

EGPRS, 1900MHz BAND 2

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
 Project #: 15U20162
 Date: 05/09/15
 Test Engineer: T. Pham
 Configuration: EUT Only
 Mode: EGPRS 1900MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

Pre-amplifier

Filter

Limit

3m Chamber E

3m Chamber E

Filter

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1850.2MHz)										
3.70	-65.4	H	3.0	-15.4	38.6	1.0	-53.0	-13.0	-40.0	
5.55	-66.2	H	3.0	-12.2	38.6	1.0	-49.7	-13.0	-36.7	
7.40	-67.5	H	3.0	-9.8	37.8	1.0	-46.6	-13.0	-33.6	
3.70	-66.1	V	3.0	-16.2	38.6	1.0	-53.8	-13.0	-40.8	
5.55	-67.4	V	3.0	-13.6	38.6	1.0	-51.2	-13.0	-38.2	
7.40	-66.5	V	3.0	-9.1	37.8	1.0	-45.9	-13.0	-32.9	
Mid Channel (1880.0)										
3.76	-66.5	H	3.0	-16.4	38.6	1.0	-54.0	-13.0	-41.0	
5.64	-67.4	H	3.0	-13.2	38.5	1.0	-50.7	-13.0	-37.7	
7.52	-69.0	H	3.0	-11.2	37.7	1.0	-47.9	-13.0	-34.9	
3.76	-65.1	V	3.0	-15.0	38.6	1.0	-52.7	-13.0	-39.7	
5.64	-68.9	V	3.0	-14.9	38.5	1.0	-52.5	-13.0	-39.5	
7.52	-68.9	V	3.0	-11.3	37.7	1.0	-48.0	-13.0	-35.0	
High Channel (1909.8MHz)										
3.82	-65.4	H	3.0	-15.1	38.7	1.0	-52.8	-13.0	-39.8	
5.73	-66.4	H	3.0	-11.9	38.5	1.0	-49.4	-13.0	-36.4	
7.64	-69.5	H	3.0	-11.5	37.7	1.0	-48.2	-13.0	-35.2	
3.82	-64.1	V	3.0	-13.9	38.7	1.0	-51.6	-13.0	-38.6	
5.73	-67.6	V	3.0	-13.4	38.5	1.0	-51.0	-13.0	-38.0	
7.64	-68.0	V	3.0	-10.2	37.7	1.0	-46.9	-13.0	-33.9	

Rev. 03.19.15

10.7.2. CDMA2000

CDMA2000 1xRTT, 850MHz BC0

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company: 15U20162
 Project #: 15U20162
 Date: 05/11/15
 Test Engineer: T. Pham
 Configuration: EUT Only
 Mode: 1xRTT 850MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

Pre-amplifier

Filter

Limit

3m Chamber D

3m Chamber D

Filter

ERP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (824.7MHz)										
1.65	-60.4	H	3.0	-18.6	35.0	1.0	-52.7	-13.0	-39.7	
2.87	-63.3	H	3.0	-17.9	33.2	1.0	-50.1	-13.0	-37.1	
3.81	-63.6	H	3.0	-15.4	33.6	1.0	-48.0	-13.0	-35.0	
1.65	-57.1	V	3.0	-15.1	35.0	1.0	-49.2	-13.0	-36.2	
2.48	-57.4	V	3.0	-13.1	33.9	1.0	-46.0	-13.0	-33.0	
3.29	-65.0	V	3.0	-18.1	33.2	1.0	-50.4	-13.0	-37.4	
Mid Channel (836.52MHz)										
1.67	-62.7	H	3.0	-20.8	35.0	1.0	-54.8	-13.0	-41.8	
2.45	-64.0	H	3.0	-20.0	34.1	1.0	-53.1	-13.0	-40.1	
5.20	-63.8	H	3.0	-13.1	32.9	1.0	-45.0	-13.0	-32.0	
1.67	-59.0	V	3.0	-17.0	35.0	1.0	-51.0	-13.0	-38.0	
2.51	-60.1	V	3.0	-15.6	33.7	1.0	-48.3	-13.0	-35.3	
3.82	-63.9	V	3.0	-15.6	33.6	1.0	-48.2	-13.0	-35.2	
High Channel (848.31MHz)										
1.70	-62.4	H	3.0	-20.5	35.0	1.0	-54.5	-13.0	-41.5	
2.61	-64.0	H	3.0	-19.4	33.6	1.0	-52.0	-13.0	-39.0	
3.52	-63.2	H	3.0	-15.8	33.4	1.0	-48.2	-13.0	-35.2	
1.70	-57.7	V	3.0	-15.7	35.0	1.0	-49.7	-13.0	-36.7	
2.55	-59.1	V	3.0	-14.5	33.7	1.0	-47.2	-13.0	-34.2	
3.40	-63.9	V	3.0	-16.8	33.3	1.0	-49.1	-13.0	-36.1	

Rev. 03.19.15

EVDO-Rev A, 850MHz BC0

High Frequency Substitution Measurement

UL Fremont Radiated Chamber

Company:
Project #: 15U20162
Date: 05/11/15
Test Engineer: T. Pham
Configuration: EUT Only
Mode: Rev A 850MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

3m Chamber D

Pre-amplifier

3m Chamber D

Filter

Filter

Limit

ERP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (824.7MHz)										
1.29	-56.2	H	3.0	-15.9	34.6	1.0	-49.5	-13.0	-36.5	
2.47	-59.5	H	3.0	-15.4	34.0	1.0	-48.4	-13.0	-35.4	
3.29	-61.7	H	3.0	-14.9	33.2	1.0	-47.2	-13.0	-34.2	
1.45	-57.1	V	3.0	-15.7	34.9	1.0	-49.6	-13.0	-36.6	
2.47	-57.3	V	3.0	-12.9	33.9	1.0	-45.8	-13.0	-32.8	
3.27	-60.9	V	3.0	-14.1	33.2	1.0	-46.3	-13.0	-33.3	
Mid Channel (836.52MHz)										
1.66	-58.1	H	3.0	-16.3	35.0	1.0	-50.3	-13.0	-37.3	
2.50	-59.1	H	3.0	-14.9	33.8	1.0	-47.6	-13.0	-34.6	
3.33	-61.4	H	3.0	-14.5	33.2	1.0	-46.8	-13.0	-33.8	
1.68	-58.9	V	3.0	-16.9	35.0	1.0	-50.9	-13.0	-37.9	
2.51	-59.8	V	3.0	-15.3	33.7	1.0	-48.0	-13.0	-35.0	
3.37	-61.3	V	3.0	-14.2	33.3	1.0	-46.5	-13.0	-33.5	
High Channel (848.31MHz)										
1.21	-56.8	H	3.0	-16.8	34.5	1.0	-50.3	-13.0	-37.3	
2.54	-59.4	H	3.0	-15.0	33.7	1.0	-47.7	-13.0	-34.7	
3.31	-60.2	H	3.0	-13.4	33.2	1.0	-45.7	-13.0	-32.7	
1.29	-56.4	V	3.0	-16.0	34.6	1.0	-49.6	-13.0	-36.6	
2.54	-58.0	V	3.0	-13.4	33.7	1.0	-46.1	-13.0	-33.1	
3.41	-62.0	V	3.0	-14.9	33.3	1.0	-47.2	-13.0	-34.2	

Rev. 03.19.15

CDMA2000 1xRTT, 1900MHz BC1

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U20162
Date: 05/09/15
Test Engineer: T. Pham
Configuration: EUT Only
Mode: 1xRTT 1900MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

3m Chamber D

Pre-amplifier

3m Chamber D

Filter

Filter

Limit

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1851.25MHz)										
3.77	-64.9	H	3.0	-16.8	33.6	1.0	-49.3	-13.0	-36.3	
5.55	-65.5	H	3.0	-14.2	32.5	1.0	-45.7	-13.0	-32.7	
7.41	-68.1	H	3.0	-13.8	30.4	1.0	-43.2	-13.0	-30.2	
3.68	-65.0	V	3.0	-17.1	33.5	1.0	-49.6	-13.0	-36.6	
5.58	-65.9	V	3.0	-14.8	32.5	1.0	-46.3	-13.0	-33.3	
7.36	-67.0	V	3.0	-12.5	30.5	1.0	-42.0	-13.0	-29.0	
Mid Channel (1880MHz)										
3.83	-61.8	H	3.0	-13.4	33.6	1.0	-46.0	-13.0	-33.0	
5.77	-64.8	H	3.0	-13.1	32.2	1.0	-44.4	-13.0	-31.4	
8.02	-66.0	H	3.0	-10.9	29.6	1.0	-39.5	-13.0	-26.5	
3.78	-64.0	V	3.0	-15.8	33.6	1.0	-48.4	-13.0	-35.4	
5.60	-66.5	V	3.0	-15.3	32.4	1.0	-46.7	-13.0	-33.7	
7.51	-68.1	V	3.0	-13.5	30.3	1.0	-42.7	-13.0	-29.7	
High Channel (1908.75MHz)										
3.80	-63.8	H	3.0	-15.6	33.6	1.0	-48.2	-13.0	-35.2	
5.74	-66.1	H	3.0	-14.5	32.3	1.0	-45.8	-13.0	-32.8	
7.66	-67.5	H	3.0	-12.8	30.1	1.0	-41.9	-13.0	-28.9	
3.78	-64.3	H	3.0	-16.1	33.6	1.0	-48.7	-13.0	-35.7	
5.72	-63.1	H	3.0	-11.5	32.3	1.0	-42.8	-13.0	-29.8	
7.64	-67.1	V	3.0	-12.4	30.1	1.0	-41.5	-13.0	-28.5	

Rev. 03.19.15

EVDO-Rev A, 1900MHz BC1

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
 Project #: 15U20163
 Date: 05/09/15
 Test Engineer: T. Pham
 Configuration: EUT Only
 Mode: Rev 0/A 1900MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

3m Chamber D

Pre-amplifier

3m Chamber D

Filter

Filter

Limit

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1851.25MHz)										
3.70	-60.6	H	3.0	-12.7	33.5	1.0	-45.2	-13.0	-32.2	
5.55	-62.0	H	3.0	-10.7	32.5	1.0	-42.2	-13.0	-29.2	
7.39	-62.3	H	3.0	-8.0	30.4	1.0	-37.4	-13.0	-24.4	
3.68	-60.9	V	3.0	-13.0	33.5	1.0	-45.5	-13.0	-32.5	
5.55	-61.2	V	3.0	-10.2	32.5	1.0	-41.7	-13.0	-28.7	
7.41	-63.2	V	3.0	-8.6	30.4	1.0	-38.0	-13.0	-25.0	
Mid Channel (1880MHz)										
3.76	-61.4	H	3.0	-13.3	33.5	1.0	-45.8	-13.0	-32.8	
5.56	-59.8	H	3.0	-8.5	32.5	1.0	-40.0	-13.0	-27.0	
7.50	-63.0	H	3.0	-8.6	30.3	1.0	-37.8	-13.0	-24.8	
3.78	-59.4	V	3.0	-11.2	33.6	1.0	-43.8	-13.0	-30.8	
5.51	-59.8	V	3.0	-8.9	32.5	1.0	-40.4	-13.0	-27.4	
7.41	-62.4	V	3.0	-7.9	30.4	1.0	-37.3	-13.0	-24.3	
High Channel (1908.75MHz)										
3.81	-60.5	H	3.0	-12.2	33.6	1.0	-44.8	-13.0	-31.8	
5.77	-60.1	H	3.0	-8.4	32.2	1.0	-39.7	-13.0	-26.7	
7.63	-63.6	H	3.0	-8.9	30.1	1.0	-38.1	-13.0	-25.1	
3.82	-60.6	V	3.0	-12.4	33.6	1.0	-44.9	-13.0	-31.9	
5.73	-62.0	V	3.0	-10.5	32.3	1.0	-41.8	-13.0	-28.8	
7.63	-63.1	V	3.0	-8.4	30.1	1.0	-37.5	-13.0	-24.5	

Rev. 03.19.15

CDMA2000 1xRTT, 1700MHz BC15

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U20162
Date: 05/09/15
Test Engineer: T. Pham
Configuration: EUT Only
Mode: 1xRTT 1700MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

3m Chamber D

Pre-amplifier

3m Chamber D

Filter

Filter

Limit

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1711.25MHz)										
3.42	-55.0	H	3.0	-7.9	33.3	1.0	-40.2	-13.0	-27.2	
5.13	-64.2	H	3.0	-13.7	32.9	1.0	-45.6	-13.0	-32.6	
6.85	-67.0	H	3.0	-13.4	31.1	1.0	-43.5	-13.0	-30.5	
3.42	-55.5	V	3.0	-8.3	33.3	1.0	-40.6	-13.0	-27.6	
5.13	-63.4	V	3.0	-13.2	32.9	1.0	-45.1	-13.0	-32.1	
6.83	-66.5	V	3.0	-12.6	31.1	1.0	-42.7	-13.0	-29.7	
Mid Channel (1732.5MHz)										
3.46	-56.2	H	3.0	-9.0	33.3	1.0	-41.3	-13.0	-28.3	
5.20	-65.3	H	3.0	-14.7	32.9	1.0	-46.5	-13.0	-33.5	
6.88	-66.2	H	3.0	-12.5	31.0	1.0	-42.6	-13.0	-29.6	
3.46	-55.2	V	3.0	-7.9	33.3	1.0	-40.2	-13.0	-27.2	
5.20	-65.0	V	3.0	-14.7	32.9	1.0	-46.6	-13.0	-33.6	
6.87	-66.3	V	3.0	-12.4	31.0	1.0	-42.4	-13.0	-29.4	
High Channel (1753.75MHz)										
3.51	-60.5	H	3.0	-13.1	33.4	1.0	-45.5	-13.0	-32.5	
5.29	-66.4	H	3.0	-15.6	32.8	1.0	-47.3	-13.0	-34.3	
7.17	-66.1	H	3.0	-12.0	30.7	1.0	-41.7	-13.0	-28.7	
3.51	-61.2	V	3.0	-13.8	33.4	1.0	-46.2	-13.0	-33.2	
5.21	-65.4	V	3.0	-15.1	32.8	1.0	-46.9	-13.0	-33.9	
6.90	-67.2	V	3.0	-13.2	31.0	1.0	-43.2	-13.0	-30.2	

Rev. 03.19.15

EVDO-Rev A, 1700MHz BC15

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company: 15U20162
 Project #: 05/09/15
 Date: T. Pham
 Test Engineer: EUT Only
 Configuration: Rev A 1700MHz
 Mode:

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

3m Chamber D

Pre-amplifier

3m Chamber D

Filter

Filter

Limit

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1711.25MHz)										
3.42	-61.4	H	3.0	-14.3	33.3	1.0	-46.6	-13.0	-33.6	
5.15	-61.3	H	3.0	-10.7	32.9	1.0	-42.6	-13.0	-29.6	
6.86	-62.5	H	3.0	-8.9	31.0	1.0	-38.9	-13.0	-25.9	
3.42	-60.1	V	3.0	-12.9	33.3	1.0	-45.2	-13.0	-32.2	
5.12	-61.7	V	3.0	-11.5	32.9	1.0	-43.4	-13.0	-30.4	
6.84	-62.4	V	3.0	-8.6	31.1	1.0	-38.7	-13.0	-25.7	
Mid Channel (1732.5MHz)										
3.47	-62.1	H	3.0	-14.8	33.3	1.0	-47.2	-13.0	-34.2	
5.21	-61.0	H	3.0	-10.3	32.9	1.0	-42.2	-13.0	-29.2	
6.93	-63.4	H	3.0	-9.7	31.0	1.0	-39.6	-13.0	-26.6	
3.49	-61.7	V	3.0	-14.4	33.4	1.0	-46.7	-13.0	-33.7	
5.16	-60.2	V	3.0	-10.0	32.9	1.0	-41.9	-13.0	-28.9	
6.92	-61.9	V	3.0	-7.9	31.0	1.0	-37.9	-13.0	-24.9	
High Channel (1753.75MHz)										
3.51	-62.1	H	3.0	-14.7	33.4	1.0	-47.1	-13.0	-34.1	
5.25	-61.1	H	3.0	-10.4	32.8	1.0	-42.2	-13.0	-29.2	
7.02	-63.6	H	3.0	-9.7	30.9	1.0	-39.6	-13.0	-26.6	
3.50	-60.5	V	3.0	-13.1	33.4	1.0	-45.5	-13.0	-32.5	
5.26	-62.2	V	3.0	-11.8	32.8	1.0	-43.6	-13.0	-30.6	
7.01	-63.3	V	3.0	-9.1	30.9	1.0	-39.0	-13.0	-26.0	

Rev. 03.19.15

CDMA2000 1xRTT, 800MHz BC10

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U20162
Date: 05/11/15
Test Engineer: T. Pham
Configuration: EUT Only
Mode: 1xRTT 800MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber
3m Chamber D

Pre-amplifier
3m Chamber D

Filter
Filter

Limit
ERP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (817.25MHz)										
1.64	-62.5	H	3.0	-20.7	35.0	1.0	-54.7	-13.0	-41.7	
2.49	-63.7	H	3.0	-19.5	33.8	1.0	-52.3	-13.0	-39.3	
3.26	-66.2	H	3.0	-19.5	33.2	1.0	-51.7	-13.0	-38.7	
1.64	-58.2	V	3.0	-16.3	35.0	1.0	-50.3	-13.0	-37.3	
2.45	-59.6	V	3.0	-15.3	34.1	1.0	-48.4	-13.0	-35.4	
3.27	-59.1	V	3.0	-12.3	33.2	1.0	-44.5	-13.0	-31.5	
Mid Channel (820.00MHz)										
1.64	-62.1	H	3.0	-20.4	35.0	1.0	-54.4	-13.0	-41.4	
2.61	-63.3	H	3.0	-18.6	33.6	1.0	-51.2	-13.0	-38.2	
3.31	-65.2	H	3.0	-18.4	33.2	1.0	-50.6	-13.0	-37.6	
1.64	-58.7	V	3.0	-16.8	35.0	1.0	-50.8	-13.0	-37.8	
2.45	-59.7	V	3.0	-15.5	34.1	1.0	-48.5	-13.0	-35.5	
3.28	-60.1	V	3.0	-13.3	33.2	1.0	-45.5	-13.0	-32.5	
High Channel (822.75MHz)										
1.63	-63.4	H	3.0	-21.7	35.0	1.0	-55.7	-13.0	-42.7	
2.47	-64.4	H	3.0	-20.3	33.9	1.0	-53.3	-13.0	-40.3	
3.28	-65.3	H	3.0	-18.6	33.2	1.0	-50.8	-13.0	-37.8	
1.65	-59.2	V	3.0	-17.2	35.0	1.0	-51.2	-13.0	-38.2	
2.46	-59.9	V	3.0	-15.6	34.0	1.0	-48.6	-13.0	-35.6	
3.29	-63.1	V	3.0	-16.3	33.2	1.0	-48.5	-13.0	-35.5	

Rev. 03.19.15

EVDO-Rev A, 800MHz BC10

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company: 15U20162
 Project #: 15U20162
 Date: 05/11/15
 Test Engineer: T. Pham
 Configuration: EUT Only
 Mode: Rev A 800MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

Pre-amplifier

Filter

Limit

3m Chamber D

3m Chamber D

Filter

ERP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (817.25MHz)										
1.64	-59.1	H	3.0	-17.3	35.0	1.0	-51.3	-13.0	-38.3	
2.44	-59.8	H	3.0	-15.8	34.1	1.0	-48.9	-13.0	-35.9	
3.27	-60.7	H	3.0	-14.0	33.2	1.0	-46.2	-13.0	-33.2	
1.63	-58.8	V	3.0	-16.9	35.0	1.0	-50.9	-13.0	-37.9	
2.45	-59.7	V	3.0	-15.5	34.1	1.0	-48.5	-13.0	-35.5	
3.27	-61.3	V	3.0	-14.5	33.2	1.0	-46.8	-13.0	-33.8	
Mid Channel (820.00MHz)										
1.63	-58.7	H	3.0	-17.0	35.0	1.0	-51.0	-13.0	-38.0	
2.46	-60.4	H	3.0	-16.4	34.0	1.0	-49.4	-13.0	-36.4	
3.28	-61.3	H	3.0	-14.6	33.2	1.0	-46.8	-13.0	-33.8	
1.64	-58.9	V	3.0	-16.9	35.0	1.0	-50.9	-13.0	-37.9	
2.45	-60.0	V	3.0	-15.8	34.1	1.0	-48.8	-13.0	-35.8	
3.27	-60.2	V	3.0	-13.4	33.2	1.0	-45.6	-13.0	-32.6	
High Channel (822.75MHz)										
1.65	-58.6	H	3.0	-16.8	35.0	1.0	-50.8	-13.0	-37.8	
2.47	-60.2	H	3.0	-16.1	34.0	1.0	-49.1	-13.0	-36.1	
3.29	-61.7	H	3.0	-14.9	33.2	1.0	-47.2	-13.0	-34.2	
1.66	-60.0	V	3.0	-18.0	35.0	1.0	-52.0	-13.0	-39.0	
2.47	-60.1	V	3.0	-15.8	34.0	1.0	-48.7	-13.0	-35.7	
3.29	-61.6	V	3.0	-14.8	33.2	1.0	-47.0	-13.0	-34.0	

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10.7.3. UMTS

UMTS REL 99, 850MHz BAND 5

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
 Project #: 15U20163
 Date: 05/11/15
 Test Engineer: T. Pham
 Configuration: EUT Only
 Mode: REL 99, 850MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

3m Chamber D

Pre-amplifier

3m Chamber D

Filter

Filter

Limit

ERP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (826.4MHz)										
1.65	-52.3	H	3.0	-10.5	35.0	1.0	-44.6	-13.0	-31.6	
2.48	-60.5	H	3.0	-16.4	33.9	1.0	-49.2	-13.0	-36.2	
3.31	-66.0	H	3.0	-19.2	33.2	1.0	-51.5	-13.0	-38.5	
1.65	-54.3	V	3.0	-12.3	35.0	1.0	-46.3	-13.0	-33.3	
2.48	-60.2	V	3.0	-15.8	38.5	1.0	-53.3	-13.0	-40.3	
3.31	-64.6	V	3.0	-17.7	33.2	1.0	-49.9	-13.0	-36.9	
Mid Channel (836.6MHz)										
1.67	-54.2	H	3.0	-12.4	35.0	1.0	-46.4	-13.0	-33.4	
2.51	-60.2	H	3.0	-15.9	33.7	1.0	-48.6	-13.0	-35.6	
3.34	-65.7	H	3.0	-18.8	33.3	1.0	-51.1	-13.0	-38.1	
1.67	-55.1	V	3.0	-13.1	35.0	1.0	-47.1	-13.0	-34.1	
2.58	-59.4	V	3.0	-14.7	33.6	1.0	-47.3	-13.0	-34.3	
3.34	-64.7	V	3.0	-17.7	33.3	1.0	-49.9	-13.0	-36.9	
High Channel (846.6MHz)										
1.69	-54.4	H	3.0	-12.5	35.0	1.0	-46.5	-13.0	-33.5	
2.54	-60.6	H	3.0	-16.2	33.7	1.0	-48.9	-13.0	-35.9	
3.39	-65.7	H	3.0	-18.7	33.3	1.0	-51.0	-13.0	-38.0	
1.69	-53.7	V	3.0	-11.6	35.0	1.0	-45.6	-13.0	-32.6	
2.54	-59.5	V	3.0	-15.0	33.7	1.0	-47.6	-13.0	-34.6	
3.39	-64.5	V	3.0	-17.4	33.3	1.0	-49.6	-13.0	-36.6	

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UMTS HSDPA, 850MHz BAND 5

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
 Project #: 15U20162
 Date: 05/11/15
 Test Engineer: T. Pham
 Configuration: EUT only
 Mode: HSDPA 850MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

Pre-amplifier

Filter

Limit

3m Chamber D

3m Chamber D

Filter

ERP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (826.4MHz)										
1.65	-59.8	H	3.0	-18.0	35.0	1.0	-52.0	-13.0	-39.0	
2.48	-64.7	H	3.0	-20.6	33.9	1.0	-53.4	-13.0	-40.4	
3.30	-64.8	H	3.0	-18.0	33.2	1.0	-50.2	-13.0	-37.2	
1.65	-55.2	V	3.0	-13.2	35.0	1.0	-47.3	-13.0	-34.3	
2.48	-64.8	V	3.0	-20.4	33.9	1.0	-53.3	-13.0	-40.3	
3.30	-65.1	V	3.0	-18.2	33.2	1.0	-50.5	-13.0	-37.5	
Mid Channel (836.6MHz)										
1.67	-59.7	H	3.0	-17.9	35.0	1.0	-51.9	-13.0	-38.9	
2.50	-64.7	H	3.0	-20.5	33.7	1.0	-53.2	-13.0	-40.2	
3.26	-66.0	H	3.0	-19.3	33.2	1.0	-51.5	-13.0	-38.5	
1.67	-55.2	V	3.0	-13.2	35.0	1.0	-47.2	-13.0	-34.2	
2.51	-63.9	V	3.0	-19.4	33.7	1.0	-52.1	-13.0	-39.1	
3.30	-64.5	V	3.0	-17.6	33.2	1.0	-49.9	-13.0	-36.9	
High Channel (846.6MHz)										
1.70	-60.1	H	3.0	-18.2	35.0	1.0	-52.2	-13.0	-39.2	
2.54	-65.6	H	3.0	-21.2	33.7	1.0	-53.9	-13.0	-40.9	
3.30	-64.3	H	3.0	-17.5	33.2	1.0	-49.8	-13.0	-36.8	
1.70	-53.9	V	3.0	-11.8	35.0	1.0	-45.9	-13.0	-32.9	
2.54	-64.4	V	3.0	-19.8	33.7	1.0	-52.5	-13.0	-39.5	
3.30	-66.2	V	3.0	-19.3	33.2	1.0	-51.6	-13.0	-38.6	

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UMTS REL 99, 1900MHz BAND 2

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
 Project #: 15U20162
 Date: 05/09/15
 Test Engineer: T. Pham
 Configuration: EUT Only
 Mode: REL 99, 1900MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

3m Chamber D

Pre-amplifier

3m Chamber D

Filter

Filter

Limit

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1852.4MHz)										
3.70	-65.3	H	3.0	-17.4	33.5	1.0	-49.9	-13.0	-36.9	
5.56	-59.2	H	3.0	-7.9	32.5	1.0	-39.4	-13.0	-26.4	
7.41	-68.0	H	3.0	-13.6	30.4	1.0	-43.0	-13.0	-30.0	
3.70	-64.1	V	3.0	-16.2	33.5	1.0	-48.7	-13.0	-35.7	
5.56	-63.3	V	3.0	-12.3	32.5	1.0	-43.8	-13.0	-30.8	
7.41	-67.9	V	3.0	-13.3	30.4	1.0	-42.7	-13.0	-29.7	
Mid Channel (1880MHz)										
3.76	-67.0	H	3.0	-18.9	33.5	1.0	-51.4	-13.0	-38.4	
5.64	-67.7	H	3.0	-16.3	32.4	1.0	-47.7	-13.0	-34.7	
7.52	-68.0	H	3.0	-13.5	30.3	1.0	-42.8	-13.0	-29.8	
3.76	-66.4	V	3.0	-18.3	33.5	1.0	-50.8	-13.0	-37.8	
5.64	-67.5	V	3.0	-16.2	32.4	1.0	-47.6	-13.0	-34.6	
7.52	-68.3	V	3.0	-13.7	30.3	1.0	-42.9	-13.0	-29.9	
High Channel (1907.6MHz)										
3.82	-65.9	H	3.0	-17.6	33.6	1.0	-50.2	-13.0	-37.2	
5.72	-66.3	H	3.0	-14.7	32.3	1.0	-46.0	-13.0	-33.0	
7.63	-69.1	H	3.0	-14.5	30.1	1.0	-43.6	-13.0	-30.6	
3.82	-66.2	V	3.0	-17.9	33.6	1.0	-50.5	-13.0	-37.5	
5.72	-66.7	V	3.0	-15.3	32.3	1.0	-46.6	-13.0	-33.6	
7.63	-69.1	V	3.0	-14.3	30.1	1.0	-43.5	-13.0	-30.5	

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UMTS HSDPA, 1900MHz BAND 2

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
 Project #: 15U20162
 Date: 06/11/15
 Test Engineer: T. Pham
 Configuration: EUT only
 Mode: HSDPA 1900MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

3m Chamber D

Pre-amplifier

3m Chamber D

Filter

Filter

Limit

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1852.4MHz)										
3.85	-64.3	H	3.0	-15.9	33.6	1.0	-48.5	-13.0	-35.5	
5.69	-67.0	H	3.0	-15.5	32.3	1.0	-46.8	-13.0	-33.8	
7.38	-67.1	H	3.0	-12.8	30.4	1.0	-42.2	-13.0	-29.2	
3.80	-65.3	V	3.0	-17.1	33.6	1.0	-49.7	-13.0	-36.7	
5.54	-66.6	V	3.0	-15.6	32.5	1.0	-47.1	-13.0	-34.1	
7.31	-66.4	V	3.0	-12.0	30.5	1.0	-41.5	-13.0	-28.5	
Mid Channel (1890MHz)										
3.87	-64.5	H	3.0	-16.0	33.6	1.0	-48.6	-13.0	-35.6	
5.86	-65.0	H	3.0	-13.2	32.1	1.0	-44.3	-13.0	-31.3	
7.42	-67.4	H	3.0	-13.0	30.4	1.0	-42.4	-13.0	-29.4	
3.88	-64.0	V	3.0	-15.6	33.6	1.0	-48.2	-13.0	-35.2	
5.53	-65.8	V	3.0	-14.8	32.5	1.0	-46.3	-13.0	-33.3	
7.58	-66.7	V	3.0	-12.0	30.2	1.0	-41.2	-13.0	-28.2	
High Channel (1907.6MHz)										
4.13	-64.6	H	3.0	-15.6	33.6	1.0	-48.2	-13.0	-35.2	
5.85	-64.6	H	3.0	-12.8	32.2	1.0	-43.9	-13.0	-30.9	
7.30	-66.3	H	3.0	-12.1	30.5	1.0	-41.6	-13.0	-28.6	
3.97	-65.8	V	3.0	-17.1	33.7	1.0	-49.8	-13.0	-36.8	
5.84	-64.8	V	3.0	-13.2	32.2	1.0	-44.3	-13.0	-31.3	
7.33	-65.8	V	3.0	-11.3	30.5	1.0	-40.8	-13.0	-27.8	

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UMTS REL 99, 1700MHz BAND 4

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
 Project #: 15U20162
 Date: 06/11/15
 Test Engineer: T. Pham
 Configuration: EUT Only
 Mode: REL 99, 1700MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

3m Chamber E

Pre-amplifier

3m Chamber E

Filter

Filter

Limit

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1712.4MHz)										
3.42	-56.5	H	3.0	-7.3	38.5	1.0	-44.8	-13.0	-31.8	
5.14	-67.0	H	3.0	-13.9	38.7	1.0	-51.6	-13.0	-38.6	
6.85	-67.3	H	3.0	-10.4	38.1	1.0	-47.6	-13.0	-34.6	
3.42	-54.1	V	3.0	-5.0	38.5	1.0	-42.6	-13.0	-29.6	
5.14	-65.0	V	3.0	-12.1	38.7	1.0	-49.8	-13.0	-36.8	
6.85	-67.4	V	3.0	-10.8	38.1	1.0	-47.9	-13.0	-34.9	
Mid Channel (1732.6MHz)										
3.47	-57.3	H	3.0	-8.0	38.5	1.0	-45.5	-13.0	-32.5	
5.20	-66.7	H	3.0	-13.4	38.7	1.0	-51.1	-13.0	-38.1	
6.93	-67.0	H	3.0	-10.0	38.1	1.0	-47.1	-13.0	-34.1	
3.47	-56.6	V	3.0	-7.5	38.5	1.0	-45.0	-13.0	-32.0	
5.20	-66.7	V	3.0	-13.8	38.7	1.0	-51.5	-13.0	-38.5	
6.93	-68.1	V	3.0	-11.3	38.1	1.0	-48.4	-13.0	-35.4	
High Channel (1752.6MHz)										
3.51	-55.7	H	3.0	-6.2	38.5	1.0	-43.8	-13.0	-30.8	
5.26	-63.6	H	3.0	-10.2	38.7	1.0	-47.9	-13.0	-34.9	
7.01	-68.7	H	3.0	-11.4	38.1	1.0	-48.5	-13.0	-35.5	
3.51	-62.7	V	3.0	-13.4	38.5	1.0	-50.9	-13.0	-37.9	
5.26	-66.6	V	3.0	-13.5	38.7	1.0	-51.2	-13.0	-38.2	
7.01	-69.0	V	3.0	-12.1	38.1	1.0	-49.1	-13.0	-36.1	

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UMTS HSDPA, 1700MHz BAND 4

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
 Project #: 15U20162
 Date: 06/11/15
 Test Engineer: T. Pham
 Configuration: EUT only
 Mode: HSDPA 1700MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

3m Chamber D

Pre-amplifier

3m Chamber D

Filter

Filter

Limit

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1712.4MHz)										
3.43	-62.3	H	3.0	-15.2	33.3	1.0	-47.5	-13.0	-34.5	
5.22	-66.1	H	3.0	-15.4	32.8	1.0	-47.2	-13.0	-34.2	
7.05	-65.3	H	3.0	-11.4	30.8	1.0	-41.3	-13.0	-28.3	
3.43	-63.2	V	3.0	-16.0	33.3	1.0	-48.3	-13.0	-35.3	
5.17	-66.1	V	3.0	-15.9	32.9	1.0	-47.7	-13.0	-34.7	
6.80	-65.6	V	3.0	-11.9	31.1	1.0	-42.0	-13.0	-29.0	
Mid Channel (1732.6MHz)										
3.47	-63.6	H	3.0	-16.3	33.3	1.0	-48.6	-13.0	-35.6	
5.32	-66.1	H	3.0	-15.2	32.7	1.0	-46.9	-13.0	-33.9	
7.00	-66.3	H	3.0	-12.5	30.9	1.0	-42.4	-13.0	-29.4	
3.47	-65.0	V	3.0	-17.7	33.3	1.0	-50.0	-13.0	-37.0	
5.28	-66.1	V	3.0	-15.7	32.8	1.0	-47.5	-13.0	-34.5	
7.04	-67.1	V	3.0	-12.9	30.8	1.0	-42.8	-13.0	-29.8	
High Channel (1752.6MHz)										
3.98	-65.6	H	3.0	-16.8	33.7	1.0	-49.5	-13.0	-36.5	
5.55	-64.5	H	3.0	-13.2	32.5	1.0	-44.7	-13.0	-31.7	
7.13	-66.4	H	3.0	-12.4	30.7	1.0	-42.1	-13.0	-29.1	
3.95	-65.0	V	3.0	-16.4	33.7	1.0	-49.1	-13.0	-36.1	
5.87	-65.0	V	3.0	-13.2	32.1	1.0	-44.4	-13.0	-31.4	
7.26	-67.0	V	3.0	-12.6	30.6	1.0	-42.2	-13.0	-29.2	

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10.8. FIELD STRENGTH OF SPURIOUS RADIATION, MODEL: A1634 (UAT)

10.8.1. GSM

GPRS, 850MHz BAND 5

High Frequency Substitution Measurement
 UL Fremont Radiated Chamber

Company:
Project #: 15U20162
Date: 06/10/15
Test Engineer: T. Pham
Configuration: EUT Only
Mode: GPRS 850MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber
3m Chamber D

Pre-amplifier
3m Chamber D

Filter
Filter

Limit
ERP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (824.2MHz)										
1.65	-49.7	H	3.0	-7.9	35.0	1.0	-41.9	-13.0	-28.9	
2.47	-57.8	H	3.0	-13.7	33.9	1.0	-46.6	-13.0	-33.6	
3.30	-65.1	H	3.0	-18.4	33.2	1.0	-50.6	-13.0	-37.6	
1.65	-45.9	V	3.0	-3.9	35.0	1.0	-38.0	-13.0	-25.0	
2.47	-53.1	V	3.0	-8.8	33.9	1.0	-41.7	-13.0	-28.7	
3.30	-65.9	V	3.0	-19.1	33.2	1.0	-51.3	-13.0	-38.3	
Mid Channel (836.6MHz)										
1.67	-50.4	H	3.0	-8.5	35.0	1.0	-42.5	-13.0	-29.5	
2.51	-59.9	H	3.0	-15.6	33.7	1.0	-48.3	-13.0	-35.3	
3.35	-64.5	H	3.0	-17.6	33.3	1.0	-49.8	-13.0	-36.8	
1.67	-43.7	V	3.0	-1.6	35.0	1.0	-35.6	-13.0	-22.6	
2.51	-55.2	V	3.0	-10.7	33.7	1.0	-43.4	-13.0	-30.4	
3.35	-65.7	V	3.0	-18.7	33.3	1.0	-51.0	-13.0	-38.0	
High Channel (848.8MHz)										
1.70	-55.2	H	3.0	-13.3	35.0	1.0	-47.3	-13.0	-34.3	
2.55	-50.0	H	3.0	-5.6	33.7	1.0	-38.2	-13.0	-25.2	
3.40	-64.5	H	3.0	-17.5	33.3	1.0	-49.8	-13.0	-36.8	
1.70	-48.0	V	3.0	-5.9	35.0	1.0	-39.9	-13.0	-26.9	
2.55	-50.6	V	3.0	-6.0	33.7	1.0	-38.6	-13.0	-25.6	
3.40	-64.7	V	3.0	-17.5	33.3	1.0	-49.8	-13.0	-36.8	

Rev. 03.19.15

EGPRS, 850MHz BAND 5

High Frequency Substitution Measurement

UL Fremont Radiated Chamber

Company:
Project #: 15U20162
Date: 06/10/15
Test Engineer: T. Pham
Configuration: EUT Only
Mode: EGPRS 850MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

3m Chamber D

Pre-amplifier

3m Chamber D

Filter

Filter

Limit

ERP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (824.2MHz)										
1.65	-59.5	H	3.0	-17.7	35.0	1.0	-51.7	-13.0	-38.7	
2.47	-59.9	H	3.0	-15.8	33.9	1.0	-48.7	-13.0	-35.7	
3.30	-65.1	H	3.0	-18.4	33.2	1.0	-50.6	-13.0	-37.6	
1.65	-58.0	V	3.0	-16.0	35.0	1.0	-50.0	-13.0	-37.0	
2.47	-60.4	V	3.0	-16.1	33.9	1.0	-49.0	-13.0	-36.0	
3.30	-66.0	V	3.0	-19.1	33.2	1.0	-51.4	-13.0	-38.4	
Mid Channel (836.6MHz)										
1.67	-59.2	H	3.0	-17.3	35.0	1.0	-51.4	-13.0	-38.4	
2.51	-61.1	H	3.0	-16.8	33.7	1.0	-49.5	-13.0	-36.5	
3.35	-66.2	H	3.0	-19.3	33.3	1.0	-51.5	-13.0	-38.5	
1.67	-54.3	V	3.0	-12.2	35.0	1.0	-46.2	-13.0	-33.2	
2.51	-61.3	V	3.0	-16.8	33.7	1.0	-49.5	-13.0	-36.5	
3.35	-65.1	V	3.0	-18.1	33.3	1.0	-50.4	-13.0	-37.4	
High Channel (848.8MHz)										
1.70	-57.6	H	3.0	-15.7	35.0	1.0	-49.7	-13.0	-36.7	
2.55	-61.3	H	3.0	-16.9	33.7	1.0	-49.6	-13.0	-36.6	
3.40	-64.2	H	3.0	-17.2	33.3	1.0	-49.5	-13.0	-36.5	
1.70	-58.8	V	3.0	-16.7	35.0	1.0	-50.8	-13.0	-37.8	
2.55	-61.0	V	3.0	-16.4	33.7	1.0	-49.1	-13.0	-36.1	
3.40	-64.8	V	3.0	-17.7	33.3	1.0	-50.0	-13.0	-37.0	

Rev. 03.19.15

GPRS, 1900MHz BAND 2

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
 Project #: 15U20162
 Date: 06/10/15
 Test Engineer: T. Pham
 Configuration: EUT Only
 Mode: GPRS 1900MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

Pre-amplifier

Filter

Limit

3m Chamber D

3m Chamber D

Filter

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1850.2MHz)										
3.70	-64.5	H	3.0	-16.5	33.5	1.0	49.0	-13.0	-36.0	
5.55	-65.1	H	3.0	-13.8	32.5	1.0	45.3	-13.0	-32.3	
7.40	-66.6	H	3.0	-12.3	30.4	1.0	41.7	-13.0	-28.7	
3.70	-65.2	V	3.0	-17.3	33.5	1.0	49.8	-13.0	-36.8	
5.55	-65.7	V	3.0	-14.7	32.5	1.0	46.1	-13.0	-33.1	
7.40	-66.1	V	3.0	-11.6	30.4	1.0	41.0	-13.0	-28.0	
Mid Channel (1880.0)										
3.76	-63.4	H	3.0	-15.3	33.5	1.0	47.8	-13.0	-34.8	
5.64	-64.8	H	3.0	-13.4	32.4	1.0	44.8	-13.0	-31.8	
7.52	-66.6	H	3.0	-12.1	30.3	1.0	41.3	-13.0	-28.3	
3.76	-64.2	V	3.0	-16.1	33.5	1.0	48.7	-13.0	-35.7	
5.64	-64.8	V	3.0	-13.6	32.4	1.0	45.0	-13.0	-32.0	
7.52	-65.9	V	3.0	-11.2	30.3	1.0	40.5	-13.0	-27.5	
High Channel (1909.8MHz)										
3.82	-64.1	H	3.0	-15.8	33.6	1.0	48.4	-13.0	-35.4	
5.73	-66.2	H	3.0	-14.6	32.3	1.0	45.9	-13.0	-32.9	
7.64	-66.0	H	3.0	-11.3	30.1	1.0	40.4	-13.0	-27.4	
3.82	-64.5	V	3.0	-16.2	33.6	1.0	48.8	-13.0	-35.8	
5.73	-65.1	V	3.0	-13.7	32.3	1.0	45.0	-13.0	-32.0	
7.64	-68.3	V	3.0	-13.6	30.1	1.0	42.7	-13.0	-29.7	

Rev. 03.19.15

EGPRS, 1900MHz BAND 2

High Frequency Substitution Measurement

UL Fremont Radiated Chamber

Company: _____
 Project #: 15U20162
 Date: 06/10/15
 Test Engineer: T. Pham
 Configuration: EUT Only
 Mode: EGPRS 1900MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber
3m Chamber E

Pre-amplifier
3m Chamber E

Filter
Filter

Limit
EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1850.2MHz)										
3.70	-65.3	H	3.0	-15.3	38.6	1.0	-52.9	-13.0	-39.9	
5.55	-65.5	H	3.0	-11.4	38.6	1.0	-49.0	-13.0	-36.0	
7.40	-66.9	H	3.0	-9.2	37.8	1.0	-46.1	-13.0	-33.1	
3.70	-65.0	V	3.0	-15.2	38.6	1.0	-52.8	-13.0	-39.8	
5.55	-66.8	V	3.0	-13.1	38.6	1.0	-50.6	-13.0	-37.6	
7.40	-66.6	V	3.0	-9.1	37.8	1.0	-45.9	-13.0	-32.9	
Mid Channel (1880.0)										
3.76	-66.0	H	3.0	-15.9	38.6	1.0	-53.5	-13.0	-40.5	
5.64	-67.5	H	3.0	-13.2	38.5	1.0	-50.8	-13.0	-37.8	
7.52	-67.9	H	3.0	-10.0	37.7	1.0	-46.8	-13.0	-33.8	
3.76	-64.2	V	3.0	-14.2	38.6	1.0	-51.8	-13.0	-38.8	
5.64	-68.0	V	3.0	-14.1	38.5	1.0	-51.6	-13.0	-38.6	
7.52	-69.2	V	3.0	-11.6	37.7	1.0	-48.3	-13.0	-35.3	
High Channel (1909.8MHz)										
3.82	-64.4	H	3.0	-14.1	38.7	1.0	-51.8	-13.0	-38.8	
5.73	-66.1	H	3.0	-11.7	38.5	1.0	-49.2	-13.0	-36.2	
7.64	-66.9	H	3.0	-8.9	37.7	1.0	-45.6	-13.0	-32.6	
3.82	-63.3	V	3.0	-13.0	38.7	1.0	-50.7	-13.0	-37.7	
5.73	-67.0	V	3.0	-12.8	38.5	1.0	-50.4	-13.0	-37.4	
7.64	-68.0	V	3.0	-10.2	37.7	1.0	-46.9	-13.0	-33.9	

Rev. 03.19.15

10.8.2. CDMA2000

CDMA2000 1xRTT, 850MHz BC0

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
 Project #: 15U20162
 Date: 06/10/15
 Test Engineer: T. Pham
 Configuration: EUT Only
 Mode: 1xRTT 850MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

Pre-amplifer

Filter

Limit

3m Chamber D

3m Chamber D

Filter

ERP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (824.7MHz)										
1.65	-59.7	H	3.0	-18.0	35.0	1.0	-52.0	-13.0	-39.0	
2.87	-63.0	H	3.0	-17.5	33.2	1.0	-49.8	-13.0	-36.8	
3.81	-62.9	H	3.0	-14.6	33.6	1.0	-47.2	-13.0	-34.2	
1.65	-56.7	V	3.0	-14.7	35.0	1.0	-48.8	-13.0	-35.8	
2.48	-57.1	V	3.0	-12.8	33.9	1.0	-45.7	-13.0	-32.7	
3.29	-64.3	V	3.0	-17.4	33.2	1.0	-49.7	-13.0	-36.7	
Mid Channel (836.52MHz)										
1.67	-62.0	H	3.0	-20.2	35.0	1.0	-54.2	-13.0	-41.2	
2.45	-63.4	H	3.0	-19.4	34.1	1.0	-52.4	-13.0	-39.4	
5.20	-63.4	H	3.0	-12.7	32.9	1.0	-44.6	-13.0	-31.6	
1.67	-59.3	V	3.0	-17.2	35.0	1.0	-51.2	-13.0	-38.2	
2.51	-59.9	V	3.0	-15.4	33.7	1.0	-48.1	-13.0	-35.1	
3.82	-63.1	V	3.0	-14.8	33.6	1.0	-47.4	-13.0	-34.4	
High Channel (848.31MHz)										
1.70	-61.6	H	3.0	-19.7	35.0	1.0	-53.7	-13.0	-40.7	
2.61	-63.8	H	3.0	-19.2	33.6	1.0	-51.8	-13.0	-38.8	
3.52	-61.4	H	3.0	-14.0	33.4	1.0	-46.3	-13.0	-33.3	
1.70	-57.4	V	3.0	-15.3	35.0	1.0	-49.4	-13.0	-36.4	
2.55	-58.6	V	3.0	-14.0	33.7	1.0	-46.7	-13.0	-33.7	
3.40	-63.3	V	3.0	-16.2	33.3	1.0	-48.5	-13.0	-35.5	

Rev. 03.19.15

EVDO-Rev A, 850MHz BC0

High Frequency Substitution Measurement UL Fremont Radiated Chamber

Company:
Project #: 15U20162
Date: 06/10/15
Test Engineer: T. Pham
Configuration: EUT Only
Mode: Rev A 850MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber
 3m Chamber D

Pre-amplifier
 3m Chamber D

Filter
 Filter

Limit
 ERP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (824.7MHz)										
1.29	-55.2	H	3.0	-14.9	34.6	1.0	48.5	-13.0	-35.5	
2.47	-58.7	H	3.0	-14.6	34.0	1.0	47.6	-13.0	-34.6	
3.29	-61.0	H	3.0	-14.3	33.2	1.0	46.5	-13.0	-33.5	
1.45	-56.7	V	3.0	-15.3	34.9	1.0	49.3	-13.0	-36.3	
2.47	-57.2	V	3.0	-12.9	33.9	1.0	45.8	-13.0	-32.8	
3.27	-60.5	V	3.0	-13.7	33.2	1.0	45.9	-13.0	-32.9	
Mid Channel (836.52MHz)										
1.66	-58.0	H	3.0	-16.2	35.0	1.0	50.2	-13.0	-37.2	
2.50	-59.0	H	3.0	-14.8	33.8	1.0	47.5	-13.0	-34.5	
3.33	-59.1	H	3.0	-12.3	33.2	1.0	44.5	-13.0	-31.5	
1.68	-58.6	V	3.0	-16.5	35.0	1.0	50.5	-13.0	-37.5	
2.51	-59.6	V	3.0	-15.1	33.7	1.0	47.8	-13.0	-34.8	
3.37	-60.4	V	3.0	-13.4	33.3	1.0	45.6	-13.0	-32.6	
High Channel (848.31MHz)										
1.21	-56.2	H	3.0	-16.3	34.5	1.0	49.8	-13.0	-36.8	
2.54	-59.0	H	3.0	-14.6	33.7	1.0	47.3	-13.0	-34.3	
3.31	-59.0	H	3.0	-12.2	33.2	1.0	44.4	-13.0	-31.4	
1.29	-55.5	V	3.0	-15.1	34.6	1.0	48.7	-13.0	-35.7	
2.54	-58.0	V	3.0	-13.4	33.7	1.0	46.0	-13.0	-33.0	
3.41	-61.0	V	3.0	-13.9	33.3	1.0	46.2	-13.0	-33.2	

Rev. 03.19.15

CDMA2000 1xRTT, 1900MHz BC1

**High Frequency Substitution Measurement
 UL Fremont Radiated Chamber**

Company:
Project #: 15U20162
Date: 06/10/15
Test Engineer: T. Pham
Configuration: EUT Only
Mode: 1xRTT 1900MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifier	Filter	Limit
3m Chamber D	3m Chamber D	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1851.25MHz)										
3.77	-64.1	H	3.0	-15.9	33.6	1.0	-48.5	-13.0	-35.5	
5.55	-65.0	H	3.0	-13.7	32.5	1.0	-45.2	-13.0	-32.2	
7.41	-67.2	H	3.0	-12.9	30.4	1.0	-42.3	-13.0	-29.3	
3.68	-64.6	V	3.0	-16.7	33.5	1.0	-49.2	-13.0	-36.2	
5.58	-66.0	V	3.0	-15.0	32.5	1.0	-46.4	-13.0	-33.4	
7.36	-67.0	V	3.0	-12.5	30.5	1.0	-41.9	-13.0	-28.9	
Mid Channel (1880MHz)										
3.83	-61.9	H	3.0	-13.6	33.6	1.0	-46.2	-13.0	-33.2	
5.77	-64.8	H	3.0	-13.1	32.2	1.0	-44.3	-13.0	-31.3	
8.02	-63.1	H	3.0	-8.0	29.6	1.0	-36.7	-13.0	-23.7	
3.78	-63.0	V	3.0	-14.8	33.6	1.0	-47.4	-13.0	-34.4	
5.60	-66.5	V	3.0	-15.3	32.4	1.0	-46.7	-13.0	-33.7	
7.51	-67.5	V	3.0	-12.8	30.3	1.0	-42.1	-13.0	-29.1	
High Channel (1908.75MHz)										
3.80	-63.2	H	3.0	-14.9	33.6	1.0	-47.5	-13.0	-34.5	
5.74	-65.0	H	3.0	-13.4	32.3	1.0	-44.6	-13.0	-31.6	
7.66	-66.6	H	3.0	-11.9	30.1	1.0	-41.0	-13.0	-28.0	
3.78	-63.3	H	3.0	-15.1	33.6	1.0	-47.6	-13.0	-34.6	
5.72	-63.0	H	3.0	-11.4	32.3	1.0	-42.7	-13.0	-29.7	
7.64	-67.8	V	3.0	-13.0	30.1	1.0	-42.1	-13.0	-29.1	

Rev. 03.19.15

EVDO-Rev A, 1900MHz BC1

High Frequency Substitution Measurement UL Fremont Radiated Chamber

Company:
Project #: 15U20162
Date: 06/10/15
Test Engineer: T. Pham
Configuration: EUT Only
Mode: Rev 0/A 1900MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber
 3m Chamber D

Pre-amplifier
 3m Chamber D

Filter
 Filter

Limit
 EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1851.25MHz)										
3.70	-60.0	H	3.0	-12.1	33.5	1.0	-44.6	-13.0	-31.6	
5.55	-61.4	H	3.0	-10.1	32.5	1.0	-41.6	-13.0	-28.6	
7.39	-62.1	H	3.0	-7.8	30.4	1.0	-37.2	-13.0	-24.2	
3.68	-59.8	V	3.0	-11.9	33.5	1.0	-44.4	-13.0	-31.4	
5.55	-60.8	V	3.0	-9.8	32.5	1.0	-41.3	-13.0	-28.3	
7.41	-62.7	V	3.0	-8.1	30.4	1.0	-37.5	-13.0	-24.5	
Mid Channel (1880MHz)										
3.76	-61.3	H	3.0	-13.2	33.5	1.0	-45.8	-13.0	-32.8	
5.56	-60.0	H	3.0	-8.7	32.5	1.0	-40.2	-13.0	-27.2	
7.50	-60.4	H	3.0	-6.0	30.3	1.0	-35.2	-13.0	-22.2	
3.78	-58.5	V	3.0	-10.3	33.6	1.0	-42.9	-13.0	-29.9	
5.51	-59.0	V	3.0	-8.1	32.5	1.0	-39.6	-13.0	-26.6	
7.41	-62.5	V	3.0	-7.9	30.4	1.0	-37.3	-13.0	-24.3	
High Channel (1908.75MHz)										
3.81	-59.8	H	3.0	-11.5	33.6	1.0	-44.1	-13.0	-31.1	
5.77	-59.9	H	3.0	-8.3	32.2	1.0	-39.5	-13.0	-26.5	
7.63	-62.5	H	3.0	-7.9	30.1	1.0	-37.0	-13.0	-24.0	
3.82	-60.0	V	3.0	-11.7	33.6	1.0	-44.3	-13.0	-31.3	
5.73	-61.4	V	3.0	-10.0	32.3	1.0	-41.3	-13.0	-28.3	
7.63	-62.9	V	3.0	-8.2	30.1	1.0	-37.3	-13.0	-24.3	

Rev. 03.19.15

CDMA2000 1xRTT, 1700MHz BC15

High Frequency Substitution Measurement

UL Fremont Radiated Chamber

Company:
Project #: 15U20162
Date: 06/10/15
Test Engineer: T. Pham
Configuration: EUT Only
Mode: 1xRTT 1700MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

Pre-amplifier

Filter

Limit

3m Chamber D

3m Chamber D

Filter

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1711.25MHz)										
3.42	-56.3	H	3.0	-9.2	33.3	1.0	-41.5	-13.0	-28.5	
5.13	-63.6	H	3.0	-13.0	32.9	1.0	-44.9	-13.0	-31.9	
6.85	-65.2	H	3.0	-11.6	31.1	1.0	-41.6	-13.0	-28.6	
3.42	-54.8	V	3.0	-7.6	33.3	1.0	-39.9	-13.0	-26.9	
5.13	-62.7	V	3.0	-12.5	32.9	1.0	-44.4	-13.0	-31.4	
6.83	-65.9	V	3.0	-12.1	31.1	1.0	-42.2	-13.0	-29.2	
Mid Channel (1732.5MHz)										
3.46	-55.7	H	3.0	-8.5	33.3	1.0	-40.8	-13.0	-27.8	
5.20	-64.9	H	3.0	-14.2	32.9	1.0	-46.1	-13.0	-33.1	
6.88	-65.4	H	3.0	-11.7	31.0	1.0	-41.8	-13.0	-28.8	
3.46	-55.0	V	3.0	-7.7	33.3	1.0	-40.0	-13.0	-27.0	
5.20	-64.3	V	3.0	-14.0	32.9	1.0	-45.9	-13.0	-32.9	
6.87	-65.6	V	3.0	-11.7	31.0	1.0	-41.8	-13.0	-28.8	
High Channel (1753.75MHz)										
3.51	-60.2	H	3.0	-12.8	33.4	1.0	-45.2	-13.0	-32.2	
5.29	-65.8	H	3.0	-15.0	32.8	1.0	-46.8	-13.0	-33.8	
7.17	-65.3	H	3.0	-11.3	30.7	1.0	-40.9	-13.0	-27.9	
3.51	-60.4	V	3.0	-12.9	33.4	1.0	-45.3	-13.0	-32.3	
5.21	-65.5	V	3.0	-15.2	32.8	1.0	-47.0	-13.0	-34.0	
6.90	-67.0	V	3.0	-13.0	31.0	1.0	-43.0	-13.0	-30.0	

Rev. 03.19.15

EVDO-Rev A, 1700MHz BC15

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company: 15U20162
 Project #: 15U20162
 Date: 06/10/15
 Test Engineer: T. Pham
 Configuration: EUT Only
 Mode: Rev A 1700MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

Pre-amplifier

Filter

Limit

3m Chamber D

3m Chamber D

Filter

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1711.25MHz)										
3.42	-61.0	H	3.0	-13.9	33.3	1.0	-46.2	-13.0	-33.2	
5.15	-60.0	H	3.0	-9.4	32.9	1.0	-41.3	-13.0	-28.3	
6.86	-61.5	H	3.0	-7.9	31.0	1.0	-38.0	-13.0	-25.0	
3.42	-59.7	V	3.0	-12.5	33.3	1.0	-44.8	-13.0	-31.8	
5.12	-61.0	V	3.0	-10.8	32.9	1.0	-42.7	-13.0	-29.7	
6.84	-61.8	V	3.0	-8.0	31.1	1.0	-38.1	-13.0	-25.1	
Mid Channel (1732.5MHz)										
3.47	-61.0	H	3.0	-13.8	33.3	1.0	-46.1	-13.0	-33.1	
5.21	-60.8	H	3.0	-10.1	32.9	1.0	-42.0	-13.0	-29.0	
6.93	-62.3	H	3.0	-8.6	31.0	1.0	-38.6	-13.0	-25.6	
3.49	-61.0	V	3.0	-13.6	33.4	1.0	-46.0	-13.0	-33.0	
5.16	-60.3	V	3.0	-10.1	32.9	1.0	-42.0	-13.0	-29.0	
6.92	-61.8	V	3.0	-7.8	31.0	1.0	-37.8	-13.0	-24.8	
High Channel (1753.75MHz)										
3.51	-61.7	H	3.0	-14.3	33.4	1.0	-46.7	-13.0	-33.7	
5.25	-60.7	H	3.0	-10.0	32.8	1.0	-41.8	-13.0	-28.8	
7.02	-61.4	H	3.0	-7.6	30.9	1.0	-37.4	-13.0	-24.4	
3.50	-59.6	V	3.0	-12.2	33.4	1.0	-44.6	-13.0	-31.6	
5.26	-61.5	V	3.0	-11.1	32.8	1.0	-42.9	-13.0	-29.9	
7.01	-63.2	V	3.0	-9.0	30.9	1.0	-38.9	-13.0	-25.9	

Rev. 03.19.15

CDMA2000 1xRTT, 800MHz BC10

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U20162
Date: 06/10/15
Test Engineer: T. Pham
Configuration: EUT Only
Mode: 1xRTT 800MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

3m Chamber D

Pre-amplifier

3m Chamber D

Filter

Filter

Limit

ERP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (817.25MHz)										
1.64	-61.9	H	3.0	-20.1	35.0	1.0	-54.1	-13.0	-41.1	
2.49	-62.8	H	3.0	-18.6	33.8	1.0	-51.4	-13.0	-38.4	
3.26	-66.1	H	3.0	-19.5	33.2	1.0	-51.7	-13.0	-38.7	
1.64	-57.9	V	3.0	-15.9	35.0	1.0	-50.0	-13.0	-37.0	
2.45	-59.2	V	3.0	-14.9	34.1	1.0	-48.0	-13.0	-35.0	
3.27	-58.9	V	3.0	-12.1	33.2	1.0	-44.3	-13.0	-31.3	
Mid Channel (820.00MHz)										
1.64	-61.8	H	3.0	-20.1	35.0	1.0	-54.1	-13.0	-41.1	
2.61	-62.3	H	3.0	-17.7	33.6	1.0	-50.3	-13.0	-37.3	
3.31	-65.1	H	3.0	-18.3	33.2	1.0	-50.5	-13.0	-37.5	
1.64	-58.1	V	3.0	-16.1	35.0	1.0	-50.1	-13.0	-37.1	
2.45	-59.6	V	3.0	-15.3	34.1	1.0	-48.4	-13.0	-35.4	
3.28	-59.4	V	3.0	-12.5	33.2	1.0	-44.8	-13.0	-31.8	
High Channel (822.75MHz)										
1.63	-62.8	H	3.0	-21.1	35.0	1.0	-55.1	-13.0	-42.1	
2.47	-63.7	H	3.0	-19.6	33.9	1.0	-52.6	-13.0	-39.6	
3.28	-63.3	H	3.0	-16.6	33.2	1.0	-48.8	-13.0	-35.8	
1.65	-58.6	V	3.0	-16.6	35.0	1.0	-50.6	-13.0	-37.6	
2.46	-59.6	V	3.0	-15.3	34.0	1.0	-48.3	-13.0	-35.3	
3.29	-62.3	V	3.0	-15.5	33.2	1.0	-47.7	-13.0	-34.7	

Rev. 03.19.15

EVDO-Rev A, 800MHz BC10

**High Frequency Substitution Measurement
 UL Fremont Radiated Chamber**

Company:
Project #: 15U20162
Date: 06/10/15
Test Engineer: T. Pham
Configuration: EUT Only
Mode: Rev A 800MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifier	Filter	Limit
3m Chamber D	3m Chamber D	Filter	ERP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (817.25MHz)										
1.64	-59.0	H	3.0	-17.2	35.0	1.0	-51.2	-13.0	-38.2	
2.44	-58.9	H	3.0	-14.9	34.1	1.0	-48.0	-13.0	-35.0	
3.27	-58.5	H	3.0	-11.8	33.2	1.0	-44.0	-13.0	-31.0	
1.63	-57.8	V	3.0	-15.9	35.0	1.0	-49.9	-13.0	-36.9	
2.45	-59.0	V	3.0	-14.7	34.1	1.0	-47.8	-13.0	-34.8	
3.27	-60.9	V	3.0	-14.1	33.2	1.0	-46.4	-13.0	-33.4	
Mid Channel (820.00MHz)										
1.63	-58.6	H	3.0	-16.8	35.0	1.0	-50.8	-13.0	-37.8	
2.46	-59.8	H	3.0	-15.7	34.0	1.0	-48.8	-13.0	-35.8	
3.28	-60.7	H	3.0	-14.0	33.2	1.0	-46.2	-13.0	-33.2	
1.64	-58.7	V	3.0	-16.7	35.0	1.0	-50.7	-13.0	-37.7	
2.45	-59.0	V	3.0	-14.7	34.1	1.0	-47.8	-13.0	-34.8	
3.27	-60.0	V	3.0	-13.2	33.2	1.0	-45.4	-13.0	-32.4	
High Channel (822.75MHz)										
1.65	-57.9	H	3.0	-16.1	35.0	1.0	-50.1	-13.0	-37.1	
2.47	-59.8	H	3.0	-15.7	34.0	1.0	-48.7	-13.0	-35.7	
3.29	-61.0	H	3.0	-14.3	33.2	1.0	-46.5	-13.0	-33.5	
1.66	-59.1	V	3.0	-17.1	35.0	1.0	-51.1	-13.0	-38.1	
2.47	-59.4	V	3.0	-15.1	34.0	1.0	-48.1	-13.0	-35.1	
3.29	-60.7	V	3.0	-13.9	33.2	1.0	-46.1	-13.0	-33.1	

Rev. 03.19.15

10.8.3. UMTS

UMTS REL 99, 850MHz BAND 5

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
 Project #: 15U20162
 Date: 06/10/15
 Test Engineer: T. Pham
 Configuration: EUT Only
 Mode: REL 99, 850MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

3m Chamber D

Pre-amplifier

3m Chamber D

Filter

Filter

Limit

ERP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (826.4MHz)										
1.65	-55.3	H	3.0	-13.5	35.0	1.0	-47.5	-13.0	-34.5	
2.48	-60.8	H	3.0	-16.6	33.9	1.0	-49.5	-13.0	-36.5	
3.31	-64.2	H	3.0	-17.4	33.2	1.0	-49.6	-13.0	-36.6	
1.65	-56.1	V	3.0	-14.1	35.0	1.0	-48.1	-13.0	-35.1	
2.48	-62.0	V	3.0	-17.7	38.5	1.0	-55.2	-13.0	-42.2	
3.31	-64.3	V	3.0	-17.4	33.2	1.0	-49.7	-13.0	-36.7	
Mid Channel (836.6MHz)										
1.67	-53.7	H	3.0	-11.8	35.0	1.0	-45.9	-13.0	-32.9	
2.51	-59.0	H	3.0	-14.7	33.7	1.0	-47.5	-13.0	-34.5	
3.34	-65.7	H	3.0	-18.8	33.3	1.0	-51.0	-13.0	-38.0	
1.67	-54.5	V	3.0	-12.5	35.0	1.0	-46.5	-13.0	-33.5	
2.58	-59.4	V	3.0	-14.7	33.6	1.0	-47.3	-13.0	-34.3	
3.34	-64.6	V	3.0	-17.6	33.3	1.0	-49.8	-13.0	-36.8	
High Channel (846.6MHz)										
1.69	-54.1	H	3.0	-12.2	35.0	1.0	-46.2	-13.0	-33.2	
2.54	-57.6	H	3.0	-13.2	33.7	1.0	-45.9	-13.0	-32.9	
3.39	-65.8	H	3.0	-18.8	33.3	1.0	-51.1	-13.0	-38.1	
1.69	-54.0	V	3.0	-11.9	35.0	1.0	-45.9	-13.0	-32.9	
2.54	-59.8	V	3.0	-15.2	33.7	1.0	-47.9	-13.0	-34.9	
3.39	-64.6	V	3.0	-17.5	33.3	1.0	-49.8	-13.0	-36.8	

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UMTS HSDPA, 850MHz BAND 5

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
 Project #: 15U20162
 Date: 06/10/15
 Test Engineer: T. Pham
 Configuration: EUT only
 Mode: HSDPA 850MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

3m Chamber D

Pre-amplifier

3m Chamber D

Filter

Filter

Limit

ERP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (826.4MHz)										
1.65	-59.6	H	3.0	-17.8	35.0	1.0	-51.8	-13.0	-38.8	
2.48	-64.7	H	3.0	-20.6	33.9	1.0	-53.4	-13.0	-40.4	
3.30	-64.8	H	3.0	-18.1	33.2	1.0	-50.3	-13.0	-37.3	
1.65	-55.1	V	3.0	-13.1	35.0	1.0	-47.1	-13.0	-34.1	
2.48	-65.0	V	3.0	-20.6	33.9	1.0	-53.4	-13.0	-40.4	
3.30	-65.2	V	3.0	-18.4	33.2	1.0	-50.6	-13.0	-37.6	
Mid Channel (836.6MHz)										
1.67	-59.7	H	3.0	-17.9	35.0	1.0	-51.9	-13.0	-38.9	
2.50	-64.8	H	3.0	-20.6	33.7	1.0	-53.3	-13.0	-40.3	
3.26	-64.2	H	3.0	-17.5	33.2	1.0	-49.7	-13.0	-36.7	
1.67	-55.2	V	3.0	-13.2	35.0	1.0	-47.2	-13.0	-34.2	
2.51	-63.9	V	3.0	-19.4	33.7	1.0	-52.1	-13.0	-39.1	
3.30	-64.8	V	3.0	-17.9	33.2	1.0	-50.2	-13.0	-37.2	
High Channel (846.6MHz)										
1.70	-60.1	H	3.0	-18.2	35.0	1.0	-52.2	-13.0	-39.2	
2.54	-65.5	H	3.0	-21.1	33.7	1.0	-53.8	-13.0	-40.8	
3.30	-64.3	H	3.0	-17.6	33.2	1.0	-49.8	-13.0	-36.8	
1.70	-53.9	V	3.0	-11.8	35.0	1.0	-45.8	-13.0	-32.8	
2.54	-64.6	V	3.0	-20.0	33.7	1.0	-52.6	-13.0	-39.6	
3.30	-66.4	V	3.0	-19.5	33.2	1.0	-51.7	-13.0	-38.7	

Rev. 03.19.15

UMTS REL 99, 1900MHz BAND 2

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
 Project #: 15U20162
 Date: 06/10/15
 Test Engineer: T. Pham
 Configuration: EUT Only
 Mode: REL 99, 1900MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

3m Chamber D

Pre-amplifier

3m Chamber D

Filter

Filter

Limit

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1852.4MHz)										
3.70	-64.6	H	3.0	-16.6	33.5	1.0	-49.1	-13.0	-36.1	
5.56	-62.1	H	3.0	-10.8	32.5	1.0	-42.3	-13.0	-29.3	
7.41	-67.5	H	3.0	-13.1	30.4	1.0	-42.5	-13.0	-29.5	
3.70	-63.6	V	3.0	-15.7	33.5	1.0	-48.2	-13.0	-35.2	
5.56	-54.1	V	3.0	-3.1	32.5	1.0	-34.5	-13.0	-21.5	
7.41	-67.0	V	3.0	-12.5	30.4	1.0	-41.9	-13.0	-28.9	
Mid Channel (1880MHz)										
3.76	-66.2	H	3.0	-18.1	33.5	1.0	-50.6	-13.0	-37.6	
5.64	-67.7	H	3.0	-16.3	32.4	1.0	-47.7	-13.0	-34.7	
7.52	-67.3	H	3.0	-12.9	30.3	1.0	-42.1	-13.0	-29.1	
3.76	-66.0	V	3.0	-17.9	33.5	1.0	-50.4	-13.0	-37.4	
5.64	-66.8	V	3.0	-15.5	32.4	1.0	-46.9	-13.0	-33.9	
7.52	-67.6	V	3.0	-13.0	30.3	1.0	-42.2	-13.0	-29.2	
High Channel (1907.6MHz)										
3.82	-65.8	H	3.0	-17.5	33.6	1.0	-50.1	-13.0	-37.1	
5.72	-66.6	H	3.0	-15.0	32.3	1.0	-46.3	-13.0	-33.3	
7.63	-67.1	H	3.0	-12.4	30.1	1.0	-41.5	-13.0	-28.5	
3.82	-65.5	V	3.0	-17.3	33.6	1.0	-49.8	-13.0	-36.8	
5.72	-65.9	V	3.0	-14.5	32.3	1.0	-45.8	-13.0	-32.8	
7.63	-68.2	V	3.0	-13.4	30.1	1.0	-42.5	-13.0	-29.5	

Rev. 03.19.15

UMTS HSDPA, 1900MHz BAND 2

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U20162
Date: 06/10/15
Test Engineer: T. Pham
Configuration: EUT only
Mode: HSDPA 1900MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

Pre-amplifier

Filter

Limit

3m Chamber D

3m Chamber D

Filter

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1852.4MHz)										
3.85	-63.4	H	3.0	-15.0	33.6	1.0	47.6	-13.0	-34.6	
5.69	-66.1	H	3.0	-14.6	32.3	1.0	45.9	-13.0	-32.9	
7.38	-66.9	H	3.0	-12.6	30.4	1.0	42.0	-13.0	-29.0	
3.80	-64.3	V	3.0	-16.1	33.6	1.0	48.7	-13.0	-35.7	
5.54	-66.4	V	3.0	-15.4	32.5	1.0	46.9	-13.0	-33.9	
7.31	-66.4	V	3.0	-11.9	30.5	1.0	41.4	-13.0	-28.4	
Mid Channel (1880MHz)										
3.87	-64.6	H	3.0	-16.1	33.6	1.0	48.7	-13.0	-35.7	
5.86	-64.2	H	3.0	-12.4	32.1	1.0	43.5	-13.0	-30.5	
7.42	-64.7	H	3.0	-10.3	30.4	1.0	39.7	-13.0	-26.7	
3.88	-63.8	V	3.0	-15.3	33.6	1.0	48.0	-13.0	-35.0	
5.53	-64.9	V	3.0	-13.9	32.5	1.0	45.4	-13.0	-32.4	
7.58	-66.2	V	3.0	-11.5	30.2	1.0	40.7	-13.0	-27.7	
High Channel (1907.6MHz)										
4.13	-63.6	H	3.0	-14.5	33.6	1.0	47.1	-13.0	-34.1	
5.85	-63.5	H	3.0	-11.7	32.2	1.0	42.8	-13.0	-29.8	
7.30	-65.7	H	3.0	-11.5	30.5	1.0	41.0	-13.0	-28.0	
3.97	-64.8	V	3.0	-16.1	33.7	1.0	48.8	-13.0	-35.8	
5.84	-63.7	V	3.0	-12.0	32.2	1.0	43.2	-13.0	-30.2	
7.33	-64.8	V	3.0	-10.3	30.5	1.0	39.8	-13.0	-26.8	

Rev. 03.19.15

UMTS REL 99, 1700MHz BAND 4

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
 Project #: 15U20162
 Date: 06/10/15
 Test Engineer: T. Pham
 Configuration: EUT Only
 Mode: REL 99, 1700MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

3m Chamber E

Pre-amplifier

3m Chamber E

Filter

Filter

Limit

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1712.4MHz)										
3.42	-56.4	H	3.0	-7.2	38.5	1.0	-44.7	-13.0	-31.7	
5.14	-67.1	H	3.0	-13.9	38.7	1.0	-51.6	-13.0	-38.6	
6.85	-67.3	H	3.0	-10.4	38.1	1.0	-47.6	-13.0	-34.6	
3.42	-54.0	V	3.0	-5.0	38.5	1.0	-42.5	-13.0	-29.5	
5.14	-65.2	V	3.0	-12.3	38.7	1.0	-50.0	-13.0	-37.0	
6.85	-67.5	V	3.0	-10.9	38.1	1.0	-48.1	-13.0	-35.1	
Mid Channel (1732.6MHz)										
3.47	-57.5	H	3.0	-8.1	38.5	1.0	-45.7	-13.0	-32.7	
5.20	-66.8	H	3.0	-13.5	38.7	1.0	-51.2	-13.0	-38.2	
6.93	-65.0	H	3.0	-8.0	38.1	1.0	-45.1	-13.0	-32.1	
3.47	-56.5	V	3.0	-7.4	38.5	1.0	-44.9	-13.0	-31.9	
5.20	-66.8	V	3.0	-13.8	38.7	1.0	-51.5	-13.0	-38.5	
6.93	-68.0	V	3.0	-11.2	38.1	1.0	-48.3	-13.0	-35.3	
High Channel (1752.6MHz)										
3.51	-55.7	H	3.0	-6.2	38.5	1.0	-43.8	-13.0	-30.8	
5.26	-63.4	H	3.0	-10.0	38.7	1.0	-47.7	-13.0	-34.7	
7.01	-68.6	H	3.0	-11.4	38.1	1.0	-48.5	-13.0	-35.5	
3.51	-62.8	V	3.0	-13.5	38.5	1.0	-51.0	-13.0	-38.0	
5.26	-66.7	V	3.0	-13.6	38.7	1.0	-51.2	-13.0	-38.2	
7.01	-69.1	V	3.0	-12.1	38.1	1.0	-49.2	-13.0	-36.2	

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UMTS HSDPA, 1700MHz BAND 4

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
 Project #: 15U20162
 Date: 06/10/15
 Test Engineer: T. Pham
 Configuration: EUT only
 Mode: HSDPA 1700MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

Pre-amplifier

Filter

Limit

3m Chamber D

3m Chamber D

Filter

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1712.4MHz)										
3.43	-62.4	H	3.0	-15.3	33.3	1.0	-47.6	-13.0	-34.6	
5.22	-65.9	H	3.0	-15.2	32.8	1.0	-47.1	-13.0	-34.1	
7.05	-65.4	H	3.0	-11.5	30.8	1.0	-41.3	-13.0	-28.3	
3.43	-63.2	V	3.0	-16.0	33.3	1.0	-48.3	-13.0	-35.3	
5.17	-66.1	V	3.0	-15.8	32.9	1.0	-47.7	-13.0	-34.7	
6.80	-65.5	V	3.0	-11.8	31.1	1.0	-41.9	-13.0	-28.9	
Mid Channel (1732.6MHz)										
3.47	-63.6	H	3.0	-16.3	33.3	1.0	-48.7	-13.0	-35.7	
5.32	-66.0	H	3.0	-15.1	32.7	1.0	-46.8	-13.0	-33.8	
7.00	-66.3	H	3.0	-12.4	30.9	1.0	-42.3	-13.0	-29.3	
3.47	-64.9	V	3.0	-17.6	33.3	1.0	-49.9	-13.0	-36.9	
5.28	-66.2	V	3.0	-15.8	32.8	1.0	-47.6	-13.0	-34.6	
7.04	-67.4	V	3.0	-13.2	30.8	1.0	-43.0	-13.0	-30.0	
High Channel (1752.6MHz)										
3.98	-65.8	H	3.0	-17.0	33.7	1.0	-49.7	-13.0	-36.7	
5.55	-64.6	H	3.0	-13.3	32.5	1.0	-44.8	-13.0	-31.8	
7.13	-64.7	H	3.0	-10.6	30.7	1.0	-40.4	-13.0	-27.4	
3.95	-64.8	V	3.0	-16.2	33.7	1.0	-48.9	-13.0	-35.9	
5.87	-65.7	V	3.0	-13.9	32.1	1.0	-45.1	-13.0	-32.1	
7.26	-67.1	V	3.0	-12.7	30.6	1.0	-42.3	-13.0	-29.3	

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10.9. FIELD STRENGTH OF SPURIOUS RADIATION, MODEL: A1687 (LAT)

10.9.1. GSM

GPRS, 850MHz BAND 5

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U20163
Date: 06/08/15
Test Engineer: K. Ros
Configuration: EUT Only
Mode: GPRS 850MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

Pre-amplifier

Filter

Limit

3m Chamber D

3m Chamber D

Filter

ERP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (824.2MHz)										
1.65	-50.3	H	3.0	-8.5	35.0	1.0	-42.5	-13.0	-29.5	
2.47	-59.0	H	3.0	-14.9	33.9	1.0	-47.8	-13.0	-34.8	
3.30	-65.7	H	3.0	-19.0	33.2	1.0	-51.2	-13.0	-38.2	
1.65	-47.0	V	3.0	-5.0	35.0	1.0	-39.0	-13.0	-26.0	
2.47	-53.9	V	3.0	-9.5	33.9	1.0	-42.5	-13.0	-29.5	
3.30	-66.2	V	3.0	-19.4	33.2	1.0	-51.6	-13.0	-38.6	
Mid Channel (836.6MHz)										
1.67	-51.3	H	3.0	-9.4	35.0	1.0	-43.4	-13.0	-30.4	
2.51	-61.2	H	3.0	-16.9	33.7	1.0	-49.6	-13.0	-36.6	
3.35	-65.5	H	3.0	-18.6	33.3	1.0	-50.9	-13.0	-37.9	
1.67	-44.7	V	3.0	-2.6	35.0	1.0	-36.7	-13.0	-23.7	
2.51	-56.1	V	3.0	-11.6	33.7	1.0	-44.3	-13.0	-31.3	
3.35	-66.7	V	3.0	-19.7	33.3	1.0	-52.0	-13.0	-39.0	
High Channel (848.8MHz)										
1.70	-56.0	H	3.0	-14.1	35.0	1.0	-48.1	-13.0	-35.1	
2.55	-50.4	H	3.0	-6.0	33.7	1.0	-38.7	-13.0	-25.7	
3.40	-66.9	H	3.0	-19.9	33.3	1.0	-52.2	-13.0	-39.2	
1.70	-48.6	V	3.0	-6.5	35.0	1.0	-40.5	-13.0	-27.5	
2.55	-51.4	V	3.0	-6.8	33.7	1.0	-39.5	-13.0	-26.5	
3.40	-65.7	V	3.0	-18.6	33.3	1.0	-50.9	-13.0	-37.9	

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EGPRS, 850MHz BAND 5

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
 Project #: 15U20163
 Date: 06/08/15
 Test Engineer: K. Ros
 Configuration: EUT Only
 Mode: EGPRS 850MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

Pre-amplifier

Filter

Limit

3m Chamber E

3m Chamber E

Filter

ERP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (824.2MHz)										
1.65	-51.1	H	3.0	-8.7	37.8	1.0	-45.5	-13.0	-32.5	
2.47	-47.9	H	3.0	-2.8	38.5	1.0	-40.3	-13.0	-27.3	
3.30	-65.6	H	3.0	-16.7	38.5	1.0	-54.2	-13.0	-41.2	
1.65	-42.3	V	3.0	-0.2	37.8	1.0	-37.0	-13.0	-24.0	
2.47	-51.0	V	3.0	-5.8	38.5	1.0	-43.3	-13.0	-30.3	
3.30	-66.3	V	3.0	-17.6	38.5	1.0	-55.1	-13.0	-42.1	
Mid Channel (836.6MHz)										
1.67	-51.6	H	3.0	-9.1	37.8	1.0	-46.0	-13.0	-33.0	
2.51	-58.0	H	3.0	-12.8	38.6	1.0	-50.4	-13.0	-37.4	
3.35	-66.8	H	3.0	-17.7	38.5	1.0	-55.2	-13.0	-42.2	
1.67	-42.7	V	3.0	-0.5	37.8	1.0	-37.3	-13.0	-24.3	
2.51	-53.9	V	3.0	-8.5	38.6	1.0	-46.1	-13.0	-33.1	
3.35	-66.4	V	3.0	-17.5	38.5	1.0	-55.0	-13.0	-42.0	
High Channel (848.8MHz)										
1.70	-53.9	H	3.0	-11.4	37.9	1.0	-48.2	-13.0	-35.2	
2.55	-62.6	H	3.0	-17.1	38.6	1.0	-54.7	-13.0	-41.7	
3.40	-66.9	H	3.0	-17.7	38.5	1.0	-55.2	-13.0	-42.2	
1.70	-43.5	V	3.0	-1.1	37.9	1.0	-37.9	-13.0	-24.9	
2.55	-52.1	V	3.0	-6.5	38.6	1.0	-44.1	-13.0	-31.1	
3.40	-66.2	V	3.0	-17.2	38.5	1.0	-54.7	-13.0	-41.7	

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GPRS, 1900MHz BAND 2

**High Frequency Substitution Measurement
 UL Fremont Radiated Chamber**

Company:
Project #: 15U20163
Date: 06/08/15
Test Engineer: K. Ros
Configuration: EUT Only
Mode: GPRS 1900MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifier	Filter	Limit
3m Chamber D	3m Chamber D	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (HV)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1850.2MHz)										
3.70	-65.2	H	3.0	-17.2	33.5	1.0	-49.7	-13.0	-36.7	
5.55	-66.0	H	3.0	-14.7	32.5	1.0	-46.2	-13.0	-33.2	
7.40	-67.8	H	3.0	-13.4	30.4	1.0	-42.8	-13.0	-29.8	
3.70	-65.8	V	3.0	-17.9	33.5	1.0	-50.4	-13.0	-37.4	
5.55	-66.8	V	3.0	-15.7	32.5	1.0	-47.2	-13.0	-34.2	
7.40	-66.7	V	3.0	-12.2	30.4	1.0	-41.6	-13.0	-28.6	
Mid Channel (1880.0)										
3.76	-65.7	H	3.0	-17.6	33.5	1.0	-50.2	-13.0	-37.2	
5.64	-67.9	H	3.0	-16.4	32.4	1.0	-47.8	-13.0	-34.8	
7.52	-69.0	H	3.0	-14.5	30.3	1.0	-43.8	-13.0	-30.8	
3.76	-65.7	V	3.0	-17.6	33.5	1.0	-50.2	-13.0	-37.2	
5.64	-68.5	V	3.0	-17.3	32.4	1.0	-48.7	-13.0	-35.7	
7.52	-68.4	V	3.0	-13.8	30.3	1.0	-43.0	-13.0	-30.0	
High Channel (1909.8MHz)										
3.82	-65.0	H	3.0	-16.7	33.6	1.0	-49.3	-13.0	-36.3	
5.73	-66.2	H	3.0	-14.6	32.3	1.0	-45.9	-13.0	-32.9	
7.64	-68.3	H	3.0	-13.7	30.1	1.0	-42.8	-13.0	-29.8	
3.82	-65.1	V	3.0	-16.8	33.6	1.0	-49.4	-13.0	-36.4	
5.73	-65.9	V	3.0	-14.5	32.3	1.0	-45.8	-13.0	-32.8	
7.64	-69.6	V	3.0	-14.8	30.1	1.0	-43.9	-13.0	-30.9	

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EGPRS, 1900MHz BAND 2

High Frequency Substitution Measurement UL Fremont Radiated Chamber

Company:
Project #: 15U20163
Date: 06/08/15
Test Engineer: K. Ros
Configuration: EUT Only
Mode: EGPRS 1900MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

Pre-amplifier

Filter

Limit

3m Chamber E

3m Chamber E

Filter

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1850.2MHz)										
3.70	-66.1	H	3.0	-16.1	38.6	1.0	-53.7	-13.0	-40.7	
5.55	-66.1	H	3.0	-12.1	38.6	1.0	-49.6	-13.0	-36.6	
7.40	-67.6	H	3.0	-10.0	37.8	1.0	-46.8	-13.0	-33.8	
3.70	-66.1	V	3.0	-16.2	38.6	1.0	-53.8	-13.0	-40.8	
5.55	-67.1	V	3.0	-13.4	38.6	1.0	-50.9	-13.0	-37.9	
7.40	-67.4	V	3.0	-9.9	37.8	1.0	-46.7	-13.0	-33.7	
Mid Channel (1880.0)										
3.76	-66.6	H	3.0	-16.5	38.6	1.0	-54.1	-13.0	-41.1	
5.64	-67.8	H	3.0	-13.5	38.5	1.0	-51.1	-13.0	-38.1	
7.52	-68.3	H	3.0	-10.5	37.7	1.0	-47.3	-13.0	-34.3	
3.76	-65.2	V	3.0	-15.2	38.6	1.0	-52.8	-13.0	-39.8	
5.64	-68.1	V	3.0	-14.2	38.5	1.0	-51.8	-13.0	-38.8	
7.52	-69.3	V	3.0	-11.7	37.7	1.0	-48.4	-13.0	-35.4	
High Channel (1909.8MHz)										
3.82	-64.8	H	3.0	-14.6	38.7	1.0	-52.2	-13.0	-39.2	
5.73	-66.2	H	3.0	-11.8	38.5	1.0	-49.3	-13.0	-36.3	
7.64	-69.5	H	3.0	-11.5	37.7	1.0	-48.2	-13.0	-35.2	
3.82	-64.2	V	3.0	-14.0	38.7	1.0	-51.7	-13.0	-38.7	
5.73	-67.6	V	3.0	-13.4	38.5	1.0	-51.0	-13.0	-38.0	
7.64	-68.7	V	3.0	-10.9	37.7	1.0	-47.6	-13.0	-34.6	

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10.9.2. CDMA2000

CDMA2000 1xRTT, 850MHz BC0

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
 Project #: 15U20163
 Date: 06/08/15
 Test Engineer: K. Ros
 Configuration: EUT Only
 Mode: 1xRTT 850MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

Pre-amplifer

Filter

Limit

3m Chamber D

3m Chamber D

Filter

ERP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (824.7MHz)										
1.65	-60.2	H	3.0	-18.4	35.0	1.0	-52.5	-13.0	-39.5	
2.87	-63.4	H	3.0	-17.9	33.2	1.0	-50.1	-13.0	-37.1	
3.81	-63.8	H	3.0	-15.5	33.6	1.0	-48.1	-13.0	-35.1	
1.65	-57.4	V	3.0	-15.4	35.0	1.0	-49.4	-13.0	-36.4	
2.48	-57.5	V	3.0	-13.1	33.9	1.0	-46.0	-13.0	-33.0	
3.29	-65.1	V	3.0	-18.2	33.2	1.0	-50.5	-13.0	-37.5	
Mid Channel (836.52MHz)										
1.67	-62.8	H	3.0	-20.9	35.0	1.0	-54.9	-13.0	-41.9	
2.45	-64.0	H	3.0	-20.0	34.1	1.0	-53.0	-13.0	-40.0	
5.20	-64.0	H	3.0	-13.3	32.9	1.0	-45.2	-13.0	-32.2	
1.67	-59.6	V	3.0	-17.5	35.0	1.0	-51.5	-13.0	-38.5	
2.51	-60.0	V	3.0	-15.5	33.7	1.0	-48.3	-13.0	-35.3	
3.82	-64.0	V	3.0	-15.8	33.6	1.0	-48.4	-13.0	-35.4	
High Channel (848.31MHz)										
1.70	-62.7	H	3.0	-20.8	35.0	1.0	-54.8	-13.0	-41.8	
2.61	-64.7	H	3.0	-20.1	33.6	1.0	-52.6	-13.0	-39.6	
3.52	-64.3	H	3.0	-16.9	33.4	1.0	-49.3	-13.0	-36.3	
1.70	-58.1	V	3.0	-16.0	35.0	1.0	-50.0	-13.0	-37.0	
2.55	-59.3	V	3.0	-14.7	33.7	1.0	-47.4	-13.0	-34.4	
3.40	-64.1	V	3.0	-17.0	33.3	1.0	-49.3	-13.0	-36.3	

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EVDO-Rev A, 850MHz BC0

**High Frequency Substitution Measurement
 UL Fremont Radiated Chamber**

Company:
 Project #: 15U20163
 Date: 06/08/15
 Test Engineer: K. Ros
 Configuration: EUT Only
 Mode: Rev A 850MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifier	Filter	Limit
3m Chamber D	3m Chamber D	Filter	ERP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (824.7MHz)										
1.29	-56.4	H	3.0	-16.0	34.6	1.0	-49.7	-13.0	-36.7	
2.47	-59.6	H	3.0	-15.5	34.0	1.0	-48.4	-13.0	-35.4	
3.29	-61.7	H	3.0	-15.0	33.2	1.0	-47.2	-13.0	-34.2	
1.45	-57.5	V	3.0	-16.1	34.9	1.0	-50.0	-13.0	-37.0	
2.47	-57.6	V	3.0	-13.3	33.9	1.0	-46.2	-13.0	-33.2	
3.27	-60.9	V	3.0	-14.1	33.2	1.0	-46.3	-13.0	-33.3	
Mid Channel (836.52MHz)										
1.66	-59.0	H	3.0	-17.1	35.0	1.0	-51.2	-13.0	-38.2	
2.50	-59.6	H	3.0	-15.4	33.8	1.0	-48.2	-13.0	-35.2	
3.33	-61.4	H	3.0	-14.6	33.2	1.0	-46.8	-13.0	-33.8	
1.68	-59.0	V	3.0	-16.9	35.0	1.0	-50.9	-13.0	-37.9	
2.51	-60.1	V	3.0	-15.6	33.7	1.0	-48.4	-13.0	-35.4	
3.37	-61.6	V	3.0	-14.6	33.3	1.0	-46.8	-13.0	-33.8	
High Channel (848.31MHz)										
1.21	-57.1	H	3.0	-17.2	34.5	1.0	-50.7	-13.0	-37.7	
2.54	-59.6	H	3.0	-15.2	33.7	1.0	-47.9	-13.0	-34.9	
3.31	-60.1	H	3.0	-13.3	33.2	1.0	-45.5	-13.0	-32.5	
1.29	-56.6	V	3.0	-16.2	34.6	1.0	-49.8	-13.0	-36.8	
2.54	-58.3	V	3.0	-13.7	33.7	1.0	-46.4	-13.0	-33.4	
3.41	-61.9	V	3.0	-14.8	33.3	1.0	-47.1	-13.0	-34.1	

Rev. 03.19.15

CDMA2000 1xRTT, 1900MHz BC1

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
 Project #: 15U20163
 Date: 06/08/15
 Test Engineer: K. Ros
 Configuration: EUT Only
 Mode: 1xRTT 1900MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

Pre-amplifier

Filter

Limit

3m Chamber D

3m Chamber D

Filter

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1851.25MHz)										
3.77	-65.2	H	3.0	-17.0	33.6	1.0	-49.6	-13.0	-36.6	
5.55	-65.6	H	3.0	-14.3	32.5	1.0	-45.8	-13.0	-32.8	
7.41	-68.0	H	3.0	-13.7	30.4	1.0	-43.1	-13.0	-30.1	
3.68	-65.7	V	3.0	-17.8	33.5	1.0	-50.3	-13.0	-37.3	
5.58	-66.1	V	3.0	-15.0	32.5	1.0	-46.4	-13.0	-33.4	
7.36	-67.1	V	3.0	-12.6	30.5	1.0	-42.1	-13.0	-29.1	
Mid Channel (1880MHz)										
3.83	-62.0	H	3.0	-13.7	33.6	1.0	-46.3	-13.0	-33.3	
5.77	-65.0	H	3.0	-13.3	32.2	1.0	-44.6	-13.0	-31.6	
8.02	-66.1	H	3.0	-10.9	29.6	1.0	-39.6	-13.0	-26.6	
3.78	-64.0	V	3.0	-15.9	33.6	1.0	-48.4	-13.0	-35.4	
5.60	-66.9	V	3.0	-15.7	32.4	1.0	-47.1	-13.0	-34.1	
7.51	-68.1	V	3.0	-13.5	30.3	1.0	-42.7	-13.0	-29.7	
High Channel (1908.75MHz)										
3.80	-63.9	H	3.0	-15.7	33.6	1.0	-48.3	-13.0	-35.3	
5.74	-66.0	H	3.0	-14.4	32.3	1.0	-45.7	-13.0	-32.7	
7.66	-67.5	H	3.0	-12.8	30.1	1.0	-41.9	-13.0	-28.9	
3.78	-64.4	H	3.0	-16.2	33.6	1.0	-48.8	-13.0	-35.8	
5.72	-63.4	H	3.0	-11.8	32.3	1.0	-43.1	-13.0	-30.1	
7.64	-68.4	V	3.0	-13.6	30.1	1.0	-42.7	-13.0	-29.7	

Rev. 03.19.15

EVDO-Rev A, 1900MHz BC1

**High Frequency Substitution Measurement
 UL Fremont Radiated Chamber**

Company:
 Project #: 15U20163
 Date: 06/08/15
 Test Engineer: K. Ros
 Configuration: EUT Only
 Mode: Rev 0/A 1900MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifier	Filter	Limit
3m Chamber D	3m Chamber D	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1851.25MHz)										
3.70	-60.7	H	3.0	-12.7	33.5	1.0	-45.2	-13.0	-32.2	
5.55	-62.0	H	3.0	-10.7	32.5	1.0	-42.2	-13.0	-29.2	
7.39	-62.5	H	3.0	-8.2	30.4	1.0	-37.6	-13.0	-24.6	
3.68	-61.0	V	3.0	-13.1	33.5	1.0	-45.6	-13.0	-32.6	
5.55	-61.4	V	3.0	-10.4	32.5	1.0	-41.8	-13.0	-28.8	
7.41	-63.3	V	3.0	-8.7	30.4	1.0	-38.1	-13.0	-25.1	
Mid Channel (1880MHz)										
3.76	-61.6	H	3.0	-13.5	33.5	1.0	-46.1	-13.0	-33.1	
5.56	-60.1	H	3.0	-8.8	32.5	1.0	-40.3	-13.0	-27.3	
7.50	-63.2	H	3.0	-8.7	30.3	1.0	-38.0	-13.0	-25.0	
3.78	-59.5	V	3.0	-11.3	33.6	1.0	-43.9	-13.0	-30.9	
5.51	-59.9	V	3.0	-9.0	32.5	1.0	-40.5	-13.0	-27.5	
7.41	-62.9	V	3.0	-8.3	30.4	1.0	-37.7	-13.0	-24.7	
High Channel (1908.75MHz)										
3.81	-60.7	H	3.0	-12.5	33.6	1.0	-45.0	-13.0	-32.0	
5.77	-60.4	H	3.0	-8.7	32.2	1.0	-40.0	-13.0	-27.0	
7.63	-63.7	H	3.0	-9.0	30.1	1.0	-38.2	-13.0	-25.2	
3.82	-60.6	V	3.0	-12.3	33.6	1.0	-44.9	-13.0	-31.9	
5.73	-61.8	V	3.0	-10.4	32.3	1.0	-41.6	-13.0	-28.6	
7.63	-63.5	V	3.0	-8.7	30.1	1.0	-37.8	-13.0	-24.8	

Rev. 03.19.15

CDMA2000 1xRTT, 1700MHz BC15

**High Frequency Substitution Measurement
 UL Fremont Radiated Chamber**

Company:
 Project #: 15U20163
 Date: 06/08/15
 Test Engineer: K. Ros
 Configuration: EUT Only
 Mode: 1xRTT 1700MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifier	Filter	Limit
3m Chamber D	3m Chamber D	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1711.25MHz)										
3.42	-55.2	H	3.0	-8.0	33.3	1.0	-40.3	-13.0	-27.3	
5.13	-64.5	H	3.0	-13.9	32.9	1.0	-45.8	-13.0	-32.8	
6.85	-67.2	H	3.0	-13.6	31.1	1.0	-43.7	-13.0	-30.7	
3.42	-55.8	V	3.0	-8.6	33.3	1.0	-40.9	-13.0	-27.9	
5.13	-63.6	V	3.0	-13.5	32.9	1.0	-45.4	-13.0	-32.4	
6.83	-66.7	V	3.0	-12.9	31.1	1.0	-43.0	-13.0	-30.0	
Mid Channel (1732.5MHz)										
3.46	-56.2	H	3.0	-9.0	33.3	1.0	-41.3	-13.0	-28.3	
5.20	-65.4	H	3.0	-14.8	32.9	1.0	-46.6	-13.0	-33.6	
6.88	-66.3	H	3.0	-12.6	31.0	1.0	-42.7	-13.0	-29.7	
3.46	-55.3	V	3.0	-8.0	33.3	1.0	-40.4	-13.0	-27.4	
5.20	-65.1	V	3.0	-14.8	32.9	1.0	-46.7	-13.0	-33.7	
6.87	-66.5	V	3.0	-12.6	31.0	1.0	-42.6	-13.0	-29.6	
High Channel (1753.75MHz)										
3.51	-60.8	H	3.0	-13.4	33.4	1.0	-45.8	-13.0	-32.8	
5.29	-66.6	H	3.0	-15.8	32.8	1.0	-47.5	-13.0	-34.5	
7.17	-66.1	H	3.0	-12.1	30.7	1.0	-41.7	-13.0	-28.7	
3.51	-61.4	V	3.0	-14.0	33.4	1.0	-46.4	-13.0	-33.4	
5.21	-65.5	V	3.0	-15.3	32.8	1.0	-47.1	-13.0	-34.1	
6.90	-67.3	V	3.0	-13.4	31.0	1.0	-43.4	-13.0	-30.4	

Rev. 03.19.15

EVDO-Rev A, 1700MHz BC15

**High Frequency Substitution Measurement
 UL Fremont Radiated Chamber**

Company:
 Project #: 15U20163
 Date: 06/08/15
 Test Engineer: K. Ros
 Configuration: EUT Only
 Mode: Rev A 1700MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifier	Filter	Limit
3m Chamber D	3m Chamber D	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1711.25MHz)										
3.42	-61.5	H	3.0	-14.4	33.3	1.0	-46.7	-13.0	-33.7	
5.15	-61.3	H	3.0	-10.7	32.9	1.0	-42.6	-13.0	-29.6	
6.86	-62.7	H	3.0	-9.1	31.0	1.0	-39.1	-13.0	-26.1	
3.42	-60.0	V	3.0	-12.8	33.3	1.0	-45.2	-13.0	-32.2	
5.12	-61.9	V	3.0	-11.7	32.9	1.0	-43.6	-13.0	-30.6	
6.84	-62.8	V	3.0	-9.0	31.1	1.0	-39.0	-13.0	-26.0	
Mid Channel (1732.5MHz)										
3.47	-62.2	H	3.0	-14.9	33.3	1.0	-47.3	-13.0	-34.3	
5.21	-61.1	H	3.0	-10.4	32.9	1.0	-42.2	-13.0	-29.2	
6.93	-63.3	H	3.0	-9.6	31.0	1.0	-39.6	-13.0	-26.6	
3.49	-61.9	V	3.0	-14.6	33.4	1.0	-46.9	-13.0	-33.9	
5.16	-60.5	V	3.0	-10.3	32.9	1.0	-42.2	-13.0	-29.2	
6.92	-62.0	V	3.0	-8.0	31.0	1.0	-38.0	-13.0	-25.0	
High Channel (1753.75MHz)										
3.51	-62.2	H	3.0	-14.8	33.4	1.0	-47.2	-13.0	-34.2	
5.25	-61.2	H	3.0	-10.4	32.8	1.0	-42.2	-13.0	-29.2	
7.02	-63.6	H	3.0	-9.8	30.9	1.0	-39.6	-13.0	-26.6	
3.50	-60.8	V	3.0	-13.4	33.4	1.0	-45.7	-13.0	-32.7	
5.26	-62.3	V	3.0	-11.9	32.8	1.0	-43.7	-13.0	-30.7	
7.01	-63.7	V	3.0	-9.5	30.9	1.0	-39.4	-13.0	-26.4	

Rev. 03.19.15

CDMA2000 1xRTT, 800MHz BC10

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U20163
Date: 06/08/15
Test Engineer: K. Ros
Configuration: EUT Only
Mode: 1xRTT 800MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

Pre-amplifier

Filter

Limit

3m Chamber D

3m Chamber D

Filter

ERP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (817.25MHz)										
1.64	-62.8	H	3.0	-21.1	35.0	1.0	-55.1	-13.0	-42.1	
2.49	-64.0	H	3.0	-19.8	33.8	1.0	-52.6	-13.0	-39.6	
3.26	-66.3	H	3.0	-19.7	33.2	1.0	-51.9	-13.0	-38.9	
1.64	-58.3	V	3.0	-16.3	35.0	1.0	-50.4	-13.0	-37.4	
2.45	-59.6	V	3.0	-15.4	34.1	1.0	-48.4	-13.0	-35.4	
3.27	-59.3	V	3.0	-12.5	33.2	1.0	-44.7	-13.0	-31.7	
Mid Channel (820.00MHz)										
1.64	-62.3	H	3.0	-20.5	35.0	1.0	-54.5	-13.0	-41.5	
2.61	-63.1	H	3.0	-18.5	33.6	1.0	-51.1	-13.0	-38.1	
3.31	-65.6	H	3.0	-18.8	33.2	1.0	-51.0	-13.0	-38.0	
1.64	-58.8	V	3.0	-16.9	35.0	1.0	-50.9	-13.0	-37.9	
2.45	-59.8	V	3.0	-15.6	34.1	1.0	-48.6	-13.0	-35.6	
3.28	-60.2	V	3.0	-13.4	33.2	1.0	-45.6	-13.0	-32.6	
High Channel (822.75MHz)										
1.63	-63.7	H	3.0	-21.9	35.0	1.0	-55.9	-13.0	-42.9	
2.47	-64.5	H	3.0	-20.4	33.9	1.0	-53.3	-13.0	-40.3	
3.28	-65.4	H	3.0	-18.7	33.2	1.0	-50.9	-13.0	-37.9	
1.65	-59.2	V	3.0	-17.2	35.0	1.0	-51.3	-13.0	-38.3	
2.46	-60.0	V	3.0	-15.7	34.0	1.0	-48.7	-13.0	-35.7	
3.29	-63.5	V	3.0	-16.7	33.2	1.0	-48.9	-13.0	-35.9	

Rev. 03.19.15

EVDO-Rev A, 800MHz BC10

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company: 15U20163
 Project #: 15U20163
 Date: 06/08/15
 Test Engineer: K. Ros
 Configuration: EUT Only
 Mode: Rev A 800MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

Pre-amplifier

Filter

Limit

3m Chamber D

3m Chamber D

Filter

ERP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (817.25MHz)										
1.64	-59.1	H	3.0	-17.4	35.0	1.0	-51.4	-13.0	-38.4	
2.44	-59.9	H	3.0	-15.9	34.1	1.0	-49.0	-13.0	-36.0	
3.27	-60.8	H	3.0	-14.1	33.2	1.0	-46.3	-13.0	-33.3	
1.63	-59.0	V	3.0	-17.0	35.0	1.0	-51.0	-13.0	-38.0	
2.45	-59.9	V	3.0	-15.6	34.1	1.0	-48.7	-13.0	-35.7	
3.27	-61.5	V	3.0	-14.7	33.2	1.0	-46.9	-13.0	-33.9	
Mid Channel (820.00MHz)										
1.63	-58.9	H	3.0	-17.1	35.0	1.0	-51.2	-13.0	-38.2	
2.46	-60.6	H	3.0	-16.5	34.0	1.0	-49.6	-13.0	-36.6	
3.28	-61.5	H	3.0	-14.8	33.2	1.0	-47.0	-13.0	-34.0	
1.64	-58.9	V	3.0	-16.9	35.0	1.0	-51.0	-13.0	-38.0	
2.45	-60.0	V	3.0	-15.8	34.1	1.0	-48.8	-13.0	-35.8	
3.27	-60.4	V	3.0	-13.6	33.2	1.0	-45.8	-13.0	-32.8	
High Channel (822.75MHz)										
1.65	-58.7	H	3.0	-16.9	35.0	1.0	-50.9	-13.0	-37.9	
2.47	-60.2	H	3.0	-16.2	34.0	1.0	-49.1	-13.0	-36.1	
3.29	-61.8	H	3.0	-15.0	33.2	1.0	-47.2	-13.0	-34.2	
1.66	-60.0	V	3.0	-18.0	35.0	1.0	-52.0	-13.0	-39.0	
2.47	-60.3	V	3.0	-16.0	34.0	1.0	-48.9	-13.0	-35.9	
3.29	-61.7	V	3.0	-14.8	33.2	1.0	-47.1	-13.0	-34.1	

Rev. 03.19.15

10.9.3. UMTS

UMTS REL 99, 850MHz BAND 5

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
 Project #: 15U20163
 Date: 06/08/15
 Test Engineer: K. Ros
 Configuration: EUT Only
 Mode: REL 99, 850MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

3m Chamber D

Pre-amplifier

3m Chamber D

Filter

Filter

Limit

ERP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (826.4MHz)										
1.65	-52.4	H	3.0	-10.6	35.0	1.0	-44.6	-13.0	-31.6	
2.48	-60.8	H	3.0	-16.6	33.9	1.0	-49.5	-13.0	-36.5	
3.31	-66.2	H	3.0	-19.4	33.2	1.0	-51.6	-13.0	-38.6	
1.65	-54.5	V	3.0	-12.5	35.0	1.0	-46.5	-13.0	-33.5	
2.48	-60.3	V	3.0	-15.9	38.5	1.0	-53.4	-13.0	-40.4	
3.31	-64.6	V	3.0	-17.7	33.2	1.0	-50.0	-13.0	-37.0	
Mid Channel (836.6MHz)										
1.67	-54.3	H	3.0	-12.4	35.0	1.0	-46.5	-13.0	-33.5	
2.51	-60.2	H	3.0	-15.9	33.7	1.0	-48.6	-13.0	-35.6	
3.34	-65.9	H	3.0	-19.0	33.3	1.0	-51.2	-13.0	-38.2	
1.67	-55.2	V	3.0	-13.2	35.0	1.0	-47.2	-13.0	-34.2	
2.58	-59.6	V	3.0	-14.9	33.6	1.0	-47.5	-13.0	-34.5	
3.34	-64.8	V	3.0	-17.8	33.3	1.0	-50.0	-13.0	-37.0	
High Channel (846.6MHz)										
1.69	-54.5	H	3.0	-12.6	35.0	1.0	-46.6	-13.0	-33.6	
2.54	-60.7	H	3.0	-16.3	33.7	1.0	-49.0	-13.0	-36.0	
3.39	-66.0	H	3.0	-19.0	33.3	1.0	-51.2	-13.0	-38.2	
1.69	-53.8	V	3.0	-11.7	35.0	1.0	-45.7	-13.0	-32.7	
2.54	-59.6	V	3.0	-15.0	33.7	1.0	-47.7	-13.0	-34.7	
3.39	-64.7	V	3.0	-17.6	33.3	1.0	-49.8	-13.0	-36.8	

Rev. 03.19.15

UMTS HSDPA, 850MHz BAND 5

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U20163
Date: 06/08/15
Test Engineer: K. Ros
Configuration: EUT only
Mode: HSDPA 850MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

Pre-amplifier

Filter

Limit

3m Chamber D

3m Chamber D

Filter

ERP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (826.4MHz)										
1.65	-59.8	H	3.0	-18.0	35.0	1.0	-52.0	-13.0	-39.0	
2.48	-64.8	H	3.0	-20.7	33.9	1.0	-53.5	-13.0	-40.5	
3.30	-65.0	H	3.0	-18.2	33.2	1.0	-50.4	-13.0	-37.4	
1.65	-55.3	V	3.0	-13.3	35.0	1.0	-47.3	-13.0	-34.3	
2.48	-65.0	V	3.0	-20.6	33.9	1.0	-53.5	-13.0	-40.5	
3.30	-65.3	V	3.0	-18.4	33.2	1.0	-50.6	-13.0	-37.6	
Mid Channel (836.6MHz)										
1.67	-59.8	H	3.0	-18.0	35.0	1.0	-52.0	-13.0	-39.0	
2.50	-64.8	H	3.0	-20.6	33.7	1.0	-53.3	-13.0	-40.3	
3.26	-66.2	H	3.0	-19.5	33.2	1.0	-51.7	-13.0	-38.7	
1.67	-55.4	V	3.0	-13.3	35.0	1.0	-47.4	-13.0	-34.4	
2.51	-63.9	V	3.0	-19.5	33.7	1.0	-52.2	-13.0	-39.2	
3.30	-65.1	V	3.0	-18.2	33.2	1.0	-50.5	-13.0	-37.5	
High Channel (846.6MHz)										
1.70	-60.2	H	3.0	-18.3	35.0	1.0	-52.3	-13.0	-39.3	
2.54	-65.8	H	3.0	-21.4	33.7	1.0	-54.1	-13.0	-41.1	
3.30	-64.5	H	3.0	-17.8	33.2	1.0	-50.0	-13.0	-37.0	
1.70	-54.1	V	3.0	-12.0	35.0	1.0	-46.0	-13.0	-33.0	
2.54	-64.7	V	3.0	-20.1	33.7	1.0	-52.7	-13.0	-39.7	
3.30	-66.6	V	3.0	-19.7	33.2	1.0	-51.9	-13.0	-38.9	

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UMTS REL 99, 1900MHz BAND 2

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U20163
Date: 06/08/15
Test Engineer: K. Ros
Configuration: EUT Only
Mode: REL 99, 1900MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

3m Chamber D

Pre-amplifier

3m Chamber D

Filter

Filter

Limit

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1852.4MHz)										
3.70	-65.5	H	3.0	-17.5	33.5	1.0	-50.0	-13.0	-37.0	
5.56	-59.4	H	3.0	-8.0	32.5	1.0	-39.5	-13.0	-26.5	
7.41	-68.0	H	3.0	-13.7	30.4	1.0	-43.1	-13.0	-30.1	
3.70	-64.2	V	3.0	-16.3	33.5	1.0	-48.8	-13.0	-35.8	
5.56	-63.5	V	3.0	-12.5	32.5	1.0	-43.9	-13.0	-30.9	
7.41	-68.0	V	3.0	-13.5	30.4	1.0	-42.9	-13.0	-29.9	
Mid Channel (1880MHz)										
3.76	-67.0	H	3.0	-18.9	33.5	1.0	-51.4	-13.0	-38.4	
5.64	-67.9	H	3.0	-16.5	32.4	1.0	-47.9	-13.0	-34.9	
7.52	-68.2	H	3.0	-13.7	30.3	1.0	-43.0	-13.0	-30.0	
3.76	-66.6	V	3.0	-18.5	33.5	1.0	-51.0	-13.0	-38.0	
5.64	-67.6	V	3.0	-16.4	32.4	1.0	-47.8	-13.0	-34.8	
7.52	-68.6	V	3.0	-13.9	30.3	1.0	-43.2	-13.0	-30.2	
High Channel (1907.6MHz)										
3.82	-66.0	H	3.0	-17.7	33.6	1.0	-50.3	-13.0	-37.3	
5.72	-66.6	H	3.0	-15.0	32.3	1.0	-46.3	-13.0	-33.3	
7.63	-69.2	H	3.0	-14.5	30.1	1.0	-43.7	-13.0	-30.7	
3.82	-66.4	V	3.0	-18.1	33.6	1.0	-50.7	-13.0	-37.7	
5.72	-66.8	V	3.0	-15.4	32.3	1.0	-46.7	-13.0	-33.7	
7.63	-69.4	V	3.0	-14.6	30.1	1.0	-43.7	-13.0	-30.7	

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UMTS HSDPA, 1900MHz BAND 2

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U20163
Date: 06/08/15
Test Engineer: K. Ros
Configuration: EUT only
Mode: HSDPA 1900MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

3m Chamber D

Pre-amplifier

3m Chamber D

Filter

Filter

Limit

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1852.4MHz)										
3.85	-64.4	H	3.0	-16.0	33.6	1.0	-48.6	-13.0	-35.6	
5.69	-67.1	H	3.0	-15.6	32.3	1.0	-46.9	-13.0	-33.9	
7.38	-67.2	H	3.0	-12.9	30.4	1.0	-42.3	-13.0	-29.3	
3.80	-65.6	V	3.0	-17.3	33.6	1.0	-49.9	-13.0	-36.9	
5.54	-66.7	V	3.0	-15.7	32.5	1.0	-47.1	-13.0	-34.1	
7.31	-66.5	V	3.0	-12.1	30.5	1.0	-41.6	-13.0	-28.6	
Mid Channel (1880MHz)										
3.87	-64.7	H	3.0	-16.3	33.6	1.0	-48.9	-13.0	-35.9	
5.86	-65.2	H	3.0	-13.3	32.1	1.0	-44.5	-13.0	-31.5	
7.42	-67.5	H	3.0	-13.2	30.4	1.0	-42.6	-13.0	-29.6	
3.88	-64.2	V	3.0	-15.8	33.6	1.0	-48.4	-13.0	-35.4	
5.53	-65.8	V	3.0	-14.8	32.5	1.0	-46.3	-13.0	-33.3	
7.58	-66.9	V	3.0	-12.2	30.2	1.0	-41.4	-13.0	-28.4	
High Channel (1907.6MHz)										
4.13	-64.6	H	3.0	-15.6	33.6	1.0	-48.2	-13.0	-35.2	
5.85	-64.6	H	3.0	-12.8	32.2	1.0	-44.0	-13.0	-31.0	
7.30	-66.5	H	3.0	-12.2	30.5	1.0	-41.8	-13.0	-28.8	
3.97	-65.9	V	3.0	-17.3	33.7	1.0	-50.0	-13.0	-37.0	
5.84	-64.3	V	3.0	-12.6	32.2	1.0	-43.8	-13.0	-30.8	
7.33	-65.9	V	3.0	-11.4	30.5	1.0	-40.9	-13.0	-27.9	

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UMTS REL 99, 1700MHz BAND 4

**High Frequency Substitution Measurement
 UL Fremont Radiated Chamber**

Company:
Project #: 15U20163
Date: 06/08/15
Test Engineer: K. Ros
Configuration: EUT Only
Mode: REL 99, 1700MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifier	Filter	Limit
3m Chamber E	3m Chamber E	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1712.4MHz)										
3.42	-56.6	H	3.0	-7.4	38.5	1.0	-44.9	-13.0	-31.9	
5.14	-67.2	H	3.0	-14.0	38.7	1.0	-51.7	-13.0	-38.7	
6.85	-67.5	H	3.0	-10.6	38.1	1.0	-47.7	-13.0	-34.7	
3.42	-54.3	V	3.0	-5.2	38.5	1.0	-42.7	-13.0	-29.7	
5.14	-65.2	V	3.0	-12.3	38.7	1.0	-50.0	-13.0	-37.0	
6.85	-67.6	V	3.0	-11.0	38.1	1.0	-48.1	-13.0	-35.1	
Mid Channel (1732.6MHz)										
3.47	-57.6	H	3.0	-8.2	38.5	1.0	-45.8	-13.0	-32.8	
5.20	-66.8	H	3.0	-13.5	38.7	1.0	-51.2	-13.0	-38.2	
6.93	-67.0	H	3.0	-10.0	38.1	1.0	-47.1	-13.0	-34.1	
3.47	-56.7	V	3.0	-7.5	38.5	1.0	-45.1	-13.0	-32.1	
5.20	-66.8	V	3.0	-13.9	38.7	1.0	-51.6	-13.0	-38.6	
6.93	-68.3	V	3.0	-11.5	38.1	1.0	-48.6	-13.0	-35.6	
High Channel (1752.6MHz)										
3.51	-55.8	H	3.0	-6.3	38.5	1.0	-43.9	-13.0	-30.9	
5.26	-63.7	H	3.0	-10.3	38.7	1.0	-48.0	-13.0	-35.0	
7.01	-68.8	H	3.0	-11.6	38.1	1.0	-48.7	-13.0	-35.7	
3.51	-63.0	V	3.0	-13.7	38.5	1.0	-51.2	-13.0	-38.2	
5.26	-66.8	V	3.0	-13.7	38.7	1.0	-51.3	-13.0	-38.3	
7.01	-69.3	V	3.0	-12.3	38.1	1.0	-49.4	-13.0	-36.4	

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UMTS HSDPA, 1700MHz BAND 4

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U20163
Date: 06/08/15
Test Engineer: K. Ros
Configuration: EUT only
Mode: HSDPA 1700MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

3m Chamber D

Pre-amplifier

3m Chamber D

Filter

Filter

Limit

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1712.4MHz)										
3.43	-62.5	H	3.0	-15.4	33.3	1.0	-47.7	-13.0	-34.7	
5.22	-66.2	H	3.0	-15.5	32.8	1.0	-47.4	-13.0	-34.4	
7.05	-65.6	H	3.0	-11.7	30.8	1.0	-41.5	-13.0	-28.5	
3.43	-63.4	V	3.0	-16.2	33.3	1.0	-48.5	-13.0	-35.5	
5.17	-66.2	V	3.0	-15.9	32.9	1.0	-47.8	-13.0	-34.8	
6.80	-65.7	V	3.0	-12.0	31.1	1.0	-42.1	-13.0	-29.1	
Mid Channel (1732.6MHz)										
3.47	-63.8	H	3.0	-16.5	33.3	1.0	-48.9	-13.0	-35.9	
5.32	-66.1	H	3.0	-15.2	32.7	1.0	-46.9	-13.0	-33.9	
7.00	-66.4	H	3.0	-12.6	30.9	1.0	-42.5	-13.0	-29.5	
3.47	-65.1	V	3.0	-17.8	33.3	1.0	-50.1	-13.0	-37.1	
5.28	-66.3	V	3.0	-15.8	32.8	1.0	-47.6	-13.0	-34.6	
7.04	-67.4	V	3.0	-13.2	30.8	1.0	-43.1	-13.0	-30.1	
High Channel (1752.6MHz)										
3.98	-65.9	H	3.0	-17.1	33.7	1.0	-49.8	-13.0	-36.8	
5.55	-64.6	H	3.0	-13.3	32.5	1.0	-44.8	-13.0	-31.8	
7.13	-66.7	H	3.0	-12.6	30.7	1.0	-42.4	-13.0	-29.4	
3.95	-65.0	V	3.0	-16.4	33.7	1.0	-49.1	-13.0	-36.1	
5.87	-65.7	V	3.0	-14.0	32.1	1.0	-45.1	-13.0	-32.1	
7.26	-67.4	V	3.0	-13.0	30.6	1.0	-42.6	-13.0	-29.6	

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10.1. FIELD STRENGTH OF SPURIOUS RADIATION, MODEL: A1687 (UAT)

10.1.1. GSM

GPRS, 850MHz BAND 5

High Frequency Substitution Measurement
 UL Fremont Radiated Chamber

Company:
Project #: 15U20163
Date: 06/09/15
Test Engineer: T. Pham
Configuration: EUT Only
Mode: GPRS 850MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

Pre-amplifier

Filter

Limit

3m Chamber D

3m Chamber D

Filter

ERP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (824.2MHz)										
1.65	-49.8	H	3.0	-8.0	35.0	1.0	-42.0	-13.0	-29.0	
2.47	-58.1	H	3.0	-14.0	33.9	1.0	-46.9	-13.0	-33.9	
3.30	-65.3	H	3.0	-18.6	33.2	1.0	-50.8	-13.0	-37.8	
1.65	-46.1	V	3.0	-4.1	35.0	1.0	-38.2	-13.0	-25.2	
2.47	-53.2	V	3.0	-8.9	33.9	1.0	-41.8	-13.0	-28.8	
3.30	-66.1	V	3.0	-19.3	33.2	1.0	-51.5	-13.0	-38.5	
Mid Channel (836.6MHz)										
1.67	-50.6	H	3.0	-8.7	35.0	1.0	-42.7	-13.0	-29.7	
2.51	-60.0	H	3.0	-15.7	33.7	1.0	-48.4	-13.0	-35.4	
3.35	-64.6	H	3.0	-17.7	33.3	1.0	-50.0	-13.0	-37.0	
1.67	-43.9	V	3.0	-1.8	35.0	1.0	-35.9	-13.0	-22.9	
2.51	-55.2	V	3.0	-10.7	33.7	1.0	-43.5	-13.0	-30.5	
3.35	-65.8	V	3.0	-18.8	33.3	1.0	-51.0	-13.0	-38.0	
High Channel (848.8MHz)										
1.70	-55.3	H	3.0	-13.4	35.0	1.0	-47.4	-13.0	-34.4	
2.55	-50.0	H	3.0	-5.6	33.7	1.0	-38.3	-13.0	-25.3	
3.40	-66.5	H	3.0	-19.5	33.3	1.0	-51.8	-13.0	-38.8	
1.70	-48.1	V	3.0	-6.0	35.0	1.0	-40.1	-13.0	-27.1	
2.55	-50.7	V	3.0	-6.0	33.7	1.0	-38.7	-13.0	-25.7	
3.40	-65.0	V	3.0	-17.8	33.3	1.0	-50.1	-13.0	-37.1	

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EGPRS, 850MHz BAND 5

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U20163
Date: 06/09/15
Test Engineer: T. Pham
Configuration: EUT Only
Mode: EGPRS 850MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

3m Chamber D

Pre-amplifier

3m Chamber D

Filter

Filter

Limit

ERP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (824.2MHz)										
1.65	-59.6	H	3.0	-17.8	35.0	1.0	-51.8	-13.0	-38.8	
2.47	-60.2	H	3.0	-16.1	33.9	1.0	-49.0	-13.0	-36.0	
3.30	-65.3	H	3.0	-18.6	33.2	1.0	-50.8	-13.0	-37.8	
1.65	-58.2	V	3.0	-16.2	35.0	1.0	-50.2	-13.0	-37.2	
2.47	-60.5	V	3.0	-16.2	33.9	1.0	-49.1	-13.0	-36.1	
3.30	-66.2	V	3.0	-19.3	33.2	1.0	-51.6	-13.0	-38.6	
Mid Channel (836.6MHz)										
1.67	-59.4	H	3.0	-17.5	35.0	1.0	-51.6	-13.0	-38.6	
2.51	-61.2	H	3.0	-16.9	33.7	1.0	-49.6	-13.0	-36.6	
3.35	-66.3	H	3.0	-19.4	33.3	1.0	-51.7	-13.0	-38.7	
1.67	-54.5	V	3.0	-12.5	35.0	1.0	-46.5	-13.0	-33.5	
2.51	-61.3	V	3.0	-16.8	33.7	1.0	-49.5	-13.0	-36.5	
3.35	-65.1	V	3.0	-18.1	33.3	1.0	-50.4	-13.0	-37.4	
High Channel (848.8MHz)										
1.70	-57.7	H	3.0	-15.8	35.0	1.0	-49.8	-13.0	-36.8	
2.55	-61.3	H	3.0	-16.9	33.7	1.0	-49.6	-13.0	-36.6	
3.40	-66.2	H	3.0	-19.2	33.3	1.0	-51.5	-13.0	-38.5	
1.70	-59.0	V	3.0	-16.9	35.0	1.0	-50.9	-13.0	-37.9	
2.55	-61.1	V	3.0	-16.5	33.7	1.0	-49.2	-13.0	-36.2	
3.40	-65.1	V	3.0	-18.0	33.3	1.0	-50.3	-13.0	-37.3	

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GPRS, 1900MHz BAND 2

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U20163
Date: 06/09/15
Test Engineer: T. Pham
Configuration: EUT Only
Mode: GPRS 1900MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

3m Chamber D

Pre-amplifier

3m Chamber D

Filter

Filter

Limit

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1850.2MHz)										
3.70	-64.6	H	3.0	-16.6	33.5	1.0	49.1	-13.0	-36.1	
5.55	-65.4	H	3.0	-14.1	32.5	1.0	45.6	-13.0	-32.6	
7.40	-66.8	H	3.0	-12.5	30.4	1.0	41.9	-13.0	-28.9	
3.70	-65.4	V	3.0	-17.5	33.5	1.0	50.0	-13.0	-37.0	
5.55	-65.8	V	3.0	-14.8	32.5	1.0	46.2	-13.0	-33.2	
7.40	-66.3	V	3.0	-11.8	30.4	1.0	41.2	-13.0	-28.2	
Mid Channel (1880.0)										
3.76	-63.6	H	3.0	-15.5	33.5	1.0	48.0	-13.0	-35.0	
5.64	-64.9	H	3.0	-13.5	32.4	1.0	44.9	-13.0	-31.9	
7.52	-66.7	H	3.0	-12.2	30.3	1.0	41.5	-13.0	-28.5	
3.76	-64.5	V	3.0	-16.4	33.5	1.0	48.9	-13.0	-35.9	
5.64	-64.8	V	3.0	-13.6	32.4	1.0	45.0	-13.0	-32.0	
7.52	-66.0	V	3.0	-11.3	30.3	1.0	40.6	-13.0	-27.6	
High Channel (1909.8MHz)										
3.82	-64.2	H	3.0	-15.9	33.6	1.0	48.5	-13.0	-35.5	
5.73	-66.2	H	3.0	-14.6	32.3	1.0	45.9	-13.0	-32.9	
7.64	-68.0	H	3.0	-13.3	30.1	1.0	42.4	-13.0	-29.4	
3.82	-64.7	V	3.0	-16.4	33.6	1.0	49.0	-13.0	-36.0	
5.73	-65.2	V	3.0	-13.8	32.3	1.0	45.1	-13.0	-32.1	
7.64	-68.6	V	3.0	-13.9	30.1	1.0	43.0	-13.0	-30.0	

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EGPRS, 1900MHz BAND 2

High Frequency Substitution Measurement UL Fremont Radiated Chamber

Company:
Project #: 15U20163
Date: 06/09/15
Test Engineer: T. Pham
Configuration: EUT Only
Mode: EGPRS 1900MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

Pre-amplifier

Filter

Limit

3m Chamber E

3m Chamber E

Filter

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1850.2MHz)										
3.70	-65.4	H	3.0	-15.4	38.6	1.0	-53.0	-13.0	-40.0	
5.55	-65.8	H	3.0	-11.7	38.6	1.0	-49.3	-13.0	-36.3	
7.40	-67.1	H	3.0	-9.4	37.8	1.0	-46.3	-13.0	-33.3	
3.70	-65.2	V	3.0	-15.4	38.6	1.0	-53.0	-13.0	-40.0	
5.55	-66.9	V	3.0	-13.2	38.6	1.0	-50.7	-13.0	-37.7	
7.40	-66.8	V	3.0	-9.3	37.8	1.0	-46.1	-13.0	-33.1	
Mid Channel (1880.0)										
3.76	-66.2	H	3.0	-16.1	38.6	1.0	-53.7	-13.0	-40.7	
5.64	-67.6	H	3.0	-13.3	38.5	1.0	-50.9	-13.0	-37.9	
7.52	-68.0	H	3.0	-10.2	37.7	1.0	-46.9	-13.0	-33.9	
3.76	-64.4	V	3.0	-14.4	38.6	1.0	-52.0	-13.0	-39.0	
5.64	-68.0	V	3.0	-14.1	38.5	1.0	-51.6	-13.0	-38.6	
7.52	-69.2	V	3.0	-11.6	37.7	1.0	-48.3	-13.0	-35.3	
High Channel (1909.8MHz)										
3.82	-64.5	H	3.0	-14.2	38.7	1.0	-51.9	-13.0	-38.9	
5.73	-66.2	H	3.0	-11.7	38.5	1.0	-49.2	-13.0	-36.2	
7.64	-68.9	H	3.0	-10.9	37.7	1.0	-47.6	-13.0	-34.6	
3.82	-63.4	V	3.0	-13.2	38.7	1.0	-50.9	-13.0	-37.9	
5.73	-67.0	V	3.0	-12.9	38.5	1.0	-50.4	-13.0	-37.4	
7.64	-68.3	V	3.0	-10.5	37.7	1.0	-47.2	-13.0	-34.2	

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10.1.2. CDMA2000

CDMA2000 1xRTT, 850MHz BC0

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
 Project #: 15U20163
 Date: 06/09/15
 Test Engineer: T. Pham
 Configuration: EUT Only
 Mode: 1xRTT 850MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

Pre-amplifier

Filter

Limit

3m Chamber D

3m Chamber D

Filter

ERP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (824.7MHz)										
1.65	-59.8	H	3.0	-18.1	35.0	1.0	-52.1	-13.0	-39.1	
2.87	-63.3	H	3.0	-17.8	33.2	1.0	-50.1	-13.0	-37.1	
3.81	-63.1	H	3.0	-14.8	33.6	1.0	-47.4	-13.0	-34.4	
1.65	-56.9	V	3.0	-14.9	35.0	1.0	-49.0	-13.0	-36.0	
2.48	-57.2	V	3.0	-12.9	33.9	1.0	-45.8	-13.0	-32.8	
3.29	-64.5	V	3.0	-17.6	33.2	1.0	-49.9	-13.0	-36.9	
Mid Channel (836.52MHz)										
1.67	-62.2	H	3.0	-20.4	35.0	1.0	-54.4	-13.0	-41.4	
2.45	-63.5	H	3.0	-19.5	34.1	1.0	-52.5	-13.0	-39.5	
5.20	-63.5	H	3.0	-12.9	32.9	1.0	-44.7	-13.0	-31.7	
1.67	-59.5	V	3.0	-17.5	35.0	1.0	-51.5	-13.0	-38.5	
2.51	-59.9	V	3.0	-15.4	33.7	1.0	-48.1	-13.0	-35.1	
3.82	-63.1	V	3.0	-14.8	33.6	1.0	-47.4	-13.0	-34.4	
High Channel (848.31MHz)										
1.70	-61.7	H	3.0	-19.8	35.0	1.0	-53.8	-13.0	-40.8	
2.61	-63.8	H	3.0	-19.2	33.6	1.0	-51.8	-13.0	-38.8	
3.52	-63.4	H	3.0	-16.0	33.4	1.0	-48.3	-13.0	-35.3	
1.70	-57.6	V	3.0	-15.5	35.0	1.0	-49.5	-13.0	-36.5	
2.55	-58.7	V	3.0	-14.1	33.7	1.0	-46.8	-13.0	-33.8	
3.40	-63.6	V	3.0	-16.5	33.3	1.0	-48.8	-13.0	-35.8	

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EVDO-Rev A, 850MHz BC0

**High Frequency Substitution Measurement
 UL Fremont Radiated Chamber**

Company:
 Project #: 15U20163
 Date: 06/09/15
 Test Engineer: T. Pham
 Configuration: EUT Only
 Mode: Rev A 850MHz

Test Equipment:

Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifier	Filter	Limit
3m Chamber D	3m Chamber D	Filter	ERP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (824.7MHz)										
1.29	-55.4	H	3.0	-15.1	34.6	1.0	-48.7	-13.0	-35.7	
2.47	-58.8	H	3.0	-14.7	34.0	1.0	-47.7	-13.0	-34.7	
3.29	-61.1	H	3.0	-14.4	33.2	1.0	-46.6	-13.0	-33.6	
1.45	-57.0	V	3.0	-15.6	34.9	1.0	-49.5	-13.0	-36.5	
2.47	-57.2	V	3.0	-12.9	33.9	1.0	-45.8	-13.0	-32.8	
3.27	-60.6	V	3.0	-13.8	33.2	1.0	-46.0	-13.0	-33.0	
Mid Channel (836.52MHz)										
1.66	-58.1	H	3.0	-16.3	35.0	1.0	-50.3	-13.0	-37.3	
2.50	-59.0	H	3.0	-14.8	33.8	1.0	-47.6	-13.0	-34.6	
3.33	-61.1	H	3.0	-14.3	33.2	1.0	-46.5	-13.0	-33.5	
1.68	-58.7	V	3.0	-16.7	35.0	1.0	-50.7	-13.0	-37.7	
2.51	-59.7	V	3.0	-15.2	33.7	1.0	-47.9	-13.0	-34.9	
3.37	-60.7	V	3.0	-13.7	33.3	1.0	-45.9	-13.0	-32.9	
High Channel (848.31MHz)										
1.21	-56.3	H	3.0	-16.4	34.5	1.0	-49.9	-13.0	-36.9	
2.54	-59.3	H	3.0	-14.9	33.7	1.0	-47.6	-13.0	-34.6	
3.31	-59.2	H	3.0	-12.4	33.2	1.0	-44.6	-13.0	-31.6	
1.29	-55.7	V	3.0	-15.3	34.6	1.0	-48.9	-13.0	-35.9	
2.54	-58.1	V	3.0	-13.5	33.7	1.0	-46.1	-13.0	-33.1	
3.41	-61.2	V	3.0	-14.1	33.3	1.0	-46.4	-13.0	-33.4	

Rev. 03.19.15

CDMA2000 1xRTT, 1900MHz BC1

High Frequency Substitution Measurement

UL Fremont Radiated Chamber

Company:
Project #: 15U20163
Date: 06/09/15
Test Engineer: T. Pham
Configuration: EUT Only
Mode: 1xRTT 1900MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber
 3m Chamber D

Pre-amplifier
 3m Chamber D

Filter
 Filter

Limit
 EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1851.25MHz)										
3.77	-64.3	H	3.0	-16.1	33.6	1.0	-48.7	-13.0	-35.7	
5.55	-65.1	H	3.0	-13.8	32.5	1.0	-45.3	-13.0	-32.3	
7.41	-67.4	H	3.0	-13.0	30.4	1.0	-42.4	-13.0	-29.4	
3.68	-64.8	V	3.0	-16.9	33.5	1.0	-49.4	-13.0	-36.4	
5.58	-66.0	V	3.0	-15.0	32.5	1.0	-46.4	-13.0	-33.4	
7.36	-67.0	V	3.0	-12.5	30.5	1.0	-42.0	-13.0	-29.0	
Mid Channel (1880MHz)										
3.83	-62.0	H	3.0	-13.7	33.6	1.0	-46.3	-13.0	-33.3	
5.77	-64.8	H	3.0	-13.1	32.2	1.0	-44.4	-13.0	-31.4	
8.02	-65.1	H	3.0	-10.0	29.6	1.0	-38.7	-13.0	-25.7	
3.78	-63.2	V	3.0	-15.0	33.6	1.0	-47.6	-13.0	-34.6	
5.60	-66.5	V	3.0	-15.4	32.4	1.0	-46.8	-13.0	-33.8	
7.51	-67.8	V	3.0	-13.1	30.3	1.0	-42.4	-13.0	-29.4	
High Channel (1908.75MHz)										
3.80	-63.3	H	3.0	-15.0	33.6	1.0	-47.6	-13.0	-34.6	
5.74	-65.3	H	3.0	-13.7	32.3	1.0	-44.9	-13.0	-31.9	
7.66	-66.8	H	3.0	-12.1	30.1	1.0	-41.2	-13.0	-28.2	
3.78	-63.5	H	3.0	-15.3	33.6	1.0	-47.8	-13.0	-34.8	
5.72	-63.1	H	3.0	-11.5	32.3	1.0	-42.8	-13.0	-29.8	
7.64	-68.0	V	3.0	-13.2	30.1	1.0	-42.3	-13.0	-29.3	

Rev. 03.19.15

EVDO-Rev A, 1900MHz BC1

**High Frequency Substitution Measurement
 UL Fremont Radiated Chamber**

Company:
 Project #: 15U20163
 Date: 06/09/15
 Test Engineer: T. Pham
 Configuration: EUT Only
 Mode: Rev 0/A 1900MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifier	Filter	Limit
3m Chamber D	3m Chamber D	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1851.25MHz)										
3.70	-60.2	H	3.0	-12.3	33.5	1.0	-44.8	-13.0	-31.8	
5.55	-61.5	H	3.0	-10.2	32.5	1.0	-41.7	-13.0	-28.7	
7.39	-62.3	H	3.0	-7.9	30.4	1.0	-37.4	-13.0	-24.4	
3.68	-60.0	V	3.0	-12.2	33.5	1.0	-44.6	-13.0	-31.6	
5.55	-60.8	V	3.0	-9.8	32.5	1.0	-41.3	-13.0	-28.3	
7.41	-62.7	V	3.0	-8.2	30.4	1.0	-37.6	-13.0	-24.6	
Mid Channel (1880MHz)										
3.76	-61.4	H	3.0	-13.3	33.5	1.0	-45.9	-13.0	-32.9	
5.56	-60.0	H	3.0	-8.7	32.5	1.0	-40.2	-13.0	-27.2	
7.50	-62.4	H	3.0	-8.0	30.3	1.0	-37.2	-13.0	-24.2	
3.78	-58.7	V	3.0	-10.5	33.6	1.0	-43.1	-13.0	-30.1	
5.51	-59.1	V	3.0	-8.1	32.5	1.0	-39.7	-13.0	-26.7	
7.41	-62.8	V	3.0	-8.2	30.4	1.0	-37.6	-13.0	-24.6	
High Channel (1908.75MHz)										
3.81	-59.9	H	3.0	-11.6	33.6	1.0	-44.2	-13.0	-31.2	
5.77	-60.2	H	3.0	-8.6	32.2	1.0	-39.8	-13.0	-26.8	
7.63	-62.7	H	3.0	-8.1	30.1	1.0	-37.2	-13.0	-24.2	
3.82	-60.2	V	3.0	-11.9	33.6	1.0	-44.5	-13.0	-31.5	
5.73	-61.5	V	3.0	-10.1	32.3	1.0	-41.4	-13.0	-28.4	
7.63	-63.1	V	3.0	-8.4	30.1	1.0	-37.5	-13.0	-24.5	

Rev. 03.19.15

CDMA2000 1xRTT, 1700MHz BC15

**High Frequency Substitution Measurement
 UL Fremont Radiated Chamber**

Company:
 Project #: 15U20163
 Date: 06/09/15
 Test Engineer: T. Pham
 Configuration: EUT Only
 Mode: 1xRTT 1700MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifier	Filter	Limit
3m Chamber D	3m Chamber D	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1711.25MHz)										
3.42	-56.4	H	3.0	-9.3	33.3	1.0	41.6	-13.0	-28.6	
5.13	-63.6	H	3.0	-13.0	32.9	1.0	45.0	-13.0	-32.0	
6.85	-67.2	H	3.0	-13.6	31.1	1.0	43.6	-13.0	-30.6	
3.42	-54.9	V	3.0	-7.7	33.3	1.0	40.0	-13.0	-27.0	
5.13	-62.7	V	3.0	-12.6	32.9	1.0	44.5	-13.0	-31.5	
6.83	-66.2	V	3.0	-12.4	31.1	1.0	42.5	-13.0	-29.5	
Mid Channel (1732.5MHz)										
3.46	-55.8	H	3.0	-8.6	33.3	1.0	40.9	-13.0	-27.9	
5.20	-65.2	H	3.0	-14.5	32.9	1.0	46.4	-13.0	-33.4	
6.88	-65.6	H	3.0	-11.9	31.0	1.0	42.0	-13.0	-29.0	
3.46	-55.2	V	3.0	-7.9	33.3	1.0	40.2	-13.0	-27.2	
5.20	-64.4	V	3.0	-14.1	32.9	1.0	46.0	-13.0	-33.0	
6.87	-65.8	V	3.0	-11.9	31.0	1.0	42.0	-13.0	-29.0	
High Channel (1753.75MHz)										
3.51	-60.4	H	3.0	-13.0	33.4	1.0	45.4	-13.0	-32.4	
5.29	-65.9	H	3.0	-15.1	32.8	1.0	46.9	-13.0	-33.9	
7.17	-65.5	H	3.0	-11.4	30.7	1.0	41.1	-13.0	-28.1	
3.51	-60.6	V	3.0	-13.2	33.4	1.0	45.5	-13.0	-32.5	
5.21	-65.5	V	3.0	-15.2	32.8	1.0	47.0	-13.0	-34.0	
6.90	-67.0	V	3.0	-13.1	31.0	1.0	43.1	-13.0	-30.1	

Rev. 03.19.15

EVDO-Rev A, 1700MHz BC15

**High Frequency Substitution Measurement
 UL Fremont Radiated Chamber**

Company:
 Project #: 15U20163
 Date: 06/09/15
 Test Engineer: T. Pham
 Configuration: EUT Only
 Mode: Rev A 1700MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifier	Filter	Limit
3m Chamber D	3m Chamber D	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1711.25MHz)										
3.42	-61.1	H	3.0	-14.0	33.3	1.0	-46.3	-13.0	-33.3	
5.15	-60.3	H	3.0	-9.7	32.9	1.0	-41.6	-13.0	-28.6	
6.86	-61.7	H	3.0	-8.1	31.0	1.0	-38.2	-13.0	-25.2	
3.42	-59.9	V	3.0	-12.7	33.3	1.0	-45.0	-13.0	-32.0	
5.12	-61.1	V	3.0	-10.9	32.9	1.0	-42.8	-13.0	-29.8	
6.84	-62.0	V	3.0	-8.2	31.1	1.0	-38.3	-13.0	-25.3	
Mid Channel (1732.5MHz)										
3.47	-61.2	H	3.0	-14.0	33.3	1.0	-46.3	-13.0	-33.3	
5.21	-60.9	H	3.0	-10.2	32.9	1.0	-42.1	-13.0	-29.1	
6.93	-62.5	H	3.0	-8.8	31.0	1.0	-38.8	-13.0	-25.8	
3.49	-61.2	V	3.0	-13.8	33.4	1.0	-46.2	-13.0	-33.2	
5.16	-60.3	V	3.0	-10.1	32.9	1.0	-42.0	-13.0	-29.0	
6.92	-61.9	V	3.0	-7.9	31.0	1.0	-37.9	-13.0	-24.9	
High Channel (1753.75MHz)										
3.51	-61.8	H	3.0	-14.4	33.4	1.0	-46.8	-13.0	-33.8	
5.25	-60.8	H	3.0	-10.0	32.8	1.0	-41.8	-13.0	-28.8	
7.02	-63.4	H	3.0	-9.6	30.9	1.0	-39.4	-13.0	-26.4	
3.50	-59.8	V	3.0	-12.4	33.4	1.0	-44.7	-13.0	-31.7	
5.26	-61.6	V	3.0	-11.2	32.8	1.0	-43.0	-13.0	-30.0	
7.01	-63.5	V	3.0	-9.3	30.9	1.0	-39.2	-13.0	-26.2	

Rev. 03.19.15

CDMA2000 1xRTT, 800MHz BC10

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U20163
Date: 06/09/15
Test Engineer: T. Pham
Configuration: EUT Only
Mode: 1xRTT 800MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

Pre-amplifier

Filter

Limit

3m Chamber D

3m Chamber D

Filter

ERP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (817.25MHz)										
1.64	-62.0	H	3.0	-20.2	35.0	1.0	-54.2	-13.0	-41.2	
2.49	-63.1	H	3.0	-18.9	33.8	1.0	-51.7	-13.0	-38.7	
3.26	-66.3	H	3.0	-19.7	33.2	1.0	-51.9	-13.0	-38.9	
1.64	-58.1	V	3.0	-16.1	35.0	1.0	-50.2	-13.0	-37.2	
2.45	-59.3	V	3.0	-15.0	34.1	1.0	-48.1	-13.0	-35.1	
3.27	-59.1	V	3.0	-12.3	33.2	1.0	-44.5	-13.0	-31.5	
Mid Channel (820.00MHz)										
1.64	-62.0	H	3.0	-20.3	35.0	1.0	-54.3	-13.0	-41.3	
2.61	-62.4	H	3.0	-17.8	33.6	1.0	-50.4	-13.0	-37.4	
3.31	-65.3	H	3.0	-18.5	33.2	1.0	-50.7	-13.0	-37.7	
1.64	-58.3	V	3.0	-16.4	35.0	1.0	-50.4	-13.0	-37.4	
2.45	-59.6	V	3.0	-15.3	34.1	1.0	-48.4	-13.0	-35.4	
3.28	-59.4	V	3.0	-12.6	33.2	1.0	-44.8	-13.0	-31.8	
High Channel (822.75MHz)										
1.63	-62.9	H	3.0	-21.2	35.0	1.0	-55.2	-13.0	-42.2	
2.47	-63.7	H	3.0	-19.6	33.9	1.0	-52.6	-13.0	-39.6	
3.28	-65.3	H	3.0	-18.6	33.2	1.0	-50.8	-13.0	-37.8	
1.65	-58.8	V	3.0	-16.8	35.0	1.0	-50.8	-13.0	-37.8	
2.46	-59.7	V	3.0	-15.4	34.0	1.0	-48.4	-13.0	-35.4	
3.29	-62.6	V	3.0	-15.8	33.2	1.0	-48.0	-13.0	-35.0	

Rev. 03.19.15

EVDO-Rev A, 800MHz BC10

**High Frequency Substitution Measurement
 UL Fremont Radiated Chamber**

Company:
 Project #: 15U20163
 Date: 06/09/15
 Test Engineer: T. Pham
 Configuration: EUT Only
 Mode: Rev A 800MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifier	Filter	Limit
3m Chamber D	3m Chamber D	Filter	ERP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (817.25MHz)										
1.64	-59.1	H	3.0	-17.3	35.0	1.0	-51.3	-13.0	-38.3	
2.44	-58.9	H	3.0	-14.9	34.1	1.0	-48.0	-13.0	-35.0	
3.27	-60.5	H	3.0	-13.8	33.2	1.0	-46.0	-13.0	-33.0	
1.63	-58.0	V	3.0	-16.0	35.0	1.0	-50.1	-13.0	-37.1	
2.45	-59.1	V	3.0	-14.8	34.1	1.0	-47.9	-13.0	-34.9	
3.27	-61.2	V	3.0	-14.4	33.2	1.0	-46.7	-13.0	-33.7	
Mid Channel (820.00MHz)										
1.63	-58.7	H	3.0	-16.9	35.0	1.0	-50.9	-13.0	-37.9	
2.46	-60.1	H	3.0	-16.0	34.0	1.0	-49.1	-13.0	-36.1	
3.28	-60.9	H	3.0	-14.2	33.2	1.0	-46.4	-13.0	-33.4	
1.64	-58.9	V	3.0	-16.9	35.0	1.0	-50.9	-13.0	-37.9	
2.45	-59.1	V	3.0	-14.8	34.1	1.0	-47.9	-13.0	-34.9	
3.27	-60.2	V	3.0	-13.4	33.2	1.0	-45.6	-13.0	-32.6	
High Channel (822.75MHz)										
1.65	-58.1	H	3.0	-16.3	35.0	1.0	-50.3	-13.0	-37.3	
2.47	-59.9	H	3.0	-15.8	34.0	1.0	-48.8	-13.0	-35.8	
3.29	-61.2	H	3.0	-14.4	33.2	1.0	-46.7	-13.0	-33.7	
1.66	-59.4	V	3.0	-17.3	35.0	1.0	-51.4	-13.0	-38.4	
2.47	-59.5	V	3.0	-15.1	34.0	1.0	-48.1	-13.0	-35.1	
3.29	-60.8	V	3.0	-13.9	33.2	1.0	-46.1	-13.0	-33.1	

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10.1.3. UMTS

UMTS REL 99, 850MHz BAND 5

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
 Project #: 15U20163
 Date: 06/09/15
 Test Engineer: T. Pham
 Configuration: EUT Only
 Mode: REL 99, 850MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

3m Chamber D

Pre-amplifier

3m Chamber D

Filter

Filter

Limit

ERP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (826.4MHz)										
1.65	-55.4	H	3.0	-13.6	35.0	1.0	-47.6	-13.0	-34.6	
2.48	-60.8	H	3.0	-16.6	33.9	1.0	-49.5	-13.0	-36.5	
3.31	-66.2	H	3.0	-19.4	33.2	1.0	-51.6	-13.0	-38.6	
1.65	-56.3	V	3.0	-14.3	35.0	1.0	-48.3	-13.0	-35.3	
2.48	-62.1	V	3.0	-17.7	38.5	1.0	-55.2	-13.0	-42.2	
3.31	-64.6	V	3.0	-17.7	33.2	1.0	-50.0	-13.0	-37.0	
Mid Channel (836.6MHz)										
1.67	-53.8	H	3.0	-11.9	35.0	1.0	-46.0	-13.0	-33.0	
2.51	-59.3	H	3.0	-15.0	33.7	1.0	-47.8	-13.0	-34.8	
3.34	-65.9	H	3.0	-19.0	33.3	1.0	-51.2	-13.0	-38.2	
1.67	-54.7	V	3.0	-12.7	35.0	1.0	-46.7	-13.0	-33.7	
2.58	-59.5	V	3.0	-14.8	33.6	1.0	-47.4	-13.0	-34.4	
3.34	-64.8	V	3.0	-17.8	33.3	1.0	-50.0	-13.0	-37.0	
High Channel (846.6MHz)										
1.69	-54.3	H	3.0	-12.4	35.0	1.0	-46.4	-13.0	-33.4	
2.54	-57.7	H	3.0	-13.3	33.7	1.0	-46.0	-13.0	-33.0	
3.39	-66.0	H	3.0	-19.0	33.3	1.0	-51.2	-13.0	-38.2	
1.69	-54.2	V	3.0	-12.1	35.0	1.0	-46.1	-13.0	-33.1	
2.54	-59.8	V	3.0	-15.2	33.7	1.0	-47.9	-13.0	-34.9	
3.39	-64.7	V	3.0	-17.6	33.3	1.0	-49.8	-13.0	-36.8	

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UMTS HSDPA, 850MHz BAND 5

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U20163
Date: 06/09/15
Test Engineer: T. Pham
Configuration: EUT only
Mode: HSDPA 850MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

3m Chamber D

Pre-amplifier

3m Chamber D

Filter

Filter

Limit

ERP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (826.4MHz)										
1.65	-59.8	H	3.0	-18.0	35.0	1.0	-52.0	-13.0	-39.0	
2.48	-64.8	H	3.0	-20.7	33.9	1.0	-53.5	-13.0	-40.5	
3.30	-65.0	H	3.0	-18.2	33.2	1.0	-50.4	-13.0	-37.4	
1.65	-55.3	V	3.0	-13.3	35.0	1.0	-47.3	-13.0	-34.3	
2.48	-65.0	V	3.0	-20.6	33.9	1.0	-53.5	-13.0	-40.5	
3.30	-65.3	V	3.0	-18.4	33.2	1.0	-50.6	-13.0	-37.6	
Mid Channel (836.6MHz)										
1.67	-59.8	H	3.0	-18.0	35.0	1.0	-52.0	-13.0	-39.0	
2.50	-64.8	H	3.0	-20.6	33.7	1.0	-53.3	-13.0	-40.3	
3.26	-66.2	H	3.0	-19.5	33.2	1.0	-51.7	-13.0	-38.7	
1.67	-55.4	V	3.0	-13.3	35.0	1.0	-47.4	-13.0	-34.4	
2.51	-63.9	V	3.0	-19.5	33.7	1.0	-52.2	-13.0	-39.2	
3.30	-65.1	V	3.0	-18.2	33.2	1.0	-50.5	-13.0	-37.5	
High Channel (846.6MHz)										
1.70	-60.2	H	3.0	-18.3	35.0	1.0	-52.3	-13.0	-39.3	
2.54	-65.8	H	3.0	-21.4	33.7	1.0	-54.1	-13.0	-41.1	
3.30	-64.5	H	3.0	-17.8	33.2	1.0	-50.0	-13.0	-37.0	
1.70	-54.1	V	3.0	-12.0	35.0	1.0	-46.0	-13.0	-33.0	
2.54	-64.7	V	3.0	-20.1	33.7	1.0	-52.7	-13.0	-39.7	
3.30	-66.6	V	3.0	-19.7	33.2	1.0	-51.9	-13.0	-38.9	

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UMTS REL 99, 1900MHz BAND 2

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U20163
Date: 06/09/15
Test Engineer: T. Pham
Configuration: EUT Only
Mode: REL 99, 1900MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

3m Chamber D

Pre-amplifier

3m Chamber D

Filter

Filter

Limit

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1852.4MHz)										
3.70	-64.7	H	3.0	-16.7	33.5	1.0	49.2	-13.0	-36.2	
5.56	-62.4	H	3.0	-11.1	32.5	1.0	42.6	-13.0	-29.6	
7.41	-67.7	H	3.0	-13.3	30.4	1.0	42.7	-13.0	-29.7	
3.70	-63.8	V	3.0	-15.9	33.5	1.0	48.4	-13.0	-35.4	
5.56	-54.2	V	3.0	-3.2	32.5	1.0	34.6	-13.0	-21.6	
7.41	-67.2	V	3.0	-12.7	30.4	1.0	42.1	-13.0	-29.1	
Mid Channel (1880MHz)										
3.76	-66.4	H	3.0	-18.3	33.5	1.0	50.8	-13.0	-37.8	
5.64	-67.8	H	3.0	-16.4	32.4	1.0	47.8	-13.0	-34.8	
7.52	-67.5	H	3.0	-13.0	30.3	1.0	42.3	-13.0	-29.3	
3.76	-66.2	V	3.0	-18.1	33.5	1.0	50.6	-13.0	-37.6	
5.64	-66.8	V	3.0	-15.6	32.4	1.0	46.9	-13.0	-33.9	
7.52	-67.7	V	3.0	-13.0	30.3	1.0	42.3	-13.0	-29.3	
High Channel (1907.6MHz)										
3.82	-65.9	H	3.0	-17.6	33.6	1.0	50.2	-13.0	-37.2	
5.72	-66.6	H	3.0	-15.0	32.3	1.0	46.3	-13.0	-33.3	
7.63	-69.1	H	3.0	-14.4	30.1	1.0	43.5	-13.0	-30.5	
3.82	-65.7	V	3.0	-17.4	33.6	1.0	50.0	-13.0	-37.0	
5.72	-66.0	V	3.0	-14.6	32.3	1.0	45.9	-13.0	-32.9	
7.63	-68.5	V	3.0	-13.7	30.1	1.0	42.8	-13.0	-29.8	

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UMTS HSDPA, 1900MHz BAND 2

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U20163
Date: 06/09/15
Test Engineer: T. Pham
Configuration: EUT only
Mode: HSDPA 1900MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

3m Chamber D

Pre-amplifier

3m Chamber D

Filter

Filter

Limit

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1852.4MHz)										
3.85	-63.6	H	3.0	-15.2	33.6	1.0	-47.8	-13.0	-34.8	
5.69	-66.2	H	3.0	-14.7	32.3	1.0	-46.0	-13.0	-33.0	
7.38	-67.0	H	3.0	-12.7	30.4	1.0	-42.1	-13.0	-29.1	
3.80	-64.6	V	3.0	-16.3	33.6	1.0	-48.9	-13.0	-35.9	
5.54	-66.5	V	3.0	-15.4	32.5	1.0	-46.9	-13.0	-33.9	
7.31	-66.4	V	3.0	-12.0	30.5	1.0	-41.5	-13.0	-28.5	
Mid Channel (1880MHz)										
3.87	-64.7	H	3.0	-16.2	33.6	1.0	-48.8	-13.0	-35.8	
5.86	-64.2	H	3.0	-12.4	32.1	1.0	-43.5	-13.0	-30.5	
7.42	-66.7	H	3.0	-12.3	30.4	1.0	-41.7	-13.0	-28.7	
3.88	-63.9	V	3.0	-15.5	33.6	1.0	-48.1	-13.0	-35.1	
5.53	-65.0	V	3.0	-14.0	32.5	1.0	-45.5	-13.0	-32.5	
7.58	-66.5	V	3.0	-11.8	30.2	1.0	-41.0	-13.0	-28.0	
High Channel (1907.6MHz)										
4.13	-63.7	H	3.0	-14.6	33.6	1.0	-47.2	-13.0	-34.2	
5.85	-63.8	H	3.0	-12.0	32.2	1.0	-43.1	-13.0	-30.1	
7.30	-65.9	H	3.0	-11.7	30.5	1.0	-41.2	-13.0	-28.2	
3.97	-65.0	V	3.0	-16.3	33.7	1.0	-49.0	-13.0	-36.0	
5.84	-63.8	V	3.0	-12.1	32.2	1.0	-43.3	-13.0	-30.3	
7.33	-65.0	V	3.0	-10.5	30.5	1.0	-40.0	-13.0	-27.0	

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UMTS REL 99, 1700MHz BAND 4

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U20163
Date: 06/09/15
Test Engineer: T. Pham
Configuration: EUT Only
Mode: REL 99, 1700MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

3m Chamber E

Pre-amplifier

3m Chamber E

Filter

Filter

Limit

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1712.4MHz)										
3.42	-56.6	H	3.0	-7.4	38.5	1.0	-44.9	-13.0	-31.9	
5.14	-67.2	H	3.0	-14.0	38.7	1.0	-51.7	-13.0	-38.7	
6.85	-67.5	H	3.0	-10.6	38.1	1.0	-47.7	-13.0	-34.7	
3.42	-54.3	V	3.0	-5.2	38.5	1.0	-42.7	-13.0	-29.7	
5.14	-65.2	V	3.0	-12.3	38.7	1.0	-50.0	-13.0	-37.0	
6.85	-67.6	V	3.0	-11.0	38.1	1.0	-48.1	-13.0	-35.1	
Mid Channel (1732.6MHz)										
3.47	-57.6	H	3.0	-8.2	38.5	1.0	-45.8	-13.0	-32.8	
5.20	-66.8	H	3.0	-13.5	38.7	1.0	-51.2	-13.0	-38.2	
6.93	-67.0	H	3.0	-10.0	38.1	1.0	-47.1	-13.0	-34.1	
3.47	-56.7	V	3.0	-7.5	38.5	1.0	-45.1	-13.0	-32.1	
5.20	-66.8	V	3.0	-13.9	38.7	1.0	-51.6	-13.0	-38.6	
6.93	-68.3	V	3.0	-11.5	38.1	1.0	-48.6	-13.0	-35.6	
High Channel (1752.6MHz)										
3.51	-55.8	H	3.0	-6.3	38.5	1.0	-43.9	-13.0	-30.9	
5.26	-63.7	H	3.0	-10.3	38.7	1.0	-48.0	-13.0	-35.0	
7.01	-68.8	H	3.0	-11.6	38.1	1.0	-48.7	-13.0	-35.7	
3.51	-63.0	V	3.0	-13.7	38.5	1.0	-51.2	-13.0	-38.2	
5.26	-66.8	V	3.0	-13.7	38.7	1.0	-51.3	-13.0	-38.3	
7.01	-69.3	V	3.0	-12.3	38.1	1.0	-49.4	-13.0	-36.4	

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UMTS HSDPA, 1700MHz BAND 4

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 15U20163
Date: 06/09/15
Test Engineer: T. Pham
Configuration: EUT only
Mode: HSDPA 1700MHz

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

3m Chamber D

Pre-amplifier

3m Chamber D

Filter

Filter

Limit

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1712.4MHz)										
3.43	-62.5	H	3.0	-15.4	33.3	1.0	-47.7	-13.0	-34.7	
5.22	-66.2	H	3.0	-15.5	32.8	1.0	-47.4	-13.0	-34.4	
7.05	-65.6	H	3.0	-11.7	30.8	1.0	-41.5	-13.0	-28.5	
3.43	-63.4	V	3.0	-16.2	33.3	1.0	-48.5	-13.0	-35.5	
5.17	-66.2	V	3.0	-15.9	32.9	1.0	-47.8	-13.0	-34.8	
6.80	-65.7	V	3.0	-12.0	31.1	1.0	-42.1	-13.0	-29.1	
Mid Channel (1732.6MHz)										
3.47	-63.8	H	3.0	-16.5	33.3	1.0	-48.9	-13.0	-35.9	
5.32	-66.1	H	3.0	-15.2	32.7	1.0	-46.9	-13.0	-33.9	
7.00	-66.4	H	3.0	-12.6	30.9	1.0	-42.5	-13.0	-29.5	
3.47	-65.1	V	3.0	-17.8	33.3	1.0	-50.1	-13.0	-37.1	
5.28	-66.3	V	3.0	-15.8	32.8	1.0	-47.6	-13.0	-34.6	
7.04	-67.4	V	3.0	-13.2	30.8	1.0	-43.1	-13.0	-30.1	
High Channel (1752.6MHz)										
3.98	-65.9	H	3.0	-17.1	33.7	1.0	-49.8	-13.0	-36.8	
5.55	-64.6	H	3.0	-13.3	32.5	1.0	-44.8	-13.0	-31.8	
7.13	-66.7	H	3.0	-12.6	30.7	1.0	-42.4	-13.0	-29.4	
3.95	-65.0	V	3.0	-16.4	33.7	1.0	-49.1	-13.0	-36.1	
5.87	-65.7	V	3.0	-14.0	32.1	1.0	-45.1	-13.0	-32.1	
7.26	-67.4	V	3.0	-13.0	30.6	1.0	-42.6	-13.0	-29.6	

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