PCTEST Engineering Laboratory, Inc.
6660-B Dobbin Road · Columbia, MD 21045 · U.S.A.
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http://www.pctestlab.com

CERTIFICATE OF COMPLIANCE
FCC Part 90 Certification

Panasonic Corporation of North America
One Panasonic Way, 4B-8
Secaucus, NJ 07094

Dates of Tests: July 11-12, 2005
Test Report S/N: 0507180510
Test Site: PCTEST Lab, MD U.S.A.
Project Number: ITPD-05-F004

FCC ID	**ACJ9TGCF-29D**
APPLICANT	**Matsushita Electric Industrial Co., Ltd.**

Classification:	**Licensed Non-Broadcast Station Transmitter (TNB)**
FCC Rule Part(s):	**§ 90**
EUT Type:	**Panasonic Notebook w/ Boomer-II OEM Wireless Radio Modem Module FCC ID: PQS-BM28001, Sierra Wireless CDMA Module FCC ID: N7NSB555, also incorporating Intel WLAN FCC ID: PD9WM3B2200BG**
Model(s):	***CF-29mk2***
Tx/Rx Frequency Range:	**806 ~ 821 MHz, 821 ~ 824 MHz**
Max. RF Output Power:	**Mask G: 1.833 W (32.633 dBm)/ Mask H: 1.711 W (32.333 dBm)**
Frequency Tolerance:	**2.5 ppm/ 1.5 ppm**
Emission Designator:	**20K0F1D, 12K0F1D**

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. If the EUT contains any additional embedded transmitters, then those transmitter were active during all tests.

The Boomer-II OEM Wireless Radio Modem Module is electrically identical to previously authorized FCC ID: PQS-BM28001. RF conducted data is shown in that test report, included in this application.

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.

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

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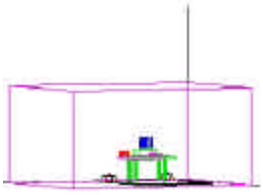
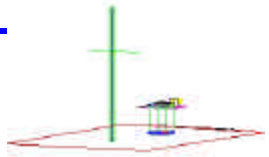
MEASUREMENT REPORT





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.

General Information

Applicant Name:	**Matsushita Electric Industrial Co., Ltd.**
Address:	**1006 Oaza Kadoma, Kadoma, Osaka, 571 JAPAN**

- **FCC ID:** **ACJ9TGCF-29D**
- **Model(s):** **CF-29mk2**
- Quantity: Quantity production is planned
- Emission Designator: 20K0F1D, 12K0F1D
- Tx/Rx Freq. Range: 806 ~ 821 MHz, 821 ~ 824 MHz
- Equipment Class: Licensed Non-Broadcast Station Transmitter (TNB)
- Equipment Type: Panasonic Notebook w/ Boomer-II OEM Wireless Radio Modem Module, Sierra Wireless CDMA Module, also incorporating Intel WLAN
- Modulation: FM
- Frequency Tolerance: ± 2.5 ppm
- Max. Power: Mask G: 1.833 W (32.633 dBm)/ Mask H: 1.711 W (32.333 dBm
- FCC Rule Part(s): § 90
- Power Supply: 3.8V (3.4 to 4.2V range)
- Dates of Tests: July 11-12, 2005
- Place of Tests: PCTEST Lab, Columbia, MD U.S.A.
- Test Report S/N: 0507180510
- Project No.: ITPD-05-F004
- There is a provision for connection to an external antenna.
  The antenna will be professionally installed via a uniquely couple docking station.
- Deviation from measurement procedure.....NONE

NVLAP LAB CODE 100431-0

2.1 INTRODUCTION

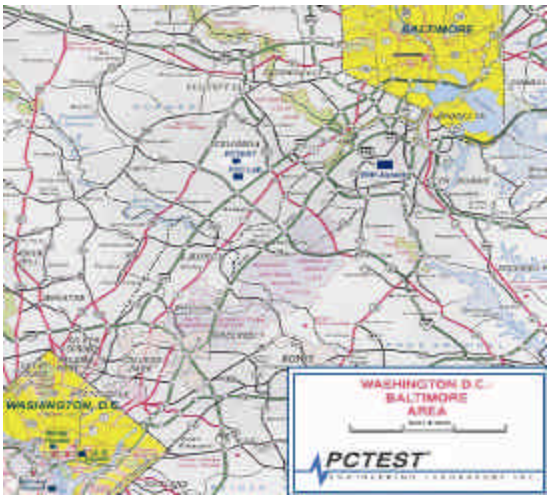


Figure 1. Map of the Greater Baltimore and Metropolitan Washington, D.C. area.

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.

Measurement Procedure

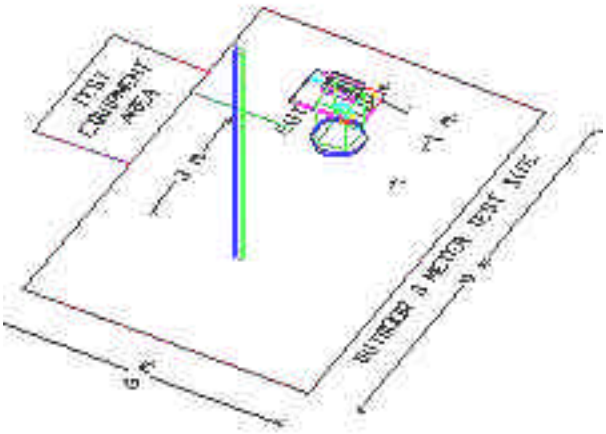


Figure 2. 3-meter outdoor test site

The radiated and spurious measurements were made outdoors at a 3-meter test range (see Figure2). The equipment under testing was placed on a wooden turntable, 3-meters from the receive antenna. The receive antenna height and turntable rotations was 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 was recorded.

For readings above 1 GHZ, the above procedure would be repeated using horn antennas and the difference between the gain of the horn and an isotropic antenna are taken into consideration.

3.1 INSERTS

Block Diagram(s) & Circuit Diagram(s)

The block diagram is shown in Attachment I, and the circuit diagram is shown in Attachment J.

Operating Instructions

The instruction manual is shown in Attachment K.

4.1 DESCRIPTION OF TESTS

4.2 Radiation Spurious and Harmonic Emissions

Radiation and harmonic emissions above 1 GHz is measured at out 3-meter indoor site. The EUT is placed on the turntable connected to a dummy load in normal operation using the intended power source. A receiving antenna located 3 meters from the turntable receives any signal radiated from the transmitter and its operating accessories. The antenna is varied from 1 to 4 meters and the polarization is varied (horizontal and vertical) to determine the worst-case emission level. To obtain actual radiated signal strength, a signal generator is adjusted in output until a reading identical to that obtained with the actual transmitter is obtained at the receiver. Signal strength is read directly from the generator and recorded on the attached table.

4.3 Frequencies

At the input terminals of the spectrum analyzer, an isolator (RF pad) and an 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.

4.4 Radiation 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 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.

5.0 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.

5.1 Test Data

5.2 MASK G: Effective Radiated Power Output

A. POWER: **High**

Freq. Tuned (MHz)	REF. LEVEL (dBm)	POL (H/V)	ERP (W)	ERP (dBm)	BATTERY
806.00	-9.000	V	1.688	32.273	Standard
815.00	-9.100	V	1.711	32.333	Standard
821.00	-9.300	V	1.692	32.283	Standard

Note: Standard batteries are the only options for this phone

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 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.

5.1 Test Data

5.3 MASK H: Effective Radiated Power Output

A. POWER: **High**

Freq. Tuned (MHz)	REF. LEVEL (dBm)	POL (H/V)	ERP (W)	ERP (dBm)	BATTERY
821.00	-8.900	V	1.727	32.373	Standard
822.50	-8.800	V	1.833	32.633	Standard
824.00	-9.000	V	1.812	32.583	Standard

Note: Standard batteries are the only options for this phone

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 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.

7.1 Test Data (Continued)

7.2 Radiated Measurements MASK G

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 806.00 MHz
CHANNEL: (Low)
MEASURED OUTPUT POWER: 32.333 dBm = 1.711 W
MODULATION SIGNAL: (Internal)
DISTANCE: 3 meters
LIMIT: 43 + 10 $\log_{10}$ (W) = 45.33 dBc

FREQ. (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
1612.00	-63.08	6.10	-56.98	V	89.3
2418.00	-74.28	6.70	-67.58	V	99.9
3224.00	-66.58	6.80	-59.78	V	92.1

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 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 Test Data (Continued)

7.3 Radiated Measurements MASK G

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 815.00 MHz
CHANNEL: (Mid)
MEASURED OUTPUT POWER: 32.333 dBm = 1.711 W
MODULATION SIGNAL: (Internal)
DISTANCE: 3 meters
LIMIT: 43 + 10 $\log_{10}$ (W) = 45.33 dBc

FREQ. (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
1630.00	-57.28	6.10	-51.18	V	83.5
2445.00	-66.08	6.70	-59.38	V	91.7
3260.00	-59.98	6.80	-53.18	V	85.5

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 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 Test Data (Continued)

7.4 Radiated Measurements MASK G

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 821.00 MHz
CHANNEL: (High)
MEASURED OUTPUT POWER: 32.333 dBm = 1.711 W
MODULATION SIGNAL: (Internal)
DISTANCE: 3 meters
LIMIT: 43 + 10 $\log_{10}$ (W) = 45.33 dBc

FREQ. (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
1642.00	-67.68	6.10	-61.58	V	93.9
2463.00	-60.88	6.70	-54.18	V	86.5
3284.00	-73.08	6.80	-66.28	V	98.6

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 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 Test Data (Continued)

7.5 Radiated Measurements MASK H

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 821.00 MHz
CHANNEL: (Low)
MEASURED OUTPUT POWER: 32.633 dBm = 1.833 W
MODULATION SIGNAL: (Internal)
DISTANCE: 3 meters
LIMIT: 43 + 10 $\log_{10}$ (W) = 45.63 dBc

FREQ. (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
1642.00	-64.08	6.10	-57.98	V	90.6
2463.00	-74.08	6.70	-67.38	V	100.0
3284.00	-66.48	6.80	-59.68	V	92.3

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 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 Test Data (Continued)

7.6 Radiated Measurements MASK H

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 822.50 MHz
CHANNEL:
MEASURED OUTPUT POWER: 32.633 dBm = 1.833 W
MODULATION SIGNAL: (Internal)
DISTANCE: 3 meters
LIMIT: $43 + 10 \log_{10} (W)$ = 45.63 dBc

FREQ. (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
1645.00	-56.98	6.10	-50.88	V	83.5
2467.50	-65.08	6.70	-58.38	V	91.0
3290.00	-58.48	6.80	-51.68	V	84.3

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 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 Test Data (Continued)

7.7 Radiated Measurements MASK H

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 824.00 MHz
CHANNEL: (High)
MEASURED OUTPUT POWER: 32.633 dBm = 1.833 W
MODULATION SIGNAL: (Internal)
DISTANCE: 3 meters
LIMIT: 43 + 10 $\log_{10}$ (W) = 45.63 dBc

FREQ. (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
1648.00	-66.88	6.10	-60.78	V	93.4
2472.00	-61.28	6.70	-54.58	V	87.2
3296.00	-71.08	6.80	-64.28	V	96.9

NOTES:

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

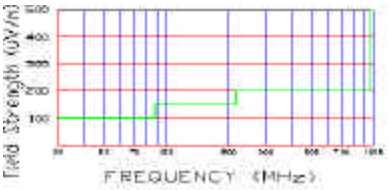
The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For AMPS, GSM, and NADC TDMA signals,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

Radiated Spurious Measurements

Freq. (MHz)	Level (dBm)	AFCL (dB)	POL (H/V)	Height (m)	Azimuth (°angle)	F/S (uV/m)	Margin (dB)
66.43	-84.00	5.80	V	2.7	180	27.59	-11.2
130.29	-88.72	12.22	H	2.4	160	33.55	-130
167.01	-85.82	14.72	V	2.1	225	62.42	-7.6
181.70	-86.98	15.59	H	1.9	070	60.31	-7.9
367.30	-91.08	22.78	H	1.3	190	86.15	-7.3
434.01	-93.41	24.52	H	1.1	180	80.40	-7.9

Table A-1. Radiated Measurements at 3-meters



NOTES:

1. All modes of operation were investigated and the worst-case emissions are reported.

2. The radiated limits are shown on Figure A-1. Above 1 GHz the limit is 500µV/m.

Figure A-1. Limits at 3 meters

[1] All readings are calibrated by HP8640B signal generator with accuracy traceable to the National Institute of Standards and Technology (NIST).

[2] AFCL = Antenna Factor (Roberts dipole) and Cable Loss (30 ft. RG58C/U).

[3] Measurements using CISPR quasi-peak mode. Above 1GHz, peak detector function mode is used with a resolution bandwidth of 1MHz and a video bandwidth of 1MHz. The peak level complies with the average limit. Peak mode is used with linearly polarized horn antenna and low-loss microwave cable.

10.1 Test Data

Part 90 FREQUENCY STABILITY

OPERATING FREQUENCY: 806 Hz

CHANNEL: 17

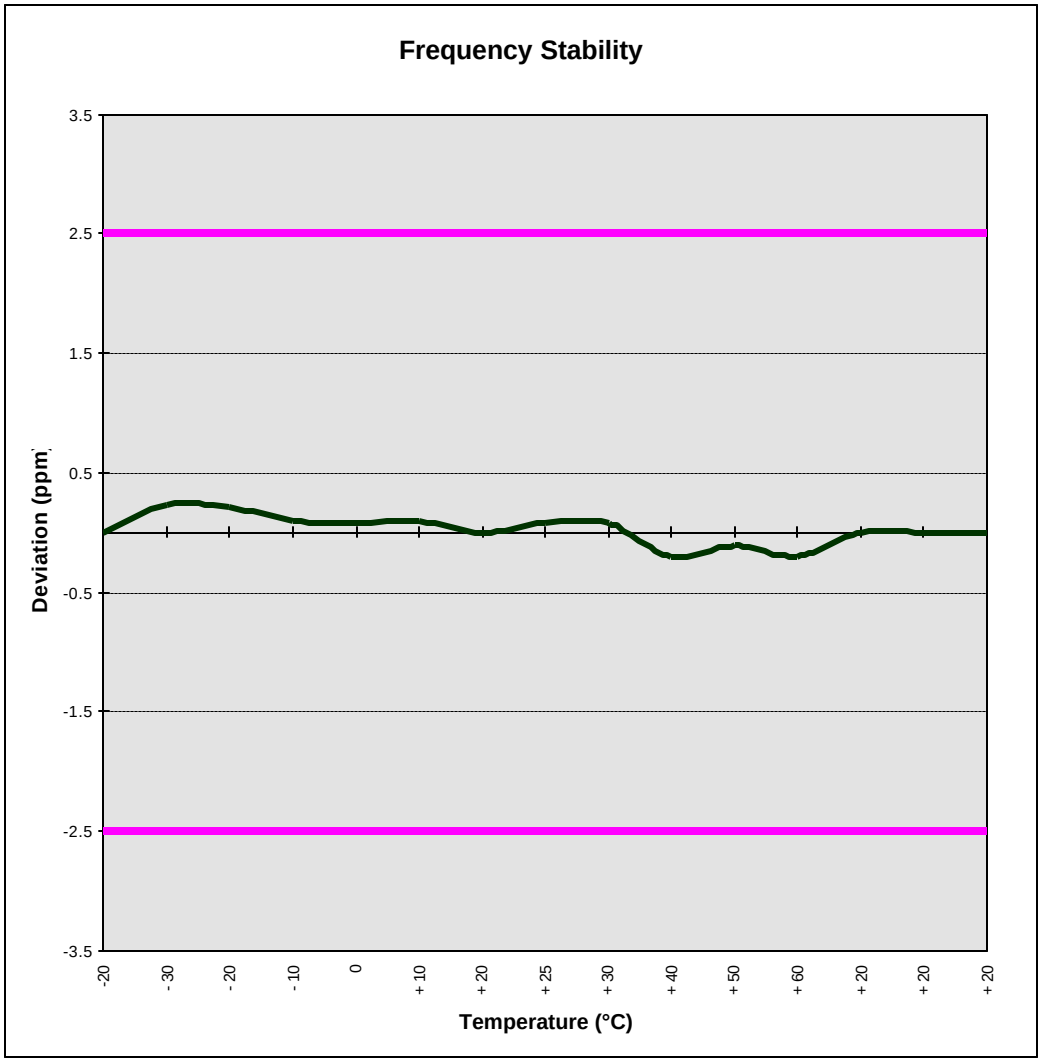
REFERENCE VOLTAGE: 5.0 VDC

DEVIATION LIMIT: ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (VdC)	TEMP (ºC)	FREQ. (Hz)	Deviation (%)
100 %	5.00	+ 20 (Ref)	806	0.000000
100 %		- 30	806	0.000023
100 %		- 20	806	0.000021
100 %		- 10	806	0.000010
100 %		0	806	0.000008
100 %		+ 10	806	0.000009
100 %		+ 20	806	0.000000
100 %		+ 25	806	0.000008
100 %		+ 30	806	0.000008
100 %		+ 40	806	-0.000020
100 %		+ 50	806	-0.000011
100 %		+ 60	806	-0.000020
85 %	4.25	+ 20	806	0.000000
115 %	5.75	+ 20	806	0.000000
BATT. ENDPOINT	3.50	+ 20	806	0.000000

10.1 Test Data (Continued)

Part 90 FREQUENCY STABILITY



9.1 PLOT(S) OF EMISSIONS

(SEE ATTACHMENT D)

10.1 TEST EQUIPMENT

10.2 Type	Model	Cal. Due Date	S/N
Microwave Spectrum Analyzer	HP 8566B (100Hz-22GHz)	08/15/05	3638A08713
Microwave Spectrum Analyzer	HP 8566B (100Hz-22GHz)	04/17/06	2542A11898
Spectrum Analyzer/Tracking Gen.	HP 8591A (100Hz-1.8GHz)	08/10/05	3144A02458
Signal Generator*	HP 8640B (500Hz-1GHz)	06/03/05	2232A19558
Signal Generator*	HP 8640B (500Hz-1GHz)	06/03/05	1851A09816
Signal Generator*	Rohde & Schwarz (0.1-1000MHz)	09/11/05	894215/012
Ailtech/Eaton Receiver	NM 37/57A-SL (30-1000MHz)	04/12/06	0792-03271
Ailtech/Eaton Receiver	NM 37/57A (30-1000MHz)	03/11/06	0805-03334
Ailtech/Eaton Receiver	NM 17/27A (0.1-32MHz)	09/17/05	0608-03241
Quasi-Peak Adapter	HP 85650A	08/15/05	2043A00301
Ailtech/Eaton Adapter	CCA-7 CISPR/ANSI QP Adapter	03/11/06	0194-04082
RG58 Coax Test Cable	No.167		n/a
Harmonic/Flicker Test System	HP 6841A (IEC 555-2/3)		3531A00115
Broadband Amplifier (2)	HP 8447D		1145A00470, 1937A03348
Broadband Amplifier	HP 8447F		2443A03784
Transient Limiter	HP 11947A (9kHz-200MHz)	2820A00300	
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	3816/2		1079
EMCO LISN	3816/2		1077
EMCO LISN	3725/2		2009
Microwave Preamplifier 40dB Gain	HP 83017A (0.5-26.5GHz)		3123A00181
Microwave Cables	MicroCoax (1.0-26.5GHz)		
Ailtech/Eaton Receiver	NM37/57A-SL		0792-03271
Spectrum Analyzer	HP 8594A		3051A00187
Spectrum Analyzer (2)	HP 8591A		3034A01395, 3108A02053
Modulation Analyzer	HP 8901A		2432A03467
NTSC Pattern Generator	Leader 408		0377433
Noise Figure Meter	HP 8970B		3106A02189
Noise Figure Meter	Ailtech 7510		TE31700
Noise Generator	Ailtech 7010		1473
Microwave Survey Meter	Holaday Model 1501 (2.450GHz)		80931
Digital Thermometer	Extech Instruments 421305	426966	
Attenuator	HP 8495A (0-70dB) DC-4GHz		
Bi-Directional Coax Coupler	Narda 3020A (50-1000MHz)		
Shielded Screen Room	RF Lindgren Model 26-2/2-0	6710 (PCT270)	
Shielded Semi-Anechoic Chamber	Ray Proof Model S81		R2437 (PCT278)
Enviromental Chamber	Associated Systems Model 1025 (Temperature/Humidity)		PCT285

* Calibration traceable to the National Institute of Standards and Technology (NIST).

11.1 SAMPLE CALCULATIONS

Occupied Bandwidth

The audio signal generator is adjusted to 1kHz. The output level is increased until deviation limiting takes place. With the level constant, the freq. is set to 2,500Hz. Then the audio signal level is increased by 16dB.

The limits are specified in Section 2.1049.

Bandwidth Calculations (2M + 2D):

2(3.0) + 2 (5.0)
6 + 10.0 = 16.0 kHz

Emission Designator = 16K0F1D

M = maximum modulation frequency
D = maximum deviation from modulating limiting plot

Bandwidth Calculations (2M + 2D):

2(3.0) + 2 (2.5)
6 + 5.0 = 11.0 kHz

Emission Designator = 11K0F1D

M = maximum modulation frequency
D = maximum deviation from modulating limiting plot

12.1 CONCLUSION

The data collected shows that the **PANASONIC Notebook PC FCC ID: ACJ9TGCF-29D w/ Boomer-II OEM Radio Modem Module, CDMA Module and WLAN** complies with all the requirements of Part 90 of the FCC rules.