



# PCTEST ENGINEERING LABORATORY, INC.

6660-B Dobbin Road, Columbia, MD 21045 USA

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<http://www.pctestlab.com>



## CERTIFICATE OF COMPLIANCE FCC Part 22 & 24 Certification

**Applicant Name:**

Novatel Wireless Inc.  
9645 Scranton Road, Suite 205  
San Diego, CA 92121-3030  
United States

**Date of Testing:**

April 23-27, 2009

**Test Site/Location:**

PCTEST Lab., Columbia, MD, USA

**Test Report Serial No.:**

0903200546.NBZ

**FCC ID:**

NBZNRM-MIFI2372

**APPLICANT:**

NOVATEL WIRELESS INC.

**Application Type:**

Certification

**FCC Classification:**

PCS Licensed Transmitter (PCB)

**FCC Rule Part(s):**

§2; §22(H), §24(E)

**EUT Type:**

850/1900 GSM/WCDMA/GPRS/EDGE USB Modem with WLAN

**Model(s):**

NRM-MIFI2372

**Tx Frequency Range:**

824.20 - 848.80MHz (Cell. GSM) / 1850.20 - 1909.80MHz (PCS GSM)

826.40 - 846.60MHz (Cell. WCDMA) / 1852.4 - 1907.6MHz (PCS WCDMA)

**Max. RF Output Power:**

1.866 W ERP Cell. GSM (32.71 dBm) / 1.986 W EIRP PCS GSM (32.98 dBm)

0.199 W ERP Cell. WCDMA (22.99 dBm) / 0.412 W EIRP PCS WCDMA (26.15 dBm)

0.597 W ERP EDGE850 (27.76 dBm) / 0.855 W EIRP EDGE1900 (29.32 dBm)

**Emission**

246KGXW (Cellular GSM), 243KGXW (PCS GSM)

**Designator(s):**

240KG7W (EDGE850), 242KG7W (EDGE1900)

4M19F9W (Cellular WCDMA), 4M17F9W (PCS WCDMA)

**Test Device Serial No.:** *identical prototype* [S/N: N/A]

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in §2.947. Test results reported herein relate only to the item(s) tested.



I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

**Grant Conditions:** Power output listed is ERP for Part 22 and EIRP for Part 24. This device also contains functions that are not operational in U.S. territories. This report is applicable only to U.S. operations.

PCTEST certifies that no party to this application has been denied the FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. 862.



  
Randy Ortanez  
President



<b>FCC ID:</b> NBZNRM-MIFI2372		<b>FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CERTIFICATION)</b>		<b>Reviewed by:</b> Quality Manager
<b>Test Report S/N:</b> 0903200546.NBZ	<b>Test Dates:</b> April 23-27, 2009	<b>EUT Type:</b> 850/1900 GSM/WCDMA/GPRS/EDGE USB Modem with WLAN		Page 1 of 57

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## MEASUREMENT REPORT

### FCC Part 22 & 24



#### §2.1033 General Information



**APPLICANT:** Novatel Wireless Inc.  
**APPLICANT ADDRESS:** 9645 Scranton Road, Suite 205  
 San Diego, CA 92121-3030  
**TEST SITE:** PCTEST ENGINEERING LABORATORY, INC.  
**TEST SITE ADDRESS:** 6660-B Dobbin Road, Columbia, MD 21045 USA  
**FCC RULE PART(S):** §2; §22(H), §24(E)  
**BASE MODEL :** NRM-MIFI2372  
**FCC ID:** NBZNRM-MIFI2372  
**FCC CLASSIFICATION:** PCS Licensed Transmitter (PCB)  
**EMISSION DESIGNATOR(S):** 246KGXW (Cellular GSM), 243KGXW (PCS GSM)  
 240KG7W (EDGE850), 242KG7W (EDGE1900)  
 4M19F9W (Cellular WCDMA), 4M17F9W (PCS WCDMA)  
**MODE:** GSM/EDGE/WCDMA  
**FREQUENCY TOLERANCE:**  $\pm 0.00025\%$  (2.5 ppm)  
**Test Device Serial No.:** N/A ☐ Production ☒ Pre-Production ☐ Engineering  
**DATE(S) OF TEST:** April 23-27, 2009  
**TEST REPORT S/N:** 0903200546.NBZ

#### Test Facility / Accreditations

Measurements were performed at PCTEST Engineering Lab located in Columbia, MD 21045, U.S.A.



- PCTEST facility is an FCC registered (PCTEST Reg. No. 90864) test facility with the site description report on file and has met all the requirements specified in Section 2.948 of the FCC Rules and Industry Canada (2451A-1).
- PCTEST Lab is accredited to ISO 17025 by U.S. National Institute of Standards and Technology (NIST) under the National Voluntary Laboratory Accreditation Program (NVLAP Lab code: 100431-0) in EMC, FCC and Telecommunications.
- PCTEST Lab is accredited to ISO 17025:2005 by the American Association for Laboratory Accreditation (A2LA) in Specific Absorption Rate (SAR) testing, Hearing Aid Compatibility (HAC) testing, CTIA Test Plans, and wireless testing for FCC and Industry Canada Rules.
- PCTEST Lab is a recognized U.S. Conformity Assessment Body (CAB) in EMC and R&TTE (n.b. 0982) under the U.S.-EU Mutual Recognition Agreement (MRA).
- PCTEST TCB is a Telecommunication Certification Body (TCB) accredited to ISO/IEC Guide 65 by the American National Standards Institute (ANSI) in all scopes of FCC Rules and Industry Canada Standards (RSS).
- PCTEST facility is an IC registered (2451A-1) test laboratory with the site description on file at Industry Canada.
- PCTEST is a CTIA Authorized Test Laboratory (CATL) for AMPS, CDMA, and EvDO wireless devices and for Over-the-Air (OTA) Antenna Performance testing for AMPS, CDMA, GSM, GPRS, EGPRS, UMTS (W-CDMA), CDMA 1xEVDO, and CDMA 1xRTT.

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<b>Test Report S/N:</b> 0903200546.NBZ	<b>Test Dates:</b> April 23-27, 2009	<b>EUT Type:</b> 850/1900 GSM/WCDMA/GPRS/EDGE USB Modem with WLAN		Page 3 of 57

## 1.0 INTRODUCTION

### 1.1 Scope

Measurement and determination of electromagnetic emissions (EME) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission.

### 1.2 Testing Facility

The map below shows the location of the PCTEST LABORATORY, its proximity to the FCC Laboratory, the Columbia vicinity area, the Baltimore-Washington Intern't'l (BWI) airport, the city of Baltimore and the Washington, DC area. (See Figure 1-1).

These measurement tests were conducted at the PCTEST Engineering Laboratory, Inc. facility in New Concept Business Park, Guilford Industrial Park, Columbia, Maryland. The site address is 6660-B Dobbin Road, Columbia, MD 21045. The test site is one of the highest points in the Columbia area with an elevation of 390 feet above mean sea level. The site coordinates are 39° 11'15" N latitude and 76° 49'38" W longitude. The facility is 1.5 miles North of the FCC laboratory, and the ambient signal and ambient signal strength are approximately equal to those of the FCC laboratory. There are no FM or TV transmitters within 15 miles of the site. The detailed description of the measurement facility was found to be in compliance with the requirements of § 2.948 according to ANSI C63.4-2003 on January 27, 2006.

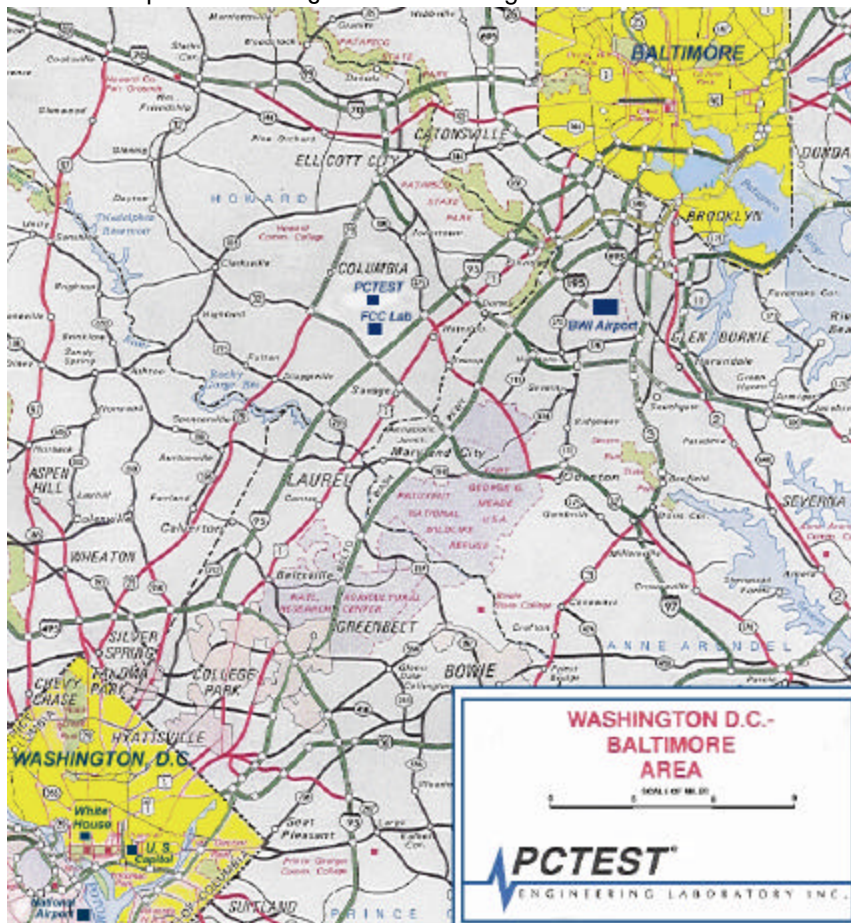


Figure 1-1. Map of the Greater Baltimore and Metropolitan Washington, D.C. area

FCC ID: NBZNRM-MIF12372	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CERTIFICATION)	<b>Reviewed by:</b> Quality Manager
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## 2.0 PRODUCT INFORMATION

### 2.1 Equipment Description

The Equipment Under Test (EUT) is the **Novatel 850/1900 GSM/WCDMA/GPRS/EDGE USB Modem with WLAN FCC ID: NBZNRM-MIFI2372**. The model NRM-MIFI2372 is under the same family of model NRM-MIFI2352. All of the testing on the MIFI2352 for GSM 850/1900 and for WCDMA 1900 for Part 22/24 is considered valid for MIFI2372. Testing in this report contains the additional results for Part 22 testing on the 850 WCDMA band. The EUT consisted of the following component(s):

Trade Name / Base Model	FCC ID	Description
Novatel / Model: NRM-MIFI2372	NBZNRM-MIFI2372	850/1900 GSM/WCDMA/GPRS/EDGE USB Modem with WLAN
Acer / Model: ZC1	N/A	TravelMate 8200 Series Notebook PC

Table 2-1. EUT Equipment Description

### 2.2 EMI Suppression Device(s)/Modifications

No EMI suppression device(s) were added and no modifications were made during testing.

### 2.3 Labeling Requirements

Per 2.925

The FCC identifier shall be permanently affixed to the equipment and shall be readily visible to the purchaser at the time of purchase.



Per 15.19; Docket 95-19

In addition to this requirement, a device subject to certification shall be labeled as follows:

*This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.*

The label shall be permanently affixed at a conspicuous location on the device; instruction manual or pamphlet supplied to the user and be readily visible to the purchaser at the time of purchase. However, when the device is so small wherein placement of the label with specified statement is not practical, only the trade name and FCC ID must be displayed on the device per Section 15.19(b)(2).

Please see attachment for FCC ID label and label location.

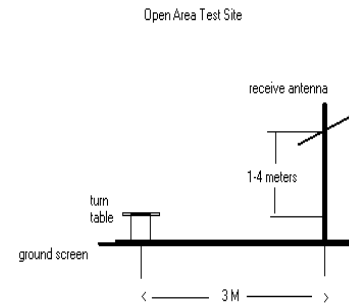
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## 3.0 DESCRIPTION OF TESTS

### 3.1 Measurement Procedure

The radiated spurious measurements were made outdoors at a 3-meter test range (See Figure 3-1). The equipment under test is placed on a wooden turntable 80 cm above the ground plane and 3-meters from the receive antenna. The receive antenna height and turntable rotations were adjusted for the highest reading on the receive spectrum analyzer. This power level was recorded using a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This level is recorded with the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic antenna are taken into consideration.



**Figure 3-1. Diagram of 3-meter outdoor test range**

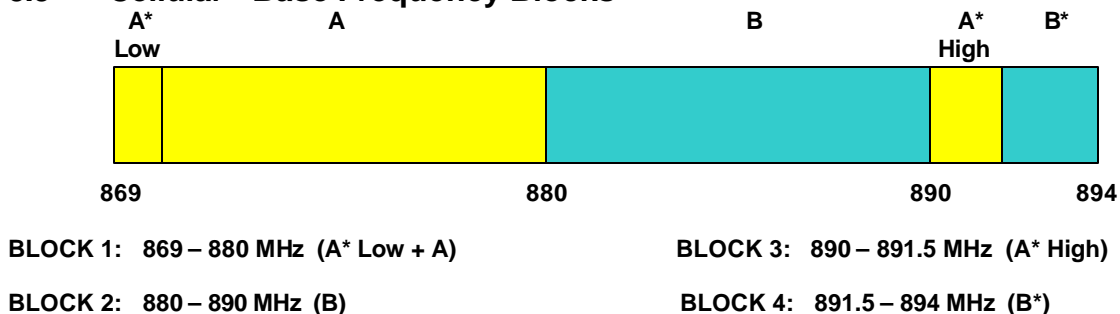
**Deviation from Measurement Procedure.....None**

### 3.2 Occupied Bandwidth Emission Limits

\$2.1049, 22.917(a), 24.238(a)

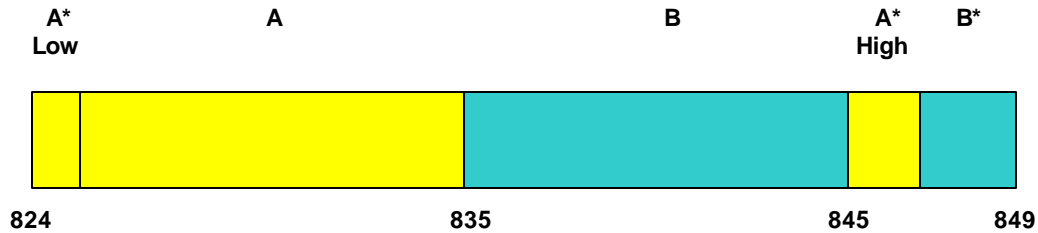
- On any frequency outside a licensee's frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least  $43 + 10 \log(P)$  dB.
- Compliance with these provisions is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emission are attenuated at least 26 dB below the transmitter power.
- When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the licensee's frequency block edges, both upper and lower, as the design permits.
- The measurement of emission power can be expressed in peak or average values, provided they are expressed in the same parameters as the transmitter power.

### 3.3 Cellular - Base Frequency Blocks



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### 3.4 Cellular - Mobile Frequency Blocks



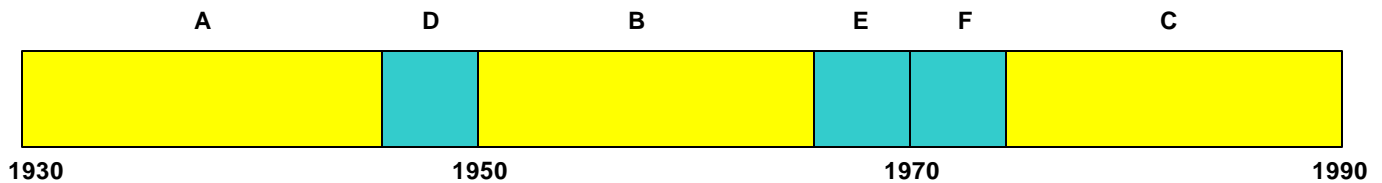
BLOCK 1: 824 – 835 MHz (A\* Low + A)

BLOCK 3: 845 – 846.5 MHz (A\* High)

BLOCK 2: 835 – 845 MHz (B)

BLOCK 4: 846.5 – 849 MHz (B\*)

### 3.5 PCS - Base Frequency Blocks



BLOCK 1: 1930 – 1945 MHz (A)

BLOCK 4: 1965 – 1970 MHz (E)

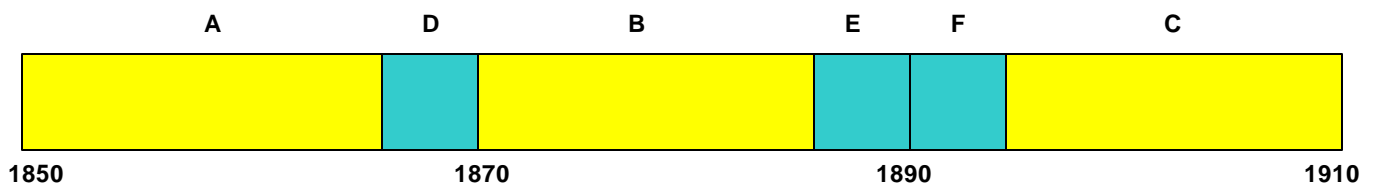
BLOCK 2: 1945 – 1950 MHz (D)

BLOCK 5: 1970 – 1975 MHz (F)

BLOCK 3: 1950 – 1965 MHz (B)

BLOCK 6: 1975 – 1990 MHz (C)

### 3.6 PCS - Mobile Frequency Blocks



BLOCK 1: 1850 – 1865 MHz (A)

BLOCK 4: 1885 – 1890 MHz (E)

BLOCK 2: 1865 – 1870 MHz (D)

BLOCK 5: 1890 – 1895 MHz (F)



BLOCK 3: 1870 – 1885 MHz (B)

BLOCK 6: 1895 – 1910 MHz (C)

### 3.7 Spurious and Harmonic Emissions at Antenna Terminal

§2.1051, 22.917(a), 24.238(a)

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10<sup>th</sup> harmonic.

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### 3.8 Radiated Spurious and Harmonic Emissions

§2.1053, 22.917(a), 24.238(a)

Spurious and harmonic radiated emissions are measured outdoors at our 3meter test range. The equipment under test is placed on a wooden turntable 3-meters from the receive antenna. The receive antenna height and turntable rotations were adjusted for the highest reading on the receive spectrum analyzer. This level is then measured with a broadband average power meter. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10<sup>th</sup> harmonic. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator with the level of the signal generator being adjusted to obtain the same receive average power meter reading. This spurious level is recorded with the power meter. For readings above 1 GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration. This device was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Active at 12.2 kbps RMC and TPC bits all set to "1" and in GSM mode and using a Power Control Level of "0" in the PCS Band and "5" in the Cellular Band.

### 3.9 Peak-Average Ratio

§24.232(d)

A peak to average ratio measurement is performed at the conducted port of the EUT. For CDMA and WCDMA signals, the spectrum analyzers Complementary Cumulative Distribution Function (CCDF) measurement profile is used to determine the largest deviation between the average and the peak power of the EUT in a given bandwidth. The CCDF curve shows how much time the peak waveform spends at or above a given average power level. The percent of time the signal spends at or above the level defines the probability for that particular power level. For GSM signals, an average and a peak trace are used on a spectrum analyzer to determine the largest deviation between the average and the peak power of the EUT in a bandwidth greater than the emission bandwidth.

### 3.10 Frequency Stability / Temperature Variation

§2.1055, 22.355, 24.235



The frequency stability of the transmitter is measured by:

- a.) **Temperature:** The temperature is varied from -30°C to +50°C in 10°C increments using an environmental chamber.
- b.) **Primary Supply Voltage:** The primary supply voltage is varied from 85% to 115% of the nominal value for non hand-carried battery equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

*Specification – The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. The frequency stability of the transmitter shall be maintained within  $\pm 0.00025\%$  ( $\pm 2.5$  ppm) of the center frequency.*

#### Time Period and Procedure:

1. The carrier frequency of the transmitter is measured at room temperature (20°C to provide a reference).
2. The equipment is turned on in a "standby" condition for one minute before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.
3. Frequency measurements are made at 10°C intervals ranging from -30°C to +50°C. A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

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## 4.0 TEST EQUIPMENT CALIBRATION DATA

Test Equipment Calibration is traceable to the National Institute of Standards and Technology (NIST).

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
-	263-10dB	(DC-18GHz) 10 dB Attenuator	N/A		N/A	N/A
-	No.165	(30MHz - 1000MHz) RG58 Coax Cable	N/A		N/A	N/A
-	No.166	(1000-26500MHz) Microwave RF Cable	N/A		N/A	N/A
-	No.167	(100kHz - 100MHz) RG58 Coax Cable	N/A		N/A	N/A
Aqilent	11713A	Attenuation/Switch Driver	12/4/2008	Annual	12/4/2009	3439A02645
Aqilent	8449B	(1-26.5GHz) Pre-Amplifier	12/4/2008	Annual	12/4/2009	3008A00985
Aqilent	8495A	(0-70dB) DC-4GHz Attenuator	N/A		N/A	N/A
Aqilent	85650A	Quasi-Peak Adapter	12/4/2008	Annual	12/4/2009	3303A01872
Aqilent	85650A	Quasi-Peak Adapter	3/24/2009	Annual	3/24/2010	2043A00301
Aqilent	8566B	(100Hz-22GHz) Spectrum Analyzer	12/5/2008	Annual	12/5/2009	3638A08713
Aqilent	8591A	(9kHz-1.8GHz) Spectrum Analyzer	8/19/2008	Annual	8/19/2009	3144A02458
Aqilent	8648D	(9kHz-4GHz) Signal Generator	10/11/2007	Biennial	10/11/2009	3613A00315
Aqilent	8901A	Modulation Analyzer	8/18/2008	Annual	8/18/2009	2432A03467
Aqilent	8903B	Audio Analyzer	8/18/2008	Annual	8/18/2009	3011A09025
Aqilent	E4407B	ESA Spectrum Analyzer	3/24/2009	Annual	3/24/2010	US39210313
Aqilent	E4432B	ESG-D Series Signal Generator	8/18/2008	Annual	8/18/2009	US40053896
Aqilent	E4448A	PSA (3Hz-50GHz) Spectrum Analyzer	12/5/2008	Annual	12/5/2009	US42510244
Aqilent	E5515C	Wireless Communications Test Set	6/8/2007	Biennial	6/8/2009	GB46110872
Aqilent	E5515C	Wireless Communications Test Set	6/8/2007	Biennial	6/8/2009	GB46310798
Aqilent	E5515C	Wireless Communications Test Set	9/10/2008	Biennial	9/10/2010	GB41450275
Aqilent	E8257D	(250kHz-20GHz) Signal Generator	3/25/2009	Biennial	3/25/2011	MY45470194
Aqilent	E8267C	Vector Signal Generator	11/15/2007	Biennial	11/15/2009	US42340152
Aqilent	N9020A	MXA Signal Analyzer	9/17/2008	Annual	9/17/2009	US46470561
Compliance Design	Roberts	Dipole Set	11/9/2007	Biennial	11/9/2009	146
Compliance Design	Roberts	Dipole Set	11/9/2007	Biennial	11/9/2009	147
Emco	3115	Horn Antenna (1-18GHz)	9/24/2007	Biennial	9/24/2009	9704-5182
Emco	3115	Horn Antenna (1-18GHz)	10/4/2007	Biennial	10/4/2009	9205-3874
Espec	ESX-2CA	Environmental Chamber	3/20/2009	Annual	3/20/2010	17620
Gigatronics	80701A	(0.05-18GHz) Power Sensor	8/18/2008	Annual	8/18/2009	1833460
Gigatronics	8651A	Universal Power Meter	8/18/2008	Annual	8/18/2009	1835299
Gigatronics	8651A	Universal Power Meter	8/18/2008	Annual	8/18/2009	8650319
K & L	11SH10	Band Pass Filter	N/A	Annual	N/A	1300/4000
K & L	11SH10	Band Pass Filter	N/A	Annual	N/A	4000/12000
MiniCircuits	VHF-1300+	High Pass Filter	N/A		N/A	30716
MiniCircuits	VHF-3100+	High Pass Filter	N/A		N/A	30721
Pasternack	PE2208-6	Bidirectional Coupler	N/A		N/A	N/A
Rohde & Schwarz	CMU200	Base Station Simulator	5/29/2008	Annual	5/29/2009	836371/0079
Rohde & Schwarz	CMU200	Base Station Simulator	7/23/2008	Annual	7/23/2009	109892
Rohde & Schwarz	NRVD	Dual Channel Power Meter	8/20/2008	Biennial	8/20/2010	101695
Rohde & Schwarz	NRVS	Single Channel Power Meter	7/3/2007	Biennial	7/3/2009	835360/0079
Rohde & Schwarz	NRV-Z32	Peak Power Sensor (100uW-2W)	12/5/2008	Biennial	12/5/2010	100155
Rohde & Schwarz	NRV-Z33	Peak Power Sensor (1mW-20W)	12/5/2008	Biennial	12/5/2010	100004
Rohde & Schwarz	NRV-Z53	Power Sensor	7/3/2007	Biennial	7/3/2009	846076/0007
Schwarzbeck	UHA9105	Dipole Antenna (400 - 1GHz) Rx	6/19/2007	Biennial	6/18/2009	9105-2404
Schwarzbeck	UHA9105	Dipole Antenna (400 - 1GHz) Tx	6/19/2007	Biennial	6/18/2009	9105-2403
Solar Electronics	8012-50-R-24-BNC	LISN	11/8/2007	Biennial	11/8/2009	310233
Sunol	DRH-118	Horn Antenna (1 - 18GHz)	5/9/2007	Biennial	5/9/2009	A050307
Rohde & Schwarz	CMU200	Base Station Simulator	3/11/2009	Annual	3/11/2010	836536/0005

Table 4-1. Test Equipment

FCC ID: NBZNR-MIFI2372		FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0903200546.NBZ	Test Dates: April 23-27, 2009	EUT Type: 850/1900 GSM/WCDMA/GPRS/EDGE USB Modem with WLAN		Page 9 of 57

## 5.0 SAMPLE CALCULATIONS

### GSM Emission Designator

**Emission Designator = 250KGXW**

GSM BW = 250 kHz

G = Phase Modulation

X = Cases not otherwise covered

W = Combination (Audio/Data)

### WCDMA Emission Designator

**Emission Designator = 4M16F9W**

WCDMA BW = 4.16 MHz

F = Frequency Modulation



9 = Composite Digital Info

W = Combination (Audio/Data) (Measured at the 99.75% power bandwidth)

### Spurious Radiated Emission - PCS Band

**Example: GSM Channel 512 PCS Mode 2<sup>nd</sup> Harmonic (3700.40 MHz)**

The average receive power meter reading at 3 meters with the EUT on the turntable was -81.0 dBm. The gain of the substituted antenna is 8.1 dBi. The signal generator connected to the substituted antenna terminals is adjusted to produce a reading of -81.0 dBm on the power meter. The loss of the cable between the signal generator and the terminals of the substituted antenna is 2.0 dB at 3700.40 MHz. So 6.1 dB is added to the power meter reading of -30.9 dBm yielding -24.80 dBm. The fundamental EIRP was 25.501 dBm so this harmonic was 25.501 dBm - (-24.80) = 50.3 dBc.

FCC ID: NBZNRM-MIFI2372		FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CERTIFICATION)	 Reviewed by: Quality Manager
Test Report S/N: 0903200546.NBZ	Test Dates: April 23-27, 2009	EUT Type: 850/1900 GSM/WCDMA/GPRS/EDGE USB Modem with WLAN	Page 10 of 57



## 6.0 TEST RESULTS

### 6.1 Summary

Company Name: Novatel Wireless Inc.  
 FCC ID: NBZNR-MIFI2372  
 FCC Classification: PCS Licensed Transmitter (PCB)  
 Mode(s): GSM/EDGE/WCDMA

FCC Part Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
TRANSMITTER MODE (TX)					
2.1049, 22.917(a), 24.238(a)	Occupied Bandwidth	N/A	CONDUCTED	PASS	Section 7.0
2.1051, 22.917(a), 24.238(a)	Band Edge / Conducted Spurious Emissions	< 43 + log <sub>10</sub> (P[Watts]) at Band Edge and for all out-of-band emissions		PASS	Section 7.0
24.232(d)	Peak-Average Ratio	< 13 dB		PASS	Section 7.0
2.1046	Transmitter Conducted Output Power	N/A		PASS	MPE Report
22.913(a)(2)	Effective Radiated Power	< 7 Watts max. ERP (<6.3 Watts max. ERP (IC))	RADIATED	PASS	Section 6.2
24.232(c)	Equivalent Isotropic Radiated Power	< 2 Watts max. EIRP		PASS	Section 6.3
2.1053, 22.917(a), 24.238(a)	Undesirable Emissions	< 43 + log <sub>10</sub> (P[Watts]) for all out-of-band emissions		PASS	Sections 6.4, 6.5, 6.6, 6.7
2.1055, 22.355, 24.235	Frequency Stability	< 2.5 ppm		PASS	Sections 6.8, 6.9, 6.10, 6.11
RECEIVER MODE (RX) / DIGITAL EMISSIONS					
15.107	AC Conducted Emissions 150kHz – 30MHz	< FCC 15.107 limits	LINE CONDUCTED	PASS	Pt. 15B Test Report
15.109	General Field Strength Limits (Restricted Bands and Radiated Emissions Limits)	< FCC 15.109 limits	RADIATED (30MHz-1GHz) (1-25 GHz)	PASS	Pt. 15B Test Report
RF EXPOSURE (SAR)					
2.1091 / 2.1093	MPE Test	1 mW/cm² (MPE Limit) @ 20 cm	MPE	PASS	MPE Report

**Table 6-1. Summary of Test Results**

FCC ID: NBZNR-MIFI2372		FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0903200546.NBZ	Test Dates: April 23-27, 2009	EUT Type: 850/1900 GSM/WCDMA/GPRS/EDGE USB Modem with WLAN	Page 11 of 57	

## 6.2 Effective Radiated Power Output Data

### §22.913(a)(2)

#### POWER: PCL "5" (Cellular GSM Mode)

Frequency [MHz]	Mode	Measured Level [dBm]	Substitute Level [dBm]	Antenna Gain [dBd]	Pol [H/V]	ERP [dBm]	ERP [Watts]	Battery Type
824.20	GSM850	-9.400	30.52	0.00	V	30.52	1.127	Standard
836.60	GSM850	-7.210	32.71	0.00	V	32.71	1.866	Standard
848.80	GSM850	-7.640	32.28	0.00	V	32.28	1.690	Standard
836.60	EDGE850	-12.160	27.76	0.00	V	27.76	0.597	Standard

Table 6-2. Effective Radiated Power Output Data (GSM)

#### POWER: All "1" bits (Cellular WCDMA Mode)

Frequency [MHz]	Mode	Measured Level [dBm]	Substitute Level [dBm]	Antenna Gain [dBd]	Pol [H/V]	ERP [dBm]	ERP [Watts]	Battery Type
826.40	WCDMA850	-18.220	21.98	0.00	V	21.98	0.158	Standard
836.60	WCDMA850	-17.720	22.48	0.00	V	22.48	0.177	Standard
846.60	WCDMA850	-17.210	22.99	0.00	V	22.99	0.199	Standard



Table 6-3. Effective Radiated Power Output Data (WCDMA)

#### NOTES:

Effective Radiated Power Output Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80 cm above the ground plane and 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This level is recorded using the power meter. The conducted power at the terminals of the dipole is measured. The ERP is recorded.

This device was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Active at 12.2 kbps RMC and TPC bits all set to "1" and in GSM mode and using a Power Control Level of "0" in the PCS Band and "5" in the Cellular Band. This unit was tested with its standard battery.

FCC ID: NBZNR-MIFI2372		FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0903200546.NBZ	Test Dates: April 23-27, 2009	EUT Type: 850/1900 GSM/WCDMA/GPRS/EDGE USB Modem with WLAN		Page 12 of 57

### 6.3 Equivalent Isotropic Radiated Power Output Data

§24.232(c)

#### POWER: PCL "0" (PCS GSM Mode)

Frequency [MHz]	Mode	Measured Level [dBm]	Substitute Level [dBm]	Antenna Gain [dBi]	Pol [H/V]	EIRP [dBm]	EIRP [Watts]	Battery Type
1850.20	GSM1900	-10.260	24.98	8.00	V	32.98	1.986	Standard
1880.00	GSM1900	-10.800	24.44	8.00	V	32.44	1.754	Standard
1909.80	GSM1900	-12.730	22.51	8.00	V	30.51	1.125	Standard
1850.20	EDGE1900	-13.920	21.32	8.00	V	29.32	0.855	Standard

Table 6-4. Equivalent Isotropic Radiated Power Output Data (GSM)

#### POWER: All "1" bits (PCS WCDMA Mode)

Frequency [MHz]	Mode	Measured Level [dBm]	Substitute Level [dBm]	Antenna Gain [dBi]	Pol [H/V]	EIRP [dBm]	EIRP [Watts]	Battery Type
1852.40	WCDMA1900	-17.090	18.15	8.00	V	26.15	0.412	Standard
1880.00	WCDMA1900	-18.720	16.52	8.00	V	24.52	0.283	Standard
1907.60	WCDMA1900	-19.270	15.97	8.00	V	23.97	0.249	Standard



Table 6-5. Equivalent Isotropic Radiated Power Output Data (WCDMA)

#### NOTES:

Equivalent Isotropic Radiated Power Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80 cm above the ground plane and 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A Horn antenna was substituted in place of the EUT. This Horn antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This level is recorded using the power meter. The conducted power at the terminals of the Horn antenna is measured. The difference between the gain of the horn and an isotropic antenna is taken into consideration and the EIRP is recorded.

This device was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Active at 12.2 kbps RMC and TPC bits all set to "1" and in GSM mode and using a Power Control Level of "0" in the PCS Band and "5" in the Cellular Band. This unit was tested with its standard battery.

FCC ID: NBZNR-MIFI2372		FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0903200546.NBZ	Test Dates: April 23-27, 2009	EUT Type: 850/1900 GSM/WCDMA/GPRS/EDGE USB Modem with WLAN		Page 13 of 57



## 6.4 Cellular GSM Radiated Measurements

§2.1053, 22.917(a)

### Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 824.20 MHz  
 CHANNEL: 128  
 MEASURED OUTPUT POWER: 32.710 dBm = 1.866 W  
 MODULATION SIGNAL: GSM (Internal)  
 DISTANCE: 3 meters  
 LIMIT:  $43 + 10 \log_{10}(W) =$  45.71 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
1648.40	-44.48	6.08	-38.40	V	71.1
2472.60	-44.64	6.53	-38.11	V	70.8
3296.80	-44.62	6.87	-37.75	V	70.5
4121.00	-50.15	7.21	-42.94	V	75.7
4945.20	-50.53	8.37	-42.16	V	74.9



**Table 6-6. Radiated Spurious Data (Cellular GSM Mode – Ch. 128)**

#### NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80 cm above the ground plane and 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Active at 12.2 kbps RMC and TPC bits all set to "1" and in GSM mode and using a Power Control Level of "0" in the PCS Band and "5" in the Cellular Band. This unit was tested with its standard battery.

FCC ID: NBZNR-MIFI2372		FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0903200546.NBZ	Test Dates: April 23-27, 2009	EUT Type: 850/1900 GSM/WCDMA/GPRS/EDGE USB Modem with WLAN		Page 14 of 57

## Cellular GSM Radiated Measurements (Cont'd)

§2.1053, 22.917(a)

### Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 836.60 MHz  
 CHANNEL: 190  
 MEASURED OUTPUT POWER: 32.710 dBm = 1.866 W  
 MODULATION SIGNAL: GSM (Internal)  
 DISTANCE: 3 meters  
 LIMIT:  $43 + 10 \log_{10} (W) =$  45.71 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
1673.20	-46.50	6.09	-40.41	V	73.1
2509.80	-42.77	6.55	-36.21	V	68.9
3346.40	-43.94	6.89	-37.04	V	69.8
4183.00	-51.04	7.43	-43.61	V	76.3
5019.60	-48.13	8.35	-39.78	V	72.5



**Table 6-7. Radiated Spurious Data (Cellular GSM Mode – Ch. 190)**

#### NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80 cm above the ground plane and 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Active at 12.2 kbps RMC and TPC bits all set to "1" and in GSM mode and using a Power Control Level of "0" in the PCS Band and "5" in the Cellular Band. This unit was tested with its standard battery.

FCC ID: NBZNR-MIFI2372		FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0903200546.NBZ	Test Dates: April 23-27, 2009	EUT Type: 850/1900 GSM/WCDMA/GPRS/EDGE USB Modem with WLAN		Page 15 of 57

## Cellular GSM Radiated Measurements (Cont'd)

§2.1053, 22.917(a)

### Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 848.80 MHz  
 CHANNEL: 251  
 MEASURED OUTPUT POWER: 32.710 dBm = 1.866 W  
 MODULATION SIGNAL: GSM (Internal)  
 DISTANCE: 3 meters  
 LIMIT:  $43 + 10 \log_{10} (W) =$  45.71 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
1697.60	-45.88	6.09	-39.78	V	72.5
2546.40	-44.02	6.57	-37.45	V	70.2
3395.20	-43.60	6.91	-36.69	V	69.4
4244.00	-48.83	7.65	-41.18	V	73.9
5092.80	-48.95	8.33	-40.62	V	73.3



**Table 6-8. Radiated Spurious Data (Cellular GSM Mode – Ch. 251)**

#### NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80 cm above the ground plane and 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Active at 12.2 kbps RMC and TPC bits all set to "1" and in GSM mode and using a Power Control Level of "0" in the PCS Band and "5" in the Cellular Band. This unit was tested with its standard battery.

FCC ID: NBZNR-MIFI2372		FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0903200546.NBZ	Test Dates: April 23-27, 2009	EUT Type: 850/1900 GSM/WCDMA/GPRS/EDGE USB Modem with WLAN		Page 16 of 57

## 6.5 Cellular WCDMA Radiated Measurements

### §2.1053, 22.917(a)

#### Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 826.40 MHz  
 CHANNEL: 4132  
 MEASURED OUTPUT POWER: 22.990 dBm = 0.199 W  
 MODULATION SIGNAL: WCDMA (Internal)  
 DISTANCE: 3 meters  
 LIMIT:  $43 + 10 \log_{10} (W) =$  35.99 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
1652.80	-61.56	6.08	-55.48	H	78.5
2479.20	-55.25	6.54	-48.72	H	71.7
3305.60	-97.94	6.88	-91.06	H	114.1
4132.00	-96.31	7.25	-89.07	H	112.1
4958.40	-95.87	8.37	-87.50	H	110.5



**Table 6-9. Radiated Spurious Data (Cellular WCDMA Mode – Ch. 4132)**

#### NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80 cm above the ground plane and 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Active at 12.2 kbps RMC and TPC bits all set to "1" and in GSM mode and using a Power Control Level of "0" in the PCS Band and "5" in the Cellular Band. This unit was tested with its standard battery.

FCC ID: NBZNR-MIFI2372		FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0903200546.NBZ	Test Dates: April 23-27, 2009	EUT Type: 850/1900 GSM/WCDMA/GPRS/EDGE USB Modem with WLAN		Page 17 of 57

## Cellular WCDMA Radiated Measurements (Cont'd)

§2.1053, 22.917(a)

### Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 836.60 MHz  
 CHANNEL: 4183  
 MEASURED OUTPUT POWER: 22.990 dBm = 0.199 W  
 MODULATION SIGNAL: WCDMA (Internal)  
 DISTANCE: 3 meters  
 LIMIT:  $43 + 10 \log_{10} (W) =$  35.99 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
1673.20	-57.48	6.09	-51.40	H	74.4
2509.80	-54.44	6.55	-47.89	H	70.9
3346.40	-97.87	6.89	-90.98	H	114.0
4183.00	-96.48	7.40	-89.08	H	112.1
5019.60	-95.67	8.35	-87.32	H	110.3



Table 6-10. Radiated Spurious Data (Cellular WCDMA Mode – Ch. 4183)

#### NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80 cm above the ground plane and 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Active at 12.2 kbps RMC and TPC bits all set to "1" and in GSM mode and using a Power Control Level of "0" in the PCS Band and "5" in the Cellular Band. This unit was tested with its standard battery.

FCC ID: NBZNRM-MIFI2372		FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0903200546.NBZ	Test Dates: April 23-27, 2009	EUT Type: 850/1900 GSM/WCDMA/GPRS/EDGE USB Modem with WLAN		Page 18 of 57



## Cellular WCDMA Radiated Measurements (Cont'd)

§2.1053, 22.917(a)

### Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 846.60 MHz  
 CHANNEL: 4233  
 MEASURED OUTPUT POWER: 22.990 dBm = 0.199 W  
 MODULATION SIGNAL: WCDMA (Internal)  
 DISTANCE: 3 meters  
 LIMIT:  $43 + 10 \log_{10} (W) =$  35.99 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
1693.20	-60.68	6.09	-54.59	H	77.6
2539.80	-54.12	6.57	-47.56	H	70.5
3386.40	-97.78	6.91	-90.87	H	113.9
4233.00	-96.71	7.62	-89.10	H	112.1
5079.60	-95.38	8.33	-87.05	H	110.0



Table 6-11. Radiated Spurious Data (Cellular WCDMA Mode – Ch. 4233)

#### NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80 cm above the ground plane and 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Active at 12.2 kbps RMC and TPC bits all set to "1" and in GSM mode and using a Power Control Level of "0" in the PCS Band and "5" in the Cellular Band. This unit was tested with its standard battery.

FCC ID: NBZNR-MIFI2372		FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0903200546.NBZ	Test Dates: April 23-27, 2009	EUT Type: 850/1900 GSM/WCDMA/GPRS/EDGE USB Modem with WLAN		Page 19 of 57

## 6.6 PCS GSM Radiated Measurements

### §2.1053, 24.238(a)

#### Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 1850.20 MHz  
 CHANNEL: 512  
 MEASURED OUTPUT POWER: 32.980 dBm = 1.986 W  
 MODULATION SIGNAL: GSM (Internal)  
 DISTANCE: 3 meters  
 LIMIT:  $43 + 10 \log_{10} (W) =$  45.98 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
3700.40	-51.94	9.02	-42.92	V	75.9
5550.60	-49.81	10.40	-39.41	V	72.4
7400.80	-48.09	10.50	-37.59	V	70.6
9251.00	-41.35	11.85	-29.51	V	62.5
11101.20	-38.76	12.76	-26.00	V	59.0



**Table 6-12. Radiated Spurious Data (PCS GSM Mode – Ch. 512)**

#### NOTES:

Radiated Spurious Emission Measurements by Substitution Method  
according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80 cm above the ground plane and 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Active at 12.2 kbps RMC and TPC bits all set to "1" and in GSM mode and using a Power Control Level of "0" in the PCS Band and "5" in the Cellular Band. This unit was tested with its standard battery.

FCC ID: NBZNR-MIFI2372		FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0903200546.NBZ	Test Dates: April 23-27, 2009	EUT Type: 850/1900 GSM/WCDMA/GPRS/EDGE USB Modem with WLAN		Page 20 of 57

## PCS GSM Radiated Measurements (Cont'd)

§2.1053, 24.238(a)

### Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 1880.00 MHz  
 CHANNEL: 661  
 MEASURED OUTPUT POWER: 32.980 dBm = 1.986 W  
 MODULATION SIGNAL: GSM (Internal)  
 DISTANCE: 3 meters  
 LIMIT:  $43 + 10 \log_{10}(W) =$  45.98 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
3760.00	-48.63	8.99	-39.64	V	72.6
5640.00	-49.64	10.40	-39.24	V	72.2
7520.00	-47.34	10.62	-36.72	V	69.7
9400.00	-41.54	11.70	-29.84	V	62.8
11280.00	-38.80	12.69	-26.11	V	59.1



Table 6-13. Radiated Spurious Data (PCS GSM Mode – Ch. 661)

#### NOTES:

Radiated Spurious Emission Measurements by Substitution Method  
 according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80 cm above the ground plane and 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Active at 12.2 kbps RMC and TPC bits all set to "1" and in GSM mode and using a Power Control Level of "0" in the PCS Band and "5" in the Cellular Band. This unit was tested with its standard battery.

FCC ID: NBZNR-MIFI2372		FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0903200546.NBZ	Test Dates: April 23-27, 2009	EUT Type: 850/1900 GSM/WCDMA/GPRS/EDGE USB Modem with WLAN		Page 21 of 57

## PCS GSM Radiated Measurements (Cont'd)

§2.1053, 24.238(a)

### Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 1909.80 MHz  
 CHANNEL: 810  
 MEASURED OUTPUT POWER: 32.980 dBm = 1.986 W  
 MODULATION SIGNAL: GSM (Internal)  
 DISTANCE: 3 meters  
 LIMIT:  $43 + 10 \log_{10} (W) =$  45.98 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
3819.60	-48.83	8.97	-39.86	V	72.8
5729.40	-50.46	10.40	-40.06	V	73.0
7639.20	-46.77	10.71	-36.05	V	69.0
9549.00	-43.35	11.64	-31.71	V	64.7
11458.80	-37.70	12.62	-25.08	V	58.1



Table 6-14. Radiated Spurious Data (PCS GSM Mode – Ch. 810)

#### NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80 cm above the ground plane and 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Active at 12.2 kbps RMC and TPC bits all set to "1" and in GSM mode and using a Power Control Level of "0" in the PCS Band and "5" in the Cellular Band. This unit was tested with its standard battery.

FCC ID: NBZNR-MIFI2372		FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0903200546.NBZ	Test Dates: April 23-27, 2009	EUT Type: 850/1900 GSM/WCDMA/GPRS/EDGE USB Modem with WLAN		Page 22 of 57

## 6.7 PCS WCDMA Radiated Measurements

### §2.1053, 24.238(a)

#### Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 1852.40 MHz  
 CHANNEL: 9262  
 MEASURED OUTPUT POWER: 26.150 dBm = 0.412 W  
 MODULATION SIGNAL: WCDMA (Internal)  
 DISTANCE: 3 meters  
 LIMIT:  $43 + 10 \log_{10} (W) =$  39.15 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
3704.80	-63.57	9.01	-54.56	V	80.7
5557.20	-62.59	10.40	-52.19	V	78.3
7409.60	-61.64	10.51	-51.13	V	77.3
9262.00	-55.78	11.83	-43.95	V	70.1
11114.40	-52.95	12.75	-40.20	V	66.3



**Table 6-15. Radiated Spurious Data (PCS WCDMA Mode – Ch. 9262)**

#### NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80 cm above the ground plane and 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Active at 12.2 kbps RMC and TPC bits all set to "1" and in GSM mode and using a Power Control Level of "0" in the PCS Band and "5" in the Cellular Band. This unit was tested with its standard battery.

FCC ID: NBZNR-MIFI2372		FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0903200546.NBZ	Test Dates: April 23-27, 2009	EUT Type: 850/1900 GSM/WCDMA/GPRS/EDGE USB Modem with WLAN		Page 23 of 57



## PCS WCDMA Radiated Measurements (Cont'd)

§2.1053, 24.238(a)

### Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 1880.00 MHz  
 CHANNEL: 9400  
 MEASURED OUTPUT POWER: 26.150 dBm = 0.412 W  
 MODULATION SIGNAL: WCDMA (Internal)  
 DISTANCE: 3 meters  
 LIMIT:  $43 + 10 \log_{10} (W) =$  39.15 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
3760.00	-66.23	8.99	-57.24	V	83.4
5640.00	-63.74	10.40	-53.34	V	79.5
7520.00	-59.14	10.62	-48.52	V	74.7
9400.00	-55.29	11.70	-43.59	V	69.7
11280.00	-53.05	12.69	-40.36	V	66.5



Table 6-16. Radiated Spurious Data (PCS WCDMA Mode – Ch. 9400)

#### NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80 cm above the ground plane and 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Active at 12.2 kbps RMC and TPC bits all set to "1" and in GSM mode and using a Power Control Level of "0" in the PCS Band and "5" in the Cellular Band. This unit was tested with its standard battery.

FCC ID: NBZNR-MIFI2372		FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0903200546.NBZ	Test Dates: April 23-27, 2009	EUT Type: 850/1900 GSM/WCDMA/GPRS/EDGE USB Modem with WLAN		Page 24 of 57

## PCS WCDMA Radiated Measurements (Cont'd)

§2.1053, 24.238(a)

### Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 1907.60 MHz  
 CHANNEL: 9538  
 MEASURED OUTPUT POWER: 26.150 dBm = 0.412 W  
 MODULATION SIGNAL: WCDMA (Internal)  
 DISTANCE: 3 meters  
 LIMIT:  $43 + 10 \log_{10} (W) =$  39.15 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
3815.20	-65.65	8.97	-56.67	V	82.8
5722.80	-63.49	10.40	-53.09	V	79.2
7630.40	-58.79	10.71	-48.08	V	74.2
9538.00	-55.11	11.63	-43.48	V	69.6
11445.60	-51.80	12.62	-39.18	V	65.3



Table 6-17. Radiated Spurious Data (PCS WCDMA Mode – Ch. 9538)

#### NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80 cm above the ground plane and 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Active at 12.2 kbps RMC and TPC bits all set to "1" and in GSM mode and using a Power Control Level of "0" in the PCS Band and "5" in the Cellular Band. This unit was tested with its standard battery.

FCC ID: NBZNR-MIF12372		FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0903200546.NBZ	Test Dates: April 23-27, 2009	EUT Type: 850/1900 GSM/WCDMA/GPRS/EDGE USB Modem with WLAN		Page 25 of 57

## 6.8 Cellular GSM Frequency Stability Measurements

§2.1055, 22.355

OPERATING FREQUENCY: 836,600,000 Hz



CHANNEL: 190

REFERENCE VOLTAGE: 3.7 VDC

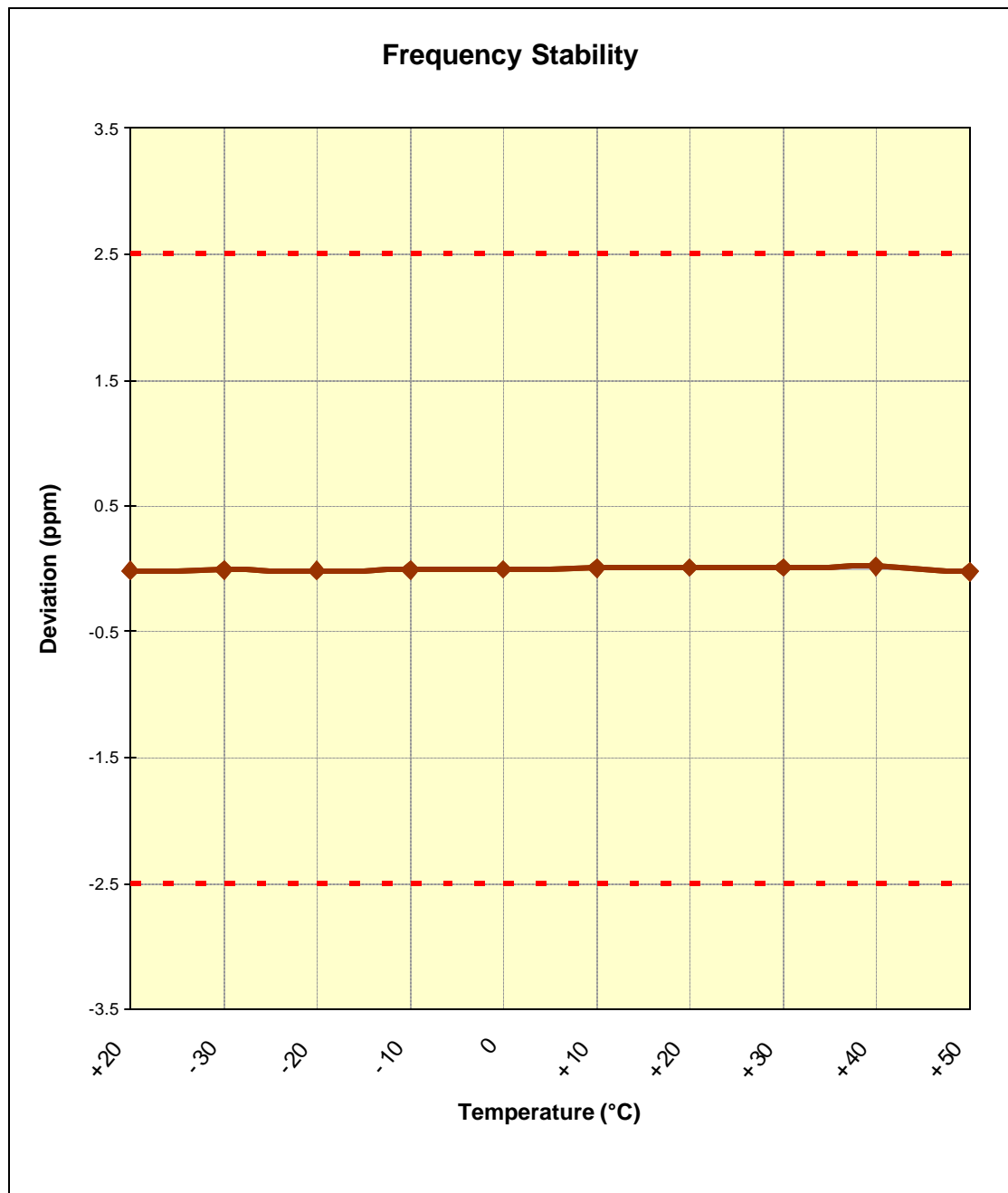
DEVIATION LIMIT: ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.70	+ 20 (Ref)	836,599,987	-13	-0.000002
100 %		- 30	836,599,994	-6	-0.000001
100 %		- 20	836,599,986	-14	-0.000002
100 %		- 10	836,599,996	-4	0.000000
100 %		0	836,599,997	-3	0.000000
100 %		+ 10	836,600,005	5	0.000001
100 %		+ 20	836,600,008	8	0.000001
100 %		+ 30	836,600,010	10	0.000001
100 %		+ 40	836,600,016	16	0.000002
100 %		+ 50	836,599,981	-19	-0.000002
115 %	4.26	+ 20	836,599,995	-5	-0.000001
BATT. ENDPOINT	3.41	+ 20	836,599,998	-2	0.000000

**Table 6-18. Frequency Stability Data (Cellular GSM Mode – Ch. 190)**

FCC ID: NBZNR-MIFI2372		FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0903200546.NBZ	Test Dates: April 23-27, 2009	EUT Type: 850/1900 GSM/WCDMA/GPRS/EDGE USB Modem with WLAN	Page 26 of 57	

**Cellular GSM Frequency Stability Measurements (Cont'd)**  
**§2.1055, 22.355**



**Plot 6-1. Frequency Stability Graph (Cellular GSM Mode – Ch. 190)**

FCC ID: NBZNR-MIFI2372		FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0903200546.NBZ	Test Dates: April 23-27, 2009	EUT Type: 850/1900 GSM/WCDMA/GPRS/EDGE USB Modem with WLAN		Page 27 of 57

## 6.9 Cellular WCDMA Frequency Stability Measurements

### §2.1055, 22.355

OPERATING FREQUENCY: 836,600,000 Hz



CHANNEL: 4183

REFERENCE VOLTAGE: 3.7 VDC

DEVIATION LIMIT: ± 0.00025 % or 2.5 ppm

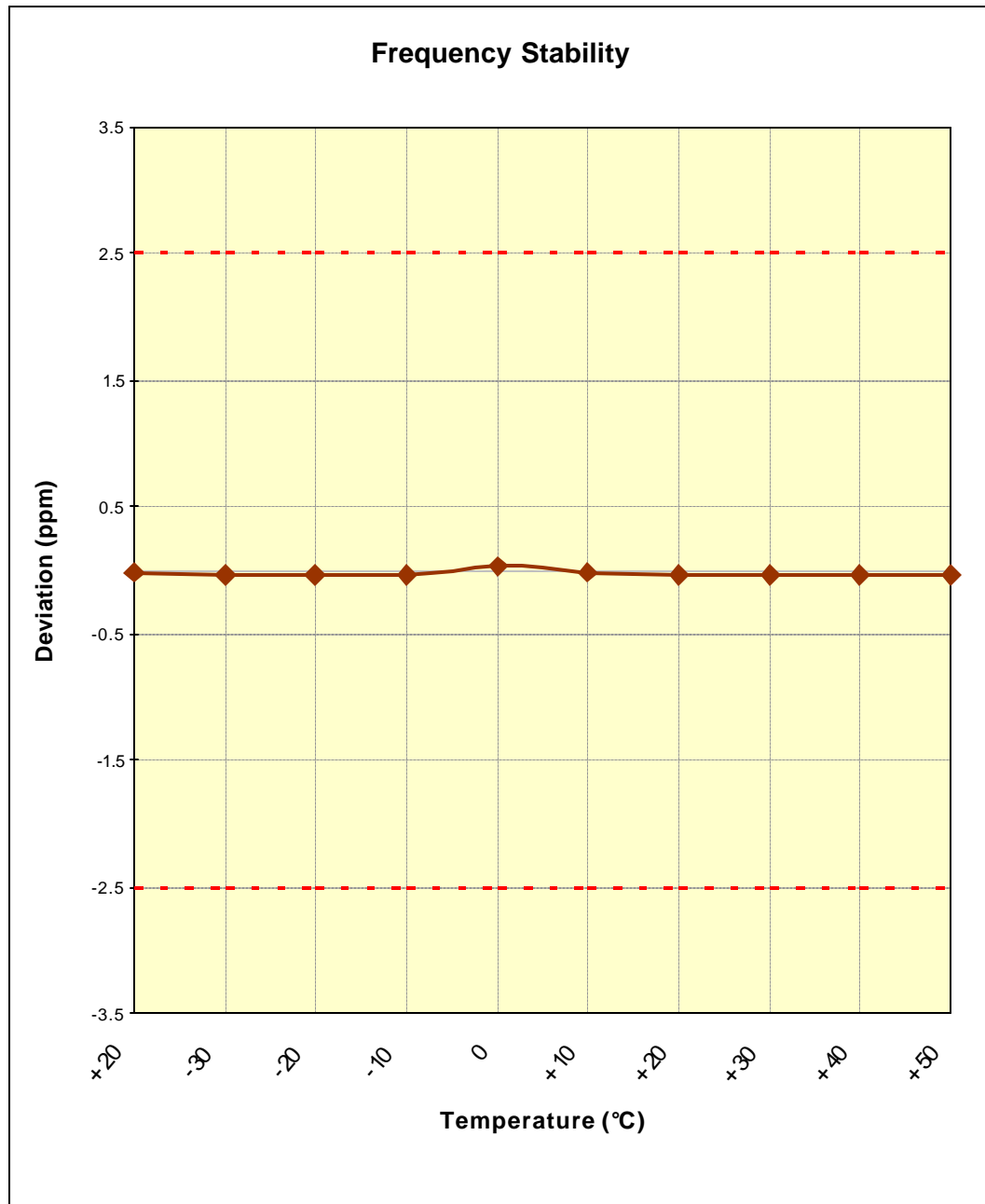
VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.70	+ 20 (Ref)	836,599,979	-21	-0.000003
100 %		- 30	836,599,976	-24	-0.000003
100 %		- 20	836,599,972	-28	-0.000003
100 %		- 10	836,599,977	-23	-0.000003
100 %		0	836,600,025	25	0.000003
100 %		+ 10	836,599,979	-21	-0.000003
100 %		+ 20	836,599,978	-22	-0.000003
100 %		+ 30	836,599,974	-26	-0.000003
100 %		+ 40	836,599,977	-23	-0.000003
100 %		+ 50	836,599,977	-23	-0.000003
115 %	4.26	+ 20	836,599,987	-13	-0.000002
BATT. ENDPOINT	3.41	+ 20	836,599,977	-23	-0.000003

**Table 6-19. Frequency Stability Data (Cellular WCDMA Mode – Ch. 4183)**

FCC ID: NBZNR-MIFI2372		FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0903200546.NBZ	Test Dates: April 23-27, 2009	EUT Type: 850/1900 GSM/WCDMA/GPRS/EDGE USB Modem with WLAN	Page 28 of 57	



**Cellular WCDMA Frequency Stability Measurements (Cont'd)**  
**§2.1055, 22.355**



**Plot 6-2. Frequency Stability Graph (Cellular WCDMA Mode – Ch. 4183)**

FCC ID: NBZNR-MIFI2372		FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CERTIFICATION)	Reviewed by: Quality Manager
Test Report S/N: 0903200546.NBZ	Test Dates: April 23-27, 2009	EUT Type: 850/1900 GSM/WCDMA/GPRS/EDGE USB Modem with WLAN	Page 29 of 57

## 6.10 PCS GSM Frequency Stability Measurements

§2.1055, 24.235

OPERATING FREQUENCY: 1,880,000,000 Hz



CHANNEL: 661

REFERENCE VOLTAGE: 3.7 VDC

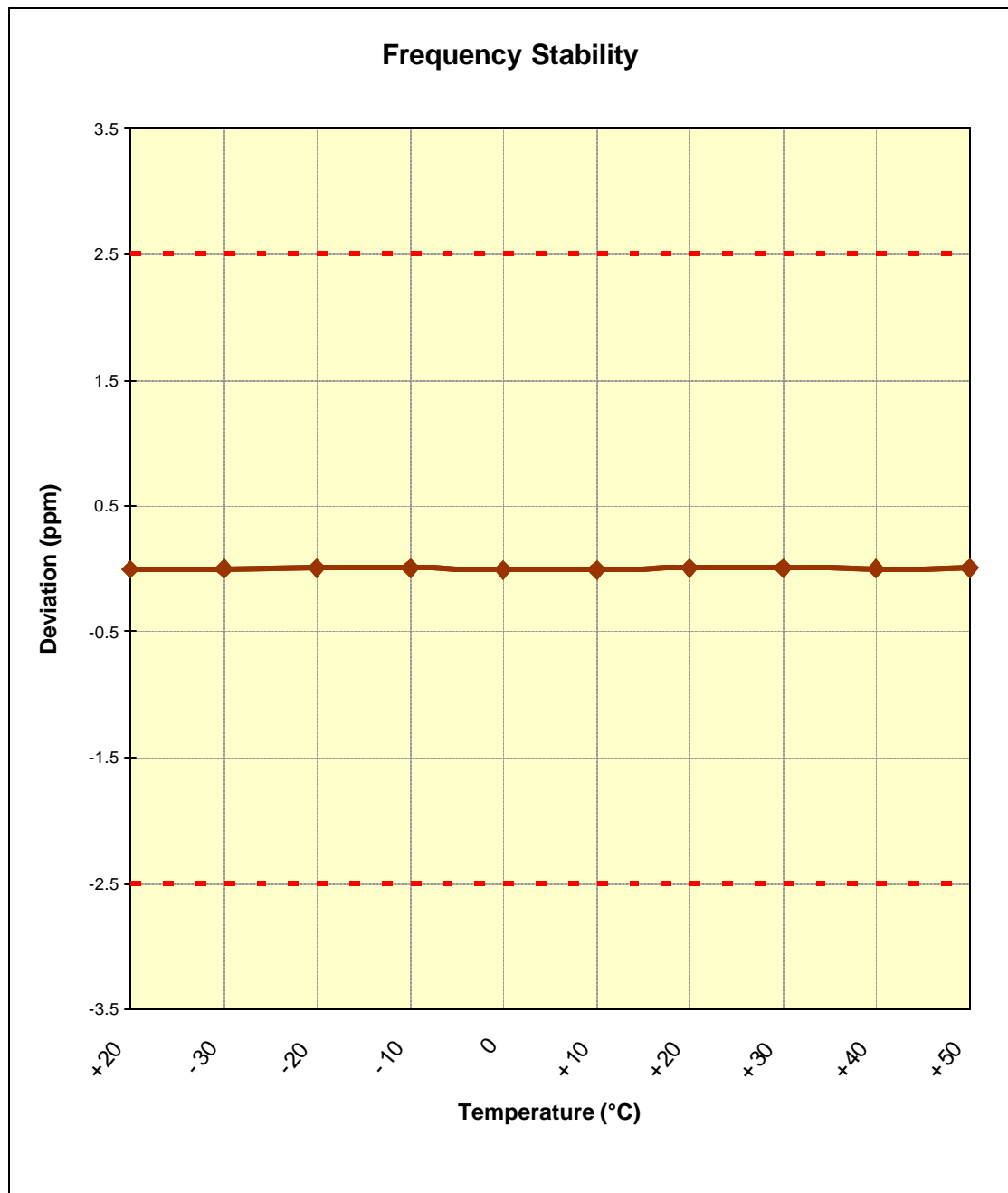
DEVIATION LIMIT: ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.70	+ 20 (Ref)	1,879,999,997	-3	0.000000
100 %		- 30	1,880,000,004	4	0.000000
100 %		- 20	1,880,000,008	8	0.000000
100 %		- 10	1,880,000,017	17	0.000001
100 %		0	1,879,999,992	-8	0.000000
100 %		+ 10	1,879,999,989	-11	-0.000001
100 %		+ 20	1,880,000,015	15	0.000001
100 %		+ 30	1,880,000,014	14	0.000001
100 %		+ 40	1,880,000,006	6	0.000000
100 %		+ 50	1,880,000,010	10	0.000001
115 %	4.26	+ 20	1,879,999,991	-9	0.000000
BATT. ENDPOINT	3.41	+ 20	1,879,999,985	-15	-0.000001

Table 6-20. Frequency Stability Data (PCS GSM Mode – Ch. 661)

FCC ID: NBZNR-MIFI2372		FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0903200546.NBZ	Test Dates: April 23-27, 2009	EUT Type: 850/1900 GSM/WCDMA/GPRS/EDGE USB Modem with WLAN	Page 30 of 57	

**PCS GSM Frequency Stability Measurements (Cont'd)**  
**§2.1055, 24.235**



**Plot 6-3. Frequency Stability Graph (PCS GSM Mode – Ch. 661)**

FCC ID: NBZNR-MIFI2372		FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0903200546.NBZ	Test Dates: April 23-27, 2009	EUT Type: 850/1900 GSM/WCDMA/GPRS/EDGE USB Modem with WLAN		Page 31 of 57

## 6.11 PCS WCDMA Frequency Stability Measurements

§2.1055, 24.235

OPERATING FREQUENCY: 1,880,000,000 Hz



CHANNEL: 9400

REFERENCE VOLTAGE: 3.7 VDC

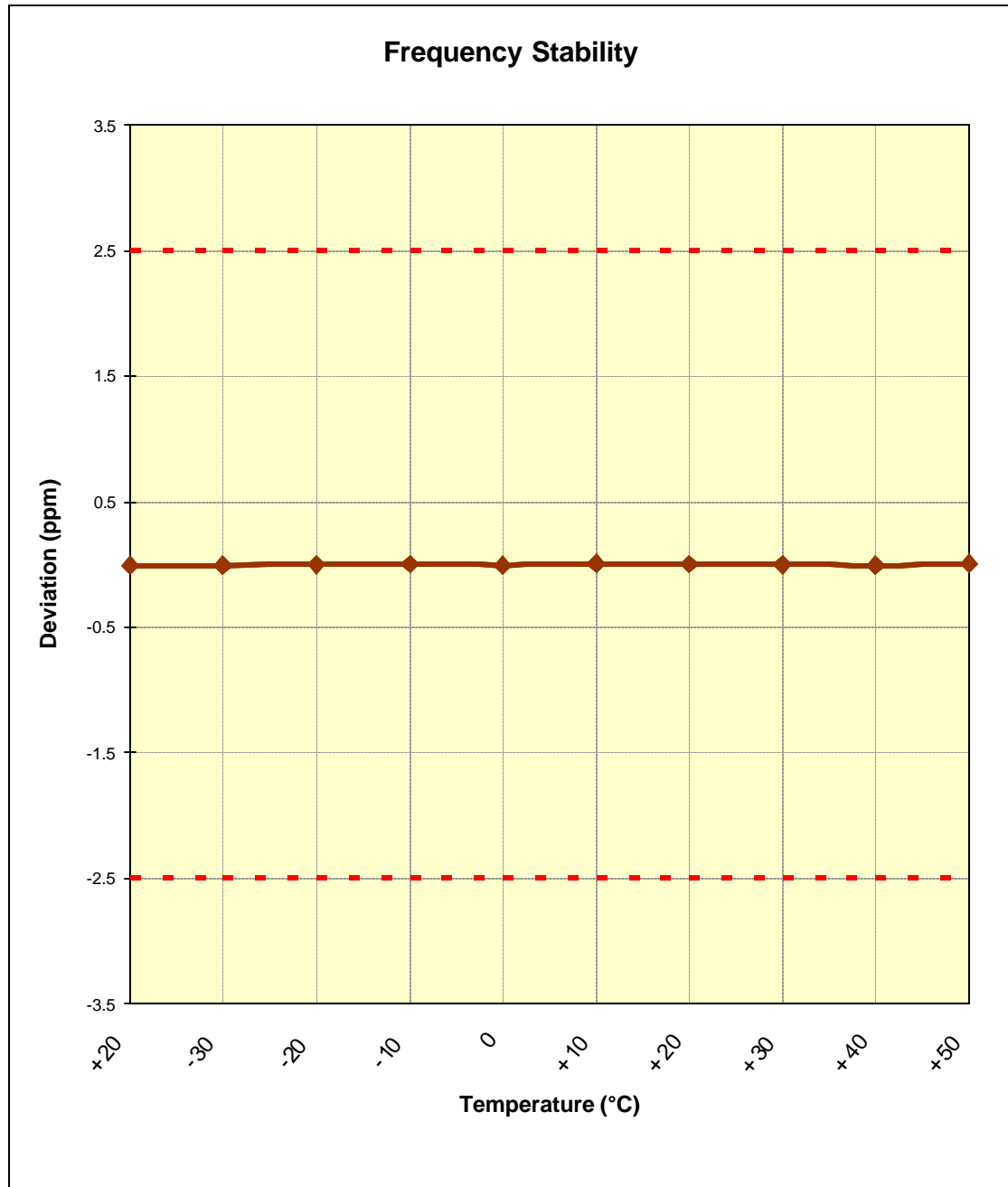
DEVIATION LIMIT: ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.70	+ 20 (Ref)	1,879,999,991	-9	0.000000
100 %		- 30	1,879,999,992	-8	0.000000
100 %		- 20	1,880,000,007	7	0.000000
100 %		- 10	1,880,000,010	10	0.000001
100 %		0	1,879,999,991	-9	-0.000001
100 %		+ 10	1,880,000,016	16	0.000001
100 %		+ 20	1,880,000,008	8	0.000000
100 %		+ 30	1,880,000,004	4	0.000000
100 %		+ 40	1,879,999,984	-16	-0.000001
100 %		+ 50	1,880,000,019	19	0.000001
115 %	4.26	+ 20	1,880,000,014	14	0.000001
BATT. ENDPOINT	3.41	+ 20	1,879,999,995	-5	0.000000



**Table 6-21. Frequency Stability Data (PCS WCDMA Mode – Ch. 9400)**

FCC ID: NBZNR-MIFI2372		FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0903200546.NBZ	Test Dates: April 23-27, 2009	EUT Type: 850/1900 GSM/WCDMA/GPRS/EDGE USB Modem with WLAN	Page 32 of 57	

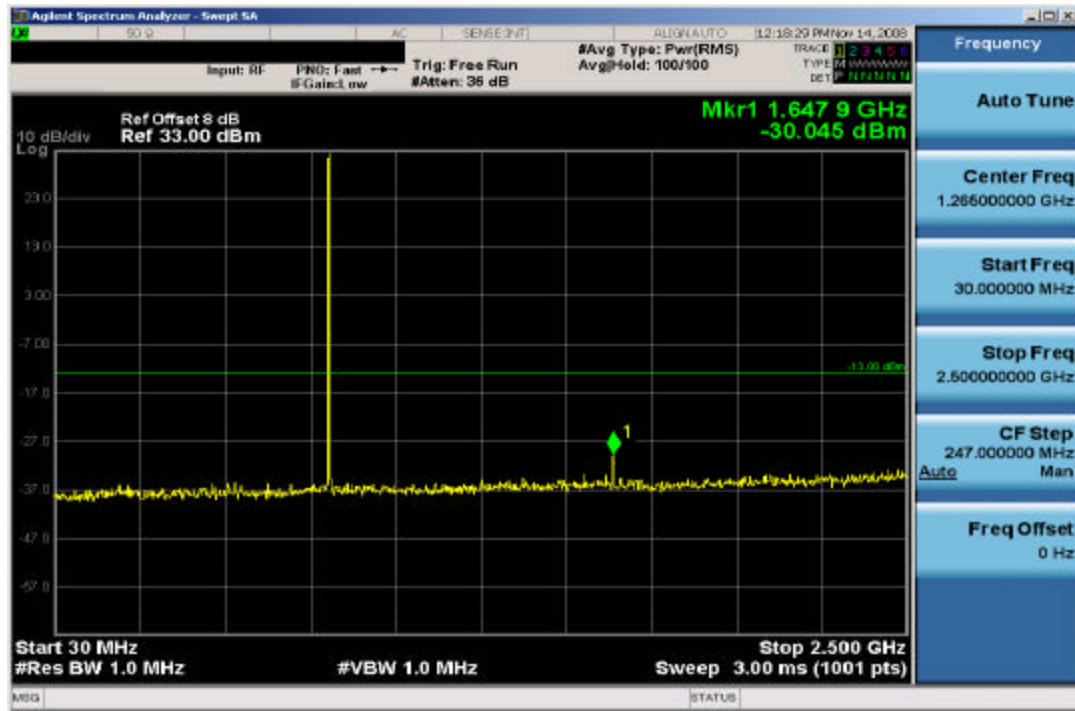
**PCS WCDMA Frequency Stability Measurements (Cont'd)**  
**§2.1055, 24.235**



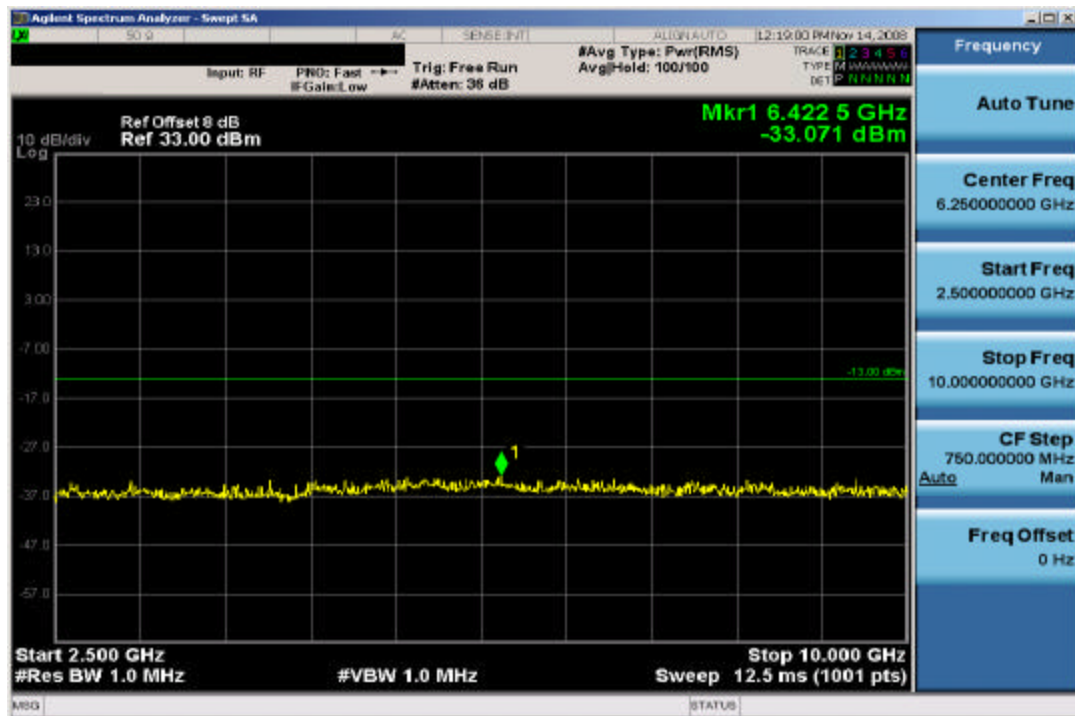
**Plot 6-4. Frequency Stability Graph (PCS WCDMA Mode – Ch. 9400)**

<b>FCC ID:</b> NBZNRM-MIFI2372		<b>FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CERTIFICATION)</b>		<b>Reviewed by:</b> Quality Manager
<b>Test Report S/N:</b> 0903200546.NBZ	<b>Test Dates:</b> April 23-27, 2009	<b>EUT Type:</b> 850/1900 GSM/WCDMA/GPRS/EDGE USB Modem with WLAN		Page 33 of 57



## 7.0 PLOTS OF EMISSIONS

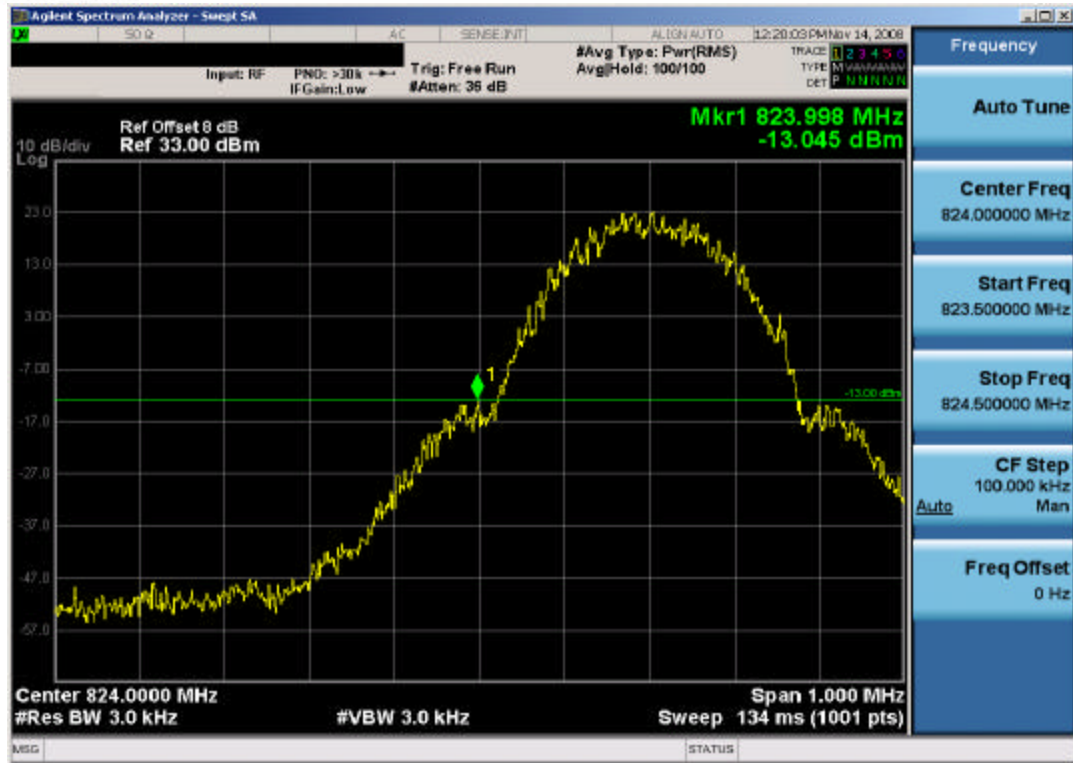


Plot 7-1. Conducted Spurious Plot (Cellular GSM Mode – Ch. 128)

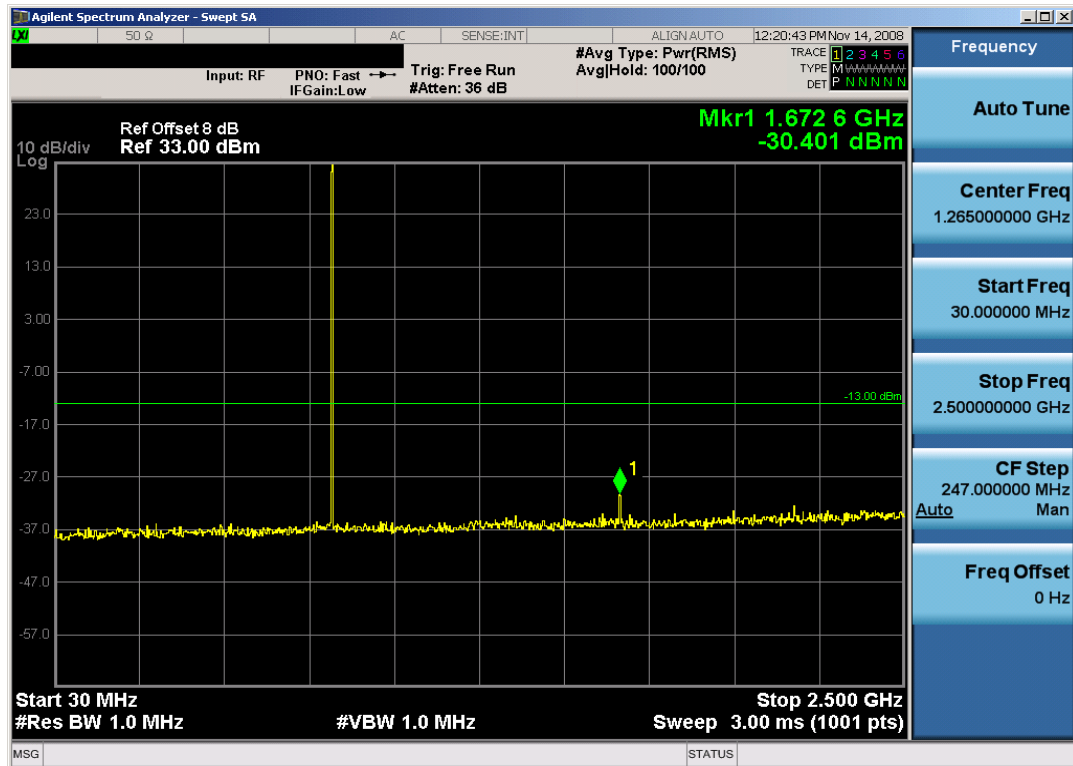


Plot 7-2. Conducted Spurious Plot (Cellular GSM Mode – Ch. 128)


FCC ID: NBZNRM-MIF2372		FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0903200546.NBZ	Test Dates: April 23-27, 2009	EUT Type: 850/1900 GSM/WCDMA/GPRS/EDGE USB Modem with WLAN		Page 34 of 57



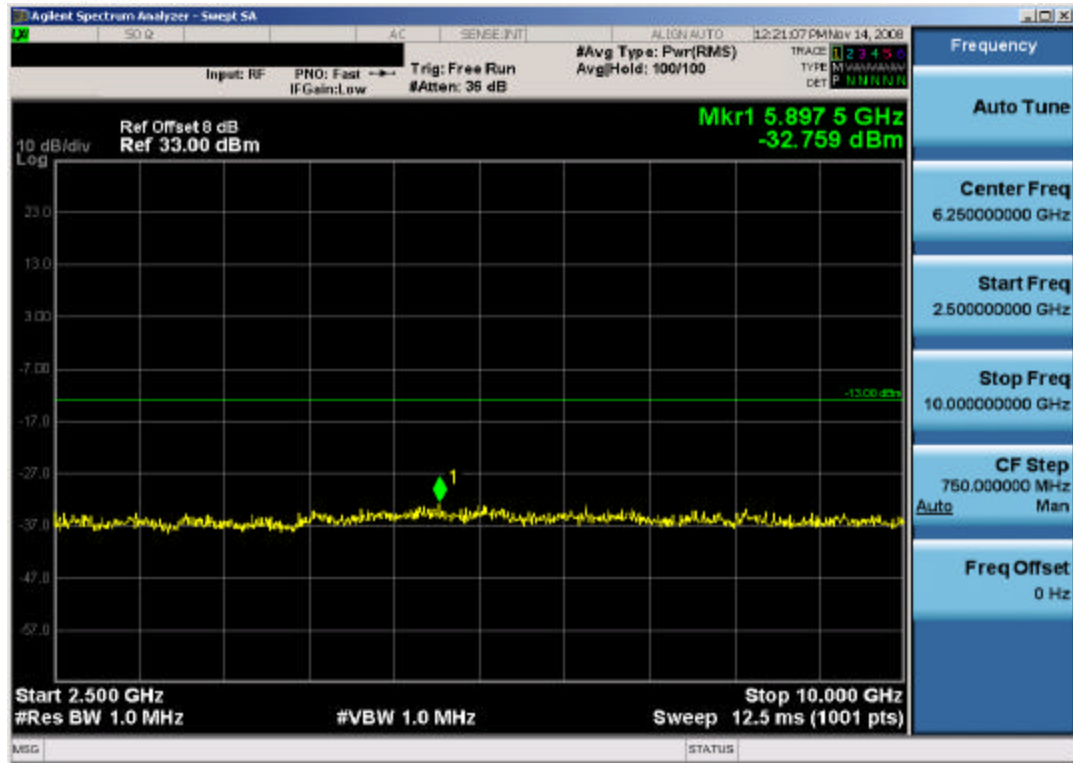
Plot 7-3. Band Edge Plot (Cellular GSM Mode – Ch. 128)



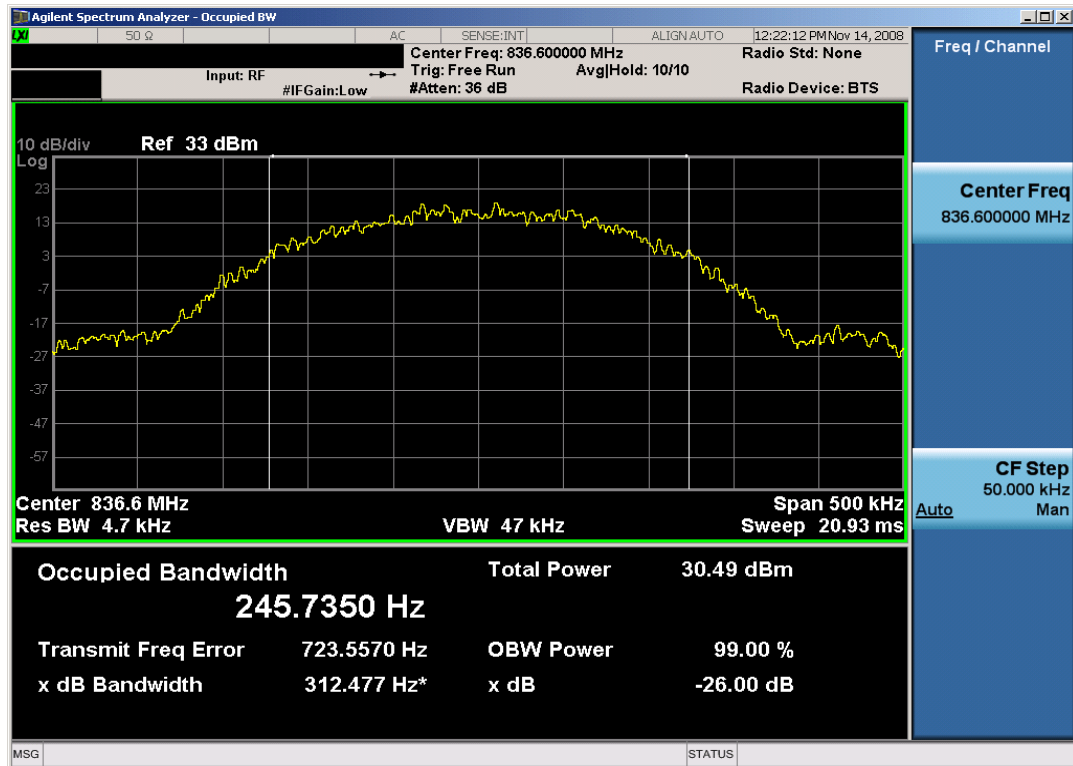
Plot 7-4. Conducted Spurious (Cellular GSM Mode – Ch. 190)

FCC ID: NBZNR-MIFI2372	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0903200546.NBZ	Test Dates: April 23-27, 2009	EUT Type: 850/1900 GSM/WCDMA/GPRS/EDGE USB Modem with WLAN		Page 35 of 57




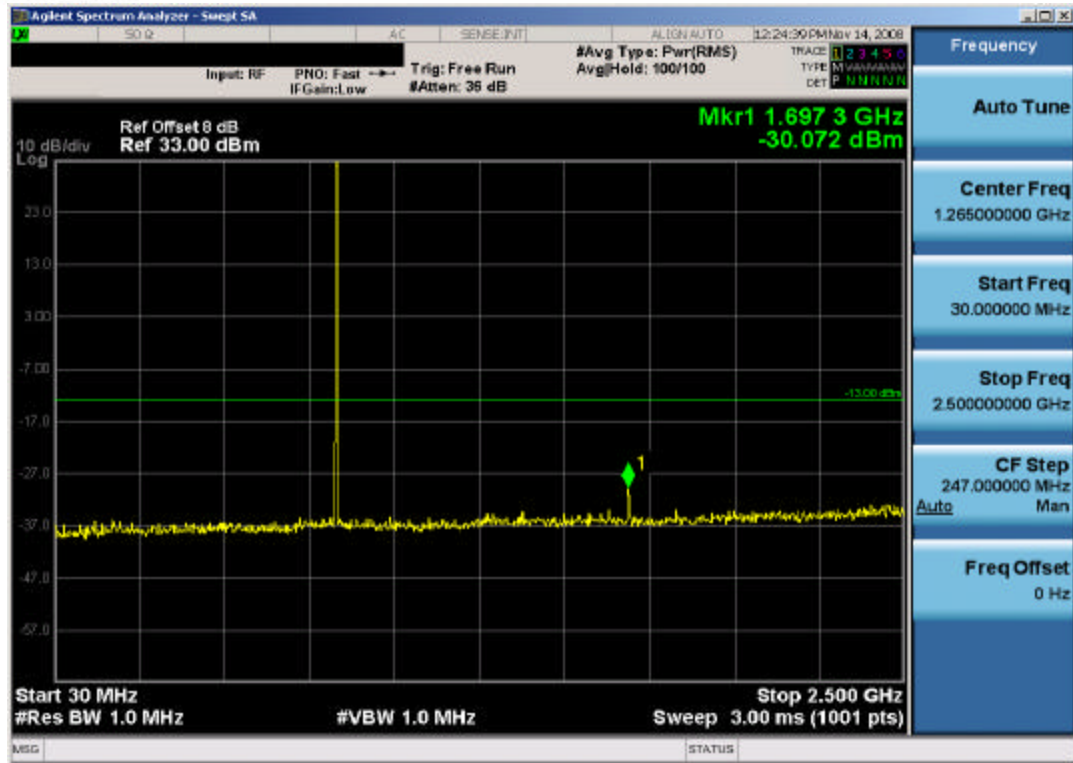


Plot 7-5. Conducted Spurious Plot (Cellular GSM Mode – Ch. 190)

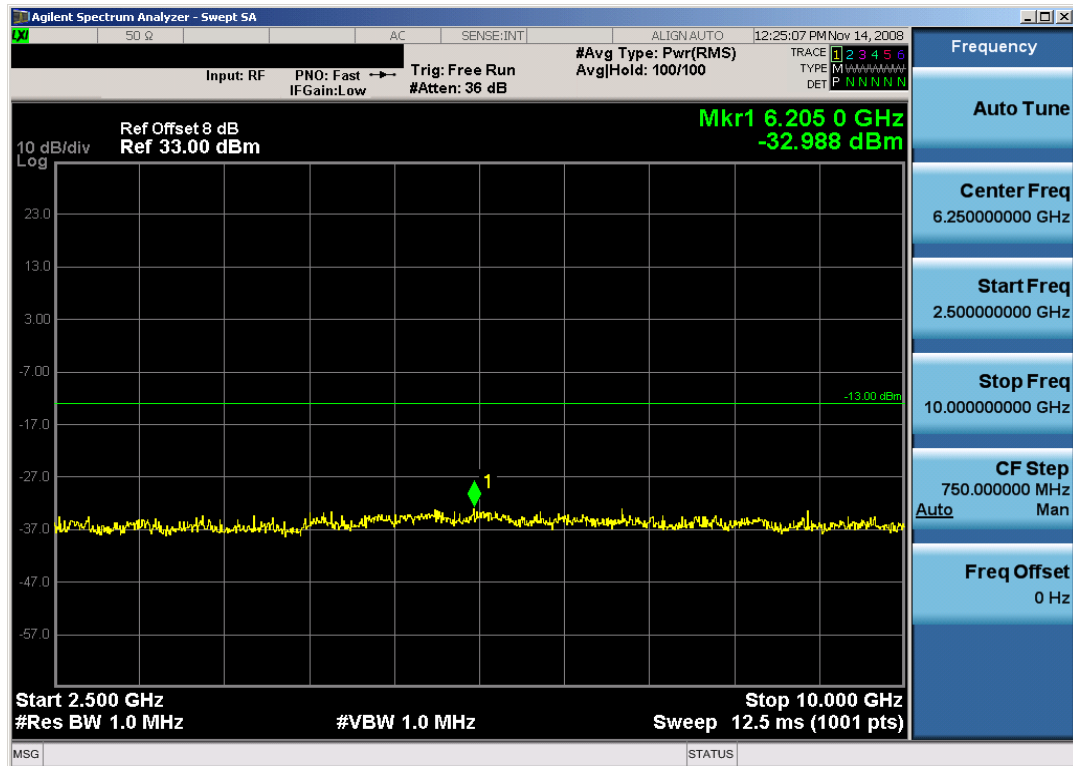


Plot 7-6. Occupied Bandwidth Plot (Cellular GSM Mode – Ch. 190)


FCC ID: NBZNRM-MIFI2372	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CERTIFICATION)	 Reviewed by: Quality Manager
Test Report S/N: 0903200546.NBZ	Test Dates: April 23-27, 2009	EUT Type: 850/1900 GSM/WCDMA/GPRS/EDGE USB Modem with WLAN	Page 36 of 57

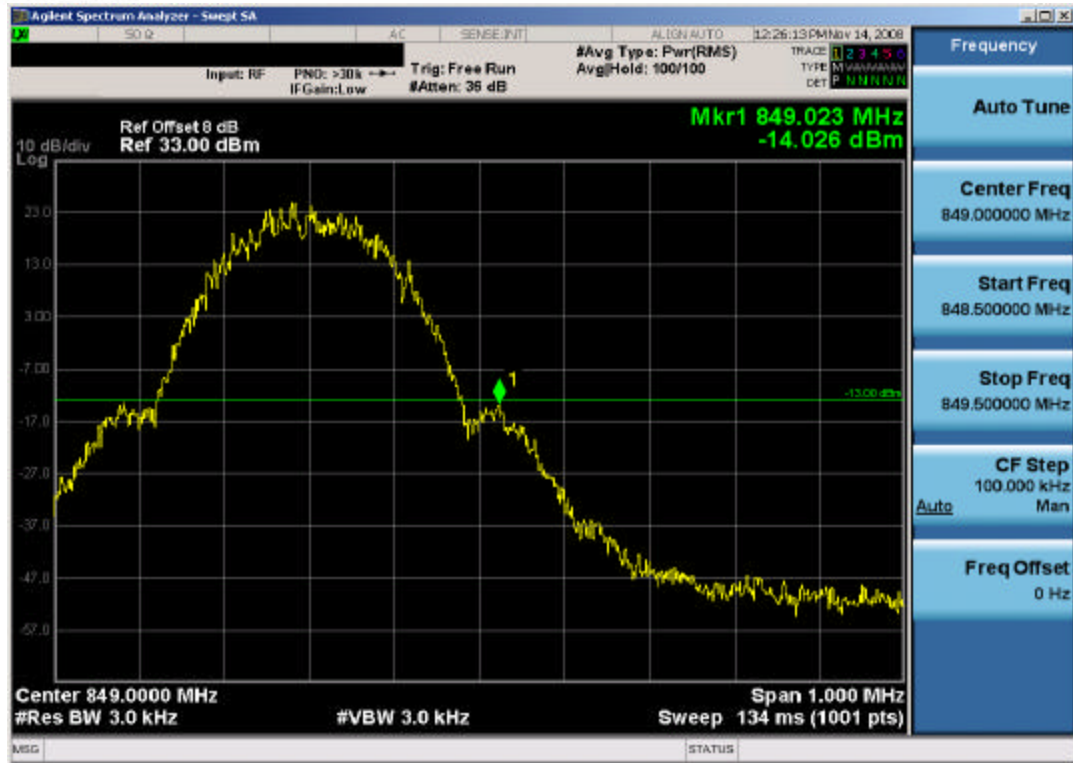


Plot 7-7. Conducted Spurious Plot (Cellular GSM Mode – Ch. 251)

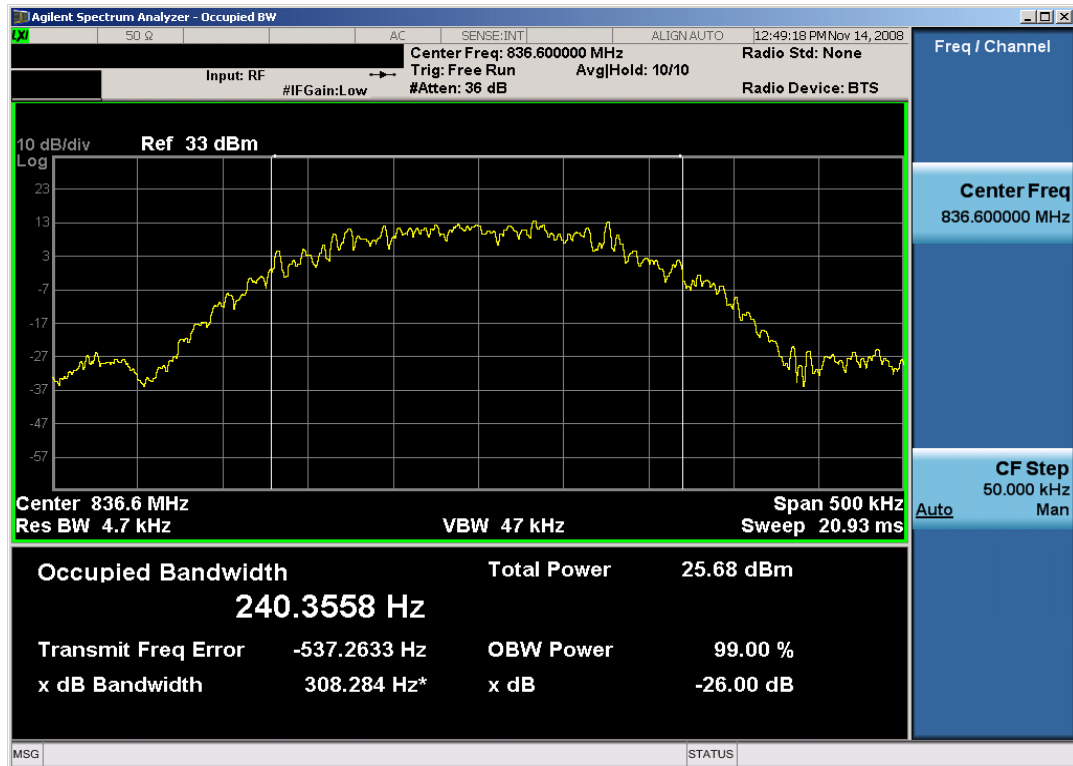


Plot 7-8. Conducted Spurious Plot (Cellular GSM Mode – Ch. 251)


FCC ID: NBZNRM-MIFI2372	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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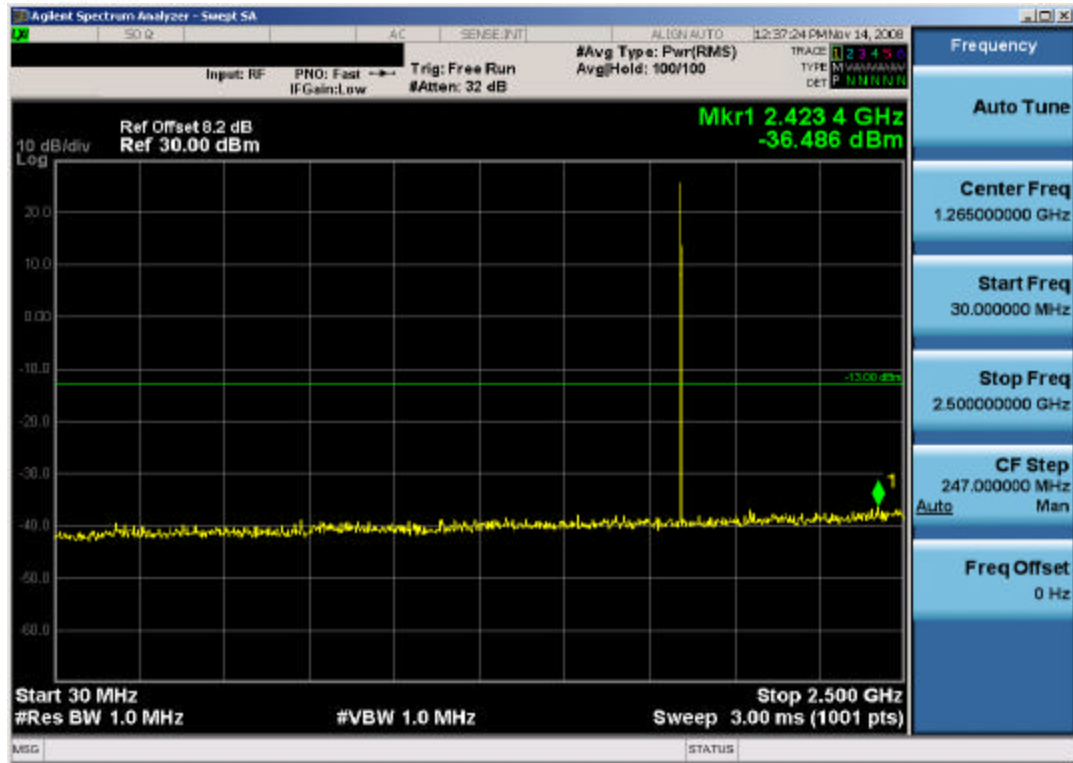


Plot 7-9. Band Edge Plot (Cellular GSM Mode – Ch. 251)

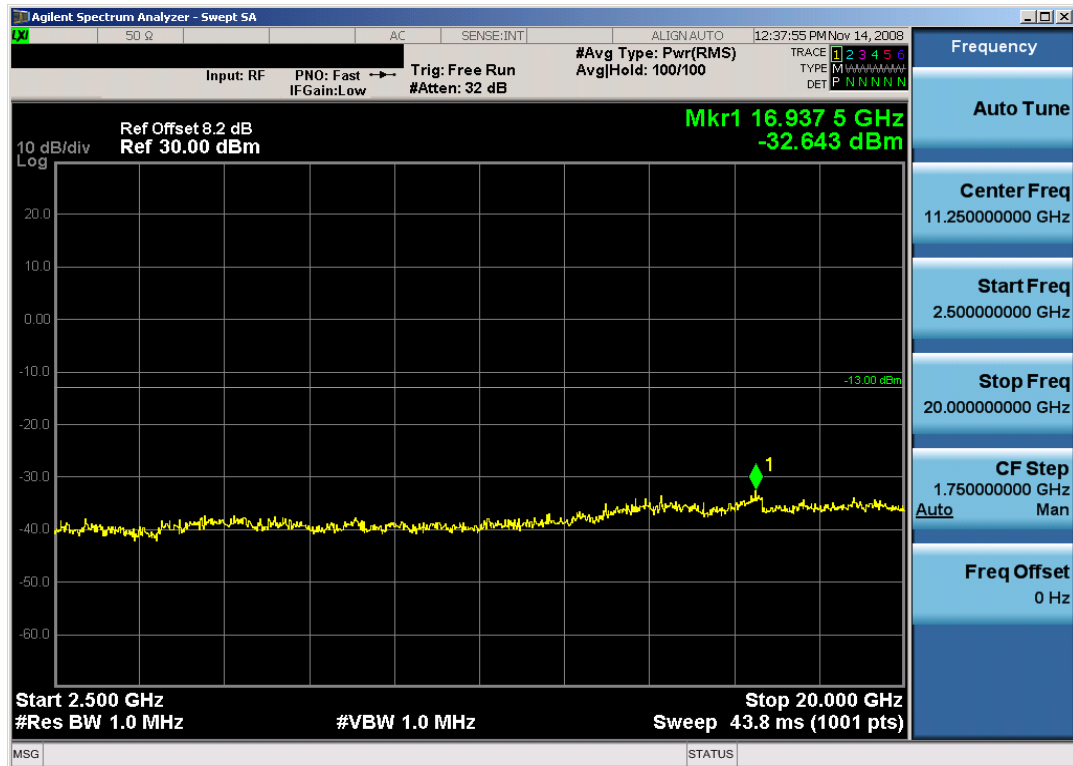


Plot 7-10. Occupied Bandwidth Plot (EDGE850 Mode – Ch. 190)


FCC ID: NBZNRM-MIFI2372	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CERTIFICATION)	 Reviewed by: Quality Manager
Test Report S/N: 0903200546.NBZ	Test Dates: April 23-27, 2009	EUT Type: 850/1900 GSM/WCDMA/GPRS/EDGE USB Modem with WLAN	Page 38 of 57

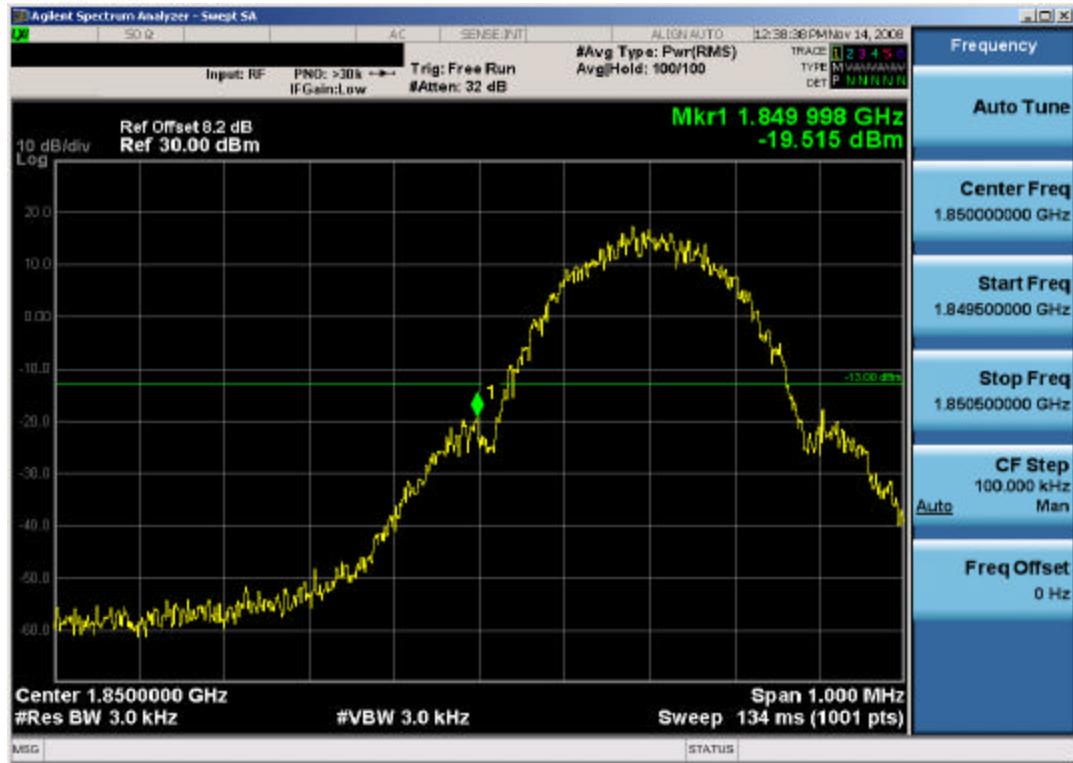


Plot 7-11. Conducted Spurious Plot (PCS GSM Mode – Ch. 512)

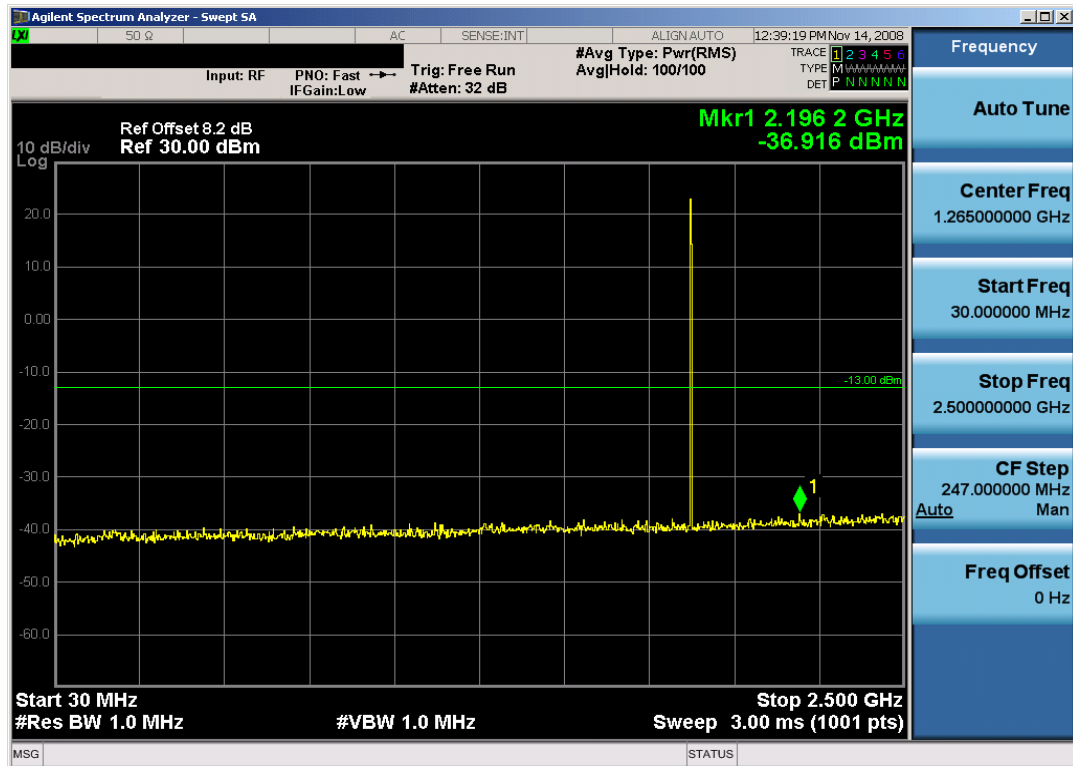


Plot 7-12. Conducted Spurious Plot (PCS GSM Mode – Ch. 512)


FCC ID: NBZNRM-MIFI2372	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CERTIFICATION)	 Reviewed by: Quality Manager
Test Report S/N: 0903200546.NBZ	Test Dates: April 23-27, 2009	EUT Type: 850/1900 GSM/WCDMA/GPRS/EDGE USB Modem with WLAN	Page 39 of 57



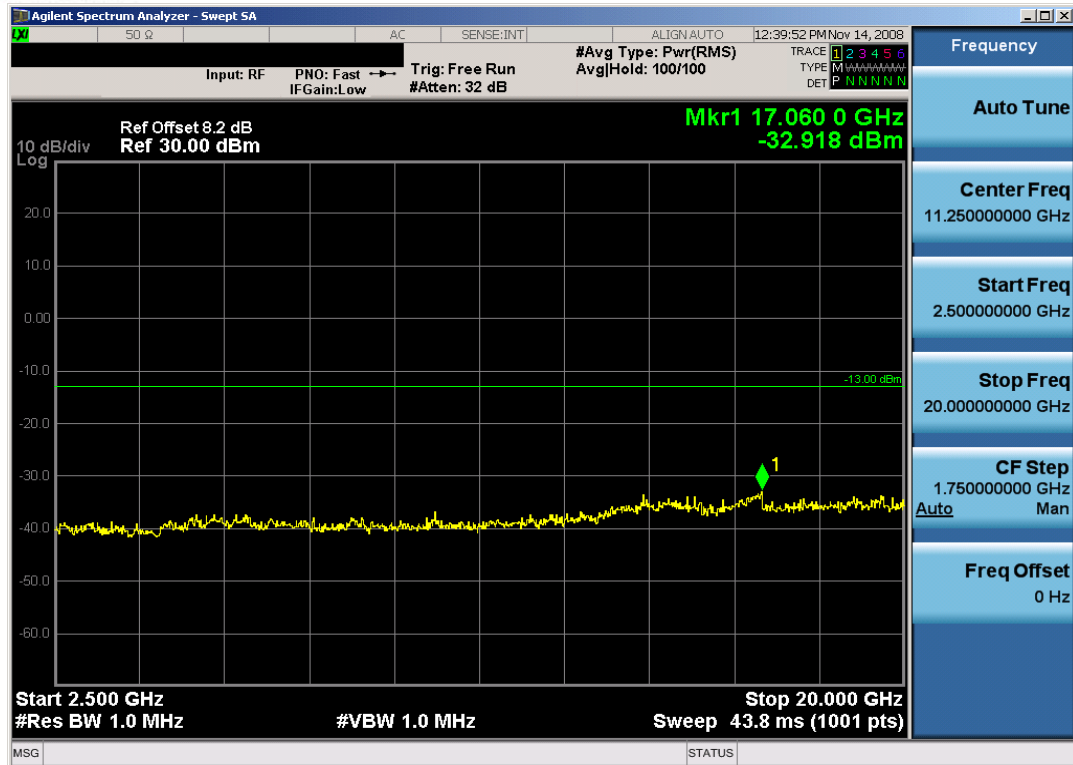
Plot 7-13. Band Edge Plot (PCS GSM Mode – Ch. 512)



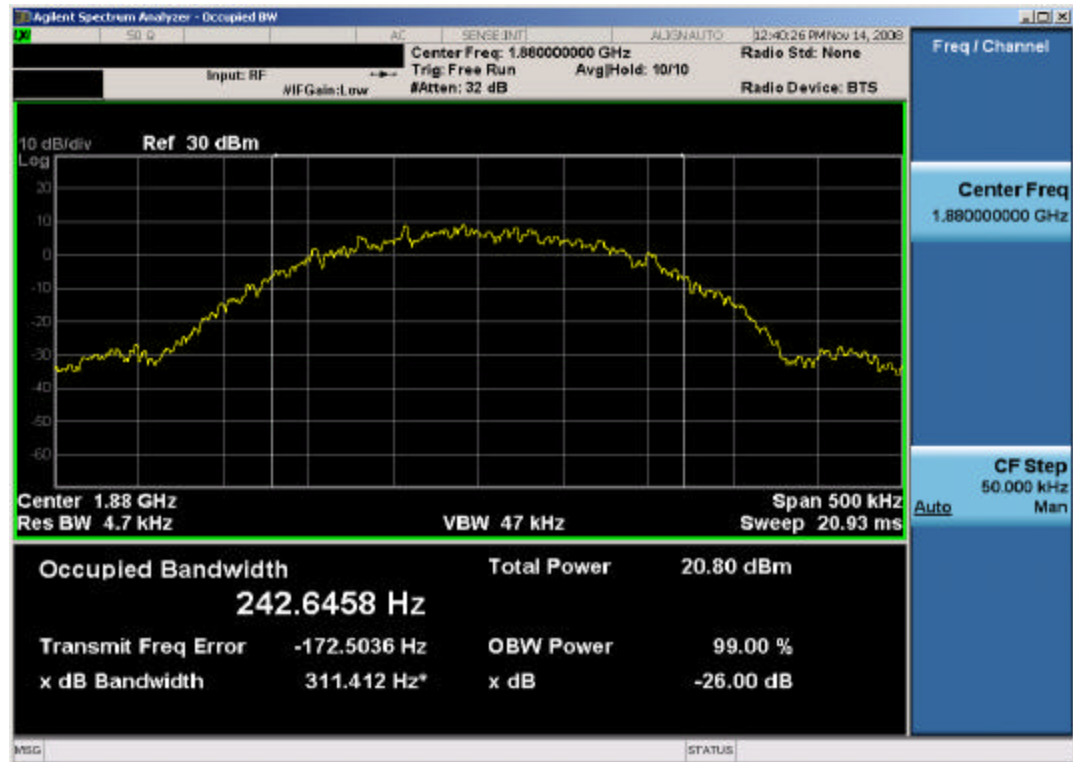
Plot 7-14. Conducted Spurious Plot (PCS GSM Mode – Ch. 661)

FCC ID: NBZNRM-MIFI2372	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0903200546.NBZ	Test Dates: April 23-27, 2009	EUT Type: 850/1900 GSM/WCDMA/GPRS/EDGE USB Modem with WLAN		Page 40 of 57




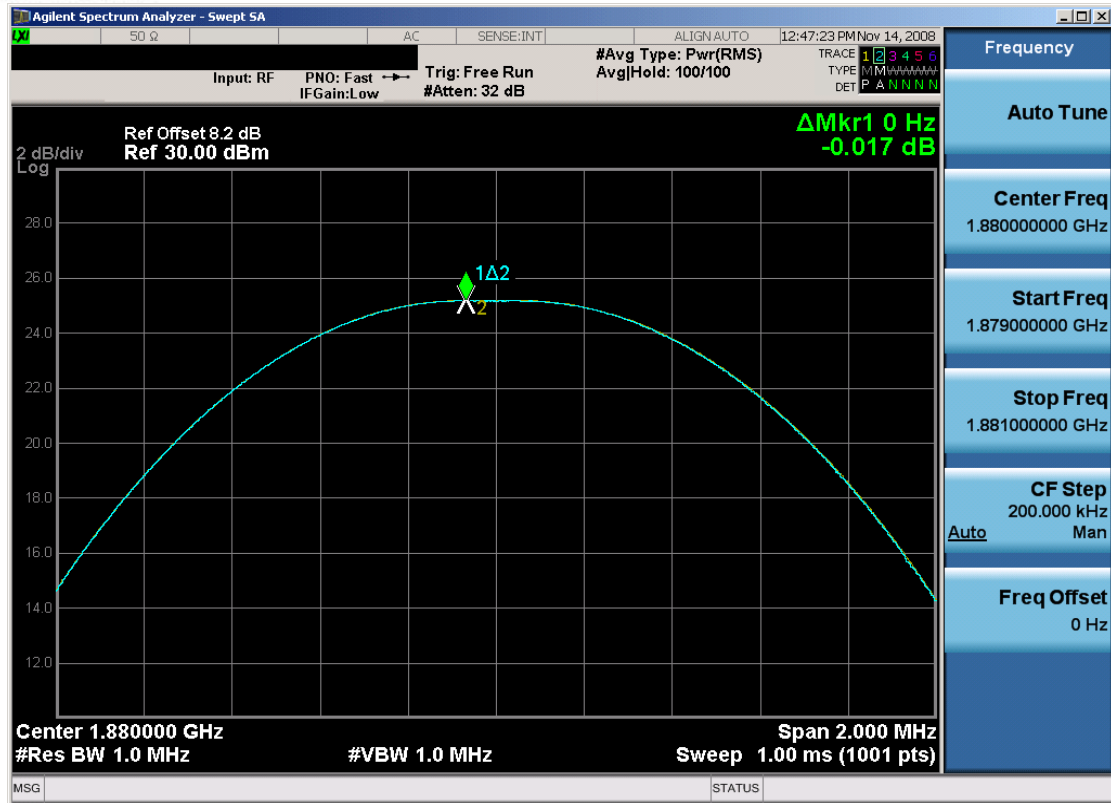


Plot 7-15. Conducted Spurious Plot (PCS GSM Mode – Ch. 661)

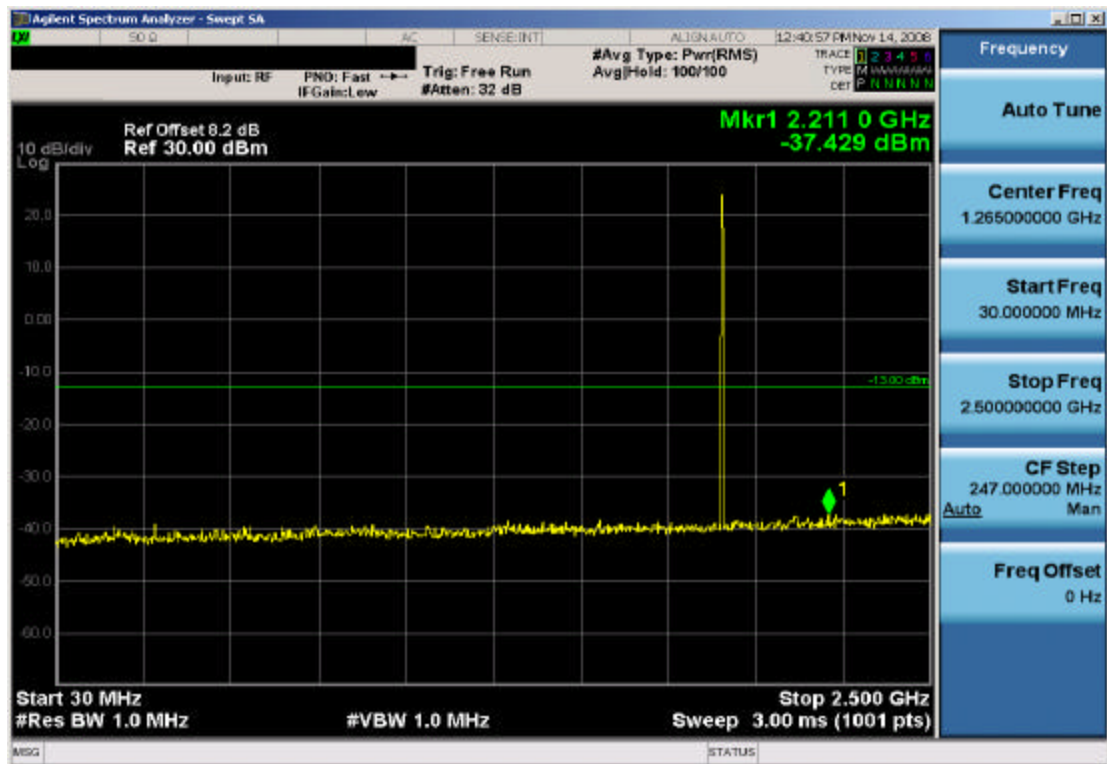


Plot 7-16. Occupied Bandwidth Plot (PCS GSM Mode – Ch. 661)


FCC ID: NBZNR-MIFI2372	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CERTIFICATION)	 Reviewed by: Quality Manager
Test Report S/N: 0903200546.NBZ	Test Dates: April 23-27, 2009	EUT Type: 850/1900 GSM/WCDMA/GPRS/EDGE USB Modem with WLAN	Page 41 of 57



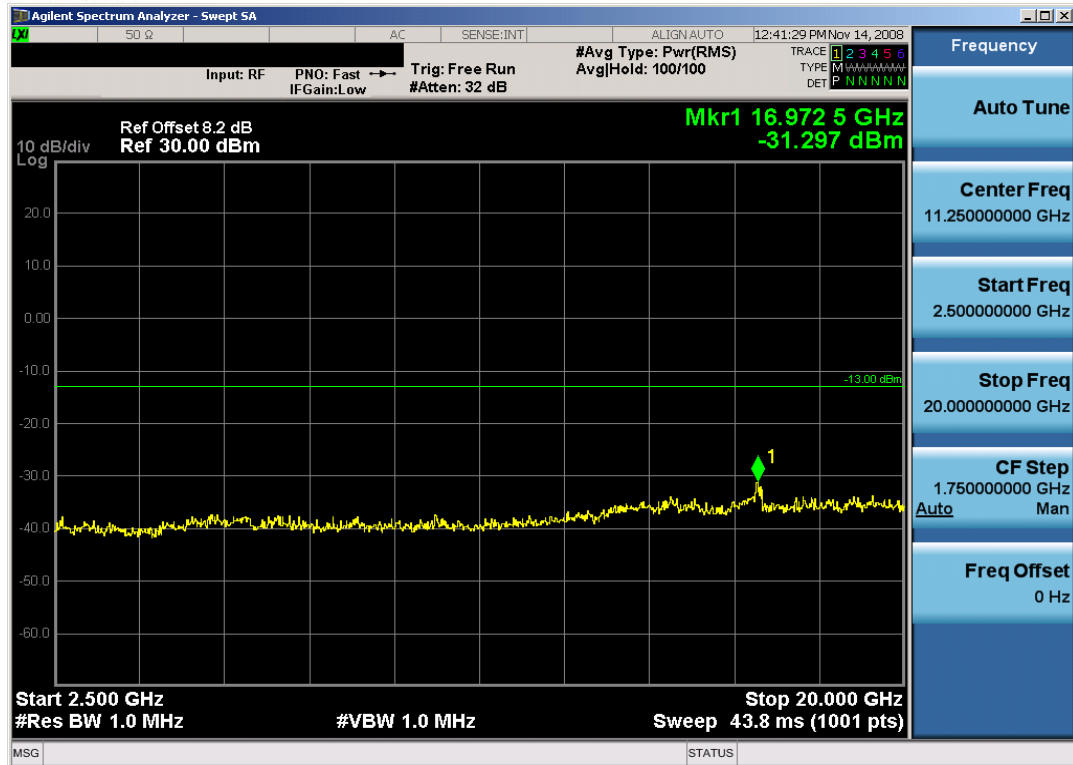
Plot 7-17. Peak-Average Ratio Plot (PCS GSM Mode – Ch. 661)



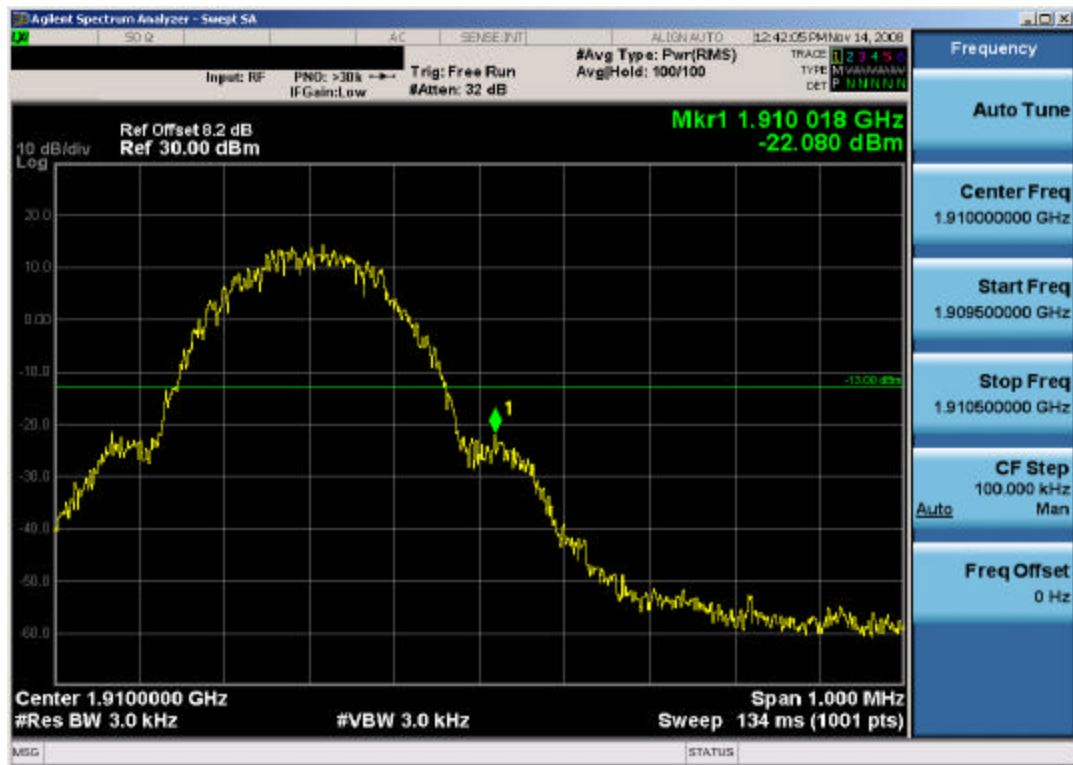
Plot 7-18. Conducted Spurious Plot (PCS GSM Mode – Ch. 810)

FCC ID: NBZNR-MIFI2372	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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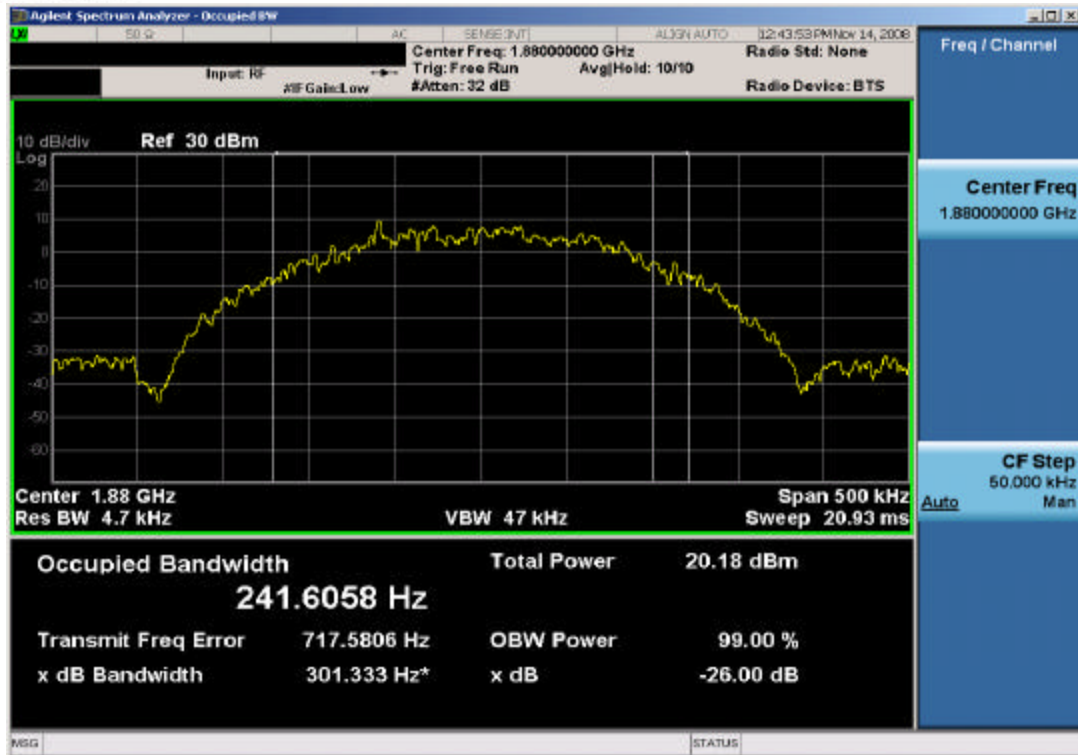


Plot 7-19. Conducted Spurious Plot (PCS GSM Mode – Ch. 810)

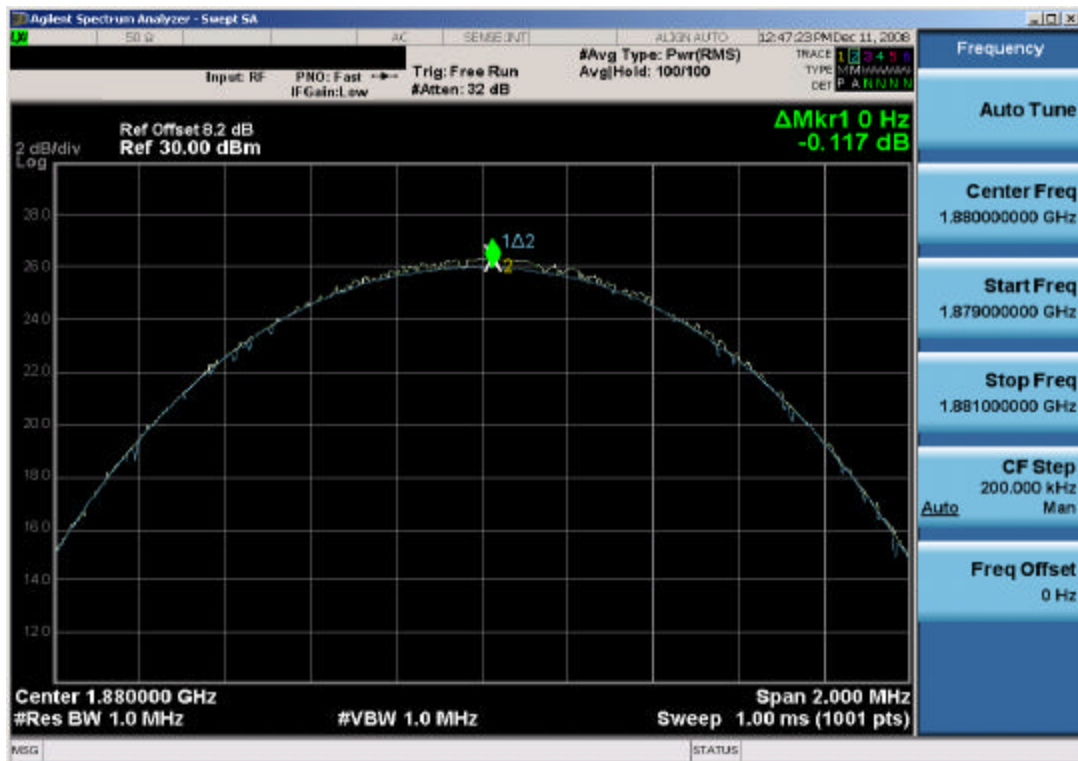


Plot 7-20. Band Edge Plot (PCS GSM Mode – Ch. 810)


FCC ID: NBZNRM-MIFI2372		FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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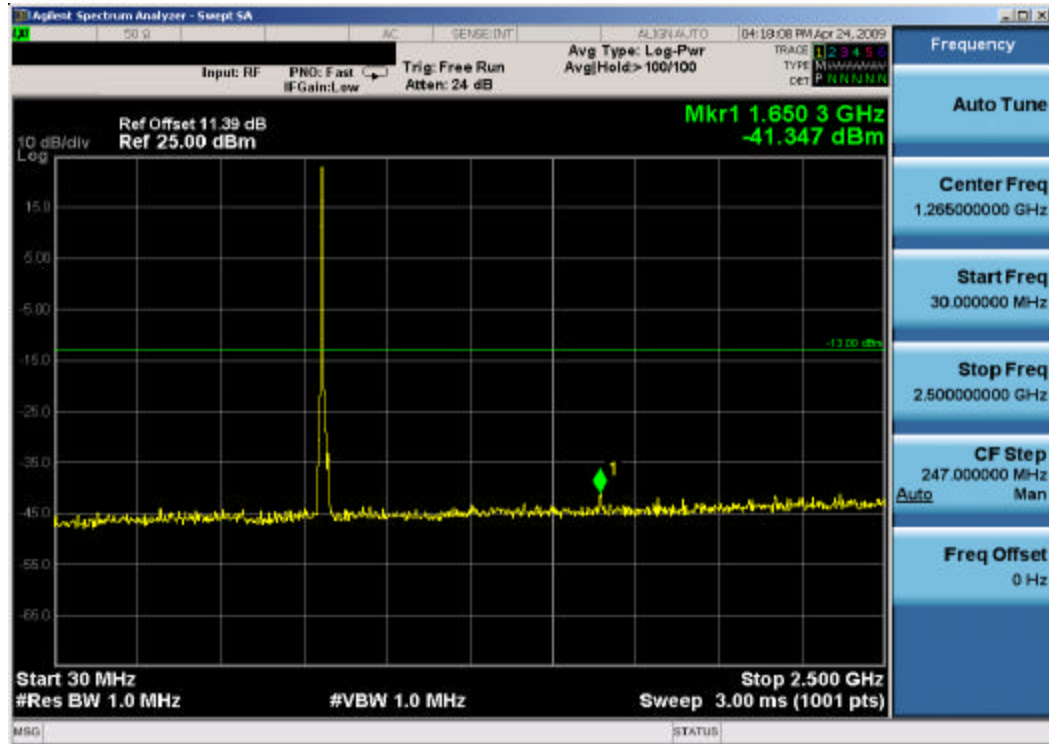


Plot 7-21. Occupied Bandwidth Plot (EDGE1900 Mode – Ch. 661)

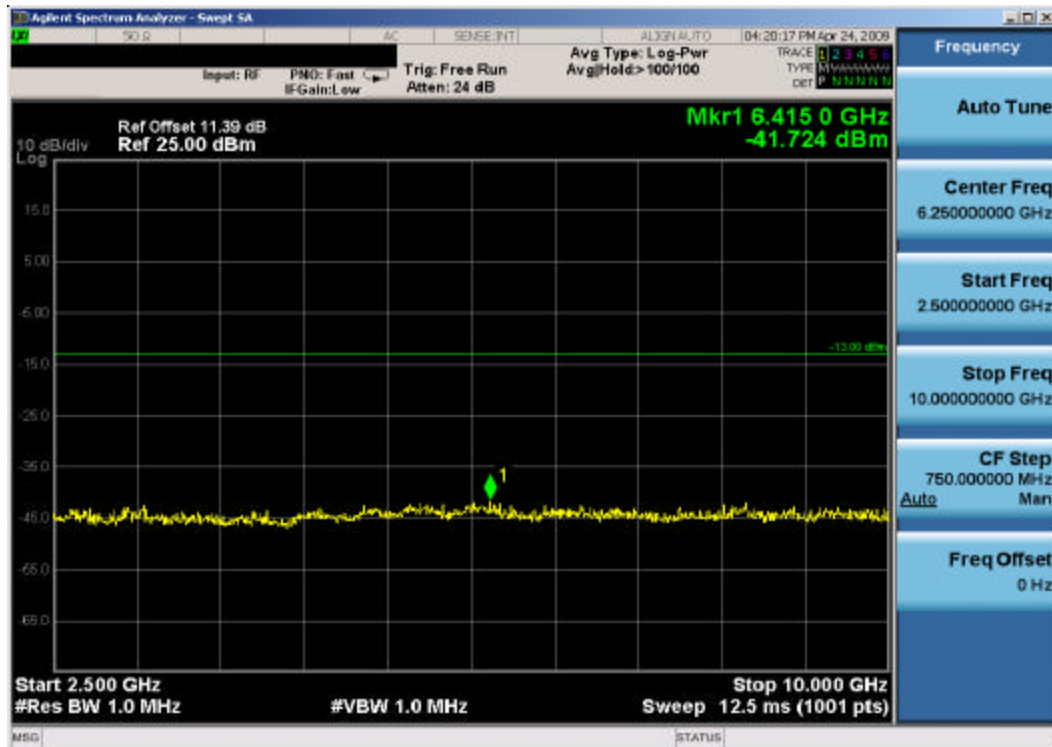


Plot 7-22. Peak-Average Ratio Plot (EDGE1900 Mode – Ch. 661)


FCC ID: NBZNRM-MIFI2372	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CERTIFICATION)	 Reviewed by: Quality Manager
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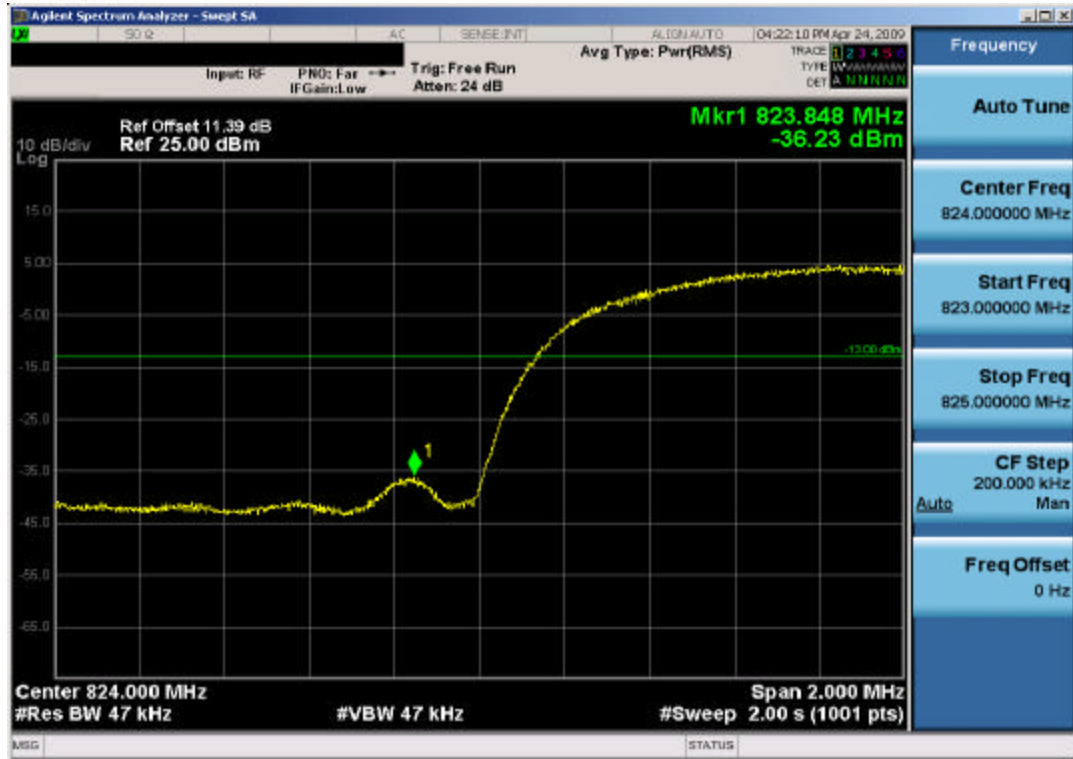


Plot 7-23. Conducted Spurious Plot (Cellular WCDMA Mode – Ch. 4132)

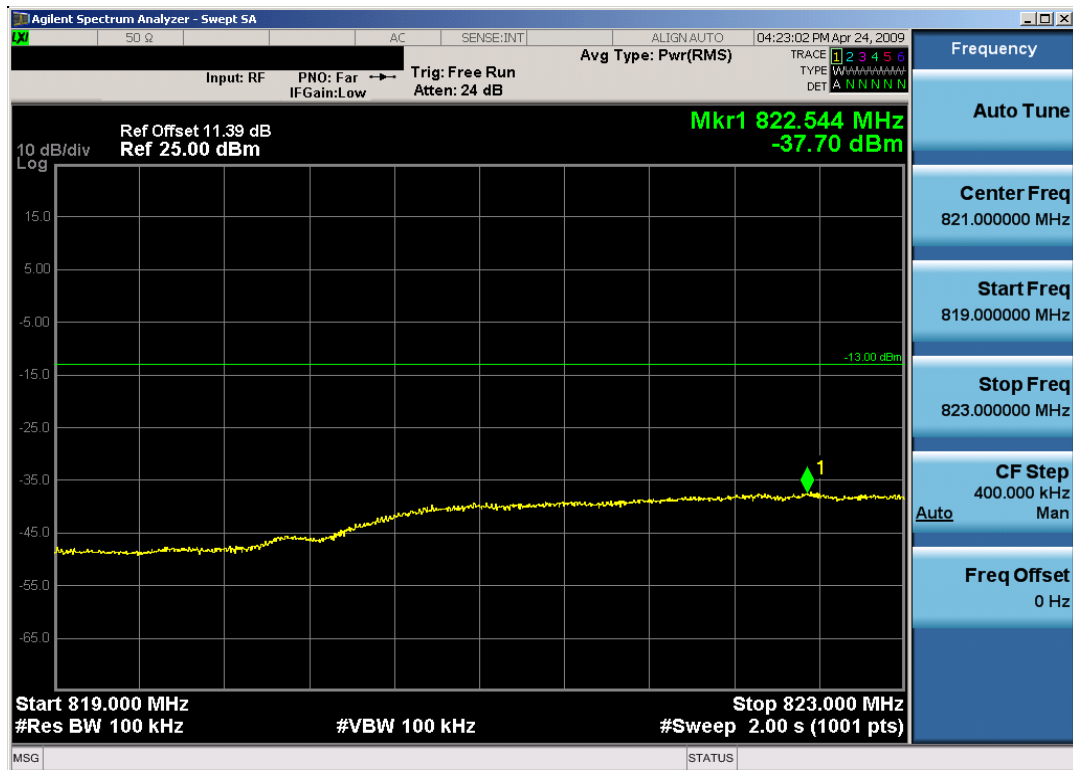


Plot 7-24. Conducted Spurious Plot (Cellular WCDMA Mode – Ch. 4132)


FCC ID: NBZNRM-MIFI2372	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CERTIFICATION)	 Reviewed by: Quality Manager
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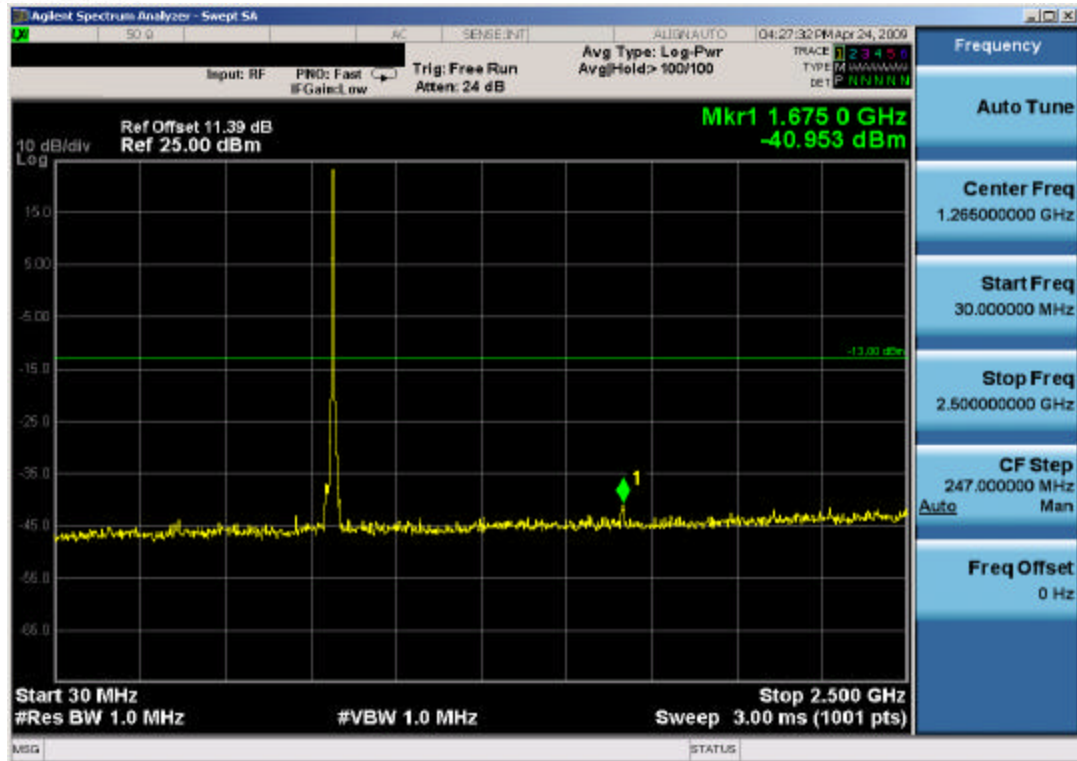


Plot 7-25. Band Edge Plot (Cellular WCDMA Mode – Ch. 4132)

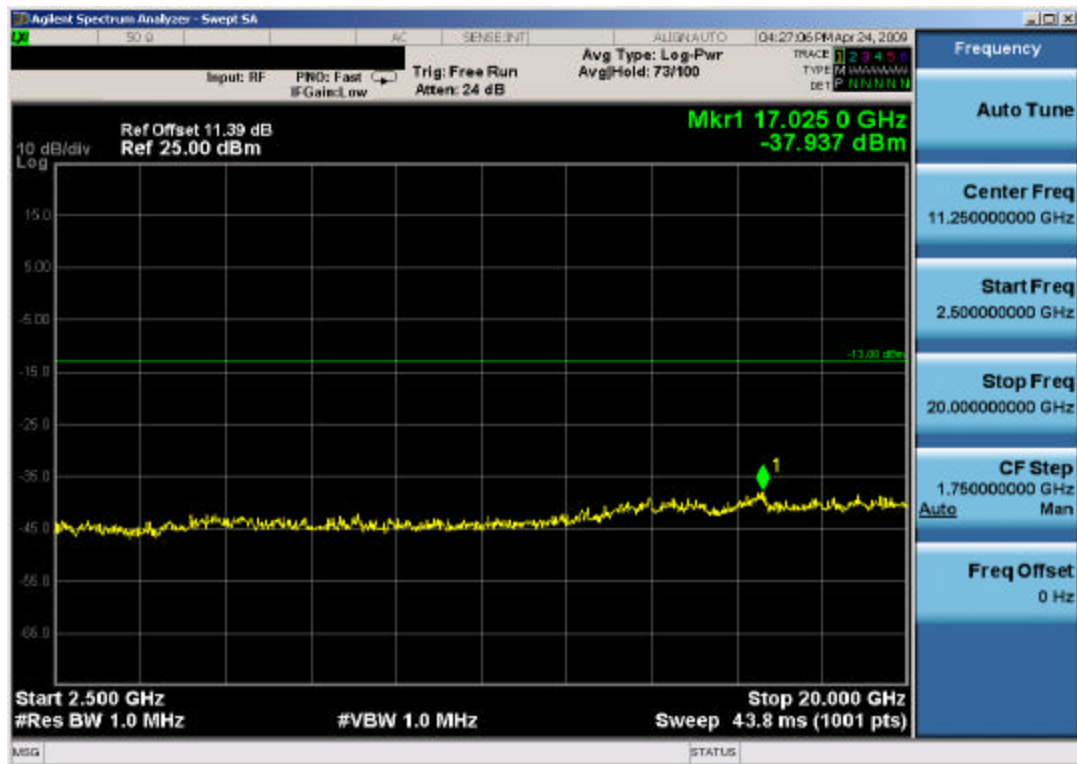


Plot 7-26. 4MHz Span Plot (Cellular WCDMA Mode – Ch. 4132)


FCC ID: NBZNRM-MIFI2372	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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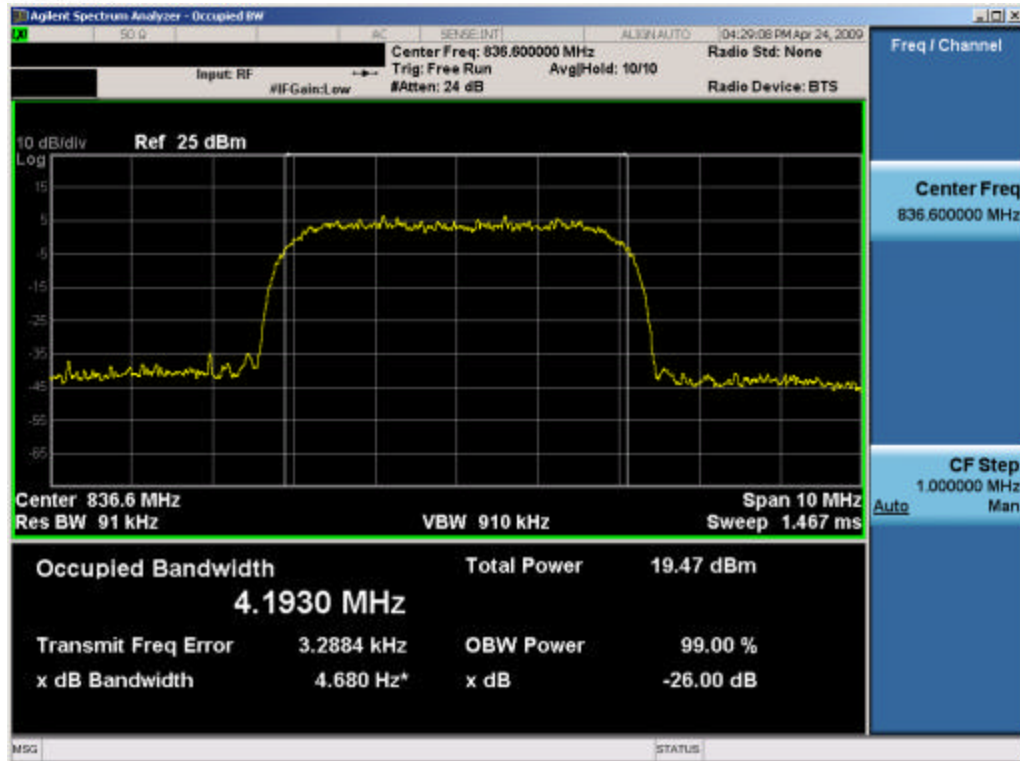
Plot 7-27. Conducted Spurious Plot (Cellular WCDMA Mode – Ch. 4183)



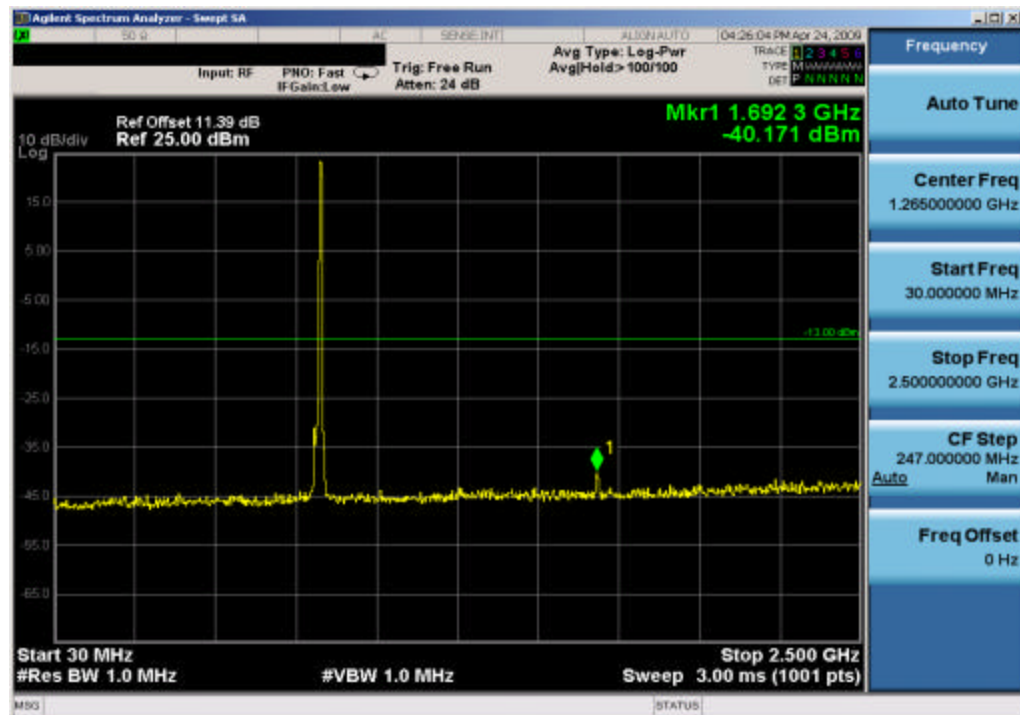
Plot 7-28. Conducted Spurious Plot (Cellular WCDMA Mode – Ch. 4183)

FCC ID: NBZNRM-MIFI2372	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0903200546.NBZ	Test Dates: April 23-27, 2009	EUT Type: 850/1900 GSM/WCDMA/GPRS/EDGE USB Modem with WLAN		Page 47 of 57



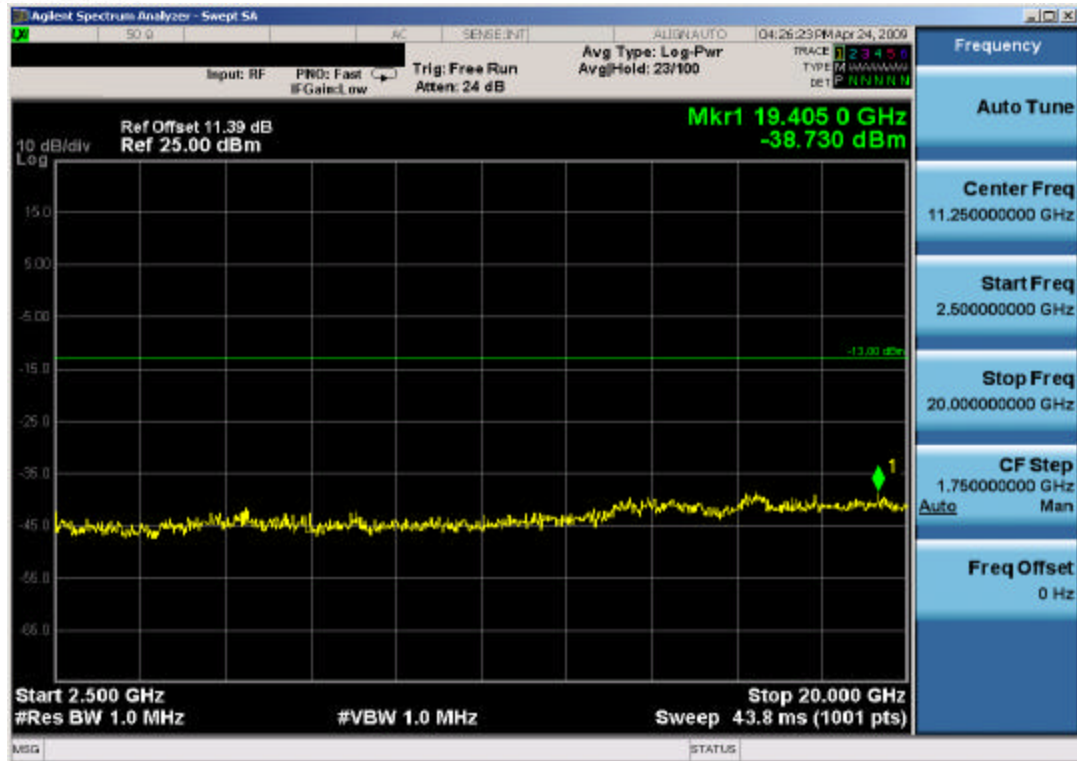


Plot 7-29. Occupied Bandwidth Plot (Cellular WCDMA Mode – Ch. 4183)

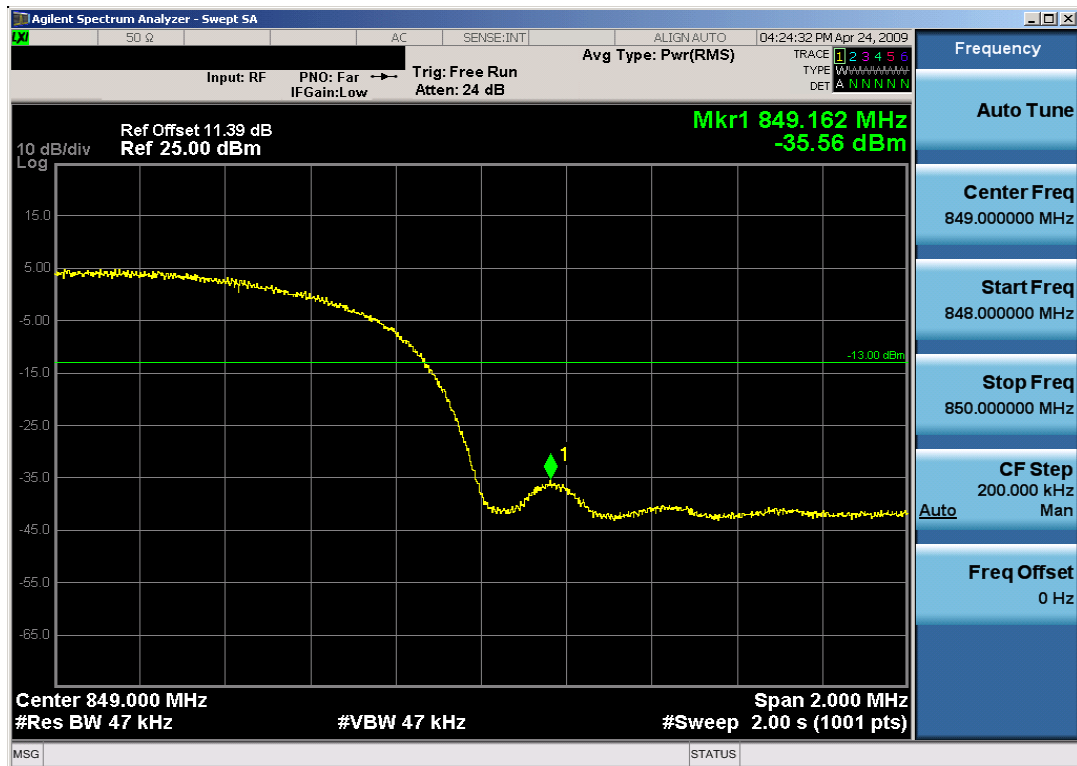


Plot 7-30. Conducted Spurious Plot (Cellular WCDMA Mode – Ch. 4233)


FCC ID: NBZNRM-MIF12372	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CERTIFICATION)	<b>Reviewed by:</b> Quality Manager
Test Report S/N: 0903200546.NBZ	Test Dates: April 23-27, 2009	EUT Type: 850/1900 GSM/WCDMA/GPRS/EDGE USB Modem with WLAN	Page 48 of 57



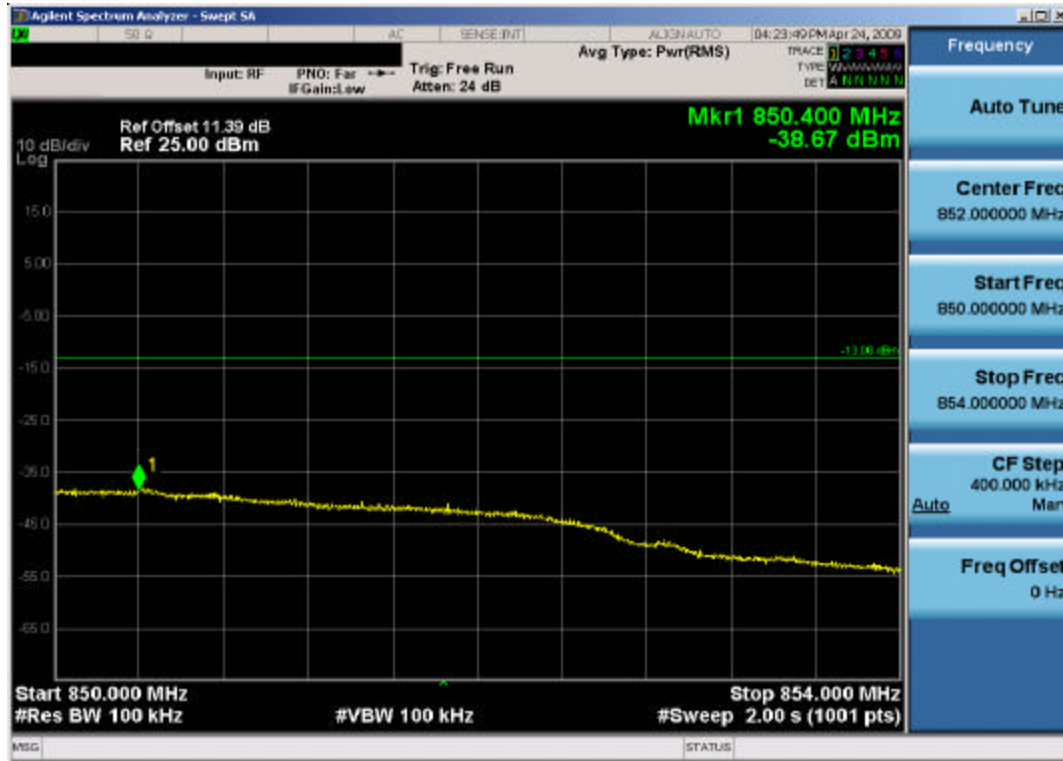
Plot 7-31. Conducted Spurious Plot (Cellular WCDMA Mode – Ch. 4233)



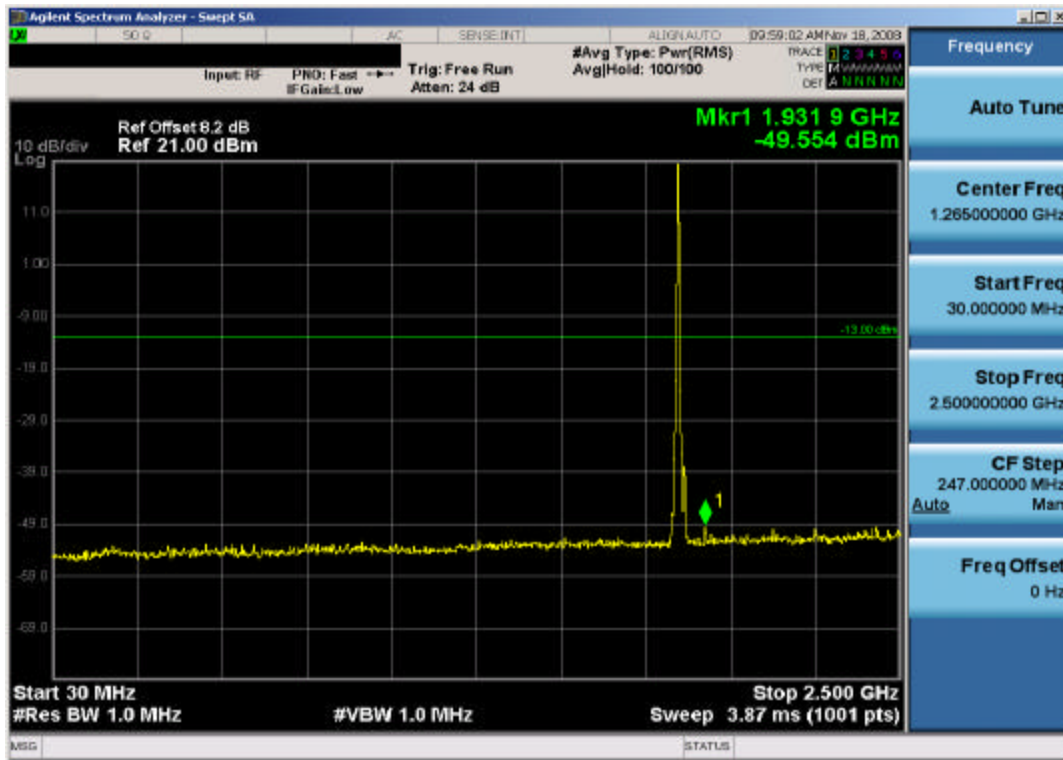
Plot 7-32. Band Edge Plot (Cellular WCDMA Mode – Ch. 4233)

FCC ID: NBZNRM-MIFI2372	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CERTIFICATION)	 Reviewed by: Quality Manager
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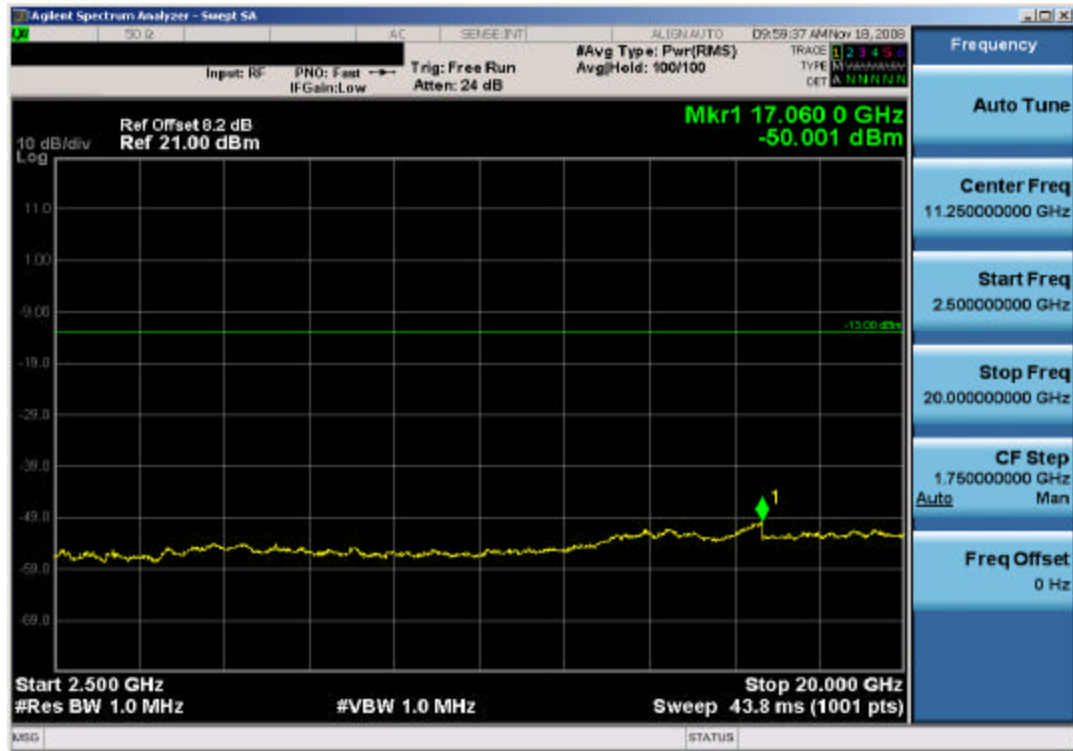


Plot 7-33. 4MHz Span Plot (Cellular WCDMA Mode – Ch. 4233)

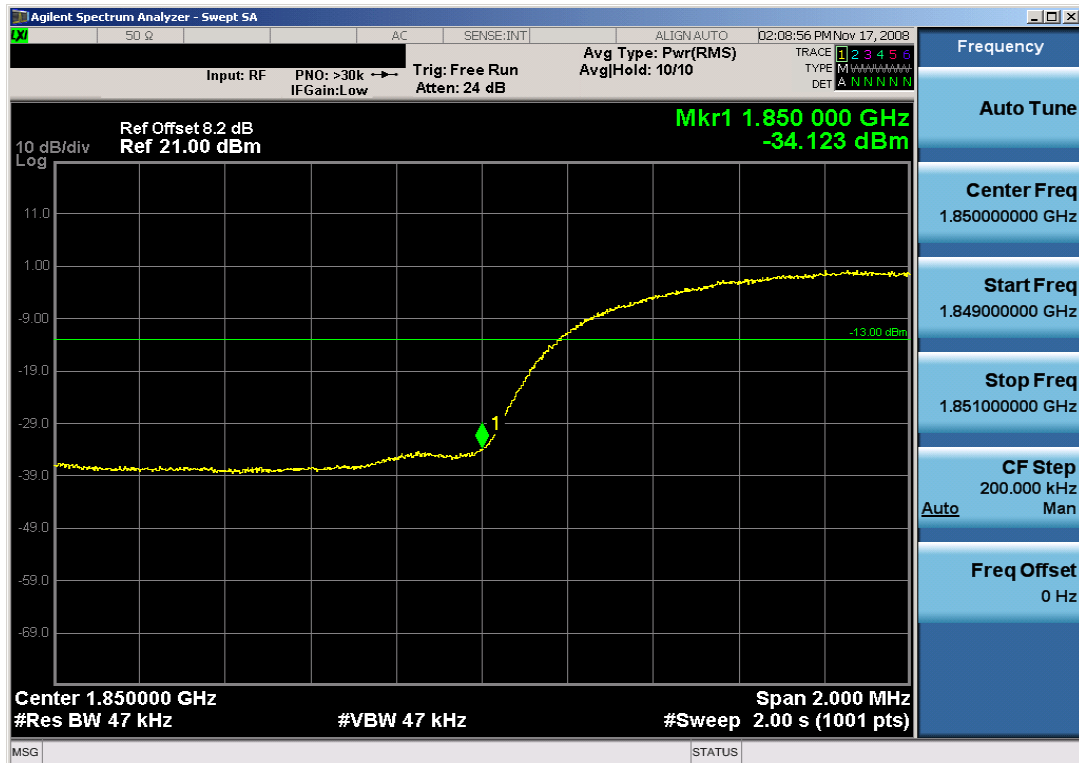


Plot 7-34. Conducted Spurious Plot (PCS WCDMA Mode – Ch. 9262)


FCC ID: NBZNRM-MIFI2372	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CERTIFICATION)	 Reviewed by: Quality Manager
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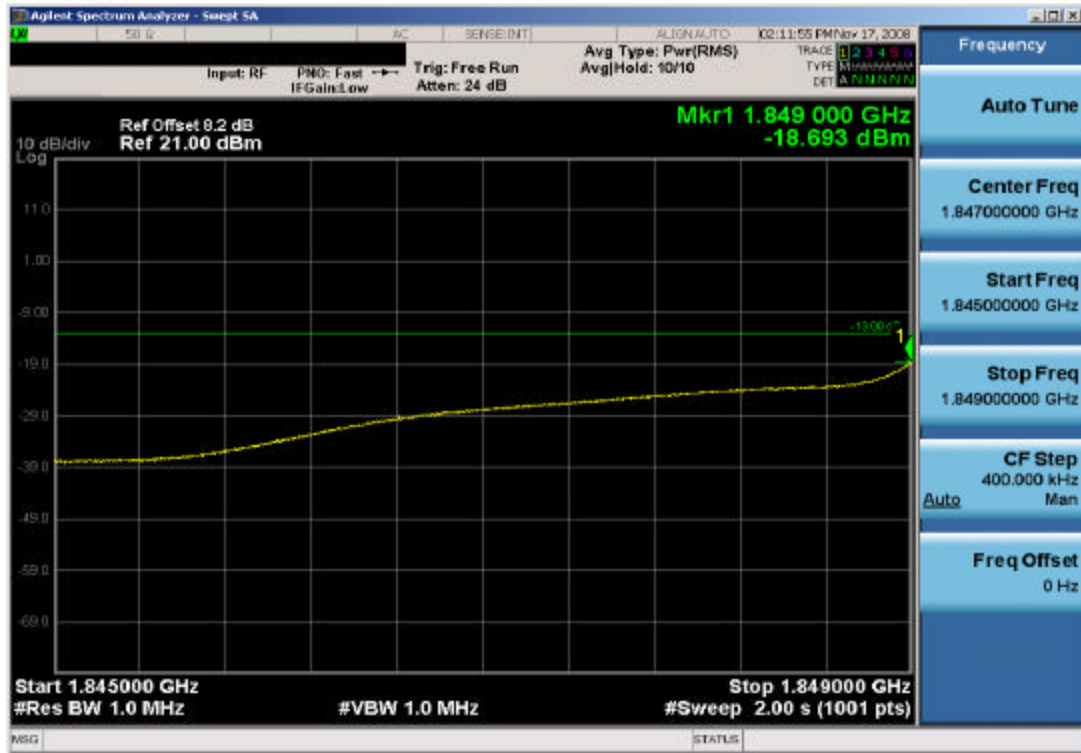


Plot 7-35. Conducted Spurious Plot (PCS WCDMA Mode – Ch. 9262)

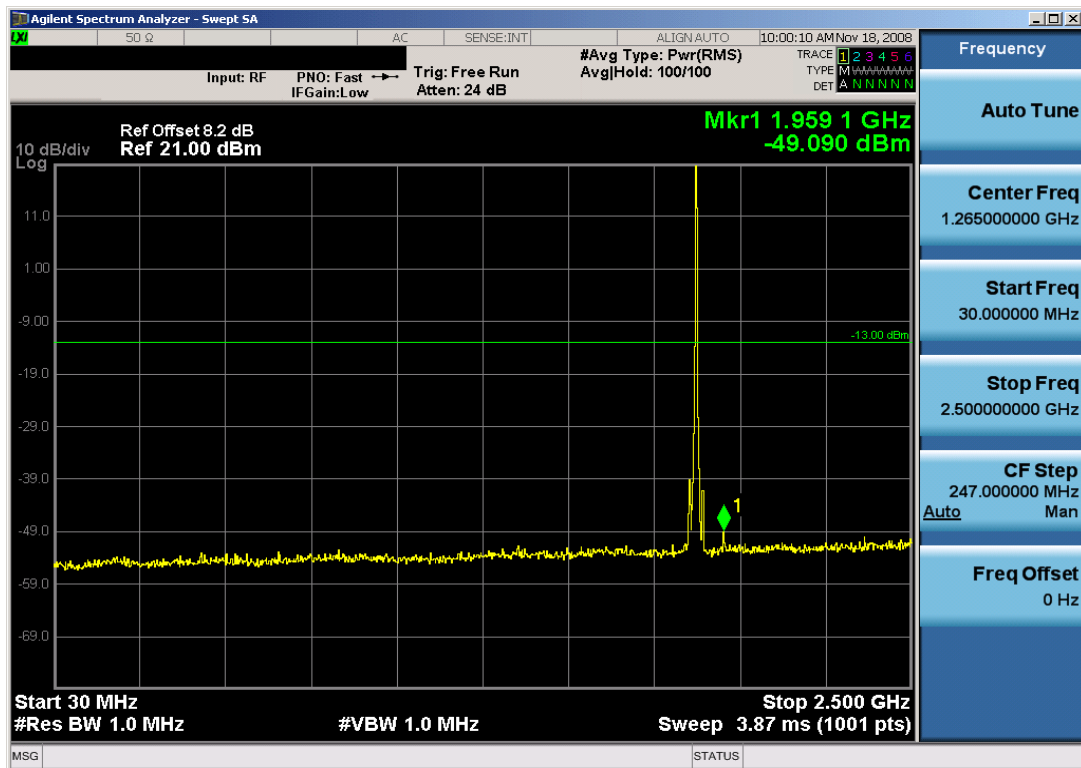


Plot 7-36. Band Edge Plot (PCS WCDMA Mode – Ch. 9262)



FCC ID: NBZNR-MIFI2372	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CERTIFICATION)	 Reviewed by: Quality Manager
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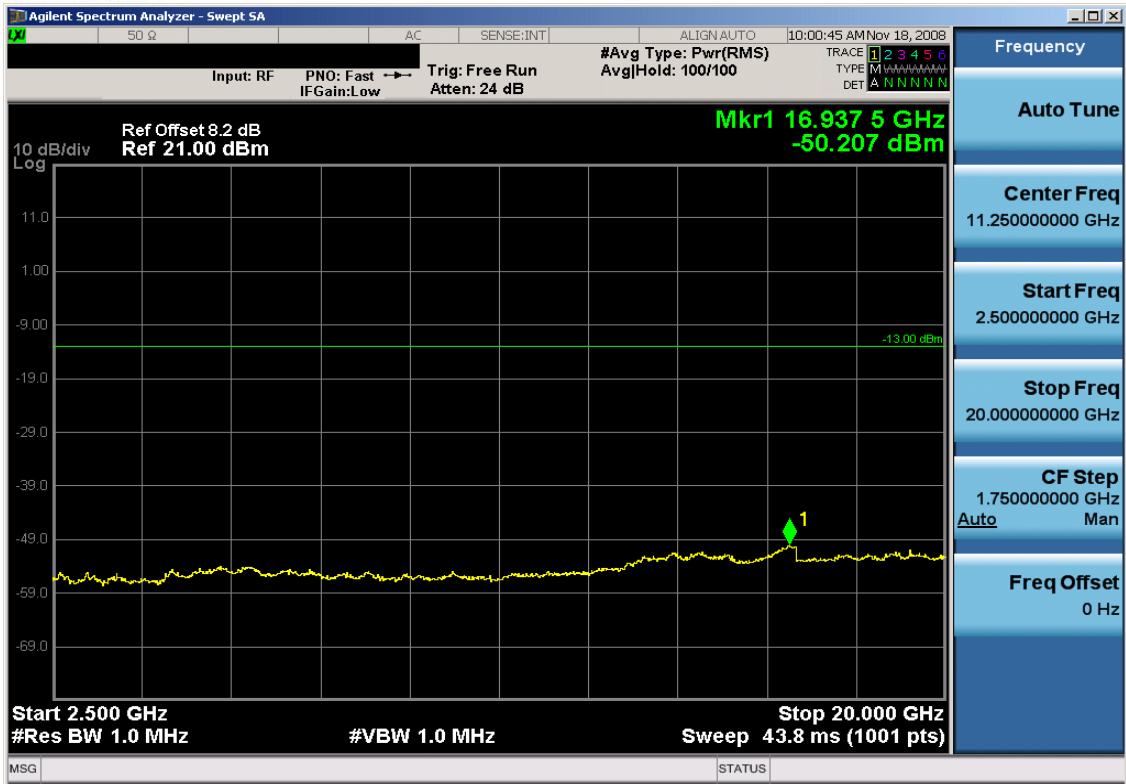


### Plot 7-37. 4MHz Span Plot (PCS WCDMA Mode – Ch. 9262)

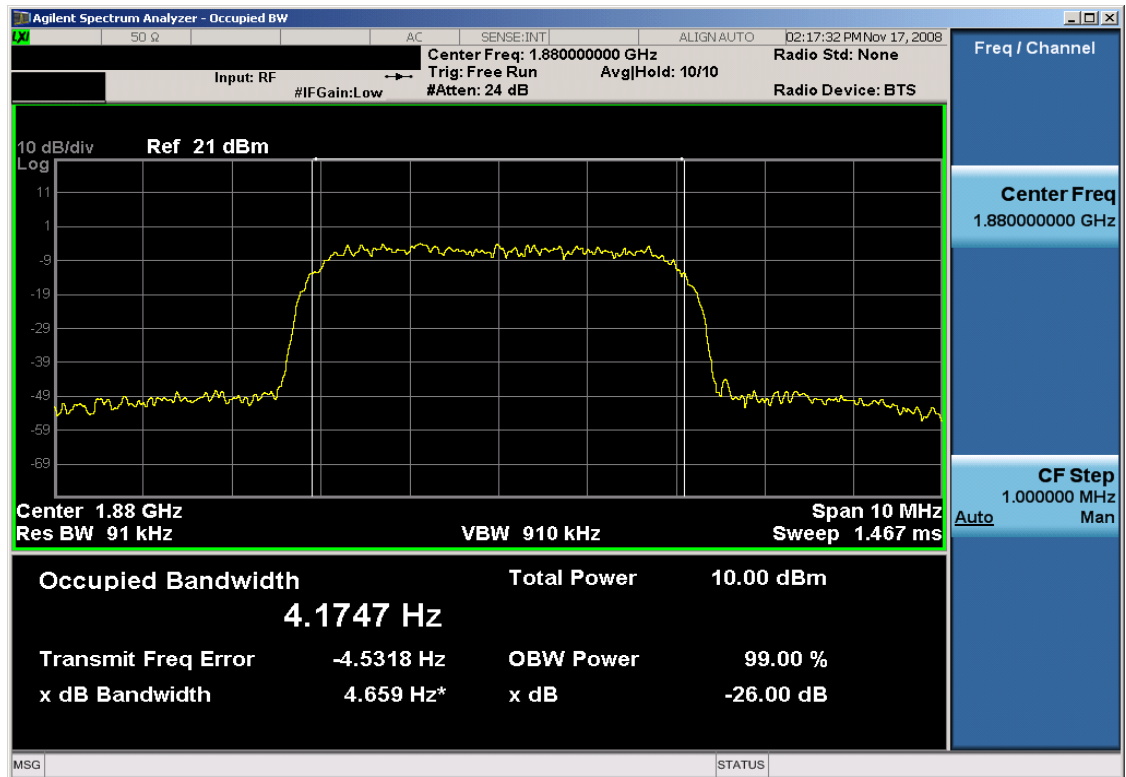


### Plot 7-38. Conducted Spurious Plot (PCS WCDMA Mode – Ch. 9400)


FCC ID: NBZNRM-MIFI2372	 <b>FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CERTIFICATION)</b> 		<b>Reviewed by:</b> Quality Manager
<b>Test Report S/N:</b> 0903200546.NBZ	<b>Test Dates:</b> April 23-27, 2009	<b>EUT Type:</b> 850/1900 GSM/WCDMA/GPRS/EDGE USB Modem with WLAN	Page 52 of 57

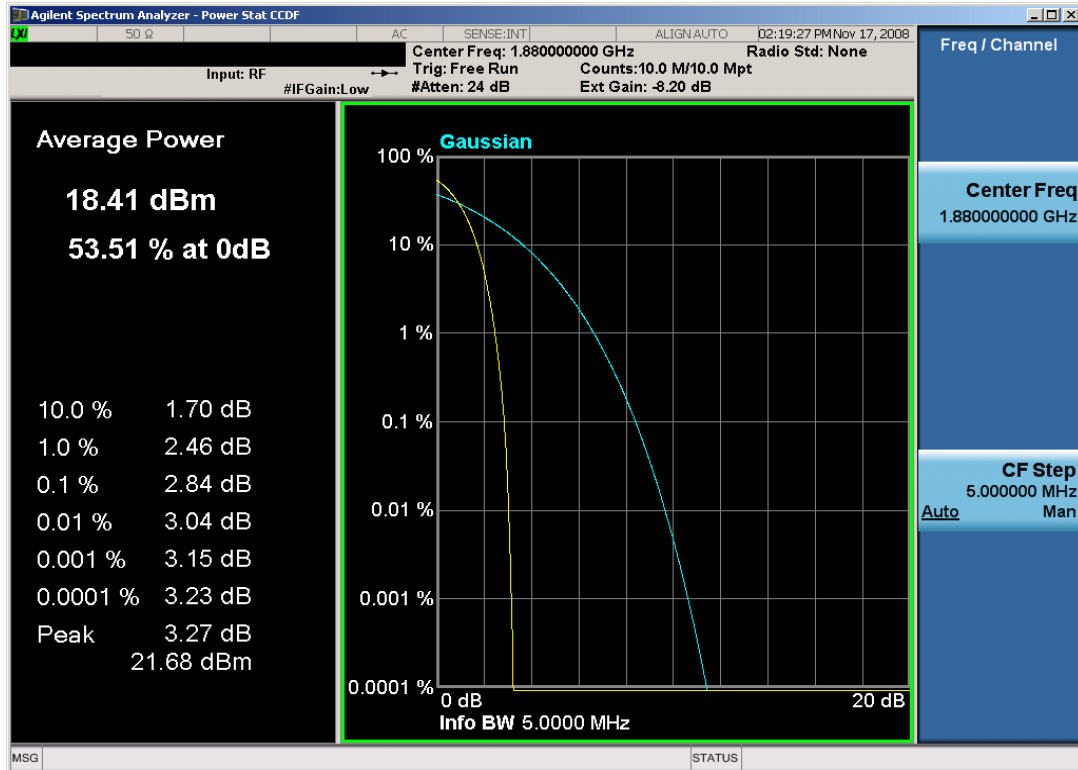


Plot 7-39. Conducted Spurious Plot (PCS WCDMA Mode – Ch. 9400)

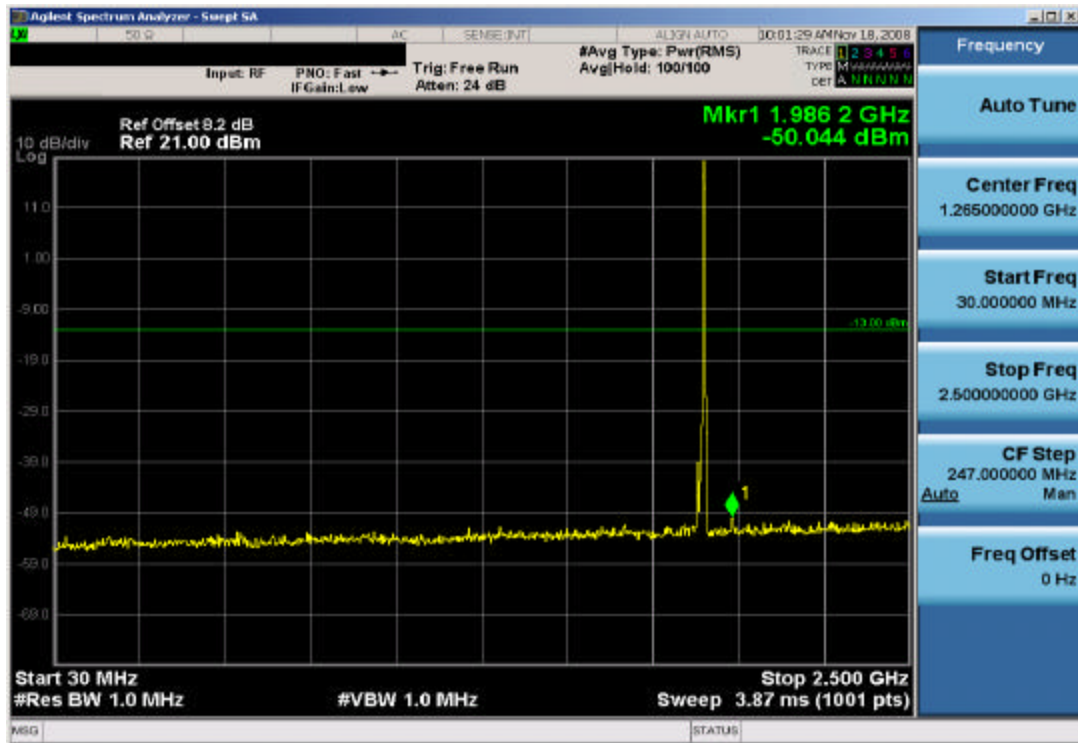


Plot 7-40. Occupied Bandwidth Plot (PCS WCDMA Mode – Ch. 9400)

FCC ID: NBZNR-MIFI2372	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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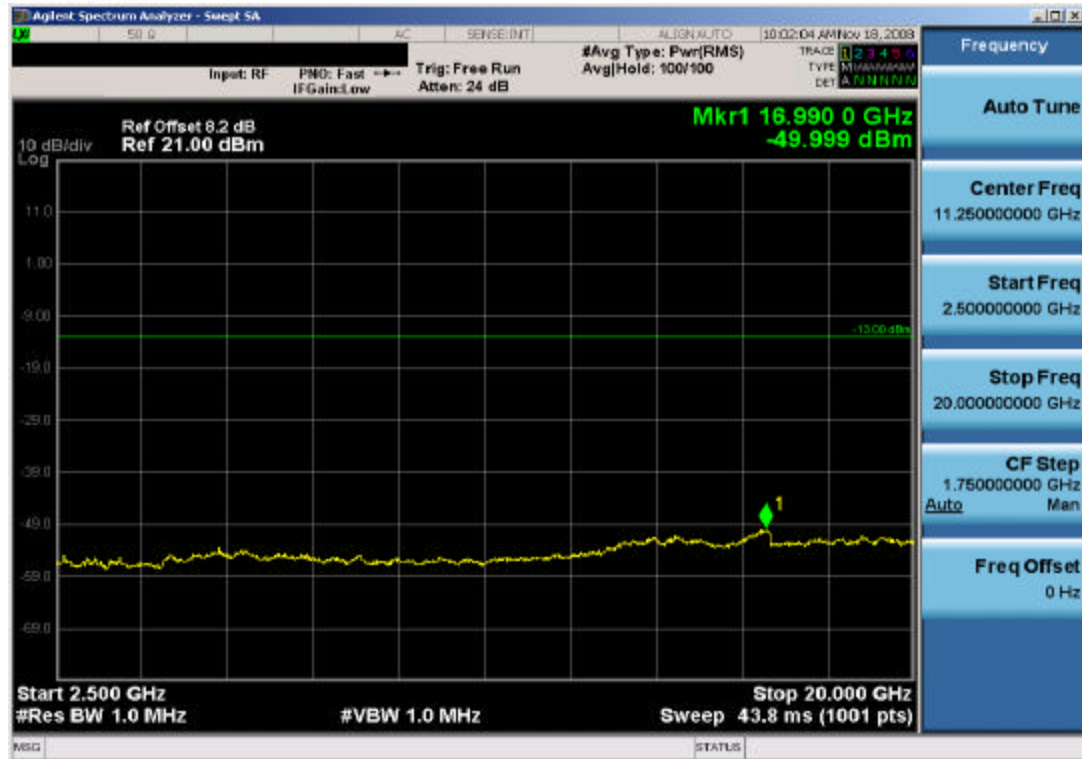
Plot 7-41. Peak-Average Ratio Plot (PCS WCDMA Mode – Ch. 9400)



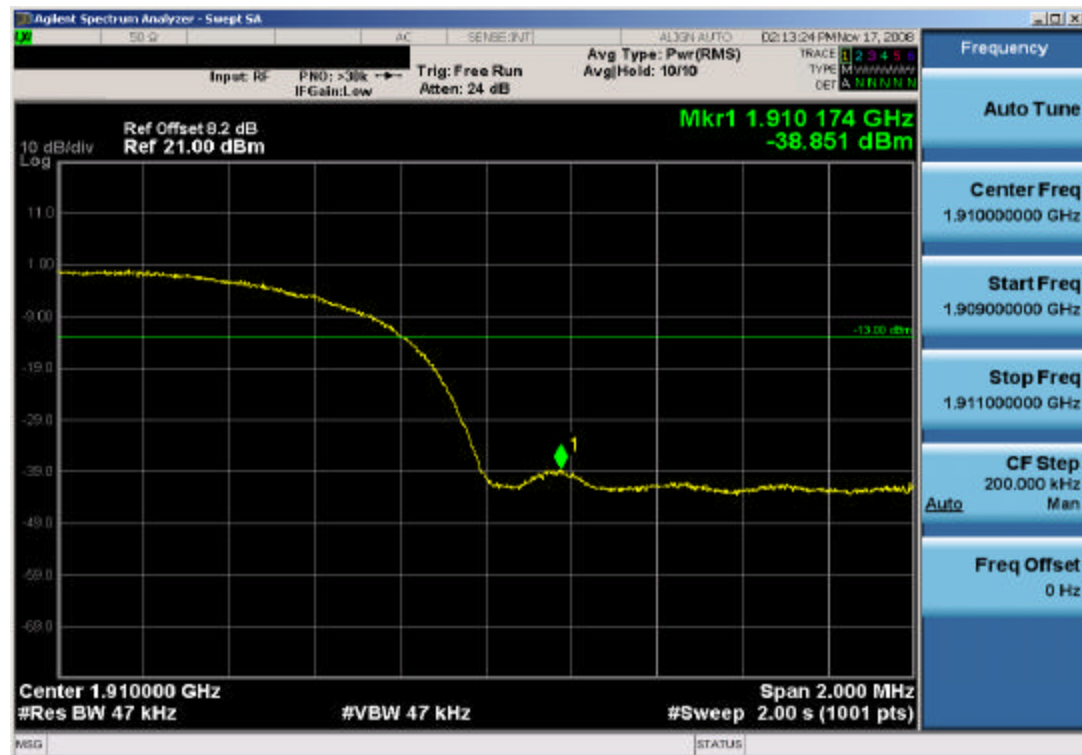
Plot 7-42. Conducted Spurious Plot (PCS WCDMA Mode – Ch. 9538)

FCC ID: NBZNR-MIFI2372	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CERTIFICATION)	<b>Reviewed by:</b> Quality Manager
Test Report S/N: 0903200546.NBZ	Test Dates: April 23-27, 2009	EUT Type: 850/1900 GSM/WCDMA/GPRS/EDGE USB Modem with WLAN	Page 54 of 57




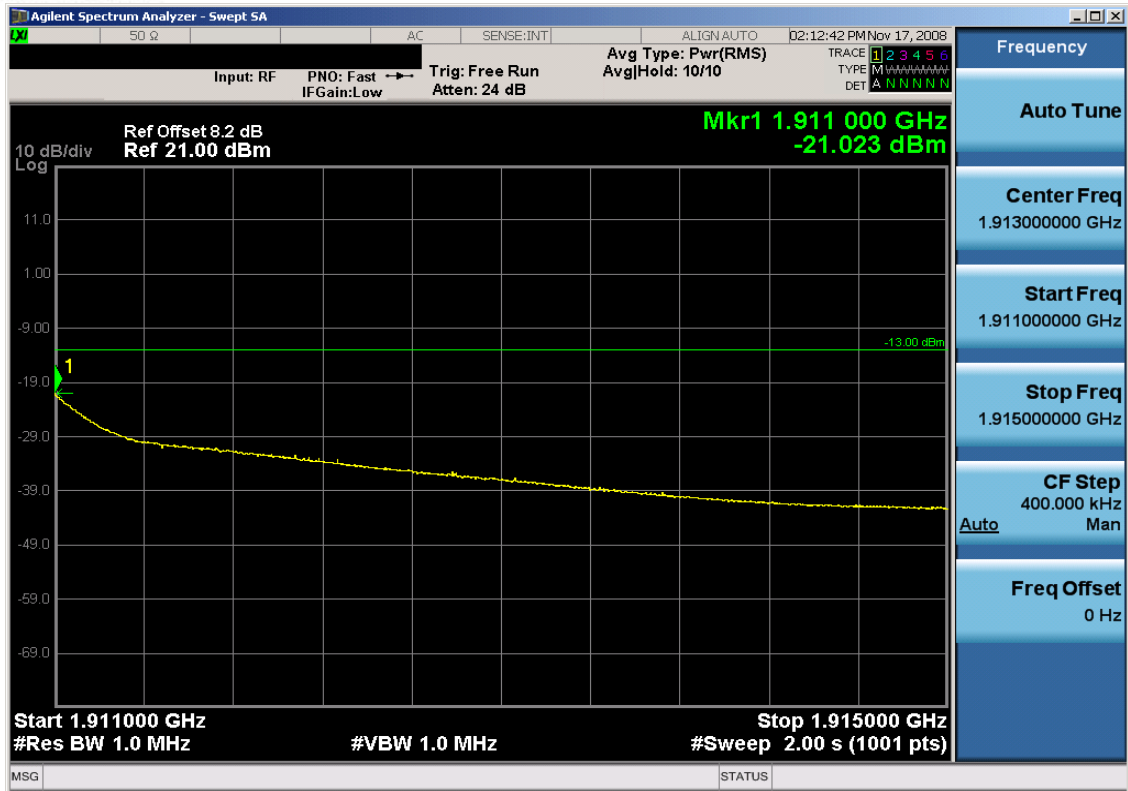


Plot 7-43. Conducted Spurious Plot (PCS WCDMA Mode – Ch. 9538)




Plot 7-44. Band Edge Plot (PCS WCDMA Mode – Ch. 9538)

FCC ID: NBZNRM-MIFI2372	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CERTIFICATION)	 Reviewed by: Quality Manager
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Plot 7-45. 4MHz Span Plot (PCS WCDMA Mode – Ch. 9538)

FCC ID: NBZNR-MIFI2372	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CERTIFICATION)	 Reviewed by: Quality Manager
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## 8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Novatel 850/1900 GSM/WCDMA/GPRS/EDGE USB Modem with WLAN FCC ID: NBZNRM-MIFI2372** complies with all the requirements of Parts 2, 22, and 24 of the FCC rules.

<b>FCC ID:</b> NBZNRM-MIFI2372		<b>FCC Pt. 22/24 GSM/EDGE/WCDMA MEASUREMENT REPORT (CERTIFICATION)</b>	 <b>Reviewed by:</b> Quality Manager
<b>Test Report S/N:</b> 0903200546.NBZ	<b>Test Dates:</b> April 23-27, 2009	<b>EUT Type:</b> 850/1900 GSM/WCDMA/GPRS/EDGE USB Modem with WLAN	Page 57 of 57