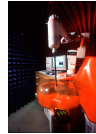




# PCTEST ENGINEERING LABORATORY, INC.

6660-B Dobbin Road, Columbia, MD 21045 USA  
Tel. 410.290.6652 / Fax 410.290.6554  
<http://www.pctestlab.com>



## CERTIFICATE OF COMPLIANCE FCC Part 22 & 24 Certification

<b>Applicant Name:</b> Panasonic Corporation of North America One Panasonic Way, 4B-8 Secaucus, NJ 07094 United States	<b>Date of Testing:</b> September 16 - 17, 2008 <b>Test Site/Location:</b> PCTEST Lab., Columbia, MD, USA <b>Test Report Serial No.:</b> 0808271202.ACJ
--	--

<b>FCC ID:</b>	<b>ACJ9TGCF-309</b>
<b>APPLICANT:</b>	<b>PANASONIC CORPORATION OF NORTH AMERICA</b>

**Application Type:** Certification

**FCC Classification:** PCS Licensed Transmitter (PCB)

**FCC Rule Part(s):** §2; §22(H), §24(E)

**EUT Type:** Toughbook Model: CF-30

**Model(s):** CF-30

**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)  
824.70 - 848.31MHz (Cell. CDMA) / 1851.25 - 1908.75MHz (PCS CDMA)

**Max. RF Output Power:** 1.23 W ERP Cell. GSM (30.9 dBm) / 0.748 W EIRP PCS GSM (28.74 dBm)  
0.164 W ERP Cell. WCDMA (22.15 dBm) / 0.191 W EIRP PCS WCDMA (22.8 dBm)  
0.108 W ERP Cell. CDMA (20.33 dBm) / 0.189 W EIRP PCS CDMA (22.77 dBm)  
0.381 W ERP EDGE850 (25.81 dBm) / 0.215 W EIRP EDGE1900 (23.33 dBm)

**Emission Designators:** 246KGXW (Cellular GSM), 242KGXW (PCS GSM)  
245KG7W (EDGE850), 242KG7W (EDGE1900)  
4M16F9W (Cellular WCDMA), 4M17F9W (PCS WCDMA)  
1M27F9W (Cellular CDMA), 1M27F9W (PCS CDMA)

**Test Device Serial No.:** *identical prototype* [S/N: 8GKSA00045]

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.



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 Orianez  
President

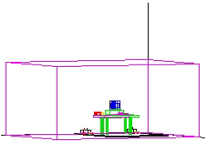


<b>FCC ID:</b> ACJ9TGCF-309		<b>FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)</b>		<b>Reviewed by:</b> Quality Manager
<b>Test Report S/N:</b> 0808271202.ACJ	<b>Test Dates:</b> September 16 - 17, 2008	<b>EUT Type:</b> Toughbook Model: CF-30	Page 1 of 80	

# T A B L E O F C O N T E N T S

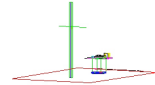
FCC PART 22 & 24 MEASUREMENT REPORT.....		3
1.0 INTRODUCTION .....		4
1.1 SCOPE .....		4
1.2 TESTING FACILITY.....		4
2.0 PRODUCT INFORMATION.....		5
2.1 EQUIPMENT DESCRIPTION .....		5
2.2 EMI SUPPRESSION DEVICE(S)/MODIFICATIONS .....		5
2.3 LABELING REQUIREMENTS.....		5
3.0 DESCRIPTION OF TESTS .....		6
3.1 MEASUREMENT PROCEDURE .....		6
3.2 OCCUPIED BANDWIDTH EMISSION LIMITS .....		6
3.3 CELLULAR - BASE FREQUENCY BLOCKS.....		6
3.4 CELLULAR - MOBILE FREQUENCY BLOCKS.....		7
3.5 PCS - BASE FREQUENCY BLOCKS.....		7
3.6 PCS - MOBILE FREQUENCY BLOCKS.....		7
3.7 SPURIOUS AND HARMONIC EMISSIONS AT ANTENNA TERMINAL.....		7
3.8 RADIATED SPURIOUS AND HARMONIC EMISSIONS .....		8
3.9 PEAK-AVERAGE RATIO.....		8
3.10 FREQUENCY STABILITY / TEMPERATURE VARIATION .....		9
4.0 TEST EQUIPMENT CALIBRATION DATA .....		10
5.0 SAMPLE CALCULATIONS .....		11
6.0 TEST RESULTS.....		12
6.1 SUMMARY.....		12
6.2 CONDUCTED OUTPUT POWER.....		13
6.3 EFFECTIVE RADIATED POWER OUTPUT DATA .....		14
6.4 EQUIVALENT ISOTROPIC RADIATED POWER OUTPUT DATA.....		15
6.5 CELLULAR GSM RADIATED MEASUREMENTS .....		16
6.6 CELLULAR WCDMA RADIATED MEASUREMENTS .....		19
6.7 CELLULAR CDMA RADIATED MEASUREMENTS.....		22
6.8 PCS GSM RADIATED MEASUREMENTS .....		25
6.9 PCS WCDMA RADIATED MEASUREMENTS .....		28
6.10 PCS CDMA RADIATED MEASUREMENTS.....		31
6.11 CELLULAR GSM FREQUENCY STABILITY MEASUREMENTS.....		34
6.12 CELLULAR WCDMA FREQUENCY STABILITY MEASUREMENTS.....		36
6.13 CELLULAR CDMA FREQUENCY STABILITY MEASUREMENTS .....		38
6.14 PCS GSM FREQUENCY STABILITY MEASUREMENTS .....		40
6.15 PCS WCDMA FREQUENCY STABILITY MEASUREMENTS .....		42
6.16 PCS CDMA FREQUENCY STABILITY MEASUREMENTS.....		44
7.0 PLOTS OF EMISSIONS.....		46
8.0 CONCLUSION.....		80

<b>FCC ID:</b> ACJ9TGCF-309		<b>FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)</b>		<b>Reviewed by:</b> Quality Manager
<b>Test Report S/N:</b> 0808271202.ACJ	<b>Test Dates:</b> September 16 - 17, 2008	<b>EUT Type:</b> Toughbook Model: CF-30	Page 2 of 80	



# MEASUREMENT REPORT

## FCC Part 22 & 24



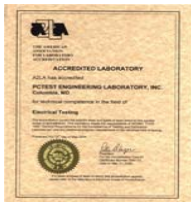
### §2.1033 General Information



**APPLICANT:** Panasonic Corporation of North America  
**APPLICANT ADDRESS:** One Panasonic Way, 4B-8  
 Secaucus, NJ 07094  
**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:** CF-30  
**FCC ID:** ACJ9TGCF-309  
**FCC CLASSIFICATION:** PCS Licensed Transmitter (PCB)  
 246KGXW (Cellular GSM), 242KGXW (PCS GSM)  
 245KG7W (EDGE850), 242KG7W (EDGE1900)  
**EMISSION DESIGNATOR(S):** 4M16F9W (Cellular WCDMA), 4M17F9W (PCS WCDMA)  
 1M27F9W (Cellular CDMA), 1M27F9W (PCS CDMA)  
**MODE:** GSM/EDGE/CDMA/WCDMA  
**FREQUENCY TOLERANCE:** ±0.00025 % (2.5 ppm)  
**Test Device Serial No.:** 8GKSA00045     Production     Pre-Production     Engineering  
**DATE(S) OF TEST:** September 16 - 17, 2008  
**TEST REPORT S/N:** 0808271202.ACJ

### 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 (IC-2451).
- 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 (IC-2451) 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.



<b>FCC ID:</b> ACJ9TGCF-309	 <b>PCTEST</b> ENGINEERING LABORATORY, INC.	<b>FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT</b> (CERTIFICATION)		<b>Reviewed by:</b> Quality Manager
<b>Test Report S/N:</b> 0808271202.ACJ	<b>Test Dates:</b> September 16 - 17, 2008	<b>EUT Type:</b> Toughbook Model: CF-30	Page 3 of 80	

# 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 Internt'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 and Industry Canada.

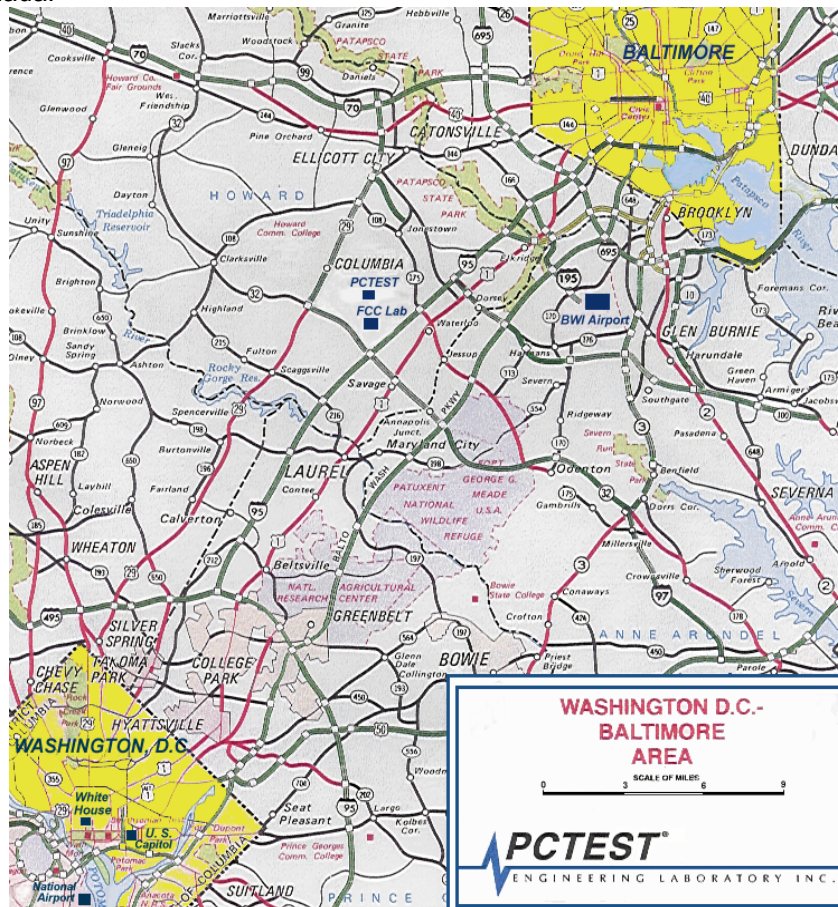


Figure 1-1. Map of the Greater Baltimore and Metropolitan Washington, D.C. area

FCC ID: ACJ9TGCF-309	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)	Panasonic	Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30		Page 4 of 80

## 2.0 PRODUCT INFORMATION

### 2.1 Equipment Description

The Equipment Under Test (EUT) is the **Panasonic Toughbook Model: CF-30 FCC ID: ACJ9TGCF-309**. The EUT consisted of the following component(s):

Trade Name / Base Model	FCC ID	Description
Panasonic / Model: CF-30	ACJ9TGCF-309	Toughbook Model: CF-30
Alps / Model: UGNZA	N/A	Bluetooth Module
Intel / Model: 512AN_MMW	PD9512ANM	802.11a/b/g/n Wireless LAN Module
Qualcomm / Model: UNDP-1	J9CUNDP-1	GSM/EDGE/WCDMA/CDMA Module

**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).

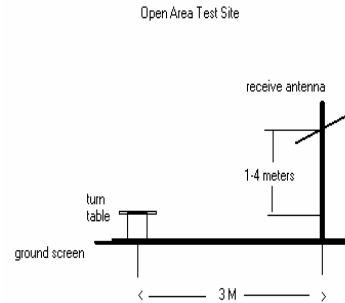
Please see attachment for FCC ID label and label location.

FCC ID: ACJ9TGCF-309		FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30	Page 5 of 80	

### 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 3-meters from the receive antenna. The receive antenna height and turntable rotations were adjusted for the highest reading on the receive spectrum analyzer. 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. 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**

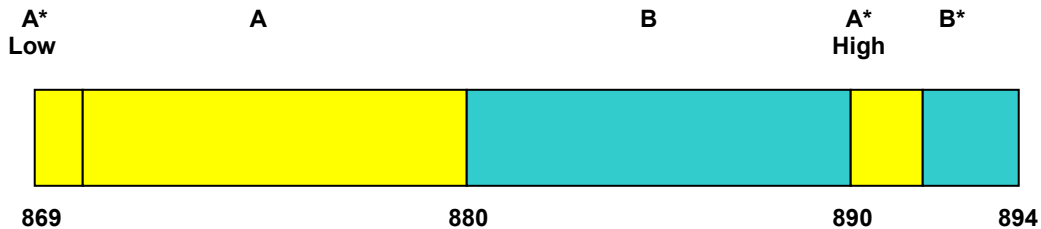
**Deviation from Measurement Procedure.....None**

#### 3.2 Occupied Bandwidth Emission Limits

§2.1049, 22.917(a), 24.238(a)

- 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.
- b. 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.
- c. 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.
- d. 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





**BLOCK 1: 869 – 880 MHz (A\* Low + A)**

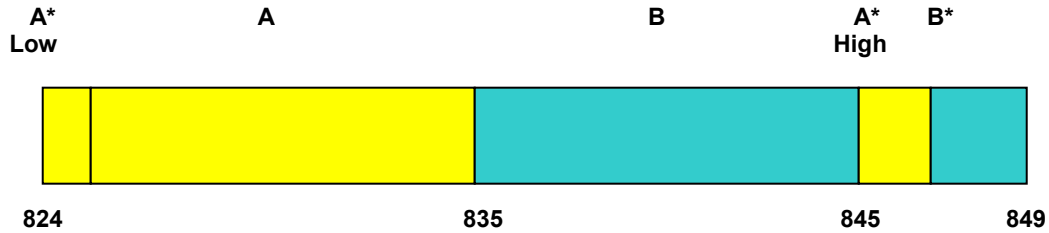
**BLOCK 3: 890 – 891.5 MHz (A\* High)**

**BLOCK 2: 880 – 890 MHz (B)**

**BLOCK 4: 891.5 – 894 MHz (B\*)**

FCC ID: ACJ9TGCF-309	 PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)	 Panasonic	Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30	Page 6 of 80	

### 3.4 Cellular - Mobile Frequency Blocks



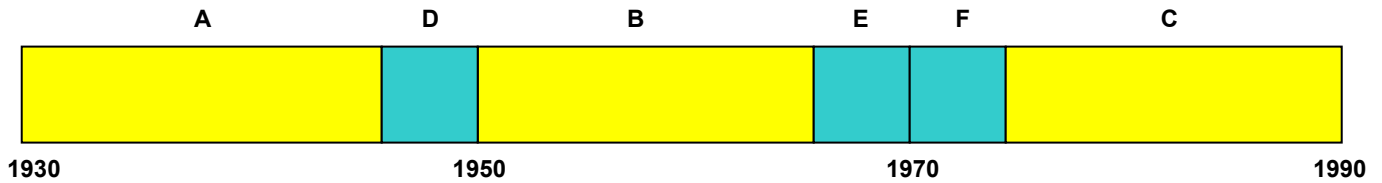
BLOCK 1: 824 – 835 MHz (A\* Low + A)

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)

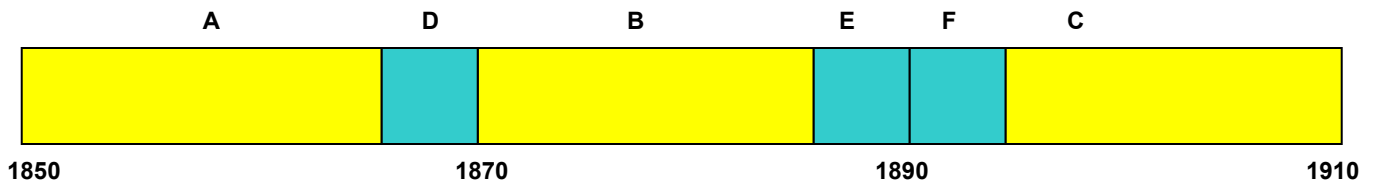
BLOCK 2: 1945 – 1950 MHz (D)

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.

FCC ID: ACJ9TGCF-309		FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30		Page 7 of 80

### 3.8 Radiated Spurious and Harmonic Emissions

#### §2.1053, 22.917(a), 24.238(a)

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz.

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

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. The conducted power at the terminals of the dipole is measured. The ERP is recorded.

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



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 receive spectrum analyzer reading. 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.

Spurious and harmonic radiated emissions are measured outdoors at our 3-meter 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. 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 spectrum analyzer reading. This level is recorded. 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. In CDMA mode, this device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits.

### 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.

FCC ID: ACJ9TGCF-309		FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30	Page 8 of 80	

### 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 ±0.00025% (±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.



FCC ID: ACJ9TGCF-309		FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)	Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30	Page 9 of 80

## 4.0 TEST EQUIPMENT CALIBRATION DATA

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

Manufacturer	Model	Description	Calibration Date	Cal Interval	Calibration Due	Serial No.
-	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
Agilent	11713A	Attenuation/Switch Driver	12/13/07	Annual	12/13/08	3439A02645
Agilent	8449B	(1-26.5GHz) Pre-Amplifier	12/13/07	Annual	12/12/08	3008A00985
Agilent	8495A	(0-70dB) DC-4GHz Attenuator	N/A		N/A	N/A
Agilent	85650A	Quasi-Peak Adapter	03/13/08	Annual	03/13/09	2043A00301
Agilent	8566B	(100Hz-22GHz) Spectrum Analyzer	12/13/07	Annual	12/13/08	3638A08713
Agilent	8566B	Opt. 462 Impulse Bandwidth	12/13/07	Annual	12/12/08	3701A22204
Agilent	8591A	(9kHz-1.8GHz) Spectrum Analyzer	08/19/08	Annual	08/19/09	3144A02458
Agilent	8648D	(9kHz-4GHz) Signal Generator	10/11/07	Biennial	10/10/09	3613A00315
Agilent	E4407B	ESA Spectrum Analyzer	03/13/08	Annual	03/13/09	US39210313
Agilent	E4448A	(3Hz-50GHz) Spectrum Analyzer	01/24/08	Annual	01/24/09	US42510244
Agilent	E8257D	(250kHz-20GHz) Signal Generator	03/08/07	Biennial	03/08/09	MY45470194
Compliance Design	Roberts	Dipole Set	11/09/07	Biennial	11/08/09	146
Compliance Design	Roberts	Dipole Set	11/09/07	Biennial	11/08/09	147
Emco	3115	Horn Antenna (1-18GHz)	9/24/07	Biennial	9/23/09	9704-5182
Emco	3115	Horn Antenna (1-18GHz)	10/4/07	Biennial	10/3/09	9205-3874
Emco	3121C-DB4	Dipole Antenna	1/23/07	Biennial	1/22/09	00023951
Espec	ESX-2CA	Environmental Chamber	3/12/08	Annual	3/12/09	017620
Gigatronics	80701A	(0.05-18GHz) Power Sensor	8/18/08	Annual	8/18/09	1833460
Gigatronics	8651A	Universal Power Meter	8/18/08	Annual	8/18/09	1835299
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	
Rohde & Schwarz	CMU200	Base Station Simulator	7/23/08	Annual	7/23/09	109892
Schwarzbeck	UHA9105	Dipole Antenna (400 - 1GHz) Rx	6/19/07	Biennial	6/18/09	9105-2404
Schwarzbeck	UHA9105	Dipole Antenna (400 - 1GHz) Tx	6/19/07	Biennial	6/18/09	9105-2403
Solar Electronics	8012-50-R-24-BNC	LISN	11/8/07	Biennial	11/8/09	0310233
Sunol	DRH-118	Horn Antenna (1 - 18GHz)	5/9/07	Biennial	5/8/09	A050307

**Table 4-1. Test Equipment**

FCC ID: ACJ9TGCF-309		FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30	Page 10 of 80	

## 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)

### CDMA Emission Designator



**Emission Designator = 1M27F9W**

CDMA BW = 1.27 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 receive analyzer 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 receive analyzer. 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 signal generator 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: ACJ9TGCF-309		FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30	Page 11 of 80	



## 6.0 TEST RESULTS

### 6.1 Summary

Company Name: Panasonic Corporation of North America  
 FCC ID: ACJ9TGCF-309  
 FCC Classification: PCS Licensed Transmitter (PCB)  
 Mode(s): GSM/EDGE/CDMA/WCDMA

FCC Part Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
<b><u>TRANSMITTER MODE (TX)</u></b>					
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	GSM/WCDMA Conducted Output Power	N/A		PASS	Section 6.2
22.913(a)(2)	Effective Radiated Power	< 7 Watts max. ERP (<6.3 Watts max. ERP (IC))	RADIATED	PASS	Section 6.3
24.232(c)	Equivalent Isotropic Radiated Power	< 2 Watts max. EIRP		PASS	Section 6.4
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 6.5, 6.6, 6.8, 6.9
2.1055, 22.355, 24.235	Frequency Stability	< 2.5 ppm		PASS	Sections 6.11, 6.12, 6.14, 6.15
<b><u>RECEIVER MODE (RX) / DIGITAL EMISSIONS</u></b>					
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
<b><u>RF EXPOSURE (SAR)</u></b>					
2.1091 / 2.1093	MPE Test	1 mW/cm <sup>2</sup> (MPE Limit) @ 20 cm	MPE	PASS	MPE Report

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

FCC ID: ACJ9TGCF-309		FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30	Page 12 of 80	

## 6.2 Conducted Output Power

### §2.1046

A base station simulator was used to establish communication with the **Panasonic Toughbook Model: CF-30 FCC ID: ACJ9TGCF-309**. The base station simulator parameters were set to produce the maximum power from the EUT. 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. In CDMA mode, this device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits. The GSM and WCDMA conducted powers are reported below, respectively. The CDMA conducted powers can be found in a separate FCC 3G conducted power table.

Band	Channel	GSM		GPRS		EDGE	
		Power Control Level	Conducted Power	Uplink / Downlink Slots Used	Conducted Power	Uplink / Downlink Slots Used	Conducted Power
			[dBm]		[dBm]		[dBm]
Cellular	128	5	32.92	1/1	32.98	1/1	27.50
	190	5	32.96	1/1	32.70	1/1	27.83
	251	5	32.93	1/1	32.64	1/1	27.71
PCS	512	0	29.33	1/1	28.34	1/1	26.65
	661	0	29.47	1/1	29.41	1/1	26.81
	810	0	29.35	1/1	29.30	1/1	26.53

Table 6-2. GSM Conducted Output Powers

Band	Channel	HSDPA Inactive	HSDPA Active
		Conducted Power	Conducted Power
		[dBm]	[dBm]
Cellular	4132	24.22	24.24
	4183	24.42	24.28
	4233	24.20	24.07
PCS	9262	24.54	24.30
	9400	24.25	24.24
	9538	24.08	23.92

Table 6-3. WCDMA Conducted Output Powers

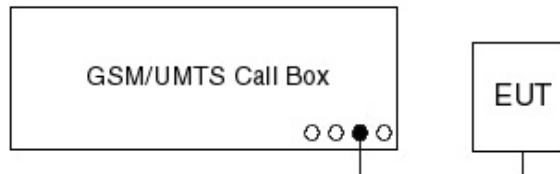




Figure 6-1. GSM/WCDMA Conducted Power Test Setup Diagram

FCC ID: ACJ9TGCF-309	 PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)	 Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30	Page 13 of 80

### 6.3 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	-7.060	30.90	0.00	V	30.90	1.230	Standard
836.60	GSM850	-7.680	30.28	0.00	V	30.28	1.067	Standard
848.80	GSM850	-8.130	29.83	0.00	V	29.83	0.962	Standard
824.20	EDGE850	-12.150	25.81	0.00	V	25.81	0.381	Standard

**Table 6-4. 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	-15.810	22.15	0.00	V	22.15	0.164	Standard
836.60	WCDMA850	-16.790	21.17	0.00	V	21.17	0.131	Standard
846.60	WCDMA850	-16.350	21.61	0.00	V	21.61	0.145	Standard

**Table 6-5. Effective Radiated Power Output Data (WCDMA)**

**POWER: All "1" bits (Cellular CDMA Mode)**

Frequency [MHz]	Mode	Measured Level [dBm]	Substitute Level [dBm]	Antenna Gain [dBd]	Pol [H/V]	ERP [dBm]	ERP [Watts]	Battery Type
824.70	CDMA850	-17.850	20.11	0.00	V	20.11	0.103	Standard
836.52	CDMA850	-17.630	20.33	0.00	V	20.33	0.108	Standard
848.31	CDMA850	-18.030	19.93	0.00	V	19.93	0.098	Standard

**Table 6-6. Effective Radiated Power Output Data (CDMA)**

## 6.4 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]	PoI [H/V]	EIRP [dBm]	EIRP [Watts]	Battery Type
1850.20	GSM1900	-15.010	20.74	8.00	V	28.74	0.748	Standard
1880.00	GSM1900	-16.820	18.93	8.00	V	26.93	0.493	Standard
1909.80	GSM1900	-18.510	17.24	8.00	V	25.24	0.334	Standard
1850.20	EDGE1900	-20.420	15.33	8.00	V	23.33	0.215	Standard

Table 6-7. 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]	PoI [H/V]	EIRP [dBm]	EIRP [Watts]	Battery Type
1852.40	WCDMA1900	-20.950	14.80	8.00	V	22.80	0.191	Standard
1880.00	WCDMA1900	-21.340	14.41	8.00	V	22.41	0.174	Standard
1907.60	WCDMA1900	-21.780	13.97	8.00	V	21.97	0.157	Standard

Table 6-8. Equivalent Isotropic Radiated Power Output Data (WCDMA)

POWER: All "1" bits (PCS CDMA Mode)

Frequency [MHz]	Mode	Measured Level [dBm]	Substitute Level [dBm]	Antenna Gain [dBi]	PoI [H/V]	EIRP [dBm]	EIRP [Watts]	Battery Type
1851.25	CDMA1900	-20.980	14.77	8.00	V	22.77	0.189	Standard
1880.00	CDMA1900	-22.170	13.58	8.00	V	21.58	0.144	Standard
1908.75	CDMA1900	-23.340	12.41	8.00	V	20.41	0.110	Standard

Table 6-9. Equivalent Isotropic Radiated Power Output Data (CDMA)

FCC ID: ACJ9TGCF-309		FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30		Page 15 of 80

## 6.5 Cellular GSM Radiated Measurements

§2.1053, 22.917(a)

### Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 824.20 MHz  
 CHANNEL: 128  
 MEASURED OUTPUT POWER: 30.900 dBm = 1.230 W  
 MODULATION SIGNAL: GSM (Internal)  
 DISTANCE: 3 meters  
 LIMIT:  $43 + 10 \log_{10} (W) =$  43.90 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
1648.40	-45.68	6.08	-39.60	H	70.5
2472.60	-40.24	6.53	-33.71	H	64.6
3296.80	-52.52	6.87	-45.65	H	76.6
4121.00	-59.50	7.21	-52.29	H	83.2
4945.20	-91.93	8.37	-83.56	H	114.5



**Table 6-10. 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 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. 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 spurious level is recorded. 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. In CDMA mode, this device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits. This unit was tested with its standard battery.

FCC ID: ACJ9TGCF-309		FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30		Page 16 of 80

**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: 30.900 dBm = 1.230 W  
 MODULATION SIGNAL: GSM (Internal)  
 DISTANCE: 3 meters  
 LIMIT:  $43 + 10 \log_{10} (W) =$  43.90 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
1673.20	-48.70	6.09	-42.61	H	73.5
2509.80	-36.47	6.55	-29.91	H	60.8
3346.40	-48.79	6.89	-41.89	H	72.8
4183.00	-59.79	7.43	-52.36	H	83.3
5019.60	-91.61	8.35	-83.26	H	114.2



**Table 6-11. 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 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. 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 spurious level is recorded. 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. In CDMA mode, this device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits. This unit was tested with its standard battery.

FCC ID: ACJ9TGCF-309		FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30	Page 17 of 80	

**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: 30.900 dBm = 1.230 W  
 MODULATION SIGNAL: GSM (Internal)  
 DISTANCE: 3 meters  
 LIMIT:  $43 + 10 \log_{10} (W) =$  43.90 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
1697.60	-48.73	6.09	-42.63	H	73.5
2546.40	-35.27	6.57	-28.70	H	59.6
3395.20	-49.50	6.91	-42.59	H	73.5
4244.00	-60.44	7.65	-52.79	H	83.7
5092.80	-91.27	8.33	-82.94	H	113.8



**Table 6-12. 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 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. 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 spurious level is recorded. 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. In CDMA mode, this device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits. This unit was tested with its standard battery.

FCC ID: ACJ9TGCF-309		FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30	Page 18 of 80	

## 6.6 Cellular WCDMA Radiated Measurements §2.1053, 22.917(a)

### Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 826.40 MHz  
 CHANNEL: 4132  
 MEASURED OUTPUT POWER: 22.150 dBm = 0.164 W  
 MODULATION SIGNAL: WCDMA (Internal)  
 DISTANCE: 3 meters  
 LIMIT:  $43 + 10 \log_{10} (W) =$  35.15 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
1652.80	-68.86	6.08	-62.77	H	84.9
2479.20	-59.11	6.54	-52.58	H	74.7
3305.60	-66.10	6.88	-59.22	H	81.4
4132.00	-92.64	7.25	-85.40	H	107.5
4958.40	-91.87	8.37	-83.51	H	105.7



**Table 6-13. 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 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. 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 spurious level is recorded. 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. In CDMA mode, this device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits. This unit was tested with its standard battery.

FCC ID: ACJ9TGCF-309		FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30		Page 19 of 80

## 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: 22.150 dBm = 0.164 W  
 MODULATION SIGNAL: WCDMA (Internal)  
 DISTANCE: 3 meters  
 LIMIT:  $43 + 10 \log_{10} (W) =$  35.15 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
1673.20	-67.67	6.09	-61.58	H	83.7
2509.80	-56.49	6.55	-49.93	H	72.1
3346.40	-69.10	6.89	-62.21	H	84.4
4183.00	-92.80	7.40	-85.39	H	107.5
5019.60	-91.65	8.35	-83.30	H	105.5



**Table 6-14. 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 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. 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 spurious level is recorded. 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. In CDMA mode, this device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits. This unit was tested with its standard battery.

FCC ID: ACJ9TGCF-309		FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30	Page 20 of 80	

**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: 22.150 dBm = 0.164 W  
 MODULATION SIGNAL: WCDMA (Internal)  
 DISTANCE: 3 meters  
 LIMIT:  $43 + 10 \log_{10} (W) =$  35.15 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
1693.20	-68.35	6.09	-62.26	H	84.4
2539.80	-54.15	6.57	-47.58	H	69.7
3386.40	-65.58	6.91	-58.67	H	80.8
4233.00	-93.00	7.62	-85.38	H	107.5
5079.60	-91.33	8.33	-83.00	H	105.1



**Table 6-15. 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 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. 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 spurious level is recorded. 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. In CDMA mode, this device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits. This unit was tested with its standard battery.

FCC ID: ACJ9TGCF-309		FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30	Page 21 of 80	

## 6.7 Cellular CDMA Radiated Measurements

### §2.1053, 22.917(a)

#### Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 824.70 MHz  
 CHANNEL: 1013  
 MEASURED OUTPUT POWER: 20.330 dBm = 0.108 W  
 MODULATION SIGNAL: CDMA (Internal)  
 DISTANCE: 3 meters  
 LIMIT:  $43 + 10 \log_{10} (W) =$  33.33 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
1649.40	-60.38	6.08	-54.29	H	74.6
2474.10	-60.14	6.53	-53.61	H	73.9
3298.80	-64.72	6.87	-57.84	H	78.2
4123.50	-92.61	7.21	-85.40	H	105.7
4948.20	-91.91	8.37	-83.54	H	103.9



**Table 6-16. Radiated Spurious Data (Cellular CDMA Mode – Ch. 1013)**

#### 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 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. 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 spurious level is recorded. 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. In CDMA mode, this device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits. This unit was tested with its standard battery.

FCC ID: ACJ9TGCF-309		FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30		Page 22 of 80

**Cellular CDMA Radiated Measurements (Cont'd)**  
**§2.1053, 22.917(a)**

**Field Strength of SPURIOUS Radiation**

OPERATING FREQUENCY: 836.52 MHz  
 CHANNEL: 384  
 MEASURED OUTPUT POWER: 20.330 dBm = 0.108 W  
 MODULATION SIGNAL: CDMA (Internal)  
 DISTANCE: 3 meters  
 LIMIT:  $43 + 10 \log_{10} (W) =$  33.33 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
1673.04	-63.85	6.09	-57.76	H	78.1
2509.56	-61.97	6.55	-55.41	H	75.7
3346.08	-64.29	6.89	-57.40	H	77.7
4182.60	-92.82	7.43	-85.39	H	105.7
5019.12	-91.61	8.35	-83.26	H	103.6



**Table 6-17. Radiated Spurious Data (Cellular CDMA Mode – Ch. 384)**

**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 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. 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 spurious level is recorded. 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. In CDMA mode, this device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits. This unit was tested with its standard battery.

FCC ID: ACJ9TGCF-309		FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30	Page 23 of 80	

**Cellular CDMA Radiated Measurements (Cont'd)**  
§2.1053, 22.917(a)

**Field Strength of SPURIOUS Radiation**

OPERATING FREQUENCY: 848.31 MHz  
 CHANNEL: 777  
 MEASURED OUTPUT POWER: 20.330 dBm = 0.108 W  
 MODULATION SIGNAL: CDMA (Internal)  
 DISTANCE: 3 meters  
 LIMIT:  $43 + 10 \log_{10} (W) =$  33.33 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
1696.62	-59.63	6.09	-53.54	H	73.9
2544.93	-58.92	6.57	-52.36	H	72.7
3393.24	-64.76	6.91	-57.85	H	78.2
4241.55	-93.03	7.65	-85.38	H	105.7
5089.86	-91.28	8.33	-82.95	H	103.3



**Table 6-18. Radiated Spurious Data (Cellular CDMA Mode – Ch. 777)**

**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 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. 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 spurious level is recorded. 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. In CDMA mode, this device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits. This unit was tested with its standard battery.

FCC ID: ACJ9TGCF-309		FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30		Page 24 of 80

## 6.8 PCS GSM Radiated Measurements

§2.1053, 24.238(a)

### Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 1850.20 MHz  
 CHANNEL: 512  
 MEASURED OUTPUT POWER: 28.740 dBm = 0.748 W  
 MODULATION SIGNAL: GSM (Internal)  
 DISTANCE: 3 meters  
 LIMIT:  $43 + 10 \log_{10} (W) =$  41.74 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
3700.40	-49.55	9.02	-40.53	H	69.3
5550.60	-45.36	10.40	-34.96	H	63.7
7400.80	-48.49	10.50	-37.99	H	66.7
9251.00	-76.76	11.85	-64.91	H	93.7
11101.20	-76.61	12.76	-63.85	H	92.6



**Table 6-19. 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 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. 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 spurious level is recorded. 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. In CDMA mode, this device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits. This unit was tested with its standard battery.

FCC ID: ACJ9TGCF-309		FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30	Page 25 of 80	

**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: 28.740 dBm = 0.748 W  
 MODULATION SIGNAL: GSM (Internal)  
 DISTANCE: 3 meters  
 LIMIT:  $43 + 10 \log_{10} (W) =$  41.74 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
3760.00	-49.85	8.99	-40.86	H	69.6
5640.00	-45.93	10.40	-35.53	H	64.3
7520.00	-51.09	10.62	-40.48	H	69.2
9400.00	-74.00	11.70	-62.30	H	91.0
11280.00	-76.72	12.69	-64.03	H	92.8



**Table 6-20. 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 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. 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 spurious level is recorded. 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. In CDMA mode, this device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits. This unit was tested with its standard battery.

FCC ID: ACJ9TGCF-309		FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30	Page 26 of 80	

**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: 28.740 dBm = 0.748 W  
 MODULATION SIGNAL: GSM (Internal)  
 DISTANCE: 3 meters  
 LIMIT:  $43 + 10 \log_{10} (W) =$  41.74 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
3819.60	-47.81	8.97	-38.84	H	67.6
5729.40	-42.84	10.40	-32.44	H	61.2
7639.20	-47.30	10.71	-36.58	H	65.3
9549.00	-72.33	11.64	-60.69	H	89.4
11458.80	-76.82	12.62	-64.20	H	92.9



**Table 6-21. 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 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. 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 spurious level is recorded. 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. In CDMA mode, this device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits. This unit was tested with its standard battery.

FCC ID: ACJ9TGCF-309		FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30		Page 27 of 80

## 6.9 PCS WCDMA Radiated Measurements

### §2.1053, 24.238(a)

#### Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 1852.40 MHz  
 CHANNEL: 9262  
 MEASURED OUTPUT POWER: 22.800 dBm = 0.191 W  
 MODULATION SIGNAL: WCDMA (Internal)  
 DISTANCE: 3 meters  
 LIMIT:  $43 + 10 \log_{10} (W) =$  35.80 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
3704.80	-52.57	9.01	-43.56	H	66.4
5557.20	-55.49	10.40	-45.09	H	67.9
7409.60	-60.14	10.51	-49.63	H	72.4
9262.00	-86.40	11.83	-74.57	H	97.4
11114.40	-83.99	12.75	-71.24	H	94.0



**Table 6-22. 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 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. 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 spurious level is recorded. 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. In CDMA mode, this device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits. This unit was tested with its standard battery.

FCC ID: ACJ9TGCF-309		FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30		Page 28 of 80

**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: 22.800 dBm = 0.191 W  
 MODULATION SIGNAL: WCDMA (Internal)  
 DISTANCE: 3 meters  
 LIMIT:  $43 + 10 \log_{10} (W) =$  35.80 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
3760.00	-50.33	8.99	-41.34	H	64.1
5640.00	-59.39	10.40	-48.99	H	71.8
7520.00	-60.94	10.62	-50.32	H	73.1
9400.00	-86.20	11.70	-74.50	H	97.3
11280.00	-83.30	12.69	-70.61	H	93.4



**Table 6-23. 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 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. 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 spurious level is recorded. 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. In CDMA mode, this device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits. This unit was tested with its standard battery.

FCC ID: ACJ9TGCF-309		FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30		Page 29 of 80

**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: 22.800 dBm = 0.191 W  
 MODULATION SIGNAL: WCDMA (Internal)  
 DISTANCE: 3 meters  
 LIMIT:  $43 + 10 \log_{10} (W) =$  35.80 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
3815.20	-52.40	8.97	-43.42	H	66.2
5722.80	-61.39	10.40	-50.99	H	73.8
7630.40	-59.89	10.71	-49.18	H	72.0
9538.00	-86.02	11.63	-74.39	H	97.2
11445.60	-82.62	12.62	-70.00	H	92.8



**Table 6-24. 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 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. 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 spurious level is recorded. 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. In CDMA mode, this device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits. This unit was tested with its standard battery.

FCC ID: ACJ9TGCF-309		FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30		Page 30 of 80

## 6.10 PCS CDMA Radiated Measurements

### §2.1053, 24.238(a)

#### Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 1851.25 MHz  
 CHANNEL: 25  
 MEASURED OUTPUT POWER: 22.770 dBm = 0.189 W  
 MODULATION SIGNAL: CDMA (Internal)  
 DISTANCE: 3 meters  
 LIMIT:  $43 + 10 \log_{10} (W) =$  35.77 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
3702.50	-49.73	9.02	-40.72	H	63.5
5553.75	-60.20	10.40	-49.80	H	72.6
7405.00	-61.39	10.51	-50.88	H	73.7
9256.25	-86.41	11.84	-74.57	H	97.3
11107.50	-84.02	12.76	-71.26	H	94.0



**Table 6-25. Radiated Spurious Data (PCS CDMA Mode – Ch. 25)**

#### 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 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. 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 spurious level is recorded. 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. In CDMA mode, this device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits. This unit was tested with its standard battery.

FCC ID: ACJ9TGCF-309		FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30		Page 31 of 80

## PCS CDMA Radiated Measurements (Cont'd)

§2.1053, 24.238(a)

### Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 1880.00 MHz  
 CHANNEL: 600  
 MEASURED OUTPUT POWER: 22.770 dBm = 0.189 W  
 MODULATION SIGNAL: CDMA (Internal)  
 DISTANCE: 3 meters  
 LIMIT:  $43 + 10 \log_{10} (W) =$  35.77 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
3760.00	-46.93	8.99	-37.94	H	60.7
5640.00	-60.19	10.40	-49.79	H	72.6
7520.00	-63.44	10.62	-52.82	H	75.6
9400.00	-86.20	11.70	-74.50	H	97.3
11280.00	-83.30	12.69	-70.61	H	93.4



**Table 6-26. Radiated Spurious Data (PCS CDMA Mode – Ch. 600)**

#### 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 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. 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 spurious level is recorded. 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. In CDMA mode, this device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits. This unit was tested with its standard battery.

FCC ID: ACJ9TGCF-309		FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30		Page 32 of 80

## PCS CDMA Radiated Measurements (Cont'd)

§2.1053, 24.238(a)

### Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 1908.75 MHz  
 CHANNEL: 1175  
 MEASURED OUTPUT POWER: 22.770 dBm = 0.189 W  
 MODULATION SIGNAL: CDMA (Internal)  
 DISTANCE: 3 meters  
 LIMIT:  $43 + 10 \log_{10} (W) =$  35.77 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
3817.50	-43.79	8.97	-34.82	H	57.6
5726.25	-56.57	10.40	-46.17	H	68.9
7635.00	-60.68	10.71	-49.97	H	72.7
9543.75	-86.01	11.64	-74.38	H	97.1
11452.50	-82.60	12.62	-69.98	H	92.7



**Table 6-27. Radiated Spurious Data (PCS CDMA Mode – Ch. 1175)**

#### 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 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. 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 spurious level is recorded. 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. In CDMA mode, this device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits. This unit was tested with its standard battery.

FCC ID: ACJ9TGCF-309		FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30		Page 33 of 80

## 6.11 Cellular GSM Frequency Stability Measurements

§2.1055, 22.355

OPERATING FREQUENCY: 836,600,000 Hz



CHANNEL: 190

REFERENCE VOLTAGE: 10.65 VDC

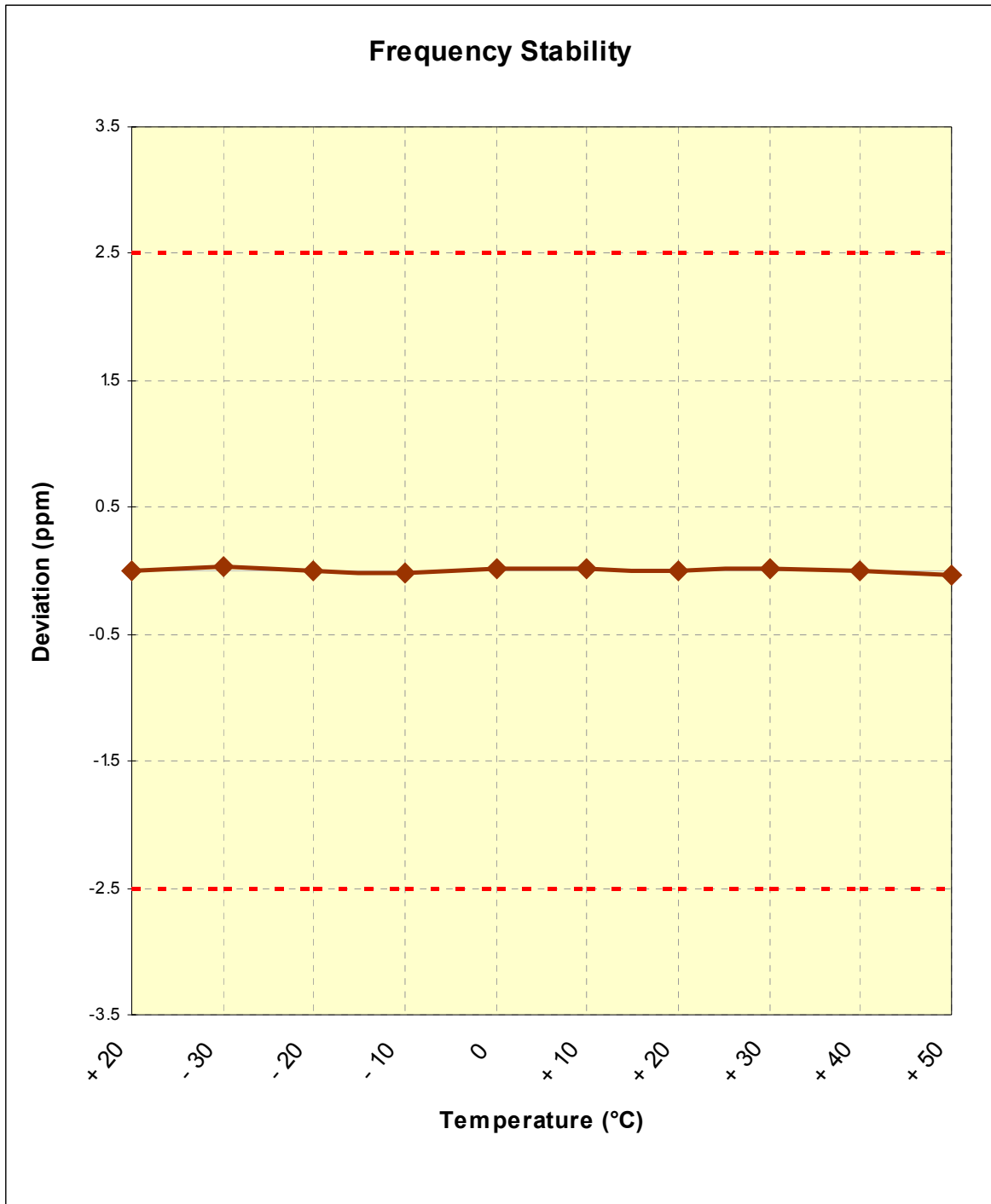
DEVIATION LIMIT: ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	10.65	+ 20 (Ref)	836,599,997	-3	0.000000
100 %		- 30	836,600,022	22	0.000003
100 %		- 20	836,600,005	5	0.000001
100 %		- 10	836,599,983	-17	-0.000002
100 %		0	836,600,014	14	0.000002
100 %		+ 10	836,600,011	11	0.000001
100 %		+ 20	836,599,997	-3	0.000000
100 %		+ 30	836,600,011	11	0.000001
100 %		+ 40	836,599,998	-2	0.000000
100 %		+ 50	836,599,977	-23	-0.000003
115 %		12.25	+ 20	836,599,995	-5
BATT. ENDPOINT	9.38	+ 20	836,599,982	-18	-0.000002

**Table 6-28. Frequency Stability Data (Cellular GSM Mode – Ch. 190)**

FCC ID: ACJ9TGCF-309		FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30	Page 34 of 80	

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



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

FCC ID: ACJ9TGCF-309	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)	<b>Panasonic</b>	Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30		Page 35 of 80

## 6.12 Cellular WCDMA Frequency Stability Measurements

§2.1055, 22.355

OPERATING FREQUENCY: 836,600,000 Hz



CHANNEL: 4183

REFERENCE VOLTAGE: 10.65 VDC

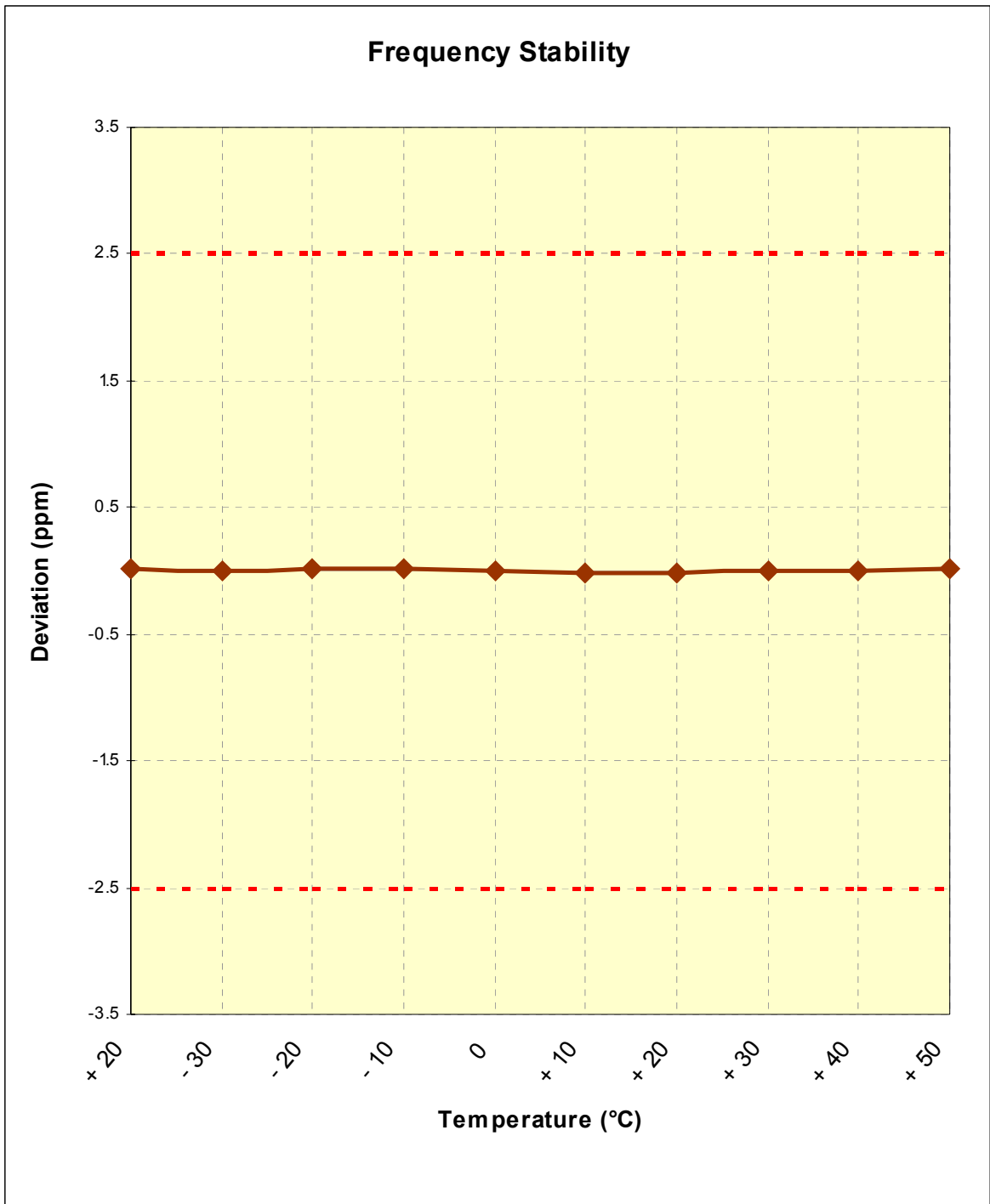
DEVIATION LIMIT: ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	10.65	+ 20 (Ref)	836,600,011	11	0.000001
100 %		- 30	836,599,997	-3	0.000000
100 %		- 20	836,600,008	8	0.000001
100 %		- 10	836,600,017	17	0.000002
100 %		0	836,600,004	4	0.000000
100 %		+ 10	836,599,981	-19	-0.000002
100 %		+ 20	836,599,985	-15	-0.000002
100 %		+ 30	836,600,004	4	0.000001
100 %		+ 40	836,600,003	3	0.000000
100 %		+ 50	836,600,018	18	0.000002
115 %	12.25	+ 20	836,599,980	-20	-0.000002
BATT. ENDPOINT	9.38	+ 20	836,600,027	27	0.000003

**Table 6-29. Frequency Stability Data (Cellular WCDMA Mode – Ch. 4183)**

FCC ID: ACJ9TGCF-309		FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30	Page 36 of 80	

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



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

FCC ID: ACJ9TGCF-309	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)	Panasonic	Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30		Page 37 of 80

### 6.13 Cellular CDMA Frequency Stability Measurements

§2.1055, 22.355

OPERATING FREQUENCY: 836,520,000 Hz

CHANNEL: 384

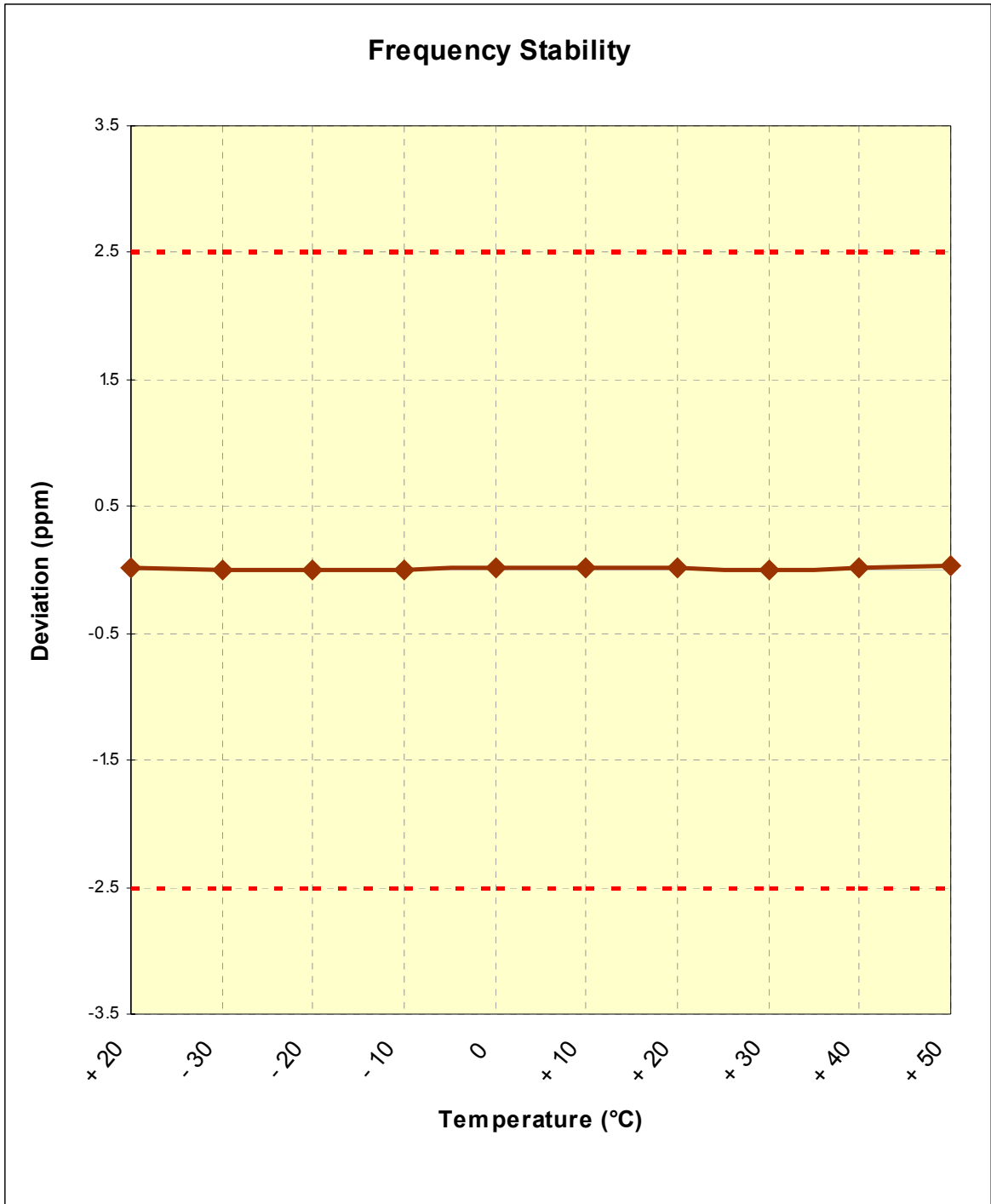
REFERENCE VOLTAGE: 10.65 VDC

DEVIATION LIMIT: ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	10.65	+ 20 (Ref)	836,520,012	12	0.000001
100 %		- 30	836,520,005	5	0.000001
100 %		- 20	836,520,003	3	0.000000
100 %		- 10	836,520,002	2	0.000000
100 %		0	836,520,019	19	0.000002
100 %		+ 10	836,520,010	10	0.000001
100 %		+ 20	836,520,012	12	0.000001
100 %		+ 30	836,520,005	5	0.000001
100 %		+ 40	836,520,011	11	0.000001
100 %		+ 50	836,520,024	24	0.000003
115 %	12.25	+ 20	836,519,992	-8	-0.000001
BATT. ENDPOINT	9.38	+ 20	836,520,009	9	0.000001

**Table 6-30. Frequency Stability Data (Cellular CDMA Mode – Ch. 384)**

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



**Plot 6-3. Frequency Stability Graph (Cellular CDMA Mode – Ch. 384)**

FCC ID: ACJ9TGCF-309	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)	Panasonic	Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30	Page 39 of 80	

## 6.14 PCS GSM Frequency Stability Measurements

§2.1055, 24.235

OPERATING FREQUENCY: 1,880,000,000 Hz



CHANNEL: 661

REFERENCE VOLTAGE: 10.65 VDC

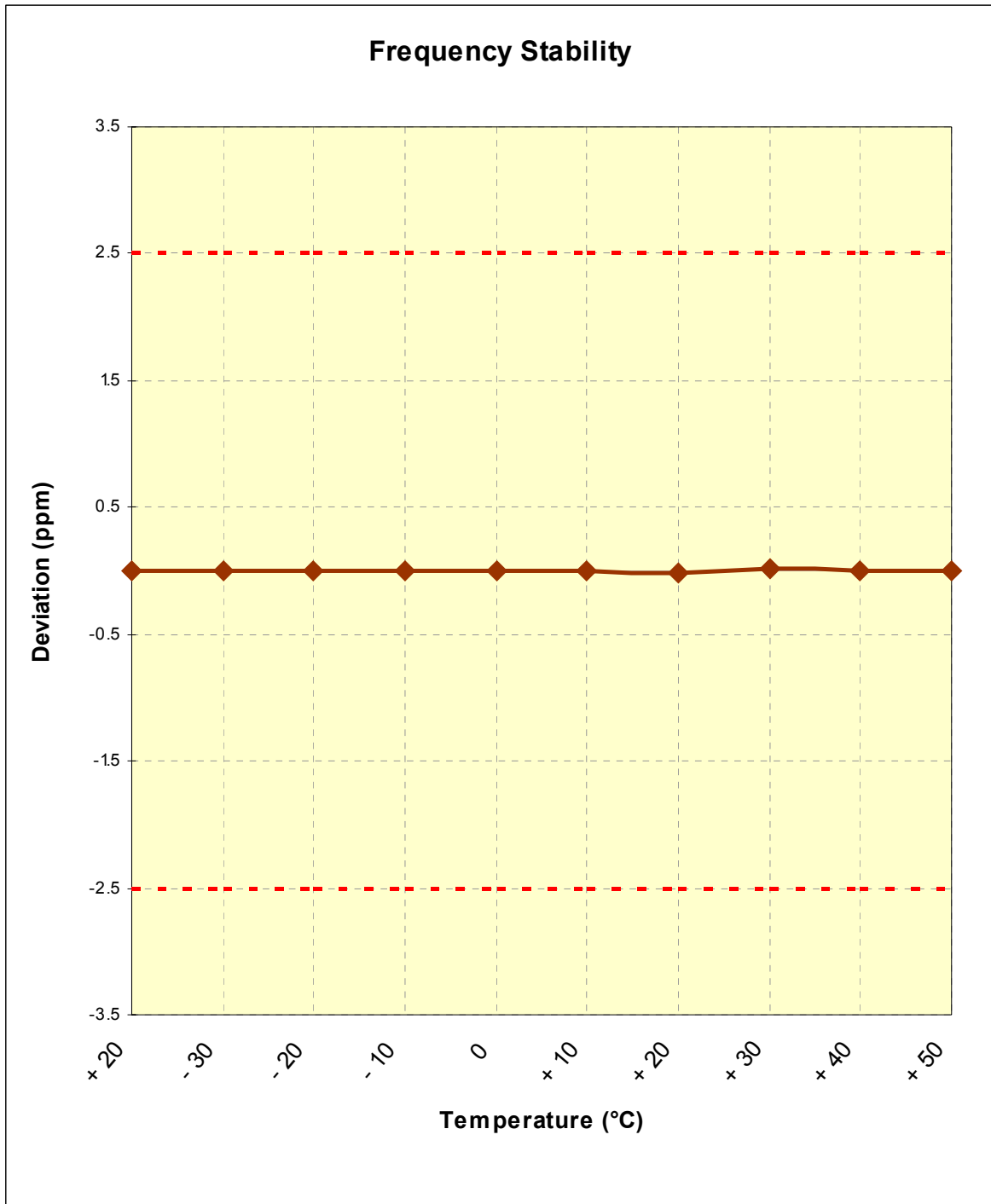
DEVIATION LIMIT: ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	10.65	+ 20 (Ref)	1,880,000,005	5	0.000000
100 %		- 30	1,879,999,994	-6	0.000000
100 %		- 20	1,880,000,012	12	0.000001
100 %		- 10	1,880,000,008	8	0.000000
100 %		0	1,879,999,991	-9	0.000000
100 %		+ 10	1,879,999,989	-11	-0.000001
100 %		+ 20	1,879,999,981	-19	-0.000001
100 %		+ 30	1,880,000,021	21	0.000001
100 %		+ 40	1,880,000,015	15	0.000001
100 %		+ 50	1,880,000,004	4	0.000000
115 %		12.25	+ 20	1,879,999,988	-12
BATT. ENDPOINT	9.38	+ 20	1,880,000,017	17	0.000001

Table 6-31. Frequency Stability Data (PCS GSM Mode – Ch. 661)

FCC ID: ACJ9TGCF-309		FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30	Page 40 of 80	

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



**Plot 6-4. Frequency Stability Graph (PCS GSM Mode – Ch. 661)**

<b>FCC ID:</b> ACJ9TGCF-309	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	<b>FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)</b>	<b>Panasonic</b>	<b>Reviewed by:</b> Quality Manager
<b>Test Report S/N:</b> 0808271202.ACJ	<b>Test Dates:</b> September 16 - 17, 2008	<b>EUT Type:</b> Toughbook Model: CF-30	Page 41 of 80	

## 6.15 PCS WCDMA Frequency Stability Measurements

§2.1055, 24.235

OPERATING FREQUENCY: 1,880,000,000 Hz



CHANNEL: 9400

REFERENCE VOLTAGE: 10.65 VDC

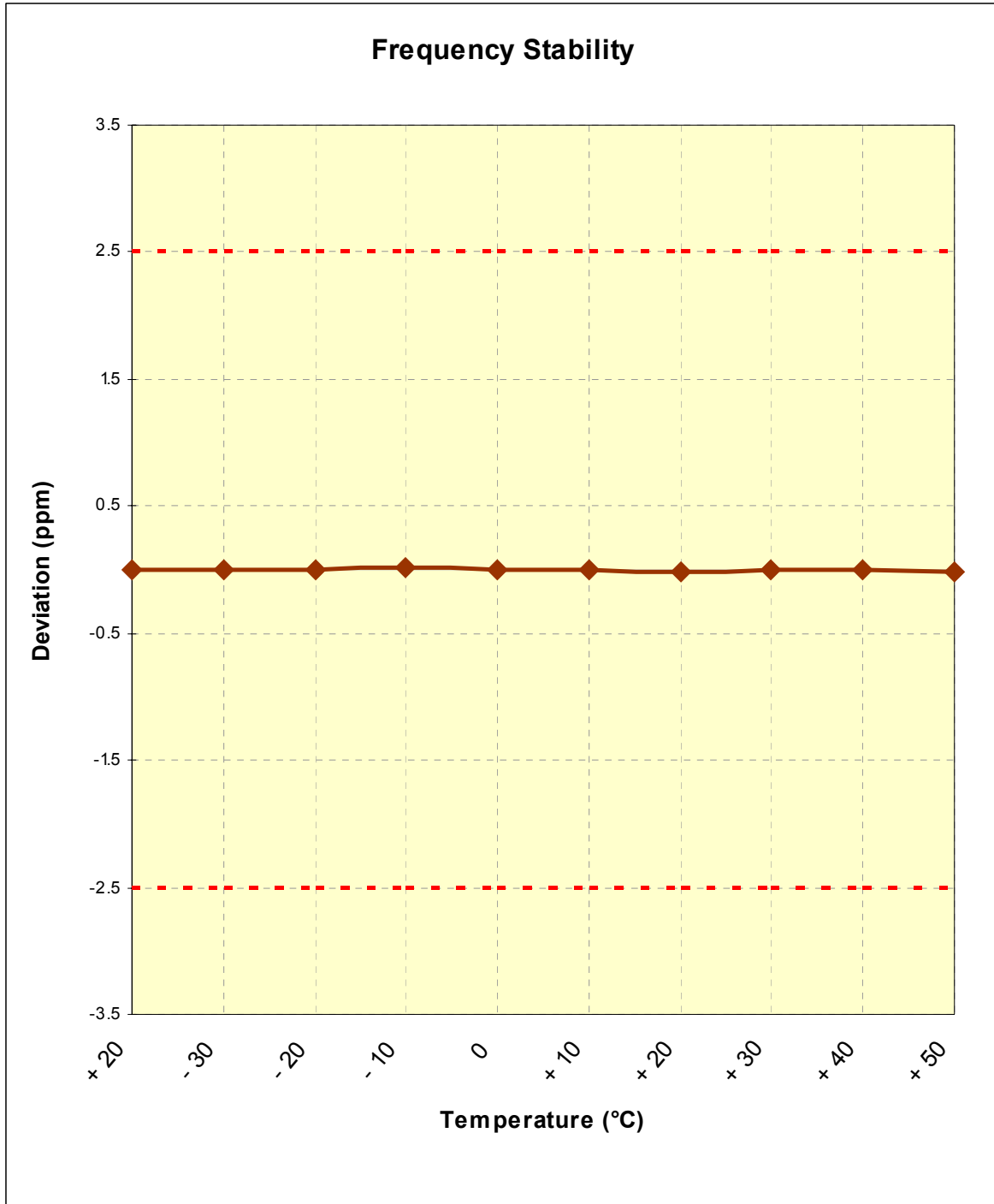
DEVIATION LIMIT: ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	10.65	+ 20 (Ref)	1,880,000,013	13	0.000001
100 %		- 30	1,879,999,987	-13	-0.000001
100 %		- 20	1,880,000,010	10	0.000001
100 %		- 10	1,880,000,024	24	0.000001
100 %		0	1,880,000,014	14	0.000001
100 %		+ 10	1,879,999,993	-7	0.000000
100 %		+ 20	1,879,999,978	-22	-0.000001
100 %		+ 30	1,879,999,991	-9	0.000000
100 %		+ 40	1,879,999,988	-12	-0.000001
100 %		+ 50	1,879,999,983	-17	-0.000001
115 %		12.25	+ 20	1,879,999,980	-20
BATT. ENDPOINT	9.38	+ 20	1,880,000,015	15	0.000001

Table 6-32. Frequency Stability Data (PCS WCDMA Mode – Ch. 9400)

FCC ID: ACJ9TGCF-309		FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30		Page 42 of 80

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



**Plot 6-5. Frequency Stability Graph (PCS WCDMA Mode – Ch. 9400)**

<b>FCC ID:</b> ACJ9TGCF-309	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	<b>FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)</b>	<b>Panasonic</b>	<b>Reviewed by:</b> Quality Manager
<b>Test Report S/N:</b> 0808271202.ACJ	<b>Test Dates:</b> September 16 - 17, 2008	<b>EUT Type:</b> Toughbook Model: CF-30	Page 43 of 80	

## 6.16 PCS CDMA Frequency Stability Measurements

§2.1055, 24.235

OPERATING FREQUENCY: 1,880,000,000 Hz



CHANNEL: 600

REFERENCE VOLTAGE: 10.65 VDC

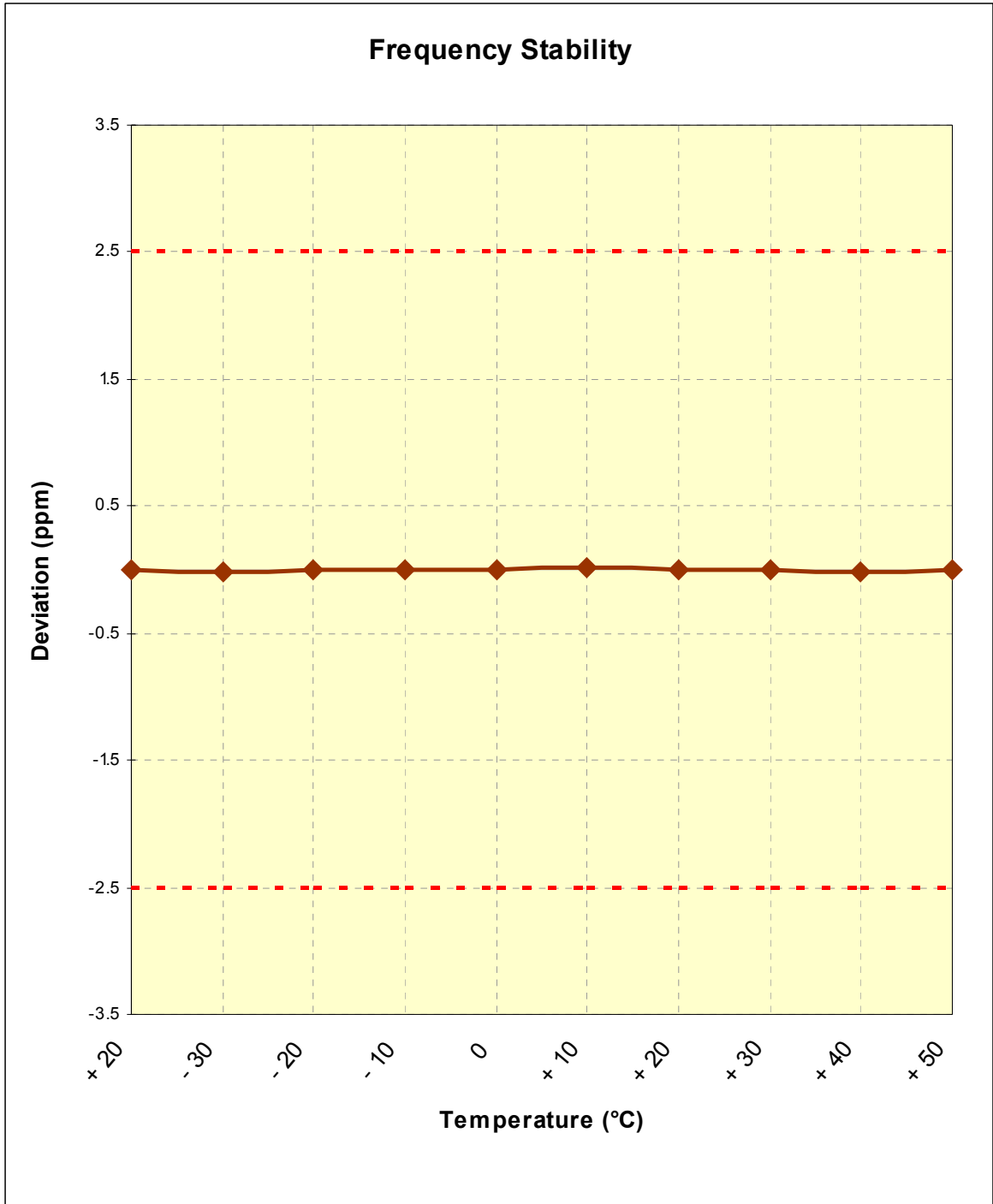
DEVIATION LIMIT: ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	10.65	+ 20 (Ref)	1,879,999,988	-12	-0.000001
100 %		- 30	1,879,999,982	-18	-0.000001
100 %		- 20	1,880,000,014	14	0.000001
100 %		- 10	1,880,000,006	6	0.000000
100 %		0	1,880,000,010	10	0.000001
100 %		+ 10	1,880,000,019	19	0.000001
100 %		+ 20	1,880,000,007	7	0.000000
100 %		+ 30	1,879,999,988	-12	-0.000001
100 %		+ 40	1,879,999,984	-16	-0.000001
100 %		+ 50	1,879,999,993	-7	0.000000
115 %		12.25	+ 20	1,879,999,985	-15
BATT. ENDPOINT	9.38	+ 20	1,879,999,991	-9	0.000000

Table 6-33. Frequency Stability Data (PCS CDMA Mode – Ch. 600)

FCC ID: ACJ9TGCF-309		FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30	Page 44 of 80	

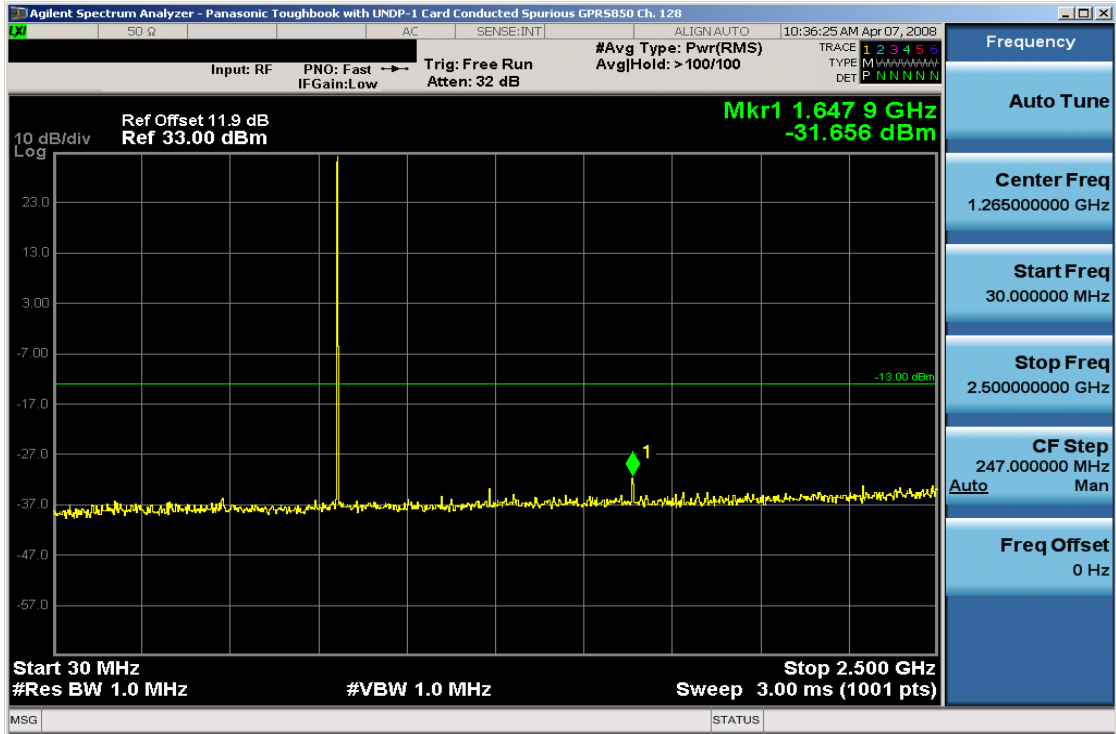
**PCS CDMA Frequency Stability Measurements (Cont'd)**  
**§2.1055, 24.235**



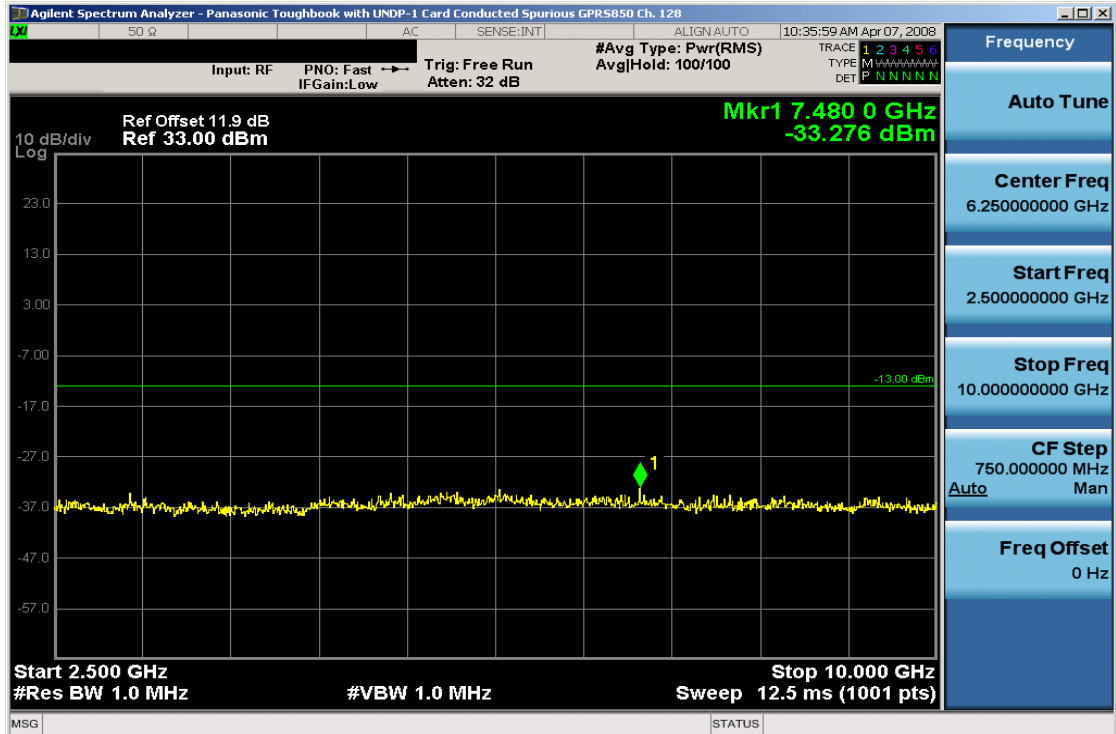
**Plot 6-6. Frequency Stability Graph (PCS CDMA Mode – Ch. 600)**

FCC ID: ACJ9TGCF-309	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)	Panasonic	Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30	Page 45 of 80	

## 7.0 PLOTS OF EMISSIONS

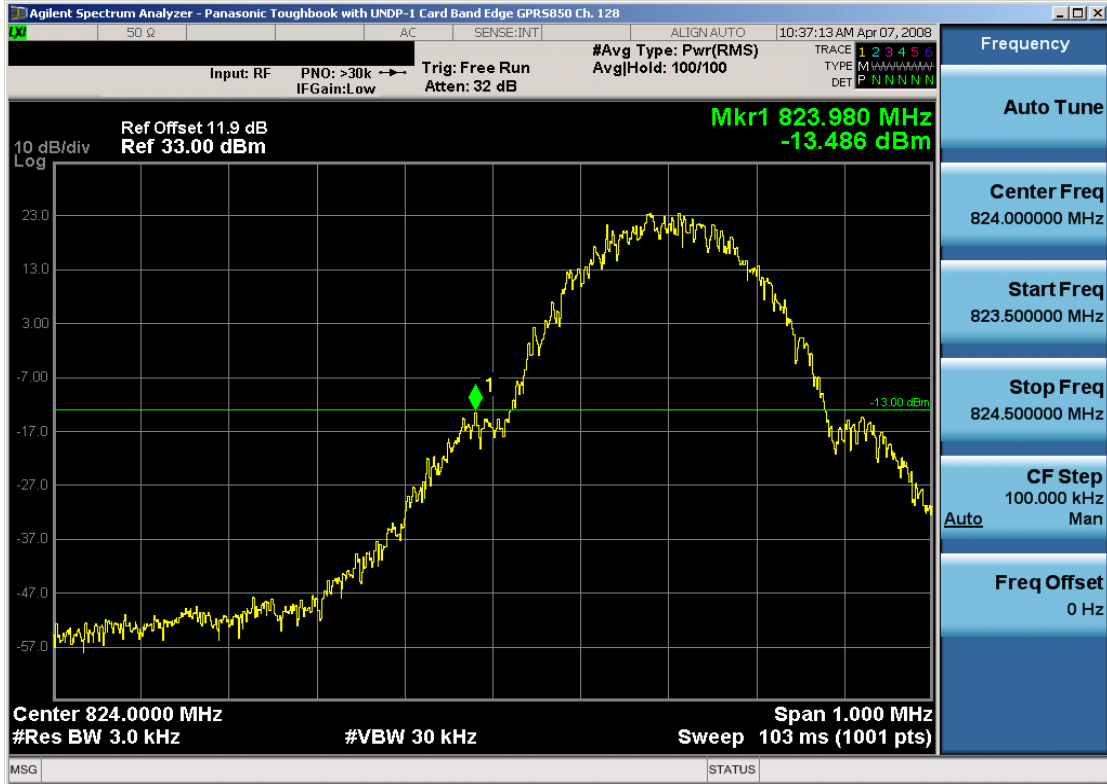


Plot 7-1. Conducted Spurious Plot (Cellular GSM Mode – Ch. 128)

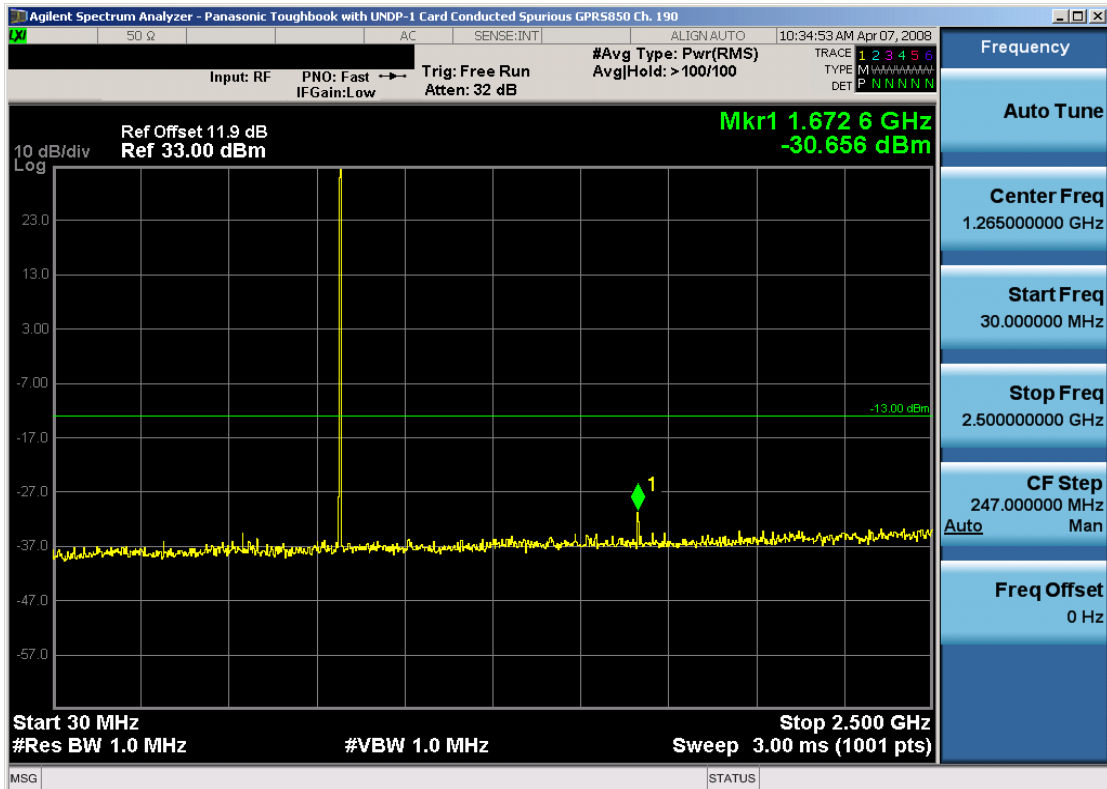


Plot 7-2. Conducted Spurious Plot (Cellular GSM Mode – Ch. 128)

FCC ID: ACJ9TGCF-309		FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30		Page 46 of 80

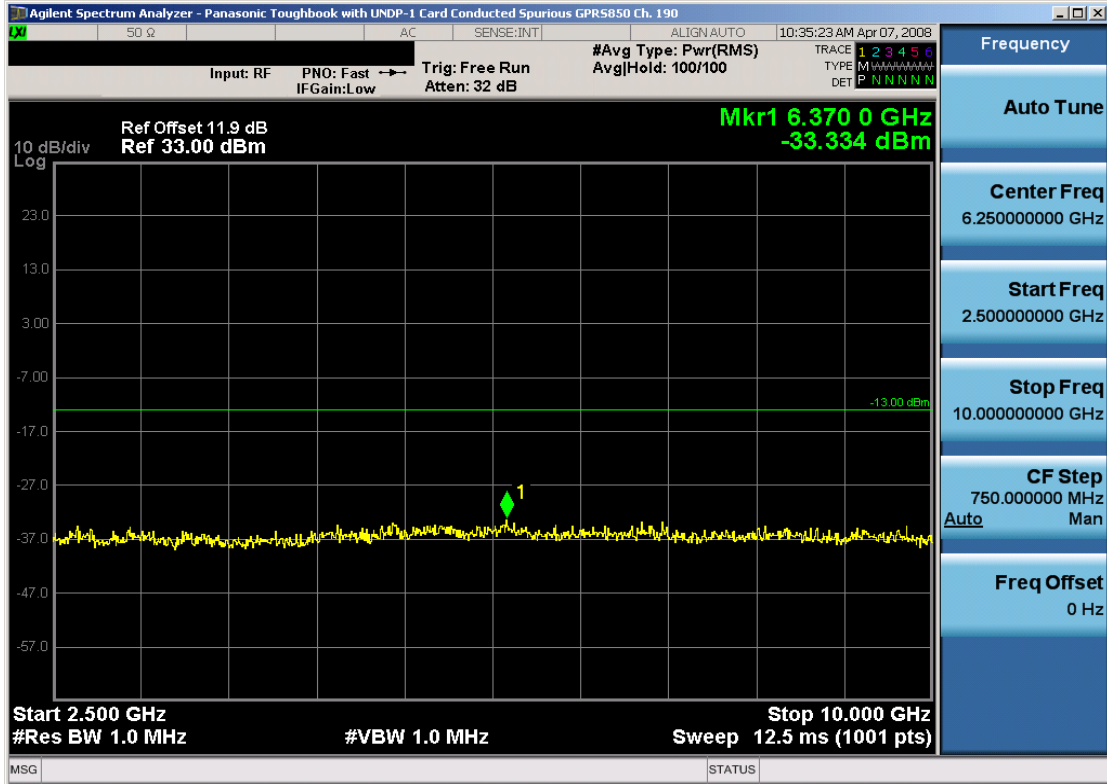


Plot 7-3. Band Edge Plot (Cellular GSM Mode – Ch. 128)

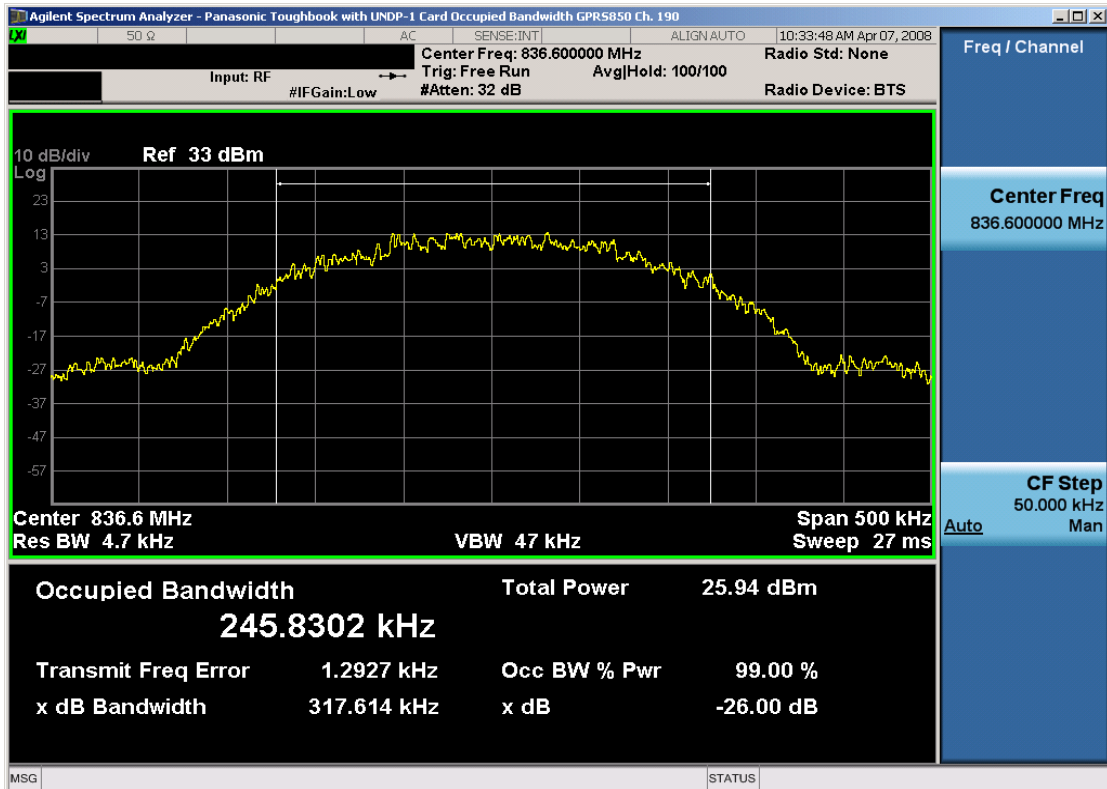


Plot 7-4. Conducted Spurious (Cellular GSM Mode – Ch. 190)

FCC ID: ACJ9TGCF-309	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)	<b>Panasonic</b>	Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30		Page 47 of 80

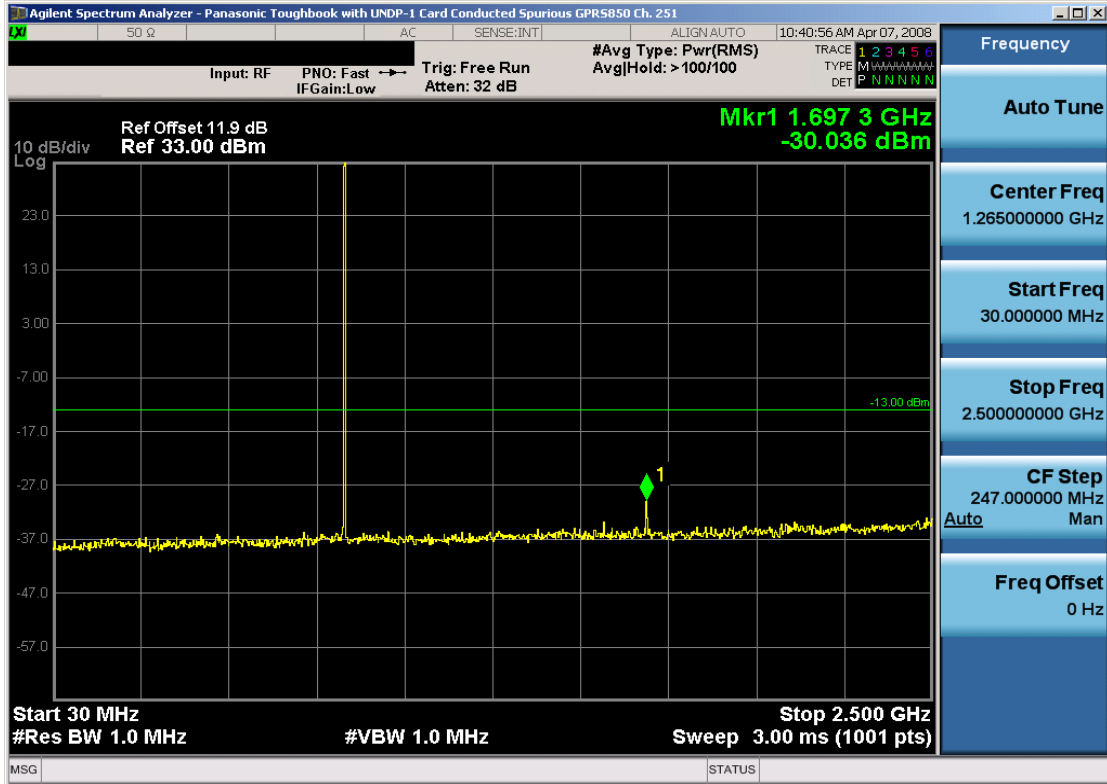


Plot 7-5. Conducted Spurious Plot (Cellular GSM Mode – Ch. 190)

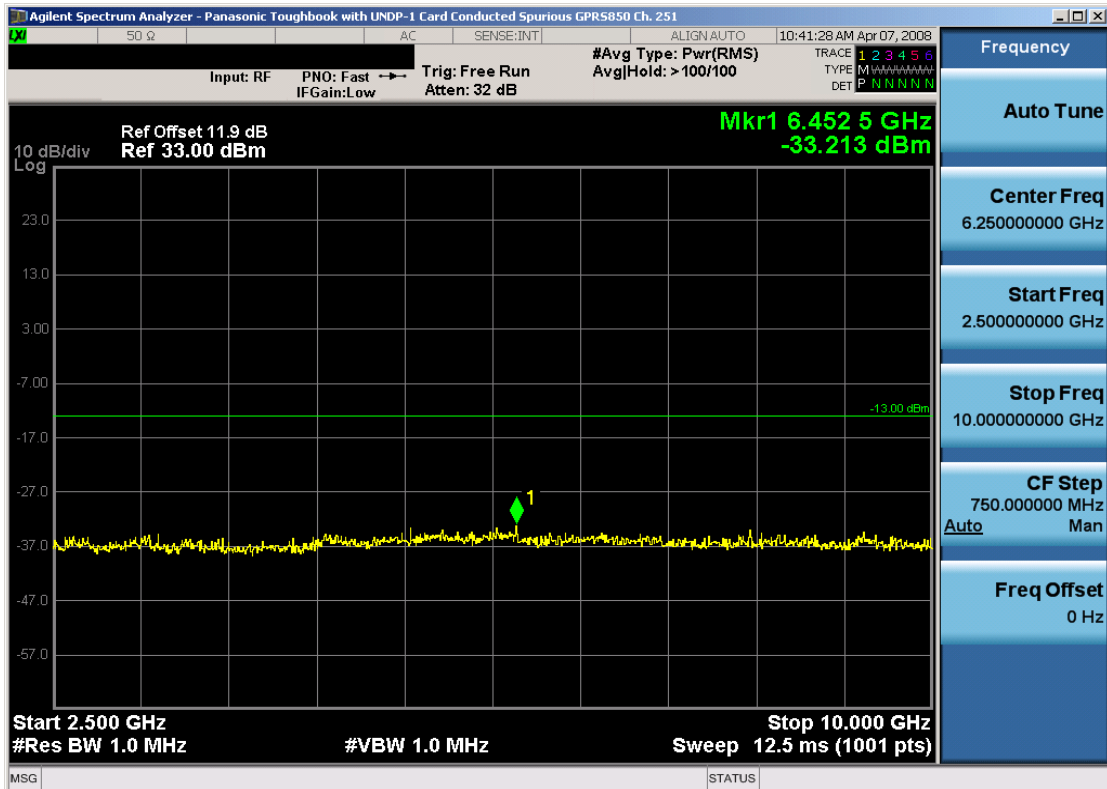


Plot 7-6. Occupied Bandwidth Plot (Cellular GSM Mode – Ch. 190)

FCC ID: ACJ9TGCF-309	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)	<b>Panasonic</b>	Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30		Page 48 of 80

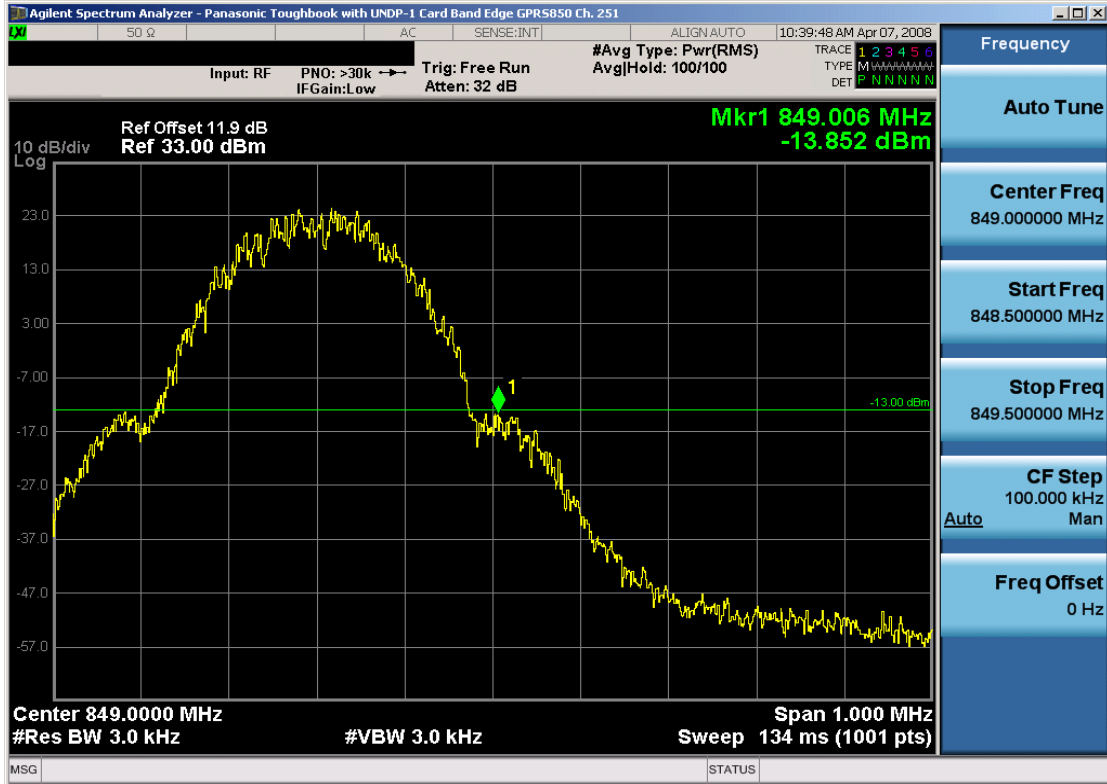


Plot 7-7. Conducted Spurious Plot (Cellular GSM Mode – Ch. 251)

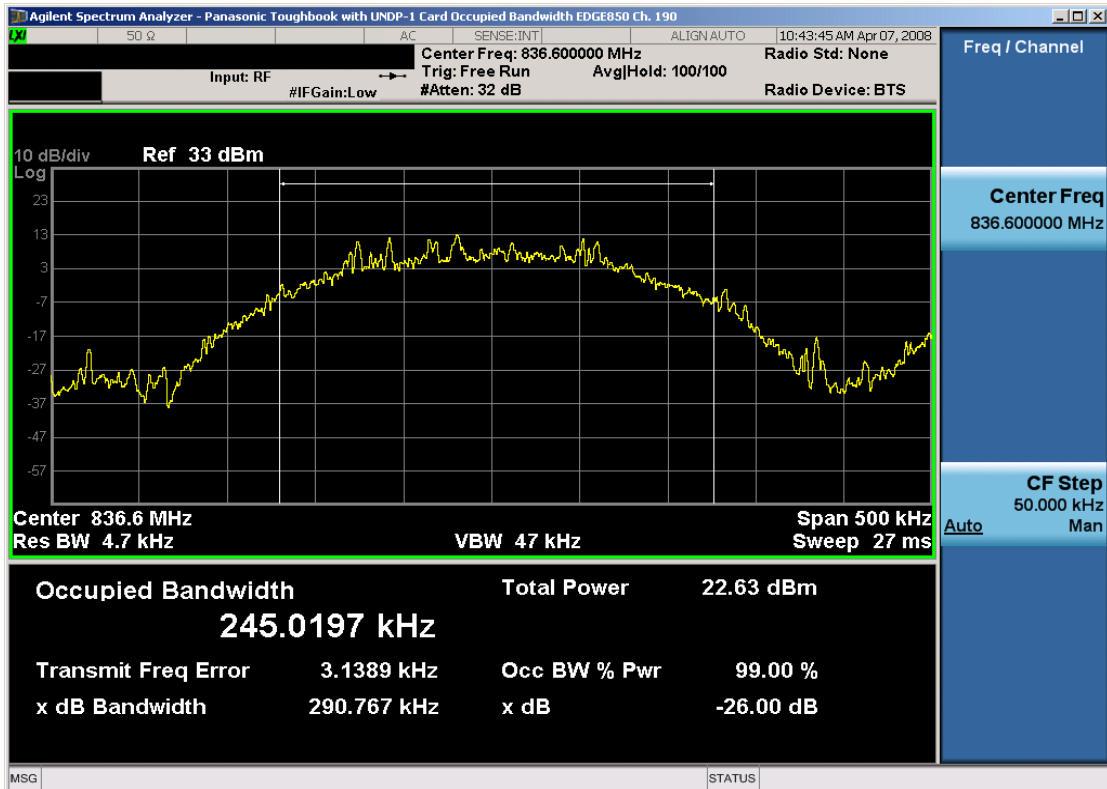


Plot 7-8. Conducted Spurious Plot (Cellular GSM Mode – Ch. 251)

FCC ID: ACJ9TGCF-309	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)	<b>Panasonic</b>	Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30		Page 49 of 80

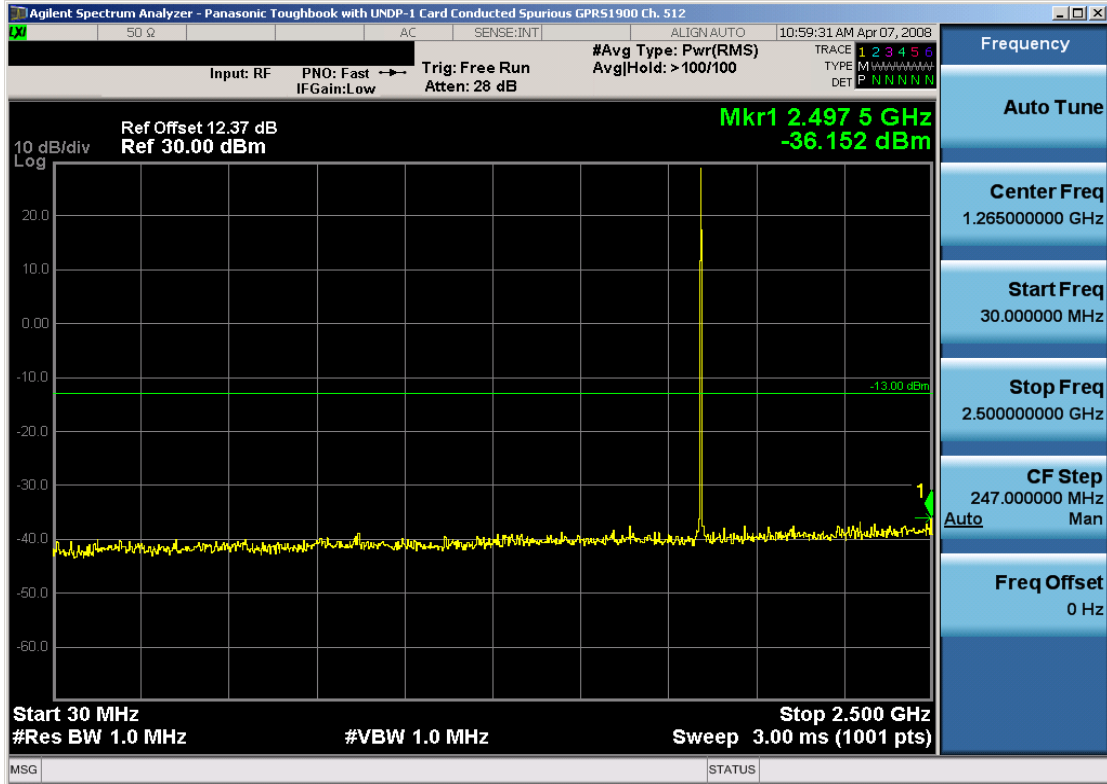


Plot 7-9. Band Edge Plot (Cellular GSM Mode – Ch. 251)

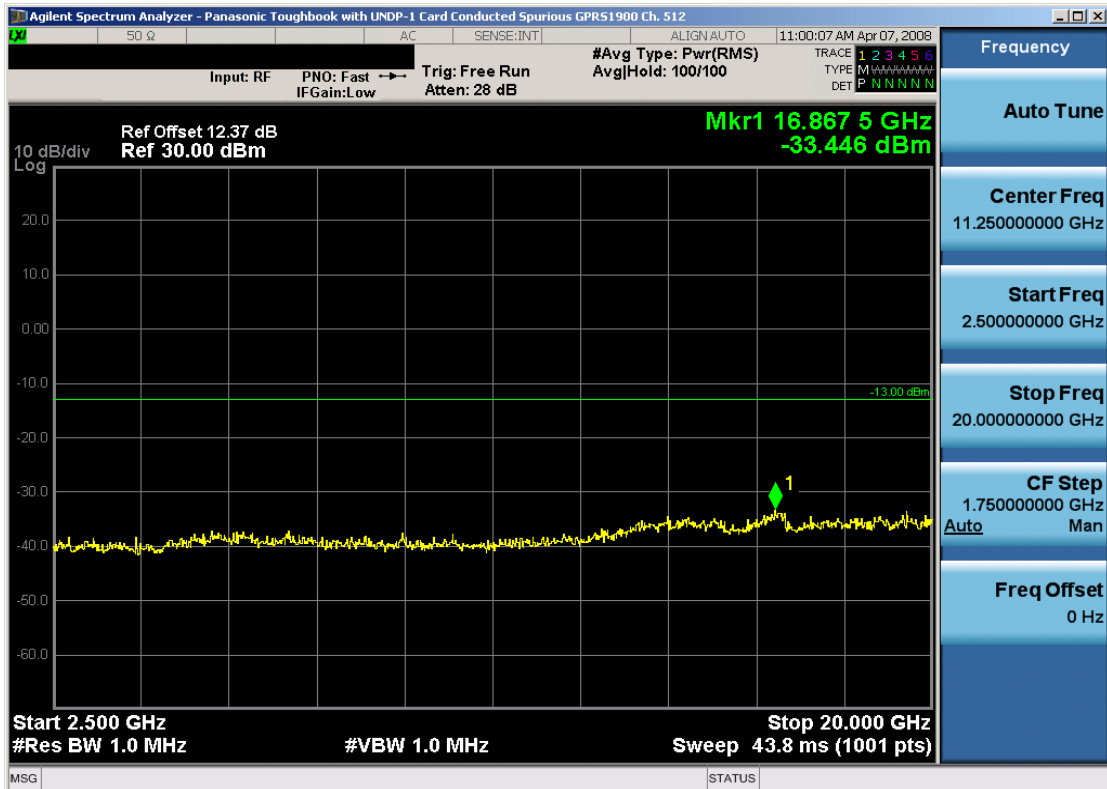


Plot 7-10. Occupied Bandwidth Plot (EDGE850 Mode – Ch. 190)

FCC ID: ACJ9TGCF-309	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)	<b>Panasonic</b>	Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30		Page 50 of 80

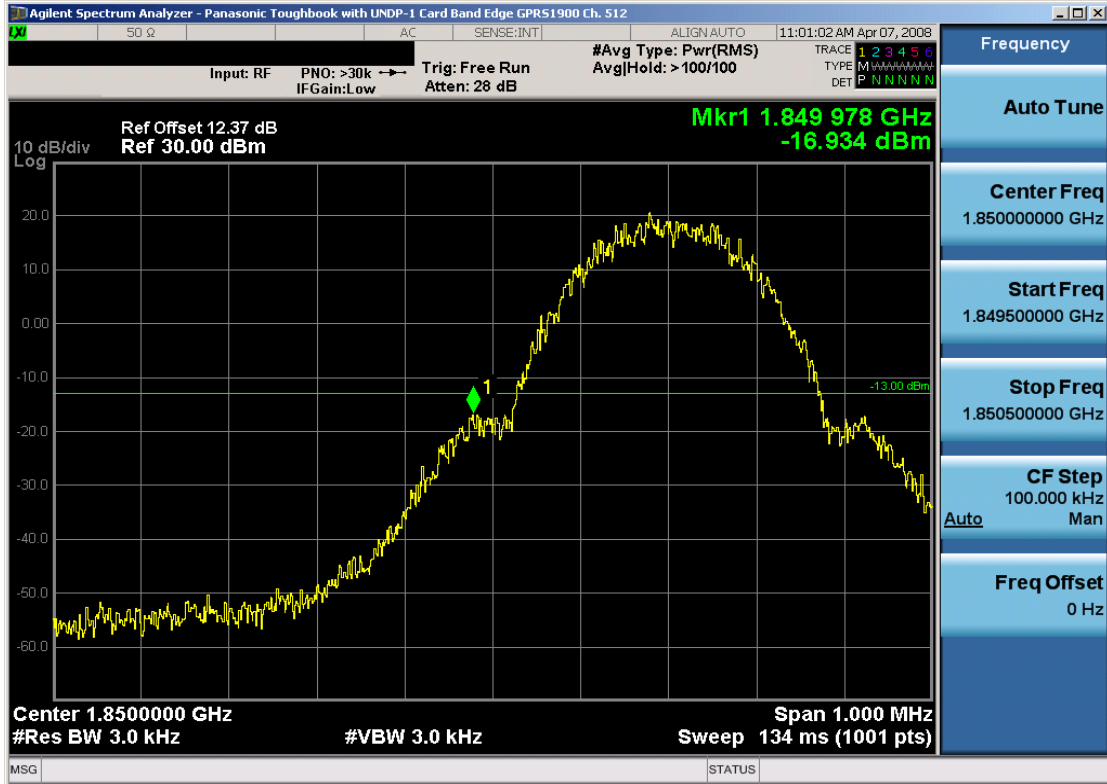


Plot 7-11. Conducted Spurious Plot (PCS GSM Mode – Ch. 512)

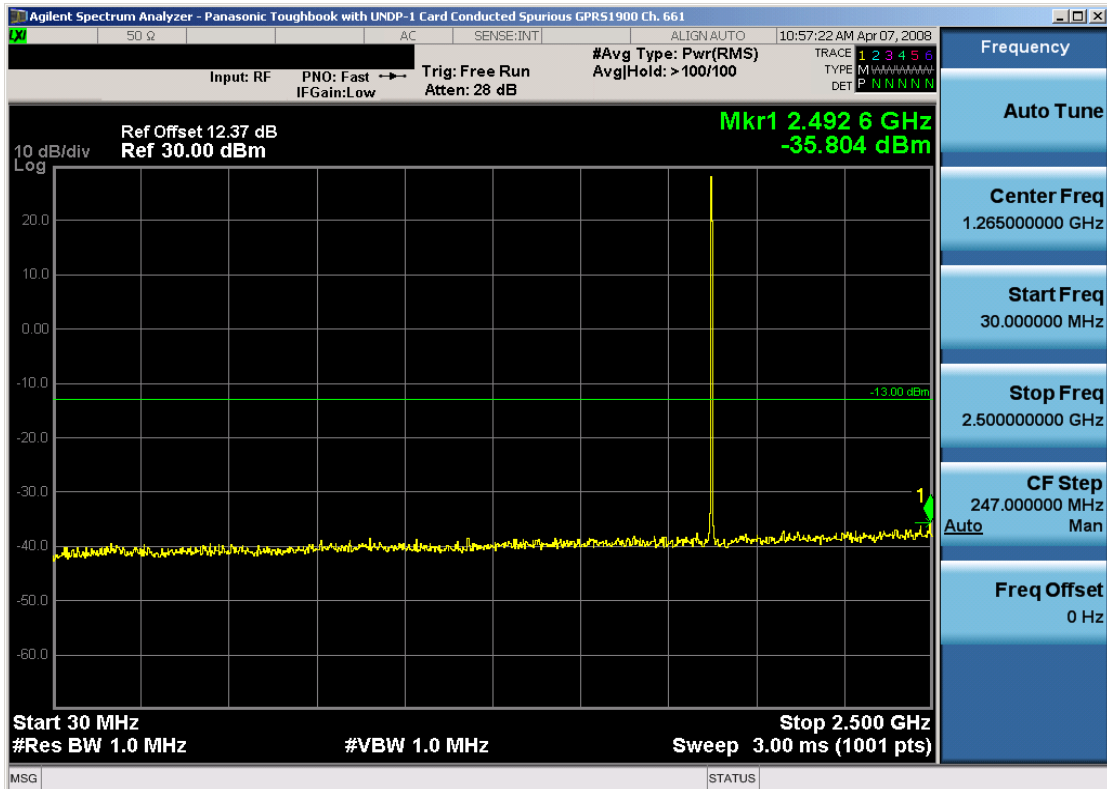


Plot 7-12. Conducted Spurious Plot (PCS GSM Mode – Ch. 512)

FCC ID: ACJ9TGCF-309	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)	<b>Panasonic</b>	Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30		Page 51 of 80



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

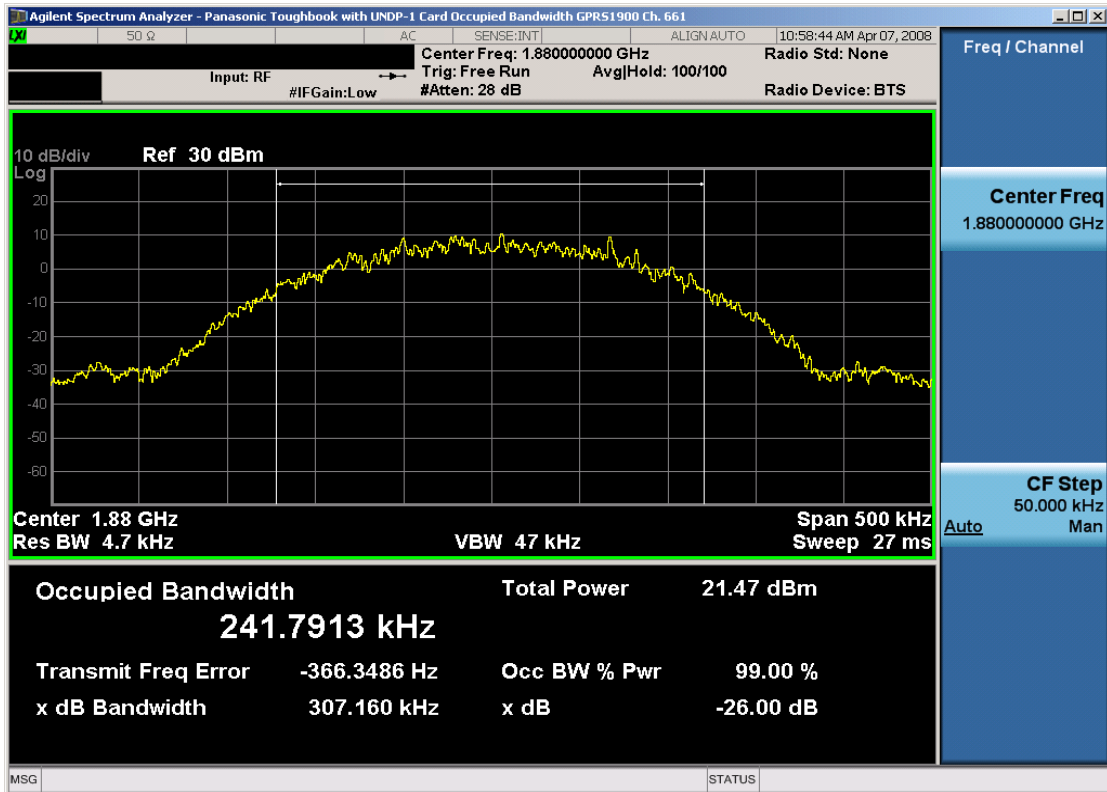


Plot 7-14. Conducted Spurious Plot (PCS GSM Mode – Ch. 661)

FCC ID: ACJ9TGCF-309	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)	<b>Panasonic</b>	Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30		Page 52 of 80



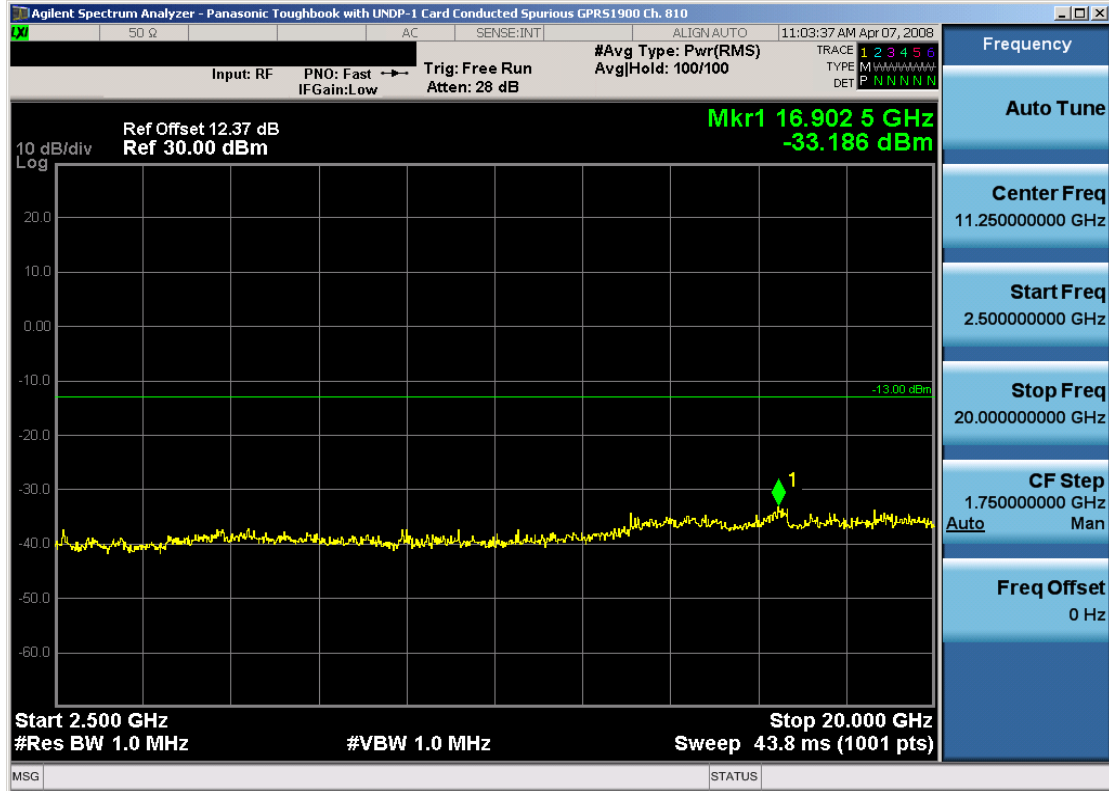
Plot 7-15. Conducted Spurious Plot (PCS GSM Mode – Ch. 661)



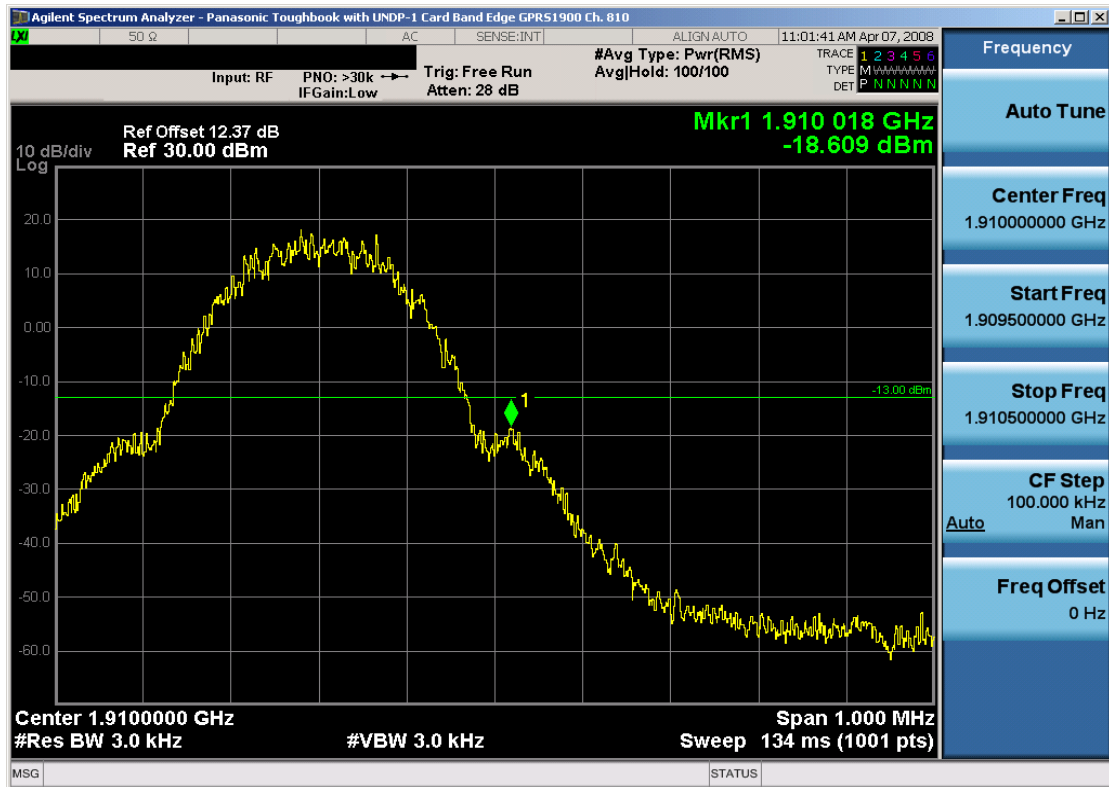
Plot 7-16. Occupied Bandwidth Plot (PCS GSM Mode – Ch. 661)

FCC ID: ACJ9TGCF-309	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)	<b>Panasonic</b>	Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30		Page 53 of 80





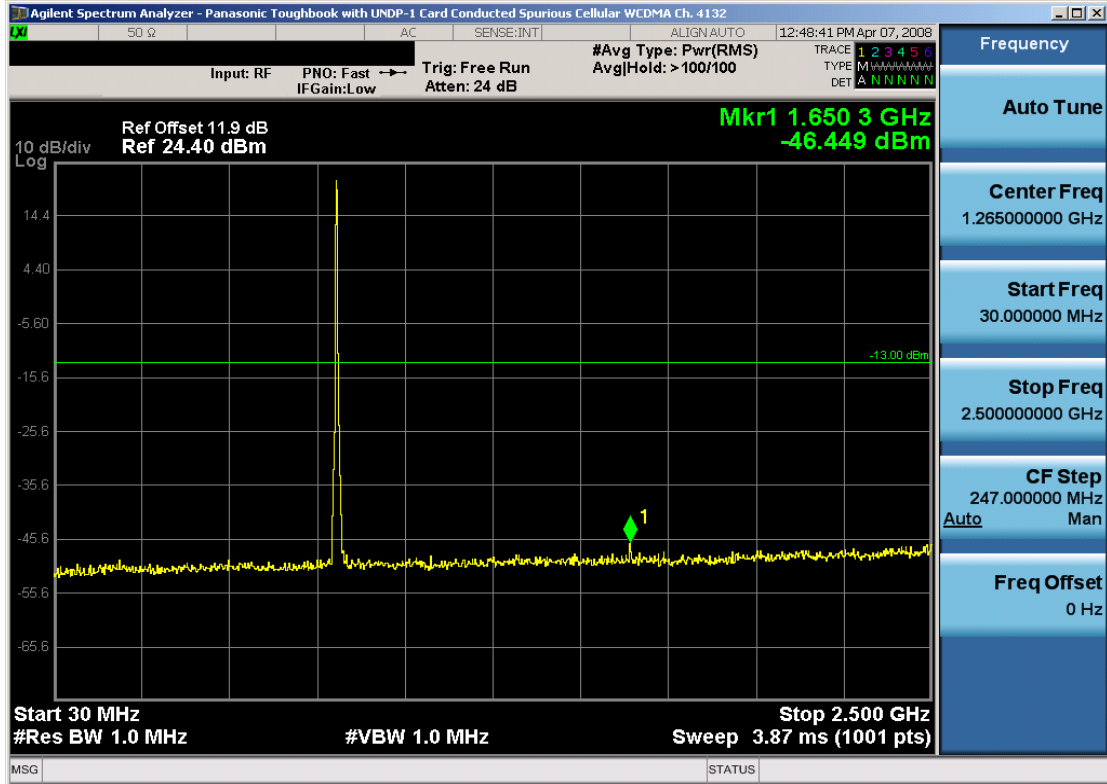
Plot 7-19. Conducted Spurious Plot (PCS GSM Mode – Ch. 810)



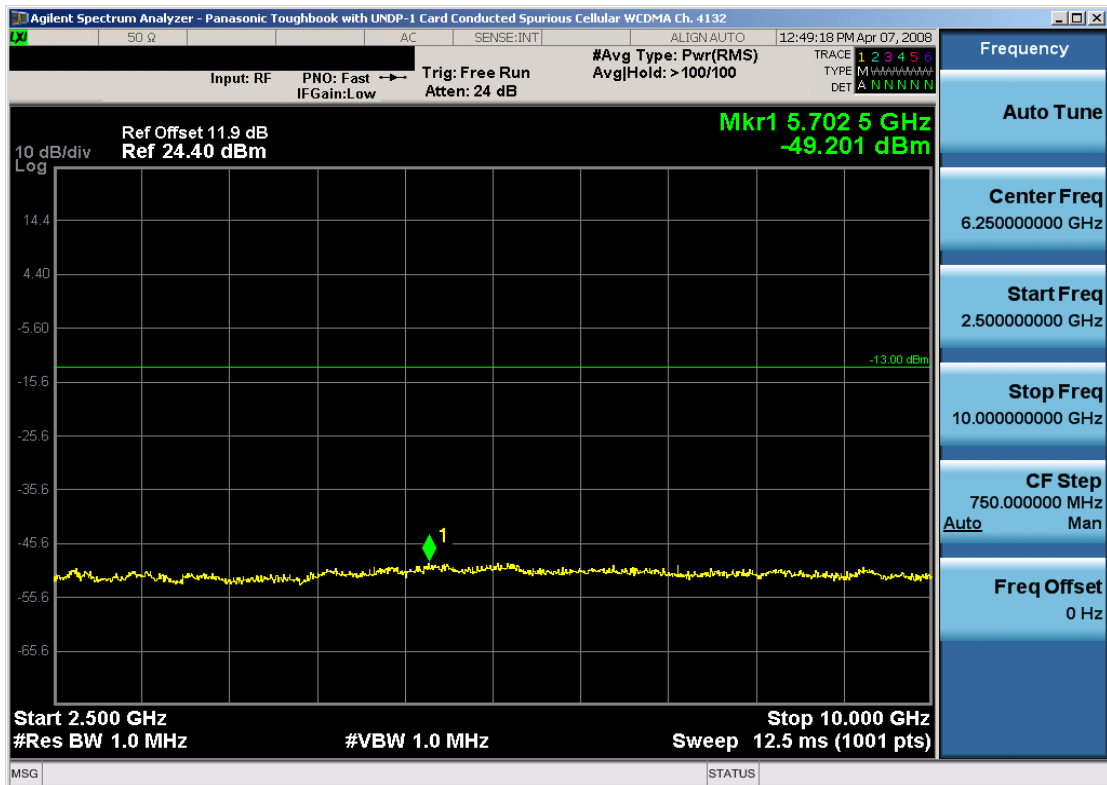
Plot 7-20. Band Edge Plot (PCS GSM Mode – Ch. 810)

FCC ID: ACJ9TGCF-309		FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30		Page 55 of 80





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

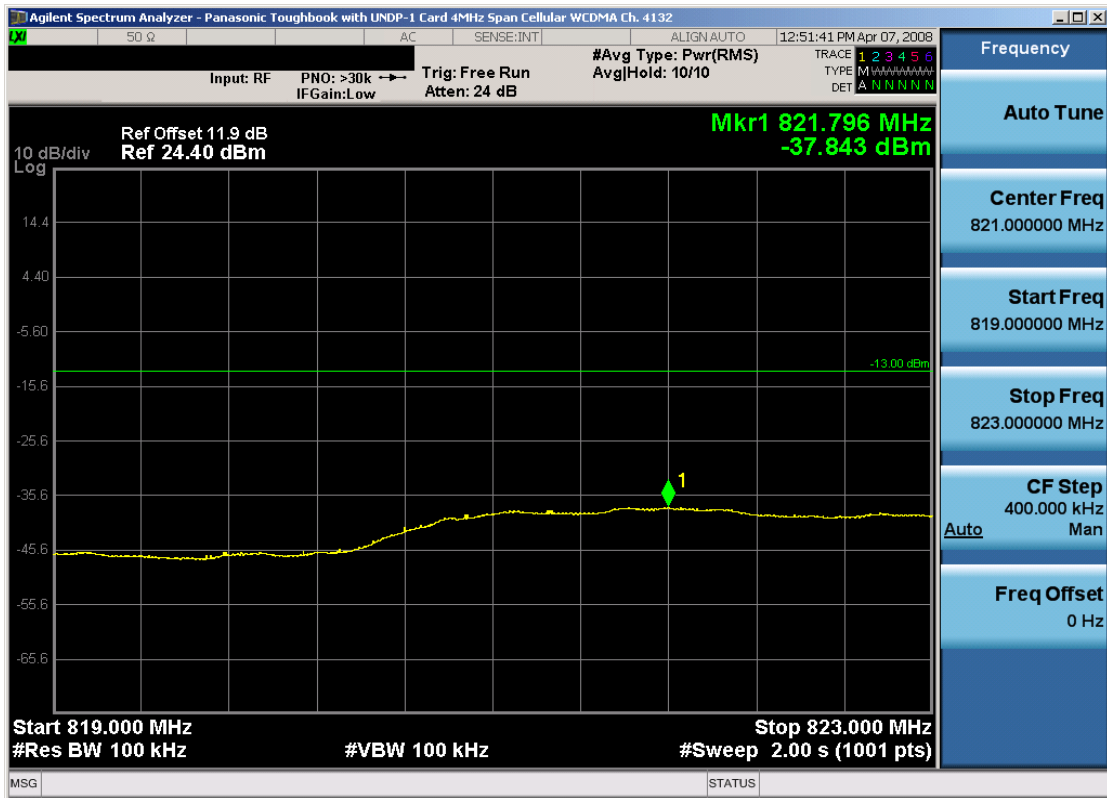


Plot 7-24. Conducted Spurious Plot (Cellular WCDMA Mode – Ch. 4132)

FCC ID: ACJ9TGCF-309	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)	<b>Panasonic</b>	Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30		Page 57 of 80



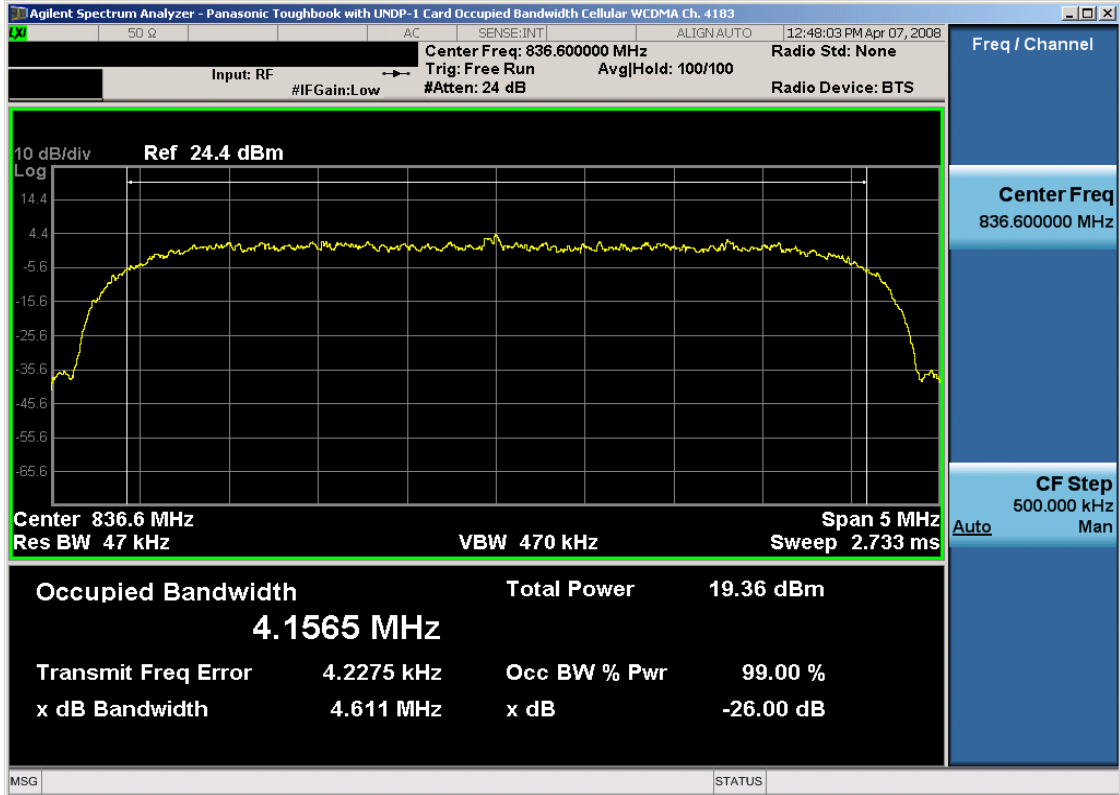
Plot 7-25. Band Edge Plot (Cellular WCDMA Mode – Ch. 4132)



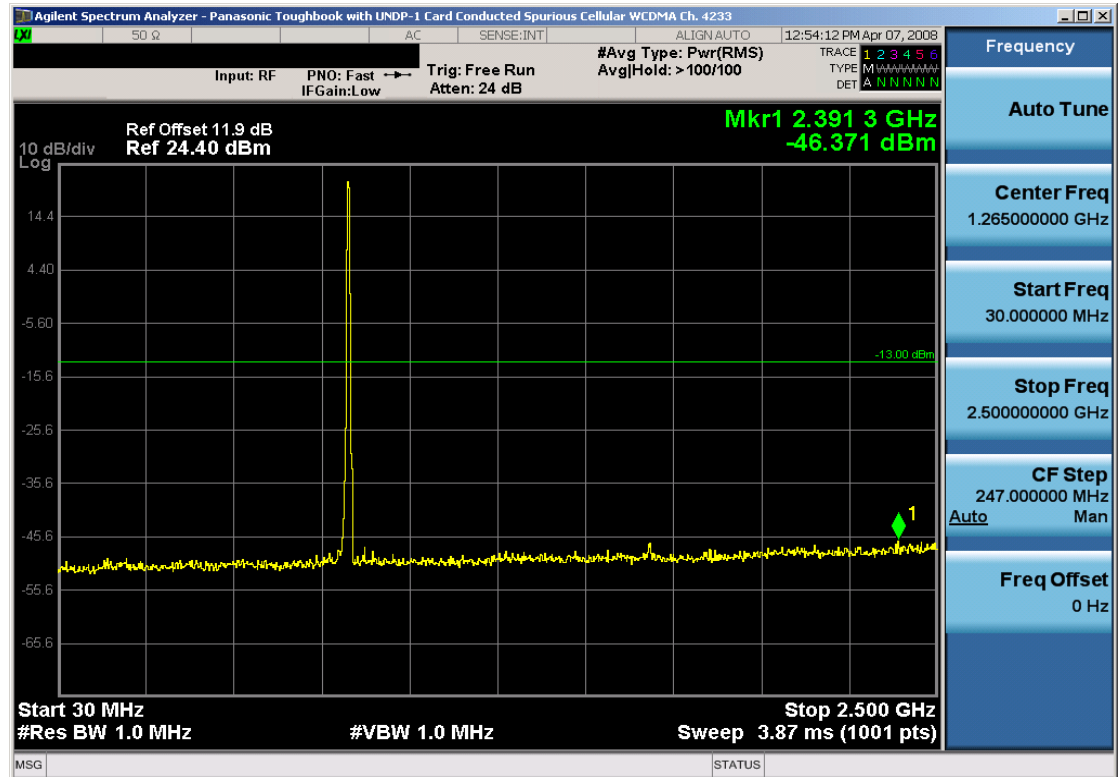
Plot 7-26. 4MHz Span Plot (Cellular WCDMA Mode – Ch. 4132)

FCC ID: ACJ9TGCF-309	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)	<b>Panasonic</b>	Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30		Page 58 of 80



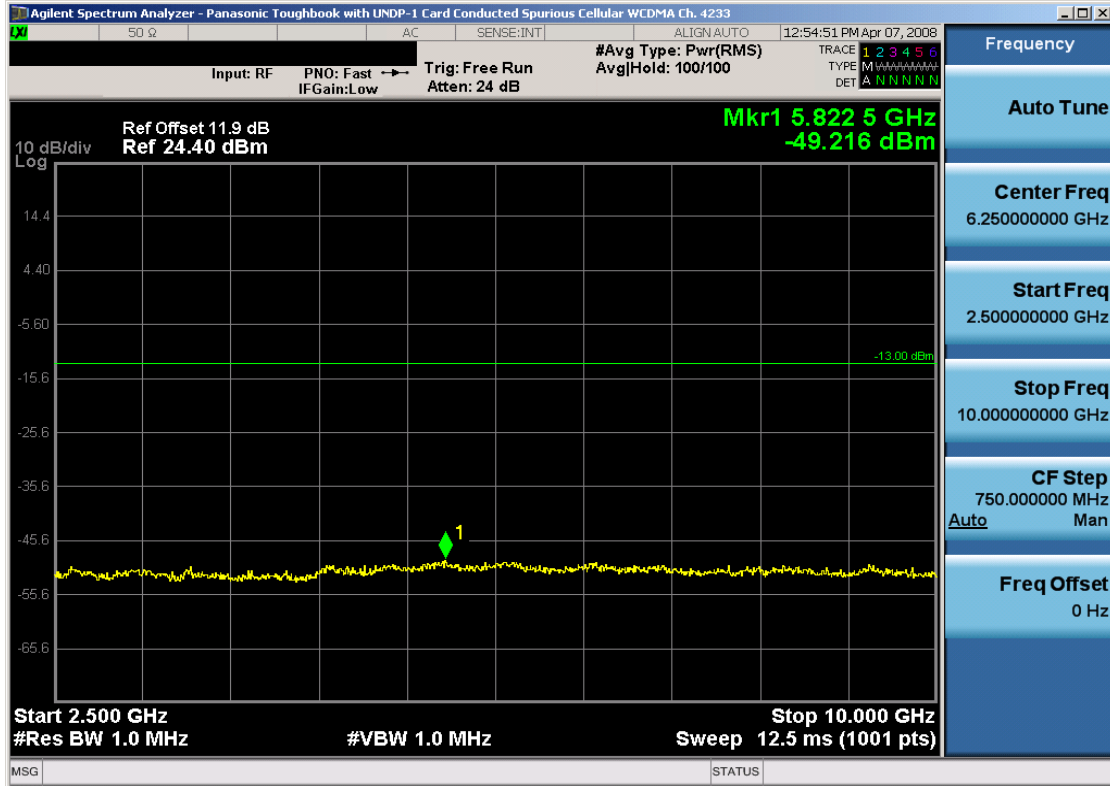


Plot 7-29. Occupied Bandwidth Plot (Cellular WCDMA Mode – Ch. 4183)

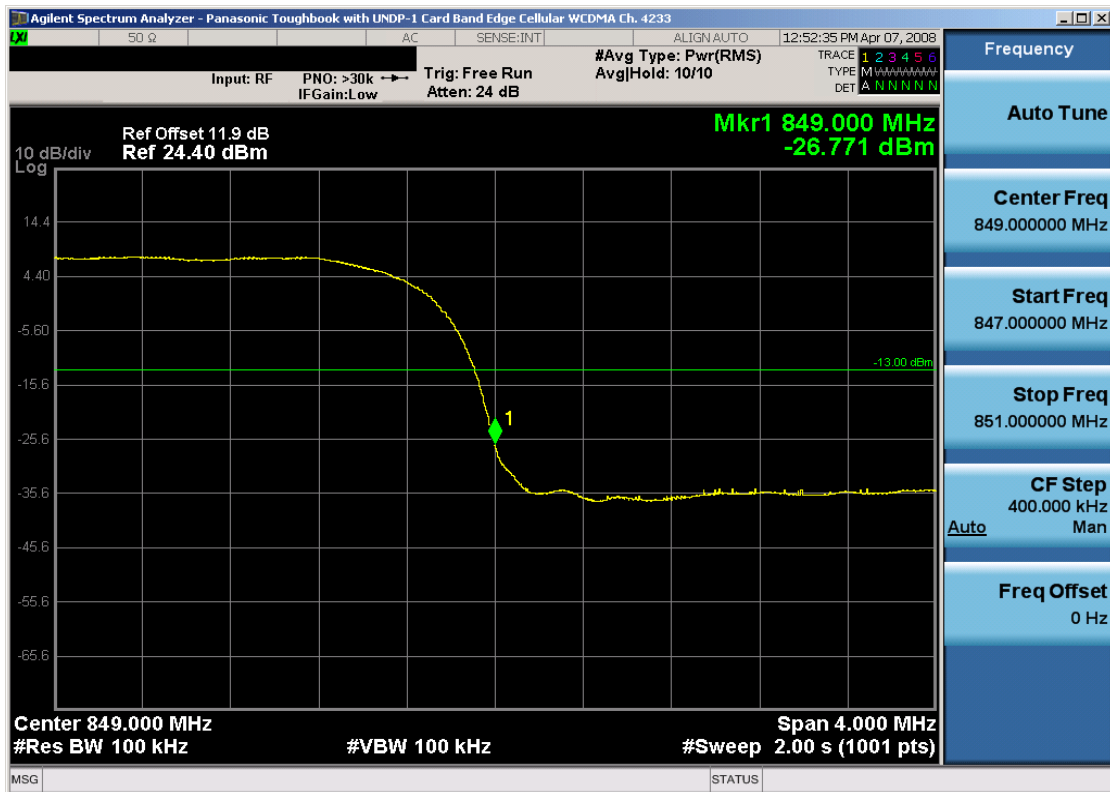


Plot 7-30. Conducted Spurious Plot (Cellular WCDMA Mode – Ch. 4233)

FCC ID: ACJ9TGCF-309		FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30		Page 60 of 80

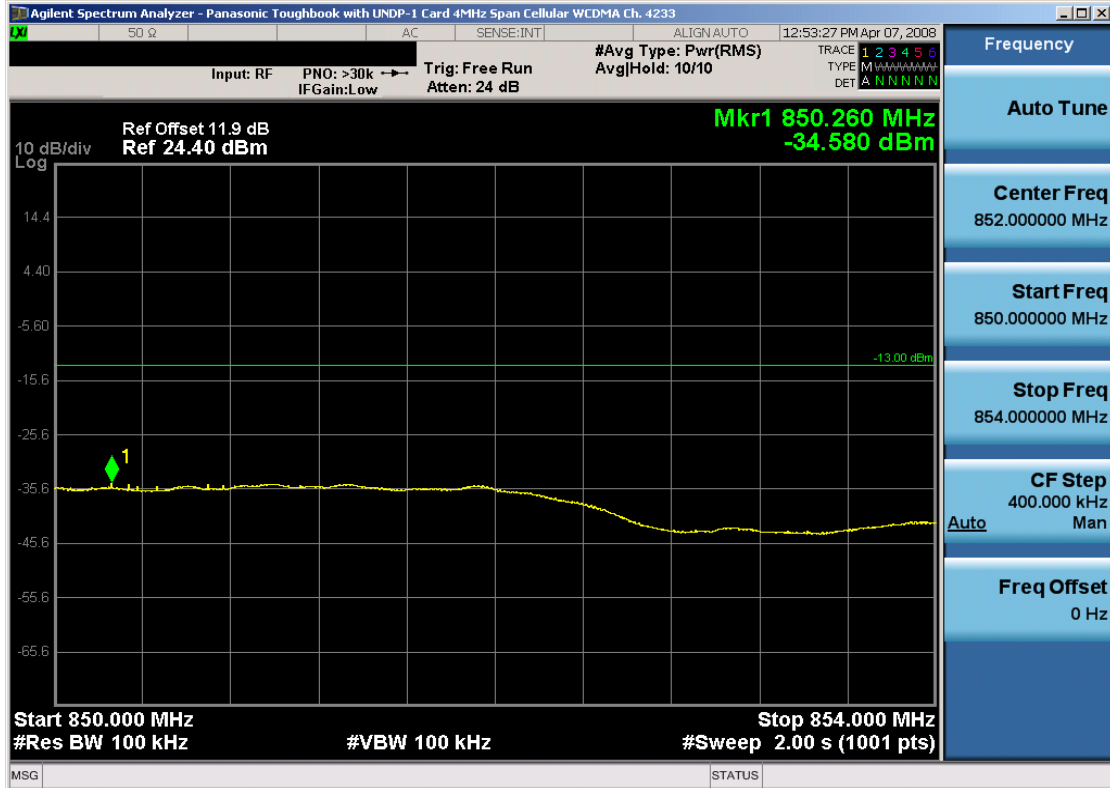


Plot 7-31. Conducted Spurious Plot (Cellular WCDMA Mode – Ch. 4233)

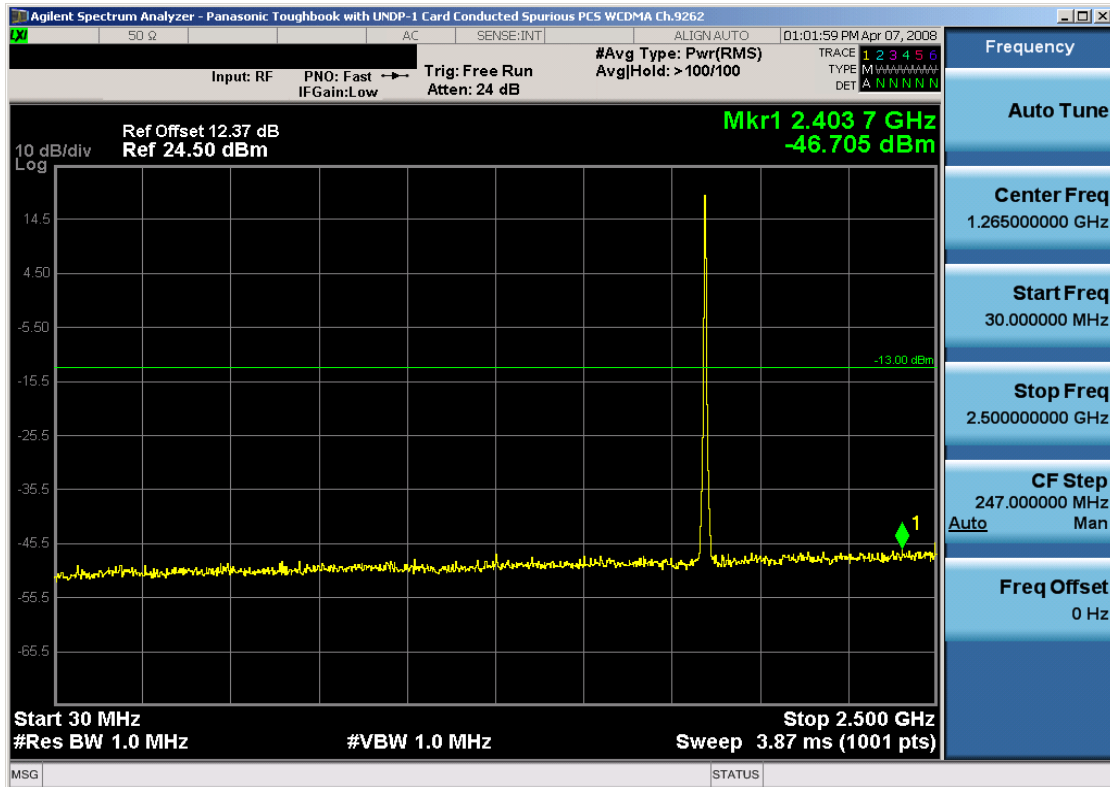


Plot 7-32. Band Edge Plot (Cellular WCDMA Mode – Ch. 4233)

FCC ID: ACJ9TGCF-309	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)	<b>Panasonic</b>	Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30		Page 61 of 80

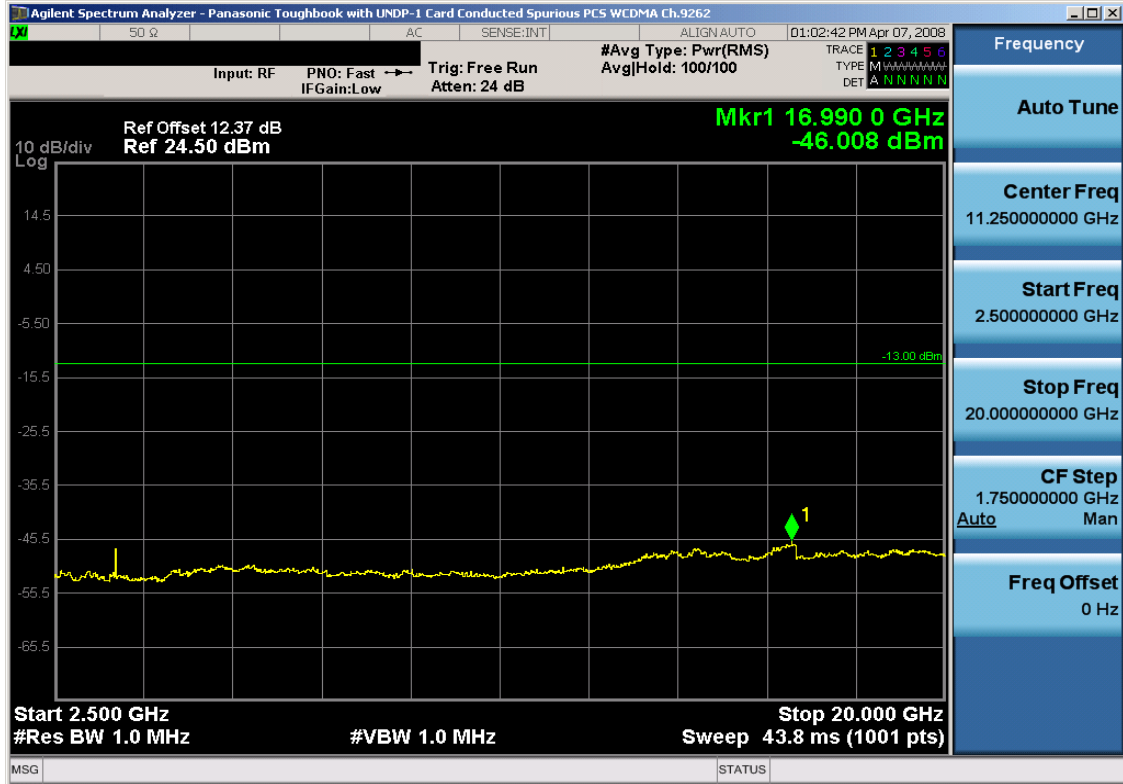


Plot 7-33. 4MHz Span Plot (Cellular WCDMA Mode – Ch. 4233)

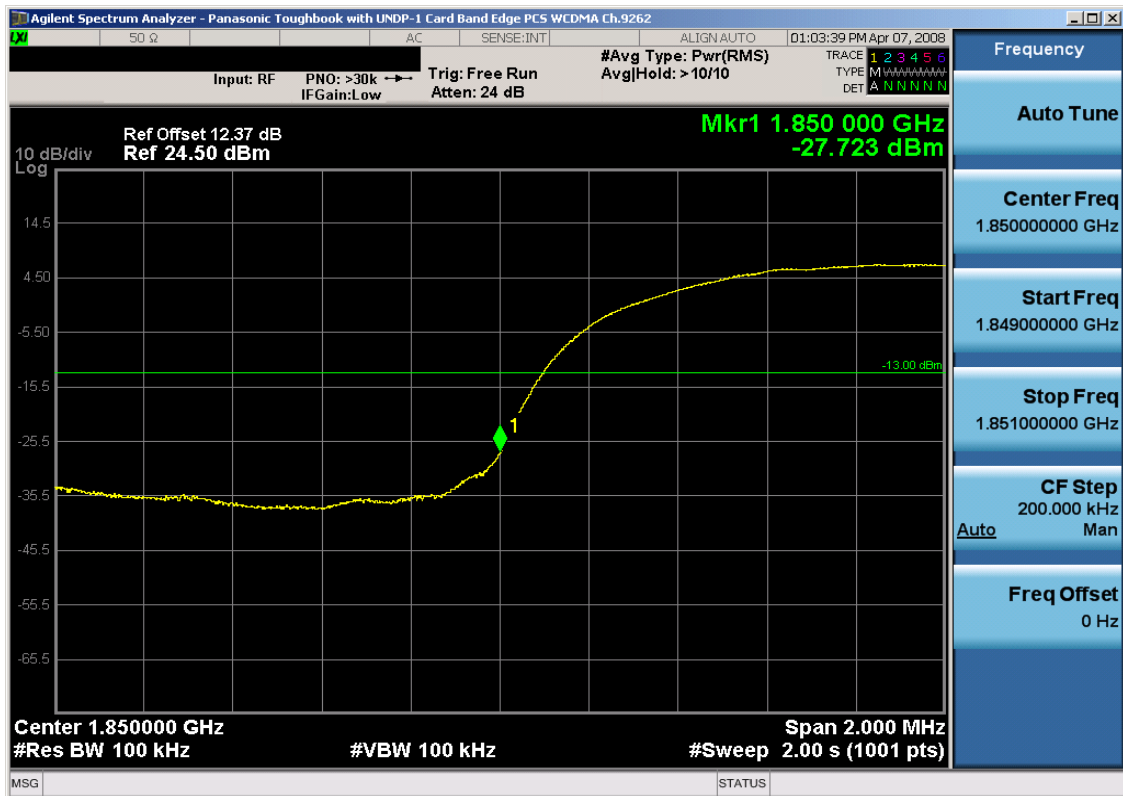


Plot 7-34. Conducted Spurious Plot (PCS WCDMA Mode – Ch. 9262)

FCC ID: ACJ9TGCF-309	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)	<b>Panasonic</b>	Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30		Page 62 of 80

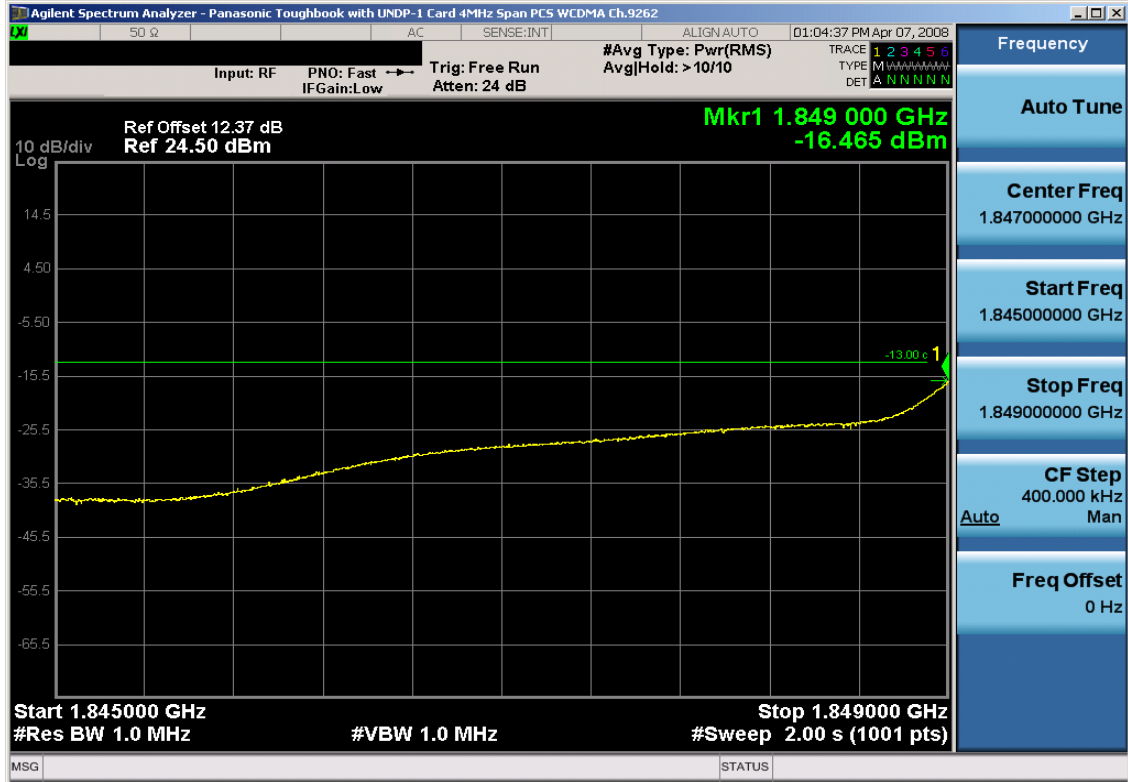


Plot 7-35. Conducted Spurious Plot (PCS WCDMA Mode – Ch. 9262)

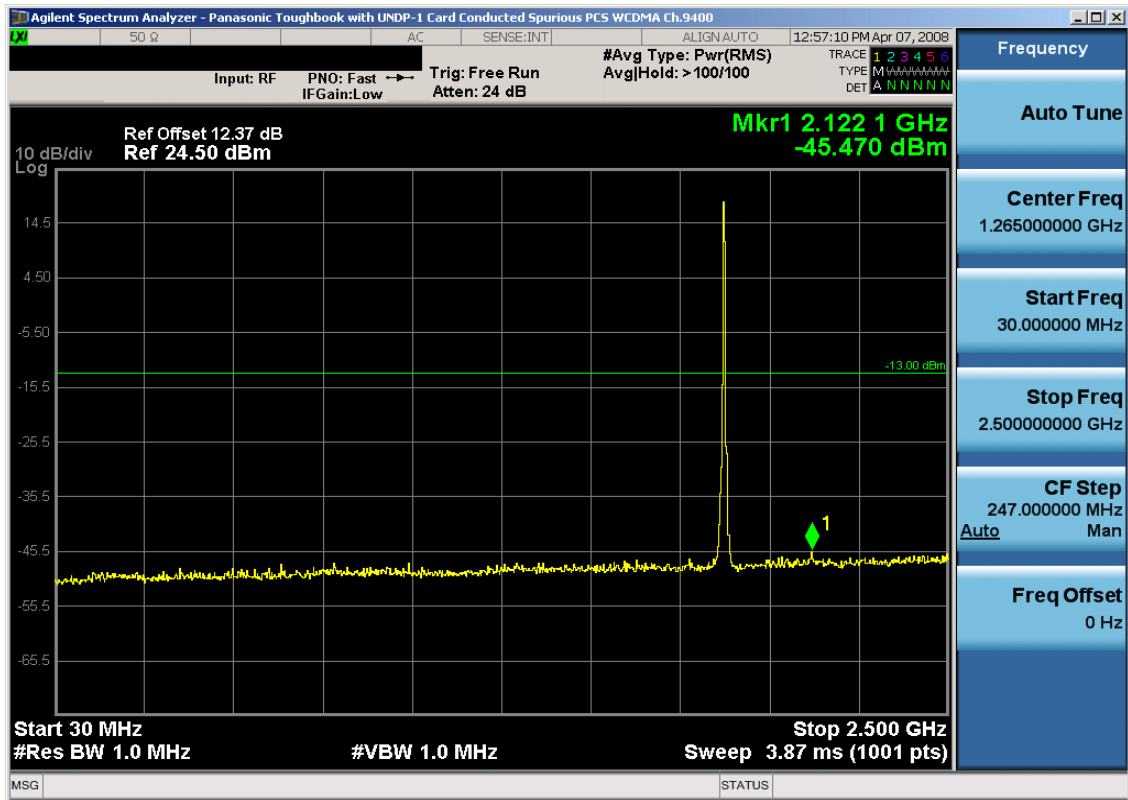


Plot 7-36. Band Edge Plot (PCS WCDMA Mode – Ch. 9262)

FCC ID: ACJ9TGCF-309	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)	<b>Panasonic</b>	Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30		Page 63 of 80

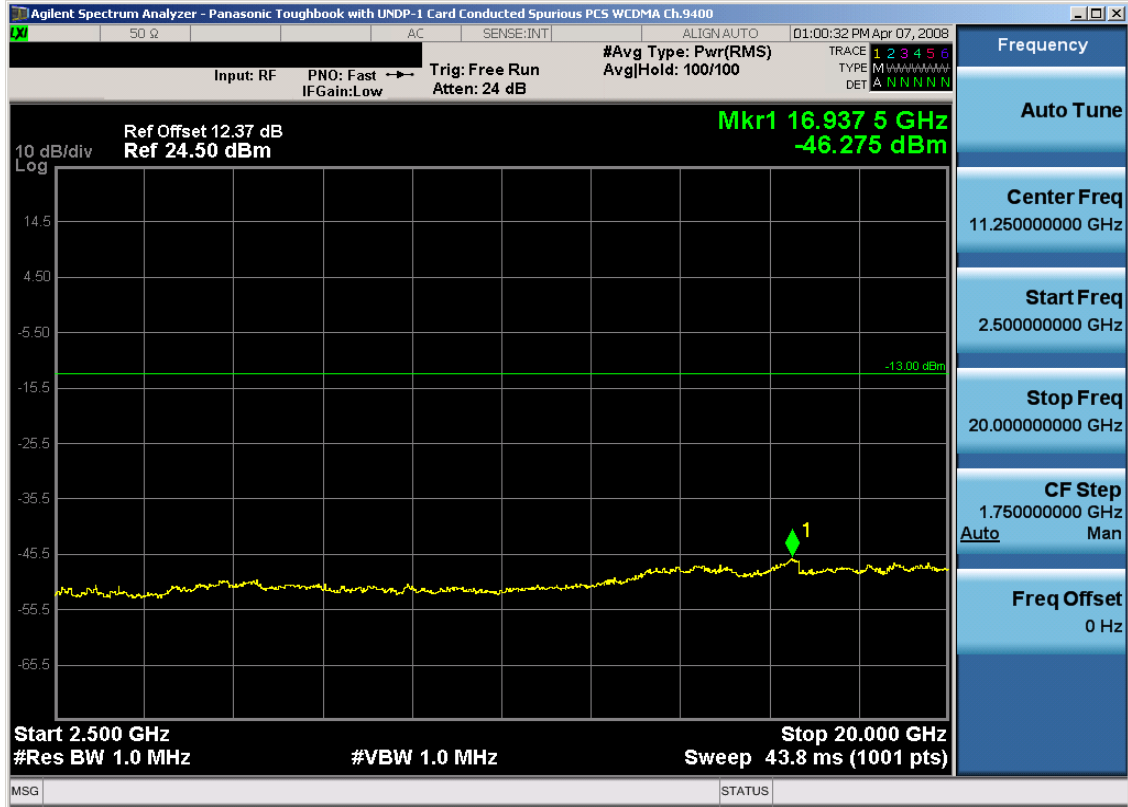


Plot 7-37. 4MHz Span Plot (PCS WCDMA Mode – Ch. 9262)

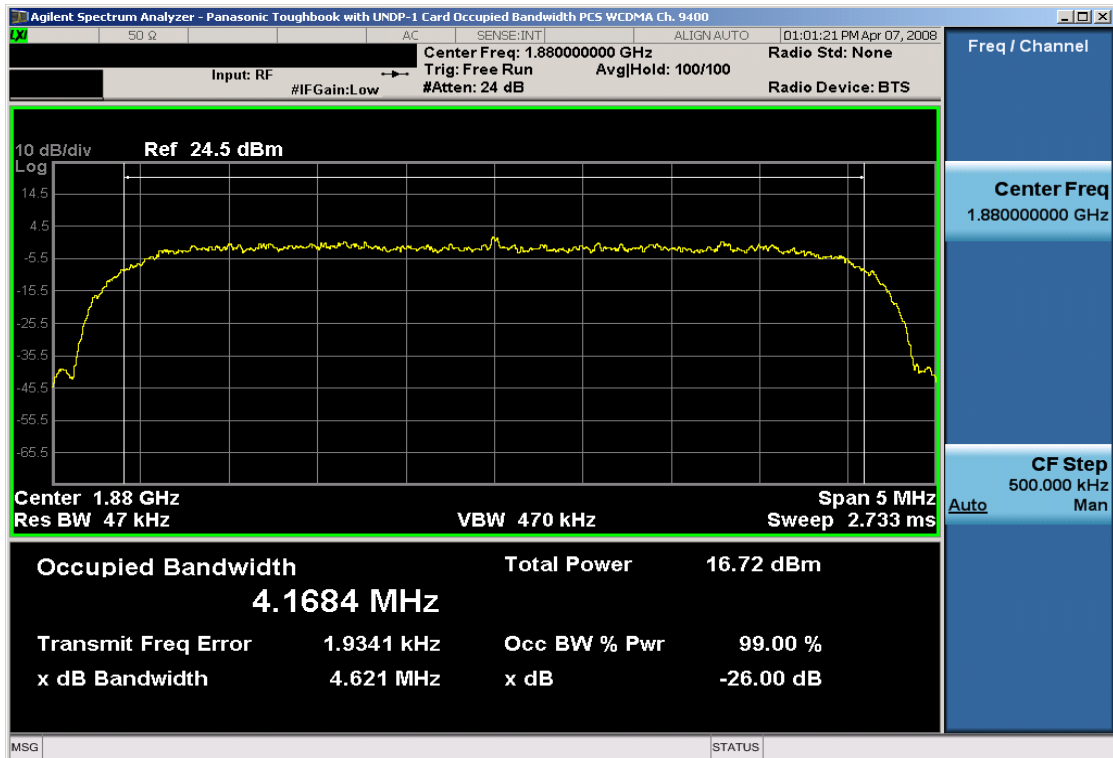


Plot 7-38. Conducted Spurious Plot (PCS WCDMA Mode – Ch. 9400)

FCC ID: ACJ9TGCF-309	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)	<b>Panasonic</b>	Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30		Page 64 of 80

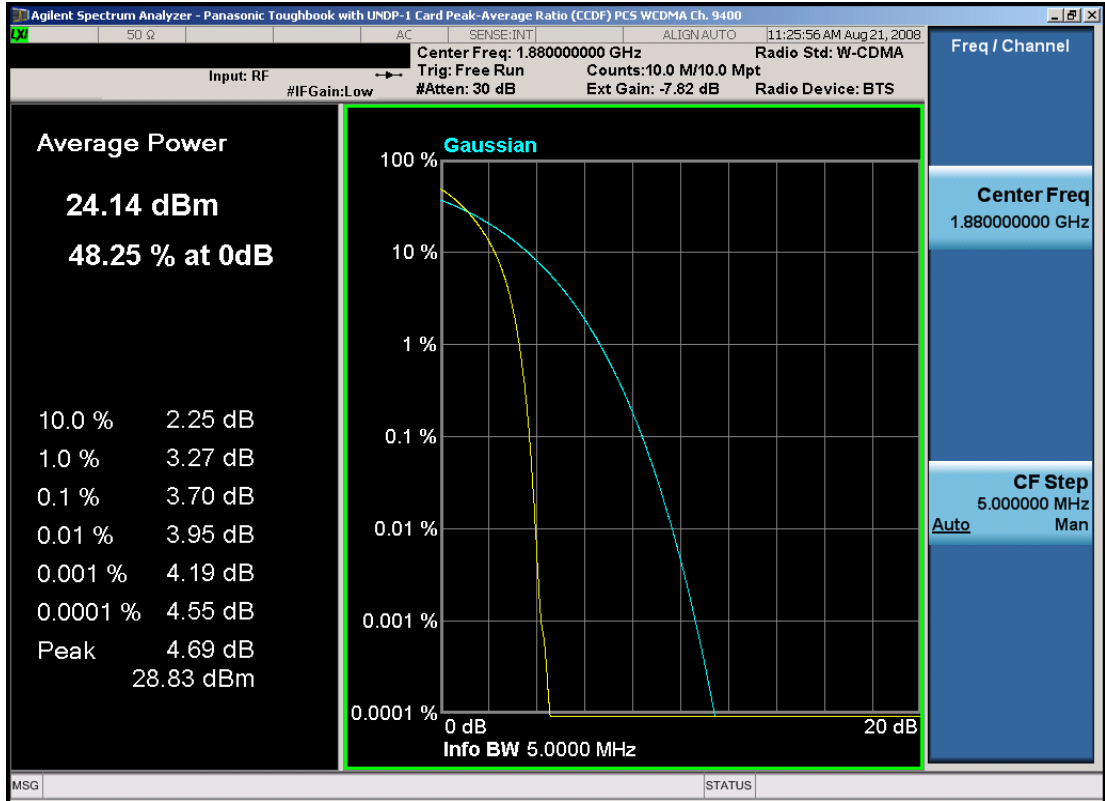


**Plot 7-39. Conducted Spurious Plot (PCS WCDMA Mode – Ch. 9400)**

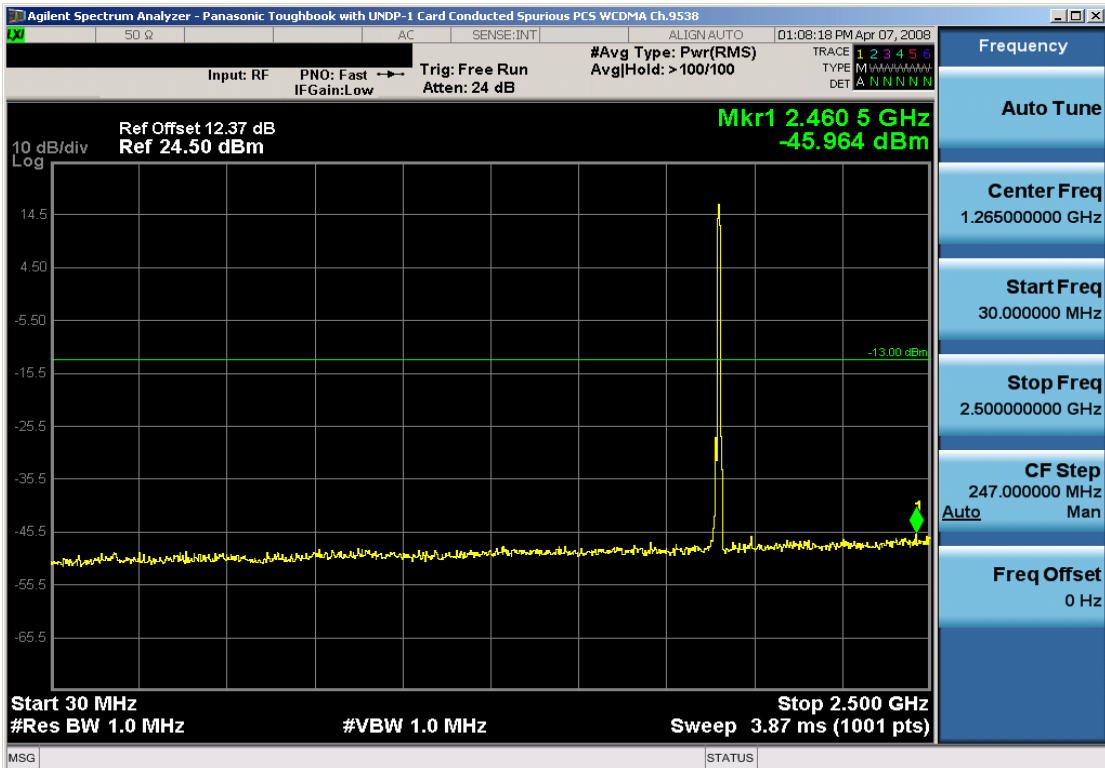


**Plot 7-40. Occupied Bandwidth Plot (PCS WCDMA Mode – Ch. 9400)**

FCC ID: ACJ9TGCF-309	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)	<b>Panasonic</b>	Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30		Page 65 of 80

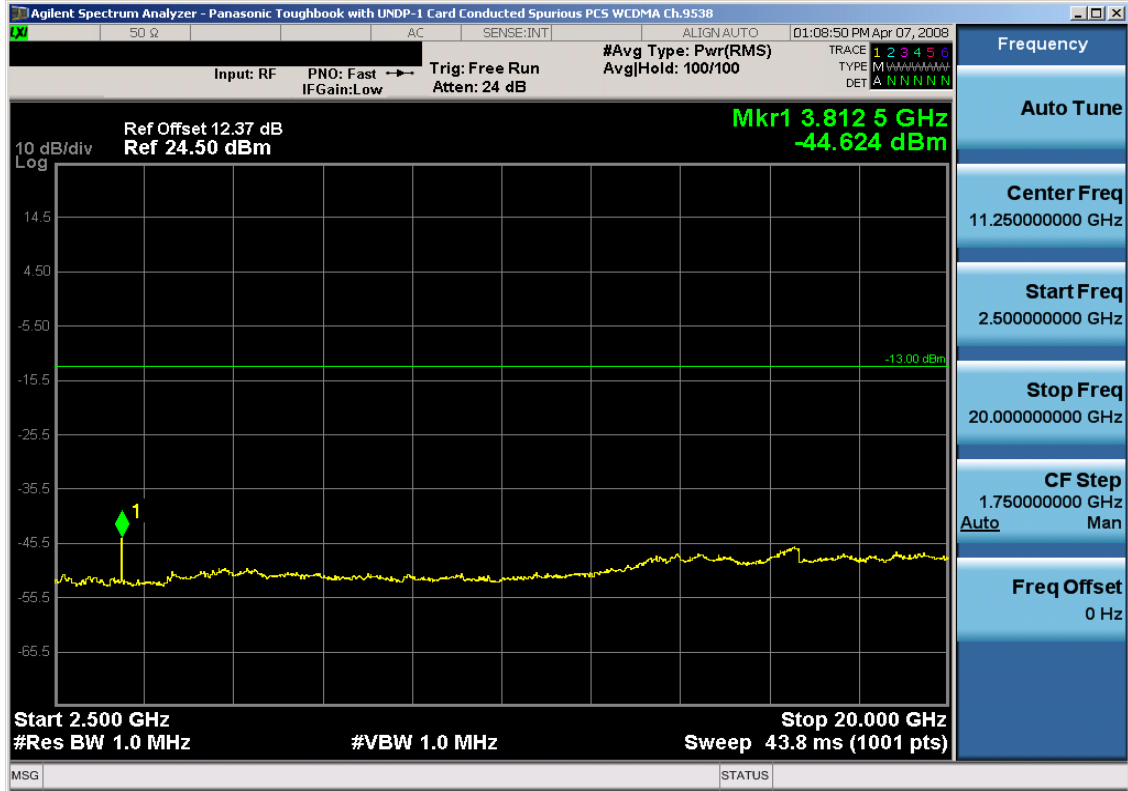


**Plot 7-41. Peak-Average Ratio Plot (PCS WCDMA Mode – Ch. 9400)**

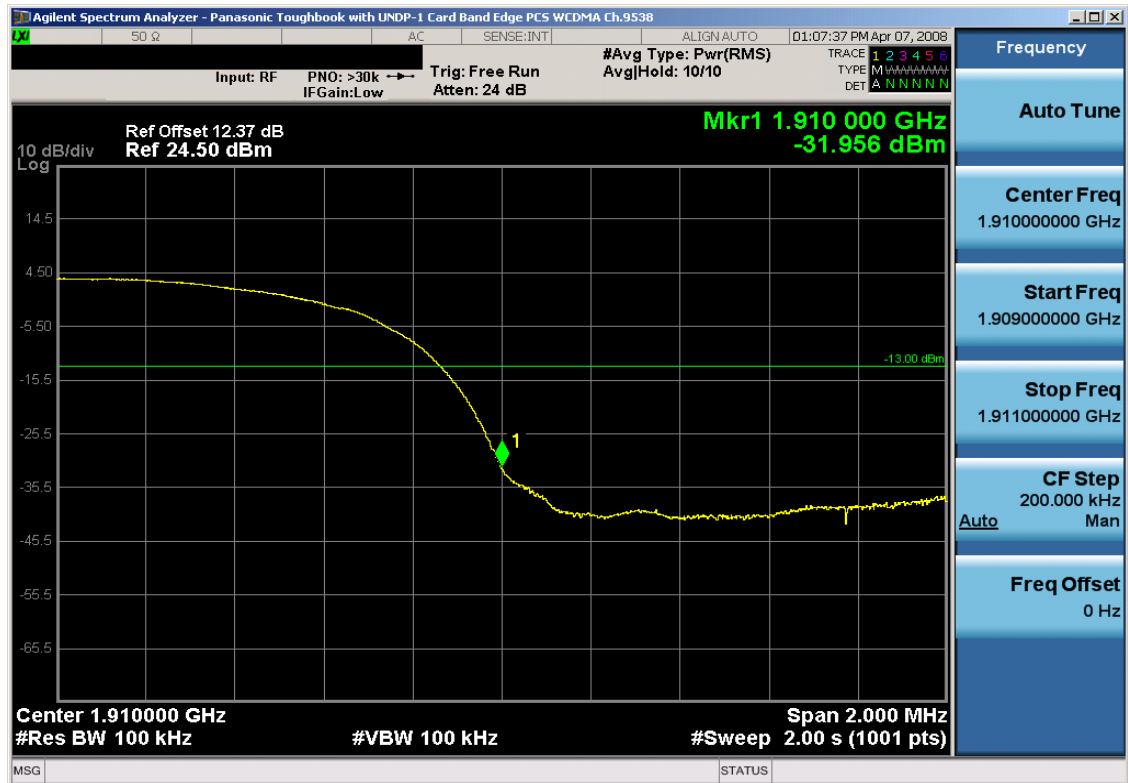


**Plot 7-42. Conducted Spurious Plot (PCS WCDMA Mode – Ch. 9538)**

FCC ID: ACJ9TGCF-309	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)	<b>Panasonic</b>	Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30		Page 66 of 80

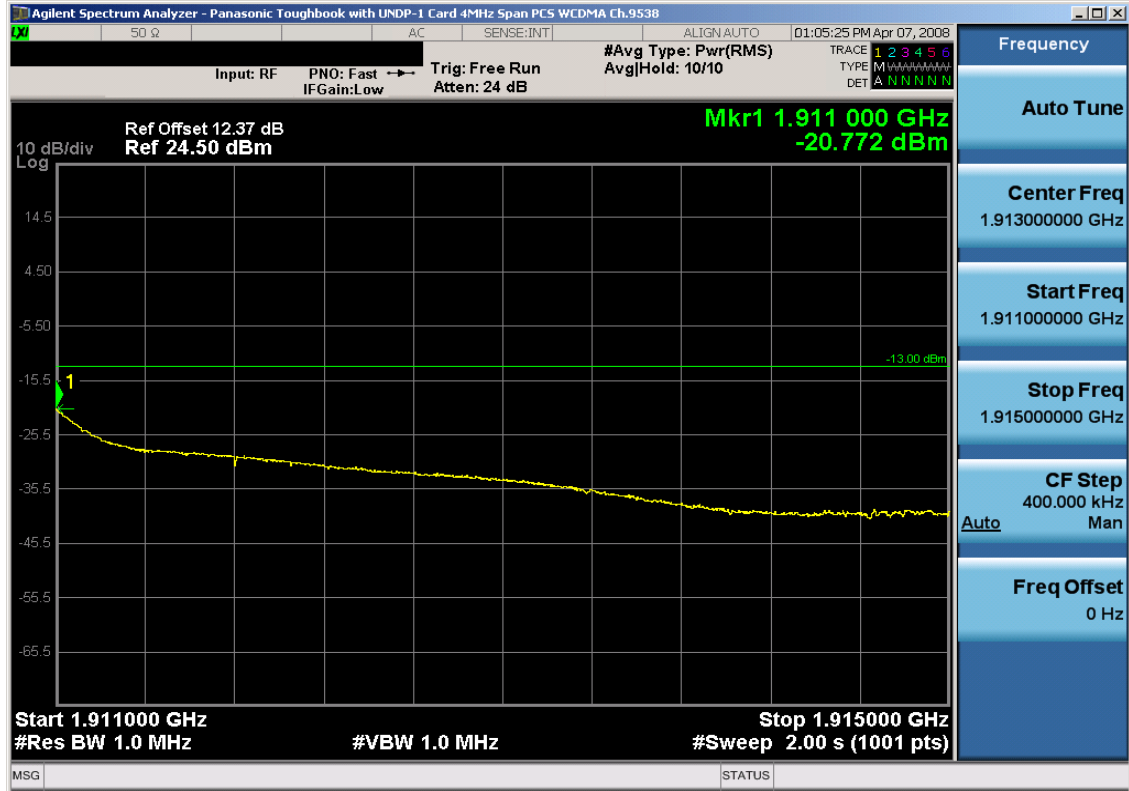


Plot 7-43. Conducted Spurious Plot (PCS WCDMA Mode – Ch. 9538)

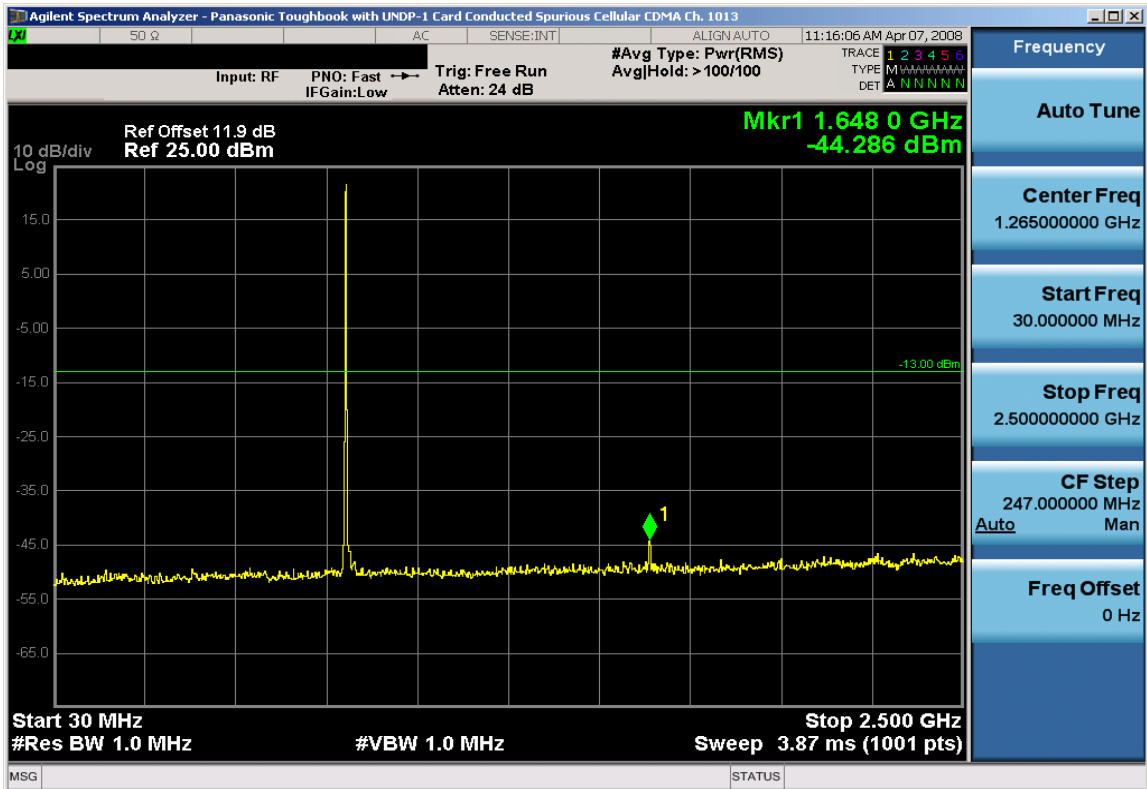


Plot 7-44. Band Edge Plot (PCS WCDMA Mode – Ch. 9538)

FCC ID: ACJ9TGCF-309	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)	<b>Panasonic</b>	Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30		Page 67 of 80

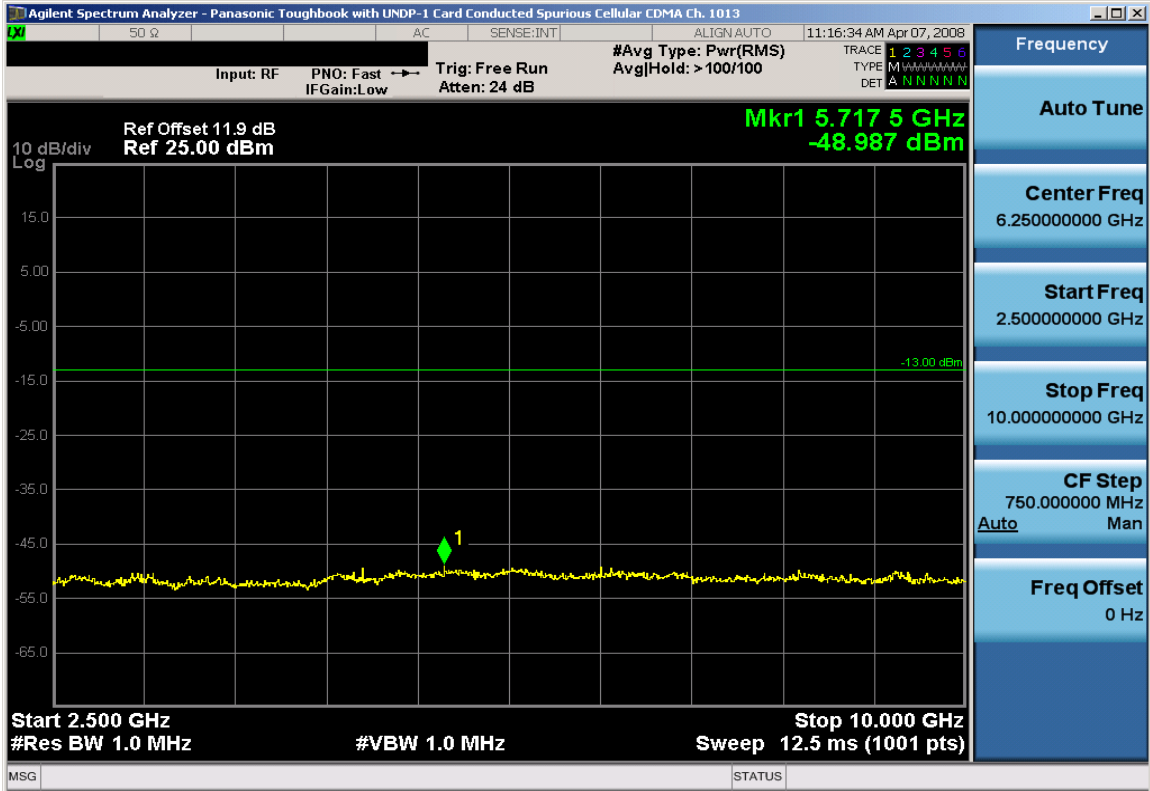


Plot 7-45. 4MHz Span Plot (PCS WCDMA Mode – Ch. 9538)

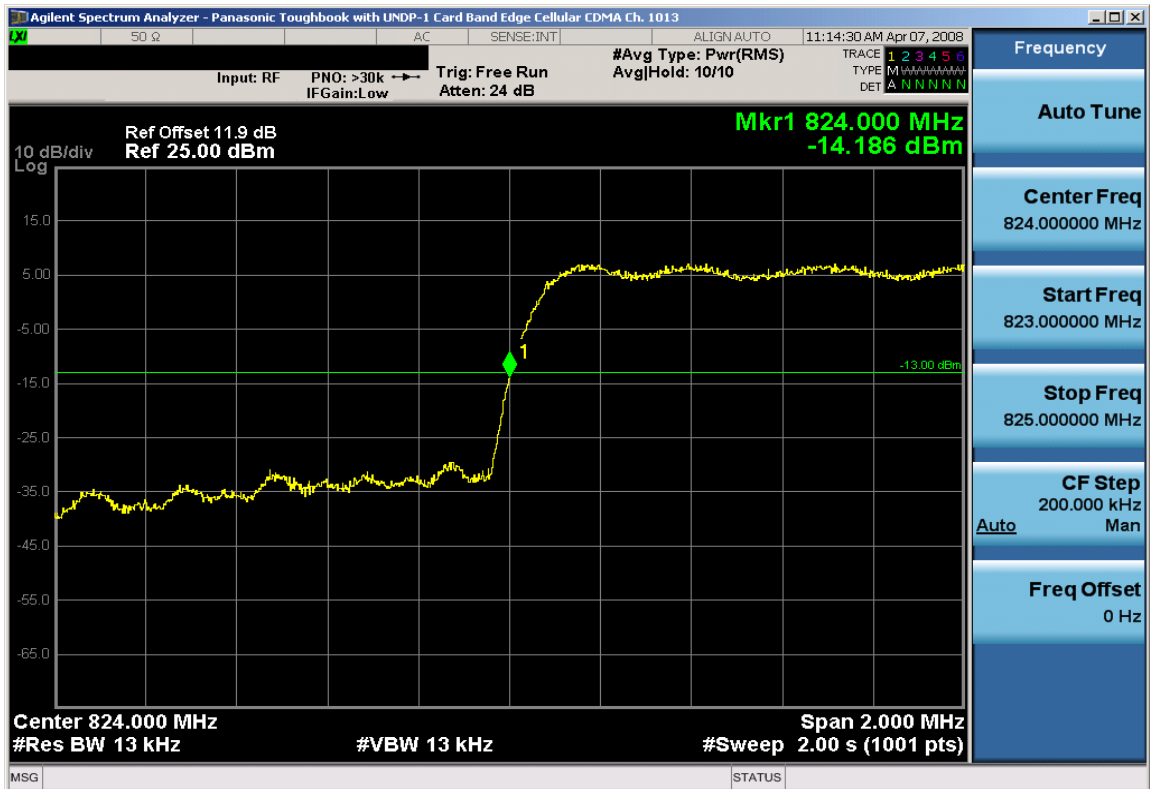


Plot 7-46. Conducted Spurious Plot (Cellular CDMA Mode – Ch. 1013)

FCC ID: ACJ9TGCF-309	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)	<b>Panasonic</b>	Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30		Page 68 of 80



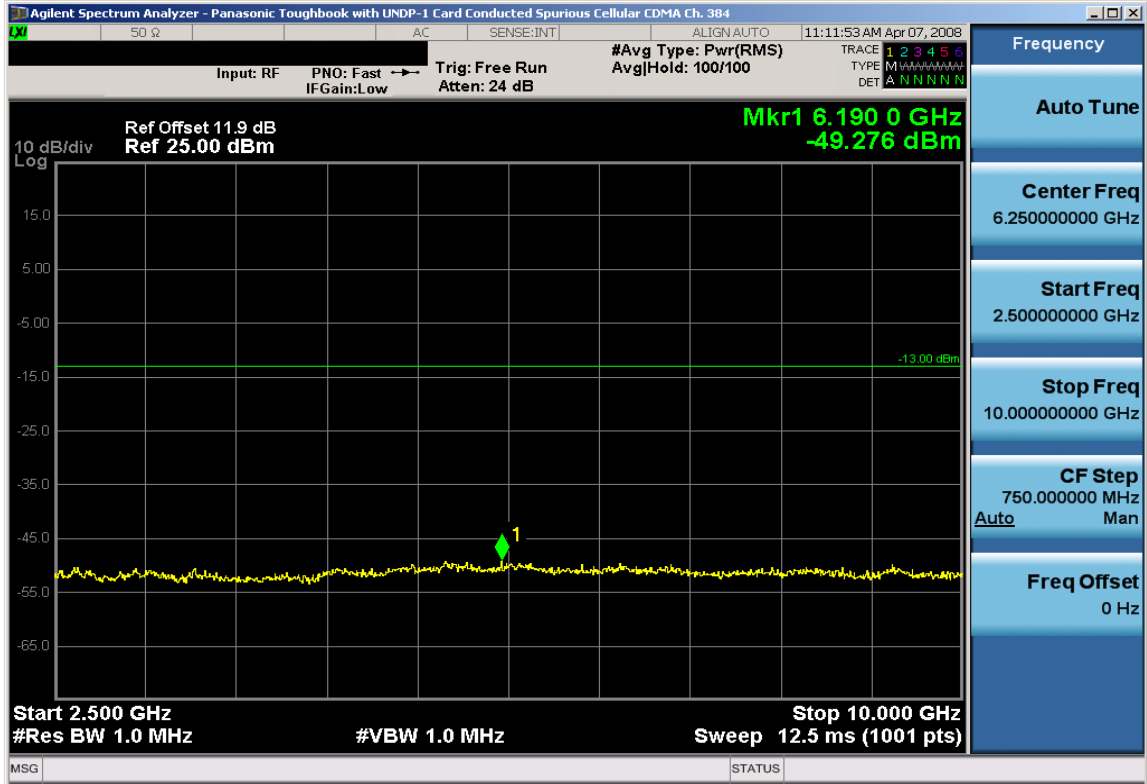
Plot 7-47. Conducted Spurious Plot (Cellular CDMA Mode – Ch. 1013)



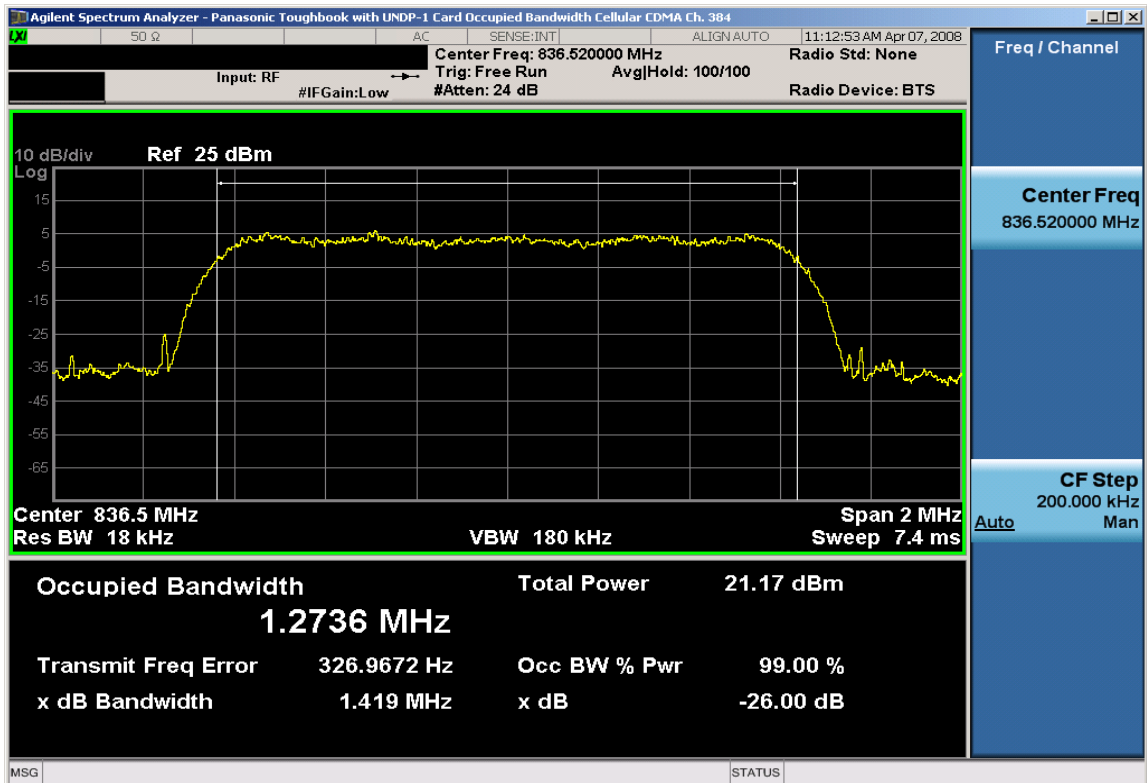
Plot 7-48. Band Edge Plot (Cellular CDMA Mode – Ch. 1013)

FCC ID: ACJ9TGCF-309	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)	<b>Panasonic</b>	Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30		Page 69 of 80



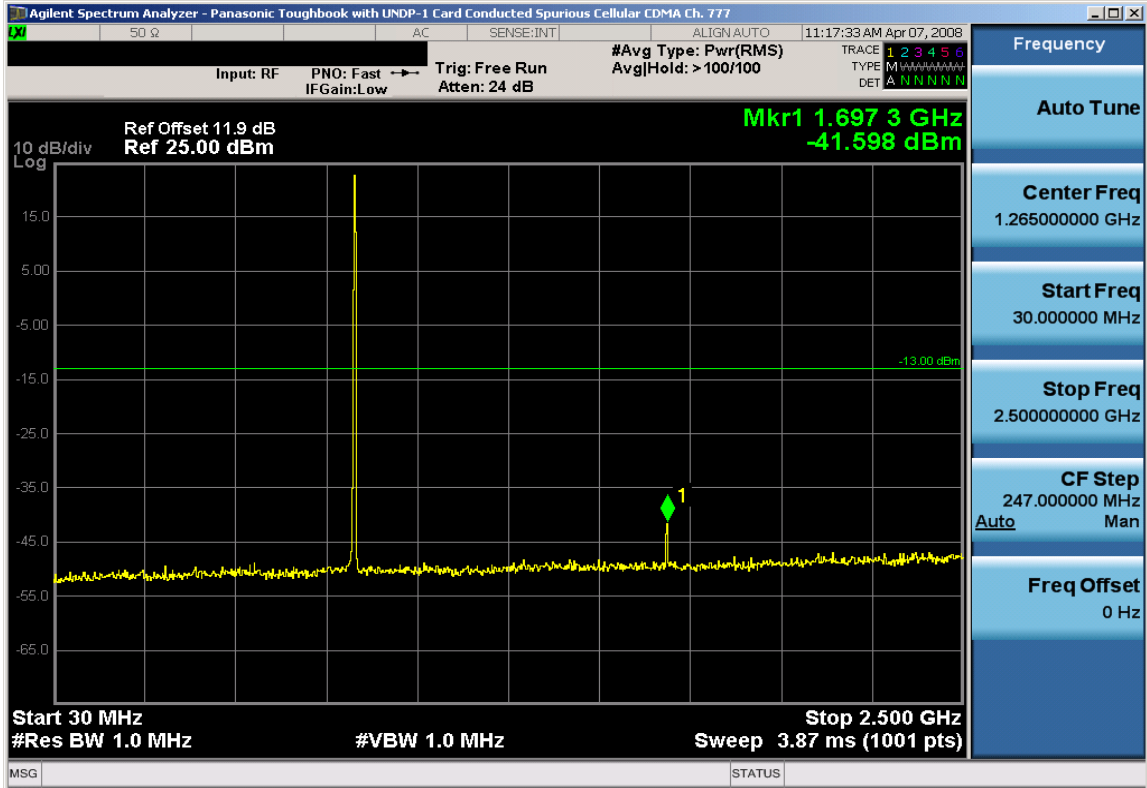


Plot 7-51. Conducted Spurious Plot (Cellular CDMA Mode – Ch. 384)

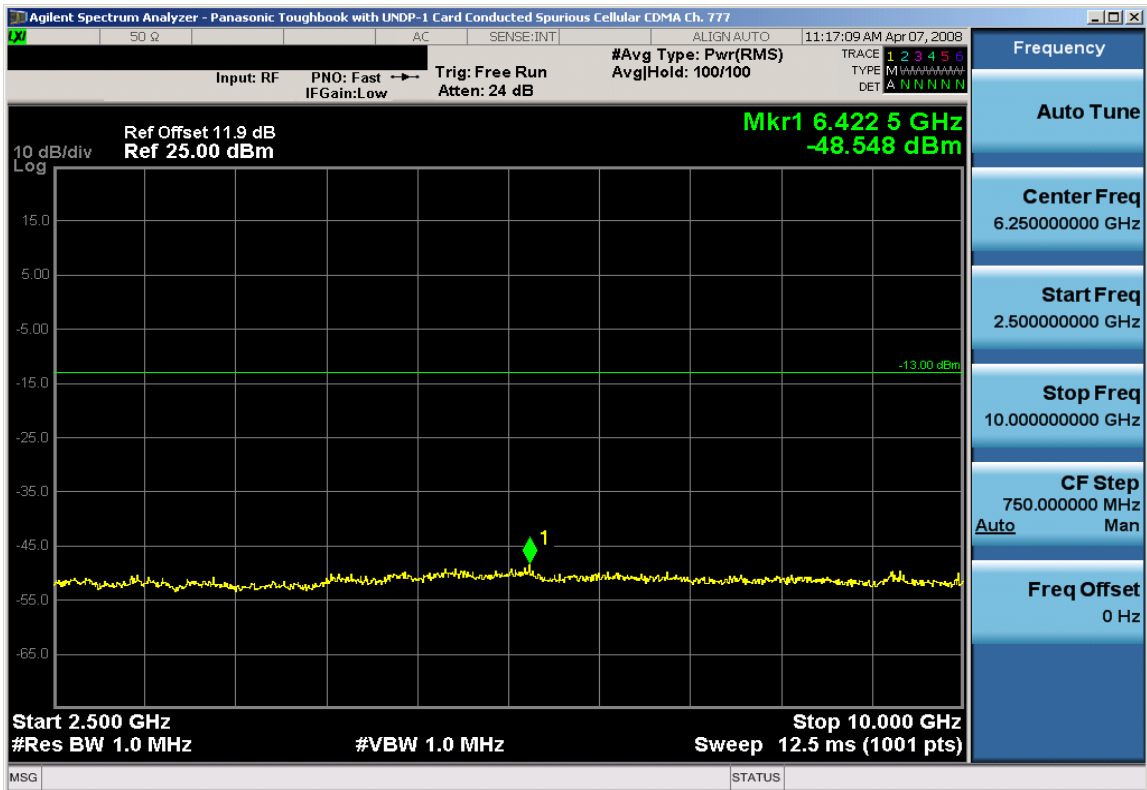


Plot 7-52. Occupied Bandwidth Plot (Cellular CDMA Mode – Ch. 1013)

FCC ID: ACJ9TGCF-309	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)	<b>Panasonic</b>	Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30		Page 71 of 80

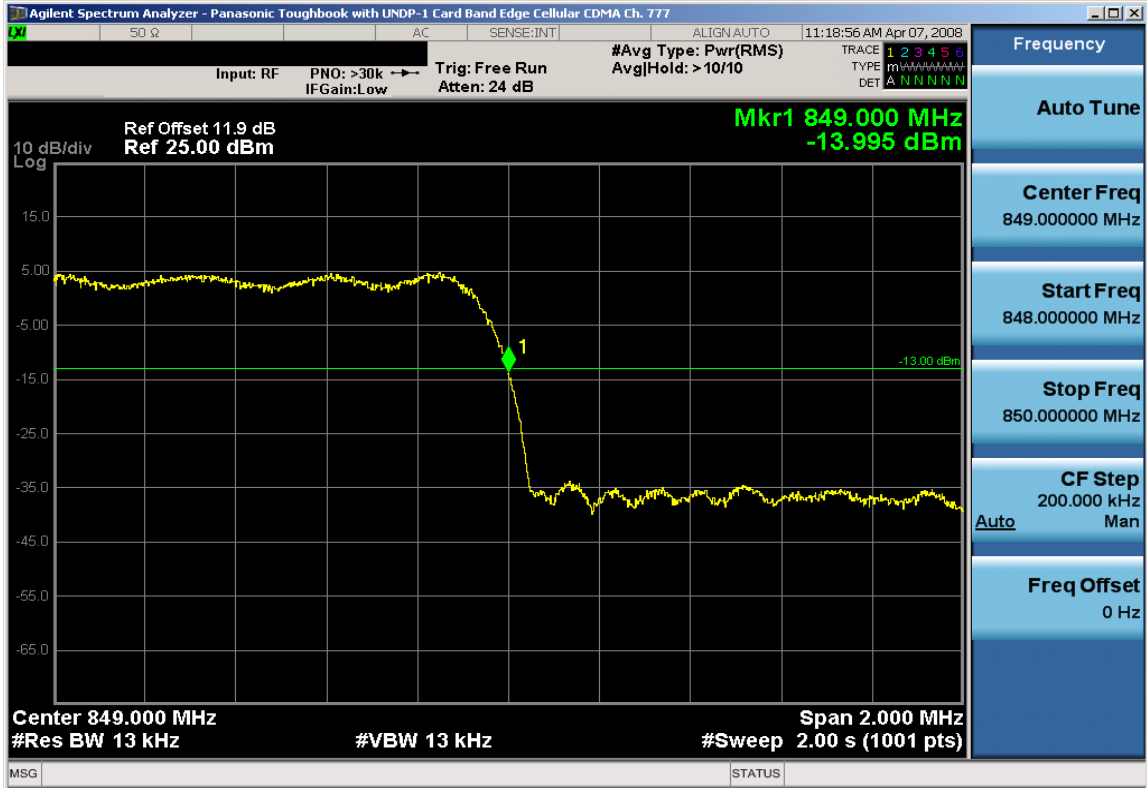


Plot 7-53. Conducted Spurious Plot (Cellular CDMA Mode – Ch. 777)



Plot 7-54. Conducted Spurious Plot (Cellular CDMA Mode – Ch. 777)

FCC ID: ACJ9TGCF-309	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)	<b>Panasonic</b>	Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30		Page 72 of 80

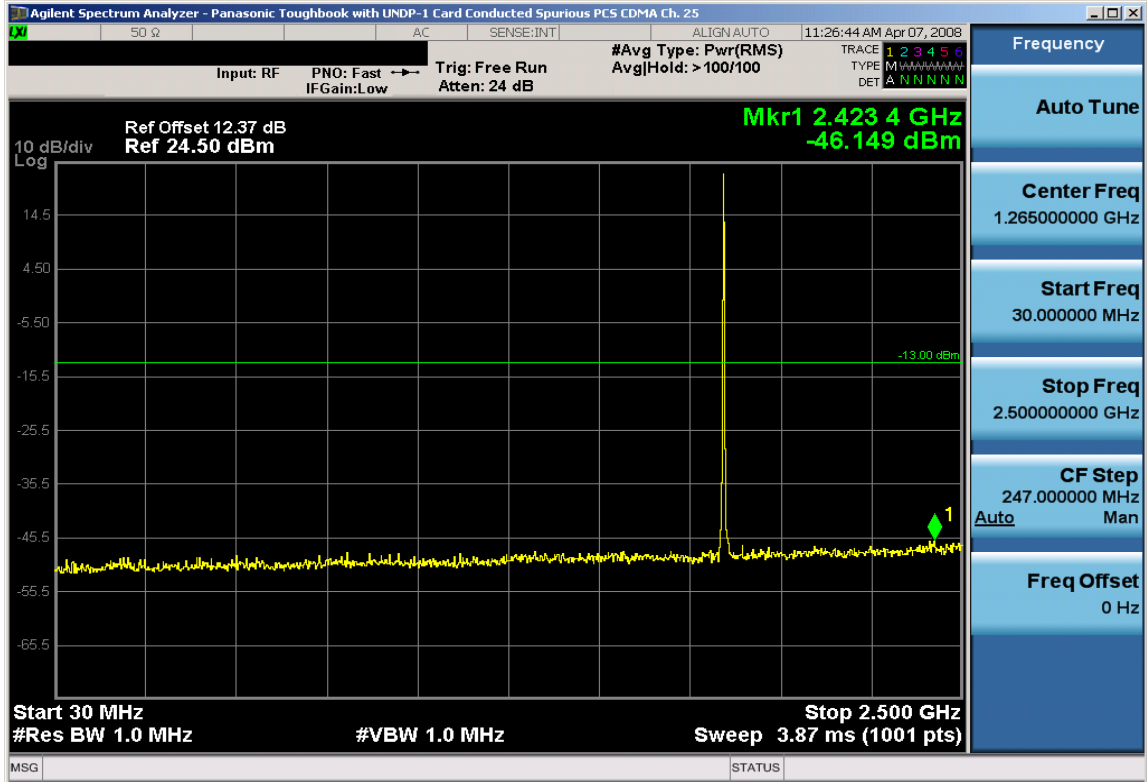


Plot 7-55. Band Edge Plot (Cellular CDMA Mode – Ch. 777)

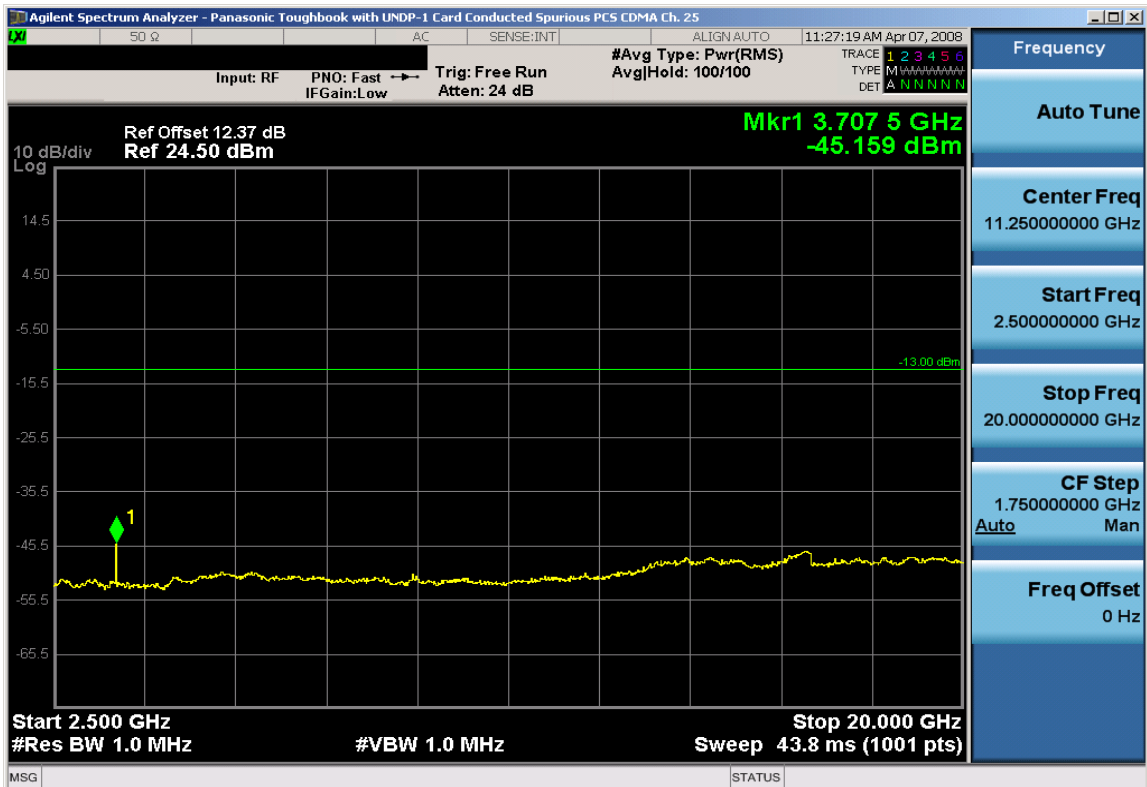


Plot 7-56. 4MHz Span Plot (Cellular CDMA Mode – Ch. 777)

FCC ID: ACJ9TGCF-309	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)	<b>Panasonic</b>	Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30		Page 73 of 80

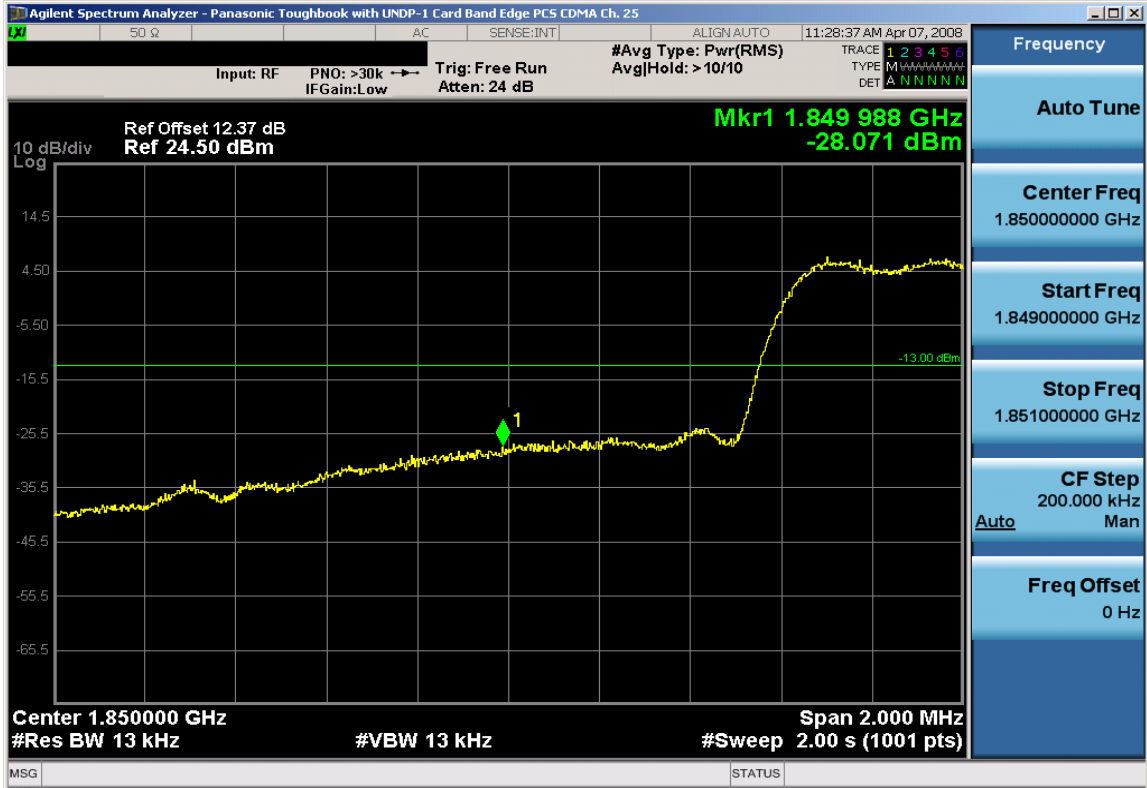


Plot 7-57. Conducted Spurious Plot (PCS CDMA Mode – Ch. 25)

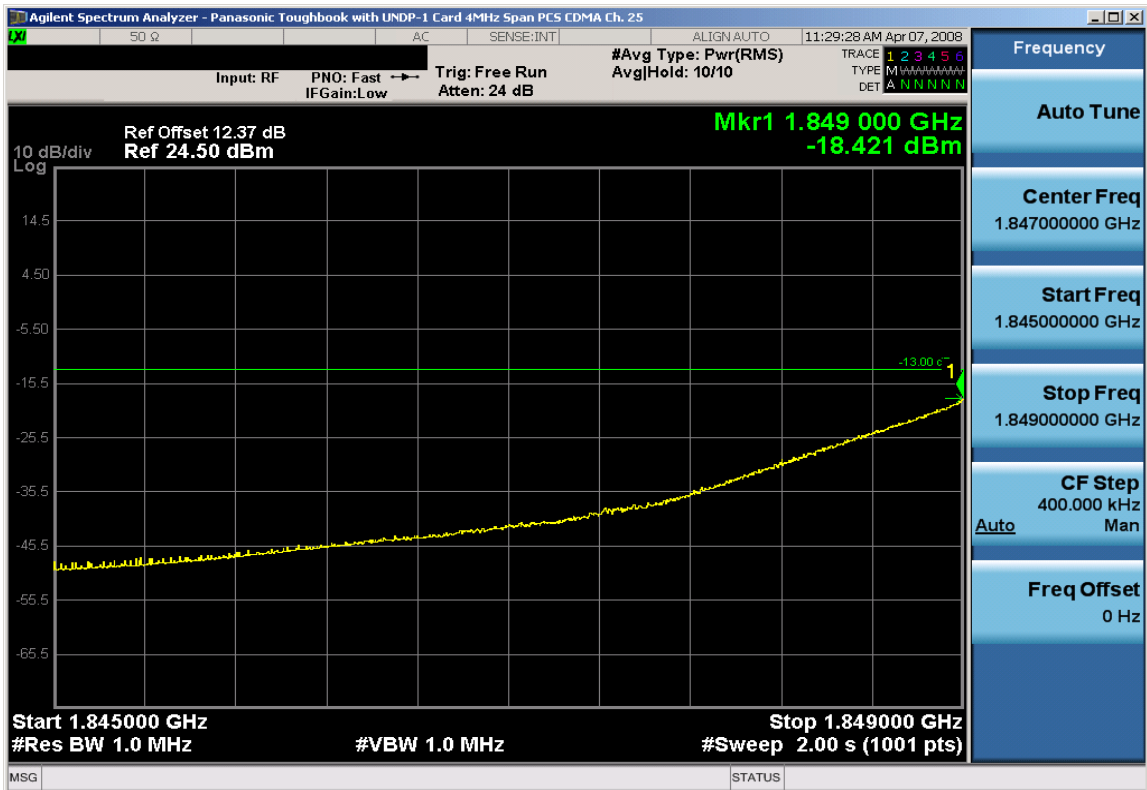


Plot 7-58. Conducted Spurious Plot (PCS CDMA Mode – Ch. 25)

FCC ID: ACJ9TGCF-309	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)	<b>Panasonic</b>	Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30		Page 74 of 80

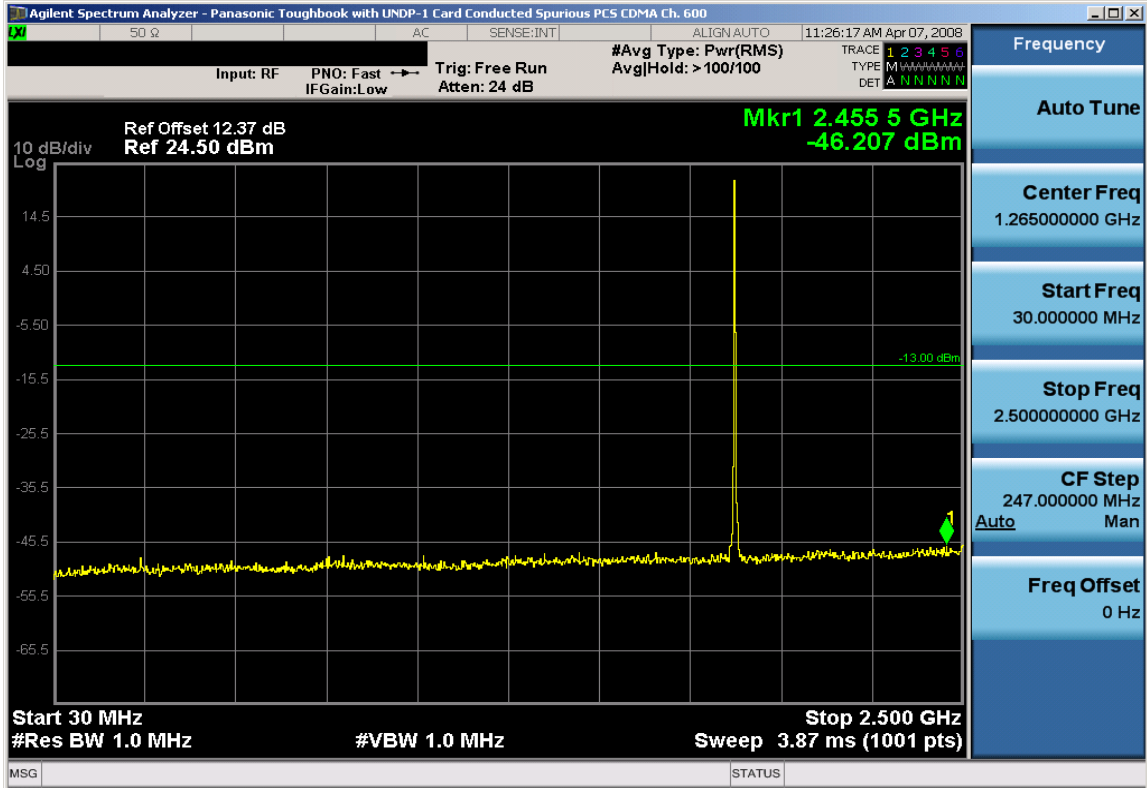


Plot 7-59. Band Edge Plot (PCS CDMA Mode – Ch. 25)

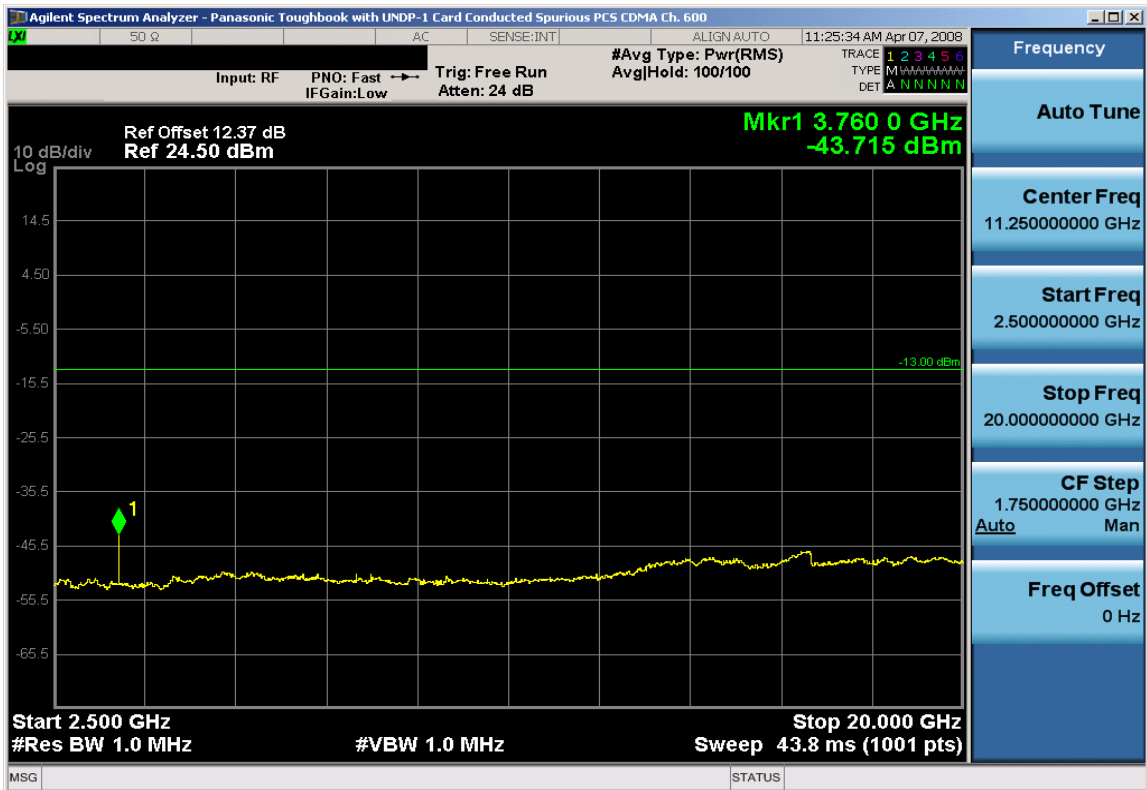


Plot 7-60. 4MHz Span Plot (PCS CDMA Mode – Ch. 25)

FCC ID: ACJ9TGCF-309	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)	<b>Panasonic</b>	Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30		Page 75 of 80

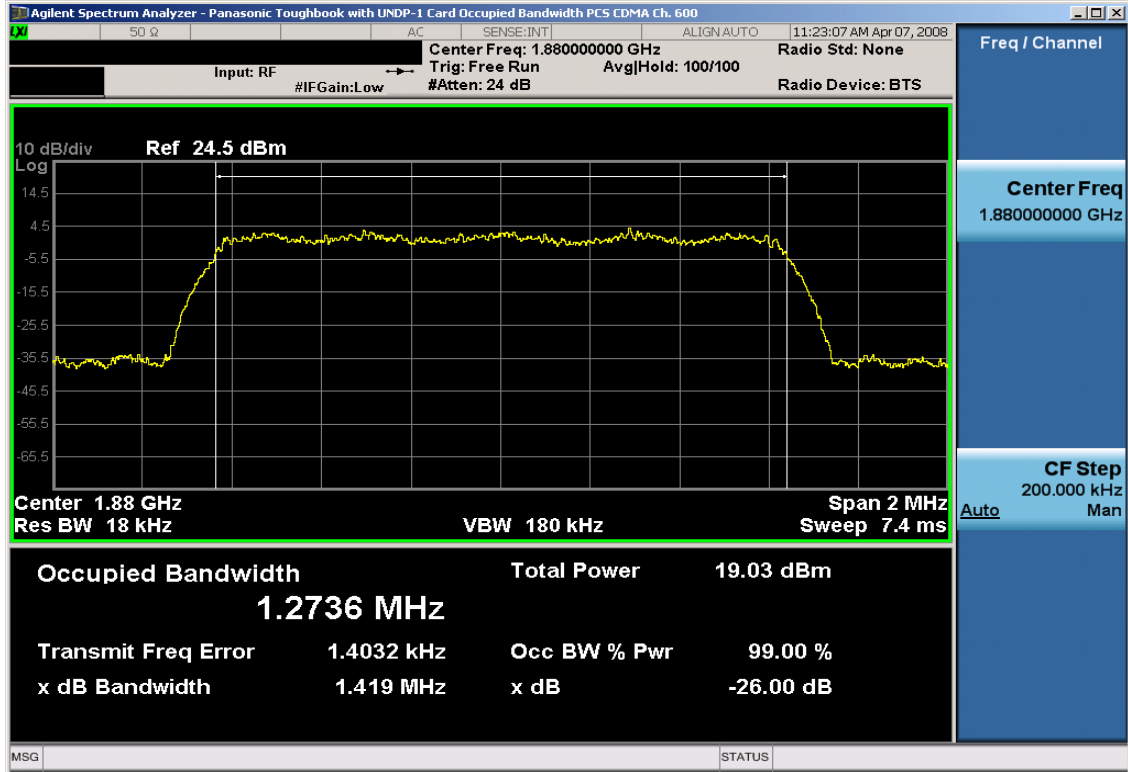


Plot 7-61. Conducted Spurious Plot (PCS CDMA Mode – Ch. 600)

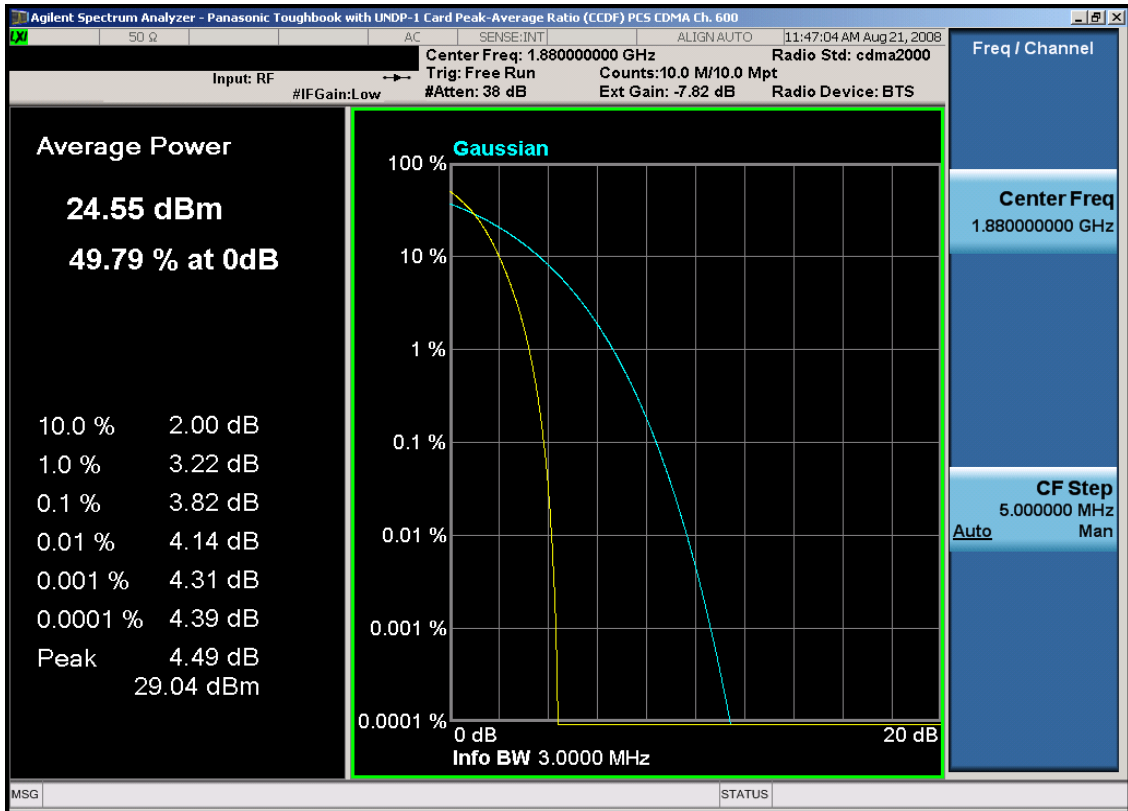


Plot 7-62. Conducted Spurious Plot (PCS CDMA Mode – Ch. 600)

FCC ID: ACJ9TGCF-309	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)	<b>Panasonic</b>	Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30		Page 76 of 80

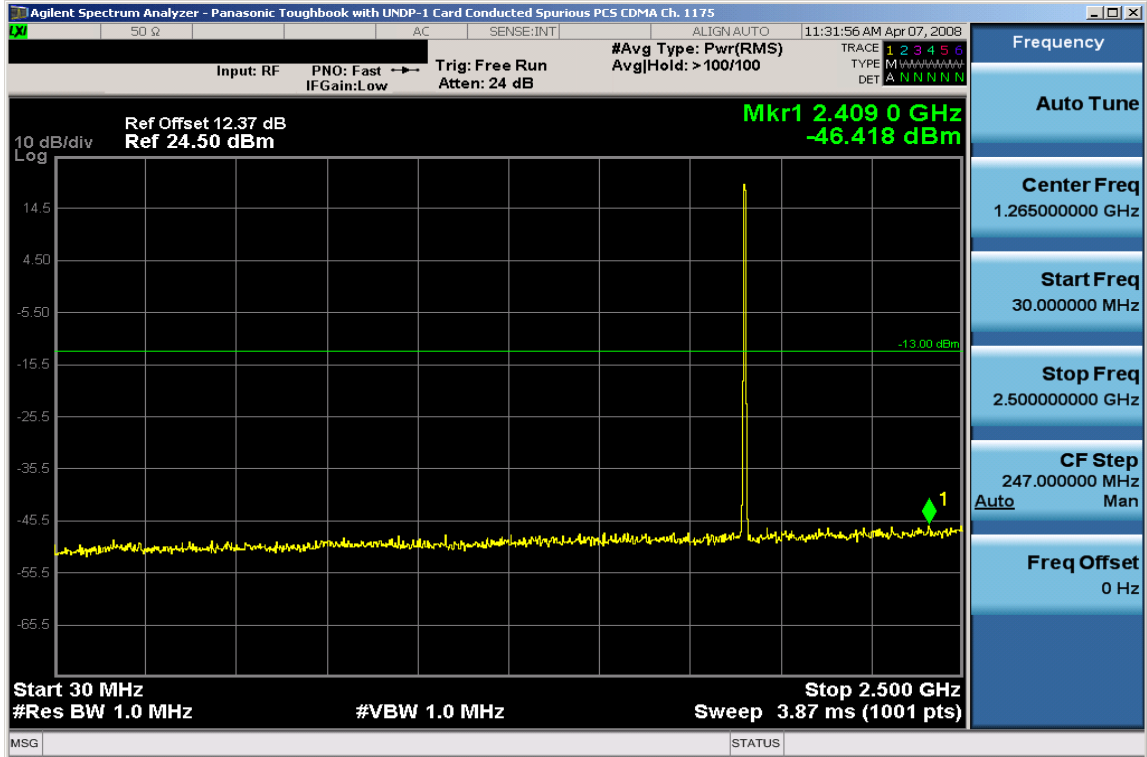


Plot 7-63. Occupied Bandwidth Plot (PCS CDMA Mode – Ch. 600)

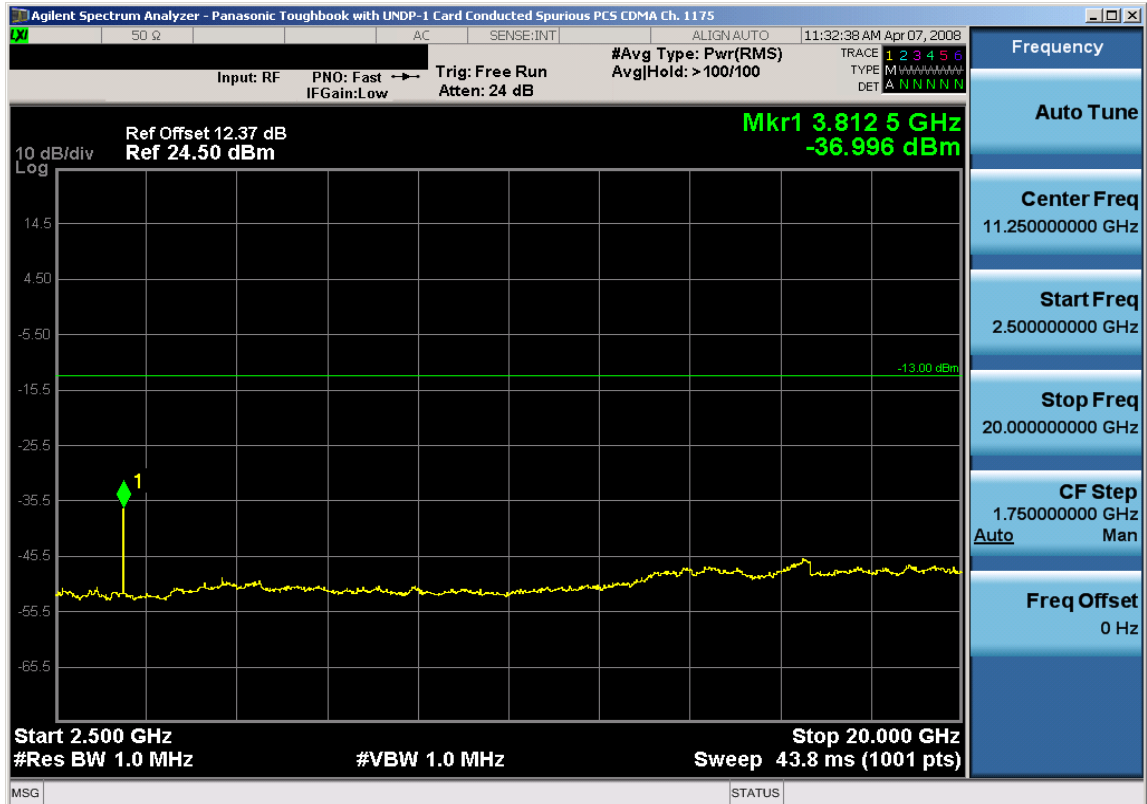


Plot 7-64. Peak-Average Ratio Plot (PCS CDMA Mode – Ch. 600)

FCC ID: ACJ9TGCF-309	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)	<b>Panasonic</b>	Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30		Page 77 of 80



Plot 7-65. Conducted Spurious Plot (PCS CDMA Mode – Ch. 1175)




Plot 7-66. Conducted Spurious Plot (PCS CDMA Mode – Ch. 1175)

FCC ID: ACJ9TGCF-309	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)	<b>Panasonic</b>	Reviewed by: Quality Manager
Test Report S/N: 0808271202.ACJ	Test Dates: September 16 - 17, 2008	EUT Type: Toughbook Model: CF-30		Page 78 of 80



## 8.0 CONCLUSION

The data collected show that the **Panasonic Toughbook Model: CF-30 FCC ID: ACJ9TGCF-309** complies with all the requirements of Parts 2, 22, and 24 of the FCC rules.

FCC ID: ACJ9TGCF-309		<b>FCC Pt. 22/24 GSM/EDGE/CDMA/WCDMA TEST REPORT (CERTIFICATION)</b>	<b>Reviewed by:</b> Quality Manager
<b>Test Report S/N:</b> 0808271202.ACJ	<b>Test Dates:</b> September 16 - 17, 2008	<b>EUT Type:</b> Toughbook Model: CF-30	Page 80 of 80