Regesta Smart NESSUM

Regesta Smart NESSUM Communications Gateway

Introduction

The Regesta Smart NESSUM router family offers the Gen4-BPL High-Speed Power Line Communication Solution, designed for cost-sensitive Smart Grid applications while delivering unmatched flexibility, performance, and efficiency. With fast response times, robust design, and high power efficiency, it's perfect for centralized communication between substations and transformation centers.

Powered by Teldat's advanced internetworking software, it ensures top-level security with encryption, authentication management, and access control, making it a reliable solution for modern smart grid and smart city infrastructure.

Destacar

- **Multiple WAN (NESSUM, LTE, Ethernet, SFP)**

- **BPL (NESSUM) interface (>100Mbps)**

- **Extended temperature range (-25 to 70 °C)**

- **Complies with electrical safety regulations & EMC**

- **DMVPNs, VLANs and QoS for critical services**

- **Compatible with Teldat SDWAN solution**

Interfaces

Up to 3 x 10/100/1000 Gigabit Ethernet	Yes
Up to 2 x BPL (NESSUM) interface	Yes (medium or low voltage)
One 2G/3G/LTE module	Optional
LEDs	Power, PLC, LAN, WAN, etc.
1 SFP interface	Yes
2 x SMA antenna connectors	Yes
2 x SIM Trays	Yes

Competitive Advantage

Reliable communications and hardware	Multiple access technologies (NESSUM, Ethernet, SFP) employed with real-time backup mechanisms, SNMP trap notifications and alerts.
Rugged hardware design	Adaptable hardware design for unattended installations, with extended temperature range (-25 to 70 °C) and electrical and electromagnetic immunity.
HD-PLC communications support	Enables direct communication with Broadband PLC NESSUM standard. Delivers BPL 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.

Key Features

- **3 x GE ports with VLAN, 802.1X, duplex** 2 x 10/100/1000 BaseT RJ45 + 1 x SFP auto detect ports (full/half-duplex automatic negotiation).

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

- **Security: 802.1X, ACLs, firewall and DMVPNs (IPSec)** The Regesta Smart NESSUM 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.

- **IEEE1901, ITU G.9960** IEEE 1901 and ITU G.9960 are standards of powerline communication, and they provide specifications that enable the development and deployment of devices for high-speed data communication over power lines.

- **Up to 2 x BPL (NESSUM) Interface (>100Mbps)** NESSUM offers upt to 10 kms comms using multi-hop (each 1 km). The NESSUM can be used in Medium Voltage with front coaxial connectors or in Low Voltage with the power supply connector, depending on the SKU.

- **Extended temperature range (-25 to 70 °C)** The Regesta Smart NESSUM includes a housing design for optimal heat dissipation and, wall mount and DIN rail mount options, guaranteeing operation between -25 and 70 °C with up to 93 % humidity.

- **Advanced services (routing, management, QoS)** Integrates advanced routing, management, and QoS into one platform, optimizing performance, scalability, and manageability for dynamic Smart Grid networks, ensuring reliable, secure, and efficient service delivery.

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

CARACTERíSTICA TéCNICA DEL HARDWARE

BPL (NESSUM) communications
Complies with CENELEC, FCC and ARIB regulations
IEEE1910, ITU G.9960
>100Mbps

Dimensions and weight
L x W x H: 140 x 80 x 190 mm
Format: DIN rail, wall mounting and in substations

WWAN interface (optional)
Built-in hardware module with LTE technology
2 x external antennas with SMA connector
Dual SIM trays (internal)

Ethernet interface
Up to 2 ports (RJ45 connector)
802.3i (10BaseT), 802.3u (100BaseT), 802.3ab (1000BaseT)
Supports duplex, IEEE 802.3u link speed auto-negotiation, VLAN and
802.1X

Environmental specifications
Temperature: -25 to 70 ºC
Relative humidity on: 5 to 93%
Atmospheric pressure: TBD

CARACTERíSTICA TéCNICA DEL SOFTWARE

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)

Management (2)
Netflow, RMON V5 and V9, SNMPv1, v2c and v3, Syslog support
Manageable through SMS and Zero Touch Provisioning with Cloud Net
Manager
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
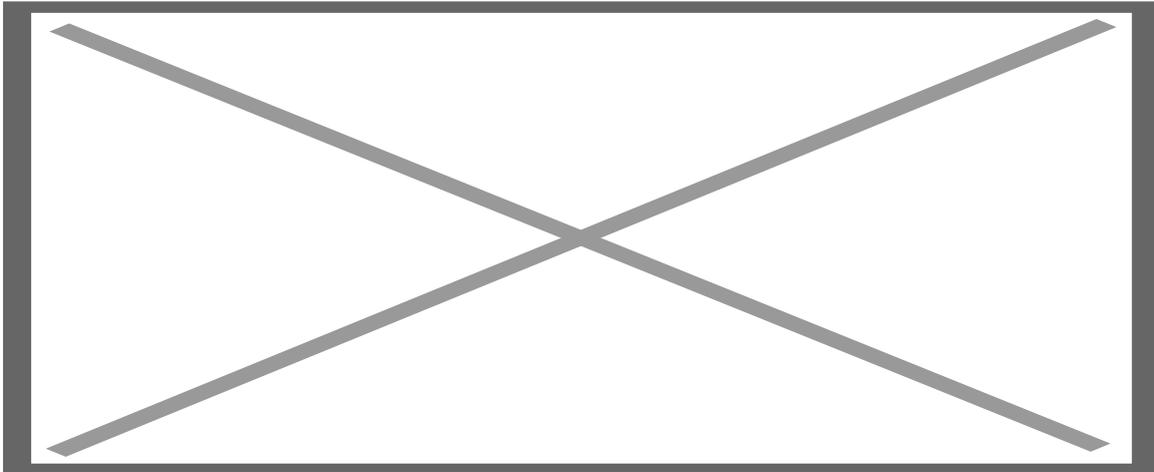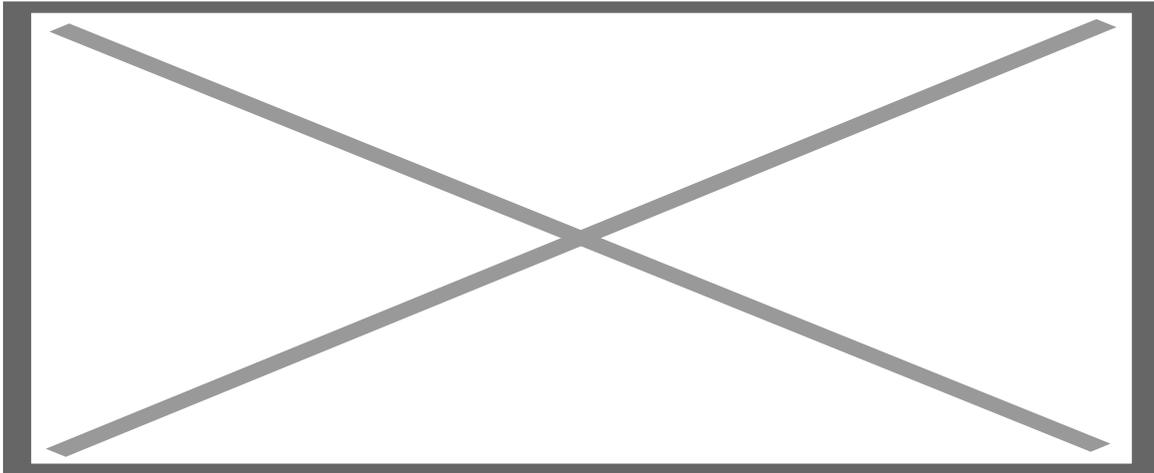RADIUS and TACACS+ compatible AAA support

CARACTERíSTICA TéCNICAS ADICIONALES

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
1 Power, 2 LAN/WAN status
1 Switch, 1 BPL

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

Scenarios