

LTE Band 17

LTE Band 17 10MHz QPSK	UL Verification Services, Inc. High Frequency Substitution Measurement								
	Company: Samsung								
	Project #: 4788312331								
	Date: 2018-01-22								
	Test Engineer: 47989								
	Configuration: EUT / Z-Position								
	Location: Chamber 2								
	Mode: LTE_QPSK Band 17 Fundamentals, 10MHz Bandwidth								
	Test Equipment: Receiving: VULB9163-749, and Chamber 2 SMA Cables Substitution: Dipole 3121_DB4, 3m N-type Cable								
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	Low Ch								
	709.00	16.51	V	0.9	-1.6	14.05	34.8	-20.7	
709.00	-4.47	H	0.9	-1.6	-6.93	34.8	-41.7		
Mid Ch									
710.00	17.63	V	0.9	-1.6	15.16	34.8	-19.6		
710.00	-4.75	H	0.9	-1.6	-7.22	34.8	-42.0		
High Ch									
711.00	17.91	V	0.9	-1.6	15.44	34.8	-19.3		
711.00	-4.45	H	0.9	-1.6	-6.92	34.8	-41.7		

LTE Band 17 10MHz 16QAM	UL Verification Services, Inc. High Frequency Substitution Measurement								
	Company: Samsung								
	Project #: 4788312331								
	Date: 2018-01-22								
	Test Engineer: 47989								
	Configuration: EUT / Z-Position								
	Location: Chamber 2								
	Mode: LTE_16QAM Band 17 Fundamentals, 10MHz Bandwidth								
	Test Equipment: Receiving: VULB9163-749, and Chamber 2 SMA Cables Substitution: Dipole 3121_DB4, 3m N-type Cable								
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	Low Ch								
	709.00	17.75	V	0.9	-1.6	15.29	34.8	-19.5	
709.00	-5.66	H	0.9	-1.6	-8.12	34.8	-42.9		
Mid Ch									
710.00	16.47	V	0.9	-1.6	14.00	34.8	-20.8		
710.00	-5.96	H	0.9	-1.6	-8.43	34.8	-43.2		
High Ch									
711.00	16.68	V	0.9	-1.6	14.21	34.8	-20.6		
711.00	-5.67	H	0.9	-1.6	-8.14	34.8	-42.9		

LTE Band 17 5MHz QPSK	UL Verification Services, Inc. High Frequency Substitution Measurement																																																																																																		
	Company:		Samsung																																																																																																
	Project #:		4788312331																																																																																																
	Date:		2018-01-22																																																																																																
	Test Engineer:		47989																																																																																																
	Configuration:		EUT / Z-Position																																																																																																
	Location:		Chamber 2																																																																																																
	Mode:		LTE_QPSK Band 17 Fundamentals, 5MHz Bandwidth																																																																																																
	Test Equipment:		Receiving: VULB9163-749, and Chamber 2 SMA Cables Substitution: Dipole 3121_DB4, 3m N-type Cable																																																																																																
			<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>EIRP (dBm)</th> <th>Limit (dBm)</th> <th>Delta (dB)</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td colspan="9">Low Ch</td> </tr> <tr> <td>706.50</td> <td>17.31</td> <td>V</td> <td>0.9</td> <td>-1.6</td> <td>14.85</td> <td>34.8</td> <td>-19.9</td> <td></td> </tr> <tr> <td>706.50</td> <td>-4.99</td> <td>H</td> <td>0.9</td> <td>-1.6</td> <td>-7.45</td> <td>34.8</td> <td>-42.2</td> <td></td> </tr> <tr> <td colspan="9">Mid Ch</td> </tr> <tr> <td>710.00</td> <td>17.63</td> <td>V</td> <td>0.9</td> <td>-1.6</td> <td>15.16</td> <td>34.8</td> <td>-19.6</td> <td></td> </tr> <tr> <td>710.00</td> <td>-4.50</td> <td>H</td> <td>0.9</td> <td>-1.6</td> <td>-6.97</td> <td>34.8</td> <td>-41.7</td> <td></td> </tr> <tr> <td colspan="9">High Ch</td> </tr> <tr> <td>713.50</td> <td>17.90</td> <td>V</td> <td>0.9</td> <td>-1.6</td> <td>15.43</td> <td>34.8</td> <td>-19.3</td> <td></td> </tr> <tr> <td>713.50</td> <td>-4.74</td> <td>H</td> <td>0.9</td> <td>-1.6</td> <td>-7.22</td> <td>34.8</td> <td>-42.0</td> <td></td> </tr> </tbody> </table>							f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	Low Ch									706.50	17.31	V	0.9	-1.6	14.85	34.8	-19.9		706.50	-4.99	H	0.9	-1.6	-7.45	34.8	-42.2		Mid Ch									710.00	17.63	V	0.9	-1.6	15.16	34.8	-19.6		710.00	-4.50	H	0.9	-1.6	-6.97	34.8	-41.7		High Ch									713.50	17.90	V	0.9	-1.6	15.43	34.8	-19.3		713.50	-4.74	H	0.9	-1.6	-7.22	34.8	-42.0	
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes																																																																																										
	Low Ch																																																																																																		
706.50	17.31	V	0.9	-1.6	14.85	34.8	-19.9																																																																																												
706.50	-4.99	H	0.9	-1.6	-7.45	34.8	-42.2																																																																																												
Mid Ch																																																																																																			
710.00	17.63	V	0.9	-1.6	15.16	34.8	-19.6																																																																																												
710.00	-4.50	H	0.9	-1.6	-6.97	34.8	-41.7																																																																																												
High Ch																																																																																																			
713.50	17.90	V	0.9	-1.6	15.43	34.8	-19.3																																																																																												
713.50	-4.74	H	0.9	-1.6	-7.22	34.8	-42.0																																																																																												
LTE Band 17 5MHz 16QAM	UL Verification Services, Inc. High Frequency Substitution Measurement																																																																																																		
	Company:		Samsung																																																																																																
	Project #:		4788312331																																																																																																
	Date:		2018-01-22																																																																																																
	Test Engineer:		47989																																																																																																
	Configuration:		EUT / Z-Position																																																																																																
	Location:		Chamber 2																																																																																																
	Mode:		LTE_16QAM Band 17 Fundamentals, 5MHz Bandwidth																																																																																																
	Test Equipment:		Receiving: VULB9163-749, and Chamber 2 SMA Cables Substitution: Dipole 3121_DB4, 3m N-type Cable																																																																																																
			<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>EIRP (dBm)</th> <th>Limit (dBm)</th> <th>Delta (dB)</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td colspan="9">Low Ch</td> </tr> <tr> <td>706.50</td> <td>16.61</td> <td>V</td> <td>0.9</td> <td>-1.6</td> <td>14.15</td> <td>34.8</td> <td>-20.6</td> <td></td> </tr> <tr> <td>706.50</td> <td>-6.06</td> <td>H</td> <td>0.9</td> <td>-1.6</td> <td>-8.52</td> <td>34.8</td> <td>-43.3</td> <td></td> </tr> <tr> <td colspan="9">Mid Ch</td> </tr> <tr> <td>710.00</td> <td>16.46</td> <td>V</td> <td>0.9</td> <td>-1.6</td> <td>13.99</td> <td>34.8</td> <td>-20.8</td> <td></td> </tr> <tr> <td>710.00</td> <td>-5.52</td> <td>H</td> <td>0.9</td> <td>-1.6</td> <td>-7.99</td> <td>34.8</td> <td>-42.8</td> <td></td> </tr> <tr> <td colspan="9">High Ch</td> </tr> <tr> <td>713.50</td> <td>16.68</td> <td>V</td> <td>0.9</td> <td>-1.6</td> <td>14.21</td> <td>34.8</td> <td>-20.6</td> <td></td> </tr> <tr> <td>713.50</td> <td>-5.98</td> <td>H</td> <td>0.9</td> <td>-1.6</td> <td>-8.46</td> <td>34.8</td> <td>-43.2</td> <td></td> </tr> </tbody> </table>							f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	Low Ch									706.50	16.61	V	0.9	-1.6	14.15	34.8	-20.6		706.50	-6.06	H	0.9	-1.6	-8.52	34.8	-43.3		Mid Ch									710.00	16.46	V	0.9	-1.6	13.99	34.8	-20.8		710.00	-5.52	H	0.9	-1.6	-7.99	34.8	-42.8		High Ch									713.50	16.68	V	0.9	-1.6	14.21	34.8	-20.6		713.50	-5.98	H	0.9	-1.6	-8.46	34.8	-43.2	
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes																																																																																										
	Low Ch																																																																																																		
706.50	16.61	V	0.9	-1.6	14.15	34.8	-20.6																																																																																												
706.50	-6.06	H	0.9	-1.6	-8.52	34.8	-43.3																																																																																												
Mid Ch																																																																																																			
710.00	16.46	V	0.9	-1.6	13.99	34.8	-20.8																																																																																												
710.00	-5.52	H	0.9	-1.6	-7.99	34.8	-42.8																																																																																												
High Ch																																																																																																			
713.50	16.68	V	0.9	-1.6	14.21	34.8	-20.6																																																																																												
713.50	-5.98	H	0.9	-1.6	-8.46	34.8	-43.2																																																																																												

LTE Band 5

LTE Band 5 10MHz QPSK	UL Verification Services, Inc. High Frequency Substitution Measurement																																																																																																	
	Company: Samsung																																																																																																	
	Project #: 4788312331																																																																																																	
	Date: 2018-01-22																																																																																																	
	Test Engineer: 47989																																																																																																	
	Configuration: EUT / Z-Position																																																																																																	
	Location: Chamber 2																																																																																																	
	Mode: LTE_QPSK Band 5 Fundamentals, 10MHz Bandwidth																																																																																																	
	Test Equipment: Receiving: VULB9163-749, and Chamber 2 SMA Cables Substitution: Dipole 3121_DB4, 3m N-type Cable																																																																																																	
	<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>EIRP (dBm)</th> <th>Limit (dBm)</th> <th>Delta (dB)</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td colspan="9">Low Ch</td> </tr> <tr> <td>829.00</td> <td>22.47</td> <td>V</td> <td>1.0</td> <td>-1.5</td> <td>20.06</td> <td>38.5</td> <td>-18.4</td> <td></td> </tr> <tr> <td>829.00</td> <td>5.56</td> <td>H</td> <td>1.0</td> <td>-1.5</td> <td>3.15</td> <td>38.5</td> <td>-35.4</td> <td></td> </tr> <tr> <td colspan="9">Mid Ch</td> </tr> <tr> <td>836.50</td> <td>21.73</td> <td>V</td> <td>1.0</td> <td>-1.4</td> <td>19.35</td> <td>38.5</td> <td>-19.2</td> <td></td> </tr> <tr> <td>836.50</td> <td>5.47</td> <td>H</td> <td>1.0</td> <td>-1.4</td> <td>3.09</td> <td>38.5</td> <td>-35.4</td> <td></td> </tr> <tr> <td colspan="9">High Ch</td> </tr> <tr> <td>844.00</td> <td>21.11</td> <td>V</td> <td>1.0</td> <td>-1.4</td> <td>18.76</td> <td>38.5</td> <td>-19.7</td> <td></td> </tr> <tr> <td>844.00</td> <td>4.34</td> <td>H</td> <td>1.0</td> <td>-1.4</td> <td>1.98</td> <td>38.5</td> <td>-36.5</td> <td></td> </tr> </tbody> </table>									f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	Low Ch									829.00	22.47	V	1.0	-1.5	20.06	38.5	-18.4		829.00	5.56	H	1.0	-1.5	3.15	38.5	-35.4		Mid Ch									836.50	21.73	V	1.0	-1.4	19.35	38.5	-19.2		836.50	5.47	H	1.0	-1.4	3.09	38.5	-35.4		High Ch									844.00	21.11	V	1.0	-1.4	18.76	38.5	-19.7		844.00	4.34	H	1.0	-1.4	1.98	38.5	-36.5
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes																																																																																										
Low Ch																																																																																																		
829.00	22.47	V	1.0	-1.5	20.06	38.5	-18.4																																																																																											
829.00	5.56	H	1.0	-1.5	3.15	38.5	-35.4																																																																																											
Mid Ch																																																																																																		
836.50	21.73	V	1.0	-1.4	19.35	38.5	-19.2																																																																																											
836.50	5.47	H	1.0	-1.4	3.09	38.5	-35.4																																																																																											
High Ch																																																																																																		
844.00	21.11	V	1.0	-1.4	18.76	38.5	-19.7																																																																																											
844.00	4.34	H	1.0	-1.4	1.98	38.5	-36.5																																																																																											
LTE Band 5 10MHz 16QAM	UL Verification Services, Inc. High Frequency Substitution Measurement																																																																																																	
	Company: Samsung																																																																																																	
	Project #: 4788312331																																																																																																	
	Date: 2018-01-22																																																																																																	
	Test Engineer: 47989																																																																																																	
	Configuration: EUT / Z-Position																																																																																																	
	Location: Chamber 2																																																																																																	
	Mode: LTE_16QAM Band 5 Fundamentals, 10MHz Bandwidth																																																																																																	
	Test Equipment: Receiving: VULB9163-749, and Chamber 2 SMA Cables Substitution: Dipole 3121_DB4, 3m N-type Cable																																																																																																	
	<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>EIRP (dBm)</th> <th>Limit (dBm)</th> <th>Delta (dB)</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td colspan="9">Low Ch</td> </tr> <tr> <td>829.00</td> <td>20.84</td> <td>V</td> <td>1.0</td> <td>-1.5</td> <td>18.43</td> <td>38.5</td> <td>-20.1</td> <td></td> </tr> <tr> <td>829.00</td> <td>4.57</td> <td>H</td> <td>1.0</td> <td>-1.5</td> <td>2.16</td> <td>38.5</td> <td>-36.3</td> <td></td> </tr> <tr> <td colspan="9">Mid Ch</td> </tr> <tr> <td>836.50</td> <td>20.74</td> <td>V</td> <td>1.0</td> <td>-1.4</td> <td>18.36</td> <td>38.5</td> <td>-20.1</td> <td></td> </tr> <tr> <td>836.50</td> <td>4.47</td> <td>H</td> <td>1.0</td> <td>-1.4</td> <td>2.09</td> <td>38.5</td> <td>-36.4</td> <td></td> </tr> <tr> <td colspan="9">High Ch</td> </tr> <tr> <td>844.00</td> <td>19.98</td> <td>V</td> <td>1.0</td> <td>-1.4</td> <td>17.63</td> <td>38.5</td> <td>-20.9</td> <td></td> </tr> <tr> <td>844.00</td> <td>3.76</td> <td>H</td> <td>1.0</td> <td>-1.4</td> <td>1.40</td> <td>38.5</td> <td>-37.1</td> <td></td> </tr> </tbody> </table>									f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	Low Ch									829.00	20.84	V	1.0	-1.5	18.43	38.5	-20.1		829.00	4.57	H	1.0	-1.5	2.16	38.5	-36.3		Mid Ch									836.50	20.74	V	1.0	-1.4	18.36	38.5	-20.1		836.50	4.47	H	1.0	-1.4	2.09	38.5	-36.4		High Ch									844.00	19.98	V	1.0	-1.4	17.63	38.5	-20.9		844.00	3.76	H	1.0	-1.4	1.40	38.5	-37.1
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes																																																																																										
Low Ch																																																																																																		
829.00	20.84	V	1.0	-1.5	18.43	38.5	-20.1																																																																																											
829.00	4.57	H	1.0	-1.5	2.16	38.5	-36.3																																																																																											
Mid Ch																																																																																																		
836.50	20.74	V	1.0	-1.4	18.36	38.5	-20.1																																																																																											
836.50	4.47	H	1.0	-1.4	2.09	38.5	-36.4																																																																																											
High Ch																																																																																																		
844.00	19.98	V	1.0	-1.4	17.63	38.5	-20.9																																																																																											
844.00	3.76	H	1.0	-1.4	1.40	38.5	-37.1																																																																																											

LTE Band 5 5MHz QPSK	UL Verification Services, Inc. High Frequency Substitution Measurement																																																																																																	
	Company: Samsung																																																																																																	
	Project #: 4788312331																																																																																																	
	Date: 2018-01-22																																																																																																	
	Test Engineer: 47989																																																																																																	
	Configuration: EUT / Z-Position																																																																																																	
	Location: Chamber 2																																																																																																	
	Mode: LTE_QPSK Band 5 Fundamentals, 5MHz Bandwidth																																																																																																	
	Test Equipment: Receiving: VULB9163-749, and Chamber 2 SMA Cables Substitution: Dipole 3121_DB4, 3m N-type Cable																																																																																																	
	<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>EIRP (dBm)</th> <th>Limit (dBm)</th> <th>Delta (dB)</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td colspan="9">Low Ch</td> </tr> <tr> <td>826.50</td> <td>22.10</td> <td>V</td> <td>1.0</td> <td>-1.5</td> <td>19.68</td> <td>38.5</td> <td>-18.8</td> <td></td> </tr> <tr> <td>826.50</td> <td>4.51</td> <td>H</td> <td>1.0</td> <td>-1.5</td> <td>2.09</td> <td>38.5</td> <td>-36.4</td> <td></td> </tr> <tr> <td colspan="9">Mid Ch</td> </tr> <tr> <td>836.50</td> <td>21.15</td> <td>V</td> <td>1.0</td> <td>-1.4</td> <td>18.77</td> <td>38.5</td> <td>-19.7</td> <td></td> </tr> <tr> <td>836.50</td> <td>5.22</td> <td>H</td> <td>1.0</td> <td>-1.4</td> <td>2.84</td> <td>38.5</td> <td>-35.7</td> <td></td> </tr> <tr> <td colspan="9">High Ch</td> </tr> <tr> <td>846.50</td> <td>20.11</td> <td>V</td> <td>1.0</td> <td>-1.4</td> <td>17.76</td> <td>38.5</td> <td>-20.7</td> <td></td> </tr> <tr> <td>846.50</td> <td>4.31</td> <td>H</td> <td>1.0</td> <td>-1.4</td> <td>1.96</td> <td>38.5</td> <td>-36.5</td> <td></td> </tr> </tbody> </table>									f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	Low Ch									826.50	22.10	V	1.0	-1.5	19.68	38.5	-18.8		826.50	4.51	H	1.0	-1.5	2.09	38.5	-36.4		Mid Ch									836.50	21.15	V	1.0	-1.4	18.77	38.5	-19.7		836.50	5.22	H	1.0	-1.4	2.84	38.5	-35.7		High Ch									846.50	20.11	V	1.0	-1.4	17.76	38.5	-20.7		846.50	4.31	H	1.0	-1.4	1.96	38.5	-36.5
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes																																																																																										
Low Ch																																																																																																		
826.50	22.10	V	1.0	-1.5	19.68	38.5	-18.8																																																																																											
826.50	4.51	H	1.0	-1.5	2.09	38.5	-36.4																																																																																											
Mid Ch																																																																																																		
836.50	21.15	V	1.0	-1.4	18.77	38.5	-19.7																																																																																											
836.50	5.22	H	1.0	-1.4	2.84	38.5	-35.7																																																																																											
High Ch																																																																																																		
846.50	20.11	V	1.0	-1.4	17.76	38.5	-20.7																																																																																											
846.50	4.31	H	1.0	-1.4	1.96	38.5	-36.5																																																																																											
LTE Band 5 5MHz 16QAM	UL Verification Services, Inc. High Frequency Substitution Measurement																																																																																																	
	Company: Samsung																																																																																																	
	Project #: 4788312331																																																																																																	
	Date: 2018-01-22																																																																																																	
	Test Engineer: 47989																																																																																																	
	Configuration: EUT / Z-Position																																																																																																	
	Location: Chamber 2																																																																																																	
	Mode: LTE_16QAM Band 5 Fundamentals, 5MHz Bandwidth																																																																																																	
	Test Equipment: Receiving: VULB9163-749, and Chamber 2 SMA Cables Substitution: Dipole 3121_DB4, 3m N-type Cable																																																																																																	
	<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>EIRP (dBm)</th> <th>Limit (dBm)</th> <th>Delta (dB)</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td colspan="9">Low Ch</td> </tr> <tr> <td>826.50</td> <td>21.13</td> <td>V</td> <td>1.0</td> <td>-1.5</td> <td>18.71</td> <td>38.5</td> <td>-19.8</td> <td></td> </tr> <tr> <td>826.50</td> <td>3.46</td> <td>H</td> <td>1.0</td> <td>-1.5</td> <td>1.04</td> <td>38.5</td> <td>-37.5</td> <td></td> </tr> <tr> <td colspan="9">Mid Ch</td> </tr> <tr> <td>836.50</td> <td>20.14</td> <td>V</td> <td>1.0</td> <td>-1.4</td> <td>17.76</td> <td>38.5</td> <td>-20.7</td> <td></td> </tr> <tr> <td>836.50</td> <td>4.12</td> <td>H</td> <td>1.0</td> <td>-1.4</td> <td>1.74</td> <td>38.5</td> <td>-36.8</td> <td></td> </tr> <tr> <td colspan="9">High Ch</td> </tr> <tr> <td>846.50</td> <td>19.32</td> <td>V</td> <td>1.0</td> <td>-1.4</td> <td>16.97</td> <td>38.5</td> <td>-21.5</td> <td></td> </tr> <tr> <td>846.50</td> <td>3.45</td> <td>H</td> <td>1.0</td> <td>-1.4</td> <td>1.10</td> <td>38.5</td> <td>-37.4</td> <td></td> </tr> </tbody> </table>									f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	Low Ch									826.50	21.13	V	1.0	-1.5	18.71	38.5	-19.8		826.50	3.46	H	1.0	-1.5	1.04	38.5	-37.5		Mid Ch									836.50	20.14	V	1.0	-1.4	17.76	38.5	-20.7		836.50	4.12	H	1.0	-1.4	1.74	38.5	-36.8		High Ch									846.50	19.32	V	1.0	-1.4	16.97	38.5	-21.5		846.50	3.45	H	1.0	-1.4	1.10	38.5	-37.4
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes																																																																																										
Low Ch																																																																																																		
826.50	21.13	V	1.0	-1.5	18.71	38.5	-19.8																																																																																											
826.50	3.46	H	1.0	-1.5	1.04	38.5	-37.5																																																																																											
Mid Ch																																																																																																		
836.50	20.14	V	1.0	-1.4	17.76	38.5	-20.7																																																																																											
836.50	4.12	H	1.0	-1.4	1.74	38.5	-36.8																																																																																											
High Ch																																																																																																		
846.50	19.32	V	1.0	-1.4	16.97	38.5	-21.5																																																																																											
846.50	3.45	H	1.0	-1.4	1.10	38.5	-37.4																																																																																											

LTE Band 5 3MHz QPSK	UL Verification Services, Inc. High Frequency Substitution Measurement								
	Company: Samsung Project #: 4788312331 Date: 2018-01-22 Test Engineer: 47989 Configuration: EUT / Z-Position Location: Chamber 2 Mode: LTE_QPSK Band 5 Fundamentals, 3MHz Bandwidth								
	Test Equipment: Receiving: VULB9163-749, and Chamber 2 SMA Cables Substitution: Dipole 3121_DB4, 3m N-type Cable								
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	Low Ch								
	825.50	22.19	V	1.0	-1.5	19.77	38.5	-18.7	
	825.50	3.91	H	1.0	-1.5	1.49	38.5	-37.0	
	Mid Ch								
	836.50	21.22	V	1.0	-1.4	18.84	38.5	-19.7	
	836.50	3.53	H	1.0	-1.4	1.15	38.5	-37.4	
High Ch									
847.50	20.08	V	1.0	-1.4	17.74	38.5	-20.8		
847.50	3.25	H	1.0	-1.4	0.90	38.5	-37.6		
LTE Band 5 3MHz 16QAM	UL Verification Services, Inc. High Frequency Substitution Measurement								
	Company: Samsung Project #: 4788312331 Date: 2018-01-22 Test Engineer: 47989 Configuration: EUT / Z-Position Location: Chamber 2 Mode: LTE_16QAM Band 5 Fundamentals, 3MHz Bandwidth								
	Test Equipment: Receiving: VULB9163-749, and Chamber 2 SMA Cables Substitution: Dipole 3121_DB4, 3m N-type Cable								
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	Low Ch								
	825.50	21.24	V	1.0	-1.5	18.82	38.5	-19.7	
	825.50	3.00	H	1.0	-1.5	0.58	38.5	-37.9	
	Mid Ch								
	836.50	20.72	V	1.0	-1.4	18.34	38.5	-20.2	
	836.50	2.52	H	1.0	-1.4	0.14	38.5	-38.4	
High Ch									
847.50	19.29	V	1.0	-1.4	16.95	38.5	-21.6		
847.50	2.43	H	1.0	-1.4	0.08	38.5	-38.4		

LTE Band 5 1.4MHz QPSK	UL Verification Services, Inc. High Frequency Substitution Measurement																																																																																																	
	Company: Samsung																																																																																																	
	Project #: 4788312331																																																																																																	
	Date: 2018-01-22																																																																																																	
	Test Engineer: 47989																																																																																																	
	Configuration: EUT / Z-Position																																																																																																	
	Location: Chamber 2																																																																																																	
	Mode: LTE_QPSK Band 5 Fundamentals, 1.4MHz Bandwidth																																																																																																	
	Test Equipment: Receiving: VULB9163-749, and Chamber 2 SMA Cables Substitution: Dipole 3121_DB4, 3m N-type Cable																																																																																																	
	<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>EIRP (dBm)</th> <th>Limit (dBm)</th> <th>Delta (dB)</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td colspan="9">Low Ch</td> </tr> <tr> <td>824.70</td> <td>20.06</td> <td>V</td> <td>1.0</td> <td>-1.5</td> <td>17.63</td> <td>38.5</td> <td>-20.9</td> <td></td> </tr> <tr> <td>824.70</td> <td>2.84</td> <td>H</td> <td>1.0</td> <td>-1.5</td> <td>0.41</td> <td>38.5</td> <td>-38.1</td> <td></td> </tr> <tr> <td colspan="9">Mid Ch</td> </tr> <tr> <td>836.50</td> <td>18.41</td> <td>V</td> <td>1.0</td> <td>-1.4</td> <td>16.03</td> <td>38.5</td> <td>-22.5</td> <td></td> </tr> <tr> <td>836.50</td> <td>3.31</td> <td>H</td> <td>1.0</td> <td>-1.4</td> <td>0.93</td> <td>38.5</td> <td>-37.6</td> <td></td> </tr> <tr> <td colspan="9">High Ch</td> </tr> <tr> <td>848.30</td> <td>17.84</td> <td>V</td> <td>1.0</td> <td>-1.4</td> <td>15.49</td> <td>38.5</td> <td>-23.0</td> <td></td> </tr> <tr> <td>848.30</td> <td>2.18</td> <td>H</td> <td>1.0</td> <td>-1.4</td> <td>-0.17</td> <td>38.5</td> <td>-38.7</td> <td></td> </tr> </tbody> </table>									f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	Low Ch									824.70	20.06	V	1.0	-1.5	17.63	38.5	-20.9		824.70	2.84	H	1.0	-1.5	0.41	38.5	-38.1		Mid Ch									836.50	18.41	V	1.0	-1.4	16.03	38.5	-22.5		836.50	3.31	H	1.0	-1.4	0.93	38.5	-37.6		High Ch									848.30	17.84	V	1.0	-1.4	15.49	38.5	-23.0		848.30	2.18	H	1.0	-1.4	-0.17	38.5	-38.7
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes																																																																																										
Low Ch																																																																																																		
824.70	20.06	V	1.0	-1.5	17.63	38.5	-20.9																																																																																											
824.70	2.84	H	1.0	-1.5	0.41	38.5	-38.1																																																																																											
Mid Ch																																																																																																		
836.50	18.41	V	1.0	-1.4	16.03	38.5	-22.5																																																																																											
836.50	3.31	H	1.0	-1.4	0.93	38.5	-37.6																																																																																											
High Ch																																																																																																		
848.30	17.84	V	1.0	-1.4	15.49	38.5	-23.0																																																																																											
848.30	2.18	H	1.0	-1.4	-0.17	38.5	-38.7																																																																																											
LTE Band 5 1.4MHz 16QAM	UL Verification Services, Inc. High Frequency Substitution Measurement																																																																																																	
	Company: Samsung																																																																																																	
	Project #: 4788312331																																																																																																	
	Date: 2018-01-22																																																																																																	
	Test Engineer: 47989																																																																																																	
	Configuration: EUT / Z-Position																																																																																																	
	Location: Chamber 2																																																																																																	
	Mode: LTE_16QAM Band 5 Fundamentals, 1.4MHz Bandwidth																																																																																																	
	Test Equipment: Receiving: VULB9163-749, and Chamber 2 SMA Cables Substitution: Dipole 3121_DB4, 3m N-type Cable																																																																																																	
	<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>EIRP (dBm)</th> <th>Limit (dBm)</th> <th>Delta (dB)</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td colspan="9">Low Ch</td> </tr> <tr> <td>824.70</td> <td>19.12</td> <td>V</td> <td>1.0</td> <td>-1.5</td> <td>16.69</td> <td>38.5</td> <td>-21.8</td> <td></td> </tr> <tr> <td>824.70</td> <td>2.51</td> <td>H</td> <td>1.0</td> <td>-1.5</td> <td>0.08</td> <td>38.5</td> <td>-38.4</td> <td></td> </tr> <tr> <td colspan="9">Mid Ch</td> </tr> <tr> <td>836.50</td> <td>17.30</td> <td>V</td> <td>1.0</td> <td>-1.4</td> <td>14.92</td> <td>38.5</td> <td>-23.6</td> <td></td> </tr> <tr> <td>836.50</td> <td>2.21</td> <td>H</td> <td>1.0</td> <td>-1.4</td> <td>-0.17</td> <td>38.5</td> <td>-38.7</td> <td></td> </tr> <tr> <td colspan="9">High Ch</td> </tr> <tr> <td>848.30</td> <td>17.03</td> <td>V</td> <td>1.0</td> <td>-1.4</td> <td>14.68</td> <td>38.5</td> <td>-23.8</td> <td></td> </tr> <tr> <td>848.30</td> <td>0.96</td> <td>H</td> <td>1.0</td> <td>-1.4</td> <td>-1.39</td> <td>38.5</td> <td>-39.9</td> <td></td> </tr> </tbody> </table>									f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	Low Ch									824.70	19.12	V	1.0	-1.5	16.69	38.5	-21.8		824.70	2.51	H	1.0	-1.5	0.08	38.5	-38.4		Mid Ch									836.50	17.30	V	1.0	-1.4	14.92	38.5	-23.6		836.50	2.21	H	1.0	-1.4	-0.17	38.5	-38.7		High Ch									848.30	17.03	V	1.0	-1.4	14.68	38.5	-23.8		848.30	0.96	H	1.0	-1.4	-1.39	38.5	-39.9
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes																																																																																										
Low Ch																																																																																																		
824.70	19.12	V	1.0	-1.5	16.69	38.5	-21.8																																																																																											
824.70	2.51	H	1.0	-1.5	0.08	38.5	-38.4																																																																																											
Mid Ch																																																																																																		
836.50	17.30	V	1.0	-1.4	14.92	38.5	-23.6																																																																																											
836.50	2.21	H	1.0	-1.4	-0.17	38.5	-38.7																																																																																											
High Ch																																																																																																		
848.30	17.03	V	1.0	-1.4	14.68	38.5	-23.8																																																																																											
848.30	0.96	H	1.0	-1.4	-1.39	38.5	-39.9																																																																																											

LTE Band 4

LTE Band 4 20MHz QPSK	UL Verification Services, Inc. High Frequency Substitution Measurement								
	Company: Samsung								
	Project #: 4788312331								
	Date: 2018-02-01								
	Test Engineer: 47989								
	Configuration: EUT / X-Position								
	Location: Chamber 2								
	Mode: LTE_QPSK Band 4 Fundamentals, 20MHz Bandwidth								
	Test Equipment: Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables Substitution: Horn 3115[00161451], 3m N-type Cable								
	f	SG reading	Ant. Pol.	Cable Loss	Antenna Gain	EIRP	Limit	Delta	Notes
	MHz	(dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	
	Low Ch								
	1720.00	14.62	V	4.3	9.5	19.79	30.0	-10.2	
	1720.00	14.44	H	4.3	9.5	19.61	30.0	-10.4	
	Mid Ch								
1732.50	14.54	V	4.3	9.5	19.74	30.0	-10.3		
1732.50	15.04	H	4.3	9.5	20.24	30.0	-9.8		
High Ch									
1745.00	12.76	V	4.4	9.6	17.98	30.0	-12.0		
1745.00	15.19	H	4.4	9.6	20.41	30.0	-9.6		
LTE Band 4 20MHz 16QAM	UL Verification Services, Inc. High Frequency Substitution Measurement								
	Company: Samsung								
	Project #: 4788312331								
	Date: 2018-02-01								
	Test Engineer: 47989								
	Configuration: EUT / X-Position								
	Location: Chamber 2								
	Mode: LTE_16QAM Band 4 Fundamentals, 20MHz Bandwidth								
	Test Equipment: Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables Substitution: Horn 3115[00161451], 3m N-type Cable								
	f	SG reading	Ant. Pol.	Cable Loss	Antenna Gain	EIRP	Limit	Delta	Notes
	MHz	(dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	
	Low Ch								
	1720.00	13.71	V	4.3	9.5	18.88	30.0	-11.1	
	1720.00	13.50	H	4.3	9.5	18.67	30.0	-11.3	
	Mid Ch								
1732.50	13.55	V	4.3	9.5	18.75	30.0	-11.3		
1732.50	14.05	H	4.3	9.5	19.25	30.0	-10.7		
High Ch									
1745.00	11.80	V	4.4	9.6	17.02	30.0	-13.0		
1745.00	14.23	H	4.4	9.6	19.45	30.0	-10.6		

LTE Band 4 15MHz QPSK	UL Verification Services, Inc. High Frequency Substitution Measurement																																																																																																	
	Company: Samsung																																																																																																	
	Project #: 4788312331																																																																																																	
	Date: 2018-02-01																																																																																																	
	Test Engineer: 47989																																																																																																	
	Configuration: EUT / X-Position																																																																																																	
	Location: Chamber 2																																																																																																	
	Mode: LTE_QPSK Band 4 Fundamentals, 15MHz Bandwidth																																																																																																	
	Test Equipment: Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables Substitution: Horn 3115[00161451], 3m N-type Cable																																																																																																	
	<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 (dBi)</th> <th>EIRP (dBm)</th> <th>Limit (dBm)</th> <th>Delta (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>1717.50</td> <td>13.27</td> <td>V</td> <td>4.3</td> <td>9.5</td> <td>18.44</td> <td>30.0</td> <td>-11.6</td> <td></td> </tr> <tr> <td>1717.50</td> <td>14.83</td> <td>H</td> <td>4.3</td> <td>9.5</td> <td>19.99</td> <td>30.0</td> <td>-10.0</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>12.70</td> <td>V</td> <td>4.3</td> <td>9.5</td> <td>17.90</td> <td>30.0</td> <td>-12.1</td> <td></td> </tr> <tr> <td>1732.50</td> <td>14.31</td> <td>H</td> <td>4.3</td> <td>9.5</td> <td>19.51</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>1747.50</td> <td>13.58</td> <td>V</td> <td>4.4</td> <td>9.6</td> <td>18.81</td> <td>30.0</td> <td>-11.2</td> <td></td> </tr> <tr> <td>1747.50</td> <td>15.18</td> <td>H</td> <td>4.4</td> <td>9.6</td> <td>20.41</td> <td>30.0</td> <td>-9.6</td> <td></td> </tr> </tbody> </table>									f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	Low Ch									1717.50	13.27	V	4.3	9.5	18.44	30.0	-11.6		1717.50	14.83	H	4.3	9.5	19.99	30.0	-10.0		Mid Ch									1732.50	12.70	V	4.3	9.5	17.90	30.0	-12.1		1732.50	14.31	H	4.3	9.5	19.51	30.0	-10.5		High Ch									1747.50	13.58	V	4.4	9.6	18.81	30.0	-11.2		1747.50	15.18	H	4.4	9.6	20.41	30.0	-9.6
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes																																																																																										
Low Ch																																																																																																		
1717.50	13.27	V	4.3	9.5	18.44	30.0	-11.6																																																																																											
1717.50	14.83	H	4.3	9.5	19.99	30.0	-10.0																																																																																											
Mid Ch																																																																																																		
1732.50	12.70	V	4.3	9.5	17.90	30.0	-12.1																																																																																											
1732.50	14.31	H	4.3	9.5	19.51	30.0	-10.5																																																																																											
High Ch																																																																																																		
1747.50	13.58	V	4.4	9.6	18.81	30.0	-11.2																																																																																											
1747.50	15.18	H	4.4	9.6	20.41	30.0	-9.6																																																																																											
LTE Band 4 15MHz 16QAM	UL Verification Services, Inc. High Frequency Substitution Measurement																																																																																																	
	Company: Samsung																																																																																																	
	Project #: 4788312331																																																																																																	
	Date: 2018-02-01																																																																																																	
	Test Engineer: 47989																																																																																																	
	Configuration: EUT / X-Position																																																																																																	
	Location: Chamber 2																																																																																																	
	Mode: LTE_16QAM Band 4 Fundamentals, 15MHz Bandwidth																																																																																																	
	Test Equipment: Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables Substitution: Horn 3115[00161451], 3m N-type Cable																																																																																																	
	<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 (dBi)</th> <th>EIRP (dBm)</th> <th>Limit (dBm)</th> <th>Delta (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>1717.50</td> <td>12.27</td> <td>V</td> <td>4.3</td> <td>9.5</td> <td>17.44</td> <td>30.0</td> <td>-12.6</td> <td></td> </tr> <tr> <td>1717.50</td> <td>13.84</td> <td>H</td> <td>4.3</td> <td>9.5</td> <td>19.00</td> <td>30.0</td> <td>-11.0</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>11.71</td> <td>V</td> <td>4.3</td> <td>9.5</td> <td>16.91</td> <td>30.0</td> <td>-13.1</td> <td></td> </tr> <tr> <td>1732.50</td> <td>15.28</td> <td>H</td> <td>4.3</td> <td>9.5</td> <td>20.48</td> <td>30.0</td> <td>-9.5</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>1747.50</td> <td>12.60</td> <td>V</td> <td>4.4</td> <td>9.6</td> <td>17.83</td> <td>30.0</td> <td>-12.2</td> <td></td> </tr> <tr> <td>1747.50</td> <td>14.21</td> <td>H</td> <td>4.4</td> <td>9.6</td> <td>19.44</td> <td>30.0</td> <td>-10.6</td> <td></td> </tr> </tbody> </table>									f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	Low Ch									1717.50	12.27	V	4.3	9.5	17.44	30.0	-12.6		1717.50	13.84	H	4.3	9.5	19.00	30.0	-11.0		Mid Ch									1732.50	11.71	V	4.3	9.5	16.91	30.0	-13.1		1732.50	15.28	H	4.3	9.5	20.48	30.0	-9.5		High Ch									1747.50	12.60	V	4.4	9.6	17.83	30.0	-12.2		1747.50	14.21	H	4.4	9.6	19.44	30.0	-10.6
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes																																																																																										
Low Ch																																																																																																		
1717.50	12.27	V	4.3	9.5	17.44	30.0	-12.6																																																																																											
1717.50	13.84	H	4.3	9.5	19.00	30.0	-11.0																																																																																											
Mid Ch																																																																																																		
1732.50	11.71	V	4.3	9.5	16.91	30.0	-13.1																																																																																											
1732.50	15.28	H	4.3	9.5	20.48	30.0	-9.5																																																																																											
High Ch																																																																																																		
1747.50	12.60	V	4.4	9.6	17.83	30.0	-12.2																																																																																											
1747.50	14.21	H	4.4	9.6	19.44	30.0	-10.6																																																																																											

LTE Band 4 10MHz QPSK	UL Verification Services, Inc. High Frequency Substitution Measurement																																																																																																		
	Company:		Samsung																																																																																																
	Project #:		4788312331																																																																																																
	Date:		2018-02-01																																																																																																
	Test Engineer:		47989																																																																																																
	Configuration:		EUT / X-Position																																																																																																
	Location:		Chamber 2																																																																																																
	Mode:		LTE_QPSK Band 4 Fundamentals, 10MHz Bandwidth																																																																																																
	Test Equipment:		Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables Substitution: Horn 3115[00161451], 3m N-type Cable																																																																																																
			<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 (dBi)</th> <th>EIRP (dBm)</th> <th>Limit (dBm)</th> <th>Delta (dB)</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td colspan="9">Low Ch</td> </tr> <tr> <td>1715.00</td> <td>12.89</td> <td>V</td> <td>4.3</td> <td>9.5</td> <td>18.05</td> <td>30.0</td> <td>-11.9</td> <td></td> </tr> <tr> <td>1715.00</td> <td>14.65</td> <td>H</td> <td>4.3</td> <td>9.5</td> <td>19.81</td> <td>30.0</td> <td>-10.2</td> <td></td> </tr> <tr> <td colspan="9">Mid Ch</td> </tr> <tr> <td>1732.50</td> <td>13.15</td> <td>V</td> <td>4.3</td> <td>9.5</td> <td>18.35</td> <td>30.0</td> <td>-11.7</td> <td></td> </tr> <tr> <td>1732.50</td> <td>15.22</td> <td>H</td> <td>4.3</td> <td>9.5</td> <td>20.42</td> <td>30.0</td> <td>-9.6</td> <td></td> </tr> <tr> <td colspan="9">High Ch</td> </tr> <tr> <td>1750.00</td> <td>12.89</td> <td>V</td> <td>4.4</td> <td>9.6</td> <td>18.12</td> <td>30.0</td> <td>-11.9</td> <td></td> </tr> <tr> <td>1750.00</td> <td>15.30</td> <td>H</td> <td>4.4</td> <td>9.6</td> <td>20.53</td> <td>30.0</td> <td>-9.5</td> <td></td> </tr> </tbody> </table>							f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	Low Ch									1715.00	12.89	V	4.3	9.5	18.05	30.0	-11.9		1715.00	14.65	H	4.3	9.5	19.81	30.0	-10.2		Mid Ch									1732.50	13.15	V	4.3	9.5	18.35	30.0	-11.7		1732.50	15.22	H	4.3	9.5	20.42	30.0	-9.6		High Ch									1750.00	12.89	V	4.4	9.6	18.12	30.0	-11.9		1750.00	15.30	H	4.4	9.6	20.53	30.0	-9.5	
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes																																																																																										
	Low Ch																																																																																																		
1715.00	12.89	V	4.3	9.5	18.05	30.0	-11.9																																																																																												
1715.00	14.65	H	4.3	9.5	19.81	30.0	-10.2																																																																																												
Mid Ch																																																																																																			
1732.50	13.15	V	4.3	9.5	18.35	30.0	-11.7																																																																																												
1732.50	15.22	H	4.3	9.5	20.42	30.0	-9.6																																																																																												
High Ch																																																																																																			
1750.00	12.89	V	4.4	9.6	18.12	30.0	-11.9																																																																																												
1750.00	15.30	H	4.4	9.6	20.53	30.0	-9.5																																																																																												
LTE Band 4 10MHz 16QAM	UL Verification Services, Inc. High Frequency Substitution Measurement																																																																																																		
	Company:		Samsung																																																																																																
	Project #:		4788312331																																																																																																
	Date:		2018-02-01																																																																																																
	Test Engineer:		47989																																																																																																
	Configuration:		EUT / X-Position																																																																																																
	Location:		Chamber 2																																																																																																
	Mode:		LTE_16QAM Band 4 Fundamentals, 10MHz Bandwidth																																																																																																
	Test Equipment:		Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables Substitution: Horn 3115[00161451], 3m N-type Cable																																																																																																
			<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 (dBi)</th> <th>EIRP (dBm)</th> <th>Limit (dBm)</th> <th>Delta (dB)</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td colspan="9">Low Ch</td> </tr> <tr> <td>1715.00</td> <td>11.58</td> <td>V</td> <td>4.3</td> <td>9.5</td> <td>16.74</td> <td>30.0</td> <td>-13.3</td> <td></td> </tr> <tr> <td>1715.00</td> <td>13.62</td> <td>H</td> <td>4.3</td> <td>9.5</td> <td>18.78</td> <td>30.0</td> <td>-11.2</td> <td></td> </tr> <tr> <td colspan="9">Mid Ch</td> </tr> <tr> <td>1732.50</td> <td>12.15</td> <td>V</td> <td>4.3</td> <td>9.5</td> <td>17.35</td> <td>30.0</td> <td>-12.7</td> <td></td> </tr> <tr> <td>1732.50</td> <td>14.24</td> <td>H</td> <td>4.3</td> <td>9.5</td> <td>19.44</td> <td>30.0</td> <td>-10.6</td> <td></td> </tr> <tr> <td colspan="9">High Ch</td> </tr> <tr> <td>1750.00</td> <td>11.87</td> <td>V</td> <td>4.4</td> <td>9.6</td> <td>17.10</td> <td>30.0</td> <td>-12.9</td> <td></td> </tr> <tr> <td>1750.00</td> <td>14.29</td> <td>H</td> <td>4.4</td> <td>9.6</td> <td>19.52</td> <td>30.0</td> <td>-10.5</td> <td></td> </tr> </tbody> </table>							f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	Low Ch									1715.00	11.58	V	4.3	9.5	16.74	30.0	-13.3		1715.00	13.62	H	4.3	9.5	18.78	30.0	-11.2		Mid Ch									1732.50	12.15	V	4.3	9.5	17.35	30.0	-12.7		1732.50	14.24	H	4.3	9.5	19.44	30.0	-10.6		High Ch									1750.00	11.87	V	4.4	9.6	17.10	30.0	-12.9		1750.00	14.29	H	4.4	9.6	19.52	30.0	-10.5	
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes																																																																																										
	Low Ch																																																																																																		
1715.00	11.58	V	4.3	9.5	16.74	30.0	-13.3																																																																																												
1715.00	13.62	H	4.3	9.5	18.78	30.0	-11.2																																																																																												
Mid Ch																																																																																																			
1732.50	12.15	V	4.3	9.5	17.35	30.0	-12.7																																																																																												
1732.50	14.24	H	4.3	9.5	19.44	30.0	-10.6																																																																																												
High Ch																																																																																																			
1750.00	11.87	V	4.4	9.6	17.10	30.0	-12.9																																																																																												
1750.00	14.29	H	4.4	9.6	19.52	30.0	-10.5																																																																																												

LTE Band 4 5MHz QPSK	UL Verification Services, Inc. High Frequency Substitution Measurement																																																																																																	
	Company: Samsung																																																																																																	
	Project #: 4788312331																																																																																																	
	Date: 2018-01-31																																																																																																	
	Test Engineer: 47989																																																																																																	
	Configuration: EUT / X-Position																																																																																																	
	Location: Chamber 2																																																																																																	
	Mode: LTE_QPSK Band 4 Fundamentals, 5MHz Bandwidth																																																																																																	
	Test Equipment: Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables Substitution: Horn 3115[00161451], 3m N-type Cable																																																																																																	
	<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 (dBi)</th> <th>EIRP (dBm)</th> <th>Limit (dBm)</th> <th>Delta (dB)</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td colspan="9">Low Ch</td> </tr> <tr> <td>1712.50</td> <td>11.17</td> <td>V</td> <td>4.3</td> <td>9.5</td> <td>16.33</td> <td>30.0</td> <td>-13.7</td> <td></td> </tr> <tr> <td>1712.50</td> <td>13.51</td> <td>H</td> <td>4.3</td> <td>9.5</td> <td>18.66</td> <td>30.0</td> <td>-11.3</td> <td></td> </tr> <tr> <td colspan="9">Mid Ch</td> </tr> <tr> <td>1732.50</td> <td>12.48</td> <td>V</td> <td>4.3</td> <td>9.5</td> <td>17.68</td> <td>30.0</td> <td>-12.3</td> <td></td> </tr> <tr> <td>1732.50</td> <td>14.91</td> <td>H</td> <td>4.3</td> <td>9.5</td> <td>20.11</td> <td>30.0</td> <td>-9.9</td> <td></td> </tr> <tr> <td colspan="9">High Ch</td> </tr> <tr> <td>1752.50</td> <td>13.01</td> <td>V</td> <td>4.4</td> <td>9.6</td> <td>18.24</td> <td>30.0</td> <td>-11.8</td> <td></td> </tr> <tr> <td>1752.50</td> <td>15.05</td> <td>H</td> <td>4.4</td> <td>9.6</td> <td>20.29</td> <td>30.0</td> <td>-9.7</td> <td></td> </tr> </tbody> </table>									f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	Low Ch									1712.50	11.17	V	4.3	9.5	16.33	30.0	-13.7		1712.50	13.51	H	4.3	9.5	18.66	30.0	-11.3		Mid Ch									1732.50	12.48	V	4.3	9.5	17.68	30.0	-12.3		1732.50	14.91	H	4.3	9.5	20.11	30.0	-9.9		High Ch									1752.50	13.01	V	4.4	9.6	18.24	30.0	-11.8		1752.50	15.05	H	4.4	9.6	20.29	30.0	-9.7
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes																																																																																										
Low Ch																																																																																																		
1712.50	11.17	V	4.3	9.5	16.33	30.0	-13.7																																																																																											
1712.50	13.51	H	4.3	9.5	18.66	30.0	-11.3																																																																																											
Mid Ch																																																																																																		
1732.50	12.48	V	4.3	9.5	17.68	30.0	-12.3																																																																																											
1732.50	14.91	H	4.3	9.5	20.11	30.0	-9.9																																																																																											
High Ch																																																																																																		
1752.50	13.01	V	4.4	9.6	18.24	30.0	-11.8																																																																																											
1752.50	15.05	H	4.4	9.6	20.29	30.0	-9.7																																																																																											
LTE Band 4 5MHz 16QAM	UL Verification Services, Inc. High Frequency Substitution Measurement																																																																																																	
	Company: Samsung																																																																																																	
	Project #: 4788312331																																																																																																	
	Date: 2018-01-31																																																																																																	
	Test Engineer: 47989																																																																																																	
	Configuration: EUT / X-Position																																																																																																	
	Location: Chamber 2																																																																																																	
	Mode: LTE_16QAM Band 4 Fundamentals, 5MHz Bandwidth																																																																																																	
	Test Equipment: Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables Substitution: Horn 3115[00161451], 3m N-type Cable																																																																																																	
	<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 (dBi)</th> <th>EIRP (dBm)</th> <th>Limit (dBm)</th> <th>Delta (dB)</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td colspan="9">Low Ch</td> </tr> <tr> <td>1712.50</td> <td>10.38</td> <td>V</td> <td>4.3</td> <td>9.5</td> <td>15.54</td> <td>30.0</td> <td>-14.5</td> <td></td> </tr> <tr> <td>1712.50</td> <td>12.42</td> <td>H</td> <td>4.3</td> <td>9.5</td> <td>17.57</td> <td>30.0</td> <td>-12.4</td> <td></td> </tr> <tr> <td colspan="9">Mid Ch</td> </tr> <tr> <td>1732.50</td> <td>11.30</td> <td>V</td> <td>4.3</td> <td>9.5</td> <td>16.50</td> <td>30.0</td> <td>-13.5</td> <td></td> </tr> <tr> <td>1732.50</td> <td>13.95</td> <td>H</td> <td>4.3</td> <td>9.5</td> <td>19.15</td> <td>30.0</td> <td>-10.8</td> <td></td> </tr> <tr> <td colspan="9">High Ch</td> </tr> <tr> <td>1752.50</td> <td>11.98</td> <td>V</td> <td>4.4</td> <td>9.6</td> <td>17.21</td> <td>30.0</td> <td>-12.8</td> <td></td> </tr> <tr> <td>1752.50</td> <td>14.03</td> <td>H</td> <td>4.4</td> <td>9.6</td> <td>19.27</td> <td>30.0</td> <td>-10.7</td> <td></td> </tr> </tbody> </table>									f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	Low Ch									1712.50	10.38	V	4.3	9.5	15.54	30.0	-14.5		1712.50	12.42	H	4.3	9.5	17.57	30.0	-12.4		Mid Ch									1732.50	11.30	V	4.3	9.5	16.50	30.0	-13.5		1732.50	13.95	H	4.3	9.5	19.15	30.0	-10.8		High Ch									1752.50	11.98	V	4.4	9.6	17.21	30.0	-12.8		1752.50	14.03	H	4.4	9.6	19.27	30.0	-10.7
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes																																																																																										
Low Ch																																																																																																		
1712.50	10.38	V	4.3	9.5	15.54	30.0	-14.5																																																																																											
1712.50	12.42	H	4.3	9.5	17.57	30.0	-12.4																																																																																											
Mid Ch																																																																																																		
1732.50	11.30	V	4.3	9.5	16.50	30.0	-13.5																																																																																											
1732.50	13.95	H	4.3	9.5	19.15	30.0	-10.8																																																																																											
High Ch																																																																																																		
1752.50	11.98	V	4.4	9.6	17.21	30.0	-12.8																																																																																											
1752.50	14.03	H	4.4	9.6	19.27	30.0	-10.7																																																																																											

LTE Band 4 3MHz QPSK	UL Verification Services, Inc. High Frequency Substitution Measurement																																																																																																	
	Company: Samsung																																																																																																	
	Project #: 4788312331																																																																																																	
	Date: 2018-01-31																																																																																																	
	Test Engineer: 47989																																																																																																	
	Configuration: EUT / X-Position																																																																																																	
	Location: Chamber 2																																																																																																	
	Mode: LTE_QPSK Band 4 Fundamentals, 3MHz Bandwidth																																																																																																	
	Test Equipment: Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables Substitution: Horn 3115[00161451], 3m N-type Cable																																																																																																	
	<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 (dBi)</th> <th>EIRP (dBm)</th> <th>Limit (dBm)</th> <th>Delta (dB)</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td colspan="9">Low Ch</td> </tr> <tr> <td>1711.50</td> <td>10.91</td> <td>V</td> <td>4.3</td> <td>9.5</td> <td>16.06</td> <td>30.0</td> <td>-13.9</td> <td></td> </tr> <tr> <td>1711.50</td> <td>14.10</td> <td>H</td> <td>4.3</td> <td>9.5</td> <td>19.25</td> <td>30.0</td> <td>-10.7</td> <td></td> </tr> <tr> <td colspan="9">Mid Ch</td> </tr> <tr> <td>1732.50</td> <td>12.30</td> <td>V</td> <td>4.3</td> <td>9.5</td> <td>17.50</td> <td>30.0</td> <td>-12.5</td> <td></td> </tr> <tr> <td>1732.50</td> <td>14.68</td> <td>H</td> <td>4.3</td> <td>9.5</td> <td>19.88</td> <td>30.0</td> <td>-10.1</td> <td></td> </tr> <tr> <td colspan="9">High Ch</td> </tr> <tr> <td>1753.50</td> <td>12.75</td> <td>V</td> <td>4.4</td> <td>9.6</td> <td>17.99</td> <td>30.0</td> <td>-12.0</td> <td></td> </tr> <tr> <td>1753.50</td> <td>15.19</td> <td>H</td> <td>4.4</td> <td>9.6</td> <td>20.43</td> <td>30.0</td> <td>-9.6</td> <td></td> </tr> </tbody> </table>									f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	Low Ch									1711.50	10.91	V	4.3	9.5	16.06	30.0	-13.9		1711.50	14.10	H	4.3	9.5	19.25	30.0	-10.7		Mid Ch									1732.50	12.30	V	4.3	9.5	17.50	30.0	-12.5		1732.50	14.68	H	4.3	9.5	19.88	30.0	-10.1		High Ch									1753.50	12.75	V	4.4	9.6	17.99	30.0	-12.0		1753.50	15.19	H	4.4	9.6	20.43	30.0	-9.6
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes																																																																																										
Low Ch																																																																																																		
1711.50	10.91	V	4.3	9.5	16.06	30.0	-13.9																																																																																											
1711.50	14.10	H	4.3	9.5	19.25	30.0	-10.7																																																																																											
Mid Ch																																																																																																		
1732.50	12.30	V	4.3	9.5	17.50	30.0	-12.5																																																																																											
1732.50	14.68	H	4.3	9.5	19.88	30.0	-10.1																																																																																											
High Ch																																																																																																		
1753.50	12.75	V	4.4	9.6	17.99	30.0	-12.0																																																																																											
1753.50	15.19	H	4.4	9.6	20.43	30.0	-9.6																																																																																											
LTE Band 4 3MHz 16QAM	UL Verification Services, Inc. High Frequency Substitution Measurement																																																																																																	
	Company: Samsung																																																																																																	
	Project #: 4788312331																																																																																																	
	Date: 2018-01-31																																																																																																	
	Test Engineer: 47989																																																																																																	
	Configuration: EUT / X-Position																																																																																																	
	Location: Chamber 2																																																																																																	
	Mode: LTE_16QAM Band 4 Fundamentals, 3MHz Bandwidth																																																																																																	
	Test Equipment: Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables Substitution: Horn 3115[00161451], 3m N-type Cable																																																																																																	
	<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 (dBi)</th> <th>EIRP (dBm)</th> <th>Limit (dBm)</th> <th>Delta (dB)</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td colspan="9">Low Ch</td> </tr> <tr> <td>1711.50</td> <td>9.84</td> <td>V</td> <td>4.3</td> <td>9.5</td> <td>14.99</td> <td>30.0</td> <td>-15.0</td> <td></td> </tr> <tr> <td>1711.50</td> <td>13.10</td> <td>H</td> <td>4.3</td> <td>9.5</td> <td>18.25</td> <td>30.0</td> <td>-11.7</td> <td></td> </tr> <tr> <td colspan="9">Mid Ch</td> </tr> <tr> <td>1732.50</td> <td>11.27</td> <td>V</td> <td>4.3</td> <td>9.5</td> <td>16.47</td> <td>30.0</td> <td>-13.5</td> <td></td> </tr> <tr> <td>1732.50</td> <td>13.64</td> <td>H</td> <td>4.3</td> <td>9.5</td> <td>18.84</td> <td>30.0</td> <td>-11.2</td> <td></td> </tr> <tr> <td colspan="9">High Ch</td> </tr> <tr> <td>1753.50</td> <td>11.74</td> <td>V</td> <td>4.4</td> <td>9.6</td> <td>16.98</td> <td>30.0</td> <td>-13.0</td> <td></td> </tr> <tr> <td>1753.50</td> <td>14.10</td> <td>H</td> <td>4.4</td> <td>9.6</td> <td>19.34</td> <td>30.0</td> <td>-10.7</td> <td></td> </tr> </tbody> </table>									f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	Low Ch									1711.50	9.84	V	4.3	9.5	14.99	30.0	-15.0		1711.50	13.10	H	4.3	9.5	18.25	30.0	-11.7		Mid Ch									1732.50	11.27	V	4.3	9.5	16.47	30.0	-13.5		1732.50	13.64	H	4.3	9.5	18.84	30.0	-11.2		High Ch									1753.50	11.74	V	4.4	9.6	16.98	30.0	-13.0		1753.50	14.10	H	4.4	9.6	19.34	30.0	-10.7
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes																																																																																										
Low Ch																																																																																																		
1711.50	9.84	V	4.3	9.5	14.99	30.0	-15.0																																																																																											
1711.50	13.10	H	4.3	9.5	18.25	30.0	-11.7																																																																																											
Mid Ch																																																																																																		
1732.50	11.27	V	4.3	9.5	16.47	30.0	-13.5																																																																																											
1732.50	13.64	H	4.3	9.5	18.84	30.0	-11.2																																																																																											
High Ch																																																																																																		
1753.50	11.74	V	4.4	9.6	16.98	30.0	-13.0																																																																																											
1753.50	14.10	H	4.4	9.6	19.34	30.0	-10.7																																																																																											

LTE Band 4 1.4MHz QPSK	UL Verification Services, Inc. High Frequency Substitution Measurement																																																																																																	
	Company: Samsung																																																																																																	
	Project #: 4788312331																																																																																																	
	Date: 2018-01-31																																																																																																	
	Test Engineer: 47989																																																																																																	
	Configuration: EUT / X-Position																																																																																																	
	Location: Chamber 2																																																																																																	
	Mode: LTE_QPSK Band 4 Fundamentals, 1.4MHz Bandwidth																																																																																																	
	Test Equipment: Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables Substitution: Horn 3115[00161451], 3m N-type Cable																																																																																																	
	<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 (dBi)</th> <th>EIRP (dBm)</th> <th>Limit (dBm)</th> <th>Delta (dB)</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td colspan="9">Low Ch</td> </tr> <tr> <td>1710.70</td> <td>11.29</td> <td>V</td> <td>4.3</td> <td>9.5</td> <td>16.43</td> <td>30.0</td> <td>-13.6</td> <td></td> </tr> <tr> <td>1710.70</td> <td>11.39</td> <td>H</td> <td>4.3</td> <td>9.5</td> <td>16.53</td> <td>30.0</td> <td>-13.5</td> <td></td> </tr> <tr> <td colspan="9">Mid Ch</td> </tr> <tr> <td>1732.50</td> <td>9.41</td> <td>V</td> <td>4.3</td> <td>9.5</td> <td>14.61</td> <td>30.0</td> <td>-15.4</td> <td></td> </tr> <tr> <td>1732.50</td> <td>12.84</td> <td>H</td> <td>4.3</td> <td>9.5</td> <td>18.04</td> <td>30.0</td> <td>-12.0</td> <td></td> </tr> <tr> <td colspan="9">High Ch</td> </tr> <tr> <td>1754.30</td> <td>10.12</td> <td>V</td> <td>4.4</td> <td>9.6</td> <td>15.36</td> <td>30.0</td> <td>-14.6</td> <td></td> </tr> <tr> <td>1754.30</td> <td>13.08</td> <td>H</td> <td>4.4</td> <td>9.6</td> <td>18.31</td> <td>30.0</td> <td>-11.7</td> <td></td> </tr> </tbody> </table>									f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	Low Ch									1710.70	11.29	V	4.3	9.5	16.43	30.0	-13.6		1710.70	11.39	H	4.3	9.5	16.53	30.0	-13.5		Mid Ch									1732.50	9.41	V	4.3	9.5	14.61	30.0	-15.4		1732.50	12.84	H	4.3	9.5	18.04	30.0	-12.0		High Ch									1754.30	10.12	V	4.4	9.6	15.36	30.0	-14.6		1754.30	13.08	H	4.4	9.6	18.31	30.0	-11.7
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes																																																																																										
Low Ch																																																																																																		
1710.70	11.29	V	4.3	9.5	16.43	30.0	-13.6																																																																																											
1710.70	11.39	H	4.3	9.5	16.53	30.0	-13.5																																																																																											
Mid Ch																																																																																																		
1732.50	9.41	V	4.3	9.5	14.61	30.0	-15.4																																																																																											
1732.50	12.84	H	4.3	9.5	18.04	30.0	-12.0																																																																																											
High Ch																																																																																																		
1754.30	10.12	V	4.4	9.6	15.36	30.0	-14.6																																																																																											
1754.30	13.08	H	4.4	9.6	18.31	30.0	-11.7																																																																																											
LTE Band 4 1.4MHz 16QAM	UL Verification Services, Inc. High Frequency Substitution Measurement																																																																																																	
	Company: Samsung																																																																																																	
	Project #: 4788312331																																																																																																	
	Date: 2018-01-31																																																																																																	
	Test Engineer: 47989																																																																																																	
	Configuration: EUT / X-Position																																																																																																	
	Location: Chamber 2																																																																																																	
	Mode: LTE_16QAM Band 4 Fundamentals, 1.4MHz Bandwidth																																																																																																	
	Test Equipment: Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables Substitution: Horn 3115[00161451], 3m N-type Cable																																																																																																	
	<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 (dBi)</th> <th>EIRP (dBm)</th> <th>Limit (dBm)</th> <th>Delta (dB)</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td colspan="9">Low Ch</td> </tr> <tr> <td>1710.70</td> <td>10.27</td> <td>V</td> <td>4.3</td> <td>9.5</td> <td>15.41</td> <td>30.0</td> <td>-14.6</td> <td></td> </tr> <tr> <td>1710.70</td> <td>10.96</td> <td>H</td> <td>4.3</td> <td>9.5</td> <td>16.10</td> <td>30.0</td> <td>-13.9</td> <td></td> </tr> <tr> <td colspan="9">Mid Ch</td> </tr> <tr> <td>1732.50</td> <td>8.44</td> <td>V</td> <td>4.3</td> <td>9.5</td> <td>13.64</td> <td>30.0</td> <td>-16.4</td> <td></td> </tr> <tr> <td>1732.50</td> <td>11.82</td> <td>H</td> <td>4.3</td> <td>9.5</td> <td>17.02</td> <td>30.0</td> <td>-13.0</td> <td></td> </tr> <tr> <td colspan="9">High Ch</td> </tr> <tr> <td>1754.30</td> <td>9.04</td> <td>V</td> <td>4.4</td> <td>9.6</td> <td>14.28</td> <td>30.0</td> <td>-15.7</td> <td></td> </tr> <tr> <td>1754.30</td> <td>12.11</td> <td>H</td> <td>4.4</td> <td>9.6</td> <td>17.34</td> <td>30.0</td> <td>-12.7</td> <td></td> </tr> </tbody> </table>									f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	Low Ch									1710.70	10.27	V	4.3	9.5	15.41	30.0	-14.6		1710.70	10.96	H	4.3	9.5	16.10	30.0	-13.9		Mid Ch									1732.50	8.44	V	4.3	9.5	13.64	30.0	-16.4		1732.50	11.82	H	4.3	9.5	17.02	30.0	-13.0		High Ch									1754.30	9.04	V	4.4	9.6	14.28	30.0	-15.7		1754.30	12.11	H	4.4	9.6	17.34	30.0	-12.7
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes																																																																																										
Low Ch																																																																																																		
1710.70	10.27	V	4.3	9.5	15.41	30.0	-14.6																																																																																											
1710.70	10.96	H	4.3	9.5	16.10	30.0	-13.9																																																																																											
Mid Ch																																																																																																		
1732.50	8.44	V	4.3	9.5	13.64	30.0	-16.4																																																																																											
1732.50	11.82	H	4.3	9.5	17.02	30.0	-13.0																																																																																											
High Ch																																																																																																		
1754.30	9.04	V	4.4	9.6	14.28	30.0	-15.7																																																																																											
1754.30	12.11	H	4.4	9.6	17.34	30.0	-12.7																																																																																											

LTE Band 2

LTE Band 2 20MHz QPSK	UL Verification Services, Inc. High Frequency Substitution Measurement								
	Company: Samsung								
	Project #: 4788312331								
	Date: 2018-01-24								
	Test Engineer: 45585								
	Configuration: EUT / X-Position								
	Location: Chamber 1								
	Mode: LTE_QPSK Band 2 Fundamentals, 20MHz Bandwidth								
	Test Equipment: Receiving: Horn 3117[00168717], and Chamber 1 SMA Cables Substitution: Horn 3115[00161451], 3m N-type Cable								
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	Low Ch								
	1860.00	12.38	V	4.5	9.4	17.28	33.0	-15.7	
1860.00	14.10	H	4.5	9.4	19.00	33.0	-14.0		
Mid Ch									
1880.00	12.39	V	4.5	9.2	17.07	33.0	-15.9		
1880.00	15.00	H	4.5	9.2	19.68	33.0	-13.3		
High Ch									
1900.00	11.11	V	4.6	9.0	15.57	33.0	-17.4		
1900.00	15.45	H	4.6	9.0	19.91	33.0	-13.1		

LTE Band 2 20MHz 16QAM	UL Verification Services, Inc. High Frequency Substitution Measurement								
	Company: Samsung								
	Project #: 4788312331								
	Date: 2018-01-24								
	Test Engineer: 45585								
	Configuration: EUT / X-Position								
	Location: Chamber 1								
	Mode: LTE_16QAM Band 2 Fundamentals, 20MHz Bandwidth								
	Test Equipment: Receiving: Horn 3117[00168717], and Chamber 1 SMA Cables Substitution: Horn 3115[00161451], 3m N-type Cable								
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	Low Ch								
	1860.00	11.48	V	4.5	9.4	16.38	33.0	-16.6	
1860.00	13.15	H	4.5	9.4	18.05	33.0	-15.0		
Mid Ch									
1880.00	11.44	V	4.5	9.2	16.12	33.0	-16.9		
1880.00	14.02	H	4.5	9.2	18.70	33.0	-14.3		
High Ch									
1900.00	10.26	V	4.6	9.0	14.72	33.0	-18.3		
1900.00	14.52	H	4.6	9.0	18.98	33.0	-14.0		

LTE Band 2 15MHz QPSK	UL Verification Services, Inc. High Frequency Substitution Measurement																																																																																																	
	Company: Samsung																																																																																																	
	Project #: 4788312331																																																																																																	
	Date: 2018-01-24																																																																																																	
	Test Engineer: 45585																																																																																																	
	Configuration: EUT / X-Position																																																																																																	
	Location: Chamber 1																																																																																																	
	Mode: LTE_QPSK Band 2 Fundamentals, 15MHz Bandwidth																																																																																																	
	Test Equipment: Receiving: Horn 3117[00168717], and Chamber 1 SMA Cables Substitution: Horn 3115[00161451], 3m N-type Cable																																																																																																	
	<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 (dBi)</th> <th>EIRP (dBm)</th> <th>Limit (dBm)</th> <th>Delta (dB)</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td colspan="9">Low Ch</td> </tr> <tr> <td>1857.50</td> <td>12.05</td> <td>V</td> <td>4.5</td> <td>9.4</td> <td>16.98</td> <td>33.0</td> <td>-16.0</td> <td></td> </tr> <tr> <td>1857.50</td> <td>15.37</td> <td>H</td> <td>4.5</td> <td>9.4</td> <td>20.30</td> <td>33.0</td> <td>-12.7</td> <td></td> </tr> <tr> <td colspan="9">Mid Ch</td> </tr> <tr> <td>1880.00</td> <td>12.36</td> <td>V</td> <td>4.5</td> <td>9.2</td> <td>17.04</td> <td>33.0</td> <td>-16.0</td> <td></td> </tr> <tr> <td>1880.00</td> <td>15.01</td> <td>H</td> <td>4.5</td> <td>9.2</td> <td>19.69</td> <td>33.0</td> <td>-13.3</td> <td></td> </tr> <tr> <td colspan="9">High Ch</td> </tr> <tr> <td>1902.50</td> <td>10.80</td> <td>V</td> <td>4.6</td> <td>9.0</td> <td>15.22</td> <td>33.0</td> <td>-17.8</td> <td></td> </tr> <tr> <td>1902.50</td> <td>14.46</td> <td>H</td> <td>4.6</td> <td>9.0</td> <td>18.87</td> <td>33.0</td> <td>-14.1</td> <td></td> </tr> </tbody> </table>									f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	Low Ch									1857.50	12.05	V	4.5	9.4	16.98	33.0	-16.0		1857.50	15.37	H	4.5	9.4	20.30	33.0	-12.7		Mid Ch									1880.00	12.36	V	4.5	9.2	17.04	33.0	-16.0		1880.00	15.01	H	4.5	9.2	19.69	33.0	-13.3		High Ch									1902.50	10.80	V	4.6	9.0	15.22	33.0	-17.8		1902.50	14.46	H	4.6	9.0	18.87	33.0	-14.1
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes																																																																																										
Low Ch																																																																																																		
1857.50	12.05	V	4.5	9.4	16.98	33.0	-16.0																																																																																											
1857.50	15.37	H	4.5	9.4	20.30	33.0	-12.7																																																																																											
Mid Ch																																																																																																		
1880.00	12.36	V	4.5	9.2	17.04	33.0	-16.0																																																																																											
1880.00	15.01	H	4.5	9.2	19.69	33.0	-13.3																																																																																											
High Ch																																																																																																		
1902.50	10.80	V	4.6	9.0	15.22	33.0	-17.8																																																																																											
1902.50	14.46	H	4.6	9.0	18.87	33.0	-14.1																																																																																											
LTE Band 2 15MHz 16QAM	UL Verification Services, Inc. High Frequency Substitution Measurement																																																																																																	
	Company: Samsung																																																																																																	
	Project #: 4788312331																																																																																																	
	Date: 2018-01-24																																																																																																	
	Test Engineer: 45585																																																																																																	
	Configuration: EUT / X-Position																																																																																																	
	Location: Chamber 1																																																																																																	
	Mode: LTE_16QAM Band 2 Fundamentals, 15MHz Bandwidth																																																																																																	
	Test Equipment: Receiving: Horn 3117[00168717], and Chamber 1 SMA Cables Substitution: Horn 3115[00161451], 3m N-type Cable																																																																																																	
	<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 (dBi)</th> <th>EIRP (dBm)</th> <th>Limit (dBm)</th> <th>Delta (dB)</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td colspan="9">Low Ch</td> </tr> <tr> <td>1857.50</td> <td>11.07</td> <td>V</td> <td>4.5</td> <td>9.4</td> <td>16.00</td> <td>33.0</td> <td>-17.0</td> <td></td> </tr> <tr> <td>1857.50</td> <td>14.38</td> <td>H</td> <td>4.5</td> <td>9.4</td> <td>19.31</td> <td>33.0</td> <td>-13.7</td> <td></td> </tr> <tr> <td colspan="9">Mid Ch</td> </tr> <tr> <td>1880.00</td> <td>11.40</td> <td>V</td> <td>4.5</td> <td>9.2</td> <td>16.08</td> <td>33.0</td> <td>-16.9</td> <td></td> </tr> <tr> <td>1880.00</td> <td>13.99</td> <td>H</td> <td>4.5</td> <td>9.2</td> <td>18.67</td> <td>33.0</td> <td>-14.3</td> <td></td> </tr> <tr> <td colspan="9">High Ch</td> </tr> <tr> <td>1902.50</td> <td>9.86</td> <td>V</td> <td>4.6</td> <td>9.0</td> <td>14.28</td> <td>33.0</td> <td>-18.7</td> <td></td> </tr> <tr> <td>1902.50</td> <td>13.55</td> <td>H</td> <td>4.6</td> <td>9.0</td> <td>17.96</td> <td>33.0</td> <td>-15.0</td> <td></td> </tr> </tbody> </table>									f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	Low Ch									1857.50	11.07	V	4.5	9.4	16.00	33.0	-17.0		1857.50	14.38	H	4.5	9.4	19.31	33.0	-13.7		Mid Ch									1880.00	11.40	V	4.5	9.2	16.08	33.0	-16.9		1880.00	13.99	H	4.5	9.2	18.67	33.0	-14.3		High Ch									1902.50	9.86	V	4.6	9.0	14.28	33.0	-18.7		1902.50	13.55	H	4.6	9.0	17.96	33.0	-15.0
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes																																																																																										
Low Ch																																																																																																		
1857.50	11.07	V	4.5	9.4	16.00	33.0	-17.0																																																																																											
1857.50	14.38	H	4.5	9.4	19.31	33.0	-13.7																																																																																											
Mid Ch																																																																																																		
1880.00	11.40	V	4.5	9.2	16.08	33.0	-16.9																																																																																											
1880.00	13.99	H	4.5	9.2	18.67	33.0	-14.3																																																																																											
High Ch																																																																																																		
1902.50	9.86	V	4.6	9.0	14.28	33.0	-18.7																																																																																											
1902.50	13.55	H	4.6	9.0	17.96	33.0	-15.0																																																																																											

LTE Band 2 10MHz QPSK	UL Verification Services, Inc. High Frequency Substitution Measurement																																																																																																		
	Company:		Samsung																																																																																																
	Project #:		4788312331																																																																																																
	Date:		2018-01-24																																																																																																
	Test Engineer:		45585																																																																																																
	Configuration:		EUT / X-Position																																																																																																
	Location:		Chamber 1																																																																																																
	Mode:		LTE_QPSK Band 2 Fundamentals, 10MHz Bandwidth																																																																																																
	Test Equipment:		Receiving: Horn 3117[00168717], and Chamber 1 SMA Cables Substitution: Horn 3115[00161451], 3m N-type Cable																																																																																																
			<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 (dBi)</th> <th>EIRP (dBm)</th> <th>Limit (dBm)</th> <th>Delta (dB)</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td colspan="9">Low Ch</td> </tr> <tr> <td>1855.00</td> <td>12.19</td> <td>V</td> <td>4.5</td> <td>9.5</td> <td>17.14</td> <td>33.0</td> <td>-15.9</td> <td></td> </tr> <tr> <td>1855.00</td> <td>15.54</td> <td>H</td> <td>4.5</td> <td>9.5</td> <td>20.50</td> <td>33.0</td> <td>-12.5</td> <td></td> </tr> <tr> <td colspan="9">Mid Ch</td> </tr> <tr> <td>1880.00</td> <td>10.67</td> <td>V</td> <td>4.5</td> <td>9.2</td> <td>15.35</td> <td>33.0</td> <td>-17.7</td> <td></td> </tr> <tr> <td>1880.00</td> <td>14.94</td> <td>H</td> <td>4.5</td> <td>9.2</td> <td>19.62</td> <td>33.0</td> <td>-13.4</td> <td></td> </tr> <tr> <td colspan="9">High Ch</td> </tr> <tr> <td>1905.00</td> <td>10.43</td> <td>V</td> <td>4.6</td> <td>8.9</td> <td>14.80</td> <td>33.0</td> <td>-18.2</td> <td></td> </tr> <tr> <td>1905.00</td> <td>14.32</td> <td>H</td> <td>4.6</td> <td>8.9</td> <td>18.70</td> <td>33.0</td> <td>-14.3</td> <td></td> </tr> </tbody> </table>							f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	Low Ch									1855.00	12.19	V	4.5	9.5	17.14	33.0	-15.9		1855.00	15.54	H	4.5	9.5	20.50	33.0	-12.5		Mid Ch									1880.00	10.67	V	4.5	9.2	15.35	33.0	-17.7		1880.00	14.94	H	4.5	9.2	19.62	33.0	-13.4		High Ch									1905.00	10.43	V	4.6	8.9	14.80	33.0	-18.2		1905.00	14.32	H	4.6	8.9	18.70	33.0	-14.3	
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes																																																																																										
	Low Ch																																																																																																		
1855.00	12.19	V	4.5	9.5	17.14	33.0	-15.9																																																																																												
1855.00	15.54	H	4.5	9.5	20.50	33.0	-12.5																																																																																												
Mid Ch																																																																																																			
1880.00	10.67	V	4.5	9.2	15.35	33.0	-17.7																																																																																												
1880.00	14.94	H	4.5	9.2	19.62	33.0	-13.4																																																																																												
High Ch																																																																																																			
1905.00	10.43	V	4.6	8.9	14.80	33.0	-18.2																																																																																												
1905.00	14.32	H	4.6	8.9	18.70	33.0	-14.3																																																																																												
LTE Band 2 10MHz 16QAM	UL Verification Services, Inc. High Frequency Substitution Measurement																																																																																																		
	Company:		Samsung																																																																																																
	Project #:		4788312331																																																																																																
	Date:		2018-01-24																																																																																																
	Test Engineer:		45585																																																																																																
	Configuration:		EUT / X-Position																																																																																																
	Location:		Chamber 1																																																																																																
	Mode:		LTE_16QAM Band 2 Fundamentals, 10MHz Bandwidth																																																																																																
	Test Equipment:		Receiving: Horn 3117[00168717], and Chamber 1 SMA Cables Substitution: Horn 3115[00161451], 3m N-type Cable																																																																																																
			<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 (dBi)</th> <th>EIRP (dBm)</th> <th>Limit (dBm)</th> <th>Delta (dB)</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td colspan="9">Low Ch</td> </tr> <tr> <td>1855.00</td> <td>11.21</td> <td>V</td> <td>4.5</td> <td>9.5</td> <td>16.16</td> <td>33.0</td> <td>-16.8</td> <td></td> </tr> <tr> <td>1855.00</td> <td>14.52</td> <td>H</td> <td>4.5</td> <td>9.5</td> <td>19.48</td> <td>33.0</td> <td>-13.5</td> <td></td> </tr> <tr> <td colspan="9">Mid Ch</td> </tr> <tr> <td>1880.00</td> <td>9.73</td> <td>V</td> <td>4.5</td> <td>9.2</td> <td>14.41</td> <td>33.0</td> <td>-18.6</td> <td></td> </tr> <tr> <td>1880.00</td> <td>13.98</td> <td>H</td> <td>4.5</td> <td>9.2</td> <td>18.66</td> <td>33.0</td> <td>-14.3</td> <td></td> </tr> <tr> <td colspan="9">High Ch</td> </tr> <tr> <td>1905.00</td> <td>9.48</td> <td>V</td> <td>4.6</td> <td>8.9</td> <td>13.85</td> <td>33.0</td> <td>-19.1</td> <td></td> </tr> <tr> <td>1905.00</td> <td>13.36</td> <td>H</td> <td>4.6</td> <td>8.9</td> <td>17.74</td> <td>33.0</td> <td>-15.3</td> <td></td> </tr> </tbody> </table>							f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	Low Ch									1855.00	11.21	V	4.5	9.5	16.16	33.0	-16.8		1855.00	14.52	H	4.5	9.5	19.48	33.0	-13.5		Mid Ch									1880.00	9.73	V	4.5	9.2	14.41	33.0	-18.6		1880.00	13.98	H	4.5	9.2	18.66	33.0	-14.3		High Ch									1905.00	9.48	V	4.6	8.9	13.85	33.0	-19.1		1905.00	13.36	H	4.6	8.9	17.74	33.0	-15.3	
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes																																																																																										
	Low Ch																																																																																																		
1855.00	11.21	V	4.5	9.5	16.16	33.0	-16.8																																																																																												
1855.00	14.52	H	4.5	9.5	19.48	33.0	-13.5																																																																																												
Mid Ch																																																																																																			
1880.00	9.73	V	4.5	9.2	14.41	33.0	-18.6																																																																																												
1880.00	13.98	H	4.5	9.2	18.66	33.0	-14.3																																																																																												
High Ch																																																																																																			
1905.00	9.48	V	4.6	8.9	13.85	33.0	-19.1																																																																																												
1905.00	13.36	H	4.6	8.9	17.74	33.0	-15.3																																																																																												

LTE Band 2 5MHz QPSK	UL Verification Services, Inc. High Frequency Substitution Measurement																																																																																																	
	Company: Samsung																																																																																																	
	Project #: 4788312331																																																																																																	
	Date: 2018-01-24																																																																																																	
	Test Engineer: 45585																																																																																																	
	Configuration: EUT / X-Position																																																																																																	
	Location: Chamber 1																																																																																																	
	Mode: LTE_QPSK Band 2 Fundamentals, 5MHz Bandwidth																																																																																																	
	Test Equipment: Receiving: Horn 3117[00168717], and Chamber 1 SMA Cables Substitution: Horn 3115[00161451], 3m N-type Cable																																																																																																	
	<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 (dBi)</th> <th>EIRP (dBm)</th> <th>Limit (dBm)</th> <th>Delta (dB)</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td colspan="9">Low Ch</td> </tr> <tr> <td>1852.50</td> <td>11.53</td> <td>V</td> <td>4.5</td> <td>9.5</td> <td>16.52</td> <td>33.0</td> <td>-16.5</td> <td></td> </tr> <tr> <td>1852.50</td> <td>15.55</td> <td>H</td> <td>4.5</td> <td>9.5</td> <td>20.54</td> <td>33.0</td> <td>-12.5</td> <td></td> </tr> <tr> <td colspan="9">Mid Ch</td> </tr> <tr> <td>1880.00</td> <td>11.99</td> <td>V</td> <td>4.5</td> <td>9.2</td> <td>16.67</td> <td>33.0</td> <td>-16.3</td> <td></td> </tr> <tr> <td>1880.00</td> <td>14.15</td> <td>H</td> <td>4.5</td> <td>9.2</td> <td>18.83</td> <td>33.0</td> <td>-14.2</td> <td></td> </tr> <tr> <td colspan="9">High Ch</td> </tr> <tr> <td>1907.50</td> <td>10.19</td> <td>V</td> <td>4.6</td> <td>8.9</td> <td>14.53</td> <td>33.0</td> <td>-18.5</td> <td></td> </tr> <tr> <td>1907.50</td> <td>13.69</td> <td>H</td> <td>4.6</td> <td>8.9</td> <td>18.03</td> <td>33.0</td> <td>-15.0</td> <td></td> </tr> </tbody> </table>									f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	Low Ch									1852.50	11.53	V	4.5	9.5	16.52	33.0	-16.5		1852.50	15.55	H	4.5	9.5	20.54	33.0	-12.5		Mid Ch									1880.00	11.99	V	4.5	9.2	16.67	33.0	-16.3		1880.00	14.15	H	4.5	9.2	18.83	33.0	-14.2		High Ch									1907.50	10.19	V	4.6	8.9	14.53	33.0	-18.5		1907.50	13.69	H	4.6	8.9	18.03	33.0	-15.0
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes																																																																																										
Low Ch																																																																																																		
1852.50	11.53	V	4.5	9.5	16.52	33.0	-16.5																																																																																											
1852.50	15.55	H	4.5	9.5	20.54	33.0	-12.5																																																																																											
Mid Ch																																																																																																		
1880.00	11.99	V	4.5	9.2	16.67	33.0	-16.3																																																																																											
1880.00	14.15	H	4.5	9.2	18.83	33.0	-14.2																																																																																											
High Ch																																																																																																		
1907.50	10.19	V	4.6	8.9	14.53	33.0	-18.5																																																																																											
1907.50	13.69	H	4.6	8.9	18.03	33.0	-15.0																																																																																											
LTE Band 2 5MHz 16QAM	UL Verification Services, Inc. High Frequency Substitution Measurement																																																																																																	
	Company: Samsung																																																																																																	
	Project #: 4788312331																																																																																																	
	Date: 2018-01-24																																																																																																	
	Test Engineer: 45585																																																																																																	
	Configuration: EUT / X-Position																																																																																																	
	Location: Chamber 1																																																																																																	
	Mode: LTE_16QAM Band 2 Fundamentals, 5MHz Bandwidth																																																																																																	
	Test Equipment: Receiving: Horn 3117[00168717], and Chamber 1 SMA Cables Substitution: Horn 3115[00161451], 3m N-type Cable																																																																																																	
	<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 (dBi)</th> <th>EIRP (dBm)</th> <th>Limit (dBm)</th> <th>Delta (dB)</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td colspan="9">Low Ch</td> </tr> <tr> <td>1852.50</td> <td>10.57</td> <td>V</td> <td>4.5</td> <td>9.5</td> <td>15.56</td> <td>33.0</td> <td>-17.4</td> <td></td> </tr> <tr> <td>1852.50</td> <td>14.57</td> <td>H</td> <td>4.5</td> <td>9.5</td> <td>19.56</td> <td>33.0</td> <td>-13.4</td> <td></td> </tr> <tr> <td colspan="9">Mid Ch</td> </tr> <tr> <td>1880.00</td> <td>11.08</td> <td>V</td> <td>4.5</td> <td>9.2</td> <td>15.76</td> <td>33.0</td> <td>-17.2</td> <td></td> </tr> <tr> <td>1880.00</td> <td>13.22</td> <td>H</td> <td>4.5</td> <td>9.2</td> <td>17.90</td> <td>33.0</td> <td>-15.1</td> <td></td> </tr> <tr> <td colspan="9">High Ch</td> </tr> <tr> <td>1907.50</td> <td>9.22</td> <td>V</td> <td>4.6</td> <td>8.9</td> <td>13.56</td> <td>33.0</td> <td>-19.4</td> <td></td> </tr> <tr> <td>1907.50</td> <td>12.73</td> <td>H</td> <td>4.6</td> <td>8.9</td> <td>17.07</td> <td>33.0</td> <td>-15.9</td> <td></td> </tr> </tbody> </table>									f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	Low Ch									1852.50	10.57	V	4.5	9.5	15.56	33.0	-17.4		1852.50	14.57	H	4.5	9.5	19.56	33.0	-13.4		Mid Ch									1880.00	11.08	V	4.5	9.2	15.76	33.0	-17.2		1880.00	13.22	H	4.5	9.2	17.90	33.0	-15.1		High Ch									1907.50	9.22	V	4.6	8.9	13.56	33.0	-19.4		1907.50	12.73	H	4.6	8.9	17.07	33.0	-15.9
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes																																																																																										
Low Ch																																																																																																		
1852.50	10.57	V	4.5	9.5	15.56	33.0	-17.4																																																																																											
1852.50	14.57	H	4.5	9.5	19.56	33.0	-13.4																																																																																											
Mid Ch																																																																																																		
1880.00	11.08	V	4.5	9.2	15.76	33.0	-17.2																																																																																											
1880.00	13.22	H	4.5	9.2	17.90	33.0	-15.1																																																																																											
High Ch																																																																																																		
1907.50	9.22	V	4.6	8.9	13.56	33.0	-19.4																																																																																											
1907.50	12.73	H	4.6	8.9	17.07	33.0	-15.9																																																																																											

LTE Band 2 3MHz QPSK	UL Verification Services, Inc. High Frequency Substitution Measurement																																																																																																	
	Company: Samsung																																																																																																	
	Project #: 4788312331																																																																																																	
	Date: 2018-01-23																																																																																																	
	Test Engineer: 45585																																																																																																	
	Configuration: EUT / X-Position																																																																																																	
	Location: Chamber 1																																																																																																	
	Mode: LTE_QPSK Band 2 Fundamentals, 3MHz Bandwidth																																																																																																	
	Test Equipment: Receiving: Horn 3117[00168717], and Chamber 1 SMA Cables Substitution: Horn 3115[00161451], 3m N-type Cable																																																																																																	
	<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 (dBi)</th> <th>EIRP (dBm)</th> <th>Limit (dBm)</th> <th>Delta (dB)</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td colspan="9">Low Ch</td> </tr> <tr> <td>1851.50</td> <td>11.52</td> <td>V</td> <td>4.5</td> <td>9.5</td> <td>16.52</td> <td>33.0</td> <td>-16.5</td> <td></td> </tr> <tr> <td>1851.50</td> <td>13.70</td> <td>H</td> <td>4.5</td> <td>9.5</td> <td>18.70</td> <td>33.0</td> <td>-14.3</td> <td></td> </tr> <tr> <td colspan="9">Mid Ch</td> </tr> <tr> <td>1880.00</td> <td>11.09</td> <td>V</td> <td>4.5</td> <td>9.2</td> <td>15.77</td> <td>33.0</td> <td>-17.2</td> <td></td> </tr> <tr> <td>1880.00</td> <td>13.17</td> <td>H</td> <td>4.5</td> <td>9.2</td> <td>17.85</td> <td>33.0</td> <td>-15.2</td> <td></td> </tr> <tr> <td colspan="9">High Ch</td> </tr> <tr> <td>1908.50</td> <td>11.43</td> <td>V</td> <td>4.6</td> <td>8.9</td> <td>15.76</td> <td>33.0</td> <td>-17.2</td> <td></td> </tr> <tr> <td>1908.50</td> <td>13.89</td> <td>H</td> <td>4.6</td> <td>8.9</td> <td>18.21</td> <td>33.0</td> <td>-14.8</td> <td></td> </tr> </tbody> </table>									f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	Low Ch									1851.50	11.52	V	4.5	9.5	16.52	33.0	-16.5		1851.50	13.70	H	4.5	9.5	18.70	33.0	-14.3		Mid Ch									1880.00	11.09	V	4.5	9.2	15.77	33.0	-17.2		1880.00	13.17	H	4.5	9.2	17.85	33.0	-15.2		High Ch									1908.50	11.43	V	4.6	8.9	15.76	33.0	-17.2		1908.50	13.89	H	4.6	8.9	18.21	33.0	-14.8
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes																																																																																										
Low Ch																																																																																																		
1851.50	11.52	V	4.5	9.5	16.52	33.0	-16.5																																																																																											
1851.50	13.70	H	4.5	9.5	18.70	33.0	-14.3																																																																																											
Mid Ch																																																																																																		
1880.00	11.09	V	4.5	9.2	15.77	33.0	-17.2																																																																																											
1880.00	13.17	H	4.5	9.2	17.85	33.0	-15.2																																																																																											
High Ch																																																																																																		
1908.50	11.43	V	4.6	8.9	15.76	33.0	-17.2																																																																																											
1908.50	13.89	H	4.6	8.9	18.21	33.0	-14.8																																																																																											
LTE Band 2 3MHz 16QAM	UL Verification Services, Inc. High Frequency Substitution Measurement																																																																																																	
	Company: Samsung																																																																																																	
	Project #: 4788312331																																																																																																	
	Date: 2018-01-23																																																																																																	
	Test Engineer: 45585																																																																																																	
	Configuration: EUT / X-Position																																																																																																	
	Location: Chamber 1																																																																																																	
	Mode: LTE_16QAM Band 2 Fundamentals, 3MHz Bandwidth																																																																																																	
	Test Equipment: Receiving: Horn 3117[00168717], and Chamber 1 SMA Cables Substitution: Horn 3115[00161451], 3m N-type Cable																																																																																																	
	<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 (dBi)</th> <th>EIRP (dBm)</th> <th>Limit (dBm)</th> <th>Delta (dB)</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td colspan="9">Low Ch</td> </tr> <tr> <td>1851.50</td> <td>10.47</td> <td>V</td> <td>4.5</td> <td>9.5</td> <td>15.47</td> <td>33.0</td> <td>-17.5</td> <td></td> </tr> <tr> <td>1851.50</td> <td>12.71</td> <td>H</td> <td>4.5</td> <td>9.5</td> <td>17.71</td> <td>33.0</td> <td>-15.3</td> <td></td> </tr> <tr> <td colspan="9">Mid Ch</td> </tr> <tr> <td>1880.00</td> <td>10.02</td> <td>V</td> <td>4.5</td> <td>9.2</td> <td>14.70</td> <td>33.0</td> <td>-18.3</td> <td></td> </tr> <tr> <td>1880.00</td> <td>12.07</td> <td>H</td> <td>4.5</td> <td>9.2</td> <td>16.75</td> <td>33.0</td> <td>-16.3</td> <td></td> </tr> <tr> <td colspan="9">High Ch</td> </tr> <tr> <td>1908.50</td> <td>10.42</td> <td>V</td> <td>4.6</td> <td>8.9</td> <td>14.75</td> <td>33.0</td> <td>-18.3</td> <td></td> </tr> <tr> <td>1908.50</td> <td>12.86</td> <td>H</td> <td>4.6</td> <td>8.9</td> <td>17.18</td> <td>33.0</td> <td>-15.8</td> <td></td> </tr> </tbody> </table>									f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	Low Ch									1851.50	10.47	V	4.5	9.5	15.47	33.0	-17.5		1851.50	12.71	H	4.5	9.5	17.71	33.0	-15.3		Mid Ch									1880.00	10.02	V	4.5	9.2	14.70	33.0	-18.3		1880.00	12.07	H	4.5	9.2	16.75	33.0	-16.3		High Ch									1908.50	10.42	V	4.6	8.9	14.75	33.0	-18.3		1908.50	12.86	H	4.6	8.9	17.18	33.0	-15.8
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes																																																																																										
Low Ch																																																																																																		
1851.50	10.47	V	4.5	9.5	15.47	33.0	-17.5																																																																																											
1851.50	12.71	H	4.5	9.5	17.71	33.0	-15.3																																																																																											
Mid Ch																																																																																																		
1880.00	10.02	V	4.5	9.2	14.70	33.0	-18.3																																																																																											
1880.00	12.07	H	4.5	9.2	16.75	33.0	-16.3																																																																																											
High Ch																																																																																																		
1908.50	10.42	V	4.6	8.9	14.75	33.0	-18.3																																																																																											
1908.50	12.86	H	4.6	8.9	17.18	33.0	-15.8																																																																																											

LTE Band 2 1.4MHz QPSK	UL Verification Services, Inc. High Frequency Substitution Measurement																																																																																																	
	Company: Samsung																																																																																																	
	Project #: 4788312331																																																																																																	
	Date: 2018-01-23																																																																																																	
	Test Engineer: 45585																																																																																																	
	Configuration: EUT / X-Position																																																																																																	
	Location: Chamber 1																																																																																																	
	Mode: LTE_QPSK Band 2 Fundamentals, 1.4MHz Bandwidth																																																																																																	
	Test Equipment: Receiving: Horn 3117[00168717], and Chamber 1 SMA Cables Substitution: Horn 3115[00161451], 3m N-type Cable																																																																																																	
	<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 (dBi)</th> <th>EIRP (dBm)</th> <th>Limit (dBm)</th> <th>Delta (dB)</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td colspan="9">Low Ch</td> </tr> <tr> <td>1850.70</td> <td>8.29</td> <td>V</td> <td>4.5</td> <td>9.5</td> <td>13.29</td> <td>33.0</td> <td>-19.7</td> <td></td> </tr> <tr> <td>1850.70</td> <td>11.49</td> <td>H</td> <td>4.5</td> <td>9.5</td> <td>16.50</td> <td>33.0</td> <td>-16.5</td> <td></td> </tr> <tr> <td colspan="9">Mid Ch</td> </tr> <tr> <td>1880.00</td> <td>9.02</td> <td>V</td> <td>4.5</td> <td>9.2</td> <td>13.70</td> <td>33.0</td> <td>-19.3</td> <td></td> </tr> <tr> <td>1880.00</td> <td>11.21</td> <td>H</td> <td>4.5</td> <td>9.2</td> <td>15.89</td> <td>33.0</td> <td>-17.1</td> <td></td> </tr> <tr> <td colspan="9">High Ch</td> </tr> <tr> <td>1909.30</td> <td>9.03</td> <td>V</td> <td>4.6</td> <td>8.9</td> <td>13.34</td> <td>33.0</td> <td>-19.7</td> <td></td> </tr> <tr> <td>1909.30</td> <td>9.71</td> <td>H</td> <td>4.6</td> <td>8.9</td> <td>14.02</td> <td>33.0</td> <td>-19.0</td> <td></td> </tr> </tbody> </table>									f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	Low Ch									1850.70	8.29	V	4.5	9.5	13.29	33.0	-19.7		1850.70	11.49	H	4.5	9.5	16.50	33.0	-16.5		Mid Ch									1880.00	9.02	V	4.5	9.2	13.70	33.0	-19.3		1880.00	11.21	H	4.5	9.2	15.89	33.0	-17.1		High Ch									1909.30	9.03	V	4.6	8.9	13.34	33.0	-19.7		1909.30	9.71	H	4.6	8.9	14.02	33.0	-19.0
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes																																																																																										
Low Ch																																																																																																		
1850.70	8.29	V	4.5	9.5	13.29	33.0	-19.7																																																																																											
1850.70	11.49	H	4.5	9.5	16.50	33.0	-16.5																																																																																											
Mid Ch																																																																																																		
1880.00	9.02	V	4.5	9.2	13.70	33.0	-19.3																																																																																											
1880.00	11.21	H	4.5	9.2	15.89	33.0	-17.1																																																																																											
High Ch																																																																																																		
1909.30	9.03	V	4.6	8.9	13.34	33.0	-19.7																																																																																											
1909.30	9.71	H	4.6	8.9	14.02	33.0	-19.0																																																																																											
LTE Band 2 1.4MHz 16QAM	UL Verification Services, Inc. High Frequency Substitution Measurement																																																																																																	
	Company: Samsung																																																																																																	
	Project #: 4788312331																																																																																																	
	Date: 2018-01-23																																																																																																	
	Test Engineer: 45585																																																																																																	
	Configuration: EUT / X-Position																																																																																																	
	Location: Chamber 1																																																																																																	
	Mode: LTE_16QAM Band 2 Fundamentals, 1.4MHz Bandwidth																																																																																																	
	Test Equipment: Receiving: Horn 3117[00168717], and Chamber 1 SMA Cables Substitution: Horn 3115[00161451], 3m N-type Cable																																																																																																	
	<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 (dBi)</th> <th>EIRP (dBm)</th> <th>Limit (dBm)</th> <th>Delta (dB)</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td colspan="9">Low Ch</td> </tr> <tr> <td>1850.70</td> <td>7.37</td> <td>V</td> <td>4.5</td> <td>9.5</td> <td>12.37</td> <td>33.0</td> <td>-20.6</td> <td></td> </tr> <tr> <td>1850.70</td> <td>10.59</td> <td>H</td> <td>4.5</td> <td>9.5</td> <td>15.60</td> <td>33.0</td> <td>-17.4</td> <td></td> </tr> <tr> <td colspan="9">Mid Ch</td> </tr> <tr> <td>1880.00</td> <td>8.06</td> <td>V</td> <td>4.5</td> <td>9.2</td> <td>12.74</td> <td>33.0</td> <td>-20.3</td> <td></td> </tr> <tr> <td>1880.00</td> <td>10.19</td> <td>H</td> <td>4.5</td> <td>9.2</td> <td>14.87</td> <td>33.0</td> <td>-18.1</td> <td></td> </tr> <tr> <td colspan="9">High Ch</td> </tr> <tr> <td>1909.30</td> <td>8.02</td> <td>V</td> <td>4.6</td> <td>8.9</td> <td>12.33</td> <td>33.0</td> <td>-20.7</td> <td></td> </tr> <tr> <td>1909.30</td> <td>8.65</td> <td>H</td> <td>4.6</td> <td>8.9</td> <td>12.96</td> <td>33.0</td> <td>-20.0</td> <td></td> </tr> </tbody> </table>									f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	Low Ch									1850.70	7.37	V	4.5	9.5	12.37	33.0	-20.6		1850.70	10.59	H	4.5	9.5	15.60	33.0	-17.4		Mid Ch									1880.00	8.06	V	4.5	9.2	12.74	33.0	-20.3		1880.00	10.19	H	4.5	9.2	14.87	33.0	-18.1		High Ch									1909.30	8.02	V	4.6	8.9	12.33	33.0	-20.7		1909.30	8.65	H	4.6	8.9	12.96	33.0	-20.0
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes																																																																																										
Low Ch																																																																																																		
1850.70	7.37	V	4.5	9.5	12.37	33.0	-20.6																																																																																											
1850.70	10.59	H	4.5	9.5	15.60	33.0	-17.4																																																																																											
Mid Ch																																																																																																		
1880.00	8.06	V	4.5	9.2	12.74	33.0	-20.3																																																																																											
1880.00	10.19	H	4.5	9.2	14.87	33.0	-18.1																																																																																											
High Ch																																																																																																		
1909.30	8.02	V	4.6	8.9	12.33	33.0	-20.7																																																																																											
1909.30	8.65	H	4.6	8.9	12.96	33.0	-20.0																																																																																											

10.2. FIELD STRENGTH OF SPURIOUS RADIATION

RULE PART(S)

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

LIMIT

Part 22.917(a) & Part 24.238(a) & Part 27.53(g),(h) - The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log (P)$ dB.

TEST PROCEDURE

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

For peak power measurement with a ESU40:

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

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

RESULTS

10.2.1. SPURIOUS RADIATION PLOTS

GSM 850

		UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
		f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
GSM GSM850 GPRS	Company: Samsung Project #: 4788312331 Date: 2018-01-25 Test Engineer: 47989 Configuration: EUT / AC Adapter / Earphone, Z Position Location: Chamber 2 Mode: GPRS 850 MHz Harmonics										
	Low Ch, 824.2MHz										
	1648.40	-5.8	V	3.0	38.2	1.0	-43.0	-13.0	-30.0		
	2472.60	-8.3	V	3.0	38.8	1.0	-47.1	-13.0	-34.1		
	3296.80	-12.5	V	3.0	39.4	1.0	-50.9	-13.0	-37.9		
	4121.00	-12.1	V	3.0	39.8	2.0	-49.9	-13.0	-36.9		
	1648.40	-4.6	H	3.0	38.2	1.0	-41.8	-13.0	-28.8		
	2472.60	-7.3	H	3.0	38.8	1.0	-45.1	-13.0	-32.1		
	3296.80	-10.6	H	3.0	39.4	1.0	-49.0	-13.0	-36.0		
	4121.00	-10.3	H	3.0	39.8	2.0	-48.2	-13.0	-35.2		
	Mid Ch, 836.6MHz										
	1673.20	-6.2	V	3.0	38.2	1.0	-43.5	-13.0	-30.5		
	2509.80	-8.9	V	3.0	38.8	1.0	-46.8	-13.0	-33.8		
	3346.40	-13.5	V	3.0	39.5	1.0	-51.9	-13.0	-38.9		
	4183.00	-11.1	V	3.0	39.8	2.0	-48.9	-13.0	-35.9		
	1673.20	-3.8	H	3.0	38.2	1.0	-41.0	-13.0	-28.0		
	2509.80	-12.4	H	3.0	38.8	1.0	-50.2	-13.0	-37.2		
	3346.40	-11.2	H	3.0	39.5	1.0	-49.6	-13.0	-36.6		
	4183.00	-10.3	H	3.0	39.8	2.0	-48.1	-13.0	-35.1		
	High Ch, 848.8MHz										
	1697.60	-7.8	V	3.0	38.2	1.0	-45.0	-13.0	-32.0		
	2546.40	-6.1	V	3.0	38.9	1.0	-44.0	-13.0	-31.0		
	3395.20	-13.2	V	3.0	39.5	1.0	-51.7	-13.0	-38.7		
	4244.00	-9.9	V	3.0	39.8	2.0	-47.7	-13.0	-34.7		
	1697.60	-5.9	H	3.0	38.2	1.0	-43.2	-13.0	-30.2		
	2546.40	-15.3	H	3.0	38.9	1.0	-53.2	-13.0	-40.2		
	3395.20	-13.1	H	3.0	39.5	1.0	-51.6	-13.0	-38.6		
	4244.00	-8.9	H	3.0	39.8	2.0	-46.7	-13.0	-33.7		
	GSM GSM850 EGPRS	Company: Samsung Project #: 4788312331 Date: 2018-01-25 Test Engineer: 47989 Configuration: EUT / AC Adapter / Earphone, Z Position Location: Chamber 2 Mode: EGPRS 850 MHz Harmonics									
		Low Ch, 824.2MHz									
		1648.40	-7.6	V	3.0	38.2	1.0	-44.8	-13.0	-31.8	
		2472.60	-11.5	V	3.0	38.8	1.0	-49.3	-13.0	-36.3	
		3296.80	-14.3	V	3.0	39.4	1.0	-52.8	-13.0	-39.8	
		4121.00	-13.8	V	3.0	39.8	2.0	-51.6	-13.0	-38.6	
		1648.40	-5.6	H	3.0	38.2	1.0	-42.8	-13.0	-29.8	
2472.60		-10.1	H	3.0	38.8	1.0	-47.9	-13.0	-34.9		
3296.80		-12.9	H	3.0	39.4	1.0	-51.4	-13.0	-38.4		
4121.00		-10.6	H	3.0	39.8	2.0	-48.4	-13.0	-35.4		
Mid Ch, 836.6MHz											
1673.20		-9.7	V	3.0	38.2	1.0	-46.9	-13.0	-33.9		
2509.80		-12.6	V	3.0	38.8	1.0	-50.5	-13.0	-37.5		
3346.40		-14.2	V	3.0	39.5	1.0	-52.7	-13.0	-39.7		
4183.00		-12.1	V	3.0	39.8	1.0	-50.9	-13.0	-37.9		
1673.20		-8.6	H	3.0	38.2	1.0	-45.8	-13.0	-32.8		
2509.80		-15.5	H	3.0	38.8	1.0	-53.3	-13.0	-40.3		
3346.40		-14.7	H	3.0	39.5	1.0	-53.2	-13.0	-40.2		
4183.00		-10.3	H	3.0	39.8	1.0	-49.2	-13.0	-36.2		
High Ch, 848.8MHz											
1697.60		-7.7	V	3.0	38.2	1.0	-44.9	-13.0	-31.9		
2546.40		-11.1	V	3.0	38.9	1.0	-49.0	-13.0	-36.0		
3395.20		-13.7	V	3.0	39.5	1.0	-52.2	-13.0	-39.2		
2148.00		-16.1	V	3.0	38.5	1.0	-53.7	-13.0	-40.7		
1697.60		-6.5	H	3.0	38.2	1.0	-43.8	-13.0	-30.8		
2546.40		-11.7	H	3.0	38.9	1.0	-49.6	-13.0	-36.6		
3395.20		-13.9	H	3.0	39.5	1.0	-52.4	-13.0	-39.4		
4244.00		-11.8	H	3.0	39.8	2.0	-49.7	-13.0	-36.7		

GSM 1900

		UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
GSM GSM1900 GPRS	Company: Samsung Project #: 4788312331 Date: 2018-02-02 Test Engineer: 45585 Configuration: EUT / Adapter / Earphone, X-Position Location: Chamber 1 Mode: GPRS 1900 MHz Harmonics										
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	
	Low Ch, 1850.2MHz										
	3700.40	3.9	V	3.0	43.8	1.0	-38.9	-13.0	-25.9		
	5550.60	-3.6	V	3.0	43.7	1.0	-46.3	-13.0	-33.3		
	7400.80	-4.4	V	3.0	42.5	1.0	-46.0	-13.0	-33.0		
	3700.40	4.1	H	3.0	43.8	1.0	-38.6	-13.0	-25.6		
	5550.60	-3.9	H	3.0	43.7	1.0	-46.6	-13.0	-33.6		
	7400.80	-3.2	H	3.0	42.5	1.0	-44.7	-13.0	-31.7		
	Mid Ch, 1880MHz										
	3760.00	4.4	V	3.0	43.8	1.0	-38.4	-13.0	-25.4		
	5640.00	-3.4	V	3.0	43.7	1.0	-46.1	-13.0	-33.1		
	7520.00	-3.5	V	3.0	42.5	1.0	-45.0	-13.0	-32.0		
	3760.00	3.2	H	3.0	43.8	1.0	-39.6	-13.0	-26.6		
	5640.00	-4.0	H	3.0	43.7	1.0	-46.7	-13.0	-33.7		
	7520.00	-2.9	H	3.0	42.5	1.0	-44.4	-13.0	-31.4		
	High Ch, 1909.8MHz										
	3819.60	0.4	V	3.0	43.8	1.0	-42.4	-13.0	-29.4		
	5729.40	-2.7	V	3.0	43.7	1.0	-45.4	-13.0	-32.4		
	7639.20	-4.8	V	3.0	42.4	1.0	-46.2	-13.0	-33.2		
3819.60	0.0	H	3.0	43.8	1.0	-42.8	-13.0	-29.8			
5729.40	-4.3	H	3.0	43.7	1.0	-47.0	-13.0	-34.0			
7639.20	-4.0	H	3.0	42.4	1.0	-45.4	-13.0	-32.4			
GSM GSM1900 EGPRS	Company: Samsung Project #: 4788312331 Date: 2018-02-02 Test Engineer: 45585 Configuration: EUT / Adapter / Earphone, X-Position Location: Chamber 1 Mode: EGPRS 1900 MHz Harmonics										
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	
	Low Ch, 1850.2MHz										
	3700.40	2.3	V	3.0	43.8	1.0	-40.5	-13.0	-27.5		
	5550.60	-5.8	V	3.0	43.7	1.0	-48.5	-13.0	-35.5		
	7400.80	-4.3	V	3.0	42.5	1.0	-45.8	-13.0	-32.8		
	3700.40	2.5	H	3.0	43.8	1.0	-40.3	-13.0	-27.3		
	5550.60	-6.1	H	3.0	43.7	1.0	-48.8	-13.0	-35.8		
	7400.80	-4.5	H	3.0	42.5	1.0	-46.0	-13.0	-33.0		
	Mid Ch, 1880MHz										
	3760.00	2.3	V	3.0	43.8	1.0	-40.5	-13.0	-27.5		
	5640.00	-4.6	V	3.0	43.7	1.0	-47.3	-13.0	-34.3		
	7520.00	-3.7	V	3.0	42.5	1.0	-45.2	-13.0	-32.2		
	3760.00	1.2	H	3.0	43.8	1.0	-41.5	-13.0	-28.5		
	5640.00	-5.6	H	3.0	43.7	1.0	-48.3	-13.0	-35.3		
	7520.00	-4.0	H	3.0	42.5	1.0	-45.5	-13.0	-32.5		
	High Ch, 1909.8MHz										
	3819.60	-1.6	V	3.0	43.8	1.0	-44.4	-13.0	-31.4		
	5729.40	-4.5	V	3.0	43.7	1.0	-47.2	-13.0	-34.2		
	7639.20	-4.6	V	3.0	42.4	1.0	-46.0	-13.0	-33.0		
3819.60	-2.0	H	3.0	43.8	1.0	-44.8	-13.0	-31.8			
5729.40	-4.3	H	3.0	43.7	1.0	-47.0	-13.0	-34.0			
7639.20	-3.9	H	3.0	42.4	1.0	-45.2	-13.0	-32.2			

WCDMA Band 5

		UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
WCDMA Band 5 REL99	Company: Samsung Project #: 4788312331 Date: 2018-01-25 Test Engineer: 47989 Configuration: EUT / AC Adapter / Earphone, Z Position Location: Chamber 2 Mode: Rel99 Band 5 Harmonics										
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	
	Low Ch, 826.4MHz										
	1652.80	-14.9	V	3.0	38.2	1.0	-52.2	-13.0	-39.2		
	2479.20	-13.8	V	3.0	38.8	1.0	-51.7	-13.0	-38.7		
	3305.60	-13.8	V	3.0	39.4	1.0	-52.2	-13.0	-39.2		
	1652.80	-15.8	H	3.0	38.2	1.0	-53.0	-13.0	-40.0		
	2479.20	-13.2	H	3.0	38.8	1.0	-51.0	-13.0	-38.0		
	3305.60	-14.2	H	3.0	39.4	1.0	-52.6	-13.0	-39.6		
	Mid Ch, 836.6MHz										
	1673.20	-15.0	V	3.0	38.2	1.0	-52.2	-13.0	-39.2		
	2509.80	-13.8	V	3.0	38.8	1.0	-51.7	-13.0	-38.7		
	3346.40	-14.1	V	3.0	39.5	1.0	-52.6	-13.0	-39.6		
	1673.20	-14.3	H	3.0	38.2	1.0	-51.5	-13.0	-38.5		
	2509.80	-15.1	H	3.0	38.8	1.0	-53.0	-13.0	-40.0		
	3346.40	-14.4	H	3.0	39.5	1.0	-52.8	-13.0	-39.8		
	High Ch, 846.6MHz										
	1693.20	-13.4	V	3.0	38.2	1.0	-50.7	-13.0	-37.7		
	2539.80	-14.2	V	3.0	38.9	1.0	-52.1	-13.0	-39.1		
	3386.40	-13.1	V	3.0	39.5	1.0	-51.6	-13.0	-38.6		
	1693.20	-13.6	H	3.0	38.2	1.0	-50.8	-13.0	-37.8		
	2539.80	-15.0	H	3.0	38.9	1.0	-52.8	-13.0	-39.8		
	3386.40	-13.9	H	3.0	39.5	1.0	-52.4	-13.0	-39.4		
	WCDMA Band 5 HSDPA	Company: Samsung Project #: 4788312331 Date: 2018-01-25 Test Engineer: 47989 Configuration: EUT / AC Adapter / Earphone, Z Position Location: Chamber 2 Mode: HSDPA Band 5 Harmonics									
f MHz		SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	
Low Ch, 826.4MHz											
1652.80		-15.4	V	3.0	38.2	1.0	-52.6	-13.0	-39.6		
2479.20		-14.2	V	3.0	38.8	1.0	-52.0	-13.0	-39.0		
3305.60		-13.8	V	3.0	39.4	1.0	-52.3	-13.0	-39.3		
1652.80		-16.3	H	3.0	38.2	1.0	-53.5	-13.0	-40.5		
2479.20		-13.0	H	3.0	38.8	1.0	-50.9	-13.0	-37.9		
3305.60		-14.2	H	3.0	39.4	1.0	-52.6	-13.0	-39.6		
Mid Ch, 836.6MHz											
1673.20		-15.2	V	3.0	38.2	1.0	-52.4	-13.0	-39.4		
2509.80		-14.5	V	3.0	38.8	1.0	-52.3	-13.0	-39.3		
3346.40		-14.2	V	3.0	39.5	1.0	-52.7	-13.0	-39.7		
1673.20		-13.9	H	3.0	38.2	1.0	-51.2	-13.0	-38.2		
2509.80		-15.6	H	3.0	38.8	1.0	-53.5	-13.0	-40.5		
3346.40		-14.5	H	3.0	39.5	1.0	-53.0	-13.0	-40.0		
High Ch, 846.6MHz											
1693.20		-14.3	V	3.0	38.2	1.0	-51.5	-13.0	-38.5		
2539.80		-14.2	V	3.0	38.9	1.0	-52.1	-13.0	-39.1		
3386.40		-13.8	V	3.0	39.5	1.0	-52.3	-13.0	-39.3		
1693.20		-13.9	H	3.0	38.2	1.0	-51.1	-13.0	-38.1		
2539.80		-15.3	H	3.0	38.9	1.0	-53.2	-13.0	-40.2		
3386.40		-13.9	H	3.0	39.5	1.0	-52.4	-13.0	-39.4		

WCDMA Band 4

		UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement										
WCDMA Band 4 REL99	Company:		Samsung									
	Project #:		4788312331									
	Date:		2018-01-26									
	Test Engineer:		47989									
	Configuration:		EUT / AC Adapter / Earphone, XPosition									
	Location:		Chamber 2									
	Mode:		Rel99 Band 4 Harmonics									
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes		
	Low Ch, 1712.4MHz											
	3424.80	-9.2	V	3.0	39.5	1.0	-47.7	-13.0	-34.7			
	5137.20	-11.2	V	3.0	39.8	1.0	-50.0	-13.0	-37.0			
	6849.60	-6.9	V	3.0	39.7	1.0	-45.6	-13.0	-32.6			
	3424.80	-8.0	H	3.0	39.5	1.0	-46.5	-13.0	-33.5			
	5137.20	-11.6	H	3.0	39.8	1.0	-50.4	-13.0	-37.4			
	6849.60	-8.4	H	3.0	39.7	1.0	-47.1	-13.0	-34.1			
	Mid Ch, 1732.6MHz											
	3465.20	-9.8	V	3.0	39.5	1.0	-48.3	-13.0	-35.3			
	5197.80	-10.9	V	3.0	39.8	1.0	-49.8	-13.0	-36.8			
	6930.40	-8.1	V	3.0	39.7	1.0	-46.7	-13.0	-33.7			
	3465.20	-9.3	H	3.0	39.5	1.0	-47.8	-13.0	-34.8			
	5197.80	-11.0	H	3.0	39.8	1.0	-49.8	-13.0	-36.8			
	6930.40	-7.4	H	3.0	39.7	1.0	-46.0	-13.0	-33.0			
	High Ch, 1752.6MHz											
	3505.20	-11.1	V	3.0	39.5	1.0	-49.7	-13.0	-36.7			
	5257.80	-11.2	V	3.0	39.8	1.0	-50.1	-13.0	-37.1			
7010.40	-5.9	V	3.0	39.6	1.0	-44.5	-13.0	-31.5				
3505.20	-10.8	H	3.0	39.5	1.0	-49.3	-13.0	-36.3				
5257.80	-11.7	H	3.0	39.8	1.0	-50.5	-13.0	-37.5				
7010.40	-7.1	H	3.0	39.6	1.0	-45.8	-13.0	-32.8				
UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement												
Company:		Samsung										
Project #:		4788312331										
Date:		2018-01-26										
Test Engineer:		47989										
Configuration:		EUT / AC Adapter / Earphone, XPosition										
Location:		Chamber 2										
Mode:		HSDPA Band 4 Harmonics										
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes			
Low Ch, 1712.4MHz												
3424.80	-9.7	V	3.0	39.5	1.0	-48.2	-13.0	-35.2				
5137.20	-11.2	V	3.0	39.8	1.0	-50.0	-13.0	-37.0				
6849.60	-7.4	V	3.0	39.7	1.0	-46.1	-13.0	-33.1				
3424.80	-7.1	H	3.0	39.5	1.0	-45.6	-13.0	-32.6				
5137.20	-11.3	H	3.0	39.8	1.0	-50.1	-13.0	-37.1				
6849.60	-8.9	H	3.0	39.7	1.0	-47.5	-13.0	-34.5				
Mid Ch, 1732.6MHz												
3465.20	-10.5	V	3.0	39.5	1.0	-49.0	-13.0	-36.0				
5197.80	-11.1	V	3.0	39.8	1.0	-49.9	-13.0	-36.9				
6930.40	-8.4	V	3.0	39.7	1.0	-47.1	-13.0	-34.1				
3465.20	-9.5	H	3.0	39.5	1.0	-48.0	-13.0	-35.0				
5197.80	-11.2	H	3.0	39.8	1.0	-50.0	-13.0	-37.0				
6930.40	-8.2	H	3.0	39.7	1.0	-46.8	-13.0	-33.8				
High Ch, 1752.6MHz												
3505.20	-11.6	V	3.0	39.5	1.0	-50.1	-13.0	-37.1				
5257.80	-11.5	V	3.0	39.8	1.0	-50.4	-13.0	-37.4				
7010.40	-6.4	V	3.0	39.6	1.0	-45.0	-13.0	-32.0				
3505.20	-11.4	H	3.0	39.5	1.0	-49.9	-13.0	-36.9				
5257.80	-11.2	H	3.0	39.8	1.0	-50.1	-13.0	-37.1				
7010.40	-7.2	H	3.0	39.6	1.0	-45.8	-13.0	-32.8				

WCDMA Band 2

		UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
		f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
WCDMA Band 2 REL99	Company: Samsung Project #: 4788312331 Date: 2018-01-30 Test Engineer: 47989 Configuration: EUT / AC Adapter / Earphone, XPosition Location: Chamber 2 Mode: Rel99 Band 2 Harmonics										
	Low Ch, 1852.4MHz 3704.80 -8.5 V 3.0 39.7 1.0 -47.2 -13.0 -34.2 5557.20 -10.6 V 3.0 39.9 1.0 -49.5 -13.0 -36.5 7409.60 -7.8 V 3.0 39.4 1.0 -46.3 -13.0 -33.3 3704.80 -6.9 H 3.0 39.7 1.0 -45.5 -13.0 -32.5 5557.20 -10.8 H 3.0 39.9 1.0 -49.7 -13.0 -36.7 7409.60 -7.2 H 3.0 39.4 1.0 -45.6 -13.0 -32.6										
	Mid Ch, 1880MHz 3760.00 -3.7 V 3.0 39.7 1.0 -42.4 -13.0 -29.4 5640.00 -11.0 V 3.0 40.0 1.0 -49.9 -13.0 -36.9 7520.00 -8.8 V 3.0 39.4 1.0 -47.2 -13.0 -34.2 3760.00 -6.5 H 3.0 39.7 1.0 -45.1 -13.0 -32.1 5640.00 -10.7 H 3.0 40.0 1.0 -49.7 -13.0 -36.7 7520.00 -8.0 H 3.0 39.4 1.0 -46.4 -13.0 -33.4										
	High Ch, 1907.6MHz 3815.20 -6.9 V 3.0 39.7 1.0 -45.6 -13.0 -32.6 5722.80 -10.3 V 3.0 40.0 1.0 -49.3 -13.0 -36.3 7630.40 -6.4 V 3.0 39.3 1.0 -44.7 -13.0 -31.7 3815.20 -7.3 H 3.0 39.7 1.0 -46.0 -13.0 -33.0 5722.80 -10.7 H 3.0 40.0 1.0 -49.7 -13.0 -36.7 7630.40 -7.7 H 3.0 39.3 1.0 -46.1 -13.0 -33.1										
	WCDMA Band 2 HSDPA	Company: Samsung Project #: 4788312331 Date: 2018-01-30 Test Engineer: 47989 Configuration: EUT / AC Adapter / Earphone, XPosition Location: Chamber 2 Mode: HSDPA Band 2 Harmonics									
		Low Ch, 1852.4MHz 3704.80 -8.6 V 3.0 39.7 1.0 -47.3 -13.0 -34.3 5557.20 -10.7 V 3.0 39.9 1.0 -49.7 -13.0 -36.7 7409.60 -8.0 V 3.0 39.4 1.0 -46.4 -13.0 -33.4 3704.80 -6.4 H 3.0 39.7 1.0 -45.0 -13.0 -32.0 5557.20 -10.9 H 3.0 39.9 1.0 -49.8 -13.0 -36.8 7409.60 -7.3 H 3.0 39.4 1.0 -45.7 -13.0 -32.7									
		Mid Ch, 1880MHz 3760.00 -3.9 V 3.0 39.7 1.0 -42.6 -13.0 -29.6 5640.00 -11.2 V 3.0 40.0 1.0 -50.2 -13.0 -37.2 7520.00 -8.9 V 3.0 39.4 1.0 -47.3 -13.0 -34.3 3760.00 -6.6 H 3.0 39.7 1.0 -45.3 -13.0 -32.3 5640.00 -10.5 H 3.0 40.0 1.0 -49.4 -13.0 -36.4 7520.00 -8.1 H 3.0 39.4 1.0 -46.5 -13.0 -33.5									
		High Ch, 1907.6MHz 3815.20 -6.5 V 3.0 39.7 1.0 -45.2 -13.0 -32.2 5722.80 -10.7 V 3.0 40.0 1.0 -49.6 -13.0 -36.6 7630.40 -6.9 V 3.0 39.3 1.0 -45.2 -13.0 -32.2 3815.20 -7.0 H 3.0 39.7 1.0 -45.7 -13.0 -32.7 5722.80 -10.9 H 3.0 40.0 1.0 -49.8 -13.0 -36.8 7630.40 -8.1 H 3.0 39.3 1.0 -46.4 -13.0 -33.4									

		UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement										
LTE Band 17 5MHz QPSK	Company: Samsung Project #: 4788312331 Date: 2018-01-29 Test Engineer: 47989 Configuration: EUT / AC Adapter / Earphone, Z Position Location: Chamber 2 Mode: LTE_QPSK Band 17 Harmonics, 5MHz Bandwidth											
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes		
	Low Ch, 706.5MHz											
	1413.00	-8.6	V	3.0	38.1	1.0	-45.7	-13.0	-32.7			
	2119.50	-13.5	V	3.0	38.5	1.0	-51.0	-13.0	-38.0			
	2826.00	-14.8	V	3.0	39.1	1.0	-52.9	-13.0	-39.9			
	1413.00	-11.6	H	3.0	38.1	1.0	-48.7	-13.0	-35.7			
	2119.50	-16.4	H	3.0	38.5	1.0	-53.9	-13.0	-40.9			
	2826.00	-15.1	H	3.0	39.1	1.0	-53.2	-13.0	-40.2			
	Mid Ch, 710MHz											
	1420.00	-8.1	V	3.0	38.1	1.0	-45.2	-13.0	-32.2			
	2130.00	-13.3	V	3.0	38.5	1.0	-50.8	-13.0	-37.8			
	2840.00	-14.7	V	3.0	39.1	1.0	-52.8	-13.0	-39.8			
	1420.00	-8.0	H	3.0	38.1	1.0	-45.2	-13.0	-32.2			
	2130.00	-13.4	H	3.0	38.5	1.0	-50.9	-13.0	-37.9			
	2840.00	-13.9	H	3.0	39.1	1.0	-52.0	-13.0	-39.0			
	High Ch, 713.5MHz											
	1427.00	-8.1	V	3.0	38.1	1.0	-45.2	-13.0	-32.2			
	2140.50	-14.7	V	3.0	38.5	1.0	-52.2	-13.0	-39.2			
	2854.00	-15.5	V	3.0	39.1	1.0	-53.6	-13.0	-40.6			
	1427.00	-8.0	H	3.0	38.1	1.0	-45.1	-13.0	-32.1			
	2140.50	-15.4	H	3.0	38.5	1.0	-52.9	-13.0	-39.9			
	2854.00	-14.6	H	3.0	39.1	1.0	-52.7	-13.0	-39.7			
			UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
	LTE Band 17 5MHz 16QAM	Company: Samsung Project #: 4788312331 Date: 2018-01-29 Test Engineer: 47989 Configuration: EUT / AC Adapter / Earphone, Z Position Location: Chamber 2 Mode: LTE_16QAM Band 17 Harmonics, 5MHz Bandwidth										
		f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	
		Low Ch, 706.5MHz										
		1413.00	-8.7	V	3.0	38.1	1.0	-45.9	-13.0	-32.9		
2119.50		-14.2	V	3.0	38.5	1.0	-51.7	-13.0	-38.7			
2826.00		-14.5	V	3.0	39.1	1.0	-52.6	-13.0	-39.6			
1413.00		-11.8	H	3.0	38.1	1.0	-48.9	-13.0	-35.9			
2119.50		-16.8	H	3.0	38.5	1.0	-54.3	-13.0	-41.3			
2826.00		-15.5	H	3.0	39.1	1.0	-53.6	-13.0	-40.6			
Mid Ch, 710MHz												
1420.00		-8.1	V	3.0	38.1	1.0	-45.2	-13.0	-32.2			
2130.00		-14.3	V	3.0	38.5	1.0	-51.8	-13.0	-38.8			
2840.00		-14.6	V	3.0	39.1	1.0	-52.7	-13.0	-39.7			
1420.00		-7.4	H	3.0	38.1	1.0	-44.5	-13.0	-31.5			
2130.00		-15.0	H	3.0	38.5	1.0	-52.5	-13.0	-39.5			
2840.00		-12.9	H	3.0	39.1	1.0	-51.0	-13.0	-38.0			
High Ch, 713.5MHz												
1427.00		-7.3	V	3.0	38.1	1.0	-44.4	-13.0	-31.4			
2140.50		-14.9	V	3.0	38.5	1.0	-52.5	-13.0	-39.5			
2854.00		-15.1	V	3.0	39.1	1.0	-53.2	-13.0	-40.2			
1427.00		-8.8	H	3.0	38.1	1.0	-45.9	-13.0	-32.9			
2140.50		-15.5	H	3.0	38.5	1.0	-53.0	-13.0	-40.0			
2854.00		-14.7	H	3.0	39.1	1.0	-52.8	-13.0	-39.8			

LTE Band 5

		UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement										
LTE Band 5 10MHz QPSK	Company: Samsung Project #: 4788312331 Date: 2018-01-31 Test Engineer: 47989 Configuration: EUT / AC Adapter / Earphone, Z Position Location: Chamber 2 Mode: LTE_QPSK Band 5 Harmonics, 10MHz Bandwidth											
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes		
	Low Ch, 829MHz											
	1658.00	-15.3	V	3.0	38.2	1.0	-52.6	-13.0	-39.6			
	2487.00	-8.2	V	3.0	38.8	1.0	-46.0	-13.0	-33.0			
	3316.00	-14.2	V	3.0	39.4	1.0	-52.7	-13.0	-39.7			
	1658.00	-14.0	H	3.0	38.2	1.0	-51.2	-13.0	-38.2			
	2487.00	-8.7	H	3.0	38.8	1.0	-46.5	-13.0	-33.5			
	3316.00	-14.4	H	3.0	39.4	1.0	-52.8	-13.0	-39.8			
	Mid Ch, 836.5MHz											
	1673.00	-12.6	V	3.0	38.2	1.0	-49.8	-13.0	-36.8			
	2509.50	-13.2	V	3.0	38.8	1.0	-51.0	-13.0	-38.0			
	3346.00	-14.7	V	3.0	39.5	1.0	-53.1	-13.0	-40.1			
	1673.00	-10.4	H	3.0	38.2	1.0	-47.6	-13.0	-34.6			
	2509.50	-12.9	H	3.0	38.8	1.0	-50.8	-13.0	-37.8			
	3346.00	-13.5	H	3.0	39.5	1.0	-52.0	-13.0	-39.0			
	High Ch, 844MHz											
	1688.00	-8.4	V	3.0	38.2	1.0	-45.6	-13.0	-32.6			
	2532.00	-13.1	V	3.0	38.9	1.0	-50.9	-13.0	-37.9			
	3376.00	-14.3	V	3.0	39.5	1.0	-52.8	-13.0	-39.8			
	1688.00	-9.0	H	3.0	38.2	1.0	-46.2	-13.0	-33.2			
	2532.00	-13.0	H	3.0	38.9	1.0	-50.8	-13.0	-37.8			
	3376.00	-14.7	H	3.0	39.5	1.0	-53.2	-13.0	-40.2			
	LTE Band 5 10MHz 16QAM	Company: Samsung Project #: 4788312331 Date: 2018-01-31 Test Engineer: 47989 Configuration: EUT / AC Adapter / Earphone, Z Position Location: Chamber 2 Mode: LTE_16QAM Band 5 Harmonics, 10MHz Bandwidth										
f MHz		SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes		
Low Ch, 829MHz												
1658.00		-15.1	V	3.0	38.2	1.0	-52.4	-13.0	-39.4			
2487.00		-8.9	V	3.0	38.8	1.0	-46.7	-13.0	-33.7			
3316.00		-14.3	V	3.0	39.4	1.0	-52.8	-13.0	-39.8			
1658.00		-14.2	H	3.0	38.2	1.0	-51.4	-13.0	-38.4			
2487.00		-8.4	H	3.0	38.8	1.0	-46.2	-13.0	-33.2			
3316.00		-14.9	H	3.0	39.4	1.0	-53.4	-13.0	-40.4			
Mid Ch, 836.5MHz												
1673.00		-12.9	V	3.0	38.2	1.0	-50.1	-13.0	-37.1			
2509.50		-13.9	V	3.0	38.8	1.0	-51.7	-13.0	-38.7			
3346.00		-14.7	V	3.0	39.5	1.0	-53.1	-13.0	-40.1			
1673.00		-10.3	H	3.0	38.2	1.0	-47.6	-13.0	-34.6			
2509.50		-12.9	H	3.0	38.8	1.0	-50.8	-13.0	-37.8			
3346.00		-14.1	H	3.0	39.5	1.0	-52.5	-13.0	-39.5			
High Ch, 844MHz												
1688.00		-8.8	V	3.0	38.2	1.0	-46.0	-13.0	-33.0			
2532.00		-13.2	V	3.0	38.9	1.0	-51.1	-13.0	-38.1			
3376.00		-14.8	V	3.0	39.5	1.0	-53.3	-13.0	-40.3			
1688.00		-9.4	H	3.0	38.2	1.0	-46.6	-13.0	-33.6			
2532.00		-12.8	H	3.0	38.9	1.0	-50.7	-13.0	-37.7			
3376.00		-15.0	H	3.0	39.5	1.0	-53.4	-13.0	-40.4			

		UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement										
		Company: Samsung Project #: 4788312331 Date: 2018-01-31 Test Engineer: 47989 Configuration: EUT / AC Adapter / Earphone, Z Position Location: Chamber 2 Mode: LTE_QPSK Band 5 Harmonics, 5MHz Bandwidth										
LTE Band 5 5MHz QPSK		f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	
	Low Ch, 826.5MHz											
		1653.00	-11.7	V	3.0	38.2	1.0	-48.9	-13.0	-35.9		
		2479.50	-10.2	V	3.0	38.8	1.0	-48.0	-13.0	-35.0		
		3306.00	-14.1	V	3.0	39.4	1.0	-52.6	-13.0	-39.6		
		1653.00	-11.1	H	3.0	38.2	1.0	-48.3	-13.0	-35.3		
		2479.50	-13.7	H	3.0	38.8	1.0	-51.5	-13.0	-38.5		
		3306.00	0.0	H	3.0	39.4	1.0	-38.4	-13.0	-25.4		
	Mid Ch, 836.5MHz											
		1673.00	-11.4	V	3.0	38.2	1.0	-48.7	-13.0	-35.7		
		2509.50	-12.0	V	3.0	38.8	1.0	-49.9	-13.0	-36.9		
		3346.00	-13.1	V	3.0	39.5	1.0	-51.6	-13.0	-38.6		
		1673.00	-9.2	H	3.0	38.2	1.0	-46.4	-13.0	-33.4		
		2509.50	-13.1	H	3.0	38.8	1.0	-51.0	-13.0	-38.0		
		3346.00	-14.5	H	3.0	39.5	1.0	-53.0	-13.0	-40.0		
	High Ch, 846.5MHz											
		1693.00	-10.6	V	3.0	38.2	1.0	-47.8	-13.0	-34.8		
		2539.50	-12.4	V	3.0	38.9	1.0	-50.3	-13.0	-37.3		
		3386.00	-13.4	V	3.0	39.5	1.0	-51.9	-13.0	-38.9		
		1693.00	-10.2	H	3.0	38.2	1.0	-47.5	-13.0	-34.5		
		2539.50	-11.8	H	3.0	38.9	1.0	-49.6	-13.0	-36.6		
		3386.00	-14.9	H	3.0	39.5	1.0	-53.4	-13.0	-40.4		
			UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
			Company: Samsung Project #: 4788312331 Date: 2018-01-31 Test Engineer: 47989 Configuration: EUT / AC Adapter / Earphone, Z Position Location: Chamber 2 Mode: LTE_16QAM Band 5 Harmonics, 5MHz Bandwidth									
	LTE Band 5 5MHz 16QAM		f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
		Low Ch, 826.5MHz										
			1653.00	-13.1	V	3.0	38.2	1.0	-50.3	-13.0	-37.3	
		2479.50	-11.0	V	3.0	38.8	1.0	-48.8	-13.0	-35.8		
		3306.00	-14.3	V	3.0	39.4	1.0	-52.7	-13.0	-39.7		
		1653.00	-11.7	H	3.0	38.2	1.0	-48.9	-13.0	-35.9		
		2479.50	-13.3	H	3.0	38.8	1.0	-51.1	-13.0	-38.1		
		3306.00	-14.0	H	3.0	39.4	1.0	-52.4	-13.0	-39.4		
Mid Ch, 836.5MHz												
		1673.00	-12.6	V	3.0	38.2	1.0	-49.9	-13.0	-36.9		
		2509.50	-13.1	V	3.0	38.8	1.0	-50.9	-13.0	-37.9		
		3346.00	-13.4	V	3.0	39.5	1.0	-51.9	-13.0	-38.9		
		1673.00	-9.4	H	3.0	38.2	1.0	-46.6	-13.0	-33.6		
		2509.50	-13.6	H	3.0	38.8	1.0	-51.4	-13.0	-38.4		
		3346.00	-14.4	H	3.0	39.5	1.0	-52.8	-13.0	-39.8		
High Ch, 846.5MHz												
		1693.00	-11.2	V	3.0	38.2	1.0	-48.4	-13.0	-35.4		
		2539.50	-12.4	V	3.0	38.9	1.0	-50.3	-13.0	-37.3		
		3386.00	-13.8	V	3.0	39.5	1.0	-52.3	-13.0	-39.3		
		1693.00	-10.2	H	3.0	38.2	1.0	-47.5	-13.0	-34.5		
		2539.50	-12.2	H	3.0	38.9	1.0	-50.0	-13.0	-37.0		
		3386.00	-14.7	H	3.0	39.5	1.0	-53.2	-13.0	-40.2		

		UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
LTE Band 5 3MHz QPSK	Company: Samsung Project #: 4788312331 Date: 2018-01-30 Test Engineer: 47989 Configuration: EUT / AC Adapter / Earphone, Z Position Location: Chamber 2 Mode: LTE_QPSK Band 5 Hamonics, 3MHz Bandwidth										
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	
	Low Ch, 825.5MHz										
	1651.00	-11.9	V	3.0	38.2	1.0	-49.1	-13.0	-36.1		
	2476.50	-10.1	V	3.0	38.8	1.0	-47.9	-13.0	-34.9		
	3302.00	-13.6	V	3.0	39.4	1.0	-52.0	-13.0	-39.0		
	1651.00	-9.1	H	3.0	38.2	1.0	-46.3	-13.0	-33.3		
	2476.50	-13.4	H	3.0	38.8	1.0	-51.2	-13.0	-38.2		
	3302.00	-13.9	H	3.0	39.4	1.0	-52.3	-13.0	-39.3		
	Mid Ch, 836.5MHz										
	1673.00	-12.5	V	3.0	38.2	1.0	-49.7	-13.0	-36.7		
	2509.50	-12.7	V	3.0	38.8	1.0	-50.6	-13.0	-37.6		
	3346.00	-14.2	V	3.0	39.5	1.0	-52.6	-13.0	-39.6		
	1673.00	-11.3	H	3.0	38.2	1.0	-48.5	-13.0	-35.5		
	2509.50	-14.8	H	3.0	38.8	1.0	-52.7	-13.0	-39.7		
	3346.00	-14.8	H	3.0	39.5	1.0	-53.2	-13.0	-40.2		
	High Ch, 847.5MHz										
	1695.00	-7.1	V	3.0	38.2	1.0	-44.3	-13.0	-31.3		
	2542.50	-9.9	V	3.0	38.9	1.0	-47.7	-13.0	-34.7		
	3390.00	-13.5	V	3.0	39.5	1.0	-52.0	-13.0	-39.0		
1695.00	-6.5	H	3.0	38.2	1.0	-43.8	-13.0	-30.8			
2542.50	-13.9	H	3.0	38.9	1.0	-51.7	-13.0	-38.7			
3390.00	-13.2	H	3.0	39.5	1.0	-51.7	-13.0	-38.7			
LTE Band 5 3MHz 16QAM	Company: Samsung Project #: 4788312331 Date: 2018-01-30 Test Engineer: 47989 Configuration: EUT / AC Adapter / Earphone, Z Position Location: Chamber 2 Mode: LTE_16QAM Band 5 Hamonics, 3MHz Bandwidth										
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	
	Low Ch, 825.5MHz										
	1651.00	-11.9	V	3.0	38.2	1.0	-49.1	-13.0	-36.1		
	2476.50	-10.7	V	3.0	38.8	1.0	-48.5	-13.0	-35.5		
	3302.00	-13.7	V	3.0	39.4	1.0	-52.1	-13.0	-39.1		
	1651.00	-9.2	H	3.0	38.2	1.0	-46.4	-13.0	-33.4		
	2476.50	-13.6	H	3.0	38.8	1.0	-51.4	-13.0	-38.4		
	3302.00	-14.2	H	3.0	39.4	1.0	-52.6	-13.0	-39.6		
	Mid Ch, 836.5MHz										
	1673.00	-13.2	V	3.0	38.2	1.0	-50.4	-13.0	-37.4		
	2509.50	-12.7	V	3.0	38.8	1.0	-50.5	-13.0	-37.5		
	3346.00	-13.3	V	3.0	39.5	1.0	-51.7	-13.0	-38.7		
	1673.00	-12.1	H	3.0	38.2	1.0	-49.3	-13.0	-36.3		
	2509.50	-15.1	H	3.0	38.8	1.0	-53.0	-13.0	-40.0		
	3346.00	-14.9	H	3.0	39.5	1.0	-53.3	-13.0	-40.3		
	High Ch, 847.5MHz										
	1695.00	-6.9	V	3.0	38.2	1.0	-44.2	-13.0	-31.2		
	2542.50	-10.1	V	3.0	38.9	1.0	-47.9	-13.0	-34.9		
	3390.00	-14.1	V	3.0	39.5	1.0	-52.6	-13.0	-39.6		
1695.00	-7.5	H	3.0	38.2	1.0	-44.8	-13.0	-31.8			
2542.50	-14.2	H	3.0	38.9	1.0	-52.1	-13.0	-39.1			
3390.00	-13.3	H	3.0	39.5	1.0	-51.8	-13.0	-38.8			

		UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
LTE Band 5 1.4MHz QPSK	Company: Samsung Project #: 4788312331 Date: 2018-01-30 Test Engineer: 47989 Configuration: EUT / AC Adapter / Earphone, Z Position Location: Chamber 2 Mode: LTE_QPSK Band 5 Hamonics, 1.4MHz Bandwidth										
	f (MHz)	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	
	Low Ch, 824.7MHz										
	1649.40	-14.6	V	3.0	38.2	1.0	-51.8	-13.0	-38.8		
	2474.10	-11.7	V	3.0	38.8	1.0	-49.5	-13.0	-36.5		
	3298.80	-14.4	V	3.0	39.4	1.0	-52.8	-13.0	-39.8		
	1649.40	-15.3	H	3.0	38.2	1.0	-52.5	-13.0	-39.5		
	2474.10	-13.4	H	3.0	38.8	1.0	-51.2	-13.0	-38.2		
	3298.80	-14.1	H	3.0	39.4	1.0	-52.5	-13.0	-39.5		
	Mid Ch, 836.5MHz										
	1673.00	-11.2	V	3.0	38.2	1.0	-48.4	-13.0	-35.4		
	2509.50	-11.9	V	3.0	38.8	1.0	-49.7	-13.0	-36.7		
	3346.00	-13.9	V	3.0	39.5	1.0	-52.4	-13.0	-39.4		
	1673.00	-12.0	H	3.0	38.2	1.0	-49.2	-13.0	-36.2		
	2509.50	-14.5	H	3.0	38.8	1.0	-52.3	-13.0	-39.3		
	3346.00	-13.5	H	3.0	39.5	1.0	-52.0	-13.0	-39.0		
	High Ch, 848.3MHz										
	1696.60	-7.9	V	3.0	38.2	1.0	-45.1	-13.0	-32.1		
	2544.90	-8.6	V	3.0	38.9	1.0	-46.5	-13.0	-33.5		
	3393.20	-13.6	V	3.0	39.5	1.0	-52.1	-13.0	-39.1		
1696.60	-6.8	H	3.0	38.2	1.0	-44.0	-13.0	-31.0			
2544.90	-10.8	H	3.0	38.9	1.0	-48.6	-13.0	-35.6			
3393.20	-13.9	H	3.0	39.5	1.0	-52.4	-13.0	-39.4			
		UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
LTE Band 5 1.4MHz 16QAM	Company: Samsung Project #: 4788312331 Date: 2018-01-30 Test Engineer: 47989 Configuration: EUT / AC Adapter / Earphone, Z Position Location: Chamber 2 Mode: LTE_16QAM Band 5 Hamonics, 1.4MHz Bandwidth										
	f (MHz)	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	
	Low Ch, 824.7MHz										
	1649.40	-15.1	V	3.0	38.2	1.0	-52.3	-13.0	-39.3		
	2474.10	-11.1	V	3.0	38.8	1.0	-48.9	-13.0	-35.9		
	3298.80	-14.3	V	3.0	39.4	1.0	-52.7	-13.0	-39.7		
	1649.40	-16.1	H	3.0	38.2	1.0	-53.4	-13.0	-40.4		
	2474.10	-13.4	H	3.0	38.8	1.0	-51.2	-13.0	-38.2		
	3298.80	-14.0	H	3.0	39.4	1.0	-52.4	-13.0	-39.4		
	Mid Ch, 836.5MHz										
	1673.00	-11.1	V	3.0	38.2	1.0	-48.3	-13.0	-35.3		
	2509.50	-12.3	V	3.0	38.8	1.0	-50.2	-13.0	-37.2		
	3346.00	-13.2	V	3.0	39.5	1.0	-51.7	-13.0	-38.7		
	1673.00	-12.2	H	3.0	38.2	1.0	-49.5	-13.0	-36.5		
	2509.50	-14.5	H	3.0	38.8	1.0	-52.3	-13.0	-39.3		
	3346.00	-13.8	H	3.0	39.5	1.0	-52.2	-13.0	-39.2		
	High Ch, 848.3MHz										
	1696.60	-8.6	V	3.0	38.2	1.0	-45.8	-13.0	-32.8		
	2544.90	-8.3	V	3.0	38.9	1.0	-46.1	-13.0	-33.1		
	3393.20	-13.8	V	3.0	39.5	1.0	-52.2	-13.0	-39.2		
1696.60	-6.8	H	3.0	38.2	1.0	-44.1	-13.0	-31.1			
2544.90	-10.3	H	3.0	38.9	1.0	-48.1	-13.0	-35.1			
3393.20	-13.9	H	3.0	39.5	1.0	-52.4	-13.0	-39.4			

LTE Band 4

		UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement											
		Company: Samsung Project #: 4788312331 Date: 2018-02-05 Test Engineer: 47989 Configuration: EUT / AC Adapter / Earphone, X Position Location: Chamber 2 Mode: LTE_QPSK Band 4 Harmonics, 20MHz Bandwidth											
		f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes		
LTE Band 4 20MHz QPSK		Low Ch, 1720MHz											
		3440.00	-8.6	V	3.0	39.5	1.0	-47.1	-13.0	-34.1			
		5160.00	-9.6	V	3.0	39.8	1.0	-48.4	-13.0	-35.4			
		6880.00	-4.7	V	3.0	39.7	1.0	-43.4	-13.0	-30.4			
		8600.00	-5.3	V	3.0	39.0	1.0	-43.2	-13.0	-30.2			
		3440.00	-7.0	H	3.0	39.5	1.0	-45.5	-13.0	-32.5			
		5160.00	-10.2	H	3.0	39.8	1.0	-49.1	-13.0	-36.1			
		6880.00	-6.3	H	3.0	39.7	1.0	-45.0	-13.0	-32.0			
		8600.00	-9.0	H	3.0	39.0	1.0	-46.9	-13.0	-33.9			
		Mid Ch, 1732.5MHz											
		3465.00	-9.4	V	3.0	39.5	1.0	-47.9	-13.0	-34.9			
		5197.50	-11.0	V	3.0	39.8	1.0	-49.9	-13.0	-36.9			
		6930.00	-7.6	V	3.0	39.7	1.0	-46.2	-13.0	-33.2			
		8662.50	-6.0	V	3.0	38.9	1.0	-43.9	-13.0	-30.9			
		3465.00	-7.2	H	3.0	39.5	1.0	-45.7	-13.0	-32.7			
		5197.50	-11.3	H	3.0	39.8	1.0	-50.1	-13.0	-37.1			
		6930.00	-7.7	H	3.0	39.7	1.0	-46.4	-13.0	-33.4			
		8662.50	-6.2	H	3.0	38.9	1.0	-44.1	-13.0	-31.1			
		High Ch, 1745MHz											
		3490.00	-9.8	V	3.0	39.5	1.0	-48.3	-13.0	-35.3			
		5235.00	-10.9	V	3.0	39.8	1.0	-49.7	-13.0	-36.7			
		6980.00	-6.7	V	3.0	39.6	1.0	-45.3	-13.0	-32.3			
		8725.00	-3.3	V	3.0	38.9	1.0	-41.2	-13.0	-28.2			
		3490.00	-9.5	H	3.0	39.5	1.0	-48.1	-13.0	-35.1			
		5235.00	-11.7	H	3.0	39.8	1.0	-50.5	-13.0	-37.5			
		6980.00	-7.8	H	3.0	39.6	1.0	-46.4	-13.0	-33.4			
		8725.00	-5.8	H	3.0	38.9	1.0	-43.7	-13.0	-30.7			
				UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
				Company: Samsung Project #: 4788312331 Date: 2018-02-05 Test Engineer: 47989 Configuration: EUT / AC Adapter / Earphone, X Position Location: Chamber 2 Mode: LTE_16QAM Band 4 Harmonics, 20MHz Bandwidth									
				f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
LTE Band 4 20MHz 16QAM		Low Ch, 1720MHz											
		3440.00	-8.1	V	3.0	39.5	1.0	-46.6	-13.0	-33.6			
		5160.00	-9.4	V	3.0	39.8	1.0	-48.2	-13.0	-35.2			
		6880.00	-4.7	V	3.0	39.7	1.0	-43.4	-13.0	-30.4			
		8600.00	-5.3	V	3.0	39.0	1.0	-43.2	-13.0	-30.2			
		3440.00	-8.5	H	3.0	39.5	1.0	-47.0	-13.0	-34.0			
		5160.00	-10.5	H	3.0	39.8	1.0	-49.4	-13.0	-36.4			
		6880.00	-6.5	H	3.0	39.7	1.0	-45.1	-13.0	-32.1			
		8600.00	-9.1	H	3.0	39.0	1.0	-47.1	-13.0	-34.1			
		Mid Ch, 1732.5MHz											
		3465.00	-10.0	V	3.0	39.5	1.0	-48.5	-13.0	-35.5			
		5197.50	-10.2	V	3.0	39.8	1.0	-49.0	-13.0	-36.0			
		6930.00	-7.5	V	3.0	39.7	1.0	-46.2	-13.0	-33.2			
		8662.50	-6.4	V	3.0	38.9	1.0	-44.3	-13.0	-31.3			
		3465.00	-7.3	H	3.0	39.5	1.0	-45.8	-13.0	-32.8			
		5197.50	-11.0	H	3.0	39.8	1.0	-49.9	-13.0	-36.9			
		6930.00	-7.7	H	3.0	39.7	1.0	-46.3	-13.0	-33.3			
		8662.50	-7.0	H	3.0	38.9	1.0	-44.9	-13.0	-31.9			
		High Ch, 1745MHz											
		3490.00	-9.5	V	3.0	39.5	1.0	-48.0	-13.0	-35.0			
		5235.00	-11.2	V	3.0	39.8	1.0	-50.1	-13.0	-37.1			
		6980.00	-6.9	V	3.0	39.6	1.0	-45.5	-13.0	-32.5			
		8725.00	-3.0	V	3.0	38.9	1.0	-40.9	-13.0	-27.9			
		3490.00	-9.4	H	3.0	39.5	1.0	-47.9	-13.0	-34.9			
		5235.00	-12.0	H	3.0	39.8	1.0	-50.8	-13.0	-37.8			
		6980.00	-8.0	H	3.0	39.6	1.0	-46.6	-13.0	-33.6			
		8725.00	-7.0	H	3.0	38.9	1.0	-44.9	-13.0	-31.9			

		UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement											
		Company: Samsung Project #: 4788312331 Date: 2018-02-05 Test Engineer: 47989 Configuration: EUT / AC Adapter / Earphone, X Position Location: Chamber 2 Mode: LTE_QPSK Band 4 Harmonics, 15MHz Bandwidth											
		f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes		
LTE Band 4 15MHz QPSK		Low Ch, 1717.5MHz											
		3435.00	-7.3	V	3.0	39.5	1.0	-45.8	-13.0	-32.8			
		5152.50	-8.9	V	3.0	39.8	1.0	-47.7	-13.0	-34.7			
		6870.00	-2.8	V	3.0	39.7	1.0	-41.5	-13.0	-28.5			
		8587.50	-5.1	V	3.0	39.0	1.0	-43.0	-13.0	-30.0			
		3435.00	-6.9	H	3.0	39.5	1.0	-45.4	-13.0	-32.4			
		5152.50	-10.3	H	3.0	39.8	1.0	-49.2	-13.0	-36.2			
		6870.00	-5.5	H	3.0	39.7	1.0	-44.2	-13.0	-31.2			
		8587.50	-6.4	H	3.0	39.0	1.0	-44.4	-13.0	-31.4			
		Mid Ch, 1732.5MHz											
		3465.00	-8.4	V	3.0	39.5	1.0	-47.0	-13.0	-34.0			
		5197.50	-10.9	V	3.0	39.8	1.0	-49.8	-13.0	-36.8			
		6930.00	-5.6	V	3.0	39.7	1.0	-44.2	-13.0	-31.2			
		8662.50	-6.2	V	3.0	38.9	1.0	-44.1	-13.0	-31.1			
		3465.00	-7.5	H	3.0	39.5	1.0	-46.0	-13.0	-33.0			
		5197.50	-11.2	H	3.0	39.8	1.0	-50.0	-13.0	-37.0			
		6930.00	-6.6	H	3.0	39.7	1.0	-45.2	-13.0	-32.2			
		8662.50	-7.4	H	3.0	38.9	1.0	-45.4	-13.0	-32.4			
		High Ch, 1747.5MHz											
		3495.00	-11.0	V	3.0	39.5	1.0	-49.5	-13.0	-36.5			
		5242.50	-11.2	V	3.0	39.8	1.0	-50.1	-13.0	-37.1			
		6990.00	-4.8	V	3.0	39.6	1.0	-43.4	-13.0	-30.4			
		8737.50	-1.3	V	3.0	38.9	1.0	-39.2	-13.0	-26.2			
		3495.00	-8.5	H	3.0	39.5	1.0	-47.0	-13.0	-34.0			
		5242.50	-12.2	H	3.0	39.8	1.0	-51.1	-13.0	-38.1			
		6990.00	-7.0	H	3.0	39.6	1.0	-45.7	-13.0	-32.7			
		8737.50	-5.5	H	3.0	38.9	1.0	-43.4	-13.0	-30.4			
				UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
				Company: Samsung Project #: 4788312331 Date: 2018-02-05 Test Engineer: 47989 Configuration: EUT / AC Adapter / Earphone, X Position Location: Chamber 2 Mode: LTE_16QAM Band 4 Harmonics, 15MHz Bandwidth									
				f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
LTE Band 4 15MHz 16QAM		Low Ch, 1717.5MHz											
		3435.00	-7.7	V	3.0	39.5	1.0	-46.3	-13.0	-33.3			
		5152.50	-9.7	V	3.0	39.8	1.0	-48.5	-13.0	-35.5			
		6870.00	-2.2	V	3.0	39.7	1.0	-40.9	-13.0	-27.9			
		8587.50	-6.6	V	3.0	39.0	1.0	-44.5	-13.0	-31.5			
		3435.00	-7.1	H	3.0	39.5	1.0	-45.6	-13.0	-32.6			
		5152.50	-10.3	H	3.0	39.8	1.0	-49.1	-13.0	-36.1			
		6870.00	-4.9	H	3.0	39.7	1.0	-43.6	-13.0	-30.6			
		8587.50	-6.6	H	3.0	39.0	1.0	-44.5	-13.0	-31.5			
		Mid Ch, 1732.5MHz											
		3465.00	-8.5	V	3.0	39.5	1.0	-47.1	-13.0	-34.1			
		5197.50	-11.3	V	3.0	39.8	1.0	-50.1	-13.0	-37.1			
		6930.00	-5.2	V	3.0	39.7	1.0	-43.9	-13.0	-30.9			
		8662.50	-7.2	V	3.0	38.9	1.0	-45.1	-13.0	-32.1			
		3465.00	-8.8	H	3.0	39.5	1.0	-47.3	-13.0	-34.3			
		5197.50	-11.5	H	3.0	39.8	1.0	-50.3	-13.0	-37.3			
		6930.00	-7.5	H	3.0	39.7	1.0	-46.1	-13.0	-33.1			
		8662.50	-7.7	H	3.0	38.9	1.0	-45.7	-13.0	-32.7			
		High Ch, 1747.5MHz											
		3495.00	-11.6	V	3.0	39.5	1.0	-50.2	-13.0	-37.2			
		5242.50	-11.4	V	3.0	39.8	1.0	-50.2	-13.0	-37.2			
		6990.00	-6.2	V	3.0	39.6	1.0	-44.8	-13.0	-31.8			
		8737.50	-0.6	V	3.0	38.9	1.0	-38.5	-13.0	-25.5			
		3495.00	-9.2	H	3.0	39.5	1.0	-47.7	-13.0	-34.7			
		5242.50	-12.0	H	3.0	39.8	1.0	-50.9	-13.0	-37.9			
		6990.00	-7.0	H	3.0	39.6	1.0	-45.7	-13.0	-32.7			
		8737.50	-3.4	H	3.0	38.9	1.0	-41.3	-13.0	-28.3			