

**11.1.1. ERP/EIRP Results**

**11.1.2. ERP/EIRP DATA**

**LTE Band 4**

		High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 2								
LTE Band 4 20MHz QPSK	Company:		Samsung							
	Project #:		4787852390							
	Date:		02-07-17							
	Test Engineer:		YH Lim							
	Configuration:		EUT / Y-Position							
	Mode:		LTE Band 4, QPSK, 20MHz							
	<u>Test Equipment:</u>		Receiving: 3117[00168724] and Chamber 1 SMA Cables Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse							
		<b>f</b>	<b>SG reading</b>	<b>Ant. Pol.</b>	<b>Cable Loss</b>	<b>Antenna Gain</b>	<b>EIRP</b>	<b>Limit</b>	<b>Margin</b>	<b>Notes</b>
		<b>MHz</b>	<b>(dBm)</b>	<b>(H/V)</b>	<b>(dB)</b>	<b>(dBi)</b>	<b>(dBm)</b>	<b>(dBm)</b>	<b>(dB)</b>	
		Low Ch								
		1720.00	5.25	V	1.54	9.12	12.83	30.0	-17.2	
		1720.00	8.46	H	1.54	9.12	16.04	30.0	-14.0	
		Mid Ch								
		1732.50	4.66	V	1.55	9.31	12.42	30.0	-17.6	
	1732.50	8.52	H	1.55	9.31	16.28	30.0	-13.7		
	High Ch									
	1745.00	4.72	V	1.56	9.37	12.53	30.0	-17.5		
	1745.00	9.13	H	1.56	9.37	16.94	30.0	-13.1		
		Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm								
LTE Band 4 20MHz 16QAM	Company:		Samsung							
	Project #:		4787852390							
	Date:		02-07-17							
	Test Engineer:		YH Lim							
	Configuration:		EUT / Y-Position							
	Mode:		LTE Band 4, 16QAM, 20MHz							
	<u>Test Equipment:</u>		Receiving: 3117[00168724] and Chamber 1 SMA Cables Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse							
		<b>f</b>	<b>SG reading</b>	<b>Ant. Pol.</b>	<b>Cable Loss</b>	<b>Antenna Gain</b>	<b>EIRP</b>	<b>Limit</b>	<b>Margin</b>	<b>Notes</b>
		<b>MHz</b>	<b>(dBm)</b>	<b>(H/V)</b>	<b>(dB)</b>	<b>(dBi)</b>	<b>(dBm)</b>	<b>(dBm)</b>	<b>(dB)</b>	
		Low Ch								
		1720.00	4.30	V	1.54	9.12	11.88	30.0	-18.1	
		1720.00	7.52	H	1.54	9.12	15.10	30.0	-14.9	
		Mid Ch								
		1732.50	3.75	V	1.55	9.31	11.51	30.0	-18.5	
	1732.50	7.57	H	1.55	9.31	15.33	30.0	-14.7		
	High Ch									
	1745.00	3.04	V	1.56	9.37	10.85	30.0	-19.2		
	1745.00	8.20	H	1.56	9.37	16.01	30.0	-14.0		
		Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm								

		High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 2							
LTE Band 4 15MHz QPSK	<b>Company:</b> Samsung <b>Project #:</b> 4787852390.0 <b>Date:</b> 02-08-17 <b>Test Engineer:</b> YH Lim <b>Configuration:</b> EUT / Y-Position <b>Mode:</b> LTE Band 4, QPSK, 15MHz								
	<b>Test Equipment:</b> Receiving: 3117[00168724] and Chamber 1 SMA Cables Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse								
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
	Low Ch								
	1717.50	4.95	V	1.54	9.12	12.53	30.0	-17.5	
	1717.50	6.93	H	1.54	9.12	14.51	30.0	-15.5	
	Mid Ch								
	1732.50	5.77	V	1.55	9.31	13.53	30.0	-16.5	
	1732.50	8.15	H	1.55	9.31	15.91	30.0	-14.1	
	High Ch								
	1747.50	5.99	V	1.56	9.39	13.82	30.0	-16.2	
	1747.50	9.17	H	1.56	9.39	17.00	30.0	-13.0	
	Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm								
	LTE Band 4 15MHz 16QAM	<b>Company:</b> Samsung <b>Project #:</b> 4787852390 <b>Date:</b> 02-08-17 <b>Test Engineer:</b> YH Lim <b>Configuration:</b> EUT / Y-Position <b>Mode:</b> LTE Band 4, 16QAM, 15MHz							
<b>Test Equipment:</b> Receiving: 3117[00168724] and Chamber 1 SMA Cables Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse									
f MHz		SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch									
1717.50		3.99	V	1.54	9.12	11.57	30.0	-18.4	
1717.50		5.91	H	1.54	9.12	13.49	30.0	-16.5	
Mid Ch									
1732.50		4.81	V	1.55	9.31	12.57	30.0	-17.4	
1732.50		7.20	H	1.55	9.31	14.96	30.0	-15.0	
High Ch									
1747.50		5.14	V	1.56	9.39	12.97	30.0	-17.0	
1747.50		8.20	H	1.56	9.39	16.03	30.0	-14.0	
Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm									

		High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 2							
LTE Band 4 10MHz QPSK	<b>Company:</b> Samsung <b>Project #:</b> 4787852390 <b>Date:</b> 02-08-17 <b>Test Engineer:</b> YH Lim <b>Configuration:</b> EUT / Y-Position <b>Mode:</b> LTE Band 4, QPSK, 10MHz								
	<b>Test Equipment:</b> Receiving: 3117[00168724] and Chamber 1 SMA Cables Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse								
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
	Low Ch								
	1715.00	5.39	V	1.54	9.12	12.97	30.0	-17.0	
	1715.00	10.44	H	1.54	9.12	18.02	30.0	-12.0	
	Mid Ch								
	1732.50	6.92	V	1.55	9.31	14.68	30.0	-15.3	
	1732.50	10.98	H	1.55	9.31	18.74	30.0	-11.3	
	High Ch								
1750.00	5.10	V	1.56	9.40	12.94	30.0	-17.1		
1750.00	9.69	H	1.56	9.40	17.53	30.0	-12.5		
		Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm							
		High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 2							
LTE Band 4 10MHz 16QAM	<b>Company:</b> Samsung <b>Project #:</b> 4787852390 <b>Date:</b> 02-08-17 <b>Test Engineer:</b> YH Lim <b>Configuration:</b> EUT / Y-Position <b>Mode:</b> LTE Band 4 16QAM, 10MHz								
	<b>Test Equipment:</b> Receiving: 3117[00168724] and Chamber 1 SMA Cables Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse								
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
	Low Ch								
	1715.00	5.35	V	1.54	9.12	12.93	30.0	-17.1	
	1715.00	9.65	H	1.54	9.12	17.23	30.0	-12.8	
	Mid Ch								
	1732.50	5.98	V	1.55	9.31	13.74	30.0	-16.3	
	1732.50	10.03	H	1.55	9.31	17.79	30.0	-12.2	
	High Ch								
1750.00	6.02	V	1.56	9.40	13.86	30.0	-16.1		
1750.00	8.66	H	1.56	9.40	16.50	30.0	-13.5		
		Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm							

		High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 2							
LTE Band 4 5MHz QPSK	<b>Company:</b> Samsung <b>Project #:</b> 4787852390 <b>Date:</b> 02-08-17 <b>Test Engineer:</b> YH Lim <b>Configuration:</b> EUT / Y-Position <b>Mode:</b> LTE Band 4, QPSK , 5MHz								
	<b>Test Equipment:</b> Receiving: 3117[00168724] and Chamber 1 SMA Cables Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse								
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
	Low Ch								
	1712.50	6.54	V	1.54	9.12	14.12	30.0	-15.9	
	1712.50	8.73	H	1.54	9.12	16.31	30.0	-13.7	
	Mid Ch								
	1732.50	6.47	V	1.55	9.31	14.23	30.0	-15.8	
	1732.50	10.20	H	1.55	9.31	17.96	30.0	-12.0	
	High Ch								
	1752.50	7.35	V	1.56	9.39	15.18	30.0	-14.8	
	1752.50	10.65	H	1.56	9.39	18.48	30.0	-11.5	
Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm									
LTE Band 4 5MHz 16QAM	<b>Company:</b> Samsung <b>Project #:</b> 4787852390 <b>Date:</b> 02-08-17 <b>Test Engineer:</b> YH Lim <b>Configuration:</b> EUT / Y-Position <b>Mode:</b> LTE Band 4 16QAM, 5MHz								
	<b>Test Equipment:</b> Receiving: 3117[00168724] and Chamber 1 SMA Cables Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse								
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
	Low Ch								
	1712.50	5.49	V	1.54	9.12	13.07	30.0	-16.9	
	1712.50	7.70	H	1.54	9.12	15.28	30.0	-14.7	
	Mid Ch								
	1732.50	5.40	V	1.55	9.31	13.16	30.0	-16.8	
	1732.50	9.27	H	1.55	9.31	17.03	30.0	-13.0	
	High Ch								
	1752.50	6.33	V	1.56	9.39	14.16	30.0	-15.8	
	1752.50	9.62	H	1.56	9.39	17.45	30.0	-12.6	
Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm									

		<b>High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 2</b>							
LTE Band 4 3MHz QPSK	<b>Company:</b> Samsung <b>Project #:</b> 4787852390 <b>Date:</b> 02-08-17 <b>Test Engineer:</b> YH Lim <b>Configuration:</b> EUT / Y-Position <b>Mode:</b> LTE Band 4, QPSK , 3MHz								
	<b>Test Equipment:</b> Receiving: 3117[00168724] and Chamber 1 SMA Cables Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse								
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
	Low Ch								
	1711.50	2.92	V	1.54	9.12	10.50	30.0	-19.5	
	1711.50	4.67	H	1.54	9.12	12.25	30.0	-17.8	
	Mid Ch								
	1732.50	3.35	V	1.55	9.31	11.11	30.0	-18.9	
	1732.50	6.32	H	1.55	9.31	14.08	30.0	-15.9	
	High Ch								
	1753.50	3.91	V	1.56	9.38	11.73	30.0	-18.3	
	1753.50	7.02	H	1.56	9.38	14.84	30.0	-15.2	
	Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm								
	LTE Band 4 3MHz 16QAM	<b>Company:</b> Samsung <b>Project #:</b> 4787852390 <b>Date:</b> 02-08-17 <b>Test Engineer:</b> YH Lim <b>Configuration:</b> EUT / Y-Position <b>Mode:</b> LTE Band 4 16QAM, 3MHz							
<b>Test Equipment:</b> Receiving: 3117[00168724] and Chamber 1 SMA Cables Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse									
f MHz		SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch									
1711.50		1.87	V	1.54	9.12	9.45	30.0	-20.6	
1711.50		3.71	H	1.54	9.12	11.29	30.0	-18.7	
Mid Ch									
1732.50		2.31	V	1.55	9.31	10.07	30.0	-19.9	
1732.50		5.28	H	1.55	9.31	13.04	30.0	-17.0	
High Ch									
1753.50		2.90	V	1.56	9.38	10.72	30.0	-19.3	
1753.50		8.03	H	1.56	9.38	15.85	30.0	-14.2	
Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm									

High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 2										
LTE Band 4 1.4MHz QPSK	<b>Company:</b>		Samsung							
	<b>Project #:</b>		4787852390							
	<b>Date:</b>		02-08-17							
	<b>Test Engineer:</b>		YH Lim							
	<b>Configuration:</b>		EUT / Y-Position							
	<b>Mode:</b>		LTE Band 4 QPSK, 1.4MHz							
	<b>Test Equipment:</b>									
	Receiving: 3117[00168724] and Chamber 1 SMA Cables									
	Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse									
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes	
	Low Ch									
	1710.70	0.69	V	1.54	9.12	8.27	30.0	-21.7		
	1710.70	5.57	H	1.54	9.12	13.15	30.0	-16.9		
	Mid Ch									
	1732.50	0.45	V	1.55	9.31	8.21	30.0	-21.8		
1732.50	6.59	H	1.55	9.31	14.35	30.0	-15.7			
High Ch										
1754.30	1.82	V	1.56	9.37	9.63	30.0	-20.4			
1754.30	8.38	H	1.56	9.37	16.19	30.0	-13.8			
Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm										
LTE Band 4 1.4MHz 16QAM	High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 2									
	<b>Company:</b>		Samsung							
	<b>Project #:</b>		4787852390							
	<b>Date:</b>		02-08-17							
	<b>Test Engineer:</b>		YH Lim							
	<b>Configuration:</b>		EUT / Y-Position							
	<b>Mode:</b>		LTE Band 4 16QAM, 1.4MHz							
	<b>Test Equipment:</b>									
	Receiving: 3117[00168724] and Chamber 1 SMA Cables									
	Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse									
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes	
	Low Ch									
	1710.70	-0.08	V	1.54	9.12	7.50	30.0	-22.5		
	1710.70	4.74	H	1.54	9.12	12.32	30.0	-17.7		
	Mid Ch									
1732.50	-0.50	V	1.55	9.31	7.26	30.0	-22.7			
1732.50	5.97	H	1.55	9.31	13.73	30.0	-16.3			
High Ch										
1754.30	0.87	V	1.56	9.37	8.68	30.0	-21.3			
1754.30	7.44	H	1.56	9.37	15.25	30.0	-14.8			
Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm										

**LTE Band 13**

LTE Band 13 10MHz QPSK	<b>High Frequency Substitution Measurement                  UL Korea, Ltd. Suwon Laboratory Chamber 1</b>																																				
	Company: Samsung Project #: 4787852390 Date: 02-24-17 Test Engineer: YH Lim Configuration: EUT ONLY, X Position Mode: TX, LTE BAND 13, 10MHz BW,QPSK																																				
	<b>Test Equipment:</b> Receiving: VULB9163-845, and 3m Chamber N-type Cable (Setup this one for testing EUT) Substitution: Dipole S/N: 00164753, 3m SMA Cable Warehouse.																																				
	<table border="1"> <thead> <tr> <th>f MHz</th> <th>SG reading (dBm)</th> <th>Ant. Pol. (H/V)</th> <th>Cable Loss (dB)</th> <th>Antenna Gain (dBd)</th> <th>ERP (dBm)</th> <th>Limit (dBm)</th> <th>Margin (dB)</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td>Mid Ch</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>782.00</td> <td>1.67</td> <td>V</td> <td>1.1</td> <td>-1.4</td> <td>-0.83</td> <td>34.8</td> <td>-35.6</td> <td></td> </tr> <tr> <td>782.00</td> <td>-9.42</td> <td>H</td> <td>1.1</td> <td>-1.4</td> <td>-11.92</td> <td>34.8</td> <td>-46.7</td> <td></td> </tr> </tbody> </table>	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes	Mid Ch									782.00	1.67	V	1.1	-1.4	-0.83	34.8	-35.6		782.00	-9.42	H	1.1	-1.4	-11.92	34.8	-46.7	
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes																													
Mid Ch																																					
782.00	1.67	V	1.1	-1.4	-0.83	34.8	-35.6																														
782.00	-9.42	H	1.1	-1.4	-11.92	34.8	-46.7																														
	Rev. 3.17.11 Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm																																				
LTE Band 13 10MHz 16QAM	<b>High Frequency Substitution Measurement                  UL Korea, Ltd. Suwon Laboratory Chamber 1</b>																																				
	Company: Samsung Project #: 4787852390 Date: 02-24-17 Test Engineer: YH Lim Configuration: EUT ONLY, X Position Mode: LTE13 10MHz FUND 16QAM																																				
	<b>Test Equipment:</b> Receiving: VULB9163-845, and 3m Chamber N-type Cable (Setup this one for testing EUT) Substitution: Dipole S/N: 00164753, 3m SMA Cable Warehouse.																																				
	<table border="1"> <thead> <tr> <th>f MHz</th> <th>SG reading (dBm)</th> <th>Ant. Pol. (H/V)</th> <th>Cable Loss (dB)</th> <th>Antenna Gain (dBd)</th> <th>ERP (dBm)</th> <th>Limit (dBm)</th> <th>Margin (dB)</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td>Mid Ch</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>782.00</td> <td>0.62</td> <td>V</td> <td>1.1</td> <td>-1.4</td> <td>-1.89</td> <td>34.8</td> <td>-36.7</td> <td></td> </tr> <tr> <td>782.00</td> <td>-10.40</td> <td>H</td> <td>1.1</td> <td>-1.4</td> <td>-12.91</td> <td>34.8</td> <td>-47.7</td> <td></td> </tr> </tbody> </table>	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes	Mid Ch									782.00	0.62	V	1.1	-1.4	-1.89	34.8	-36.7		782.00	-10.40	H	1.1	-1.4	-12.91	34.8	-47.7	
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes																													
Mid Ch																																					
782.00	0.62	V	1.1	-1.4	-1.89	34.8	-36.7																														
782.00	-10.40	H	1.1	-1.4	-12.91	34.8	-47.7																														
	Rev. 3.17.11 Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm																																				

		<b>High Frequency Substitution Measurement</b> <b>UL Korea, Ltd. Suwon Laboratory Chamber 1</b>							
LTE Band 13 5MHz QPSK	<b>Company:</b> Samsung <b>Project #:</b> 4787852390 <b>Date:</b> 02-24-17 <b>Test Engineer:</b> YH Lim <b>Configuration:</b> EUT ONLY, X Position <b>Mode:</b> LTE13 5MHz FUND QPSK								
	<b>Test Equipment:</b> Receiving: VULB9163-845, and 3m Chamber N-type Cable (Setup this one for testing EUT) Substitution: Dipole S/N: 00164753, 3m SMA Cable Warehouse.								
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
	Low Ch								
	779.50	0.06	V	1.1	-1.5	-2.54	34.8	-37.3	
	779.50	-9.78	H	1.1	-1.5	-12.38	34.8	-47.2	
	Mid Ch								
	782.00	0.19	V	1.1	-1.4	-2.31	34.8	-37.1	
	782.00	-10.05	H	1.1	-1.4	-12.55	34.8	-47.3	
	High Ch								
	784.50	-0.28	V	1.6	-1.3	-3.16	34.8	-37.9	
	784.50	-10.89	H	1.6	-1.3	-13.77	34.8	-48.5	
Rev. 3.17.11 Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm									
LTE Band 13 5MHz 16QAM	<b>Company:</b> Samsung <b>Project #:</b> 4787852390 <b>Date:</b> 02-24-17 <b>Test Engineer:</b> YH Lim <b>Configuration:</b> EUT ONLY, X Position <b>Mode:</b> LTE13 5MHz FUND 16QAM								
	<b>Test Equipment:</b> Receiving: VULB9163-845, and 3m Chamber N-type Cable (Setup this one for testing EUT) Substitution: Dipole S/N: 00164753, 3m SMA Cable Warehouse.								
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
	Low Ch								
	779.50	-0.95	V	1.1	-1.5	-3.55	34.8	-38.3	
	779.50	-10.85	H	1.1	-1.5	-13.45	34.8	-48.2	
	Mid Ch								
	782.00	-0.80	V	1.1	-1.4	-3.30	34.8	-38.1	
	782.00	-11.12	H	1.1	-1.4	-13.62	34.8	-48.4	
	High Ch								
	784.50	-1.30	V	1.1	-1.3	-3.69	34.8	-38.5	
	784.50	-11.91	H	1.1	-1.3	-14.30	34.8	-49.1	
Rev. 3.17.11 Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm									

## 11.2. FIELD STRENGTH OF SPURIOUS RADIATION

### RULE PART(S)

FCC: §2.1053, §27.53

### LIMIT

Part 27.53(f) - For operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band 1559-1610 MHz shall be limited to  $-70$  dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and  $-80$  dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation. (LTE B13)

Part 27.53(c) (2) - On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least  $43 + 10 \log (P)$  dB. (LTE B13)

Part 27.53(h) - The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least  $43 + 10 \log_{10} (P)$  dB. (LTE B4)

### TEST PROCEDURE

ANSI / TIA / EIA 603D Clause 2.2.12; ESU40 setting reference to 971168 D01 v02r02

For peak power measurement with a ESU40:

- a) Set the RBW = 100KHz for emission below 1GHz and 1MHz for emissions above 1GHz
- b) Set VBW  $\geq 3 \times$  RBW;
- c) Set span  $\geq 1.5$  times the OBW;
- d) Sweep time = auto couple;
- e) Detector = peak
- f) Ensure that the number of measurement points  $\geq$  span/RBW;
- g) Trace mode = max hold;

### RESULTS

### 11.2.1. SPURIOUS RADIATION PLOTS

#### LTE Band 4

		UL Korea, Ltd Suwon Laboratory Above 1GHz High Frequency Substitution Measurement										
LTE Band 4 20MHz QPSK	Company: Samsung		Project #: 4787852390								Date: 02-09-17	
	Test Engineer: YH Lim		Configuration: EUT / AC Adapter / Cradle / Y-Position								Mode: TX, LTE BAND 4, 20MHz BW, QPSK	
	Chamber		Pre-amplifier		Filter		Limit					
	Chamber 2		AFS42		Filter 1		FCC Part 27					
	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes		
	Low Channel (1720MHz)											
	3.4400	-13.2	V	3.0	39.5	1.0	-51.7	-13.0	-38.7			
	5.1600	-12.9	V	3.0	39.8	1.0	-51.7	-13.0	-38.7			
	6.8800	-12.1	V	3.0	39.7	1.0	-50.8	-13.0	-37.8			
	3.4400	-16.1	H	3.0	39.5	1.0	-54.6	-13.0	-41.6			
	5.1600	-10.1	H	3.0	39.8	1.0	-48.9	-13.0	-35.9			
	6.8800	-12.2	H	3.0	39.7	1.0	-50.9	-13.0	-37.9			
	Mid Channel (1732.5MHz)											
	3.4650	-14.7	V	3.0	39.5	1.0	-53.3	-13.0	-40.3			
	5.1975	-12.3	V	3.0	39.8	1.0	-51.1	-13.0	-38.1			
6.9300	-12.0	V	3.0	39.7	1.0	-50.6	-13.0	-37.6				
3.4650	-15.7	H	3.0	39.5	1.0	-54.2	-13.0	-41.2				
5.1975	-10.8	H	3.0	39.8	1.0	-49.7	-13.0	-36.7				
6.9300	-12.1	H	3.0	39.7	1.0	-50.7	-13.0	-37.7				
High Channel (1745MHz)												
3.4900	-15.4	V	3.0	39.5	1.0	-53.9	-13.0	-40.9				
5.2350	-13.0	V	3.0	39.8	1.0	-51.9	-13.0	-38.9				
6.9800	-11.9	V	3.0	39.6	1.0	-50.5	-13.0	-37.5				
3.4900	-14.8	H	3.0	39.5	1.0	-53.3	-13.0	-40.3				
5.2350	-11.2	H	3.0	39.8	1.0	-50.0	-13.0	-37.0				
6.9800	-10.9	H	3.0	39.6	1.0	-49.6	-13.0	-36.6				
Rev. 03.03.09 Note: No other emissions were detected above the system noise floor.												
LTE Band 4 20MHz 16QAM	Company: Samsung		Project #: 4787852390								Date: 02-09-17	
	Test Engineer: YH Lim		Configuration: EUT / AC Adapter / Cradle / Y-Position								Mode: TX, LTE BAND 4, 20MHz BW, 16QAM	
	Chamber		Pre-amplifier		Filter		Limit					
	Chamber 2		AFS42		Filter 1		FCC Part 27					
	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes		
	Low Channel (1720MHz)											
	3.4400	-13.7	V	3.0	39.5	1.0	-52.2	-13.0	-39.2			
	5.1600	-13.7	V	3.0	39.8	1.0	-52.5	-13.0	-39.5			
	6.8800	-12.1	V	3.0	39.7	1.0	-50.8	-13.0	-37.8			
	3.4400	-16.4	H	3.0	39.5	1.0	-54.9	-13.0	-41.9			
	5.1600	-10.1	H	3.0	39.8	1.0	-48.9	-13.0	-35.9			
	6.8800	-12.7	H	3.0	39.7	1.0	-51.4	-13.0	-38.4			
	Mid Channel (1732.5MHz)											
	3.4650	-14.9	V	3.0	39.5	1.0	-53.4	-13.0	-40.4			
	5.1975	-13.4	V	3.0	39.8	1.0	-52.3	-13.0	-39.3			
6.9300	-12.8	V	3.0	39.7	1.0	-51.5	-13.0	-38.5				
3.4650	-14.6	H	3.0	39.5	1.0	-53.1	-13.0	-40.1				
5.1975	-10.6	H	3.0	39.8	1.0	-49.4	-13.0	-36.4				
6.9300	-11.7	H	3.0	39.7	1.0	-50.3	-13.0	-37.3				
High Channel (1745MHz)												
3.4900	-15.5	V	3.0	39.5	1.0	-54.1	-13.0	-41.1				
5.2350	-13.7	V	3.0	39.8	1.0	-52.5	-13.0	-39.5				
6.9800	-11.9	V	3.0	39.6	1.0	-50.5	-13.0	-37.5				
3.4900	-15.2	H	3.0	39.5	1.0	-53.7	-13.0	-40.7				
5.2350	-11.8	H	3.0	39.8	1.0	-50.7	-13.0	-37.7				
6.9800	-11.1	H	3.0	39.6	1.0	-49.7	-13.0	-36.7				
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									
LTE Band 4 15MHz QPSK		Company: Samsung									
		Project #: 4787852390									
		Date: 02-09-17									
		Test Engineer: YH Lim									
		Configuration: EUT / AC Adapter / Cradle / Y-Position									
		Mode: TX, LTE BAND 4, 15MHz BW,QPSK									
		Chamber		Pre-amplifier		Filter		Limit			
		Chamber 2		AFS42		Filter 1		FCC Part 27			
		f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
		Low Channel (1717.5MHz)									
		3.4350	-15.5	V	3.0	39.5	1.0	-54.0	-13.0	-41.0	
		5.1525	-11.8	V	3.0	39.8	1.0	-50.6	-13.0	-37.6	
6.8700	-11.6	V	3.0	39.7	1.0	-50.3	-13.0	-37.3			
3.4350	-13.0	H	3.0	39.5	1.0	-51.5	-13.0	-38.5			
5.1525	-12.2	H	3.0	39.8	1.0	-51.0	-13.0	-38.0			
6.8700	-12.2	H	3.0	39.7	1.0	-50.9	-13.0	-37.9			
Mid Channel (1732.5MHz)											
3.4650	-15.7	V	3.0	39.5	1.0	-54.2	-13.0	-41.2			
5.1975	-12.1	V	3.0	39.8	1.0	-51.0	-13.0	-38.0			
6.9300	-11.9	V	3.0	39.7	1.0	-50.5	-13.0	-37.5			
3.4650	-13.3	H	3.0	39.5	1.0	-51.8	-13.0	-38.8			
5.1975	-10.5	H	3.0	39.8	1.0	-49.3	-13.0	-36.3			
6.9300	-12.1	H	3.0	39.7	1.0	-50.7	-13.0	-37.7			
High Channel (1747.5MHz)											
3.4950	-14.6	V	3.0	39.5	1.0	-53.2	-13.0	-40.2			
5.2425	-11.3	V	3.0	39.8	1.0	-50.2	-13.0	-37.2			
6.9900	-12.4	V	3.0	39.6	1.0	-51.0	-13.0	-38.0			
3.4950	-15.1	H	3.0	39.5	1.0	-53.6	-13.0	-40.6			
5.2425	-9.7	H	3.0	39.8	1.0	-48.5	-13.0	-35.5			
6.9900	-12.7	H	3.0	39.6	1.0	-51.3	-13.0	-38.3			
Rev. 03.03.09 Note: No other emissions were detected above the system noise floor.											
LTE Band 4 15MHz 16QAM		Company: Samsung									
		Project #: 4787852390									
		Date: 02-09-17									
		Test Engineer: YH Lim									
		Configuration: EUT / AC Adapter / Cradle / Y-Position									
		Mode: TX, LTE BAND 4, 15MHz BW,16QAM									
		Chamber		Pre-amplifier		Filter		Limit			
		Chamber 2		AFS42		Filter 1		FCC Part 27			
		f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
		Low Channel (1717.5MHz)									
		3.4350	-15.9	V	3.0	39.5	1.0	-54.5	-13.0	-41.5	
		5.1525	-12.9	V	3.0	39.8	1.0	-51.7	-13.0	-38.7	
6.8700	-11.9	V	3.0	39.7	1.0	-50.6	-13.0	-37.6			
3.4350	-14.2	H	3.0	39.5	1.0	-52.7	-13.0	-39.7			
5.1525	-12.1	H	3.0	39.8	1.0	-50.9	-13.0	-37.9			
6.8700		H	3.0	39.7	1.0	-38.7	-13.0	-25.7			
Mid Channel (1732.5MHz)											
3.4650	-15.8	V	3.0	39.5	1.0	-54.4	-13.0	-41.4			
5.1975	-12.4	V	3.0	39.8	1.0	-51.2	-13.0	-38.2			
6.9300	-12.6	V	3.0	39.7	1.0	-51.2	-13.0	-38.2			
3.4650	-14.2	H	3.0	39.5	1.0	-52.7	-13.0	-39.7			
5.1975	-11.0	H	3.0	39.8	1.0	-49.8	-13.0	-36.8			
6.9300	-12.8	H	3.0	39.7	1.0	-51.4	-13.0	-38.4			
High Channel (1747.5MHz)											
3.4950	-15.1	V	3.0	39.5	1.0	-53.6	-13.0	-40.6			
5.2425	-12.2	V	3.0	39.8	1.0	-51.0	-13.0	-38.0			
6.9900	-12.4	V	3.0	39.6	1.0	-51.0	-13.0	-38.0			
3.4950	-15.6	H	3.0	39.5	1.0	-54.2	-13.0	-41.2			
5.2425	-9.2	H	3.0	39.8	1.0	-48.0	-13.0	-35.0			
6.9900	-12.9	H	3.0	39.6	1.0	-51.5	-13.0	-38.5			
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									
LTE Band 4 10MHz QPSK		Company: Samsung									
		Project #: 4787852390									
		Date: 02-09-17									
		Test Engineer: YH Lim									
		Configuration: EUT / AC Adapter / Cradle / Y-Position									
		Mode: TX, LTE BAND 4, 10MHz BW, QPSK									
		Chamber		Pre-amplifier		Filter		Limit			
		Chamber 2		AFS42		Filter 1		FCC Part 27			
		f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
		Low Channel (1715MHz)									
		3.4300	-12.8	V	3.0	39.5	1.0	-51.3	-13.0	-38.3	
		5.1450	-11.6	V	3.0	39.8	1.0	-50.4	-13.0	-37.4	
		6.8600	-12.2	V	3.0	39.7	1.0	-50.9	-13.0	-37.9	
		3.4300	-14.2	H	3.0	39.5	1.0	-52.7	-13.0	-39.7	
		5.1450	-11.8	H	3.0	39.8	1.0	-50.6	-13.0	-37.6	
6.8600	-12.9	H	3.0	39.7	1.0	-51.5	-13.0	-38.5			
Mid Channel (1732.5MHz)											
3.4650	-14.7	V	3.0	39.5	1.0	-53.2	-13.0	-40.2			
5.1975	-11.4	V	3.0	39.8	1.0	-50.2	-13.0	-37.2			
6.9300	-11.7	V	3.0	39.7	1.0	-50.4	-13.0	-37.4			
3.4650	-14.8	H	3.0	39.5	1.0	-53.3	-13.0	-40.3			
5.1975	-11.9	H	3.0	39.8	1.0	-50.7	-13.0	-37.7			
6.9300	-12.0	H	3.0	39.7	1.0	-50.7	-13.0	-37.7			
High Channel (1750MHz)											
3.5000	-13.8	V	3.0	39.5	1.0	-52.4	-13.0	-39.4			
5.2500	-11.7	V	3.0	39.8	1.0	-50.6	-13.0	-37.6			
7.0000	-12.4	V	3.0	39.6	1.0	-51.0	-13.0	-38.0			
3.5000	-13.9	H	3.0	39.5	1.0	-52.4	-13.0	-39.4			
5.2500	-8.7	H	3.0	39.8	1.0	-47.6	-13.0	-34.6			
7.0000	-11.9	H	3.0	39.6	1.0	-50.5	-13.0	-37.5			
Rev. 03.03.09 Note: No other emissions were detected above the system noise floor.											
LTE Band 4 10MHz 16QAM		Company: Samsung									
		Project #: 4787852390									
		Date: 02-09-17									
		Test Engineer: YH Lim									
		Configuration: EUT / AC Adapter / Cradle / Y-Position									
		Mode: TX, LTE BAND 4, 10MHz BW, 16QAM									
		Chamber		Pre-amplifier		Filter		Limit			
		Chamber 2		AFS42		Filter 1		FCC Part 27			
		f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
		Low Channel (1715MHz)									
		3.4300	-12.8	V	3.0	39.5	1.0	-51.3	-13.0	-38.3	
		5.1450	-12.1	V	3.0	39.8	1.0	-50.9	-13.0	-37.9	
		6.8600	-12.7	V	3.0	39.7	1.0	-51.4	-13.0	-38.4	
		3.4300	-14.2	H	3.0	39.5	1.0	-52.7	-13.0	-39.7	
		5.1450	-12.6	H	3.0	39.8	1.0	-51.4	-13.0	-38.4	
6.8600	-12.3	H	3.0	39.7	1.0	-51.0	-13.0	-38.0			
Mid Channel (1732.5MHz)											
3.4650	-14.9	V	3.0	39.5	1.0	-53.5	-13.0	-40.5			
5.1975	-12.0	V	3.0	39.8	1.0	-50.8	-13.0	-37.8			
6.9300	-12.5	V	3.0	39.7	1.0	-51.2	-13.0	-38.2			
3.4650	-14.9	H	3.0	39.5	1.0	-53.4	-13.0	-40.4			
5.1975	-12.2	H	3.0	39.8	1.0	-51.1	-13.0	-38.1			
6.9300	-12.6	H	3.0	39.7	1.0	-51.2	-13.0	-38.2			
High Channel (1750MHz)											
3.5000	-13.7	V	3.0	39.5	1.0	-52.2	-13.0	-39.2			
5.2500	-12.6	V	3.0	39.8	1.0	-51.5	-13.0	-38.5			
7.0000	-11.8	V	3.0	39.6	1.0	-50.4	-13.0	-37.4			
3.5000	-14.4	H	3.0	39.5	1.0	-53.0	-13.0	-40.0			
5.2500	-8.8	H	3.0	39.8	1.0	-47.7	-13.0	-34.7			
7.0000	-12.5	H	3.0	39.6	1.0	-51.1	-13.0	-38.1			
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										
LTE Band 4 5MHz QPSK		Company: Samsung										
		Project #: 4787852390										
		Date: 02-09-17										
		Test Engineer: YH Lim										
		Configuration: EUT / AC Adapter / Cradle / Y-Position										
		Mode: TX, LTE BAND 4, 5MHz BW, QPSK										
			<b>Chamber</b>	<b>Pre-amplifier</b>	<b>Filter</b>	<b>Limit</b>						
			Chamber 2	AFS42	Filter 1	FCC Part 27						
			<b>f GHz</b>	<b>SG reading (dBm)</b>	<b>Ant. Pol. (H/V)</b>	<b>Distance (m)</b>	<b>Preamp (dB)</b>	<b>Filter (dB)</b>	<b>ERP (dBm)</b>	<b>Limit (dBm)</b>	<b>Delta (dB)</b>	<b>Notes</b>
			Low Channel (1712.5MHz)									
			3.4250	-13.7	V	3.0	39.5	1.0	-52.2	-13.0	-39.2	
			5.1375	-10.5	V	3.0	39.8	1.0	-49.3	-13.0	-36.3	
			6.8500	-12.6	V	3.0	39.7	1.0	-51.3	-13.0	-38.3	
			3.4250	-14.4	H	3.0	39.5	1.0	-52.9	-13.0	-39.9	
			5.1375	-12.1	H	3.0	39.8	1.0	-50.9	-13.0	-37.9	
		6.8500	-12.8	H	3.0	39.7	1.0	-51.5	-13.0	-38.5		
		Mid Channel (1732.5MHz)										
		3.4650	-14.1	V	3.0	39.5	1.0	-52.6	-13.0	-39.6		
		5.1975	-11.4	V	3.0	39.8	1.0	-50.2	-13.0	-37.2		
		6.9300	-12.0	V	3.0	39.7	1.0	-50.7	-13.0	-37.7		
		3.4650	-14.9	H	3.0	39.5	1.0	-53.4	-13.0	-40.4		
		5.1975	-9.7	H	3.0	39.8	1.0	-48.5	-13.0	-35.5		
		6.9300	-11.2	H	3.0	39.7	1.0	-49.8	-13.0	-36.8		
		High Channel (1752.5MHz)										
		3.5050	-14.2	V	3.0	39.5	1.0	-52.7	-13.0	-39.7		
		5.2575	-11.8	V	3.0	39.8	1.0	-50.6	-13.0	-37.6		
		7.0100	-11.8	V	3.0	39.6	1.0	-50.5	-13.0	-37.5		
		3.5050	-14.3	H	3.0	39.5	1.0	-52.9	-13.0	-39.9		
		5.2575	-10.6	H	3.0	39.8	1.0	-49.5	-13.0	-36.5		
		7.0100	-12.8	H	3.0	39.6	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 #: 4787852390										
		Date: 02-09-17										
		Test Engineer: YH Lim										
		Configuration: EUT / AC Adapter / Cradle / Y-Position										
		Mode: TX, LTE BAND 7, 5MHz BW, 16QAM										
			<b>Chamber</b>	<b>Pre-amplifier</b>	<b>Filter</b>	<b>Limit</b>						
			Chamber 2	AFS42	Filter 1	FCC Part 27						
			<b>f GHz</b>	<b>SG reading (dBm)</b>	<b>Ant. Pol. (H/V)</b>	<b>Distance (m)</b>	<b>Preamp (dB)</b>	<b>Filter (dB)</b>	<b>ERP (dBm)</b>	<b>Limit (dBm)</b>	<b>Delta (dB)</b>	<b>Notes</b>
			Low Channel (1712.5MHz)									
			3.4250	-13.8	V	3.0	39.5	1.0	-52.3	-13.0	-39.3	
			5.1375	-11.5	V	3.0	39.8	1.0	-50.3	-13.0	-37.3	
			6.8500	-12.1	V	3.0	39.7	1.0	-50.8	-13.0	-37.8	
			3.4250	-14.4	H	3.0	39.5	1.0	-52.9	-13.0	-39.9	
		5.1375	-11.4	H	3.0	39.8	1.0	-50.2	-13.0	-37.2		
		6.8500	-12.4	H	3.0	39.7	1.0	-51.1	-13.0	-38.1		
		Mid Channel (1732.5MHz)										
		3.4650	-15.2	V	3.0	39.5	1.0	-53.7	-13.0	-40.7		
		5.1975	-12.9	V	3.0	39.8	1.0	-51.7	-13.0	-38.7		
		6.9300	-12.5	V	3.0	39.7	1.0	-51.1	-13.0	-38.1		
		3.4650	-15.2	H	3.0	39.5	1.0	-53.8	-13.0	-40.8		
		5.1975	-11.2	H	3.0	39.8	1.0	-50.1	-13.0	-37.1		
		6.9300	-11.2	H	3.0	39.7	1.0	-49.9	-13.0	-36.9		
		High Channel (1752.5MHz)										
		3.5050	-13.8	V	3.0	39.5	1.0	-52.3	-13.0	-39.3		
		5.2575	-12.3	V	3.0	39.8	1.0	-51.1	-13.0	-38.1		
		7.0100	-11.8	V	3.0	39.6	1.0	-50.4	-13.0	-37.4		
		3.5050	-14.7	H	3.0	39.5	1.0	-53.3	-13.0	-40.3		
		5.2575	-11.4	H	3.0	39.8	1.0	-50.2	-13.0	-37.2		
		7.0100	-12.7	H	3.0	39.6	1.0	-51.3	-13.0	-38.3		
		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									
LTE Band 4 3MHz QPSK	Company: Samsung										
	Project #: 4787852390										
	Date: 02-08-17										
	Test Engineer: YH Lim										
	Configuration: EUT / AC Adapter / Cradle / Y-Position										
	Mode: TX, LTE BAND 4, 3MHz BW,QPSK										
	Chamber: Chamber 2		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 (1711.5MHz)										
	3.4230	-13.7	V	3.0	39.5	1.0	-52.1	-13.0	-39.1		
	5.1345	-10.3	V	3.0	39.8	1.0	-49.1	-13.0	-36.1		
	6.8460	-10.7	V	3.0	39.7	1.0	-49.4	-13.0	-36.4		
	3.4230	-13.4	H	3.0	39.5	1.0	-51.9	-13.0	-38.9		
	5.1345	-8.7	H	3.0	39.8	1.0	-47.5	-13.0	-34.5		
	6.8460	-10.2	H	3.0	39.7	1.0	-48.9	-13.0	-35.9		
Mid Channel (1732.5MHz)											
3.4650	-13.6	V	3.0	39.5	1.0	-52.1	-13.0	-39.1			
5.1975	-9.2	V	3.0	39.8	1.0	-48.1	-13.0	-35.1			
6.9300	-10.5	V	3.0	39.7	1.0	-49.2	-13.0	-36.2			
3.4650	-12.5	H	3.0	39.5	1.0	-51.0	-13.0	-38.0			
5.1975	-9.0	H	3.0	39.8	1.0	-47.9	-13.0	-34.9			
6.9300	-10.0	H	3.0	39.7	1.0	-48.7	-13.0	-35.7			
High Channel (1753.5MHz)											
3.5070	-11.8	V	3.0	39.5	1.0	-50.4	-13.0	-37.4			
5.2605	-9.4	V	3.0	39.8	1.0	-48.2	-13.0	-35.2			
7.0140	-10.6	V	3.0	39.6	1.0	-49.2	-13.0	-36.2			
3.5070	-13.0	H	3.0	39.5	1.0	-51.5	-13.0	-38.5			
5.2605	-8.3	H	3.0	39.8	1.0	-47.1	-13.0	-34.1			
7.0140	-9.8	H	3.0	39.6	1.0	-48.4	-13.0	-35.4			
Rev. 03.03.09 Note: No other emissions were detected above the system noise floor.											
LTE Band 4 3MHz 16QAM	Company: Samsung										
	Project #: 4787852390										
	Date: 02-08-17										
	Test Engineer: YH Lim										
	Configuration: EUT / AC Adapter / Cradle / Y-Position										
	Mode: TX, LTE BAND 4, 3MHz BW,16QAM										
	Chamber: Chamber 2		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 (1711.5MHz)										
	3.4230	-13.9	V	3.0	39.5	1.0	-52.4	-13.0	-39.4		
	5.1345	-10.6	V	3.0	39.8	1.0	-49.4	-13.0	-36.4		
	6.8460	-10.7	V	3.0	39.7	1.0	-49.4	-13.0	-36.4		
	3.4230	-13.7	H	3.0	39.5	1.0	-52.2	-13.0	-39.2		
	5.1345	-9.1	H	3.0	39.8	1.0	-48.0	-13.0	-35.0		
	6.8460	-10.3	H	3.0	39.7	1.0	-49.0	-13.0	-36.0		
Mid Channel (1732.5MHz)											
3.4650	-13.7	V	3.0	39.5	1.0	-52.2	-13.0	-39.2			
5.1975	-9.1	V	3.0	39.8	1.0	-47.9	-13.0	-34.9			
6.9300	-10.4	V	3.0	39.7	1.0	-49.0	-13.0	-36.0			
3.4650	-13.1	H	3.0	39.5	1.0	-51.6	-13.0	-38.6			
5.1975	-9.2	H	3.0	39.8	1.0	-48.0	-13.0	-35.0			
6.9300	-10.6	H	3.0	39.7	1.0	-49.3	-13.0	-36.3			
High Channel (1752.5MHz)											
3.5070	-12.3	V	3.0	39.5	1.0	-50.8	-13.0	-37.8			
5.2605	-10.7	V	3.0	39.8	1.0	-49.5	-13.0	-36.5			
7.0140	-10.7	V	3.0	39.6	1.0	-49.3	-13.0	-36.3			
3.5070	-13.1	H	3.0	39.5	1.0	-51.7	-13.0	-38.7			
5.2605	-9.3	H	3.0	39.8	1.0	-48.1	-13.0	-35.1			
7.0140	-10.7	H	3.0	39.6	1.0	-49.3	-13.0	-36.3			
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									
LTE Band 4 1.4MHz QPSK	Company: Samsung										
	Project #: 4787852390										
	Date: 02-08-17										
	Test Engineer: YH Lim										
	Configuration: EUT / AC Adapter / Cradle / Y-Position										
	Mode: TX, LTE BAND 4, 1.4MHz BW, QPSK										
	Chamber: Chamber 2		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 (1710.7MHz)										
	3.4214	-12.7	V	3.0	39.5	1.0	-51.2	-13.0	-38.2		
	5.1321	-9.1	V	3.0	39.8	1.0	-47.9	-13.0	-34.9		
	6.8428	-10.4	V	3.0	39.7	1.0	-49.1	-13.0	-36.1		
	3.4214	-13.4	H	3.0	39.5	1.0	-51.9	-13.0	-38.9		
	5.1321	-9.5	H	3.0	39.8	1.0	-48.3	-13.0	-35.3		
	6.8428	-10.4	H	3.0	39.7	1.0	-49.1	-13.0	-36.1		
	Mid Channel (1732.5MHz)										
	3.4650	-13.1	V	3.0	39.5	1.0	-51.6	-13.0	-38.6		
	5.1975	-9.7	V	3.0	39.8	1.0	-48.6	-13.0	-35.6		
	6.9300	-10.0	V	3.0	39.7	1.0	-48.7	-13.0	-35.7		
	3.4650	-13.4	H	3.0	39.5	1.0	-51.9	-13.0	-38.9		
5.1975	-9.7	H	3.0	39.8	1.0	-48.5	-13.0	-35.5			
6.9300	-9.7	H	3.0	39.7	1.0	-48.3	-13.0	-35.3			
High Channel (1754.3MHz)											
3.5086	-12.1	V	3.0	39.5	1.0	-50.7	-13.0	-37.7			
5.2629	-10.0	V	3.0	39.8	1.0	-48.8	-13.0	-35.8			
7.0172	-10.1	V	3.0	39.6	1.0	-48.7	-13.0	-35.7			
3.5086	-12.6	H	3.0	39.5	1.0	-51.2	-13.0	-38.2			
5.2629	-8.6	H	3.0	39.8	1.0	-47.5	-13.0	-34.5			
7.0172	-10.4	H	3.0	39.6	1.0	-49.1	-13.0	-36.1			
Rev. 03.03.09 Note: No other emissions were detected above the system noise floor.											
LTE Band 4 1.4MHz 16QAM	Company: Samsung										
	Project #: 4787852390										
	Date: 02-08-17										
	Test Engineer: YH Lim										
	Configuration: EUT / AC Adapter / Cradle / Y-Position										
	Mode: TX, LTE BAND 4, 1.4MHz BW, 16QAM										
	Chamber: Chamber 2		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 (1710.7MHz)										
	3.4214	-12.9	V	3.0	39.5	1.0	-51.4	-13.0	-38.4		
	5.1321	-9.6	V	3.0	39.8	1.0	-48.4	-13.0	-35.4		
	6.8428	-10.8	V	3.0	39.7	1.0	-49.5	-13.0	-36.5		
	3.4214	-13.9	H	3.0	39.5	1.0	-52.4	-13.0	-39.4		
	5.1321	-10.4	H	3.0	39.8	1.0	-49.2	-13.0	-36.2		
	6.8428	-10.8	H	3.0	39.7	1.0	-49.5	-13.0	-36.5		
	Mid Channel (1732.5MHz)										
	3.4650	-13.7	V	3.0	39.5	1.0	-52.2	-13.0	-39.2		
	5.1975	-9.5	V	3.0	39.8	1.0	-48.3	-13.0	-35.3		
	6.9300	-10.7	V	3.0	39.7	1.0	-49.4	-13.0	-36.4		
	3.4650	-13.7	H	3.0	39.5	1.0	-52.2	-13.0	-39.2		
5.1975	-10.8	H	3.0	39.8	1.0	-49.6	-13.0	-36.6			
6.9300	-10.7	H	3.0	39.7	1.0	-49.4	-13.0	-36.4			
High Channel (1754.3MHz)											
3.5086	-13.2	V	3.0	39.5	1.0	-51.8	-13.0	-38.8			
5.2629	-9.8	V	3.0	39.8	1.0	-48.7	-13.0	-35.7			
7.0172	-10.8	V	3.0	39.6	1.0	-49.4	-13.0	-36.4			
3.5086	-13.3	H	3.0	39.5	1.0	-51.8	-13.0	-38.8			
5.2629	-8.5	H	3.0	39.8	1.0	-47.4	-13.0	-34.4			
7.0172	-10.9	H	3.0	39.6	1.0	-49.5	-13.0	-36.5			
Rev. 03.03.09 Note: No other emissions were detected above the system noise floor.											

**LTE Band 13**

LTE Band 13 10MHz QPSK	UL Korea, Ltd Suwon Laboratory Above 1GHz High Frequency Substitution Measurement									
	Company: Samsung Project #: 4787852390 Date: 02-24-17 Test Engineer: YH Lim Configuration: EUT / AC Adapter / Cradle / X Position Mode: TX, LTE BAND 13, 10MHz BW, QPSK									
Chamber		Pre-amplifier		Filter		Limit				
Chamber 2		AFS42		Filter 1		Part 22				
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	
Mid Channel (782MHz)										
1.5640	-6.8	V	3.0	44.2	1.0	-50.0	-40.0	-10.0		
2.3460	2.8	V	3.0	44.6	1.0	-40.8	-13.0	-27.8		
3.1280	-5.6	V	3.0	45.1	1.0	-49.7	-13.0	-36.7		
1.5640	-3.8	H	3.0	44.2	1.0	-47.0	-40.0	-7.0		
2.3460	7.8	H	3.0	44.6	1.0	-35.8	-13.0	-22.8		
3.1280	-6.4	H	3.0	45.1	1.0	-50.5	-13.0	-37.5		
Rev. 03.03.09 Note: No other emissions were detected above the system noise floor.										
LTE Band 13 10MHz 16QAM	UL Korea, Ltd Suwon Laboratory Above 1GHz High Frequency Substitution Measurement									
	Company: Samsung Project #: 4787852390 Date: 02-24-17 Test Engineer: YH Lim Configuration: EUT / AC Adapter / Cradle / X Position Mode: TX, LTE BAND 13, 10MHz BW, 16QAM									
Chamber		Pre-amplifier		Filter		Limit				
Chamber 2		AFS42		Filter 1		Part 22				
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	
Mid Channel (782MHz)										
1.5640	-6.2	V	3.0	44.2	1.0	-49.4	-40.0	-9.4		
2.3460	2.6	V	3.0	44.6	1.0	-41.0	-13.0	-28.0		
3.1280	-6.1	V	3.0	45.1	1.0	-50.2	-13.0	-37.2		
1.5640	-2.5	H	3.0	44.2	1.0	-45.7	-40.0	-5.7		
2.3460	6.4	H	3.0	44.6	1.0	-37.2	-13.0	-24.2		
3.1280	-7.1	H	3.0	45.1	1.0	-51.2	-13.0	-38.2		
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									
LTE Band 13 5MHz QPSK	Company: Samsung Project #: 4787852390 Date: 02-24-17 Test Engineer: YH Lim Configuration: EUT / AC Adapter / Cradle / X Position Mode: TX, LTE BAND 13, 5MHz BW, QPSK										
	Chamber: Chamber 2 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 Channel (779.5MHz)									
		1.5590	-5.6	V	3.0	44.2	1.0	-48.9	-40.0	-8.9	
		2.3385	4.3	V	3.0	44.6	1.0	-39.3	-13.0	-26.3	
		3.1180	-7.6	V	3.0	45.1	1.0	-51.8	-13.0	-38.8	
		1.5590	-2.0	H	3.0	44.2	1.0	-45.2	-40.0	-5.2	
		2.3385	5.8	H	3.0	44.6	1.0	-37.8	-13.0	-24.8	
		3.1180	-7.0	H	3.0	45.1	1.0	-51.1	-13.0	-38.1	
	Mid Channel (782MHz)										
	1.5640	-4.7	V	3.0	44.2	1.0	-47.9	-40.0	-7.9		
	2.3460	4.6	V	3.0	44.6	1.0	-39.0	-13.0	-26.0		
	3.1280	-7.3	V	3.0	45.1	1.0	-51.4	-13.0	-38.4		
	1.5640	-3.6	H	3.0	44.2	1.0	-46.8	-40.0	-6.8		
	2.3460	5.6	H	3.0	44.6	1.0	-38.0	-13.0	-25.0		
	3.1280	-7.6	H	3.0	45.1	1.0	-51.7	-13.0	-38.7		
	High Channel (784.5MHz)										
	1.5690	-6.1	V	3.0	44.2	1.0	-49.3	-40.0	-9.3		
	2.3535	1.8	V	3.0	44.6	1.0	-41.9	-13.0	-28.9		
	3.1380	-7.3	V	3.0	45.1	1.0	-51.4	-13.0	-38.4		
	1.5690	-4.8	H	3.0	44.2	1.0	-48.0	-40.0	-8.0		
	2.3535	0.7	H	3.0	44.6	1.0	-42.9	-13.0	-29.9		
	3.1380	-7.2	H	3.0	45.1	1.0	-51.3	-13.0	-38.3		
		Rev. 03.03.09 Note: No other emissions were detected above the system noise floor.									
LTE Band 13 5MHz 16QAM	Company: Samsung Project #: 4787852390 Date: 02-24-17 Test Engineer: YH Lim Configuration: EUT / AC Adapter / Cradle / X Position Mode: TX, LTE BAND 13, 5MHz BW, 16QAM										
	Chamber: Chamber 2 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 Channel (779.5MHz)									
		1.5590	-5.7	V	3.0	44.2	1.0	-49.0	-40.0	-9.0	
		2.3385	4.4	V	3.0	44.6	1.0	-39.2	-13.0	-26.2	
		3.1180	-7.7	V	3.0	45.1	1.0	-51.8	-13.0	-38.8	
		1.5590	-3.0	H	3.0	44.2	1.0	-46.2	-40.0	-6.2	
		2.3385	6.0	H	3.0	44.6	1.0	-37.6	-13.0	-24.6	
		3.1180	-7.1	H	3.0	45.1	1.0	-51.2	-13.0	-38.2	
	Mid Channel (782MHz)										
	1.5640	-8.8	V	3.0	44.2	1.0	-52.0	-40.0	-12.0		
	2.3460	5.6	V	3.0	44.6	1.0	-38.0	-13.0	-25.0		
	3.1280	-7.5	V	3.0	45.1	1.0	-51.6	-13.0	-38.6		
	1.5640	-8.1	H	3.0	44.2	1.0	-51.3	-40.0	-11.3		
	2.3460	4.6	H	3.0	44.6	1.0	-39.0	-13.0	-26.0		
	3.1280	-7.7	H	3.0	45.1	1.0	-51.8	-13.0	-38.8		
	High Channel (784.5MHz)										
	1.5690	-8.3	V	3.0	44.2	1.0	-51.5	-40.0	-11.5		
	2.3535	1.7	V	3.0	44.6	1.0	-41.9	-13.0	-28.9		
	3.1380	-6.8	V	3.0	45.1	1.0	-50.9	-13.0	-37.9		
	1.5690	-4.8	H	3.0	44.2	1.0	-48.0	-40.0	-8.0		
	2.3535	0.3	H	3.0	44.6	1.0	-43.3	-13.0	-30.3		
	3.1380	-7.8	H	3.0	45.1	1.0	-51.9	-13.0	-38.9		
		Rev. 03.03.09 Note: No other emissions were detected above the system noise floor.									