Agilent portable equipment for testing optical networks
Agilent Modular Network Tester

The Agilent Technologies modular network tester was designed and developed according to the requirements we learnt from our existing customers and other prospective owners and users. It combines answers for the needs of the field (battery life, brilliant display, lightness and ruggedness) with highest technology advances (speed, connectability, and best in class Agilent measurement accuracy and reliability). This is not our product, this is your solution. If you have an optical network to look after, this is the tool you were looking for.

Optical time domain reflectometer

Optical spectrum analyzer

Polarization mode dispersion and differential group delay analyzer

Chromatic dispersion analyzer and 4-λ OTDR
The Agilent N3900A Modular Network Tester

- The modular network tester is designed to be a natural extension of your arm: the lightest platform on the market, with a powerful measurement processor, and an adaptable user interface to match the tool to the task.
- A working day of battery life.
- Softkeys and cursor control, or touchscreen, full functionality at your fingertips, however you want it.

**Agilent N3988A Video Microscope Camera**

- 200 – 500 optical magnification
- One button image capture
- No need for external power supply
- 0.2 Kg weight
- Standard PC format for pictures (JPG, BMP)
- Can be directly connected to any PC with USB support

**Available connector tips**

- FC/PC, FC/APC, SC, SC/APC
- 2.5 mm ferule
- LC, MU, 1.25 mm ferule

**Agilent N3940AA 1x 12 optical switch module**

- Snaps onto the Modular Network Tester behind the OTDR modules.
- The OTDR is connected to the input port of the switch.
- The “Multi-fiber Test Routine” automatically tests 12 fibers in a row.

**Wavelength range**

- 1280-1650 nm

**Insertion Loss**

- 27 dB

**Return Loss**

- 40dB (straight connector), 50dB (angled connector)

**Agilent N3900A connectivity options**

- Universal serial bus (USB 1.1) for Video microscope camera
- USB 1.1 peripheral, transmission up to 12Mbit/s
- RS232C
- Parallel port
- LAN: RJ-45 jack, Ethernet 10/100
- Keyboard
- Analog monitor output (SVGA)
- Floppy disk

**Display**

SVGA-LCD 10.4” TFT display 800 x 600 pixels

**Weight**

3.3 kg (including Battery pack)

**Battery**

5 hours of continuous measurement.
< 3 hours charging time
OTDR test engines
Agilent N3910AM, N3911AL, N3914AL & N3910AL

• Each OTDR engine has built in RISC processing power for fast and accurate trace acquisition.
• For long haul links, Agilent N3910AL (1310&1550nm) and N3911AL (1550&1625nm).
• For metro links: Agilent N3914AL (1310, 1550 & 1625nm).

Minimum sample spacing:
4 cm
Pulse width:
selectable, from 10 ns to 20 µs
Event dead zone
(for all single mode modules) 3 m
Attenuation dead zone
10m @ 1310nm / 12m @ 1550nm
14m @1625nm
Linearity
± 0.03 dB (1-100 nm)

Built-in applications
• OTDR mode.
• Pass/Fail test
• Macro bending finder
• Multi-fiber test
• Accumulated optical return loss and end to end loss
• Loop back fiber testing mode
• CW and source mode.

Chromatic dispersion analyzer
Agilent N3916AL

• Powerful built-in measurement algorithms provide the user with fiber type and accurate chromatic dispersion information.
• Access to just one fiber end is necessary.
• This engine combines the CD analyzer with the capabilities of a 4-Wavelength OTDR.

Zero dispersion wavelength
Repeatability ± 0.6 nm
Dispersion coefficient
Accuracy ± 0.5 ps/nm/km
Repeatability ± 0.05 ps/nm/km
Dispersion range
± 2500 ps/nm
Wavelength range
1250 nm to 1700 nm

• Fiber loss test and chromatic dispersion in one go.
• For easy dispersion compensation planning, the user directly gets dispersion values and dispersion slope ratios as a function of the wavelength.

Modular Network Tester N3900A

<table>
<thead>
<tr>
<th>Wavelength SM OTDR Modules</th>
<th>40dB</th>
<th>43dB</th>
<th>45 dB</th>
</tr>
</thead>
<tbody>
<tr>
<td>1310/1550 nm</td>
<td>N3910AM</td>
<td></td>
<td>N3910AL</td>
</tr>
<tr>
<td>1550/1625 nm</td>
<td>N3911AL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1310/1550/1625 nm</td>
<td>N3914AL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1310/1480/1550/1625 nm</td>
<td>N3916AL</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Polarization mode dispersion analyzer
Agilent N3909A

- Agilent Technologies is first again to implement state of the art measurement technology: A field PMD analyzer based on the “gold standard” Jones Matrix Eigenanalysis method.
- Genuine differential group delay (DGD) measurements instead of a single calculated PMD value per fiber. By measuring DGD and then calculating PMD, you get the highest accuracy and the most reliable results.
- DGD distribution over the transmission band.
- Measure through active components, such as amplifiers, without sacrificing accuracy.
- Link loss over wavelength.
- As a tool for troubleshooting optical networks and identifying problems, this is truly a dream made real.

Wavelength range
1525 nm to 1620 nm
Measurement time
< 15 s
DGD range
0 ps to 300 ps
PMD range
0 ps to 115 ps
PMD accuracy
±(0.02ps + 2% of PMD)
Link loss accuracy
+/−0.4dB

Optical spectrum analyzer engine
Agilent N3935A

- Designed for use in systems with channel spacing down to 25GHz.
- Like all the modular network test engines, built for the rigors of the outside plant environment, to be shared and above all to be reliable.
- Enough dynamic range to detect any fault.
- One button completion of predefined jobs.

Built-in test routines and applications:
- Channel planning tool
- Spectral analysis with real time (continuous) and average measurements.
- Automatic detection of missing and/or unexpected channels.
- Pass/Fail Test for all parameters (OSNR, Power, channel frequency and drift, total power)

Dynamic range
45dBc@100GHz and 40dBc@50GHz
Resolution Bandwidth (FWHM)
< 100 pm
Scanning Resolution
0.005 nm
PDL
±0.05 dB
Wavelength accuracy
±40pm
Power Noise Level
-70 dBm
The Agilent Mini-OTDR
The lightest, smartest OTDR on the market

The Agilent Mini OTDR family offers you the most advanced technology for portable equipment: measurements that are simultaneously fast, reliable and accurate, best trace resolution from the connector to the end of the link, 8 hours of battery operation and just 2.9 kg. It makes your work easier before you even switch it on.

**Built-in applications**
- OTDR expert mode.
- Multi-fiber test
- Pass fail test and event table
- Optical return loss and end to end loss
- Traffic detection
- Fiber break locator
- OTDR wizard and auto-text for novice operators

### Minimum sample space
4 cm

### Pulse width
10 ns to 20 µs

### Event dead zone
3 m

### Attenuation dead zone
10/12/14 m at 1310/1550/1625 nm

---

**Mini OTDR E6000C**

<table>
<thead>
<tr>
<th>Wavelength SM OTDR Modules</th>
<th>Deadzone</th>
<th>30dB</th>
<th>35dB</th>
<th>40dB</th>
<th>43dB</th>
<th>45dB</th>
</tr>
</thead>
<tbody>
<tr>
<td>1310/1550 nm</td>
<td>3m</td>
<td>E6004A</td>
<td>E6003A</td>
<td>E6003B</td>
<td>E6008B</td>
<td></td>
</tr>
<tr>
<td>1310/1550 nm</td>
<td>1.5 m</td>
<td></td>
<td></td>
<td></td>
<td>E6003C</td>
<td></td>
</tr>
<tr>
<td>1550/1625 nm</td>
<td>3m</td>
<td></td>
<td></td>
<td></td>
<td>E6012A</td>
<td></td>
</tr>
<tr>
<td>1310/1550/1625 nm</td>
<td>3m</td>
<td></td>
<td></td>
<td></td>
<td>E6013A</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Wavelength MM OTDR Modules</th>
<th>Deadzone</th>
<th>23dB</th>
<th>35dB</th>
</tr>
</thead>
<tbody>
<tr>
<td>850/1300 nm</td>
<td>3m</td>
<td>E6005A</td>
<td></td>
</tr>
<tr>
<td>850/1300 nm</td>
<td>3m</td>
<td>E6009A</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Wavelength Power Meter Sub module E6006A</th>
<th>Power Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>800 - 1650 nm</td>
<td>-70dBm to +10dBm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Visual Fault Locator Sub module E6007A</th>
<th>Distance range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red Visible Light (635nm)</td>
<td>up to 5 km</td>
</tr>
</tbody>
</table>