VALIANT COMMUNICATIONS

Introduction:

IEEE C37.94 Optical Data Interface Card provides 4 x IEEE C37.94 compliant interfaces for the VCL-MX Version-6 E1 PDH Multiplexer. This card can be used to interface with current differential and distance protection relays.

VCL-MX Version 6 - 80 x E1 Multiplexer may be used for inter-connecting legacy voice and data networks, provisioning and managing bandwidth on a E1 channelized level as well as 64Kbps, DS-0 time-slot level and can be used as a digital-access cross-connect equipment. This solution also provides 4 x Binary (110VDC / 220VDC) Commands Teleprotection interface for providing Distance Protection and IEEE C37.94 optical (MM / SM) ports for providing Distance / Differential Protection.

Front View - VCL-MX Version 6

By installing IEEE C37.94 Card, the existing IEEE C37.94 interfaces from differential and protection relays can be transmitted over the E1 network without incurring large capex, or without the tiresome task of having to replace or rewire the IEEE C37.94 Relays which need to be interconnected to the far end substations over E1 (SDH) transmission links.

Application Diagram:

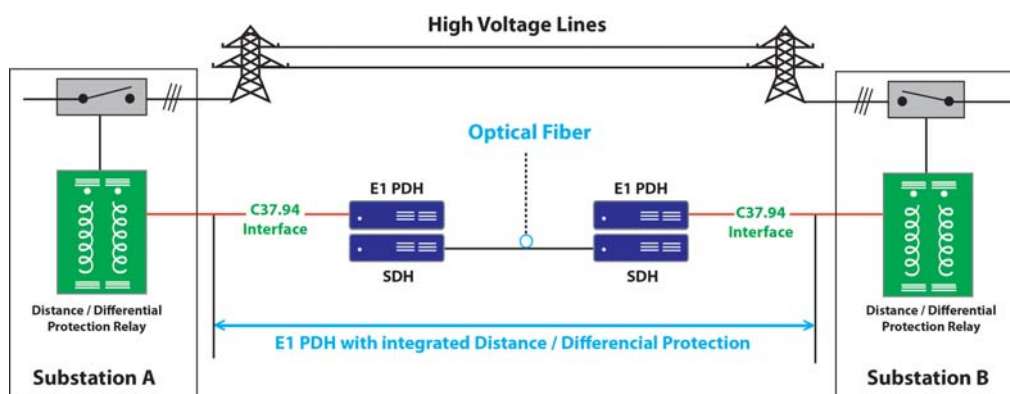IEEE C37.94 Teleprotection Card Provides Distance / Differential Protection using IEEE C37.94 Teleprotection Interface. 4 x C37.94 Optical Interfaces are provided per card. Each MUX supports up to 9 x C37.94 TP Cards (i.e. 36 x IEEE C37.94 Optical interfaces).

VCL-MX IEEE C37.94 interface card meets and complies with EMI, EMC, Surge and Temperature specifications making it suitable for sub-station installations to provide uninterrupted service even in the most demanding and harsh environments.

IEEE C37.94 Teleprotection Card

Technical Specifications:

IEEE C37.94 Interface Specifications Option #1:

Interfaces per card	4 (4 Tx, 4 Rx)
Standards	IEEE C37.94
Optical connector	ST
Optical Transmitter	LED
Optical	820nm Multi-Mode

IEEE C37.94 Interface Specifications Option #2:

Interfaces per card	4 (4 Tx, 4 Rx)
Standards	Modulation as per IEEE C37.94
Optical connector	LC (SFP)
Optical Transmitter	Laser
Optical	820nm/850nm Multi-Mode 1310nm/ 1550nm Single Mode

Technical Specification:

Environmental

Operating Temperature	-20^{0}C to +60^{0}C
Maximum Operating Humidity	95% R.H., Non-Condensing Humidity
Maximum Operating Level Altitude	Up to 3,000 meters above sea
Operation	Complies with ETS 300 019 Class 3.2
Storage Temperature	-40C to +70C
Storage	Complies with ETS 300 019 Class 1.2
Maximum Storage	98% R.H., Non-Condensing Humidity
Maximum Storage	Up to 3,000 meters above sea level Altitude
Transportation	Complies with 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 60068-2-6	IEC 60068-2-2
IEC 60068-2-78	IEC 60068-2-1	IEC 60068-2-14
CISPR 32 / EN55022 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 61000-4-12
IEC 61000-4-3 (Radiated Immunity)	IEC 61000-4-8	IEC 61000-4-16
IEC 61000-4-2	IEC 61000-4-10	Telcordia GR-1089 Surge and Power Contact
IEC 61000-4-4	IEC 61000-4-11	

- ESD, Voltage and Surge Withstand: Meets and exceeds IEC 61000-4-2, IEC 61000-4-4, IEC 61000-4-5, Level 4 specifications.
- Immunity to Voltage Dips, Short Power Supply Interruptions and Voltage Variations meets and exceeds IEC6 1000-4-11, Level 1 specifications.

Other Regulatory Compliances:

- RoHS
- CE marking
- Complies with FCC Part 68 and EMC FCC Part 15

Ordering Information:

Part No.	Description:
VCL-MX-1564-04-MM-ST	Integrated, 4 x Ports, C37.94 Interface Card, Multi-Mode, 820nm, 1.5Km, ST Connector (May be used to multiplex and connect up to 4 x C37.94 Protection Relays or 4 x VCL-TP Teleprotection Terminals with C37.94 Optical Interfaces. Supports: - 4 x C37.94, Tx, 820nm, MM, ST - 4 x C37.94, Rx, 820nm, MM, ST
VCL-MX-1554-04	4 Port, Integrated IEEE C37.94 Optical, SFP based Teleprotection Interface Card, used to connect up to 4 x C37.94 Protection Relays or 4 x VCL-TP Teleprotection Terminals (without SFPs - SFPs must be ordered separately). Supports: - 4 x C37.94 protocol Optical Interface [without SFP] (4 x SFP to be ordered separately)

Select SFP option from below:

VCL-EMOD 0262-TP	SFP Transceiver Duplex LC, 850nm, 2Km, MM (Multi-Mode)
VCL-EMOD 0294-TP	SFP Transceiver Duplex LC, 1310nm, 2Km, MM (Multi-Mode)

Add Accessories:

VCL-HRNS 1292	Optical Patch Cord Connectorized Cable [ST-FC, 3m, Multi-Mode]
VCL-HRNS 1301	Optical Patch Cord Connectorized Cable [ST-LC, 3m, Multi-Mode]

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

U.K.
Valiant Communications (UK) Ltd
Central House Rear Office
124 High Street, Hampton Hill
Middlesex, TW12 1NS, U.K.
E-mail: gb@valiantcom.com

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