



# ORION TELECOM NETWORKS INC.

## **XC 64 Port Electronic Intelligent Patch Panel T1 to T1 Patch Panel**

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### Product Brochure & Data Sheet

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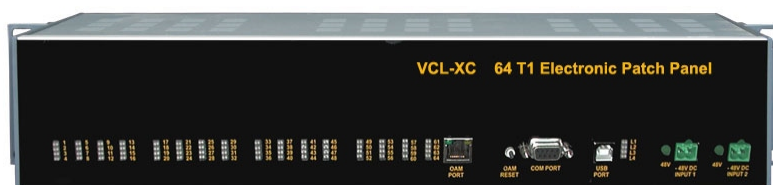
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## Product Description

The XC 64 T1 electronic patch panel allows the user to cross-connect any T1 port to any T1 port, electronically through user executable software commands, without having to use any patch-cords or loosely hanging inter-connect cables.



**XC 64 T1 Electronic Patch Panel**

The XC 64 T1 electronic patch panel also provides the user with the capability to uni-directionally broadcast a T1 input to multiple T1 destinations.

The XC 64 T1 electronic patch panel also allows the user to re-route any T1 circuit to a secondary route (secondary T1 Port) in the event of the failure of the primary T1 route (primary T1 Port), without any human intervention and may be used as an "N"+1 protection switch. The feature to provide "N"+1 Protection capability is available as an optional software module any may be ordered additionally with the standard 64 Port, Electronic Intelligent T1 to T1 Patch Panel.

The patch-panel may be accessed remotely over a TCP/IP link using Telnet. This allows the user to create / patch new circuits remotely and make new T1 cross-connections on the fly. SNMP V2 Traps are also generated over a UDP link, which allows the user to monitor the patch-panel and all T1 circuits remotely for any alarms. An MIB file is provided with the patch-panel to allow easy integration with customer's network management systems (NMS), or for easy integration with standard SNMP browsers.

### **Where it should be used, who should use it and in which applications:**

The XC 64 T1 electronic patch panel is designed to be used in Central Offices, Data Centers, Command and Control Centers, Remote Cell Sites, Utilities and Dealing Rooms seeking to eliminate the jungle of external patch-cords and loosely hanging wires which usually exists in locations where T1 patch-panels are installed.

### **Why it should be used:**

The XC 64 T1 electronic patch panel eliminates the use of patch cords and the maze of loosely hanging inter-connect wires.

**Easier Management** - The XC 64 T1 electronic patch panel allows easier management of the T1 cross-connects since all cross-connects can be made and managed from a central location over TCP/IP or UDP Network using either CLI (text) commands, or a GUI.

**Efficient Management** - The XC 64 T1 electronic patch panel allows a more efficient management since a log / database of all circuit patches / cross-connects can be saved and archived as a MS (Microsoft) Access database file and retrieved and re-loaded whenever required.

The XC 64 T1 electronic patch panel eliminates the need for labeling the patch-cords and inter-connected wires since all inter-connection records are automatically retained in the system's non-volatile memory. Additionally, the same can also be saved and archived as a MS (Microsoft) Access database file from the system's GUI.

The XC 64 T1 electronic patch panel can easily be integrated into any standard existing customer's NMS. An MIB file is provided with the equipment for easy integration.

**An Intelligent Patch Panel:**

The XC 64 Port T1 electronic patch panel keeps the user informed of potential problems by generating SNMP V2 alarms.

The XC 64 Port T1 electronic patch panel generates SNMP V2 alarms and is supplied with an MIB file which allows the user to easily integrate the XC 64 Port T1 Electronic Patch Panel into their NMS (Network Management Software) for faster trouble-shooting and fault rectification. This results in more efficient network control and fault management.

The XC 64 Port T1 electronic patch panel also maintains a log of the 200 most recent time-stamped events, as they occur in real-time, by storing them in the system memory. These events may be viewed at any time by a user. The system event log is maintained in addition to SNMP V2 traps, which the equipment sends out to a centralized NMS, when such events or alarms occur.

User friendly the equipment may be assessed remotely using Telnet, GUI (Graphical User Interface) or SNMP over an Ethernet link through the system's 10/100BaseT Ethernet Port. The equipment may be also accessed locally through either an RS232 (DB9) serial or a USB COM Port.

**Additional Advantages:**

Automatic circuit protection and re-routing option (available with optional software module).

The XC, 64 Port T1 electronic patch panel provides the user (optional software module) to re-route any T1 circuit to a secondary route (secondary T1 Port) in the event of the failure of the primary route (primary T1 Port).

This feature ensures that critical T1 routes can be automatically be protected on the cross-connect (in a "N"+1 protection scheme) and can be re-routed to secondary standby route(s) in the event of the failure of the primary route without any intervention of the maintenance staff. Such a feature is especially useful at unmanned locations or at remote locations where the local maintenance staff may not be available at all times of the day to provide immediate critical servicing, if required.

**Highlights:**

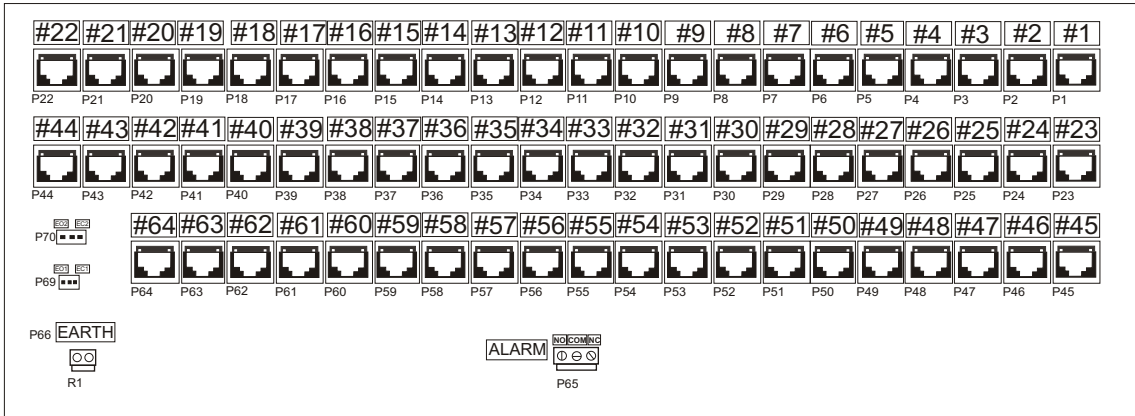
- 64 circuit, T1 to T1 electronic, remotely manageable patch panel
- Allows the user to cross-connect between any T1 port to any T1 port, or any T1 port to multiple T1 Ports (in a broadcast mode only), electronically
- Allows the user to re-route any T1 circuit to a secondary route (secondary T1 Port) in the event of the failure of the primary route (primary T1 Port), without any human intervention.
- Hitless (automatic) switching between Primary T1 and Standby T1 links
- Eliminates the use of the messy, loose, hanging inter-connect wires
- Host of alarms for trouble shooting and maintenance
- SNMP - V2 Traps / Alarms
- Telnet and GUI based remote management features
- Dual power inputs (1+1) to connect the equipment to two separate - 48V DC power sources for power source redundancy
- Compact. Available in 19-inch, 2U shelf (DB37 connector) version, and a 19-inch, 3U shelf (RJ45 connector) version.

**Dual Power Inputs:**

The system provides dual -48V DC power inputs for connecting the equipment to two separate -48V DC power sources for added security and power backup.

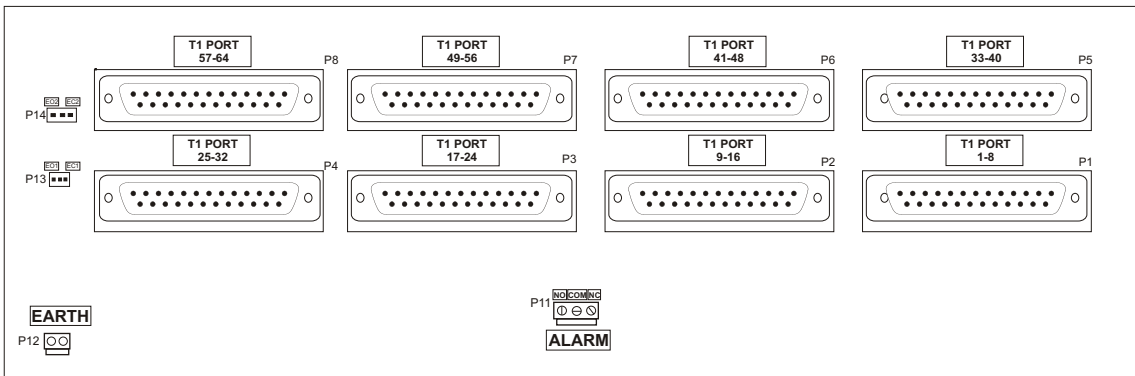
**Option 1**

**Rear View - with 3U high, rack-mountable RJ-45 (F) 19-inch shelf**



**Option 2**

**Rear View - with 2U high, rack-mountable DB-37 (F) 19-inch shelf**



**Indications and Alarm Monitoring**

- Loss of incoming signal at any T1 Port
- Configuration error alarm
- 64 LED indicators to indicate the status of each T1 link
- System's internal 3 Volts power supply present
- External -48V DC input present
- System Self Test Error.

**Programmable Features**

- Enabling or disabling T1 channels (masking alarms) of the T1 channels that are unconnected and not in use
- Creating a cross connect between T1s using the Windows based, easy to use GUI
- Telnet interface for remote programming by using text commands

## Status Monitoring

- Status of alarms
- Enabled / Disabled status of T1 ports
- Monitoring of the XC 64 Port T1 Electronic Patch Panel status and configuration
- SNMP - V2 Traps / Alarms.

## Technical Specifications

Maximum Number of Interfaces	64 T1 Interfaces
Conformity (Electrical)	ITU-T G.703
Framing	Transparent
Bit Rate	1.544 Kbps $\pm$ 50 ppm
Line Code	AMI, B8ZS (Selectable)
Nominal Impedance	100 Ohms balanced
Jitter Tolerance	ITU-T G.823, ITU-T 1.431
Connectors	64 x RJ-45 (F) connectors - 19 Inch 3U shelf version
Connectors	64 Port, 8 x DB37 (F) connectors - 19 Inch 2U shelf version

## System Management and Access

Windows XP and Windows 7 compatible Graphical User Interface (GUI)
Telnet - CLI (Command Line Interface)
SNMP V2 (MIB File provided with the equipment).

## Management and Control Port

Serial Management Port (RS232) - COM Port
USB Serial Port
10/100BaseT for remote management over a LAN / TCP/IP network.

## Command Language

Command Line Interface (english text commands)
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**NMS (with Telnet) OAM Port Specifications**

Network interface	RJ-45 Ethernet 10BaseT or 100BaseTx (auto sensing),MDI-X.
Compatibility	Ethernet Version 2.0 IEEE802.3
Protocols supported	ARP, UDP/IP, TCP/IP, Telnet, ICMP, SNMP
LEDs	10Base-T and 100Base-TX Activity, Full/half duplex.
Management	SNMP, Serial login, Telnet login
EMI Compliance	Radiated and conducted emissions complies with Class B limits of EN55022:1998
	Direct and Indirect ESD complies with EN55024:1998
	RF Electromagnetic Field Immunity complies with EN55024:1998
	Electrical Fast Transient/Burst Immunity complies with EN55024:1998
	Power Frequency Magnetic Field Immunity complies with EN55024:1998
	RF Common Mode Conducted Susceptibility complies with EN55024:1998

**Environmental**

Temperature and Humidity	0°C to + 50°C, 90% R.H. (Non-condensing)
Altitude	Upto 9,000 feet

**Power Supply**

Power supply	-48V DC (-18V DC to -72V DC)
Power supply	Redundant (1+1 Protected) Inputs
Power consumption	14 watts (maximum)

**Power Supply Specifications:**

Input DC Voltage	-48V DC (nominal)
Range of Input Voltage	-18V DC to -72V DC
Input Voltage Reversal Protection	Protected
Over Current Protection	3 Amperes
Short Circuit Protection	Current limit up to 3 Amperes recovers on removal of short circuit
Efficiency at Full Load	>93%
Ripple at Full Load	<5mVrms
Spike at Full Load	<50mV

**Compliance**

FCC Part 68, Class B
CE

**Chassis**

- Option 1 - 3U high, rack-mountable RJ-45 (F) 19-inch shelf
- Option 2 - 2U high, rack-mountable DB-37 (F) 19-inch shelf

**Dimensions:****Option 1 - 3U high, rack-mountable RJ-45 (F) 19-inch shelf**

Depth	292 mm
Width	485 mm
Height	3U (133.33 mm)

**Option 2 - 2U high, rack-mountable DB-37 (F) 19-inch shelf**

Depth	260 mm
Width	485 mm
Height	2U (90 mm)

<b>Ordering Information</b>		
<b>S.No.</b>	<b>Part No.</b>	<b>Product Description</b>
1.	XC-1467-T1-48 Option RJ45-3U	XC, 64 Port T1 Electronic (Manageable), T1 to T1 patch panel, -48V DC Power Input, 3U high, Rack mountable, RJ-45 (F) Connectors 19-inch shelf
2.	XC-1468-T1-48 Option DB37-2U	XC, 64 Port T1 Electronic (Manageable), T1 to T1 patch panel, -48V DC Power Input, 2U high, Rack mountable, DB-37 (F) Connectors 19-inch shelf
3.	PRO-SW-MOD	1+1 Link Protection Software Module (optional)

Technical specifications are subject to changes without notice.  
Revision 10 - October 25, 2010.

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