WCDMA Band 2

WCDMA

Band 2
REL99

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

Company: Samsung
Project #: 4787827147
Date: 01-18-17
Test Engineer: Chan Park
Configuration: EUT / AC Adapter / Earphone / X Position
Mode: Tx, REL99,1900MHz

Chamber	Pre-amplifier	Filter	Limit
Chamber 2	AFS42	Filter 1	Part 24

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1852.4MHz									
3.7048	-18.8	V	3.0	39.7	1.0	-57.4	-13.0	-44.4	
5.5572	-16.4	V	3.0	39.9	1.0	-55.3	-13.0	-42.3	
7.4096	-16.3	V	3.0	39.4	1.0	-54.7	-13.0	-41.7	
3.7048	-19.7	H	3.0	39.7	1.0	-58.4	-13.0	-45.4	
5.5572	-17.2	H	3.0	39.9	1.0	-56.2	-13.0	-43.2	
7.4096	-16.3	H	3.0	39.4	1.0	-54.8	-13.0	-41.8	
Mid Ch, 1880MHz									
3.7600	-13.8	V	3.0	39.7	1.0	-52.4	-13.0	-39.4	
5.6400	-16.8	V	3.0	40.0	1.0	-55.8	-13.0	-42.8	
7.5200	-16.4	V	3.0	39.4	1.0	-54.8	-13.0	-41.8	
3.7600	-14.4	H	3.0	39.7	1.0	-53.1	-13.0	-40.1	
5.6400	-17.3	H	3.0	40.0	1.0	-56.3	-13.0	-43.3	
7.5200	-16.3	H	3.0	39.4	1.0	-54.7	-13.0	-41.7	
High Ch, 1907.6MHz									
3.8152	-17.1	V	3.0	39.7	1.0	-55.8	-13.0	-42.8	
5.7228	-16.7	V	3.0	40.0	1.0	-55.7	-13.0	-42.7	
7.6304	-13.9	V	3.0	39.3	1.0	-52.2	-13.0	-39.2	
3.8152	-15.7	H	3.0	39.7	1.0	-54.4	-13.0	-41.4	
5.7228	-17.2	H	3.0	40.0	1.0	-56.2	-13.0	-43.2	
7.6304	-14.1	H	3.0	39.3	1.0	-52.4	-13.0	-39.4	

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

WCDMA

Band 2
HSDPA

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

Company: Samsung
Project #: 4787827147
Date: 01-18-17
Test Engineer: Chan Park
Configuration: EUT / AC Adapter / Earphone / X Position
Mode: Tx, HSDPA,1900MHz

Chamber	Pre-amplifier	Filter	Limit
Chamber 2	AFS42	Filter 1	Part 24

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1852.4MHz									
3.7048	-19.4	V	3.0	39.7	1.0	-58.1	-13.0	-45.1	
5.5572	-16.3	V	3.0	39.9	1.0	-55.3	-13.0	-42.3	
7.4096	-16.4	V	3.0	39.4	1.0	-54.8	-13.0	-41.8	
3.7048	-20.1	H	3.0	39.7	1.0	-58.8	-13.0	-45.8	
5.5572	-17.2	H	3.0	39.9	1.0	-56.1	-13.0	-43.1	
7.4096	-16.3	H	3.0	39.4	1.0	-54.7	-13.0	-41.7	
Mid Ch, 1880MHz									
3.7600	-14.5	V	3.0	39.7	1.0	-53.2	-13.0	-40.2	
5.6400	-16.9	V	3.0	40.0	1.0	-55.8	-13.0	-42.8	
7.5200	-16.6	V	3.0	39.4	1.0	-54.9	-13.0	-41.9	
3.7600	-15.2	H	3.0	39.7	1.0	-53.9	-13.0	-40.9	
5.6400	-17.4	H	3.0	40.0	1.0	-56.3	-13.0	-43.3	
7.5200	-16.5	H	3.0	39.4	1.0	-54.8	-13.0	-41.8	
High Ch, 1907.6MHz									
3.8152	-17.4	V	3.0	39.7	1.0	-56.1	-13.0	-43.1	
5.7228	-16.7	V	3.0	40.0	1.0	-55.7	-13.0	-42.7	
7.6304	-14.0	V	3.0	39.3	1.0	-52.3	-13.0	-39.3	
3.8152	-16.6	H	3.0	39.7	1.0	-55.3	-13.0	-42.3	
5.7228	-17.1	H	3.0	40.0	1.0	-56.1	-13.0	-43.1	
7.6304	-14.1	H	3.0	39.3	1.0	-52.4	-13.0	-39.4	

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

WCDMA Band 2 equipped with keyboard

WCDMA

Band 2
REL99

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

Company: Samsung
Project #: 4787827147
Date: 02-16-17
Test Engineer: YH Lim
Configuration: EUT / AC Adapter / Earphone / Keyboard
Mode: Tx, REL99,1900MHz

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

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1852.4MHz									
3.7048	-19.4	V	3.0	39.7	1.0	-58.1	-13.0	-45.1	
5.5572	-14.2	V	3.0	39.9	1.0	-53.1	-13.0	-40.1	
7.4096	-16.3	V	3.0	39.4	1.0	-54.7	-13.0	-41.7	
3.7048	-20.2	H	3.0	39.7	1.0	-58.9	-13.0	-45.9	
5.5572	-16.9	H	3.0	39.9	1.0	-55.8	-13.0	-42.8	
7.4096	-15.6	H	3.0	39.4	1.0	-54.0	-13.0	-41.0	
Mid Ch, 1880MHz									
3.7600	-13.7	V	3.0	39.7	1.0	-52.4	-13.0	-39.4	
5.6400	-16.8	V	3.0	40.0	1.0	-55.8	-13.0	-42.8	
7.5200	-17.1	V	3.0	39.4	1.0	-55.5	-13.0	-42.5	
3.7600	-16.0	H	3.0	39.7	1.0	-54.7	-13.0	-41.7	
5.6400	-17.3	H	3.0	40.0	1.0	-56.3	-13.0	-43.3	
7.5200	-16.5	H	3.0	39.4	1.0	-54.8	-13.0	-41.8	
High Ch, 1907.6MHz									
3.8152	-15.6	V	3.0	39.7	1.0	-54.3	-13.0	-41.3	
5.7228	-16.9	V	3.0	40.0	1.0	-55.9	-13.0	-42.9	
7.6304	-12.0	V	3.0	39.3	1.0	-50.3	-13.0	-37.3	
3.8152	-16.3	H	3.0	39.7	1.0	-55.0	-13.0	-42.0	
5.7228	-16.7	H	3.0	40.0	1.0	-55.7	-13.0	-42.7	
7.6304	-15.0	H	3.0	39.3	1.0	-53.4	-13.0	-40.4	

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

LTE Band 17

LTE Band 17 10MHz QPSK

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

Company: Samsung
Project #: 4787827147
Date: 01-16-17
Test Engineer: JH Park
Configuration: EUT / AC Adapter / Ear Phone / X-Position
Mode: TX, LTE BAND 17, 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 (709MHz)									
1.4180	-21.0	V	3.0	44.2	1.0	-64.2	-13.0	-51.2	
2.1270	-10.2	V	3.0	44.4	1.0	-53.6	-13.0	-40.6	
2.8360	-23.0	V	3.0	45.1	1.0	-67.1	-13.0	-54.1	
1.4180	-15.9	H	3.0	44.2	1.0	-59.1	-13.0	-46.1	
2.1270	-19.3	H	3.0	44.4	1.0	-62.7	-13.0	-49.7	
2.8360	-22.4	H	3.0	45.1	1.0	-66.6	-13.0	-53.6	
Mid Channel (710MHz)									
1.4200	-15.3	V	3.0	44.2	1.0	-58.5	-13.0	-45.5	
2.1300	-15.4	V	3.0	44.4	1.0	-58.8	-13.0	-45.8	
2.8400	-22.1	V	3.0	45.1	1.0	-66.3	-13.0	-53.3	
1.4200	-14.5	H	3.0	44.2	1.0	-57.7	-13.0	-44.7	
2.1300	-23.9	H	3.0	44.4	1.0	-67.3	-13.0	-54.3	
2.8400	-22.6	H	3.0	45.1	1.0	-66.8	-13.0	-53.8	
High Channel (711MHz)									
1.4220	-13.6	V	3.0	44.2	1.0	-56.8	-13.0	-43.8	
2.1330	-7.5	V	3.0	44.4	1.0	-50.9	-13.0	-37.9	
2.8440	-22.2	V	3.0	45.2	1.0	-66.4	-13.0	-53.4	
1.4220	-15.6	H	3.0	44.2	1.0	-58.9	-13.0	-45.9	
2.1330	-18.3	H	3.0	44.4	1.0	-61.7	-13.0	-48.7	
2.8440	-21.9	H	3.0	45.2	1.0	-66.1	-13.0	-53.1	

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

LTE Band 17 10MHz 16QAM

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

Company: Samsung
Project #: 4787827147
Date: 01-16-17
Test Engineer: JH Park
Configuration: EUT / AC Adapter / Ear Phone / X-Position
Mode: TX, LTE BAND 17, 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 (709MHz)									
1.4180	-23.2	V	3.0	44.2	1.0	-66.4	-13.0	-53.4	
2.1270	-11.2	V	3.0	44.4	1.0	-54.5	-13.0	-41.5	
2.8360	-22.7	V	3.0	45.1	1.0	-66.8	-13.0	-53.8	
1.4180	-18.6	H	3.0	44.2	1.0	-61.8	-13.0	-48.8	
2.1270	-19.9	H	3.0	44.4	1.0	-63.3	-13.0	-50.3	
2.8360	-22.5	H	3.0	45.1	1.0	-66.7	-13.0	-53.7	
Mid Channel (710MHz)									
1.4200	-18.1	V	3.0	44.2	1.0	-61.3	-13.0	-48.3	
2.1300	-19.3	V	3.0	44.4	1.0	-62.7	-13.0	-49.7	
2.8400	-22.4	V	3.0	45.1	1.0	-66.5	-13.0	-53.5	
1.4200	-16.4	H	3.0	44.2	1.0	-59.6	-13.0	-46.6	
2.1300	-23.5	H	3.0	44.4	1.0	-66.8	-13.0	-53.8	
2.8400	-22.5	H	3.0	45.1	1.0	-66.6	-13.0	-53.6	
High Channel (711MHz)									
1.4220	-12.6	V	3.0	44.2	1.0	-55.8	-13.0	-42.8	
2.1330	-8.3	V	3.0	44.4	1.0	-51.7	-13.0	-38.7	
2.8440	-22.5	V	3.0	45.2	1.0	-66.6	-13.0	-53.6	
1.4220	-18.4	H	3.0	44.2	1.0	-61.6	-13.0	-48.6	
2.1330	-19.7	H	3.0	44.4	1.0	-63.1	-13.0	-50.1	
2.8440	-22.7	H	3.0	45.2	1.0	-66.9	-13.0	-53.9	

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

LTE

Band 17

5MHz

QPSK

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

Company: Samsung
Project #: 4787827147
Date: 01-17-17
Test Engineer: Chan Park
Configuration: EUT / AC Adapter / Ear Phone / X-Position
Mode: TX, LTE BAND 17, 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 (706.5MHz)									
1.4130	-12.1	V	3.0	44.2	1.0	-55.3	-13.0	-42.3	
2.1195	-4.6	V	3.0	44.4	1.0	-48.0	-13.0	-35.0	
2.8260	-23.6	V	3.0	45.1	1.0	-67.8	-13.0	-54.8	
1.4130	-16.9	H	3.0	44.2	1.0	-60.1	-13.0	-47.1	
2.1195	-10.5	H	3.0	44.4	1.0	-53.9	-13.0	-40.9	
2.8260	-23.8	H	3.0	45.1	1.0	-67.9	-13.0	-54.9	
Mid Channel (710MHz)									
1.4200	-9.3	V	3.0	44.2	1.0	-52.5	-13.0	-39.5	
2.1300	-5.4	V	3.0	44.4	1.0	-48.7	-13.0	-35.7	
2.8400	-22.7	V	3.0	45.1	1.0	-66.9	-13.0	-53.9	
1.4200	-14.4	H	3.0	44.2	1.0	-57.6	-13.0	-44.6	
2.1300	-14.3	H	3.0	44.4	1.0	-57.7	-13.0	-44.7	
2.8400	-22.2	H	3.0	45.1	1.0	-66.4	-13.0	-53.4	
High Channel (713.5MHz)									
1.4270	-13.1	V	3.0	44.2	1.0	-56.3	-13.0	-43.3	
2.1405	0.4	V	3.0	44.4	1.0	-43.0	-13.0	-30.0	
2.8540	-23.2	V	3.0	45.2	1.0	-67.4	-13.0	-54.4	
1.4270	-16.1	H	3.0	44.2	1.0	-59.4	-13.0	-46.4	
2.1405	-9.9	H	3.0	44.4	1.0	-53.3	-13.0	-40.3	
2.8540	-22.9	H	3.0	45.2	1.0	-67.1	-13.0	-54.1	

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

LTE

Band 17

5MHz

16QAM

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

Company: Samsung
Project #: 4787827147
Date: 01-17-17
Test Engineer: Chan Park
Configuration: EUT / AC Adapter / Ear Phone / X-Position
Mode: TX, LTE BAND 17, 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 (706.5MHz)									
1.4130	-13.9	V	3.0	44.2	1.0	-57.1	-13.0	-44.1	
2.1195	-6.4	V	3.0	44.4	1.0	-49.8	-13.0	-36.8	
2.8260	-23.7	V	3.0	45.1	1.0	-67.9	-13.0	-54.9	
1.4130	-18.4	H	3.0	44.2	1.0	-61.6	-13.0	-48.6	
2.1195	-11.9	H	3.0	44.4	1.0	-55.3	-13.0	-42.3	
2.8260	-23.7	H	3.0	45.1	1.0	-67.8	-13.0	-54.8	
Mid Channel (710MHz)									
1.4200	-11.3	V	3.0	44.2	1.0	-54.5	-13.0	-41.5	
2.1300	-8.0	V	3.0	44.4	1.0	-51.3	-13.0	-38.3	
2.8400	-22.7	V	3.0	45.1	1.0	-66.9	-13.0	-53.9	
1.4200	-16.0	H	3.0	44.2	1.0	-59.2	-13.0	-46.2	
2.1300	-17.1	H	3.0	44.4	1.0	-60.5	-13.0	-47.5	
2.8400	-22.5	H	3.0	45.1	1.0	-66.6	-13.0	-53.6	
High Channel (713.5MHz)									
1.4270	-14.7	V	3.0	44.2	1.0	-57.9	-13.0	-44.9	
2.1405	-1.2	V	3.0	44.4	1.0	-44.6	-13.0	-31.6	
2.8540	-23.2	V	3.0	45.2	1.0	-67.3	-13.0	-54.3	
1.4270	-17.1	H	3.0	44.2	1.0	-60.3	-13.0	-47.3	
2.1405	-7.7	H	3.0	44.4	1.0	-51.1	-13.0	-38.1	
2.8540	-23.3	H	3.0	45.2	1.0	-67.4	-13.0	-54.4	

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

LTE Band 17 equipped with keyboard

LTE

Band 17

5MHz

QPSK

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

Company: Samsung
Project #: 4787827147
Date: 02-16-17
Test Engineer: YH Lim
Configuration: EUT / AC Adapter / Earphone / Keyboard
Mode: TX, LTE BAND 17, 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 (706.5MHz)									
1.4130	-19.7	V	3.0	38.1	1.0	-56.9	-13.0	-43.9	
2.1195	-8.5	V	3.0	38.5	1.0	-46.0	-13.0	-33.0	
2.8260	-22.3	V	3.0	39.1	1.0	-60.4	-13.0	-47.4	
1.4130	-22.3	H	3.0	38.1	1.0	-59.4	-13.0	-46.4	
2.1195	-10.0	H	3.0	38.5	1.0	-47.5	-13.0	-34.5	
2.8260	-22.5	H	3.0	39.1	1.0	-60.6	-13.0	-47.6	
Mid Channel (710MHz)									
1.4200	-18.7	V	3.0	38.1	1.0	-55.8	-13.0	-42.8	
2.1300	-8.7	V	3.0	38.5	1.0	-46.2	-13.0	-33.2	
2.8400	-21.4	V	3.0	39.1	1.0	-59.5	-13.0	-46.5	
1.4200	-18.4	H	3.0	38.1	1.0	-55.6	-13.0	-42.6	
2.1300	-12.1	H	3.0	38.5	1.0	-49.7	-13.0	-36.7	
2.8400	-21.4	H	3.0	39.1	1.0	-59.5	-13.0	-46.5	
High Channel (713.5MHz)									
1.4270	-21.6	V	3.0	38.1	1.0	-58.7	-13.0	-45.7	
2.1405	-5.7	V	3.0	38.5	1.0	-43.2	-13.0	-30.2	
2.8540	-21.7	V	3.0	39.1	1.0	-59.8	-13.0	-46.8	
1.4270	-20.9	H	3.0	38.1	1.0	-58.0	-13.0	-45.0	
2.1405	-8.7	H	3.0	38.5	1.0	-46.2	-13.0	-33.2	
2.8540	-22.2	H	3.0	39.1	1.0	-60.3	-13.0	-47.3	

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

LTE Band 5

LTE Band 5 10MHz QPSK

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

Company: Samsung
Project #: 4787827147
Date: 01-17-17
Test Engineer: Chan Park
Configuration: EUT / AC Adapter / Earphone, X Position
Mode: TX, LTE BAND 5, 10MHz BW,QPSK

Chamber	Pre-amplifier	Filter	Limit
Chamber 1	AFS42	Filter 1	Part 22

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (829MHz)									
1.6580	-2.3	V	3.0	44.2	1.0	-45.5	-13.0	-32.5	
2.4870	-5.3	V	3.0	44.8	1.0	-49.1	-13.0	-36.1	
3.3160	-23.0	V	3.0	44.8	1.0	-66.7	-13.0	-53.7	
1.6580	-14.3	H	3.0	44.2	1.0	-57.6	-13.0	-44.6	
2.4870	-11.4	H	3.0	44.8	1.0	-55.1	-13.0	-42.1	
3.3160	-22.6	H	3.0	44.8	1.0	-66.4	-13.0	-53.4	
Mid Channel (836.5MHz)									
1.6730	-6.5	V	3.0	44.2	1.0	-49.7	-13.0	-36.7	
2.5090	-5.6	V	3.0	44.8	1.0	-49.4	-13.0	-36.4	
3.3460	-23.1	V	3.0	44.7	1.0	-66.8	-13.0	-53.8	
1.6730	-17.2	H	3.0	44.2	1.0	-60.5	-13.0	-47.5	
2.5090	-4.5	H	3.0	44.8	1.0	-48.2	-13.0	-35.2	
3.3460	-22.8	H	3.0	44.7	1.0	-66.6	-13.0	-53.6	
High Channel (844MHz)									
1.6880	-10.0	V	3.0	44.2	1.0	-53.2	-13.0	-40.2	
2.5320	-7.1	V	3.0	44.8	1.0	-50.9	-13.0	-37.9	
3.3760	-22.7	V	3.0	44.7	1.0	-66.4	-13.0	-53.4	
1.6880	-18.8	H	3.0	44.2	1.0	-62.0	-13.0	-49.0	
2.5320	-7.4	H	3.0	44.8	1.0	-51.3	-13.0	-38.3	
3.3760	-22.5	H	3.0	44.7	1.0	-66.2	-13.0	-53.2	

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

LTE Band 5 10MHz 16QAM

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

Company: Samsung
Project #: 4787827147
Date: 01-17-17
Test Engineer: Chan Park
Configuration: EUT / AC Adapter / Earphone, X Position
Mode: TX, LTE BAND 5, 10MHz BW,16QAM

Chamber	Pre-amplifier	Filter	Limit
Chamber 1	AFS42	Filter 1	Part 22

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (829MHz)									
1.6580	-2.1	V	3.0	44.2	1.0	-45.3	-13.0	-32.3	
2.4870	-4.8	V	3.0	44.8	1.0	-48.6	-13.0	-35.6	
3.3160	-22.9	V	3.0	44.8	1.0	-66.7	-13.0	-53.7	
1.6580	-13.9	H	3.0	44.2	1.0	-57.1	-13.0	-44.1	
2.4870	-10.9	H	3.0	44.8	1.0	-54.7	-13.0	-41.7	
3.3160	-22.4	H	3.0	44.8	1.0	-66.2	-13.0	-53.2	
Mid Channel (836.5MHz)									
1.6730	-6.1	V	3.0	44.2	1.0	-49.3	-13.0	-36.3	
2.5090	-5.2	V	3.0	44.8	1.0	-49.0	-13.0	-36.0	
3.3460	-23.2	V	3.0	44.7	1.0	-66.9	-13.0	-53.9	
1.6730	-17.2	H	3.0	44.2	1.0	-60.4	-13.0	-47.4	
2.5090	-14.2	H	3.0	44.8	1.0	-57.9	-13.0	-44.9	
3.3460	-22.8	H	3.0	44.7	1.0	-66.6	-13.0	-53.6	
High Channel (844MHz)									
1.6880	-10.1	V	3.0	44.2	1.0	-53.4	-13.0	-40.4	
2.5320	-7.1	V	3.0	44.8	1.0	-50.9	-13.0	-37.9	
3.3760	-23.0	V	3.0	44.7	1.0	-66.6	-13.0	-53.6	
1.6880	-18.6	H	3.0	44.2	1.0	-61.8	-13.0	-48.8	
2.5320	-7.1	H	3.0	44.8	1.0	-51.0	-13.0	-38.0	
3.3760	-22.4	H	3.0	44.7	1.0	-66.1	-13.0	-53.1	

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

UL Korea, Ltd. Suwon Laboratory FORM ID: FCC_22/24/27
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LTE

Band 5

5MHz

QPSK

UL Korea, Ltd Suwon Laboratory

Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 4787827147
Date: 01-17-17
Test Engineer: Chan Park
Configuration: EUT / AC Adapter / Earphone, X Position
Mode: TX, LTE BAND 5, 5MHz BW,QPSK

Chamber	Pre-amplifer	Filter	Limit
Chamber 1	AFS42	Filter 1	Part 22

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (826.5MHz)									
1.6530	-4.7	V	3.0	44.2	1.0	-47.9	-13.0	-34.9	
2.4790	-7.9	V	3.0	44.8	1.0	-51.7	-13.0	-38.7	
3.3060	-23.4	V	3.0	44.8	1.0	-67.2	-13.0	-54.2	
1.6530	-15.0	H	3.0	44.2	1.0	-58.3	-13.0	-45.3	
2.4790	-7.8	H	3.0	44.8	1.0	-51.5	-13.0	-38.5	
3.3060	-23.0	H	3.0	44.8	1.0	-66.8	-13.0	-53.8	
Mid Channel (836.5MHz)									
1.6730	-9.9	V	3.0	44.2	1.0	-53.1	-13.0	-40.1	
2.5090	-12.1	V	3.0	44.8	1.0	-55.9	-13.0	-42.9	
3.3460	-23.0	V	3.0	44.7	1.0	-66.8	-13.0	-53.8	
1.6730	-16.2	H	3.0	44.2	1.0	-59.5	-13.0	-46.5	
2.5090	-12.4	H	3.0	44.8	1.0	-56.2	-13.0	-43.2	
3.3460	-22.5	H	3.0	44.7	1.0	-66.2	-13.0	-53.2	
High Channel (846.5MHz)									
1.6930	-6.8	V	3.0	44.2	1.0	-50.0	-13.0	-37.0	
2.5390	-9.2	V	3.0	44.8	1.0	-53.0	-13.0	-40.0	
3.3860	-23.1	V	3.0	44.7	1.0	-66.7	-13.0	-53.7	
1.6930	-17.2	H	3.0	44.2	1.0	-60.4	-13.0	-47.4	
2.5390	-13.5	H	3.0	44.8	1.0	-57.3	-13.0	-44.3	
3.3860	-22.8	H	3.0	44.7	1.0	-66.5	-13.0	-53.5	

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

LTE

Band 5

5MHz

16QAM

UL Korea, Ltd Suwon Laboratory

Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 4787827147
Date: 01-17-17
Test Engineer: Chan Park
Configuration: EUT / AC Adapter / Earphone, X Position
Mode: TX, LTE BAND 5, 5MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
Chamber 1	AFS42	Filter 1	Part 22

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (826.5MHz)									
1.6530	-4.9	V	3.0	44.2	1.0	-48.1	-13.0	-35.1	
2.4790	-9.0	V	3.0	44.8	1.0	-52.8	-13.0	-39.8	
3.3060	-23.4	V	3.0	44.8	1.0	-67.2	-13.0	-54.2	
1.6530	-15.4	H	3.0	44.2	1.0	-58.6	-13.0	-45.6	
2.4790	-8.4	H	3.0	44.8	1.0	-52.1	-13.0	-39.1	
3.3060	-23.2	H	3.0	44.8	1.0	-67.0	-13.0	-54.0	
Mid Channel (836.5MHz)									
1.6730	-10.2	V	3.0	44.2	1.0	-53.4	-13.0	-40.4	
2.5090	-13.0	V	3.0	44.8	1.0	-56.7	-13.0	-43.7	
3.3460	-22.9	V	3.0	44.7	1.0	-66.6	-13.0	-53.6	
1.6730	-15.3	H	3.0	44.2	1.0	-58.5	-13.0	-45.5	
2.5090	-13.4	H	3.0	44.8	1.0	-57.2	-13.0	-44.2	
3.3460	-22.7	H	3.0	44.7	1.0	-66.4	-13.0	-53.4	
High Channel (846.5MHz)									
1.6930	-7.3	V	3.0	44.2	1.0	-50.5	-13.0	-37.5	
2.5390	-9.3	V	3.0	44.8	1.0	-53.1	-13.0	-40.1	
3.3860	-23.1	V	3.0	44.7	1.0	-66.7	-13.0	-53.7	
1.6930	-17.9	H	3.0	44.2	1.0	-61.1	-13.0	-48.1	
2.5390	-13.6	H	3.0	44.8	1.0	-57.4	-13.0	-44.4	
3.3860	-22.7	H	3.0	44.7	1.0	-66.4	-13.0	-53.4	

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

LTE Band 5 3MHz QPSK

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

Company: Samsung
Project #: 4787827147
Date: 01-17-17
Test Engineer: Chan Park
Configuration: EUT / AC Adapter / Earphone, X Position
Mode: TX, LTE BAND 5, 3MHz BW,QPSK

Chamber	Pre-amplifer	Filter	Limit
Chamber 1	AFS42	Filter 1	Part 22

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (825.5MHz)									
1.6510	-16.0	V	3.0	44.2	1.0	-59.2	-13.0	-46.2	
2.4765	-11.4	V	3.0	44.8	1.0	-55.1	-13.0	-42.1	
3.3020	-22.7	V	3.0	44.8	1.0	-66.5	-13.0	-53.5	
1.6510	-16.9	H	3.0	44.2	1.0	-60.1	-13.0	-47.1	
2.4765	-11.1	H	3.0	44.8	1.0	-54.8	-13.0	-41.8	
3.3020	-22.2	H	3.0	44.8	1.0	-66.0	-13.0	-53.0	
Mid Channel (836.5MHz)									
1.6730	-10.4	V	3.0	44.2	1.0	-53.6	-13.0	-40.6	
2.5090	-2.5	V	3.0	44.8	1.0	-46.3	-13.0	-33.3	
3.3460	-23.1	V	3.0	44.7	1.0	-66.8	-13.0	-53.8	
1.6730	-18.2	H	3.0	44.2	1.0	-61.4	-13.0	-48.4	
2.5090	-4.6	H	3.0	44.8	1.0	-48.4	-13.0	-35.4	
3.3460	-23.0	H	3.0	44.7	1.0	-66.7	-13.0	-53.7	
High Channel (847.5MHz)									
1.6950	-9.7	V	3.0	44.2	1.0	-52.9	-13.0	-39.9	
2.5425	-9.5	V	3.0	44.8	1.0	-53.3	-13.0	-40.3	
3.3900	-22.5	V	3.0	44.6	1.0	-66.1	-13.0	-53.1	
1.6950	-18.5	H	3.0	44.2	1.0	-61.7	-13.0	-48.7	
2.5425	-14.4	H	3.0	44.8	1.0	-58.2	-13.0	-45.2	
3.3900	-22.0	H	3.0	44.6	1.0	-65.7	-13.0	-52.7	

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

LTE Band 5 3MHz 16QAM

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

Company: Samsung
Project #: 4787827147
Date: 01-17-17
Test Engineer: Chan Park
Configuration: EUT / AC Adapter / Earphone, X Position
Mode: TX, LTE BAND 5, 3MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
Chamber 1	AFS42	Filter 1	Part 22

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (825.5MHz)									
1.6510	-16.1	V	3.0	44.2	1.0	-59.3	-13.0	-46.3	
2.4765	-10.7	V	3.0	44.8	1.0	-54.5	-13.0	-41.5	
3.3020	-22.6	V	3.0	44.8	1.0	-66.4	-13.0	-53.4	
1.6510	-17.0	H	3.0	44.2	1.0	-60.2	-13.0	-47.2	
2.4765	-10.9	H	3.0	44.8	1.0	-54.7	-13.0	-41.7	
3.3020	-22.6	H	3.0	44.8	1.0	-66.4	-13.0	-53.4	
Mid Channel (836.5MHz)									
1.6730	-10.6	V	3.0	44.2	1.0	-53.8	-13.0	-40.8	
2.5090	-2.3	V	3.0	44.8	1.0	-46.0	-13.0	-33.0	
3.3460	-23.2	V	3.0	44.7	1.0	-66.9	-13.0	-53.9	
1.6730	-17.8	H	3.0	44.2	1.0	-61.0	-13.0	-48.0	
2.5090	-4.0	H	3.0	44.8	1.0	-47.8	-13.0	-34.8	
3.3460	-22.9	H	3.0	44.7	1.0	-66.7	-13.0	-53.7	
High Channel (847.5MHz)									
1.6950	-9.7	V	3.0	44.2	1.0	-53.0	-13.0	-40.0	
2.5425	-9.8	V	3.0	44.8	1.0	-53.6	-13.0	-40.6	
3.3900	-22.1	V	3.0	44.6	1.0	-65.8	-13.0	-52.8	
1.6950	-18.6	H	3.0	44.2	1.0	-61.8	-13.0	-48.8	
2.5425	-14.9	H	3.0	44.8	1.0	-58.8	-13.0	-45.8	
3.3900	-22.2	H	3.0	44.6	1.0	-65.8	-13.0	-52.8	

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

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LTE

Band 5

1.4MHz

QPSK

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

Company: Samsung
Project #: 4787827147
Date: 01-17-17
Test Engineer: Chan Park
Configuration: EUT / AC Adapter / Earphone, X Position
Mode: TX, LTE BAND 5, 1.4MHz BW,QPSK

Chamber	Pre-amplifer	Filter	Limit
Chamber 1	AFS42	Filter 1	Part 22

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (824.7MHz)									
1.6494	-4.6	V	3.0	44.2	1.0	-47.9	-13.0	-34.9	
2.4741	-13.1	V	3.0	44.8	1.0	-56.8	-13.0	-43.8	
3.2988	-23.5	V	3.0	44.8	1.0	-67.3	-13.0	-54.3	
1.6494	-15.4	H	3.0	44.2	1.0	-58.6	-13.0	-45.6	
2.4741	-15.6	H	3.0	44.8	1.0	-59.4	-13.0	-46.4	
3.2988	-23.0	H	3.0	44.8	1.0	-66.8	-13.0	-53.8	
Mid Channel (836.5MHz)									
1.6730	-8.8	V	3.0	44.2	1.0	-52.0	-13.0	-39.0	
2.5090	-4.8	V	3.0	44.8	1.0	-48.6	-13.0	-35.6	
3.3460	-22.8	V	3.0	44.7	1.0	-66.5	-13.0	-53.5	
1.6730	-19.6	H	3.0	44.2	1.0	-62.8	-13.0	-49.8	
2.5090	-9.7	H	3.0	44.8	1.0	-53.5	-13.0	-40.5	
3.3460	-22.1	H	3.0	44.7	1.0	-65.9	-13.0	-52.9	
High Channel (848.3MHz)									
1.6966	-7.1	V	3.0	44.2	1.0	-50.3	-13.0	-37.3	
2.5449	-7.7	V	3.0	44.8	1.0	-51.6	-13.0	-38.6	
3.3932	-22.3	V	3.0	44.6	1.0	-66.0	-13.0	-53.0	
1.6966	-9.4	H	3.0	44.2	1.0	-52.6	-13.0	-39.6	
2.5449	-10.2	H	3.0	44.8	1.0	-54.0	-13.0	-41.0	
3.3932	-22.1	H	3.0	44.6	1.0	-65.8	-13.0	-52.8	

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

LTE

Band 5

1.4MHz

16QAM

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

Company: Samsung
Project #: 4787827147
Date: 01-17-17
Test Engineer: Chan Park
Configuration: EUT / AC Adapter / Earphone, X Position
Mode: TX, LTE BAND 5, 1.4MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
Chamber 1	AFS42	Filter 1	Part 22

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (824.7MHz)									
1.6494	-4.6	V	3.0	44.2	1.0	-47.8	-13.0	-34.8	
2.4741	-13.3	V	3.0	44.8	1.0	-57.0	-13.0	-44.0	
3.2988	-23.4	V	3.0	44.8	1.0	-67.2	-13.0	-54.2	
1.6494	-15.8	H	3.0	44.2	1.0	-59.0	-13.0	-46.0	
2.4741	-16.7	H	3.0	44.8	1.0	-60.4	-13.0	-47.4	
3.2988	-23.0	H	3.0	44.8	1.0	-66.8	-13.0	-53.8	
Mid Channel (836.5MHz)									
1.6730	-8.9	V	3.0	44.2	1.0	-52.1	-13.0	-39.1	
2.5090	-4.6	V	3.0	44.8	1.0	-48.4	-13.0	-35.4	
3.3460	-22.7	V	3.0	44.7	1.0	-66.4	-13.0	-53.4	
1.6730	-19.3	H	3.0	44.2	1.0	-62.5	-13.0	-49.5	
2.5090	-9.9	H	3.0	44.8	1.0	-53.6	-13.0	-40.6	
3.3460	-22.2	H	3.0	44.7	1.0	-66.0	-13.0	-53.0	
High Channel (848.3MHz)									
1.6966	-7.4	V	3.0	44.2	1.0	-50.6	-13.0	-37.6	
2.5449	-8.3	V	3.0	44.8	1.0	-52.1	-13.0	-39.1	
3.3932	-22.1	V	3.0	44.6	1.0	-65.7	-13.0	-52.7	
1.6966	-9.5	H	3.0	44.2	1.0	-52.8	-13.0	-39.8	
2.5449	-10.9	H	3.0	44.8	1.0	-54.8	-13.0	-41.8	
3.3932	-22.1	H	3.0	44.6	1.0	-65.7	-13.0	-52.7	

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

LTE Band 5 equipped with keyboard

LTE Band 5 10MHz 16QAM

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

Company: Samsung
Project #: 4787827147
Date: 02-16-17
Test Engineer: YH Lim
Configuration: EUT / AC Adapter / Earphone / Keyboard
Mode: TX, LTE BAND 5, 10MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
Chamber 1	AFS42	Filter 1	Part 22

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (829MHz)									
1.6580	-11.7	V	3.0	44.2	1.0	-54.9	-13.0	-41.9	
2.4870	-1.2	V	3.0	44.8	1.0	-44.9	-13.0	-31.9	
3.3160	-18.7	V	3.0	44.8	1.0	-62.5	-13.0	-49.5	
1.6580	-12.9	H	3.0	44.2	1.0	-56.1	-13.0	-43.1	
2.4870	-5.0	H	3.0	44.8	1.0	-48.7	-13.0	-35.7	
3.3160	-18.6	H	3.0	44.8	1.0	-62.4	-13.0	-49.4	
Mid Channel (836.5MHz)									
1.6730	-14.5	V	3.0	44.2	1.0	-57.8	-13.0	-44.8	
2.5090	-2.3	V	3.0	44.8	1.0	-46.1	-13.0	-33.1	
3.3460	-18.9	V	3.0	44.7	1.0	-62.7	-13.0	-49.7	
1.6730	-9.6	H	3.0	44.2	1.0	-52.8	-13.0	-39.8	
2.5090	-4.5	H	3.0	44.8	1.0	-48.3	-13.0	-35.3	
3.3460	-19.1	H	3.0	44.7	1.0	-62.8	-13.0	-49.8	
High Channel (844MHz)									
1.6880	-15.7	V	3.0	44.2	1.0	-58.9	-13.0	-45.9	
2.5320	-2.1	V	3.0	44.8	1.0	-45.9	-13.0	-32.9	
3.3760	-18.3	V	3.0	44.7	1.0	-62.0	-13.0	-49.0	
1.6880	-13.0	H	3.0	44.2	1.0	-56.2	-13.0	-43.2	
2.5320	-4.4	H	3.0	44.8	1.0	-48.2	-13.0	-35.2	
3.3760	-17.8	H	3.0	44.7	1.0	-61.5	-13.0	-48.5	

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