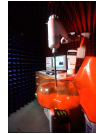




PCTEST ENGINEERING LABORATORY, INC.

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 Class II Permissive Change

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

Date of Testing:
March 16 - 17, 2009
Test Site/Location:
PCTEST Lab., Columbia, MD, USA
Test Report Serial No.:
0903200544.PKR

FCC ID:	PKRNVWE725
APPLICANT:	NOVATEL WIRELESS INC.

Application Type: Class II Permissive Change
FCC Classification: PCS Licensed Transmitter (PCB)
FCC Rule Part(s): §2; §22(H), §24(E)
EUT Type: Cellular/PCS CDMA/EvDO Module
Model(s): E727
Tx Frequency Range: 824.70 - 848.31MHz (Cell. CDMA) / 1851.25 - 1908.75MHz (PCS CDMA)
Max. RF Output Power: 295.12 mW (24.70 dBm) Conducted (Cell. CDMA)
 297.17 mW (24.73 dBm) Conducted (PCS CDMA)
Emission Designator(s): 1M26F9W (CDMA) / 1M26F9W (PCS)
Test Device Serial No.: *identical prototype* [S/N: N/A]
Class II Permissive Change: Please See FCC Change Document
Original Grant Date: 12/07/2006

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

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

Grant Conditions: Power output listed is conducted for Part 22 and 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

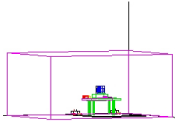


FCC ID: PKRNVWE725		FCC Pt. 22/24 CDMA / EvDO MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)		Reviewed by: Quality Manager
Test Report S/N: 0903200544.PKR	Test Dates: March 16 - 17, 2009	EUT Type: Cellular/PCS CDMA/EvDO Module	Page 1 of 18	

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

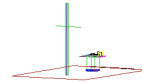
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MEASUREMENT REPORT

FCC Part 22 & 24



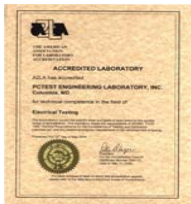
§2.1033 General Information



APPLICANT: Novatel Wireless Inc.
APPLICANT ADDRESS: 9645 Scranton Road, Suite 205
 San Diego, CA 92121-3030
TEST SITE: PCTEST ENGINEERING LABORATORY, INC.
TEST SITE ADDRESS: 6660-B Dobbin Road, Columbia, MD 21045 USA
FCC RULE PART(S): §2; §22(H), §24(E)
BASE MODEL: E727
FCC ID: PKRNVWE725
FCC CLASSIFICATION: PCS Licensed Transmitter (PCB)
EMISSION DESIGNATOR(S): 1M26F9W (CDMA) / 1M26F9W (PCS)
MODE: CDMA / EvDO
FREQUENCY TOLERANCE: ±0.00025 % (2.5 ppm)
Test Device Serial No.: N/A Production Pre-Production Engineering
DATE(S) OF TEST: March 16 - 17, 2009
TEST REPORT S/N: 0903200544.PKR

Test Facility / Accreditations

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

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



FCC ID: PKRNVWE725	 PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 CDMA / EvDO MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	 NOVATEL WIRELESS	Reviewed by: Quality Manager
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1.0 INTRODUCTION

1.1 Scope

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

1.2 Testing Facility

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

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

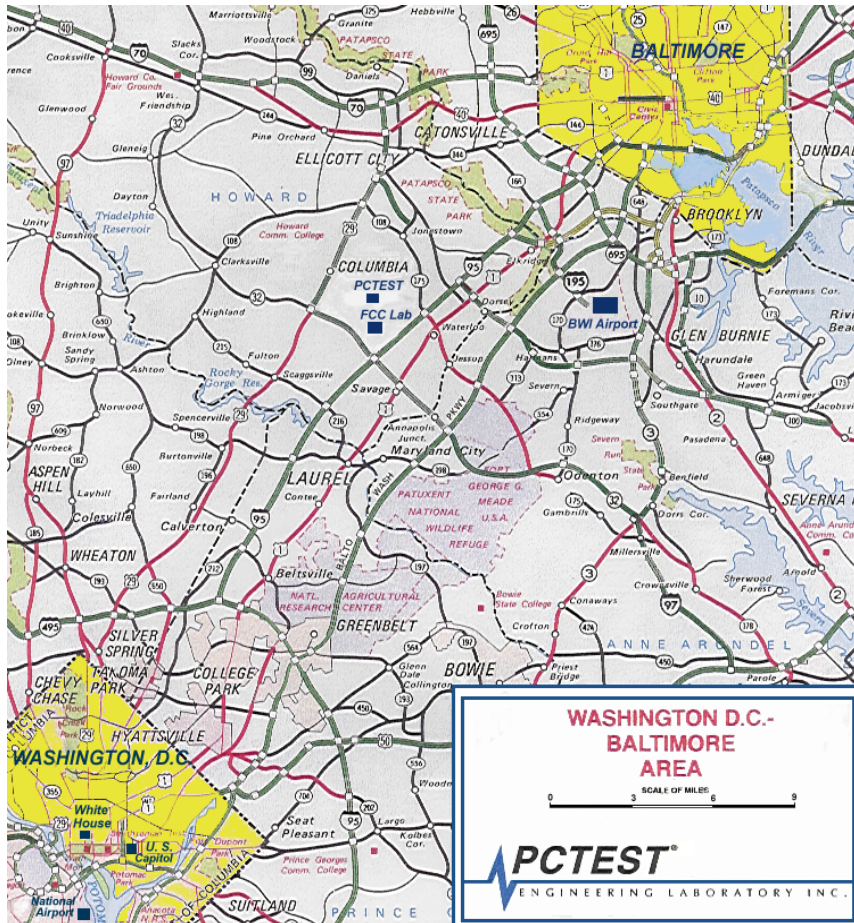


Figure 1-1. Map of the Greater Baltimore and Metropolitan Washington, D.C. area

FCC ID: PKRNVWE725	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 CDMA / EvDO MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	NOVATEL WIRELESS	Reviewed by: Quality Manager
Test Report S/N: 0903200544.PKR	Test Dates: March 16 - 17, 2009	EUT Type: Cellular/PCS CDMA/EvDO Module		Page 4 of 18

2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **Novatel Cellular/PCS CDMA/EvDO Module FCC ID: PKRNVWE725**. The EUT was placed into a test board that was powered by a 5VDC power supply. This device is capable of transmission using EvDO Rev. 0 and EvDO Rev. A. The EUT consisted of the following component(s):

Trade Name / Base Model	FCC ID	Description
Novatel / Model: E727	PKRNVWE725	Cellular/PCS CDMA/EvDO 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.

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Test Report S/N: 0903200544.PKR	Test Dates: March 16 - 17, 2009	EUT Type: Cellular/PCS CDMA/EvDO Module	Page 5 of 18	

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

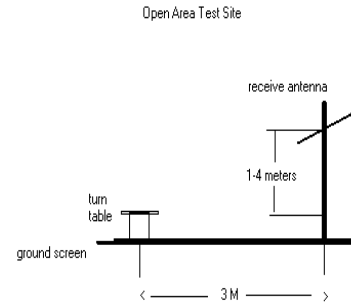


Figure 3-1. Diagram of 3-meter outdoor test range

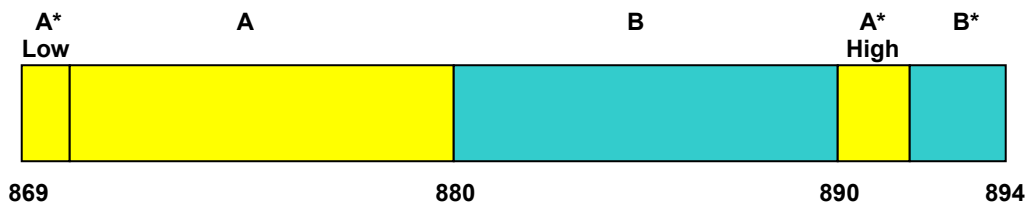
Deviation from Measurement Procedure.....None

3.2 Occupied Bandwidth Emission Limits

§2.1049, 22.917(a), 24.238(a)

- 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)

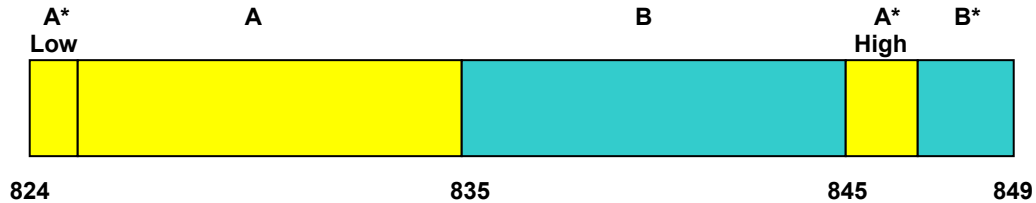
BLOCK 3: 890 – 891.5 MHz (A* High)

BLOCK 2: 880 – 890 MHz (B)

BLOCK 4: 891.5 – 894 MHz (B*)

FCC ID: PKRNVWE725	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 CDMA / EvDO MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	NOVATEL WIRELESS	Reviewed by: Quality Manager
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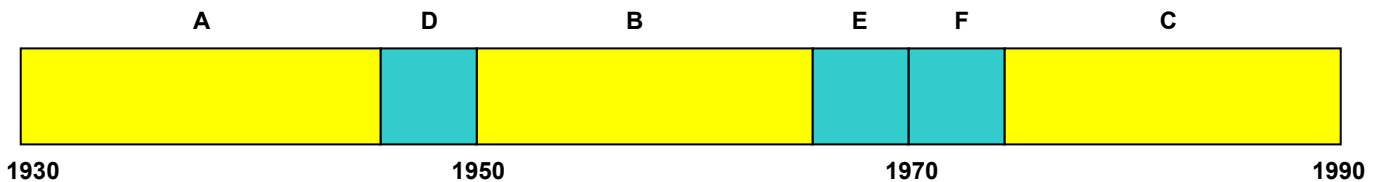
3.4 Cellular - Mobile Frequency Blocks



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*)

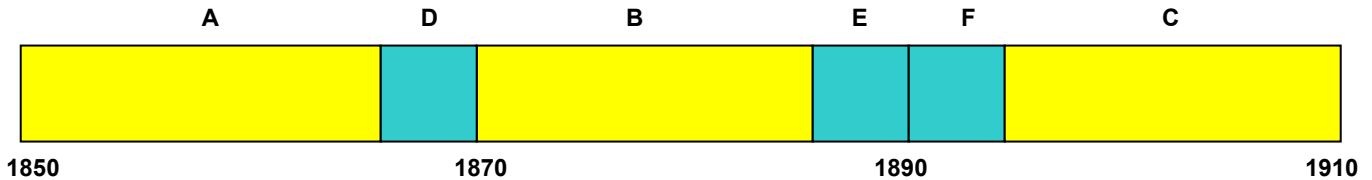
3.5 PCS - Base Frequency Blocks



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)

3.6 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)

3.7 Radiated Spurious and Harmonic Emissions

§2.1053, 22.917(a), 24.238(a)

Spurious and harmonic radiated emissions are measured outdoors at our 3-meter test range. The equipment under test is placed on a wooden turntable 80cm above the ground plane and 3-meters from the receive antenna. The receive antenna height and turntable rotations were adjusted for the highest reading on the receive spectrum analyzer. This level is then measured with a broadband average power meter. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10th harmonic. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator with the level of the signal generator being adjusted to obtain the same receive average power meter reading. This spurious level is recorded with the power meter. For readings above 1 GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration. This device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits.



FCC ID: PKRNVWE725	 PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 CDMA / EvDO MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	 NOVATEL WIRELESS	Reviewed by: Quality Manager
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4.0 TEST EQUIPMENT CALIBRATION DATA

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

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
-	263-10dB	(DC-18GHz) 10 dB Attenuator	N/A		N/A	N/A
-	No.165	(30MHz - 1000MHz) RG58 Coax Cable	N/A		N/A	N/A
-	No.166	(1000-26500MHz) Microwave RF Cable	N/A		N/A	N/A
-	No.167	(100kHz - 100MHz) RG58 Coax Cable	N/A		N/A	N/A
Agilent	11713A	Attenuation/Switch Driver	12/4/2008	Annual	12/4/2009	3439A02645
Agilent	8449B	(1-26.5GHz) Pre-Amplifier	12/4/2008	Annual	12/4/2009	3008A00985
Agilent	8495A	(0-70dB) DC-4GHz Attenuator	N/A		N/A	N/A
Agilent	85650A	Quasi-Peak Adapter	12/4/2008	Annual	12/4/2009	3303A01872
Agilent	8566B	(100Hz-22GHz) Spectrum Analyzer	12/5/2008	Annual	12/5/2009	3638A08713
Agilent	8648D	(9kHz-4GHz) Signal Generator	10/11/2007	Biennial	10/11/2009	3613A00315
Agilent	E5515C	Wireless Communications Test Set	9/10/2008	Biennial	9/10/2010	GB41450275
Agilent	E8257D	(250kHz-20GHz) Signal Generator	4/8/2007	Biennial	4/8/2009	MY45470194
Compliance Design	Roberts	Dipole Set	11/9/2007	Biennial	11/9/2009	146
Compliance Design	Roberts	Dipole Set	11/9/2007	Biennial	11/9/2009	147
Emco	3115	Horn Antenna (1-18GHz)	9/24/2007	Biennial	9/24/2009	9704-5182
Emco	3115	Horn Antenna (1-18GHz)	10/4/2007	Biennial	10/4/2009	9205-3874
Espec	ESX-2CA	Environmental Chamber	4/12/2008	Annual	4/12/2009	17620
Gigatronics	80701A	(0.05-18GHz) Power Sensor	8/18/2008	Annual	8/18/2009	1833460
Gigatronics	8651A	Universal Power Meter	8/18/2008	Annual	8/18/2009	1835299
MiniCircuits	VHF-1300+	High Pass Filter	N/A		N/A	30716
MiniCircuits	VHF-3100+	High Pass Filter	N/A		N/A	30721
Pasternack	PE2208-6	Bidirectional Coupler	N/A		N/A	N/A
Schwarzbeck	UHA9105	Dipole Antenna (400 - 1GHz) Rx	6/19/2007	Biennial	6/18/2009	9105-2404
Schwarzbeck	UHA9105	Dipole Antenna (400 - 1GHz) Tx	6/19/2007	Biennial	6/18/2009	9105-2403
Solar Electronics	8012-50-R-24-BNC	LISN	11/8/2007	Biennial	11/8/2009	310233
Sunol	DRH-118	Horn Antenna (1 - 18GHz)	5/9/2007	Biennial	5/9/2009	A050307

Table 4-1. Test Equipment

FCC ID: PKRNVWE725	 PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 22/24 CDMA / EvDO MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	 NOVATEL WIRELESS	Reviewed by: Quality Manager
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5.0 SAMPLE CALCULATIONS

Emission Designator

Emission Designator = 1M25F9W

CDMA BW = 1.25 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: Channel 25 PCS Mode 2nd Harmonic (3702.50 MHz)

The average receive power meter reading at 3 meters with the EUT on the turntable was -81.0 dBm. The gain of the substituted antenna is 8.1 dBi. The signal generator connected to the substituted antenna terminals is adjusted to produce a reading of -81.0 dBm on the power meter. The loss of the cable between the signal generator and the terminals of the substituted antenna is 2.0 dB at 3702.50 MHz. So 6.1 dB is added to the power meter reading of -30.9 dBm yielding -24.80 dBm. The fundamental EIRP was 25.501 dBm so this harmonic was 25.501 dBm $- (-24.80) = 50.3$ dBc.

FCC ID: PKRNVWE725		FCC Pt. 22/24 CDMA / EvDO MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	 Reviewed by: Quality Manager
Test Report S/N: 0903200544.PKR	Test Dates: March 16 - 17, 2009	EUT Type: Cellular/PCS CDMA/EvDO Module	Page 9 of 18



6.0 TEST RESULTS

6.1 Summary

Company Name: Novatel Wireless Inc.
 FCC ID: PKRNVWE725
 FCC Classification: PCS Licensed Transmitter (PCB)
 Mode(s): CDMA / EvDO

FCC Part Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
TRANSMITTER MODE (TX)					
2.1046	Transmitter Conducted Output Power	N/A	CONDUCTED	PASS	Section 6.2
2.1053, 22.917(a), 24.238(a)	Undesirable Emissions	< 43 + 10log ₁₀ (P[Watts]) for all out-of-band emissions	RADIATED	PASS	Sections 6.3, 6.4

Table 6-1. Summary of Test Results

FCC ID: PKRNVWE725		FCC Pt. 22/24 CDMA / EvDO MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)		Reviewed by: Quality Manager
Test Report S/N: 0903200544.PKR	Test Dates: March 16 - 17, 2009	EUT Type: Cellular/PCS CDMA/EvDO Module	Page 10 of 18	

6.2 Conducted Output Power

§2.1046

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.

Output Power Verification

See 3GPP2 C.S0011/TIA-98-E as recommended by "SAR Measurement Procedures for 3G Devices", June 2006.



1. If the mobile station (MS) supports Reverse TCH RC 1 and Forward TCH RC 1, set up a call using Fundamental Channel Test Mode 1 (RC=1/1) with 9600 bps data rate only.
2. Under RC1, C.S0011 Table 4.4.5.2-1, Table 6-2 parameters were applied.
3. If the MS supports the RC 3 Reverse FCH, RC3 Reverse SCH0 and demodulation of RC 3,4, or 5, set up a call using Supplemental Channel Test Mode 3 (RC 3/3) with 9600 bps Fundamental Channel and 9600 bps SCH0 data rate.
4. Under RC3, C.S0011 Table 4.4.5.2-2, Table 6-3 was applied.
5. FCHs were configured at full rate for maximum power with "All Up" power control bits.

Parameter	Units	Value
\bar{I}_{or}	dBm/1.23 MHz	-86
$\frac{\text{Pilot } E_c}{I_{or}}$	dB	-7
$\frac{\text{Traffic } E_c}{I_{or}}$	dB	-7.4

Table 6-2. Parameters for Max. Power for RC3

Band	Channel	SO55	TDSO	1x EVDO	1x EVDO	1x EVDO	1x EVDO
		[dBm]	SO32	Rev. 0	Rev. 0	Rev. A	Rev. A
		RC3	RC3	(FTAP)	(RTAP)	(FETAP)	(RETAP)
Cellular	1013	24.38	24.54	24.58	24.52	24.57	24.70
	384	24.61	24.59	24.51	24.69	24.54	24.68
	777	24.45	24.63	24.46	24.39	24.49	24.47
PCS	25	24.73	24.55	24.60	24.53	24.68	24.51
	600	24.64	24.57	24.52	24.38	24.59	24.55
	1175	24.71	24.58	24.41	24.47	24.65	24.56

Table 6-3. Maximum Conducted Output Power Table for E727

FCC ID: PKRNVWE725		FCC Pt. 22/24 CDMA / EvDO MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)		Reviewed by: Quality Manager
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6.3 Cellular CDMA Radiated Measurements

§2.1053, 22.917(a)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 824.70 MHz
 CHANNEL: 1013
 MODULATION SIGNAL: CDMA (Internal)
 DISTANCE: 3 meters
 LIMIT: -13 dBm

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	MARGIN (dB)
1649.40	-54.42	6.08	-48.34	V	-35.3
2474.10	-51.02	6.08	-44.94	V	-31.9
3298.80	-62.38	6.53	-55.85	V	-42.8
4123.50	-67.44	6.87	-60.56	V	-47.6
4948.20	-64.07	7.21	-56.85	V	-43.9



Table 6-4. 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 80cm above the ground plane and 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits. No EvDO radiated measurements were performed based on the FCC 3G measurement procedure requiring measurements to be made under RC3/SO55 test conditions except when the conducted power of another test condition exceeds the RC3/SO55 conducted power by more than 0.25dB. This unit was tested while powered by a DC power supply.

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

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 836.52 MHz
 CHANNEL: 384
 MODULATION SIGNAL: CDMA (Internal)
 DISTANCE: 3 meters
 LIMIT: -13 dBm

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	MARGIN (dB)
1673.04	-51.29	6.09	-45.20	V	-32.2
2509.56	-45.95	6.55	-39.40	V	-26.4
3346.08	-57.23	6.89	-50.34	V	-37.3
4182.60	-64.34	7.43	-56.91	V	-43.9
5019.12	-61.58	8.35	-53.23	V	-40.2



Table 6-5. 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 80cm above the ground plane and 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits. No EvDO radiated measurements were performed based on the FCC 3G measurement procedure requiring measurements to be made under RC3/SO55 test conditions except when the conducted power of another test condition exceeds the RC3/SO55 conducted power by more than 0.25dB. This unit was tested while powered by a DC power supply.

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

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 848.31 MHz
 CHANNEL: 777
 MODULATION SIGNAL: CDMA (Internal)
 DISTANCE: 3 meters
 LIMIT: -13 dBm

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	MARGIN (dB)
1696.62	-48.56	6.09	-42.46	V	-29.5
2544.93	-45.38	6.57	-38.82	V	-25.8
3393.24	-60.88	6.91	-53.97	V	-41.0
4241.55	-64.11	7.65	-56.47	V	-43.5
5089.86	-62.16	8.33	-53.83	V	-40.8



Table 6-6. 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 80cm above the ground plane and 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits. No EvDO radiated measurements were performed based on the FCC 3G measurement procedure requiring measurements to be made under RC3/SO55 test conditions except when the conducted power of another test condition exceeds the RC3/SO55 conducted power by more than 0.25dB. This unit was tested while powered by a DC power supply.

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6.4 PCS CDMA Radiated Measurements

§2.1053, 24.238(a)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 1851.25 MHz
 CHANNEL: 25
 MODULATION SIGNAL: CDMA (Internal)
 DISTANCE: 3 meters
 LIMIT: -13 dBm

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	MARGIN (dB)
3702.50	-38.51	9.02	-29.49	V	-16.5
5553.75	-58.59	10.40	-48.19	V	-35.2
7405.00	-54.59	10.51	-44.08	V	-31.1
9256.25	-54.34	11.84	-42.50	V	-29.5
11107.50	-51.27	12.76	-38.52	V	-25.5



Table 6-7. 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 80cm above the ground plane and 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits. No EvDO radiated measurements were performed based on the FCC 3G measurement procedure requiring measurements to be made under RC3/SO55 test conditions except when the conducted power of another test condition exceeds the RC3/SO55 conducted power by more than 0.25dB. This unit was tested while powered by a DC power supply.

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PCS CDMA Radiated Measurements (Cont'd)
§2.1053, 24.238(a)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 1880.00 MHz
 CHANNEL: 600
 MODULATION SIGNAL: CDMA (Internal)
 DISTANCE: 3 meters
 LIMIT: -13 dBm

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	MARGIN (dB)
3760.00	-33.93	8.99	-24.94	V	-11.9
5640.00	-59.17	10.40	-48.77	V	-35.8
7520.00	-50.75	10.62	-40.14	V	-27.1
9400.00	-54.50	11.70	-42.80	V	-29.8
11280.00	-51.01	12.69	-38.32	V	-25.3



Table 6-8. 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 80cm above the ground plane and 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits. No EvDO radiated measurements were performed based on the FCC 3G measurement procedure requiring measurements to be made under RC3/SO55 test conditions except when the conducted power of another test condition exceeds the RC3/SO55 conducted power by more than 0.25dB. This unit was tested while powered by a DC power supply.

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PCS CDMA Radiated Measurements (Cont'd)
§2.1053, 24.238(a)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 1908.75 MHz
 CHANNEL: 1175
 MODULATION SIGNAL: CDMA (Internal)
 DISTANCE: 3 meters
 LIMIT: -13 dBm

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	MARGIN (dB)
3817.50	-34.71	8.97	-25.74	V	-12.7
5726.25	-59.71	10.40	-49.31	V	-36.3
7635.00	-53.70	10.71	-42.99	V	-30.0
9543.75	-54.17	11.64	-42.54	V	-29.5
11452.50	-50.00	12.62	-37.38	V	-24.4



Table 6-9. 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 80cm above the ground plane and 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits. No EvDO radiated measurements were performed based on the FCC 3G measurement procedure requiring measurements to be made under RC3/SO55 test conditions except when the conducted power of another test condition exceeds the RC3/SO55 conducted power by more than 0.25dB. This unit was tested while powered by a DC power supply.

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7.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Novatel Cellular/PCS CDMA/EvDO Module FCC ID: PKRNVWE725** complies with all the requirements of Parts 2, 22, and 24 of the FCC rules.

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