

8.3. OUT OF BAND EMISSIONS

RULE PART(S)

FCC: §2.1051, §22.917, §24.238, §27.53 and §90.691
IC: RSS132§5.5; RSS133§6.5 and RSS139§6.6

LIMITS

FCC: §22.917, §24.238, §27.53 (h), §90.691

The minimum permissible attenuation level of any spurious emissions is $43 + 10 \log (P)$ dB where transmitting power (P) in Watts.

RSS132§5.5, RSS133§6.5, RSS139§6.6

The minimum permissible attenuation level of any spurious emissions is $43 + 10 \log (P)$ dB where transmitting power (P) in Watts.

TEST PROCEDURE

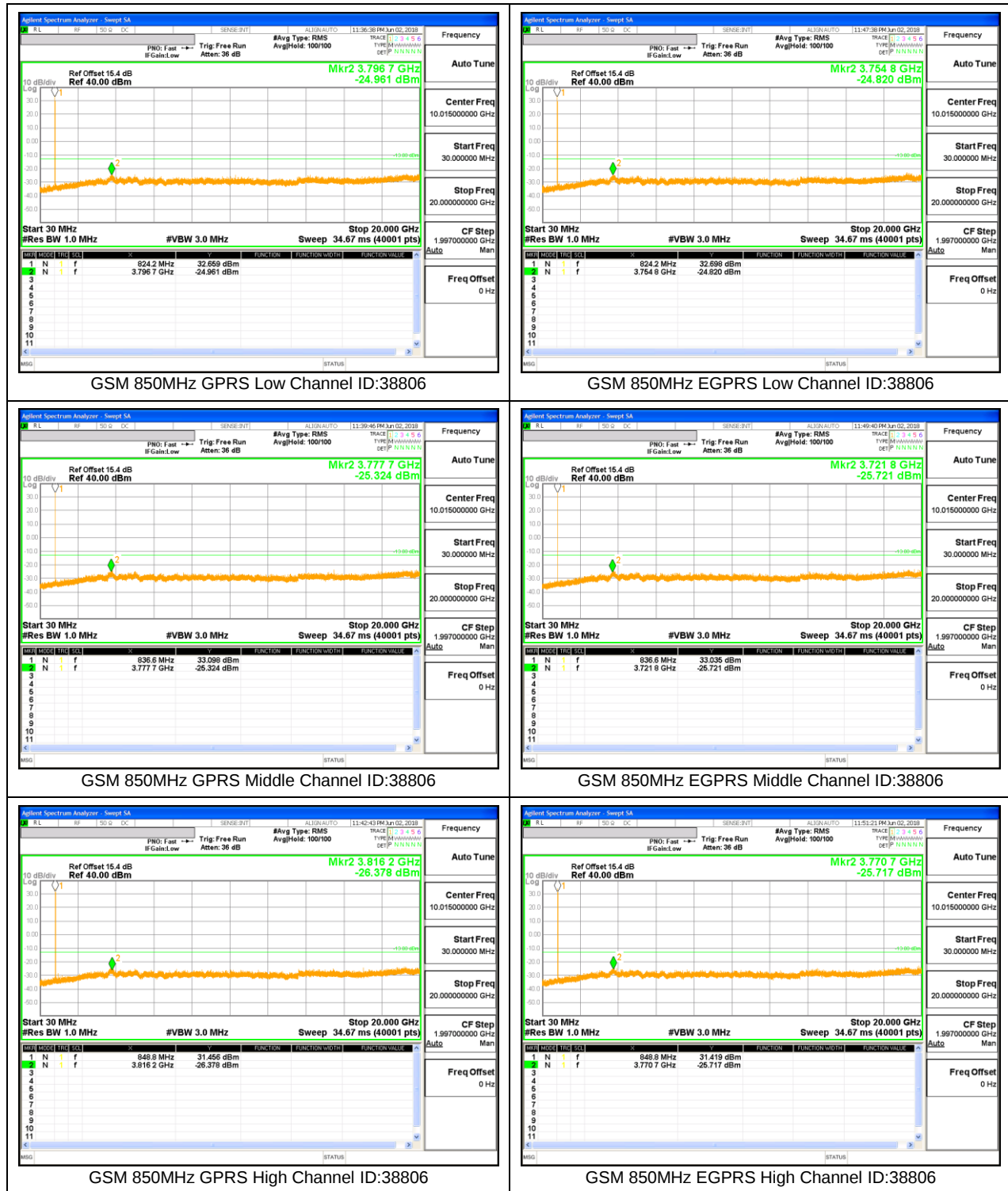
The RF output of the transmitter was connected to a spectrum analyzer through a calibrated coaxial cable. Sufficient scans were taken to show the out-of-band Emissions, if any, up to 10th harmonic. Multiple sweeps were recorded in maximum hold mode using a peak detector to ensure that the worst-case emissions were caught.

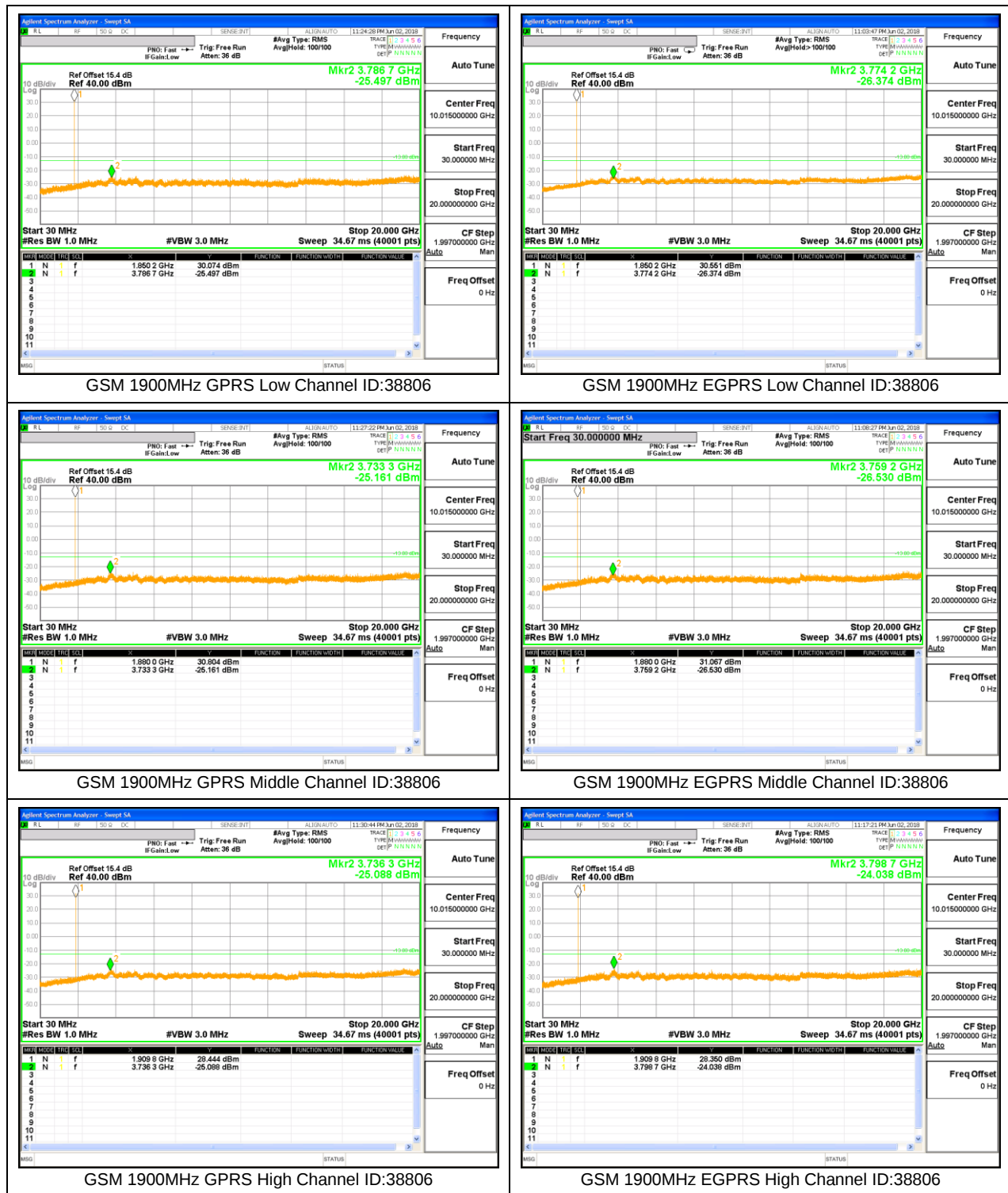
For each out of band emissions measurement:

- Set display line at -13 dBm
- Set RBW & VBW to 100 kHz for the measurement below 1 GHz, and 1 MHz for the measurement above 1 GHz.
(NOTE: Worst case set RBW/VBW to 1MHz/3MHz)

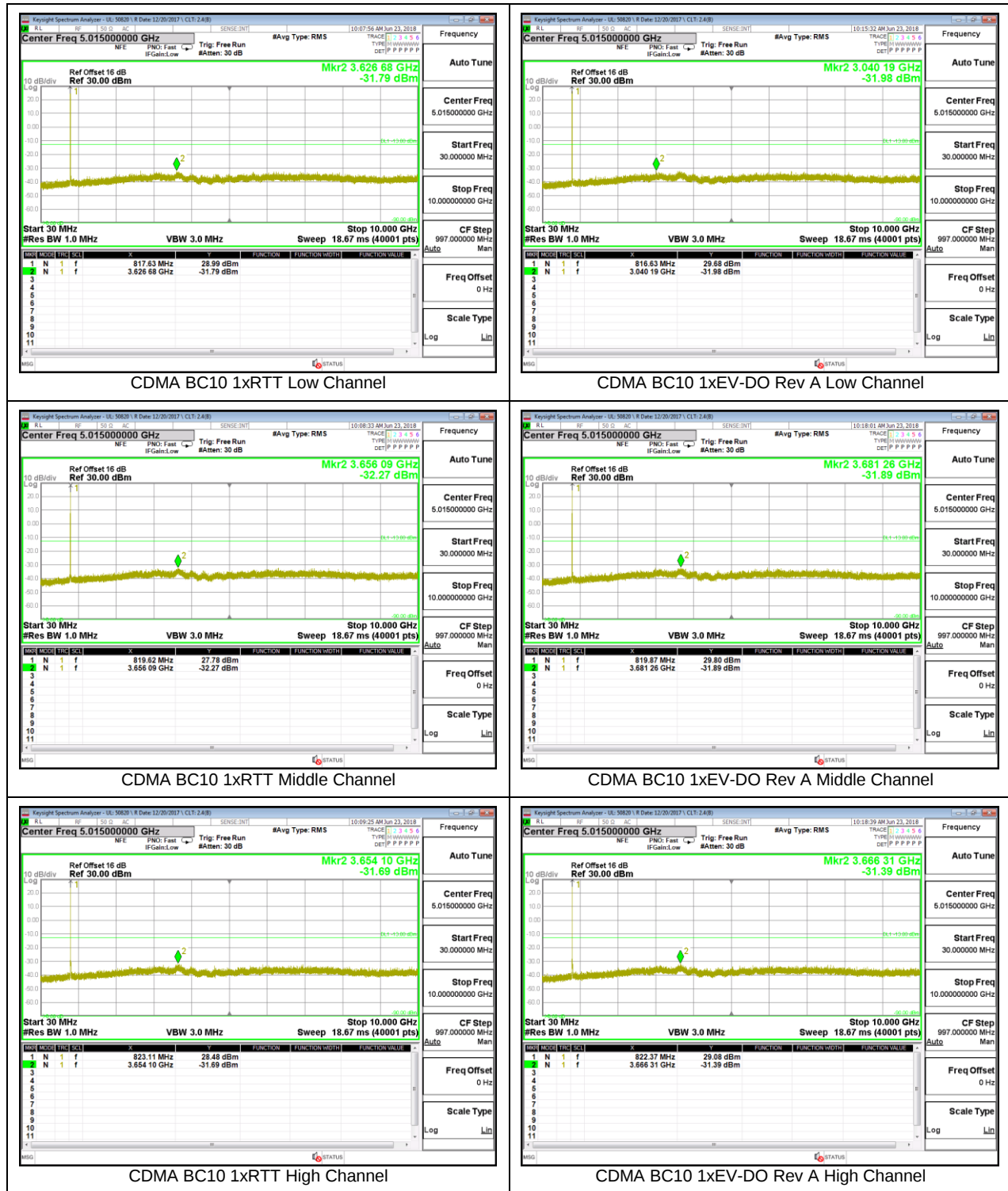
RESULTS

8.3.1. GSM 850

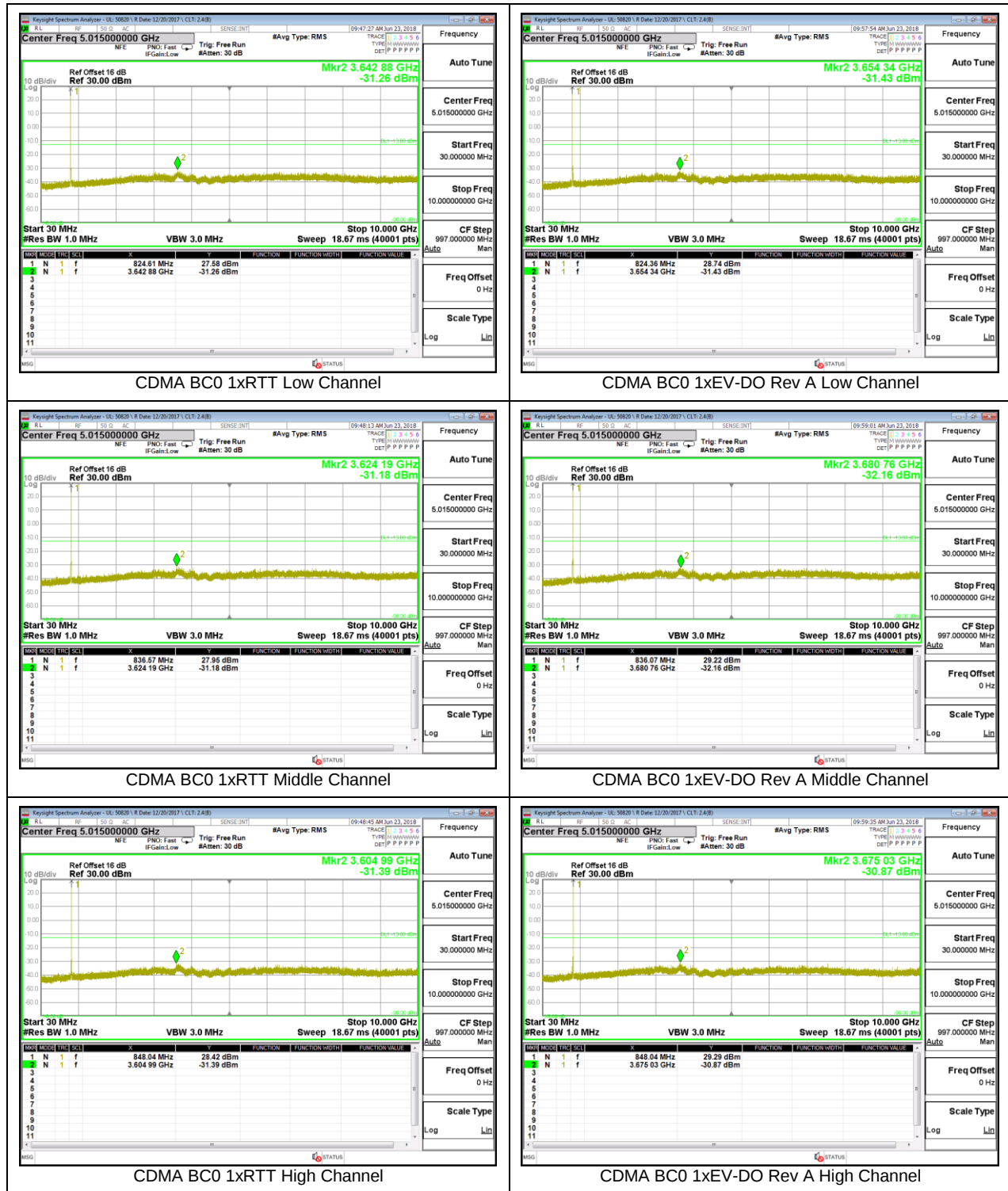




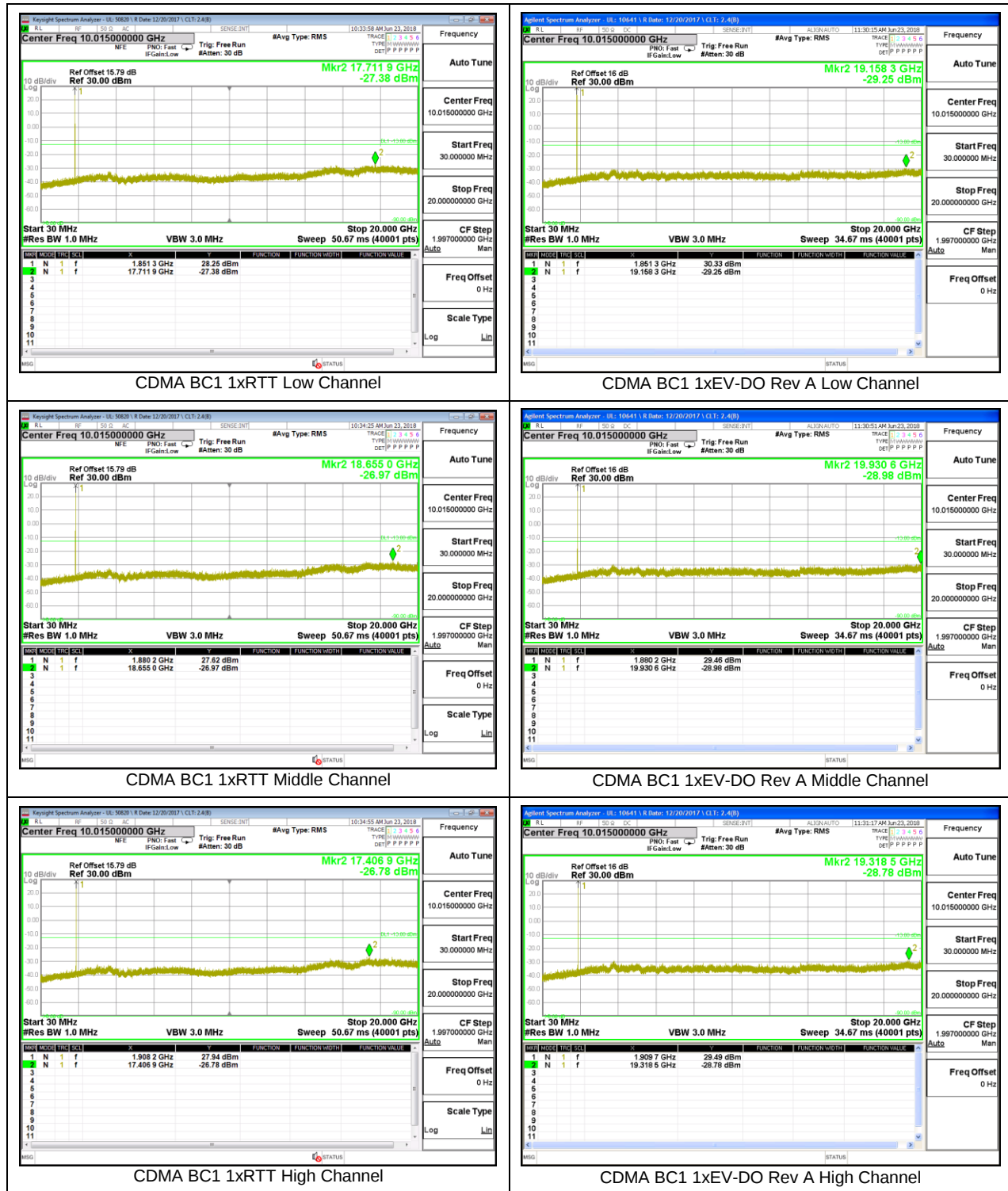
8.3.3. CDMA BC10



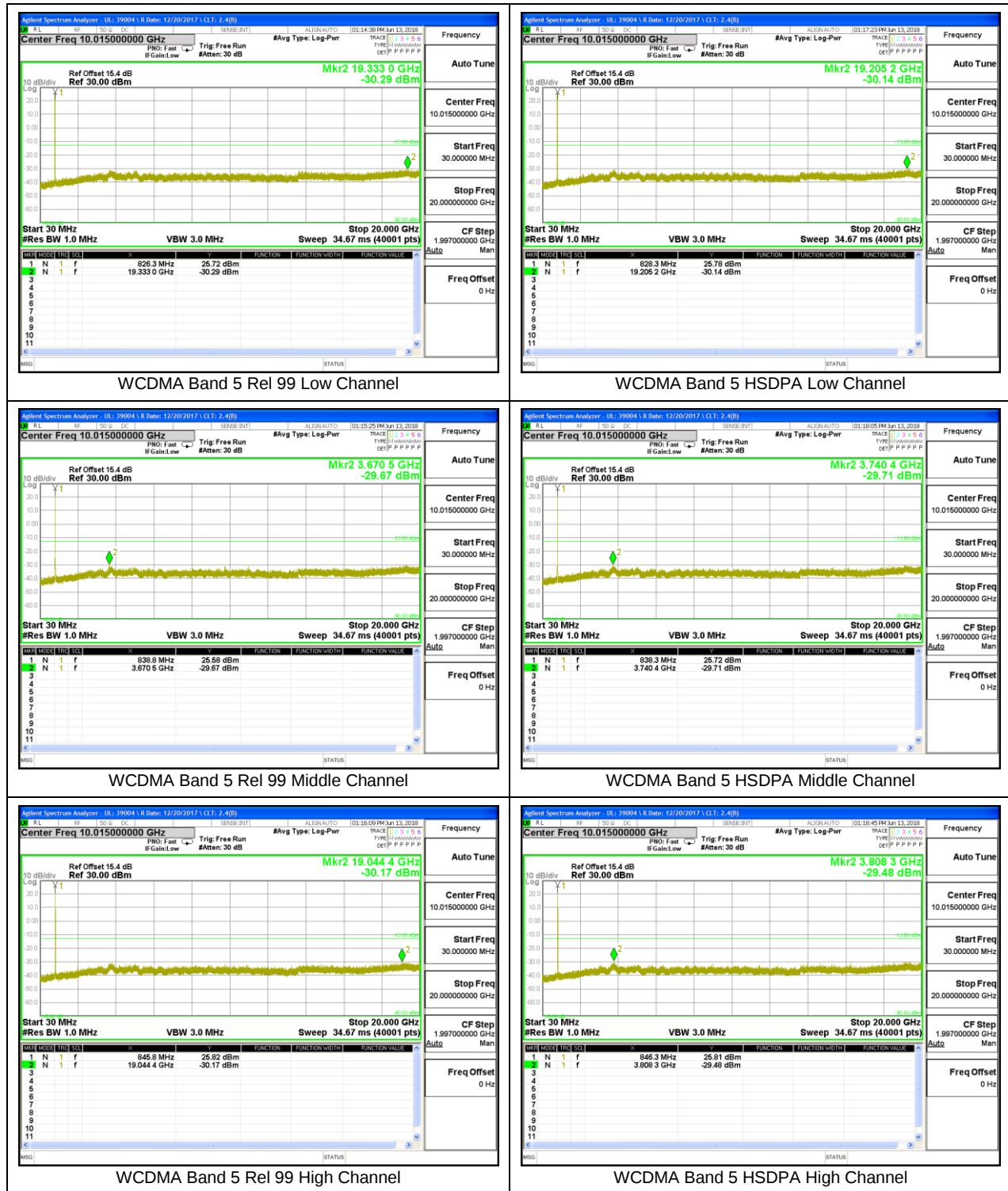
8.3.4. CDMA BC0



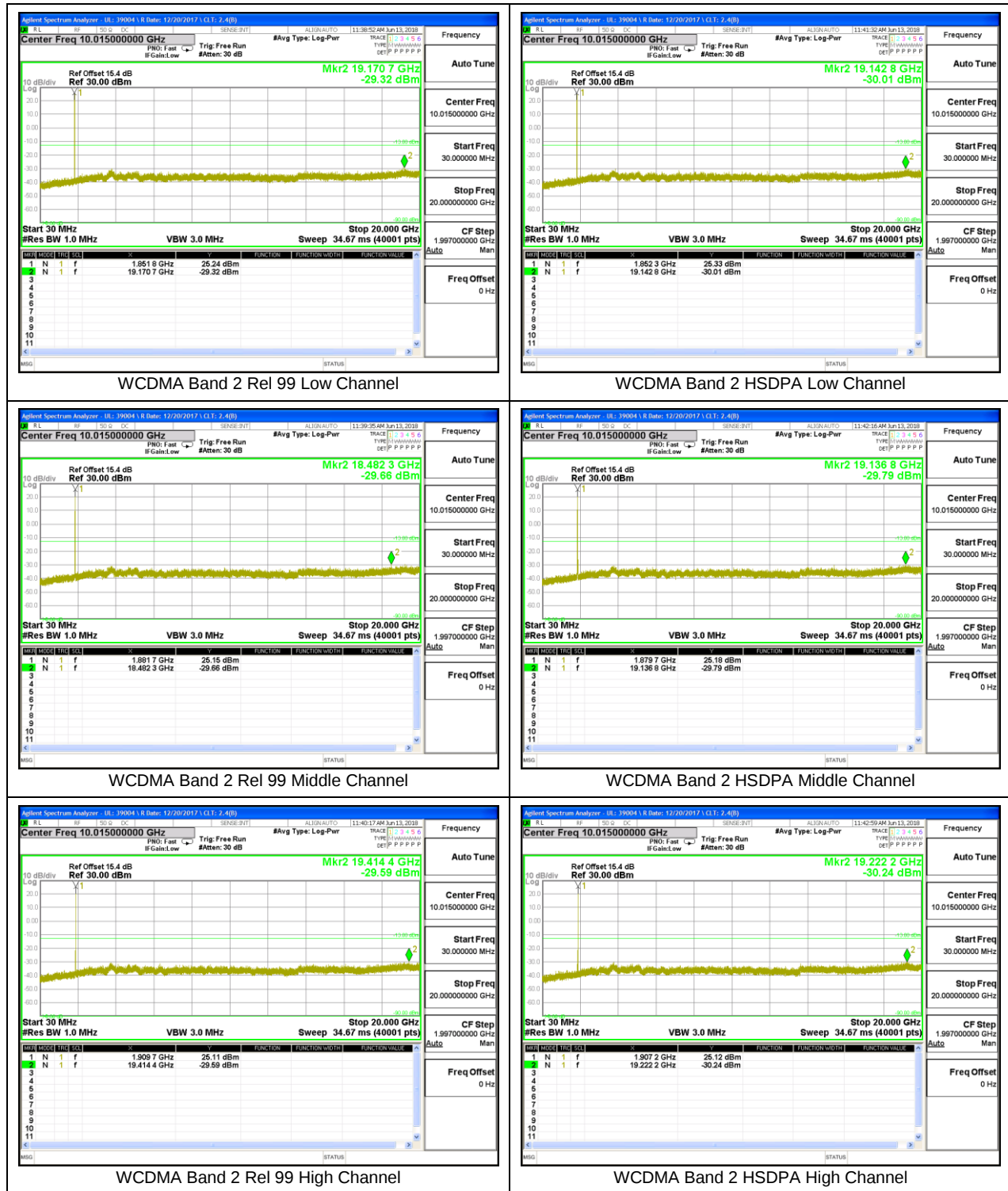
8.3.5. CDMA BC1



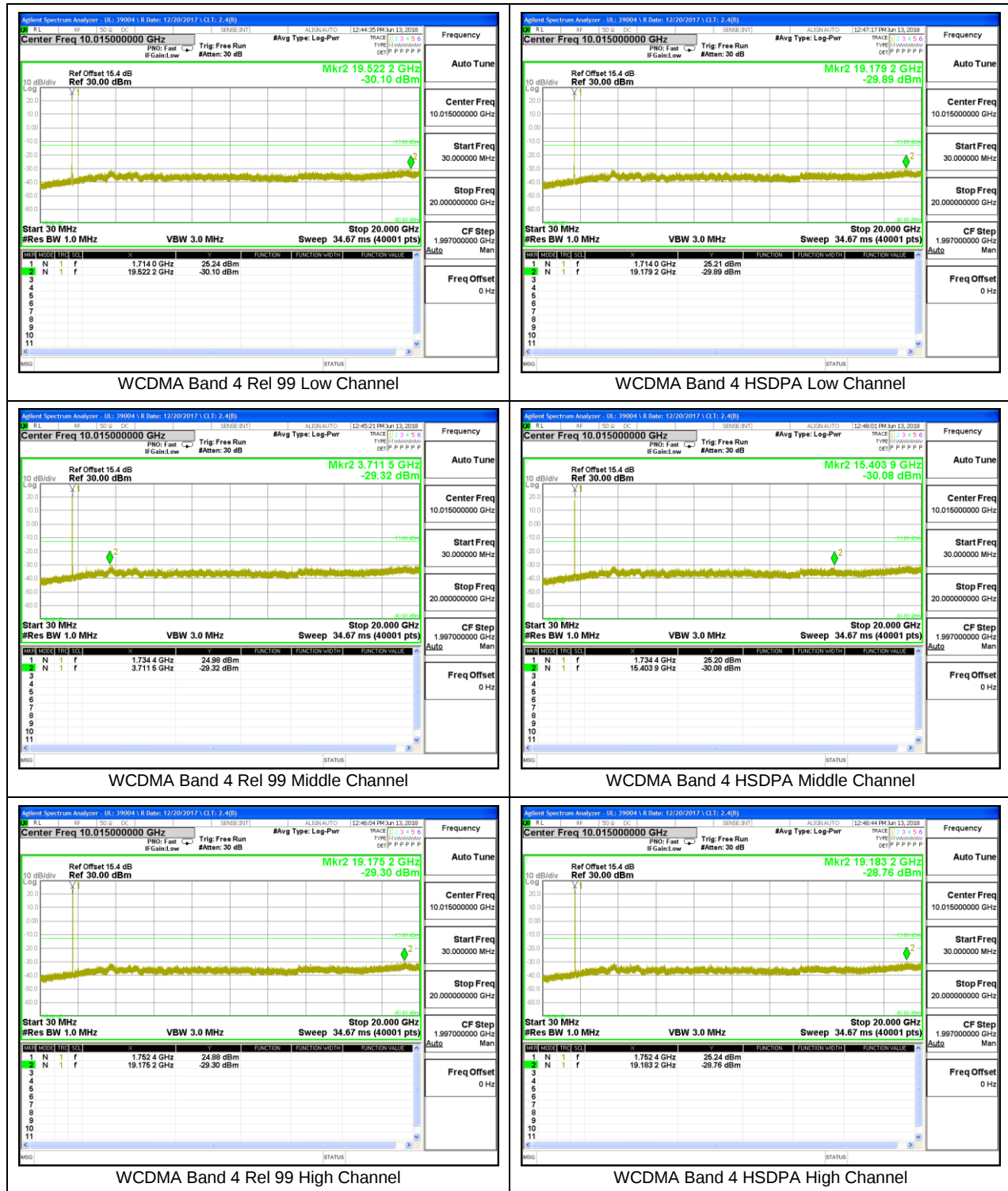
8.3.6. WCDMA BAND 5



8.3.7. WCDMA BAND 2



8.3.8. WCDMA BAND 4



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 $+50^{\circ}\text{C}$
- 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 placed inside a temperature chamber. The temperature is set to 20°C 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 $+50^{\circ}\text{C}$ is reached.

Frequency Stability vs Voltage:

The peak frequency error is recorded (worst-case).

RESULTS

See the following pages.

8.4.1. GSM

ID:	50893	Date:	3/13/18
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GPRS 850MHz

Limit		824	849	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	824.4000	848.8000		
Extreme (50C)		824.4000	848.8000	34.4	0.041
Extreme (40C)		824.4000	848.8000	-19.8	-0.024
Extreme (30C)		824.4000	848.8000	-21.8	-0.026
Extreme (10C)		824.4000	848.8000	29.5	0.035
Extreme (0C)		824.4000	848.8000	26.0	0.031
Extreme (-10C)		824.4000	848.8000	-25.6	-0.031
Extreme (-20C)		824.4000	848.8000	-17.4	-0.021
Extreme (-30C)		824.4000	848.8000	-18.5	-0.022
20C	15%	824.4000	848.8000	-18.6	-0.022
	-15%	824.4000	848.8000	-16.2	-0.019
	End Point	824.4000	848.8000	-18.7	-0.022

GPRS 1900MHz

Limit		1850	1910	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	1850.2000	1909.8000		
Extreme (50C)		1850.1999	1909.7999	-52.4	-0.028
Extreme (40C)		1850.2000	1909.8000	-46.8	-0.025
Extreme (30C)		1850.2000	1909.8000	-49.8	-0.026
Extreme (10C)		1850.2000	1909.8000	-48.9	-0.026
Extreme (0C)		1850.2000	1909.8000	-45.8	-0.024
Extreme (-10C)		1850.2000	1909.8000	-42.8	-0.023
Extreme (-20C)		1850.1999	1909.7999	-73.0	-0.039
Extreme (-30C)		1850.1999	1909.7999	-64.1	-0.034
20C	15%	1850.2000	1909.8000	-46.9	-0.025
	-15%	1850.2000	1909.8000	-45.3	-0.024
	End Point	1850.2000	1909.8000	-43.5	-0.023

8.4.2. CDMA

ID:	44366	Date:	3/21/18
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CDMA 1xRTT BC10

Limit		816	824	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	816.5423	823.4663		
Extreme (50C)		816.5423	823.4663	11.1	0.014
Extreme (40C)		816.5423	823.4662	-12.5	-0.015
Extreme (30C)		816.5423	823.4663	9.5	0.012
Extreme (10C)		816.5423	823.4662	-16.2	-0.020
Extreme (0C)		816.5423	823.4662	-13.0	-0.016
Extreme (-10C)		816.5423	823.4662	-13.0	-0.016
Extreme (-20C)		816.5423	823.4662	-14.7	-0.018
Extreme (-30C)		816.5423	823.4663	12.6	0.015
20C	15%	816.5423	823.4662	-33.6	-0.041
	-15%	816.5423	823.4663	17.3	0.021
	End Point	816.5423	823.4663	7.1	0.009

CDMA 1xRTT BC0

Limit		824	849	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	824.0853	848.9674		
Extreme (50C)		824.0853	848.9674	-11.3	-0.013
Extreme (40C)		824.0853	848.9674	-9.7	-0.012
Extreme (30C)		824.0853	848.9674	-8.7	-0.010
Extreme (10C)		824.0853	848.9674	-12.0	-0.014
Extreme (0C)		824.0853	848.9674	-13.6	-0.016
Extreme (-10C)		824.0853	848.9674	-16.3	-0.020
Extreme (-20C)		824.0852	848.9673	-54.3	-0.065
Extreme (-30C)		824.0853	848.9674	-10.8	-0.013
20C	15%	824.0853	848.9674	-22.2	-0.027
	-15%	824.0853	848.9674	-7.8	-0.009
	End Point	824.0853	848.9674	-7.9	-0.009

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	1850.5504	1909.4588		
Extreme (50C)		1850.5505	1909.4589	60.7	0.032
Extreme (40C)		1850.5505	1909.4589	66.9	0.036
Extreme (30C)		1850.5505	1909.4589	81.5	0.043
Extreme (10C)		1850.5504	1909.4588	28.0	0.015
Extreme (0C)		1850.5503	1909.4587	-55.2	-0.029
Extreme (-10C)		1850.5504	1909.4588	-31.8	-0.017
Extreme (-20C)		1850.5503	1909.4587	-51.9	-0.028
Extreme (-30C)		1850.5503	1909.4587	-58.3	-0.031
20C	15%	1850.5505	1909.4589	86.7	0.046
	-15%	1850.5505	1909.4589	73.4	0.039
	End Point	1850.5505	1909.4589	91.2	0.049

8.4.3. WCDMA

ID:	50893	Date:	3/15/18
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WCDMA REL 99 BAND 5

Limit		824	849	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	824.4123	848.6340		
Extreme (50C)		824.4123	848.6340	7.7	0.009
Extreme (40C)		824.4123	848.6340	10.1	0.012
Extreme (30C)		824.4123	848.6340	10.6	0.013
Extreme (10C)		824.4123	848.6340	10.9	0.013
Extreme (0C)		824.4123	848.6340	-11.0	-0.013
Extreme (-10C)		824.4123	848.6340	12.5	0.015
Extreme (-20C)		824.4123	848.6340	27.8	0.033
Extreme (-30C)		824.4123	848.6340	38.5	0.046
20C	15%	824.4123	848.6340	11.8	0.014
	-15%	824.4123	848.6340	10.8	0.013
	End Point	824.4123	848.6340	9.8	0.012

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	1850.4943	1909.7329		
Extreme (50C)		1850.4943	1909.7329	20.7	0.011
Extreme (40C)		1850.4943	1909.7329	-20.6	-0.011
Extreme (30C)		1850.4943	1909.7329	18.6	0.010
Extreme (10C)		1850.4943	1909.7329	23.0	0.012
Extreme (0C)		1850.4943	1909.7329	31.8	0.017
Extreme (-10C)		1850.4943	1909.7329	-26.8	-0.014
Extreme (-20C)		1850.4943	1909.7329	-44.0	-0.023
Extreme (-30C)		1850.4943	1909.7329	-42.3	-0.022
20C	15%	1850.4943	1909.7329	17.5	0.009
	-15%	1850.4943	1909.7329	19.9	0.011
	End Point	1850.4943	1909.7329	20.6	0.011

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	1710.6732	1754.8231		
Extreme (50C)		1710.6732	1754.8231	36.0	0.021
Extreme (40C)		1710.6732	1754.8231	29.3	0.017
Extreme (30C)		1710.6732	1754.8231	32.8	0.019
Extreme (10C)		1710.6732	1754.8231	-16.1	-0.009
Extreme (0C)		1710.6732	1754.8231	-16.2	-0.009
Extreme (-10C)		1710.6732	1754.8231	-13.7	-0.008
Extreme (-20C)		1710.6732	1754.8231	-39.4	-0.023
Extreme (-30C)		1710.6732	1754.8231	-27.6	-0.016
20C	15%	1710.6732	1754.8231	-18.5	-0.011
	-15%	1710.6732	1754.8231	18.3	0.011
	End Point	1710.6732	1754.8231	15.8	0.009

8.5. PEAK-TO-AVERAGE POWER RATIO

LIMIT

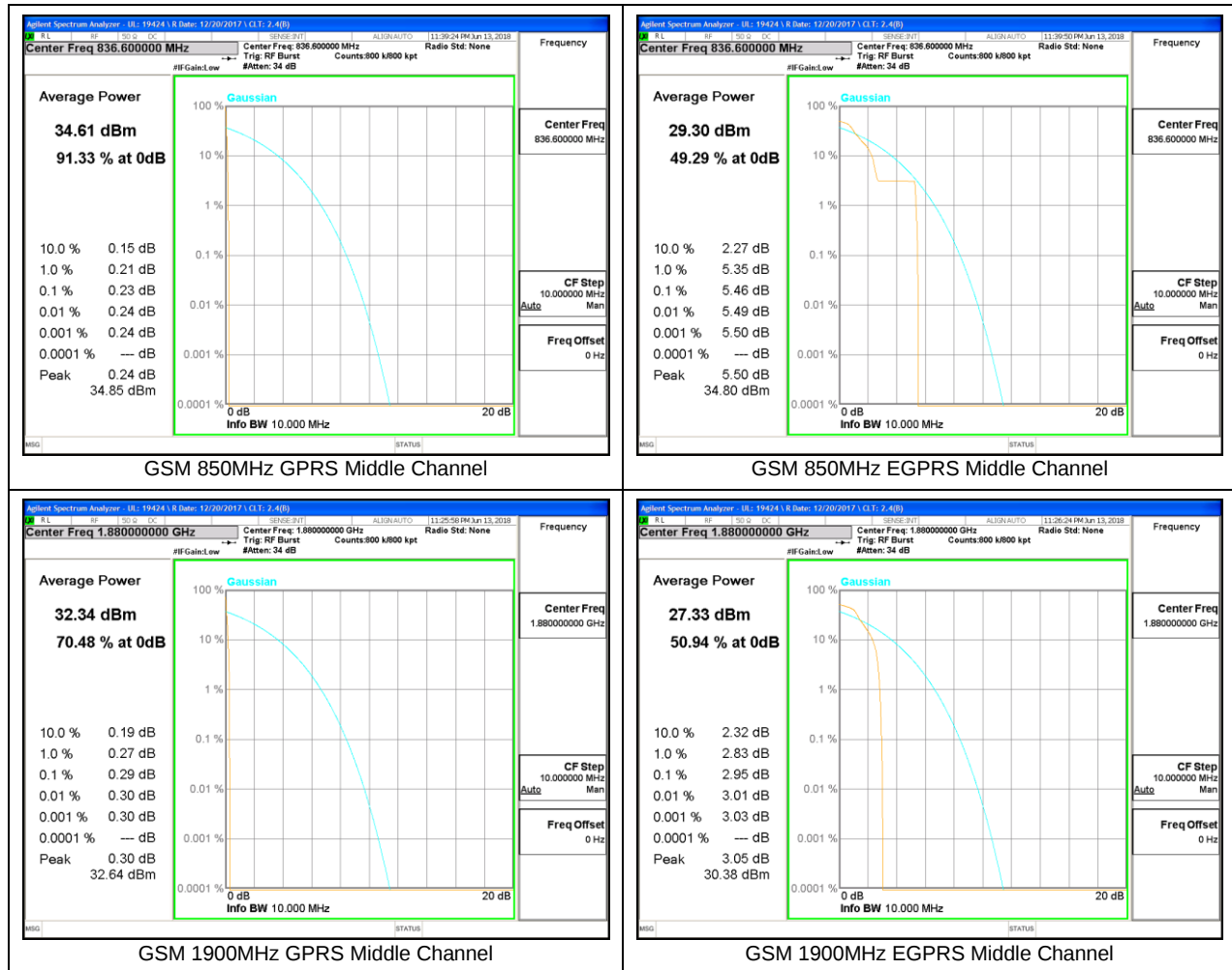
In addition, the peak-to-average power ratio (PAPR) of the transmitter shall not exceed 13 dB for more than 0.1% of the time and shall use a signal corresponding to the highest PAPR during periods of continuous transmission.

RESULT

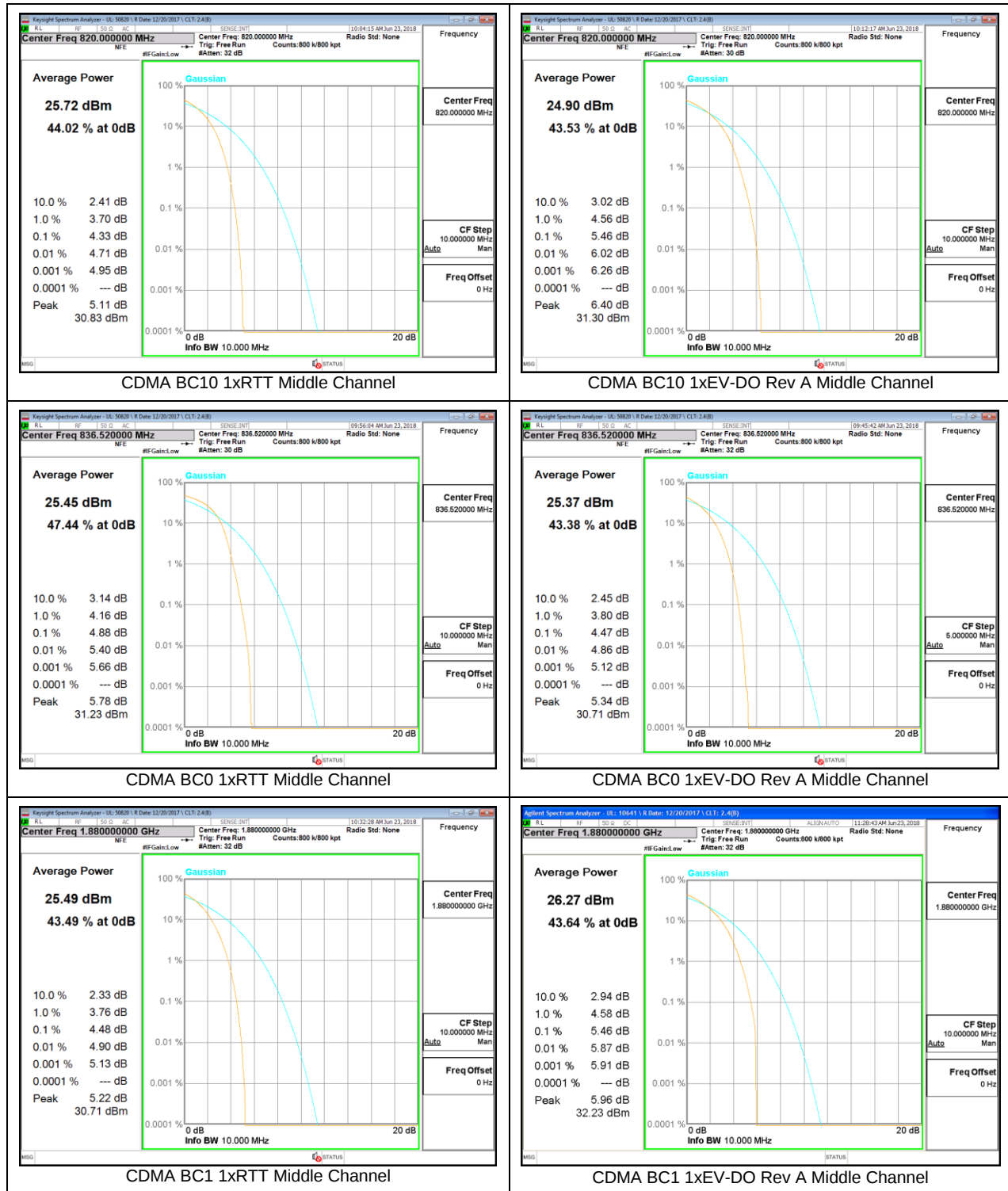
Ant 1 was used to measure as the worst case. The results from all CCDF plots are passed with 13dB peak-to-average power ratio criteria.

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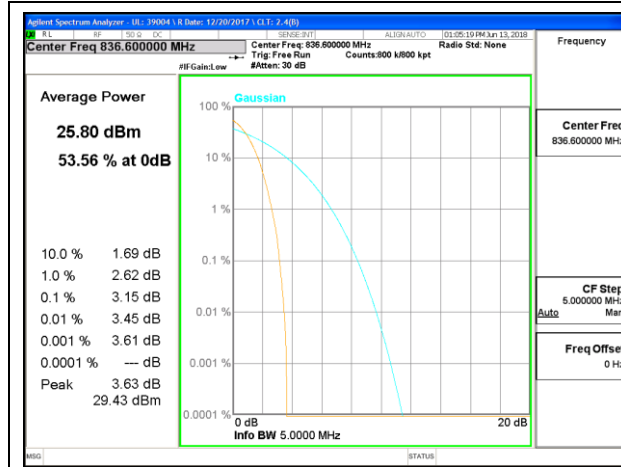
8.5.1. GSM



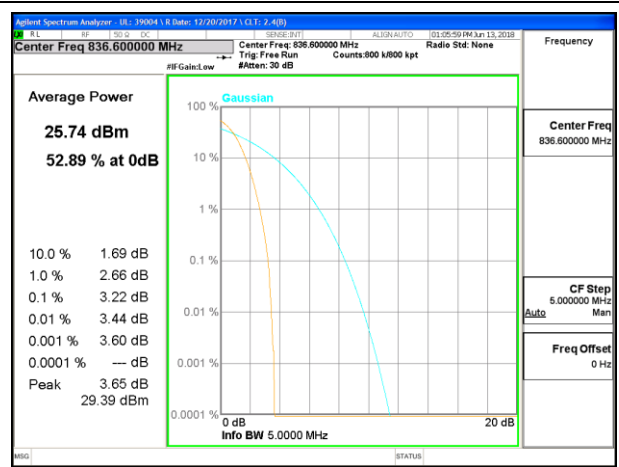
8.5.2. CDMA



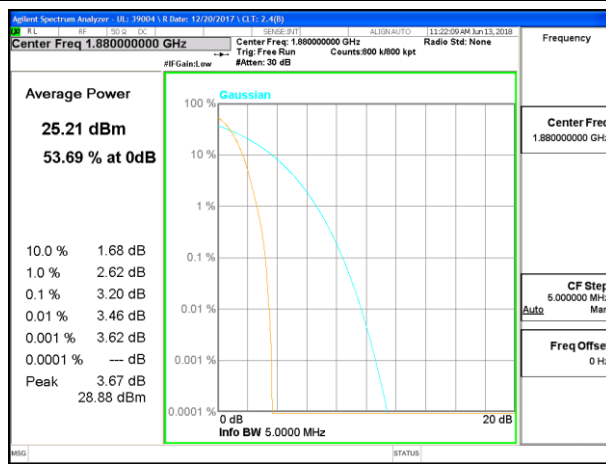
8.5.3. WCDMA



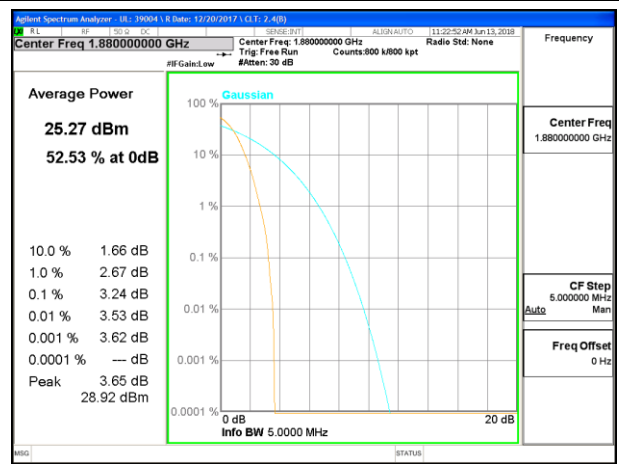
WCDMA Band 5 Rel 99 Middle Channel



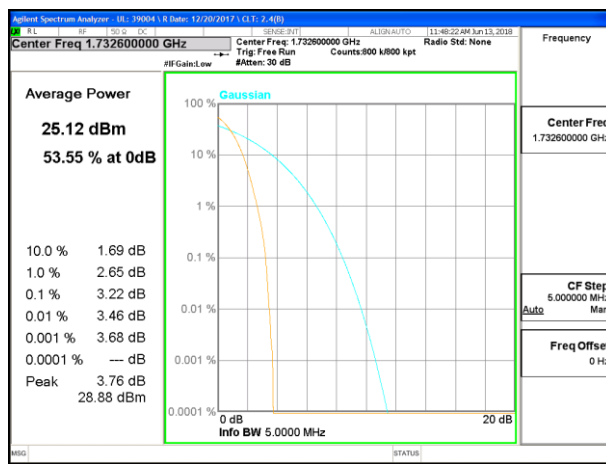
WCDMA Band 5 HSDPA Middle Channel



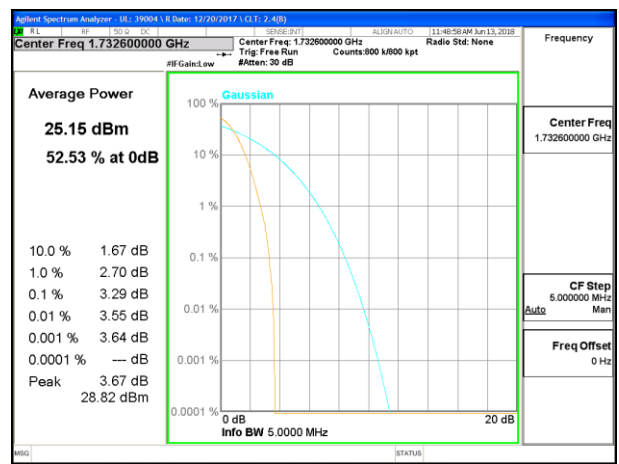
WCDMA Band 2 Rel 99 Middle Channel



WCDMA Band 2 HSDPA Middle Channel



WCDMA Band 4 Rel 99 Middle Channel



WCDMA Band 4 HSDPA Middle Channel

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 $43 + 10 \log_{10} p$ (watts).
- (ii) After the first 1.0 MHz immediately outside and adjacent to each of the sub-bands, the power of emissions in any 100 kHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least $43 + 10 \log_{10} p$ (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 $43 + 10 \log_{10} p$ (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 $43 + 10 \log_{10} p$ (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, Footnote 2 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 least $43 + 10 \log_{10} p$ (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 $43 + 10 \log_{10} p$ (watts) dB.

TEST PROCEDURE

KDB 971168 D01 Section 7

RESULTS

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: 10641 Configuration: EUT only Mode: GPRS 850MHz <u>Test Equipment:</u> Substitution: Horn T59 Substitution, and 8ft SMA Cable Chamber: 3m Chamber G Pre-amplifier: 3m Chamber G Filter: Filter Limit: EIRP <table> <tr> <th>Frequency (GHz)</th><th>SA reading (dBm)</th><th>Ant. Pol. 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1.65	-64.4	V	3.0	-21.9	36.5	1.0	-57.4	-13.0	-44.4																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
2.47	-64.8	V	3.0	-19.1	35.2	1.0	-53.2	-13.0	-40.2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
3.30	-63.3	V	3.0	-13.8	34.6	1.0	-47.4	-13.0	-34.4																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
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1.67	-65.2	H	3.0	-23.3	36.5	1.0	-58.8	-13.0	-45.8																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
2.51	-63.5	H	3.0	-17.6	35.1	1.0	-51.8	-13.0	-38.8																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
3.35	-64.4	H	3.0	-15.4	34.6	1.0	-48.9	-13.0	-35.9																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
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Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes	Low Channel (1890.2MHz)											3.70	-68.9	H	3.0	-20.0	34.1	1.0	-53.1	-13.0	-40.1		5.95	-71.4	H	3.0	-17.4	33.3	1.0	-48.7	-13.0	-35.7		7.40	-72.7	H	3.0	-15.3	33.1	1.0	-47.4	-13.0	-34.4		3.70	-69.3	V	3.0	-19.0	34.1	1.0	-52.2	-13.0	-39.2		5.95	-70.0	V	3.0	-18.1	33.3	1.0	-48.4	-13.0	-35.4		7.40	-71.8	V	3.0	-14.4	33.1	1.0	-46.4	-13.0	-33.4		Mid Channel (1890.0)											3.76	-70.0	H	3.0	-19.9	34.1	1.0	-53.0	-13.0	-40.0		5.64	-69.6	H	3.0	-15.4	33.3	1.0	-47.7	-13.0	-34.7		7.52	-72.6	H	3.0	-15.0	33.0	1.0	-47.1	-13.0	-34.1		3.76	-69.8	V	3.0	-18.4	34.1	1.0	-52.5	-13.0	-39.5		5.64	-70.4	V	3.0	-16.3	33.3	1.0	-48.6	-13.0	-35.6		7.52	-73.2	V	3.0	-15.6	33.0	1.0	-47.6	-13.0	-34.6		High Channel (1900.0MHz)											3.82	-69.0	H	3.0	-18.7	34.0	1.0	-51.7	-13.0	-38.7		5.73	-69.8	H	3.0	-15.5	33.3	1.0	-47.7	-13.0	-34.7		7.54	-72.6	H	3.0	-15.0	33.0	1.0	-47.0	-13.0	-34.0		3.82	-70.2	V	3.0	-18.6	34.0	1.0	-52.6	-13.0	-39.6		5.73	-71.1	V	3.0	-16.8	33.3	1.0	-48.1	-13.0	-35.1		7.54	-71.4	V	3.0	-13.7	33.0	1.0	-46.8	-13.0	-33.8		High Frequency Substitution Measurement UL Fremont Radiated Chamber Company: Project #: Date: 06/18/18 Test Engineer: 10641 Configuration: EUT only Mode: EGPRS 1900MHz <u>Test Equipment:</u> Substitution: Horn T59 Substitution, and 8ft SMA Cable Chamber: 3m Chamber C Pre-amplifier: 3m Chamber C Filter: Filter Limit: EIRP <table> <tr> <th>Frequency (GHz)</th><th>SA reading (dBm)</th><th>Ant. 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Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes	Low Channel (1890.2MHz)											3.70	-70.1	H	3.0	-20.2	34.1	1.0	-53.3	-13.0	-40.3		5.95	-75.3	H	3.0	-16.3	33.3	1.0	-48.6	-13.0	-35.6		7.40	-77.5	H	3.0	-16.1	33.1	1.0	-48.2	-13.0	-35.2		3.70	-70.0	V	3.0	-19.7	34.1	1.0	-52.9	-13.0	-39.9		5.95	-70.6	V	3.0	-16.7	33.3	1.0	-48.0	-13.0	-35.0		7.40	-72.2	V	3.0	-14.7	33.1	1.0	-46.8	-13.0	-33.8		Mid Channel (1890.0)											3.76	-69.6	H	3.0	-19.5	34.1	1.0	-52.6	-13.0	-39.6		5.64	-70.7	H	3.0	-15.5	33.3	1.0	-48.8	-13.0	-35.8		7.52	-74.0	H	3.0	-14.4	33.0	1.0	-48.4	-13.0	-35.4		3.76	-69.4	V	3.0	-19.0	34.1	1.0	-52.0	-13.0	-39.0		5.64	-70.3	V	3.0	-16.2	33.3	1.0	-48.5	-13.0	-35.5		7.52	-73.6	V	3.0	-16.0	33.0	1.0	-48.1	-13.0	-35.1		High Channel (1900.0MHz)											3.82	-70.2	H	3.0	-19.9	34.0	1.0	-52.9	-13.0	-39.9		5.73	-69.9	H	3.0	-15.5	33.3	1.0	-47.8	-13.0	-34.8		7.54	-72.9	H	3.0	-15.3	33.0	1.0	-47.3	-13.0	-34.3		3.82	-69.8	V	3.0	-18.2	34.0	1.0	-52.2	-13.0	-39.2		5.73	-70.3	V	3.0	-16.1	33.3	1.0	-48.3	-13.0	-35.3		7.54	-72.0	V	3.0	-14.4	33.0	1.0	-46.4	-13.0	-33.4	
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9.1.2. CDMA

High Frequency Substitution Measurement UL Fremont Radiated Chamber Company: Project #: Date: 06/19/18 Test Engineer: 19431 Configuration: EUT only Mode: 1xRTT 800MHz Test Equipment: Substitution: Horn T59 Substitution, and 8ft SMA Cable Chamber: 3m Chamber C Pre-amplifier: 3m Chamber C Filter: Filter Limit: EIRP <table> <tr> <th>Frequency (GHz)</th><th>SA reading (dBm)</th><th>Ant. Pol. (H/V)</th><th>Distance</th><th>EIRP @ TX Ant End (dBm)</th><th>Preamp</th><th>Attenuator</th><th>EIRP</th><th>Limit</th><th>Delta</th><th>Notes</th></tr> <tr><td colspan="11">Low Channel (824.7MHz)</td></tr> <tr><td>1.63</td><td>-69.4</td><td>H</td><td>3.0</td><td>-27.8</td><td>36.5</td><td>1.0</td><td>-63.3</td><td>-13.0</td><td>-50.3</td><td></td></tr> <tr><td>2.45</td><td>-71.0</td><td>H</td><td>3.0</td><td>-25.4</td><td>35.2</td><td>1.0</td><td>-59.5</td><td>-13.0</td><td>-46.5</td><td></td></tr> <tr><td>3.27</td><td>-68.8</td><td>H</td><td>3.0</td><td>-20.9</td><td>34.7</td><td>1.0</td><td>-53.7</td><td>-13.0</td><td>-40.7</td><td></td></tr> <tr><td>1.63</td><td>-69.5</td><td>V</td><td>3.0</td><td>-27.1</td><td>36.5</td><td>1.0</td><td>-62.6</td><td>-13.0</td><td>-49.6</td><td></td></tr> <tr><td>2.45</td><td>-70.5</td><td>V</td><td>3.0</td><td>-24.9</td><td>35.2</td><td>1.0</td><td>-59.1</td><td>-13.0</td><td>-46.1</td><td></td></tr> <tr><td>3.27</td><td>-69.2</td><td>V</td><td>3.0</td><td>-19.8</td><td>34.7</td><td>1.0</td><td>-53.4</td><td>-13.0</td><td>-40.4</td><td></td></tr> <tr><td colspan="11">Mid Channel (836.5MHz)</td></tr> <tr><td>1.64</td><td>-70.9</td><td>H</td><td>3.0</td><td>-29.2</td><td>36.5</td><td>1.0</td><td>-64.7</td><td>-13.0</td><td>-51.7</td><td></td></tr> <tr><td>2.46</td><td>-70.0</td><td>H</td><td>3.0</td><td>-24.3</td><td>35.2</td><td>1.0</td><td>-58.5</td><td>-13.0</td><td>-45.5</td><td></td></tr> <tr><td>3.28</td><td>-70.2</td><td>H</td><td>3.0</td><td>-21.4</td><td>34.6</td><td>1.0</td><td>-55.1</td><td>-13.0</td><td>-42.1</td><td></td></tr> <tr><td>1.64</td><td>-70.4</td><td>V</td><td>3.0</td><td>-27.9</td><td>36.5</td><td>1.0</td><td>-63.4</td><td>-13.0</td><td>-50.4</td><td></td></tr> <tr><td>2.46</td><td>-70.5</td><td>V</td><td>3.0</td><td>-24.8</td><td>35.2</td><td>1.0</td><td>-58.9</td><td>-13.0</td><td>-45.9</td><td></td></tr> <tr><td>3.28</td><td>-70.2</td><td>V</td><td>3.0</td><td>-20.8</td><td>34.6</td><td>1.0</td><td>-54.4</td><td>-13.0</td><td>-41.4</td><td></td></tr> <tr><td colspan="11">High Channel (848.31MHz)</td></tr> <tr><td>1.65</td><td>-70.7</td><td>H</td><td>3.0</td><td>-28.9</td><td>36.5</td><td>1.0</td><td>-64.4</td><td>-13.0</td><td>-51.4</td><td></td></tr> <tr><td>2.47</td><td>-70.2</td><td>H</td><td>3.0</td><td>-24.5</td><td>35.2</td><td>1.0</td><td>-58.6</td><td>-13.0</td><td>-45.6</td><td></td></tr> <tr><td>3.29</td><td>-71.0</td><td>H</td><td>3.0</td><td>-22.2</td><td>34.6</td><td>1.0</td><td>-55.5</td><td>-13.0</td><td>-42.5</td><td></td></tr> <tr><td>1.65</td><td>-69.9</td><td>V</td><td>3.0</td><td>-27.3</td><td>36.5</td><td>1.0</td><td>-62.8</td><td>-13.0</td><td>-49.8</td><td></td></tr> <tr><td>2.47</td><td>-71.3</td><td>V</td><td>3.0</td><td>-25.5</td><td>35.2</td><td>1.0</td><td>-59.7</td><td>-13.0</td><td>-46.7</td><td></td></tr> <tr><td>3.29</td><td>-70.3</td><td>V</td><td>3.0</td><td>-20.8</td><td>34.6</td><td>1.0</td><td>-54.5</td><td>-13.0</td><td>-41.5</td><td></td></tr> </table> Rev 03.19.15											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)											1.63	-69.4	H	3.0	-27.8	36.5	1.0	-63.3	-13.0	-50.3		2.45	-71.0	H	3.0	-25.4	35.2	1.0	-59.5	-13.0	-46.5		3.27	-68.8	H	3.0	-20.9	34.7	1.0	-53.7	-13.0	-40.7		1.63	-69.5	V	3.0	-27.1	36.5	1.0	-62.6	-13.0	-49.6		2.45	-70.5	V	3.0	-24.9	35.2	1.0	-59.1	-13.0	-46.1		3.27	-69.2	V	3.0	-19.8	34.7	1.0	-53.4	-13.0	-40.4		Mid Channel (836.5MHz)											1.64	-70.9	H	3.0	-29.2	36.5	1.0	-64.7	-13.0	-51.7		2.46	-70.0	H	3.0	-24.3	35.2	1.0	-58.5	-13.0	-45.5		3.28	-70.2	H	3.0	-21.4	34.6	1.0	-55.1	-13.0	-42.1		1.64	-70.4	V	3.0	-27.9	36.5	1.0	-63.4	-13.0	-50.4		2.46	-70.5	V	3.0	-24.8	35.2	1.0	-58.9	-13.0	-45.9		3.28	-70.2	V	3.0	-20.8	34.6	1.0	-54.4	-13.0	-41.4		High Channel (848.31MHz)											1.65	-70.7	H	3.0	-28.9	36.5	1.0	-64.4	-13.0	-51.4		2.47	-70.2	H	3.0	-24.5	35.2	1.0	-58.6	-13.0	-45.6		3.29	-71.0	H	3.0	-22.2	34.6	1.0	-55.5	-13.0	-42.5		1.65	-69.9	V	3.0	-27.3	36.5	1.0	-62.8	-13.0	-49.8		2.47	-71.3	V	3.0	-25.5	35.2	1.0	-59.7	-13.0	-46.7		3.29	-70.3	V	3.0	-20.8	34.6	1.0	-54.5	-13.0	-41.5	
Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes																																																																																																																																																																																																																																																		
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High Frequency Substitution Measurement UL Fremont Radiated Chamber Company: Project #: Date: 06/21/18 Test Engineer: 19445 Configuration: EUT only Mode: Rev 0.1A 150MHz Test Equipment: Substitution: Horn T59 Substitution, and 8ft SMA Cable Chamber: 3m Chamber E Pre-amplifier: 3m Chamber E Filter: Filter Limit: EIRP <table> <tr> <th>Frequency (GHz)</th><th>SA reading (dBm)</th><th>Ant. Pol. (H/V)</th><th>Distance</th><th>EIRP @ TX Ant End (dBm)</th><th>Preamp</th><th>Attenuator</th><th>EIRP</th><th>Limit</th><th>Delta</th><th>Notes</th></tr> <tr><td colspan="11">Low Channel (824.7MHz)</td></tr> <tr><td>1.63</td><td>-70.5</td><td>H</td><td>3.0</td><td>-28.0</td><td>37.8</td><td>1.0</td><td>-64.9</td><td>-13.0</td><td>-51.9</td><td></td></tr> <tr><td>2.45</td><td>-71.0</td><td>H</td><td>3.0</td><td>-26.2</td><td>36.4</td><td>1.0</td><td>-63.5</td><td>-13.0</td><td>-50.5</td><td></td></tr> <tr><td>3.27</td><td>-69.6</td><td>H</td><td>3.0</td><td>-20.7</td><td>36.5</td><td>1.0</td><td>-58.2</td><td>-13.0</td><td>-45.2</td><td></td></tr> <tr><td>1.63</td><td>-69.7</td><td>V</td><td>3.0</td><td>-27.6</td><td>37.8</td><td>1.0</td><td>-64.5</td><td>-13.0</td><td>-51.5</td><td></td></tr> <tr><td>2.45</td><td>-70.8</td><td>V</td><td>3.0</td><td>-25.8</td><td>36.4</td><td>1.0</td><td>-63.2</td><td>-13.0</td><td>-50.2</td><td></td></tr> <tr><td>3.27</td><td>-69.8</td><td>V</td><td>3.0</td><td>-21.2</td><td>36.5</td><td>1.0</td><td>-58.6</td><td>-13.0</td><td>-45.6</td><td></td></tr> <tr><td colspan="11">Mid Channel (836.5MHz)</td></tr> <tr><td>1.64</td><td>-70.0</td><td>H</td><td>3.0</td><td>-27.5</td><td>37.8</td><td>1.0</td><td>-64.4</td><td>-13.0</td><td>-51.4</td><td></td></tr> <tr><td>2.46</td><td>-69.6</td><td>H</td><td>3.0</td><td>-24.6</td><td>36.4</td><td>1.0</td><td>-62.0</td><td>-13.0</td><td>-49.0</td><td></td></tr> <tr><td>3.28</td><td>-70.2</td><td>H</td><td>3.0</td><td>-21.3</td><td>36.5</td><td>1.0</td><td>-58.8</td><td>-13.0</td><td>-45.8</td><td></td></tr> <tr><td>1.64</td><td>-70.2</td><td>V</td><td>3.0</td><td>-28.1</td><td>37.8</td><td>1.0</td><td>-64.9</td><td>-13.0</td><td>-51.9</td><td></td></tr> <tr><td>2.46</td><td>-69.2</td><td>V</td><td>3.0</td><td>-24.1</td><td>36.4</td><td>1.0</td><td>-61.6</td><td>-13.0</td><td>-48.6</td><td></td></tr> <tr><td>3.28</td><td>-69.6</td><td>V</td><td>3.0</td><td>-19.9</td><td>36.5</td><td>1.0</td><td>-57.4</td><td>-13.0</td><td>-44.4</td><td></td></tr> <tr><td colspan="11">High Channel (848.31MHz)</td></tr> <tr><td>1.65</td><td>-69.0</td><td>H</td><td>3.0</td><td>-26.5</td><td>37.8</td><td>1.0</td><td>-63.4</td><td>-13.0</td><td>-50.4</td><td></td></tr> <tr><td>2.47</td><td>-70.5</td><td>H</td><td>3.0</td><td>-25.5</td><td>36.5</td><td>1.0</td><td>-63.0</td><td>-13.0</td><td>-50.0</td><td></td></tr> <tr><td>3.29</td><td>-69.3</td><td>H</td><td>3.0</td><td>-19.4</td><td>36.5</td><td>1.0</td><td>-56.9</td><td>-13.0</td><td>-43.9</td><td></td></tr> <tr><td>1.65</td><td>-69.9</td><td>V</td><td>3.0</td><td>-27.7</td><td>37.8</td><td>1.0</td><td>-64.6</td><td>-13.0</td><td>-51.6</td><td></td></tr> <tr><td>2.47</td><td>-69.1</td><td>V</td><td>3.0</td><td>-23.9</td><td>36.5</td><td>1.0</td><td>-61.4</td><td>-13.0</td><td>-48.4</td><td></td></tr> <tr><td>3.29</td><td>-69.5</td><td>V</td><td>3.0</td><td>-20.2</td><td>36.5</td><td>1.0</td><td>-57.7</td><td>-13.0</td><td>-44.7</td><td></td></tr> </table> Rev 03.19.15											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)											1.63	-70.5	H	3.0	-28.0	37.8	1.0	-64.9	-13.0	-51.9		2.45	-71.0	H	3.0	-26.2	36.4	1.0	-63.5	-13.0	-50.5		3.27	-69.6	H	3.0	-20.7	36.5	1.0	-58.2	-13.0	-45.2		1.63	-69.7	V	3.0	-27.6	37.8	1.0	-64.5	-13.0	-51.5		2.45	-70.8	V	3.0	-25.8	36.4	1.0	-63.2	-13.0	-50.2		3.27	-69.8	V	3.0	-21.2	36.5	1.0	-58.6	-13.0	-45.6		Mid Channel (836.5MHz)											1.64	-70.0	H	3.0	-27.5	37.8	1.0	-64.4	-13.0	-51.4		2.46	-69.6	H	3.0	-24.6	36.4	1.0	-62.0	-13.0	-49.0		3.28	-70.2	H	3.0	-21.3	36.5	1.0	-58.8	-13.0	-45.8		1.64	-70.2	V	3.0	-28.1	37.8	1.0	-64.9	-13.0	-51.9		2.46	-69.2	V	3.0	-24.1	36.4	1.0	-61.6	-13.0	-48.6		3.28	-69.6	V	3.0	-19.9	36.5	1.0	-57.4	-13.0	-44.4		High Channel (848.31MHz)											1.65	-69.0	H	3.0	-26.5	37.8	1.0	-63.4	-13.0	-50.4		2.47	-70.5	H	3.0	-25.5	36.5	1.0	-63.0	-13.0	-50.0		3.29	-69.3	H	3.0	-19.4	36.5	1.0	-56.9	-13.0	-43.9		1.65	-69.9	V	3.0	-27.7	37.8	1.0	-64.6	-13.0	-51.6		2.47	-69.1	V	3.0	-23.9	36.5	1.0	-61.4	-13.0	-48.4		3.29	-69.5	V	3.0	-20.2	36.5	1.0	-57.7	-13.0	-44.7	
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1.67	-70.7	V	3.0	-27.9	36.5	1.0	-63.4	-13.0	-50.4																																																																																																																																																																																																																																																			
2.51	-70.6	V	3.0	-24.7	35.1	1.0	-58.8	-13.0	-45.8																																																																																																																																																																																																																																																			
3.35	-70.0	V	3.0	-20.4	34.6	1.0	-54.0	-13.0	-41.0																																																																																																																																																																																																																																																			
High Channel (848.31MHz)																																																																																																																																																																																																																																																												
1.70	-71.1	H	3.0	-28.9	36.4	1.0	-64.3	-13.0	-51.3																																																																																																																																																																																																																																																			
2.54	-70.0	H	3.0	-24.0	35.1	1.0	-58.1	-13.0	-45.1																																																																																																																																																																																																																																																			
3.39	-71.6	H	3.0	-21.9	34.5	1.0	-55.4	-13.0	-42.4																																																																																																																																																																																																																																																			
1.70	-69.8	V	3.0	-26.8	36.4	1.0	-62.2	-13.0	-49.2																																																																																																																																																																																																																																																			
2.54	-71.4	V	3.0	-25.3	35.1	1.0	-59.4	-13.0	-46.4																																																																																																																																																																																																																																																			
3.39	-71.6	V	3.0	-21.1	34.5	1.0	-54.8	-13.0	-41.8																																																																																																																																																																																																																																																			
High Frequency Substitution Measurement UL Fremont Radiated Chamber Company: Project #: Date: 06/21/18 Test Engineer: 19445 Configuration: EUT only Mode: Rev 0.1A 150MHz Test Equipment: Substitution: Horn T59 Substitution, and 8ft SMA Cable Chamber: 3m Chamber E Pre-amplifier: 3m Chamber E Filter: Filter Limit: EIRP <table> <tr> <th>Frequency (GHz)</th><th>SA reading (dBm)</th><th>Ant. Pol. (H/V)</th><th>Distance</th><th>EIRP @ TX Ant End (dBm)</th><th>Preamp</th><th>Attenuator</th><th>EIRP</th><th>Limit</th><th>Delta</th><th>Notes</th></tr> <tr><td colspan="11">Low Channel (824.7MHz)</td></tr> <tr><td>1.65</td><td>-68.4</td><td>H</td><td>3.0</td><td>-25.9</td><td>37.8</td><td>1.0</td><td>-62.7</td><td>-13.0</td><td>-49.7</td><td></td></tr> <tr><td>2.47</td><td>-70.5</td><td>H</td><td>3.0</td><td>-25.5</td><td>36.5</td><td>1.0</td><td>-63.0</td><td>-13.0</td><td>-50.0</td><td></td></tr> <tr><td>3.30</td><td>-67.2</td><td>H</td><td>3.0</td><td>-18.3</td><td>36.5</td><td>1.0</td><td>-55.8</td><td>-13.0</td><td>-42.8</td><td></td></tr> <tr><td>1.65</td><td>-69.2</td><td>V</td><td>3.0</td><td>-27.1</td><td>37.8</td><td>1.0</td><td>-63.9</td><td>-13.0</td><td>-50.9</td><td></td></tr> <tr><td>2.47</td><td>-70.2</td><td>V</td><td>3.0</td><td>-25.0</td><td>36.5</td><td>1.0</td><td>-62.5</td><td>-13.0</td><td>-49.5</td><td></td></tr> <tr><td>3.30</td><td>-69.1</td><td>V</td><td>3.0</td><td>-20.4</td><td>36.5</td><td>1.0</td><td>-57.9</td><td>-13.0</td><td>-44.9</td><td></td></tr> <tr><td colspan="11">Mid Channel (836.5MHz)</td></tr> <tr><td>1.67</td><td>-70.6</td><td>H</td><td>3.0</td><td>-28.1</td><td>37.8</td><td>1.0</td><td>-65.0</td><td>-13.0</td><td>-52.0</td><td></td></tr> <tr><td>2.51</td><td>-69.6</td><td>H</td><td>3.0</td><td>-24.4</td><td>36.5</td><td>1.0</td><td>-61.9</td><td>-13.0</td><td>-48.9</td><td></td></tr> <tr><td>3.35</td><td>-69.6</td><td>H</td><td>3.0</td><td>-19.5</td><td>36.5</td><td>1.0</td><td>-57.0</td><td>-13.0</td><td>-44.0</td><td></td></tr> <tr><td>1.67</td><td>-69.7</td><td>V</td><td>3.0</td><td>-26.5</td><td>37.8</td><td>1.0</td><td>-63.3</td><td>-13.0</td><td>-50.3</td><td></td></tr> <tr><td>2.51</td><td>-69.2</td><td>V</td><td>3.0</td><td>-22.8</td><td>36.5</td><td>1.0</td><td>-60.4</td><td>-13.0</td><td>-47.4</td><td></td></tr> <tr><td>3.35</td><td>-69.1</td><td>V</td><td>3.0</td><td>-20.3</td><td>36.5</td><td>1.0</td><td>-57.8</td><td>-13.0</td><td>-44.8</td><td></td></tr> <tr><td colspan="11">High Channel (848.31MHz)</td></tr> <tr><td>1.70</td><td>-69.9</td><td>H</td><td>3.0</td><td>-27.3</td><td>37.8</td><td>1.0</td><td>-64.2</td><td>-13.0</td><td>-51.2</td><td></td></tr> <tr><td>2.54</td><td>-69.2</td><td>H</td><td>3.0</td><td>-23.8</td><td>36.5</td><td>1.0</td><td>-61.3</td><td>-13.0</td><td>-48.3</td><td></td></tr> <tr><td>3.39</td><td>-69.3</td><td>H</td><td>3.0</td><td>-19.1</td><td>36.5</td><td>1.0</td><td>-56.6</td><td>-13.0</td><td>-43.6</td><td></td></tr> <tr><td>1.70</td><td>-68.6</td><td>V</td><td>3.0</td><td>-26.2</td><td>37.8</td><td>1.0</td><td>-63.1</td><td>-13.0</td><td>-50.1</td><td></td></tr> <tr><td>2.54</td><td>-69.2</td><td>V</td><td>3.0</td><td>-22.7</td><td>36.5</td><td>1.0</td><td>-60.1</td><td>-13.0</td><td>-47.1</td><td></td></tr> <tr><td>3.39</td><td>-69.1</td><td>V</td><td>3.0</td><td>-20.2</td><td>36.5</td><td>1.0</td><td>-57.7</td><td>-13.0</td><td>-44.7</td><td></td></tr> </table> Rev 03.19.15											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	-68.4	H	3.0	-25.9	37.8	1.0	-62.7	-13.0	-49.7		2.47	-70.5	H	3.0	-25.5	36.5	1.0	-63.0	-13.0	-50.0		3.30	-67.2	H	3.0	-18.3	36.5	1.0	-55.8	-13.0	-42.8		1.65	-69.2	V	3.0	-27.1	37.8	1.0	-63.9	-13.0	-50.9		2.47	-70.2	V	3.0	-25.0	36.5	1.0	-62.5	-13.0	-49.5		3.30	-69.1	V	3.0	-20.4	36.5	1.0	-57.9	-13.0	-44.9		Mid Channel (836.5MHz)											1.67	-70.6	H	3.0	-28.1	37.8	1.0	-65.0	-13.0	-52.0		2.51	-69.6	H	3.0	-24.4	36.5	1.0	-61.9	-13.0	-48.9		3.35	-69.6	H	3.0	-19.5	36.5	1.0	-57.0	-13.0	-44.0		1.67	-69.7	V	3.0	-26.5	37.8	1.0	-63.3	-13.0	-50.3		2.51	-69.2	V	3.0	-22.8	36.5	1.0	-60.4	-13.0	-47.4		3.35	-69.1	V	3.0	-20.3	36.5	1.0	-57.8	-13.0	-44.8		High Channel (848.31MHz)											1.70	-69.9	H	3.0	-27.3	37.8	1.0	-64.2	-13.0	-51.2		2.54	-69.2	H	3.0	-23.8	36.5	1.0	-61.3	-13.0	-48.3		3.39	-69.3	H	3.0	-19.1	36.5	1.0	-56.6	-13.0	-43.6		1.70	-68.6	V	3.0	-26.2	37.8	1.0	-63.1	-13.0	-50.1		2.54	-69.2	V	3.0	-22.7	36.5	1.0	-60.1	-13.0	-47.1		3.39	-69.1	V	3.0	-20.2	36.5	1.0	-57.7	-13.0	-44.7	
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	-68.4	H	3.0	-25.9	37.8	1.0	-62.7	-13.0	-49.7																																																																																																																																																																																																																																																			
2.47	-70.5	H	3.0	-25.5	36.5	1.0	-63.0	-13.0	-50.0																																																																																																																																																																																																																																																			
3.30	-67.2	H	3.0	-18.3	36.5	1.0	-55.8	-13.0	-42.8																																																																																																																																																																																																																																																			
1.65	-69.2	V	3.0	-27.1	37.8	1.0	-63.9	-13.0	-50.9																																																																																																																																																																																																																																																			
2.47	-70.2	V	3.0	-25.0	36.5	1.0	-62.5	-13.0	-49.5																																																																																																																																																																																																																																																			
3.30	-69.1	V	3.0	-20.4	36.5	1.0	-57.9	-13.0	-44.9																																																																																																																																																																																																																																																			
Mid Channel (836.5MHz)																																																																																																																																																																																																																																																												
1.67	-70.6	H	3.0	-28.1	37.8	1.0	-65.0	-13.0	-52.0																																																																																																																																																																																																																																																			
2.51	-69.6	H	3.0	-24.4	36.5	1.0	-61.9	-13.0	-48.9																																																																																																																																																																																																																																																			
3.35	-69.6	H	3.0	-19.5	36.5	1.0	-57.0	-13.0	-44.0																																																																																																																																																																																																																																																			
1.67	-69.7	V	3.0	-26.5	37.8	1.0	-63.3	-13.0	-50.3																																																																																																																																																																																																																																																			
2.51	-69.2	V	3.0	-22.8	36.5	1.0	-60.4	-13.0	-47.4																																																																																																																																																																																																																																																			
3.35	-69.1	V	3.0	-20.3	36.5	1.0	-57.8	-13.0	-44.8																																																																																																																																																																																																																																																			
High Channel (848.31MHz)																																																																																																																																																																																																																																																												
1.70	-69.9	H	3.0	-27.3	37.8	1.0	-64.2	-13.0	-51.2																																																																																																																																																																																																																																																			
2.54	-69.2	H	3.0	-23.8	36.5	1.0	-61.3	-13.0	-48.3																																																																																																																																																																																																																																																			
3.39	-69.3	H	3.0	-19.1	36.5	1.0	-56.6	-13.0	-43.6																																																																																																																																																																																																																																																			
1.70	-68.6	V	3.0	-26.2	37.8	1.0	-63.1	-13.0	-50.1																																																																																																																																																																																																																																																			
2.54	-69.2	V	3.0	-22.7	36.5	1.0	-60.1	-13.0	-47.1																																																																																																																																																																																																																																																			
3.39	-69.1	V	3.0	-20.2	36.5	1.0	-57.7	-13.0	-44.7																																																																																																																																																																																																																																																			
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CDMA BC0 1xEV-DO Rev A																																																																																																																																																																																																																																																												

High Frequency Substitution Measurement UL Fremont Radiated Chamber										
Company: Project #: Date: 06/21/18 Test Engineer: 19445 Configuration: ELUT only Mode: 1xRTT 1500MHz Test Equipment: Substitution: Horn T59 Substitution, and 8ft SMA Cable										
Chamber	Pre-amplifier	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 (1851.25MHz)										
3.70	-67.7	H	3.0	-37.7	34.1	1.0	-50.9	-33.0	-37.9	
5.95	-69.0	H	3.0	-35.0	33.3	1.0	-47.3	-33.0	-34.3	
7.41	-67.8	H	3.0	-38.4	33.1	1.0	-42.4	-33.0	-29.4	
3.70	-67.0	V	3.0	-36.7	34.1	1.0	-49.8	-33.0	-36.8	
5.95	-69.2	V	3.0	-35.3	33.3	1.0	-47.5	-33.0	-34.5	
7.41	-67.9	V	3.0	-38.4	33.1	1.0	-42.5	-33.0	-29.5	
Mid Channel (1880MHz)										
3.76	-66.9	H	3.0	-36.7	34.1	1.0	-49.8	-33.0	-36.8	
5.94	-69.1	H	3.0	-34.5	33.3	1.0	-46.8	-33.0	-33.8	
7.52	-67.5	H	3.0	-39.9	33.0	1.0	-42.0	-33.0	-29.0	
3.76	-66.4	V	3.0	-36.0	34.1	1.0	-49.0	-33.0	-36.0	
5.94	-69.0	V	3.0	-34.9	33.3	1.0	-47.2	-33.0	-34.2	
7.52	-67.9	V	3.0	-39.3	33.0	1.0	-42.3	-33.0	-29.3	
High Channel (1908.75MHz)										
3.82	-66.5	H	3.0	-36.2	34.0	1.0	-49.2	-33.0	-36.2	
5.73	-67.5	H	3.0	-33.2	33.3	1.0	-45.4	-33.0	-32.4	
7.64	-69.8	H	3.0	-32.2	33.0	1.0	-44.2	-33.0	-31.2	
3.82	-65.9	V	3.0	-35.3	34.0	1.0	-48.3	-33.0	-35.3	
5.73	-68.0	V	3.0	-31.7	33.3	1.0	-44.0	-33.0	-31.0	
7.64	-69.4	V	3.0	-31.6	33.0	1.0	-43.7	-33.0	-30.7	
Rev 03.19.15										

CDMA BC1 1xRTT

9.1.3. WCDMA

High Frequency Substitution Measurement UL Fremont Radiated Chamber										
Company: Project #: Date: 06/21/18 Test Engineer: 19445 Configuration: ELUT Only Mode: REL 99, 850MHz Test Equipment: Substitution: Horn T59 Substitution, and 8ft SMA Cable										
Chamber	Pre-amplifier	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	-70.4	H	3.0	-28.6	36.5	1.0	-64.1	-33.0	-51.1	
2.48	-70.1	H	3.0	-24.3	36.2	1.0	-58.5	-33.0	-45.5	
3.31	-69.8	H	3.0	-20.8	34.6	1.0	-54.6	-33.0	-41.6	
1.65	-70.3	V	3.0	-27.7	36.5	1.0	-63.2	-33.0	-50.2	
2.48	-70.9	V	3.0	-25.1	36.2	1.0	-59.3	-33.0	-46.3	
3.31	-69.8	V	3.0	-20.3	34.6	1.0	-53.9	-33.0	-40.9	
Mid Channel (836.6MHz)										
1.67	-70.0	H	3.0	-28.0	36.5	1.0	-63.5	-33.0	-50.5	
2.51	-68.9	H	3.0	-23.0	35.1	1.0	-57.1	-33.0	-44.1	
3.35	-70.6	H	3.0	-21.6	34.6	1.0	-55.2	-33.0	-42.2	
1.67	-70.5	V	3.0	-27.7	36.5	1.0	-63.2	-33.0	-50.2	
2.51	-71.2	V	3.0	-25.3	35.1	1.0	-59.4	-33.0	-46.4	
3.35	-69.1	V	3.0	-19.5	34.6	1.0	-51.1	-33.0	-38.1	
High Channel (846.6MHz)										
1.69	-70.2	H	3.0	-28.0	36.4	1.0	-63.5	-33.0	-50.5	
2.54	-69.8	H	3.0	-23.8	35.1	1.0	-57.9	-33.0	-44.9	
3.39	-71.1	H	3.0	-22.6	34.5	1.0	-55.5	-33.0	-42.5	
1.69	-70.7	V	3.0	-27.7	36.4	1.0	-63.2	-33.0	-50.2	
2.54	-69.5	V	3.0	-23.4	35.1	1.0	-57.5	-33.0	-44.5	
3.39	-71.3	V	3.0	-21.6	34.5	1.0	-55.2	-33.0	-42.2	
Rev 03.19.15										

WCDMA Band 5 Rel 99

High Frequency Substitution Measurement UL Fremont Radiated Chamber										
Company: Project #: Date: 06/21/18 Test Engineer: 19445 Configuration: ELUT only Mode: Rev 0A 1900MHz Test Equipment: Substitution: Horn T59 Substitution, and 8ft SMA Cable										
Chamber	Pre-amplifier	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 (1851.25MHz)										
3.70	-67.2	H	3.0	-37.3	34.1	1.0	-50.4	-33.0	-37.4	
5.95	-68.3	H	3.0	-34.3	33.3	1.0	-46.6	-33.0	-33.6	
7.41	-72.5	H	3.0	-31.1	33.1	1.0	-47.2	-33.0	-34.2	
3.70	-67.1	V	3.0	-36.8	34.1	1.0	-50.0	-33.0	-37.0	
5.95	-68.5	V	3.0	-34.6	33.3	1.0	-46.9	-33.0	-33.9	
7.41	-72.3	V	3.0	-34.8	33.1	1.0	-46.9	-33.0	-33.9	
Mid Channel (1880MHz)										
3.76	-67.5	H	3.0	-37.4	34.1	1.0	-50.5	-33.0	-37.5	
5.94	-68.5	H	3.0	-34.4	33.3	1.0	-46.7	-33.0	-33.7	
7.52	-71.4	H	3.0	-31.8	33.0	1.0	-45.9	-33.0	-32.9	
3.76	-67.7	V	3.0	-37.2	34.1	1.0	-50.3	-33.0	-37.3	
5.94	-67.5	V	3.0	-33.4	33.3	1.0	-45.7	-33.0	-32.7	
7.52	-72.2	V	3.0	-34.6	33.0	1.0	-46.7	-33.0	-33.7	
High Channel (1908.75MHz)										
3.82	-68.7	H	3.0	-34.0	34.0	1.0	-51.5	-33.0	-38.5	
5.73	-68.9	H	3.0	-34.6	33.3	1.0	-46.9	-33.0	-33.9	
7.64	-71.3	H	3.0	-33.5	33.0	1.0	-45.6	-33.0	-32.6	
3.82	-68.5	V	3.0	-34.0	34.0	1.0	-48.9	-33.0	-35.9	
5.73	-69.7	V	3.0	-35.4	33.3	1.0	-47.7	-33.0	-34.7	
7.64	-72.5	V	3.0	-34.7	33.0	1.0	-46.7	-33.0	-33.7	
Rev 03.19.15										

CDMA BC1 1xEV-DO Rev A

High Frequency Substitution Measurement UL Fremont Radiated Chamber										
Company: Project #: Date: 06/21/18 Test Engineer: 19445 Configuration: ELUT only Mode: HSDPA 850MHz Test Equipment: Substitution: Horn T59 Substitution, and 8ft SMA Cable										
Chamber	Pre-amplifier	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	-71.2	H	3.0	-29.4	36.5	1.0	-64.9	-33.0	-51.9	
2.48	-69.6	H	3.0	-23.8	36.2	1.0	-57.9	-33.0	-44.9	
3.31	-69.5	H	3.0	-19.7	34.6	1.0	-53.3	-33.0	-40.3	
1.65	-71.2	V	3.0	-29.6	36.5	1.0	-64.1	-33.0	-51.1	
2.48	-70.6	V	3.0	-24.8	36.2	1.0	-59.0	-33.0	-46.0	
3.31	-67.6	V	3.0	-18.1	34.6	1.0	-51.7	-33.0	-38.7	
Mid Channel (836.6MHz)										
1.67	-70.9	H	3.0	-28.9	36.5	1.0	-64.4	-33.0	-51.4	
2.51	-68.9	H	3.0	-22.1	35.1	1.0	-56.3	-33.0	-43.3	
3.34	-69.0	H	3.0	-20.1	34.6	1.0	-53.6	-33.0	-40.6	
1.67	-70.5	V	3.0	-27.7	36.5	1.0	-63.2	-33.0	-50.2	
2.51	-69.2	V	3.0	-22.2	35.1	1.0	-56.4	-33.0	-43.4	
3.34	-68.9	V	3.0	-19.3	34.6	1.0	-52.9	-33.0	-39.9	
High Channel (846.6MHz)										
1.69	-69.4	H	3.0	-26.3	36.4	1.0	-61.7	-33.0	-48.7	
2.54	-69.3	H	3.0	-23.3	35.1	1.0	-57.4	-33.0	-44.4	
3.39	-70.1	H	3.0	-21.0	34.5	1.0	-54.5	-33.0	-41.5	
1.69	-69.6	V	3.0	-25.6	36.4	1.0	-61.0	-33.0	-48.0	
2.54	-69.4	V	3.0	-23.3	35.1	1.0	-57.4	-33.0	-44.4	
3.39	-69.9	V	3.0	-20.2	34.5	1.0	-53.7	-33.0	-40.7	
Rev 03.19.15										

WCDMA Band 5 HSDPA

High Frequency Substitution Measurement UL Fremont Radiated Chamber										
Company: Project #: Date: 06/19/18 Test Engineer: 19421 Configuration: EUT Only Mode: REL 99, 1800MHz Test Equipment: Substitution: Horn T59 Substitution, and 8ft SMA Cable										
Chamber 3m Chamber C		Pre-amplifier 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 (1852.4MHz)										
3.70	-66.4	H	3.0	-16.4	34.1	1.0	-49.6	-13.0	-36.6	
5.56	-68.8	H	3.0	-14.8	33.3	1.0	-47.1	-13.0	-34.1	
7.41	-66.9	H	3.0	-9.5	33.1	1.0	-41.5	-13.0	-28.5	
3.70	-67.8	V	3.0	-17.5	34.1	1.0	-50.6	-13.0	-37.6	
5.56	-67.8	V	3.0	-13.5	33.3	1.0	-46.2	-13.0	-33.2	
7.42	-69.2	V	3.0	-11.7	33.1	1.0	-43.8	-13.0	-30.8	
Mid Channel (1800MHz)										
3.76	-66.4	H	3.0	-16.3	34.1	1.0	-49.4	-13.0	-36.4	
5.54	-68.6	H	3.0	-14.4	33.3	1.0	-46.7	-13.0	-33.7	
7.52	-67.6	H	3.0	-10.0	33.0	1.0	-42.1	-13.0	-29.1	
3.76	-65.2	V	3.0	-14.9	34.1	1.0	-47.8	-13.0	-34.8	
5.54	-69.8	V	3.0	-15.7	33.3	1.0	-48.0	-13.0	-35.0	
7.52	-68.9	V	3.0	-11.3	33.0	1.0	-43.3	-13.0	-30.3	
High Channel (1807.6MHz)										
3.81	-66.3	H	3.0	-16.0	34.0	1.0	-49.1	-13.0	-36.1	
5.72	-68.3	H	3.0	-14.0	33.3	1.0	-46.3	-13.0	-33.3	
7.66	-69.7	H	3.0	-11.9	33.0	1.0	-44.0	-13.0	-31.0	
3.82	-66.0	V	3.0	-15.4	34.0	1.0	-48.4	-13.0	-35.4	
5.72	-68.1	V	3.0	-13.9	33.3	1.0	-46.1	-13.0	-33.1	
7.63	-70.0	V	3.0	-12.2	33.0	1.0	-44.3	-13.0	-31.3	

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WCDMA Band 2 Rel 99

High Frequency Substitution Measurement UL Fremont Radiated Chamber										
Company: Project #: Date: 06/19/18 Test Engineer: 19454 Configuration: EUT Only Mode: REL 99, 1700MHz Test Equipment: Substitution: Horn T59 Substitution, and 8ft SMA Cable										
Chamber 3m Chamber C		Pre-amplifier 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 (1712.6MHz)										
3.42	-70.7	H	3.0	-21.5	34.5	1.0	-55.0	-13.0	-42.0	
5.14	-69.0	H	3.0	-15.8	33.4	1.0	-48.2	-13.0	-35.2	
6.85	-69.2	H	3.0	-13.6	33.1	1.0	-43.7	-13.0	-30.7	
8.56	-68.4	H	3.0	-9.9	32.9	1.0	-41.4	-13.0	-28.4	
3.42	-71.0	V	3.0	-21.3	34.5	1.0	-54.7	-13.0	-41.7	
5.14	-69.3	V	3.0	-16.2	33.4	1.0	-48.6	-13.0	-35.6	
6.85	-68.6	V	3.0	-12.1	33.1	1.0	-44.2	-13.0	-31.2	
8.56	-70.0	V	3.0	-10.9	32.9	1.0	-42.8	-13.0	-29.8	
Mid Channel (1752.6MHz)										
3.47	-70.4	H	3.0	-21.1	34.4	1.0	-54.5	-13.0	-41.5	
5.20	-68.8	H	3.0	-13.5	33.4	1.0	-45.9	-13.0	-32.9	
6.91	-67.6	H	3.0	-10.0	33.1	1.0	-43.9	-13.0	-29.9	
8.66	-68.4	H	3.0	-9.3	32.9	1.0	-41.2	-13.0	-28.2	
3.47	-69.9	V	3.0	-20.0	34.4	1.0	-53.4	-13.0	-40.4	
5.20	-68.2	V	3.0	-15.0	33.4	1.0	-47.3	-13.0	-34.3	
6.93	-68.7	V	3.0	-13.0	33.1	1.0	-45.1	-13.0	-32.1	
8.66	-69.9	V	3.0	-8.6	32.9	1.0	-41.4	-13.0	-28.4	
High Channel (1752.6MHz)										
3.51	-70.7	H	3.0	-21.3	34.4	1.0	-54.7	-13.0	-41.7	
5.26	-67.2	H	3.0	-13.8	33.4	1.0	-46.2	-13.0	-33.2	
7.01	-67.8	H	3.0	-10.9	33.1	1.0	-43.0	-13.0	-30.0	
8.76	-68.6	H	3.0	-10.4	32.9	1.0	-42.3	-13.0	-29.3	
3.51	-70.2	V	3.0	-20.9	34.4	1.0	-53.6	-13.0	-40.6	
5.26	-68.2	V	3.0	-14.0	33.3	1.0	-47.2	-13.0	-34.2	
7.01	-68.5	V	3.0	-11.7	33.1	1.0	-43.8	-13.0	-30.8	
8.76	-68.6	V	3.0	-10.3	32.9	1.0	-42.1	-13.0	-29.1	

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WCDMA Band 4 Rel 99

High Frequency Substitution Measurement UL Fremont Radiated Chamber										
Company: Project #: Date: 06/21/18 Test Engineer: 19445 Configuration: EUT Only Mode: HSDPA 1800MHz Test Equipment: Substitution: Horn T59 Substitution, and 8ft SMA Cable										
Chamber 3m Chamber C		Pre-amplifier 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 (1852.4MHz)										
3.70	-69.0	H	3.0	-18.0	34.1	1.0	-52.2	-13.0	-39.2	
5.56	-69.6	H	3.0	-14.6	33.3	1.0	-45.9	-13.0	-32.9	
7.41	-71.7	H	3.0	-14.3	33.1	1.0	-46.3	-13.0	-33.3	
3.70	-67.8	V	3.0	-17.4	34.1	1.0	-50.6	-13.0	-37.6	
5.56	-69.1	V	3.0	-14.1	33.3	1.0	-46.4	-13.0	-33.4	
7.41	-71.6	V	3.0	-14.2	33.1	1.0	-46.2	-13.0	-33.2	
Mid Channel (1800MHz)										
3.76	-69.5	H	3.0	-18.4	34.1	1.0	-51.4	-13.0	-38.4	
5.64	-67.8	H	3.0	-13.6	33.3	1.0	-45.9	-13.0	-32.9	
7.52	-69.7	H	3.0	-11.1	33.0	1.0	-43.2	-13.0	-30.2	
3.76	-68.3	V	3.0	-17.9	34.1	1.0	-51.0	-13.0	-38.0	
5.64	-70.8	V	3.0	-16.7	33.3	1.0	-49.0	-13.0	-36.0	
7.52	-67.8	V	3.0	-10.2	33.0	1.0	-42.3	-13.0	-29.3	
High Channel (1807.6MHz)										
3.82	-66.1	H	3.0	-15.8	34.0	1.0	-48.8	-13.0	-35.8	
5.72	-68.7	H	3.0	-15.3	33.3	1.0	-47.6	-13.0	-34.6	
7.63	-71.9	H	3.0	-14.2	33.0	1.0	-46.2	-13.0	-33.2	
3.82	-66.1	V	3.0	-15.6	34.0	1.0	-48.6	-13.0	-35.6	
5.72	-67.9	V	3.0	-13.7	33.3	1.0	-46.0	-13.0	-33.0	
7.63	-71.8	V	3.0	-14.0	33.0	1.0	-46.0	-13.0	-33.0	

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WCDMA Band 2 HSDPA

High Frequency Substitution Measurement UL Fremont Radiated Chamber										
Company: Project #: Date: 06/21/18 Test Engineer: 19445 Configuration: EUT Only Mode: HSDPA 1700MHz Test Equipment: Substitution: Horn T59 Substitution, and 8ft SMA Cable										
Chamber 3m Chamber C		Pre-amplifier 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 (1712.6MHz)										
3.42	-69.4	H	3.0	-20.2	34.5	1.0	-53.7	-13.0	-40.7	
5.14	-69.3	H	3.0	-16.1	33.4	1.0	-48.5	-13.0	-35.5	
6.85	-71.0	H	3.0	-14.6	33.1	1.0	-46.6	-13.0	-33.6	
3.42	-70.8	V	3.0	-21.0	34.5	1.0	-54.5	-13.0	-41.5	
5.14	-67.8	V	3.0	-14.7	33.4	1.0	-47.1	-13.0	-34.1	
6.85	-71.5	V	3.0	-14.9	33.1	1.0	-47.0	-13.0	-34.0	
Mid Channel (1752.6MHz)										
3.47	-71.9	H	3.0	-22.6	34.4	1.0	-56.0	-13.0	-43.0	
5.20	-70.0	H	3.0	-16.7	33.4	1.0	-49.1	-13.0	-36.1	
6.93	-70.4	H	3.0	-13.6	33.1	1.0	-45.7	-13.0	-32.7	
3.47	-71.0	V	3.0	-21.2	34.4	1.0	-54.6	-13.0	-41.6	
5.20	-69.5	V	3.0	-15.3	33.4	1.0	-47.6	-13.0	-34.6	
6.93	-72.0	V	3.0	-15.3	33.1	1.0	-47.4	-13.0	-34.4	
High Channel (1752.6MHz)										
3.51	-70.9	H	3.0	-20.5	34.4	1.0	-53.9	-13.0	-40.9	
5.26	-69.9	H	3.0	-16.9	33.3	1.0	-48.9	-13.0	-35.9	
7.01	-70.5	H	3.0	-13.5	33.1	1.0	-45.7	-13.0	-32.7	
3.51	-70.5	V	3.0	-20.6	34.4	1.0	-54.0	-13.0	-41.0	
5.26	-68.4	V	3.0	-16.1	33.3	1.0	-48.4	-13.0	-35.4	
7.01	-70.8	V	3.0	-13.9	33.1	1.0	-46.0	-13.0	-33.0	

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WCDMA Band 4 HSDPA

9.2. FIELD STRENGTH OF SPURIOUS RADIATION, Ant 2

9.2.1. GSM

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company: _____
Project #: _____
Date: 06/18/18
Test Engineer: 19429
Configuration: EUT only
Mode: GPRS 850MHz

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

Chamber
3m Chamber C

Pre-amplifier
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	-70.9	H	3.0	-28.2	36.5	1.0	-63.7	-13.0	-50.7	
2.47	-66.9	H	3.0	-21.2	35.2	1.0	-55.4	-13.0	-42.4	
3.30	-66.8	H	3.0	-17.7	34.6	1.0	-51.4	-13.0	-38.4	
1.65	-70.9	V	3.0	-28.2	36.5	1.0	-63.7	-13.0	-50.7	
2.47	-67.7	V	3.0	-22.0	35.2	1.0	-56.1	-13.0	-43.1	
3.30	-66.6	V	3.0	-17.1	34.6	1.0	-50.8	-13.0	-37.8	
Mid Channel (836.6MHz)										
1.67	-70.2	H	3.0	-26.2	36.5	1.0	-63.7	-13.0	-50.7	
2.51	-67.4	H	3.0	-21.4	35.1	1.0	-55.6	-13.0	-42.6	
3.35	-66.8	H	3.0	-17.8	34.6	1.0	-51.4	-13.0	-38.4	
1.67	-69.5	V	3.0	-25.8	36.5	1.0	-62.3	-13.0	-49.3	
2.51	-67.5	V	3.0	-21.4	35.1	1.0	-55.6	-13.0	-42.6	
3.35	-66.6	V	3.0	-17.0	34.6	1.0	-50.6	-13.0	-37.6	
High Channel (848.8MHz)										
1.70	-70.4	H	3.0	-28.1	36.4	1.0	-63.6	-13.0	-50.6	
2.55	-67.5	H	3.0	-21.4	35.1	1.0	-55.6	-13.0	-42.6	
3.40	-67.5	H	3.0	-18.4	34.5	1.0	-51.9	-13.0	-38.9	
1.70	-70.7	V	3.0	-27.7	36.4	1.0	-63.1	-13.0	-50.1	
2.55	-67.9	V	3.0	-21.7	35.1	1.0	-56.8	-13.0	-43.8	
3.40	-67.5	V	3.0	-17.8	34.5	1.0	-51.3	-13.0	-38.3	

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GSM 850MHz GPRS

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company: _____
Project #: _____
Date: 06/18/18
Test Engineer: 19429
Configuration: EUT only
Mode: EGPRS 850MHz

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

Chamber
3m Chamber C

Pre-amplifier
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	-63.9	-13.0	-50.9	
2.47	-67.3	H	3.0	-21.6	35.2	1.0	-55.7	-13.0	-42.7	
3.30	-67.7	H	3.0	-18.9	34.6	1.0	-52.5	-13.0	-39.5	
1.65	-70.5	V	3.0	-28.0	36.5	1.0	-63.5	-13.0	-50.5	
2.47	-68.3	V	3.0	-22.6	35.2	1.0	-56.7	-13.0	-43.7	
3.30	-68.1	V	3.0	-18.6	34.6	1.0	-52.3	-13.0	-39.3	
Mid Channel (836.6MHz)										
1.67	-69.2	H	3.0	-27.3	36.5	1.0	-62.7	-13.0	-49.7	
2.51	-67.8	H	3.0	-21.9	35.1	1.0	-56.0	-13.0	-43.0	
3.35	-68.2	H	3.0	-19.3	34.6	1.0	-52.8	-13.0	-39.8	
1.67	-68.9	V	3.0	-27.2	36.5	1.0	-62.6	-13.0	-49.6	
2.51	-67.3	V	3.0	-21.4	35.1	1.0	-55.5	-13.0	-42.5	
3.35	-67.2	V	3.0	-17.6	34.6	1.0	-51.2	-13.0	-38.2	
High Channel (848.8MHz)										
1.70	-69.8	H	3.0	-26.6	36.4	1.0	-62.0	-13.0	-49.0	
2.55	-67.5	H	3.0	-21.5	35.1	1.0	-55.6	-13.0	-42.6	
3.40	-68.9	H	3.0	-18.9	34.5	1.0	-52.4	-13.0	-39.4	
1.70	-70.2	V	3.0	-27.1	36.4	1.0	-62.5	-13.0	-49.5	
2.55	-67.5	V	3.0	-21.4	35.1	1.0	-55.5	-13.0	-42.5	
3.40	-66.9	V	3.0	-17.2	34.5	1.0	-50.7	-13.0	-37.7	

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GSM 850MHz EGPRS

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company: _____
Project #: _____
Date: 06/18/18
Test Engineer: 19421
Configuration: EUT only
Mode: GPRS 1900MHz

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

Chamber
3m Chamber C

Pre-amplifier
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	-69.9	H	3.0	-19.0	34.1	1.0	-52.1	-13.0	-39.1	
5.55	-69.1	H	3.0	-15.2	33.3	1.0	-47.5	-13.0	-34.5	
7.40	-70.6	H	3.0	-13.1	33.1	1.0	-46.2	-13.0	-33.2	
3.70	-69.5	V	3.0	-19.2	34.1	1.0	-52.4	-13.0	-39.4	
5.55	-69.7	V	3.0	-15.6	33.3	1.0	-48.1	-13.0	-35.1	
7.40	-70.5	V	3.0	-13.1	33.1	1.0	-45.1	-13.0	-32.1	
Mid Channel (1880.0)										
5.76	-70.2	H	3.0	-20.0	34.1	1.0	-53.1	-13.0	-40.1	
5.64	-68.4	H	3.0	-12.2	33.3	1.0	-44.5	-13.0	-31.5	
7.52	-71.4	H	3.0	-13.8	33.0	1.0	-46.8	-13.0	-32.8	
3.76	-69.2	V	3.0	-18.7	34.1	1.0	-51.8	-13.0	-38.8	
5.64	-68.0	V	3.0	-13.9	33.3	1.0	-46.2	-13.0	-33.2	
7.52	-71.5	V	3.0	-13.9	33.0	1.0	-46.0	-13.0	-33.0	
High Channel (1909.8MHz)										
3.82	-69.5	H	3.0	-18.2	34.0	1.0	-51.2	-13.0	-38.2	
5.73	-69.4	H	3.0	-15.1	33.3	1.0	-47.4	-13.0	-34.4	
7.54	-71.4	H	3.0	-13.8	33.0	1.0	-46.8	-13.0	-32.8	
3.82	-69.5	V	3.0	-18.0	34.0	1.0	-52.0	-13.0	-39.0	
5.73	-69.5	V	3.0	-15.2	33.3	1.0	-47.5	-13.0	-34.5	
7.54	-69.6	V	3.0	-11.9	33.0	1.0	-44.0	-13.0	-31.0	

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GSM 1900MHz GPRS

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company: _____
Project #: _____
Date: 06/18/18
Test Engineer: 19421
Configuration: EUT only
Mode: EGPRS 1900MHz

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

Chamber
3m Chamber C

Pre-amplifier
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	-69.5	H	3.0	-19.5	34.1	1.0	-52.7	-13.0	-39.7	
5.55	-70.1	H	3.0	-16.1	33.3	1.0	-48.4	-13.0	-35.4	
7.40	-71.6	H	3.0	-14.2	33.1	1.0	-46.2	-13.0	-33.2	
3.70	-69.4	V	3.0	-19.1	34.1	1.0	-52.2	-13.0	-39.2	
5.55	-69.5	V	3.0	-15.6	33.3	1.0	-47.9	-13.0	-34.9	
7.40	-71.4	V	3.0	-14.5	33.1	1.0	-46.0	-13.0	-33.0	
Mid Channel (1880.0)										
5.76	-67.6	H	3.0	-17.5	34.1	1.0	-50.6	-13.0	-37.6	
5.64	-68.1	H	3.0	-13.9	33.3	1.0	-46.2	-13.0	-33.2	
7.57	-70.9	H	3.0	-13.3	33.0	1.0	-45.4	-13.0	-32.4	
3.76	-69.1	V	3.0	-18.7	34.1	1.0	-51.7	-13.0	-38.7	
5.64	-68.5	V	3.0	-14.4	33.3	1.0	-46.7	-13.0	-33.7	
7.52	-70.5	V	3.0	-12.5	33.0	1.0	-44.9	-13.0	-31.9	
High Channel (1909.8MHz)										
3.85	-68.6	H	3.0	-18.3	34.0	1.0	-51.3	-13.0	-38.3	
5.73	-69.5	H	3.0	-15.2	33.3	1.0	-47.4	-13.0	-34.4	
7.54	-71.4	H	3.0	-13.8	33.0	1.0	-46.8	-13.0	-32.8	
3.82	-69.1	V	3.0	-18.5	34.0	1.0	-51.5	-13.0	-38.5	
5.73	-70.4	V	3.0	-16.1	33.3	1.0	-48.4	-13.0	-35.4	
7.54	-71.3	V	3.0	-13.7	33.0	1.0	-45.7	-13.0	-32.7	

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UL VERIFICATION SERVICES INC.

47173 BENICIA STREET, FREMONT, CA 94538, USA

TEL: (510) 771-1000

FORM NO: CCSUP4701i

FAX: (510) 661-0888

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High Frequency Substitution Measurement UL Fremont Radiated Chamber Company: Project #: Date: Test Engineer: Configuration: Mode: 06/21/18 19445 EUT only 1xRTT 800MHz Test Equipment: Substitution Horn T59 Substitution, and 8ft SMA Cable Chamber Pre-amplifier Filter Limit 3m Chamber C 3m Chamber C Filter ERP										
Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	ERP @ TX Ant End (dBm)	Preamp	Attenuator	ERP	Limit	Delta	Notes
Low Channel (#17.25MHz)										
1.63	-49.6	H	3.0	-28.0	36.5	1.0	-63.5	-13.0	-50.5	
2.45	-71.1	H	3.0	-25.5	35.2	1.0	-59.6	-13.0	-46.6	
3.27	-68.7	H	3.0	-15.9	34.7	1.0	-53.6	-13.0	-40.6	
1.63	-69.5	V	3.0	-27.1	36.5	1.0	-62.6	-13.0	-49.6	
2.45	-71.3	V	3.0	-25.6	35.2	1.0	-59.8	-13.0	-46.8	
3.27	-70.4	V	3.0	-24.0	34.7	1.0	-54.6	-13.0	-41.6	
Mid Channel (#20MHz)										
1.64	-70.7	H	3.0	-29.0	36.5	1.0	-64.5	-13.0	-51.5	
2.46	-69.6	H	3.0	-23.8	35.2	1.0	-58.0	-13.0	-45.0	
3.28	-69.9	H	3.0	-21.1	34.6	1.0	-54.8	-13.0	-41.8	
1.64	-69.7	V	3.0	-27.2	36.5	1.0	-62.7	-13.0	-49.7	
2.46	-70.3	V	3.0	-24.8	35.2	1.0	-58.7	-13.0	-45.7	
3.28	-71.1	V	3.0	-21.7	34.6	1.0	-55.3	-13.0	-42.3	
High Channel (#22.75MHz)										
1.65	-71.0	H	3.0	-29.2	36.5	1.0	-64.7	-13.0	-51.7	
2.47	-70.7	H	3.0	-25.0	35.2	1.0	-59.1	-13.0	-46.1	
3.29	-71.2	H	3.0	-22.4	34.6	1.0	-56.0	-13.0	-43.0	
1.65	-71.0	V	3.0	-28.4	36.5	1.0	-63.9	-13.0	-50.9	
2.47	-70.1	V	3.0	-24.3	35.2	1.0	-58.5	-13.0	-45.5	
3.29	-70.5	V	3.0	-21.0	34.6	1.0	-54.7	-13.0	-41.7	
Rev. 03.19.15										
CDMA BC10 1xRTT										
High Frequency Substitution Measurement UL Fremont Radiated Chamber Company: Project #: Date: Test Engineer: Configuration: Mode: 06/21/18 19445 EUT only 1xRTT 800MHz Test Equipment: Substitution Horn T59 Substitution, and 8ft SMA Cable Chamber Pre-amplifier Filter Limit 3m Chamber C 3m Chamber C Filter ERP										
Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	ERP @ TX Ant End (dBm)	Preamp	Attenuator	ERP	Limit	Delta	Notes
Low Channel (#17.25MHz)										
1.65	-70.1	H	3.0	-28.3	36.5	1.0	-63.8	-13.0	-50.8	
2.47	-70.8	H	3.0	-25.1	35.2	1.0	-59.2	-13.0	-46.2	
3.30	-69.6	H	3.0	-20.7	34.6	1.0	-54.3	-13.0	-41.3	
1.65	-70.3	V	3.0	-27.7	36.5	1.0	-63.2	-13.0	-50.2	
2.47	-69.9	V	3.0	-24.9	35.2	1.0	-58.3	-13.0	-45.3	
3.30	-69.6	V	3.0	-19.1	34.6	1.0	-52.7	-13.0	-39.7	
Mid Channel (#18.52MHz)										
1.67	-68.2	H	3.0	-26.2	36.5	1.0	-61.7	-13.0	-48.7	
2.51	-70.3	H	3.0	-24.3						

High Frequency Substitution Measurement UL Fremont Radiated Chamber										
Company: Project #: Date: 06/21/18 Test Engineer: 19443 Configuration: ELUT only Mode: 1xRTT 1900MHz Test Equipment: Substitution: Horn T59 Substitution, and 8ft SMA Cable										
Chamber		Pre-amplifier		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 (1885.25MHz)										
3.70	-68.5	H	3.0	-18.5	34.1	1.0	-51.7	-13.0	-38.7	
5.95	-69.1	H	3.0	-15.1	33.3	1.0	-47.4	-13.0	-34.4	
7.41	-68.9	H	3.0	-11.5	33.1	1.0	-43.5	-13.0	-30.5	
3.70	-67.6	V	3.0	-17.3	34.1	1.0	-50.4	-13.0	-37.4	
5.95	-68.5	V	3.0	-15.0	33.3	1.0	-47.3	-13.0	-34.3	
7.41	-67.9	V	3.0	-18.4	33.1	1.0	-42.9	-13.0	-29.9	
Mid Channel (1880MHz)										
3.76	-69.3	H	3.0	-15.2	34.1	1.0	-48.3	-13.0	-35.3	
5.94	-69.4	H	3.0	-15.2	33.3	1.0	-47.5	-13.0	-34.5	
7.52	-68.6	H	3.0	-11.0	33.0	1.0	-43.1	-13.0	-30.1	
3.76	-66.0	V	3.0	-15.6	34.1	1.0	-48.6	-13.0	-35.6	
5.94	-69.9	V	3.0	-15.7	33.3	1.0	-48.0	-13.0	-35.0	
7.52	-69.1	V	3.0	-11.5	33.0	1.0	-43.9	-13.0	-30.9	
High Channel (1908.75MHz)										
3.82	-66.5	H	3.0	-16.2	34.0	1.0	-49.2	-13.0	-36.2	
5.73	-69.3	H	3.0	-14.0	33.3	1.0	-46.2	-13.0	-33.2	
7.64	-69.6	H	3.0	-11.9	33.0	1.0	-43.9	-13.0	-30.9	
3.82	-66.6	V	3.0	-16.0	34.0	1.0	-49.0	-13.0	-36.0	
5.73	-67.7	V	3.0	-13.4	33.3	1.0	-45.7	-13.0	-32.7	
7.64	-68.2	V	3.0	-11.4	33.0	1.0	-43.5	-13.0	-30.5	

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CDMA BC1 1xRTT

9.2.3. WCDMA

High Frequency Substitution Measurement UL Fremont Radiated Chamber										
Company: Project #: Date: 06/21/18 Test Engineer: 19443 Configuration: ELUT Only Mode: REL 99, 850MHz Test Equipment: Substitution: Horn T59 Substitution, and 8ft SMA Cable										
Chamber		Pre-amplifier		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	-62.0	-13.0	-49.0	
2.48	-70.0	H	3.0	-24.2	35.2	1.0	-58.8	-13.0	-45.8	
3.31	-70.1	H	3.0	-21.2	34.6	1.0	-54.9	-13.0	-41.9	
1.65	-68.9	V	3.0	-27.3	36.5	1.0	-62.0	-13.0	-49.0	
2.48	-70.8	V	3.0	-25.0	35.2	1.0	-59.2	-13.0	-46.2	
3.31	-70.0	V	3.0	-20.5	34.6	1.0	-54.1	-13.0	-41.1	
Mid Channel (836.6MHz)										
1.67	-69.8	H	3.0	-27.8	36.5	1.0	-63.3	-13.0	-50.3	
2.51	-69.8	H	3.0	-23.9	35.1	1.0	-58.0	-13.0	-45.0	
3.35	-69.9	H	3.0	-20.9	34.6	1.0	-54.5	-13.0	-41.5	
1.67	-70.5	V	3.0	-27.7	36.5	1.0	-63.1	-13.0	-50.1	
2.51	-70.1	V	3.0	-24.2	35.1	1.0	-58.3	-13.0	-45.3	
3.35	-69.7	V	3.0	-20.1	34.6	1.0	-53.7	-13.0	-40.7	
High Channel (846.8MHz)										
1.69	-70.0	H	3.0	-27.9	36.4	1.0	-63.3	-13.0	-50.3	
2.54	-70.0	H	3.0	-24.0	35.1	1.0	-58.1	-13.0	-45.1	
3.39	-70.6	H	3.0	-21.5	34.5	1.0	-55.0	-13.0	-42.0	
1.69	-70.6	V	3.0	-27.6	36.4	1.0	-63.0	-13.0	-50.0	
2.54	-70.4	V	3.0	-24.3	35.1	1.0	-58.4	-13.0	-45.4	
3.39	-70.1	V	3.0	-20.4	34.5	1.0	-53.9	-13.0	-40.9	

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WCDMA Band 5 Rel 99

High Frequency Substitution Measurement UL Fremont Radiated Chamber										
Company: Project #: Date: 06/21/18 Test Engineer: 19443 Configuration: ELUT only Mode: Rev 01A 1900MHz Test Equipment: Substitution: Horn T59 Substitution, and 8ft SMA Cable										
Chamber		Pre-amplifier		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 (1851.25MHz)										
3.70	-68.2	H	3.0	-18.2	34.1	1.0	-51.4	-13.0	-38.4	
5.95	-67.8	H	3.0	-13.7	33.3	1.0	-46.0	-13.0	-33.0	
7.41	-68.1	H	3.0	-10.6	33.1	1.0	-42.7	-13.0	-29.7	
3.70	-68.0	V	3.0	-17.7	34.1	1.0	-50.8	-13.0	-37.8	
5.95	-68.4	V	3.0	-14.5	33.3	1.0	-46.8	-13.0	-33.8	
7.41	-67.4	V	3.0	-10.0	33.1	1.0	-42.0	-13.0	-29.0	
Mid Channel (1850MHz)										
3.76	-67.4	H	3.0	-17.3	34.1	1.0	-50.4	-13.0	-37.4	
5.94	-68.4	H	3.0	-14.3	33.3	1.0	-46.6	-13.0	-33.6	
7.52	-69.1	H	3.0	-11.5	33.0	1.0	-43.6	-13.0	-30.6	
3.76	-67.8	V	3.0	-17.4	34.1	1.0	-50.4	-13.0	-37.4	
5.94	-68.5	V	3.0	-14.4	33.3	1.0	-46.7	-13.0	-33.7	
7.52	-68.4	V	3.0	-10.8	33.0	1.0	-42.8	-13.0	-29.8	
High Channel (1908.75MHz)										
3.82	-66.7	H	3.0	-16.4	34.0	1.0	-49.4	-13.0	-36.4	
5.73	-67.3	H	3.0	-13.0	33.3	1.0	-45.3	-13.0	-32.3	
7.64	-67.8	H	3.0	-10.1	33.0	1.0	-42.1	-13.0	-29.1	
3.82	-66.8	V	3.0	-15.8	34.0	1.0	-48.8	-13.0	-35.8	
5.73	-68.2	V	3.0	-13.9	33.3	1.0	-46.2	-13.0	-33.2	
7.64	-68.6	V	3.0	-10.8	33.0	1.0	-42.8	-13.0	-29.8	

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CDMA BC1 1xEV-DO Rev A

High Frequency Substitution Measurement UL Fremont Radiated Chamber										
Company: Project #: Date: 06/21/18 Test Engineer: 19443 Configuration: ELUT Only Mode: HSDPA 850MHz Test Equipment: Substitution: Horn T59 Substitution, and 8ft SMA Cable										
Chamber		Pre-amplifier		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	-69.1	H	3.0	-27.3	36.5	1.0	-62.8	-13.0	-49.8	
2.48	-69.1	H	3.0	-23.3	35.2	1.0	-57.5	-13.0	-44.5	
3.31	-69.5	H	3.0	-20.6	34.6	1.0	-54.2	-13.0	-41.2	
1.65	-68.9	V	3.0	-27.3	36.5	1.0	-62.8	-13.0	-49.8	
2.48	-70.3	V	3.0	-24.5	35.2	1.0	-59.6	-13.0	-46.6	
3.31	-68.4	V	3.0	-18.9	34.6	1.0	-52.5	-13.0	-39.5	
Mid Channel (836.6MHz)										
1.67	-69.3	H	3.0	-27.3	36.5	1.0	-62.8	-13.0	-49.8	
2.51	-69.0	H	3.0	-23.1	35.1	1.0	-57.3	-13.0	-44.3	
3.34	-69.3	H	3.0	-20.3	34.6	1.0	-53.9	-13.0	-40.9	
1.67	-69.5	V	3.0	-26.7	36.5	1.0	-62.2	-13.0	-49.2	
2.51	-70.1	V	3.0	-24.2	35.1	1.0	-58.4	-13.0	-45.4	
3.34	-69.0	V	3.0	-19.4	34.6	1.0	-53.0	-13.0	-40.0	
High Channel (846.8MHz)										
1.69	-69.5	H	3.0	-27.3	36.4	1.0	-62.8	-13.0	-49.8	
2.54	-69.7	H	3.0	-22.7	35.1	1.0	-56.8	-13.0	-43.8	
3.38	-69.7	H	3.0	-20.6	34.5	1.0	-54.1	-13.0	-41.1	
1.69	-69.4	V	3.0	-26.4	36.4	1.0	-61.8	-13.0	-48.8	
2.54	-69.9	V	3.0	-23.9	35.1	1.0	-58.0	-13.0	-45.0	
3.38	-69.9	V	3.0	-20.2	34.5	1.0	-53.8	-13.0	-40.8	

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WCDMA Band 5 HSDPA

High Frequency Substitution Measurement UL Fremont Radiated Chamber										
Company: Project #: Date: 06/21/18 Test Engineer: 18445 Configuration: EUT Only Mode: REL 99, 1800MHz Test Equipment: Substitution: Horn T59 Substitution, and 8ft SMA Cable										
Chamber		Pre-amplifier		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	-67.8	H	3.0	-37.5	34.4	1.0	-50.9	-33.0	-37.9	
5.56	-69.5	H	3.0	-36.0	34.1	1.0	-49.1	-33.0	-36.1	
7.41	-67.7	H	3.0	-34.4	33.6	1.0	-46.0	-33.0	-33.0	
3.70	-67.3	V	3.0	-37.4	34.4	1.0	-50.8	-33.0	-37.8	
5.56	-68.2	V	3.0	-34.6	34.1	1.0	-47.7	-33.0	-34.7	
7.42	-68.2	V	3.0	-32.6	33.6	1.0	-44.6	-33.0	-31.6	
Mid Channel (1880MHz)										
3.76	-67.7	H	3.0	-37.7	34.4	1.0	-51.1	-33.0	-38.1	
5.64	-69.4	H	3.0	-35.8	34.1	1.0	-48.9	-33.0	-35.9	
7.52	-68.6	H	3.0	-32.2	33.6	1.0	-44.7	-33.0	-31.7	
3.76	-65.4	V	3.0	-36.3	34.4	1.0	-48.7	-33.0	-35.7	
5.64	-69.3	V	3.0	-35.6	34.1	1.0	-48.7	-33.0	-35.7	
7.52	-67.8	V	3.0	-33.5	33.6	1.0	-44.0	-33.0	-31.0	
High Channel (1907.6MHz)										
3.85	-66.1	H	3.0	-35.9	34.4	1.0	-49.3	-33.0	-36.3	
5.72	-65.9	H	3.0	-32.2	34.1	1.0	-45.3	-33.0	-32.3	
7.66	-68.5	H	3.0	-31.8	33.4	1.0	-44.2	-33.0	-31.2	
3.85	-66.2	V	3.0	-35.8	34.4	1.0	-49.3	-33.0	-36.3	
5.72	-68.2	V	3.0	-34.4	34.1	1.0	-47.5	-33.0	-34.5	
7.63	-68.7	V	3.0	-33.3	33.4	1.0	-46.7	-33.0	-32.7	

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High Frequency Substitution Measurement UL Fremont Radiated Chamber										
Company: Project #: Date: 06/21/18 Test Engineer: 18445 Configuration: EUT Only Mode: HSDPA 1800MHz Test Equipment: Substitution: Horn T59 Substitution, and 8ft SMA Cable										
Chamber		Pre-amplifier		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	-67.5	H	3.0	-17.8	34.4	1.0	-51.2	-13.0	-38.2	
5.56	-68.6	H	3.0	-15.2	34.1	1.0	-48.3	-13.0	-35.3	
7.41	-67.8	H	3.0	-11.5	33.6	1.0	-44.1	-13.0	-31.1	
3.70	-68.1	V	3.0	-18.2	34.4	1.0	-51.7	-13.0	-38.7	
5.56	-68.6	V	3.0	-14.9	34.1	1.0	-48.0	-13.0	-35.0	
7.41	-66.8	V	3.0	-10.7	33.6	1.0	-43.3	-13.0	-30.3	
Mid Channel (1880MHz)										
3.76	-66.9	H	3.0	-16.9	34.4	1.0	-50.3	-13.0	-37.3	
5.64	-68.4	H	3.0	-14.8	34.1	1.0	-48.0	-13.0	-35.0	
7.52	-68.8	H	3.0	-12.3	33.5	1.0	-44.8	-13.0	-31.8	
3.76	-67.5	V	3.0	-17.4	34.4	1.0	-50.8	-13.0	-37.8	
5.64	-67.8	V	3.0	-14.0	34.1	1.0	-47.1	-13.0	-34.1	
7.52	-66.8	V	3.0	-10.5	33.5	1.0	-43.0	-13.0	-30.0	
High Channel (1907.6MHz)										
3.85	-66.0	H	3.0	-15.8	34.4	1.0	-49.2	-13.0	-36.2	
5.72	-67.7	H	3.0	-14.0	34.1	1.0	-47.1	-13.0	-34.1	
7.63	-68.8	H	3.0	-12.2	33.4	1.0	-44.6	-13.0	-31.6	
3.85	-67.0	V	3.0	-16.7	34.4	1.0	-50.1	-13.0	-37.1	
5.72	-67.8	V	3.0	-13.9	34.1	1.0	-47.0	-13.0	-34.0	
7.63	-68.1	V	3.0	-11.7	33.4	1.0	-44.1	-13.0	-31.1	

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High Frequency Substitution Measurement UL Fremont Radiated Chamber										
Company: Project #: Date: 06/21/18 Test Engineer: 18445 Configuration: EUT Only Mode: REL 99, 1700MHz Test Equipment: Substitution: Horn T59 Substitution, and 8ft SMA Cable										
Chamber		Pre-amplifier		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	-68.7	H	3.0	-19.5	34.5	1.0	-53.0	-13.0	-40.0	
5.14	-67.6	H	3.0	-14.5	33.4	1.0	-46.9	-13.0	-33.9	
6.85	-67.6	H	3.0	-11.0	33.1	1.0	-42.1	-13.0	-30.1	
3.42	-68.7	V	3.0	-19.0	34.5	1.0	-52.4	-13.0	-39.4	
5.14	-68.9	V	3.0	-15.8	33.4	1.0	-48.1	-13.0	-35.1	
6.85	-68.6	V	3.0	-12.2	33.1	1.0	-44.4	-13.0	-31.4	
Mid Channel (1732.6MHz)										
3.47	-68.7	H	3.0	-19.3	34.4	1.0	-52.8	-13.0	-39.8	
5.20	-67.8	H	3.0	-14.5	33.4	1.0	-46.9	-13.0	-33.9	
6.93	-68.2	H	3.0	-11.4	33.1	1.0	-42.5	-13.0	-30.5	
3.47	-68.1	V	3.0	-18.2	34.4	1.0	-51.6	-13.0	-38.6	
5.20	-68.2	V	3.0	-15.0	33.4	1.0	-47.3	-13.0	-34.3	
6.93	-67.8	V	3.0	-11.0	33.1	1.0	-43.2	-13.0	-30.2	
High Channel (1752.8MHz)										
3.51	-69.0	H	3.0	-19.5	34.4	1.0	-52.0	-13.0	-39.0	
5.26	-67.8	H	3.0	-14.2	33.3	1.0	-46.5	-13.0	-33.5	
7.01	-67.8	H	3.0	-10.3	33.1	1.0	-42.0	-13.0	-29.0	
3.51	-69.5	V	3.0	-19.5	34.4	1.0	-52.9	-13.0	-39.9	
5.26	-67.7	V	3.0	-14.4	33.3	1.0	-46.7	-13.0	-33.7	
7.01	-68.2	V	3.0	-11.3	33.1	1.0	-43.4	-13.0	-30.4	

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High Frequency Substitution Measurement UL Fremont Radiated Chamber										
Company: Project #: Date: 06/21/18 Test Engineer: 18445 Configuration: EUT Only Mode: HSDPA 1700MHz Test Equipment: Substitution: Horn T59 Substitution, and 8ft SMA Cable										
Chamber		Pre-amplifier		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	-68.3	H	3.0	-19.1	34.5	1.0	-52.6	-13.0	-39.6	
5.14	-67.3	H	3.0	-14.2	33.4	1.0	-46.5	-13.0	-33.5	
6.85	-67.2	H	3.0	-10.6	33.1	1.0	-42.8	-13.0	-29.8	
3.42	-68.6	V	3.0	-18.9	34.5	1.0	-52.4	-13.0	-39.4	
5.14	-68.5	V	3.0	-15.4	33.4	1.0	-47.8	-13.0	-34.8	
6.85	-68.6	V	3.0	-12.0	33.1	1.0	-44.2	-13.0	-31.2	
Mid Channel (1732.6MHz)										
3.47	-68.3	H	3.0	-19.0	34.4	1.0	-52.4	-13.0	-39.4	
5.20	-67.4	H	3.0	-14.2	33.4	1.0	-46.5	-13.0	-33.5	
6.93	-67.8	H	3.0	-11.0	33.1	1.0	-43.2	-13.0	-30.2	
3.47	-67.7	V	3.0	-17.9	34.4	1.0	-51.3	-13.0	-38.3	
5.20	-67.8	V	3.0	-14.6	33.4	1.0	-47.0	-13.0	-34.0	
6.93	-67.4	V	3.0	-10.7	33.1	1.0	-42.8	-13.0	-29.8	
High Channel (1752.8MHz)										
3.51	-68.6	H	3.0	-19.2	34.4	1.0	-52.6	-13.0	-39.6	
5.26	-67.2	H	3.0	-13.8	33.3	1.0	-46.2	-13.0	-33.2	
7.01	-67.4	H	3.0	-10.5	33.1	1.0	-42.6	-13.0	-29.6	
3.51	-69.1	V	3.0	-19.2	34.4	1.0	-52.6	-13.0	-39.6	
5.26	-67.4	V	3.0	-14.1	33.3	1.0	-46.4	-13.0	-33.4	
7.01	-67.8	V	3.0	-10.9	33.1	1.0	-43.0	-13.0	-30.0	

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END OF REPORT

10. SETUP PHOTOS

See 12216366-EP1V1 SETUP PHOTOS.