

## Introduction

The Regesta Compact PLC-3G router family brings today's most advanced corporate IP network protocols to the world of smart grids and telemetry. Specially designed to interconnect IP-based networks with PLC technology. It is ideal for the deployment of centralized smart meter communications. It takes full advantage of Teldat's advanced internetworking software (CIT) to provide the latest in communications security with encryption, authentication management and access control. The combination of advanced networking protocols and management tools makes it ideal for large-scale deployments.

## Product Highlights

- ▶ Multiple WAN (2G/3G/LTE, Ethernet)
- ▶ SCADA (Modbus, IEC-101/102, IEC-104 gateway)
- ▶ PLC interface (Base node up to 750 smart meters)
- ▶ Extended temperature range (-10 to 60 °C)
- ▶ Complies with electrical safety regulations & EMC
- ▶ DMVPNs, VLANs and QoS for critical services
- ▶ Dual-SIM redundancy (optional double module)

## Interfaces

## Regesta Compact PLC

1 x 2G/3G/LTE	Yes
2 x 10/100 Mbps Fast-Ethernet	Yes
1 x asynchronous serial port	Yes (RS-232 & RS-485 depending on model)
1 x PLC interface (PRIME 1.3.6 or 1.4)	Yes(associated with the power connector)
LEDs	2 x Ethernet, 2 x 3G, 1 x system, 1x PLC
On/Off button	Yes
2 x SMA antenna connectors	Yes
Dual SIM card tray	Yes

## Competitive Advantage

Reliable communications and hardware	Multiple access technologies (1 LTE + Ethernet) employed with real-time backup mechanisms, SNMP trap notifications and alerts.
Rugged hardware design	Adaptable hardware design for unattended installations, with extended temperature range (-10 to 60 °C) and electrical and electromagnetic immunity.
PLC communications support	Enables direct communication with PLC-based smart meters. Delivers PLC base node and advanced networking communications in a single device.
Corporate networking software	The latest IP network technology for smart grid communications bringing security, quality and ease of use to large-scale multiservice deployments.

# Scenarios

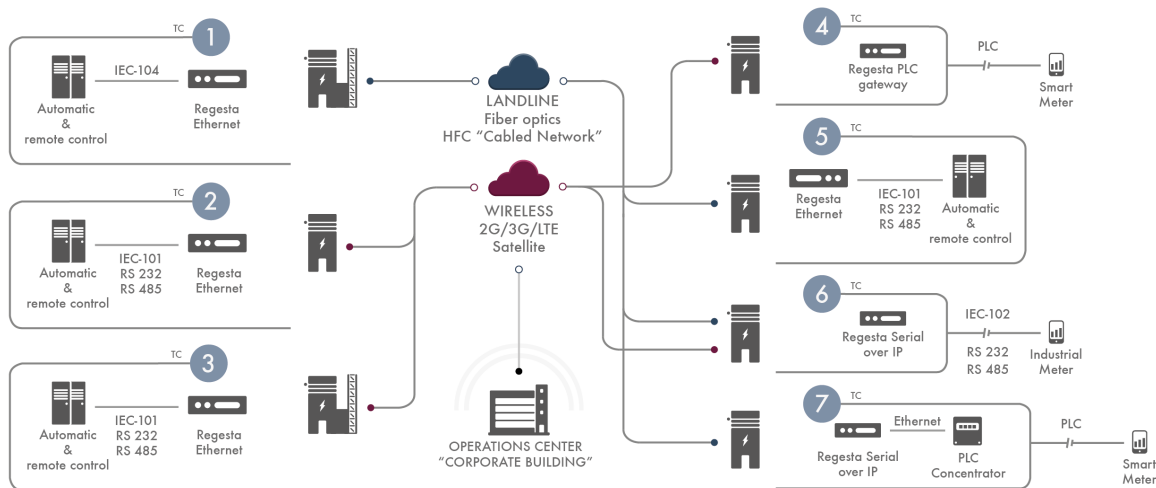


Figure: PLC communications with smart meters and management software

## Key Features

**2 x 10/100 FE port with VLAN, 802.1X, duplex** 1 x 10/100 BaseT auto detect ports (full/half-duplex automatic negotiation). MDI / MDI-X crossover detection, Ethernet V2 / IEEE 802.3 LLC (802.2), ARP, IEEE 802.1Q (VLAN), IEEE 802.1X

**PRIME PLC interface (up to 750 smart meters)** PRIME PLC interface with base and service node operation. It support up to 500 PLC smart meters, with topology discovery and firmware updates.

**2G/3G/4G (dual-SIM backup)** Up to two embedded 2G/3G/4G interfaces, with dual SIM card tray for automatic backups. Advanced Teldat system for proactive monitoring and automatic recovery from WWAN incidents.

**Electrical environment safety certificates** Safety certificates for equipment in electrical environments: EMC, isolation, immunity, electrical, climatic and mechanical.

**Extended temperature range (-10 to 60 °C)** The Regesta Compact PLC-3G includes a housing design for optimal heat dissipation and, wall mount and DIN rail mount options, guaranteeing operation between -10 and 60 °C with up to 95 % humidity.

**Security 802.1X, ACLs, firewall and DMVPNs (IPSec)** The Regesta Compact PLC-3G includes state-of-the-art security: ACLs, firewall, 802.1X, IPSEC with hardware encryption, DMVPNs, etc. This allows for safe and scalable deployment in easy to manage smart grid networks.

**Serial port for SCADA protocols (RS-232 and RS-485)** It is also able to incorporate serial interfaces with SCADA protocols, thus providing the versatility to connect to industrial meters, RTUs and other control devices.

**Advanced services (routing, management, QoS)** The Regesta Compact PLC-3G includes a software stack with the advanced functions required by advanced IP networks, such as QoS, policy routing, DMVPNs, VLANs, and VRF, providing maximum versatility for shared services.

**IEC-101 to IEC-104 Serial-IP and Gateway encapsulation** Data from the serial port can be transparently encapsulated with IP. The "IEC-101 to IEC-104 gateway" function also allows IEC-101 RTUs to be maintained and central management software to migrate to IEC-104.

**Console port for out-of-band management** The console port facilitates troubleshooting and installation at remote points.

## HARDWARE TECHNICAL FEATURES

### PLC communications

Base node (up to 750 service nodes)  
Phase selection in power supply terminals  
Power supply: 85-264 VAC. Consumption: 11W

### Up to three serial interfaces (DB9 connector)

Asynchronous communications up to 115200 bps  
RS-232 and RS-485 options  
RTS/CTS and SCADA flow control (Modbus, IEC-101/102, IEC-104 gateway)

### Dimensions and weight

L x W x H: 140 x 192 x 78.2 mm (without protection)  
Approximate weight: 600 gr.  
Format: DIN rail, and wall mounting and in meter rooms

### Ethernet interface

Up to 2 ports (RJ45 connector)  
802.3i (10BaseT), 802.3u (100BaseT)  
Supports duplex, IEEE 802.3u link speed auto-negotiation, VLAN and 802.1X

### WWAN interface

Built in hardware module with EDGE/UMTS/HSPA+ or LTE technology  
2 x external antennas with SMA connector  
Dual-SIM trays (internal)

### Environmental specifications

Temperature: -10 to 60° C  
Relative humidity: 5 to 95%  
Atmospheric pressure: 700 to 1060 mbars

## SOFTWARE TECHNICAL FEATURES

### IP protocol

ARP, Proxy ARP, MTU discovery, NAT, ECMP, BFD  
RIP, OSPF, BGP, policy-based static and dynamic routing  
Virtual Router Forwarding (Multi-VRF)

### Security

IPSec support in transport and tunnel mode (including DMVPNs)  
Pre-shared authentication, RSA, Certificates, MD5, SHA-1  
DES (56 bits), 3DES (168 bits), AES (128, 192 and 256 bits), IKEv1, IKEv2

### IP services

Telnet, DHCP, DNS, FTP, SFTP and SSH server and client  
NTP, LDAP, Syslog and SCP client. TFTP server  
DynDNS, DHCP relay

### Specific WWAN functions

Automatic hand-over (passive and active probe-based detection)  
Advanced link monitoring (packet error, latency, jitter)  
Dual SIM associated with the hand-over mechanism

### Management (2)

Netflow, RMON V5 and V9, SNMPv1, v2c and v3, Syslog support  
Manageable through SMS and self-provisioning with Colibri  
NetManager  
Wireshark-compatible remote traffic capture

### IP protocol (2)

Multicast: IGMP (v1,v2, v3), PIM-SM, MSDP, MLD, MLDv2  
IPSLA service probes (delay, packet loss, jitter)  
High availability: VRRP, TVRP (HSRP (compatible))

### Security (2)

Certificates: CSR, SCEP, X.509v3, PKIX, LDAP revocation  
Static and dynamic access lists and session-based firewall  
DoS and DDoS attack detection

### Service quality

Classification, marking, bandwidth management and limiting/prioritizing  
Up to 32 classes and 16 queues per interface  
Strict policies (PQ), low latency (LLQ), by weight/class (WFQ, CBWFQ)

### Management

CLI configuration and storage in plain text file  
Assignment of user/group profile licenses  
RADIUS and TACACS+ compatible AAA support

### PLC communications

PRIME version 1.3.6 or 1.4  
PRIME wrapping protocol support (Multiplexing 4-32 connections)  
Network topology discovery and MIBs

## ADDITIONAL TECHNICAL FEATURES

### Console interface

RJ-45 connector with proprietary pinouts (including adaptor)  
Type RS232  
Default speed 9600 bps, maximum speed 115200 bps

### Certificates (I)

Isolation (EN 60255-5) for electrical resistance and impulses  
Immunity (I): EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5  
EN 61000-4-6, EN 61000-4-8, EN 61000-4-10, EN 61000-4-12, EN 61000-4-13

### LEDs

2 status/speed LEDs per Ethernet port  
2 wireless status/coverage LEDs  
1 PLC LED

### Certificates (II)

Immunity (II): EN 61000-4-18 Eléctricas: EN 61000-4-11 and EN 61000-4-29  
Climatic: EN 60068-2-78, EN 60068-2-2, EN 60068-2-1, EN 60068-2-14  
Mechanical: EN 60870-2-2, EN 60068-2-6 EN 60068-2-27

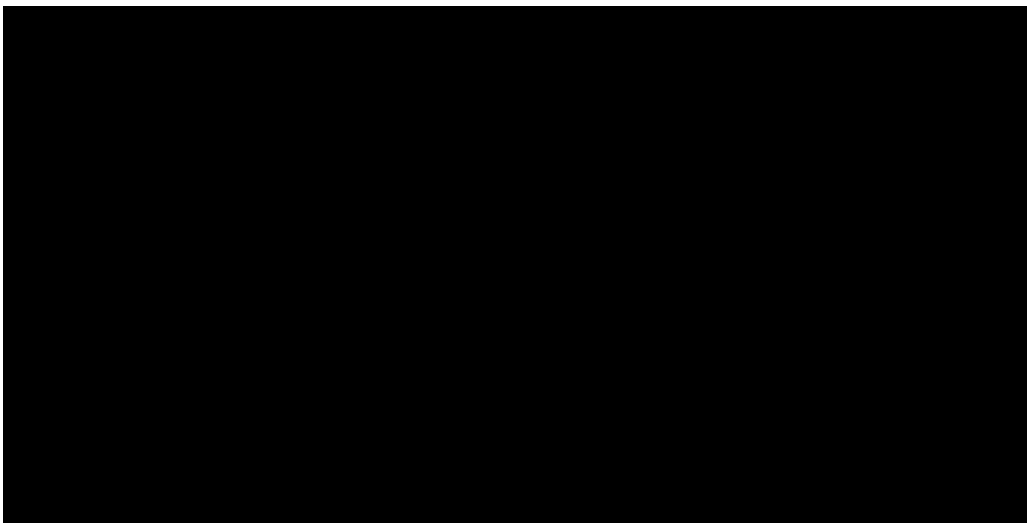
# FLEXIBLE

## COMMUNICATIONS SOLUTIONS

### THAT GROW WITH YOU.

## PLC communication gateway: Regesta Compact PLC

PLC gateway for efficient, cost-effective telemetry deployments



**Teldat is a leading provider in Enterprise Communications equipment and Services for the top corporate to mid-sized and SME markets.**

### About TELDAT



ROUTERS | Wi-Fi | MANAGEMENT | TRANSPORT | SMART GRID | INDUSTRIAL | VoIP | CLOUD | SECURITY | NFV |

Teldat Group is a leading technology holding that designs, manufactures and distributes advanced Internetworking platforms for corporate environments, providing new and cutting-edge communication solutions without ever losing sight of its customers real requirements. Teldat's solutions development is based on proprietary technology, which is in the Group's DNA. This allows Teldat to be a leading provider in Enterprise Communications equipment and Services for the top corporate to midsized markets, as well as the SME and SoHo markets.

From a geographical viewpoint, Teldat Group has a presence in all continents, with its corporate headquarters located in Spain, and operational affiliates in Europe (Germany, Austria, Portugal, Italy and France) and in LATAM (Mexico and Brazil), as well as two business development offices in USA and China.

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**Publish Date:** August 30, 2018  
**Version:** 20180830075721