

# MN9320A

Optical Channel Drop Unit



*Independent Test Access Tool for Comprehensive  
DWDM Measurements*



# MN9320A

## Access to DWDM Channels and Traffic at One Location

The technique of Dense Wavelength Division Multiplexing is well established and adopted worldwide as a means of increasing the traffic-carrying capacity of a fiber. Optical cross connects, and wavelength routing and translation now make a typical network far more complex in construction. Identification of an individual channel and verification of the data passing over it during installation, commissioning, and routine maintenance as part of a Service Level Agreement (SLA) is becoming more critical. The MN9320A Optical Channel Drop Unit is a test instrument that scans the DWDM optical signal and displays all those channels in the form of a bar graph. Any channel can be selected from this display and fed to the output port which can then be connected to an analyzer such as the Anritsu MP1570A for data validation and testing. Wherever the integrity of a DWDM signal must be verified, the MN9320A can be used.

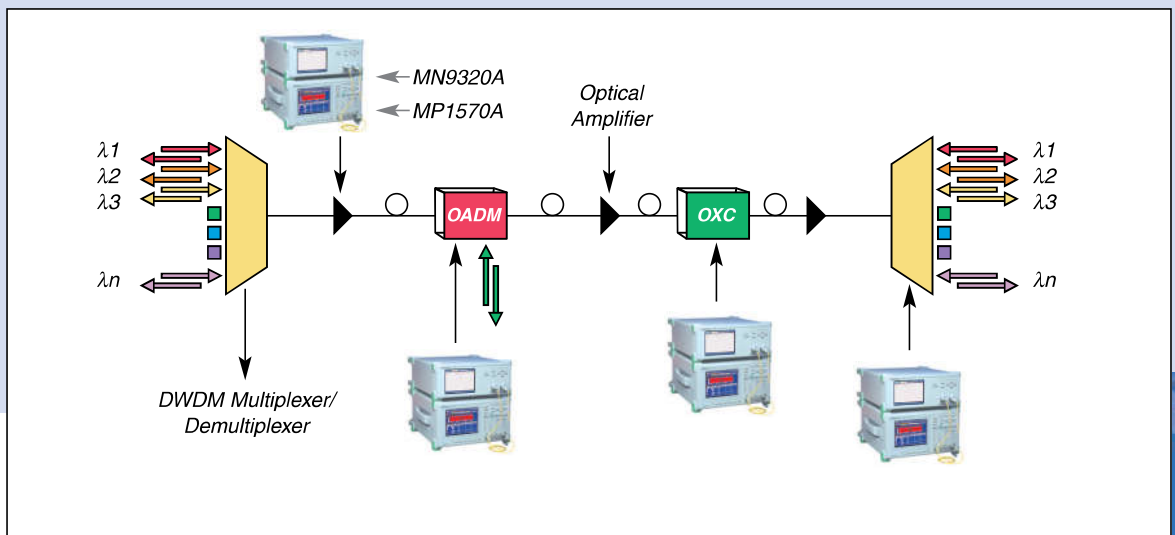
### Product Features

Independent DWDM signal access for channels of 50 GHz spacing or higher-up to data rates of 10 Gbps.

- Provides DWDM channel access to any BER tester
- Measurement of channel wavelength and power
- $\pm 10$  pm wavelength accuracy (typical)
- Optical output protection mode
- ITU-T 50 GHz, 100 GHz, or custom grid capability

Proof of conformance to a customer SLA, isolation of points of failure or performance degradation in a DWDM network can be achieved by connecting the MN9320A to a monitor point in the network and connecting it to an analyzer such as the Anritsu MP1570A. Any DWDM channel signals can then be directed to the input of the BERT for analysis.

Data at rates of up to 10 Gbps and at a spacing as close as 50 GHz are easily handled by the MN9320A.



## Functional and Simple to Use

- Single-button operation
- Channel table shows wavelength and optical power
- Any channel can be dropped
- Filter design prevents data corruption at 10 Gbps

## Access to Individual Channels on a DWDM System

The optical filter design of the MN9320A is specifically intended to access (i.e. drop) an individual channel from a DWDM signal for analysis such as SONET/SDH, BER, Q-Factor, etc. The unique optical filter design combines a wide, flat top and steep sides with very strong adjacent channel rejection, ideally suited for high data rates, up to 10 Gbps.

## Channel Power and Wavelength Measurement

The MN9320A provides accurate measurement of individual channel powers and wavelengths. Wavelength is measured in scan mode.

## Automatic Channel and Grid Detection

The MN9320A enables the user to select a particular power level above which DWDM channels are expected. The unit will then scan and determine the wavelength and channel power of all channels in the measurement range. Results are then presented in tabular or bar graph format. The user can also save a custom grid based on the wavelengths measured. The new custom grid is stored for future use.

## Easy Channel Grid Management

The MN9320A understands that channels are arranged in a grid, and that not all grids are the same. The user interface makes it easy to manage wavelengths based on standard ITU-T grids as well as custom grids. Removing and inserting channels can easily modify existing grids, creating new ones appropriate for the task at hand. Custom grids are easily stored and recalled, reducing measurement time and operator skill levels.

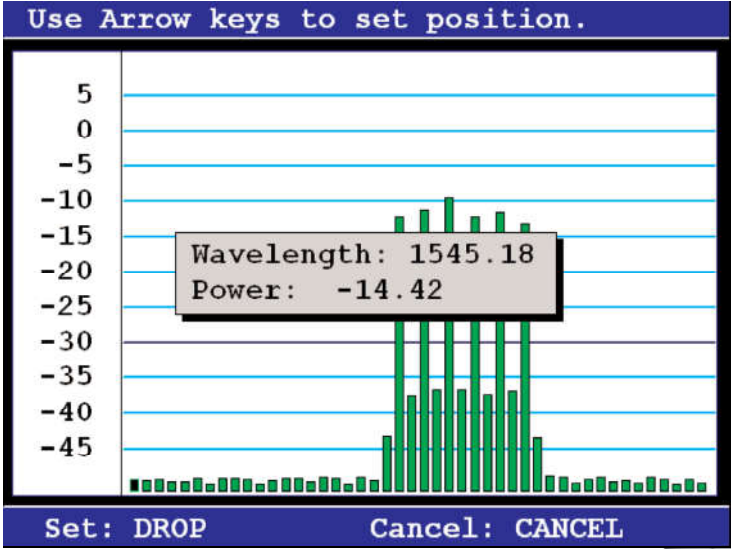
## Optical Output Protection Mode

Any network data analyzer is an expensive test tool, yet the receiver can be easily damaged by the application of a high input power. The MN9320A offers a unique output protection mode to prevent this expensive mistake. When enabled, the unit has a preset level above which the output port will not activate. This level can be changed by the user.

## Incredible Wavelength Accuracy

The optical components within the MN9320A are of the highest quality, providing wavelength accuracy of typically  $\pm 10$  pm so you can be sure it goes back to the same spot, time after time.





Anritsu MN9320A Optical Channel Analyzer

Setup Channels Measurement

Current System

Position Units:

Power Units:

Output Protection:

Channel Grid:

Search Threshold:

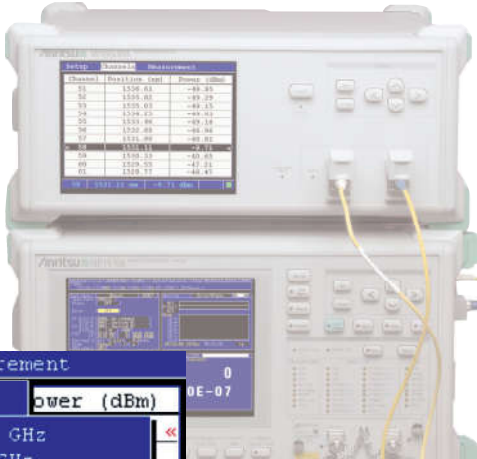
Scan Range Start:

Scan Range End:

Configuration Name:

Press SET To Change

73    1540.16 nm



Setup Channels Measurement

| Channel | Output | Channel            | Power (dBm) |
|---------|--------|--------------------|-------------|
| >> 15   | FGH    | 100 GHz            |             |
| 16      | ABC    | 50 GHz             |             |
| 16      | Insert | Load Custom Grid   |             |
| 18      | Center | Save Current Grid  |             |
| 18      |        | Delete Custom Grid |             |
| 20      |        |                    |             |
| 21      |        | 1560.61            |             |
| 21      |        | 1559.79            |             |
| 23      |        | 1558.98            |             |
| 23      |        | 1558.17            |             |
| 25      |        | 1557.36            |             |

Channel: 15 | 1565.50 nm |

Setup Channels Measurement

| Channel | Position (nm) | Power (dBm) |
|---------|---------------|-------------|
| >> 28   | 1554.94       | -7.38       |
| 30      | 1553.33       | -4.7        |
| 31      | 1551.72       | -8.4        |
| 33      | 1550.92       | -22.8       |
| 33      | 1550.12       | -4.4        |
| 36      | 1548.52       | -6.7        |
|         |               |             |
|         |               |             |
|         |               |             |
|         |               |             |

Channel: 28 | 1554.94 nm | -7.38 dBm

Setup Channels Measurement

Units - Channel Position

Units - Power

Output Protection

Output Protection

Channel Search Threshold

Custom Configuration

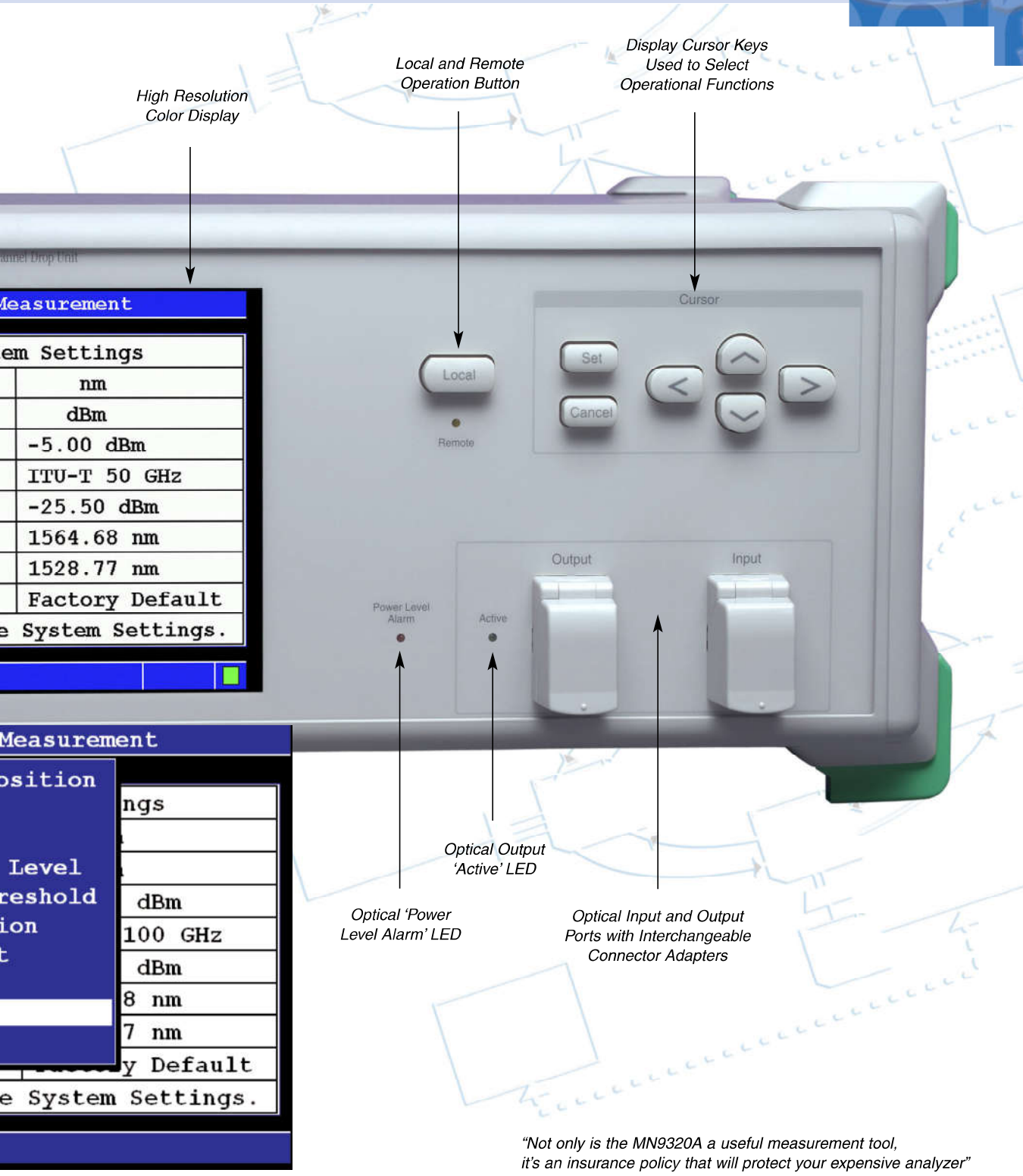
Scan Range - Start

Scan Range - End

System Help

Shut Down

Press SET To Change



High Resolution Color Display

Local and Remote Operation Button

Display Cursor Keys Used to Select Operational Functions

Channel Drop Unit

Measurement

Measurement Settings

|                  |
|------------------|
| nm               |
| dBm              |
| -5.00 dBm        |
| ITU-T 50 GHz     |
| -25.50 dBm       |
| 1564.68 nm       |
| 1528.77 nm       |
| Factory Default  |
| System Settings. |

Cursor

Local

Set

Cancel

Remote

Output

Input

Power Level Alarm

Active

Measurement

Position

Level

Threshold

ion

t

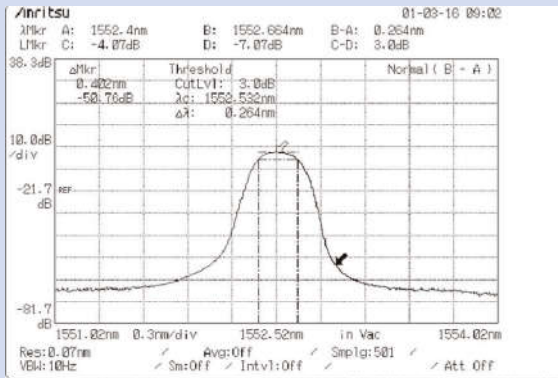
|                  |
|------------------|
| ings             |
| dBm              |
| 100 GHz          |
| dBm              |
| 8 nm             |
| 7 nm             |
| y Default        |
| System Settings. |

Optical Output 'Active' LED

Optical 'Power Level Alarm' LED

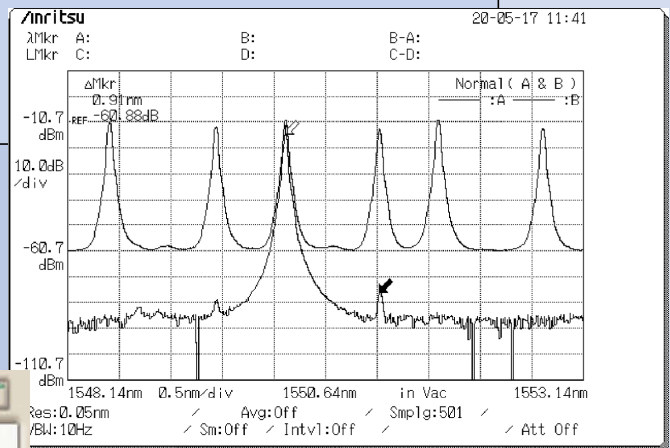
Optical Input and Output Ports with Interchangeable Connector Adapters

"Not only is the MN9320A a useful measurement tool, it's an insurance policy that will protect your expensive analyzer"

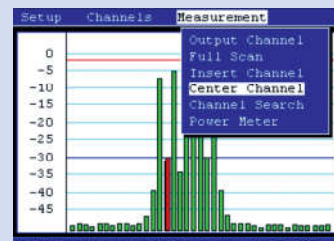
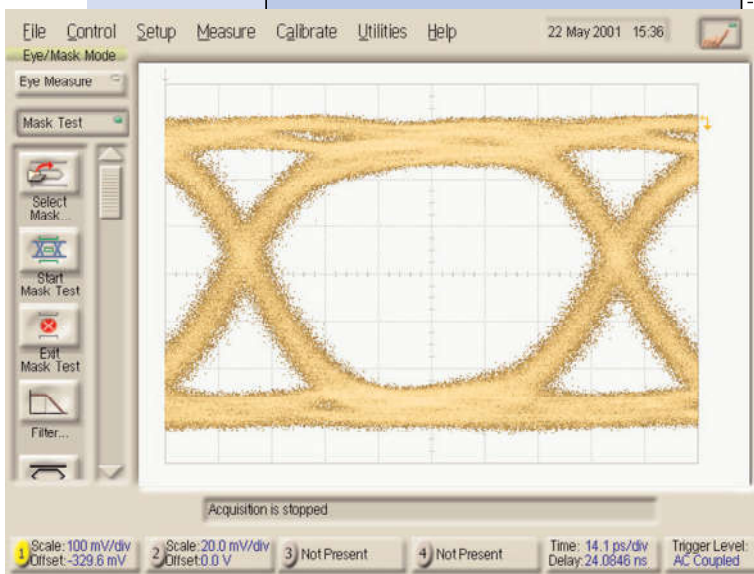


To avoid corruption of high data rate traffic within the channel, a filter shape with steep sides and a flat top is required.

The filter technology used in the MN9320A provides superb shape for 10 Gbps traffic and minimal cross-talk between adjacent channels.



The eye diagram demonstrates that the optical filter in the MN9320A has little or no effect on a 10 Gbps signal.



| Channel | Position (nm) | Power (dBm) |
|---------|---------------|-------------|
| 18      | 1563.05       | -49.54      |
| 18      | 1562.23       | -49.49      |
| 20      | 1561.42       | -49.50      |
| 21      | 1560.61       | -49.32      |
| 21      | 1559.79       | -49.57      |
| 23      | 1558.98       | -49.05      |
| 23      | 1558.17       | -49.25      |
| 25      | 1557.36       | -49.12      |
| 26      | 1556.56       | -46.70      |
| 26      | 1555.75       | -39.41      |
| 28      | 1554.94       | -7.55       |

Channel  
 Search

## Specifications

### MN9320A Optical Channel Drop Unit

#### Optical Performance

|                               |  |
|-------------------------------|--|
| Wavelength range              | 1528 to 1565 nm  |
| Channel drop mode             |  |
| - Channel spacing             | 50 GHz and higher  |
| - Data rate                   | Up to 10 Gbps  |
| Wavelength accuracy           | ±20 pm guaranteed, ±10 pm typical  |
| Wavelength repeatability      | ±10 pm non-additive to wavelength accuracy   |
| ORR @ 0.4 nm                  | >40 dBc typical  |
| Filter full width @ 3 dB      | 0.2 nm   |
| @ 20 dB                       | 0.6 nm   |
| Maximum input power           | +20 dBm  |
| Input power measurement range | -50 to +10 dBm   |
| Power meter accuracy          | ±0.5 dBm for -40 to +10 dBm  |
| Insertion loss                | 8 dB max, <6 dB typical  |
| Display                       | Color STN 6" FVGA  |
| External interfaces           | RS-232, 115 Kbps, 200 Kbps   |
| EMC                           | EN 61326: 1998 STD   |
| Safety                        | EN 61010-1: 1993   |
| Dimensions and mass           | 320(W) x 133(H) x 350(D) mm, 11 kg   |
| Power                         | 115 VAC, 7.0 A, 50/60 Hz, or<br>230 VAC, 4.0 A, 50/60 Hz, auto-selecting<br>(Typical load: <1.5A [115 VAC]; <1.0A [230 VAC]) |
| Temperature range             |  |
| - Operation                   | 0° to 50° C  |
| - Storage                     | -40° to +70° C   |

## Ordering Information

Please specify the model or order number and quantity when ordering.

| Model Number | Description  | Remarks   |
|--------------|--|---|
| MN9320A      | <b>Mainframe</b><br>'C' band Optical Channel Drop Unit*<br><b>Standard accessories supplied with this unit:</b><br>User's Guide<br>AC power cord<br>Protective front cover |   |
|              | <b>Options</b><br><i>Optical Channel Drop Unit with:</i>   |   |
| MN9320A-01   | SC/UPC connectors  |   |
| MN9320A-02   | ST/UPC connectors  |   |
| MN9320A-03   | HMS-10/A connectors  |   |
| 760-218      | <b>Application parts</b><br>Hard carry case  | With storage for power cord, optical patch cords, User's Guide, and other accessories |
| J0617B       | Replaceable connector (FC)   |   |
| J0618D       | Replaceable connector (ST)   |   |
| J0618E       | Replaceable connector (DIN)  |   |
| J0618F       | Replaceable connector (HMS-10/A)   |   |
| J0619B       | Replaceable connector (SC)   |   |

\* Equipped with FC/UPC connectors



ANRITSU COMPANY  
1155 East Collins Boulevard  
Richardson, TX 75081

<http://www.us.anritsu.com>

## SALES & SUPPORT

### UNITED STATES

Tel: 1-800-ANRITSU  
Fax: 972-671-1877

### CANADA

Tel: 1-800-ANRITSU  
Fax: 613-828-5400

### SOUTH AMERICA

Tel: 55-21-527-6922  
Fax: 55-21-537-1456

### JAPAN

Tel: 81-3-3446-1111  
Fax: 81-3-3442-0235

### ASIA-PACIFIC

Tel: 65-282-2400  
Fax: 65-282-2533

### EUROPE

Tel: +44 (0)1582-433433  
Fax: +44 (0)1582-731303

Copyright © 2002 Anritsu Company  
Specifications subject to change without notice.  
Other brand and product names may be trademarks  
or registered trademarks of their respective owners.

January 2002  
P/N : 80401-00128 Rev.1  
Printed in USA

