



# **VCL-Ethernet over DS3 Switch (Ethernet to DS3 Switch)**

---

## **Product Brochure & Data Sheet**

### **U.K.**

Valiant Communications (UK) Ltd  
1, Acton Hill Mews,  
310-328 Uxbridge Road,  
London W3 9QN  
United Kingdom  
E-mail: [gb@valiantcom.com](mailto:gb@valiantcom.com)

### **U.S.A.**

Valcomm Technologies Inc.  
4000 Ponce de Leon, Suite 470  
Coral Gables,  
FL 33146, U.S.A.  
E-mail: [us@valiantcom.com](mailto:us@valiantcom.com)

### **INDIA**

Valiant Communications Limited  
71/1, Shivaji Marg,  
New Delhi - 110015,  
India  
E-mail: [getinfo@valiantcom.com](mailto:getinfo@valiantcom.com)

### Product Overview

Valiant offers its Ethernet over DS3 Switch (Ethernet to Ds3 Switch) packaged in a 19-inch rack-mountable chassis.

Valiant Ethernet over DS3 Switch (Ethernet over DS3 Switch) provides a four 100BaseT Ethernet and 100Base-FX optical ethernet interfaces on the user side which may be used to transport Ethernet traffic over a DS3 link. Both ethernet interfaces may be used simultaneously. The Switch provides a simple and cost effective method to convert and transport ethernet data over an DS3 link.

### Features and Highlights

- Ethernet interface to DS3 45 Mbps converter
- 4x100BaseT full duplex fast ethernet interface in accordance with IEEE802.3
- 3x100BaseT full duplex fast ethernet interface + 1x100Base-FX full duplex optical ethernet interface accordance with IEEE802.3
- Framed and un-framed DS3 options available
- Local and Remote access and monitoring with either RS232 or 10/100BaseT for remote management over TCP-IP network
- **Power Supply:** -48V DC, Dual (1+1) protected Inputs or 100V to 240V AC, 50Hz / 60Hz power supply options available.
- Ethernet frame size 1936 bytes (max)
- Supports Jumbo Frames
- Accommodates up to 8192 frames with a maximum frame size of 1936 bytes
- Prevents any data overflows, or loss of packets in the event of a data burst.

### Indications and Alarm Monitoring

- DS3 Loss of Signal
- Loss of DS3 frame (in framed DS3 mode)
- Loss of incoming signal at 100 BaseT Ethernet
- Loss of ethernet packets, errored ethernet packets, over-sized ethernet packets and under-sized ethernet packets log.
- Configuration Error Alarm
- Clock Status
- +3 Volts Power Supply
- -48V DC present
- Configuration Error



### Applications

- 100 BaseT Ethernet and 100Base-FX optical to Ds3 conversion (Ethernet over Ds3).

### Programmable Features

- Telnet interface for remote programming and monitoring by using CLI text commands
- Easy to use programing using Windows based GUI.

### Status Monitoring

- Status of alarms on DS3 interface
- Status of alarms on 100BaseT interface.

### Ethernet Interface

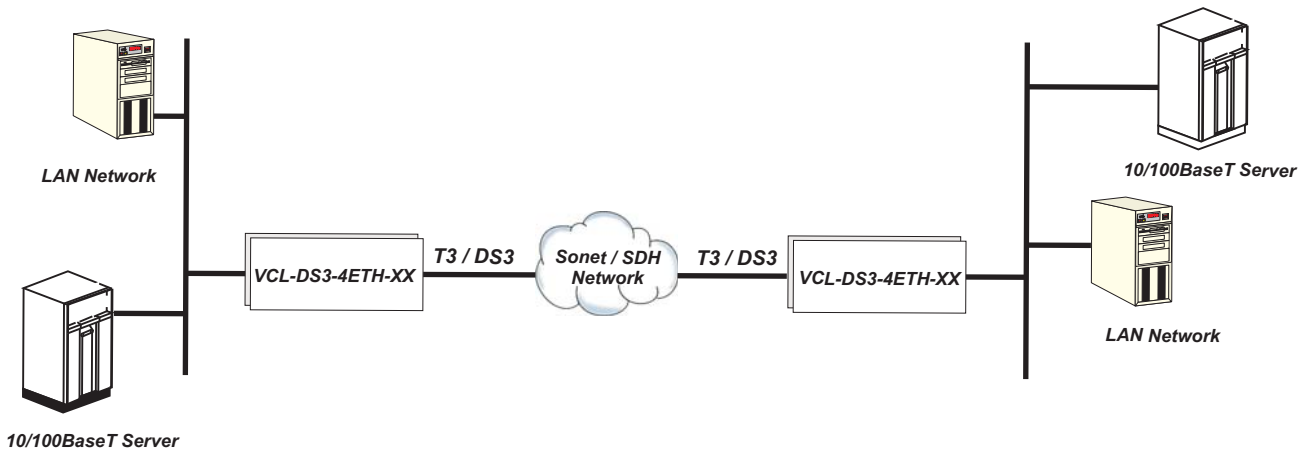
Interface Types	100BaseT and 100Base-FX optical
Standards Compliance	IEEE 802.3-2002 RFC1662 RFC2615 X.86 RMII
Interface Rate	100BaseT limited to DS3 transmission rate
Protocol	HDLC/X.86 (LAPS) Encapsulation

### DS3 Interface

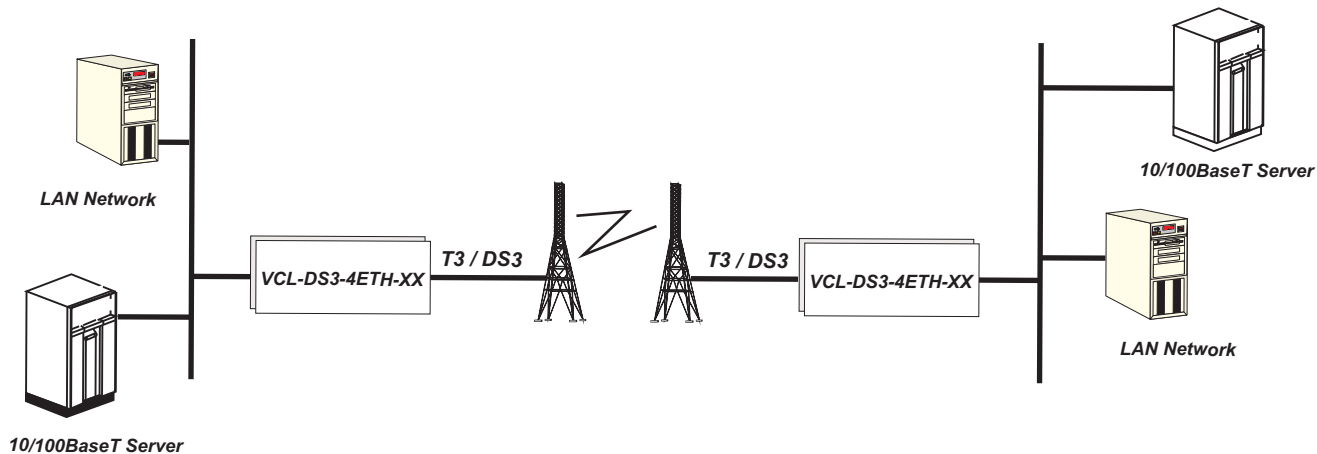
Bit Rate	44.736 Mbps
Bit Rate Tolerance	+/- 20ppm
Line Code	B3ZS
Framing options *	Meets ANSIT1.404 M13 (M23) C-Bit Un-framed
Pulse Shape	Meets ANSI T1.102-1993 and Bellcore GR-499-CORE
Connectors	BNC, Co-axial Un-balanced
Impedance	75 Ohms

### Application Diagrams

#### Application 1: Remote LAN Connections over Optical Sonet/SDH Network



#### Application 2: Remote LAN Connections over Wireless T3 / DS3



## Technical Specifications

### DC Adapter Power Supply Specifications (DC Option)

Power Supply	-48V DC (-40V DC to -60V DC)
Input DC voltage	-48V DC ( nominal )
Range of input	-40V to -60V DC
Output voltages	+3.3V
Full Load Output Current	2A at +3.3V
Input Voltage Reversal Protection	Provided in the Card
Over Current Protection	2A for +3.3V
Short Circuit Protection	Current limit - 3A. Recovers on removal of Short
Under Voltage	< 3.17V
Over Voltage	3.5V
Efficiency at full load	>90%
Ripple at full load	<5mVrms
Spike at full load	<50mV

### AC Power Supply Specifications (AC Option)

Input AC voltage of AC Adapter	100 - 240 Volt AC
Range of input AC voltage	100 V to 240 V AC
System Input voltage	7.5 V DC to 9.0 V DC, DC input polarity protection
Maximum full load Output Current	2.5 A at 7.5 V DC/9.0 V DC
Input voltage reversal Protection	Provided in the Card
Efficiency at full load	>86%

### Power Supply options

Power Supply	-48V DC (-40V DC to -60V DC) (Optional)*
Power Supply	AC input (Optional)*

\* Please specify the Power Supply Option (AC or DC) which is required before placing the order. Please see ordering information in this data sheet for details.

### Power Consumption

Power Consumption	9 Watts
-------------------	---------

### Chassis

- 1U High (42 mm)
- 19-inch rack-mounting shelf.

### Number of Ethernet Interface

10/100BaseT (Electrical)	4
10/100BaseT Electrical +100Base FX Optical	3 Electrical and 1 Optical

### 100BaseT Interface (Electrical Ethernet)

Interface Types	100BaseT
Standards Compliance	IEEE 802.3-2002 RFC1662 RFC2615 X.86 RMII
Interface Rate	100BaseT limited to DS3 transmission rate
Protocol	HDLC/X.86 (LAPS) Encapsulation
Connectors	RJ-45 (100 BaseT Electrical)

### 100Base-FX Interface (Optical Ethernet)

Interface Types	100Base-FX
Standards Compliance	IEEE 802.3-2002 RFC1662 RFC2615 X.86 RMII
Interface Rat	100Base-FX optical Limited to DS3 transmission rate
Protocol	HDLC/X.86 (LAPS) Encapsulation
Connectors	SC

## Technical Specifications

### Receiver Optical Characteristics

Parameter	Minimum	Typical	Maximum
Data Rate		125Mb/s	
Receive Sensitivity	-24dBm		
Maximum Input Power			-3dBm
Operating Wavelength	-10dBm	850nm	
Connectors	SC		

### Ethernet Interface Specifications - 100Base-FX (Optical) - 1310nm Single Mode

#### Transmitter Optical Characteristics

Parameter	Minimum	Typical	Maximum
Data Rate		125Mb/s	
Center Wavelength	1260nm	1310nm	1360nm
Output Spectral Width (RMS)			6nm
Average Output Power	-15dBm	-12dBm	-8dBm
Output optical Eye	Complaint with ITU-T G.957		
Connectors	SC		

#### Receiver Optical Characteristics

Parameter	Minimum	Typical	Maximum
Data Rate		125Mb/s	
Receive Sensitivity	-32dBm		
Maximum Input Power			-15dBm
Operating Wavelength	1100nm		1600nm
Connectors	SC		

### Ethernet Interface Specifications - 100Base-FX (Optical) - 1550nm Single Mode

#### Transmitter Optical Characteristics

Parameter	Minimum	Typical	Maximum
Data Rate		125Mb/s	
Center Wavelength	1480nm	1550nm	1580nm
Output Spectral Width (RMS)			4nm
Average Output Power	-15dBm	-12dBm	-8dBm
Output optical Eye	Complaint with ITU-T G.957		
Connectors	SC		

### Receiver Optical Characteristics

Parameter	Minimum	Typical	Maximum
Data Rate		125Mb/s	
Receive Sensitivity	-32dBm		
Maximum Input Power			-15dBm
Operating Wavelength	1100nm		1600nm
Connectors	SC		

### DS3 (T3) Interface

Number of DS3 Interfaces	One
Bit rate	44.736 Mbps
Bit rate tolerance	+/- 20ppm
Line code	B3ZS
Framing options *	M13 (M23) C-Bit Un-framed
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	≤ 20mV
Signal level to clear loss signal condition	≥ 90mV

*Framing options \* - All framing options are user selectable.*

### Clock

Internal	System Internal Clock
Loop-Timed	Timed from Ds3 Interface

### Management and Control

- Serial Management Port - RS232 Interface
- 10/100 BaseT for Remote Management over a LAN
- 10/100 BaseT Telnet over a TCP-IP Network

### Command Language

- Command Line Interface (English text commands)
- Windows based GUI (optional)

## Technical Specifications

### 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>

### Ordering Information

S. No.	Part #	Product Description
1	VCL-1457_1458-DS3-4ETH-AC-DLX	VCL-4Ethernet over DS3 Switch (DS3 Ethernet Switch) 19" Shelf 1U High Mount Version Supports: <ul style="list-style-type: none"> <li>- 4 x Ethernet [100Mbps, Electrical RJ45 (F)]</li> <li>- 1 x DS3 [45Mbps, 75Ω 2xBNCF Co-axial] [Framed and un-framed options - User Programmable]</li> <li>- 1 x 100-240VAC Power Supply Input [Adapter Option]</li> <li>- 1 x Systems Core Cables, Installation accessories, Documentation, System User Manual / Disk etc (Set)</li> <li>- OAM : 10/100BaseT Ethernet - RJ45 (Telnet) and Serial Port (DB-9 COM Port)</li> </ul>
2	VCL-1457_1458-DS3-4ETH-DC-DLX	VCL-4Ethernet over DS3 Switch (DS3 Ethernet Switch) 19" Shelf 1U High Mount Version Supports: <ul style="list-style-type: none"> <li>- 4 x Ethernet [100Mbps, Electrical RJ45 (F)]</li> <li>- 1 x DS3 [45Mbps, 75Ω 2xBNCF Co-axial] [Framed and un-framed options - User Programmable]</li> <li>- 2 x -48VDC Power Supply Input</li> <li>- 1 x Systems Core Cables, Installation accessories, Documentation, System User Manual / Disk etc (Set)</li> <li>- OAM : 10/100BaseT Ethernet - RJ45 (Telnet) and Serial Port (DB-9 COM Port)</li> </ul>

Technical specifications are subject to changes without notice.

Windows is the registered Trademark of Microsoft Corporation, USA.

Revision 08 - February 17, 2017

#### U.K.

Valiant Communications (UK) Ltd  
 1, Acton Hill Mews,  
 310-328 Uxbridge Road,  
 London W3 9QN  
 United Kingdom  
 E-mail: gb@valiantcom.com

#### U.S.A.

Valcomm Technologies Inc.  
 4000 Ponce de Leon, Suite 470  
 Coral Gables,  
 FL 33146, U.S.A.  
 E-mail: us@valiantcom.com

#### INDIA

Valiant Communications Limited  
 71/1, Shivaji Marg,  
 New Delhi - 110015,  
 India  
 E-mail: getinfo@valiantcom.com