Date: 2021-02-04 Test Engineer: 22943 Configuration: EUT, Z-Position Location: Chamber 2 Mode: LTE_QPSK Band 26 Fundamentals, 15MHz Bandwidth </p> <p> Test Equipment: Receiving: VULB9163-749, and Chamber 2 SMA Cables Substitution: Dipole 3121_DB4, 8.5m SMA-type Cable </p> <table border="1"> <thead> <tr> <th>f MHz</th> <th>SG reading (dBm)</th> <th>Ant. Pol. (H/V)</th> <th>Cable Loss (dB)</th> <th>Antenna Gain (dBd)</th> <th>ERP (dBm)</th> <th>Limit (dBm)</th> <th>Delta (dB)</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td colspan="9">Straddle Ch</td> </tr> <tr> <td>824.00</td> <td>24.23</td> <td>V</td> <td>3.0</td> <td>-1.0</td> <td>20.24</td> <td>38.5</td> <td>-18.3</td> <td></td> </tr> <tr> <td>824.00</td> <td>4.53</td> <td>H</td> <td>3.0</td> <td>-1.0</td> <td>0.53</td> <td>38.5</td> <td>-38.0</td> <td></td> </tr> </tbody> </table>	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes	Straddle Ch									824.00	24.23	V	3.0	-1.0	20.24	38.5	-18.3		824.00	4.53	H	3.0	-1.0	0.53	38.5	-38.0
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LTE Band 26 10MHz QPSK	UL Verification Services, Inc. High Frequency Substitution Measurement																																											
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LTE Band 26 (Part 22)

LTE Band 26 15MHz QPSK	UL Verification Services, Inc. High Frequency Substitution Measurement																																																														
	<p> Company: Samsung Project #: 4789746830 Date: 2020-12-28 Test Engineer: 20881 Configuration: EUT, Z-Position Location: Chamber 1 Mode: LTE_QPSK Band 26 Fundamentals, 15MHz Bandwidth </p> <p> Test Equipment: Receiving: VULB9163-750, and Chamber 1 SMA Cables Substitution: Dipole 3121_DB4, 8.5m SMA-type Cable </p> <table border="1"> <thead> <tr> <th>f MHz</th> <th>SG reading (dBm)</th> <th>Ant. Pol. (H/V)</th> <th>Cable Loss (dB)</th> <th>Antenna Gain (dBd)</th> <th>ERP (dBm)</th> <th>Limit (dBm)</th> <th>Delta (dB)</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td colspan="9">Mid Ch</td> </tr> <tr> <td>831.50</td> <td>25.18</td> <td>V</td> <td>3.1</td> <td>-0.9</td> <td>21.20</td> <td>38.5</td> <td>-17.3</td> <td></td> </tr> <tr> <td>831.50</td> <td>5.40</td> <td>H</td> <td>3.1</td> <td>-0.9</td> <td>1.42</td> <td>38.5</td> <td>-37.1</td> <td></td> </tr> <tr> <td colspan="9">High Ch</td> </tr> <tr> <td>841.50</td> <td>23.92</td> <td>V</td> <td>3.1</td> <td>-0.9</td> <td>19.96</td> <td>38.5</td> <td>-18.5</td> <td></td> </tr> <tr> <td>841.50</td> <td>3.84</td> <td>H</td> <td>3.1</td> <td>-0.9</td> <td>-0.12</td> <td>38.5</td> <td>-38.6</td> <td></td> </tr> </tbody> </table>	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes	Mid Ch									831.50	25.18	V	3.1	-0.9	21.20	38.5	-17.3		831.50	5.40	H	3.1	-0.9	1.42	38.5	-37.1		High Ch									841.50	23.92	V	3.1	-0.9	19.96	38.5	-18.5		841.50	3.84	H	3.1	-0.9	-0.12	38.5	-38.6
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826.50	24.48	V	3.0	-0.9	20.49	38.5	-18.0																																																																																											
826.50	3.70	H	3.0	-0.9	-0.30	38.5	-38.8																																																																																											
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831.50	24.87	V	3.1	-0.9	20.89	38.5	-17.6																																																																																											
831.50	5.00	H	3.1	-0.9	1.02	38.5	-37.5																																																																																											
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846.50	23.01	V	3.1	-0.9	19.07	38.5	-19.4																																																																																											
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824.70	4.97	H	3.0	-1.0	0.97	38.5	-37.5																																																																																											
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831.50	24.35	V	3.1	-0.9	20.37	38.5	-18.1																																																																																											
831.50	2.72	H	3.1	-0.9	-1.26	38.5	-39.8																																																																																											
High Ch																																																																																																		
848.30	22.06	V	3.1	-0.9	18.12	38.5	-20.4																																																																																											
848.30	2.07	H	3.1	-0.9	-1.87	38.5	-40.4																																																																																											

LTE Band 41

LTE Band 41 20MHz QPSK	UL Verification Services, Inc. High Frequency Substitution Measurement								
	Company:		Samsung						
	Project #:		4789746830						
	Date:		2020-12-24						
	Test Engineer:		22943						
	Configuration:		EUT, Y-Position						
	Location:		Chamber 2						
	Mode:		LTE_QPSK Band 41 Fundamentals, 20MHz Bandwidth						
	Test Equipment:								
	Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables Substitution: Horn 3115[00161451], 8.5m SMA-type Cable								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	
Low Ch									
2506.00	15.31	V	5.3	10.2	20.21	33.0	-12.8		
2506.00	15.38	H	5.3	10.2	20.29	33.0	-12.7		
Mid Ch									
2593.00	16.71	V	5.4	10.1	21.45	33.0	-11.6		
2593.00	16.90	H	5.4	10.1	21.64	33.0	-11.4		
High Ch									
2680.00	16.15	V	5.5	10.2	20.85	33.0	-12.1		
2680.00	15.80	H	5.5	10.2	20.51	33.0	-12.5		

LTE Band 41 20MHz 16QAM	UL Verification Services, Inc. High Frequency Substitution Measurement								
	Company:		Samsung						
	Project #:		4789746830						
	Date:		2020-12-24						
	Test Engineer:		22943						
	Configuration:		EUT, Y-Position						
	Location:		Chamber 2						
	Mode:		LTE_16QAM Band 41 Fundamentals, 20MHz Bandwidth						
	Test Equipment:								
	Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables Substitution: Horn 3115[00161451], 8.5m SMA-type Cable								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	
Low Ch									
2506.00	14.74	V	5.3	10.2	19.64	33.0	-13.4		
2506.00	14.76	H	5.3	10.2	19.67	33.0	-13.3		
Mid Ch									
2593.00	16.35	V	5.4	10.1	21.09	33.0	-11.9		
2593.00	16.36	H	5.4	10.1	21.10	33.0	-11.9		
High Ch									
2680.00	15.06	V	5.5	10.2	19.76	33.0	-13.2		
2680.00	14.76	H	5.5	10.2	19.47	33.0	-13.5		

LTE Band 41 15MHz QPSK	UL Verification Services, Inc. High Frequency Substitution Measurement																																																																																																	
	Company: Samsung																																																																																																	
	Project #: 4789746830																																																																																																	
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	Test Engineer: 22943																																																																																																	
	Configuration: EUT, Y-Position																																																																																																	
	Location: Chamber 2																																																																																																	
	Mode: LTE_QPSK Band 41 Fundamentals, 15MHz Bandwidth																																																																																																	
	Test Equipment: Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables Substitution: Horn 3115[00161451], 8.5m SMA-type Cable																																																																																																	
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f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes																																																																																										
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LTE Band 41 10MHz QPSK	UL Verification Services, Inc. High Frequency Substitution Measurement								
	Company: Samsung Project #: 4789746830 Date: 2020-12-24 Test Engineer: 22943 Configuration: EUT, Y-Position Location: Chamber 2 Mode: LTE_QPSK Band 41 Fundamentals, 10MHz Bandwidth								
	Test Equipment: Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables Substitution: Horn 3115[00161451], 8.5m SMA-type Cable								
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	Low Ch								
	2501.00	15.23	V	5.3	10.2	20.15	33.0	-12.9	
	2501.00	15.40	H	5.3	10.2	20.32	33.0	-12.7	
	Mid Ch								
	2593.00	16.87	V	5.4	10.1	21.61	33.0	-11.4	
	2593.00	16.90	H	5.4	10.1	21.64	33.0	-11.4	
High Ch									
2685.00	16.53	V	5.5	10.2	21.24	33.0	-11.8		
2685.00	16.16	H	5.5	10.2	20.86	33.0	-12.1		
LTE Band 41 10MHz 16QAM	UL Verification Services, Inc. High Frequency Substitution Measurement								
	Company: Samsung Project #: 4789746830 Date: 2020-12-24 Test Engineer: 22943 Configuration: EUT, Y-Position Location: Chamber 2 Mode: LTE_16QAM Band 41 Fundamentals, 10MHz Bandwidth								
	Test Equipment: Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables Substitution: Horn 3115[00161451], 8.5m SMA-type Cable								
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	Low Ch								
	2501.00	14.90	V	5.3	10.2	19.82	33.0	-13.2	
	2501.00	15.07	H	5.3	10.2	19.99	33.0	-13.0	
	Mid Ch								
	2593.00	16.42	V	5.4	10.1	21.16	33.0	-11.8	
	2593.00	16.47	H	5.4	10.1	21.21	33.0	-11.8	
High Ch									
2685.00	15.65	V	5.5	10.2	20.36	33.0	-12.6		
2685.00	15.29	H	5.5	10.2	19.99	33.0	-13.0		

LTE Band 41 5MHz QPSK	UL Verification Services, Inc. High Frequency Substitution Measurement																																																																																																	
	Company: Samsung																																																																																																	
	Project #: 4789746830																																																																																																	
	Date: 2020-12-28																																																																																																	
	Test Engineer: 20881																																																																																																	
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2593.00	16.31	V	5.4	10.1	21.05	33.0	-12.0																																																																																											
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2687.50	15.82	V	5.5	10.2	20.54	33.0	-12.5																																																																																											
2687.50	13.00	H	5.5	10.2	17.72	33.0	-15.3																																																																																											

LTE Band 66

LTE Band 66 20MHz QPSK	UL Verification Services, Inc. High Frequency Substitution Measurement																																																																																																	
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	Configuration: EUT / X-Position																																																																																																	
	Location: Chamber 2																																																																																																	
	Mode: LTE_QPSK Band 66 Fundamentals, 1.4MHz Bandwidth																																																																																																	
	Test Equipment: Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables Substitution: Horn 3115[00161451], 8.5m SMA-type Cable																																																																																																	
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	Company: Samsung																																																																																																	
	Project #: 4789746830																																																																																																	
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9.6. FIELD STRENGTH OF SPURIOUS RADIATION

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:

(f) For operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band 1559-1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth.

(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 than $43 + 10 \log (P)$ 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.

Part 90.691(a):

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

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

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

TEST PROCEDURE

ANSI / TIA / EIA 603 E Clause 2.2.12; ESU40 setting reference to 971168 D01 v03r01

For peak power measurement with a ESU40:

- a) Set the RBW = 100 kHz for emission below 1GHz and 1MHz for emissions above 1GHz
- b) Set VBW $\geq 3 \times$ RBW;
- c) Set span ≥ 1.5 times the OBW;
- d) Sweep time = auto couple;
- e) Detector = rms;
- f) Ensure that the number of measurement points \geq span/RBW;
- g) Trace mode = average(WCDMA, LTE), Max hold(GSM, LTE Band41)

RESULTS

See the following pages.

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

9.6.1. SPURIOUS RADIATION PLOTS

GSM850

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
Company:		Samsung							
Project #:		4789746830							
Date:		2021-01-18							
Test Engineer:		20882							
Configuration:		EUT, Y-Position							
Location:		Chamber 2							
Mode:		GPRS 850 MHz Harmonics							
Test Voltage:		AC 120 V, 60 Hz							
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 824.2MHz									
1648.40	8.2	V	3.0	40.7	1.0	-31.5	-13.0	-18.5	
2472.60	18.0	V	3.0	41.3	1.0	-22.3	-13.0	-9.3	
3296.80	4.7	V	3.0	42.1	1.0	-36.3	-13.0	-23.3	
4121.00	3.7	V	3.0	42.2	1.0	-37.5	-13.0	-24.5	
4945.20	1.3	V	3.0	42.8	1.0	-40.5	-13.0	-27.5	
1648.40	13.7	H	3.0	40.7	1.0	-26.0	-13.0	-13.0	
2472.60	14.9	H	3.0	41.3	1.0	-25.4	-13.0	-12.4	
3296.80	8.3	H	3.0	42.1	1.0	-32.8	-13.0	-19.8	
4121.00	3.7	H	3.0	42.2	1.0	-37.5	-13.0	-24.5	
4945.20	0.8	H	3.0	42.8	1.0	-41.0	-13.0	-28.0	
Mid Ch, 836.6MHz									
1673.20	9.4	V	3.0	40.7	1.0	-30.3	-13.0	-17.3	
2509.80	16.6	V	3.0	41.4	1.0	-23.8	-13.0	-10.8	
3346.40	9.0	V	3.0	42.1	1.0	-32.1	-13.0	-19.1	
4183.00	2.9	V	3.0	42.2	1.0	-38.3	-13.0	-25.3	
5019.60	4.3	V	3.0	42.8	1.0	-37.5	-13.0	-24.5	
1673.20	16.3	H	3.0	40.7	1.0	-23.4	-13.0	-10.4	
2509.80	17.6	H	3.0	41.4	1.0	-22.7	-13.0	-9.7	
3346.40	9.1	H	3.0	42.1	1.0	-32.0	-13.0	-19.0	
4183.00	7.2	H	3.0	42.2	1.0	-34.1	-13.0	-21.1	
5019.60	5.2	H	3.0	42.8	1.0	-36.6	-13.0	-23.6	
High Ch, 848.8MHz									
1697.60	6.9	V	3.0	40.7	1.0	-32.8	-13.0	-19.8	
2546.40	20.6	V	3.0	41.4	1.0	-19.8	-13.0	-6.8	
3395.20	6.0	V	3.0	42.1	1.0	-35.1	-13.0	-22.1	
4244.00	1.6	V	3.0	42.3	1.0	-39.7	-13.0	-26.7	
5092.80	5.1	V	3.0	42.8	1.0	-36.7	-13.0	-23.7	
1697.60	14.1	H	3.0	40.7	1.0	-25.6	-13.0	-12.6	
2546.40	18.2	H	3.0	41.4	1.0	-22.2	-13.0	-9.2	
3395.20	8.3	H	3.0	42.1	1.0	-32.7	-13.0	-19.7	
4244.00	3.4	H	3.0	42.3	1.0	-37.9	-13.0	-24.9	
5092.80	5.2	H	3.0	42.8	1.0	-36.6	-13.0	-23.6	

GSM850
GPRS

UL Verification Services, Inc.										
Above 1GHz High Frequency Substitution Measurement										
Company:		Samsung								
Project #:		4789746830								
Date:		2021-01-18								
Test Engineer:		20896								
Configuration:		EUT, Y-Position								
Location:		Chamber 2								
Mode:		EGPRS 850 MHz Harmonics								
Test Voltage:		AC 120 V, 60 Hz								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	
Low Ch, 824.2MHz										
1648.40	-7.3	V	3.0	40.7	1.0	-46.9	-13.0	-33.9		
2472.60	8.7	V	3.0	41.3	1.0	-31.6	-13.0	-18.6		
3296.80	-9.0	V	3.0	42.1	1.0	-50.1	-13.0	-37.1		
4121.00	-9.0	V	3.0	42.2	1.0	-50.2	-13.0	-37.2		
4945.20	-8.2	V	3.0	42.8	1.0	-49.9	-13.0	-36.9		
1648.40	-1.8	H	3.0	40.7	1.0	-41.5	-13.0	-28.5		
2472.60	6.5	H	3.0	41.3	1.0	-33.8	-13.0	-20.8		
3296.80	-8.4	H	3.0	42.1	1.0	-49.5	-13.0	-36.5		
4121.00	-7.5	H	3.0	42.2	1.0	-48.7	-13.0	-35.7		
4945.20	-7.5	H	3.0	42.8	1.0	-49.3	-13.0	-36.3		
Mid Ch, 836.6MHz										
1673.20	-7.8	V	3.0	40.7	1.0	-47.5	-13.0	-34.5		
2509.80	11.6	V	3.0	41.4	1.0	-28.8	-13.0	-15.8		
3346.40	-8.3	V	3.0	42.1	1.0	-49.3	-13.0	-36.3		
4183.00	-9.6	V	3.0	42.2	1.0	-50.8	-13.0	-37.8		
5019.60	-7.7	V	3.0	42.8	1.0	-49.5	-13.0	-36.5		
1673.20	-1.2	H	3.0	40.7	1.0	-40.9	-13.0	-27.9		
2509.80	7.0	H	3.0	41.4	1.0	-33.3	-13.0	-20.3		
3346.40	-8.5	H	3.0	42.1	1.0	-49.6	-13.0	-36.6		
4183.00	-7.8	H	3.0	42.2	1.0	-49.0	-13.0	-36.0		
5019.60	-7.4	H	3.0	42.8	1.0	-49.2	-13.0	-36.2		
High Ch, 848.8MHz										
1697.60	-9.2	V	3.0	40.7	1.0	-48.9	-13.0	-35.9		
2546.40	11.8	V	3.0	41.4	1.0	-28.6	-13.0	-15.6		
3395.20	-8.9	V	3.0	42.1	1.0	-49.9	-13.0	-36.9		
4244.00	-8.7	V	3.0	42.3	1.0	-50.0	-13.0	-37.0		
5092.80	-7.9	V	3.0	42.8	1.0	-49.7	-13.0	-36.7		
1697.60	-2.7	H	3.0	40.7	1.0	-42.4	-13.0	-29.4		
2546.40	10.4	H	3.0	41.4	1.0	-30.0	-13.0	-17.0		
3395.20	-8.8	H	3.0	42.1	1.0	-49.9	-13.0	-36.9		
4244.00	-7.2	H	3.0	42.3	1.0	-48.5	-13.0	-35.5		
5092.80	-7.6	H	3.0	42.8	1.0	-49.4	-13.0	-36.4		

GSM850
EGPRS

GSM1900

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
Company:		Samsung							
Project #:		4789746830							
Date:		2021-01-25							
Test Engineer:		20896							
Configuration:		EUT / AC Adapter / Earphone, X-Position							
Location:		Chamber 1							
Mode:		GPRS 1900 MHz Harmonics							
Test Voltage:		AC 120 V, 60 Hz							
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1850.2MHz									
3700.40	-0.8	V	3.0	45.5	1.0	-45.2	-13.0	-32.2	
5550.60	-3.1	V	3.0	45.4	1.0	-47.5	-13.0	-34.5	
7400.80	-2.8	V	3.0	44.2	1.0	-46.0	-13.0	-33.0	
3700.40	2.0	H	3.0	45.5	1.0	-42.5	-13.0	-29.5	
5550.60	1.3	H	3.0	45.4	1.0	-43.1	-13.0	-30.1	
7400.80	-3.2	H	3.0	44.2	1.0	-46.4	-13.0	-33.4	
Mid Ch, 1880MHz									
3760.00	0.0	V	3.0	45.5	1.0	-44.4	-13.0	-31.4	
5640.00	7.5	V	3.0	45.4	1.0	-36.9	-13.0	-23.9	
7520.00	-3.4	V	3.0	44.1	1.0	-46.5	-13.0	-33.5	
3760.00	1.5	H	3.0	45.5	1.0	-43.0	-13.0	-30.0	
5640.00	4.5	H	3.0	45.4	1.0	-39.9	-13.0	-26.9	
7520.00	-3.5	H	3.0	44.1	1.0	-46.6	-13.0	-33.6	
High Ch, 1909.8MHz									
3819.60	6.9	V	3.0	45.5	1.0	-37.6	-13.0	-24.6	
5729.40	17.3	V	3.0	45.4	1.0	-27.0	-13.0	-14.0	
7639.20	0.7	V	3.0	44.1	1.0	-42.3	-13.0	-29.3	
3819.60	10.2	H	3.0	45.5	1.0	-34.3	-13.0	-21.3	
5729.40	12.4	H	3.0	45.4	1.0	-32.0	-13.0	-19.0	
7639.20	0.9	H	3.0	44.1	1.0	-42.2	-13.0	-29.2	

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
Company:		Samsung							
Project #:		4789746830							
Date:		2021-01-25							
Test Engineer:		20896							
Configuration:		EUT / AC Adapter / Earphone, X-Position							
Location:		Chamber 1							
Mode:		EGPRS 1900 MHz Harmonics							
Test Voltage:		AC 120 V, 60 Hz							
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1850.2MHz									
3700.40	-10.3	V	3.0	45.5	1.0	-54.7	-13.0	-41.7	
5550.60	-7.7	V	3.0	45.4	1.0	-52.1	-13.0	-39.1	
7400.80	-4.9	V	3.0	44.2	1.0	-48.1	-13.0	-35.1	
3700.40	-9.7	H	3.0	45.5	1.0	-54.1	-13.0	-41.1	
5550.60	-7.5	H	3.0	45.4	1.0	-51.9	-13.0	-38.9	
7400.80	-2.8	H	3.0	44.2	1.0	-46.0	-13.0	-33.0	
Mid Ch, 1880MHz									
3760.00	-9.1	V	3.0	45.5	1.0	-53.6	-13.0	-40.6	
5640.00	-4.0	V	3.0	45.4	1.0	-48.4	-13.0	-35.4	
7520.00	-4.8	V	3.0	44.1	1.0	-48.0	-13.0	-35.0	
3760.00	-9.7	H	3.0	45.5	1.0	-54.2	-13.0	-41.2	
5640.00	-6.2	H	3.0	45.4	1.0	-50.5	-13.0	-37.5	
7520.00	-4.2	H	3.0	44.1	1.0	-47.4	-13.0	-34.4	
High Ch, 1909.8MHz									
3819.60	-4.3	V	3.0	45.5	1.0	-48.8	-13.0	-35.8	
5729.40	7.8	V	3.0	45.4	1.0	-36.6	-13.0	-23.6	
7639.20	-4.5	V	3.0	44.1	1.0	-47.6	-13.0	-34.6	
3819.60	-1.5	H	3.0	45.5	1.0	-46.0	-13.0	-33.0	
5729.40	3.3	H	3.0	45.4	1.0	-41.1	-13.0	-28.1	
7639.20	-4.3	H	3.0	44.1	1.0	-47.4	-13.0	-34.4	

WCDMA Band 5

		UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement								
		Company:	Samsung							
		Project #:	4789746830							
		Date:	2021-01-19							
		Test Engineer:	20896							
		Configuration:	EUT, Y-Position							
		Location:	Chamber 2							
		Mode:	Rel99 Band 5 Harmonics							
		Test Voltage:	AC 120 V, 60 Hz							
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	
WCDMA										
Band 5										
REL99										
Low Ch, 826.4MHz										
1652.80	-13.7	V	3.0	40.7	1.0	-53.4	-13.0	-40.4		
2479.20	-1.8	V	3.0	41.3	1.0	-42.2	-13.0	-29.2		
3305.60	-10.2	V	3.0	42.1	1.0	-51.2	-13.0	-38.2		
1652.80	-10.5	H	3.0	40.7	1.0	-50.2	-13.0	-37.2		
2479.20	-3.6	H	3.0	41.3	1.0	-43.9	-13.0	-30.9		
3305.60	-10.1	H	3.0	42.1	1.0	-51.2	-13.0	-38.2		
Mid Ch, 836.6MHz										
1673.20	-13.9	V	3.0	40.7	1.0	-53.5	-13.0	-40.5		
2509.80	-1.8	V	3.0	41.4	1.0	-42.2	-13.0	-29.2		
3346.40	-9.9	V	3.0	42.1	1.0	-51.0	-13.0	-38.0		
1673.20	-11.3	H	3.0	40.7	1.0	-51.0	-13.0	-38.0		
2509.80	-4.9	H	3.0	41.4	1.0	-45.2	-13.0	-32.2		
3346.40	-9.8	H	3.0	42.1	1.0	-50.9	-13.0	-37.9		
High Ch, 846.6MHz										
1693.20	-14.6	V	3.0	40.7	1.0	-54.3	-13.0	-41.3		
2539.80	-1.9	V	3.0	41.4	1.0	-42.3	-13.0	-29.3		
3386.40	-10.0	V	3.0	42.1	1.0	-51.1	-13.0	-38.1		
1693.20	-13.4	H	3.0	40.7	1.0	-53.1	-13.0	-40.1		
2539.80	-3.7	H	3.0	41.4	1.0	-44.1	-13.0	-31.1		
3386.40	-9.9	H	3.0	42.1	1.0	-51.0	-13.0	-38.0		
UL Verification Services, Inc.										
Above 1GHz High Frequency Substitution Measurement										
		Company:	Samsung							
		Project #:	4789746830							
		Date:	2021-01-19							
		Test Engineer:	20881							
		Configuration:	EUT, Y-Position							
		Location:	Chamber 2							
		Mode:	HSDPA Band 5 Harmonics							
		Test Voltage:	AC 120 V, 60 Hz							
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	
WCDMA										
Band 5										
HSDPA										
Low Ch, 826.4MHz										
1652.80	-14.3	V	3.0	40.7	1.0	-54.0	-13.0	-41.0		
2479.20	-12.7	V	3.0	41.3	1.0	-53.1	-13.0	-40.1		
3305.60	-10.2	V	3.0	42.1	1.0	-51.2	-13.0	-38.2		
1652.80	-11.6	H	3.0	40.7	1.0	-51.3	-13.0	-38.3		
2479.20	-12.4	H	3.0	41.3	1.0	-52.7	-13.0	-39.7		
3305.60	-10.1	H	3.0	42.1	1.0	-51.1	-13.0	-38.1		
Mid Ch, 836.6MHz										
1673.20	-14.6	V	3.0	40.7	1.0	-54.3	-13.0	-41.3		
2509.80	-12.7	V	3.0	41.4	1.0	-53.0	-13.0	-40.0		
3346.40	-9.9	V	3.0	42.1	1.0	-50.9	-13.0	-37.9		
1673.20	-12.7	H	3.0	40.7	1.0	-52.4	-13.0	-39.4		
2509.80	-12.4	H	3.0	41.4	1.0	-52.8	-13.0	-39.8		
3346.40	-9.8	H	3.0	42.1	1.0	-50.9	-13.0	-37.9		
High Ch, 846.6MHz										
1693.20	-15.2	V	3.0	40.7	1.0	-54.9	-13.0	-41.9		
2539.80	-12.9	V	3.0	41.4	1.0	-53.3	-13.0	-40.3		
3386.40	-10.0	V	3.0	42.1	1.0	-51.1	-13.0	-38.1		
1693.20	-14.2	H	3.0	40.7	1.0	-53.9	-13.0	-40.9		
2539.80	-12.3	H	3.0	41.4	1.0	-52.7	-13.0	-39.7		
3386.40	-9.9	H	3.0	42.1	1.0	-51.0	-13.0	-38.0		

WCDMA Band 4

		UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement								
		Company:	Samsung							
		Project #:	4789746830							
		Date:	2021-01-19							
		Test Engineer:	20881							
		Configuration:	EUT, Y-Position							
		Location:	Chamber 2							
		Mode:	Rel99 Band 4 Harmonics							
		Test Voltage:	AC 120 V, 60 Hz							
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	
Low Ch, 1712.4MHz										
3424.80	9.8	V	3.0	42.1	1.0	-31.3	-13.0	-18.3		
5137.20	1.5	V	3.0	42.8	1.0	-40.3	-13.0	-27.3		
6849.60	-6.3	V	3.0	42.7	1.0	-48.0	-13.0	-35.0		
3424.80	7.2	H	3.0	42.1	1.0	-33.9	-13.0	-20.9		
5137.20	2.3	H	3.0	42.8	1.0	-39.5	-13.0	-26.5		
6849.60	-5.6	H	3.0	42.7	1.0	-47.4	-13.0	-34.4		
Mid Ch, 1732.6MHz										
3465.20	10.2	V	3.0	42.1	1.0	-30.9	-13.0	-17.9		
5197.80	-0.5	V	3.0	42.8	1.0	-42.3	-13.0	-29.3		
6930.40	-5.8	V	3.0	42.7	1.0	-47.5	-13.0	-34.5		
3465.20	9.0	H	3.0	42.1	1.0	-32.1	-13.0	-19.1		
5197.80	1.4	H	3.0	42.8	1.0	-40.4	-13.0	-27.4		
6930.40	-5.8	H	3.0	42.7	1.0	-47.5	-13.0	-34.5		
High Ch, 1752.6MHz										
3505.20	15.3	V	3.0	42.1	1.0	-25.7	-13.0	-12.7		
5257.80	3.1	V	3.0	42.8	1.0	-38.8	-13.0	-25.8		
7010.40	-4.9	V	3.0	42.7	1.0	-46.6	-13.0	-33.6		
3505.20	13.6	H	3.0	42.1	1.0	-27.5	-13.0	-14.5		
5257.80	-0.4	H	3.0	42.8	1.0	-42.3	-13.0	-29.3		
7010.40	-5.3	H	3.0	42.7	1.0	-47.0	-13.0	-34.0		

		UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement								
		Company:	Samsung							
		Project #:	4789746830							
		Date:	2021-01-19							
		Test Engineer:	20881							
		Configuration:	EUT, Y-Position							
		Location:	Chamber 2							
		Mode:	HSDPA Band 4 Harmonics							
		Test Voltage:	AC 120 V, 60 Hz							
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	
Low Ch, 1712.4MHz										
3424.80	5.9	V	3.0	42.1	1.0	-35.2	-13.0	-22.2		
5137.20	0.3	V	3.0	42.8	1.0	-41.5	-13.0	-28.5		
6849.60	-5.6	V	3.0	42.7	1.0	-47.3	-13.0	-34.3		
3424.80	3.2	H	3.0	42.1	1.0	-37.8	-13.0	-24.8		
5137.20	-0.2	H	3.0	42.8	1.0	-42.0	-13.0	-29.0		
6849.60	-5.9	H	3.0	42.7	1.0	-47.6	-13.0	-34.6		
Mid Ch, 1732.6MHz										
3465.20	6.4	V	3.0	42.1	1.0	-34.7	-13.0	-21.7		
5197.80	-0.8	V	3.0	42.8	1.0	-42.6	-13.0	-29.6		
6930.40	-6.1	V	3.0	42.7	1.0	-47.9	-13.0	-34.9		
3465.20	5.7	H	3.0	42.1	1.0	-35.4	-13.0	-22.4		
5197.80	-0.7	H	3.0	42.8	1.0	-42.5	-13.0	-29.5		
6930.40	-5.7	H	3.0	42.7	1.0	-47.4	-13.0	-34.4		
High Ch, 1752.6MHz										
3505.20	12.8	V	3.0	42.1	1.0	-28.2	-13.0	-15.2		
5257.80	1.4	V	3.0	42.8	1.0	-40.5	-13.0	-27.5		
7010.40	-3.0	V	3.0	42.7	1.0	-44.7	-13.0	-31.7		
3505.20	9.0	H	3.0	42.1	1.0	-32.1	-13.0	-19.1		
5257.80	-4.9	H	3.0	42.8	1.0	-46.7	-13.0	-33.7		
7010.40	-5.6	H	3.0	42.7	1.0	-47.3	-13.0	-34.3		

WCDMA Band 2

		UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement								
		Company:	Samsung							
		Project #:	4789746830							
		Date:	2021-01-18							
		Test Engineer:	20881							
		Configuration:	EUT / AC Adapter/ Earphone, Z-Position							
		Location:	Chamber 1							
		Mode:	Rel99 Band 2 Harmonics							
		Test Voltage:	AC 120 V, 60 Hz							
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	
Low Ch, 1852.4MHz										
3704.80	10.0	V	3.0	45.5	1.0	-34.4	-13.0	-21.4		
5557.20	-3.4	V	3.0	45.4	1.0	-47.8	-13.0	-34.8		
7409.60	-5.9	V	3.0	44.2	1.0	-49.1	-13.0	-36.1		
3704.80	6.9	H	3.0	45.5	1.0	-37.5	-13.0	-24.5		
5557.20	-2.7	H	3.0	45.4	1.0	-47.1	-13.0	-34.1		
7409.60	-5.5	H	3.0	44.2	1.0	-48.7	-13.0	-35.7		
Mid Ch, 1880MHz										
3760.00	11.6	V	3.0	45.5	1.0	-32.9	-13.0	-19.9		
5640.00	0.3	V	3.0	45.4	1.0	-44.1	-13.0	-31.1		
7520.00	-5.5	V	3.0	44.1	1.0	-48.6	-13.0	-35.6		
3760.00	7.8	H	3.0	45.5	1.0	-36.7	-13.0	-23.7		
5640.00	0.5	H	3.0	45.4	1.0	-43.9	-13.0	-30.9		
7520.00	-4.8	H	3.0	44.1	1.0	-48.0	-13.0	-35.0		
High Ch, 1907.6MHz										
3815.20	13.4	V	3.0	45.5	1.0	-31.1	-13.0	-18.1		
5722.80	3.1	V	3.0	45.4	1.0	-41.2	-13.0	-28.2		
7630.40	-4.9	V	3.0	44.1	1.0	-48.0	-13.0	-35.0		
3815.20	13.9	H	3.0	45.5	1.0	-30.6	-13.0	-17.6		
5722.80	1.0	H	3.0	45.4	1.0	-43.3	-13.0	-30.3		
7630.40	-4.8	H	3.0	44.1	1.0	-47.9	-13.0	-34.9		

		UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement								
		Company:	Samsung							
		Project #:	4789746830							
		Date:	2021-01-18							
		Test Engineer:	20882							
		Configuration:	EUT / AC Adapter/ Earphone, Z-Position							
		Location:	Chamber 1							
		Mode:	HSDPA Band 2 Harmonics							
		Test Voltage:	AC 120 V, 60 Hz							
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	
Low Ch, 1852.4MHz										
3704.80	0.4	V	3.0	45.5	1.0	-44.0	-13.0	-31.0		
5557.20	-8.6	V	3.0	45.4	1.0	-53.0	-13.0	-40.0		
7409.60	-6.2	V	3.0	44.2	1.0	-49.4	-13.0	-36.4		
3704.80	-6.1	H	3.0	45.5	1.0	-50.5	-13.0	-37.5		
5557.20	-8.2	H	3.0	45.4	1.0	-52.6	-13.0	-39.6		
7409.60	-6.0	H	3.0	44.2	1.0	-49.2	-13.0	-36.2		
Mid Ch, 1880MHz										
3760.00	1.0	V	3.0	45.5	1.0	-43.5	-13.0	-30.5		
5640.00	-8.0	V	3.0	45.4	1.0	-52.4	-13.0	-39.4		
7520.00	-6.0	V	3.0	44.1	1.0	-49.2	-13.0	-36.2		
3760.00	-9.0	H	3.0	45.5	1.0	-53.5	-13.0	-40.5		
5640.00	-8.2	H	3.0	45.4	1.0	-52.6	-13.0	-39.6		
7520.00	-5.8	H	3.0	44.1	1.0	-48.9	-13.0	-35.9		
High Ch, 1907.6MHz										
3815.20	1.7	V	3.0	45.5	1.0	-42.8	-13.0	-29.8		
5722.80	-8.2	V	3.0	45.4	1.0	-52.5	-13.0	-39.5		
7630.40	-5.6	V	3.0	44.1	1.0	-48.7	-13.0	-35.7		
3815.20	-5.9	H	3.0	45.5	1.0	-50.3	-13.0	-37.3		
5722.80	-7.4	H	3.0	45.4	1.0	-51.8	-13.0	-38.8		
7630.40	-5.7	H	3.0	44.1	1.0	-48.8	-13.0	-35.8		

LTE Band 2

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement										
		Company:	Samsung							
		Project #:	4789746830							
		Date:	2021-01-19							
		Test Engineer:	22943							
		Configuration:	EUT / AC Adapter / Earphone, Y-Position							
		Location:	Chamber 1							
		Mode:	LTE_QPSK Band 2 Harmonics, 15MHz Bandwidth							
		Test Voltage:	AC 120 V, 60 Hz							
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	
Low Ch, 1857.5MHz										
3715.00	16.7	V	3.0	45.5	1.0	-27.7	-13.0	-14.7		
5572.50	7.0	V	3.0	45.4	1.0	-37.4	-13.0	-24.4		
7430.00	-4.0	V	3.0	44.2	1.0	-47.1	-13.0	-34.1		
15MHz										
3715.00	17.7	H	3.0	45.5	1.0	-26.8	-13.0	-13.8		
5572.50	7.8	H	3.0	45.4	1.0	-36.6	-13.0	-23.6		
7430.00	-2.7	H	3.0	44.2	1.0	-45.9	-13.0	-32.9		
Mid Ch, 1880MHz										
3760.00	17.0	V	3.0	45.5	1.0	-27.4	-13.0	-14.4		
5640.00	7.8	V	3.0	45.4	1.0	-36.6	-13.0	-23.6		
7520.00	-3.3	V	3.0	44.1	1.0	-46.4	-13.0	-33.4		
3760.00	17.8	H	3.0	45.5	1.0	-26.7	-13.0	-13.7		
5640.00	8.9	H	3.0	45.4	1.0	-35.5	-13.0	-22.5		
7520.00	-2.9	H	3.0	44.1	1.0	-46.1	-13.0	-33.1		
High Ch, 1902.5MHz										
3805.00	17.7	V	3.0	45.5	1.0	-26.8	-13.0	-13.8		
5707.50	9.6	V	3.0	45.4	1.0	-34.8	-13.0	-21.8		
7610.00	-2.4	V	3.0	44.1	1.0	-45.5	-13.0	-32.5		
3805.00	19.7	H	3.0	45.5	1.0	-24.8	-13.0	-11.8		
5707.50	11.7	H	3.0	45.4	1.0	-32.7	-13.0	-19.7		
7610.00	-1.7	H	3.0	44.1	1.0	-44.8	-13.0	-31.8		

LTE Band 12

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
Company:		Samsung							
Project #:		4789746830							
Date:		2021-01-18							
Test Engineer:		20882							
Configuration:		EUT, Z-Position							
Location:		Chamber 1							
Mode:		LTE_QPSK Band 12 Harmonics, 10MHz Bandwidth							
Test Voltage:		AC 120 V, 60 Hz							
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 704MHz									
1408.00	-4.1	V	3.0	45.5	1.0	-48.5	-13.0	-35.5	
2112.00	-5.0	V	3.0	45.0	1.0	-49.0	-13.0	-36.0	
2816.00	-3.6	V	3.0	45.2	1.0	-47.7	-13.0	-34.7	
3520.00	-2.6	V	3.0	45.4	1.0	-47.0	-13.0	-34.0	
4224.00	-5.1	V	3.0	45.5	1.0	-49.6	-13.0	-36.6	
1408.00	-6.7	H	3.0	45.5	1.0	-51.2	-13.0	-38.2	
2112.00	1.3	H	3.0	45.0	1.0	-42.7	-13.0	-29.7	
2816.00	-5.7	H	3.0	45.2	1.0	-49.9	-13.0	-36.9	
3520.00	-2.0	H	3.0	45.4	1.0	-46.4	-13.0	-33.4	
4224.00	0.0	H	3.0	45.5	1.0	-44.5	-13.0	-31.5	
Mid Ch, 707.5MHz									
1415.00	-7.4	V	3.0	45.5	1.0	-51.9	-13.0	-38.9	
2122.50	-4.8	V	3.0	45.0	1.0	-48.8	-13.0	-35.8	
2830.00	-3.3	V	3.0	45.2	1.0	-47.4	-13.0	-34.4	
3537.50	-2.5	V	3.0	45.4	1.0	-46.9	-13.0	-33.9	
4245.00	-4.8	V	3.0	45.5	1.0	-49.3	-13.0	-36.3	
1415.00	-10.6	H	3.0	45.5	1.0	-55.0	-13.0	-42.0	
2122.50	1.4	H	3.0	45.0	1.0	-42.6	-13.0	-29.6	
2830.00	-5.2	H	3.0	45.2	1.0	-49.4	-13.0	-36.4	
3537.50	-2.0	H	3.0	45.4	1.0	-46.4	-13.0	-33.4	
4245.00	-6.6	H	3.0	45.5	1.0	-51.1	-13.0	-38.1	
High Ch, 711MHz									
1422.00	-2.0	V	3.0	45.5	1.0	-46.5	-13.0	-33.5	
2133.00	-5.6	V	3.0	45.0	1.0	-49.6	-13.0	-36.6	
2844.00	-3.7	V	3.0	45.2	1.0	-47.9	-13.0	-34.9	
3555.00	-2.2	V	3.0	45.4	1.0	-46.6	-13.0	-33.6	
4266.00	-6.3	V	3.0	45.5	1.0	-50.8	-13.0	-37.8	
1422.00	-6.0	H	3.0	45.5	1.0	-50.5	-13.0	-37.5	
2133.00	0.1	H	3.0	45.0	1.0	-44.0	-13.0	-31.0	
2844.00	-5.5	H	3.0	45.2	1.0	-49.6	-13.0	-36.6	
3555.00	-3.0	H	3.0	45.4	1.0	-47.4	-13.0	-34.4	
4266.00	-7.5	H	3.0	45.5	1.0	-52.0	-13.0	-39.0	

LTE
 Band 12
 10MHz
 QPSK

LTE Band 26 (Part 90)

LTE Band 26 10MHz QPSK	UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement																																																																																								
	Company:		Samsung																																																																																						
	Project #:		4789746830																																																																																						
	Date:		2021-01-19																																																																																						
	Test Engineer:		20890																																																																																						
	Configuration:		EUT / AC Adapter / Earphone, Y-Position																																																																																						
	Location:		Chamber 1																																																																																						
	Mode:		LTE_QPSK Band 26 Harmonics, 10MHz Bandwidth																																																																																						
	Test Voltage:		AC 120 V, 60 Hz																																																																																						
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3276.00	-9.7	H	3.0	45.3	1.0	-54.0	-13.0	-41.0																																																																																	

LTE Band 26 (Straddle)

LTE Band 26 5MHz QPSK	UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement																																																																																								
	Company:		Samsung																																																																																						
	Project #:		4789746830																																																																																						
	Date:		2021-02-04																																																																																						
	Test Engineer:		22943																																																																																						
	Configuration:		EUT / AC Adapter / Earphone, X-Position																																																																																						
	Location:		Chamber 2																																																																																						
	Mode:		LTE_QPSK Band 26 Harmonics, 5MHz Bandwidth																																																																																						
	Test Voltage:		AC 120 V, 60 Hz																																																																																						
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2472.00	-9.8	V	3.0	41.3	1.0	-50.1	-13.0	-37.1																																																																																	
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2472.00	-7.4	H	3.0	41.3	1.0	-47.7	-13.0	-34.7																																																																																	
3296.00	-10.0	H	3.0	42.1	1.0	-51.1	-13.0	-38.1																																																																																	

LTE Band 26 (Part 22)

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement										
		Company:	Samsung							
		Project #:	4789746830							
		Date:	2021-01-19							
		Test Engineer:	20890							
		Configuration:	EUT / AC Adapter / Earphone, X-Position							
		Location:	Chamber 1							
		Mode:	LTE_QPSK Band 26 Harmonics, 5MHz Bandwidth							
		Test Voltage:	AC 120 V, 60 Hz							
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	
Low Ch, 826.5MHz										
1653.00	1.6	V	3.0	45.3	1.0	-42.7	-13.0	-29.7		
2479.50	-6.0	V	3.0	45.1	1.0	-50.1	-13.0	-37.1		
3306.00	-9.5	V	3.0	45.3	1.0	-53.8	-13.0	-40.8		
5MHz										
1653.00	5.6	H	3.0	45.3	1.0	-38.7	-13.0	-25.7		
2479.50	-3.8	H	3.0	45.1	1.0	-47.9	-13.0	-34.9		
3306.00	-9.3	H	3.0	45.3	1.0	-53.6	-13.0	-40.6		
QPSK										
Mid Ch, 831.5MHz										
1663.00	0.4	V	3.0	45.3	1.0	-43.9	-13.0	-30.9		
2494.50	-5.7	V	3.0	45.1	1.0	-49.8	-13.0	-36.8		
3326.00	-10.0	V	3.0	45.3	1.0	-54.3	-13.0	-41.3		
1663.00	7.1	H	3.0	45.3	1.0	-37.2	-13.0	-24.2		
2494.50	-4.3	H	3.0	45.1	1.0	-48.4	-13.0	-35.4		
3326.00	-9.8	H	3.0	45.3	1.0	-54.1	-13.0	-41.1		
High Ch, 846.5MHz										
1693.00	1.0	V	3.0	45.2	1.0	-43.2	-13.0	-30.2		
2539.50	-7.7	V	3.0	45.1	1.0	-51.8	-13.0	-38.8		
3386.00	-9.2	V	3.0	45.3	1.0	-53.6	-13.0	-40.6		
1693.00	5.5	H	3.0	45.2	1.0	-38.7	-13.0	-25.7		
2539.50	-4.2	H	3.0	45.1	1.0	-48.3	-13.0	-35.3		
3386.00	-8.9	H	3.0	45.3	1.0	-53.3	-13.0	-40.3		

LTE Band 41

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
Company:		Samsung							
Project #:		4789746830							
Date:		2021-01-22							
Test Engineer:		20882							
Configuration:		EUT / AC Adapter / Earphone, Y-Position							
Location:		Chamber 1							
Mode:		LTE_QPSK Band 41 Harmonics, 20MHz Bandwidth							
Test Voltage:		AC 120 V, 60 Hz							
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2506MHz									
5012.00	0.0	V	3.0	45.5	1.0	-44.5	-25.0	-19.5	
7518.00	0.0	V	3.0	44.1	1.0	-43.1	-25.0	-18.1	
10024.00	0.0	V	3.0	42.2	1.0	-41.2	-25.0	-16.2	
12530.00	0.0	V	3.0	43.3	1.0	-42.3	-25.0	-17.3	
15036.00	0.0	V	3.0	45.3	1.0	-44.3	-25.0	-19.3	
5012.00	-3.5	H	3.0	45.5	1.0	-48.0	-25.0	-23.0	
7518.00	0.0	H	3.0	44.1	1.0	-43.1	-25.0	-18.1	
10024.00	0.0	H	3.0	42.2	1.0	-41.2	-25.0	-16.2	
12530.00	0.0	H	3.0	43.3	1.0	-42.3	-25.0	-17.3	
15036.00	0.0	H	3.0	45.3	1.0	-44.3	-25.0	-19.3	
Mid Ch, 2593MHz									
5186.00	0.0	V	3.0	45.4	1.0	-44.4	-25.0	-19.4	
7779.00	0.0	V	3.0	44.0	1.0	-43.0	-25.0	-18.0	
10372.00	0.0	V	3.0	42.4	1.0	-41.4	-25.0	-16.4	
12965.00	0.0	V	3.0	43.7	1.0	-42.7	-25.0	-17.7	
15558.00	0.0	V	3.0	44.7	1.0	-43.7	-25.0	-18.7	
5186.00	6.6	H	3.0	45.4	1.0	-37.8	-25.0	-12.8	
7779.00	0.0	H	3.0	44.0	1.0	-43.0	-25.0	-18.0	
10372.00	0.0	H	3.0	42.4	1.0	-41.4	-25.0	-16.4	
12965.00	0.0	H	3.0	43.7	1.0	-42.7	-25.0	-17.7	
15558.00	0.0	H	3.0	44.7	1.0	-43.7	-25.0	-18.7	
High Ch, 2680MHz									
5360.00	0.0	V	3.0	45.4	1.0	-44.4	-25.0	-19.4	
8040.00	0.0	V	3.0	43.9	1.0	-42.9	-25.0	-17.9	
10720.00	0.0	V	3.0	42.5	1.0	-41.5	-25.0	-16.5	
13400.00	0.0	V	3.0	44.0	1.0	-43.0	-25.0	-18.0	
16080.00	0.0	V	3.0	44.1	1.0	-43.1	-25.0	-18.1	
5360.00	9.3	H	3.0	45.4	1.0	-35.1	-25.0	-10.1	
8040.00	0.0	H	3.0	43.9	1.0	-42.9	-25.0	-17.9	
10720.00	0.0	H	3.0	42.5	1.0	-41.5	-25.0	-16.5	
13400.00	0.0	H	3.0	44.0	1.0	-43.0	-25.0	-18.0	
16080.00	0.0	H	3.0	44.1	1.0	-43.1	-25.0	-18.1	

LTE
 Band 41
 20MHz
 QPSK

LTE Band 66

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
Company:		Samsung							
Project #:		4789746830							
Date:		2021-01-18							
Test Engineer:		20882							
Configuration:		EUT, Y-Position							
Location:		Chamber 2							
Mode:		LTE_QPSK Band 66 Harmonics, 20MHz Bandwidth							
Test Voltage:		AC 120 V, 60 Hz							
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
LTE									
Band 66									
20MHz									
QPSK									
Low Ch, 1720MHz									
3440.00	16.2	V	3.0	42.1	1.0	-24.9	-13.0	-11.9	
5160.00	7.7	V	3.0	42.8	1.0	-34.1	-13.0	-21.1	
6880.00	-4.0	V	3.0	42.7	1.0	-45.8	-13.0	-32.8	
3440.00	13.8	H	3.0	42.1	1.0	-27.3	-13.0	-14.3	
5160.00	9.1	H	3.0	42.8	1.0	-32.8	-13.0	-19.8	
6880.00	-6.4	H	3.0	42.7	1.0	-48.2	-13.0	-35.2	
Mid Ch, 1745MHz									
3490.00	5.5	V	3.0	42.1	1.0	-35.5	-13.0	-22.5	
5235.00	-2.6	V	3.0	42.8	1.0	-44.4	-13.0	-31.4	
6980.00	-6.2	V	3.0	42.7	1.0	-47.9	-13.0	-34.9	
3490.00	4.0	H	3.0	42.1	1.0	-37.1	-13.0	-24.1	
5235.00	0.3	H	3.0	42.8	1.0	-41.6	-13.0	-28.6	
6980.00	-6.1	H	3.0	42.7	1.0	-47.9	-13.0	-34.9	
High Ch, 1770MHz									
3540.00	8.5	V	3.0	42.1	1.0	-32.6	-13.0	-19.6	
5310.00	2.6	V	3.0	42.9	1.0	-39.2	-13.0	-26.2	
7080.00	-5.9	V	3.0	42.7	1.0	-47.6	-13.0	-34.6	
3540.00	8.1	H	3.0	42.1	1.0	-33.0	-13.0	-20.0	
5310.00	-0.5	H	3.0	42.9	1.0	-42.3	-13.0	-29.3	
7080.00	-6.1	H	3.0	42.7	1.0	-47.8	-13.0	-34.8	

LTE Band 4

LTE Band 4 (Frequency range: 1710-1755 MHz) is covered by LTE Band 66 (Frequency range: 1710-1780 MHz) due to overlapping frequency range, same maximum tune-up limit and same channel bandwidth.

LTE Band 5

LTE Band 5 (Frequency range: 824-849 MHz) is covered by LTE Band 26 (Frequency range: 814-849 MHz) due to overlapping frequency range, same maximum tune-up limit and same channel bandwidth.

LTE Band 17

LTE Band 17 (Frequency range: 704-716 MHz) is covered by LTE Band 12 (Frequency range: 699-716 MHz) due to overlapping frequency range, same maximum tune-up limit and same channel bandwidth.

END OF TEST REPORT