

	RF Test Solutions Ltd 409 Cuba Street Alicetown Lower Hutt Wellington, NEW ZEALAND Telephone +64 4 570 2483	Repair and Calibration Centre
---	--	----------------------------------

## Certificate of Calibration

Certificate Number: [REDACTED]

<b>Manufacturer:</b> Nettest <b>Model No:</b> CMA4500 <b>Serial No:</b> [REDACTED] <b>Customer:</b> [REDACTED]  [REDACTED] [REDACTED] [REDACTED]	<b>Description:</b> Singlemode ODTR  <b>Options Installed:</b> Nil <b>Customer Asset No:</b> [REDACTED] <b>Location of Calibration:</b> RF Test Solutions Ltd 409 Cuba Street, Alicetown Lower Hutt New Zealand  <b>Date of Calibration:</b> 18-Mar-2011 <b>Temperature:</b> 23°C ± 5°C <b>Procedure:</b> EMU A.00.00  <b>Received Date:</b> 10-Mar-2011 <b>Humidity:</b> 20 - 80 % RH
---	--

This calibration certificate documents that the instrument was calibrated for the parameters and at the points specified in the relevant RF Test Solutions calibration procedure as defined for this instrument, in accordance with the RF Test Solutions current recommended procedure. **Note:** This calibration certificate may reference instruments manufactured by HP and Agilent as being manufactured by Agilent Technologies, Inc.

As received conditions: Initial Testing found the instrument to be IN-SPECIFICATION for the parameters tested.

No adjustment was necessary to ensure the instruments performance to published specifications.

As shipped conditions: At completion of the service the instrument was found to be IN-SPECIFICATION for the parameters tested.

Based on the manufacturer recommended calibration interval or user defined calibration interval, the next calibration is due on: 18-Mar-2012. The user should determine the suitability of this instrument for its intended use.

This calibration report is composed of a certificate of calibration, performance test results and /or certificate appendices. Each report section is numbered separately. The results of the performance tests are retained for a period of six years.

**Remarks or Special Requirements:**



**Mike Tecofsky**

	<p>RF Test Solutions Ltd 409 Cuba Street Alicetown Lower Hutt Wellington, NEW ZEALAND Telephone +64 4 570 2483</p>	<p>Repair and Calibration Centre</p>
---	--	--

## Certificate of Calibration

Certificate Number: XXXXXXXXXX

### Traceability Information:

**Technician ID:** M Tecofsky

The measurements made in support of this certificate are traceable to one or more of the following national standards laboratories: Industrial Research Limited (New Zealand), National Measurements Institute (Australia), National Institute of Standards and Technology (USA) and the National Physical Laboratory (UK).

Supporting documentation relative to traceability is available for review by appointment.

At planned intervals, our measurement standards are calibrated by comparison to, or measurement against national or international standards, natural physical constants, consensus standards or by ratio type measurements using self calibrating techniques.

### Calibration Equipment Used:

Model Number:	Model Description:	Trace Number:	Cal due date:
81610A	Return Loss Module	RFT2658	11-Nov-2011
81571A	Optical Attenuator	RFT2662	12-Nov-2011
81663A	DFB Laser Source Module	RFT2663	23-Oct-2011
81663A	DFB Laser Source Module	RFT2664	13-Oct-2011

## Measurement Report

RF Test Solutions Ltd  
409 Cuba Street  
Alicetown  
Lower Hutt, New Zealand

**Report Number:** [REDACTED]  
**Manufacturer:** Nettest  
**Model Number:** CMA4500  
**Options:** Nil

**Customer:** [REDACTED]  
**Serial Number:** [REDACTED]  
**ID Number:** [REDACTED]

**Test Date:** 17 Mar 2011  
**Temperature:** 23 +/- 5 °C

**Tested By:** M Tecofsky  
**Humidity:** 20-80 %

**Part Number:**  
**Version:** A.00.00  
**Executive Version:** A.02.49

**Traceability Information is on the Certificate**

Report Number :7154

Test Date :17 Mar 2011

Model Number :CMA4500

Serial Number : [REDACTED]

**PERFORMANCE TEST RESULTS SUMMARY**

<b>TEST NAME</b>	<b>STATUS</b>
Distance Accuracy	Passed
Loss (Attenuation) Accuracy	Passed
Reflectance Accuracy	Done

Report Number :7154	Test Date :17 Mar 2011
Model Number :CMA4500	
Serial Number : [REDACTED]	

**Distance Accuracy**

**Passed**

1310nm Single Mode

<u>Test Distance (km)</u>	<u>Lower Limit</u>	<u>Measured</u>	<u>Upper Limit</u>	
2.0117	2.0115 km	2.01161 km	2.0119 km	Pass
10.0585	10.0581 km	10.05826 km	10.0589 km	Pass
12.0702	12.0698 km	12.06990 km	12.0706 km	Pass

1550nm Single Mode

<u>Test Distance (km)</u>	<u>Lower Limit</u>	<u>Measured</u>	<u>Upper Limit</u>	
2.0117	2.0115 km	2.01155 km	2.0119 km	Pass
10.0585	10.0581 km	10.05829 km	10.0589 km	Pass
12.0702	12.0698 km	12.06994 km	12.0706 km	Pass

**Loss (Attenuation) Accuracy**

**Passed**

1310nm Single Mode

<u>Applied Attenuation</u>	<u>Lower Limit</u>	<u>Measured</u>	<u>Upper Limit</u>	
5	4.800 dB	4.957 dB	5.200 dB	Pass
10	9.600 dB	10.102 dB	10.400 dB	Pass

1550nm Single Mode

<u>Applied Attenuation</u>	<u>Lower Limit</u>	<u>Measured</u>	<u>Upper Limit</u>	
5	4.800 dB	4.814 dB	5.200 dB	Pass
10	9.600 dB	9.797 dB	10.400 dB	Pass

Report Number :7154

Test Date :17 Mar 2011

Model Number :CMA4500

Serial Number : [REDACTED]

**Reflectance Accuracy**

**Done**

1310nm Single Mode

Applied Reflectance

Measured

46.8 dB

46.31 dB Done

1550nm Single Mode

Applied Reflectance

Measured

47.2 dB

46.99 dB Done