TEST REPORT

Report Number. : 13131738-E7V2

Applicant	:	APPLE, INC. 1 APPLE PARK WAY CUPERTINO, CA 95014, U.S.A
Model	:	A2410
FCC ID	:	BCG-E3549A
IC	:	579C-E3549A
EUT Description	:	SMARTPHONE
Test Standard(s)	:	FCC CFR47 PART 22H, 24E, 27L AND 90S ISED RSS-132 ISSUE 3, RSS-133 ISSUE 6, AND RSS-139 ISSUE 3

Date Of Issue:
OCTOBER 01, 2020

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NVLAP TESTING
NVLAP Lab code: 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	09/23/2020	Initial Review	Mengistu Mekuria
V2	10/01/2020	Addressed TCB questions at Section 5.4 and 5.8	Mengistu Mekuria

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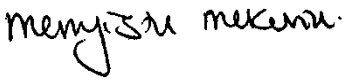
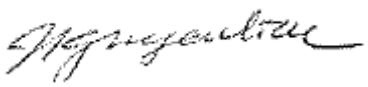
1. ATTESTATION OF TEST RESULTS

Applicant Name and Address	APPLE, INC. 1 APPLE PARK WAY CUPERTINO, CA 95014, U.S.A
Model	A2410
FCC ID	BCG-E3549A
IC	579C-E3549A
EUT Description	SMARTPHONE
Serial Number	MODEL (A2410): C0703040063P5635 (Conducted) and G6TD402M06P3 (Radiated)
Date Tested	AUGUST 01, 2020 to SEPTEMBER 08, 2020
Applicable Standards	FCC CFR47 22H, 24E, 27L AND 90S ISED RSS-132 ISSUE 3, RSS-133 ISSUE 6, AND RSS-139 ISSUE 3
Test Results	COMPLIES

UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. All samples tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise.

This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of the U.S. government.

Approved & Released By:	Reviewed By:	Prepared By:
		
Mengistu Mekuria Lead Test Engineer UL Verification Services Inc.	Glenn Escano Project Engineer UL Verification Services Inc.	Lieu Nguyen Test Engineer UL Verification Services Inc.

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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with the following:

- ANSI C63.26:2015
- FCC CFR 47 Part 2, Part 22, Part 24, Part 27 and Part 90
- FCC KDB 971168 D01 v03r01: Power Meas License Digital Systems
- FCC KDB 971168 D02 v02r01: Misc Rev Approv License Devices
- FCC KDB 412172 D01 v01r01. Determining ERP and EIRP
- ISED RSS-132 Issue 3, RSS-133 Issue 6, RSS-139 Issue 3.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 and 47266 Benicia Street, and 47658 Kato Road, Fremont, California, USA. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

47173 Benicia Street	47266 Benicia Street	47658 Kato Road
☐ Chamber A	☐ Chamber D	☐ Chamber I
☒ Chamber B	☐ Chamber E	☐ Chamber J
☐ Chamber C	☐ Chamber F	☐ Chamber K
	☐ Chamber G	☐ Chamber L
	☐ Chamber H	☐ Chamber M

The above test sites and facilities are covered under FCC Test Firm Registration # 208313. Chambers above are covered under Industry Canada company address and respective code: 2324A.
UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0

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4. DECISION RULES AND MEASUREMENT UNCERTAINTY

4.1. METROLOGICAL TRACEABILITY

All test and measuring equipment utilized to perform the tests documented in this report are calibrated on a regular basis, with a maximum time between calibrations of one year or the manufacturers' recommendation, whichever is less, and where applicable is traceable to recognized national standards.

4.2. DECISION RULES

The Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4:2012 Clause 8.2. (Measurement uncertainty is not taken into account when stating conformity with a specified requirement.)

4.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	U_{Lab}
Conducted Disturbance, 9KHz to 0.15 MHz	3.84 dB
Conducted Disturbance, 0.15 to 30 MHz	3.65 dB
Radiated Disturbance, 9KHz to 30 MHz	2.52 dB
Radiated Disturbance, 30 to 1000 MHz	4.88 dB
Radiated Disturbance,1000 to 18000 MHz	4.24 dB
Radiated Disturbance,18000 to 26000 MHz	4.37 dB
Radiated Disturbance,26000 to 40000 MHz	5.17 dB
Occupied Channel Bandwidth	±0.39 %
Temperature	±0.9 °C
Supply voltages	±0.45 %
Time	±0.02 %

Uncertainty figures are valid to a confidence level of 95%.

4.4. SAMPLE CALCULATION

RADIATED EMISSIONS

Where relevant, the following sample calculation is provided:
Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)
36.5 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 dBuV/m

MAINS CONDUCTED EMISSIONS

Where relevant, the following sample calculation is provided:
Final Voltage (dBuV) = Measured Voltage (dBuV) + Cable Loss (dB) + Limiter Factor (dB) + LISN Insertion Loss.
36.5 dBuV + 0 dB +10.1 dB+ 0 dB = 46.6 dBuV

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5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The Apple iPhone is a smartphone with multimedia functions (music, application support, and video), cellular GSM, GPRS, EGPRS, UMTS, LTE, 5G, CDMA, IEEE 802.11a/b/g/n/ac/ax, Bluetooth, Ultra-Wideband, GPS, NFC and WPT. All models support at least one UICC based SIM. The second SIM is either an UICC based p-SIM (physical SIM) or e-SIM (electronic SIM). The device supports a built-in inductive charging transmitter and receiver. The rechargeable battery is not user accessible.

5.2. INTRODUCTION

This application for certification is leveraging the data reuse procedures from KDB 484596 D01 based on reference FCC ID BCG-E3548A / IC ID 579C-E3548A to cover variant model BCG-E3549A/ IC ID 579C-E3549A. The major difference between the parent/reference model and the variant model is the depopulation in the variant model of the mmWave transmitter. All other circuitry and features are identical. The data reuse test plan was approved via manufacturer KDB inquiry.

5.3. MODEL DIFFERENCES

The manufacturer hereby declares the following for models A2342 and A2410.

A2342 and A2410 are highly similar, with the only difference being the supported cellular bands.

They have the same PCB layout, design, common components, antennas, antenna locations and housing cases.

More specifically, their cellular modem, Wi-Fi, BT, NFC, WPT and UWB transmitters are identical, and removal of cellular bands is done by software and depopulation of band-specific components associated with the removed bands.

Spot check verification and additional full radiated spurious emission test on ANT2 have been done on model A2410 in accordance with the test plan approved via KDB inquiry. Comparison of the models, upper deviation is within 3dB range and all tests are under FCC/ISED Technical Limits. The results documented for model A2342 may be applied as representative to model A2410.

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5.4. SPOT CHECK VERIFICATION RESULTS SUMMARY

A2410 SPOT CHECK RESULTS								
Technology	Worst Mode	Test Item	Channel	Measured Frequency MHz	Original Model: A2342 FCC ID : BCG-E3548A IC ID : 579C-E3548A	Sub Model: A2410 FCC ID: BCG-E3549A IC ID : 579C-E3549A	Delta (dB)	Remarks
GSM	GPRS 850	ERP	Low	824.2	26.05 dBm	26.05 dBm	0	
	EGPRS 850	RSE	Mid	1673.23	-46.52 dBm	-53.94 dBm	-7.42	Noise Floor Level
	GPRS 1900	EIRP	Mid	1880	32.1 dBm	32.1 dBm	0	
	EGPRS 1900	RSE	Mid	7511.41	-45.4 dBm	-44.7 dBm	0.7	Noise Floor Level
WCDMA	REL99 B5	ERP	Low	826.4	18.25 dBm	18.25 dBm	0	
	REL99 B5	RSE	Mid	3212.5	-52.29 dBm	-52.72 dBm	-0.43	Noise Floor Level
	REL99 B2	EIRP	Low	1852.4	25.8 dBm	25.8 dBm	0	
	REL99 B2	RSE	Mid	7777.74	-43.7 dBm	-46.38 dBm	-2.68	Noise Floor Level
	REL99 B4	EIRP	Low	1712.4	25.1 dBm	25.1 dBm	0	
	HSDPA B4	RSE	High	7257.07	-44.34 dBm	-44.61 dBm	-0.27	Noise Floor Level

5.5. REFERENCE DETAIL

Reference application that contains the reused reference data.

Equipment Class	Reference FCC/IC ID	Reference Application	Report Title/Section
PCE	BCG-E3548A / 579C-E3548A	13335182-E7	FCC_IC 2G/3G Report / All Sections except Radiated spurious emission on ANT2

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5.6. SOFTWARE AND FIRMWARE

The EUT firmware installed during testing was version 0.28.03-1.

5.7. MAXIMUM ANTENNA GAIN

Frequency Range (MHz)	ANT 1 Antenna Gain (dBi)	ANT 2 Antenna Gain (dBi)	ANT 3 Antenna Gain (dBi)	ANT 4 Antenna Gain (dBi)
816 - 824	-5.3	-5.4	N/A	N/A
824 - 849	-5.3	-4.9	N/A	N/A
1850 - 1910	-2.8	-1.4	1.1	-0.7
1710 - 1755	-3.1	-1.8	0.4	-1.7

5.8. WORST-CASE CONFIGURATION AND MODE

The EUT was investigated in three orthogonal orientations X/Y/Z on all ANT 1, ANT2, ANT3, and ANT 4 antennas to determine the worst case orientation. The following table exabit the worst case orientation for different frequency bands. The full tests of the EUT have made upon the orientations that shown in the table below.

Bands	ANT1	ANT2	ANT3	ANT4
Secondary (800MHz)	Y	X	N/A	N/A
Cell (850MHz)	Y	X	N/A	N/A
AWS (1700MHz)	Y	Z	Z	X
PCS (1900MHz)	Y	Z	Z	X

Based on average conducted output power measurement investigations. The worst-case is Ant. 1 with the highest power. Therefore, Ant. 1 was used to perform all conducted tests.

The worst-case scenario for all measurements as followed:
- GSM GPRS
- GSM EGPRS
- CDMA 2000 1xRTT
- CDMA 2000 1xEV-DO REV. A
- WCDMA REL 99
- WCDMA HSDPA

CDMA BC10 band is supported in USA only.

Radiated spurious emissions were investigated from 9kHz to 30MHz, 30MHz-1GHz and above 1GHz. There were no emissions found with less than 20dB of margin from 9kHz to 1GHz.

For simultaneous transmission of multiple channels in the 2.4GHz/5GH WLAN, UWB, and Cellular bands, tests were conducted for various configurations having the highest power, least separation in frequencies and widest operation bandwidths. No noticeable new emission was found.

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5.9. DESCRIPTION OF TEST SETUP

SUPPORT TEST EQUIPMENT				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID/ DoC**
Laptop	Apple	A1398	C02PM012G3QD	QDS-BRCM1069
Laptop AC/DC adapter	Liteon Technology	PA-1450-BA1	B123	N/A

I/O CABLES (RF CONDUCTED TEST)						
Cable No.	**Port**	**# of Identical Ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	AC	3	US 115V	Un-shielded	2.0	N/A
2	USB	1	DC	Un-shielded	1.0	N/A
3	RF In/Out	1	EUT	Un-shielded	0.6	N/A
4	RF In/Out	1	Communication Test Set	Un-shielded	1.2	N/A
5	RF In/Out	1	Barrel	N/A	N/A	N/A

I/O CABLES (RF RADIATED TEST)						
Cable No.	**Port**	**# of Identical Ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	RF In/Out	1	Antenna	Un-shielded	5.0	N/A

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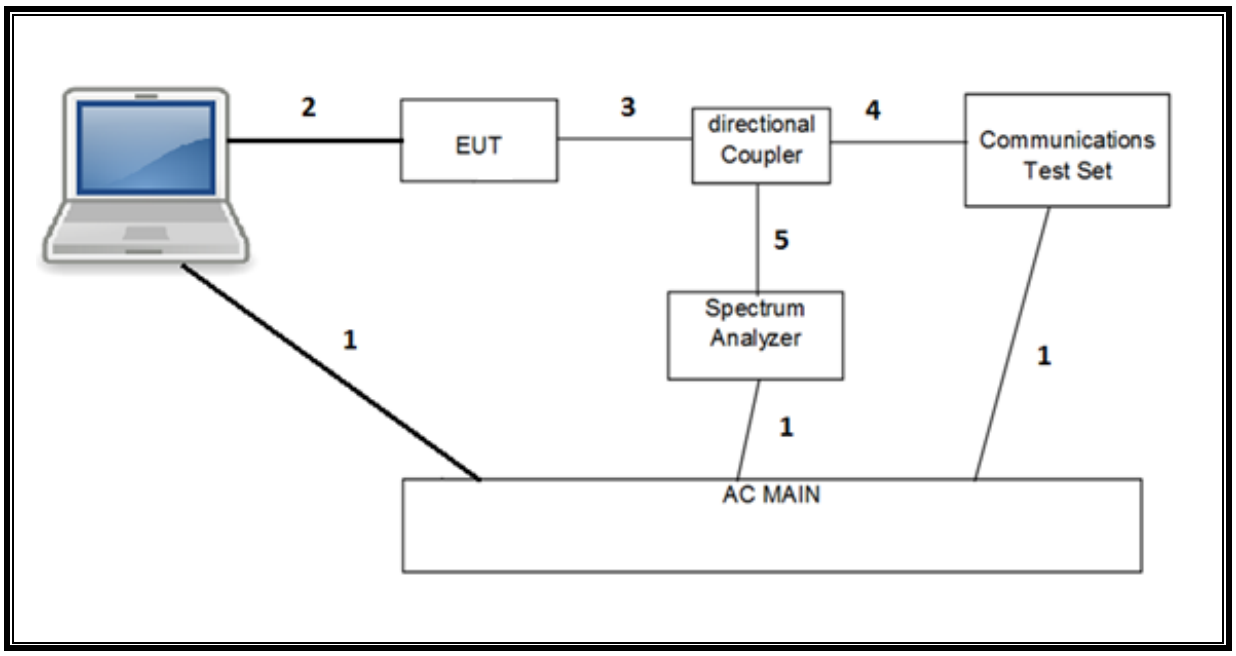
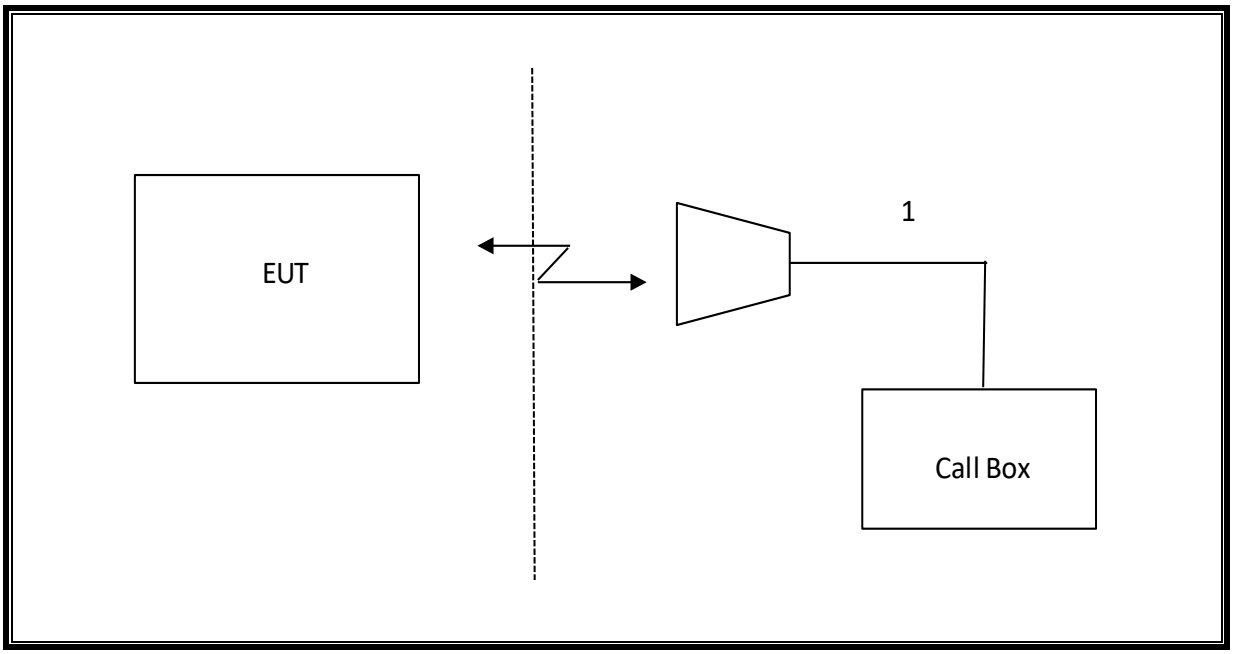
CONDUCTED SETUP



RADIATED SETUP



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6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

TEST EQUIPMENT LIST				
Description	**Manufacturer**	**Model**	**Asset**	**Cal Due**
Antenna, Horn 1-18GHz	A.H. Systems, Inc.	SAS-571	T962	01/25/2021
Antenna, Horn 1-18GHz	ETS Lindgren	3117	T136	07/07/2021
Antenna, Broadband Hybrid, 30MHz to 2000MHz	Sunol Sciences Corp.	JB3	T407	05/20/2021
Amplifier, 1 to 18GHz	MITEQ	AFS42-00101800-25-S-42	T931	05/11/2021
Amplifier, 1 to 18GHz	MITEQ	AFS42-00101800-25-S-42	T1165	08/10/2021
Amplifier, 9KHz to 1GHz, 32dB	SONOMA INSTRUMENT	310	PRE0180176	07/14/2021
Filter, BRF 1850 – 1910 MHz	Micro-Tronics	BRM50714-02	T1796	06/23/2021
Filter, BRF 824 – 848 MHz	Micro-Tronics	BRM20025	PRE0191180	06/23/2021
*Directional Coupler	KRYTAR	152610	T1161	08/14/2020
Spectrum Analyzer, PXA 3Hz to 44GHZ	Keysight	N9030A	T340	01/22/2021
Spectrum Analyzer, PXA 3Hz to 44GHz	Keysight	N9030A	T907	01/22/2021
Wideband Communication Test Set, Call Box	R&S GmbH & Co. KG	CMW500	T260	02/19/2021
Wideband Communication Test Set, Call Box	R&S GmbH & Co. KG	CMW500	T959	02/19/2021
Power Meter, P-series single channel	Keysight	N1912A	T1245	01/22/2021
Power Sensor	Keysight	N1921A	T1225	02/23/2021
UL AUTOMATION SOFTWARE				
CLT Software	UL	UL RF	Ver 7.6, November 11, 2017	
Power Measurement Software	UL	UL RF	Ver 2.7, 2019	
Radiated test software	UL	UL RF	Ver 9.5 June 15, 2019	

NOTES:

* Testing is completed before equipment expiration date.

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7. RADIATED TEST RESULTS

7.1. FIELD STRENGTH OF SPURIOUS RADIATION, ANT2

7.1.1. GSM 850

GPRS MODE

Project #:	13131738
Date:	8/18/2020
Test Engineer:	19206
Configuration:	EUT Only
Mode:	GSM850 GPRS
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 824.2 MHz										
1.69634	41.69	Pk	25	-30.3	.7	-95.2	-58.11	-13	-45.11	H
2.55249	40.13	Pk	29.3	-29.3	.6	-95.2	-54.47	-13	-41.47	H
3.21206	39.67	Pk	31.4	-28.4	.5	-95.2	-52.03	-13	-39.03	H
1.73927	40.6	Pk	25.4	-30.4	.7	-95.2	-58.9	-13	-45.9	V
2.5601	40.32	Pk	29.2	-29.2	.5	-95.2	-54.38	-13	-41.38	V
3.37786	39.69	Pk	30.8	-28.1	.6	-95.2	-52.21	-13	-39.21	V
Mid Channel, 836.6 MHz										
1.69634	41.69	Pk	25	-30.3	.7	-95.2	-58.11	-13	-45.11	H
2.55249	40.13	Pk	29.3	-29.3	.6	-95.2	-54.47	-13	-41.47	H
3.21206	39.67	Pk	31.4	-28.4	.5	-95.2	-52.03	-13	-39.03	H
1.73927	40.6	Pk	25.4	-30.4	.7	-95.2	-58.9	-13	-45.9	V
2.5601	40.32	Pk	29.2	-29.2	.5	-95.2	-54.38	-13	-41.38	V
3.37786	39.69	Pk	30.8	-28.1	.6	-95.2	-52.21	-13	-39.21	V
High Channel, 848.8 MHz										
1.70078	40.02	Pk	29.3	-30.5	.6	-95.2	-55.78	-13	-42.78	H
2.55232	39.19	Pk	33.2	-29.6	.5	-95.2	-51.91	-13	-38.91	H
3.40409	38.16	Pk	33	-28.2	.6	-95.2	-51.64	-13	-38.64	H
1.70362	39.42	Pk	29.4	-30.5	.6	-95.2	-56.28	-13	-43.28	V
2.54969	38.62	Pk	33.2	-29.5	.6	-95.2	-52.28	-13	-39.28	V
3.40147	37.93	Pk	32.9	-28.2	.6	-95.2	-51.97	-13	-38.97	V

Pk – Peak Detector

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EGPRS MODE

Project #:	13131738
Date:	8/18/2020
Test Engineer:	50822
Configuration:	EUT Only
Mode:	GSM850 EGPRS
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 824.2 MHz										
1.64852	43.7	Pk	29	-30.7	.7	-95.2	-52.5	-13	-39.5	H
2.47236	42.26	Pk	33.3	-29.7	.5	-95.2	-48.84	-13	-35.84	H
3.2967	38.02	Pk	33	-28.3	.8	-95.2	-51.68	-13	-38.68	H
1.64797	42.96	Pk	29.1	-30.7	.7	-95.2	-53.14	-13	-40.14	V
2.47273	38.7	Pk	33.3	-29.7	.5	-95.2	-52.4	-13	-39.4	V
3.29723	37.59	Pk	33	-28.3	.8	-95.2	-52.11	-13	-39.11	V
Mid Channel, 836.6 MHz										
1.61414	41.01	Pk	24.9	-30.5	.7	-95.2	-59.09	-13	-46.09	H
2.54748	39.59	Pk	29.3	-29.2	.7	-95.2	-54.81	-13	-41.81	H
3.24255	38.24	Pk	31.3	-28.3	.4	-95.2	-53.56	-13	-40.56	H
1.61105	40.47	Pk	24.9	-30.5	.7	-95.2	-59.63	-13	-46.63	V
2.61529	39.93	Pk	29.2	-29	.6	-95.2	-54.47	-13	-41.47	V
3.27493	38.2	Pk	31.3	-28.2	.7	-95.2	-53.2	-13	-40.2	V
High Channel, 848.8 MHz										
1.69764	44.3	Pk	29.1	-30.5	.6	-95.2	-51.7	-13	-38.7	H
2.54628	38.86	Pk	33.3	-29.5	.6	-95.2	-51.94	-13	-38.94	H
3.39667	37.52	Pk	33	-28.3	.6	-95.2	-52.38	-13	-39.38	H
1.69748	44.33	Pk	29.1	-30.5	.6	-95.2	-51.67	-13	-38.67	V
2.54503	38.92	Pk	33.3	-29.4	.6	-95.2	-51.78	-13	-38.78	V
3.39573	37.69	Pk	33	-28.4	.6	-95.2	-52.31	-13	-39.31	V

Pk – Peak Detector

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7.1.2. GSM 1900

GPRS MODE

Project #:	13131738
Date:	8/18/2020
Test Engineer:	50822
Configuration:	EUT Only
Mode:	GPRS 1900
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 2.7GHz T772 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 1850.2MHz										
3.82304	38.77	Pk	33.7	-27.4	1	-95.2	-49.13	-13	-36.13	H
5.55375	37.27	Pk	35	-24.9	1	-95.2	-46.83	-13	-33.83	H
7.40405	35.31	Pk	36.2	-22.2	1	-95.2	-44.89	-13	-31.89	H
3.81371	31.78	Pk	33.7	-27.4	1	-95.2	-56.12	-13	-43.12	V
5.55418	29.75	Pk	35	-24.9	1	-95.2	-54.35	-13	-41.35	V
7.35358	27.68	Pk	36.1	-21.3	1	-95.2	-51.72	-13	-38.72	V
Mid Channel, 1880MHz										
3.8755	38.7	Pk	31.3	-27.1	1	-95.2	-51.3	-13	-38.3	H
5.95932	37.1	Pk	34.4	-24.7	1	-95.2	-47.4	-13	-34.4	H
7.59075	36.18	Pk	36.9	-23.3	1	-95.2	-44.42	-13	-31.42	H
3.86571	38.66	Pk	31.2	-27.1	1	-95.2	-51.44	-13	-38.44	V
5.93288	36.62	Pk	34.3	-25	1	-95.2	-48.28	-13	-35.28	V
7.80911	34.96	Pk	37.3	-21.9	1	-95.2	-43.84	-13	-30.84	V
High Channel, 1909.8MHz										
3.81892	39.25	Pk	33.7	-27.4	1	-95.2	-48.65	-13	-35.65	H
5.5521	37.15	Pk	35	-24.9	1	-95.2	-46.95	-13	-33.95	H
7.39577	36.06	Pk	36.1	-22.1	1	-95.2	-44.14	-13	-31.14	H
3.83634	39.28	Pk	33.7	-27.3	1	-95.2	-48.52	-13	-35.52	V
5.59667	37.6	Pk	35.1	-24.3	1	-95.2	-45.8	-13	-32.8	V
7.41937	34.9	Pk	36.2	-22.6	1	-95.2	-45.7	-13	-32.7	V

Pk – Peak Detector

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EGPRS MODE

Project #:	13131738
Date:	8/18/2020
Test Engineer:	50822
Configuration:	EUT Only
Mode:	EGPRS 1900
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 2.7GHz T772 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 1850.2MHz										
3.6931	38.08	Pk	33.3	-27.4	1	-95.2	-50.22	-13	-37.22	H
5.55047	36.35	Pk	35	-24.9	1	-95.2	-47.75	-13	-34.75	H
7.40587	35.4	Pk	36.2	-22.2	1	-95.2	-44.8	-13	-31.8	H
3.70886	38.14	Pk	33.5	-27.1	1	-95.2	-49.66	-13	-36.66	V
5.58953	36.48	Pk	35	-24.6	1	-95.2	-47.32	-13	-34.32	V
7.43313	35.45	Pk	36.2	-22.8	1	-95.2	-45.35	-13	-32.35	V
Mid Channel, 1880MHz										
3.74645	39.25	Pk	30.6	-27.5	1	-95.2	-51.85	-13	-38.85	H
5.67914	37.01	Pk	33.1	-24.2	1	-95.2	-48.29	-13	-35.29	H
7.21781	36.66	Pk	37.2	-22.6	1	-95.2	-42.94	-13	-29.94	H
3.75805	39.46	Pk	30.6	-27.5	1	-95.2	-51.64	-13	-38.64	V
5.72031	36.05	Pk	33	-24.3	1	-95.2	-49.45	-13	-36.45	V
7.1477	37.13	Pk	36.8	-22.8	1	-95.2	-43.07	-13	-30.07	V
High Channel, 1909.8MHz										
3.82519	38.66	Pk	33.7	-27.4	1	-95.2	-49.24	-13	-36.24	H
5.72477	37.04	Pk	35.2	-25.6	1	-95.2	-47.56	-13	-34.56	H
7.39509	34.46	Pk	36.1	-22.1	1	-95.2	-45.74	-13	-32.74	H
3.82375	38.86	Pk	33.7	-27.4	1	-95.2	-49.04	-13	-36.04	V
5.764	36.36	Pk	35.2	-25.5	1	-95.2	-48.14	-13	-35.14	V
7.40652	34.74	Pk	36.2	-22.2	1	-95.2	-45.46	-13	-32.46	V

Pk – Peak Detector

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7.1.3. CDMA BC10

1xRTT MODE

Project #:	13131738
Date:	8/14/2020
Test Engineer:	50822
Configuration;	EUT Only
Mode:	1xRTT BC10
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 817.25MHz										
1.64644	40.13	Pk	29.1	-30.7	.7	-95.2	-55.97	-13	-42.97	H
2.46993	39.25	Pk	33.3	-29.8	.5	-95.2	-51.95	-13	-38.95	H
3.29194	38.54	Pk	33	-28.2	.8	-95.2	-51.06	-13	-38.06	H
1.64583	40.64	Pk	29.1	-30.8	.7	-95.2	-55.56	-13	-42.56	V
2.46642	39.35	Pk	33.2	-29.8	.5	-95.2	-51.95	-13	-38.95	V
3.29133	38.15	Pk	33	-28.2	.8	-95.2	-51.45	-13	-38.45	V
Mid Channel, 820MHz										
1.65254	40.65	Pk	24.9	-30.4	.8	-95.2	-59.25	-13	-46.25	H
2.44586	40.32	Pk	28.8	-29.4	.5	-95.2	-54.98	-13	-41.98	H
3.18406	39.7	Pk	31.1	-28.5	.6	-95.2	-52.3	-13	-39.3	H
1.63746	41.15	Pk	25	-30.5	.7	-95.2	-58.85	-13	-45.85	V
2.50326	41.05	Pk	29	-29.3	.6	-95.2	-53.85	-13	-40.85	V
3.31585	38.92	Pk	31.1	-28	.6	-95.2	-52.58	-13	-39.58	V
High Channel, 822.75MHz										
1.64484	41.08	Pk	29.1	-30.8	.7	-95.2	-55.12	-13	-42.12	H
2.46731	40.47	Pk	33.3	-29.8	.5	-95.2	-50.73	-13	-37.73	H
3.2928	38.66	Pk	33	-28.3	.8	-95.2	-51.04	-13	-38.04	H
1.64586	40.54	Pk	29.1	-30.8	.7	-95.2	-55.66	-13	-42.66	V
2.46846	39.98	Pk	33.3	-29.8	.5	-95.2	-51.22	-13	-38.22	V
3.29226	38.54	Pk	33	-28.2	.8	-95.2	-51.06	-13	-38.06	V

Pk – Peak Detector

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1xEV-DO REV A MODE

Project #:	13131738
Date:	8/13/2020
Test Engineer:	50822
Configuration;	EUT Only
Mode:	1xEV-DO REV A BC10
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 817.25MHz										
1.63234	39.2	Pk	29.1	-30.8	.7	-95.2	-57	-13	-44	H
2.45292	43.56	Pk	33	-29.8	.5	-95.2	-47.94	-13	-34.94	H
3.71024	38.32	Pk	33.5	-27.5	.7	-95.2	-50.18	-13	-37.18	H
1.88775	38.93	Pk	31.8	-30.4	.6	-95.2	-54.27	-13	-41.27	V
2.45471	42	Pk	33	-29.8	.5	-95.2	-49.5	-13	-36.5	V
3.69644	38.47	Pk	33.4	-27.5	.8	-95.2	-50.03	-13	-37.03	V
Mid Channel, 820MHz										
1.65692	40.7	Pk	25	-30.5	.8	-95.2	-59.2	-13	-46.2	H
2.3277	40.15	Pk	27.9	-29.5	.6	-95.2	-56.05	-13	-43.05	H
3.90534	38.63	Pk	31.4	-27.6	.6	-95.2	-52.17	-13	-39.17	H
1.67902	40.09	Pk	24.9	-30.4	.7	-95.2	-59.91	-13	-46.91	V
2.49913	40.48	Pk	29	-29.3	.6	-95.2	-54.42	-13	-41.42	V
3.90312	38.65	Pk	31.4	-27.6	.6	-95.2	-52.15	-13	-39.15	V
High Channel, 822.75MHz										
1.68283	39.7	Pk	28.9	-30.6	.7	-95.2	-56.5	-13	-43.5	H
2.47002	44	Pk	33.3	-29.8	.5	-95.2	-47.2	-13	-34.2	H
3.90254	38.94	Pk	33.9	-27.5	.6	-95.2	-49.26	-13	-36.26	H
1.7963	38.82	Pk	30.5	-30.5	.6	-95.2	-55.78	-13	-42.78	V
2.53442	39.2	Pk	33.3	-29.3	.7	-95.2	-51.3	-13	-38.3	V
3.76921	38.82	Pk	33.6	-27.9	.5	-95.2	-50.18	-13	-37.18	V

Pk – Peak Detector

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7.1.4. CDMA BC0

1xRTT MODE

Project #:	13131738
Date:	8/14/2020
Test Engineer:	50822
Configuration;	EUT Only
Mode:	1xRTT BC0
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 824.7MHz										
1.71798	39.65	Pk	29.8	-30.4	.6	-95.2	-55.55	-13	-42.55	H
2.47475	39.32	Pk	33.3	-29.7	.5	-95.2	-51.78	-13	-38.78	H
4.19049	37.59	Pk	33.4	-27.3	.7	-95.2	-50.81	-13	-37.81	H
1.80535	39	Pk	30.5	-30.5	.6	-95.2	-55.6	-13	-42.6	V
2.47544	39.43	Pk	33.3	-29.7	.5	-95.2	-51.67	-13	-38.67	V
4.30557	37.61	Pk	33.5	-26.7	.6	-95.2	-50.19	-13	-37.19	V
Mid Channel, 836.52MHz										
1.62146	40.3	Pk	24.9	-30.5	.7	-95.2	-59.8	-13	-46.8	H
2.32901	39.87	Pk	27.9	-29.5	.6	-95.2	-56.33	-13	-43.33	H
3.20571	38.9	Pk	31.3	-28.4	.6	-95.2	-52.8	-13	-39.8	H
1.63548	40.78	Pk	25	-30.5	.7	-95.2	-59.22	-13	-46.22	V
2.36731	39.06	Pk	28.2	-29.5	.6	-95.2	-56.84	-13	-43.84	V
3.30921	38.63	Pk	31.1	-28	.7	-95.2	-52.77	-13	-39.77	V
High Channel, 848.31MHz										
2.08714	40.42	Pk	31.9	-30.2	.5	-95.2	-52.58	-13	-39.58	H
2.54559	39.82	Pk	33.3	-29.5	.6	-95.2	-50.98	-13	-37.98	H
3.86042	38.38	Pk	33.8	-27.6	.6	-95.2	-50.02	-13	-37.02	H
2.03476	38.76	Pk	32.3	-30.3	.5	-95.2	-53.94	-13	-40.94	V
2.50268	39.11	Pk	33.5	-29.8	.6	-95.2	-51.79	-13	-38.79	V
3.82607	38.89	Pk	33.7	-27.5	.4	-95.2	-49.71	-13	-36.71	V

Pk – Peak Detector

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1xEV-DO REV A MODE

Project #:	13131738
Date:	8/13/2020
Test Engineer:	50822
Configuration;	EUT Only
Mode:	1xEV-DO REV A BC0
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 824.7MHz										
1.77493	39.5	Pk	30.1	-30.6	.6	-95.2	-55.6	-13	-42.6	H
2.47432	42.83	Pk	33.3	-29.7	.5	-95.2	-48.27	-13	-35.27	H
3.75945	38.65	Pk	33.6	-27.9	.5	-95.2	-50.35	-13	-37.35	H
1.76607	38.98	Pk	30.1	-30.7	.6	-95.2	-56.22	-13	-43.22	V
2.69767	38.78	Pk	33	-29.4	.5	-95.2	-52.32	-13	-39.32	V
3.75907	38.4	Pk	33.6	-27.9	.5	-95.2	-50.6	-13	-37.6	V
Mid Channel, 836.52MHz										
1.65601	40.02	Pk	25	-30.5	.8	-95.2	-59.88	-13	-46.88	H
2.38163	39.91	Pk	28.4	-29.5	.6	-95.2	-55.79	-13	-42.79	H
3.07996	39.02	Pk	30.4	-28.5	.6	-95.2	-53.68	-13	-40.68	H
1.63658	41.02	Pk	25	-30.5	.7	-95.2	-58.98	-13	-45.98	V
2.44187	39.84	Pk	28.8	-29.4	.5	-95.2	-55.46	-13	-42.46	V
3.26953	39.85	Pk	31.3	-28.2	.6	-95.2	-51.65	-13	-38.65	V
High Channel, 848.31MHz										
2.0442	39.09	Pk	32.2	-30.3	.5	-95.2	-53.71	-13	-40.71	H
2.54393	43.3	Pk	33.3	-29.4	.6	-95.2	-47.4	-13	-34.4	H
3.88909	38.04	Pk	33.9	-27.3	.6	-95.2	-49.96	-13	-36.96	H
2.03797	39.45	Pk	32.3	-30.3	.6	-95.2	-53.15	-13	-40.15	V
2.54383	45.02	Pk	33.3	-29.4	.6	-95.2	-45.68	-13	-32.68	V
3.80318	38.47	Pk	33.7	-27.9	.8	-95.2	-50.13	-13	-37.13	V

Pk – Peak Detector

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7.1.5. CDMA BC1

1xRTT MODE

Project #:	13131738
Date:	8/14/2020
Test Engineer:	50822
Configuration:	EUT Only
Mode:	1xRTT BC1
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 2.7GHz T772 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 1851.25MHz										
3.70238	39.23	Pk	33.4	-27.3	1	-95.2	-48.87	-13	-35.87	H
5.55499	36.65	Pk	35	-24.9	1	-95.2	-47.45	-13	-34.45	H
7.40446	34.5	Pk	36.2	-22.2	1	-95.2	-45.7	-13	-32.7	H
3.70188	38.76	Pk	33.4	-27.3	1	-95.2	-49.34	-13	-36.34	V
5.55358	37.42	Pk	35	-24.9	1	-95.2	-46.68	-13	-33.68	V
7.40523	34.93	Pk	36.2	-22.2	1	-95.2	-45.27	-13	-32.27	V
Mid Channel, 1880MHz										
3.80224	39.12	Pk	30.9	-27.4	1	-95.2	-51.58	-13	-38.58	H
5.18969	37.31	Pk	33.7	-25.7	1	-95.2	-48.89	-13	-35.89	H
8.41381	35.21	Pk	37.6	-21.1	1	-95.2	-42.49	-13	-29.49	H
3.82236	38.94	Pk	31	-27.4	1	-95.2	-51.66	-13	-38.66	V
5.05603	37.54	Pk	33.8	-24.8	1	-95.2	-47.66	-13	-34.66	V
7.27004	36.29	Pk	37.2	-23.1	1	-95.2	-43.81	-13	-30.81	V
High Channel, 1908.75MHz										
3.81938	39.63	Pk	33.7	-27.4	1	-95.2	-48.27	-13	-35.27	H
5.72709	37.97	Pk	35.2	-25.6	1	-95.2	-46.63	-13	-33.63	H
7.63316	34.23	Pk	35.9	-21.1	1	-95.2	-45.17	-13	-32.17	H
3.81561	39.06	Pk	33.7	-27.4	1	-95.2	-48.84	-13	-35.84	V
5.72643	38.57	Pk	35.2	-25.6	1	-95.2	-46.03	-13	-33.03	V
7.63548	35.44	Pk	35.9	-21.1	1	-95.2	-43.96	-13	-30.96	V

Pk – Peak Detector

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1xEV-DO REV A MODE

Project #:	13131738
Date:	8/13/2020
Test Engineer:	50822
Configuration;	EUT Only
Mode:	1xEV-DO REV A BC1
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 2.7GHz T772 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 1851.25MHz										
3.70073	38.7	Pk	33.4	-27.3	1	-95.2	-49.4	-13	-36.4	H
5.55437	36.58	Pk	35	-24.9	1	-95.2	-47.52	-13	-34.52	H
7.40636	35.14	Pk	36.2	-22.2	1	-95.2	-45.06	-13	-32.06	H
3.70451	39.41	Pk	33.4	-27.3	1	-95.2	-48.69	-13	-35.69	V
5.55192	37.69	Pk	35	-24.9	1	-95.2	-46.41	-13	-33.41	V
7.40388	34.69	Pk	36.2	-22.2	1	-95.2	-45.51	-13	-32.51	V
Mid Channel, 1880MHz										
3.73789	39.81	Pk	30.5	-27.4	1	-95.2	-51.29	-13	-38.29	H
5.16573	37.97	Pk	33.7	-25.4	1	-95.2	-47.93	-13	-34.93	H
6.74529	37.36	Pk	35.9	-24.6	1	-95.2	-45.54	-13	-32.54	H
3.76216	39.45	Pk	30.7	-27.5	1	-95.2	-51.55	-13	-38.55	V
5.16734	37.45	Pk	33.7	-25.4	1	-95.2	-48.45	-13	-35.45	V
6.84693	35.92	Pk	36.1	-23.8	1	-95.2	-45.98	-13	-32.98	V
High Channel, 1908.75MHz										
3.81898	38.71	Pk	33.7	-27.4	1	-95.2	-49.19	-13	-36.19	H
5.72711	36.55	Pk	35.2	-25.6	1	-95.2	-48.05	-13	-35.05	H
7.63383	34.99	Pk	35.9	-21.1	1	-95.2	-44.41	-13	-31.41	H
3.81862	38.63	Pk	33.7	-27.4	1	-95.2	-49.27	-13	-36.27	V
5.72428	36.65	Pk	35.2	-25.6	1	-95.2	-47.95	-13	-34.95	V
7.63495	33.68	Pk	35.9	-21.1	1	-95.2	-45.72	-13	-32.72	V

Pk – Peak Detector

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7.1.6. WCDMA BAND 5

REL 99 MODE

Project #:	13131738
Date:	8/23/2020
Test Engineer:	19410
Configuration:	EUT Only
Mode:	Rel 99 Band 5
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 826.4MHz										
1.65321	39.25	Pk	29	-30.7	.8	-95.2	-56.85	-13	-43.85	H
2.48144	38.39	Pk	33.4	-29.6	.5	-95.2	-52.51	-13	-39.51	H
3.30473	38.12	Pk	32.9	-28.5	.7	-95.2	-51.98	-13	-38.98	H
1.65511	39.04	Pk	29	-30.7	.8	-95.2	-57.06	-13	-44.06	V
2.48427	39.48	Pk	33.4	-29.7	.5	-95.2	-51.52	-13	-38.52	V
3.30566	37.33	Pk	32.9	-28.5	.7	-95.2	-52.77	-13	-39.77	V
Mid Channel, 836.6MHz										
1.67125	40.23	Pk	25	-30.4	.7	-95.2	-59.67	-13	-46.67	H
2.50878	40.13	Pk	29.1	-29.3	.7	-95.2	-54.57	-13	-41.57	H
3.34544	38.42	Pk	30.9	-28.2	.6	-95.2	-53.48	-13	-40.48	H
1.67515	40.82	Pk	25	-30.4	.7	-95.2	-59.08	-13	-46.08	V
2.50823	40.33	Pk	29.1	-29.3	.7	-95.2	-54.37	-13	-41.37	V
3.34648	38.25	Pk	31	-28.2	.6	-95.2	-53.55	-13	-40.55	V
High Channel, 846.6MHz										
1.69532	39.13	Pk	29	-30.5	.7	-95.2	-56.87	-13	-43.87	H
2.53883	38.7	Pk	33.4	-29.4	.7	-95.2	-51.8	-13	-38.8	H
3.38884	37.29	Pk	33	-28.5	.6	-95.2	-52.81	-13	-39.81	H
1.69719	39.79	Pk	29.1	-30.5	.6	-95.2	-56.21	-13	-43.21	V
2.55186	38.14	Pk	33.2	-29.6	.5	-95.2	-52.96	-13	-39.96	V
3.3888	37.87	Pk	33	-28.5	.6	-95.2	-52.23	-13	-39.23	V

Pk – Peak Detector

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HSDPA MODE

Project #:	13131738
Date:	8/23/2020
Test Engineer:	19410
Configuration:	EUT Only
Mode:	HSDPA Band 5
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 826.4MHz										
1.65016	39.86	Pk	29	-30.7	.8	-95.2	-56.24	-13	-43.24	H
2.48039	38.72	Pk	33.4	-29.6	.5	-95.2	-52.18	-13	-39.18	H
3.30049	37.68	Pk	33	-28.4	.8	-95.2	-52.12	-13	-39.12	H
1.65275	39.73	Pk	29	-30.7	.8	-95.2	-56.37	-13	-43.37	V
2.48969	38.57	Pk	33.4	-29.8	.6	-95.2	-52.43	-13	-39.43	V
3.29962	37.87	Pk	33	-28.4	.8	-95.2	-51.93	-13	-38.93	V
Mid Channel, 836.6MHz										
1.67152	41.27	Pk	25	-30.4	.7	-95.2	-58.63	-13	-45.63	H
2.50817	40.69	Pk	29.1	-29.3	.7	-95.2	-54.01	-13	-41.01	H
3.34433	38.35	Pk	31	-28.2	.6	-95.2	-53.45	-13	-40.45	H
1.67509	41.68	Pk	25	-30.4	.7	-95.2	-58.22	-13	-45.22	V
2.50912	40.39	Pk	29.1	-29.3	.7	-95.2	-54.31	-13	-41.31	V
3.34525	39.09	Pk	30.9	-28.2	.6	-95.2	-52.81	-13	-39.81	V
High Channel, 846.6MHz										
1.69338	39.81	Pk	29	-30.5	.7	-95.2	-56.19	-13	-43.19	H
2.54203	38.5	Pk	33.4	-29.4	.7	-95.2	-52	-13	-39	H
3.38796	37.27	Pk	33	-28.5	.6	-95.2	-52.83	-13	-39.83	H
1.69404	40.12	Pk	29	-30.5	.7	-95.2	-55.88	-13	-42.88	V
2.5589	39.3	Pk	33.2	-29.5	.5	-95.2	-51.7	-13	-38.7	V
3.38704	37.39	Pk	33	-28.6	.6	-95.2	-52.81	-13	-39.81	V

Pk – Peak Detector

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7.1.7. WCDMA BAND 2

REL 99 MODE

Project #:	13131738
Date:	8/20/2020
Test Engineer:	50822
Configuration:	EUT Only
Mode:	REL 99 Band 2
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 2.7GHz T772 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 1852.4MHz										
3.71405	38.74	Pk	33.4	-27.1	1	-95.2	-49.16	-13	-36.16	H
5.57029	36.83	Pk	35	-24.7	1	-95.2	-47.07	-13	-34.07	H
7.40381	34.82	Pk	36.2	-22.2	1	-95.2	-45.38	-13	-32.38	H
3.69784	38.62	Pk	33.4	-27.4	1	-95.2	-49.58	-13	-36.58	V
5.60802	35.9	Pk	35.1	-24.1	1	-95.2	-47.3	-13	-34.3	V
7.39821	34.36	Pk	36.1	-22.1	1	-95.2	-45.84	-13	-32.84	V
Mid Channel, 1880MHz										
3.96849	38.59	Pk	31.6	-26.8	1	-95.2	-50.81	-13	-37.81	H
5.64048	37.46	Pk	33.1	-24.8	1	-95.2	-48.44	-13	-35.44	H
7.72016	35.74	Pk	37.1	-22.1	1	-95.2	-43.46	-13	-30.46	H
3.86374	40.09	Pk	31.2	-27.1	1	-95.2	-50.01	-13	-37.01	V
5.83628	38.21	Pk	33.5	-25.5	1	-95.2	-47.99	-13	-34.99	V
8.14887	35.88	Pk	37.3	-22.4	1	-95.2	-43.42	-13	-30.42	V
High Channel, 1907.6MHz										
3.82292	38.64	Pk	33.7	-27.4	1	-95.2	-49.26	-13	-36.26	H
5.71903	35.91	Pk	35.3	-25.5	1	-95.2	-48.49	-13	-35.49	H
7.62693	33.71	Pk	35.9	-21.1	1	-95.2	-45.69	-13	-32.69	H
3.84481	31.84	Pk	33.8	-27.3	1	-95.2	-55.86	-13	-42.86	V
5.71227	30.43	Pk	35.2	-25.4	1	-95.2	-53.97	-13	-40.97	V
7.62199	27.35	Pk	35.9	-21.1	1	-95.2	-52.05	-13	-39.05	V

Pk – Peak Detector

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HSDPA MODE

Project #:	13131738
Date:	8/20/2020
Test Engineer:	50822
Configuration:	EUT Only
Mode:	HSDPA Band 2
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 2.7GHz T772 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 1852.4MHz										
3.71819	38.72	Pk	33.4	-26.9	1	-95.2	-48.98	-13	-35.98	H
5.56176	36.3	Pk	34.9	-24.8	1	-95.2	-47.8	-13	-34.8	H
7.40554	35.62	Pk	36.2	-22.2	1	-95.2	-44.58	-13	-31.58	H
3.7051	38.12	Pk	33.4	-27.3	1	-95.2	-49.98	-13	-36.98	V
5.57359	36.24	Pk	35	-24.7	1	-95.2	-47.66	-13	-34.66	V
7.41563	34.52	Pk	36.2	-22.5	1	-95.2	-45.98	-13	-32.98	V
Mid Channel, 1880MHz										
4.19432	38.49	Pk	31.9	-25.7	1	-95.2	-49.51	-13	-36.51	H
5.60954	37.58	Pk	33.2	-25.2	1	-95.2	-48.62	-13	-35.62	H
7.72029	35.65	Pk	37.1	-22.1	1	-95.2	-43.55	-13	-30.55	H
4.26116	37.96	Pk	31.8	-26.1	1	-95.2	-50.54	-13	-37.54	V
5.69919	35.99	Pk	33.1	-24.1	1	-95.2	-49.21	-13	-36.21	V
8.14807	35.71	Pk	37.3	-22.4	1	-95.2	-43.59	-13	-30.59	V
High Channel, 1907.6MHz										
3.80906	38.24	Pk	33.6	-27.4	1	-95.2	-49.76	-13	-36.76	H
5.71519	36.83	Pk	35.3	-25.5	1	-95.2	-47.57	-13	-34.57	H
7.62047	34.91	Pk	35.9	-21.1	1	-95.2	-44.49	-13	-31.49	H
3.77877	38.87	Pk	33.6	-26.9	1	-95.2	-48.63	-13	-35.63	V
5.70581	36.87	Pk	35.2	-25.3	1	-95.2	-47.43	-13	-34.43	V
7.63158	35.05	Pk	35.9	-21.1	1	-95.2	-44.35	-13	-31.35	V

Pk – Peak Detector

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7.1.8. WCDMA BAND 4

REL 99 MODE

Project #:	13131738
Date:	8/23/2020
Test Engineer:	19410
Configuration:	EUT Only
Mode:	REL 99 Band 4
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 2.7GHz T772 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 1712.4MHz										
3.42736	38.8	Pk	33	-28.2	1	-95.2	-50.6	-13	-37.6	H
5.13662	38.09	Pk	34.6	-25.7	1	-95.2	-47.21	-13	-34.21	H
6.84462	36.16	Pk	36.4	-23.3	1	-95.2	-44.94	-13	-31.94	H
3.44414	38.35	Pk	33.1	-28.1	1	-95.2	-50.85	-13	-37.85	V
5.12775	37.25	Pk	34.5	-25.4	1	-95.2	-47.85	-13	-34.85	V
6.87872	34.96	Pk	36.4	-23.4	1	-95.2	-46.24	-13	-33.24	V
Mid Channel, 1732.6MHz										
3.46303	39.3	Pk	30.3	-27.3	1	-95.2	-51.9	-13	-38.9	H
5.19855	37.58	Pk	33.7	-25.9	1	-95.2	-48.82	-13	-35.82	H
6.92911	35.88	Pk	36.3	-23.4	1	-95.2	-45.42	-13	-32.42	H
3.46667	39.23	Pk	30.3	-27.3	1	-95.2	-51.97	-13	-38.97	V
5.19794	38.27	Pk	33.7	-25.9	1	-95.2	-48.13	-13	-35.13	V
6.93227	36.13	Pk	36.3	-23.4	1	-95.2	-45.17	-13	-32.17	V
High Channel, 1752.6MHz										
3.50155	37.93	Pk	33.1	-27.5	1	-95.2	-50.67	-13	-37.67	H
5.2544	37.03	Pk	34.6	-25.9	1	-95.2	-48.47	-13	-35.47	H
7.0123	35.3	Pk	36.1	-22.6	1	-95.2	-45.4	-13	-32.4	H
3.51072	38.01	Pk	33.2	-27.3	1	-95.2	-50.29	-13	-37.29	V
5.26462	36.96	Pk	34.7	-25.8	1	-95.2	-48.34	-13	-35.34	V
6.98803	34.22	Pk	36.2	-22.5	1	-95.2	-46.28	-13	-33.28	V

Pk – Peak Detector

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HSDPA MODE

Project #:	13131738
Date:	8/23/2020
Test Engineer:	19410
Configuration:	EUT Only
Mode:	HSDPA Band 4
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 2.7GHz T772 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 1712.4MHz										
3.42377	37.98	Pk	33	-28.2	1	-95.2	-51.42	-13	-38.42	H
5.13578	36.65	Pk	34.6	-25.6	1	-95.2	-48.55	-13	-35.55	H
6.84568	35.91	Pk	36.4	-23.3	1	-95.2	-45.19	-13	-32.19	H
3.41979	38.67	Pk	33	-28.2	1	-95.2	-50.73	-13	-37.73	V
5.13932	37.02	Pk	34.6	-25.7	1	-95.2	-48.28	-13	-35.28	V
6.83415	35.68	Pk	36.4	-23	1	-95.2	-45.12	-13	-32.12	V
Mid Channel, 1732.6MHz										
3.46672	40.12	Pk	30.3	-27.3	1	-95.2	-51.08	-13	-38.08	H
5.19718	38.57	Pk	33.7	-25.9	1	-95.2	-47.83	-13	-34.83	H
6.93108	36.29	Pk	36.3	-23.4	1	-95.2	-45.01	-13	-32.01	H
3.46305	38.97	Pk	30.3	-27.3	1	-95.2	-52.23	-13	-39.23	V
5.19605	38.44	Pk	33.7	-25.9	1	-95.2	-47.96	-13	-34.96	V
6.93025	36.82	Pk	36.3	-23.4	1	-95.2	-44.48	-13	-31.48	V
High Channel, 1752.6MHz										
3.50344	37.93	Pk	33.2	-27.4	1	-95.2	-50.47	-13	-37.47	H
5.25479	38.19	Pk	34.6	-25.9	1	-95.2	-47.31	-13	-34.31	H
7.00958	34.86	Pk	36.2	-22.5	1	-95.2	-45.64	-13	-32.64	H
3.50425	39.1	Pk	33.2	-27.4	1	-95.2	-49.3	-13	-36.3	V
5.26081	36.99	Pk	34.7	-25.9	1	-95.2	-48.41	-13	-35.41	V
6.98594	35.35	Pk	36.1	-22.6	1	-95.2	-45.35	-13	-32.35	V

Pk – Peak Detector

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8. SETUP PHOTOS

Please refer to 13335182-EP1V1 for setup photos

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Appendix A – Reference Test Report 13335182-E7

Attached is the test report (13335182-E7) containing the reference data from the parent model as detailed in section 5.5.

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TEST REPORT

Report Number. : 13335182-E7V2

Applicant	:	APPLE, INC. 1 APPLE PARK WAY CUPERTINO, CA 95014, U.S.A
Model	:	A2342
FCC ID	:	BCG-E3548A
IC	:	579C-E3548A
EUT Description	:	SMARTPHONE
Test Standard(s)	:	FCC CFR47 PART 22H, 24E, 27L AND 90S ISED RSS-132 ISSUE 3, RSS-133, ISSUE 6 AND RSS-139 ISSUE 3

Date Of Issue:
SEPTEMBER 23, 2020

Prepared by:
UL Verification Services Inc.
47173 Benicia Street
Fremont, CA 94538, U.S.A.
TEL: (510) 319-4000
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NVLAP TESTING
NVLAP Lab code: 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	09/17/2020	Initial Review	Mengistu Mekuria
V2	09/23/2020	Addressed TCB Feedback	Glenn Escano

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1. ATTESTATION OF TEST RESULTS

Applicant Name and Address	APPLE, INC. 1 APPLE PARK WAY CUPERTINO, CA 95014, U.S.A
Model	A2342
FCC ID	BCG-E3548A
IC	579C-E3548A
EUT Description	SMARTPHONE
Serial Number	MODEL A2342:C070033L5P573(Conducted) G6TC400TPT33(Radiated)
Date Tested	MARCH 09, 2017 to SEPTEMBER 17, 2020
Applicable Standards	FCC CFR47 22H, 24E, 27L AND 90S ISED RSS-132 ISSUE 3, RSS-133, ISSUE 6 AND RSS-139 ISSUE 3
Test Results	COMPLIES

UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. All samples tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise.

This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of the U.S. government.

Approved & Released By:	Prepared By:	Reviewed By:
Mengistu Mekuria Operations Leader UL Verification Services Inc.	Glenn Escano Project Engineer UL Verification Services Inc.	John Thompson Laboratory Engineer UL Verification Services Inc.

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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with the following:

- ANSI C63.26:2015
- FCC CFR 47 Part 2, Part 22, Part 24, Part 27 and Part 90
- FCC KDB 971168 D01 v03r01: Power Meas License Digital Systems
- FCC KDB 971168 D02 v02r01: Misc Rev Approv License Devices
- FCC KDB 412172 D01 v01r01. Determining ERP and EIRP
- ISED RSS-132 Issue 3, RSS-133 Issue 6, RSS-139 Issue 3.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 and 47266 Benicia Street, and 47658 Kato Road, Fremont, California, USA. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

47173 Benicia Street	47266 Benicia Street	47658 Kato Road
☒ Chamber A	☐ Chamber D	☐ Chamber I
☒ Chamber B	☐ Chamber E	☐ Chamber J
☐ Chamber C	☐ Chamber F	☐ Chamber K
	☐ Chamber G	☐ Chamber L
	☐ Chamber H	☐ Chamber M

The above test sites and facilities are covered under FCC Test Firm Registration # 208313. Chambers above are covered under Industry Canada company address and respective code: 2324A.
UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0

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4. DECISION RULES AND MEASUREMENT UNCERTAINTY

4.1. METROLOGICAL TRACEABILITY

All test and measuring equipment utilized to perform the tests documented in this report are calibrated on a regular basis, with a maximum time between calibrations of one year or the manufacturers' recommendation, whichever is less, and where applicable is traceable to recognized national standards.

4.2. DECISION RULES

The Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4:2012 Clause 8.2. (Measurement uncertainty is not taken into account when stating conformity with a specified requirement.)

4.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	U_{Lab}
Conducted Disturbance, 9KHz to 0.15 MHz	3.84 dB
Conducted Disturbance, 0.15 to 30 MHz	3.65 dB
Radiated Disturbance, 9KHz to 30 MHz	2.52 dB
Radiated Disturbance, 30 to 1000 MHz	4.88 dB
Radiated Disturbance,1000 to 18000 MHz	4.24 dB
Radiated Disturbance,18000 to 26000 MHz	4.37 dB
Radiated Disturbance,26000 to 40000 MHz	5.17 dB
Occupied Channel Bandwidth	±0.39 %
Temperature	±0.9 °C
Supply voltages	±0.45 %
Time	±0.02 %

Uncertainty figures are valid to a confidence level of 95%.

4.4. SAMPLE CALCULATION

RADIATED EMISSIONS

Where relevant, the following sample calculation is provided:
Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)
36.5 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 dBuV/m

MAINS CONDUCTED EMISSIONS

Where relevant, the following sample calculation is provided:
Final Voltage (dBuV) = Measured Voltage (dBuV) + Cable Loss (dB) + Limiter Factor (dB) + LISN Insertion Loss.
36.5 dBuV + 0 dB +10.1 dB+ 0 dB = 46.6 dBuV

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5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The Apple iPhone is a smartphone with multimedia functions (music, application support, and video), cellular GSM, GPRS, EGPRS, UMTS, LTE, 5G, CDMA, IEEE 802.11a/b/g/n/ac/ax, Bluetooth, Ultra-Wideband, GPS, NFC and WPT. All models support at least one UICC based SIM. The second SIM is either an UICC based p-SIM (physical SIM) or e-SIM (electronic SIM). The device supports a built-in inductive charging transmitter and receiver. The rechargeable battery is not user accessible.

5.2. MAXIMUM OUTPUT POWER

EIRP/ERP TEST PROCEDURE

ANSI C63.26:2015
KDB 971168 D01 Section 5.6

ERP/EIRP = PMeas + GT − LC
where: ERP/EIRP = effective or equivalent radiated power, respectively (expressed in the same units as PMeas, typically dBW or dBm);
PMeas = measured transmitter output power or PSD, in dBm or dBW;
GT = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);
LC = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

For devices utilizing multiple antennas, KDB 662911 provides guidance for determining the effective array transmit antenna gain term to be used in the above equation.

EUT includes different power levels for head use configuration and body use configuration and the below tables contain the highest of all configurations average conducted and ERP/EIRP output powers as follows:

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GSM MODES

RSS 132 850MHz								
Frequency range (MHz)	Modulation	Conducted (Average) (dBm)	Antenna Gain (dBi)	Limit (W)	EIRP		99% BW (kHz)	Emission Designator
					(dBm)	(W)		
824.2-848.8	GPRS	33.5	-5.30	11.5	28.20	0.661	243.7235	244KGXW
	EGPRS	28.0			22.68	0.185	231.8629	232KG7W
Part 22 850MHz								
Frequency range (MHz)	Modulation	Conducted (Average) (dBm)	Antenna Gain (dBi)	Limit (W)	ERP		99% BW (kHz)	Emission Designator
					(dBm)	(W)		
824.2-848.8	GPRS	33.5	-5.30	7.0	26.05	0.403	243.7235	244KGXW
	EGPRS	28.0			20.53	0.113	231.8629	232KG7W
Part 24 / RSS 133 1900MHz								
Frequency range (MHz)	Modulation	Conducted (Average) (dBm)	Antenna Gain (dBi)	Limit (W)	EIRP		99% BW (kHz)	Emission Designator
					(dBm)	(W)		
1850.2-1909.8	GPRS	31.0	1.10	2.0	32.10	1.622	247.5659	248KGXW
	EGPRS	26.5			27.60	0.575	248.0284	248KG7W

CDMA MODES

Part 90 BC10								
Frequency range (MHz)	Modulation	Conducted (Average) (dBm)	Antenna Gain (dBi)	Limit (W)	EIRP		99% BW (kHz)	Emission Designator
					(dBm)	(W)		
817.25-822.75	1xRTT	25.7	-5.30	100.0	20.40	0.110	1277.7	1M28F9W
	1xEV-DO Rev A	25.7			20.40	0.110	1282.8	1M28F9W
RSS 132 BC0								
Frequency range (MHz)	Modulation	Conducted (Average) (dBm)	Antenna Gain (dBi)	Limit (W)	EIRP		99% BW (kHz)	Emission Designator
					(dBm)	(W)		
824.7-848.31	1xRTT	25.4	-5.30	11.5	20.10	0.102	1281.5	1M28F9W
	1xEV-DO Rev A	25.7			20.40	0.110	1277.4	1M28F9W
Part 22 BC0								
Frequency range (MHz)	Modulation	Conducted (Average) (dBm)	Antenna Gain (dBi)	Limit (W)	ERP		99% BW (kHz)	Emission Designator
					(dBm)	(W)		
824.7-848.31	1xRTT	25.4	-5.30	7.0	17.95	0.062	1281.5	1M28F9W
	1xEV-DO Rev A	25.7			18.25	0.067	1277.4	1M28F9W
Part 24 / RSS 133 BC1								
Frequency range (MHz)	Modulation	Conducted (Average) (dBm)	Antenna Gain (dBi)	Limit (W)	EIRP		99% BW (kHz)	Emission Designator
					(dBm)	(W)		
1851.25-1908.75	1xRTT	25.7	-2.80	2.0	22.90	0.195	1282.6	1M28F9W
	1xEV-DO Rev A	25.5			22.70	0.186	1279.9	1M28F9W

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WCDMA MODE

RSS 132 Band 5

Frequency range (MHz)	Modulation	Conducted (Average) (dBm)	Antenna Gain (dBi)	Limit (W)	EIRP		99% BW (kHz)	Emission Designator
					(dBm)	(W)		
826.4-846.6	REL 99	25.7	-5.30	11.5	20.40	0.110	4158.6	4M16F9W
	HSDPA	24.7			19.40	0.087	4156.7	4M16F9W

Part 22 Band 5

Frequency range (MHz)	Modulation	Conducted (Average) (dBm)	Antenna Gain (dBi)	Limit (W)	ERP		99% BW (kHz)	Emission Designator
					(dBm)	(W)		
826.4-846.6	REL 99	25.7	-5.30	7.0	18.25	0.067	4158.6	4M16F9W
	HSDPA	24.7			17.25	0.053	4156.7	4M16F9W

Part 24 / RSS 133 Band 2

Frequency range (MHz)	Modulation	Conducted (Average) (dBm)	Antenna Gain (dBi)	Limit (W)	EIRP		99% BW (kHz)	Emission Designator
					(dBm)	(W)		
1852.4-1907.6	REL 99	24.7	1.10	2.0	25.80	0.380	4146.5	4M15F9W
	HSDPA	23.8			24.90	0.309	4138.6	4M14F9W

Part 27 / RSS 139 Band 4

Frequency range (MHz)	Modulation	Conducted (Average) (dBm)	Antenna Gain (dBi)	Limit (W)	EIRP		99% BW (kHz)	Emission Designator
					(dBm)	(W)		
1712.4-1752.6	REL 99	24.7	0.40	1.0	25.10	0.324	4131.3	4M13F9W
	HSDPA	23.8			24.20	0.263	4148.8	4M15F9W

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5.3. SOFTWARE AND FIRMWARE

The EUT firmware installed during testing was version 0.28.03-1.

5.4. MAXIMUM ANTENNA GAIN

Frequency Range (MHz)	ANT 1 Antenna Gain (dBi)	ANT 2 Antenna Gain (dBi)	ANT 3 Antenna Gain (dBi)	ANT 4 Antenna Gain (dBi)
816 - 824	-5.3	-5.5	-	-
824 - 849	-5.3	-5.0	-	-
1850 - 1910	-2.8	-1.6	1.1	-0.7
1710 - 1755	-3.1	-2.2	0.4	-1.7

5.5. WORST-CASE CONFIGURATION AND MODE

The EUT was investigated in three orthogonal orientations X/Y/Z on all ANT 1, ANT2, ANT3, and ANT 4 antennas to determine the worst case orientation. The following table exabit the worst case orientation for different frequency bands. The full tests of the EUT have made upon the orientations that shown in the table below.

Bands	ANT1	ANT2	ANT3	ANT4
Secondary (800MHz)	Y	Z	N/A	N/A
Cell (850MHz)	Y	Z	N/A	N/A
AWS (1700MHz)	Y	X	Y	X
PCS (1900MHz)	Y	X	Y	X

Based on average conducted output power measurement investigations. The worst-case is Ant. 1 with the highest power. Therefore, Ant. 1 was used to perform all conducted tests.

The worst-case scenario for all measurements as followed:
- GSM GPRS
- GSM EGPRS
- CDMA 2000 1xRTT
- CDMA 2000 1xEV-DO REV. A
- WCDMA REL 99
- WCDMA HSDPA

CDMA BC10 band is supported in USA only.

Radiated spurious emissions were investigated from 9kHz to 30MHz, 30MHz-1GHz and above 1GHz. There were no emissions found with less than 20dB of margin from 9kHz to 1GHz.

For simultaneous transmission of multiple channels in the 2.4GHz/5GH WLAN, UWB, and Cellular bands, tests were conducted for various configurations having the highest power, least separation in frequencies and widest operation bandwidths. No noticeable new emission was found.

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5.6. DESCRIPTION OF TEST SETUP

SUPPORT TEST EQUIPMENT				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID/ DoC**
Laptop	Apple	A1398	C02PM012G3QD	QDS-BRCM1069
Laptop AC/DC adapter	Liteon Technology	PA-1450-BA1	B123	N/A

I/O CABLES (RF CONDUCTED TEST)						
Cable No.	**Port**	**# of Identical Ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	AC	3	US 115V	Un-shielded	2.0	N/A
2	USB	1	DC	Un-shielded	1.0	N/A
3	RF In/Out	1	EUT	Un-shielded	0.6	N/A
4	RF In/Out	1	Communication Test Set	Un-shielded	1.2	N/A
5	RF In/Out	1	Barrel	N/A	N/A	N/A

I/O CABLES (RF RADIATED TEST)						
Cable No.	**Port**	**# of Identical Ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	RF In/Out	1	Antenna	Un-shielded	5.0	N/A

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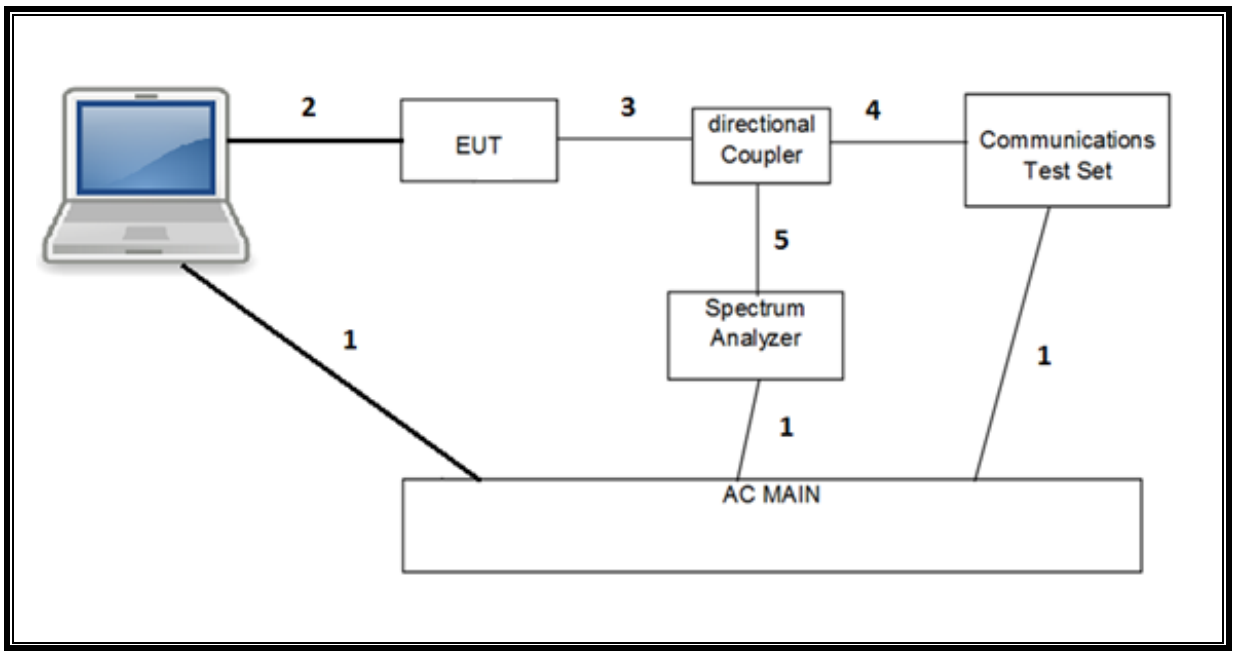
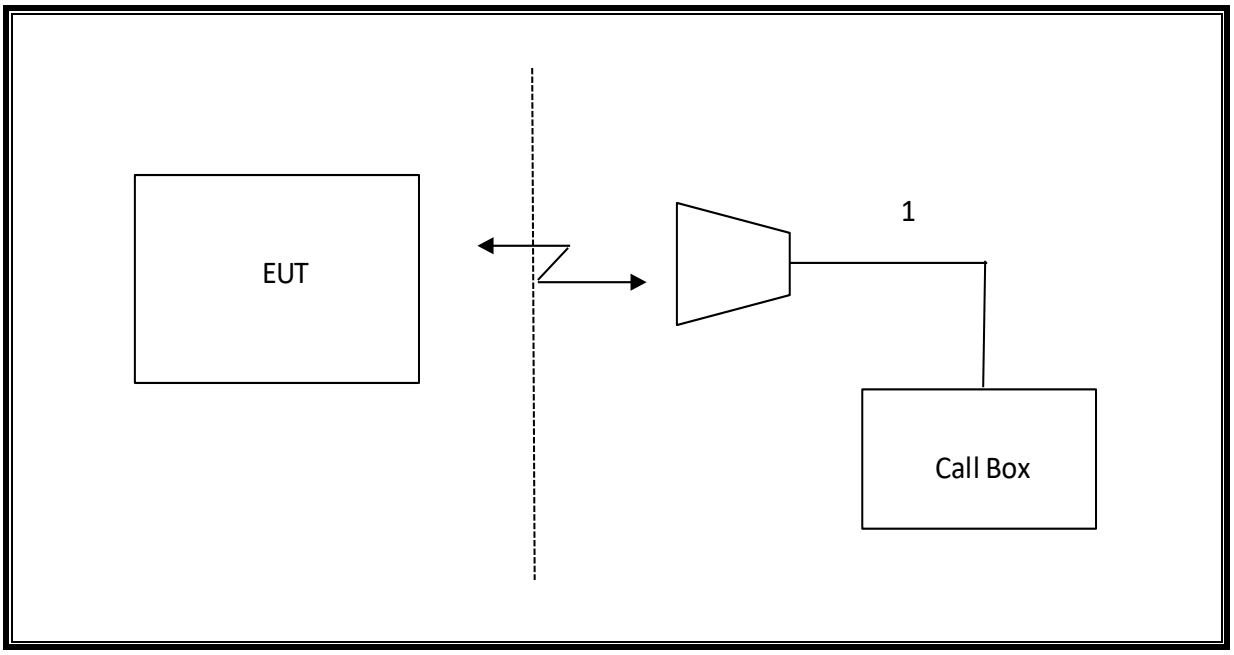
CONDUCTED SETUP



RADIATED SETUP



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6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

TEST EQUIPMENT LIST				
Description	**Manufacturer**	**Model**	**Asset**	**Cal Due**
Antenna, Horn 1-18GHz	A.H. Systems, Inc.	SAS-571	T962	01/25/2021
Antenna, Horn 1-18GHz	ETS Lindgren	3117	T346	07/20/2021
Antenna, Horn 1-18GHz	ETS Lindgren	3117	T136	07/07/2021
Antenna, Broadband Hybrid, 30MHz to 2000MHz	Sunol Sciences	JB3	T407	05/20/2021
Antenna, Broadband Hybrid, 30MHz to 2000MHz	Sunol Sciences	JB3	PRE0184052	11/12/2020
Antenna, Broadband Hybrid, 30MHz to 2000MHz	Sunol Sciences	JB3	PRE0181575	09/05/2020
Antenna, Active Loop 9KHz to 30MHz	ETS-Lindgren	6502	T757	10/01/2020
Antenna Horn, 18 to 26GHz	ARA	SWH-28	T125	04/17/2021
Antenna, Horn 26-40GHz	ARA	MWH-2640/B	PRE0182203	04/17/2021
*Amplifier, 1 to 18GHz	MITEQ	AFS42-00101800-25-S-42	T1165	05/18/2020
Amplifier, 1 to 18GHz	MITEQ	AFS42-00101800-25-S-42	PRE0181078	05/06/2021
Amplifier, 10KHz to 1GHz, 32dB	Sonoma	310N	PRE0180176	07/14/2021
Amplifier, 100KHz to 1GHz, 32dB	Keysight	8447D	T15	10/26/2020
*Amplifier, 10KHz to 1GHz, 32dB	Sonoma	310N	PRE0180175	05/29/2020
Pre-Amp 18-26GHz	Agilent Technology	8449B	T404	04/8/2021
Amplifier, 26-40GHz	Miteq	TTA2640	T1864	04/08/2021
Filter, BRF 1850 – 1910 MHz	Micro-Tronics	BRM50714-02	T1796	06/23/2021
Filter, BRF 824 – 848 MHz	Micro-Tronics	BRM20025	PRE0191180	06/23/2021
Filter, HPF 1.2 GHz	MICRO-TRONICS	MICRO-TRONICS	T1737	06/23/2021
*Directional Coupler	KRYTAR	152610	T1536	06/09/2020
*Directional Coupler	KRYTAR	152610	T1161	08/14/2020
*Directional Coupler	KRYTAR	152613	T1537	06/08/2020
Spectrum Analyzer, PXA 3Hz to 44GHZ	Keysight	N9030A	T340	01/22/2021
Spectrum Analyzer, PXA 3Hz to 44GHz	Keysight	N9030A	T1454	07/15/2021
Spectrum Analyzer, PXA 3Hz to 44GHz	Keysight	N9030A	T907	01/22/2021
Spectrum Analyzer, PSA, 3Hz to 44GHz	Keysight	N9030A	T908	05/05/2021
Spectrum Analyzer, PSA, 3Hz to 26.5GHz	Keysight	E4440A	T198	01/28/2021
Spectrum Analyzer, PSA, 3Hz to 44GHz	Keysight	E4440A	T200	01/24/2021
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	PRE0179522	02/18/2021
Wireless Communications Test Set, 8960 Series 10	Agilent	E5515C	T211	02/18/2021
Wideband Communication Test Set, Call Box	R&S GmbH & Co. KG	CMW500	T948	08/10/2021
Wideband Communication Test Set, Call Box	R&S GmbH & Co. KG	CMW500	T1871	02/25/2021
Wideband Communication Test Set, Call Box	R&S GmbH & Co. KG	CMW500	T972	02/24/2021
Wideband Communication Test Set, Call Box	R&S GmbH & Co. KG	CMW500	T260	02/19/2021
Wideband Communication Test Set, Call Box	R&S GmbH & Co. KG	CMW500	T959	02/19/2021
Chamber, Environmental	Cincinnati Sub Zero	ZPHS-8-3.5-SCT/WC	T754	12/22/2020
Environmental Chamber	Cincinnati Sub Zero	ZPHS-8-3.5-SCT/WC	T1154	12/22/2020
Power Meter, P-series single channel	Keysight	N1912A	T1245	01/22/2021
Power Sensor	Keysight	N1921A	T1225	02/23/2021
UL AUTOMATION SOFTWARE				
CLT Software	UL	UL RF	Ver 7.6, November 11, 2017	
Power Measurement Software	UL	UL RF	Ver 2.7, 2019	
Radiated test software	UL	UL RF	Ver 9.5 June 15, 2019	

NOTES:

* Testing is completed before equipment expiration date.

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7. RF OUTPUT POWER VERIFICATION

EUT includes different power levels for head use configuration and body use configuration and the below tables contain the highest of all configurations average conducted output powers as follows:

7.1. GSM

Using CMW500 Communication Test Set
Function: Menu select > GSM Mobile Station > GSM 850/900/1800/1900

Press **Connection control** to choose the different menus
Press **RESET** > choose all to reset all settings

Connection	Press **Signal Off** to turn off the signal and change settings Network Support > GSM+GPRS or GSM+EGPRS Main Service > Packet Data Service selection > Test Mode A – Auto Slot Config. off	
MS Signal	Press Slot Config bottom on the right twice to select and change the number of time slots and power setting	
	> Slot configuration	> Uplink/Gamma > 33 dBm for GPRS 850/900 > 27 dBm for EGPRS 850/900 > 30 dBm for GPRS1800/1900 > 26 dBm for EGPRS1800/1900
BS Signal	Enter the same channel number for TCH channel (test channel) and BCCH channel	
	Frequency Offset >	+ 0 Hz
	Mode >	BCCH and TCH
	BCCH Level >	-85 dBm (May need to adjust if link is not stable)
	BCCH Channel >	choose desire test channel [Enter the same channel number for TCH channel (test channel) and BCCH channel]
	Channel Type >	Off
	P0>	4 dB
	Slot Config >	Unchanged (if already set under MS Signal)
	TCH >	choose desired test channel
	Hopping >	Off
	Main Timeslot >	3 (Default)
Network	Coding Scheme >	CS 1 (GPRS) and MCS5 (EGPRS)
	Bit Stream >	2E9-1PSR Bit Pattern
AF/RF	Enter appropriate offsets for Ext. Att. Output and Ext. Att. Input	
Connection	Press **Signal On** to turn on the signal and change settings	

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RESULT

7.1.1. GSM 850

Test Engineer ID:	38602	Test Date:	5/8/2020 – 5/12/2020

Mode	Coding Scheme	Time Slots	Ch No.	Freq. (MHz)	Conducted Average Power (dBm)	
					ANT 1	ANT 2
GPRS (GMSK)	CS1	1	128	824.2	**33.50**	**32.00**
			190	836.6	33.47	31.94
			251	848.8	33.31	31.98
		2	128	824.2	32.50	31.00
			190	836.6	32.20	30.70
			251	848.8	32.30	30.52
EGPRS (8PSK)	MCS5	1	128	824.2	**28.00**	26.41
			190	836.6	27.84	**26.50**
			251	848.8	27.92	25.85
		2	128	824.2	27.00	25.50
			190	836.6	26.99	25.39
			251	848.8	26.93	25.35

7.1.2. GSM 1900

Test Engineer ID:	38602	Test Date:	5/8/2020

Mode	Coding Scheme	Time Slots	Ch No.	Freq. (MHz)	Conducted Average Power (dBm)			
					ANT 1	ANT 2	ANT 3	ANT 4
GPRS (GMSK)	CS1	1	512	1850.2	31.83	29.32	30.68	28.67
			661	1880	**32.00**	**29.50**	**31.00**	**29.00**
			810	1909.8	31.67	29.17	30.73	28.48
		2	512	1850.2	30.82	**28.50**	29.64	27.31
			661	1880	31.00	28.36	30.00	28.00
			810	1909.8	30.67	28.15	29.33	25.74
EGPRS (8PSK)	MCS5	1	512	1850.2	**27.00**	**24.50**	**26.50**	**24.00**
			661	1880	26.91	24.31	26.41	23.82
			810	1909.8	26.32	24.38	26.44	23.63
		2	512	1850.2	26.00	23.50	25.50	22.96
			661	1880	25.84	23.41	25.33	23.00
			810	1909.8	25.73	23.45	24.65	22.67

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7.2. CDMA

Maximum output power is verified on the Low, Middle and High channels according to procedures in section 4.4.5.2 of 3GPP2 C.S0011/TIA-98-E for 1xRTT, section 3.1.2.3.4 of 3GPP2 C.S0033-0/TIA-866 for Rel. 0 and section 4.3.4 of 3GPP2 C.S0033-A for Rev. A

1xRTT

This procedure assumes the Agilent 8960 Test Set has the following applications installed and with valid license.

Application	Rev, License
CDMA2000 Mobile Test	B.15.18, L

- Protocol Rev > 6 (IS-2000-0)
- System ID: 18; NID: 65535, Reg. Ch. #.: 610 for Cell, 600 for PCS & 450 for AWS
- Radio Config (RC) > RC1 or RC3
- Service Option (SO) Setup > SO55 or SO32
- Traffic Data Rate > Full
- Rvs Power Ctrl > All Up bits (Maximum TxPout)

1xEV-DO - Release 0 (REL 0)

This procedure assumes the Agilent 8960 Test Set has the following applications installed and with valid license.

EVDO Release 0 - RTAP

- Call Setup > Shift & Preset
- Call Control:
  - Access Network Info > Cell Parameters > Sector ID > 00000000 : 00000000 : 00000000 : 00000000 > Subnet Mask > 0
  - Generator Info > Termination Parameters > Max Forward Packet Duration > 16 Slots
- Call Parms:
  - Cell Power > -105.5 dBm/1.23 MHz
  - Channel > (Enter channel number)
  - Application Config > Enhanced Test Application Protocol > RTAP
  - RTAP Rate > 153.6 kbps
  - Rvs Power Ctrl > Active bits
  - Protocol Rel > 0 (1xEV-DO)
- Press “Start Data Connection” when “Session Open” appear in “Active Cell”
- Rvs Power Ctrl > All Up bits (Maximum TxPout)

EVDO Release 0 - FTAP

- Call Setup > Shift & Preset
- Call Control:
  - Access Network Info > Cell Parameters > Sector ID > 00000000 : 00000000 : 00000000 : 00000000 > Subnet Mask > 0
  - Generator Info > Termination Parameters > Max Forward Packet Duration > 16 Slots
- Call Parms:
  - Cell Power > -105.5 dBm/1.23 MHz
  - Cell Band > (Select US Cellular or US PCS)
  - Channel > (Enter channel number)
  - Application Config > Enhanced Test Application Protocol > FTAP (default)
  - FTAP Rate > 307.2 kbps (2 Slot, QPSK)
  - Rvs Power Ctrl > Active bits
  - Protocol Rel > 0 (1xEV-DO)
- Press “Start Data Connection” when “Session Open” appear in “Active Cell”
- Rvs Power Ctrl > All Up bits (Maximum TxPout)

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1xEV-DO - Revision A (REV A)

This procedure assumes the Agilent 8960 Test Set has the following applications installed and with valid license.

Application	Rev, License
1xEV-DO Terminal Test	A.09.13

EVDO Rev. A – RETAP

- Call Setup > Shift & Preset
- Cell Power > -60 dBm/1.23 MHz
- Protocol Rev > A (1xEV-DO-A)
- Application Config > Enhanced Test Application Protocol > RETAP
- R-Data Pkt Size > 4096
- Protocol Subtype Config > Release A Physical Layer Subtype > Subtype 2
  - PL Subtype 2 Access Channel MAC Subtype > Default (Subtype 0)
- Access Network Info > Cell Parameters
  - Sector ID > 00000000: 00000000: 00000000: 00000000
  - Subnet Mask > 0
- Generator Info > Termination Parameters > Max Forward Packet Duration >16 Slots
  - ACK R-Data After > Subpacket 0 (All ACK)
- Rvs Power Ctrl > All Up bits (to get the maximum power)

EVDO Rev. A - FETAP

- Call Setup > Shift & Preset
- Cell Power > -60 dBm/1.23 MHz
- Protocol Rev > A (1xEV-DO-A)
- Application Config > Enhanced Test Application Protocol > FETAP
- F-Traffic Format > 4 (1024, 2,128) Canonical (307.2k, QPSK)
- Protocol Subtype Config > Release A Physical Layer Subtype > Subtype 2
  - PL Subtype 2 Access Channel MAC Subtype > Default (Subtype 0)
- Access Network Info > Cell Parameters > Sector ID > 00000000: 00000000: 00000000: 00000000
  - Subnet Mask > 0
- Generator Info > Termination Parameters > Max Forward Packet Duration >16 Slots
  - ACK R-Data After > Subpacket 0 (All ACK)
- Rvs Power Ctrl > All Up bits (to get the maximum power)

1x Advanced Setup Procedures used to establish the test signals

Call box setup procedure

- Protocol Rev > 6 (IS-2000-0)
- System ID: 331; NID: 65535, Reg. Ch. #.:
- Radio Config (RC) > Fwd11,Rvs8
- Service Option (SO) Setup > SO75 (Loopback)
- Traffic Data Rate > Full
- Rvs Power Ctrl > All Up bits (Maximum TxPout)
- Reverse Power Control Mode: 00-200 to 400 bps
- Smart blanking was disabled.

1xEV-DO Rev. B Setup Procedures used to establish the test signals

Call box setup procedure

- CMW 500 Signal Generator > 1xEV-DO Taskbar Enable
- CMW 500 1xEV-DO Signaling Configuration Window >
- 1xEV-DO Signaling On Window:
  Under Access Network Control:
  Band Class: BC0: US Cellular
  RF Channel: 31
  1xEV-DO Power: -70 dBm
  Release B

- 1xEV-DO Signaling Configuration Window

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Under RF Frequency Band / Channel: Enter Ch. Frequency

- Under Carrier Configuration: RF Frequency
  For Two Carriers: Low Channel (1013)

	RF Channel	RF Channel Offset
Carrier [0]	31	0
Carrier [1]	1013	982

- Under Carrier Configuration: RF Pilot

	Carrier Sector	Active on AN	Assigned to AT
Pilot [0]	C0/S0	✓	✓
	CA/S1	✓	✓

For Three Carriers: Low Channel (1013)

	RF Channel	RF Channel Offset
Carrier [0]	72	0
Carrier [1]	31	-41
Carrier [2]	1013	941

- Under Carrier Configuration: RF Pilot

	Carrier Sector	Active on AN	Assigned to AT
Pilot [0]	C0/S0	✓	✓
Pilot [1]	C1/S1	✓	✓
Pilot [2]	C2/S2	✓	✓

- Rvs Power Ctrl > All Up bits (to get the maximum power)

RESULT

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7.2.1. CDMA BC10

Test Engineer ID:	39005	Test Date:	9/3/2020

Band	Mode	Radio Configuration (RC)	Service Option (SO)	Ch No.	Freq. (MHz)	Condcuted Average Power (dBm)	
						ANT 1	ANT 2
BC10 (800MHz)	1xRTT	RC1	2 (Loopback)	450	817.25	25.7	23.7
				560	820.00	25.6	23.7
				670	822.75	25.6	23.7
			55 (Loopback)	450	817.25	25.7	23.7
				560	820.00	25.6	23.7
				670	822.75	25.6	23.7
		RC2	9 (Loopback)	450	817.25	25.7	23.7
				560	820.00	25.7	23.7
				670	822.75	25.6	23.7
			55 (Loopback)	450	817.25	25.7	23.7
				560	820.00	25.6	23.8
				670	822.75	25.6	23.8
		RC3	2 (Loopback)	450	817.25	25.7	23.7
				560	820.00	25.7	23.7
				670	822.75	25.7	23.8
			55 (Loopback)	450	817.25	25.7	23.7
				560	820.00	25.7	23.8
				670	822.75	25.7	23.7
			32 (+ F-SCH)	450	817.25	25.6	23.8
				560	820.00	25.7	**23.8**
				670	822.75	25.6	23.6
			32 (+ SCH)	450	817.25	25.6	23.7
				560	820.00	25.6	23.7
				670	822.75	25.6	23.7
		RC4	2 (Loopback)	450	817.25	25.7	23.7
				560	820.00	25.7	23.7
				670	822.75	25.7	23.7
			55 (Loopback)	450	817.25	25.7	23.7
				560	820.00	25.7	23.7
				670	822.75	25.7	23.7
			32 (+ F-SCH)	450	817.25	25.6	23.7
				560	820.00	25.6	23.7
				670	822.75	**25.7**	23.7
			32 (+ SCH)	450	817.25	25.4	23.7
				560	820.00	25.6	23.7
				670	822.75	25.5	23.8
		RC5	9 (Loopback)	450	817.25	25.6	23.7
				560	820.00	25.7	23.7
				670	822.75	25.6	23.7
			55 (Loopback)	450	817.25	25.7	23.7
				560	820.00	25.6	23.7
				670	822.75	25.6	23.7
	1xAdvanced	RC11	2 (Loopback)	450	817.25	25.6	23.7
				560	820.00	25.6	23.8
				670	822.75	25.6	23.8
			75 (Loopback)	450	817.25	25.6	23.8
				560	820.00	25.6	23.8
				670	822.75	25.6	23.9
			32 (+ F-SCH)	450	817.25	25.6	23.8
				560	820.00	25.5	23.8
				670	822.75	25.6	**23.9**
			32 (+ SCH)	450	817.25	25.6	23.8
				560	820.00	25.5	23.8
				670	822.75	25.6	23.8
	1xEVDO Rel. 0	FTAP Rate: 307.2 kbps(2 slot, QPSK)	RTAP Rate: 153.6 kbps	450	817.25	25.5	23.7
				560	820.00	25.6	23.7
				670	822.75	**25.7**	23.7
	1xEVDO Rev. A	FETAP: 307.2k, QPSK/ ACK	RETAP: 4096	450	817.25	25.6	23.6
				560	820.00	25.7	23.7
				670	822.75	25.6	23.8

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7.2.2. CDMA BC0

Test Engineer ID:	39005	Test Date:	8/31/2020

Band	Mode	Radio Configuration (RC)	Service Option (SO)	Ch No.	Freq. (MHz)	Condcuted Average Power (dBm)	
						ANT 1	ANT 2
BC0 (850MHz)	1xRTT	RC1	2 (Loopback)	1013	824.70	25.0	23.6
				384	836.52	25.0	23.8
				777	848.31	25.0	23.6
			55 (Loopback)	1013	824.70	25.0	23.6
				384	836.52	25.0	23.8
				777	848.31	25.0	23.6
		RC2	9 (Loopback)	1013	824.70	25.0	23.6
				384	836.52	25.0	23.9
				777	848.31	25.0	23.7
			55 (Loopback)	1013	824.70	25.0	23.6
				384	836.52	25.0	23.8
				777	848.31	25.0	23.7
		RC3	2 (Loopback)	1013	824.70	25.0	23.7
				384	836.52	25.0	23.8
				777	848.31	25.0	23.7
			55 (Loopback)	1013	824.70	25.0	23.6
				384	836.52	25.0	23.9
				777	848.31	25.0	23.7
			32 (+ F-SCH)	1013	824.70	25.0	23.7
				384	836.52	25.2	23.8
				777	848.31	25.0	23.7
			32 (+ SCH)	1013	824.70	25.2	23.6
				384	836.52	25.3	23.8
				777	848.31	25.1	23.7
		RC4	2 (Loopback)	1013	824.70	25.0	23.7
				384	836.52	25.0	23.9
				777	848.31	25.0	23.7
			55 (Loopback)	1013	824.70	25.0	23.7
				384	836.52	25.0	23.9
				777	848.31	25.0	23.7
			32 (+ F-SCH)	1013	824.70	25.3	23.7
				384	836.52	**25.4**	**23.9**
				777	848.31	25.3	23.7
			32 (+ SCH)	1013	824.70	25.3	23.7
				384	836.52	25.3	**23.9**
				777	848.31	25.4	23.7
		RC5	9 (Loopback)	1013	824.70	25.0	23.7
				384	836.52	25.0	23.9
				777	848.31	25.0	23.7
			55 (Loopback)	1013	824.70	25.0	23.6
				384	836.52	25.0	23.9
				777	848.31	25.0	23.7
	1xAdvanced	RC11	2 (Loopback)	1013	824.70	25.0	23.7
				384	836.52	25.0	**23.9**
				777	848.31	25.0	23.8
			75 (Loopback)	1013	824.70	25.0	23.8
				384	836.52	25.0	23.9
				777	848.31	25.0	23.8
			32 (+ F-SCH)	1013	824.70	25.4	23.8
				384	836.52	25.5	23.9
				777	848.31	25.4	23.7
			32 (+ SCH)	1013	824.70	25.4	23.7
				384	836.52	25.4	23.9
				777	848.31	25.3	23.6
	1xEVDO Rel. 0	FTAP Rate: 307.2 kbps(2 slot, QPSK)	RTAP Rate: 153.6 kbps	1013	824.70	25.6	23.6
				384	836.52	25.6	23.5
				777	848.31	25.7	23.6
	1xEVDO Rev. A	FETAP: 307.2k, QPSK/ ACK	RETAP: 4096	1013	824.70	25.7	23.8
				384	836.52	**25.7**	23.5
				777	848.31	25.7	23.7

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7.2.3. CDMA BC1

Test Engineer ID:	39005	Test Date:	9/1/2020

Band	Mode	Radio Configuration (RC)	Service Option (SO)	Ch No.	Freq. (MHz)	Condcuted Average Power (dBm)	
						ANT 1	ANT 2
BC1 (1900MHz)	1xRTT	RC1	2 (Loopback)	25	1851.25	25.5	22.8
				600	1880.00	25.6	22.8
				1175	1908.75	25.4	22.8
			55 (Loopback)	25	1851.25	25.5	22.8
				600	1880.00	25.4	22.9
				1175	1908.75	25.3	22.8
		RC2	9 (Loopback)	25	1851.25	25.4	22.8
				600	1880.00	25.4	22.9
				1175	1908.75	25.4	22.8
			55 (Loopback)	25	1851.25	25.5	22.7
				600	1880.00	25.4	**22.9**
				1175	1908.75	25.4	22.8
		RC3	2 (Loopback)	25	1851.25	25.5	22.8
				600	1880.00	25.4	**22.9**
				1175	1908.75	25.4	22.8
			55 (Loopback)	25	1851.25	25.4	22.8
				600	1880.00	25.4	22.8
				1175	1908.75	25.3	22.7
			32 (+ F-SCH)	25	1851.25	25.6	22.7
				600	1880.00	**25.7**	22.8
				1175	1908.75	25.6	22.8
			32 (+ SCH)	25	1851.25	25.4	22.7
				600	1880.00	25.5	22.8
				1175	1908.75	25.5	22.8
		RC4	2 (Loopback)	25	1851.25	25.5	22.7
				600	1880.00	25.4	22.9
				1175	1908.75	25.4	22.8
			55 (Loopback)	25	1851.25	25.5	22.7
				600	1880.00	25.4	22.9
				1175	1908.75	25.4	22.8
			32 (+ F-SCH)	25	1851.25	25.4	22.7
				600	1880.00	25.5	**22.9**
				1175	1908.75	25.5	22.8
			32 (+ SCH)	25	1851.25	25.4	22.8
				600	1880.00	25.5	22.9
				1175	1908.75	25.3	22.8
		RC5	9 (Loopback)	25	1851.25	25.5	22.8
				600	1880.00	25.5	22.9
				1175	1908.75	25.4	22.8
			55 (Loopback)	25	1851.25	25.5	22.7
				600	1880.00	25.4	22.8
				1175	1908.75	25.4	22.8
	1xAdvanced	RC11	2 (Loopback)	25	1851.25	25.5	22.7
				600	1880.00	25.4	22.8
				1175	1908.75	25.5	22.8
			75 (Loopback)	25	1851.25	25.4	22.7
				600	1880.00	25.4	22.8
				1175	1908.75	25.4	22.8
			32 (+ F-SCH)	25	1851.25	25.3	22.7
				600	1880.00	25.3	**22.8**
				1175	1908.75	25.4	22.8
			32 (+ SCH)	25	1851.25	25.0	22.7
				600	1880.00	25.4	22.7
				1175	1908.75	25.1	22.8
	1xEVDO Rel. 0	FTAP Rate: 307.2 kbps(2 slot, QPSK)	RTAP Rate: 153.6 kbps	25	1851.25	25.4	22.6
				600	1880	**25.5**	22.8
				1175	1908.75	25.4	22.7
	1xEVDO Rev. A	FETAP: 307.2k, QPSK/ ACK	RETAP: 4096	25	1851.25	25.4	22.6
				600	1880	25.5	22.9
				1175	1908.75	25.4	22.7

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7.3. WCDMA

TEST PROCEDURE

The transmitter output was connected to the input terminal of Directional Coupler via calibrated coaxial cable. The output coupling terminal of the Directional Coupler was directly connected to a spectrum analyzer while the output through terminal connected to the communication test set via calibrated coaxial cable.

The output power was measured with the spectrum analyzer at the low, middle and high channel in each band.

- Set the spectrum analyzer span wide enough or greater than the modulated signal BW.
- Set a spectrum analyzer at peak detection mode with VBW ≥ RBW.≥ 26dB BW, typically 5MHz.
- Set a marker to point the corresponding peak value.

REL 99

The following tests were completed according to the test requirements outlined in section 5.2 of the 3GPP TS34.121-1 specification. The DUT supports power Class 3, which has a nominal maximum output power of 24 dBm (+1.7/-3.7).

Mode	Subtest	Rel99
WCDMA General Settings	Loopback Mode	Test Mode 2
	Rel99 RMC	12.2kbps RMC
	Power Control Algorithm	Algorithm2
	βc/βd	8/15

HSDPA REL 5

The following 4 Sub-tests were completed according to Release 5 procedures in table C.10.1.4 of 3GPP TS 34.121-1 A summary of these settings are illustrated below:

Table C.10.1.4: β values for transmitter characteristics tests with HS-DPCCH

Sub-test	β_c	β_d	β_d *(SF)*	β_c/β_d	β_{HS} *(Note1, Note 2)*	**CM** (dB) *(Note 3)*	**MPR** (dB) *(Note 3)*
1	2/15	15/15	64	2/15	4/15	0.0	0.0
2	12/15 *(Note 4)*	15/15 *(Note 4)*	64	12/15 *(Note 4)*	24/15	1.0	0.0
3	15/15	8/15	64	15/8	30/15	1.5	0.5
4	15/15	4/15	64	15/4	30/15	1.5	0.5

Note 1: Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 30/15 with $\beta_{hs} = 30/15 * \beta_c$.

Note 2: For the HS-DPCCH power mask requirement test in clause 5.2C, 5.7A, and the Error Vector Magnitude (EVM) with HS-DPCCH test in clause 5.13.1A, and HSDPA EVM with phase discontinuity in clause 5.13.1AA, Δ_{ACK} and Δ_{NACK} = 30/15 with $\beta_{hs} = 30/15 * \beta_c$, and Δ_{CQI} = 24/15 with $\beta_{hs} = 24/15 * \beta_c$.

Note 3: CM = 1 for β_c/β_d =12/15, β_{hs}/β_c=24/15. For all other combinations of DPDCH, DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.

Note 4: For subtest 2 the β_c/β_d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to β_c = 11/15 and β_d = 15/15.

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HSPA REL 6 (HSDPA & HSUPA)

The following 5 Sub-tests were completed according to Release 6 procedures in table C.11.1.3 of 3GPP TS 34.121-1. A summary of these settings are illustrated below:

Table C.11.1.3: β values for transmitter characteristics tests with HS-DPCCH and E-DCH

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{HS} (Note1)	β_{ec}	β_{ed} (Note 4) (Note 5)	β_{ed} (SF)	β_{ed} (Codes)	CM (dB) (Note 2)	MPR (dB) (Note 2) (Note 6)	AG Index (Note 5)	E-TFCI
1	11/15 (Note 3)	15/15 (Note 3)	64	11/15 (Note 3)	22/15	209/225	1309/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	$\beta_{ed}1$: 47/15 $\beta_{ed}2$: 47/15	4 4	2	2.0	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15	0	-	-	5/15	5/15	47/15	4	1	1.0	0.0	12	67

Note 1: For sub-test 1 to 4, Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 30/15 with β_{hs} = 30/15 * β_c. For sub-test 5, Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 5/15 with β_{hs} = 5/15 * β_c.

Note 2: CM = 1 for β_c/β_d =12/15, β_{hs}/β_c=24/15. For all other combinations of DPDCH, DPCCH, HS- DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference.

Note 3: For subtest 1 the β_c/β_d ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to β_c = 10/15 and β_d = 15/15.

Note 4: In case of testing by UE using E-DPDCH Physical Layer category 1, Sub-test 3 is omitted according to TS25.306 Table 5.1g.

Note 5: β_{ed} can not be set directly; it is set by Absolute Grant Value.

Note 6: For subtests 2, 3 and 4, UE may perform E-DPDCH power scaling at max power which could results in slightly smaller MPR values.

DUAL CARRIER HSDPA (DC-HSDPA (REL 8, CAT 24)

The following 4 Sub-tests for DC-HSDPA were completed according to Release 8 procedures in table C08.1.12 of 3GPP TS 34.121-1. A summary of subtest settings are illustrated below:

Table C.8.1.12: Fixed Reference Channel H-Set 12

Parameter	Unit	Value
Nominal Avg. Inf. Bit Rate	kbps	60
Inter-TTI Distance	TTI's	1
Number of HARQ Processes	Processes	6
Information Bit Payload (N_{INF})	Bits	120
Number Code Blocks	Blocks	1
Binary Channel Bits Per TTI	Bits	960
Total Available SML's in UE	SML's	19200
Number of SML's per HARQ Proc.	SML's	3200
Coding Rate		0.15
Number of Physical Channel Codes	Codes	1
Modulation		QPSK

Note 1: The RMC is intended to be used for DC-HSDPA mode and both cells shall transmit with identical parameters as listed in the table.

Note 2: Maximum number of transmission is limited to 1, i.e., retransmission is not allowed. The redundancy and constellation version 0 shall be used.

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RESULT

7.3.1. WCDMA BAND 5

Test Engineer ID:	38602	Test Date:	5/8/2020 – 5/12/2020

Band	Mode		UL Ch No.	Freq. (MHz)	MPR (dB)	Conducted Average Power (dBm)	
						ANT 1	ANT 2
W-CDMA Band 5 (850MHz)	Rel 99	RMC, 12.2 kbps	4132	826.4	N/A	**25.7**	23.9
			4183	836.6	N/A	25.6	23.9
			4233	846.6	N/A	25.6	**23.9**
	HSDPA	Subtest 1	4132	826.4	0	24.7	22.9
			4183	836.6	0	24.6	22.9
			4233	846.6	0	24.6	22.9
		Subtest 2	4132	826.4	0	24.7	22.9
			4183	836.6	0	24.6	22.9
			4233	846.6	0	24.5	22.9
		Subtest 3	4132	826.4	0.5	24.2	22.4
			4183	836.6	0.5	24.0	22.3
			4233	846.6	0.5	24.1	22.4
		Subtest 4	4132	826.4	0.5	24.1	22.4
			4183	836.6	0.5	24.1	22.4
			4233	846.6	0.5	24.0	22.4
	HSPA (HSDPA & HSUPA)	Subtest 1	4132	826.4	0	24.7	22.9
			4183	836.6	0	24.6	22.9
			4233	846.6	0	24.6	**22.9**
		Subtest 2	4132	826.4	2	22.7	20.9
			4183	836.6	2	22.6	20.9
			4233	846.6	2	22.6	20.9
		Subtest 3	4132	826.4	1	23.7	21.9
			4183	836.6	1	23.6	21.9
			4233	846.6	1	23.6	21.9
		Subtest 4	4132	826.4	2	22.7	20.9
			4183	836.6	2	22.6	20.9
			4233	846.6	2	22.6	20.9
		Subtest 5	4132	826.4	0	24.3	22.4
			4183	836.6	0	24.1	22.4
			4233	846.6	0	24.2	22.5
	DC-HSDPA	Subtest 1	4132	826.4	0	**24.7**	22.9
			4183	836.6	0	24.6	22.9
			4233	846.6	0	24.6	22.9
		Subtest 2	4132	826.4	0	24.7	22.9
			4183	836.6	0	24.6	22.9
			4233	846.6	0	24.6	22.9
		Subtest 3	4132	826.4	0.5	24.2	22.4
			4183	836.6	0.5	24.1	22.4
			4233	846.6	0.5	24.1	22.4
		Subtest 4	4132	826.4	0.5	24.2	22.4
			4183	836.6	0.5	24.1	22.4
			4233	846.6	0.5	24.1	22.4

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7.3.2. WCDMA BAND 2

Test Engineer ID:	38602	Test Date:	5/8/2020 – 5/12/2020

Band	Mode		UL Ch No.	Freq. (MHz)	MPR (dB)	Conducted Average Power (dBm)			
						ANT 1	ANT 2	ANT 3	ANT 4
W-CDMA Band 2 (1900MHz)	Rel 99	RMC, 12.2 kbps	9262	1852.4	N/A	**25.7**	**23.1**	**24.7**	**22.7**
			9400	1880.0	N/A	25.6	22.9	24.5	22.5
			9538	1907.6	N/A	25.6	22.9	24.4	22.3
	HSDPA	Subtest 1	9262	1852.4	0	24.7	22.2	23.7	21.7
			9400	1880.0	0	24.6	21.9	23.5	21.5
			9538	1907.6	0	24.6	21.9	23.4	21.3
		Subtest 2	9262	1852.4	0	24.7	22.2	23.7	21.7
			9400	1880.0	0	24.6	21.9	23.6	21.5
			9538	1907.6	0	24.6	21.9	23.4	21.3
		Subtest 3	9262	1852.4	0.5	24.2	21.6	23.2	21.2
			9400	1880.0	0.5	24.1	21.4	22.9	21.0
			9538	1907.6	0.5	24.1	21.4	22.9	20.8
		Subtest 4	9262	1852.4	0.5	24.2	21.7	23.1	21.2
			9400	1880.0	0.5	24.0	21.5	23.1	21.1
			9538	1907.6	0.5	24.1	21.4	23.0	20.9
	HSPA (HSDPA & HSUPA)	Subtest 1	9262	1852.4	0	24.7	22.2	23.7	21.8
			9400	1880.0	0	24.6	22.0	23.6	21.6
			9538	1907.6	0	22.0	22.0	23.5	21.4
		Subtest 2	9262	1852.4	2	22.6	20.2	21.8	19.8
			9400	1880.0	2	22.6	19.9	21.6	19.6
			9538	1907.6	2	22.6	20.0	21.5	19.4
		Subtest 3	9262	1852.4	1	23.7	21.2	22.7	20.8
			9400	1880.0	1	23.6	20.9	22.6	20.6
			9538	1907.6	1	23.6	20.9	22.5	20.4
		Subtest 4	9262	1852.4	2	22.7	20.2	21.8	19.8
			9400	1880.0	2	22.6	20.0	21.7	19.6
			9538	1907.6	2	22.6	20.0	21.5	19.5
		Subtest 5	9262	1852.4	0	24.3	21.7	23.4	21.3
			9400	1880.0	0	24.2	21.5	23.2	21.2
			9538	1907.6	0	24.2	21.5	23.1	21.0
	DC-HSDPA	Subtest 1	9262	1852.4	0	**24.7**	**22.2**	**23.8**	**21.8**
			9400	1880.0	0	24.7	22.0	23.7	21.6
			9538	1907.6	0	24.7	22.0	23.6	21.4
		Subtest 2	9262	1852.4	0	24.7	22.2	23.8	21.8
			9400	1880.0	0	24.6	22.0	23.7	21.6
			9538	1907.6	0	24.7	22.0	23.5	21.4
		Subtest 3	9262	1852.4	0.5	24.2	21.7	23.2	21.3
			9400	1880.0	0.5	24.1	21.5	23.1	21.1
			9538	1907.6	0.5	24.2	21.5	23.0	20.9
		Subtest 4	9262	1852.4	0.5	24.3	21.7	23.3	21.3
			9400	1880.0	0.5	24.2	21.5	23.2	21.1
			9538	1907.6	0.5	24.2	21.5	23.0	20.9

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7.3.3. WCDMA BAND 4

Test Engineer ID:	38602	Test Date:	5/8/2020 – 5/12/2020

Band	Mode		UL Ch No.	Freq. (MHz)	MPR (dB)	Conducted Average Power (dBm)			
						ANT 1	ANT 2	ANT 3	ANT 4
W-CDMA Band 4 (1700MHz)	Rel 99	RMC, 12.2 kbps	1312	1712.4	N/A	**25.7**	**23.1**	**24.7**	**22.7**
			1413	1732.6	N/A	25.6	23.0	24.6	22.6
			1513	1752.6	N/A	25.6	23.0	24.6	22.6
	HSDPA	Subtest 1	1312	1712.4	0	24.6	22.1	23.7	21.7
			1413	1732.6	0	24.6	22.1	23.6	21.6
			1513	1752.6	0	24.6	22.0	23.6	21.6
		Subtest 2	1312	1712.4	0	24.6	22.1	23.7	21.8
			1413	1732.6	0	24.5	22.0	23.6	21.6
			1513	1752.6	0	24.6	22.0	23.6	21.6
		Subtest 3	1312	1712.4	0.5	24.0	21.6	23.2	21.3
			1413	1732.6	0.5	24.1	21.5	23.1	21.1
			1513	1752.6	0.5	24.1	21.5	23.1	21.1
		Subtest 4	1312	1712.4	0.5	24.1	21.6	23.0	21.2
			1413	1732.6	0.5	24.0	21.5	23.1	21.1
			1513	1752.6	0.5	24.1	21.5	23.1	21.1
	HSPA (HSDPA & HSUPA)	Subtest 1	1312	1712.4	0	24.6	22.1	23.5	21.8
			1413	1732.6	0	24.6	**22.2**	23.6	21.8
			1513	1752.6	0	**24.7**	22.1	23.4	21.8
		Subtest 2	1312	1712.4	2	22.8	19.7	21.6	20.1
			1413	1732.6	2	22.9	19.6	21.5	20.0
			1513	1752.6	2	23.0	19.8	21.7	20.1
		Subtest 3	1312	1712.4	1	23.9	20.7	22.6	21.1
			1413	1732.6	1	23.9	20.7	22.6	20.5
			1513	1752.6	1	24.0	20.8	22.7	20.8
		Subtest 4	1312	1712.4	2	22.9	19.7	21.7	20.1
			1413	1732.6	2	22.9	19.7	21.7	19.1
			1513	1752.6	2	23.0	19.8	21.8	20.1
		Subtest 5	1312	1712.4	0	24.5	21.3	23.3	21.7
			1413	1732.6	0	24.6	21.4	23.3	21.7
			1513	1752.6	0	24.6	21.4	23.4	21.8
	DC-HSDPA	Subtest 1	1312	1712.4	0	24.7	22.2	**23.8**	**21.9**
			1413	1732.6	0	24.6	22.1	23.7	21.8
			1513	1752.6	0	24.6	22.0	23.7	21.7
		Subtest 2	1312	1712.4	0	24.6	22.2	23.8	21.9
			1413	1732.6	0	24.6	22.0	23.7	21.7
			1513	1752.6	0	24.6	22.0	23.7	21.7
		Subtest 3	1312	1712.4	0.5	24.1	21.6	23.3	21.3
			1413	1732.6	0.5	24.1	21.5	23.2	21.2
			1513	1752.6	0.5	24.0	21.5	23.2	21.2
		Subtest 4	1312	1712.4	0.5	24.1	21.6	23.3	21.2
			1413	1732.6	0.5	24.1	21.6	23.2	21.1
			1513	1752.6	0.5	24.0	21.5	23.2	21.1

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8. CONDUCTED TEST RESULTS

8.1. OCCUPIED BANDWIDTH

RULE PART(S)

FCC: §2.1049
ISED: RSS132; RSS133§2.3; RSS139

LIMITS

For reporting purposes only.

TEST PROCEDURE

The transmitter output was connected to a calibrated coaxial cable and coupler, the other end of which was connected to a spectrum analyzer. The occupied bandwidth was measured with the spectrum analyzer at the middle channel in each band. The 99% and -26dB bandwidths was also measured and recorded.

RESULTS

There is no limit required and power is the same for low, middle and high channel; therefore, only middle channel was tested.

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GSM

Band	Modulation	Channel	f(MHz)	99% BW (KHz)	-26dB BW (KHz)
850	GPRS	190	836.6	243.7235	319.477
	EGPRS			231.8629	290.546
1900	GPRS	661	1880.0	247.5659	319.015
	EGPRS			248.0284	320.175

CDMA

Band	Modulation	Channel	f(MHz)	99% BW (MHz)	-26dB BW (MHz)
BC10	1xRTT	560	820.0	1.2777	1.439
	1xEV-DO Rev A			1.2828	1.432
BC0	1xRTT	384	836.5	1.2815	1.428
	1xEV-DO Rev A			1.2774	1.430
BC1	1xRTT	600	1880.0	1.2826	1.436
	1xEV-DO Rev A			1.2799	1.435

WCDMA

Band	Modulation	Channel	f(MHz)	99% BW (MHz)	-26dB BW (MHz)
BAND 5	REL 99	4408	836.6	4.1586	4.733
	HSDPA			4.1567	4.703
BAND 2	REL 99	9800	1880.0	4.1465	4.712
	HSDPA			4.1386	4.671
BAND 4	REL 99	1638	1732.6	4.1313	4.697
	HSDPA			4.1488	4.676

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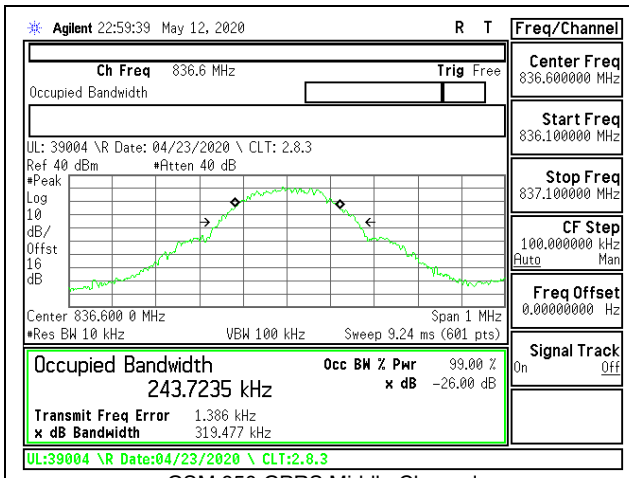
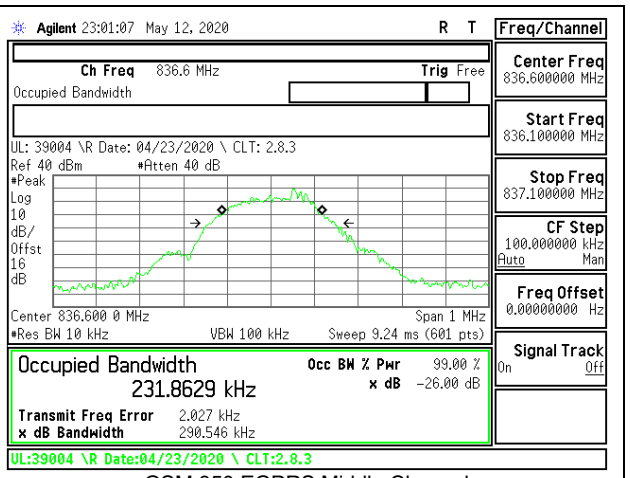
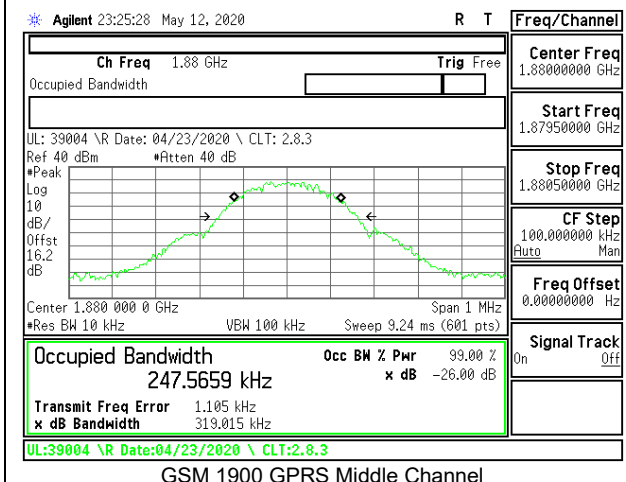
8.1.1. GSM



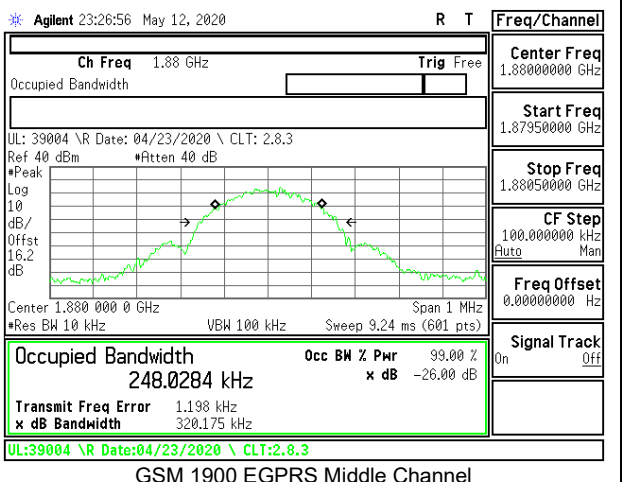
GSM 850 GPRS Middle Channel



GSM 850 EGPRS Middle Channel



GSM 1900 GPRS Middle Channel



GSM 1900 EGPRS Middle Channel

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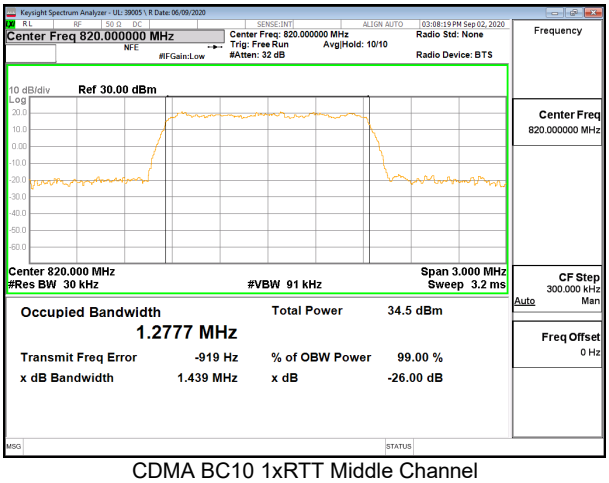
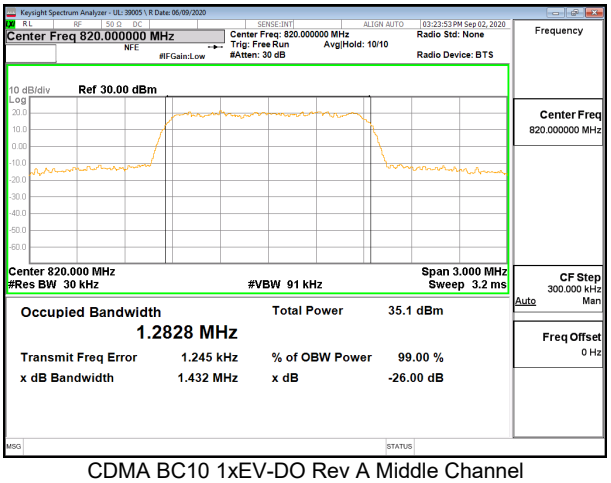
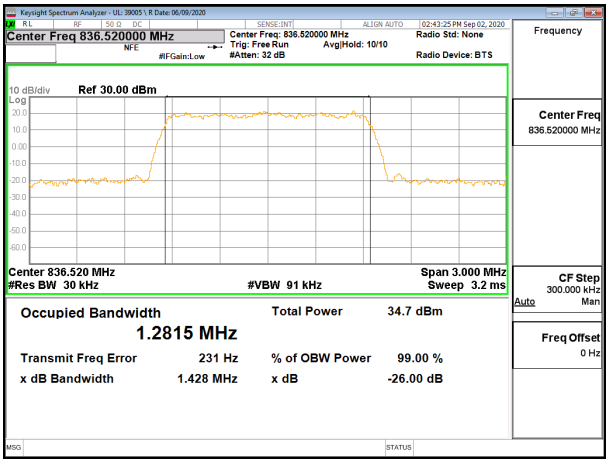
8.1.2. CDMA



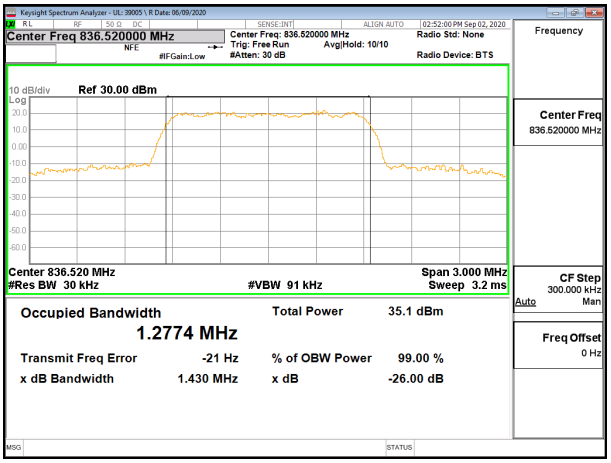
CDMA BC10 1xRTT Middle Channel



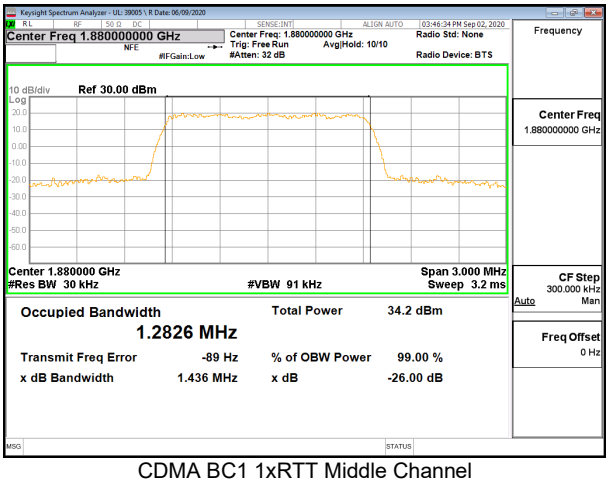
CDMA BC10 1xEV-DO Rev A Middle Channel



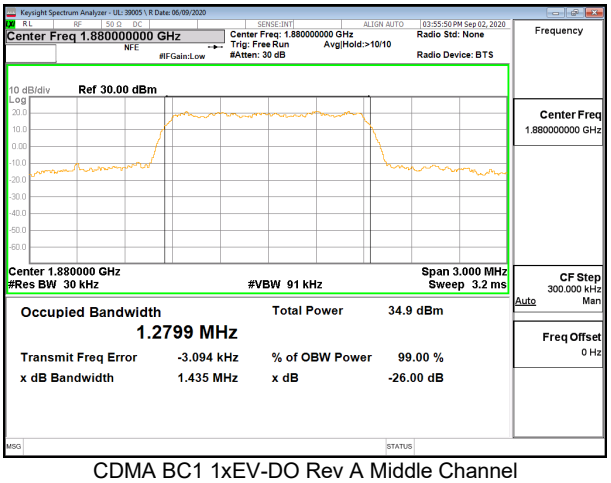
CDMA BC0 1xRTT Middle Channel



CDMA BC0 1xEV-DO Rev A Middle Channel



CDMA BC1 1xRTT Middle Channel



CDMA BC1 1xEV-DO Rev A Middle Channel

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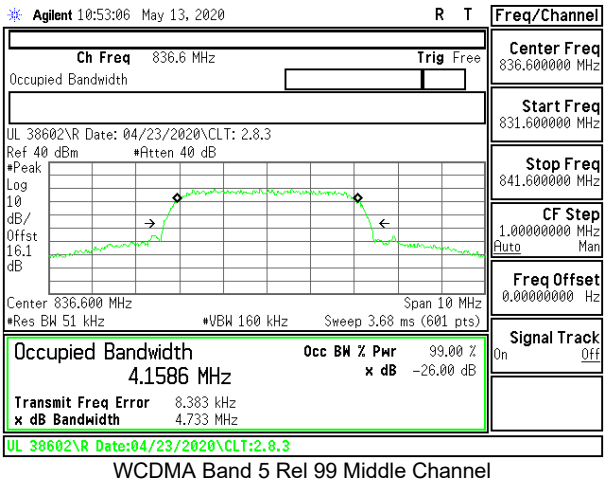
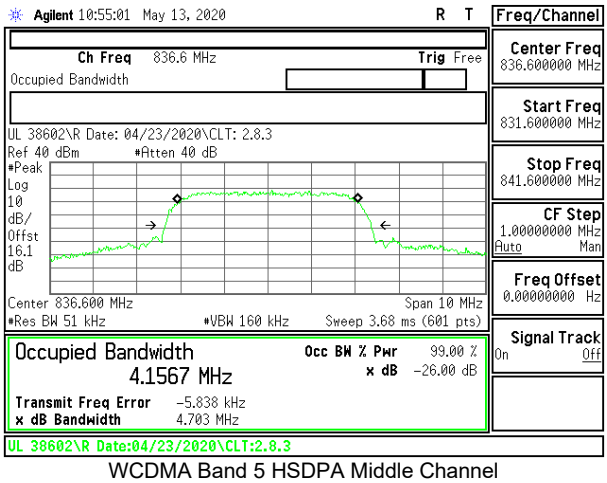
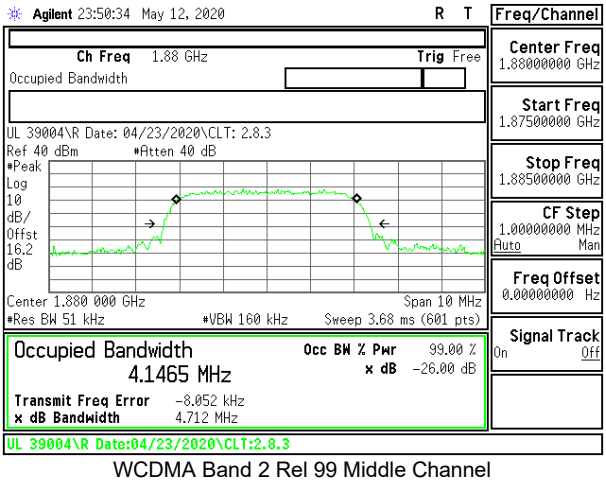
8.1.3. WCDMA



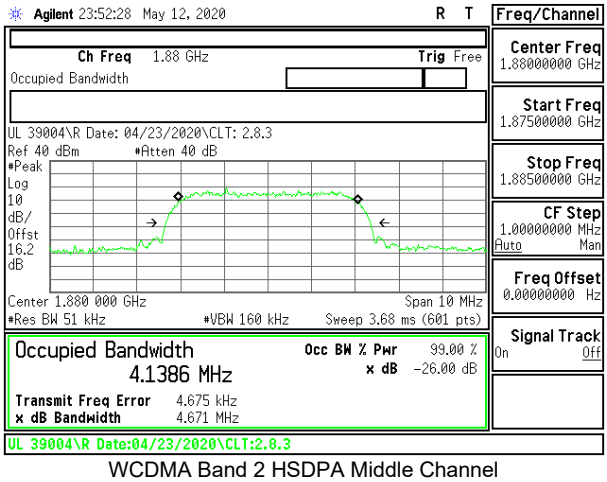
WCDMA Band 5 Rel 99 Middle Channel



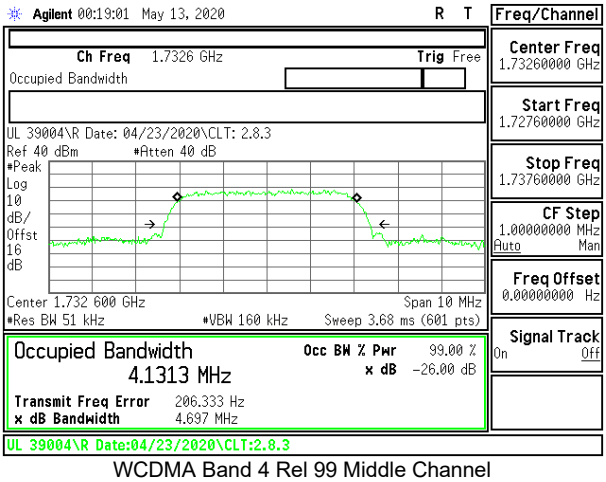
WCDMA Band 5 HSDPA Middle Channel



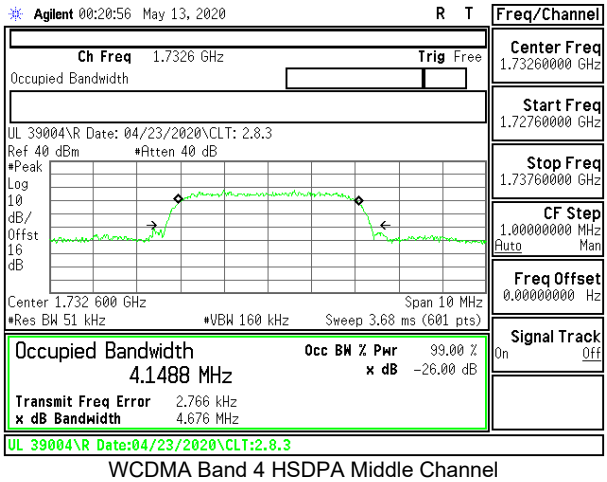
WCDMA Band 2 Rel 99 Middle Channel



WCDMA Band 2 HSDPA Middle Channel



WCDMA Band 4 Rel 99 Middle Channel



WCDMA Band 4 HSDPA Middle Channel

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8.2. BAND EDGE AND EMISSION MASK

LIMITS

FCC: §22.917, §24.238, §27.53 (h)
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.

FCC: §90.691 Emission mask requirements for EA-based systems.
(a) Out-of-band emission requirement shall apply only to the “outer” channels included in an EA license and to spectrum adjacent to interior channels used by incumbent licensees. The emission limits are as follows:

(1) For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 116 Log10(f/6.1) decibels or 50 + 10 Log10(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.

(2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 43 + 10Log10(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

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.

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TEST PROCEDURE

The transmitter output was connected to a R&S CMW500 Test Set and configured to operate at maximum power. The band edge emissions were measured at the required operating frequencies in each band on the Spectrum Analyzer. For each band edge measurement:

- Set the spectrum analyzer span to include the block edge frequency.
- Set a marker to point the corresponding band edge frequency in each test case.
- Set display line at -13 dBm
- Set resolution bandwidth to at least 1% of emission bandwidth.

RESULTS

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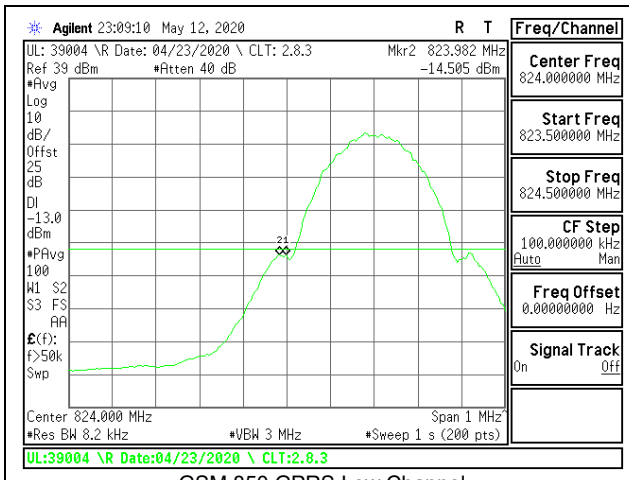
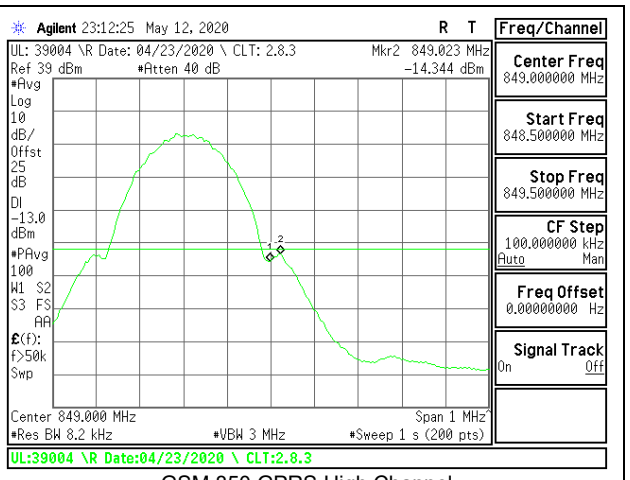
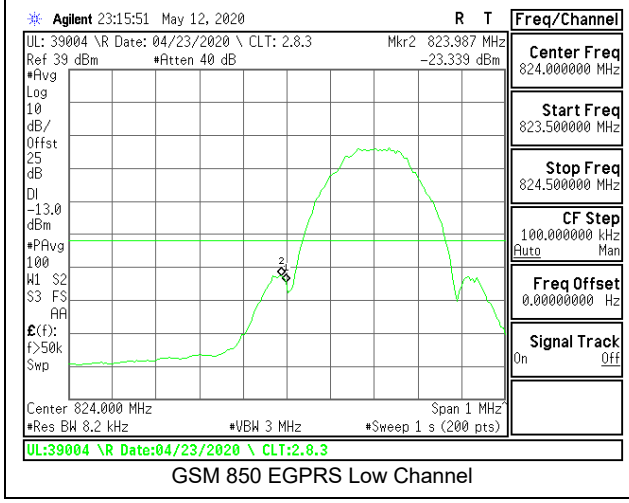
8.2.1. GSM 850



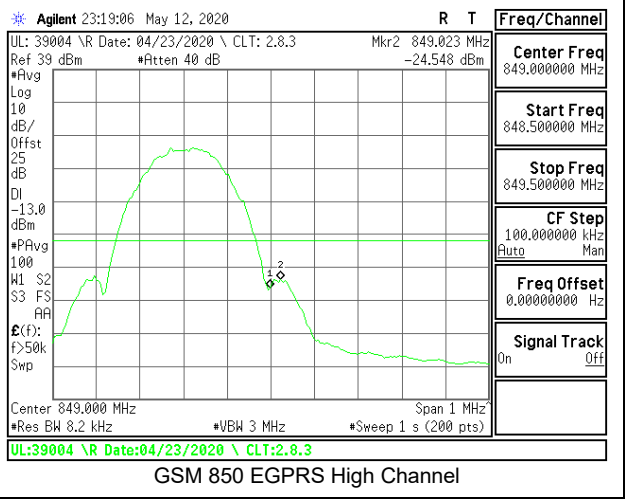
GSM 850 GPRS Low Channel



GSM 850 GPRS High Channel



GSM 850 EGPRS Low Channel



GSM 850 EGPRS High Channel

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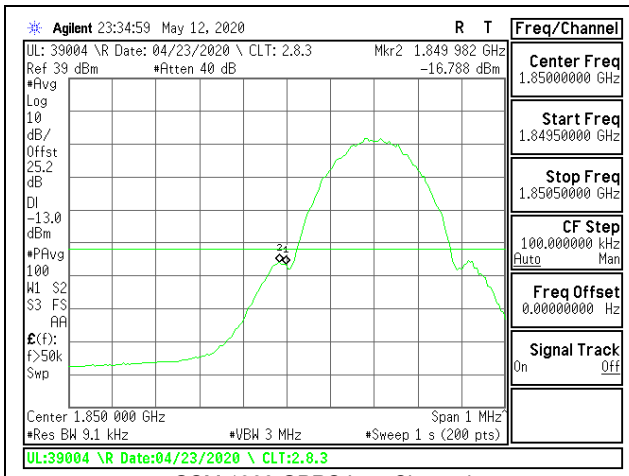
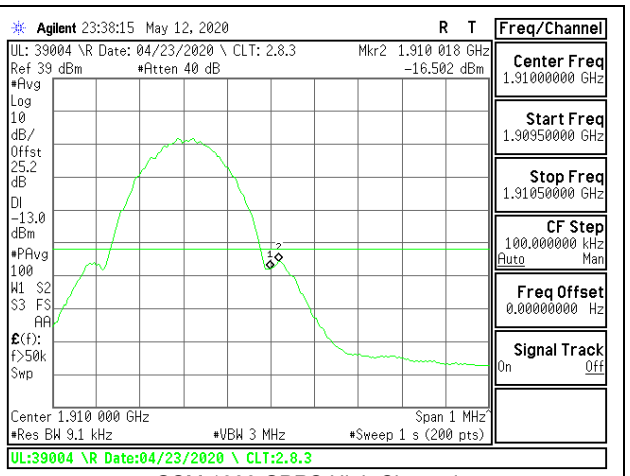
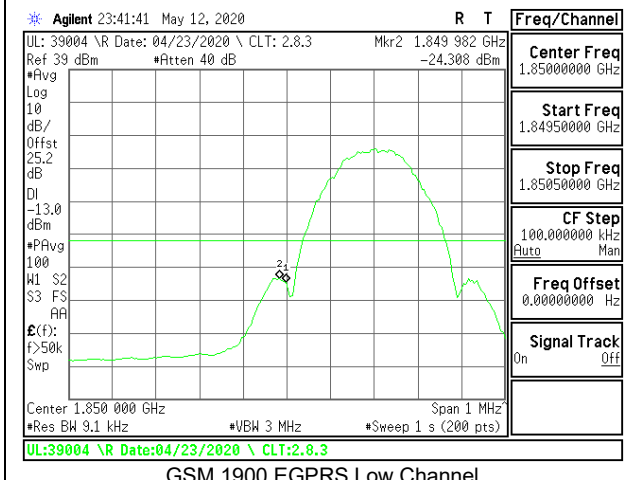
8.2.2. GSM 1900



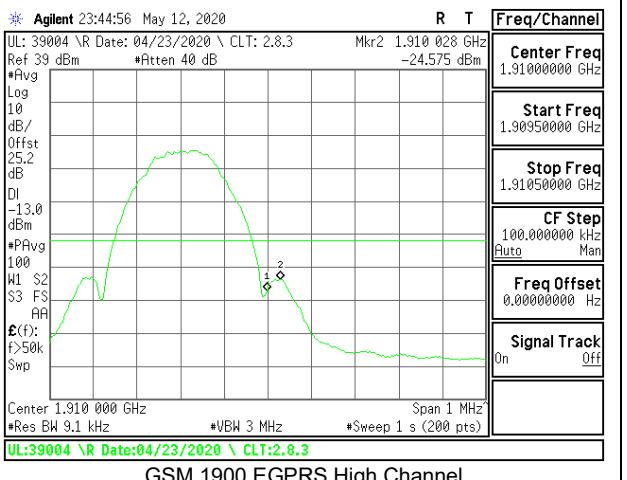
GSM 1900 GPRS Low Channel



GSM 1900 GPRS High Channel



GSM 1900 EGPRS Low Channel



GSM 1900 EGPRS High Channel

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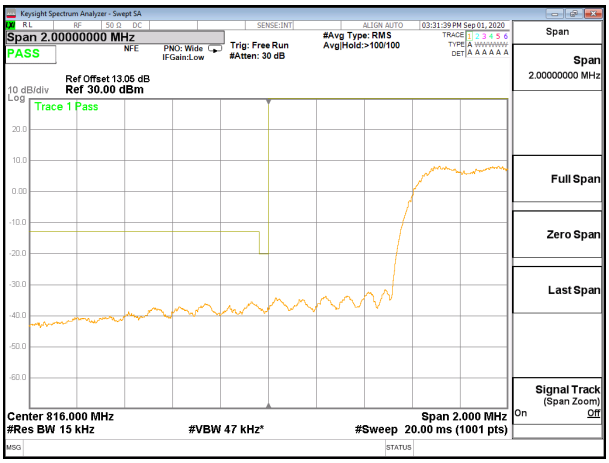
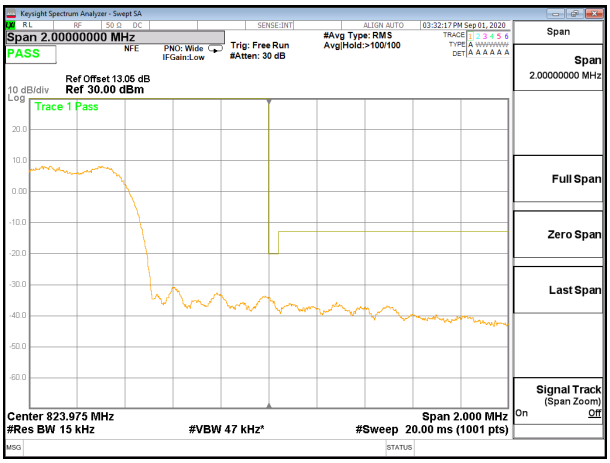
8.2.3. CDMA BC10

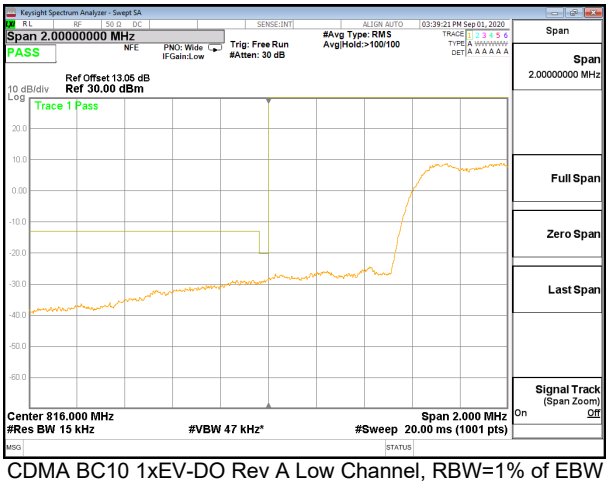
Test Engineer ID:	39005	Test Date:	9/1/2020



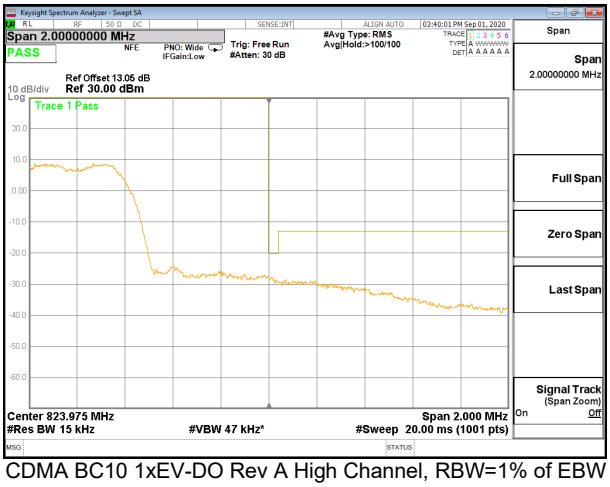
CDMA BC10 1xRTT Low Channel, RBW=1% of EBW



CDMA BC10 1xRTT High Channel, RBW=1% of EBW



CDMA BC10 1xEV-DO Rev A Low Channel, RBW=1% of EBW



CDMA BC10 1xEV-DO Rev A High Channel, RBW=1% of EBW

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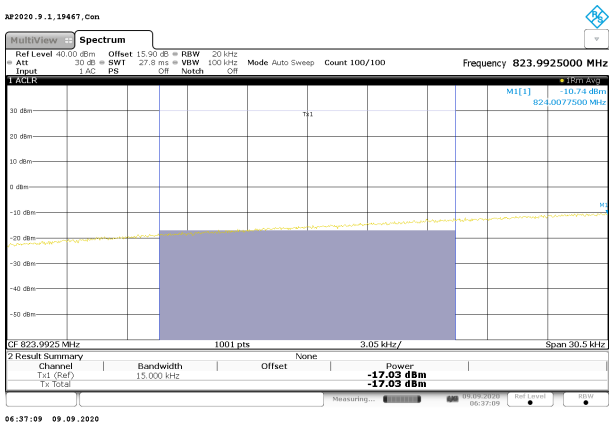
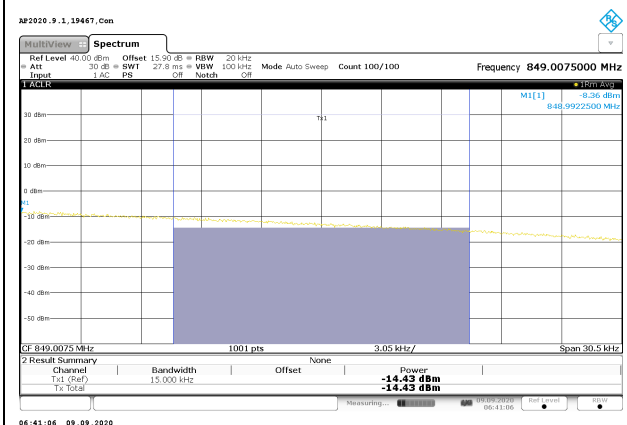
8.2.4. CDMA BC0

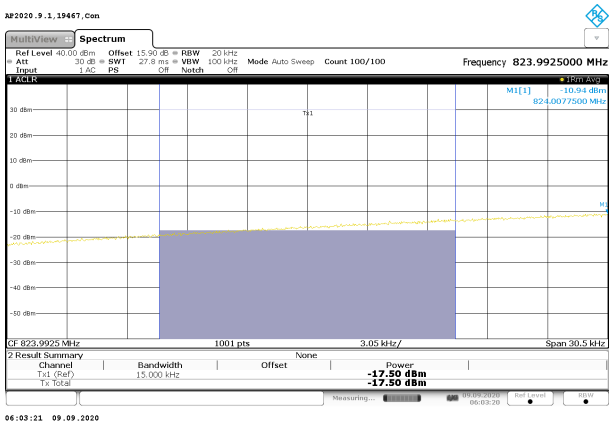
Band	Mode	Channel	Band Power (dBm)	Limit
BC0	1xRTT	Low	-17.03	-13
		High	-14.43	
	1xEV-DO	Low	-17.50	
		High	-14.10	



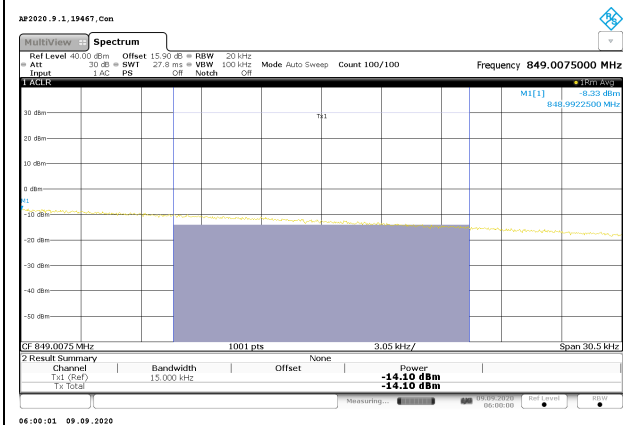
CDMA BC0 1xRTT Low Channel



CDMA BC0 1xRTT High Channel



CDMA BC0 1xEV-DO Rev A Low Channel



CDMA BC0 1xEV-DO Rev A High Channel

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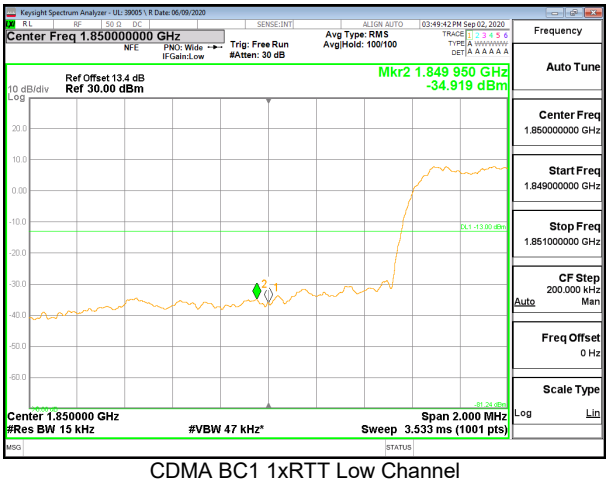
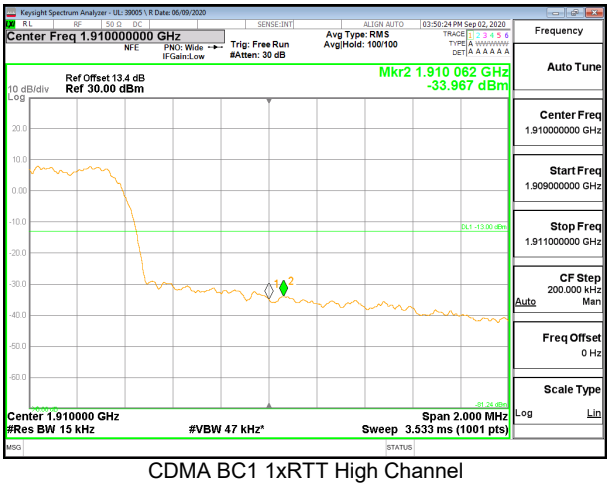
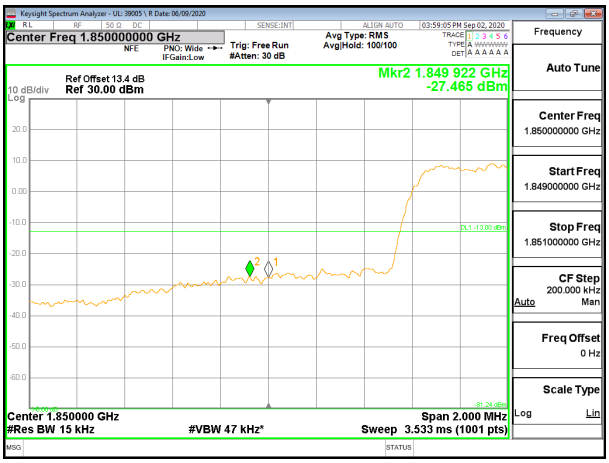
8.2.5. CDMA BC1



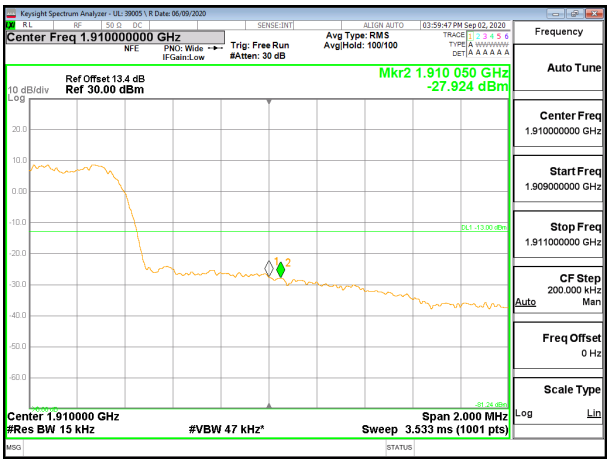
CDMA BC1 1xRTT Low Channel



CDMA BC1 1xRTT High Channel



CDMA BC1 1xEV-DO Rev A Low Channel



CDMA BC1 1xEV-DO Rev A High Channel

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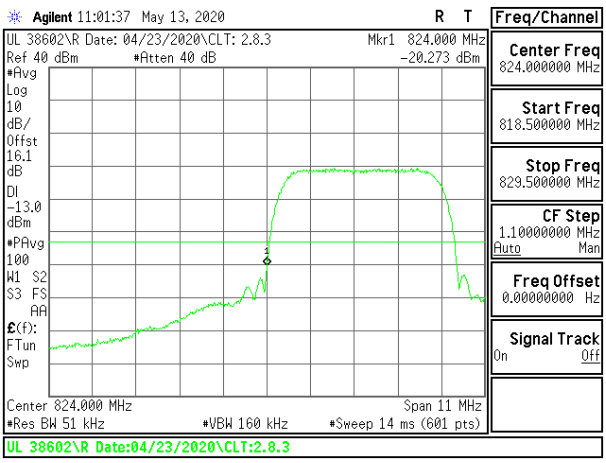
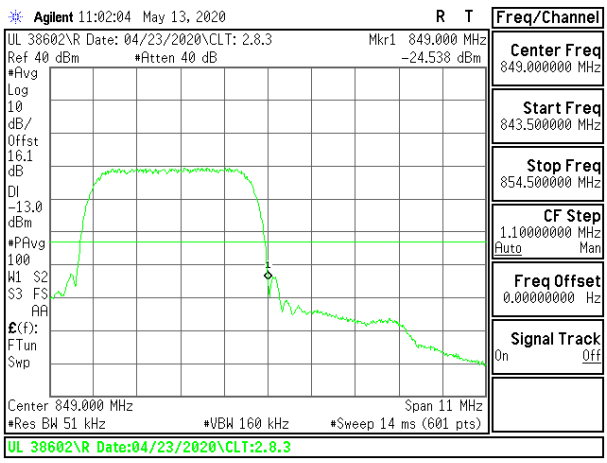
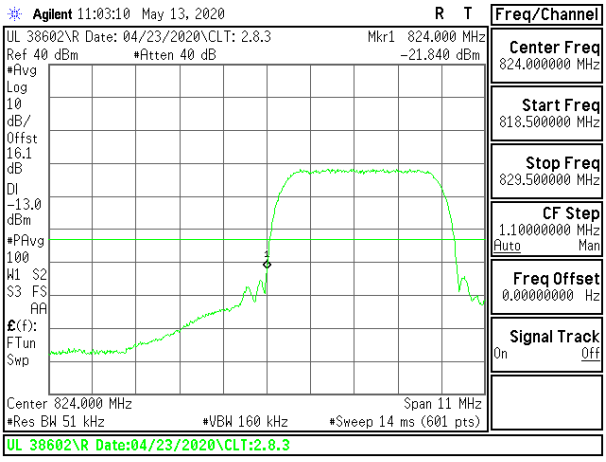
8.2.6. WCDMA BAND 5



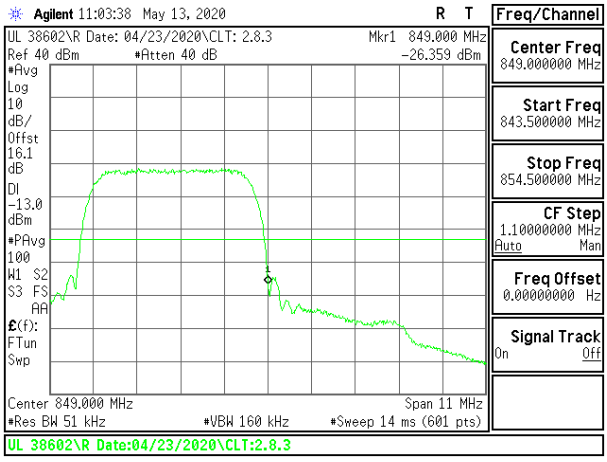
WCDMA Band 5 Rel 99 Low Channel



WCDMA Band 5 Rel 99 High Channel



WCDMA Band 5 HSDPA Low Channel



WCDMA Band 5 HSDPA High Channel

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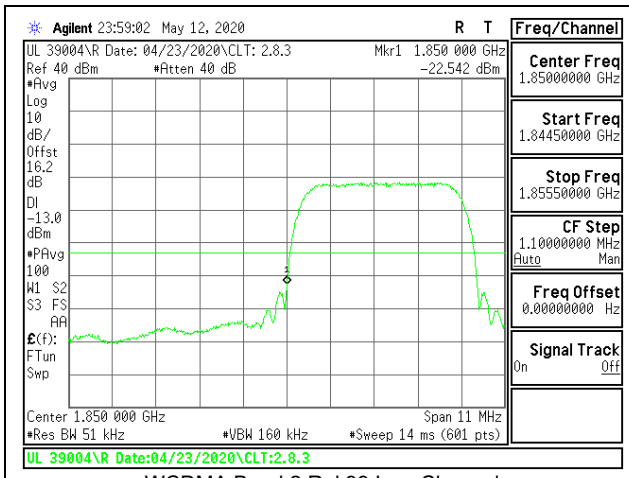
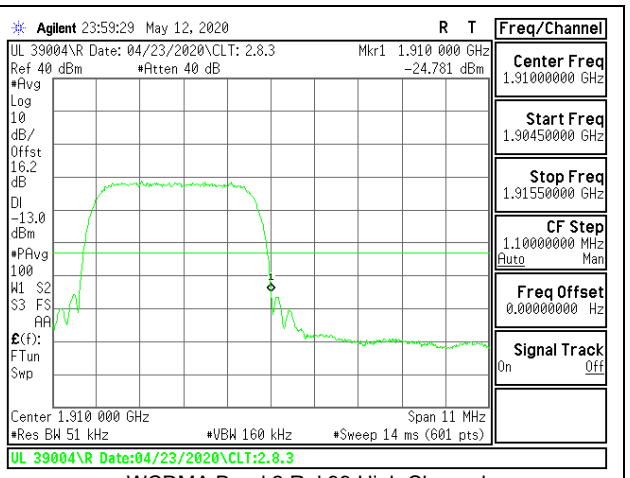
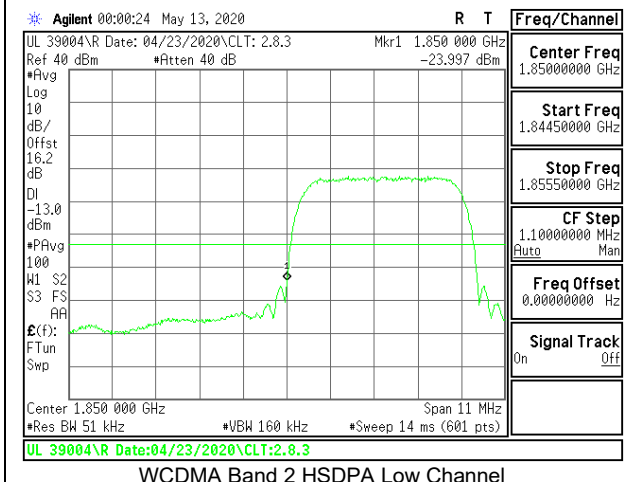
8.2.7. WCDMA BAND 2



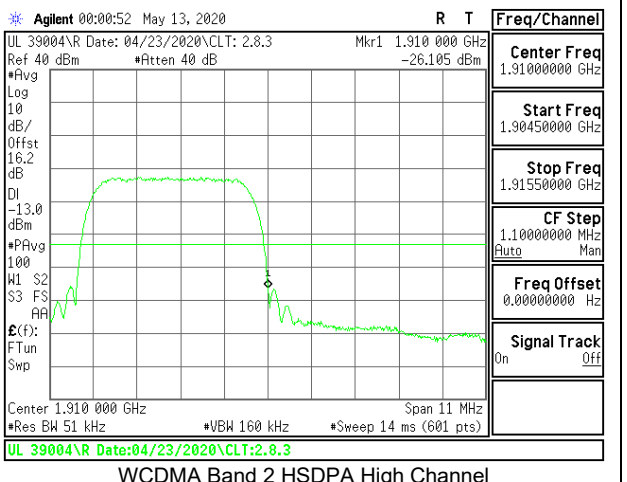
WCDMA Band 2 Rel 99 Low Channel



WCDMA Band 2 Rel 99 High Channel



WCDMA Band 2 HSDPA Low Channel



WCDMA Band 2 HSDPA High Channel

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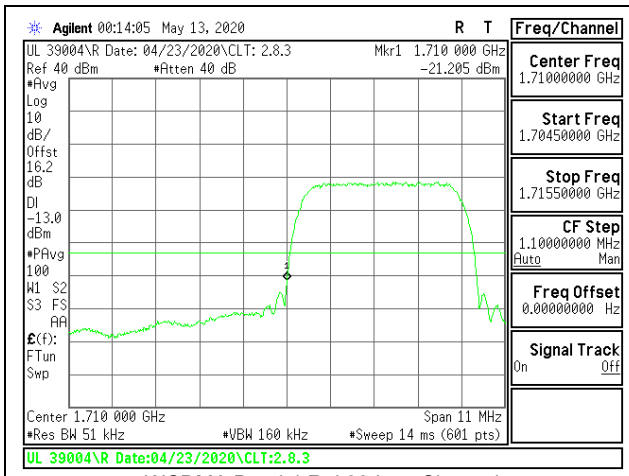
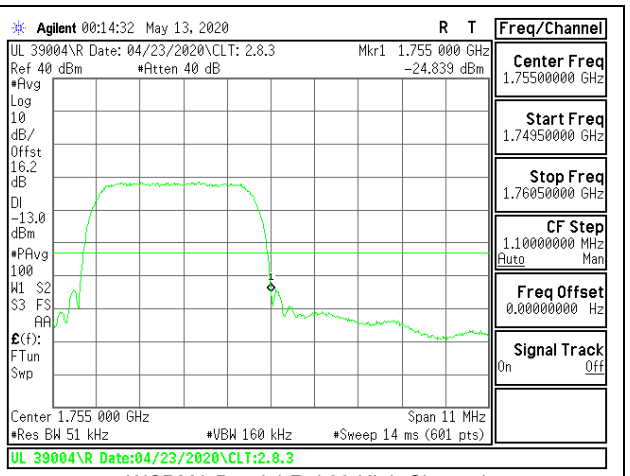
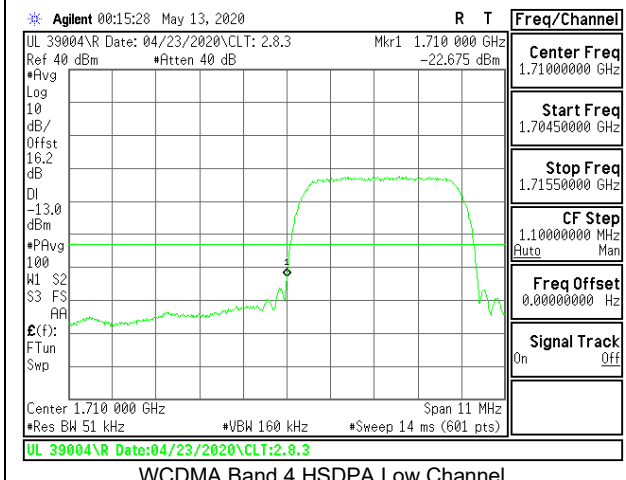
8.2.8. WCDMA BAND 4



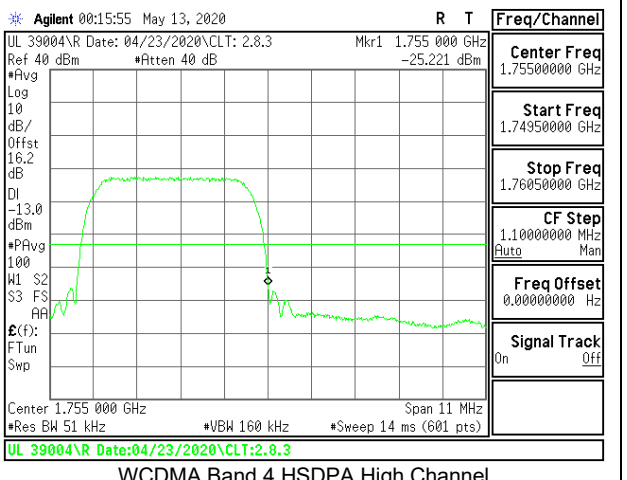
WCDMA Band 4 Rel 99 Low Channel



WCDMA Band 4 Rel 99 High Channel



WCDMA Band 4 HSDPA Low Channel



WCDMA Band 4 HSDPA High Channel

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8.3. OUT OF BAND EMISSIONS

RULE PART(S)

FCC: §2.1051, §22.917, §24.238, §27.53 and §90.691
ISED: 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

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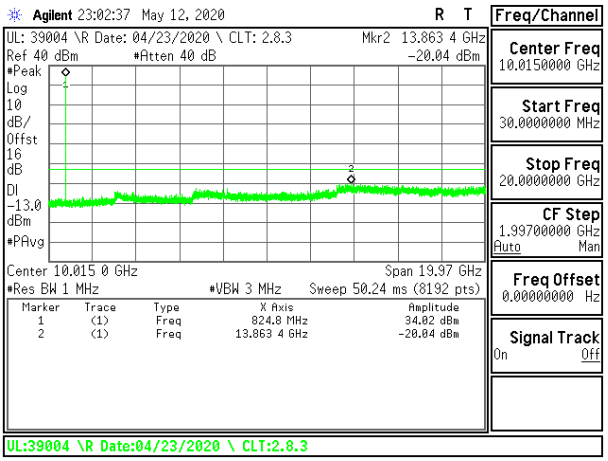
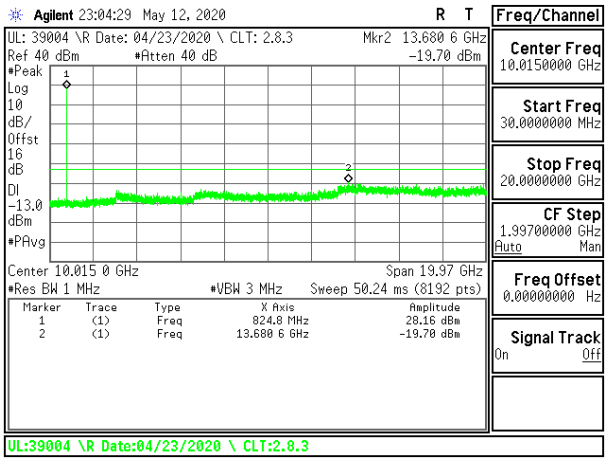
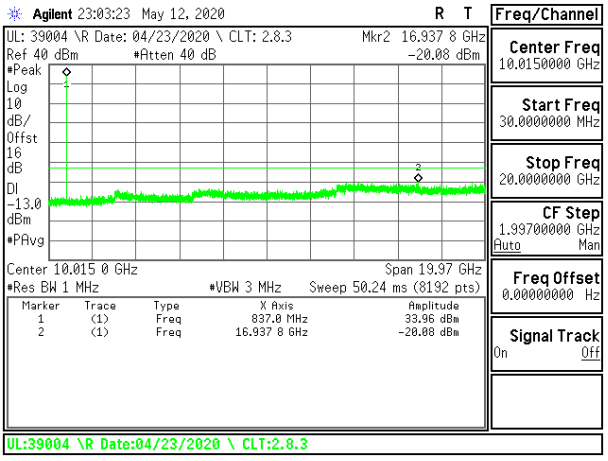
8.3.1. GSM 850



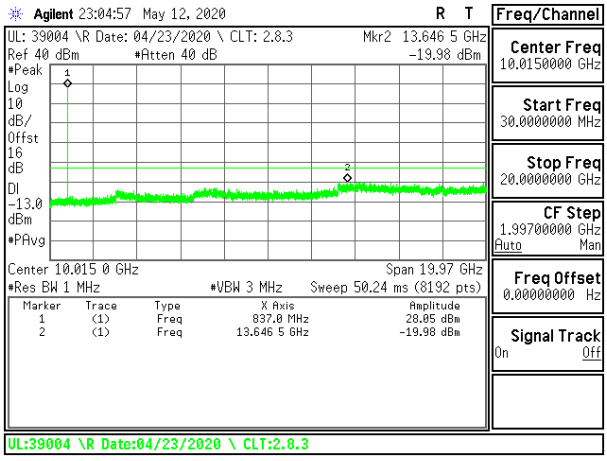
GSM 850 GPRS Low Channel



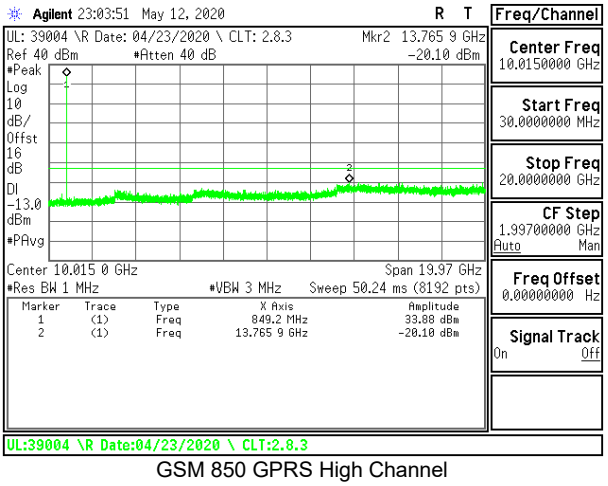
GSM 850 EGPRS Low Channel



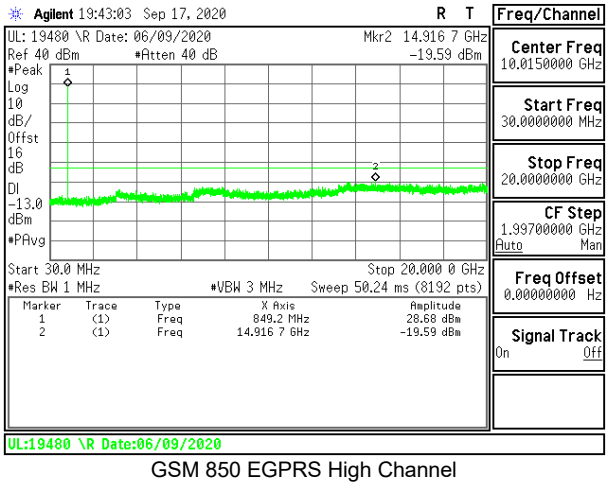
GSM 850 GPRS Middle Channel



GSM 850 EGPRS Middle Channel



GSM 850 GPRS High Channel



GSM 850 EGPRS High Channel

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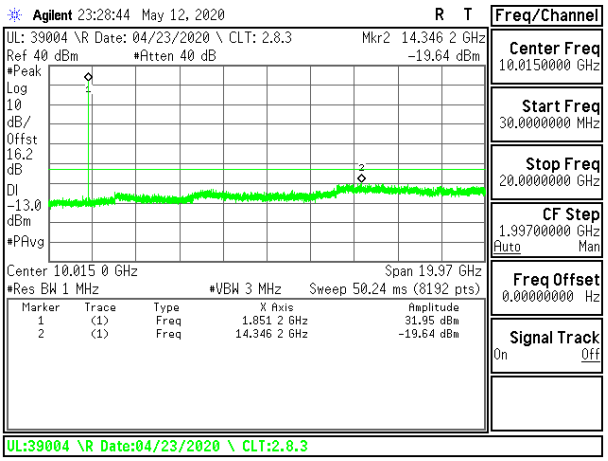
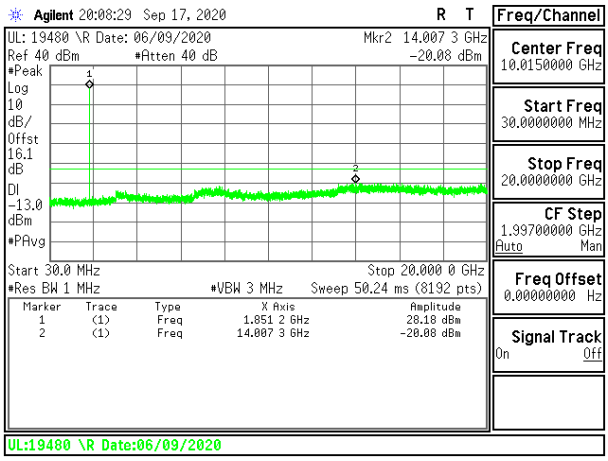
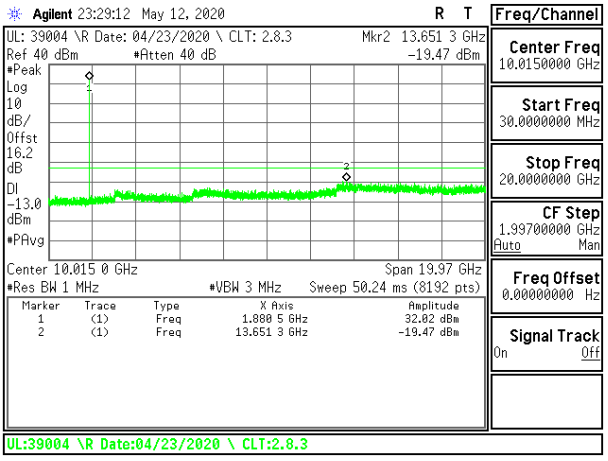
8.3.2. GSM 1900



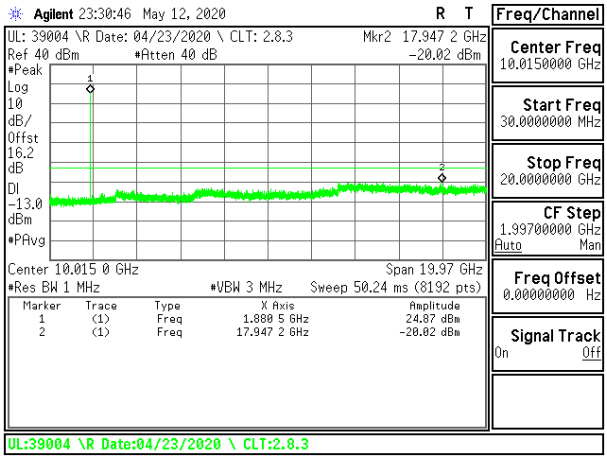
GSM 1900 GPRS Low Channel



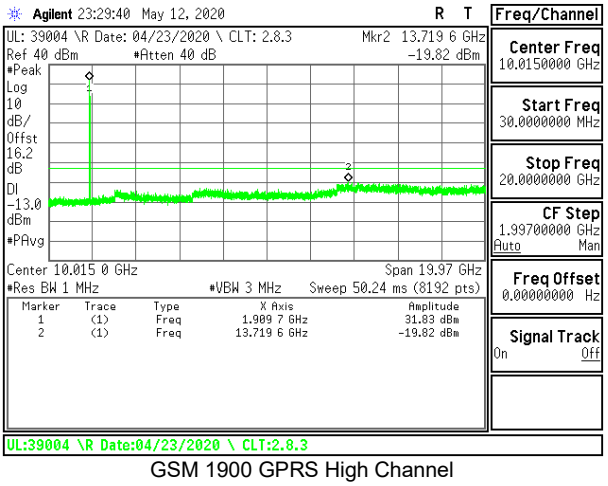
190GSM 1900 EGPRS Low Channel



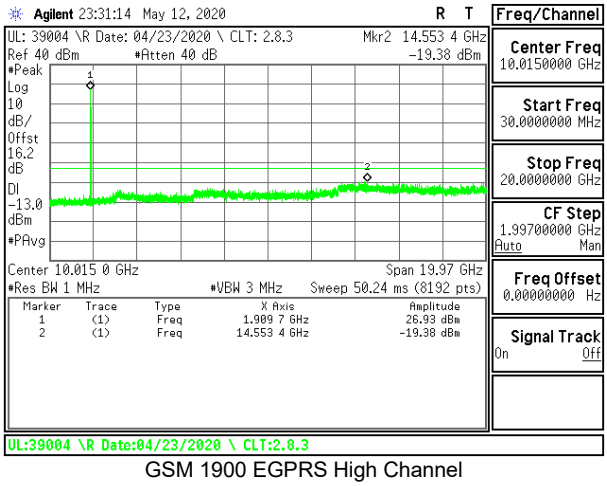
GSM 1900 GPRS Middle Channel



GSM 1900 EGPRS Middle Channel



GSM 1900 GPRS High Channel



GSM 1900 EGPRS High Channel

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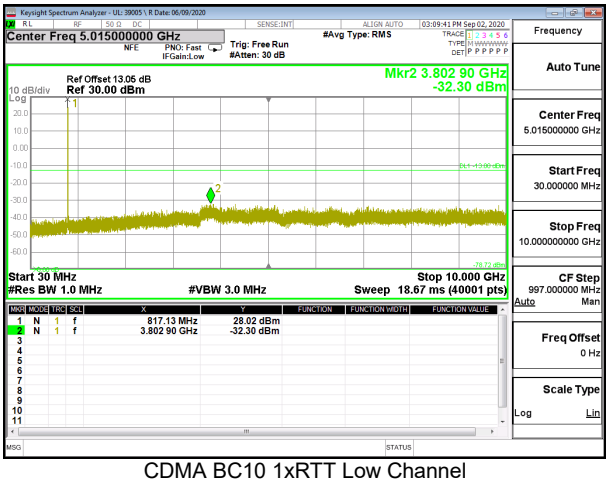
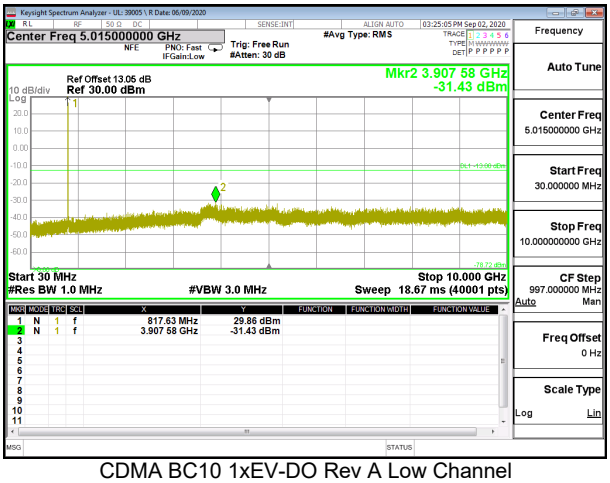
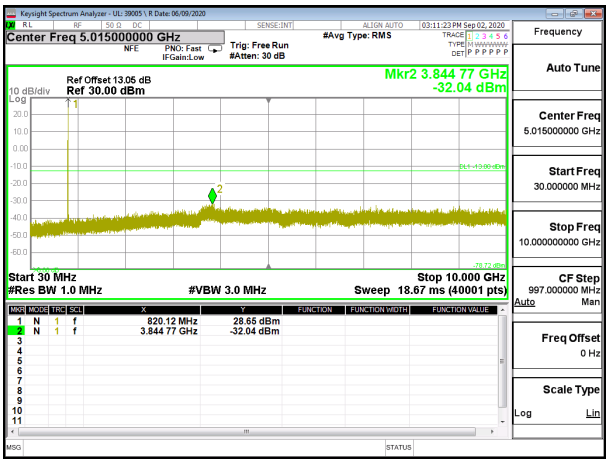
8.3.3. CDMA BC10



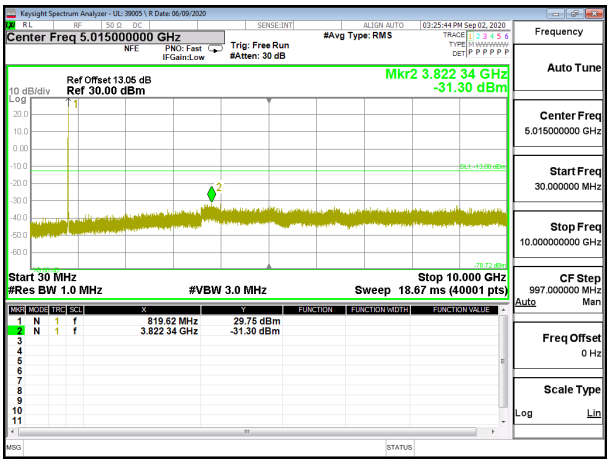
CDMA BC10 1xRTT Low Channel



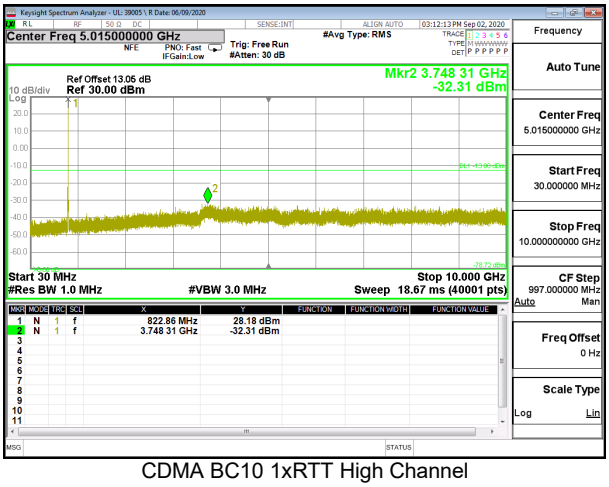
CDMA BC10 1xEV-DO Rev A Low Channel



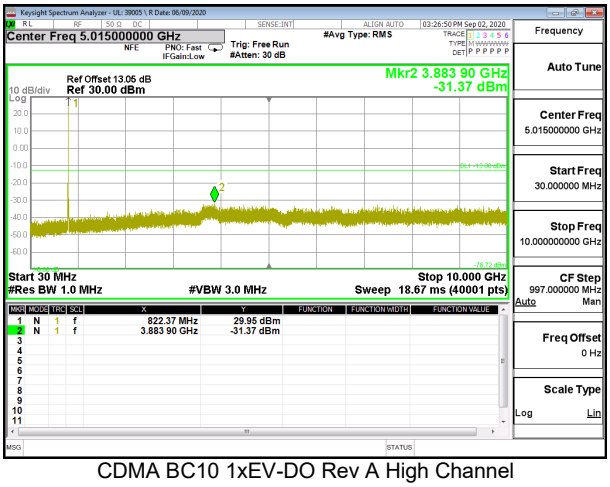
CDMA BC10 1xRTT Middle Channel



CDMA BC10 1xEV-DO Rev A Middle Channel



CDMA BC10 1xRTT High Channel



CDMA BC10 1xEV-DO Rev A High Channel

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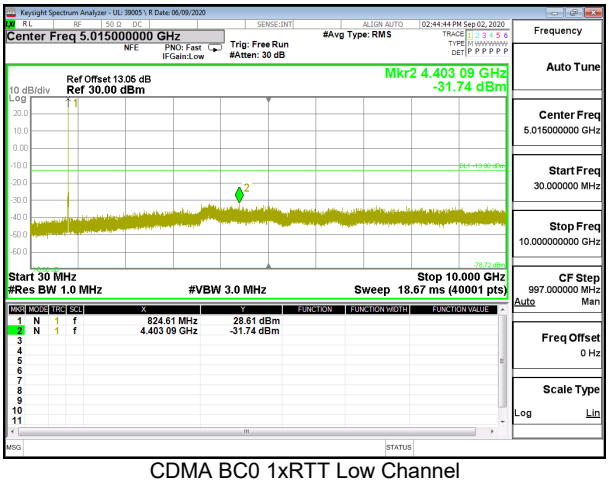
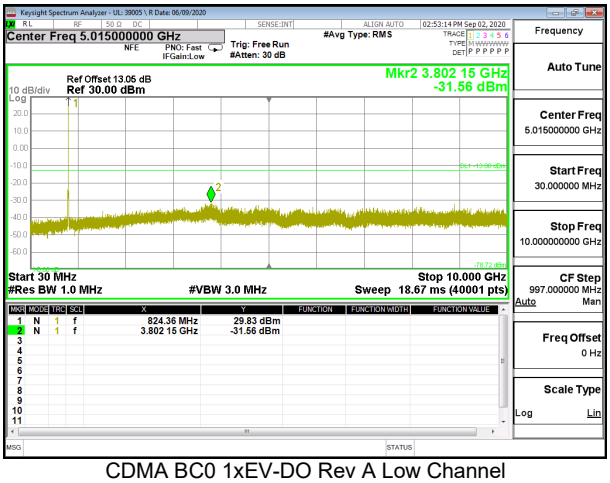
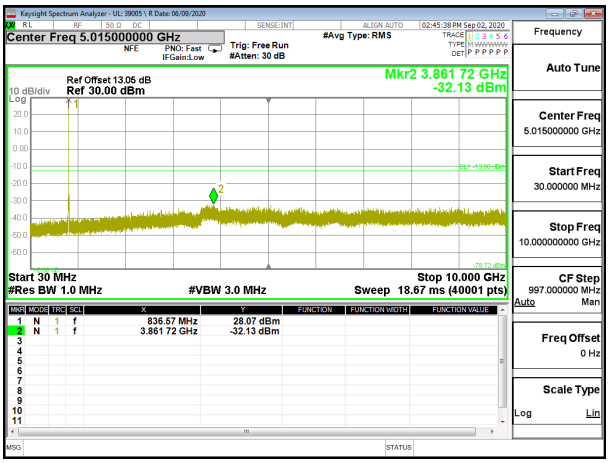
8.3.4. CDMA BC0



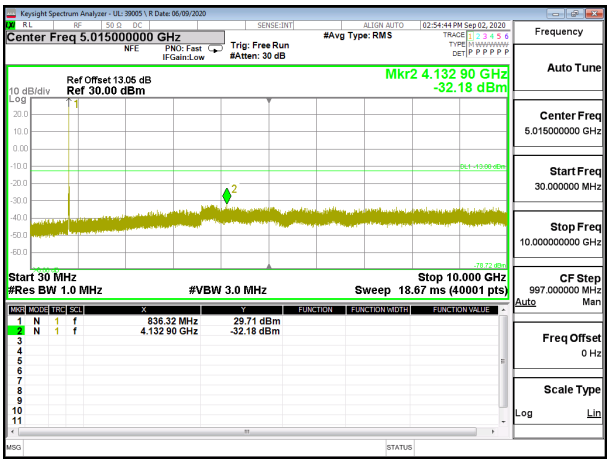
CDMA BC0 1xRTT Low Channel



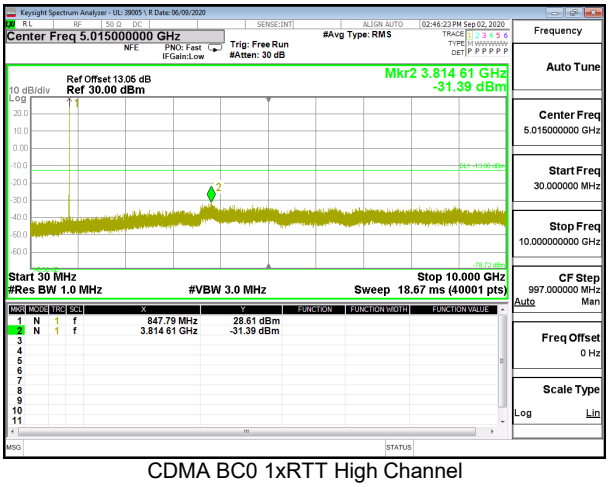
CDMA BC0 1xEV-DO Rev A Low Channel



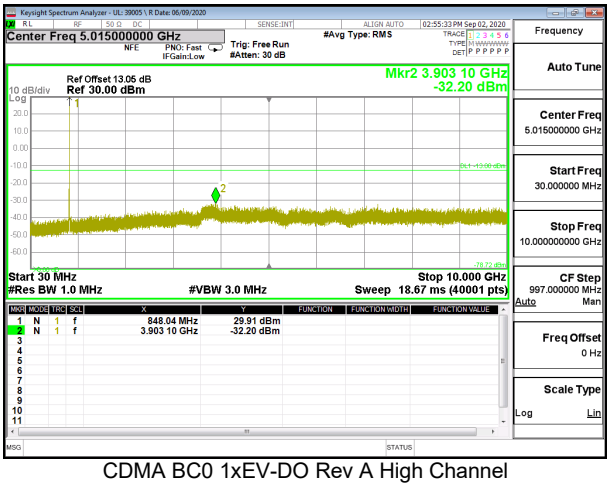
CDMA BC0 1xRTT Middle Channel



CDMA BC0 1xEV-DO Rev A Middle Channel



CDMA BC0 1xRTT High Channel



CDMA BC0 1xEV-DO Rev A High Channel

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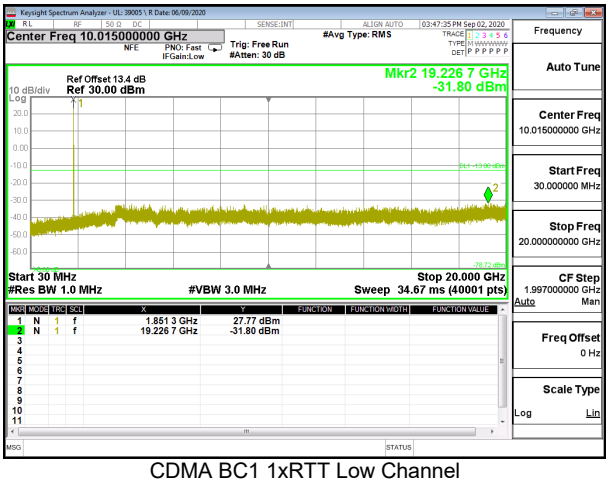
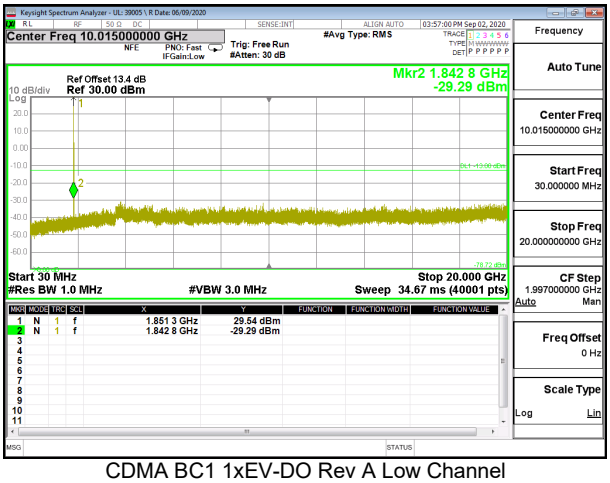
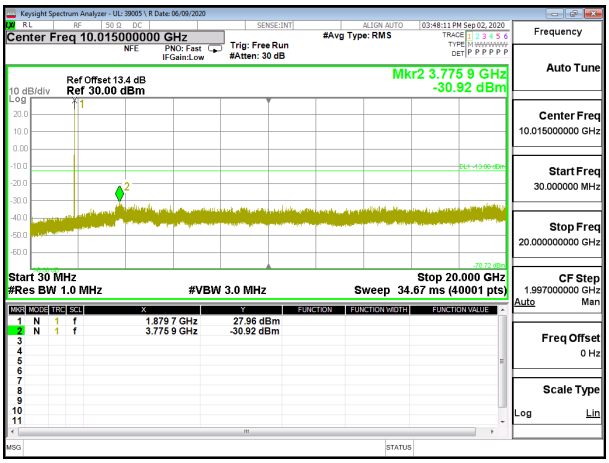
8.3.5. CDMA BC1



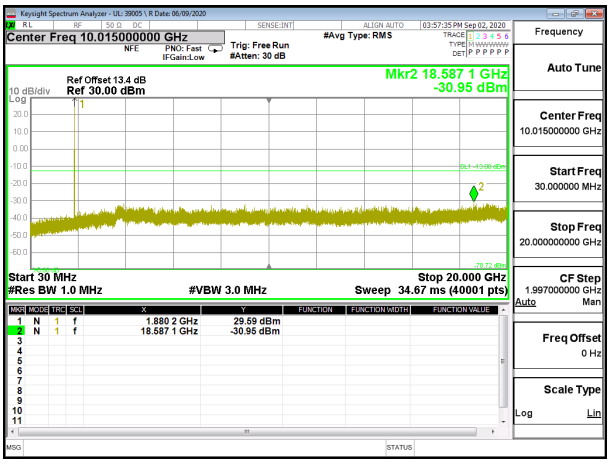
CDMA BC1 1xRTT Low Channel



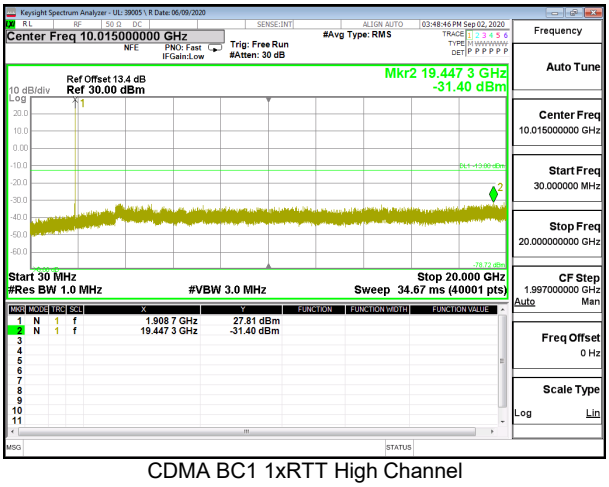
CDMA BC1 1xEV-DO Rev A Low Channel



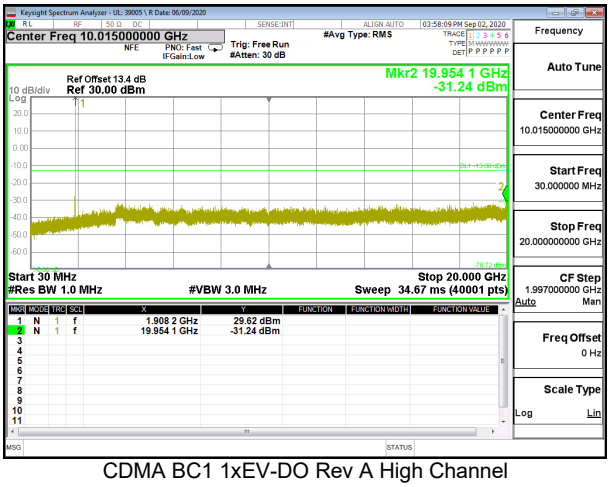
CDMA BC1 1xRTT Middle Channel



CDMA BC1 1xEV-DO Rev A Middle Channel



CDMA BC1 1xRTT High Channel



CDMA BC1 1xEV-DO Rev A High Channel

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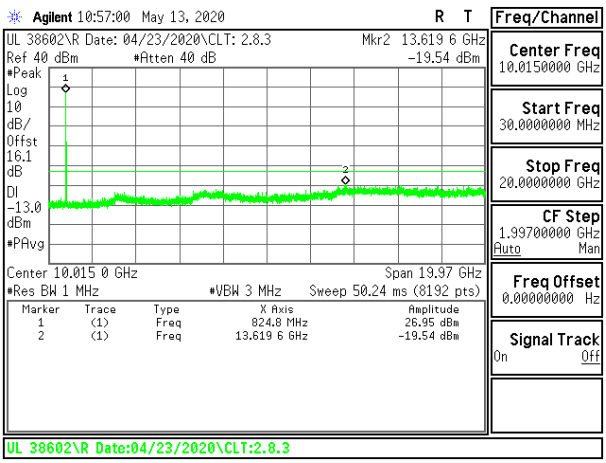
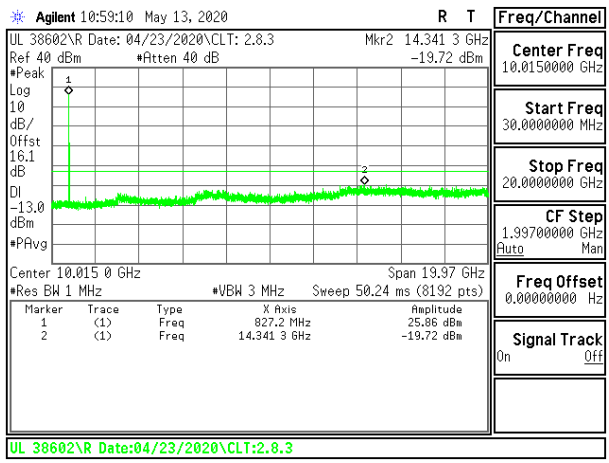
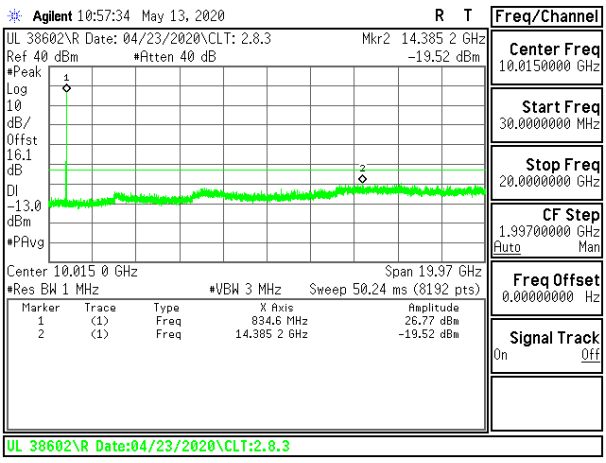
8.3.6. WCDMA BAND 5



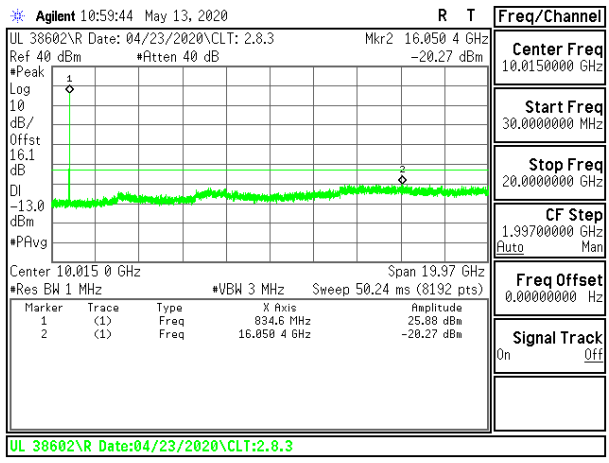
WCDMA Band 5 Rel 99 Low Channel



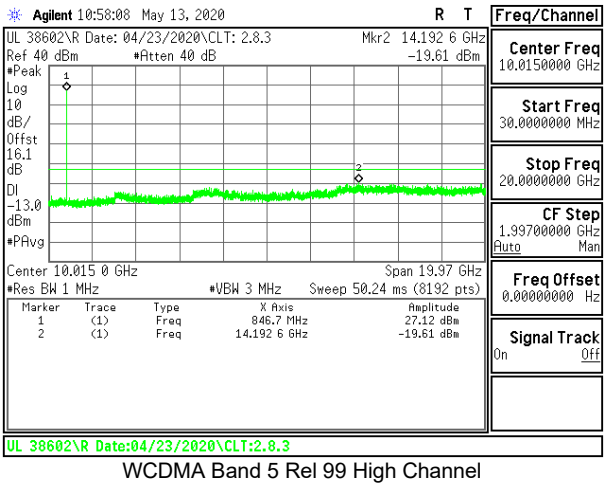
WCDMA Band 5 HSDPA Low Channel



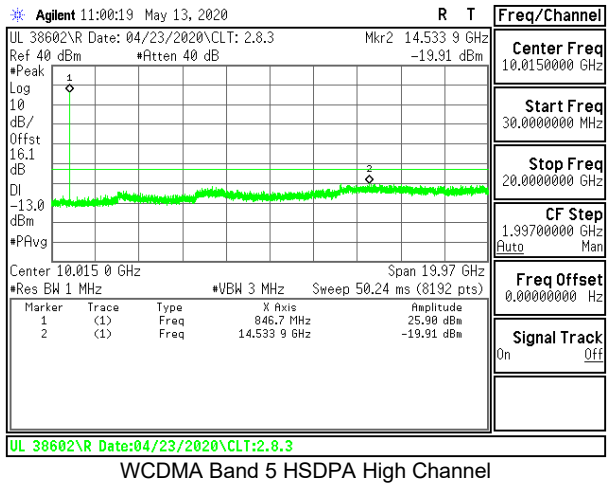
WCDMA Band 5 Rel 99 Middle Channel



WCDMA Band 5 HSDPA Middle Channel



WCDMA Band 5 Rel 99 High Channel



WCDMA Band 5 HSDPA High Channel

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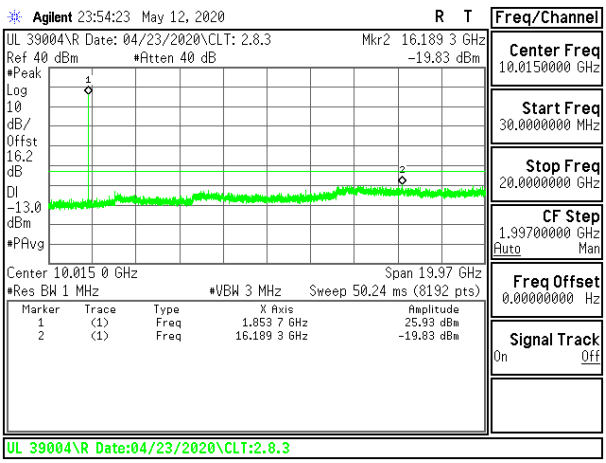
8.3.7. WCDMA BAND 2



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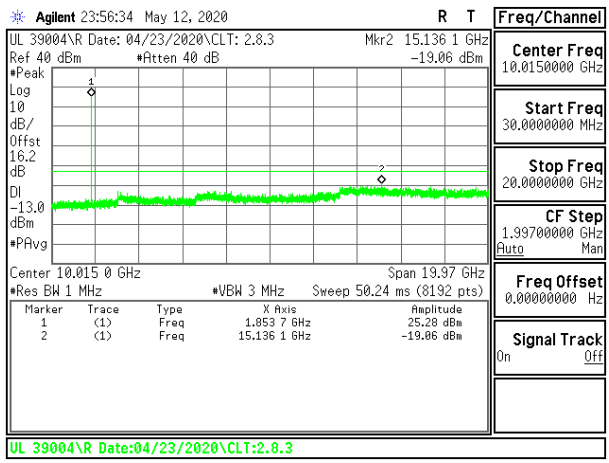

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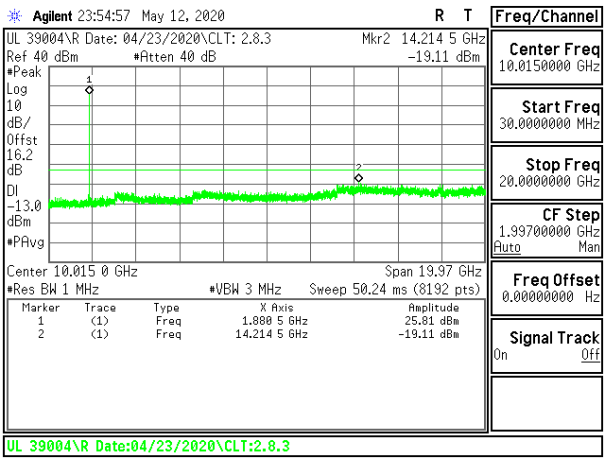
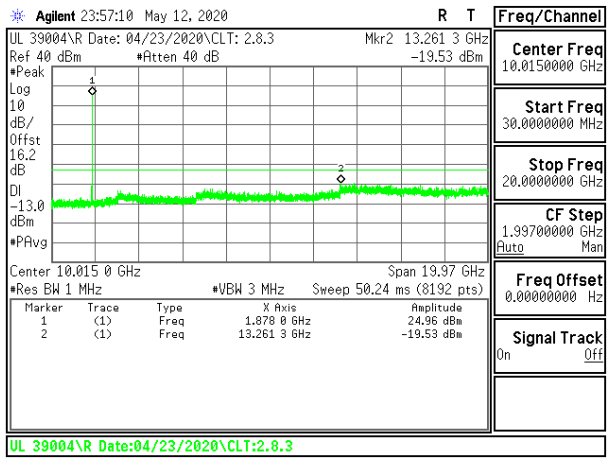
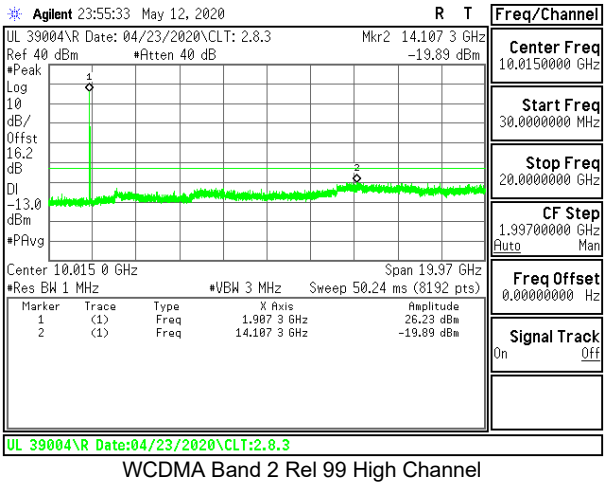


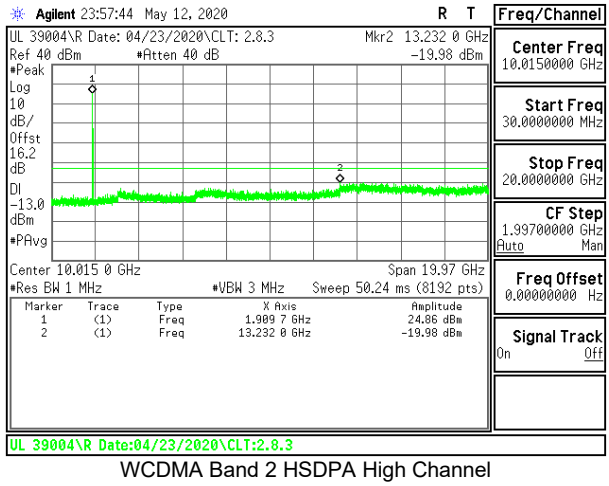
WCDMA Band 2 Rel 99 Middle Channel



WCDMA Band 2 HSDPA Middle Channel



WCDMA Band 2 Rel 99 High Channel



WCDMA Band 2 HSDPA High Channel

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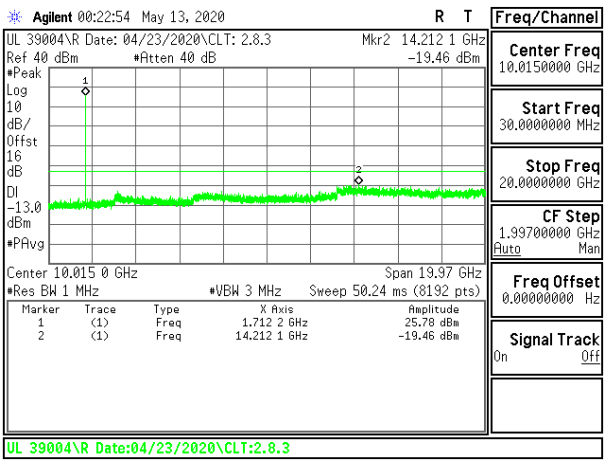
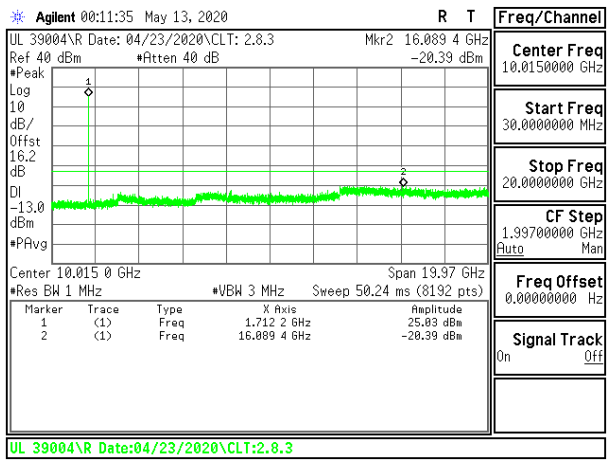
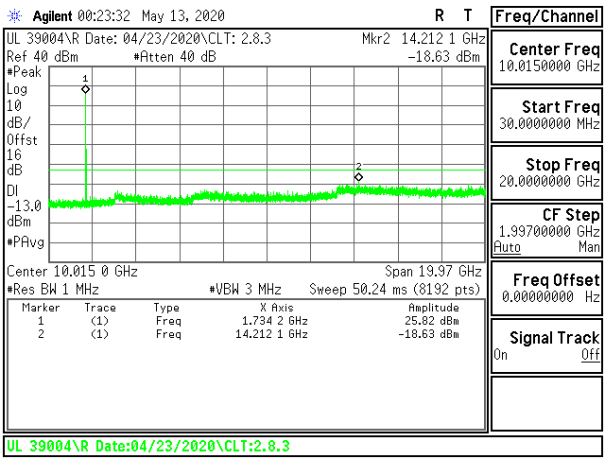
8.3.8. WCDMA BAND 4



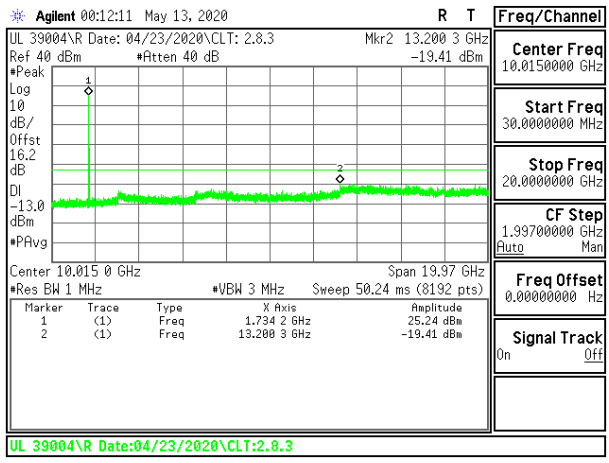
WCDMA Band 4 Rel 99 Low Channel



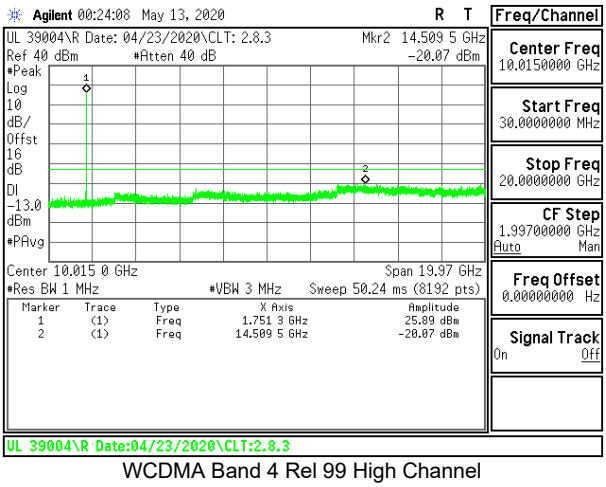
WCDMA Band 4 HSDPA Low Channel



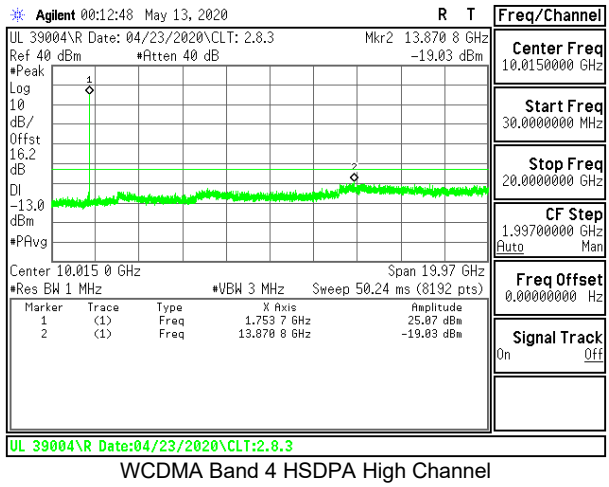
WCDMA Band 4 Rel 99 Middle Channel



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
ISED: 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

Test Engineer ID:	19177	Test Date:	6/30/2020

GPRS 850

Limit		824	849	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)		824.0742	848.9191		
Extreme (50C)		824.0742	848.9191	21.2	0.025
Extreme (40C)		824.0742	848.9191	20.7	0.025
Extreme (30C)		824.0742	848.9191	29.4	0.035
Extreme (10C)	Normal	824.0742	848.9191	22.1	0.026
Extreme (0C)		824.0742	848.9191	21.2	0.025
Extreme (-10C)		824.0742	848.9191	18.5	0.022
Extreme (-20C)		824.0742	848.9191	21.5	0.026
Extreme (-30C)		824.0742	848.9191	18.5	0.022
	15%	824.0742	848.9191	19.6	0.023
20C	-15%	824.0742	848.9191	15.3	0.018
	End Point	824.0742	848.9191	16.2	0.019

8.4.2. GPRS 1900

Limit		1850	1910	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)		1850.0605	1909.9388		
Extreme (50C)		1850.0605	1909.9388	28.8	0.015
Extreme (40C)		1850.0605	1909.9388	26.3	0.014
Extreme (30C)		1850.0605	1909.9388	19.0	0.010
Extreme (10C)	Normal	1850.0605	1909.9388	24.3	0.013
Extreme (0C)		1850.0605	1909.9388	28.9	0.015
Extreme (-10C)		1850.0605	1909.9388	29.2	0.016
Extreme (-20C)		1850.0605	1909.9388	21.2	0.011
Extreme (-30C)		1850.0605	1909.9388	27.0	0.014
	15%	1850.0605	1909.9388	30.5	0.016
20C	-15%	1850.0605	1909.9388	30.7	0.016
	End Point	1850.0605	1909.9388	31.3	0.017

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8.4.3. CDMA

Test Engineer ID:	38602	Test Date:	7/16/2020

CDMA 1xRTT BC10

Limit		816	824	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	816.5757	823.4252		
Extreme (50C)		816.5757	823.4252	-3.3	-0.004
Extreme (40C)		816.5757	823.4252	1.2	0.001
Extreme (30C)		816.5757	823.4252	-3.7	-0.005
Extreme (10C)		816.5757	823.4252	2.7	0.003
Extreme (0C)		816.5757	823.4252	3.1	0.004
Extreme (-10C)		816.5757	823.4252	2.8	0.003
Extreme (-20C)		816.5757	823.4252	7.9	0.010
Extreme (-30C)		816.5757	823.4252	2.7	0.003
20C	15%	816.5757	823.4252	-2.6	-0.003
	-15%	816.5757	823.4252	2.1	0.003
	End Point	816.5757	823.4252	-3.6	-0.004

8.4.4. 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	824.0219	848.9871		
Extreme (50C)		824.0219	848.9871	-4.7	-0.006
Extreme (40C)		824.0219	848.9871	-3.8	-0.005
Extreme (30C)		824.0219	848.9871	-2.2	-0.003
Extreme (10C)		824.0219	848.9871	-3.8	-0.005
Extreme (0C)		824.0219	848.9871	4.7	0.006
Extreme (-10C)		824.0219	848.9871	4.1	0.005
Extreme (-20C)		824.0219	848.9871	3.3	0.004
Extreme (-30C)		824.0219	848.9871	-4.5	-0.005
20C	15%	824.0219	848.9871	-2.8	-0.003
	-15%	824.0219	848.9871	3.5	0.004
	End Point	824.0219	848.9871	-2.7	-0.003

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8.4.5. CDMA 1xRTT BC1

Limit		1850	1910	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)		1850.5733	1909.4278		
Extreme (50C)		1850.5733	1909.4278	9.6	0.005
Extreme (40C)		1850.5733	1909.4278	11.7	0.006
Extreme (30C)		1850.5733	1909.4278	10.5	0.006
Extreme (10C)	Normal	1850.5733	1909.4278	14.1	0.008
Extreme (0C)		1850.5733	1909.4278	13.6	0.007
Extreme (-10C)		1850.5733	1909.4278	15.0	0.008
Extreme (-20C)		1850.5733	1909.4278	14.4	0.008
Extreme (-30C)		1850.5733	1909.4278	12.1	0.006
20C	15%	1850.5733	1909.4278	12.3	0.007
	-15%	1850.5733	1909.4278	11.4	0.006
	End Point	1850.5733	1909.4278	10.9	0.006

8.4.6. WCDMA

Test Engineer ID:	19177	Test Date:	7/1/2020

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)		824.0826	848.3229		
Extreme (50C)		824.0826	848.3229	-2.3	-0.003
Extreme (40C)		824.0826	848.3229	4.8	0.006
Extreme (30C)		824.0826	848.3229	4.8	0.006
Extreme (10C)	Normal	824.0826	848.3229	3.7	0.004
Extreme (0C)		824.0826	848.3229	-2.2	-0.003
Extreme (-10C)		824.0826	848.3229	-3.4	-0.004
Extreme (-20C)		824.0826	848.3229	-4.9	-0.006
Extreme (-30C)		824.0826	848.3229	-4.7	-0.006
20C	15%	824.0826	848.3229	3.1	0.004
	-15%	824.0826	848.3229	3.3	0.004
	End Point	824.0826	848.3229	3.8	0.005

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8.4.7. 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)		1850.1002	1909.2942		
Extreme (50C)		1850.1002	1909.2942	14.2	0.008
Extreme (40C)		1850.1002	1909.2942	21.0	0.011
Extreme (30C)		1850.1002	1909.2942	21.0	0.011
Extreme (10C)	Normal	1850.1002	1909.2942	16.9	0.009
Extreme (0C)		1850.1002	1909.2942	15.2	0.008
Extreme (-10C)		1850.1002	1909.2942	13.7	0.007
Extreme (-20C)		1850.1002	1909.2942	10.4	0.006
Extreme (-30C)		1850.1002	1909.2942	13.0	0.007
20C	15%	1850.1002	1909.2942	15.0	0.008
	-15%	1850.1002	1909.2942	14.8	0.008
	End Point	1850.1002	1909.2942	15.8	0.008

8.4.8. 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)		1710.1057	1754.3109		
Extreme (50C)		1710.1057	1754.3109	9.3	0.005
Extreme (40C)		1710.1057	1754.3109	24.0	0.014
Extreme (30C)		1710.1057	1754.3109	23.8	0.014
Extreme (10C)	Normal	1710.1057	1754.3109	16.3	0.009
Extreme (0C)		1710.1057	1754.3109	8.6	0.005
Extreme (-10C)		1710.1057	1754.3109	-9.8	-0.006
Extreme (-20C)		1710.1057	1754.3109	-18.3	-0.011
Extreme (-30C)		1710.1057	1754.3109	-22.3	-0.013
20C	15%	1710.1057	1754.3109	7.8	0.004
	-15%	1710.1057	1754.3109	10.1	0.006
	End Point	1710.1057	1754.3109	12.1	0.007

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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 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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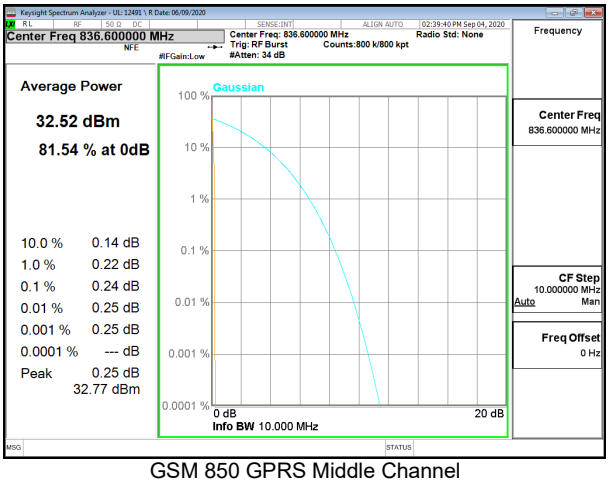
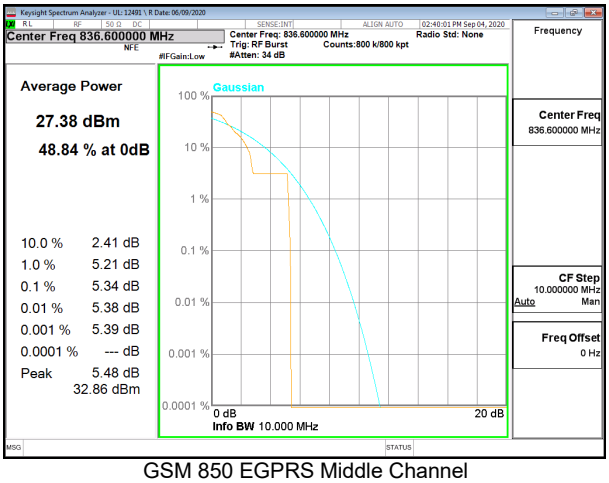
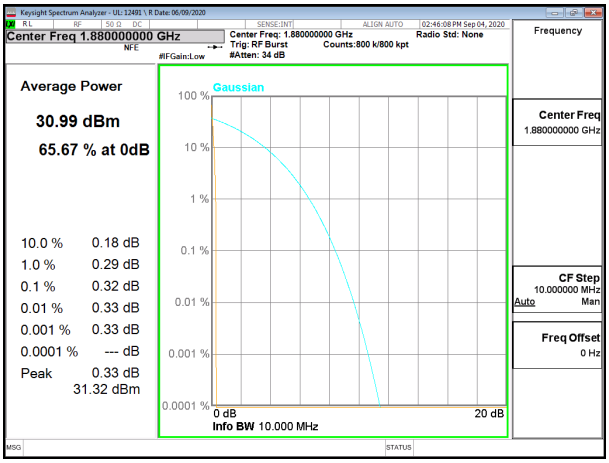
8.5.1. GSM



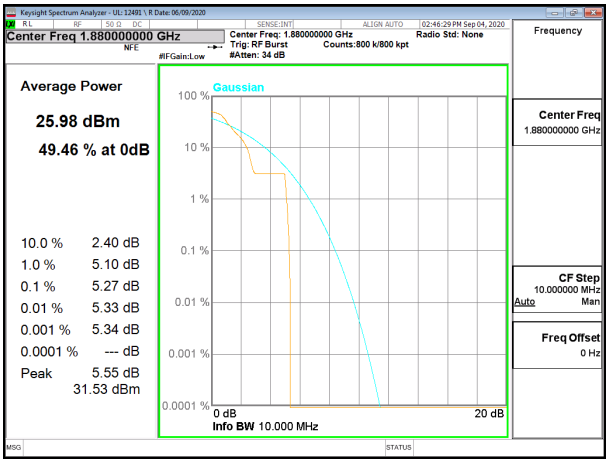
GSM 850 GPRS Middle Channel



GSM 850 EGPRS Middle Channel



GSM 1900 GPRS Middle Channel



GSM 1900 EGPRS Middle Channel

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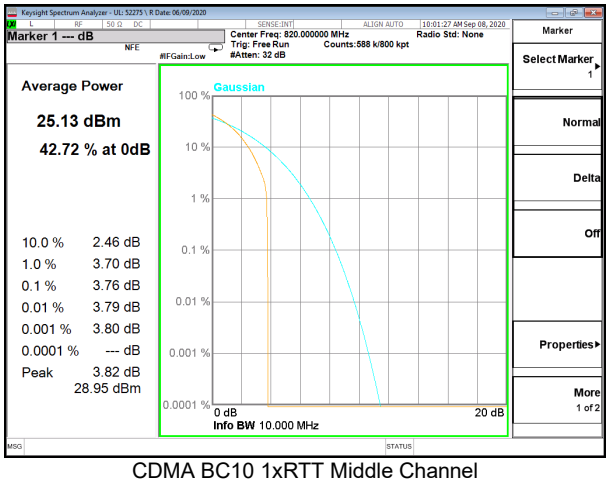
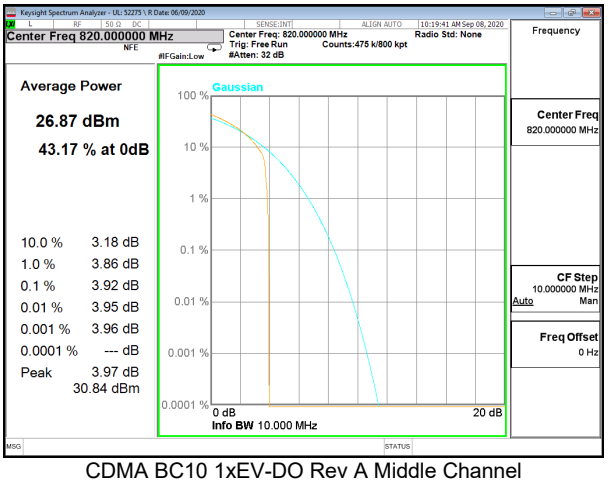
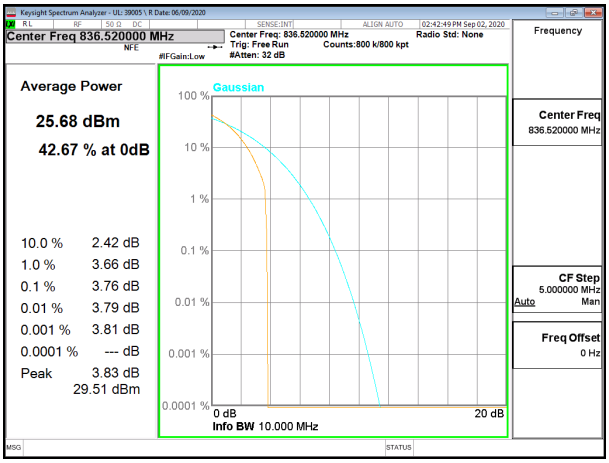
8.5.2. CDMA



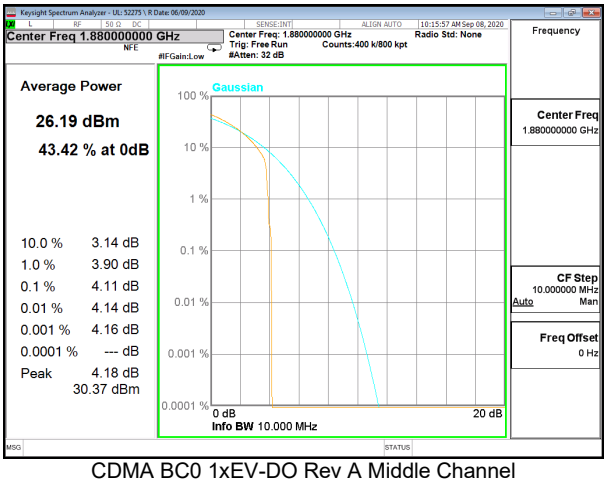
CDMA BC10 1xRTT Middle Channel



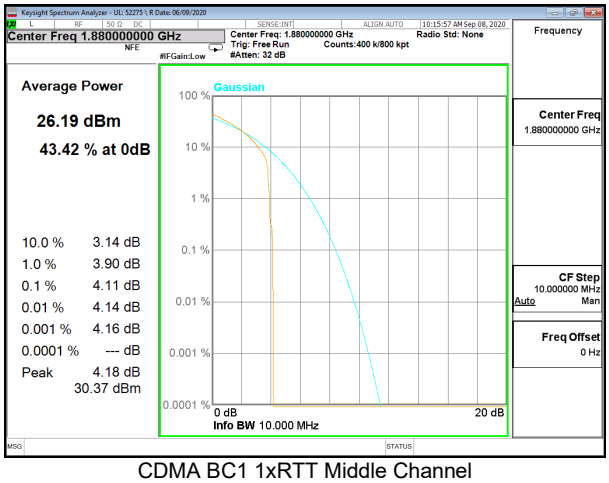
CDMA BC10 1xEV-DO Rev A Middle Channel



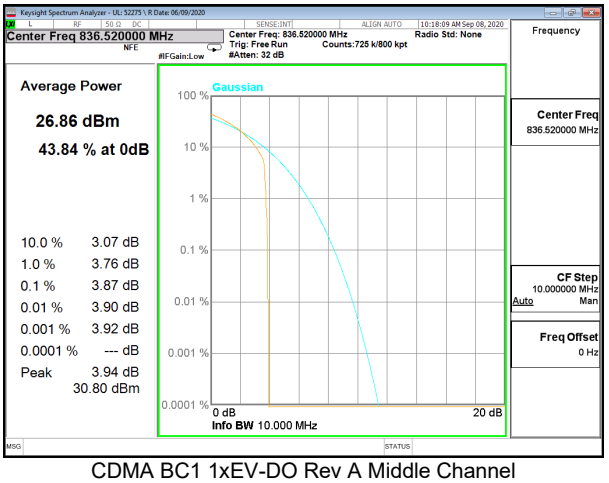
CDMA BC0 1xRTT Middle Channel



CDMA BC0 1xEV-DO Rev A Middle Channel



CDMA BC1 1xRTT Middle Channel



CDMA BC1 1xEV-DO Rev A Middle Channel

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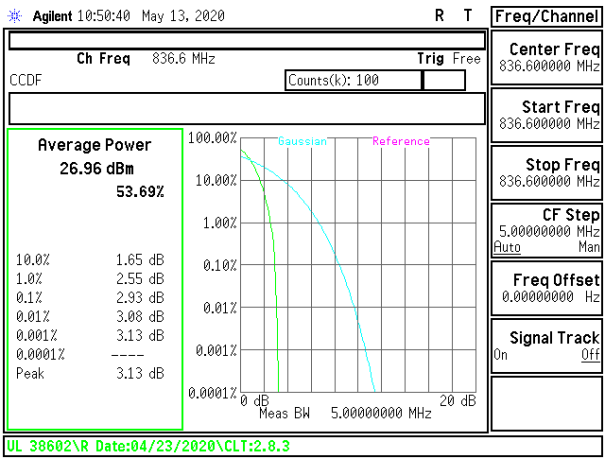
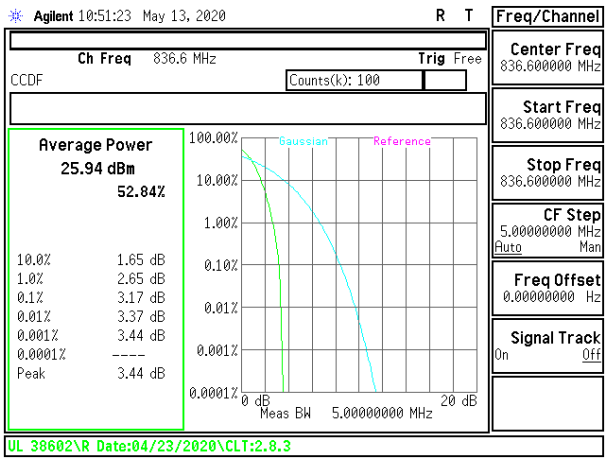
8.5.3. WCDMA

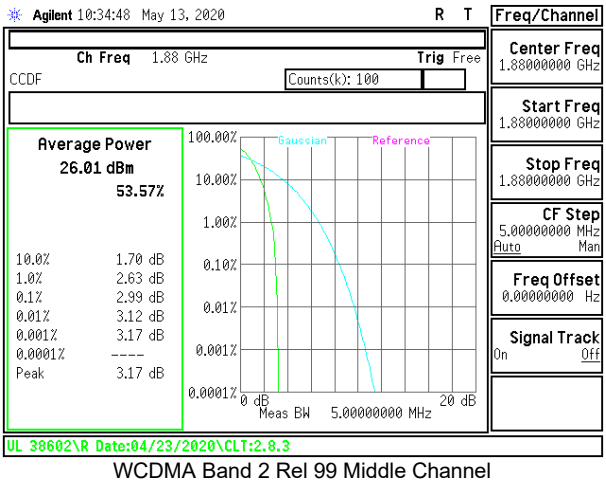
Test Engineer ID:	12491	Test Date:	5/13/2020



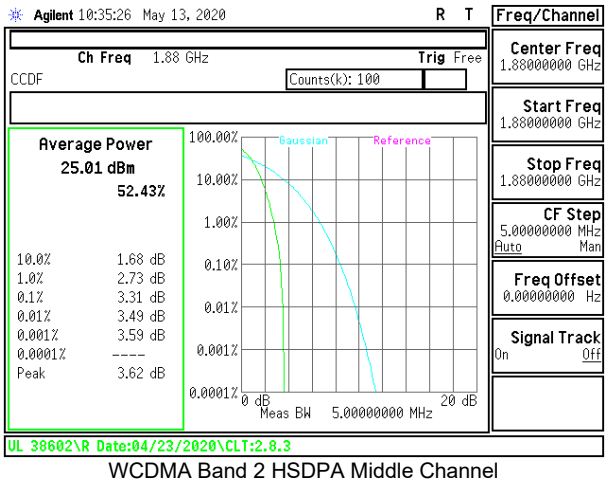
WCDMA Band 5 Rel 99 Middle Channel



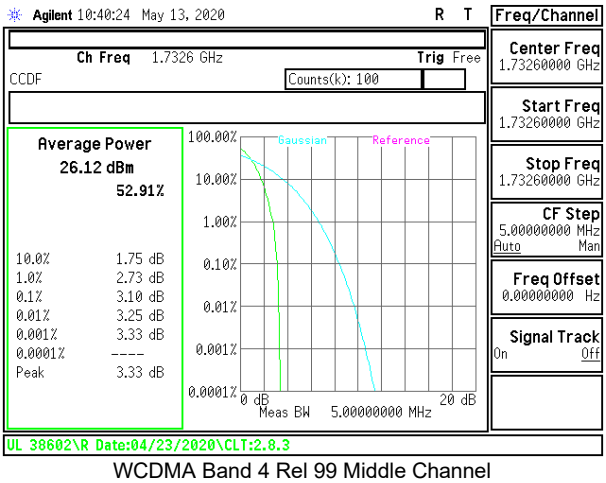
WCDMA Band 5 HSDPA Middle Channel



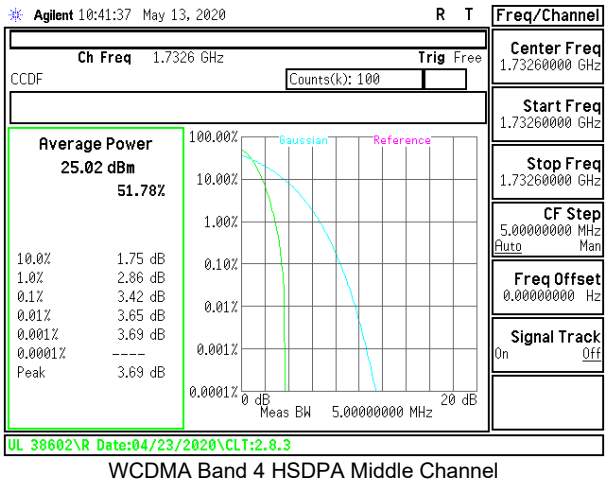
WCDMA Band 2 Rel 99 Middle Channel



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

Radiated measurement using the Field Strength Method

Using the test configuration shown in Figure 6 below, We measure the radiated emissions directly from the EUT and convert the measured field strength or received power to ERP or EIRP, as required, for comparison to the applicable limits. As stated in 5.5.1 of ANSI C63.26-2015, the field strength measurement method using a test site validated to the requirements of ANSI C63.4 is an alternative to the substitution measurement method.

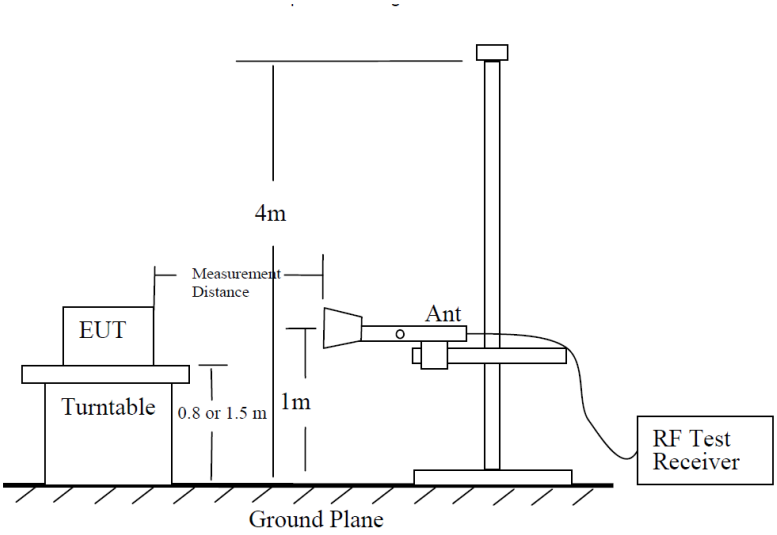

Figure 6—Test site-up for radiated ERP and/or EIRP measurements

Radiated Power Measurement Calculation According to ANSI C63.26-2015

a) E (dBµV/m) = Measured amplitude level (dBµV) + Cable Loss (dB) + Antenna Factor (dB/m).
b) E (dBµV/m) = Measured amplitude level (dBm) + 107 + Cable Loss (dB) + Antenna Factor (dB/m).
c) E (dBµV/m) = EIRP (dBm) − 20log(D) + 104.8; where D is the measurement distance (in the far field region) in m.
d) EIRP (dBm) = E (dBµV/m) + 20log(D) − 104.8; where D is the measurement distance (in the far field region) in m.

So, from d)
The measuring distance is usually at 3m, then 20*Log(3)=9.5424

Then, EIRP (dBm) = E (dBµV/m) + 9.5424 − 104.8 = E (dBµV/m) – 95.2576

Note that: we do confidence check to our chambers every day to see if any degradation from expected/normal reading reference data. Also we do ambient check to all our chambers every month.

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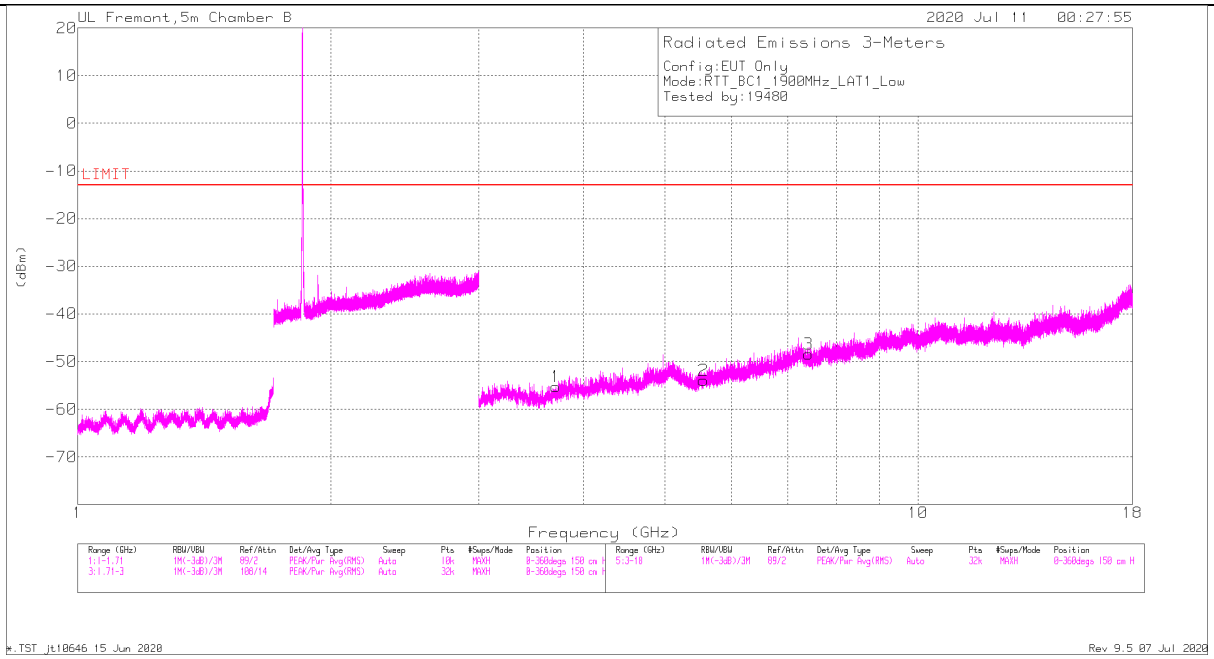
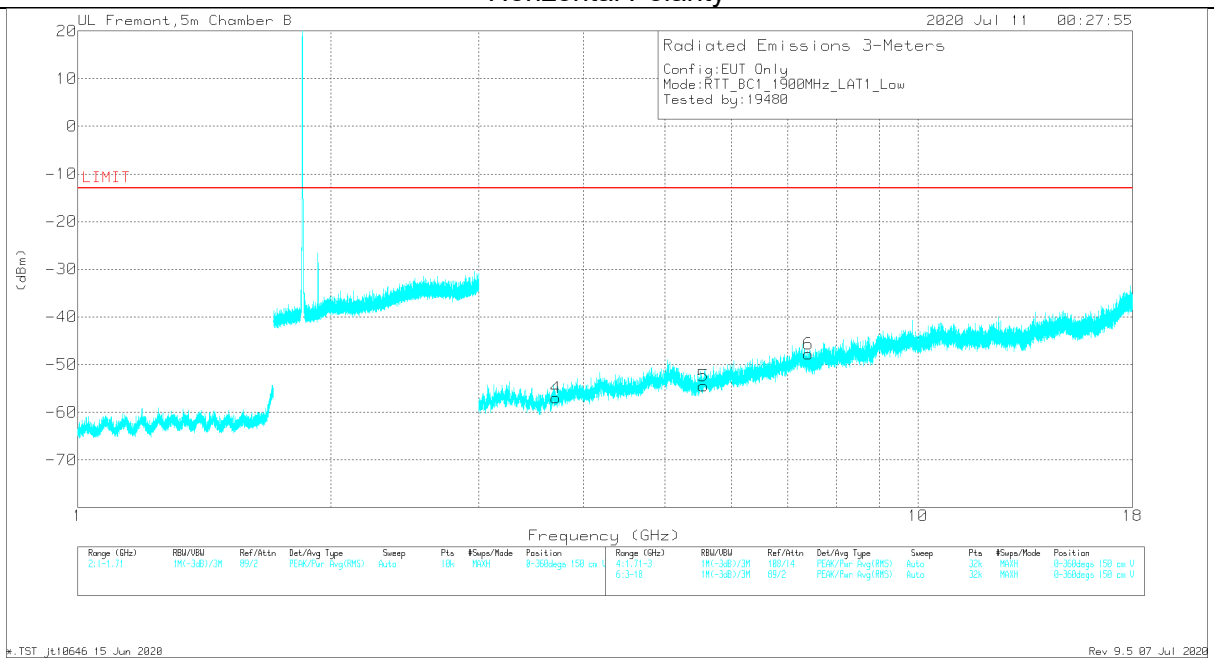
9.1. Example Plot



Horizontal Polarity



Vertical Polarity

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Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T962 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
1	3.70734	37.1	Pk	30.3	-27.4	-95.2	-55.2	-13	-42.2	H
2	5.55516	33.76	Pk	33.3	-25.8	-95.2	-53.94	-13	-40.94	H
3	7.40531	33.01	Pk	36.9	-23.1	-95.2	-48.39	-13	-35.39	H
4	3.70734	35.28	Pk	30.3	-27.4	-95.2	-57.02	-13	-44.02	V
5	5.55516	33.27	Pk	33.3	-25.8	-95.2	-54.43	-13	-41.43	V
6	7.40391	33.61	Pk	36.9	-23.1	-95.2	-47.79	-13	-34.79	V

Pk - Peak detector

Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T962 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	HPF 2.7GHz T772 1-18GHz	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	3.70713	39.43	Pk	30.3	-27.4	1	-95.2	-51.87	-13	-38.87	360	150	H
2	5.55507	37.57	Pk	33.3	-25.8	1	-95.2	-49.13	-13	-36.13	360	150	H
3	7.40723	35.48	Pk	36.8	-23.1	1	-95.2	-45.02	-13	-32.02	360	150	H
4	3.70562	39.05	Pk	30.3	-27.4	1	-95.2	-52.25	-13	-39.25	360	150	V
5	5.55704	37.29	Pk	33.2	-25.9	1	-95.2	-49.61	-13	-36.61	360	150	V
6	7.4034	36.38	Pk	36.9	-23.1	1	-95.2	-44.02	-13	-31.02	360	150	V

Pk - Peak detector

EIRP FCC_EN License 1-18GHz.tst jt10646 15 Jun 2020
Rev 9.5 07 Jul 2020

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701i
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 319-4000 FAX: (510) 661-0888
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9.2. FIELD STRENGTH OF SPURIOUS RADIATION, ANT 1

RULE PART(S)

FCC: §2.1053, §22.917, §24.238, §27.53 and §90.691.
ISED: 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

RESULTS

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9.2.1. GSM 850

GPRS MODE

Project #:	13335182
Date:	5/19/2020
Test Engineer:	45258
Configuration:	EUT Only
Mode:	GSM850 GPRS
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 824.2 MHz										
1.64847	46.88	Pk	28.7	-32.4	.7	-95.2	-51.32	-13	-38.32	H
2.47247	44.95	Pk	32.6	-31.4	.5	-95.2	-48.55	-13	-35.55	H
3.29537	39.96	Pk	32.9	-30.1	.8	-95.2	-51.64	-13	-38.64	H
1.64849	44.13	Pk	28.7	-32.4	.7	-95.2	-54.07	-13	-41.07	V
2.4727	46.77	Pk	32.6	-31.4	.5	-95.2	-46.73	-13	-33.73	V
3.29624	39.83	Pk	32.9	-30.1	.8	-95.2	-51.77	-13	-38.77	V
Mid Channel, 836.6 MHz										
1.67314	50.83	Pk	28.9	-32.2	.7	-95.2	-46.97	-13	-33.97	H
2.51003	45.02	Pk	32.6	-31.4	.7	-95.2	-48.28	-13	-35.28	H
3.34689	40.28	Pk	32.8	-30.1	.6	-95.2	-51.62	-13	-38.62	H
1.67323	51.28	Pk	28.9	-32.2	.7	-95.2	-46.52	-13	-33.52	V
2.50795	40.42	Pk	32.7	-31.4	.7	-95.2	-52.78	-13	-39.78	V
3.34562	40.45	Pk	32.8	-30.1	.6	-95.2	-51.45	-13	-38.45	V
High Channel, 848.8 MHz										
1.92075	39.61	Pk	26.3	-30	.5	-95.2	-58.79	-13	-45.79	H
2.44694	39.01	Pk	28.8	-29.4	.5	-95.2	-56.29	-13	-43.29	H
3.31093	38.55	Pk	31.1	-28	.7	-95.2	-52.85	-13	-39.85	H
1.92801	40.36	Pk	26.4	-30	.5	-95.2	-57.94	-13	-44.94	V
2.44734	39.39	Pk	28.8	-29.4	.5	-95.2	-55.91	-13	-42.91	V
3.30544	38.91	Pk	31.1	-27.9	.7	-95.2	-52.39	-13	-39.39	V

Pk – Peak Detector

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EGPRS MODE

Project #:	13335182
Date:	5/19/2020
Test Engineer:	50822
Configuration:	EUT Only
Mode:	GSM850 EGPRS
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 824.2 MHz										
1.66033	41.63	Pk	28.8	-32.3	.7	-95.2	-56.37	-13	-43.37	H
2.46292	41.36	Pk	32.6	-31.4	.5	-95.2	-52.14	-13	-39.14	H
3.31398	40.18	Pk	32.8	-30.1	.6	-95.2	-51.72	-13	-38.72	H
1.67073	41.6	Pk	28.8	-32.2	.7	-95.2	-56.3	-13	-43.3	V
2.46242	41.2	Pk	32.6	-31.4	.5	-95.2	-52.3	-13	-39.3	V
3.29913	40.34	Pk	32.9	-30.1	.6	-95.2	-51.46	-13	-38.46	V
Mid Channel, 836.6 MHz										
1.66532	41.05	Pk	28.7	-32.2	.7	-95.2	-56.95	-13	-43.95	H
2.50287	41.26	Pk	32.6	-31.3	.7	-95.2	-51.94	-13	-38.94	H
3.35991	39.76	Pk	32.8	-30.1	.6	-95.2	-52.14	-13	-39.14	H
1.6566	41.58	Pk	28.7	-32.3	.7	-95.2	-56.52	-13	-43.52	V
2.50442	41.21	Pk	32.7	-31.4	.7	-95.2	-51.99	-13	-38.99	V
3.355	40.03	Pk	32.8	-30.1	.6	-95.2	-51.87	-13	-38.87	V
High Channel, 848.8 MHz										
1.74423	41.03	Pk	25.5	-30.4	.7	-95.2	-58.37	-13	-45.37	H
2.5191	39.73	Pk	29.2	-29.3	.8	-95.2	-54.77	-13	-41.77	H
3.37286	39.53	Pk	30.9	-28	.6	-95.2	-52.17	-13	-39.17	H
1.78951	38.88	Pk	25.9	-30.2	.6	-95.2	-60.02	-13	-47.02	V
2.49867	38.54	Pk	29	-29.2	.6	-95.2	-56.26	-13	-43.26	V
3.37642	38.26	Pk	30.8	-28	.6	-95.2	-53.54	-13	-40.54	V

Pk – Peak Detector

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9.2.2. GSM 1900

GPRS MODE

Project #:	13335182
Date:	5/20/2020
Test Engineer:	50822
Configuration:	EUT Only
Mode:	GSM1900 GPRS
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl (dB)	HPF 2.7GHz T772 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 1850.2MHz										
3.69915	40.05	Pk	33.2	-29.4	1	-95.2	-50.35	-13	-37.35	H
5.55474	38.64	Pk	34.8	-27.1	1	-95.2	-47.86	-13	-34.86	H
7.40414	35.94	Pk	35.7	-24.1	1	-95.2	-46.66	-13	-33.66	H
3.69962	40.34	Pk	33.2	-29.4	1	-95.2	-50.06	-13	-37.06	V
5.54896	33.86	Pk	34.8	-27.1	1	-95.2	-52.64	-13	-39.64	V
7.47035	36.04	Pk	35.7	-24	1	-95.2	-46.46	-13	-33.46	V
Mid Channel, 1880MHz										
3.76805	39.73	Pk	33.6	-29.6	1	-95.2	-50.47	-13	-37.47	H
5.63407	38.01	Pk	34.8	-27.1	1	-95.2	-48.49	-13	-35.49	H
7.52322	36.62	Pk	35.7	-23.9	1	-95.2	-45.78	-13	-32.78	H
3.75354	39.88	Pk	33.5	-29.6	1	-95.2	-50.42	-13	-37.42	V
5.6497	38.2	Pk	34.8	-27.1	1	-95.2	-48.3	-13	-35.3	V
7.54356	36.25	Pk	35.8	-23.9	1	-95.2	-46.05	-13	-33.05	V
High Channel, 1909.8MHz										
3.81907	40.31	Pk	33.7	-29.5	1	-95.2	-49.69	-13	-36.69	H
5.73694	38.97	Pk	34.9	-27.4	1	-95.2	-47.73	-13	-34.73	H
7.54863	36.57	Pk	35.8	-23.8	1	-95.2	-45.63	-13	-32.63	H
3.79466	40.37	Pk	33.7	-29.5	1	-95.2	-49.63	-13	-36.63	V
5.74958	38.04	Pk	34.9	-27.4	1	-95.2	-48.66	-13	-35.66	V
7.58341	35.85	Pk	35.7	-23.8	1	-95.2	-46.45	-13	-33.45	V

Pk – Peak Detector

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EGPRS MODE

Project #:	13335182
Date:	5/21/2020
Test Engineer:	50822
Configuration:	EUT Only
Mode:	GSM1900 EGPRS
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl (dB)	HPF 2.7GHz T772 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 1850.2MHz										
3.71097	40.03	Pk	33.3	-29.4	1	-95.2	-50.27	-13	-37.27	H
5.55778	38.77	Pk	34.8	-27.1	1	-95.2	-47.73	-13	-34.73	H
7.39292	36.65	Pk	35.6	-24.1	1	-95.2	-46.05	-13	-33.05	H
3.69706	39.99	Pk	33.2	-29.4	1	-95.2	-50.41	-13	-37.41	V
5.5517	38.91	Pk	34.8	-27.1	1	-95.2	-47.59	-13	-34.59	V
7.39887	36.09	Pk	35.7	-24.1	1	-95.2	-46.51	-13	-33.51	V
Mid Channel, 1880MHz										
3.76639	39.75	Pk	33.6	-29.6	1	-95.2	-50.45	-13	-37.45	H
5.6391	39.02	Pk	34.8	-27.1	1	-95.2	-47.48	-13	-34.48	H
7.52718	36.63	Pk	35.7	-23.9	1	-95.2	-45.77	-13	-32.77	H
3.78045	40.78	Pk	33.6	-29.5	1	-95.2	-49.32	-13	-36.32	V
5.62942	37.96	Pk	34.9	-27.1	1	-95.2	-48.44	-13	-35.44	V
7.51141	36.9	Pk	35.8	-23.9	1	-95.2	-45.4	-13	-32.4	V
High Channel, 1909.8MHz										
3.84122	40.78	Pk	33.7	-29.4	1	-95.2	-49.12	-13	-36.12	H
5.73563	38.84	Pk	34.9	-27.4	1	-95.2	-47.86	-13	-34.86	H
7.53536	36.05	Pk	35.8	-23.9	1	-95.2	-46.25	-13	-33.25	H
3.82297	40.57	Pk	33.7	-29.5	1	-95.2	-49.43	-13	-36.43	V
5.70829	38.57	Pk	34.8	-27.3	1	-95.2	-48.13	-13	-35.13	V
7.58797	36.42	Pk	35.8	-23.8	1	-95.2	-45.78	-13	-32.78	V

Pk – Peak Detector

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9.2.3. CDMA BC10

1xRTT MODE

Project #:	13335182
Date:	7/11/2020
Test Engineer:	19480
Configuration:	EUT Only
Mode:	1xRTT BC10
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 817.25MHz										
1.63536	41.37	Pk	25	-30.5	.7	-95.2	-58.63	-13	-45.63	H
2.45241	44.19	Pk	28.8	-29.4	.5	-95.2	-51.11	-13	-38.11	H
3.26944	39.79	Pk	31.3	-28.2	.6	-95.2	-51.71	-13	-38.71	H
1.63243	41.28	Pk	25	-30.5	.7	-95.2	-58.72	-13	-45.72	V
2.45231	45.25	Pk	28.8	-29.4	.5	-95.2	-50.05	-13	-37.05	V
3.2705	39.2	Pk	31.3	-28.2	.7	-95.2	-52.2	-13	-39.2	V
Mid Channel, 820MHz										
1.64106	41.17	Pk	25	-30.4	.7	-95.2	-58.73	-13	-45.73	H
2.45932	45.1	Pk	28.9	-29.4	.5	-95.2	-50.1	-13	-37.1	H
3.3781	39.45	Pk	30.8	-28.1	.6	-95.2	-52.45	-13	-39.45	H
1.64042	41.38	Pk	25	-30.5	.7	-95.2	-58.62	-13	-45.62	V
2.45928	45.49	Pk	28.9	-29.4	.5	-95.2	-49.71	-13	-36.71	V
3.37776	38.88	Pk	30.8	-28.1	.6	-95.2	-53.02	-13	-40.02	V
High Channel, 822.75MHz										
1.6473	40.79	Pk	24.9	-30.4	.8	-95.2	-59.11	-13	-46.11	H
2.46785	42.77	Pk	28.9	-29.4	.5	-95.2	-52.43	-13	-39.43	H
3.2903	38.08	Pk	31.2	-28	.8	-95.2	-53.12	-13	-40.12	H
1.64501	40.84	Pk	25	-30.5	.7	-95.2	-59.16	-13	-46.16	V
2.46778	44.27	Pk	28.9	-29.4	.5	-95.2	-50.93	-13	-37.93	V
3.29221	38.02	Pk	31.2	-28	.8	-95.2	-53.18	-13	-40.18	V

Pk – Peak Detector

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1xEV-DO REV A MODE

Project #:	13335182
Date:	7/15/2020
Test Engineer:	45258
Configuration:	EUT Only
Mode:	1xEV-DO REV A BC10
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 817.25MHz										
1.63483	53.35	Pk	25	-30.5	.7	-95.2	-46.65	-13	-33.65	H
2.45271	51.35	Pk	28.8	-29.4	.5	-95.2	-43.95	-13	-30.95	H
3.26911	39.37	Pk	31.3	-28.2	.6	-95.2	-52.13	-13	-39.13	H
1.63522	51.85	Pk	25	-30.5	.7	-95.2	-48.15	-13	-35.15	V
2.45077	47.66	Pk	28.8	-29.4	.5	-95.2	-47.64	-13	-34.64	V
3.26778	40.08	Pk	31.4	-28.2	.6	-95.2	-51.32	-13	-38.32	V
Mid Channel, 820MHz										
1.64036	40.64	Pk	25	-30.5	.7	-95.2	-59.36	-13	-46.36	H
2.45957	39.27	Pk	28.9	-29.3	.5	-95.2	-55.83	-13	-42.83	H
3.28097	37.59	Pk	31.4	-28.1	.8	-95.2	-53.51	-13	-40.51	H
1.64053	41.12	Pk	25	-30.5	.7	-95.2	-58.88	-13	-45.88	V
2.46134	41.65	Pk	28.9	-29.3	.5	-95.2	-53.45	-13	-40.45	V
3.28066	38.47	Pk	31.4	-28.1	.8	-95.2	-52.63	-13	-39.63	V
High Channel, 822.75MHz										
1.6464	54.94	Pk	24.9	-30.5	.7	-95.2	-45.16	-13	-32.16	H
2.46926	46.53	Pk	28.9	-29.3	.5	-95.2	-48.57	-13	-35.57	H
3.29142	37.96	Pk	31.2	-28	.8	-95.2	-53.24	-13	-40.24	H
1.64624	55.26	Pk	24.9	-30.5	.7	-95.2	-44.84	-13	-31.84	V
2.46961	47.9	Pk	28.9	-29.3	.5	-95.2	-47.2	-13	-34.2	V
3.28925	37.79	Pk	31.2	-28	.8	-95.2	-53.41	-13	-40.41	V

Pk – Peak Detector

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9.2.4. CDMA BC0

1xRTT MODE

Project #:	13335182
Date:	7/10/2020
Test Engineer:	19480
Configuration:	EUT Only
Mode:	1xRTT BC0
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 824.7MHz										
1.64905	40.2	Pk	24.9	-30.4	.8	-95.2	-59.7	-13	-46.7	H
2.47499	43.62	Pk	29	-29.3	.5	-95.2	-51.38	-13	-38.38	H
3.30134	37.94	Pk	31.1	-27.9	.8	-95.2	-53.26	-13	-40.26	H
1.64886	41.25	Pk	24.9	-30.4	.8	-95.2	-58.65	-13	-45.65	V
2.47315	39.31	Pk	29	-29.3	.5	-95.2	-55.69	-13	-42.69	V
3.29905	38.42	Pk	31.1	-27.9	.8	-95.2	-52.78	-13	-39.78	V
Mid Channel, 836.52MHz										
1.67167	40.28	Pk	25	-30.4	.7	-95.2	-59.62	-13	-46.62	H
2.50918	42.98	Pk	29.1	-29.3	.7	-95.2	-51.72	-13	-38.72	H
3.34509	37.41	Pk	30.9	-28.2	.6	-95.2	-54.49	-13	-41.49	H
1.67409	40.12	Pk	25	-30.4	.7	-95.2	-59.78	-13	-46.78	V
2.5087	43.17	Pk	29.1	-29.3	.7	-95.2	-51.53	-13	-38.53	V
3.34685	37.99	Pk	31	-28.2	.6	-95.2	-53.81	-13	-40.81	V
High Channel, 848.31MHz										
1.69845	41.98	Pk	25.1	-30.4	.7	-95.2	-57.82	-13	-44.82	H
2.54397	42.56	Pk	29.2	-29.2	.7	-95.2	-51.94	-13	-38.94	H
3.39415	39.5	Pk	30.7	-28.2	.6	-95.2	-52.6	-13	-39.6	H
1.69937	40.95	Pk	25.1	-30.4	.7	-95.2	-58.85	-13	-45.85	V
2.54515	43.22	Pk	29.2	-29.2	.7	-95.2	-51.28	-13	-38.28	V
3.3932	38.39	Pk	30.7	-28.2	.6	-95.2	-53.71	-13	-40.71	V

Pk – Peak Detector

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1xEV-DO REV A MODE

Project #:	13335182
Date:	7/15/2020
Test Engineer:	45258
Configuration:	EUT Only
Mode:	1xEV-DO REV A BC0
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 824.7MHz										
1.64853	54.19	Pk	24.9	-30.4	.8	-95.2	-45.71	-13	-32.71	H
2.47515	47.76	Pk	29	-29.3	.5	-95.2	-47.24	-13	-34.24	H
3.29981	38.16	Pk	31.1	-27.9	.8	-95.2	-53.04	-13	-40.04	H
1.6503	54.16	Pk	24.9	-30.4	.8	-95.2	-45.74	-13	-32.74	V
2.47534	45.26	Pk	29	-29.3	.5	-95.2	-49.74	-13	-36.74	V
3.29926	37.87	Pk	31.1	-27.9	.8	-95.2	-53.33	-13	-40.33	V
Mid Channel, 836.52MHz										
1.67264	56.81	Pk	25	-30.4	.7	-95.2	-43.09	-13	-30.09	H
2.50944	50.95	Pk	29.1	-29.3	.7	-95.2	-43.75	-13	-30.75	H
3.34783	37.62	Pk	31	-28.2	.6	-95.2	-54.18	-13	-41.18	H
1.67236	53.27	Pk	25	-30.4	.7	-95.2	-46.63	-13	-33.63	V
2.5088	48.84	Pk	29.1	-29.3	.7	-95.2	-45.86	-13	-32.86	V
3.34541	37.6	Pk	30.9	-28.2	.6	-95.2	-54.3	-13	-41.3	V
High Channel, 848.31MHz										
1.69583	58.87	Pk	25	-30.3	.7	-95.2	-40.93	-13	-27.93	H
2.54406	45.78	Pk	29.2	-29.2	.7	-95.2	-48.72	-13	-35.72	H
3.39127	38.75	Pk	30.7	-28.2	.6	-95.2	-53.35	-13	-40.35	H
1.69567	46.96	Pk	25	-30.3	.7	-95.2	-52.84	-13	-39.84	V
2.54382	47.96	Pk	29.2	-29.2	.7	-95.2	-46.54	-13	-33.54	V
3.39358	38.88	Pk	30.7	-28.2	.6	-95.2	-53.22	-13	-40.22	V

Pk – Peak Detector

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9.2.5. CDMA BC1

1xRTT MODE

Project #:	13335182
Date:	7/11/2020
Test Engineer:	19480
Configuration:	EUT Only
Mode:	1xRTT BC1
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 2.7GHz T772 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 1851.25MHz										
3.70713	39.43	Pk	30.3	-27.4	1	-95.2	-51.87	-13	-38.87	H
5.55507	37.57	Pk	33.3	-25.8	1	-95.2	-49.13	-13	-36.13	H
7.40723	35.48	Pk	36.8	-23.1	1	-95.2	-45.02	-13	-32.02	H
3.70562	39.05	Pk	30.3	-27.4	1	-95.2	-52.25	-13	-39.25	V
5.55704	37.29	Pk	33.2	-25.9	1	-95.2	-49.61	-13	-36.61	V
7.4034	36.38	Pk	36.9	-23.1	1	-95.2	-44.02	-13	-31.02	V
Mid Channel, 1880MHz										
3.75906	39.32	Pk	30.6	-27.5	1	-95.2	-51.78	-13	-38.78	H
5.64243	36.34	Pk	33.2	-24.8	1	-95.2	-49.46	-13	-36.46	H
7.52058	35.84	Pk	36.7	-23.1	1	-95.2	-44.76	-13	-31.76	H
3.75818	39.48	Pk	30.6	-27.5	1	-95.2	-51.62	-13	-38.62	V
5.64412	36.58	Pk	33.2	-24.8	1	-95.2	-49.22	-13	-36.22	V
7.52014	35.99	Pk	36.7	-23.1	1	-95.2	-44.61	-13	-31.61	V
High Channel, 1908.75MHz										
3.81673	39.52	Pk	31	-27.3	1	-95.2	-50.98	-13	-37.98	H
5.72714	37.16	Pk	33	-24.4	1	-95.2	-48.44	-13	-35.44	H
7.6353	36.76	Pk	36.9	-23.6	1	-95.2	-44.14	-13	-31.14	H
3.81798	39.21	Pk	30.9	-27.3	1	-95.2	-51.39	-13	-38.39	V
5.72628	37.94	Pk	33	-24.4	1	-95.2	-47.66	-13	-34.66	V
7.63279	37.1	Pk	36.9	-23.5	1	-95.2	-43.7	-13	-30.7	V

Pk – Peak Detector

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1xEV-DO REV A MODE

Project #:	13335182
Date:	7/15/2020
Test Engineer:	45258
Configuration:	EUT Only
Mode:	1xEV-DO REV A BC1
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 2.7GHz T772 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 1851.25MHz										
3.70295	39.34	Pk	30.3	-27.4	1	-95.2	-51.96	-13	-38.96	H
5.55454	38.16	Pk	33.3	-25.8	1	-95.2	-48.54	-13	-35.54	H
7.4047	34.56	Pk	36.9	-23.1	1	-95.2	-45.84	-13	-32.84	H
3.70083	38.2	Pk	30.3	-27.3	1	-95.2	-53	-13	-40	V
5.55199	37.74	Pk	33.3	-25.9	1	-95.2	-49.06	-13	-36.06	V
7.4063	35.45	Pk	36.9	-23.1	1	-95.2	-44.95	-13	-31.95	V
Mid Channel, 1880MHz										
3.75952	38.59	Pk	30.6	-27.5	1	-95.2	-52.51	-13	-39.51	H
5.64072	36.61	Pk	33.1	-24.8	1	-95.2	-49.29	-13	-36.29	H
7.52099	35.9	Pk	36.7	-23.1	1	-95.2	-44.7	-13	-31.7	H
3.75793	39.11	Pk	30.6	-27.5	1	-95.2	-51.99	-13	-38.99	V
5.63818	36.27	Pk	33.1	-24.8	1	-95.2	-49.63	-13	-36.63	V
7.51859	35.16	Pk	36.7	-23.1	1	-95.2	-45.44	-13	-32.44	V
High Channel, 1908.75MHz										
3.81652	39.03	Pk	31	-27.3	1	-95.2	-51.47	-13	-38.47	H
5.72762	36.95	Pk	33	-24.4	1	-95.2	-48.65	-13	-35.65	H
7.63477	35.71	Pk	36.9	-23.6	1	-95.2	-45.19	-13	-32.19	H
3.81873	38.63	Pk	30.9	-27.4	1	-95.2	-52.07	-13	-39.07	V
5.7251	36.78	Pk	33	-24.4	1	-95.2	-48.82	-13	-35.82	V
7.63414	36.85	Pk	36.9	-23.6	1	-95.2	-44.05	-13	-31.05	V

Pk – Peak Detector

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9.2.6. WCDMA BAND 5

REL 99 MODE

Project #:	13335182
Date:	6/11/2020
Test Engineer:	19206
Configuration:	EUT Only
Mode:	REL 99 Band 5
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 826.4MHz										
1.67557	39.45	Pk	25	-30.4	.7	-95.2	-60.45	-13	-47.45	H
2.35679	39.56	Pk	28.2	-29.5	.7	-95.2	-56.24	-13	-43.24	H
3.31135	38.16	Pk	31.1	-28	.6	-95.2	-53.34	-13	-40.34	H
1.64423	39.77	Pk	25	-30.5	.7	-95.2	-60.23	-13	-47.23	V
2.37878	38.94	Pk	28.3	-29.5	.7	-95.2	-56.76	-13	-43.76	V
3.30019	38.25	Pk	31.1	-27.9	.6	-95.2	-53.15	-13	-40.15	V
Mid Channel, 836.6MHz										
1.69349	39.51	Pk	25	-30.4	.7	-95.2	-60.39	-13	-47.39	H
2.52321	39.55	Pk	29.2	-29.3	.7	-95.2	-55.05	-13	-42.05	H
3.25273	38.66	Pk	31.3	-28.3	.6	-95.2	-52.94	-13	-39.94	H
1.69861	40.34	Pk	25.1	-30.4	.7	-95.2	-59.46	-13	-46.46	V
2.50944	39.72	Pk	29.1	-29.3	.7	-95.2	-54.98	-13	-41.98	V
3.2125	39.31	Pk	31.4	-28.4	.6	-95.2	-52.29	-13	-39.29	V
High Channel, 846.6MHz										
1.66842	39.89	Pk	25	-30.4	.7	-95.2	-60.01	-13	-47.01	H
2.51381	39.57	Pk	29.1	-29.3	.7	-95.2	-55.13	-13	-42.13	H
3.2985	38.32	Pk	31.2	-27.9	.8	-95.2	-52.78	-13	-39.78	H
1.63951	39.95	Pk	25	-30.5	.7	-95.2	-60.05	-13	-47.05	V
2.5326	38.89	Pk	29.2	-29.3	.7	-95.2	-55.71	-13	-42.71	V
3.31967	37.76	Pk	31.1	-28.1	.6	-95.2	-53.84	-13	-40.84	V

Pk – Peak Detector

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HSDPA MODE

Project #:	13335182
Date:	6/11/2020
Test Engineer:	19206
Configuration;	EUT Only
Mode:	HSDPA Band 5
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 826.4MHz										
1.65587	39.9	Pk	25	-30.5	.7	-95.2	-60.1	-13	-47.1	H
2.44682	38.99	Pk	28.8	-29.4	.7	-95.2	-56.11	-13	-43.11	H
3.34433	38.06	Pk	31	-28.2	.6	-95.2	-53.74	-13	-40.74	H
1.6325	39.51	Pk	25	-30.5	.7	-95.2	-60.49	-13	-47.49	V
2.44503	38.8	Pk	28.8	-29.4	.7	-95.2	-56.3	-13	-43.3	V
3.29666	38.36	Pk	31.2	-27.9	.8	-95.2	-52.74	-13	-39.74	V
Mid Channel, 836.6MHz										
1.64266	40.32	Pk	25	-30.4	.7	-95.2	-59.58	-13	-46.58	H
2.57158	39	Pk	29.4	-29.2	.5	-95.2	-55.5	-13	-42.5	H
3.34609	38.18	Pk	30.9	-28.2	.6	-95.2	-53.72	-13	-40.72	H
1.6352	39.55	Pk	25	-30.5	.7	-95.2	-60.45	-13	-47.45	V
2.57774	39.03	Pk	29.3	-29.2	.5	-95.2	-55.57	-13	-42.57	V
3.30156	38.5	Pk	31.1	-27.9	.7	-95.2	-52.8	-13	-39.8	V
High Channel, 846.6MHz										
1.67875	39.6	Pk	24.9	-30.4	.7	-95.2	-60.4	-13	-47.4	H
2.5755	39.8	Pk	29.3	-29.1	.5	-95.2	-54.7	-13	-41.7	H
3.36106	38.68	Pk	30.9	-28.1	.6	-95.2	-53.12	-13	-40.12	H
1.69027	39.85	Pk	25	-30.4	.7	-95.2	-60.05	-13	-47.05	V
2.51559	39.48	Pk	29.2	-29.3	.7	-95.2	-55.12	-13	-42.12	V
3.34878	38.52	Pk	31	-28.2	.6	-95.2	-53.28	-13	-40.28	V

Pk – Peak Detector

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9.2.7. WCDMA BAND 2

REL 99 MODE

Project #:	13335182
Date:	6/10/2020
Test Engineer:	19206
Configuration:	EUT Only
Mode:	REL 99 Band 2
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 2.7GHz T772 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 1852.4MHz										
3.69581	38.43	Pk	30.3	-27.6	1	-95.2	-53.07	-13	-40.07	H
5.55985	37.53	Pk	33.2	-26.1	1	-95.2	-49.57	-13	-36.57	H
7.3963	35.27	Pk	36.9	-24	1	-95.2	-46.03	-13	-33.03	H
3.69483	38.19	Pk	30.3	-27.6	1	-95.2	-53.31	-13	-40.31	V
5.58403	36.96	Pk	33.2	-25.8	1	-95.2	-49.84	-13	-36.84	V
7.32233	35.35	Pk	37	-23.6	1	-95.2	-45.45	-13	-32.45	V
Mid Channel, 1880MHz										
3.75117	38.98	Pk	30.6	-27.7	1	-95.2	-52.32	-13	-39.32	H
5.66155	36.81	Pk	33.1	-25.8	1	-95.2	-50.09	-13	-37.09	H
7.52338	35.81	Pk	36.8	-23.9	1	-95.2	-45.49	-13	-32.49	H
3.75407	38.71	Pk	30.6	-27.7	1	-95.2	-52.59	-13	-39.59	V
5.56442	36.83	Pk	33.2	-26	1	-95.2	-50.17	-13	-37.17	V
7.77774	36.7	Pk	37.2	-23.4	1	-95.2	-43.7	-13	-30.7	V
High Channel, 1907.6MHz										
3.83491	38.96	Pk	31	-27.7	1	-95.2	-51.94	-13	-38.94	H
5.72554	36.36	Pk	33	-25.4	1	-95.2	-50.24	-13	-37.24	H
7.6239	35.32	Pk	37	-23.7	1	-95.2	-45.58	-13	-32.58	H
3.8161	38.61	Pk	31	-27.7	1	-95.2	-52.29	-13	-39.29	V
5.71446	36.45	Pk	33	-25.4	1	-95.2	-50.15	-13	-37.15	V
7.57305	35.86	Pk	36.9	-24	1	-95.2	-45.44	-13	-32.44	V

Pk – Peak Detector

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HSDPA MODE

Project #:	13335182
Date:	6/11/2020
Test Engineer:	50822
Configuration;	EUT Only
Mode:	HSDPA Band 2
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 2.7GHz T772 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 1852.4MHz										
3.70525	39.04	Pk	30.3	-27.7	1	-95.2	-52.56	-13	-39.56	H
5.57439	36.86	Pk	33.2	-26	1	-95.2	-50.14	-13	-37.14	H
7.41847	35.69	Pk	36.9	-23.9	1	-95.2	-45.51	-13	-32.51	H
3.70807	39.46	Pk	30.3	-27.7	1	-95.2	-52.14	-13	-39.14	V
5.59722	36.45	Pk	33.3	-25.9	1	-95.2	-50.35	-13	-37.35	V
7.45908	34.86	Pk	36.8	-23.8	1	-95.2	-46.34	-13	-33.34	V
Mid Channel, 1880MHz										
3.7728	38.41	Pk	30.7	-27.8	1	-95.2	-52.89	-13	-39.89	H
5.63552	37.35	Pk	33.1	-26	1	-95.2	-49.75	-13	-36.75	H
7.53275	36	Pk	36.9	-23.8	1	-95.2	-45.1	-13	-32.1	H
3.76226	38.82	Pk	30.7	-27.7	1	-95.2	-52.38	-13	-39.38	V
5.60477	36.36	Pk	33.2	-25.9	1	-95.2	-50.54	-13	-37.54	V
7.55931	35.34	Pk	36.8	-24.1	1	-95.2	-46.16	-13	-33.16	V
High Channel, 1907.6MHz										
3.94037	38.46	Pk	31.5	-27.6	1	-95.2	-51.84	-13	-38.84	H
5.81957	37.44	Pk	33.4	-25.6	1	-95.2	-48.96	-13	-35.96	H
7.62618	35.25	Pk	37	-23.6	1	-95.2	-45.55	-13	-32.55	H
4.0007	37.55	Pk	31.5	-27.7	1	-95.2	-52.85	-13	-39.85	V
5.86775	36.69	Pk	33.8	-25.9	1	-95.2	-49.61	-13	-36.61	V
7.75933	35.78	Pk	37.1	-23.5	1	-95.2	-44.82	-13	-31.82	V

Pk – Peak Detector

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9.2.8. WCDMA BAND 4

REL 99 MODE

Project #:	13335182
Date:	6/10/2020
Test Engineer:	19206
Configuration:	EUT Only
Mode:	REL 99 Band 4
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 2.7GHz T772 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 1712.4MHz										
3.4353	38.34	Pk	30.5	-27.9	1	-95.2	-53.26	-13	-40.26	H
5.72955	37.32	Pk	33.1	-25.4	1	-95.2	-49.18	-13	-36.18	H
6.87628	36.86	Pk	36.2	-24.7	1	-95.2	-45.84	-13	-32.84	H
3.43772	38.15	Pk	30.5	-27.9	1	-95.2	-53.45	-13	-40.45	V
5.72604	36.68	Pk	33	-25.4	1	-95.2	-49.92	-13	-36.92	V
7.06432	36.72	Pk	36.6	-23.9	1	-95.2	-44.78	-13	-31.78	V
Mid Channel, 1732.6MHz										
3.46871	38.23	Pk	30.3	-27.9	1	-95.2	-53.57	-13	-40.57	H
5.18769	37.72	Pk	33.6	-26.4	1	-95.2	-49.28	-13	-36.28	H
6.92398	35.99	Pk	36.2	-24.7	1	-95.2	-46.71	-13	-33.71	H
3.4345	38.88	Pk	30.6	-27.9	1	-95.2	-52.62	-13	-39.62	V
5.26999	37.27	Pk	33.4	-26.4	1	-95.2	-49.93	-13	-36.93	V
6.93055	36.15	Pk	36.3	-24.7	1	-95.2	-46.45	-13	-33.45	V
High Channel, 1752.6MHz										
3.50762	37.99	Pk	30.3	-27.7	1	-95.2	-53.61	-13	-40.61	H
5.2551	37.35	Pk	33.5	-26.4	1	-95.2	-49.75	-13	-36.75	H
7.09034	35.63	Pk	36.7	-23.6	1	-95.2	-45.47	-13	-32.47	H
3.53438	38.38	Pk	30.1	-27.9	1	-95.2	-53.62	-13	-40.62	V
5.21409	37.5	Pk	33.6	-26.3	1	-95.2	-49.4	-13	-36.4	V
7.06968	36.12	Pk	36.7	-23.8	1	-95.2	-45.18	-13	-32.18	V

Pk – Peak Detector

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HSDPA MODE

Project #:	13335182
Date:	6/11/2020
Test Engineer:	19206
Configuration:	EUT Only
Mode:	HSDPA Band 4
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 2.7GHz T772 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 1712.4MHz										
3.19618	38.42	Pk	31.2	-28.5	1	-95.2	-53.08	-13	-40.08	H
4.99775	37.19	Pk	33.6	-25.9	1	-95.2	-49.31	-13	-36.31	H
6.51073	36.02	Pk	35.2	-24.4	1	-95.2	-47.38	-13	-34.38	H
3.29847	37.44	Pk	31.2	-27.9	1	-95.2	-53.46	-13	-40.46	V
5.02412	37.23	Pk	33.7	-25.9	1	-95.2	-49.17	-13	-36.17	V
6.87752	36.34	Pk	36.3	-24.7	1	-95.2	-46.26	-13	-33.26	V
Mid Channel, 1732.6MHz										
3.48736	37.93	Pk	30.2	-27.8	1	-95.2	-53.87	-13	-40.87	H
5.18842	37.31	Pk	33.6	-26.3	1	-95.2	-49.59	-13	-36.59	H
6.878	36.89	Pk	36.3	-24.7	1	-95.2	-45.71	-13	-32.71	H
3.4956	37.82	Pk	30.2	-27.6	1	-95.2	-53.78	-13	-40.78	V
5.15509	37.16	Pk	33.8	-26.4	1	-95.2	-49.64	-13	-36.64	V
6.82045	36.63	Pk	36.1	-24.7	1	-95.2	-46.17	-13	-33.17	V
High Channel, 1752.6MHz										
3.26882	39.16	Pk	31.3	-28.2	1	-95.2	-51.94	-13	-38.94	H
5.08734	37.96	Pk	33.8	-26.2	1	-95.2	-48.64	-13	-35.64	H
7.15952	35.77	Pk	37	-24	1	-95.2	-45.43	-13	-32.43	H
3.67376	38.82	Pk	30.2	-27.7	1	-95.2	-52.88	-13	-39.88	V
5.14806	37.96	Pk	33.8	-26.3	1	-95.2	-48.74	-13	-35.74	V
7.25707	36.16	Pk	37.2	-23.5	1	-95.2	-44.34	-13	-31.34	V

Pk – Peak Detector

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9.3. FIELD STRENGTH OF SPURIOUS RADIATION, ANT 2

9.3.1. GSM 850

GPRS MODE

Project #:	13335182
Date:	5/28/2020
Test Engineer:	45258
Configuration:	EUT Only
Mode:	GSM850 GPRS
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 824.2 MHz										
1.64839	43.09	Pk	28.7	-32.4	.7	-95.2	-55.11	-13	-42.11	H
2.47247	48.08	Pk	32.6	-31.4	.5	-95.2	-45.42	-13	-32.42	H
3.29663	40.29	Pk	32.9	-30.1	.8	-95.2	-51.31	-13	-38.31	H
1.64942	41.43	Pk	28.7	-32.4	.7	-95.2	-56.77	-13	-43.77	V
2.47239	48.92	Pk	32.6	-31.4	.5	-95.2	-44.58	-13	-31.58	V
3.29866	39.84	Pk	32.9	-30.1	.6	-95.2	-51.96	-13	-38.96	V
Mid Channel, 836.6 MHz										
1.67296	41.92	Pk	28.9	-32.2	.7	-95.2	-55.88	-13	-42.88	H
2.51007	50.57	Pk	32.6	-31.4	.7	-95.2	-42.73	-13	-29.73	H
3.34425	40.17	Pk	32.8	-30.2	.6	-95.2	-51.83	-13	-38.83	H
1.67243	42.29	Pk	28.9	-32.2	.7	-95.2	-55.51	-13	-42.51	V
2.50987	51.81	Pk	32.6	-31.4	.7	-95.2	-41.49	-13	-28.49	V
3.34752	39.46	Pk	32.8	-30.1	.6	-95.2	-52.44	-13	-39.44	V
High Channel, 848.8 MHz										
1.69784	44.29	Pk	28.8	-32.3	.7	-95.2	-53.71	-13	-40.71	H
2.54656	47.5	Pk	32.6	-31	.7	-95.2	-45.4	-13	-32.4	H
3.39723	39.93	Pk	32.7	-30.1	.6	-95.2	-52.07	-13	-39.07	H
1.69977	41.67	Pk	28.9	-32.3	.7	-95.2	-56.23	-13	-43.23	V
2.54648	47.84	Pk	32.6	-31	.7	-95.2	-45.06	-13	-32.06	V
3.39672	39.83	Pk	32.7	-30.1	.6	-95.2	-52.17	-13	-39.17	V

Pk – Peak Detector

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EGPRS MODE

Project #:	13335182
Date:	5/28/2020
Test Engineer:	20792
Configuration:	EUT Only
Mode:	GSM850 EGPRS
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 824.2 MHz										
1.64689	41.92	Pk	28.7	-32.4	.7	-95.2	-56.28	-13	-43.28	H
2.47244	50.58	Pk	32.6	-31.4	.5	-95.2	-42.92	-13	-29.92	H
3.29538	39.53	Pk	32.9	-30.1	.8	-95.2	-52.07	-13	-39.07	H
1.64863	43.09	Pk	28.7	-32.4	.7	-95.2	-55.11	-13	-42.11	V
2.47272	53.35	Pk	32.6	-31.4	.5	-95.2	-40.15	-13	-27.15	V
3.29816	39.82	Pk	32.9	-30.1	.8	-95.2	-51.78	-13	-38.78	V
Mid Channel, 836.6 MHz										
1.6733	43.42	Pk	28.9	-32.2	.7	-95.2	-54.38	-13	-41.38	H
2.50992	51.04	Pk	32.6	-31.4	.7	-95.2	-42.26	-13	-29.26	H
3.34487	39.09	Pk	32.8	-30.2	.6	-95.2	-52.91	-13	-39.91	H
1.67325	43.53	Pk	28.9	-32.2	.7	-95.2	-54.27	-13	-41.27	V
2.51002	51.17	Pk	32.6	-31.4	.7	-95.2	-42.13	-13	-29.13	V
3.34754	39.84	Pk	32.8	-30.1	.6	-95.2	-52.06	-13	-39.06	V
High Channel, 848.8 MHz										
1.69757	43.86	Pk	28.8	-32.3	.7	-95.2	-54.14	-13	-41.14	H
2.54608	51.58	Pk	32.6	-31	.7	-95.2	-41.32	-13	-28.32	H
3.39344	40.13	Pk	32.7	-30.2	.6	-95.2	-51.97	-13	-38.97	H
1.6977	42.9	Pk	28.8	-32.3	.7	-95.2	-55.1	-13	-42.1	V
2.54638	53.82	Pk	32.6	-31	.7	-95.2	-39.08	-13	-26.08	V
3.39524	39.94	Pk	32.7	-30.2	.6	-95.2	-52.16	-13	-39.16	V

Pk – Peak Detector

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9.3.2. GSM 1900

GPRS MODE

Project #:	13335182
Date:	5/21/2020
Test Engineer:	50822
Configuration:	EUT Only
Mode:	GSM1900 GPRS
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl (dB)	HPF 2.7GHz T772 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 1850.2MHz										
3.71222	39.76	Pk	33.3	-29.4	1	-95.2	-50.54	-13	-37.54	H
5.55717	38.31	Pk	34.8	-27.1	1	-95.2	-48.19	-13	-35.19	H
7.40456	35.98	Pk	35.7	-24.1	1	-95.2	-46.62	-13	-33.62	H
3.71913	40.5	Pk	33.3	-29.4	1	-95.2	-49.8	-13	-36.8	V
5.57765	38.46	Pk	34.9	-27	1	-95.2	-47.84	-13	-34.84	V
7.35577	30.31	Pk	35.7	-24	1	-95.2	-52.19	-13	-39.19	V
Mid Channel, 1880MHz										
3.3753	39.68	Pk	32.8	-30.2	1	-95.2	-51.92	-13	-38.92	H
5.65316	38.49	Pk	34.8	-27.1	1	-95.2	-48.01	-13	-35.01	H
7.51775	36.51	Pk	35.7	-23.9	1	-95.2	-45.89	-13	-32.89	H
3.38173	39.95	Pk	32.8	-30.2	1	-95.2	-51.65	-13	-38.65	V
5.70122	38.12	Pk	34.9	-27.2	1	-95.2	-48.38	-13	-35.38	V
7.51271	36.82	Pk	35.8	-23.9	1	-95.2	-45.48	-13	-32.48	V
High Channel, 1909.8MHz										
3.82168	40.01	Pk	33.7	-29.5	1	-95.2	-49.99	-13	-36.99	H
5.73874	38.17	Pk	34.9	-27.4	1	-95.2	-48.53	-13	-35.53	H
7.5507	36.6	Pk	35.8	-23.8	1	-95.2	-45.6	-13	-32.6	H
3.84007	40.7	Pk	33.7	-29.4	1	-95.2	-49.2	-13	-36.2	V
5.77781	38.62	Pk	35.1	-27.2	1	-95.2	-47.68	-13	-34.68	V
7.45519	35.83	Pk	35.7	-24	1	-95.2	-46.67	-13	-33.67	V

Pk – Peak Detector

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EGPRS MODE

Project #:	13335182
Date:	5/21/2020
Test Engineer:	50822
Configuration:	EUT Only
Mode:	GSM1900 EGPRS
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl (dB)	HPF 2.7GHz T772 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 1850.2MHz										
3.69723	39.96	Pk	33.2	-29.4	1	-95.2	-50.44	-13	-37.44	H
5.55967	38.66	Pk	34.8	-27.1	1	-95.2	-47.84	-13	-34.84	H
7.40619	36.69	Pk	35.7	-24.1	1	-95.2	-45.91	-13	-32.91	H
3.70041	42.96	Pk	33.2	-29.4	1	-95.2	-47.44	-13	-34.44	V
5.55063	38.81	Pk	34.8	-27.1	1	-95.2	-47.69	-13	-34.69	V
7.38415	37.44	Pk	35.8	-24	1	-95.2	-44.96	-13	-31.96	V
Mid Channel, 1880MHz										
3.76761	40.6	Pk	33.6	-29.6	1	-95.2	-49.6	-13	-36.6	H
5.64021	39.77	Pk	34.9	-27.1	1	-95.2	-46.63	-13	-33.63	H
7.52554	36.22	Pk	35.7	-23.9	1	-95.2	-46.18	-13	-33.18	H
3.74755	40.06	Pk	33.5	-29.5	1	-95.2	-50.14	-13	-37.14	V
5.68127	38.06	Pk	34.8	-27.2	1	-95.2	-48.54	-13	-35.54	V
7.55831	36.28	Pk	35.7	-23.8	1	-95.2	-46.02	-13	-33.02	V
High Channel, 1909.8MHz										
3.84111	40.17	Pk	33.7	-29.4	1	-95.2	-49.73	-13	-36.73	H
5.72907	41.4	Pk	34.9	-27.4	1	-95.2	-45.3	-13	-32.3	H
7.53414	36.85	Pk	35.8	-23.9	1	-95.2	-45.45	-13	-32.45	H
3.85056	40.57	Pk	33.6	-29.3	1	-95.2	-49.33	-13	-36.33	V
5.72907	40.67	Pk	34.9	-27.4	1	-95.2	-46.03	-13	-33.03	V
7.50408	36.84	Pk	35.7	-23.8	1	-95.2	-45.46	-13	-32.46	V

Pk – Peak Detector

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9.3.3. CDMA BC10

1xRTT MODE

Project #:	13335182
Date:	7/11/2020
Test Engineer:	45258
Configuration:	EUT Only
Mode:	1xRTT BC10
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 817.25MHz										
1.63499	41.23	Pk	25	-30.5	.7	-95.2	-58.77	-13	-45.77	H
2.45171	41.48	Pk	28.8	-29.4	.5	-95.2	-53.82	-13	-40.82	H
3.26711	39.47	Pk	31.4	-28.2	.6	-95.2	-51.93	-13	-38.93	H
1.63424	41.18	Pk	25	-30.5	.7	-95.2	-58.82	-13	-45.82	V
2.45156	40.76	Pk	28.8	-29.4	.5	-95.2	-54.54	-13	-41.54	V
3.26812	38.95	Pk	31.4	-28.2	.6	-95.2	-52.45	-13	-39.45	V
Mid Channel, 820MHz										
1.63992	43.71	Pk	25	-30.5	.7	-95.2	-56.29	-13	-43.29	H
2.45985	40.13	Pk	28.9	-29.3	.5	-95.2	-54.97	-13	-41.97	H
3.28152	38.25	Pk	31.4	-28.1	.8	-95.2	-52.85	-13	-39.85	H
1.64068	42.71	Pk	25	-30.4	.7	-95.2	-57.19	-13	-44.19	V
2.45866	39.37	Pk	28.9	-29.4	.5	-95.2	-55.83	-13	-42.83	V
3.27913	38.28	Pk	31.4	-28.1	.8	-95.2	-52.82	-13	-39.82	V
High Channel, 822.75MHz										
1.64356	40.08	Pk	25	-30.4	.7	-95.2	-59.82	-13	-46.82	H
2.46982	38.7	Pk	28.9	-29.3	.5	-95.2	-56.4	-13	-43.4	H
3.28979	37.88	Pk	31.2	-28	.8	-95.2	-53.32	-13	-40.32	H
1.64366	40.38	Pk	25	-30.4	.7	-95.2	-59.52	-13	-46.52	V
2.46696	39.62	Pk	28.9	-29.4	.5	-95.2	-55.58	-13	-42.58	V
3.29053	37.39	Pk	31.2	-28	.8	-95.2	-53.81	-13	-40.81	V

Pk – Peak Detector

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1xEV-DO REV A MODE

Project #:	13335182
Date:	7/15/2020
Test Engineer:	50822
Configuration:	EUT Only
Mode:	1xEV-DO REV A BC10
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 817.25MHz										
1.72471	49.48	Pk	25.2	-30.3	.7	-95.2	-50.12	-13	-37.12	H
2.36882	39.42	Pk	28.3	-29.5	.6	-95.2	-56.38	-13	-43.38	H
3.14222	39.35	Pk	30.8	-28.5	.6	-95.2	-52.95	-13	-39.95	H
1.72438	50.92	Pk	25.2	-30.3	.7	-95.2	-48.68	-13	-35.68	V
2.54457	39.37	Pk	29.2	-29.2	.7	-95.2	-55.13	-13	-42.13	V
4.1444	38.37	Pk	31.8	-27.3	.6	-95.2	-51.73	-13	-38.73	V
Mid Channel, 820MHz										
1.7301	48.99	Pk	25.4	-30.4	.7	-95.2	-50.51	-13	-37.51	H
2.38668	39.8	Pk	28.4	-29.5	.6	-95.2	-55.9	-13	-42.9	H
3.26972	38.96	Pk	31.3	-28.2	.6	-95.2	-52.54	-13	-39.54	H
1.73016	51.11	Pk	25.4	-30.4	.7	-95.2	-48.39	-13	-35.39	V
2.61992	39.55	Pk	29.2	-29.1	.6	-95.2	-54.95	-13	-41.95	V
3.32771	39.46	Pk	31	-28.2	.6	-95.2	-52.34	-13	-39.34	V
High Channel, 822.75MHz										
1.73565	49.38	Pk	25.4	-30.4	.7	-95.2	-50.12	-13	-37.12	H
2.23742	39.42	Pk	27.4	-29.5	.5	-95.2	-57.38	-13	-44.38	H
3.14883	38.99	Pk	30.9	-28.6	.5	-95.2	-53.41	-13	-40.41	H
1.73548	50.32	Pk	25.4	-30.4	.7	-95.2	-49.18	-13	-36.18	V
2.50776	39.88	Pk	29.1	-29.3	.7	-95.2	-54.82	-13	-41.82	V
3.20653	39.44	Pk	31.3	-28.4	.5	-95.2	-52.36	-13	-39.36	V

Pk – Peak Detector

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9.3.4. CDMA BC0

1xRTT MODE

Project #:	13335182
Date:	7/11/2020
Test Engineer:	45258
Configuration:	EUT Only
Mode:	1xRTT BC0
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 824.7MHz										
1.64888	44.99	Pk	24.9	-30.4	.8	-95.2	-54.91	-13	-41.91	H
2.47487	38.59	Pk	29	-29.3	.5	-95.2	-56.41	-13	-43.41	H
3.29748	38.81	Pk	31.2	-27.9	.8	-95.2	-52.29	-13	-39.29	H
1.65019	40.83	Pk	24.9	-30.4	.8	-95.2	-59.07	-13	-46.07	V
2.4746	38.76	Pk	29	-29.3	.5	-95.2	-56.24	-13	-43.24	V
3.2986	37.8	Pk	31.2	-27.9	.8	-95.2	-53.3	-13	-40.3	V
Mid Channel, 836.52MHz										
1.67186	40.7	Pk	25	-30.4	.7	-95.2	-59.2	-13	-46.2	H
2.5091	39.39	Pk	29.1	-29.3	.7	-95.2	-55.31	-13	-42.31	H
3.34652	37.96	Pk	31	-28.2	.6	-95.2	-53.84	-13	-40.84	H
1.67322	40.09	Pk	25	-30.4	.7	-95.2	-59.81	-13	-46.81	V
2.50775	40.31	Pk	29.1	-29.3	.7	-95.2	-54.39	-13	-41.39	V
3.34752	37.86	Pk	31	-28.2	.6	-95.2	-53.94	-13	-40.94	V
High Channel, 848.31MHz										
1.69599	47.32	Pk	25	-30.3	.7	-95.2	-52.48	-13	-39.48	H
2.54366	39.62	Pk	29.2	-29.2	.7	-95.2	-54.88	-13	-41.88	H
3.39316	38.75	Pk	30.7	-28.2	.6	-95.2	-53.35	-13	-40.35	H
1.69517	41.5	Pk	25	-30.3	.7	-95.2	-58.3	-13	-45.3	V
2.54505	38.89	Pk	29.2	-29.2	.7	-95.2	-55.61	-13	-42.61	V
3.39142	39.04	Pk	30.7	-28.2	.6	-95.2	-53.06	-13	-40.06	V

Pk – Peak Detector

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1xEV-DO REV A MODE

Project #:	13335182
Date:	7/15/2020
Test Engineer:	50822
Configuration:	EUT Only
Mode:	1xEV-DO REV A BC0
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 824.7MHz										
1.73922	51.31	Pk	25.4	-30.4	.7	-95.2	-48.19	-13	-35.19	H
2.51144	40.29	Pk	29.1	-29.3	.7	-95.2	-54.41	-13	-41.41	H
3.13973	39.34	Pk	30.8	-28.6	.6	-95.2	-53.06	-13	-40.06	H
1.73985	49.29	Pk	25.4	-30.4	.7	-95.2	-50.21	-13	-37.21	V
2.55592	39.53	Pk	29.3	-29.2	.6	-95.2	-54.97	-13	-41.97	V
4.15881	37.81	Pk	31.9	-27.1	.7	-95.2	-51.89	-13	-38.89	V
Mid Channel, 836.52MHz										
1.76306	49.45	Pk	25.7	-30.3	.7	-95.2	-49.65	-13	-36.65	H
1.98229	40.68	Pk	27.3	-29.9	.6	-95.2	-56.52	-13	-43.52	H
3.1998	40.55	Pk	31.2	-28.5	.6	-95.2	-51.35	-13	-38.35	H
1.76306	51.29	Pk	25.7	-30.3	.7	-95.2	-47.81	-13	-34.81	V
2.54571	39.44	Pk	29.2	-29.2	.7	-95.2	-55.06	-13	-42.06	V
3.31509	39.18	Pk	31.1	-28	.6	-95.2	-52.32	-13	-39.32	V
High Channel, 848.31MHz										
1.78644	49.99	Pk	25.9	-30.2	.6	-95.2	-48.91	-13	-35.91	H
2.61507	39.72	Pk	29.2	-29	.6	-95.2	-54.68	-13	-41.68	H
4.14568	38.25	Pk	31.8	-27.3	.6	-95.2	-51.85	-13	-38.85	H
1.7867	48.11	Pk	25.9	-30.2	.6	-95.2	-50.79	-13	-37.79	V
2.51781	39.21	Pk	29.2	-29.3	.8	-95.2	-55.29	-13	-42.29	V
3.26038	38.81	Pk	31.3	-28.3	.5	-95.2	-52.89	-13	-39.89	V

Pk – Peak Detector

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9.3.5. CDMA BC1

1xRTT MODE

Project #:	13335182
Date:	7/11/2020
Test Engineer:	19480
Configuration:	EUT Only
Mode:	1xRTT BC1
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 2.7GHz T772 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 1851.25MHz										
3.70256	38.73	Pk	30.3	-27.4	1	-95.2	-52.57	-13	-39.57	H
5.5533	39.81	Pk	33.3	-25.9	1	-95.2	-46.99	-13	-33.99	H
7.40483	35.75	Pk	36.9	-23.1	1	-95.2	-44.65	-13	-31.65	H
3.70273	40.26	Pk	30.3	-27.4	1	-95.2	-51.04	-13	-38.04	V
5.55384	40.74	Pk	33.3	-25.8	1	-95.2	-45.96	-13	-32.96	V
7.40482	35.71	Pk	36.9	-23.1	1	-95.2	-44.69	-13	-31.69	V
Mid Channel, 1880MHz										
3.75874	39.48	Pk	30.6	-27.5	1	-95.2	-51.62	-13	-38.62	H
5.63922	37.3	Pk	33.1	-24.8	1	-95.2	-48.6	-13	-35.6	H
7.52073	36.13	Pk	36.7	-23.1	1	-95.2	-44.47	-13	-31.47	H
3.75958	40.31	Pk	30.6	-27.5	1	-95.2	-50.79	-13	-37.79	V
5.63958	37.95	Pk	33.1	-24.8	1	-95.2	-47.95	-13	-34.95	V
7.52197	36.33	Pk	36.7	-23.1	1	-95.2	-44.27	-13	-31.27	V
High Channel, 1908.75MHz										
3.81717	39.32	Pk	31	-27.3	1	-95.2	-51.18	-13	-38.18	H
5.72735	37.34	Pk	33	-24.4	1	-95.2	-48.26	-13	-35.26	H
7.63561	36.87	Pk	36.9	-23.6	1	-95.2	-44.03	-13	-31.03	H
3.81749	39.33	Pk	30.9	-27.3	1	-95.2	-51.27	-13	-38.27	V
5.72634	37.09	Pk	33	-24.4	1	-95.2	-48.51	-13	-35.51	V
7.63578	36.23	Pk	36.9	-23.6	1	-95.2	-44.67	-13	-31.67	V

Pk – Peak Detector

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1xEV-DO REV A MODE

Project #:	13335182
Date:	7/15/2020
Test Engineer:	45258
Configuration:	EUT Only
Mode:	1xEV-DO REV A BC1
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 2.7GHz T772 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 1851.25MHz										
3.70293	39.02	Pk	30.3	-27.4	1	-95.2	-52.28	-13	-39.28	H
5.55367	37.12	Pk	33.3	-25.9	1	-95.2	-49.68	-13	-36.68	H
7.40456	35.71	Pk	36.9	-23.1	1	-95.2	-44.69	-13	-31.69	H
3.70393	39.03	Pk	30.3	-27.4	1	-95.2	-52.27	-13	-39.27	V
5.55398	37.55	Pk	33.3	-25.8	1	-95.2	-49.15	-13	-36.15	V
7.40491	35.19	Pk	36.9	-23.1	1	-95.2	-45.21	-13	-32.21	V
Mid Channel, 1880MHz										
3.7586	39.13	Pk	30.6	-27.5	1	-95.2	-51.97	-13	-38.97	H
5.6393	37.07	Pk	33.1	-24.8	1	-95.2	-48.83	-13	-35.83	H
7.52142	35.63	Pk	36.7	-23.1	1	-95.2	-44.97	-13	-31.97	H
3.7585	39.22	Pk	30.6	-27.5	1	-95.2	-51.88	-13	-38.88	V
5.64194	37.41	Pk	33.2	-24.8	1	-95.2	-48.39	-13	-35.39	V
7.51989	35.97	Pk	36.7	-23.1	1	-95.2	-44.63	-13	-31.63	V
High Channel, 1908.75MHz										
3.81832	38.4	Pk	30.9	-27.4	1	-95.2	-52.3	-13	-39.3	H
5.72756	36.44	Pk	33	-24.4	1	-95.2	-49.16	-13	-36.16	H
7.63644	36.65	Pk	36.9	-23.6	1	-95.2	-44.25	-13	-31.25	H
3.81851	39.46	Pk	30.9	-27.4	1	-95.2	-51.24	-13	-38.24	V
5.72518	37.16	Pk	33	-24.4	1	-95.2	-48.44	-13	-35.44	V
7.63621	36.85	Pk	36.9	-23.6	1	-95.2	-44.05	-13	-31.05	V

Pk – Peak Detector

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9.3.6. WCDMA BAND 5

REL 99 MODE

Project #:	13335182
Date:	6/11/2020
Test Engineer:	50822
Configuration:	EUT Only
Mode:	REL 99 Band 5
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 826.4MHz										
1.65519	39.84	Pk	25	-30.4	.7	-95.2	-60.06	-13	-47.06	H
2.48037	38.97	Pk	29	-29.3	.5	-95.2	-56.03	-13	-43.03	H
3.30479	38.15	Pk	31.1	-27.9	.7	-95.2	-53.15	-13	-40.15	H
1.64918	40.06	Pk	24.9	-30.4	.7	-95.2	-59.94	-13	-46.94	V
2.46617	39.4	Pk	28.9	-29.4	.5	-95.2	-55.8	-13	-42.8	V
3.31008	37.98	Pk	31.1	-28	.6	-95.2	-53.52	-13	-40.52	V
Mid Channel, 836.6MHz										
1.68236	40.4	Pk	25	-30.4	.7	-95.2	-59.5	-13	-46.5	H
2.3046	39.3	Pk	27.5	-29.5	.6	-95.2	-57.3	-13	-44.3	H
3.34647	38.55	Pk	31	-28.2	.6	-95.2	-53.25	-13	-40.25	H
1.65892	40.35	Pk	25	-30.4	.7	-95.2	-59.55	-13	-46.55	V
2.30637	39.35	Pk	27.6	-29.5	.6	-95.2	-57.15	-13	-44.15	V
3.39511	38.27	Pk	30.8	-28.2	.6	-95.2	-53.73	-13	-40.73	V
High Channel, 846.6MHz										
1.69615	39.91	Pk	25	-30.3	.7	-95.2	-59.89	-13	-46.89	H
2.54117	38.98	Pk	29.3	-29.2	.7	-95.2	-55.42	-13	-42.42	H
3.37997	38.39	Pk	30.8	-28.1	.6	-95.2	-53.51	-13	-40.51	H
1.70323	39.68	Pk	25.2	-30.3	.7	-95.2	-59.92	-13	-46.92	V
2.52089	39.68	Pk	29.2	-29.4	.7	-95.2	-55.02	-13	-42.02	V
3.45508	38.4	Pk	30.4	-27.9	.6	-95.2	-53.7	-13	-40.7	V

Pk – Peak Detector

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HSDPA MODE

Project #:	13335182
Date:	6/11/2020
Test Engineer:	50822
Configuration;	EUT Only
Mode:	HSDPA Band 5
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 826.4MHz										
1.65295	40.3	Pk	24.9	-30.4	.7	-95.2	-59.7	-13	-46.7	H
2.4699	39.56	Pk	29	-29.3	.5	-95.2	-55.44	-13	-42.44	H
3.30263	37.92	Pk	31.1	-27.9	.7	-95.2	-53.38	-13	-40.38	H
1.63741	40.63	Pk	25	-30.5	.5	-95.2	-59.57	-13	-46.57	V
2.46523	40.15	Pk	28.9	-29.4	.7	-95.2	-54.85	-13	-41.85	V
3.32739	37.96	Pk	31	-28.2	.6	-95.2	-53.84	-13	-40.84	V
Mid Channel, 836.6MHz										
1.67941	39.99	Pk	24.9	-30.4	.7	-95.2	-60.01	-13	-47.01	H
2.51638	39.98	Pk	29.2	-29.2	.7	-95.2	-54.52	-13	-41.52	H
3.35001	38.98	Pk	31	-28.2	.6	-95.2	-52.82	-13	-39.82	H
1.65601	40.68	Pk	25	-30.5	.7	-95.2	-59.32	-13	-46.32	V
2.50116	40.17	Pk	29	-29.3	.7	-95.2	-54.63	-13	-41.63	V
3.3289	38.04	Pk	31	-28.2	.6	-95.2	-53.76	-13	-40.76	V
High Channel, 846.6MHz										
1.70038	39.99	Pk	25.1	-30.4	.7	-95.2	-59.81	-13	-46.81	H
2.5363	38.84	Pk	29.2	-29.3	.7	-95.2	-55.76	-13	-42.76	H
3.37452	37.34	Pk	30.8	-28	.6	-95.2	-54.46	-13	-41.46	H
1.68616	39.64	Pk	25	-30.4	.7	-95.2	-60.26	-13	-47.26	V
2.52331	38.75	Pk	29.2	-29.3	.7	-95.2	-55.85	-13	-42.85	V
3.36923	38.01	Pk	30.9	-28	.6	-95.2	-53.69	-13	-40.69	V

Pk – Peak Detector

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9.3.7. WCDMA BAND 2

REL 99 MODE

Project #:	13335182
Date:	6/11/2020
Test Engineer:	45258
Configuration:	EUT Only
Mode:	REL 99 Band 2
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 2.7GHz T772 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 1852.4MHz										
3.70693	38.61	Pk	30.3	-27.7	1	-95.2	-52.99	-13	-39.99	H
5.55877	36.78	Pk	33.2	-26.1	1	-95.2	-50.32	-13	-37.32	H
7.40779	35.42	Pk	36.8	-24	1	-95.2	-45.98	-13	-32.98	H
3.70332	38.24	Pk	30.3	-27.7	1	-95.2	-53.36	-13	-40.36	V
5.55574	37.06	Pk	33.2	-26	1	-95.2	-49.94	-13	-36.94	V
7.40858	36.07	Pk	36.8	-24	1	-95.2	-45.33	-13	-32.33	V
Mid Channel, 1880MHz										
3.75999	38.78	Pk	30.6	-27.7	1	-95.2	-52.52	-13	-39.52	H
5.64159	37.12	Pk	33.2	-26	1	-95.2	-49.88	-13	-36.88	H
7.52883	35.72	Pk	36.9	-23.9	1	-95.2	-45.48	-13	-32.48	H
3.75943	38.69	Pk	30.6	-27.7	1	-95.2	-52.61	-13	-39.61	V
5.64196	36.41	Pk	33.2	-26	1	-95.2	-50.59	-13	-37.59	V
7.53105	35.24	Pk	36.9	-23.8	1	-95.2	-45.86	-13	-32.86	V
High Channel, 1907.6MHz										
3.81408	38.66	Pk	31	-27.8	1	-95.2	-52.34	-13	-39.34	H
5.72155	37.63	Pk	33	-25.4	1	-95.2	-48.97	-13	-35.97	H
7.62847	35.75	Pk	36.9	-23.6	1	-95.2	-45.15	-13	-32.15	H
3.81574	40.09	Pk	31	-27.7	1	-95.2	-50.81	-13	-37.81	V
5.7223	36.69	Pk	33	-25.4	1	-95.2	-49.91	-13	-36.91	V
7.62996	35.88	Pk	36.9	-23.6	1	-95.2	-45.02	-13	-32.02	V

Pk – Peak Detector

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HSDPA MODE

Project #:	13335182
Date:	6/11/2020
Test Engineer:	50822
Configuration;	EUT Only
Mode:	HSDPA Band 2
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 2.7GHz T772 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 1852.4MHz										
3.70669	38.27	Pk	30.3	-27.7	1	-95.2	-53.33	-13	-40.33	H
5.55573	37.04	Pk	33.2	-26	1	-95.2	-49.96	-13	-36.96	H
7.40828	35.66	Pk	36.8	-24	1	-95.2	-45.74	-13	-32.74	H
3.70486	38.11	Pk	30.3	-27.7	1	-95.2	-53.49	-13	-40.49	V
5.55829	36.87	Pk	33.2	-26.1	1	-95.2	-50.23	-13	-37.23	V
7.40917	35.77	Pk	36.8	-24	1	-95.2	-45.63	-13	-32.63	V
Mid Channel, 1880MHz										
3.75996	38.76	Pk	30.6	-27.7	1	-95.2	-52.54	-13	-39.54	H
5.6406	37.1	Pk	33.1	-26	1	-95.2	-50	-13	-37	H
7.52151	35.35	Pk	36.7	-23.9	1	-95.2	-46.05	-13	-33.05	H
3.75902	38.82	Pk	30.6	-27.7	1	-95.2	-52.48	-13	-39.48	V
5.6423	37.55	Pk	33.2	-26	1	-95.2	-49.45	-13	-36.45	V
7.52145	35.97	Pk	36.7	-23.9	1	-95.2	-45.43	-13	-32.43	V
High Channel, 1907.6MHz										
3.81692	38.7	Pk	31	-27.7	1	-95.2	-52.2	-13	-39.2	H
5.72213	36.1	Pk	33	-25.4	1	-95.2	-50.5	-13	-37.5	H
7.62972	35.67	Pk	36.9	-23.6	1	-95.2	-45.23	-13	-32.23	H
3.81729	38.45	Pk	31	-27.7	1	-95.2	-52.45	-13	-39.45	V
5.72403	36.79	Pk	33	-25.4	1	-95.2	-49.81	-13	-36.81	V
7.62869	35.49	Pk	36.9	-23.6	1	-95.2	-45.41	-13	-32.41	V

Pk – Peak Detector

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9.3.8. WCDMA BAND 4

REL 99 MODE

Project #:	13335182
Date:	6/11/2020
Test Engineer:	45258
Configuration:	EUT Only
Mode:	REL 99 Band 4
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 2.7GHz T772 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 1712.4MHz										
3.4255	38.5	Pk	30.5	-28	1	-95.2	-53.2	-13	-40.2	H
5.13691	38.2	Pk	33.9	-26.2	1	-95.2	-48.3	-13	-35.3	H
6.85093	35.29	Pk	36.1	-24.5	1	-95.2	-47.31	-13	-34.31	H
3.42619	38.46	Pk	30.5	-28	1	-95.2	-53.24	-13	-40.24	V
5.13563	38.05	Pk	33.9	-26.2	1	-95.2	-48.45	-13	-35.45	V
6.84975	35.47	Pk	36.1	-24.5	1	-95.2	-47.13	-13	-34.13	V
Mid Channel, 1732.6MHz										
3.46692	38.06	Pk	30.3	-27.9	1	-95.2	-53.74	-13	-40.74	H
5.19793	37.76	Pk	33.7	-26.3	1	-95.2	-49.04	-13	-36.04	H
6.93046	36.55	Pk	36.3	-24.7	1	-95.2	-46.05	-13	-33.05	H
3.46476	37.88	Pk	30.3	-27.9	1	-95.2	-53.92	-13	-40.92	V
5.19834	37.21	Pk	33.7	-26.3	1	-95.2	-49.59	-13	-36.59	V
6.93052	37.19	Pk	36.3	-24.7	1	-95.2	-45.41	-13	-32.41	V
High Channel, 1752.6MHz										
3.50449	37.64	Pk	30.2	-27.7	1	-95.2	-54.06	-13	-41.06	H
5.25655	37.08	Pk	33.5	-26.3	1	-95.2	-49.92	-13	-36.92	H
7.01011	36.05	Pk	36.6	-24.2	1	-95.2	-45.75	-13	-32.75	H
3.50449	37.97	Pk	30.2	-27.7	1	-95.2	-53.73	-13	-40.73	V
5.25716	37.81	Pk	33.4	-26.3	1	-95.2	-49.29	-13	-36.29	V
7.01191	36.1	Pk	36.5	-24.2	1	-95.2	-45.80	-13	-32.80	V

Pk – Peak Detector

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HSDPA MODE

Project #:	13335182
Date:	6/11/2020
Test Engineer:	45258
Configuration:	EUT Only
Mode:	HSDPA Band 4
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 2.7GHz T772 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 1712.4MHz										
3.42575	38.61	Pk	30.5	-28	1	-95.2	-53.09	-13	-40.09	H
5.13619	37.96	Pk	33.9	-26.2	1	-95.2	-48.54	-13	-35.54	H
6.84814	35.15	Pk	36.1	-24.5	1	-95.2	-47.45	-13	-34.45	H
3.42509	38.39	Pk	30.5	-28	1	-95.2	-53.31	-13	-40.31	V
5.13845	37.44	Pk	33.9	-26.2	1	-95.2	-49.06	-13	-36.06	V
6.84982	36.05	Pk	36.1	-24.5	1	-95.2	-46.55	-13	-33.55	V
Mid Channel, 1732.6MHz										
3.46357	38	Pk	30.3	-27.9	1	-95.2	-53.8	-13	-40.8	H
5.19826	37.87	Pk	33.7	-26.3	1	-95.2	-48.93	-13	-35.93	H
6.93185	36	Pk	36.3	-24.7	1	-95.2	-46.6	-13	-33.6	H
3.46559	37.38	Pk	30.3	-27.9	1	-95.2	-54.42	-13	-41.42	V
5.19632	37.68	Pk	33.7	-26.3	1	-95.2	-49.12	-13	-36.12	V
6.92883	36.05	Pk	36.3	-24.7	1	-95.2	-46.55	-13	-33.55	V
High Channel, 1752.6MHz										
3.50318	37.82	Pk	30.2	-27.7	1	-95.2	-53.88	-13	-40.88	H
5.25674	37.95	Pk	33.5	-26.3	1	-95.2	-49.05	-13	-36.05	H
7.01126	35.41	Pk	36.5	-24.2	1	-95.2	-46.49	-13	-33.49	H
3.50309	37.42	Pk	30.2	-27.7	1	-95.2	-54.28	-13	-41.28	V
5.25609	37.32	Pk	33.5	-26.3	1	-95.2	-49.68	-13	-36.68	V
7.01146	36.1	Pk	36.5	-24.2	1	-95.2	-45.8	-13	-32.8	V

Pk – Peak Detector

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9.4. FIELD STRENGTH OF SPURIOUS RADIATION, ANT 3

9.4.1. GSM 1900

GPRS MODE

Project #:	13335182
Date:	5/28/2020
Test Engineer:	30606
Configuration:	EUT Only
Mode:	GSM1900 GPRS
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 2.7GHz T772 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 1850.2MHz										
3.70907	39.65	Pk	30.4	-27.7	1	-95.2	-51.85	-13	-38.85	H
5.53551	38.13	Pk	33.2	-26	1	-95.2	-48.87	-13	-35.87	H
7.41358	36.85	Pk	36.8	-24	1	-95.2	-44.55	-13	-31.55	H
3.75793	39.16	Pk	30.6	-27.7	1	-95.2	-52.14	-13	-39.14	V
5.63276	37.83	Pk	33.1	-26	1	-95.2	-49.27	-13	-36.27	V
7.54526	37.37	Pk	36.9	-23.9	1	-95.2	-43.83	-13	-30.83	V
Mid Channel, 1880MHz										
3.78945	39.03	Pk	30.8	-27.8	1	-95.2	-52.17	-13	-39.17	H
5.64383	37.07	Pk	33.2	-26	1	-95.2	-49.93	-13	-36.93	H
7.51792	36.16	Pk	36.7	-23.9	1	-95.2	-45.24	-13	-32.24	H
3.76567	39.03	Pk	30.8	-27.8	1	-95.2	-52.17	-13	-39.17	V
5.6195	37.67	Pk	33.1	-26	1	-95.2	-49.43	-13	-36.43	V
7.5317	36.34	Pk	36.9	-23.8	1	-95.2	-44.76	-13	-31.76	V
High Channel, 1909.8MHz										
3.80223	38.95	Pk	30.9	-27.8	1	-95.2	-52.15	-13	-39.15	H
5.74905	36.41	Pk	33	-25.2	1	-95.2	-49.99	-13	-36.99	H
7.65126	35.57	Pk	36.9	-23.4	1	-95.2	-45.13	-13	-32.13	H
3.81689	38.31	Pk	31	-27.7	1	-95.2	-52.59	-13	-39.59	V
5.70694	37.04	Pk	33	-25.4	1	-95.2	-49.56	-13	-36.56	V
7.6538	35.61	Pk	36.9	-23.4	1	-95.2	-45.09	-13	-32.09	V

Pk – Peak Detector

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EGPRS MODE

Project #:	13335182
Date:	5/28/2020
Test Engineer:	50820
Configuration:	EUT Only
Mode:	GSM1900 EGPRS
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 2.7GHz T772 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 1850.2MHz										
3.70075	37.93	Pk	30.3	-27.6	1	-95.2	-53.57	-13	-40.57	H
5.55078	36.76	Pk	33.3	-26.1	1	-95.2	-50.24	-13	-37.24	H
7.40241	35.1	Pk	36.9	-24	1	-95.2	-46.2	-13	-33.2	H
3.70105	38.19	Pk	30.3	-27.6	1	-95.2	-53.31	-13	-40.31	V
5.54947	38.16	Pk	33.2	-26.1	1	-95.2	-48.94	-13	-35.94	V
7.39946	35.47	Pk	36.9	-24	1	-95.2	-45.83	-13	-32.83	V
Mid Channel, 1880MHz										
3.75974	41.23	Pk	33.5	-29.6	1	-95.2	-49.07	-13	-36.07	H
5.64022	42.57	Pk	34.9	-27.1	1	-95.2	-43.83	-13	-30.83	H
7.51878	36.35	Pk	35.7	-23.9	1	-95.2	-46.05	-13	-33.05	H
3.7626	39.66	Pk	33.6	-29.6	1	-95.2	-50.54	-13	-37.54	V
5.64072	38.02	Pk	34.9	-27.1	1	-95.2	-48.38	-13	-35.38	V
7.51888	36.48	Pk	35.7	-23.9	1	-95.2	-45.92	-13	-32.92	V
High Channel, 1909.8MHz										
3.82035	38.39	Pk	30.9	-27.8	1	-95.2	-52.71	-13	-39.71	H
5.72806	36.96	Pk	33	-25.4	1	-95.2	-49.64	-13	-36.64	H
7.64031	35.74	Pk	37	-23.5	1	-95.2	-44.96	-13	-31.96	H
3.81951	38.9	Pk	30.9	-27.8	1	-95.2	-52.2	-13	-39.2	V
5.72906	36.09	Pk	33	-25.4	1	-95.2	-50.51	-13	-37.51	V
7.64059	35.33	Pk	37	-23.5	1	-95.2	-45.37	-13	-32.37	V

Pk – Peak Detector

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9.4.2. WCDMA BAND 2

REL 99 MODE

Project #:	13335182
Date:	6/11/2020
Test Engineer:	50822
Configuration:	EUT Only
Mode:	REL 99 Band 2
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 2.7GHz T772 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 1852.4MHz										
3.71307	38.71	Pk	30.4	-27.8	1	-95.2	-52.89	-13	-39.89	H
5.55687	36.93	Pk	33.2	-26.1	1	-95.2	-50.17	-13	-37.17	H
7.41869	35.3	Pk	36.9	-23.9	1	-95.2	-45.9	-13	-32.9	H
3.68983	38.17	Pk	30.3	-27.6	1	-95.2	-53.33	-13	-40.33	V
5.55915	37.08	Pk	33.2	-26.1	1	-95.2	-50.02	-13	-37.02	V
7.58542	36.07	Pk	36.9	-23.9	1	-95.2	-45.13	-13	-32.13	V
Mid Channel, 1880MHz										
3.77213	38.85	Pk	30.7	-27.8	1	-95.2	-52.45	-13	-39.45	H
5.6471	36.79	Pk	33.1	-26	1	-95.2	-50.31	-13	-37.31	H
7.52979	35.99	Pk	36.9	-23.8	1	-95.2	-45.11	-13	-32.11	H
3.74857	38.29	Pk	30.6	-27.7	1	-95.2	-53.01	-13	-40.01	V
5.70955	37.45	Pk	33	-25.4	1	-95.2	-49.15	-13	-36.15	V
7.48848	35.73	Pk	36.7	-23.9	1	-95.2	-45.67	-13	-32.67	V
High Channel, 1907.6MHz										
3.8229	38.93	Pk	31	-27.8	1	-95.2	-52.07	-13	-39.07	H
5.73263	36.09	Pk	33.1	-25.3	1	-95.2	-50.31	-13	-37.31	H
7.63487	35.47	Pk	36.9	-23.6	1	-95.2	-45.43	-13	-32.43	H
3.79497	38.49	Pk	30.8	-27.8	1	-95.2	-52.71	-13	-39.71	V
5.73549	36.51	Pk	33.1	-25.3	1	-95.2	-49.89	-13	-36.89	V
7.58196	36.58	Pk	36.9	-24	1	-95.2	-44.72	-13	-31.72	V

Pk – Peak Detector

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HSDPA MODE

Project #:	13335182
Date:	6/11/2020
Test Engineer:	50822
Configuration;	EUT Only
Mode:	HSDPA Band 2
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 2.7GHz T772 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 1852.4MHz										
3.72115	39.12	Pk	30.4	-27.8	1	-95.2	-52.48	-13	-39.48	H
5.57466	36.99	Pk	33.2	-26	1	-95.2	-50.01	-13	-37.01	H
7.41722	35.35	Pk	36.9	-23.9	1	-95.2	-45.85	-13	-32.85	H
3.69746	38.38	Pk	30.3	-27.6	1	-95.2	-53.12	-13	-40.12	V
5.58631	36.92	Pk	33.2	-25.9	1	-95.2	-49.98	-13	-36.98	V
7.47945	35.93	Pk	36.8	-23.8	1	-95.2	-45.27	-13	-32.27	V
Mid Channel, 1880MHz										
3.76003	38.28	Pk	30.6	-27.7	1	-95.2	-53.02	-13	-40.02	H
5.63551	37.19	Pk	33.1	-26	1	-95.2	-49.91	-13	-36.91	H
7.53333	36.59	Pk	36.9	-23.8	1	-95.2	-44.51	-13	-31.51	H
3.73832	38.22	Pk	30.5	-27.8	1	-95.2	-53.28	-13	-40.28	V
5.72374	36.35	Pk	33	-25.4	1	-95.2	-50.25	-13	-37.25	V
7.57247	35.19	Pk	36.9	-24	1	-95.2	-46.11	-13	-33.11	V
High Channel, 1907.6MHz										
3.82397	39.35	Pk	31	-27.7	1	-95.2	-51.55	-13	-38.55	H
5.71948	36.95	Pk	33	-25.4	1	-95.2	-49.65	-13	-36.65	H
7.62509	35.49	Pk	37	-23.7	1	-95.2	-45.41	-13	-32.41	H
3.79247	38.53	Pk	30.8	-27.8	1	-95.2	-52.67	-13	-39.67	V
5.7273	36.66	Pk	33	-25.4	1	-95.2	-49.94	-13	-36.94	V
7.55595	36.27	Pk	36.8	-24	1	-95.2	-45.13	-13	-32.13	V

Pk – Peak Detector

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9.4.3. WCDMA BAND 4

REL 99 MODE

Project #:	13335182
Date:	6/11/2020
Test Engineer:	50822
Configuration:	EUT Only
Mode:	REL 99 Band 4
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 2.7GHz T772 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 1712.4MHz										
3.4226	38.23	Pk	30.5	-28	1	-95.2	-53.47	-13	-40.47	H
5.13893	37.51	Pk	33.8	-26.2	1	-95.2	-49.09	-13	-36.09	H
6.85535	35.49	Pk	36.1	-24.6	1	-95.2	-47.21	-13	-34.21	H
3.38636	38.23	Pk	30.8	-28.1	1	-95.2	-53.27	-13	-40.27	V
4.99973	37.62	Pk	33.6	-26	1	-95.2	-48.98	-13	-35.98	V
6.90565	35.54	Pk	36.1	-24.5	1	-95.2	-47.06	-13	-34.06	V
Mid Channel, 1732.6MHz										
3.46365	37.12	Pk	30.3	-27.9	1	-95.2	-54.68	-13	-41.68	H
5.19426	37.14	Pk	33.7	-26.3	1	-95.2	-49.66	-13	-36.66	H
6.93023	36.93	Pk	36.3	-24.7	1	-95.2	-45.67	-13	-32.67	H
3.47432	37.89	Pk	30.3	-27.8	1	-95.2	-53.81	-13	-40.81	V
5.2644	37.29	Pk	33.4	-26.4	1	-95.2	-49.91	-13	-36.91	V
6.94233	35.8	Pk	36.3	-24.6	1	-95.2	-46.7	-13	-33.7	V
High Channel, 1752.6MHz										
3.50606	37.39	Pk	30.3	-27.7	1	-95.2	-54.21	-13	-41.21	H
5.25455	37.15	Pk	33.5	-26.4	1	-95.2	-49.95	-13	-36.95	H
7.01365	34.92	Pk	36.5	-24.1	1	-95.2	-46.88	-13	-33.88	H
3.52062	37.08	Pk	30.2	-27.8	1	-95.2	-54.72	-13	-41.72	V
5.26694	37.16	Pk	33.4	-26.3	1	-95.2	-49.94	-13	-36.94	V
7.05769	37.12	Pk	36.5	-23.8	1	-95.2	-44.38	-13	-31.38	V

Pk – Peak Detector

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HSDPA MODE

Project #:	13335182
Date:	6/11/2020
Test Engineer:	50822
Configuration:	EUT Only
Mode:	HSDPA Band 4
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 2.7GHz T772 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 1712.4MHz										
3.42284	38.7	Pk	30.5	-28	1	-95.2	-53.00	-13	-40.00	H
5.14407	37.04	Pk	33.8	-26.2	1	-95.2	-49.56	-13	-36.56	H
6.84247	35.08	Pk	36.2	-24.6	1	-95.2	-47.52	-13	-34.52	H
3.45167	37.74	Pk	30.5	-27.9	1	-95.2	-53.86	-13	-40.86	V
5.179	37.6	Pk	33.7	-26.5	1	-95.2	-49.4	-13	-36.4	V
6.86013	36.91	Pk	36.2	-24.7	1	-95.2	-45.79	-13	-32.79	V
Mid Channel, 1732.6MHz										
3.46924	38.62	Pk	30.3	-27.9	1	-95.2	-53.18	-13	-40.18	H
5.19011	37.94	Pk	33.7	-26.3	1	-95.2	-48.86	-13	-35.86	H
6.93167	36.23	Pk	36.3	-24.7	1	-95.2	-46.37	-13	-33.37	H
3.48636	38.14	Pk	30.2	-27.8	1	-95.2	-53.66	-13	-40.66	V
5.24096	37.29	Pk	33.5	-26.5	1	-95.2	-49.91	-13	-36.91	V
7.03355	35.3	Pk	36.6	-23.7	1	-95.2	-46.00	-13	-33.00	V
High Channel, 1752.6MHz										
3.50229	37.21	Pk	30.1	-27.7	1	-95.2	-54.59	-13	-41.59	H
5.25372	37.02	Pk	33.5	-26.4	1	-95.2	-50.08	-13	-37.08	H
7.01928	35.41	Pk	36.5	-23.9	1	-95.2	-46.19	-13	-33.19	H
3.4766	38.16	Pk	30.2	-27.8	1	-95.2	-53.64	-13	-40.64	V
5.22363	37.02	Pk	33.5	-26.4	1	-95.2	-50.08	-13	-37.08	V
7.04296	35.01	Pk	36.6	-23.7	1	-95.2	-46.29	-13	-33.29	V

Pk – Peak Detector

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9.5. FIELD STRENGTH OF SPURIOUS RADIATION, ANT 4

9.5.1. GSM 1900

GPRS MODE

Project #:	13335182
Date:	5/28/2020
Test Engineer:	30606
Configuration:	EUT Only
Mode:	GPRS 1900
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 2.7GHz T772 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 1850.2MHz										
3.70015	38.59	Pk	30.3	-27.6	1	-95.2	-52.91	-13	-39.91	H
5.56336	37.14	Pk	33.2	-26	1	-95.2	-49.86	-13	-36.86	H
7.39677	35.58	Pk	36.9	-24	1	-95.2	-45.72	-13	-32.72	H
3.69578	38.52	Pk	30.3	-27.6	1	-95.2	-52.98	-13	-39.98	V
5.55018	38.09	Pk	33.3	-26.1	1	-95.2	-48.91	-13	-35.91	V
7.38852	36.06	Pk	36.9	-24.1	1	-95.2	-45.34	-13	-32.34	V
Mid Channel, 1880MHz										
3.78524	39.68	Pk	30.8	-27.8	1	-95.2	-51.52	-13	-38.52	H
5.63971	37.75	Pk	33.1	-26	1	-95.2	-49.35	-13	-36.35	H
7.53721	35.96	Pk	36.8	-23.9	1	-95.2	-45.34	-13	-32.34	H
3.74519	39.08	Pk	30.6	-27.7	1	-95.2	-52.22	-13	-39.22	V
5.65962	38.43	Pk	33.1	-25.8	1	-95.2	-48.47	-13	-35.47	V
7.50768	36.55	Pk	36.8	-23.9	1	-95.2	-44.75	-13	-31.75	V
High Channel, 1909.8MHz										
3.8244	38.48	Pk	31	-27.7	1	-95.2	-52.42	-13	-39.42	H
5.7283	36.8	Pk	33	-25.4	1	-95.2	-49.8	-13	-36.8	H
7.65932	35.63	Pk	37	-23.4	1	-95.2	-44.97	-13	-31.97	H
3.82026	39.03	Pk	30.9	-27.8	1	-95.2	-52.07	-13	-39.07	V
5.71956	36.69	Pk	33	-25.4	1	-95.2	-49.91	-13	-36.91	V
7.73586	35.39	Pk	37.1	-23.5	1	-95.2	-45.21	-13	-32.21	V

Pk – Peak Detector

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EGPRS MODE

Project #:	13335182
Date:	5/29/2020
Test Engineer:	19410
Configuration:	EUT Only
Mode:	EGPRS 1900
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 2.7GHz T772 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 1850.2MHz										
3.70082	38.47	Pk	30.3	-27.6	1	-95.2	-53.03	-13	-40.03	H
5.55167	36.86	Pk	33.3	-26.1	1	-95.2	-50.14	-13	-37.14	H
7.40095	35.82	Pk	36.9	-24	1	-95.2	-45.48	-13	-32.48	H
3.70045	38.79	Pk	30.3	-27.6	1	-95.2	-52.71	-13	-39.71	V
5.55119	37.09	Pk	33.3	-26.1	1	-95.2	-49.91	-13	-36.91	V
7.40015	35.9	Pk	36.9	-24	1	-95.2	-45.4	-13	-32.4	V
Mid Channel, 1880MHz										
3.75861	38.44	Pk	30.6	-27.7	1	-95.2	-52.86	-13	-39.86	H
5.64006	37.39	Pk	33.1	-26	1	-95.2	-49.71	-13	-36.71	H
7.52006	34.71	Pk	36.7	-23.9	1	-95.2	-46.69	-13	-33.69	H
3.76191	37.58	Pk	30.7	-27.7	1	-95.2	-53.62	-13	-40.62	V
5.63865	36.55	Pk	33.1	-26	1	-95.2	-50.55	-13	-37.55	V
7.52109	35.71	Pk	36.7	-23.9	1	-95.2	-45.69	-13	-32.69	V
High Channel, 1909.8MHz										
3.8194	39.05	Pk	30.9	-27.8	1	-95.2	-52.05	-13	-39.05	H
5.73106	36.28	Pk	33.1	-25.4	1	-95.2	-50.22	-13	-37.22	H
7.63705	35.36	Pk	36.9	-23.6	1	-95.2	-45.54	-13	-32.54	H
3.81869	39.31	Pk	30.9	-27.7	1	-95.2	-51.69	-13	-38.69	V
5.72769	36.81	Pk	33	-25.4	1	-95.2	-49.79	-13	-36.79	V
7.63753	35.44	Pk	36.9	-23.6	1	-95.2	-45.46	-13	-32.46	V

Pk – Peak Detector

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9.5.2. WCDMA BAND 2

REL 99 MODE

Project #:	13335182
Date:	6/1/2020
Test Engineer:	19410
Configuration:	EUT Only
Mode:	REL 99 Band 2
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 2.7GHz T772 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 1852.4MHz										
3.70307	38.59	Pk	30.3	-27.7	1	-95.2	-53.01	-13	-40.01	H
5.5584	37.1	Pk	33.2	-26.1	1	-95.2	-50	-13	-37	H
7.40896	35.83	Pk	36.8	-24	1	-95.2	-45.57	-13	-32.57	H
3.70399	31.96	Pk	30.3	-27.7	1	-95.2	-59.64	-13	-46.64	V
5.55748	38.32	Pk	33.2	-26.1	1	-95.2	-48.78	-13	-35.78	V
7.41046	35.78	Pk	36.8	-24	1	-95.2	-45.62	-13	-32.62	V
Mid Channel, 1880MHz										
3.76169	38.63	Pk	30.7	-27.7	1	-95.2	-52.57	-13	-39.57	H
5.64096	36.85	Pk	33.1	-26	1	-95.2	-50.25	-13	-37.25	H
7.52037	36.42	Pk	36.7	-23.9	1	-95.2	-44.98	-13	-31.98	H
3.75965	39.21	Pk	30.6	-27.7	1	-95.2	-52.09	-13	-39.09	V
5.64105	37.27	Pk	33.1	-26	1	-95.2	-49.83	-13	-36.83	V
7.52089	35.68	Pk	36.7	-23.9	1	-95.2	-45.72	-13	-32.72	V
High Channel, 1907.6MHz										
3.81406	39.26	Pk	31	-27.8	1	-95.2	-51.74	-13	-38.74	H
5.72115	38.09	Pk	33	-25.4	1	-95.2	-48.51	-13	-35.51	H
7.63056	36.09	Pk	36.9	-23.6	1	-95.2	-44.81	-13	-31.81	H
3.81349	39.02	Pk	31	-27.8	1	-95.2	-51.98	-13	-38.98	V
5.72397	37.39	Pk	33	-25.4	1	-95.2	-49.21	-13	-36.21	V
7.63052	36.49	Pk	36.9	-23.6	1	-95.2	-44.41	-13	-31.41	V

Pk – Peak Detector

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HSDPA MODE

Project #:	13335182
Date:	6/1/2020
Test Engineer:	19410
Configuration:	EUT Only
Mode:	HSDPA Band 2
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 2.7GHz T772 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 1852.4MHz										
3.70344	39.29	Pk	30.3	-27.7	1	-95.2	-52.31	-13	-39.31	H
5.55889	38.5	Pk	33.2	-26.1	1	-95.2	-48.6	-13	-35.6	H
7.41052	36	Pk	36.8	-24	1	-95.2	-45.4	-13	-32.4	H
3.70578	38.98	Pk	30.3	-27.7	1	-95.2	-52.62	-13	-39.62	V
5.5578	38.63	Pk	33.2	-26.1	1	-95.2	-48.47	-13	-35.47	V
7.41072	36.37	Pk	36.8	-24	1	-95.2	-45.03	-13	-32.03	V
Mid Channel, 1880MHz										
3.7611	38.75	Pk	30.7	-27.7	1	-95.2	-52.45	-13	-39.45	H
5.6409	37.33	Pk	33.1	-26	1	-95.2	-49.77	-13	-36.77	H
7.53093	36.64	Pk	36.9	-23.8	1	-95.2	-44.46	-13	-31.46	H
3.76179	38.64	Pk	30.7	-27.7	1	-95.2	-52.56	-13	-39.56	V
5.63945	37.51	Pk	33.1	-26	1	-95.2	-49.59	-13	-36.59	V
7.52971	36.42	Pk	36.9	-23.8	1	-95.2	-44.68	-13	-31.68	V
High Channel, 1907.6MHz										
3.81606	39.15	Pk	31	-27.7	1	-95.2	-51.75	-13	-38.75	H
5.72169	37.43	Pk	33	-25.4	1	-95.2	-49.17	-13	-36.17	H
7.62997	36.26	Pk	36.9	-23.6	1	-95.2	-44.64	-13	-31.64	H
3.8167	32.02	Pk	31	-27.7	1	-95.2	-58.88	-13	-45.88	V
5.72169	36.93	Pk	33	-25.4	1	-95.2	-49.67	-13	-36.67	V
7.62964	35.85	Pk	36.9	-23.6	1	-95.2	-45.05	-13	-32.05	V

Pk – Peak Detector

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9.5.3. WCDMA BAND 4

REL 99 MODE

Project #:	13335182
Date:	6/12/2020
Test Engineer:	50822
Configuration:	EUT Only
Mode:	REL 99 Band 4
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 2.7GHz T772 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 1712.4MHz										
3.42624	38.63	Pk	30.5	-28	1	-95.2	-53.07	-13	-40.07	H
5.1491	38.37	Pk	33.8	-26.3	1	-95.2	-48.33	-13	-35.33	H
6.85472	35.9	Pk	36.1	-24.6	1	-95.2	-46.8	-13	-33.8	H
3.40761	37.51	Pk	30.6	-28.2	1	-95.2	-54.29	-13	-41.29	V
5.12699	37.72	Pk	33.8	-26.3	1	-95.2	-48.98	-13	-35.98	V
6.81478	36.7	Pk	36	-24.8	1	-95.2	-46.3	-13	-33.3	V
Mid Channel, 1732.6MHz										
3.46391	38.44	Pk	30.3	-27.9	1	-95.2	-53.36	-13	-40.36	H
5.19384	37.55	Pk	33.7	-26.3	1	-95.2	-49.25	-13	-36.25	H
6.93671	37.11	Pk	36.3	-24.7	1	-95.2	-45.49	-13	-32.49	H
3.45802	37.75	Pk	30.3	-27.9	1	-95.2	-54.05	-13	-41.05	V
5.20643	37.24	Pk	33.6	-26.2	1	-95.2	-49.56	-13	-36.56	V
6.94358	36.62	Pk	36.3	-24.6	1	-95.2	-45.88	-13	-32.88	V
High Channel, 1752.6MHz										
3.51071	37.58	Pk	30.2	-27.7	1	-95.2	-54.12	-13	-41.12	H
5.26615	37.34	Pk	33.4	-26.3	1	-95.2	-49.76	-13	-36.76	H
7.01643	36.06	Pk	36.4	-24	1	-95.2	-45.74	-13	-32.74	H
3.50851	36.97	Pk	30.3	-27.7	1	-95.2	-54.63	-13	-41.63	V
5.24076	36.59	Pk	33.5	-26.5	1	-95.2	-50.61	-13	-37.61	V
7.04651	35.24	Pk	36.6	-23.8	1	-95.2	-46.16	-13	-33.16	V

Pk – Peak Detector

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HSDPA MODE

Project #:	13335182
Date:	6/12/2020
Test Engineer:	50822
Configuration:	EUT Only
Mode:	HSDPA Band 4
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 2.7GHz T772 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 1712.4MHz										
3.42955	38.17	Pk	30.6	-28	1	-95.2	-53.43	-13	-40.43	H
5.14218	37.47	Pk	33.8	-26.2	1	-95.2	-49.13	-13	-36.13	H
6.87092	36.49	Pk	36.1	-24.8	1	-95.2	-46.41	-13	-33.41	H
3.43044	38.38	Pk	30.6	-28	1	-95.2	-53.22	-13	-40.22	V
5.20054	37.9	Pk	33.7	-26.2	1	-95.2	-48.8	-13	-35.8	V
6.7846	35.34	Pk	36	-24.7	1	-95.2	-47.56	-13	-34.56	V
Mid Channel, 1732.6MHz										
3.46803	38.43	Pk	30.3	-27.9	1	-95.2	-53.37	-13	-40.37	H
5.11476	37.33	Pk	33.9	-26.4	1	-95.2	-49.37	-13	-36.37	H
6.93614	36.44	Pk	36.3	-24.7	1	-95.2	-46.16	-13	-33.16	H
3.47666	38.42	Pk	30.2	-27.8	1	-95.2	-53.38	-13	-40.38	V
5.14597	37.24	Pk	33.8	-26.2	1	-95.2	-49.36	-13	-36.36	V
6.98961	36.54	Pk	36.5	-24.5	1	-95.2	-45.66	-13	-32.66	V
High Channel, 1752.6MHz										
3.50221	37.83	Pk	30.1	-27.7	1	-95.2	-53.97	-13	-40.97	H
5.25893	37.57	Pk	33.4	-26.2	1	-95.2	-49.43	-13	-36.43	H
7.02661	35.31	Pk	36.6	-23.8	1	-95.2	-46.09	-13	-33.09	H
3.54939	38.35	Pk	30.1	-27.8	1	-95.2	-53.55	-13	-40.55	V
5.27076	37.39	Pk	33.4	-26.4	1	-95.2	-49.81	-13	-36.81	V
7.05707	36.27	Pk	36.5	-23.8	1	-95.2	-45.23	-13	-32.23	V

Pk – Peak Detector

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10. SETUP PHOTOS

Please refer to 13335182-EP1V1 for setup photos

END OF REPORT

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