

Characterize your SONET/SDH  
devices fast and accurately

## OmnibER 725



**Agilent Technologies**  
Innovating the HP Way

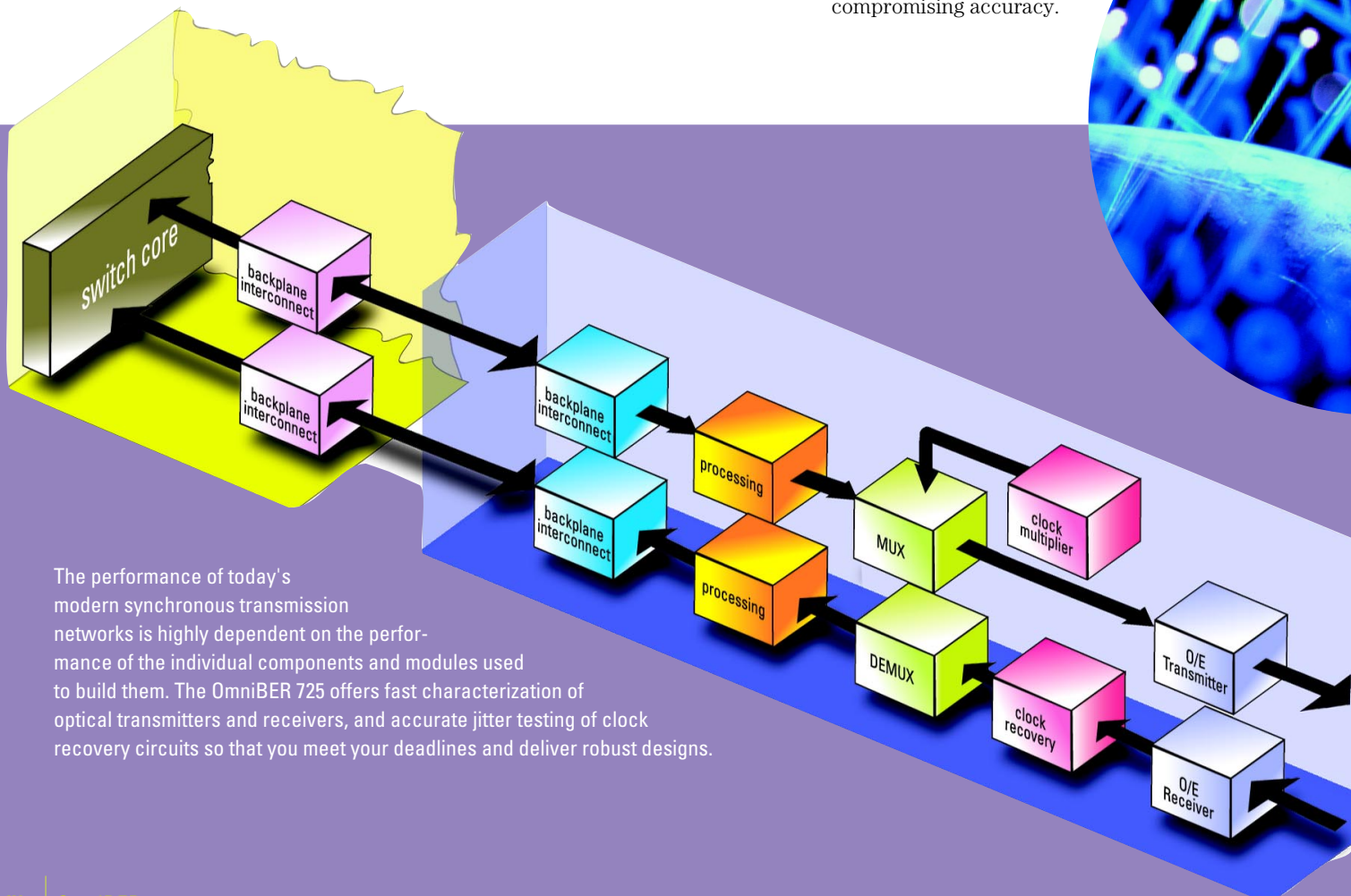
# qualify optical and electrical devices efficiently

When you're racing to get new SONET/SDH components and modules on the market, characterizing optical and electrical devices needs to be fast and precise. With the Agilent Technologies OmniBER 725 communications performance analyzer you get lab-quality performance, plus flexibility, for increased throughput to help bring your innovations to market faster than ever.

The OmniBER 725 combines the OmniBER family's acclaimed 2.5 Gb/s jitter capability with the ability to interface electrically to a variety of electrical and optical modules and components. In addition, the analyzer can generate unframed pseudo-random binary sequence (PRBS) test patterns to ensure absolute error-free performance of devices. So not only do you have increased test efficiency, you can manage all your testing with one test set rather than switching to others.

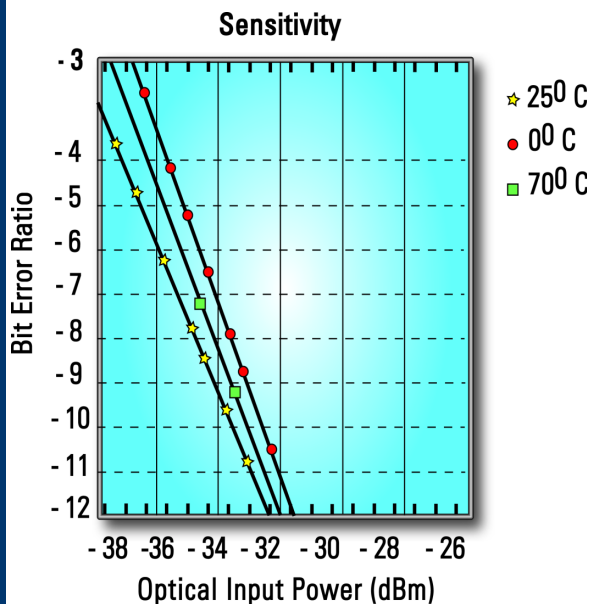
What's more, because the OmniBER 725 is also equipped with concatenated payloads—vital for representative jitter testing—you'll test transmitter and receiver modules faster, with greater confidence.

With differential clock and data interfaces at all line rates between 52 Mb/s and 2.5 Gb/s, a suite of BER and jitter measurements to Bellcore/ITU-T standards, and unframed PRBS generation and analysis, the OmniBER 725 will help you test more devices in a shorter period of time. Without compromising accuracy.



Because the OmniBER 725's transmitter and receiver can be independently configured to test electrical or optical signals, testing optical modules couldn't be easier. For example, when the analyzer is configured to transmit an electrical test signal and receive an optical signal, you can measure the bit error rate of the test signal plus optical power and frequency. Used in conjunction with a variable attenuator, this capability allows sensitivity curves to be constructed to fully characterize optical receivers.

[independent electrical and optical signals]



Test the entire signal payload and overhead area with one simple, fast test. The OmniBER 725 lets you turn SONET/SDH framing off so you can generate an unframed pseudo-random binary sequence (PRBS) test pattern to quickly and accurately characterize the BER and jitter performance of your devices, including clock recovery circuits.

[flexible payloads]

Want faster throughput? Then use the OmniBER 725 to interface to differential components and modules. With differential interfaces available, you potentially reduce your test time by at least half when compared to testers providing only single-ended test signals. Moreover, testing is more realistic as the analyzer tests both halves of the signal simultaneously so that nothing is left to interpretation. You'll not just save time either—you can also interface to single-ended devices allowing you to test a greater mix of product. That's interface flexibility.

[differential interfaces]

# check jitter tolerance with confidence

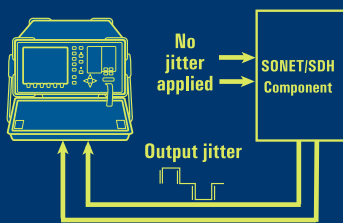
If you're challenged by jitter look no further than the OmniBER 725. With its low jitter intrinsics, you'll easily identify and pin down high frequency and low frequency jitter problems both in the design and manufacture of components and modules.

User-definable jitter masks for auto-tolerance and transfer testing allow you to specify precise checkpoints to test known problem areas. Plus, jitter generation and measurement capability at all synchronous rates (52, 155, 622 Mb/s and 2.5 Gb/s) are included.

The OmniBER 725 meets all Bellcore and ITU-T equipment recommendations, including ITU-T O.172. With fast automatic measurements to all the necessary equipment recommendations, the OminBER 725 is the ideal choice for testing optical and electrical clock signals.



## [output jitter]

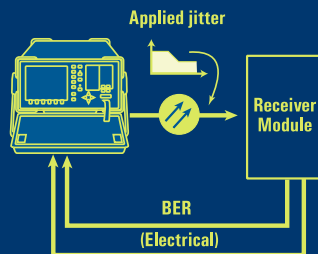


(to ITU-T O.172, G.825 and G.958; Bellcore GR-253)

Meet low intrinsics and tight accuracy ITU-T and Bellcore specifications.

- All SONET/SDH rates
- Electrical clock and optical
- 1.6 UI, 16 UI and 64 UI measurement ranges
- Extended receiver range up to 1024 UI

## [jitter and wander tolerance]

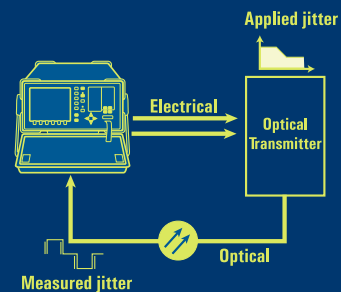


(to ITU-T G.825 and G.958; Bellcore GR-253)

Jitter and wander tolerance testing for checking clock recovery circuits.

- User programmable masks for jitter tolerance testing
- Generate up to 800 UI jitter and up to 57,600 UI wander
- Modulation frequencies from 10  $\mu$ Hz to 20 MHz
- Add line frequency offset during jitter tolerance test

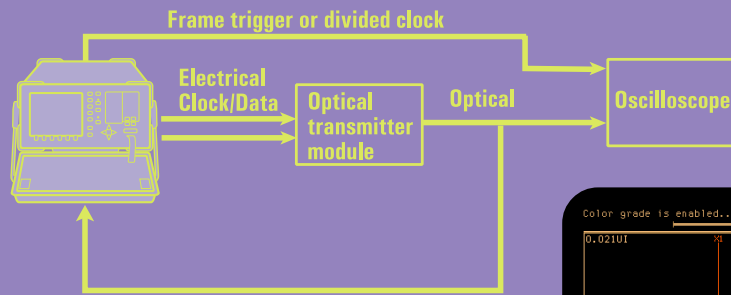
## [jitter transfer]



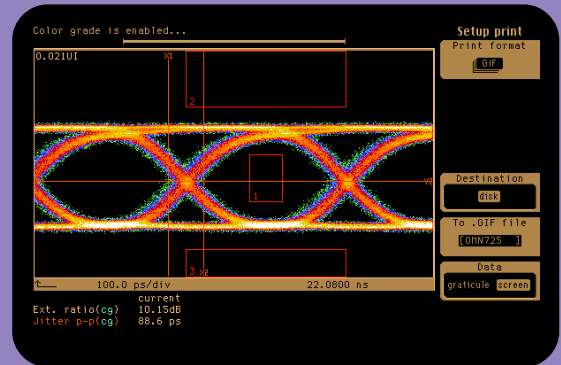
(to ITU-T G.958; Bellcore GR-253)

Automatic jitter transfer capability for accurate, repeatable results.

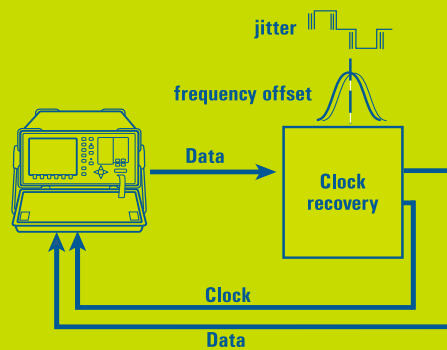
- Narrowband, 10 Hz, selective filtering for jitter transfer testing
- Graphical and tabular results presentation



Simplify the measurement of eye diagram and pulse shape. The OmniBER 725 provides a divided clock output and frame trigger for measurements using an oscilloscope. These additional trigger outputs simplify test setups for faster testing.



If you're designing leading-edge optical devices for the network you need to stress their performance thoroughly. Now you can test the ability of a module's clock recovery circuits to provide a stable clock reference. The OmniBER 725 lets you create frequency offsets, or add jitter, and measure the frequency of the output signal from the device-under-test. Stress testing to this level means you'll eliminate faulty devices early, increasing your test efficiency and saving you costly re-test.



[stress clock recovery circuits]

The OmniBER 725 approach to testing components and modules for SONET/SDH network equipment is to make sure that (1) your products are brought to market faster (2) they comply fully with Bellcore or ITU-T recommendations; and (3) you have performance and flexibility to hand whenever you need it. That way, the full benefits of your products will meet your customers' requirements and expectations.

The analyzer performs both functional and parametric tests to give improved throughput and lower cost-of-test. The unrivalled accuracy and repeatability of results from both optical and electrical interfaces helps you deliver with confidence. And with many of the tests being performed simultaneously, you get fast, accurate measurements making

[manufacturing]

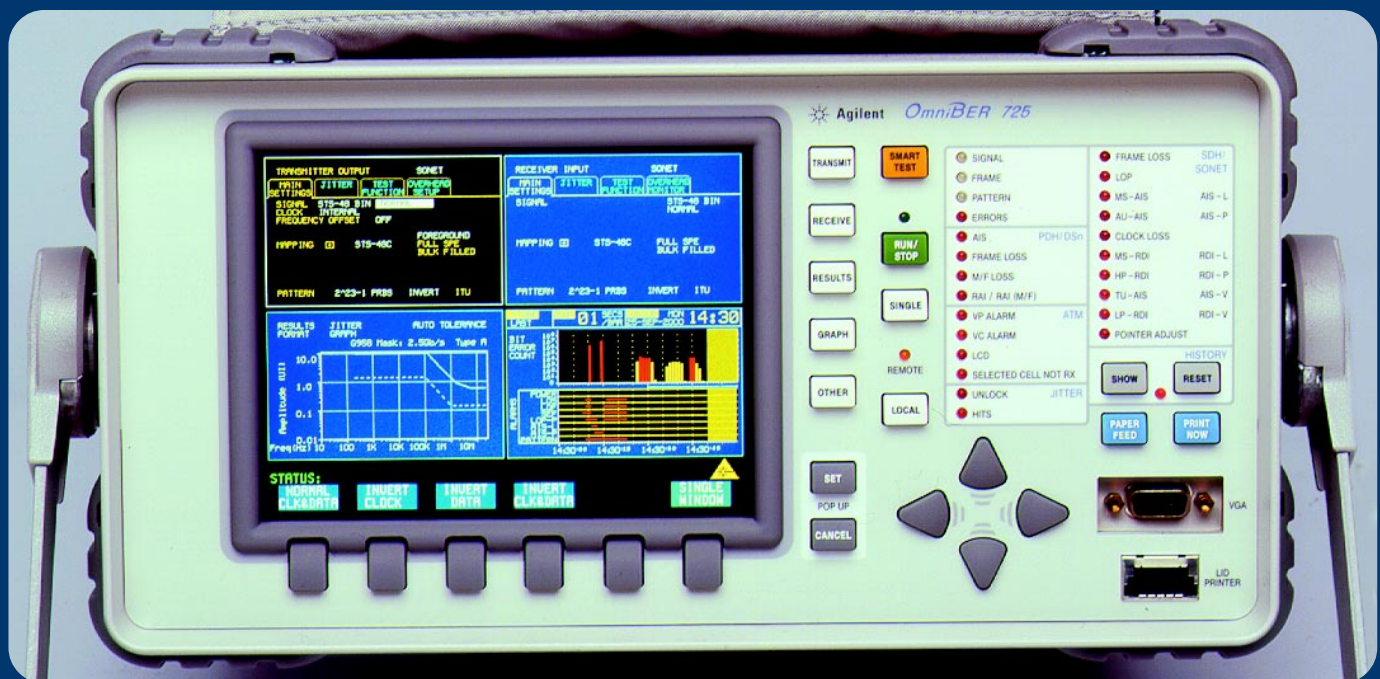
# making testing easier and faster

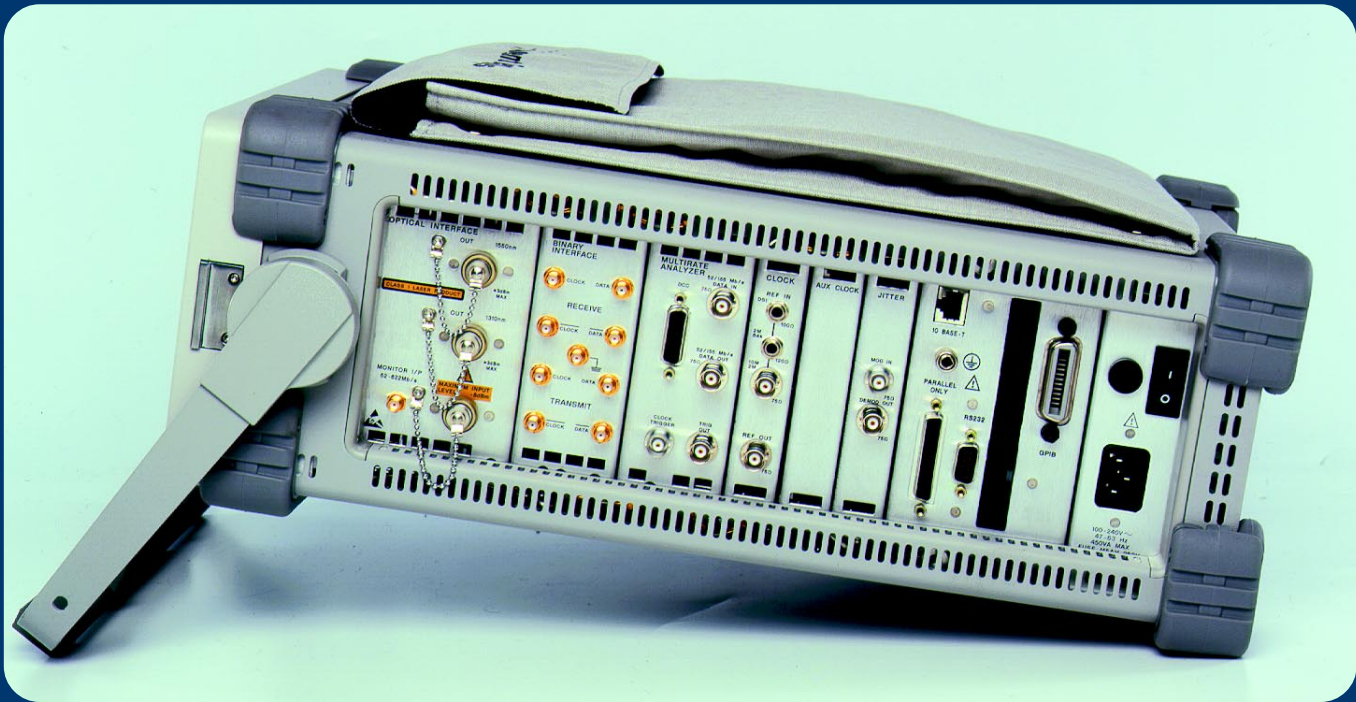
The key to greater productivity is simpler testing. Which is why the OmniBER 725's user interface is designed to get both experienced engineers and technicians testing effectively in the shortest possible time. From the easy-to-understand, multi-window color display to an array of easy-to-use features, the OmniBER 725 offers fast, intuitive operation.

The analyzer's SmartTest mode provides a short-cut to many powerful and frequently used test functions. There's automated scanning of alarms and errors, access to all the overhead bytes, and graphical representation of results for easy interpretation. Plus, the integral printer ensures you'll always have a hard copy of results when you need them. In short, the OmniBER 725 is designed to simplify your day-to-day tasks to improve your time-to-market.

## Easy-to-use test capability includes:

- Structured SONET/SDH payloads
- Concatenated payloads to OC-48c/STM-16c
- Control of clock/data polarity
- Full error and alarm generation and detection
- Frequency and optical power measurements





- **Optical and electrical interfaces (choose 1310, 1550 or 1310/1550 nm)**  
Select either BER-only or BER and jitter test. Transmit and receive interfaces cover all rates from 52, 155, 622 Mb/s through 2.5 Gb/s (STM-0/OC-1 to STM-16/OC-48).

- **Flexible test signals**  
Structured SONET/SDH up to OC-48c/STM-16c. Unframed PRBS capability.

- **Frame pulse, divided clock and trigger outputs**  
Synchronize your oscilloscopes for pulse mask, eye diagram testing etc.

- **Multiple synchronization inputs**  
10 MHz, 2 and 1.5 Mb/s, and 64 kb/s reference inputs.

- **Jitter transmitter (optional)**  
Jitter and wander generation up to 2.5 Gb/s. Auto jitter tolerance/transfer plus external jitter modulation input.

- **DSP-based jitter measurement (optional)**  
ITU-T 0.172 switchable measurement filters. Unrivalled low intrinsic, plus rms/peak-to-peak measurements. LP/HP and 12 kHz HP filters plus 0.001 UI resolution, external demodulated jitter output.

- **Full remote control**  
GP-IB, RS-232-C, LAN programming control.

- **Floppy disk drive**

Install firmware upgrades, store/recall graphic results, log results, store bitmaps of screen shots.

- **Auto-ranging power supply**  
Global operation without worrying about setting voltage selection switches.

- **Integral in-lid printer (optional)**  
80 column full width graphics printer for results logging, graphics printout and screen dumps.

[performance summary]

For more information:

Call your local Agilent Technologies sales office and find out how to speed up optical and electrical component test without delay.

## Product literature

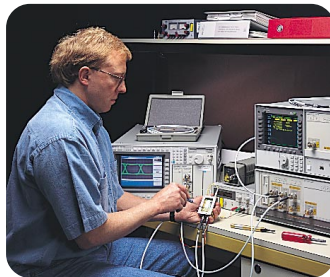
You'll find further details of the OmniBER 725 analyzer's test capability in the product specifications publication no. 5980-3131EN and configuration guide publication no. 5988-1124EN.

## Related products



[OmniBER 718]

The Agilent Technologies OmniBER 718 communications performance analyzer is a rugged, portable one-box solution for manufacturing, installation and maintenance of SDH/SONET networks and network elements. It provides full PDH/T-carrier and SDH/SONET capability up to 2.5 Gb/s, including STM-16c/OC-48c payloads, ATM, jitter and POS. For further information, refer to publication no. 5968-8740E.



[71612B]

The 71612B series of 12 Gb/s testers addresses applications for high speed digital test from 100 Mb/s to 12 Gb/s—including R&D and manufacturing test of lightwave components and sub-assemblies, advanced computer technology and high capacity communications systems. For further information, refer to publication no. 5968-2810E.

## Agilent Technologies' Test and Measurement Support, Services, and Assistance

Agilent Technologies aims to maximize the value you receive, while minimizing your risk and problems. We strive to ensure that you get the test and measurement capabilities you paid for and obtain the support you need. Our extensive support resources and services can help you choose the right Agilent products for your applications and apply them successfully. Every instrument and system we sell has a global warranty. Support is available for at least five years beyond the production life of the product. Two concepts underlie Agilent's overall support policy: "Our Promise" and "Your Advantage."

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Our Promise means your Agilent test and measurement equipment will meet its advertised performance and functionality. When you are choosing new equipment, we will help you with product information, including realistic performance specifications and practical recommendations from experienced test engineers. When you use Agilent equipment, we can verify that it works properly, help with product operation, and provide basic measurement assistance for the use of specified capabilities, at no extra cost upon request. Many self-help tools are available.

### Your Advantage

Your Advantage means that Agilent offers a wide range of additional expert test and measurement services, which you can purchase according to your unique technical and business needs. Solve problems efficiently and gain a competitive edge by contracting with us for calibration, extra-cost upgrades, out-of-warranty repairs, and on-site education and training, as well as design, system integration, project management, and other professional engineering services. Experienced Agilent engineers and technicians worldwide can help you maximize your productivity, optimize the return on investment of your Agilent instruments and systems, and obtain dependable measurement accuracy for the life of those products.

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