LTE Band 17

LTE Band 17 10MHz QPSK

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

Company: Samsung
Project #: 16K22866
Date: 02-23-16
Test Engineer: Steven Kim
Configuration: EUT / AC Adapter / Ear Phone / Y-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	-25.0	V	3.0	39.0	1.0	-63.1	-13.0	-50.1	
2.1270	-11.0	V	3.0	39.3	1.0	-49.3	-13.0	-36.3	
2.8360	-22.4	V	3.0	39.7	1.0	-61.1	-13.0	-48.1	
1.4180	-27.3	H	3.0	39.0	1.0	-65.3	-13.0	-52.3	
2.1270	-14.3	H	3.0	39.3	1.0	-52.7	-13.0	-39.7	
2.8360	-22.4	H	3.0	39.7	1.0	-61.2	-13.0	-48.2	
Mid Channel (710MHz)									
1.4200	-22.2	V	3.0	39.0	1.0	-60.2	-13.0	-47.2	
2.1300	-11.6	V	3.0	39.3	1.0	-50.0	-13.0	-37.0	
2.8400	-23.5	V	3.0	39.7	1.0	-62.2	-13.0	-49.2	
1.4200	-26.6	H	3.0	39.0	1.0	-64.6	-13.0	-51.6	
2.1300	-13.8	H	3.0	39.3	1.0	-52.1	-13.0	-39.1	
2.8400	-23.5	H	3.0	39.7	1.0	-62.2	-13.0	-49.2	
High Channel (711MHz)									
1.4220	-24.6	V	3.0	39.0	1.0	-62.6	-13.0	-49.6	
2.1330	-9.0	V	3.0	39.3	1.0	-47.4	-13.0	-34.4	
2.8440	-23.2	V	3.0	39.7	1.0	-61.9	-13.0	-48.9	
1.4220	-27.6	H	3.0	39.0	1.0	-65.6	-13.0	-52.6	
2.1330	-14.0	H	3.0	39.3	1.0	-52.4	-13.0	-39.4	
2.8440	-23.4	H	3.0	39.7	1.0	-62.1	-13.0	-49.1	

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 #: 16K22866
Date: 02-23-16
Test Engineer: Steven Kim
Configuration: EUT / AC Adapter / Ear Phone / Y-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	-25.6	V	3.0	39.0	1.0	-63.6	-13.0	-50.6	
2.1270	-12.9	V	3.0	39.3	1.0	-51.2	-13.0	-38.2	
2.8360	-22.4	V	3.0	39.7	1.0	-61.1	-13.0	-48.1	
1.4180	-27.8	H	3.0	39.0	1.0	-65.8	-13.0	-52.8	
2.1270	-15.8	H	3.0	39.3	1.0	-54.1	-13.0	-41.1	
2.8360	-22.5	H	3.0	39.7	1.0	-61.3	-13.0	-48.3	
Mid Channel (710MHz)									
1.4200	-23.3	V	3.0	39.0	1.0	-61.3	-13.0	-48.3	
2.1300	-14.2	V	3.0	39.3	1.0	-52.5	-13.0	-39.5	
2.8400	-23.4	V	3.0	39.7	1.0	-62.1	-13.0	-49.1	
1.4200	-27.1	H	3.0	39.0	1.0	-65.1	-13.0	-52.1	
2.1300	-16.1	H	3.0	39.3	1.0	-54.4	-13.0	-41.4	
2.8400	-23.5	H	3.0	39.7	1.0	-62.2	-13.0	-49.2	
High Channel (711MHz)									
1.4220	-23.4	V	3.0	39.0	1.0	-61.4	-13.0	-48.4	
2.1330	-12.4	V	3.0	39.3	1.0	-50.7	-13.0	-37.7	
2.8440	-23.2	V	3.0	39.7	1.0	-62.0	-13.0	-49.0	
1.4220	-29.2	H	3.0	39.0	1.0	-67.2	-13.0	-54.2	
2.1330	-17.0	H	3.0	39.3	1.0	-55.4	-13.0	-42.4	
2.8440	-23.2	H	3.0	39.7	1.0	-61.9	-13.0	-48.9	

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 #: 16K22866
Date: 02-23-16
Test Engineer: Steven Kim
Configuration: EUT / AC Adapter / Ear Phone / Y-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	-25.4	V	3.0	39.0	1.0	-63.4	-13.0	-50.4	
2.1195	-9.4	V	3.0	39.3	1.0	-47.7	-13.0	-34.7	
2.8260	-23.9	V	3.0	39.7	1.0	-62.6	-13.0	-49.6	
1.4130	-26.2	H	3.0	39.0	1.0	-64.2	-13.0	-51.2	
2.1195	-16.2	H	3.0	39.3	1.0	-54.5	-13.0	-41.5	
2.8260	-24.0	H	3.0	39.7	1.0	-62.8	-13.0	-49.8	
Mid Channel (710MHz)									
1.4200	-22.8	V	3.0	39.0	1.0	-60.8	-13.0	-47.8	
2.1300	-9.2	V	3.0	39.3	1.0	-47.6	-13.0	-34.6	
2.8400	-23.6	V	3.0	39.7	1.0	-62.3	-13.0	-49.3	
1.4200	-26.9	H	3.0	39.0	1.0	-64.9	-13.0	-51.9	
2.1300	-16.6	H	3.0	39.3	1.0	-54.9	-13.0	-41.9	
2.8400	-23.1	H	3.0	39.7	1.0	-61.8	-13.0	-48.8	
High Channel (713.5MHz)									
1.4270	-24.2	V	3.0	39.0	1.0	-62.2	-13.0	-49.2	
2.1405	-10.0	V	3.0	39.3	1.0	-48.4	-13.0	-35.4	
2.8540	-23.8	V	3.0	39.7	1.0	-62.5	-13.0	-49.5	
1.4270	-26.2	H	3.0	39.0	1.0	-64.2	-13.0	-51.2	
2.1405	-14.1	H	3.0	39.3	1.0	-52.5	-13.0	-39.5	
2.8540	-23.9	H	3.0	39.7	1.0	-62.6	-13.0	-49.6	

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 #: 16K22866
Date: 02-23-16
Test Engineer: Steven Kim
Configuration: EUT / AC Adapter / Ear Phone / Y-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	-26.0	V	3.0	39.0	1.0	-64.1	-13.0	-51.1	
2.1195	-10.7	V	3.0	39.3	1.0	-49.0	-13.0	-36.0	
2.8260	-24.0	V	3.0	39.7	1.0	-62.7	-13.0	-49.7	
1.4130	-26.9	H	3.0	39.0	1.0	-64.9	-13.0	-51.9	
2.1195	-17.5	H	3.0	39.3	1.0	-55.8	-13.0	-42.8	
2.8260	-24.0	H	3.0	39.7	1.0	-62.7	-13.0	-49.7	
Mid Channel (710MHz)									
1.4200	-24.0	V	3.0	39.0	1.0	-62.0	-13.0	-49.0	
2.1300	-12.2	V	3.0	39.3	1.0	-50.5	-13.0	-37.5	
2.8400	-23.6	V	3.0	39.7	1.0	-62.3	-13.0	-49.3	
1.4200	-27.2	H	3.0	39.0	1.0	-65.2	-13.0	-52.2	
2.1300	-18.4	H	3.0	39.3	1.0	-56.7	-13.0	-43.7	
2.8400	-23.1	H	3.0	39.7	1.0	-61.8	-13.0	-48.8	
High Channel (713.5MHz)									
1.4270	-25.4	V	3.0	39.0	1.0	-63.4	-13.0	-50.4	
2.1405	-13.2	V	3.0	39.3	1.0	-51.6	-13.0	-38.6	
2.8540	-23.9	V	3.0	39.7	1.0	-62.6	-13.0	-49.6	
1.4270	-27.1	H	3.0	39.0	1.0	-65.1	-13.0	-52.1	
2.1405	-17.3	H	3.0	39.3	1.0	-55.6	-13.0	-42.6	
2.8540	-23.9	H	3.0	39.7	1.0	-62.6	-13.0	-49.6	

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 #: 16K22866
Date: 02-23-16
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Earphone, Y Position
Mode: TX, LTE BAND 5, 10MHz BW,QPSK

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	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	-18.1	V	3.0	39.1	1.0	-56.2	-13.0	-43.2	
2.4870	-16.3	V	3.0	39.5	1.0	-54.8	-13.0	-41.8	
3.3160	-21.9	V	3.0	40.1	1.0	-61.0	-13.0	-48.0	
1.6580	-25.7	H	3.0	39.1	1.0	-63.8	-13.0	-50.8	
2.4870	-10.3	H	3.0	39.5	1.0	-48.9	-13.0	-35.9	
3.3160	-22.3	H	3.0	40.1	1.0	-61.4	-13.0	-48.4	
Mid Channel (836.5MHz)									
1.6730	-21.9	V	3.0	39.1	1.0	-60.0	-13.0	-47.0	
2.5090	-16.8	V	3.0	39.5	1.0	-55.3	-13.0	-42.3	
3.3460	-22.2	V	3.0	40.1	1.0	-61.3	-13.0	-48.3	
1.6730	-23.9	H	3.0	39.1	1.0	-62.1	-13.0	-49.1	
2.5090	-9.9	H	3.0	39.5	1.0	-48.4	-13.0	-35.4	
3.3460	-22.6	H	3.0	40.1	1.0	-61.8	-13.0	-48.8	
High Channel (844MHz)									
1.6880	-21.9	V	3.0	39.1	1.0	-60.0	-13.0	-47.0	
2.5320	-16.5	V	3.0	39.5	1.0	-55.1	-13.0	-42.1	
3.3760	-22.6	V	3.0	40.2	1.0	-61.8	-13.0	-48.8	
1.6880	-22.0	H	3.0	39.1	1.0	-60.1	-13.0	-47.1	
2.5320	-14.4	H	3.0	39.5	1.0	-53.0	-13.0	-40.0	
3.3760	-22.9	H	3.0	40.2	1.0	-62.1	-13.0	-49.1	

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 #: 16K22866
Date: 02-23-16
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Earphone, Y Position
Mode: TX, LTE BAND 5, 10MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	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	-20.0	V	3.0	39.1	1.0	-58.1	-13.0	-45.1	
2.4870	-16.8	V	3.0	39.5	1.0	-55.3	-13.0	-42.3	
3.3160	-22.1	V	3.0	40.1	1.0	-61.2	-13.0	-48.2	
1.6580	-26.2	H	3.0	39.1	1.0	-64.3	-13.0	-51.3	
2.4870	-12.4	H	3.0	39.5	1.0	-50.9	-13.0	-37.9	
3.3160	-22.3	H	3.0	40.1	1.0	-61.4	-13.0	-48.4	
Mid Channel (836.5MHz)									
1.6730	-22.7	V	3.0	39.1	1.0	-60.9	-13.0	-47.9	
2.5090	-18.1	V	3.0	39.5	1.0	-56.6	-13.0	-43.6	
3.3460	-22.3	V	3.0	40.1	1.0	-61.5	-13.0	-48.5	
1.6730	-24.1	H	3.0	39.1	1.0	-62.2	-13.0	-49.2	
2.5090	-11.6	H	3.0	39.5	1.0	-50.1	-13.0	-37.1	
3.3460	-22.6	H	3.0	40.1	1.0	-61.7	-13.0	-48.7	
High Channel (844MHz)									
1.6880	-22.8	V	3.0	39.1	1.0	-60.9	-13.0	-47.9	
2.5320	-18.3	V	3.0	39.5	1.0	-56.9	-13.0	-43.9	
3.3760	-22.6	V	3.0	40.2	1.0	-61.7	-13.0	-48.7	
1.6880	-23.5	H	3.0	39.1	1.0	-61.7	-13.0	-48.7	
2.5320	-15.2	H	3.0	39.5	1.0	-53.8	-13.0	-40.8	
3.3760	-22.8	H	3.0	40.2	1.0	-62.0	-13.0	-49.0	

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

LTE

Band 5

5MHz

QPSK

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

Company: Samsung
Project #: 16K22866
Date: 03-07-16
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Earphone, Y Position
Mode: TX, LTE BAND 5, 5MHz BW,QPSK

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	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	-21.3	V	3.0	39.1	1.0	-59.4	-13.0	-46.4	
2.4790	-20.5	V	3.0	39.5	1.0	-59.0	-13.0	-46.0	
3.3060	-22.9	V	3.0	40.1	1.0	-62.0	-13.0	-49.0	
1.6530	-26.5	H	3.0	39.1	1.0	-64.6	-13.0	-51.6	
2.4790	-22.0	H	3.0	39.5	1.0	-60.5	-13.0	-47.5	
3.3060	-22.9	H	3.0	40.1	1.0	-62.0	-13.0	-49.0	
Mid Channel (836.5MHz)									
1.6730	-20.3	V	3.0	39.1	1.0	-58.4	-13.0	-45.4	
2.5090	-22.8	V	3.0	39.5	1.0	-61.3	-13.0	-48.3	
3.3460	-22.8	V	3.0	40.1	1.0	-61.9	-13.0	-48.9	
1.6730	-25.6	H	3.0	39.1	1.0	-63.7	-13.0	-50.7	
2.5090	-21.5	H	3.0	39.5	1.0	-60.1	-13.0	-47.1	
3.3460	-22.8	H	3.0	40.1	1.0	-61.9	-13.0	-48.9	
High Channel (846.5MHz)									
1.6930	-23.9	V	3.0	39.1	1.0	-62.0	-13.0	-49.0	
2.5390	-23.8	V	3.0	39.6	1.0	-62.3	-13.0	-49.3	
3.3860	-22.5	V	3.0	40.2	1.0	-61.6	-13.0	-48.6	
1.6930	-25.8	H	3.0	39.1	1.0	-64.0	-13.0	-51.0	
2.5390	-22.4	H	3.0	39.6	1.0	-61.0	-13.0	-48.0	
3.3860	-22.8	H	3.0	40.2	1.0	-62.0	-13.0	-49.0	

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 #: 16K22866
Date: 03-07-16
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Earphone, Y Position
Mode: TX, LTE BAND 5, 5MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	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	-22.3	V	3.0	39.1	1.0	-60.4	-13.0	-47.4	
2.4790	-21.2	V	3.0	39.5	1.0	-59.7	-13.0	-46.7	
3.3060	-23.1	V	3.0	40.1	1.0	-62.2	-13.0	-49.2	
1.6530	-26.7	H	3.0	39.1	1.0	-64.8	-13.0	-51.8	
2.4790	-22.3	H	3.0	39.5	1.0	-60.8	-13.0	-47.8	
3.3060	-23.1	H	3.0	40.1	1.0	-62.2	-13.0	-49.2	
Mid Channel (836.5MHz)									
1.6730	-22.6	V	3.0	39.1	1.0	-60.7	-13.0	-47.7	
2.5090	-23.6	V	3.0	39.5	1.0	-62.2	-13.0	-49.2	
3.3460	-23.0	V	3.0	40.1	1.0	-62.2	-13.0	-49.2	
1.6730	-26.5	H	3.0	39.1	1.0	-64.6	-13.0	-51.6	
2.5090	-23.1	H	3.0	39.5	1.0	-61.6	-13.0	-48.6	
3.3460	-23.2	H	3.0	40.1	1.0	-62.3	-13.0	-49.3	
High Channel (846.5MHz)									
1.6930	-24.4	V	3.0	39.1	1.0	-62.5	-13.0	-49.5	
2.5390	-24.2	V	3.0	39.6	1.0	-62.8	-13.0	-49.8	
3.3860	-22.9	V	3.0	40.2	1.0	-62.1	-13.0	-49.1	
1.6930	-26.7	H	3.0	39.1	1.0	-64.8	-13.0	-51.8	
2.5390	-23.5	H	3.0	39.6	1.0	-62.1	-13.0	-49.1	
3.3860	-23.2	H	3.0	40.2	1.0	-62.4	-13.0	-49.4	

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 #: 16K22866
Date: 03-07-16
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Earphone, Y Position
Mode: TX, LTE BAND 5, 3MHz BW,QPSK

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	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	-20.4	V	3.0	39.1	1.0	-58.5	-13.0	-45.5	
2.4765	-20.2	V	3.0	39.5	1.0	-58.7	-13.0	-45.7	
3.3020	-22.8	V	3.0	40.1	1.0	-61.9	-13.0	-48.9	
1.6510	-26.6	H	3.0	39.1	1.0	-64.7	-13.0	-51.7	
2.4765	-19.5	H	3.0	39.5	1.0	-58.0	-13.0	-45.0	
3.3020	-22.7	H	3.0	40.1	1.0	-61.8	-13.0	-48.8	
Mid Channel (836.5MHz)									
1.6730	-20.0	V	3.0	39.1	1.0	-58.1	-13.0	-45.1	
2.5090	-20.7	V	3.0	39.5	1.0	-59.3	-13.0	-46.3	
3.3460	-22.7	V	3.0	40.1	1.0	-61.8	-13.0	-48.8	
1.6730	-25.2	H	3.0	39.1	1.0	-63.3	-13.0	-50.3	
2.5090	-20.6	H	3.0	39.5	1.0	-59.2	-13.0	-46.2	
3.3460	-23.0	H	3.0	40.1	1.0	-62.1	-13.0	-49.1	
High Channel (847.5MHz)									
1.6950	-20.7	V	3.0	39.1	1.0	-58.8	-13.0	-45.8	
2.5425	-23.0	V	3.0	39.6	1.0	-61.6	-13.0	-48.6	
3.3900	-22.7	V	3.0	40.2	1.0	-61.9	-13.0	-48.9	
1.6950	-26.5	H	3.0	39.1	1.0	-64.6	-13.0	-51.6	
2.5425	-22.3	H	3.0	39.6	1.0	-60.8	-13.0	-47.8	
3.3900	-22.6	H	3.0	40.2	1.0	-61.8	-13.0	-48.8	

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 #: 16K22866
Date: 03-07-16
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Earphone, Y Position
Mode: TX, LTE BAND 5, 3MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	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	-21.9	V	3.0	39.1	1.0	-60.0	-13.0	-47.0	
2.4765	-21.6	V	3.0	39.5	1.0	-60.1	-13.0	-47.1	
3.3020	-23.1	V	3.0	40.1	1.0	-62.2	-13.0	-49.2	
1.6510	-26.9	H	3.0	39.1	1.0	-65.0	-13.0	-52.0	
2.4765	-21.5	H	3.0	39.5	1.0	-60.0	-13.0	-47.0	
3.3020	-23.1	H	3.0	40.1	1.0	-62.2	-13.0	-49.2	
Mid Channel (836.5MHz)									
1.6730	-21.8	V	3.0	39.1	1.0	-59.9	-13.0	-46.9	
2.5090	-20.2	V	3.0	39.5	1.0	-58.7	-13.0	-45.7	
3.3460	-22.9	V	3.0	40.1	1.0	-62.1	-13.0	-49.1	
1.6730	-26.0	H	3.0	39.1	1.0	-64.1	-13.0	-51.1	
2.5090	-21.7	H	3.0	39.5	1.0	-60.3	-13.0	-47.3	
3.3460	-22.8	H	3.0	40.1	1.0	-61.9	-13.0	-48.9	
High Channel (847.5MHz)									
1.6950	-22.3	V	3.0	39.1	1.0	-60.4	-13.0	-47.4	
2.5425	-23.5	V	3.0	39.6	1.0	-62.1	-13.0	-49.1	
3.3900	-22.8	V	3.0	40.2	1.0	-62.0	-13.0	-49.0	
1.6950	-26.9	H	3.0	39.1	1.0	-65.0	-13.0	-52.0	
2.5425	-23.6	H	3.0	39.6	1.0	-62.1	-13.0	-49.1	
3.3900	-22.8	H	3.0	40.2	1.0	-62.0	-13.0	-49.0	

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

LTE

Band 5

1.4MHz

QPSK

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

Company: Samsung
Project #: 16K22866
Date: 03-07-16
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Earphone, Y Position
Mode: TX, LTE BAND 5, 1.4MHz BW,QPSK

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	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	-19.2	V	3.0	39.1	1.0	-57.3	-13.0	-44.3	
2.4741	-20.7	V	3.0	39.5	1.0	-59.3	-13.0	-46.3	
3.2988	-23.0	V	3.0	40.1	1.0	-62.1	-13.0	-49.1	
1.6494	-27.5	H	3.0	39.1	1.0	-65.6	-13.0	-52.6	
2.4741	-20.0	H	3.0	39.5	1.0	-58.5	-13.0	-45.5	
3.2988	-22.9	H	3.0	40.1	1.0	-62.0	-13.0	-49.0	
Mid Channel (836.5MHz)									
1.6730	-22.9	V	3.0	39.1	1.0	-61.0	-13.0	-48.0	
2.5090	-21.6	V	3.0	39.5	1.0	-60.2	-13.0	-47.2	
3.3460	-22.7	V	3.0	40.1	1.0	-61.8	-13.0	-48.8	
1.6730	-24.5	H	3.0	39.1	1.0	-62.6	-13.0	-49.6	
2.5090	-19.4	H	3.0	39.5	1.0	-57.9	-13.0	-44.9	
3.3460	-22.6	H	3.0	40.1	1.0	-61.7	-13.0	-48.7	
High Channel (848.3MHz)									
1.6966	-18.9	V	3.0	39.1	1.0	-57.0	-13.0	-44.0	
2.5449	-23.2	V	3.0	39.6	1.0	-61.8	-13.0	-48.8	
3.3932	-22.4	V	3.0	40.2	1.0	-61.6	-13.0	-48.6	
1.6966	-25.7	H	3.0	39.1	1.0	-63.9	-13.0	-50.9	
2.5449	-20.3	H	3.0	39.6	1.0	-58.8	-13.0	-45.8	
3.3932	-22.2	H	3.0	40.2	1.0	-61.4	-13.0	-48.4	

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 #: 16K22866
Date: 03-07-16
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Earphone, Y Position
Mode: TX, LTE BAND 5, 1.4MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
Chamber 2	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	-20.9	V	3.0	39.1	1.0	-59.0	-13.0	-46.0	
2.4741	-22.3	V	3.0	39.5	1.0	-60.8	-13.0	-47.8	
3.2988	-23.1	V	3.0	40.1	1.0	-62.2	-13.0	-49.2	
1.6494	-27.2	H	3.0	39.1	1.0	-65.3	-13.0	-52.3	
2.4741	-21.7	H	3.0	39.5	1.0	-60.2	-13.0	-47.2	
3.2988	-23.0	H	3.0	40.1	1.0	-62.1	-13.0	-49.1	
Mid Channel (836.5MHz)									
1.6730	-23.4	V	3.0	39.1	1.0	-61.5	-13.0	-48.5	
2.5090	-22.2	V	3.0	39.5	1.0	-60.7	-13.0	-47.7	
3.3460	-22.8	V	3.0	40.1	1.0	-62.0	-13.0	-49.0	
1.6730	-25.6	H	3.0	39.1	1.0	-63.8	-13.0	-50.8	
2.5090	-20.7	H	3.0	39.5	1.0	-59.3	-13.0	-46.3	
3.3460	-22.9	H	3.0	40.1	1.0	-62.1	-13.0	-49.1	
High Channel (848.3MHz)									
1.6966	-21.0	V	3.0	39.1	1.0	-59.1	-13.0	-46.1	
2.5449	-23.9	V	3.0	39.6	1.0	-62.4	-13.0	-49.4	
3.3932	-22.6	V	3.0	40.2	1.0	-61.8	-13.0	-48.8	
1.6966	-26.1	H	3.0	39.1	1.0	-64.2	-13.0	-51.2	
2.5449	-21.4	H	3.0	39.6	1.0	-60.0	-13.0	-47.0	
3.3932	-22.6	H	3.0	40.2	1.0	-61.8	-13.0	-48.8	

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

LTE Band 4

LTE Band 4 20MHz QPSK

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

Company: Samsung
Project #: 16K22866
Date: 02-29-16
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	-8.9	V	3.0	40.2	1.0	-48.1	-13.0	-35.1	
5.1600	-10.4	V	3.0	40.9	1.0	-50.3	-13.0	-37.3	
6.8800	-14.2	V	3.0	41.0	1.0	-54.2	-13.0	-41.2	
3.4400	-12.4	H	3.0	40.2	1.0	-51.6	-13.0	-38.6	
5.1600	-13.7	H	3.0	40.9	1.0	-53.6	-13.0	-40.6	
6.8800	-12.5	H	3.0	41.0	1.0	-52.5	-13.0	-39.5	
Mid Channel (1732.5MHz)									
3.4650	-8.5	V	3.0	40.3	1.0	-47.7	-13.0	-34.7	
5.1975	-7.5	V	3.0	40.9	1.0	-47.4	-13.0	-34.4	
6.9300	-14.9	V	3.0	41.0	1.0	-54.9	-13.0	-41.9	
3.4650	-11.6	H	3.0	40.3	1.0	-50.9	-13.0	-37.9	
5.1975	-12.2	H	3.0	40.9	1.0	-52.0	-13.0	-39.0	
6.9300	-11.4	H	3.0	41.0	1.0	-51.4	-13.0	-38.4	
High Channel (1745MHz)									
3.4900	-7.2	V	3.0	40.3	1.0	-46.5	-13.0	-33.5	
5.2350	-9.3	V	3.0	40.9	1.0	-49.2	-13.0	-36.2	
6.9800	-14.8	V	3.0	41.0	1.0	-54.8	-13.0	-41.8	
3.4900	-8.4	H	3.0	40.3	1.0	-47.7	-13.0	-34.7	
5.2350	-9.5	H	3.0	40.9	1.0	-49.4	-13.0	-36.4	
6.9800	-11.9	H	3.0	41.0	1.0	-51.9	-13.0	-38.9	

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 #: 16K22866
Date: 02-29-16
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	-10.7	V	3.0	40.2	1.0	-49.9	-13.0	-36.9	
5.1600	-11.8	V	3.0	40.9	1.0	-51.7	-13.0	-38.7	
6.8800	-14.9	V	3.0	41.0	1.0	-54.9	-13.0	-41.9	
3.4400	-14.0	H	3.0	40.2	1.0	-53.2	-13.0	-40.2	
5.1600	-16.1	H	3.0	40.9	1.0	-56.0	-13.0	-43.0	
6.8800	-13.7	H	3.0	41.0	1.0	-53.7	-13.0	-40.7	
Mid Channel (1732.5MHz)									
3.4650	-9.2	V	3.0	40.3	1.0	-48.4	-13.0	-35.4	
5.1975	-9.6	V	3.0	40.9	1.0	-49.5	-13.0	-36.5	
6.9300	-15.3	V	3.0	41.0	1.0	-55.3	-13.0	-42.3	
3.4650	-10.7	H	3.0	40.3	1.0	-49.9	-13.0	-36.9	
5.1975	-12.5	H	3.0	40.9	1.0	-52.4	-13.0	-39.4	
6.9300	-12.1	H	3.0	41.0	1.0	-52.1	-13.0	-39.1	
High Channel (1745MHz)									
3.4900	-8.9	V	3.0	40.3	1.0	-48.2	-13.0	-35.2	
5.2350	-8.1	V	3.0	40.9	1.0	-48.0	-13.0	-35.0	
6.9800	-15.0	V	3.0	41.0	1.0	-55.0	-13.0	-42.0	
3.4900	-10.3	H	3.0	40.3	1.0	-49.5	-13.0	-36.5	
5.2350	-11.1	H	3.0	40.9	1.0	-51.0	-13.0	-38.0	
6.9800	-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.

LTE

Band 4

15MHz

QPSK

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

Company: Samsung
Project #: 16K22866
Date: 02-29-16
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	-9.0	V	3.0	40.2	1.0	-48.2	-13.0	-35.2	
5.1525	-11.3	V	3.0	40.9	1.0	-51.2	-13.0	-38.2	
6.8700	-14.9	V	3.0	41.0	1.0	-54.8	-13.0	-41.8	
3.4350	-11.5	H	3.0	40.2	1.0	-50.8	-13.0	-37.8	
5.1525	-12.9	H	3.0	40.9	1.0	-52.8	-13.0	-39.8	
6.8700	-11.9	H	3.0	41.0	1.0	-51.9	-13.0	-38.9	
Mid Channel (1732.5MHz)									
3.4650	-8.5	V	3.0	40.3	1.0	-47.8	-13.0	-34.8	
5.1975	-11.0	V	3.0	40.9	1.0	-50.9	-13.0	-37.9	
6.9300	-16.2	V	3.0	41.0	1.0	-56.2	-13.0	-43.2	
3.4650	-12.7	H	3.0	40.3	1.0	-52.0	-13.0	-39.0	
5.1975	-14.1	H	3.0	40.9	1.0	-53.9	-13.0	-40.9	
6.9300	-15.3	H	3.0	41.0	1.0	-55.3	-13.0	-42.3	
High Channel (1747.5MHz)									
3.4950	-5.7	V	3.0	40.3	1.0	-45.0	-13.0	-32.0	
5.2425	-9.4	V	3.0	40.9	1.0	-49.3	-13.0	-36.3	
6.9900	-16.5	V	3.0	41.0	1.0	-56.5	-13.0	-43.5	
3.4950	-10.6	H	3.0	40.3	1.0	-49.9	-13.0	-36.9	
5.2425	-11.1	H	3.0	40.9	1.0	-50.9	-13.0	-37.9	
6.9900	-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.

LTE

Band 4

15MHz

16QAM

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

Company: Samsung
Project #: 16K22866
Date: 02-29-16
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	-10.7	V	3.0	40.2	1.0	-50.0	-13.0	-37.0	
5.1525	-12.4	V	3.0	40.9	1.0	-52.3	-13.0	-39.3	
6.8700	-15.1	V	3.0	41.0	1.0	-55.1	-13.0	-42.1	
3.4350	-10.3	H	3.0	40.2	1.0	-49.5	-13.0	-36.5	
5.1525	-14.5	H	3.0	40.9	1.0	-54.4	-13.0	-41.4	
6.8700	-12.7	H	3.0	41.0	1.0	-52.6	-13.0	-39.6	
Mid Channel (1732.5MHz)									
3.4650	-10.1	V	3.0	40.3	1.0	-49.4	-13.0	-36.4	
5.1975	-13.1	V	3.0	40.9	1.0	-53.0	-13.0	-40.0	
6.9300	-16.2	V	3.0	41.0	1.0	-56.2	-13.0	-43.2	
3.4650	-10.9	H	3.0	40.3	1.0	-50.2	-13.0	-37.2	
5.1975	-15.5	H	3.0	40.9	1.0	-55.4	-13.0	-42.4	
6.9300	-14.7	H	3.0	41.0	1.0	-54.7	-13.0	-41.7	
High Channel (1747.5MHz)									
3.4950	-8.1	V	3.0	40.3	1.0	-47.4	-13.0	-34.4	
5.2425	-11.7	V	3.0	40.9	1.0	-51.5	-13.0	-38.5	
6.9900	-16.5	V	3.0	41.0	1.0	-56.5	-13.0	-43.5	
3.4950	-12.5	H	3.0	40.3	1.0	-51.8	-13.0	-38.8	
5.2425	-13.8	H	3.0	40.9	1.0	-53.7	-13.0	-40.7	
6.9900	-13.8	H	3.0	41.0	1.0	-53.8	-13.0	-40.8	

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

LTE Band 4 10MHz QPSK

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

Company: Samsung
Project #: 16K22866
Date: 02-29-16
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	-9.5	V	3.0	40.2	1.0	-48.7	-13.0	-35.7	
5.1450	-12.1	V	3.0	40.9	1.0	-52.0	-13.0	-39.0	
6.8600	-13.6	V	3.0	41.0	1.0	-53.5	-13.0	-40.5	
3.4300	-11.3	H	3.0	40.2	1.0	-50.5	-13.0	-37.5	
5.1450	-12.5	H	3.0	40.9	1.0	-52.4	-13.0	-39.4	
6.8600	-11.4	H	3.0	41.0	1.0	-51.4	-13.0	-38.4	
Mid Channel (1732.5MHz)									
3.4650	-7.8	V	3.0	40.3	1.0	-47.1	-13.0	-34.1	
5.1975	-10.5	V	3.0	40.9	1.0	-50.4	-13.0	-37.4	
6.9300	-15.6	V	3.0	41.0	1.0	-55.6	-13.0	-42.6	
3.4650	-11.8	H	3.0	40.3	1.0	-51.0	-13.0	-38.0	
5.1975	-11.4	H	3.0	40.9	1.0	-51.3	-13.0	-38.3	
6.9300	-15.6	H	3.0	41.0	1.0	-55.6	-13.0	-42.6	
High Channel (1750MHz)									
3.5000	-6.6	V	3.0	40.3	1.0	-45.8	-13.0	-32.8	
5.2500	-9.2	V	3.0	40.9	1.0	-49.1	-13.0	-36.1	
7.0000	-15.1	V	3.0	41.0	1.0	-55.1	-13.0	-42.1	
3.5000	-10.8	H	3.0	40.3	1.0	-50.1	-13.0	-37.1	
5.2500	-12.0	H	3.0	40.9	1.0	-51.9	-13.0	-38.9	
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.

LTE Band 4 10MHz 16QAM

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

Company: Samsung
Project #: 16K22866
Date: 02-29-16
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	-10.6	V	3.0	40.2	1.0	-49.9	-13.0	-36.9	
5.1450	-13.7	V	3.0	40.9	1.0	-53.6	-13.0	-40.6	
6.8600	-14.2	V	3.0	41.0	1.0	-54.2	-13.0	-41.2	
3.4300	-12.6	H	3.0	40.2	1.0	-51.9	-13.0	-38.9	
5.1450	-14.2	H	3.0	40.9	1.0	-54.1	-13.0	-41.1	
6.8600	-11.7	H	3.0	41.0	1.0	-51.7	-13.0	-38.7	
Mid Channel (1732.5MHz)									
3.4650	-9.7	V	3.0	40.3	1.0	-48.9	-13.0	-35.9	
5.1975	-12.1	V	3.0	40.9	1.0	-52.0	-13.0	-39.0	
6.9300	-15.8	V	3.0	41.0	1.0	-55.8	-13.0	-42.8	
3.4650	-13.3	H	3.0	40.3	1.0	-52.6	-13.0	-39.6	
5.1975	-13.0	H	3.0	40.9	1.0	-52.9	-13.0	-39.9	
6.9300	-15.6	H	3.0	41.0	1.0	-55.6	-13.0	-42.6	
High Channel (1750MHz)									
3.5000	-8.1	V	3.0	40.3	1.0	-47.4	-13.0	-34.4	
5.2500	-10.9	V	3.0	40.9	1.0	-50.8	-13.0	-37.8	
7.0000	-15.5	V	3.0	41.0	1.0	-55.6	-13.0	-42.6	
3.5000	-12.4	H	3.0	40.3	1.0	-51.7	-13.0	-38.7	
5.2500	-13.4	H	3.0	40.9	1.0	-53.2	-13.0	-40.2	
7.0000	-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.

LTE

Band 4

5MHz

QPSK

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

Company: Samsung
Project #: 16K22866
Date: 02-29-16
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	-8.9	V	3.0	40.2	1.0	-48.1	-13.0	-35.1	
5.1375	-11.6	V	3.0	40.9	1.0	-51.5	-13.0	-38.5	
6.8500	-14.6	V	3.0	41.0	1.0	-54.6	-13.0	-41.6	
3.4250	-11.8	H	3.0	40.2	1.0	-51.1	-13.0	-38.1	
5.1375	-15.1	H	3.0	40.9	1.0	-55.0	-13.0	-42.0	
6.8500	-10.4	H	3.0	41.0	1.0	-50.4	-13.0	-37.4	
Mid Channel (1732.5MHz)									
3.4650	-7.2	V	3.0	40.3	1.0	-46.5	-13.0	-33.5	
5.1975	-11.1	V	3.0	40.9	1.0	-51.0	-13.0	-38.0	
6.9300	-16.3	V	3.0	41.0	1.0	-56.3	-13.0	-43.3	
3.4650	-13.1	H	3.0	40.3	1.0	-52.3	-13.0	-39.3	
5.1975	-15.0	H	3.0	40.9	1.0	-54.8	-13.0	-41.8	
6.9300	-12.8	H	3.0	41.0	1.0	-52.8	-13.0	-39.8	
High Channel (1752.5MHz)									
3.5050	-7.0	V	3.0	40.3	1.0	-46.3	-13.0	-33.3	
5.2575	-9.5	V	3.0	40.9	1.0	-49.3	-13.0	-36.3	
7.0100	-15.3	V	3.0	41.0	1.0	-55.3	-13.0	-42.3	
3.5050	-12.1	H	3.0	40.3	1.0	-51.4	-13.0	-38.4	
5.2575	-13.1	H	3.0	40.9	1.0	-53.0	-13.0	-40.0	
7.0100	-12.1	H	3.0	41.0	1.0	-52.1	-13.0	-39.1	

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 #: 16K22866
Date: 02-29-16
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	-10.5	V	3.0	40.2	1.0	-49.7	-13.0	-36.7	
5.1375	-13.7	V	3.0	40.9	1.0	-53.6	-13.0	-40.6	
6.8500	-15.0	V	3.0	41.0	1.0	-55.0	-13.0	-42.0	
3.4250	-13.7	H	3.0	40.2	1.0	-52.9	-13.0	-39.9	
5.1375	-16.2	H	3.0	40.9	1.0	-56.1	-13.0	-43.1	
6.8500	-11.7	H	3.0	41.0	1.0	-51.7	-13.0	-38.7	
Mid Channel (1732.5MHz)									
3.4650	-8.8	V	3.0	40.3	1.0	-48.0	-13.0	-35.0	
5.1975	-13.1	V	3.0	40.9	1.0	-53.0	-13.0	-40.0	
6.9300	-16.2	V	3.0	41.0	1.0	-56.2	-13.0	-43.2	
3.4650	-14.6	H	3.0	40.3	1.0	-53.8	-13.0	-40.8	
5.1975	-16.1	H	3.0	40.9	1.0	-56.0	-13.0	-43.0	
6.9300	-13.7	H	3.0	41.0	1.0	-53.7	-13.0	-40.7	
High Channel (1752.5MHz)									
3.5050	-9.1	V	3.0	40.3	1.0	-48.4	-13.0	-35.4	
5.2575	-12.1	V	3.0	40.9	1.0	-52.0	-13.0	-39.0	
7.0100	-15.7	V	3.0	41.0	1.0	-55.7	-13.0	-42.7	
3.5050	-13.2	H	3.0	40.3	1.0	-52.5	-13.0	-39.5	
5.2575	-14.8	H	3.0	40.9	1.0	-54.6	-13.0	-41.6	
7.0100	-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.

LTE Band 4 3MHz QPSK

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

Company: Samsung
Project #: 16K22866
Date: 03-02-16
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	-8.9	V	3.0	40.2	1.0	-48.1	-13.0	-35.1	
5.1345	-6.5	V	3.0	40.9	1.0	-46.4	-13.0	-33.4	
6.8460	-15.4	V	3.0	41.0	1.0	-55.3	-13.0	-42.3	
3.4230	-12.4	H	3.0	40.2	1.0	-51.6	-13.0	-38.6	
5.1345	-7.7	H	3.0	40.9	1.0	-47.6	-13.0	-34.6	
6.8460	-13.1	H	3.0	41.0	1.0	-53.1	-13.0	-40.1	
Mid Channel (1732.5MHz)									
3.4650	-7.2	V	3.0	40.3	1.0	-46.5	-13.0	-33.5	
5.1975	-7.4	V	3.0	40.9	1.0	-47.3	-13.0	-34.3	
6.9300	-15.1	V	3.0	41.0	1.0	-55.1	-13.0	-42.1	
3.4650	-11.1	H	3.0	40.3	1.0	-50.3	-13.0	-37.3	
5.1975	-6.4	H	3.0	40.9	1.0	-46.3	-13.0	-33.3	
6.9300	-13.0	H	3.0	41.0	1.0	-53.0	-13.0	-40.0	
High Channel (1753.5MHz)									
3.5070	-6.9	V	3.0	40.3	1.0	-46.2	-13.0	-33.2	
5.2605	-8.7	V	3.0	40.9	1.0	-48.5	-13.0	-35.5	
7.0140	-15.7	V	3.0	41.0	1.0	-55.7	-13.0	-42.7	
3.5070	-8.3	H	3.0	40.3	1.0	-47.5	-13.0	-34.5	
5.2605	-4.2	H	3.0	40.9	1.0	-44.1	-13.0	-31.1	
7.0140	-13.7	H	3.0	41.0	1.0	-53.7	-13.0	-40.7	

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 #: 16K22866
Date: 03-02-16
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	-9.8	V	3.0	40.2	1.0	-49.0	-13.0	-36.0	
5.1345	-8.3	V	3.0	40.9	1.0	-48.2	-13.0	-35.2	
6.8460	-15.3	V	3.0	41.0	1.0	-55.3	-13.0	-42.3	
3.4230	-13.4	H	3.0	40.2	1.0	-52.6	-13.0	-39.6	
5.1345	-9.6	H	3.0	40.9	1.0	-49.5	-13.0	-36.5	
6.8460	-13.5	H	3.0	41.0	1.0	-53.5	-13.0	-40.5	
Mid Channel (1732.5MHz)									
3.4650	-8.7	V	3.0	40.3	1.0	-47.9	-13.0	-34.9	
5.1975	-9.2	V	3.0	40.9	1.0	-49.1	-13.0	-36.1	
6.9300	-15.3	V	3.0	41.0	1.0	-55.3	-13.0	-42.3	
3.4650	-12.9	H	3.0	40.3	1.0	-52.2	-13.0	-39.2	
5.1975	-9.9	H	3.0	40.9	1.0	-49.8	-13.0	-36.8	
6.9300	-13.3	H	3.0	41.0	1.0	-53.3	-13.0	-40.3	
High Channel (1752.5MHz)									
3.5070	-5.9	V	3.0	40.3	1.0	-45.2	-13.0	-32.2	
5.2605	-5.5	V	3.0	40.9	1.0	-45.4	-13.0	-32.4	
7.0140	-15.8	V	3.0	41.0	1.0	-55.8	-13.0	-42.8	
3.5070	-9.4	H	3.0	40.3	1.0	-48.7	-13.0	-35.7	
5.2605	-7.3	H	3.0	40.9	1.0	-47.2	-13.0	-34.2	
7.0140	-14.2	H	3.0	41.0	1.0	-54.2	-13.0	-41.2	

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

LTE

Band 4

1.4MHz

QPSK

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

Company: Samsung
Project #: 16K22866
Date: 03-02-16
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	-8.9	V	3.0	40.2	1.0	-48.1	-13.0	-35.1	
5.1321	-6.8	V	3.0	40.9	1.0	-46.7	-13.0	-33.7	
6.8428	-14.5	V	3.0	41.0	1.0	-54.4	-13.0	-41.4	
3.4214	-12.7	H	3.0	40.2	1.0	-51.9	-13.0	-38.9	
5.1321	-6.7	H	3.0	40.9	1.0	-46.6	-13.0	-33.6	
6.8428	-13.8	H	3.0	41.0	1.0	-53.8	-13.0	-40.8	
Mid Channel (1732.5MHz)									
3.4650	-8.7	V	3.0	40.3	1.0	-48.0	-13.0	-35.0	
5.1975	-7.1	V	3.0	40.9	1.0	-46.9	-13.0	-33.9	
6.9300	-15.5	V	3.0	41.0	1.0	-55.5	-13.0	-42.5	
3.4650	-11.4	H	3.0	40.3	1.0	-50.7	-13.0	-37.7	
5.1975	-7.0	H	3.0	40.9	1.0	-46.8	-13.0	-33.8	
6.9300	-12.8	H	3.0	41.0	1.0	-52.8	-13.0	-39.8	
High Channel (1754.3MHz)									
3.5086	-5.6	V	3.0	40.3	1.0	-44.9	-13.0	-31.9	
5.2629	-6.5	V	3.0	40.9	1.0	-46.3	-13.0	-33.3	
7.0172	-14.9	V	3.0	41.0	1.0	-54.9	-13.0	-41.9	
3.5086	-11.2	H	3.0	40.3	1.0	-50.5	-13.0	-37.5	
5.2629	-4.4	H	3.0	40.9	1.0	-44.2	-13.0	-31.2	
7.0172	-14.2	H	3.0	41.0	1.0	-54.2	-13.0	-41.2	

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 #: 16K22866
Date: 03-02-16
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	-10.6	V	3.0	40.2	1.0	-49.9	-13.0	-36.9	
5.1321	-9.4	V	3.0	40.9	1.0	-49.3	-13.0	-36.3	
6.8428	-14.9	V	3.0	41.0	1.0	-54.9	-13.0	-41.9	
3.4214	-13.5	H	3.0	40.2	1.0	-52.7	-13.0	-39.7	
5.1321	-8.9	H	3.0	40.9	1.0	-48.8	-13.0	-35.8	
6.8428	-14.3	H	3.0	41.0	1.0	-54.3	-13.0	-41.3	
Mid Channel (1732.5MHz)									
3.4650	-9.9	V	3.0	40.3	1.0	-49.2	-13.0	-36.2	
5.1975	-8.2	V	3.0	40.9	1.0	-48.1	-13.0	-35.1	
6.9300	-15.3	V	3.0	41.0	1.0	-55.3	-13.0	-42.3	
3.4650	-12.6	H	3.0	40.3	1.0	-51.9	-13.0	-38.9	
5.1975	-5.9	H	3.0	40.9	1.0	-45.7	-13.0	-32.7	
6.9300	-13.4	H	3.0	41.0	1.0	-53.4	-13.0	-40.4	
High Channel (1754.3MHz)									
3.5086	-7.1	V	3.0	40.3	1.0	-46.4	-13.0	-33.4	
5.2629	-8.3	V	3.0	40.9	1.0	-48.2	-13.0	-35.2	
7.0172	-15.3	V	3.0	41.0	1.0	-55.3	-13.0	-42.3	
3.5086	-12.5	H	3.0	40.3	1.0	-51.8	-13.0	-38.8	
5.2629	-6.6	H	3.0	40.9	1.0	-46.4	-13.0	-33.4	
7.0172	-14.8	H	3.0	41.0	1.0	-54.8	-13.0	-41.8	

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

LTE Band 2

LTE Band 2 20MHz QPSK

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

Company: Samsung
Project #: 16K22866
Date: 03-08-16
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-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	-3.8	V	3.0	40.5	1.0	-43.3	-13.0	-30.3	
5.5800	-4.9	V	3.0	40.8	1.0	-44.7	-13.0	-31.7	
7.4400	-14.6	V	3.0	40.8	1.0	-54.3	-13.0	-41.3	
3.7200	-9.9	H	3.0	40.5	1.0	-49.4	-13.0	-36.4	
5.5800	-2.3	H	3.0	40.8	1.0	-42.1	-13.0	-29.1	
7.4400	-13.3	H	3.0	40.8	1.0	-53.0	-13.0	-40.0	
Mid Channel (1880MHz)									
3.7600	-4.9	V	3.0	40.5	1.0	-44.5	-13.0	-31.5	
5.6400	-3.2	V	3.0	40.8	1.0	-43.0	-13.0	-30.0	
7.5200	-14.4	V	3.0	40.7	1.0	-54.1	-13.0	-41.1	
3.7600	-8.5	H	3.0	40.5	1.0	-48.1	-13.0	-35.1	
5.6400	-3.3	H	3.0	40.8	1.0	-43.1	-13.0	-30.1	
7.520	-12.3	H	3.0	40.7	1.0	-52.0	-13.0	-39.0	
High Channel (1900MHz)									
3.8000	-2.7	V	3.0	40.6	1.0	-42.3	-13.0	-29.3	
5.7000	-3.9	V	3.0	40.8	1.0	-43.7	-13.0	-30.7	
7.6000	-13.9	V	3.0	40.7	1.0	-53.6	-13.0	-40.6	
3.8000	-6.5	H	3.0	40.6	1.0	-46.1	-13.0	-33.1	
5.7000	3.5	H	3.0	40.8	1.0	-36.3	-13.0	-23.3	
7.6000	-12.5	H	3.0	40.7	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 2 20MHz 16QAM

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

Company: Samsung
Project #: 16K22866
Date: 03-08-16
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-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	-5.6	V	3.0	40.5	1.0	-45.1	-13.0	-32.1	
5.5800	-7.2	V	3.0	40.8	1.0	-47.0	-13.0	-34.0	
7.4400	-15.5	V	3.0	40.8	1.0	-55.3	-13.0	-42.3	
3.7200	-11.6	H	3.0	40.5	1.0	-51.1	-13.0	-38.1	
5.5800	-5.0	H	3.0	40.8	1.0	-44.8	-13.0	-31.8	
7.4400	-14.3	H	3.0	40.8	1.0	-54.0	-13.0	-41.0	
Mid Channel (1880MHz)									
3.7600	-6.0	V	3.0	40.5	1.0	-45.6	-13.0	-32.6	
5.6400	-4.5	V	3.0	40.8	1.0	-44.3	-13.0	-31.3	
7.5200	-14.8	V	3.0	40.7	1.0	-54.5	-13.0	-41.5	
3.7600	-9.6	H	3.0	40.5	1.0	-49.1	-13.0	-36.1	
5.6400	-4.3	H	3.0	40.8	1.0	-44.1	-13.0	-31.1	
7.5200	-12.2	H	3.0	40.7	1.0	-51.9	-13.0	-38.9	
High Channel (1900MHz)									
3.8000	-4.1	V	3.0	40.6	1.0	-43.7	-13.0	-30.7	
5.7000	-1.7	V	3.0	40.8	1.0	-41.5	-13.0	-28.5	
7.6000	-14.4	V	3.0	40.7	1.0	-54.0	-13.0	-41.0	
3.8000	-5.0	H	3.0	40.6	1.0	-44.5	-13.0	-31.5	
5.7000	1.4	H	3.0	40.8	1.0	-38.4	-13.0	-25.4	
7.6000	-13.4	H	3.0	40.7	1.0	-53.0	-13.0	-40.0	

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
218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 443-823, Korea TEL: (031) 337-9902 FAX: (031) 213-5433

LTE

Band 2

15MHz

QPSK

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

Company: Samsung
Project #: 16K22866
Date: 03-08-16
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-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	-4.1	V	3.0	40.5	1.0	-43.6	-13.0	-30.6	
5.5725	-7.8	V	3.0	40.8	1.0	-47.6	-13.0	-34.6	
7.4300	-15.7	V	3.0	40.8	1.0	-55.4	-13.0	-42.4	
3.7150	-10.3	H	3.0	40.5	1.0	-49.8	-13.0	-36.8	
5.5725	-4.4	H	3.0	40.8	1.0	-44.3	-13.0	-31.3	
7.4300	-12.9	H	3.0	40.8	1.0	-52.7	-13.0	-39.7	
Mid Channel (1880MHz)									
3.7600	-4.5	V	3.0	40.5	1.0	-44.1	-13.0	-31.1	
5.6400	-4.3	V	3.0	40.8	1.0	-44.1	-13.0	-31.1	
7.5200	-14.6	V	3.0	40.7	1.0	-54.3	-13.0	-41.3	
3.7600	-8.8	H	3.0	40.5	1.0	-48.3	-13.0	-35.3	
5.6400	-1.2	H	3.0	40.8	1.0	-41.0	-13.0	-28.0	
7.5200	-12.3	H	3.0	40.7	1.0	-52.0	-13.0	-39.0	
High Channel (1902.5MHz)									
3.8050	-7.8	V	3.0	40.6	1.0	-47.4	-13.0	-34.4	
5.7075	-0.6	V	3.0	40.8	1.0	-40.4	-13.0	-27.4	
7.6100	-15.1	V	3.0	40.7	1.0	-54.8	-13.0	-41.8	
3.8050	-4.4	H	3.0	40.6	1.0	-44.0	-13.0	-31.0	
5.7075	3.2	H	3.0	40.8	1.0	-36.6	-13.0	-23.6	
7.6100	-13.3	H	3.0	40.7	1.0	-53.0	-13.0	-40.0	

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 #: 16K22866
Date: 03-08-16
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-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	-5.5	V	3.0	40.5	1.0	-45.0	-13.0	-32.0	
5.5725	-8.3	V	3.0	40.8	1.0	-48.1	-13.0	-35.1	
7.4300	-15.4	V	3.0	40.8	1.0	-55.2	-13.0	-42.2	
3.7150	-11.9	H	3.0	40.5	1.0	-51.4	-13.0	-38.4	
5.5725	-5.9	H	3.0	40.8	1.0	-45.7	-13.0	-32.7	
7.4300	-13.5	H	3.0	40.8	1.0	-53.2	-13.0	-40.2	
Mid Channel (1880MHz)									
3.7600	-6.6	V	3.0	40.5	1.0	-46.2	-13.0	-33.2	
5.6400	-6.4	V	3.0	40.8	1.0	-46.2	-13.0	-33.2	
7.5200	-15.1	V	3.0	40.7	1.0	-54.8	-13.0	-41.8	
3.7600	-10.2	H	3.0	40.5	1.0	-49.7	-13.0	-36.7	
5.6400	-4.7	H	3.0	40.8	1.0	-44.5	-13.0	-31.5	
7.5200	-13.4	H	3.0	40.7	1.0	-53.1	-13.0	-40.1	
High Channel (1902.5MHz)									
3.8050	-3.8	V	3.0	40.6	1.0	-43.4	-13.0	-30.4	
5.7075	-3.2	V	3.0	40.8	1.0	-43.0	-13.0	-30.0	
7.6100	-14.8	V	3.0	40.7	1.0	-54.5	-13.0	-41.5	
3.8050	-6.3	H	3.0	40.6	1.0	-45.9	-13.0	-32.9	
5.7075	1.5	H	3.0	40.8	1.0	-38.3	-13.0	-25.3	
7.6100	-14.2	H	3.0	40.7	1.0	-53.9	-13.0	-40.9	

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

LTE

Band 2

10MHz

QPSK

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

Company: Samsung
Project #: 16K22866
Date: 03-08-16
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-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	-5.5	V	3.0	40.5	1.0	-45.0	-13.0	-32.0	
5.5650	-6.8	V	3.0	40.8	1.0	-46.6	-13.0	-33.6	
7.4200	-15.9	V	3.0	40.8	1.0	-55.7	-13.0	-42.7	
3.7100	-11.3	H	3.0	40.5	1.0	-50.8	-13.0	-37.8	
5.5650	-5.0	H	3.0	40.8	1.0	-44.8	-13.0	-31.8	
7.4200	-12.8	H	3.0	40.8	1.0	-52.6	-13.0	-39.6	
Mid Channel (1880MHz)									
3.7600	-4.1	V	3.0	40.5	1.0	-43.6	-13.0	-30.6	
5.6400	-3.5	V	3.0	40.8	1.0	-43.3	-13.0	-30.3	
7.5200	-14.6	V	3.0	40.7	1.0	-54.3	-13.0	-41.3	
3.7600	-7.6	H	3.0	40.5	1.0	-47.1	-13.0	-34.1	
5.6400	-3.4	H	3.0	40.8	1.0	-43.2	-13.0	-30.2	
7.5200	-12.7	H	3.0	40.7	1.0	-52.4	-13.0	-39.4	
High Channel (1905MHz)									
3.8100	-1.7	V	3.0	40.6	1.0	-41.2	-13.0	-28.2	
5.7150	2.4	V	3.0	40.8	1.0	-37.4	-13.0	-24.4	
7.6200	-15.3	V	3.0	40.7	1.0	-55.0	-13.0	-42.0	
3.8100	-4.9	H	3.0	40.6	1.0	-44.5	-13.0	-31.5	
5.7150	6.0	H	3.0	40.8	1.0	-33.8	-13.0	-20.8	
7.620	-12.3	H	3.0	40.7	1.0	-52.0	-13.0	-39.0	

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 #: 16K22866
Date: 03-08-16
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-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	-7.4	V	3.0	40.5	1.0	-46.9	-13.0	-33.9	
5.5650	-7.6	V	3.0	40.8	1.0	-47.4	-13.0	-34.4	
7.4200	-16.4	V	3.0	40.8	1.0	-56.2	-13.0	-43.2	
3.7100	-12.4	H	3.0	40.5	1.0	-51.9	-13.0	-38.9	
5.5650	-6.7	H	3.0	40.8	1.0	-46.5	-13.0	-33.5	
7.4200	-14.3	H	3.0	40.8	1.0	-54.1	-13.0	-41.1	
Mid Channel (1880MHz)									
3.7600	-5.5	V	3.0	40.5	1.0	-45.0	-13.0	-32.0	
5.6400	-5.3	V	3.0	40.8	1.0	-45.1	-13.0	-32.1	
7.5200	-15.1	V	3.0	40.7	1.0	-54.8	-13.0	-41.8	
3.7600	-9.2	H	3.0	40.5	1.0	-48.7	-13.0	-35.7	
5.6400	-1.1	H	3.0	40.8	1.0	-40.9	-13.0	-27.9	
7.5200	-13.3	H	3.0	40.7	1.0	-53.0	-13.0	-40.0	
High Channel (1905MHz)									
3.8100	-4.7	V	3.0	40.6	1.0	-44.3	-13.0	-31.3	
5.7150	-1.5	V	3.0	40.8	1.0	-41.3	-13.0	-28.3	
7.6200	-15.5	V	3.0	40.7	1.0	-55.1	-13.0	-42.1	
3.8100	-6.4	H	3.0	40.6	1.0	-46.0	-13.0	-33.0	
5.7150	3.8	H	3.0	40.8	1.0	-36.0	-13.0	-23.0	
7.6200	-12.9	H	3.0	40.7	1.0	-52.5	-13.0	-39.5	

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

LTE

Band 2

5MHz

QPSK

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

Company: Samsung
Project #: 16K22866
Date: 03-08-16
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-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	-5.7	V	3.0	40.5	1.0	-45.2	-13.0	-32.2	
5.5575	-7.6	V	3.0	40.8	1.0	-47.4	-13.0	-34.4	
7.4100	-15.6	V	3.0	40.8	1.0	-55.4	-13.0	-42.4	
3.7050	-10.9	H	3.0	40.5	1.0	-50.4	-13.0	-37.4	
5.5575	-3.3	H	3.0	40.8	1.0	-43.1	-13.0	-30.1	
7.4100	-13.3	H	3.0	40.8	1.0	-53.1	-13.0	-40.1	
Mid Channel (1880MHz)									
3.7600	-4.6	V	3.0	40.5	1.0	-44.1	-13.0	-31.1	
5.6400	-3.7	V	3.0	40.8	1.0	-43.5	-13.0	-30.5	
7.5200	-15.3	V	3.0	40.7	1.0	-55.1	-13.0	-42.1	
3.7600	-8.3	H	3.0	40.5	1.0	-47.8	-13.0	-34.8	
5.6400	-0.8	H	3.0	40.8	1.0	-40.6	-13.0	-27.6	
7.5200	-14.0	H	3.0	40.7	1.0	-53.7	-13.0	-40.7	
High Channel (1907.5MHz)									
3.8150	-2.7	V	3.0	40.6	1.0	-42.3	-13.0	-29.3	
5.7225	4.3	V	3.0	40.8	1.0	-35.5	-13.0	-22.5	
7.6300	-14.9	V	3.0	40.7	1.0	-54.5	-13.0	-41.5	
3.8150	-2.4	H	3.0	40.6	1.0	-42.0	-13.0	-29.0	
5.7225	5.2	H	3.0	40.8	1.0	-34.6	-13.0	-21.6	
7.6300	-12.9	H	3.0	40.7	1.0	-52.5	-13.0	-39.5	

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 #: 16K22866
Date: 03-08-16
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-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	-6.3	V	3.0	40.5	1.0	-45.7	-13.0	-32.7	
5.5575	-6.5	V	3.0	40.8	1.0	-46.4	-13.0	-33.4	
7.4100	-15.8	V	3.0	40.8	1.0	-55.6	-13.0	-42.6	
3.7050	-11.7	H	3.0	40.5	1.0	-51.2	-13.0	-38.2	
5.5575	-5.3	H	3.0	40.8	1.0	-45.1	-13.0	-32.1	
7.4100	-14.2	H	3.0	40.8	1.0	-53.9	-13.0	-40.9	
Mid Channel (1880MHz)									
3.7600	-6.4	V	3.0	40.5	1.0	-46.0	-13.0	-33.0	
5.6400	-6.9	V	3.0	40.8	1.0	-46.7	-13.0	-33.7	
7.5200	-15.7	V	3.0	40.7	1.0	-55.5	-13.0	-42.5	
3.7600	-9.6	H	3.0	40.5	1.0	-49.2	-13.0	-36.2	
5.6400	-2.9	H	3.0	40.8	1.0	-42.7	-13.0	-29.7	
7.5200	-14.7	H	3.0	40.7	1.0	-54.4	-13.0	-41.4	
High Channel (1907.5MHz)									
3.8150	-0.4	V	3.0	40.6	1.0	-40.0	-13.0	-27.0	
5.7225	1.2	V	3.0	40.8	1.0	-38.5	-13.0	-25.5	
7.6300	-15.0	V	3.0	40.7	1.0	-54.6	-13.0	-41.6	
3.8150	-3.9	H	3.0	40.6	1.0	-43.5	-13.0	-30.5	
5.7225	3.1	H	3.0	40.8	1.0	-36.7	-13.0	-23.7	
7.6300	-13.8	H	3.0	40.7	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 2

3MHz

QPSK

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

Company: Samsung
Project #: 16K22866
Date: 03-08-16
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-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	-6.9	V	3.0	40.5	1.0	-46.4	-13.0	-33.4	
5.5545	-6.1	V	3.0	40.8	1.0	-46.0	-13.0	-33.0	
7.4060	-15.7	V	3.0	40.8	1.0	-55.5	-13.0	-42.5	
3.7030	-13.5	H	3.0	40.5	1.0	-53.0	-13.0	-40.0	
5.5545	-4.7	H	3.0	40.8	1.0	-44.6	-13.0	-31.6	
7.4060	-13.8	H	3.0	40.8	1.0	-53.6	-13.0	-40.6	
Mid Channel (1880MHz)									
3.7600	-5.5	V	3.0	40.5	1.0	-45.1	-13.0	-32.1	
5.6400	-4.2	V	3.0	40.8	1.0	-44.0	-13.0	-31.0	
7.5200	-14.9	V	3.0	40.7	1.0	-54.6	-13.0	-41.6	
3.7600	-9.3	H	3.0	40.5	1.0	-48.8	-13.0	-35.8	
5.6400	-2.8	H	3.0	40.8	1.0	-42.6	-13.0	-29.6	
7.5200	-13.5	H	3.0	40.7	1.0	-53.2	-13.0	-40.2	
High Channel (1908.5MHz)									
3.8170	-0.1	V	3.0	40.6	1.0	-39.7	-13.0	-26.7	
5.7255	1.0	V	3.0	40.8	1.0	-38.8	-13.0	-25.8	
7.6340	-13.2	V	3.0	40.7	1.0	-52.9	-13.0	-39.9	
3.8170	-0.9	H	3.0	40.6	1.0	-40.5	-13.0	-27.5	
5.7255	6.7	H	3.0	40.8	1.0	-33.1	-13.0	-20.1	
7.6340	-12.9	H	3.0	40.7	1.0	-52.5	-13.0	-39.5	

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 #: 16K22866
Date: 03-08-16
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-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)									
3.7030	-5.7	V	3.0	40.5	1.0	-45.2	-13.0	-32.2	
5.5545	-7.6	V	3.0	40.8	1.0	-47.4	-13.0	-34.4	
7.4060	-15.4	V	3.0	40.8	1.0	-55.2	-13.0	-42.2	
3.7030	-12.0	H	3.0	40.5	1.0	-51.5	-13.0	-38.5	
5.5545	-5.5	H	3.0	40.8	1.0	-45.3	-13.0	-32.3	
7.4060	-14.1	H	3.0	40.8	1.0	-53.8	-13.0	-40.8	
Mid Channel (1880MHz)									
3.7600	-6.4	V	3.0	40.5	1.0	-45.9	-13.0	-32.9	
5.6400	-5.2	V	3.0	40.8	1.0	-45.0	-13.0	-32.0	
7.5200	-15.2	V	3.0	40.7	1.0	-54.9	-13.0	-41.9	
3.7600	-7.7	H	3.0	40.5	1.0	-47.3	-13.0	-34.3	
5.6400	-3.6	H	3.0	40.8	1.0	-43.4	-13.0	-30.4	
7.5200	-14.1	H	3.0	40.7	1.0	-53.8	-13.0	-40.8	
3.8170	-2.2	V	3.0	40.6	1.0	-41.8	-13.0	-28.8	
5.7255	-2.3	V	3.0	40.8	1.0	-42.1	-13.0	-29.1	
7.6340	-14.3	V	3.0	40.7	1.0	-54.0	-13.0	-41.0	
3.8170	-3.7	H	3.0	40.6	1.0	-43.3	-13.0	-30.3	
5.7255	4.8	H	3.0	40.8	1.0	-35.0	-13.0	-22.0	
7.6340	-14.1	H	3.0	40.7	1.0	-53.7	-13.0	-40.7	

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

LTE

Band 2

1.4MHz

QPSK

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

Company: Samsung
Project #: 16K22866
Date: 03-08-16
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-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	-7.2	V	3.0	40.5	1.0	-46.6	-13.0	-33.6	
5.5521	-3.9	V	3.0	40.8	1.0	-43.7	-13.0	-30.7	
7.4028	-15.4	V	3.0	40.8	1.0	-55.2	-13.0	-42.2	
3.7014	-11.2	H	3.0	40.5	1.0	-50.7	-13.0	-37.7	
5.5521	-3.8	H	3.0	40.8	1.0	-43.6	-13.0	-30.6	
7.4028	-14.5	H	3.0	40.8	1.0	-54.3	-13.0	-41.3	
Mid Channel (1880MHz)									
3.7600	-3.4	V	3.0	40.5	1.0	-43.0	-13.0	-30.0	
5.6400	-2.2	V	3.0	40.8	1.0	-42.0	-13.0	-29.0	
7.5200	-14.8	V	3.0	40.7	1.0	-54.6	-13.0	-41.6	
3.7600	-8.2	H	3.0	40.5	1.0	-47.8	-13.0	-34.8	
5.6400	-2.4	H	3.0	40.8	1.0	-42.2	-13.0	-29.2	
7.5200	-13.8	H	3.0	40.7	1.0	-53.6	-13.0	-40.6	
High Channel (1909.3MHz)									
3.8186	1.0	V	3.0	40.6	1.0	-38.6	-13.0	-25.6	
5.7279	3.6	V	3.0	40.8	1.0	-36.2	-13.0	-23.2	
7.6372	-13.9	V	3.0	40.7	1.0	-53.5	-13.0	-40.5	
3.8186	-0.9	H	3.0	40.6	1.0	-40.5	-13.0	-27.5	
5.7279	7.9	H	3.0	40.8	1.0	-31.9	-13.0	-18.9	
7.6372	-12.7	H	3.0	40.7	1.0	-52.4	-13.0	-39.4	

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 #: 16K22866
Date: 03-08-16
Test Engineer: Steven.Kim
Configuration: EUT / AC Adapter / Ear Phone / Z-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	-8.1	V	3.0	40.5	1.0	-47.6	-13.0	-34.6	
5.5521	-5.8	V	3.0	40.8	1.0	-45.7	-13.0	-32.7	
7.4028	-15.7	V	3.0	40.8	1.0	-55.5	-13.0	-42.5	
3.7014	-12.6	H	3.0	40.5	1.0	-52.1	-13.0	-39.1	
5.5521	-5.8	H	3.0	40.8	1.0	-45.7	-13.0	-32.7	
7.4028	-14.8	H	3.0	40.8	1.0	-54.6	-13.0	-41.6	
Mid Channel (1880MHz)									
3.7600	-4.5	V	3.0	40.5	1.0	-44.0	-13.0	-31.0	
5.6400	-3.4	V	3.0	40.8	1.0	-43.2	-13.0	-30.2	
7.5200	-15.1	V	3.0	40.7	1.0	-54.8	-13.0	-41.8	
3.7600	-9.6	H	3.0	40.5	1.0	-49.1	-13.0	-36.1	
5.6400	-3.8	H	3.0	40.8	1.0	-43.6	-13.0	-30.6	
7.5200	-14.1	H	3.0	40.7	1.0	-53.9	-13.0	-40.9	
High Channel (1909.3MHz)									
3.8186	0.0	V	3.0	40.6	1.0	-39.6	-13.0	-26.6	
5.7279	0.4	V	3.0	40.8	1.0	-39.4	-13.0	-26.4	
7.6372	-14.9	V	3.0	40.7	1.0	-54.6	-13.0	-41.6	
3.8186	-2.1	H	3.0	40.6	1.0	-41.7	-13.0	-28.7	
5.7279	5.8	H	3.0	40.8	1.0	-34.0	-13.0	-21.0	
7.6372	-13.6	H	3.0	40.7	1.0	-53.3	-13.0	-40.3	

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