Power Line Carrier Solutions for Transmission Line Communications
GARD Pro™ PLC
The GARD Pro™ Single Function PLC is the latest generation Power Line Carrier terminal. It can be programmed as Frequency-Shift Keyed (FSK) power line carrier system or as an amplitude-modulated ON/OFF powerline carrier terminal.

Features and Benefits
- Intuitive web browser interface
- DNP & SNMP protocol support
- IEC 61850 Ed. 2 GOOSE & MMS support
- Optional Touch Screen Display
- 3U or 6U chassis for up to 4 PLC transceivers
- Highly customizable and flexible logic design
- Common hardware for all FSK & On/Off applications and frequencies
- Digital receiver calibration and frequency programming
- >2000 Sequence of Event records
- Integrated reflected power and signal-to-noise ratio meters

RFL™ 9780 FSK PLC
The RFL™ 9780 is a Programmable Frequency-Shift Keyed (FSK) power line carrier system, which can be supplied as a transceiver (Tx/Rx), transmit-only (Tx), receive-only (Rx), dual transmitter (Tx/Tx), or dual receiver (Rx/Rx). All versions are available with redundant power supplies and increased flexibility through field-programmable frequencies and logic and a reflected power measurement option.

RFL™ 9785 ON/OFF PLC
The RFL™ 9785 is an amplitude-modulated ON/OFF Powerline carrier transmitter/receiver terminal. It is based on three generations of proven RFL technology, with enhanced features to meet today’s market demands. All versions are available redundant power supplies, increased flexibility through field programmable frequencies and logic and a reflected power measurement option.

Auxiliary 50W/100W Amplifiers
The 9508 auxiliary amplifiers provide a 50 watt, or when combined, 100 watts of output signal. These are used in conjunction with RFL™ PLC terminals to provide a higher output level than the standard 10 watts. For demanding applications such as long transmission lines and high noise levels.

Auxiliary Termination Panel
The termination panel provides a termination point where a meter can be connected to take signal measurements. Includes a convenient testing mechanism for taking reflected power measurements without interrupting the circuit. Works with one to three phase coupled systems.
Auxiliary Hybrid – PLC Hybrid Pro™ System

The PLC Hybrid Pro™ System is the latest generation RFL™ hybrid system. The system consists of a 1U chassis with 3 slots for pluggable hybrid modules. Available hybrid modules include Balanced, Skewed, Splitter, Splitter/Combiner and Bypass types. For use with 10 watt transceivers.

Features and Benefits

• Single-card module design for ease-of-use.
• Front BNC test points eliminate the need for adapters.
• Improved port labeling for easy identification.
• Convenient reflected power meter connections to eliminate circuit interruption.
• Space-saving Splitter, Splitter/Combiner, and Bypass hybrids occupy one chassis slot.

High Power Auxiliary Hybrids

High power hybrids are used with 50 watt or 100 watt transceivers. Two types are available; Combiner and Splitter/Combiner. Each hybrid is a 4U rack mounted design and is commonly used in conjunction with auxiliary amplifiers.

9512 Wideband Tuner

The RFL 9512 Line Tuner matches the impedance of the Power Line Carrier (PLC) terminal to the high voltage power line in order to reduce the insertion loss of the transmission of PLC signals over the power line. In addition, isolation from the power frequency voltage and transient overvoltage protection is provided. The 9512 may be used in single phase to three phase coupled systems.

Features and Benefits

• Versatile wideband operation
• Convenient jumper type tuning adjustment.
• Integrated ground switch, drain coil, spark gap and heater available.

Line/Wave Trap

Line or Wave Traps, from Quality Power, direct the PLC signal energy onto the transmission line and isolate the PLC system from the station bus. The trap is typically a parallel resonant circuit, tuned for high impedance at the carrier frequency. Quality Power traps feature rugged construction according to IEC 60353 and ANSI C93.3 standards. In addition they offer low losses, compact design, low weight, multiple mounting options and UV resistance coating.

Features and Benefits

• Air core dry type epoxy impregnated construction
• Multilayer technology with variants up to 3mH, 5000A, 80kA fault currents.
• Low equipment energy Losses
• Multi tap tuning pots for field adjustments

• Variants with very low series resonant frequency up to 900kHz
• Low acoustic profile
• Compact Dimensions
• High-performance anti-UV polyurethane-based paint coated for rugged performance.
• Silicone RTV-based coatings for special applications