



**M. Flom Associates, Inc.**  
International Compliance Testing Laboratory  
3356 N. San Marcos Place, Suite 107  
Chandler, AZ 85225  
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Date: December 14, 2004

Federal Communications Commission  
Via: Electronic Filing

Attention: Authorization & Evaluation Division

Applicant: Westel Wireless Systems Pty Ltd  
Equipment: DRB-25  
FCC ID: P6ZCI00063  
FCC Rules: 2, 90, 95, Confidentiality, Class II Permissive Change

Gentlemen:

On behalf of the Applicant, enclosed please find the Engineering Test Report in support of a Class II Permissive Change Request.

Should you need any further information, kindly contact the writer who is authorized to act as agent.

Sincerely yours,

David E. Lee,  
Compliance Test Manager

enclosure(s)  
cc: Applicant  
del/ca

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

FCC ID: P6ZCI00063  
MFA p0360008, d04c0013



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## Transmitter Certification

of

FCC ID: P6ZCI00063

Model: DRB-25

to

**Federal Communications Commission**

Rule Part(s) 2, 90, 95, Confidentiality  
Class II Permissive Change

Date of report: December 7, 2004

**On the Behalf of the Applicant:**

Westel Wireless Systems Pty Ltd

**At the Request of:**

P.O. WWS DMR PO 076

Comserv, Inc.  
895 N. White Station Road  
Memphis, TN 38122-3021  
(901) 767-6800; FAX: -4555

**Attention of:**

Ken Hunt, Director, Technical Services  
(901) 681-1716 (direct); (901) 226-7211 (pager)  
E-mail: [kenhunt@comservinc.com](mailto:kenhunt@comservinc.com)

**Supervised by:**

David E. Lee,  
Compliance Test Manager

M. Flom Associates, Inc.  
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FCC ID: P6ZCI00063  
MFA p0360008, d04c0013

**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.

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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: d04c0013

d) Client: Comserv, Inc.  
895 N. White Station Road  
Memphis, TN 38122-3021  
(901) 767-6800; FAX: -4555

e) Identification: DRB-25  
FCC ID: P6ZCI00063  
EUT Description: Base Station Transceiver (50W UHF)

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

g) Report Date: December 7, 2004  
EUT Received: June 20, 2004

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:



David E. Lee,  
Compliance Test 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.

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
- 22 Subpart H - Cellular Radiotelephone Service
- 22.901(d) - Alternative technologies and auxiliary services
- 23 - International Fixed Public Radiocommunication services
- 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 C63.4-1992/2001, 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.



## 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**



## 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: Westel Wireless Systems Pty Ltd

FCC ID: P6ZCI00063

The applicant has made design changes/improvements to the originally FCC approved equipment.

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:

**No hardware or software changes have been made to the unit.**

When the application was first made the Emission Designators 8K10F1E and 8K10F1D were not included to signify APCO P25 compliance. The applicant now wishes to add these designators to the Grant.

This report includes new Occupied Bandwidth plots showing compliance.

## List of General Information Required for Certification

In Accordance with FCC Rules and Regulations,  
Volume II, Part 2 and to

2, 90, 95, Confidentiality

Sub-part 2.1033

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

Westel Wireless Systems Pty Ltd  
Level 13, 15 Blue Street  
North Sydney, Australia NSW 2060

**Manufacturer:**

Westel Wireless Systems Pty Ltd  
Level 13, 15 Blue Street  
North Sydney, Australia NSW 2060

(c)(2): **FCC ID:** P6ZCI00063

**Model Number:** DRB-25

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

Please see attached exhibits

(c)(4): **Type of Emission:** 16K0F3E, 11K0F3E, 8K10F1E, 8K10F1D

(c)(5): **Frequency Range, MHz:** 400 to 470

(c)(6): **Power Rating, Watts:** 6 to 60  
 Switchable                       Variable                       N/A

**FCC Grant Note:** BD - The output power is continuously variable from the value listed in this entry to 10%-15% of the value listed.

(c)(7): **Maximum Power Rating, Watts:** 300

**DUT Results:** Passes  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	=	11.0
Collector Voltage, Vdc	=	24.0
Supply Voltage, Vac	=	115

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

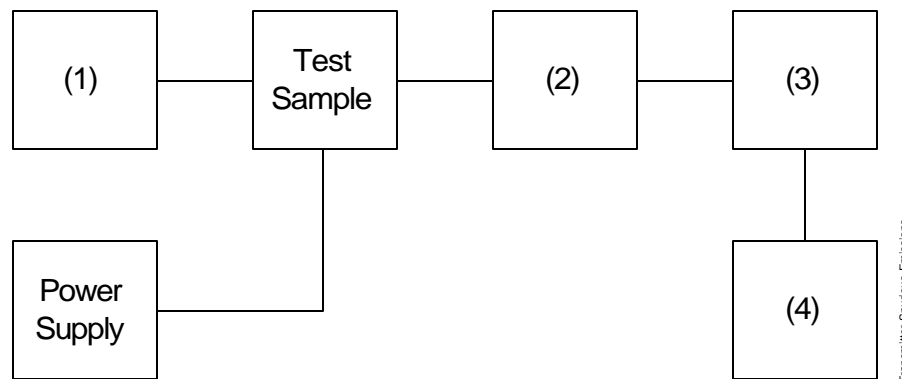
Follows

**Name of Test:** Emission Masks (Occupied Bandwidth)  
**Specification:** 47 CFR 2.1049(c)(1)  
**Guide:** ANSI/TIA/EIA-603-1992, Paragraph 2.2.11

**Measurement Procedure**

- A) The EUT and test equipment were set up as shown below
- B) For EUTs supporting audio modulation, the audio signal generator was adjusted to the frequency of maximum response and with output level set for  $\pm 2.5/\pm 1.25$  kHz deviation (or 50% modulation). With level constant, the signal level was increased 16 dB.
- C) For EUTs supporting digital modulation, the digital modulation mode was operated to its maximum extent.
- D) The Occupied Bandwidth was measured with the Spectrum Analyzer controls set as shown on the test results.

**Transmitter Test Set-Up: Occupied Bandwidth**



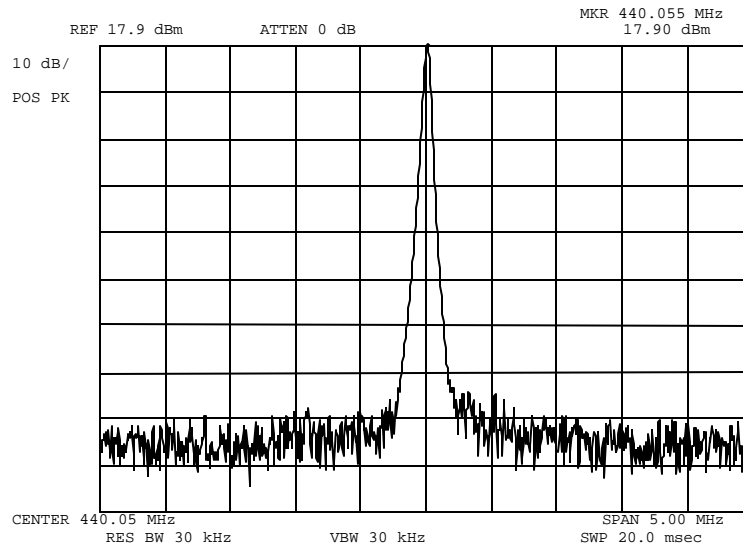
Asset	Description	s/n	Cycle	Last Cal
<b>(1) Audio Oscillator/Generator</b>				
X	i00017 HP 8903A Modulation Meter	2216A01753	12 mo.	Apr-04
<b>(2) Coaxial Attenuator</b>				
X	i00231/2 PASTERNAK PE7021-30 (30 dB)	231 or 232	NCR	
	i00123 NARDA 766 (10 dB)	7802A	NCR	
<b>(3) Interface</b>				
X	i00021 HP 8954A Transceiver Interface	2146A00159	NCR	
<b>(4) Spectrum Analyzer</b>				
X	i00048 HP 8566B Spectrum Analyzer	2511A01467	12 mo.	Oct-04
	i00029 HP 8563E Spectrum Analyzer	3213A00104	12 mo.	May-04

Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0360089: 2003-Jun-26 Thu 10:02:00  
State: 2:High Power


Ambient Temperature: 23°C ± 3°C



Power:  
Modulation:

HIGH  
NONE  
REFERENCE 440.05MHZ  
(17.9dB + Attenuator of 30dB)

Performed by:

  
David E. Lee,  
Compliance Test Manager









**Name of Test:** Necessary Bandwidth and Emission Bandwidth

**Specification:** 47 CFR 2.202(g)

Modulation = 16K0F3E

**Necessary Bandwidth Calculation:**

Maximum Modulation (M), kHz	=	3
Maximum Deviation (D), kHz	=	5
Constant Factor (K)	=	1
Necessary Bandwidth ( $B_N$ ), kHz	=	$(2 \times M) + (2 \times D \times K)$
	=	16.0

Modulation = 11K0F3E

**Necessary Bandwidth Calculation:**

Maximum Modulation (M), kHz	=	3
Maximum Deviation (D), kHz	=	2.5
Constant Factor (K)	=	1
Necessary Bandwidth ( $B_N$ ), kHz	=	$(2 \times M) + (2 \times D \times K)$
	=	11.0

Modulation = 8K10F1E

**Necessary Bandwidth Calculation:**

Maximum Modulation (M), kHz	=	
Maximum Deviation (D), kHz	=	2.5
Constant Factor (K)	=	1
Necessary Bandwidth ( $B_N$ ), kHz	=	$(2 \times M) + (2 \times D \times K)$
	=	8.0

Modulation = 8K10F1D

**Necessary Bandwidth Calculation:**

Maximum Modulation (M), kHz	=	3
Maximum Deviation (D), kHz	=	1.25
Constant Factor (K)	=	1
Necessary Bandwidth ( $B_N$ ), kHz	=	$(2 \times M) + (2 \times D \times K)$
	=	8.0



Performed by:

David E. Lee,  
Compliance Test Manager

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:



David E. Lee,  
Compliance Test Manager