



RFL Communications plc

PRODUCT INFORMATION

C37.94 Short Haul Fibre Card



The C37.94 sub-station fibre module has been developed to interface with any ANSI compliant protection device. The card is designed to be integrated into a dedicated chassis or within the UMUX1500 multi-service platform.

Purpose

The C37.94 protocol facilitates direct fibre connections from protection relays/devices across a sub-station site to a central telecoms room. The RFL C37.94 card provides a mechanism to translate the C37.94 protocol to an X.21 nx64Kbit/s electrical signal, suitable for connection to any ITU-T compliant interface.

The RFL C37.94 module is available as a standalone device that can be integrated into a multi-card 19" sub-rack, complete with redundant PSU. This provides a clear demarcation point between protection and telecoms.

Alternatively the same module is available as a plug in card for the UMUX1500 multi-service platform. The UMUX is a fully configurable SDH/PDH TDM multiplexer. It has been adapted specifically for the sub-station environment and is available with a full range of voice, data and IP interfaces.

Key Benefits and Features

- Fully compliant with ANSI C37.94 fibre standard
- Facilitates connection of a complaint protection device with non-complaint digital telecom equipment.
- Can be supplied as a fully integrated card within the UMUX1500 multiplexer
- Ruggedised for use within harsh electrical environments

Description

The RFL C37.94 Short Haul Fibre Interface is designed to interface ANSI compliant devices such as protective relays, protection signalling equipment and other devices found in the high voltage substation environment, to a multiplexer that does not support the standard. The RFL unit converts the optical signal into an electrical signal that will be accepted by the multiplexer or digital telecom interface (NTU). The digital output to the Fibre Optic Service Unit is connected to the communications equipment by a short electrical cable as shown in Figure-1. The unit is available with an X.21 interface.

The C37.94 standard defines a point-to-point optical link for synchronous data between a multiplexer and a teleprotection device. This data is typically 64kb/s but the standard provides for speeds up to 768 kb/s or (12 x 64 kb/s). The clocking is generated by the multiplexer/NTU and is recovered and reused by the protection device/relay. A fixed framing pattern and some variable overhead bits are provided in the frame structure. The data is of alternating polarity to ensure clock edges regardless of the ones density. The gross bit rate is 2.048 Mbit/s and the frame complies with G.704 (E1) rules.

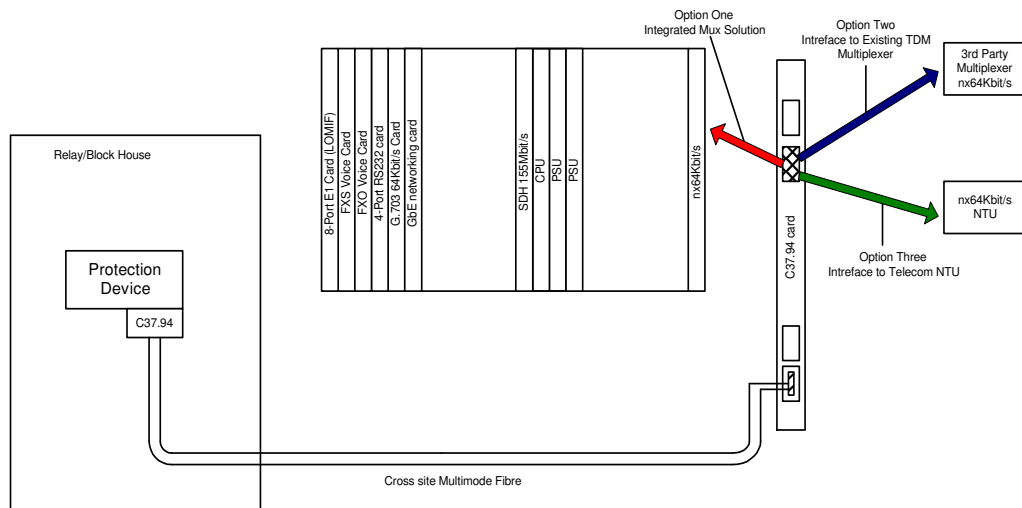


Figure 1: Typical ANSI compliant Teleprotection device with RFL Fibre Card

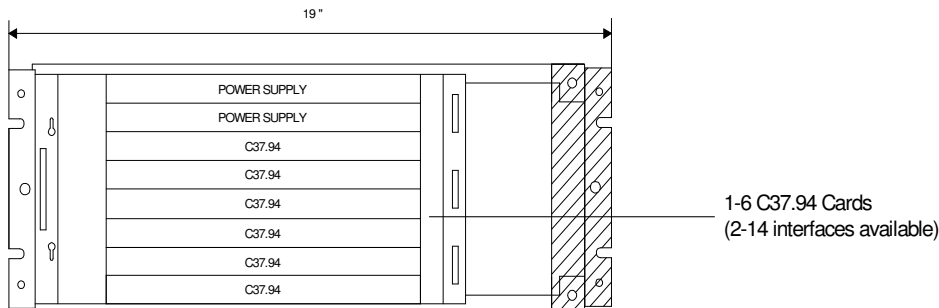


Figure 2: Standalone R12 chassis, with redundant PSU present

Technical Specifications

Operating temperature	-30°C to +60°
Operating Humidity	95% RH Non Condensing @ 40°C
Supply Voltage	Shelf Powered
ESD Withstand	C.37.90.3
RFI Withstand	C.37.90.2
SWC Withstand	C.37.90.1
Dielectric Withstand	C.37.90
Regulatory requirements	CD-LVD
MTTF MIL-HD BK-217F	>20Years
Wavelength and Emitter Type	850nm LED (Short Haul)
Fibre Type	50 or 62.5 Micron Multimode
Optical Budget	50 Micron Core: 9db 62.5 Micron Core: 13db
Digital Connector Type	E2000
Optical Connector Type	Nx64Kbit/s X.21

Contact Details

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