

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement										
Company: Samsung Project #: 4788371667 Date: 2018-03-15 Test Engineer: 45574 Configuration: EUT / AC Adapter / Earphone, X-Position Location: Chamber 3 Mode: LTE_QPSK Band 66 Harmonics, 10MHz Bandwidth										
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	
Low Ch, 1715MHz										
3430.00	-13.5	V	3.0	41.0	1.0	-53.6	-13.0	-40.6		
5145.00	-13.8	V	3.0	40.1	1.0	-52.9	-13.0	-39.9		
6860.00	-11.3	V	3.0	40.0	1.0	-50.3	-13.0	-37.3		
3430.00	-9.6	H	3.0	41.0	1.0	-49.6	-13.0	-36.6		
5145.00	-15.8	H	3.0	40.1	1.0	-54.9	-13.0	-41.9		
6860.00	-12.7	H	3.0	40.0	1.0	-51.7	-13.0	-38.7		
Mid Ch, 1745MHz										
3490.00	-14.7	V	3.0	41.0	1.0	-54.7	-13.0	-41.7		
5235.00	-11.1	V	3.0	40.1	1.0	-50.2	-13.0	-37.2		
6980.00	-8.5	V	3.0	40.0	1.0	-47.5	-13.0	-34.5		
3490.00	-9.6	H	3.0	41.0	1.0	-49.6	-13.0	-36.6		
5235.00	-15.3	H	3.0	40.1	1.0	-54.4	-13.0	-41.4		
6980.00	-12.3	H	3.0	40.0	1.0	-51.3	-13.0	-38.3		
High Ch, 1775MHz										
3550.00	-15.3	V	3.0	41.0	1.0	-55.2	-13.0	-42.2		
5325.00	-12.1	V	3.0	40.1	1.0	-51.2	-13.0	-38.2		
7100.00	-13.0	V	3.0	40.0	1.0	-52.1	-13.0	-39.1		
3550.00	-11.0	H	3.0	41.0	1.0	-50.9	-13.0	-37.9		
5325.00	-15.4	H	3.0	40.1	1.0	-54.5	-13.0	-41.5		
7100.00	-13.3	H	3.0	40.0	1.0	-52.3	-13.0	-39.3		

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement										
Company: Samsung Project #: 4788371667 Date: 2018-03-15 Test Engineer: 45574 Configuration: EUT / AC Adapter / Earphone, X-Position Location: Chamber 3 Mode: LTE_16QAM Band 66 Harmonics, 10MHz Bandwidth										
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	
Low Ch, 1715MHz										
3430.00	-12.9	V	3.0	41.0	1.0	-52.9	-13.0	-39.9		
5145.00	-15.4	V	3.0	40.1	1.0	-54.5	-13.0	-41.5		
6860.00	-12.1	V	3.0	40.0	1.0	-51.1	-13.0	-38.1		
3430.00	-9.9	H	3.0	41.0	1.0	-50.0	-13.0	-37.0		
5145.00	-15.3	H	3.0	40.1	1.0	-54.5	-13.0	-41.5		
6860.00	-12.1	H	3.0	40.0	1.0	-51.1	-13.0	-38.1		
Mid Ch, 1745MHz										
3490.00	-14.8	V	3.0	41.0	1.0	-54.8	-13.0	-41.8		
5235.00	-13.4	V	3.0	40.1	1.0	-52.5	-13.0	-39.5		
6980.00	-10.9	V	3.0	40.0	1.0	-49.9	-13.0	-36.9		
3490.00	-14.9	H	3.0	41.0	1.0	-54.9	-13.0	-41.9		
5235.00	-13.9	H	3.0	40.1	1.0	-53.0	-13.0	-40.0		
6980.00	-11.1	H	3.0	40.0	1.0	-50.1	-13.0	-37.1		
High Ch, 1775MHz										
3550.00	-13.4	V	3.0	41.0	1.0	-53.4	-13.0	-40.4		
5325.00	-11.9	V	3.0	40.1	1.0	-51.0	-13.0	-38.0		
7100.00	-9.7	V	3.0	40.0	1.0	-48.8	-13.0	-35.8		
3550.00	-9.8	H	3.0	41.0	1.0	-49.8	-13.0	-36.8		
5325.00	-14.6	H	3.0	40.1	1.0	-53.7	-13.0	-40.7		
7100.00	-13.0	H	3.0	40.0	1.0	-52.0	-13.0	-39.0		

		UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
		Company: Samsung Project #: 4788371667 Date: 2018-03-15 Test Engineer: 45574 Configuration: EUT / AC Adapter / Earphone, X-Position Location: Chamber 3 Mode: LTE_QPSK Band 66 Harmonics, 5MHz Bandwidth									
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes		
Low Ch, 1712.5MHz											
3425.00	-13.6	V	3.0	41.0	1.0	-53.6	-13.0	-40.6			
5137.50	-14.3	V	3.0	40.1	1.0	-53.4	-13.0	-40.4			
6850.00	-11.2	V	3.0	40.0	1.0	-50.2	-13.0	-37.2			
5MHz											
3425.00	-8.4	H	3.0	41.0	1.0	-48.4	-13.0	-35.4			
5137.50	-15.7	H	3.0	40.1	1.0	-54.8	-13.0	-41.8			
6850.00	-12.4	H	3.0	40.0	1.0	-51.5	-13.0	-38.5			
QPSK											
Mid Ch, 1745MHz											
3490.00	-14.1	V	3.0	41.0	1.0	-54.1	-13.0	-41.1			
5235.00	-11.6	V	3.0	40.1	1.0	-50.7	-13.0	-37.7			
6980.00	-8.5	V	3.0	40.0	1.0	-47.5	-13.0	-34.5			
3490.00	-10.0	H	3.0	41.0	1.0	-50.0	-13.0	-37.0			
5235.00	-15.2	H	3.0	40.1	1.0	-54.3	-13.0	-41.3			
6980.00	-12.3	H	3.0	40.0	1.0	-51.4	-13.0	-38.4			
High Ch, 1777.5MHz											
3555.00	-14.1	V	3.0	41.0	1.0	-54.1	-13.0	-41.1			
5332.50	-11.5	V	3.0	40.1	1.0	-50.6	-13.0	-37.6			
7110.00	-6.7	V	3.0	40.0	1.0	-45.7	-13.0	-32.7			
3555.00	-10.2	H	3.0	41.0	1.0	-50.1	-13.0	-37.1			
5332.50	-13.1	H	3.0	40.1	1.0	-52.2	-13.0	-39.2			
7110.00	-13.1	H	3.0	40.0	1.0	-52.2	-13.0	-39.2			

		UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
		Company: Samsung Project #: 4788371667 Date: 2018-03-15 Test Engineer: 45574 Configuration: EUT / AC Adapter / Earphone, X-Position Location: Chamber 3 Mode: LTE_16QAM Band 66 Harmonics, 5MHz Bandwidth									
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes		
Low Ch, 1712.5MHz											
3425.00	-13.7	V	3.0	41.0	1.0	-53.7	-13.0	-40.7			
5137.50	-15.0	V	3.0	40.1	1.0	-54.2	-13.0	-41.2			
6850.00	-12.3	V	3.0	40.0	1.0	-51.4	-13.0	-38.4			
5MHz											
3425.00	-8.3	H	3.0	41.0	1.0	-48.3	-13.0	-35.3			
5137.50	-15.2	H	3.0	40.1	1.0	-54.3	-13.0	-41.3			
6850.00	-12.1	H	3.0	40.0	1.0	-51.2	-13.0	-38.2			
16QAM											
Mid Ch, 1745MHz											
3490.00	-14.8	V	3.0	41.0	1.0	-54.8	-13.0	-41.8			
5235.00	-13.1	V	3.0	40.1	1.0	-52.2	-13.0	-39.2			
6980.00	-11.1	V	3.0	40.0	1.0	-50.1	-13.0	-37.1			
3490.00	-10.5	H	3.0	41.0	1.0	-50.5	-13.0	-37.5			
5235.00	-15.5	H	3.0	40.1	1.0	-54.6	-13.0	-41.6			
6980.00	-11.2	H	3.0	40.0	1.0	-50.2	-13.0	-37.2			
High Ch, 1777.5MHz											
3555.00	-14.7	V	3.0	41.0	1.0	-54.7	-13.0	-41.7			
5332.50	-13.2	V	3.0	40.1	1.0	-52.3	-13.0	-39.3			
7110.00	-11.1	V	3.0	40.0	1.0	-50.1	-13.0	-37.1			
3555.00	-10.0	H	3.0	41.0	1.0	-50.0	-13.0	-37.0			
5332.50	-14.6	H	3.0	40.1	1.0	-53.7	-13.0	-40.7			
7110.00	-11.1	H	3.0	40.0	1.0	-50.2	-13.0	-37.2			

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement											
LTE Band 66 3MHz QPSK	Company: Samsung Project #: 4788371667 Date: 2018-03-15 Test Engineer: 45574 Configuration: EUT / AC Adapter / Earphone, X-Position Location: Chamber 3 Mode: LTE_QPSK Band 66 Harmonics, 3MHz Bandwidth										
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	
	Low Ch, 1711.5MHz										
	3423.00	-12.3	V	3.0	41.0	1.0	-52.3	-13.0	-39.3		
	5134.50	-13.9	V	3.0	40.1	1.0	-53.0	-13.0	-40.0		
	6846.00	-10.2	V	3.0	40.0	1.0	-49.2	-13.0	-36.2		
	3423.00	-6.9	H	3.0	41.0	1.0	-46.9	-13.0	-33.9		
	5134.50	-15.3	H	3.0	40.1	1.0	-54.4	-13.0	-41.4		
	6846.00	-12.6	H	3.0	40.0	1.0	-51.6	-13.0	-38.6		
	Mid Ch, 1745MHz										
	3490.00	-13.6	V	3.0	41.0	1.0	-53.6	-13.0	-40.6		
	5235.00	-12.0	V	3.0	40.1	1.0	-51.1	-13.0	-38.1		
	6980.00	-8.3	V	3.0	40.0	1.0	-47.4	-13.0	-34.4		
	3490.00	-9.2	H	3.0	41.0	1.0	-49.2	-13.0	-36.2		
	5235.00	-14.7	H	3.0	40.1	1.0	-53.8	-13.0	-40.8		
	6980.00	-11.4	H	3.0	40.0	1.0	-50.5	-13.0	-37.5		
	High Ch, 1778.5MHz										
	3557.00	-13.1	V	3.0	41.0	1.0	-53.1	-13.0	-40.1		
	5335.50	-11.9	V	3.0	40.1	1.0	-51.0	-13.0	-38.0		
	7114.00	-6.9	V	3.0	40.0	1.0	-45.9	-13.0	-32.9		
	3557.00	-9.7	H	3.0	41.0	1.0	-49.7	-13.0	-36.7		
	5335.50	-13.1	H	3.0	40.1	1.0	-52.2	-13.0	-39.2		
	7114.00	-12.7	H	3.0	40.0	1.0	-51.7	-13.0	-38.7		
	UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement										
	LTE Band 66 3MHz 16QAM	Company: Samsung Project #: 4788371667 Date: 2018-03-15 Test Engineer: 45574 Configuration: EUT / AC Adapter / Earphone, X-Position Location: Chamber 3 Mode: LTE_16QAM Band 66 Harmonics, 3MHz Bandwidth									
f MHz		SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	
Low Ch, 1711.5MHz											
3423.00		-12.9	V	3.0	41.0	1.0	-52.9	-13.0	-39.9		
5134.50		-13.8	V	3.0	40.1	1.0	-52.9	-13.0	-39.9		
6846.00		-10.1	V	3.0	40.0	1.0	-49.1	-13.0	-36.1		
3423.00		-7.6	H	3.0	41.0	1.0	-47.6	-13.0	-34.6		
5134.50		-15.4	H	3.0	40.1	1.0	-54.5	-13.0	-41.5		
6846.00		-12.2	H	3.0	40.0	1.0	-51.2	-13.0	-38.2		
Mid Ch, 1745MHz											
3490.00		-14.6	V	3.0	41.0	1.0	-54.6	-13.0	-41.6		
5235.00		-13.8	V	3.0	40.1	1.0	-52.9	-13.0	-39.9		
6980.00		-10.0	V	3.0	40.0	1.0	-49.0	-13.0	-36.0		
3490.00		-9.4	H	3.0	41.0	1.0	-49.4	-13.0	-36.4		
5235.00		-15.0	H	3.0	40.1	1.0	-54.1	-13.0	-41.1		
6980.00		-11.9	H	3.0	40.0	1.0	-50.9	-13.0	-37.9		
High Ch, 1778.5MHz											
3557.00		-13.9	V	3.0	41.0	1.0	-53.8	-13.0	-40.8		
5335.50		-13.2	V	3.0	40.1	1.0	-52.3	-13.0	-39.3		
7114.00		-11.0	V	3.0	40.0	1.0	-50.1	-13.0	-37.1		
3557.00		-10.3	H	3.0	41.0	1.0	-50.3	-13.0	-37.3		
5335.50		-15.3	H	3.0	40.1	1.0	-54.4	-13.0	-41.4		
7114.00		-13.4	H	3.0	40.0	1.0	-52.4	-13.0	-39.4		

		UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement											
		Company: Samsung Project #: 4788371667 Date: 2018-03-15 Test Engineer: 45574 Configuration: EUT / AC Adapter / Earphone, X-Position Location: Chamber 3 Mode: LTE_QPSK Band 66 Harmonics, 1.4MHz Bandwidth											
LTE	Band 66	1.4MHz	QPSK	f	SG reading	Ant. Pol.	Distance	Preamp	Filter	EIRP	Limit	Delta	Notes
				MHz	(dBm)	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)	
				Low Ch, 1710.7MHz									
				3421.40	-12.6	V	3.0	41.0	1.0	-52.6	-13.0	-39.6	
				5132.10	-14.1	V	3.0	40.1	1.0	-53.2	-13.0	-40.2	
				6842.80	-10.6	V	3.0	40.0	1.0	-49.6	-13.0	-36.6	
				3421.40	-6.9	H	3.0	41.0	1.0	-46.9	-13.0	-33.9	
				5132.10	-14.2	H	3.0	40.1	1.0	-53.3	-13.0	-40.3	
				6842.80	-11.9	H	3.0	40.0	1.0	-50.9	-13.0	-37.9	
				Mid Ch, 1745MHz									
				3490.00	-14.9	V	3.0	41.0	1.0	-54.9	-13.0	-41.9	
				5235.00	-12.7	V	3.0	40.1	1.0	-51.8	-13.0	-38.8	
				6980.00	-8.4	V	3.0	40.0	1.0	-47.5	-13.0	-34.5	
				3490.00	-9.1	H	3.0	41.0	1.0	-49.1	-13.0	-36.1	
				5235.00	-14.1	H	3.0	40.1	1.0	-53.2	-13.0	-40.2	
				6980.00	-11.3	H	3.0	40.0	1.0	-50.3	-13.0	-37.3	
				High Ch, 1779.3MHz									
				3558.60	-13.9	V	3.0	41.0	1.0	-53.9	-13.0	-40.9	
				5337.90	-11.1	V	3.0	40.1	1.0	-50.2	-13.0	-37.2	
				7117.20	-5.7	V	3.0	40.0	1.0	-44.7	-13.0	-31.7	
				3558.60	-9.8	H	3.0	41.0	1.0	-49.8	-13.0	-36.8	
				5337.90	-12.8	H	3.0	40.1	1.0	-51.9	-13.0	-38.9	
				7117.20	-12.8	H	3.0	40.0	1.0	-51.8	-13.0	-38.8	

		UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement											
		Company: Samsung Project #: 4788371667 Date: 2018-03-15 Test Engineer: 45574 Configuration: EUT / AC Adapter / Earphone, X-Position Location: Chamber 3 Mode: LTE_16QAM Band 66 Harmonics, 1.4MHz Bandwidth											
LTE	Band 66	1.4MHz	16QAM	f	SG reading	Ant. Pol.	Distance	Preamp	Filter	EIRP	Limit	Delta	Notes
				MHz	(dBm)	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)	
				Low Ch, 1710.7MHz									
				3421.40	-12.5	V	3.0	41.0	1.0	-52.6	-13.0	-39.6	
				5132.10	-14.7	V	3.0	40.1	1.0	-53.8	-13.0	-40.8	
				6842.80	-12.0	V	3.0	40.0	1.0	-51.1	-13.0	-38.1	
				3421.40	-7.8	H	3.0	41.0	1.0	-47.9	-13.0	-34.9	
				5132.10	-15.2	H	3.0	40.1	1.0	-54.3	-13.0	-41.3	
				6842.80	-12.3	H	3.0	40.0	1.0	-51.3	-13.0	-38.3	
				Mid Ch, 1745MHz									
				3490.00	-14.8	V	3.0	41.0	1.0	-54.8	-13.0	-41.8	
				5235.00	-13.4	V	3.0	40.1	1.0	-52.5	-13.0	-39.5	
				6980.00	-11.1	V	3.0	40.0	1.0	-50.1	-13.0	-37.1	
				3490.00	-10.1	H	3.0	41.0	1.0	-50.1	-13.0	-37.1	
				5235.00	-15.2	H	3.0	40.1	1.0	-54.3	-13.0	-41.3	
				6980.00	-11.6	H	3.0	40.0	1.0	-50.7	-13.0	-37.7	
				High Ch, 1779.3MHz									
				3558.60	-14.2	V	3.0	41.0	1.0	-54.1	-13.0	-41.1	
				5337.90	-12.4	V	3.0	40.1	1.0	-51.5	-13.0	-38.5	
				7117.20	-7.7	V	3.0	40.0	1.0	-46.7	-13.0	-33.7	
				3558.60	-10.7	H	3.0	41.0	1.0	-50.7	-13.0	-37.7	
				5337.90	-14.8	H	3.0	40.1	1.0	-53.9	-13.0	-40.9	
				7117.20	-13.5	H	3.0	40.0	1.0	-52.5	-13.0	-39.5	

LTE Band 2

		UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement										
		Company: Samsung Project #: 4788371667 Date: 2018-03-14 Test Engineer: 45574 Configuration: EUT / AC Adapter / Earphone, Z-Position Location: Chamber 3 Mode: LTE_QPSK Band 2 Harmonics, 20MHz Bandwidth										
LTE Band 2 20MHz 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, 1860MHz											
		3720.00	-13.5	V	3.0	40.9	1.0		-53.4	-13.0	-40.4	
		5580.00	-8.9	V	3.0	40.0	1.0		-47.9	-13.0	-34.9	
		7440.00	-4.5	V	3.0	40.0	1.0		-43.5	-13.0	-30.5	
		3720.00	-9.8	H	3.0	40.9	1.0		-49.7	-13.0	-36.7	
		5580.00	-13.3	H	3.0	40.0	1.0		-52.3	-13.0	-39.3	
		7440.00	-8.4	H	3.0	40.0	1.0		-47.5	-13.0	-34.5	
	Mid Ch, 1880MHz											
		3760.00	-13.5	V	3.0	40.8	1.0		-53.3	-13.0	-40.3	
		5640.00	-8.5	V	3.0	40.0	1.0		-47.6	-13.0	-34.6	
		7520.00	-4.6	V	3.0	40.0	1.0		-43.6	-13.0	-30.6	
		3760.00	-11.3	H	3.0	40.8	1.0		-51.1	-13.0	-38.1	
		5640.00	-13.7	H	3.0	40.0	1.0		-52.7	-13.0	-39.7	
		7520.00	-7.6	H	3.0	40.0	1.0		-46.7	-13.0	-33.7	
	High Ch, 1900MHz											
		3800.00	-12.8	V	3.0	40.8	1.0		-52.6	-13.0	-39.6	
		5700.00	-10.0	V	3.0	40.0	1.0		-49.0	-13.0	-36.0	
		7600.00	-0.6	V	3.0	40.0	1.0		-39.7	-13.0	-26.7	
		3800.00	-9.3	H	3.0	40.8	1.0		-49.1	-13.0	-36.1	
		5700.00	-12.8	H	3.0	40.0	1.0		-51.8	-13.0	-38.8	
		7600.00	-6.0	H	3.0	40.0	1.0		-45.0	-13.0	-32.0	
			UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
			Company: Samsung Project #: 4788371667 Date: 2018-03-14 Test Engineer: 45574 Configuration: EUT / AC Adapter / Earphone, Z-Position Location: Chamber 3 Mode: LTE_16QAM Band 2 Harmonics, 20MHz Bandwidth									
	LTE Band 2 20MHz 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, 1860MHz												
		3720.00	-13.7	V	3.0	40.9	1.0		-53.5	-13.0	-40.5	
		5580.00	-10.7	V	3.0	40.0	1.0		-49.7	-13.0	-36.7	
		7440.00	-8.1	V	3.0	40.0	1.0		-47.2	-13.0	-34.2	
		3720.00	-10.5	H	3.0	40.9	1.0		-50.4	-13.0	-37.4	
		5580.00	-14.2	H	3.0	40.0	1.0		-53.3	-13.0	-40.3	
		7440.00	-11.5	H	3.0	40.0	1.0		-50.6	-13.0	-37.6	
Mid Ch, 1880MHz												
		3760.00	-14.2	V	3.0	40.8	1.0		-54.1	-13.0	-41.1	
		5640.00	-11.4	V	3.0	40.0	1.0		-50.4	-13.0	-37.4	
		7520.00	-8.5	V	3.0	40.0	1.0		-47.6	-13.0	-34.6	
		3760.00	-11.2	H	3.0	40.8	1.0		-51.0	-13.0	-38.0	
		5640.00	-15.2	H	3.0	40.0	1.0		-54.2	-13.0	-41.2	
		7520.00	-11.2	H	3.0	40.0	1.0		-50.2	-13.0	-37.2	
High Ch, 1900MHz												
		3800.00	-13.5	V	3.0	40.8	1.0		-53.3	-13.0	-40.3	
		5700.00	-10.7	V	3.0	40.0	1.0		-49.8	-13.0	-36.8	
		7600.00	-3.7	V	3.0	40.0	1.0		-42.8	-13.0	-29.8	
		3800.00	-9.6	H	3.0	40.8	1.0		-49.4	-13.0	-36.4	
		5700.00	-12.7	H	3.0	40.0	1.0		-51.7	-13.0	-38.7	
		7600.00	-8.0	H	3.0	40.0	1.0		-47.1	-13.0	-34.1	

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement											
LTE Band 2 15MHz QPSK	Company: Samsung Project #: 4788371667 Date: 2018-03-14 Test Engineer: 45574 Configuration: EUT / AC Adapter / Earphone, Z-Position Location: Chamber 3 Mode: LTE_QPSK Band 2 Harmonics, 15MHz Bandwidth										
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	
	Low Ch, 1857.5MHz										
	3715.00	-13.7	V	3.0	40.9	1.0	-53.5	-13.0	-40.5		
	5572.50	-9.7	V	3.0	40.0	1.0	-48.8	-13.0	-35.8		
	7430.00	-4.7	V	3.0	40.0	1.0	-43.7	-13.0	-30.7		
	3715.00	-10.2	H	3.0	40.9	1.0	-50.1	-13.0	-37.1		
	5572.50	-14.5	H	3.0	40.0	1.0	-53.5	-13.0	-40.5		
	7430.00	-7.8	H	3.0	40.0	1.0	-46.8	-13.0	-33.8		
	Mid Ch, 1880MHz										
	3760.00	-13.7	V	3.0	40.8	1.0	-53.5	-13.0	-40.5		
	5640.00	-9.5	V	3.0	40.0	1.0	-48.5	-13.0	-35.5		
	7520.00	-4.4	V	3.0	40.0	1.0	-43.5	-13.0	-30.5		
	3760.00	-11.0	H	3.0	40.8	1.0	-50.8	-13.0	-37.8		
	5640.00	-13.5	H	3.0	40.0	1.0	-52.5	-13.0	-39.5		
	7520.00	-7.4	H	3.0	40.0	1.0	-46.5	-13.0	-33.5		
	High Ch, 1902.5MHz										
	3805.00	-13.6	V	3.0	40.8	1.0	-53.4	-13.0	-40.4		
	5707.50	-10.1	V	3.0	40.0	1.0	-49.2	-13.0	-36.2		
	7610.00	-1.6	V	3.0	40.0	1.0	-40.6	-13.0	-27.6		
	3805.00	-9.4	H	3.0	40.8	1.0	-49.2	-13.0	-36.2		
	5707.50	-13.9	H	3.0	40.0	1.0	-52.9	-13.0	-39.9		
	7610.00	-7.9	H	3.0	40.0	1.0	-46.9	-13.0	-33.9		
	LTE Band 2 15MHz 16QAM	Company: Samsung Project #: 4788371667 Date: 2018-03-14 Test Engineer: 45574 Configuration: EUT / AC Adapter / Earphone, Z-Position Location: Chamber 3 Mode: LTE_16QAM Band 2 Harmonics, 15MHz Bandwidth									
		f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1857.5MHz											
3715.00		-14.1	V	3.0	40.9	1.0	-53.9	-13.0	-40.9		
5572.50		-11.2	V	3.0	40.0	1.0	-50.3	-13.0	-37.3		
7430.00		-7.8	V	3.0	40.0	1.0	-46.8	-13.0	-33.8		
3715.00		-10.1	H	3.0	40.9	1.0	-50.0	-13.0	-37.0		
5572.50		-14.3	H	3.0	40.0	1.0	-53.4	-13.0	-40.4		
7430.00		-11.4	H	3.0	40.0	1.0	-50.5	-13.0	-37.5		
Mid Ch, 1880MHz											
3760.00		-15.0	V	3.0	40.8	1.0	-54.8	-13.0	-41.8		
5640.00		-10.1	V	3.0	40.0	1.0	-49.1	-13.0	-36.1		
7520.00		-9.7	V	3.0	40.0	1.0	-48.7	-13.0	-35.7		
3760.00		-12.2	H	3.0	40.8	1.0	-52.0	-13.0	-39.0		
5640.00		-15.5	H	3.0	40.0	1.0	-54.6	-13.0	-41.6		
7520.00		-11.3	H	3.0	40.0	1.0	-50.3	-13.0	-37.3		
High Ch, 1902.5MHz											
3805.00		-14.1	V	3.0	40.8	1.0	-53.9	-13.0	-40.9		
5707.50		-11.3	V	3.0	40.0	1.0	-50.3	-13.0	-37.3		
7610.00		-2.2	V	3.0	40.0	1.0	-41.3	-13.0	-28.3		
3805.00		-9.8	H	3.0	40.8	1.0	-49.6	-13.0	-36.6		
5707.50		-15.3	H	3.0	40.0	1.0	-54.3	-13.0	-41.3		
7610.00		-6.7	H	3.0	40.0	1.0	-45.8	-13.0	-32.8		

		UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
		Company: Samsung Project #: 4788371667 Date: 2018-03-14 Test Engineer: 45574 Configuration: EUT / AC Adapter / Earphone, Z-Position Location: Chamber 3 Mode: LTE_QPSK Band 2 Harmonics, 10MHz Bandwidth									
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes		
Low Ch, 1855MHz											
3710.00	-13.6	V	3.0	40.9	1.0	-53.4	-13.0	-40.4			
5565.00	-10.3	V	3.0	40.0	1.0	-49.4	-13.0	-36.4			
7420.00	-3.4	V	3.0	40.0	1.0	-42.5	-13.0	-29.5			
3710.00	-10.8	H	3.0	40.9	1.0	-50.6	-13.0	-37.6			
5565.00	-13.8	H	3.0	40.0	1.0	-52.9	-13.0	-39.9			
7420.00	-8.7	H	3.0	40.0	1.0	-47.8	-13.0	-34.8			
Mid Ch, 1880MHz											
3760.00	-12.2	V	3.0	40.8	1.0	-52.0	-13.0	-39.0			
5640.00	-9.6	V	3.0	40.0	1.0	-48.7	-13.0	-35.7			
7520.00	-3.9	V	3.0	40.0	1.0	-43.0	-13.0	-30.0			
3760.00	-10.5	H	3.0	40.8	1.0	-50.3	-13.0	-37.3			
5640.00	-14.1	H	3.0	40.0	1.0	-53.2	-13.0	-40.2			
7520.00	-6.8	H	3.0	40.0	1.0	-45.8	-13.0	-32.8			
High Ch, 1905MHz											
3810.00	-14.7	V	3.0	40.8	1.0	-54.4	-13.0	-41.4			
5715.00	-8.9	V	3.0	40.0	1.0	-47.9	-13.0	-34.9			
7620.00	0.7	V	3.0	40.0	1.0	-38.3	-13.0	-25.3			
3810.00	-9.3	H	3.0	40.8	1.0	-49.1	-13.0	-36.1			
5715.00	-14.1	H	3.0	40.0	1.0	-53.1	-13.0	-40.1			
7620.00	-6.5	H	3.0	40.0	1.0	-45.5	-13.0	-32.5			
LTE Band 2 10MHz QPSK											
		UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
		Company: Samsung Project #: 4788371667 Date: 2018-03-14 Test Engineer: 45574 Configuration: EUT / AC Adapter / Earphone, Z-Position Location: Chamber 3 Mode: LTE_16QAM Band 2 Harmonics, 10MHz Bandwidth									
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes		
Low Ch, 1855MHz											
3710.00	-13.7	V	3.0	40.9	1.0	-53.6	-13.0	-40.6			
5565.00	-10.6	V	3.0	40.0	1.0	-49.6	-13.0	-36.6			
7420.00	-4.7	V	3.0	40.0	1.0	-43.8	-13.0	-30.8			
3710.00	-10.8	H	3.0	40.9	1.0	-50.7	-13.0	-37.7			
5565.00	-14.1	H	3.0	40.0	1.0	-53.2	-13.0	-40.2			
7420.00	-8.7	H	3.0	40.0	1.0	-47.7	-13.0	-34.7			
Mid Ch, 1880MHz											
3760.00	-14.5	V	3.0	40.8	1.0	-54.3	-13.0	-41.3			
5640.00	-11.1	V	3.0	40.0	1.0	-50.1	-13.0	-37.1			
7520.00	-6.7	V	3.0	40.0	1.0	-45.7	-13.0	-32.7			
3760.00	-11.3	H	3.0	40.8	1.0	-51.2	-13.0	-38.2			
5640.00	-14.4	H	3.0	40.0	1.0	-53.4	-13.0	-40.4			
7520.00	-10.9	H	3.0	40.0	1.0	-50.0	-13.0	-37.0			
High Ch, 1905MHz											
3810.00	-15.0	V	3.0	40.8	1.0	-54.8	-13.0	-41.8			
5715.00	-11.2	V	3.0	40.0	1.0	-50.2	-13.0	-37.2			
7620.00	-3.6	V	3.0	40.0	1.0	-42.7	-13.0	-29.7			
3810.00	-11.0	H	3.0	40.8	1.0	-50.8	-13.0	-37.8			
5715.00	-15.4	H	3.0	40.0	1.0	-54.4	-13.0	-41.4			
7620.00	-8.0	H	3.0	40.0	1.0	-47.0	-13.0	-34.0			
LTE Band 2 10MHz 16QAM											

		UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
		Company: Samsung Project #: 4788371667 Date: 2018-03-14 Test Engineer: 45574 Configuration: EUT / AC Adapter / Earphone, Z-Position Location: Chamber 3 Mode: LTE_QPSK Band 2 Harmonics, 5MHz Bandwidth									
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes		
Low Ch, 1852.5MHz											
3705.00	-13.5	V	3.0	40.9	1.0	-53.4	-13.0	-40.4			
5557.50	-10.0	V	3.0	40.1	1.0	-49.1	-13.0	-36.1			
7410.00	-3.4	V	3.0	40.0	1.0	-42.4	-13.0	-29.4			
5MHz											
3705.00	-10.6	H	3.0	40.9	1.0	-50.5	-13.0	-37.5			
5557.50	-13.7	H	3.0	40.1	1.0	-52.7	-13.0	-39.7			
7410.00	-7.2	H	3.0	40.0	1.0	-46.2	-13.0	-33.2			
QPSK											
Mid Ch, 1880MHz											
3760.00	-13.7	V	3.0	40.8	1.0	-53.6	-13.0	-40.6			
5640.00	-9.4	V	3.0	40.0	1.0	-48.4	-13.0	-35.4			
7520.00	-3.6	V	3.0	40.0	1.0	-42.6	-13.0	-29.6			
3760.00	-11.3	H	3.0	40.8	1.0	-51.1	-13.0	-38.1			
5640.00	-14.0	H	3.0	40.0	1.0	-53.1	-13.0	-40.1			
7520.00	-7.8	H	3.0	40.0	1.0	-46.9	-13.0	-33.9			
High Ch, 1907.5MHz											
3815.00	-14.6	V	3.0	40.8	1.0	-54.4	-13.0	-41.4			
5722.50	-9.2	V	3.0	40.0	1.0	-48.3	-13.0	-35.3			
7630.00	2.0	V	3.0	40.0	1.0	-37.1	-13.0	-24.1			
3815.00	-11.3	H	3.0	40.8	1.0	-51.0	-13.0	-38.0			
5722.50	-11.2	H	3.0	40.0	1.0	-50.2	-13.0	-37.2			
7630.00	-3.8	H	3.0	40.0	1.0	-42.8	-13.0	-29.8			
		UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
		Company: Samsung Project #: 4788371667 Date: 2018-03-14 Test Engineer: 45574 Configuration: EUT / AC Adapter / Earphone, Z-Position Location: Chamber 3 Mode: LTE_16QAM Band 2 Harmonics, 5MHz Bandwidth									
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes		
Low Ch, 1852.5MHz											
3705.00	-14.9	V	3.0	40.9	1.0	-54.8	-13.0	-41.8			
5557.50	-11.4	V	3.0	40.1	1.0	-50.5	-13.0	-37.5			
7410.00	-6.7	V	3.0	40.0	1.0	-45.8	-13.0	-32.8			
5MHz											
3705.00	-10.9	H	3.0	40.9	1.0	-50.7	-13.0	-37.7			
5557.50	-14.6	H	3.0	40.1	1.0	-53.6	-13.0	-40.6			
7410.00	-9.4	H	3.0	40.0	1.0	-48.4	-13.0	-35.4			
16QAM											
Mid Ch, 1880MHz											
3760.00	-14.6	V	3.0	40.8	1.0	-54.5	-13.0	-41.5			
5640.00	-12.3	V	3.0	40.0	1.0	-51.3	-13.0	-38.3			
7520.00	-9.9	V	3.0	40.0	1.0	-48.9	-13.0	-35.9			
3760.00	-11.8	H	3.0	40.8	1.0	-51.6	-13.0	-38.6			
5640.00	-15.3	H	3.0	40.0	1.0	-54.3	-13.0	-41.3			
7520.00	-10.6	H	3.0	40.0	1.0	-49.6	-13.0	-36.6			
High Ch, 1907.5MHz											
3815.00	-15.0	V	3.0	40.8	1.0	-54.8	-13.0	-41.8			
5722.50	-10.2	V	3.0	40.0	1.0	-49.2	-13.0	-36.2			
7630.00	0.1	V	3.0	40.0	1.0	-39.0	-13.0	-26.0			
3815.00	-12.1	H	3.0	40.8	1.0	-51.9	-13.0	-38.9			
5722.50	-13.8	H	3.0	40.0	1.0	-52.8	-13.0	-39.8			
7630.00	-5.5	H	3.0	40.0	1.0	-44.5	-13.0	-31.5			

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement										
Company: Samsung Project #: 4788371667 Date: 2018-03-14 Test Engineer: 45574 Configuration: EUT / AC Adapter / Earphone, Z-Position Location: Chamber 3 Mode: LTE_QPSK Band 2 Harmonics, 3MHz Bandwidth										
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	
Low Ch, 1851.5MHz										
3703.00	-13.5	V	3.0	40.9	1.0	-53.4	-13.0	-40.4		
5554.50	-10.3	V	3.0	40.1	1.0	-49.3	-13.0	-36.3		
7406.00	-3.6	V	3.0	40.0	1.0	-42.7	-13.0	-29.7		
3MHz										
3703.00	-10.6	H	3.0	40.9	1.0	-50.5	-13.0	-37.5		
5554.50	-13.6	H	3.0	40.1	1.0	-52.6	-13.0	-39.6		
7406.00	-8.4	H	3.0	40.0	1.0	-47.4	-13.0	-34.4		
QPSK										
Mid Ch, 1880MHz										
3760.00	-13.9	V	3.0	40.8	1.0	-53.7	-13.0	-40.7		
5640.00	-8.2	V	3.0	40.0	1.0	-47.2	-13.0	-34.2		
7520.00	-4.6	V	3.0	40.0	1.0	-43.7	-13.0	-30.7		
3760.00	-11.1	H	3.0	40.8	1.0	-51.0	-13.0	-38.0		
5640.00	-13.9	H	3.0	40.0	1.0	-53.0	-13.0	-40.0		
7520.00	-5.5	H	3.0	40.0	1.0	-44.6	-13.0	-31.6		
High Ch, 1908.5MHz										
3817.00	-15.3	V	3.0	40.8	1.0	-55.1	-13.0	-42.1		
5725.50	-8.4	V	3.0	40.0	1.0	-47.5	-13.0	-34.5		
7634.00	2.7	V	3.0	40.0	1.0	-36.4	-13.0	-23.4		
3817.00	-12.5	H	3.0	40.8	1.0	-52.3	-13.0	-39.3		
5725.50	-11.1	H	3.0	40.0	1.0	-50.1	-13.0	-37.1		
7634.00	-3.2	H	3.0	40.0	1.0	-42.3	-13.0	-29.3		

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement										
Company: Samsung Project #: 4788371667 Date: 2018-03-14 Test Engineer: 45574 Configuration: EUT / AC Adapter / Earphone, Z-Position Location: Chamber 3 Mode: LTE_16QAM Band 2 Harmonics, 3MHz Bandwidth										
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	
Low Ch, 1851.5MHz										
3703.00	-13.5	V	3.0	40.9	1.0	-53.3	-13.0	-40.3		
5554.50	-11.8	V	3.0	40.1	1.0	-50.8	-13.0	-37.8		
7406.00	-6.7	V	3.0	40.0	1.0	-45.7	-13.0	-32.7		
3MHz										
3703.00	-10.9	H	3.0	40.9	1.0	-50.8	-13.0	-37.8		
5554.50	-14.8	H	3.0	40.1	1.0	-53.8	-13.0	-40.8		
7406.00	-10.3	H	3.0	40.0	1.0	-49.3	-13.0	-36.3		
16QAM										
Mid Ch, 1880MHz										
3760.00	-14.9	V	3.0	40.8	1.0	-54.7	-13.0	-41.7		
5640.00	-8.6	V	3.0	40.0	1.0	-47.7	-13.0	-34.7		
7520.00	-5.0	V	3.0	40.0	1.0	-44.1	-13.0	-31.1		
3760.00	-11.3	H	3.0	40.8	1.0	-51.1	-13.0	-38.1		
5640.00	-13.1	H	3.0	40.0	1.0	-52.1	-13.0	-39.1		
7520.00	-7.5	H	3.0	40.0	1.0	-46.5	-13.0	-33.5		
High Ch, 1908.5MHz										
3817.00	-15.1	V	3.0	40.8	1.0	-54.9	-13.0	-41.9		
5725.50	-10.0	V	3.0	40.0	1.0	-49.0	-13.0	-36.0		
7634.00	-1.9	V	3.0	40.0	1.0	-41.0	-13.0	-28.0		
3817.00	-12.4	H	3.0	40.8	1.0	-52.2	-13.0	-39.2		
5725.50	-15.0	H	3.0	40.0	1.0	-54.0	-13.0	-41.0		
7634.00	-8.1	H	3.0	40.0	1.0	-47.1	-13.0	-34.1		

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement										
Company: Samsung Project #: 4788371667 Date: 2018-03-14 Test Engineer: 45574 Configuration: EUT / AC Adapter / Earphone, Z-Position Location: Chamber 3 Mode: LTE_QPSK Band 2 Harmonics, 1.4MHz Bandwidth										
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	
Low Ch, 1850.7MHz										
3701.40	-13.2	V	3.0	40.9	1.0	-53.1	-13.0	-40.1		
5552.10	-10.0	V	3.0	40.1	1.0	-49.0	-13.0	-36.0		
7402.80	-3.4	V	3.0	40.0	1.0	-42.5	-13.0	-29.5		
3701.40	-10.5	H	3.0	40.9	1.0	-50.4	-13.0	-37.4		
5552.10	-11.4	H	3.0	40.1	1.0	-50.5	-13.0	-37.5		
7402.80	-6.6	H	3.0	40.0	1.0	-45.7	-13.0	-32.7		
Mid Ch, 1880MHz										
3760.00	-13.1	V	3.0	40.8	1.0	-52.9	-13.0	-39.9		
5640.00	-8.7	V	3.0	40.0	1.0	-47.7	-13.0	-34.7		
7520.00	-4.4	V	3.0	40.0	1.0	-43.5	-13.0	-30.5		
3760.00	-9.7	H	3.0	40.8	1.0	-49.5	-13.0	-36.5		
5640.00	-13.0	H	3.0	40.0	1.0	-52.0	-13.0	-39.0		
7520.00	-7.1	H	3.0	40.0	1.0	-46.1	-13.0	-33.1		
High Ch, 1909.3MHz										
3818.60	-14.9	V	3.0	40.8	1.0	-54.7	-13.0	-41.7		
5727.90	-7.8	V	3.0	40.0	1.0	-46.8	-13.0	-33.8		
7637.20	3.0	V	3.0	40.0	1.0	-36.1	-13.0	-23.1		
3818.60	-12.4	H	3.0	40.8	1.0	-52.2	-13.0	-39.2		
5727.90	-10.7	H	3.0	40.0	1.0	-49.7	-13.0	-36.7		
7637.20	-2.7	H	3.0	40.0	1.0	-41.8	-13.0	-28.8		
UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement										
Company: Samsung Project #: 4788371667 Date: 2018-03-14 Test Engineer: 45574 Configuration: EUT / AC Adapter / Earphone, Z-Position Location: Chamber 3 Mode: LTE_16QAM Band 2 Harmonics, 1.4MHz Bandwidth										
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	
Low Ch, 1850.7MHz										
3701.40	-13.4	V	3.0	40.9	1.0	-53.2	-13.0	-40.2		
5552.10	-10.4	V	3.0	40.1	1.0	-49.4	-13.0	-36.4		
7402.80	-2.6	V	3.0	40.0	1.0	-41.6	-13.0	-28.6		
3701.40	-10.5	H	3.0	40.9	1.0	-50.4	-13.0	-37.4		
5552.10	-12.5	H	3.0	40.1	1.0	-51.5	-13.0	-38.5		
7402.80	-8.0	H	3.0	40.0	1.0	-47.0	-13.0	-34.0		
Mid Ch, 1880MHz										
3760.00	-14.1	V	3.0	40.8	1.0	-53.9	-13.0	-40.9		
5640.00	-11.6	V	3.0	40.0	1.0	-50.6	-13.0	-37.6		
7520.00	-9.7	V	3.0	40.0	1.0	-48.8	-13.0	-35.8		
3760.00	-11.5	H	3.0	40.8	1.0	-51.3	-13.0	-38.3		
5640.00	-15.1	H	3.0	40.0	1.0	-54.1	-13.0	-41.1		
7520.00	-10.7	H	3.0	40.0	1.0	-49.8	-13.0	-36.8		
High Ch, 1909.3MHz										
3818.60	-14.3	V	3.0	40.8	1.0	-54.1	-13.0	-41.1		
5727.90	-8.2	V	3.0	40.0	1.0	-47.2	-13.0	-34.2		
7637.20	3.3	V	3.0	40.0	1.0	-35.7	-13.0	-22.7		
3818.60	-12.5	H	3.0	40.8	1.0	-52.3	-13.0	-39.3		
5727.90	-11.5	H	3.0	40.0	1.0	-50.5	-13.0	-37.5		
7637.20	-2.3	H	3.0	40.0	1.0	-41.3	-13.0	-28.3		

LTE Band 13

LTE Band 13 10MHz QPSK	UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement										
	Company:		Samsung								
	Project #:		4788371667								
	Date:		2018-03-17								
	Test Engineer:		45574								
	Configuration:		EUT / AC Adapter / Earphone, Z-position								
	Location:		Chamber 3								
	Mode:		LTE_QPSK Band 13 Harmonics, 10MHz Bandwidth								
	f MHz		SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	Mid Ch, 782MHz										
	1564.00		-17.7	V	3.0	41.8	1.0	-58.4	-40.0	-18.4	
	2346.00		-7.9	V	3.0	41.8	1.0	-48.7	-13.0	-35.7	
	3128.00		-15.7	V	3.0	41.2	1.0	-55.9	-13.0	-42.9	
3910.00		-14.8	V	3.0	40.7	1.0	-54.5	-13.0	-41.5		
4692.00		-11.5	V	3.0	40.3	1.0	-50.8	-13.0	-37.8		
1564.00		-15.5	H	3.0	41.8	1.0	-56.2	-40.0	-16.2		
2346.00		-7.6	H	3.0	41.8	1.0	-48.4	-13.0	-35.4		
3128.00		-14.4	H	3.0	41.2	1.0	-54.6	-13.0	-41.6		
3910.00		-14.6	H	3.0	40.7	1.0	-54.3	-13.0	-41.3		
4692.00		-13.7	H	3.0	40.3	1.0	-53.0	-13.0	-40.0		
LTE Band 13 10MHz 16QAM	UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement										
	Company:		Samsung								
	Project #:		4788371667								
	Date:		2018-03-17								
	Test Engineer:		45574								
	Configuration:		EUT / AC Adapter / Earphone, Z-position								
	Location:		Chamber 3								
	Mode:		LTE_16QAM Band 13 Harmonics, 10MHz Bandwidth								
	f MHz		SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	Mid Ch, 782MHz										
	1564.00		-17.1	V	3.0	41.8	1.0	-57.8	-40.0	-17.8	
	2346.00		-8.5	V	3.0	41.8	1.0	-49.3	-13.0	-36.3	
	3128.00		-16.0	V	3.0	41.2	1.0	-56.2	-13.0	-43.2	
3910.00		-15.7	V	3.0	40.7	1.0	-55.4	-13.0	-42.4		
4692.00		-11.7	V	3.0	40.3	1.0	-51.0	-13.0	-38.0		
1564.00		-15.2	H	3.0	41.8	1.0	-55.9	-40.0	-15.9		
2346.00		-6.4	H	3.0	41.8	1.0	-47.2	-13.0	-34.2		
3128.00		-14.6	H	3.0	41.2	1.0	-54.8	-13.0	-41.8		
3910.00		-14.9	H	3.0	40.7	1.0	-54.6	-13.0	-41.6		
4692.00		-14.2	H	3.0	40.3	1.0	-53.5	-13.0	-40.5		

		UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
LTE Band 13 5MHz QPSK		Company: Samsung									
		Project #: 4788371667									
		Date: 2018-03-17									
		Test Engineer: 45574									
		Configuration: EUT / AC Adapter / Earphone, Z-position									
		Location: Chamber 3									
		Mode: LTE_QPSK Band 13 Harmonics, 5MHz Bandwidth									
		f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
		Low Ch, 779.5MHz									
		1559.00	-15.5	V	3.0	41.8	1.0	-56.3	-40.0	-16.3	
		2338.50	-6.4	V	3.0	41.8	1.0	-47.2	-13.0	-34.2	
		3118.00	-15.3	V	3.0	41.2	1.0	-55.5	-13.0	-42.5	
		3897.50	-14.9	V	3.0	40.7	1.0	-54.7	-13.0	-41.7	
		4677.00	-14.0	V	3.0	40.3	1.0	-53.3	-13.0	-40.3	
		1559.00	-15.2	H	3.0	41.8	1.0	-56.0	-40.0	-16.0	
		2338.50	-7.4	H	3.0	41.8	1.0	-48.2	-13.0	-35.2	
		3118.00	-15.3	H	3.0	41.2	1.0	-55.5	-13.0	-42.5	
		3897.50	-14.9	H	3.0	40.7	1.0	-54.7	-13.0	-41.7	
		4677.00	-13.5	H	3.0	40.3	1.0	-52.8	-13.0	-39.8	
		Mid Ch, 782MHz									
		1564.00	-15.7	V	3.0	41.8	1.0	-56.5	-40.0	-16.5	
		2346.00	-7.3	V	3.0	41.8	1.0	-48.1	-13.0	-35.1	
		3128.00	-14.0	V	3.0	41.2	1.0	-54.2	-13.0	-41.2	
		3910.00	-13.9	V	3.0	40.7	1.0	-53.6	-13.0	-40.6	
		4692.00	-13.3	V	3.0	40.3	1.0	-52.6	-13.0	-39.6	
		1564.00	-17.8	H	3.0	41.8	1.0	-58.5	-40.0	-18.5	
		2346.00	-8.5	H	3.0	41.8	1.0	-49.3	-13.0	-36.3	
		3128.00	-16.6	H	3.0	41.2	1.0	-56.8	-13.0	-43.8	
		3910.00	-13.3	H	3.0	40.7	1.0	-53.0	-13.0	-40.0	
		4692.00	-11.3	H	3.0	40.3	1.0	-50.6	-13.0	-37.6	
		High Ch, 784.5MHz									
		1569.00	-18.8	V	3.0	41.8	1.0	-59.6	-40.0	-19.6	
		2353.50	-7.9	V	3.0	41.8	1.0	-48.7	-13.0	-35.7	
		3138.00	-16.2	V	3.0	41.2	1.0	-56.4	-13.0	-43.4	
		3922.50	-14.4	V	3.0	40.7	1.0	-54.2	-13.0	-41.2	
		4707.00	-10.8	V	3.0	40.3	1.0	-50.1	-13.0	-37.1	
		1569.00	-17.3	H	3.0	41.8	1.0	-58.1	-40.0	-18.1	
		2353.50	-9.5	H	3.0	41.8	1.0	-50.3	-13.0	-37.3	
		3138.00	-14.1	H	3.0	41.2	1.0	-54.3	-13.0	-41.3	
		3922.50	-14.9	H	3.0	40.7	1.0	-54.6	-13.0	-41.6	
4707.00	-13.5	H	3.0	40.3	1.0	-52.8	-13.0	-39.8			
LTE Band 13 5MHz 16QAM		Company: Samsung									
		Project #: 4788371667									
		Date: 2018-03-17									
		Test Engineer: 45574									
		Configuration: EUT / AC Adapter / Earphone, Z-position									
		Location: Chamber 3									
		Mode: LTE_16QAM Band 13 Harmonics, 5MHz Bandwidth									
		f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
		Low Ch, 779.5MHz									
		1559.00	-17.5	V	3.0	41.8	1.0	-58.2	-40.0	-18.2	
		2338.50	-7.4	V	3.0	41.8	1.0	-48.2	-13.0	-35.2	
		3118.00	-16.4	V	3.0	41.2	1.0	-56.6	-13.0	-43.6	
		3897.50	-15.0	V	3.0	40.7	1.0	-54.7	-13.0	-41.7	
		4677.00	-12.5	V	3.0	40.3	1.0	-51.9	-13.0	-38.9	
		1559.00	-16.0	H	3.0	41.8	1.0	-56.7	-40.0	-16.7	
		2338.50	-7.6	H	3.0	41.8	1.0	-48.4	-13.0	-35.4	
		3118.00	-15.3	H	3.0	41.2	1.0	-55.5	-13.0	-42.5	
		3897.50	-14.7	H	3.0	40.7	1.0	-54.4	-13.0	-41.4	
		4677.00	-13.9	H	3.0	40.3	1.0	-53.2	-13.0	-40.2	
		Mid Ch, 782MHz									
		1564.00	-17.3	V	3.0	41.8	1.0	-58.1	-40.0	-18.1	
		2346.00	-7.3	V	3.0	41.8	1.0	-48.1	-13.0	-35.1	
		3128.00	-15.8	V	3.0	41.2	1.0	-56.1	-13.0	-43.1	
		3910.00	-15.3	V	3.0	40.7	1.0	-55.0	-13.0	-42.0	
		4692.00	-11.3	V	3.0	40.3	1.0	-50.6	-13.0	-37.6	
		1564.00	-15.9	H	3.0	41.8	1.0	-56.7	-40.0	-16.7	
		2346.00	-6.8	H	3.0	41.8	1.0	-47.6	-13.0	-34.6	
		3128.00	-14.4	H	3.0	41.2	1.0	-54.6	-13.0	-41.6	
		3910.00	-14.7	H	3.0	40.7	1.0	-54.4	-13.0	-41.4	
		4692.00	-13.5	H	3.0	40.3	1.0	-52.8	-13.0	-39.8	
		High Ch, 784.5MHz									
		1569.00	-18.7	V	3.0	41.8	1.0	-59.5	-40.0	-19.5	
		2353.50	-8.1	V	3.0	41.8	1.0	-48.9	-13.0	-35.9	
		3138.00	-15.7	V	3.0	41.2	1.0	-56.0	-13.0	-43.0	
		3922.50	-15.2	V	3.0	40.7	1.0	-54.9	-13.0	-41.9	
		4707.00	-11.5	V	3.0	40.3	1.0	-50.8	-13.0	-37.8	
		1569.00	-17.4	H	3.0	41.8	1.0	-58.2	-40.0	-18.2	
		2353.50	-8.6	H	3.0	41.8	1.0	-49.3	-13.0	-36.3	
		3138.00	-15.4	H	3.0	41.2	1.0	-55.7	-13.0	-42.7	
		3922.50	-15.2	H	3.0	40.7	1.0	-54.9	-13.0	-41.9	
4707.00	-13.8	H	3.0	40.3	1.0	-53.1	-13.0	-40.1			

LTE Band 12

		UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
		Company: Samsung Project #: 4788371667 Date: 2018-03-15 Test Engineer: 45574 Configuration: EUT / AC Adapter / Earphone, Z-position Location: Chamber 3 Mode: LTE_QPSK Band 12 Harmonics, 10MHz Bandwidth									
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes		
Low Ch, 704MHz											
1408.00	-19.4	V	3.0	41.7	1.0	-60.1	-13.0	-47.1			
2112.00	-0.7	V	3.0	42.0	1.0	-41.6	-13.0	-28.6			
2816.00	-13.4	V	3.0	41.5	1.0	-53.8	-13.0	-40.8			
3520.00	-4.8	V	3.0	41.0	1.0	-44.7	-13.0	-31.7			
4224.00	-10.1	V	3.0	40.6	1.0	-49.6	-13.0	-36.6			
1408.00	-17.7	V	3.0	41.7	1.0	-58.3	-13.0	-45.3			
2112.00	-2.5	H	3.0	42.0	1.0	-43.5	-13.0	-30.5			
2816.00	-14.8	H	3.0	41.5	1.0	-55.3	-13.0	-42.3			
3520.00	1.2	H	3.0	41.0	1.0	-38.8	-13.0	-25.8			
4224.00	-11.3	H	3.0	40.6	1.0	-50.8	-13.0	-37.8			
Mid Ch, 707.5MHz											
1415.00	-16.8	V	3.0	41.7	1.0	-57.5	-13.0	-44.5			
2122.50	-3.8	V	3.0	41.9	1.0	-44.7	-13.0	-31.7			
2830.00	-14.8	V	3.0	41.4	1.0	-55.2	-13.0	-42.2			
3537.50	-0.4	V	3.0	41.0	1.0	-40.3	-13.0	-27.3			
4245.00	-9.7	V	3.0	40.5	1.0	-49.2	-13.0	-36.2			
1415.00	-17.1	H	3.0	41.7	1.0	-57.7	-13.0	-44.7			
2122.50	-5.8	H	3.0	41.9	1.0	-46.8	-13.0	-33.8			
2830.00	-15.7	H	3.0	41.4	1.0	-56.2	-13.0	-43.2			
3537.50	-0.2	H	3.0	41.0	1.0	-40.2	-13.0	-27.2			
4245.00	-15.3	H	3.0	40.5	1.0	-54.9	-13.0	-41.9			
High Ch, 711MHz											
1422.00	-14.7	V	3.0	41.7	1.0	-55.4	-13.0	-42.4			
2133.00	-0.4	V	3.0	41.9	1.0	-41.3	-13.0	-28.3			
2844.00	-10.6	V	3.0	41.4	1.0	-51.0	-13.0	-38.0			
3555.00	5.4	V	3.0	41.0	1.0	-34.6	-13.0	-21.6			
4266.00	-4.7	V	3.0	40.5	1.0	-44.2	-13.0	-31.2			
1422.00	-14.8	H	3.0	41.7	1.0	-55.5	-13.0	-42.5			
2133.00	-2.6	H	3.0	41.9	1.0	-43.5	-13.0	-30.5			
2844.00	-12.1	H	3.0	41.4	1.0	-52.6	-13.0	-39.6			
3555.00	5.0	H	3.0	41.0	1.0	-35.0	-13.0	-22.0			
4266.00	-6.4	H	3.0	40.5	1.0	-45.9	-13.0	-32.9			

		UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
		Company: Samsung Project #: 4788371667 Date: 2018-03-15 Test Engineer: 45574 Configuration: EUT / AC Adapter / Earphone, Z-position Location: Chamber 3 Mode: LTE_16QAM Band 12 Harmonics, 10MHz Bandwidth									
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes		
Low Ch, 704MHz											
1408.00	-19.7	V	3.0	41.7	1.0	-60.4	-13.0	-47.4			
2112.00	-0.7	V	3.0	42.0	1.0	-41.7	-13.0	-28.7			
2816.00	-13.8	V	3.0	41.5	1.0	-54.3	-13.0	-41.3			
3520.00	-5.2	V	3.0	41.0	1.0	-45.1	-13.0	-32.1			
4224.00	-10.4	V	3.0	40.6	1.0	-49.9	-13.0	-36.9			
1408.00	-18.2	H	3.0	41.7	1.0	-58.8	-13.0	-45.8			
2112.00	-2.9	H	3.0	42.0	1.0	-43.8	-13.0	-30.8			
2816.00	-15.7	H	3.0	41.5	1.0	-56.2	-13.0	-43.2			
3520.00	0.9	H	3.0	41.0	1.0	-39.1	-13.0	-26.1			
4224.00	-11.5	H	3.0	40.6	1.0	-51.0	-13.0	-38.0			
Mid Ch, 707.5MHz											
1415.00	-17.3	V	3.0	41.7	1.0	-58.0	-13.0	-45.0			
2122.50	-3.7	V	3.0	41.9	1.0	-44.7	-13.0	-31.7			
2830.00	-15.2	V	3.0	41.4	1.0	-55.6	-13.0	-42.6			
3537.50	-3.2	V	3.0	41.0	1.0	-43.2	-13.0	-30.2			
4245.00	-11.6	V	3.0	40.5	1.0	-51.1	-13.0	-38.1			
1415.00	-17.1	H	3.0	41.7	1.0	-57.8	-13.0	-44.8			
2122.50	-5.4	H	3.0	41.9	1.0	-46.3	-13.0	-33.3			
2830.00	-14.9	H	3.0	41.4	1.0	-55.4	-13.0	-42.4			
3537.50	-3.6	H	3.0	41.0	1.0	-43.6	-13.0	-30.6			
4245.00	-13.1	H	3.0	40.5	1.0	-52.6	-13.0	-39.6			
High Ch, 711MHz											
1422.00	-15.1	V	3.0	41.7	1.0	-55.7	-13.0	-42.7			
2133.00	-0.9	V	3.0	41.9	1.0	-41.8	-13.0	-28.8			
2844.00	-10.7	V	3.0	41.4	1.0	-51.2	-13.0	-38.2			
3555.00	5.3	V	3.0	41.0	1.0	-34.7	-13.0	-21.7			
4266.00	-4.8	V	3.0	40.5	1.0	-44.3	-13.0	-31.3			
1422.00	-15.0	H	3.0	41.7	1.0	-55.6	-13.0	-42.6			
2133.00	-2.5	H	3.0	41.9	1.0	-43.4	-13.0	-30.4			
2844.00	-12.3	H	3.0	41.4	1.0	-52.7	-13.0	-39.7			
3555.00	4.8	H	3.0	41.0	1.0	-35.1	-13.0	-22.1			
4266.00	-6.3	H	3.0	40.5	1.0	-45.8	-13.0	-32.8			

		UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
		Company: Samsung Project #: 4788371667 Date: 2018-03-15 Test Engineer: 45574 Configuration: EUT / AC Adapter / Earphone, Z-position Location: Chamber 3 Mode: LTE_QPSK Band 12 Harmonics, 5MHz Bandwidth									
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes		
Low Ch, 701.5MHz											
1403.00	-14.4	V	3.0	41.7	1.0	-55.1	-13.0	-42.1			
2104.50	2.2	V	3.0	42.0	1.0	-38.8	-13.0	-25.8			
2806.00	-11.2	V	3.0	41.5	1.0	-51.7	-13.0	-38.7			
3507.50	4.5	V	3.0	41.0	1.0	-35.5	-13.0	-22.5			
4209.00	-8.0	V	3.0	40.6	1.0	-45.6	-13.0	-32.6			
1403.00	-17.5	H	3.0	41.7	1.0	-58.2	-13.0	-45.2			
2104.50	0.0	H	3.0	42.0	1.0	-40.9	-13.0	-27.9			
2806.00	-12.5	H	3.0	41.5	1.0	-53.0	-13.0	-40.0			
3507.50	4.5	H	3.0	41.0	1.0	-35.5	-13.0	-22.5			
4209.00	-7.6	H	3.0	40.6	1.0	-47.1	-13.0	-34.1			
Mid Ch, 707.5MHz											
1415.00	-16.9	V	3.0	41.7	1.0	-57.5	-13.0	-44.5			
2122.50	-3.7	V	3.0	41.9	1.0	-44.6	-13.0	-31.6			
2830.00	-14.9	V	3.0	41.4	1.0	-55.3	-13.0	-42.3			
3537.50	0.1	V	3.0	41.0	1.0	-39.8	-13.0	-26.8			
4245.00	-9.5	V	3.0	40.5	1.0	-49.0	-13.0	-36.0			
1415.00	-16.7	H	3.0	41.7	1.0	-57.4	-13.0	-44.4			
2122.50	-5.7	H	3.0	41.9	1.0	-46.7	-13.0	-33.7			
2830.00	-15.7	H	3.0	41.4	1.0	-56.2	-13.0	-43.2			
3537.50	0.3	H	3.0	41.0	1.0	-39.6	-13.0	-26.6			
4245.00	-11.8	H	3.0	40.5	1.0	-51.3	-13.0	-38.3			
High Ch, 713.5MHz											
1427.00	-14.4	V	3.0	41.7	1.0	-55.1	-13.0	-42.1			
2140.50	-1.5	V	3.0	41.9	1.0	-42.4	-13.0	-29.4			
2854.00	-8.2	V	3.0	41.4	1.0	-46.6	-13.0	-33.6			
3567.50	6.2	V	3.0	41.0	1.0	-33.7	-13.0	-20.7			
4281.00	-5.1	V	3.0	40.5	1.0	-44.7	-13.0	-31.7			
1427.00	-16.5	H	3.0	41.7	1.0	-57.2	-13.0	-44.2			
2140.50	-2.3	H	3.0	41.9	1.0	-43.2	-13.0	-30.2			
2854.00	-8.6	H	3.0	41.4	1.0	-49.0	-13.0	-36.0			
3567.50	5.7	H	3.0	41.0	1.0	-34.3	-13.0	-21.3			
4281.00	-7.2	H	3.0	40.5	1.0	-46.7	-13.0	-33.7			

		UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
		Company: Samsung Project #: 4788371667 Date: 2018-03-15 Test Engineer: 45574 Configuration: EUT / AC Adapter / Earphone, Z-position Location: Chamber 3 Mode: LTE_16QAM Band 12 Harmonics, 5MHz Bandwidth									
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes		
Low Ch, 701.5MHz											
1403.00	-14.9	V	3.0	41.7	1.0	-55.6	-13.0	-42.6			
2104.50	3.2	V	3.0	42.0	1.0	-37.8	-13.0	-24.8			
2806.00	-11.2	V	3.0	41.5	1.0	-51.6	-13.0	-38.6			
3507.50	4.0	V	3.0	41.0	1.0	-36.0	-13.0	-23.0			
4209.00	-5.9	V	3.0	40.6	1.0	-45.4	-13.0	-32.4			
1403.00	-17.4	H	3.0	41.7	1.0	-58.1	-13.0	-45.1			
2104.50	0.7	H	3.0	42.0	1.0	-40.2	-13.0	-27.2			
2806.00	-11.9	H	3.0	41.5	1.0	-52.3	-13.0	-39.3			
3507.50	4.2	H	3.0	41.0	1.0	-35.8	-13.0	-22.8			
4209.00	-8.3	H	3.0	40.6	1.0	-47.9	-13.0	-34.9			
Mid Ch, 707.5MHz											
1415.00	-18.0	V	3.0	41.7	1.0	-58.6	-13.0	-45.6			
2122.50	-3.3	V	3.0	41.9	1.0	-44.3	-13.0	-31.3			
2830.00	-15.3	V	3.0	41.4	1.0	-55.7	-13.0	-42.7			
3537.50	-3.1	V	3.0	41.0	1.0	-43.1	-13.0	-30.1			
4245.00	-11.1	V	3.0	40.5	1.0	-50.7	-13.0	-37.7			
1415.00	-17.3	H	3.0	41.7	1.0	-57.9	-13.0	-44.9			
2122.50	-5.9	H	3.0	41.9	1.0	-46.8	-13.0	-33.8			
2830.00	-16.0	H	3.0	41.4	1.0	-56.4	-13.0	-43.4			
3537.50	-3.0	H	3.0	41.0	1.0	-43.0	-13.0	-30.0			
4245.00	-12.3	H	3.0	40.5	1.0	-51.9	-13.0	-38.9			
High Ch, 713.5MHz											
1427.00	-14.8	V	3.0	41.7	1.0	-55.5	-13.0	-42.5			
2140.50	0.1	V	3.0	41.9	1.0	-40.8	-13.0	-27.8			
2854.00	-7.4	V	3.0	41.4	1.0	-47.8	-13.0	-34.8			
3567.50	5.5	V	3.0	41.0	1.0	-34.5	-13.0	-21.5			
4281.00	-5.6	V	3.0	40.5	1.0	-45.1	-13.0	-32.1			
1427.00	-17.0	H	3.0	41.7	1.0	-57.7	-13.0	-44.7			
2140.50	-1.5	H	3.0	41.9	1.0	-42.4	-13.0	-29.4			
2854.00	-9.3	H	3.0	41.4	1.0	-49.7	-13.0	-36.7			
3567.50	4.9	H	3.0	41.0	1.0	-35.1	-13.0	-22.1			
4281.00	-6.2	H	3.0	40.5	1.0	-45.8	-13.0	-32.8			

		UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement								
		Company:	Samsung							
		Project #:	4788371667							
		Date:	2018-03-15							
		Test Engineer:	45574							
		Configuration:	EUT / AC Adapter / Earphone, Z-Position							
		Location:	Chamber 3							
		Mode:	LTE_QPSK Band 12 Harmonics, 3MHz Bandwidth							
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	
Low Ch, 700.5MHz										
1401.00	-13.9	V	3.0	41.7	1.0	-54.6	-13.0	-41.6		
2101.50	2.6	V	3.0	42.0	1.0	-38.3	-13.0	-25.3		
2802.00	-11.0	V	3.0	41.5	1.0	-51.4	-13.0	-38.4		
3502.50	5.7	V	3.0	41.0	1.0	-34.3	-13.0	-21.3		
4203.00	-4.0	V	3.0	40.6	1.0	-43.6	-13.0	-30.6		
1401.00	-16.4	H	3.0	41.7	1.0	-57.1	-13.0	-44.1		
2101.50	0.8	H	3.0	42.0	1.0	-40.1	-13.0	-27.1		
2802.00	-11.9	H	3.0	41.5	1.0	-52.3	-13.0	-39.3		
3502.50	5.5	H	3.0	41.0	1.0	-34.5	-13.0	-21.5		
4203.00	-6.4	H	3.0	40.6	1.0	-46.0	-13.0	-33.0		
Mid Ch, 707.5MHz										
1415.00	-17.2	V	3.0	41.7	1.0	-57.8	-13.0	-44.8		
2122.50	-4.5	V	3.0	41.9	1.0	-45.5	-13.0	-32.5		
2830.00	-14.6	V	3.0	41.4	1.0	-55.1	-13.0	-42.1		
3537.50	0.0	V	3.0	41.0	1.0	-39.9	-13.0	-26.9		
4245.00	-10.5	V	3.0	40.5	1.0	-50.0	-13.0	-37.0		
1415.00	-16.4	H	3.0	41.7	1.0	-57.0	-13.0	-44.0		
2122.50	-6.0	H	3.0	41.9	1.0	-47.0	-13.0	-34.0		
2830.00	-15.7	H	3.0	41.4	1.0	-56.2	-13.0	-43.2		
3537.50	-0.1	H	3.0	41.0	1.0	-40.0	-13.0	-27.0		
4245.00	-10.8	H	3.0	40.5	1.0	-50.3	-13.0	-37.3		
High Ch, 714.5MHz										
1429.00	-14.7	V	3.0	41.7	1.0	-55.4	-13.0	-42.4		
2143.50	-4.0	V	3.0	41.9	1.0	-44.9	-13.0	-31.9		
2858.00	-8.9	V	3.0	41.4	1.0	-49.3	-13.0	-36.3		
3572.50	6.2	V	3.0	40.9	1.0	-33.7	-13.0	-20.7		
4287.00	-5.6	V	3.0	40.5	1.0	-45.2	-13.0	-32.2		
1429.00	-16.2	H	3.0	41.7	1.0	-56.9	-13.0	-43.9		
2143.50	-5.0	H	3.0	41.9	1.0	-46.0	-13.0	-33.0		
2858.00	-11.0	H	3.0	41.4	1.0	-51.4	-13.0	-38.4		
3572.50	5.7	H	3.0	40.9	1.0	-34.3	-13.0	-21.3		
4287.00	-7.0	H	3.0	40.5	1.0	-46.5	-13.0	-33.5		

		UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement								
		Company:	Samsung							
		Project #:	4788371667							
		Date:	2018-03-15							
		Test Engineer:	45574							
		Configuration:	EUT / AC Adapter / Earphone, Z-Position							
		Location:	Chamber 3							
		Mode:	LTE_16QAM Band 12 Harmonics, 3MHz Bandwidth							
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	
Low Ch, 700.5MHz										
1401.00	-18.7	V	3.0	41.7	1.0	-59.3	-13.0	-46.3		
2101.50	2.1	V	3.0	42.0	1.0	-38.8	-13.0	-25.8		
2802.00	-11.8	V	3.0	41.5	1.0	-52.3	-13.0	-39.3		
3502.50	-10.0	V	3.0	41.0	1.0	-50.0	-13.0	-37.0		
4203.00	-5.1	V	3.0	40.6	1.0	-44.7	-13.0	-31.7		
1401.00	-16.1	H	3.0	41.7	1.0	-56.8	-13.0	-43.8		
2101.50	-1.1	H	3.0	42.0	1.0	-42.0	-13.0	-29.0		
2802.00	-11.6	H	3.0	41.5	1.0	-52.1	-13.0	-39.1		
3502.50	5.4	H	3.0	41.0	1.0	-34.6	-13.0	-21.6		
4203.00	-6.7	H	3.0	40.6	1.0	-46.3	-13.0	-33.3		
Mid Ch, 707.5MHz										
1415.00	-17.4	V	3.0	41.7	1.0	-58.1	-13.0	-45.1		
2122.50	-3.8	V	3.0	41.9	1.0	-44.8	-13.0	-31.8		
2830.00	-14.5	V	3.0	41.4	1.0	-55.0	-13.0	-42.0		
3537.50	-1.8	V	3.0	41.0	1.0	-41.8	-13.0	-28.8		
4245.00	-11.5	V	3.0	40.5	1.0	-51.0	-13.0	-38.0		
1415.00	-20.8	H	3.0	41.7	1.0	-61.4	-13.0	-48.4		
2122.50	-5.5	H	3.0	41.9	1.0	-46.5	-13.0	-33.5		
2830.00	-15.5	H	3.0	41.4	1.0	-56.0	-13.0	-43.0		
3537.50	-1.5	H	3.0	41.0	1.0	-41.5	-13.0	-28.5		
4245.00	-12.7	H	3.0	40.5	1.0	-52.2	-13.0	-39.2		
High Ch, 714.5MHz										
1429.00	-15.1	V	3.0	41.7	1.0	-55.8	-13.0	-42.8		
2143.50	-2.4	V	3.0	41.9	1.0	-43.3	-13.0	-30.3		
2858.00	-9.4	V	3.0	41.4	1.0	-49.8	-13.0	-36.8		
3572.50	4.7	V	3.0	40.9	1.0	-35.3	-13.0	-22.3		
4287.00	-6.2	V	3.0	40.5	1.0	-45.7	-13.0	-32.7		
1429.00	-17.4	H	3.0	41.7	1.0	-58.1	-13.0	-45.1		
2143.50	-3.7	H	3.0	41.9	1.0	-44.6	-13.0	-31.6		
2858.00	-10.5	H	3.0	41.4	1.0	-50.9	-13.0	-37.9		
3572.50	4.6	H	3.0	40.9	1.0	-35.4	-13.0	-22.4		
4287.00	-8.3	H	3.0	40.5	1.0	-47.8	-13.0	-34.8		

		UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
		Company: Samsung Project #: 4788371667 Date: 2018-03-15 Test Engineer: 45574 Configuration: EUT / AC Adapter / Earphone, Z-Position Location: Chamber 3 Mode: LTE_QPSK Band 12 Harmonics, 1.4MHz Bandwidth									
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes		
Low Ch, 699.7MHz											
1399.40	-14.4	V	3.0	41.7	1.0	-55.0	-13.0	-42.0			
2099.10	-8.1	V	3.0	42.0	1.0	-50.1	-13.0	-37.1			
2798.80	3.6	V	3.0	41.5	1.0	-36.8	-13.0	-23.8			
3798.50	-15.4	V	3.0	40.8	1.0	-55.2	-13.0	-42.2			
4198.20	-4.3	V	3.0	40.6	1.0	-43.9	-13.0	-30.9			
1399.40	-15.4	H	3.0	41.7	1.0	-56.0	-13.0	-43.0			
2099.10	-4.6	H	3.0	42.0	1.0	-45.6	-13.0	-32.6			
2798.80	-12.4	H	3.0	41.5	1.0	-52.9	-13.0	-39.9			
3798.50	-17.9	H	3.0	40.8	1.0	-57.7	-13.0	-44.7			
4198.20	-6.5	H	3.0	40.6	1.0	-46.0	-13.0	-33.0			
Mid Ch, 707.5MHz											
1415.00	-18.1	V	3.0	41.7	1.0	-58.8	-13.0	-45.8			
2122.50	-5.8	V	3.0	41.9	1.0	-46.7	-13.0	-33.7			
2830.00	-14.4	V	3.0	41.4	1.0	-54.8	-13.0	-41.8			
3537.50	-1.3	V	3.0	41.0	1.0	-41.3	-13.0	-28.3			
4245.00	-10.2	V	3.0	40.5	1.0	-49.7	-13.0	-36.7			
1415.00	-18.7	H	3.0	41.7	1.0	-59.3	-13.0	-46.3			
2122.50	-5.9	H	3.0	41.9	1.0	-46.9	-13.0	-33.9			
2830.00	-17.3	H	3.0	41.4	1.0	-57.7	-13.0	-44.7			
3537.50	0.0	H	3.0	41.0	1.0	-40.0	-13.0	-27.0			
4245.00	-10.8	H	3.0	40.5	1.0	-50.3	-13.0	-37.3			
High Ch, 715.3MHz											
1430.60	-16.2	V	3.0	41.7	1.0	-56.8	-13.0	-43.8			
2145.90	-5.8	V	3.0	41.9	1.0	-46.7	-13.0	-33.7			
2861.20	-8.9	V	3.0	41.4	1.0	-49.3	-13.0	-36.3			
3576.50	-8.8	V	3.0	40.9	1.0	-48.7	-13.0	-35.7			
4291.80	-7.0	V	3.0	40.5	1.0	-46.5	-13.0	-33.5			
1430.60	-18.1	H	3.0	41.7	1.0	-58.8	-13.0	-45.8			
2145.90	-7.3	H	3.0	41.9	1.0	-48.2	-13.0	-35.2			
2861.20	-11.5	H	3.0	41.4	1.0	-51.9	-13.0	-38.9			
3576.50	4.3	H	3.0	40.9	1.0	-35.7	-13.0	-22.7			
4291.80	-8.3	H	3.0	40.5	1.0	-47.8	-13.0	-34.8			

		UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
		Company: Samsung Project #: 4788371667 Date: 2018-03-15 Test Engineer: 45574 Configuration: EUT / AC Adapter / Earphone, Z-Position Location: Chamber 3 Mode: LTE_16QAM Band 12 Harmonics, 1.4MHz Bandwidth									
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes		
Low Ch, 699.7MHz											
1399.40	-15.0	V	3.0	41.7	1.0	-55.6	-13.0	-42.6			
2099.10	3.2	V	3.0	42.0	1.0	-37.8	-13.0	-24.8			
2798.80	-12.1	V	3.0	41.5	1.0	-52.6	-13.0	-39.6			
3798.50	-15.9	V	3.0	40.8	1.0	-55.7	-13.0	-42.7			
4198.20	-4.8	V	3.0	40.6	1.0	-44.4	-13.0	-31.4			
1399.40	-15.7	H	3.0	41.7	1.0	-56.3	-13.0	-43.3			
2099.10	1.5	H	3.0	42.0	1.0	-39.5	-13.0	-26.5			
2798.80	-13.4	H	3.0	41.5	1.0	-53.8	-13.0	-40.8			
3798.50	-15.5	H	3.0	40.8	1.0	-55.3	-13.0	-42.3			
4198.20	-6.7	H	3.0	40.6	1.0	-46.3	-13.0	-33.3			
Mid Ch, 707.5MHz											
1415.00	-17.0	V	3.0	41.7	1.0	-57.7	-13.0	-44.7			
2122.50	-5.5	V	3.0	41.9	1.0	-46.5	-13.0	-33.5			
2830.00	-14.2	V	3.0	41.4	1.0	-54.7	-13.0	-41.7			
3537.50	-4.2	V	3.0	41.0	1.0	-44.1	-13.0	-31.1			
4245.00	-10.7	V	3.0	40.5	1.0	-50.3	-13.0	-37.3			
1415.00	-17.7	H	3.0	41.7	1.0	-58.4	-13.0	-45.4			
2122.50	-6.2	H	3.0	41.9	1.0	-47.1	-13.0	-34.1			
2830.00	-16.2	H	3.0	41.4	1.0	-56.6	-13.0	-43.6			
3537.50	-3.1	H	3.0	41.0	1.0	-43.1	-13.0	-30.1			
4245.00	-12.0	H	3.0	40.5	1.0	-51.6	-13.0	-38.6			
High Ch, 715.3MHz											
1430.60	-16.6	V	3.0	41.7	1.0	-57.3	-13.0	-44.3			
2145.90	-5.2	V	3.0	41.9	1.0	-46.1	-13.0	-33.1			
2861.20	-9.0	V	3.0	41.4	1.0	-49.4	-13.0	-36.4			
3576.50	6.6	V	3.0	40.9	1.0	-33.4	-13.0	-20.4			
4291.80	-6.7	V	3.0	40.5	1.0	-46.2	-13.0	-33.2			
1430.60	-16.8	H	3.0	41.7	1.0	-57.5	-13.0	-44.5			
2145.90	-6.5	H	3.0	41.9	1.0	-47.4	-13.0	-34.4			
2861.20	-11.5	H	3.0	41.4	1.0	-51.9	-13.0	-38.9			
3576.50	5.0	H	3.0	40.9	1.0	-35.0	-13.0	-22.0			
4291.80	-9.5	H	3.0	40.5	1.0	-49.1	-13.0	-36.1			