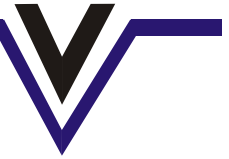


VALIANT COMMUNICATIONS LIMITED



VCL-Ethernet over SDH (Ethernet over STM-1)

Product Brochure & Data Sheet

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Product Overview

Valiant's VCL-Ethernet-over-SDH provides a simple, cost effective and compact solution to convert 10/100BaseT data interface on the user side and transport Ethernet traffic over a STM-1 SDH link and reconstruct the data back to ethernet frame format, at remote end. The converter is an effective method for converting and transporting 10/100BaseT ethernet data over an STM-1 (SDH) link.



VCL-Ethernet over SDH

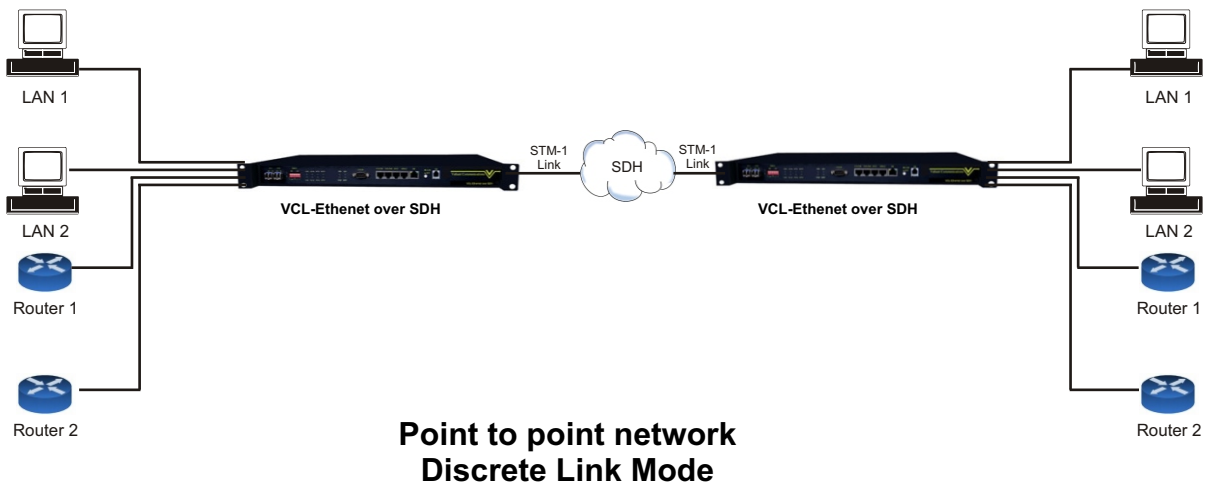
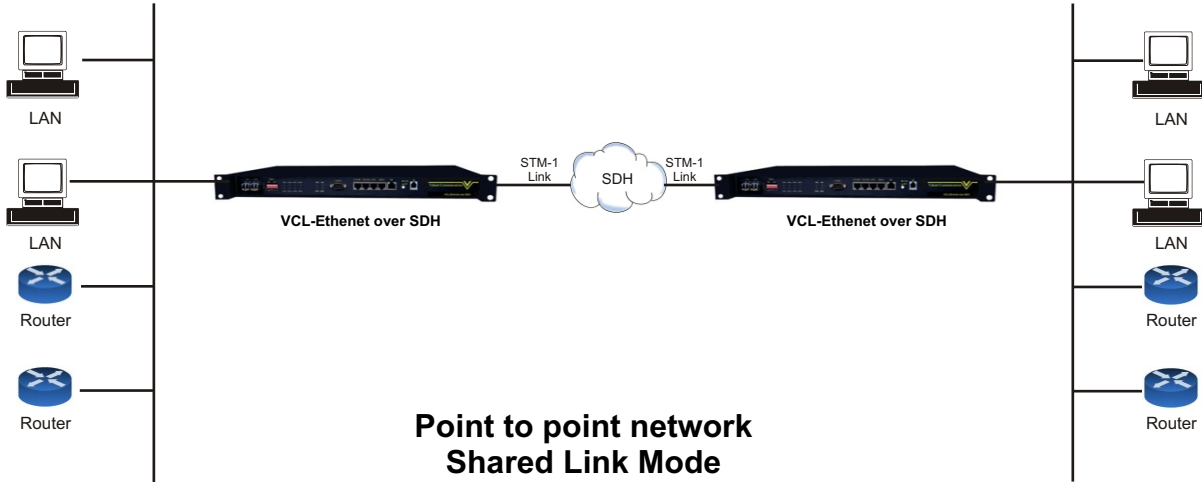
Features and Highlights:

- Compact 1U height, 19-Inch standard chassis ideal for rack mounting
- Service interfaces
 - 2 x STM-1 optical interfaces, SFP optical module (LC connector)
 - 2 x STM-1 electrical interfaces, SFP electrical module (Mini BNC connector) (optional)
 - 4 x 10/100BaseT Ethernet (electric) interface
 - 1 x GigE (GigaBit) Ethernet (optical) interface (optional)
- Management and Maintenance Interfaces
 - TCP/IP Management Interface for Telnet and SNMP
 - RS232 Serial Management Interface
 - SNMP based NMS inbuilt with Windows XP / Windows Vista compatible Graphical User Interface (GUI)
 - SNMP V2 Management and Monitoring
 - Engineering Order Wire (EOW) Interface (RJ-11)
- Timing mode
 - Synchronization with STM-1 line timing
 - External timing source option - 120 Ohms 2Mbps (External Bits Clock)
 - External timing source - 120 Ohms 2MHz (External TTL Clock)
 - Internal Clock - ITU-T G.813 internal oscillator
 - The timing source can be auto-switched according to default or operator programmed settings
- Ethernet Standards Conformity:
 - Generic Framing Procedure GFP-F compliant with ITU-T G.7041
 - VCAT compliant with ITU-T G.707 and LCAS compliant with ITU-T G.7042
 - Ethernet flow control on WAN Port and LAN Port
 - Maximum Frame Size : 1536 bytes
 - Auto MDI/MDI-X for Ethernet Interfaces.

Features and Highlights:

- Supports 1+1 Line Protection and Automatic Protection Switching (APS) with less than 50ms recovery
- Supports Remote Power Down Detection (RPD) and Auto Laser Shutdown (ALS)
- Supports STM-1 loop-back for troubleshooting
- Supports management based on CLI commands via RS232 interface and TELNET
- Redundant power supply (-48V DC) option available
- Power consumption less than 20W
- Providing standard STM-1 Electrical interface compliant to G.664 standard
- 4 x Ethernet Ports - electrical
- Supports 802.1Q based VLAN tagging
- Supports Port based VLAN tagging
- Dual or single fiber transmission supported
- 1310nm wavelength and 1550nm wavelength supported
- Ethernet mapping adopts GFP/VC-12 virtual concatenated technology; according with MSTP criterion
- Provides Ethernet over SDH mapping through standard GFP and VC-12 virtual concatenation (VCAT).
- EoS bandwidth can be adjusted between 2M~100M by set the number of VC-12s (1~48) through management software.
- Supports MAC Address list filtration, learning and updating function
- Easy to operate

Network Application



Technical Specifications:

Item		Criterion
Interface	STM-1 SDH Optical Port	G.957, framing G.707
	Electrical Ethernet Port	IEEE 802.3 100Base-Tx
Timing	SDH	G.813, G.825

Network topology	Point to point network
Service interface	STM-1 SDH single optical or double optical ports (1+1 protection) supported - 10/100BaseT Ethernet
Clock mode	Line clock or internal high precision oscillation can be selected

SDH signal interface:

Bit rate	155520 kbit/s (STM-1 G.957, framing G.707)
Line code	Scrambled NRZ
Optical ports	1 or 2 optical ports selected

Optic interfaces available

Type	Wavelength (nm)	Mean launched power (dBm)	Receiver sensitivity (dBm)	Receiver overload (dBm)	Connector	Configuration
Double fibers ,two directions	1310	-8 ~ -12	- 36	-3	SC	Standard (S1.1)
	1310	0 ~ -5	- 36	-3	FC or SC	Selected (L1.1)
Single fiber, one direction	1310 / 1550	-8 ~ -14	- 30	-3	FC or SC	Selected
	1310 / 1550	0 ~ -5	- 30	-3	FC or SC	Selected

STM-1 electrical interface

Data Rate	155.52 Mbps
Standard	ITU-T G.703 Compliant
Line Code	CMI
Physical Connector	Mini BNC
Automatic 1+1 line protection	Less than 50 ms switching / recovery

STM-1 optical interface

Data Rate	155.52 Mbps
Standard	ITU-T G.703 Compliant
Bit rate	155.520Mbps
Coding	NRZ
Connector	LC
Light source	Class 1 Laser
Wave length	1310nm or 1550nm (optional)
Transmit power	S 1.1, L 1.1, L 1.2 (- 11 dBm to - 2.5 dBm - as may be or dered)
Receive sensitivity	S 1.1, L 1.1, L 1.2 (- 28 dBm to - 34 dBm - as may be ordered)
Automatic 1+1 Line Protection	Less than 50 ms switching / recovery
Automatic Laser Shut Down Option	User selectable options

Ethernet Interface Specification: 10/100BaseT (Electrical)

Interface Types	10/100BaseT
VCAT Compliance	ITU-T G.707
LCAS Compliance	ITU-T G.7042
GFP-F	ITU-T G.7041
Frame Size	1536 bytes
Transmission Bit Rate	10/100BaseT
Connectors	RJ-45 (10/100 BaseT Electrical)

Ethernet data port

<ul style="list-style-type: none"> • 4 100Base-Tx Ethernet ports. Comply with IEEE 802.3 specifications
<ul style="list-style-type: none"> • 10M/100M, Half duplex/full duplex auto-adapted
<ul style="list-style-type: none"> • Ethernet data rate can be adjusted from 2M to 100M
<ul style="list-style-type: none"> • MDI and MDI-X auto-adapted (automatic cross-parallel cable recognition)
<ul style="list-style-type: none"> • Connectors: RJ-45 socket
<ul style="list-style-type: none"> • 802.1Q MAC packet transparent transmission supported
<ul style="list-style-type: none"> • Maximum size: 1536 byte

Clock Synchronization Options

Clock Synchronization options	Internal Clock
	STM-1 line clock
	External 2 Mbps clock source
	External 2 MHz clock source

Engineering Order Wire (EOW)

Engineering Order Wire (EOW)	RJ-11 connector
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NMS

Windows XP / Windows Vista compatible
SNMP V2 based NMS

Power Supply Options

DC Mains Input	- 48VDC (range 40V DC to 60V DC)
Power Consumption	< 20 Watts

Operating Conditions

Ambient temperature	-20°C ~ +65°C
Relative humidity	<90% (Non condensing)

Mechanical Specifications

Rack Mounting	Standard 19 Inch. DIN Rack
Height	44 mm.
Depth	256 mm.
Width	440 mm.
Weight	3.5 kg

Ordering Information

VCL-Ethernet over SDH			
S. No.	Part #	Product Description	Qty
1.	VCL-STM-1-o-ETH	STM-1 Optical, Ethernet over SDH transmission unit	1
2.	VCL-STM-1-e-ETH	STM-1 Electrical, Ethernet over SDH Transmission unit	1

Technical specifications are subject to changes without notice.
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