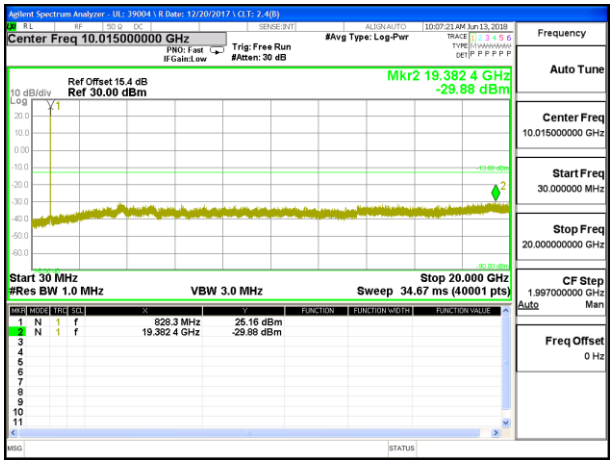
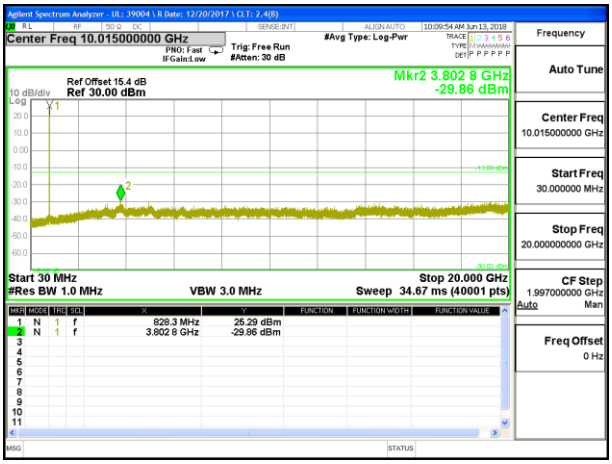
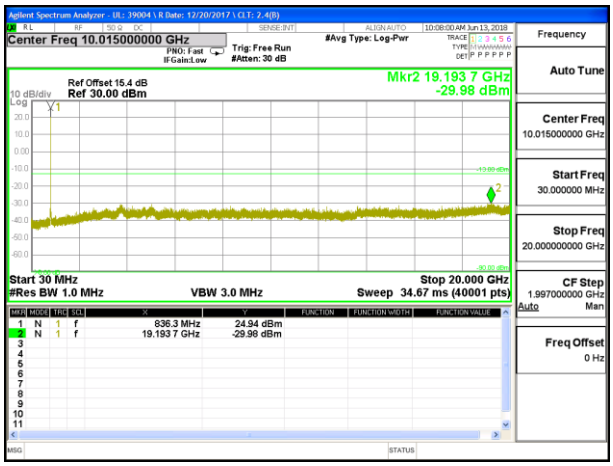
8.3.6. WCDMA BAND 5



WCDMA Band 5 Rel 99 Low Channel



WCDMA Band 5 HSDPA Low Channel



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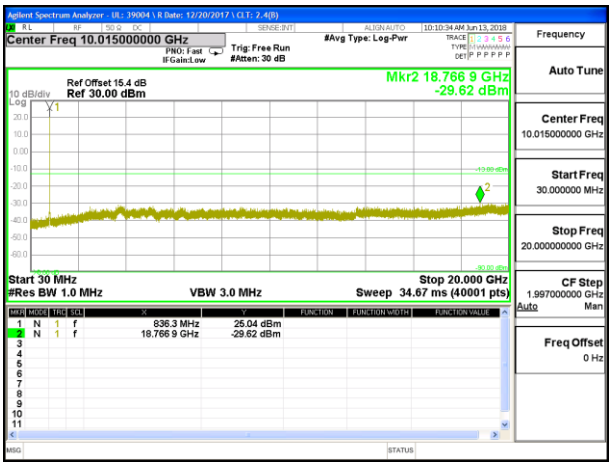

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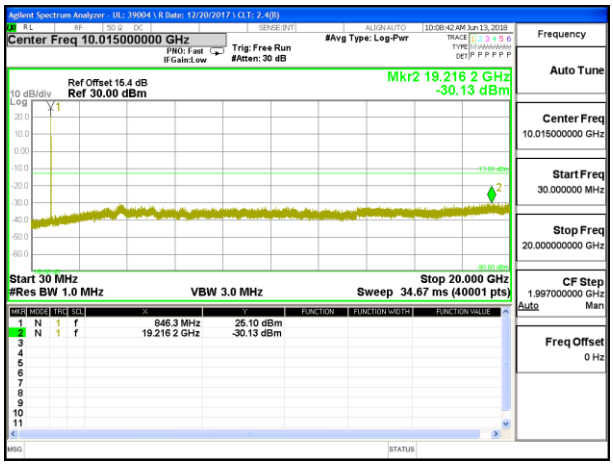

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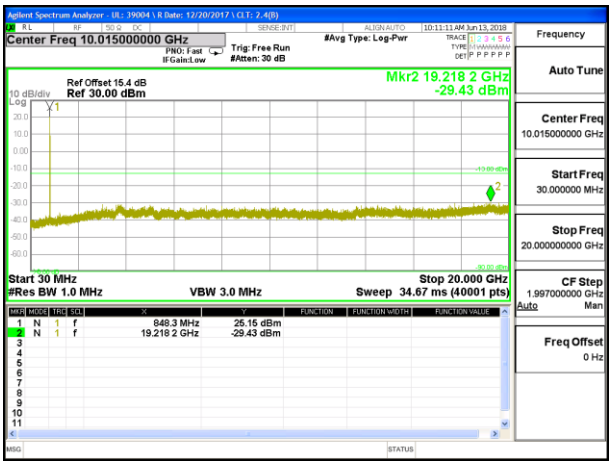

WCDMA Band 5 HSDPA High Channel

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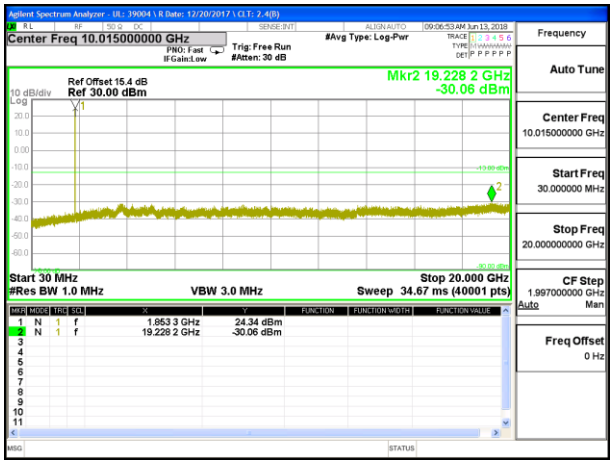
8.3.7. WCDMA BAND 2



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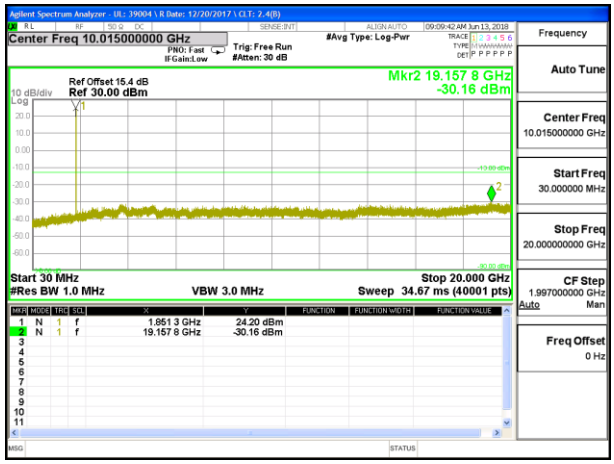

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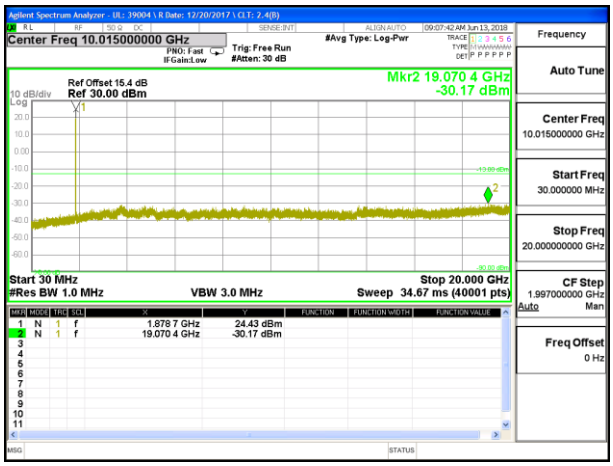

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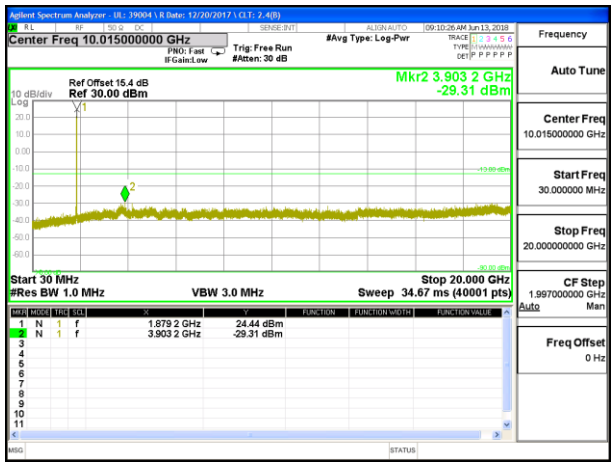

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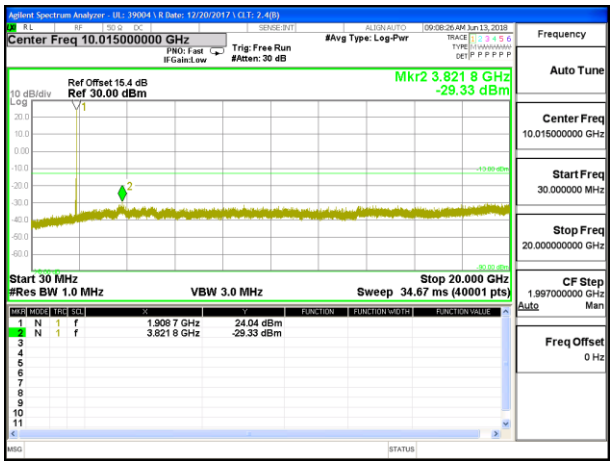
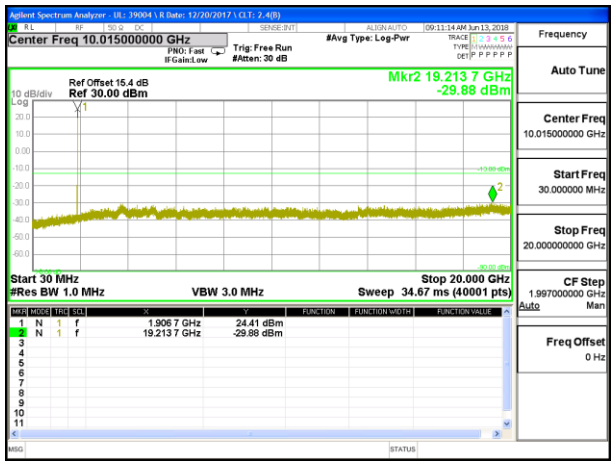


WCDMA Band 2 Rel 99 High Channel



WCDMA Band 2 HSDPA High Channel

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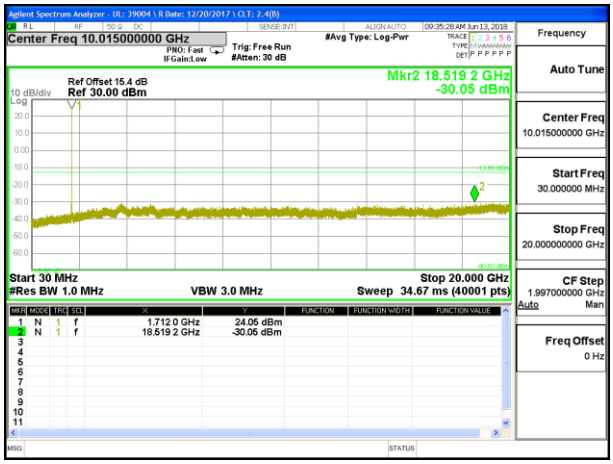
8.3.8. WCDMA BAND 4



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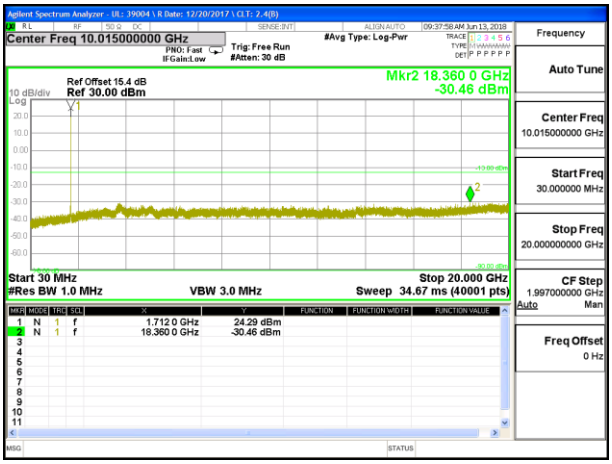
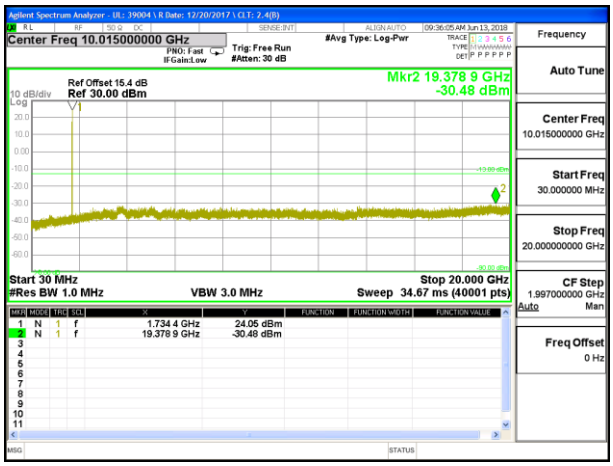
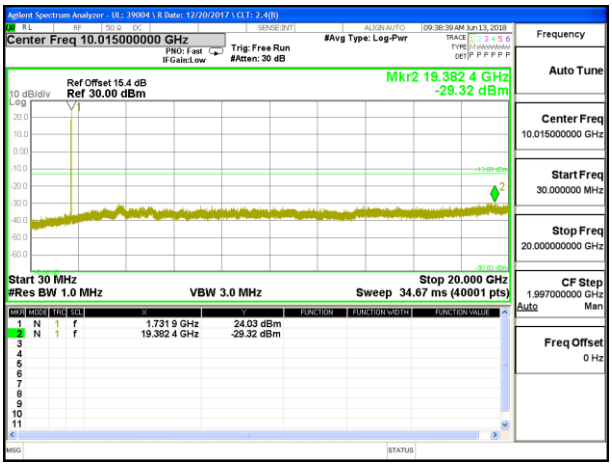


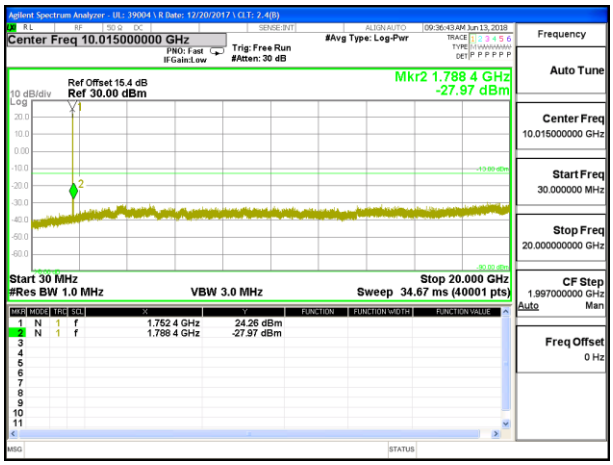
WCDMA Band 4 HSDPA Low Channel



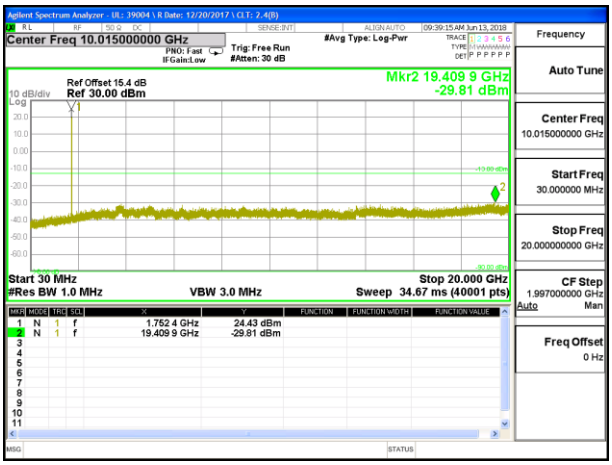
WCDMA Band 4 Rel 99 Middle Channel



WCDMA Band 4 HSDPA Middle Channel



WCDMA Band 4 Rel 99 High Channel



WCDMA Band 4 HSDPA High Channel

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8.4. FREQUENCY STABILITY

RULE PART(S)

FCC: §2.1055, §22.355, §24.235, §27.54 and §90.213
IC: RSS132§5.3; RSS133§6.3 and RSS139§6.4

LIMITS

FCC §22.355, §90.213
The carrier frequency shall not depart from the reference frequency in excess of ±2.5 ppm for mobile stations.

FCC §24.235 & §27.54
The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

RSS132§5.3
The carrier frequency shall not depart from the reference frequency in excess of ±2.5 SRSP for mobile stations and±1.5 ppm for base stations.
In lieu of meeting the above stability values, the test report may show that the frequency stability is sufficient to ensure that the occupied bandwidth stays within each of the sub-bands (see Section 5.1) when tested to the temperature and supply voltage variations specified in RSS-Gen.

RSS133§6.3
The carrier frequency shall not depart from the reference frequency, in excess of ±2.5 ppm for mobile stations and±1.0 ppm for base stations.
In lieu of meeting the above stability values, the test report may show that the frequency stability is sufficient to ensure that the emission bandwidth stays within the operating frequency block when tested to the temperature and supply voltage variations specified in RSS-Gen.

RSS139§6.4
The frequency stability shall be sufficient to ensure that the occupied bandwidth stays within the operating frequency block when tested to the temperature and supply voltage variations specified in RSS-Gen.

TEST PROCEDURE

Use CMW 500 with Frequency Error measurement capability.

- Temp. = −30°C to +50°C
- Voltage = (85% - 115%)

  Low voltage, 3.23VDC, Normal, 3.8VDC and High voltage, 4.37VDC.
  End Voltage, 3.2VDC.

Frequency Stability vs Temperature:
The EUT is place inside a temperature chamber. The temperature is set to 20ºC and allowed to stabilize. After sufficient soak time, the transmitting frequency error is measured. The temperature is increased by 10 degrees, allowed to stabilize and soak, and then the measurement is repeated. This is repeated until +50ºC is reached.

Frequency Stability vs Voltage:
The peak frequency error is recorded (worst-case).

RESULTS

See the following pages.

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8.4.1. GSM

ID:	44410	Date:	3/9/18

GPRS 850MHz

Limit		824	849	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	824.0340	848.9590		
Extreme (50C)		824.0340	848.9590	-39.0	-0.047
Extreme (40C)		824.0340	848.9590	-45.5	-0.054
Extreme (30C)		824.0340	848.9590	-57.6	-0.069
Extreme (10C)		824.0340	848.9590	-40.4	-0.048
Extreme (0C)		824.0340	848.9590	49.0	0.059
Extreme (-10C)		824.0340	848.9590	-39.2	-0.047
Extreme (-20C)		824.0340	848.9590	-55.1	-0.066
Extreme (-30C)		824.0340	848.9590	-52.4	-0.063
20C	15%	824.0340	848.9590	-21.2	-0.025
	-15%	824.0340	848.9590	-23.7	-0.028
	End Point	824.0340	848.9590	-20.3	-0.024

GPRS 1900MHz

Limit		1850	1910	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	1850.0370	1909.9540		
Extreme (50C)		1850.0370	1909.9540	60.4	0.032
Extreme (40C)		1850.0370	1909.9540	61.2	0.033
Extreme (30C)		1850.0370	1909.9540	-48.1	-0.026
Extreme (10C)		1850.0370	1909.9540	59.3	0.032
Extreme (0C)		1850.0370	1909.9540	88.1	0.047
Extreme (-10C)		1850.0370	1909.9540	107.8	0.057
Extreme (-20C)		1850.0370	1909.9540	156.7	0.083
Extreme (-30C)		1850.0370	1909.9540	154.8	0.082
20C	15%	1850.0370	1909.9540	-45.9	-0.024
	-15%	1850.0370	1909.9540	-50.1	-0.027
	End Point	1850.0370	1909.9540	-43.7	-0.023

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8.4.2. CDMA

ID:	44410	Date:	3/9/18

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	816.5640	823.4230		
Extreme (50C)		816.5640	823.4230	-38.5	-0.047
Extreme (40C)		816.5640	823.4230	-24.7	-0.030
Extreme (30C)		816.5640	823.4230	-36.5	-0.044
Extreme (10C)		816.5640	823.4230	54.5	0.066
Extreme (0C)		816.5640	823.4230	-87.2	-0.106
Extreme (-10C)		816.5640	823.4230	20.3	0.025
Extreme (-20C)		816.5640	823.4230	35.8	0.044
Extreme (-30C)		816.5640	823.4230	22.1	0.027
20C	15%	816.5640	823.4230	-27.7	-0.034
	-15%	816.5640	823.4230	52.3	0.064
	End Point	816.5640	823.4230	-26.3	-0.032

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	824.0195	848.9760		
Extreme (50C)		824.0195	848.9760	-31.0	-0.037
Extreme (40C)		824.0195	848.9760	-26.1	-0.031
Extreme (30C)		824.0195	848.9760	-49.7	-0.059
Extreme (10C)		824.0195	848.9760	-11.5	-0.014
Extreme (0C)		824.0195	848.9760	-78.8	-0.094
Extreme (-10C)		824.0195	848.9760	17.4	0.021
Extreme (-20C)		824.0195	848.9760	19.9	0.024
Extreme (-30C)		824.0195	848.9760	-55.5	-0.066
20C	15%	824.0195	848.9760	-26.3	-0.031
	-15%	824.0195	848.9760	52.7	0.063
	End Point	824.0195	848.9760	-31.6	-0.038

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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	1850.5698	1909.4277		
Extreme (50C)		1850.5698	1909.4277	-25.6	-0.014
Extreme (40C)		1850.5698	1909.4277	-30.0	-0.016
Extreme (30C)		1850.5698	1909.4277	-27.9	-0.015
Extreme (10C)		1850.5698	1909.4277	-27.2	-0.014
Extreme (0C)		1850.5698	1909.4277	-27.3	-0.015
Extreme (-10C)		1850.5698	1909.4277	-31.2	-0.017
Extreme (-20C)		1850.5698	1909.4277	-34.1	-0.018
Extreme (-30C)		1850.5698	1909.4277	-35.5	-0.019
20C	15%	1850.5698	1909.4277	-33.7	-0.018
	-15%	1850.5698	1909.4277	-34.5	-0.018
	End Point	1850.5698	1909.4277	-32.6	-0.017

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8.4.3. WCDMA

ID:	44410	Date:	3/9/18

WCDMA REL 99 BAND 5

Limit		824	849	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	824.1770	848.8170		
Extreme (50C)		824.1770	848.8170	6.5	0.008
Extreme (40C)		824.1770	848.8170	-4.8	-0.006
Extreme (30C)		824.1770	848.8170	-8.3	-0.010
Extreme (10C)		824.1770	848.8170	-6.1	-0.007
Extreme (0C)		824.1770	848.8170	11.0	0.013
Extreme (-10C)		824.1770	848.8170	8.6	0.010
Extreme (-20C)		824.1770	848.8170	7.3	0.009
Extreme (-30C)		824.1770	848.8170	5.4	0.006
20C	15%	824.1770	848.8170	-6.8	-0.008
	-15%	824.1770	848.8170	6.2	0.007
	End Point	824.1770	848.8170	-4.5	-0.005

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	1850.2010	1909.8230		
Extreme (50C)		1850.2010	1909.8230	43.8	0.023
Extreme (40C)		1850.2010	1909.8230	50.0	0.027
Extreme (30C)		1850.2010	1909.8230	56.9	0.030
Extreme (10C)		1850.2010	1909.8230	78.8	0.042
Extreme (0C)		1850.2010	1909.8230	75.8	0.040
Extreme (-10C)		1850.2010	1909.8230	85.8	0.046
Extreme (-20C)		1850.2010	1909.8230	95.5	0.051
Extreme (-30C)		1850.2010	1909.8230	153.5	0.082
20C	15%	1850.2010	1909.8230	28.7	0.015
	-15%	1850.2010	1909.8230	-30.2	-0.016
	End Point	1850.2010	1909.8230	-27.5	-0.015

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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	1710.1750	1754.8230		
Extreme (50C)		1710.1750	1754.8230	21.4	0.012
Extreme (40C)		1710.1750	1754.8230	13.1	0.008
Extreme (30C)		1710.1750	1754.8230	14.9	0.009
Extreme (10C)		1710.1750	1754.8230	23.8	0.014
Extreme (0C)		1710.1750	1754.8230	20.5	0.012
Extreme (-10C)		1710.1750	1754.8230	-18.1	-0.010
Extreme (-20C)		1710.1750	1754.8230	-14.3	-0.008
Extreme (-30C)		1710.1750	1754.8230	-137.6	-0.079
20C	15%	1710.1750	1754.8230	-29.8	-0.017
	-15%	1710.1750	1754.8230	-26.4	-0.015
	End Point	1710.1750	1754.8230	-25.9	-0.015

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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.

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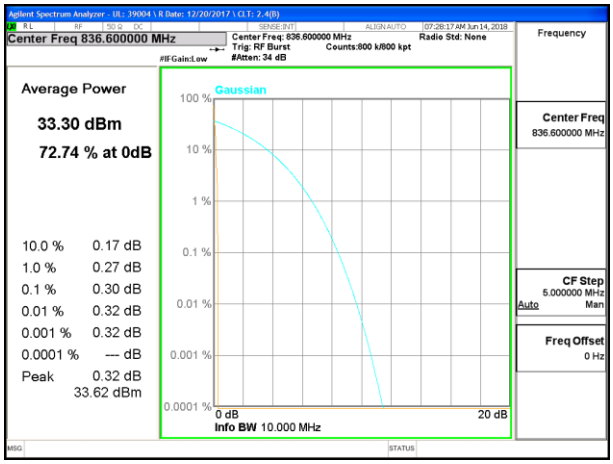
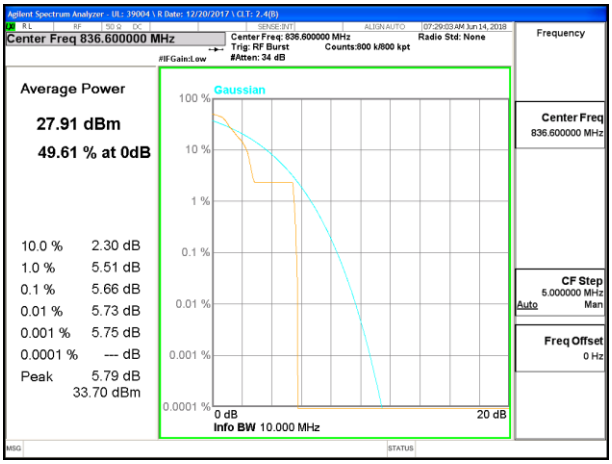
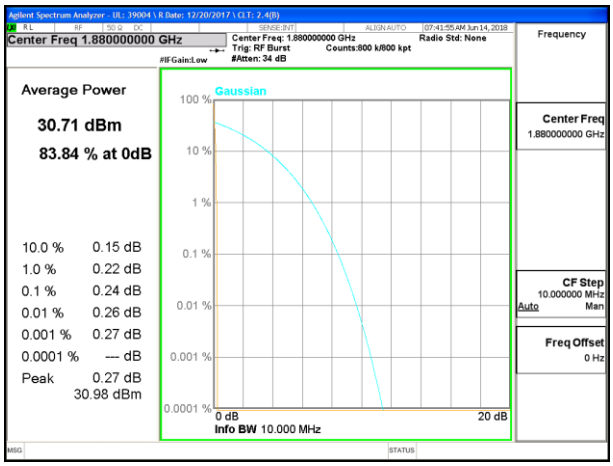
8.5.1. GSM



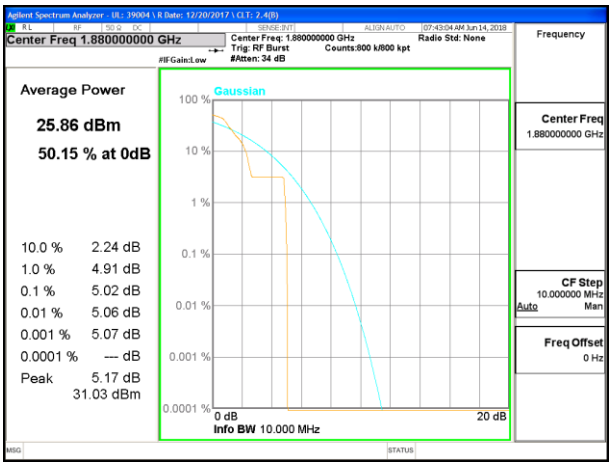
GSM 850MHz GPRS Middle Channel



GSM 850MHz EGPRS Middle Channel



GSM 1900MHz GPRS Middle Channel



GSM 1900MHz EGPRS Middle Channel

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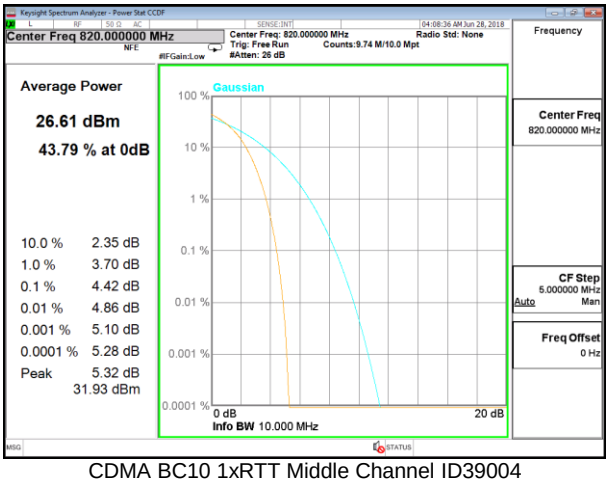
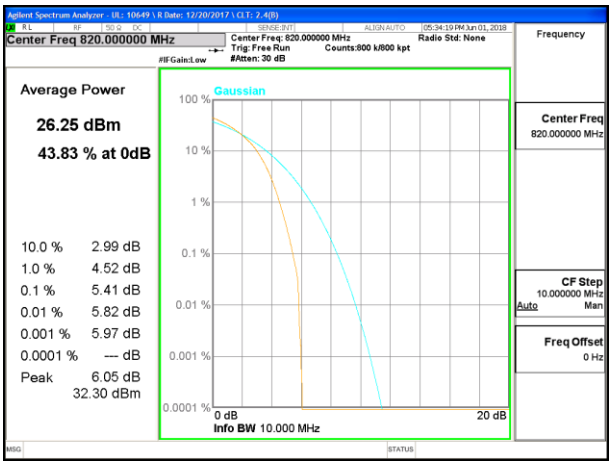
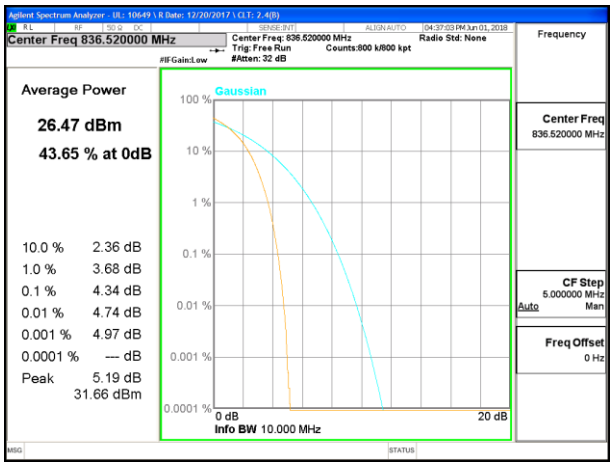
8.5.2. CDMA



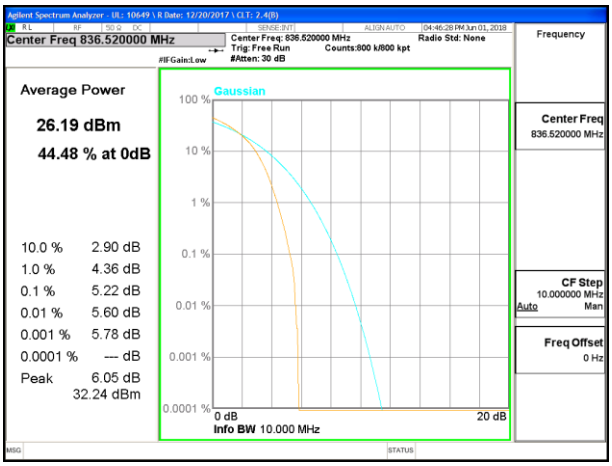
CDMA BC10 1xRTT Middle Channel ID39004



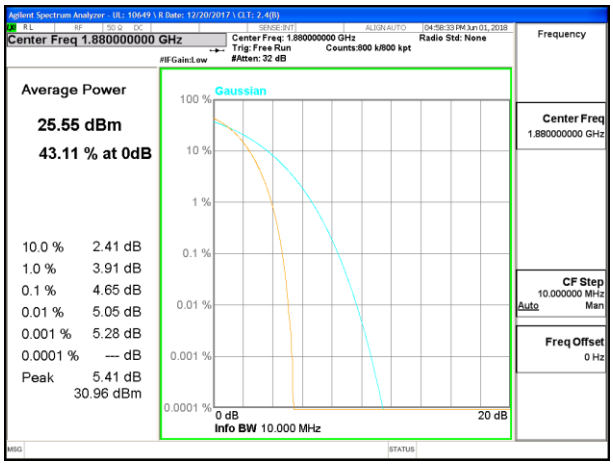
CDMA BC10 1xEV-DO Rev A Middle Channel



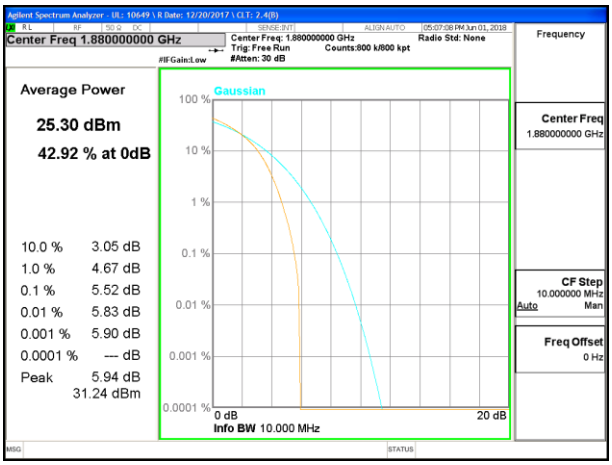
CDMA BC0 1xRTT Middle Channel



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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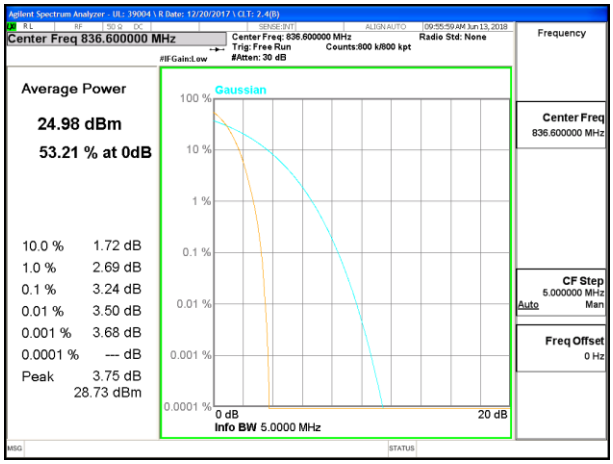
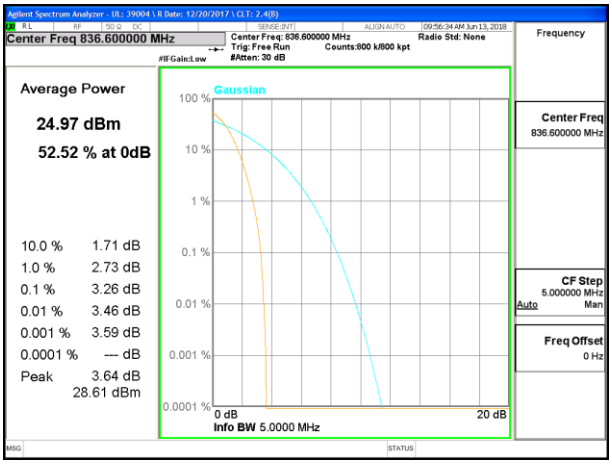
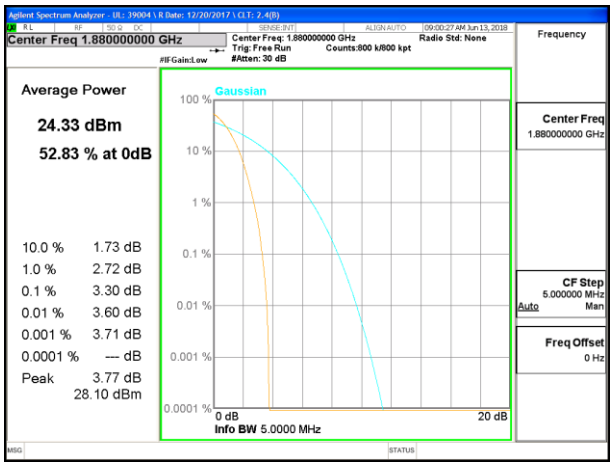
8.5.3. WCDMA



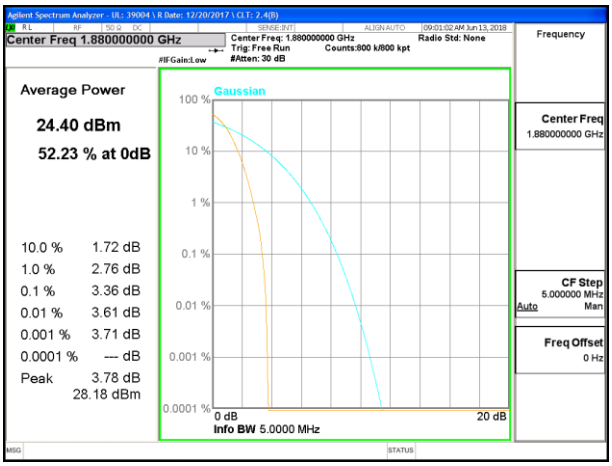
WCDMA Band 5 Rel 99 Middle Channel



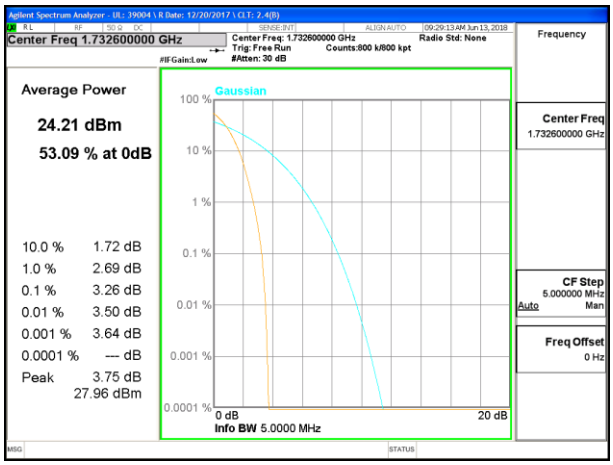
WCDMA Band 5 HSDPA Middle Channel



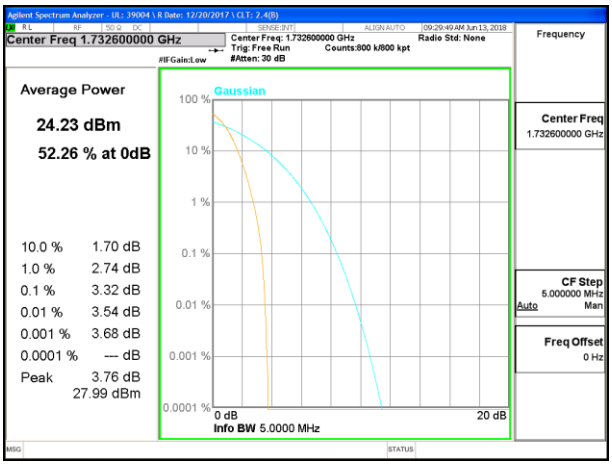
WCDMA Band 2 Rel 99 Middle Channel



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: 06/18/18
Test Engineer: 19448
Configuration: EUT only
Mode: GPRS 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 (824.2MHz)										
1.65	-66.5	H	3.0	-24.0	37.8	1.0	-60.9	-13.0	-47.9	
2.47	-67.9	H	3.0	-22.9	38.5	1.0	-60.4	-13.0	-47.4	
3.30	-66.6	H	3.0	-17.6	38.5	1.0	-55.1	-13.0	-42.1	
1.65	-66.9	V	3.0	-24.8	37.8	1.0	-61.6	-13.0	-48.6	
2.47	-66.7	V	3.0	-21.5	38.5	1.0	-59.0	-13.0	-46.0	
3.30	-66.8	V	3.0	-18.1	38.5	1.0	-55.6	-13.0	-42.6	
Mid Channel (836.6MHz)										
1.67	-66.2	H	3.0	-23.7	37.8	1.0	-60.6	-13.0	-47.6	
2.51	-68.1	H	3.0	-22.9	38.6	1.0	-60.5	-13.0	-47.5	
3.35	-66.1	H	3.0	-17.0	38.5	1.0	-54.5	-13.0	-41.5	
1.67	-66.8	V	3.0	-24.6	37.8	1.0	-61.4	-13.0	-48.4	
2.51	-67.0	V	3.0	-21.6	38.6	1.0	-59.2	-13.0	-46.2	
3.35	-66.1	V	3.0	-17.3	38.5	1.0	-54.8	-13.0	-41.8	
High Channel (848.8MHz)										
1.70	-68.5	H	3.0	-25.9	37.9	1.0	-62.8	-13.0	-49.8	
2.55	-67.7	H	3.0	-22.2	38.6	1.0	-59.8	-13.0	-46.8	
3.40	-66.5	H	3.0	-17.3	38.5	1.0	-54.8	-13.0	-41.8	
1.70	-67.7	V	3.0	-25.3	37.9	1.0	-62.2	-13.0	-49.2	
2.55	-66.8	V	3.0	-21.2	38.6	1.0	-58.8	-13.0	-45.8	
3.40	-66.5	V	3.0	-17.5	38.5	1.0	-55.0	-13.0	-42.0	

Rev. 03.19.15

GSM 850MHz GPRS

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 06/18/18
Test Engineer: 19448
Configuration: EUT only
Mode: EGPRS 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 (824.2MHz)										
1.65	-66.2	H	3.0	-23.7	37.8	1.0	-60.6	-13.0	-47.6	
2.47	-67.3	H	3.0	-22.3	38.5	1.0	-59.8	-13.0	-46.8	
3.30	-66.2	H	3.0	-17.2	38.5	1.0	-54.7	-13.0	-41.7	
1.65	-66.6	V	3.0	-24.5	37.8	1.0	-61.3	-13.0	-48.3	
2.47	-66.3	V	3.0	-21.1	38.5	1.0	-58.6	-13.0	-45.6	
3.30	-66.2	V	3.0	-17.5	38.5	1.0	-55.0	-13.0	-42.0	
Mid Channel (836.6MHz)										
1.67	-65.8	H	3.0	-23.3	37.8	1.0	-60.1	-13.0	-47.1	
2.51	-67.5	H	3.0	-22.3	38.6	1.0	-59.9	-13.0	-46.9	
3.35	-65.7	H	3.0	-16.6	38.5	1.0	-54.1	-13.0	-41.1	
1.67	-66.5	V	3.0	-24.3	37.8	1.0	-61.1	-13.0	-48.1	
2.51	-66.6	V	3.0	-21.2	38.6	1.0	-58.8	-13.0	-45.8	
3.35	-65.7	V	3.0	-16.8	38.5	1.0	-54.3	-13.0	-41.3	
High Channel (848.8MHz)										
1.70	-68.2	H	3.0	-25.6	37.9	1.0	-62.5	-13.0	-49.5	
2.55	-67.3	H	3.0	-21.8	38.6	1.0	-59.4	-13.0	-46.4	
3.40	-66.3	H	3.0	-17.1	38.5	1.0	-54.6	-13.0	-41.6	
1.70	-67.3	V	3.0	-24.9	37.9	1.0	-61.7	-13.0	-48.7	
2.55	-66.4	V	3.0	-20.8	38.6	1.0	-58.3	-13.0	-45.3	
3.40	-65.7	V	3.0	-16.7	38.5	1.0	-54.2	-13.0	-41.2	

Rev. 03.19.15

GSM 850MHz EGPRS

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 06/18/18
Test Engineer: 19448
Configuration: EUT only
Mode: GPRS 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 (1850.2MHz)										
3.70	-66.5	H	3.0	-16.6	38.6	1.0	-54.2	-13.0	-41.2	
5.55	-66.1	H	3.0	-12.1	38.6	1.0	-49.6	-13.0	-36.6	
7.40	-67.2	H	3.0	-9.5	37.8	1.0	-46.3	-13.0	-33.3	
3.70	-66.3	V	3.0	-16.4	38.6	1.0	-54.0	-13.0	-41.0	
5.55	-66.9	V	3.0	-13.2	38.6	1.0	-50.8	-13.0	-37.8	
7.40	-66.6	V	3.0	-9.1	37.8	1.0	-45.9	-13.0	-32.9	
Mid Channel (1880.0)										
3.76	-66.8	H	3.0	-16.7	38.6	1.0	-54.3	-13.0	-41.3	
5.64	-65.7	H	3.0	-11.5	38.5	1.0	-49.0	-13.0	-36.0	
7.52	-68.5	H	3.0	-10.7	37.7	1.0	-47.4	-13.0	-34.4	
3.76	-67.4	V	3.0	-17.4	38.6	1.0	-55.0	-13.0	-42.0	
5.64	-66.8	V	3.0	-12.8	38.5	1.0	-50.4	-13.0	-37.4	
7.52	-69.7	V	3.0	-12.1	37.7	1.0	-48.8	-13.0	-35.8	
High Channel (1909.8MHz)										
3.82	-64.9	H	3.0	-14.6	38.7	1.0	-52.3	-13.0	-39.3	
5.73	-68.9	H	3.0	-14.5	38.5	1.0	-52.0	-13.0	-39.0	
7.54	-70.5	H	3.0	-12.7	37.7	1.0	-49.4	-13.0	-36.4	
3.82	-65.4	V	3.0	-15.2	38.7	1.0	-52.8	-13.0	-39.8	
5.73	-67.3	V	3.0	-13.2	38.5	1.0	-50.7	-13.0	-37.7	
7.54	-68.0	V	3.0	-10.4	37.7	1.0	-47.1	-13.0	-34.1	

Rev. 03.19.15

GSM 1900MHz GPRS

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 06/18/18
Test Engineer: 19448
Configuration: EUT only
Mode: EGPRS 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 (1850.2MHz)										
3.70	-66.2	H	3.0	-16.2	38.6	1.0	-53.8	-13.0	-40.8	
5.55	-65.8	H	3.0	-11.7	38.6	1.0	-49.3	-13.0	-36.3	
7.40	-66.9	H	3.0	-9.2	37.8	1.0	-46.0	-13.0	-33.0	
3.70	-65.9	V	3.0	-16.0	38.6	1.0	-53.6	-13.0	-40.6	
5.55	-66.6	V	3.0	-12.8	38.6	1.0	-50.4	-13.0	-37.4	
7.40	-66.2	V	3.0	-8.8	37.8	1.0	-45.6	-13.0	-32.6	
Mid Channel (1880.0)										
3.76	-66.4	H	3.0	-16.3	38.6	1.0	-54.0	-13.0	-41.0	
5.64	-65.4	H	3.0	-11.1	38.5	1.0	-48.6	-13.0	-35.6	
7.52	-68.1	H	3.0	-10.3	37.7	1.0	-47.1	-13.0	-34.1	
3.76	-67.1	V	3.0	-17.0	38.6	1.0	-54.6	-13.0	-41.6	
5.64	-66.4	V	3.0	-12.5	38.5	1.0	-50.0	-13.0	-37.0	
7.52	-69.4	V	3.0	-11.7	37.7	1.0	-48.5	-13.0	-35.5	
High Channel (1909.8MHz)										
3.82	-64.6	H	3.0	-14.3	38.7	1.0	-52.0	-13.0	-39.0	
5.73	-68.6	H	3.0	-14.1	38.5	1.0	-51.6	-13.0	-38.6	
7.54	-70.2	H	3.0	-12.3	37.7	1.0	-49.0	-13.0	-36.0	
3.82	-65.1	V	3.0	-14.8	38.7	1.0	-52.5	-13.0	-39.5	
5.73	-67.0	V	3.0	-12.8	38.5	1.0	-50.4	-13.0	-37.4	
7.54	-67.7	V	3.0	-10.0	37.7	1.0	-46.8	-13.0	-33.8	

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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: 06/18/18
Test Engineer: 19448
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	-66.9	H	3.0	-24.5	37.8	1.0	-61.3	-13.0	-48.3	
2.45	-65.3	H	3.0	-20.4	38.4	1.0	-57.8	-13.0	-44.8	
3.27	-66.3	H	3.0	-17.4	38.5	1.0	-54.9	-13.0	-41.9	
1.63	-66.1	V	3.0	-24.1	37.8	1.0	-60.9	-13.0	-47.9	
2.45	-65.7	V	3.0	-20.6	38.4	1.0	-58.0	-13.0	-45.0	
3.27	-64.8	V	3.0	-16.2	38.5	1.0	-53.7	-13.0	-40.7	
Mid Channel (820MHz)										
1.64	-65.4	H	3.0	-23.0	37.8	1.0	-59.8	-13.0	-46.8	
2.46	-64.7	H	3.0	-19.9	38.4	1.0	-57.2	-13.0	-44.2	
3.28	-65.8	H	3.0	-16.9	38.5	1.0	-54.4	-13.0	-41.4	
1.64	-66.6	V	3.0	-24.5	37.8	1.0	-61.3	-13.0	-48.3	
2.46	-65.9	V	3.0	-20.8	38.4	1.0	-58.2	-13.0	-45.2	
3.28	-65.4	V	3.0	-16.8	38.5	1.0	-54.2	-13.0	-41.2	
High Channel (822.75MHz)										
1.65	-67.1	H	3.0	-24.6	37.8	1.0	-61.5	-13.0	-48.5	
2.47	-65.8	H	3.0	-20.8	38.5	1.0	-58.3	-13.0	-45.3	
3.29	-65.0	H	3.0	-16.1	38.5	1.0	-53.5	-13.0	-40.5	
1.65	-66.1	V	3.0	-24.0	37.8	1.0	-60.8	-13.0	-47.8	
2.47	-65.6	V	3.0	-20.4	38.5	1.0	-57.9	-13.0	-44.9	
3.29	-66.1	V	3.0	-17.4	38.5	1.0	-54.9	-13.0	-41.9	

Rev. 03.19.15

CDMA BC10 1xRTT

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 06/18/18
Test Engineer: 19448
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	-65.7	H	3.0	-23.3	37.8	1.0	-60.1	-13.0	-47.1	
2.45	-64.8	H	3.0	-19.9	38.4	1.0	-57.3	-13.0	-44.3	
3.27	-65.6	H	3.0	-16.7	38.5	1.0	-54.2	-13.0	-41.2	
1.63	-65.8	V	3.0	-23.7	37.8	1.0	-60.5	-13.0	-47.5	
2.45	-65.4	V	3.0	-20.3	38.4	1.0	-57.7	-13.0	-44.7	
3.27	-64.5	V	3.0	-15.8	38.5	1.0	-53.3	-13.0	-40.3	
Mid Channel (820MHz)										
1.64	-65.2	H	3.0	-22.7	37.8	1.0	-59.6	-13.0	-46.6	
2.46	-64.4	H	3.0	-19.4	38.4	1.0	-56.8	-13.0	-43.8	
3.28	-65.4	H	3.0	-16.5	38.5	1.0	-54.0	-13.0	-41.0	
1.64	-66.3	V	3.0	-24.2	37.8	1.0	-61.0	-13.0	-48.0	
2.46	-65.3	V	3.0	-20.2	38.4	1.0	-57.6	-13.0	-44.6	
3.28	-65.1	V	3.0	-16.4	38.5	1.0	-53.9	-13.0	-40.9	
High Channel (822.75MHz)										
1.65	-66.5	H	3.0	-24.0	37.8	1.0	-60.9	-13.0	-47.9	
2.47	-65.5	H	3.0	-20.5	38.5	1.0	-57.9	-13.0	-44.9	
3.29	-64.5	H	3.0	-15.6	38.5	1.0	-53.0	-13.0	-40.0	
1.65	-65.8	V	3.0	-23.6	37.8	1.0	-60.5	-13.0	-47.5	
2.47	-65.3	V	3.0	-20.1	38.5	1.0	-57.5	-13.0	-44.5	
3.29	-65.7	V	3.0	-17.0	38.5	1.0	-54.5	-13.0	-41.5	

Rev. 03.19.15

CDMA BC10 1xEV-DO Rev A

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 06/18/18
Test Engineer: 19448
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	-61.4	H	3.0	-18.9	37.8	1.0	-55.8	-13.0	-42.8	
2.47	-60.8	H	3.0	-15.8	38.5	1.0	-53.3	-13.0	-40.3	
3.30	-62.2	H	3.0	-13.2	38.5	1.0	-50.7	-13.0	-37.7	
1.65	-61.7	V	3.0	-19.6	37.8	1.0	-56.4	-13.0	-43.4	
2.47	-62.2	V	3.0	-17.0	38.5	1.0	-54.5	-13.0	-41.5	
3.30	-60.7	V	3.0	-12.0	38.5	1.0	-49.5	-13.0	-36.5	
Mid Channel (836.52MHz)										
1.67	-61.4	H	3.0	-18.9	37.8	1.0	-55.8	-13.0	-42.8	
2.51	-58.3	H	3.0	-13.1	38.6	1.0	-50.7	-13.0	-37.7	
3.35	-61.8	H	3.0	-12.7	38.5	1.0	-50.2	-13.0	-37.2	
1.67	-61.9	V	3.0	-19.7	37.8	1.0	-56.5	-13.0	-43.5	
2.51	-60.9	V	3.0	-15.5	38.6	1.0	-53.1	-13.0	-40.1	
3.35	-60.9	V	3.0	-12.1	38.5	1.0	-49.6	-13.0	-36.6	
High Channel (848.31MHz)										
1.70	-62.2	H	3.0	-19.6	37.9	1.0	-56.5	-13.0	-43.5	
2.54	-61.7	H	3.0	-16.3	38.6	1.0	-53.9	-13.0	-40.9	
3.39	-62.1	H	3.0	-12.9	38.5	1.0	-50.4	-13.0	-37.4	
1.70	-62.5	V	3.0	-20.1	37.9	1.0	-57.0	-13.0	-44.0	
2.54	-61.9	V	3.0	-16.4	38.6	1.0	-53.9	-13.0	-40.9	
3.39	-62.2	V	3.0	-13.2	38.5	1.0	-50.7	-13.0	-37.7	

Rev. 03.19.15

CDMA BC0 1xRTT

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date:
Test Engineer: 19448
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	-60.2	H	3.0	-17.7	37.8	1.0	-54.6	-13.0	-41.6	
2.47	-61.3	H	3.0	-16.3	38.5	1.0	-53.8	-13.0	-40.8	
3.30	-62.4	H	3.0	-13.4	38.5	1.0	-50.9	-13.0	-37.9	
1.65	-59.7	V	3.0	-17.6	37.8	1.0	-54.4	-13.0	-41.4	
2.47	-61.5	V	3.0	-16.3	38.5	1.0	-53.8	-13.0	-40.8	
3.30	-61.0	V	3.0	-12.3	38.5	1.0	-49.8	-13.0	-36.8	
Mid Channel (836.52MHz)										
1.67	-60.9	H	3.0	-18.4	37.8	1.0	-55.3	-13.0	-42.3	
2.51	-62.4	H	3.0	-17.2	38.6	1.0	-54.8	-13.0	-41.8	
3.35	-62.7	H	3.0	-13.6	38.5	1.0	-51.1	-13.0	-38.1	
1.67	-60.4	V	3.0	-18.2	37.8	1.0	-55.0	-13.0	-42.0	
2.51	-61.6	V	3.0	-16.2	38.6	1.0	-53.8	-13.0	-40.8	
3.35	-62.6	V	3.0	-13.7	38.5	1.0	-51.2	-13.0	-38.2	
High Channel (848.31MHz)										
1.70	-59.1	H	3.0	-16.5	37.9	1.0	-53.4	-13.0	-40.4	
2.54	-62.1	H	3.0	-16.7	38.6	1.0	-54.3	-13.0	-41.3	
3.39	-62.7	H	3.0	-13.5	38.5	1.0	-51.0	-13.0	-38.0	
1.70	-59.1	V	3.0	-16.7	37.9	1.0	-53.6	-13.0	-40.6	
2.54	-62.1	V	3.0	-16.6	38.6	1.0	-54.1	-13.0	-41.1	
3.39	-62.2	V	3.0	-13.2	38.5	1.0	-50.7	-13.0	-37.7	

Rev. 03.19.15

CDMA BC0 1xEV-DO Rev A

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 06/18/18
Test Engineer: 19448
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	-68.0	H	3.0	-18.0	38.6	1.0	-55.7	-13.0	-42.7	
5.55	-69.2	H	3.0	-15.2	38.6	1.0	-52.7	-13.0	-39.7	
7.41	-68.9	H	3.0	-11.2	37.8	1.0	-48.0	-13.0	-35.0	
3.70	-68.4	V	3.0	-18.5	38.6	1.0	-56.1	-13.0	-43.1	
5.55	-68.6	V	3.0	-14.9	38.6	1.0	-52.4	-13.0	-39.4	
7.41	-67.5	V	3.0	-10.0	37.8	1.0	-46.8	-13.0	-33.8	
Mid Channel (1880MHz)										
3.76	-67.7	H	3.0	-17.6	38.6	1.0	-55.2	-13.0	-42.2	
5.64	-69.7	H	3.0	-15.5	38.5	1.0	-53.0	-13.0	-40.0	
7.52	-71.6	H	3.0	-13.8	37.7	1.0	-50.5	-13.0	-37.5	
3.76	-68.8	V	3.0	-18.7	38.6	1.0	-56.4	-13.0	-43.4	
5.64	-69.3	V	3.0	-15.4	38.5	1.0	-52.9	-13.0	-39.9	
7.52	-67.4	V	3.0	-9.8	37.7	1.0	-46.5	-13.0	-33.5	
High Channel (1908.75MHz)										
3.82	-68.0	H	3.0	-17.7	38.7	1.0	-55.4	-13.0	-42.4	
5.73	-68.9	H	3.0	-14.5	38.5	1.0	-52.0	-13.0	-39.0	
7.64	-68.6	H	3.0	-10.6	37.7	1.0	-47.3	-13.0	-34.3	
3.82	-67.8	V	3.0	-17.6	38.7	1.0	-55.2	-13.0	-42.2	
5.73	-68.8	V	3.0	-14.7	38.5	1.0	-52.2	-13.0	-39.2	
7.64	-67.6	V	3.0	-9.8	37.7	1.0	-46.5	-13.0	-33.5	

Rev. 03.19.15

CDMA BC1 1xRTT

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date:
Test Engineer: 19448
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	-67.8	H	3.0	-17.6	38.6	1.0	-55.2	-13.0	-42.2	
5.55	-68.6	H	3.0	-14.6	38.6	1.0	-52.1	-13.0	-39.1	
7.41	-68.5	H	3.0	-10.8	37.8	1.0	-47.6	-13.0	-34.6	
3.70	-68.0	V	3.0	-18.1	38.6	1.0	-55.7	-13.0	-42.7	
5.55	-68.3	V	3.0	-14.6	38.6	1.0	-52.1	-13.0	-39.1	
7.41	-67.1	V	3.0	-9.6	37.8	1.0	-46.4	-13.0	-33.4	
Mid Channel (1880MHz)										
3.76	-67.3	H	3.0	-17.2	38.6	1.0	-54.8	-13.0	-41.8	
5.64	-69.3	H	3.0	-15.0	38.5	1.0	-52.6	-13.0	-39.6	
7.52	-68.2	H	3.0	-10.4	37.7	1.0	-47.1	-13.0	-34.1	
3.76	-68.4	V	3.0	-18.3	38.6	1.0	-56.0	-13.0	-43.0	
5.64	-68.9	V	3.0	-15.0	38.5	1.0	-52.5	-13.0	-39.5	
7.52	-67.0	V	3.0	-9.4	37.7	1.0	-46.1	-13.0	-33.1	
High Channel (1908.75MHz)										
3.82	-67.6	H	3.0	-17.3	38.7	1.0	-55.0	-13.0	-42.0	
5.73	-68.5	H	3.0	-14.0	38.5	1.0	-51.6	-13.0	-38.6	
7.64	-68.2	H	3.0	-10.2	37.7	1.0	-46.9	-13.0	-33.9	
3.82	-67.4	V	3.0	-17.1	38.7	1.0	-54.8	-13.0	-41.8	
5.73	-68.4	V	3.0	-14.3	38.5	1.0	-51.8	-13.0	-38.8	
7.64	-67.2	V	3.0	-9.4	37.7	1.0	-46.1	-13.0	-33.1	

Rev. 03.19.15

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: 06/18/18
Test Engineer: 50822
Configuration: EUT Only
Mode: REL 99, 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 (826.4MHz)										
1.65	-63.9	H	3.0	-21.4	37.8	1.0	-58.3	-13.0	-45.3	
2.48	-64.6	H	3.0	-19.5	38.5	1.0	-57.0	-13.0	-44.0	
3.31	-65.0	H	3.0	-16.1	38.5	1.0	-53.5	-13.0	-40.5	
1.65	-64.5	V	3.0	-22.3	37.8	1.0	-59.1	-13.0	-46.1	
2.48	-64.5	V	3.0	-19.3	38.5	1.0	-56.8	-13.0	-43.8	
3.31	-65.0	V	3.0	-16.3	38.5	1.0	-53.8	-13.0	-40.8	
Mid Channel (836.6MHz)										
1.67	-64.9	H	3.0	-22.4	37.8	1.0	-59.2	-13.0	-46.2	
2.51	-63.8	H	3.0	-18.6	38.6	1.0	-56.2	-13.0	-43.2	
3.35	-65.7	H	3.0	-16.6	38.5	1.0	-54.1	-13.0	-41.1	
1.67	-64.2	V	3.0	-21.9	37.8	1.0	-58.7	-13.0	-45.7	
2.51	-64.8	V	3.0	-19.5	38.6	1.0	-57.0	-13.0	-44.0	
3.35	-65.9	V	3.0	-17.0	38.5	1.0	-54.5	-13.0	-41.5	
High Channel (846.6MHz)										
1.69	-64.4	H	3.0	-21.8	37.9	1.0	-58.7	-13.0	-45.7	
2.54	-64.8	H	3.0	-19.4	38.6	1.0	-56.9	-13.0	-43.9	
3.39	-65.6	H	3.0	-16.4	38.5	1.0	-53.9	-13.0	-40.9	
1.69	-63.2	V	3.0	-20.8	37.9	1.0	-57.7	-13.0	-44.7	
2.54	-65.2	V	3.0	-19.6	38.6	1.0	-57.2	-13.0	-44.2	
3.39	-65.1	V	3.0	-16.2	38.5	1.0	-53.7	-13.0	-40.7	

Rev. 03.19.15

WCDMA Band 5 Rel 99

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 06/18/18
Test Engineer: 50822
Configuration: EUT Only
Mode: HSDPA 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 (826.4MHz)										
1.65	-64.7	H	3.0	-22.3	37.8	1.0	-59.1	-13.0	-46.1	
2.48	-63.2	H	3.0	-18.1	38.5	1.0	-55.6	-13.0	-42.6	
3.31	-65.3	H	3.0	-16.3	38.5	1.0	-53.8	-13.0	-40.8	
1.65	-63.9	V	3.0	-21.7	37.8	1.0	-58.6	-13.0	-45.6	
2.48	-63.8	V	3.0	-18.6	38.5	1.0	-56.1	-13.0	-43.1	
3.31	-65.5	V	3.0	-16.8	38.5	1.0	-54.2	-13.0	-41.2	
Mid Channel (836.6MHz)										
1.67	-64.3	H	3.0	-21.8	37.8	1.0	-58.6	-13.0	-45.6	
2.51	-62.9	H	3.0	-17.7	38.6	1.0	-55.3	-13.0	-42.3	
3.35	-64.5	H	3.0	-15.5	38.5	1.0	-52.9	-13.0	-39.9	
1.67	-64.2	V	3.0	-22.0	37.8	1.0	-58.8	-13.0	-45.8	
2.51	-63.6	V	3.0	-18.2	38.6	1.0	-55.8	-13.0	-42.8	
3.35	-65.9	V	3.0	-17.1	38.5	1.0	-54.6	-13.0	-41.6	
High Channel (846.6MHz)										
1.69	-64.3	H	3.0	-21.7	37.9	1.0	-58.6	-13.0	-45.6	
2.54	-64.2	H	3.0	-18.8	38.6	1.0	-56.4	-13.0	-43.4	
3.39	-66.5	H	3.0	-17.3	38.5	1.0	-54.8	-13.0	-41.8	
1.69	-64.6	V	3.0	-22.2	37.9	1.0	-59.1	-13.0	-46.1	
2.54	-65.1	V	3.0	-19.5	38.6	1.0	-57.1	-13.0	-44.1	
3.39	-65.0	V	3.0	-16.1	38.5	1.0	-53.6	-13.0	-40.6	

Rev. 03.19.15

WCDMA Band 5 HSDPA

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 06/18/18
Test Engineer: 50822
Configuration: EUT Only
Mode: REL 99, 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 (1852.4MHz)										
3.70	-62.7	H	3.0	-12.7	38.6	1.0	-50.3	-13.0	-37.3	
5.56	-64.1	H	3.0	-10.0	38.6	1.0	-47.6	-13.0	-34.6	
7.41	-66.2	H	3.0	-8.5	37.8	1.0	-45.3	-13.0	-32.3	
3.70	-63.3	V	3.0	-13.4	38.6	1.0	-51.0	-13.0	-38.0	
5.55	-65.0	V	3.0	-11.3	38.6	1.0	-48.9	-13.0	-35.9	
7.42	-66.1	V	3.0	-8.6	37.8	1.0	-45.4	-13.0	-32.4	
Mid Channel (1880MHz)										
3.76	-62.4	H	3.0	-12.3	38.6	1.0	-49.9	-13.0	-36.9	
5.64	-64.8	H	3.0	-10.5	38.5	1.0	-48.1	-13.0	-35.1	
7.52	-65.1	H	3.0	-7.3	37.7	1.0	-44.0	-13.0	-31.0	
3.76	-62.8	V	3.0	-12.8	38.6	1.0	-50.4	-13.0	-37.4	
5.64	-64.7	V	3.0	-10.7	38.5	1.0	-48.3	-13.0	-35.3	
7.52	-65.7	V	3.0	-8.1	37.7	1.0	-44.9	-13.0	-31.9	
High Channel (1907.6MHz)										
3.81	-61.7	H	3.0	-11.5	38.7	1.0	-49.1	-13.0	-36.1	
5.72	-64.6	H	3.0	-10.2	38.5	1.0	-47.7	-13.0	-34.7	
7.66	-65.8	H	3.0	-7.8	37.7	1.0	-44.4	-13.0	-31.4	
3.82	-62.4	V	3.0	-12.2	38.7	1.0	-49.8	-13.0	-36.8	
5.72	-63.5	V	3.0	-9.4	38.5	1.0	-46.9	-13.0	-33.9	
7.63	-65.7	V	3.0	-7.9	37.7	1.0	-44.6	-13.0	-31.6	

Rev. 03.19.15

WCDMA Band 2 Rel 99

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 06/18/18
Test Engineer: 50822
Configuration: EUT Only
Mode: HSDPA 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 (1852.4MHz)										
3.70	-63.1	H	3.0	-13.2	38.6	1.0	-50.8	-13.0	-37.8	
5.56	-62.9	H	3.0	-8.0	38.6	1.0	-46.4	-13.0	-33.4	
7.41	-65.6	H	3.0	-7.8	37.8	1.0	-44.8	-13.0	-31.8	
3.70	-62.9	V	3.0	-13.0	38.6	1.0	-50.6	-13.0	-37.6	
5.56	-63.9	V	3.0	-10.2	38.6	1.0	-47.7	-13.0	-34.7	
7.41	-66.4	V	3.0	-8.0	37.8	1.0	-45.8	-13.0	-32.8	
Mid Channel (1880MHz)										
3.76	-62.1	H	3.0	-12.0	38.6	1.0	-49.7	-13.0	-36.7	
5.64	-64.8	H	3.0	-10.6	38.5	1.0	-48.1	-13.0	-35.1	
7.52	-66.6	H	3.0	-8.7	37.7	1.0	-45.5	-13.0	-32.5	
3.76	-62.3	V	3.0	-12.2	38.6	1.0	-49.9	-13.0	-36.9	
5.64	-64.6	V	3.0	-10.7	38.5	1.0	-48.2	-13.0	-35.2	
7.52	-66.1	V	3.0	-8.5	37.7	1.0	-45.2	-13.0	-32.2	
High Channel (1907.6MHz)										
3.82	-61.6	H	3.0	-11.4	38.7	1.0	-49.0	-13.0	-36.0	
5.72	-63.7	H	3.0	-9.3	38.5	1.0	-46.8	-13.0	-33.8	
7.63	-66.1	H	3.0	-8.2	37.7	1.0	-44.8	-13.0	-31.8	
3.82	-63.4	V	3.0	-13.2	38.7	1.0	-50.8	-13.0	-37.8	
5.72	-64.1	V	3.0	-10.0	38.5	1.0	-47.5	-13.0	-34.5	
7.63	-65.8	V	3.0	-8.0	37.7	1.0	-44.7	-13.0	-31.7	

Rev. 03.19.15

WCDMA Band 2 HSDPA

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 06/18/18
Test Engineer: 50822
Configuration: EUT Only
Mode: REL 99, 1700MHz

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 (1712.4MHz)										
3.42	-66.1	H	3.0	-16.9	38.5	1.0	-54.4	-13.0	-41.4	
5.14	-63.9	H	3.0	-10.7	38.7	1.0	-48.4	-13.0	-35.4	
6.85	-65.3	H	3.0	-8.4	38.1	1.0	-45.5	-13.0	-32.5	
3.42	-65.8	V	3.0	-16.7	38.5	1.0	-54.2	-13.0	-41.2	
5.14	-63.0	V	3.0	-10.2	38.7	1.0	-47.9	-13.0	-34.9	
6.85	-65.8	V	3.0	-9.2	38.1	1.0	-46.4	-13.0	-33.4	
Mid Channel (1732.6MHz)										
3.47	-65.9	H	3.0	-16.5	38.5	1.0	-54.0	-13.0	-41.0	
5.20	-63.3	H	3.0	-10.0	38.7	1.0	-47.7	-13.0	-34.7	
6.93	-64.9	H	3.0	-7.9	38.1	1.0	-45.0	-13.0	-32.0	
3.47	-66.2	V	3.0	-17.0	38.5	1.0	-54.5	-13.0	-41.5	
5.20	-62.5	V	3.0	-9.5	38.7	1.0	-47.2	-13.0	-34.2	
6.93	-65.5	V	3.0	-8.7	38.1	1.0	-45.8	-13.0	-32.8	
High Channel (1752.6MHz)										
3.51	-65.9	H	3.0	-16.4	38.5	1.0	-54.0	-13.0	-41.0	
5.26	-64.7	H	3.0	-11.2	38.7	1.0	-48.9	-13.0	-35.9	
7.01	-65.8	H	3.0	-8.6	38.1	1.0	-45.7	-13.0	-32.7	
3.51	-66.3	V	3.0	-16.9	38.5	1.0	-54.5	-13.0	-41.5	
5.26	-64.8	V	3.0	-11.7	38.7	1.0	-49.4	-13.0	-36.4	
7.01	-65.7	V	3.0	-8.7	38.1	1.0	-45.8	-13.0	-32.8	

Rev. 03.19.15

WCDMA Band 4 Rel 99

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date:
Test Engineer:
Configuration: EUT Only
Mode: HSDPA 1700MHz

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 (1712.4MHz)										
3.42	-65.2	H	3.0	-15.9	38.5	1.0	-53.4	-13.0	-40.4	
5.14	-62.9	H	3.0	-9.7	38.7	1.0	-47.4	-13.0	-34.4	
6.85	-66.2	H	3.0	-9.4	38.1	1.0	-46.5	-13.0	-33.5	
3.42	-66.2	V	3.0	-17.1	38.5	1.0	-54.6	-13.0	-41.6	
5.14	-63.2	V	3.0	-10.4	38.7	1.0	-48.1	-13.0	-35.1	
6.85	-65.6	V	3.0	-9.0	38.1	1.0	-46.1	-13.0	-33.1	
Mid Channel (1732.6MHz)										
3.47	-65.9	H	3.0	-16.5	38.5	1.0	-54.0	-13.0	-41.0	
5.20	-63.0	H	3.0	-9.7	38.7	1.0	-47.4	-13.0	-34.4	
6.93	-65.3	H	3.0	-8.3	38.1	1.0	-45.4	-13.0	-32.4	
3.47	-66.0	V	3.0	-16.8	38.5	1.0	-54.3	-13.0	-41.3	
5.20	-62.7	V	3.0	-9.8	38.7	1.0	-47.5	-13.0	-34.5	
6.93	-65.2	V	3.0	-8.4	38.1	1.0	-45.5	-13.0	-32.5	
High Channel (1752.6MHz)										
3.51	-66.1	H	3.0	-16.6	38.5	1.0	-54.2	-13.0	-41.2	
5.26	-63.8	H	3.0	-10.3	38.7	1.0	-48.0	-13.0	-35.0	
7.01	-66.3	H	3.0	-9.1	38.1	1.0	-46.2	-13.0	-33.2	
3.51	-66.0	V	3.0	-16.7	38.5	1.0	-54.2	-13.0	-41.2	
5.26	-64.0	V	3.0	-10.9	38.7	1.0	-48.6	-13.0	-35.6	
7.01	-65.9	V	3.0	-9.0	38.1	1.0	-46.1	-13.0	-33.1	

Rev. 03.19.15

WCDMA Band 4 HSDPA

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701i
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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: 06/22/18
Test Engineer: 52275
Configuration: EUT only
Mode: GPRS 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 (824.2MHz)										
1.65	-68.4	H	3.0	-25.9	37.8	1.0	-62.8	-13.0	-49.8	
2.47	-69.1	H	3.0	-24.1	38.5	1.0	-61.6	-13.0	-48.6	
3.30	-68.2	H	3.0	-19.2	38.5	1.0	-56.7	-13.0	-43.7	
1.65	-70.0	V	3.0	-27.9	37.8	1.0	-64.7	-13.0	-51.7	
2.47	-69.4	V	3.0	-24.2	38.5	1.0	-61.7	-13.0	-48.7	
3.30	-68.9	V	3.0	-20.3	38.5	1.0	-57.7	-13.0	-44.7	
Mid Channel (836.6MHz)										
1.67	-71.5	H	3.0	-29.0	37.8	1.0	-65.9	-13.0	-52.9	
2.51	-68.8	H	3.0	-23.6	38.6	1.0	-61.2	-13.0	-48.2	
3.35	-69.2	H	3.0	-20.1	38.5	1.0	-57.6	-13.0	-44.6	
1.67	-70.4	V	3.0	-28.1	37.8	1.0	-65.0	-13.0	-52.0	
2.51	-67.6	V	3.0	-22.2	38.6	1.0	-59.7	-13.0	-46.7	
3.35	-69.0	V	3.0	-20.1	38.5	1.0	-57.6	-13.0	-44.6	
High Channel (848.8MHz)										
1.70	-69.9	H	3.0	-27.3	37.9	1.0	-64.2	-13.0	-51.2	
2.55	-69.7	H	3.0	-24.3	38.6	1.0	-61.8	-13.0	-48.8	
3.40	-68.7	H	3.0	-19.5	38.5	1.0	-57.0	-13.0	-44.0	
1.70	-70.0	V	3.0	-27.6	37.9	1.0	-64.4	-13.0	-51.4	
2.55	-68.1	V	3.0	-22.5	38.6	1.0	-60.1	-13.0	-47.1	
3.40	-68.1	V	3.0	-19.1	38.5	1.0	-56.6	-13.0	-43.6	

Rev. 03.19.15

GSM 850MHz GPRS

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 06/22/18
Test Engineer: 52275
Configuration: EUT only
Mode: EGPRS 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 (824.2MHz)										
1.65	-68.2	H	3.0	-25.7	37.8	1.0	-62.6	-13.0	-49.6	
2.47	-69.2	H	3.0	-24.2	38.5	1.0	-61.7	-13.0	-48.7	
3.30	-69.4	H	3.0	-20.4	38.5	1.0	-57.9	-13.0	-44.9	
1.65	-70.0	V	3.0	-27.8	37.8	1.0	-64.7	-13.0	-51.7	
2.47	-68.2	V	3.0	-23.0	38.5	1.0	-60.5	-13.0	-47.5	
3.30	-68.4	V	3.0	-19.7	38.5	1.0	-57.2	-13.0	-44.2	
Mid Channel (836.6MHz)										
1.67	-70.9	H	3.0	-28.4	37.8	1.0	-65.2	-13.0	-52.2	
2.51	-68.2	H	3.0	-23.0	38.6	1.0	-60.5	-13.0	-47.5	
3.35	-68.9	H	3.0	-19.8	38.5	1.0	-57.3	-13.0	-44.3	
1.67	-69.9	V	3.0	-27.7	37.8	1.0	-64.5	-13.0	-51.5	
2.51	-66.7	V	3.0	-21.3	38.6	1.0	-58.9	-13.0	-45.9	
3.35	-68.5	V	3.0	-19.6	38.5	1.0	-57.1	-13.0	-44.1	
High Channel (848.8MHz)										
1.70	-69.5	H	3.0	-26.9	37.9	1.0	-63.8	-13.0	-50.8	
2.55	-67.2	H	3.0	-21.7	38.6	1.0	-59.3	-13.0	-46.3	
3.40	-70.0	H	3.0	-20.8	38.5	1.0	-58.3	-13.0	-45.3	
1.70	-69.5	V	3.0	-27.1	37.9	1.0	-64.0	-13.0	-51.0	
2.55	-69.0	V	3.0	-23.4	38.6	1.0	-61.0	-13.0	-48.0	
3.40	-69.5	V	3.0	-20.5	38.5	1.0	-58.0	-13.0	-45.0	

Rev. 03.19.15

GSM 850MHz EGPRS

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 06/22/18
Test Engineer: 52275
Configuration: EUT only
Mode: GPRS 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 (1850.2MHz)										
3.70	-67.1	H	3.0	-17.1	38.6	1.0	-54.7	-13.0	-41.7	
5.55	-68.2	H	3.0	-14.2	38.6	1.0	-51.8	-13.0	-38.8	
7.40	-68.0	H	3.0	-10.4	37.8	1.0	-47.2	-13.0	-34.2	
3.70	-66.5	V	3.0	-16.6	38.6	1.0	-54.2	-13.0	-41.2	
5.55	-63.3	V	3.0	-9.6	38.6	1.0	-47.1	-13.0	-34.1	
7.40	-67.0	V	3.0	-9.6	37.8	1.0	-46.4	-13.0	-33.4	
Mid Channel (1880.0)										
3.76	-67.3	H	3.0	-17.2	38.6	1.0	-54.8	-13.0	-41.8	
5.64	-67.8	H	3.0	-13.6	38.5	1.0	-51.1	-13.0	-38.1	
7.52	-68.0	H	3.0	-10.2	37.7	1.0	-47.0	-13.0	-34.0	
3.76	-67.8	V	3.0	-17.7	38.6	1.0	-55.3	-13.0	-42.3	
5.64	-67.1	V	3.0	-13.2	38.5	1.0	-50.7	-13.0	-37.7	
7.52	-68.1	V	3.0	-10.5	37.7	1.0	-47.3	-13.0	-34.3	
High Channel (1909.8MHz)										
3.82	-64.7	H	3.0	-14.4	38.7	1.0	-52.1	-13.0	-39.1	
5.73	-67.9	H	3.0	-13.4	38.5	1.0	-50.9	-13.0	-37.9	
7.54	-67.8	H	3.0	-10.0	37.7	1.0	-46.7	-13.0	-33.7	
3.82	-64.7	V	3.0	-14.5	38.7	1.0	-52.1	-13.0	-39.1	
5.73	-67.2	V	3.0	-13.0	38.5	1.0	-50.5	-13.0	-37.5	
7.54	-68.3	V	3.0	-10.7	37.7	1.0	-47.4	-13.0	-34.4	

Rev. 03.19.15

GSM 1900MHz GPRS

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 06/22/18
Test Engineer: 52275
Configuration: EUT only
Mode: EGPRS 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 (1850.2MHz)										
3.70	-66.6	H	3.0	-16.7	38.6	1.0	-54.3	-13.0	-41.3	
5.55	-67.8	H	3.0	-13.8	38.6	1.0	-51.3	-13.0	-38.3	
7.40	-67.6	H	3.0	-9.9	37.8	1.0	-46.7	-13.0	-33.7	
3.70	-66.1	V	3.0	-16.2	38.6	1.0	-53.8	-13.0	-40.8	
5.55	-62.9	V	3.0	-9.1	38.6	1.0	-46.7	-13.0	-33.7	
7.40	-66.6	V	3.0	-9.1	37.8	1.0	-46.0	-13.0	-33.0	
Mid Channel (1880.0)										
3.76	-66.9	H	3.0	-16.8	38.6	1.0	-54.4	-13.0	-41.4	
5.64	-67.4	H	3.0	-13.2	38.5	1.0	-50.7	-13.0	-37.7	
7.52	-67.6	H	3.0	-9.8	37.7	1.0	-46.5	-13.0	-33.5	
3.76	-67.3	V	3.0	-17.3	38.6	1.0	-54.9	-13.0	-41.9	
5.64	-66.7	V	3.0	-12.8	38.5	1.0	-50.3	-13.0	-37.3	
7.52	-67.7	V	3.0	-10.1	37.7	1.0	-46.8	-13.0	-33.8	
High Channel (1909.8MHz)										
3.82	-64.3	H	3.0	-14.0	38.7	1.0	-51.7	-13.0	-38.7	
5.73	-67.4	H	3.0	-13.0	38.5	1.0	-50.5	-13.0	-37.5	
7.54	-67.4	H	3.0	-9.6	37.7	1.0	-46.3	-13.0	-33.3	
3.82	-64.3	V	3.0	-14.0	38.7	1.0	-51.7	-13.0	-38.7	
5.73	-66.7	V	3.0	-12.6	38.5	1.0	-50.1	-13.0	-37.1	
7.54	-68.1	V	3.0	-10.5	37.7	1.0	-47.2	-13.0	-34.2	

Rev. 03.19.15

GSM 1900MHz EGPRS

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9.2.2. CDMA

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 06/22/18
Test Engineer: 52275
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	-68.9	H	3.0	-27.5	37.8	1.0	-64.3	-13.0	-51.3	
2.45	-66.2	H	3.0	-23.1	36.7	1.0	-58.8	-13.0	-45.8	
3.27	-65.3	H	3.0	-19.4	36.5	1.0	-54.9	-13.0	-41.9	
1.63	-69.3	V	3.0	-27.5	37.8	1.0	-64.3	-13.0	-51.3	
2.45	-66.2	V	3.0	-22.3	36.7	1.0	-58.1	-13.0	-45.1	
3.27	-64.7	V	3.0	-18.9	36.5	1.0	-54.4	-13.0	-41.4	
Mid Channel (820MHz)										
1.64	-67.6	H	3.0	-26.2	37.8	1.0	-63.0	-13.0	-50.0	
2.46	-65.5	H	3.0	-22.4	36.7	1.0	-58.0	-13.0	-45.0	
3.28	-64.3	H	3.0	-18.4	36.5	1.0	-53.9	-13.0	-40.9	
1.64	-68.2	V	3.0	-26.4	37.8	1.0	-63.2	-13.0	-50.2	
2.46	-66.7	V	3.0	-22.8	36.7	1.0	-58.4	-13.0	-45.4	
3.28	-65.3	V	3.0	-19.5	36.5	1.0	-55.0	-13.0	-42.0	
High Channel (822.75MHz)										
1.65	-68.2	H	3.0	-26.8	37.8	1.0	-63.6	-13.0	-50.6	
2.47	-65.1	H	3.0	-22.0	36.6	1.0	-57.5	-13.0	-44.5	
3.29	-63.9	H	3.0	-18.0	36.5	1.0	-53.5	-13.0	-40.5	
1.65	-68.4	V	3.0	-26.6	37.8	1.0	-63.5	-13.0	-50.5	
2.47	-66.5	V	3.0	-22.5	36.6	1.0	-58.1	-13.0	-45.1	
3.29	-67.0	V	3.0	-21.1	36.5	1.0	-56.7	-13.0	-43.7	

Rev. 03.19.15

CDMA BC10 1xRTT

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 06/27/18
Test Engineer: 19431
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	-68.4	H	3.0	-27.0	37.8	1.0	-63.9	-13.0	-50.9	
2.45	-65.3	H	3.0	-22.2	36.7	1.0	-57.9	-13.0	-44.9	
3.27	-64.8	H	3.0	-19.0	36.5	1.0	-54.5	-13.0	-41.5	
1.63	-68.6	V	3.0	-26.8	37.8	1.0	-63.7	-13.0	-50.7	
2.45	-65.5	V	3.0	-21.6	36.7	1.0	-57.4	-13.0	-44.4	
3.27	-64.2	V	3.0	-18.4	36.5	1.0	-53.9	-13.0	-40.9	
Mid Channel (820MHz)										
1.64	-67.2	H	3.0	-25.7	37.8	1.0	-62.6	-13.0	-49.6	
2.46	-65.1	H	3.0	-21.9	36.7	1.0	-57.6	-13.0	-44.6	
3.28	-63.8	H	3.0	-17.9	36.5	1.0	-53.5	-13.0	-40.5	
1.64	-67.7	V	3.0	-26.0	37.8	1.0	-62.8	-13.0	-49.8	
2.46	-66.3	V	3.0	-22.3	36.7	1.0	-58.0	-13.0	-45.0	
3.28	-64.9	V	3.0	-19.0	36.5	1.0	-54.6	-13.0	-41.6	
High Channel (822.75MHz)										
1.65	-67.8	H	3.0	-26.3	37.8	1.0	-63.1	-13.0	-50.1	
2.47	-64.6	H	3.0	-21.5	36.6	1.0	-57.1	-13.0	-44.1	
3.29	-63.5	H	3.0	-17.6	36.5	1.0	-53.1	-13.0	-40.1	
1.65	-67.7	V	3.0	-25.9	37.8	1.0	-62.8	-13.0	-49.8	
2.47	-66.1	V	3.0	-22.1	36.6	1.0	-57.7	-13.0	-44.7	
3.29	-66.6	V	3.0	-20.7	36.5	1.0	-56.2	-13.0	-43.2	

Rev. 03.19.15

CDMA BC10 1xEV-DO Rev A

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 06/22/18
Test Engineer: 52275
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	-67.0	H	3.0	-23.8	36.6	1.0	-59.4	-13.0	-46.4	
3.30	-61.5	H	3.0	-15.6	36.5	1.0	-51.1	-13.0	-38.1	
1.65	-69.6	V	3.0	-27.9	37.8	1.0	-64.7	-13.0	-51.7	
2.47	-67.5	V	3.0	-23.5	36.6	1.0	-59.0	-13.0	-46.0	
3.30	-66.8	V	3.0	-20.9	36.5	1.0	-56.5	-13.0	-43.5	
Mid Channel (836.52MHz)										
1.67	-69.7	H	3.0	-28.2	37.8	1.0	-65.1	-13.0	-52.1	
2.51	-66.9	H	3.0	-23.7	36.4	1.0	-59.0	-13.0	-46.0	
3.35	-66.8	H	3.0	-20.7	36.5	1.0	-56.2	-13.0	-43.2	
1.67	-69.8	V	3.0	-28.0	37.8	1.0	-64.9	-13.0	-51.9	
2.51	-67.4	V	3.0	-23.1	36.4	1.0	-58.5	-13.0	-45.5	
3.35	-66.6	V	3.0	-20.5	36.5	1.0	-56.0	-13.0	-43.0	
High Channel (848.31MHz)										
1.70	-69.0	H	3.0	-27.5	37.8	1.0	-64.3	-13.0	-51.3	
2.54	-66.8	H	3.0	-23.4	36.4	1.0	-58.8	-13.0	-45.8	
3.39	-66.1	H	3.0	-20.0	36.4	1.0	-55.4	-13.0	-42.4	
1.70	-68.2	V	3.0	-26.4	37.8	1.0	-63.3	-13.0	-50.3	
2.54	-66.4	V	3.0	-22.1	36.4	1.0	-57.5	-13.0	-44.5	
3.39	-64.8	V	3.0	-18.6	36.4	1.0	-54.0	-13.0	-41.0	

Rev. 03.19.15

CDMA BC0 1xRTT

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 06/27/18
Test Engineer: 19431
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	-69.3	H	3.0	-27.9	37.8	1.0	-64.7	-13.0	-51.7	
2.47	-66.5	H	3.0	-23.4	36.6	1.0	-59.0	-13.0	-46.0	
3.30	-61.2	H	3.0	-15.3	36.5	1.0	-50.8	-13.0	-37.8	
1.65	-69.2	V	3.0	-27.4	37.8	1.0	-64.3	-13.0	-51.3	
2.47	-67.0	V	3.0	-23.0	36.6	1.0	-58.6	-13.0	-45.6	
3.30	-66.4	V	3.0	-20.5	36.5	1.0	-56.0	-13.0	-43.0	
Mid Channel (836.52MHz)										
1.67	-69.3	H	3.0	-27.8	37.8	1.0	-64.6	-13.0	-51.6	
2.51	-66.4	H	3.0	-23.2	36.4	1.0	-58.6	-13.0	-45.6	
3.35	-66.3	H	3.0	-20.3	36.5	1.0	-55.8	-13.0	-42.8	
1.67	-69.4	V	3.0	-27.6	37.8	1.0	-64.4	-13.0	-51.4	
2.51	-66.9	V	3.0	-22.7	36.4	1.0	-58.1	-13.0	-45.1	
3.35	-66.1	V	3.0	-20.1	36.5	1.0	-55.5	-13.0	-42.5	
High Channel (848.31MHz)										
1.70	-68.6	H	3.0	-27.0	37.8	1.0	-63.9	-13.0	-50.9	
2.54	-66.3	H	3.0	-23.0	36.4	1.0	-58.4	-13.0	-45.4	
3.39	-65.6	H	3.0	-19.5	36.4	1.0	-55.0	-13.0	-42.0	
1.70	-67.6	V	3.0	-25.8	37.8	1.0	-62.6	-13.0	-49.6	
2.54	-65.9	V	3.0	-21.6	36.4	1.0	-57.0	-13.0	-44.0	
3.39	-64.3	V	3.0	-18.1	36.4	1.0	-53.6	-13.0	-40.6	

Rev. 03.19.15

CDMA BC0 1xEV-DO Rev A

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 06/22/18
Test Engineer: 52275
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	-67.6	H	3.0	-20.8	36.2	1.0	-56.1	-13.0	-43.1	
5.55	-67.6	H	3.0	-17.3	36.1	1.0	-52.5	-13.0	-39.5	
7.41	-67.8	H	3.0	-14.8	35.2	1.0	-49.0	-13.0	-36.0	
3.70	-67.1	V	3.0	-19.9	36.2	1.0	-55.1	-13.0	-42.1	
5.55	-66.3	V	3.0	-16.2	36.1	1.0	-51.4	-13.0	-38.4	
7.41	-69.3	V	3.0	-16.2	35.2	1.0	-50.4	-13.0	-37.4	
Mid Channel (1880MHz)										
3.76	-66.8	H	3.0	-20.0	36.2	1.0	-55.1	-13.0	-42.1	
5.64	-69.9	H	3.0	-19.4	36.1	1.0	-54.5	-13.0	-41.5	
7.52	-68.6	H	3.0	-15.5	35.1	1.0	-49.6	-13.0	-36.6	
3.76	-66.8	V	3.0	-19.5	36.2	1.0	-54.7	-13.0	-41.7	
5.64	-68.4	V	3.0	-18.1	36.1	1.0	-53.2	-13.0	-40.2	
7.52	-67.7	V	3.0	-14.6	35.1	1.0	-48.7	-13.0	-35.7	
High Channel (1908.75MHz)										
3.82	-65.2	H	3.0	-18.2	36.1	1.0	-53.4	-13.0	-40.4	
5.73	-66.9	H	3.0	-16.3	36.1	1.0	-51.3	-13.0	-38.3	
7.64	-68.9	H	3.0	-15.6	35.0	1.0	-49.6	-13.0	-36.6	
3.82	-65.4	V	3.0	-17.8	36.1	1.0	-53.0	-13.0	-40.0	
5.73	-68.3	V	3.0	-17.9	36.1	1.0	-52.9	-13.0	-39.9	
7.64	-68.8	V	3.0	-15.6	35.0	1.0	-49.6	-13.0	-36.6	

Rev. 03.19.15

CDMA BC1 1xRTT

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 06/27/18
Test Engineer: 19431
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	-67.2	H	3.0	-20.4	36.2	1.0	-55.7	-13.0	-42.7	
5.55	-67.3	H	3.0	-17.0	36.1	1.0	-52.1	-13.0	-39.1	
7.41	-67.2	H	3.0	-14.1	35.2	1.0	-48.3	-13.0	-35.3	
3.70	-66.6	V	3.0	-19.5	36.2	1.0	-54.7	-13.0	-41.7	
5.55	-65.6	V	3.0	-15.5	36.1	1.0	-50.6	-13.0	-37.6	
7.41	-68.8	V	3.0	-15.8	35.2	1.0	-50.0	-13.0	-37.0	
Mid Channel (1880MHz)										
3.76	-66.2	H	3.0	-19.3	36.2	1.0	-54.5	-13.0	-41.5	
5.64	-68.4	H	3.0	-18.9	36.1	1.0	-54.0	-13.0	-41.0	
7.52	-68.3	H	3.0	-15.1	35.1	1.0	-49.2	-13.0	-36.2	
3.76	-66.4	V	3.0	-19.1	36.2	1.0	-54.2	-13.0	-41.2	
5.64	-67.9	V	3.0	-17.6	36.1	1.0	-52.7	-13.0	-39.7	
7.52	-67.3	V	3.0	-14.2	35.1	1.0	-48.3	-13.0	-35.3	
High Channel (1908.75MHz)										
3.82	-64.5	H	3.0	-17.5	36.1	1.0	-52.6	-13.0	-39.6	
5.73	-66.6	H	3.0	-16.0	36.1	1.0	-51.0	-13.0	-38.0	
7.64	-68.4	H	3.0	-15.1	35.0	1.0	-49.2	-13.0	-36.2	
3.82	-64.5	V	3.0	-17.0	36.1	1.0	-52.1	-13.0	-39.1	
5.73	-67.7	V	3.0	-17.3	36.1	1.0	-52.3	-13.0	-39.3	
7.64	-68.3	V	3.0	-15.1	35.0	1.0	-49.2	-13.0	-36.2	

Rev. 03.19.15

CDMA BC1 1xEV-DO Rev A

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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9.2.3. WCDMA

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 06/22/18
Test Engineer: 19459
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	-69.6	H	3.0	-27.8	36.5	1.0	-63.3	-13.0	-50.3	
2.48	-67.2	H	3.0	-21.4	35.2	1.0	-55.6	-13.0	-42.6	
3.31	-69.2	H	3.0	-20.3	34.6	1.0	-53.9	-13.0	-40.9	
1.65	-70.2	V	3.0	-27.6	36.5	1.0	-63.1	-13.0	-50.1	
2.48	-67.0	V	3.0	-21.2	35.2	1.0	-55.4	-13.0	-42.4	
3.31	-67.1	V	3.0	-17.6	34.6	1.0	-51.2	-13.0	-38.2	
Mid Channel (836.6MHz)										
1.67	-69.7	H	3.0	-27.7	36.5	1.0	-63.2	-13.0	-50.2	
2.51	-66.4	H	3.0	-20.5	35.1	1.0	-54.6	-13.0	-41.6	
3.35	-70.0	H	3.0	-21.0	34.6	1.0	-54.6	-13.0	-41.6	
1.67	-68.5	V	3.0	-25.7	36.5	1.0	-61.2	-13.0	-48.2	
2.51	-65.6	V	3.0	-19.7	35.1	1.0	-53.8	-13.0	-40.8	
3.35	-66.0	V	3.0	-16.4	34.6	1.0	-50.0	-13.0	-37.0	
High Channel (846.6MHz)										
1.69	-68.8	H	3.0	-26.6	36.4	1.0	-62.0	-13.0	-49.0	
2.54	-67.6	H	3.0	-21.5	35.1	1.0	-55.7	-13.0	-42.7	
3.39	-69.2	H	3.0	-20.1	34.5	1.0	-53.6	-13.0	-40.6	
1.69	-69.8	V	3.0	-26.8	36.4	1.0	-62.2	-13.0	-49.2	
2.54	-67.6	V	3.0	-21.5	35.1	1.0	-55.6	-13.0	-42.6	
3.39	-66.0	V	3.0	-16.4	34.5	1.0	-49.9	-13.0	-36.9	

Rev. 03.19.15

WCDMA Band 5 Rel 99

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 06/22/18
Test Engineer: 19459
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	-69.2	H	3.0	-27.4	36.5	1.0	-62.9	-13.0	-49.9	
2.48	-66.6	H	3.0	-20.9	35.2	1.0	-55.0	-13.0	-42.0	
3.31	-68.5	H	3.0	-19.6	34.6	1.0	-53.3	-13.0	-40.3	
1.65	-69.7	V	3.0	-27.0	36.5	1.0	-62.5	-13.0	-49.5	
2.48	-66.4	V	3.0	-20.7	35.2	1.0	-54.8	-13.0	-41.8	
3.31	-66.6	V	3.0	-17.1	34.6	1.0	-50.7	-13.0	-37.7	
Mid Channel (836.6MHz)										
1.67	-69.2	H	3.0	-27.2	36.5	1.0	-62.7	-13.0	-49.7	
2.51	-65.8	H	3.0	-19.9	35.1	1.0	-54.0	-13.0	-41.0	
3.35	-69.4	H	3.0	-20.4	34.6	1.0	-54.0	-13.0	-41.0	
1.67	-68.0	V	3.0	-25.2	36.5	1.0	-60.6	-13.0	-47.6	
2.51	-65.2	V	3.0	-19.3	35.1	1.0	-53.4	-13.0	-40.4	
3.35	-65.5	V	3.0	-15.9	34.6	1.0	-49.4	-13.0	-36.4	
High Channel (846.6MHz)										
1.69	-68.2	H	3.0	-26.0	36.4	1.0	-61.5	-13.0	-48.5	
2.54	-67.3	H	3.0	-21.3	35.1	1.0	-55.4	-13.0	-42.4	
3.39	-68.7	H	3.0	-19.6	34.5	1.0	-53.1	-13.0	-40.1	
1.69	-69.2	V	3.0	-26.2	36.4	1.0	-61.7	-13.0	-48.7	
2.54	-67.2	V	3.0	-21.1	35.1	1.0	-55.2	-13.0	-42.2	
3.39	-65.8	V	3.0	-16.1	34.5	1.0	-49.7	-13.0	-36.7	

Rev. 03.19.15

WCDMA Band 5 HSDPA

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 06/22/18
Test Engineer: 19459
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	-68.8	H	3.0	-18.9	34.1	1.0	-52.0	-13.0	-39.0	
5.56	-69.7	H	3.0	-15.7	33.3	1.0	-48.0	-13.0	-35.0	
7.41	-70.3	H	3.0	-12.9	33.1	1.0	-45.0	-13.0	-32.0	
3.70	-68.2	V	3.0	-17.9	34.1	1.0	-51.0	-13.0	-38.0	
5.55	-69.6	V	3.0	-15.7	33.3	1.0	-48.0	-13.0	-35.0	
7.42	-69.5	V	3.0	-12.0	33.1	1.0	-44.1	-13.0	-31.1	
Mid Channel (1880MHz)										
3.76	-68.3	H	3.0	-18.2	34.1	1.0	-51.3	-13.0	-38.3	
5.64	-68.7	H	3.0	-14.5	33.3	1.0	-46.8	-13.0	-33.8	
7.52	-69.6	H	3.0	-12.0	33.0	1.0	-44.0	-13.0	-31.0	
3.76	-67.7	V	3.0	-17.3	34.1	1.0	-50.4	-13.0	-37.4	
5.64	-67.8	V	3.0	-13.7	33.3	1.0	-46.0	-13.0	-33.0	
7.52	-68.4	V	3.0	-11.8	33.0	1.0	-43.8	-13.0	-30.8	
High Channel (1907.6MHz)										
3.81	-67.7	H	3.0	-17.4	34.0	1.0	-50.4	-13.0	-37.4	
5.72	-68.9	H	3.0	-14.6	33.3	1.0	-46.9	-13.0	-33.9	
7.66	-69.6	H	3.0	-11.8	33.0	1.0	-43.8	-13.0	-30.8	
3.82	-67.9	V	3.0	-17.3	34.0	1.0	-50.3	-13.0	-37.3	
5.72	-67.6	V	3.0	-13.4	33.3	1.0	-45.7	-13.0	-32.7	
7.63	-70.5	V	3.0	-12.7	33.0	1.0	-44.7	-13.0	-31.7	

Rev. 03.19.15

WCDMA Band 2 Rel 99

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 06/24/18
Test Engineer: 19459
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	-68.3	H	3.0	-18.5	34.4	1.0	-51.9	-13.0	-38.9	
5.56	-69.2	H	3.0	-15.8	34.1	1.0	-48.9	-13.0	-35.9	
7.41	-69.8	H	3.0	-13.5	33.6	1.0	-46.1	-13.0	-33.1	
3.70	-67.6	V	3.0	-17.8	34.4	1.0	-51.2	-13.0	-38.2	
5.56	-69.3	V	3.0	-15.7	34.1	1.0	-48.8	-13.0	-35.8	
7.41	-68.9	V	3.0	-12.8	33.6	1.0	-45.4	-13.0	-32.4	
Mid Channel (1880MHz)										
3.76	-67.7	H	3.0	-17.7	34.4	1.0	-51.2	-13.0	-38.2	
5.64	-68.2	H	3.0	-14.6	34.1	1.0	-47.7	-13.0	-34.7	
7.52	-69.0	H	3.0	-12.5	33.5	1.0	-45.0	-13.0	-32.0	
3.76	-67.2	V	3.0	-17.1	34.4	1.0	-50.5	-13.0	-37.5	
5.64	-67.2	V	3.0	-13.5	34.1	1.0	-46.6	-13.0	-33.6	
7.52	-68.8	V	3.0	-12.5	33.5	1.0	-45.1	-13.0	-32.1	
High Channel (1907.6MHz)										
3.82	-67.3	H	3.0	-17.1	34.4	1.0	-50.5	-13.0	-37.5	
5.72	-68.4	H	3.0	-14.7	34.1	1.0	-47.8	-13.0	-34.8	
7.63	-68.7	H	3.0	-12.1	33.4	1.0	-44.5	-13.0	-31.5	
3.82	-67.3	V	3.0	-17.0	34.4	1.0	-50.4	-13.0	-37.4	
5.72	-67.1	V	3.0	-13.2	34.1	1.0	-46.3	-13.0	-33.3	
7.63	-69.9	V	3.0	-13.4	33.4	1.0	-45.9	-13.0	-32.9	

Rev. 03.19.15

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: 06/22/18
Test Engineer: 19459
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	-69.4	H	3.0	-20.2	34.5	1.0	-53.7	-13.0	-40.7	
5.14	-68.2	H	3.0	-15.0	33.4	1.0	-47.4	-13.0	-34.4	
6.85	-67.2	H	3.0	-10.6	33.1	1.0	-42.7	-13.0	-29.7	
3.42	-67.4	V	3.0	-17.6	34.5	1.0	-51.1	-13.0	-38.1	
5.14	-68.6	V	3.0	-15.5	33.4	1.0	-47.9	-13.0	-34.9	
6.85	-67.2	V	3.0	-10.6	33.1	1.0	-42.8	-13.0	-29.8	
Mid Channel (1732.6MHz)										
3.47	-68.7	H	3.0	-19.4	34.4	1.0	-52.8	-13.0	-39.8	
5.20	-67.2	H	3.0	-13.9	33.4	1.0	-46.3	-13.0	-33.3	
6.93	-66.7	H	3.0	-9.9	33.1	1.0	-42.0	-13.0	-29.0	
3.47	-69.4	V	3.0	-19.6	34.4	1.0	-53.0	-13.0	-40.0	
5.20	-67.2	V	3.0	-14.0	33.4	1.0	-46.3	-13.0	-33.3	
6.93	-67.7	V	3.0	-10.9	33.1	1.0	-43.1	-13.0	-30.1	
High Channel (1752.6MHz)										
3.51	-68.5	H	3.0	-19.1	34.4	1.0	-52.5	-13.0	-39.5	
5.26	-68.9	H	3.0	-15.6	33.3	1.0	-47.9	-13.0	-34.9	
7.01	-67.9	H	3.0	-11.0	33.1	1.0	-43.1	-13.0	-30.1	
3.51	-69.3	V	3.0	-19.3	34.4	1.0	-52.7	-13.0	-39.7	
5.26	-67.0	V	3.0	-13.7	33.3	1.0	-46.1	-13.0	-33.1	
7.01	-67.8	V	3.0	-10.9	33.1	1.0	-43.1	-13.0	-30.1	

Rev. 03.19.15

WCDMA Band 4 Rel 99

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 06/25/18
Test Engineer: 19431
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	-68.9	H	3.0	-19.7	34.5	1.0	-53.2	-13.0	-40.2	
5.14	-67.7	H	3.0	-14.5	33.4	1.0	-46.9	-13.0	-33.9	
6.85	-66.7	H	3.0	-10.1	33.1	1.0	-42.2	-13.0	-29.2	
3.42	-66.9	V	3.0	-17.2	34.5	1.0	-50.6	-13.0	-37.6	
5.14	-68.1	V	3.0	-15.0	33.4	1.0	-47.4	-13.0	-34.4	
6.85	-66.7	V	3.0	-10.2	33.1	1.0	-42.3	-13.0	-29.3	
Mid Channel (1732.6MHz)										
3.47	-68.2	H	3.0	-18.9	34.4	1.0	-52.3	-13.0	-39.3	
5.20	-66.7	H	3.0	-13.4	33.4	1.0	-45.8	-13.0	-32.8	
6.93	-66.2	H	3.0	-9.4	33.1	1.0	-41.6	-13.0	-28.6	
3.47	-68.9	V	3.0	-19.1	34.4	1.0	-52.5	-13.0	-39.5	
5.20	-66.7	V	3.0	-13.5	33.4	1.0	-45.9	-13.0	-32.9	
6.93	-67.2	V	3.0	-10.5	33.1	1.0	-42.6	-13.0	-29.6	
High Channel (1752.6MHz)										
3.51	-68.1	H	3.0	-18.6	34.4	1.0	-52.0	-13.0	-39.0	
5.26	-68.5	H	3.0	-15.1	33.3	1.0	-47.4	-13.0	-34.4	
7.01	-67.5	H	3.0	-10.5	33.1	1.0	-42.6	-13.0	-29.6	
3.51	-68.8	V	3.0	-18.9	34.4	1.0	-52.2	-13.0	-39.2	
5.26	-66.6	V	3.0	-13.2	33.3	1.0	-45.6	-13.0	-32.6	
7.01	-67.4	V	3.0	-10.5	33.1	1.0	-42.6	-13.0	-29.6	

Rev. 03.19.15

WCDMA Band 4 HSDPA

END OF REPORT

10. SETUP PHOTOS

See 12162294-EP1V1 SETUP PHOTOS.

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