Modular Kernel OTDR MK1000

For Secondary Development and Integration

Product Overview

The Modular Kernel OTDR integrates core functional components including optical interfaces and data processing units. It exposes an external Ethernet interface to facilitate seamless secondary development, alongside a serial port designed for basic control operations such as status monitoring and module parameter configuration.

Featuring a compact, cost-effective, convenient, and highly efficient design, this module is engineered to precisely pinpoint real-time fault conditions across the entire optical fiber link.

Operating Principle

The module operates by connecting to a upper computer (PC or embedded system) via Ethernet. The upper computer manages the entire workflow simply by issuing measurement commands to the OTDR module and receiving the returned data.

Secondary Development & Integration

Supporting user-defined secondary development, this module enables users to rapidly prototype their own professional OTDR instruments or optical fiber online monitoring systems. By only requiring the development of the human-machine interface (HUI/GUI), users can significantly shorten the OTDR R&D cycle. Additionally, the module can be effortlessly embedded into other optical communication equipment or systems to provide integrated OTDR functionality.

Key Features

- **Plug-and-Play Ethernet Interface.** Simplifies connectivity and integration.
- **High-Speed Data Transmission & Analysis**. Ensures rapid and efficient processing.
- **Automated OTDR Trace Analysis**. Delivers intelligent, automated event and fault identification.

Technical Specifications

Parameter	Value
Pulse Width	3ns, 5ns, 10ns, 20ns, 30ns, 50ns, 80ns, 100ns, 200ns, 300ns, 500ns, 1000ns, 2000ns, 3000ns, 5000ns, 8000ns, 10000ns, 2000ns
Test Range	0.1km, 0.5km, 1.25km, 2.5km, 5km, 10km, 20km, 40km, 80km, 125km, 180km, 260km
Event Dead Zone[1]	≤ 1.5m
Attenuation Dead Zone[2]	≤ 8m
Sampling Interval	0.03 ~ 4 m
Maximum Sampling Point	64000
IOR	1.000000 ~ 2.000000
Test Distance Uncertainty	±(0.75m + Sampling interval + 0.005% × Test Range)
Linearity	±0.05 dB/dB
Power	Typical +12V (Limit Range +6V ~ +19V)
Consumption	≤3W (25°C)
Communication Interface	Serial port RS-232C, default baud rate 460800 (configurable) Ethernet interface 10M/100M
Size	150(W) × 90(H) × 30(D) mm
Working Temperature	-10 °C to +50 °C
Storage Temperature	-40 °C to +70 °C
Humidity	≤ 95% (noncondensing)

Note:
1. Typical Value. Pulse Width = 3 ns, Return Loss = 35 dB to 55 dB
2. Typical Value. Pulse Width = 3 ns, Return Loss = 55 dB

Model Selection Guide

Model	Wavelength	Dynamic Range
MK1000-S1	1550nm	26dB
MK1000-S2	1550nm	30dB

Model	Wavelength	Dynamic Range
MK1000-S3	1550nm	35dB
MK1000-S4	1550nm	40dB
MK1000-S5	1550nm	43dB
MK1000-A26	1625nm	26dB
MK1000-A30	1625nm	30dB
MK1000-A35	1625nm	35dB
MK1000-A40	1625nm	40dB
MK1000-A43	1625nm	43dB
MK1000-B26	1650nm	26dB
MK1000-B30	1650nm	30dB
MK1000-B35	1650nm	35dB
MK1000-B40	1650nm	40dB
MK1000-B43	1650nm	43dB
MK1000-D28	1310/1550nm	28/26dB
MK1000-D32	1310/1550nm	32/30dB
MK1000-D37	1310/1550nm	37/32dB
MK1000-D42	1310/1550nm	42/40dB
MK1000-D45	1310/1550nm	45/43dB
MK1000-M1	850/1300nm	24/26dB
MK1000-T2	1310/1550/1625nm	42/40/40dB
MK1000-T3	1310/1550/1650nm	42/40/40dB
MK1000-Q1	1310/1550/850/1300nm	28/26/24/26dB