**FCC CFR47 PART 22 SUBPART H**
**FCC CFR47 PART 24 SUBPART E**
**INDUSTRY CANADA RSS-132 ISSUE 2**
**INDUSTRY CANADA RSS-133 ISSUE 5**

# CERTIFICATION TEST REPORT
# FOR

# CDMA/ 1x EVDO PHONE WITH 802.11 B/G AND BLUETOOTH

**MODEL NUMBER: P102EWW**

**FCC ID: O8F-ROAE**

**IC: 3905A-ROAE**

**REPORT NUMBER: 10U13270-3**

**ISSUE DATE: JULY 26, 2010**

*Prepared for*

**PALM**
**950 MAUDE AVENUE**
**SUNNYVALE, CA 94085, U.S.A.**

*Prepared by*

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NVLAP LAB CODE 200065-0

Revision History

| Rev. | Issue Date | Revisions | Revised By |
|---|---|---|---|
| -- | 07/26/10 | Initial Issue | T. Chan |

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# 1. ATTESTATION OF TEST RESULTS

**COMPANY NAME:** PALM
950 MAUDE AVENUE
SUUNYVALE, CA 94085, U.S.A.

**EUT DESCRIPTION:** CDMA/ 1x EVDO PHONE WITH 802.11 B/G AND BLUETOOTH

**MODEL:** P102EWW

**SERIAL NUMBER:** RD1AS65A4003 and RD1BS6FA5043

**DATE TESTED:** JULY18 TO 23, 2010

| APPLICABLE STANDARDS | |
|---|---|
| **STANDARD** | **TEST RESULTS** |
| FCC PART 22H AND 24E | PASS |
| IC RSS-132 ISSUE 2 AND RSS-133 ISSUE 5 | PASS |

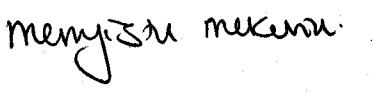
Compliance Certification Services, Inc. (CCS) tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by CCS based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

**Note**: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by Compliance Certification Services and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by Compliance Certification Services will constitute fraud and shall nullify the document. No part of this report may be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any government agency.

Approved & Released For CCS By:

THU CHAN
ENGINEERING MANAGER
COMPLIANCE CERTIFICATION SERVICES

Tested By:



MENGISTU MEKURIA
EMC ENGINEER
COMPLIANCE CERTIFICATION SERVICES

# 2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with TIA-603-C, FCC CFR 47 Part 2, FCC CFR 47 Part 22, FCC CFR Part 24, RSS-132 Issue 2, and RSS-133 Issue 5.

# 3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 Benicia Street, Fremont, California, USA.

CCS is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at http://www.ccsemc.com.

# 4. CALIBRATION AND UNCERTAINTY

## 4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

## 4.2. SAMPLE CALCULATION

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

## 4.3. MEASUREMENT UNCERTAINTY

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

| PARAMETER | UNCERTAINTY |
|---|---|
| Conducted Disturbance, 0.15 to 30 MHz | 3.52 dB |
| Radiated Disturbance, 30 to 1000 MHz | 4.94 dB |

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

# 5. EQUIPMENT UNDER TEST

## 5.1. DESCRIPTION OF EUT

EUT is a CDMA/ 1x EVDO phone with 802.11b/g and Bluetooth feature that is manufactured by Palm.

## 5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum peak ERP & EIRP output powers as follows:

**1xRTT**

824 to 849 MHz Authorized Band

| Frequency Range (MHz) | Modulation | Conducted Peak Power (dBm) | Conducted Peak Power (mW) | ERP Peak Power (dBm) | ERP Peak Power (mW) |
|---|---|---|---|---|---|
| Low CH - 824.7 | 1xRTT | 25.02 | 317.69 | 27.50 | 562.34 |
| Mid CH - 836.5 | | 25.30 | 338.84 | 26.70 | 467.74 |
| High CH - 848.3 | | 24.64 | 291.07 | 26.90 | 489.78 |

1850 to 1910 MHz Authorized Band

| Frequency Range (MHz) | Modulation | Conducted Peak Power (dBm) | Conducted Peak Power (mW) | EIRP Peak Power (dBm) | EIRP Peak Power (mW) |
|---|---|---|---|---|---|
| Low CH - 1851.25 | 1xRTT | 24.32 | 270.40 | 32.80 | 1905.46 |
| Mid CH - 1880 | | 24.29 | 268.53 | 32.30 | 1698.24 |
| High CH - 1908.75 | | 24.32 | 270.40 | 31.40 | 1380.38 |

**EVDO REV A**

824 to 849 MHz Authorized Band

| Frequency Range (MHz) | Modulation | Conducted Peak Power (dBm) | Conducted Peak Power (mW) | ERP Peak Power (dBm) | ERP Peak Power (mW) |
|---|---|---|---|---|---|
| Low CH - 824.7 | EVDO, Rev A | 25.1 | 323.59 | 30.10 | 1023.29 |
| Mid CH - 836.5 | | 25.27 | 336.51 | 27.70 | 588.84 |
| High CH - 848.3 | | 24.85 | 305.49 | 28.50 | 707.95 |

1850 to 1910 MHz Authorized Band

| Frequency Range (MHz) | Modulation | Conducted Peak Power (dBm) | Conducted Peak Power (mW) | EIRP Peak Power (dBm) | EIRP Peak Power (mW) |
|---|---|---|---|---|---|
| Low CH - 1851.25 | EVDO, Rev A | 24.83 | 304.09 | 32.90 | 1949.84 |
| Mid CH - 1880 | | 24.29 | 268.53 | 32.90 | 1949.84 |
| High CH - 1908.75 | | 24.32 | 270.40 | 31.40 | 1380.38 |

## 5.3. SOFTWARE AND FIRMWARE

The EUT is linked with Agilent Communication Test Set.

## 5.4. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an integral antenna, with a maximum gain of 1.1dBi for Cell band and 2.1dBi for PCS band.

## 5.5. WORST-CASE CONFIGURATION AND MODE

The worst-position was the EUT with highest emissions. To determine the worst-case, the EUT was investigated for X, Y, and Z-Positions on slide in and out conditions, and the worst position among them with AC/DC adapter and headset, after the investigations, the worst-position was turned out to be a slide open X and Z-position without AC/DC adapter and headset for PCS and Cell and respectively.

Based on the below investigation results, the highest peak power is the worst-case scenario for all measurements.

Worst case modes:

- Cellular & PCS bands for CDMA2000
  - 1xRTT
  - EVDO REV A.

**PROCEDURE USED TO ESTABLISH TEST SIGNAL**

**CDMA2000 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.13.08, L |

- Protocol Rev > 6 (IS-2000-0)
- Radio Config (RC) > RC2 (Fwd2, Rvs2)
- FCH Service Option (SO) Setup > 17(Voice)
- Traffic Data Rate > Full
- TDSO SCH Info > F-SCH Parameters > F-SCH Data Rate > 153.6 kbps
  - > R-SCH Parameters > R-SCH Data Rate > 153.6 kbps
- Cell Info > Cell Parameters > System ID (SID) > 8 (Cell) and 4183(PCS)
  - > Network ID (NID) > 65535
- Once “Active Cell” show “Connected ” then change “Rvs Power Ctrl” from “Active bits” to “All Up bits” to get the maximum power.
-

Worst-case Measurement Result @ Low, Middle and High Channel

Worst-case Measurement Result for Low, Middle and High Channel under Radio Configuration RC2 and Service Option 17(Voice).System.

**RF Output Power for Cellular Band**

| Radio Configuration (RC) | Service Option (SO) | Conducted Output Power (dBm) | | | | | |
|---|---|---|---|---|---|---|---|
| | | Ch.1013/824.7MHz | | Ch. 384/836.52MHz | | Ch. 777/848.31MHz | |
| | | Average | Peak | Average | Peak | Average | Peak |
| RC1 | 1 (Voice) | N/A | N/A | N/A | N/A | N/A | N/A |
| | 2 (Loopback) | 24.00 | 28.90 | 24.30 | 28.87 | 23.48 | 28.67 |
| | 3 (Voice) | 24.14 | 29.12 | 24.28 | 28.92 | 23.86 | 29.00 |
| | 55 (Loopback) | 24.07 | 28.95 | 24.14 | 28.85 | 23.52 | 28.78 |
| | 68 (Voice) | 24.09 | 29.09 | 24.27 | 29.06 | 23.82 | 29.09 |
| | 70 (Voice) | N/A | N/A | N/A | N/A | N/A | N/A |
| RC2 | 9 (Loopback) | 24.13 | 29.00 | 24.18 | 28.84 | 23.66 | 28.86 |
| | 17 (Voice) | 24.11 | **29.14** | 24.34 | 28.91 | 23.85 | 29.01 |
| | 55 (Loopback) | 24.06 | 28.98 | 24.19 | 28.83 | 23.56 | 28.84 |
| | 32768 (Voice) | 24.11 | 29.04 | 24.17 | 28.92 | 23.84 | 29.06 |
| RC3 | 1 (Voice) | N/A | N/A | N/A | N/A | N/A | N/A |
| | 2 (Loopback) | 24.08 | 28.61 | 24.15 | 28.58 | 23.53 | 28.46 |
| | 3 (Voice) | 24.00 | 28.70 | 24.14 | 28.59 | 23.55 | 28.41 |
| | 55 (Loopback) | 24.07 | 28.61 | 24.17 | 28.68 | 23.56 | 28.41 |
| | 32 (+ F-SCH) | 24.09 | 28.57 | 24.18 | 28.54 | 23.53 | 28.35 |
| | 32 (+ SCH) | 24.04 | 28.66 | 24.17 | 28.62 | 23.60 | 28.41 |
| | 68 (Voice) | 24.05 | 28.65 | 24.19 | 28.54 | 23.52 | 28.39 |
| RC4 | 1 (Voice) | N/A | N/A | N/A | N/A | N/A | N/A |
| | 2 (Loopback) | 24.03 | 28.56 | 24.19 | 28.53 | 23.59 | 28.40 |
| | 3 (Voice) | 24.02 | 28.56 | 24.15 | 28.52 | 23.54 | 28.47 |
| | 55 (Loopback) | 24.12 | 28.59 | 24.20 | 28.50 | 23.54 | 28.44 |
| | 32 (+ F-SCH) | 24.08 | 28.56 | 24.14 | 28.50 | 23.52 | 28.51 |
| | 32 (+ SCH) | 24.06 | 28.57 | 24.10 | 28.57 | 23.52 | 28.35 |
| | 68 (Voice) | 24.02 | 28.52 | 24.15 | 28.53 | 23.54 | 28.41 |
| RC5 | 9 (Loopback) | 24.03 | 28.51 | 24.14 | 28.53 | 23.53 | 28.42 |
| | 17 (Voice) | 23.99 | 28.53 | 24.12 | 28.52 | 23.47 | 28.35 |
| | 55 (Loopback) | 24.05 | 28.55 | 24.13 | 28.61 | 23.50 | 28.35 |
| | 32768 (Voice) | 24.01 | 28.56 | 24.14 | 28.54 | 23.52 | 28.43 |

**RF Output Power for PCS Band**

| Radio Configuration (RC) | Service Option (SO) | Conducted Output Power (dBm) | | | | | |
|---|---|---|---|---|---|---|---|
| | | Ch. 25/1851.25MHz | | Ch. 600/1880MHz | | 1175/1908.75MHz | |
| | | Average | Peak | Average | Peak | Average | Peak |
| RC1 | 1 (Voice) | N/A | N/A | N/A | N/A | N/A | N/A |
| | 2 (Loopback) | 23.63 | 28.25 | 23.70 | 27.93 | 23.56 | 27.89 |
| | 3 (Voice) | 23.80 | 28.60 | 23.81 | 28.45 | 23.71 | 28.34 |
| | 55 (Loopback) | 23.56 | 28.30 | 23.62 | 27.86 | 23.55 | 27.93 |
| | 68 (Voice) | 23.71 | 28.56 | 23.85 | 28.31 | 23.73 | 28.36 |
| | 70 (Voice) | N/A | N/A | N/A | N/A | N/A | N/A |
| RC2 | 9 (Loopback) | 23.63 | 28.48 | 23.68 | 28.12 | 23.58 | 28.00 |
| | 17 (Voice) | 23.86 | **28.80** | 23.87 | 28.47 | 23.73 | 28.37 |
| | 55 (Loopback) | 23.60 | 28.47 | 23.62 | 28.06 | 23.56 | 28.00 |
| | 32768 (Voice) | 23.74 | 28.75 | 23.75 | 28.41 | 23.71 | 28.39 |
| RC3 | 1 (Voice) | N/A | N/A | N/A | N/A | N/A | N/A |
| | 2 (Loopback) | 23.56 | 28.20 | 23.66 | 27.96 | 23.53 | 27.69 |
| | 3 (Voice) | 23.45 | 27.95 | 23.61 | 27.79 | 23.53 | 27.60 |
| | 55 (Loopback) | 23.51 | 28.00 | 23.65 | 27.84 | 23.52 | 27.67 |
| | 32 (+ F-SCH) | 23.48 | 27.88 | 23.60 | 27.77 | 23.53 | 27.64 |
| | 32 (+ SCH) | 23.51 | 27.86 | 23.57 | 27.77 | 23.51 | 27.65 |
| | 68 (Voice) | 23.50 | 27.89 | 23.59 | 27.71 | 23.51 | 27.67 |
| RC4 | 1 (Voice) | N/A | N/A | N/A | N/A | N/A | N/A |
| | 2 (Loopback) | 23.51 | 27.86 | 23.55 | 27.70 | 23.50 | 27.59 |
| | 3 (Voice) | 23.49 | 27.87 | 23.53 | 27.69 | 23.48 | 27.56 |
| | 55 (Loopback) | 23.50 | 27.82 | 23.54 | 27.72 | 23.49 | 27.61 |
| | 32 (+ F-SCH) | 23.48 | 27.93 | 23.55 | 27.72 | 23.50 | 27.55 |
| | 32 (+ SCH) | 23.49 | 27.90 | 23.57 | 27.71 | 23.49 | 27.57 |
| | 68 (Voice) | 23.47 | 27.82 | 23.53 | 27.72 | 23.50 | 27.55 |
| RC5 | 9 (Loopback) | 23.49 | 27.85 | 23.53 | 27.65 | 23.50 | 27.67 |
| | 17 (Voice) | 23.48 | 27.84 | 23.52 | 27.70 | 23.49 | 27.52 |
| | 55 (Loopback) | 23.48 | 27.88 | 23.53 | 27.69 | 23.50 | 27.56 |
| | 32768 (Voice) | 23.49 | 27.82 | 23.51 | 27.71 | 23.50 | 27.54 |

**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 > 00840AC0 : 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 > 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 > 00840AC0 : 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)

**RF Power Output for EV-DO Rel 0**

| Band | FTAP Rate | RTAP Rate | Channel | f (MHz) | Conducted power (dBm) | |
|---|---|---|---|---|---|---|
| | | | | | Average | Peak |
| Cellular | 307.2 kbps (2 slot, QPSK) | 153.6 kbps | 1013 | 824.70 | 24.08 | 28.72 |
| | | | 384 | 836.52 | 24.15 | 28.71 |
| | | | 777 | 848.31 | 23.54 | 28.64 |
| PCS | 307.2 kbps (2 slot, QPSK) | 153.6 kbps | 25 | 1851.25 | 23.50 | 28.41 |
| | | | 600 | 1880.00 | 23.55 | 28.02 |
| | | | 1175 | 1908.75 | 23.47 | 27.95 |

**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 > 00840AC0: 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 > 00840AC0: 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)

| Band | FETAP Traffic Format | RETAP Data Payload Size | Channel | f (MHz) | Conducted power (dBm) | |
|---|---|---|---|---|---|---|
| | | | | | Average | Peak |
| Cellular | 307.2k, QPSK/ ACK channel is transmitted at all the slots | 4096 | 1013 | 824.70 | 24.00 | 28.73 |
| | | | 384 | 836.52 | 24.12 | 28.66 |
| | | | 777 | 848.31 | 23.56 | 28.57 |
| PCS | 307.2k, QPSK/ ACK channel is transmitted at all the slots | 4096 | 25 | 1851.25 | 23.52 | 28.43 |
| | | | 600 | 1880.00 | 23.58 | 27.92 |
| | | | 1175 | 1908.75 | 23.50 | 27.83 |

## 5.6. DESCRIPTION OF TEST SETUP

**SUPPORT EQUIPMENT**

| Description | Manufacturer | Model | Serial Number | FCC ID |
|---|---|---|---|---|
| AC Power Adapter | Palm | 157-10124-00 | N/A | N/A |
| EarPhone | Palm | 180-10632-00 | N/A | N/A |

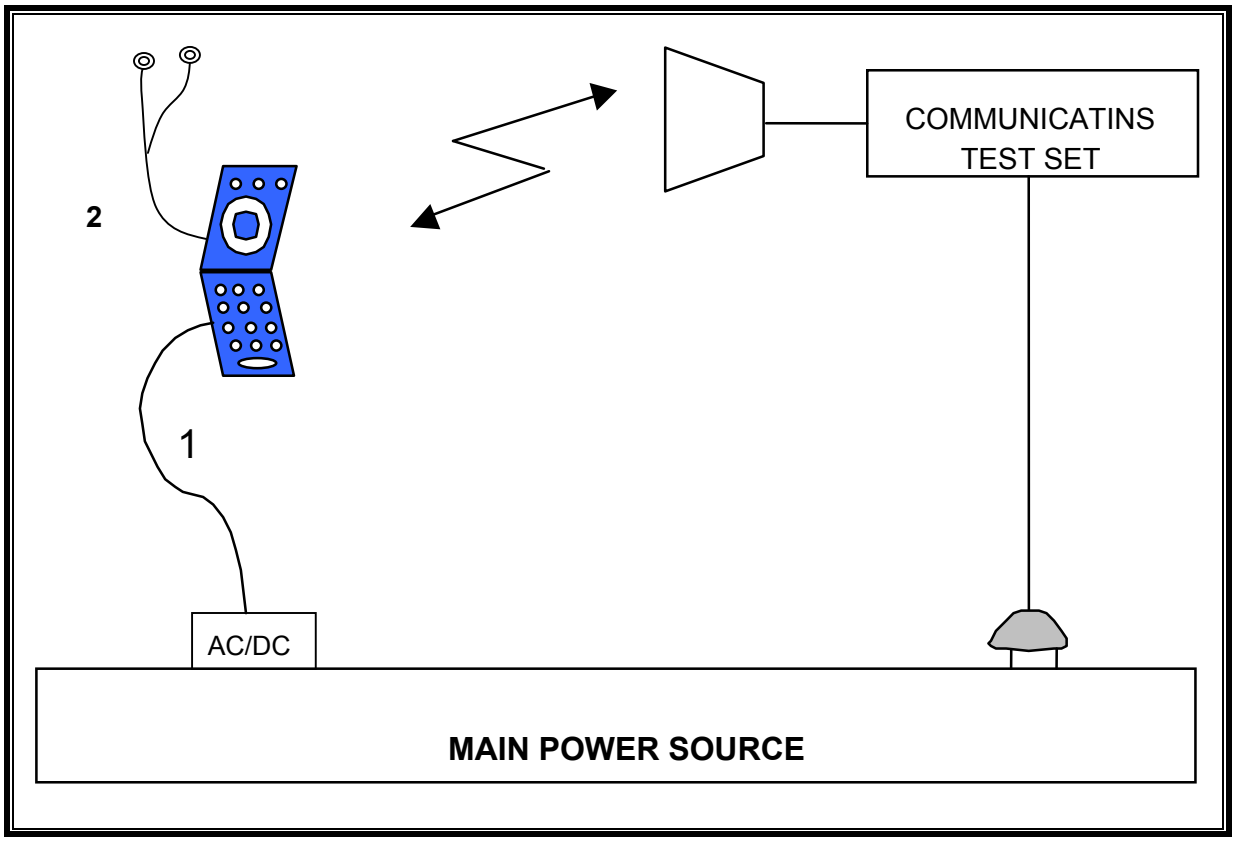
**I/O CABLES**

| I/O CABLE LIST | | | | | | |
|---|---|---|---|---|---|---|
| Cable No. | Port | # of Identical Ports | Connector Type | Cable Type | Cable Length | Remarks |
| 1 | Link | 1 | USB | Un-shielded | 1.5m | N/A |
| 2 | Ear phone | 1 | jack | Un-shielded | 1.2m | N/A |

**TEST SETUP**

The EUT is a CDMA phone and-is tested as a standalone configuration. Communications Test Set is used to link the device under test.

**SETUP DIAGRAM FOR TESTS**



# 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** |
| Spectrum Analyzer, 26.5 GHz | Agilent / HP | E4440A | C01179 | 08/24/10 |
| Spectrum Analyzer, 26.5 GHz | Agilent / HP | E4440A | C01178 | 08/31/10 |
| Spectrum Analyzer, 44 GHz | Agilent / HP | E4446A | C01069 | 03/05/11 |
| Communications Test Set | Agilent / HP | E5515C | N/A | 02/22/11 |
| Peak Power Meter | Boonton | 4541 | C01189 | 02/26/11 |
| Peak Power Sensor | Boonton | 57006 | C01203 | 02/24/11 |
| Preamplifier, 1300 MHz | Agilent / HP | 8447D | C00885 | 01/06/11 |
| Preamplifier, 26.5 GHz | Agilent / HP | 8449B | C01063 | 08/04/10 |
| Preamplifier, 26.5 GHz | Agilent / HP | 8449B | C00749 | 08/04/10 |
| Dipole | Speag | D900V2 | N/A | 11/16/11 |
| Highpass Filter, 1.5 GHz | Micro-Tronics | HPM13193 | N02689` | CNR |
| Highpass Filter, 2.7 GHz | Micro-Tronics | HPM13194 | N02687 | CNR |
| Signal Generator | R & S | SMP04 | C00953 | 02/16/11 |
| Antenna, Horn, 18 GHz | EMCO | 3115 | C00945 | 07/29/10 |
| Antenna, Horn, 18 GHz | EMCO | 3115 | C00783 | 07/29/10 |
| Antenna, Horn, 18 GHz | EMCO | 3115 | C00943 | 07/29/10 |
| Antenna, Bilog, 2 GHz | Sunol Sciences | JB1 | C01016 | 08/14/10 |
| Antenna, Bilog, 2 GHz | Sunol Sciences | JB1 | C01011 | 08/20/10 |
| EMI Test Receiver, 30 MHz | R & S | ESHS 20 | N02396 | 05/06/11 |
| LISN, 30 MHz | FCC | LISN-50/250-25-2 | N02625 | 11/06/10 |

# 7. LIMITS AND RESULTS

## 7.1. CONDUCTED TEST RESULTS

### 7.1.1. RF POWER OUTPUT

**LIMIT**

22.913(a) The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.

24.232(b) & RSS133 § 6.4 Mobile/portable stations are limited to 2 watts e.i.r.p. peak power and the equipment must employ means to limit the power to the minimum necessary for successful communications.

RSS-132 § 4.4 The maximum ERP shall be 6.3 Watts for mobile stations.

**TEST PROCEDURE**

RSS-132, RSS-133, & ANSI / TIA / EIA 603C Clause 2.2.17

**RESULTS**

1xRTT CELL CDMA Modulation

| Channel | Frequency (MHz) | Conducted Peak Power (dBm) | Conducted Peak Power (mW) |
|---|---|---|---|
| Low | 824.7 | 28.10 | 645.65 |
| Middle | 836.5 | 27.99 | 629.51 |
| High | 848.3 | 28.08 | 642.69 |

EVDO REV A. CELL Modulation

| Channel | Frequency (MHz) | Conducted Peak Power (dBm) | Conducted Peak Power (mW) |
|---|---|---|---|
| Low | 824.7 | 29.25 | 841.40 |
| Middle | 836.5 | 29.15 | 822.24 |
| High | 848.3 | 29.22 | 835.60 |

1xRTT PCS CDMA Modulation

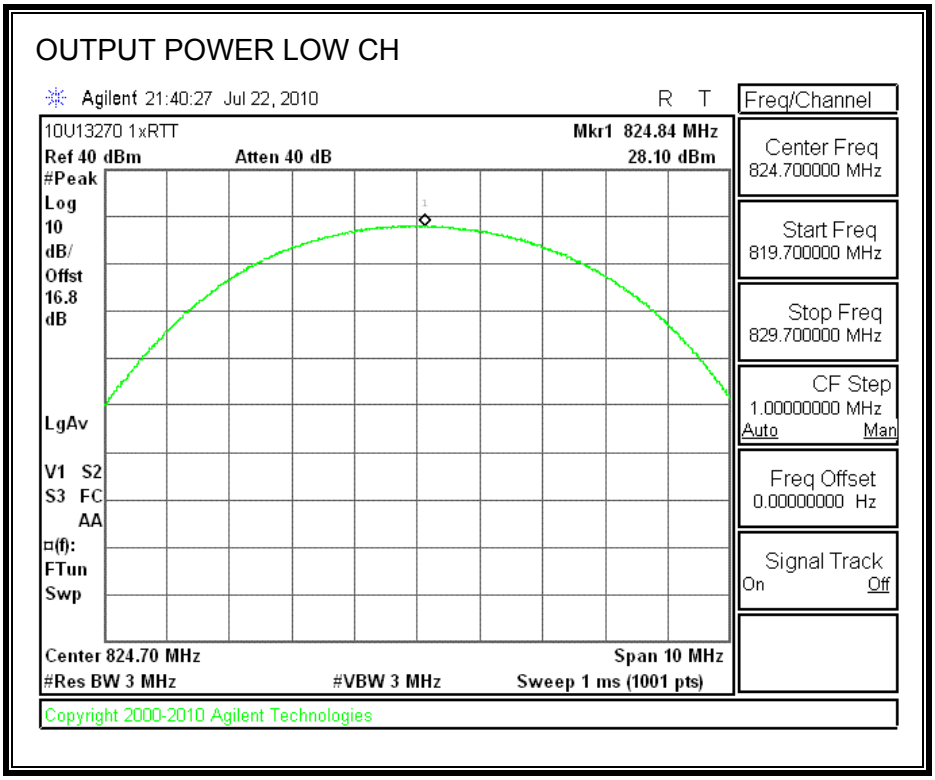
| Channel | Frequency (MHz) | Conducted Peak Power (dBm) | Conducted Peak Power (mW) |
|---|---|---|---|
| Low | 1851.25 | 28.08 | 642.69 |
| Middle | 1880.00 | 27.48 | 559.76 |
| High | 1908.75 | 27.58 | 572.80 |

EVDO REV A. PCS Modulation

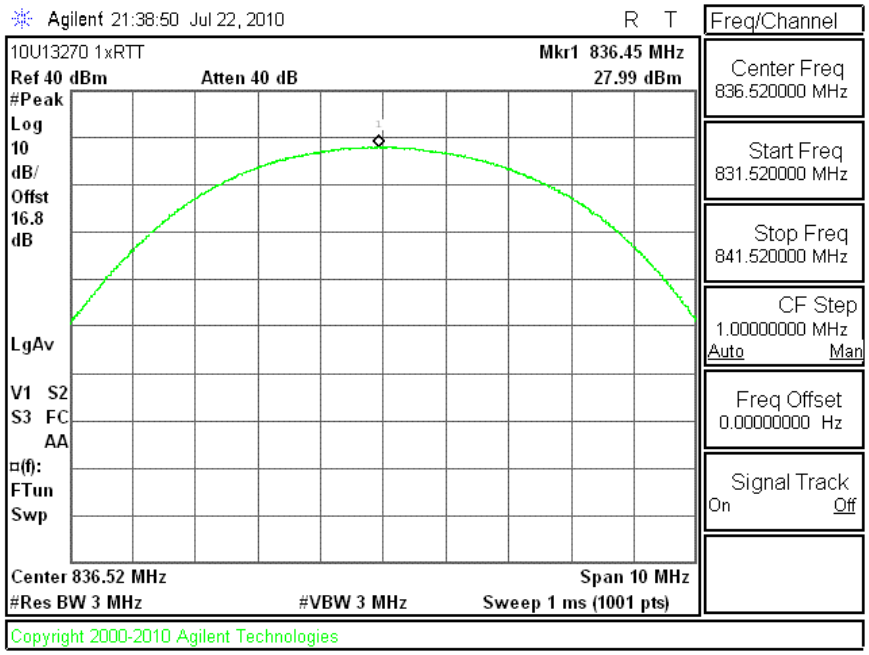
| Channel | Frequency (MHz) | Conducted Peak Power (dBm) | Conducted Peak Power (mW) |
|---|---|---|---|
| Low | 1851.25 | 29.05 | 803.53 |
| Middle | 1880.00 | 28.32 | 679.20 |
| High | 1908.75 | 28.25 | 668.34 |

NOTE: RBW=VBW=3MHz

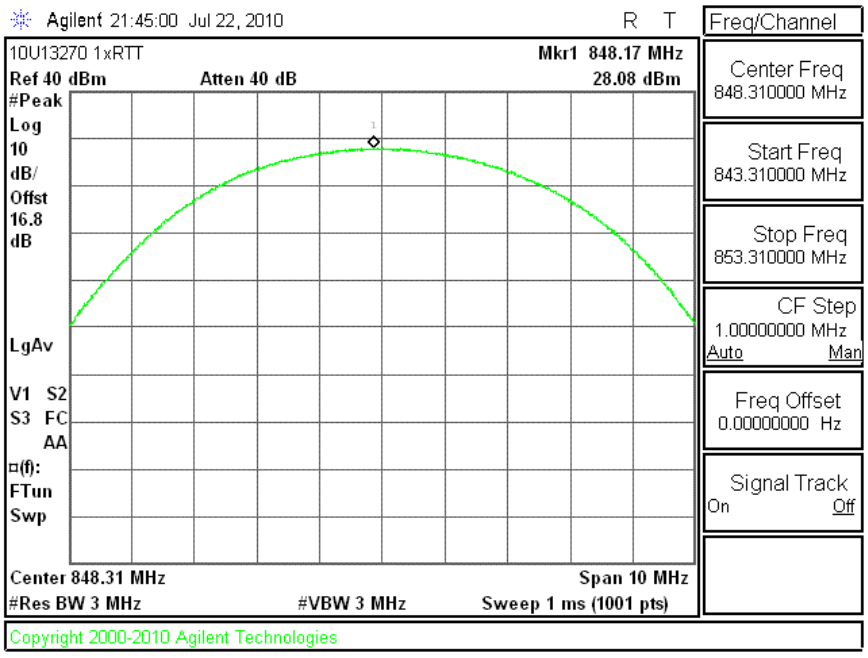
## 1XRTT CELL BAND



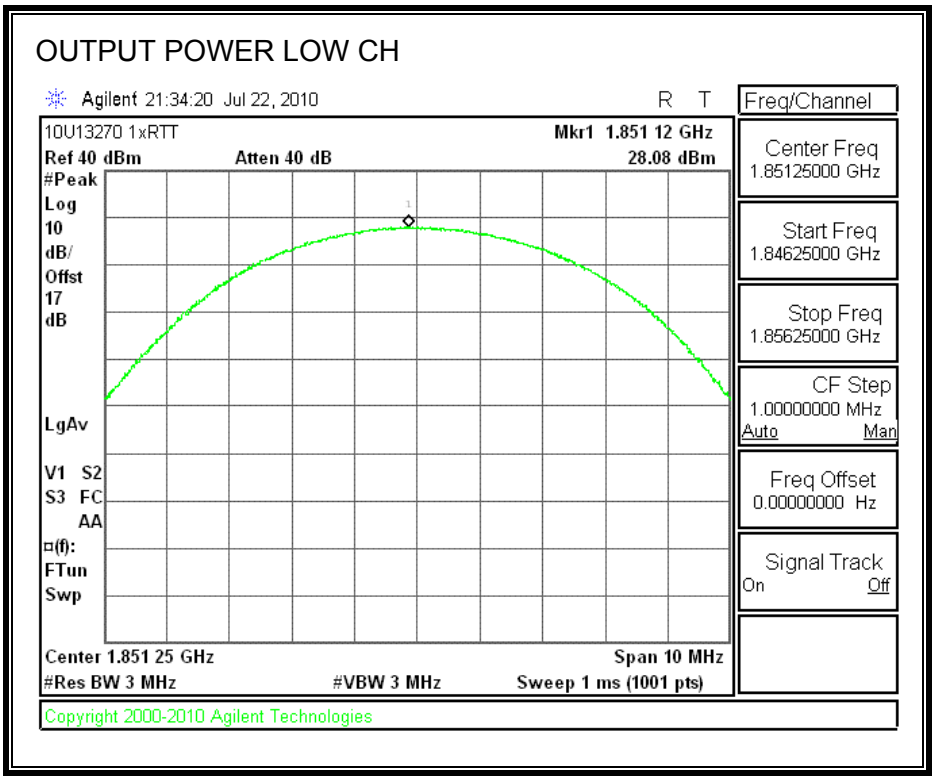
OUTPUT POWER MID CH



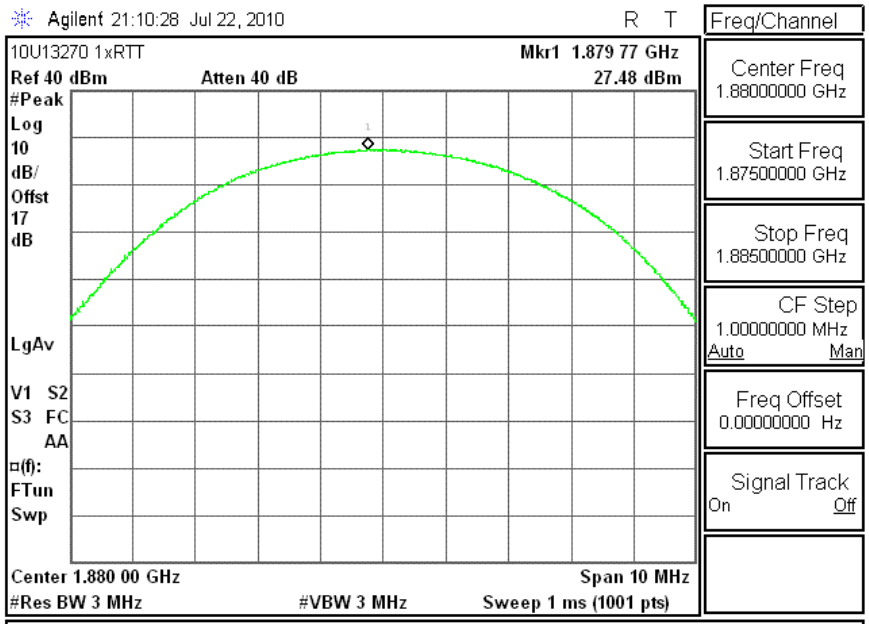
OUTPUT POWER HIGH CH



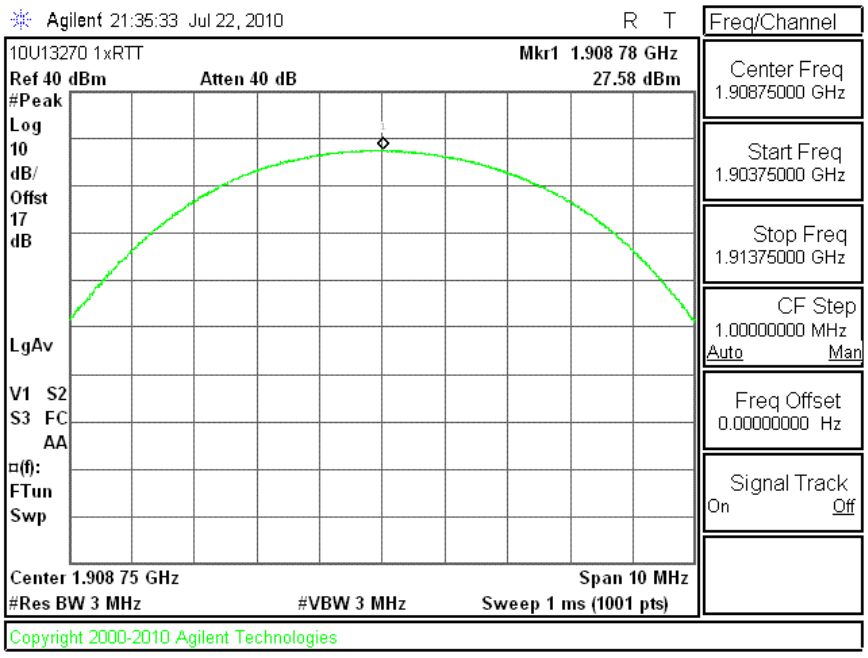
## 1XRTT PCS BAND



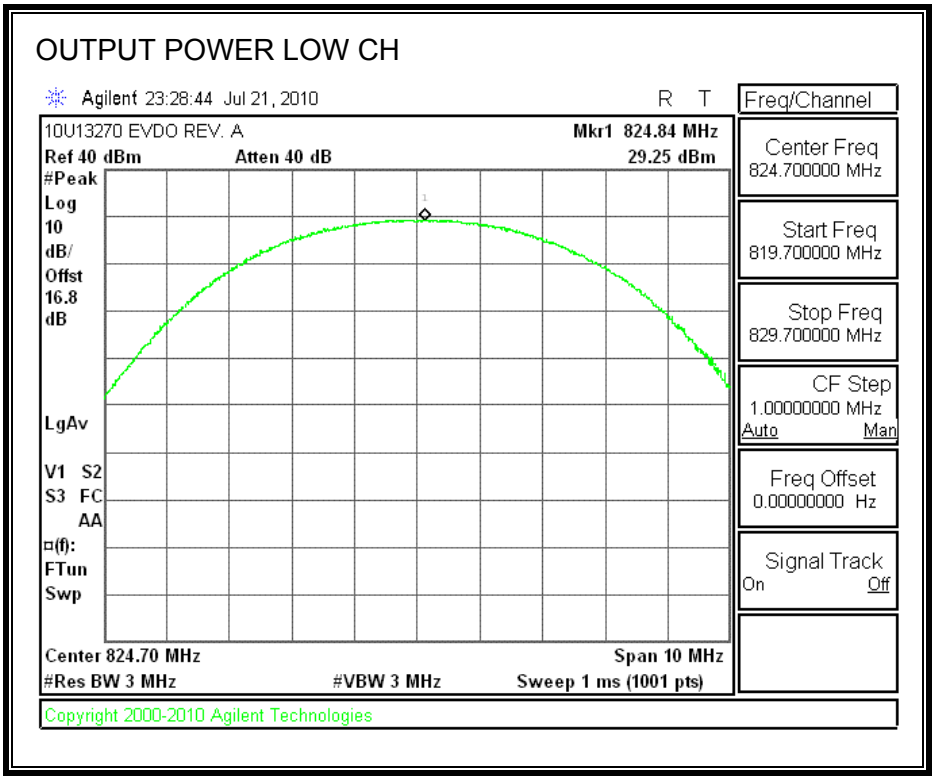
OUTPUT POWER MID CH



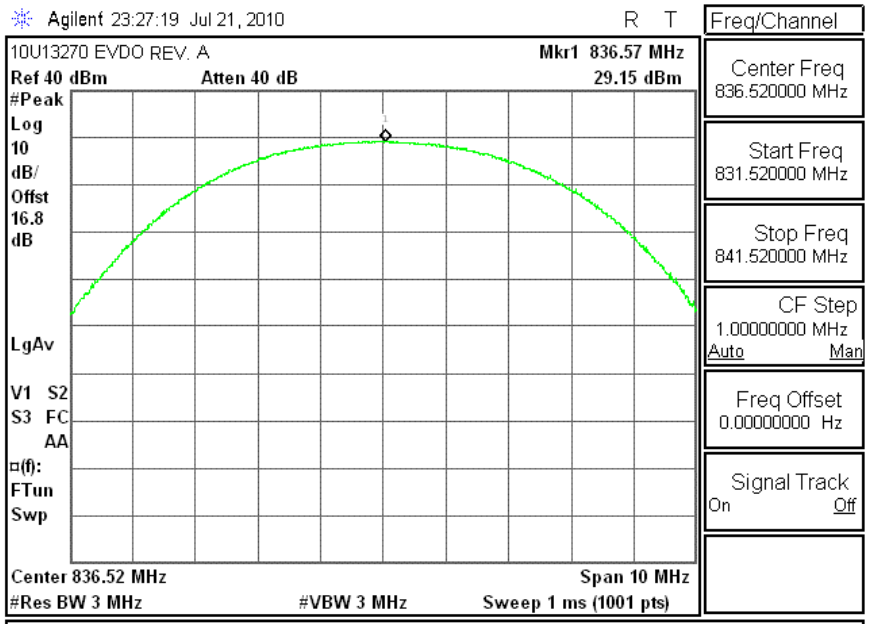
OUTPUT POWER HIGH CH



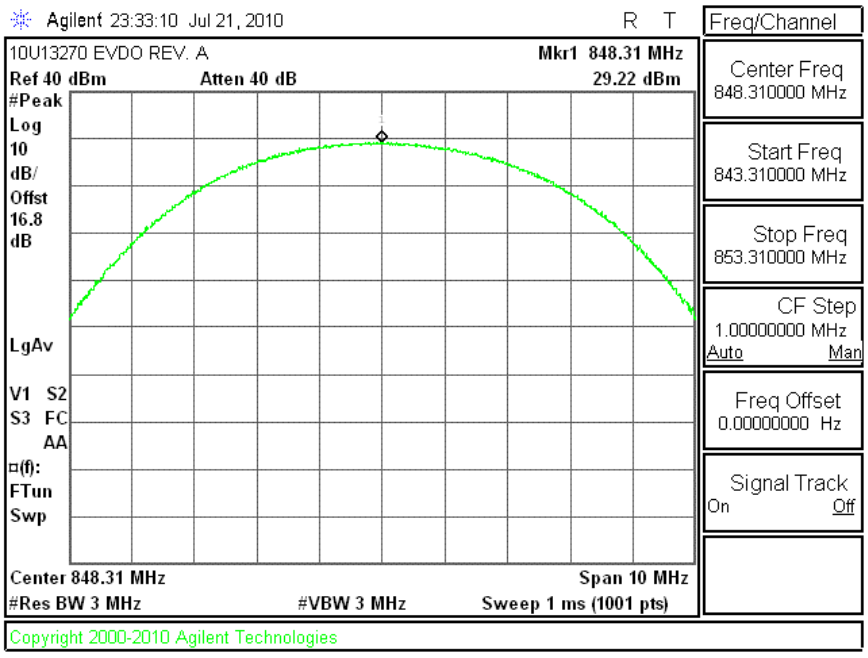
## EVDO REV A. CELL BAND



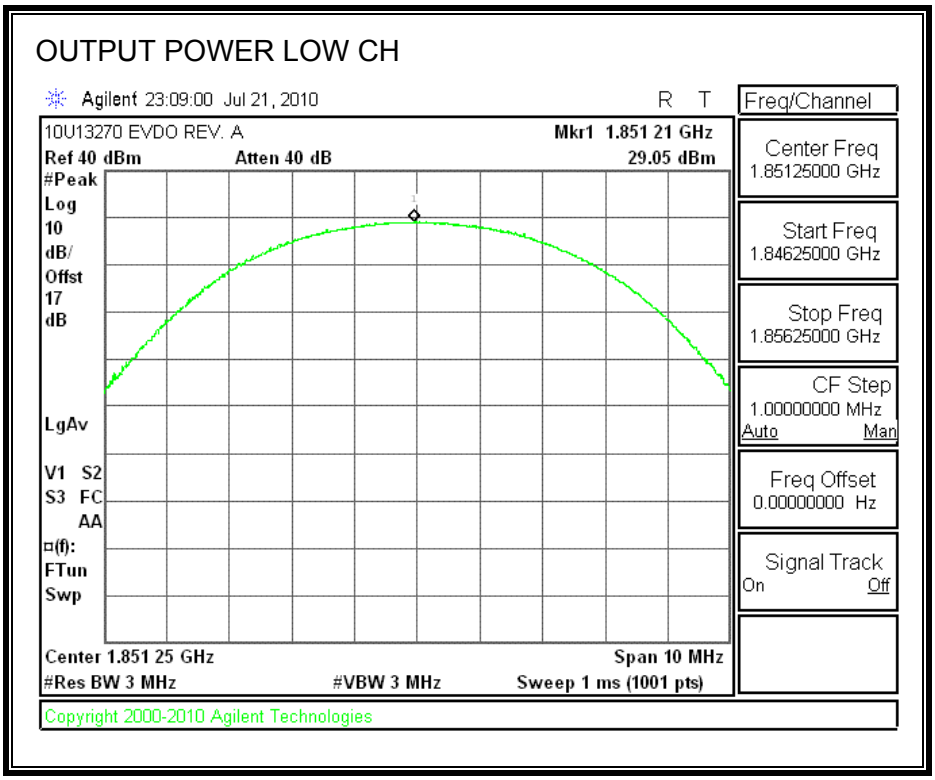
OUTPUT POWER MID CH



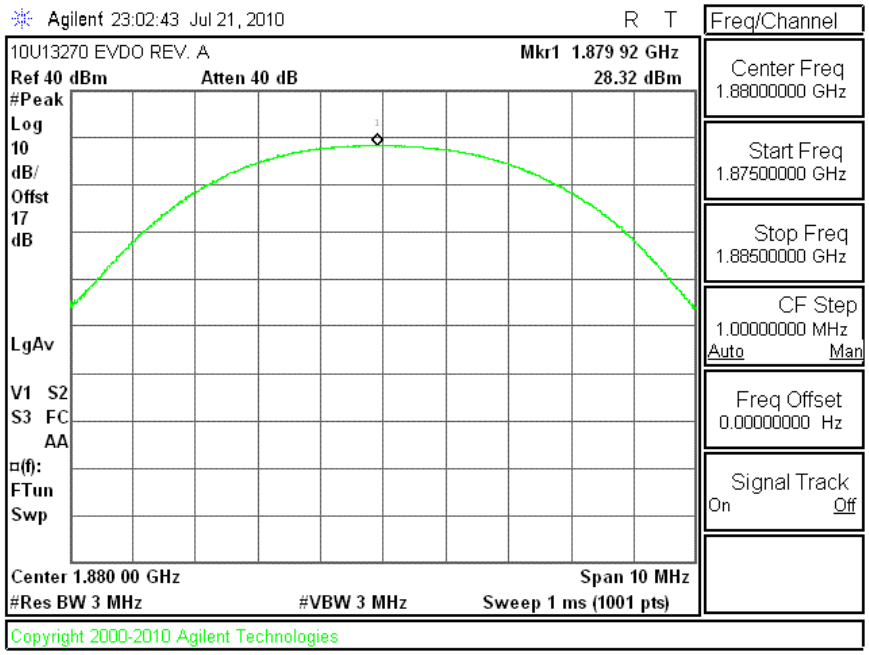
OUTPUT POWER HIGH CH



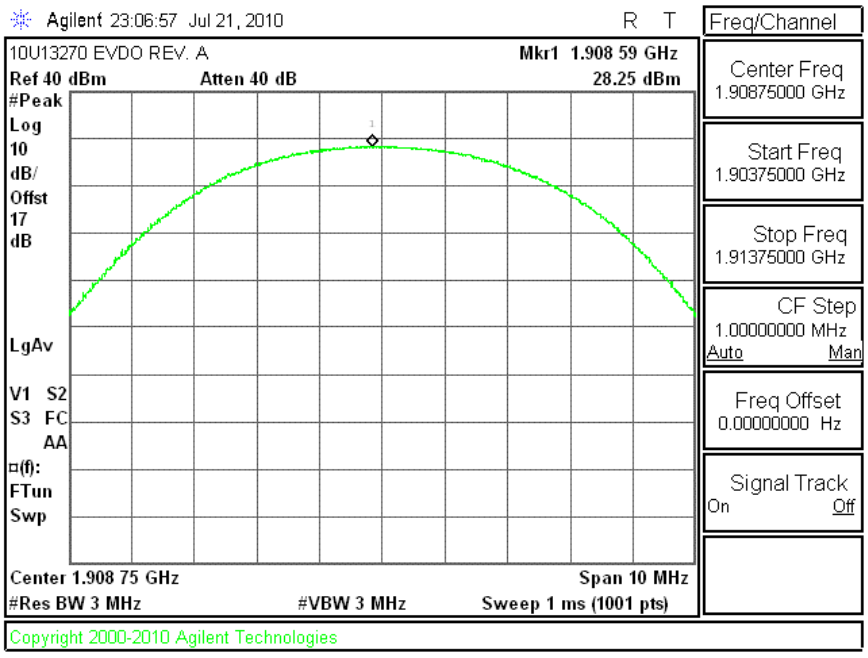
## EVDO REV A. PCS BAND



OUTPUT POWER MID CH



OUTPUT POWER HIGH CH



## 7.1.2. OCCUPIED BANDWIDTH

**RULE PART(S)**

FCC: §2.1049
IC: RSS-Gen, 4.6

**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 low, middle and high channel in each band. The -26dB bandwidth was also measured and recorded.

**MODES TESTED**

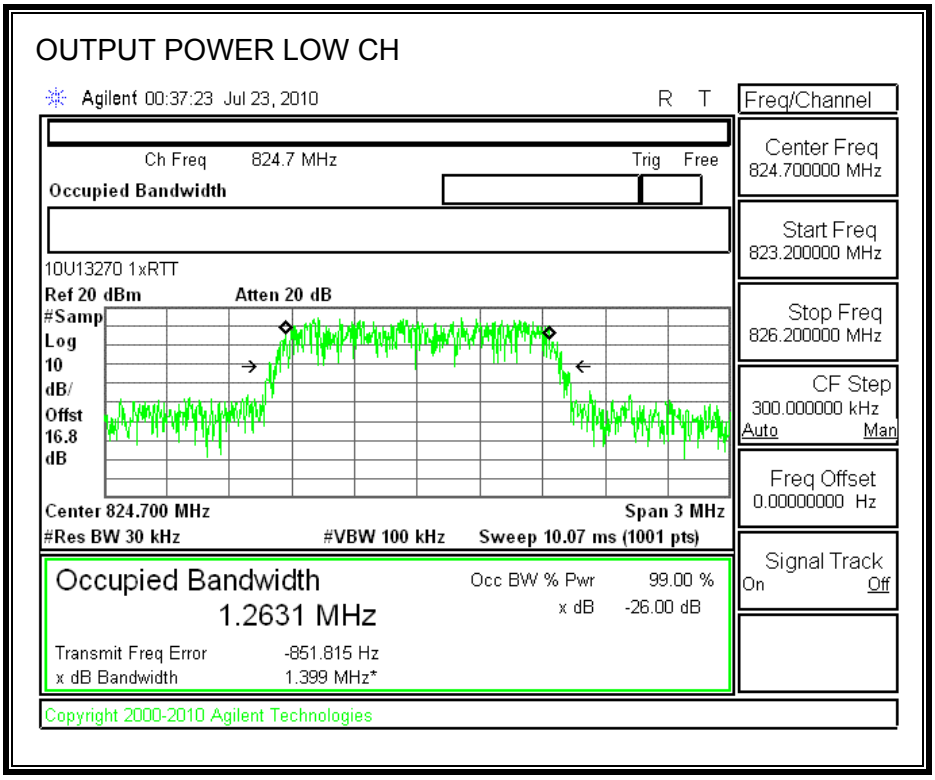
- CDMA2000 – 1xRTT
- EVDO Rev. A.

**RESULTS**

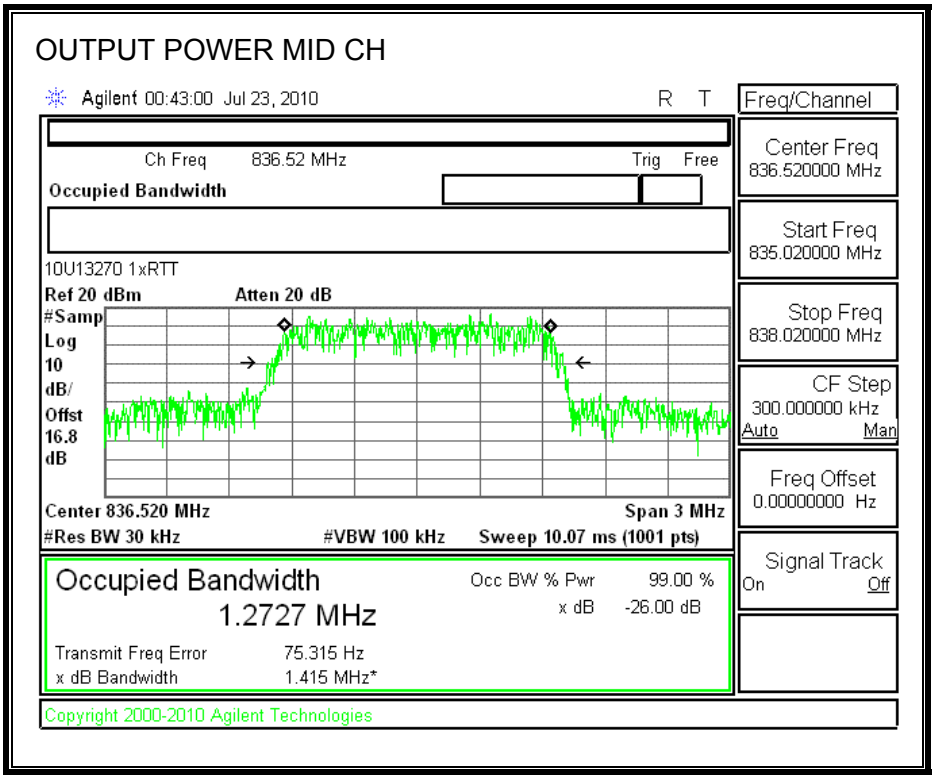
| Band | Mode | Channel | f (MHz) | 99% BW (kHz) | -26dB BW (kHz) |
|---|---|---|---|---|---|
| Cellular | 1xRTT | 1013 | 824.70 | 1263.1 | 1.399 |
| | | 384 | 836.52 | 1.2727 | 1.415 |
| | | 777 | 848.31 | 1.2753 | 1.401 |
| | EVDO Rev A. | 1013 | 824.70 | 1.2552 | 1.417 |
| | | 384 | 836.52 | 1.2571 | 1.405 |
| | | 777 | 848.31 | 1.2798 | 1.383 |
| PCS | 1xRTT | 25 | 1851.25 | 1.2720 | 1.388 |
| | | 600 | 1880.00 | 1.2718 | 1.402 |
| | | 1175 | 1908.75 | 1.2745 | 1.393 |
| | EVDO Rev A. | 25 | 1851.25 | 1.2732 | 1.395 |
| | | 600 | 1880.00 | 1.2595 | 1.405 |
| | | 1175 | 1908.75 | 1.2438 | 1.410 |

## 1xRTT CELL BAND

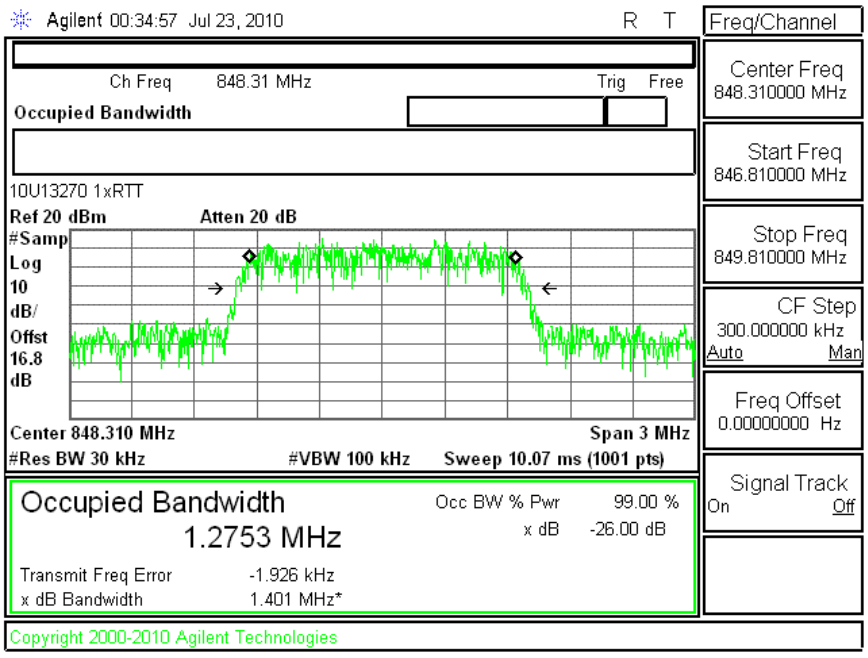
### 99% AND 26dB BANDWIDTH



OUTPUT POWER MID CH

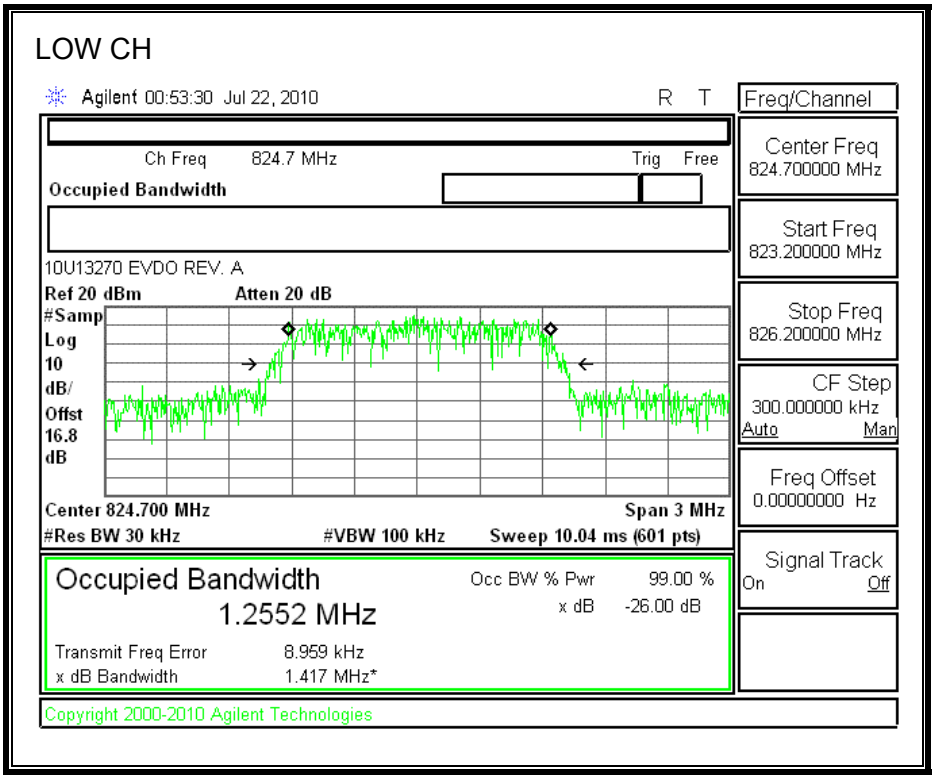


OUTPUT POWER HIGH CH

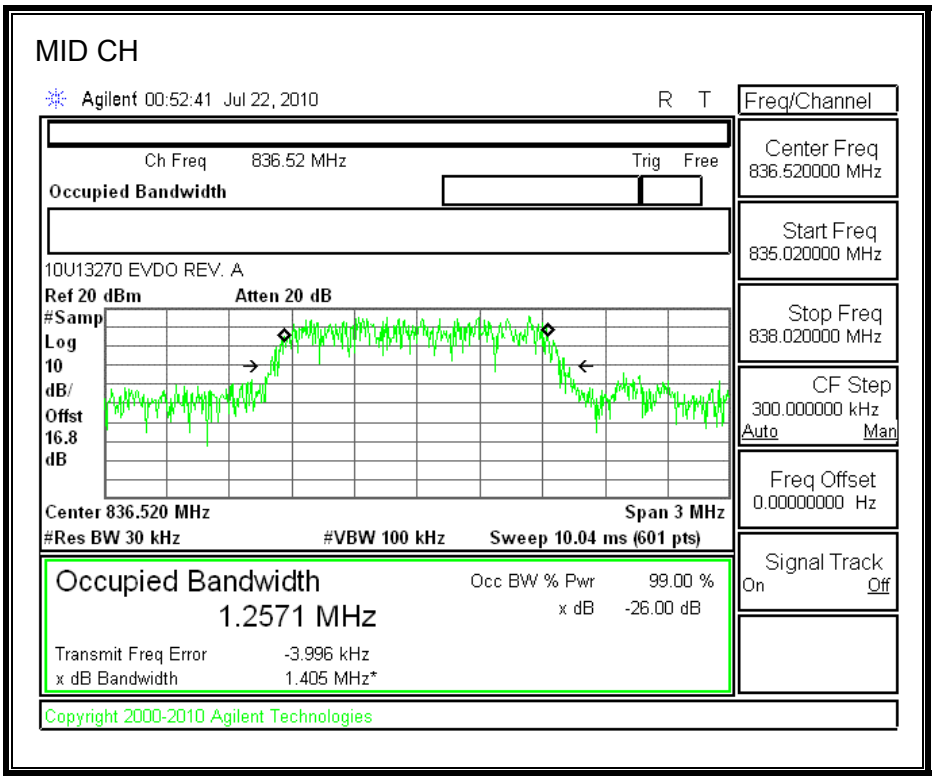


## EVDO REV A. CELL BAND

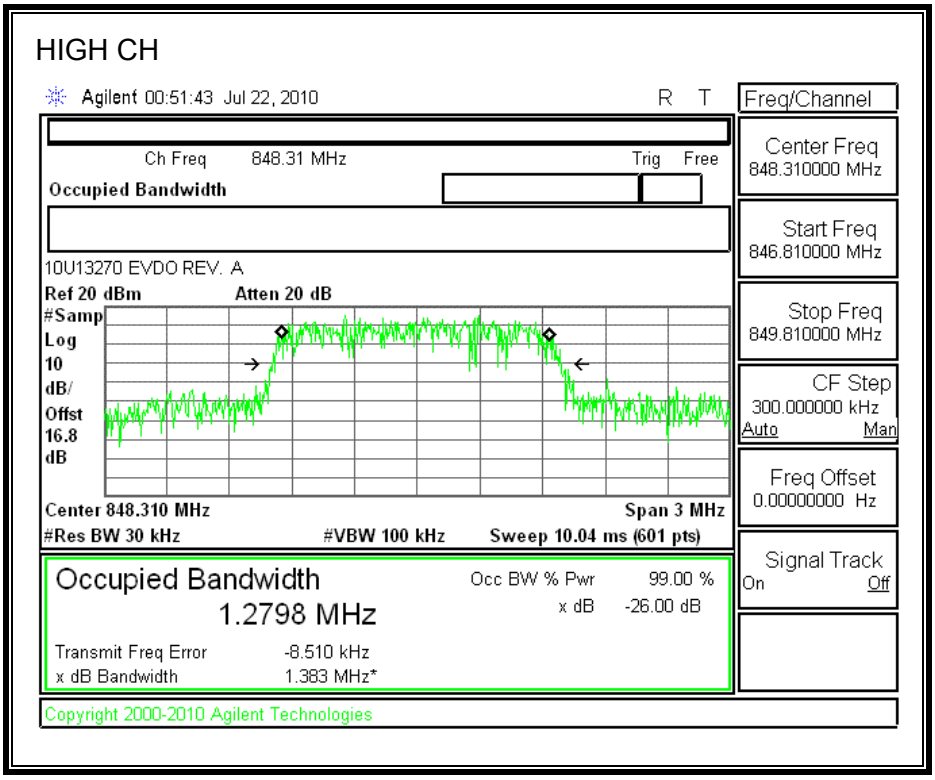
### 99% AND 26dB BANDWIDTH



MID CH

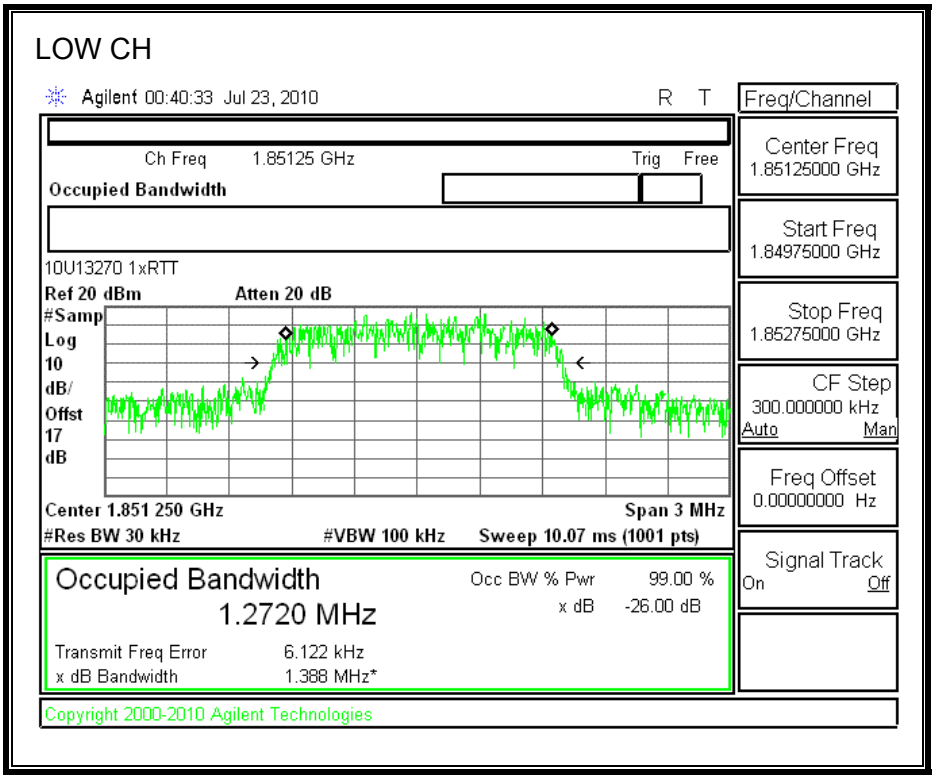


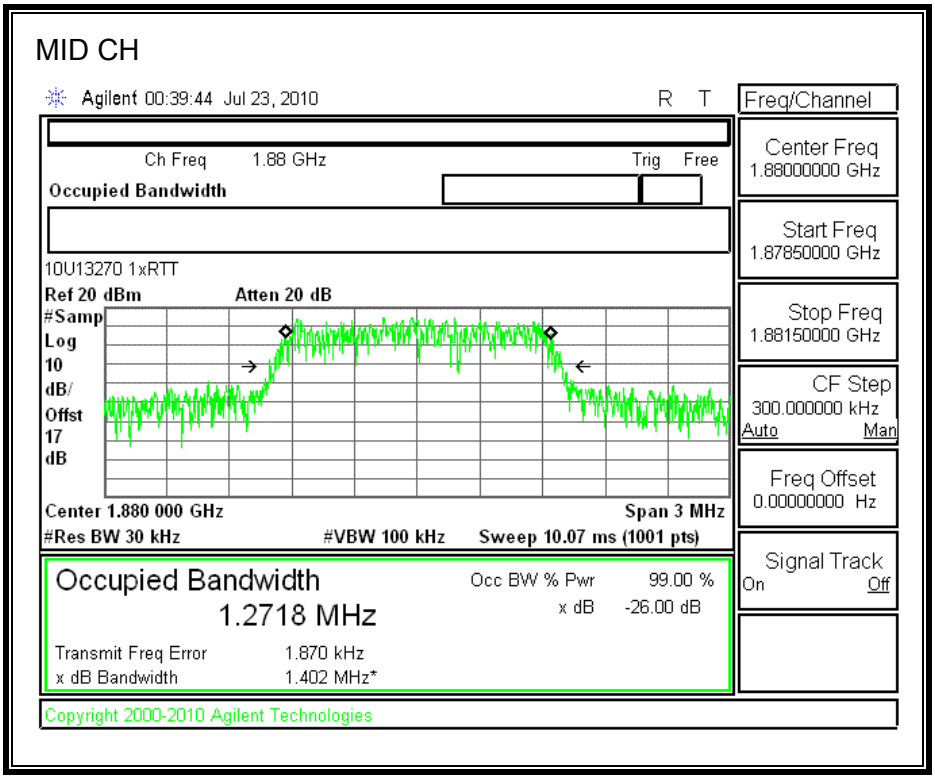
HIGH CH



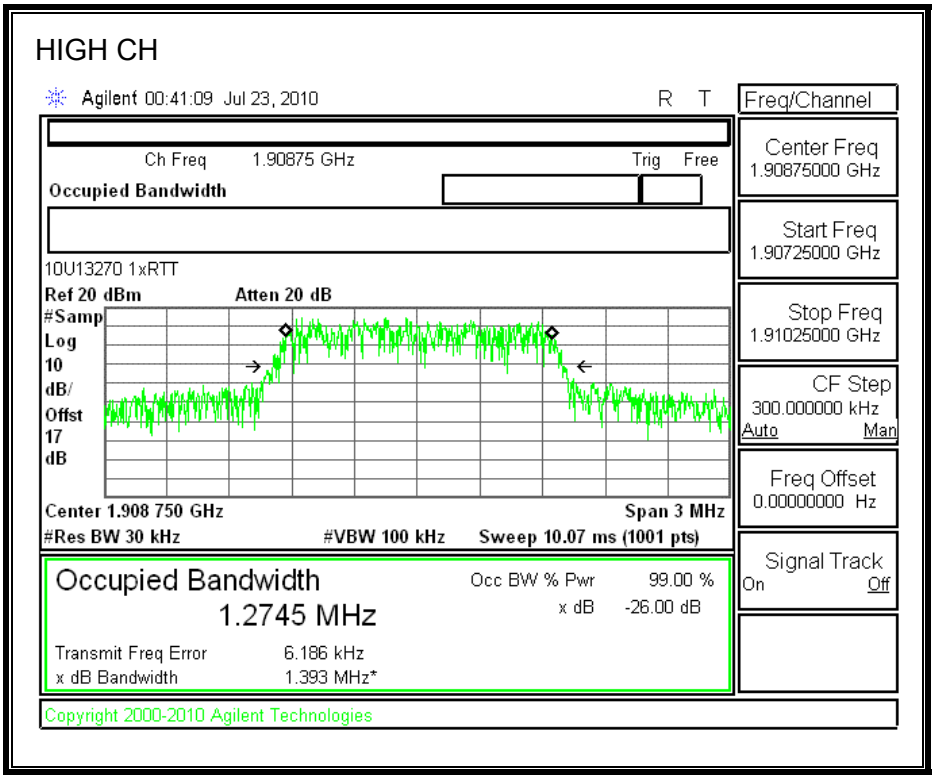
## 1xRTT CELL BAND

### 99% AND 26dB BANDWIDTH



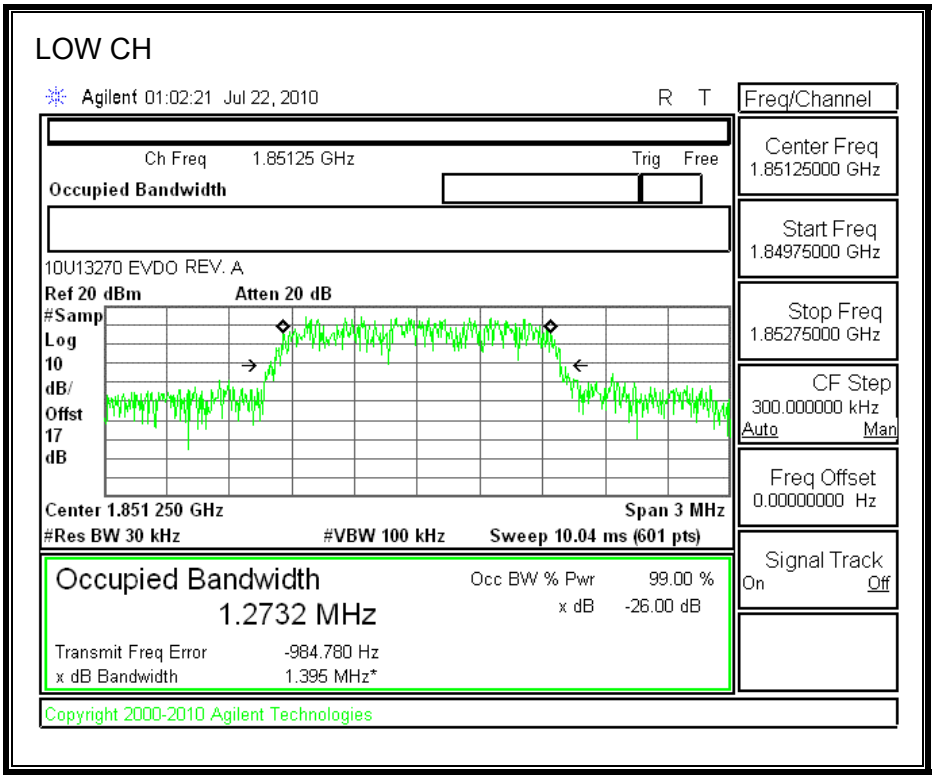


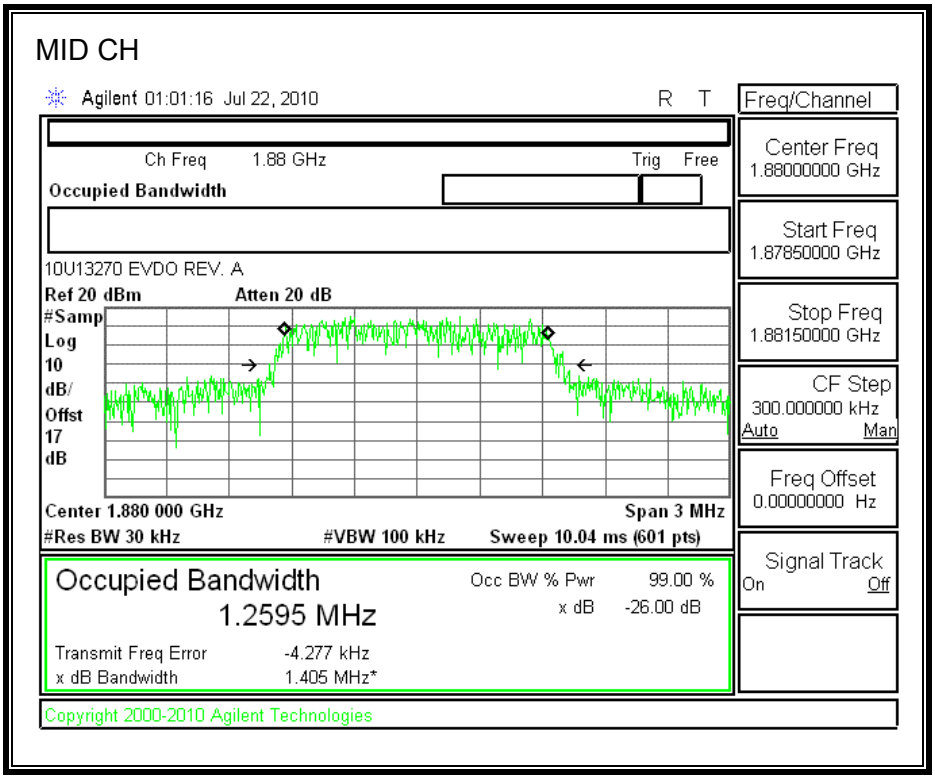
HIGH CH



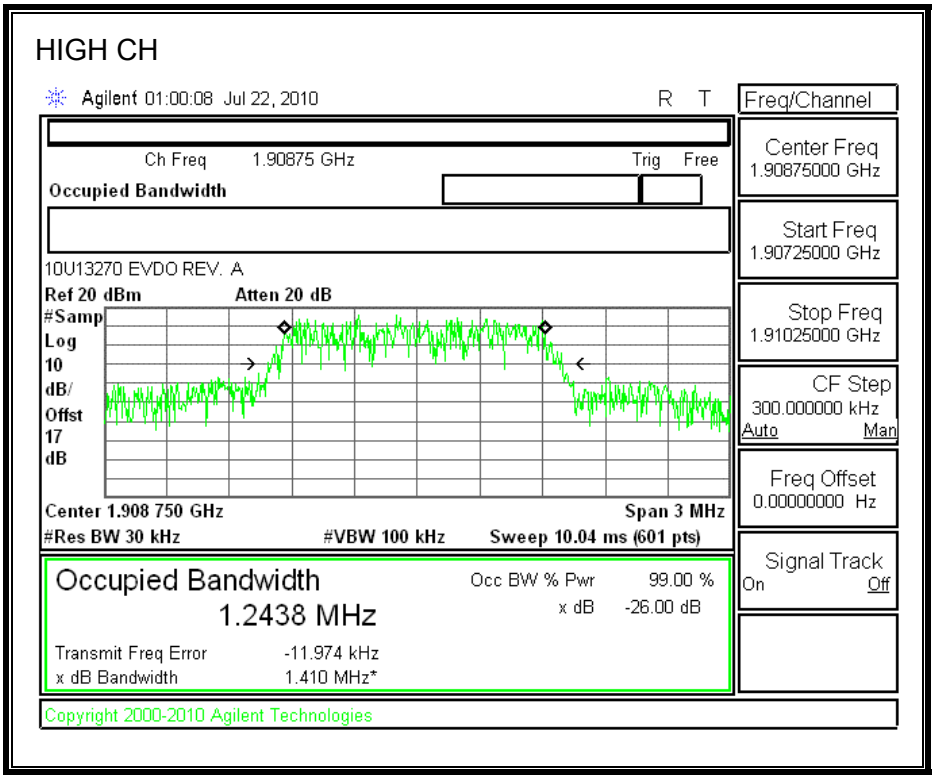
## EVDO REV A. CELL BAND

### 99% AND 26DB BANDWIDTH





HIGH CH



### 7.1.3. BAND EDGE

**RULE PART(S)**

FCC: §22.359, 24.238
IC: RSS-132, 4.5; RSS-133, 6.5

**LIMITS**

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.

**TEST PROCEDURE**

The transmitter output was connected to a Agilent 8960 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 (824, 848, 1850, 1910MHz)
- 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.

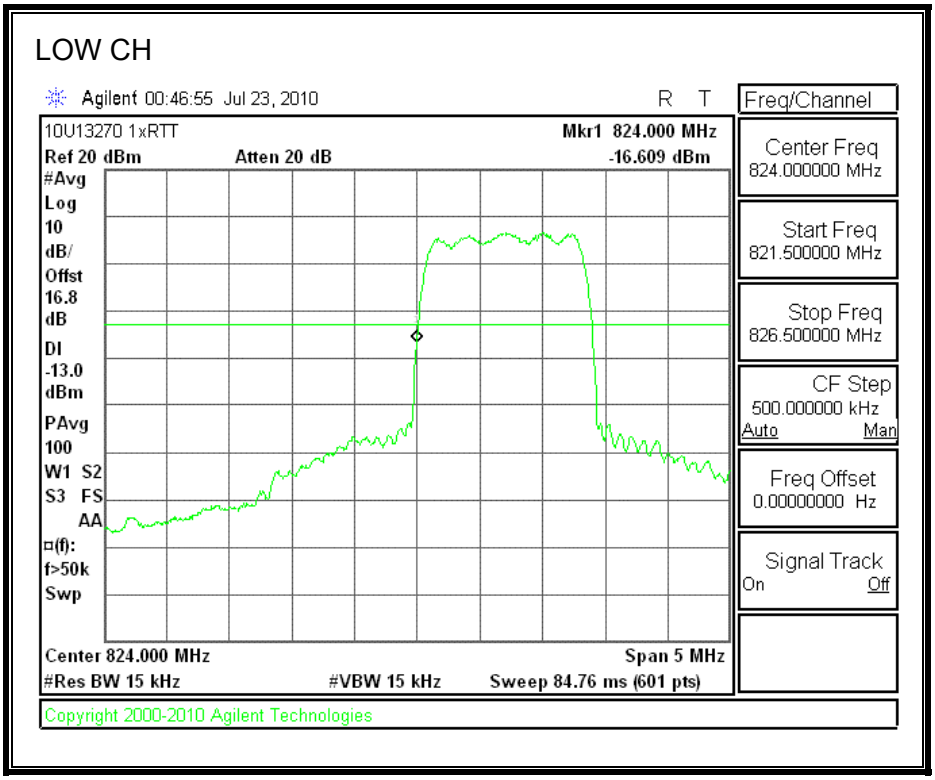
**MODES TESTED**

- CDMA2000 – 1xRTT
- EVDO Rev. A.

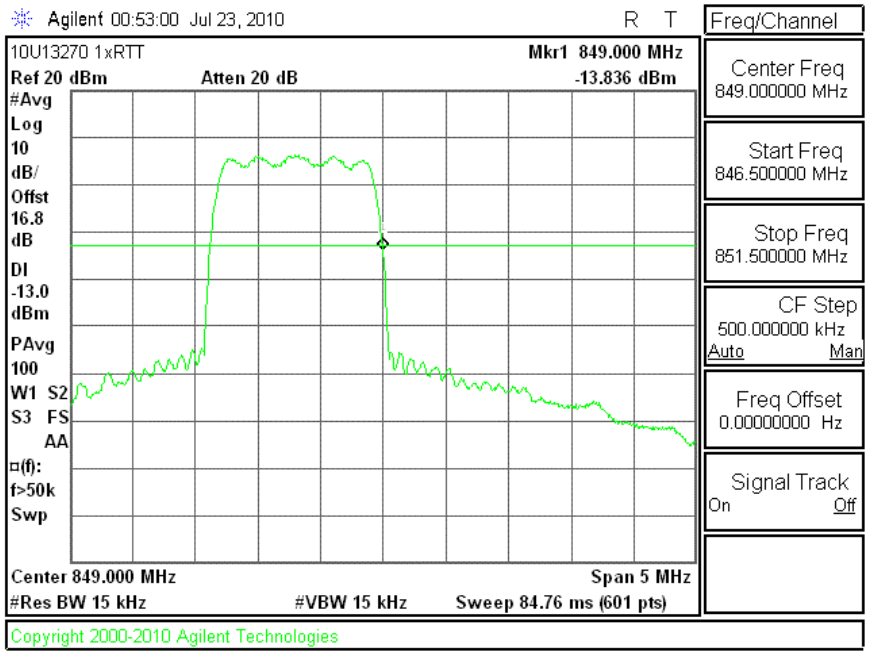
**RESULTS**

See the following pages.

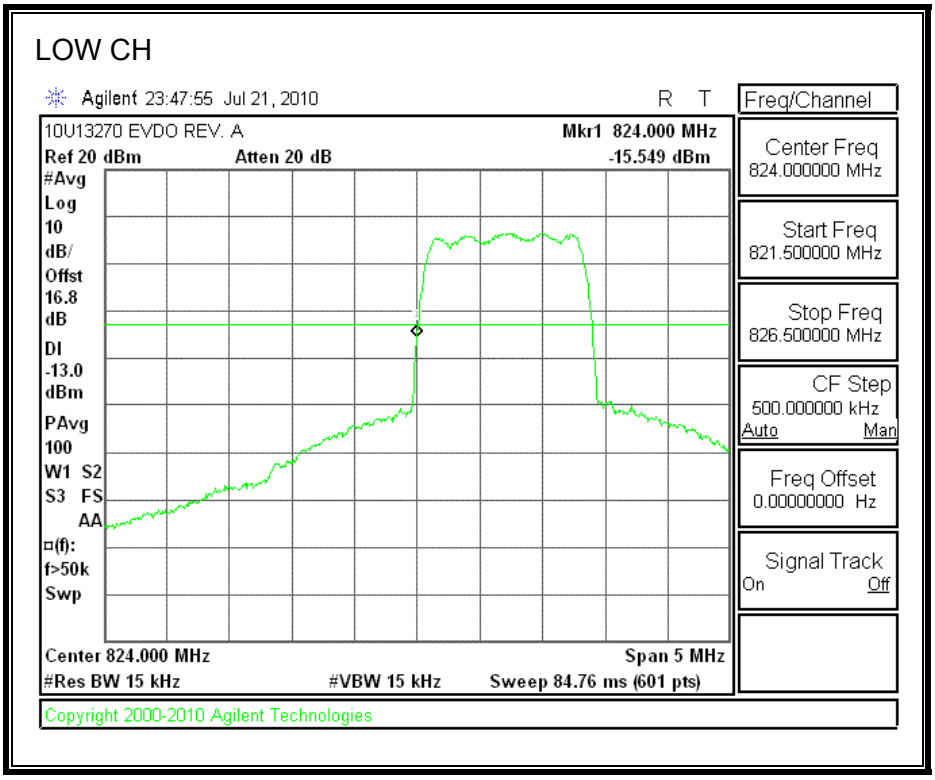
## 1xRTT CELL BAND



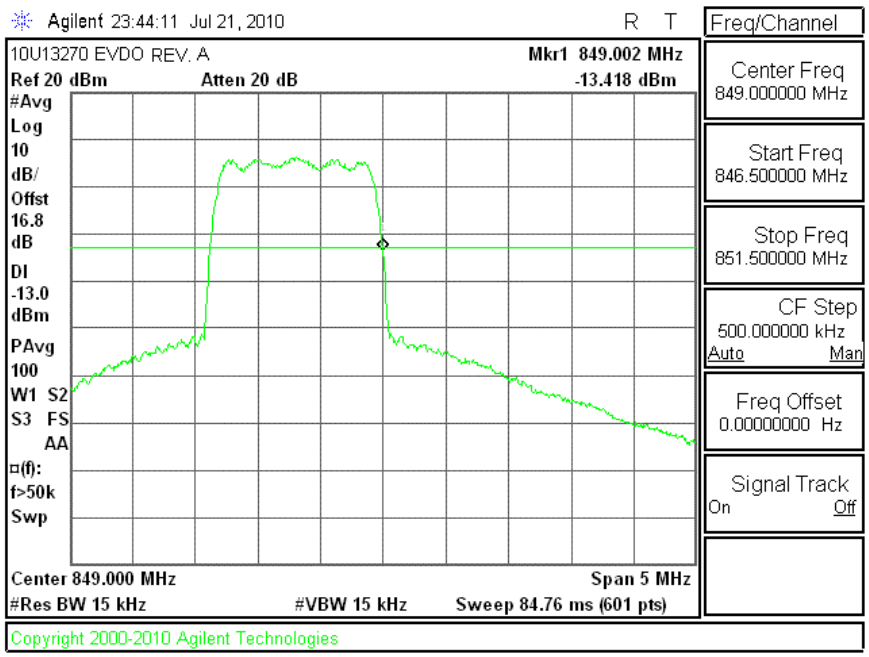
HIGH CH



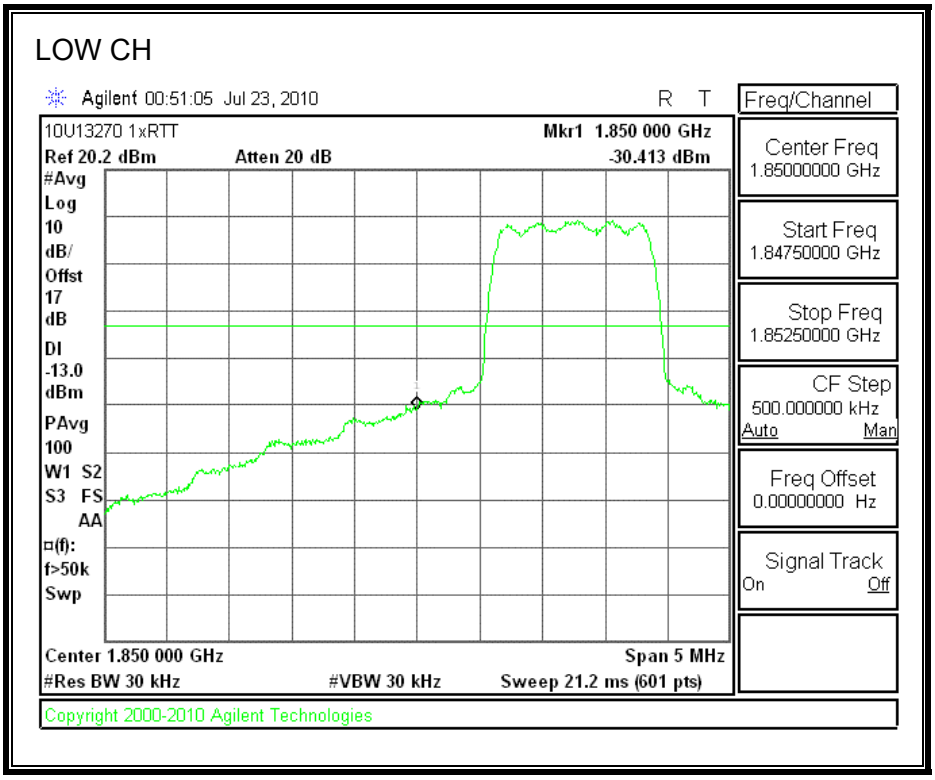
## EVDO REV A. CELL BAND



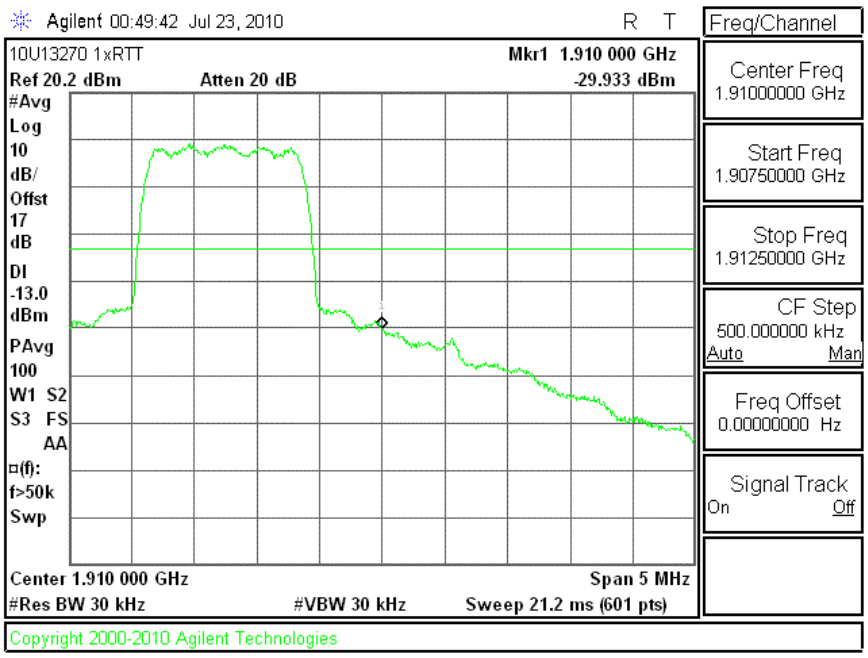
HIGH CH



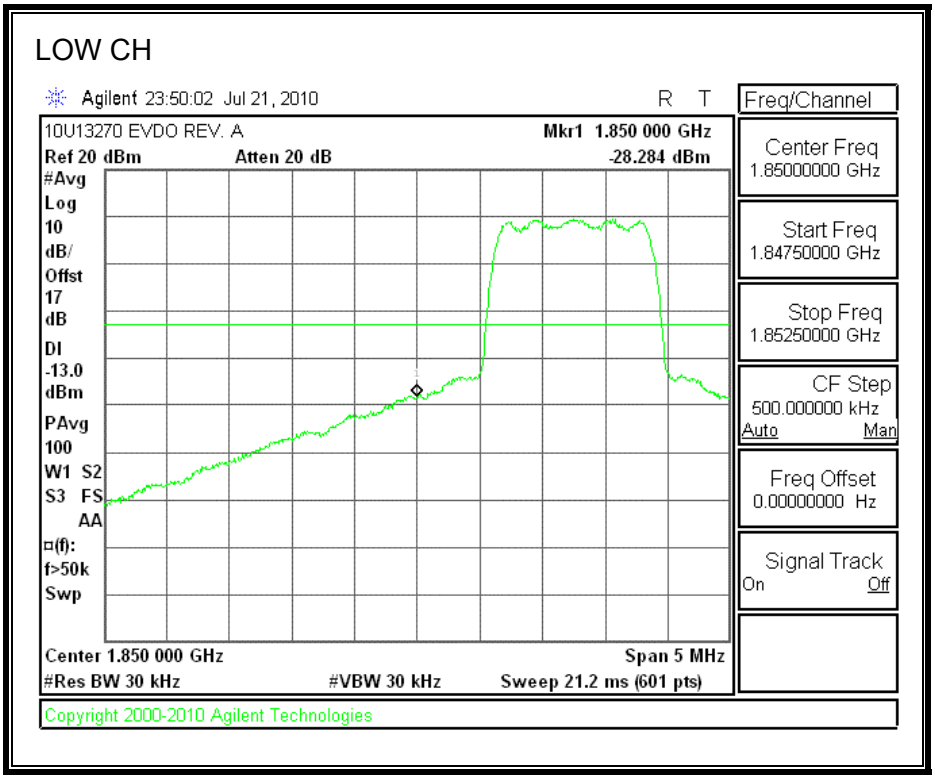
## 1xRTT PCS BAND



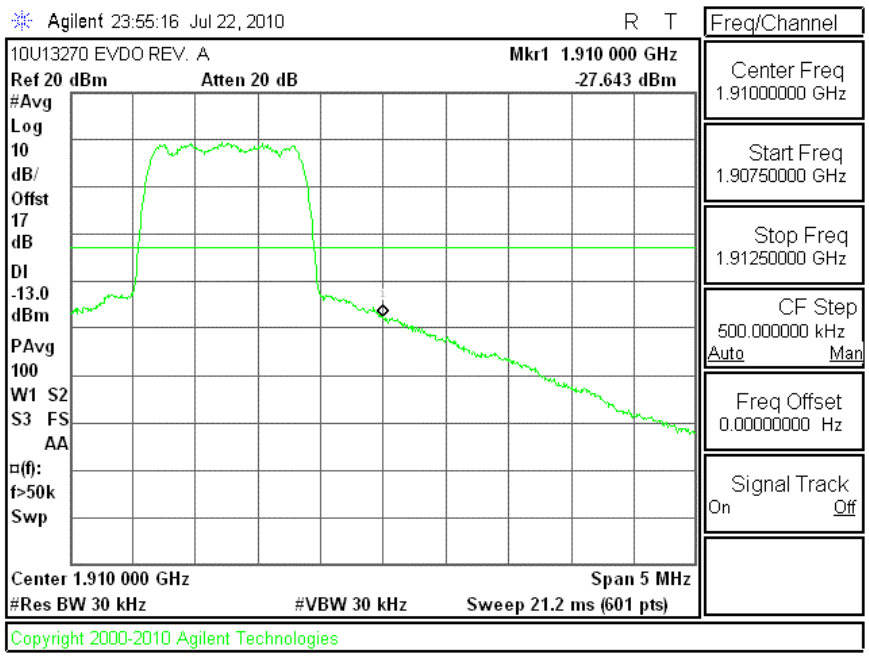
HIGH CH



## EVDO REV A. PCS BAND



HIGH CH



### 7.1.4. OUT OF BAND EMISSIONS

**RULE PART(S)**

FCC: §2.1051, §22.901, §22.917, §24.238
IC: RSS-132, 4.5; RSS-133, 6.5

**LIMITS**

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.

**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.

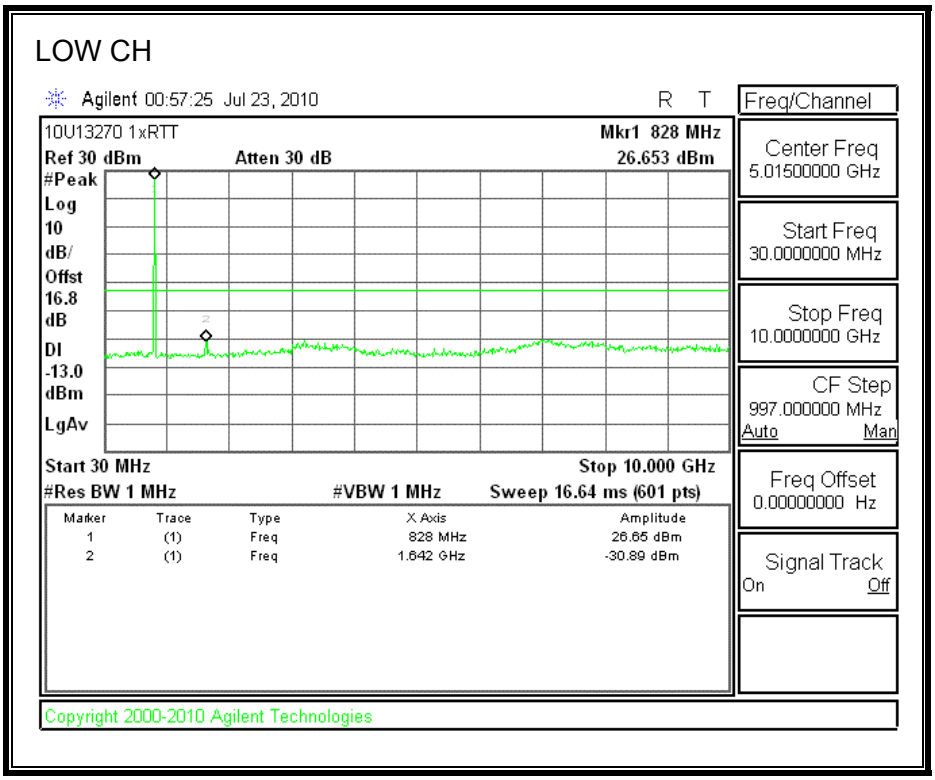
**MODES TESTED**

- CDMA2000 – 1xRTT
- EVDO Rev. A.

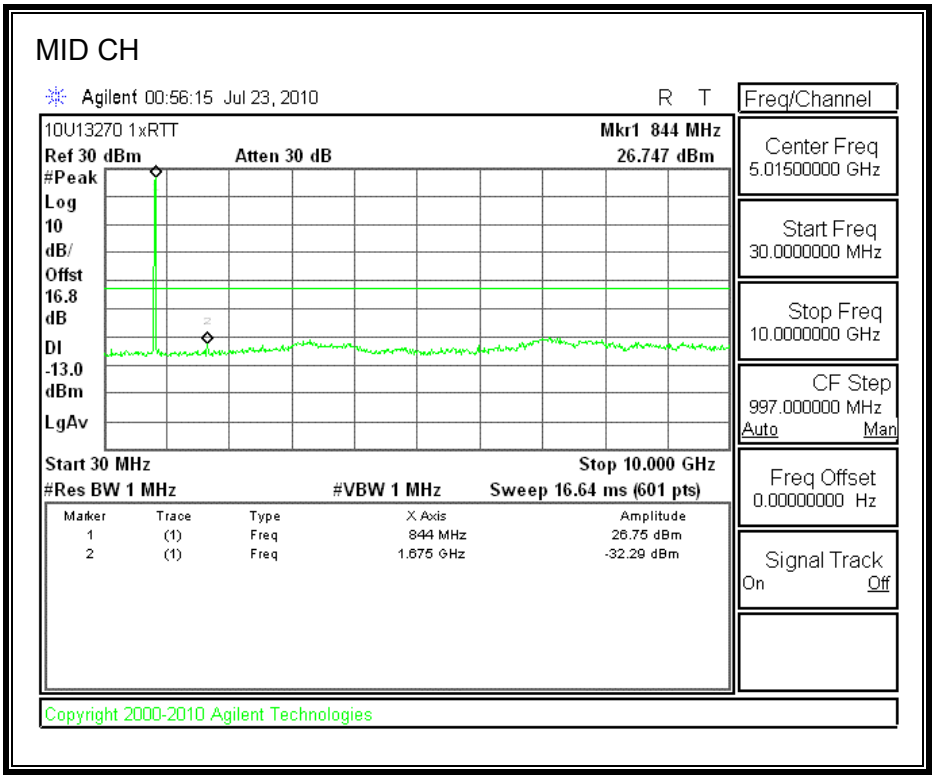
**RESULTS**

See the following pages.

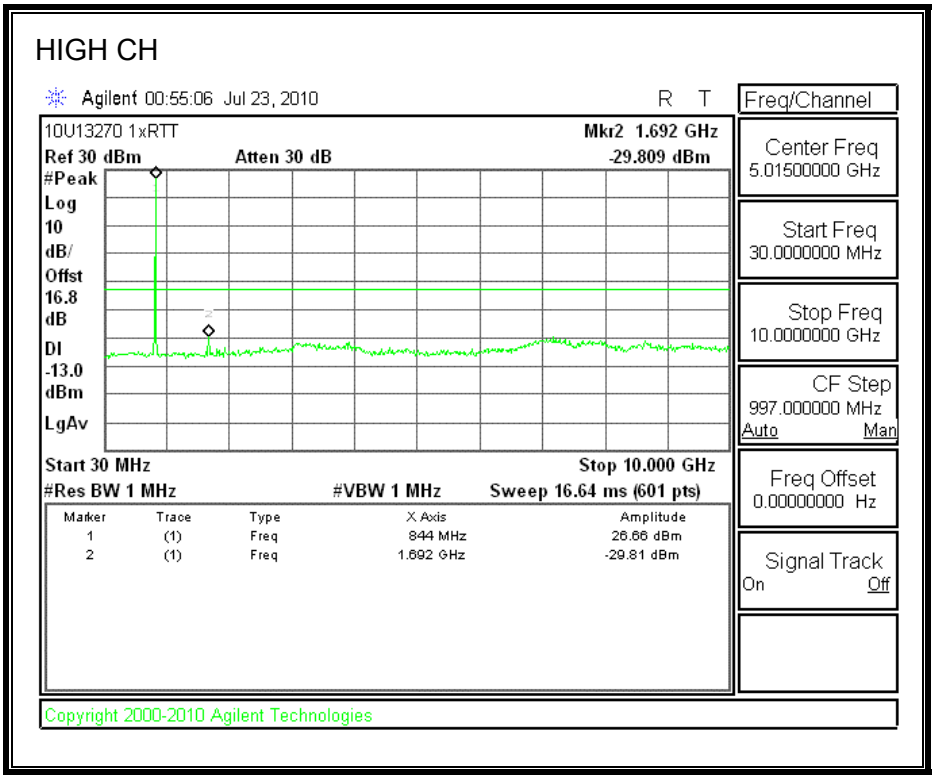
## 1xRTT CELL BAND



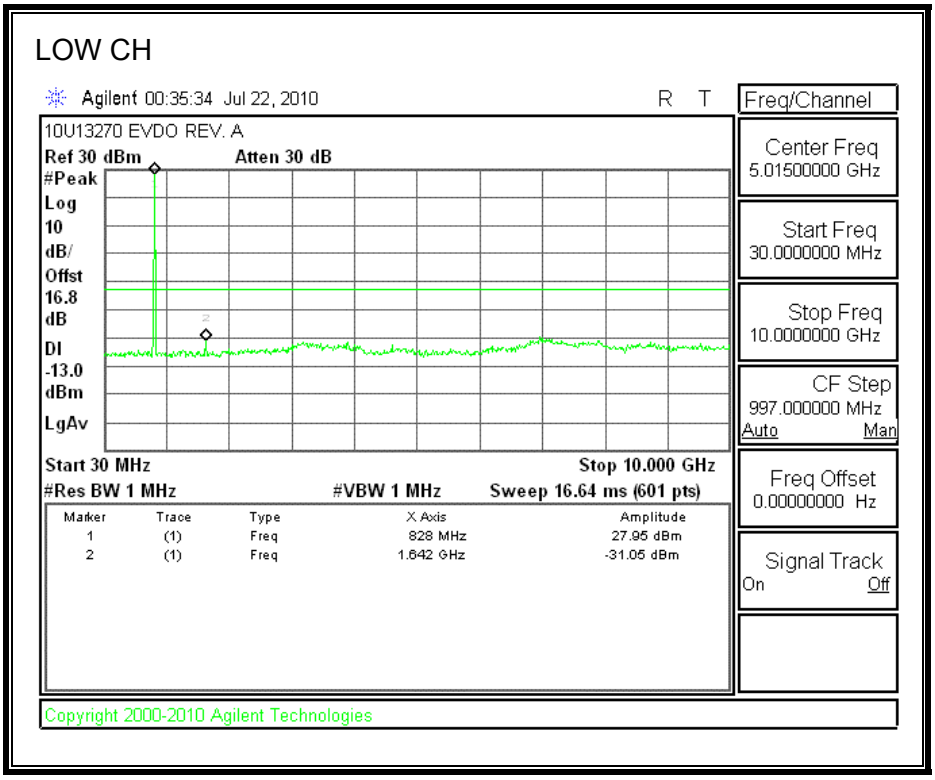
MID CH



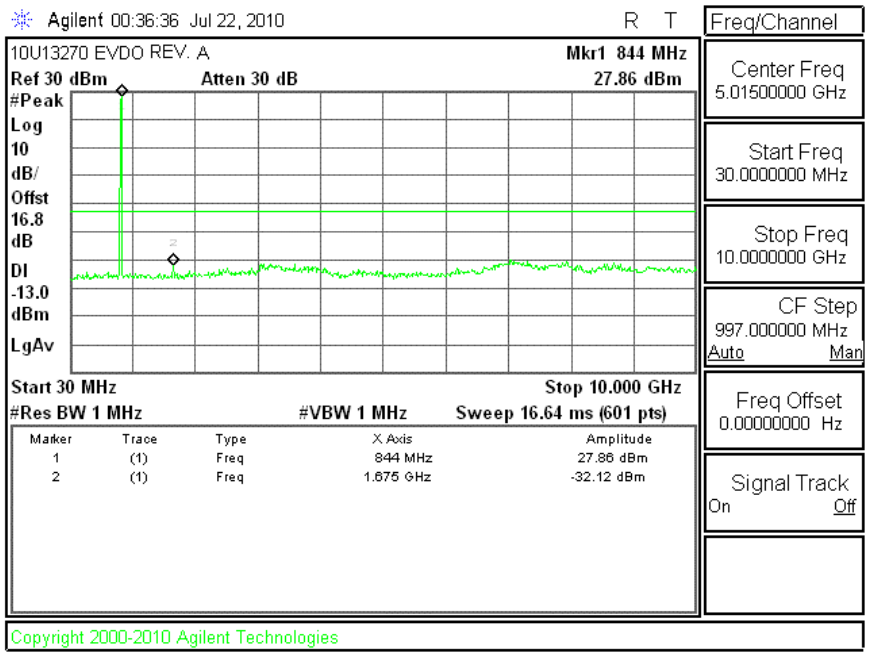
HIGH CH



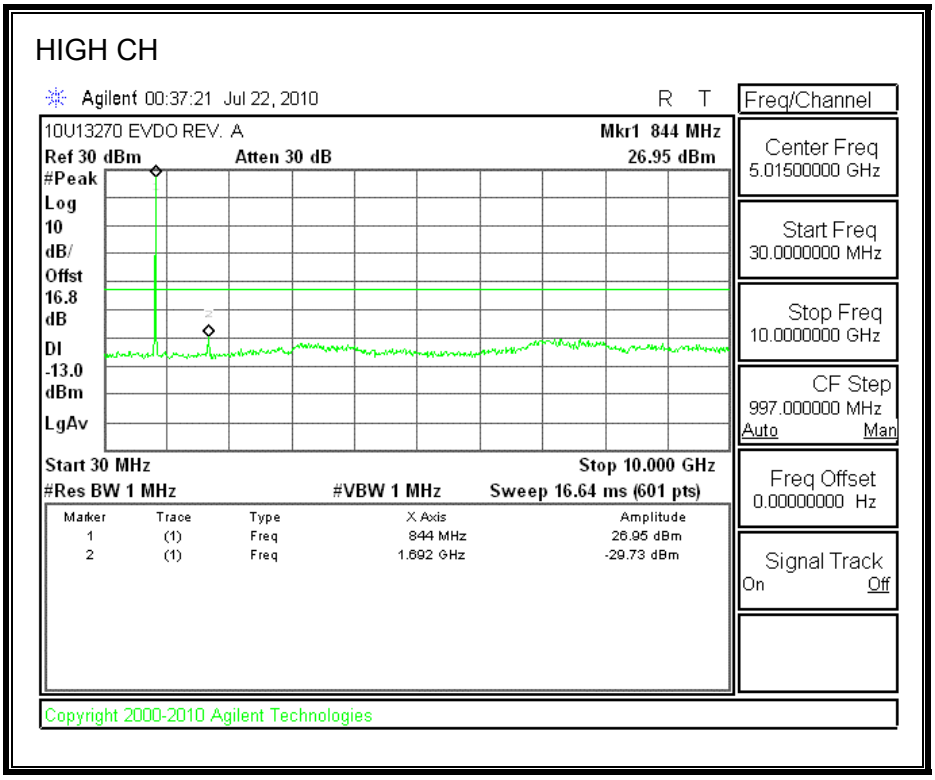
## EVDO REV A. CELL BAND



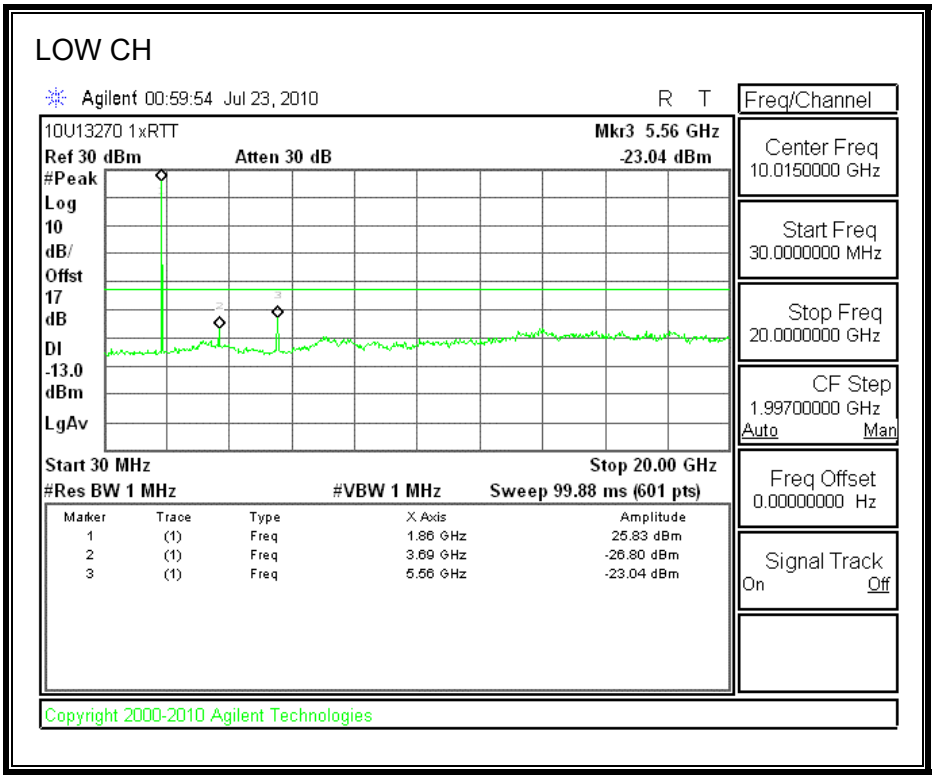
MID CH



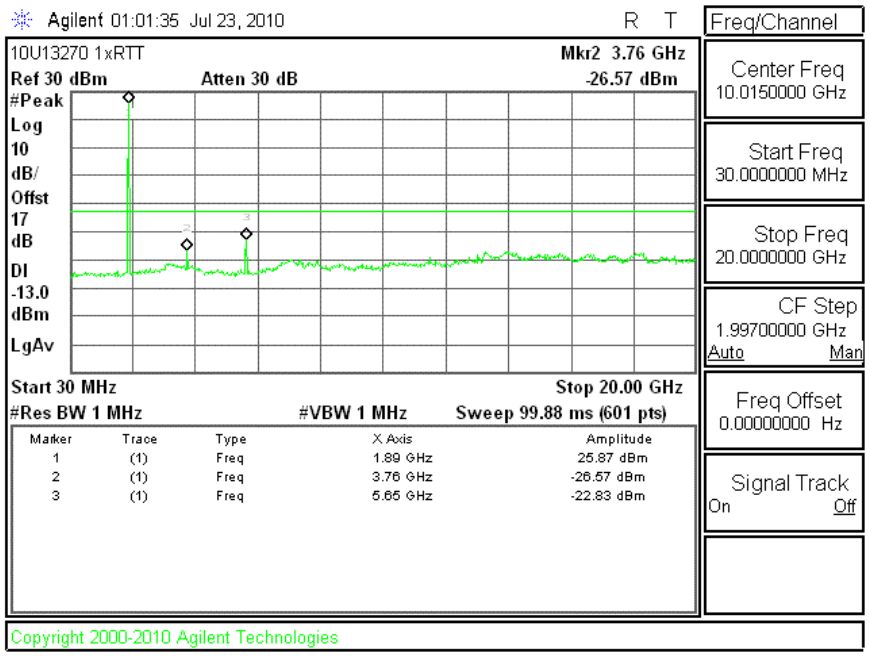
HIGH CH



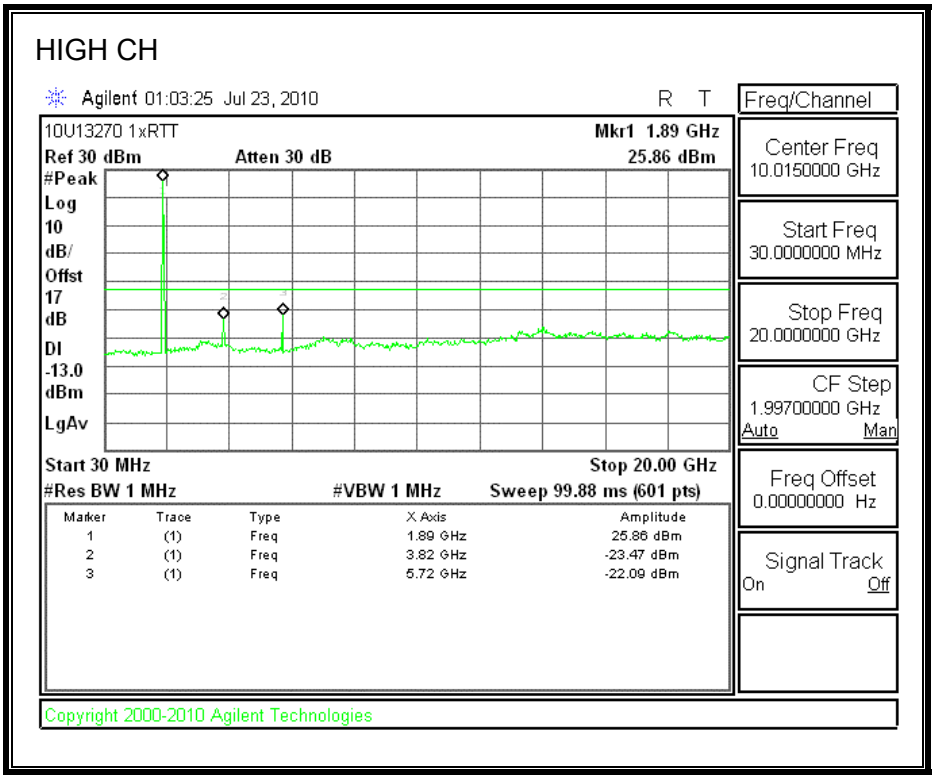
## 1xRTT PCS BAND



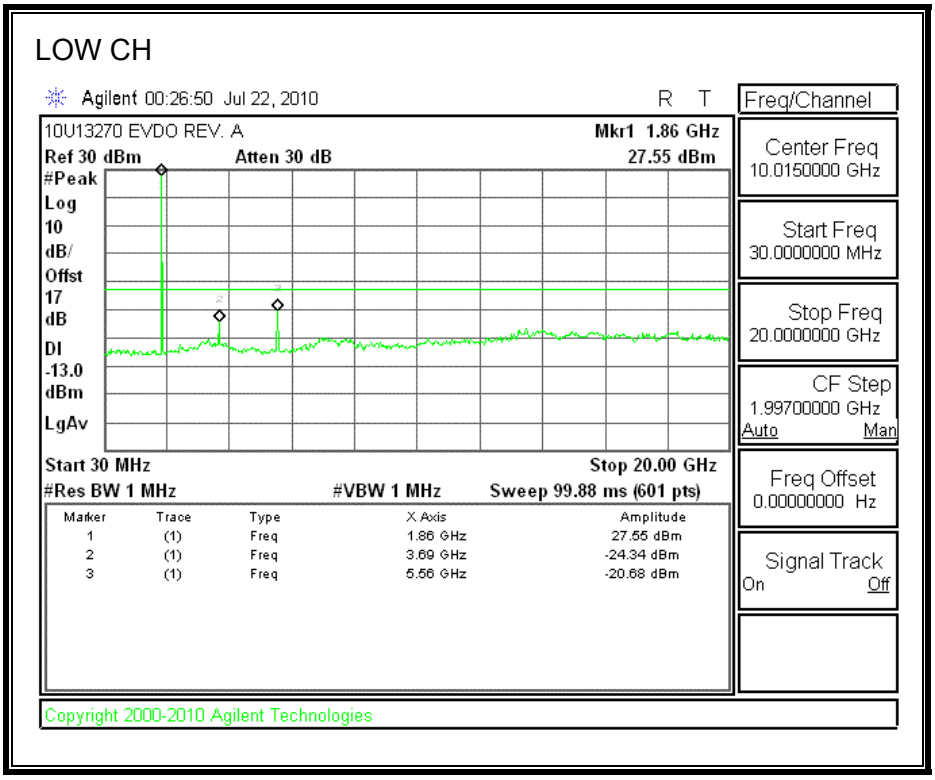
MID CH



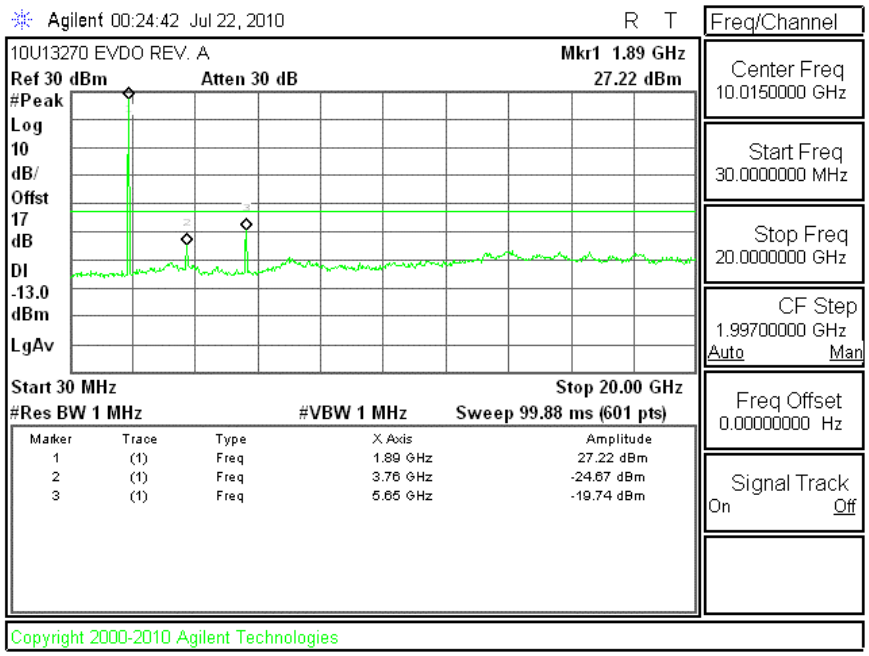
HIGH CH



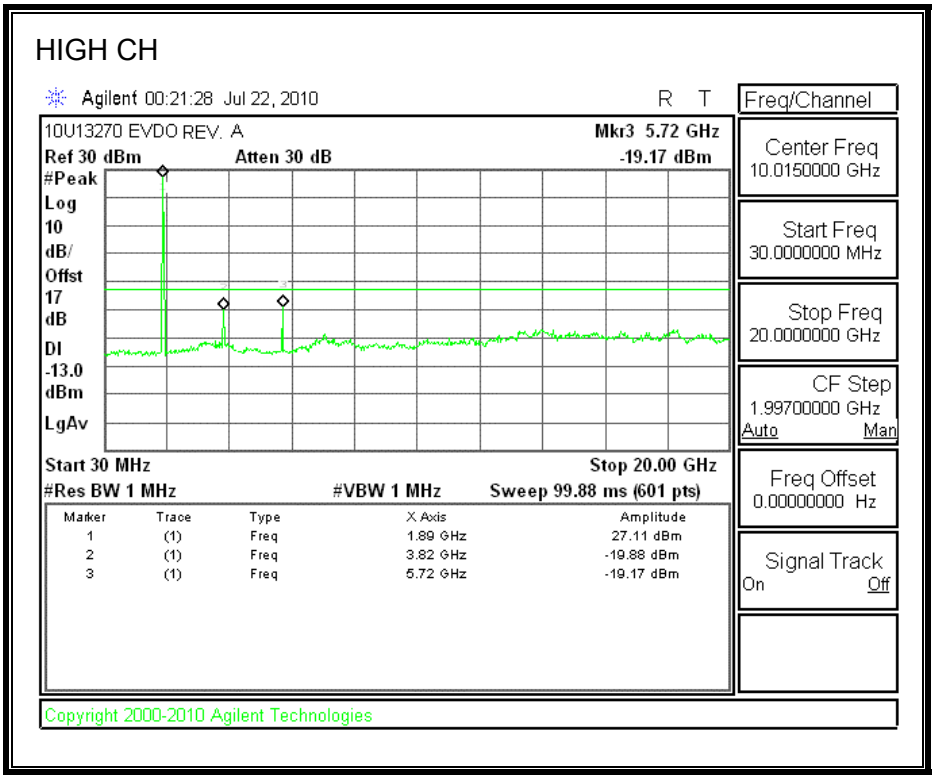
## EVDO REV A. PCS BAND



MID CH



HIGH CH



## 7.1.5. FREQUENCY STABILITY

**RULE PART(S)**

FCC: §2.1055, §22.355, §24.235
IC: RSS-132, 4.3; RSS-133, 6.3

**LIMITS**

§22.355 & RSS-132 4.3 - The carrier frequency shall not depart from the reference frequency in excess of ±2.5 ppm for mobile stations.

RSS-133 6.3 - The carrier frequency shall not depart from the reference frequency in excess of ±2.5 ppm for mobile stations.

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

**TEST PROCEDURE**

**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. Reference power supply voltage for these tests is 3.7 Vdc.

**Frequency Stability vs Voltage:**
The peak frequency error is recorded (worst-case). The test voltages are 3.7 to 4.26. Vdc.

**RESULTS**

See the following pages.

**CELLULAR BAND**

| Reference Frequency: Cellular Mid Channel 836.519996MHz @ 20°C<br>Limit: to stay +- 2.5 ppm = 2091.300 Hz | | | | |
|---|---|---|---|---|
| DC Power Supply (Vdc) | Environment Temperature (°C) | Frequency Deviation Measureed with Time Elapse (MHz) | Delta (ppm) | Limit (ppm) |
| 3.70 | 50 | 836.519994 | 0.002 | 2.5 |
| 3.70 | 40 | 836.519994 | 0.002 | 2.5 |
| 3.70 | 30 | 836.519996 | 0.000 | 2.5 |
| ***3.70*** | ***20*** | ***836.519996*** | ***0*** | 2.5 |
| 3.70 | 10 | 836.520003 | -0.008 | 2.5 |
| 3.70 | 0 | 836.520003 | -0.008 | 2.5 |
| 3.70 | -10 | 836.520005 | -0.011 | 2.5 |
| 3.70 | -20 | 836.520008 | -0.014 | 2.5 |
| 3.70 | -30 | 836.520014 | -0.022 | 2.5 |

| Reference Frequency: Cellular Mid Channel 835.999979MHz @ 20°C<br>Limit: to stay +- 2.5 ppm = 2091.300 Hz | | | | |
|---|---|---|---|---|
| DC Power Supply (Vdc) | Environment Temperature (°C) | Frequency Deviation Measureed with Time Elapse (MHz) | Delta (ppm) | Limit (ppm) |
| 3.15 | 20 | 836.519997 | 0.000 | 2.5 |
| 4.26 | 20 | 836.519997 | 0.000 | 2.5 |

**PCS BAND**

| Reference Frequency: PCS Mid Channel 1879.999990MHz @ 20ºC<br>Limit: within the authorized block or +- 2.5 ppm = 4700.000 Hz | | | | |
|---|---|---|---|---|
| Power Supply (Vdc) | Environment Temperature (°C) | Frequency Deviation Measureed with Time Elapse (MHz) | Delta (ppm) | Limit (ppm) |
| 3.70 | 50 | 1879.999973 | 0.009 | 2.5 |
| 3.70 | 40 | 1879.999977 | 0.007 | 2.5 |
| 3.70 | 30 | 1879.999989 | 0.001 | 2.5 |
| ***3.70*** | ***20*** | ***1879.999990*** | ***0*** | ***2.5*** |
| 3.70 | 10 | 1880.000006 | -0.009 | 2.5 |
| 3.70 | 0 | 1880.000019 | -0.015 | 2.5 |
| 3.70 | -10 | 1880.000020 | -0.016 | 2.5 |
| 3.70 | -20 | 1880.000022 | -0.017 | 2.5 |
| *3.70* | -30 | 1880.000023 | -0.018 | 2.5 |

| Reference Frequency: PCS Mid Channel 1879.999950MHz @ 20ºC<br>Limit: within the authorized block or +- 2.5 ppm = 4700.000 Hz | | | | |
|---|---|---|---|---|
| Power Supply (Vdc) | Environment Temperature (°C) | Frequency Deviation Measureed with Time Elapse (MHz) | Delta (ppm) | Limit (ppm) |
| 3.15 | 20 | 1879.999990 | 0.000 | 2.5 |
| 4.26 | 20 | 1879.999988 | 0.001 | 2.5 |

# 7.2. RADIATED TEST RESULTS

## 7.2.1. RADIATED OUTPUT POWER

**LIMITS**

22.913(a) The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.

24.232(b) & RSS133 § 6.4 Mobile/portable stations are limited to 2 watts e.i.r.p. peak power and the equipment must employ means to limit the power to the minimum necessary for successful communications.

RSS-132 § 4.4 The maximum ERP shall be 6.3 Watts for mobile stations.

**TEST PROCEDURE**

ANSI / TIA / EIA 603 Clause 2.2.17, RSS-132 and RSS-133.

**RESULTS**

# 1XRTT

## CELL OUTPUT POWER (ERP)

High Frequency Substitution Measurement
Compliance Certification Services Chamber A

**Company:** PALM
**Project #:** 10U13270
**Date:** 7/18/2010
**Test Engineer:** MENGISTU MEKURIA
**Configuration:** EUT, HEADSET, AND AC ADAPTER
**Mode:** TX, 1xRTT CELL BAND

**Test Equipment:**
**Receiving: Sunol T122, and 3m Chamber N-type Cable (Setup this one for testing EUT)**
**Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse.**

| f MHz | SA reading (dBm) | Ant. Pol. (H/V) | Path Loss (dBm) | ERP (dBm) | Limit (dBm) | Margin (dB) | Notes |
|---|---|---|---|---|---|---|---|
| 824.70 | -7.3 | V | 34.8 | 27.5 | 38.5 | -11.0 | |
| 824.70 | -20.9 | H | 30.5 | 9.6 | 38.5 | -28.8 | |
| 836.52 | -6.4 | V | 33.1 | 26.7 | 38.5 | -11.7 | |
| 836.52 | -21.0 | H | 31.2 | 10.2 | 38.5 | -28.2 | |
| 848.31 | -5.3 | V | 32.1 | 26.9 | 38.5 | -11.6 | |
| 848.31 | -19.8 | H | 31.2 | 11.4 | 38.5 | -27.1 | |

Rev. 1.24.7

**PCS OUTPUT POWER (EIRP)**

High Frequency Fundamental Measurement
Compliance Certification Services Chamber A

**Company:** PALM
**Project #:** 10U13270
**Date:** 7/18/2010
**Test Engineer:** MENGISTU MEKURIA
**Configuration:** EUT, HEADSET, AND AC ADAPTER
**Mode:** TX, 1xRTT PCS BAND

**Test Equipment:**
**Receiving: Horn T73, and Camber B SMA Cables**
**Substitution: Horn T72 Substitution, 6ft SMA Cable (208947003) Warehouse**

| f GHz | SA reading (dBm) | Ant. Pol. (H/V) | Path Loss (dBm) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
|---|---|---|---|---|---|---|---|
| 1.851 | -15.2 | V | 40.4 | 25.2 | 33.0 | -7.8 | |
| 1.851 | -7.0 | H | 39.7 | 32.8 | 33.0 | -0.3 | |
| 1.880 | -15.6 | V | 39.9 | 24.3 | 33.0 | -8.7 | |
| 1.880 | -7.9 | H | 40.1 | 32.3 | 33.0 | -0.7 | |
| 1.909 | -16.8 | V | 39.8 | 23.0 | 33.0 | -10.0 | |
| 1.909 | -8.8 | H | 40.2 | 31.4 | 33.0 | -1.6 | |

Rev. 1.24.7

## EVDO REV A.

### CELL OUTPUT POWER (ERP)

High Frequency Substitution Measurement
Compliance Certification Services Chamber A

**Company:** PALM
**Project #:** 10U13270
**Date:** 7/19/2010
**Test Engineer:** MENGISTU MEKURIA
**Configuration:** EUT, HEADSET, AND AC ADAPTER
**Mode:** TX, EVDO REV A. CELL BAND

**Test Equipment:**
**Receiving: Sunol T122, and 3m Chamber N-type Cable (Setup this one for testing EUT)**
**Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse.**

| f MHz | SA reading (dBm) | Ant. Pol. (H/V) | Path Loss (dBm) | ERP (dBm) | Limit (dBm) | Margin (dB) | Notes |
|---|---|---|---|---|---|---|---|
| 824.70 | -4.7 | V | 34.8 | 30.1 | 38.5 | -8.4 | |
| 824.70 | -19.9 | H | 30.5 | 10.7 | 38.5 | -27.8 | |
| 836.52 | -5.4 | V | 33.1 | 27.7 | 38.5 | -10.8 | |
| 836.52 | -20.4 | H | 31.2 | 10.7 | 38.5 | -27.7 | |
| 848.31 | -3.6 | V | 32.1 | 28.5 | 38.5 | -10.0 | |
| 848.31 | -19.1 | H | 31.2 | 12.1 | 38.5 | -26.3 | |

Rev. 1.24.7

**PCS OUTPUT POWER (EIRP)**

High Frequency Fundamental Measurement
Compliance Certification Services Chamber A

**Company:** PALM
**Project #:** 10U13270
**Date:** 7/19/2010
**Test Engineer:** MENGISTU MEKURIA
**Configuration:** EUT, HEADSET, AND AC ADAPTER
**Mode:** TX, EVDO REV A. PCS BAND

**Test Equipment:**
**Receiving: Horn T73, and Camber B SMA Cables**
**Substitution: Horn T72 Substitution, 6ft SMA Cable (208947003) Warehouse**

| f GHz | SA reading (dBm) | Ant. Pol. (H/V) | Path Loss (dBm) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
|---|---|---|---|---|---|---|---|
| 1.850 | -16.0 | V | 40.4 | 24.4 | 33.0 | -8.6 | |
| 1.850 | -6.8 | H | 39.7 | 32.9 | 33.0 | -0.1 | |
| 1.880 | -14.1 | V | 39.9 | 25.8 | 33.0 | -7.2 | |
| 1.880 | -7.2 | H | 40.1 | 32.9 | 33.0 | -0.1 | |
| 1.910 | -14.5 | V | 39.8 | 25.3 | 33.0 | -7.7 | |
| 1.910 | -8.7 | H | 40.2 | 31.4 | 33.0 | -1.6 | |

Rev. 1.24.7

## 7.2.2. FIELD STRENGTH OF SPURIOUS RADIATION

**LIMIT**

§22.917 (e) and §24.238 (a), RSS-132 § 4.5.1, & RSS-133 § 6.5.1 (a) (i) & (b): Out of band emissions. 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.

**TEST PROCEDURE**

ANSI / TIA / EIA 603 Clause 3.2.12 & FCC 22.917 (b), and FCC 24.238 (b), (g)(1)(2)(3), RSS-132, and RSS-133.

**RESULTS**

# 1xRTT

## CELL SPURIOUS & HARMONIC (ERP)

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

**Company:** PALM
**Project #:** 10U13270
**Date:** 7/18/2010
**Test Engineer:** MENGISTU MEKURIA
**Configuration:** EUT, HEADSET, AND AC ADAPTER
**Mode:** TX, 1xRTT CELL BAND

| Chamber | Pre-amplifer | Filter | Limit |
|---|---|---|---|
| 3m Chamber | T144 8449B | Filter 1 | FCC PART 22 |

| f GHz | SA reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Path Loss (dB) | Preamp (dB) | Filter (dB) | ERP (dBm) | Limit (dBm) | Delta (dB) | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| Low Ch. (824.70MHz) | | | | | | | | | | |
| 1.649 | -36.2 | H | 3.0 | 36.6 | 38.2 | 1.0 | -36.7 | -13.0 | -23.7 | |
| 2.474 | -50.8 | H | 3.0 | 40.0 | 37.5 | 1.0 | -47.2 | -13.0 | -34.2 | |
| 3.299 | -58.4 | H | 3.0 | 43.4 | 37.1 | 1.0 | -51.0 | -13.0 | -38.0 | |
| 1.649 | -34.6 | V | 3.0 | 36.9 | 38.2 | 1.0 | -34.9 | -13.0 | -21.9 | |
| 2.474 | -54.4 | V | 3.0 | 41.6 | 37.5 | 1.0 | -49.3 | -13.0 | -36.3 | |
| 3.299 | -59.0 | V | 3.0 | 43.6 | 37.1 | 1.0 | -51.5 | -13.0 | -38.5 | |
| | | | | | | | | | | |
| Mid Ch. (836.52 MHz) | | | | | | | | | | |
| 1.673 | -38.2 | H | 3.0 | 36.9 | 38.1 | 1.0 | -38.5 | -13.0 | -25.5 | |
| 2.510 | -50.5 | H | 3.0 | 40.2 | 37.5 | 1.0 | -46.7 | -13.0 | -33.7 | |
| 3.346 | -63.2 | H | 3.0 | 43.6 | 37.1 | 1.0 | -55.7 | -13.0 | -42.7 | |
| 1.673 | -38.4 | V | 3.0 | 37.1 | 38.1 | 1.0 | -38.4 | -13.0 | -25.4 | |
| 2.510 | -51.5 | V | 3.0 | 41.8 | 37.5 | 1.0 | -46.1 | -13.0 | -33.1 | |
| 3.346 | -62.0 | V | 3.0 | 43.8 | 37.1 | 1.0 | -54.3 | -13.0 | -41.3 | |
| | | | | | | | | | | |
| Hi Ch. (848.31 MHz) | | | | | | | | | | |
| 1.697 | -38.6 | H | 3.0 | 37.1 | 38.1 | 1.0 | -38.5 | -13.0 | -25.5 | |
| 2.545 | -49.5 | H | 3.0 | 40.4 | 37.5 | 1.0 | -45.5 | -13.0 | -32.5 | |
| 3.393 | -62.5 | H | 3.0 | 43.7 | 37.1 | 1.0 | -54.9 | -13.0 | -41.9 | |
| 1.697 | -30.9 | V | 3.0 | 37.4 | 38.1 | 1.0 | -30.6 | -13.0 | -17.6 | |
| 2.545 | -53.6 | V | 3.0 | 41.9 | 37.5 | 1.0 | -48.2 | -13.0 | -35.2 | |
| 3.393 | -59.8 | V | 3.0 | 43.9 | 37.1 | 1.0 | -51.9 | -13.0 | -38.9 | |
| | | | | | | | | | | |
| | | | | | | | | | | |

Rev. 03.03.09

## PCS SPURIOUS & HARMONIC (EIRP)

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

**Company:** PALM
**Project #:** 10U13270
**Date:** 7/18/2010
**Test Engineer:** MENGISTU MEKURIA
**Configuration:** EUT, HEADSET, AND AC ADAPTER
**Mode:** TX, 1xRTT PCS BAND

| Chamber | Pre-amplifer | Filter | Limit |
|---|---|---|---|
| 3m Chamber | T144 8449B | Filter 1 | FCC PART 24 |

| f GHz | SA reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Path Loss (dB) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| Low Ch. (1851.25MHz) | | | | | | | | | | |
| 3.703 | -45.7 | H | 3.0 | 44.7 | 36.8 | 1.0 | -36.9 | -13.0 | -23.9 | |
| 5.554 | -48.6 | H | 3.0 | 49.7 | 36.3 | 1.0 | -34.2 | -13.0 | -21.2 | |
| 7.405 | -64.2 | H | 3.0 | 53.1 | 36.6 | 1.0 | -46.7 | -13.0 | -33.7 | |
| 3.703 | -46.4 | V | 3.0 | 44.9 | 36.8 | 1.0 | -37.3 | -13.0 | -24.3 | |
| 5.554 | -48.2 | V | 3.0 | 49.2 | 36.3 | 1.0 | -34.3 | -13.0 | -21.3 | |
| 7.405 | -62.9 | V | 3.0 | 52.1 | 36.6 | 1.0 | -46.4 | -13.0 | -33.4 | |
| | | | | | | | | | | |
| Mid Ch. (1880.00 MHz) | | | | | | | | | | |
| 3.760 | -47.7 | H | 3.0 | 44.8 | 36.8 | 1.0 | -38.6 | -13.0 | -25.6 | |
| 5.640 | -44.7 | H | 3.0 | 49.9 | 36.3 | 1.0 | -30.1 | -13.0 | -17.1 | |
| 7.520 | -63.7 | H | 3.0 | 53.3 | 36.6 | 1.0 | -46.1 | -13.0 | -33.1 | |
| 3.760 | -46.1 | V | 3.0 | 45.1 | 36.8 | 1.0 | -36.8 | -13.0 | -23.8 | |
| 5.640 | -43.6 | V | 3.0 | 49.3 | 36.3 | 1.0 | -29.6 | -13.0 | -16.6 | |
| 7.520 | -59.4 | V | 3.0 | 52.3 | 36.6 | 1.0 | -42.7 | -13.0 | -29.7 | |
| | | | | | | | | | | |
| Hi Ch. (1908.75 MHz) | | | | | | | | | | |
| 3.818 | -44.5 | H | 3.0 | 45.0 | 36.7 | 1.0 | -35.3 | -13.0 | -22.3 | |
| 5.726 | -40.5 | H | 3.0 | 50.1 | 36.3 | 1.0 | -25.7 | -13.0 | -12.7 | |
| 7.635 | -64.3 | H | 3.0 | 53.4 | 36.6 | 1.0 | -46.5 | -13.0 | -33.5 | |
| 3.818 | -42.0 | V | 3.0 | 45.3 | 36.7 | 1.0 | -32.5 | -13.0 | -19.5 | |
| 5.726 | -40.6 | V | 3.0 | 49.5 | 36.3 | 1.0 | -26.4 | -13.0 | -13.4 | |
| 7.635 | -58.8 | V | 3.0 | 52.4 | 36.6 | 1.0 | -42.0 | -13.0 | -29.0 | |
| | | | | | | | | | | |
| | | | | | | | | | | |

Rev. 03.03.09

# EVDO REV A.

## CELL SPURIOUS & HARMONIC (ERP)

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

**Company:** PALM
**Project #:** 10U13270
**Date:** 7/19/2010
**Test Engineer:** MENGISTU MEKURIA
**Configuration:** EUT, HEADSET, AND AC ADAPTER
**Mode:** TX, EVDO REV A. CELL BAND

| Chamber | Pre-amplifer | Filter | Limit |
|---|---|---|---|
| 3m Chamber | T144 8449B | Filter 1 | FCC PART 22 |

| f GHz | SA reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Path Loss (dB) | Preamp (dB) | Filter (dB) | ERP (dBm) | Limit (dBm) | Delta (dB) | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| Low Ch. (824.70MHz) | | | | | | | | | | |
| 1.649 | -33.5 | H | 3.0 | 36.6 | 38.2 | 1.0 | -34.0 | -13.0 | -21.0 | |
| 2.474 | -40.7 | H | 3.0 | 40.0 | 37.5 | 1.0 | -37.2 | -13.0 | -24.2 | |
| 3.299 | -56.4 | H | 3.0 | 43.4 | 37.1 | 1.0 | -49.1 | -13.0 | -36.1 | |
| 1.649 | -35.0 | V | 3.0 | 36.9 | 38.2 | 1.0 | -35.3 | -13.0 | -22.3 | |
| 2.474 | -47.3 | V | 3.0 | 41.6 | 37.5 | 1.0 | -42.1 | -13.0 | -29.1 | |
| 3.299 | -58.8 | V | 3.0 | 43.6 | 37.1 | 1.0 | -51.3 | -13.0 | -38.3 | |
| | | | | | | | | | | |
| Mid Ch. (836.52 MHz) | | | | | | | | | | |
| 1.673 | -36.1 | H | 3.0 | 36.9 | 38.1 | 1.0 | -36.3 | -13.0 | -23.3 | |
| 2.510 | -44.7 | H | 3.0 | 40.2 | 37.5 | 1.0 | -41.0 | -13.0 | -28.0 | |
| 3.346 | -60.2 | H | 3.0 | 43.6 | 37.1 | 1.0 | -52.7 | -13.0 | -39.7 | |
| 1.673 | -38.2 | V | 3.0 | 37.1 | 38.1 | 1.0 | -38.1 | -13.0 | -25.1 | |
| 2.510 | -55.4 | V | 3.0 | 41.8 | 37.5 | 1.0 | -50.1 | -13.0 | -37.1 | |
| 3.346 | -61.1 | V | 3.0 | 43.8 | 37.1 | 1.0 | -53.4 | -13.0 | -40.4 | |
| | | | | | | | | | | |
| Hi Ch. (848.31 MHz) | | | | | | | | | | |
| 1.697 | -32.2 | H | 3.0 | 37.1 | 38.1 | 1.0 | -32.2 | -13.0 | -19.2 | |
| 2.545 | -48.6 | H | 3.0 | 40.4 | 37.5 | 1.0 | -44.6 | -13.0 | -31.6 | |
| 3.393 | -60.9 | H | 3.0 | 43.7 | 37.1 | 1.0 | -53.2 | -13.0 | -40.2 | |
| 1.697 | -34.2 | V | 3.0 | 37.4 | 38.1 | 1.0 | -33.9 | -13.0 | -20.9 | |
| 2.545 | -48.0 | V | 3.0 | 41.9 | 37.5 | 1.0 | -42.6 | -13.0 | -29.6 | |
| 3.393 | -60.3 | V | 3.0 | 43.9 | 37.1 | 1.0 | -52.4 | -13.0 | -39.4 | |
| | | | | | | | | | | |
| | | | | | | | | | | |

Rev. 03.03.09

## PCS SPURIOUS & HARMONIC (EIRP)

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

**Company:** PALM
**Project #:** 10U13270
**Date:** 7/19/2010
**Test Engineer:** MENGISTU MEKURIA
**Configuration:** EUT, HEADSET, AND AC ADAPTER
**Mode:** TX, EVDO REV. A PCS BAND

| Chamber | Pre-amplifer | Filter | Limit |
|---|---|---|---|
| 3m Chamber | T144 8449B | Filter 1 | FCC PART 24 |

| f GHz | SA reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Path Loss (dB) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| Low Ch. (1851.25MHz) | | | | | | | | | | |
| 3.703 | -46.6 | V | 3.0 | 44.9 | 36.8 | 1.0 | -37.4 | -13.0 | -24.4 | |
| 5.554 | -44.9 | V | 3.0 | 49.2 | 36.3 | 1.0 | -31.0 | -13.0 | -18.0 | |
| 7.405 | -63.9 | V | 3.0 | 52.1 | 36.6 | 1.0 | -47.3 | -13.0 | -34.3 | |
| 9.256 | -66.6 | V | 3.0 | 54.5 | 37.0 | 1.0 | -48.1 | -13.0 | -35.1 | |
| 3.703 | -45.1 | H | 3.0 | 44.7 | 36.8 | 1.0 | -36.2 | -13.0 | -23.2 | |
| 5.554 | -47.8 | H | 3.0 | 49.7 | 36.3 | 1.0 | -33.4 | -13.0 | -20.4 | |
| 7.405 | -67.0 | H | 3.0 | 53.1 | 36.6 | 1.0 | -49.4 | -13.0 | -36.4 | |
| 9.256 | -66.6 | H | 3.0 | 55.3 | 37.0 | 1.0 | -47.2 | -13.0 | -34.2 | |
| | | | | | | | | | | |
| Mid Ch. (1880.00 MHz) | | | | | | | | | | |
| 3.760 | -45.2 | V | 3.0 | 45.1 | 36.8 | 1.0 | -35.8 | -13.0 | -22.8 | |
| 5.640 | -40.1 | V | 3.0 | 49.3 | 36.3 | 1.0 | -26.0 | -13.0 | -13.0 | |
| 7.520 | -54.4 | V | 3.0 | 52.3 | 36.6 | 1.0 | -37.7 | -13.0 | -24.7 | |
| 9.400 | -59.0 | H | 3.0 | 55.5 | 37.0 | 1.0 | -39.6 | -13.0 | -26.6 | |
| 3.760 | -41.8 | H | 3.0 | 44.8 | 36.8 | 1.0 | -32.8 | -13.0 | -19.8 | |
| 5.640 | -43.1 | H | 3.0 | 49.9 | 36.3 | 1.0 | -28.5 | -13.0 | -15.5 | |
| 7.520 | -61.4 | H | 3.0 | 53.3 | 36.6 | 1.0 | -43.7 | -13.0 | -30.7 | |
| 9.400 | -67.2 | H | 3.0 | 55.5 | 37.0 | 1.0 | -47.8 | -13.0 | -34.8 | |
| | | | | | | | | | | |
| Hi Ch. (1908.75 MHz) | | | | | | | | | | |
| 3.818 | -41.6 | V | 3.0 | 45.3 | 36.7 | 1.0 | -32.0 | -13.0 | -19.0 | |
| 5.726 | -38.2 | V | 3.0 | 49.5 | 36.3 | 1.0 | -24.0 | -13.0 | -11.0 | |
| 7.635 | -57.0 | V | 3.0 | 52.4 | 36.6 | 1.0 | -40.2 | -13.0 | -27.2 | |
| 9.544 | -62.8 | V | 3.0 | 54.8 | 37.1 | 1.0 | -44.1 | -13.0 | -31.1 | |
| 3.818 | -38.6 | H | 3.0 | 45.0 | 36.7 | 1.0 | -29.3 | -13.0 | -16.3 | |
| 5.726 | -42.8 | H | 3.0 | 50.1 | 36.3 | 1.0 | -28.1 | -13.0 | -15.1 | |
| 7.635 | -61.7 | H | 3.0 | 53.4 | 36.6 | 1.0 | -43.9 | -13.0 | -30.9 | |
| 9.544 | -66.4 | H | 3.0 | 55.7 | 37.1 | 1.0 | -46.8 | -13.0 | -33.8 | |
| | | | | | | | | | | |
| | | | | | | | | | | |

Rev. 03.03.09

## 7.2.3. RECEIVER SPURIOUS EMISSIONS

**LIMIT**

RSS-Gen 7.2.2

Spurious Emission Limits for Receivers:

| Spurious Frequency (MHz) | Field Strength (microvolts/m at 3 metres) |
|---|---|
| 30-88 | 100 |
| 88-216 | 150 |
| 216-960 | 200 |
| Above 960 | 500 |

**TEST PROCEDURE**

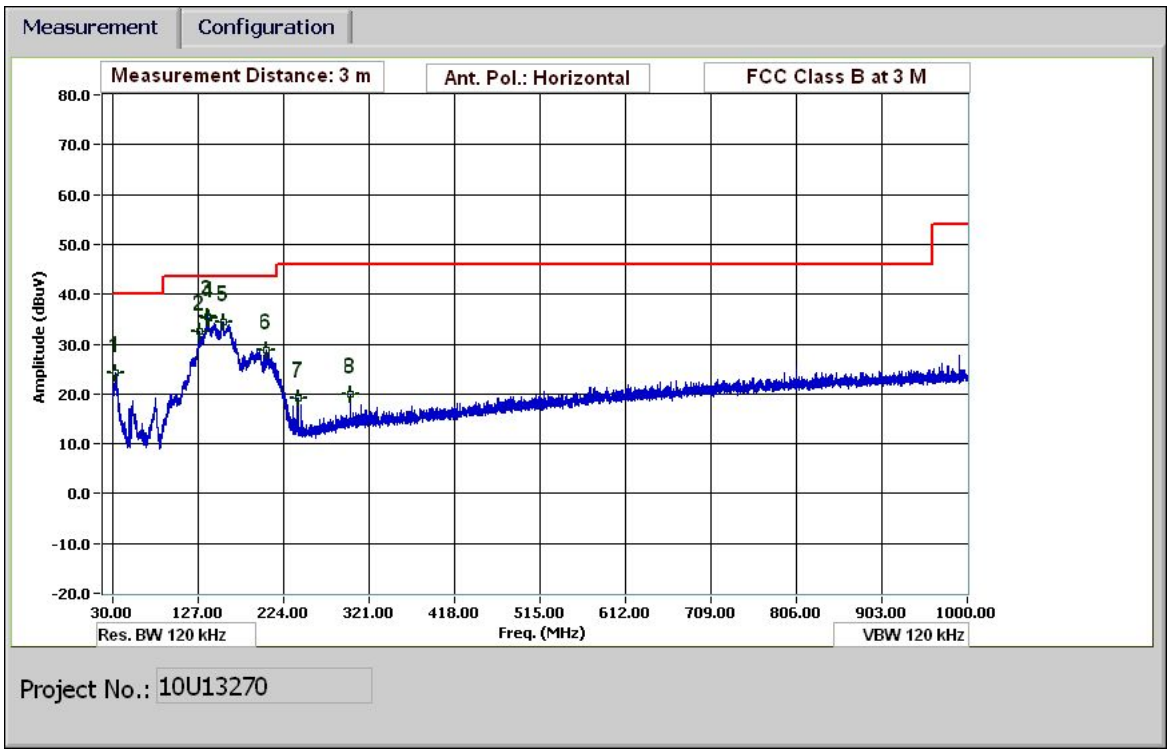
The search for spurious emissions shall be from the lowest frequency internally generated or used in the receiver (local oscillator frequency, intermediate frequency or carrier frequency),

or 30 MHz, whichever is the higher, to at least 3 times the highest tunable and local oscillator frequencies.

**RESULTS**

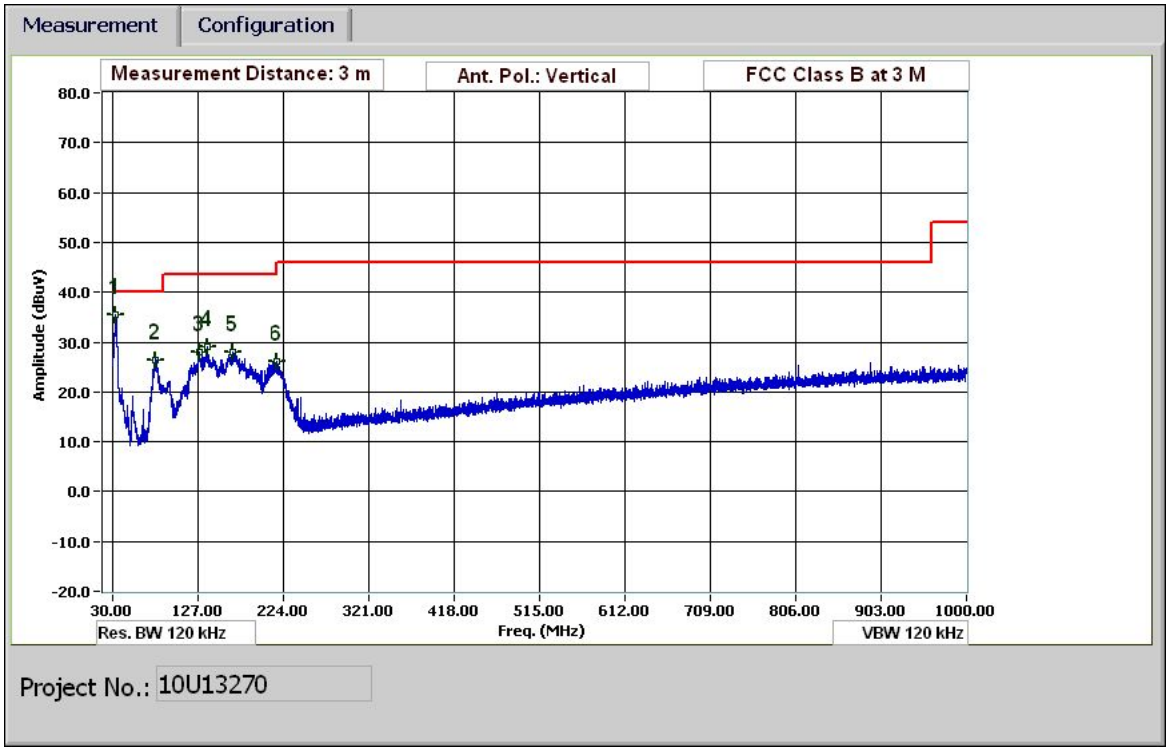
**SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, HORIZONTAL)**

HORIZONTAL



**SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, VERTICAL)**

VERTICAL



**SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION)**

## HORIZONTAL AND VERTICAL DATA

**30-1000MHz Frequency Measurement**
**Compliance Certification Services, Fremont 5m Chamber**

**Test Engr:** MENGISTU MEKURIA
**Date:** 07/21/10
**Project #:** 10U13270
**Company:** PALM
**EUT Description:** EUT, HEADSET, AND AC ADAPTER
**EUT M/N:** P102EWW
**Test Target:** FCC CLASS B
**Mode Oper:** TX WORST CASE

| | | | | | |
|---|---|---|---|---|---|
| f | Measurement Frequency | Amp | Preamp Gain | Margin | Margin vs. Limit |
| Dist | Distance to Antenna | D Corr | Distance Correct to 3 meters | | |
| Read | Analyzer Reading | Filter | Filter Insert Loss | | |
| AF | Antenna Factor | Corr. | Calculated Field Strength | | |
| CL | Cable Loss | Limit | Field Strength Limit | | |

| f MHz | Dist (m) | Read dBuV | AF dB/m | CL dB | Amp dB | D Corr dB | Filter dB | Corr. dBuV/m | Limit dBuV/m | Margin dB | Ant. Pol. V/H | Det. P/A/QP | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HORIZONTAL | | | | | | | | | | | | | |
| 33.600 | 3.0 | 33.6 | 18.5 | 0.5 | 28.4 | 0.0 | 0.0 | 24.3 | 40.0 | -15.7 | H | P | |
| 129.004 | 3.0 | 46.2 | 13.6 | 1.1 | 28.3 | 0.0 | 0.0 | 32.5 | 43.5 | -11.0 | H | P | |
| 138.004 | 3.0 | 49.3 | 13.3 | 1.1 | 28.3 | 0.0 | 0.0 | 35.4 | 43.5 | -8.1 | H | P | |
| 138.964 | 3.0 | 49.1 | 13.3 | 1.1 | 28.3 | 0.0 | 0.0 | 35.2 | 43.5 | -8.3 | H | P | |
| 155.045 | 3.0 | 49.3 | 12.1 | 1.1 | 28.3 | 0.0 | 0.0 | 34.3 | 43.5 | -9.2 | H | P | |
| 204.367 | 3.0 | 43.7 | 12.0 | 1.3 | 28.2 | 0.0 | 0.0 | 28.7 | 43.5 | -14.8 | H | P | |
| 240.009 | 3.0 | 34.2 | 11.8 | 1.3 | 28.2 | 0.0 | 0.0 | 19.2 | 46.0 | -26.8 | H | P | |
| 300.011 | 3.0 | 33.0 | 13.4 | 1.5 | 28.1 | 0.0 | 0.0 | 19.9 | 46.0 | -26.1 | H | P | |
| VERTICAL | | | | | | | | | | | | | |
| 33.360 | 3.0 | 44.8 | 18.6 | 0.5 | 28.4 | 0.0 | 0.0 | 35.6 | 40.0 | -4.4 | V | P | |
| 33.201 | 3.0 | 39.9 | 18.7 | 0.5 | 28.4 | 0.0 | 0.0 | 30.7 | 40.0 | -9.3 | V | QP | |
| 78.842 | 3.0 | 46.5 | 7.4 | 0.8 | 28.3 | 0.0 | 0.0 | 26.3 | 40.0 | -13.7 | V | P | |
| 128.284 | 3.0 | 41.6 | 13.6 | 1.1 | 28.3 | 0.0 | 0.0 | 28.0 | 43.5 | -15.5 | V | P | |
| 137.164 | 3.0 | 43.0 | 13.3 | 1.1 | 28.3 | 0.0 | 0.0 | 29.2 | 43.5 | -14.3 | V | P | |
| 166.206 | 3.0 | 43.9 | 11.1 | 1.1 | 28.2 | 0.0 | 0.0 | 28.0 | 43.5 | -15.5 | V | P | |
| 215.888 | 3.0 | 41.1 | 11.9 | 1.3 | 28.2 | 0.0 | 0.0 | 26.1 | 43.5 | -17.4 | V | P | |

Rev. 1.27.09
Note: No other emissions were detected above the system noise floor.

**SPURIOUS EMISSIONS ABOVE 1000 MHz (WORST-CASE CONFIGURATION)**

Note: No emissions were detected above the system noise floor.

## 7.2.4. POWER LINE CONDUCTED EMISSION

**LIMIT**

RSS-Gen 7.2.2

Except when the requirements applicable to a given device state otherwise, for any licence-exempt radio communication device equipped to operate from the public utility AC power supply, either directly or indirectly, the radio frequency voltage that is conducted back onto the AC power lines in the frequency range of 0.15 MHz to 30 MHz shall not exceed the limits shown in Table 2. The tighter limit applies at the frequency range boundaries.

Table 2 – AC Power Lines Conducted Emission Limits

| Frequency of Emission (MHz) | Conducted Limit (dBuV) | |
|---|---|---|
| | Quasi-peak | Average |
| 0.15-0.5 | 66 to 56 * | 56 to 46 * |
| 0.5-5 | 56 | 46 |
| 5-30 | 60 | 50 |

* Decreases with the logarithm of the frequency.

**RESULTS**

## 6 WORST EMISSIONS

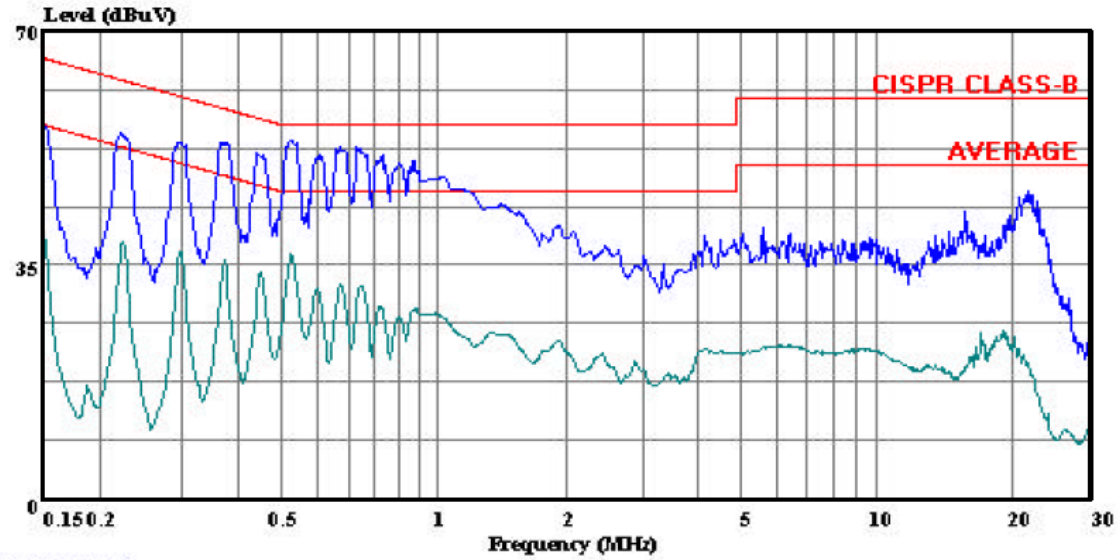
| CONDUCTED EMISSIONS DATA (115VAC 60Hz) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Freq. | Reading | | | Closs | Limit | EN_B | Margin | | Remark |
| (MHz) | PK (dBuV) | QP (dBuV) | AV (dBuV) | (dB) | QP | AV | QP (dB) | AV (dB) | L1 / L2 |
| 0.30 | 53.38 | -- | 36.97 | 0.00 | 60.24 | 50.24 | -6.86 | -13.27 | L1 |
| 0.38 | 53.30 | -- | 35.64 | 0.00 | 58.30 | 48.30 | -5.00 | -12.66 | L1 |
| 5.27 | 53.72 | -- | 36.54 | 0.00 | 60.00 | 50.00 | -6.28 | -13.46 | L1 |
| 0.22 | 53.64 | -- | 39.17 | 0.00 | 62.82 | 52.82 | -9.18 | -13.65 | L2 |
| 0.45 | 53.50 | -- | 37.66 | 0.00 | 56.89 | 46.89 | -3.39 | -9.23 | L2 |
| 0.60 | 51.84 | -- | 34.06 | 0.00 | 56.00 | 46.00 | -4.16 | -11.94 | L2 |
| 6 Worst Data | | | | | | | | | |

**LINE 1 RESULTS**

COMPLIANCE Engineering Service, Inc.
FCC,VCCI,CISPR,CE
UL,CSA,TUV

7F #8 Ln120 Neihu Rd Sec1,
Taipei, Taiwan R.O.C.
Tel:02-26594900
Fax:02-26594833

Data#: 14 File#: 10U13270_LC.EMI Date: 07-21-2010 Time: 19:23:30




(Audix ATC)

Trace: 12 Ref Trace:

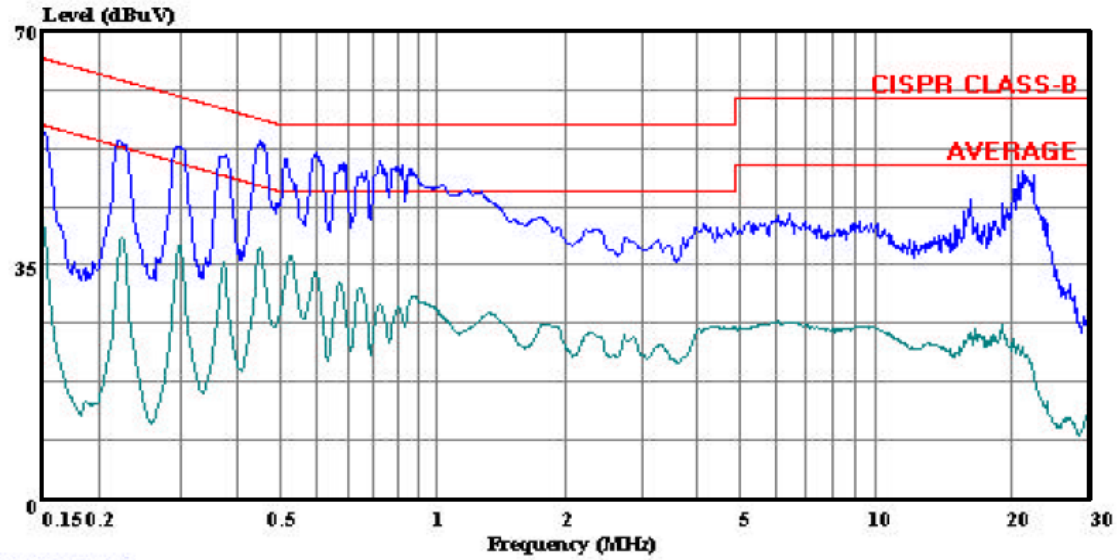
Condition: CISPR CLASS-B
Test Operator:: Mengistu Mekuria
Project #: : 10U13270
Company: : Palm
EUT: : Cell Phnoe, Headset, and AC Adapter
Mode: : Tx (Worst_Case) Mode
Target: : FCC Class B
Voltage/Freq: : 115VAC/60Hz
: Line 1:Peak(Blue), Average(Green)

**LINE 2 RESULTS**

COMPLIANCE Engineering Service, Inc.
FCC,VCCI,CISPR,CE
UL,CSA,TUV

7F #8 Ln120 Neihu Rd Sec1,
Taipei, Taiwan R.O.C.
Tel:02-26594900
Fax:02-26594833

Data#: 7 File#: 10U13270_LC.EMI Date: 07-21-2010 Time: 19:16:09




(Audix ATC)

Trace: 5 Ref Trace:

Condition: CISPR CLASS-B
Test Operator:: Mengistu Mekuria
Project #: : 10U13270
Company: : Palm
EUT: : Cell Phnoe, Headset, and AC Adapter
Mode: : Tx (Worst_Case) Mode
Target: : FCC Class B
Voltage/Freq: : 115VAC/60Hz
: Line 2: Peak (Blue), Average:(Green)