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HYBRID PLC-RF Module

The **Hybrid PLC + RF** Communication Module provides utilities with a highly resilient and intelligent communication solution for Advanced Metering Infrastructure (AMI) and smart grid applications. By combining **Power Line Communication (PLC)** and **RF Mesh** technologies within a single module, it automatically selects the optimal communication path based on real-time network conditions, ensuring maximum reliability, coverage, and performance.

Designed for seamless integration with **EDMP** smart electricity meters, gateways, data concentrator units (DCUs), and smart grid devices, the **Hybrid** Communication Module enables secure, real-time data exchange across the entire utility network. Its unified communication architecture combines the extensive reach of PLC with the flexibility and self-healing capabilities of RF Mesh, overcoming challenging installation environments such as dense urban areas, underground installations, and locations with physical obstacles.

Built on open international standards including **G3-PLC**, **DLMS/COSEM**, **SNMP**, and **CoAP**, the module delivers multi-vendor interoperability while supporting **IPv6** networking and secure IoT communications. The intelligent hybrid architecture enhances network availability, improves data collection success rates, reduces operational costs, and provides utilities with a scalable, futureready communication platform for large-scale smart metering deployments.

COMMUNICATIONS

HYBRID PLC RF MODULE

Technical Specification

Supply Voltage
- 5V / 3.3V

Operation Temperature
- -40°C to +85°C

Certification
- G3 Hybrid

PLC

Physical Layer
- IEEE 802.15.4

Support Frequency Band
- CENELECA (32 – 95 kHz), FCC (154 – 487 kHz)

Support Standards
- IEE P1901.2, ITUG9903, IEE 802.15.4, 6LoWPAN, IPv6

Maximum Transmission Rate
- 280 kbps

RF

Physical Layer
- IEEE 802.15.4

Support ISM
- 315, 433, 490 , 868, 915, 920 MHz

Maximum Transmission
- Power 30 dBm

Maximum Transmission
- Rate 400 kbps

Single hop transmission distance
- Up to 1 km

Receiving Sensitivity
- -109 dBm at 50 Kbps

Application & Features

Features
- Hybrid PLC + RF Mesh communication in a single module
- Intelligent automatic switching to the optimal communication channel
- Unified communication stack based on the G3-PLC standard
- Self-forming and self-healing RF Mesh networking
- Expanded network coverage with enhanced communication reliability
- Supports IPv6, DLMS/COSEM, SNMP, and CoAP High-speed communications for large-scale AMI deployments
- Open standards-based architecture with optional DLMS Security Suite 1

Applications
- Automatic network access using predefined parameters
- Smart meter data collection
- Remote connect and disconnect operations
- Alarm and event notifications
- Remote firmware upgrades for meters and communication modules
- Last Gasp outage notification
- AMI, smart grid, and distribution automation networks

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