8.4.2. CDMA

ID:	44410	Date:	3/7/18

CDMA 1xRTT BC10

Limit		816.35	823.65	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	816.5679	823.4405		
Extreme (50C)		816.5679	823.4405	-14.1	-0.02
Extreme (40C)		816.5679	823.4405	-15.8	-0.02
Extreme (30C)		816.5679	823.4405	-13.8	-0.02
Extreme (10C)		816.5679	823.4405	-16.7	-0.02
Extreme (0C)		816.5679	823.4405	-20.1	-0.02
Extreme (-10C)		816.5679	823.4405	-22.9	-0.03
Extreme (-20C)		816.5679	823.4405	-19.0	-0.02
Extreme (-30C)		816.5679	823.4405	-17.7	-0.02
20C	15%	816.5679	823.4405	-13.3	-0.02
	-15%	816.5679	823.4405	29.4	0.04
	End Point	816.5679	823.4405	-14.4	-0.02

CDMA 1xRTT BC0

Limit		824	849	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	824.0190	848.9954		
Extreme (50C)		824.0190	848.9954	-31.0	-0.04
Extreme (40C)		824.0190	848.9954	-15.2	-0.02
Extreme (30C)		824.0190	848.9954	-30.1	-0.04
Extreme (10C)		824.0190	848.9954	-17.7	-0.02
Extreme (0C)		824.0190	848.9954	-31.0	-0.04
Extreme (-10C)		824.0190	848.9954	-16.6	-0.02
Extreme (-20C)		824.0190	848.9954	-21.0	-0.03
Extreme (-30C)		824.0190	848.9954	-18.9	-0.02
20C	15%	824.0190	848.9954	-18.8	-0.02
	-15%	824.0190	848.9954	27.4	0.03
	End Point	824.0190	848.9954	-19.3	-0.02

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CDMA 1xRTT BC1

Limit		1850	1910	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	1850.5708	1909.4340		
Extreme (50C)		1850.5708	1909.4340	45.9	0.02
Extreme (40C)		1850.5707	1909.4339	-56.5	-0.03
Extreme (30C)		1850.5709	1909.4341	58.5	0.03
Extreme (10C)		1850.5709	1909.4341	81.2	0.04
Extreme (0C)		1850.5707	1909.4339	-58.5	-0.03
Extreme (-10C)		1850.5707	1909.4339	-50.6	-0.03
Extreme (-20C)		1850.5708	1909.4340	46.4	0.02
Extreme (-30C)		1850.5708	1909.4340	-40.4	-0.02
20C	15%	1850.5707	1909.4339	-112.2	-0.06
	-15%	1850.5707	1909.4339	-117.9	-0.06
	End Point	1850.5707	1909.4339	-117.4	-0.06

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8.4.3. WCDMA

ID:	44410	Date:	3/7/18

WCDMA REL 99 BAND 2

Limit		1850	1910	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	1850.1941	1909.8116		
Extreme (50C)		1850.1940	1909.8115	-105.5	-0.056
Extreme (40C)		1850.1941	1909.8117	67.6	0.036
Extreme (30C)		1850.1940	1909.8116	-92.4	-0.049
Extreme (10C)		1850.1941	1909.8117	67.6	0.036
Extreme (0C)		1850.1941	1909.8117	52.4	0.028
Extreme (-10C)		1850.1941	1909.8117	54.3	0.029
Extreme (-20C)		1850.1941	1909.8117	76.0	0.040
Extreme (-30C)		1850.1940	1909.8116	-83.0	-0.044
20C	15%	1850.1941	1909.8116	-18.2	-0.010
	-15%	1850.1940	1909.8116	-22.5	-0.012
	End Point	1850.1941	1909.8116	-16.6	-0.009

WCDMA REL 99 BAND 4

Limit		1710	1755	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	1710.1400	1754.8800		
Extreme (50C)		1710.1400	1754.8800	-27.9	-0.016
Extreme (40C)		1710.1400	1754.8800	-26.1	-0.015
Extreme (30C)		1710.1400	1754.8800	-32.9	-0.019
Extreme (10C)		1710.1400	1754.8800	25.6	0.015
Extreme (0C)		1710.1400	1754.8800	23.8	0.014
Extreme (-10C)		1710.1400	1754.8800	39.5	0.023
Extreme (-20C)		1710.1400	1754.8800	-49.4	-0.029
Extreme (-30C)		1710.1401	1754.8801	52.4	0.030
20C	15%	1710.1401	1754.8801	52.2	0.030
	-15%	1710.1401	1754.8801	50.1	0.029
	End Point	1710.1400	1754.8800	47.1	0.027

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WCDMA REL 99 BAND 5

Limit		824	849	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	824.1300	848.8900		
Extreme (50C)		824.1300	848.8900	-9.0	-0.011
Extreme (40C)		824.1300	848.8900	-9.9	-0.012
Extreme (30C)		824.1300	848.8900	-9.3	-0.011
Extreme (10C)		824.1300	848.8900	-10.2	-0.012
Extreme (0C)		824.1300	848.8900	-16.1	-0.019
Extreme (-10C)		824.1300	848.8900	-10.3	-0.012
Extreme (-20C)		824.1301	848.8901	68.1	0.081
Extreme (-30C)		824.1300	848.8900	-11.1	-0.013
20C	15%	824.1300	848.8900	-12.6	-0.015
	-15%	824.1300	848.8900	-7.1	-0.008
	End Point	824.1300	848.8900	-7.5	-0.009

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8.5. PEAK-TO-AVERAGE POWER RATIO

LIMIT

In addition, the peak-to-average power ratio (PAPR) of the transmitter shall not exceed 13 dB for more than 0.1% of the time and shall use a signal corresponding to the highest PAPR during periods of continuous transmission.

RESULT

ANT1 antenna was used to measure as the worst case. The results from all CCDF plots are passed with 13dB peak-to-average power ratio criteria.

ID:	10646	**Date:**	3/20/18

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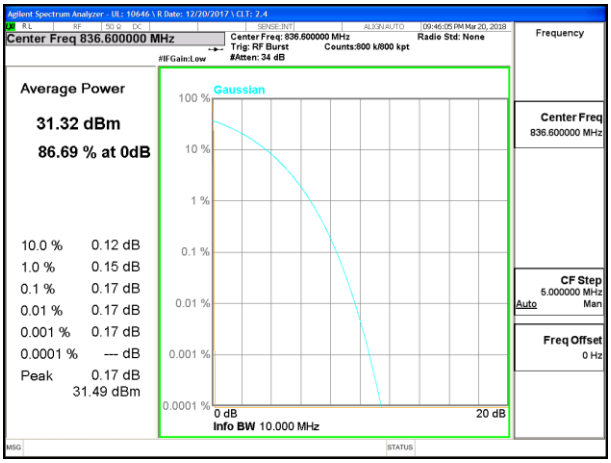
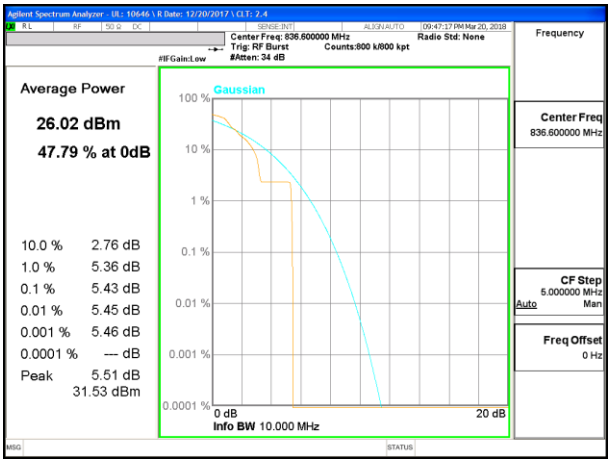
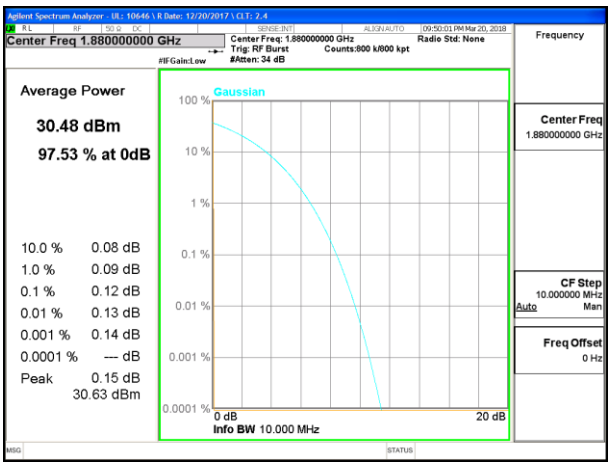
8.5.1. GSM)



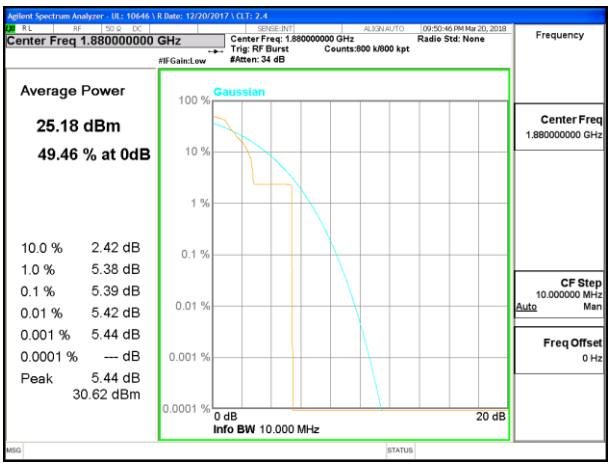
GSM 850MHz GPRS Middle Channel



GSM 850MHz EGPRS Middle Channel



GSM 1900MHz GPRS Middle Channel



GSM 1900MHz EGPRS Middle Channel

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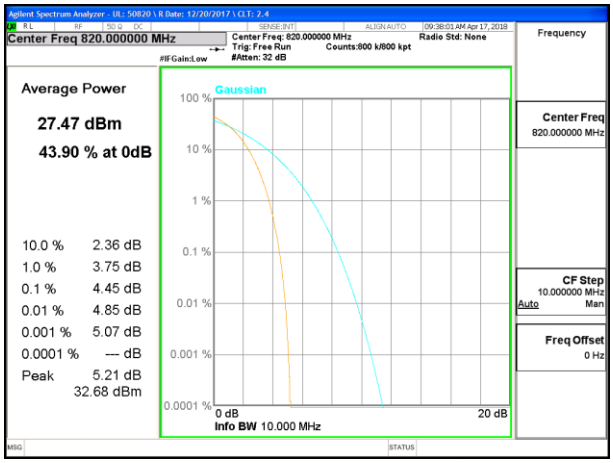
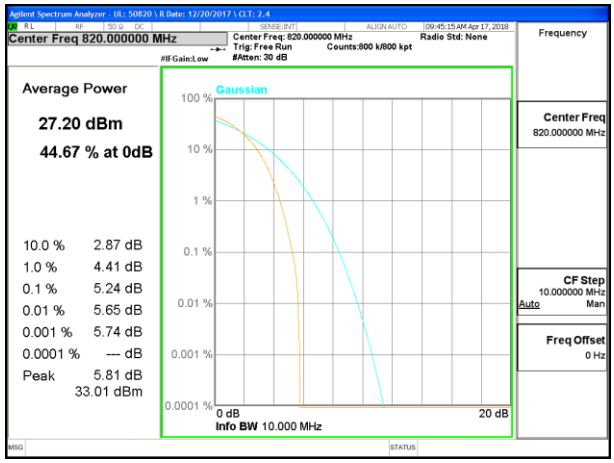
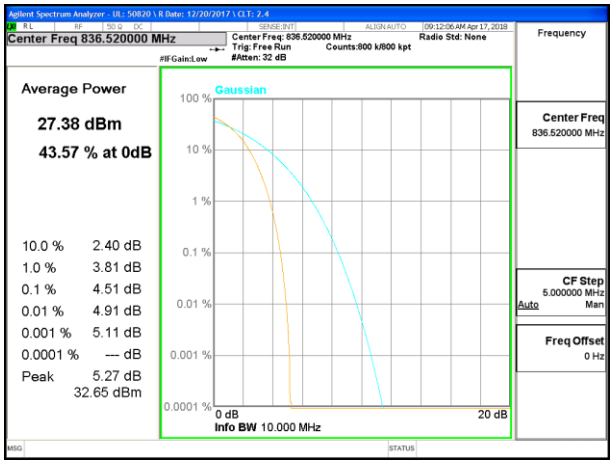
8.5.2. CDMA



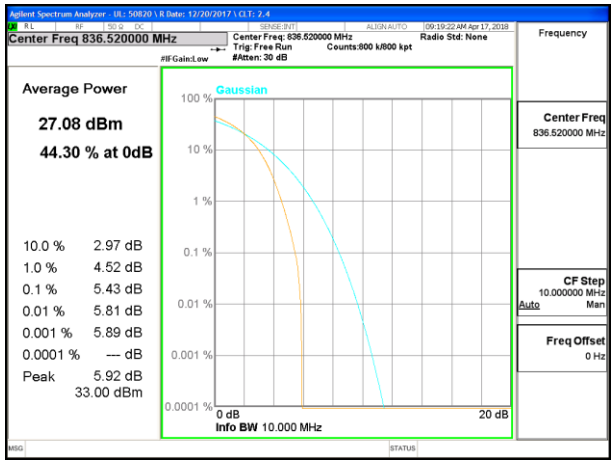
CDMA BC10 1xRTT Middle Channel



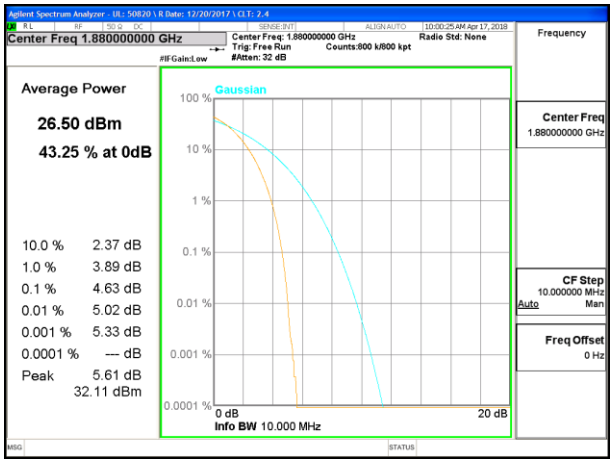
CDMA BC10 1xEV-DO Rev A Middle Channel



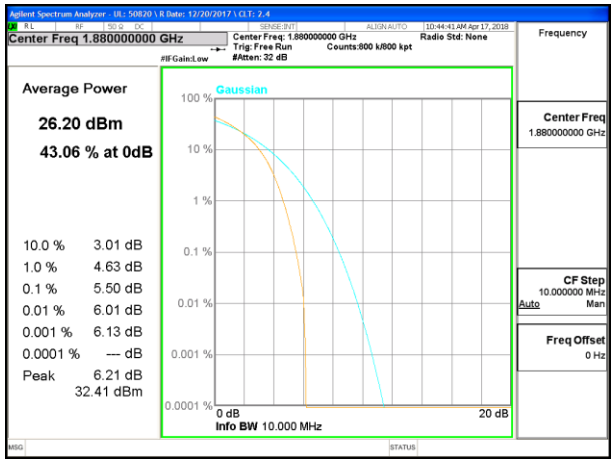
CDMA BC0 1xRTT Middle Channel



CDMA BC0 1xEV-DO Rev A Middle Channel



CDMA BC1 1xRTT Middle Channel



CDMA BC1 1xEV-DO Rev A Middle Channel

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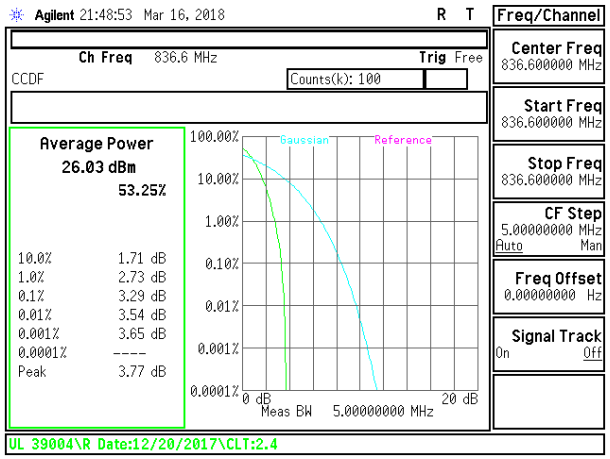
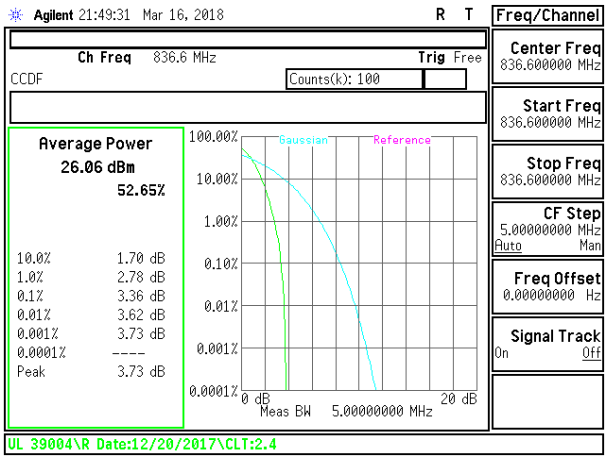
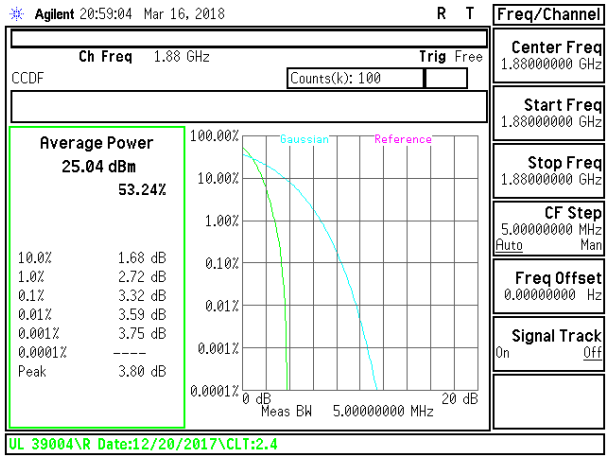
8.5.3. WCDMA



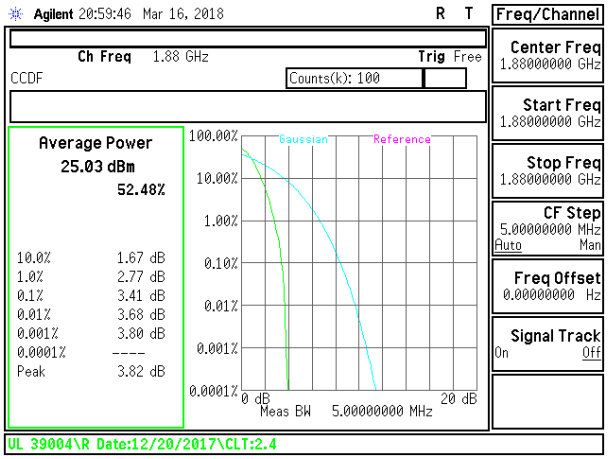
WCDMA Band 5 Rel 99 Middle Channel



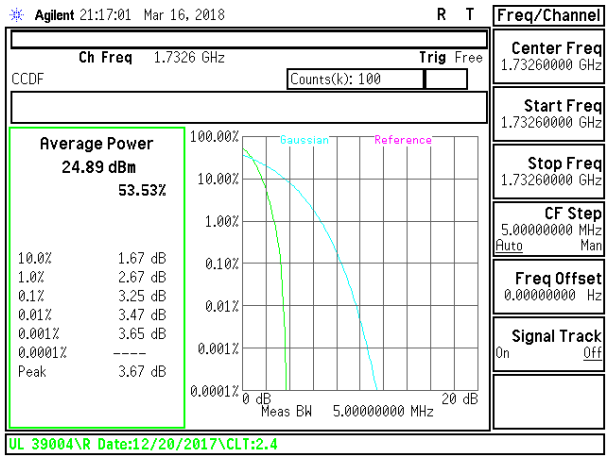
WCDMA Band 5 HSDPA Middle Channel



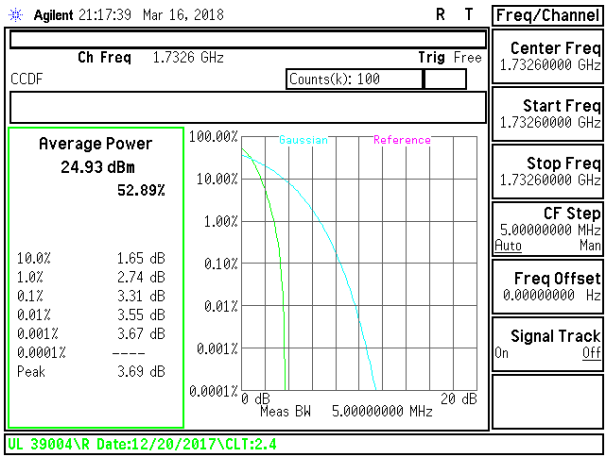
WCDMA Band 2 Rel 99 Middle Channel



WCDMA Band 2 HSDPA Middle Channel



WCDMA Band 4 Rel 99 Middle Channel



WCDMA Band 4 HSDPA Middle Channel

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9. RADIATED TEST RESULTS

9.1. FIELD STRENGTH OF SPURIOUS RADIATION (Ant 1)

RULE PART(S)

FCC: §2.1053, §22.917, §24.238, §27.53 and §90.691.
IC: RSS132§5.5; RSS133§6.5 and RSS139§6.6

LIMIT

FCC: §22.917(a), §24.238(a), §27.53 (h), §90.691
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

RSS132§5.5
Mobile and base station equipment shall comply with the limits in (i) and (ii) below.

(i) In the first 1.0 MHz band immediately outside and adjacent to each of the sub-bands specified in Section 5.1, the power of emissions per any 1% of the occupied bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10p (watts).

(ii) After the first 1.0 MHz immediately outside and adjacent to each of the sub-bands, the power of emissions in any100 kHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least43 + 10 log10 p (watts). If the measurement is performed using 1% of the occupied bandwidth, power integration over 100 kHz is required.

RSS133§6.5
Equipment shall comply with the limits in (i) and (ii) below.

(i) In the 1.0 MHz bands immediately outside and adjacent to the equipment's operating frequency block, the emission power per any 1% of the emission bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10p(watts).

(ii) After the first 1.0 MHz, the emission power in any 1 MHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10p (watts). If the measurement is performed using 1% of the emission bandwidth, power integration over 1.0 MHz is required.

RSS139§6.6

(i) In the first 1.0 MHz bands immediately outside and adjacent to the equipment's smallest operating frequency block,Footnote2 which can contain the equipment's occupied bandwidth, the emission power per any 1% of the emission bandwidth shall be attenuated below the transmitter output power P (in dBW) by at least43 + 10 log10 p (watts) dB.

(ii) After the first 1.0 MHz outside the equipment's smallest operating frequency block, which can contain the equipment's occupied bandwidth, the emission power in any 1 MHz bandwidth shall be attenuated below the transmitter output power P (in dBW) by at least 43 + 10 log10 p (watts) dB.

TEST PROCEDURE

KDB 971168 D01 Section 7

RESULTS

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9.1.1. GSM

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/19/18
Test Engineer: 38602
Configuration: EUT only
Mode: GPRS 850MHz

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber C	3m Chamber C	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (824.2MHz)										
1.65	-66.7	H	3.0	-24.9	36.5	1.0	-60.4	-13.0	-47.4	
2.47	-66.6	H	3.0	-20.9	35.2	1.0	-55.0	-13.0	-42.0	
3.30	-66.2	H	3.0	-17.4	34.6	1.0	-51.0	-13.0	-38.0	
1.65	-66.6	V	3.0	-24.0	36.5	1.0	-59.5	-13.0	-46.5	
2.47	-67.0	V	3.0	-21.2	35.2	1.0	-55.4	-13.0	-42.4	
3.30	-66.8	V	3.0	-17.3	34.6	1.0	-50.9	-13.0	-37.9	
Mid Channel (836.6MHz)										
1.67	-63.5	H	3.0	-21.5	36.5	1.0	-57.0	-13.0	-44.0	
2.51	-66.9	H	3.0	-21.0	35.1	1.0	-55.1	-13.0	-42.1	
3.35	-66.8	H	3.0	-17.8	34.6	1.0	-51.4	-13.0	-38.4	
1.67	-66.8	V	3.0	-24.0	36.5	1.0	-59.5	-13.0	-46.5	
2.51	-67.3	V	3.0	-21.4	35.1	1.0	-55.5	-13.0	-42.5	
3.35	-67.1	V	3.0	-17.5	34.6	1.0	-51.1	-13.0	-38.1	
High Channel (848.8MHz)										
1.70	-66.5	H	3.0	-24.3	36.4	1.0	-59.7	-13.0	-46.7	
2.55	-66.8	H	3.0	-20.7	35.1	1.0	-54.9	-13.0	-41.9	
3.40	-67.0	H	3.0	-17.9	34.5	1.0	-51.4	-13.0	-38.4	
1.70	-66.6	V	3.0	-23.6	36.4	1.0	-59.0	-13.0	-46.0	
2.55	-66.6	V	3.0	-20.4	35.1	1.0	-54.6	-13.0	-41.6	
3.40	-67.5	V	3.0	-17.8	34.5	1.0	-51.3	-13.0	-38.3	

Rev. 03.19.15

GSM 850MHz GPRS

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/19/18
Test Engineer: 38602
Configuration: EUT only
Mode: EGPRS 850MHz

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber C	3m Chamber C	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (824.2MHz)										
1.65	-67.0	H	3.0	-25.2	36.5	1.0	-60.7	-13.0	-47.7	
2.47	-66.9	H	3.0	-21.2	35.2	1.0	-55.3	-13.0	-42.3	
3.30	-67.4	H	3.0	-18.6	34.6	1.0	-52.2	-13.0	-39.2	
1.65	-66.9	V	3.0	-24.3	36.5	1.0	-59.8	-13.0	-46.8	
2.47	-67.0	V	3.0	-21.2	35.2	1.0	-55.4	-13.0	-42.4	
3.30	-66.8	V	3.0	-17.3	34.6	1.0	-50.9	-13.0	-37.9	
Mid Channel (836.6MHz)										
1.67	-62.6	H	3.0	-20.6	36.5	1.0	-56.1	-13.0	-43.1	
2.51	-66.1	H	3.0	-20.2	35.1	1.0	-54.3	-13.0	-41.3	
3.35	-67.7	H	3.0	-18.7	34.6	1.0	-52.3	-13.0	-39.3	
1.67	-66.7	V	3.0	-23.9	36.5	1.0	-59.4	-13.0	-46.4	
2.51	-67.1	V	3.0	-21.2	35.1	1.0	-55.3	-13.0	-42.3	
3.35	-66.1	V	3.0	-16.5	34.6	1.0	-50.1	-13.0	-37.1	
High Channel (848.8MHz)										
1.70	-66.2	H	3.0	-24.0	36.4	1.0	-59.4	-13.0	-46.4	
2.55	-66.5	H	3.0	-20.4	35.1	1.0	-54.6	-13.0	-41.6	
3.40	-67.3	H	3.0	-18.2	34.5	1.0	-51.7	-13.0	-38.7	
1.70	-66.0	V	3.0	-23.0	36.4	1.0	-58.4	-13.0	-45.4	
2.55	-66.2	V	3.0	-20.0	35.1	1.0	-54.2	-13.0	-41.2	
3.40	-67.1	V	3.0	-17.4	34.5	1.0	-50.9	-13.0	-37.9	

Rev. 03.19.15

GSM 850MHz EGPRS

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/20/18
Test Engineer: 12500
Configuration: EUT + charger
Mode: GPRS 1900MHz

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1850.2MHz)										
3.70	-65.5	H	3.0	-15.7	34.4	1.0	-49.2	-13.0	-36.2	
5.55	-60.7	H	3.0	-7.3	34.1	1.0	-40.4	-13.0	-27.4	
7.40	-69.8	H	3.0	-13.5	33.6	1.0	-46.1	-13.0	-33.1	
3.70	-66.0	V	3.0	-16.1	34.4	1.0	-49.6	-13.0	-36.6	
5.55	-59.5	V	3.0	-5.9	34.1	1.0	-39.0	-13.0	-26.0	
7.40	-70.2	V	3.0	-14.1	33.6	1.0	-46.7	-13.0	-33.7	
Mid Channel (1880.0)										
3.76	-65.7	H	3.0	-15.7	34.4	1.0	-49.1	-13.0	-36.1	
5.64	-66.1	H	3.0	-12.5	34.1	1.0	-45.6	-13.0	-32.6	
7.52	-69.5	H	3.0	-13.0	33.5	1.0	-45.5	-13.0	-32.5	
3.76	-66.2	V	3.0	-16.1	34.4	1.0	-49.5	-13.0	-36.5	
5.64	-59.9	V	3.0	-6.2	34.1	1.0	-39.3	-13.0	-26.3	
7.52	-69.7	V	3.0	-13.4	33.5	1.0	-45.9	-13.0	-32.9	
High Channel (1909.8MHz)										
3.82	-64.9	H	3.0	-14.7	34.4	1.0	-48.1	-13.0	-35.1	
5.73	-65.7	H	3.0	-12.0	34.1	1.0	-45.1	-13.0	-32.1	
7.54	-69.8	H	3.0	-13.3	33.5	1.0	-45.8	-13.0	-32.8	
3.82	-66.1	V	3.0	-15.8	34.4	1.0	-49.2	-13.0	-36.2	
5.73	-66.0	V	3.0	-12.1	34.1	1.0	-45.2	-13.0	-32.2	
7.54	-69.5	V	3.0	-13.2	33.5	1.0	-45.7	-13.0	-32.7	

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GSM 1900MHz GPRS

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/20/18
Test Engineer: 12500
Configuration: EUT + charger
Mode: EGPRS 1900MHz

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1850.2MHz)										
3.70	-66.2	H	3.0	-16.4	34.4	1.0	-49.9	-13.0	-36.9	
5.55	-62.7	H	3.0	-9.3	34.1	1.0	-42.4	-13.0	-29.4	
7.40	-68.5	H	3.0	-12.2	33.6	1.0	-44.8	-13.0	-31.8	
3.70	-66.7	V	3.0	-16.8	34.4	1.0	-50.3	-13.0	-37.3	
5.55	-63.9	V	3.0	-10.3	34.1	1.0	-43.4	-13.0	-30.4	
7.40	-68.9	V	3.0	-12.8	33.6	1.0	-45.4	-13.0	-32.4	
Mid Channel (1880.0)										
3.76	-66.4	H	3.0	-16.4	34.4	1.0	-49.8	-13.0	-36.8	
5.64	-62.6	H	3.0	-9.0	34.1	1.0	-42.1	-13.0	-29.1	
7.52	-69.2	H	3.0	-12.7	33.5	1.0	-45.2	-13.0	-32.2	
3.76	-66.2	V	3.0	-16.1	34.4	1.0	-49.5	-13.0	-36.5	
5.64	-61.8	V	3.0	-8.1	34.1	1.0	-41.2	-13.0	-28.2	
7.52	-69.8	V	3.0	-13.5	33.5	1.0	-46.0	-13.0	-33.0	
High Channel (1909.8MHz)										
3.82	-66.3	H	3.0	-16.1	34.4	1.0	-49.5	-13.0	-36.5	
5.73	-68.3	H	3.0	-14.6	34.1	1.0	-47.7	-13.0	-34.7	
7.54	-69.3	H	3.0	-12.8	33.5	1.0	-45.3	-13.0	-32.3	
3.82	-66.3	V	3.0	-16.0	34.4	1.0	-49.4	-13.0	-36.4	
5.73	-68.3	V	3.0	-14.4	34.1	1.0	-47.5	-13.0	-34.5	
7.54	-69.3	V	3.0	-13.0	33.5	1.0	-45.5	-13.0	-32.5	

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GSM 1900MHz EGPRS

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701i
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9.1.2. CDMA

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/15/18
Test Engineer: 10641
Configuration: EUT only
Mode: 1xRTT 800MHz

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

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

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (817.25MHz)										
1.63	-53.6	H	3.0	-11.1	37.8	1.0	-48.0	-13.0	-35.0	
2.45	-62.1	H	3.0	-17.2	38.4	1.0	-54.6	-13.0	-41.6	
3.27	-66.0	H	3.0	-17.1	38.5	1.0	-54.6	-13.0	-41.6	
1.63	-55.9	V	3.0	-13.8	37.8	1.0	-50.7	-13.0	-37.7	
2.45	-62.3	V	3.0	-17.2	38.4	1.0	-54.6	-13.0	-41.6	
3.27	-65.6	V	3.0	-17.0	38.5	1.0	-54.5	-13.0	-41.5	
Mid Channel (820MHz)										
1.64	-61.4	H	3.0	-19.0	37.8	1.0	-55.8	-13.0	-42.8	
2.46	-62.9	H	3.0	-18.0	38.4	1.0	-55.4	-13.0	-42.4	
3.28	-65.7	H	3.0	-16.8	38.5	1.0	-54.3	-13.0	-41.3	
1.64	-53.3	V	3.0	-11.2	37.8	1.0	-48.0	-13.0	-35.0	
2.46	-65.3	V	3.0	-20.2	38.4	1.0	-57.6	-13.0	-44.6	
3.28	-65.9	V	3.0	-17.3	38.5	1.0	-54.7	-13.0	-41.7	
High Channel (822.75MHz)										
1.65	-60.0	H	3.0	-17.6	37.8	1.0	-54.4	-13.0	-41.4	
2.47	-65.3	H	3.0	-20.3	38.5	1.0	-57.8	-13.0	-44.8	
3.29	-66.1	H	3.0	-17.1	38.5	1.0	-54.6	-13.0	-41.6	
1.65	-56.1	V	3.0	-14.0	37.8	1.0	-50.8	-13.0	-37.8	
2.47	-63.9	V	3.0	-18.8	38.5	1.0	-56.2	-13.0	-43.2	
3.29	-65.4	V	3.0	-16.7	38.5	1.0	-54.2	-13.0	-41.2	

Rev. 03.19.15

CDMA BC10 1xRTT

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/15/18
Test Engineer: 10641
Configuration: EUT only
Mode: Rev 0/A, 800MHz

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

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

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (817.25MHz)										
1.63	-51.7	H	3.0	-9.3	37.8	1.0	-46.1	-13.0	-33.1	
2.45	-61.4	H	3.0	-16.5	38.4	1.0	-53.9	-13.0	-40.9	
3.27	-65.0	H	3.0	-16.1	38.5	1.0	-53.6	-13.0	-40.6	
1.63	-54.0	V	3.0	-12.0	37.8	1.0	-48.8	-13.0	-35.8	
2.45	-61.9	V	3.0	-16.8	38.4	1.0	-54.2	-13.0	-41.2	
3.27	-64.1	V	3.0	-15.5	38.5	1.0	-52.9	-13.0	-39.9	
Mid Channel (820MHz)										
1.64	-58.8	H	3.0	-16.3	37.8	1.0	-53.2	-13.0	-40.2	
2.46	-61.3	H	3.0	-16.4	38.4	1.0	-53.8	-13.0	-40.8	
3.28	-65.6	H	3.0	-16.7	38.5	1.0	-54.1	-13.0	-41.1	
1.64	-51.4	V	3.0	-9.3	37.8	1.0	-46.1	-13.0	-33.1	
2.46	-64.3	V	3.0	-19.2	38.4	1.0	-56.6	-13.0	-43.6	
3.28	-65.7	V	3.0	-17.1	38.5	1.0	-54.6	-13.0	-41.6	
High Channel (822.75MHz)										
1.65	-59.5	H	3.0	-17.0	37.8	1.0	-53.9	-13.0	-40.9	
2.47	-65.4	H	3.0	-20.4	38.5	1.0	-57.8	-13.0	-44.8	
3.29	-64.9	H	3.0	-15.9	38.5	1.0	-53.4	-13.0	-40.4	
1.65	-64.0	V	3.0	-21.9	37.8	1.0	-58.7	-13.0	-45.7	
2.47	-62.6	V	3.0	-17.4	38.5	1.0	-54.9	-13.0	-41.9	
3.29	-65.8	V	3.0	-17.1	38.5	1.0	-54.6	-13.0	-41.6	

Rev. 03.19.15

CDMA BC10 1xEV-DO Rev A

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/15/18
Test Engineer: 10641
Configuration: EUT Only
Mode: 1xRTT 850MHz

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

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

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (824.7MHz)										
1.65	-62.8	H	3.0	-20.3	37.8	1.0	-57.2	-13.0	-44.2	
2.47	-61.0	H	3.0	-16.0	38.5	1.0	-53.5	-13.0	-40.5	
3.30	-65.6	H	3.0	-16.7	38.5	1.0	-54.1	-13.0	-41.1	
1.65	-56.8	V	3.0	-14.7	37.8	1.0	-51.5	-13.0	-38.5	
2.47	-61.4	V	3.0	-16.3	38.5	1.0	-53.7	-13.0	-40.7	
3.30	-66.0	V	3.0	-17.3	38.5	1.0	-54.8	-13.0	-41.8	
Mid Channel (836.52MHz)										
1.67	-58.0	H	3.0	-15.5	37.8	1.0	-52.3	-13.0	-39.3	
2.51	-64.8	H	3.0	-19.6	38.6	1.0	-57.2	-13.0	-44.2	
3.35	-65.6	H	3.0	-16.5	38.5	1.0	-54.0	-13.0	-41.0	
1.67	-57.2	V	3.0	-14.9	37.8	1.0	-51.8	-13.0	-38.8	
2.51	-64.5	V	3.0	-19.1	38.6	1.0	-56.7	-13.0	-43.7	
3.35	-65.6	V	3.0	-16.8	38.5	1.0	-54.3	-13.0	-41.3	
High Channel (848.31MHz)										
1.70	-54.5	H	3.0	-12.0	37.9	1.0	-48.8	-13.0	-35.8	
2.54	-66.1	H	3.0	-20.7	38.6	1.0	-58.3	-13.0	-45.3	
3.39	-66.9	H	3.0	-17.7	38.5	1.0	-55.2	-13.0	-42.2	
1.70	-53.8	V	3.0	-11.4	37.9	1.0	-48.3	-13.0	-35.3	
2.54	-65.4	V	3.0	-19.9	38.6	1.0	-57.4	-13.0	-44.4	
3.39	-65.8	V	3.0	-16.9	38.5	1.0	-54.4	-13.0	-41.4	

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CDMA BC0 1xRTT

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/15/18
Test Engineer: 10641
Configuration: EUT only
Mode: Rev 0/A 850MHz

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

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

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (824.7MHz)										
1.65	-61.2	H	3.0	-18.8	37.8	1.0	-55.6	-13.0	-42.6	
2.47	-61.9	H	3.0	-16.9	38.5	1.0	-54.4	-13.0	-41.4	
3.30	-65.3	H	3.0	-16.3	38.5	1.0	-53.8	-13.0	-40.8	
1.65	-57.8	V	3.0	-15.7	37.8	1.0	-52.5	-13.0	-39.5	
2.47	-60.8	V	3.0	-15.6	38.5	1.0	-53.1	-13.0	-40.1	
3.30	-66.1	V	3.0	-17.4	38.5	1.0	-54.9	-13.0	-41.9	
Mid Channel (836.52MHz)										
1.67	-57.4	H	3.0	-14.9	37.8	1.0	-51.8	-13.0	-38.8	
2.51	-64.5	H	3.0	-19.3	38.6	1.0	-56.9	-13.0	-43.9	
3.35	-65.4	H	3.0	-16.3	38.5	1.0	-53.8	-13.0	-40.8	
1.67	-56.1	V	3.0	-13.8	37.8	1.0	-50.7	-13.0	-37.7	
2.51	-63.5	V	3.0	-18.1	38.6	1.0	-55.7	-13.0	-42.7	
3.35	-65.3	V	3.0	-16.4	38.5	1.0	-53.9	-13.0	-40.9	
High Channel (848.31MHz)										
1.70	-51.4	H	3.0	-8.8	37.9	1.0	-45.7	-13.0	-32.7	
2.54	-65.4	H	3.0	-20.0	38.6	1.0	-57.6	-13.0	-44.6	
3.39	-65.4	H	3.0	-16.2	38.5	1.0	-53.7	-13.0	-40.7	
1.70	-52.4	V	3.0	-10.1	37.9	1.0	-46.9	-13.0	-33.9	
2.54	-65.0	V	3.0	-19.5	38.6	1.0	-57.0	-13.0	-44.0	
3.39	-66.3	V	3.0	-17.4	38.5	1.0	-54.9	-13.0	-41.9	

Rev. 03.19.15

CDMA BC0 1xEV-DO Rev A

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/15/18
Test Engineer: 10641
Configuration: EUT only
Mode: 1xRTT 1900MHz

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

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

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1851.25MHz)										
3.70	-62.6	H	3.0	-12.7	38.6	1.0	-50.3	-13.0	-37.3	
5.55	-63.3	H	3.0	-9.2	38.6	1.0	-46.8	-13.0	-33.8	
7.41	-65.1	H	3.0	-7.4	37.8	1.0	-44.2	-13.0	-31.2	
3.70	-63.2	V	3.0	-13.3	38.6	1.0	-50.9	-13.0	-37.9	
5.55	-65.1	V	3.0	-11.3	38.6	1.0	-48.9	-13.0	-35.9	
7.41	-67.5	V	3.0	-10.1	37.8	1.0	-46.9	-13.0	-33.9	
Mid Channel (1880MHz)										
3.76	-61.6	H	3.0	-11.5	38.6	1.0	-49.1	-13.0	-36.1	
5.64	-64.3	H	3.0	-10.1	38.5	1.0	-47.6	-13.0	-34.6	
7.52	-65.9	H	3.0	-8.1	37.7	1.0	-44.9	-13.0	-31.9	
3.76	-61.6	V	3.0	-11.5	38.6	1.0	-49.2	-13.0	-36.2	
5.64	-64.4	V	3.0	-10.4	38.5	1.0	-48.0	-13.0	-35.0	
7.52	-67.1	V	3.0	-9.5	37.7	1.0	-46.2	-13.0	-33.2	
High Channel (1908.75MHz)										
3.82	-61.0	H	3.0	-10.7	38.7	1.0	-48.4	-13.0	-35.4	
5.73	-64.0	H	3.0	-9.5	38.5	1.0	-47.1	-13.0	-34.1	
7.64	-66.2	H	3.0	-8.2	37.7	1.0	-44.9	-13.0	-31.9	
3.82	-61.9	V	3.0	-11.7	38.7	1.0	-49.4	-13.0	-36.4	
5.73	-64.7	V	3.0	-10.6	38.5	1.0	-48.1	-13.0	-35.1	
7.64	-65.8	V	3.0	-8.0	37.7	1.0	-44.7	-13.0	-31.7	

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CDMA BC1 1xRTT

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/15/18
Test Engineer: 10641
Configuration: EUT only
Mode: Rev 0/A 1900MHz

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

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

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1851.25MHz)										
3.70	-61.8	H	3.0	-11.8	38.6	1.0	-49.5	-13.0	-36.5	
5.55	-62.8	H	3.0	-8.7	38.6	1.0	-46.3	-13.0	-33.3	
7.41	-65.7	H	3.0	-8.0	37.8	1.0	-44.8	-13.0	-31.8	
3.70	-62.2	V	3.0	-12.3	38.6	1.0	-49.9	-13.0	-36.9	
5.55	-63.6	V	3.0	-9.9	38.6	1.0	-47.5	-13.0	-34.5	
7.41	-66.3	V	3.0	-8.9	37.8	1.0	-45.7	-13.0	-32.7	
Mid Channel (1880MHz)										
3.76	-62.7	H	3.0	-12.6	38.6	1.0	-50.2	-13.0	-37.2	
5.64	-64.8	H	3.0	-10.5	38.5	1.0	-48.1	-13.0	-35.1	
7.52	-66.2	H	3.0	-8.4	37.7	1.0	-45.2	-13.0	-32.2	
3.76	-62.3	V	3.0	-12.2	38.6	1.0	-49.8	-13.0	-36.8	
5.64	-63.7	V	3.0	-9.8	38.5	1.0	-47.3	-13.0	-34.3	
7.52	-66.4	V	3.0	-8.8	37.7	1.0	-45.5	-13.0	-32.5	
High Channel (1908.75MHz)										
3.82	-62.4	H	3.0	-12.1	38.7	1.0	-49.8	-13.0	-36.8	
5.73	-64.5	H	3.0	-10.1	38.5	1.0	-47.6	-13.0	-34.6	
7.64	-66.8	H	3.0	-8.8	37.7	1.0	-45.5	-13.0	-32.5	
3.82	-61.8	V	3.0	-11.6	38.7	1.0	-49.2	-13.0	-36.2	
5.73	-64.3	V	3.0	-10.2	38.5	1.0	-47.7	-13.0	-34.7	
7.64	-65.8	V	3.0	-8.0	37.7	1.0	-44.7	-13.0	-31.7	

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CDMA BC1 1xEV-DO Rev A

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9.1.3. WCDMA

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/19/18
Test Engineer: 36648
Configuration: EUT Only
Mode: REL 99, 850MHz

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (826.4MHz)										
1.65	-63.8	H	3.0	-22.6	33.7	1.0	-55.3	-13.0	-42.3	
2.48	-66.2	H	3.0	-22.1	34.1	1.0	-55.2	-13.0	-42.2	
3.31	-65.9	H	3.0	-17.6	34.7	1.0	-51.2	-13.0	-38.2	
1.65	-63.1	V	3.0	-19.7	33.7	1.0	-52.4	-13.0	-39.4	
2.48	-64.7	V	3.0	-19.9	34.1	1.0	-53.0	-13.0	-40.0	
3.31	-65.9	V	3.0	-17.3	34.7	1.0	-51.0	-13.0	-38.0	
Mid Channel (836.6MHz)										
1.67	-62.6	H	3.0	-21.2	33.7	1.0	-53.9	-13.0	-40.9	
2.51	-65.1	H	3.0	-20.9	34.1	1.0	-54.0	-13.0	-41.0	
3.35	-66.0	H	3.0	-17.6	34.6	1.0	-51.2	-13.0	-38.2	
1.67	-61.8	V	3.0	-18.4	33.7	1.0	-51.1	-13.0	-38.1	
2.51	-66.7	V	3.0	-21.9	34.1	1.0	-55.0	-13.0	-42.0	
3.35	-66.7	V	3.0	-18.0	34.6	1.0	-51.7	-13.0	-38.7	
High Channel (846.6MHz)										
1.69	-63.9	H	3.0	-22.4	33.7	1.0	-55.1	-13.0	-42.1	
2.54	-65.6	H	3.0	-21.2	34.1	1.0	-54.3	-13.0	-41.3	
3.39	-65.8	H	3.0	-17.2	34.6	1.0	-50.8	-13.0	-37.8	
1.69	-62.4	V	3.0	-19.0	33.7	1.0	-51.7	-13.0	-38.7	
2.54	-66.3	V	3.0	-21.3	34.1	1.0	-54.4	-13.0	-41.4	
3.39	-66.1	V	3.0	-17.3	34.6	1.0	-51.0	-13.0	-38.0	

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WCDMA Band 5 Rel 99

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/19/18
Test Engineer: 36648
Configuration: EUT Only
Mode: HSDPA 850MHz

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (826.4MHz)										
1.65	-63.0	H	3.0	-21.8	33.7	1.0	-54.5	-13.0	-41.5	
2.48	-67.2	H	3.0	-23.1	34.1	1.0	-56.2	-13.0	-43.2	
3.31	-65.8	H	3.0	-17.6	34.7	1.0	-51.2	-13.0	-38.2	
1.65	-63.2	V	3.0	-19.8	33.7	1.0	-52.5	-13.0	-39.5	
2.48	-66.1	V	3.0	-21.4	34.1	1.0	-54.5	-13.0	-41.5	
3.31	-66.1	V	3.0	-17.6	34.7	1.0	-51.3	-13.0	-38.3	
Mid Channel (836.6MHz)										
1.67	-64.3	H	3.0	-23.0	33.7	1.0	-55.7	-13.0	-42.7	
2.51	-67.1	H	3.0	-22.8	34.1	1.0	-55.9	-13.0	-42.9	
3.35	-67.2	H	3.0	-18.8	34.6	1.0	-52.4	-13.0	-39.4	
1.67	-60.8	V	3.0	-17.4	33.7	1.0	-50.1	-13.0	-37.1	
2.51	-66.9	V	3.0	-22.0	34.1	1.0	-55.1	-13.0	-42.1	
3.35	-65.7	V	3.0	-17.0	34.6	1.0	-50.6	-13.0	-37.6	
High Channel (846.6MHz)										
1.69	-62.6	H	3.0	-21.1	33.7	1.0	-53.8	-13.0	-40.8	
2.54	-66.2	H	3.0	-21.8	34.1	1.0	-55.0	-13.0	-42.0	
3.39	-66.4	H	3.0	-17.9	34.6	1.0	-51.5	-13.0	-38.5	
1.69	-62.0	V	3.0	-18.5	33.7	1.0	-51.2	-13.0	-38.2	
2.54	-65.9	V	3.0	-21.0	34.1	1.0	-54.1	-13.0	-41.1	
3.39	-67.0	V	3.0	-18.2	34.6	1.0	-51.8	-13.0	-38.8	

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WCDMA Band 5 HSDPA

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/19/18
Test Engineer: 36648
Configuration: EUT Only
Mode: REL 99, 1900MHz

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1852.4MHz)										
3.70	-64.6	H	3.0	-14.8	34.4	1.0	-48.2	-13.0	-35.2	
5.56	-67.3	H	3.0	-13.9	34.1	1.0	-47.0	-13.0	-34.0	
7.41	-66.6	H	3.0	-10.3	33.6	1.0	-42.9	-13.0	-29.9	
3.70	-65.0	V	3.0	-15.1	34.4	1.0	-48.5	-13.0	-35.5	
5.55	-67.1	V	3.0	-13.4	34.1	1.0	-46.5	-13.0	-33.5	
7.42	-67.8	V	3.0	-11.6	33.6	1.0	-44.2	-13.0	-31.2	
Mid Channel (1880MHz)										
3.76	-64.2	H	3.0	-14.2	34.4	1.0	-47.6	-13.0	-34.6	
5.64	-66.7	H	3.0	-13.1	34.1	1.0	-46.2	-13.0	-33.2	
7.52	-67.8	H	3.0	-11.4	33.5	1.0	-43.9	-13.0	-30.9	
3.76	-64.6	V	3.0	-14.5	34.4	1.0	-48.0	-13.0	-35.0	
5.64	-67.6	V	3.0	-13.9	34.1	1.0	-47.0	-13.0	-34.0	
7.52	-67.7	V	3.0	-11.4	33.5	1.0	-43.9	-13.0	-30.9	
High Channel (1907.6MHz)										
3.81	-64.7	H	3.0	-14.5	34.4	1.0	-47.9	-13.0	-34.9	
5.72	-67.4	H	3.0	-13.7	34.1	1.0	-46.8	-13.0	-33.8	
7.66	-68.9	H	3.0	-12.2	33.4	1.0	-44.6	-13.0	-31.6	
3.82	-64.4	V	3.0	-14.2	34.4	1.0	-47.5	-13.0	-34.5	
5.72	-67.0	V	3.0	-13.2	34.1	1.0	-46.3	-13.0	-33.3	
7.63	-66.8	V	3.0	-10.3	33.4	1.0	-42.8	-13.0	-29.8	

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WCDMA Band 2 Rel 99

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/19/18
Test Engineer: 36648
Configuration: EUT Only
Mode: HSDPA 1900MHz

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1852.4MHz)										
3.70	-65.9	H	3.0	-16.1	34.4	1.0	-49.5	-13.0	-36.5	
5.56	-66.7	H	3.0	-13.2	34.1	1.0	-46.3	-13.0	-33.3	
7.41	-68.1	H	3.0	-11.8	33.6	1.0	-44.4	-13.0	-31.4	
3.70	-64.2	V	3.0	-14.4	34.4	1.0	-47.8	-13.0	-34.8	
5.56	-65.3	V	3.0	-11.6	34.1	1.0	-44.7	-13.0	-31.7	
7.41	-67.8	V	3.0	-11.7	33.6	1.0	-44.3	-13.0	-31.3	
Mid Channel (1880MHz)										
3.76	-65.1	H	3.0	-15.1	34.4	1.0	-48.5	-13.0	-35.5	
5.64	-66.5	H	3.0	-12.9	34.1	1.0	-46.0	-13.0	-33.0	
7.52	-67.0	H	3.0	-10.5	33.5	1.0	-43.1	-13.0	-30.1	
3.76	-64.8	V	3.0	-14.7	34.4	1.0	-48.1	-13.0	-35.1	
5.64	-66.6	V	3.0	-12.9	34.1	1.0	-46.0	-13.0	-33.0	
7.52	-68.4	V	3.0	-12.1	33.5	1.0	-44.6	-13.0	-31.6	
9.40	-66.2	V	3.0	-7.3	32.1	1.0	-38.4	-13.0	-25.4	
High Channel (1907.6MHz)										
3.82	-65.1	H	3.0	-14.9	34.4	1.0	-48.3	-13.0	-35.3	
5.72	-66.7	H	3.0	-13.0	34.1	1.0	-46.1	-13.0	-33.1	
7.63	-68.2	H	3.0	-11.6	33.4	1.0	-44.0	-13.0	-31.0	
3.82	-63.9	V	3.0	-13.6	34.4	1.0	-47.0	-13.0	-34.0	
5.72	-66.2	V	3.0	-12.4	34.1	1.0	-45.5	-13.0	-32.5	
7.63	-66.9	V	3.0	-10.4	33.4	1.0	-42.8	-13.0	-29.8	

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WCDMA Band 2 HSDPA

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/19/18
Test Engineer: 36648
Configuration: EUT Only
Mode: REL 99, 1700MHz

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1712.4MHz)										
3.42	-65.5	H	3.0	-16.8	34.6	1.0	-50.4	-13.0	-37.4	
5.14	-63.5	H	3.0	-10.7	34.2	1.0	-43.9	-13.0	-30.9	
6.85	-67.8	H	3.0	-12.3	33.9	1.0	-45.2	-13.0	-32.2	
3.42	-66.9	V	3.0	-18.0	34.6	1.0	-51.6	-13.0	-38.6	
5.14	-64.6	V	3.0	-11.6	34.2	1.0	-44.8	-13.0	-31.8	
6.85	-67.5	V	3.0	-12.1	33.9	1.0	-45.1	-13.0	-32.1	
Mid Channel (1732.6MHz)										
3.47	-65.9	H	3.0	-17.0	34.6	1.0	-50.6	-13.0	-37.6	
5.20	-66.6	H	3.0	-13.8	34.2	1.0	-47.0	-13.0	-34.0	
6.93	-67.3	H	3.0	-11.7	33.9	1.0	-44.6	-13.0	-31.6	
3.47	-66.5	V	3.0	-17.4	34.6	1.0	-51.0	-13.0	-38.0	
5.20	-65.0	V	3.0	-11.8	34.2	1.0	-45.0	-13.0	-32.0	
6.93	-64.4	V	3.0	-8.9	33.9	1.0	-41.9	-13.0	-28.9	
High Channel (1752.6MHz)										
3.51	-67.1	H	3.0	-18.0	34.5	1.0	-51.6	-13.0	-38.6	
5.26	-66.0	H	3.0	-13.0	34.2	1.0	-46.2	-13.0	-33.2	
7.01	-67.3	H	3.0	-11.5	33.9	1.0	-44.4	-13.0	-31.4	
3.51	-67.3	V	3.0	-18.1	34.5	1.0	-51.7	-13.0	-38.7	
5.26	-66.9	V	3.0	-13.8	34.2	1.0	-46.8	-13.0	-33.8	
7.01	-67.2	V	3.0	-11.7	33.9	1.0	-44.6	-13.0	-31.6	

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WCDMA Band 4 Rel 99

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/19/18
Test Engineer: 36648
Configuration: EUT Only
Mode: HSDPA 1700MHz

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1712.4MHz)										
3.42	-65.6	H	3.0	-16.9	34.6	1.0	-50.5	-13.0	-37.5	
5.14	-64.8	H	3.0	-12.0	34.2	1.0	-45.2	-13.0	-32.2	
6.85	-67.2	H	3.0	-11.7	33.9	1.0	-44.7	-13.0	-31.7	
3.42	-65.6	V	3.0	-16.7	34.6	1.0	-50.3	-13.0	-37.3	
5.14	-64.8	V	3.0	-11.7	34.2	1.0	-44.9	-13.0	-31.9	
6.85	-67.2	V	3.0	-11.9	33.9	1.0	-44.8	-13.0	-31.8	
Mid Channel (1732.6MHz)										
3.47	-66.9	H	3.0	-18.0	34.6	1.0	-51.6	-13.0	-38.6	
5.20	-66.7	H	3.0	-13.8	34.2	1.0	-47.0	-13.0	-34.0	
6.93	-67.6	H	3.0	-11.9	33.9	1.0	-44.9	-13.0	-31.9	
3.47	-65.6	V	3.0	-16.6	34.6	1.0	-50.1	-13.0	-37.1	
5.20	-64.8	V	3.0	-11.6	34.2	1.0	-44.8	-13.0	-31.8	
6.93	-67.8	V	3.0	-12.3	33.9	1.0	-45.2	-13.0	-32.2	
High Channel (1752.6MHz)										
3.51	-66.0	H	3.0	-17.0	34.5	1.0	-50.5	-13.0	-37.5	
5.26	-65.5	H	3.0	-12.6	34.2	1.0	-45.7	-13.0	-32.7	
7.01	-67.3	H	3.0	-11.5	33.9	1.0	-44.4	-13.0	-31.4	
3.51	-66.2	V	3.0	-17.0	34.5	1.0	-50.5	-13.0	-37.5	
5.26	-64.9	V	3.0	-11.7	34.2	1.0	-44.9	-13.0	-31.9	
7.01	-66.7	V	3.0	-11.1	33.9	1.0	-44.0	-13.0	-31.0	

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WCDMA Band 4 HSDPA

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9.2. FIELD STRENGTH OF SPURIOUS RADIATION (Ant 2)

9.2.1. GSM

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/20/18
Test Engineer: 12500
Configuration: EUT + charger
Mode: GPRS 850MHz

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (824.2MHz)										
1.65	-68.1	H	3.0	-26.9	33.7	1.0	-59.6	-13.0	-46.6	
2.47	-68.7	H	3.0	-24.6	34.1	1.0	-57.7	-13.0	-44.7	
3.30	-68.2	H	3.0	-20.0	34.7	1.0	-53.6	-13.0	-40.6	
1.65	-68.1	V	3.0	-24.7	33.7	1.0	-57.4	-13.0	-44.4	
2.47	-68.5	V	3.0	-23.8	34.1	1.0	-56.9	-13.0	-43.9	
3.30	-68.2	V	3.0	-19.8	34.7	1.0	-53.4	-13.0	-40.4	
Mid Channel (836.6MHz)										
1.67	-69.5	H	3.0	-28.2	33.7	1.0	-60.9	-13.0	-47.9	
2.51	-66.6	H	3.0	-22.3	34.1	1.0	-55.4	-13.0	-42.4	
3.35	-68.1	H	3.0	-19.7	34.6	1.0	-53.3	-13.0	-40.3	
1.67	-69.4	V	3.0	-26.0	33.7	1.0	-58.7	-13.0	-45.7	
2.51	-68.6	V	3.0	-23.8	34.1	1.0	-56.9	-13.0	-43.9	
3.35	-67.9	V	3.0	-19.2	34.6	1.0	-52.9	-13.0	-39.9	
High Channel (848.8MHz)										
1.70	-68.7	H	3.0	-27.2	33.7	1.0	-59.9	-13.0	-46.9	
2.55	-67.1	H	3.0	-22.6	34.2	1.0	-55.8	-13.0	-42.8	
3.40	-68.4	H	3.0	-19.8	34.6	1.0	-53.4	-13.0	-40.4	
1.70	-69.3	V	3.0	-25.9	33.7	1.0	-58.5	-13.0	-45.5	
2.55	-68.5	V	3.0	-23.5	34.2	1.0	-56.6	-13.0	-43.6	
3.40	-69.2	V	3.0	-20.4	34.6	1.0	-54.0	-13.0	-41.0	

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GSM 850MHz GPRS

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/20/18
Test Engineer: 12500
Configuration: EUT + charger
Mode: EGPRS 850MHz

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (824.2MHz)										
1.65	-70.1	H	3.0	-28.9	33.7	1.0	-61.6	-13.0	-48.6	
2.47	-69.8	H	3.0	-25.7	34.1	1.0	-58.8	-13.0	-45.8	
3.30	-69.3	H	3.0	-21.1	34.7	1.0	-54.7	-13.0	-41.7	
1.65	-68.9	V	3.0	-25.5	33.7	1.0	-58.2	-13.0	-45.2	
2.47	-68.8	V	3.0	-24.1	34.1	1.0	-57.2	-13.0	-44.2	
3.30	-68.3	V	3.0	-19.8	34.7	1.0	-53.5	-13.0	-40.5	
Mid Channel (836.6MHz)										
1.67	-69.6	H	3.0	-28.3	33.7	1.0	-61.0	-13.0	-48.0	
2.51	-68.4	H	3.0	-24.2	34.1	1.0	-57.3	-13.0	-44.3	
3.35	-68.3	H	3.0	-19.9	34.6	1.0	-53.5	-13.0	-40.5	
1.67	-68.6	V	3.0	-25.2	33.7	1.0	-57.9	-13.0	-44.9	
2.51	-68.3	V	3.0	-23.5	34.1	1.0	-56.6	-13.0	-43.6	
3.35	-68.0	V	3.0	-19.3	34.6	1.0	-53.0	-13.0	-40.0	
High Channel (848.8MHz)										
1.70	-68.7	H	3.0	-27.2	33.7	1.0	-59.9	-13.0	-46.9	
2.55	-69.0	H	3.0	-24.5	34.2	1.0	-57.7	-13.0	-44.7	
3.40	-67.9	H	3.0	-19.3	34.6	1.0	-52.9	-13.0	-39.9	
1.70	-69.4	V	3.0	-26.0	33.7	1.0	-58.6	-13.0	-45.6	
2.55	-67.6	V	3.0	-22.5	34.2	1.0	-55.7	-13.0	-42.7	
3.40	-69.0	V	3.0	-20.2	34.6	1.0	-53.8	-13.0	-40.8	

Rev. 03.19.15

GSM 850MHz EGPRS

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/20/18
Test Engineer: 12500
Configuration: EUT + charger
Mode: GPRS 1900MHz

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber G	3m Chamber G	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1850.2MHz)										
3.70	-66.0	H	3.0	-19.2	36.2	1.0	-54.5	-13.0	-41.5	
5.55	-67.3	H	3.0	-17.0	36.1	1.0	-52.1	-13.0	-39.1	
7.40	-69.3	H	3.0	-16.2	35.2	1.0	-50.4	-13.0	-37.4	
3.70	-67.3	V	3.0	-20.2	36.2	1.0	-55.4	-13.0	-42.4	
5.55	-69.0	V	3.0	-18.9	36.1	1.0	-54.0	-13.0	-41.0	
7.40	-69.5	V	3.0	-16.5	35.2	1.0	-50.7	-13.0	-37.7	
Mid Channel (1880.0)										
3.76	-65.6	H	3.0	-18.7	36.2	1.0	-53.9	-13.0	-40.9	
5.64	-68.3	H	3.0	-17.8	36.1	1.0	-52.9	-13.0	-39.9	
7.52	-70.0	H	3.0	-16.8	35.1	1.0	-50.9	-13.0	-37.9	
3.76	-65.9	V	3.0	-18.5	36.2	1.0	-53.7	-13.0	-40.7	
5.64	-68.7	V	3.0	-18.4	36.1	1.0	-53.5	-13.0	-40.5	
7.52	-68.5	V	3.0	-15.4	35.1	1.0	-49.5	-13.0	-36.5	
High Channel (1909.8MHz)										
3.82	-64.5	H	3.0	-17.5	36.1	1.0	-52.6	-13.0	-39.6	
5.73	-69.3	H	3.0	-18.7	36.1	1.0	-53.7	-13.0	-40.7	
7.54	-68.8	H	3.0	-15.6	35.1	1.0	-49.7	-13.0	-36.7	
3.82	-66.5	V	3.0	-19.0	36.1	1.0	-54.1	-13.0	-41.1	
5.73	-68.0	V	3.0	-17.6	36.1	1.0	-52.6	-13.0	-39.6	
7.54	-69.2	V	3.0	-16.1	35.1	1.0	-50.2	-13.0	-37.2	

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GSM 1900MHz GPRS

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/20/18
Test Engineer: 12500
Configuration: EUT + charger
Mode: EGPRS 1900MHz

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1850.2MHz)										
3.70	-66.2	H	3.0	-16.4	34.4	1.0	-49.9	-13.0	-36.9	
5.55	-68.4	H	3.0	-15.0	34.1	1.0	-48.1	-13.0	-35.1	
7.40	-68.3	H	3.0	-12.0	33.6	1.0	-44.6	-13.0	-31.6	
3.70	-66.4	V	3.0	-16.5	34.4	1.0	-50.0	-13.0	-37.0	
5.55	-68.4	V	3.0	-14.8	34.1	1.0	-47.9	-13.0	-34.9	
7.40	-68.2	V	3.0	-12.1	33.6	1.0	-44.7	-13.0	-31.7	
Mid Channel (1880.0)										
3.76	-67.4	H	3.0	-17.4	34.4	1.0	-50.8	-13.0	-37.8	
5.64	-69.8	H	3.0	-16.2	34.1	1.0	-49.3	-13.0	-36.3	
7.52	-70.1	H	3.0	-13.6	33.5	1.0	-46.1	-13.0	-33.1	
3.76	-65.3	V	3.0	-15.2	34.4	1.0	-48.6	-13.0	-35.6	
5.64	-69.2	V	3.0	-15.5	34.1	1.0	-48.6	-13.0	-35.6	
7.52	-68.9	V	3.0	-12.6	33.5	1.0	-45.1	-13.0	-32.1	
High Channel (1909.8MHz)										
3.82	-66.3	H	3.0	-16.1	34.4	1.0	-49.5	-13.0	-36.5	
5.73	-69.1	H	3.0	-15.4	34.1	1.0	-48.5	-13.0	-35.5	
7.54	-70.3	H	3.0	-13.8	33.5	1.0	-46.3	-13.0	-33.3	
3.82	-65.8	V	3.0	-15.5	34.4	1.0	-48.9	-13.0	-35.9	
5.73	-68.5	V	3.0	-14.6	34.1	1.0	-47.7	-13.0	-34.7	
7.54	-69.4	V	3.0	-13.1	33.5	1.0	-45.6	-13.0	-32.6	

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GSM 1900MHz EGPRS

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701i
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888

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9.2.2. CDMA

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/22/18
Test Engineer: 36648
Configuration: EUT only
Mode: 1xRTT 800MHz

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber H	3m Chamber H	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (817.25MHz)										
1.63	-62.8	H	3.0	-22.5	37.7	1.0	-59.3	-13.0	-46.3	
2.45	-58.3	H	3.0	-14.4	37.0	1.0	-50.4	-13.0	-37.4	
3.27	-61.1	H	3.0	-13.3	37.9	1.0	-50.2	-13.0	-37.2	
1.63	-62.8	V	3.0	-22.3	37.7	1.0	-59.0	-13.0	-46.0	
2.45	-60.0	V	3.0	-15.9	37.0	1.0	-51.9	-13.0	-38.9	
3.27	-62.6	V	3.0	-15.9	37.9	1.0	-52.8	-13.0	-39.8	
Mid Channel (820MHz)										
1.64	-61.7	H	3.0	-21.4	37.7	1.0	-58.1	-13.0	-45.1	
2.46	-61.0	H	3.0	-17.0	37.0	1.0	-53.1	-13.0	-40.1	
3.28	-63.1	H	3.0	-15.4	37.9	1.0	-52.2	-13.0	-39.2	
1.64	-62.6	V	3.0	-22.1	37.7	1.0	-58.8	-13.0	-45.8	
2.46	-59.4	V	3.0	-15.3	37.0	1.0	-51.4	-13.0	-38.4	
3.28	-63.6	V	3.0	-16.8	37.9	1.0	-53.7	-13.0	-40.7	
High Channel (822.75MHz)										
1.65	-61.7	H	3.0	-21.3	37.7	1.0	-58.0	-13.0	-45.0	
2.47	-60.4	H	3.0	-16.4	37.0	1.0	-52.4	-13.0	-39.4	
3.29	-63.2	H	3.0	-15.5	37.9	1.0	-52.3	-13.0	-39.3	
1.65	-61.9	V	3.0	-21.2	37.7	1.0	-58.0	-13.0	-45.0	
2.47	-59.4	V	3.0	-15.3	37.0	1.0	-51.4	-13.0	-38.4	
3.29	-62.0	V	3.0	-15.3	37.9	1.0	-52.1	-13.0	-39.1	

Rev. 03.19.15

CDMA BC10 1xRTT

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/22/18
Test Engineer: 36648
Configuration: EUT only
Mode: Rev 0/A, 800MHz

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber H	3m Chamber H	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (817.25MHz)										
1.63	-61.6	H	3.0	-21.4	37.7	1.0	-58.1	-13.0	-45.1	
2.45	-55.6	H	3.0	-11.7	37.0	1.0	-47.7	-13.0	-34.7	
3.27	-62.5	H	3.0	-14.7	37.9	1.0	-51.6	-13.0	-38.6	
1.63	-62.1	V	3.0	-21.6	37.7	1.0	-58.3	-13.0	-45.3	
2.45	-58.7	V	3.0	-14.6	37.0	1.0	-50.6	-13.0	-37.6	
3.27	-62.9	V	3.0	-16.2	37.9	1.0	-53.1	-13.0	-40.1	
Mid Channel (820MHz)										
1.64	-61.7	H	3.0	-21.4	37.7	1.0	-58.1	-13.0	-45.1	
2.46	-61.0	H	3.0	-17.0	37.0	1.0	-53.1	-13.0	-40.1	
3.28	-63.1	H	3.0	-15.4	37.9	1.0	-52.2	-13.0	-39.2	
1.64	-62.6	V	3.0	-22.1	37.7	1.0	-58.8	-13.0	-45.8	
2.46	-59.4	V	3.0	-15.3	37.0	1.0	-51.4	-13.0	-38.4	
3.28	-63.6	V	3.0	-16.8	37.9	1.0	-53.7	-13.0	-40.7	
High Channel (822.75MHz)										
1.65	-62.3	H	3.0	-21.9	37.7	1.0	-58.6	-13.0	-45.6	
2.47	-62.5	H	3.0	-18.5	37.0	1.0	-54.6	-13.0	-41.6	
3.29	-62.1	H	3.0	-14.3	37.9	1.0	-51.2	-13.0	-38.2	
1.65	-62.7	V	3.0	-22.1	37.7	1.0	-58.8	-13.0	-45.8	
2.47	-61.4	V	3.0	-17.3	37.0	1.0	-53.3	-13.0	-40.3	
3.29	-62.3	V	3.0	-15.6	37.9	1.0	-52.4	-13.0	-39.4	

Rev. 03.19.15

CDMA BC10 1xEV-DO Rev A

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/22/18
Test Engineer: 36648
Configuration: EUT Only
Mode: 1xRTT 850MHz

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber H	3m Chamber H	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (824.7MHz)										
1.65	-61.1	H	3.0	-20.7	37.7	1.0	-57.4	-13.0	-44.4	
2.47	-61.8	H	3.0	-17.8	37.0	1.0	-53.8	-13.0	-40.8	
3.30	-63.3	H	3.0	-15.5	37.9	1.0	-52.4	-13.0	-39.4	
1.65	-61.3	V	3.0	-20.6	37.7	1.0	-57.4	-13.0	-44.4	
2.47	-60.7	V	3.0	-16.6	37.0	1.0	-52.6	-13.0	-39.6	
3.30	-62.3	V	3.0	-15.5	37.9	1.0	-52.4	-13.0	-39.4	
Mid Channel (836.52MHz)										
1.67	-62.3	H	3.0	-21.7	37.8	1.0	-58.5	-13.0	-45.5	
2.51	-62.4	H	3.0	-18.3	37.1	1.0	-54.4	-13.0	-41.4	
3.35	-63.3	H	3.0	-15.5	37.8	1.0	-52.3	-13.0	-39.3	
1.67	-61.3	V	3.0	-20.5	37.8	1.0	-57.2	-13.0	-44.2	
2.51	-60.7	V	3.0	-16.5	37.1	1.0	-52.6	-13.0	-39.6	
3.35	-62.0	V	3.0	-15.0	37.8	1.0	-51.9	-13.0	-38.9	
High Channel (848.31MHz)										
1.70	-61.9	H	3.0	-21.1	37.8	1.0	-57.9	-13.0	-44.9	
2.54	-62.0	H	3.0	-17.6	37.2	1.0	-53.8	-13.0	-40.8	
3.39	-62.8	H	3.0	-15.0	37.8	1.0	-51.7	-13.0	-38.7	
1.70	-62.3	V	3.0	-21.4	37.8	1.0	-58.1	-13.0	-45.1	
2.54	-61.3	V	3.0	-17.0	37.2	1.0	-53.1	-13.0	-40.1	
3.39	-62.3	V	3.0	-15.3	37.8	1.0	-52.0	-13.0	-39.0	

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CDMA BC0 1xRTT

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/22/18
Test Engineer: 36648
Configuration: EUT only
Mode: Rev 0/A 850MHz

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber H	3m Chamber H	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (824.7MHz)										
1.65	-62.6	H	3.0	-22.2	37.7	1.0	-58.9	-13.0	-45.9	
2.47	-60.0	H	3.0	-16.0	37.0	1.0	-52.0	-13.0	-39.0	
3.30	-62.8	H	3.0	-15.0	37.9	1.0	-51.9	-13.0	-38.9	
1.65	-62.9	V	3.0	-22.2	37.7	1.0	-59.0	-13.0	-46.0	
2.47	-60.5	V	3.0	-16.4	37.0	1.0	-52.4	-13.0	-39.4	
3.30	-62.7	V	3.0	-15.8	37.9	1.0	-52.7	-13.0	-39.7	
Mid Channel (836.52MHz)										
1.67	-62.8	H	3.0	-22.2	37.8	1.0	-59.0	-13.0	-46.0	
2.51	-62.0	H	3.0	-17.8	37.1	1.0	-53.9	-13.0	-40.9	
3.35	-62.1	H	3.0	-14.3	37.8	1.0	-51.1	-13.0	-38.1	
1.67	-61.7	V	3.0	-20.9	37.8	1.0	-57.7	-13.0	-44.7	
2.51	-61.6	V	3.0	-17.4	37.1	1.0	-53.4	-13.0	-40.4	
3.35	-63.1	V	3.0	-16.2	37.8	1.0	-53.0	-13.0	-40.0	
High Channel (848.31MHz)										
1.70	-62.7	H	3.0	-22.0	37.8	1.0	-58.8	-13.0	-45.8	
2.54	-61.8	H	3.0	-17.4	37.2	1.0	-53.6	-13.0	-40.6	
3.39	-63.3	H	3.0	-15.5	37.8	1.0	-52.2	-13.0	-39.2	
1.70	-62.1	V	3.0	-21.2	37.8	1.0	-58.0	-13.0	-45.0	
2.54	-61.4	V	3.0	-17.1	37.2	1.0	-53.2	-13.0	-40.2	
3.39	-62.8	V	3.0	-15.8	37.8	1.0	-52.6	-13.0	-39.6	

Rev. 03.19.15

CDMA BC0 1xEV-DO Rev A

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/22/18
Test Engineer: 36648
Configuration: EUT only
Mode: 1xRTT 1900MHz

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber H	3m Chamber H	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1851.25MHz)										
3.70	-61.6	H	3.0	-13.6	37.4	1.0	-50.1	-13.0	-37.1	
5.55	-66.0	H	3.0	-15.1	36.7	1.0	-50.8	-13.0	-37.8	
7.41	-68.0	H	3.0	-14.3	36.0	1.0	-49.3	-13.0	-36.3	
3.70	-61.0	V	3.0	-13.3	37.4	1.0	-49.7	-13.0	-36.7	
5.55	-66.1	V	3.0	-15.1	36.7	1.0	-50.8	-13.0	-37.8	
7.41	-68.9	V	3.0	-15.4	36.0	1.0	-50.4	-13.0	-37.4	
Mid Channel (1880MHz)										
3.76	-61.7	H	3.0	-13.7	37.4	1.0	-50.1	-13.0	-37.1	
5.64	-66.2	H	3.0	-15.1	36.7	1.0	-50.9	-13.0	-37.9	
7.52	-68.1	H	3.0	-14.2	35.9	1.0	-49.2	-13.0	-36.2	
3.76	-62.3	V	3.0	-14.4	37.4	1.0	-50.8	-13.0	-37.8	
5.64	-66.6	V	3.0	-15.5	36.7	1.0	-51.2	-13.0	-38.2	
7.52	-68.6	V	3.0	-14.9	35.9	1.0	-49.9	-13.0	-36.9	
High Channel (1908.75MHz)										
3.82	-62.0	H	3.0	-14.0	37.3	1.0	-50.3	-13.0	-37.3	
5.73	-66.2	H	3.0	-15.0	36.7	1.0	-50.7	-13.0	-37.7	
7.64	-67.8	H	3.0	-13.9	35.8	1.0	-48.7	-13.0	-35.7	
3.82	-61.9	V	3.0	-14.0	37.3	1.0	-50.3	-13.0	-37.3	
5.73	-67.0	V	3.0	-15.7	36.7	1.0	-51.4	-13.0	-38.4	
7.64	-68.6	V	3.0	-14.9	35.8	1.0	-49.7	-13.0	-36.7	

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CDMA BC1 1xRTT

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/22/18
Test Engineer: 36648
Configuration: EUT only
Mode: Rev 0/A 1900MHz

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber H	3m Chamber H	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1851.25MHz)										
3.70	-62.5	H	3.0	-14.6	37.4	1.0	-51.0	-13.0	-38.0	
5.55	-65.4	H	3.0	-14.5	36.7	1.0	-50.2	-13.0	-37.2	
7.41	-69.3	H	3.0	-15.5	36.0	1.0	-50.6	-13.0	-37.6	
3.70	-62.2	V	3.0	-14.6	37.4	1.0	-51.0	-13.0	-38.0	
5.55	-66.7	V	3.0	-15.7	36.7	1.0	-51.4	-13.0	-38.4	
7.41	-68.0	V	3.0	-14.5	36.0	1.0	-49.6	-13.0	-36.6	
Mid Channel (1880MHz)										
3.76	-62.9	H	3.0	-14.9	37.4	1.0	-51.3	-13.0	-38.3	
5.64	-66.4	H	3.0	-15.3	36.7	1.0	-51.0	-13.0	-38.0	
7.52	-69.1	H	3.0	-15.2	35.9	1.0	-50.1	-13.0	-37.1	
3.76	-62.2	V	3.0	-14.4	37.4	1.0	-50.8	-13.0	-37.8	
5.64	-64.9	V	3.0	-13.7	36.7	1.0	-49.4	-13.0	-36.4	
7.52	-68.8	V	3.0	-15.2	35.9	1.0	-50.1	-13.0	-37.1	
High Channel (1908.75MHz)										
3.82	-62.5	H	3.0	-14.5	37.3	1.0	-50.8	-13.0	-37.8	
5.73	-67.1	H	3.0	-15.9	36.7	1.0	-51.6	-13.0	-38.6	
7.64	-68.6	H	3.0	-14.6	35.8	1.0	-49.5	-13.0	-36.5	
3.82	-61.9	V	3.0	-14.0	37.3	1.0	-50.3	-13.0	-37.3	
5.73	-65.6	V	3.0	-14.3	36.7	1.0	-50.0	-13.0	-37.0	
7.64	-69.0	V	3.0	-15.3	35.8	1.0	-50.1	-13.0	-37.1	

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CDMA BC1 1xEV-DO Rev A

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9.2.3. WCDMA

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/19/18
Test Engineer: 36648
Configuration: EUT Only
Mode: REL 99, 850MHz

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (826.4MHz)										
1.65	-64.3	H	3.0	-23.1	33.7	1.0	-55.8	-13.0	-42.8	
2.48	-64.0	H	3.0	-19.9	34.1	1.0	-53.0	-13.0	-40.0	
3.31	-65.4	H	3.0	-17.1	34.7	1.0	-50.8	-13.0	-37.8	
1.65	-63.7	V	3.0	-20.3	33.7	1.0	-53.0	-13.0	-40.0	
2.48	-66.0	V	3.0	-21.2	34.1	1.0	-54.4	-13.0	-41.4	
3.31	-67.0	V	3.0	-18.5	34.7	1.0	-52.2	-13.0	-39.2	
Mid Channel (836.6MHz)										
1.67	-65.5	H	3.0	-24.2	33.7	1.0	-56.9	-13.0	-43.9	
2.51	-64.6	H	3.0	-20.4	34.1	1.0	-53.5	-13.0	-40.5	
3.35	-65.9	H	3.0	-17.5	34.6	1.0	-51.2	-13.0	-38.2	
1.67	-62.2	V	3.0	-18.8	33.7	1.0	-51.5	-13.0	-38.5	
2.51	-66.3	V	3.0	-21.4	34.1	1.0	-54.5	-13.0	-41.5	
3.35	-66.5	V	3.0	-17.9	34.6	1.0	-51.5	-13.0	-38.5	
High Channel (846.6MHz)										
1.69	-63.4	H	3.0	-22.0	33.7	1.0	-54.7	-13.0	-41.7	
2.54	-65.3	H	3.0	-20.9	34.1	1.0	-54.1	-13.0	-41.1	
3.39	-66.0	H	3.0	-17.5	34.6	1.0	-51.1	-13.0	-38.1	
1.69	-62.4	V	3.0	-18.9	33.7	1.0	-51.6	-13.0	-38.6	
2.54	-67.3	V	3.0	-22.3	34.1	1.0	-55.4	-13.0	-42.4	
3.39	-66.4	V	3.0	-17.6	34.6	1.0	-51.2	-13.0	-38.2	

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WCDMA Band 5 Rel 99

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/19/18
Test Engineer: 36648
Configuration: EUT Only
Mode: HSDPA 850MHz

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (826.4MHz)										
1.65	-66.2	H	3.0	-25.0	33.7	1.0	-57.7	-13.0	-44.7	
2.48	-66.3	H	3.0	-22.2	34.1	1.0	-55.3	-13.0	-42.3	
3.31	-67.1	H	3.0	-18.8	34.7	1.0	-52.4	-13.0	-39.4	
1.65	-66.3	V	3.0	-22.9	33.7	1.0	-55.6	-13.0	-42.6	
2.48	-67.1	V	3.0	-22.3	34.1	1.0	-55.5	-13.0	-42.5	
3.31	-67.1	V	3.0	-18.6	34.7	1.0	-52.3	-13.0	-39.3	
Mid Channel (836.6MHz)										
1.67	-66.2	H	3.0	-24.9	33.7	1.0	-57.6	-13.0	-44.6	
2.51	-65.9	H	3.0	-21.7	34.1	1.0	-54.8	-13.0	-41.8	
3.35	-66.4	H	3.0	-18.0	34.6	1.0	-51.6	-13.0	-38.6	
1.67	-66.5	V	3.0	-23.1	33.7	1.0	-55.8	-13.0	-42.8	
2.51	-66.4	V	3.0	-21.6	34.1	1.0	-54.7	-13.0	-41.7	
3.35	-66.6	V	3.0	-17.9	34.6	1.0	-51.6	-13.0	-38.6	
High Channel (846.6MHz)										
1.69	-65.3	H	3.0	-23.9	33.7	1.0	-56.5	-13.0	-43.5	
2.54	-66.3	H	3.0	-21.9	34.1	1.0	-55.1	-13.0	-42.1	
3.39	-65.3	H	3.0	-16.8	34.6	1.0	-50.4	-13.0	-37.4	
1.69	-63.7	V	3.0	-20.3	33.7	1.0	-53.0	-13.0	-40.0	
2.54	-66.7	V	3.0	-21.8	34.1	1.0	-54.9	-13.0	-41.9	
3.39	-67.4	V	3.0	-18.6	34.6	1.0	-52.2	-13.0	-39.2	

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WCDMA Band 5 HSDPA

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/19/18
Test Engineer: 36648
Configuration: EUT Only
Mode: REL 99, 1900MHz

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1852.4MHz)										
3.70	-63.9	H	3.0	-14.2	34.4	1.0	-47.6	-13.0	-34.6	
5.56	-66.0	H	3.0	-12.5	34.1	1.0	-45.6	-13.0	-32.6	
7.41	-67.4	H	3.0	-11.1	33.6	1.0	-43.7	-13.0	-30.7	
3.70	-64.4	V	3.0	-14.5	34.4	1.0	-48.0	-13.0	-35.0	
5.55	-66.9	V	3.0	-13.2	34.1	1.0	-46.4	-13.0	-33.4	
7.42	-66.9	V	3.0	-10.7	33.6	1.0	-43.3	-13.0	-30.3	
Mid Channel (1880MHz)										
3.76	-64.3	H	3.0	-14.4	34.4	1.0	-47.8	-13.0	-34.8	
5.64	-66.6	H	3.0	-13.0	34.1	1.0	-46.1	-13.0	-33.1	
7.52	-67.8	H	3.0	-11.3	33.5	1.0	-43.8	-13.0	-30.8	
3.76	-63.9	V	3.0	-13.8	34.4	1.0	-47.2	-13.0	-34.2	
5.64	-66.3	V	3.0	-12.5	34.1	1.0	-45.7	-13.0	-32.7	
7.52	-67.0	V	3.0	-10.7	33.5	1.0	-43.2	-13.0	-30.2	
High Channel (1907.6MHz)										
3.81	-64.2	H	3.0	-14.0	34.4	1.0	-47.4	-13.0	-34.4	
5.72	-66.5	H	3.0	-12.8	34.1	1.0	-45.9	-13.0	-32.9	
7.66	-67.2	H	3.0	-10.6	33.4	1.0	-43.0	-13.0	-30.0	
3.82	-64.4	V	3.0	-14.1	34.4	1.0	-47.5	-13.0	-34.5	
5.72	-65.5	V	3.0	-11.7	34.1	1.0	-44.8	-13.0	-31.8	
7.63	-66.0	V	3.0	-9.5	33.4	1.0	-42.0	-13.0	-29.0	

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WCDMA Band 2 Rel 99

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/19/18
Test Engineer: 36648
Configuration: EUT Only
Mode: HSDPA 1900MHz

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1852.4MHz)										
3.70	-65.6	H	3.0	-15.9	34.4	1.0	-49.3	-13.0	-36.3	
5.56	-66.3	H	3.0	-12.8	34.1	1.0	-45.9	-13.0	-32.9	
7.41	-68.4	H	3.0	-12.0	33.6	1.0	-44.6	-13.0	-31.6	
3.70	-64.5	V	3.0	-14.7	34.4	1.0	-48.1	-13.0	-35.1	
5.56	-66.4	V	3.0	-12.8	34.1	1.0	-45.9	-13.0	-32.9	
7.41	-67.1	V	3.0	-11.0	33.6	1.0	-43.6	-13.0	-30.6	
Mid Channel (1880MHz)										
3.76	-65.0	H	3.0	-15.0	34.4	1.0	-48.5	-13.0	-35.5	
5.64	-66.9	H	3.0	-13.3	34.1	1.0	-46.4	-13.0	-33.4	
7.52	-67.9	H	3.0	-11.5	33.5	1.0	-44.0	-13.0	-31.0	
3.76	-63.8	V	3.0	-13.7	34.4	1.0	-47.1	-13.0	-34.1	
5.64	-67.4	V	3.0	-13.7	34.1	1.0	-46.8	-13.0	-33.8	
7.52	-67.4	V	3.0	-11.1	33.5	1.0	-43.7	-13.0	-30.7	
9.40	-67.0	V	3.0	-8.1	32.1	1.0	-39.2	-13.0	-26.2	
High Channel (1907.6MHz)										
3.82	-64.6	H	3.0	-14.3	34.4	1.0	-47.7	-13.0	-34.7	
5.72	-66.5	H	3.0	-12.8	34.1	1.0	-45.9	-13.0	-32.9	
7.63	-67.4	H	3.0	-10.8	33.4	1.0	-43.2	-13.0	-30.2	
3.82	-64.6	V	3.0	-14.3	34.4	1.0	-47.7	-13.0	-34.7	
5.72	-66.4	V	3.0	-12.6	34.1	1.0	-45.7	-13.0	-32.7	
7.63	-68.3	V	3.0	-11.9	33.4	1.0	-44.3	-13.0	-31.3	

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WCDMA Band 2 HSDPA

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/19/18
Test Engineer: 36648
Configuration: EUT Only
Mode: REL 99, 1700MHz

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1712.4MHz)										
3.42	-64.3	H	3.0	-15.6	34.6	1.0	-49.1	-13.0	-36.1	
5.14	-66.8	H	3.0	-14.0	34.2	1.0	-47.2	-13.0	-34.2	
6.85	-66.9	H	3.0	-11.4	33.9	1.0	-44.3	-13.0	-31.3	
3.42	-65.0	V	3.0	-16.1	34.6	1.0	-49.7	-13.0	-36.7	
5.14	-65.2	V	3.0	-12.2	34.2	1.0	-45.4	-13.0	-32.4	
6.85	-67.3	V	3.0	-11.9	33.9	1.0	-44.8	-13.0	-31.8	
Mid Channel (1732.6MHz)										
3.47	-64.9	H	3.0	-16.0	34.6	1.0	-49.6	-13.0	-36.6	
5.20	-66.1	H	3.0	-13.3	34.2	1.0	-46.4	-13.0	-33.4	
6.93	-67.5	H	3.0	-11.9	33.9	1.0	-44.8	-13.0	-31.8	
3.47	-64.6	V	3.0	-15.5	34.6	1.0	-49.1	-13.0	-36.1	
5.20	-65.2	V	3.0	-12.1	34.2	1.0	-45.3	-13.0	-32.3	
6.93	-67.4	V	3.0	-11.9	33.9	1.0	-44.8	-13.0	-31.8	
High Channel (1752.6MHz)										
3.51	-64.2	H	3.0	-15.1	34.5	1.0	-48.7	-13.0	-35.7	
5.26	-66.8	H	3.0	-13.9	34.2	1.0	-47.0	-13.0	-34.0	
7.01	-66.3	H	3.0	-10.5	33.9	1.0	-43.4	-13.0	-30.4	
3.51	-64.4	V	3.0	-15.2	34.5	1.0	-48.7	-13.0	-35.7	
5.26	-64.8	V	3.0	-11.5	34.2	1.0	-44.7	-13.0	-31.7	
7.01	-66.0	V	3.0	-10.4	33.9	1.0	-43.3	-13.0	-30.3	

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WCDMA Band 4 Rel 99

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/19/18
Test Engineer: 36648
Configuration: EUT Only
Mode: HSDPA 1700MHz

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1712.4MHz)										
3.42	-65.5	H	3.0	-16.8	34.6	1.0	-50.4	-13.0	-37.4	
5.14	-65.5	H	3.0	-12.8	34.2	1.0	-46.0	-13.0	-33.0	
6.85	-66.8	H	3.0	-11.3	33.9	1.0	-44.2	-13.0	-31.2	
3.42	-66.9	V	3.0	-18.0	34.6	1.0	-51.6	-13.0	-38.6	
5.14	-65.5	V	3.0	-12.5	34.2	1.0	-45.6	-13.0	-32.6	
6.85	-67.8	V	3.0	-12.4	33.9	1.0	-45.3	-13.0	-32.3	
Mid Channel (1732.6MHz)										
3.47	-67.2	H	3.0	-18.3	34.6	1.0	-51.9	-13.0	-38.9	
5.20	-66.8	H	3.0	-13.9	34.2	1.0	-47.1	-13.0	-34.1	
6.93	-66.9	H	3.0	-11.2	33.9	1.0	-44.1	-13.0	-31.1	
3.47	-66.2	V	3.0	-17.1	34.6	1.0	-50.7	-13.0	-37.7	
5.20	-65.7	V	3.0	-12.6	34.2	1.0	-45.7	-13.0	-32.7	
6.93	-67.4	V	3.0	-11.9	33.9	1.0	-44.8	-13.0	-31.8	
High Channel (1752.6MHz)										
3.51	-66.0	H	3.0	-16.9	34.5	1.0	-50.5	-13.0	-37.5	
5.26	-65.1	H	3.0	-12.2	34.2	1.0	-45.3	-13.0	-32.3	
7.01	-66.9	H	3.0	-11.1	33.9	1.0	-44.0	-13.0	-31.0	
3.51	-66.3	V	3.0	-17.1	34.5	1.0	-50.6	-13.0	-37.6	
5.26	-65.9	V	3.0	-12.6	34.2	1.0	-45.8	-13.0	-32.8	
7.01	-66.6	V	3.0	-11.0	33.9	1.0	-43.9	-13.0	-30.9	

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WCDMA Band 4 HSDPA

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701i
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888

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9.3. FIELD STRENGTH OF SPURIOUS RADIATION (Ant 3)

9.3.1. GSM

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/20/18
Test Engineer: 36648
Configuration: EUT + charger
Mode: GPRS 1900MHz

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

Chamber: 3m Chamber F | Pre-amplifer: 3m Chamber F | Filter: Filter | Limit: EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1850.2MHz)										
3.70	-67.6	H	3.0	-17.9	34.4	1.0	-51.3	-13.0	-38.3	
5.55	-68.2	H	3.0	-14.8	34.1	1.0	-47.9	-13.0	-34.9	
7.40	-70.5	H	3.0	-14.2	33.6	1.0	-46.8	-13.0	-33.8	
3.70	-65.4	V	3.0	-15.6	34.4	1.0	-49.0	-13.0	-36.0	
5.55	-68.2	V	3.0	-14.6	34.1	1.0	-47.7	-13.0	-34.7	
7.40	-70.3	V	3.0	-14.2	33.6	1.0	-46.8	-13.0	-33.8	
Mid Channel (1880.0)										
3.76	-66.9	H	3.0	-16.9	34.4	1.0	-50.3	-13.0	-37.3	
5.64	-68.4	H	3.0	-14.8	34.1	1.0	-47.9	-13.0	-34.9	
7.52	-69.4	H	3.0	-13.0	33.5	1.0	-45.5	-13.0	-32.5	
3.76	-66.4	V	3.0	-16.3	34.4	1.0	-49.8	-13.0	-36.8	
5.64	-69.0	V	3.0	-15.2	34.1	1.0	-48.3	-13.0	-35.3	
7.52	-69.5	V	3.0	-13.2	33.5	1.0	-45.8	-13.0	-32.8	
High Channel (1909.8MHz)										
3.82	-65.4	H	3.0	-15.2	34.4	1.0	-48.6	-13.0	-35.6	
5.73	-69.3	H	3.0	-15.6	34.1	1.0	-48.7	-13.0	-35.7	
7.54	-69.8	H	3.0	-13.2	33.5	1.0	-45.8	-13.0	-32.8	
3.82	-66.1	V	3.0	-15.8	34.4	1.0	-49.1	-13.0	-36.1	
5.73	-68.6	V	3.0	-14.7	34.1	1.0	-47.8	-13.0	-34.8	
7.54	-68.1	V	3.0	-11.8	33.5	1.0	-44.3	-13.0	-31.3	

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GSM 1900MHz GPRS

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/20/18
Test Engineer: 36648
Configuration: EUT + charger
Mode: EGPRS 1900MHz

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

Chamber: 3m Chamber F | Pre-amplifer: 3m Chamber F | Filter: Filter | Limit: EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1850.2MHz)										
3.70	-66.6	H	3.0	-16.9	34.4	1.0	-50.3	-13.0	-37.3	
5.55	-68.8	H	3.0	-15.3	34.1	1.0	-48.4	-13.0	-35.4	
7.40	-69.1	H	3.0	-12.8	33.6	1.0	-45.4	-13.0	-32.4	
3.70	-65.7	V	3.0	-15.9	34.4	1.0	-49.3	-13.0	-36.3	
5.55	-68.4	V	3.0	-14.8	34.1	1.0	-47.9	-13.0	-34.9	
7.40	-68.7	V	3.0	-12.5	33.6	1.0	-45.1	-13.0	-32.1	
Mid Channel (1880.0)										
3.76	-64.9	H	3.0	-14.9	34.4	1.0	-48.3	-13.0	-35.3	
5.64	-68.6	H	3.0	-15.0	34.1	1.0	-48.1	-13.0	-35.1	
7.52	-69.7	H	3.0	-13.2	33.5	1.0	-45.7	-13.0	-32.7	
3.76	-64.6	V	3.0	-14.5	34.4	1.0	-48.0	-13.0	-35.0	
5.64	-69.4	V	3.0	-15.6	34.1	1.0	-48.8	-13.0	-35.8	
7.52	-70.7	V	3.0	-14.4	33.5	1.0	-47.0	-13.0	-34.0	
High Channel (1909.8MHz)										
3.82	-66.5	H	3.0	-16.2	34.4	1.0	-49.6	-13.0	-36.6	
5.73	-68.8	H	3.0	-15.1	34.1	1.0	-48.2	-13.0	-35.2	
7.54	-70.0	H	3.0	-13.5	33.5	1.0	-46.0	-13.0	-33.0	
3.82	-65.2	V	3.0	-14.9	34.4	1.0	-48.3	-13.0	-35.3	
5.73	-68.3	V	3.0	-14.4	34.1	1.0	-47.5	-13.0	-34.5	
7.54	-69.7	V	3.0	-13.4	33.5	1.0	-45.9	-13.0	-32.9	

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GSM 1900MHz EGPRS

9.3.2. WCDMA

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/20/18
Test Engineer: 36648
Configuration: EUT Only
Mode: REL 99, 1900MHz

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

Chamber: 3m Chamber F | Pre-amplifer: 3m Chamber F | Filter: Filter | Limit: EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1852.4MHz)										
3.70	-66.7	H	3.0	-16.9	34.4	1.0	-50.4	-13.0	-37.4	
5.56	-69.2	H	3.0	-15.7	34.1	1.0	-48.8	-13.0	-35.8	
7.41	-69.7	H	3.0	-13.4	33.6	1.0	-46.0	-13.0	-33.0	
3.70	-65.5	V	3.0	-15.6	34.4	1.0	-49.0	-13.0	-36.0	
5.55	-68.7	V	3.0	-15.1	34.1	1.0	-48.2	-13.0	-35.2	
7.42	-70.3	V	3.0	-14.1	33.6	1.0	-46.7	-13.0	-33.7	
Mid Channel (1880MHz)										
3.76	-66.7	H	3.0	-16.7	34.4	1.0	-50.1	-13.0	-37.1	
5.64	-68.3	H	3.0	-14.7	34.1	1.0	-47.9	-13.0	-34.9	
7.52	-68.9	H	3.0	-12.4	33.5	1.0	-44.9	-13.0	-31.9	
3.76	-66.3	V	3.0	-16.3	34.4	1.0	-49.7	-13.0	-36.7	
5.64	-68.7	V	3.0	-15.0	34.1	1.0	-48.1	-13.0	-35.1	
7.52	-70.6	V	3.0	-14.3	33.5	1.0	-46.9	-13.0	-33.9	
High Channel (1907.6MHz)										
3.81	-66.6	H	3.0	-16.4	34.4	1.0	-49.8	-13.0	-36.8	
5.72	-68.9	H	3.0	-15.2	34.1	1.0	-48.3	-13.0	-35.3	
7.66	-69.5	H	3.0	-12.9	33.4	1.0	-45.3	-13.0	-32.3	
3.82	-67.1	V	3.0	-16.8	34.4	1.0	-50.2	-13.0	-37.2	
5.72	-68.6	V	3.0	-14.7	34.1	1.0	-47.8	-13.0	-34.8	
7.63	-69.1	V	3.0	-12.7	33.4	1.0	-45.1	-13.0	-32.1	

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WCDMA Band 2 Rel 99

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 3/20/218
Test Engineer: 36648
Configuration: EUT Only
Mode: HSDPA 1900MHz

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

Chamber: 3m Chamber F | Pre-amplifer: 3m Chamber F | Filter: Filter | Limit: EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1852.4MHz)										
3.70	-66.7	H	3.0	-16.9	34.4	1.0	-50.4	-13.0	-37.4	
5.56	-68.7	H	3.0	-15.2	34.1	1.0	-48.4	-13.0	-35.4	
7.41	-68.9	H	3.0	-12.6	33.6	1.0	-45.2	-13.0	-32.2	
3.70	-66.2	V	3.0	-16.3	34.4	1.0	-49.8	-13.0	-36.8	
5.56	-67.7	V	3.0	-14.0	34.1	1.0	-47.2	-13.0	-34.2	
7.41	-70.3	V	3.0	-14.2	33.6	1.0	-46.8	-13.0	-33.8	
Mid Channel (1880MHz)										
3.76	-66.9	H	3.0	-16.9	34.4	1.0	-50.3	-13.0	-37.3	
5.64	-67.9	H	3.0	-14.3	34.1	1.0	-47.5	-13.0	-34.5	
7.52	-69.3	H	3.0	-12.8	33.5	1.0	-45.3	-13.0	-32.3	
3.76	-65.1	V	3.0	-15.1	34.4	1.0	-48.5	-13.0	-35.5	
5.64	-68.2	V	3.0	-14.4	34.1	1.0	-47.6	-13.0	-34.6	
7.52	-69.1	V	3.0	-12.8	33.5	1.0	-45.4	-13.0	-32.4	
High Channel (1907.6MHz)										
3.82	-66.0	H	3.0	-15.8	34.4	1.0	-49.1	-13.0	-36.1	
5.72	-69.8	H	3.0	-16.1	34.1	1.0	-49.2	-13.0	-36.2	
7.63	-69.8	H	3.0	-13.2	33.4	1.0	-45.6	-13.0	-32.6	
3.82	-66.4	V	3.0	-16.1	34.4	1.0	-49.5	-13.0	-36.5	
5.72	-68.6	V	3.0	-14.8	34.1	1.0	-47.9	-13.0	-34.9	
7.63	-69.9	V	3.0	-13.4	33.4	1.0	-45.9	-13.0	-32.9	

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WCDMA Band 2 HSDPA

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701i
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888
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High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/20/18
Test Engineer: 36648
Configuration: EUT only
Mode: REL 99, 1700MHz

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1712.4MHz)										
3.42	-67.0	H	3.0	-18.3	34.6	1.0	-51.9	-13.0	-38.9	
5.14	-69.5	H	3.0	-16.7	34.2	1.0	-49.9	-13.0	-36.9	
6.85	-68.3	H	3.0	-12.8	33.9	1.0	-45.7	-13.0	-32.7	
3.42	-69.7	V	3.0	-20.8	34.6	1.0	-54.3	-13.0	-41.3	
5.14	-68.1	V	3.0	-15.0	34.2	1.0	-48.2	-13.0	-35.2	
6.85	-69.2	V	3.0	-13.8	33.9	1.0	-46.8	-13.0	-33.8	
Mid Channel (1732.6MHz)										
3.47	-67.9	H	3.0	-19.0	34.6	1.0	-52.6	-13.0	-39.6	
5.20	-66.9	H	3.0	-14.0	34.2	1.0	-47.2	-13.0	-34.2	
6.93	-68.6	H	3.0	-13.0	33.9	1.0	-45.9	-13.0	-32.9	
3.47	-69.3	V	3.0	-20.2	34.6	1.0	-53.8	-13.0	-40.8	
5.20	-68.7	V	3.0	-15.5	34.2	1.0	-48.7	-13.0	-35.7	
6.93	-69.9	V	3.0	-14.5	33.9	1.0	-47.4	-13.0	-34.4	
High Channel (1752.6MHz)										
3.51	-69.8	H	3.0	-20.8	34.5	1.0	-54.3	-13.0	-41.3	
5.26	-69.3	H	3.0	-16.3	34.2	1.0	-49.5	-13.0	-36.5	
7.01	-69.9	H	3.0	-14.1	33.9	1.0	-47.0	-13.0	-34.0	
3.51	-69.0	V	3.0	-19.8	34.5	1.0	-53.3	-13.0	-40.3	
5.26	-69.3	V	3.0	-16.0	34.2	1.0	-49.2	-13.0	-36.2	
7.01	-69.4	V	3.0	-13.8	33.9	1.0	-46.7	-13.0	-33.7	

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WCDMA Band 4 Rel 99

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/20/18
Test Engineer: 36648
Configuration: EUT Only
Mode: HSDPA 1700MHz

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1712.4MHz)										
3.42	-68.0	H	3.0	-19.3	34.6	1.0	-52.9	-13.0	-39.9	
5.14	-67.5	H	3.0	-14.7	34.2	1.0	-47.9	-13.0	-34.9	
6.85	-68.7	H	3.0	-13.1	33.9	1.0	-46.1	-13.0	-33.1	
3.42	-68.4	V	3.0	-19.5	34.6	1.0	-53.1	-13.0	-40.1	
5.14	-68.4	V	3.0	-15.4	34.2	1.0	-48.6	-13.0	-35.6	
6.85	-69.4	V	3.0	-14.0	33.9	1.0	-47.0	-13.0	-34.0	
Mid Channel (1732.6MHz)										
3.47	-68.9	H	3.0	-20.0	34.6	1.0	-53.5	-13.0	-40.5	
5.20	-67.8	H	3.0	-14.9	34.2	1.0	-48.1	-13.0	-35.1	
6.93	-69.9	H	3.0	-14.2	33.9	1.0	-47.1	-13.0	-34.1	
3.47	-69.3	V	3.0	-20.2	34.6	1.0	-53.7	-13.0	-40.7	
5.20	-69.3	V	3.0	-16.2	34.2	1.0	-49.3	-13.0	-36.3	
6.93	-69.8	V	3.0	-14.3	33.9	1.0	-47.3	-13.0	-34.3	
High Channel (1752.6MHz)										
3.51	-68.8	H	3.0	-19.7	34.5	1.0	-53.3	-13.0	-40.3	
5.26	-69.1	H	3.0	-16.2	34.2	1.0	-49.3	-13.0	-36.3	
7.01	-69.4	H	3.0	-13.6	33.9	1.0	-46.6	-13.0	-33.6	
3.51	-68.5	V	3.0	-19.3	34.5	1.0	-52.8	-13.0	-39.8	
5.26	-69.0	V	3.0	-15.8	34.2	1.0	-48.9	-13.0	-35.9	
7.01	-70.4	V	3.0	-14.8	33.9	1.0	-47.8	-13.0	-34.8	

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WCDMA Band 4 HSDPA

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701i
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9.4. FIELD STRENGTH OF SPURIOUS RADIATION (Ant 4)

9.4.1. GSM

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/21/18
Test Engineer: 12500
Configuration: EUT + charger
Mode: GPRS 1900MHz

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1850.2MHz)										
3.70	-66.7	H	3.0	-16.9	34.4	1.0	-50.4	-13.0	-37.4	
5.55	-65.5	H	3.0	-12.1	34.1	1.0	-45.2	-13.0	-32.2	
7.40	-69.9	H	3.0	-13.6	33.6	1.0	-46.2	-13.0	-33.2	
3.70	-66.5	V	3.0	-16.6	34.4	1.0	-50.1	-13.0	-37.1	
5.55	-64.6	V	3.0	-11.0	34.1	1.0	-44.1	-13.0	-31.1	
7.40	-70.2	V	3.0	-14.1	33.6	1.0	-46.7	-13.0	-33.7	
Mid Channel (1880.0)										
3.76	-66.3	H	3.0	-16.3	34.4	1.0	-49.7	-13.0	-36.7	
5.64	-66.1	H	3.0	-12.5	34.1	1.0	-45.6	-13.0	-32.6	
7.52	-69.1	H	3.0	-12.6	33.5	1.0	-45.1	-13.0	-32.1	
3.76	-66.8	V	3.0	-16.7	34.4	1.0	-50.1	-13.0	-37.1	
5.64	-64.8	V	3.0	-11.1	34.1	1.0	-44.2	-13.0	-31.2	
7.52	-69.2	V	3.0	-12.9	33.5	1.0	-45.4	-13.0	-32.4	
High Channel (1909.8MHz)										
3.82	-66.5	H	3.0	-16.3	34.4	1.0	-49.7	-13.0	-36.7	
5.73	-63.8	H	3.0	-10.1	34.1	1.0	-43.2	-13.0	-30.2	
7.54	-68.8	H	3.0	-12.3	33.5	1.0	-44.8	-13.0	-31.8	
3.82	-67.2	V	3.0	-16.9	34.4	1.0	-50.3	-13.0	-37.3	
5.73	-66.7	V	3.0	-12.8	34.1	1.0	-45.9	-13.0	-32.9	
7.54	-68.7	V	3.0	-12.4	33.5	1.0	-44.9	-13.0	-31.9	

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GSM 1900MHz GPRS

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/21/18
Test Engineer: 12500
Configuration: EUT + charger
Mode: EGPRS 1900MHz

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1850.2MHz)										
3.70	-66.1	H	3.0	-16.3	34.4	1.0	-49.8	-13.0	-36.8	
5.55	-66.1	H	3.0	-12.7	34.1	1.0	-45.8	-13.0	-32.8	
7.40	-69.9	H	3.0	-13.6	33.6	1.0	-46.2	-13.0	-33.2	
3.70	-66.7	V	3.0	-16.8	34.4	1.0	-50.3	-13.0	-37.3	
5.55	-64.4	V	3.0	-10.8	34.1	1.0	-43.9	-13.0	-30.9	
7.40	-70.0	V	3.0	-13.9	33.6	1.0	-46.5	-13.0	-33.5	
Mid Channel (1880.0)										
3.76	-66.7	H	3.0	-16.7	34.4	1.0	-50.1	-13.0	-37.1	
5.64	-64.5	H	3.0	-10.9	34.1	1.0	-44.0	-13.0	-31.0	
7.52	-69.5	H	3.0	-13.0	33.5	1.0	-45.5	-13.0	-32.5	
3.76	-67.7	V	3.0	-17.6	34.4	1.0	-51.0	-13.0	-38.0	
5.64	-63.3	V	3.0	-9.6	34.1	1.0	-42.7	-13.0	-29.7	
7.52	-70.8	V	3.0	-14.5	33.5	1.0	-47.0	-13.0	-34.0	
High Channel (1909.8MHz)										
3.82	-66.3	H	3.0	-16.1	34.4	1.0	-49.5	-13.0	-36.5	
5.73	-67.7	H	3.0	-14.0	34.1	1.0	-47.1	-13.0	-34.1	
7.54	-70.1	H	3.0	-13.6	33.5	1.0	-46.1	-13.0	-33.1	
3.82	-66.3	V	3.0	-16.0	34.4	1.0	-49.4	-13.0	-36.4	
5.73	-64.4	V	3.0	-10.5	34.1	1.0	-43.6	-13.0	-30.6	
7.54	-68.3	V	3.0	-12.0	33.5	1.0	-44.5	-13.0	-31.5	

Rev. 03.19.15

GSM 1900MHz EGPRS

9.4.2. WCDMA

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/20/18
Test Engineer: 36648
Configuration: EUT Only
Mode: REL 99, 1900MHz

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1852.4MHz)										
3.70	-66.8	H	3.0	-17.1	34.4	1.0	-50.5	-13.0	-37.5	
5.56	-69.7	H	3.0	-16.3	34.1	1.0	-49.4	-13.0	-36.4	
7.41	-70.5	H	3.0	-14.2	33.6	1.0	-46.8	-13.0	-33.8	
3.70	-66.3	V	3.0	-16.4	34.4	1.0	-49.8	-13.0	-36.8	
5.55	-67.8	V	3.0	-14.1	34.1	1.0	-47.3	-13.0	-34.3	
7.41	-70.4	V	3.0	-14.2	33.6	1.0	-46.8	-13.0	-33.8	
Mid Channel (1880MHz)										
3.76	-66.5	H	3.0	-16.5	34.4	1.0	-49.9	-13.0	-36.9	
5.64	-68.8	H	3.0	-15.3	34.1	1.0	-48.4	-13.0	-35.4	
7.52	-69.9	H	3.0	-13.5	33.5	1.0	-46.0	-13.0	-33.0	
3.76	-67.4	V	3.0	-17.4	34.4	1.0	-50.8	-13.0	-37.8	
5.64	-68.7	V	3.0	-15.0	34.1	1.0	-48.1	-13.0	-35.1	
7.52	-70.3	V	3.0	-14.0	33.5	1.0	-46.6	-13.0	-33.6	
High Channel (1907.6MHz)										
3.81	-66.5	H	3.0	-16.3	34.4	1.0	-49.7	-13.0	-36.7	
5.72	-69.4	H	3.0	-15.6	34.1	1.0	-48.7	-13.0	-35.7	
7.63	-69.4	H	3.0	-12.8	33.4	1.0	-45.3	-13.0	-32.3	
3.82	-65.6	V	3.0	-15.4	34.4	1.0	-48.7	-13.0	-35.7	
5.72	-67.9	V	3.0	-14.0	34.1	1.0	-47.1	-13.0	-34.1	
7.63	-69.2	V	3.0	-12.7	33.4	1.0	-45.2	-13.0	-32.2	

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WCDMA Band 2 Rel 99

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/20/18
Test Engineer: 36648
Configuration: EUT Only
Mode: HSDPA 1900MHz

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1852.4MHz)										
3.70	-65.9	H	3.0	-16.2	34.4	1.0	-49.6	-13.0	-36.6	
5.56	-69.3	H	3.0	-15.9	34.1	1.0	-49.0	-13.0	-36.0	
7.41	-69.7	H	3.0	-13.3	33.6	1.0	-45.9	-13.0	-32.9	
3.70	-65.9	V	3.0	-16.1	34.4	1.0	-49.5	-13.0	-36.5	
5.56	-69.3	V	3.0	-15.7	34.1	1.0	-48.8	-13.0	-35.8	
7.41	-69.5	V	3.0	-13.3	33.6	1.0	-45.9	-13.0	-32.9	
Mid Channel (1880MHz)										
3.76	-65.3	H	3.0	-15.3	34.4	1.0	-48.7	-13.0	-35.7	
5.64	-69.4	H	3.0	-15.9	34.1	1.0	-49.0	-13.0	-36.0	
7.52	-69.1	H	3.0	-12.6	33.5	1.0	-45.1	-13.0	-32.1	
3.76	-66.4	V	3.0	-16.4	34.4	1.0	-49.8	-13.0	-36.8	
5.64	-69.9	V	3.0	-16.1	34.1	1.0	-49.3	-13.0	-36.3	
7.52	-70.0	V	3.0	-13.7	33.5	1.0	-46.2	-13.0	-33.2	
High Channel (1907.6MHz)										
3.82	-66.1	H	3.0	-15.9	34.4	1.0	-49.3	-13.0	-36.3	
5.72	-68.8	H	3.0	-15.1	34.1	1.0	-48.2	-13.0	-35.2	
7.63	-68.2	H	3.0	-11.6	33.4	1.0	-44.1	-13.0	-31.1	
3.82	-66.2	V	3.0	-15.9	34.4	1.0	-49.3	-13.0	-36.3	
5.72	-69.7	V	3.0	-15.9	34.1	1.0	-49.0	-13.0	-36.0	
7.63	-69.7	V	3.0	-13.3	33.4	1.0	-45.7	-13.0	-32.7	

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WCDMA Band 2 HSDPA

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701i
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High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/21/18
Test Engineer: 36648
Configuration: EUT only
Mode: REL 99, 1700MHz

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1712.4MHz)										
3.42	-68.2	H	3.0	-19.5	34.6	1.0	-53.1	-13.0	-40.1	
5.14	-67.3	H	3.0	-14.5	34.2	1.0	-47.7	-13.0	-34.7	
6.85	-70.1	H	3.0	-14.6	33.9	1.0	-47.5	-13.0	-34.5	
3.42	-67.7	V	3.0	-18.8	34.6	1.0	-52.4	-13.0	-39.4	
5.14	-67.2	V	3.0	-14.1	34.2	1.0	-47.3	-13.0	-34.3	
6.85	-69.3	V	3.0	-13.9	33.9	1.0	-46.9	-13.0	-33.9	
Mid Channel (1732.6MHz)										
3.47	-67.9	H	3.0	-19.0	34.6	1.0	-52.6	-13.0	-39.6	
5.20	-67.9	H	3.0	-15.0	34.2	1.0	-48.2	-13.0	-35.2	
6.93	-68.9	H	3.0	-13.2	33.9	1.0	-46.1	-13.0	-33.1	
3.47	-68.5	V	3.0	-19.4	34.6	1.0	-53.0	-13.0	-40.0	
5.20	-67.8	V	3.0	-14.6	34.2	1.0	-47.8	-13.0	-34.8	
6.93	-70.2	V	3.0	-14.8	33.9	1.0	-47.7	-13.0	-34.7	
High Channel (1752.6MHz)										
3.51	-67.8	H	3.0	-18.8	34.5	1.0	-52.4	-13.0	-39.4	
5.26	-68.0	H	3.0	-15.1	34.2	1.0	-48.2	-13.0	-35.2	
7.01	-68.2	H	3.0	-12.4	33.9	1.0	-45.3	-13.0	-32.3	
3.51	-68.3	V	3.0	-19.1	34.5	1.0	-52.6	-13.0	-39.6	
5.26	-69.3	V	3.0	-16.1	34.2	1.0	-49.2	-13.0	-36.2	
7.01	-68.8	V	3.0	-13.2	33.9	1.0	-46.1	-13.0	-33.1	

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WCDMA Band 4 Rel 99

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/21/18
Test Engineer: 36648
Configuration: EUT Only
Mode: HSDPA 1700MHz

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1712.4MHz)										
3.42	-68.6	H	3.0	-19.9	34.6	1.0	-53.5	-13.0	-40.5	
5.14	-67.9	H	3.0	-15.1	34.2	1.0	-48.3	-13.0	-35.3	
6.85	-69.0	H	3.0	-13.4	33.9	1.0	-46.4	-13.0	-33.4	
3.42	-68.2	V	3.0	-19.3	34.6	1.0	-52.9	-13.0	-39.9	
5.14	-68.8	V	3.0	-15.7	34.2	1.0	-48.9	-13.0	-35.9	
6.85	-70.7	V	3.0	-15.3	33.9	1.0	-48.3	-13.0	-35.3	
Mid Channel (1732.6MHz)										
3.47	-67.9	H	3.0	-19.1	34.6	1.0	-52.6	-13.0	-39.6	
5.20	-69.5	H	3.0	-16.6	34.2	1.0	-49.8	-13.0	-36.8	
6.93	-69.9	H	3.0	-14.2	33.9	1.0	-47.1	-13.0	-34.1	
3.47	-69.2	V	3.0	-20.1	34.6	1.0	-53.7	-13.0	-40.7	
5.20	-68.6	V	3.0	-15.5	34.2	1.0	-48.6	-13.0	-35.6	
6.93	-70.0	V	3.0	-14.6	33.9	1.0	-47.5	-13.0	-34.5	
High Channel (1752.6MHz)										
3.51	-68.0	H	3.0	-19.0	34.5	1.0	-52.6	-13.0	-39.6	
5.26	-68.8	H	3.0	-15.8	34.2	1.0	-49.0	-13.0	-36.0	
7.01	-68.6	H	3.0	-12.8	33.9	1.0	-45.8	-13.0	-32.8	
3.51	-68.8	V	3.0	-19.5	34.5	1.0	-53.1	-13.0	-40.1	
5.26	-68.6	V	3.0	-15.3	34.2	1.0	-48.5	-13.0	-35.5	
7.01	-69.7	V	3.0	-14.1	33.9	1.0	-47.0	-13.0	-34.0	

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WCDMA Band 4 HSDPA

END OF REPORT

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10. SETUP PHOTOS

Please refer to 12204475-EP1V1 for setup photos

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