LAN-WAN
Internetworking
& Alarm Surveillance System

**Optima** Tele.com
Incorporated

T:LAN NetPro e4x Series

The T:LAN LAN/WAN Interconnect System is a family of interworking solutions from Optima Telecom Inc. It incorporates features of a multi-port Ethernet Switch/Router, traditional T1/E1 CSU, Console Server and mini-DACS with optional path protection.

Optima's universal access platform provides a very cost-effective, scalable, and highly reliable solution for remote LAN access, legacy communications, remote apps deployment and alarms collection.

Remote Connectivity Has Never Been Easier
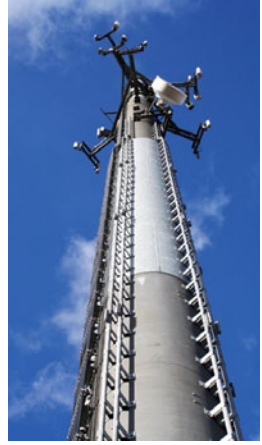
Optima's T:LAN is ideally suited to extend network management and supervisory control of multi-vendor equipment in central office, co-location, substation, CEV's, cellular, microwave radio, and point-of-presence sites. Each unit comes ready-to-go out of the box. Unpack, rack-mount and hook-up!

The T:LAN NetPro Series is ideally suited for extending communication access to remote facilities and NEs (Network Elements) for network management applications such as network surveillance, alarms backhaul,

equipment provisioning, and remote console/TELNET access for field engineers and technicians.

Targeted at the carrier, wireless service provider, CLEC and mobile operator markets, the Optima T:LAN NetPro Series provides the vital link between core/corporate network or remote local area networks (LAN) and wide area networks (WAN) operating over Ethernet or T1/E1 circuits.

Choose Your Topology

A modern and efficient architecture ensures high data throughput and reliability. Unique packet filtering and switching features allow the T:LAN to be deployed in various topologies, including point-to-point, point-to-multipoint, linear networks and path protected rings.
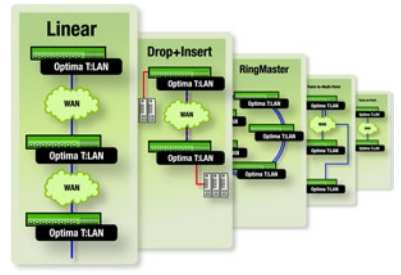
No matter whether your network infrastructure is based on Ethernet, T1/E1, SONET/SDH or microwave radio, the Optima T:LAN NetPro models provide the perfect fit.

Maximizing Your DS0's

Optima's T:LAN efficiently combines IP traffic from multiple sources into one or more DS0s. This not only preserves bandwidth but also frees up resources that can be used to carry actual voice streams and generate revenue.

Mini DACS facilitates Voice + Data Applications

Minimize costs and combine voice and data traffic over the same T1/E1. The built-in Mini-T1/E1 DACS provides n x DS0 cross connects between the two T1/E1 ports. This allows the T:LAN to add/drop IP packets at each location while forwarding non-IP or dedicated voice traffic. An optional relay bypass module protects your primary path in case of any failures.

Built-in Auto-Sensing Ethernet Switch with QoS Features

The switched Ethernet ports keep local traffic from clogging your WAN pipes and eating up valuable bandwidth. The auto-sensing 10BaseT/100BaseTX ports support priority handling and tagging to help you extend QoS features right out to the edge of your network.

Console Server for Third-Party Legacy Systems

Optima's T:LAN even lets you access equipment that was never designed to be remotely managed via IP. Whether you consider it a convenience or a lifesaver, the built-in serial/terminal access server will help you when it counts the most.

Collect Alarms and Manage Remote Equipment

Backhauling of alarms, network surveillance and remote equipment management are just some of the crucial application areas that show how our focus on Integrated Networking can save you time and money when it comes to maintaining your network. Do it all with just one integrated solution: Optima's T:LAN NetPro Series.

When Techs Need to Be In Two Places At Once

Reverse TELNET and Optima's Serial Data Conduit over IP (SDCoIP) are the perfect tools offered by the T:LAN units to help you manage your network during crunch times or when you have to administer your equipment on opposite ends of the network.

Stay Connected to Your Network

Technicians out in the field can use any of the four switched T:LAN Ethernet ports to connect to the corporate network. Whet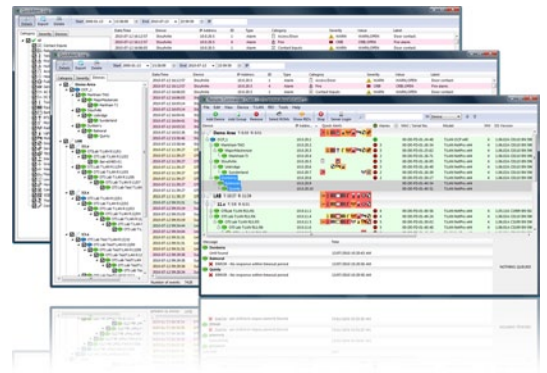her they need to file their logs, access new work orders or simply check corporate e-mail on the go, your field personnel will now be able to access the required information without constantly incurring costly dial-up charges and having to go though cumbersome dial-in access servers.

Avoid Router Complexity

Working with T:LAN units is fast and effortless. Our intuitive, single keystroke entry style and guided parametric queries produce immediate results. No need to enter long, cryptic commands with a confusing litany of options. And we do not require you and your staff to acquire a degree in router configuration first. Best of all, the T:LAN units work right out of the box. Install, hook-up, then start accessing your newly expanded LAN/WAN network.

Gain Complete Network Element Visibility

Turning up new sites has never been easier. Activate Optima's Link:Guard to monitor your circuits or use SNMP and TELNET to pinpoint trouble spots early. Get complete coverage and a concise overview about the state of your network by deploying Optima's T:LAN wherever you grow your infrastructure or require management access.

Cut Down on OAS Overhead

The T:LAN NetPro models are also perfect for radio corridor applications. Traffic from multiple sites or radios is first groomed and then combined into a single T1/E1. This reduces the number of T1/E1s that usually need to be blocked off for Operation And Support (OAS) purposes and eliminates the need to constantly upgrade expensive routers in your Network Operations Center (NOC). Optima helps you to keep up with your growing network and stay within your budget.

Compact and Flexible

The compact 1U design is ideal even when T:LANs need to be deployed in space-constrained racks. The wide AC or DC input range and low

overall power consumption of each unit will be a welcome relief for any power and cooling system, especially those that are already taxed in crowded remote sites.

Embedded Clean-Technology

We have really opened up the T:LAN platform by adding the ability to run a multitude of eco-Applications. The integrated ecoLOGIC Script Engine implements a computer programming language specifically designed for reporting network performance, collecting and processing network surveillance data, gathering network metrics and network statistics, processing environmental sensor inputs, controlling and monitoring on-site equipment including power, environmental, security, and transmission devices.

Turning Your Network Into A Greener Network

Monitoring and shifting energy usage based on time-of-day rules, accurately tracking network performance over time, fine-tuning GENSET operations, driving down diesel fuel consumption, optimizing HVAC operations, keeping an eye on the health of all the battery banks in your remote sites will help you turn your network into a greener more efficient network.

Backed Up by Solid Support

At Optima Tele.com we stand behind our products and we will do our best to provide you with prompt and knowledgeable support. No matter whether you are seeking help about our T:LAN NetPro Series or if you want to talk to us about your unique application, please feel free to discuss your requirements with our support staff. We know how to listen and are ready to offer our expert advice.

Features

- Flexible WAN Configurations (Ethernet, Single or Dual T1/E1).

- Four User Configureable 10/100 BaseT Switched Ethernet Ports.

- Four Serial Ports (for Remote Console Access, Expandable up to 20).

- Optional RS-485 MODBUS Port.

- Contact and Analog Inputs for Facilities Monitoring.

- Relay and Power Outputs for Remote Control.

- Internal and Support for External Remote Temperature Sensors.

- Integrated Modem for PPP Connections (Optional).

- Remotely Manageable (TELNET/SNMP).

- Flexible VLAN Mapping and Traffic Shaping.

- Realtime Alarms Monitoring and Reporting.

- Wall or 19" Rack Mountable, Small Footprint.

- Wide Ranging DC Input (18 to 60VDC) (Optional AC Adapter Available).

Integration

The Key To Success.

Optima Tele.com, Incorporated is a privately held Canadian high-technology company, situated just north of Toronto right in the center of Canada's electronics industry. The company designs, manufactures and sells integrated network equipment, providing complete solutions that deliver communication and management access to remote facilities and networks.
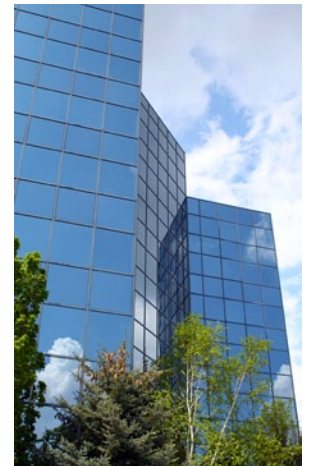
Since our foundation in 1998 we have assembled a dynamic team of experts, system architects and professionals from a number of different fields. This allows us to offer well-rounded and unique technology solutions together with the expertise our customers demand.

At Optima Tele.com we believe in one simple concept: Integrated Networking. Combining both local and wide area networks into one. Our customers benefit from simplified networks, streamlined architectures, reduced cost-of-ownership, quick deployment and increased performance.

Our product line offers a new degree of flexibility bringing together traditional datacom and telecom applications for today's ISP, CLEC, broadband service providers and telecom carriers. Feel free to talk to us about your networking environment, equipment requirements or your data transport demands. We know how to listen and how to offer expert advice. Rest assured that are dedicated to complete and total customer satisfaction.

Model e44m Shown

PHYSICAL DIMENSIONS

Size (HxWxD)
4.45cm x 44.45cm x 15.24cm
(1.75" x 17.5" x 6.0")

Weight
2.3 kg (5.0 lbs)

Mounting
1 RU, fits standard 19"/23" racks, rack-mount (flush/offset/center), table top/shelf mounting, wall mounting

POWER

DC Input
Redundant, wide ranging, 18VDC to 60VDC, positive or negative

Power Consumption
Less than 7 Watts

Fuse Rating
0.75A (GMT type recommended), 1A maximum

Connector
Dual 3 position (+/-/FGND), Tyco MATE-N-LOK™, latched

Indicators
Power LED

AC Input (External AC/DC Adapter Option)
Universal input, 90-264VAC, 40 Watts output

ENVIRONMENTAL

Temperature
0 to 50ºC (32 to 122ºF)

Humidity
Up to 80% relative humidity (non-condensing)

WAN INTERFACES

Line Rate
DS1   1.544 Mbps, ±32ppm
E1   2.048 Mbps, ±50ppm

Fractional
DS1   n x 64kbps, n x 56kbps
E1   n x 64kbps

Line Code
DS1   AMI, B8ZS
E1   AMI, HDB3

Framing
DS1   FT, D3/D4, ESF, SLC96
E1   Double/Multiframe (ITU-T G.704, ITU-T G.706)

Impedance
DS1   100 Ohms (Balanced)
E1   120 Ohms (Balanced)

Input Sensitivity
DS1   0 to -36dB
E1   0 to -43db

Output Modes
DS1   Short Haul (DSX-1 655ft), Long Haul (DS1 6000ft)
E1   Short Haul (-10dB), Long Haul (-43dB)

DS1 Line Build-Out
0 to -22.5dB in 7.5dB steps

Clocking
Internal, Loop Recovered

Loopbacks
DS1   CSU Loopback codes, Line Loopback, Payload Loopback
E1   Manual Loop-up, Loop-down

DS1/E1 Fail-Over
Signal Bypass WAN 1 To WAN 2 (only available on Dual T1/E1 WAN models)

Connectors
2 RJ45

Indicators (Per Port)
Sync, Loopback, Loss of Signal (LOS), Remote Alarm Indication (RAI)

LAN INTERFACES

Type
Switched Auto-Sensing, 10-BaseT, 100-BaseTX, Auto MDI/MDI-X

VLAN Switching
IEEE802.1Q, port based VLANs

Transport
IEEE802.3 traffic, VLAN trunks, ISL, IP/non-IP based protocols

Connectors
4 RJ45

Indicators (Per Port)
Rx/Tx Activity/Link, Full Duplex/Collision, Speed (10/100)

SERIAL INTERFACES

Front Panel Port
Local/Craft RS-232 Interface

Connector
DB9(S)

Configuration
600 to 19.2kBaud, 5 to 8 data bits, 1/2 stop bits, no/odd/even parity, no flow control

Back Panel Ports
RS-232 Serial Interface

Connectors
4 RJ45

Configuration
150 to 115200 Baud, 5 to 8 data bits, 1/2 stop bits, no/odd/even parity, no flow control

Expansion
Externally expandable up to 20 ports via SPX modules

MODBUS Port (Option)
RS-485 Serial Interface

Connectors
1 RJ45

Configuration
150 to 115200 Baud, 5 to 8 data bits, 1/2 stop bits, no/odd/even parity, no flow control

ALARM I/O

Contact Inputs
32 Contact Inputs, ground referenced, triggered by switching to ground or applying a negative voltage (up to -60VDC)

Relay Outputs
3, Form A, 60V 500mA maximum

Analog Inputs
4 Analog Inputs, 2 at ±64VDC (125mV resolution), 2 at ±6.4VDC (12.5mV resolution)

Power Outputs (For External Devices)
2 12VDC Power Outputs (100mA each)

OneWire Interface
1 OneWire Interface for External Remote Temperature Sensors

Connector
2 DB-25 (female)

Power Monitoring
Integrated A and B DC Power Supply Input Monitoring (8mV resolution)

EXTERNAL ALARM EXPANSION (RIO MODULES)

Connector
RJ45

MODEM (OPTION)

Type
V.92

Speed
Up to 56,000bps

Connector
RJ45

PROTOCOLS

ARP/RARP [RFC826/903], DHCP [RFC1534/2131-2132], ICMP [RFC792], IP [RFC791/894/950/919/1122], NTP/SNTP [RFC1305/2030], PPP [RFC 1321/1332/1334/1471/1661-1662/1841/1994/2878], SNMP [RFC1067/1089/1155-1157/1212-1213/1215/1493/1643/1905-1907/2495], TCP [RFC793/813/879/2018], TELNET [RFC854/856/857/858], UDP [RFC768]

USER INTERFACE

TELNET, VT-100, menu driven, embedded on-line help

SAFETY AND REGULATORY APPROVALS

UL 60950 3rd Edition, CAN/CSA-C22.2 No. 60950-00, IEC 60950, FCC 47 CFR Part 15, FCC 47 CFR Part 68, ICAN CS-03, EN 300-386-21997, EN 550221998, CE

ORDERING INFORMATION

1000-A0X010XD

LAN only **3**
Single T1/E1 .... **5**
Dual T1/E1 .... **7**

Base System Only **1**
MODBUS Option **2**
MODEM Option **6**

AC Adapter p/n 2000-H100001A

Consult Optima Sales for additional alarm cables, sensors and application accessories.

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