LTE Band 4

LTE

Band 4

20MHz

QPSK

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K22211
Date: 11-25-15
Test Engineer: Steven Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-Position
Mode: TX, LTE BAND 4, 20MHz BW, QPSK

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (1720MHz)									
3.4400	-2.5	V	3.0	40.2	1.0	-41.7	-13.0	-28.7	
5.1600	-18.6	V	3.0	40.9	1.0	-58.5	-13.0	-45.5	
6.8800	-15.0	V	3.0	41.0	1.0	-55.0	-13.0	-42.0	
3.4400	-13.1	H	3.0	40.2	1.0	-52.3	-13.0	-39.3	
5.1600	-17.3	H	3.0	40.9	1.0	-57.1	-13.0	-44.1	
6.8800	-14.6	H	3.0	41.0	1.0	-54.5	-13.0	-41.5	
Mid Channel (1732.5MHz)									
3.4650	0.8	V	3.0	40.3	1.0	-38.4	-13.0	-25.4	
5.1975	-17.4	V	3.0	40.9	1.0	-57.3	-13.0	-44.3	
6.9300	-15.9	V	3.0	41.0	1.0	-55.9	-13.0	-42.9	
3.4650	-10.3	H	3.0	40.3	1.0	-49.5	-13.0	-36.5	
5.1975	-17.6	H	3.0	40.9	1.0	-57.5	-13.0	-44.5	
6.9300	-14.5	H	3.0	41.0	1.0	-54.5	-13.0	-41.5	
High Channel (1745MHz)									
3.4900	3.3	V	3.0	40.3	1.0	-36.0	-13.0	-23.0	
5.2350	-16.4	V	3.0	40.9	1.0	-56.3	-13.0	-43.3	
6.9800	-15.3	V	3.0	41.0	1.0	-55.3	-13.0	-42.3	
3.4900	-8.9	H	3.0	40.3	1.0	-48.1	-13.0	-35.1	
5.2350	-17.7	H	3.0	40.9	1.0	-57.6	-13.0	-44.6	
6.9800	-12.2	H	3.0	41.0	1.0	-52.2	-13.0	-39.2	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

LTE

Band 4

20MHz

16QAM

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K22211
Date: 11-25-15
Test Engineer: Steven Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-Position
Mode: TX, LTE BAND 4, 20MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (1720MHz)									
3.4400	-3.5	V	3.0	40.2	1.0	-42.7	-13.0	-29.7	
5.1600	-18.4	V	3.0	40.9	1.0	-58.3	-13.0	-45.3	
6.8800	-15.9	V	3.0	41.0	1.0	-55.9	-13.0	-42.9	
3.4400	-14.1	H	3.0	40.2	1.0	-53.3	-13.0	-40.3	
5.1600	-18.3	H	3.0	40.9	1.0	-58.1	-13.0	-45.1	
6.8800	-15.5	H	3.0	41.0	1.0	-55.5	-13.0	-42.5	
Mid Channel (1732.5MHz)									
3.4650	-0.1	V	3.0	40.3	1.0	-39.4	-13.0	-26.4	
5.1975	-18.4	V	3.0	40.9	1.0	-58.3	-13.0	-45.3	
6.9300	-15.9	V	3.0	41.0	1.0	-55.9	-13.0	-42.9	
3.4650	-11.3	H	3.0	40.3	1.0	-50.6	-13.0	-37.6	
5.1975	-18.2	H	3.0	40.9	1.0	-58.1	-13.0	-45.1	
6.9300	-15.5	H	3.0	41.0	1.0	-55.5	-13.0	-42.5	
High Channel (1745MHz)									
3.4900	2.2	V	3.0	40.3	1.0	-37.1	-13.0	-24.1	
5.2350	-17.4	V	3.0	40.9	1.0	-57.3	-13.0	-44.3	
6.9800	-15.6	V	3.0	41.0	1.0	-55.6	-13.0	-42.6	
3.4900	-9.2	H	3.0	40.3	1.0	-48.5	-13.0	-35.5	
5.2350	-18.7	H	3.0	40.9	1.0	-58.6	-13.0	-45.6	
6.9800	-12.6	H	3.0	41.0	1.0	-52.6	-13.0	-39.6	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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LTE

Band 4

15MHz

QPSK

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K22211
Date: 11-25-15
Test Engineer: Steven Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-Position
Mode: TX, LTE BAND 4, 15MHz BW,QPSK

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (1717.5MHz)									
3.4350	-2.4	V	3.0	40.2	1.0	-41.6	-13.0	-28.6	
5.1525	-18.4	V	3.0	40.9	1.0	-58.3	-13.0	-45.3	
6.8700	-15.2	V	3.0	41.0	1.0	-55.2	-13.0	-42.2	
3.4350	-12.7	H	3.0	40.2	1.0	-52.0	-13.0	-39.0	
5.1525	-17.4	H	3.0	40.9	1.0	-57.3	-13.0	-44.3	
6.8700	-14.6	H	3.0	41.0	1.0	-54.5	-13.0	-41.5	
Mid Channel (1732.5MHz)									
3.4650	0.9	V	3.0	40.3	1.0	-38.4	-13.0	-25.4	
5.1975	-17.4	V	3.0	40.9	1.0	-57.3	-13.0	-44.3	
6.9300	-15.9	V	3.0	41.0	1.0	-55.9	-13.0	-42.9	
3.4650	-10.5	H	3.0	40.3	1.0	-49.7	-13.0	-36.7	
5.1975	-17.8	H	3.0	40.9	1.0	-57.6	-13.0	-44.6	
6.9300	-14.6	H	3.0	41.0	1.0	-54.6	-13.0	-41.6	
High Channel (1747.5MHz)									
3.4950	3.2	V	3.0	40.3	1.0	-36.1	-13.0	-23.1	
5.2425	-16.4	V	3.0	40.9	1.0	-56.3	-13.0	-43.3	
6.9900	-15.3	V	3.0	41.0	1.0	-55.3	-13.0	-42.3	
3.4950	-8.8	H	3.0	40.3	1.0	-48.1	-13.0	-35.1	
5.2425	-17.7	H	3.0	40.9	1.0	-57.6	-13.0	-44.6	
6.9900	-12.3	H	3.0	41.0	1.0	-52.3	-13.0	-39.3	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

LTE

Band 4

15MHz

16QAM

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K22211
Date: 11-25-15
Test Engineer: Steven Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-Position
Mode: TX, LTE BAND 4, 15MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (1717.5MHz)									
3.4350	-3.4	V	3.0	40.2	1.0	-42.6	-13.0	-29.6	
5.1525	-19.3	V	3.0	40.9	1.0	-59.2	-13.0	-46.2	
6.8700	-16.1	V	3.0	41.0	1.0	-56.1	-13.0	-43.1	
3.4350	-13.5	H	3.0	40.2	1.0	-52.8	-13.0	-39.8	
5.1525	-18.4	H	3.0	40.9	1.0	-58.3	-13.0	-45.3	
6.8700	-15.6	H	3.0	41.0	1.0	-55.6	-13.0	-42.6	
Mid Channel (1732.5MHz)									
3.4650	-0.1	V	3.0	40.3	1.0	-39.4	-13.0	-26.4	
5.1975	-18.3	V	3.0	40.9	1.0	-58.2	-13.0	-45.2	
6.9300	-15.8	V	3.0	41.0	1.0	-55.8	-13.0	-42.8	
3.4650	-11.4	H	3.0	40.3	1.0	-50.7	-13.0	-37.7	
5.1975	-18.2	H	3.0	40.9	1.0	-58.1	-13.0	-45.1	
6.9300	-14.8	H	3.0	41.0	1.0	-54.8	-13.0	-41.8	
High Channel (1747.5MHz)									
3.4950	2.2	V	3.0	40.3	1.0	-37.1	-13.0	-24.1	
5.2425	-17.4	V	3.0	40.9	1.0	-57.2	-13.0	-44.2	
6.9900	-15.8	V	3.0	41.0	1.0	-55.8	-13.0	-42.8	
3.4950	-9.3	H	3.0	40.3	1.0	-48.6	-13.0	-35.6	
5.2425	-18.0	H	3.0	40.9	1.0	-57.9	-13.0	-44.9	
6.9900	-13.2	H	3.0	41.0	1.0	-53.3	-13.0	-40.3	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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LTE

Band 4

10MHz

QPSK

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K22211
Date: 11-25-15
Test Engineer: Steven Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-Position
Mode: TX, LTE BAND 4, 10MHz BW, QPSK

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (1715MHz)									
3.4300	-2.8	V	3.0	40.2	1.0	-42.1	-13.0	-29.1	
5.1450	-18.7	V	3.0	40.9	1.0	-58.6	-13.0	-45.6	
6.8600	-15.1	V	3.0	41.0	1.0	-55.1	-13.0	-42.1	
3.4300	-13.2	H	3.0	40.2	1.0	-52.5	-13.0	-39.5	
5.1450	-17.9	H	3.0	40.9	1.0	-57.8	-13.0	-44.8	
6.8600	-14.9	H	3.0	41.0	1.0	-54.9	-13.0	-41.9	
Mid Channel (1732.5MHz)									
3.4650	-0.4	V	3.0	40.3	1.0	-39.6	-13.0	-26.6	
5.1975	-17.8	V	3.0	40.9	1.0	-57.7	-13.0	-44.7	
6.9300	-15.9	V	3.0	41.0	1.0	-55.9	-13.0	-42.9	
3.4650	-11.0	H	3.0	40.3	1.0	-50.2	-13.0	-37.2	
5.1975	-17.9	H	3.0	40.9	1.0	-57.8	-13.0	-44.8	
6.9300	-14.9	H	3.0	41.0	1.0	-54.9	-13.0	-41.9	
High Channel (1750MHz)									
3.5000	2.3	V	3.0	40.3	1.0	-37.0	-13.0	-24.0	
5.2500	-16.9	V	3.0	40.9	1.0	-56.8	-13.0	-43.8	
7.0000	-15.4	V	3.0	41.0	1.0	-55.4	-13.0	-42.4	
3.5000	-8.7	H	3.0	40.3	1.0	-48.0	-13.0	-35.0	
5.2500	-18.1	H	3.0	40.9	1.0	-58.0	-13.0	-45.0	
7.0000	-11.6	H	3.0	41.0	1.0	-51.6	-13.0	-38.6	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

LTE

Band 4

10MHz

16QAM

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K22211
Date: 11-25-15
Test Engineer: Steven Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-Position
Mode: TX, LTE BAND 4, 10MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (1715MHz)									
3.4300	-3.8	V	3.0	40.2	1.0	-43.0	-13.0	-30.0	
5.1450	-19.6	V	3.0	40.9	1.0	-59.5	-13.0	-46.5	
6.8600	-16.1	V	3.0	41.0	1.0	-56.1	-13.0	-43.1	
3.4300	-14.2	H	3.0	40.2	1.0	-53.4	-13.0	-40.4	
5.1450	-18.9	H	3.0	40.9	1.0	-58.8	-13.0	-45.8	
6.8600	-16.0	H	3.0	41.0	1.0	-55.9	-13.0	-42.9	
Mid Channel (1732.5MHz)									
3.4650	-1.3	V	3.0	40.3	1.0	-40.6	-13.0	-27.6	
5.1975	-18.7	V	3.0	40.9	1.0	-58.6	-13.0	-45.6	
6.9300	-16.0	V	3.0	41.0	1.0	-56.0	-13.0	-43.0	
3.4650	-12.0	H	3.0	40.3	1.0	-51.3	-13.0	-38.3	
5.1975	-18.8	H	3.0	40.9	1.0	-58.7	-13.0	-45.7	
6.9300	-15.7	H	3.0	41.0	1.0	-55.7	-13.0	-42.7	
High Channel (1750MHz)									
3.5000	1.1	V	3.0	40.3	1.0	-38.2	-13.0	-25.2	
5.2500	-17.2	V	3.0	40.9	1.0	-57.1	-13.0	-44.1	
7.0000	-15.6	V	3.0	41.0	1.0	-55.6	-13.0	-42.6	
3.5000	-9.3	H	3.0	40.3	1.0	-48.6	-13.0	-35.6	
5.2500	-19.1	H	3.0	40.9	1.0	-59.0	-13.0	-46.0	
7.0000	-12.5	H	3.0	41.0	1.0	-52.5	-13.0	-39.5	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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LTE

Band 4

5MHz

QPSK

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K22211
Date: 11-25-15
Test Engineer: Steven Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-Position
Mode: TX, LTE BAND 4, 5MHz BW, QPSK

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (1712.5MHz)									
3.4250	-2.5	V	3.0	40.2	1.0	-41.7	-13.0	-28.7	
5.1375	-18.8	V	3.0	40.9	1.0	-58.7	-13.0	-45.7	
6.5800	-16.5	V	3.0	40.9	1.0	-56.4	-13.0	-43.4	
3.4250	-13.2	H	3.0	40.2	1.0	-52.4	-13.0	-39.4	
5.1375	-17.7	H	3.0	40.9	1.0	-57.6	-13.0	-44.6	
6.5800	-15.1	H	3.0	40.9	1.0	-55.0	-13.0	-42.0	
Mid Channel (1732.5MHz)									
3.4650	0.0	V	3.0	40.3	1.0	-39.2	-13.0	-26.2	
5.1975	-17.7	V	3.0	40.9	1.0	-57.6	-13.0	-44.6	
6.9300	-16.3	V	3.0	41.0	1.0	-56.3	-13.0	-43.3	
3.4650	-10.7	H	3.0	40.3	1.0	-49.9	-13.0	-36.9	
5.1975	-17.3	H	3.0	40.9	1.0	-57.2	-13.0	-44.2	
6.9300	-14.4	H	3.0	41.0	1.0	-54.4	-13.0	-41.4	
High Channel (1752.5MHz)									
3.5050	2.0	V	3.0	40.3	1.0	-37.3	-13.0	-24.3	
5.2575	-16.4	V	3.0	40.9	1.0	-56.3	-13.0	-43.3	
7.0100	-15.1	V	3.0	41.0	1.0	-55.1	-13.0	-42.1	
3.5050	-8.2	H	3.0	40.3	1.0	-47.5	-13.0	-34.5	
5.2575	-17.7	H	3.0	40.9	1.0	-57.6	-13.0	-44.6	
7.0100	-11.8	H	3.0	41.0	1.0	-51.8	-13.0	-38.8	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

LTE

Band 4

5MHz

16QAM

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K22211
Date: 11-25-15
Test Engineer: Steven Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-Position
Mode: TX, LTE BAND 7, 5MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (1712.5MHz)									
3.4250	-3.2	V	3.0	40.2	1.0	-42.4	-13.0	-29.4	
5.1375	-18.7	V	3.0	40.9	1.0	-58.6	-13.0	-45.6	
6.5800	-16.5	V	3.0	40.9	1.0	-56.4	-13.0	-43.4	
3.4250	-13.6	H	3.0	40.2	1.0	-52.8	-13.0	-39.8	
5.1375	-18.7	H	3.0	40.9	1.0	-58.6	-13.0	-45.6	
6.5800	-15.8	H	3.0	40.9	1.0	-55.7	-13.0	-42.7	
Mid Channel (1732.5MHz)									
3.4650	-1.5	V	3.0	40.3	1.0	-40.8	-13.0	-27.8	
5.1975	-18.3	V	3.0	40.9	1.0	-58.2	-13.0	-45.2	
6.9300	-17.2	V	3.0	41.0	1.0	-57.2	-13.0	-44.2	
3.4650	-11.3	H	3.0	40.3	1.0	-50.6	-13.0	-37.6	
5.1975	-18.2	H	3.0	40.9	1.0	-58.1	-13.0	-45.1	
6.9300	-14.8	H	3.0	41.0	1.0	-54.8	-13.0	-41.8	
High Channel (1752.5MHz)									
3.5050	1.0	V	3.0	40.3	1.0	-38.3	-13.0	-25.3	
5.2575	-17.3	V	3.0	40.9	1.0	-57.2	-13.0	-44.2	
7.0100	-16.0	V	3.0	41.0	1.0	-56.1	-13.0	-43.1	
3.5050	-9.4	H	3.0	40.3	1.0	-48.7	-13.0	-35.7	
5.2575	-18.3	H	3.0	40.9	1.0	-58.2	-13.0	-45.2	
7.0100	-13.1	H	3.0	41.0	1.0	-53.1	-13.0	-40.1	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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LTE

Band 4

3MHz

QPSK

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K22211
Date: 11-25-15
Test Engineer: Steven Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-Position
Mode: TX, LTE BAND 4, 3MHz BW,QPSK

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (1711.5MHz)									
3.4230	-2.1	V	3.0	40.2	1.0	-41.3	-13.0	-28.3	
5.1345	-18.5	V	3.0	40.9	1.0	-58.4	-13.0	-45.4	
6.8460	-15.0	V	3.0	41.0	1.0	-55.0	-13.0	-42.0	
3.4230	-13.0	H	3.0	40.2	1.0	-52.2	-13.0	-39.2	
5.1345	-17.4	H	3.0	40.9	1.0	-57.3	-13.0	-44.3	
6.8460	-14.3	H	3.0	41.0	1.0	-54.3	-13.0	-41.3	
Mid Channel (1732.5MHz)									
3.4650	0.5	V	3.0	40.3	1.0	-38.8	-13.0	-25.8	
5.1975	-17.7	V	3.0	40.9	1.0	-57.6	-13.0	-44.6	
6.9300	-15.8	V	3.0	41.0	1.0	-55.8	-13.0	-42.8	
3.4650	-10.7	H	3.0	40.3	1.0	-49.9	-13.0	-36.9	
5.1975	-17.4	H	3.0	40.9	1.0	-57.3	-13.0	-44.3	
6.9300	-14.4	H	3.0	41.0	1.0	-54.4	-13.0	-41.4	
High Channel (1753.5MHz)									
3.5070	2.1	V	3.0	40.3	1.0	-37.2	-13.0	-24.2	
5.2605	-16.1	V	3.0	40.9	1.0	-56.0	-13.0	-43.0	
7.0140	-15.2	V	3.0	41.0	1.0	-55.2	-13.0	-42.2	
3.5070	-8.7	H	3.0	40.3	1.0	-48.0	-13.0	-35.0	
5.2605	-17.5	H	3.0	40.9	1.0	-57.4	-13.0	-44.4	
7.0140	-11.6	H	3.0	41.0	1.0	-51.6	-13.0	-38.6	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

LTE

Band 4

3MHz

16QAM

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K22211
Date: 11-25-15
Test Engineer: Steven Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-Position
Mode: TX, LTE BAND 4, 3MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (1711.5MHz)									
3.4230	-3.0	V	3.0	40.2	1.0	-42.2	-13.0	-29.2	
5.1345	-19.5	V	3.0	40.9	1.0	-59.4	-13.0	-46.4	
6.8460	-16.1	V	3.0	41.0	1.0	-56.1	-13.0	-43.1	
3.4230	-13.6	H	3.0	40.2	1.0	-52.8	-13.0	-39.8	
5.1345	-18.3	H	3.0	40.9	1.0	-58.2	-13.0	-45.2	
6.8460	-15.3	H	3.0	41.0	1.0	-55.3	-13.0	-42.3	
Mid Channel (1732.5MHz)									
3.4650	-0.5	V	3.0	40.3	1.0	-39.8	-13.0	-26.8	
5.1975	-18.5	V	3.0	40.9	1.0	-58.3	-13.0	-45.3	
6.9300	-15.9	V	3.0	41.0	1.0	-55.9	-13.0	-42.9	
3.4650	-11.5	H	3.0	40.3	1.0	-50.8	-13.0	-37.8	
5.1975	-18.2	H	3.0	40.9	1.0	-58.1	-13.0	-45.1	
6.9300	-14.7	H	3.0	41.0	1.0	-54.7	-13.0	-41.7	
High Channel (1752.5MHz)									
3.5070	1.1	V	3.0	40.3	1.0	-38.2	-13.0	-25.2	
5.2605	-17.2	V	3.0	40.9	1.0	-57.1	-13.0	-44.1	
7.0140	-15.8	V	3.0	41.0	1.0	-55.8	-13.0	-42.8	
3.5070	-9.9	H	3.0	40.3	1.0	-49.2	-13.0	-36.2	
5.2605	-18.1	H	3.0	40.9	1.0	-58.0	-13.0	-45.0	
7.0140	-13.2	H	3.0	41.0	1.0	-53.2	-13.0	-40.2	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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LTE

Band 4

1.4MHz

QPSK

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K22211
Date: 11-25-15
Test Engineer: Steven Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-Position
Mode: TX, LTE BAND 4, 1.4MHz BW, QPSK

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (1710.7MHz)									
3.4214	0.4	V	3.0	40.2	1.0	-38.8	-13.0	-25.8	
5.1321	-18.4	V	3.0	40.9	1.0	-58.3	-13.0	-45.3	
6.8428	-15.2	V	3.0	41.0	1.0	-55.1	-13.0	-42.1	
3.4214	-13.1	H	3.0	40.2	1.0	-52.3	-13.0	-39.3	
5.1321	-17.4	H	3.0	40.9	1.0	-57.3	-13.0	-44.3	
6.8428	-14.5	H	3.0	41.0	1.0	-54.5	-13.0	-41.5	
Mid Channel (1732.5MHz)									
3.4650	0.4	V	3.0	40.3	1.0	-38.8	-13.0	-25.8	
5.1975	-17.2	V	3.0	40.9	1.0	-57.1	-13.0	-44.1	
6.9300	-16.3	V	3.0	41.0	1.0	-56.3	-13.0	-43.3	
3.4650	-10.5	H	3.0	40.3	1.0	-49.7	-13.0	-36.7	
5.1975	-17.4	H	3.0	40.9	1.0	-57.3	-13.0	-44.3	
6.9300	-14.4	H	3.0	41.0	1.0	-54.4	-13.0	-41.4	
High Channel (1754.3MHz)									
3.5086	1.0	V	3.0	40.3	1.0	-38.3	-13.0	-25.3	
5.2629	-17.4	V	3.0	40.9	1.0	-57.3	-13.0	-44.3	
7.0172	-15.3	V	3.0	41.0	1.0	-55.3	-13.0	-42.3	
3.5086	-8.9	H	3.0	40.3	1.0	-48.2	-13.0	-35.2	
5.2629	-17.3	H	3.0	40.9	1.0	-57.2	-13.0	-44.2	
7.0172	-12.3	H	3.0	41.0	1.0	-52.3	-13.0	-39.3	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

LTE

Band 4

1.4MHz

16QAM

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K22211
Date: 11-25-15
Test Engineer: Steven Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-Position
Mode: TX, LTE BAND 4, 1.4MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (1710.7MHz)									
3.4214	-1.2	V	3.0	40.2	1.0	-40.4	-13.0	-27.4	
5.1321	-19.8	V	3.0	40.9	1.0	-59.7	-13.0	-46.7	
6.8428	-16.3	V	3.0	41.0	1.0	-56.2	-13.0	-43.2	
3.4214	-14.2	H	3.0	40.2	1.0	-53.4	-13.0	-40.4	
5.1321	-18.3	H	3.0	40.9	1.0	-58.2	-13.0	-45.2	
6.8428	-15.3	H	3.0	41.0	1.0	-55.3	-13.0	-42.3	
Mid Channel (1732.5MHz)									
3.4650	-0.4	V	3.0	40.3	1.0	-39.6	-13.0	-26.6	
5.1975	-18.3	V	3.0	40.9	1.0	-58.2	-13.0	-45.2	
6.9300	-16.3	V	3.0	41.0	1.0	-56.3	-13.0	-43.3	
3.4650	-11.8	H	3.0	40.3	1.0	-51.0	-13.0	-38.0	
5.1975	-18.5	H	3.0	40.9	1.0	-58.4	-13.0	-45.4	
6.9300	-15.2	H	3.0	41.0	1.0	-55.2	-13.0	-42.2	
High Channel (1754.3MHz)									
3.5086	-0.7	V	3.0	40.3	1.0	-40.0	-13.0	-27.0	
5.2629	-18.2	V	3.0	40.9	1.0	-58.1	-13.0	-45.1	
7.0172	-16.1	V	3.0	41.0	1.0	-56.1	-13.0	-43.1	
3.5086	-9.8	H	3.0	40.3	1.0	-49.1	-13.0	-36.1	
5.2629	-18.1	H	3.0	40.9	1.0	-58.0	-13.0	-45.0	
7.0172	-12.8	H	3.0	41.0	1.0	-52.8	-13.0	-39.8	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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LTE Band 2

LTE

Band 2

20MHz

QPSK

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K22211
Date: 11-25-15
Test Engineer: Steven Kim
Configuration: EUT / AC Adapter / Earphone, X Position
Mode: TX, LTE BAND 2, 20MHz BW, QPSK

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 24

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (1860MHz)									
3.7200	-2.0	V	3.0	40.5	1.0	-41.5	-13.0	-28.5	
5.5800	-17.9	V	3.0	40.8	1.0	-57.7	-13.0	-44.7	
7.4400	-15.7	V	3.0	40.8	1.0	-55.4	-13.0	-42.4	
3.7200	-5.4	H	3.0	40.5	1.0	-44.9	-13.0	-31.9	
5.5800	-17.5	H	3.0	40.8	1.0	-57.3	-13.0	-44.3	
7.4400	-15.4	H	3.0	40.8	1.0	-55.2	-13.0	-42.2	
Mid Channel (1880MHz)									
3.7600	1.0	V	3.0	40.5	1.0	-38.6	-13.0	-25.6	
5.6400	-16.3	V	3.0	40.8	1.0	-56.1	-13.0	-43.1	
7.5200	-14.5	V	3.0	40.7	1.0	-54.3	-13.0	-41.3	
3.7600	-3.6	H	3.0	40.5	1.0	-43.1	-13.0	-30.1	
5.6400	-17.7	H	3.0	40.8	1.0	-57.5	-13.0	-44.5	
7.5200	-13.9	H	3.0	40.7	1.0	-53.6	-13.0	-40.6	
High Channel (1900MHz)									
3.8000	-5.6	V	3.0	40.6	1.0	-45.2	-13.0	-32.2	
5.7000	-15.4	V	3.0	40.8	1.0	-55.2	-13.0	-42.2	
7.6000	-13.2	V	3.0	40.7	1.0	-52.9	-13.0	-39.9	
3.8000	-6.2	H	3.0	40.6	1.0	-45.8	-13.0	-32.8	
5.7000	-17.7	H	3.0	40.8	1.0	-57.5	-13.0	-44.5	
7.6000	-14.8	H	3.0	40.7	1.0	-54.5	-13.0	-41.5	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

LTE

Band 2

20MHz

16QAM

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K22211
Date: 11-25-15
Test Engineer: Steven Kim
Configuration: EUT / AC Adapter / Earphone / X Position
Mode: TX, LTE BAND 2, 20MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 24

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (1860MHz)									
3.7200	-3.0	V	3.0	40.5	1.0	-42.5	-13.0	-29.5	
5.5800	-17.9	V	3.0	40.8	1.0	-57.8	-13.0	-44.8	
7.4400	-15.7	V	3.0	40.8	1.0	-55.5	-13.0	-42.5	
3.7200	-6.9	H	3.0	40.5	1.0	-46.4	-13.0	-33.4	
5.5800	-17.4	H	3.0	40.8	1.0	-57.2	-13.0	-44.2	
7.4400	-15.6	H	3.0	40.8	1.0	-55.4	-13.0	-42.4	
Mid Channel (1880MHz)									
3.7600	0.0	V	3.0	40.5	1.0	-39.6	-13.0	-26.6	
5.6400	-16.3	V	3.0	40.8	1.0	-56.1	-13.0	-43.1	
7.5200	-14.6	V	3.0	40.7	1.0	-54.3	-13.0	-41.3	
3.7600	-4.7	H	3.0	40.5	1.0	-44.2	-13.0	-31.2	
5.6400	-17.7	H	3.0	40.8	1.0	-57.5	-13.0	-44.5	
7.5200	-13.9	H	3.0	40.7	1.0	-53.6	-13.0	-40.6	
High Channel (1900MHz)									
3.8000	-6.6	V	3.0	40.6	1.0	-46.2	-13.0	-33.2	
5.7000	-16.4	V	3.0	40.8	1.0	-56.2	-13.0	-43.2	
7.6000	-13.0	V	3.0	40.7	1.0	-52.7	-13.0	-39.7	
3.8000	-7.6	H	3.0	40.6	1.0	-47.1	-13.0	-34.1	
5.7000	-17.2	H	3.0	40.8	1.0	-57.0	-13.0	-44.0	
7.6000	-14.8	H	3.0	40.7	1.0	-54.5	-13.0	-41.5	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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LTE

Band 2

15MHz

QPSK

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K22211
Date: 11-25-15
Test Engineer: Steven Kim
Configuration: EUT / AC Adapter / Ear Phone / X-Position
Mode: TX, LTE BAND 2, 15MHz BW, QPSK

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 24

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (1857.5MHz)									
3.7150	-1.6	V	3.0	40.5	1.0	-41.1	-13.0	-28.1	
5.5725	-17.5	V	3.0	40.8	1.0	-57.4	-13.0	-44.4	
7.4300	-15.4	V	3.0	40.8	1.0	-55.2	-13.0	-42.2	
3.7150	-5.9	H	3.0	40.5	1.0	-45.4	-13.0	-32.4	
5.5725	-17.4	H	3.0	40.8	1.0	-57.2	-13.0	-44.2	
7.4300	-15.7	H	3.0	40.8	1.0	-55.4	-13.0	-42.4	
Mid Channel (1880MHz)									
3.7600	1.0	V	3.0	40.5	1.0	-38.5	-13.0	-25.5	
5.6400	-16.4	V	3.0	40.8	1.0	-56.2	-13.0	-43.2	
7.5200	-14.1	V	3.0	40.7	1.0	-53.8	-13.0	-40.8	
3.7600	-3.7	H	3.0	40.5	1.0	-43.2	-13.0	-30.2	
5.6400	-17.4	H	3.0	40.8	1.0	-57.2	-13.0	-44.2	
7.5200	-13.9	H	3.0	40.7	1.0	-53.7	-13.0	-40.7	
High Channel (1902.5MHz)									
3.8050	-5.6	V	3.0	40.6	1.0	-45.2	-13.0	-32.2	
5.7075	-15.3	V	3.0	40.8	1.0	-55.0	-13.0	-42.0	
7.6100	-13.3	V	3.0	40.7	1.0	-53.0	-13.0	-40.0	
3.8050	-6.2	H	3.0	40.6	1.0	-45.8	-13.0	-32.8	
5.7075	-17.6	H	3.0	40.8	1.0	-57.4	-13.0	-44.4	
7.6100	-14.7	H	3.0	40.7	1.0	-54.4	-13.0	-41.4	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

LTE

Band 2

15MHz

16QAM

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K22211
Date: 11-25-15
Test Engineer: Steven Kim
Configuration: EUT / AC Adapter / Ear Phone / X-Position
Mode: TX, LTE BAND 2, 15MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 24

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (1857.5MHz)									
3.7150	-2.6	V	3.0	40.5	1.0	-42.1	-13.0	-29.1	
5.5725	-17.7	V	3.0	40.8	1.0	-57.6	-13.0	-44.6	
7.4300	-15.5	V	3.0	40.8	1.0	-55.3	-13.0	-42.3	
3.7150	-6.8	H	3.0	40.5	1.0	-46.3	-13.0	-33.3	
5.5725	-17.5	H	3.0	40.8	1.0	-57.3	-13.0	-44.3	
7.4300	-15.7	H	3.0	40.8	1.0	-55.5	-13.0	-42.5	
Mid Channel (1880MHz)									
3.7600	0.0	V	3.0	40.5	1.0	-39.6	-13.0	-26.6	
5.6400	-16.4	V	3.0	40.8	1.0	-56.2	-13.0	-43.2	
7.5200	-14.1	V	3.0	40.7	1.0	-53.8	-13.0	-40.8	
3.7600	-4.7	H	3.0	40.5	1.0	-44.2	-13.0	-31.2	
5.6400	-17.3	H	3.0	40.8	1.0	-57.1	-13.0	-44.1	
7.5200	-14.2	H	3.0	40.7	1.0	-53.9	-13.0	-40.9	
High Channel (1902.5MHz)									
3.8050	-6.7	V	3.0	40.6	1.0	-46.3	-13.0	-33.3	
5.7075	-16.3	V	3.0	40.8	1.0	-56.0	-13.0	-43.0	
7.6100	-13.9	V	3.0	40.7	1.0	-53.5	-13.0	-40.5	
3.8050	-7.2	H	3.0	40.6	1.0	-46.7	-13.0	-33.7	
5.7075	-17.7	H	3.0	40.8	1.0	-57.5	-13.0	-44.5	
7.6100	-14.8	H	3.0	40.7	1.0	-54.4	-13.0	-41.4	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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LTE

Band 2

10MHz

QPSK

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K22211
Date: 11-25-15
Test Engineer: Steven Kim
Configuration: EUT / AC Adapter / Ear Phone / X-Position
Mode: TX, LTE BAND 2, 10MHz BW,QPSK

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 24

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (1855MHz)									
3.7100	-1.7	V	3.0	40.5	1.0	-41.2	-13.0	-28.2	
5.5650	-17.6	V	3.0	40.8	1.0	-57.4	-13.0	-44.4	
7.4450	-15.2	V	3.0	40.8	1.0	-54.9	-13.0	-41.9	
3.7100	-5.9	H	3.0	40.5	1.0	-45.4	-13.0	-32.4	
5.5650	-17.5	H	3.0	40.8	1.0	-57.3	-13.0	-44.3	
7.4450	-15.5	H	3.0	40.8	1.0	-55.3	-13.0	-42.3	
Mid Channel (1880MHz)									
3.7600	1.0	V	3.0	40.5	1.0	-38.6	-13.0	-25.6	
5.6400	-16.5	V	3.0	40.8	1.0	-56.3	-13.0	-43.3	
7.5200	-14.0	V	3.0	40.7	1.0	-53.7	-13.0	-40.7	
3.7600	-3.8	H	3.0	40.5	1.0	-43.3	-13.0	-30.3	
5.6400	-17.4	H	3.0	40.8	1.0	-57.2	-13.0	-44.2	
7.5200	-13.9	H	3.0	40.7	1.0	-53.6	-13.0	-40.6	
High Channel (1905MHz)									
3.8100	-5.6	V	3.0	40.6	1.0	-45.2	-13.0	-32.2	
5.7150	-15.2	V	3.0	40.8	1.0	-55.0	-13.0	-42.0	
7.6200	-13.4	V	3.0	40.7	1.0	-53.1	-13.0	-40.1	
3.8100	-6.5	H	3.0	40.6	1.0	-46.1	-13.0	-33.1	
5.7150	-17.2	H	3.0	40.8	1.0	-57.0	-13.0	-44.0	
7.620	-14.8	H	3.0	40.7	1.0	-54.5	-13.0	-41.5	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

LTE

Band 2

10MHz

16QAM

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K22211
Date: 11-25-15
Test Engineer: Steven Kim
Configuration: EUT / AC Adapter / Ear Phone / X-Position
Mode: TX, LTE BAND 2, 10MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 24

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (1855MHz)									
3.7100	-2.7	V	3.0	40.5	1.0	-42.2	-13.0	-29.2	
5.5650	-17.9	V	3.0	40.8	1.0	-57.7	-13.0	-44.7	
7.4450	-15.4	V	3.0	40.8	1.0	-55.2	-13.0	-42.2	
3.7100	-6.9	H	3.0	40.5	1.0	-46.4	-13.0	-33.4	
5.5650	-17.5	H	3.0	40.8	1.0	-57.4	-13.0	-44.4	
7.4450	-15.6	H	3.0	40.8	1.0	-55.4	-13.0	-42.4	
Mid Channel (1880MHz)									
3.7600	0.0	V	3.0	40.5	1.0	-39.5	-13.0	-26.5	
5.6400	-17.4	V	3.0	40.8	1.0	-57.2	-13.0	-44.2	
7.5200	-15.1	V	3.0	40.7	1.0	-54.8	-13.0	-41.8	
3.7600	-4.4	H	3.0	40.5	1.0	-44.0	-13.0	-31.0	
5.6400	-18.4	H	3.0	40.8	1.0	-58.2	-13.0	-45.2	
7.5200	-15.1	H	3.0	40.7	1.0	-54.8	-13.0	-41.8	
High Channel (1905MHz)									
3.8100	-6.6	V	3.0	40.6	1.0	-46.2	-13.0	-33.2	
5.7150	-16.2	V	3.0	40.8	1.0	-56.0	-13.0	-43.0	
7.6200	-14.1	V	3.0	40.7	1.0	-53.7	-13.0	-40.7	
3.8100	-7.5	H	3.0	40.6	1.0	-47.1	-13.0	-34.1	
5.7150	-18.1	H	3.0	40.8	1.0	-57.9	-13.0	-44.9	
7.6200	-14.8	H	3.0	40.7	1.0	-54.5	-13.0	-41.5	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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LTE

Band 2

5MHz

QPSK

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K22211
Date: 11-25-15
Test Engineer: Steven Kim
Configuration: EUT / AC Adapter / Ear Phone / X-Position
Mode: TX, LTE BAND 2, 5MHz BW, QPSK

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 24

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (1852.5MHz)									
3.7050	-1.8	V	3.0	40.5	1.0	-41.3	-13.0	-28.3	
5.5575	-17.4	V	3.0	40.8	1.0	-57.3	-13.0	-44.3	
7.4100	-15.1	V	3.0	40.8	1.0	-54.9	-13.0	-41.9	
3.7050	-5.9	H	3.0	40.5	1.0	-45.4	-13.0	-32.4	
5.5575	-17.6	H	3.0	40.8	1.0	-57.4	-13.0	-44.4	
7.4100	-15.0	H	3.0	40.8	1.0	-54.8	-13.0	-41.8	
Mid Channel (1880MHz)									
3.7600	1.0	V	3.0	40.5	1.0	-38.5	-13.0	-25.5	
5.6400	-16.5	V	3.0	40.8	1.0	-56.3	-13.0	-43.3	
7.5200	-14.0	V	3.0	40.7	1.0	-53.7	-13.0	-40.7	
3.7600	-3.4	H	3.0	40.5	1.0	-43.0	-13.0	-30.0	
5.6400	-17.3	H	3.0	40.8	1.0	-57.1	-13.0	-44.1	
7.5200	-14.0	H	3.0	40.7	1.0	-53.7	-13.0	-40.7	
High Channel (1907.5MHz)									
3.8150	-5.5	V	3.0	40.6	1.0	-45.1	-13.0	-32.1	
5.7225	-15.3	V	3.0	40.8	1.0	-55.1	-13.0	-42.1	
7.6300	-13.1	V	3.0	40.7	1.0	-52.8	-13.0	-39.8	
3.8150	-6.6	H	3.0	40.6	1.0	-46.2	-13.0	-33.2	
5.7225	-17.1	H	3.0	40.8	1.0	-56.9	-13.0	-43.9	
7.6300	-14.8	H	3.0	40.7	1.0	-54.5	-13.0	-41.5	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

LTE

Band 2

5MHz

16QAM

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K22211
Date: 11-25-15
Test Engineer: Steven Kim
Configuration: EUT / AC Adapter / Ear Phone / X-Position
Mode: TX, LTE BAND 2, 5MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 24

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (1852.5MHz)									
3.7050	-2.8	V	3.0	40.5	1.0	-42.3	-13.0	-29.3	
5.5575	-18.6	V	3.0	40.8	1.0	-58.4	-13.0	-45.4	
7.4100	-15.1	V	3.0	40.8	1.0	-54.9	-13.0	-41.9	
3.7050	-6.9	H	3.0	40.5	1.0	-46.4	-13.0	-33.4	
5.5575	-18.5	H	3.0	40.8	1.0	-58.3	-13.0	-45.3	
7.4100	-15.2	H	3.0	40.8	1.0	-54.9	-13.0	-41.9	
Mid Channel (1880MHz)									
3.7600	0.0	V	3.0	40.5	1.0	-39.5	-13.0	-26.5	
5.6400	-17.4	V	3.0	40.8	1.0	-57.2	-13.0	-44.2	
7.5200	-15.0	V	3.0	40.7	1.0	-54.7	-13.0	-41.7	
3.7600	-4.3	H	3.0	40.5	1.0	-43.9	-13.0	-30.9	
5.6400	-18.4	H	3.0	40.8	1.0	-58.2	-13.0	-45.2	
7.5200	-14.8	H	3.0	40.7	1.0	-54.5	-13.0	-41.5	
High Channel (1907.5MHz)									
3.8150	-6.3	V	3.0	40.6	1.0	-45.9	-13.0	-32.9	
5.7225	-16.3	V	3.0	40.8	1.0	-56.1	-13.0	-43.1	
7.6300	-14.0	V	3.0	40.7	1.0	-53.6	-13.0	-40.6	
3.8150	-7.9	H	3.0	40.6	1.0	-47.5	-13.0	-34.5	
5.7225	-18.1	H	3.0	40.8	1.0	-57.9	-13.0	-44.9	
7.6300	-14.8	H	3.0	40.7	1.0	-54.5	-13.0	-41.5	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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LTE

Band 2

3MHz

QPSK

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K22211
Date: 11-25-15
Test Engineer: Steven Kim
Configuration: EUT / AC Adapter / Ear Phone / X-Position
Mode: TX, LTE BAND 2, 3MHz BW,QPSK

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 24

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (1851.5MHz)									
3.7030	-1.7	V	3.0	40.5	1.0	-41.2	-13.0	-28.2	
5.5545	-17.6	V	3.0	40.8	1.0	-57.4	-13.0	-44.4	
7.4060	-15.3	V	3.0	40.8	1.0	-55.1	-13.0	-42.1	
3.7030	-5.6	H	3.0	40.5	1.0	-45.1	-13.0	-32.1	
5.5545	-17.6	H	3.0	40.8	1.0	-57.4	-13.0	-44.4	
7.4060	-15.5	H	3.0	40.8	1.0	-55.3	-13.0	-42.3	
Mid Channel (1880MHz)									
3.7600	1.5	V	3.0	40.5	1.0	-38.1	-13.0	-25.1	
5.6400	-16.3	V	3.0	40.8	1.0	-56.1	-13.0	-43.1	
7.5200	-14.0	V	3.0	40.7	1.0	-53.8	-13.0	-40.8	
3.7600	-3.3	H	3.0	40.5	1.0	-42.8	-13.0	-29.8	
5.6400	-17.5	H	3.0	40.8	1.0	-57.3	-13.0	-44.3	
7.5200	-13.9	H	3.0	40.7	1.0	-53.6	-13.0	-40.6	
High Channel (1908.5MHz)									
3.8170	-5.4	V	3.0	40.6	1.0	-45.0	-13.0	-32.0	
5.7255	-15.1	V	3.0	40.8	1.0	-54.9	-13.0	-41.9	
7.6340	-12.8	V	3.0	40.7	1.0	-52.5	-13.0	-39.5	
3.8170	-6.1	H	3.0	40.6	1.0	-45.7	-13.0	-32.7	
5.7255	-17.4	H	3.0	40.8	1.0	-57.1	-13.0	-44.1	
7.6340	-14.7	H	3.0	40.7	1.0	-54.4	-13.0	-41.4	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

LTE

Band 2

3MHz

16QAM

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K22211
Date: 11-25-15
Test Engineer: Steven Kim
Configuration: EUT / AC Adapter / Ear Phone / X-Position
Mode: TX, LTE BAND 2, 3MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 24

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (1851.5MHz)									
3.703	-2.7	V	3.0	40.5	1.0	-42.2	-13.0	-29.2	
5.555	-18.5	V	3.0	40.8	1.0	-58.3	-13.0	-45.3	
7.406	-15.2	V	3.0	40.8	1.0	-55.0	-13.0	-42.0	
3.703	-6.5	H	3.0	40.5	1.0	-46.0	-13.0	-33.0	
5.555	-18.4	H	3.0	40.8	1.0	-58.2	-13.0	-45.2	
7.406	-15.5	H	3.0	40.8	1.0	-55.3	-13.0	-42.3	
Mid Channel (1880MHz)									
3.760	0.6	V	3.0	40.5	1.0	-39.0	-13.0	-26.0	
5.640	-17.4	V	3.0	40.8	1.0	-57.2	-13.0	-44.2	
7.520	-15.0	V	3.0	40.7	1.0	-54.7	-13.0	-41.7	
3.760	-4.4	H	3.0	40.5	1.0	-44.0	-13.0	-31.0	
5.640	-18.4	H	3.0	40.8	1.0	-58.2	-13.0	-45.2	
7.520	-14.8	H	3.0	40.7	1.0	-54.5	-13.0	-41.5	
High Channel (1908.5MHz)									
3.817	-6.2	V	3.0	40.6	1.0	-45.8	-13.0	-32.8	
5.726	-16.2	V	3.0	40.8	1.0	-56.0	-13.0	-43.0	
7.634	-13.8	V	3.0	40.7	1.0	-53.5	-13.0	-40.5	
3.817	-7.2	H	3.0	40.6	1.0	-46.8	-13.0	-33.8	
5.726	-18.1	H	3.0	40.8	1.0	-57.9	-13.0	-44.9	
7.634	-14.8	H	3.0	40.7	1.0	-54.5	-13.0	-41.5	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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LTE Band 2 1.4MHz QPSK

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K22211
Date: 11-25-15
Test Engineer: Steven Kim
Configuration: EUT / AC Adapter / Ear Phone / X-Position
Mode: TX, LTE BAND 2, 1.4MHz BW,QPSK

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 24

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (1850.7MHz)									
3.7014	-1.8	V	3.0	40.5	1.0	-41.2	-13.0	-28.2	
5.5071	-17.7	V	3.0	40.8	1.0	-57.5	-13.0	-44.5	
7.3578	-15.1	V	3.0	40.8	1.0	-55.0	-13.0	-42.0	
3.7014	-5.7	H	3.0	40.5	1.0	-45.2	-13.0	-32.2	
5.5071	-17.7	H	3.0	40.8	1.0	-57.5	-13.0	-44.5	
7.3578	-15.0	H	3.0	40.8	1.0	-54.9	-13.0	-41.9	
Mid Channel (1880MHz)									
3.7600	1.0	V	3.0	40.5	1.0	-38.5	-13.0	-25.5	
5.6400	-16.4	V	3.0	40.8	1.0	-56.2	-13.0	-43.2	
7.5200	-14.1	V	3.0	40.7	1.0	-53.8	-13.0	-40.8	
3.7600	-3.4	H	3.0	40.5	1.0	-43.0	-13.0	-30.0	
5.6400	-17.3	H	3.0	40.8	1.0	-57.1	-13.0	-44.1	
7.5200	-13.9	H	3.0	40.7	1.0	-53.6	-13.0	-40.6	
High Channel (1909.3MHz)									
3.8186	-5.3	V	3.0	40.6	1.0	-44.9	-13.0	-31.9	
5.7279	-15.3	V	3.0	40.8	1.0	-55.1	-13.0	-42.1	
7.6732	-12.8	V	3.0	40.6	1.0	-52.4	-13.0	-39.4	
3.8186	-6.1	H	3.0	40.6	1.0	-45.7	-13.0	-32.7	
5.7279	-17.2	H	3.0	40.8	1.0	-57.0	-13.0	-44.0	
7.6732	-14.6	H	3.0	40.6	1.0	-54.3	-13.0	-41.3	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

LTE Band 2 1.4MHz 16QAM

UL Korea, Ltd Suwon Laboratory
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 15K22211
Date: 11-25-15
Test Engineer: Steven Kim
Configuration: EUT / AC Adapter / Ear Phone / X-Position
Mode: TX, LTE BAND 2, 1.4MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	AFS42	Filter 1	FCC Part 24

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (1850.7MHz)									
3.7014	-2.8	V	3.0	40.5	1.0	-42.2	-13.0	-29.2	
5.5071	-18.6	V	3.0	40.8	1.0	-58.4	-13.0	-45.4	
7.3578	-15.3	V	3.0	40.8	1.0	-55.1	-13.0	-42.1	
3.7014	-6.6	H	3.0	40.5	1.0	-46.1	-13.0	-33.1	
5.5071	-18.6	H	3.0	40.8	1.0	-58.4	-13.0	-45.4	
7.3578	-15.1	H	3.0	40.8	1.0	-54.9	-13.0	-41.9	
Mid Channel (1880MHz)									
3.7600	0.0	V	3.0	40.5	1.0	-39.6	-13.0	-26.6	
5.6400	-17.4	V	3.0	40.8	1.0	-57.2	-13.0	-44.2	
7.5200	-15.1	V	3.0	40.7	1.0	-54.8	-13.0	-41.8	
3.7600	-4.3	H	3.0	40.5	1.0	-43.8	-13.0	-30.8	
5.6400	-18.4	H	3.0	40.8	1.0	-58.2	-13.0	-45.2	
7.5200	-15.1	H	3.0	40.7	1.0	-54.8	-13.0	-41.8	
High Channel (1909.3MHz)									
3.8186	-6.1	V	3.0	40.6	1.0	-45.7	-13.0	-32.7	
5.7279	-16.1	V	3.0	40.8	1.0	-55.9	-13.0	-42.9	
7.6732	-13.8	V	3.0	40.6	1.0	-53.5	-13.0	-40.5	
3.8186	-7.2	H	3.0	40.6	1.0	-46.8	-13.0	-33.8	
5.7279	-18.2	H	3.0	40.8	1.0	-58.0	-13.0	-45.0	
7.6732	-14.7	H	3.0	40.6	1.0	-54.3	-13.0	-41.3	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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