

# Optical Module Combines NRZ/RZ Converter, Modulator and Drive

This module saves optical communication system designers the task of 'cobbling together' optical and microwave functions that are notoriously difficult to integrate

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

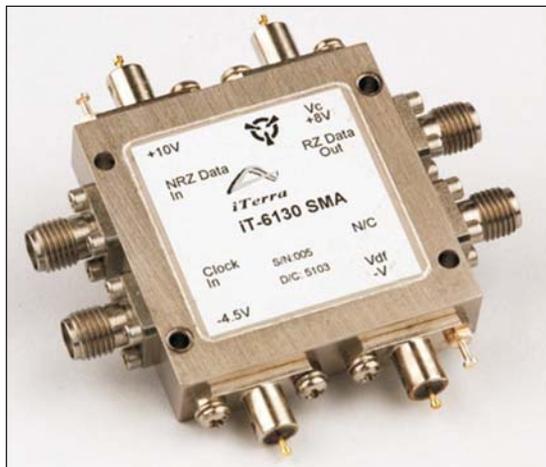
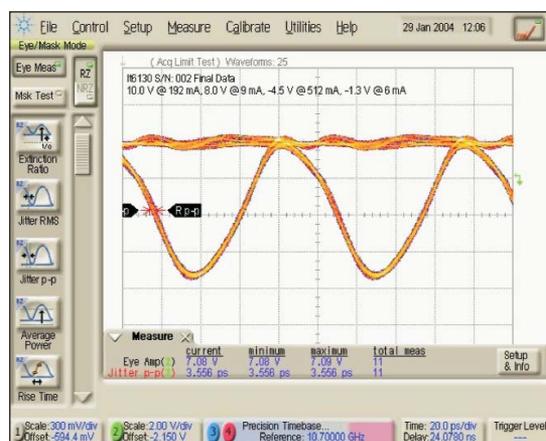


Photo of iT6130, shown here in a SMA connectorized package.



The iT6130's jitter performance resembles that of an RZ signal generated optically, which is generally considered the state-of-the-art.

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 × 12.5 × 0.375 in., and the SMT module measures 16 × 16 × 2 mm.

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

iTerra Communications  
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**HFELink 301**