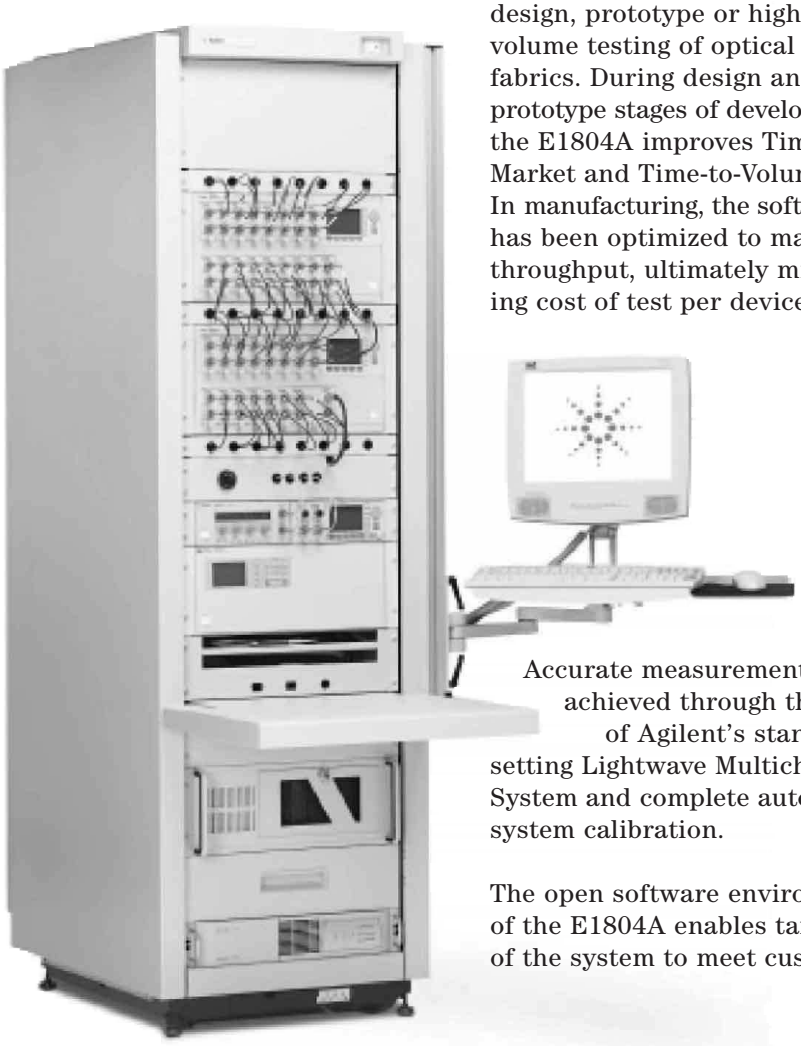
# Agilent E1804A Optical Switch Test

Data Sheet



**E1804A Optical Switch Test System**
The E1804A Optical Switch Test System is a scalable turnkey measurement solution for design, prototype or high volume testing of optical switch fabrics. During design and prototype stages of development, the E1804A improves Time-to-Market and Time-to-Volume. In manufacturing, the software has been optimized to maximize throughput, ultimately minimizing cost of test per device.

Accurate measurements are achieved through the use of Agilent's standard-setting Lightwave Multichannel System and complete automated system calibration.

The open software environment of the E1804A enables tailoring of the system to meet customer needs. Examples of tailoring options include device under test (DUT) control software and hardware, custom reports, and environmental chamber control.

**Reduce Time to Market**
In the R&D or early manufacturing stage of testing, having an integrated solution improves Time-to-Market and Time-to-Volume.

**Improve Throughput**
In manufacturing, throughput is critical! The Optical Switch Test system software has been optimized to maximize throughput. Careful design of the software ensures the efficient acquisition and storage of large amounts of data that would be generated by large matrices. Configurable test plans allow the customer to make additional tradeoffs; providing just enough test to optimize overall throughput.

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### Reduce Cost of Test per Device

The capability to generate fast and accurate measurements reduces cost of test per device.

### System Tailoring

The Optical Switch Test System can be tailored to meet specific customer needs. The software architecture is designed to allow cost effective tailoring to maximize customer value. A solution delivery team, with years of lightwave test experience, is available to the customer to help them get exactly what they need.

### System Software

The Optical Switch Test system maintains an open software architecture that supports both R&D and manufacturing use. The system includes Windows 2000, test executive and database integration - the system can output data to the optional internal database or to an ODBC compliant corporate database.

### System Hardware

The Optical Switch Test system uses an Agilent standard-setting Lightwave Multichannel System, power meters and return loss modules with fixed wavelength sources.

## Specifications

Preliminary System Measurements

| | System Characteristics | Specifications |
|---|---|---|
| | Port Count (IN x OUT) | Up to 100 x 100 (with three 8166A mainframes) |
| | Wavelength Range/Accuracy | See Laser Source selected |
| | DUT Optical Input Power | +4 to – 12 dBm depending on source configuration |
| **Insertion Loss/Crosstalk Measurements** | Dynamic Range | > 65 dB |
| | Loss Measurement Accuracy (0 to < 15 dB) | ± 0.04 dB |
| | Loss Measurement Repeatability | < 0.02 dB |
| **PDL Measurements** | PDL Accuracy (for IL of 0 to < 15 dB) | ± 0.05 dB |
| | PDL Measurement Repeatability | < 0.02 dB |
| **Return Loss Measurements** | Dynamic Range | > 60 dB range |
| | Return Loss Measurement Accuracy (< 55 dB) | ± 0.50 dB |
| | RL Measurement Repeatability | TBD |
| **Environmental Conditions** | Operating Temperature | 10 to 35°C* |
| | Storage Temperature | – 40 to 70°C* |
| | Humidity | 80% RH* |

*Specifications exclude DUT connector effects.

**Preliminary System Features**

- Optically characterize N x M
- Optical Switch Fabrics
- Measures:
  - Insertion Loss (IL)
  - Insertion Loss with PDL
  - Crosstalk (Xtalk)
  - Cumulative Crosstalk
  - Switching speed (Activation, Deactivation)
  - Return Loss
- Source flexibility — Fixed 1310, 1550 & 1625 nm Lasers Standard, and/or TLS optional

**Standard System Features:**
The basic OST System consists of a Windows 2000 computer workstation, combined fixed and optional tunable laser source (TLS), a polarization scrambler, DUT input switch and two or more separate power sensor modules (PM). The instruments are controlled by the PC via GP-IB.

The open architecture includes:

- Industry standard platform (Intel/Microsoft)
- Test Executive (NI TestStand 2.0) facilitates:
  - Test sequence flexibility
  - Adding instruments/tests
  - New test SW may be written in many different languages including LabView, VB
  - Combining applications/ tailoring
- Supports both R&D and Manufacturing needs
- Database connectivity

The OST foundation is the standard-setting Lightwave Multichannel System, power meters, and return loss modules with fixed wavelength sources.

**System Hardware Options Include:**

- Configurable Port Count
- 1310 nm Fixed Laser Source
- Tunable Laser Source enables stepped wavelength measurements

**System Software Options Include:**

- High-performance Database
- National Instruments Test Stand Development License

**System Tailoring Services:**
Tailoring of the system is available to meet customer specific needs. Typical examples include:

- DUT control software and/or hardware
- Manufacturing user interface
- Customer specific reports
- Control of external systems or instruments (environmental chambers, power supplies, etc.)

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(fax) 905 282 6495

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**Europe:**
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(fax) (31 20) 547 2390

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**Korea:**
(tel) (82 2) 2004 5004
(fax) (82 2) 2004 5115

**Latin America:**
(tel) 305 269 7500
(fax) 305 269 7599

**Taiwan:**
(tel) 0800 047 866
(fax) 0800 286 331

**Other Asia Pacific Countries:**
(tel) (65) 6375 8100
(fax) (65) 6836 0252
Email: tm_asia@agilent.com


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