PCTEST ENGINEERING LABORATORY, INC.
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http://www.pctestlab.com

CERTIFICATE OF COMPLIANCE
FCC Part 24 & 22 Certification

Applicant Name:
Panasonic Corporation of North America
One Panasonic Way, 4B-8
Secaucus, NJ 07094
United States

Date of Testing:
June 22 - June 27, 2006
Test Site/Location:
PCTEST Lab, Columbia, MD, USA
Test Report Serial No.:
0606010445-G

FCC ID:	**ACJ9TGCF-W52**
APPLICANT:	**PANASONIC CORPORATION OF NORTH AMERICA**

Application Type:	Certification
FCC Classification:	PCS Licensed Transmitter (PCB)
FCC Rule Part(s):	§24(E), §22(H); §2
EUT Type:	Notebook PC w/ Intel WLAN and Novatel HSDPA
Model(s):	CF-W5
Tx Frequency Range:	824.20 - 848.80MHz (Cellular GPRS) / 1850.20 - 1909.80MHz (PCS GPRS)
Rx Frequency Range:	869.20 - 893.80MHz (Cellular GPRS) / 1930.20 - 1989.80MHz (PCS GPRS)
Max. RF Output Power:	1.735 W ERP Cellular GPRS (32.394 dBm) / 0.779 W EIRP PCS GPRS (28.914 dBm) / 0.490 W ERP EDGE850 (26.904 dBm) / 0.445 W EIRP EDGE1900 (26.487 dBm)
Emission Designator(s):	278KGXW (Cellular GPRS) / 277KGXW (PCS GPRS) / 246KG7W (EDGE)
Test Device Serial No.:	*identical prototype* [S/N: 6BKSA00015R]

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.

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

Randy Ortanez
President

2041.01

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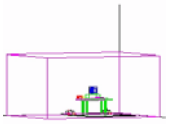
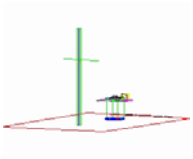
1.0 SCOPE



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.



§2.1033 General Information

Applicant Name:	Panasonic Corporation of North America
Address:	One Panasonic Way, 4B-8 Secaucus, NJ 07094 United States

- FCC ID: ACJ9TGCF-W52
- Quantity: Quantity production is planned
- Emission Designators: 278KGXW (Cellular GSM) / 277KGXW (PCS GSM) / 246KG7W (EDGE)
- Tx Freq. Range: 824.20 - 848.80MHz (Cellular GPRS)
  1850.20 - 1909.80MHz (PCS GPRS)
- Rx Freq. Range: 869.20 - 893.80MHz (Cellular GPRS)
  1930.20 - 1989.80MHz (PCS GPRS)
- Max. Power Rating: 1.735 W ERP Cellular GPRS (32.394 dBm) /
  0.779 W EIRP PCS GPRS (28.914 dBm) /
  0.490 W ERP EDGE850 (26.904 dBm) /
  0.445 W EIRP EDGE1900 (26.487 dBm)
- FCC Classification(s): PCS Licensed Transmitter (PCB)
- Equipment (EUT) Type: Notebook PC w/ Intel WLAN and Novatel HSDPA
- Modulation(s): GMSK / 8PSK
- Frequency Tolerance: ±0.00025 % (2.5 ppm)
- FCC Rule Part(s): § 24(E), §22(H)
- Dates of Tests: June 22 - June 27, 2006
- Place of Tests: PCTEST Lab, Columbia, MD U.S.A.
- Test Report S/N: 0606010445-G
- *Deviation from measurement procedure - None*

2.0 INTRODUCTION

2.1 Testing Facility

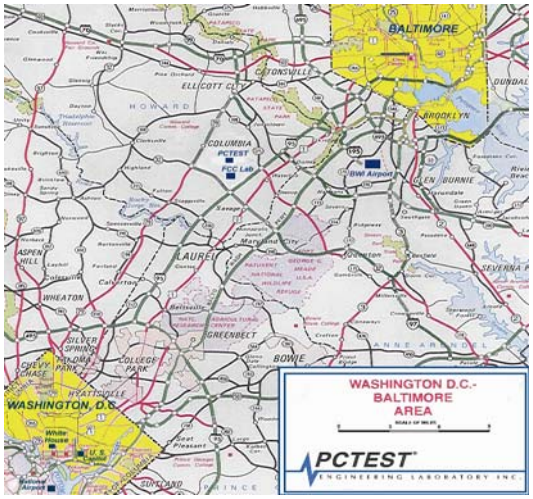


Figure 1. Map of the Greater Baltimore and Metropolitan Washington, D.C. area.

These measurement tests were conducted at 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 on October 19, 1992.

2.2 Measurement Procedure

The radiated spurious measurements were made outdoors at a 3-meter test range (see Figure2). 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.

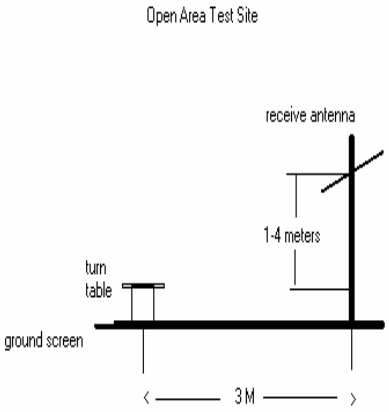


Figure 2. Diagram of 3-meter outdoor test range

3.0 INSERTS

Function of Active Devices (Confidential)

Block & Schematic Diagrams (Confidential)

Operating Instructions

Parts List & Tune-Up Procedure (Confidential)

Description of Freq. Stabilization Circuit (Confidential)

Description for Suppression of Spurious Radiation, for Limiting Modulation, and Harmonic Suppression Circuits (Confidential)

** These exhibits are not included*

4.0 DESCRIPTION OF TESTS

4.1 Occupied Bandwidth Emission Limits

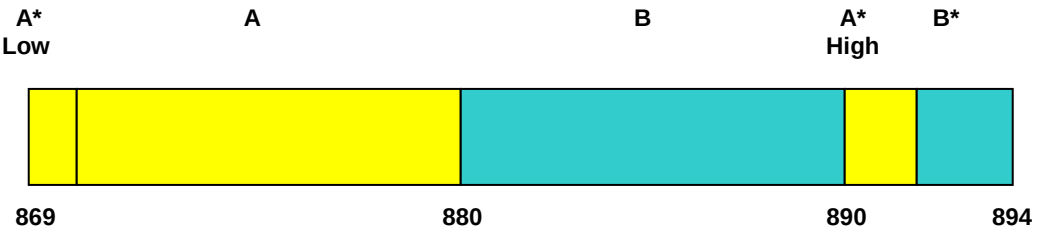
a. On any frequency outside a licensee's frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least 43 + 10 log(P) dB.

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.

4.2 Cellular - Base Frequency Blocks



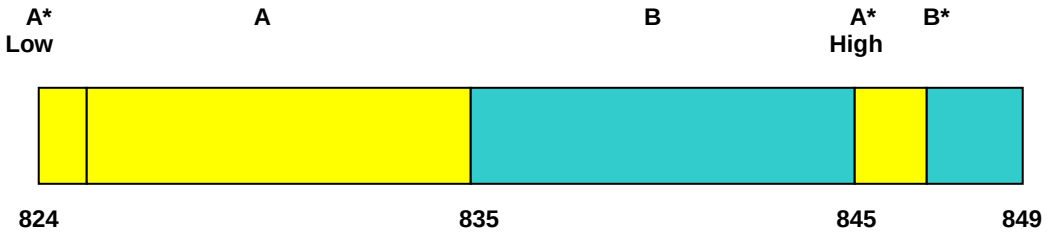
BLOCK 1: 869 – 880 MHz (A* Low + A)

BLOCK 2: 880 – 890 MHz (B)

BLOCK 3: 890 – 891.5 MHz (A* High)

BLOCK 4: 891.5 – 894 MHz (B*)

4.3 Cellular - Mobile Frequency Blocks



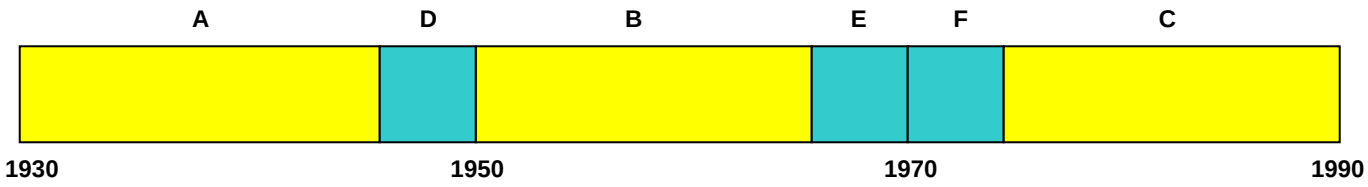
BLOCK 1: 824 – 835 MHz (A* Low + A)

BLOCK 2: 835 – 845 MHz (B)

BLOCK 3: 845 – 846.5 MHz (A* High)

BLOCK 4: 846.5 – 849 MHz (B*)

4.4 PCS - Base Frequency Blocks



BLOCK 1: 1930 – 1945 MHz (A)

BLOCK 2: 1945 – 1950 MHz (D)

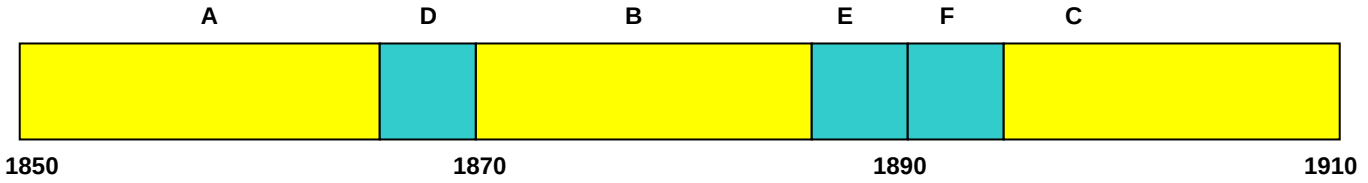
BLOCK 3: 1950 – 1965 MHz (B)

BLOCK 4: 1965 – 1970 MHz (E)

BLOCK 5: 1970 – 1975 MHz (F)

BLOCK 6: 1975 – 1990 MHz (C)

4.5 PCS - Mobile Frequency Blocks



BLOCK 1: 1850 – 1865 MHz (A)

BLOCK 2: 1865 – 1870 MHz (D)

BLOCK 3: 1870 – 1885 MHz (B)

BLOCK 4: 1885 – 1890 MHz (E)

BLOCK 5: 1890 – 1895 MHz (F)

BLOCK 6: 1895 – 1910 MHz (C)

4.6 Spurious and Harmonic Emissions at Antenna Terminal

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 10 GHz. The transmitter is modulated with a 2500 Hz tone at a level of 16 dB greater than that required to provide 50% modulation.

At the input terminals of the spectrum analyzer, an isolator (RF circulator with one port terminated in 50 Ω) and an 870 MHz to 890 MHz band-pass filter is connected between the test transceiver (for conducted tests) or the receive antenna (for radiated tests) and the analyzer. The rejection of the band-pass filter to signals in the 825 – 845 MHz range is adequate to limit the transmit energy from the test transceiver which appears to a level which will allow the analyzer to measure signals less than –90 dBm. Calibration of the test receiver is performed in the 870 – 890 MHz range to insure accuracy to allow variation in the band-pass filter insertion loss to be calibrated.

4.7 Frequencies

At the input terminals of the spectrum analyzer, an isolator (RF pad) and a high-pass filter are connected between the test transceiver (for conducted tests) or the receive antenna (for radiated tests) and the analyzer. The high-pass filter (signals below 1.6 GHz) is to limit the fundamental frequency from interfering with the measurement of low-level spurious and harmonic emissions and to ensure that the preamplifier is not saturated.

4.8 Radiated Spurious and Harmonic Emissions

Radiation and harmonic 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. 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.

4.9 Frequency Stability / Temperature Variation

The frequency stability of the transmitter is measured by:

a.) **Temperature:** The temperature is varied from -30°C to +60°C using an environmental chamber.

b.) **Primary Supply Voltage:** The primary supply voltage is varied from 85% to 115% of the voltage normally at the input to the device or at the power supply terminals if cables are not normally supplied.

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 and the individual oscillators is measured at room temperature (22°C to 25°C to provide a reference).

2. The equipment is subjected to an overnight "soak" at -30°C without any power applied.

3. After the overnight "soak" at -30°C (usually 14-16 hours), 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 and the individual oscillators is made within a three minute interval after applying power to the transmitter.

4. Frequency measurements are made at 10°C interval up to room temperature. At least a period of one and one half-hour is provided to allow stabilization of the equipment at each temperature level.

5. Again the transmitter carrier frequency and the individual oscillators is measured at room temperature to begin measurement of the upper temperature levels.

6. Frequency measurements are at 10 intervals starting at -30°C up to +50°C allowing at least two hours at each temperature for stabilization. In all measurements the frequency is measured within three minutes after re-applying power to the transmitter.

7. The artificial load is mounted external to the temperature chamber.

NOTE: The EUT is tested down to the battery endpoint.

5.0 EFFECTIVE RADIATED POWER

5.1 Effective Radiated Power Output Data

POWER: High (GPRS Mode)

Freq. Tuned (MHz)	REF. LEVEL (dBm)	Mode	POL (H/V)	ERP (W)	ERP (dBm)	BATTERY
824.20	-9.486	GPRS	H	1.509	31.787	Standard
836.60	-9.431	GPRS	H	1.586	32.002	Standard
848.80	-9.189	GPRS	H	1.735	32.394	Standard
836.60	-14.679	EDGE850	H	0.490	26.904	Standard

Note: This unit was tested with its standard battery.

NOTES:

Effective Radiated Power Output Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:

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 = 5MHz. 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. The conducted power at the terminals of the dipole is measured. The ERP is recorded.

6.0 EQUIVALENT ISOTROPIC RADIATED POWER

6.1 Equivalent Isotropic Radiated Power Output Data

Radiated measurements at 3 meters

Supply Voltage: 11.1 VDC

Modulation: PCS GPRS

FREQ. (MHz)	REF. LEVEL (dBm)	Mode	POL (H/V)	Azimuth (o angle)	EIRP (dBm)	EIRP (W)	Battery
1850.20	-14.167	GPRS	H	95	28.914	0.779	Standard
1880.00	-15.013	GPRS	H	95	28.238	0.667	Standard
1909.80	-14.981	GPRS	H	95	28.440	0.698	Standard
1850.20	-16.934	EDGE1900	H	95	26.487	0.445	Standard

Note: This unit was tested with its standard battery.

NOTES:

Equivalent Isotropic Radiated Power Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:

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 = 5MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. 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.

7.0 RADIATED MEASUREMENTS

7.1 Cellular GPRS Radiated Measurements

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	824.20	MHz		
CHANNEL:	128			
MEASURED OUTPUT POWER:	32.394	dBm	=	1.735 W
MODULATION SIGNAL:	GSM			
DISTANCE:	3	meters		
LIMIT:	$43 + 10 \log_{10}$ (W) :	45.39	dBc	

FREQ. (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
1648.40	-49.15	6.10	-43.05	H	75.4
2472.60	-53.05	6.70	-46.35	V	78.7
3296.80	-46.69	6.80	-39.89	H	72.3
4121.00	-62.08	6.50	-55.58	V	88.0
4945.20	-84.38	7.00	-77.38	H	109.8

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:

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 = 5MHz. 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.

7.1 Cellular GPRS Radiated Measurements (Cont'd)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 836.60 MHz
CHANNEL: 190
MEASURED OUTPUT POWER: 32.394 dBm = 1.735 W
MODULATION SIGNAL: GSM
DISTANCE: 3 meters
LIMIT: $43 + 10 \log_{10} (W)$ = 45.39 dBc

FREQ. (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
1673.20	-45.91	6.10	-39.81	V	72.2
2509.80	-52.01	6.70	-45.31	V	77.7
3346.40	-56.80	6.80	-50.00	H	82.4
4183.00	-61.31	6.50	-54.81	V	87.2
5019.60	-83.88	7.00	-76.88	H	109.3

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:

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 = 5MHz. 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.

7.1 Cellular GPRS Radiated Measurements (Cont'd)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	848.80	MHz		
CHANNEL:	251			
MEASURED OUTPUT POWER:	32.394	dBm	=	1.735 W
MODULATION SIGNAL:	GSM			
DISTANCE:	3	meters		
LIMIT:	$43 + 10 \log_{10}$ (W) =	45.39	dBc	

FREQ. (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
1697.60	-49.94	6.10	-43.84	H	76.2
2546.40	-49.86	6.70	-43.16	V	75.6
3395.20	-57.51	6.80	-50.71	V	83.1
4244.00	-65.75	6.50	-59.25	H	91.6
5092.80	-83.98	7.00	-76.98	H	109.4

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:

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 = 5MHz. 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.

7.2 PCS GPRS Radiated Measurements

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	1850.20	MHz		
CHANNEL:	512			
MEASURED OUTPUT POWER:	28.914	dBm	=	0.779 W
MODULATION SIGNAL:	GSM			
DISTANCE:	3	meters		
LIMIT:	43 + 10 $\log_{10}$ (W) =	41.91	dBc	

FREQ. (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
3700.40	-53.27	6.10	-47.17	V	76.1
5550.60	-44.25	6.70	-37.55	H	66.5
7400.80	-67.87	6.80	-61.07	H	90.0
9251.00	-85.68	6.50	-79.18	V	108.1
11101.20	-84.38	7.00	-77.38	H	106.3

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:

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 = 5MHz. 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.

7.2 PCS GPRS Radiated Measurements (Cont'd)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 1880.00 MHz
CHANNEL: 661
MEASURED OUTPUT POWER: 28.914 dBm = 0.779 W
MODULATION SIGNAL: GSM
DISTANCE: 3 meters
LIMIT: $43 + 10 \log_{10} (W)$ = 41.91 dBc

FREQ. (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
3760.00	-58.11	6.10	-52.01	H	80.9
5640.00	-45.80	6.70	-39.10	H	68.0
7520.00	-65.93	6.80	-59.13	V	88.0
9400.00	-85.78	6.50	-79.28	H	108.2
11280.00	-83.78	7.00	-76.78	H	105.7

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:

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 = 5MHz. 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.

7.2 PCS GPRS Radiated Measurements (Cont'd)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	1909.80	MHz		
CHANNEL:	810			
MEASURED OUTPUT POWER:	28.914	dBm	=	0.779 W
MODULATION SIGNAL:	GSM			
DISTANCE:	3	meters		
LIMIT:	$43 + 10 \log_{10}$ (W) =	41.91	dBc	

FREQ. (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
3819.60	-54.98	6.10	-48.88	H	77.8
5729.40	-35.99	6.70	-29.29	V	58.2
7639.20	-66.53	6.80	-59.73	V	88.6
9549.00	-85.68	6.50	-79.18	H	108.1
11458.80	-83.98	7.00	-76.98	H	105.9

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:

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 = 5MHz. 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.

8.0 FREQUENCY STABILITY

8.1 Frequency Stability (Cellular GPRS)

OPERATING FREQUENCY: 836,600,007 Hz

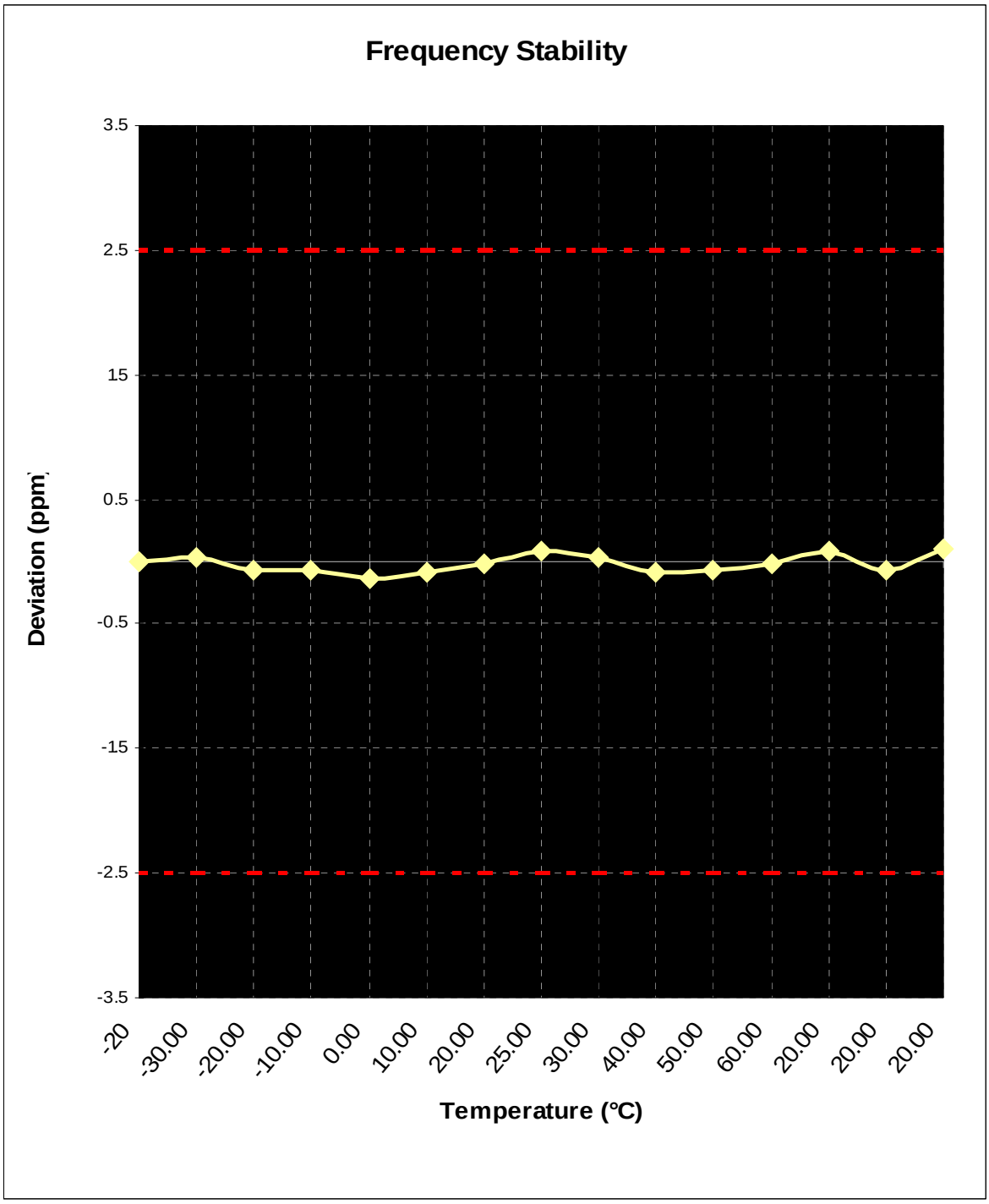
CHANNEL: 190

REFERENCE VOLTAGE: 11.1 VDC

DEVIATION LIMIT: ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQ. (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	11.10	+ 20 (Ref)	836,600,007	0.00	0.000000
100 %		-30	836,599,974	33.46	0.000004
100 %		-20	836,600,066	-58.56	-0.000007
100 %		-10	836,600,057	-50.20	-0.000006
100 %		0	836,600,116	-108.76	-0.000013
100 %		10	836,600,082	-75.29	-0.000009
100 %		20	836,600,024	-16.73	-0.000002
100 %		25	836,599,940	66.93	0.000008
100 %		30	836,599,974	33.46	0.000004
100 %		40	836,600,082	-75.29	-0.000009
100 %		50	836,600,057	-50.20	-0.000006
100 %		60	836,600,024	-16.73	-0.000002
85 %	9.44	20	836,599,940	66.93	0.000008
115 %	12.77	20	836,600,066	-58.56	-0.000007
BATT. ENDPOINT	11.00	20	836,599,915	92.03	0.000011

8.1 Frequency Stability (Cellular GPRS) (Cont'd)



8.2 Frequency Stability (PCS GPRS)

OPERATING FREQUENCY: 1,880,000,007 Hz

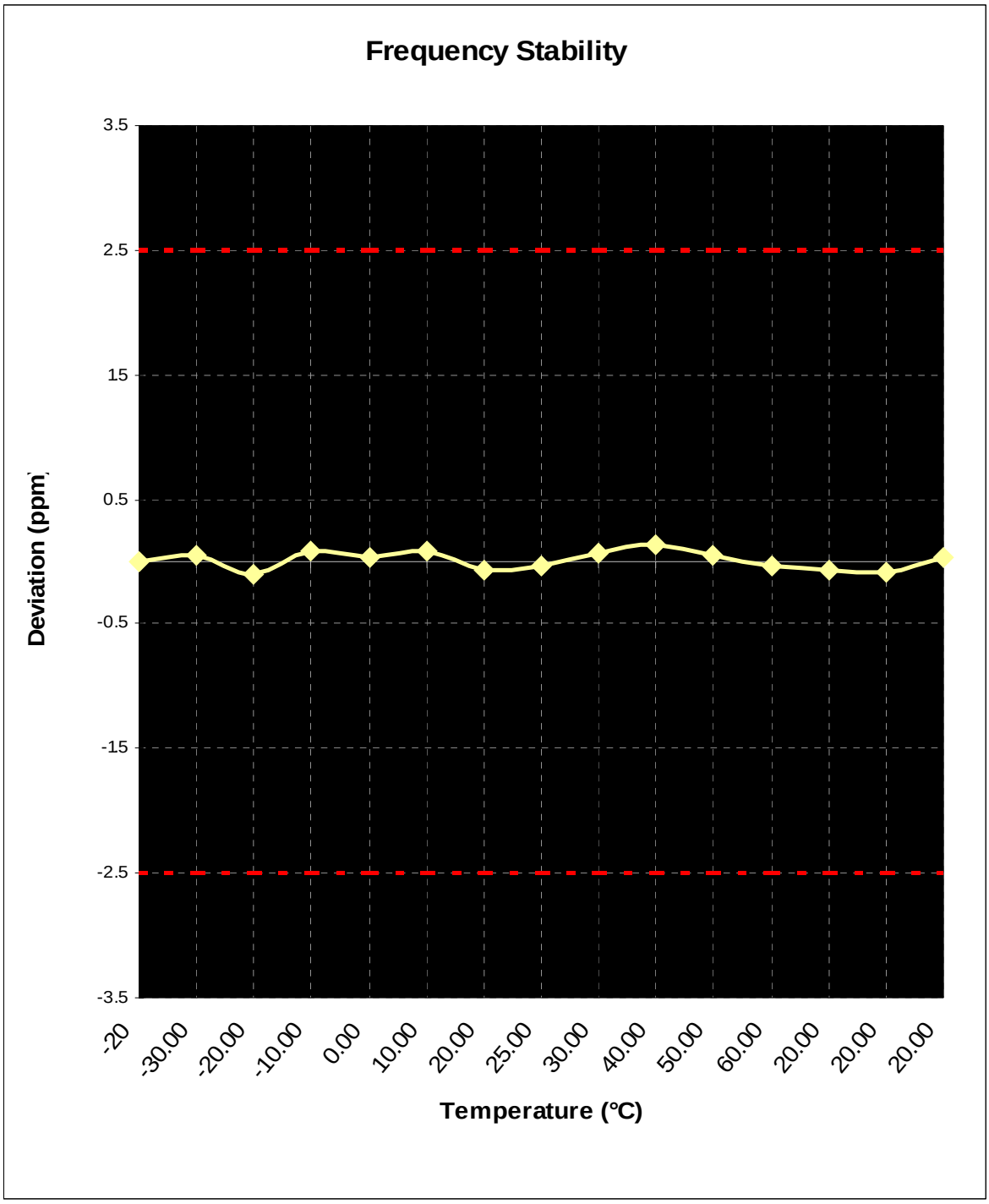
CHANNEL: 661

REFERENCE VOLTAGE: 11.1 VDC

DEVIATION LIMIT: ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (ºC)	FREQ. (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	11.10	+ 20 (Ref)	1,880,000,007	0.00	0.000000
100 %		-30	1,879,999,913	94.00	0.000005
100 %		-20	1,880,000,214	-206.80	-0.000011
100 %		-10	1,879,999,838	169.20	0.000009
100 %		0	1,879,999,951	56.40	0.000003
100 %		10	1,879,999,857	150.40	0.000008
100 %		20	1,880,000,139	-131.60	-0.000007
100 %		25	1,880,000,063	-56.40	-0.000003
100 %		30	1,879,999,894	112.80	0.000006
100 %		40	1,879,999,744	263.20	0.000014
100 %		50	1,879,999,913	94.00	0.000005
100 %		60	1,880,000,082	-75.20	-0.000004
85 %	9.44	20	1,880,000,139	-131.60	-0.000007
115 %	12.77	20	1,880,000,176	-169.20	-0.000009
BATT. ENDPOINT	10.98	20	1,879,999,951	56.40	0.000003

8.2 Frequency Stability (PCS GPRS) (Cont'd)



9.0 PLOT(S) OF EMISSIONS

(SEE ATTACHMENT A)

10.0 TEST EQUIPMENT

TYPE	MODEL	CAL DUE DATE	S/N
Signal Generator*	Rohde & Schwarz (0.1-1000MHz)	9/11/2006	894215/012
Ailtech/Eaton Receiver	NM 37/57A-SL (30-1000MHz)	4/12/2007	0792-03271
Ailtech/Eaton Receiver	NM 37/57A (30-1000MHz)	3/11/2007	0805-03334
Ailtech/Eaton Receiver	NM 17/27A (0.1-32MHz)	9/17/2006	0608-03241
Ailtech/Eaton Adapter	CCA-7 CISPR/ANSI QP Adapter	3/11/2007	0194-04082
Harmonic/Flicker	Test System HP 6841A (IEC 555-2/3)	2/11/2007	3531A00115/ PCT468
Shielded Screen Room	RF Lindgren Model 26-2/2-0	N/A	6710 (PCT270)
Shielded Semi-Anechoic Chamber	Ray Proof Model S81	N/A	R2437 (PCT278)
Quasi-Peak Adapter	HP 85650A	8/9/2006	2043A00301
Microwave Spectrum Analyzer	Agilent E4448A (3Hz-50GHz)	9/19/2006	US42510244
Microwave Spectrum Analyzer	HP 8566B (100Hz-22GHz)	4/17/2007	2542A11898
Spectrum Analyzer/Tracking Gen.	HP 8591A (100Hz-1.8GHz)	9/12/2006	3144A02458
Signal Generator*	HP 8640D (500Hz-1GHz)	12/7/2007	3613A00315
Signal Generator	HP 8648D (9kHz-4GHz)	5/1/2007	3613A00315
Spectrum Analyzer	HP 8594A	11/2/2006	3051A00187
Spectrum Analyzer (2)	HP 8591A	10/15/2006	3034A01395, 3108A02053
Audio Analyzer	HP 8903B		3011A09025
Modulation Analyzer	HP 8901A		2432A03467
Power Meter	HP 437B		3125U24437
Power Sensor	HP 8482H (30mW-3W)		2237A02084
Broadband Amplifier (2)	HP 8447D		1145A00470, 1937A03348
Broadband Amplifier	HP 8447F		2443A03784
Network Analyzer	HP 8753E (30kHz-3GHz)		JP38020182
Attenuator	HP 8495A (0-70dB) DC-4GHz		
Horn Antenna	EMCO Model 3115 (1-18GHz)		9704-5182
Horn Antenna	EMCO Model 3115 (1-18GHz)		9205-3874
Horn Antenna	EMCO Model 3116 (18-40GHz)		9203-2178
Biconical Antenna (4)	Eaton 94455/Eaton 94455-1/Singer 94455-1/Compliance Design		1295, 1332, 0355
Log-Spiral Antenna (3)	Ailtech/Eaton 93490-1		0608, 1103, 1104
Roberts Dipoles	Compliance Design (1 set)		
Ailtech Dipoles	DM-105A (1 set)		33448-111
EMCO LISN (6)	3816/2		1079
Microwave Preamplifier 40dB	Gain HP 83017A (0.5-26.5GHz)		3123A00181
Microwave Cables	MicroCoax (1.0-26.5GHz)		
Gigatronics Universal Power Meter	8657A		1835256
Gigatronics Power Sensor	80701A (0.05-18GHz)		1833460
Amplifier Research	5S1G4 (5W, 800MHz-4.2GHz)		22322
Microwave Survey Meter	Holaday Model 1501 (2.450GHz)		80931
Digital Thermometer	Extech Instruments 421305		426966
Bi-Directional Coax Coupler	Narda 3020A (50-1000MHz)		
Enviromental Chamber	Associated Systems Model 1025 (Temperature/Humidity)		PCT285

Table 10-1. Test Equipment

11.0 SAMPLE CALCULATIONS

Emission Designator

Emission Designator = 250KGXW

GSM BW = 250 kHz

G = Phase Modulation

X = Cases not otherwise covered

W = Combination (Audio/Data)

12.0 CONCLUSION

The data collected shows that the Panasonic Notebook PC w/ Intel WLAN and Novatel HSDPA FCC ID: ACJ9TGCF-W52 complies with all the requirements of Parts 2, 22, and 24 of the FCC rules.