

**LTE Band 66**

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
Company: Samsung Project #: 4790430333 Date: 7/21/2022 Test Engineer: 19568 Configuration: EUT / AC Adapter / Earphone, Z-Position Location: Chamber 1 Mode: LTE_QPSK Band 66 Harmonics, 1.4MHz Bandwidth Test Voltage: AC 120 V, 60 Hz									
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
<b>Low Ch, 1710.7MHz</b>									
3421.40	-9.0	V	3.0	45.7	1.0	-53.7	-13.0	-40.7	
5132.10	-9.0	V	3.0	45.8	1.0	-53.8	-13.0	-40.8	
6842.80	-3.4	V	3.0	44.9	1.0	-47.3	-13.0	-34.3	
3421.40	-9.1	H	3.0	45.7	1.0	-53.8	-13.0	-40.8	
5132.10	-9.0	H	3.0	45.8	1.0	-53.8	-13.0	-40.8	
6842.80	-4.4	H	3.0	44.9	1.0	-48.3	-13.0	-35.3	
<b>Mid Ch, 1745MHz</b>									
3490.00	-8.6	V	3.0	45.7	1.0	-53.3	-13.0	-40.3	
5235.00	-8.6	V	3.0	45.8	1.0	-53.3	-13.0	-40.3	
6980.00	-4.1	V	3.0	44.8	1.0	-47.9	-13.0	-34.9	
3490.00	-8.8	H	3.0	45.7	1.0	-53.5	-13.0	-40.5	
5235.00	-8.4	H	3.0	45.8	1.0	-53.2	-13.0	-40.2	
6980.00	-5.2	H	3.0	44.8	1.0	-49.0	-13.0	-36.0	
<b>High Ch, 1779.3MHz</b>									
3558.60	-8.4	V	3.0	45.8	1.0	-53.2	-13.0	-40.2	
5337.90	-8.4	V	3.0	45.8	1.0	-53.2	-13.0	-40.2	
7117.20	-1.5	V	3.0	44.7	1.0	-45.2	-13.0	-32.2	
3558.60	-8.4	H	3.0	45.8	1.0	-53.2	-13.0	-40.2	
5337.90	-8.4	H	3.0	45.8	1.0	-53.2	-13.0	-40.2	
7117.20	-2.2	H	3.0	44.7	1.0	-45.9	-13.0	-32.9	

**LTE Band 71**

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
Company:		Samsung							
Project #:		4790430333							
Date:		7/22/2022							
Test Engineer:		25770							
Configuration:		EUT / AC Adapter / Earphone, X-Position							
Location:		Chamber 2							
Mode:		LTE_QPSK Band 71 Harmonics, 5MHz Bandwidth							
Test Voltage:		AC 120 V, 60 Hz							
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
<b>Low Ch, 665.5MHz</b>									
1331.00	-17.4	V	3.0	41.0	1.0	-57.4	-13.0	-44.4	
1996.50	-15.0	V	3.0	40.9	1.0	-54.8	-13.0	-41.8	
2662.00	-12.4	V	3.0	41.8	1.0	-53.2	-13.0	-40.2	
1331.00	-18.3	H	3.0	41.0	1.0	-58.3	-13.0	-45.3	
1996.50	-15.5	H	3.0	40.9	1.0	-55.4	-13.0	-42.4	
2662.00	-12.7	H	3.0	41.8	1.0	-53.5	-13.0	-40.5	
<b>Mid Ch, 680.5MHz</b>									
1361.00	-17.3	V	3.0	41.0	1.0	-57.3	-13.0	-44.3	
2041.50	-14.8	V	3.0	40.9	1.0	-54.7	-13.0	-41.7	
2722.00	-12.1	V	3.0	41.9	1.0	-53.0	-13.0	-40.0	
1361.00	-18.0	H	3.0	41.0	1.0	-58.0	-13.0	-45.0	
2041.50	-15.3	H	3.0	40.9	1.0	-55.3	-13.0	-42.3	
2722.00	-12.4	H	3.0	41.9	1.0	-53.3	-13.0	-40.3	
<b>High Ch, 695.5MHz</b>									
1391.00	-17.0	V	3.0	41.0	1.0	-57.0	-13.0	-44.0	
2086.50	-14.7	V	3.0	41.0	1.0	-54.7	-13.0	-41.7	
2782.00	-12.0	V	3.0	42.0	1.0	-53.0	-13.0	-40.0	
1391.00	-17.9	H	3.0	41.0	1.0	-57.8	-13.0	-44.8	
2086.50	-15.2	H	3.0	41.0	1.0	-55.1	-13.0	-42.1	
2782.00	-12.2	H	3.0	42.0	1.0	-53.2	-13.0	-40.2	

LTE  
Band 71  
  
5 MHz  
QPSK

**NR Band n5**

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
Company: Samsung Project #: 4790430333 Date: 7/22/2022 Test Engineer: 25770 Configuration: EUT / AC Adapter / Earphone, Z-Position Location: Chamber 1 Mode: 5G NR_QPSK NR n5 Harmonics, 5MHz Bandwidth Test Voltage: AC 120 V, 60 Hz									
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
<b>Low Ch, 826.5MHz</b>									
1653.00	-14.6	V	3.0	45.6	1.0	-59.2	-13.0	-46.2	
2479.50	-10.4	V	3.0	45.5	1.0	-54.9	-13.0	-41.9	
3306.00	-9.8	V	3.0	45.7	1.0	-54.5	-13.0	-41.5	
1653.00	-16.5	H	3.0	45.6	1.0	-61.1	-13.0	-48.1	
2479.50	-10.6	H	3.0	45.5	1.0	-55.1	-13.0	-42.1	
3306.00	-9.8	H	3.0	45.7	1.0	-54.5	-13.0	-41.5	
<b>Mid Ch, 836.5MHz</b>									
1673.00	-15.6	V	3.0	45.6	1.0	-60.2	-13.0	-47.2	
2509.50	-9.2	V	3.0	45.5	1.0	-53.7	-13.0	-40.7	
3346.00	-9.7	V	3.0	45.7	1.0	-54.4	-13.0	-41.4	
1673.00	-16.4	H	3.0	45.6	1.0	-61.0	-13.0	-48.0	
2509.50	-11.1	H	3.0	45.5	1.0	-55.5	-13.0	-42.5	
3346.00	-9.7	H	3.0	45.7	1.0	-54.3	-13.0	-41.3	
<b>High Ch, 846.5MHz</b>									
1693.00	-15.2	V	3.0	45.6	1.0	-59.8	-13.0	-46.8	
2539.50	-10.2	V	3.0	45.5	1.0	-54.6	-13.0	-41.6	
3386.00	-9.4	V	3.0	45.7	1.0	-54.1	-13.0	-41.1	
1693.00	-16.3	H	3.0	45.6	1.0	-60.9	-13.0	-47.9	
2539.50	-11.1	H	3.0	45.5	1.0	-55.6	-13.0	-42.6	
3386.00	-9.4	H	3.0	45.7	1.0	-54.2	-13.0	-41.2	

20MHz  
QPSK

**NR Band n25**

		UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement							
		<b>Company:</b>	Samsung						
		<b>Project #:</b>	4790430333						
		<b>Date:</b>	7/22/2022						
		<b>Test Engineer:</b>	19568						
		<b>Configuration:</b>	EUT / AC Adapter / Earphone, X-Position						
		<b>Location:</b>	Chamber 2						
		<b>Mode:</b>	5G NR_QPSK NR n25 Harmonics, 20MHz Bandwidth						
		<b>Test Voltage:</b>	AC 120 V, 60 Hz						
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
<b>Low Ch, 1860MHz</b>									
3720.00	-10.6	V	3.0	42.3	1.0	-51.9	-13.0	-38.9	
5580.00	-8.3	V	3.0	43.1	1.0	-50.4	-13.0	-37.4	
7440.00	-4.1	V	3.0	42.7	1.0	-45.8	-13.0	-32.8	
3720.00	-11.1	H	3.0	42.3	1.0	-52.5	-13.0	-39.5	
5580.00	-8.2	H	3.0	43.1	1.0	-50.4	-13.0	-37.4	
7440.00	-6.4	H	3.0	42.7	1.0	-48.1	-13.0	-35.1	
<b>Mid Ch, 1882.5MHz</b>									
3765.00	-10.1	V	3.0	42.3	1.0	-51.4	-13.0	-38.4	
5647.50	-7.8	V	3.0	43.2	1.0	-50.0	-13.0	-37.0	
7530.00	-2.2	V	3.0	42.7	1.0	-43.8	-13.0	-30.8	
3765.00	-10.9	H	3.0	42.3	1.0	-52.2	-13.0	-39.2	
5647.50	-7.9	H	3.0	43.2	1.0	-50.1	-13.0	-37.1	
7530.00	-6.1	H	3.0	42.7	1.0	-47.8	-13.0	-34.8	
<b>High Ch, 1905MHz</b>									
3810.00	-10.5	V	3.0	42.3	1.0	-51.8	-13.0	-38.8	
5715.00	-8.1	V	3.0	43.2	1.0	-50.3	-13.0	-37.3	
7620.00	-4.1	V	3.0	42.6	1.0	-45.7	-13.0	-32.7	
3810.00	-11.0	H	3.0	42.3	1.0	-52.4	-13.0	-39.4	
5715.00	-8.2	H	3.0	43.2	1.0	-50.4	-13.0	-37.4	
7620.00	-6.4	H	3.0	42.6	1.0	-48.0	-13.0	-35.0	

20 MHz  
QPSK

**NR Band n41(PC2)**

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
Company:		Samsung							
Project #:		4790430333							
Date:		7/29/2022							
Test Engineer:		25546							
Configuration:		EUT / AC Adapter / Earphone, X-Position							
Location:		Chamber 1							
Mode:		5G NR_BPSK NR n41 Harmonics, 40MHz Bandwidth							
Test Voltage:		AC 120 V, 60 Hz							
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
<b>Low Ch, 2516.01MHz</b>									
5032.02	-9.5	V	3.0	45.8	1.0	-54.4	-25.0	-29.4	
7548.03	10.3	V	3.0	44.5	1.0	-33.2	-25.0	-8.2	
10064.04	4.6	V	3.0	42.6	1.0	-37.0	-25.0	-12.0	
12580.05	3.2	V	3.0	43.7	1.0	-39.5	-25.0	-14.5	
15096.06	6.4	V	3.0	45.5	1.0	-38.2	-25.0	-13.2	
5032.02	-13.8	H	3.0	45.8	1.0	-58.6	-25.0	-33.6	
7548.03	2.9	H	3.0	44.5	1.0	-40.6	-25.0	-15.6	
10064.04	1.2	H	3.0	42.6	1.0	-40.4	-25.0	-15.4	
12580.05	0.9	H	3.0	43.7	1.0	-41.9	-25.0	-16.9	
15096.06	2.5	H	3.0	45.5	1.0	-42.0	-25.0	-17.0	
<b>Mid Ch, 2592.99MHz</b>									
5185.98	-6.4	V	3.0	45.8	1.0	-51.2	-25.0	-26.2	
7778.97	11.6	V	3.0	44.4	1.0	-31.8	-25.0	-6.8	
10371.96	9.0	V	3.0	42.7	1.0	-32.7	-25.0	-7.7	
12964.95	8.5	V	3.0	44.0	1.0	-34.5	-25.0	-9.5	
15557.94	4.6	V	3.0	44.6	1.0	-39.0	-25.0	-14.0	
5185.98	-11.9	H	3.0	45.8	1.0	-56.7	-25.0	-31.7	
7778.97	2.9	H	3.0	44.4	1.0	-40.5	-25.0	-15.5	
10371.96	5.2	H	3.0	42.7	1.0	-36.5	-25.0	-11.5	
12964.95	8.4	H	3.0	44.0	1.0	-34.6	-25.0	-9.6	
15557.94	5.2	H	3.0	44.6	1.0	-38.4	-25.0	-13.4	
<b>High Ch, 2670MHz</b>									
5340.00	-4.0	V	3.0	45.8	1.0	-48.8	-25.0	-23.8	
8010.00	12.1	V	3.0	44.2	1.0	-31.1	-25.0	-6.1	
10680.00	10.0	V	3.0	42.8	1.0	-31.8	-25.0	-6.8	
13350.00	8.0	V	3.0	44.4	1.0	-35.3	-25.0	-10.3	
16020.00	0.5	V	3.0	43.6	1.0	-42.1	-25.0	-17.1	
5340.00	-7.5	H	3.0	45.8	1.0	-52.3	-25.0	-27.3	
8010.00	4.5	H	3.0	44.2	1.0	-38.7	-25.0	-13.7	
10680.00	5.0	H	3.0	42.8	1.0	-36.8	-25.0	-11.8	
13350.00	8.0	H	3.0	44.4	1.0	-35.4	-25.0	-10.4	
16020.00	-0.1	H	3.0	43.6	1.0	-42.7	-25.0	-17.7	

40 MHz  
BPSK

**NR Band n66**

		UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement								
		<b>Company:</b>	Samsung							
		<b>Project #:</b>	4790430333							
		<b>Date:</b>	7/22/2022							
		<b>Test Engineer:</b>	19568							
		<b>Configuration:</b>	EUT / AC Adapter / Earphone, X-Position							
		<b>Location:</b>	Chamber 2							
		<b>Mode:</b>	5G NR_QPSK NR n66 Harmonics, 20MHz Bandwidth							
		<b>Test Voltage:</b>	AC 120 V, 60 Hz							
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	
<b>Low Ch, 1720MHz</b>										
3440.00	-9.2	V	3.0	42.3	1.0	-50.5	-13.0	-37.5		
5160.00	-9.0	V	3.0	43.1	1.0	-51.0	-13.0	-38.0		
6880.00	-6.4	V	3.0	43.0	1.0	-48.4	-13.0	-35.4		
3440.00	-9.3	H	3.0	42.3	1.0	-50.6	-13.0	-37.6		
5160.00	-8.8	H	3.0	43.1	1.0	-50.9	-13.0	-37.9		
6880.00	-6.3	H	3.0	43.0	1.0	-48.3	-13.0	-35.3		
<b>Mid Ch, 1745MHz</b>										
3490.00	-9.0	V	3.0	42.3	1.0	-50.3	-13.0	-37.3		
5235.00	-9.0	V	3.0	43.1	1.0	-51.0	-13.0	-38.0		
6980.00	-6.5	V	3.0	42.9	1.0	-48.4	-13.0	-35.4		
3490.00	-9.0	H	3.0	42.3	1.0	-50.3	-13.0	-37.3		
5235.00	-8.8	H	3.0	43.1	1.0	-50.9	-13.0	-37.9		
6980.00	-6.2	H	3.0	42.9	1.0	-48.2	-13.0	-35.2		
<b>High Ch, 1770MHz</b>										
3540.00	-8.1	V	3.0	42.3	1.0	-49.4	-13.0	-36.4		
5310.00	-8.6	V	3.0	43.1	1.0	-50.7	-13.0	-37.7		
7080.00	-6.4	V	3.0	42.9	1.0	-48.2	-13.0	-35.2		
3540.00	-8.2	H	3.0	42.3	1.0	-49.5	-13.0	-36.5		
5310.00	-8.5	H	3.0	43.1	1.0	-50.5	-13.0	-37.5		
7080.00	-6.2	H	3.0	42.9	1.0	-48.1	-13.0	-35.1		

20 MHz  
QPSK

**NR Band n71**

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement											
10MHz  QPSK		Company: Samsung Project #: 4790430333 Date: 7/22/2022 Test Engineer: 25770 Configuration: EUT / AC Adapter / Earphone, X-Position Location: Chamber 1 Mode: 5G NR_QPSK NR n71 Harmonics, 10MHz Bandwidth Test Voltage: AC 120 V, 60 Hz									
		f	SG reading	Ant. Pol.	Distance	Preamp	Filter	EIRP	Limit	Delta	Notes
		MHz	(dBm)	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)	
		Low Ch, 668MHz									
		1336.00	-17.4	V	3.0	45.9	1.0	-62.2	-13.0	-49.2	
		2004.00	-13.9	V	3.0	45.3	1.0	-58.3	-13.0	-45.3	
		2672.00	-11.7	V	3.0	45.5	1.0	-56.2	-13.0	-43.2	
		1336.00	-18.4	H	3.0	45.9	1.0	-63.2	-13.0	-50.2	
		2004.00	-15.0	H	3.0	45.3	1.0	-59.4	-13.0	-46.4	
		2672.00	-12.1	H	3.0	45.5	1.0	-56.6	-13.0	-43.6	
Mid Ch, 680.5MHz											
1361.00	-17.3	V	3.0	45.9	1.0	-62.2	-13.0	-49.2			
2041.50	-13.7	V	3.0	45.3	1.0	-58.1	-13.0	-45.1			
2722.00	-11.5	V	3.0	45.5	1.0	-56.0	-13.0	-43.0			
1361.00	-18.3	H	3.0	45.9	1.0	-63.1	-13.0	-50.1			
2041.50	-14.8	H	3.0	45.3	1.0	-59.1	-13.0	-46.1			
2722.00	-11.8	H	3.0	45.5	1.0	-56.3	-13.0	-43.3			
High Ch, 693MHz											
1386.00	-17.1	V	3.0	45.8	1.0	-61.9	-13.0	-48.9			
2079.00	-13.6	V	3.0	45.4	1.0	-58.0	-13.0	-45.0			
2772.00	-11.3	V	3.0	45.5	1.0	-55.8	-13.0	-42.8			
1386.00	-18.0	H	3.0	45.8	1.0	-62.9	-13.0	-49.9			
2079.00	-14.5	H	3.0	45.4	1.0	-58.8	-13.0	-45.8			
2772.00	-11.5	H	3.0	45.5	1.0	-56.0	-13.0	-43.0			

**END OF REPORT**