ADVANTEST ENTERS MARKET FOR 48Gbps BIT ERROR TESTING

New Bit Error Rate Test Solution Helps Enable Practical Application of High-Volume Fiber-Optic Communications

TOKYO, Japan, September 17, 2002 -- Advantest Corporation (TSE: 6857, NYSE: ATE) announced today that it has begun sales of three new measuring tools developed to help enable the ongoing transition toward practical application of 43Gbps fiber-optic transmissions. Targeting both R&D and manufacturing line applications, the D3691 4:1 Multiplexer, D3692 1:4 Demultiplexer, and the D3693 1:4 PRBS Synthesizer can be combined to enable bit error measurements of up to 48Gbps.

Driven by the explosive growth of the Internet and the corresponding evolution toward faster, higher-volume fiber-optic telecommunications, manufacturers of telecommunication equipment are currently conducting research on increasing transmission bit rates--the number of bits transferred between devices within a given amount of time. One drawback of this approach to increasing fiber capacity, however, is that as companies make the four-fold jump from 10 to 40Gbps bit rates, transmission signals become more susceptible to the effects of noise and attenuation . Thus, to ensure fast, high-quality transmissions, there is an increased need for measuring solutions that can accurately characterize the bit error rate (BER) and transmission characteristics of fiber-optic networks and the components that go into them.

Designed to be part of a modular testing environment, the D3691, D3692, and D3693 combine with existing 12Gbps pulse pattern generators, signal generators, and error detectors to enable BER testing of up to 48Gbps. In addition, their ability to work with high-capacity transmissions allows users to also measure the maximum operating frequency of a device under test. And, because users are able to convert previously purchased equipment for use in this new testing environment , they will be able to perform BER testing on next-generation fiber-optic transmission systems while keeping capital expenditures to a minimum.

The D3691 provides a high output amplitude of 3V, which enables it to directly drive high-speed signals without the use of electro-absorption modulators or expensive external amplifiers—helping to further lower test costs. Furthermore, with the ability to freely adjust power levels within a range of 1.5 to 3.5V, the D3691 is also well suited for accurately characterizing a component's ability to withstand high voltages and high amplitude inputs, which helps users construct higher quality transmission systems and design better components.

All three of these new offerings make use of Advantest's highly refined mounting technologies, which enable the consistent generation of high quality waveforms and therefore help to ensure the reliability of BER measurements. Finally, because all three tools come with a standard general-purpose interface bus (GPIB), it is easy to control the threshold voltage and clock phases of input signals using an external PC.
This combination of a low cost of ownership, superb quality, and high reliability, makes this new testing solution ideal for BER testing of 48Gbps fiber-optic transmissions.

Reference—Configuration of the D3681/3692/3693 Using Existing Test Equipment

First, a pulse pattern generator is used to generate a pseudo random bit sequence (PRBS—a pattern used to simulate live traffic) with a rate of 12Gbps. This signal is then received by the D3693 PRBS Synthesizer, which breaks up the s ignal into four separate data streams with bit rates between 9 to 12Gbps. Next, the D3691 4:1 Multiplexer, coupled with a signal generator, is used to break up the data streams into segments and then assigns those segments to a composite signal with an aggregate rate of anywhere between 36Gbps to 48Gbps. This composite signal travels through the device under test and is reassembled by the D3692 1:4 Demultiplexer into its original four data streams. Finally, the error detector is used to sequentially receive and analyze the BER of these data streams.