

Communications Module

for L+G 350 - 1200/3300/3350 Meters



Adding two-way wireless communications to already feature-rich meters:

- » Provides one watt transmitter for full, two-way wireless communications
- » Enables over the air firmware upgrades to reduce cost
- » Supports advanced metering and demand response functions
- » Provides full security and encryption to meet rigorous industry standards
- » Saves space and simplifies installation with compact, cost-effective construction
- » Offers highly accurate energy metering
- » Includes large, easy to read LCD display and simple push-button operations.

Bringing the utility and the customer closer together - to benefit both

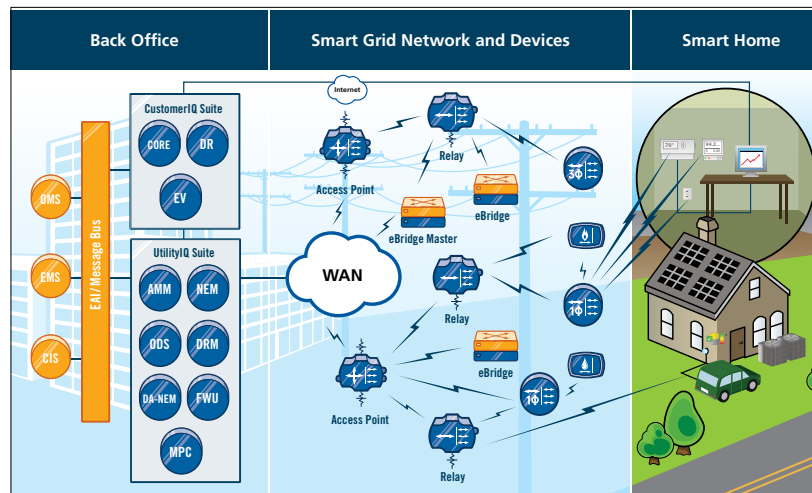
The Silver Spring Smart Energy Platform combines network infrastructure, software, and professional services to enable a range of smart grid applications. Communications with next-generation electricity meters is a fundamental building block of the smart grid.

The Silver Spring Communications Module integrated into the Landis+Gyr (L+G) 350 - 1200/3300/3350 meters provides wireless networking and Advanced Metering support for this family of meters. The combination of the L+G meter and Silver Spring Communications Module is a key component of the smart grid network, providing greater efficiency and more reliable service delivery.

L+G 350 - 1200/3300/3350 meters feature a unique, patented modular design that enables

a transition from a traditional to a smart meter, without replacing the installed meter. These meters support advanced metering functions such as remote reading of interval data, time-of-use pricing, and other events. The L+G 350 - 1200/3300/3350 meters are configurable via the secure optical port or over the air.

The Silver Spring Communications Module supports dynamic discovery and self-healing, dramatically simplifying initial deployment and on-going reliable communications. The Communications Module notifies the Silver Spring Smart Energy Platform of outages and restorations, ensuring greater efficiency while improving customer satisfaction. The scalability of the platform lets utilities support a range of smart grid services – both today and tomorrow.



An advanced, IP-based network enables the smart grid—from the data center to the customer premise.

About Silver Spring Networks

Silver Spring Networks is a leading Smart Grid solution provider that enables utilities to achieve operational efficiencies, reduce carbon emissions and empower their consumers with new ways to monitor and manage their energy consumption. Silver Spring provides the hardware, software and services that allow utilities to deploy and run multiple advanced solutions, including Smart Metering, Demand Response, Distribution Automation and Distributed Generation, over a single, unified network. The Silver Spring Smart Energy Platform is based on open, Internet Protocol (IP) standards, allowing continuous, two-way communication between the utility and devices on the grid. Silver Spring has numerous deployments with leading utilities in the US and abroad, including Florida Power & Light, Pacific Gas & Electric, Pepco Holdings, Inc., Jemena Electricity Networks Limited and United Energy Distribution, among others. For additional information, please visit www.silverspringnetworks.com.

Communication Module for L+G 350 - 1200/3300/3350 Meters

Communications Module features

- » Full, two-way 915-928 MHz FHSS communications
- » Dynamic network discovery and self-healing
- » Scheduled and on-demand meter reads
- » Over-the-air firmware upgrades, meter programming, and tariff changes
- » Robust security and RF link encryption
- » Alarm detection and clearing
- » Time synchronization and management
- » Support for a wide range of meter types
- » Continuous link monitoring and route calculation
- » Low meter burden
- » Power outage and restoration notification
- » Auxiliary communications port
- » Selectable internal or external antenna

L+G E350 Meter features

- » Unique patented modular design
- » Time-of-use (TOU) tariff
- » Remote reading of interval data, TOU, and events
- » Local reading by handheld device
- » Tamper detection and event logging
- » Quality-of-supply monitoring
- » Loss-of-supply and outage detection
- » Support for Type 4, 5, and 6 meter readings
- » Controlled load management

Specifications: Communications Module

NAN Communications	Data rate: 100 kbps Frequency: 915-928 MHz Spread spectrum technology: FHSS Channels: 43 Receiver sensitivity: -97 dBm for 1% PER Modulation: Binary FSK Transmitter output: 30 dBm
HAN Communications	Protocol: ZigBee Smart Energy Profile 1.0 Data rate: 250 Kbps Frequency: 2.4 GHz ISM Band Spreading technology: Direct Sequence PHY/MAC: 802.15.4 Transmitter output: 20 to 23 dBm (200 mW) Receiver sensitivity: -97 dBm for 1% PER Power, Transmit: 1.6 W (1.8 W max.)
Physical Interfaces	Antenna Connector: Internal Antenna: Self-contained, Inverted F Serial: RS-232
Environmental/Mechanical	Operating Temperature: -40°C to +85°C (-40°F to +185°F) Humidity: 0% to 95%, non-condensing Voltage Range: 4.0V (±), 1.4 A max., continuous Power, receiver on: 0.5 W (0.6 W max.) Power, transmit: 5.2 W (5.6 W max.)
Security	Image Security: Secure bootloader Integrity: Secure Hash Algorithm 256 bit (SHA-256) Confidentiality: Advanced Encryption Standard 256 bit (AES-256) by default. AES-128 optional Authentication: RSA-1024 for UtilOS, otherwise ECC-256

Specifications: L+G E350 Meter

Meter Types	U1200: 1-phase 1 element U1200: 1-phase 2 element U3300: 3-phase whole current U3350: 3-phase CT
Standards	Australia & New Zealand AS 1284.10.2 NMI M6 AS 62053.23-2006 AS 62054.21-2006 AS 60529 AS 4140 - 1995 IEC 62053-61 Ed. 1.0 AS 62053.21-2005 USA ANSI C12.19 ANSI C12.18 ANSI C12.21
Accuracy	Wh class 1 and varh class 2
Operating range	Current: (Ib) 10A – (Imax) 100A Starting current: 40mA Voltage: 240Vac ± 20% (phase to neutral) Frequency: 49-51Hz Voltage burden: <10 VA, < 2W at 240V Current burden: 0.07VA
Load profile	4 channels, 440 days of 30 min data per channel
Time-of-use	Four TOU billing rates
Remote disconnect	Built-in 100 A disconnect relay
Load control	Option for a fully integrated 40 A relay