



## Smart Energy PLC Adapter

Conscious of the need to reduce our carbon footprint, efficient energy management is a critical trend nowadays. Start to conserve our planet by efficiently using your in-home electrical appliances. It deploys powerline technology that utilizes in-home power line loops for network communications. No need to drill into the wall or for any extra wires! This unique device with powerline technology, providing 200Mbps peak PHY rate, effectively supports HDTV applications. The last but not the least, it features power metering and remote switch functions to enable home users to efficiently and effectively manage in-home power consumption.

### Power measurement Capability

The Billion SG2097 provides comprehensive measurement functions including Active Power (W), Total Accumulated Electricity Consumption (kWh), Interval Electricity Consumption (kWh), Voltage (V), Current (A), Apparent Power (VA), and Power Factor (PF). It allows users to collect energy usage statistic for trend analysis and usage profiling, and by shifting usage patterns will lead to savings. With the high measurement accuracy in the range of  $\pm 3\%$ , it is capable of measuring even small power consumption up to 0.001kWh, efficiently prevent the power loss.

### Remote switch control for appliances

With built-in Smart AC Power Switching Control, the Billion SG2097 features remote power on / off that enables you to remotely control on your electrical home appliances by using a computer that is connected for the Internet access when you're away from home. The Billion SG2097 provides users remote on/off control of appliances such as your washing machine. Even when you are on the way home, you can also remotely switch on the air conditioner to cool your entire house by handset or mobile phone via Internet.

### Extra noise-free power socket

When there is a limited number of available wall outlets, appliances that also use power lines as a communications medium develop some operational noise. The Billion SG2097 features a built-in electrical power socket with a noise filtering function, which provides stable and clear communication with easy installation.

### Smart power saving mechanism

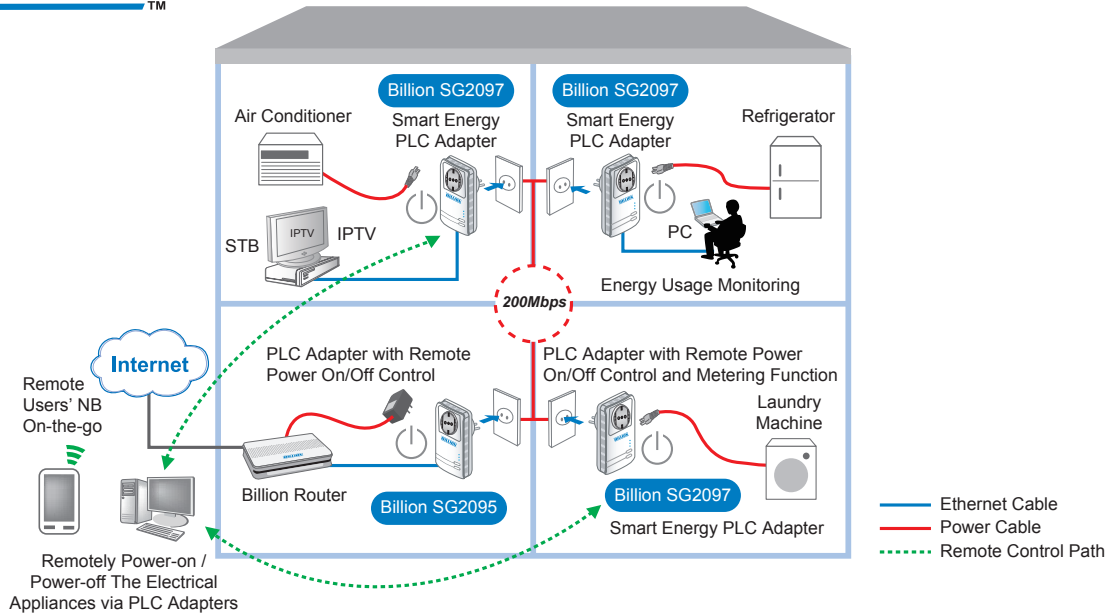
With Smart Power Saving technology, the Billion SG2097 can automatically detect web server connection and fall into sleep mode when server is disconnected. In sleep mode, the power saving mechanism will extend the standby interval session to reduce power consumption and saves money. Even in standard mode the power saving mechanism also enables shorter standby interval cycle which can significantly save power usage up to 40%.

### Premium Transmission Quality and Performance

With Quality of Service (QoS) Control and video optimization, the Billion SG2097 will automatically optimize transmission quality and recognize the bandwidth needs of voice and video applications making your network a pleasure to use. Furthermore, the built-in Smart Route technology helps to consistently maintain the best transmission path and the best transmission quality.

Ideal for  
Residential  
and  
SOHO users

- Enables high-speed data transfer rate up to 200Mbps via in-house electrical wiring
- Includes one AC Pass-through power socket with noise-filtering function
- Built-in power meter for effectively reducing home appliance power usage
- Smart power switch for remotely home appliances power control
- Smart Power Saving technology for improved power efficiency
- Smart Route delivering the best transmission path
- Smart Repeater for increased connection coverage
- Utilizes Quality of Service control
- Supports Triple Play applications
- 1 x 10 / 100 Base-T Ethernet port



▲ The connected home using the Billion SG2097

## Features & Specifications

### Standards

- Ethernet specifications: IEEE 802.3, IEEE 802.3x, IEEE 802.3u, Auto MDI / MDIX
- UPA DHS and OPERA compatible

### Transmission Speed

- 200Mbps max.

### Modulation

- Supports OFDM
- 1536 carriers, 1024 / 256 / 64 / 16 / 8 QAM, QPSK, and BPSK

### Frequency Range

- 2MHz ~ 32MHz

### Security

- 128-bit / 256-bit AES Link Encryption with key management for secure power line communications
- DES / 3DES

### Quality of Service Control

- Enhancements: contention-free access, eight-level priority based contention access,
- ToS, CoS Packet Classifiers

### Supported Operating Systems

- Windows 2000 / XP / Vista / 7
- Other 10 / 100 Base-T Ethernet devices

### Power Supply Specifications

- Input: 100 ~ 240V AC, 50 ~ 60Hz
- Protection: OCP, OVP, SCP

### Smart Power Saving

- Up to 40% power reduction in sleep mode

### Power Meter Specifications

- Accuracy: 3%
- Wattage: 0.01W-1650W(110V)  
0.01W-3300W(220V)
- Power Factor: 0-1.00
- Total WH: 0.001-9999kWh
- Power surge protection

### Hardware Specifications

#### Physical Interface

- AC power plug
- RJ-45 compatible
- Sync button
- Reset button
- AC outlet
- LED display:
  - STATUS
  - PLC
  - ETH

#### Physical Specifications

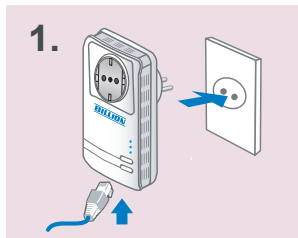
- Dimensions (W, D, H):  
5.47" x 2.44" x 3.05"  
(138.3mm x 62mm x 77.48mm)

#### Operating Environment

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

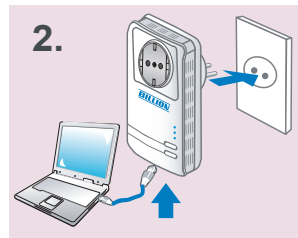
### Connecting the Billion SG2097

Connect a network cable to the adapter and then plug the Billion SG2097 into a power socket.

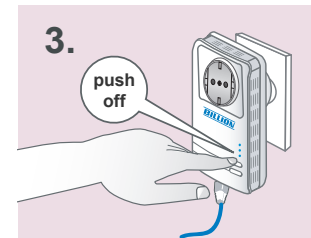


\*Note: Plug / socket, power cable and input voltage / frequency may vary from country to country.

Then connect the Billion SG2097 to a laptop, modem, router or a set-top-box.



Create a secure network by a simple push off the "Sync" button.



#### \* Notes:

1. IPTV application may require subscribing to IPTV services from a Telco / ISP.
2. Specifications in this datasheet are subject to change without prior notice