

How do I convert my RFL™ 9745 analog teleprotection equipment to operate over T1 leased digital lines?

The Scenario:

Telephone companies will no longer support audio leased lines starting as early as 2015. This presents an issue for utilities currently operating their RFL 9745 equipment with an analog communications interface. In some scenarios, full or fractional T1 leased digital data service lines are available for a nominal monthly fee. Utilities are looking for a path forward that minimizes operational impact, requires little engineering, and assures comparable security & dependability for their protection signalling.

The Solution:

For point-to-point teleprotection applications, RFL offers a complete digital upgrade kit that allows the customer to replace the 9745 analog interface with a digital interface module set. The C37.94 digital interface cables directly into the RFL Dual Channel C37.94-to-T1 Fiber Service Unit (FSU), which in turn plugs directly into a full or fractional T1 line. This layout is mirrored on the remote end teleprotection equipment.

For each side, the following equipment is required:

Description	Part #
9745 Digital Comms Module	105060-2
9745 C37.94 Interface Module	107310
Fiber Optic Patchcord 6ft	303702-6
Dual Channel C37.94-to-T1 FSU	107560-1

The Results:

This field-proven design ensures out-of-box performance in a substation's operational environment. The digital system improves tolerance to analog noise that could otherwise cause mis-operation, resulting in improved dependability of the protection system. In addition this solution provides the added benefit of a fiber connection between the teleprotection terminal and the FSU.



Before Upgrade: Analog Teleprotection over 4-wire leased lines



After Upgrade: Digital Teleprotection over T1 leased lines

The FSU may also be placed outside the substation at the T1 demarcation point. With only fiber cable entering the station, isolation is provided between the T1 line and the station equipment. Thanks to a modular architecture, there is no need to replace the unit, de-wire the unit from the relay, or remove the unit from the rack. Hardware and software installation time is typically completed in under 90 minutes.

Related Products:

RFL provides a complete installation kit with all necessary equipment and cables, removing the guesswork from upgrades.



RFL 9745

The RFL 9745 is a fully program-

mable Teleprotection Channel suitable for Direct Transfer Trip, Permissive Transfer Trip, Blocking and Unblocking applications. The communications interface can be converted in the field to adapt to different types of media: audio, digital or fiber optic.

About RFL

RFL is a brand of Hubbell Power Systems, Inc. RFL designs and manufactures a comprehensive line of highly-reliable, mission-critical, cost-effective communications and protection solutions for the electric utility and transportation markets, oil and gas markets, government agencies and engineering consulting firms. RFL is focused on guaranteeing mission-critical data will arrive on-time, every time.

