VCL-5051

10G OPTICAL REPEATER

Introduction:

The VCL-5051, 10G Optical repeater is a ruggedized and robust, 3-R 10G Repeater that Re-Generates, Re-Shapes, and Re-Times the 10G optical signal so that it may be extended over long distances on optical links. VCL-5051 supports point-to-point applications.

The most common application for the VCL-5051 repeater is for transmitting (Re-Amplification, Re-Shaping and Re-Timing) of 10G optical signal over extended optical spans. By installing a VCL-5051, the existing 10G interfaces can be extended by a factor of "n" over multiple optical spans, with each optical span admeasuring approximately 100KM / 62 Miles.

Product Image: 19" Rack Mountable Unit

VCL-5051 meets and complies with EMI, EMC, Surge and Temperature specifications making it suitable field / pole installations to provide uninterrupted service even in the most demanding and harsh environments.

Power Supply Options:

- 12VDC, solar powered battery bank (9V to 14VDC).
- 48VDC, nominal (18VDC to 60VDC)
- 110/220VDC (external adapter option)
- 90~240V AC, 50/60Hz (external adapter option)

Technical Specifications:

Connectors

Power	1 x Terminal Block, 2-PIN Supply Connector
10G Interface	2 x SFP+
Management	1 x USB Type-B Connector 1 x Ethernet (RJ-45) Connector
Alarm-IN	1 x Terminal Block, 2-PIN Connector
External Alarm	1 x Terminal Block, 3-PIN Connector
Alarm reporting	2 x RS232 / RJ-45 Connectors

Chassis:

- 19" Rack and Pole Mountable.

Power Supply Specifications

Solar Powered Battery Bank	12VDC (nominal)
Range of Input Voltage	9VDC to 14VDC
Telco DC Voltage	48VDC (nominal)
Range of Telco input voltage	18 ~ 60VDC
Voltage reversal protection	Protected
Short circuit protection	Protected
Power Consumption	<14W at ambient

10G Interface Specifications:

Interfaces per unit	Two
Protocol	10G Ethernet
Optical Connector	LC (SFP+)
Optical Transmitter	LASER
Optical Transmit Power	As per selected SFP+ module
Optical Receive Power	As per selected SFP+ module

Application Diagram:

Environmental:

Operating Temperature	-20^{0}C to +60^{0}C
Maximum Operating Humidity	95% R.H., Non-Condensing
Maximum Operating Altitude	Up to 3,000 meters above sea Level
Operation	ETS 300 019 Class 3.2
Storage Temperature	-40^{0}C to +70^{0}C
Storage	ETS 300 019 Class 1.2
Maximum Storage Humidity	98% R.H., Non-Condensing
Maximum Storage Altitude	Up to 3,000 meters above sea level
Transportation	ETS 300 019 Class 2.3

EMI, EMC, Surge Withstand and other Compliances:

EN 50081-2	EN 50082-2	IEC 60068-2-29
IEC 61000-4-6 (Conducted Immunity)	IEC 60068-2-2	IEC 60068-2-78
	IEC 60068-2-1	IEC 60068-2-14
CISPR 32 / EN55032 Class A (Conducted Emission and Radiated Emission)		
IS 9000 (Part II Sec. 1-4, Part III Sec. 1-5, Part IV, Part 14 Sec. 1-3)		
IEC 60870-2-1	IEC 61000-4-5	IEC 61000-4-8
IEC 61000-4-3 (Radiated Immunity)	IEC 61000-4-2	IEC 61000-4-4

Electromagnetic Standards Compliance:

- EN 50081-2, EN 50082-2
- IEC 61000-6-2 (Immunity)
- IEC 610000-6-4 (Emission)
- Complies to IEEE and IEC standards

CE Compliance:

- Low Voltage Directive 2014/35/EU
- Electromagnetic Compatibility 2014/30/EU

Other Regulatory Compliances:

- RoHS, Meets CE requirements
- Complies with FCC Part 68 and EMC FCC Part 15
- Telcordia GR-1089 Surge and Power Contact

Local Management:

- 1 x RJ45 Interface (10/100BaseT),
- Telnet
- 1 x Serial USB.

Remote Management:

- GSM

Mechanical Specifications:

➢ 19" Rack Mountable

- H x W x D: 44 x 482 x 199 mm
- Weight: 2.9 Kgs

➢ Pole Mountable

- H x W x D: 380 x 280 x 175 mm
- Weight: 6 Kgs.

Ordering Information (Base Unit):

Part No.:	Description:
VCL-5051-DC	VCL-5051, 10G, Optical repeater Supports: - 2 x 10G SFP+ port (without SFP+) - 1 x DC Power Supply Input - Management: Telnet (RJ45 (F) Port), Serial Port (USB), Graphical User Interface (GUI) - Installation Kit: System Core Cables, Mounting Hardware, Documentation.

Mounting Options:

R	19" Rack Mountable with 48VDC, nominal (18VDC to 60VDC) power supply input
P	Pole Mountable with 12VDC, nominal (9V to 14VDC) power supply input

Optional Power Supply Options:

VCL-EMOD 0444-AC220	External Power Supply - DIN Rail Mount Power Supply (External) AC to DC Converter, DRL30-24-1, DIN Rail Mount - Input: 1 x AC Input [90~240V AC, 50/60Hz] - Output: 1 x DC Output [24VDC~1.25A, 30W]
VCL-EMOD 0444-DC220	External Power Supply - DIN Rail Mount Power Supply (External) DC to DC Converter, DRL30-24-1, DIN Rail Mount - Input: 1 x DC Input [100~250V DC] - Output: 1 x DC Output [24VDC~1.25A, 30W]

*10G SFP+ Options:

VCL-EMOD 0552	10G SFP+ Transceiver 10Gigabit Ethernet, Duplex LC, Tx- Min: -3.0dBm, Max: +1.0dBm Receiver Sensitivity -14.4dBm 1310nm, 11.4dB, 20Km, SMF, RoHS
VCL-EMOD 0553	10G SFP+ Transceiver 10Gigabit Ethernet, Duplex LC, Tx- Min: +1.0dBm, Max: +5.0dBm Receiver Sensitivity -15.0dBm 1310nm, 16dB, 40km, SMF, RoHS
VCL-EMOD 0554	10G SFP+ Transceiver 10Gigabit Ethernet, Duplex LC, Tx- Min: -4.7dBm, Max: +4.0dBm Receiver Sensitivity -15.8dBm 1550nm, 11.1dB, 40Km, SMF, RoHS
VCL-EMOD 0555	10G SFP+ Transceiver 10Gigabit Ethernet, Duplex LC, Tx- Min: 0.0dBm, Max: +5.0dBm Receiver Sensitivity -23.0dBm 1550nm, 23dB, 80Km, SMF, RoHS
VCL-EMOD 0556	10G SFP+ Transceiver 10Gigabit Ethernet, Duplex LC, Tx- Min: +1.0dBm, Max: +5.0dBm Receiver Sensitivity -25.0dBm 1550nm, 26dB, 100Km, SMF, RoHS