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Billion SG6200NXL

3G Wireless-N Smart Energy Gateway

The Billion SG6200NXL, 3G Wireless-N Smart Energy Gateway, is an all-in-one router designed for users to enjoy real-time power management and secured wireless Internet access. Integrated with ZigBee wireless technology, the Smart Energy Gateway can communicate wirelessly with Billion ZigBee-enabled smart meters such as Billion SG3010 series and Billion SG3015 series.

The Billion SG6200NXL not only provides a wireless AP feature for connecting with local smart phone or notebook but also acts as a wireless client for connecting to existing wireless gateway. This feature can extend the wireless coverage and reduce the wiring cost. Besides its high-speed wireless connection up to 300Mbps data rate with an integrated 802.11n Wireless Access Point, the Billion SG6200NXL also expands the wireless coverage with its Dual-WAN design, Internet access via broadband/DSL and/or back up through 3G network, to keep users always-connected.

This ZigBee smart energy gateway is an important hub of Billion/BEC BEsmart Home Automation and Energy Management Ecosystem which consists of various sensors such as smart meter, power plug, smart switch, IHD, thermostat, and IP-Cam. The Billion SG6200NXL provides flexible and easy development platform via a well-defined API (Application Program Interface) for system integrator and software partner to integrate their back-end solution and application software, and further to come out their own cloud service and apps. Billion provides three models of Billion SG6200NXL according to different applications in order to meet with customers' need.

Billion SG6200NXL-Std (Standard Version)

The Billion SG6200NXL-Std is designed for SI and software companies that they can choose any kinds of platform to develop their software applications based on Billion API. The Smart Energy Gateway pushes all the recorded data to the back-end / cloud system which were built by SI and software companies so users can remotely monitor energy consumption and manage their appliances. This solution is ideal for SI of energy management and service providers.

Billion SG6200NXL-SDK (Software Development Kit Version)

The Billion SG6200NXL-SDK is designed for SI and software companies to develop the software inside of Billion SG6200NXL-SDK for providing the customized services and solutions to the end customers.

Billion SG6200NXL-SEP (Smart Energy Profile Version)

The Billion SG6200NXL-SEP is designed for utility projects that the ZigBee gateway enables the connection between HAN devices in the Smart Grid AMI network. Being certified with the ZigBee Smart Energy Profile (SEP) capabilities, the Billion SG6200NXL-SEP provides an effective interface between smart meter and ZigBee embedded devices such as Programmable Communicating Thermostats (PCT), In-Home-Display (IHD) and other ZigBee-based products. Either applied in Home Area Networks (HAN), building Advanced Metering Infrastructure (AMI) for power utilities or Plug-in Electric Vehicle (PEV) integrations, Billion's advanced communication products and solutions shall continue playing an essential role in the smart grid applications. This is ideal for SI of utility projects.

Ideal for
Residential & SOHO
I&C Users
Utility Companies

- Fully IEEE 802.15.4 and ZigBee PRO compliant
- Dual WAN – broadband and 3G connections
- 802.11n wireless AP, up to 300Mbps data rate
- Wireless bridge to connect with existing wireless gateway
- Supports wireless AP mode and client mode
- Quality of Service
- 2 x USB 2.0 ports for 3G networks
- Supports multiple SSIDs
- Auto fail-over for always-on connection
- Certified with ZigBee SEP (Smart Energy Profile)
- Compliant with ZigBee HAN (Home Automation Profile)
- Provides API for vendors to develop their App and cloud service
- Works as part of ZigBee-based energy management solution for business partners:
 - Power utilities: solar power, wind power, etc.
 - ZigBee network system integrator and planners
 - House builders
 - Suppliers of smart energy devices in IHD, load control, and PCT
 - Sub-metering service provider

Features & Specifications

Availability and Resilience

- Dual-WAN ports (3G & Ethernet WAN)
- Auto fail-over/fail-back

3.5G / 3.75G Broadband Sharing

- Supports 3.5G / HSDPA, 3.75G / HSUPA, HSPA+, EVDO and TD-SCDMA
- True mobile broadband sharing (3.5G / 3.75G)
- Common 3.5G / 3.75G USB modem support
- 3.5G / 3.75G signal strength display
- 3.5G / 3.75G APN and PIN code support
- 3G time state monitor (Current connection time, Monthly total connection time & Monthly total traffic)

Network Protocols and Features

- NAT, static routing and RIP-1 / 2
- Transparent bridging
- Virtual server and DMZ
- SNTP, DNS relay and DDNS
- IGMP snooping and IGMP proxy

Firewall Management

- Built-in NAT firewall
- Stateful Packet Inspection (SPI)
- Prevents DoS attacks including Land Attack, Ping of Death, etc.
- Remote access control for web base access
- Packet and URL filtering
- Password protection for system management
- VPN pass-through

Quality of Service Control

- Supports the DiffServ approach
- Traffic prioritization based-on IP protocol, port number and address

Wireless LAN

- Compliant with IEEE 802.11n, 802.11g and 802.11b standards
- 2.4GHz - 2.484GHz frequency range
- Up to 300Mbps wireless operation rate
- 64 / 128 bits WEP supported for encryption
- WPS (Wi-Fi Protected Setup) for easy setup
- Wireless Security with WPA-PSK / WPA2-PSK supported
- WDS repeater function support
- Multiple SSID

Management

- 3G Management Center
- Quick Installation Wizard
- Web-based for remote and local management
- Firmware upgrades and configuration data upload / download via web-based interface
- Embedded Telnet server for local management
- SNMP v1 / v2 / v3, MIB-I and MIB-II support
- Supports DHCP server / client / relay
- Mail Alert
- TR-069* supports remote management
- Multiple language support

Operating Environment

- Operating temperature: 0°C – 40°C
- Storage temperature: -20°C – 70°C
- Humidity: 20% – 95% non-condensing

Hardware Specifications

Physical Interface

- USB: 2 x USB 2.0 ports
- WLAN: 2T2R antennas
- Ethernet: 3 x 10 / 100Mbps Auto-MDI / MDI-X RJ-45 Ethernet ports
- WAN: 1 x 10 / 100Mbps Auto-MDI / MDI-X RJ-45 Ethernet port
- Reset button
- WPS/ZigBee push button
- Power jack
- Power switch

Physical Specifications

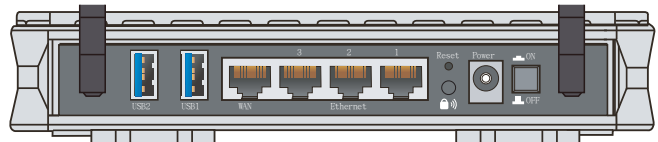
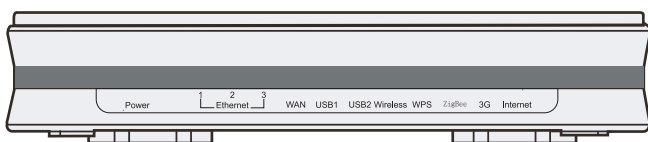
- Dimensions: 7.28" x 4.86" x 1.38" (185mm x 123.5mm x 35mm)

Power Requirements

- Input: 12V DC, 1.2A

RF Specifications

- Fully IEEE 802.15.4 / ZigBee PRO compliant
- Operating Band: 2.400 - 2.483 GHz
- 16 channels in the 2.4GHz ISM band
- AES-128 hardware supported encryption



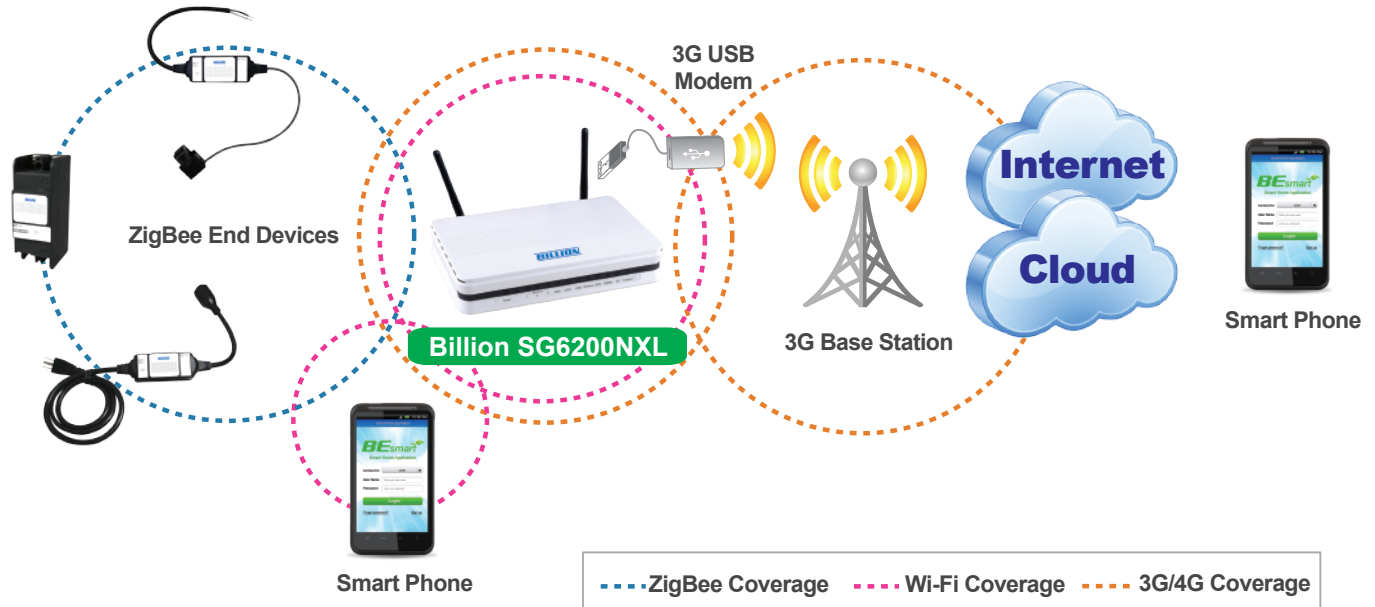
* Notes:

1. The 3G / HSDPA data rate is dependent on your local service provider and your 3G / HSDPA modem.
2. IPTV applications may require subscribing to IPTV services from a Telco / ISP.
3. Specifications in this datasheet are subject to change without prior notice.
4. TR-069: By request of the Telco/ISP projects

Application Diagram

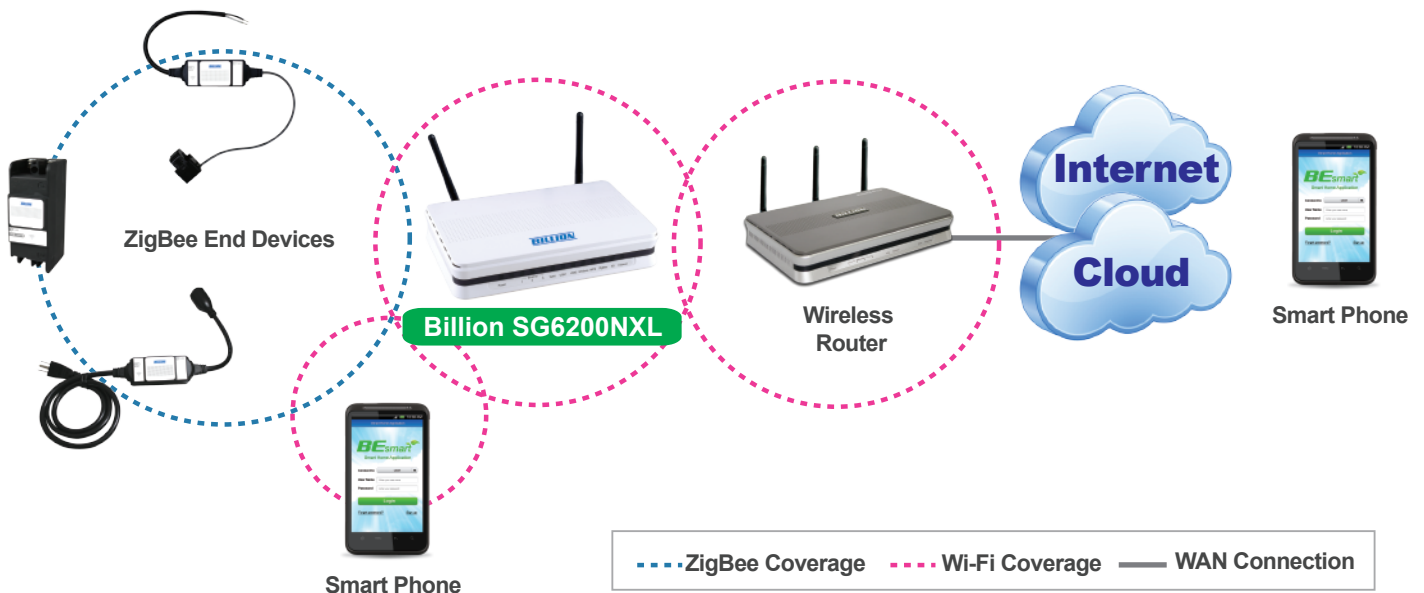
1. Wireless Bridge

The Billion SG6200NXL can be used as a wireless AP and wireless client at the same time. It can be able to collect data from ZigBee end devices via ZigBee wireless network for energy management. Meanwhile, it's able to be a wireless bridge in order to connect with existing wireless gateway.



2. 3G Wireless Broadband Router

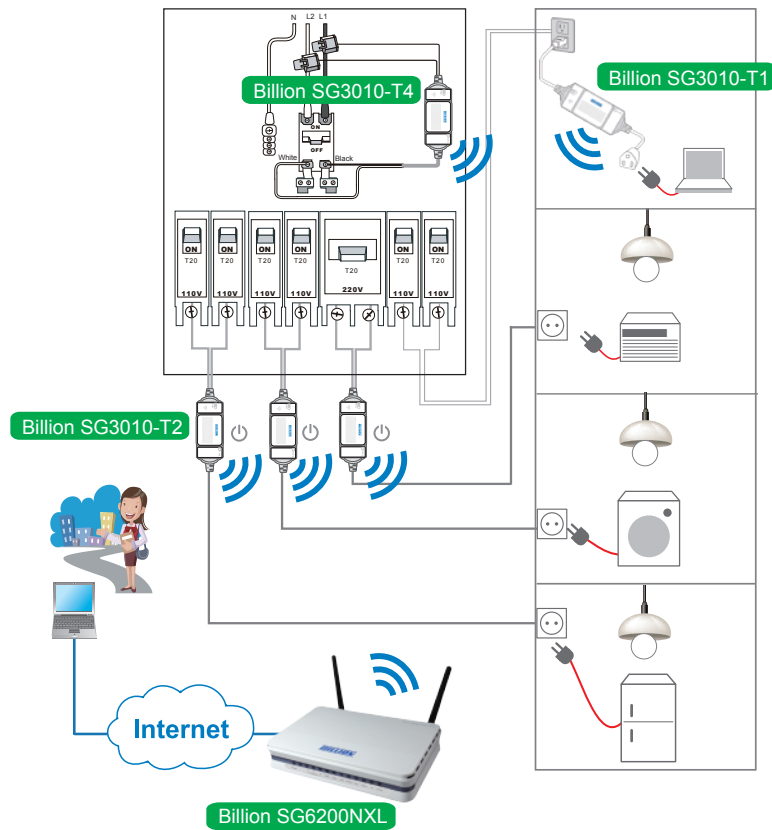
Billion SG6200NXL functions as a 3G wireless broadband router as well. The user can truly enjoy the Internet service by plugging 3G modem into this router without access to fixed-line network.



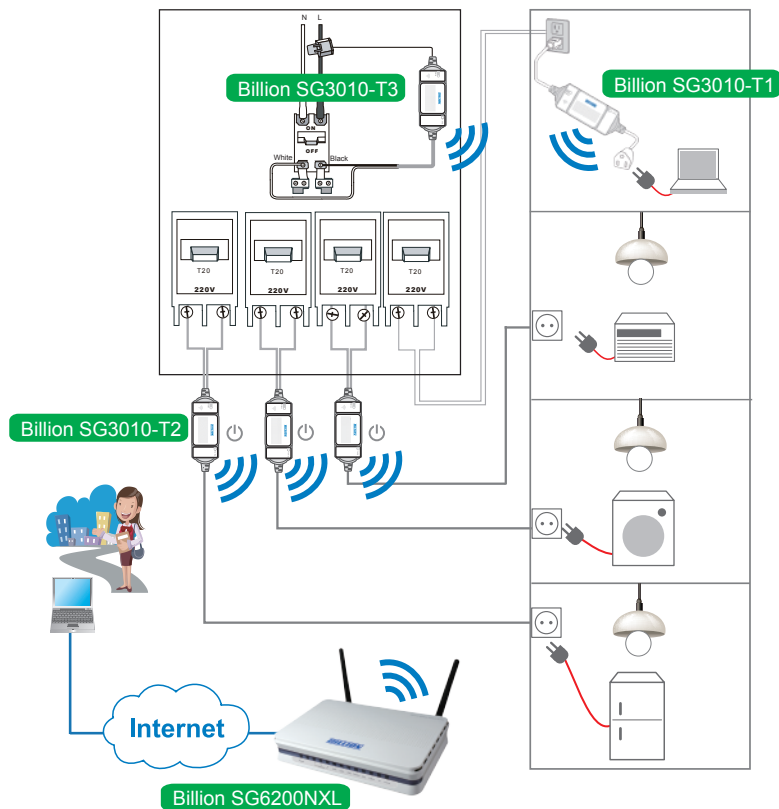
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Gateway-based Energy Management Applications

► Single-phase 3-wire (e.g. USA and Taiwan)



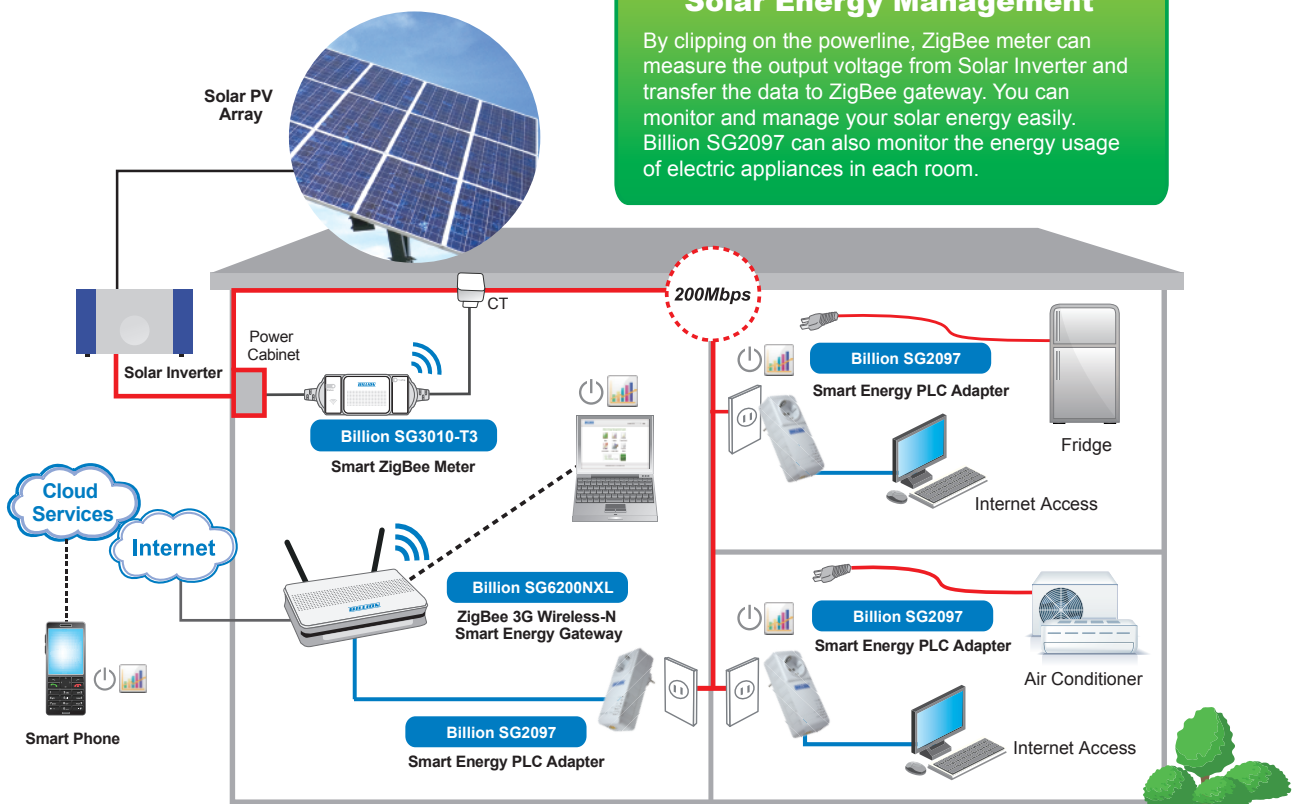
► Single-phase 2-wire (e.g. Europe)



Solar/Wind Energy Management Solutions

Solar Energy Management

By clipping on the powerline, ZigBee meter can measure the output voltage from Solar Inverter and transfer the data to ZigBee gateway. You can monitor and manage your solar energy easily. Billion SG2097 can also monitor the energy usage of electric appliances in each room.



Utility Control Center

Wind Energy Management

For Wind Utility, ZigBee meter can measure the energy output produced from wind turbine. And the data can be collected by ZigBee Gateway. It can allow administrator to monitor and manage the wind energy easily. In the peak hours, the wind energy can be transferred back to the city grids.

