LTE Band 26

Reference Frequency : LTE Band 26 Low Channel 814.7 MHz / High Channel 848.3 MHz @ 20ºC						
Limit: +- 2.5 ppm =	Low Channel	2036.750	Hz	High Channel	2120.750	Hz
Power Supply [Vdc]	Environment Temperature [*C]	Frequency Deviation Measureed with Time Elapse				
		Low Channel		High Channel		Limit [ppm]
		[MHz]	Delta [ppm]	[MHz]	Delta [ppm]	
3.85	50	814.69999072	0.000	848.29999046	0.000	2.5
3.85	40	814.69998081	0.012	848.29998456	0.007	2.5
3.85	30	814.69998405	0.008	848.29998876	0.002	2.5
3.85	***20***	***814.69999081***	***0.000***	***848.29999082***	***0.000***	***2.5***
3.85	10	814.69998861	0.003	848.29998044	0.012	2.5
3.85	0	814.69998800	0.003	848.29998023	0.012	2.5
3.85	-10	814.69999001	0.001	848.29998959	0.001	2.5
3.85	-20	814.69998372	0.009	848.29998327	0.009	2.5
3.85	-30	814.69998815	0.003	848.29998758	0.004	2.5

Reference Frequency : LTE Band 26 Low Channel 814.7 MHz / High Channel 848.3 MHz @ 20ºC						
Limit: +- 2.5 ppm =	Low Channel	2036.750	Hz	High Channel	2120.750	Hz
Power Supply [Vdc]	Environment Temperature [*C]	Frequency Deviation Measureed with Time Elapse				
		Low Channel		High Channel		Limit [ppm]
		[MHz]	Delta [ppm]	[MHz]	Delta [ppm]	
3.85	***20***	***814.69999081***	***0***	***848.29999082***	***0***	***2.5***
4.40	20	814.69998149	0.011	848.29998638	0.005	2.5
3.60	20	814.69998876	0.003	848.29998952	0.002	2.5

LTE Band 66

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)		1710.6994	1779.3005	-22.3	-0.013
Extreme (40C)		1710.6994	1779.3005	-15.6	-0.009
Extreme (30C)		1710.6994	1779.3005	-14.6	-0.008
Extreme (10C)		1710.6994	1779.3005	-19.7	-0.011
Extreme (0C)		1710.6994	1779.3005	-21.0	-0.012
Extreme (-10C)		1710.6994	1779.3005	-14.3	-0.008
Extreme (-20C)		1710.6994	1779.3005	-22.9	-0.013
Extreme (-30C)		1710.6994	1779.3005	-16.7	-0.010
20C	15%	1710.6994	1779.3005	-21.7	-0.012
	-15%	1710.6994	1779.3005	-22.2	-0.013
	End Point	1710.6994	1779.3005	-18.1	-0.010

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LTE Band 2

LTE Band 2 (Frequency range: 1850-1910 MHz) is covered by LTE Band 25 (Frequency range: 1850-1915 MHz) due to overlapping frequency range, same maximum tune-up limit and same channel bandwidth.

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.

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10. RADIATED TEST RESULTS

10.1. RADIATED POWER (ERP & EIRP)

RULE PART(S)

FCC: §2.1046, §22.913, §24.232, §27.50 and §90.635
IC RSS-132 (5.4), RSS-130 (4.4), RSS-133 (6.4), RSS-139 (6.5)

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(b) (10) - Portable stations (hand-held devices) transmitting in the 746-757 MHz, 776-788 MHz, and 805-806 MHz bands are limited to 3 watts ERP.

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.

27.50(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.

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

RSS-130 (4.4) – The e.i.r.p. shall not exceed 50 watts for mobile equipment or for outdoor fixed subscriber equipment, nor shall it exceed 5 watts for portable equipment or for indoor fixed subscriber equipment.

RSS-132 (5.4) - The equivalent isotropically radiated power (e.i.r.p.) for mobile equipment shall not exceed 11.5 watts.

RSS-133 (6.4) - The equivalent isotropically radiated power (e.i.r.p.) for transmitters shall not exceed the limits given in SRSP-510.(2 Watts)

RSS-139 (6.5) - The equivalent isotropically radiated power (e.i.r.p.) for mobile and portable transmitters shall not exceed one watt.

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

TEST RESULTS

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10.1.1. ERP/EIRP Results

WCDMA

Band	Mode	Channel	f [MHz]	ERP / EIRP	
				[dBm]	[mW]
Band 5	REL99	4132	826.4	8.23	6.65
		4183	836.6	8.63	7.29
		4233	846.6	**8.89**	**7.74**
	HSDPA	4132	826.4	7.22	5.27
		4183	836.6	**7.60**	**5.75**
		4233	846.6	7.35	5.43
Band 4	REL99	1312	1712.4	17.87	61.24
		1413	1732.6	18.63	72.95
		1513	1752.6	**19.88**	**97.27**
	HSDPA	1312	1712.4	17.88	61.38
		1413	1732.6	18.43	69.66
		1513	1752.6	**20.09**	**102.09**
Band 2	REL99	9262	1852.4	**16.61**	**45.81**
		9400	1880.0	15.79	37.93
		9538	1907.6	14.94	31.19
	HSDPA	9262	1852.4	**18.16**	**65.46**
		9400	1880.0	17.09	51.17
		9538	1907.6	16.39	43.55

Note: These data of Band 5 are ERP results.
(The EIRP conversion formula for IC : EIRP result (dBm) = ERP result (dBm) + 2.15 dB)

LTE Band 2

LTE Band 2 (Frequency range: 1850-1910 MHz) is covered by LTE Band 25 (Frequency range: 1850-1915 MHz) due to overlapping frequency range, same maximum tune-up limit and same channel bandwidth.

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.

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LTE Band 12

Band	BW [MHz]	Mode	RB Size/ RB Offset	f [MHz]	ERP / EIRP [dBm]	ERP / EIRP [mW]
Band 12	10	QPSK	1 / 0	704.0	-2.41	0.57
			1 / 0	707.5	**2.94**	**1.97**
			1 / 49	711.0	-2.19	0.60
		16QAM	1 / 0	704.0	-3.40	0.46
			1 / 0	707.5	**1.46**	**1.40**
			1 / 49	711.0	-3.42	0.45
	5	QPSK	1 / 0	701.5	-1.78	0.66
			1 / 0	707.5	-1.17	0.76
			1 / 24	713.5	0.18	1.04
		16QAM	1 / 0	701.5	-2.76	0.53
			1 / 0	707.5	-2.61	0.55
			1 / 24	713.5	-2.63	0.55
	3	QPSK	1 / 0	700.5	1.09	1.29
			1 / 0	707.5	1.74	1.49
			1 / 14	714.5	2.10	1.62
		16QAM	1 / 8	700.5	0.44	1.11
			1 / 8	707.5	0.41	1.10
			1 / 0	714.5	0.81	1.21
	1.4	QPSK	1 / 0	699.7	1.69	1.48
			1 / 0	707.5	2.27	1.69
			1 / 0	715.3	1.58	1.44
		16QAM	1 / 0	699.7	0.40	1.10
			1 / 0	707.5	1.06	1.28
			1 / 0	715.3	1.20	1.32

Note: These data are ERP results.
(The EIRP conversion formula for IC : EIRP result (dBm) = ERP result (dBm) + 2.15 dB)

LTE Band 13

Band	BW [MHz]	Mode	RB size / RB Offset	f [MHz]	ERP / EIRP [dBm]	ERP / EIRP [mW]
Band 13	10	QPSK	1/0	782.0	9.58	9.08
		16QAM	1/0	782.0	8.27	6.71
	5	QPSK	1/0	779.5	8.89	7.74
			1/0	782.0	9.78	9.51
			1/0	784.5	**10.36**	**10.86**
		16QAM	1/0	779.5	7.89	6.15
			1/0	782.0	8.68	7.38
			1/0	784.5	**9.54**	**8.99**

Note: These data are ERP results.
(The EIRP conversion formula for IC : EIRP result (dBm) = ERP result (dBm) + 2.15 dB)

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LTE Band 25

Band	BW [MHz]	Mode	RB Size/ RB Offset	f [MHz]	ERP / EIRP [dBm]	ERP / EIRP [mW]
Band 25	20	QPSK	1 / 99	1860.0	14.74	29.79
			1 / 0	1882.5	15.74	37.50
			1 / 99	1905.0	15.09	32.28
		16QAM	1 / 49	1860.0	14.09	25.64
			1 / 0	1882.5	14.93	31.12
			1 / 99	1905.0	14.29	26.85
	15	QPSK	1 / 74	1857.5	16.41	43.75
			1 / 0	1882.5	15.40	34.67
			1 / 74	1907.5	16.09	40.64
		16QAM	1 / 74	1857.5	15.55	35.89
			1 / 37	1882.5	15.27	33.65
			1 / 74	1907.5	15.31	33.96
	10	QPSK	1 / 49	1855.0	16.07	40.46
			1 / 49	1882.5	16.61	45.81
			1 / 49	1910.0	14.81	30.27
		16QAM	1 / 0	1855.0	14.51	28.25
			1 / 0	1882.5	15.38	34.51
			1 / 49	1910.0	14.02	25.23
	5	QPSK	1 / 24	1852.5	16.73	47.10
			1 / 0	1882.5	15.22	33.27
			1 / 24	1912.5	14.22	26.42
		16QAM	1 / 24	1852.5	15.95	39.36
			1 / 24	1882.5	**16.19**	**41.59**
			1 / 12	1912.5	14.86	30.62
	3	QPSK	1 / 0	1851.5	15.71	37.24
			1 / 0	1882.5	16.55	45.19
			1 / 0	1913.5	15.10	32.36
		16QAM	1 / 0	1851.5	14.70	29.51
			1 / 0	1882.5	15.38	34.51
			1 / 8	1913.5	13.67	23.28
	1.4	QPSK	1 / 0	1850.7	15.90	38.90
			1 / 0	1882.5	16.57	45.39
			1 / 0	1914.3	**17.38**	**54.70**
		16QAM	1 / 5	1850.7	15.46	35.16
			1 / 3	1882.5	15.90	38.90
			1 / 5	1914.3	14.55	28.51

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LTE Band 26

Band	BW [MHz]	Mode	RB Size/ RB Offset	f [MHz]	ERP / EIRP [dBm]	ERP / EIRP [mW]
Band 26	15	QPSK	1 / 0	821.5	4.41	2.76
			1 / 0	831.5	5.36	3.44
			1 / 37	841.5	6.32	4.29
		16QAM	1 / 0	821.5	3.46	2.22
			1 / 0	831.5	3.90	2.45
			1 / 37	841.5	5.25	3.35
	10	QPSK	1 / 0	819.0	4.19	2.62
			1 / 0	829.0	4.99	3.16
			1 / 0	831.5	4.93	3.11
			1 / 0	844.0	5.84	3.84
		16QAM	1 / 0	819.0	3.48	2.23
			1 / 25	829.0	3.37	2.17
			1 / 0	831.5	4.17	2.61
			1 / 25	844.0	4.73	2.97
	5	QPSK	1 / 0	816.5	4.63	2.90
			1 / 0	821.5	4.98	3.15
			1 / 0	826.5	4.34	2.72
			1 / 24	831.5	5.66	3.68
			1 / 0	846.5	**6.48**	**4.45**
		16QAM	1 / 0	816.5	3.41	2.19
			1 / 0	821.5	3.70	2.34
			1 / 0	826.5	4.21	2.64
			1 / 24	831.5	4.50	2.82
			1 / 0	846.5	5.35	3.43
	3	QPSK	1 / 0	815.5	3.74	2.37
			1 / 0	822.5	4.70	2.95
			1 / 0	825.5	4.96	3.13
			1 / 8	831.5	5.66	3.68
			1 / 0	847.5	5.72	3.73
		16QAM	1 / 0	815.5	2.47	1.77
			1 / 0	822.5	3.62	2.30
			1 / 0	825.5	4.02	2.52
			1 / 14	831.5	4.33	2.71
			1 / 0	847.5	4.92	3.10
	1.4	QPSK	1 / 0	814.7	4.36	2.73
			1 / 0	823.3	5.08	3.22
			1 / 0	824.7	5.34	3.42
			1 / 3	831.5	5.42	3.48
			1 / 0	848.3	6.03	4.01
		16QAM	1 / 5	814.7	2.95	1.97
			1 / 0	823.3	4.12	2.58
			1 / 0	824.7	4.36	2.73
			1 / 5	831.5	4.63	2.90
			1 / 0	848.3	**5.91**	**3.90**

Note: These data are ERP results.
(The EIRP conversion formula for IC : EIRP result (dBm) = ERP result (dBm) + 2.15 dB)

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LTE Band 66

Band	BW [MHz]	Mode	RB Size/ RB Offset	f [MHz]	ERP / EIRP [dBm]	ERP / EIRP [mW]
Band 66	20	QPSK	1 / 49	1720.0	19.36	86.30
			1 / 0	1745.0	18.27	67.14
			1 / 49	1770.0	**21.99**	**158.12**
		16QAM	1 / 49	1720.0	17.96	62.52
			1 / 0	1745.0	17.57	57.15
			1 / 49	1770.0	**21.22**	**132.43**
	15	QPSK	1 / 74	1717.5	19.84	96.38
			1 / 74	1745.0	20.49	111.94
			1 / 74	1772.5	21.31	135.21
		16QAM	1 / 74	1717.5	18.42	69.50
			1 / 74	1745.0	19.67	92.68
			1 / 74	1772.5	19.98	99.54
	10	QPSK	1 / 0	1715.0	18.37	68.71
			1 / 0	1745.0	19.09	81.10
			1 / 0	1775.0	21.89	154.53
		16QAM	1 / 0	1715.0	17.15	51.88
			1 / 0	1745.0	18.19	65.92
			1 / 49	1775.0	18.71	74.30
	5	QPSK	1 / 0	1712.5	17.93	62.09
			1 / 24	1745.0	19.54	89.95
			1 / 24	1777.5	19.31	85.31
		16QAM	1 / 0	1712.5	16.52	44.87
			1 / 24	1745.0	18.65	73.28
			1 / 24	1777.5	18.53	71.29
	3	QPSK	1 / 14	1711.5	19.14	82.04
			1 / 0	1745.0	19.45	88.10
			1 / 8	1778.5	20.89	122.74
		16QAM	1 / 0	1711.5	17.05	50.70
			1 / 0	1745.0	18.60	72.44
			1 / 0	1778.5	20.29	106.91
	1.4	QPSK	1 / 0	1710.7	18.74	74.82
			1 / 0	1745.0	18.53	71.29
			1 / 5	1779.3	20.19	104.47
		16QAM	1 / 0	1710.7	17.63	57.94
			1 / 0	1745.0	17.49	56.10
			1 / 3	1779.3	18.80	75.86

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10.1.2.ERP/EIRP DATA

WCDMA Band 5

WCDMA

Band 5
REL99

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480988
Date: 2018-07-12
Test Engineer: 47989
Configuration: EUT, Cradle, Adapter / Z-Position
Location: Chamber 2
Mode: Rel99 Band 5 Fundamentals

Test Equpment:
Receiving: VULB9163-749, and Chamber 2 SMA Cables
Substitution: Dipole 3121_DB4, 3m N-type Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
826.40	9.02	V	1.0	-1.5	6.60	38.5	-31.9	
826.40	10.65	H	1.0	-1.5	8.23	38.5	-30.3	
Mid Ch								
836.60	8.61	V	1.0	-1.4	6.23	38.5	-32.3	
836.60	11.01	H	1.0	-1.4	8.63	38.5	-29.9	
High Ch								
846.60	8.07	V	1.0	-1.4	5.72	38.5	-32.8	
846.60	11.24	H	1.0	-1.4	8.89	38.5	-29.6	

WCDMA

Band 5
HSDPA

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480988
Date: 2018-07-12
Test Engineer: 51072
Configuration: EUT, Cradle, Adapter / Z-Position
Location: Chamber 2
Mode: HSDPA Band 5 Fundamentals

Test Equpment:
Receiving: VULB9163-749, and Chamber 2 SMA Cables
Substitution: Dipole 3121_DB4, 3m N-type Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
826.40	8.01	V	1.0	-1.5	5.59	38.5	-32.9	
826.40	9.64	H	1.0	-1.5	7.22	38.5	-31.3	
Mid Ch								
836.60	7.37	V	1.0	-1.4	4.99	38.5	-33.5	
836.60	9.98	H	1.0	-1.4	7.60	38.5	-30.9	
High Ch								
846.60	6.88	V	1.0	-1.4	4.53	38.5	-34.0	
846.60	9.70	H	1.0	-1.4	7.35	38.5	-31.1	

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WCDMA Band 4

WCDMA

Band 4
REL99

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480988
Date: 2018-07-12
Test Engineer: 51072
Configuration: EUT, Cradle, Adapter / Z-Position
Location: Chamber 2
Mode: Rel99 Band 4 Fundamentals

Test Equipment:
Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables
Substitution: Horn 3115[00161451], 3m N-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								
1712.40	5.64	V	4.3	9.5	10.79	30.0	-19.2	
1712.40	12.72	H	4.3	9.5	17.87	30.0	-12.1	
Mid Ch								
1732.60	6.24	V	4.3	9.5	11.43	30.0	-18.6	
1732.60	13.43	H	4.3	9.5	18.63	30.0	-11.4	
High Ch								
1752.60	8.02	V	4.4	9.6	13.26	30.0	-16.7	
1752.60	14.65	H	4.4	9.6	19.88	30.0	-10.1	

WCDMA

Band 4
HSDPA

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480988
Date: 2018-07-12
Test Engineer: 51072
Configuration: EUT, Cradle, Adapter / Z-Position
Location: Chamber 2
Mode: HSDPA Band 4 Fundamentals

Test Equipment:
Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables
Substitution: Horn 3115[00161451], 3m N-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								
1712.40	5.68	V	4.3	9.5	10.83	30.0	-19.2	
1712.40	12.73	H	4.3	9.5	17.88	30.0	-12.1	
Mid Ch								
1732.60	6.21	V	4.3	9.5	11.40	30.0	-18.6	
1732.60	13.23	H	4.3	9.5	18.43	30.0	-11.6	
High Ch								
1752.60	8.07	V	4.4	9.6	13.31	30.0	-16.7	
1752.60	14.86	H	4.4	9.6	20.09	30.0	-9.9	

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WCDMA Band 2

WCDMA

Band 2
REL99

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480988
Date: 2018-07-12
Test Engineer: 51072
Configuration: EUT, Cradle, Adapter / Z-Position
Location: Chamber 2
Mode: Rel99 Band 2 Fundamentals

Test Equipment:
Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables
Substitution: Horn 3115[00161451], 3m N-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								
1852.40	7.89	V	4.5	9.5	12.88	33.0	-20.1	
1852.40	11.62	H	4.5	9.5	16.61	33.0	-16.4	
Mid Ch								
1880.00	3.51	V	4.5	9.2	8.19	33.0	-24.8	
1880.00	11.11	H	4.5	9.2	15.79	33.0	-17.2	
High Ch								
1907.60	3.21	V	4.6	8.9	7.55	33.0	-25.4	
1907.60	10.60	H	4.6	8.9	14.94	33.0	-18.1	

WCDMA

Band 2
HSDPA

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480988
Date: 2018-07-12
Test Engineer: 51072
Configuration: EUT, Cradle, Adapter / Z-Position
Location: Chamber 2
Mode: HSDPA Band 2 Fundamentals

Test Equipment:
Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables
Substitution: Horn 3115[00161451], 3m N-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								
1852.40	10.00	V	4.5	9.5	14.99	33.0	-18.0	
1852.40	13.17	H	4.5	9.5	18.16	33.0	-14.8	
Mid Ch								
1880.00	5.48	V	4.5	9.2	10.16	33.0	-22.8	
1880.00	12.41	H	4.5	9.2	17.09	33.0	-15.9	
High Ch								
1907.60	5.25	V	4.6	8.9	9.59	33.0	-23.4	
1907.60	12.05	H	4.6	8.9	16.39	33.0	-16.6	

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LTE Band 12

LTE

Band 12

10MHz

QPSK

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480988
Date: 2018-07-12
Test Engineer: 47989
Configuration: EUT, Cradle, Adapter / Y-Position
Location: Chamber 1
Mode: LTE_QPSK Band 12 Fundamentals, 10MHz Bandwidth

Test Equpment:
Receiving: VULB9163-750, and Chamber 2 SMA Cables
Substitution: Dipole 3121_DB4, 3m N-type Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
704.00	-0.39	V	0.9	-1.6	-2.86	34.8	-37.7	
704.00	0.06	H	0.9	-1.6	-2.41	34.8	-37.2	
Mid Ch								
707.50	0.73	V	0.9	-1.6	-1.74	34.8	-36.5	
707.50	5.41	H	0.9	-1.6	2.94	34.8	-31.9	
High Ch								
711.00	0.28	V	0.9	-1.6	-2.19	34.8	-37.0	
711.00	0.26	H	0.9	-1.6	-2.22	34.8	-37.0	

LTE

Band 12

10MHz

16QAM

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480988
Date: 2018-07-12
Test Engineer: 47989
Configuration: EUT, Cradle, Adapter / Y-Position
Location: Chamber 1
Mode: LTE_16QAM Band 12 Fundamentals, 10MHz Bandwidth

Test Equpment:
Receiving: VULB9163-750, and Chamber 2 SMA Cables
Substitution: Dipole 3121_DB4, 3m N-type Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
704.00	-1.71	V	0.9	-1.6	-4.18	34.8	-39.0	
704.00	-0.93	H	0.9	-1.6	-3.40	34.8	-38.2	
Mid Ch								
707.50	-0.18	V	0.9	-1.6	-2.65	34.8	-37.5	
707.50	3.93	H	0.9	-1.6	1.46	34.8	-33.3	
High Ch								
711.00	-0.95	V	0.9	-1.6	-3.42	34.8	-38.2	
711.00	-0.90	H	0.9	-1.6	-3.38	34.8	-38.2	

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Band 12

5MHz

QPSK

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480988
Date: 2018-07-12
Test Engineer: 47989
Configuration: EUT, Cradle, Adapter / Y-Position
Location: Chamber 1
Mode: LTE_QPSK Band 12 Fundamentals, 5MHz Bandwidth

Test Equipment:
Receiving: VULB9163-750, and Chamber 2 SMA Cables
Substitution: Dipole 3121_DB4, 3m N-type Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
701.50	0.67	V	0.9	-1.6	-1.80	34.8	-36.6	
701.50	0.68	H	0.9	-1.6	-1.78	34.8	-36.6	
Mid Ch								
707.50	1.30	V	0.9	-1.6	-1.17	34.8	-36.0	
707.50	0.55	H	0.9	-1.6	-1.92	34.8	-36.7	
High Ch								
713.50	2.66	V	0.9	-1.6	0.18	34.8	-34.6	
713.50	0.55	H	0.9	-1.6	-1.93	34.8	-36.7	

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Band 12

5MHz

16QAM

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480988
Date: 2018-07-12
Test Engineer: 47989
Configuration: EUT, Cradle, Adapter / Y-Position
Location: Chamber 1
Mode: LTE_16QAM Band 12 Fundamentals, 5MHz Bandwidth

Test Equipment:
Receiving: VULB9163-750, and Chamber 2 SMA Cables
Substitution: Dipole 3121_DB4, 3m N-type Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
701.50	-0.29	V	0.9	-1.6	-2.76	34.8	-37.6	
701.50	-0.99	H	0.9	-1.6	-3.45	34.8	-38.3	
Mid Ch								
707.50	-0.14	V	0.9	-1.6	-2.61	34.8	-37.4	
707.50	-0.86	H	0.9	-1.6	-3.33	34.8	-38.1	
High Ch								
713.50	-0.15	V	0.9	-1.6	-2.63	34.8	-37.4	
713.50	-0.51	H	0.9	-1.6	-2.99	34.8	-37.8	

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Band 12

3MHz

QPSK

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480988
Date: 2018-07-12
Test Engineer: 47989
Configuration: EUT, Cradle, Adapter / Y-Position
Location: Chamber 1
Mode: LTE_QPSK Band 12 Fundamentals, 3MHz Bandwidth

Test Equpment:
Receiving: VULB9163-750, and Chamber 2 SMA Cables
Substitution: Dipole 3121_DB4, 3m N-type Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
700.50	3.56	V	0.9	-1.6	1.09	34.8	-33.7	
700.50	2.93	H	0.9	-1.6	0.47	34.8	-34.3	
Mid Ch								
707.50	4.21	V	0.9	-1.6	1.74	34.8	-33.1	
707.50	2.26	H	0.9	-1.6	-0.21	34.8	-35.0	
High Ch								
714.50	4.57	V	0.9	-1.6	2.10	34.8	-32.7	
714.50	1.89	H	0.9	-1.6	-0.59	34.8	-35.4	

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Band 12

3MHz

16QAM

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480988
Date: 2018-07-12
Test Engineer: 47989
Configuration: EUT, Cradle, Adapter / Y-Position
Location: Chamber 1
Mode: LTE_16QAM Band 12 Fundamentals, 3MHz Bandwidth

Test Equpment:
Receiving: VULB9163-750, and Chamber 2 SMA Cables
Substitution: Dipole 3121_DB4, 3m N-type Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
700.50	2.91	V	0.9	-1.6	0.44	34.8	-34.4	
700.50	1.79	H	0.9	-1.6	-0.67	34.8	-35.5	
Mid Ch								
707.50	2.88	V	0.9	-1.6	0.41	34.8	-34.4	
707.50	2.00	H	0.9	-1.6	-0.47	34.8	-35.3	
High Ch								
714.50	3.28	V	0.9	-1.6	0.81	34.8	-34.0	
714.50	2.42	H	0.9	-1.6	-0.06	34.8	-34.9	

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Band 12

1.4MHz

QPSK

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480988
Date: 2018-07-12
Test Engineer: 47989
Configuration: EUT, Cradle, Adapter / Y-Position
Location: Chamber 1
Mode: LTE_QPSK Band 12 Fundamentals, 1.4MHz Bandwidth

Test Equipment:
Receiving: VULB9163-750, and Chamber 2 SMA Cables
Substitution: Dipole 3121_DB4, 3m N-type Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
699.70	4.16	V	0.9	-1.6	1.69	34.8	-33.1	
699.70	2.69	H	0.9	-1.6	0.22	34.8	-34.6	
Mid Ch								
707.50	4.74	V	0.9	-1.6	2.27	34.8	-32.5	
707.50	2.72	H	0.9	-1.6	0.25	34.8	-34.5	
High Ch								
715.30	4.06	V	0.9	-1.6	1.58	34.8	-33.2	
715.30	3.16	H	0.9	-1.6	0.69	34.8	-34.1	

LTE

Band 12

1.4MHz

16QAM

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480988
Date: 2018-07-12
Test Engineer: 47989
Configuration: EUT, Cradle, Adapter / Y-Position
Location: Chamber 1
Mode: LTE_16QAM Band 12 Fundamentals, 1.4MHz Bandwidth

Test Equipment:
Receiving: VULB9163-750, and Chamber 2 SMA Cables
Substitution: Dipole 3121_DB4, 3m N-type Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
699.70	2.87	V	0.9	-1.6	0.40	34.8	-34.4	
699.70	1.53	H	0.9	-1.6	-0.94	34.8	-35.7	
Mid Ch								
707.50	3.53	V	0.9	-1.6	1.06	34.8	-33.7	
707.50	1.40	H	0.9	-1.6	-1.07	34.8	-35.9	
High Ch								
715.30	3.68	V	0.9	-1.6	1.20	34.8	-33.6	
715.30	1.56	H	0.9	-1.6	-0.91	34.8	-35.7	

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LTE Band 13

LTE
Band 13
10MHz
QPSK

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480988
Date: 2018-07-14
Test Engineer: 45574
Configuration: EUT/Cradle/Adapter, Z-Position
Location: Chamber 2
Mode: LTE_QPSK Band 13 Fundamentals, 10MHz Bandwidth

Test Equipment:
Receiving: VULB9163-749, and Chamber 2 SMA Cables
Substitution: Dipole 3121_DB4, 3m N-type Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Mid Ch								
782.00	4.96	V	0.9	-1.6	2.47	34.8	-32.3	
782.00	12.07	H	0.9	-1.6	9.58	34.8	-25.2	

LTE
Band 13
10MHz
16QAM

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480988
Date: 2018-07-14
Test Engineer: 45574
Configuration: EUT/Cradle/Adapter, Z-Position
Location: Chamber 2
Mode: LTE_16QAM Band 13 Fundamentals, 10MHz Bandwidth

Test Equipment:
Receiving: VULB9163-749, and Chamber 2 SMA Cables
Substitution: Dipole 3121_DB4, 3m N-type Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Mid Ch								
782.00	4.11	V	0.9	-1.6	1.62	34.8	-33.2	
782.00	10.76	H	0.9	-1.6	8.27	34.8	-26.5	

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LTE
Band 13
5MHz
QPSK

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480988
Date: 2018-07-14
Test Engineer: 45574
Configuration: EUT/Cradle/Adapter, Z-Position
Location: Chamber 2
Mode: LTE_QPSK Band 13 Fundamentals, 5MHz Bandwidth

Test Equipment:
Receiving: VULB9163-749, and Chamber 2 SMA Cables
Substitution: Dipole 3121_DB4, 3m N-type Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
779.50	4.60	V	0.9	-1.6	2.11	34.8	-32.7	
779.50	11.39	H	0.9	-1.6	8.89	34.8	-25.9	
Mid Ch								
782.00	4.07	V	0.9	-1.6	1.58	34.8	-33.2	
782.00	12.27	H	0.9	-1.6	9.78	34.8	-25.0	
High Ch								
784.50	6.43	V	0.9	-1.6	3.94	34.8	-30.8	
784.50	12.86	H	0.9	-1.6	10.36	34.8	-24.4	

LTE
Band 13
5MHz
16QAM

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480988
Date: 2018-07-14
Test Engineer: 45574
Configuration: EUT/Cradle/Adapter, Z-Position
Location: Chamber 2
Mode: LTE_16QAM Band 13 Fundamentals, 5MHz Bandwidth

Test Equipment:
Receiving: VULB9163-749, and Chamber 2 SMA Cables
Substitution: Dipole 3121_DB4, 3m N-type Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
779.50	3.28	V	0.9	-1.6	0.79	34.8	-34.0	
779.50	10.39	H	0.9	-1.6	7.89	34.8	-26.9	
Mid Ch								
782.00	3.09	V	0.9	-1.6	0.60	34.8	-34.2	
782.00	11.17	H	0.9	-1.6	8.68	34.8	-26.1	
High Ch								
784.50	5.48	V	0.9	-1.6	2.99	34.8	-31.8	
784.50	12.04	H	0.9	-1.6	9.54	34.8	-25.2	

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LTE Band 25

LTE

Band 25

20MHz

QPSK

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480988
Date: 2018-07-12
Test Engineer: 51072
Configuration: EUT, Cradle, Adapter / Z-Position
Location: Chamber 2
Mode: LTE_QPSK Band 25 Fundamentals, 20MHz Bandwidth

Test Equipment:
Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables
Substitution: Horn 3115[00161451], 3m N-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								
1860.00	9.85	V	4.5	9.4	14.74	33.0	-18.3	
1860.00	9.38	H	4.5	9.4	14.28	33.0	-18.7	
Mid Ch								
1882.50	9.66	V	4.5	9.2	14.32	33.0	-18.7	
1882.50	11.09	H	4.5	9.2	15.74	33.0	-17.3	
High Ch								
1905.00	3.85	V	4.6	8.9	8.23	33.0	-24.8	
1905.00	10.71	H	4.6	8.9	15.09	33.0	-17.9	

LTE

Band 25

20MHz

16QAM

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480988
Date: 2018-07-12
Test Engineer: 51072
Configuration: EUT, Cradle, Adapter / Z-Position
Location: Chamber 2
Mode: LTE_16QAM Band 25 Fundamentals, 20MHz Bandwidth

Test Equipment:
Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables
Substitution: Horn 3115[00161451], 3m N-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								
1860.00	9.20	V	4.5	9.4	14.09	33.0	-18.9	
1860.00	8.52	H	4.5	9.4	13.42	33.0	-19.6	
Mid Ch								
1882.50	8.94	V	4.5	9.2	13.60	33.0	-19.4	
1882.50	10.28	H	4.5	9.2	14.93	33.0	-18.1	
High Ch								
1905.00	2.90	V	4.6	8.9	7.28	33.0	-25.7	
1905.00	9.91	H	4.6	8.9	14.29	33.0	-18.7	

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LTE

Band 25

15MHz

QPSK

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480988
Date: 2018-07-12
Test Engineer: 51072
Configuration: EUT, Cradle, Adapter / Z-Position
Location: Chamber 2
Mode: LTE_QPSK Band 25 Fundamentals, 15MHz Bandwidth

Test Equipment:
Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables
Substitution: Horn 3115[00161451], 3m N-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								
1857.50	7.77	V	4.5	9.4	12.69	33.0	-20.3	
1857.50	11.48	H	4.5	9.4	16.41	33.0	-16.6	
Mid Ch								
1882.50	10.03	V	4.5	9.2	14.69	33.0	-18.3	
1882.50	10.75	H	4.5	9.2	15.40	33.0	-17.6	
High Ch								
1907.50	5.14	V	4.6	8.9	9.48	33.0	-23.5	
1907.50	11.75	H	4.6	8.9	16.09	33.0	-16.9	

LTE

Band 25

15MHz

16QAM

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480988
Date: 2018-07-12
Test Engineer: 51072
Configuration: EUT, Cradle, Adapter / Z-Position
Location: Chamber 2
Mode: LTE_16QAM Band 25 Fundamentals, 15MHz Bandwidth

Test Equipment:
Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables
Substitution: Horn 3115[00161451], 3m N-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								
1857.50	6.90	V	4.5	9.4	11.82	33.0	-21.2	
1857.50	10.62	H	4.5	9.4	15.55	33.0	-17.5	
Mid Ch								
1882.50	7.62	V	4.5	9.2	12.28	33.0	-20.7	
1882.50	10.62	H	4.5	9.2	15.27	33.0	-17.7	
High Ch								
1907.50	4.65	V	4.6	8.9	8.99	33.0	-24.0	
1907.50	10.97	H	4.6	8.9	15.31	33.0	-17.7	

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LTE

Band 25

10MHz

QPSK

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480988
Date: 2018-07-12
Test Engineer: 51072
Configuration: EUT, Cradle, Adapter / Z-Position
Location: Chamber 2
Mode: LTE_QPSK Band 25 Fundamentals, 10MHz Bandwidth

Test Equipment:
Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables
Substitution: Horn 3115[00161451], 3m N-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								
1855.00	8.79	V	4.5	9.5	13.74	33.0	-19.3	
1855.00	11.12	H	4.5	9.5	16.07	33.0	-16.9	
Mid Ch								
1882.50	8.74	V	4.5	9.2	13.40	33.0	-19.6	
1882.50	11.96	H	4.5	9.2	16.61	33.0	-16.4	
High Ch								
1910.00	6.49	V	4.6	8.9	10.79	33.0	-22.2	
1910.00	10.52	H	4.6	8.9	14.81	33.0	-18.2	

LTE

Band 25

10MHz

16QAM

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480988
Date: 2018-07-12
Test Engineer: 51072
Configuration: EUT, Cradle, Adapter / Z-Position
Location: Chamber 2
Mode: LTE_16QAM Band 25 Fundamentals, 10MHz Bandwidth

Test Equipment:
Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables
Substitution: Horn 3115[00161451], 3m N-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								
1855.00	8.71	V	4.5	9.5	13.66	33.0	-19.3	
1855.00	9.56	H	4.5	9.5	14.51	33.0	-18.5	
Mid Ch								
1882.50	7.54	V	4.5	9.2	12.20	33.0	-20.8	
1882.50	10.73	H	4.5	9.2	15.38	33.0	-17.6	
High Ch								
1910.00	5.88	V	4.6	8.9	10.18	33.0	-22.8	
1910.00	9.73	H	4.6	8.9	14.02	33.0	-19.0	

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LTE

Band 25

5MHz

QPSK

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480988
Date: 2018-07-12
Test Engineer: 51072
Configuration: EUT, Cradle, Adapter / Z-Position
Location: Chamber 2
Mode: LTE_QPSK Band 25 Fundamentals, 5MHz Bandwidth

Test Equipment:
Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables
Substitution: Horn 3115[00161451], 3m N-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								
1852.50	8.55	V	4.5	9.5	13.53	33.0	-19.5	
1852.50	11.74	H	4.5	9.5	16.73	33.0	-16.3	
Mid Ch								
1882.50	10.56	V	4.5	9.2	15.22	33.0	-17.8	
1882.50	10.06	H	4.5	9.2	14.71	33.0	-18.3	
High Ch								
1912.50	5.58	V	4.6	8.8	9.84	33.0	-23.2	
1912.50	9.96	H	4.6	8.8	14.22	33.0	-18.8	

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Band 25

5MHz

16QAM

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480988
Date: 2018-07-12
Test Engineer: 51072
Configuration: EUT, Cradle, Adapter / Z-Position
Location: Chamber 2
Mode: LTE_16QAM Band 25 Fundamentals, 5MHz Bandwidth

Test Equipment:
Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables
Substitution: Horn 3115[00161451], 3m N-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								
1852.50	7.63	V	4.5	9.5	12.61	33.0	-20.4	
1852.50	10.96	H	4.5	9.5	15.95	33.0	-17.1	
Mid Ch								
1882.50	7.34	V	4.5	9.2	12.00	33.0	-21.0	
1882.50	11.54	H	4.5	9.2	16.19	33.0	-16.8	
High Ch								
1912.50	5.49	V	4.6	8.8	9.75	33.0	-23.3	
1912.50	10.60	H	4.6	8.8	14.86	33.0	-18.1	

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Band 25

3MHz

QPSK

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480988
Date: 2018-07-12
Test Engineer: 51072
Configuration: EUT, Cradle, Adapter / Z-Position
Location: Chamber 2
Mode: LTE_QPSK Band 25 Fundamentals, 3MHz Bandwidth

Test Equipment:
Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables
Substitution: Horn 3115[00161451], 3m N-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								
1851.50	9.70	V	4.5	9.5	14.69	33.0	-18.3	
1851.50	10.71	H	4.5	9.5	15.71	33.0	-17.3	
Mid Ch								
1882.50	7.02	V	4.5	9.2	11.68	33.0	-21.3	
1882.50	11.90	H	4.5	9.2	16.55	33.0	-16.4	
High Ch								
1913.50	8.04	V	4.6	8.8	12.28	33.0	-20.7	
1913.50	10.86	H	4.6	8.8	15.10	33.0	-17.9	

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Band 25

3MHz

16QAM

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480988
Date: 2018-07-12
Test Engineer: 51072
Configuration: EUT, Cradle, Adapter / Z-Position
Location: Chamber 2
Mode: LTE_16QAM Band 25 Fundamentals, 3MHz Bandwidth

Test Equipment:
Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables
Substitution: Horn 3115[00161451], 3m N-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								
1851.50	8.74	V	4.5	9.5	13.73	33.0	-19.3	
1851.50	9.70	H	4.5	9.5	14.70	33.0	-18.3	
Mid Ch								
1882.50	5.59	V	4.5	9.2	10.25	33.0	-22.8	
1882.50	10.73	H	4.5	9.2	15.38	33.0	-17.6	
High Ch								
1913.50	7.06	V	4.6	8.8	11.30	33.0	-21.7	
1913.50	9.43	H	4.6	8.8	13.67	33.0	-19.3	

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Band 25

1.4MHz

QPSK

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480988
Date: 2018-07-12
Test Engineer: 51072
Configuration: EUT, Cradle, Adapter / Z-Position
Location: Chamber 2
Mode: LTE_QPSK Band 25 Fundamentals, 1.4MHz Bandwidth

Test Equpment:
Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables
Substitution: Horn 3115[00161451], 3m N-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	8.45	V	4.5	9.5	13.45	33.0	-19.5	
1850.70	10.90	H	4.5	9.5	15.90	33.0	-17.1	
Mid Ch								
1882.50	7.13	V	4.5	9.2	11.79	33.0	-21.2	
1882.50	11.92	H	4.5	9.2	16.57	33.0	-16.4	
High Ch								
1914.30	4.89	V	4.6	8.8	9.11	33.0	-23.9	
1914.30	13.15	H	4.6	8.8	17.38	33.0	-15.6	

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Band 25

1.4MHz

16QAM

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480988
Date: 2018-07-12
Test Engineer: 51072
Configuration: EUT, Cradle, Adapter / Z-Position
Location: Chamber 2
Mode: LTE_16QAM Band 25 Fundamentals, 1.4MHz Bandwidth

Test Equpment:
Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables
Substitution: Horn 3115[00161451], 3m N-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	9.17	V	4.5	9.5	14.17	33.0	-18.8	
1850.70	10.46	H	4.5	9.5	15.46	33.0	-17.5	
Mid Ch								
1882.50	5.71	V	4.5	9.2	10.37	33.0	-22.6	
1882.50	11.25	H	4.5	9.2	15.90	33.0	-17.1	
High Ch								
1914.30	6.10	V	4.6	8.8	10.32	33.0	-22.7	
1914.30	10.32	H	4.6	8.8	14.55	33.0	-18.5	

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LTE Band 26

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Band 26

15MHz

QPSK

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480988
Date: 2018-07-12
Test Engineer: 51072
Configuration: EUT, Cradle, Adapter / Z-Position
Location: Chamber 2
Mode: LTE_QPSK Band 26 Fundamentals, 15MHz Bandwidth

Test Equpment:
Receiving: VULB9163-749, and Chamber 2 SMA Cables
Substitution: Dipole 3121_DB4, 3m N-type Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
821.50	6.08	V	0.9	-1.5	3.65	38.5	-34.9	
821.50	6.84	H	0.9	-1.5	4.41	38.5	-34.1	
Mid Ch								
831.50	5.98	V	1.0	-1.4	3.58	38.5	-34.9	
831.50	7.77	H	1.0	-1.4	5.36	38.5	-33.1	
High Ch								
841.50	6.23	V	1.0	-1.4	3.86	38.5	-34.6	
841.50	8.69	H	1.0	-1.4	6.32	38.5	-32.2	

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Band 26

15MHz

16QAM

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480988
Date: 2018-07-12
Test Engineer: 51072
Configuration: EUT, Cradle, Adapter / Z-Position
Location: Chamber 2
Mode: LTE_16QAM Band 26 Fundamentals, 15MHz Bandwidth

Test Equpment:
Receiving: VULB9163-749, and Chamber 2 SMA Cables
Substitution: Dipole 3121_DB4, 3m N-type Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
821.50	4.77	V	0.9	-1.5	2.34	38.5	-36.2	
821.50	5.89	H	0.9	-1.5	3.46	38.5	-35.0	
Mid Ch								
831.50	4.57	V	1.0	-1.4	2.17	38.5	-36.3	
831.50	6.31	H	1.0	-1.4	3.90	38.5	-34.6	
High Ch								
841.50	4.62	V	1.0	-1.4	2.25	38.5	-36.3	
841.50	7.62	H	1.0	-1.4	5.25	38.5	-33.3	

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Band 26

10MHz

QPSK

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480988
Date: 2018-07-12
Test Engineer: 51072
Configuration: EUT, Cradle, Adapter / Z-Position
Location: Chamber 2
Mode: LTE_QPSK Band 26 Fundamentals, 10MHz Bandwidth

Test Equipment:
Receiving: VULB9163-749, and Chamber 2 SMA Cables
Substitution: Dipole 3121_DB4, 3m N-type Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
819.00	6.27	V	0.9	-1.5	3.83	50.0	-46.2	Part 90
819.00	6.63	H	0.9	-1.5	4.19	50.0	-45.8	Part 90
Mid Ch								
831.50	6.47	V	1.0	-1.4	4.07	38.5	-34.4	
831.50	7.34	H	1.0	-1.4	4.93	38.5	-33.6	
829.00	6.54	V	1.0	-1.5	4.13	38.5	-34.4	
829.00	7.40	H	1.0	-1.5	4.99	38.5	-33.5	
High Ch								
844.00	5.83	V	1.0	-1.4	3.48	38.5	-35.0	
844.00	8.20	H	1.0	-1.4	5.84	38.5	-32.7	

LTE

Band 26

10MHz

16QAM

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480988
Date: 2018-07-12
Test Engineer: 51072
Configuration: EUT, Cradle, Adapter / Z-Position
Location: Chamber 2
Mode: LTE_16QAM Band 26 Fundamentals, 10MHz Bandwidth

Test Equipment:
Receiving: VULB9163-749, and Chamber 2 SMA Cables
Substitution: Dipole 3121_DB4, 3m N-type Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
819.00	5.39	V	0.9	-1.5	2.95	50.0	-47.1	Part 90
819.00	5.92	H	0.9	-1.5	3.48	50.0	-46.5	Part 90
Mid Ch								
831.50	5.09	V	1.0	-1.4	2.69	38.5	-35.8	
831.50	6.58	H	1.0	-1.4	4.17	38.5	-34.3	
829.00	5.34	V	1.0	-1.5	2.93	38.5	-35.6	
829.00	5.78	H	1.0	-1.5	3.37	38.5	-35.1	
High Ch								
844.00	4.69	V	1.0	-1.4	2.34	38.5	-36.2	
844.00	7.09	H	1.0	-1.4	4.73	38.5	-33.8	

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Band 26

5 MHz

QPSK

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480988
Date: 2018-07-12
Test Engineer: 51072
Configuration: EUT, Cradle, Adapter / Z-Position
Location: Chamber 2
Mode: LTE_QPSK Band 26 Fundamentals, 5MHz Bandwidth

Test Equipment:
Receiving: VULB9163-749, and Chamber 2 SMA Cables
Substitution: Dipole 3121_DB4, 3m N-type Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
816.50	6.35	V	0.9	-1.5	3.91	50.0	-46.1	Part 90
816.50	7.07	H	0.9	-1.5	4.63	50.0	-45.4	Part 90
Mid Ch								
831.50	6.55	V	1.0	-1.4	4.15	38.5	-34.4	
831.50	8.07	H	1.0	-1.4	5.66	38.5	-32.8	
826.50	6.59	V	1.0	-1.5	4.17	38.5	-34.3	
826.50	6.76	H	1.0	-1.5	4.34	38.5	-34.2	
821.50	6.06	V	0.9	-1.5	3.63	38.5	-34.9	
821.50	7.41	H	0.9	-1.5	4.98	38.5	-33.5	
High Ch								
846.50	5.94	V	1.0	-1.4	3.59	38.5	-34.9	
846.50	8.83	H	1.0	-1.4	6.48	38.5	-32.0	

LTE

Band 26

5 MHz

16QAM

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480988
Date: 2018-07-12
Test Engineer: 51072
Configuration: EUT, Cradle, Adapter / Z-Position
Location: Chamber 2
Mode: LTE_16QAM Band 26 Fundamentals, 5MHz Bandwidth

Test Equipment:
Receiving: VULB9163-749, and Chamber 2 SMA Cables
Substitution: Dipole 3121_DB4, 3m N-type Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
816.50	5.10	V	0.9	-1.5	2.66	50.0	-47.3	Part 90
816.50	5.85	H	0.9	-1.5	3.41	50.0	-46.6	Part 90
Mid Ch								
831.50	5.28	V	1.0	-1.4	2.88	38.5	-35.6	
831.50	6.91	H	1.0	-1.4	4.50	38.5	-34.0	
826.50	5.45	V	1.0	-1.5	3.03	38.5	-35.5	
826.50	6.63	H	1.0	-1.5	4.21	38.5	-34.3	
821.50	4.73	V	0.9	-1.5	2.30	38.5	-36.2	Part 90
821.50	6.13	H	0.9	-1.5	3.70	38.5	-34.8	Part 90
High Ch								
846.50	4.82	V	1.0	-1.4	2.47	38.5	-36.0	
846.50	7.70	H	1.0	-1.4	5.35	38.5	-33.2	

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LTE

Band 26

3MHz

QPSK

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480988
Date: 2018-07-12
Test Engineer: 51072
Configuration: EUT, Cradle, Adapter / Z-Position
Location: Chamber 2
Mode: LTE_QPSK Band 26 Fundamentals, 3MHz Bandwidth

Test Equipment:
Receiving: VULB9163-749, and Chamber 2 SMA Cables
Substitution: Dipole 3121_DB4, 3m N-type Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
815.50	5.40	V	0.9	-1.5	2.95	50.0	-47.1	Part 90
815.50	6.19	H	0.9	-1.5	3.74	50.0	-46.3	Part 90
Mid Ch								
831.50	6.57	V	1.0	-1.4	4.17	38.5	-34.3	
831.50	8.07	H	1.0	-1.4	5.66	38.5	-32.8	
825.50	6.50	V	1.0	-1.5	4.08	38.5	-34.4	
825.50	7.39	H	1.0	-1.5	4.96	38.5	-33.5	
822.50	6.20	V	1.0	-1.5	3.77	38.5	-34.7	
822.50	7.13	H	1.0	-1.5	4.70	38.5	-33.8	
High Ch								
847.50	5.15	V	1.0	-1.4	2.81	38.5	-35.7	
847.50	8.07	H	1.0	-1.4	5.72	38.5	-32.8	

LTE

Band 26

3MHz

16QAM

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480988
Date: 2018-07-12
Test Engineer: 51072
Configuration: EUT, Cradle, Adapter / Z-Position
Location: Chamber 2
Mode: LTE_16QAM Band 26 Fundamentals, 3MHz Bandwidth

Test Equipment:
Receiving: VULB9163-749, and Chamber 2 SMA Cables
Substitution: Dipole 3121_DB4, 3m N-type Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
815.50	4.09	V	0.9	-1.5	1.64	50.0	-48.4	Part 90
815.50	4.92	H	0.9	-1.5	2.47	50.0	-47.5	Part 90
Mid Ch								
831.50	5.34	V	1.0	-1.4	2.94	38.5	-35.6	
831.50	6.74	H	1.0	-1.4	4.33	38.5	-34.2	
825.50	5.58	V	1.0	-1.5	3.16	38.5	-35.3	
825.50	6.45	H	1.0	-1.5	4.02	38.5	-34.5	
822.50	4.67	V	1.0	-1.5	2.24	38.5	-36.3	
822.50	6.05	H	1.0	-1.5	3.62	38.5	-34.9	
High Ch								
847.50	3.94	V	1.0	-1.4	1.60	38.5	-36.9	
847.50	7.27	H	1.0	-1.4	4.92	38.5	-33.6	

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LTE

Band 26

1.4MHz

QPSK

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480988
Date: 2018-07-12
Test Engineer: 51072
Configuration: EUT, Cradle, Adapter / Z-Position
Location: Chamber 2
Mode: LTE_QPSK Band 26 Fundamentals, 1.4MHz Bandwidth

Test Equipment:
Receiving: VULB9163-749, and Chamber 2 SMA Cables
Substitution: Dipole 3121_DB4, 3m N-type Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
814.70	6.03	V	0.9	-1.5	3.59	50.0	-46.4	Part 90
814.70	6.81	H	0.9	-1.5	4.36	50.0	-45.6	Part 90
Mid Ch								
831.50	5.94	V	1.0	-1.4	3.54	38.5	-35.0	
831.50	7.83	H	1.0	-1.4	5.42	38.5	-33.1	
824.70	6.29	V	1.0	-1.5	3.86	38.5	-34.6	
824.70	7.76	H	1.0	-1.5	5.34	38.5	-33.2	
823.30	6.49	V	1.0	-1.5	4.07	38.5	-34.4	
823.30	7.51	H	1.0	-1.5	5.08	38.5	-33.4	
High Ch								
848.30	5.98	V	1.0	-1.4	3.63	38.5	-34.9	
848.30	8.37	H	1.0	-1.4	6.03	38.5	-32.5	

LTE

Band 26

1.4MHz

16QAM

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480988
Date: 2018-07-12
Test Engineer: 51072
Configuration: EUT, Cradle, Adapter / Z-Position
Location: Chamber 2
Mode: LTE_16QAM Band 26 Fundamentals, 1.4MHz Bandwidth

Test Equipment:
Receiving: VULB9163-749, and Chamber 2 SMA Cables
Substitution: Dipole 3121_DB4, 3m N-type Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
814.70	4.70	V	0.9	-1.5	2.26	50.0	-47.7	Part 90
814.70	5.40	H	0.9	-1.5	2.95	50.0	-47.1	Part 90
Mid Ch								
831.50	5.40	V	1.0	-1.4	3.00	38.5	-35.5	
831.50	7.04	H	1.0	-1.4	4.63	38.5	-33.9	
824.70	5.00	V	1.0	-1.5	2.57	38.5	-35.9	
824.70	6.78	H	1.0	-1.5	4.36	38.5	-34.1	
823.30	5.06	V	1.0	-1.5	2.64	38.5	-35.9	
823.30	6.55	H	1.0	-1.5	4.12	38.5	-34.4	
High Ch								
848.30	5.42	V	1.0	-1.4	3.07	38.5	-35.4	
848.30	8.25	H	1.0	-1.4	5.91	38.5	-32.6	

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LTE Band 66

LTE

Band 66

20MHz

QPSK

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480988
Date: 2018-07-12
Test Engineer: 51072
Configuration: EUT, Cradle, Adapter / Z-Position
Location: Chamber 2
Mode: LTE_QPSK Band 66 Fundamentals, 20MHz Bandwidth

Test Equpment:
Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables
Substitution: Horn 3115[00161451], 3m N-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								
1720.00	6.90	V	4.3	9.5	12.07	30.0	-17.9	
1720.00	14.19	H	4.3	9.5	19.36	30.0	-10.6	
Mid Ch								
1745.00	7.28	V	4.4	9.6	12.50	30.0	-17.5	
1745.00	13.05	H	4.4	9.6	18.27	30.0	-11.7	
High Ch								
1770.00	5.94	V	4.4	9.6	11.18	30.0	-18.8	
1770.00	16.76	H	4.4	9.6	21.99	30.0	-8.0	

LTE

Band 66

20MHz

16QAM

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480988
Date: 2018-07-12
Test Engineer: 51072
Configuration: EUT, Cradle, Adapter / Z-Position
Location: Chamber 2
Mode: LTE_16QAM Band 66 Fundamentals, 20MHz Bandwidth

Test Equpment:
Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables
Substitution: Horn 3115[00161451], 3m N-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								
1720.00	5.40	V	4.3	9.5	10.57	30.0	-19.4	
1720.00	12.79	H	4.3	9.5	17.96	30.0	-12.0	
Mid Ch								
1745.00	5.93	V	4.4	9.6	11.15	30.0	-18.9	
1745.00	12.35	H	4.4	9.6	17.57	30.0	-12.4	
High Ch								
1770.00	4.60	V	4.4	9.6	9.84	30.0	-20.2	
1770.00	15.99	H	4.4	9.6	21.22	30.0	-8.8	

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Band 66

15MHz

QPSK

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480988
Date: 2018-07-12
Test Engineer: 51072
Configuration: EUT, Cradle, Adapter / Z-Position
Location: Chamber 2
Mode: LTE_QPSK Band 66 Fundamentals, 15MHz Bandwidth

Test Equpment:
Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables
Substitution: Horn 3115[00161451], 3m N-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								
1717.50	6.99	V	4.3	9.5	12.16	30.0	-17.8	
1717.50	14.68	H	4.3	9.5	19.84	30.0	-10.2	
Mid Ch								
1745.00	5.78	V	4.4	9.6	11.00	30.0	-19.0	
1745.00	15.27	H	4.4	9.6	20.49	30.0	-9.5	
High Ch								
1772.50	7.92	V	4.4	9.6	13.16	30.0	-16.8	
1772.50	16.07	H	4.4	9.6	21.31	30.0	-8.7	

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Band 66

15MHz

16QAM

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480988
Date: 2018-07-12
Test Engineer: 51072
Configuration: EUT, Cradle, Adapter / Z-Position
Location: Chamber 2
Mode: LTE_16QAM Band 66 Fundamentals, 15MHz Bandwidth

Test Equpment:
Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables
Substitution: Horn 3115[00161451], 3m N-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								
1717.50	5.60	V	4.3	9.5	10.77	30.0	-19.2	
1717.50	13.26	H	4.3	9.5	18.42	30.0	-11.6	
Mid Ch								
1745.00	4.99	V	4.4	9.6	10.21	30.0	-19.8	
1745.00	14.45	H	4.4	9.6	19.67	30.0	-10.3	
High Ch								
1772.50	7.17	V	4.4	9.6	12.41	30.0	-17.6	
1772.50	14.74	H	4.4	9.6	19.98	30.0	-10.0	

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Band 66

10MHz

QPSK

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480988
Date: 2018-07-12
Test Engineer: 51072
Configuration: EUT, Cradle, Adapter / Z-Position
Location: Chamber 2
Mode: LTE_QPSK Band 66 Fundamentals, 10MHz Bandwidth

Test Equpment:
Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables
Substitution: Horn 3115[00161451], 3m N-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								
1715.00	6.71	V	4.3	9.5	11.87	30.0	-18.1	
1715.00	13.21	H	4.3	9.5	18.37	30.0	-11.6	
Mid Ch								
1745.00	5.48	V	4.4	9.6	10.70	30.0	-19.3	
1745.00	13.87	H	4.4	9.6	19.09	30.0	-10.9	
High Ch								
1775.00	7.56	V	4.4	9.6	12.80	30.0	-17.2	
1775.00	16.65	H	4.4	9.6	21.89	30.0	-8.1	

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Band 66

10MHz

16QAM

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480988
Date: 2018-07-12
Test Engineer: 51072
Configuration: EUT, Cradle, Adapter / Z-Position
Location: Chamber 2
Mode: LTE_16QAM Band 66 Fundamentals, 10MHz Bandwidth

Test Equpment:
Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables
Substitution: Horn 3115[00161451], 3m N-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								
1715.00	5.31	V	4.3	9.5	10.47	30.0	-19.5	
1715.00	11.99	H	4.3	9.5	17.15	30.0	-12.9	
Mid Ch								
1745.00	4.80	V	4.4	9.6	10.02	30.0	-20.0	
1745.00	12.97	H	4.4	9.6	18.19	30.0	-11.8	
High Ch								
1775.00	7.29	V	4.4	9.6	12.53	30.0	-17.5	
1775.00	13.47	H	4.4	9.6	18.71	30.0	-11.3	

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Band 66

5MHz

QPSK

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480988
Date: 2018-07-12
Test Engineer: 51072
Configuration: EUT, Cradle, Adapter / Z-Position
Location: Chamber 2
Mode: LTE_QPSK Band 66 Fundamentals, 5MHz Bandwidth

Test Equipment:
Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables
Substitution: Horn 3115[00161451], 3m N-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								
1712.50	6.10	V	4.3	9.5	11.25	30.0	-18.8	
1712.50	12.78	H	4.3	9.5	17.93	30.0	-12.1	
Mid Ch								
1745.00	5.51	V	4.4	9.6	10.73	30.0	-19.3	
1745.00	14.32	H	4.4	9.6	19.54	30.0	-10.5	
High Ch								
1777.50	8.07	V	4.4	9.6	13.30	30.0	-16.7	
1777.50	14.07	H	4.4	9.6	19.31	30.0	-10.7	

LTE

Band 66

5MHz

16QAM

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480988
Date: 2018-07-12
Test Engineer: 51072
Configuration: EUT, Cradle, Adapter / Z-Position
Location: Chamber 2
Mode: LTE_16QAM Band 66 Fundamentals, 5MHz Bandwidth

Test Equipment:
Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables
Substitution: Horn 3115[00161451], 3m N-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								
1712.50	4.52	V	4.3	9.5	9.67	30.0	-20.3	
1712.50	11.37	H	4.3	9.5	16.52	30.0	-13.5	
Mid Ch								
1745.00	4.97	V	4.4	9.6	10.19	30.0	-19.8	
1745.00	13.43	H	4.4	9.6	18.65	30.0	-11.4	
High Ch								
1777.50	7.26	V	4.4	9.6	12.50	30.0	-17.5	
1777.50	13.29	H	4.4	9.6	18.53	30.0	-11.5	

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Band 66

3MHz

QPSK

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480988
Date: 2018-07-12
Test Engineer: 51072
Configuration: EUT, Cradle, Adapter / Z-Position
Location: Chamber 2
Mode: LTE_QPSK Band 66 Fundamentals, 3MHz Bandwidth

Test Equpment:
Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables
Substitution: Horn 3115[00161451], 3m N-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								
1711.50	5.83	V	4.3	9.5	10.98	30.0	-19.0	
1711.50	13.99	H	4.3	9.5	19.14	30.0	-10.9	
Mid Ch								
1745.00	6.05	V	4.4	9.6	11.27	30.0	-18.7	
1745.00	14.23	H	4.4	9.6	19.45	30.0	-10.6	
High Ch								
1778.50	7.19	V	4.4	9.6	12.42	30.0	-17.6	
1778.50	15.66	H	4.4	9.6	20.89	30.0	-9.1	

LTE

Band 66

3MHz

16QAM

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480988
Date: 2018-07-12
Test Engineer: 51072
Configuration: EUT, Cradle, Adapter / Z-Position
Location: Chamber 2
Mode: LTE_16QAM Band 66 Fundamentals, 3MHz Bandwidth

Test Equpment:
Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables
Substitution: Horn 3115[00161451], 3m N-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								
1711.50	4.89	V	4.3	9.5	10.04	30.0	-20.0	
1711.50	11.90	H	4.3	9.5	17.05	30.0	-12.9	
Mid Ch								
1745.00	5.32	V	4.4	9.6	10.54	30.0	-19.5	
1745.00	13.38	H	4.4	9.6	18.60	30.0	-11.4	
High Ch								
1778.50	5.03	V	4.4	9.6	10.26	30.0	-19.7	
1778.50	15.06	H	4.4	9.6	20.29	30.0	-9.7	

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Band 66

1.4MHz

QPSK

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480988
Date: 2018-07-12
Test Engineer: 51072
Configuration: EUT, Cradle, Adapter / Z-Position
Location: Chamber 2
Mode: LTE_QPSK Band 66 Fundamentals, 1.4MHz Bandwidth

Test Equpment:
Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables
Substitution: Horn 3115[00161451], 3m N-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								
1710.70	6.23	V	4.3	9.5	11.38	30.0	-18.6	
1710.70	13.60	H	4.3	9.5	18.74	30.0	-11.3	
Mid Ch								
1745.00	5.71	V	4.4	9.6	10.93	30.0	-19.1	
1745.00	13.31	H	4.4	9.6	18.53	30.0	-11.5	
High Ch								
1779.30	7.59	V	4.4	9.6	12.83	30.0	-17.2	
1779.30	14.95	H	4.4	9.6	20.19	30.0	-9.8	

LTE

Band 66

1.4MHz

16QAM

UL Verification Services, Inc.
High Frequency Substitution Measurement

Company: Samsung
Project #: 4788480988
Date: 2018-07-12
Test Engineer: 51072
Configuration: EUT, Cradle, Adapter / Z-Position
Location: Chamber 2
Mode: LTE_16QAM Band 66 Fundamentals, 1.4MHz Bandwidth

Test Equpment:
Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables
Substitution: Horn 3115[00161451], 3m N-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								
1710.70	4.90	V	4.3	9.5	10.05	30.0	-20.0	
1710.70	12.49	H	4.3	9.5	17.63	30.0	-12.4	
Mid Ch								
1745.00	5.04	V	4.4	9.6	10.26	30.0	-19.7	
1745.00	12.27	H	4.4	9.6	17.49	30.0	-12.5	
High Ch								
1779.30	6.98	V	4.4	9.6	12.22	30.0	-17.8	
1779.30	13.56	H	4.4	9.6	18.80	30.0	-11.2	

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10.2. FIELD STRENGTH OF SPURIOUS RADIATION

RULE PART(S)

FCC: §2.1053, §22.917, §24.238, §27. 53 and §90.691
IC: RSS-132 (5.5), RSS-133 (6.5), RSS-130 (4.6), RSS-139 (6.6)

LIMIT

Part 22.917(a) & Part 24.238(a) & Part 27.53(h) & RSS-132 (5.5) & RSS-133 (6.5) & RSS-139 (6.6)
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), RSS-130 (4.6) - 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. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

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.

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

Part 27.53 (h) AWS emission limits—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 log10 (P) dB.

Part 90: (a) (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 + $10Log_{10}$(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)

TEST PROCEDURE

ANSI / TIA / EIA 603 E Clause 2.2.12; ESU40 setting reference to 971168 D01 v03

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 ≥ 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);

NOTE : Radiated spurious emissions were investigated below 30MHz, 30MHz – 1GHz and above 1GHz. There were no emissions found on below 30MHz and 30MHz – 1GHz.

RESULTS

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10.2.1. SPURIOUS RADIATION PLOTS

WCDMA Band 5

WCDMA

Band 5
REL99

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-14
Test Engineer: 51072
Configuration: EUT / Adapter / Cradle , Z-position
Location: Chamber 2
Mode: Rel99 Band 5 Harmonics

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	-29.7	V	3.0	38.2	1.0	-66.9	-13.0	-53.9	
2479.20	-28.6	V	3.0	38.8	1.0	-66.4	-13.0	-53.4	
3305.60	-27.2	V	3.0	39.4	1.0	-65.7	-13.0	-52.7	
1652.80	-29.8	H	3.0	38.2	1.0	-67.0	-13.0	-54.0	
2479.20	-29.0	H	3.0	38.8	1.0	-66.8	-13.0	-53.8	
3305.60	-27.3	H	3.0	39.4	1.0	-65.7	-13.0	-52.7	
Mid Ch, 836.6MHz									
1673.20	-30.4	V	3.0	38.2	1.0	-67.7	-13.0	-54.7	
2509.80	-28.2	V	3.0	38.8	1.0	-66.1	-13.0	-53.1	
3346.40	-26.9	V	3.0	39.5	1.0	-65.3	-13.0	-52.3	
1673.20	-30.5	H	3.0	38.2	1.0	-67.7	-13.0	-54.7	
2509.80	-28.8	H	3.0	38.8	1.0	-66.6	-13.0	-53.6	
3346.40	-26.9	H	3.0	39.5	1.0	-65.4	-13.0	-52.4	
High Ch, 846.6MHz									
1693.20	-30.0	V	3.0	38.2	1.0	-67.3	-13.0	-54.3	
2539.80	-28.3	V	3.0	38.9	1.0	-66.2	-13.0	-53.2	
3386.40	-27.1	V	3.0	39.5	1.0	-65.6	-13.0	-52.6	
1693.20	-30.0	H	3.0	38.2	1.0	-67.3	-13.0	-54.3	
2539.80	-28.8	H	3.0	38.9	1.0	-66.7	-13.0	-53.7	
3386.40	-27.2	H	3.0	39.5	1.0	-65.6	-13.0	-52.6	

WCDMA

Band 5
HSDPA

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-14
Test Engineer: 51072
Configuration: EUT / Adapter / Cradle , Z-position
Location: Chamber 2
Mode: HSDPA Band 5 Harmonics

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	-30.4	V	3.0	38.2	1.0	-67.6	-13.0	-54.6	
2479.20	-28.6	V	3.0	38.8	1.0	-66.4	-13.0	-53.4	
3305.60	-27.1	V	3.0	39.4	1.0	-65.6	-13.0	-52.6	
1652.80	-29.9	H	3.0	38.2	1.0	-67.1	-13.0	-54.1	
2479.20	-29.0	H	3.0	38.8	1.0	-66.8	-13.0	-53.8	
3305.60	-27.2	H	3.0	39.4	1.0	-65.7	-13.0	-52.7	
Mid Ch, 836.6MHz									
1673.20	-29.9	V	3.0	38.2	1.0	-67.1	-13.0	-54.1	
2509.80	-28.3	V	3.0	38.8	1.0	-66.1	-13.0	-53.1	
3346.40	-26.9	V	3.0	39.5	1.0	-65.4	-13.0	-52.4	
1673.20	-30.1	H	3.0	38.2	1.0	-67.3	-13.0	-54.3	
2509.80	-28.8	H	3.0	38.8	1.0	-66.7	-13.0	-53.7	
3346.40	-27.0	H	3.0	39.5	1.0	-65.4	-13.0	-52.4	
High Ch, 846.6MHz									
1693.20	-29.9	V	3.0	38.2	1.0	-67.1	-13.0	-54.1	
2539.80	-28.3	V	3.0	38.9	1.0	-66.2	-13.0	-53.2	
3386.40	-27.1	V	3.0	39.5	1.0	-65.6	-13.0	-52.6	
1693.20	-29.6	H	3.0	38.2	1.0	-66.9	-13.0	-53.9	
2539.80	-28.8	H	3.0	38.9	1.0	-66.6	-13.0	-53.6	
3386.40	-27.1	H	3.0	39.5	1.0	-65.6	-13.0	-52.6	

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WCDMA Band 4

WCDMA

Band 4
REL99

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-14
Test Engineer: 51072
Configuration: EUT / Adapter / Cradle , Z-position
Location: Chamber 2
Mode: Rel99 Band 4 Harmonics

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	-12.9	V	3.0	39.5	1.0	-51.4	-13.0	-38.4	
5137.20	-24.4	V	3.0	39.8	1.0	-63.2	-13.0	-50.2	
6849.60	-23.1	V	3.0	39.7	1.0	-61.8	-13.0	-48.8	
3424.80	-9.9	H	3.0	39.5	1.0	-48.3	-13.0	-35.3	
5137.20	-24.4	H	3.0	39.8	1.0	-63.2	-13.0	-50.2	
6849.60	-23.2	H	3.0	39.7	1.0	-61.9	-13.0	-48.9	
Mid Ch, 1732.6MHz									
3465.20	-11.3	V	3.0	39.5	1.0	-49.9	-13.0	-36.9	
5197.80	-24.4	V	3.0	39.8	1.0	-63.3	-13.0	-50.3	
6930.40	-23.3	V	3.0	39.7	1.0	-62.0	-13.0	-49.0	
3465.20	-16.0	H	3.0	39.5	1.0	-54.5	-13.0	-41.5	
5197.80	-24.6	H	3.0	39.8	1.0	-63.4	-13.0	-50.4	
6930.40	-23.4	H	3.0	39.7	1.0	-62.0	-13.0	-49.0	
High Ch, 1752.6MHz									
3505.20	-11.5	V	3.0	39.5	1.0	-50.1	-13.0	-37.1	
5257.80	-24.7	V	3.0	39.8	1.0	-63.6	-13.0	-50.6	
7010.40	-23.7	V	3.0	39.6	1.0	-62.3	-13.0	-49.3	
3505.20	-15.1	H	3.0	39.5	1.0	-53.6	-13.0	-40.6	
5257.80	-24.7	H	3.0	39.8	1.0	-63.5	-13.0	-50.5	
7010.40	-23.7	H	3.0	39.6	1.0	-62.3	-13.0	-49.3	

WCDMA

Band 4
HSDPA

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-14
Test Engineer: 51072
Configuration: EUT / Adapter / Cradle , Z-position
Location: Chamber 2
Mode: HSDPA Band 4 Harmonics

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	-8.7	V	3.0	39.5	1.0	-47.2	-13.0	-34.2	
5137.20	-24.4	V	3.0	39.8	1.0	-63.2	-13.0	-50.2	
6849.60	-23.1	V	3.0	39.7	1.0	-61.8	-13.0	-48.8	
3424.80	-5.1	H	3.0	39.5	1.0	-43.6	-13.0	-30.6	
5137.20	-24.4	H	3.0	39.8	1.0	-63.2	-13.0	-50.2	
6849.60	-23.1	H	3.0	39.7	1.0	-61.8	-13.0	-48.8	
Mid Ch, 1732.6MHz									
3465.20	-20.4	V	3.0	39.5	1.0	-58.9	-13.0	-45.9	
5197.80	-24.5	V	3.0	39.8	1.0	-63.3	-13.0	-50.3	
6930.40	-23.4	V	3.0	39.7	1.0	-62.0	-13.0	-49.0	
3465.20	-13.8	H	3.0	39.5	1.0	-52.3	-13.0	-39.3	
5197.80	-24.6	H	3.0	39.8	1.0	-63.4	-13.0	-50.4	
6930.40	-23.3	H	3.0	39.7	1.0	-62.0	-13.0	-49.0	
High Ch, 1752.6MHz									
3505.20	-19.0	V	3.0	39.5	1.0	-57.5	-13.0	-44.5	
5257.80	-24.8	V	3.0	39.8	1.0	-63.6	-13.0	-50.6	
7010.40	-23.6	V	3.0	39.6	1.0	-62.3	-13.0	-49.3	
3505.20	-8.9	H	3.0	39.5	1.0	-47.5	-13.0	-34.5	
5257.80	-24.7	H	3.0	39.8	1.0	-63.5	-13.0	-50.5	
7010.40	-23.7	H	3.0	39.6	1.0	-62.3	-13.0	-49.3	

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WCDMA Band 2

WCDMA

Band 2
REL99

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-14
Test Engineer: 51072
Configuration: EUT / Adapter / Cradle , Z-position
Location: Chamber 2
Mode: Rel99 Band 2 Harmonics

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	-27.2	V	3.0	39.7	1.0	-65.9	-13.0	-52.9	
5557.20	-24.1	V	3.0	39.9	1.0	-63.1	-13.0	-50.1	
7409.60	-23.6	V	3.0	39.4	1.0	-62.0	-13.0	-49.0	
3704.80	-27.0	H	3.0	39.7	1.0	-65.7	-13.0	-52.7	
5557.20	-24.2	H	3.0	39.9	1.0	-63.1	-13.0	-50.1	
7409.60	-23.5	H	3.0	39.4	1.0	-62.0	-13.0	-49.0	
Mid Ch, 1880MHz									
3760.00	-26.6	V	3.0	39.7	1.0	-65.3	-13.0	-52.3	
5640.00	-23.7	V	3.0	40.0	1.0	-62.6	-13.0	-49.6	
7520.00	-22.9	V	3.0	39.4	1.0	-61.3	-13.0	-48.3	
3760.00	-26.4	H	3.0	39.7	1.0	-65.1	-13.0	-52.1	
5640.00	-23.6	H	3.0	40.0	1.0	-62.6	-13.0	-49.6	
7520.00	-22.9	H	3.0	39.4	1.0	-61.2	-13.0	-48.2	
High Ch, 1907.6MHz									
3815.20	-26.1	V	3.0	39.7	1.0	-64.8	-13.0	-51.8	
5722.80	-24.0	V	3.0	40.0	1.0	-63.0	-13.0	-50.0	
7630.40	-22.8	V	3.0	39.3	1.0	-61.2	-13.0	-48.2	
3815.20	-26.0	H	3.0	39.7	1.0	-64.7	-13.0	-51.7	
5722.80	-23.6	H	3.0	40.0	1.0	-62.6	-13.0	-49.6	
7630.40	-22.7	H	3.0	39.3	1.0	-61.1	-13.0	-48.1	

WCDMA

Band 2
HSDPA

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-14
Test Engineer: 51072
Configuration: EUT / Adapter / Cradle , Z-position
Location: Chamber 2
Mode: HSDPA Band 2 Harmonics

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	-27.4	V	3.0	39.7	1.0	-66.1	-13.0	-53.1	
5557.20	-24.2	V	3.0	39.9	1.0	-63.1	-13.0	-50.1	
7409.60	-23.6	V	3.0	39.4	1.0	-62.0	-13.0	-49.0	
3704.80	-27.7	H	3.0	39.7	1.0	-66.4	-13.0	-53.4	
5557.20	-24.2	H	3.0	39.9	1.0	-63.2	-13.0	-50.2	
7409.60	-23.6	H	3.0	39.4	1.0	-62.0	-13.0	-49.0	
Mid Ch, 1880MHz									
3760.00	-26.6	V	3.0	39.7	1.0	-65.2	-13.0	-52.2	
5640.00	-23.8	V	3.0	40.0	1.0	-62.8	-13.0	-49.8	
7520.00	-22.9	V	3.0	39.4	1.0	-61.3	-13.0	-48.3	
3760.00	-26.5	H	3.0	39.7	1.0	-65.2	-13.0	-52.2	
5640.00	-23.8	H	3.0	40.0	1.0	-62.7	-13.0	-49.7	
7520.00	-22.8	H	3.0	39.4	1.0	-61.2	-13.0	-48.2	
High Ch, 1907.6MHz									
3815.20	-26.0	V	3.0	39.7	1.0	-64.7	-13.0	-51.7	
5722.80	-24.2	V	3.0	40.0	1.0	-63.1	-13.0	-50.1	
7630.40	-22.9	V	3.0	39.3	1.0	-61.2	-13.0	-48.2	
3815.20	-26.0	H	3.0	39.7	1.0	-64.7	-13.0	-51.7	
5722.80	-22.9	H	3.0	40.0	1.0	-61.9	-13.0	-48.9	
7630.40	-22.8	H	3.0	39.3	1.0	-61.1	-13.0	-48.1	

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LTE Band 12

LTE Band 12 10MHz QPSK

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-12
Test Engineer: 45885
Configuration: EUT / Adapter / Craddle, Y-Position
Location: Chamber 2
Mode: LTE_QPSK Band 12 Harmonics, 10MHz Bandwidth

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	-22.2	V	3.0	38.1	1.0	-59.3	-13.0	-46.3	
2112.00	-27.2	V	3.0	38.5	1.0	-64.7	-13.0	-51.7	
2816.00	-28.6	V	3.0	39.1	1.0	-66.7	-13.0	-53.7	
1408.00	-24.6	H	3.0	38.1	1.0	-61.7	-13.0	-48.7	
2112.00	-26.5	H	3.0	38.5	1.0	-63.9	-13.0	-50.9	
2816.00	-28.8	H	3.0	39.1	1.0	-66.9	-13.0	-53.9	
Mid Ch, 707.5MHz									
1415.00	-21.2	V	3.0	38.1	1.0	-58.3	-13.0	-45.3	
2122.50	-27.9	V	3.0	38.5	1.0	-65.4	-13.0	-52.4	
2830.00	-28.3	V	3.0	39.1	1.0	-66.5	-13.0	-53.5	
1415.00	-22.1	H	3.0	38.1	1.0	-59.2	-13.0	-46.2	
2122.50	-26.7	H	3.0	38.5	1.0	-64.1	-13.0	-51.1	
2830.00	-28.5	H	3.0	39.1	1.0	-66.6	-13.0	-53.6	
High Ch, 711MHz									
1422.00	-27.0	V	3.0	38.1	1.0	-64.2	-13.0	-51.2	
2133.00	-25.8	V	3.0	38.5	1.0	-63.3	-13.0	-50.3	
2844.00	-28.1	V	3.0	39.1	1.0	-66.2	-13.0	-53.2	
1422.00	-27.5	H	3.0	38.1	1.0	-64.6	-13.0	-51.6	
2133.00	-27.3	H	3.0	38.5	1.0	-64.8	-13.0	-51.8	
2844.00	-28.3	H	3.0	39.1	1.0	-66.4	-13.0	-53.4	

LTE Band 12 10MHz 16QAM

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-12
Test Engineer: 45585
Configuration: EUT / Adapter / Craddle, Y-Position
Location: Chamber 2
Mode: LTE_16QAM Band 12 Harmonics, 10MHz Bandwidth

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	-22.3	V	3.0	38.1	1.0	-59.4	-13.0	-46.4	
2112.00	-27.5	V	3.0	38.5	1.0	-65.0	-13.0	-52.0	
2816.00	-28.7	V	3.0	39.1	1.0	-66.8	-13.0	-53.8	
1408.00	-24.7	H	3.0	38.1	1.0	-61.8	-13.0	-48.8	
2112.00	-27.0	H	3.0	38.5	1.0	-64.4	-13.0	-51.4	
2816.00	-28.9	H	3.0	39.1	1.0	-67.0	-13.0	-54.0	
Mid Ch, 707.5MHz									
1415.00	-22.8	V	3.0	38.1	1.0	-59.9	-13.0	-46.9	
2122.50	-28.7	V	3.0	38.5	1.0	-66.2	-13.0	-53.2	
2830.00	-28.2	V	3.0	39.1	1.0	-66.4	-13.0	-53.4	
1415.00	-23.2	H	3.0	38.1	1.0	-60.3	-13.0	-47.3	
2122.50	-27.8	H	3.0	38.5	1.0	-65.3	-13.0	-52.3	
2830.00	-28.6	H	3.0	39.1	1.0	-66.7	-13.0	-53.7	
High Ch, 711MHz									
1422.00	-27.4	V	3.0	38.1	1.0	-64.6	-13.0	-51.6	
2133.00	-27.9	V	3.0	38.5	1.0	-65.4	-13.0	-52.4	
2844.00	-28.0	V	3.0	39.1	1.0	-66.2	-13.0	-53.2	
1422.00	-27.8	H	3.0	38.1	1.0	-64.9	-13.0	-51.9	
2133.00	-27.4	H	3.0	38.5	1.0	-64.9	-13.0	-51.9	
2844.00	-28.2	H	3.0	39.1	1.0	-66.3	-13.0	-53.3	

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LTE Band 12 5MHz QPSK

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-12
Test Engineer: 45885
Configuration: EUT / Adapter / Craddle, Y-Position
Location: Chamber 2
Mode: LTE_QPSK Band 12 Harmonics, 5MHz Bandwidth

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									
1403.00	-23.3	V	3.0	38.1	1.0	-60.4	-13.0	-47.4	
2104.50	-24.9	V	3.0	38.5	1.0	-62.3	-13.0	-49.3	
2806.00	-28.0	V	3.0	39.1	1.0	-66.1	-13.0	-53.1	
1403.00	-24.4	H	3.0	38.1	1.0	-61.5	-13.0	-48.5	
2104.50	-25.6	H	3.0	38.5	1.0	-63.0	-13.0	-50.0	
2806.00	-28.4	H	3.0	39.1	1.0	-66.5	-13.0	-53.5	
Mid Ch, 707.5MHz									
1415.00	-25.2	V	3.0	38.1	1.0	-62.3	-13.0	-49.3	
2122.50	-28.0	V	3.0	38.5	1.0	-65.5	-13.0	-52.5	
2830.00	-28.3	V	3.0	39.1	1.0	-66.4	-13.0	-53.4	
1415.00	-25.0	H	3.0	38.1	1.0	-62.1	-13.0	-49.1	
2122.50	-26.0	H	3.0	38.5	1.0	-63.5	-13.0	-50.5	
2830.00	-28.0	H	3.0	39.1	1.0	-66.2	-13.0	-53.2	
High Ch, 713.5MHz									
1427.00	-24.5	V	3.0	38.1	1.0	-61.6	-13.0	-48.6	
2140.50	-28.7	V	3.0	38.5	1.0	-66.2	-13.0	-53.2	
2854.00	-28.3	V	3.0	39.1	1.0	-66.5	-13.0	-53.5	
1427.00	-25.8	H	3.0	38.1	1.0	-62.9	-13.0	-49.9	
2140.50	-24.8	H	3.0	38.5	1.0	-62.3	-13.0	-49.3	
2854.00	-28.5	H	3.0	39.1	1.0	-66.7	-13.0	-53.7	

LTE Band 12 5MHz 16QAM

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-12
Test Engineer: 45585
Configuration: EUT / Adapter / Craddle, Y-Position
Location: Chamber 2
Mode: LTE_16QAM Band 12 Harmonics, 5MHz Bandwidth

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									
1403.00	-23.1	V	3.0	38.1	1.0	-60.2	-13.0	-47.2	
2104.50	-25.4	V	3.0	38.5	1.0	-62.9	-13.0	-49.9	
2806.00	-28.1	V	3.0	39.1	1.0	-66.2	-13.0	-53.2	
1403.00	-24.0	H	3.0	38.1	1.0	-61.1	-13.0	-48.1	
2104.50	-25.8	H	3.0	38.5	1.0	-63.3	-13.0	-50.3	
2806.00	-28.5	H	3.0	39.1	1.0	-66.6	-13.0	-53.6	
Mid Ch, 707.5MHz									
1415.00	-26.0	V	3.0	38.1	1.0	-63.1	-13.0	-50.1	
2122.50	-28.4	V	3.0	38.5	1.0	-65.9	-13.0	-52.9	
2830.00	-28.3	V	3.0	39.1	1.0	-66.4	-13.0	-53.4	
1415.00	-26.4	H	3.0	38.1	1.0	-63.5	-13.0	-50.5	
2122.50	-27.1	H	3.0	38.5	1.0	-64.6	-13.0	-51.6	
2830.00	-28.6	H	3.0	39.1	1.0	-66.7	-13.0	-53.7	
High Ch, 713.5MHz									
1427.00	-25.0	V	3.0	38.1	1.0	-62.2	-13.0	-49.2	
2140.50	-28.8	V	3.0	38.5	1.0	-66.3	-13.0	-53.3	
2854.00	-28.3	V	3.0	39.1	1.0	-66.5	-13.0	-53.5	
1427.00	-26.5	H	3.0	38.1	1.0	-63.7	-13.0	-50.7	
2140.50	-25.9	H	3.0	38.5	1.0	-63.4	-13.0	-50.4	
2854.00	-28.4	H	3.0	39.1	1.0	-66.5	-13.0	-53.5	

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LTE Band 12 3MHz QPSK

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-12
Test Engineer: 45885
Configuration: EUT / Adapter / Craddle, Y-Position
Location: Chamber 2
Mode: LTE_QPSK Band 12 Harmonics, 3MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 700.5MHz									
1401.00	-23.2	V	3.0	38.1	1.0	-60.3	-13.0	-47.3	
2101.50	-23.0	V	3.0	38.5	1.0	-60.5	-13.0	-47.5	
2802.00	-28.1	V	3.0	39.1	1.0	-66.2	-13.0	-53.2	
1401.00	-24.0	H	3.0	38.1	1.0	-61.1	-13.0	-48.1	
2101.50	-22.9	H	3.0	38.5	1.0	-60.4	-13.0	-47.4	
2802.00	-28.4	H	3.0	39.1	1.0	-66.5	-13.0	-53.5	
Mid Ch, 707.5MHz									
1415.00	-26.3	V	3.0	38.1	1.0	-63.4	-13.0	-50.4	
2122.50	-28.0	V	3.0	38.5	1.0	-65.5	-13.0	-52.5	
2830.00	-28.3	V	3.0	39.1	1.0	-66.5	-13.0	-53.5	
1415.00	-24.6	H	3.0	38.1	1.0	-61.7	-13.0	-48.7	
2122.50	-26.4	H	3.0	38.5	1.0	-63.8	-13.0	-50.8	
2830.00	-28.5	H	3.0	39.1	1.0	-66.6	-13.0	-53.6	
High Ch, 714.5MHz									
1429.00	-26.2	V	3.0	38.1	1.0	-63.3	-13.0	-50.3	
2143.50	-28.8	V	3.0	38.5	1.0	-66.3	-13.0	-53.3	
2858.00	-28.5	V	3.0	39.1	1.0	-66.6	-13.0	-53.6	
1429.00	-25.9	H	3.0	38.1	1.0	-63.0	-13.0	-50.0	
2143.50	-26.6	H	3.0	38.5	1.0	-64.1	-13.0	-51.1	
2858.00	-28.8	H	3.0	39.1	1.0	-67.0	-13.0	-54.0	

LTE Band 12 3MHz 16QAM

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-12
Test Engineer: 45585
Configuration: EUT / Adapter / Craddle, Y-Position
Location: Chamber 2
Mode: LTE_16QAM Band 12 Harmonics, 3MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 700.5MHz									
1401.00	-22.4	V	3.0	38.1	1.0	-59.5	-13.0	-46.5	
2101.50	-27.8	V	3.0	38.5	1.0	-65.3	-13.0	-52.3	
2802.00	-28.1	V	3.0	39.1	1.0	-66.2	-13.0	-53.2	
1401.00	-23.4	H	3.0	38.1	1.0	-60.5	-13.0	-47.5	
2101.50	-24.9	H	3.0	38.5	1.0	-62.4	-13.0	-49.4	
2802.00	-28.3	H	3.0	39.1	1.0	-66.4	-13.0	-53.4	
Mid Ch, 707.5MHz									
1415.00	-27.3	V	3.0	38.1	1.0	-64.4	-13.0	-51.4	
2122.50	-28.3	V	3.0	38.5	1.0	-65.8	-13.0	-52.8	
2830.00	-28.4	V	3.0	39.1	1.0	-66.5	-13.0	-53.5	
1415.00	-25.7	H	3.0	38.1	1.0	-62.8	-13.0	-49.8	
2122.50	-27.0	H	3.0	38.5	1.0	-64.5	-13.0	-51.5	
2830.00	-28.7	H	3.0	39.1	1.0	-66.8	-13.0	-53.8	
High Ch, 714.5MHz									
1429.00	-21.8	V	3.0	38.1	1.0	-58.9	-13.0	-45.9	
2143.50	-28.7	V	3.0	38.5	1.0	-66.2	-13.0	-53.2	
2858.00	-28.4	V	3.0	39.1	1.0	-66.6	-13.0	-53.6	
1429.00	-23.1	H	3.0	38.1	1.0	-60.2	-13.0	-47.2	
2143.50	-26.6	H	3.0	38.5	1.0	-64.1	-13.0	-51.1	
2858.00	-28.7	H	3.0	39.1	1.0	-66.9	-13.0	-53.9	

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LTE Band 12 1.4MHz QPSK

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-12
Test Engineer: 45585
Configuration: EUT / Adapter / Craddle, Y-Position
Location: Chamber 2
Mode: LTE_QPSK Band 12 Harmonics, 1.4MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 699.7MHz									
1399.40	-23.3	V	3.0	38.1	1.0	-60.4	-13.0	-47.4	
2099.10	-22.6	V	3.0	38.5	1.0	-60.1	-13.0	-47.1	
2798.80	-27.9	V	3.0	39.1	1.0	-65.9	-13.0	-52.9	
1399.40	-23.7	H	3.0	38.1	1.0	-60.8	-13.0	-47.8	
2099.10	-27.4	H	3.0	38.5	1.0	-64.9	-13.0	-51.9	
2798.80	-28.2	H	3.0	39.1	1.0	-66.3	-13.0	-53.3	
Mid Ch, 707.5MHz									
1415.00	-25.3	V	3.0	38.1	1.0	-62.4	-13.0	-49.4	
2122.50	-22.2	V	3.0	38.5	1.0	-59.6	-13.0	-46.6	
2830.00	-27.7	V	3.0	39.1	1.0	-65.8	-13.0	-52.8	
1415.00	-25.0	H	3.0	38.1	1.0	-62.1	-13.0	-49.1	
2122.50	-28.0	H	3.0	38.5	1.0	-65.5	-13.0	-52.5	
2830.00	-28.0	H	3.0	39.1	1.0	-66.1	-13.0	-53.1	
High Ch, 715.3MHz									
1430.60	-24.5	V	3.0	38.1	1.0	-61.7	-13.0	-48.7	
2145.90	-29.1	V	3.0	38.5	1.0	-66.6	-13.0	-53.6	
2861.20	-28.7	V	3.0	39.1	1.0	-66.8	-13.0	-53.8	
1430.60	-25.0	H	3.0	38.1	1.0	-62.1	-13.0	-49.1	
2145.90	-26.4	H	3.0	38.5	1.0	-64.0	-13.0	-51.0	
2861.20	-29.0	H	3.0	39.1	1.0	-67.1	-13.0	-54.1	

LTE Band 12 1.4MHz 16QAM

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-12
Test Engineer: 45585
Configuration: EUT / Adapter / Craddle,Y-Position
Location: Chamber 2
Mode: LTE_16QAM Band 12 Harmonics, 1.4MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 699.7MHz									
1399.40	-23.0	V	3.0	38.1	1.0	-60.2	-13.0	-47.2	
2099.10	-23.6	V	3.0	38.5	1.0	-61.1	-13.0	-48.1	
2798.80	-27.9	V	3.0	39.1	1.0	-66.0	-13.0	-53.0	
1399.40	-23.3	H	3.0	38.1	1.0	-60.4	-13.0	-47.4	
2099.10	-26.8	H	3.0	38.5	1.0	-64.2	-13.0	-51.2	
2798.80	-28.2	H	3.0	39.1	1.0	-66.3	-13.0	-53.3	
Mid Ch, 707.5MHz									
1415.00	-25.8	V	3.0	38.1	1.0	-62.9	-13.0	-49.9	
2122.50	-27.5	V	3.0	38.5	1.0	-64.9	-13.0	-51.9	
2830.00	-27.7	V	3.0	39.1	1.0	-65.8	-13.0	-52.8	
1415.00	-26.0	H	3.0	38.1	1.0	-63.1	-13.0	-50.1	
2122.50	-28.1	H	3.0	38.5	1.0	-65.6	-13.0	-52.6	
2830.00	-28.1	H	3.0	39.1	1.0	-66.2	-13.0	-53.2	
High Ch, 715.3MHz									
1430.60	-25.4	V	3.0	38.1	1.0	-62.5	-13.0	-49.5	
2145.90	-29.1	V	3.0	38.5	1.0	-66.6	-13.0	-53.6	
2861.20	-28.7	V	3.0	39.1	1.0	-66.8	-13.0	-53.8	
1430.60	-27.0	H	3.0	38.1	1.0	-64.1	-13.0	-51.1	
2145.90	-27.6	H	3.0	38.5	1.0	-65.1	-13.0	-52.1	
2861.20	-28.9	H	3.0	39.1	1.0	-67.1	-13.0	-54.1	

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218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea TEL: (031) 337-9902 FAX: (031) 213-5433
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LTE Band 13

LTE Band 13 10MHz QPSK

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-12
Test Engineer: 45885
Configuration: EUT / Adapter / Craddle, Z-Position
Location: Chamber 2
Mode: LTE_QPSK Band 13 Harmonics, 10MHz Bandwidth

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	-27.8	V	3.0	38.2	1.0	-65.0	-40.0	-25.0	
2346.00	-28.4	V	3.0	38.7	1.0	-66.1	-13.0	-53.1	
3128.00	-27.5	V	3.0	39.3	1.0	-65.9	-13.0	-52.9	
1564.00	-21.4	H	3.0	38.2	1.0	-58.5	-40.0	-18.5	
2346.00	-27.9	H	3.0	38.7	1.0	-65.6	-13.0	-52.6	
3128.00	-27.5	H	3.0	39.3	1.0	-65.9	-13.0	-52.9	

LTE Band 13 10MHz 16QAM

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-12
Test Engineer: 45585
Configuration: EUT / Adapter / Craddle, Z-Position
Location: Chamber 2
Mode: LTE_16QAM Band 13 Harmonics, 10MHz Bandwidth

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	-28.2	V	3.0	38.2	1.0	-65.4	-40.0	-25.4	
2346.00	-28.4	V	3.0	38.7	1.0	-66.1	-13.0	-53.1	
3128.00	-27.6	V	3.0	39.3	1.0	-65.9	-13.0	-52.9	
1564.00	-22.2	H	3.0	38.2	1.0	-59.4	-40.0	-19.4	
2346.00	-27.3	H	3.0	38.7	1.0	-65.0	-13.0	-52.0	
3128.00	-27.7	H	3.0	39.3	1.0	-66.1	-13.0	-53.1	

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LTE

Band 13

5MHz

QPSK

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-12
Test Engineer: 45885
Configuration: EUT / Adapter / Craddle, Z-Position
Location: Chamber 2
Mode: LTE_QPSK Band 13 Harmonics, 5MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 779.5MHz									
1559.00	-26.2	V	3.0	38.2	1.0	-63.4	-40.0	-23.4	
2338.50	-28.4	V	3.0	38.7	1.0	-66.1	-13.0	-53.1	
3118.00	-27.8	V	3.0	39.3	1.0	-66.1	-13.0	-53.1	
1559.00	-23.9	H	3.0	38.2	1.0	-61.1	-40.0	-21.1	
2338.50	-27.9	H	3.0	38.7	1.0	-65.5	-13.0	-52.5	
3118.00	-28.0	H	3.0	39.3	1.0	-66.3	-13.0	-53.3	
Mid Ch, 782MHz									
1564.00	-27.2	V	3.0	38.2	1.0	-64.4	-40.0	-24.4	
2346.00	-26.6	V	3.0	38.7	1.0	-64.3	-13.0	-51.3	
3128.00	-27.7	V	3.0	39.3	1.0	-66.0	-13.0	-53.0	
1564.00	-27.7	H	3.0	38.2	1.0	-64.9	-40.0	-24.9	
2346.00	-29.5	H	3.0	38.7	1.0	-67.2	-13.0	-54.2	
3128.00	-27.9	H	3.0	39.3	1.0	-66.2	-13.0	-53.2	
High Ch, 784.5MHz									
1569.00	-30.6	V	3.0	38.2	1.0	-67.8	-40.0	-27.8	
2353.50	-25.2	V	3.0	38.7	1.0	-62.9	-13.0	-49.9	
3138.00	-27.5	V	3.0	39.3	1.0	-65.8	-13.0	-52.8	
1569.00	-30.8	H	3.0	38.2	1.0	-68.0	-40.0	-28.0	
2353.50	-24.7	H	3.0	38.7	1.0	-62.4	-13.0	-49.4	
3138.00	-27.2	H	3.0	39.3	1.0	-65.5	-13.0	-52.5	

LTE

Band 13

5MHz

16QAM

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-12
Test Engineer: 45585
Configuration: EUT / Adapter / Craddle, Z-Position
Location: Chamber 2
Mode: LTE_16QAM Band 13 Harmonics, 5MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 779.5MHz									
1559.00	-26.7	V	3.0	38.2	1.0	-63.9	-40.0	-23.9	
2338.50	-28.8	V	3.0	38.7	1.0	-66.5	-13.0	-53.5	
3118.00	-27.8	V	3.0	39.3	1.0	-66.1	-13.0	-53.1	
1559.00	-24.8	H	3.0	38.2	1.0	-62.0	-40.0	-22.0	
2338.50	-28.4	H	3.0	38.7	1.0	-66.1	-13.0	-53.1	
3118.00	-28.0	H	3.0	39.3	1.0	-66.3	-13.0	-53.3	
Mid Ch, 782MHz									
1564.00	-28.0	V	3.0	38.2	1.0	-65.2	-40.0	-25.2	
2346.00	-26.8	V	3.0	38.7	1.0	-64.5	-13.0	-51.5	
3128.00	-27.6	V	3.0	39.3	1.0	-65.9	-13.0	-52.9	
1564.00	-28.6	H	3.0	38.2	1.0	-65.8	-40.0	-25.8	
2346.00	-29.4	H	3.0	38.7	1.0	-67.1	-13.0	-54.1	
3128.00	-27.7	H	3.0	39.3	1.0	-66.0	-13.0	-53.0	
High Ch, 784.5MHz									
1569.00	-30.7	V	3.0	38.2	1.0	-67.9	-40.0	-27.9	
2353.50	-25.2	V	3.0	38.7	1.0	-62.9	-13.0	-49.9	
3138.00	-27.4	V	3.0	39.3	1.0	-65.7	-13.0	-52.7	
1569.00	-30.2	H	3.0	38.2	1.0	-67.4	-40.0	-27.4	
2353.50	-26.5	H	3.0	38.7	1.0	-64.2	-13.0	-51.2	
3138.00	-27.5	H	3.0	39.3	1.0	-65.8	-13.0	-52.8	

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LTE Band 25

LTE Band 25 20MHz QPSK

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-13
Test Engineer: 45585
Configuration: EUT / Adapter / Cradle, Z-Position
Location: Chamber 2
Mode: LTE_QPSK Band 25 Harmonics, 20MHz Bandwidth

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	-27.1	V	3.0	39.7	1.0	-65.8	-13.0	-52.8	
5580.00	-24.5	V	3.0	39.9	1.0	-63.5	-13.0	-50.5	
7440.00	-23.4	V	3.0	39.4	1.0	-61.8	-13.0	-48.8	
3720.00	-27.0	H	3.0	39.7	1.0	-65.6	-13.0	-52.6	
5580.00	-23.4	H	3.0	39.9	1.0	-62.3	-13.0	-49.3	
7440.00	-23.3	H	3.0	39.4	1.0	-61.8	-13.0	-48.8	
Mid Ch, 1882.5MHz									
3765.00	-26.6	V	3.0	39.7	1.0	-65.3	-13.0	-52.3	
5647.50	-24.2	V	3.0	40.0	1.0	-63.2	-13.0	-50.2	
7530.00	-23.2	V	3.0	39.4	1.0	-61.6	-13.0	-48.6	
3765.00	-26.6	H	3.0	39.7	1.0	-65.3	-13.0	-52.3	
5647.50	-22.4	H	3.0	40.0	1.0	-61.3	-13.0	-48.3	
7530.00	-23.0	H	3.0	39.4	1.0	-61.4	-13.0	-48.4	
High Ch, 1905MHz									
3810.00	-25.8	V	3.0	39.7	1.0	-64.5	-13.0	-51.5	
5715.00	-23.8	V	3.0	40.0	1.0	-62.8	-13.0	-49.8	
7620.00	-23.1	V	3.0	39.3	1.0	-61.4	-13.0	-48.4	
3810.00	-24.2	H	3.0	39.7	1.0	-63.0	-13.0	-50.0	
5715.00	-22.1	H	3.0	40.0	1.0	-61.1	-13.0	-48.1	
7620.00	-23.1	H	3.0	39.3	1.0	-61.5	-13.0	-48.5	

LTE Band 25 20MHz 16QAM

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-13
Test Engineer: 45585
Configuration: EUT / Adapter / Cradle , Z-positon
Location: Chamber 2
Mode: LTE_16QAM Band 25 Harmonics, 20MHz Bandwidth

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	-25.4	V	3.0	39.7	1.0	-64.0	-13.0	-51.0	
5580.00	-23.1	V	3.0	39.9	1.0	-62.0	-13.0	-49.0	
7440.00	-23.3	V	3.0	39.4	1.0	-61.7	-13.0	-48.7	
3720.00	-26.0	H	3.0	39.7	1.0	-64.6	-13.0	-51.6	
5580.00	-22.6	H	3.0	39.9	1.0	-61.6	-13.0	-48.6	
7440.00	-23.4	H	3.0	39.4	1.0	-61.8	-13.0	-48.8	
Mid Ch, 1882.5MHz									
3765.00	-26.7	V	3.0	39.7	1.0	-65.4	-13.0	-52.4	
5647.50	-24.1	V	3.0	40.0	1.0	-63.0	-13.0	-50.0	
7530.00	-23.0	V	3.0	39.4	1.0	-61.4	-13.0	-48.4	
3765.00	-26.6	H	3.0	39.7	1.0	-65.3	-13.0	-52.3	
5647.50	-23.0	H	3.0	40.0	1.0	-62.0	-13.0	-49.0	
7530.00	-23.1	H	3.0	39.4	1.0	-61.5	-13.0	-48.5	
High Ch, 1905MHz									
3810.00	-25.9	V	3.0	39.7	1.0	-64.6	-13.0	-51.6	
5715.00	-24.0	V	3.0	40.0	1.0	-63.0	-13.0	-50.0	
7620.00	-23.0	V	3.0	39.3	1.0	-61.4	-13.0	-48.4	
3810.00	-24.5	H	3.0	39.7	1.0	-63.2	-13.0	-50.2	
5715.00	-22.3	H	3.0	40.0	1.0	-61.3	-13.0	-48.3	
7620.00	-23.1	H	3.0	39.3	1.0	-61.5	-13.0	-48.5	

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LTE Band 25 15MHz QPSK

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-13
Test Engineer: 45585
Configuration: EUT / Adapter / Cradle, Z-Position
Location: Chamber 2
Mode: LTE_QPSK Band 25 Harmonics, 15MHz Bandwidth

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	-26.2	V	3.0	39.7	1.0	-64.9	-13.0	-51.9	
5572.50	-24.7	V	3.0	39.9	1.0	-63.7	-13.0	-50.7	
7430.00	-23.4	V	3.0	39.4	1.0	-61.8	-13.0	-48.8	
3715.00	-26.3	H	3.0	39.7	1.0	-65.0	-13.0	-52.0	
5572.50	-21.9	H	3.0	39.9	1.0	-60.9	-13.0	-47.9	
7430.00	-23.3	H	3.0	39.4	1.0	-61.8	-13.0	-48.8	
Mid Ch, 1882.5MHz									
3765.00	-26.6	V	3.0	39.7	1.0	-65.3	-13.0	-52.3	
5647.50	-22.9	V	3.0	40.0	1.0	-61.9	-13.0	-48.9	
7530.00	-23.2	V	3.0	39.4	1.0	-61.6	-13.0	-48.6	
3765.00	-26.1	H	3.0	39.7	1.0	-64.7	-13.0	-51.7	
5647.50	-21.5	H	3.0	40.0	1.0	-60.4	-13.0	-47.4	
7530.00	-23.1	H	3.0	39.4	1.0	-61.5	-13.0	-48.5	
High Ch, 1907.5MHz									
3815.00	-25.5	V	3.0	39.7	1.0	-64.2	-13.0	-51.2	
5722.50	-21.4	V	3.0	40.0	1.0	-60.3	-13.0	-47.3	
7630.00	-22.9	V	3.0	39.3	1.0	-61.2	-13.0	-48.2	
3815.00	-25.9	H	3.0	39.7	1.0	-64.6	-13.0	-51.6	
5722.50	-19.0	H	3.0	40.0	1.0	-58.0	-13.0	-45.0	
7630.00	-23.0	H	3.0	39.3	1.0	-61.3	-13.0	-48.3	

LTE Band 25 15MHz 16QAM

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-13
Test Engineer: 45585
Configuration: EUT / Adapter / Cradle , Z-positon
Location: Chamber 2
Mode: LTE_16QAM Band 25 Harmonics, 15MHz Bandwidth

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	-26.2	V	3.0	39.7	1.0	-64.9	-13.0	-51.9	
5572.50	-24.6	V	3.0	39.9	1.0	-63.6	-13.0	-50.6	
7430.00	-23.3	V	3.0	39.4	1.0	-61.7	-13.0	-48.7	
3715.00	-26.6	H	3.0	39.7	1.0	-65.3	-13.0	-52.3	
5572.50	-22.7	H	3.0	39.9	1.0	-61.6	-13.0	-48.6	
7430.00	-23.4	H	3.0	39.4	1.0	-61.8	-13.0	-48.8	
Mid Ch, 1882.5MHz									
3765.00	-25.7	V	3.0	39.7	1.0	-64.4	-13.0	-51.4	
5647.50	-22.1	V	3.0	40.0	1.0	-61.0	-13.0	-48.0	
7530.00	-23.3	V	3.0	39.4	1.0	-61.7	-13.0	-48.7	
3765.00	-26.0	H	3.0	39.7	1.0	-64.7	-13.0	-51.7	
5647.50	-23.1	H	3.0	40.0	1.0	-62.1	-13.0	-49.1	
7530.00	-23.2	H	3.0	39.4	1.0	-61.5	-13.0	-48.5	
High Ch, 1907.5MHz									
3815.00	-25.9	V	3.0	39.7	1.0	-64.6	-13.0	-51.6	
5722.50	-21.8	V	3.0	40.0	1.0	-60.8	-13.0	-47.8	
7630.00	-23.0	V	3.0	39.3	1.0	-61.3	-13.0	-48.3	
3815.00	-25.9	H	3.0	39.7	1.0	-64.6	-13.0	-51.6	
5722.50	-19.6	H	3.0	40.0	1.0	-58.6	-13.0	-45.6	
7630.00	-22.8	H	3.0	39.3	1.0	-61.1	-13.0	-48.1	

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LTE

Band 25

10MHz

QPSK

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-13
Test Engineer: 45585
Configuration: EUT / Adapter / Cradle, Z-Position
Location: Chamber 2
Mode: LTE_QPSK Band 25 Harmonics, 10MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1855MHz									
3710.00	-26.0	V	3.0	39.7	1.0	-64.7	-13.0	-51.7	
5565.00	-22.1	V	3.0	39.9	1.0	-61.1	-13.0	-48.1	
7420.00	-23.6	V	3.0	39.4	1.0	-62.1	-13.0	-49.1	
3710.00	-26.1	H	3.0	39.7	1.0	-64.7	-13.0	-51.7	
5565.00	-20.9	H	3.0	39.9	1.0	-59.9	-13.0	-46.9	
7420.00	-23.7	H	3.0	39.4	1.0	-62.1	-13.0	-49.1	
Mid Ch, 1882.5MHz									
3765.00	-25.6	V	3.0	39.7	1.0	-64.3	-13.0	-51.3	
5647.50	-24.0	V	3.0	40.0	1.0	-62.9	-13.0	-49.9	
7530.00	-23.1	V	3.0	39.4	1.0	-61.5	-13.0	-48.5	
3765.00	-25.9	H	3.0	39.7	1.0	-64.6	-13.0	-51.6	
5647.50	-21.3	H	3.0	40.0	1.0	-60.3	-13.0	-47.3	
7530.00	-23.0	H	3.0	39.4	1.0	-61.4	-13.0	-48.4	
High Ch, 1910MHz									
3820.00	-26.0	V	3.0	39.7	1.0	-64.7	-13.0	-51.7	
5730.00	-23.9	V	3.0	40.0	1.0	-62.9	-13.0	-49.9	
7640.00	-22.8	V	3.0	39.3	1.0	-61.1	-13.0	-48.1	
3820.00	-25.6	H	3.0	39.7	1.0	-64.3	-13.0	-51.3	
5730.00	-22.5	H	3.0	40.0	1.0	-61.5	-13.0	-48.5	
7640.00	-22.7	H	3.0	39.3	1.0	-61.0	-13.0	-48.0	

LTE

Band 25

10MHz

16QAM

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-13
Test Engineer: 45585
Configuration: EUT / Adapter / Cradle , Z-positon
Location: Chamber 2
Mode: LTE_16QAM Band 25 Harmonics, 10MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1855MHz									
3710.00	-28.0	V	3.0	39.7	1.0	-66.7	-13.0	-53.7	
5565.00	-24.5	V	3.0	39.9	1.0	-63.5	-13.0	-50.5	
7420.00	-23.7	V	3.0	39.4	1.0	-62.1	-13.0	-49.1	
3710.00	-26.7	H	3.0	39.7	1.0	-65.4	-13.0	-52.4	
5565.00	-21.4	H	3.0	39.9	1.0	-60.4	-13.0	-47.4	
7420.00	-23.6	H	3.0	39.4	1.0	-62.0	-13.0	-49.0	
Mid Ch, 1882.5MHz									
3765.00	-26.7	V	3.0	39.7	1.0	-65.4	-13.0	-52.4	
5647.50	-22.8	V	3.0	40.0	1.0	-61.8	-13.0	-48.8	
7530.00	-23.2	V	3.0	39.4	1.0	-61.6	-13.0	-48.6	
3765.00	-26.6	H	3.0	39.7	1.0	-65.3	-13.0	-52.3	
5647.50	-21.6	H	3.0	40.0	1.0	-60.6	-13.0	-47.6	
7530.00	-23.1	H	3.0	39.4	1.0	-61.5	-13.0	-48.5	
High Ch, 1910MHz									
3820.00	-25.7	V	3.0	39.7	1.0	-64.4	-13.0	-51.4	
5730.00	-24.0	V	3.0	40.0	1.0	-63.0	-13.0	-50.0	
7640.00	-22.9	V	3.0	39.3	1.0	-61.3	-13.0	-48.3	
3820.00	-25.3	H	3.0	39.7	1.0	-64.0	-13.0	-51.0	
5730.00	-22.9	H	3.0	40.0	1.0	-61.9	-13.0	-48.9	
7640.00	-22.8	H	3.0	39.3	1.0	-61.1	-13.0	-48.1	

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218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea TEL: (031) 337-9902 FAX: (031) 213-5433
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LTE

Band 25

5MHz

QPSK

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-13
Test Engineer: 45585
Configuration: EUT / Adapter / Cradle, Z-Position
Location: Chamber 2
Mode: LTE_QPSK Band 25 Harmonics, 5MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1852.5MHz									
3705.00	-26.2	V	3.0	39.7	1.0	-64.9	-13.0	-51.9	
5557.50	-23.7	V	3.0	39.9	1.0	-62.6	-13.0	-49.6	
7410.00	-23.8	V	3.0	39.4	1.0	-62.3	-13.0	-49.3	
3705.00	-25.2	H	3.0	39.7	1.0	-63.8	-13.0	-50.8	
5557.50	-21.7	H	3.0	39.9	1.0	-60.6	-13.0	-47.6	
7410.00	-23.8	H	3.0	39.4	1.0	-62.2	-13.0	-49.2	
Mid Ch, 1882.5MHz									
3765.00	-26.1	V	3.0	39.7	1.0	-64.7	-13.0	-51.7	
5647.50	-22.9	V	3.0	40.0	1.0	-61.9	-13.0	-48.9	
7530.00	-23.1	V	3.0	39.4	1.0	-61.5	-13.0	-48.5	
3765.00	-26.4	H	3.0	39.7	1.0	-65.1	-13.0	-52.1	
5647.50	-20.9	H	3.0	40.0	1.0	-59.9	-13.0	-46.9	
7530.00	-23.0	H	3.0	39.4	1.0	-61.4	-13.0	-48.4	
High Ch, 1912.5MHz									
3825.00	-25.0	V	3.0	39.7	1.0	-63.7	-13.0	-50.7	
5737.50	-23.4	V	3.0	40.0	1.0	-62.4	-13.0	-49.4	
7650.00	-22.8	V	3.0	39.3	1.0	-61.1	-13.0	-48.1	
3825.00	-24.3	H	3.0	39.7	1.0	-63.0	-13.0	-50.0	
5737.50	-20.6	H	3.0	40.0	1.0	-59.6	-13.0	-46.6	
7650.00	-22.8	H	3.0	39.3	1.0	-61.1	-13.0	-48.1	

LTE

Band 25

5MHz

16QAM

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-13
Test Engineer: 45585
Configuration: EUT / Adapter / Cradle , Z-positon
Location: Chamber 2
Mode: LTE_16QAM Band 25 Harmonics, 5MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1852.5MHz									
3705.00	-26.8	V	3.0	39.7	1.0	-65.5	-13.0	-52.5	
5557.50	-23.8	V	3.0	39.9	1.0	-62.7	-13.0	-49.7	
7410.00	-23.7	V	3.0	39.4	1.0	-62.1	-13.0	-49.1	
3705.00	-25.6	H	3.0	39.7	1.0	-64.3	-13.0	-51.3	
5557.50	-22.4	H	3.0	39.9	1.0	-61.4	-13.0	-48.4	
7410.00	-23.8	H	3.0	39.4	1.0	-62.2	-13.0	-49.2	
Mid Ch, 1882.5MHz									
3765.00	-26.1	V	3.0	39.7	1.0	-64.8	-13.0	-51.8	
5647.50	-22.1	V	3.0	40.0	1.0	-61.1	-13.0	-48.1	
7530.00	-23.1	V	3.0	39.4	1.0	-61.4	-13.0	-48.4	
3765.00	-26.5	H	3.0	39.7	1.0	-65.1	-13.0	-52.1	
5647.50	-22.1	H	3.0	40.0	1.0	-61.0	-13.0	-48.0	
7530.00	-23.0	H	3.0	39.4	1.0	-61.4	-13.0	-48.4	
High Ch, 1912.5MHz									
3825.00	-24.6	V	3.0	39.7	1.0	-63.4	-13.0	-50.4	
5737.50	-23.0	V	3.0	40.0	1.0	-62.0	-13.0	-49.0	
7650.00	-22.9	V	3.0	39.3	1.0	-61.3	-13.0	-48.3	
3825.00	-24.4	H	3.0	39.7	1.0	-63.1	-13.0	-50.1	
5737.50	-19.7	H	3.0	40.0	1.0	-58.7	-13.0	-45.7	
7650.00	-22.9	H	3.0	39.3	1.0	-61.2	-13.0	-48.2	

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LTE Band 25 3MHz QPSK

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-13
Test Engineer: 45585
Configuration: EUT / Adapter / Cradle, Z-Position
Location: Chamber 2
Mode: LTE_QPSK Band 25 Harmonics, 3MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1851.5MHz									
3703.00	-27.3	V	3.0	39.7	1.0	-65.9	-13.0	-52.9	
5554.50	-23.0	V	3.0	39.9	1.0	-61.9	-13.0	-48.9	
7406.00	-23.6	V	3.0	39.4	1.0	-62.0	-13.0	-49.0	
3703.00	-25.9	H	3.0	39.7	1.0	-64.5	-13.0	-51.5	
5554.50	-20.3	H	3.0	39.9	1.0	-59.2	-13.0	-46.2	
7406.00	-23.6	H	3.0	39.4	1.0	-62.0	-13.0	-49.0	
Mid Ch, 1882.5MHz									
3765.00	-26.0	V	3.0	39.7	1.0	-64.7	-13.0	-51.7	
5647.50	-21.3	V	3.0	40.0	1.0	-60.3	-13.0	-47.3	
7530.00	-23.0	V	3.0	39.4	1.0	-61.3	-13.0	-48.3	
3765.00	-26.4	H	3.0	39.7	1.0	-65.0	-13.0	-52.0	
5647.50	-20.5	H	3.0	40.0	1.0	-59.5	-13.0	-46.5	
7530.00	-23.0	H	3.0	39.4	1.0	-61.4	-13.0	-48.4	
High Ch, 1913.5MHz									
3827.00	-25.5	V	3.0	39.7	1.0	-64.2	-13.0	-51.2	
5740.50	-21.9	V	3.0	40.0	1.0	-60.9	-13.0	-47.9	
7654.00	-23.0	V	3.0	39.3	1.0	-61.3	-13.0	-48.3	
3827.00	-24.8	H	3.0	39.7	1.0	-63.5	-13.0	-50.5	
5740.50	-22.5	H	3.0	40.0	1.0	-61.5	-13.0	-48.5	
7654.00	-22.9	H	3.0	39.3	1.0	-61.2	-13.0	-48.2	

LTE Band 25 3MHz 16QAM

Company: Samsung
Project #: 4788480988
Date: 2018-06-13
Test Engineer: 45585
Configuration: EUT / Adapter / Cradle , Z-positon
Location: Chamber 2
Mode: LTE_16QAM Band 25 Harmonics, 3MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1851.5MHz									
3703.00	-27.3	V	3.0	39.7	1.0	-65.9	-13.0	-52.9	
5554.50	-23.2	V	3.0	39.9	1.0	-62.1	-13.0	-49.1	
7406.00	-23.6	V	3.0	39.4	1.0	-62.1	-13.0	-49.1	
3703.00	-26.3	H	3.0	39.7	1.0	-64.9	-13.0	-51.9	
5554.50	-21.4	H	3.0	39.9	1.0	-60.3	-13.0	-47.3	
7406.00	-23.7	H	3.0	39.4	1.0	-62.1	-13.0	-49.1	
Mid Ch, 1882.5MHz									
3765.00	-26.3	V	3.0	39.7	1.0	-65.0	-13.0	-52.0	
5647.50	-22.0	V	3.0	40.0	1.0	-60.9	-13.0	-47.9	
7530.00	-22.9	V	3.0	39.4	1.0	-61.3	-13.0	-48.3	
3765.00	-26.3	H	3.0	39.7	1.0	-65.0	-13.0	-52.0	
5647.50	-21.2	H	3.0	40.0	1.0	-60.2	-13.0	-47.2	
7530.00	-22.9	H	3.0	39.4	1.0	-61.3	-13.0	-48.3	
High Ch, 1913.5MHz									
3827.00	-25.9	V	3.0	39.7	1.0	-64.7	-13.0	-51.7	
5740.50	-23.9	V	3.0	40.0	1.0	-62.9	-13.0	-49.9	
7654.00	-23.0	V	3.0	39.3	1.0	-61.3	-13.0	-48.3	
3827.00	-25.2	H	3.0	39.7	1.0	-63.9	-13.0	-50.9	
5740.50	-22.0	H	3.0	40.0	1.0	-61.0	-13.0	-48.0	
7654.00	-23.0	H	3.0	39.3	1.0	-61.3	-13.0	-48.3	

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LTE Band 25 1.4MHz QPSK

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-13
Test Engineer: 45585
Configuration: EUT / Adapter / Cradle , Z-positon
Location: Chamber 2
Mode: LTE_QPSK Band 25 Harmonics, 1.4MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1850.7MHz									
3701.40	-25.8	V	3.0	39.7	1.0	-64.5	-13.0	-51.5	
5552.10	-22.8	V	3.0	39.9	1.0	-61.8	-13.0	-48.8	
7402.80	-23.4	V	3.0	39.4	1.0	-61.8	-13.0	-48.8	
3701.40	-26.8	H	3.0	39.7	1.0	-65.5	-13.0	-52.5	
5552.10	-20.7	H	3.0	39.9	1.0	-59.6	-13.0	-46.6	
7402.80	-23.4	H	3.0	39.4	1.0	-61.8	-13.0	-48.8	
Mid Ch, 1882.5MHz									
3765.00	-25.6	V	3.0	39.7	1.0	-64.3	-13.0	-51.3	
5647.50	-22.2	V	3.0	40.0	1.0	-61.1	-13.0	-48.1	
7530.00	-22.7	V	3.0	39.4	1.0	-61.1	-13.0	-48.1	
3765.00	-26.2	H	3.0	39.7	1.0	-64.8	-13.0	-51.8	
5647.50	-20.8	H	3.0	40.0	1.0	-59.7	-13.0	-46.7	
7530.00	-22.9	H	3.0	39.4	1.0	-61.2	-13.0	-48.2	
High Ch, 1914.3MHz									
3828.60	-25.6	V	3.0	39.7	1.0	-64.3	-13.0	-51.3	
5742.90	-22.7	V	3.0	40.0	1.0	-61.7	-13.0	-48.7	
7657.20	-22.8	V	3.0	39.3	1.0	-61.1	-13.0	-48.1	
3828.60	-23.6	H	3.0	39.7	1.0	-62.4	-13.0	-49.4	
5742.90	-20.3	H	3.0	40.0	1.0	-59.3	-13.0	-46.3	
7657.20	-23.0	H	3.0	39.3	1.0	-61.3	-13.0	-48.3	

LTE Band 25 1.4MHz 16QAM

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-13
Test Engineer: 45585
Configuration: EUT / Adapter / Cradle , Z-positon
Location: Chamber 2
Mode: LTE_16QAM Band 25 Harmonics, 1.4MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1850.7MHz									
3701.40	-26.1	V	3.0	39.7	1.0	-64.8	-13.0	-51.8	
5552.10	-23.0	V	3.0	39.9	1.0	-62.0	-13.0	-49.0	
7402.80	-23.4	V	3.0	39.4	1.0	-61.9	-13.0	-48.9	
3701.40	-27.1	H	3.0	39.7	1.0	-65.8	-13.0	-52.8	
5552.10	-23.2	H	3.0	39.9	1.0	-62.1	-13.0	-49.1	
7402.80	-23.5	H	3.0	39.4	1.0	-61.9	-13.0	-48.9	
Mid Ch, 1882.5MHz									
3765.00	-25.5	V	3.0	39.7	1.0	-64.2	-13.0	-51.2	
5647.50	-22.8	V	3.0	40.0	1.0	-61.8	-13.0	-48.8	
7530.00	-22.9	V	3.0	39.4	1.0	-61.3	-13.0	-48.3	
3765.00	-25.9	H	3.0	39.7	1.0	-64.6	-13.0	-51.6	
5647.50	-22.0	H	3.0	40.0	1.0	-60.9	-13.0	-47.9	
7530.00	-22.9	H	3.0	39.4	1.0	-61.3	-13.0	-48.3	
High Ch, 1914.3MHz									
3828.60	-24.9	V	3.0	39.7	1.0	-63.7	-13.0	-50.7	
5742.90	-22.6	V	3.0	40.0	1.0	-61.6	-13.0	-48.6	
7657.20	-23.0	V	3.0	39.3	1.0	-61.3	-13.0	-48.3	
3828.60	-23.0	H	3.0	39.7	1.0	-61.8	-13.0	-48.8	
5742.90	-18.8	H	3.0	40.0	1.0	-57.8	-13.0	-44.8	
7657.20	-22.8	H	3.0	39.3	1.0	-61.1	-13.0	-48.1	

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LTE Band 26

LTE

Band 26

15MHz

QPSK

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-14
Test Engineer: 51072
Configuration: EUT / Adapter / Cradle , Z-position
Location: Chamber 2
Mode: LTE_QPSK Band 26 Harmonics, 15MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 821.5MHz									
1643.00	-29.9	V	3.0	38.2	1.0	-67.1	-13.0	-54.1	
2464.50	-28.2	V	3.0	38.8	1.0	-66.0	-13.0	-53.0	
3286.00	-27.3	V	3.0	39.4	1.0	-65.7	-13.0	-52.7	
1643.00	-27.1	H	3.0	38.2	1.0	-64.3	-13.0	-51.3	
2464.50	-27.5	H	3.0	38.8	1.0	-65.3	-13.0	-52.3	
3286.00	-27.4	H	3.0	39.4	1.0	-65.9	-13.0	-52.9	
831.50									
1663.00	-28.3	V	3.0	38.2	1.0	-65.5	-13.0	-52.5	
2494.50	-28.5	V	3.0	38.8	1.0	-66.4	-13.0	-53.4	
3326.00	-27.1	V	3.0	39.4	1.0	-65.5	-13.0	-52.5	
1663.00	-27.8	H	3.0	38.2	1.0	-65.0	-13.0	-52.0	
2494.50	-28.9	H	3.0	38.8	1.0	-66.7	-13.0	-53.7	
3326.00	-27.1	H	3.0	39.4	1.0	-65.6	-13.0	-52.6	
High Ch, 841.5MHz									
1683.00	-29.0	V	3.0	38.2	1.0	-66.3	-13.0	-53.3	
2524.50	-27.5	V	3.0	38.8	1.0	-65.4	-13.0	-52.4	
3366.00	-27.0	V	3.0	39.5	1.0	-65.5	-13.0	-52.5	
1683.00	-26.9	H	3.0	38.2	1.0	-64.2	-13.0	-51.2	
2524.50	-28.6	H	3.0	38.8	1.0	-66.5	-13.0	-53.5	
3366.00	-27.0	H	3.0	39.5	1.0	-65.5	-13.0	-52.5	

LTE

Band 26

15MHz

16QAM

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-14
Test Engineer: 51072
Configuration: EUT / Adapter / Cradle , Z-position
Location: Chamber 2
Mode: LTE_16QAM Band 26 Harmonics, 15MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 821.5MHz									
1643.00	-29.7	V	3.0	38.2	1.0	-67.0	-13.0	-54.0	
2464.50	-28.5	V	3.0	38.8	1.0	-66.3	-13.0	-53.3	
3286.00	-27.4	V	3.0	39.4	1.0	-65.8	-13.0	-52.8	
1643.00	-28.1	H	3.0	38.2	1.0	-65.3	-13.0	-52.3	
2464.50	-28.1	H	3.0	38.8	1.0	-65.9	-13.0	-52.9	
3286.00	-27.4	H	3.0	39.4	1.0	-65.8	-13.0	-52.8	
831.50									
1663.00	-29.0	V	3.0	38.2	1.0	-66.2	-13.0	-53.2	
2494.50	-28.5	V	3.0	38.8	1.0	-66.3	-13.0	-53.3	
3326.00	-27.2	V	3.0	39.4	1.0	-65.6	-13.0	-52.6	
1663.00	-27.7	H	3.0	38.2	1.0	-64.9	-13.0	-51.9	
2494.50	-28.9	H	3.0	38.8	1.0	-66.7	-13.0	-53.7	
3326.00	-27.2	H	3.0	39.4	1.0	-65.6	-13.0	-52.6	
High Ch, 841.5MHz									
1683.00	-29.5	V	3.0	38.2	1.0	-66.7	-13.0	-53.7	
2524.50	-27.9	V	3.0	38.8	1.0	-65.7	-13.0	-52.7	
3366.00	-26.9	V	3.0	39.5	1.0	-65.4	-13.0	-52.4	
1683.00	-27.7	H	3.0	38.2	1.0	-64.9	-13.0	-51.9	
2524.50	-28.8	H	3.0	38.8	1.0	-66.7	-13.0	-53.7	
3366.00	-27.1	H	3.0	39.5	1.0	-65.5	-13.0	-52.5	

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LTE

Band 26

10MHz

QPSK

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-14
Test Engineer: 51072
Configuration: EUT / Adapter / Cradle , Z-position
Location: Chamber 2
Mode: LTE_QPSK Band 26 Harmonics, 10MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 819MHz									
1638.00	-28.2	V	3.0	38.2	1.0	-65.4	-13.0	-52.4	
2457.00	-28.5	V	3.0	38.8	1.0	-66.3	-13.0	-53.3	
3276.00	-26.8	V	3.0	39.4	1.0	-65.2	-13.0	-52.2	
1638.00	-28.2	H	3.0	38.2	1.0	-65.4	-13.0	-52.4	
2457.00	-28.9	H	3.0	38.8	1.0	-66.7	-13.0	-53.7	
3276.00	-26.8	H	3.0	39.4	1.0	-65.3	-13.0	-52.3	
Mid Ch, 831.5MHz									
1663.00	-30.0	V	3.0	38.2	1.0	-67.2	-13.0	-54.2	
2494.50	-26.4	V	3.0	38.8	1.0	-64.2	-13.0	-51.2	
3326.00	-26.6	V	3.0	39.4	1.0	-65.0	-13.0	-52.0	
1663.00	-27.7	H	3.0	38.2	1.0	-65.0	-13.0	-52.0	
2494.50	-28.5	H	3.0	38.8	1.0	-66.3	-13.0	-53.3	
3326.00	-26.7	H	3.0	39.4	1.0	-65.1	-13.0	-52.1	
High Ch, 844MHz									
1688.00	-29.4	V	3.0	38.2	1.0	-66.6	-13.0	-53.6	
2532.00	-28.4	V	3.0	38.9	1.0	-66.2	-13.0	-53.2	
3376.00	-26.5	V	3.0	39.5	1.0	-65.0	-13.0	-52.0	
1688.00	-27.1	H	3.0	38.2	1.0	-64.4	-13.0	-51.4	
2532.00	-29.0	H	3.0	38.9	1.0	-66.9	-13.0	-53.9	
3376.00	-26.5	H	3.0	39.5	1.0	-65.0	-13.0	-52.0	

LTE

Band 26

10MHz

QPSK

Mid Ch.

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-14
Test Engineer: 51072
Configuration: EUT / Adapter / Cradle , Z-position
Location: Chamber 2
Mode: LTE_QPSK Band 26 Harmonics, 10MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
829MHz									
1658.00	-29.8	V	3.0	38.2	1.0	-67.0	-13.0	-54.0	
2487.00	-26.7	V	3.0	38.8	1.0	-64.5	-13.0	-51.5	
3316.00	-26.9	V	3.0	39.4	1.0	-65.3	-13.0	-52.3	
1658.00	-27.8	H	3.0	38.2	1.0	-65.0	-13.0	-52.0	
2487.00	-28.4	H	3.0	38.8	1.0	-66.2	-13.0	-53.2	
3316.00	-27.0	H	3.0	39.4	1.0	-65.5	-13.0	-52.5	

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LTE

Band 26

10MHz

16QAM

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-14
Test Engineer: 51072
Configuration: EUT / Adapter / Cradle , Z-position
Location: Chamber 2
Mode: LTE_16QAM Band 26 Harmonics, 10MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 819MHz									
1638.00	-28.6	V	3.0	38.2	1.0	-65.8	-13.0	-52.8	
2457.00	-28.5	V	3.0	38.8	1.0	-66.2	-13.0	-53.2	
3276.00	-26.8	V	3.0	39.4	1.0	-65.3	-13.0	-52.3	
1638.00	-28.7	H	3.0	38.2	1.0	-65.9	-13.0	-52.9	
2457.00	-29.0	H	3.0	38.8	1.0	-66.8	-13.0	-53.8	
3276.00	-26.5	H	3.0	39.4	1.0	-64.9	-13.0	-51.9	
Mid Ch, 831.5MHz									
1663.00	-30.3	V	3.0	38.2	1.0	-67.5	-13.0	-54.5	
2494.50	-27.1	V	3.0	38.8	1.0	-64.9	-13.0	-51.9	
3326.00	-26.4	V	3.0	39.4	1.0	-64.9	-13.0	-51.9	
1663.00	-28.1	H	3.0	38.2	1.0	-65.4	-13.0	-52.4	
2494.50	-28.4	H	3.0	38.8	1.0	-66.2	-13.0	-53.2	
3326.00	-26.6	H	3.0	39.4	1.0	-65.0	-13.0	-52.0	
High Ch, 844MHz									
1688.00	-29.5	V	3.0	38.2	1.0	-66.7	-13.0	-53.7	
2532.00	-28.2	V	3.0	38.9	1.0	-66.0	-13.0	-53.0	
3376.00	-26.3	V	3.0	39.5	1.0	-64.8	-13.0	-51.8	
1688.00	-28.0	H	3.0	38.2	1.0	-65.2	-13.0	-52.2	
2532.00	-28.9	H	3.0	38.9	1.0	-66.8	-13.0	-53.8	
3376.00	-26.2	H	3.0	39.5	1.0	-64.6	-13.0	-51.6	

LTE

Band 26

10MHz

16QAM

Mid Ch.

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-14
Test Engineer: 51072
Configuration: EUT / Adapter / Cradle , Z-position
Location: Chamber 2
Mode: LTE_16QAM Band 26 Harmonics, 10MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
829MHz									
1658.00	-30.2	V	3.0	38.2	1.0	-67.4	-13.0	-54.4	
2487.00	-27.8	V	3.0	38.8	1.0	-65.6	-13.0	-52.6	
3316.00	-27.0	V	3.0	39.4	1.0	-65.5	-13.0	-52.5	
1658.00	-27.1	H	3.0	38.2	1.0	-64.4	-13.0	-51.4	
2487.00	-28.6	H	3.0	38.8	1.0	-66.4	-13.0	-53.4	
3316.00	-27.0	H	3.0	39.4	1.0	-65.5	-13.0	-52.5	

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LTE

Band 26

5 MHz

QPSK

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-14
Test Engineer: 51072
Configuration: EUT / Adapter / Cradle , Z-position
Location: Chamber 2
Mode: LTE_QPSK Band 26 Harmonics, 5MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 816.5MHz									
1633.00	-29.6	V	3.0	38.2	1.0	-66.8	-13.0	-53.8	
2449.50	-28.2	V	3.0	38.8	1.0	-65.9	-13.0	-52.9	
3266.00	-26.5	V	3.0	39.4	1.0	-64.9	-13.0	-51.9	
1633.00	-30.0	H	3.0	38.2	1.0	-67.2	-13.0	-54.2	
2449.50	-28.7	H	3.0	38.8	1.0	-66.5	-13.0	-53.5	
3266.00	-26.8	H	3.0	39.4	1.0	-65.2	-13.0	-52.2	
Mid Ch, 831.5MHz									
1663.00	-29.7	V	3.0	38.2	1.0	-66.9	-13.0	-53.9	
2494.50	-23.7	V	3.0	38.8	1.0	-61.6	-13.0	-48.6	
3326.00	-27.0	V	3.0	39.4	1.0	-65.5	-13.0	-52.5	
1663.00	-29.2	H	3.0	38.2	1.0	-66.4	-13.0	-53.4	
2494.50	-28.1	H	3.0	38.8	1.0	-65.9	-13.0	-52.9	
3326.00	-27.0	H	3.0	39.4	1.0	-65.5	-13.0	-52.5	
High Ch, 846.5MHz									
1693.00	-30.4	V	3.0	38.2	1.0	-67.7	-13.0	-54.7	
2539.50	-27.5	V	3.0	38.9	1.0	-65.4	-13.0	-52.4	
3386.00	-26.9	V	3.0	39.5	1.0	-65.3	-13.0	-52.3	
1693.00	-29.6	H	3.0	38.2	1.0	-66.9	-13.0	-53.9	
2539.50	-27.9	H	3.0	38.9	1.0	-65.8	-13.0	-52.8	
3386.00	-26.7	H	3.0	39.5	1.0	-65.2	-13.0	-52.2	

LTE

Band 26

5 MHz

QPSK

Mid Ch.

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-14
Test Engineer: 51072
Configuration: EUT / Adapter / Cradle , Z-position
Location: Chamber 2
Mode: LTE_QPSK Band 26 Harmonics, 5MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
821.5 MHz									
1643.00	-27.7	V	3.0	38.2	1.0	-64.9	-13.0	-51.9	
2464.50	-27.3	V	3.0	38.8	1.0	-65.1	-13.0	-52.1	
3286.00	-26.8	V	3.0	39.4	1.0	-65.3	-13.0	-52.3	
1643.00	-28.6	H	3.0	38.2	1.0	-65.8	-13.0	-52.8	
2464.50	-28.9	H	3.0	38.8	1.0	-66.7	-13.0	-53.7	
3286.00	-27.0	H	3.0	39.4	1.0	-65.4	-13.0	-52.4	
826.5 MHz									
1653.00	-27.8	V	3.0	38.2	1.0	-65.0	-13.0	-52.0	
2479.50	-27.2	V	3.0	38.8	1.0	-65.0	-13.0	-52.0	
3306.00	-27.0	V	3.0	39.4	1.0	-65.5	-13.0	-52.5	
1653.00	-26.9	H	3.0	38.2	1.0	-64.1	-13.0	-51.1	
2479.50	-28.8	H	3.0	38.8	1.0	-66.6	-13.0	-53.6	
3306.00	-27.0	H	3.0	39.4	1.0	-65.4	-13.0	-52.4	

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LTE

Band 26

5MHz

16 QAM

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-14
Test Engineer: 51072
Configuration: EUT / Adapter / Cradle , Z-position
Location: Chamber 2
Mode: LTE_16QAM Band 26 Harmonics, 5MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 816.5MHz									
1633.00	-29.9	V	3.0	38.2	1.0	-67.1	-13.0	-54.1	
2449.50	-28.3	V	3.0	38.8	1.0	-66.1	-13.0	-53.1	
3266.00	-26.6	V	3.0	39.4	1.0	-65.1	-13.0	-52.1	
1633.00	-28.5	H	3.0	38.2	1.0	-65.7	-13.0	-52.7	
2449.50	-28.8	H	3.0	38.8	1.0	-66.5	-13.0	-53.5	
3266.00	-26.7	H	3.0	39.4	1.0	-65.2	-13.0	-52.2	
Mid Ch, 831.5MHz									
1663.00	-29.8	V	3.0	38.2	1.0	-67.0	-13.0	-54.0	
2494.50	-25.4	V	3.0	38.8	1.0	-63.2	-13.0	-50.2	
3326.00	-27.1	V	3.0	39.4	1.0	-65.5	-13.0	-52.5	
1663.00	-29.4	H	3.0	38.2	1.0	-66.6	-13.0	-53.6	
2494.50	-28.4	H	3.0	38.8	1.0	-66.2	-13.0	-53.2	
3326.00	-26.8	H	3.0	39.4	1.0	-65.3	-13.0	-52.3	
High Ch, 846.5MHz									
1693.00	-30.4	V	3.0	38.2	1.0	-67.7	-13.0	-54.7	
2539.50	-28.1	V	3.0	38.9	1.0	-66.0	-13.0	-53.0	
3386.00	-26.9	V	3.0	39.5	1.0	-65.4	-13.0	-52.4	
1693.00	-30.0	H	3.0	38.2	1.0	-67.2	-13.0	-54.2	
2539.50	-27.6	H	3.0	38.9	1.0	-65.5	-13.0	-52.5	
3386.00	-26.6	H	3.0	39.5	1.0	-65.1	-13.0	-52.1	

LTE

Band 26

5MHz

16QAM

Mid Ch.

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-14
Test Engineer: 51072
Configuration: EUT / Adapter / Cradle , Z-position
Location: Chamber 2
Mode: LTE_16QAM Band 26 Harmonics, 5MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
821.5 MHz									
1643.00	-28.1	V	3.0	38.2	1.0	-65.4	-13.0	-52.4	
2464.50	-28.0	V	3.0	38.8	1.0	-65.8	-13.0	-52.8	
3286.00	-27.0	V	3.0	39.4	1.0	-65.4	-13.0	-52.4	
1643.00	-28.4	H	3.0	38.2	1.0	-65.6	-13.0	-52.6	
2464.50	-28.9	H	3.0	38.8	1.0	-66.7	-13.0	-53.7	
3286.00	-26.9	H	3.0	39.4	1.0	-65.3	-13.0	-52.3	
826.5 MHz									
1653.00	-28.3	V	3.0	38.2	1.0	-65.5	-13.0	-52.5	
2479.50	-27.8	V	3.0	38.8	1.0	-65.6	-13.0	-52.6	
3306.00	-27.0	V	3.0	39.4	1.0	-65.5	-13.0	-52.5	
1653.00	-27.8	H	3.0	38.2	1.0	-65.0	-13.0	-52.0	
2479.50	-29.0	H	3.0	38.8	1.0	-66.8	-13.0	-53.8	
3306.00	-27.0	H	3.0	39.4	1.0	-65.5	-13.0	-52.5	

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LTE

Band 26

3MHz

QPSK

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-14
Test Engineer: 51072
Configuration: EUT / Adapter / Cradle , Z-position
Location: Chamber 2
Mode: LTE_QPSK Band 26 Harmonics, 3MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 815.5MHz									
1631.00	-29.2	V	3.0	38.2	1.0	-66.4	-13.0	-53.4	
2446.50	-28.3	V	3.0	38.8	1.0	-66.1	-13.0	-53.1	
3262.00	-27.1	V	3.0	39.4	1.0	-65.5	-13.0	-52.5	
1631.00	-28.9	H	3.0	38.2	1.0	-66.1	-13.0	-53.1	
2446.50	-26.9	H	3.0	38.8	1.0	-64.7	-13.0	-51.7	
3262.00	-26.6	H	3.0	39.4	1.0	-65.0	-13.0	-52.0	
Mid Ch, 831.5MHz									
1663.00	-30.1	V	3.0	38.2	1.0	-67.3	-13.0	-54.3	
2494.50	-26.3	V	3.0	38.8	1.0	-64.1	-13.0	-51.1	
3326.00	-26.5	V	3.0	39.4	1.0	-65.0	-13.0	-52.0	
1663.00	-28.4	H	3.0	38.2	1.0	-65.6	-13.0	-52.6	
2494.50	-28.4	H	3.0	38.8	1.0	-66.2	-13.0	-53.2	
3326.00	-27.0	H	3.0	39.4	1.0	-65.4	-13.0	-52.4	
High Ch, 847.5MHz									
1695.00	-30.3	V	3.0	38.2	1.0	-67.5	-13.0	-54.5	
2542.50	-27.9	V	3.0	38.9	1.0	-65.8	-13.0	-52.8	
3390.00	-26.7	V	3.0	39.5	1.0	-65.1	-13.0	-52.1	
1695.00	-29.8	H	3.0	38.2	1.0	-67.0	-13.0	-54.0	
2542.50	-28.7	H	3.0	38.9	1.0	-66.6	-13.0	-53.6	
3390.00	-26.7	H	3.0	39.5	1.0	-65.2	-13.0	-52.2	

LTE

Band 26

3MHz

QPSK

Mid Ch.

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-14
Test Engineer: 51072
Configuration: EUT / Adapter / Cradle , Z-position
Location: Chamber 2
Mode: LTE_QPSK Band 26 Harmonics, 3MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
822.5 MHz									
1645.00	-27.2	V	3.0	38.2	1.0	-64.4	-13.0	-51.4	
2467.50	-27.6	V	3.0	38.8	1.0	-65.4	-13.0	-52.4	
3290.00	-27.1	V	3.0	39.4	1.0	-65.5	-13.0	-52.5	
1645.00	-27.6	H	3.0	38.2	1.0	-64.8	-13.0	-51.8	
2467.50	-28.6	H	3.0	38.8	1.0	-66.4	-13.0	-53.4	
3290.00	-27.2	H	3.0	39.4	1.0	-65.7	-13.0	-52.7	
825.5 MHz									
1651.00	-26.9	V	3.0	38.2	1.0	-64.2	-13.0	-51.2	
2476.50	-27.4	V	3.0	38.8	1.0	-65.2	-13.0	-52.2	
3302.00	-27.1	V	3.0	39.4	1.0	-65.5	-13.0	-52.5	
1651.00	-26.5	H	3.0	38.2	1.0	-63.7	-13.0	-50.7	
2476.50	-28.5	H	3.0	38.8	1.0	-66.3	-13.0	-53.3	
3302.00	-27.1	H	3.0	39.4	1.0	-65.5	-13.0	-52.5	

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218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea TEL: (031) 337-9902 FAX: (031) 213-5433
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LTE

Band 26

3MHz

16QAM

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-14
Test Engineer: 51072
Configuration: EUT / Adapter / Cradle , Z-position
Location: Chamber 2
Mode: LTE_16QAM Band 26 Harmonics, 3MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 815.5MHz									
1631.00	-29.3	V	3.0	38.2	1.0	-66.5	-13.0	-53.5	
2446.50	-28.4	V	3.0	38.8	1.0	-66.2	-13.0	-53.2	
3262.00	-26.5	V	3.0	39.4	1.0	-64.9	-13.0	-51.9	
1631.00	-29.2	H	3.0	38.2	1.0	-66.4	-13.0	-53.4	
2446.50	-28.4	H	3.0	38.8	1.0	-66.1	-13.0	-53.1	
3262.00	-26.7	H	3.0	39.4	1.0	-65.1	-13.0	-52.1	
Mid Ch, 831.5MHz									
1663.00	-29.2	V	3.0	38.2	1.0	-66.4	-13.0	-53.4	
2494.50	-25.5	V	3.0	38.8	1.0	-63.3	-13.0	-50.3	
3326.00	-26.9	V	3.0	39.4	1.0	-65.3	-13.0	-52.3	
1663.00	-28.8	H	3.0	38.2	1.0	-66.1	-13.0	-53.1	
2494.50	-28.7	H	3.0	38.8	1.0	-66.5	-13.0	-53.5	
3326.00	-26.8	H	3.0	39.4	1.0	-65.2	-13.0	-52.2	
High Ch, 847.5MHz									
1695.00	-30.1	V	3.0	38.2	1.0	-67.4	-13.0	-54.4	
2542.50	-28.2	V	3.0	38.9	1.0	-66.0	-13.0	-53.0	
3390.00	-26.7	V	3.0	39.5	1.0	-65.1	-13.0	-52.1	
1695.00	-29.2	H	3.0	38.2	1.0	-66.5	-13.0	-53.5	
2542.50	-28.2	H	3.0	38.9	1.0	-66.1	-13.0	-53.1	
3390.00	-26.7	H	3.0	39.5	1.0	-65.2	-13.0	-52.2	

LTE

Band 26

3MHz

16QAM

Mid Ch.

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-14
Test Engineer: 51072
Configuration: EUT / Adapter / Cradle , Z-position
Location: Chamber 2
Mode: LTE_16QAM Band 26 Harmonics, 3MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
822.5 MHz									
1645.00	-27.7	V	3.0	38.2	1.0	-65.0	-13.0	-52.0	
2467.50	-27.8	V	3.0	38.8	1.0	-65.6	-13.0	-52.6	
3290.00	-27.1	V	3.0	39.4	1.0	-65.6	-13.0	-52.6	
1645.00	-28.2	H	3.0	38.2	1.0	-65.4	-13.0	-52.4	
2467.50	-28.9	H	3.0	38.8	1.0	-66.7	-13.0	-53.7	
3290.00	-27.3	H	3.0	39.4	1.0	-65.7	-13.0	-52.7	
825.5 MHz									
1651.00	-27.7	V	3.0	38.2	1.0	-64.9	-13.0	-51.9	
2476.50	-27.6	V	3.0	38.8	1.0	-65.4	-13.0	-52.4	
3302.00	-27.0	V	3.0	39.4	1.0	-65.5	-13.0	-52.5	
1651.00	-27.4	H	3.0	38.2	1.0	-64.6	-13.0	-51.6	
2476.50	-29.1	H	3.0	38.8	1.0	-66.9	-13.0	-53.9	
3302.00	-27.1	H	3.0	39.4	1.0	-65.5	-13.0	-52.5	

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LTE

Band 26

1.4MHz

QPSK

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-14
Test Engineer: 51072
Configuration: EUT / Adapter / Cradle , Z-position
Location: Chamber 2
Mode: LTE_QPSK Band 26 Harmonics, 1.4MHz Bandwidth

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	-29.9	V	3.0	38.2	1.0	-67.1	-13.0	-54.1	
2444.10	-27.9	V	3.0	38.8	1.0	-65.7	-13.0	-52.7	
3258.80	-26.6	V	3.0	39.4	1.0	-65.0	-13.0	-52.0	
1629.40	-28.9	H	3.0	38.2	1.0	-66.1	-13.0	-53.1	
2444.10	-28.3	H	3.0	38.8	1.0	-66.1	-13.0	-53.1	
3258.80	-26.8	H	3.0	39.4	1.0	-65.2	-13.0	-52.2	
Mid Ch, 831.5MHz									
1663.00	-30.4	V	3.0	38.2	1.0	-67.6	-13.0	-54.6	
2494.50	-26.9	V	3.0	38.8	1.0	-64.7	-13.0	-51.7	
3326.00	-27.0	V	3.0	39.4	1.0	-65.5	-13.0	-52.5	
1663.00	-29.1	H	3.0	38.2	1.0	-66.3	-13.0	-53.3	
2494.50	-28.0	H	3.0	38.8	1.0	-65.8	-13.0	-52.8	
3326.00	-27.1	H	3.0	39.4	1.0	-65.5	-13.0	-52.5	
High Ch, 848.3MHz									
1696.60	-29.5	V	3.0	38.2	1.0	-66.8	-13.0	-53.8	
2544.90	-28.1	V	3.0	38.9	1.0	-66.0	-13.0	-53.0	
3393.20	-26.6	V	3.0	39.5	1.0	-65.1	-13.0	-52.1	
1696.60	-28.9	H	3.0	38.2	1.0	-66.2	-13.0	-53.2	
2544.90	-28.3	H	3.0	38.9	1.0	-66.2	-13.0	-53.2	
3393.20	-26.6	H	3.0	39.5	1.0	-65.1	-13.0	-52.1	

LTE

Band 26

1.4MHz

QPSK

Mid Ch.

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-14
Test Engineer: 51072
Configuration: EUT / Adapter / Cradle , Z-position
Location: Chamber 2
Mode: LTE_QPSK Band 26 Harmonics, 1.4MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
823.3 MHz									
1646.60	-27.8	V	3.0	38.2	1.0	-65.0	-13.0	-52.0	
2469.90	-27.8	V	3.0	38.8	1.0	-65.6	-13.0	-52.6	
3293.20	-27.5	V	3.0	39.4	1.0	-65.9	-13.0	-52.9	
1646.60	-27.0	H	3.0	38.2	1.0	-64.2	-13.0	-51.2	
2469.90	-28.3	H	3.0	38.8	1.0	-66.1	-13.0	-53.1	
3293.20	0.0	H	3.0	39.4	1.0	-38.4	-13.0	-25.4	
824.7 MHz									
1649.40	-30.4	V	3.0	38.2	1.0	-67.7	-13.0	-54.7	
2474.10	-28.5	V	3.0	38.8	1.0	-66.3	-13.0	-53.3	
3298.80	-27.3	V	3.0	39.4	1.0	-65.7	-13.0	-52.7	
1649.40	-27.9	H	3.0	38.2	1.0	-65.1	-13.0	-52.1	
2474.10	-28.4	H	3.0	38.8	1.0	-66.2	-13.0	-53.2	
3298.80	-27.1	H	3.0	39.4	1.0	-65.5	-13.0	-52.5	

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LTE

Band 26

1.4MHz

16QAM

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-14
Test Engineer: 51072
Configuration: EUT / Adapter / Cradle , Z-position
Location: Chamber 2
Mode: LTE_16QAM Band 26 Harmonics, 1.4MHz Bandwidth

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	-29.3	V	3.0	38.2	1.0	-66.5	-13.0	-53.5	
2444.10	-27.4	V	3.0	38.8	1.0	-65.2	-13.0	-52.2	
3258.80	-26.7	V	3.0	39.4	1.0	-65.1	-13.0	-52.1	
1629.40	-28.5	H	3.0	38.2	1.0	-65.7	-13.0	-52.7	
2444.10	-27.4	H	3.0	38.8	1.0	-65.2	-13.0	-52.2	
3258.80	-26.8	H	3.0	39.4	1.0	-65.3	-13.0	-52.3	
Mid Ch, 831.5MHz									
1663.00	-29.0	V	3.0	38.2	1.0	-66.3	-13.0	-53.3	
2494.50	-28.1	V	3.0	38.8	1.0	-66.0	-13.0	-53.0	
3326.00	-26.5	V	3.0	39.4	1.0	-64.9	-13.0	-51.9	
1663.00	-30.3	H	3.0	38.2	1.0	-67.5	-13.0	-54.5	
2494.50	-28.6	H	3.0	38.8	1.0	-66.4	-13.0	-53.4	
3326.00	-26.6	H	3.0	39.4	1.0	-65.0	-13.0	-52.0	
High Ch, 848.3MHz									
1696.60	-28.6	V	3.0	38.2	1.0	-65.9	-13.0	-52.9	
2544.90	-28.1	V	3.0	38.9	1.0	-65.9	-13.0	-52.9	
3393.20	-26.4	V	3.0	39.5	1.0	-64.8	-13.0	-51.8	
1696.60	-29.1	H	3.0	38.2	1.0	-66.4	-13.0	-53.4	
2544.90	-28.5	H	3.0	38.9	1.0	-66.3	-13.0	-53.3	
3393.20	-26.4	H	3.0	39.5	1.0	-64.9	-13.0	-51.9	

LTE

Band 26

1.4MHz

16QAM

Mid Ch.

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-14
Test Engineer: 51072
Configuration: EUT / Adapter / Cradle , Z-position
Location: Chamber 2
Mode: LTE_16QAM Band 26 Harmonics, 1.4MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
823.3 MHz									
1646.60	-29.1	V	3.0	38.2	1.0	-66.3	-13.0	-53.3	
2469.90	-28.1	V	3.0	38.8	1.0	-65.9	-13.0	-52.9	
3293.20	-27.4	V	3.0	39.4	1.0	-65.9	-13.0	-52.9	
1646.60	-27.5	H	3.0	38.2	1.0	-64.7	-13.0	-51.7	
2469.90	-28.7	H	3.0	38.8	1.0	-66.5	-13.0	-53.5	
3293.20	0.0	H	3.0	39.4	1.0	-38.4	-13.0	-25.4	
824.7 MHz									
1649.40	-30.5	V	3.0	38.2	1.0	-67.7	-13.0	-54.7	
2474.10	-28.6	V	3.0	38.8	1.0	-66.4	-13.0	-53.4	
3298.80	-27.2	V	3.0	39.4	1.0	-65.6	-13.0	-52.6	
1649.40	-28.6	H	3.0	38.2	1.0	-65.8	-13.0	-52.8	
2474.10	-28.9	H	3.0	38.8	1.0	-66.7	-13.0	-53.7	
3298.80	-27.2	H	3.0	39.4	1.0	-65.6	-13.0	-52.6	

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LTE Band 66

LTE Band 66 20MHz QPSK

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-14
Test Engineer: 51072
Configuration: EUT / Adapter / Cradle , Z-position
Location: Chamber 2
Mode: LTE_QPSK Band 66 Harmonics, 20MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1720MHz									
3440.00	-3.1	V	3.0	39.5	1.0	-41.6	-13.0	-28.6	
5160.00	-19.5	V	3.0	39.8	1.0	-58.3	-13.0	-45.3	
6880.00	-23.0	V	3.0	39.7	1.0	-61.7	-13.0	-48.7	
3440.00	-8.1	H	3.0	39.5	1.0	-46.6	-13.0	-33.6	
5160.00	-19.4	H	3.0	39.8	1.0	-58.2	-13.0	-45.2	
6880.00	-23.0	H	3.0	39.7	1.0	-61.7	-13.0	-48.7	
Mid Ch, 1745MHz									
3490.00	-9.0	V	3.0	39.5	1.0	-47.5	-13.0	-34.5	
5235.00	-15.5	V	3.0	39.8	1.0	-54.3	-13.0	-41.3	
6980.00	-23.5	V	3.0	39.6	1.0	-62.1	-13.0	-49.1	
3490.00	-5.2	H	3.0	39.5	1.0	-43.7	-13.0	-30.7	
5235.00	-22.2	H	3.0	39.8	1.0	-61.0	-13.0	-48.0	
6980.00	-23.5	H	3.0	39.6	1.0	-62.1	-13.0	-49.1	
High Ch, 1770MHz									
3540.00	-11.2	V	3.0	39.6	1.0	-49.8	-13.0	-36.8	
5310.00	-19.3	V	3.0	39.9	1.0	-58.2	-13.0	-45.2	
7080.00	-24.0	V	3.0	39.6	1.0	-62.5	-13.0	-49.5	
3540.00	-6.9	H	3.0	39.6	1.0	-45.5	-13.0	-32.5	
5310.00	-22.0	H	3.0	39.9	1.0	-60.9	-13.0	-47.9	
7080.00	-23.9	H	3.0	39.6	1.0	-62.5	-13.0	-49.5	

LTE Band 66 20MHz 16QAM

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-14
Test Engineer: 51072
Configuration: EUT / Adapter / Cradle , Z-position
Location: Chamber 2
Mode: LTE_16QAM Band 66 Harmonics, 20MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1720MHz									
3440.00	-4.0	V	3.0	39.5	1.0	-42.5	-13.0	-29.5	
5160.00	-21.3	V	3.0	39.8	1.0	-60.1	-13.0	-47.1	
6880.00	-23.0	V	3.0	39.7	1.0	-61.7	-13.0	-48.7	
3440.00	-8.9	H	3.0	39.5	1.0	-47.4	-13.0	-34.4	
5160.00	-21.0	H	3.0	39.8	1.0	-59.8	-13.0	-46.8	
6880.00	-23.1	H	3.0	39.7	1.0	-61.8	-13.0	-48.8	
Mid Ch, 1745MHz									
3490.00	-9.3	V	3.0	39.5	1.0	-47.9	-13.0	-34.9	
5235.00	-18.1	V	3.0	39.8	1.0	-56.9	-13.0	-43.9	
6980.00	-23.5	V	3.0	39.6	1.0	-62.2	-13.0	-49.2	
3490.00	-5.7	H	3.0	39.5	1.0	-44.2	-13.0	-31.2	
5235.00	-22.3	H	3.0	39.8	1.0	-61.1	-13.0	-48.1	
6980.00	-23.6	H	3.0	39.6	1.0	-62.2	-13.0	-49.2	
High Ch, 1770MHz									
3540.00	-12.5	V	3.0	39.6	1.0	-51.1	-13.0	-38.1	
5310.00	-20.6	V	3.0	39.9	1.0	-59.5	-13.0	-46.5	
7080.00	-23.9	V	3.0	39.6	1.0	-62.5	-13.0	-49.5	
3540.00	-7.8	H	3.0	39.6	1.0	-46.3	-13.0	-33.3	
5310.00	-22.6	H	3.0	39.9	1.0	-61.5	-13.0	-48.5	
7080.00	-23.9	H	3.0	39.6	1.0	-62.5	-13.0	-49.5	

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LTE
Band 66
15MHz
QPSK

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-14
Test Engineer: 51072
Configuration: EUT / Adapter / Cradle , Z-position
Location: Chamber 2
Mode: LTE_QPSK Band 66 Harmonics, 15MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1717.5MHz									
3435.00	-8.2	V	3.0	39.5	1.0	-46.7	-13.0	-33.7	
5152.50	-12.7	V	3.0	39.8	1.0	-51.5	-13.0	-38.5	
6870.00	-23.0	V	3.0	39.7	1.0	-61.7	-13.0	-48.7	
3435.00	-5.5	H	3.0	39.5	1.0	-44.0	-13.0	-31.0	
5152.50	-19.8	H	3.0	39.8	1.0	-58.6	-13.0	-45.6	
6870.00	-22.9	H	3.0	39.7	1.0	-61.6	-13.0	-48.6	
Mid Ch, 1745MHz									
3490.00	-8.6	V	3.0	39.5	1.0	-47.1	-13.0	-34.1	
5235.00	-17.3	V	3.0	39.8	1.0	-56.1	-13.0	-43.1	
6980.00	-23.5	V	3.0	39.6	1.0	-62.2	-13.0	-49.2	
3490.00	-4.5	H	3.0	39.5	1.0	-43.0	-13.0	-30.0	
5235.00	-23.9	H	3.0	39.8	1.0	-62.7	-13.0	-49.7	
6980.00	-23.5	H	3.0	39.6	1.0	-62.1	-13.0	-49.1	
High Ch, 1772.5MHz									
3545.00	-15.9	V	3.0	39.6	1.0	-54.5	-13.0	-41.5	
5317.50	-22.7	V	3.0	39.9	1.0	-61.6	-13.0	-48.6	
7090.00	-23.6	V	3.0	39.6	1.0	-62.2	-13.0	-49.2	
3545.00	-17.9	H	3.0	39.6	1.0	-56.5	-13.0	-43.5	
5317.50	-22.9	H	3.0	39.9	1.0	-61.7	-13.0	-48.7	
7090.00	-23.5	H	3.0	39.6	1.0	-62.1	-13.0	-49.1	

LTE
Band 66
15MHz
16QAM

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-14
Test Engineer: 51072
Configuration: EUT / Adapter / Cradle , Z-position
Location: Chamber 2
Mode: LTE_16QAM Band 66 Harmonics, 15MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1717.5MHz									
3435.00	-9.2	V	3.0	39.5	1.0	-47.7	-13.0	-34.7	
5152.50	-16.3	V	3.0	39.8	1.0	-55.1	-13.0	-42.1	
6870.00	-23.0	V	3.0	39.7	1.0	-61.6	-13.0	-48.6	
3435.00	-5.8	H	3.0	39.5	1.0	-44.3	-13.0	-31.3	
5152.50	-21.5	H	3.0	39.8	1.0	-60.3	-13.0	-47.3	
6870.00	-22.9	H	3.0	39.7	1.0	-61.6	-13.0	-48.6	
Mid Ch, 1745MHz									
3490.00	-9.0	V	3.0	39.5	1.0	-47.5	-13.0	-34.5	
5235.00	-17.8	V	3.0	39.8	1.0	-56.6	-13.0	-43.6	
6980.00	-23.3	V	3.0	39.6	1.0	-62.0	-13.0	-49.0	
3490.00	-4.3	H	3.0	39.5	1.0	-42.9	-13.0	-29.9	
5235.00	-23.9	H	3.0	39.8	1.0	-62.8	-13.0	-49.8	
6980.00	-23.6	H	3.0	39.6	1.0	-62.2	-13.0	-49.2	
High Ch, 1772.5MHz									
3545.00	-16.1	V	3.0	39.6	1.0	-54.6	-13.0	-41.6	
5317.50	-22.9	V	3.0	39.9	1.0	-61.8	-13.0	-48.8	
7090.00	-23.0	V	3.0	39.6	1.0	-61.6	-13.0	-48.6	
3545.00	-17.8	H	3.0	39.6	1.0	-56.4	-13.0	-43.4	
5317.50	-23.1	H	3.0	39.9	1.0	-62.0	-13.0	-49.0	
7090.00	-23.5	H	3.0	39.6	1.0	-62.0	-13.0	-49.0	

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LTE

Band 66

10MHz

QPSK

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-14
Test Engineer: 51072
Configuration: EUT / Adapter / Cradle , Z-position
Location: Chamber 2
Mode: LTE_QPSK Band 66 Harmonics, 10MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1715MHz									
3430.00	-5.1	V	3.0	39.5	1.0	-43.6	-13.0	-30.6	
5145.00	-13.7	V	3.0	39.8	1.0	-52.5	-13.0	-39.5	
6860.00	-23.5	V	3.0	39.7	1.0	-62.2	-13.0	-49.2	
3430.00	-0.7	H	3.0	39.5	1.0	-39.2	-13.0	-26.2	
5145.00	-17.3	H	3.0	39.8	1.0	-56.1	-13.0	-43.1	
6860.00	-23.6	H	3.0	39.7	1.0	-62.2	-13.0	-49.2	
Mid Ch, 1745MHz									
3490.00	-7.4	V	3.0	39.5	1.0	-45.9	-13.0	-32.9	
5235.00	-22.4	V	3.0	39.8	1.0	-61.3	-13.0	-48.3	
6980.00	-23.5	V	3.0	39.6	1.0	-62.1	-13.0	-49.1	
3490.00	-3.9	H	3.0	39.5	1.0	-42.4	-13.0	-29.4	
5235.00	-22.9	H	3.0	39.8	1.0	-61.8	-13.0	-48.8	
6980.00	-23.6	H	3.0	39.6	1.0	-62.2	-13.0	-49.2	
High Ch, 1775MHz									
3550.00	-11.5	V	3.0	39.6	1.0	-50.0	-13.0	-37.0	
5325.00	-21.3	V	3.0	39.9	1.0	-60.2	-13.0	-47.2	
7100.00	-23.8	V	3.0	39.6	1.0	-62.4	-13.0	-49.4	
3550.00	-8.6	H	3.0	39.6	1.0	-47.1	-13.0	-34.1	
5325.00	-23.0	H	3.0	39.9	1.0	-61.9	-13.0	-48.9	
7100.00	-23.8	H	3.0	39.6	1.0	-62.3	-13.0	-49.3	

LTE

Band 66

10MHz

16QAM

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-14
Test Engineer: 51072
Configuration: EUT / Adapter / Cradle , Z-position
Location: Chamber 2
Mode: LTE_16QAM Band 66 Harmonics, 10MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1715MHz									
3430.00	-5.8	V	3.0	39.5	1.0	-44.3	-13.0	-31.3	
5145.00	-17.0	V	3.0	39.8	1.0	-55.8	-13.0	-42.8	
6860.00	-23.5	V	3.0	39.7	1.0	-62.1	-13.0	-49.1	
3430.00	-1.2	H	3.0	39.5	1.0	-39.7	-13.0	-26.7	
5145.00	-19.9	H	3.0	39.8	1.0	-58.7	-13.0	-45.7	
6860.00	-23.6	H	3.0	39.7	1.0	-62.3	-13.0	-49.3	
Mid Ch, 1745MHz									
3490.00	-7.5	V	3.0	39.5	1.0	-46.1	-13.0	-33.1	
5235.00	-22.7	V	3.0	39.8	1.0	-61.5	-13.0	-48.5	
6980.00	-23.5	V	3.0	39.6	1.0	-62.1	-13.0	-49.1	
3490.00	-4.0	H	3.0	39.5	1.0	-42.5	-13.0	-29.5	
5235.00	-23.2	H	3.0	39.8	1.0	-62.0	-13.0	-49.0	
6980.00	-23.1	H	3.0	39.6	1.0	-61.7	-13.0	-48.7	
High Ch, 1775MHz									
3550.00	-12.4	V	3.0	39.6	1.0	-51.0	-13.0	-38.0	
5325.00	-20.3	V	3.0	39.9	1.0	-59.1	-13.0	-46.1	
7100.00	-23.7	V	3.0	39.6	1.0	-62.3	-13.0	-49.3	
3550.00	-9.8	H	3.0	39.6	1.0	-48.4	-13.0	-35.4	
5325.00	-22.3	H	3.0	39.9	1.0	-61.2	-13.0	-48.2	
7100.00	-23.6	H	3.0	39.6	1.0	-62.2	-13.0	-49.2	

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LTE

Band 66

5MHz

QPSK

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-14
Test Engineer: 51072
Configuration: EUT / Adapter / Cradle , Z-position
Location: Chamber 2
Mode: LTE_QPSK Band 66 Harmonics, 5MHz Bandwidth

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	-8.2	V	3.0	39.5	1.0	-46.7	-13.0	-33.7	
5137.50	-11.3	V	3.0	39.8	1.0	-50.1	-13.0	-37.1	
6850.00	-23.0	V	3.0	39.7	1.0	-61.7	-13.0	-48.7	
3425.00	-2.2	H	3.0	39.5	1.0	-40.7	-13.0	-27.7	
5137.50	-16.8	H	3.0	39.8	1.0	-55.7	-13.0	-42.7	
6850.00	-23.2	H	3.0	39.7	1.0	-61.9	-13.0	-48.9	
Mid Ch, 1745MHz									
3490.00	-9.4	V	3.0	39.5	1.0	-48.0	-13.0	-35.0	
5235.00	-21.3	V	3.0	39.8	1.0	-60.1	-13.0	-47.1	
6980.00	-23.5	V	3.0	39.6	1.0	-62.2	-13.0	-49.2	
3490.00	-8.1	H	3.0	39.5	1.0	-46.7	-13.0	-33.7	
5235.00	-20.8	H	3.0	39.8	1.0	-59.7	-13.0	-46.7	
6980.00	-23.4	H	3.0	39.6	1.0	-62.1	-13.0	-49.1	
High Ch, 1777.5MHz									
3555.00	-14.6	V	3.0	39.6	1.0	-53.2	-13.0	-40.2	
5332.50	-21.4	V	3.0	39.9	1.0	-60.2	-13.0	-47.2	
7110.00	-23.7	V	3.0	39.6	1.0	-62.2	-13.0	-49.2	
3555.00	-12.3	H	3.0	39.6	1.0	-50.9	-13.0	-37.9	
5332.50	-22.3	H	3.0	39.9	1.0	-61.2	-13.0	-48.2	
7110.00	-23.3	H	3.0	39.6	1.0	-61.9	-13.0	-48.9	

LTE

Band 66

5MHz

16QAM

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-14
Test Engineer: 51072
Configuration: EUT / Adapter / Cradle , Z-position
Location: Chamber 2
Mode: LTE_16QAM Band 66 Harmonics, 5MHz Bandwidth

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	-8.8	V	3.0	39.5	1.0	-47.3	-13.0	-34.3	
5137.50	-15.8	V	3.0	39.8	1.0	-54.6	-13.0	-41.6	
6850.00	-23.1	V	3.0	39.7	1.0	-61.8	-13.0	-48.8	
3425.00	-2.9	H	3.0	39.5	1.0	-41.4	-13.0	-28.4	
5137.50	-20.0	H	3.0	39.8	1.0	-58.8	-13.0	-45.8	
6850.00	-23.0	H	3.0	39.7	1.0	-61.7	-13.0	-48.7	
Mid Ch, 1745MHz									
3490.00	-9.6	V	3.0	39.5	1.0	-48.1	-13.0	-35.1	
5235.00	-21.8	V	3.0	39.8	1.0	-60.7	-13.0	-47.7	
6980.00	-23.5	V	3.0	39.6	1.0	-62.1	-13.0	-49.1	
3490.00	-8.0	H	3.0	39.5	1.0	-46.5	-13.0	-33.5	
5235.00	-22.5	H	3.0	39.8	1.0	-61.3	-13.0	-48.3	
6980.00	-23.6	H	3.0	39.6	1.0	-62.2	-13.0	-49.2	
High Ch, 1777.5MHz									
3555.00	-15.4	V	3.0	39.6	1.0	-54.0	-13.0	-41.0	
5332.50	-22.1	V	3.0	39.9	1.0	-60.9	-13.0	-47.9	
7110.00	-23.6	V	3.0	39.6	1.0	-62.2	-13.0	-49.2	
3555.00	-13.4	H	3.0	39.6	1.0	-52.0	-13.0	-39.0	
5332.50	-23.1	H	3.0	39.9	1.0	-62.0	-13.0	-49.0	
7110.00	-23.4	H	3.0	39.6	1.0	-62.0	-13.0	-49.0	

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LTE
Band 66
3MHz
QPSK

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-14
Test Engineer: 51072
Configuration: EUT / Adapter / Cradle , Z-position
Location: Chamber 2
Mode: LTE_QPSK Band 66 Harmonics, 3MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1711.5MHz									
3423.00	-6.7	V	3.0	39.5	1.0	-45.2	-13.0	-32.2	
5134.50	-15.8	V	3.0	39.8	1.0	-54.7	-13.0	-41.7	
6846.00	-23.3	V	3.0	39.7	1.0	-62.0	-13.0	-49.0	
3423.00	-2.5	H	3.0	39.5	1.0	-41.0	-13.0	-28.0	
5134.50	-18.4	H	3.0	39.8	1.0	-57.2	-13.0	-44.2	
6846.00	-23.4	H	3.0	39.7	1.0	-62.0	-13.0	-49.0	
Mid Ch, 1745MHz									
3490.00	-10.5	V	3.0	39.5	1.0	-49.1	-13.0	-36.1	
5235.00	-17.8	V	3.0	39.8	1.0	-56.6	-13.0	-43.6	
6980.00	-23.7	V	3.0	39.6	1.0	-62.4	-13.0	-49.4	
3490.00	-7.6	H	3.0	39.5	1.0	-46.1	-13.0	-33.1	
5235.00	-20.6	H	3.0	39.8	1.0	-59.4	-13.0	-46.4	
6980.00	-23.8	H	3.0	39.6	1.0	-62.4	-13.0	-49.4	
High Ch, 1778.5MHz									
3557.00	-11.4	V	3.0	39.6	1.0	-50.0	-13.0	-37.0	
5335.50	-23.3	V	3.0	39.9	1.0	-62.2	-13.0	-49.2	
7114.00	-23.7	V	3.0	39.6	1.0	-62.3	-13.0	-49.3	
3557.00	-15.8	H	3.0	39.6	1.0	-54.4	-13.0	-41.4	
5335.50	-23.1	H	3.0	39.9	1.0	-62.0	-13.0	-49.0	
7114.00	-23.6	H	3.0	39.6	1.0	-62.2	-13.0	-49.2	

LTE
Band 66
3MHz
16QAM

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-14
Test Engineer: 51072
Configuration: EUT / Adapter / Cradle , Z-position
Location: Chamber 2
Mode: LTE_16QAM Band 66 Harmonics, 3MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1711.5MHz									
3423.00	-7.9	V	3.0	39.5	1.0	-46.4	-13.0	-33.4	
5134.50	-15.8	V	3.0	39.8	1.0	-54.6	-13.0	-41.6	
6846.00	-23.2	V	3.0	39.7	1.0	-61.9	-13.0	-48.9	
3423.00	-2.4	H	3.0	39.5	1.0	-40.9	-13.0	-27.9	
5134.50	-18.0	H	3.0	39.8	1.0	-56.8	-13.0	-43.8	
6846.00	-23.4	H	3.0	39.7	1.0	-62.1	-13.0	-49.1	
Mid Ch, 1745MHz									
3490.00	-9.7	V	3.0	39.5	1.0	-48.3	-13.0	-35.3	
5235.00	-19.6	V	3.0	39.8	1.0	-58.4	-13.0	-45.4	
6980.00	-23.7	V	3.0	39.6	1.0	-62.4	-13.0	-49.4	
3490.00	-7.3	H	3.0	39.5	1.0	-45.8	-13.0	-32.8	
5235.00	-21.6	H	3.0	39.8	1.0	-60.4	-13.0	-47.4	
6980.00	-23.8	H	3.0	39.6	1.0	-62.4	-13.0	-49.4	
High Ch, 1778.5MHz									
3557.00	-12.0	V	3.0	39.6	1.0	-50.5	-13.0	-37.5	
5335.50	-23.6	V	3.0	39.9	1.0	-62.4	-13.0	-49.4	
7114.00	-23.4	V	3.0	39.6	1.0	-62.0	-13.0	-49.0	
3557.00	-16.0	H	3.0	39.6	1.0	-54.5	-13.0	-41.5	
5335.50	-23.7	H	3.0	39.9	1.0	-62.6	-13.0	-49.6	
7114.00	-23.8	H	3.0	39.6	1.0	-62.4	-13.0	-49.4	

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LTE
Band 66
1.4MHz
QPSK

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-13
Test Engineer: 45585
Configuration: EUT / Adapter / Cradle, Z-Position
Location: Chamber 2
Mode: LTE_QPSK Band 66 Harmonics, 1.4MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1710.7MHz									
3421.40	-6.2	V	3.0	39.5	1.0	-44.7	-13.0	-31.7	
5132.10	-13.7	V	3.0	39.8	1.0	-52.5	-13.0	-39.5	
6842.80	-23.5	V	3.0	39.7	1.0	-62.2	-13.0	-49.2	
3421.40	-3.5	H	3.0	39.5	1.0	-42.0	-13.0	-29.0	
5132.10	-14.5	H	3.0	39.8	1.0	-53.3	-13.0	-40.3	
6842.80	-23.6	H	3.0	39.7	1.0	-62.3	-13.0	-49.3	
Mid Ch, 1745MHz									
3490.00	-9.8	V	3.0	39.5	1.0	-48.3	-13.0	-35.3	
5235.00	-21.6	V	3.0	39.8	1.0	-60.5	-13.0	-47.5	
6980.00	-23.7	V	3.0	39.6	1.0	-62.4	-13.0	-49.4	
3490.00	-7.8	H	3.0	39.5	1.0	-46.3	-13.0	-33.3	
5235.00	-20.8	H	3.0	39.8	1.0	-59.6	-13.0	-46.6	
6980.00	-23.8	H	3.0	39.6	1.0	-62.4	-13.0	-49.4	
High Ch, 1779.3MHz									
3558.60	-14.5	V	3.0	39.6	1.0	-53.1	-13.0	-40.1	
5337.90	-21.6	V	3.0	39.9	1.0	-60.4	-13.0	-47.4	
7117.20	-23.9	V	3.0	39.6	1.0	-62.5	-13.0	-49.5	
3558.60	-13.3	H	3.0	39.6	1.0	-51.8	-13.0	-38.8	
5337.90	-24.0	H	3.0	39.9	1.0	-62.8	-13.0	-49.8	
7117.20	-23.8	H	3.0	39.6	1.0	-62.4	-13.0	-49.4	

LTE
Band 66
1.4MHz
16QAM

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

Company: Samsung
Project #: 4788480988
Date: 2018-06-13
Test Engineer: 45585
Configuration: EUT / Adapter / Cradle , Z-Positon
Location: Chamber 2
Mode: LTE_16QAM Band 66 Harmonics, 1.4MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1710.7MHz									
3421.40	-6.6	V	3.0	39.5	1.0	-45.1	-13.0	-32.1	
5132.10	-17.0	V	3.0	39.8	1.0	-55.8	-13.0	-42.8	
6842.80	-23.5	V	3.0	39.7	1.0	-62.2	-13.0	-49.2	
3421.40	-4.1	H	3.0	39.5	1.0	-42.6	-13.0	-29.6	
5132.10	-17.9	H	3.0	39.8	1.0	-56.7	-13.0	-43.7	
6842.80	-23.6	H	3.0	39.7	1.0	-62.3	-13.0	-49.3	
Mid Ch, 1745MHz									
3490.00	-10.1	V	3.0	39.5	1.0	-48.6	-13.0	-35.6	
5235.00	-21.8	V	3.0	39.8	1.0	-60.7	-13.0	-47.7	
6980.00	-23.8	V	3.0	39.6	1.0	-62.4	-13.0	-49.4	
3490.00	-7.7	H	3.0	39.5	1.0	-46.3	-13.0	-33.3	
5235.00	-22.2	H	3.0	39.8	1.0	-61.1	-13.0	-48.1	
6980.00	-23.8	H	3.0	39.6	1.0	-62.5	-13.0	-49.5	
High Ch, 1779.3MHz									
3558.60	-14.3	V	3.0	39.6	1.0	-52.9	-13.0	-39.9	
5337.90	-20.4	V	3.0	39.9	1.0	-59.3	-13.0	-46.3	
7117.20	-23.9	V	3.0	39.6	1.0	-62.4	-13.0	-49.4	
3558.60	-13.8	H	3.0	39.6	1.0	-52.4	-13.0	-39.4	
5337.90	-22.3	H	3.0	39.9	1.0	-61.2	-13.0	-48.2	
7117.20	-23.6	H	3.0	39.6	1.0	-62.2	-13.0	-49.2	

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