LTE Band 13

LTE

Band 13

5MHz

QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company:	Samsunf
Project #:	4788725460
Date:	2018-11-22
Test Engineer:	45585
Configuration:	EUT / AC Adapter / Earphone, Y-Position
Location:	Chamber 2
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	-27.2	V	3.0	38.2	1.0	-64.4	-40.0	-24.4	
2338.50	-11.9	V	3.0	38.7	1.0	-49.6	-13.0	-36.6	
3118.00	-10.1	V	3.0	39.3	1.0	-48.4	-13.0	-35.4	
3897.50	-10.2	V	3.0	39.8	1.0	-49.0	-13.0	-36.0	
4677.00	-9.1	V	3.0	39.8	1.0	-47.8	-13.0	-34.8	
1559.00	-26.9	H	3.0	38.2	1.0	-64.1	-40.0	-24.1	
2338.50	-13.1	H	3.0	38.7	1.0	-50.8	-13.0	-37.8	
3118.00	-10.5	H	3.0	39.3	1.0	-48.8	-13.0	-35.8	
3897.50	-10.4	H	3.0	39.8	1.0	-49.2	-13.0	-36.2	
4677.00	-8.9	H	3.0	39.8	1.0	-47.7	-13.0	-34.7	
Mid Ch, 782MHz									
1564.00	-30.0	V	3.0	38.2	1.0	-67.2	-40.0	-27.2	
2346.00	-16.0	V	3.0	38.7	1.0	-53.7	-13.0	-40.7	
3128.00	-10.3	V	3.0	39.3	1.0	-48.6	-13.0	-35.6	
3910.00	-10.4	V	3.0	39.8	1.0	-49.2	-13.0	-36.2	
4692.00	-9.2	V	3.0	39.8	1.0	-48.0	-13.0	-35.0	
1564.00	-31.3	H	3.0	38.2	1.0	-68.5	-40.0	-28.5	
2346.00	-13.3	H	3.0	38.7	1.0	-51.0	-13.0	-38.0	
3128.00	-10.7	H	3.0	39.3	1.0	-49.0	-13.0	-36.0	
3910.00	-10.5	H	3.0	39.8	1.0	-49.3	-13.0	-36.3	
4692.00	-9.8	H	3.0	39.8	1.0	-48.6	-13.0	-35.6	
High Ch, 784.5MHz									
1569.00	-26.8	V	3.0	38.2	1.0	-64.0	-40.0	-24.0	
2353.50	-12.4	V	3.0	38.7	1.0	-50.1	-13.0	-37.1	
3138.00	-9.8	V	3.0	39.3	1.0	-48.1	-13.0	-35.1	
3922.50	-10.1	V	3.0	39.8	1.0	-48.8	-13.0	-35.8	
4707.00	-8.8	V	3.0	39.8	1.0	-47.6	-13.0	-34.6	
1569.00	-25.9	H	3.0	38.2	1.0	-63.0	-40.0	-23.0	
2353.50	-12.2	H	3.0	38.7	1.0	-49.9	-13.0	-36.9	
3138.00	-10.1	H	3.0	39.3	1.0	-48.5	-13.0	-35.5	
3922.50	-10.1	H	3.0	39.8	1.0	-48.9	-13.0	-35.9	
4707.00	-9.2	H	3.0	39.8	1.0	-48.0	-13.0	-35.0	

LTE Band 25

LTE

Band 25

3MHz

QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company:	Samsung
Project #:	4788725460
Date:	2018-11-13
Test Engineer:	45585
Configuration:	EUT / AC Adpater / Earphone, Y-Position
Location:	Chamber 2
Mode:	LTE_QPSK Band 25 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	-11.3	V	3.0	39.7	1.0	-50.0	-13.0	-37.0	
5554.50	-8.3	V	3.0	39.9	1.0	-47.2	-13.0	-34.2	
7406.00	-6.2	V	3.0	39.4	1.0	-44.6	-13.0	-31.6	
3703.00	-11.6	H	3.0	39.7	1.0	-50.2	-13.0	-37.2	
5554.50	-8.6	H	3.0	39.9	1.0	-47.6	-13.0	-34.6	
7406.00	-7.0	H	3.0	39.4	1.0	-45.4	-13.0	-32.4	
Mid Ch, 1882.5MHz									
3765.00	-11.0	V	3.0	39.7	1.0	-49.7	-13.0	-36.7	
5647.50	-8.0	V	3.0	40.0	1.0	-46.9	-13.0	-33.9	
7530.00	-6.4	V	3.0	39.4	1.0	-44.7	-13.0	-31.7	
3765.00	-11.3	H	3.0	39.7	1.0	-50.0	-13.0	-37.0	
5647.50	-8.3	H	3.0	40.0	1.0	-47.2	-13.0	-34.2	
7530.00	-7.1	H	3.0	39.4	1.0	-45.5	-13.0	-32.5	
High Ch, 1913.5MHz									
3827.00	-10.9	V	3.0	39.7	1.0	-49.6	-13.0	-36.6	
5740.50	-8.2	V	3.0	40.0	1.0	-47.2	-13.0	-34.2	
7654.00	-6.4	V	3.0	39.3	1.0	-44.7	-13.0	-31.7	
3827.00	-11.1	H	3.0	39.7	1.0	-49.9	-13.0	-36.9	
5740.50	-8.3	H	3.0	40.0	1.0	-47.3	-13.0	-34.3	
7654.00	-7.0	H	3.0	39.3	1.0	-45.3	-13.0	-32.3	

LTE Band 26

LTE

Band 26

3MHz

QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company:	Samsung
Project #:	4788725460
Date:	2018-11-27
Test Engineer:	47989
Configuration:	EUT / AC Adapter / Earphone, Y-Position
Location:	Chamber 1
Mode:	LTE_QPSK Band 26 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, 815.5MHz									
1631.00	-11.7	V	3.0	43.6	1.0	-54.3	-13.0	-41.3	
2446.50	-12.6	V	3.0	43.4	1.0	-55.0	-13.0	-42.0	
3262.00	-10.2	V	3.0	43.6	1.0	-52.8	-13.0	-39.8	
1631.00	-10.8	H	3.0	43.6	1.0	-53.4	-13.0	-40.4	
2446.50	-13.3	H	3.0	43.4	1.0	-55.7	-13.0	-42.7	
3262.00	-10.8	H	3.0	43.6	1.0	-53.4	-13.0	-40.4	
Mid Ch, 831.5MHz									
1663.00	-11.4	V	3.0	43.6	1.0	-54.0	-13.0	-41.0	
2494.50	-12.6	V	3.0	43.4	1.0	-55.0	-13.0	-42.0	
3326.00	-10.3	V	3.0	43.6	1.0	-53.0	-13.0	-40.0	
1663.00	-11.4	H	3.0	43.6	1.0	-53.9	-13.0	-40.9	
2494.50	-12.9	H	3.0	43.4	1.0	-55.3	-13.0	-42.3	
3326.00	-10.8	H	3.0	43.6	1.0	-53.5	-13.0	-40.5	
High Ch, 847.5MHz									
1695.00	-8.6	V	3.0	43.6	1.0	-51.2	-13.0	-38.2	
2542.50	-12.0	V	3.0	43.4	1.0	-54.5	-13.0	-41.5	
3390.00	-10.3	V	3.0	43.7	1.0	-52.9	-13.0	-39.9	
1695.00	-8.9	H	3.0	43.6	1.0	-51.4	-13.0	-38.4	
2542.50	-12.5	H	3.0	43.4	1.0	-55.0	-13.0	-42.0	
3390.00	-10.6	H	3.0	43.7	1.0	-53.3	-13.0	-40.3	

LTE Band 41

LTE

Band 41

15MHz

QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company:	Samsung
Project #:	4788725460
Date:	2018-11-23
Test Engineer:	45585
Configuration:	EUT / AC Adapter / Earphone, Z-Position
Location:	Chamber 2
Mode:	LTE_QPSK Band 41 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, 2503.5MHz									
5007.00	-6.2	V	3.0	39.8	1.0	-45.0	-25.0	-20.0	
7510.50	-14.7	V	3.0	39.4	1.0	-53.1	-25.0	-28.1	
10014.00	-15.3	V	3.0	38.6	1.0	-52.8	-25.0	-27.8	
12517.50	-11.1	V	3.0	39.0	1.0	-49.1	-25.0	-24.1	
15021.00	-8.5	V	3.0	41.3	1.0	-48.8	-25.0	-23.8	
5007.00	-17.5	H	3.0	39.8	1.0	-56.3	-25.0	-31.3	
7510.50	-12.7	H	3.0	39.4	1.0	-51.1	-25.0	-26.1	
10014.00	-15.3	H	3.0	38.6	1.0	-52.9	-25.0	-27.9	
12517.50	-11.3	H	3.0	39.0	1.0	-49.3	-25.0	-24.3	
15021.00	-8.8	H	3.0	41.3	1.0	-49.1	-25.0	-24.1	
Mid Ch, 2593MHz									
5186.00	-0.5	V	3.0	39.8	1.0	-39.3	-25.0	-14.3	
7779.00	-5.4	V	3.0	39.3	1.0	-43.7	-25.0	-18.7	
10372.00	-15.0	V	3.0	38.6	1.0	-52.5	-25.0	-27.5	
12965.00	-11.1	V	3.0	39.4	1.0	-49.5	-25.0	-24.5	
15558.00	-8.4	V	3.0	41.1	1.0	-48.5	-25.0	-23.5	
5186.00	-11.2	H	3.0	39.8	1.0	-50.0	-25.0	-25.0	
7779.00	-7.4	H	3.0	39.3	1.0	-45.7	-25.0	-20.7	
10372.00	-14.9	H	3.0	38.6	1.0	-52.5	-25.0	-27.5	
12965.00	-11.1	H	3.0	39.4	1.0	-49.5	-25.0	-24.5	
15558.00	-8.5	H	3.0	41.1	1.0	-48.6	-25.0	-23.6	
High Ch, 2682.5MHz									
5365.00	-2.4	V	3.0	39.9	1.0	-41.3	-25.0	-16.3	
8047.50	-5.7	V	3.0	39.2	1.0	-43.8	-25.0	-18.8	
10730.00	-14.0	V	3.0	38.5	1.0	-51.6	-25.0	-26.6	
13412.50	-10.1	V	3.0	39.8	1.0	-48.9	-25.0	-23.9	
16095.00	-7.6	V	3.0	40.9	1.0	-47.5	-25.0	-22.5	
5365.00	-11.3	H	3.0	39.9	1.0	-50.1	-25.0	-25.1	
8047.50	-5.8	H	3.0	39.2	1.0	-43.9	-25.0	-18.9	
10730.00	-14.2	H	3.0	38.5	1.0	-51.8	-25.0	-26.8	
13412.50	-10.0	H	3.0	39.8	1.0	-48.8	-25.0	-23.8	
16095.00	-7.7	H	3.0	40.9	1.0	-47.5	-25.0	-22.5	

LTE Band 66

LTE

Band 66

15MHz
QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company:	Samsung
Project #:	4788725460
Date:	2018-11-13
Test Engineer:	47989
Configuration:	EUT / AC Adapter / Earphone, Y-Position
Location:	Chamber 1
Mode:	LTE_QPSK Band 66 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, 1717.5MHz									
3435.00	-9.4	V	3.0	43.7	1.0	-52.1	-13.0	-39.1	
5152.50	-8.9	V	3.0	43.8	1.0	-51.6	-13.0	-38.6	
6870.00	-6.2	V	3.0	42.8	1.0	-48.0	-13.0	-35.0	
3435.00	-9.0	H	3.0	43.7	1.0	-51.6	-13.0	-38.6	
5152.50	-9.5	H	3.0	43.8	1.0	-52.3	-13.0	-39.3	
6870.00	-5.9	H	3.0	42.8	1.0	-47.7	-13.0	-34.7	
Mid Ch, 1745MHz									
3490.00	-9.1	V	3.0	43.7	1.0	-51.8	-13.0	-38.8	
5235.00	-8.7	V	3.0	43.8	1.0	-51.5	-13.0	-38.5	
6980.00	-6.0	V	3.0	42.7	1.0	-47.8	-13.0	-34.8	
3490.00	-9.3	H	3.0	43.7	1.0	-52.0	-13.0	-39.0	
5235.00	-8.9	H	3.0	43.8	1.0	-51.7	-13.0	-38.7	
6980.00	-6.0	H	3.0	42.7	1.0	-47.7	-13.0	-34.7	
High Ch, 1772.5MHz									
3545.00	-8.8	V	3.0	43.7	1.0	-51.5	-13.0	-38.5	
5317.50	-8.5	V	3.0	43.7	1.0	-51.2	-13.0	-38.2	
10635.00	-1.7	V	3.0	40.8	1.0	-41.5	-13.0	-28.5	
3545.00	-8.7	H	3.0	43.7	1.0	-51.4	-13.0	-38.4	
5317.50	-8.6	H	3.0	43.7	1.0	-51.3	-13.0	-38.3	
7090.00	-5.7	H	3.0	42.7	1.0	-47.4	-13.0	-34.4	

LTE Band 17

LTE Band 17 (Frequency range: 704-716 MHz) is covered by LTE Band 12 (Frequency range: 699-716 MHz) due to overlapping frequency range, same maximum tune-up limit and same channel bandwidth.

LTE Band 38[Single carrier]

LTE Band 38[Single carrier] (Frequency range: 2570-2620 MHz) is covered by LTE Band 41 (Frequency range: 2496-2690 MHz) due to overlapping frequency range, same maximum tune-up limit and same channel bandwidth.