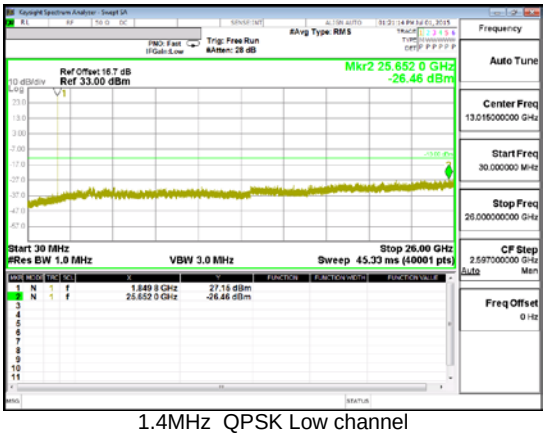
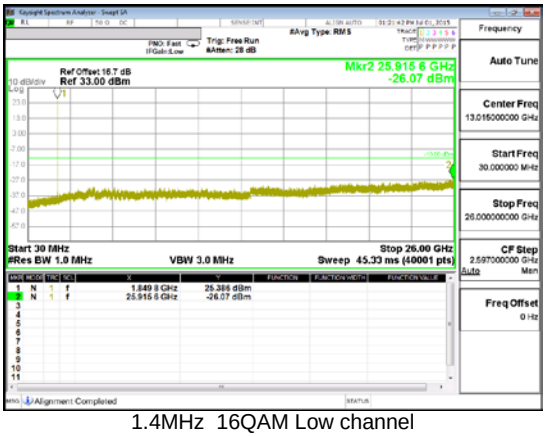
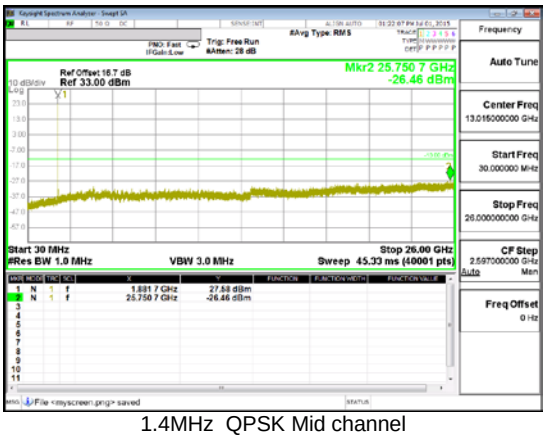
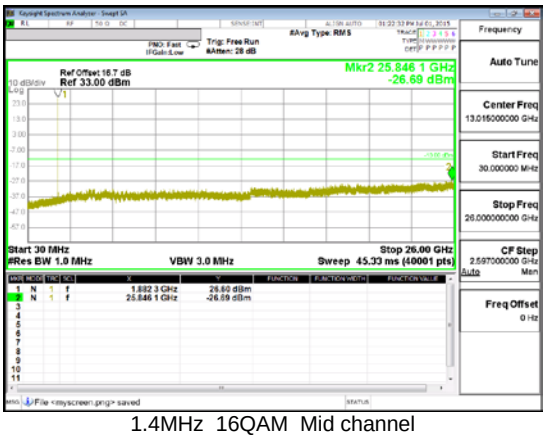
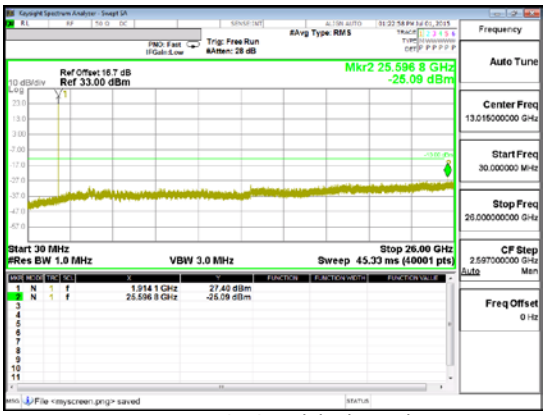
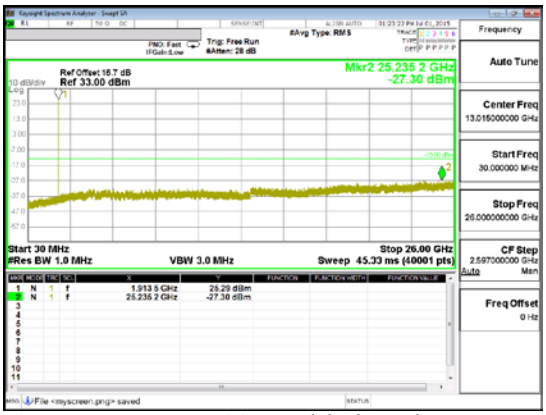
Band 25 1.4MHz	 1.4MHz QPSK Low channel	 1.4MHz 16QAM Low channel
	 1.4MHz QPSK Mid channel	 1.4MHz 16QAM Mid channel
	 1.4MHz QPSK High channel	 1.4MHz 16QAM High channel

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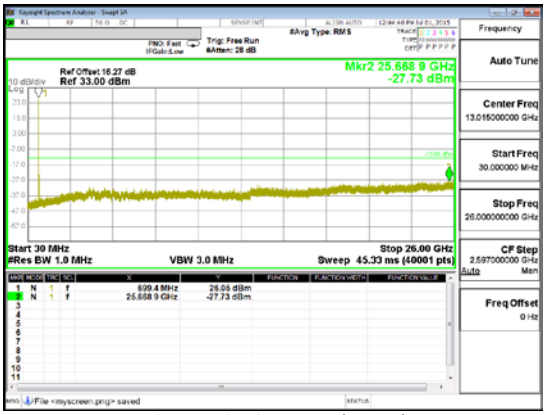
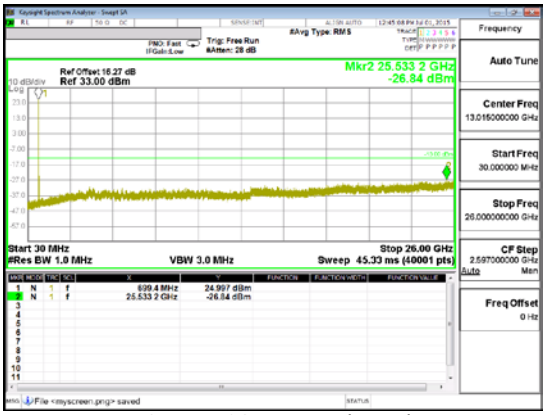
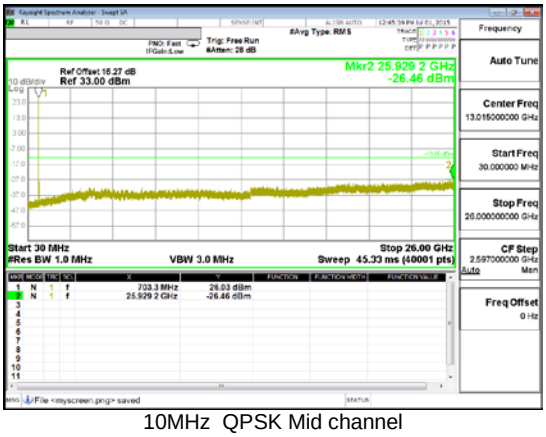
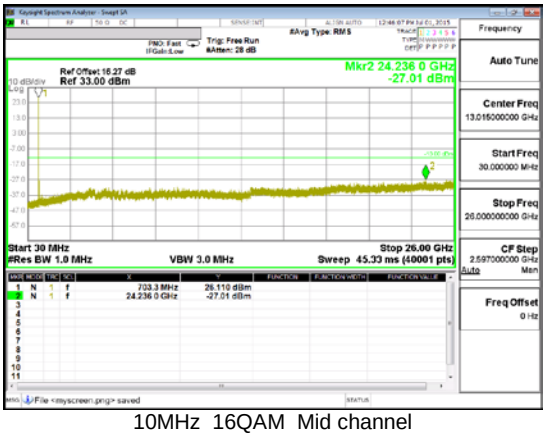
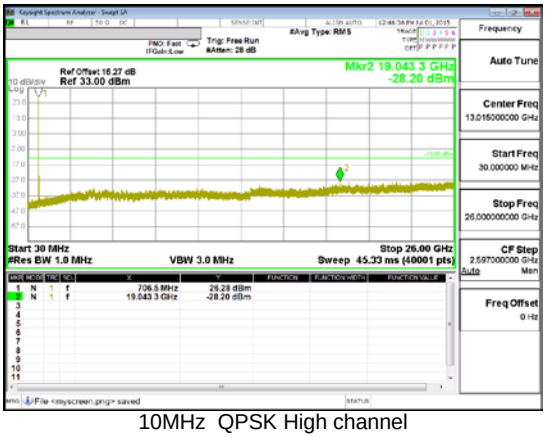
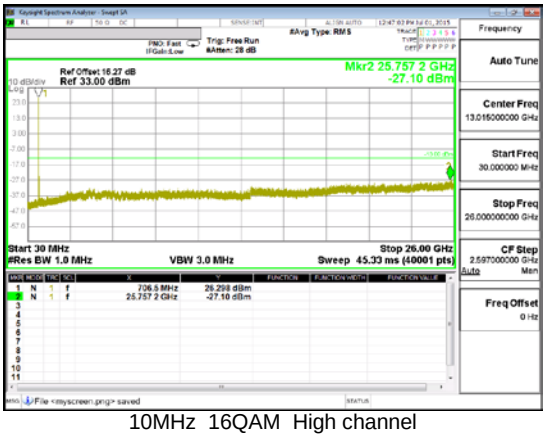
LTE Band 12

Band 12 10MHz	 10MHz QPSK Low channel	 10MHz 16QAM Low channel
	 10MHz QPSK Mid channel	 10MHz 16QAM Mid channel
	 10MHz QPSK High channel	 10MHz 16QAM High channel

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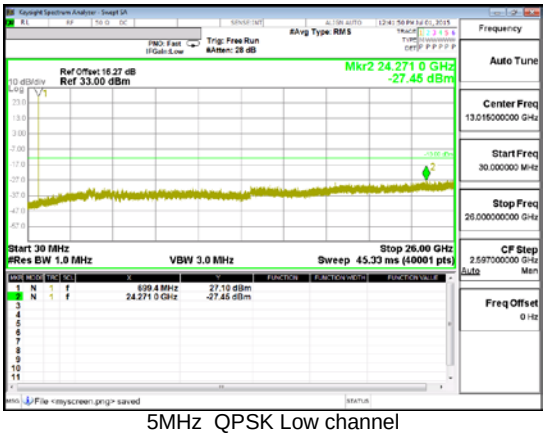
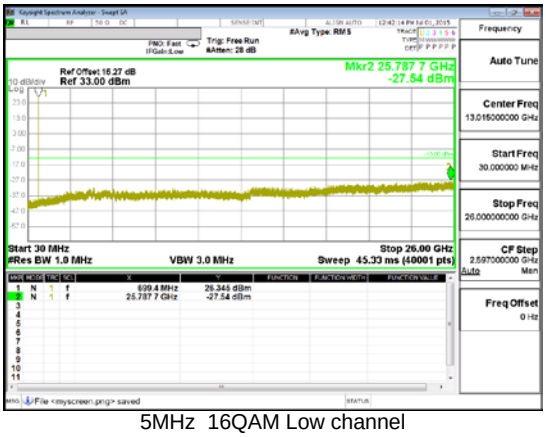
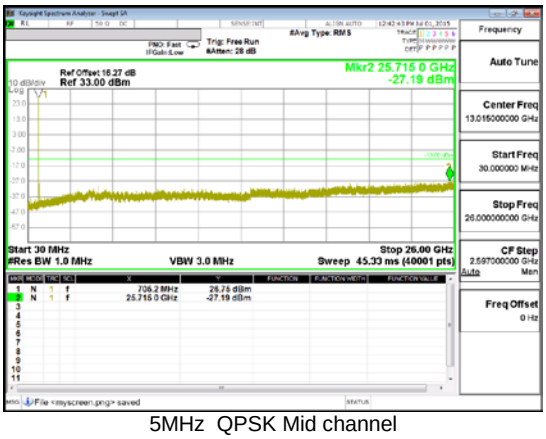
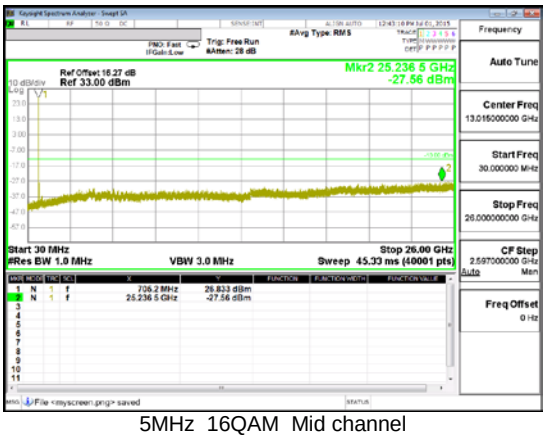
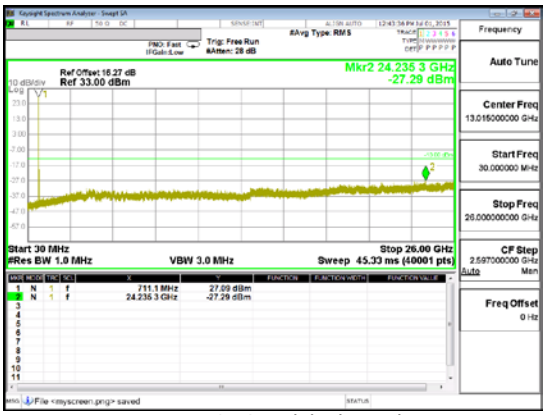
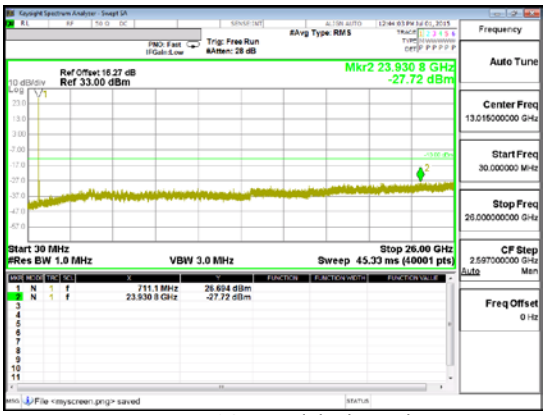
Band 12 5MHz	 5MHz QPSK Low channel	 5MHz 16QAM Low channel
	 5MHz QPSK Mid channel	 5MHz 16QAM Mid channel
	 5MHz QPSK High channel	 5MHz 16QAM High channel

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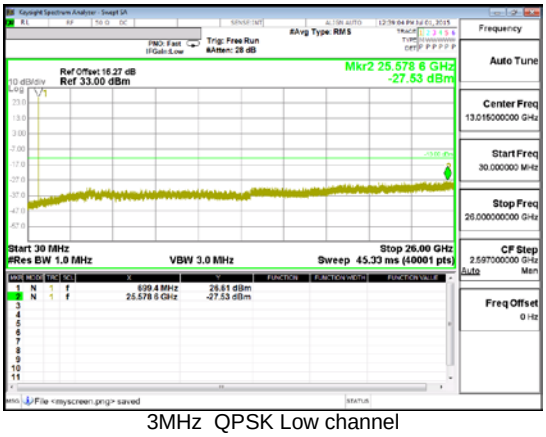
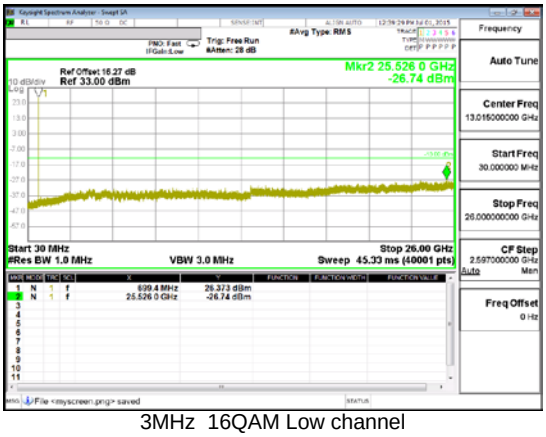
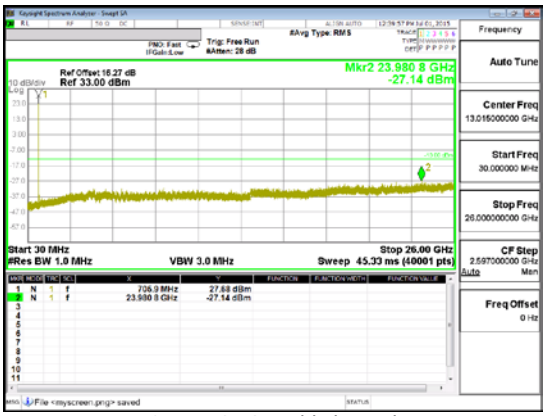
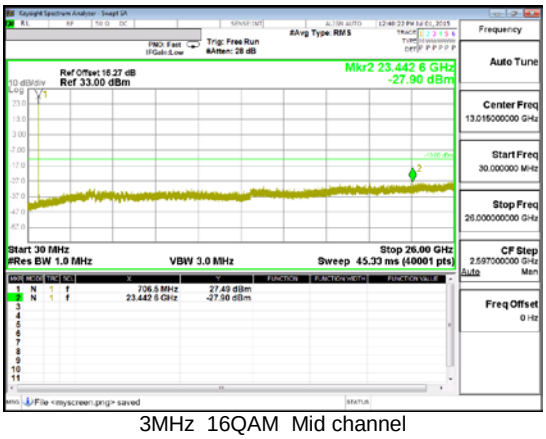
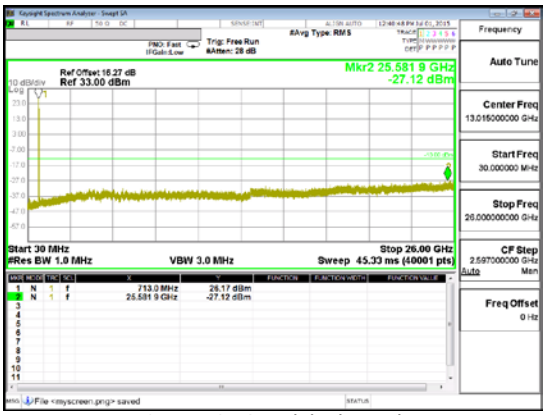
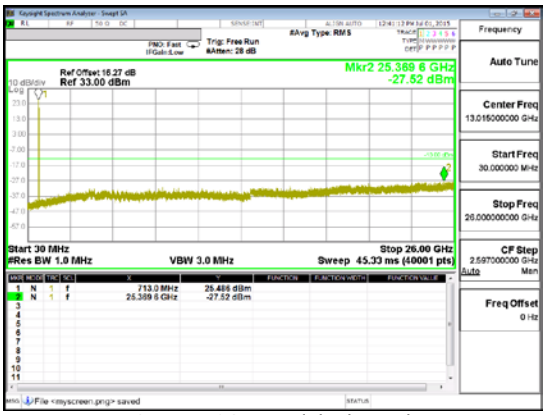
Band 12 3MHz	 3MHz QPSK Low channel	 3MHz 16QAM Low channel
	 3MHz QPSK Mid channel	 3MHz 16QAM Mid channel
	 3MHz QPSK High channel	 3MHz 16QAM High channel

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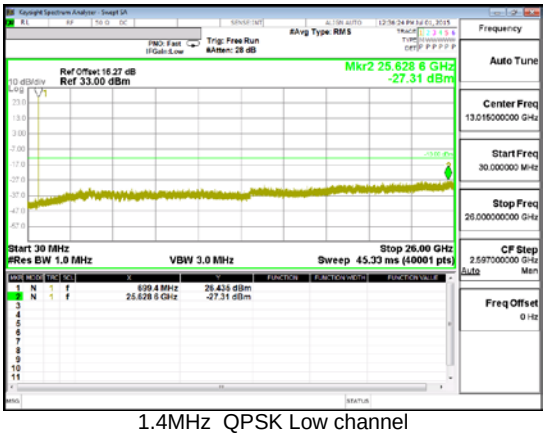
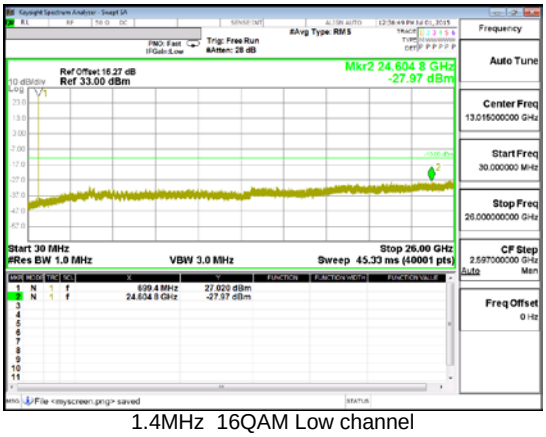
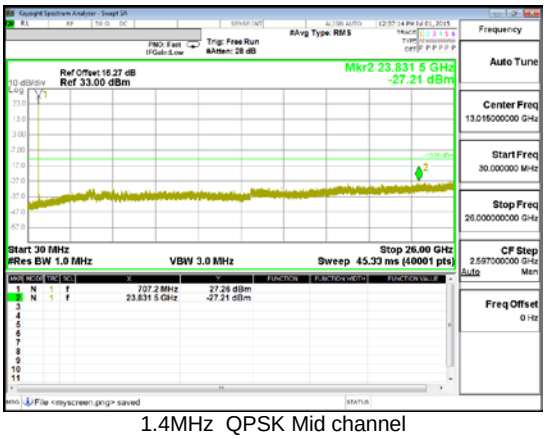
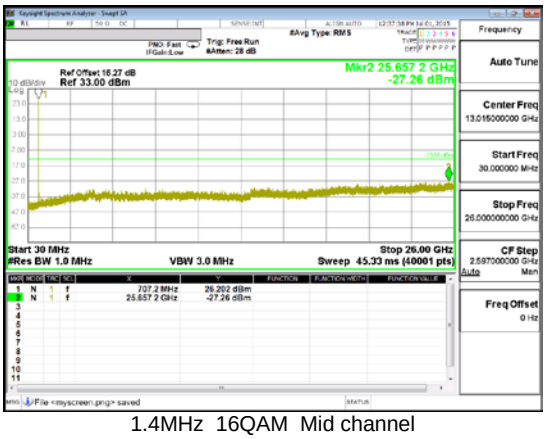
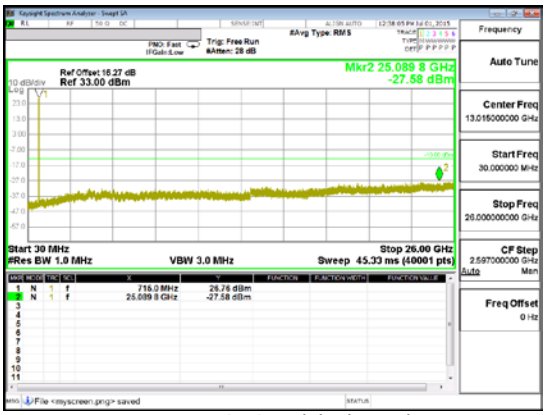
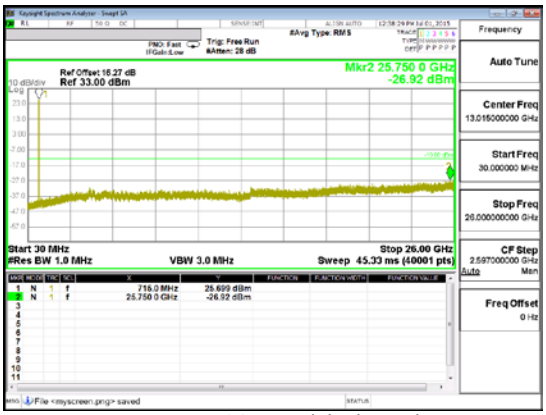
Band 12 1.4MHz	 1.4MHz QPSK Low channel	 1.4MHz 16QAM Low channel
	 1.4MHz QPSK Mid channel	 1.4MHz 16QAM Mid channel
	 1.4MHz QPSK High channel	 1.4MHz 16QAM High channel

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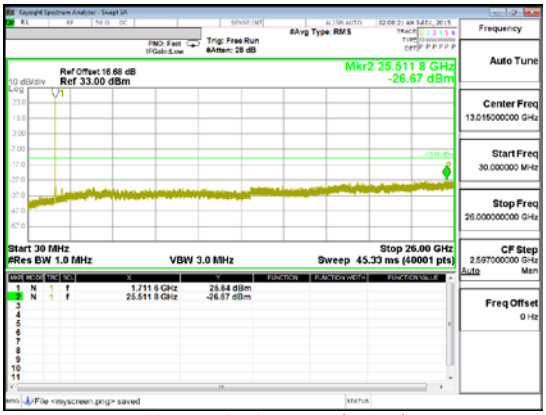
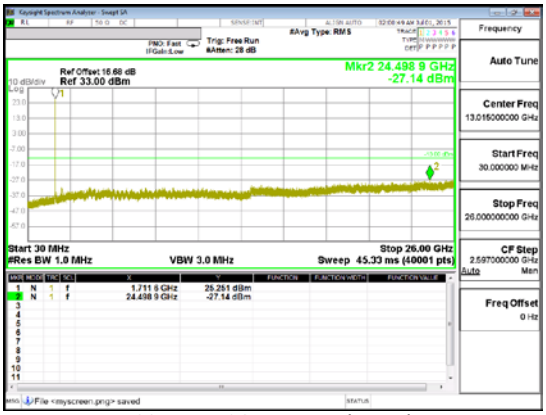
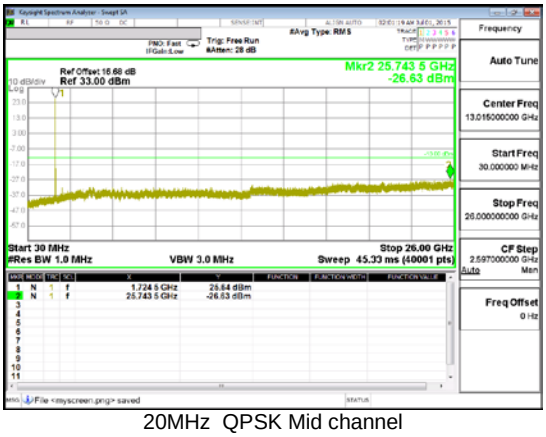
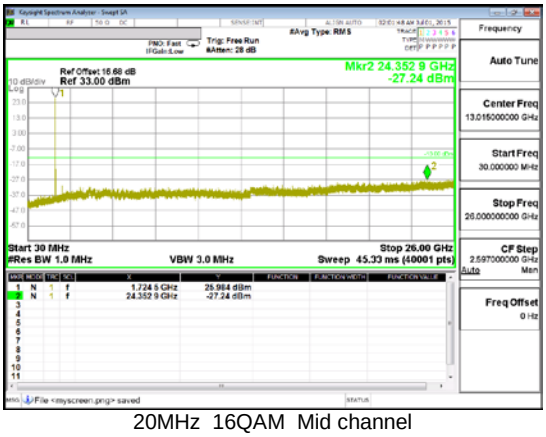
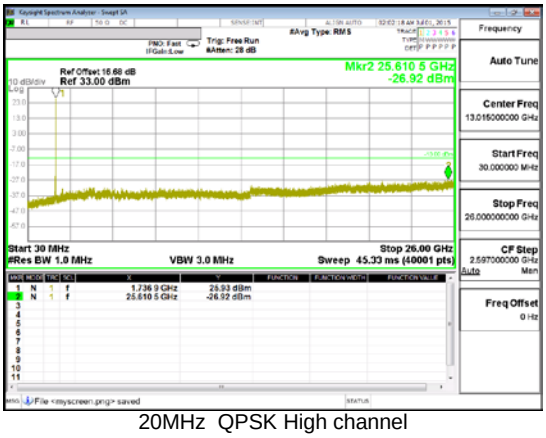
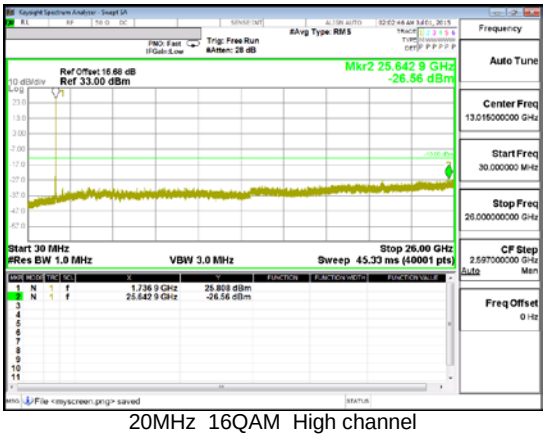
LTE Band 4

Band 4 20MHz	 20MHz QPSK Low channel	 20MHz 16QAM Low channel
	 20MHz QPSK Mid channel	 20MHz 16QAM Mid channel
	 20MHz QPSK High channel	 20MHz 16QAM High channel

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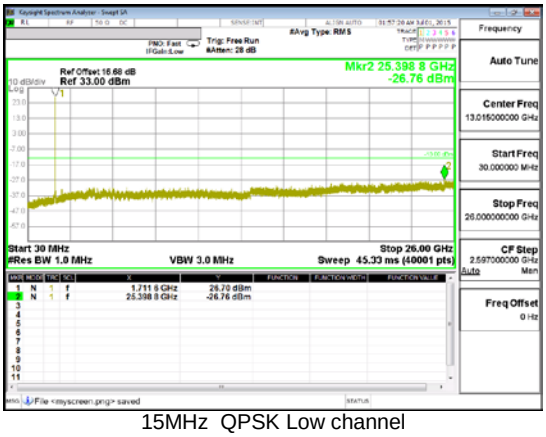
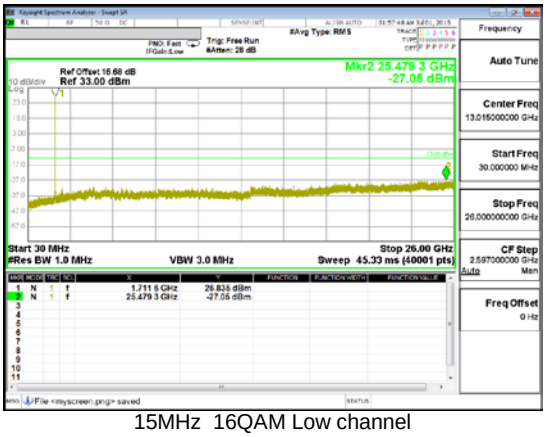
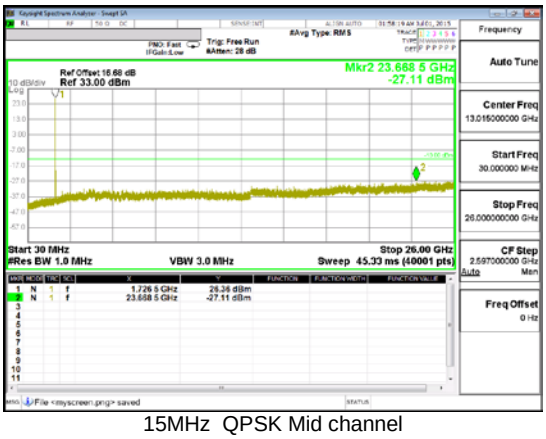
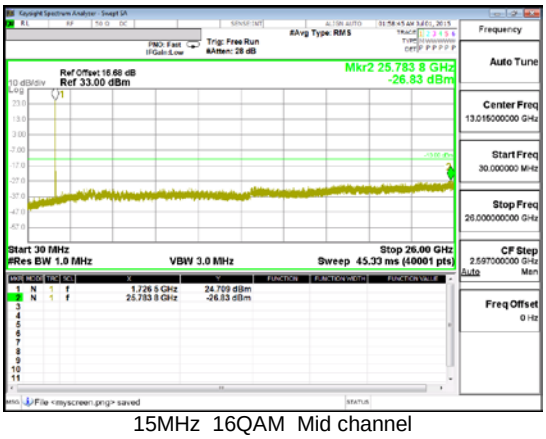
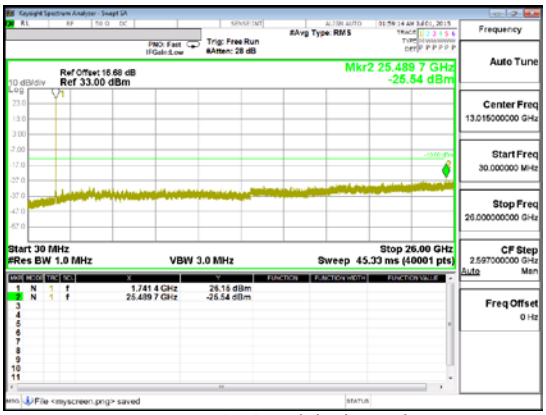
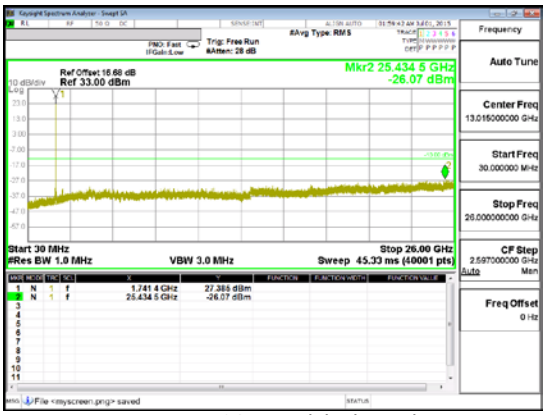
Band 4 15MHz	 15MHz QPSK Low channel	 15MHz 16QAM Low channel
	 15MHz QPSK Mid channel	 15MHz 16QAM Mid channel
	 15MHz QPSK High channel	 15MHz 16QAM High channel

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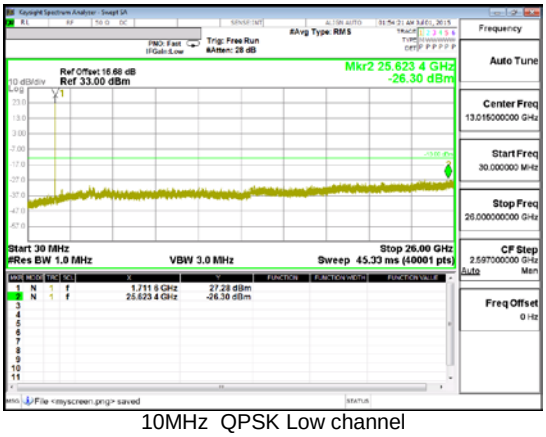
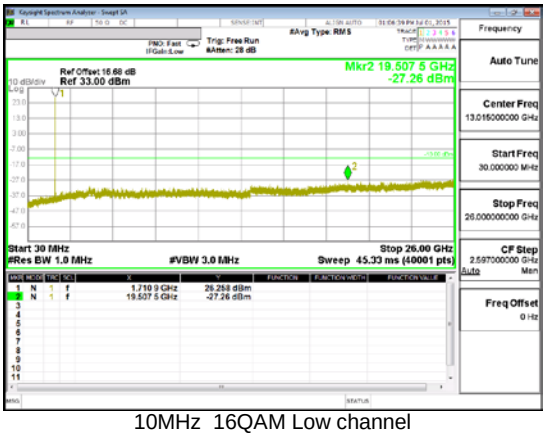
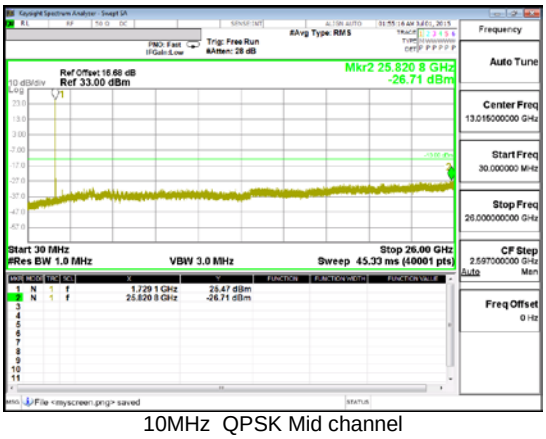
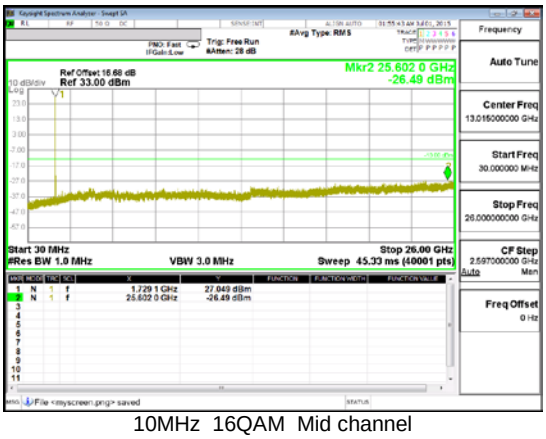
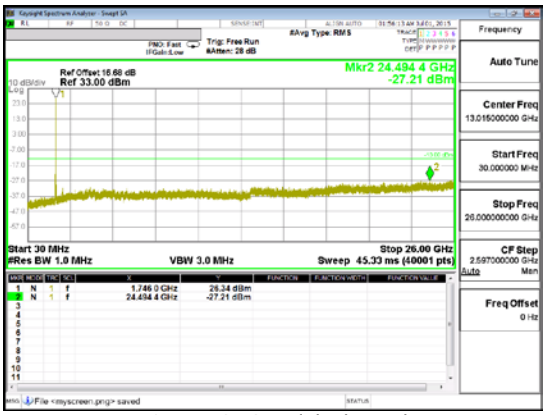
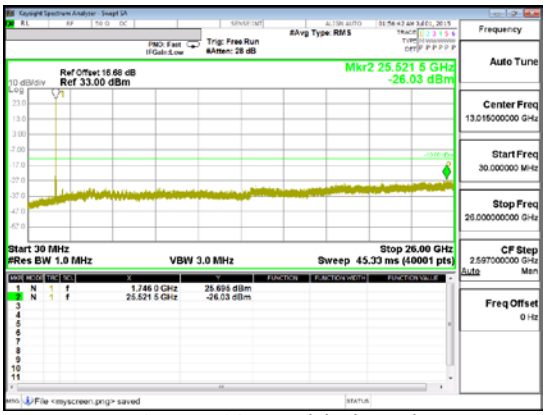
Band 4 10MHz	 10MHz QPSK Low channel	 10MHz 16QAM Low channel
	 10MHz QPSK Mid channel	 10MHz 16QAM Mid channel
	 10MHz QPSK High channel	 10MHz 16QAM High channel

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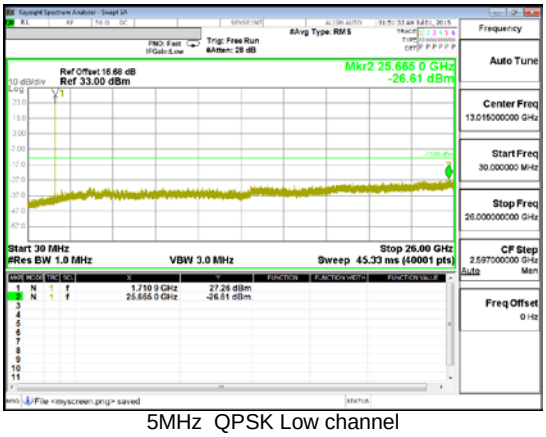
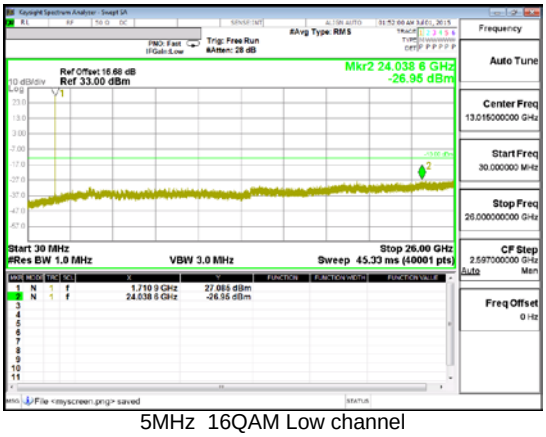
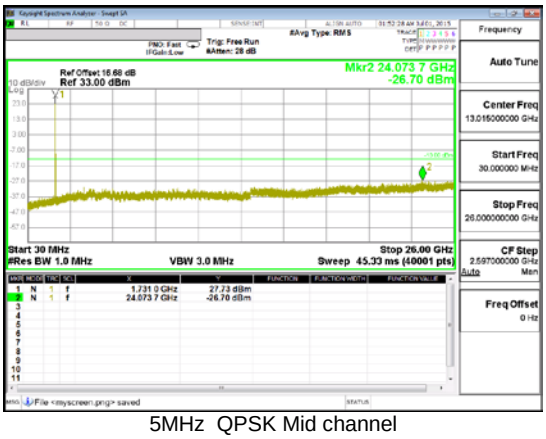
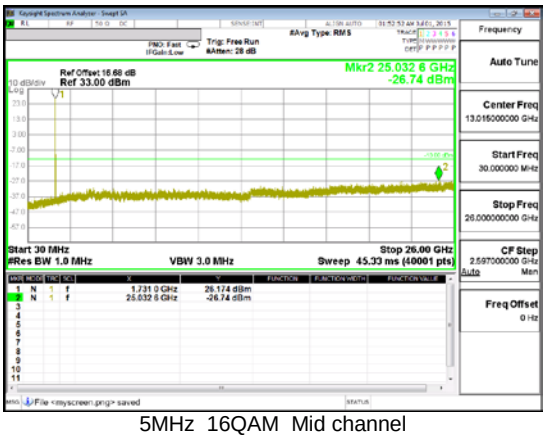
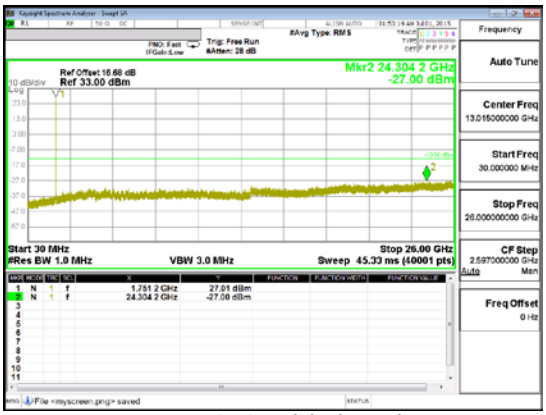
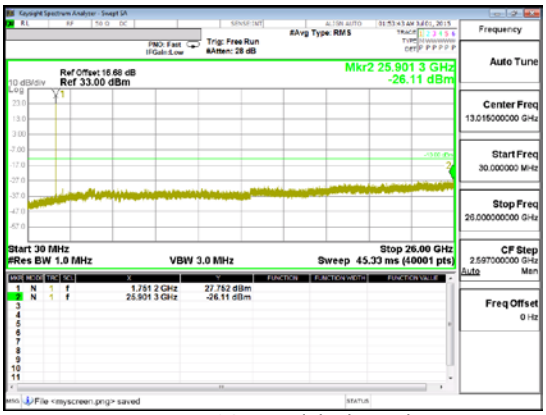
Band 4 5MHz	 5MHz QPSK Low channel	 5MHz 16QAM Low channel
	 5MHz QPSK Mid channel	 5MHz 16QAM Mid channel
	 5MHz QPSK High channel	 5MHz 16QAM High channel

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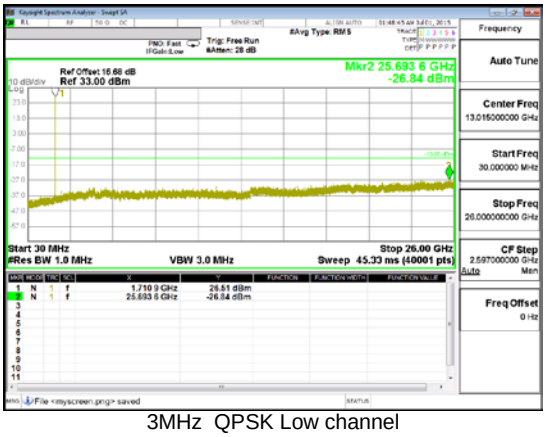
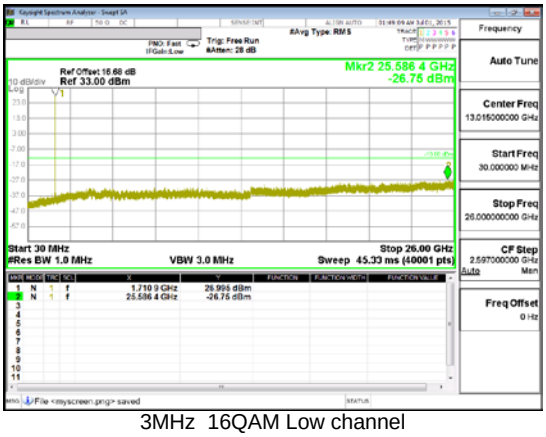
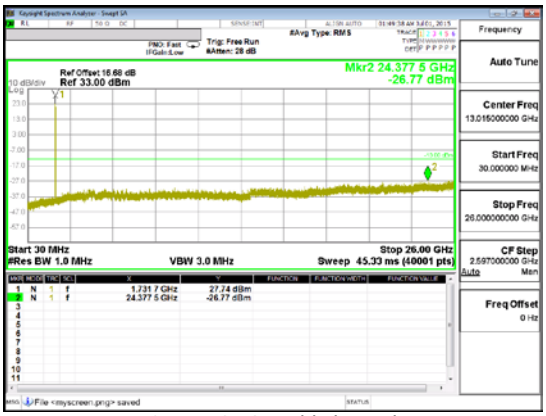
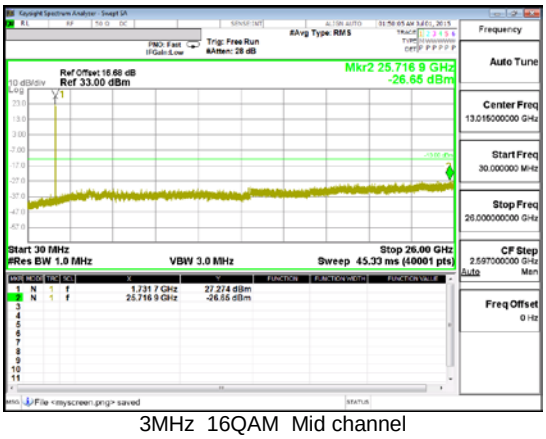
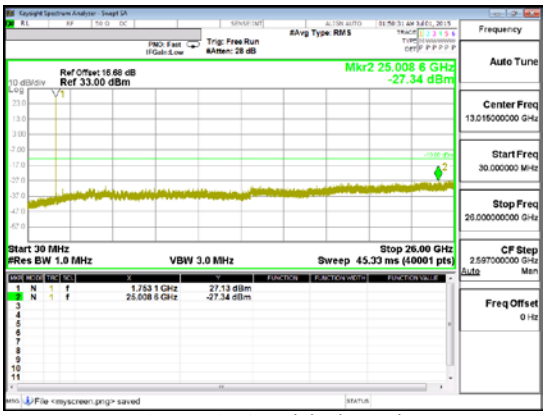
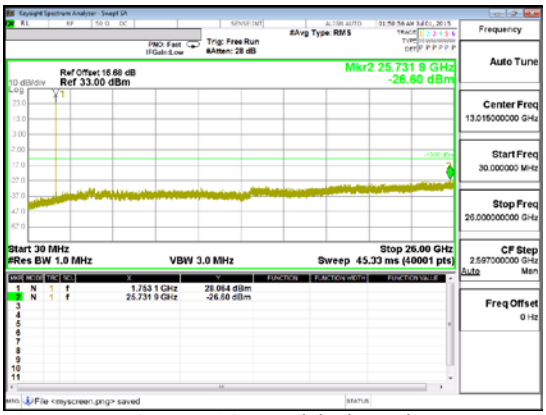
Band 4 3MHz	 3MHz QPSK Low channel	 3MHz 16QAM Low channel
	 3MHz QPSK Mid channel	 3MHz 16QAM Mid channel
	 3MHz QPSK High channel	 3MHz 16QAM High channel

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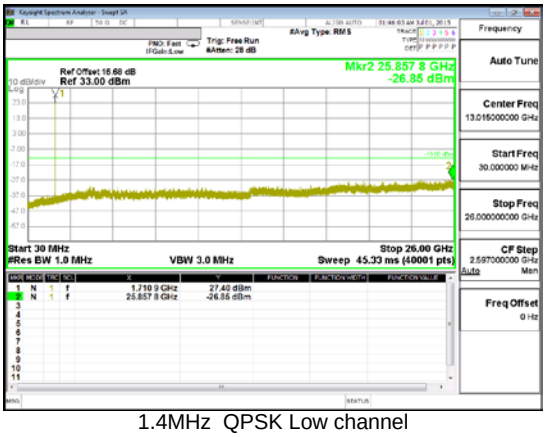
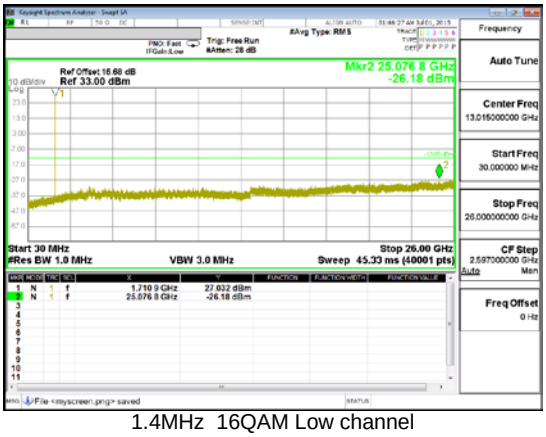
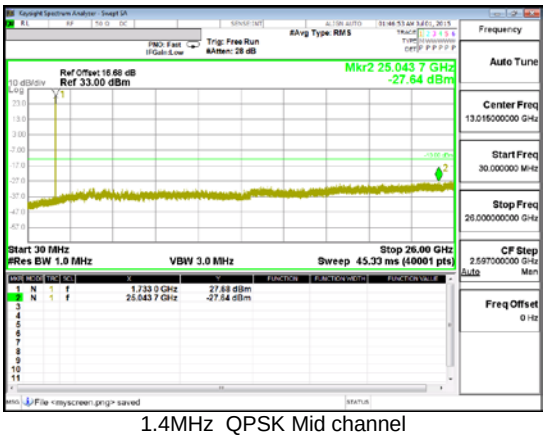
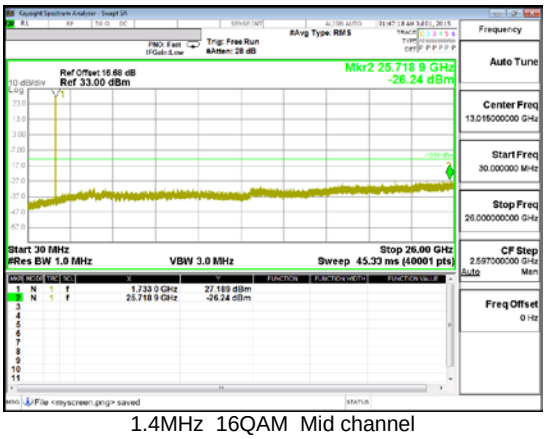
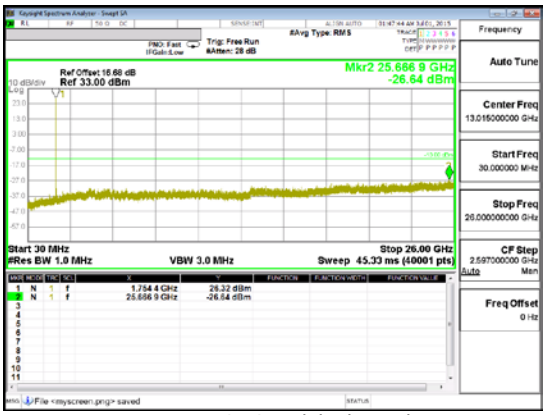
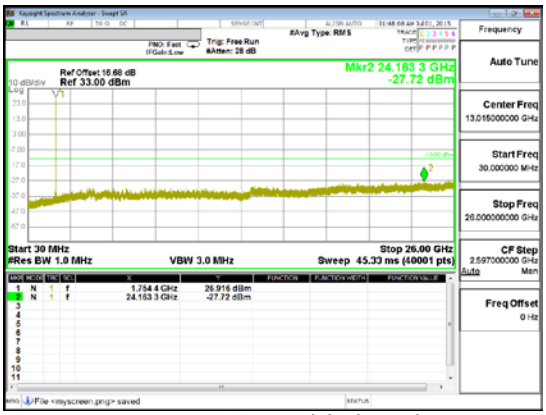
Band 4 1.4MHz	 1.4MHz QPSK Low channel	 1.4MHz 16QAM Low channel
	 1.4MHz QPSK Mid channel	 1.4MHz 16QAM Mid channel
	 1.4MHz QPSK High channel	 1.4MHz 16QAM High channel

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10.4. FREQUENCY STABILITY

RULE PART(S)

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

LIMITS

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

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

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

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

TEST PROCEDURE

Per KDB 971168 D01 Power Meas License Digital Systems v02r02

RESULTS

See the following pages.

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10.4.1. FREQUENCY STABILITY RESULTS

LTE Band 41, Channel 40620, Frequency 2593.0 MHz

Reference Frequency: LTE Band41 Mid Channel 2593 MHz @ 20ºC Limit: ± 2.5 ppm = 6482.500 Hz				
Power Supply	Environment	Frequency Deviation Measureed with Time Elapse		
(Vdc)	Temperature (*C)	(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	2592.99994055	0.006	2.5
3.80	40	2592.99994018	0.007	2.5
3.80	30	2592.99994853	0.003	2.5
3.80	***20***	**2592.99995724**	***0***	***2.5***
3.80	10	2592.99995562	0.001	2.5
3.80	0	2592.99995600	0.000	2.5
3.80	-10	2592.99995338	0.001	2.5
3.80	-20	2592.99994737	0.004	2.5
3.80	-30	2592.99995155	0.002	2.5

Reference Frequency: LTE Band41 Mid Channel 2593 MHz @ 20ºC Limit: ± 2.5 ppm = 6482.500 Hz				
Power Supply	Environment	Frequency Deviation Measureed with Time Elapse		
(Vdc)	Temperature (*C)	(MHz)	Delta (ppm)	Limit (ppm)
3.80	***20***	**2592.99995724**	***0***	***2.5***
4.20	20	2592.99994964	0.003	2.5
3.50	20	2592.99995371	0.001	2.5

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LTE Band 26, Channel 26965, Frequency 831.5 MHz

Reference Frequency: LTE Band26 Mid Channel 831.5 MHz @ 20ºC Limit: ± 2.5 ppm = 2078.750 Hz				
Power Supply (Vdc)	Environment Temperature (*C)	Frequency Deviation Measureed with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	831.50003055	0.003	2.5
3.80	40	831.50002883	0.005	2.5
3.80	30	831.50001415	0.022	2.5
3.80	***20***	***831.50003285***	***0***	***2.5***
3.80	10	831.50002260	0.012	2.5
3.80	0	831.50002789	0.006	2.5
3.80	-10	831.50002310	0.012	2.5
3.80	-20	831.50002665	0.007	2.5
3.80	-30	831.50003153	0.002	2.5

Reference Frequency: LTE Band26 Mid Channel 831.5 MHz @ 20ºC Limit: ± 2.5 ppm = 2078.750 Hz				
Power Supply (Vdc)	Environment Temperature (*C)	Frequency Deviation Measureed with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	***20***	***831.50003285***	***0***	***2.5***
4.20	20	831.50002351	0.011	2.5
3.50	20	831.50002926	0.004	2.5

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LTE Band 25, Channel 26365, Frequency 1882.5 MHz

Reference Frequency: LTE Band25 Mid Channel 1882.5 MHz @ 20ºC Limit: ± 2.5 ppm = 4706.250 Hz				
Power Supply (Vdc)	Environment Temperature (*C)	Frequency Deviation Measureed with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	1882.50002752	-0.001	2.5
3.80	40	1882.50002074	0.003	2.5
3.80	30	1882.50002923	-0.002	2.5
3.80	***20***	**1882.50002621**	***0***	***2.5***
3.80	10	1882.50003259	-0.003	2.5
3.80	0	1882.50002092	0.003	2.5
3.80	-10	1882.50002688	0.000	2.5
3.80	-20	1882.50001346	0.007	2.5
3.80	-30	1882.50002762	-0.001	2.5

Reference Frequency: LTE Band25 Mid Channel 1882.5 MHz @ 20ºC Limit: ± 2.5 ppm = 4706.250 Hz				
Power Supply (Vdc)	Environment Temperature (*C)	Frequency Deviation Measureed with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	***20***	**1882.50002621**	***0***	***2.5***
4.20	20	1882.50002374	0.001	2.5
3.50	20	1882.50001936	0.004	2.5

LTE Band 17

Due to frequency range and same output power setting, test was carried in LTE Band 12 to cover both LTE Band 12 and LTE Band 17.

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LTE Band 12, Channel 23095, Frequency 707.5 MHz

Reference Frequency: LTE Band12 Mid Channel 707.5 MHz @ 20ºC Limit: ± 2.5 ppm = 1768.750 Hz				
Power Supply (Vdc)	Environment Temperature (*C)	Frequency Deviation Measureed with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	707.50002988	-0.008	2.5
3.80	40	707.50003280	-0.012	2.5
3.80	30	707.49998375	0.057	2.5
3.80	***20***	***707.50002415***	***0***	***2.5***
3.80	10	707.50001882	0.008	2.5
3.80	0	707.50001416	0.014	2.5
3.80	-10	707.50002393	0.000	2.5
3.80	-20	707.50002243	0.002	2.5
3.80	-30	707.50002830	-0.006	2.5

Reference Frequency: LTE Band12 Mid Channel 707.5 MHz @ 20ºC Limit: ± 2.5 ppm = 1768.750 Hz				
Power Supply (Vdc)	Environment Temperature (*C)	Frequency Deviation Measureed with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	***20***	***707.50002415***	***0***	***2.5***
4.20	20	707.50003711	-0.018	2.5
3.50	20	707.50003129	-0.010	2.5

LTE Band 5

Due to frequency range and same output power setting, test was carried in LTE Band 26 to cover both LTE Band 26 and LTE Band 5.

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LTE Band 4, Channel 20174, Frequency 1732.5 MHz

Reference Frequency: LTE Band4 Mid Channel 1732.5 MHz @ 20ºC Limit: ± 2.5 ppm = 4331.250 Hz				
Power Supply (Vdc)	Environment Temperature (*C)	Frequency Deviation Measureed with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	1732.50002689	-0.003	2.5
3.80	40	1732.50003089	-0.005	2.5
3.80	30	1732.50002047	0.001	2.5
3.80	***20***	**1732.50002183**	***0***	***2.5***
3.80	10	1732.49998717	0.020	2.5
3.80	0	1732.50002293	-0.001	2.5
3.80	-10	1732.50008137	-0.034	2.5
3.80	-20	1732.49998445	0.022	2.5
3.80	-30	1732.50001712	0.003	2.5

Reference Frequency: LTE Band4 Mid Channel 1880 MHz @ 20ºC Limit: ± 2.5 ppm = 4331.250 Hz				
Power Supply (Vdc)	Environment Temperature (*C)	Frequency Deviation Measureed with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	***20***	**1732.50002183**	***0***	***2.5***
4.20	20	1732.50002496	-0.002	2.5
3.50	20	1732.50003350	-0.007	2.5

LTE Band 2

Due to frequency range and same output power setting, test was carried in LTE Band 25 to cover both LTE Band 25 and LTE Band 2.

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11. RADIATED TEST RESULTS

11.1. RADIATED POWER (ERP & EIRP)

RULE PART(S)

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

LIMITS

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

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

27.50(c) - (10) Portable stations (hand-held devices) are limited to 3 watts ERP; (LTE B17)

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.(Band 4)

27.50(h) - (2) Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.(LTE B41 / 7)

90.635(b) – The maximum output power of the transmitter for mobile stations is 100 watts (20dBw).
(LTE B26)

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 603C Clause 2.2.17; MXA setting reference to 971168 D01 v02r02

For peak power measurement with a MXA:

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

For average power measurement with a MXA:

a) Set span to at least 1.5 times the OBW; b) Set RBW = 1-5% of the OBW, not to exceed 1 MHz; c) Set VBW ≥ 3 x RBW; d) Set number of points in sweep ≥ 2 × span / RBW; e) Sweep time = auto-couple; f) Detector = RMS (power averaging); g) Use free run trigger If burst duty cycle ≥ 98; h) Use trigger to capture bursts If burst duty cycle < 98; i) Trace average at least 100 traces in power averaging (*i.e.*, RMS) mode. j) Compute the power by integrating the spectrum across the OBW of the signal using the instrument's band power measurement function.

TEST RESULTS

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11.1.1. ERP/EIRP Results

LTE Band 41

Band	BW [MHz]	Mode	RB/RB Size	f [MHz]	ERP / EIRP	
			Full RB		[dBm]	[mW]
Band 41	20	QPSK	1/0	2506.0	10.46	11.12
			1/0	2593.0	11.77	15.03
			1/0	2680.0	12.51	17.82
		16QAM	1/0	2506.0	9.41	8.73
			1/0	2593.0	10.77	11.94
			1/0	2680.0	11.70	14.79
	15	QPSK	1/0	2503.5	10.67	11.67
			1/0	2593.0	12.53	17.91
			1/0	2682.5	12.75	18.84
		16QAM	1/0	2503.5	9.65	9.23
			1/0	2593.0	10.41	10.99
			1/0	2682.5	10.90	12.30
	10	QPSK	1/0	2501.0	10.80	12.02
			1/0	2593.0	11.52	14.19
			1/0	2685.0	11.84	15.28
		16QAM	1/0	2501.0	9.39	8.69
			1/0	2593.0	9.53	8.97
			1/0	2685.0	11.24	13.30
	5	QPSK	1/0	2498.5	13.69	23.39
			1/0	2593.0	14.77	29.99
			1/0	2687.5	16.78	47.64
		16QAM	1/0	2498.5	8.69	7.40
			1/0	2593.0	8.53	7.13
			1/0	2687.5	10.12	10.28

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LTE Band 26

Band	BW [MHz]	Mode	RB/RB Size	f [MHz]	ERP / EIRP	
			Full RB		[dBm]	[mW]
Band 26	15	QPSK	100/0	831.5	11.64	14.59
			100/0	841.5	10.84	12.13
		16QAM	100/0	831.5	10.58	11.43
			100/0	841.5	9.87	9.71
	10	QPSK	75/0	819.0	12.91	19.54
			75/0	831.5	12.07	16.11
			75/0	844.0	10.90	12.30
		16QAM	75/0	819.0	11.89	15.45
			75/0	831.5	11.00	12.59
			75/0	844.0	9.74	9.42
	5	QPSK	50/0	816.5	12.94	19.68
			50/0	821.5	13.27	21.23
			50/0	831.5	11.66	14.66
			50/0	846.5	10.37	10.89
		16QAM	50/0	816.5	11.97	15.74
			50/0	821.5	12.10	16.22
			50/0	831.5	10.66	11.64
			50/0	846.5	9.81	9.57
	3	QPSK	25/0	815.5	12.99	19.91
			25/0	822.5	9.06	8.05
			25/0	831.5	11.90	15.49
			25/0	847.5	10.07	10.16
		16QAM	25/0	815.5	11.99	15.81
			25/0	822.5	8.23	6.65
			25/0	831.5	10.9	12.30
			25/0	847.5	9.48	8.87
	1.4	QPSK	15/0	814.7	11.13	12.97
			15/0	823.3	9.38	8.67
			15/0	831.5	10.09	10.21
			15/0	848.3	7.93	6.21
		16QAM	15/0	814.7	10.08	10.19
			15/0	823.3	8.76	7.52
			15/0	831.5	9.11	8.15
			15/0	848.3	7.34	5.42

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LTE Band 25

Band	BW [MHz]	Mode	RB/RB Size	f [MHz]	ERP / EIRP	
			Full RB		[dBm]	[mW]
Band 25	20	QPSK	100/0	1860.0	22.10	162.18
			100/0	1882.5	21.20	131.83
			100/0	1905.0	20.80	120.23
		16QAM	100/0	1860.0	21.07	127.94
			100/0	1882.5	20.14	103.28
			100/0	1905.0	19.77	94.84
	15	QPSK	75/0	1857.5	22.21	166.34
			75/0	1882.5	21.22	132.43
			75/0	1907.5	20.47	111.43
		16QAM	75/0	1857.5	21.23	132.74
			75/0	1882.5	20.21	104.95
			75/0	1907.5	19.44	87.90
	10	QPSK	50/0	1855.0	22.00	158.49
			50/0	1882.5	21.17	130.92
			50/0	1910.0	20.12	102.80
		16QAM	50/0	1855.0	20.97	125.03
			50/0	1882.5	20.14	103.28
			50/0	1910.0	19.15	82.22
	5	QPSK	25/0	1852.5	21.57	143.55
			25/0	1882.5	21.33	135.83
			25/0	1912.5	19.77	94.84
		16QAM	25/0	1852.5	20.57	114.02
			25/0	1882.5	20.34	108.14
			25/0	1912.5	18.77	75.34
	3	QPSK	15/0	1851.5	21.61	144.88
			15/0	1882.5	21.41	138.36
			15/0	1913.5	19.68	92.90
		16QAM	15/0	1851.5	20.63	115.61
			15/0	1882.5	20.44	110.66
			15/0	1913.5	18.71	74.30
	1.4	QPSK	6/0	1850.7	19.10	81.28
			6/0	1882.5	19.42	87.50
			6/0	1914.3	18.28	67.30
		16QAM	6/0	1850.7	18.13	65.01
			6/0	1882.5	18.43	69.66
			6/0	1914.3	17.25	53.09

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LTE Band 17

Due to frequency range and same output power setting, test was carried in LTE Band 12 to cover both LTE Band 12 and LTE Band 17.

LTE Band 12

Band	BW [MHz]	Mode	RB/RB Size	f [MHz]	ERP / EIRP	
			Full RB		[dBm]	[mW]
Band 12	10	QPSK	50/0	704.0	13.13	20.56
			50/0	707.5	13.79	23.93
			50/0	711.0	14.07	25.53
		16QAM	50/0	704.0	12.12	16.29
			50/0	707.5	12.72	18.71
			50/0	711.0	12.99	19.91
	5	QPSK	25/0	701.5	13.24	21.09
			25/0	707.5	14.19	26.24
			25/0	713.5	14.35	27.23
		16QAM	25/0	701.5	12.26	16.83
			25/0	707.5	13.14	20.61
			25/0	713.5	13.82	24.10
	3	QPSK	15/0	700.5	13.07	20.28
			15/0	707.5	14.25	26.61
			15/0	714.5	14.26	26.67
		16QAM	15/0	700.5	12.06	16.07
			15/0	707.5	13.24	21.09
			15/0	714.5	13.72	23.55
	1.4	QPSK	6/0	699.7	12.95	19.72
			6/0	707.5	14.32	27.04
			6/0	715.3	14.29	26.85
		16QAM	6/0	699.7	11.94	15.63
			6/0	707.5	13.31	21.43
			6/0	715.3	13.73	23.60

LTE Band 5

Due to frequency range and same output power setting, test was carried in LTE Band 26 to cover both LTE Band 26 and LTE Band 5.

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LTE Band 4

Band	BW [MHz]	Mode	RB/RB Size	f [MHz]	ERP / EIRP	
			Full RB		[dBm]	[mW]
Band 4	20	QPSK	100/0	1720.0	20.57	114.02
			100/0	1732.5	21.08	128.23
			100/0	1745.0	21.51	141.58
		16QAM	100/0	1720.0	19.62	91.62
			100/0	1732.5	20.03	100.69
			100/0	1745.0	20.43	110.41
	15	QPSK	75/0	1717.5	20.29	106.91
			75/0	1732.5	20.86	121.90
			75/0	1747.5	21.65	146.22
		16QAM	75/0	1717.5	19.22	83.56
			75/0	1732.5	19.86	96.83
			75/0	1747.5	20.61	115.08
	10	QPSK	50/0	1715.0	20.24	105.68
			50/0	1732.5	20.89	122.74
			50/0	1750.0	21.73	148.94
		16QAM	50/0	1715.0	19.24	83.95
			50/0	1732.5	19.86	96.83
			50/0	1750.0	20.73	118.30
	5	QPSK	25/0	1712.5	20.36	108.64
			25/0	1732.5	20.90	123.03
			25/0	1752.5	21.66	146.55
		16QAM	25/0	1712.5	19.36	86.30
			25/0	1732.5	19.86	96.83
			25/0	1752.5	20.68	116.95
	3	QPSK	15/0	1711.5	20.45	110.92
			15/0	1732.5	20.99	125.60
			15/0	1753.5	21.66	146.55
		16QAM	15/0	1711.5	19.46	88.31
			15/0	1732.5	19.93	98.40
			15/0	1753.5	20.64	115.88
	1.4	QPSK	6/0	1710.7	18.67	73.62
			6/0	1732.5	19.14	82.04
			6/0	1754.3	19.78	95.06
		16QAM	6/0	1710.7	17.69	58.75
			6/0	1732.5	18.16	65.46
			6/0	1754.3	18.78	75.51

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LTE Band 2

Due to frequency range and same output power setting, test was carried in LTE Band 25 to cover both LTE Band 25 and LTE Band 2.

11.1.2. ERP/EIRP DATA

LTE Band 41

LTE Band 41 20MHz QPSK

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: GT-I6408
Date: 06-30-15
Test Engineer: Steven.Kim
Configuration: EUT / Z-Position
Mode: LTE Band 41, QPSK, 20MHz

Test Equipment:
Receiving: 3117[00168724] and Chamber 1 SMA Cables
Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
2506.00	1.53	V	1.9	9.1	8.79	33.0	-24.2	
2506.00	3.20	H	1.9	9.1	10.46	33.0	-22.5	
Mid Ch								
2593.00	-0.60	V	1.9	10.4	7.89	33.0	-25.1	
2593.00	3.28	H	1.9	10.4	11.77	33.0	-21.2	
High Ch								
2680.00	0.68	V	1.9	10.3	9.12	33.0	-23.9	
2680.00	4.07	H	1.9	10.3	12.51	33.0	-20.5	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

LTE Band 41 20MHz 16QAM

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: GT-I6408
Date: 06-30-15
Test Engineer: Steven.Kim
Configuration: EUT / Z-Position
Mode: LTE Band 41, 16QAM, 20MHz

Test Equipment:
Receiving: 3117[00168724] and Chamber 1 SMA Cables
Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
2506.00	0.48	V	1.9	9.1	7.74	33.0	-25.3	
2506.00	2.15	H	1.9	9.1	9.41	33.0	-23.6	
Mid Ch								
2593.00	-1.62	V	1.9	10.4	6.87	33.0	-26.1	
2593.00	2.28	H	1.9	10.4	10.77	33.0	-22.2	
High Ch								
2680.00	-0.08	V	1.9	10.3	8.36	33.0	-24.6	
2680.00	3.26	H	1.9	10.3	11.70	33.0	-21.3	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

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LTE Band 41 15MHz QPSK

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: GT-I6408
Date: 06-30-15
Test Engineer: Steven.Kim
Configuration: EUT / Z-Position
Mode: LTE Band 41, QPSK, 15MHz

Test Equipment:
Receiving: 3117[00168724] and Chamber 1 SMA Cables
Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
2503.50	3.41	V	1.9	9.1	10.67	33.0	-22.3	
2503.50	2.18	H	1.9	9.1	9.44	33.0	-23.6	
Mid Ch								
2593.00	2.60	V	1.9	10.4	11.09	33.0	-21.9	
2593.00	4.04	H	1.9	10.4	12.53	33.0	-20.5	
High Ch								
2682.50	2.95	V	1.9	10.3	11.39	33.0	-21.6	
2682.50	4.31	H	1.9	10.3	12.75	33.0	-20.2	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

LTE Band 41 15MHz 16QAM

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: GT-I6408
Date: 06-30-15
Test Engineer: Steven.Kim
Configuration: EUT / Z-Position
Mode: LTE Band 41, 16QAM, 15MHz

Test Equipment:
Receiving: 3117[00168724] and Chamber 1 SMA Cables
Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
2503.50	0.85	V	1.9	9.1	8.11	33.0	-24.9	
2503.50	2.39	H	1.9	9.1	9.65	33.0	-23.4	
Mid Ch								
2593.00	-0.94	V	1.9	10.4	7.55	33.0	-25.5	
2593.00	1.92	H	1.9	10.4	10.41	33.0	-22.6	
High Ch								
2682.50	-1.15	V	1.9	10.3	7.29	33.0	-25.7	
2682.50	2.46	H	1.9	10.3	10.90	33.0	-22.1	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

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LTE Band 41 10MHz QPSK

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: GT-I6408
Date: 06-30-15
Test Engineer: Steven.Kim
Configuration: EUT / Z-Position
Mode: LTE Band 41, QPSK, 10MHz

Test Equipment:
Receiving: 3117[00168724] and Chamber 1 SMA Cables
Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
2501.00	3.54	V	1.9	9.1	10.80	33.0	-22.2	
2501.00	2.28	H	1.9	9.1	9.54	33.0	-23.5	
Mid Ch								
2593.00	3.03	V	1.9	10.4	11.52	33.0	-21.5	
2593.00	2.15	H	1.9	10.4	10.64	33.0	-22.4	
High Ch								
2685.00	2.10	V	1.9	10.3	10.54	33.0	-22.5	
2685.00	3.40	H	1.9	10.3	11.84	33.0	-21.2	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

LTE Band 41 10MHz 16QAM

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: GT-I6408
Date: 06-30-15
Test Engineer: Steven.Kim
Configuration: EUT / Z-Position
Mode: LTE Band 41 16QAM, 10MHz

Test Equipment:
Receiving: 3117[00168724] and Chamber 1 SMA Cables
Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
2501.00	1.44	V	1.9	9.1	8.70	33.0	-24.3	
2501.00	2.13	H	1.9	9.1	9.39	33.0	-23.6	
Mid Ch								
2593.00	-1.94	V	1.9	10.4	6.55	33.0	-26.5	
2593.00	1.04	H	1.9	10.4	9.53	33.0	-23.5	
High Ch								
2685.00	0.13	V	1.9	10.3	8.57	33.0	-24.4	
2685.00	2.80	H	1.9	10.3	11.24	33.0	-21.8	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

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LTE

Band 41

5 MHz

QPSK

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: GT-I6408
Date: 06-30-15
Test Engineer: Steven.Kim
Configuration: EUT / Z-Position
Mode: LTE Band 41, QPSK , 5MHz

Test Equipment:
Receiving: 3117[00168724] and Chamber 1 SMA Cables
Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
2498.50	5.57	V	1.9	9.1	12.83	33.0	-20.2	
2498.50	6.43	H	1.9	9.1	13.69	33.0	-19.3	
Mid Ch								
2593.00	4.91	V	1.9	10.4	13.40	33.0	-19.6	
2593.00	6.28	H	1.9	10.4	14.77	33.0	-18.2	
High Ch								
2687.50	6.25	V	1.9	10.3	14.69	33.0	-18.3	
2687.50	8.34	H	1.9	10.3	16.78	33.0	-16.2	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

LTE

Band 41

5 MHz

16QAM

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: GT-I6408
Date: 06-30-15
Test Engineer: Steven.Kim
Configuration: EUT / Z-Position
Mode: LTE Band 41 16QAM, 5MHz

Test Equipment:
Receiving: 3117[00168724] and Chamber 1 SMA Cables
Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
2498.50	0.57	V	1.9	9.1	7.83	33.0	-25.2	
2498.50	1.43	H	1.9	9.1	8.69	33.0	-24.3	
Mid Ch								
2593.00	-3.07	V	1.9	10.4	5.42	33.0	-27.6	
2593.00	0.04	H	1.9	10.4	8.53	33.0	-24.5	
High Ch								
2687.50	-1.01	V	1.9	10.3	7.43	33.0	-25.6	
2687.50	1.68	H	1.9	10.3	10.12	33.0	-22.9	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

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LTE Band 26

LTE Band 26 15MHz QPSK

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: GT-I6408
Date: 06-26-15
Test Engineer: Steven.Kim
Configuration: EUT ONLY, Z Position
Mode: LTE Band 26 QPSK, 15MHz

Test Equipment:
Receiving: VULB9163-749, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00164753, 3m SMA Cable Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
831.50	14.15	V	1.1	-1.4	11.64	38.5	-26.8	
831.50	11.84	H	1.1	-1.4	9.33	38.5	-29.1	
High Ch								
841.50	13.26	V	1.1	-1.3	10.84	38.5	-27.6	
841.50	11.52	H	1.1	-1.3	9.10	38.5	-29.3	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

LTE Band 26 15MHz 16QAM

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: GT-I6408
Date: 06-26-15
Test Engineer: Steven.Kim
Configuration: EUT ONLY, Z Position
Mode: LTE Band 26 16QAM, 15MHz

Test Equipment:
Receiving: VULB9163-749, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00164753, 3m SMA Cable Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
831.50	13.09	V	1.1	-1.4	10.58	38.5	-27.9	
831.50	10.79	H	1.1	-1.4	8.28	38.5	-30.2	
High Ch								
841.50	12.29	V	1.1	-1.3	9.87	38.5	-28.6	
841.50	10.48	H	1.1	-1.3	8.06	38.5	-30.4	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

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LTE Band 26 10MHz QPSK

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: GT-I6408
Date: 06-26-15
Test Engineer: Steven.Kim
Configuration: EUT ONLY, Z Position
Mode: TX, LTE BAND 26, 10MHz BW,QPSK

Test Equipment:
Receiving: VULB9163-749, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00164753, 3m SMA Cable Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
819.00	15.49	V	1.1	-1.5	12.91	38.5	-25.5	
819.00	8.33	H	1.1	-1.5	5.75	38.5	-32.7	
Mid Ch								
831.50	14.56	V	1.1	-1.4	12.07	38.5	-26.4	
831.50	8.37	H	1.1	-1.4	5.88	38.5	-32.6	
High Ch								
844.00	13.29	V	1.1	-1.3	10.90	38.5	-27.6	
844.00	7.89	H	1.1	-1.3	5.47	38.5	-33.0	

Rev. 3.17.11
Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm

LTE Band 26 10MHz 16QAM

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: GT-I6408
Date: 06-26-15
Test Engineer: Steven.Kim
Configuration: EUT ONLY, Z Position
Mode: LTE26 10MHz FUND 16QAM

Test Equipment:
Receiving: VULB9163-749, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00164753, 3m SMA Cable Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
819.00	14.47	V	1.1	-1.5	11.89	38.5	-26.6	
819.00	7.34	H	1.1	-1.5	4.76	38.5	-33.7	
Mid Ch								
831.50	13.51	V	1.1	-1.4	11.00	38.5	-27.4	
831.50	7.37	H	1.1	-1.4	4.86	38.5	-33.6	
High Ch								
844.00	12.16	V	1.1	-1.3	9.74	38.5	-28.7	
844.00	6.87	H	1.1	-1.3	4.45	38.5	-34.0	

Rev. 3.17.11
Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm

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LTE

Band 26

5 MHz

QPSK

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: GT-I6408
Date: 06-26-15
Test Engineer: Steven.Kim
Configuration: EUT ONLY, Z Position
Mode: LTE26 5MHz FUND QPSK

Test Equipment:
Receiving: VULB9163-749, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00164753, 3m SMA Cable Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
816.50	15.54	V	1.1	-1.5	12.94	38.5	-25.5	
816.50	8.31	H	1.1	-1.5	5.71	38.5	-32.7	
Mid Ch								
831.50	14.15	V	1.1	-1.4	11.66	38.5	-26.8	
831.50	8.30	H	1.1	-1.4	5.81	38.5	-32.6	
High Ch								
846.50	13.25	V	1.6	-1.3	10.37	38.5	-28.1	
846.50	8.00	H	1.6	-1.3	5.12	38.5	-33.3	

Rev. 3.17.11
Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm

LTE

Band 26

5 MHz

16QAM

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: GT-I6408
Date: 06-26-15
Test Engineer: Steven.Kim
Configuration: EUT ONLY, Z Position
Mode: LTE26 5MHz FUND 16QAM

Test Equipment:
Receiving: VULB9163-749, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00164753, 3m SMA Cable Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
816.50	14.57	V	1.1	-1.5	11.97	38.5	-26.5	
816.50	7.22	H	1.1	-1.5	4.62	38.5	-33.8	
Mid Ch								
831.50	13.15	V	1.1	-1.4	10.66	38.5	-27.8	
831.50	7.29	H	1.1	-1.4	4.80	38.5	-33.7	
High Ch								
846.50	12.19	V	1.1	-1.3	9.81	38.5	-28.6	
846.50	6.98	H	1.1	-1.3	4.60	38.5	-33.9	

Rev. 3.17.11
Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm

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LTE

Band 26

5 MHz

QPSK

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: GT-I6408
Date: 07-10-15
Test Engineer: Steven.Kim
Configuration: EUT ONLY, Z Position
Mode: LTE Band 26 QPSK, 5MHz

Test Equipment:
Receiving: VULB9163-749, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00164753, 3m SMA Cable Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
821.50	15.85	V	1.1	-1.5	13.27	38.5	-25.2	
821.50	5.68	H	1.1	-1.5	3.10	38.5	-35.4	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

LTE

Band 26

5 MHz

16QAM

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: GT-I6408
Date: 07-10-15
Test Engineer: Steven.Kim
Configuration: EUT ONLY, Z Position
Mode: LTE Band 26 16QAM, 5MHz

Test Equipment:
Receiving: VULB9163-749, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00164753, 3m SMA Cable Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
821.50	14.68	V	1.1	-1.5	12.10	38.5	-26.4	
821.50	5.04	H	1.1	-1.5	2.46	38.5	-36.0	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

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LTE
Band 26
3MHz
QPSK

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: GT-I6408
Date: 06-26-15
Test Engineer: Steven.Kim
Configuration: EUT ONLY, Z Position
Mode: LTE26 3MHz FUND QPSK

Test Equipment:
Receiving: VULB9163-749, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00164753, 3m SMA Cable Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
815.50	15.59	V	1.1	-1.5	12.99	38.5	-25.5	
815.50	8.29	H	1.1	-1.5	5.69	38.5	-32.8	
Mid Ch								
831.50	14.39	V	1.1	-1.4	11.90	38.5	-26.6	
831.50	8.43	H	1.1	-1.4	5.94	38.5	-32.5	
High Ch								
847.50	12.95	V	1.6	-1.3	10.07	38.5	-28.4	
847.50	7.98	H	1.6	-1.3	5.10	38.5	-33.3	

Rev. 3.17.11
Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm

LTE
Band 26
3MHz
16QAM

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: GT-I6408
Date: 06-26-15
Test Engineer: Steven.Kim
Configuration: EUT ONLY, Z Position
Mode: LTE26 3MHz FUND 16QAM

Test Equipment:
Receiving: VULB9163-749, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00164753, 3m SMA Cable Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
815.50	14.59	V	1.1	-1.5	11.99	38.5	-26.5	
815.50	7.28	H	1.1	-1.5	4.68	38.5	-33.8	
Mid Ch								
831.50	13.39	V	1.1	-1.4	10.90	38.5	-27.6	
831.50	7.39	H	1.1	-1.4	4.90	38.5	-33.6	
High Ch								
847.50	11.86	V	1.1	-1.3	9.48	38.5	-29.0	
847.50	6.98	H	1.1	-1.3	4.60	38.5	-33.9	

Rev. 3.17.11
Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm

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Band 26

3MHz

QPSK

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: GT-I6408
Date: 07-10-15
Test Engineer: Steven.Kim
Configuration: EUT ONLY, Z Position
Mode: LTE Band 26 QPSK, 3MHz

Test Equipment:
Receiving: VULB9163-749, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00164753, 3m SMA Cable Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
822.50	11.64	V	1.1	-1.5	9.06	38.5	-29.4	
822.50	1.63	H	1.1	-1.5	-0.95	38.5	-39.4	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

LTE

Band 26

3MHz

16QAM

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: GT-I6408
Date: 07-10-15
Test Engineer: Steven.Kim
Configuration: EUT ONLY, Z Position
Mode: LTE Band 26 16QAM, 3MHz

Test Equipment:
Receiving: VULB9163-749, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00164753, 3m SMA Cable Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
822.50	10.81	V	1.1	-1.5	8.23	38.5	-30.2	
822.50	1.89	H	1.1	-1.5	-0.69	38.5	-39.1	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

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LTE Band 26 1.4MHz QPSK

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: GT-I6408
Date: 06-26-15
Test Engineer: Steven.Kim
Configuration: EUT ONLY, Z Position
Mode: LTE26 1.4MHz FUND QPSK

Test Equipment:
Receiving: VULB9163-749, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00164753, 3m SMA Cable Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
814.70	13.73	V	1.1	-1.5	11.13	38.5	-27.3	
814.70	6.39	H	1.1	-1.5	3.79	38.5	-34.7	
Mid Ch								
831.50	12.58	V	1.1	-1.4	10.09	38.5	-28.4	
831.50	4.56	H	1.1	-1.4	2.07	38.5	-36.4	
High Ch								
848.30	10.81	V	1.6	-1.3	7.93	38.5	-30.5	
848.30	5.66	H	1.6	-1.3	2.78	38.5	-35.7	

Rev. 3.17.11
Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm

LTE Band 26 1.4MHz 16QAM

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: GT-I6408
Date: 06-26-15
Test Engineer: Steven.Kim
Configuration: EUT ONLY, Z Position
Mode: LTE26 1.4MHz FUND 16QAM

Test Equipment:
Receiving: VULB9163-749, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00164753, 3m SMA Cable Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
814.70	12.68	V	1.1	-1.5	10.08	38.5	-28.4	
814.70	5.35	H	1.1	-1.5	2.75	38.5	-35.7	
Mid Ch								
831.50	11.60	V	1.1	-1.4	9.11	38.5	-29.3	
831.50	3.38	H	1.1	-1.4	0.88	38.5	-37.6	
High Ch								
847.50	9.72	V	1.1	-1.3	7.34	38.5	-31.1	
847.50	4.64	H	1.1	-1.3	2.26	38.5	-36.2	

Rev. 3.17.11
Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm

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LTE

Band 26

1.4MHz

QPSK

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: GT-I6408
Date: 07-10-15
Test Engineer: Steven.Kim
Configuration: EUT ONLY, Z Position
Mode: LTE Band 26 QPSK, 1.4MHz

Test Equipment:
Receiving: VULB9163-749, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00164753, 3m SMA Cable Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
823.30	11.96	V	1.1	-1.5	9.38	38.5	-29.1	
823.30	1.82	H	1.1	-1.5	-0.76	38.5	-39.2	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

LTE

Band 26

1.4MHz

16QAM

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: GT-I6408
Date: 07-10-15
Test Engineer: Steven.Kim
Configuration: EUT ONLY, Z Position
Mode: LTE Band 26 16QAM, 1.4MHz

Test Equipment:
Receiving: VULB9163-749, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00164753, 3m SMA Cable Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
823.30	11.34	V	1.1	-1.5	8.76	38.5	-29.7	
823.30	2.59	H	1.1	-1.5	0.01	38.5	-38.4	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

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LTE Band 25

LTE Band 25 20MHz QPSK

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: 15K21213
Date: 06-26-15
Test Engineer: Steven.Kim
Configuration: EUT ONLY, Z Position
Mode: LTE Band 25 QPSK, 20MHz

Test Equipment:
Receiving: 3117[00168724] and Chamber 1 SMA Cables
Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1860.00	8.80	V	1.60	9.12	16.32	33.0	-16.7	
1860.00	14.58	H	1.60	9.12	22.10	33.0	-10.9	
Mid Ch								
1882.50	13.37	V	1.62	8.62	20.37	33.0	-12.6	
1882.50	14.20	H	1.62	8.62	21.20	33.0	-11.8	
High Ch								
1905.00	8.77	V	1.63	8.50	15.64	33.0	-17.4	
1905.00	13.93	H	1.63	8.50	20.80	33.0	-12.2	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

LTE Band 25 20MHz 16QAM

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: 15K21213
Date: 06-26-15
Test Engineer: Steven.Kim
Configuration: EUT ONLY, Z Position
Mode: LTE Band 25 16QAM, 20MHz

Test Equipment:
Receiving: 3117[00168724] and Chamber 1 SMA Cables
Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1860.00	7.75	V	1.60	9.12	15.27	33.0	-17.7	
1860.00	13.55	H	1.60	9.12	21.07	33.0	-11.9	
Mid Ch								
1882.50	12.37	V	1.62	8.62	19.37	33.0	-13.6	
1882.50	13.14	H	1.62	8.62	20.14	33.0	-12.9	
High Ch								
1905.00	7.79	V	1.63	8.50	14.66	33.0	-18.3	
1905.00	12.90	H	1.63	8.50	19.77	33.0	-13.2	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

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LTE Band 25 15MHz QPSK

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: 15K21213
Date: 06-26-15
Test Engineer: Steven.Kim
Configuration: EUT ONLY, Z Position
Mode: LTE Band 25 QPSK, 15MHz

Test Equipment:
Receiving: 3117[00168724] and Chamber 1 SMA Cables
Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1857.50	8.88	V	1.60	9.12	16.40	33.0	-16.6	
1857.50	14.69	H	1.60	9.12	22.21	33.0	-10.8	
Mid Ch								
1882.50	10.46	V	1.62	8.62	17.46	33.0	-15.5	
1882.50	14.22	H	1.62	8.62	21.22	33.0	-11.8	
High Ch								
1907.50	8.55	V	1.63	8.49	15.41	33.0	-17.6	
1907.50	13.61	H	1.63	8.49	20.47	33.0	-12.5	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

LTE Band 25 15MHz 16QAM

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: 15K21213
Date: 06-26-15
Test Engineer: Steven.Kim
Configuration: EUT ONLY, Z Position
Mode: LTE Band 25 16QAM, 15MHz

Test Equipment:
Receiving: 3117[00168724] and Chamber 1 SMA Cables
Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1857.50	7.89	V	1.60	9.12	15.41	33.0	-17.6	
1857.50	13.71	H	1.60	9.12	21.23	33.0	-11.8	
Mid Ch								
1882.50	9.47	V	1.62	8.62	16.47	33.0	-16.5	
1882.50	13.21	H	1.62	8.62	20.21	33.0	-12.8	
High Ch								
1907.50	7.49	V	1.63	8.49	14.35	33.0	-18.6	
1907.50	12.58	H	1.63	8.49	19.44	33.0	-13.6	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

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LTE Band 25 10MHz QPSK

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: 15K21213
Date: 06-26-15
Test Engineer: Steven.Kim
Configuration: EUT ONLY, Z Position
Mode: LTE Band 25 QPSK, 10MHz

Test Equipment:
Receiving: 3117[00168724] and Chamber 1 SMA Cables
Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1855.00	8.52	V	1.60	9.12	16.04	33.0	-17.0	
1855.00	14.48	H	1.60	9.12	22.00	33.0	-11.0	
Mid Ch								
1882.50	10.53	V	1.62	8.62	17.53	33.0	-15.5	
1882.50	14.17	H	1.62	8.62	21.17	33.0	-11.8	
High Ch								
1910.00	8.50	V	1.63	8.47	15.34	33.0	-17.7	
1910.00	13.28	H	1.63	8.47	20.12	33.0	-12.9	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

LTE Band 25 10MHz 16QAM

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: 15K21213
Date: 06-26-15
Test Engineer: Steven.Kim
Configuration: EUT ONLY, Z Position
Mode: LTE Band 25 16QAM, 10MHz

Test Equipment:
Receiving: 3117[00168724] and Chamber 1 SMA Cables
Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1855.00	7.53	V	1.60	9.12	15.05	33.0	-18.0	
1855.00	13.45	H	1.60	9.12	20.97	33.0	-12.0	
Mid Ch								
1882.50	9.47	V	1.62	8.62	16.47	33.0	-16.5	
1882.50	13.14	H	1.62	8.62	20.14	33.0	-12.9	
High Ch								
1910.00	7.46	V	1.63	8.47	14.30	33.0	-18.7	
1910.00	12.31	H	1.63	8.47	19.15	33.0	-13.8	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

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LTE Band 25 5MHz QPSK

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: 15K21213
Date: 06-26-15
Test Engineer: Steven.Kim
Configuration: EUT ONLY, Z Position
Mode: LTE Band 25 QPSK, 5MHz

Test Equipment:
Receiving: 3117[00168724] and Chamber 1 SMA Cables
Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1852.50	8.29	V	1.60	9.12	15.81	33.0	-17.2	
1852.50	14.05	H	1.60	9.12	21.57	33.0	-11.4	
Mid Ch								
1882.50	10.55	V	1.62	8.62	17.55	33.0	-15.4	
1882.50	14.33	H	1.62	8.62	21.33	33.0	-11.7	
High Ch								
1912.50	8.76	V	1.63	8.46	15.59	33.0	-17.4	
1912.50	12.94	H	1.63	8.46	19.77	33.0	-13.2	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

LTE Band 25 5MHz 16QAM

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: 15K21213
Date: 06-26-15
Test Engineer: Steven.Kim
Configuration: EUT ONLY, Z Position
Mode: LTE Band 25 16QAM, 5MHz

Test Equipment:
Receiving: 3117[00168724] and Chamber 1 SMA Cables
Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1852.50	7.31	V	1.60	9.12	14.83	33.0	-18.2	
1852.50	13.05	H	1.60	9.12	20.57	33.0	-12.4	
Mid Ch								
1882.50	9.57	V	1.62	8.62	16.57	33.0	-16.4	
1882.50	13.34	H	1.62	8.62	20.34	33.0	-12.7	
High Ch								
1912.50	7.80	V	1.63	8.46	14.63	33.0	-18.4	
1912.50	11.94	H	1.63	8.46	18.77	33.0	-14.2	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

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LTE Band 25 3MHz QPSK

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: 15K21213
Date: 06-26-15
Test Engineer: Steven.Kim
Configuration: EUT ONLY, Z Position
Mode: LTE Band 25 QPSK, 3MHz

Test Equipment:
Receiving: 3117[00168724] and Chamber 1 SMA Cables
Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1851.50	8.21	V	1.60	9.12	15.73	33.0	-17.3	
1851.50	14.09	H	1.60	9.12	21.61	33.0	-11.4	
Mid Ch								
1882.50	10.56	V	1.62	8.62	17.56	33.0	-15.4	
1882.50	14.41	H	1.62	8.62	21.41	33.0	-11.6	
High Ch								
1913.50	8.75	V	1.63	8.45	15.57	33.0	-17.4	
1913.50	12.86	H	1.63	8.45	19.68	33.0	-13.3	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

LTE Band 25 3MHz 16QAM

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: 15K21213
Date: 06-26-15
Test Engineer: Steven.Kim
Configuration: EUT ONLY, Z Position
Mode: LTE Band 25 16QAM, 3MHz

Test Equipment:
Receiving: 3117[00168724] and Chamber 1 SMA Cables
Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1851.50	7.33	V	1.60	9.12	14.85	33.0	-18.2	
1851.50	13.11	H	1.60	9.12	20.63	33.0	-12.4	
Mid Ch								
1882.50	9.57	V	1.62	8.62	16.57	33.0	-16.4	
1882.50	13.44	H	1.62	8.62	20.44	33.0	-12.6	
High Ch								
1913.50	7.75	V	1.63	8.45	14.57	33.0	-18.4	
1913.50	11.89	H	1.63	8.45	18.71	33.0	-14.3	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

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LTE Band 25 1.4MHz QPSK

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: 15K21213
Date: 06-26-15
Test Engineer: Steven.Kim
Configuration: EUT ONLY, Z Position
Mode: LTE Band 25 QPSK, 1.4MHz

Test Equipment:
Receiving: 3117[00168724] and Chamber 1 SMA Cables
Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1850.70	6.37	V	1.60	9.12	13.89	33.0	-19.1	
1850.70	11.58	H	1.60	9.12	19.10	33.0	-13.9	
Mid Ch								
1882.50	8.75	V	1.62	8.62	15.75	33.0	-17.2	
1882.50	12.42	H	1.62	8.62	19.42	33.0	-13.6	
High Ch								
1914.30	7.48	V	1.63	8.44	14.29	33.0	-18.7	
1914.30	11.47	H	1.63	8.44	18.28	33.0	-14.7	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

LTE Band 25 1.4MHz 16QAM

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: 15K21213
Date: 06-26-15
Test Engineer: Steven.Kim
Configuration: EUT ONLY, Z Position
Mode: LTE Band 25 16QAM, 1.4MHz

Test Equipment:
Receiving: 3117[00168724] and Chamber 1 SMA Cables
Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1850.70	5.40	V	1.60	9.12	12.92	33.0	-20.1	
1850.70	10.61	H	1.60	9.12	18.13	33.0	-14.9	
Mid Ch								
1882.50	7.77	V	1.62	8.62	14.77	33.0	-18.2	
1882.50	11.43	H	1.62	8.62	18.43	33.0	-14.6	
High Ch								
1914.30	6.49	V	1.63	8.44	13.30	33.0	-19.7	
1914.30	10.44	H	1.63	8.44	17.25	33.0	-15.7	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

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LTE Band 12

LTE Band 12 10MHz QPSK

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: 15K21213
Date: 06-26-15
Test Engineer: Steven.Kim
Configuration: EUT ONLY, Z Position
Mode: TX, LTE12, 10MHz BW,QPSK

Test Equipment:
Receiving: VULB9163-749, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00164753, 3m SMA Cable Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
704.00	15.71	V	1.1	-1.5	13.13	38.5	-25.3	
704.00	7.22	H	1.1	-1.5	4.64	38.5	-33.8	
Mid Ch								
707.50	16.28	V	1.1	-1.4	13.79	38.5	-24.7	
707.50	7.78	H	1.1	-1.4	5.29	38.5	-33.2	
High Ch								
711.00	16.46	V	1.1	-1.3	14.07	38.5	-24.4	
711.00	7.73	H	1.1	-1.3	5.31	38.5	-33.1	

Rev. 3.17.11
Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm

LTE Band 12 10MHz 16QAM

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: 15K21213
Date: 06-26-15
Test Engineer: Steven.Kim
Configuration: EUT ONLY, Z Position
Mode: LTE12 10MHz FUND 16QAM

Test Equipment:
Receiving: VULB9163-749, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00164753, 3m SMA Cable Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
704.00	14.70	V	1.1	-1.5	12.12	38.5	-26.3	
704.00	6.23	H	1.1	-1.5	3.65	38.5	-34.8	
Mid Ch								
707.50	15.23	V	1.1	-1.4	12.72	38.5	-25.7	
707.50	6.73	H	1.1	-1.4	4.22	38.5	-34.2	
High Ch								
711.00	15.41	V	1.1	-1.3	12.99	38.5	-25.5	
711.00	6.74	H	1.1	-1.3	4.32	38.5	-34.1	

Rev. 3.17.11
Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm

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LTE
Band 12
5MHz
QPSK

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: 15K21213
Date: 06-26-15
Test Engineer: Steven.Kim
Configuration: EUT ONLY, Z Position
Mode: LTE12 5MHz FUND QPSK

Test Equipment:
Receiving: VULB9163-749, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00164753, 3m SMA Cable Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
701.50	15.84	V	1.1	-1.5	13.24	38.5	-25.2	
701.50	7.40	H	1.1	-1.5	4.80	38.5	-33.7	
Mid Ch								
707.50	16.68	V	1.1	-1.4	14.19	38.5	-24.3	
707.50	8.31	H	1.1	-1.4	5.82	38.5	-32.6	
High Ch								
713.50	17.23	V	1.6	-1.3	14.35	38.5	-24.1	
713.50	8.43	H	1.6	-1.3	5.55	38.5	-32.9	

Rev. 3.17.11
Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm

LTE
Band 12
5MHz
16QAM

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: 15K21213
Date: 06-26-15
Test Engineer: Steven.Kim
Configuration: EUT ONLY, Z Position
Mode: LTE12 5MHz FUND 16QAM

Test Equipment:
Receiving: VULB9163-749, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00164753, 3m SMA Cable Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
701.50	14.86	V	1.1	-1.5	12.26	38.5	-26.2	
701.50	6.40	H	1.1	-1.5	3.80	38.5	-34.7	
Mid Ch								
707.50	15.63	V	1.1	-1.4	13.14	38.5	-25.3	
707.50	7.33	H	1.1	-1.4	4.84	38.5	-33.6	
High Ch								
713.50	16.20	V	1.1	-1.3	13.82	38.5	-24.6	
713.50	7.38	H	1.1	-1.3	5.00	38.5	-33.5	

Rev. 3.17.11
Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm

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LTE
Band 12
3MHz
QPSK

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: 15K21213
Date: 06-26-15
Test Engineer: Steven.Kim
Configuration: EUT ONLY, Z Position
Mode: LTE12 3MHz FUND QPSK

Test Equipment:
Receiving: VULB9163-749, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00164753, 3m SMA Cable Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
700.50	15.67	V	1.1	-1.5	13.07	38.5	-25.4	
700.50	7.52	H	1.1	-1.5	4.92	38.5	-33.5	
Mid Ch								
707.50	16.74	V	1.1	-1.4	14.25	38.5	-24.2	
707.50	8.55	H	1.1	-1.4	6.06	38.5	-32.4	
High Ch								
714.50	17.14	V	1.6	-1.3	14.26	38.5	-24.2	
714.50	8.32	H	1.6	-1.3	5.44	38.5	-33.0	

Rev. 3.17.11
Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm

LTE
Band 12
3MHz
16QAM

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: 15K21213
Date: 06-26-15
Test Engineer: Steven.Kim
Configuration: EUT ONLY, Z Position
Mode: LTE12 3MHz FUND 16QAM

Test Equipment:
Receiving: VULB9163-749, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00164753, 3m SMA Cable Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
700.50	14.66	V	1.1	-1.5	12.06	38.5	-26.4	
700.50	6.54	H	1.1	-1.5	3.94	38.5	-34.5	
Mid Ch								
707.50	15.73	V	1.1	-1.4	13.24	38.5	-25.2	
707.50	7.53	H	1.1	-1.4	5.04	38.5	-33.4	
High Ch								
714.50	16.10	V	1.1	-1.3	13.72	38.5	-24.7	
714.50	7.30	H	1.1	-1.3	4.92	38.5	-33.5	

Rev. 3.17.11
Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm

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LTE
Band 12
1.4MHz
QPSK

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: 15K21213
Date: 06-26-15
Test Engineer: Steven.Kim
Configuration: EUT ONLY, Z Position
Mode: LTE12 1.4MHz FUND QPSK

Test Equipment:
Receiving: VULB9163-749, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00164753, 3m SMA Cable Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
699.70	15.55	V	1.1	-1.5	12.95	38.5	-25.5	
699.70	7.14	H	1.1	-1.5	4.54	38.5	-33.9	
Mid Ch								
707.50	16.81	V	1.1	-1.4	14.32	38.5	-24.1	
707.50	8.47	H	1.1	-1.4	5.98	38.5	-32.5	
High Ch								
715.30	17.17	V	1.6	-1.3	14.29	38.5	-24.2	
715.30	8.37	H	1.6	-1.3	5.49	38.5	-33.0	

Rev. 3.17.11
Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm

LTE
Band 12
1.4MHz
16QAM

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: 15K21213
Date: 06-26-15
Test Engineer: Steven.Kim
Configuration: EUT ONLY, Z Position
Mode: LTE12 1.4MHz FUND 16QAM

Test Equipment:
Receiving: VULB9163-749, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00164753, 3m SMA Cable Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
699.70	14.54	V	1.1	-1.5	11.94	38.5	-26.5	
699.70	6.12	H	1.1	-1.5	3.52	38.5	-34.9	
Mid Ch								
707.50	15.80	V	1.1	-1.4	13.31	38.5	-25.1	
707.50	7.44	H	1.1	-1.4	4.95	38.5	-33.5	
High Ch								
715.30	16.11	V	1.1	-1.3	13.73	38.5	-24.7	
715.30	7.34	H	1.1	-1.3	4.96	38.5	-33.5	

Rev. 3.17.11
Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm

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LTE Band 4

LTE Band 4 20MHz QPSK

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: 15K21213
Date: 06-27-15
Test Engineer: Steven.Kim
Configuration: EUT / Z-Position
Mode: LTE Band 4, QPSK, 20MHz

Test Equipment:
Receiving: 3117[00168724] and Chamber 1 SMA Cables
Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1720.00	8.05	V	1.54	9.12	15.63	30.0	-14.4	
1720.00	12.99	H	1.54	9.12	20.57	30.0	-9.4	
Mid Ch								
1732.50	8.22	V	1.55	9.31	15.98	30.0	-14.0	
1732.50	13.32	H	1.55	9.31	21.08	30.0	-8.9	
High Ch								
1745.00	8.59	V	1.56	9.37	16.40	30.0	-13.6	
1745.00	13.70	H	1.56	9.37	21.51	30.0	-8.5	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

LTE Band 4 20MHz 16QAM

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: 15K21213
Date: 06-27-15
Test Engineer: Steven.Kim
Configuration: EUT / Z-Position
Mode: LTE Band 4, 16QAM, 20MHz

Test Equipment:
Receiving: 3117[00168724] and Chamber 1 SMA Cables
Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1720.00	7.07	V	1.54	9.12	14.65	30.0	-15.4	
1720.00	12.04	H	1.54	9.12	19.62	30.0	-10.4	
Mid Ch								
1732.50	7.17	V	1.55	9.31	14.93	30.0	-15.1	
1732.50	12.27	H	1.55	9.31	20.03	30.0	-10.0	
High Ch								
1745.00	7.61	V	1.56	9.37	15.42	30.0	-14.6	
1745.00	12.62	H	1.56	9.37	20.43	30.0	-9.6	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

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LTE Band 4 15MHz QPSK

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: 15K21213
Date: 06-27-15
Test Engineer: Steven.Kim
Configuration: EUT / Z-Position
Mode: LTE Band 4, QPSK, 15MHz

Test Equipment:
Receiving: 3117[00168724] and Chamber 1 SMA Cables
Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1717.50	7.89	V	1.54	9.12	15.47	30.0	-14.5	
1717.50	12.71	H	1.54	9.12	20.29	30.0	-9.7	
Mid Ch								
1732.50	8.31	V	1.55	9.31	16.07	30.0	-13.9	
1732.50	13.10	H	1.55	9.31	20.86	30.0	-9.1	
High Ch								
1747.50	8.56	V	1.56	9.39	16.39	30.0	-13.6	
1747.50	13.82	H	1.56	9.39	21.65	30.0	-8.3	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

LTE Band 4 15MHz 16QAM

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: 15K21213
Date: 06-27-15
Test Engineer: Steven.Kim
Configuration: EUT / Z-Position
Mode: LTE Band 4, 16QAM, 15MHz

Test Equipment:
Receiving: 3117[00168724] and Chamber 1 SMA Cables
Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1717.50	6.92	V	1.54	9.12	14.50	30.0	-15.5	
1717.50	11.64	H	1.54	9.12	19.22	30.0	-10.8	
Mid Ch								
1732.50	7.28	V	1.55	9.31	15.04	30.0	-15.0	
1732.50	12.10	H	1.55	9.31	19.86	30.0	-10.1	
High Ch								
1747.50	7.50	V	1.56	9.39	15.33	30.0	-14.7	
1747.50	12.78	H	1.56	9.39	20.61	30.0	-9.4	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

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LTE Band 4 10MHz QPSK

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: 15K21213
Date: 06-27-15
Test Engineer: Steven.Kim
Configuration: EUT / Z-Position
Mode: LTE Band 4, QPSK, 10MHz

Test Equipment:
Receiving: 3117[00168724] and Chamber 1 SMA Cables
Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1715.00	7.90	V	1.54	9.12	15.48	30.0	-14.5	
1715.00	12.66	H	1.54	9.12	20.24	30.0	-9.8	
Mid Ch								
1732.50	8.34	V	1.55	9.31	16.10	30.0	-13.9	
1732.50	13.13	H	1.55	9.31	20.89	30.0	-9.1	
High Ch								
1750.00	8.63	V	1.56	9.40	16.47	30.0	-13.5	
1750.00	13.89	H	1.56	9.40	21.73	30.0	-8.3	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

LTE Band 4 10MHz 16QAM

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: 15K21213
Date: 06-27-15
Test Engineer: Steven.Kim
Configuration: EUT / Z-Position
Mode: LTE Band 4 16QAM, 10MHz

Test Equipment:
Receiving: 3117[00168724] and Chamber 1 SMA Cables
Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1715.00	6.90	V	1.54	9.12	14.48	30.0	-15.5	
1715.00	11.66	H	1.54	9.12	19.24	30.0	-10.8	
Mid Ch								
1732.50	7.28	V	1.55	9.31	15.04	30.0	-15.0	
1732.50	12.10	H	1.55	9.31	19.86	30.0	-10.1	
High Ch								
1750.00	7.66	V	1.56	9.40	15.50	30.0	-14.5	
1750.00	12.89	H	1.56	9.40	20.73	30.0	-9.3	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

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LTE Band 4 5MHz QPSK

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: 15K21213
Date: 06-27-15
Test Engineer: Steven.Kim
Configuration: EUT / Z-Position
Mode: LTE Band 4, QPSK , 5MHz

Test Equipment:
Receiving: 3117[00168724] and Chamber 1 SMA Cables
Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1712.50	7.84	V	1.54	9.12	15.42	30.0	-14.6	
1712.50	12.78	H	1.54	9.12	20.36	30.0	-9.6	
Mid Ch								
1732.50	8.45	V	1.55	9.31	16.21	30.0	-13.8	
1732.50	13.14	H	1.55	9.31	20.90	30.0	-9.1	
High Ch								
1752.50	8.44	V	1.56	9.39	16.27	30.0	-13.7	
1752.50	13.83	H	1.56	9.39	21.66	30.0	-8.3	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

LTE Band 4 5MHz 16QAM

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: 15K21213
Date: 06-27-15
Test Engineer: Steven.Kim
Configuration: EUT / Z-Position
Mode: LTE Band 4 16QAM, 5MHz

Test Equipment:
Receiving: 3117[00168724] and Chamber 1 SMA Cables
Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1712.50	6.86	V	1.54	9.12	14.44	30.0	-15.6	
1712.50	11.78	H	1.54	9.12	19.36	30.0	-10.6	
Mid Ch								
1732.50	7.48	V	1.55	9.31	15.24	30.0	-14.8	
1732.50	12.10	H	1.55	9.31	19.86	30.0	-10.1	
High Ch								
1752.50	7.40	V	1.56	9.39	15.23	30.0	-14.8	
1752.50	12.85	H	1.56	9.39	20.68	30.0	-9.3	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

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LTE Band 4 3MHz QPSK

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: 15K21213
Date: 06-27-15
Test Engineer: Steven.Kim
Configuration: EUT / Z-Position
Mode: LTE Band 4, QPSK , 3MHz

Test Equipment:
Receiving: 3117[00168724] and Chamber 1 SMA Cables
Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1711.50	7.76	V	1.54	9.12	15.34	30.0	-14.7	
1711.50	12.87	H	1.54	9.12	20.45	30.0	-9.6	
Mid Ch								
1732.50	8.47	V	1.55	9.31	16.23	30.0	-13.8	
1732.50	13.23	H	1.55	9.31	20.99	30.0	-9.0	
High Ch								
1753.50	8.37	V	1.56	9.38	16.19	30.0	-13.8	
1753.50	13.84	H	1.56	9.38	21.66	30.0	-8.3	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

LTE Band 4 3MHz 16QAM

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: 15K21213
Date: 06-27-15
Test Engineer: Steven.Kim
Configuration: EUT / Z-Position
Mode: LTE Band 4 16QAM, 3MHz

Test Equipment:
Receiving: 3117[00168724] and Chamber 1 SMA Cables
Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1711.50	6.73	V	1.54	9.12	14.31	30.0	-15.7	
1711.50	11.88	H	1.54	9.12	19.46	30.0	-10.5	
Mid Ch								
1732.50	7.48	V	1.55	9.31	15.24	30.0	-14.8	
1732.50	12.17	H	1.55	9.31	19.93	30.0	-10.1	
High Ch								
1753.50	7.39	V	1.56	9.38	15.21	30.0	-14.8	
1753.50	12.82	H	1.56	9.38	20.64	30.0	-9.4	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

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LTE Band 4 1.4MHz QPSK

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: 15K21213
Date: 06-27-15
Test Engineer: Steven.Kim
Configuration: EUT / Z-Position
Mode: LTE Band 4 QPSK, 1.4MHz

Test Equipment:
Receiving: 3117[00168724] and Chamber 1 SMA Cables
Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1710.70	5.80	V	1.54	9.12	13.38	30.0	-16.6	
1710.70	11.09	H	1.54	9.12	18.67	30.0	-11.3	
Mid Ch								
1732.50	6.66	V	1.55	9.31	14.42	30.0	-15.6	
1732.50	11.38	H	1.55	9.31	19.14	30.0	-10.9	
High Ch								
1754.30	6.32	V	1.56	9.37	14.13	30.0	-15.9	
1754.30	11.97	H	1.56	9.37	19.78	30.0	-10.2	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

LTE Band 4 1.4MHz 16QAM

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 2

Company: Samsung
Project #: 15K21213
Date: 06-27-15
Test Engineer: Steven.Kim
Configuration: EUT / Z-Position
Mode: LTE Band 4 16QAM, 1.4MHz

Test Equipment:
Receiving: 3117[00168724] and Chamber 1 SMA Cables
Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1710.70	4.83	V	1.54	9.12	12.41	30.0	-17.6	
1710.70	10.11	H	1.54	9.12	17.69	30.0	-12.3	
Mid Ch								
1732.50	5.68	V	1.55	9.31	13.44	30.0	-16.6	
1732.50	10.40	H	1.55	9.31	18.16	30.0	-11.8	
High Ch								
1754.30	5.32	V	1.56	9.37	13.13	30.0	-16.9	
1754.30	10.97	H	1.56	9.37	18.78	30.0	-11.2	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

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11.2. FIELD STRENGTH OF SPURIOUS RADIATION

RULE PART(S)

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

LIMIT

Part 22.917(a) & Part 24.238(a) 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: (m)(4) For mobile station, the attenuation factor shall be not less than 43 + 10 log (P) dB at the channel edge and (55 + 10 log (P)dB) at the 5.5 MHz from the channel edges.

TEST PROCEDURE

For Cellular equipment - Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 100 kHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

For PCS equipment - Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 1 MHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

RESULTS

LTE Band 17

Due to frequency range and same output power setting, test was carried in LTE Band 12 to cover both LTE Band 12 and LTE Band 17.

LTE Band 5

Due to frequency range and same output power setting, test was carried in LTE Band 26 to cover both LTE Band 26 and LTE Band 5.

LTE Band 2

Due to frequency range and same output power setting, test was carried in LTE Band 25 to cover both LTE Band 25 and LTE Band 2.

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11.2.1. SPURIOUS RADIATION PLOTS

LTE Band 41

LTE Band 41 20MHz QPSK

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: GT-I6408
Date: 06-30-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-Position
Mode: TX, LTE BAND 41, 20MHz BW, QPSK

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (2506 MHz)									
5.0120	-27.3	V	3.0	40.9	1.0	-67.2	-25.0	-42.2	
7.5180	-25.9	V	3.0	40.7	1.0	-65.6	-25.0	-40.6	
10.0240	-23.6	V	3.0	39.7	1.0	-62.3	-25.0	-37.3	
5.0120	-31.4	H	3.0	40.9	1.0	-71.3	-25.0	-46.3	
7.5180	-25.0	H	3.0	40.7	1.0	-64.7	-25.0	-39.7	
10.0240	-27.5	H	3.0	39.7	1.0	-66.1	-25.0	-41.1	
Mid Ch, (2593 MHz)									
5.1860	-26.6	V	3.0	40.9	1.0	-66.5	-25.0	-41.5	
7.7790	-27.6	V	3.0	40.6	1.0	-67.2	-25.0	-42.2	
10.3720	-22.8	V	3.0	39.4	1.0	-61.2	-25.0	-36.2	
5.1860	-22.0	H	3.0	40.9	1.0	-61.9	-25.0	-36.9	
7.7790	-22.0	H	3.0	40.6	1.0	-61.6	-25.0	-36.6	
10.3720	-26.1	H	3.0	39.4	1.0	-64.5	-25.0	-39.5	
High Ch, (2680 MHz)									
5.3600	-21.2	V	3.0	40.9	1.0	-61.1	-25.0	-36.1	
8.0400	-24.4	V	3.0	40.4	1.0	-63.8	-25.0	-38.8	
10.7200	-22.4	V	3.0	39.2	1.0	-60.6	-25.0	-35.6	
5.3600	-18.0	H	3.0	40.9	1.0	-57.9	-25.0	-32.9	
8.0400	-22.2	H	3.0	40.4	1.0	-61.6	-25.0	-36.6	
10.7200	-23.3	H	3.0	39.2	1.0	-61.4	-25.0	-36.4	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

LTE Band 41 20MHz 16QAM

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: GT-I6408
Date: 06-30-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-Position
Mode: TX, LTE BAND 41, 20MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (2506 MHz)									
5.0120	-27.9	V	3.0	40.9	1.0	-67.8	-25.0	-42.8	
7.5180	-26.4	V	3.0	40.7	1.0	-66.1	-25.0	-41.1	
10.0240	-23.1	V	3.0	39.7	1.0	-61.8	-25.0	-36.8	
5.0120	-32.4	H	3.0	40.9	1.0	-72.3	-25.0	-47.3	
7.5180	-26.3	H	3.0	40.7	1.0	-66.0	-25.0	-41.0	
10.0240	-28.0	H	3.0	39.7	1.0	-66.7	-25.0	-41.7	
Mid Ch, (2593 MHz)									
5.1860	-27.4	V	3.0	40.9	1.0	-67.3	-25.0	-42.3	
7.7790	-28.0	V	3.0	40.6	1.0	-67.6	-25.0	-42.6	
10.3720	-23.9	V	3.0	39.4	1.0	-62.3	-25.0	-37.3	
5.1860	-22.4	H	3.0	40.9	1.0	-62.3	-25.0	-37.3	
7.7790	-23.4	H	3.0	40.6	1.0	-63.0	-25.0	-38.0	
10.3720	-26.2	H	3.0	39.4	1.0	-64.6	-25.0	-39.6	
High Ch, (2680 MHz)									
5.3600	-22.2	V	3.0	40.9	1.0	-62.1	-25.0	-37.1	
8.0400	-25.3	V	3.0	40.4	1.0	-64.8	-25.0	-39.8	
10.7200	-23.4	V	3.0	39.2	1.0	-61.5	-25.0	-36.5	
5.3600	-19.0	H	3.0	40.9	1.0	-58.9	-25.0	-33.9	
8.0400	-23.2	H	3.0	40.4	1.0	-62.7	-25.0	-37.7	
10.7200	-23.7	H	3.0	39.2	1.0	-61.9	-25.0	-36.9	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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LTE

Band 41

15MHz

QPSK

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: GT-I6408
Date: 06-30-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-Position
Mode: TX, LTE BAND 41, 15MHz BW,QPSK

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (2503.5 MHz)									
5.0070	-27.6	V	3.0	40.9	1.0	-67.5	-25.0	-42.5	
7.5100	-25.2	V	3.0	40.7	1.0	-64.9	-25.0	-39.9	
10.0140	-23.4	V	3.0	39.7	1.0	-62.1	-25.0	-37.1	
5.0070	-29.8	H	3.0	40.9	1.0	-69.8	-25.0	-44.8	
7.5100	-25.2	H	3.0	40.7	1.0	-64.9	-25.0	-39.9	
10.0140	-26.9	H	3.0	39.7	1.0	-65.6	-25.0	-40.6	
Mid_Ch, (2593 MHz)									
5.1860	-27.1	V	3.0	40.9	1.0	-67.0	-25.0	-42.0	
7.7790	-27.7	V	3.0	40.6	1.0	-67.3	-25.0	-42.3	
10.3720	-23.0	V	3.0	39.4	1.0	-61.5	-25.0	-36.5	
5.1860	-21.5	H	3.0	40.9	1.0	-61.4	-25.0	-36.4	
7.7790	-22.4	H	3.0	40.6	1.0	-62.0	-25.0	-37.0	
10.3720	-25.6	H	3.0	39.4	1.0	-64.0	-25.0	-39.0	
High Ch, (2682.5 MHz)									
5.3650	-21.2	V	3.0	40.9	1.0	-61.0	-25.0	-36.0	
8.0470	-24.1	V	3.0	40.4	1.0	-63.5	-25.0	-38.5	
10.7300	-22.8	V	3.0	39.2	1.0	-61.0	-25.0	-36.0	
5.3650	-17.8	H	3.0	40.9	1.0	-57.7	-25.0	-32.7	
8.0470	-21.9	H	3.0	40.4	1.0	-61.3	-25.0	-36.3	
10.7300	-23.3	H	3.0	39.2	1.0	-61.4	-25.0	-36.4	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

LTE

Band 41

15MHz

16QAM

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: GT-I6408
Date: 06-30-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-Position
Mode: TX, LTE BAND 41, 15MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (2503.5 MHz)									
5.0070	-28.7	V	3.0	40.9	1.0	-68.6	-25.0	-43.6	
7.5100	-25.3	V	3.0	40.7	1.0	-65.0	-25.0	-40.0	
10.0140	-23.7	V	3.0	39.7	1.0	-62.4	-25.0	-37.4	
5.0070	-30.8	H	3.0	40.9	1.0	-70.7	-25.0	-45.7	
7.5100	-26.1	H	3.0	40.7	1.0	-65.8	-25.0	-40.8	
10.0140	-27.0	H	3.0	39.7	1.0	-65.7	-25.0	-40.7	
Mid_Ch, (2593 MHz)									
5.1860	-27.4	V	3.0	40.9	1.0	-67.3	-25.0	-42.3	
7.7790	-27.8	V	3.0	40.6	1.0	-67.4	-25.0	-42.4	
10.3720	-23.3	V	3.0	39.4	1.0	-61.7	-25.0	-36.7	
5.1860	-22.3	H	3.0	40.9	1.0	-62.2	-25.0	-37.2	
7.7790	-23.2	H	3.0	40.6	1.0	-62.8	-25.0	-37.8	
10.3720	-25.9	H	3.0	39.4	1.0	-64.3	-25.0	-39.3	
High Ch, (2682.5 MHz)									
5.3650	-22.2	V	3.0	40.9	1.0	-62.0	-25.0	-37.0	
8.0470	-25.2	V	3.0	40.4	1.0	-64.6	-25.0	-39.6	
10.7300	-23.3	V	3.0	39.2	1.0	-61.4	-25.0	-36.4	
5.3650	-19.2	H	3.0	40.9	1.0	-59.0	-25.0	-34.0	
8.0470	-23.0	H	3.0	40.4	1.0	-62.4	-25.0	-37.4	
10.7300	-24.2	H	3.0	39.2	1.0	-62.4	-25.0	-37.4	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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LTE Band 41 10MHz QPSK

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: GT-I6408
Date: 06-30-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-Position
Mode: TX, LTE BAND 41, 10MHz BW, QPSK

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (2501 MHz)									
5.0020	-27.2	V	3.0	40.9	1.0	-67.2	-25.0	-42.2	
7.5030	-25.4	V	3.0	40.7	1.0	-65.1	-25.0	-40.1	
10.0040	-23.5	V	3.0	39.7	1.0	-62.1	-25.0	-37.1	
5.0020	-29.7	H	3.0	40.9	1.0	-69.7	-25.0	-44.7	
7.5030	-25.3	H	3.0	40.7	1.0	-65.0	-25.0	-40.0	
10.0040	-26.8	H	3.0	39.7	1.0	-65.5	-25.0	-40.5	
Mid Ch, (2593 MHz)									
5.1860	-26.6	V	3.0	40.9	1.0	-66.5	-25.0	-41.5	
7.7790	-26.2	V	3.0	40.6	1.0	-65.7	-25.0	-40.7	
10.3720	-23.3	V	3.0	39.4	1.0	-61.7	-25.0	-36.7	
5.1860	-21.3	H	3.0	40.9	1.0	-61.2	-25.0	-36.2	
7.7790	-22.2	H	3.0	40.6	1.0	-61.8	-25.0	-36.8	
10.3720	-25.2	H	3.0	39.4	1.0	-63.6	-25.0	-38.6	
High Ch, (2685 MHz)									
5.3700	-21.6	V	3.0	40.9	1.0	-61.4	-25.0	-36.4	
8.0550	-24.0	V	3.0	40.4	1.0	-63.4	-25.0	-38.4	
10.7400	-22.9	V	3.0	39.1	1.0	-61.0	-25.0	-36.0	
5.3700	-18.1	H	3.0	40.9	1.0	-58.0	-25.0	-33.0	
8.0550	-21.8	H	3.0	40.4	1.0	-61.2	-25.0	-36.2	
10.7400	-23.2	H	3.0	39.1	1.0	-61.4	-25.0	-36.4	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

LTE Band 41 10MHz 16QAM

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: GT-I6408
Date: 06-30-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-Position
Mode: TX, LTE BAND 41, 10MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (2501 MHz)									
5.0020	-28.4	V	3.0	40.9	1.0	-68.3	-25.0	-43.3	
7.5030	-25.3	V	3.0	40.7	1.0	-65.0	-25.0	-40.0	
10.0040	-23.9	V	3.0	39.7	1.0	-62.5	-25.0	-37.5	
5.0020	-31.2	H	3.0	40.9	1.0	-71.1	-25.0	-46.1	
7.5030	-26.2	H	3.0	40.7	1.0	-65.9	-25.0	-40.9	
10.0040	-27.1	H	3.0	39.7	1.0	-65.8	-25.0	-40.8	
Mid Ch, (2593 MHz)									
5.1860	-27.4	V	3.0	40.9	1.0	-67.3	-25.0	-42.3	
7.7790	-27.7	V	3.0	40.6	1.0	-67.2	-25.0	-42.2	
10.3720	-23.6	V	3.0	39.4	1.0	-62.0	-25.0	-37.0	
5.1860	-22.6	H	3.0	40.9	1.0	-62.5	-25.0	-37.5	
7.7790	-23.0	H	3.0	40.6	1.0	-62.6	-25.0	-37.6	
10.3720	-25.4	H	3.0	39.4	1.0	-63.8	-25.0	-38.8	
High Ch, (2685 MHz)									
5.3700	-22.2	V	3.0	40.9	1.0	-62.0	-25.0	-37.0	
8.0550	-25.7	V	3.0	40.4	1.0	-65.1	-25.0	-40.1	
10.7400	-22.4	V	3.0	39.1	1.0	-60.5	-25.0	-35.5	
5.3700	-19.5	H	3.0	40.9	1.0	-59.3	-25.0	-34.3	
8.0550	-23.5	H	3.0	40.4	1.0	-62.9	-25.0	-37.9	
10.7400	-24.3	H	3.0	39.1	1.0	-62.5	-25.0	-37.5	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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LTE
Band 41
5 MHz
QPSK

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: GT-I6408
Date: 06-30-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-Position
Mode: TX, LTE BAND 41, 5MHz BW, QPSK

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (2498.5 MHz)									
4.9970	-27.8	V	3.0	40.9	1.0	-67.7	-25.0	-42.7	
7.4955	-25.7	V	3.0	40.7	1.0	-65.4	-25.0	-40.4	
9.9940	-23.5	V	3.0	39.7	1.0	-62.2	-25.0	-37.2	
4.9970	-30.2	H	3.0	40.9	1.0	-70.1	-25.0	-45.1	
7.4955	-25.8	H	3.0	40.7	1.0	-65.5	-25.0	-40.5	
9.9940	-26.7	H	3.0	39.7	1.0	-65.4	-25.0	-40.4	
Mid Ch, (2593 MHz)									
5.1860	-26.9	V	3.0	40.9	1.0	-66.8	-25.0	-41.8	
7.7790	-26.3	V	3.0	40.6	1.0	-65.9	-25.0	-40.9	
10.3720	-22.7	V	3.0	39.4	1.0	-61.2	-25.0	-36.2	
5.1860	-21.8	H	3.0	40.9	1.0	-61.6	-25.0	-36.6	
7.7790	-22.4	H	3.0	40.6	1.0	-62.0	-25.0	-37.0	
10.3720	-25.0	H	3.0	39.4	1.0	-63.4	-25.0	-38.4	
High Ch, (2687.5 MHz)									
5.3750	-21.2	V	3.0	40.9	1.0	-61.1	-25.0	-36.1	
8.0625	-24.7	V	3.0	40.4	1.0	-64.1	-25.0	-39.1	
10.7500	-22.7	V	3.0	39.1	1.0	-60.9	-25.0	-35.9	
5.3750	-18.4	H	3.0	40.9	1.0	-58.2	-25.0	-33.2	
8.0625	-22.6	H	3.0	40.4	1.0	-62.0	-25.0	-37.0	
10.7500	-23.2	H	3.0	39.1	1.0	-61.3	-25.0	-36.3	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

LTE
Band 41
5 MHz
16QAM

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: GT-I6408
Date: 06-30-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-Position
Mode: TX, LTE BAND 41, 5MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (2498.5 MHz)									
4.9970	-28.3	V	3.0	40.9	1.0	-68.2	-25.0	-43.2	
7.4955	-26.2	V	3.0	40.7	1.0	-65.9	-25.0	-40.9	
9.9940	-23.5	V	3.0	39.7	1.0	-62.2	-25.0	-37.2	
4.9970	-31.2	H	3.0	40.9	1.0	-71.1	-25.0	-46.1	
7.4955	-26.3	H	3.0	40.7	1.0	-66.0	-25.0	-41.0	
9.9940	-26.8	H	3.0	39.7	1.0	-65.5	-25.0	-40.5	
Mid Ch, (2593 MHz)									
5.1860	-27.5	V	3.0	40.9	1.0	-67.4	-25.0	-42.4	
7.7790	-27.3	V	3.0	40.6	1.0	-66.8	-25.0	-41.8	
10.3720	-23.5	V	3.0	39.4	1.0	-61.9	-25.0	-36.9	
5.1860	-22.7	H	3.0	40.9	1.0	-62.5	-25.0	-37.5	
7.7790	-23.0	H	3.0	40.6	1.0	-62.6	-25.0	-37.6	
10.3720	-25.0	H	3.0	39.4	1.0	-63.4	-25.0	-38.4	
High Ch, (2687.5 MHz)									
5.3750	-22.2	V	3.0	40.9	1.0	-62.0	-25.0	-37.0	
8.0625	-25.1	V	3.0	40.4	1.0	-64.5	-25.0	-39.5	
10.7500	-23.3	V	3.0	39.1	1.0	-61.4	-25.0	-36.4	
5.3750	-19.0	H	3.0	40.9	1.0	-58.8	-25.0	-33.8	
8.0625	-22.9	H	3.0	40.4	1.0	-62.3	-25.0	-37.3	
10.7500	-23.3	H	3.0	39.1	1.0	-61.4	-25.0	-36.4	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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LTE Band 26

LTE Band 26 15MHz QPSK

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: GT-I6408
Date: 06-29-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Earphone, Z Position
Mode: TX, LTE BAND 26, 15MHz BW, QPSK

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 22

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (831.5MHz)									
1.6630	-32.8	V	3.0	39.1	1.0	-70.9	-13.0	-57.9	
2.4945	-34.3	V	3.0	39.5	1.0	-72.8	-13.0	-59.8	
3.3260	-35.7	V	3.0	40.1	1.0	-74.9	-13.0	-61.9	
1.6630	-33.1	H	3.0	39.1	1.0	-71.2	-13.0	-58.2	
2.4945	-34.4	H	3.0	39.5	1.0	-72.9	-13.0	-59.9	
3.3260	-34.9	H	3.0	40.1	1.0	-74.0	-13.0	-61.0	
High Channel (841.5MHz)									
1.6830	-32.6	V	3.0	39.1	1.0	-70.7	-13.0	-57.7	
2.5245	-35.3	V	3.0	39.5	1.0	-73.9	-13.0	-60.9	
3.3660	-34.9	V	3.0	40.2	1.0	-74.1	-13.0	-61.1	
1.6830	-32.3	H	3.0	39.1	1.0	-70.4	-13.0	-57.4	
2.5245	-35.4	H	3.0	39.5	1.0	-74.0	-13.0	-61.0	
3.3660	-34.2	H	3.0	40.2	1.0	-73.4	-13.0	-60.4	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

LTE Band 26 15MHz 16QAM

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: GT-I6408
Date: 06-29-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Earphone, Z Position
Mode: TX, LTE BAND 26, 15MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 22

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (831.5MHz)									
1.6630	-33.9	V	3.0	39.1	1.0	-72.0	-13.0	-59.0	
2.4945	-35.5	V	3.0	39.5	1.0	-74.0	-13.0	-61.0	
3.3260	-36.7	V	3.0	40.1	1.0	-75.9	-13.0	-62.9	
1.6630	-33.4	H	3.0	39.1	1.0	-71.5	-13.0	-58.5	
2.4945	-34.7	H	3.0	39.5	1.0	-73.3	-13.0	-60.3	
3.3260	-35.6	H	3.0	40.1	1.0	-74.8	-13.0	-61.8	
High Channel (841.5MHz)									
1.6830	-33.4	V	3.0	39.1	1.0	-71.5	-13.0	-58.5	
2.5245	-36.6	V	3.0	39.5	1.0	-75.1	-13.0	-62.1	
3.3660	-35.2	V	3.0	40.2	1.0	-74.4	-13.0	-61.4	
1.6830	-34.0	H	3.0	39.1	1.0	-72.1	-13.0	-59.1	
2.5245	-36.3	H	3.0	39.5	1.0	-74.8	-13.0	-61.8	
3.3660	-35.5	H	3.0	40.2	1.0	-74.6	-13.0	-61.6	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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LTE Band 26 10MHz QPSK

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: GT-I6408
Date: 06-29-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Earphone, Z Position
Mode: TX, LTE BAND 26, 10MHz BW,QPSK

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	Part 22

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (819MHz)									
1.6380	-30.6	V	3.0	39.1	1.0	-68.7	-13.0	-55.7	
2.4570	-34.3	V	3.0	39.5	1.0	-72.8	-13.0	-59.8	
3.2760	-35.0	V	3.0	40.1	1.0	-74.0	-13.0	-61.0	
1.6380	-29.5	H	3.0	39.1	1.0	-67.6	-13.0	-54.6	
2.4570	-35.0	H	3.0	39.5	1.0	-73.5	-13.0	-60.5	
3.2760	-35.3	H	3.0	40.1	1.0	-74.4	-13.0	-61.4	
Mid Channel (831.5MHz)									
1.6630	-32.1	V	3.0	39.1	1.0	-70.2	-13.0	-57.2	
2.4945	-34.8	V	3.0	39.5	1.0	-73.3	-13.0	-60.3	
3.3260	-34.8	V	3.0	40.1	1.0	-74.0	-13.0	-61.0	
1.6630	-32.4	H	3.0	39.1	1.0	-70.5	-13.0	-57.5	
2.4945	-33.7	H	3.0	39.5	1.0	-72.3	-13.0	-59.3	
3.3260	-34.9	H	3.0	40.1	1.0	-74.0	-13.0	-61.0	
High Channel (844MHz)									
1.6880	-32.0	V	3.0	39.1	1.0	-70.1	-13.0	-57.1	
2.5320	-35.6	V	3.0	39.5	1.0	-74.1	-13.0	-61.1	
3.3760	-34.5	V	3.0	40.2	1.0	-73.7	-13.0	-60.7	
1.6880	-32.6	H	3.0	39.1	1.0	-70.7	-13.0	-57.7	
2.5320	-34.9	H	3.0	39.5	1.0	-73.5	-13.0	-60.5	
3.3760	-34.9	H	3.0	40.2	1.0	-74.0	-13.0	-61.0	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

LTE Band 26 10MHz 16QAM

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: GT-I6408
Date: 06-29-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Earphone, Z Position
Mode: TX, LTE BAND 26, 10MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	Part 22

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (819MHz)									
1.6380	-31.6	V	3.0	39.1	1.0	-69.7	-13.0	-56.7	
2.4570	-35.4	V	3.0	39.5	1.0	-73.9	-13.0	-60.9	
3.2760	-36.0	V	3.0	40.1	1.0	-75.0	-13.0	-62.0	
1.6380	-31.0	H	3.0	39.1	1.0	-69.1	-13.0	-56.1	
2.4570	-36.3	H	3.0	39.5	1.0	-74.8	-13.0	-61.8	
3.2760	-35.6	H	3.0	40.1	1.0	-74.7	-13.0	-61.7	
Mid Channel (831.5MHz)									
1.6630	-33.7	V	3.0	39.1	1.0	-71.8	-13.0	-58.8	
2.4945	-35.4	V	3.0	39.5	1.0	-73.9	-13.0	-60.9	
3.3260	-35.7	V	3.0	40.1	1.0	-74.9	-13.0	-61.9	
1.6630	-33.4	H	3.0	39.1	1.0	-71.5	-13.0	-58.5	
2.4945	-35.0	H	3.0	39.5	1.0	-73.5	-13.0	-60.5	
3.3260	-35.7	H	3.0	40.1	1.0	-74.8	-13.0	-61.8	
High Channel (844MHz)									
1.6880	-33.1	V	3.0	39.1	1.0	-71.2	-13.0	-58.2	
2.5320	-36.6	V	3.0	39.5	1.0	-75.1	-13.0	-62.1	
3.3760	-35.5	V	3.0	40.2	1.0	-74.7	-13.0	-61.7	
1.6880	-33.6	H	3.0	39.1	1.0	-71.7	-13.0	-58.7	
2.5320	-35.9	H	3.0	39.5	1.0	-74.5	-13.0	-61.5	
3.3760	-35.4	H	3.0	40.2	1.0	-74.6	-13.0	-61.6	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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LTE

Band 26

5 MHz

QPSK

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: GT-I6408
Date: 06-29-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Earphone, Z Position
Mode: TX, LTE BAND 26, 5MHz BW,QPSK

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	Part 22

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (816.5MHz)									
1.6330	-30.2	V	3.0	39.1	1.0	-68.3	-13.0	-55.3	
2.4495	-35.0	V	3.0	39.5	1.0	-73.5	-13.0	-60.5	
3.2660	-34.9	V	3.0	40.1	1.0	-74.0	-13.0	-61.0	
1.6330	-30.2	H	3.0	39.1	1.0	-68.3	-13.0	-55.3	
2.4495	-35.3	H	3.0	39.5	1.0	-73.8	-13.0	-60.8	
3.2660	-35.3	H	3.0	40.1	1.0	-74.4	-13.0	-61.4	
Mid Channel (831.5MHz)									
1.6630	-32.8	V	3.0	39.1	1.0	-70.9	-13.0	-57.9	
2.4945	-34.3	V	3.0	39.5	1.0	-72.8	-13.0	-59.8	
3.3260	-34.7	V	3.0	40.1	1.0	-73.9	-13.0	-60.9	
1.6630	-32.4	H	3.0	39.1	1.0	-70.5	-13.0	-57.5	
2.4945	-34.4	H	3.0	39.5	1.0	-73.0	-13.0	-60.0	
3.3260	-34.9	H	3.0	40.1	1.0	-74.0	-13.0	-61.0	
High Channel (846.5MHz)									
1.6930	-32.5	V	3.0	39.1	1.0	-70.6	-13.0	-57.6	
2.5390	-36.1	V	3.0	39.6	1.0	-74.6	-13.0	-61.6	
3.3860	-34.1	V	3.0	40.2	1.0	-73.3	-13.0	-60.3	
1.6930	-32.9	H	3.0	39.1	1.0	-71.1	-13.0	-58.1	
2.5390	-35.4	H	3.0	39.6	1.0	-74.0	-13.0	-61.0	
3.3860	-34.5	H	3.0	40.2	1.0	-73.7	-13.0	-60.7	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

LTE

Band 26

5 MHz

16QAM

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: GT-I6408
Date: 06-29-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Earphone, Z Position
Mode: TX, LTE BAND 26, 5MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	Part 22

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (816.5MHz)									
1.6330	-31.7	V	3.0	39.1	1.0	-69.8	-13.0	-56.8	
2.4495	-35.4	V	3.0	39.5	1.0	-73.9	-13.0	-60.9	
3.2660	-35.7	V	3.0	40.1	1.0	-74.7	-13.0	-61.7	
1.6330	-31.0	H	3.0	39.1	1.0	-69.1	-13.0	-56.1	
2.4495	-35.8	H	3.0	39.5	1.0	-74.4	-13.0	-61.4	
3.2660	-35.9	H	3.0	40.1	1.0	-74.9	-13.0	-61.9	
Mid Channel (831.5MHz)									
1.6630	-33.1	V	3.0	39.1	1.0	-71.2	-13.0	-58.2	
2.4945	-35.4	V	3.0	39.5	1.0	-73.9	-13.0	-60.9	
3.3260	-35.7	V	3.0	40.1	1.0	-74.8	-13.0	-61.8	
1.6630	-33.4	H	3.0	39.1	1.0	-71.5	-13.0	-58.5	
2.4945	-33.3	H	3.0	39.5	1.0	-71.8	-13.0	-58.8	
3.3260	-35.5	H	3.0	40.1	1.0	-74.6	-13.0	-61.6	
High Channel (846.5MHz)									
1.6930	-33.3	V	3.0	39.1	1.0	-71.5	-13.0	-58.5	
2.5390	-36.3	V	3.0	39.6	1.0	-74.9	-13.0	-61.9	
3.3860	-35.3	V	3.0	40.2	1.0	-74.5	-13.0	-61.5	
1.6930	-33.1	H	3.0	39.1	1.0	-71.2	-13.0	-58.2	
2.5390	-35.9	H	3.0	39.6	1.0	-74.5	-13.0	-61.5	
3.3860	-35.4	H	3.0	40.2	1.0	-74.6	-13.0	-61.6	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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LTE

Band 26

5 MHz

QPSK

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: GT-I6408
Date: 07-10-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Earphone, Z Position
Mode: TX, LTE BAND 26, 5MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 22

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (821.5MHz)									
1.6430	-31.5	V	3.0	39.1	1.0	-69.6	-13.0	-56.6	
2.4645	-33.9	V	3.0	39.5	1.0	-72.4	-13.0	-59.4	
3.2860	-34.0	V	3.0	40.1	1.0	-73.1	-13.0	-60.1	
1.6430	-31.1	H	3.0	39.1	1.0	-69.2	-13.0	-56.2	
2.4645	-34.7	H	3.0	39.5	1.0	-73.2	-13.0	-60.2	
3.2860	-33.8	H	3.0	40.1	1.0	-72.8	-13.0	-59.8	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

LTE

Band 26

5 MHz

16QAM

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: GT-I6408
Date: 07-10-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Earphone, Z Position
Mode: TX, LTE BAND 26, 5MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 22

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (821.5MHz)									
1.6430	-31.5	V	3.0	39.1	1.0	-69.6	-13.0	-56.6	
2.4645	-33.9	V	3.0	39.5	1.0	-72.4	-13.0	-59.4	
3.2860	-34.0	V	3.0	40.1	1.0	-73.1	-13.0	-60.1	
1.6430	-31.1	H	3.0	39.1	1.0	-69.2	-13.0	-56.2	
2.4645	-34.7	H	3.0	39.5	1.0	-73.2	-13.0	-60.2	
3.2860	-33.8	H	3.0	40.1	1.0	-72.8	-13.0	-59.8	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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LTE
Band 26
3MHz
QPSK

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: GT-I6408
Date: 06-29-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Earphone, Z Position
Mode: TX, LTE BAND 26, 3MHz BW,QPSK

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	Part 22

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (815.5MHz)									
1.6310	-30.6	V	3.0	39.1	1.0	-68.7	-13.0	-55.7	
2.4465	-34.3	V	3.0	39.5	1.0	-72.8	-13.0	-59.8	
3.2620	-35.0	V	3.0	40.1	1.0	-74.1	-13.0	-61.1	
1.6310	-29.5	H	3.0	39.1	1.0	-67.6	-13.0	-54.6	
2.4465	-34.7	H	3.0	39.5	1.0	-73.2	-13.0	-60.2	
3.2620	-34.8	H	3.0	40.1	1.0	-73.8	-13.0	-60.8	
Mid Channel (831.5MHz)									
1.6630	-32.1	V	3.0	39.1	1.0	-70.2	-13.0	-57.2	
2.4945	-34.8	V	3.0	39.5	1.0	-73.3	-13.0	-60.3	
3.3260	-34.9	V	3.0	40.1	1.0	-74.0	-13.0	-61.0	
1.6630	-33.1	H	3.0	39.1	1.0	-71.2	-13.0	-58.2	
2.4945	-33.7	H	3.0	39.5	1.0	-72.3	-13.0	-59.3	
3.3260	-34.7	H	3.0	40.1	1.0	-73.8	-13.0	-60.8	
High Channel (847.5MHz)									
1.6950	-32.3	V	3.0	39.1	1.0	-70.4	-13.0	-57.4	
2.5425	-35.8	V	3.0	39.6	1.0	-74.3	-13.0	-61.3	
3.3900	-34.8	V	3.0	40.2	1.0	-74.0	-13.0	-61.0	
1.6950	-32.9	H	3.0	39.1	1.0	-71.0	-13.0	-58.0	
2.5425	-34.7	H	3.0	39.6	1.0	-73.3	-13.0	-60.3	
3.3900	-34.3	H	3.0	40.2	1.0	-73.5	-13.0	-60.5	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

LTE
Band 26
3MHz
16QAM

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: GT-I6408
Date: 06-29-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Earphone, Z Position
Mode: TX, LTE BAND 26, 3MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	Part 22

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (815.5MHz)									
1.6310	-31.2	V	3.0	39.1	1.0	-69.3	-13.0	-56.3	
2.4465	-35.4	V	3.0	39.5	1.0	-73.9	-13.0	-60.9	
3.2620	-35.7	V	3.0	40.1	1.0	-74.7	-13.0	-61.7	
1.6310	-31.0	H	3.0	39.1	1.0	-69.1	-13.0	-56.1	
2.4465	-35.8	H	3.0	39.5	1.0	-74.3	-13.0	-61.3	
3.2620	-35.9	H	3.0	40.1	1.0	-74.9	-13.0	-61.9	
Mid Channel (831.5MHz)									
1.6630	-33.3	V	3.0	39.1	1.0	-71.4	-13.0	-58.4	
2.4945	-35.4	V	3.0	39.5	1.0	-73.9	-13.0	-60.9	
3.3260	-35.6	V	3.0	40.1	1.0	-74.7	-13.0	-61.7	
1.6630	-33.7	H	3.0	39.1	1.0	-71.8	-13.0	-58.8	
2.4945	-35.0	H	3.0	39.5	1.0	-73.5	-13.0	-60.5	
3.3260	-35.4	H	3.0	40.1	1.0	-74.5	-13.0	-61.5	
High Channel (847.5MHz)									
1.6950	-33.3	V	3.0	39.1	1.0	-71.4	-13.0	-58.4	
2.5425	-36.4	V	3.0	39.6	1.0	-74.9	-13.0	-61.9	
3.3900	-35.3	V	3.0	40.2	1.0	-74.5	-13.0	-61.5	
1.6950	-33.6	H	3.0	39.1	1.0	-71.7	-13.0	-58.7	
2.5425	-35.9	H	3.0	39.6	1.0	-74.5	-13.0	-61.5	
3.3900	-35.4	H	3.0	40.2	1.0	-74.6	-13.0	-61.6	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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LTE Band 26 3MHz QPSK

Company: Samsung
Project #: GT-I6408
Date: 07-10-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Earphone, Z Position
Mode: TX, LTE BAND 26, 3MHz BW, QPSK

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 22

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (822.5MHz)									
1.6450	-30.5	V	3.0	39.1	1.0	-68.6	-13.0	-55.6	
2.4675	-34.0	V	3.0	39.5	1.0	-72.6	-13.0	-59.6	
3.2900	-33.7	V	3.0	40.1	1.0	-72.8	-13.0	-59.8	
1.6450	-30.3	H	3.0	39.1	1.0	-68.4	-13.0	-55.4	
2.4675	-34.6	H	3.0	39.5	1.0	-73.1	-13.0	-60.1	
3.2900	-33.6	H	3.0	40.1	1.0	-72.7	-13.0	-59.7	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

LTE Band 26 3MHz 16QAM

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: GT-I6408
Date: 07-10-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Earphone, Z Position
Mode: TX, LTE BAND 26, 3MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 22

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (822.5MHz)									
1.6450	-31.6	V	3.0	39.1	1.0	-69.7	-13.0	-56.7	
2.4675	-33.8	V	3.0	39.5	1.0	-72.3	-13.0	-59.3	
3.2900	-33.7	V	3.0	40.1	1.0	-72.7	-13.0	-59.7	
1.6450	-30.8	H	3.0	39.1	1.0	-68.9	-13.0	-55.9	
2.4675	-34.7	H	3.0	39.5	1.0	-73.2	-13.0	-60.2	
3.2900	-33.7	H	3.0	40.1	1.0	-72.8	-13.0	-59.8	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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LTE
Band 26
1.4MHz
QPSK

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: GT-I6408
Date: 06-29-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Earphone, Z Position
Mode: TX, LTE BAND 26, 1.4MHz BW,QPSK

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	Part 22

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (814.7MHz)									
1.6294	-30.8	V	3.0	39.1	1.0	-68.9	-13.0	-55.9	
2.4441	-35.1	V	3.0	39.5	1.0	-73.6	-13.0	-60.6	
3.2588	-35.1	V	3.0	40.1	1.0	-74.1	-13.0	-61.1	
1.6294	-29.6	H	3.0	39.1	1.0	-67.7	-13.0	-54.7	
2.4441	-35.2	H	3.0	39.5	1.0	-73.7	-13.0	-60.7	
3.2588	-34.9	H	3.0	40.1	1.0	-73.9	-13.0	-60.9	
Mid Channel (831.5MHz)									
1.6630	-32.5	V	3.0	39.1	1.0	-70.6	-13.0	-57.6	
2.4945	-35.0	V	3.0	39.5	1.0	-73.6	-13.0	-60.6	
3.3260	-35.1	V	3.0	40.1	1.0	-74.2	-13.0	-61.2	
1.6630	-32.8	H	3.0	39.1	1.0	-70.9	-13.0	-57.9	
2.4945	-32.9	H	3.0	39.5	1.0	-71.4	-13.0	-58.4	
3.3260	-35.0	H	3.0	40.1	1.0	-74.2	-13.0	-61.2	
High Channel (848.3MHz)									
1.6966	-32.5	V	3.0	39.1	1.0	-70.6	-13.0	-57.6	
2.5449	-35.7	V	3.0	39.6	1.0	-74.2	-13.0	-61.2	
3.3932	-34.6	V	3.0	40.2	1.0	-73.8	-13.0	-60.8	
1.6966	-32.9	H	3.0	39.1	1.0	-71.1	-13.0	-58.1	
2.5449	-35.1	H	3.0	39.6	1.0	-73.7	-13.0	-60.7	
3.3932	-34.5	H	3.0	40.2	1.0	-73.7	-13.0	-60.7	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

LTE
Band 26
1.4MHz
16QAM

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: GT-I6408
Date: 06-29-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Earphone, Z Position
Mode: TX, LTE BAND 26, 1.4MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	Part 22

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (814.7MHz)									
1.6294	-31.8	V	3.0	39.1	1.0	-69.9	-13.0	-56.9	
2.4441	-35.9	V	3.0	39.5	1.0	-74.4	-13.0	-61.4	
3.2588	-35.9	V	3.0	40.1	1.0	-75.0	-13.0	-62.0	
1.6294	-30.5	H	3.0	39.1	1.0	-68.6	-13.0	-55.6	
2.4441	-36.0	H	3.0	39.5	1.0	-74.4	-13.0	-61.4	
3.2588	-35.6	H	3.0	40.1	1.0	-74.7	-13.0	-61.7	
Mid Channel (831.5MHz)									
1.6630	-33.1	V	3.0	39.1	1.0	-71.2	-13.0	-58.2	
2.4945	-35.3	V	3.0	39.5	1.0	-73.8	-13.0	-60.8	
3.3260	-35.6	V	3.0	40.1	1.0	-74.7	-13.0	-61.7	
1.6630	-33.4	H	3.0	39.1	1.0	-71.5	-13.0	-58.5	
2.4945	-34.2	H	3.0	39.5	1.0	-72.7	-13.0	-59.7	
3.3260	-35.6	H	3.0	40.1	1.0	-74.8	-13.0	-61.8	
High Channel (848.3MHz)									
1.6966	-33.5	V	3.0	39.1	1.0	-71.6	-13.0	-58.6	
2.5449	-36.6	V	3.0	39.6	1.0	-75.1	-13.0	-62.1	
3.3932	-35.1	V	3.0	40.2	1.0	-74.3	-13.0	-61.3	
1.6966	-33.2	H	3.0	39.1	1.0	-71.3	-13.0	-58.3	
2.5449	-36.2	H	3.0	39.6	1.0	-74.8	-13.0	-61.8	
3.3932	-35.4	H	3.0	40.2	1.0	-74.6	-13.0	-61.6	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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LTE

Band 26

1.4MHz

QPSK

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: GT-I6408
Date: 07-10-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Earphone, Z Position
Mode: TX, LTE BAND 26, 1.4MHz BW, QPSK

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 22

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (823.3MHz)									
1.6466	-30.8	V	3.0	39.1	1.0	-68.9	-13.0	-55.9	
2.4699	-34.0	V	3.0	39.5	1.0	-72.6	-13.0	-59.6	
3.2932	-33.4	V	3.0	40.1	1.0	-72.5	-13.0	-59.5	
1.6466	-29.5	H	3.0	39.1	1.0	-67.6	-13.0	-54.6	
2.4699	-34.6	H	3.0	39.5	1.0	-73.1	-13.0	-60.1	
3.2932	-33.6	H	3.0	40.1	1.0	-72.7	-13.0	-59.7	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

LTE

Band 26

1.4MHz

16QAM

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: GT-I6408
Date: 07-10-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Earphone, Z Position
Mode: TX, LTE BAND 26, 1.4MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 22

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (823.3MHz)									
1.6466	-32.6	V	3.0	39.1	1.0	-70.7	-13.0	-57.7	
2.4699	-34.0	V	3.0	39.5	1.0	-72.5	-13.0	-59.5	
3.2932	-33.7	V	3.0	40.1	1.0	-72.8	-13.0	-59.8	
1.6466	-30.6	H	3.0	39.1	1.0	-68.7	-13.0	-55.7	
2.4699	-33.9	H	3.0	39.5	1.0	-72.4	-13.0	-59.4	
3.2932	-33.7	H	3.0	40.1	1.0	-72.8	-13.0	-59.8	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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LTE Band 25

LTE Band 25 20MHz QPSK

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K21213
Date: 06-28-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-Position
Mode: TX, LTE BAND 25, 20MHz BW, QPSK

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 24

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (1860MHz)									
3.7200	-33.8	V	3.0	40.5	1.0	-73.3	-13.0	-60.3	
5.5800	-31.8	V	3.0	40.8	1.0	-71.6	-13.0	-58.6	
7.4400	-29.1	V	3.0	40.8	1.0	-68.9	-13.0	-55.9	
3.7200	-34.4	H	3.0	40.5	1.0	-73.9	-13.0	-60.9	
5.5800	-31.3	H	3.0	40.8	1.0	-71.1	-13.0	-58.1	
7.4400	-28.9	H	3.0	40.8	1.0	-68.7	-13.0	-55.7	
Mid_Channel (1882.5MHz)									
3.7650	-32.0	V	3.0	40.5	1.0	-71.5	-13.0	-58.5	
5.6475	-30.5	V	3.0	40.8	1.0	-70.3	-13.0	-57.3	
7.5300	-27.9	V	3.0	40.7	1.0	-67.6	-13.0	-54.6	
3.7650	-33.0	H	3.0	40.5	1.0	-72.5	-13.0	-59.5	
5.6475	-30.7	H	3.0	40.8	1.0	-70.5	-13.0	-57.5	
7.5300	-28.0	H	3.0	40.7	1.0	-67.7	-13.0	-54.7	
High Channel (1905MHz)									
3.8100	-31.9	V	3.0	40.6	1.0	-71.5	-13.0	-58.5	
5.7150	-30.4	V	3.0	40.8	1.0	-70.2	-13.0	-57.2	
7.6200	-28.0	V	3.0	40.7	1.0	-67.7	-13.0	-54.7	
3.8100	-32.3	H	3.0	40.6	1.0	-71.8	-13.0	-58.8	
5.7150	-30.2	H	3.0	40.8	1.0	-70.0	-13.0	-57.0	
7.6200	-27.7	H	3.0	40.7	1.0	-67.4	-13.0	-54.4	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

LTE Band 25 20MHz 16QAM

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K21213
Date: 06-28-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-Position
Mode: TX, LTE BAND 25, 20MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 24

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (1860MHz)									
3.7200	-33.8	V	3.0	40.5	1.0	-73.3	-13.0	-60.3	
5.5800	-31.8	V	3.0	40.8	1.0	-71.6	-13.0	-58.6	
7.4400	-29.1	V	3.0	40.8	1.0	-68.9	-13.0	-55.9	
3.7200	-34.4	H	3.0	40.5	1.0	-73.9	-13.0	-60.9	
5.5800	-31.3	H	3.0	40.8	1.0	-71.2	-13.0	-58.2	
7.4400	-28.9	H	3.0	40.8	1.0	-68.7	-13.0	-55.7	
Mid_Channel (1882.5MHz)									
3.7650	-31.9	V	3.0	40.5	1.0	-71.5	-13.0	-58.5	
5.6475	-30.4	V	3.0	40.8	1.0	-70.2	-13.0	-57.2	
7.5300	-27.9	V	3.0	40.7	1.0	-67.6	-13.0	-54.6	
3.7650	-33.0	H	3.0	40.5	1.0	-72.5	-13.0	-59.5	
5.6475	-30.6	H	3.0	40.8	1.0	-70.4	-13.0	-57.4	
7.5300	-27.9	H	3.0	40.7	1.0	-67.7	-13.0	-54.7	
High Channel (1905MHz)									
3.8100	-31.8	V	3.0	40.6	1.0	-71.4	-13.0	-58.4	
5.7150	-30.3	V	3.0	40.8	1.0	-70.1	-13.0	-57.1	
7.6200	-28.1	V	3.0	40.7	1.0	-67.8	-13.0	-54.8	
3.8100	-32.3	H	3.0	40.6	1.0	-71.9	-13.0	-58.9	
5.7150	-30.2	H	3.0	40.8	1.0	-70.0	-13.0	-57.0	
7.6200	-27.8	H	3.0	40.7	1.0	-67.4	-13.0	-54.4	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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LTE

Band 25

15MHz

QPSK

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K21213
Date: 06-28-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-Position
Mode: TX, LTE BAND 25, 15MHz BW, QPSK

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 24

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (1857.5MHz)									
3.7150	-33.4	V	3.0	40.5	1.0	-72.9	-13.0	-59.9	
5.5725	-31.5	V	3.0	40.8	1.0	-71.4	-13.0	-58.4	
7.4300	-29.2	V	3.0	40.8	1.0	-69.0	-13.0	-56.0	
3.7150	-33.9	H	3.0	40.5	1.0	-73.4	-13.0	-60.4	
5.5725	-31.3	H	3.0	40.8	1.0	-71.1	-13.0	-58.1	
7.4300	-29.5	H	3.0	40.8	1.0	-69.2	-13.0	-56.2	
Mid_Channel (1882.5MHz)									
3.7650	-32.1	V	3.0	40.5	1.0	-71.7	-13.0	-58.7	
5.6475	-31.0	V	3.0	40.8	1.0	-70.8	-13.0	-57.8	
7.5300	-27.6	V	3.0	40.7	1.0	-67.3	-13.0	-54.3	
3.7650	-32.7	H	3.0	40.5	1.0	-72.2	-13.0	-59.2	
5.6475	-31.0	H	3.0	40.8	1.0	-70.8	-13.0	-57.8	
7.5300	-28.1	H	3.0	40.7	1.0	-67.8	-13.0	-54.8	
High Channel (1907.5MHz)									
3.8150	-31.7	V	3.0	40.6	1.0	-71.3	-13.0	-58.3	
5.7225	-29.8	V	3.0	40.8	1.0	-69.6	-13.0	-56.6	
7.6300	-28.2	V	3.0	40.7	1.0	-67.8	-13.0	-54.8	
3.8150	-31.7	H	3.0	40.6	1.0	-71.3	-13.0	-58.3	
5.7225	-29.9	H	3.0	40.8	1.0	-69.7	-13.0	-56.7	
7.6300	-28.1	H	3.0	40.7	1.0	-67.8	-13.0	-54.8	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

LTE

Band 25

15MHz

16QAM

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K21213
Date: 06-28-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-Position
Mode: TX, LTE BAND 25, 15MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 24

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (1857.5MHz)									
3.7150	-33.4	V	3.0	40.5	1.0	-72.9	-13.0	-59.9	
5.5725	-31.5	V	3.0	40.8	1.0	-71.3	-13.0	-58.3	
7.4300	-29.2	V	3.0	40.8	1.0	-69.0	-13.0	-56.0	
3.7150	-33.9	H	3.0	40.5	1.0	-73.4	-13.0	-60.4	
5.5725	-31.2	H	3.0	40.8	1.0	-71.1	-13.0	-58.1	
7.4300	-29.4	H	3.0	40.8	1.0	-69.2	-13.0	-56.2	
Mid_Channel (1882.5MHz)									
3.7650	-33.1	V	3.0	40.5	1.0	-72.6	-13.0	-59.6	
5.6475	-31.1	V	3.0	40.8	1.0	-70.9	-13.0	-57.9	
7.5300	-27.6	V	3.0	40.7	1.0	-67.3	-13.0	-54.3	
3.7650	-32.7	H	3.0	40.5	1.0	-72.3	-13.0	-59.3	
5.6475	-30.9	H	3.0	40.8	1.0	-70.7	-13.0	-57.7	
7.5300	-28.0	H	3.0	40.7	1.0	-67.7	-13.0	-54.7	
High Channel (1907.5MHz)									
3.8150	-31.7	V	3.0	40.6	1.0	-71.3	-13.0	-58.3	
5.7225	-29.9	V	3.0	40.8	1.0	-69.7	-13.0	-56.7	
7.6300	-28.2	V	3.0	40.7	1.0	-67.9	-13.0	-54.9	
3.8150	-31.6	H	3.0	40.6	1.0	-71.2	-13.0	-58.2	
5.7225	-29.9	H	3.0	40.8	1.0	-69.7	-13.0	-56.7	
7.6300	-28.2	H	3.0	40.7	1.0	-67.8	-13.0	-54.8	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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LTE

Band 25

10MHz

QPSK

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K21213
Date: 06-28-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-Position
Mode: TX, LTE BAND 25, 10MHz BW,QPSK

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 24

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (1855MHz)									
3.7100	-33.7	V	3.0	40.5	1.0	-73.2	-13.0	-60.2	
5.5650	-31.1	V	3.0	40.8	1.0	-70.9	-13.0	-57.9	
7.4450	-29.4	V	3.0	40.8	1.0	-69.1	-13.0	-56.1	
3.7100	-33.5	H	3.0	40.5	1.0	-73.0	-13.0	-60.0	
5.5650	-31.8	H	3.0	40.8	1.0	-71.6	-13.0	-58.6	
7.4450	-28.7	H	3.0	40.8	1.0	-68.5	-13.0	-55.5	
Mid Channel (1882.5MHz)									
3.7650	-32.2	V	3.0	40.5	1.0	-71.7	-13.0	-58.7	
5.6475	-30.9	V	3.0	40.8	1.0	-70.7	-13.0	-57.7	
7.5300	-28.1	V	3.0	40.7	1.0	-67.8	-13.0	-54.8	
3.7650	-32.9	H	3.0	40.5	1.0	-72.5	-13.0	-59.5	
5.6475	-31.1	H	3.0	40.8	1.0	-70.9	-13.0	-57.9	
7.5300	-27.6	H	3.0	40.7	1.0	-67.3	-13.0	-54.3	
High Channel (1910MHz)									
3.8200	-31.8	V	3.0	40.6	1.0	-71.4	-13.0	-58.4	
5.7300	-30.0	V	3.0	40.8	1.0	-69.8	-13.0	-56.8	
7.6400	-28.1	V	3.0	40.7	1.0	-67.7	-13.0	-54.7	
3.8200	-32.0	H	3.0	40.6	1.0	-71.6	-13.0	-58.6	
5.7300	-30.4	H	3.0	40.8	1.0	-70.2	-13.0	-57.2	
7.6400	-27.9	H	3.0	40.7	1.0	-67.5	-13.0	-54.5	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

LTE

Band 25

10MHz

16QAM

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K21213
Date: 06-28-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-Position
Mode: TX, LTE BAND 25, 10MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 24

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (1855MHz)									
3.7100	-33.7	V	3.0	40.5	1.0	-73.2	-13.0	-60.2	
5.5650	-31.1	V	3.0	40.8	1.0	-70.9	-13.0	-57.9	
7.4450	-29.4	V	3.0	40.8	1.0	-69.2	-13.0	-56.2	
3.7100	-33.4	H	3.0	40.5	1.0	-72.9	-13.0	-59.9	
5.5650	-31.8	H	3.0	40.8	1.0	-71.6	-13.0	-58.6	
7.4450	-28.7	H	3.0	40.8	1.0	-68.5	-13.0	-55.5	
Mid Channel (1882.5MHz)									
3.7650	-32.2	V	3.0	40.5	1.0	-71.7	-13.0	-58.7	
5.6475	-30.9	V	3.0	40.8	1.0	-70.7	-13.0	-57.7	
7.5300	-28.0	V	3.0	40.7	1.0	-67.8	-13.0	-54.8	
3.7650	-33.0	H	3.0	40.5	1.0	-72.5	-13.0	-59.5	
5.6475	-32.2	H	3.0	40.8	1.0	-72.0	-13.0	-59.0	
7.5300	-27.0	H	3.0	40.7	1.0	-66.8	-13.0	-53.8	
High Channel (1910MHz)									
3.8200	-32.9	V	3.0	40.6	1.0	-72.5	-13.0	-59.5	
5.7300	-30.0	V	3.0	40.8	1.0	-69.8	-13.0	-56.8	
7.6400	-28.1	V	3.0	40.7	1.0	-67.8	-13.0	-54.8	
3.8200	-32.1	H	3.0	40.6	1.0	-71.7	-13.0	-58.7	
5.7300	-30.5	H	3.0	40.8	1.0	-70.2	-13.0	-57.2	
7.6400	-27.9	H	3.0	40.7	1.0	-67.6	-13.0	-54.6	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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LTE Band 25 5MHz QPSK

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K21213
Date: 06-28-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-Position
Mode: TX, LTE BAND 25, 5MHz BW, QPSK

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 24

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (1852.5MHz)									
3.7050	-34.2	V	3.0	40.5	1.0	-73.7	-13.0	-60.7	
5.5575	-31.2	V	3.0	40.8	1.0	-71.0	-13.0	-58.0	
7.4100	-29.0	V	3.0	40.8	1.0	-68.7	-13.0	-55.7	
3.7050	-34.2	H	3.0	40.5	1.0	-73.7	-13.0	-60.7	
5.5575	-31.1	H	3.0	40.8	1.0	-71.0	-13.0	-58.0	
7.4100	-28.7	H	3.0	40.8	1.0	-68.5	-13.0	-55.5	
Mid_Channel (1882.5MHz)									
3.7650	-32.5	V	3.0	40.5	1.0	-72.0	-13.0	-59.0	
5.6475	-31.5	V	3.0	40.8	1.0	-71.3	-13.0	-58.3	
7.5300	-27.7	V	3.0	40.7	1.0	-67.4	-13.0	-54.4	
3.7650	-32.8	H	3.0	40.5	1.0	-72.3	-13.0	-59.3	
5.6475	-31.0	H	3.0	40.8	1.0	-70.8	-13.0	-57.8	
7.5300	-28.1	H	3.0	40.7	1.0	-67.8	-13.0	-54.8	
High Channel (1912.5MHz)									
3.8250	-31.1	V	3.0	40.6	1.0	-70.7	-13.0	-57.7	
5.7375	-29.6	V	3.0	40.8	1.0	-69.4	-13.0	-56.4	
7.6500	-27.8	V	3.0	40.6	1.0	-67.5	-13.0	-54.5	
3.8250	-31.8	H	3.0	40.6	1.0	-71.4	-13.0	-58.4	
5.7375	-29.1	H	3.0	40.8	1.0	-68.9	-13.0	-55.9	
7.6500	-27.9	H	3.0	40.6	1.0	-67.6	-13.0	-54.6	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

LTE Band 25 5MHz 16QAM

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K21213
Date: 06-28-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-Position
Mode: TX, LTE BAND 25, 5MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 24

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (1852.5MHz)									
3.7050	-34.2	V	3.0	40.5	1.0	-73.7	-13.0	-60.7	
5.5575	-31.2	V	3.0	40.8	1.0	-71.1	-13.0	-58.1	
7.4100	-29.0	V	3.0	40.8	1.0	-68.7	-13.0	-55.7	
3.7050	-34.2	H	3.0	40.5	1.0	-73.7	-13.0	-60.7	
5.5575	-31.1	H	3.0	40.8	1.0	-70.9	-13.0	-57.9	
7.4100	-28.7	H	3.0	40.8	1.0	-68.5	-13.0	-55.5	
Mid_Channel (1882.5MHz)									
3.7650	-32.4	V	3.0	40.5	1.0	-72.0	-13.0	-59.0	
5.6475	-31.4	V	3.0	40.8	1.0	-71.2	-13.0	-58.2	
7.5300	-27.7	V	3.0	40.7	1.0	-67.4	-13.0	-54.4	
3.7650	-32.8	H	3.0	40.5	1.0	-72.3	-13.0	-59.3	
5.6475	-30.9	H	3.0	40.8	1.0	-70.7	-13.0	-57.7	
7.5300	-28.1	H	3.0	40.7	1.0	-67.8	-13.0	-54.8	
High Channel (1912.5MHz)									
3.8250	-31.0	V	3.0	40.6	1.0	-70.6	-13.0	-57.6	
5.7375	-29.6	V	3.0	40.8	1.0	-69.4	-13.0	-56.4	
7.6500	-27.8	V	3.0	40.6	1.0	-67.4	-13.0	-54.4	
3.8250	-31.8	H	3.0	40.6	1.0	-71.4	-13.0	-58.4	
5.7375	-29.0	H	3.0	40.8	1.0	-68.8	-13.0	-55.8	
7.6500	-28.0	H	3.0	40.6	1.0	-67.6	-13.0	-54.6	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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LTE
Band 25
3MHz
QPSK

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K21213
Date: 06-28-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-Position
Mode: TX, LTE BAND 25, 3MHz BW,QPSK

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 24

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (1851.5MHz)									
3.7030	-34.0	V	3.0	40.5	1.0	-73.5	-13.0	-60.5	
5.5545	-31.3	V	3.0	40.8	1.0	-71.1	-13.0	-58.1	
7.4060	-29.4	V	3.0	40.8	1.0	-69.2	-13.0	-56.2	
3.7030	-33.6	H	3.0	40.5	1.0	-73.1	-13.0	-60.1	
5.5545	-31.1	H	3.0	40.8	1.0	-70.9	-13.0	-57.9	
7.4060	-29.0	H	3.0	40.8	1.0	-68.8	-13.0	-55.8	
Mid_Channel (1882.5MHz)									
3.7650	-32.4	V	3.0	40.5	1.0	-72.0	-13.0	-59.0	
5.6475	-31.1	V	3.0	40.8	1.0	-70.9	-13.0	-57.9	
7.5300	-27.6	V	3.0	40.7	1.0	-67.3	-13.0	-54.3	
3.7650	-32.7	H	3.0	40.5	1.0	-72.3	-13.0	-59.3	
5.6475	-31.4	H	3.0	40.8	1.0	-71.2	-13.0	-58.2	
7.5300	-28.0	H	3.0	40.7	1.0	-67.7	-13.0	-54.7	
High Channel (1913.5MHz)									
3.8270	-31.8	V	3.0	40.6	1.0	-71.4	-13.0	-58.4	
5.7405	-30.0	V	3.0	40.8	1.0	-69.8	-13.0	-56.8	
7.6540	-28.4	V	3.0	40.6	1.0	-68.0	-13.0	-55.0	
3.8270	-32.0	H	3.0	40.6	1.0	-71.6	-13.0	-58.6	
5.7405	-30.0	H	3.0	40.8	1.0	-69.8	-13.0	-56.8	
7.6540	-27.8	H	3.0	40.6	1.0	-67.5	-13.0	-54.5	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

LTE
Band 25
3MHz
16QAM

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K21213
Date: 06-28-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-Position
Mode: TX, LTE BAND 25, 3MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 24

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (1851.5MHz)									
3.7030	-34.0	V	3.0	40.5	1.0	-73.5	-13.0	-60.5	
5.5545	-31.3	V	3.0	40.8	1.0	-71.2	-13.0	-58.2	
7.4060	-29.4	V	3.0	40.8	1.0	-69.2	-13.0	-56.2	
3.7030	-33.6	H	3.0	40.5	1.0	-73.0	-13.0	-60.0	
5.5545	-31.1	H	3.0	40.8	1.0	-70.9	-13.0	-57.9	
7.4060	-29.1	H	3.0	40.8	1.0	-68.8	-13.0	-55.8	
Mid_Channel (1882.5MHz)									
3.7650	-33.5	V	3.0	40.5	1.0	-73.0	-13.0	-60.0	
5.6475	-31.2	V	3.0	40.8	1.0	-71.0	-13.0	-58.0	
7.5300	-27.5	V	3.0	40.7	1.0	-67.3	-13.0	-54.3	
3.7650	-32.6	H	3.0	40.5	1.0	-72.2	-13.0	-59.2	
5.6475	-31.5	H	3.0	40.8	1.0	-71.3	-13.0	-58.3	
7.5300	-28.1	H	3.0	40.7	1.0	-67.8	-13.0	-54.8	
High Channel (1913.5MHz)									
3.8270	-31.7	V	3.0	40.6	1.0	-71.3	-13.0	-58.3	
5.7405	-30.0	V	3.0	40.8	1.0	-69.8	-13.0	-56.8	
7.6540	-28.3	V	3.0	40.6	1.0	-68.0	-13.0	-55.0	
3.8270	-32.1	H	3.0	40.6	1.0	-71.7	-13.0	-58.7	
5.7405	-30.0	H	3.0	40.8	1.0	-69.8	-13.0	-56.8	
7.6540	-27.8	H	3.0	40.6	1.0	-67.4	-13.0	-54.4	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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LTE Band 25 1.4MHz QPSK

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K21213
Date: 06-28-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-Position
Mode: TX, LTE BAND 25, 1.4MHz BW,QPSK

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 24

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (1850.7MHz)									
3.7014	-33.6	V	3.0	40.5	1.0	-73.1	-13.0	-60.1	
5.5521	-30.6	V	3.0	40.8	1.0	-70.4	-13.0	-57.4	
7.4028	-28.8	V	3.0	40.8	1.0	-68.6	-13.0	-55.6	
3.7014	-33.5	H	3.0	40.5	1.0	-73.0	-13.0	-60.0	
5.5521	-30.5	H	3.0	40.8	1.0	-70.3	-13.0	-57.3	
7.4028	-29.0	H	3.0	40.8	1.0	-68.8	-13.0	-55.8	
Mid Channel (1882.5MHz)									
3.7650	-32.6	V	3.0	40.5	1.0	-72.1	-13.0	-59.1	
5.6475	-31.8	V	3.0	40.8	1.0	-71.6	-13.0	-58.6	
7.5300	-27.6	V	3.0	40.7	1.0	-67.3	-13.0	-54.3	
3.7650	-32.8	H	3.0	40.5	1.0	-72.3	-13.0	-59.3	
5.6475	-31.3	H	3.0	40.8	1.0	-71.1	-13.0	-58.1	
7.5300	-27.5	H	3.0	40.7	1.0	-67.2	-13.0	-54.2	
High Channel (1914.3MHz)									
3.8286	-31.6	V	3.0	40.6	1.0	-71.3	-13.0	-58.3	
5.7429	-29.4	V	3.0	40.8	1.0	-69.2	-13.0	-56.2	
7.6572	-28.1	V	3.0	40.6	1.0	-67.7	-13.0	-54.7	
3.8286	-31.9	H	3.0	40.6	1.0	-71.5	-13.0	-58.5	
5.7429	-29.8	H	3.0	40.8	1.0	-69.6	-13.0	-56.6	
7.6572	-27.8	H	3.0	40.6	1.0	-67.4	-13.0	-54.4	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

LTE Band 25 1.4MHz 16QAM

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K21213
Date: 06-28-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-Position
Mode: TX, LTE BAND 25, 1.4MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 24

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (1850.7MHz)									
3.7014	-33.6	V	3.0	40.5	1.0	-73.1	-13.0	-60.1	
5.5521	-30.6	V	3.0	40.8	1.0	-70.4	-13.0	-57.4	
7.4028	-28.8	V	3.0	40.8	1.0	-68.6	-13.0	-55.6	
3.7014	-33.5	H	3.0	40.5	1.0	-72.9	-13.0	-59.9	
5.5521	-30.5	H	3.0	40.8	1.0	-70.3	-13.0	-57.3	
7.4028	-29.0	H	3.0	40.8	1.0	-68.8	-13.0	-55.8	
Mid Channel (1882.5MHz)									
3.7650	-33.5	V	3.0	40.5	1.0	-73.1	-13.0	-60.1	
5.6475	-31.8	V	3.0	40.8	1.0	-71.6	-13.0	-58.6	
7.5300	-27.5	V	3.0	40.7	1.0	-67.3	-13.0	-54.3	
3.7650	-32.8	H	3.0	40.5	1.0	-72.3	-13.0	-59.3	
5.6475	-31.6	H	3.0	40.8	1.0	-71.4	-13.0	-58.4	
7.5300	-27.5	H	3.0	40.7	1.0	-67.2	-13.0	-54.2	
High Channel (1914.3MHz)									
3.8286	-31.6	V	3.0	40.6	1.0	-71.2	-13.0	-58.2	
5.7429	-29.4	V	3.0	40.8	1.0	-69.2	-13.0	-56.2	
7.6572	-27.1	V	3.0	40.6	1.0	-66.7	-13.0	-53.7	
3.8286	-31.9	H	3.0	40.6	1.0	-71.5	-13.0	-58.5	
5.7429	-29.9	H	3.0	40.8	1.0	-69.7	-13.0	-56.7	
7.6572	-27.8	H	3.0	40.6	1.0	-67.5	-13.0	-54.5	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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LTE Band 12

LTE Band 12 10MHz QPSK

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K21213
Date: 06-29-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Earphone, Z Position
Mode: TX, LTE BAND 12, 10MHz BW,QPSK

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (704MHz)									
1.4080	-33.6	V	3.0	39.0	1.0	-71.7	-13.0	-58.7	
2.1120	-33.6	V	3.0	39.3	1.0	-71.9	-13.0	-58.9	
2.8160	-34.9	V	3.0	39.7	1.0	-73.6	-13.0	-60.6	
1.4080	-35.2	H	3.0	39.0	1.0	-73.2	-13.0	-60.2	
2.1120	-29.8	H	3.0	39.3	1.0	-68.1	-13.0	-55.1	
2.8160	-35.2	H	3.0	39.7	1.0	-73.9	-13.0	-60.9	
Mid Channel (707.5MHz)									
1.4150	-34.9	V	3.0	39.0	1.0	-72.9	-13.0	-59.9	
2.1225	-34.2	V	3.0	39.3	1.0	-72.6	-13.0	-59.6	
2.8300	-35.6	V	3.0	39.7	1.0	-74.4	-13.0	-61.4	
1.4150	-34.7	H	3.0	39.0	1.0	-72.7	-13.0	-59.7	
2.1225	-32.8	H	3.0	39.3	1.0	-71.1	-13.0	-58.1	
2.8300	-35.9	H	3.0	39.7	1.0	-74.6	-13.0	-61.6	
High Channel (711MHz)									
1.4220	-32.4	V	3.0	39.0	1.0	-70.4	-13.0	-57.4	
2.1330	-33.9	V	3.0	39.3	1.0	-72.2	-13.0	-59.2	
2.8440	-36.3	V	3.0	39.7	1.0	-75.0	-13.0	-62.0	
1.4220	-31.7	H	3.0	39.0	1.0	-69.7	-13.0	-56.7	
2.1330	-35.3	H	3.0	39.3	1.0	-73.7	-13.0	-60.7	
2.8440	-36.0	H	3.0	39.7	1.0	-74.7	-13.0	-61.7	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

LTE Band 12 10MHz 16QAM

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K21213
Date: 06-29-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Earphone, Z Position
Mode: TX, LTE BAND 12, 10MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (704MHz)									
1.4080	-34.2	V	3.0	39.0	1.0	-72.3	-13.0	-59.3	
2.1120	-34.1	V	3.0	39.3	1.0	-72.4	-13.0	-59.4	
2.8160	-35.7	V	3.0	39.7	1.0	-74.4	-13.0	-61.4	
1.4080	-35.5	H	3.0	39.0	1.0	-73.5	-13.0	-60.5	
2.1120	-31.6	H	3.0	39.3	1.0	-69.9	-13.0	-56.9	
2.8160	-35.9	H	3.0	39.7	1.0	-74.6	-13.0	-61.6	
Mid Channel (707.5MHz)									
1.4150	-35.4	V	3.0	39.0	1.0	-73.5	-13.0	-60.5	
2.1225	-35.1	V	3.0	39.3	1.0	-73.4	-13.0	-60.4	
2.8300	-36.7	V	3.0	39.7	1.0	-75.4	-13.0	-62.4	
1.4150	-36.0	H	3.0	39.0	1.0	-74.0	-13.0	-61.0	
2.1225	125.3	H	3.0	39.3	1.0	86.9	-13.0	99.9	
2.8300	-36.9	H	3.0	39.7	1.0	-75.6	-13.0	-62.6	
High Channel (711MHz)									
1.4220	-33.4	V	3.0	39.0	1.0	-71.4	-13.0	-58.4	
2.1330	-35.1	V	3.0	39.3	1.0	-73.4	-13.0	-60.4	
2.8440	-36.7	V	3.0	39.7	1.0	-75.4	-13.0	-62.4	
1.4220	-33.0	H	3.0	39.0	1.0	-71.0	-13.0	-58.0	
2.1330	-36.0	H	3.0	39.3	1.0	-74.3	-13.0	-61.3	
2.8440	-36.7	H	3.0	39.7	1.0	-75.4	-13.0	-62.4	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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LTE
Band 12
5MHz
QPSK

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K21213
Date: 06-29-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Earphone, Z Position
Mode: TX, LTE BAND 12, 5MHz BW,QPSK

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (701.5MHz)									
1.4030	-33.5	V	3.0	39.0	1.0	-71.5	-13.0	-58.5	
2.1045	-32.9	V	3.0	39.3	1.0	-71.2	-13.0	-58.2	
2.8060	-34.8	V	3.0	39.7	1.0	-73.5	-13.0	-60.5	
1.4030	-34.6	H	3.0	39.0	1.0	-72.6	-13.0	-59.6	
2.1045	-30.5	H	3.0	39.3	1.0	-68.8	-13.0	-55.8	
2.8060	-34.9	H	3.0	39.7	1.0	-73.6	-13.0	-60.6	
Mid Channel (707.5MHz)									
1.4150	-33.8	V	3.0	39.0	1.0	-71.8	-13.0	-58.8	
2.1225	-34.6	V	3.0	39.3	1.0	-72.9	-13.0	-59.9	
2.8300	-36.2	V	3.0	39.7	1.0	-74.9	-13.0	-61.9	
1.4150	-35.0	H	3.0	39.0	1.0	-73.0	-13.0	-60.0	
2.1225	-33.5	H	3.0	39.3	1.0	-71.8	-13.0	-58.8	
2.8300	-36.0	H	3.0	39.7	1.0	-74.7	-13.0	-61.7	
High Channel (713.5MHz)									
1.4270	-32.8	V	3.0	39.0	1.0	-70.9	-13.0	-57.9	
2.1405	-34.1	V	3.0	39.3	1.0	-72.5	-13.0	-59.5	
2.8540	-36.0	V	3.0	39.7	1.0	-74.8	-13.0	-61.8	
1.4270	-31.6	H	3.0	39.0	1.0	-69.6	-13.0	-56.6	
2.1405	-35.0	H	3.0	39.3	1.0	-73.3	-13.0	-60.3	
2.8540	-36.3	H	3.0	39.7	1.0	-75.0	-13.0	-62.0	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

LTE
Band 12
5MHz
16QAM

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K21213
Date: 06-29-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Earphone, Z Position
Mode: TX, LTE BAND 12, 5MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (701.5MHz)									
1.4030	-34.5	V	3.0	39.0	1.0	-72.5	-13.0	-59.5	
2.1045	-34.1	V	3.0	39.3	1.0	-72.4	-13.0	-59.4	
2.8060	-35.9	V	3.0	39.7	1.0	-74.6	-13.0	-61.6	
1.4030	-36.3	H	3.0	39.0	1.0	-74.4	-13.0	-61.4	
2.1045	-31.1	H	3.0	39.3	1.0	-69.4	-13.0	-56.4	
2.8060	-35.8	H	3.0	39.7	1.0	-74.5	-13.0	-61.5	
Mid Channel (707.5MHz)									
1.4150	-34.8	V	3.0	39.0	1.0	-72.8	-13.0	-59.8	
2.1225	-35.0	V	3.0	39.3	1.0	-73.3	-13.0	-60.3	
2.8300	-36.7	V	3.0	39.7	1.0	-75.4	-13.0	-62.4	
1.4150	-35.8	H	3.0	39.0	1.0	-73.8	-13.0	-60.8	
2.1225	-34.0	H	3.0	39.3	1.0	-72.3	-13.0	-59.3	
2.8300	-36.7	H	3.0	39.7	1.0	-75.5	-13.0	-62.5	
High Channel (713.5MHz)									
1.4270	-33.1	V	3.0	39.0	1.0	-71.1	-13.0	-58.1	
2.1405	-35.1	V	3.0	39.3	1.0	-73.5	-13.0	-60.5	
2.8540	-36.7	V	3.0	39.7	1.0	-75.4	-13.0	-62.4	
1.4270	-32.8	H	3.0	39.0	1.0	-70.8	-13.0	-57.8	
2.1405	-36.0	H	3.0	39.3	1.0	-74.3	-13.0	-61.3	
2.8540	-36.8	H	3.0	39.7	1.0	-75.5	-13.0	-62.5	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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LTE
Band 12
3MHz
QPSK

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K21213
Date: 06-29-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Earphone, Z Position
Mode: TX, LTE BAND 12, 3MHz BW,QPSK

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (700.5MHz)									
1.4010	-33.5	V	3.0	39.0	1.0	-71.5	-13.0	-58.5	
2.1015	-33.0	V	3.0	39.3	1.0	-71.3	-13.0	-58.3	
2.8020	-34.6	V	3.0	39.7	1.0	-73.3	-13.0	-60.3	
1.4010	-34.8	H	3.0	39.0	1.0	-72.8	-13.0	-59.8	
2.1015	-29.8	H	3.0	39.3	1.0	-68.1	-13.0	-55.1	
2.8020	-34.8	H	3.0	39.7	1.0	-73.5	-13.0	-60.5	
Mid Channel (707.5MHz)									
1.4150	-33.1	V	3.0	39.0	1.0	-71.1	-13.0	-58.1	
2.1225	-34.6	V	3.0	39.3	1.0	-72.9	-13.0	-59.9	
2.8300	-36.1	V	3.0	39.7	1.0	-74.8	-13.0	-61.8	
1.4150	-34.6	H	3.0	39.0	1.0	-72.6	-13.0	-59.6	
2.1225	-32.8	H	3.0	39.3	1.0	-71.1	-13.0	-58.1	
2.8300	-35.9	H	3.0	39.7	1.0	-74.6	-13.0	-61.6	
High Channel (714.5MHz)									
1.4290	-32.7	V	3.0	39.0	1.0	-70.7	-13.0	-57.7	
2.1435	-33.9	V	3.0	39.3	1.0	-72.3	-13.0	-59.3	
2.8580	-35.9	V	3.0	39.7	1.0	-74.6	-13.0	-61.6	
1.4290	-31.7	H	3.0	39.0	1.0	-69.7	-13.0	-56.7	
2.1435	-35.1	H	3.0	39.3	1.0	-73.4	-13.0	-60.4	
2.8580	-35.9	H	3.0	39.7	1.0	-74.6	-13.0	-61.6	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

LTE
Band 12
3MHz
16QAM

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K21213
Date: 06-29-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Earphone, Z Position
Mode: TX, LTE BAND 12, 3MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (700.5MHz)									
1.4010	-35.0	V	3.0	39.0	1.0	-73.0	-13.0	-60.0	
2.1015	-34.1	V	3.0	39.3	1.0	-72.4	-13.0	-59.4	
2.8020	-36.0	V	3.0	39.7	1.0	-74.7	-13.0	-61.7	
1.4010	-35.6	H	3.0	39.0	1.0	-73.6	-13.0	-60.6	
2.1015	-31.6	H	3.0	39.3	1.0	-69.9	-13.0	-56.9	
2.8020	-35.9	H	3.0	39.7	1.0	-74.6	-13.0	-61.6	
Mid Channel (707.5MHz)									
1.4150	-34.2	V	3.0	39.0	1.0	-72.2	-13.0	-59.2	
2.1225	-35.1	V	3.0	39.3	1.0	-73.4	-13.0	-60.4	
2.8300	-37.1	V	3.0	39.7	1.0	-75.8	-13.0	-62.8	
1.4150	-36.0	H	3.0	39.0	1.0	-74.1	-13.0	-61.1	
2.1225	-34.2	H	3.0	39.3	1.0	-72.6	-13.0	-59.6	
2.8300	-36.7	H	3.0	39.7	1.0	-75.4	-13.0	-62.4	
High Channel (714.5MHz)									
1.4290	-33.3	V	3.0	39.0	1.0	-71.3	-13.0	-58.3	
2.1435	-35.4	V	3.0	39.3	1.0	-73.7	-13.0	-60.7	
2.8580	-37.0	V	3.0	39.7	1.0	-75.7	-13.0	-62.7	
1.4290	-32.5	H	3.0	39.0	1.0	-70.5	-13.0	-57.5	
2.1435	-36.0	H	3.0	39.3	1.0	-74.3	-13.0	-61.3	
2.8580	-37.0	H	3.0	39.7	1.0	-75.7	-13.0	-62.7	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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LTE
Band 12
1.4MHz
QPSK

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K21213
Date: 06-29-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Earphone, Z Position
Mode: TX, LTE BAND 12, 1.4MHz BW,QPSK

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (699.7MHz)									
1.3994	-33.5	V	3.0	39.0	1.0	-71.5	-13.0	-58.5	
2.0991	-32.9	V	3.0	39.3	1.0	-71.3	-13.0	-58.3	
2.7988	-35.3	V	3.0	39.7	1.0	-73.9	-13.0	-60.9	
1.3994	-34.8	H	3.0	39.0	1.0	-72.8	-13.0	-59.8	
2.0991	-30.3	H	3.0	39.3	1.0	-68.6	-13.0	-55.6	
2.7988	-35.0	H	3.0	39.7	1.0	-73.7	-13.0	-60.7	
Mid Channel (707.5MHz)									
1.4150	-33.4	V	3.0	39.0	1.0	-71.4	-13.0	-58.4	
2.1225	-34.0	V	3.0	39.3	1.0	-72.4	-13.0	-59.4	
2.8300	-35.8	V	3.0	39.7	1.0	-74.5	-13.0	-61.5	
1.4150	-34.4	H	3.0	39.0	1.0	-72.4	-13.0	-59.4	
2.1225	-33.6	H	3.0	39.3	1.0	-71.9	-13.0	-58.9	
2.8300	-35.8	H	3.0	39.7	1.0	-74.5	-13.0	-61.5	
High Channel (715.3MHz)									
1.4306	-32.1	V	3.0	39.0	1.0	-70.1	-13.0	-57.1	
2.1459	-34.4	V	3.0	39.3	1.0	-72.8	-13.0	-59.8	
2.8612	-36.3	V	3.0	39.7	1.0	-75.1	-13.0	-62.1	
1.4306	-31.8	H	3.0	39.0	1.0	-69.8	-13.0	-56.8	
2.1459	-35.4	H	3.0	39.3	1.0	-73.7	-13.0	-60.7	
2.8612	-36.2	H	3.0	39.7	1.0	-75.0	-13.0	-62.0	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

LTE
Band 12
1.4MHz
16QAM

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K21213
Date: 06-29-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Earphone, Z Position
Mode: TX, LTE BAND 12, 1.4MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (699.7MHz)									
1.3994	-34.5	V	3.0	39.0	1.0	-72.5	-13.0	-59.5	
2.0991	-34.1	V	3.0	39.3	1.0	-72.4	-13.0	-59.4	
2.7988	-36.4	V	3.0	39.7	1.0	-75.1	-13.0	-62.1	
1.3994	-35.7	H	3.0	39.0	1.0	-73.7	-13.0	-60.7	
2.0991	-30.9	H	3.0	39.3	1.0	-69.2	-13.0	-56.2	
2.7988	-35.9	H	3.0	39.7	1.0	-74.6	-13.0	-61.6	
Mid Channel (707.5MHz)									
1.4150	-34.2	V	3.0	39.0	1.0	-72.2	-13.0	-59.2	
2.1225	-35.0	V	3.0	39.3	1.0	-73.3	-13.0	-60.3	
2.8300	-36.9	V	3.0	39.7	1.0	-75.6	-13.0	-62.6	
1.4150	-36.0	H	3.0	39.0	1.0	-74.1	-13.0	-61.1	
2.1225	-34.2	H	3.0	39.3	1.0	-72.5	-13.0	-59.5	
2.8300	-36.7	H	3.0	39.7	1.0	-75.4	-13.0	-62.4	
High Channel (715.3MHz)									
1.4306	-33.1	V	3.0	39.0	1.0	-71.1	-13.0	-58.1	
2.1459	-35.1	V	3.0	39.3	1.0	-73.5	-13.0	-60.5	
2.8612	-36.8	V	3.0	39.7	1.0	-75.5	-13.0	-62.5	
1.4306	-33.1	H	3.0	39.0	1.0	-71.1	-13.0	-58.1	
2.1459	-36.3	H	3.0	39.3	1.0	-74.7	-13.0	-61.7	
2.8612	-37.4	H	3.0	39.7	1.0	-76.1	-13.0	-63.1	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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LTE Band 4

LTE Band 4 20MHz QPSK

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K21213
Date: 06-28-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-Position
Mode: TX, LTE BAND 4, 20MHz BW, QPSK

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (1720MHz)									
3.4400	-31.2	V	3.0	40.2	1.0	-70.5	-13.0	-57.5	
5.1600	-31.0	V	3.0	40.9	1.0	-70.9	-13.0	-57.9	
6.8800	-28.7	V	3.0	41.0	1.0	-68.7	-13.0	-55.7	
3.4400	-26.4	H	3.0	40.2	1.0	-65.7	-13.0	-52.7	
5.1600	-30.4	H	3.0	40.9	1.0	-70.3	-13.0	-57.3	
6.8800	-28.5	H	3.0	41.0	1.0	-68.5	-13.0	-55.5	
Mid_Channel (1732.5MHz)									
3.4650	-28.8	V	3.0	40.3	1.0	-68.0	-13.0	-55.0	
5.1975	-30.6	V	3.0	40.9	1.0	-70.5	-13.0	-57.5	
6.9300	-27.8	V	3.0	41.0	1.0	-67.8	-13.0	-54.8	
3.4650	-21.2	H	3.0	40.3	1.0	-60.4	-13.0	-47.4	
5.1975	-31.4	H	3.0	40.9	1.0	-71.3	-13.0	-58.3	
6.9300	-28.9	H	3.0	41.0	1.0	-68.9	-13.0	-55.9	
High Channel (1745MHz)									
3.4900	-31.8	V	3.0	40.3	1.0	-71.1	-13.0	-58.1	
5.2350	-30.8	V	3.0	40.9	1.0	-70.7	-13.0	-57.7	
6.9800	-28.3	V	3.0	41.0	1.0	-68.3	-13.0	-55.3	
3.4900	-23.0	H	3.0	40.3	1.0	-62.3	-13.0	-49.3	
5.2350	-30.7	H	3.0	40.9	1.0	-70.5	-13.0	-57.5	
6.9800	-29.4	H	3.0	41.0	1.0	-69.4	-13.0	-56.4	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

LTE Band 4 20MHz 16QAM

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K21213
Date: 06-28-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-Position
Mode: TX, LTE BAND 4, 20MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (1720MHz)									
3.4400	-31.9	V	3.0	40.2	1.0	-71.1	-13.0	-58.1	
5.1600	-31.7	V	3.0	40.9	1.0	-71.6	-13.0	-58.6	
6.8800	-29.3	V	3.0	41.0	1.0	-69.3	-13.0	-56.3	
3.4400	-27.5	H	3.0	40.2	1.0	-66.7	-13.0	-53.7	
5.1600	-31.3	H	3.0	40.9	1.0	-71.2	-13.0	-58.2	
6.8800	-28.9	H	3.0	41.0	1.0	-68.9	-13.0	-55.9	
Mid_Channel (1732.5MHz)									
3.4650	-30.1	V	3.0	40.3	1.0	-69.4	-13.0	-56.4	
5.1975	-31.6	V	3.0	40.9	1.0	-71.5	-13.0	-58.5	
6.9300	-28.4	V	3.0	41.0	1.0	-68.4	-13.0	-55.4	
3.4650	-21.9	H	3.0	40.3	1.0	-61.2	-13.0	-48.2	
5.1975	-32.3	H	3.0	40.9	1.0	-72.2	-13.0	-59.2	
6.9300	-28.4	H	3.0	41.0	1.0	-68.4	-13.0	-55.4	
High Channel (1745MHz)									
3.4900	-32.9	V	3.0	40.3	1.0	-72.2	-13.0	-59.2	
5.2350	-31.3	V	3.0	40.9	1.0	-71.1	-13.0	-58.1	
6.9800	-28.6	V	3.0	41.0	1.0	-68.6	-13.0	-55.6	
3.4900	-24.3	H	3.0	40.3	1.0	-63.6	-13.0	-50.6	
5.2350	-30.8	H	3.0	40.9	1.0	-70.7	-13.0	-57.7	
6.9800	-29.2	H	3.0	41.0	1.0	-69.2	-13.0	-56.2	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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LTE
Band 4
15MHz
QPSK

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K21213
Date: 06-28-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-Position
Mode: TX, LTE BAND 4, 15MHz BW,QPSK

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (1717.5MHz)									
3.4350	-31.2	V	3.0	40.2	1.0	-70.5	-13.0	-57.5	
5.1525	-31.0	V	3.0	40.9	1.0	-70.9	-13.0	-57.9	
6.8700	-29.0	V	3.0	41.0	1.0	-69.0	-13.0	-56.0	
3.4350	-26.4	H	3.0	40.2	1.0	-65.6	-13.0	-52.6	
5.1525	-30.7	H	3.0	40.9	1.0	-70.6	-13.0	-57.6	
6.8700	-29.1	H	3.0	41.0	1.0	-69.1	-13.0	-56.1	
Mid Channel (1732.5MHz)									
3.4650	-29.6	V	3.0	40.3	1.0	-68.8	-13.0	-55.8	
5.1975	-30.7	V	3.0	40.9	1.0	-70.6	-13.0	-57.6	
6.9300	-27.9	V	3.0	41.0	1.0	-67.9	-13.0	-54.9	
3.4650	-21.7	H	3.0	40.3	1.0	-60.9	-13.0	-47.9	
5.1975	-31.4	H	3.0	40.9	1.0	-71.3	-13.0	-58.3	
6.9300	-29.0	H	3.0	41.0	1.0	-69.0	-13.0	-56.0	
High Channel (1747.5MHz)									
3.4950	-31.8	V	3.0	40.3	1.0	-71.1	-13.0	-58.1	
5.2425	-30.2	V	3.0	40.9	1.0	-70.1	-13.0	-57.1	
6.9900	-28.5	V	3.0	41.0	1.0	-68.5	-13.0	-55.5	
3.4950	-23.1	H	3.0	40.3	1.0	-62.4	-13.0	-49.4	
5.2425	-30.7	H	3.0	40.9	1.0	-70.5	-13.0	-57.5	
6.9900	-29.4	H	3.0	41.0	1.0	-69.5	-13.0	-56.5	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

LTE
Band 4
15MHz
16QAM

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K21213
Date: 06-28-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-Position
Mode: TX, LTE BAND 4, 15MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (1717.5MHz)									
3.4350	-32.2	V	3.0	40.2	1.0	-71.4	-13.0	-58.4	
5.1525	-31.7	V	3.0	40.9	1.0	-71.6	-13.0	-58.6	
6.8700	-28.7	V	3.0	41.0	1.0	-68.7	-13.0	-55.7	
3.4350	-27.2	H	3.0	40.2	1.0	-66.4	-13.0	-53.4	
5.1525	-31.4	H	3.0	40.9	1.0	-71.3	-13.0	-58.3	
6.8700	-29.1	H	3.0	41.0	1.0	-69.1	-13.0	-56.1	
Mid Channel (1732.5MHz)									
3.4650	-30.5	V	3.0	40.3	1.0	-69.8	-13.0	-56.8	
5.1975	-31.6	V	3.0	40.9	1.0	-71.5	-13.0	-58.5	
6.9300	-28.9	V	3.0	41.0	1.0	-68.9	-13.0	-55.9	
3.4650	-22.0	H	3.0	40.3	1.0	-61.2	-13.0	-48.2	
5.1975	-32.2	H	3.0	40.9	1.0	-72.1	-13.0	-59.1	
6.9300	-29.4	H	3.0	41.0	1.0	-69.4	-13.0	-56.4	
High Channel (1747.5MHz)									
3.4950	-32.8	V	3.0	40.3	1.0	-72.0	-13.0	-59.0	
5.2425	-31.3	V	3.0	40.9	1.0	-71.1	-13.0	-58.1	
6.9900	-28.5	V	3.0	41.0	1.0	-68.5	-13.0	-55.5	
3.4950	-24.1	H	3.0	40.3	1.0	-63.3	-13.0	-50.3	
5.2425	-31.1	H	3.0	40.9	1.0	-71.0	-13.0	-58.0	
6.9900	-29.4	H	3.0	41.0	1.0	-69.4	-13.0	-56.4	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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LTE

Band 4

10MHz

QPSK

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K21213
Date: 06-28-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-Position
Mode: TX, LTE BAND 4, 10MHz BW, QPSK

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (1715MHz)									
3.4300	-31.4	V	3.0	40.2	1.0	-70.7	-13.0	-57.7	
5.1450	-31.0	V	3.0	40.9	1.0	-70.9	-13.0	-57.9	
6.8600	-28.7	V	3.0	41.0	1.0	-68.7	-13.0	-55.7	
3.4300	-26.8	H	3.0	40.2	1.0	-66.1	-13.0	-53.1	
5.1450	-30.9	H	3.0	40.9	1.0	-70.8	-13.0	-57.8	
6.8600	-28.8	H	3.0	41.0	1.0	-68.8	-13.0	-55.8	
Mid_Channel (1732.5MHz)									
3.4650	-29.2	V	3.0	40.3	1.0	-68.5	-13.0	-55.5	
5.1975	-30.7	V	3.0	40.9	1.0	-70.6	-13.0	-57.6	
6.9300	-28.2	V	3.0	41.0	1.0	-68.2	-13.0	-55.2	
3.4650	-21.5	H	3.0	40.3	1.0	-60.8	-13.0	-47.8	
5.1975	-31.4	H	3.0	40.9	1.0	-71.3	-13.0	-58.3	
6.9300	-29.2	H	3.0	41.0	1.0	-69.2	-13.0	-56.2	
High Channel (1750MHz)									
3.5000	-32.0	V	3.0	40.3	1.0	-71.2	-13.0	-58.2	
5.2500	-30.5	V	3.0	40.9	1.0	-70.4	-13.0	-57.4	
7.0000	-28.8	V	3.0	41.0	1.0	-68.8	-13.0	-55.8	
3.5000	-23.0	H	3.0	40.3	1.0	-62.3	-13.0	-49.3	
5.2500	-33.3	H	3.0	40.9	1.0	-73.2	-13.0	-60.2	
7.0000	-29.5	H	3.0	41.0	1.0	-69.5	-13.0	-56.5	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

LTE

Band 4

10MHz

16QAM

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K21213
Date: 06-28-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-Position
Mode: TX, LTE BAND 4, 10MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (1715MHz)									
3.4300	-32.4	V	3.0	40.2	1.0	-71.6	-13.0	-58.6	
5.1450	-31.8	V	3.0	40.9	1.0	-71.7	-13.0	-58.7	
6.8600	-29.3	V	3.0	41.0	1.0	-69.3	-13.0	-56.3	
3.4300	-27.8	H	3.0	40.2	1.0	-67.0	-13.0	-54.0	
5.1450	-31.8	H	3.0	40.9	1.0	-71.7	-13.0	-58.7	
6.8600	-29.2	H	3.0	41.0	1.0	-69.2	-13.0	-56.2	
Mid_Channel (1732.5MHz)									
3.4650	-30.2	V	3.0	40.3	1.0	-69.4	-13.0	-56.4	
5.1975	-31.9	V	3.0	40.9	1.0	-71.8	-13.0	-58.8	
6.9300	-29.2	V	3.0	41.0	1.0	-69.2	-13.0	-56.2	
3.4650	-22.4	H	3.0	40.3	1.0	-61.6	-13.0	-48.6	
5.1975	-32.5	H	3.0	40.9	1.0	-72.3	-13.0	-59.3	
6.9300	-29.4	H	3.0	41.0	1.0	-69.4	-13.0	-56.4	
High Channel (1750MHz)									
3.5000	-32.9	V	3.0	40.3	1.0	-72.2	-13.0	-59.2	
5.2500	-31.5	V	3.0	40.9	1.0	-71.4	-13.0	-58.4	
7.0000	-29.6	V	3.0	41.0	1.0	-69.6	-13.0	-56.6	
3.5000	-24.0	H	3.0	40.3	1.0	-63.3	-13.0	-50.3	
5.2500	-33.7	H	3.0	40.9	1.0	-73.6	-13.0	-60.6	
7.0000	-29.4	H	3.0	41.0	1.0	-69.4	-13.0	-56.4	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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LTE
Band 4
5MHz
QPSK

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K21213
Date: 06-28-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-Position
Mode: TX, LTE BAND 4, 5MHz BW, QPSK

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (1712.5MHz)									
3.4250	-31.2	V	3.0	40.2	1.0	-70.4	-13.0	-57.4	
5.1375	-30.9	V	3.0	40.9	1.0	-70.8	-13.0	-57.8	
6.5800	-29.6	V	3.0	40.9	1.0	-69.5	-13.0	-56.5	
3.4250	-26.6	H	3.0	40.2	1.0	-65.8	-13.0	-52.8	
5.1375	-30.6	H	3.0	40.9	1.0	-70.5	-13.0	-57.5	
6.5800	-29.5	H	3.0	40.9	1.0	-69.4	-13.0	-56.4	
Mid Channel (1732.5MHz)									
3.4650	-30.5	V	3.0	40.3	1.0	-69.7	-13.0	-56.7	
5.1975	-31.9	V	3.0	40.9	1.0	-71.8	-13.0	-58.8	
6.9300	-28.9	V	3.0	41.0	1.0	-68.9	-13.0	-55.9	
3.4650	-22.7	H	3.0	40.3	1.0	-61.9	-13.0	-48.9	
5.1975	-32.4	H	3.0	40.9	1.0	-72.3	-13.0	-59.3	
6.9300	-28.9	H	3.0	41.0	1.0	-68.9	-13.0	-55.9	
High Channel (1752.5MHz)									
3.5050	-32.6	V	3.0	40.3	1.0	-71.9	-13.0	-58.9	
5.2575	-31.4	V	3.0	40.9	1.0	-71.3	-13.0	-58.3	
7.0100	-28.9	V	3.0	41.0	1.0	-68.9	-13.0	-55.9	
3.5050	-23.8	H	3.0	40.3	1.0	-63.1	-13.0	-50.1	
5.2575	-31.4	H	3.0	40.9	1.0	-71.3	-13.0	-58.3	
7.0100	-29.8	H	3.0	41.0	1.0	-69.8	-13.0	-56.8	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

LTE
Band 4
5MHz
16QAM

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K21213
Date: 06-28-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-Position
Mode: TX, LTE BAND 7, 5MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (1712.5MHz)									
3.4250	-32.2	V	3.0	40.2	1.0	-71.4	-13.0	-58.4	
5.1375	-31.9	V	3.0	40.9	1.0	-71.8	-13.0	-58.8	
6.5800	-29.8	V	3.0	40.9	1.0	-69.7	-13.0	-56.7	
3.4250	-27.1	H	3.0	40.2	1.0	-66.4	-13.0	-53.4	
5.1375	-31.6	H	3.0	40.9	1.0	-71.5	-13.0	-58.5	
6.5800	-30.7	H	3.0	40.9	1.0	-70.6	-13.0	-57.6	
Mid Channel (1732.5MHz)									
3.4650	-29.5	V	3.0	40.3	1.0	-68.7	-13.0	-55.7	
5.1975	-30.6	V	3.0	40.9	1.0	-70.5	-13.0	-57.5	
6.9300	-27.8	V	3.0	41.0	1.0	-67.8	-13.0	-54.8	
3.4650	-21.7	H	3.0	40.3	1.0	-60.9	-13.0	-47.9	
5.1975	-31.4	H	3.0	40.9	1.0	-71.3	-13.0	-58.3	
6.9300	-28.4	H	3.0	41.0	1.0	-68.4	-13.0	-55.4	
High Channel (1752.5MHz)									
3.5050	-31.6	V	3.0	40.3	1.0	-70.9	-13.0	-57.9	
5.2575	-30.4	V	3.0	40.9	1.0	-70.3	-13.0	-57.3	
7.0100	-28.5	V	3.0	41.0	1.0	-68.5	-13.0	-55.5	
3.5050	-22.7	H	3.0	40.3	1.0	-62.0	-13.0	-49.0	
5.2575	-30.6	H	3.0	40.9	1.0	-70.5	-13.0	-57.5	
7.0100	-29.7	H	3.0	41.0	1.0	-69.7	-13.0	-56.7	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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LTE Band 4 3MHz QPSK

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K21213
Date: 06-28-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-Position
Mode: TX, LTE BAND 4, 3MHz BW,QPSK

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (1711.5MHz)									
3.4230	-30.9	V	3.0	40.2	1.0	-70.2	-13.0	-57.2	
5.1345	-30.9	V	3.0	40.9	1.0	-70.8	-13.0	-57.8	
6.8460	-28.9	V	3.0	41.0	1.0	-68.9	-13.0	-55.9	
3.4230	-26.1	H	3.0	40.2	1.0	-65.4	-13.0	-52.4	
5.1345	-30.6	H	3.0	40.9	1.0	-70.5	-13.0	-57.5	
6.8460	-29.3	H	3.0	41.0	1.0	-69.3	-13.0	-56.3	
Mid_Channel (1732.5MHz)									
3.4650	-28.8	V	3.0	40.3	1.0	-68.1	-13.0	-55.1	
5.1975	-30.6	V	3.0	40.9	1.0	-70.5	-13.0	-57.5	
6.9300	-27.9	V	3.0	41.0	1.0	-67.9	-13.0	-54.9	
3.4650	-21.2	H	3.0	40.3	1.0	-60.5	-13.0	-47.5	
5.1975	-31.9	H	3.0	40.9	1.0	-71.8	-13.0	-58.8	
6.9300	-28.8	H	3.0	41.0	1.0	-68.8	-13.0	-55.8	
High Channel (1753.5MHz)									
3.5070	-31.7	V	3.0	40.3	1.0	-71.0	-13.0	-58.0	
5.2605	-30.2	V	3.0	40.9	1.0	-70.1	-13.0	-57.1	
7.0140	-28.7	V	3.0	41.0	1.0	-68.7	-13.0	-55.7	
3.5070	-23.1	H	3.0	40.3	1.0	-62.4	-13.0	-49.4	
5.2605	-30.6	H	3.0	40.9	1.0	-70.5	-13.0	-57.5	
7.0140	-29.4	H	3.0	41.0	1.0	-69.4	-13.0	-56.4	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

LTE Band 4 3MHz 16QAM

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K21213
Date: 06-28-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-Position
Mode: TX, LTE BAND 4, 3MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (1711.5MHz)									
3.4230	-32.0	V	3.0	40.2	1.0	-71.2	-13.0	-58.2	
5.1345	-31.8	V	3.0	40.9	1.0	-71.7	-13.0	-58.7	
6.8460	-28.9	V	3.0	41.0	1.0	-68.9	-13.0	-55.9	
3.4230	-27.2	H	3.0	40.2	1.0	-66.4	-13.0	-53.4	
5.1345	-31.5	H	3.0	40.9	1.0	-71.4	-13.0	-58.4	
6.8460	-29.3	H	3.0	41.0	1.0	-69.3	-13.0	-56.3	
Mid_Channel (1732.5MHz)									
3.4650	-29.8	V	3.0	40.3	1.0	-69.0	-13.0	-56.0	
5.1975	-31.6	V	3.0	40.9	1.0	-71.5	-13.0	-58.5	
6.9300	-29.1	V	3.0	41.0	1.0	-69.1	-13.0	-56.1	
3.4650	-22.4	H	3.0	40.3	1.0	-61.7	-13.0	-48.7	
5.1975	-32.9	H	3.0	40.9	1.0	-72.8	-13.0	-59.8	
6.9300	-28.8	H	3.0	41.0	1.0	-68.8	-13.0	-55.8	
High Channel (1752.5MHz)									
3.5070	-32.7	V	3.0	40.3	1.0	-72.0	-13.0	-59.0	
5.2605	-31.7	V	3.0	40.9	1.0	-71.6	-13.0	-58.6	
7.0140	-28.9	V	3.0	41.0	1.0	-68.9	-13.0	-55.9	
3.5070	-24.0	H	3.0	40.3	1.0	-63.3	-13.0	-50.3	
5.2605	-31.5	H	3.0	40.9	1.0	-71.4	-13.0	-58.4	
7.0140	-29.3	H	3.0	41.0	1.0	-69.3	-13.0	-56.3	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

UL Korea, Ltd. Suwon Laboratory FORM ID: FCC_22/24/27
218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 443-823, Korea TEL: (031) 337-9902 FAX: (031) 213-5433
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LTE
Band 4
1.4MHz
QPSK

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K21213
Date: 06-28-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-Position
Mode: TX, LTE BAND 4, 1.4MHz BW, QPSK

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (1710.7MHz)									
3.4214	-29.3	V	3.0	40.2	1.0	-68.5	-13.0	-55.5	
5.1321	-30.5	V	3.0	40.9	1.0	-70.4	-13.0	-57.4	
6.8428	-28.6	V	3.0	41.0	1.0	-68.5	-13.0	-55.5	
3.4214	-23.0	H	3.0	40.2	1.0	-62.2	-13.0	-49.2	
5.1321	-30.6	H	3.0	40.9	1.0	-70.5	-13.0	-57.5	
6.8428	-28.6	H	3.0	41.0	1.0	-68.5	-13.0	-55.5	
Mid Channel (1732.5MHz)									
3.4650	-28.2	V	3.0	40.3	1.0	-67.4	-13.0	-54.4	
5.1975	-31.1	V	3.0	40.9	1.0	-70.9	-13.0	-57.9	
6.9300	-28.2	V	3.0	41.0	1.0	-68.2	-13.0	-55.2	
3.4650	-19.0	H	3.0	40.3	1.0	-58.3	-13.0	-45.3	
5.1975	-31.4	H	3.0	40.9	1.0	-71.3	-13.0	-58.3	
6.9300	-28.9	H	3.0	41.0	1.0	-68.9	-13.0	-55.9	
High Channel (1754.3MHz)									
3.5086	-29.6	V	3.0	40.3	1.0	-68.9	-13.0	-55.9	
5.2629	-30.8	V	3.0	40.9	1.0	-70.7	-13.0	-57.7	
7.0172	-29.0	V	3.0	41.0	1.0	-69.0	-13.0	-56.0	
3.5086	-20.7	H	3.0	40.3	1.0	-60.0	-13.0	-47.0	
5.2629	-30.7	H	3.0	40.9	1.0	-70.5	-13.0	-57.5	
7.0172	-29.2	H	3.0	41.0	1.0	-69.2	-13.0	-56.2	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

LTE
Band 4
1.4MHz
16QAM

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K21213
Date: 06-28-15
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-Position
Mode: TX, LTE BAND 4, 1.4MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (1710.7MHz)									
3.4214	-30.3	V	3.0	40.2	1.0	-69.5	-13.0	-56.5	
5.1321	-31.5	V	3.0	40.9	1.0	-71.4	-13.0	-58.4	
6.8428	-28.7	V	3.0	41.0	1.0	-68.7	-13.0	-55.7	
3.4214	-24.1	H	3.0	40.2	1.0	-63.4	-13.0	-50.4	
5.1321	-31.6	H	3.0	40.9	1.0	-71.5	-13.0	-58.5	
6.8428	-28.5	H	3.0	41.0	1.0	-68.5	-13.0	-55.5	
Mid Channel (1732.5MHz)									
3.4650	-28.8	V	3.0	40.3	1.0	-68.0	-13.0	-55.0	
5.1975	-31.6	V	3.0	40.9	1.0	-71.5	-13.0	-58.5	
6.9300	-28.5	V	3.0	41.0	1.0	-68.5	-13.0	-55.5	
3.4650	-19.9	H	3.0	40.3	1.0	-59.2	-13.0	-46.2	
5.1975	-32.4	H	3.0	40.9	1.0	-72.3	-13.0	-59.3	
6.9300	-28.4	H	3.0	41.0	1.0	-68.4	-13.0	-55.4	
High Channel (1754.3MHz)									
3.5086	-30.6	V	3.0	40.3	1.0	-69.9	-13.0	-56.9	
5.2629	-31.7	V	3.0	40.9	1.0	-71.5	-13.0	-58.5	
7.0172	-29.2	V	3.0	41.0	1.0	-69.2	-13.0	-56.2	
3.5086	-22.4	H	3.0	40.3	1.0	-61.7	-13.0	-48.7	
5.2629	-31.3	H	3.0	40.9	1.0	-71.1	-13.0	-58.1	
7.0172	-29.1	H	3.0	41.0	1.0	-69.1	-13.0	-56.1	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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