8.4.1. GSM

ID:	38602	Date:	3/20/18

GPRS 850MHz

Limit		824	849	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	824.034	848.964		
Extreme (50C)		824.034	848.964	31.4	0.04
Extreme (40C)		824.034	848.964	31.8	0.04
Extreme (30C)		824.034	848.964	32.7	0.04
Extreme (10C)		824.034	848.964	33.1	0.04
Extreme (0C)		824.034	848.964	29.9	0.04
Extreme (-10C)		824.034	848.964	33.5	0.04
Extreme (-20C)		824.034	848.964	31.1	0.04
Extreme (-30C)		824.034	848.964	33.9	0.04
20C	15%	824.034	848.964	32.6	0.04
	-15%	824.034	848.964	31.4	0.04
	End Point	824.034	848.964	33.2	0.04

GPRS 1900MHz

Limit		1850	1910	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	1850.042	1909.956		
Extreme (50C)		1850.042	1909.956	36.0	0.02
Extreme (40C)		1850.042	1909.956	35.1	0.02
Extreme (30C)		1850.042	1909.956	36.7	0.02
Extreme (10C)		1850.042	1909.956	39.2	0.02
Extreme (0C)		1850.042	1909.956	43.0	0.02
Extreme (-10C)		1850.042	1909.956	40.4	0.02
Extreme (-20C)		1850.042	1909.956	42.4	0.02
Extreme (-30C)		1850.042	1909.956	49.9	0.03
20C	15%	1850.042	1909.956	33.6	0.02
	-15%	1850.042	1909.956	29.7	0.02
	End Point	1850.042	1909.956	40.7	0.02

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8.4.2. CDMA

ID:	50893	Date:	3/20/18

CDMA 1xRTT BC10

Limit		816	824	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	816.5679	823.4337		
Extreme (50C)		816.5679	823.4337	16.1	0.02
Extreme (40C)		816.5679	823.4337	-11.1	-0.01
Extreme (30C)		816.5679	823.4337	10.0	0.01
Extreme (10C)		816.5679	823.4337	11.6	0.01
Extreme (0C)		816.5679	823.4337	9.9	0.01
Extreme (-10C)		816.5679	823.4337	-8.6	-0.01
Extreme (-20C)		816.5679	823.4337	-13.2	-0.02
Extreme (-30C)		816.5679	823.4337	-10.6	-0.01
20C	15%	816.5679	823.4337	-11.2	-0.01
	-15%	816.5679	823.4337	-11.4	-0.01
	End Point	816.5679	823.4337	-11.9	-0.01

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	824.0140	848.9919		
Extreme (50C)		824.0139	848.9919	-21.2	-0.03
Extreme (40C)		824.0139	848.9919	-18.3	-0.02
Extreme (30C)		824.0140	848.9919	12.6	0.02
Extreme (10C)		824.0140	848.9919	-10.9	-0.01
Extreme (0C)		824.0139	848.9919	-16.4	-0.02
Extreme (-10C)		824.0139	848.9918	-43.7	-0.05
Extreme (-20C)		824.0140	848.9919	18.7	0.02
Extreme (-30C)		824.0139	848.9919	-21.2	-0.03
20C	15%	824.0140	848.9919	-10.6	-0.01
	-15%	824.0140	848.9919	-10.6	-0.01
	End Point	824.0140	848.9919	9.8	0.01

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CDMA 1xRTT BC1

Limit		1850	1910	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	1850.5647	1909.4334		
Extreme (50C)		1850.5648	1909.4334	18.2	0.01
Extreme (40C)		1850.5647	1909.4334	-29.4	-0.02
Extreme (30C)		1850.5647	1909.4334	-27.8	-0.01
Extreme (10C)		1850.5647	1909.4334	-22.1	-0.01
Extreme (0C)		1850.5647	1909.4334	-20.7	-0.01
Extreme (-10C)		1850.5647	1909.4334	-63.2	-0.03
Extreme (-20C)		1850.5648	1909.4334	21.0	0.01
Extreme (-30C)		1850.5647	1909.4334	-24.8	-0.01
20C	15%	1850.5647	1909.4334	-56.5	-0.03
	-15%	1850.5646	1909.4333	-119.2	-0.06
	End Point	1850.5647	1909.4334	-53.3	-0.03

8.4.3. WCDMA

ID:	38602	Date:	3/21/18

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	824.146	848.875		
Extreme (50C)		824.146	848.875	3.1	0.00
Extreme (40C)		824.146	848.875	4.3	0.01
Extreme (30C)		824.146	848.875	3.6	0.00
Extreme (10C)		824.146	848.875	3.7	0.00
Extreme (0C)		824.146	848.875	4.2	0.00
Extreme (-10C)		824.146	848.875	4.0	0.00
Extreme (-20C)		824.146	848.875	4.5	0.01
Extreme (-30C)		824.146	848.875	14.9	0.02
20C	15%	824.146	848.875	4.0	0.00
	-15%	824.146	848.875	3.4	0.00
	End Point	824.146	848.875	4.8	0.01

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WCDMA REL 99 BAND 2

Limit		1850	1910	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	1850.155	1909.871		
Extreme (50C)		1850.155	1909.871	-33.2	-0.02
Extreme (40C)		1850.155	1909.871	-31.0	-0.02
Extreme (30C)		1850.155	1909.871	-30.6	-0.02
Extreme (10C)		1850.155	1909.871	-23.8	-0.01
Extreme (0C)		1850.155	1909.871	-20.0	-0.01
Extreme (-10C)		1850.155	1909.871	35.8	0.02
Extreme (-20C)		1850.155	1909.871	30.8	0.02
Extreme (-30C)		1850.155	1909.871	30.1	0.02
20C	15%	1850.155	1909.871	-23.3	-0.01
	-15%	1850.155	1909.871	-26.2	-0.01
	End Point	1850.155	1909.871	42.3	0.02

WCDMA REL 99 BAND 4

Limit		1710	1755	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	1710.147	1754.872		
Extreme (50C)		1710.147	1754.872	15.7	0.01
Extreme (40C)		1710.147	1754.872	17.8	0.01
Extreme (30C)		1710.147	1754.872	19.0	0.01
Extreme (10C)		1710.147	1754.872	-43.6	-0.03
Extreme (0C)		1710.147	1754.872	-35.2	-0.02
Extreme (-10C)		1710.147	1754.872	30.5	0.02
Extreme (-20C)		1710.147	1754.872	-36.1	-0.02
Extreme (-30C)		1710.147	1754.872	-63.5	-0.04
20C	15%	1710.147	1754.872	-30.6	-0.02
	-15%	1710.147	1754.872	-28.4	-0.02
	End Point	1710.147	1754.872	-42.7	-0.02

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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

ANT 1 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:	39004	**Date:**	3/20/18

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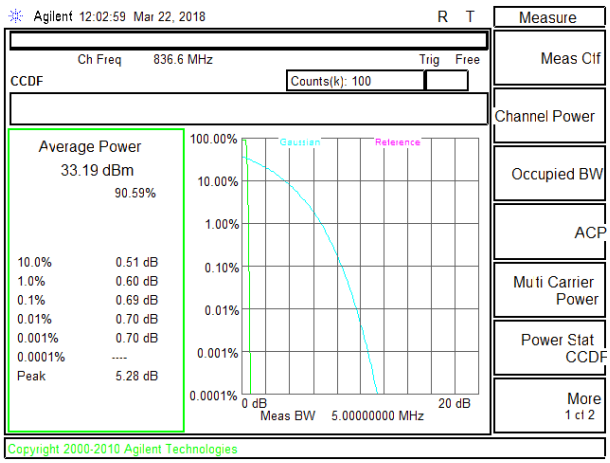
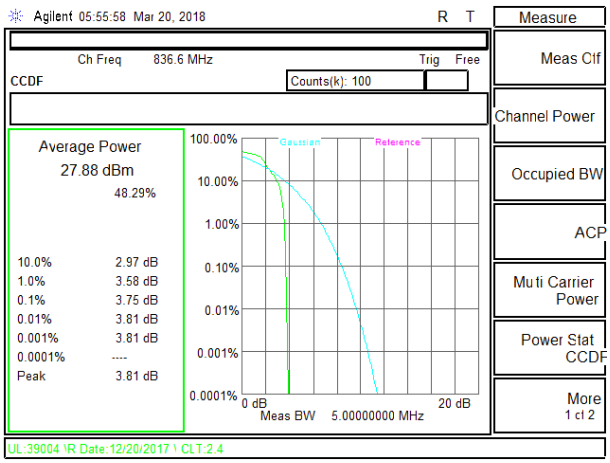
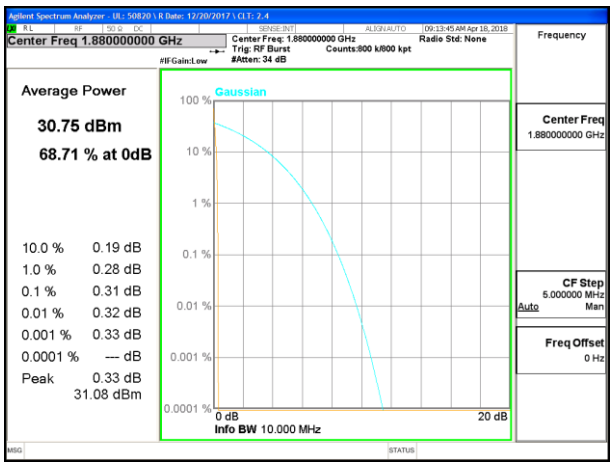
8.5.1. GSM



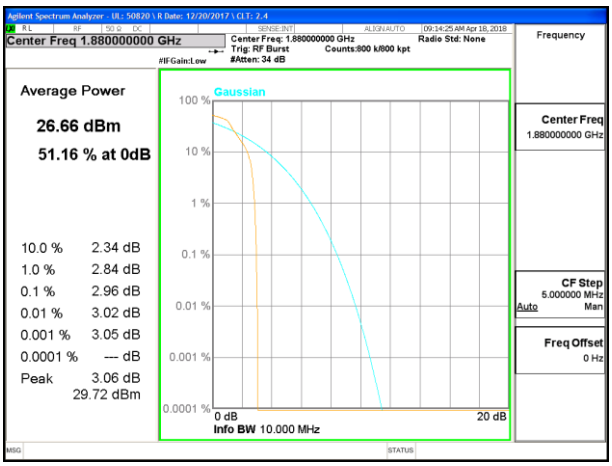
GSM 850MHz GPRS Middle Channel



GSM 850MHz EGPRS Middle Channel



GSM 1900MHz GPRS Middle Channel



GSM 1900MHz EGPRS Middle Channel

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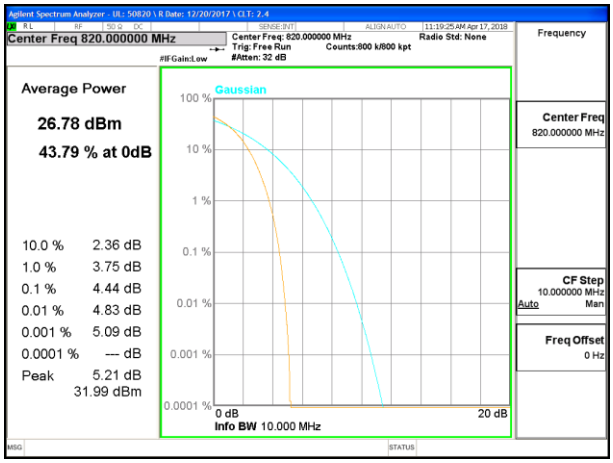
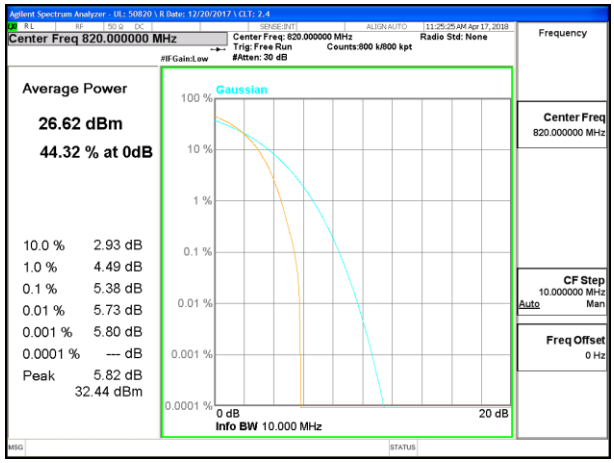
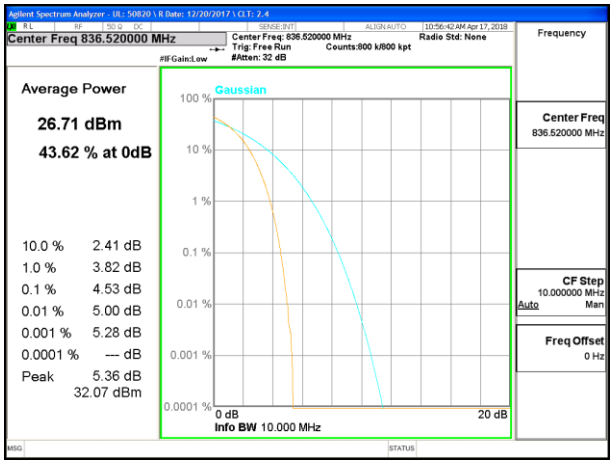
8.5.2. CDMA



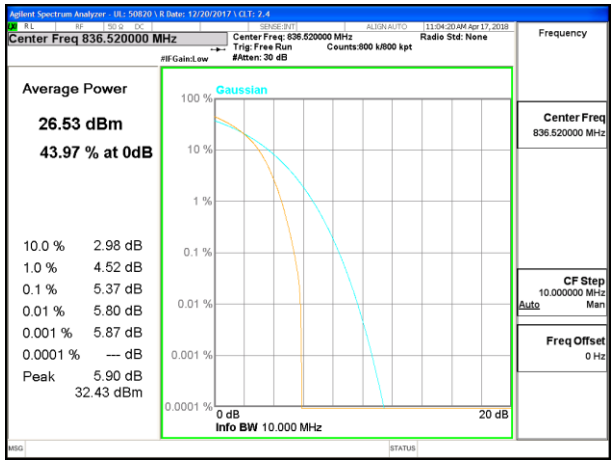
CDMA BC10 1xRTT Middle Channel



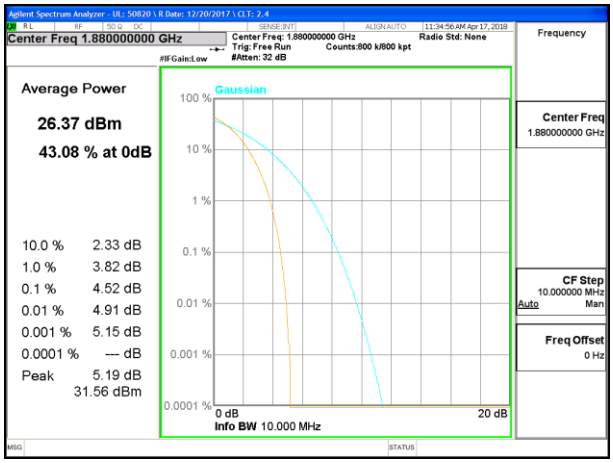
CDMA BC10 1xEV-DO Rev A Middle Channel



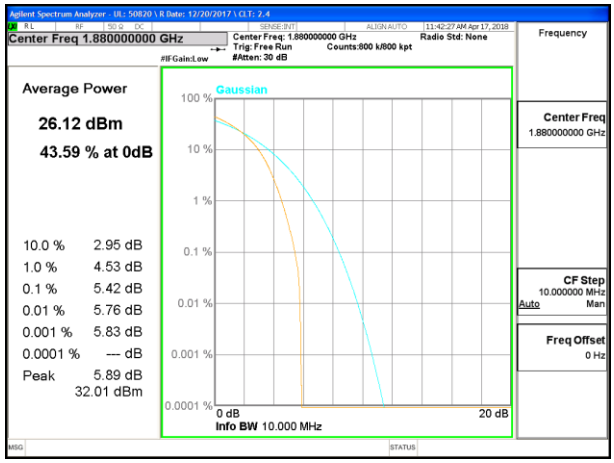
CDMA BC0 1xRTT Middle Channel



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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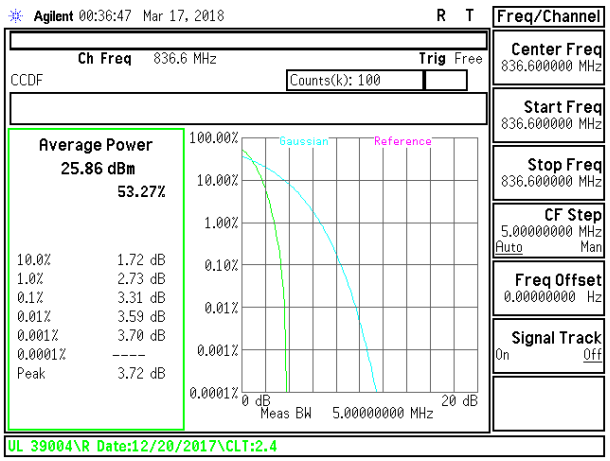
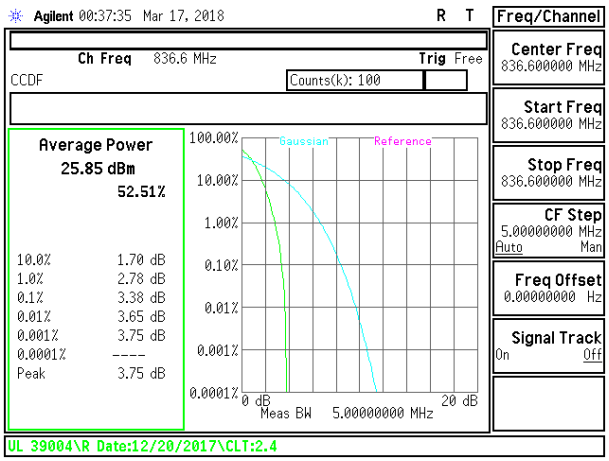
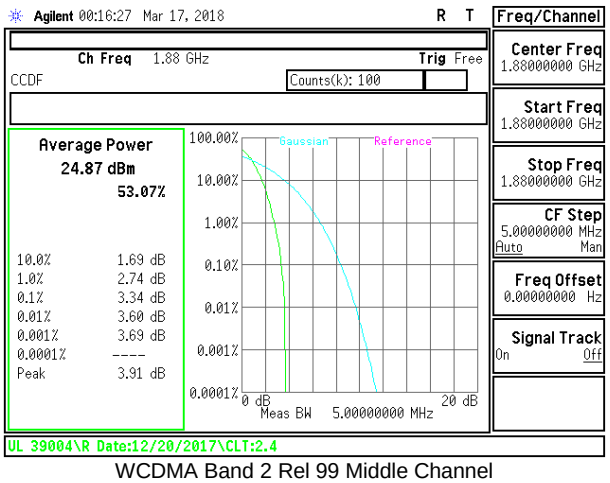
8.5.3. WCDMA



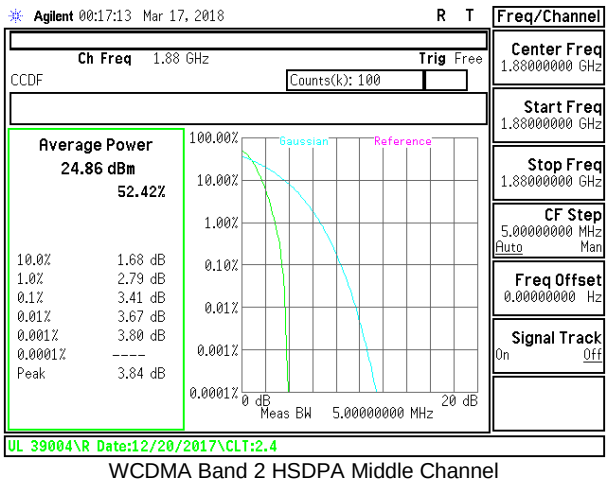
WCDMA Band 5 Rel 99 Middle Channel



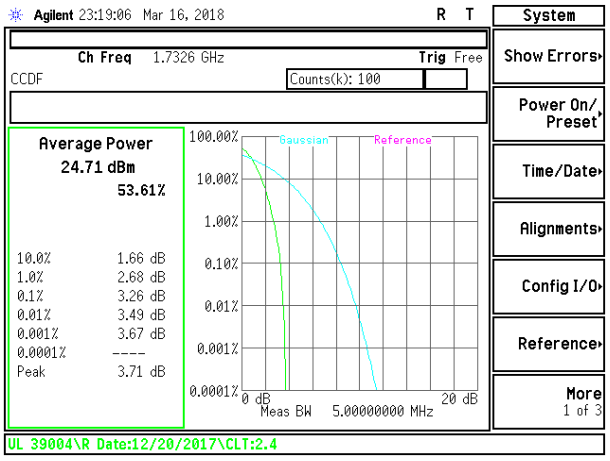
WCDMA Band 5 HSDPA Middle Channel



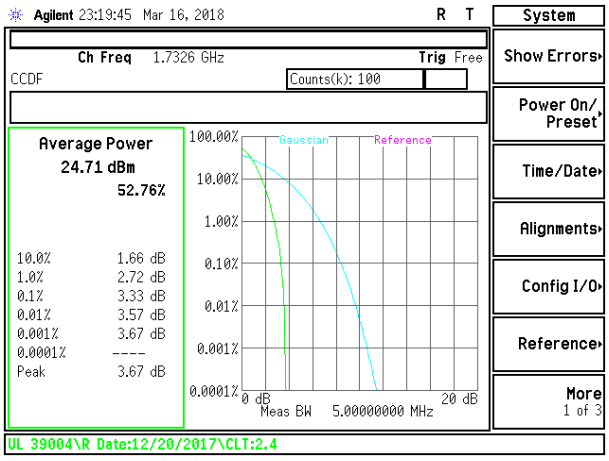
WCDMA Band 2 Rel 99 Middle Channel



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

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. FIELD STRENGTH OF SPURIOUS RADIATION (Ant 1)

9.1.1. GSM

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/26/18
Test Engineer: 36648
Configuration: EUT only
Mode: GPRS 850MHz

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

Chamber: 3m Chamber C | Pre-amplifer: 3m Chamber C | 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 (824.2MHz)										
1.65	-66.2	H	3.0	-24.4	36.5	1.0	-59.9	-13.0	-46.9	
2.47	-65.8	H	3.0	-20.1	35.2	1.0	-54.3	-13.0	-41.3	
3.30	-66.6	H	3.0	-17.7	34.6	1.0	-51.4	-13.0	-38.4	
1.65	-66.1	V	3.0	-23.6	36.5	1.0	-59.1	-13.0	-46.1	
2.47	-66.3	V	3.0	-20.5	35.2	1.0	-54.7	-13.0	-41.7	
3.30	-65.9	V	3.0	-16.4	34.6	1.0	-50.0	-13.0	-37.0	
Mid Channel (836.6MHz)										
1.67	-66.0	H	3.0	-24.0	36.5	1.0	-59.5	-13.0	-46.5	
2.51	-66.5	H	3.0	-20.6	35.1	1.0	-54.8	-13.0	-41.8	
3.35	-65.9	H	3.0	-16.9	34.6	1.0	-50.5	-13.0	-37.5	
1.67	-66.4	V	3.0	-23.6	36.5	1.0	-59.1	-13.0	-46.1	
2.51	-65.7	V	3.0	-19.8	35.1	1.0	-54.0	-13.0	-41.0	
3.35	-66.0	V	3.0	-16.4	34.6	1.0	-50.0	-13.0	-37.0	
High Channel (848.8MHz)										
1.70	-64.9	H	3.0	-22.7	36.4	1.0	-58.1	-13.0	-45.1	
2.55	-66.2	H	3.0	-20.1	35.1	1.0	-54.3	-13.0	-41.3	
3.40	-66.2	H	3.0	-17.1	34.5	1.0	-50.6	-13.0	-37.6	
1.70	-66.8	V	3.0	-23.8	36.4	1.0	-59.2	-13.0	-46.2	
2.55	-66.8	V	3.0	-20.7	35.1	1.0	-54.8	-13.0	-41.8	
3.40	-66.4	V	3.0	-16.7	34.5	1.0	-50.2	-13.0	-37.2	

Rev. 03.19.15

GSM 850MHz GPRS

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/26/18
Test Engineer: 36648
Configuration: EUT only
Mode: EGPRS 850MHz

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

Chamber: 3m Chamber C | Pre-amplifer: 3m Chamber C | 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 (824.2MHz)										
1.65	-66.0	H	3.0	-24.2	36.5	1.0	-59.7	-13.0	-46.7	
2.47	-65.7	H	3.0	-20.0	35.2	1.0	-54.2	-13.0	-41.2	
3.30	-66.5	H	3.0	-17.6	34.6	1.0	-51.2	-13.0	-38.2	
1.65	-66.8	V	3.0	-24.2	36.5	1.0	-59.7	-13.0	-46.7	
2.47	-65.8	V	3.0	-20.0	35.2	1.0	-54.2	-13.0	-41.2	
3.30	-65.9	V	3.0	-16.4	34.6	1.0	-50.0	-13.0	-37.0	
Mid Channel (836.6MHz)										
1.67	-65.9	H	3.0	-24.0	36.5	1.0	-59.4	-13.0	-46.4	
2.51	-65.6	H	3.0	-19.7	35.1	1.0	-53.9	-13.0	-40.9	
3.35	-66.5	H	3.0	-17.5	34.6	1.0	-51.1	-13.0	-38.1	
1.67	-65.5	V	3.0	-22.8	36.5	1.0	-58.2	-13.0	-45.2	
2.51	-66.1	V	3.0	-20.2	35.1	1.0	-54.3	-13.0	-41.3	
3.35	-66.3	V	3.0	-16.7	34.6	1.0	-50.2	-13.0	-37.2	
High Channel (848.8MHz)										
1.70	-66.8	H	3.0	-24.5	36.4	1.0	-60.0	-13.0	-47.0	
2.55	-65.7	H	3.0	-19.7	35.1	1.0	-53.8	-13.0	-40.8	
3.40	-65.8	H	3.0	-16.7	34.5	1.0	-50.2	-13.0	-37.2	
1.70	-65.7	V	3.0	-22.6	36.4	1.0	-58.1	-13.0	-45.1	
2.55	-66.2	V	3.0	-20.0	35.1	1.0	-54.1	-13.0	-41.1	
3.40	-65.4	V	3.0	-15.7	34.5	1.0	-49.2	-13.0	-36.2	

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GSM 850MHz EGPRS

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/26/18
Test Engineer: 36648
Configuration: EUT only
Mode: GPRS 1900MHz

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

Chamber: 3m Chamber C | Pre-amplifer: 3m Chamber C | 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	-63.8	H	3.0	-13.9	34.1	1.0	-47.0	-13.0	-34.0	
5.55	-64.4	H	3.0	-10.4	33.3	1.0	-42.7	-13.0	-29.7	
7.40	-65.1	H	3.0	-7.7	33.1	1.0	-39.7	-13.0	-26.7	
3.70	-63.5	V	3.0	-13.2	34.1	1.0	-46.3	-13.0	-33.3	
5.55	-63.8	V	3.0	-9.9	33.3	1.0	-42.2	-13.0	-29.2	
7.40	-65.2	V	3.0	-7.7	33.1	1.0	-39.8	-13.0	-26.8	
Mid Channel (1880.0)										
3.76	-63.6	H	3.0	-13.4	34.1	1.0	-46.5	-13.0	-33.5	
5.64	-65.6	H	3.0	-11.4	33.3	1.0	-43.7	-13.0	-30.7	
7.52	-64.7	H	3.0	-7.1	33.0	1.0	-39.2	-13.0	-26.2	
3.76	-62.4	V	3.0	-12.0	34.1	1.0	-45.0	-13.0	-32.0	
5.64	-63.3	V	3.0	-9.2	33.3	1.0	-41.5	-13.0	-28.5	
7.52	-63.8	V	3.0	-6.2	33.0	1.0	-38.2	-13.0	-25.2	
High Channel (1909.8MHz)										
3.82	-62.8	H	3.0	-12.5	34.0	1.0	-45.5	-13.0	-32.5	
5.73	-64.4	H	3.0	-10.1	33.3	1.0	-42.4	-13.0	-29.4	
7.64	-64.2	H	3.0	-6.5	33.0	1.0	-38.5	-13.0	-25.5	
3.82	-62.7	V	3.0	-12.1	34.0	1.0	-45.1	-13.0	-32.1	
5.73	-64.2	V	3.0	-10.0	33.3	1.0	-42.3	-13.0	-29.3	
7.64	-65.0	V	3.0	-7.2	33.0	1.0	-39.2	-13.0	-26.2	

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GSM 1900MHz GPRS

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/26/18
Test Engineer: 36648
Configuration: EUT only
Mode: EGPRS 1900MHz

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

Chamber: 3m Chamber C | Pre-amplifer: 3m Chamber C | 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	-63.3	H	3.0	-13.4	34.1	1.0	-46.5	-13.0	-33.5	
5.55	-64.8	H	3.0	-10.8	33.3	1.0	-43.1	-13.0	-30.1	
7.40	-64.0	H	3.0	-6.6	33.1	1.0	-38.6	-13.0	-25.6	
3.70	-63.4	V	3.0	-13.1	34.1	1.0	-46.2	-13.0	-33.2	
5.55	-64.5	V	3.0	-10.6	33.3	1.0	-42.9	-13.0	-29.9	
7.40	-63.9	V	3.0	-6.5	33.1	1.0	-38.5	-13.0	-25.5	
Mid Channel (1880.0MHz)										
3.76	-63.3	H	3.0	-13.2	34.1	1.0	-46.2	-13.0	-33.2	
5.64	-64.8	H	3.0	-10.6	33.3	1.0	-42.9	-13.0	-29.9	
7.52	-64.4	H	3.0	-6.8	33.0	1.0	-38.9	-13.0	-25.9	
3.76	-63.3	V	3.0	-12.8	34.1	1.0	-45.9	-13.0	-32.9	
5.64	-64.3	V	3.0	-10.2	33.3	1.0	-42.5	-13.0	-29.5	
7.52	-64.6	V	3.0	-7.0	33.0	1.0	-39.0	-13.0	-26.0	
High Channel (1909.8MHz)										
3.82	-63.3	H	3.0	-13.0	34.0	1.0	-46.0	-13.0	-33.0	
5.73	-65.0	H	3.0	-10.6	33.3	1.0	-42.9	-13.0	-29.9	
7.64	-64.5	H	3.0	-6.7	33.0	1.0	-38.8	-13.0	-25.8	
3.82	-63.0	V	3.0	-12.5	34.0	1.0	-45.5	-13.0	-32.5	
5.73	-65.4	V	3.0	-11.1	33.3	1.0	-43.4	-13.0	-30.4	
7.64	-65.5	V	3.0	-7.8	33.0	1.0	-39.8	-13.0	-26.8	

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GSM 1900MHz EGPRS

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9.1.2. CDMA

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 04/13/18
Test Engineer: 12491
Configuration: EUT only
Mode: 1xRTT 800MHz

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

Chamber: 3m Chamber G | Pre-amplifer: 3m Chamber G | 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 (817.25MHz)										
1.64	-66.8	H	3.0	-25.3	37.8	1.0	-62.2	-13.0	-49.2	
2.45	-67.0	H	3.0	-23.9	36.7	1.0	-59.6	-13.0	-46.6	
3.27	-67.1	H	3.0	-21.2	36.5	1.0	-56.8	-13.0	-43.8	
1.64	-66.2	V	3.0	-24.5	37.8	1.0	-61.3	-13.0	-48.3	
2.45	-66.2	V	3.0	-22.3	36.7	1.0	-58.0	-13.0	-45.0	
3.27	-67.2	V	3.0	-21.3	36.5	1.0	-56.9	-13.0	-43.9	
Mid Channel (820MHz)										
1.64	-66.5	H	3.0	-25.0	37.8	1.0	-61.9	-13.0	-48.9	
2.46	-66.7	H	3.0	-23.6	36.6	1.0	-59.3	-13.0	-46.3	
3.28	-67.3	H	3.0	-21.4	36.5	1.0	-57.0	-13.0	-44.0	
1.64	-66.4	V	3.0	-24.7	37.8	1.0	-61.5	-13.0	-48.5	
2.46	-66.4	V	3.0	-22.4	36.6	1.0	-58.1	-13.0	-45.1	
3.28	-67.1	V	3.0	-21.2	36.5	1.0	-56.8	-13.0	-43.8	
High Channel (822.75MHz)										
1.65	-66.1	H	3.0	-24.7	37.8	1.0	-61.5	-13.0	-48.5	
2.47	-66.5	H	3.0	-23.4	36.6	1.0	-59.0	-13.0	-46.0	
3.29	-66.7	H	3.0	-20.8	36.5	1.0	-56.3	-13.0	-43.3	
1.65	-66.5	V	3.0	-24.7	37.8	1.0	-61.5	-13.0	-48.5	
2.47	-66.5	V	3.0	-22.5	36.6	1.0	-58.1	-13.0	-45.1	
3.29	-66.7	V	3.0	-20.8	36.5	1.0	-56.3	-13.0	-43.3	

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CDMA BC10 1xRTT

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 04/13/18
Test Engineer: 12491
Configuration: EUT only
Mode: Rev 0/A, 800MHz

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

Chamber: 3mChamber G | Pre-amplifer: 3mChamber G | 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 (817.25MHz)										
1.63	-67.0	H	3.0	-25.6	37.8	1.0	-62.5	-13.0	-49.5	
2.45	-66.6	H	3.0	-23.5	36.7	1.0	-59.2	-13.0	-46.2	
3.27	-64.5	H	3.0	-18.6	36.5	1.0	-54.1	-13.0	-41.1	
1.63	-64.4	V	3.0	-22.6	37.8	1.0	-59.5	-13.0	-46.5	
2.45	-65.9	V	3.0	-22.0	36.7	1.0	-57.8	-13.0	-44.8	
3.27	-64.7	V	3.0	-18.9	36.5	1.0	-54.4	-13.0	-41.4	
Mid Channel (820MHz)										
1.64	-67.1	H	3.0	-25.7	37.8	1.0	-62.5	-13.0	-49.5	
2.46	-64.0	H	3.0	-20.9	36.7	1.0	-56.6	-13.0	-43.6	
3.28	-65.0	H	3.0	-19.2	36.5	1.0	-54.7	-13.0	-41.7	
1.64	-64.8	V	3.0	-23.1	37.8	1.0	-59.9	-13.0	-46.9	
2.46	-65.1	V	3.0	-21.2	36.7	1.0	-56.9	-13.0	-43.9	
3.28	-65.5	V	3.0	-19.6	36.5	1.0	-55.1	-13.0	-42.1	
High Channel (822.75MHz)										
1.65	-65.6	H	3.0	-24.2	37.8	1.0	-61.0	-13.0	-48.0	
2.47	-67.1	H	3.0	-23.9	36.6	1.0	-59.5	-13.0	-46.5	
3.29	-64.5	H	3.0	-18.6	36.5	1.0	-54.1	-13.0	-41.1	
1.65	-67.4	V	3.0	-25.7	37.8	1.0	-62.5	-13.0	-49.5	
2.47	-66.9	V	3.0	-22.9	36.6	1.0	-58.5	-13.0	-45.5	
3.29	-64.1	V	3.0	-18.2	36.5	1.0	-53.7	-13.0	-40.7	

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CDMA BC10 1xEV-DO Rev A

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/20/18
Test Engineer: 12491
Configuration: EUT Only
Mode: 1xRTT 850MHz

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

Chamber: 3m Chamber G | Pre-amplifer: 3m Chamber G | 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 (824.7MHz)										
1.65	-66.3	H	3.0	-24.8	37.8	1.0	-61.6	-13.0	-48.6	
2.47	-66.4	H	3.0	-23.3	36.6	1.0	-58.9	-13.0	-45.9	
3.30	-66.9	H	3.0	-21.0	36.5	1.0	-56.5	-13.0	-43.5	
1.65	-66.6	V	3.0	-24.8	37.8	1.0	-61.6	-13.0	-48.6	
2.47	-66.4	V	3.0	-22.4	36.6	1.0	-57.9	-13.0	-44.9	
3.30	-67.2	V	3.0	-21.3	36.5	1.0	-56.8	-13.0	-43.8	
Mid Channel (836.52MHz)										
1.67	-66.1	H	3.0	-24.6	37.8	1.0	-61.4	-13.0	-48.4	
2.51	-66.0	H	3.0	-22.8	36.4	1.0	-58.1	-13.0	-45.1	
3.35	-67.1	H	3.0	-21.0	36.5	1.0	-56.5	-13.0	-43.5	
1.67	-66.2	V	3.0	-24.4	37.8	1.0	-61.3	-13.0	-48.3	
2.51	-66.1	V	3.0	-21.8	36.4	1.0	-57.2	-13.0	-44.2	
3.35	-66.8	V	3.0	-20.8	36.5	1.0	-56.3	-13.0	-43.3	
High Channel (848.31MHz)										
1.70	-66.2	H	3.0	-24.7	37.8	1.0	-61.5	-13.0	-48.5	
2.54	-66.6	H	3.0	-23.2	36.4	1.0	-58.6	-13.0	-45.6	
3.39	-67.0	H	3.0	-20.9	36.4	1.0	-56.3	-13.0	-43.3	
1.70	-66.2	V	3.0	-24.4	37.8	1.0	-61.3	-13.0	-48.3	
2.54	-66.5	V	3.0	-22.2	36.4	1.0	-57.6	-13.0	-44.6	
3.39	-67.6	V	3.0	-21.3	36.4	1.0	-56.7	-13.0	-43.7	

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CDMA BC0 1xRTT

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 04/13/18
Test Engineer: 12491
Configuration: EUT only
Mode: Rev 0/A 850MHz

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

Chamber: 3mChamber G | Pre-amplifer: 3mChamber G | 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 (824.7MHz)										
1.65	-66.2	H	3.0	-24.8	37.8	1.0	-61.6	-13.0	-48.6	
2.47	-67.4	H	3.0	-24.3	36.6	1.0	-59.8	-13.0	-46.8	
3.30	-65.0	H	3.0	-19.1	36.5	1.0	-54.6	-13.0	-41.6	
1.65	-68.0	V	3.0	-26.2	37.8	1.0	-63.0	-13.0	-50.0	
2.47	-65.5	V	3.0	-21.5	36.6	1.0	-57.1	-13.0	-44.1	
3.30	-64.6	V	3.0	-18.7	36.5	1.0	-54.2	-13.0	-41.2	
Mid Channel (836.52MHz)										
1.67	-67.3	H	3.0	-25.8	37.8	1.0	-62.6	-13.0	-49.6	
2.51	-67.0	H	3.0	-23.8	36.4	1.0	-59.2	-13.0	-46.2	
3.35	-65.2	H	3.0	-19.1	36.5	1.0	-54.6	-13.0	-41.6	
1.67	-66.9	V	3.0	-25.2	37.8	1.0	-62.0	-13.0	-49.0	
2.51	-64.5	V	3.0	-20.2	36.4	1.0	-55.6	-13.0	-42.6	
3.35	-64.3	V	3.0	-18.2	36.5	1.0	-53.7	-13.0	-40.7	
High Channel (848.31MHz)										
1.70	-67.7	H	3.0	-26.1	37.8	1.0	-63.0	-13.0	-50.0	
2.54	-65.2	H	3.0	-21.8	36.4	1.0	-57.2	-13.0	-44.2	
3.39	-65.6	H	3.0	-19.4	36.4	1.0	-54.9	-13.0	-41.9	
1.70	-66.7	V	3.0	-24.9	37.8	1.0	-61.7	-13.0	-48.7	
2.54	-65.1	V	3.0	-20.8	36.4	1.0	-56.2	-13.0	-43.2	
3.39	-65.0	V	3.0	-18.8	36.4	1.0	-54.3	-13.0	-41.3	

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CDMA BC0 1xEV-DO Rev A

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/20/18
Test Engineer: 12491
Configuration: EUT only
Mode: 1xRTT 1900MHz

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

Chamber: 3m Chamber G | Pre-amplifer: 3m Chamber G | 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 (1851.25MHz)										
3.70	-67.7	H	3.0	-21.0	36.2	1.0	-56.2	-13.0	-43.2	
5.55	-67.0	H	3.0	-16.7	36.1	1.0	-51.8	-13.0	-38.8	
7.41	-68.8	H	3.0	-15.7	35.2	1.0	-49.9	-13.0	-36.9	
3.70	-67.6	V	3.0	-20.4	36.2	1.0	-55.7	-13.0	-42.7	
5.55	-66.5	V	3.0	-16.4	36.1	1.0	-51.6	-13.0	-38.6	
7.41	-68.8	V	3.0	-15.7	35.2	1.0	-50.0	-13.0	-37.0	
Mid Channel (1880MHz)										
3.76	-67.6	H	3.0	-20.7	36.2	1.0	-55.8	-13.0	-42.8	
5.64	-68.0	H	3.0	-17.5	36.1	1.0	-52.6	-13.0	-39.6	
7.52	-69.2	H	3.0	-16.0	35.1	1.0	-50.1	-13.0	-37.1	
3.76	-67.6	V	3.0	-20.3	36.2	1.0	-55.4	-13.0	-42.4	
5.64	-67.9	V	3.0	-17.7	36.1	1.0	-52.8	-13.0	-39.8	
7.52	-69.0	V	3.0	-15.9	35.1	1.0	-50.0	-13.0	-37.0	
High Channel (1908.75MHz)										
3.82	-67.1	H	3.0	-20.1	36.1	1.0	-55.2	-13.0	-42.2	
5.73	-67.9	H	3.0	-17.3	36.1	1.0	-52.4	-13.0	-39.4	
7.64	-68.5	H	3.0	-15.2	35.0	1.0	-49.2	-13.0	-36.2	
3.82	-67.4	V	3.0	-19.9	36.1	1.0	-55.0	-13.0	-42.0	
5.73	-67.6	V	3.0	-17.2	36.1	1.0	-52.3	-13.0	-39.3	
7.64	-68.7	V	3.0	-15.5	35.0	1.0	-49.6	-13.0	-36.6	

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CDMA BC1 1xRTT

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 04/13/18
Test Engineer: 12491
Configuration: EUT only
Mode: Rev 0/A 1900MHz

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

Chamber: 3mChamber G | Pre-amplifer: 3mChamber G | 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 (1851.25MHz)										
3.70	-67.1	H	3.0	-20.4	36.2	1.0	-55.6	-13.0	-42.6	
5.55	-63.3	H	3.0	-12.9	36.1	1.0	-48.1	-13.0	-35.1	
7.41	-67.7	H	3.0	-14.6	35.2	1.0	-48.8	-13.0	-35.8	
3.70	-64.9	V	3.0	-17.8	36.2	1.0	-53.0	-13.0	-40.0	
5.55	-68.4	V	3.0	-18.2	36.1	1.0	-53.4	-13.0	-40.4	
7.41	-65.2	V	3.0	-12.2	35.2	1.0	-46.4	-13.0	-33.4	
Mid Channel (1880MHz)										
3.76	-67.1	H	3.0	-20.2	36.2	1.0	-55.4	-13.0	-42.4	
5.64	-66.5	H	3.0	-16.0	36.1	1.0	-51.1	-13.0	-38.1	
7.52	-67.6	H	3.0	-14.4	35.1	1.0	-48.6	-13.0	-35.6	
3.76	-65.3	V	3.0	-18.0	36.2	1.0	-53.2	-13.0	-40.2	
5.64	-66.3	V	3.0	-16.1	36.1	1.0	-51.2	-13.0	-38.2	
7.52	-68.7	V	3.0	-15.6	35.1	1.0	-49.7	-13.0	-36.7	
High Channel (1908.75MHz)										
3.82	-65.3	H	3.0	-18.3	36.1	1.0	-53.4	-13.0	-40.4	
5.73	-68.0	H	3.0	-17.4	36.1	1.0	-52.5	-13.0	-39.5	
7.64	-68.0	H	3.0	-14.7	35.0	1.0	-48.7	-13.0	-35.7	
3.82	-65.8	V	3.0	-18.3	36.1	1.0	-53.4	-13.0	-40.4	
5.73	-67.4	V	3.0	-17.0	36.1	1.0	-52.1	-13.0	-39.1	
7.64	-66.2	V	3.0	-12.9	35.0	1.0	-47.0	-13.0	-34.0	

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CDMA BC1 1xEV-DO Rev A

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701i
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9.1.3. WCDMA

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/06/18
Test Engineer: 38602
Configuration: EUT Only
Mode: REL 99, 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 (826.4MHz)										
1.65	-64.7	H	3.0	-22.9	36.5	1.0	-58.4	-13.0	-45.4	
2.48	-66.0	H	3.0	-20.2	35.2	1.0	-54.4	-13.0	-41.4	
3.31	-65.0	H	3.0	-16.1	34.6	1.0	-49.8	-13.0	-36.8	
1.65	-65.2	V	3.0	-22.6	36.5	1.0	-58.1	-13.0	-45.1	
2.48	-65.5	V	3.0	-19.7	35.2	1.0	-53.9	-13.0	-40.9	
3.31	-64.6	V	3.0	-15.1	34.6	1.0	-48.7	-13.0	-35.7	
Mid Channel (836.6MHz)										
1.67	-60.4	H	3.0	-18.4	36.5	1.0	-53.9	-13.0	-40.9	
2.51	-65.5	H	3.0	-19.6	35.1	1.0	-53.7	-13.0	-40.7	
3.35	-66.1	H	3.0	-17.1	34.6	1.0	-50.7	-13.0	-37.7	
1.67	-66.0	V	3.0	-23.2	36.5	1.0	-58.7	-13.0	-45.7	
2.51	-65.2	V	3.0	-19.3	35.1	1.0	-53.4	-13.0	-40.4	
3.35	-65.8	V	3.0	-16.2	34.6	1.0	-49.8	-13.0	-36.8	
High Channel (846.6MHz)										
1.69	-66.5	H	3.0	-24.3	36.4	1.0	-59.8	-13.0	-46.8	
2.54	-65.0	H	3.0	-19.0	35.1	1.0	-53.1	-13.0	-40.1	
3.39	-65.4	H	3.0	-16.3	34.5	1.0	-49.8	-13.0	-36.8	
1.69	-65.9	V	3.0	-22.9	36.4	1.0	-58.4	-13.0	-45.4	
2.54	-64.2	V	3.0	-18.1	35.1	1.0	-52.2	-13.0	-39.2	
3.39	-65.8	V	3.0	-16.1	34.5	1.0	-49.7	-13.0	-36.7	

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WCDMA Band 5 Rel 99

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/06/18
Test Engineer: 38648
Configuration: EUT Only
Mode: HSDPA 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 (826.4MHz)										
1.65	-66.2	H	3.0	-24.4	36.5	1.0	-59.9	-13.0	-46.9	
2.48	-65.3	H	3.0	-19.5	35.2	1.0	-53.7	-13.0	-40.7	
3.31	-66.3	H	3.0	-17.4	34.6	1.0	-51.1	-13.0	-38.1	
1.65	-66.6	V	3.0	-24.0	36.5	1.0	-59.5	-13.0	-46.5	
2.48	-65.3	V	3.0	-19.5	35.2	1.0	-53.7	-13.0	-40.7	
3.31	-65.3	V	3.0	-15.8	34.6	1.0	-49.4	-13.0	-36.4	
Mid Channel (836.6MHz)										
1.67	-66.0	H	3.0	-24.0	36.5	1.0	-59.5	-13.0	-46.5	
2.51	-66.4	H	3.0	-20.5	35.1	1.0	-54.7	-13.0	-41.7	
3.35	-66.6	H	3.0	-17.6	34.6	1.0	-51.2	-13.0	-38.2	
1.67	-66.6	V	3.0	-23.8	36.5	1.0	-59.3	-13.0	-46.3	
2.51	-66.3	V	3.0	-20.4	35.1	1.0	-54.6	-13.0	-41.6	
3.35	-65.5	V	3.0	-15.9	34.6	1.0	-49.5	-13.0	-36.5	
High Channel (846.6MHz)										
1.69	-65.8	H	3.0	-23.7	36.4	1.0	-59.1	-13.0	-46.1	
2.54	-64.6	H	3.0	-18.6	35.1	1.0	-52.7	-13.0	-39.7	
3.39	-65.2	H	3.0	-16.1	34.5	1.0	-49.6	-13.0	-36.6	
1.69	-66.4	V	3.0	-23.5	36.4	1.0	-58.9	-13.0	-45.9	
2.54	-65.1	V	3.0	-19.0	35.1	1.0	-53.1	-13.0	-40.1	
3.39	-65.4	V	3.0	-15.7	34.5	1.0	-49.2	-13.0	-36.2	

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WCDMA Band 5 HSDPA

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/06/18
Test Engineer: 38648
Configuration: EUT Only
Mode: REL 99, 1900MHz

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 (1852.4MHz)										
3.70	-66.3	H	3.0	-15.3	34.1	1.0	-48.4	-13.0	-35.4	
5.56	-64.0	H	3.0	-10.0	33.3	1.0	-42.3	-13.0	-29.3	
7.41	-65.2	H	3.0	-7.8	33.1	1.0	-39.8	-13.0	-26.8	
3.70	-64.7	V	3.0	-14.4	34.1	1.0	-47.5	-13.0	-34.5	
5.55	-63.9	V	3.0	-10.0	33.3	1.0	-42.3	-13.0	-29.3	
7.42	-64.7	V	3.0	-7.3	33.1	1.0	-39.3	-13.0	-26.3	
Mid Channel (1880MHz)										
3.76	-63.7	H	3.0	-13.6	34.1	1.0	-46.7	-13.0	-33.7	
5.64	-65.1	H	3.0	-10.9	33.3	1.0	-43.2	-13.0	-30.2	
7.52	-63.4	H	3.0	-8.8	33.0	1.0	-37.9	-13.0	-24.9	
3.76	-63.2	V	3.0	-12.7	34.1	1.0	-45.8	-13.0	-32.8	
5.64	-64.5	V	3.0	-10.4	33.3	1.0	-42.7	-13.0	-29.7	
7.52	-66.0	V	3.0	-7.4	33.0	1.0	-39.4	-13.0	-26.4	
High Channel (1907.6MHz)										
3.81	-62.4	H	3.0	-12.2	34.0	1.0	-45.2	-13.0	-32.2	
5.72	-64.5	H	3.0	-10.2	33.3	1.0	-42.5	-13.0	-29.5	
7.66	-65.0	H	3.0	-7.3	33.0	1.0	-39.3	-13.0	-26.3	
3.82	-66.7	V	3.0	-15.1	34.0	1.0	-48.1	-13.0	-35.1	
5.72	-64.7	V	3.0	-10.4	33.3	1.0	-42.7	-13.0	-29.7	
7.63	-66.6	V	3.0	-7.7	33.0	1.0	-39.8	-13.0	-26.8	

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WCDMA Band 2 Rel 99

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/06/18
Test Engineer: 38648
Configuration: EUT Only
Mode: HSDPA 1900MHz

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 (1852.4MHz)										
3.70	-64.6	H	3.0	-14.7	34.1	1.0	-47.8	-13.0	-34.8	
5.56	-64.1	H	3.0	-10.1	33.3	1.0	-42.4	-13.0	-29.4	
7.41	-65.1	H	3.0	-7.7	33.1	1.0	-39.7	-13.0	-26.7	
9.26	-65.8	H	3.0	-6.0	32.8	1.0	-37.8	-13.0	-24.8	
3.70	-63.4	V	3.0	-13.1	34.1	1.0	-46.3	-13.0	-33.3	
5.56	-64.0	V	3.0	-10.1	33.3	1.0	-42.4	-13.0	-29.4	
7.41	-66.1	V	3.0	-7.7	33.1	1.0	-39.7	-13.0	-26.7	
9.26	-66.4	V	3.0	-5.4	32.8	1.0	-37.1	-13.0	-24.1	
Mid Channel (1880MHz)										
3.76	-63.5	H	3.0	-13.4	34.1	1.0	-46.5	-13.0	-33.5	
5.64	-65.6	H	3.0	-11.4	33.3	1.0	-43.7	-13.0	-30.7	
7.52	-64.7	H	3.0	-7.1	33.0	1.0	-39.2	-13.0	-26.2	
9.40	-66.7	H	3.0	-6.7	32.8	1.0	-38.5	-13.0	-25.5	
3.76	-63.7	V	3.0	-13.2	34.1	1.0	-46.3	-13.0	-33.3	
5.64	-65.4	V	3.0	-11.4	33.3	1.0	-43.6	-13.0	-30.6	
7.52	-64.0	V	3.0	-6.4	33.0	1.0	-38.4	-13.0	-25.4	
9.40	-66.0	V	3.0	-5.8	32.8	1.0	-37.6	-13.0	-24.6	
High Channel (1907.6MHz)										
3.82	-62.7	H	3.0	-12.4	34.0	1.0	-45.4	-13.0	-32.4	
5.72	-64.9	H	3.0	-10.5	33.3	1.0	-42.8	-13.0	-29.8	
7.63	-65.4	H	3.0	-7.7	33.0	1.0	-39.7	-13.0	-26.7	
9.54	-65.3	H	3.0	-6.1	32.7	1.0	-36.8	-13.0	-23.8	
3.82	-63.0	V	3.0	-12.4	34.0	1.0	-45.4	-13.0	-32.4	
5.72	-64.1	V	3.0	-9.9	33.3	1.0	-42.2	-13.0	-29.2	
7.63	-65.1	V	3.0	-7.3	33.0	1.0	-39.3	-13.0	-26.3	
9.54	-64.9	V	3.0	-4.5	32.7	1.0	-36.2	-13.0	-23.2	

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WCDMA Band 2 HSDPA

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/06/18
Test Engineer: 38602
Configuration: EUT Only
Mode: REL 99, 1700MHz

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 (1712.4MHz)										
3.42	-66.0	H	3.0	-16.8	34.5	1.0	-50.3	-13.0	-37.3	
5.14	-64.8	H	3.0	-11.6	33.4	1.0	-44.0	-13.0	-31.0	
6.85	-65.6	H	3.0	-9.0	33.1	1.0	-41.1	-13.0	-28.1	
8.56	-66.1	H	3.0	-7.1	32.9	1.0	-39.0	-13.0	-26.0	
3.42	-66.6	V	3.0	-16.8	34.5	1.0	-50.3	-13.0	-37.3	
5.14	-65.2	V	3.0	-12.1	33.4	1.0	-44.5	-13.0	-31.5	
6.85	-65.3	V	3.0	-8.7	33.1	1.0	-40.9	-13.0	-27.9	
8.56	-66.2	V	3.0	-7.1	32.9	1.0	-39.0	-13.0	-26.0	
Mid Channel (1732.6MHz)										
3.47	-65.5	H	3.0	-16.2	34.4	1.0	-49.7	-13.0	-36.7	
5.20	-63.7	H	3.0	-10.5	33.4	1.0	-42.8	-13.0	-29.8	
6.93	-64.8	H	3.0	-8.0	33.1	1.0	-40.2	-13.0	-27.2	
8.66	-65.2	H	3.0	-6.1	32.9	1.0	-38.0	-13.0	-25.0	
3.47	-65.6	V	3.0	-15.8	34.4	1.0	-49.2	-13.0	-36.2	
5.20	-64.1	V	3.0	-11.0	33.4	1.0	-43.3	-13.0	-30.3	
6.93	-65.1	V	3.0	-8.3	33.1	1.0	-40.5	-13.0	-27.5	
8.66	-65.4	V	3.0	-6.2	32.9	1.0	-38.1	-13.0	-25.1	
High Channel (1752.6MHz)										
3.51	-66.5	H	3.0	-17.0	34.4	1.0	-50.4	-13.0	-37.4	
5.26	-64.1	H	3.0	-10.7	33.3	1.0	-43.1	-13.0	-30.1	
7.01	-65.1	H	3.0	-8.1	33.1	1.0	-40.2	-13.0	-27.2	
8.76	-65.8	H	3.0	-6.6	32.9	1.0	-38.5	-13.0	-25.5	
3.51	-65.1	V	3.0	-15.2	34.4	1.0	-48.6	-13.0	-35.6	
5.26	-64.2	V	3.0	-10.9	33.3	1.0	-43.3	-13.0	-30.3	
7.01	-64.5	V	3.0	-7.6	33.1	1.0	-39.7	-13.0	-26.7	
8.76	-65.3	V	3.0	-6.0	32.9	1.0	-37.8	-13.0	-24.8	

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WCDMA Band 4 Rel 99

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/07/18
Test Engineer: 38602
Configuration: EUT ONLY
Mode: HSDPA 1700MHz

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 (1712.4MHz)										
3.42	-65.2	H	3.0	-16.0	34.5	1.0	-49.5	-13.0	-36.5	
5.14	-63.6	H	3.0	-10.5	33.4	1.0	-42.8	-13.0	-29.8	
6.85	-64.9	H	3.0	-8.3	33.1	1.0	-40.4	-13.0	-27.4	
3.42	-65.3	V	3.0	-15.6	34.5	1.0	-49.0	-13.0	-36.0	
5.14	-62.6	V	3.0	-9.5	33.4	1.0	-41.9	-13.0	-28.9	
6.85	-65.5	V	3.0	-8.9	33.1	1.0	-41.1	-13.0	-28.1	
Mid Channel (1732.6MHz)										
3.47	-65.8	H	3.0	-16.5	34.4	1.0	-49.9	-13.0	-36.9	
5.20	-63.5	H	3.0	-10.2	33.4	1.0	-42.6	-13.0	-29.6	
6.93	-65.0	H	3.0	-8.2	33.1	1.0	-40.4	-13.0	-27.4	
3.47	-65.7	V	3.0	-15.9	34.4	1.0	-49.3	-13.0	-36.3	
5.20	-62.3	V	3.0	-9.1	33.4	1.0	-41.5	-13.0	-28.5	
6.93	-65.4	V	3.0	-8.7	33.1	1.0	-40.8	-13.0	-27.8	
High Channel (1752.6MHz)										
3.51	-65.6	H	3.0	-16.2	34.4	1.0	-49.5	-13.0	-36.5	
5.26	-63.2	H	3.0	-9.8	33.3	1.0	-42.2	-13.0	-29.2	
7.01	-64.5	H	3.0	-7.6	33.1	1.0	-39.7	-13.0	-26.7	
3.51	-66.0	V	3.0	-16.1	34.4	1.0	-49.4	-13.0	-36.4	
5.26	-63.8	V	3.0	-10.5	33.3	1.0	-42.8	-13.0	-29.8	
7.01	-64.5	V	3.0	-7.6	33.1	1.0	-39.7	-13.0	-26.7	

Rev. 03.19.15

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: 3/5/218
Test Engineer: 10649
Configuration: EUT Only
Mode: GPRS 850MHz

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

Chamber: 3m Chamber C | Pre-amplifer: 3m Chamber C | 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 (824.2MHz)										
1.65	-70.8	H	3.0	-29.0	36.5	1.0	-64.5	-13.0	-51.5	
2.47	-68.9	H	3.0	-23.2	35.2	1.0	-57.3	-13.0	-44.3	
3.30	-67.7	H	3.0	-18.9	34.6	1.0	-52.5	-13.0	-39.5	
1.65	-71.0	V	3.0	-28.4	36.5	1.0	-63.9	-13.0	-50.9	
2.47	-69.0	V	3.0	-23.3	35.2	1.0	-57.4	-13.0	-44.4	
3.30	-68.8	V	3.0	-19.3	34.6	1.0	-53.0	-13.0	-40.0	
Mid Channel (836.6MHz)										
1.67	-71.0	H	3.0	-29.1	36.5	1.0	-64.5	-13.0	-51.5	
2.51	-69.7	H	3.0	-23.8	35.1	1.0	-58.0	-13.0	-45.0	
3.35	-69.5	H	3.0	-20.5	34.6	1.0	-54.0	-13.0	-41.0	
1.67	-70.1	V	3.0	-27.3	36.5	1.0	-62.8	-13.0	-49.8	
2.51	-69.9	V	3.0	-24.0	35.1	1.0	-58.1	-13.0	-45.1	
3.35	-68.7	V	3.0	-19.1	34.6	1.0	-52.6	-13.0	-39.6	
High Channel (848.8MHz)										
1.70	-71.7	H	3.0	-29.5	36.4	1.0	-64.9	-13.0	-51.9	
2.55	-68.8	H	3.0	-22.7	35.1	1.0	-56.9	-13.0	-43.9	
3.40	-69.7	H	3.0	-20.5	34.5	1.0	-54.1	-13.0	-41.1	
1.70	-71.5	V	3.0	-28.4	36.4	1.0	-63.8	-13.0	-50.8	
2.55	-69.2	V	3.0	-23.1	35.1	1.0	-57.2	-13.0	-44.2	
3.40	-68.3	V	3.0	-18.6	34.5	1.0	-52.1	-13.0	-39.1	

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GSM 850MHz GPRS

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/05/18
Test Engineer: 10649
Configuration: EUT Only
Mode: EGPRS 850MHz

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

Chamber: 3m Chamber C | Pre-amplifer: 3m Chamber C | 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 (824.2MHz)										
1.65	-70.1	H	3.0	-28.3	36.5	1.0	-63.8	-13.0	-50.8	
2.47	-67.8	H	3.0	-22.1	35.2	1.0	-56.3	-13.0	-43.3	
3.30	-68.9	H	3.0	-20.1	34.6	1.0	-53.7	-13.0	-40.7	
1.65	-71.4	V	3.0	-28.8	36.5	1.0	-64.3	-13.0	-51.3	
2.47	-69.9	V	3.0	-24.1	35.2	1.0	-58.3	-13.0	-45.3	
3.30	-68.1	V	3.0	-18.6	34.6	1.0	-52.2	-13.0	-39.2	
Mid Channel (836.6MHz)										
1.67	-70.8	H	3.0	-28.8	36.5	1.0	-64.3	-13.0	-51.3	
2.51	-69.8	H	3.0	-23.9	35.1	1.0	-58.1	-13.0	-45.1	
3.35	-69.0	H	3.0	-20.0	34.6	1.0	-53.5	-13.0	-40.5	
1.67	-71.2	V	3.0	-28.5	36.5	1.0	-63.9	-13.0	-50.9	
2.51	-69.3	V	3.0	-23.4	35.1	1.0	-57.5	-13.0	-44.5	
3.35	-68.0	V	3.0	-18.4	34.6	1.0	-52.0	-13.0	-39.0	
High Channel (848.8MHz)										
1.70	-70.1	H	3.0	-27.9	36.4	1.0	-63.4	-13.0	-50.4	
2.55	-70.0	H	3.0	-23.9	35.1	1.0	-58.1	-13.0	-45.1	
3.40	-68.7	H	3.0	-19.6	34.5	1.0	-53.1	-13.0	-40.1	
1.70	-71.4	V	3.0	-28.4	36.4	1.0	-63.8	-13.0	-50.8	
2.55	-69.6	V	3.0	-23.5	35.1	1.0	-57.6	-13.0	-44.6	
3.40	-68.4	V	3.0	-18.7	34.5	1.0	-52.2	-13.0	-39.2	

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GSM 850MHz EGPRS

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/05/18
Test Engineer: 10649
Configuration: EUT ONLY
Mode: GPRS 1900MHz

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

Chamber: 3m Chamber C | Pre-amplifer: 3m Chamber C | 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	-66.7	H	3.0	-16.8	34.1	1.0	-49.9	-13.0	-36.9	
5.55	-66.7	H	3.0	-12.7	33.3	1.0	-46.0	-13.0	-32.0	
7.40	-67.0	H	3.0	-9.5	33.1	1.0	-41.7	-13.0	-28.7	
3.70	-66.2	V	3.0	-15.9	34.1	1.0	-49.1	-13.0	-36.1	
5.55	-66.2	V	3.0	-12.3	33.3	1.0	-44.6	-13.0	-31.6	
7.40	-66.7	V	3.0	-9.3	33.1	1.0	-41.3	-13.0	-28.3	
Mid Channel (1880.0)										
3.76	-64.8	H	3.0	-14.7	34.1	1.0	-47.7	-13.0	-34.7	
5.64	-68.1	H	3.0	-13.9	33.3	1.0	-46.2	-13.0	-33.2	
7.52	-64.2	H	3.0	-8.6	33.0	1.0	-38.7	-13.0	-25.7	
3.76	-62.9	V	3.0	-12.5	34.1	1.0	-45.6	-13.0	-32.6	
5.64	-66.9	V	3.0	-12.8	33.3	1.0	-45.1	-13.0	-32.1	
7.52	-65.4	V	3.0	-7.8	33.0	1.0	-39.8	-13.0	-26.8	
High Channel (1909.8MHz)										
3.82	-64.5	H	3.0	-14.2	34.0	1.0	-47.2	-13.0	-34.2	
5.73	-66.8	H	3.0	-12.4	33.3	1.0	-44.7	-13.0	-31.7	
7.64	-64.4	H	3.0	-6.7	33.0	1.0	-38.7	-13.0	-25.7	
3.82	-64.1	V	3.0	-13.5	34.0	1.0	-46.5	-13.0	-33.5	
5.73	-64.9	V	3.0	-10.6	33.3	1.0	-42.9	-13.0	-29.9	
7.64	-65.9	V	3.0	-8.1	33.0	1.0	-40.1	-13.0	-27.1	

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GSM 1900MHz GPRS

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/05/18
Test Engineer: 10649
Configuration: EUT ONLY
Mode: EGPRS 1900MHz

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

Chamber: 3m Chamber C | Pre-amplifer: 3m Chamber C | 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	-66.2	H	3.0	-16.3	34.1	1.0	-49.4	-13.0	-36.4	
5.55	-66.6	H	3.0	-12.6	33.3	1.0	-44.9	-13.0	-31.9	
7.40	-67.0	H	3.0	-9.6	33.1	1.0	-41.6	-13.0	-28.6	
3.70	-65.6	V	3.0	-15.3	34.1	1.0	-48.5	-13.0	-35.5	
5.55	-67.1	V	3.0	-13.2	33.3	1.0	-45.5	-13.0	-32.5	
7.40	-66.5	V	3.0	-9.1	33.1	1.0	-41.1	-13.0	-28.1	
Mid Channel (1880.0)										
3.76	-65.0	H	3.0	-14.9	34.1	1.0	-48.0	-13.0	-35.0	
5.64	-66.9	H	3.0	-12.7	33.3	1.0	-45.0	-13.0	-32.0	
7.52	-66.2	H	3.0	-8.6	33.0	1.0	-40.6	-13.0	-27.6	
3.76	-66.2	V	3.0	-15.7	34.1	1.0	-48.8	-13.0	-35.8	
5.64	-66.4	V	3.0	-12.3	33.3	1.0	-44.6	-13.0	-31.6	
7.52	-66.6	V	3.0	-9.0	33.0	1.0	-41.0	-13.0	-28.0	
High Channel (1909.8MHz)										
3.82	-64.2	H	3.0	-13.9	34.0	1.0	-46.9	-13.0	-33.9	
5.73	-65.8	H	3.0	-11.4	33.3	1.0	-43.7	-13.0	-30.7	
7.64	-66.4	H	3.0	-8.7	33.0	1.0	-40.7	-13.0	-27.7	
3.82	-64.2	V	3.0	-13.6	34.0	1.0	-46.6	-13.0	-33.6	
5.73	-65.5	V	3.0	-11.2	33.3	1.0	-43.5	-13.0	-30.5	
7.64	-66.3	V	3.0	-8.5	33.0	1.0	-40.5	-13.0	-27.5	

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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: 03/20/18
Test Engineer: 12491
Configuration: EUT only
Mode: 1xRTT 800MHz

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

Chamber: 3m Chamber G | Pre-amplifer: 3m Chamber G | 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 (817.25MHz)										
1.63	-68.3	H	3.0	-26.8	37.8	1.0	-63.7	-13.0	-50.7	
2.45	-69.4	H	3.0	-26.3	36.7	1.0	-62.0	-13.0	-49.0	
3.27	-70.5	H	3.0	-24.7	36.5	1.0	-60.2	-13.0	-47.2	
1.63	-69.5	V	3.0	-27.8	37.8	1.0	-64.6	-13.0	-51.6	
2.45	-69.6	V	3.0	-25.7	36.7	1.0	-61.4	-13.0	-48.4	
3.27	-70.6	V	3.0	-24.8	36.5	1.0	-60.4	-13.0	-47.4	
Mid Channel (820MHz)										
1.64	-69.2	H	3.0	-27.7	37.8	1.0	-64.6	-13.0	-51.6	
2.46	-69.0	H	3.0	-25.9	36.6	1.0	-61.5	-13.0	-48.5	
3.28	-70.3	H	3.0	-24.4	36.5	1.0	-60.0	-13.0	-47.0	
1.64	-69.0	V	3.0	-27.3	37.8	1.0	-64.1	-13.0	-51.1	
2.46	-69.2	V	3.0	-25.2	36.6	1.0	-60.9	-13.0	-47.9	
3.28	-70.7	V	3.0	-24.9	36.5	1.0	-60.4	-13.0	-47.4	
High Channel (822.75MHz)										
1.65	-68.8	H	3.0	-27.4	37.8	1.0	-64.2	-13.0	-51.2	
2.47	-69.8	H	3.0	-26.7	36.6	1.0	-62.2	-13.0	-49.2	
3.29	-70.5	H	3.0	-24.6	36.5	1.0	-60.1	-13.0	-47.1	
1.65	-67.3	V	3.0	-25.6	37.8	1.0	-62.4	-13.0	-49.4	
2.47	-68.5	V	3.0	-24.5	36.6	1.0	-60.1	-13.0	-47.1	
3.29	-69.9	V	3.0	-24.0	36.5	1.0	-59.5	-13.0	-46.5	

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CDMA BC10 1xRTT

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 04/13/18
Test Engineer: 12491
Configuration: EUT only
Mode: Rev 0/A, 800MHz

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

Chamber: 3m Chamber G | Pre-amplifer: 3m Chamber G | 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 (817.25MHz)										
1.63	-69.5	H	3.0	-28.0	37.8	1.0	-64.9	-13.0	-51.9	
2.45	-69.3	H	3.0	-26.2	36.7	1.0	-62.0	-13.0	-49.0	
3.27	-67.4	H	3.0	-21.5	36.5	1.0	-57.0	-13.0	-44.0	
1.63	-69.0	V	3.0	-27.3	37.8	1.0	-64.1	-13.0	-51.1	
2.45	-68.6	V	3.0	-24.7	36.7	1.0	-60.5	-13.0	-47.6	
3.27	-66.2	V	3.0	-20.4	36.5	1.0	-56.0	-13.0	-43.0	
Mid Channel (820MHz)										
1.64	-68.5	H	3.0	-27.1	37.8	1.0	-63.9	-13.0	-50.9	
2.46	-69.2	H	3.0	-26.1	36.7	1.0	-61.7	-13.0	-48.7	
3.28	-66.7	H	3.0	-20.8	36.5	1.0	-56.3	-13.0	-43.3	
1.64	-68.1	V	3.0	-26.4	37.8	1.0	-63.2	-13.0	-50.2	
2.46	-68.3	V	3.0	-24.4	36.7	1.0	-60.1	-13.0	-47.1	
3.28	-67.0	V	3.0	-21.2	36.5	1.0	-56.7	-13.0	-43.7	
High Channel (822.75MHz)										
1.65	-69.1	H	3.0	-27.6	37.8	1.0	-64.4	-13.0	-51.4	
2.47	-69.0	H	3.0	-25.9	36.6	1.0	-61.4	-13.0	-48.4	
3.29	-66.9	H	3.0	-21.0	36.5	1.0	-56.5	-13.0	-43.5	
1.65	-68.0	V	3.0	-26.2	37.8	1.0	-63.0	-13.0	-50.0	
2.47	-68.2	V	3.0	-24.2	36.6	1.0	-59.8	-13.0	-46.8	
3.29	-66.7	V	3.0	-20.8	36.5	1.0	-56.3	-13.0	-43.3	

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CDMA BC10 1xEV-DO Rev A

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/30/18
Test Engineer: 12491
Configuration: EUT Only
Mode: 1xRTT 850MHz

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

Chamber: 3m Chamber G | Pre-amplifer: 3m Chamber G | 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 (824.7MHz)										
1.65	-69.8	H	3.0	-28.3	37.8	1.0	-65.1	-13.0	-52.1	
2.47	-69.6	H	3.0	-26.5	36.6	1.0	-62.0	-13.0	-49.0	
3.30	-69.9	H	3.0	-24.0	36.5	1.0	-59.5	-13.0	-46.5	
1.65	-68.4	V	3.0	-26.6	37.8	1.0	-63.5	-13.0	-50.5	
2.47	-70.3	V	3.0	-26.3	36.6	1.0	-61.8	-13.0	-48.8	
3.30	-70.9	V	3.0	-25.0	36.5	1.0	-60.5	-13.0	-47.5	
Mid Channel (836.52MHz)										
1.67	-69.5	H	3.0	-28.0	37.8	1.0	-64.8	-13.0	-51.8	
2.51	-70.5	H	3.0	-27.3	36.4	1.0	-62.6	-13.0	-49.6	
3.35	-70.8	H	3.0	-24.8	36.5	1.0	-60.2	-13.0	-47.2	
1.67	-68.9	V	3.0	-27.1	37.8	1.0	-64.0	-13.0	-51.0	
2.51	-70.6	V	3.0	-26.3	36.4	1.0	-61.7	-13.0	-48.7	
3.35	-70.4	V	3.0	-24.4	36.5	1.0	-59.8	-13.0	-46.8	
High Channel (848.31MHz)										
1.70	-68.8	H	3.0	-27.3	37.8	1.0	-64.1	-13.0	-51.1	
2.54	-69.7	H	3.0	-26.3	36.4	1.0	-61.7	-13.0	-48.7	
3.39	-70.5	H	3.0	-24.4	36.4	1.0	-59.9	-13.0	-46.9	
1.70	-69.5	V	3.0	-27.7	37.8	1.0	-64.5	-13.0	-51.5	
2.54	-69.5	V	3.0	-25.2	36.4	1.0	-60.6	-13.0	-47.6	
3.39	-70.5	V	3.0	-24.3	36.4	1.0	-59.7	-13.0	-46.7	

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CDMA BC0 1xRTT

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 04/13/18
Test Engineer: 12491
Configuration: EUT only
Mode: Rev 0/A 850MHz

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

Chamber: 3m Chamber G | Pre-amplifer: 3m Chamber G | 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 (824.7MHz)										
1.65	-68.8	H	3.0	-27.3	37.8	1.0	-64.2	-13.0	-51.2	
2.47	-67.4	H	3.0	-24.3	36.6	1.0	-59.9	-13.0	-46.9	
3.30	-66.6	H	3.0	-20.6	36.5	1.0	-56.1	-13.0	-43.1	
1.65	-67.9	V	3.0	-26.1	37.8	1.0	-63.0	-13.0	-50.0	
2.47	-66.9	V	3.0	-22.9	36.6	1.0	-58.5	-13.0	-45.5	
3.30	-65.9	V	3.0	-20.0	36.5	1.0	-55.5	-13.0	-42.5	
Mid Channel (836.52MHz)										
1.67	-68.9	H	3.0	-27.4	37.8	1.0	-64.2	-13.0	-51.2	
2.51	-67.3	H	3.0	-24.1	36.4	1.0	-59.5	-13.0	-46.5	
3.35	-65.5	H	3.0	-19.4	36.5	1.0	-54.9	-13.0	-41.9	
1.67	-67.1	V	3.0	-25.4	37.8	1.0	-62.2	-13.0	-49.2	
2.51	-67.1	V	3.0	-22.9	36.4	1.0	-58.3	-13.0	-45.3	
3.35	-65.8	V	3.0	-19.8	36.5	1.0	-55.3	-13.0	-42.3	
High Channel (848.31MHz)										
1.70	-69.0	H	3.0	-27.4	37.8	1.0	-64.3	-13.0	-51.3	
2.54	-67.2	H	3.0	-23.8	36.4	1.0	-59.2	-13.0	-46.2	
3.39	-67.7	H	3.0	-21.6	36.4	1.0	-57.0	-13.0	-44.0	
1.70	-67.8	V	3.0	-26.0	37.8	1.0	-62.9	-13.0	-49.9	
2.54	-66.5	V	3.0	-22.2	36.4	1.0	-57.6	-13.0	-44.6	
3.39	-65.9	V	3.0	-19.7	36.4	1.0	-55.2	-13.0	-42.2	

Rev. 03.19.15

CDMA BC0 1xEV-DO Rev A

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/20/18
Test Engineer: 12491
Configuration: EUT only
Mode: 1xRTT 1900MHz

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

Chamber: 3m Chamber G | Pre-amplifer: 3m Chamber G | 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 (1851.25MHz)										
3.70	-71.7	H	3.0	-24.9	36.2	1.0	-60.1	-13.0	-47.1	
5.55	-69.8	H	3.0	-19.5	36.1	1.0	-54.6	-13.0	-41.6	
7.41	-71.7	H	3.0	-18.6	35.2	1.0	-52.8	-13.0	-39.8	
3.70	-71.2	V	3.0	-24.0	36.2	1.0	-59.3	-13.0	-46.3	
5.55	-70.1	V	3.0	-20.0	36.1	1.0	-55.1	-13.0	-42.1	
7.41	-71.9	V	3.0	-18.9	35.2	1.0	-53.1	-13.0	-40.1	
Mid Channel (1880MHz)										
3.76	-69.1	H	3.0	-22.2	36.2	1.0	-57.4	-13.0	-44.4	
5.64	-70.8	H	3.0	-20.3	36.1	1.0	-55.4	-13.0	-42.4	
7.52	-72.3	H	3.0	-19.1	35.1	1.0	-53.3	-13.0	-40.3	
3.76	-69.9	V	3.0	-22.5	36.2	1.0	-57.7	-13.0	-44.7	
5.64	-71.0	V	3.0	-20.8	36.1	1.0	-55.9	-13.0	-42.9	
7.52	-71.6	V	3.0	-18.5	35.1	1.0	-52.6	-13.0	-39.6	
High Channel (1908.75MHz)										
3.82	-70.4	H	3.0	-23.4	36.1	1.0	-58.5	-13.0	-45.5	
5.73	-70.6	H	3.0	-20.0	36.1	1.0	-55.1	-13.0	-42.1	
7.64	-71.7	H	3.0	-18.4	35.0	1.0	-52.5	-13.0	-39.5	
3.82	-69.3	V	3.0	-21.7	36.1	1.0	-56.9	-13.0	-43.9	
5.73	-70.2	V	3.0	-19.8	36.1	1.0	-54.8	-13.0	-41.8	
7.64	-71.1	V	3.0	-17.9	35.0	1.0	-51.9	-13.0	-38.9	

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CDMA BC1 1xRTT

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 04/13/18
Test Engineer: 12491
Configuration: EUT only
Mode: Rev 0/A 1900MHz

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

Chamber: 3m Chamber G | Pre-amplifer: 3m Chamber G | 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 (1851.25MHz)										
3.70	-68.3	H	3.0	-21.6	36.2	1.0	-56.8	-13.0	-43.8	
5.55	-66.4	H	3.0	-16.1	36.1	1.0	-51.2	-13.0	-38.2	
7.41	-68.9	H	3.0	-15.8	35.2	1.0	-50.0	-13.0	-37.0	
3.70	-67.0	V	3.0	-19.8	36.2	1.0	-55.1	-13.0	-42.1	
5.55	-66.7	V	3.0	-16.6	36.1	1.0	-51.7	-13.0	-38.7	
7.41	-67.3	V	3.0	-14.3	35.2	1.0	-48.5	-13.0	-35.5	
Mid Channel (1880MHz)										
3.76	-67.0	H	3.0	-20.1	36.2	1.0	-55.3	-13.0	-42.3	
5.64	-67.1	H	3.0	-16.6	36.1	1.0	-51.7	-13.0	-38.7	
7.52	-68.2	H	3.0	-15.0	35.1	1.0	-49.1	-13.0	-36.1	
3.76	-66.7	V	3.0	-19.4	36.2	1.0	-54.6	-13.0	-41.6	
5.64	-68.2	V	3.0	-17.9	36.1	1.0	-53.0	-13.0	-40.0	
7.52	-68.3	V	3.0	-16.2	35.1	1.0	-49.3	-13.0	-36.3	
High Channel (1908.75MHz)										
3.82	-66.3	H	3.0	-19.3	36.1	1.0	-54.4	-13.0	-41.4	
5.73	-68.6	H	3.0	-19.0	36.1	1.0	-53.0	-13.0	-40.0	
7.64	-67.8	H	3.0	-14.5	35.0	1.0	-48.5	-13.0	-35.5	
3.82	-66.2	V	3.0	-19.7	36.1	1.0	-53.9	-13.0	-40.9	
5.73	-68.9	V	3.0	-18.4	36.1	1.0	-53.5	-13.0	-40.5	
7.64	-68.1	V	3.0	-14.8	35.0	1.0	-48.9	-13.0	-35.9	

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CDMA BC1 1xEV-DO Rev A

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701i
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9.2.3. WCDMA

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/07/18
Test Engineer: 38602
Configuration: EUT ONLY
Mode: REL 99, 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 (826.4MHz)										
1.65	-65.5	H	3.0	-23.7	36.5	1.0	-59.2	-13.0	-46.2	
2.47	-64.9	H	3.0	-19.2	35.2	1.0	-53.3	-13.0	-40.3	
3.31	-65.2	H	3.0	-16.3	34.6	1.0	-50.0	-13.0	-37.0	
1.65	-65.4	V	3.0	-22.8	36.5	1.0	-58.3	-13.0	-45.3	
2.47	-64.6	V	3.0	-18.8	35.2	1.0	-53.0	-13.0	-40.0	
3.31	-64.9	V	3.0	-15.4	34.6	1.0	-49.0	-13.0	-36.0	
Mid Channel (836.6MHz)										
1.67	-65.6	H	3.0	-23.6	36.5	1.0	-59.1	-13.0	-46.1	
2.51	-65.3	H	3.0	-19.4	35.1	1.0	-53.5	-13.0	-40.5	
3.35	-65.2	H	3.0	-16.2	34.6	1.0	-49.8	-13.0	-36.8	
1.67	-65.8	V	3.0	-23.0	36.5	1.0	-58.5	-13.0	-45.5	
2.51	-65.1	V	3.0	-19.2	35.1	1.0	-53.3	-13.0	-40.3	
3.35	-65.0	V	3.0	-15.4	34.6	1.0	-49.0	-13.0	-36.0	
High Channel (846.6MHz)										
1.69	-65.9	H	3.0	-23.8	36.4	1.0	-59.2	-13.0	-46.2	
2.54	-65.3	H	3.0	-19.3	35.1	1.0	-53.4	-13.0	-40.4	
3.39	-64.8	H	3.0	-15.7	34.5	1.0	-49.2	-13.0	-36.2	
1.69	-65.5	V	3.0	-22.5	36.4	1.0	-58.0	-13.0	-45.0	
2.54	-64.5	V	3.0	-18.4	35.1	1.0	-52.5	-13.0	-39.5	
3.39	-64.4	V	3.0	-14.7	34.5	1.0	-48.3	-13.0	-35.3	

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WCDMA Band 5 Rel 99

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/07/18
Test Engineer: 38602
Configuration: EUT ONLY
Mode: HSPA 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 (826.4MHz)										
1.65	-65.6	H	3.0	-23.8	36.5	1.0	-59.3	-13.0	-46.3	
2.47	-65.0	H	3.0	-19.3	35.2	1.0	-53.4	-13.0	-40.4	
3.31	-65.4	H	3.0	-16.5	34.6	1.0	-50.2	-13.0	-37.2	
1.65	-65.2	V	3.0	-22.6	36.5	1.0	-58.1	-13.0	-45.1	
2.47	-64.3	V	3.0	-18.5	35.2	1.0	-52.7	-13.0	-39.7	
3.31	-65.0	V	3.0	-15.5	34.6	1.0	-49.1	-13.0	-36.1	
Mid Channel (836.6MHz)										
1.67	-65.5	H	3.0	-23.5	36.5	1.0	-59.0	-13.0	-46.0	
2.51	-65.6	H	3.0	-19.7	35.1	1.0	-53.8	-13.0	-40.8	
3.35	-65.1	H	3.0	-16.1	34.6	1.0	-49.7	-13.0	-36.7	
1.67	-65.9	V	3.0	-23.1	36.5	1.0	-58.6	-13.0	-45.6	
2.51	-65.3	V	3.0	-19.4	35.1	1.0	-53.5	-13.0	-40.5	
3.35	-65.2	V	3.0	-15.6	34.6	1.0	-49.2	-13.0	-36.2	
High Channel (846.6MHz)										
1.69	-65.7	H	3.0	-23.6	36.4	1.0	-59.0	-13.0	-46.0	
2.54	-65.5	H	3.0	-19.5	35.1	1.0	-53.6	-13.0	-40.6	
3.39	-65.0	H	3.0	-15.9	34.5	1.0	-49.4	-13.0	-36.4	
1.69	-65.2	V	3.0	-22.2	36.4	1.0	-57.7	-13.0	-44.7	
2.54	-64.8	V	3.0	-18.5	35.1	1.0	-52.6	-13.0	-39.6	
3.39	-64.5	V	3.0	-14.8	34.5	1.0	-48.4	-13.0	-35.4	

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WCDMA Band 5 HSDPA

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/07/18
Test Engineer: 38602
Configuration: EUT ONLY
Mode: REL 99, 1900MHz

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 (1852.4MHz)										
3.70	-63.7	H	3.0	-13.7	34.1	1.0	-46.9	-13.0	-33.9	
5.56	-64.0	H	3.0	-10.0	33.3	1.0	-42.3	-13.0	-29.3	
7.41	-64.7	H	3.0	-7.3	33.1	1.0	-39.3	-13.0	-26.3	
3.70	-63.8	V	3.0	-13.5	34.1	1.0	-46.6	-13.0	-33.6	
5.56	-63.6	V	3.0	-9.7	33.3	1.0	-42.0	-13.0	-29.0	
7.41	-65.0	V	3.0	-7.5	33.1	1.0	-39.6	-13.0	-26.6	
Mid Channel (1880MHz)										
3.76	-62.0	H	3.0	-11.9	34.1	1.0	-45.0	-13.0	-32.0	
5.64	-64.2	H	3.0	-10.0	33.3	1.0	-42.3	-13.0	-29.3	
7.52	-64.2	H	3.0	-6.6	33.0	1.0	-38.7	-13.0	-25.7	
3.76	-63.3	V	3.0	-12.9	34.1	1.0	-45.9	-13.0	-32.9	
5.64	-64.4	V	3.0	-10.3	33.3	1.0	-42.6	-13.0	-29.6	
7.52	-64.3	V	3.0	-6.7	33.0	1.0	-38.7	-13.0	-25.7	
High Channel (1907.6MHz)										
3.82	-62.8	H	3.0	-12.5	34.0	1.0	-45.5	-13.0	-32.5	
5.72	-63.6	H	3.0	-9.3	33.3	1.0	-41.6	-13.0	-28.6	
7.63	-64.5	H	3.0	-6.8	33.0	1.0	-38.8	-13.0	-25.8	
3.82	-62.7	V	3.0	-12.1	34.0	1.0	-45.2	-13.0	-32.2	
5.72	-62.9	V	3.0	-8.6	33.3	1.0	-40.9	-13.0	-27.9	
7.63	-64.2	V	3.0	-6.4	33.0	1.0	-38.5	-13.0	-25.5	

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WCDMA Band 2 Rel 99

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/07/18
Test Engineer: 38602
Configuration: EUT ONLY
Mode: HSPA 1900MHz

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 (1852.4MHz)										
3.70	-64.0	H	3.0	-14.0	34.1	1.0	-47.2	-13.0	-34.2	
5.56	-64.2	H	3.0	-10.2	33.3	1.0	-42.5	-13.0	-29.5	
7.41	-65.0	H	3.0	-7.6	33.1	1.0	-39.6	-13.0	-26.6	
3.70	-64.1	V	3.0	-13.8	34.1	1.0	-46.9	-13.0	-33.9	
5.56	-63.8	V	3.0	-9.9	33.3	1.0	-42.2	-13.0	-29.2	
7.41	-65.1	V	3.0	-7.6	33.1	1.0	-39.7	-13.0	-26.7	
Mid Channel (1880MHz)										
3.76	-62.7	H	3.0	-12.6	34.1	1.0	-45.7	-13.0	-32.7	
5.64	-64.3	H	3.0	-10.1	33.3	1.0	-42.4	-13.0	-29.4	
7.52	-64.4	H	3.0	-6.8	33.0	1.0	-38.9	-13.0	-25.9	
3.76	-63.6	V	3.0	-13.2	34.1	1.0	-46.2	-13.0	-33.2	
5.64	-64.5	V	3.0	-10.4	33.3	1.0	-42.7	-13.0	-29.7	
7.52	-64.7	V	3.0	-7.1	33.0	1.0	-39.1	-13.0	-26.1	
High Channel (1907.6MHz)										
3.82	-63.0	H	3.0	-12.7	34.0	1.0	-45.7	-13.0	-32.7	
5.72	-64.1	H	3.0	-9.8	33.3	1.0	-42.1	-13.0	-29.1	
7.63	-64.4	H	3.0	-6.7	33.0	1.0	-38.7	-13.0	-25.7	
3.82	-63.2	V	3.0	-12.6	34.0	1.0	-45.7	-13.0	-32.7	
5.72	-63.0	V	3.0	-8.7	33.3	1.0	-41.0	-13.0	-28.0	
7.63	-64.5	V	3.0	-6.7	33.0	1.0	-38.8	-13.0	-25.8	

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WCDMA Band 2 HSDPA

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/07/18
Test Engineer: 38602
Configuration: EUT ONLY
Mode: REL 99, 1700MHz

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 (1712.4MHz)										
3.42	-65.4	H	3.0	-16.2	34.5	1.0	-49.7	-13.0	-36.7	
5.14	-64.6	H	3.0	-11.5	33.4	1.0	-43.8	-13.0	-30.8	
6.85	-64.6	H	3.0	-8.0	33.1	1.0	-40.1	-13.0	-27.1	
3.42	-65.0	V	3.0	-15.3	34.5	1.0	-48.7	-13.0	-35.7	
5.14	-64.1	V	3.0	-11.0	33.4	1.0	-43.4	-13.0	-30.4	
6.85	-64.5	V	3.0	-7.9	33.1	1.0	-40.1	-13.0	-27.1	
Mid Channel (1732.6MHz)										
3.47	-65.1	H	3.0	-15.8	34.4	1.0	-49.2	-13.0	-36.2	
5.20	-63.9	H	3.0	-10.6	33.4	1.0	-43.0	-13.0	-30.0	
6.93	-64.5	H	3.0	-7.7	33.1	1.0	-39.9	-13.0	-26.9	
3.47	-65.2	V	3.0	-15.4	34.4	1.0	-48.8	-13.0	-35.8	
5.20	-61.4	V	3.0	-8.2	33.4	1.0	-40.6	-13.0	-27.6	
6.93	-64.2	V	3.0	-7.5	33.1	1.0	-39.6	-13.0	-26.6	
High Channel (1752.6MHz)										
3.51	-65.6	H	3.0	-16.2	34.4	1.0	-49.6	-13.0	-36.6	
5.26	-63.7	H	3.0	-10.3	33.3	1.0	-42.7	-13.0	-29.7	
7.01	-64.4	H	3.0	-7.5	33.1	1.0	-39.6	-13.0	-26.6	
3.51	-65.2	V	3.0	-15.3	34.4	1.0	-48.7	-13.0	-35.7	
5.26	-63.7	V	3.0	-10.4	33.3	1.0	-42.7	-13.0	-29.7	
7.01	-64.1	V	3.0	-7.2	33.1	1.0	-39.3	-13.0	-26.3	

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WCDMA Band 4 Rel 99

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/07/18
Test Engineer: 38602
Configuration: EUT ONLY
Mode: HSPA 1700MHz

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 (1712.4MHz)										
3.42	-65.6	H	3.0	-16.4	34.5	1.0	-49.9	-13.0	-36.9	
5.14	-64.5	H	3.0	-11.4	33.4	1.0	-43.7	-13.0	-30.7	
6.85	-64.7	H	3.0	-8.1	33.1	1.0	-40.2	-13.0	-27.2	
3.42	-65.1	V	3.0	-15.4	34.5	1.0	-48.8	-13.0	-35.8	
5.14	-64.3	V	3.0	-11.2	33.4	1.0	-43.6	-13.0	-30.6	
6.85	-64.7	V	3.0	-8.1	33.1	1.0	-40.3	-13.0	-27.3	
Mid Channel (1732.6MHz)										
3.47	-65.0	H	3.0	-15.7	34.4	1.0	-49.1	-13.0	-36.1	
5.20	-64.3	H	3.0	-11.0	33.4	1.0	-43.4	-13.0	-30.4	
6.93	-64.6	H	3.0	-7.8	33.1	1.0	-40.0	-13.0	-27.0	
3.47	-65.1	V	3.0	-15.3	34.4	1.0	-48.7	-13.0	-35.7	
5.20	-62.2	V	3.0	-9.0	33.4	1.0	-41.4	-13.0	-28.4	
6.93	-64.4	V	3.0	-7.7	33.1	1.0	-39.8	-13.0	-26.8	
High Channel (1752.6MHz)										
3.51	-65.5	H	3.0	-16.1	34.4	1.0	-49.5	-13.0	-36.5	
5.26	-64.7	H	3.0	-11.3	33.3	1.0	-43.7	-13.0	-30.7	
7.01	-64.6	H	3.0	-7.7	33.1	1.0	-39.8	-13.0	-26.8	
3.51	-65.3	V	3.0	-15.4	34.4	1.0	-48.8	-13.0	-35.8	
5.26	-64.0	V	3.0	-10.7	33.3	1.0	-43.0	-13.0	-30.0	
7.01	-64.4	V	3.0	-7.5	33.1	1.0	-39.6	-13.0	-26.6	

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WCDMA Band 4 HSDPA

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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: 03/06/18
Test Engineer: 38602
Configuration: EUT only
Mode: GPRS 1900MHz

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 (1850.2MHz)										
3.70	-63.5	H	3.0	-13.5	34.1	1.0	-46.7	-13.0	-33.7	
5.55	-63.8	H	3.0	-9.8	33.3	1.0	-42.1	-13.0	-29.1	
7.40	-64.1	H	3.0	-6.7	33.1	1.0	-38.7	-13.0	-25.7	
3.70	-62.6	V	3.0	-12.3	34.1	1.0	-45.4	-13.0	-32.4	
5.55	-64.0	V	3.0	-10.1	33.3	1.0	-42.4	-13.0	-29.4	
7.40	-64.4	V	3.0	-7.0	33.1	1.0	-39.0	-13.0	-26.0	
Mid Channel (1880.0MHz)										
3.76	-62.6	H	3.0	-12.5	34.1	1.0	-45.6	-13.0	-32.6	
5.64	-64.1	H	3.0	-9.9	33.3	1.0	-42.2	-13.0	-29.2	
7.52	-64.5	H	3.0	-6.9	33.0	1.0	-39.0	-13.0	-26.0	
3.76	-62.4	V	3.0	-12.0	34.1	1.0	-45.0	-13.0	-32.0	
5.64	-64.0	V	3.0	-9.9	33.3	1.0	-42.2	-13.0	-29.2	
7.52	-63.8	V	3.0	-6.2	33.0	1.0	-38.2	-13.0	-25.2	
High Channel (1909.8MHz)										
3.82	-62.7	H	3.0	-12.4	34.0	1.0	-45.4	-13.0	-32.4	
5.73	-63.2	H	3.0	-8.9	33.3	1.0	-41.1	-13.0	-28.1	
7.64	-64.4	H	3.0	-6.7	33.0	1.0	-38.7	-13.0	-25.7	
3.82	-62.3	V	3.0	-11.7	34.0	1.0	-44.7	-13.0	-31.7	
5.73	-63.6	V	3.0	-9.3	33.3	1.0	-41.6	-13.0	-28.6	
7.64	-63.9	V	3.0	-6.1	33.0	1.0	-38.2	-13.0	-25.2	

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GSM 1900MHz GPRS

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/06/18
Test Engineer: 38602
Configuration: EUT only
Mode: EGPRS 1900MHz

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 (1850.2MHz)										
3.70	-63.3	H	3.0	-13.3	34.1	1.0	-46.5	-13.0	-33.5	
5.55	-63.5	H	3.0	-9.5	33.3	1.0	-41.8	-13.0	-28.8	
7.40	-64.1	H	3.0	-6.7	33.1	1.0	-38.7	-13.0	-25.7	
3.70	-63.9	V	3.0	-13.6	34.1	1.0	-46.7	-13.0	-33.7	
5.55	-64.4	V	3.0	-10.5	33.3	1.0	-42.8	-13.0	-29.8	
7.40	-64.6	V	3.0	-7.2	33.1	1.0	-39.2	-13.0	-26.2	
Mid Channel (1880.0)										
3.76	-62.3	H	3.0	-12.2	34.1	1.0	-45.3	-13.0	-32.3	
5.64	-64.1	H	3.0	-9.9	33.3	1.0	-42.2	-13.0	-29.2	
7.52	-63.5	H	3.0	-5.9	33.0	1.0	-38.0	-13.0	-25.0	
3.76	-61.8	V	3.0	-11.4	34.1	1.0	-44.4	-13.0	-31.4	
5.64	-64.8	V	3.0	-10.7	33.3	1.0	-43.0	-13.0	-30.0	
7.52	-64.6	V	3.0	-7.0	33.0	1.0	-39.0	-13.0	-26.0	
High Channel (1909.8MHz)										
3.82	-62.2	H	3.0	-11.9	34.0	1.0	-44.9	-13.0	-31.9	
5.73	-64.0	H	3.0	-9.7	33.3	1.0	-41.9	-13.0	-28.9	
7.64	-64.2	H	3.0	-6.5	33.0	1.0	-38.5	-13.0	-25.5	
3.82	-62.2	V	3.0	-11.6	34.0	1.0	-44.6	-13.0	-31.6	
5.73	-63.6	V	3.0	-9.3	33.3	1.0	-41.6	-13.0	-28.6	
7.64	-64.8	V	3.0	-7.0	33.0	1.0	-39.1	-13.0	-26.1	

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GSM 1900MHz EGPRS

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701i
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9.3.2. WCDMA

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/07/18
Test Engineer: 38602
Configuration: EUT Only
Mode: REL 99, 1900MHz

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 (1852.4MHz)										
3.70	-63.7	H	3.0	-13.7	34.1	1.0	-46.9	-13.0	-33.9	
5.56	-63.8	H	3.0	-9.8	33.3	1.0	-42.1	-13.0	-29.1	
7.42	-64.3	H	3.0	-6.8	33.1	1.0	-38.9	-13.0	-25.9	
3.70	-63.5	V	3.0	-13.2	34.1	1.0	-46.3	-13.0	-33.3	
5.55	-64.7	V	3.0	-10.8	33.3	1.0	-43.1	-13.0	-30.1	
7.42	-64.8	V	3.0	-7.3	33.1	1.0	-39.4	-13.0	-26.4	
Mid Channel (1880MHz)										
3.76	-63.2	H	3.0	-13.1	34.1	1.0	-46.2	-13.0	-33.2	
5.64	-64.0	H	3.0	-9.8	33.3	1.0	-42.1	-13.0	-29.1	
7.52	-64.1	H	3.0	-6.5	33.0	1.0	-38.6	-13.0	-25.6	
3.76	-62.3	V	3.0	-11.9	34.1	1.0	-44.9	-13.0	-31.9	
5.64	-64.7	V	3.0	-10.6	33.3	1.0	-42.9	-13.0	-29.9	
7.52	-64.0	V	3.0	-6.4	33.0	1.0	-38.4	-13.0	-25.4	
High Channel (1907.6MHz)										
3.82	-62.6	H	3.0	-12.3	34.0	1.0	-45.3	-13.0	-32.3	
5.72	-63.7	H	3.0	-9.4	33.3	1.0	-41.7	-13.0	-28.7	
7.63	-64.6	H	3.0	-6.9	33.0	1.0	-38.9	-13.0	-25.9	
3.82	-63.5	V	3.0	-12.9	34.0	1.0	-45.9	-13.0	-32.9	
5.72	-64.3	V	3.0	-10.0	33.3	1.0	-42.3	-13.0	-29.3	
7.63	-64.7	V	3.0	-6.9	33.0	1.0	-39.0	-13.0	-26.0	

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WCDMA Band 2 Rel 99

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/07/18
Test Engineer: 38602
Configuration: EUT Only
Mode: HSDPA 1900MHz

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 (1852.4MHz)										
3.70	-63.9	H	3.0	-13.9	34.1	1.0	-47.1	-13.0	-34.1	
5.56	-64.0	H	3.0	-10.0	33.3	1.0	-42.3	-13.0	-29.3	
7.41	-64.6	H	3.0	-7.2	33.1	1.0	-39.2	-13.0	-26.2	
3.70	-63.5	V	3.0	-13.2	34.1	1.0	-46.3	-13.0	-33.3	
5.56	-64.8	V	3.0	-10.9	33.3	1.0	-43.2	-13.0	-30.2	
7.41	-65.1	V	3.0	-7.6	33.1	1.0	-39.7	-13.0	-26.7	
Mid Channel (1880MHz)										
3.76	-63.5	H	3.0	-13.4	34.1	1.0	-46.5	-13.0	-33.5	
5.64	-64.2	H	3.0	-10.0	33.3	1.0	-42.3	-13.0	-29.3	
7.52	-64.4	H	3.0	-6.8	33.0	1.0	-38.9	-13.0	-25.9	
3.76	-63.1	V	3.0	-12.7	34.1	1.0	-45.7	-13.0	-32.7	
5.64	-64.6	V	3.0	-10.5	33.3	1.0	-42.8	-13.0	-29.8	
7.52	-64.5	V	3.0	-6.9	33.0	1.0	-38.9	-13.0	-25.9	
High Channel (1907.6MHz)										
3.82	-63.1	H	3.0	-12.8	34.0	1.0	-45.8	-13.0	-32.8	
5.72	-64.2	H	3.0	-9.9	33.3	1.0	-42.2	-13.0	-29.2	
7.63	-64.7	H	3.0	-7.0	33.0	1.0	-39.0	-13.0	-26.0	
3.82	-63.8	V	3.0	-13.2	34.0	1.0	-46.2	-13.0	-33.2	
5.72	-64.4	V	3.0	-10.1	33.3	1.0	-42.4	-13.0	-29.4	
7.63	-65.0	V	3.0	-7.2	33.0	1.0	-39.3	-13.0	-26.3	

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WCDMA Band 2 HSDPA

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/07/18
Test Engineer: 38602
Configuration: EUT Only
Mode: REL 99, 1700MHz

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 (1712.4MHz)										
3.42	-65.4	H	3.0	-16.2	34.5	1.0	-49.7	-13.0	-36.7	
5.14	-64.5	H	3.0	-11.4	33.4	1.0	-43.7	-13.0	-30.7	
6.85	-64.7	H	3.0	-8.1	33.1	1.0	-40.2	-13.0	-27.2	
3.42	-65.4	V	3.0	-15.7	34.5	1.0	-49.1	-13.0	-36.1	
5.14	-64.5	V	3.0	-11.4	33.4	1.0	-43.8	-13.0	-30.8	
6.85	-64.9	V	3.0	-8.3	33.1	1.0	-40.5	-13.0	-27.5	
Mid Channel (1732.6MHz)										
3.47	-65.7	H	3.0	-16.4	34.4	1.0	-49.8	-13.0	-36.8	
5.20	-63.7	H	3.0	-10.4	33.4	1.0	-42.8	-13.0	-29.8	
6.93	-64.4	H	3.0	-7.6	33.1	1.0	-39.8	-13.0	-26.8	
3.47	-66.0	V	3.0	-16.2	34.4	1.0	-49.6	-13.0	-36.6	
5.20	-64.0	V	3.0	-10.8	33.4	1.0	-43.2	-13.0	-30.2	
6.93	-64.3	V	3.0	-7.6	33.1	1.0	-39.7	-13.0	-26.7	
High Channel (1752.6MHz)										
3.51	-65.2	H	3.0	-15.8	34.4	1.0	-49.1	-13.0	-36.1	
5.26	-63.6	H	3.0	-10.2	33.3	1.0	-42.6	-13.0	-29.6	
7.01	-64.0	H	3.0	-7.1	33.1	1.0	-39.2	-13.0	-26.2	
3.51	-65.3	V	3.0	-15.4	34.4	1.0	-48.7	-13.0	-35.7	
5.26	-63.8	V	3.0	-10.5	33.3	1.0	-42.8	-13.0	-29.8	
7.01	-64.7	V	3.0	-7.8	33.1	1.0	-39.9	-13.0	-26.9	

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WCDMA Band 4 Rel 99

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/07/18
Test Engineer: 38602
Configuration: EUT Only
Mode: HSDPA 1700MHz

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 (1712.4MHz)										
3.42	-65.8	H	3.0	-16.6	34.5	1.0	-50.1	-13.0	-37.1	
5.14	-64.6	H	3.0	-11.5	33.4	1.0	-43.8	-13.0	-30.8	
6.85	-65.1	H	3.0	-8.5	33.1	1.0	-40.6	-13.0	-27.6	
3.42	-65.5	V	3.0	-15.8	34.5	1.0	-49.2	-13.0	-36.2	
5.14	-64.7	V	3.0	-11.6	33.4	1.0	-44.0	-13.0	-31.0	
6.85	-65.0	V	3.0	-8.4	33.1	1.0	-40.6	-13.0	-27.6	
Mid Channel (1732.6MHz)										
3.47	-65.5	H	3.0	-16.2	34.4	1.0	-49.6	-13.0	-36.6	
5.20	-63.8	H	3.0	-10.5	33.4	1.0	-42.9	-13.0	-29.9	
6.93	-64.5	H	3.0	-7.7	33.1	1.0	-39.9	-13.0	-26.9	
3.47	-65.8	V	3.0	-16.0	34.4	1.0	-49.4	-13.0	-36.4	
5.20	-128.8	V	3.0	-75.6	33.4	1.0	-108.0	-13.0	-95.0	
6.93	-64.3	V	3.0	-7.8	33.1	1.0	-39.7	-13.0	-26.7	
High Channel (1752.6MHz)										
3.51	-65.6	H	3.0	-16.2	34.4	1.0	-49.5	-13.0	-36.5	
5.26	-63.9	H	3.0	-10.5	33.3	1.0	-42.9	-13.0	-29.9	
7.01	-64.3	H	3.0	-7.4	33.1	1.0	-39.5	-13.0	-26.5	
3.51	-65.1	V	3.0	-15.2	34.4	1.0	-48.5	-13.0	-35.5	
5.26	-64.2	V	3.0	-10.9	33.3	1.0	-43.2	-13.0	-30.2	
7.01	-64.8	V	3.0	-7.9	33.1	1.0	-40.0	-13.0	-27.0	

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WCDMA Band 4 HSDPA

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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: 03/05/18
Test Engineer: 38602
Configuration: EUT only
Mode: GPRS 1900MHz

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 (1850.2MHz)										
3.70	-62.6	H	3.0	-12.6	34.1	1.0	-45.8	-13.0	-32.8	
5.55	-63.9	H	3.0	-9.9	33.3	1.0	-42.2	-13.0	-29.2	
7.40	-64.6	H	3.0	-7.2	33.1	1.0	-39.2	-13.0	-26.2	
3.70	-63.3	V	3.0	-13.0	34.1	1.0	-46.1	-13.0	-33.1	
5.55	-63.2	V	3.0	-9.3	33.3	1.0	-41.6	-13.0	-28.6	
7.40	-64.5	V	3.0	-7.1	33.1	1.0	-39.1	-13.0	-26.1	
Mid Channel (1880.0)										
3.76	-62.6	H	3.0	-12.5	34.1	1.0	-45.6	-13.0	-32.6	
5.64	-56.9	H	3.0	-2.7	33.3	1.0	-35.0	-13.0	-22.0	
7.52	-63.4	H	3.0	-5.8	33.0	1.0	-37.9	-13.0	-24.9	
3.76	-63.5	V	3.0	-13.1	34.1	1.0	-46.1	-13.0	-33.1	
5.64	-59.0	V	3.0	-4.9	33.3	1.0	-37.2	-13.0	-24.2	
7.52	-64.1	V	3.0	-6.5	33.0	1.0	-38.5	-13.0	-25.5	
High Channel (1909.8MHz)										
3.82	-61.8	H	3.0	-11.5	34.0	1.0	-44.5	-13.0	-31.5	
5.73	-62.8	H	3.0	-8.5	33.3	1.0	-40.7	-13.0	-27.7	
7.64	-64.4	H	3.0	-6.7	33.0	1.0	-38.7	-13.0	-25.7	
3.82	-63.1	V	3.0	-12.5	34.0	1.0	-45.5	-13.0	-32.5	
5.73	-63.3	V	3.0	-9.0	33.3	1.0	-41.3	-13.0	-28.3	
7.64	-62.8	V	3.0	-5.0	33.0	1.0	-37.1	-13.0	-24.1	

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GSM 1900MHz GPRS

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/05/18
Test Engineer: 38602
Configuration: EUT only
Mode: EGPRS 1900MHz

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 (1850.2MHz)										
3.70	-63.8	H	3.0	-13.8	34.1	1.0	-47.0	-13.0	-34.0	
5.55	-63.6	H	3.0	-9.6	33.3	1.0	-41.9	-13.0	-28.9	
7.40	-64.6	H	3.0	-7.2	33.1	1.0	-39.2	-13.0	-26.2	
3.70	-63.6	V	3.0	-13.3	34.1	1.0	-46.4	-13.0	-33.4	
5.55	-64.2	V	3.0	-10.3	33.3	1.0	-42.6	-13.0	-29.6	
7.40	-65.0	V	3.0	-7.6	33.1	1.0	-39.6	-13.0	-26.6	
Mid Channel (1880.0)										
3.76	-63.1	H	3.0	-13.0	34.1	1.0	-46.1	-13.0	-33.1	
5.64	-58.3	H	3.0	-4.1	33.3	1.0	-36.4	-13.0	-23.4	
7.52	-64.2	H	3.0	-6.6	33.0	1.0	-38.7	-13.0	-25.7	
3.76	-63.5	V	3.0	-13.1	34.1	1.0	-46.1	-13.0	-33.1	
5.64	-63.2	V	3.0	-9.1	33.3	1.0	-41.4	-13.0	-28.4	
7.52	-64.1	V	3.0	-6.5	33.0	1.0	-38.5	-13.0	-25.5	
High Channel (1909.8MHz)										
3.82	-63.0	H	3.0	-12.7	34.0	1.0	-45.7	-13.0	-32.7	
5.73	-63.6	H	3.0	-9.3	33.3	1.0	-41.5	-13.0	-28.5	
7.64	-64.2	H	3.0	-6.5	33.0	1.0	-38.5	-13.0	-25.5	
3.82	-62.5	V	3.0	-11.9	34.0	1.0	-44.9	-13.0	-31.9	
5.73	-63.8	V	3.0	-9.5	33.3	1.0	-41.8	-13.0	-28.8	
7.64	-64.4	V	3.0	-6.6	33.0	1.0	-38.7	-13.0	-25.7	

Rev. 03.19.15

GSM 1900MHz EGPRS

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9.4.2. WCDMA

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/07/18
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 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 (1852.4MHz)										
3.70	-65.8	H	3.0	-15.9	34.1	1.0	-49.0	-13.0	-36.0	
5.56	-66.2	H	3.0	-12.2	33.3	1.0	-44.5	-13.0	-31.5	
7.41	-67.0	H	3.0	-9.5	33.1	1.0	-41.6	-13.0	-28.6	
3.70	-65.9	V	3.0	-15.6	34.1	1.0	-48.8	-13.0	-35.8	
5.55	-66.0	V	3.0	-12.1	33.3	1.0	-44.4	-13.0	-31.4	
7.42	-66.4	V	3.0	-8.9	33.1	1.0	-41.0	-13.0	-28.0	
Mid Channel (1880MHz)										
3.76	-63.0	H	3.0	-12.9	34.1	1.0	-45.9	-13.0	-32.9	
5.64	-64.8	H	3.0	-10.6	33.3	1.0	-42.9	-13.0	-29.9	
7.52	-64.5	H	3.0	-6.9	33.0	1.0	-38.9	-13.0	-25.9	
3.76	-64.6	V	3.0	-14.2	34.1	1.0	-47.3	-13.0	-34.3	
5.64	-67.2	V	3.0	-13.1	33.3	1.0	-45.4	-13.0	-32.4	
7.52	-65.8	V	3.0	-8.2	33.0	1.0	-40.3	-13.0	-27.3	
High Channel (1907.6MHz)										
3.81	-63.2	H	3.0	-12.9	34.0	1.0	-46.0	-13.0	-33.0	
5.72	-66.4	H	3.0	-12.1	33.3	1.0	-44.4	-13.0	-31.4	
7.66	-66.5	H	3.0	-8.7	33.0	1.0	-40.8	-13.0	-27.8	
3.82	-64.7	V	3.0	-14.1	34.0	1.0	-47.1	-13.0	-34.1	
5.72	-67.2	V	3.0	-12.9	33.3	1.0	-45.2	-13.0	-32.2	
7.63	-65.4	V	3.0	-7.6	33.0	1.0	-39.6	-13.0	-26.6	

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WCDMA Band 2 Rel 99

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/07/18
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	-63.6	H	3.0	-13.8	34.4	1.0	-47.2	-13.0	-34.2	
5.56	-65.6	H	3.0	-12.2	34.1	1.0	-45.3	-13.0	-32.3	
7.41	-65.5	H	3.0	-9.1	33.6	1.0	-41.7	-13.0	-28.7	
9.26	-65.1	H	3.0	-6.3	32.2	1.0	-37.5	-13.0	-24.5	
3.70	-63.6	V	3.0	-13.7	34.4	1.0	-47.1	-13.0	-34.1	
5.56	-65.6	V	3.0	-12.0	34.1	1.0	-45.1	-13.0	-32.1	
7.41	-65.5	V	3.0	-9.3	33.6	1.0	-41.9	-13.0	-28.9	
9.26	-65.1	V	3.0	-6.4	32.2	1.0	-37.6	-13.0	-24.6	
Mid Channel (1880MHz)										
3.76	-63.0	H	3.0	-13.0	34.4	1.0	-46.4	-13.0	-33.4	
5.64	-65.5	H	3.0	-12.0	34.1	1.0	-45.1	-13.0	-32.1	
7.52	-65.7	H	3.0	-9.2	33.5	1.0	-41.7	-13.0	-28.7	
9.40	-65.0	H	3.0	-6.0	32.1	1.0	-37.1	-13.0	-24.1	
3.76	-63.0	V	3.0	-12.9	34.4	1.0	-46.3	-13.0	-33.3	
5.64	-66.4	V	3.0	-12.6	34.1	1.0	-45.7	-13.0	-32.7	
7.52	-64.3	V	3.0	-8.0	33.5	1.0	-40.6	-13.0	-27.6	
9.40	-65.9	V	3.0	-7.0	32.1	1.0	-38.1	-13.0	-25.1	
High Channel (1907.6MHz)										
3.82	-62.8	H	3.0	-12.6	34.4	1.0	-46.0	-13.0	-33.0	
5.72	-64.9	H	3.0	-11.1	34.1	1.0	-44.2	-13.0	-31.2	
7.63	-66.9	H	3.0	-10.3	33.4	1.0	-42.7	-13.0	-29.7	
9.54	-65.3	H	3.0	-6.2	32.0	1.0	-37.1	-13.0	-24.1	
3.82	-63.1	V	3.0	-12.8	34.4	1.0	-46.2	-13.0	-33.2	
5.72	-64.5	V	3.0	-10.7	34.1	1.0	-43.8	-13.0	-30.8	
7.63	-66.9	V	3.0	-10.5	33.4	1.0	-42.9	-13.0	-29.9	
9.54	-64.9	V	3.0	-5.8	32.0	1.0	-36.8	-13.0	-23.8	

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WCDMA Band 2 HSDPA

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/07/18
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 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 (1712.4MHz)										
3.42	-67.6	H	3.0	-18.4	34.5	1.0	-51.9	-13.0	-38.9	
5.14	-65.2	H	3.0	-12.8	33.4	1.0	-44.4	-13.0	-31.4	
6.85	-64.2	H	3.0	-7.6	33.1	1.0	-38.7	-13.0	-26.7	
8.56	-66.4	H	3.0	-7.5	32.9	1.0	-39.3	-13.0	-26.3	
3.42	-67.4	V	3.0	-17.7	34.5	1.0	-51.2	-13.0	-38.2	
5.14	-65.3	V	3.0	-12.2	33.4	1.0	-44.6	-13.0	-31.6	
6.85	-65.0	V	3.0	-8.4	33.1	1.0	-40.6	-13.0	-27.6	
8.56	-66.6	V	3.0	-7.5	32.9	1.0	-39.4	-13.0	-26.4	
Mid Channel (1732.6MHz)										
3.47	-66.9	H	3.0	-17.6	34.4	1.0	-51.0	-13.0	-38.0	
5.20	-64.2	H	3.0	-11.0	33.4	1.0	-43.3	-13.0	-30.3	
6.93	-65.2	H	3.0	-8.5	33.1	1.0	-40.6	-13.0	-27.6	
8.66	-64.9	H	3.0	-5.8	32.9	1.0	-37.7	-13.0	-24.7	
3.47	-66.4	V	3.0	-16.6	34.4	1.0	-50.0	-13.0	-37.0	
5.20	-64.5	V	3.0	-11.3	33.4	1.0	-43.6	-13.0	-30.6	
6.93	-65.4	V	3.0	-8.6	33.1	1.0	-40.8	-13.0	-27.8	
8.66	-65.3	V	3.0	-6.1	32.9	1.0	-38.0	-13.0	-25.0	
High Channel (1752.6MHz)										
3.51	-66.9	H	3.0	-17.5	34.4	1.0	-50.9	-13.0	-37.9	
5.26	-64.6	H	3.0	-11.2	33.3	1.0	-43.5	-13.0	-30.5	
7.01	-65.2	H	3.0	-8.3	33.1	1.0	-40.4	-13.0	-27.4	
8.76	-64.6	H	3.0	-5.4	32.9	1.0	-37.2	-13.0	-24.2	
3.51	-67.9	V	3.0	-18.0	34.4	1.0	-51.3	-13.0	-38.3	
5.26	-63.6	V	3.0	-10.3	33.3	1.0	-42.6	-13.0	-29.6	
7.01	-66.3	V	3.0	-9.5	33.1	1.0	-41.6	-13.0	-28.6	
8.76	-64.7	V	3.0	-5.3	32.9	1.0	-37.2	-13.0	-24.2	

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WCDMA Band 4 Rel 99

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/07/18
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 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 (1712.4MHz)										
3.42	-67.7	H	3.0	-18.5	34.5	1.0	-52.0	-13.0	-39.0	
5.14	-66.2	H	3.0	-13.0	33.4	1.0	-45.4	-13.0	-32.4	
6.85	-64.3	H	3.0	-7.7	33.1	1.0	-39.9	-13.0	-26.9	
8.56	-65.7	H	3.0	-6.8	32.9	1.0	-38.7	-13.0	-25.7	
3.42	-67.1	V	3.0	-17.3	34.5	1.0	-50.8	-13.0	-37.8	
5.14	-66.0	V	3.0	-12.9	33.4	1.0	-45.3	-13.0	-32.3	
6.85	-65.1	V	3.0	-8.5	33.1	1.0	-40.7	-13.0	-27.7	
8.56	-65.6	V	3.0	-6.5	32.9	1.0	-38.4	-13.0	-25.4	
Mid Channel (1732.6MHz)										
3.47	-67.2	H	3.0	-17.9	34.4	1.0	-51.3	-13.0	-38.3	
5.20	-64.2	H	3.0	-10.9	33.4	1.0	-43.3	-13.0	-30.3	
6.93	-65.0	H	3.0	-8.2	33.1	1.0	-40.3	-13.0	-27.3	
8.66	-65.1	H	3.0	-6.1	32.9	1.0	-37.9	-13.0	-24.9	
3.47	-67.3	V	3.0	-17.4	34.4	1.0	-50.8	-13.0	-37.8	
5.20	-63.2	V	3.0	-10.0	33.4	1.0	-42.4	-13.0	-29.4	
6.93	-64.9	V	3.0	-8.2	33.1	1.0	-40.3	-13.0	-27.3	
8.66	-64.7	V	3.0	-5.5	32.9	1.0	-37.4	-13.0	-24.4	
High Channel (1752.6MHz)										
3.51	-67.0	H	3.0	-17.6	34.4	1.0	-51.0	-13.0	-38.0	
5.26	-63.4	H	3.0	-10.0	33.3	1.0	-42.4	-13.0	-29.4	
7.01	-64.8	H	3.0	-7.9	33.1	1.0	-40.0	-13.0	-27.0	
8.76	-64.8	H	3.0	-5.6	32.9	1.0	-37.5	-13.0	-24.5	
3.51	-67.3	V	3.0	-17.4	34.4	1.0	-50.7	-13.0	-37.7	
5.26	-63.5	V	3.0	-10.2	33.3	1.0	-42.5	-13.0	-29.5	
7.01	-64.3	V	3.0	-7.4	33.1	1.0	-39.5	-13.0	-26.5	
8.76	-66.2	V	3.0	-6.9	32.9	1.0	-38.7	-13.0	-25.7	

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WCDMA Band 4 HSDPA

END OF REPORT

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10. SETUP PHOTOS

Please refer to 12204447-EP1V1 for setup photos

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