



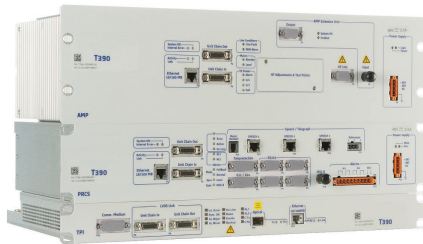
Grid Solutions

TELECOMMUNICATIONS PRODUCT SOLUTIONS

Gridcom T390

Universal power line carrier

New generation PLC solution perfectly adapted to power utilities' environment and constraints.

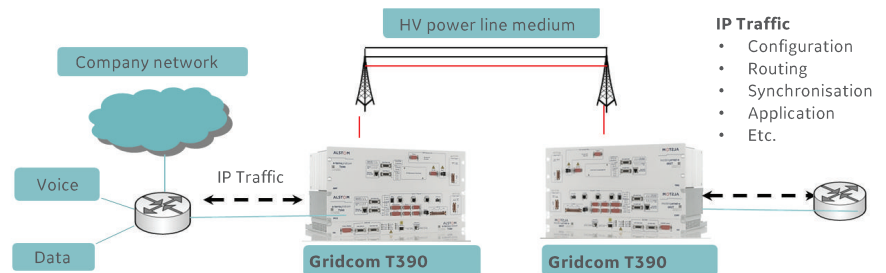


A fully integrated system

Built on years of expertise, **Gridcom T390 PLC** provides a completely integrated system combined with high performance and flexibility for your operations' needs.

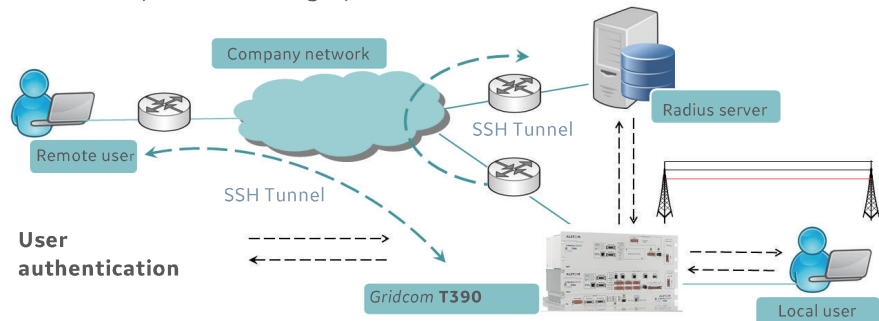
OUTSTANDING TRANSMISSION CAPACITY & EFFICIENCY

Offering up to 320 kbit/s data rate, this is an ideal solution for power utilities' IP based network applications. (VOIP, data) etc.



ENHANCED SECURITY MANAGEMENT

Including RADIUS remote user authentication and SSH encryption, the product adapts perfectly to centralised user management topology for communication confidentiality and data integrity between PLC and the user.



MAIN FEATURES

- Analogue, digital or mixed communication modes with one hardware platform
- Integration within digital communication networks (IP networking, RS232 /RS422(V11), RS485 interfaces)
- Optimised bandwidth allocation with superimposed mode: Up to 320 kbit/s @ 48 kHz total bandwidth
- Up to eight independent teleprotection commands
- Fast recovery time
- Radius authentication and SSH encryption

COMPREHENSIVE & VERSATILE

Offering operational simplicity with common hardware supporting various services:

- Operates like a conventional SSB power line carrier working on 2.5 kHz or 4 kHz basic BW or via a combination of analogue and digital modes.
- In digital mode, can manage separated or superimposed bandwidth

CONFIGURABLE & CUSTOMISED

Offering embedded powerful configuration, commissioning and test tools:

- Line measurements: SNR, AGC, etc.
- G821 statistics (BER, QAM, etc.)
- Constellation and Spectrum views
- System diagnostics event recorder history logging & loopback
- Alarms status monitoring

TECHNICAL SPECIFICATIONS

Transmission capacity

Frequency range	24 to 700 kHz
Bandwidth allocation	Superimposed, Separated
Transmitter power	1 W to 80 W PEP (AMP+AMPX) - software adjustable
Line output	Balanced or unbalanced, 50, 75, 125, 150 Ohm
Max digital bit rate	320 kbit/s

Receiver sensitivity

	-56 dBm (absolute) / -30 dBm (typical)
Minimum SNR for Synchronization	20 dB (QAM16/TCM32) / 24 dB (QAM64/TCM128)

Data & voice services

V11	220 kbit/s @QAM64
V24/28 (RS232)	Digital : 300 - 38400 bit/s Analog : 300 / 600 / 1200 bit/s
Speech	Digital : Vocoder 2400 bit/s, ADPCM16, 24, 32, 40 Analog band : 300-2000 Hz, 300-2200 Hz, 300-2400 Hz, 300-3400 Hz
Ethernet (LAN to LAN)	IEEE802.3/IEEE802.1q

Cyber security

User Authentication	RADIUS and PLC
Encryption	SSH (AES128, 3DES)

Internal teleprotection

	Performance according to 60834-1
I/O Continuous max voltage	160 VDC -250 VAC
I/O Continuous max current	200 A
I/O Peak current	100 A during 30 ms
	8 inputs with logical combination
	14 heavy duty outputs

Dimension & weight

Dimension (L x W x H)	480 mm x 260 mm x (3 to 6 U)
Weight	13 kg to 24 kg

Power supply

Voltage	48 V= typical
Power	72 W typical (AMP) / 15 W typical (PRCS) / 19 W max (TPI)

Environmental

Normal operational	-5 °C / +50°C according to IEC 721-3-3 class 3K5
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Temperature

Extended temperature range	-30°C / + 55 °C
Storage temperature range	-40 °C < T < +70°C

Certification

Insulation	IEC 60495 (IEC 62488) / IEC 60950
EMC (emissions)	Radiated and conducted IEC 61000-6-4 /EN55011
EMC (immunity)	IEC 61000-6-2 /IEC 61000-6-5 for power station and substation environments
Safety	IEC 60950/ IEC 60255
Climatic/Mechanical	IEC 60068-2-4

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