M. Flom Associates, Inc.
International Compliance Testing Laboratory
3356 N. San Marcos Place, Suite 107
Chandler, AZ 85225
toll-free: (866) 311-3268
fax: (480) 926-3598
http://www.mflom.com
info@mflom.com

Date: June 27, 2005

Federal Communications Commission
Via: Electronic Filing

Attention: Authorization & Evaluation Division

Applicant: Novatel Wireless Inc.
Equipment: V620
FCC ID: PKRNVWV620
FCC Rules: 22H, 24E, Class II Permissive Change

Gentlemen:

On behalf of the Applicant, enclosed please find Application Form 731, Engineering Test Report and all pertinent documentation, the whole for approval of the referenced equipment as shown i.e.:

a) Application Form
b) Test Report
c) Expository Statement
d) Manual

We trust the same is in order. Should you need any further information, kindly contact the writer who is authorized to act as agent.

Sincerely yours,

David E. Lee, Quality Assurance Manager

enclosure(s)
cc: Applicant
DEL/del

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Transmitter Certification

of

FCC ID: PKRNVWV620
Model: V620

to

Federal Communications Commission

Rule Part(s) 22H, 24E
Class II Permissive Change

Date of report: June 27, 2005

On the Behalf of the Applicant:

Novatel Wireless Inc.

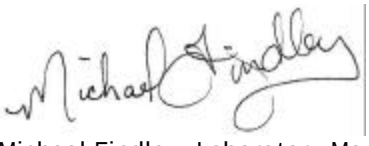
At the Request of:

P.O. NWS11191

Novatel Wireless Inc.
9255 Towne Centre Dr., Suite 225
San Diego, CA 92121-3030

Attention of:

John Ross
858-812-0614; FAX:-2888
Email: jross@novatelwireless.com



Supervised by:

Michael Findley, Laboratory Manager

The Applicant has been cautioned as to the following:

15.21 **Information to the User**.

The users manual or instruction manual for an intentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

15.27(a) **Special Accessories**.

Equipment marketed to a consumer must be capable of complying with the necessary regulations in the configuration in which the equipment is marketed. Where special accessories, such as shielded cables and/or special connectors are required to enable an unintentional or intentional radiator to comply with the emission limits in this part, the equipment must be marketed with, i.e. shipped and sold with, those special accessories. However, in lieu of shipping or packaging the special accessories with the unintentional or intentional radiator, the responsible party may employ other methods of ensuring that the special accessories are provided to the consumer, without additional charge.

Information detailing any alternative method used to supply the special accessories for a grant of equipment authorization or retained in the verification records, as appropriate. The party responsible for the equipment, as detailed in § 2.909 of this chapter, shall ensure that these special accessories are provided with the equipment. The instruction manual for such devices shall include appropriate instructions on the first page of text concerned with the installation of the device that these special accessories must be used with the device. It is the responsibility of the user to use the needed special accessories supplied with the equipment.

Table of Contents

Required information per ISO/IEC Guide 25-1990, paragraph 13.2:

a) **Test Report**

b) Laboratory: M. Flom Associates, Inc.
(FCC: 31040/SIT) 3356 N. San Marcos Place, Suite 107
(Canada: IC 2044) Chandler, AZ 85225

c) Report Number: d0560045

d) Client: Novatel Wireless Inc.
9255 Towne Centre Dr., Suite 225
San Diego, CA 92121-3030

e) Identification: V620
FCC ID: PKRNVWV620
EUT Description: Permissive Change for use of external antenna

f) EUT Condition: Not required unless specified in individual tests.

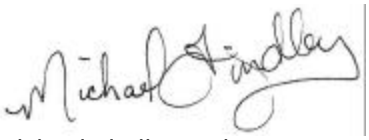
g) Report Date: June 27, 2005
EUT Received: June 14, 2005

h, j, k): As indicated in individual tests.

i) Sampling method: No sampling procedure used.

l) Uncertainty: In accordance with MFA internal quality manual.

m) Supervised by:



Michael Findley, Laboratory Manager

n) Results: The results presented in this report relate only to the item tested.

o) Reproduction: This report must not be reproduced, except in full, without written permission from this laboratory.

Accessories used during testing:

Type	Quantity	Manufacturer	Model	Serial No.	FCC ID
Antenna	1	Antenna Specialists	ASPRDM1994	NSN	NONE
Ground Plane	1	Novatel (Special)	17" Diameter	NSN	NONE

Sub-part
2.1033(c)(14):

Test and Measurement Data

All tests and measurement data shown were performed in accordance with FCC Rules and Regulations, Volume II; Part 2, Sub-part J, Sections 2.947, 2.1033(c), 2.1041, 2.1046, 2.1047, 2.1079, 2.1051, 2.1053, 2.1055, 2.1057 and the following individual Parts:

____	21 – Domestic Public Fixed Radio Services
____	22 – Public Mobile Services
X	22 Subpart H - Cellular Radiotelephone Service
X	22.901(d) - Alternative technologies and auxiliary services
____	23 – International Fixed Public Radiocommunication services
X	24 – Personal Communications Services
____	74 Subpart H - Low Power Auxiliary Stations
____	80 – Stations in the Maritime Services
____	80 Subpart E - General Technical Standards
____	80 Subpart F - Equipment Authorization for Compulsory Ships
____	80 Subpart K - Private Coast Stations and Marine Utility Stations
____	80 Subpart S - Compulsory Radiotelephone Installations for Small Passenger Boats
____	80 Subpart T - Radiotelephone Installation Required for Vessels on the Great Lakes
____	80 Subpart U - Radiotelephone Installations Required by the Bridge-to-Bridge Act
____	80 Subpart V - Emergency Position Indicating Radio Beacons (EPIRB'S)
____	80 Subpart W - Global Maritime Distress and Safety System (GMDSS)
____	80 Subpart X - Voluntary Radio Installations
____	87 – Aviation Services
____	90 – Private Land Mobile Radio Services
____	94 – Private Operational-Fixed Microwave Service
____	95 Subpart A - General Mobile Radio Service (GMRS)
____	95 Subpart C - Radio Control (R/C) Radio Service
____	95 Subpart D - Citizens Band (CB) Radio Service
____	95 Subpart E - Family Radio Service
____	95 Subpart F - Interactive Video and Data Service (IVDS)
____	97 - Amateur Radio Service
____	101 – Fixed Microwave Services

Standard Test Conditions
and
Engineering Practices

Except as noted herein, the following conditions and procedures were observed during the testing:

In accordance with ANSI C63.4-1992/2000, section 6.1.9, and unless otherwise indicated in the specific measurement results, the ambient temperature of the actual EUT was maintained within the range of 10° to 40°C (50° to 104 °F) unless the particular equipment requirements specify testing over a different temperature range. Also, unless otherwise indicated, the humidity levels were in the range of 10% to 90% relative humidity.

Prior to testing, the EUT was tuned up in accordance with the manufacturer's alignment procedures. All external gain controls were maintained at the position of maximum and/or optimum gain throughout the testing.

Measurement results, unless otherwise noted, are worst-case measurements.

THE AMERICAN
ASSOCIATION
FOR LABORATORY
ACCREDITATION

ACCREDITED LABORATORY

A2LA has accredited

M. FLOM ASSOCIATES, INC.
Chandler, AZ

for technical competence in the field of

Electrical Testing

The accreditation covers the specific tests and types of tests listed on the agreed scope of accreditation. This laboratory meets the requirements of ISO/IEC 17025 - 1999 "General Requirements for the Competence of Testing and Calibration Laboratories" and any additional program requirements in the identified field of testing.

Presented this 16th day of June 2004.

President
For the Accreditation Council
Certificate Number 2152-01
Valid to August 31, 2006

A2LA

For tests or types of tests to which this accreditation applies, please refer to the laboratory's Electrical Scope of Accreditation.

A2LA

"A2LA has accredited M. Flom Associates, Inc. Chandler, AZ for technical competence in the field of Electrical Testing. The accreditation covers the specific tests and types of tests listed on the agreed scope of accreditation. This laboratory meets the requirements of ISO/IEC 17025 – 1999 'General Requirements for the Competence of Testing and Calibration Laboratories' and any additional program requirements in the identified field of testing."

Certificate Number: **2152-01**

UNITED STATES DEPARTMENT OF COMMERCE
National Institute of Standards and Technology
Gaithersburg, Maryland 20899-

September 15, 1999

Mr. Morton Flom
M. Flom Associates Inc.
3356 N. San Marcos Place, Suite 107
Chandler, AZ 85224

Dear Mr. Flom:

I am pleased to inform you that your laboratory has been validated by the Chinese Taipei Bureau of Standards, Metrology, and Inspection (BSMI) under the Asia Pacific Economic Cooperation Mutual Recognition Arrangement (APEC MRA). Your laboratory is now formally designated to act as a Conformity Assessment Body (CAB) under Appendix B, Phase I Procedures, of the APEC MRA between the American Institute in Taiwan (AIT) and the Taipei Economic and Cultural Representative Office (TECRO) in the United States, covering equipment subject to Electro-Magnetic Compatibility (EMC) requirements. The names of all validated and nominated laboratories will be posted on the NIST website at http://ts.nist.gov/mra under the "Asia" category.

As of August 1, 1999, you may submit test data to BSMI to verify that the equipment to be imported into Chinese Taipei satisfies the applicable EMC requirements. Your assigned BSMI number is SL2-IN-E-041R; you must use this number when sending test reports to BSMI. Your designation will remain in force as long as your NVLAP and/or A2LA and/or BSMI accreditation remains valid for the CNS 13438.

Please note that BSMI requires that the entity making application for the approval of regulated equipment must make such application in person at their Taipei office. BSMI also requires the names of the authorized signatories who are authorized to sign the test reports. You can send this information via fax to C-Taipei CAB Response Manager at 301-975-3414. I am also enclosing a copy of the cover sheet that, according to BSMI requirements, must accompany every test report.

NIST

If you have any questions, please contact Robert Gladhill at 301-975-4273 or Joe Dhillon at 301-975-5528. We appreciate your continued interest in our international conformity assessment activities.

Sincerely,

Belinda L. Collins, Ph.D.
Director, Office of Standards Services

Enclosure

NIST

I am pleased to inform you that your laboratory has been validated by the Chinese Taipei Bureau of Standards, Metrology and Inspection (BSMI) under the Asia Pacific Economic Cooperation Mutual Recognition Agreement (APEC MRA). Your laboratory is now formally designated to act as a Conformity Assessment Body (CAB) under Appendix B, Phase I Procedures, of the APEC MRA between the American Institute in Taiwan (AIT) and the Taipei Economic and Cultural Representative Office (TECRO) in the United States, covering equipment subject to Electro-Magnetic Compatibility (EMC) requirements. The names of all validated and nominated laboratories will be posted on the NIST website at http://ts.nist.gov/mra under the 'Asia' category."

BSMI Number: **SL2-IN-E-041R**

Expository Statement

Permissive Change

Applicant: Novatel Wireless Inc.

FCC ID: PKRNVWV620

The applicant wishes to add the use of an external antenna to the Grant to be used as an alternative to internal antenna already certified.

Data contained herein confirms that a Permissive Change to the unit has been effected and that the performance of the unit is at or better than the levels originally reported to the commission.

The following changes/improvements have been made as per attached letter of Explanation:

The Applicant wishes to allow integrators / users of the device to use antennas with an overall gain of up to 5dBi to be used.

The conducted power output of the EUT is 24.5dBm on Cellular and 23.5dBm on PCS.

Calculations would indicate that such an antenna could be used without exceeding to maximum rating for this device under parts 22H and 24E.

This report shows that the test antenna does not exceed 30dBm on either band even when allowance is made for the antenna cable loss.

An amendment to the Grant is requested which allows for generic antennas up 5dBi to be used at a safety distance of 20cm.

List of General Information Required for Certification

In Accordance with FCC Rules and Regulations,
Volume II, Part 2 and to 22H, 24E

Sub-part 2.1033

(c)(1): **Name and Address of Applicant**:

Novatel Wireless Inc.
9255 Towne Centre Dr., Suite 225
San Diego, CA 92121-3030

Manufacturer:

Novatel Wireless Inc.
9255 Towne Centre Dr., Suite 225
San Diego, CA 92121-3030

(c)(2): **FCC ID**: PKRNVWV620

Model Number: V620

(c)(3): **Instruction Manual(s):**

Please see attached exhibits

(c)(4): **Type of Emission**: 1M25F9W

(c)(5): **Frequency Range, MHz**: 824.7 to 848.3
1851.3 to 1908.7

(c)(6): **Power Rating, Watts**: (Conducted) 0.282 (Cell)
0.224 (PCS)

____ Switchable X Variable ____ N/A

(c)(7): **Maximum Power Rating, Watts**: 2.0

DUT Results: Passes x Fails _____

Subpart 2.1033 (continued)
(c)(8): Voltages & currents in all elements in final RF stage, including final transistor or solid-state device:

Collector Current, A	=	0.450 (max)
Collector Voltage, Vdc	=	3.45
Supply Voltage, Vdc	=	3.60

(c)(14): **Test and Measurement Data**:

Follows

Name of Test: Carrier Output Power (Conducted)

Specification: 47 CFR 2.1046(a)

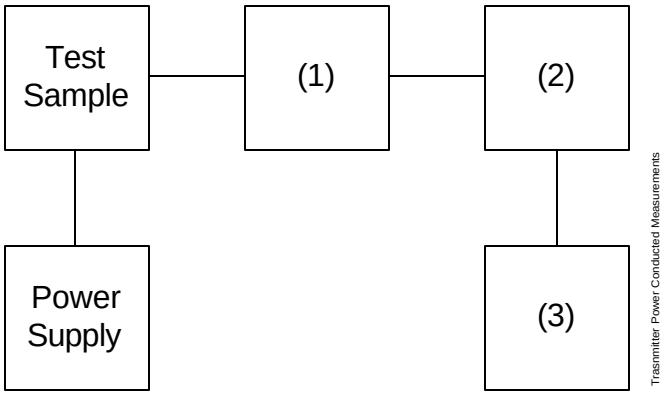
Guide: ANSI/TIA/EIA-603-1992, Paragraph 2.2.1

Measurement Procedure

A) The EUT was connected to a resistive coaxial attenuator of normal load impedance, and the unmodulated output power was measured by means of an RF Power Meter.

B) Measurement accuracy is ±3%.

Transmitter Test Set-Up: RF Power Output



	Asset	Description	s/n	Cycle	Last Cal
(1)	**Coaxial Attenuator**				
X	i00231/2	PASTERNACK PE7021-30 (30 dB)	231 or 232	NCR	
	i00122/3	NARDA 766 (10 dB)	7802 or 7802A	NCR	
(2)	**Power Meters**				
X	i00020	HP 8901A Power Mode	2105A01087	12 mo.	Apr-05
(3)	**Frequency Counter**				
X	i00020	HP 8901A Frequency Mode	2105A01087	12 mo.	Apr-05

Name of Test: Carrier Output Power (Conducted)

Measurement Results
(Worst case)

Nominal, MHz	Channel	dBm	RF Power, Watts
Cellular CDMA Mode:			
825.3	991	24.5	0.282
836.4	380	24.5	0.282
847.7	799	24.5	0.282
PCS CDMA Mode:			
1851.25	025	23.5	0.224
1880.00	600	23.5	0.224
1908.75	1175	23.5	0.224

Performed By: David E. Lee, Test Engineer

Name of Test: Carrier Power (Radiated)

Test Equipment

	Asset	Description	s/n	Cycle	Last Cal
Transducer					
	i00088	EMCO 3109-B 25MHz-300MHz	2336	24 mo.	Sep-03
X	i00089	Aprel 2001 200MHz-1GHz	001500	24 mo.	Sep-03
X	i00103	EMCO 3115 1GHz-18GHz	9208-3925	24 mo.	Jan-04
Amplifier					
X	i00028	HP 8449A	2749A00121	12 mo.	May-05
Spectrum Analyzer					
X	i00029	HP 8563E	3213A00104	12 mo.	May-05
X	i00033	HP 85462A	3625A00357	12 mo.	Sep-04

Measurement Procedure (Radiated)

1. The EUT was placed on an open-field site and its radiated field strength at a known distance was measured by means of a spectrum analyzer. Equivalent loading was calculated from the equation $P_t=((E \times R)^2/49.2)$ watts, where R = 3m.

2. The Path Loss was measured at each frequency using the substitution method.

3. Measurement accuracy is ±1.5 dB.

Name of Test: Carrier Power (Radiated)

Measurement Results

g0560279: 2005-Jun-24 Fri 09:25:00
State: 2:High Power Ambient Temperature: 35°C ± 3°C
Cellular CDMA:

Frequency Tuned, MHz	Frequency Emission, MHz	Meter, dBuV/m	CF, dB	Calc, dBm	Path Loss dB (Sub)	EUT to Ant Loss, dB	ERP, dBm	ERP, Watts (max)
824.700000	824.715000	100.69	25.52	30.0	-2.40	1.20	28.8	
836.500000	836.535000	102.18	24.11	29.4	-1.70	1.20	28.9	0.79
848.300000	848.325000	103.24	22.81	30.7	-3.20	1.20	28.7	

g0560278: 2005-Jun-24 Fri 08:47:00
State: 2:High Power Ambient Temperature: 35°C ± 3°C
PCS CDMA

Frequency Tuned, MHz	Frequency Emission, MHz	Meter, dBuV/m	CF, dB	Calc, dBm	Path Loss dB (Sub)	EUT to Ant Loss, dB	EIRP, dBm	EIRP, Watts (max)
1851.300000	1851.300000	89.57	33.93	28.3	-0.20	1.80	29.9	
1880.000000	1880.000000	89.06	33.97	27.8	+0.10	1.80	29.7	0.98
1908.700000	1908.700000	85.56	34.43	24.8	+3.00	1.80	29.6	

Performed By: David E. Lee, Test Engineer

END OF TEST REPORT

Testimonial
and
Statement of Certification

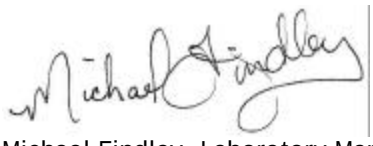
This is to Certify:

1. **That** the application was prepared either by, or under the direct supervision of, the undersigned.

2. **That** the technical data supplied with the application was taken under my direction and supervision.

3. **That** the data was obtained on representative units, randomly selected.

4. **That**, to the best of my knowledge and belief, the facts set forth in the application and accompanying technical data are true and correct.



Certifying Engineer: Michael Findley, Laboratory Manager

M. Flom Associates, Inc.
3356 North San Marcos Place, Suite 107
Chandler, Arizona 85225-7176
(480) 926-3100 phone, fax (480) 926-3598