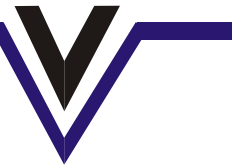


# VALIANT COMMUNICATIONS LIMITED



## E3 Fail-Over (E3 Protection) Switch

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### Data Sheet & Product Brochure

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### Product Overview

Valiant's E3 Protection (Fail-Over) Switch allows the user to connect a E3 line from the telephone company to **"active"**, as well as to **"standby"** E3 terminal, such as data Server, router etc. at the customer premises.

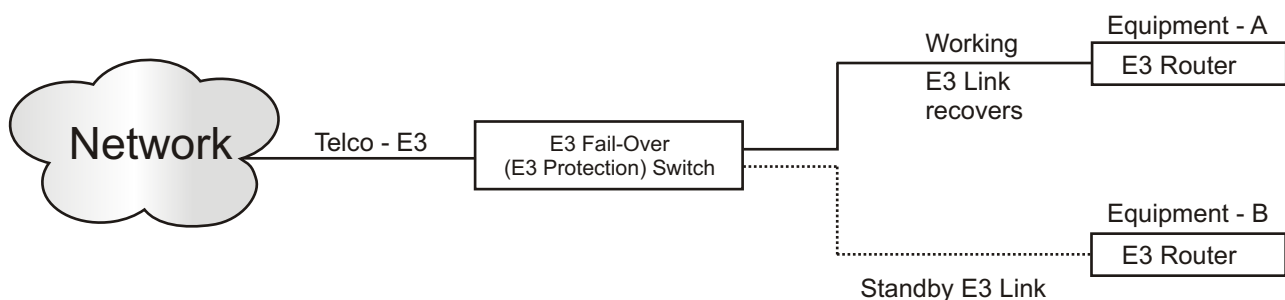


**E3 Protection (Fail-Over) Switch**

### HOW IT WORKS ?

In the event of the failure of the data server / router connected to the "A / active" port of the E3 Protection (Fail-Over) Switch, it shall automatically switch and connect the E3 line from the telephone company to the data server / router on the "B / standby" port. This ensures minimum downtime - which would have otherwise occurred due to equipment failure connected to the "A / active" port. This equipment may be used to enhance the reliability and the efficiency of the customer's data network.

### Application Diagram



**Upon failure of Equipment-A, the E3 Telco line automatically switches to Standby Equipment-B.**

### Features

- Allows the user to connect a E3 line from the Telephone Company and to switch it automatically between an active and a standby E3 terminal at the customer premises
- LOS (Loss of E3 Signal) is the switching criterion between "Active" and "Standby" E3 Ports
- Fail-Safe switching to Main (Port A) link in to event of equipment or power failure
- Available in a single E3 line and a two E3 line version
- Independent switching for each E3 line (in 2, E3 line version)
- Built-in real-time clock / real-time logging maintains a history of all events
- Remotely accessible over a TCP-IP networks. Allows the user to access and carry out maintenance, or / and switch the E3 line between the "active" and "standby" E3 terminals, remotely, if required
- Dual AC (1+1 AC) or Dual -48V DC (1+1 DC) power input.

### Benefits

- Allows the users to install and maintain active / standby / duplicate customer premises data networks / data servers, without bearing the recurring \$\$ expense of leasing additional expensive E3 lines from the telephone company
- Automatically switches the E3 link from the Telephone Company between the "active" and "standby" E3 equipment at the customer premises, according to the customer-defined criterion
- Improves equipment and data security.
- Allows the user to co-locate the "backup / standby" equipment in a different room / building and prevent any data loss arising out of conditions of natural calamity such as fire, flooding etc
- Increases the reliability of the customer's data / IT networks without having to bear the recurring and additional cost of leasing additional E3 lines from the telephone company. The equipment may be used to create secondary / backup systems at the customer premises to provide virtually uninterrupted service.

### Application Note

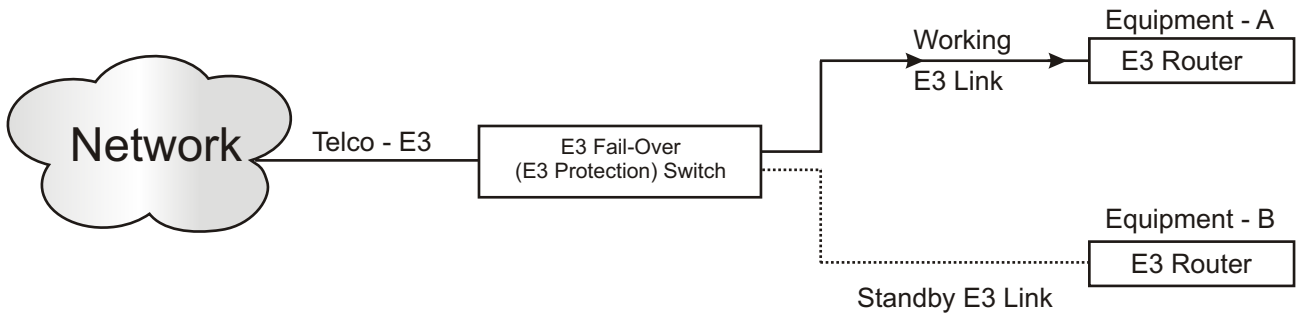
The E3 Fail-Over Switch should be used when the customer is using a single E3 line and install "**active**" E3 equipment and "**standby**" E3 equipment (such as a ROUTER) at the customers premises.

The E3 Fail-Over Switch shall automatically switch the E3 line from the telephone company between the ACTIVE E3 data server / router and the STANDBY E3 data server / router. Should the ACTIVE E3 data server / router fail or be removed from service, the E3 line from the telephone company automatically switches to the STANDBY E3 data server / router without requiring any customer or user intervention.

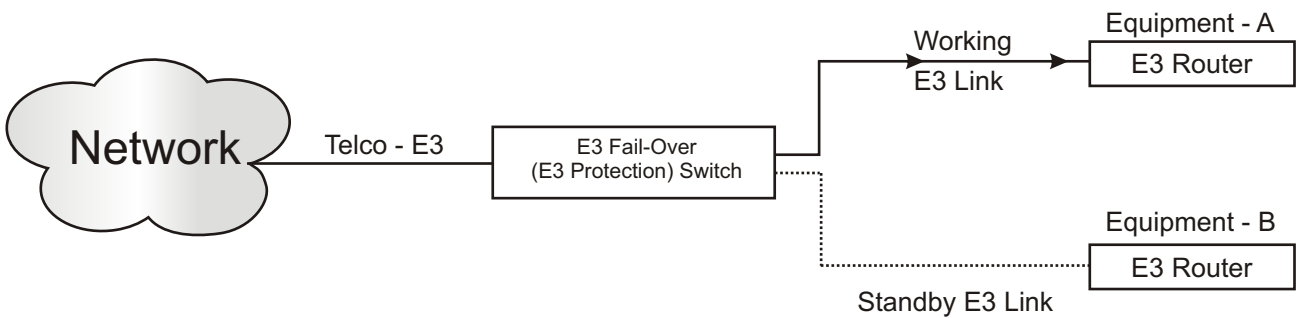
### E3 Switching Parameter

Loss Of E3 Signal (LOS)	The Loss of Signal condition in a E3 may occur due to: a) The failure of the E3 Port of the customer premises equipment. b) Or due to loss of power to the customer premises equipment. c) Or due to the disconnection of the E3 cable between the protection Switch and the E3 Port of the customer premises equipment.
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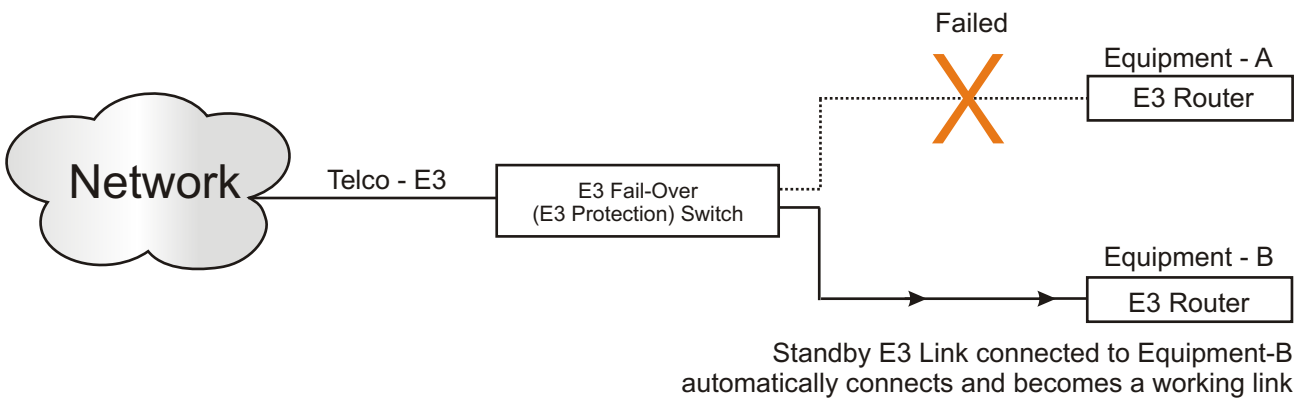
### Application Diagram



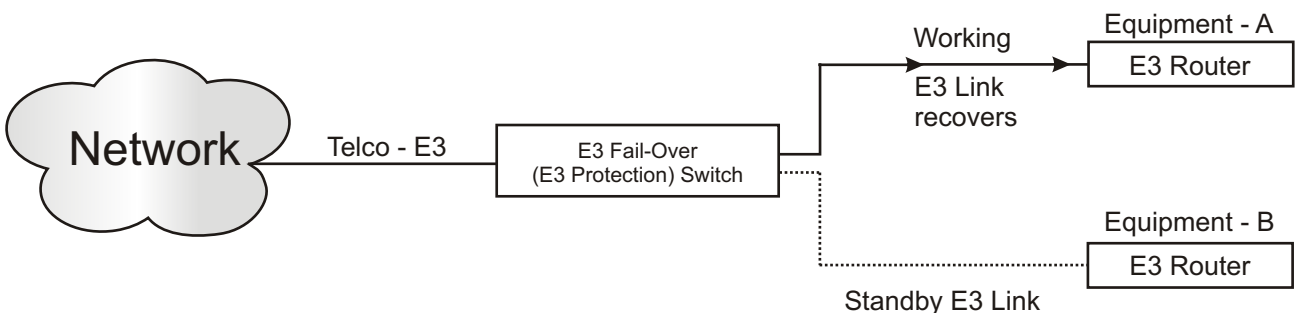
#### Telco E3 line connected to Equipment-A



#### Equipment-A fails - Telco E3 automatically switches to Equipment-B



#### Equipment-A recovers - Telco E3 line automatically switches to Equipment-A



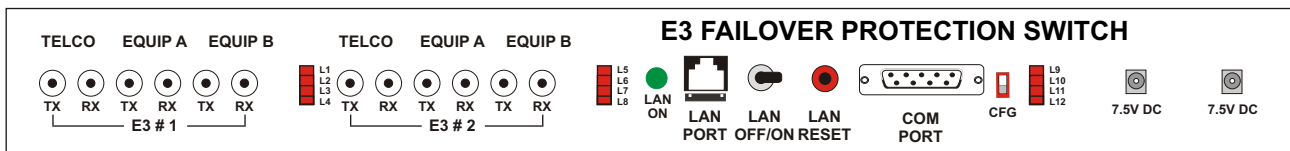
## E3 Protection (Fail-Over) Switch

### Shelf Description

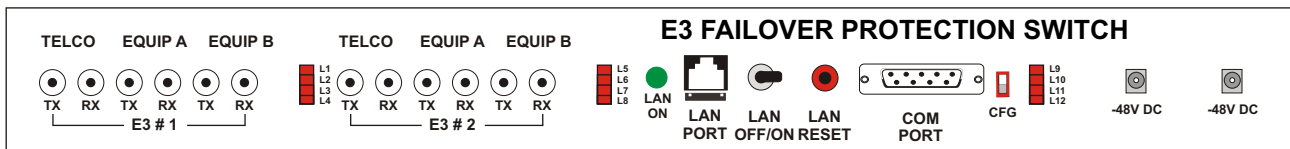
The E3 Protection (Fail-Over) Switch is fitted in a 19-inch 1U shelf that provides access to all external interfaces.

The E3 interface, power input and access and Management Ports (RS232) and 10BaseT Ethernet interfaces) are accessible from the front panel. The external alarm extension are accessible at the rear panel.

### Front view of the shelf AC Power Version



### Front view of the shelf DC Power Version



### Mechanical Specifications

Rack mounting	Standard 19-Inch. DIN Rack
Height	44.00 mm.
Depth	260.00 mm.
Width	477.00 mm.
Weight	4.00 kg.

## Technical Specification

### E3 (T3) Interfaces

Number of E3 Interfaces - Telco	1 (in one E3 line version) 2 (in two E3 line version)
Number of E3 Interfaces - Equipment	2 (in one E3 line version) 4 (in two E3 line version)
Bit rate	44.736 Mbps
Bit rate tolerance	$\pm$ 20ppm
Line code	B3ZS
Framing	Transparent (M-13 and C-Bit supported)
Pulse shape	Meets ANSI T1.102-1993 and Bellcore GR-499-CORE
Connectors	BNC, Co-axial Un-balanced
Impedance	75 Ohms
Signal level to declare loss of signal condition	$\leq$ 20mV
Signal level to clear loss of signal condition	$\geq$ 90mV

### AC Power Supply Specifications

Output voltage of AC Adapter	100 - 240 Volt AC
Range of input AC voltage	100V to 240V AC, 50Hz / 60Hz.
System Input voltage	7.5V DC to 9.0V DC, DC input polarity protection.
Maximum full load output current	2.5 A at 7.5V DC/9.0V DC
Power consumption	14 watts
Input voltage reversal protection	Provided in the Card
Efficiency at full load	>86%
Feed connectors	Dual Feed - 2 AC Inputs

### DC Power Supply Specifications

Power supply	- 48V DC (-40V DC to -60V DC)
Input voltage reversal protection	Provided in the Card
Power supply	1+1 Protected Inputs
Power consumption	14 watts
Feed connectors	Dual Feed - 2 AC Inputs

### Command Language

Command Line Interface (English text commands)
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## System Management and Access

Windows XP and Windows 7 compatible Graphical User Interface (GUI)
Telnet - CLI (Command Line Interface)

## Management and Control

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

## NMS (with Telnet) XPort Specifications

Network Interface	RJ-45 Ethernet 10BaseT or 100BaseT-TX (auto sensing)
Compatibility	Ethernet Version 2.0 IEEE802.3
Protocols Supported	ARP, UDP/IP, TCP/IP, Telnet, ICMP, SNMP, DHCP, BOOTP, TFTP, Auto IP, SMTP and HTTP
LEDs	10Base-T and 100Base-TX Activity, full/half duplex
Management	Internal web server, SNMP (read only), Serial login, Telnet login
EMI Compliance	<ul style="list-style-type: none"><li>- Radiated and conducted emissions - complies with Class B limits of EN55022:1998</li><li>- Direct and Indirect ESD - complies with EN55024:1998</li><li>- RF Electromagnetic Field Immunity - complies with EN55024:1998</li><li>- Electrical Fast Transient/Burst Immunity - complies with EN55024:1998</li><li>- Power Frequency Magnetic Field Immunity - complies with EN55024:1998</li><li>- RF Common Mode Conducted Susceptibility - complies with EN55024:1998</li></ul>

## Clock

Synchronized to network.
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## Chassis

1U High
19-inch rack-mounting shelf

### Compliance/Regulatory

• Meets CE requirements
• Complies with FCC Part 68 and EMC FCC Part 15 Class 2
• Safety - ULI 1459 Issue 2
• Operation ETS 300 019 Class 3.2
• Storage ETS 300 019 Class 1.2
• Transportation ETS 300 019 Class 2.3

### Ordering Information

S. No.	Product Description	Part No.
1.	Single E3 Protection (Fail-Over Switch) 19" Shelf 1U High Mount Version 110/120 V AC, 50/60 Hz power input	VCL-E3-SNG-PRO-1455-AC
2.	Single E3 Protection (Fail-Over Switch) 19" Shelf 1U High Mount Version - 48 V DC power input	VCL-E3-SNG-PRO-1455-DC
3.	Dual E3 Protection (Fail-Over Switch) 19" Shelf 1U High Mount Version 110/120 V AC, 50/60 Hz power input	VCL-E3-DUAL-PRO-1455-AC
4.	Dual E3 Protection (Fail-Over Switch) 19" Shelf 1U High Mount Version - 48 V DC power input	VCL-E3-DUAL-PRO-1455-DC

Technical specifications are subject to changes without notice.  
Revision 04 - August 17, 2010

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