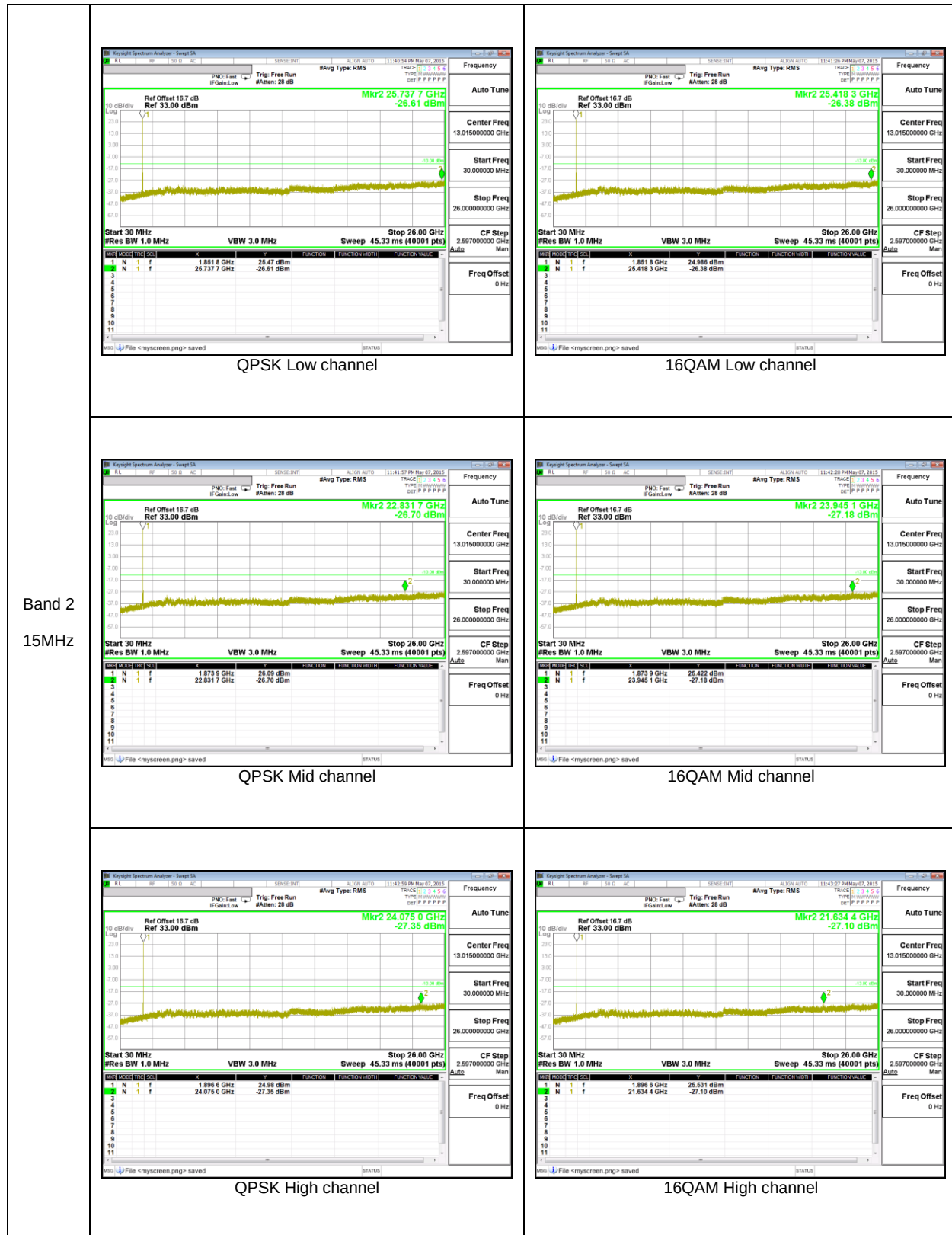
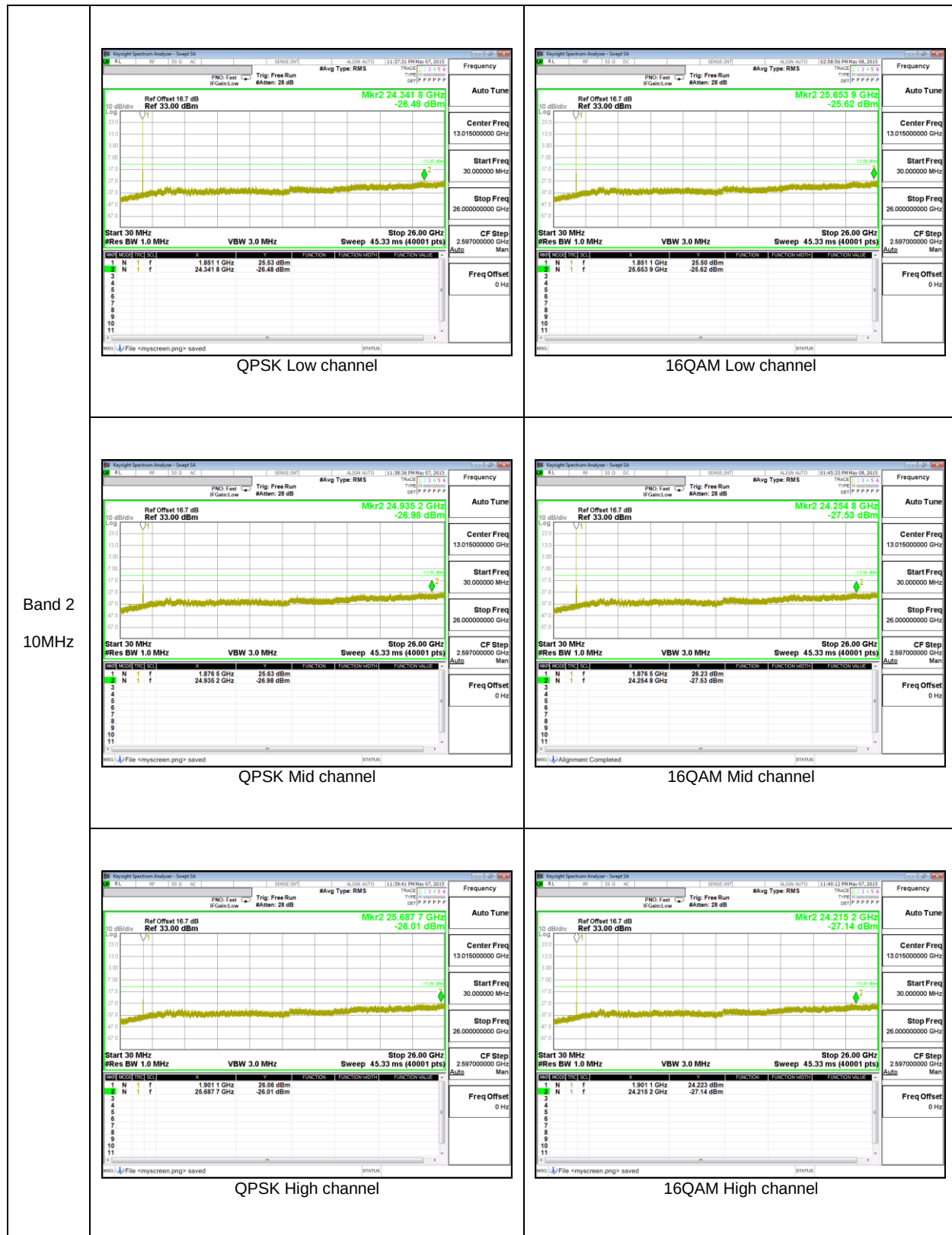
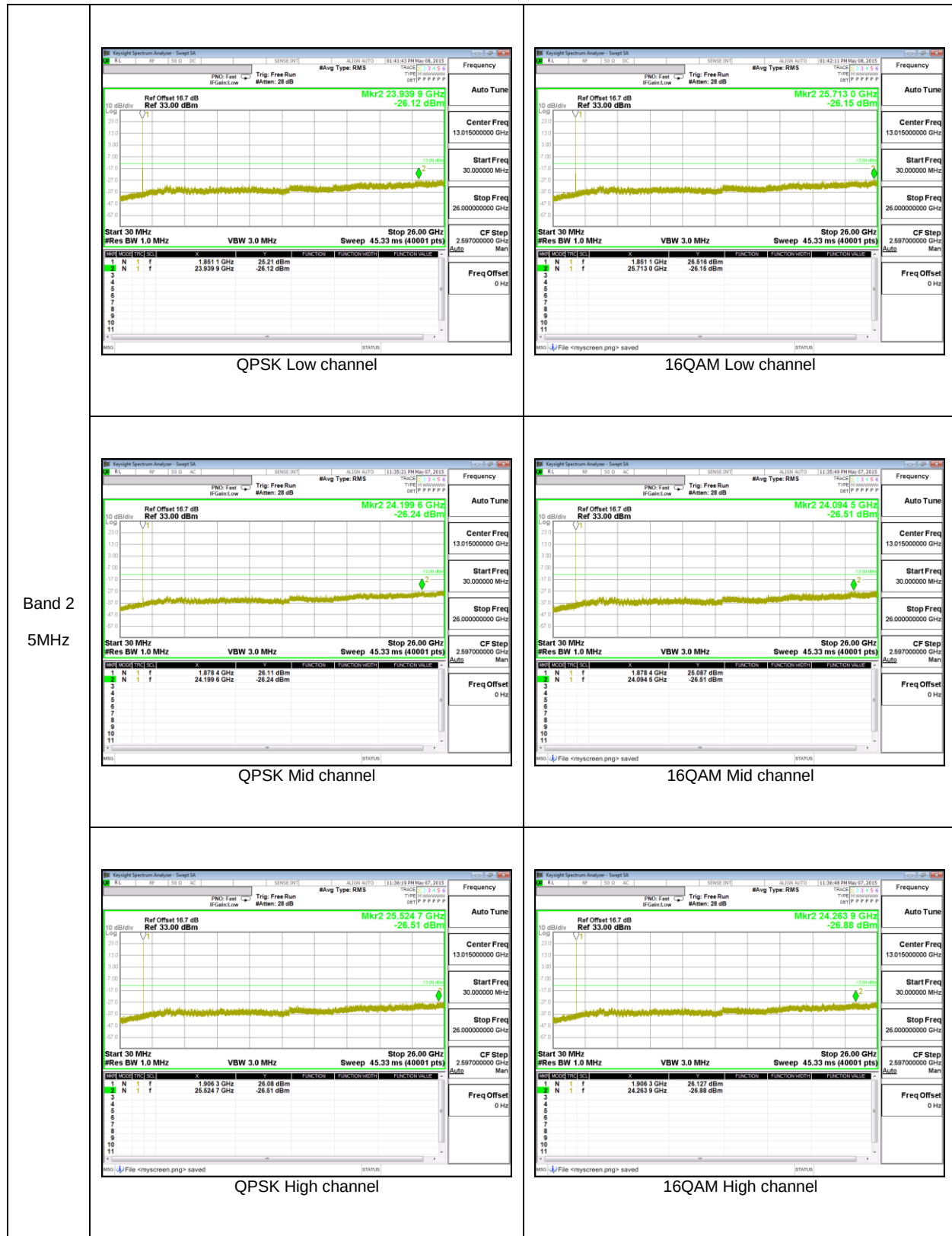


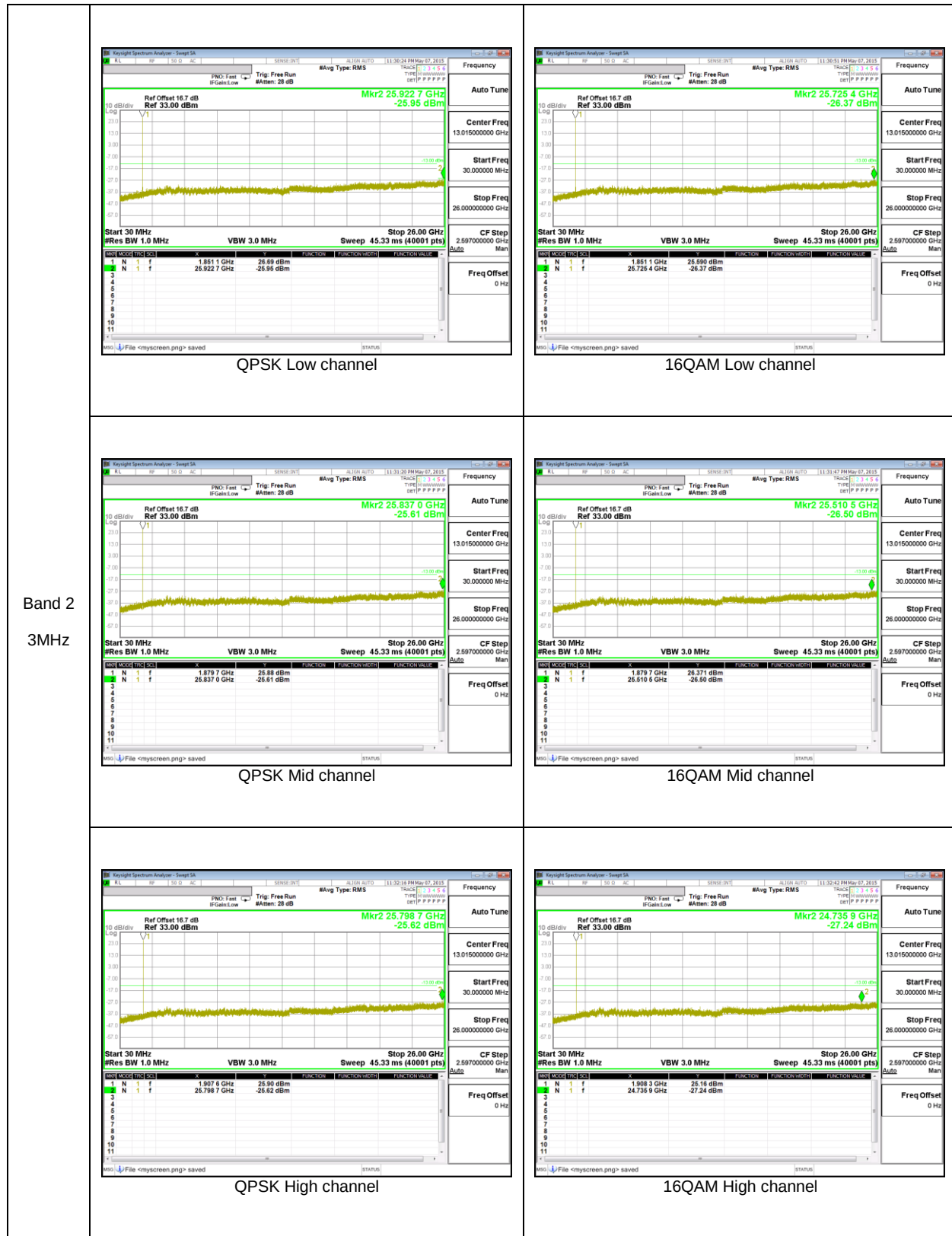
LTE Band 2













10.1. FREQUENCY STABILITY

RULE PART(S)

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

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.

TEST PROCEDURE

Per KDB 971168 D01 Power Meas License Digital Systems v02r02

RESULTS

See the following pages.

10.1.1. FREQUENCY STABILITY RESULTS

LTE Band 17, Channel 23790, Frequency 710.0 MHz

Reference Frequency: LTE Band 17 Mid Channel 710.0 MHz @ 20°C Limit: +/- 2.5 ppm = 1775.000 Hz				
Power Supply [Vdc]	Environment Temperature [*C]	Frequency Deviation Measured with Time Elapse		
		[MHz]	Delta [ppm]	Limit [ppm]
3.80	50	710.00001158	0.002	2.5
3.80	40	710.00000914	0.005	2.5
3.80	30	709.99999248	0.029	2.5
3.80	20	710.00001286	0	2.5
3.80	10	710.00001793	-0.007	2.5
3.80	0	710.00001236	0.001	2.5
3.80	-10	709.99999005	0.032	2.5
3.80	-20	709.99998768	0.035	2.5
3.80	-30	710.00000664	0.009	2.5

Reference Frequency: LTE Band 17 Mid Channel 710.0 MHz @ 20°C Limit: +/- 2.5 ppm = 1775.000 Hz				
Power Supply [Vdc]	Environment Temperature [*C]	Frequency Deviation Measured with Time Elapse		
		[MHz]	Delta [ppm]	Limit [ppm]
3.80	20	710.00001286	0	2.5
4.20	20	710.00001730	-0.006	2.5
3.40	20	709.99998756	0.036	2.5

LTE Band 5, Channel 20524, Frequency 836.5 MHz

WCDMA Band 5, Channel 4183, Frequency 836.6 MHz

GSM 850, Channel 190, Frequency 836.6 MHz

Reference Frequency: LTE Band 5 Mid Channel 836.5 MHz @ 20°C				
Limit: +/- 2.5 ppm = 2091.250 Hz				
Power Supply [Vdc]	Environment Temperature [°C]	Frequency Deviation Measured with Time Elapse		
		[MHz]	Delta [ppm]	Limit [ppm]
3.80	50	836.50000780	0.005	2.5
3.80	40	836.50000964	0.003	2.5
3.80	30	836.50001014	0.002	2.5
3.80	20	836.50001193	0	2.5
3.80	10	836.50001325	-0.002	2.5
3.80	0	836.50001601	-0.005	2.5
3.80	-10	836.50001271	-0.001	2.5
3.80	-20	836.50001384	-0.002	2.5
3.80	-30	836.50001857	-0.008	2.5

Reference Frequency: LTE Band 5 Mid Channel 836.5 MHz @ 20°C				
Limit: +/- 2.5 ppm = 2091.250 Hz				
Power Supply [Vdc]	Environment Temperature [°C]	Frequency Deviation Measured with Time Elapse		
		[MHz]	Delta [ppm]	Limit [ppm]
3.80	20	836.50001193	0	2.5
4.20	20	836.50001813	-0.007	2.5
3.40	20	836.50001946	-0.009	2.5

LTE Band 4, Channel 20174, Frequency 1732.5 MHz

Reference Frequency: LTE Band 4 Mid Channel 1732.5 MHz @ 20°C				
Limit: +/- 2.5 ppm = 4331.250 Hz				
Power Supply [Vdc]	Environment Temperature [*C]	Frequency Deviation Measured with Time Elapse		
		[MHz]	Delta [ppm]	Limit [ppm]
3.80	50	1732.49998465	0.000	2.5
3.80	40	1732.50001784	-0.019	2.5
3.80	30	1732.50002010	-0.021	2.5
3.80	20	1732.49998406	0	2.5
3.80	10	1732.49998378	0.000	2.5
3.80	0	1732.49998027	0.002	2.5
3.80	-10	1732.49998745	-0.002	2.5
3.80	-20	1732.49998459	0.000	2.5
3.80	-30	1732.49998796	-0.002	2.5

Reference Frequency: LTE Band 4 Mid Channel 1732.5 MHz @ 20°C				
Limit: +/- 2.5 ppm = 4331.250 Hz				
Power Supply [Vdc]	Environment Temperature [*C]	Frequency Deviation Measured with Time Elapse		
		[MHz]	Delta [ppm]	Limit [ppm]
3.80	20	1732.49998406	0	2.5
4.20	20	1732.49997712	0.004	2.5
3.40	20	1732.49996739	0.010	2.5

LTE Band 2, Channel 18900, Frequency 1880.0 MHz

WCDMA Band 2, Channel 9400, Frequency 1880.0 MHz

GSM 1900, Channel 661, Frequency 1880.0 MHz

Reference Frequency: LTE Band 2 Mid Channel 1880.0 MHz @ 20°C				
Limit: +/- 2.5 ppm = 4700.000 Hz				
Power Supply [Vdc]	Environment Temperature [°C]	Frequency Deviation Measured with Time Elapse		
		[MHz]	Delta [ppm]	Limit [ppm]
3.80	50	1880.00002440	-0.001	2.5
3.80	40	1879.99998007	0.023	2.5
3.80	30	1879.99998125	0.022	2.5
3.80	20	1880.00002315	0	2.5
3.80	10	1880.00001521	0.004	2.5
3.80	0	1880.00001558	0.004	2.5
3.80	-10	1879.99997719	0.024	2.5
3.80	-20	1880.00001817	0.003	2.5
3.80	-30	1879.99998783	0.019	2.5

Reference Frequency: LTE Band 2 Mid Channel 1880.0 MHz @ 20°C				
Limit: +/- 2.5 ppm = 4700.000 Hz				
Power Supply [Vdc]	Environment Temperature [°C]	Frequency Deviation Measured with Time Elapse		
		[MHz]	Delta [ppm]	Limit [ppm]
3.80	20	1880.00002315	0	2.5
4.20	20	1880.00001884	0.002	2.5
3.40	20	1880.00002170	0.001	2.5

11. RADIATED TEST RESULTS

11.1. RADIATED POWER (ERP & EIRP)

RULE PART(S)

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

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)

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 $\geq$ OBW; b) Set VBW $\geq 3 \times$ RBW; c) Set span $\geq 2 \times$ RBW; d) Sweep time = auto couple; e) Detector = peak; f) Ensure that the number of measurement points $\geq$ 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 $\geq 3 \times$ RBW; d) Set number of points in sweep $\geq 2 \times$ 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

11.1.1. ERP/EIRP Results

GSM

Band	Mode	Channel	f [MHz]	ERP / EIRP	
				[dBm]	[mW]
GSM850	GPRS	512	824.2	28.61	725.3
		661	836.6	29.63	917.3
		810	848.8	28.68	737.4
	EGPRS	512	824.2	23.82	240.7
		661	836.6	23.58	227.8
		810	848.8	22.43	174.9
GSM1900	GPRS	512	1850.2	31.95	1566.0
		661	1880.0	31.95	1566.8
		810	1909.8	31.82	1521.6
	EGPRS	512	1850.2	29.82	959.0
		661	1880.0	29.87	970.5
		810	1909.8	29.63	919.0

WCDMA

Band	Mode	Channel	f [MHz]	ERP / EIRP	
				[dBm]	[mW]
Band 5	REL99	4132	826.4	17.99	62.9
		4183	836.6	18.54	71.4
		4233	846.6	17.93	62.0
	HSDPA	4132	826.4	18.39	68.9
		4183	836.6	18.99	79.2
		4233	846.6	18.51	70.9
Band 2	REL99	9262	1852.4	23.55	226.4
		9400	1880.0	23.77	238.2
		9538	1907.6	23.61	229.8
	HSDPA	9262	1852.4	22.44	175.3
		9400	1880.0	23.09	203.7
		9538	1907.6	21.90	155.0

LTE Band 17

Band	BW [MHz]	Mode	RB/RB Size	f [MHz]	ERP / EIRP	
			Full RB		[dBm]	[mW]
Band 17	10	QPSK	50/0	709.0	11.51	14.2
			50/0	710.0	11.19	13.2
			50/0	711.0	12.00	15.8
		16QAM	50/0	709.0	10.89	12.3
			50/0	710.0	11.12	12.9
			50/0	711.0	10.19	10.4
	5	QPSK	25/0	706.5	10.47	11.1
			25/0	710.0	11.63	14.6
			25/0	713.5	10.11	10.3
		16QAM	25/0	706.5	10.07	10.2
			25/0	710.0	8.11	6.5
			25/0	713.5	11.18	13.1

LTE Band 5

Band	BW [MHz]	Mode	RB/RB Size	f [MHz]	ERP / EIRP	
			Full RB		[dBm]	[mW]
Band 5	10	QPSK	50/0	1860.0	15.81	38.1
			50/0	1880.0	15.64	36.6
			50/0	1900.0	16.02	40.0
		16QAM	50/0	1860.0	14.07	25.5
			50/0	1880.0	14.51	28.3
			50/0	1900.0	14.92	31.1
	5	QPSK	25/0	1852.5	14.20	26.3
			25/0	1880.0	15.82	38.2
			25/0	1907.5	15.28	33.8
		16QAM	25/0	1852.5	14.93	31.1
			25/0	1880.0	16.06	40.3
			25/0	1907.5	15.30	33.8
	3	QPSK	15/0	1815.5	11.89	15.4
			15/0	1880.0	13.15	20.6
			15/0	1908.5	12.21	16.6
		16QAM	15/0	1815.5	10.64	11.6
			15/0	1880.0	12.24	16.7
			15/0	1908.5	11.77	15.0
	1.4	QPSK	6/0	1850.7	12.26	16.8
			6/0	1880.0	13.73	23.6
			6/0	1909.3	12.40	17.4
		16QAM	6/0	1850.7	11.13	13.0
			6/0	1880.0	11.36	13.7
			6/0	1909.3	11.77	15.0

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	22.18	165.2
			100/0	1732.5	22.05	160.3
			100/0	1745.0	23.17	207.5
		16QAM	100/0	1720.0	20.92	123.6
			100/0	1732.5	21.82	152.1
			100/0	1745.0	21.20	131.8
	15	QPSK	75/0	1717.5	22.87	193.6
			75/0	1732.5	22.58	181.1
			75/0	1747.5	23.42	219.8
		16QAM	75/0	1717.5	21.65	146.2
			75/0	1732.5	21.86	153.5
			75/0	1747.5	22.56	180.3
	10	QPSK	50/0	1715.0	22.73	187.5
			50/0	1732.5	23.21	209.4
			50/0	1750.0	23.30	213.8
		16QAM	50/0	1715.0	21.34	136.1
			50/0	1732.5	22.13	163.3
			50/0	1750.0	22.00	158.5
	5	QPSK	25/0	1712.5	21.91	155.2
			25/0	1732.5	22.01	158.9
			25/0	1752.5	22.72	187.1
		16QAM	25/0	1712.5	21.27	134.0
			25/0	1732.5	21.57	143.5
			25/0	1752.5	22.47	176.6
	3	QPSK	15/0	1711.5	22.80	190.5
			15/0	1732.5	21.97	157.4
			15/0	1753.5	22.60	182.0
		16QAM	15/0	1711.5	20.77	119.4
			15/0	1732.5	20.74	118.6
			15/0	1753.5	21.61	144.9
	1.4	QPSK	6/0	1710.7	20.85	121.6
			6/0	1732.5	20.62	115.3
			6/0	1754.3	21.20	131.8
		16QAM	6/0	1710.7	19.48	88.7
			6/0	1732.5	19.47	88.5
			6/0	1754.3	19.13	81.8

LTE Band 2

Band	BW [MHz]	Mode	RB/RB Size	f [MHz]	ERP / EIRP	
			Full RB		[dBm]	[mW]
Band 2	20	QPSK	100/0	1860.0	22.59	181.5
			100/0	1880.0	22.35	171.8
			100/0	1900.0	21.55	143.0
		16QAM	100/0	1860.0	21.18	131.2
			100/0	1880.0	21.17	130.9
			100/0	1900.0	20.42	110.2
	15	QPSK	75/0	1857.5	23.34	215.7
			75/0	1880.0	21.65	146.2
			75/0	1902.5	20.32	107.7
		16QAM	75/0	1857.5	22.12	162.9
			75/0	1880.0	20.86	121.9
			75/0	1902.5	19.46	88.4
	10	QPSK	50/0	1955.0	22.87	193.6
			50/0	1880.0	22.07	161.1
			50/0	1905.0	21.06	127.7
		16QAM	50/0	1955.0	21.44	139.3
			50/0	1880.0	20.90	123.0
			50/0	1905.0	19.58	90.8
	5	QPSK	25/0	1852.5	22.22	166.6
			25/0	1880.0	20.58	114.3
			25/0	1907.5	21.19	131.6
		16QAM	25/0	1852.5	21.10	128.8
			25/0	1880.0	18.57	71.9
			25/0	1907.5	19.17	82.7
	3	QPSK	15/0	1815.5	20.97	125.0
			15/0	1880.0	20.63	115.6
			15/0	1908.5	20.40	109.7
		16QAM	15/0	1815.5	18.81	76.0
			15/0	1880.0	19.08	80.9
			15/0	1908.5	19.29	85.0
	1.4	QPSK	6/0	1850.7	22.07	161.0
			6/0	1880.0	19.58	90.8
			6/0	1909.3	20.17	104.1
		16QAM	6/0	1850.7	18.30	67.6
			6/0	1880.0	18.13	65.0
			6/0	1909.3	18.81	76.1

11.1.2. ERP/EIRP DATA

GSM 850

GSM GSM850 GPRS	High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 1 Company: Samsung Project #: 15K20515 Date: 04-23-15 Test Engineer: Steven.Kim Configuration: EUT ONLY, Y Position Mode: GPRS 850 MHz Test Equipment: Receiving: VULB9163-750, and 3m Chamber N-type Cable (Setup this one for testing EUT) Substitution: Dipole S/N: 00164753, 3m SMA Cable Warehouse. <table><tr><th>f MHz</th><th>SG reading (dBm)</th><th>Ant. Pol. (H/V)</th><th>Cable Loss (dB)</th><th>Antenna Gain (dBd)</th><th>ERP (dBm)</th><th>Limit (dBm)</th><th>Margin (dB)</th><th>Notes</th></tr><tr><td colspan="9">Low Ch</td></tr><tr><td>824.20</td><td>31.23</td><td>V</td><td>1.1</td><td>-1.6</td><td>28.61</td><td>38.5</td><td>-9.8</td><td></td></tr><tr><td>824.20</td><td>20.55</td><td>H</td><td>1.1</td><td>-1.6</td><td>17.93</td><td>38.5</td><td>-20.5</td><td></td></tr><tr><td colspan="9">Mid Ch</td></tr><tr><td>836.60</td><td>32.12</td><td>V</td><td>1.1</td><td>-1.4</td><td>29.63</td><td>38.5</td><td>-8.8</td><td></td></tr><tr><td>836.60</td><td>24.59</td><td>H</td><td>1.1</td><td>-1.4</td><td>22.10</td><td>38.5</td><td>-16.4</td><td></td></tr><tr><td colspan="9">High Ch</td></tr><tr><td>848.80</td><td>31.04</td><td>V</td><td>1.1</td><td>-1.3</td><td>28.68</td><td>38.5</td><td>-9.8</td><td></td></tr><tr><td>848.80</td><td>24.55</td><td>H</td><td>1.1</td><td>-1.3</td><td>22.19</td><td>38.5</td><td>-16.3</td><td></td></tr></table> Rev. 3.17.11 Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm									f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes	Low Ch									824.20	31.23	V	1.1	-1.6	28.61	38.5	-9.8		824.20	20.55	H	1.1	-1.6	17.93	38.5	-20.5		Mid Ch									836.60	32.12	V	1.1	-1.4	29.63	38.5	-8.8		836.60	24.59	H	1.1	-1.4	22.10	38.5	-16.4		High Ch									848.80	31.04	V	1.1	-1.3	28.68	38.5	-9.8		848.80	24.55	H	1.1	-1.3	22.19	38.5	-16.3	
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes																																																																																										
	Low Ch																																																																																																		
	824.20	31.23	V	1.1	-1.6	28.61	38.5	-9.8																																																																																											
	824.20	20.55	H	1.1	-1.6	17.93	38.5	-20.5																																																																																											
	Mid Ch																																																																																																		
	836.60	32.12	V	1.1	-1.4	29.63	38.5	-8.8																																																																																											
	836.60	24.59	H	1.1	-1.4	22.10	38.5	-16.4																																																																																											
	High Ch																																																																																																		
	848.80	31.04	V	1.1	-1.3	28.68	38.5	-9.8																																																																																											
848.80	24.55	H	1.1	-1.3	22.19	38.5	-16.3																																																																																												
GSM GSM850 EGPRS	High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 1 Company: Samsung Project #: 15K20515 Date: 04-23-15 Test Engineer: Steven.Kim Configuration: EUT ONLY, Y Position Mode: GPRS 850 MHz Test Equipment: Receiving: VULB9163-750, and 3m Chamber N-type Cable (Setup this one for testing EUT) Substitution: Dipole S/N: 00164753, 3m SMA Cable Warehouse. <table><tr><th>f MHz</th><th>SG reading (dBm)</th><th>Ant. Pol. (H/V)</th><th>Cable Loss (dB)</th><th>Antenna Gain (dBd)</th><th>ERP (dBm)</th><th>Limit (dBm)</th><th>Margin (dB)</th><th>Notes</th></tr><tr><td colspan="9">Low Ch</td></tr><tr><td>824.20</td><td>26.44</td><td>V</td><td>1.1</td><td>-1.6</td><td>23.82</td><td>38.5</td><td>-14.6</td><td></td></tr><tr><td>824.20</td><td>17.92</td><td>H</td><td>1.1</td><td>-1.6</td><td>15.30</td><td>38.5</td><td>-23.2</td><td></td></tr><tr><td colspan="9">Mid Ch</td></tr><tr><td>836.60</td><td>26.07</td><td>V</td><td>1.1</td><td>-1.4</td><td>23.58</td><td>38.5</td><td>-14.9</td><td></td></tr><tr><td>836.60</td><td>19.26</td><td>H</td><td>1.1</td><td>-1.4</td><td>16.77</td><td>38.5</td><td>-21.7</td><td></td></tr><tr><td colspan="9">High Ch</td></tr><tr><td>848.80</td><td>24.79</td><td>V</td><td>1.1</td><td>-1.3</td><td>22.43</td><td>38.5</td><td>-16.0</td><td></td></tr><tr><td>848.80</td><td>19.44</td><td>H</td><td>1.1</td><td>-1.3</td><td>17.08</td><td>38.5</td><td>-21.4</td><td></td></tr></table> Rev. 3.17.11 Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm									f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes	Low Ch									824.20	26.44	V	1.1	-1.6	23.82	38.5	-14.6		824.20	17.92	H	1.1	-1.6	15.30	38.5	-23.2		Mid Ch									836.60	26.07	V	1.1	-1.4	23.58	38.5	-14.9		836.60	19.26	H	1.1	-1.4	16.77	38.5	-21.7		High Ch									848.80	24.79	V	1.1	-1.3	22.43	38.5	-16.0		848.80	19.44	H	1.1	-1.3	17.08	38.5	-21.4	
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes																																																																																										
	Low Ch																																																																																																		
	824.20	26.44	V	1.1	-1.6	23.82	38.5	-14.6																																																																																											
	824.20	17.92	H	1.1	-1.6	15.30	38.5	-23.2																																																																																											
	Mid Ch																																																																																																		
	836.60	26.07	V	1.1	-1.4	23.58	38.5	-14.9																																																																																											
	836.60	19.26	H	1.1	-1.4	16.77	38.5	-21.7																																																																																											
	High Ch																																																																																																		
	848.80	24.79	V	1.1	-1.3	22.43	38.5	-16.0																																																																																											
848.80	19.44	H	1.1	-1.3	17.08	38.5	-21.4																																																																																												

GSM 1900

GSM GSM1900 GPRS	High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 1 Company: Samsung Project #: 15K20515 Date: 04-23-15 Test Engineer: Steven.Kim Configuration: EUT ONLY, Z Position Mode: GPRS 1900MHz Test Equipment: Receiving: 3117, and Chamber 1 SMA Cables Substitution: 3115 Substitution, 3m SMA Cable Warehouse <table><tr><th>f GHz</th><th>SG reading (dBm)</th><th>Ant. Pol. (H/V)</th><th>Cable Loss (dB)</th><th>Antenna Gain (dBi)</th><th>EIRP (dBm)</th><th>Limit (dBm)</th><th>Delta (dB)</th><th>Notes</th></tr><tr><td>Low Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1850.20</td><td>20.4</td><td>V</td><td>1.60</td><td>9.12</td><td>27.93</td><td>33.0</td><td>-5.1</td></tr><tr><td>1850.20</td><td>24.4</td><td>H</td><td>1.60</td><td>9.12</td><td>31.95</td><td>33.0</td><td>-1.1</td></tr><tr><td>Mid Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1880.00</td><td>18.3</td><td>V</td><td>1.62</td><td>8.98</td><td>25.68</td><td>33.0</td><td>-7.3</td></tr><tr><td>1880.00</td><td>24.6</td><td>H</td><td>1.62</td><td>8.98</td><td>31.95</td><td>33.0</td><td>-1.1</td></tr><tr><td>High Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1909.80</td><td>17.5</td><td>V</td><td>1.63</td><td>8.83</td><td>24.73</td><td>33.0</td><td>-8.3</td></tr><tr><td>1909.80</td><td>24.6</td><td>H</td><td>1.63</td><td>8.83</td><td>31.82</td><td>33.0</td><td>-1.2</td></tr></table> Rev. 3.17.11									f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	Low Ch								1850.20	20.4	V	1.60	9.12	27.93	33.0	-5.1	1850.20	24.4	H	1.60	9.12	31.95	33.0	-1.1	Mid Ch								1880.00	18.3	V	1.62	8.98	25.68	33.0	-7.3	1880.00	24.6	H	1.62	8.98	31.95	33.0	-1.1	High Ch								1909.80	17.5	V	1.63	8.83	24.73	33.0	-8.3	1909.80	24.6	H	1.63	8.83	31.82	33.0	-1.2
	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes																																																																																	
	Low Ch																																																																																									
	1850.20	20.4	V	1.60	9.12	27.93	33.0	-5.1																																																																																		
	1850.20	24.4	H	1.60	9.12	31.95	33.0	-1.1																																																																																		
	Mid Ch																																																																																									
	1880.00	18.3	V	1.62	8.98	25.68	33.0	-7.3																																																																																		
	1880.00	24.6	H	1.62	8.98	31.95	33.0	-1.1																																																																																		
	High Ch																																																																																									
	1909.80	17.5	V	1.63	8.83	24.73	33.0	-8.3																																																																																		
1909.80	24.6	H	1.63	8.83	31.82	33.0	-1.2																																																																																			
GSM GSM1900 EGPRS	High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 1 Company: Samsung Project #: 15K20515 Date: 04-23-15 Test Engineer: Steven.Kim Configuration: EUT ONLY, Z Position Mode: EGPRS 1900MHz Test Equipment: Receiving: 3117, and Chamber 1 SMA Cables Substitution: 3115 Substitution, 3m SMA Cable Warehouse <table><tr><th>f GHz</th><th>SG reading (dBm)</th><th>Ant. Pol. (H/V)</th><th>Cable Loss (dB)</th><th>Antenna Gain (dBi)</th><th>EIRP (dBm)</th><th>Limit (dBm)</th><th>Delta (dB)</th><th>Notes</th></tr><tr><td>Low Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1850.20</td><td>18.8</td><td>V</td><td>1.60</td><td>9.12</td><td>26.32</td><td>33.0</td><td>-6.7</td></tr><tr><td>1850.20</td><td>22.3</td><td>H</td><td>1.60</td><td>9.12</td><td>29.82</td><td>33.0</td><td>-3.2</td></tr><tr><td>Mid Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1880.00</td><td>18.7</td><td>V</td><td>1.62</td><td>8.98</td><td>26.04</td><td>33.0</td><td>-7.0</td></tr><tr><td>1880.00</td><td>22.5</td><td>H</td><td>1.62</td><td>8.98</td><td>29.87</td><td>33.0</td><td>-3.1</td></tr><tr><td>High Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1909.80</td><td>18.5</td><td>V</td><td>1.63</td><td>8.83</td><td>25.70</td><td>33.0</td><td>-7.3</td></tr><tr><td>1909.80</td><td>22.4</td><td>H</td><td>1.63</td><td>8.83</td><td>29.63</td><td>33.0</td><td>-3.4</td></tr></table> Rev. 3.17.11									f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	Low Ch								1850.20	18.8	V	1.60	9.12	26.32	33.0	-6.7	1850.20	22.3	H	1.60	9.12	29.82	33.0	-3.2	Mid Ch								1880.00	18.7	V	1.62	8.98	26.04	33.0	-7.0	1880.00	22.5	H	1.62	8.98	29.87	33.0	-3.1	High Ch								1909.80	18.5	V	1.63	8.83	25.70	33.0	-7.3	1909.80	22.4	H	1.63	8.83	29.63	33.0	-3.4
	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes																																																																																	
	Low Ch																																																																																									
	1850.20	18.8	V	1.60	9.12	26.32	33.0	-6.7																																																																																		
	1850.20	22.3	H	1.60	9.12	29.82	33.0	-3.2																																																																																		
	Mid Ch																																																																																									
	1880.00	18.7	V	1.62	8.98	26.04	33.0	-7.0																																																																																		
	1880.00	22.5	H	1.62	8.98	29.87	33.0	-3.1																																																																																		
	High Ch																																																																																									
	1909.80	18.5	V	1.63	8.83	25.70	33.0	-7.3																																																																																		
1909.80	22.4	H	1.63	8.83	29.63	33.0	-3.4																																																																																			

WCDMA Band 5

WCDMA Band 5 REL99	High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 1 Company: Samsung Project #: 15K20515 Date: 04-23-15 Test Engineer: Steven.Kim Configuration: EUT ONLY, Y Position Mode: Rel 99_850 MHz Test Equipment: Receiving: VULB9163-750, and 3m Chamber N-type Cable (Setup this one for testing EUT) Substitution: Dipole S/N: 00164753, 3m SMA Cable Warehouse. <table><tr><th>f MHz</th><th>SG reading (dBm)</th><th>Ant. Pol. (H/V)</th><th>Cable Loss (dB)</th><th>Antenna Gain (dBd)</th><th>ERP (dBm)</th><th>Limit (dBm)</th><th>Margin (dB)</th><th>Notes</th></tr><tr><td>Low Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>826.40</td><td>20.60</td><td>V</td><td>1.1</td><td>-1.5</td><td>17.99</td><td>38.5</td><td>-20.5</td></tr><tr><td>826.40</td><td>13.75</td><td>H</td><td>1.1</td><td>-1.5</td><td>11.14</td><td>38.5</td><td>-27.3</td></tr><tr><td>Mid Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>836.60</td><td>21.03</td><td>V</td><td>1.1</td><td>-1.4</td><td>18.54</td><td>38.5</td><td>-19.9</td></tr><tr><td>836.60</td><td>14.86</td><td>H</td><td>1.1</td><td>-1.4</td><td>12.37</td><td>38.5</td><td>-26.1</td></tr><tr><td>High Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>846.60</td><td>20.31</td><td>V</td><td>1.1</td><td>-1.3</td><td>17.93</td><td>38.5</td><td>-20.5</td></tr><tr><td>846.60</td><td>15.22</td><td>H</td><td>1.1</td><td>-1.3</td><td>12.84</td><td>38.5</td><td>-25.6</td></tr></table> Rev. 3.17.11									f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes	Low Ch								826.40	20.60	V	1.1	-1.5	17.99	38.5	-20.5	826.40	13.75	H	1.1	-1.5	11.14	38.5	-27.3	Mid Ch								836.60	21.03	V	1.1	-1.4	18.54	38.5	-19.9	836.60	14.86	H	1.1	-1.4	12.37	38.5	-26.1	High Ch								846.60	20.31	V	1.1	-1.3	17.93	38.5	-20.5	846.60	15.22	H	1.1	-1.3	12.84	38.5	-25.6
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes																																																																																	
	Low Ch																																																																																									
	826.40	20.60	V	1.1	-1.5	17.99	38.5	-20.5																																																																																		
	826.40	13.75	H	1.1	-1.5	11.14	38.5	-27.3																																																																																		
	Mid Ch																																																																																									
	836.60	21.03	V	1.1	-1.4	18.54	38.5	-19.9																																																																																		
	836.60	14.86	H	1.1	-1.4	12.37	38.5	-26.1																																																																																		
	High Ch																																																																																									
	846.60	20.31	V	1.1	-1.3	17.93	38.5	-20.5																																																																																		
846.60	15.22	H	1.1	-1.3	12.84	38.5	-25.6																																																																																			
WCDMA Band 5 HSDPA	High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 1 Company: Samsung Project #: 15K20515 Date: 04-23-15 Test Engineer: Steven.Kim Configuration: EUT ONLY, Y Position Mode: HSDPA_850 MHz Test Equipment: Receiving: VULB9163-750, and 3m Chamber N-type Cable (Setup this one for testing EUT) Substitution: Dipole S/N: 00164753, 3m SMA Cable Warehouse. <table><tr><th>f MHz</th><th>SG reading (dBm)</th><th>Ant. Pol. (H/V)</th><th>Cable Loss (dB)</th><th>Antenna Gain (dBd)</th><th>ERP (dBm)</th><th>Limit (dBm)</th><th>Margin (dB)</th><th>Notes</th></tr><tr><td>Low Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>826.40</td><td>21.00</td><td>V</td><td>1.1</td><td>-1.5</td><td>18.39</td><td>38.5</td><td>-20.1</td></tr><tr><td>826.40</td><td>15.24</td><td>H</td><td>1.1</td><td>-1.5</td><td>12.63</td><td>38.5</td><td>-25.8</td></tr><tr><td>Mid Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>836.60</td><td>21.48</td><td>V</td><td>1.1</td><td>-1.4</td><td>18.99</td><td>38.5</td><td>-19.5</td></tr><tr><td>836.60</td><td>15.08</td><td>H</td><td>1.1</td><td>-1.4</td><td>12.59</td><td>38.5</td><td>-25.9</td></tr><tr><td>High Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>846.60</td><td>20.89</td><td>V</td><td>1.1</td><td>-1.3</td><td>18.51</td><td>38.5</td><td>-19.9</td></tr><tr><td>846.60</td><td>16.31</td><td>H</td><td>1.1</td><td>-1.3</td><td>13.93</td><td>38.5</td><td>-24.5</td></tr></table> Rev. 3.17.11									f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes	Low Ch								826.40	21.00	V	1.1	-1.5	18.39	38.5	-20.1	826.40	15.24	H	1.1	-1.5	12.63	38.5	-25.8	Mid Ch								836.60	21.48	V	1.1	-1.4	18.99	38.5	-19.5	836.60	15.08	H	1.1	-1.4	12.59	38.5	-25.9	High Ch								846.60	20.89	V	1.1	-1.3	18.51	38.5	-19.9	846.60	16.31	H	1.1	-1.3	13.93	38.5	-24.5
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes																																																																																	
	Low Ch																																																																																									
	826.40	21.00	V	1.1	-1.5	18.39	38.5	-20.1																																																																																		
	826.40	15.24	H	1.1	-1.5	12.63	38.5	-25.8																																																																																		
	Mid Ch																																																																																									
	836.60	21.48	V	1.1	-1.4	18.99	38.5	-19.5																																																																																		
	836.60	15.08	H	1.1	-1.4	12.59	38.5	-25.9																																																																																		
	High Ch																																																																																									
	846.60	20.89	V	1.1	-1.3	18.51	38.5	-19.9																																																																																		
846.60	16.31	H	1.1	-1.3	13.93	38.5	-24.5																																																																																			

WCDMA Band 2

WCDMA Band 2 REL99	High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 1 Company: Samsung Project #: 15K20515 Date: 04-23-15 Test Engineer: Steven.Kim Configuration: EUT ONLY, Z Position Mode: REL99_1900 MHz Test Equipment: Receiving: 3117, and Chamber 1 SMA Cables Substitution: 3115 Substitution, 3m SMA Cable Warehouse <table><tr><th>f MHz</th><th>SG reading (dBm)</th><th>Ant. Pol. (H/V)</th><th>Cable Loss (dB)</th><th>Antenna Gain (dBi)</th><th>EIRP (dBm)</th><th>Limit (dBm)</th><th>Margin (dB)</th><th>Notes</th></tr><tr><td colspan="9">Low Ch</td></tr><tr><td>1852.40</td><td>13.46</td><td>V</td><td>1.60</td><td>9.12</td><td>20.98</td><td>33.0</td><td>-12.0</td><td></td></tr><tr><td>1852.40</td><td>16.03</td><td>H</td><td>1.60</td><td>9.12</td><td>23.55</td><td>33.0</td><td>-9.5</td><td></td></tr><tr><td colspan="9">Mid Ch</td></tr><tr><td>1880.00</td><td>12.11</td><td>V</td><td>1.62</td><td>8.98</td><td>19.47</td><td>33.0</td><td>-13.5</td><td></td></tr><tr><td>1880.00</td><td>16.41</td><td>H</td><td>1.62</td><td>8.98</td><td>23.77</td><td>33.0</td><td>-9.2</td><td></td></tr><tr><td colspan="9">High Ch</td></tr><tr><td>1907.60</td><td>11.05</td><td>V</td><td>1.63</td><td>8.83</td><td>18.25</td><td>33.0</td><td>-14.7</td><td></td></tr><tr><td>1907.60</td><td>16.41</td><td>H</td><td>1.63</td><td>8.83</td><td>23.61</td><td>33.0</td><td>-9.4</td><td></td></tr></table> Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm									f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes	Low Ch									1852.40	13.46	V	1.60	9.12	20.98	33.0	-12.0		1852.40	16.03	H	1.60	9.12	23.55	33.0	-9.5		Mid Ch									1880.00	12.11	V	1.62	8.98	19.47	33.0	-13.5		1880.00	16.41	H	1.62	8.98	23.77	33.0	-9.2		High Ch									1907.60	11.05	V	1.63	8.83	18.25	33.0	-14.7		1907.60	16.41	H	1.63	8.83	23.61	33.0	-9.4	
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes																																																																																										
	Low Ch																																																																																																		
	1852.40	13.46	V	1.60	9.12	20.98	33.0	-12.0																																																																																											
	1852.40	16.03	H	1.60	9.12	23.55	33.0	-9.5																																																																																											
	Mid Ch																																																																																																		
	1880.00	12.11	V	1.62	8.98	19.47	33.0	-13.5																																																																																											
	1880.00	16.41	H	1.62	8.98	23.77	33.0	-9.2																																																																																											
	High Ch																																																																																																		
	1907.60	11.05	V	1.63	8.83	18.25	33.0	-14.7																																																																																											
1907.60	16.41	H	1.63	8.83	23.61	33.0	-9.4																																																																																												
WCDMA Band 2 HSDPA	High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 1 Company: Samsung Project #: 15K20515 Date: 04-23-15 Test Engineer: Steven.Kim Configuration: EUT ONLY, Z Position Mode: HSDPA_1900 MHz Test Equipment: Receiving: 3117, and Chamber 1 SMA Cables Substitution: 3115 Substitution, 3m SMA Cable Warehouse <table><tr><th>f MHz</th><th>SG reading (dBm)</th><th>Ant. Pol. (H/V)</th><th>Cable Loss (dB)</th><th>Antenna Gain (dBi)</th><th>EIRP (dBm)</th><th>Limit (dBm)</th><th>Margin (dB)</th><th>Notes</th></tr><tr><td colspan="9">Low Ch</td></tr><tr><td>1852.40</td><td>13.37</td><td>V</td><td>1.60</td><td>9.12</td><td>20.89</td><td>33.0</td><td>-12.1</td><td></td></tr><tr><td>1852.40</td><td>14.92</td><td>H</td><td>1.60</td><td>9.12</td><td>22.44</td><td>33.0</td><td>-10.6</td><td></td></tr><tr><td colspan="9">Mid Ch</td></tr><tr><td>1880.00</td><td>13.26</td><td>V</td><td>1.62</td><td>8.98</td><td>20.62</td><td>33.0</td><td>-12.4</td><td></td></tr><tr><td>1880.00</td><td>15.73</td><td>H</td><td>1.62</td><td>8.98</td><td>23.09</td><td>33.0</td><td>-9.9</td><td></td></tr><tr><td colspan="9">High Ch</td></tr><tr><td>1907.60</td><td>10.37</td><td>V</td><td>1.63</td><td>8.83</td><td>17.57</td><td>33.0</td><td>-15.4</td><td></td></tr><tr><td>1907.60</td><td>14.70</td><td>H</td><td>1.63</td><td>8.83</td><td>21.90</td><td>33.0</td><td>-11.1</td><td></td></tr></table> Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm									f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes	Low Ch									1852.40	13.37	V	1.60	9.12	20.89	33.0	-12.1		1852.40	14.92	H	1.60	9.12	22.44	33.0	-10.6		Mid Ch									1880.00	13.26	V	1.62	8.98	20.62	33.0	-12.4		1880.00	15.73	H	1.62	8.98	23.09	33.0	-9.9		High Ch									1907.60	10.37	V	1.63	8.83	17.57	33.0	-15.4		1907.60	14.70	H	1.63	8.83	21.90	33.0	-11.1	
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes																																																																																										
	Low Ch																																																																																																		
	1852.40	13.37	V	1.60	9.12	20.89	33.0	-12.1																																																																																											
	1852.40	14.92	H	1.60	9.12	22.44	33.0	-10.6																																																																																											
	Mid Ch																																																																																																		
	1880.00	13.26	V	1.62	8.98	20.62	33.0	-12.4																																																																																											
	1880.00	15.73	H	1.62	8.98	23.09	33.0	-9.9																																																																																											
	High Ch																																																																																																		
	1907.60	10.37	V	1.63	8.83	17.57	33.0	-15.4																																																																																											
1907.60	14.70	H	1.63	8.83	21.90	33.0	-11.1																																																																																												

LTE Band 17

LTE Band 17 10MHz QPSK	High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 1 Company: Samsung Project #: 15K20515 Date: 04-23-15 Test Engineer: Steven Kim Configuration: EUT / Z-Position Mode: LTE Band 17, QPSK, 10MHz Test Equipment: Receiving: VULB9163-750, and 3m Chamber N-type Cable (Setup this one for testing EUT) Substitution: Dipole S/N: 00164753, 3m SMA Cable Warehouse. <table><tr><th>f MHz</th><th>SG reading (dBm)</th><th>Ant. Pol. (H/V)</th><th>Cable Loss (dB)</th><th>Antenna Gain (dBd)</th><th>EIRP (dBm)</th><th>Limit (dBm)</th><th>Margin (dB)</th><th>Notes</th></tr><tr><td colspan="9">Low Ch</td></tr><tr><td>709.00</td><td>14.11</td><td>V</td><td>1.0</td><td>-1.6</td><td>11.51</td><td>34.8</td><td>-23.3</td><td></td></tr><tr><td>709.00</td><td>11.48</td><td>H</td><td>1.0</td><td>-1.6</td><td>8.88</td><td>34.8</td><td>-25.9</td><td></td></tr><tr><td colspan="9">Mid Ch</td></tr><tr><td>710.00</td><td>13.79</td><td>V</td><td>1.0</td><td>-1.6</td><td>11.19</td><td>34.8</td><td>-23.6</td><td></td></tr><tr><td>710.00</td><td>12.19</td><td>H</td><td>1.0</td><td>-1.6</td><td>9.59</td><td>34.8</td><td>-25.2</td><td></td></tr><tr><td colspan="9">High Ch</td></tr><tr><td>711.00</td><td>14.60</td><td>V</td><td>1.0</td><td>-1.6</td><td>12.00</td><td>34.8</td><td>-22.8</td><td></td></tr><tr><td>711.00</td><td>12.35</td><td>H</td><td>1.0</td><td>-1.6</td><td>9.75</td><td>34.8</td><td>-25.0</td><td></td></tr></table> Rev. 3.17.11 Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm									f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes	Low Ch									709.00	14.11	V	1.0	-1.6	11.51	34.8	-23.3		709.00	11.48	H	1.0	-1.6	8.88	34.8	-25.9		Mid Ch									710.00	13.79	V	1.0	-1.6	11.19	34.8	-23.6		710.00	12.19	H	1.0	-1.6	9.59	34.8	-25.2		High Ch									711.00	14.60	V	1.0	-1.6	12.00	34.8	-22.8		711.00	12.35	H	1.0	-1.6	9.75	34.8	-25.0	
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes																																																																																										
	Low Ch																																																																																																		
	709.00	14.11	V	1.0	-1.6	11.51	34.8	-23.3																																																																																											
	709.00	11.48	H	1.0	-1.6	8.88	34.8	-25.9																																																																																											
	Mid Ch																																																																																																		
	710.00	13.79	V	1.0	-1.6	11.19	34.8	-23.6																																																																																											
	710.00	12.19	H	1.0	-1.6	9.59	34.8	-25.2																																																																																											
	High Ch																																																																																																		
	711.00	14.60	V	1.0	-1.6	12.00	34.8	-22.8																																																																																											
711.00	12.35	H	1.0	-1.6	9.75	34.8	-25.0																																																																																												
LTE Band 17 10MHz 16QAM	High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 1 Company: Samsung Project #: 15K20515 Date: 04-23-15 Test Engineer: Steven Kim Configuration: EUT / Z-Position Mode: LTE Band 17 16QAM, 10MHz Test Equipment: Receiving: VULB9163-750, and 3m Chamber N-type Cable (Setup this one for testing EUT) Substitution: Dipole S/N: 00164753, 3m SMA Cable Warehouse. <table><tr><th>f MHz</th><th>SG reading (dBm)</th><th>Ant. Pol. (H/V)</th><th>Cable Loss (dB)</th><th>Antenna Gain (dBd)</th><th>EIRP (dBm)</th><th>Limit (dBm)</th><th>Margin (dB)</th><th>Notes</th></tr><tr><td colspan="9">Low Ch</td></tr><tr><td>709.00</td><td>13.49</td><td>V</td><td>1.0</td><td>-1.6</td><td>10.89</td><td>34.8</td><td>-23.9</td><td></td></tr><tr><td>709.00</td><td>10.37</td><td>H</td><td>1.0</td><td>-1.6</td><td>7.77</td><td>34.8</td><td>-27.0</td><td></td></tr><tr><td colspan="9">Mid Ch</td></tr><tr><td>710.00</td><td>13.72</td><td>V</td><td>1.0</td><td>-1.6</td><td>11.12</td><td>34.8</td><td>-23.7</td><td></td></tr><tr><td>710.00</td><td>10.61</td><td>H</td><td>1.0</td><td>-1.6</td><td>8.01</td><td>34.8</td><td>-26.8</td><td></td></tr><tr><td colspan="9">High Ch</td></tr><tr><td>711.00</td><td>12.79</td><td>V</td><td>1.0</td><td>-1.6</td><td>10.19</td><td>34.8</td><td>-24.6</td><td></td></tr><tr><td>711.00</td><td>10.38</td><td>H</td><td>1.0</td><td>-1.6</td><td>7.78</td><td>34.8</td><td>-27.0</td><td></td></tr></table> Rev. 3.17.11 Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm									f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes	Low Ch									709.00	13.49	V	1.0	-1.6	10.89	34.8	-23.9		709.00	10.37	H	1.0	-1.6	7.77	34.8	-27.0		Mid Ch									710.00	13.72	V	1.0	-1.6	11.12	34.8	-23.7		710.00	10.61	H	1.0	-1.6	8.01	34.8	-26.8		High Ch									711.00	12.79	V	1.0	-1.6	10.19	34.8	-24.6		711.00	10.38	H	1.0	-1.6	7.78	34.8	-27.0	
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes																																																																																										
	Low Ch																																																																																																		
	709.00	13.49	V	1.0	-1.6	10.89	34.8	-23.9																																																																																											
	709.00	10.37	H	1.0	-1.6	7.77	34.8	-27.0																																																																																											
	Mid Ch																																																																																																		
	710.00	13.72	V	1.0	-1.6	11.12	34.8	-23.7																																																																																											
	710.00	10.61	H	1.0	-1.6	8.01	34.8	-26.8																																																																																											
	High Ch																																																																																																		
	711.00	12.79	V	1.0	-1.6	10.19	34.8	-24.6																																																																																											
711.00	10.38	H	1.0	-1.6	7.78	34.8	-27.0																																																																																												

LTE Band 17 5MHz QPSK	High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 1 Company: Samsung Project #: 15K20515 Date: 04-23-15 Test Engineer: Steven Kim Configuration: EUT / Z-Position Mode: LTE Band 17, QPSK , 5MHz Test Equipment: Receiving: VULB9163-750, and 3m Chamber N-type Cable (Setup this one for testing EUT) Substitution: Dipole S/N: 00164753, 3m SMA Cable Warehouse. <table><tr><th>f MHz</th><th>SG reading (dBm)</th><th>Ant. Pol. (H/V)</th><th>Cable Loss (dB)</th><th>Antenna Gain (dBd)</th><th>EIRP (dBm)</th><th>Limit (dBm)</th><th>Margin (dB)</th><th>Notes</th></tr><tr><td>Low Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>706.50</td><td>13.07</td><td>V</td><td>1.0</td><td>-1.6</td><td>10.47</td><td>34.8</td><td>-24.3</td></tr><tr><td>706.50</td><td>11.80</td><td>H</td><td>1.0</td><td>-1.6</td><td>9.20</td><td>34.8</td><td>-25.6</td></tr><tr><td>Mid Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>710.00</td><td>14.23</td><td>V</td><td>1.0</td><td>-1.6</td><td>11.63</td><td>34.8</td><td>-23.1</td></tr><tr><td>710.00</td><td>11.38</td><td>H</td><td>1.0</td><td>-1.6</td><td>8.78</td><td>34.8</td><td>-26.0</td></tr><tr><td>High Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>713.50</td><td>12.00</td><td>V</td><td>1.0</td><td>-1.6</td><td>9.40</td><td>34.8</td><td>-25.4</td></tr><tr><td>713.50</td><td>12.71</td><td>H</td><td>1.0</td><td>-1.6</td><td>10.11</td><td>34.8</td><td>-24.7</td></tr></table> Rev. 3.17.11 Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm									f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes	Low Ch								706.50	13.07	V	1.0	-1.6	10.47	34.8	-24.3	706.50	11.80	H	1.0	-1.6	9.20	34.8	-25.6	Mid Ch								710.00	14.23	V	1.0	-1.6	11.63	34.8	-23.1	710.00	11.38	H	1.0	-1.6	8.78	34.8	-26.0	High Ch								713.50	12.00	V	1.0	-1.6	9.40	34.8	-25.4	713.50	12.71	H	1.0	-1.6	10.11	34.8	-24.7
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes																																																																																	
	Low Ch																																																																																									
	706.50	13.07	V	1.0	-1.6	10.47	34.8	-24.3																																																																																		
	706.50	11.80	H	1.0	-1.6	9.20	34.8	-25.6																																																																																		
	Mid Ch																																																																																									
	710.00	14.23	V	1.0	-1.6	11.63	34.8	-23.1																																																																																		
	710.00	11.38	H	1.0	-1.6	8.78	34.8	-26.0																																																																																		
	High Ch																																																																																									
	713.50	12.00	V	1.0	-1.6	9.40	34.8	-25.4																																																																																		
713.50	12.71	H	1.0	-1.6	10.11	34.8	-24.7																																																																																			
LTE Band 17 5MHz 16QAM	High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 1 Company: Samsung Project #: 15K20515 Date: 04-23-15 Test Engineer: Steven Kim Configuration: EUT / Z-Position Mode: LTE Band 17 16QAM, 5MHz Test Equipment: Receiving: VULB9163-750, and 3m Chamber N-type Cable (Setup this one for testing EUT) Substitution: Dipole S/N: 00164753, 3m SMA Cable Warehouse. <table><tr><th>f MHz</th><th>SG reading (dBm)</th><th>Ant. Pol. (H/V)</th><th>Cable Loss (dB)</th><th>Antenna Gain (dBd)</th><th>EIRP (dBm)</th><th>Limit (dBm)</th><th>Margin (dB)</th><th>Notes</th></tr><tr><td>Low Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>706.50</td><td>12.67</td><td>V</td><td>1.0</td><td>-1.6</td><td>10.07</td><td>34.8</td><td>-24.7</td></tr><tr><td>706.50</td><td>10.84</td><td>H</td><td>1.0</td><td>-1.6</td><td>8.24</td><td>34.8</td><td>-26.5</td></tr><tr><td>Mid Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>710.00</td><td>10.71</td><td>V</td><td>1.0</td><td>-1.6</td><td>8.11</td><td>34.8</td><td>-26.7</td></tr><tr><td>710.00</td><td>10.34</td><td>H</td><td>1.0</td><td>-1.6</td><td>7.74</td><td>34.8</td><td>-27.0</td></tr><tr><td>High Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>713.50</td><td>13.78</td><td>V</td><td>1.0</td><td>-1.6</td><td>11.18</td><td>34.8</td><td>-23.6</td></tr><tr><td>713.50</td><td>10.91</td><td>H</td><td>1.0</td><td>-1.6</td><td>8.31</td><td>34.8</td><td>-26.5</td></tr></table> Rev. 3.17.11 Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm									f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes	Low Ch								706.50	12.67	V	1.0	-1.6	10.07	34.8	-24.7	706.50	10.84	H	1.0	-1.6	8.24	34.8	-26.5	Mid Ch								710.00	10.71	V	1.0	-1.6	8.11	34.8	-26.7	710.00	10.34	H	1.0	-1.6	7.74	34.8	-27.0	High Ch								713.50	13.78	V	1.0	-1.6	11.18	34.8	-23.6	713.50	10.91	H	1.0	-1.6	8.31	34.8	-26.5
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes																																																																																	
	Low Ch																																																																																									
	706.50	12.67	V	1.0	-1.6	10.07	34.8	-24.7																																																																																		
	706.50	10.84	H	1.0	-1.6	8.24	34.8	-26.5																																																																																		
	Mid Ch																																																																																									
	710.00	10.71	V	1.0	-1.6	8.11	34.8	-26.7																																																																																		
	710.00	10.34	H	1.0	-1.6	7.74	34.8	-27.0																																																																																		
	High Ch																																																																																									
	713.50	13.78	V	1.0	-1.6	11.18	34.8	-23.6																																																																																		
713.50	10.91	H	1.0	-1.6	8.31	34.8	-26.5																																																																																			

LTE Band 5

LTE Band 5 10MHz QPSK	High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 1 Company: Samsung Project #: 15K20515 Date: 04-23-15 Test Engineer: Steven.Kim Configuration: EUT ONLY, Y Position Mode: TX, LTE BAND 5, 10MHz BW,QPSK Test Equipment: Receiving: VULB9163-750, and 3m Chamber N-type Cable (Setup this one for testing EUT) Substitution: Dipole S/N: 00164753, 3m SMA Cable Warehouse. <table><tr><th>f MHz</th><th>SG reading (dBm)</th><th>Ant. Pol. (H/V)</th><th>Cable Loss (dB)</th><th>Antenna Gain (dBd)</th><th>ERP (dBm)</th><th>Limit (dBm)</th><th>Margin (dB)</th><th>Notes</th></tr><tr><td colspan="9">Low Ch</td></tr><tr><td>829.00</td><td>18.39</td><td>V</td><td>1.1</td><td>-1.5</td><td>15.81</td><td>38.5</td><td>-22.6</td><td></td></tr><tr><td>829.00</td><td>12.83</td><td>H</td><td>1.1</td><td>-1.5</td><td>10.25</td><td>38.5</td><td>-28.2</td><td></td></tr><tr><td colspan="9">Mid Ch</td></tr><tr><td>836.50</td><td>18.13</td><td>V</td><td>1.1</td><td>-1.4</td><td>15.64</td><td>38.5</td><td>-22.8</td><td></td></tr><tr><td>836.50</td><td>12.99</td><td>H</td><td>1.1</td><td>-1.4</td><td>10.50</td><td>38.5</td><td>-28.0</td><td></td></tr><tr><td colspan="9">High Ch</td></tr><tr><td>844.00</td><td>18.41</td><td>V</td><td>1.1</td><td>-1.3</td><td>16.02</td><td>38.5</td><td>-22.4</td><td></td></tr><tr><td>844.00</td><td>12.04</td><td>H</td><td>1.1</td><td>-1.3</td><td>9.62</td><td>38.5</td><td>-28.8</td><td></td></tr></table> Rev. 3.17.11 Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm									f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes	Low Ch									829.00	18.39	V	1.1	-1.5	15.81	38.5	-22.6		829.00	12.83	H	1.1	-1.5	10.25	38.5	-28.2		Mid Ch									836.50	18.13	V	1.1	-1.4	15.64	38.5	-22.8		836.50	12.99	H	1.1	-1.4	10.50	38.5	-28.0		High Ch									844.00	18.41	V	1.1	-1.3	16.02	38.5	-22.4		844.00	12.04	H	1.1	-1.3	9.62	38.5	-28.8	
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes																																																																																										
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	829.00	18.39	V	1.1	-1.5	15.81	38.5	-22.6																																																																																											
	829.00	12.83	H	1.1	-1.5	10.25	38.5	-28.2																																																																																											
	Mid Ch																																																																																																		
	836.50	18.13	V	1.1	-1.4	15.64	38.5	-22.8																																																																																											
	836.50	12.99	H	1.1	-1.4	10.50	38.5	-28.0																																																																																											
	High Ch																																																																																																		
	844.00	18.41	V	1.1	-1.3	16.02	38.5	-22.4																																																																																											
844.00	12.04	H	1.1	-1.3	9.62	38.5	-28.8																																																																																												
LTE Band 5 10MHz 16QAM	High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 1 Company: Samsung Project #: 15K20515 Date: 04-23-15 Test Engineer: Steven.Kim Configuration: EUT ONLY, Y Position Mode: LTE5 10MHz FUND 16QAM Test Equipment: Receiving: VULB9163-750, and 3m Chamber N-type Cable (Setup this one for testing EUT) Substitution: Dipole S/N: 00164753, 3m SMA Cable Warehouse. <table><tr><th>f MHz</th><th>SG reading (dBm)</th><th>Ant. Pol. (H/V)</th><th>Cable Loss (dB)</th><th>Antenna Gain (dBd)</th><th>ERP (dBm)</th><th>Limit (dBm)</th><th>Margin (dB)</th><th>Notes</th></tr><tr><td colspan="9">Low Ch</td></tr><tr><td>829.00</td><td>16.65</td><td>V</td><td>1.1</td><td>-1.5</td><td>14.07</td><td>38.5</td><td>-24.4</td><td></td></tr><tr><td>829.00</td><td>11.49</td><td>H</td><td>1.1</td><td>-1.5</td><td>8.91</td><td>38.5</td><td>-29.5</td><td></td></tr><tr><td colspan="9">Mid Ch</td></tr><tr><td>836.50</td><td>17.02</td><td>V</td><td>1.1</td><td>-1.4</td><td>14.51</td><td>38.5</td><td>-23.9</td><td></td></tr><tr><td>836.50</td><td>11.78</td><td>H</td><td>1.1</td><td>-1.4</td><td>9.27</td><td>38.5</td><td>-29.2</td><td></td></tr><tr><td colspan="9">High Ch</td></tr><tr><td>844.00</td><td>17.34</td><td>V</td><td>1.1</td><td>-1.3</td><td>14.92</td><td>38.5</td><td>-23.5</td><td></td></tr><tr><td>844.00</td><td>10.68</td><td>H</td><td>1.1</td><td>-1.3</td><td>8.26</td><td>38.5</td><td>-30.2</td><td></td></tr></table> Rev. 3.17.11 Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm									f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes	Low Ch									829.00	16.65	V	1.1	-1.5	14.07	38.5	-24.4		829.00	11.49	H	1.1	-1.5	8.91	38.5	-29.5		Mid Ch									836.50	17.02	V	1.1	-1.4	14.51	38.5	-23.9		836.50	11.78	H	1.1	-1.4	9.27	38.5	-29.2		High Ch									844.00	17.34	V	1.1	-1.3	14.92	38.5	-23.5		844.00	10.68	H	1.1	-1.3	8.26	38.5	-30.2	
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes																																																																																										
	Low Ch																																																																																																		
	829.00	16.65	V	1.1	-1.5	14.07	38.5	-24.4																																																																																											
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	836.50	17.02	V	1.1	-1.4	14.51	38.5	-23.9																																																																																											
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	844.00	17.34	V	1.1	-1.3	14.92	38.5	-23.5																																																																																											
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LTE Band 5 5MHz QPSK	High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 1 Company: Samsung Project #: 15K20515 Date: 04-23-15 Test Engineer: Steven.Kim Configuration: EUT ONLY, Y Position Mode: LTE5 5MHz FUND QPSK Test Equipment: Receiving: VULB9163-750, and 3m Chamber N-type Cable (Setup this one for testing EUT) Substitution: Dipole S/N: 00164753, 3m SMA Cable Warehouse. <table><tr><th>f MHz</th><th>SG reading (dBm)</th><th>Ant. Pol. (H/V)</th><th>Cable Loss (dB)</th><th>Antenna Gain (dBd)</th><th>ERP (dBm)</th><th>Limit (dBm)</th><th>Margin (dB)</th><th>Notes</th></tr><tr><td colspan="9">Low Ch</td></tr><tr><td>826.50</td><td>16.80</td><td>V</td><td>1.1</td><td>-1.5</td><td>14.20</td><td>38.5</td><td>-24.3</td><td></td></tr><tr><td>826.50</td><td>12.08</td><td>H</td><td>1.1</td><td>-1.5</td><td>9.48</td><td>38.5</td><td>-29.0</td><td></td></tr><tr><td colspan="9">Mid Ch</td></tr><tr><td>836.50</td><td>18.31</td><td>V</td><td>1.1</td><td>-1.4</td><td>15.82</td><td>38.5</td><td>-22.6</td><td></td></tr><tr><td>836.50</td><td>11.60</td><td>H</td><td>1.1</td><td>-1.4</td><td>9.11</td><td>38.5</td><td>-29.3</td><td></td></tr><tr><td colspan="9">High Ch</td></tr><tr><td>846.50</td><td>18.16</td><td>V</td><td>1.6</td><td>-1.3</td><td>15.28</td><td>38.5</td><td>-23.2</td><td></td></tr><tr><td>846.50</td><td>11.48</td><td>H</td><td>1.6</td><td>-1.3</td><td>8.60</td><td>38.5</td><td>-29.8</td><td></td></tr></table> Rev. 3.17.11 Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm									f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes	Low Ch									826.50	16.80	V	1.1	-1.5	14.20	38.5	-24.3		826.50	12.08	H	1.1	-1.5	9.48	38.5	-29.0		Mid Ch									836.50	18.31	V	1.1	-1.4	15.82	38.5	-22.6		836.50	11.60	H	1.1	-1.4	9.11	38.5	-29.3		High Ch									846.50	18.16	V	1.6	-1.3	15.28	38.5	-23.2		846.50	11.48	H	1.6	-1.3	8.60	38.5	-29.8	
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes																																																																																										
	Low Ch																																																																																																		
	826.50	16.80	V	1.1	-1.5	14.20	38.5	-24.3																																																																																											
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	836.50	18.31	V	1.1	-1.4	15.82	38.5	-22.6																																																																																											
	836.50	11.60	H	1.1	-1.4	9.11	38.5	-29.3																																																																																											
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	846.50	18.16	V	1.6	-1.3	15.28	38.5	-23.2																																																																																											
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LTE Band 5 5MHz 16QAM	High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 1 Company: Samsung Project #: 15K20515 Date: 04-23-15 Test Engineer: Steven.Kim Configuration: EUT ONLY, Y Position Mode: LTE5 5MHz FUND 16QAM Test Equipment: Receiving: VULB9163-750, and 3m Chamber N-type Cable (Setup this one for testing EUT) Substitution: Dipole S/N: 00164753, 3m SMA Cable Warehouse. <table><tr><th>f MHz</th><th>SG reading (dBm)</th><th>Ant. Pol. (H/V)</th><th>Cable Loss (dB)</th><th>Antenna Gain (dBd)</th><th>ERP (dBm)</th><th>Limit (dBm)</th><th>Margin (dB)</th><th>Notes</th></tr><tr><td colspan="9">Low Ch</td></tr><tr><td>826.50</td><td>17.53</td><td>V</td><td>1.1</td><td>-1.5</td><td>14.93</td><td>38.5</td><td>-23.5</td><td></td></tr><tr><td>826.50</td><td>11.35</td><td>H</td><td>1.1</td><td>-1.5</td><td>8.75</td><td>38.5</td><td>-29.7</td><td></td></tr><tr><td colspan="9">Mid Ch</td></tr><tr><td>836.50</td><td>18.55</td><td>V</td><td>1.1</td><td>-1.4</td><td>16.06</td><td>38.5</td><td>-22.4</td><td></td></tr><tr><td>836.50</td><td>12.25</td><td>H</td><td>1.1</td><td>-1.4</td><td>9.76</td><td>38.5</td><td>-28.7</td><td></td></tr><tr><td colspan="9">High Ch</td></tr><tr><td>846.50</td><td>17.68</td><td>V</td><td>1.1</td><td>-1.3</td><td>15.30</td><td>38.5</td><td>-23.2</td><td></td></tr><tr><td>846.50</td><td>11.33</td><td>H</td><td>1.1</td><td>-1.3</td><td>8.95</td><td>38.5</td><td>-29.5</td><td></td></tr></table> Rev. 3.17.11 Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm									f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes	Low Ch									826.50	17.53	V	1.1	-1.5	14.93	38.5	-23.5		826.50	11.35	H	1.1	-1.5	8.75	38.5	-29.7		Mid Ch									836.50	18.55	V	1.1	-1.4	16.06	38.5	-22.4		836.50	12.25	H	1.1	-1.4	9.76	38.5	-28.7		High Ch									846.50	17.68	V	1.1	-1.3	15.30	38.5	-23.2		846.50	11.33	H	1.1	-1.3	8.95	38.5	-29.5	
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes																																																																																										
	Low Ch																																																																																																		
	826.50	17.53	V	1.1	-1.5	14.93	38.5	-23.5																																																																																											
	826.50	11.35	H	1.1	-1.5	8.75	38.5	-29.7																																																																																											
	Mid Ch																																																																																																		
	836.50	18.55	V	1.1	-1.4	16.06	38.5	-22.4																																																																																											
	836.50	12.25	H	1.1	-1.4	9.76	38.5	-28.7																																																																																											
	High Ch																																																																																																		
	846.50	17.68	V	1.1	-1.3	15.30	38.5	-23.2																																																																																											
846.50	11.33	H	1.1	-1.3	8.95	38.5	-29.5																																																																																												

LTE Band 5 3MHz QPSK	High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 1								
	Company: Samsung Project #: 15K20515 Date: 04-23-15 Test Engineer: Steven.Kim Configuration: EUT ONLY, Y Position Mode: LTE5 3MHz FUND QPSK								
	Test Equipment: Receiving: VULB9163-750, and 3m Chamber N-type Cable (Setup this one for testing EUT) Substitution: Dipole S/N: 00164753, 3m SMA Cable Warehouse.								
	f	SG reading	Ant. Pol.	Cable Loss	Antenna Gain	ERP	Limit	Margin	Notes
	MHz	(dBm)	(H/V)	(dB)	(dBd)	(dBm)	(dBm)	(dB)	
	Low Ch								
	825.50	14.49	V	1.1	-1.5	11.89	38.5	-26.6	
	825.50	8.64	H	1.1	-1.5	6.04	38.5	-32.4	
	Mid Ch								
	836.50	15.64	V	1.1	-1.4	13.15	38.5	-25.3	
	836.50	9.20	H	1.1	-1.4	6.71	38.5	-31.7	
	High Ch								
	847.50	15.09	V	1.6	-1.3	12.21	38.5	-26.2	
	847.50	8.02	H	1.6	-1.3	5.14	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 5 3MHz 16QAM	High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 1								
	Company: Samsung Project #: 15K20515 Date: 04-23-15 Test Engineer: Steven.Kim Configuration: EUT ONLY, Y Position Mode: LTE5 3MHz FUND 16QAM								
	Test Equipment: Receiving: VULB9163-750, and 3m Chamber N-type Cable (Setup this one for testing EUT) Substitution: Dipole S/N: 00164753, 3m SMA Cable Warehouse.								
	f	SG reading	Ant. Pol.	Cable Loss	Antenna Gain	ERP	Limit	Margin	Notes
	MHz	(dBm)	(H/V)	(dB)	(dBd)	(dBm)	(dBm)	(dB)	
	Low Ch								
	825.50	13.24	V	1.1	-1.5	10.64	38.5	-27.8	
	825.50	7.83	H	1.1	-1.5	5.23	38.5	-33.2	
	Mid Ch								
	836.50	14.73	V	1.1	-1.4	12.24	38.5	-26.2	
	836.50	7.79	H	1.1	-1.4	5.30	38.5	-33.2	
	High Ch								
	847.50	14.15	V	1.1	-1.3	11.77	38.5	-26.7	
	847.50	7.69	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 5 1.4MHz QPSK	High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 1 Company: Samsung Project #: 15K20515 Date: 04-23-15 Test Engineer: Steven.Kim Configuration: EUT ONLY, Y Position Mode: LTE5 1.4MHz FUND QPSK Test Equipment: Receiving: VULB9163-750, and 3m Chamber N-type Cable (Setup this one for testing EUT) Substitution: Dipole S/N: 00164753, 3m SMA Cable Warehouse. <table><tr><th>f MHz</th><th>SG reading (dBm)</th><th>Ant. Pol. (H/V)</th><th>Cable Loss (dB)</th><th>Antenna Gain (dBd)</th><th>ERP (dBm)</th><th>Limit (dBm)</th><th>Margin (dB)</th><th>Notes</th></tr><tr><td>Low Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>824.70</td><td>14.86</td><td>V</td><td>1.1</td><td>-1.5</td><td>12.26</td><td>38.5</td><td>-26.2</td></tr><tr><td>824.70</td><td>8.51</td><td>H</td><td>1.1</td><td>-1.5</td><td>5.91</td><td>38.5</td><td>-32.5</td></tr><tr><td>Mid Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>836.50</td><td>16.22</td><td>V</td><td>1.1</td><td>-1.4</td><td>13.73</td><td>38.5</td><td>-24.7</td></tr><tr><td>836.50</td><td>8.22</td><td>H</td><td>1.1</td><td>-1.4</td><td>5.73</td><td>38.5</td><td>-32.7</td></tr><tr><td>High Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>844.30</td><td>15.28</td><td>V</td><td>1.6</td><td>-1.3</td><td>12.40</td><td>38.5</td><td>-26.0</td></tr><tr><td>844.30</td><td>8.18</td><td>H</td><td>1.6</td><td>-1.3</td><td>5.30</td><td>38.5</td><td>-33.1</td></tr></table> Rev. 3.17.11 Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm									f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes	Low Ch								824.70	14.86	V	1.1	-1.5	12.26	38.5	-26.2	824.70	8.51	H	1.1	-1.5	5.91	38.5	-32.5	Mid Ch								836.50	16.22	V	1.1	-1.4	13.73	38.5	-24.7	836.50	8.22	H	1.1	-1.4	5.73	38.5	-32.7	High Ch								844.30	15.28	V	1.6	-1.3	12.40	38.5	-26.0	844.30	8.18	H	1.6	-1.3	5.30	38.5	-33.1
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes																																																																																	
	Low Ch																																																																																									
	824.70	14.86	V	1.1	-1.5	12.26	38.5	-26.2																																																																																		
	824.70	8.51	H	1.1	-1.5	5.91	38.5	-32.5																																																																																		
	Mid Ch																																																																																									
	836.50	16.22	V	1.1	-1.4	13.73	38.5	-24.7																																																																																		
	836.50	8.22	H	1.1	-1.4	5.73	38.5	-32.7																																																																																		
	High Ch																																																																																									
	844.30	15.28	V	1.6	-1.3	12.40	38.5	-26.0																																																																																		
844.30	8.18	H	1.6	-1.3	5.30	38.5	-33.1																																																																																			
LTE Band 5 1.4MHz 16QAM	High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 1 Company: Samsung Project #: 15K20515 Date: 04-23-15 Test Engineer: Steven.Kim Configuration: EUT ONLY, Y Position Mode: LTE5 1.4MHz FUND 16QAM Test Equipment: Receiving: VULB9163-750, and 3m Chamber N-type Cable (Setup this one for testing EUT) Substitution: Dipole S/N: 00164753, 3m SMA Cable Warehouse. <table><tr><th>f MHz</th><th>SG reading (dBm)</th><th>Ant. Pol. (H/V)</th><th>Cable Loss (dB)</th><th>Antenna Gain (dBd)</th><th>ERP (dBm)</th><th>Limit (dBm)</th><th>Margin (dB)</th><th>Notes</th></tr><tr><td>Low Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>824.70</td><td>13.73</td><td>V</td><td>1.1</td><td>-1.5</td><td>11.13</td><td>38.5</td><td>-27.3</td></tr><tr><td>824.70</td><td>7.75</td><td>H</td><td>1.1</td><td>-1.5</td><td>5.15</td><td>38.5</td><td>-33.3</td></tr><tr><td>Mid Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>836.50</td><td>13.85</td><td>V</td><td>1.1</td><td>-1.4</td><td>11.36</td><td>38.5</td><td>-27.1</td></tr><tr><td>836.50</td><td>8.08</td><td>H</td><td>1.1</td><td>-1.4</td><td>5.59</td><td>38.5</td><td>-32.9</td></tr><tr><td>High Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>844.30</td><td>14.15</td><td>V</td><td>1.1</td><td>-1.3</td><td>11.77</td><td>38.5</td><td>-26.7</td></tr><tr><td>844.30</td><td>7.58</td><td>H</td><td>1.1</td><td>-1.3</td><td>5.20</td><td>38.5</td><td>-33.3</td></tr></table> Rev. 3.17.11 Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm									f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes	Low Ch								824.70	13.73	V	1.1	-1.5	11.13	38.5	-27.3	824.70	7.75	H	1.1	-1.5	5.15	38.5	-33.3	Mid Ch								836.50	13.85	V	1.1	-1.4	11.36	38.5	-27.1	836.50	8.08	H	1.1	-1.4	5.59	38.5	-32.9	High Ch								844.30	14.15	V	1.1	-1.3	11.77	38.5	-26.7	844.30	7.58	H	1.1	-1.3	5.20	38.5	-33.3
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes																																																																																	
	Low Ch																																																																																									
	824.70	13.73	V	1.1	-1.5	11.13	38.5	-27.3																																																																																		
	824.70	7.75	H	1.1	-1.5	5.15	38.5	-33.3																																																																																		
	Mid Ch																																																																																									
	836.50	13.85	V	1.1	-1.4	11.36	38.5	-27.1																																																																																		
	836.50	8.08	H	1.1	-1.4	5.59	38.5	-32.9																																																																																		
	High Ch																																																																																									
	844.30	14.15	V	1.1	-1.3	11.77	38.5	-26.7																																																																																		
844.30	7.58	H	1.1	-1.3	5.20	38.5	-33.3																																																																																			

LTE Band 4

LTE Band 4 20MHz QPSK	High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 1 Company: Samsung Project #: 15K20515 Date: 04-23-15 Test Engineer: Steven.Kim Configuration: EUT / Z-Position Mode: LTE Band 4, QPSK, 20MHz Test Equipment: Receiving: 3117, and Chamber 1 SMA Cables Substitution: 3115 Substitution, 3m SMA Cable Warehouse <table><tr><th>f MHz</th><th>SG reading (dBm)</th><th>Ant. Pol. (H/V)</th><th>Cable Loss (dB)</th><th>Antenna Gain (dBi)</th><th>EIRP (dBm)</th><th>Limit (dBm)</th><th>Margin (dB)</th><th>Notes</th></tr><tr><td colspan="9">Low Ch</td></tr><tr><td>1720.00</td><td>10.36</td><td>V</td><td>1.54</td><td>9.12</td><td>17.94</td><td>30.0</td><td>-12.1</td><td></td></tr><tr><td>1720.00</td><td>14.60</td><td>H</td><td>1.54</td><td>9.12</td><td>22.18</td><td>30.0</td><td>-7.8</td><td></td></tr><tr><td colspan="9">Mid Ch</td></tr><tr><td>1732.50</td><td>11.23</td><td>V</td><td>1.55</td><td>9.42</td><td>19.10</td><td>30.0</td><td>-10.9</td><td></td></tr><tr><td>1732.50</td><td>14.18</td><td>H</td><td>1.55</td><td>9.42</td><td>22.05</td><td>30.0</td><td>-8.0</td><td></td></tr><tr><td colspan="9">High Ch</td></tr><tr><td>1745.00</td><td>9.72</td><td>V</td><td>1.56</td><td>9.61</td><td>17.77</td><td>30.0</td><td>-12.2</td><td></td></tr><tr><td>1745.00</td><td>15.12</td><td>H</td><td>1.56</td><td>9.61</td><td>23.17</td><td>30.0</td><td>-6.8</td><td></td></tr></table> Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm									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	10.36	V	1.54	9.12	17.94	30.0	-12.1		1720.00	14.60	H	1.54	9.12	22.18	30.0	-7.8		Mid Ch									1732.50	11.23	V	1.55	9.42	19.10	30.0	-10.9		1732.50	14.18	H	1.55	9.42	22.05	30.0	-8.0		High Ch									1745.00	9.72	V	1.56	9.61	17.77	30.0	-12.2		1745.00	15.12	H	1.56	9.61	23.17	30.0	-6.8	
	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	10.36	V	1.54	9.12	17.94	30.0	-12.1																																																																																											
	1720.00	14.60	H	1.54	9.12	22.18	30.0	-7.8																																																																																											
	Mid Ch																																																																																																		
	1732.50	11.23	V	1.55	9.42	19.10	30.0	-10.9																																																																																											
	1732.50	14.18	H	1.55	9.42	22.05	30.0	-8.0																																																																																											
	High Ch																																																																																																		
	1745.00	9.72	V	1.56	9.61	17.77	30.0	-12.2																																																																																											
1745.00	15.12	H	1.56	9.61	23.17	30.0	-6.8																																																																																												
LTE Band 4 20MHz 16QAM	High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 1 Company: Samsung Project #: 15K20515 Date: 04-23-15 Test Engineer: Steven.Kim Configuration: EUT / Z-Position Mode: LTE Band 4, 16QAM, 20MHz Test Equipment: Receiving: 3117, and Chamber 1 SMA Cables Substitution: 3115 Substitution, 3m SMA Cable Warehouse <table><tr><th>f MHz</th><th>SG reading (dBm)</th><th>Ant. Pol. (H/V)</th><th>Cable Loss (dB)</th><th>Antenna Gain (dBi)</th><th>EIRP (dBm)</th><th>Limit (dBm)</th><th>Margin (dB)</th><th>Notes</th></tr><tr><td colspan="9">Low Ch</td></tr><tr><td>1720.00</td><td>9.33</td><td>V</td><td>1.54</td><td>9.12</td><td>16.91</td><td>30.0</td><td>-13.1</td><td></td></tr><tr><td>1720.00</td><td>13.34</td><td>H</td><td>1.54</td><td>9.12</td><td>20.92</td><td>30.0</td><td>-9.1</td><td></td></tr><tr><td colspan="9">Mid Ch</td></tr><tr><td>1732.50</td><td>10.11</td><td>V</td><td>1.55</td><td>9.42</td><td>17.98</td><td>30.0</td><td>-12.0</td><td></td></tr><tr><td>1732.50</td><td>13.95</td><td>H</td><td>1.55</td><td>9.42</td><td>21.82</td><td>30.0</td><td>-8.2</td><td></td></tr><tr><td colspan="9">High Ch</td></tr><tr><td>1745.00</td><td>8.64</td><td>V</td><td>1.56</td><td>9.61</td><td>16.69</td><td>30.0</td><td>-13.3</td><td></td></tr><tr><td>1745.00</td><td>13.15</td><td>H</td><td>1.56</td><td>9.61</td><td>21.20</td><td>30.0</td><td>-8.8</td><td></td></tr></table> Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm									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	9.33	V	1.54	9.12	16.91	30.0	-13.1		1720.00	13.34	H	1.54	9.12	20.92	30.0	-9.1		Mid Ch									1732.50	10.11	V	1.55	9.42	17.98	30.0	-12.0		1732.50	13.95	H	1.55	9.42	21.82	30.0	-8.2		High Ch									1745.00	8.64	V	1.56	9.61	16.69	30.0	-13.3		1745.00	13.15	H	1.56	9.61	21.20	30.0	-8.8	
	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	9.33	V	1.54	9.12	16.91	30.0	-13.1																																																																																											
	1720.00	13.34	H	1.54	9.12	20.92	30.0	-9.1																																																																																											
	Mid Ch																																																																																																		
	1732.50	10.11	V	1.55	9.42	17.98	30.0	-12.0																																																																																											
	1732.50	13.95	H	1.55	9.42	21.82	30.0	-8.2																																																																																											
	High Ch																																																																																																		
	1745.00	8.64	V	1.56	9.61	16.69	30.0	-13.3																																																																																											
1745.00	13.15	H	1.56	9.61	21.20	30.0	-8.8																																																																																												

LTE Band 4 15MHz QPSK	High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 1 Company: Samsung Project #: 15K20515 Date: 04-23-15 Test Engineer: Steven.Kim Configuration: EUT / Z-Position Mode: LTE Band 4, QPSK, 15MHz Test Equipment: Receiving: 3117, and Chamber 1 SMA Cables Substitution: 3115 Substitution, 3m SMA Cable Warehouse <table><tr><th>f MHz</th><th>SG reading (dBm)</th><th>Ant. Pol. (H/V)</th><th>Cable Loss (dB)</th><th>Antenna Gain (dBi)</th><th>EIRP (dBm)</th><th>Limit (dBm)</th><th>Margin (dB)</th><th>Notes</th></tr><tr><td>Low Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1717.50</td><td>10.74</td><td>V</td><td>1.54</td><td>9.12</td><td>18.32</td><td>30.0</td><td>-11.7</td></tr><tr><td>1717.50</td><td>15.29</td><td>H</td><td>1.54</td><td>9.12</td><td>22.87</td><td>30.0</td><td>-7.1</td></tr><tr><td>Mid Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1732.50</td><td>11.23</td><td>V</td><td>1.55</td><td>9.42</td><td>19.10</td><td>30.0</td><td>-10.9</td></tr><tr><td>1732.50</td><td>14.71</td><td>H</td><td>1.55</td><td>9.42</td><td>22.58</td><td>30.0</td><td>-7.4</td></tr><tr><td>High Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1747.50</td><td>10.99</td><td>V</td><td>1.56</td><td>9.61</td><td>19.04</td><td>30.0</td><td>-11.0</td></tr><tr><td>1747.50</td><td>15.37</td><td>H</td><td>1.56</td><td>9.61</td><td>23.42</td><td>30.0</td><td>-6.6</td></tr></table> Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm									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	10.74	V	1.54	9.12	18.32	30.0	-11.7	1717.50	15.29	H	1.54	9.12	22.87	30.0	-7.1	Mid Ch								1732.50	11.23	V	1.55	9.42	19.10	30.0	-10.9	1732.50	14.71	H	1.55	9.42	22.58	30.0	-7.4	High Ch								1747.50	10.99	V	1.56	9.61	19.04	30.0	-11.0	1747.50	15.37	H	1.56	9.61	23.42	30.0	-6.6
	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	10.74	V	1.54	9.12	18.32	30.0	-11.7																																																																																		
	1717.50	15.29	H	1.54	9.12	22.87	30.0	-7.1																																																																																		
	Mid Ch																																																																																									
	1732.50	11.23	V	1.55	9.42	19.10	30.0	-10.9																																																																																		
	1732.50	14.71	H	1.55	9.42	22.58	30.0	-7.4																																																																																		
	High Ch																																																																																									
	1747.50	10.99	V	1.56	9.61	19.04	30.0	-11.0																																																																																		
1747.50	15.37	H	1.56	9.61	23.42	30.0	-6.6																																																																																			
LTE Band 4 15MHz 16QAM	High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 1 Company: Samsung Project #: 15K20515 Date: 04-23-15 Test Engineer: Steven.Kim Configuration: EUT / Z-Position Mode: LTE Band 4, 16QAM, 15MHz Test Equipment: Receiving: 3117, and Chamber 1 SMA Cables Substitution: 3115 Substitution, 3m SMA Cable Warehouse <table><tr><th>f MHz</th><th>SG reading (dBm)</th><th>Ant. Pol. (H/V)</th><th>Cable Loss (dB)</th><th>Antenna Gain (dBi)</th><th>EIRP (dBm)</th><th>Limit (dBm)</th><th>Margin (dB)</th><th>Notes</th></tr><tr><td>Low Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1717.50</td><td>10.87</td><td>V</td><td>1.54</td><td>9.12</td><td>18.45</td><td>30.0</td><td>-11.6</td></tr><tr><td>1717.50</td><td>14.07</td><td>H</td><td>1.54</td><td>9.12</td><td>21.65</td><td>30.0</td><td>-8.4</td></tr><tr><td>Mid Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1732.50</td><td>11.12</td><td>V</td><td>1.55</td><td>9.42</td><td>18.99</td><td>30.0</td><td>-11.0</td></tr><tr><td>1732.50</td><td>13.99</td><td>H</td><td>1.55</td><td>9.42</td><td>21.86</td><td>30.0</td><td>-8.1</td></tr><tr><td>High Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1747.50</td><td>10.35</td><td>V</td><td>1.56</td><td>9.61</td><td>18.40</td><td>30.0</td><td>-11.6</td></tr><tr><td>1747.50</td><td>14.51</td><td>H</td><td>1.56</td><td>9.61</td><td>22.56</td><td>30.0</td><td>-7.4</td></tr></table> Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm									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	10.87	V	1.54	9.12	18.45	30.0	-11.6	1717.50	14.07	H	1.54	9.12	21.65	30.0	-8.4	Mid Ch								1732.50	11.12	V	1.55	9.42	18.99	30.0	-11.0	1732.50	13.99	H	1.55	9.42	21.86	30.0	-8.1	High Ch								1747.50	10.35	V	1.56	9.61	18.40	30.0	-11.6	1747.50	14.51	H	1.56	9.61	22.56	30.0	-7.4
	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	10.87	V	1.54	9.12	18.45	30.0	-11.6																																																																																		
	1717.50	14.07	H	1.54	9.12	21.65	30.0	-8.4																																																																																		
	Mid Ch																																																																																									
	1732.50	11.12	V	1.55	9.42	18.99	30.0	-11.0																																																																																		
	1732.50	13.99	H	1.55	9.42	21.86	30.0	-8.1																																																																																		
	High Ch																																																																																									
	1747.50	10.35	V	1.56	9.61	18.40	30.0	-11.6																																																																																		
1747.50	14.51	H	1.56	9.61	22.56	30.0	-7.4																																																																																			

LTE
Band 4
10MHz
QPSK

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 1

Company: Samsung
Project #: 15K20515
Date: 04-20-15
Test Engineer: Steven.Kim
Configuration: EUT / Z-Position
Mode: LTE Band 4, QPSK, 10MHz

Test Equipment:

Receiving: 3117, and Chamber 1 SMA Cables
Substitution: 3115 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	10.31	V	1.54	9.12	17.89	30.0	-12.1	
1715.00	15.15	H	1.54	9.12	22.73	30.0	-7.3	
Mid Ch								
1732.50	10.65	V	1.55	9.42	18.52	30.0	-11.5	
1732.50	15.34	H	1.55	9.42	23.21	30.0	-6.8	
High Ch								
1750.00	9.45	V	1.56	9.61	17.50	30.0	-12.5	
1750.00	15.25	H	1.56	9.61	23.30	30.0	-6.7	

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 1

Company: Samsung
Project #: 15K20515
Date: 04-20-15
Test Engineer: Steven.Kim
Configuration: EUT / Z-Position
Mode: LTE Band 4 16QAM, 10MHz

Test Equipment:

Receiving: 3117, and Chamber 1 SMA Cables
Substitution: 3115 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	9.34	V	1.54	9.12	16.92	30.0	-13.1	
1715.00	13.76	H	1.54	9.12	21.34	30.0	-8.7	
Mid Ch								
1732.50	9.01	V	1.55	9.42	16.88	30.0	-13.1	
1732.50	14.26	H	1.55	9.42	22.13	30.0	-7.9	
High Ch								
1750.00	8.38	V	1.56	9.61	16.43	30.0	-13.6	
1750.00	13.95	H	1.56	9.61	22.00	30.0	-8.0	

Rev. 3.17.11

Note: For Band 4 EIRP limit is 30dBm

LTE
Band 4

5MHz

QPSK

High Frequency Substitution Measurement
UL Korea, Ltd. Suwon Laboratory Chamber 1

Company: Samsung
Project #: 15K20515
Date: 04-20-15
Test Engineer: Steven.Kim
Configuration: EUT / Z-Position
Mode: LTE Band 4, QPSK , 5MHz

Test Equipment:

Receiving: 3117, and Chamber 1 SMA Cables
Substitution: 3115 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	10.53	V	1.54	9.12	18.11	30.0	-11.9	
1712.50	14.33	H	1.54	9.12	21.91	30.0	-8.1	
Mid Ch								
1732.50	10.05	V	1.55	9.42	17.92	30.0	-12.1	
1732.50	14.14	H	1.55	9.42	22.01	30.0	-8.0	
High Ch								
1752.50	10.46	V	1.56	9.61	18.51	30.0	-11.5	
1752.50	14.67	H	1.56	9.61	22.72	30.0	-7.3	

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 1

Company: Samsung
Project #: 15K20515
Date: 04-20-15
Test Engineer: Steven.Kim
Configuration: EUT / Z-Position
Mode: LTE Band 4 16QAM, 5MHz

Test Equipment:

Receiving: 3117, and Chamber 1 SMA Cables
Substitution: 3115 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	9.64	V	1.54	9.12	17.22	30.0	-12.8	
1712.50	13.69	H	1.54	9.12	21.27	30.0	-8.7	
Mid Ch								
1732.50	9.99	V	1.55	9.42	17.86	30.0	-12.1	
1732.50	13.70	H	1.55	9.42	21.57	30.0	-8.4	
High Ch								
1752.50	9.34	V	1.56	9.61	17.39	30.0	-12.6	
1752.50	14.42	H	1.56	9.61	22.47	30.0	-7.5	

Rev. 3.17.11

Note: For Band 4 EIRP limit is 30dBm

LTE Band 4 3MHz QPSK	High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 1 Company: Samsung Project #: Date: 2015.04.20 Test Engineer: Configuration: EUT / Z-Position Mode: LTE Band 4, QPSK , 3MHz Test Equipment: Receiving: 3117, and Chamber 1 SMA Cables Substitution: 3115 Substitution, 3m SMA Cable Warehouse <table><tr><th>f MHz</th><th>SG reading (dBm)</th><th>Ant. Pol. (H/V)</th><th>Cable Loss (dB)</th><th>Antenna Gain (dBi)</th><th>EIRP (dBm)</th><th>Limit (dBm)</th><th>Margin (dB)</th><th>Notes</th></tr><tr><td>Low Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1711.50</td><td>7.47</td><td>V</td><td>1.54</td><td>9.12</td><td>15.05</td><td>30.0</td><td>-15.0</td></tr><tr><td>1711.50</td><td>15.22</td><td>H</td><td>1.54</td><td>9.12</td><td>22.80</td><td>30.0</td><td>-7.2</td></tr><tr><td>Mid Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1732.50</td><td>11.59</td><td>V</td><td>1.55</td><td>9.42</td><td>19.46</td><td>30.0</td><td>-10.5</td></tr><tr><td>1732.50</td><td>14.10</td><td>H</td><td>1.55</td><td>9.42</td><td>21.97</td><td>30.0</td><td>-8.0</td></tr><tr><td>High Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1753.50</td><td>10.74</td><td>V</td><td>1.56</td><td>9.61</td><td>18.79</td><td>30.0</td><td>-11.2</td></tr><tr><td>1753.50</td><td>14.55</td><td>H</td><td>1.56</td><td>9.61</td><td>22.60</td><td>30.0</td><td>-7.4</td></tr></table> Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm									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	7.47	V	1.54	9.12	15.05	30.0	-15.0	1711.50	15.22	H	1.54	9.12	22.80	30.0	-7.2	Mid Ch								1732.50	11.59	V	1.55	9.42	19.46	30.0	-10.5	1732.50	14.10	H	1.55	9.42	21.97	30.0	-8.0	High Ch								1753.50	10.74	V	1.56	9.61	18.79	30.0	-11.2	1753.50	14.55	H	1.56	9.61	22.60	30.0	-7.4
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes																																																																																	
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	1711.50	7.47	V	1.54	9.12	15.05	30.0	-15.0																																																																																		
	1711.50	15.22	H	1.54	9.12	22.80	30.0	-7.2																																																																																		
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	1732.50	14.10	H	1.55	9.42	21.97	30.0	-8.0																																																																																		
	High Ch																																																																																									
	1753.50	10.74	V	1.56	9.61	18.79	30.0	-11.2																																																																																		
1753.50	14.55	H	1.56	9.61	22.60	30.0	-7.4																																																																																			
LTE Band 4 3MHz 16QAM	High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 1 Company: Samsung Project #: 15K20515 Date: 04-20-15 Test Engineer: Steven.Kim Configuration: EUT / Z-Position Mode: LTE Band 4 16QAM, 3MHz Test Equipment: Receiving: 3117, and Chamber 1 SMA Cables Substitution: 3115 Substitution, 3m SMA Cable Warehouse <table><tr><th>f MHz</th><th>SG reading (dBm)</th><th>Ant. Pol. (H/V)</th><th>Cable Loss (dB)</th><th>Antenna Gain (dBi)</th><th>EIRP (dBm)</th><th>Limit (dBm)</th><th>Margin (dB)</th><th>Notes</th></tr><tr><td>Low Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1711.50</td><td>9.68</td><td>V</td><td>1.54</td><td>9.12</td><td>17.26</td><td>30.0</td><td>-12.7</td></tr><tr><td>1711.50</td><td>13.19</td><td>H</td><td>1.54</td><td>9.12</td><td>20.77</td><td>30.0</td><td>-9.2</td></tr><tr><td>Mid Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1732.50</td><td>9.38</td><td>V</td><td>1.55</td><td>9.42</td><td>17.25</td><td>30.0</td><td>-12.8</td></tr><tr><td>1732.50</td><td>12.87</td><td>H</td><td>1.55</td><td>9.42</td><td>20.74</td><td>30.0</td><td>-9.3</td></tr><tr><td>High Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1753.50</td><td>9.56</td><td>V</td><td>1.56</td><td>9.61</td><td>17.61</td><td>30.0</td><td>-12.4</td></tr><tr><td>1753.50</td><td>13.56</td><td>H</td><td>1.56</td><td>9.61</td><td>21.61</td><td>30.0</td><td>-8.4</td></tr></table> Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm									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	9.68	V	1.54	9.12	17.26	30.0	-12.7	1711.50	13.19	H	1.54	9.12	20.77	30.0	-9.2	Mid Ch								1732.50	9.38	V	1.55	9.42	17.25	30.0	-12.8	1732.50	12.87	H	1.55	9.42	20.74	30.0	-9.3	High Ch								1753.50	9.56	V	1.56	9.61	17.61	30.0	-12.4	1753.50	13.56	H	1.56	9.61	21.61	30.0	-8.4
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes																																																																																	
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	1711.50	9.68	V	1.54	9.12	17.26	30.0	-12.7																																																																																		
	1711.50	13.19	H	1.54	9.12	20.77	30.0	-9.2																																																																																		
	Mid Ch																																																																																									
	1732.50	9.38	V	1.55	9.42	17.25	30.0	-12.8																																																																																		
	1732.50	12.87	H	1.55	9.42	20.74	30.0	-9.3																																																																																		
	High Ch																																																																																									
	1753.50	9.56	V	1.56	9.61	17.61	30.0	-12.4																																																																																		
1753.50	13.56	H	1.56	9.61	21.61	30.0	-8.4																																																																																			

LTE Band 4 1.4MHz QPSK	High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 1 Company: Samsung Project #: 15K20515 Date: 04-20-15 Test Engineer: Steven.Kim Configuration: EUT / Z-Position Mode: LTE Band 4 QPSK, 1.4MHz Test Equipment: Receiving: 3117, and Chamber 1 SMA Cables Substitution: 3115 Substitution, 3m SMA Cable Warehouse <table><thead><tr><th>f MHz</th><th>SG reading (dBm)</th><th>Ant. Pol. (H/V)</th><th>Cable Loss (dB)</th><th>Antenna Gain (dBi)</th><th>EIRP (dBm)</th><th>Limit (dBm)</th><th>Margin (dB)</th><th>Notes</th></tr></thead><tbody><tr><td>Low Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1710.70</td><td>8.24</td><td>V</td><td>1.54</td><td>9.12</td><td>15.82</td><td>30.0</td><td>-14.2</td><td></td></tr><tr><td>1710.70</td><td>13.27</td><td>H</td><td>1.54</td><td>9.12</td><td>20.85</td><td>30.0</td><td>-9.2</td><td></td></tr><tr><td>Mid Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1732.50</td><td>8.82</td><td>V</td><td>1.55</td><td>9.42</td><td>16.69</td><td>30.0</td><td>-13.3</td><td></td></tr><tr><td>1732.50</td><td>12.75</td><td>H</td><td>1.55</td><td>9.42</td><td>20.62</td><td>30.0</td><td>-9.4</td><td></td></tr><tr><td>High Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1754.30</td><td>7.83</td><td>V</td><td>1.56</td><td>9.61</td><td>15.88</td><td>30.0</td><td>-14.1</td><td></td></tr><tr><td>1754.30</td><td>13.15</td><td>H</td><td>1.56</td><td>9.61</td><td>21.20</td><td>30.0</td><td>-8.8</td><td></td></tr></tbody></table> Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm									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	8.24	V	1.54	9.12	15.82	30.0	-14.2		1710.70	13.27	H	1.54	9.12	20.85	30.0	-9.2		Mid Ch									1732.50	8.82	V	1.55	9.42	16.69	30.0	-13.3		1732.50	12.75	H	1.55	9.42	20.62	30.0	-9.4		High Ch									1754.30	7.83	V	1.56	9.61	15.88	30.0	-14.1		1754.30	13.15	H	1.56	9.61	21.20	30.0	-8.8	
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes																																																																																										
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	1732.50	12.75	H	1.55	9.42	20.62	30.0	-9.4																																																																																											
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1754.30	13.15	H	1.56	9.61	21.20	30.0	-8.8																																																																																												
LTE Band 4 1.4MHz 16QAM	High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 1 Company: Samsung Project #: 15K20515 Date: 04-20-15 Test Engineer: Steven.Kim Configuration: EUT / Z-Position Mode: LTE Band 4 16QAM, 1.4MHz Test Equipment: Receiving: 3117, and Chamber 1 SMA Cables Substitution: 3115 Substitution, 3m SMA Cable Warehouse <table><thead><tr><th>f MHz</th><th>SG reading (dBm)</th><th>Ant. Pol. (H/V)</th><th>Cable Loss (dB)</th><th>Antenna Gain (dBi)</th><th>EIRP (dBm)</th><th>Limit (dBm)</th><th>Margin (dB)</th><th>Notes</th></tr></thead><tbody><tr><td>Low Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1710.70</td><td>8.75</td><td>V</td><td>1.54</td><td>9.12</td><td>16.33</td><td>30.0</td><td>-13.7</td><td></td></tr><tr><td>1710.70</td><td>11.90</td><td>H</td><td>1.54</td><td>9.12</td><td>19.48</td><td>30.0</td><td>-10.5</td><td></td></tr><tr><td>Mid Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1732.50</td><td>7.13</td><td>V</td><td>1.55</td><td>9.42</td><td>15.00</td><td>30.0</td><td>-15.0</td><td></td></tr><tr><td>1732.50</td><td>11.60</td><td>H</td><td>1.55</td><td>9.42</td><td>19.47</td><td>30.0</td><td>-10.5</td><td></td></tr><tr><td>High Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1754.30</td><td>6.97</td><td>V</td><td>1.56</td><td>9.61</td><td>15.02</td><td>30.0</td><td>-15.0</td><td></td></tr><tr><td>1754.30</td><td>11.08</td><td>H</td><td>1.56</td><td>9.61</td><td>19.13</td><td>30.0</td><td>-10.9</td><td></td></tr></tbody></table> Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm									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	8.75	V	1.54	9.12	16.33	30.0	-13.7		1710.70	11.90	H	1.54	9.12	19.48	30.0	-10.5		Mid Ch									1732.50	7.13	V	1.55	9.42	15.00	30.0	-15.0		1732.50	11.60	H	1.55	9.42	19.47	30.0	-10.5		High Ch									1754.30	6.97	V	1.56	9.61	15.02	30.0	-15.0		1754.30	11.08	H	1.56	9.61	19.13	30.0	-10.9	
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes																																																																																										
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1754.30	11.08	H	1.56	9.61	19.13	30.0	-10.9																																																																																												

LTE Band 2

LTE Band 2 20MHz QPSK	High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 1 Company: Samsung Project #: 15K20515 Date: 04-23-15 Test Engineer: Steven.Kim Configuration: EUT / Z-Position Mode: LTE Band 2 QPSK, 20MHz Test Equipment: Receiving: 3117, and Chamber 1 SMA Cables Substitution: 3115 Substitution, 3m SMA Cable Warehouse <table><tr><th>f MHz</th><th>SG reading (dBm)</th><th>Ant. Pol. (H/V)</th><th>Cable Loss (dB)</th><th>Antenna Gain (dBi)</th><th>EIRP (dBm)</th><th>Limit (dBm)</th><th>Margin (dB)</th><th>Notes</th></tr><tr><td colspan="9">Low Ch</td></tr><tr><td>1860.00</td><td>10.82</td><td>V</td><td>1.60</td><td>9.12</td><td>18.34</td><td>33.0</td><td>-14.7</td><td></td></tr><tr><td>1860.00</td><td>15.07</td><td>H</td><td>1.60</td><td>9.12</td><td>22.59</td><td>33.0</td><td>-10.4</td><td></td></tr><tr><td colspan="9">Mid Ch</td></tr><tr><td>1880.00</td><td>6.15</td><td>V</td><td>1.62</td><td>8.98</td><td>13.51</td><td>33.0</td><td>-19.5</td><td></td></tr><tr><td>1880.00</td><td>14.99</td><td>H</td><td>1.62</td><td>8.98</td><td>22.35</td><td>33.0</td><td>-10.7</td><td></td></tr><tr><td colspan="9">High Ch</td></tr><tr><td>1900.00</td><td>9.61</td><td>V</td><td>1.63</td><td>8.83</td><td>16.81</td><td>33.0</td><td>-16.2</td><td></td></tr><tr><td>1900.00</td><td>14.35</td><td>H</td><td>1.63</td><td>8.83</td><td>21.55</td><td>33.0</td><td>-11.4</td><td></td></tr></table> Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm									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	10.82	V	1.60	9.12	18.34	33.0	-14.7		1860.00	15.07	H	1.60	9.12	22.59	33.0	-10.4		Mid Ch									1880.00	6.15	V	1.62	8.98	13.51	33.0	-19.5		1880.00	14.99	H	1.62	8.98	22.35	33.0	-10.7		High Ch									1900.00	9.61	V	1.63	8.83	16.81	33.0	-16.2		1900.00	14.35	H	1.63	8.83	21.55	33.0	-11.4	
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes																																																																																										
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	1900.00	9.61	V	1.63	8.83	16.81	33.0	-16.2																																																																																											
1900.00	14.35	H	1.63	8.83	21.55	33.0	-11.4																																																																																												
LTE Band 2 20MHz 16QAM	High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 1 Company: Samsung Project #: 15K20515 Date: 04-23-15 Test Engineer: Steven.Kim Configuration: EUT / Z-Position Mode: LTE Band 2 16QAM, 20MHz Test Equipment: Receiving: 3117, and Chamber 1 SMA Cables Substitution: 3115 Substitution, 3m SMA Cable Warehouse <table><tr><th>f MHz</th><th>SG reading (dBm)</th><th>Ant. Pol. (H/V)</th><th>Cable Loss (dB)</th><th>Antenna Gain (dBi)</th><th>EIRP (dBm)</th><th>Limit (dBm)</th><th>Margin (dB)</th><th>Notes</th></tr><tr><td colspan="9">Low Ch</td></tr><tr><td>1860.00</td><td>10.90</td><td>V</td><td>1.60</td><td>9.12</td><td>18.42</td><td>33.0</td><td>-14.6</td><td></td></tr><tr><td>1860.00</td><td>13.66</td><td>H</td><td>1.60</td><td>9.12</td><td>21.18</td><td>33.0</td><td>-11.8</td><td></td></tr><tr><td colspan="9">Mid Ch</td></tr><tr><td>1880.00</td><td>8.15</td><td>V</td><td>1.62</td><td>8.98</td><td>15.51</td><td>33.0</td><td>-17.5</td><td></td></tr><tr><td>1880.00</td><td>13.81</td><td>H</td><td>1.62</td><td>8.98</td><td>21.17</td><td>33.0</td><td>-11.8</td><td></td></tr><tr><td colspan="9">High Ch</td></tr><tr><td>1900.00</td><td>8.72</td><td>V</td><td>1.63</td><td>8.83</td><td>15.92</td><td>33.0</td><td>-17.1</td><td></td></tr><tr><td>1900.00</td><td>13.22</td><td>H</td><td>1.63</td><td>8.83</td><td>20.42</td><td>33.0</td><td>-12.6</td><td></td></tr></table> Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm									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	10.90	V	1.60	9.12	18.42	33.0	-14.6		1860.00	13.66	H	1.60	9.12	21.18	33.0	-11.8		Mid Ch									1880.00	8.15	V	1.62	8.98	15.51	33.0	-17.5		1880.00	13.81	H	1.62	8.98	21.17	33.0	-11.8		High Ch									1900.00	8.72	V	1.63	8.83	15.92	33.0	-17.1		1900.00	13.22	H	1.63	8.83	20.42	33.0	-12.6	
	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	10.90	V	1.60	9.12	18.42	33.0	-14.6																																																																																											
	1860.00	13.66	H	1.60	9.12	21.18	33.0	-11.8																																																																																											
	Mid Ch																																																																																																		
	1880.00	8.15	V	1.62	8.98	15.51	33.0	-17.5																																																																																											
	1880.00	13.81	H	1.62	8.98	21.17	33.0	-11.8																																																																																											
	High Ch																																																																																																		
	1900.00	8.72	V	1.63	8.83	15.92	33.0	-17.1																																																																																											
1900.00	13.22	H	1.63	8.83	20.42	33.0	-12.6																																																																																												

LTE Band 2 15MHz QPSK	High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 1 Company: Samsung Project #: 15K20515 Date: 04-23-15 Test Engineer: Steven.Kim Configuration: EUT / Z-Position Mode: LTE Band 2 QPSK, 15MHz Test Equipment: Receiving: 3117, and Chamber 1 SMA Cables Substitution: 3115 Substitution, 3m SMA Cable Warehouse <table><tr><th>f MHz</th><th>SG reading (dBm)</th><th>Ant. Pol. (H/V)</th><th>Cable Loss (dB)</th><th>Antenna Gain (dBi)</th><th>EIRP (dBm)</th><th>Limit (dBm)</th><th>Margin (dB)</th><th>Notes</th></tr><tr><td>Low Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1857.50</td><td>12.17</td><td>V</td><td>1.60</td><td>9.12</td><td>19.69</td><td>33.0</td><td>-13.3</td></tr><tr><td>1857.50</td><td>15.82</td><td>H</td><td>1.60</td><td>9.12</td><td>23.34</td><td>33.0</td><td>-9.7</td></tr><tr><td>Mid Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1880.00</td><td>9.77</td><td>V</td><td>1.62</td><td>8.98</td><td>17.13</td><td>33.0</td><td>-15.9</td></tr><tr><td>1880.00</td><td>14.29</td><td>H</td><td>1.62</td><td>8.98</td><td>21.65</td><td>33.0</td><td>-11.4</td></tr><tr><td>High Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1902.50</td><td>7.91</td><td>V</td><td>1.63</td><td>8.83</td><td>15.11</td><td>33.0</td><td>-17.9</td></tr><tr><td>1902.50</td><td>13.12</td><td>H</td><td>1.63</td><td>8.83</td><td>20.32</td><td>33.0</td><td>-12.7</td></tr></table> Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm									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	12.17	V	1.60	9.12	19.69	33.0	-13.3	1857.50	15.82	H	1.60	9.12	23.34	33.0	-9.7	Mid Ch								1880.00	9.77	V	1.62	8.98	17.13	33.0	-15.9	1880.00	14.29	H	1.62	8.98	21.65	33.0	-11.4	High Ch								1902.50	7.91	V	1.63	8.83	15.11	33.0	-17.9	1902.50	13.12	H	1.63	8.83	20.32	33.0	-12.7
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes																																																																																	
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	1857.50	12.17	V	1.60	9.12	19.69	33.0	-13.3																																																																																		
	1857.50	15.82	H	1.60	9.12	23.34	33.0	-9.7																																																																																		
	Mid Ch																																																																																									
	1880.00	9.77	V	1.62	8.98	17.13	33.0	-15.9																																																																																		
	1880.00	14.29	H	1.62	8.98	21.65	33.0	-11.4																																																																																		
	High Ch																																																																																									
	1902.50	7.91	V	1.63	8.83	15.11	33.0	-17.9																																																																																		
1902.50	13.12	H	1.63	8.83	20.32	33.0	-12.7																																																																																			
LTE Band 2 15MHz 16QAM	High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 1 Company: Samsung Project #: 15K20515 Date: 04-23-15 Test Engineer: Steven.Kim Configuration: EUT / Z-Position Mode: LTE Band 2 16QAM, 15MHz Test Equipment: Receiving: 3117, and Chamber 1 SMA Cables Substitution: 3115 Substitution, 3m SMA Cable Warehouse <table><tr><th>f MHz</th><th>SG reading (dBm)</th><th>Ant. Pol. (H/V)</th><th>Cable Loss (dB)</th><th>Antenna Gain (dBi)</th><th>EIRP (dBm)</th><th>Limit (dBm)</th><th>Margin (dB)</th><th>Notes</th></tr><tr><td>Low Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1857.50</td><td>11.02</td><td>V</td><td>1.60</td><td>9.12</td><td>18.54</td><td>33.0</td><td>-14.5</td></tr><tr><td>1857.50</td><td>14.60</td><td>H</td><td>1.60</td><td>9.12</td><td>22.12</td><td>33.0</td><td>-10.9</td></tr><tr><td>Mid Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1880.00</td><td>6.73</td><td>V</td><td>1.62</td><td>8.98</td><td>14.09</td><td>33.0</td><td>-18.9</td></tr><tr><td>1880.00</td><td>13.50</td><td>H</td><td>1.62</td><td>8.98</td><td>20.86</td><td>33.0</td><td>-12.1</td></tr><tr><td>High Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1902.50</td><td>7.80</td><td>V</td><td>1.63</td><td>8.83</td><td>15.00</td><td>33.0</td><td>-18.0</td></tr><tr><td>1902.50</td><td>12.26</td><td>H</td><td>1.63</td><td>8.83</td><td>19.46</td><td>33.0</td><td>-13.5</td></tr></table> Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm									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	11.02	V	1.60	9.12	18.54	33.0	-14.5	1857.50	14.60	H	1.60	9.12	22.12	33.0	-10.9	Mid Ch								1880.00	6.73	V	1.62	8.98	14.09	33.0	-18.9	1880.00	13.50	H	1.62	8.98	20.86	33.0	-12.1	High Ch								1902.50	7.80	V	1.63	8.83	15.00	33.0	-18.0	1902.50	12.26	H	1.63	8.83	19.46	33.0	-13.5
	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	11.02	V	1.60	9.12	18.54	33.0	-14.5																																																																																		
	1857.50	14.60	H	1.60	9.12	22.12	33.0	-10.9																																																																																		
	Mid Ch																																																																																									
	1880.00	6.73	V	1.62	8.98	14.09	33.0	-18.9																																																																																		
	1880.00	13.50	H	1.62	8.98	20.86	33.0	-12.1																																																																																		
	High Ch																																																																																									
	1902.50	7.80	V	1.63	8.83	15.00	33.0	-18.0																																																																																		
1902.50	12.26	H	1.63	8.83	19.46	33.0	-13.5																																																																																			

LTE Band 2 10MHz QPSK	High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 1 Company: Samsung Project #: 15K20515 Date: 04-20-15 Test Engineer: Steven.Kim Configuration: EUT / Z-Position Mode: LTE Band 2 QPSK, 10MHz Test Equipment: Receiving: 3117, and Chamber 1 SMA Cables Substitution: 3115 Substitution, 3m SMA Cable Warehouse <table><tr><th>f MHz</th><th>SG reading (dBm)</th><th>Ant. Pol. (H/V)</th><th>Cable Loss (dB)</th><th>Antenna Gain (dBi)</th><th>EIRP (dBm)</th><th>Limit (dBm)</th><th>Margin (dB)</th><th>Notes</th></tr><tr><td>Low Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1855.00</td><td>7.55</td><td>V</td><td>1.60</td><td>9.12</td><td>15.07</td><td>33.0</td><td>-17.9</td></tr><tr><td>1855.00</td><td>15.35</td><td>H</td><td>1.60</td><td>9.12</td><td>22.87</td><td>33.0</td><td>-10.1</td></tr><tr><td>Mid Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1880.00</td><td>6.87</td><td>V</td><td>1.62</td><td>8.98</td><td>14.23</td><td>33.0</td><td>-18.8</td></tr><tr><td>1880.00</td><td>14.71</td><td>H</td><td>1.62</td><td>8.98</td><td>22.07</td><td>33.0</td><td>-10.9</td></tr><tr><td>High Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1905.00</td><td>9.02</td><td>V</td><td>1.63</td><td>8.83</td><td>16.22</td><td>33.0</td><td>-16.8</td></tr><tr><td>1905.00</td><td>13.86</td><td>H</td><td>1.63</td><td>8.83</td><td>21.06</td><td>33.0</td><td>-11.9</td></tr></table> Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm									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	7.55	V	1.60	9.12	15.07	33.0	-17.9	1855.00	15.35	H	1.60	9.12	22.87	33.0	-10.1	Mid Ch								1880.00	6.87	V	1.62	8.98	14.23	33.0	-18.8	1880.00	14.71	H	1.62	8.98	22.07	33.0	-10.9	High Ch								1905.00	9.02	V	1.63	8.83	16.22	33.0	-16.8	1905.00	13.86	H	1.63	8.83	21.06	33.0	-11.9
	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	7.55	V	1.60	9.12	15.07	33.0	-17.9																																																																																		
	1855.00	15.35	H	1.60	9.12	22.87	33.0	-10.1																																																																																		
	Mid Ch																																																																																									
	1880.00	6.87	V	1.62	8.98	14.23	33.0	-18.8																																																																																		
	1880.00	14.71	H	1.62	8.98	22.07	33.0	-10.9																																																																																		
	High Ch																																																																																									
	1905.00	9.02	V	1.63	8.83	16.22	33.0	-16.8																																																																																		
1905.00	13.86	H	1.63	8.83	21.06	33.0	-11.9																																																																																			
LTE Band 2 10MHz 16QAM	High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 1 Company: Samsung Project #: 15K20515 Date: 04-20-15 Test Engineer: Steven.Kim Configuration: EUT / Z-Position Mode: LTE Band 2 16QAM, 10MHz Test Equipment: Receiving: 3117, and Chamber 1 SMA Cables Substitution: 3115 Substitution, 3m SMA Cable Warehouse <table><tr><th>f MHz</th><th>SG reading (dBm)</th><th>Ant. Pol. (H/V)</th><th>Cable Loss (dB)</th><th>Antenna Gain (dBi)</th><th>EIRP (dBm)</th><th>Limit (dBm)</th><th>Margin (dB)</th><th>Notes</th></tr><tr><td>Low Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1855.00</td><td>9.03</td><td>V</td><td>1.60</td><td>9.12</td><td>16.55</td><td>33.0</td><td>-16.5</td></tr><tr><td>1855.00</td><td>13.92</td><td>H</td><td>1.60</td><td>9.12</td><td>21.44</td><td>33.0</td><td>-11.6</td></tr><tr><td>Mid Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1880.00</td><td>5.30</td><td>V</td><td>1.62</td><td>8.98</td><td>12.66</td><td>33.0</td><td>-20.3</td></tr><tr><td>1880.00</td><td>13.54</td><td>H</td><td>1.62</td><td>8.98</td><td>20.90</td><td>33.0</td><td>-12.1</td></tr><tr><td>High Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1905.00</td><td>7.87</td><td>V</td><td>1.63</td><td>8.83</td><td>15.07</td><td>33.0</td><td>-17.9</td></tr><tr><td>1905.00</td><td>12.38</td><td>H</td><td>1.63</td><td>8.83</td><td>19.58</td><td>33.0</td><td>-13.4</td></tr></table> Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm									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	9.03	V	1.60	9.12	16.55	33.0	-16.5	1855.00	13.92	H	1.60	9.12	21.44	33.0	-11.6	Mid Ch								1880.00	5.30	V	1.62	8.98	12.66	33.0	-20.3	1880.00	13.54	H	1.62	8.98	20.90	33.0	-12.1	High Ch								1905.00	7.87	V	1.63	8.83	15.07	33.0	-17.9	1905.00	12.38	H	1.63	8.83	19.58	33.0	-13.4
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes																																																																																	
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	1855.00	9.03	V	1.60	9.12	16.55	33.0	-16.5																																																																																		
	1855.00	13.92	H	1.60	9.12	21.44	33.0	-11.6																																																																																		
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	1880.00	13.54	H	1.62	8.98	20.90	33.0	-12.1																																																																																		
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	1905.00	7.87	V	1.63	8.83	15.07	33.0	-17.9																																																																																		
1905.00	12.38	H	1.63	8.83	19.58	33.0	-13.4																																																																																			

LTE Band 2 5MHz QPSK	High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 1 Company: Samsung Project #: 15K20515 Date: 04-20-15 Test Engineer: Steven.Kim Configuration: EUT / Z-Position Mode: LTE Band 2 QPSK, 5MHz Test Equipment: Receiving: 3117, and Chamber 1 SMA Cables Substitution: 3115 Substitution, 3m SMA Cable Warehouse <table><tr><th>f MHz</th><th>SG reading (dBm)</th><th>Ant. Pol. (H/V)</th><th>Cable Loss (dB)</th><th>Antenna Gain (dBi)</th><th>EIRP (dBm)</th><th>Limit (dBm)</th><th>Margin (dB)</th><th>Notes</th></tr><tr><td>Low Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1852.50</td><td>10.38</td><td>V</td><td>1.60</td><td>9.12</td><td>17.90</td><td>33.0</td><td>-15.1</td></tr><tr><td>1852.50</td><td>14.70</td><td>H</td><td>1.60</td><td>9.12</td><td>22.22</td><td>33.0</td><td>-10.8</td></tr><tr><td>Mid Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1880.00</td><td>9.88</td><td>V</td><td>1.62</td><td>8.98</td><td>17.24</td><td>33.0</td><td>-15.8</td></tr><tr><td>1880.00</td><td>13.22</td><td>H</td><td>1.62</td><td>8.98</td><td>20.58</td><td>33.0</td><td>-12.4</td></tr><tr><td>High Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1907.50</td><td>10.43</td><td>V</td><td>1.63</td><td>8.83</td><td>17.63</td><td>33.0</td><td>-15.4</td></tr><tr><td>1907.50</td><td>13.99</td><td>H</td><td>1.63</td><td>8.83</td><td>21.19</td><td>33.0</td><td>-11.8</td></tr></table> Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm									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	10.38	V	1.60	9.12	17.90	33.0	-15.1	1852.50	14.70	H	1.60	9.12	22.22	33.0	-10.8	Mid Ch								1880.00	9.88	V	1.62	8.98	17.24	33.0	-15.8	1880.00	13.22	H	1.62	8.98	20.58	33.0	-12.4	High Ch								1907.50	10.43	V	1.63	8.83	17.63	33.0	-15.4	1907.50	13.99	H	1.63	8.83	21.19	33.0	-11.8
	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	10.38	V	1.60	9.12	17.90	33.0	-15.1																																																																																		
	1852.50	14.70	H	1.60	9.12	22.22	33.0	-10.8																																																																																		
	Mid Ch																																																																																									
	1880.00	9.88	V	1.62	8.98	17.24	33.0	-15.8																																																																																		
	1880.00	13.22	H	1.62	8.98	20.58	33.0	-12.4																																																																																		
	High Ch																																																																																									
	1907.50	10.43	V	1.63	8.83	17.63	33.0	-15.4																																																																																		
1907.50	13.99	H	1.63	8.83	21.19	33.0	-11.8																																																																																			
LTE Band 2 5MHz 16QAM	High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 1 Company: Samsung Project #: 15K20515 Date: 04-20-15 Test Engineer: Steven.Kim Configuration: EUT / Z-Position Mode: LTE Band 2 16QAM, 5MHz Test Equipment: Receiving: 3117, and Chamber 1 SMA Cables Substitution: 3115 Substitution, 3m SMA Cable Warehouse <table><tr><th>f MHz</th><th>SG reading (dBm)</th><th>Ant. Pol. (H/V)</th><th>Cable Loss (dB)</th><th>Antenna Gain (dBi)</th><th>EIRP (dBm)</th><th>Limit (dBm)</th><th>Margin (dB)</th><th>Notes</th></tr><tr><td>Low Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1852.50</td><td>9.99</td><td>V</td><td>1.60</td><td>9.12</td><td>17.51</td><td>33.0</td><td>-15.5</td></tr><tr><td>1852.50</td><td>13.58</td><td>H</td><td>1.60</td><td>9.12</td><td>21.10</td><td>33.0</td><td>-11.9</td></tr><tr><td>Mid Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1880.00</td><td>8.56</td><td>V</td><td>1.62</td><td>8.98</td><td>15.92</td><td>33.0</td><td>-17.1</td></tr><tr><td>1880.00</td><td>11.21</td><td>H</td><td>1.62</td><td>8.98</td><td>18.57</td><td>33.0</td><td>-14.4</td></tr><tr><td>High Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1907.50</td><td>4.72</td><td>V</td><td>1.63</td><td>8.83</td><td>11.92</td><td>33.0</td><td>-21.1</td></tr><tr><td>1907.50</td><td>11.97</td><td>H</td><td>1.63</td><td>8.83</td><td>19.17</td><td>33.0</td><td>-13.8</td></tr></table> Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm									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	9.99	V	1.60	9.12	17.51	33.0	-15.5	1852.50	13.58	H	1.60	9.12	21.10	33.0	-11.9	Mid Ch								1880.00	8.56	V	1.62	8.98	15.92	33.0	-17.1	1880.00	11.21	H	1.62	8.98	18.57	33.0	-14.4	High Ch								1907.50	4.72	V	1.63	8.83	11.92	33.0	-21.1	1907.50	11.97	H	1.63	8.83	19.17	33.0	-13.8
	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	9.99	V	1.60	9.12	17.51	33.0	-15.5																																																																																		
	1852.50	13.58	H	1.60	9.12	21.10	33.0	-11.9																																																																																		
	Mid Ch																																																																																									
	1880.00	8.56	V	1.62	8.98	15.92	33.0	-17.1																																																																																		
	1880.00	11.21	H	1.62	8.98	18.57	33.0	-14.4																																																																																		
	High Ch																																																																																									
	1907.50	4.72	V	1.63	8.83	11.92	33.0	-21.1																																																																																		
1907.50	11.97	H	1.63	8.83	19.17	33.0	-13.8																																																																																			

LTE Band 2 3MHz QPSK	High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 1 Company: Samsung Project #: 15K20515 Date: 04-20-15 Test Engineer: Steven.Kim Configuration: EUT / Z-Position Mode: LTE Band 2 QPSK, 3MHz Test Equipment: Receiving: 3117, and Chamber 1 SMA Cables Substitution: 3115 Substitution, 3m SMA Cable Warehouse <table><tr><th>f MHz</th><th>SG reading (dBm)</th><th>Ant. Pol. (H/V)</th><th>Cable Loss (dB)</th><th>Antenna Gain (dBi)</th><th>EIRP (dBm)</th><th>Limit (dBm)</th><th>Margin (dB)</th><th>Notes</th></tr><tr><td>Low Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1851.50</td><td>9.71</td><td>V</td><td>1.60</td><td>9.12</td><td>17.23</td><td>33.0</td><td>-15.8</td></tr><tr><td>1851.50</td><td>13.45</td><td>H</td><td>1.60</td><td>9.12</td><td>20.97</td><td>33.0</td><td>-12.0</td></tr><tr><td>Mid Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1880.00</td><td>6.65</td><td>V</td><td>1.62</td><td>8.98</td><td>14.01</td><td>33.0</td><td>-19.0</td></tr><tr><td>1880.00</td><td>13.27</td><td>H</td><td>1.62</td><td>8.98</td><td>20.63</td><td>33.0</td><td>-12.4</td></tr><tr><td>High Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1908.50</td><td>6.99</td><td>V</td><td>1.63</td><td>8.83</td><td>14.19</td><td>33.0</td><td>-18.8</td></tr><tr><td>1908.50</td><td>13.20</td><td>H</td><td>1.63</td><td>8.83</td><td>20.40</td><td>33.0</td><td>-12.6</td></tr></table> Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm									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	9.71	V	1.60	9.12	17.23	33.0	-15.8	1851.50	13.45	H	1.60	9.12	20.97	33.0	-12.0	Mid Ch								1880.00	6.65	V	1.62	8.98	14.01	33.0	-19.0	1880.00	13.27	H	1.62	8.98	20.63	33.0	-12.4	High Ch								1908.50	6.99	V	1.63	8.83	14.19	33.0	-18.8	1908.50	13.20	H	1.63	8.83	20.40	33.0	-12.6
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes																																																																																	
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	1851.50	9.71	V	1.60	9.12	17.23	33.0	-15.8																																																																																		
	1851.50	13.45	H	1.60	9.12	20.97	33.0	-12.0																																																																																		
	Mid Ch																																																																																									
	1880.00	6.65	V	1.62	8.98	14.01	33.0	-19.0																																																																																		
	1880.00	13.27	H	1.62	8.98	20.63	33.0	-12.4																																																																																		
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LTE Band 2 3MHz 16QAM	High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 1 Company: Samsung Project #: 15K20515 Date: 04-20-15 Test Engineer: Steven.Kim Configuration: EUT / Z-Position Mode: LTE Band 2 16QAM, 3MHz Test Equipment: Receiving: 3117, and Chamber 1 SMA Cables Substitution: 3115 Substitution, 3m SMA Cable Warehouse <table><tr><th>f MHz</th><th>SG reading (dBm)</th><th>Ant. Pol. (H/V)</th><th>Cable Loss (dB)</th><th>Antenna Gain (dBi)</th><th>EIRP (dBm)</th><th>Limit (dBm)</th><th>Margin (dB)</th><th>Notes</th></tr><tr><td>Low Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1851.50</td><td>9.88</td><td>V</td><td>1.60</td><td>9.12</td><td>17.40</td><td>33.0</td><td>-15.6</td></tr><tr><td>1851.50</td><td>11.29</td><td>H</td><td>1.60</td><td>9.12</td><td>18.81</td><td>33.0</td><td>-14.2</td></tr><tr><td>Mid Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1880.00</td><td>7.76</td><td>V</td><td>1.62</td><td>8.98</td><td>15.12</td><td>33.0</td><td>-17.9</td></tr><tr><td>1880.00</td><td>11.72</td><td>H</td><td>1.62</td><td>8.98</td><td>19.08</td><td>33.0</td><td>-13.9</td></tr><tr><td>High Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1908.50</td><td>5.19</td><td>V</td><td>1.63</td><td>8.83</td><td>12.39</td><td>33.0</td><td>-20.6</td></tr><tr><td>1908.50</td><td>12.09</td><td>H</td><td>1.63</td><td>8.83</td><td>19.29</td><td>33.0</td><td>-13.7</td></tr></table> Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm									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	9.88	V	1.60	9.12	17.40	33.0	-15.6	1851.50	11.29	H	1.60	9.12	18.81	33.0	-14.2	Mid Ch								1880.00	7.76	V	1.62	8.98	15.12	33.0	-17.9	1880.00	11.72	H	1.62	8.98	19.08	33.0	-13.9	High Ch								1908.50	5.19	V	1.63	8.83	12.39	33.0	-20.6	1908.50	12.09	H	1.63	8.83	19.29	33.0	-13.7
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes																																																																																	
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	1851.50	9.88	V	1.60	9.12	17.40	33.0	-15.6																																																																																		
	1851.50	11.29	H	1.60	9.12	18.81	33.0	-14.2																																																																																		
	Mid Ch																																																																																									
	1880.00	7.76	V	1.62	8.98	15.12	33.0	-17.9																																																																																		
	1880.00	11.72	H	1.62	8.98	19.08	33.0	-13.9																																																																																		
	High Ch																																																																																									
	1908.50	5.19	V	1.63	8.83	12.39	33.0	-20.6																																																																																		
1908.50	12.09	H	1.63	8.83	19.29	33.0	-13.7																																																																																			

LTE Band 2 1.4MHz QPSK	High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 1 Company: Samsung Project #: 15K20515 Date: 04-20-15 Test Engineer: Steven.Kim Configuration: EUT / Z-Position Mode: LTE Band 2 QPSK, 1.4MHz Test Equipment: Receiving: 3117, and Chamber 1 SMA Cables Substitution: 3115 Substitution, 3m SMA Cable Warehouse <table><tr><th>f MHz</th><th>SG reading (dBm)</th><th>Ant. Pol. (H/V)</th><th>Cable Loss (dB)</th><th>Antenna Gain (dBi)</th><th>EIRP (dBm)</th><th>Limit (dBm)</th><th>Margin (dB)</th><th>Notes</th></tr><tr><td>Low Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1850.70</td><td>9.32</td><td>V</td><td>1.60</td><td>9.12</td><td>16.84</td><td>33.0</td><td>-16.2</td></tr><tr><td>1850.70</td><td>14.55</td><td>H</td><td>1.60</td><td>9.12</td><td>22.07</td><td>33.0</td><td>-10.9</td></tr><tr><td>Mid Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1880.00</td><td>8.57</td><td>V</td><td>1.62</td><td>8.98</td><td>15.93</td><td>33.0</td><td>-17.1</td></tr><tr><td>1880.00</td><td>12.22</td><td>H</td><td>1.62</td><td>8.98</td><td>19.58</td><td>33.0</td><td>-13.4</td></tr><tr><td>High Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1909.30</td><td>3.53</td><td>V</td><td>1.63</td><td>8.83</td><td>10.73</td><td>33.0</td><td>-22.3</td></tr><tr><td>1909.30</td><td>12.97</td><td>H</td><td>1.63</td><td>8.83</td><td>20.17</td><td>33.0</td><td>-12.8</td></tr></table> Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm									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	9.32	V	1.60	9.12	16.84	33.0	-16.2	1850.70	14.55	H	1.60	9.12	22.07	33.0	-10.9	Mid Ch								1880.00	8.57	V	1.62	8.98	15.93	33.0	-17.1	1880.00	12.22	H	1.62	8.98	19.58	33.0	-13.4	High Ch								1909.30	3.53	V	1.63	8.83	10.73	33.0	-22.3	1909.30	12.97	H	1.63	8.83	20.17	33.0	-12.8
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes																																																																																	
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	1850.70	9.32	V	1.60	9.12	16.84	33.0	-16.2																																																																																		
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	1880.00	8.57	V	1.62	8.98	15.93	33.0	-17.1																																																																																		
	1880.00	12.22	H	1.62	8.98	19.58	33.0	-13.4																																																																																		
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	1909.30	3.53	V	1.63	8.83	10.73	33.0	-22.3																																																																																		
1909.30	12.97	H	1.63	8.83	20.17	33.0	-12.8																																																																																			
LTE Band 2 1.4MHz 16QAM	High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 1 Company: Samsung Project #: 15K20515 Date: 04-18-15 Test Engineer: Steven.Kim Configuration: EUT / Z-Position Mode: LTE Band 2 16QAM, 1.4MHz Test Equipment: Receiving: 3117, and Chamber 1 SMA Cables Substitution: 3115 Substitution, 3m SMA Cable Warehouse <table><tr><th>f MHz</th><th>SG reading (dBm)</th><th>Ant. Pol. (H/V)</th><th>Cable Loss (dB)</th><th>Antenna Gain (dBi)</th><th>EIRP (dBm)</th><th>Limit (dBm)</th><th>Margin (dB)</th><th>Notes</th></tr><tr><td>Low Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1850.70</td><td>7.74</td><td>V</td><td>1.60</td><td>9.12</td><td>15.26</td><td>33.0</td><td>-17.7</td></tr><tr><td>1850.70</td><td>10.78</td><td>H</td><td>1.60</td><td>9.12</td><td>18.30</td><td>33.0</td><td>-14.7</td></tr><tr><td>Mid Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1880.00</td><td>3.10</td><td>V</td><td>1.62</td><td>8.98</td><td>10.46</td><td>33.0</td><td>-22.5</td></tr><tr><td>1880.00</td><td>10.77</td><td>H</td><td>1.62</td><td>8.98</td><td>18.13</td><td>33.0</td><td>-14.9</td></tr><tr><td>High Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1909.30</td><td>3.62</td><td>V</td><td>1.63</td><td>8.83</td><td>10.82</td><td>33.0</td><td>-22.2</td></tr><tr><td>1909.30</td><td>11.61</td><td>H</td><td>1.63</td><td>8.83</td><td>18.81</td><td>33.0</td><td>-14.2</td></tr></table> Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm									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	7.74	V	1.60	9.12	15.26	33.0	-17.7	1850.70	10.78	H	1.60	9.12	18.30	33.0	-14.7	Mid Ch								1880.00	3.10	V	1.62	8.98	10.46	33.0	-22.5	1880.00	10.77	H	1.62	8.98	18.13	33.0	-14.9	High Ch								1909.30	3.62	V	1.63	8.83	10.82	33.0	-22.2	1909.30	11.61	H	1.63	8.83	18.81	33.0	-14.2
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes																																																																																	
	Low Ch																																																																																									
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	1850.70	10.78	H	1.60	9.12	18.30	33.0	-14.7																																																																																		
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	1880.00	3.10	V	1.62	8.98	10.46	33.0	-22.5																																																																																		
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1909.30	11.61	H	1.63	8.83	18.81	33.0	-14.2																																																																																			

11.2. FIELD STRENGTH OF SPURIOUS RADIATION

RULE PART(S)

FCC: §2.1053, §22.917, §24.238, §27.53

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 27.53(g) For operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log (P)$ dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

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

11.2.1. SPURIOUS RADIATION PLOTS

GSM 850

		UL Korea, Ltd Suwon Laboratory Above 1GHz High Frequency Substitution Measurement									
GSM GSM850 GPRS	Company:	Samsung									
	Project #:	15K20515									
	Date:	04-24-15									
	Test Engineer:	Steven.Kim									
	Configuration:	EUT / AC Adapter / Earphone, Y Position									
	Mode:	GPRS 850 MHz									
	Chamber Chamber 1										
	Pre-amplifier AFS42										
	Filter Filter 1										
	Limit 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 Ch, 824.2MHz										
	1.6484	12.9	V	3.0	40.2	1.0	-26.3	-13.0	-13.3		
	2.4726	0.8	V	3.0	40.1	1.0	-38.3	-13.0	-25.3		
	3.2968	-21.9	V	3.0	39.6	1.0	-60.5	-13.0	-47.5		
	1.6484	7.0	H	3.0	40.2	1.0	-32.2	-13.0	-19.2		
	2.4726	1.3	H	3.0	40.1	1.0	-37.8	-13.0	-24.8		
	3.2968	-21.5	H	3.0	39.6	1.0	-60.1	-13.0	-47.1		
	Mid Ch, 836.6MHz										
	1.6730	15.3	V	3.0	40.2	1.0	-23.8	-13.0	-10.8		
	2.5098	0.5	V	3.0	40.1	1.0	-38.6	-13.0	-25.6		
	3.3464	-19.0	V	3.0	39.6	1.0	-57.6	-13.0	-44.6		
	1.6730	9.6	H	3.0	40.2	1.0	-29.6	-13.0	-16.6		
	2.5098	2.6	H	3.0	40.1	1.0	-36.5	-13.0	-23.5		
	3.3464	-20.5	H	3.0	39.6	1.0	-59.1	-13.0	-46.1		
	High Ch, 848.8MHz										
	1.6976	12.3	V	3.0	40.2	1.0	-26.9	-13.0	-13.9		
	2.5466	-2.7	V	3.0	40.1	1.0	-41.8	-13.0	-28.8		
	3.3952	-18.7	V	3.0	39.5	1.0	-57.2	-13.0	-44.2		
	1.6976	6.4	H	3.0	40.2	1.0	-32.8	-13.0	-19.8		
	2.5466	2.5	H	3.0	40.1	1.0	-36.6	-13.0	-23.6		
	3.3952	-17.0	H	3.0	39.5	1.0	-55.5	-13.0	-42.5		
Rev. 03.03.09											
Note: No other emissions were detected above the system noise floor.											
GSM GSM850 EGPRS	UL Korea, Ltd Suwon Laboratory Above 1GHz High Frequency Substitution Measurement										
	Company:	Samsung									
	Project #:	15K20515									
	Date:	04-24-15									
	Test Engineer:	Steven.Kim									
	Configuration:	EUT / AC Adapter / Earphone, Y Position									
	Mode:	EGPRS 850 MHz									
	Chamber Chamber 1										
	Pre-amplifier AFS42										
	Filter Filter 1										
Limit 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 Ch, 824.2MHz										
	1.6484		V	3.0	40.2	1.0	-39.2	-13.0	-26.2		
	2.4726		V	3.0	40.1	1.0	-39.1	-13.0	-26.1		
	3.2968		V	3.0	39.6	1.0	-38.6	-13.0	-25.6		
	1.6484		H	3.0	40.2	1.0	-39.2	-13.0	-26.2		
	2.4726		H	3.0	40.1	1.0	-39.1	-13.0	-26.1		
	3.2968		H	3.0	39.6	1.0	-38.6	-13.0	-25.6		
	Mid Ch, 836.6MHz										
	1.6730	1.5	V	3.0	40.2	1.0	-37.7	-13.0	-24.7		
	2.5098	-13.3	V	3.0	40.1	1.0	-52.4	-13.0	-39.4		
	3.3464	-22.1	V	3.0	39.6	1.0	-60.7	-13.0	-47.7		
	1.6730	-6.8	H	3.0	40.2	1.0	-46.0	-13.0	-33.0		
	2.5098	-12.3	H	3.0	40.1	1.0	-51.4	-13.0	-38.4		
	3.3464	-21.7	H	3.0	39.6	1.0	-60.3	-13.0	-47.3		
	High Ch, 848.8MHz										
	1.6976	2.1	V	3.0	40.2	1.0	-37.1	-13.0	-24.1		
	2.5466	-11.9	V	3.0	40.1	1.0	-50.9	-13.0	-37.9		
	3.3952	-21.4	V	3.0	39.5	1.0	-59.9	-13.0	-46.9		
	1.6976	-1.5	H	3.0	40.2	1.0	-40.7	-13.0	-27.7		
	2.5466	-15.1	H	3.0	40.1	1.0	-54.1	-13.0	-41.1		
	3.3952	-19.8	H	3.0	39.5	1.0	-58.3	-13.0	-45.3		
Rev. 03.03.09											
Note: No other emissions were detected above the system noise floor.											

GSM 1900

GSM GSM1900 GPRS	UL Korea, Ltd Suwon Laboratory Above 1GHz High Frequency Substitution Measurement Company: Samsung Project #: 15K20515 Date: 04-24-15 Test Engineer: Steven.Kim Configuration: EUT / AC Adapter / Earphone, Z Position Mode: GPRS 1900									
	Chamber Chamber 1 Pre-amplifier AFS42 Filter Filter 1 Limit Part 24									
	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	Low Ch, 1850.2MHz									
	3.7004	-19.3	V	3.0	39.2	1.0	-57.5	-13.0	-44.5	
	5.5506	-0.4	V	3.0	40.0	1.0	-39.4	-13.0	-26.4	
	7.4008	3.7	V	3.0	39.2	1.0	-34.5	-13.0	-21.5	
	3.7000	-19.5	H	3.0	39.2	1.0	-57.6	-13.0	-44.6	
	5.5506	2.2	H	3.0	40.0	1.0	-36.8	-13.0	-23.8	
	7.4008	-1.5	H	3.0	39.2	1.0	-39.7	-13.0	-26.7	
	Mid Ch, 1880.0MHz									
	3.7600	-11.7	V	3.0	39.1	1.0	-49.8	-13.0	-36.8	
	5.6400	1.0	V	3.0	39.9	1.0	-37.9	-13.0	-24.9	
	7.5200	1.0	V	3.0	39.1	1.0	-37.1	-13.0	-24.1	
	3.7600	-15.2	H	3.0	39.1	1.0	-53.3	-13.0	-40.3	
	5.6400	3.1	H	3.0	39.9	1.0	-35.8	-13.0	-22.8	
	7.5200	-2.8	H	3.0	39.1	1.0	-41.0	-13.0	-28.0	
	High Ch, 1909.8 MHz									
	3.8196	-7.0	V	3.0	39.0	1.0	-45.1	-13.0	-32.1	
	5.7294	-9.0	V	3.0	39.9	1.0	-47.9	-13.0	-34.9	
	7.6392	-0.5	V	3.0	39.1	1.0	-38.6	-13.0	-25.6	
	3.8196	-9.3	H	3.0	39.0	1.0	-47.4	-13.0	-34.4	
	5.7294	-3.5	H	3.0	39.9	1.0	-42.4	-13.0	-29.4	
	7.6392	-3.8	H	3.0	39.1	1.0	-41.9	-13.0	-28.9	
	Rev. 03.03.09 Note: No other emissions were detected above the system noise floor.									
GSM GSM1900 EGPRS	UL Korea, Ltd Suwon Laboratory Above 1GHz High Frequency Substitution Measurement Company: Samsung Project #: 15K20515 Date: 04-24-15 Test Engineer: Steven.Kim Configuration: EUT / AC Adapter / Earphone, Z Position Mode: EGPRS 1900 MHz									
	Chamber Chamber 1 Pre-amplifier AFS42 Filter Filter 1 Limit Part 24									
	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	Low Ch, 1850.2MHz									
	3.7004	-13.8	V	3.0	39.2	1.0	-52.0	-13.0	-39.0	
	5.5506	-12.4	V	3.0	40.0	1.0	-51.4	-13.0	-38.4	
	7.4008	0.4	V	3.0	39.2	1.0	-37.8	-13.0	-24.8	
	3.7000	-15.2	H	3.0	39.2	1.0	-53.4	-13.0	-40.4	
	5.5500	-9.7	H	3.0	40.0	1.0	-48.6	-13.0	-35.6	
	7.4000	-2.9	H	3.0	39.2	1.0	-41.1	-13.0	-28.1	
	Mid Ch, 1880.0MHz									
	3.7600	-11.2	V	3.0	39.1	1.0	-49.3	-13.0	-36.3	
	5.6400	-14.4	V	3.0	39.9	1.0	-53.3	-13.0	-40.3	
	7.5200	-1.3	V	3.0	39.1	1.0	-39.5	-13.0	-26.5	
	3.7600	-13.1	H	3.0	39.1	1.0	-51.2	-13.0	-38.2	
	5.6400	-7.4	H	3.0	39.9	1.0	-46.4	-13.0	-33.4	
	7.5200	-6.8	H	3.0	39.1	1.0	-45.0	-13.0	-32.0	
	High Ch, 1909.8 MHz									
	3.8196	-7.2	V	3.0	39.0	1.0	-45.2	-13.0	-32.2	
	5.7294	-12.4	V	3.0	39.9	1.0	-51.2	-13.0	-38.2	
	7.6392	-3.5	V	3.0	39.1	1.0	-41.6	-13.0	-28.6	
	3.8196	-10.4	H	3.0	39.0	1.0	-48.4	-13.0	-35.4	
	5.7294	-10.5	H	3.0	39.9	1.0	-49.4	-13.0	-36.4	
	7.6392	-8.4	H	3.0	39.1	1.0	-46.5	-13.0	-33.5	
	Rev. 03.03.09 Note: No other emissions were detected above the system noise floor.									

WCDMA Band 5

		UL Korea, Ltd Suwon Laboratory Above 1GHz High Frequency Substitution Measurement											
		Company: Samsung		Project #: 15K20515		Date: 05-01-15		Test Engineer: Steven Kim		Configuration: EUT / AC Adapter / Earphone / Y Position		Mode: Tx, REL99,850MHz	
WCDMA	Band 5 REL99	Chamber		Pre-amplifier		Filter		Limit					
		Chamber 1		AFS42		Filter 1		Part 24					
		f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes		
		Low Ch, 826.40MHz											
		1.6520	-19.8	V	3.0	40.2	1.0	-59.0	-13.0	-46.0			
		2.4790	-9.8	V	3.0	40.1	1.0	-48.8	-13.0	-35.8			
		3.3056	-23.0	V	3.0	39.6	1.0	-61.6	-13.0	-48.6			
		1.6520	-20.3	H	3.0	40.2	1.0	-59.5	-13.0	-46.5			
		2.4790	-5.9	H	3.0	40.1	1.0	-45.0	-13.0	-32.0			
		3.3056	-23.0	H	3.0	39.6	1.0	-61.6	-13.0	-48.6			
		Mid Ch, 836.6MHz											
		1.6732	-22.1	V	3.0	40.2	1.0	-61.3	-13.0	-48.3			
		2.5098	-12.2	V	3.0	40.1	1.0	-51.3	-13.0	-38.3			
		3.3464	-22.1	V	3.0	39.6	1.0	-60.6	-13.0	-47.6			
		1.6732	-20.3	H	3.0	40.2	1.0	-59.5	-13.0	-46.5			
		2.5098	-7.9	H	3.0	40.1	1.0	-46.9	-13.0	-33.9			
		3.3464	-22.3	H	3.0	39.6	1.0	-60.8	-13.0	-47.8			
		High Ch, 846.6MHz											
		1.6932	-21.2	V	3.0	40.2	1.0	-60.3	-13.0	-47.3			
		2.5390	-6.4	V	3.0	40.1	1.0	-45.5	-13.0	-32.5			
		3.3860	-21.1	V	3.0	39.5	1.0	-59.6	-13.0	-46.6			
		1.6932	-20.4	H	3.0	40.2	1.0	-59.5	-13.0	-46.5			
		2.5390	-8.5	H	3.0	40.1	1.0	-47.6	-13.0	-34.6			
		3.3860	-21.1	H	3.0	39.5	1.0	-59.6	-13.0	-46.6			
		Rev. 03.03.09 Note: No other emissions were detected above the system noise floor.											
WCDMA	Band 5 HSDPA	UL Korea, Ltd Suwon Laboratory Above 1GHz High Frequency Substitution Measurement											
		Company: Samsung		Project #: 15K20515		Date: 05-01-15		Test Engineer: Steven Kim		Configuration: EUT / AC Adapter / Earphone / Y Position		Mode: Tx, HSDPA,850MHz	
		Chamber		Pre-amplifier		Filter		Limit					
		Chamber 1		AFS42		Filter 1		Part 24					
		f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes		
		Low Ch, 826.40MHz											
		1.6520	-19.4	V	3.0	40.2	1.0	-58.5	-13.0	-45.5			
		2.4790	-8.8	V	3.0	40.1	1.0	-47.9	-13.0	-34.9			
		3.3056	-23.0	V	3.0	39.6	1.0	-61.6	-13.0	-48.6			
		1.6520	-19.7	H	3.0	40.2	1.0	-58.9	-13.0	-45.9			
		2.4790	-4.7	H	3.0	40.1	1.0	-43.8	-13.0	-30.8			
		3.3056	-23.2	H	3.0	39.6	1.0	-61.8	-13.0	-48.8			
		Mid Ch, 836.6MHz											
		1.6732	-21.8	V	3.0	40.2	1.0	-61.0	-13.0	-48.0			
		2.5098	-11.9	V	3.0	40.1	1.0	-50.9	-13.0	-37.9			
		3.3464	-22.1	V	3.0	39.6	1.0	-60.6	-13.0	-47.6			
		1.6732	-19.7	H	3.0	40.2	1.0	-58.9	-13.0	-45.9			
		2.5098	-7.6	H	3.0	40.1	1.0	-46.7	-13.0	-33.7			
		3.3464	-22.2	H	3.0	39.6	1.0	-60.8	-13.0	-47.8			
		High Ch, 846.6MHz											
		1.6932	-20.2	V	3.0	40.2	1.0	-59.4	-13.0	-46.4			
		2.5390	-5.9	V	3.0	40.1	1.0	-44.9	-13.0	-31.9			
		3.3860	-20.9	V	3.0	39.5	1.0	-59.4	-13.0	-46.4			
		1.6932	-19.2	H	3.0	40.2	1.0	-58.4	-13.0	-45.4			
		2.5390	-8.5	H	3.0	40.1	1.0	-47.6	-13.0	-34.6			
		3.3860	-21.2	H	3.0	39.5	1.0	-59.8	-13.0	-46.8			
		Rev. 03.03.09 Note: No other emissions were detected above the system noise floor.											

WCDMA Band 2

WCDMA Band 2 REL99	UL Korea, Ltd Suwon Laboratory Above 1GHz High Frequency Substitution Measurement Company: Samsung Project #: 15K20515 Date: 04-23-15 Test Engineer: Steven.Kim Configuration: EUT / AC Adapter / Earphone / Z Position Mode: Tx, REL99,1900MHz Chamber Pre-amplifier Filter Limit Chamber 1 AFS42 Filter 1 Part 24									
	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1852.4MHz										
	3.7050	-9.6	V	3.0	39.2	1.0	-47.8	-13.0	-34.8	
	5.5570	-12.7	V	3.0	40.0	1.0	-51.7	-13.0	-38.7	
	7.4090	-10.5	V	3.0	39.2	1.0	-48.7	-13.0	-35.7	
	3.7050	-10.5	H	3.0	39.2	1.0	-48.7	-13.0	-35.7	
	5.5570	-13.7	H	3.0	40.0	1.0	-52.6	-13.0	-39.6	
	7.4090	-10.7	H	3.0	39.2	1.0	-48.8	-13.0	-35.8	
Mid Ch, 1880MHz										
	3.7600	-17.2	V	3.0	39.1	1.0	-55.3	-13.0	-42.3	
	5.6400	-13.9	V	3.0	39.9	1.0	-52.8	-13.0	-39.8	
	7.5200	-10.7	V	3.0	39.1	1.0	-48.8	-13.0	-35.8	
	3.7600	-18.0	H	3.0	39.1	1.0	-56.1	-13.0	-43.1	
	5.6400	-13.8	H	3.0	39.9	1.0	-52.8	-13.0	-39.8	
	7.5200	-10.4	H	3.0	39.1	1.0	-48.5	-13.0	-35.5	
High Ch, 1907.6MHz										
	3.8150	-15.7	V	3.0	39.0	1.0	-53.8	-13.0	-40.8	
	5.7230	-13.3	V	3.0	39.9	1.0	-52.2	-13.0	-39.2	
	7.6300	-10.4	V	3.0	39.1	1.0	-48.5	-13.0	-35.5	
	3.8150	-15.8	H	3.0	39.0	1.0	-53.9	-13.0	-40.9	
	5.7230	-13.3	H	3.0	39.9	1.0	-52.2	-13.0	-39.2	
	7.6300	-10.0	H	3.0	39.1	1.0	-48.2	-13.0	-35.2	
Rev. 03.03.09 Note: No other emissions were detected above the system noise floor.										
WCDMA Band 2 HSDPA	UL Korea, Ltd Suwon Laboratory Above 1GHz High Frequency Substitution Measurement Company: Samsung Project #: 15K20515 Date: 04-23-15 Test Engineer: Steven.Kim Configuration: EUT / AC Adapter / Earphone / Z Position Mode: Tx, HSDPA,1900MHz Chamber Pre-amplifier Filter Limit Chamber 1 AFS42 Filter 1 Part 24									
	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1852.4MHz										
	3.7050	-10.0	V	3.0	39.2	1.0	-48.2	-13.0	-35.2	
	5.5570	-13.6	V	3.0	40.0	1.0	-52.6	-13.0	-39.6	
	7.4090	-10.7	V	3.0	39.2	1.0	-48.9	-13.0	-35.9	
	3.7050	-11.4	H	3.0	39.2	1.0	-49.6	-13.0	-36.6	
	5.5570	-13.6	H	3.0	40.0	1.0	-52.6	-13.0	-39.6	
	7.4090	-10.6	H	3.0	39.2	1.0	-48.7	-13.0	-35.7	
Mid Ch, 1880MHz										
	3.7600	-17.0	V	3.0	39.1	1.0	-55.0	-13.0	-42.0	
	5.6400	-13.8	V	3.0	39.9	1.0	-52.8	-13.0	-39.8	
	7.5200	-10.6	V	3.0	39.1	1.0	-48.8	-13.0	-35.8	
	3.7600	-17.5	H	3.0	39.1	1.0	-55.6	-13.0	-42.6	
	5.6400	-13.8	H	3.0	39.9	1.0	-52.7	-13.0	-39.7	
	7.5200	-10.3	H	3.0	39.1	1.0	-48.4	-13.0	-35.4	
High Ch, 1907.6MHz										
	3.8150	-15.8	V	3.0	39.0	1.0	-53.8	-13.0	-40.8	
	5.7230	-13.3	V	3.0	39.9	1.0	-52.2	-13.0	-39.2	
	7.6300	-10.3	V	3.0	39.1	1.0	-48.4	-13.0	-35.4	
	3.8150	-16.3	H	3.0	39.0	1.0	-54.3	-13.0	-41.3	
	5.7230	-13.3	H	3.0	39.9	1.0	-52.2	-13.0	-39.2	
	7.6300	-10.0	H	3.0	39.1	1.0	-48.1	-13.0	-35.1	
Rev. 03.03.09 Note: No other emissions were detected above the system noise floor.										

LTE Band 17

LTE Band 17 10MHz QPSK	UL Korea, Ltd Suwon Laboratory Above 1GHz High Frequency Substitution Measurement Company: Samsung Project #: 15K20515 Date: 05-03-15 Test Engineer: Steven.Kim Configuration: EUT / AC Adapter / Ear Phone / Y-Position Mode: TX, LTE BAND 17, 10MHz BW, QPSK									
	Chamber Pre-amplifier Filter Limit Chamber 1 AFS42 Filter 1 FCC Part 27									
	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamplifier (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
	Low Channel (709MHz)									
	1.4180	-25.2	V	3.0	40.2	1.0	-64.4	-13.0	-51.4	
	2.1270	-20.4	V	3.0	40.1	1.0	-59.6	-13.0	-46.6	
	2.8360	-31.0	V	3.0	40.0	1.0	-70.0	-13.0	-57.0	
	1.4180	-22.5	H	3.0	40.2	1.0	-61.6	-13.0	-48.6	
	2.1270	-18.2	H	3.0	40.1	1.0	-57.3	-13.0	-44.3	
	2.8360	-31.4	H	3.0	40.0	1.0	-70.3	-13.0	-57.3	
	Mid Channel (710MHz)									
	1.4200	-22.5	V	3.0	40.2	1.0	-61.7	-13.0	-48.7	
	2.1300	12.6	V	3.0	40.1	1.0	-26.5	-13.0	-13.5	
	2.8400	-31.1	V	3.0	40.0	1.0	-70.1	-13.0	-57.1	
	1.4200	-24.4	H	3.0	40.2	1.0	-63.6	-13.0	-50.6	
	2.1300	-25.5	H	3.0	40.1	1.0	-64.6	-13.0	-51.6	
	2.8400	-31.7	H	3.0	40.0	1.0	-70.7	-13.0	-57.7	
	High Channel (711MHz)									
	1.4220	-21.0	V	3.0	40.2	1.0	-60.2	-13.0	-47.2	
	2.1330	-17.9	V	3.0	40.1	1.0	-57.0	-13.0	-44.0	
	2.8440	-31.1	V	3.0	40.0	1.0	-70.1	-13.0	-57.1	
	1.4220	-22.3	H	3.0	40.2	1.0	-61.5	-13.0	-48.5	
	2.1330	-21.3	H	3.0	40.1	1.0	-60.4	-13.0	-47.4	
	2.8440	-31.7	H	3.0	40.0	1.0	-70.7	-13.0	-57.7	
	Rev. 03.03.09 Note: No other emissions were detected above the system noise floor.									
LTE Band 17 10MHz 16QAM	UL Korea, Ltd Suwon Laboratory Above 1GHz High Frequency Substitution Measurement Company: Samsung Project #: 15K20515 Date: 05-03-15 Test Engineer: Steven.Kim Configuration: EUT / AC Adapter / Ear Phone / Y-Position Mode: TX, LTE BAND 17, 10MHz BW, 16QAM									
	Chamber Pre-amplifier Filter Limit Chamber 1 AFS42 Filter 1 FCC Part 27									
	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamplifier (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
	Low Channel (709MHz)									
	1.4180	-27.7	V	3.0	40.2	1.0	-66.9	-13.0	-53.9	
	2.1270	-21.4	V	3.0	40.1	1.0	-60.6	-13.0	-47.6	
	2.8360	-30.9	V	3.0	40.0	1.0	-69.9	-13.0	-56.9	
	1.4180	-23.9	H	3.0	40.2	1.0	-63.1	-13.0	-50.1	
	2.1270	-18.9	H	3.0	40.1	1.0	-58.1	-13.0	-45.1	
	2.8360	-31.4	H	3.0	40.0	1.0	-70.3	-13.0	-57.3	
	Mid Channel (710MHz)									
	1.4200	-23.1	V	3.0	40.2	1.0	-62.3	-13.0	-49.3	
	2.1300	-19.0	V	3.0	40.1	1.0	-58.2	-13.0	-45.2	
	2.8400	-31.2	V	3.0	40.0	1.0	-70.2	-13.0	-57.2	
	1.4200	-25.9	H	3.0	40.2	1.0	-65.1	-13.0	-52.1	
	2.1300	-26.0	H	3.0	40.1	1.0	-65.1	-13.0	-52.1	
	2.8400	-31.5	H	3.0	40.0	1.0	-70.5	-13.0	-57.5	
	High Channel (711MHz)									
	1.4220	-22.4	V	3.0	40.2	1.0	-61.6	-13.0	-48.6	
	2.1330	-18.6	V	3.0	40.1	1.0	-57.8	-13.0	-44.8	
	2.8440	-31.3	V	3.0	40.0	1.0	-70.3	-13.0	-57.3	
	1.4220	-23.8	H	3.0	40.2	1.0	-63.0	-13.0	-50.0	
	2.1330	-22.3	H	3.0	40.1	1.0	-61.4	-13.0	-48.4	
	2.8440	-31.6	H	3.0	40.0	1.0	-70.6	-13.0	-57.6	
	Rev. 03.03.09 Note: No other emissions were detected above the system noise floor.									

LTE Band 17 5MHz QPSK	UL Korea, Ltd Suwon Laboratory Above 1GHz High Frequency Substitution Measurement									
	Company: Samsung Project #: 15K20515 Date: 05-03-15 Test Engineer: Steven.Kim Configuration: EUT / AC Adapter / Ear Phone / Y-Position Mode: TX, LTE BAND 17, 5MHz BW, QPSK									
	Chamber Chamber 1		Pre-amplifier AFS42		Filter Filter 1		Limit 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 (706.5MHz)									
	1.4130	-17.8	V	3.0	40.2	1.0	-57.0	-13.0	-44.0	
	2.1195	-13.6	V	3.0	40.1	1.0	-52.8	-13.0	-39.8	
	2.8260	-30.7	V	3.0	40.0	1.0	-69.6	-13.0	-56.6	
	1.4130	-25.1	H	3.0	40.2	1.0	-64.3	-13.0	-51.3	
	2.1195	-24.2	H	3.0	40.1	1.0	-63.4	-13.0	-50.4	
	2.8260	-31.1	H	3.0	40.0	1.0	-70.1	-13.0	-57.1	
	Mid Channel (710MHz)									
	1.4200	-21.0	V	3.0	40.2	1.0	-60.2	-13.0	-47.2	
	2.1300	-13.4	V	3.0	40.1	1.0	-52.6	-13.0	-39.6	
	2.8400	-30.7	V	3.0	40.0	1.0	-69.6	-13.0	-56.6	
	1.4200	-25.4	H	3.0	40.2	1.0	-64.6	-13.0	-51.6	
	2.1300	-23.2	H	3.0	40.1	1.0	-62.3	-13.0	-49.3	
	2.8400	-31.2	H	3.0	40.0	1.0	-70.2	-13.0	-57.2	
	High Channel (713.5MHz)									
	1.4270	-17.8	V	3.0	40.2	1.0	-57.0	-13.0	-44.0	
	2.1405	-15.4	V	3.0	40.1	1.0	-54.6	-13.0	-41.6	
	2.8540	-30.9	V	3.0	40.0	1.0	-69.9	-13.0	-56.9	
	1.4270	-25.4	H	3.0	40.2	1.0	-64.6	-13.0	-51.6	
	2.1405	-22.3	H	3.0	40.1	1.0	-61.4	-13.0	-48.4	
	2.8540	-31.2	H	3.0	40.0	1.0	-70.2	-13.0	-57.2	
	Rev. 03.03.09									
	Note: No other emissions were detected above the system noise floor.									
LTE Band 17 5MHz 16QAM	UL Korea, Ltd Suwon Laboratory Above 1GHz High Frequency Substitution Measurement									
	Company: Samsung Project #: 15K20515 Date: 05-03-15 Test Engineer: Steven.Kim Configuration: EUT / AC Adapter / Ear Phone / Y-Position Mode: TX, LTE BAND 17, 5MHz BW, 16QAM									
	Chamber Chamber 1		Pre-amplifier AFS42		Filter Filter 1		Limit 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 (706.5MHz)									
	1.4130	-20.4	V	3.0	40.2	1.0	-59.6	-13.0	-46.6	
	2.1195	-15.0	V	3.0	40.1	1.0	-54.2	-13.0	-41.2	
	2.8260	-30.6	V	3.0	40.0	1.0	-69.6	-13.0	-56.6	
	1.4130	-26.4	H	3.0	40.2	1.0	-65.6	-13.0	-52.6	
	2.1195	-25.4	H	3.0	40.1	1.0	-64.5	-13.0	-51.5	
	2.8260	-31.0	H	3.0	40.0	1.0	-70.0	-13.0	-57.0	
	Mid Channel (710MHz)									
	1.4200	-22.4	V	3.0	40.2	1.0	-61.6	-13.0	-48.6	
	2.1300	-16.1	V	3.0	40.1	1.0	-55.2	-13.0	-42.2	
	2.8400	-30.9	V	3.0	40.0	1.0	-69.9	-13.0	-56.9	
	1.4200	-26.2	H	3.0	40.2	1.0	-65.4	-13.0	-52.4	
	2.1300	-24.2	H	3.0	40.1	1.0	-63.4	-13.0	-50.4	
	2.8400	-31.4	H	3.0	40.0	1.0	-70.4	-13.0	-57.4	
	High Channel (713.5MHz)									
	1.4270	-19.0	V	3.0	40.2	1.0	-58.2	-13.0	-45.2	
	2.1405	-17.3	V	3.0	40.1	1.0	-56.4	-13.0	-43.4	
	2.8540	-30.9	V	3.0	40.0	1.0	-69.9	-13.0	-56.9	
	1.4270	-26.3	H	3.0	40.2	1.0	-65.5	-13.0	-52.5	
	2.1405	-23.5	H	3.0	40.1	1.0	-62.6	-13.0	-49.6	
	2.8540	-31.3	H	3.0	40.0	1.0	-70.3	-13.0	-57.3	
	Rev. 03.03.09									
	Note: No other emissions were detected above the system noise floor.									

LTE Band 5

LTE Band 5 10MHz QPSK	UL Korea, Ltd Suwon Laboratory Above 1GHz High Frequency Substitution Measurement Company: Samsung Project #: 15K20515 Date: 05-04-15 Test Engineer: Steven Kim Configuration: EUT / AC Adapter / Earphone / Y Position Mode: TX, LTE BAND 5, 10MHz BW, QPSK									
	Chamber: Chamber 1 Pre-amplifier: AFS42 Filter: Filter 1 Limit: Part 24									
	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	Low Channel (829MHz)									
	1.6580	-13.4	V	3.0	40.2	1.0	-52.6	-13.0	-39.6	
	2.4870	-13.7	V	3.0	40.1	1.0	-52.8	-13.0	-39.8	
	3.3160	-29.9	V	3.0	39.6	1.0	-68.5	-13.0	-55.5	
	1.6580	-17.7	H	3.0	40.2	1.0	-56.9	-13.0	-43.9	
	2.4870	-12.4	H	3.0	40.1	1.0	-51.5	-13.0	-38.5	
	3.3160	-29.8	H	3.0	39.6	1.0	-68.4	-13.0	-55.4	
	Mid Channel (836.5MHz)									
	1.6730	-18.8	V	3.0	40.2	1.0	-58.0	-13.0	-45.0	
	2.5090	-11.4	V	3.0	40.1	1.0	-50.4	-13.0	-37.4	
	3.3460	-29.1	V	3.0	39.6	1.0	-67.6	-13.0	-54.6	
	1.6730	-19.0	H	3.0	40.2	1.0	-58.1	-13.0	-45.1	
	2.5090	-12.4	H	3.0	40.1	1.0	-51.5	-13.0	-38.5	
	3.3460	-29.5	H	3.0	39.6	1.0	-68.1	-13.0	-55.1	
	High Channel (844MHz)									
	1.6880	-4.1	V	3.0	40.2	1.0	-43.3	-13.0	-30.3	
	2.5320	-7.6	V	3.0	40.1	1.0	-46.7	-13.0	-33.7	
	3.3760	-28.9	V	3.0	39.5	1.0	-67.4	-13.0	-54.4	
	1.6880	-1.1	H	3.0	40.2	1.0	-40.3	-13.0	-27.3	
	2.5320	-9.8	H	3.0	40.1	1.0	-48.8	-13.0	-35.8	
	3.3760	-29.1	H	3.0	39.5	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 5 10MHz 16QAM	UL Korea, Ltd Suwon Laboratory Above 1GHz High Frequency Substitution Measurement Company: Samsung Project #: 15K20515 Date: 05-04-15 Test Engineer: Steven Kim Configuration: EUT / AC Adapter / Earphone / Y Position Mode: TX, LTE BAND 5, 10MHz BW, 16QAM									
	Chamber: Chamber 1 Pre-amplifier: AFS42 Filter: Filter 1 Limit: Part 24									
	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	Low Channel (829MHz)									
	1.6580	-14.8	V	3.0	40.2	1.0	-54.0	-13.0	-41.0	
	2.4870	-14.6	V	3.0	40.1	1.0	-53.7	-13.0	-40.7	
	3.3160	-29.3	V	3.0	39.6	1.0	-67.9	-13.0	-54.9	
	1.6580	-17.5	H	3.0	40.2	1.0	-56.6	-13.0	-43.6	
	2.4870	-14.7	H	3.0	40.1	1.0	-53.8	-13.0	-40.8	
	3.3160	-29.7	H	3.0	39.6	1.0	-68.3	-13.0	-55.3	
	Mid Channel (836.5MHz)									
	1.6730	-19.2	V	3.0	40.2	1.0	-58.4	-13.0	-45.4	
	2.5090	-11.6	V	3.0	40.1	1.0	-50.7	-13.0	-37.7	
	3.3460	-29.0	V	3.0	39.6	1.0	-67.5	-13.0	-54.5	
	1.6730	-22.4	H	3.0	40.2	1.0	-61.6	-13.0	-48.6	
	2.5090	-14.1	H	3.0	40.1	1.0	-53.1	-13.0	-40.1	
	3.3460	-29.0	H	3.0	39.6	1.0	-67.5	-13.0	-54.5	
	High Channel (844MHz)									
	1.6880	-12.9	V	3.0	40.2	1.0	-52.1	-13.0	-39.1	
	2.5320	-10.3	V	3.0	40.1	1.0	-49.3	-13.0	-36.3	
	3.3760	-28.7	V	3.0	39.5	1.0	-67.2	-13.0	-54.2	
	1.6880	-12.0	H	3.0	40.2	1.0	-51.2	-13.0	-38.2	
	2.5320	-11.0	H	3.0	40.1	1.0	-50.1	-13.0	-37.1	
	3.3760	-29.1	H	3.0	39.5	1.0	-67.6	-13.0	-54.6	
	Rev. 03.03.09 Note: No other emissions were detected above the system noise floor.									

UL Korea, Ltd Suwon Laboratory Above 1GHz High Frequency Substitution Measurement Company: Samsung Project #: 15K20515 Date: 05-04-15 Test Engineer: Steven Kim Configuration: EUT / AC Adapter / Earphone / Y Position Mode: TX, LTE BAND 5, 5MHz BW,QPSK										
LTE Band 5 5MHz QPSK	Chamber		Pre-amplifier		Filter		Limit			
	Chamber 1		AFS42		Filter 1		Part 24			
	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	Low Channel (826.5MHz)									
	1.6530	-14.4	V	3.0	40.2	1.0	-53.6	-13.0	-40.6	
	2.4790	-14.8	V	3.0	40.1	1.0	-53.9	-13.0	-40.9	
	3.3060	-29.4	V	3.0	39.6	1.0	-68.0	-13.0	-55.0	
	1.6530	-21.8	H	3.0	40.2	1.0	-61.0	-13.0	-48.0	
	2.4790	-15.1	H	3.0	40.1	1.0	-54.2	-13.0	-41.2	
	3.3060	-29.9	H	3.0	39.6	1.0	-68.5	-13.0	-55.5	
	Mid Channel (836.5MHz)									
	1.6730	-18.7	V	3.0	40.2	1.0	-57.9	-13.0	-44.9	
	2.5090	-9.2	V	3.0	40.1	1.0	-48.2	-13.0	-35.2	
	3.3460	-29.0	V	3.0	39.6	1.0	-67.5	-13.0	-54.5	
	1.6730	-21.3	H	3.0	40.2	1.0	-60.5	-13.0	-47.5	
	2.5090	-12.8	H	3.0	40.1	1.0	-51.9	-13.0	-38.9	
	3.3460	-29.0	H	3.0	39.6	1.0	-67.5	-13.0	-54.5	
	High Channel (846.5MHz)									
	1.6930	-2.2	V	3.0	40.2	1.0	-41.4	-13.0	-28.4	
	2.5390	-7.1	V	3.0	40.1	1.0	-46.2	-13.0	-33.2	
	3.3860	-28.2	V	3.0	39.5	1.0	-66.7	-13.0	-53.7	
	1.6930	-8.7	H	3.0	40.2	1.0	-47.9	-13.0	-34.9	
	2.5390	-10.6	H	3.0	40.1	1.0	-49.7	-13.0	-36.7	
	3.3860	-28.6	H	3.0	39.5	1.0	-67.1	-13.0	-54.1	
Rev. 03.03.09 Note: No other emissions were detected above the system noise floor.										
UL Korea, Ltd Suwon Laboratory Above 1GHz High Frequency Substitution Measurement Company: Samsung Project #: 15K20515 Date: 05-04-15 Test Engineer: Steven Kim Configuration: EUT / AC Adapter / Earphone / Y Position Mode: TX, LTE BAND 5, 5MHz BW,16QAM										
LTE Band 5 5MHz 16QAM	Chamber		Pre-amplifier		Filter		Limit			
	Chamber 1		AFS42		Filter 1		Part 24			
	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	Low Channel (826.5MHz)									
	1.6530	-16.2	V	3.0	40.2	1.0	-55.4	-13.0	-42.4	
	2.4790	-16.0	V	3.0	40.1	1.0	-55.1	-13.0	-42.1	
	3.3060	-29.8	V	3.0	39.6	1.0	-68.4	-13.0	-55.4	
	1.6530	-19.4	H	3.0	40.2	1.0	-58.5	-13.0	-45.5	
	2.4790	-15.4	H	3.0	40.1	1.0	-54.5	-13.0	-41.5	
	3.3060	-29.9	H	3.0	39.6	1.0	-68.5	-13.0	-55.5	
	Mid Channel (836.5MHz)									
	1.6730	-17.8	V	3.0	40.2	1.0	-57.0	-13.0	-44.0	
	2.5090	-10.7	V	3.0	40.1	1.0	-49.8	-13.0	-36.8	
	3.3460	-28.9	V	3.0	39.6	1.0	-67.5	-13.0	-54.5	
	1.6730	-21.9	H	3.0	40.2	1.0	-61.1	-13.0	-48.1	
	2.5090	-11.6	H	3.0	40.1	1.0	-50.7	-13.0	-37.7	
	3.3460	-28.9	H	3.0	39.6	1.0	-67.4	-13.0	-54.4	
	High Channel (846.5MHz)									
	1.6930	-3.1	V	3.0	40.2	1.0	-42.3	-13.0	-29.3	
	2.5390	-9.5	V	3.0	40.1	1.0	-48.6	-13.0	-35.6	
	3.3860	-28.2	V	3.0	39.5	1.0	-66.7	-13.0	-53.7	
	1.6930	-9.2	H	3.0	40.2	1.0	-48.4	-13.0	-35.4	
	2.5390	-12.9	H	3.0	40.1	1.0	-51.9	-13.0	-38.9	
	3.3860	-28.4	H	3.0	39.5	1.0	-66.9	-13.0	-53.9	
Rev. 03.03.09 Note: No other emissions were detected above the system noise floor.										

LTE Band 5 3MHz QPSK	UL Korea, Ltd Suwon Laboratory Above 1GHz High Frequency Substitution Measurement									
	Company: Samsung									
	Project #: 15K20515									
	Date: 05-04-15									
	Test Engineer: Steven Kim									
	Configuration: EUT / AC Adapter / Earphone / Y Position									
	Mode: TX, LTE BAND 5, 3MHz BW,QPSK									
	Chamber		Pre-amplifier		Filter		Limit			
	Chamber 1		AFS42		Filter 1		Part 24			
	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	Low Channel (825.5MHz)									
	1.6510	-16.2	V	3.0	40.2	1.0	-55.4	-13.0	-42.4	
	2.4675	-15.6	V	3.0	40.1	1.0	-54.7	-13.0	-41.7	
	3.3020	-29.2	V	3.0	39.6	1.0	-67.8	-13.0	-54.8	
	1.6510	-23.7	H	3.0	40.2	1.0	-62.9	-13.0	-49.9	
	2.4675	-13.7	H	3.0	40.1	1.0	-52.7	-13.0	-39.7	
	3.3020	-29.9	H	3.0	39.6	1.0	-68.5	-13.0	-55.5	
	Mid Channel (836.5MHz)									
	1.6730	-19.0	V	3.0	40.2	1.0	-58.2	-13.0	-45.2	
	2.5090	-9.1	V	3.0	40.1	1.0	-48.2	-13.0	-35.2	
	3.3460	-28.9	V	3.0	39.6	1.0	-67.5	-13.0	-54.5	
	1.6730	-22.6	H	3.0	40.2	1.0	-61.8	-13.0	-48.8	
	2.5090	-12.0	H	3.0	40.1	1.0	-51.1	-13.0	-38.1	
	3.3460	-29.0	H	3.0	39.6	1.0	-67.6	-13.0	-54.6	
	High Channel (847.5MHz)									
	1.6950	-4.7	V	3.0	40.2	1.0	-43.8	-13.0	-30.8	
2.5425	-6.3	V	3.0	40.1	1.0	-45.3	-13.0	-32.3		
3.3900	-27.7	V	3.0	39.5	1.0	-66.2	-13.0	-53.2		
1.6950	-12.0	H	3.0	40.2	1.0	-51.2	-13.0	-38.2		
2.5425	-7.5	H	3.0	40.1	1.0	-46.6	-13.0	-33.6		
3.3900	-27.9	H	3.0	39.5	1.0	-66.4	-13.0	-53.4		
Rev. 03.03.09 Note: No other emissions were detected above the system noise floor.										

LTE Band 5 3MHz 16QAM	UL Korea, Ltd Suwon Laboratory Above 1GHz High Frequency Substitution Measurement									
	Company: Samsung									
	Project #: 15K20515									
	Date: 05-04-15									
	Test Engineer: Steven Kim									
	Configuration: EUT / AC Adapter / Earphone / Y Position									
	Mode: TX, LTE BAND 5, 3MHz BW,16QAM									
	Chamber		Pre-amplifier		Filter		Limit			
	Chamber 1		AFS42		Filter 1		Part 24			
	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	Low Channel (825.5MHz)									
	1.6510	-19.2	V	3.0	40.2	1.0	-58.3	-13.0	-45.3	
	2.4675	-17.9	V	3.0	40.1	1.0	-57.0	-13.0	-44.0	
	3.3020	-29.7	V	3.0	39.6	1.0	-68.4	-13.0	-55.4	
	1.6510	-24.2	H	3.0	40.2	1.0	-63.4	-13.0	-50.4	
	2.4675	-16.1	H	3.0	40.1	1.0	-55.2	-13.0	-42.2	
	3.3020	-30.0	H	3.0	39.6	1.0	-68.6	-13.0	-55.6	
	Mid Channel (836.5MHz)									
	1.6730	-22.2	V	3.0	40.2	1.0	-61.4	-13.0	-48.4	
	2.5090	-10.9	V	3.0	40.1	1.0	-50.0	-13.0	-37.0	
	3.3460	-28.9	V	3.0	39.6	1.0	-67.5	-13.0	-54.5	
	1.6730	-22.0	H	3.0	40.2	1.0	-61.1	-13.0	-48.1	
	2.5090	-14.2	H	3.0	40.1	1.0	-53.3	-13.0	-40.3	
	3.3460	-28.8	H	3.0	39.6	1.0	-67.3	-13.0	-54.3	
	High Channel (847.5MHz)									
	1.6950	-4.6	V	3.0	40.2	1.0	-43.8	-13.0	-30.8	
2.5425	-9.1	V	3.0	40.1	1.0	-48.2	-13.0	-35.2		
3.3900	-27.9	V	3.0	39.5	1.0	-66.4	-13.0	-53.4		
1.6950	-12.0	H	3.0	40.2	1.0	-51.1	-13.0	-38.1		
2.5425	-10.7	H	3.0	40.1	1.0	-49.8	-13.0	-36.8		
3.3900	-28.0	H	3.0	39.5	1.0	-66.5	-13.0	-53.5		
Rev. 03.03.09 Note: No other emissions were detected above the system noise floor.										

LTE Band 5 1.4MHz QPSK	UL Korea, Ltd Suwon Laboratory Above 1GHz High Frequency Substitution Measurement									
	Company: Samsung									
	Project #: 15K20515									
	Date: 05-04-15									
	Test Engineer: Steven.Kim									
	Configuration: EUT / AC Adapter / Earphone, X Position									
	Mode: TX, LTE BAND 5, 1.4MHz BW,QPSK									
	Chamber		Pre-amplifier		Filter		Limit			
	Chamber 1		AFS42		Filter 1		Part 24			
	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	Low Channel (824.7MHz)									
	1.6494	-20.5	V	3.0	40.2	1.0	-59.7	-13.0	-46.7	
	2.4741	-17.2	V	3.0	40.1	1.0	-56.3	-13.0	-43.3	
	3.2988	-30.0	V	3.0	39.6	1.0	-68.6	-13.0	-55.6	
	1.6494	-23.3	H	3.0	40.2	1.0	-62.5	-13.0	-49.5	
	2.4741	-16.9	H	3.0	40.1	1.0	-56.0	-13.0	-43.0	
	3.2988	-30.4	H	3.0	39.6	1.0	-69.0	-13.0	-56.0	
	Mid Channel (836.5MHz)									
	1.6730	117.4	V	3.0	40.2	1.0	78.2	-13.0	91.2	
	2.5090	-11.9	V	3.0	40.1	1.0	-51.0	-13.0	-38.0	
	3.3460	-29.3	V	3.0	39.6	1.0	-67.8	-13.0	-54.8	
	1.6730	-20.0	H	3.0	40.2	1.0	-59.1	-13.0	-46.1	
	2.5090	-13.3	H	3.0	40.1	1.0	-52.3	-13.0	-39.3	
	3.3460	-29.6	H	3.0	39.6	1.0	-68.1	-13.0	-55.1	
	High Channel (844.3MHz)									
1.6886	-6.2	V	3.0	40.2	1.0	-45.4	-13.0	-32.4		
2.5329	-9.9	V	3.0	40.1	1.0	-48.9	-13.0	-35.9		
3.3772	-29.4	V	3.0	39.5	1.0	-67.9	-13.0	-54.9		
1.6886	-12.0	H	3.0	40.2	1.0	-51.2	-13.0	-38.2		
2.5329	-8.9	H	3.0	40.1	1.0	-48.0	-13.0	-35.0		
3.3772	-29.7	H	3.0	39.5	1.0	-68.2	-13.0	-55.2		
Rev. 03.03.09 Note: No other emissions were detected above the system noise floor.										

LTE Band 5 1.4MHz 16QAM	UL Korea, Ltd Suwon Laboratory Above 1GHz High Frequency Substitution Measurement									
	Company: Samsung									
	Project #: 15K20515									
	Date: 05-04-15									
	Test Engineer: Steven.Kim									
	Configuration: EUT / AC Adapter / Earphone, Y Position									
	Mode: TX, LTE BAND 5, 1.4MHz BW,16QAM									
	Chamber		Pre-amplifier		Filter		Limit			
	Chamber 1		AFS42		Filter 1		Part 24			
	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	Low Channel (824.7MHz)									
	1.6494	-33.6	V	3.0	40.2	1.0	-72.8	-13.0	-59.8	
	2.4741	-26.6	V	3.0	40.1	1.0	-65.7	-13.0	-52.7	
	3.2988	-37.1	V	3.0	39.6	1.0	-75.7	-13.0	-62.7	
	1.6494	-34.5	H	3.0	40.2	1.0	-73.7	-13.0	-60.7	
	2.4741	-23.4	H	3.0	40.1	1.0	-62.5	-13.0	-49.5	
	3.2988	-37.3	H	3.0	39.6	1.0	-75.9	-13.0	-62.9	
	Mid Channel (836.5MHz)									
	1.6730	-32.0	V	3.0	40.2	1.0	-71.2	-13.0	-58.2	
	2.5090	-23.7	V	3.0	40.1	1.0	-62.8	-13.0	-49.8	
	3.3460	-36.3	V	3.0	39.6	1.0	-74.8	-13.0	-61.8	
	1.6730	-35.9	H	3.0	40.2	1.0	-75.0	-13.0	-62.0	
	2.5090	-28.4	H	3.0	40.1	1.0	-67.5	-13.0	-54.5	
	3.3460	-36.5	H	3.0	39.6	1.0	-75.0	-13.0	-62.0	
	High Channel (844.3MHz)									
1.6886	-18.6	V	3.0	40.2	1.0	-57.8	-13.0	-44.8		
2.5329	-18.6	V	3.0	40.1	1.0	-57.6	-13.0	-44.6		
3.3772	-36.9	V	3.0	39.5	1.0	-75.4	-13.0	-62.4		
1.6886	-25.5	H	3.0	40.2	1.0	-64.7	-13.0	-51.7		
2.5329	-27.3	H	3.0	40.1	1.0	-66.3	-13.0	-53.3		
3.3772	-36.7	H	3.0	39.5	1.0	-75.2	-13.0	-62.2		
Rev. 03.03.09 Note: No other emissions were detected above the system noise floor.										

LTE Band 4

LTE Band 4 20MHz QPSK	UL Korea, Ltd Suwon Laboratory Above 1GHz High Frequency Substitution Measurement Company: Samsung Project #: 15K20515 Date: 05-03-15 Test Engineer: Steven.Kim Configuration: EUT / AC Adapter / Ear Phone / Z-Position Mode: TX, LTE BAND 4, 20MHz BW, QPSK									
	Chamber Pre-amplifier Filter Limit Chamber 1 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	-19.9	V	3.0	39.5	1.0	-58.4	-13.0	-45.4	
	5.1600	-15.3	V	3.0	40.1	1.0	-54.4	-13.0	-41.4	
	6.8800	-13.8	V	3.0	39.4	1.0	-52.2	-13.0	-39.2	
	3.4400	-19.0	H	3.0	39.5	1.0	-57.5	-13.0	-44.5	
	5.1600	-10.3	H	3.0	40.1	1.0	-49.4	-13.0	-36.4	
	6.8800	-7.1	H	3.0	39.4	1.0	-45.5	-13.0	-32.5	
	Mid Channel (1732.5MHz)									
	3.4650	-20.5	V	3.0	39.4	1.0	-59.0	-13.0	-46.0	
	5.1975	-9.9	V	3.0	40.1	1.0	-49.0	-13.0	-36.0	
	6.9300	-16.8	V	3.0	39.4	1.0	-55.2	-13.0	-42.2	
	3.4650	-19.6	H	3.0	39.4	1.0	-58.0	-13.0	-45.0	
	5.1975	-9.1	H	3.0	40.1	1.0	-48.2	-13.0	-35.2	
	6.9300	-14.0	H	3.0	39.4	1.0	-52.4	-13.0	-39.4	
	High Channel (1745MHz)									
	3.4900	-22.3	V	3.0	39.4	1.0	-60.7	-13.0	-47.7	
	5.2350	-17.5	V	3.0	40.1	1.0	-56.6	-13.0	-43.6	
	6.9800	-11.6	V	3.0	39.3	1.0	-50.0	-13.0	-37.0	
	3.4900	-19.5	H	3.0	39.4	1.0	-57.9	-13.0	-44.9	
	5.2350	-10.2	H	3.0	40.1	1.0	-49.3	-13.0	-36.3	
	6.9800	-13.3	H	3.0	39.3	1.0	-51.6	-13.0	-38.6	
	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 #: 15K20515 Date: 05-03-15 Test Engineer: Steven.Kim Configuration: EUT / AC Adapter / Ear Phone / Z-Position Mode: TX, LTE BAND 4, 20MHz BW, 16QAM									
	Chamber Pre-amplifier Filter Limit Chamber 1 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	-21.7	V	3.0	39.5	1.0	-60.1	-13.0	-47.1	
	5.1600	-16.6	V	3.0	40.1	1.0	-55.7	-13.0	-42.7	
	6.8800	-15.0	V	3.0	39.4	1.0	-53.4	-13.0	-40.4	
	3.4400	-20.6	H	3.0	39.5	1.0	-59.1	-13.0	-46.1	
	5.1600	-11.7	H	3.0	40.1	1.0	-50.7	-13.0	-37.7	
	6.8800	-17.3	H	3.0	39.4	1.0	-55.7	-13.0	-42.7	
	Mid Channel (1732.5MHz)									
	3.4650	-22.3	V	3.0	39.4	1.0	-60.7	-13.0	-47.7	
	5.1975	-11.4	V	3.0	40.1	1.0	-50.5	-13.0	-37.5	
	6.9300	-17.3	V	3.0	39.4	1.0	-55.6	-13.0	-42.6	
	3.4650	-20.6	H	3.0	39.4	1.0	-59.0	-13.0	-46.0	
	5.1975	-10.3	H	3.0	40.1	1.0	-49.4	-13.0	-36.4	
	6.9300	-15.8	H	3.0	39.4	1.0	-54.1	-13.0	-41.1	
	High Channel (1745MHz)									
	3.4900	-22.4	V	3.0	39.4	1.0	-60.8	-13.0	-47.8	
	5.2350	-18.5	V	3.0	40.1	1.0	-57.6	-13.0	-44.6	
	6.9800	-12.9	V	3.0	39.3	1.0	-51.3	-13.0	-38.3	
	3.4900	-21.0	H	3.0	39.4	1.0	-59.4	-13.0	-46.4	
	5.2350	-10.8	H	3.0	40.1	1.0	-49.9	-13.0	-36.9	
	6.9800	-14.5	H	3.0	39.3	1.0	-52.9	-13.0	-39.9	
	Rev. 03.03.09 Note: No other emissions were detected above the system noise floor.									

LTE Band 4 15MHz QPSK	UL Korea, Ltd Suwon Laboratory Above 1GHz High Frequency Substitution Measurement									
	Company: Samsung									
	Project #: 15K20515									
	Date: 05-03-15									
	Test Engineer: Steven.Kim									
	Configuration: EUT / AC Adapter / Ear Phone / Z-Position									
	Mode: TX, LTE BAND 4, 15MHz BW,QPSK									
	Chamber		Pre-amplifier		Filter		Limit			
	Chamber 1		AFS42		Filter 1		FCC Part 27			
	f	SG reading	Ant. Pol.	Distance	Preamp	Filter	ERP	Limit	Delta	Notes
	GHz	(dBm)	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)	
	Low Channel (1717.5MHz)									
	3.4350	-21.7	V	3.0	39.5	1.0	-60.2	-13.0	-47.2	
	5.1525	-16.3	V	3.0	40.1	1.0	-55.4	-13.0	-42.4	
	6.8700	-15.0	V	3.0	39.4	1.0	-53.4	-13.0	-40.4	
	3.4350	-20.2	H	3.0	39.5	1.0	-58.6	-13.0	-45.6	
	5.1525	-12.4	H	3.0	40.1	1.0	-51.4	-13.0	-38.4	
	6.8700	-16.9	H	3.0	39.4	1.0	-55.3	-13.0	-42.3	
	Mid Channel (1732.5MHz)									
	3.4650	-22.2	V	3.0	39.4	1.0	-60.7	-13.0	-47.7	
	5.1975	-10.2	V	3.0	40.1	1.0	-49.3	-13.0	-36.3	
	6.9300	-17.0	V	3.0	39.4	1.0	-55.4	-13.0	-42.4	
	3.4650	-19.0	H	3.0	39.4	1.0	-57.4	-13.0	-44.4	
	5.1975	-10.3	H	3.0	40.1	1.0	-49.4	-13.0	-36.4	
6.9300	-16.2	H	3.0	39.4	1.0	-54.5	-13.0	-41.5		
High Channel (1747.5MHz)										
3.4950	-20.4	V	3.0	39.4	1.0	-58.8	-13.0	-45.8		
5.2425	-15.8	V	3.0	40.1	1.0	-54.9	-13.0	-41.9		
6.9900	-13.3	V	3.0	39.3	1.0	-51.7	-13.0	-38.7		
3.4950	-20.5	H	3.0	39.4	1.0	-58.9	-13.0	-45.9		
5.2425	-18.1	H	3.0	40.1	1.0	-57.2	-13.0	-44.2		
6.9900	-13.2	H	3.0	39.3	1.0	-51.6	-13.0	-38.6		
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 #: 15K20515									
	Date: 05-03-15									
	Test Engineer: Steven.Kim									
	Configuration: EUT / AC Adapter / Ear Phone / Z-Position									
	Mode: TX, LTE BAND 4, 15MHz BW,16QAM									
	Chamber		Pre-amplifier		Filter		Limit			
	Chamber 1		AFS42		Filter 1		FCC Part 27			
	f	SG reading	Ant. Pol.	Distance	Preamp	Filter	ERP	Limit	Delta	Notes
	GHz	(dBm)	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)	
	Low Channel (1717.5MHz)									
	3.4350	-22.1	V	3.0	39.5	1.0	-60.5	-13.0	-47.5	
	5.1525	-17.2	V	3.0	40.1	1.0	-56.3	-13.0	-43.3	
	6.8700	-15.7	V	3.0	39.4	1.0	-54.1	-13.0	-41.1	
	3.4350	-21.7	H	3.0	39.5	1.0	-60.1	-13.0	-47.1	
	5.1525	-13.1	H	3.0	40.1	1.0	-52.2	-13.0	-39.2	
	6.8700	-17.4	H	3.0	39.4	1.0	-55.8	-13.0	-42.8	
	Mid Channel (1732.5MHz)									
	3.4650	-22.9	V	3.0	39.4	1.0	-61.3	-13.0	-48.3	
	5.1975	-11.6	V	3.0	40.1	1.0	-50.7	-13.0	-37.7	
	6.9300	-17.3	V	3.0	39.4	1.0	-55.6	-13.0	-42.6	
	3.4650	-20.1	H	3.0	39.4	1.0	-58.5	-13.0	-45.5	
	5.1975	-11.0	H	3.0	40.1	1.0	-50.2	-13.0	-37.2	
6.9300	-17.0	H	3.0	39.4	1.0	-55.4	-13.0	-42.4		
High Channel (1747.5MHz)										
3.4950	-21.5	V	3.0	39.4	1.0	-59.9	-13.0	-46.9		
5.2425	-16.7	V	3.0	40.1	1.0	-55.8	-13.0	-42.8		
6.9900	-14.3	V	3.0	39.3	1.0	-52.6	-13.0	-39.6		
3.4950	-21.8	H	3.0	39.4	1.0	-60.2	-13.0	-47.2		
5.2425	-19.3	H	3.0	40.1	1.0	-58.4	-13.0	-45.4		
6.9900	-14.4	H	3.0	39.3	1.0	-52.7	-13.0	-39.7		
Rev. 03.03.09										
Note: No other emissions were detected above the system noise floor.										

LTE Band 4 10MHz QPSK	UL Korea, Ltd Suwon Laboratory Above 1GHz High Frequency Substitution Measurement									
	Company: Samsung									
	Project #: 15K20515									
	Date: 05-03-15									
	Test Engineer: Steven.Kim									
	Configuration: EUT / AC Adapter / Ear Phone / Z-Position									
	Mode: TX, LTE BAND 4, 10MHz BW, QPSK									
	Chamber		Pre-amplifier		Filter		Limit			
	Chamber 1		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	-22.0	V	3.0	39.5	1.0	-60.5	-13.0	-47.5	
	5.1450	-15.6	V	3.0	40.1	1.0	-54.6	-13.0	-41.6	
	6.8600	-16.3	V	3.0	39.4	1.0	-54.7	-13.0	-41.7	
	3.4300	-21.5	H	3.0	39.5	1.0	-59.9	-13.0	-46.9	
	5.1450	-15.5	H	3.0	40.1	1.0	-54.5	-13.0	-41.5	
	6.8600	-16.4	H	3.0	39.4	1.0	-54.8	-13.0	-41.8	
	Mid Channel (1732.5MHz)									
	3.4650	-21.7	V	3.0	39.4	1.0	-60.1	-13.0	-47.1	
	5.1975	-11.3	V	3.0	40.1	1.0	-50.4	-13.0	-37.4	
	6.9300	-15.5	V	3.0	39.4	1.0	-53.9	-13.0	-40.9	
	3.4650	-22.0	H	3.0	39.4	1.0	-60.4	-13.0	-47.4	
	5.1975	-14.4	H	3.0	40.1	1.0	-53.5	-13.0	-40.5	
	6.9300	-14.2	H	3.0	39.4	1.0	-52.6	-13.0	-39.6	
	High Channel (1750MHz)									
	3.5000	-20.3	V	3.0	39.4	1.0	-58.7	-13.0	-45.7	
5.2500	-14.3	V	3.0	40.1	1.0	-53.4	-13.0	-40.4		
7.0000	-15.4	V	3.0	39.3	1.0	-53.7	-13.0	-40.7		
3.5000	-20.9	H	3.0	39.4	1.0	-59.3	-13.0	-46.3		
5.2500	-17.9	H	3.0	40.1	1.0	-57.0	-13.0	-44.0		
7.0000	-14.6	H	3.0	39.3	1.0	-52.9	-13.0	-39.9		
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 #: 15K20515									
	Date: 05-03-15									
	Test Engineer: Steven.Kim									
	Configuration: EUT / AC Adapter / Ear Phone / Z-Position									
	Mode: TX, LTE BAND 4, 10MHz BW, 16QAM									
	Chamber		Pre-amplifier		Filter		Limit			
	Chamber 1		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	-23.3	V	3.0	39.5	1.0	-61.8	-13.0	-48.8	
	5.1450	-16.1	V	3.0	40.1	1.0	-55.2	-13.0	-42.2	
	6.8600	-17.4	V	3.0	39.4	1.0	-55.8	-13.0	-42.8	
	3.4300	-22.2	H	3.0	39.5	1.0	-60.6	-13.0	-47.6	
	5.1450	-16.7	H	3.0	40.1	1.0	-55.8	-13.0	-42.8	
	6.8600	-17.5	H	3.0	39.4	1.0	-55.9	-13.0	-42.9	
	Mid Channel (1732.5MHz)									
	3.4650	-22.8	V	3.0	39.4	1.0	-61.2	-13.0	-48.2	
	5.1975	-12.6	V	3.0	40.1	1.0	-51.8	-13.0	-38.8	
	6.9300	-16.5	V	3.0	39.4	1.0	-54.9	-13.0	-41.9	
	3.4650	-22.8	H	3.0	39.4	1.0	-61.2	-13.0	-48.2	
	5.1975	-15.8	H	3.0	40.1	1.0	-54.9	-13.0	-41.9	
	6.9300	-15.5	H	3.0	39.4	1.0	-53.9	-13.0	-40.9	
	High Channel (1750MHz)									
	3.5000	-21.6	V	3.0	39.4	1.0	-60.0	-13.0	-47.0	
5.2500	-14.7	V	3.0	40.1	1.0	-53.8	-13.0	-40.8		
7.0000	-16.1	V	3.0	39.3	1.0	-54.4	-13.0	-41.4		
3.5000	-21.5	H	3.0	39.4	1.0	-59.9	-13.0	-46.9		
5.2500	-18.9	H	3.0	40.1	1.0	-58.0	-13.0	-45.0		
7.0000	-15.5	H	3.0	39.3	1.0	-53.8	-13.0	-40.8		
Rev. 03.03.09										
Note: No other emissions were detected above the system noise floor.										

LTE Band 4 5MHz QPSK	UL Korea, Ltd Suwon Laboratory Above 1GHz High Frequency Substitution Measurement Company: Samsung Project #: 15K20515 Date: 05-03-15 Test Engineer: Steven.Kim Configuration: EUT / AC Adapter / Ear Phone / Z-Position Mode: TX, LTE BAND 4, 5MHz BW, QPSK									
	Chamber Chamber 1 Pre-amplifier AFS42 Filter Filter 1 Limit 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	-22.1	V	3.0	39.5	1.0	-60.5	-13.0	-47.5	
	5.1375	-16.3	V	3.0	40.1	1.0	-55.4	-13.0	-42.4	
	6.5800	-17.7	V	3.0	39.5	1.0	-56.2	-13.0	-43.2	
	3.4250	-22.4	H	3.0	39.5	1.0	-60.8	-13.0	-47.8	
	5.1375	-18.3	H	3.0	40.1	1.0	-57.3	-13.0	-44.3	
	6.5800	-17.2	H	3.0	39.5	1.0	-55.7	-13.0	-42.7	
	Mid Channel (1732.5MHz)									
	3.4650	-21.9	V	3.0	39.4	1.0	-60.3	-13.0	-47.3	
	5.1975	-11.2	V	3.0	40.1	1.0	-50.3	-13.0	-37.3	
	6.9300	-15.7	V	3.0	39.4	1.0	-54.1	-13.0	-41.1	
	3.4650	-19.2	H	3.0	39.4	1.0	-57.6	-13.0	-44.6	
	5.1975	-17.5	H	3.0	40.1	1.0	-56.7	-13.0	-43.7	
	6.9300	-16.2	H	3.0	39.4	1.0	-54.5	-13.0	-41.5	
	High Channel (1752.5MHz)									
	3.5050	-21.3	V	3.0	39.4	1.0	-59.7	-13.0	-46.7	
	5.2575	-13.2	V	3.0	40.1	1.0	-52.3	-13.0	-39.3	
	7.0100	-14.2	V	3.0	39.3	1.0	-52.5	-13.0	-39.5	
	3.5050	-19.9	H	3.0	39.4	1.0	-58.2	-13.0	-45.2	
	5.2575	-13.0	H	3.0	40.1	1.0	-52.1	-13.0	-39.1	
	7.0100	-13.1	H	3.0	39.3	1.0	-51.4	-13.0	-38.4	
	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 #: 15K20515 Date: 05-03-15 Test Engineer: Steven.Kim Configuration: EUT / AC Adapter / Ear Phone / Z-Position Mode: TX, LTE BAND 7, 5MHz BW, 16QAM									
	Chamber Chamber 1 Pre-amplifier AFS42 Filter Filter 1 Limit 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	-23.6	V	3.0	39.5	1.0	-62.0	-13.0	-49.0	
	5.1375	-17.3	V	3.0	40.1	1.0	-56.3	-13.0	-43.3	
	6.5800	-18.9	V	3.0	39.5	1.0	-57.4	-13.0	-44.4	
	3.4250	-24.0	H	3.0	39.5	1.0	-62.4	-13.0	-49.4	
	5.1375	-19.8	H	3.0	40.1	1.0	-58.9	-13.0	-45.9	
	6.5800	-18.7	H	3.0	39.5	1.0	-57.2	-13.0	-44.2	
	Mid Channel (1732.5MHz)									
	3.4650	-23.1	V	3.0	39.4	1.0	-61.5	-13.0	-48.5	
	5.1975	-11.9	V	3.0	40.1	1.0	-51.1	-13.0	-38.1	
	6.9300	-17.0	V	3.0	39.4	1.0	-55.4	-13.0	-42.4	
	3.4650	-20.3	H	3.0	39.4	1.0	-58.7	-13.0	-45.7	
	5.1975	-18.8	H	3.0	40.1	1.0	-58.0	-13.0	-45.0	
	6.9300	-17.0	H	3.0	39.4	1.0	-55.4	-13.0	-42.4	
	High Channel (1752.5MHz)									
	3.5050	-22.3	V	3.0	39.4	1.0	-60.7	-13.0	-47.7	
	5.2575	-13.9	V	3.0	40.1	1.0	-53.0	-13.0	-40.0	
	7.0100	-15.0	V	3.0	39.3	1.0	-53.4	-13.0	-40.4	
	3.5050	-20.7	H	3.0	39.4	1.0	-59.1	-13.0	-46.1	
	5.2575	-13.9	H	3.0	40.1	1.0	-53.0	-13.0	-40.0	
	7.0100	-14.1	H	3.0	39.3	1.0	-52.4	-13.0	-39.4	
	Rev. 03.03.09 Note: No other emissions were detected above the system noise floor.									

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LTE Band 4 1.4MHz QPSK	UL Korea, Ltd Suwon Laboratory Above 1GHz High Frequency Substitution Measurement																																																																																																																																																																																																																																				
	Company: Samsung																																																																																																																																																																																																																																				
	Project #: 15K20515																																																																																																																																																																																																																																				
	Date: 05-03-15																																																																																																																																																																																																																																				
	Test Engineer: Steven.Kim																																																																																																																																																																																																																																				
	Configuration: EUT / AC Adapter / Ear Phone / Z-Position																																																																																																																																																																																																																																				
	Mode: TX, LTE BAND 4, 1.4MHz BW, QPSK																																																																																																																																																																																																																																				
	Chamber		Pre-amplifier		Filter		Limit																																																																																																																																																																																																																														
	Chamber 1		AFS42		Filter 1		FCC Part 27																																																																																																																																																																																																																														
<table><tr><th>f GHz</th><th>SG reading (dBm)</th><th>Ant. Pol. (H/V)</th><th>Distance (m)</th><th>Preamp (dB)</th><th>Filter (dB)</th><th>ERP (dBm)</th><th>Limit (dBm)</th><th>Delta (dB)</th><th>Notes</th></tr><tr><td colspan="10">Low Channel (1710.7MHz)</td></tr><tr><td>3.4214</td><td>-23.4</td><td>V</td><td>3.0</td><td>39.5</td><td>1.0</td><td>-61.9</td><td>-13.0</td><td>-48.9</td><td></td></tr><tr><td>5.1321</td><td>-15.0</td><td>V</td><td>3.0</td><td>40.0</td><td>1.0</td><td>-54.1</td><td>-13.0</td><td>-41.1</td><td></td></tr><tr><td>6.8428</td><td>-16.8</td><td>V</td><td>3.0</td><td>39.4</td><td>1.0</td><td>-55.2</td><td>-13.0</td><td>-42.2</td><td></td></tr><tr><td>3.4214</td><td>-23.2</td><td>H</td><td>3.0</td><td>39.5</td><td>1.0</td><td>-61.7</td><td>-13.0</td><td>-48.7</td><td></td></tr><tr><td>5.1321</td><td>-16.3</td><td>H</td><td>3.0</td><td>40.0</td><td>1.0</td><td>-55.3</td><td>-13.0</td><td>-42.3</td><td></td></tr><tr><td>6.8428</td><td>-16.6</td><td>H</td><td>3.0</td><td>39.4</td><td>1.0</td><td>-55.0</td><td>-13.0</td><td>-42.0</td><td></td></tr><tr><td colspan="10">Mid Channel (1732.5MHz)</td></tr><tr><td>3.4650</td><td>-22.2</td><td>V</td><td>3.0</td><td>39.4</td><td>1.0</td><td>-60.6</td><td>-13.0</td><td>-47.6</td><td></td></tr><tr><td>5.1975</td><td>-10.0</td><td>V</td><td>3.0</td><td>40.1</td><td>1.0</td><td>-49.1</td><td>-13.0</td><td>-36.1</td><td></td></tr><tr><td>6.9300</td><td>-14.6</td><td>V</td><td>3.0</td><td>39.4</td><td>1.0</td><td>-53.0</td><td>-13.0</td><td>-40.0</td><td></td></tr><tr><td>3.4650</td><td>-19.3</td><td>H</td><td>3.0</td><td>39.4</td><td>1.0</td><td>-57.7</td><td>-13.0</td><td>-44.7</td><td></td></tr><tr><td>5.1975</td><td>-13.0</td><td>H</td><td>3.0</td><td>40.1</td><td>1.0</td><td>-52.1</td><td>-13.0</td><td>-39.1</td><td></td></tr><tr><td>6.9300</td><td>-6.3</td><td>H</td><td>3.0</td><td>39.4</td><td>1.0</td><td>-44.6</td><td>-13.0</td><td>-31.6</td><td></td></tr><tr><td colspan="10">High Channel (1754.3MHz)</td></tr><tr><td>3.5086</td><td>-21.4</td><td>V</td><td>3.0</td><td>39.4</td><td>1.0</td><td>-59.7</td><td>-13.0</td><td>-46.7</td><td></td></tr><tr><td>5.2629</td><td>-12.0</td><td>V</td><td>3.0</td><td>40.1</td><td>1.0</td><td>-51.1</td><td>-13.0</td><td>-38.1</td><td></td></tr><tr><td>7.0172</td><td>-14.0</td><td>V</td><td>3.0</td><td>39.3</td><td>1.0</td><td>-52.4</td><td>-13.0</td><td>-39.4</td><td></td></tr><tr><td>3.5086</td><td>-19.6</td><td>H</td><td>3.0</td><td>39.4</td><td>1.0</td><td>-57.9</td><td>-13.0</td><td>-44.9</td><td></td></tr><tr><td>5.2629</td><td>-11.5</td><td>H</td><td>3.0</td><td>40.1</td><td>1.0</td><td>-50.6</td><td>-13.0</td><td>-37.6</td><td></td></tr><tr><td>7.0172</td><td>-13.1</td><td>H</td><td>3.0</td><td>39.3</td><td>1.0</td><td>-51.4</td><td>-13.0</td><td>-38.4</td><td></td></tr></table>										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	-23.4	V	3.0	39.5	1.0	-61.9	-13.0	-48.9		5.1321	-15.0	V	3.0	40.0	1.0	-54.1	-13.0	-41.1		6.8428	-16.8	V	3.0	39.4	1.0	-55.2	-13.0	-42.2		3.4214	-23.2	H	3.0	39.5	1.0	-61.7	-13.0	-48.7		5.1321	-16.3	H	3.0	40.0	1.0	-55.3	-13.0	-42.3		6.8428	-16.6	H	3.0	39.4	1.0	-55.0	-13.0	-42.0		Mid Channel (1732.5MHz)										3.4650	-22.2	V	3.0	39.4	1.0	-60.6	-13.0	-47.6		5.1975	-10.0	V	3.0	40.1	1.0	-49.1	-13.0	-36.1		6.9300	-14.6	V	3.0	39.4	1.0	-53.0	-13.0	-40.0		3.4650	-19.3	H	3.0	39.4	1.0	-57.7	-13.0	-44.7		5.1975	-13.0	H	3.0	40.1	1.0	-52.1	-13.0	-39.1		6.9300	-6.3	H	3.0	39.4	1.0	-44.6	-13.0	-31.6		High Channel (1754.3MHz)										3.5086	-21.4	V	3.0	39.4	1.0	-59.7	-13.0	-46.7		5.2629	-12.0	V	3.0	40.1	1.0	-51.1	-13.0	-38.1		7.0172	-14.0	V	3.0	39.3	1.0	-52.4	-13.0	-39.4		3.5086	-19.6	H	3.0	39.4	1.0	-57.9	-13.0	-44.9		5.2629	-11.5	H	3.0	40.1	1.0	-50.6	-13.0	-37.6		7.0172	-13.1	H	3.0	39.3	1.0	-51.4	-13.0	-38.4	
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes																																																																																																																																																																																																																												
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5.1321	-15.0	V	3.0	40.0	1.0	-54.1	-13.0	-41.1																																																																																																																																																																																																																													
6.8428	-16.8	V	3.0	39.4	1.0	-55.2	-13.0	-42.2																																																																																																																																																																																																																													
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Mid Channel (1732.5MHz)																																																																																																																																																																																																																																					
3.4650	-22.2	V	3.0	39.4	1.0	-60.6	-13.0	-47.6																																																																																																																																																																																																																													
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6.9300	-6.3	H	3.0	39.4	1.0	-44.6	-13.0	-31.6																																																																																																																																																																																																																													
High Channel (1754.3MHz)																																																																																																																																																																																																																																					
3.5086	-21.4	V	3.0	39.4	1.0	-59.7	-13.0	-46.7																																																																																																																																																																																																																													
5.2629	-12.0	V	3.0	40.1	1.0	-51.1	-13.0	-38.1																																																																																																																																																																																																																													
7.0172	-14.0	V	3.0	39.3	1.0	-52.4	-13.0	-39.4																																																																																																																																																																																																																													
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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																																																																																																																																																																																																																																				
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	Configuration: EUT / AC Adapter / Ear Phone / Z-Position																																																																																																																																																																																																																																				
	Mode: TX, LTE BAND 4, 1.4MHz BW, 16QAM																																																																																																																																																																																																																																				
	Chamber		Pre-amplifier		Filter		Limit																																																																																																																																																																																																																														
	Chamber 1		AFS42		Filter 1		FCC Part 27																																																																																																																																																																																																																														
<table><tr><th>f GHz</th><th>SG reading (dBm)</th><th>Ant. Pol. (H/V)</th><th>Distance (m)</th><th>Preamp (dB)</th><th>Filter (dB)</th><th>ERP (dBm)</th><th>Limit (dBm)</th><th>Delta (dB)</th><th>Notes</th></tr><tr><td colspan="10">Low Channel (1710.7MHz)</td></tr><tr><td>3.4214</td><td>-24.6</td><td>V</td><td>3.0</td><td>39.5</td><td>1.0</td><td>-63.1</td><td>-13.0</td><td>-50.1</td><td></td></tr><tr><td>5.1321</td><td>-16.6</td><td>V</td><td>3.0</td><td>40.0</td><td>1.0</td><td>-55.7</td><td>-13.0</td><td>-42.7</td><td></td></tr><tr><td>6.8428</td><td>-17.8</td><td>V</td><td>3.0</td><td>39.4</td><td>1.0</td><td>-56.2</td><td>-13.0</td><td>-43.2</td><td></td></tr><tr><td>3.4214</td><td>-24.8</td><td>H</td><td>3.0</td><td>39.5</td><td>1.0</td><td>-63.3</td><td>-13.0</td><td>-50.3</td><td></td></tr><tr><td>5.1321</td><td>-17.2</td><td>H</td><td>3.0</td><td>40.0</td><td>1.0</td><td>-56.2</td><td>-13.0</td><td>-43.2</td><td></td></tr><tr><td>6.8428</td><td>-17.4</td><td>H</td><td>3.0</td><td>39.4</td><td>1.0</td><td>-55.8</td><td>-13.0</td><td>-42.8</td><td></td></tr><tr><td colspan="10">Mid Channel (1732.5MHz)</td></tr><tr><td>3.4650</td><td>-22.7</td><td>V</td><td>3.0</td><td>39.4</td><td>1.0</td><td>-61.1</td><td>-13.0</td><td>-48.1</td><td></td></tr><tr><td>5.1975</td><td>-11.2</td><td>V</td><td>3.0</td><td>40.1</td><td>1.0</td><td>-50.3</td><td>-13.0</td><td>-37.3</td><td></td></tr><tr><td>6.9300</td><td>-15.9</td><td>V</td><td>3.0</td><td>39.4</td><td>1.0</td><td>-54.3</td><td>-13.0</td><td>-41.3</td><td></td></tr><tr><td>3.4650</td><td>-20.1</td><td>H</td><td>3.0</td><td>39.4</td><td>1.0</td><td>-58.5</td><td>-13.0</td><td>-45.5</td><td></td></tr><tr><td>5.1975</td><td>-14.7</td><td>H</td><td>3.0</td><td>40.1</td><td>1.0</td><td>-53.8</td><td>-13.0</td><td>-40.8</td><td></td></tr><tr><td>6.9300</td><td>-17.3</td><td>H</td><td>3.0</td><td>39.4</td><td>1.0</td><td>-55.7</td><td>-13.0</td><td>-42.7</td><td></td></tr><tr><td colspan="10">High Channel (1754.3MHz)</td></tr><tr><td>3.5086</td><td>-22.3</td><td>V</td><td>3.0</td><td>39.4</td><td>1.0</td><td>-60.6</td><td>-13.0</td><td>-47.6</td><td></td></tr><tr><td>5.2629</td><td>-13.5</td><td>V</td><td>3.0</td><td>40.1</td><td>1.0</td><td>-52.6</td><td>-13.0</td><td>-39.6</td><td></td></tr><tr><td>7.0172</td><td>-15.2</td><td>V</td><td>3.0</td><td>39.3</td><td>1.0</td><td>-53.6</td><td>-13.0</td><td>-40.6</td><td></td></tr><tr><td>3.5086</td><td>-20.4</td><td>H</td><td>3.0</td><td>39.4</td><td>1.0</td><td>-58.8</td><td>-13.0</td><td>-45.8</td><td></td></tr><tr><td>5.2629</td><td>-12.5</td><td>H</td><td>3.0</td><td>40.1</td><td>1.0</td><td>-51.6</td><td>-13.0</td><td>-38.6</td><td></td></tr><tr><td>7.0172</td><td>-14.4</td><td>H</td><td>3.0</td><td>39.3</td><td>1.0</td><td>-52.8</td><td>-13.0</td><td>-39.8</td><td></td></tr></table>										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	-24.6	V	3.0	39.5	1.0	-63.1	-13.0	-50.1		5.1321	-16.6	V	3.0	40.0	1.0	-55.7	-13.0	-42.7		6.8428	-17.8	V	3.0	39.4	1.0	-56.2	-13.0	-43.2		3.4214	-24.8	H	3.0	39.5	1.0	-63.3	-13.0	-50.3		5.1321	-17.2	H	3.0	40.0	1.0	-56.2	-13.0	-43.2		6.8428	-17.4	H	3.0	39.4	1.0	-55.8	-13.0	-42.8		Mid Channel (1732.5MHz)										3.4650	-22.7	V	3.0	39.4	1.0	-61.1	-13.0	-48.1		5.1975	-11.2	V	3.0	40.1	1.0	-50.3	-13.0	-37.3		6.9300	-15.9	V	3.0	39.4	1.0	-54.3	-13.0	-41.3		3.4650	-20.1	H	3.0	39.4	1.0	-58.5	-13.0	-45.5		5.1975	-14.7	H	3.0	40.1	1.0	-53.8	-13.0	-40.8		6.9300	-17.3	H	3.0	39.4	1.0	-55.7	-13.0	-42.7		High Channel (1754.3MHz)										3.5086	-22.3	V	3.0	39.4	1.0	-60.6	-13.0	-47.6		5.2629	-13.5	V	3.0	40.1	1.0	-52.6	-13.0	-39.6		7.0172	-15.2	V	3.0	39.3	1.0	-53.6	-13.0	-40.6		3.5086	-20.4	H	3.0	39.4	1.0	-58.8	-13.0	-45.8		5.2629	-12.5	H	3.0	40.1	1.0	-51.6	-13.0	-38.6		7.0172	-14.4	H	3.0	39.3	1.0	-52.8	-13.0	-39.8	
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High Channel (1754.3MHz)																																																																																																																																																																																																																																					
3.5086	-22.3	V	3.0	39.4	1.0	-60.6	-13.0	-47.6																																																																																																																																																																																																																													
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Note: No other emissions were detected above the system noise floor.																																																																																																																																																																																																																																					

LTE Band 2

LTE Band 2 20MHz QPSK	UL Korea, Ltd Suwon Laboratory Above 1GHz High Frequency Substitution Measurement Company: Samsung Project #: 15K20515 Date: 05-01-15 Test Engineer: Steven.Kim Configuration: EUT / AC Adapter / Ear Phone / Z-Position Mode: TX, LTE BAND 2, 20MHz BW, QPSK									
	Chamber Pre-amplifier Filter Limit Chamber 1 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 (1860MHz)									
	3.7200	-9.7	V	3.0	39.1	1.0	-47.8	-13.0	-34.8	
	5.5800	-10.9	V	3.0	40.0	1.0	-49.9	-13.0	-36.9	
	7.4400	-17.7	V	3.0	39.2	1.0	-55.9	-13.0	-42.9	
	3.7200	-12.6	H	3.0	39.1	1.0	-50.8	-13.0	-37.8	
	5.5800	-11.7	H	3.0	40.0	1.0	-50.7	-13.0	-37.7	
	7.4400	-16.6	H	3.0	39.2	1.0	-54.7	-13.0	-41.7	
	Mid Channel (1880MHz)									
	3.7600	-22.2	V	3.0	39.1	1.0	-60.2	-13.0	-47.2	
	5.6400	-10.9	V	3.0	39.9	1.0	-49.8	-13.0	-36.8	
	7.5200	-16.8	V	3.0	39.1	1.0	-54.9	-13.0	-41.9	
	3.7600	-21.0	H	3.0	39.1	1.0	-59.1	-13.0	-46.1	
	5.6400	-12.6	H	3.0	39.9	1.0	-51.5	-13.0	-38.5	
	7.5200	-16.2	H	3.0	39.1	1.0	-54.4	-13.0	-41.4	
	High Channel (1900MHz)									
	3.8000	-16.5	V	3.0	39.1	1.0	-54.5	-13.0	-41.5	
	5.7000	-13.6	V	3.0	39.9	1.0	-52.5	-13.0	-39.5	
	7.6000	-16.6	V	3.0	39.1	1.0	-54.7	-13.0	-41.7	
	3.8000	-16.2	H	3.0	39.1	1.0	-54.3	-13.0	-41.3	
	5.7000	-14.6	H	3.0	39.9	1.0	-53.5	-13.0	-40.5	
	7.6000	-16.2	H	3.0	39.1	1.0	-54.3	-13.0	-41.3	
	Rev. 03.03.09 Note: No other emissions were detected above the system noise floor.									
LTE Band 2 20MHz 16QAM	UL Korea, Ltd Suwon Laboratory Above 1GHz High Frequency Substitution Measurement Company: Samsung Project #: 15K20515 Date: 05-01-15 Test Engineer: Steven.Kim Configuration: EUT / AC Adapter / Ear Phone / Z-Position Mode: TX, LTE BAND 2, 20MHz BW, 16QAM									
	Chamber Pre-amplifier Filter Limit Chamber 1 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 (1860MHz)									
	3.7200	-10.8	V	3.0	39.1	1.0	-48.9	-13.0	-35.9	
	5.5800	-13.0	V	3.0	40.0	1.0	-51.9	-13.0	-38.9	
	7.4400	-17.5	V	3.0	39.2	1.0	-55.6	-13.0	-42.6	
	3.7200	-13.6	H	3.0	39.1	1.0	-51.8	-13.0	-38.8	
	5.5800	-14.0	H	3.0	40.0	1.0	-53.0	-13.0	-40.0	
	7.4400	-16.7	H	3.0	39.2	1.0	-54.9	-13.0	-41.9	
	Mid Channel (1880MHz)									
	3.7600	-23.6	V	3.0	39.1	1.0	-61.7	-13.0	-48.7	
	5.6400	-11.6	V	3.0	39.9	1.0	-50.5	-13.0	-37.5	
	7.5200	-17.2	V	3.0	39.1	1.0	-55.3	-13.0	-42.3	
	3.7600	-22.7	H	3.0	39.1	1.0	-60.8	-13.0	-47.8	
	5.6400	-15.2	H	3.0	39.9	1.0	-54.1	-13.0	-41.1	
	7.5200	-16.4	H	3.0	39.1	1.0	-54.5	-13.0	-41.5	
	High Channel (1900MHz)									
	3.8000	-17.8	V	3.0	39.1	1.0	-55.8	-13.0	-42.8	
	5.7000	-14.7	V	3.0	39.9	1.0	-53.6	-13.0	-40.6	
	7.6000	-16.7	V	3.0	39.1	1.0	-54.8	-13.0	-41.8	
	3.8000	-16.5	H	3.0	39.1	1.0	-54.6	-13.0	-41.6	
	5.7000	-15.5	H	3.0	39.9	1.0	-54.4	-13.0	-41.4	
	7.6000	-16.0	H	3.0	39.1	1.0	-54.1	-13.0	-41.1	
	Rev. 03.03.09 Note: No other emissions were detected above the system noise floor.									

LTE Band 2 15MHz QPSK	UL Korea, Ltd Suwon Laboratory Above 1GHz High Frequency Substitution Measurement									
	Company: Samsung		Project #: 15K20515							
	Date: 05-01-15		Test Engineer: Steven.Kim							
	Configuration: EUT / AC Adapter / Ear Phone / Z-Position		Mode: TX, LTE BAND 2, 15MHz BW, QPSK							
	Chamber		Pre-amplifier		Filter		Limit			
	Chamber 1		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 (1857.5MHz)									
	3.7150	-10.0	V	3.0	39.1	1.0	-48.2	-13.0	-35.2	
LTE Band 2 15MHz 16QAM	5.5725	-11.7	V	3.0	40.0	1.0	-50.6	-13.0	-37.6	
	7.4300	-17.2	V	3.0	39.2	1.0	-55.4	-13.0	-42.4	
	3.7150	-12.4	H	3.0	39.1	1.0	-50.6	-13.0	-37.6	
	5.5725	-12.1	H	3.0	40.0	1.0	-51.0	-13.0	-38.0	
	7.4300	-16.8	H	3.0	39.2	1.0	-55.0	-13.0	-42.0	
	Mid Channel (1880MHz)									
	3.7600	-21.0	V	3.0	39.1	1.0	-59.0	-13.0	-46.0	
	5.6400	-10.8	V	3.0	39.9	1.0	-49.7	-13.0	-36.7	
	7.5200	-15.4	V	3.0	39.1	1.0	-53.6	-13.0	-40.6	
	3.7600	-21.6	H	3.0	39.1	1.0	-59.7	-13.0	-46.7	
LTE Band 2 15MHz 16QAM	5.6400	-13.7	H	3.0	39.9	1.0	-52.6	-13.0	-39.6	
	7.5200	-16.0	H	3.0	39.1	1.0	-54.2	-13.0	-41.2	
	High Channel (1902.5MHz)									
	3.8050	-17.9	V	3.0	39.0	1.0	-56.0	-13.0	-43.0	
	5.7075	-10.0	V	3.0	39.9	1.0	-48.9	-13.0	-35.9	
	7.6100	-15.8	V	3.0	39.1	1.0	-53.9	-13.0	-40.9	
	3.8050	-15.7	H	3.0	39.0	1.0	-53.8	-13.0	-40.8	
	5.7075	-14.5	H	3.0	39.9	1.0	-53.4	-13.0	-40.4	
	7.6100	-15.6	H	3.0	39.1	1.0	-53.7	-13.0	-40.7	
	Rev. 03.03.09									
	Note: No other emissions were detected above the system noise floor.									
LTE Band 2 15MHz 16QAM	UL Korea, Ltd Suwon Laboratory Above 1GHz High Frequency Substitution Measurement									
	Company: Samsung		Project #: 15K20515							
	Date: 05-01-15		Test Engineer: Steven.Kim							
	Configuration: EUT / AC Adapter / Ear Phone / Z-Position		Mode: TX, LTE BAND 2, 15MHz BW, 16QAM							
	Chamber		Pre-amplifier		Filter		Limit			
	Chamber 1		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 (1857.5MHz)									
	3.7150	-10.3	V	3.0	39.1	1.0	-48.5	-13.0	-35.5	
	5.5725	-12.6	V	3.0	40.0	1.0	-51.5	-13.0	-38.5	
LTE Band 2 15MHz 16QAM	7.4300	-17.2	V	3.0	39.2	1.0	-55.4	-13.0	-42.4	
	3.7150	-13.3	H	3.0	39.1	1.0	-51.4	-13.0	-38.4	
	5.5725	-12.9	H	3.0	40.0	1.0	-51.9	-13.0	-38.9	
	7.4300	-16.5	H	3.0	39.2	1.0	-54.7	-13.0	-41.7	
	Mid Channel (1880MHz)									
	3.7600	-22.5	V	3.0	39.1	1.0	-60.6	-13.0	-47.6	
	5.6400	-12.1	V	3.0	39.9	1.0	-51.0	-13.0	-38.0	
	7.5200	-16.9	V	3.0	39.1	1.0	-55.1	-13.0	-42.1	
	3.7600	-22.3	H	3.0	39.1	1.0	-60.4	-13.0	-47.4	
	5.6400	-15.0	H	3.0	39.9	1.0	-53.9	-13.0	-40.9	
LTE Band 2 15MHz 16QAM	7.5200	-16.3	H	3.0	39.1	1.0	-54.4	-13.0	-41.4	
	High Channel (1902.5MHz)									
	3.8050	-18.7	V	3.0	39.0	1.0	-56.7	-13.0	-43.7	
	5.7075	-11.3	V	3.0	39.9	1.0	-50.2	-13.0	-37.2	
	7.6100	-16.6	V	3.0	39.1	1.0	-54.7	-13.0	-41.7	
	3.8050	-16.5	H	3.0	39.0	1.0	-54.5	-13.0	-41.5	
	5.7075	-15.5	H	3.0	39.9	1.0	-54.4	-13.0	-41.4	
	7.6100	-15.6	H	3.0	39.1	1.0	-53.8	-13.0	-40.8	
	Rev. 03.03.09									
	Note: No other emissions were detected above the system noise floor.									

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7.4450	-17.3	V	3.0	39.2	1.0	-55.5	-13.0	-42.5																																																																																																																																																																																																																																																																																																																																																							
3.7100	-11.9	H	3.0	39.2	1.0	-50.1	-13.0	-37.1																																																																																																																																																																																																																																																																																																																																																							
5.5650	-14.2	H	3.0	40.0	1.0	-53.2	-13.0	-40.2																																																																																																																																																																																																																																																																																																																																																							
7.4450	-17.2	H	3.0	39.2	1.0	-55.3	-13.0	-42.3																																																																																																																																																																																																																																																																																																																																																							
Mid Channel (1880MHz)																																																																																																																																																																																																																																																																																																																																																															
3.7600	-23.1	V	3.0	39.1	1.0	-61.2	-13.0	-48.2																																																																																																																																																																																																																																																																																																																																																							
5.6400	-12.6	V	3.0	39.9	1.0	-51.6	-13.0	-38.6																																																																																																																																																																																																																																																																																																																																																							
7.5200	-17.3	V	3.0	39.1	1.0	-55.5	-13.0	-42.5																																																																																																																																																																																																																																																																																																																																																							
3.7600	-22.3	H	3.0	39.1	1.0	-60.4	-13.0	-47.4																																																																																																																																																																																																																																																																																																																																																							
5.6400	-15.3	H	3.0	39.9	1.0	-54.2	-13.0	-41.2																																																																																																																																																																																																																																																																																																																																																							
7.5200	-16.5	H	3.0	39.1	1.0	-54.6	-13.0	-41.6																																																																																																																																																																																																																																																																																																																																																							
High Channel (1905MHz)																																																																																																																																																																																																																																																																																																																																																															
3.8100	-19.1	V	3.0	39.0	1.0	-57.2	-13.0	-44.2																																																																																																																																																																																																																																																																																																																																																							
5.7150	-11.5	V	3.0	39.9	1.0	-50.4	-13.0	-37.4																																																																																																																																																																																																																																																																																																																																																							
7.6200	-16.7	V	3.0	39.1	1.0	-54.8	-13.0	-41.8																																																																																																																																																																																																																																																																																																																																																							
3.8100	-16.6	H	3.0	39.0	1.0	-54.7	-13.0	-41.7																																																																																																																																																																																																																																																																																																																																																							
5.7150	-16.8	H	3.0	39.9	1.0	-55.6	-13.0	-42.6																																																																																																																																																																																																																																																																																																																																																							
7.6200	-16.4	H	3.0	39.1	1.0	-54.5	-13.0	-41.5																																																																																																																																																																																																																																																																																																																																																							
Rev. 03.03.09 Note: No other emissions were detected above the system noise floor.																																																																																																																																																																																																																																																																																																																																																															

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