



## PowerTracker Smart Gateway

### 3G Wireless-N Smart Energy Gateway

The PowerTracker 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 PowerTracker SG3010 series and PowerTracker SG3015 series.

The PowerTracker 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 PowerTracker SG6200NXL also extends 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 PowerTracker Energy Management Ecosystem consists of various sensors such as smart meter, power plug, smart switch, IHD, thermostat, and IP-Cam. The PowerTracker 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.

PowerTracker provides three models of PowerTracker SG6200NXL according to different applications in order to meet with customers' need.

#### PowerTracker SG6200NXL-Std (Standard Version)

The PowerTracker SG6200NXL-Std is designed for SI and software companies that they can choose any kinds of platform to develop their software applications based on PowerTracker 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. As online gaming, media streaming and video calling that assist in delivering the best possible user networking experience. It can also carry out Video on Demand (VoD), FTP, file downloading that performs quicker than traditional modem.

#### PowerTracker SG6200NXL-SDK (Software Development Kit Version)

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

#### PowerTracker SG6200NXL-SEP (Smart Energy Profile Version)

The PowerTracker 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 PowerTracker 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, PowerTracker'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.

- Fully IEEE 802.15.4 and ZigBee PRO compliant
- Dual WAN – broadband and 3G connections
- 802.11n wireless AP, up to 300 Mbps data rate
- Supports wireless AP mode and client mode
- Wireless bridge to connect with existing wireless gateway
- 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
- Ideal for:
  - Residential and office users
  - Industrial and commercial users
  - Utilities companies
- 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

## 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 and 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 support
- WDS repeater function support
- Multiple SSID
- Wireless bridge to connect with existing wireless gateway

### 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
- Syslog monitoring
- Supports DHCP server/client/relay
- Mail Alert
- TR-069<sup>5</sup> supports remote management
- ☒ Multiple language support

### Hardware Specification

#### 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 - 2.483GHz
- 16 channels in the 2.4GHz ISM band
- AES-128 hardware supported encryption

### Operating Environment

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

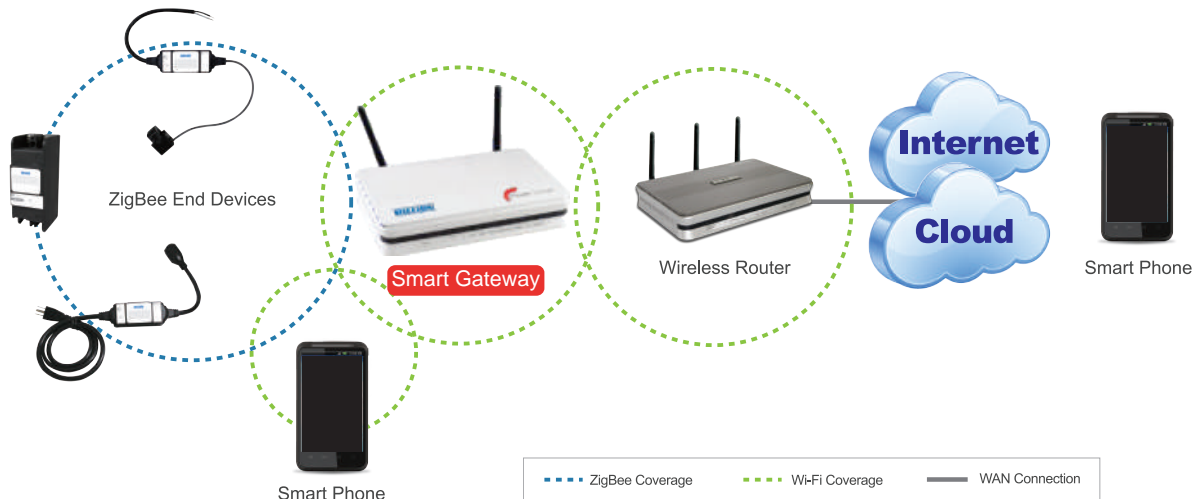
### Notes:

1. The 3G / HSDPA data rate is dependent on your local service provider and your 3G / HSDPA modem.
2. A car power cable can be made available as an optional accessory upon request.
3. IPTV applications may require subscribing to IPTV services from a Telco / ISP.
4. Specifications in this datasheet are subject to change without prior notice.
5. By request of the Telco/ISP projects

## Application Scenarios

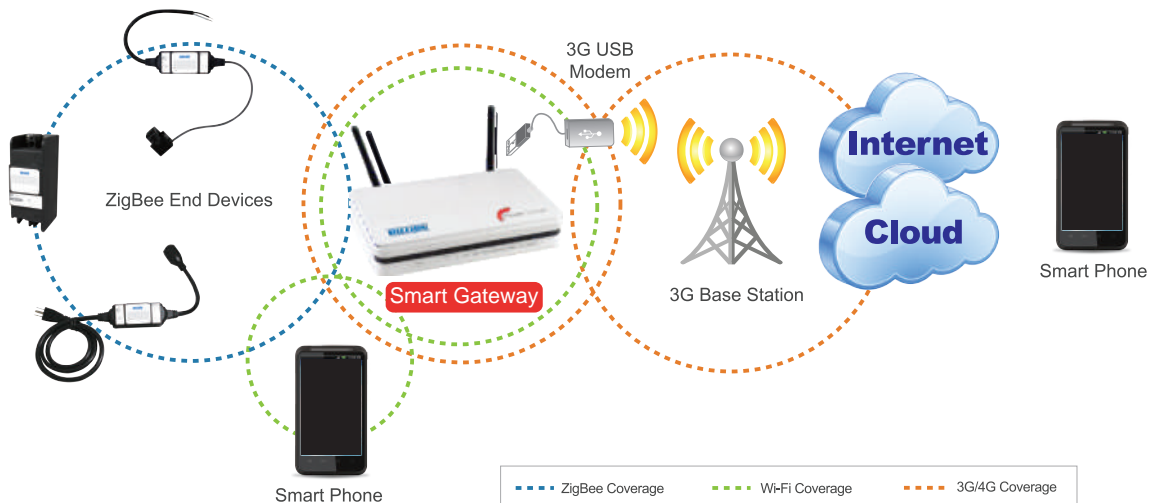
### 1. Wireless Bridge

The PowerTracker 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.



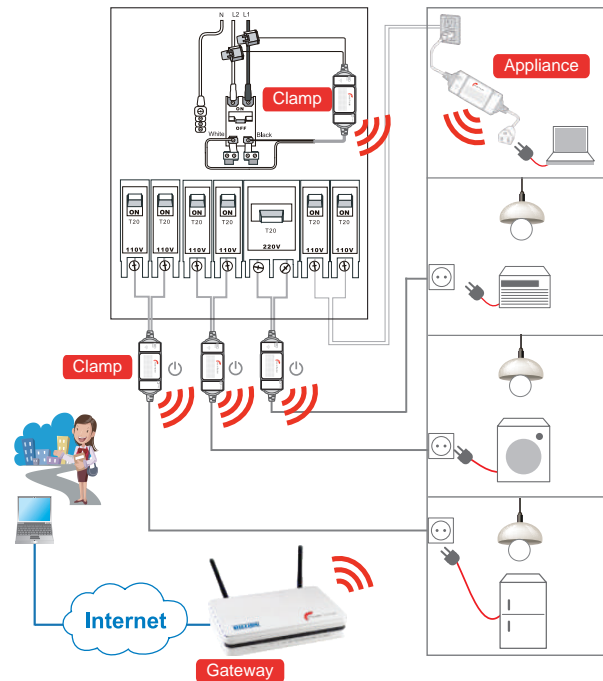
### 2. 3G Wireless Broadband Router

PowerTracker 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.

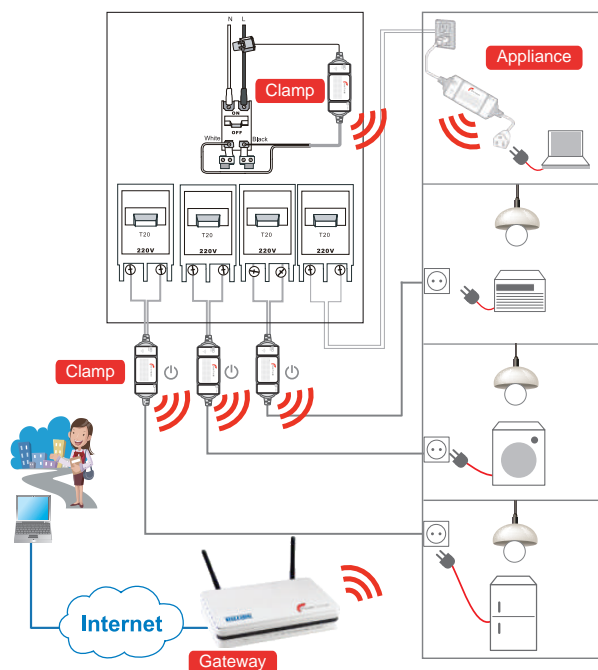


## Gateway-based Energy Management Applications

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

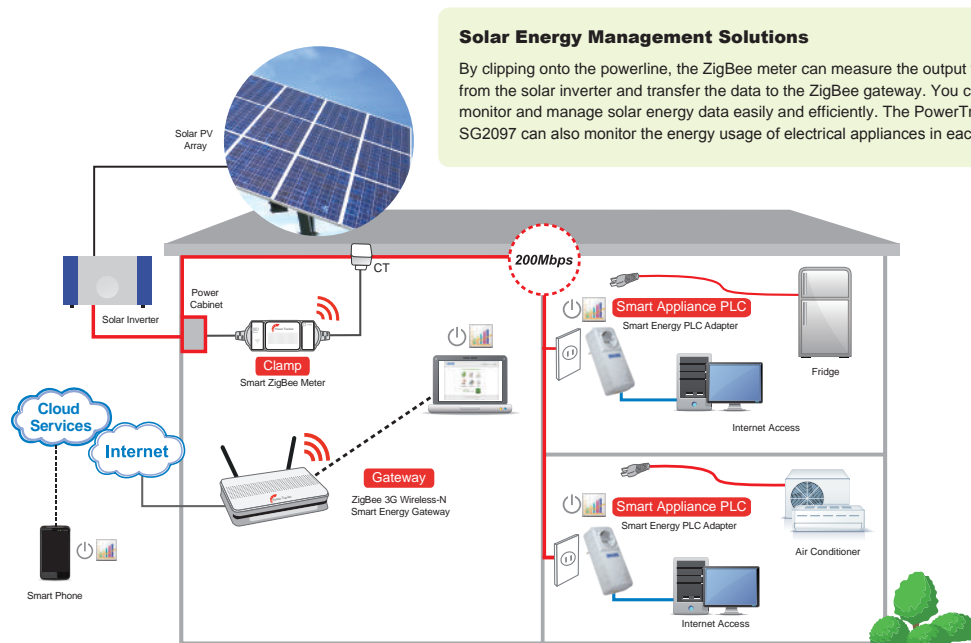


### 2. Single-phase 2-wire (e.g. Australia, Europe)



## Application Scenarios

### 1. Solar Energy Management Solutions



### 2. Wind Energy Management Solutions

