Optical Module Combines NRZ/RZ Converter, Modulator and Drive

The iT6130 optical driver assembly from iTerra Communications brings together a monolithic GaAs NRZ-to-RZ signal converter and a FET traveling-wave modulator driver in either module form with SMA connectors or as a small surface-mount package. The device is the first to integrate and optimize the two functions in a single package, which eliminates the need for device selection, tuning, and matching. This, of course, can save significant time in design and development.

The iT6130 converts the NRZ signal from a multiplexer to an RZ signal and then amplifies it to drive a lithium niobate optical modulator. It is designed for long-haul systems that employ RZ modulation because of its inherently higher peak power for a given input level, which reduces the number of optical amplifiers required along the length of the cable span.

The iT6130 operates at a data rate of 11.5 Gb/s, accepts inputs up to +23 dBm, and produces a maximum adjustable output of 4 to 7 VDC p-p. Jitter at 7 VDC is 3.5 ps p-p, which produces eye diagrams (Figure 1) that are virtually indistinguishable from those of much more expensive optically-generated RZ systems. The connectorized module measures 1.5 x 12.5 x 0.375 in., and the SMT module measures 16 x 16 x 2 mm.

More information on the iTerra iT6130 can be viewed at the company’s web site.

iTerra Communications
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Photo of iT6130, shown here in a SMA connectorized package.