SAMSUNG ELECTRONICS

homevita

Home Gateway

HHG-3004H2 User's Manual

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HOME GATEWAY SYSTEM

PART 1

Introduction

The Home Gateway is a home network controller using diverse technologies such as Ethernet, power line communication and RF communication. In addition to providing high speed Internet for computer and information communication devices, it also monitors and controls the status of electronic appliances (Light switch, Thermostat, Plug-in Adaptor and etc,).

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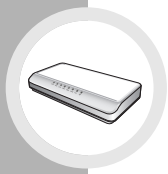


Features of the Home Gateway

1. Main Features

Diverse Applications

The Home Gateway provides connectivity across various network platforms, including Ethernet, Power Line Control, and RF. Through its built-in web server, it provides an easy to use interface enabling device monitoring and control. The homevita software also enables automation, scheduling, and other advanced features providing easy and convenient control of everyday tasks.

The Home Gateway enables Internet connectivity and sharing through standard TCP/IP routing, Networking and AC power line communication using an Internet connection with external ADSL or Cable modem.

Remote Web-based Management

When connected to Broadband Internet, the Home Gateway offers remote access from almost any Internet enabled computer. This allows users to securely log in to the home gateway when away from home, and monitor and control their homevita system.

2. Various Services

PLC (Power line communication) Home Device Control

The Home Gateway enables you to monitor and control various PLC devices such as light switches.

* PLC (Power Line Communication) is a wire line technology that uses the AC wiring in your home for data transmission.

Internet Access from IT devices including PC

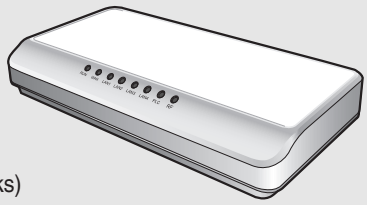
The Home Gateway enables you to access the Internet from multiple IT devices at the same time.

RF Home Appliances Control

The Home Gateway enables you to monitor and control the status of various RF electronic devices including your home Thermostat.

Main Features

- 4 Port Fast Ethernet Router
- External ADSL/Cable modem support (PPPoE)
- Very High Speed Data Communication
- Remote Web-based Access and Management
- Home device control using Power Line Communication (PLC/LonWorks)
- Home device control using RF communication



Safety Instructions

- Please make sure that you read and follow all safety instructions described in this manual.
- This product is installed and managed by authorized installation personnel, so please consult the installing dealer if there is any problem.

Description of Safety Symbol

Caution — If the instructions are not followed, user may be injured, property damage may occur or the product may not function properly.

Warning — If the instructions are not followed, user may be fatally injured or seriously wounded.

Instructions on power supply cord

Caution

Please check the following items on the power supply system in order to prevent electric shock accident.

- Only use the AC adapter provided with the product.
- The power cord should meet the AC voltage standard of the region it will be used in.
- The power cord, including the cable and the plugs at either end, must be rated to 150% of the electricity supplied by the power source.
- The power cord must be approved by the safety regulatory of the region it will be used in.
- The power cord plug should be plugged into an IEC Female connector.
- The power cord is the main device used to cut AC power. It should be installed in an easy to reach place near the device in case the power cord needs to be unplugged.

Instructions before installing

Caution

Only a service person should open the product because the internal part of the product can cause electric shock and system malfunction. Unplug the AC power cord before opening the product.

- Cut off the power sources of all the peripheral devices connected to the product.
- Unplug the power cord to turn the power off.
- Label each cable and communication line connected to I/O connector at the back of the product in order to identify them, and then pull them out of the connector.
- Do not attempt to repair any part of the power supply on your own. Contact your dealer if you believe that it requires repair or maintenence.

Caution

The system power cord must be plugged into a properly grounded outlet to prevent electric shock. Ensure that it is plugged into a grounded outlet.

Instructions when installing

Warning

Do not install the product in locations with high humidity. It may result in a risk of electric shock. Use the product within the operational humidity range specified in the manual.

Caution

Keep plastic packaging away from children.

- If they wear the plastic package on their heads, they can suffocate.

Caution

Do not block any of the product's ports or vents. Do not put any object inside the product.

- If ports or vents are blocked with any material, internal parts of the product can be damaged and result in a risk of fire or electric shock.

Warning

When installing the product, check the following before selecting the location.

- Air is clean.
- Proper ventilation is provided.
- Not in direct sunlight, or near heat sources.
- There is no vibration or physical shock.
- Well away from electric devices causing strong electromagnetic radiation.
- Outlet is properly grounded.
- Enough space to reach power cords.
- In areas where severe thunderstorm might occur, connect the system to a circuit breaker and separate the communication lines from the modem.

Safety Instructions (continued)

Instructions for connecting the power source

Warning

Do not touch the power source plug with wet hands.

- There is a risk of electric shock.

Warning

If there is any noise from the power source plug or the outlet, unplug the power source and contact your dealer.

- If the power source is left plugged in, it may result in a risk of electric shock and fire.

Warning

Connect power source directly to the outlet.

- Otherwise it may result in a risk of fire.

Warning

When using multi-outlet extension cord, do not exceed the rating specifications (voltage/current) of the extension cord.

- If exceeding the rating of the extension cord, it may result in a risk of fire.

Warning

Do not use a damaged or loose power source plug, cord or outlet.

- It may result in a risk of fire.

Warning

When unplugging the power source, ensure you hold the plug.

- If you pull the power cord, it can be damaged and result in a risk of fire or electric shock.

Warning

Do not bend the power cord and ensure it is not placed under a heavy object.

- If the power source is left plugged in when the cord is damaged, it may result in a risk of electric shock and fire.

Warning

If water or other substances get inside the power source or the system, unplug the power source and contact your dealer.

- It may result in a risk of fire.

Warning

If the power source plug/outlet are covered with dust, clean them.

- It may result in a risk of fire.

Warning

Plug the power source to an outlet with a grounding terminal.

- Not using an outlet with a grounding terminal may result in a risk of electric shock.

Instructions for using Home Gateway

Warning

When cleaning the product, make sure that you unplug all the power source cables before cleaning.

- It may result in a risk of electric shock.

Warning

Do not place cup or any container filled with chemical or water on or near the product.

- If chemical or other substances leak inside of the product, it can cause parts to be damaged and result in a risk of electric shock and fire.

Warning

Do not expose the product to direct sunlight.

- In particular, if the product is exposed to direct sunlight in an airtight space such as in a car, the inside temperature of the product increases and it can cause its shape to be deformed or it may result in a risk of fire.

Warning

If the product is dropped or broken due to any other reasons, disconnect the power and have it checked by your dealer.

- When using a damaged product, it may result in a risk of electric shock and fire.

Caution

Do not place candle, cigarette or other flame/heat source on or near the product.

- Candles and cigarettes may result in a risk of fire.

Caution

When using the product with a modem connected, make sure you separate the power cord from the modem and do not use the modem during a thunderstorm.

- If the product is used with a modem during a thunderstorm, there is an increased risk of fire.

Caution

Connectors or ports should be connected to designated devices only.

- If undesignated devices are connected, it may result in a risk of electric shock and fire.

Caution

When attaching additional parts to the product or removing parts attached separately, read and follow the instructions in the manual carefully.

Caution

When cleaning the product, only use a cleaner specified for computer cleaning. Remove power to the product prior to cleaning. Reconnect power only after the cleaner has completely dried.

- When the product is activated without being dried completely, it may result in a risk of electric and fire.

Caution

If there is any unusual smell, stop using the product, separate the power source plug and all other connected lines and call your dealer.

- It may result in a risk of fire.

Safety Instructions (continued)

Instructions on function extension and maintenance

Function extension and maintenance of the product must be entrusted to the service personnel.

- If you attempt to repair the product, it can injure you or cause system malfunction.

If you want to connect any other peripheral device to the product other than those recommended by Samsung Electronics, contact your dealer first.

- If you connect peripheral devices other than those recommended by Samsung, the product itself or the peripheral devices might get damaged.

Other instructions

Caution

Do not lift or move the product with the handle on the power supply.

Caution

When moving the product, you must first turn off the product and separate all cables from the product.

Warning

Do not attempt repairing the power supply on your own. If there is any problem in the power supply, contact your dealer.
Use only the AC Adapter that came with the product, and is specified in this manual.

Warning

Do not use the product in high humidity or heavy vapor.

- You should use within the temperature and humidity specified in the manual.

Warning

Before removing power from the product, unplug power from each of the devices connected to the product.

Warning

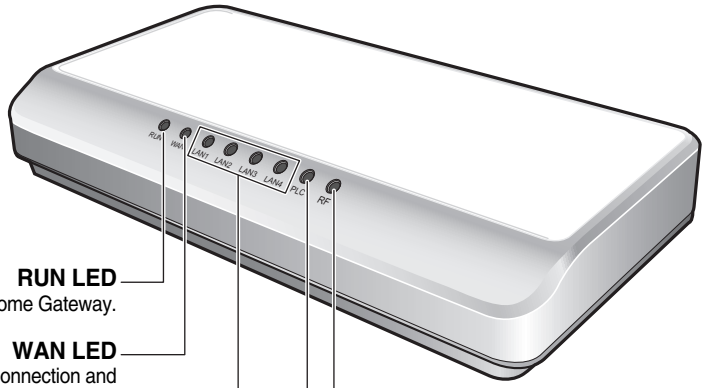
Note that electric current flowing from the power source, telephone and communication cable is dangerous.

Warning

Do not connect, release or install cable to the product during a fire, flood or thunderstorm.

Product Overview

Front



RUN LED
Indicates ON and OFF state of the Home Gateway.

WAN LED
Indicates the Internet connection and communication state.

LAN 1 2 3 4 LEDs
Indicates LAN connection and communication state.

RF LED
Indicates RF data communication state.

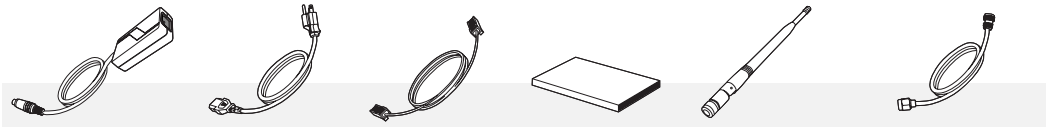
PLC LED
PLC communication state.

Functions of LED

LED	State		Functions
RUN	ON		Abnormal state. i.e., this machine is out of order.
	BLINK	rapid	Initial power on state
		slow	Normal operaion
	OFF		No Power, or Abnormal State
※In normal state, the LED should slowly blink periodocally (beginning a few seconds after unit is turned on.)			
WAN	ON		Normal linked state
	BLINK		Data transimission
	OFF		Not connected state
LAN 1 2 3 4	ON		Normal linked state
	BLINK		Data transimission
	OFF		Not connected state

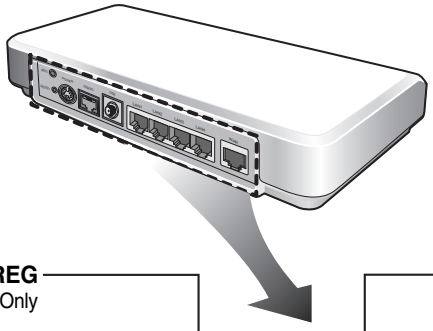
LED	State	Functions
PLC	ON	Initial power on state
	BLINK	Normal operation
	OFF	Abnormal state
※In normal state, the LED should blink periodocally (beginning about 1minute after unit is turned on.)		
RF	ON	Initial power on state
	OFF	Norma state

Accessories



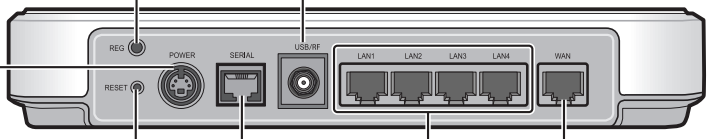
AC Adapter (1)	Power cord (1)	LAN cable (1)	Manual (1)	RF antenna (1)	RF extension cable (1)
GL44-00048A	GL39-00094A	GL39-00095A	GL68-00196A	EW92-00007A	EW92-00008A

Back



REG
For Service Use Only

USB/RF
Connector for RF antenna.



POWER
Jack for connecting the power source cable.

RESET
This button, when pressed, resets the product to the factory default settings.

SERIAL
For Service Use Only

WAN
RJ-45 jack for connecting UTP cable for WAN connectivity.

LAN 1 2 3 4
RJ-45 jacks for LAN connectivity.

Note

- Check the package carefully for any missing or damaged parts. Contact you dealer to replace or exchange them.
- Cables that are connected to each port are shown in the table below.

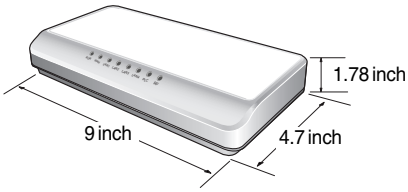
Cable	Ports
UTP-5 cable	SERIAL/WAN
STP Cable	LAN 1 2 3 4
Power source cable	DC IN

Equipment required for installation
Antistatic strap Cables to connect to each port LAN cable Computer equipped with an Ethernet card.

- UTP5 cable (UTP category 5 cabling), STP5 cable (STP category 5 cabling)
  The cable types defined by the EIA/TIA-586 standard to support ethernet connection.
  Category 5 cabling guarantees maximum 100 Mbps data transimission.

  ※ UTP (unshielded twisted pair) , STP (shielded twisted pair)

Product Specifications



Product Specifications

Items	Specifications
Fast Ethernet	10/100Base-T/Tx IEEE802.3 CSMA/CD compliant
Serial	RS-232C console port (For Service Use Only)
Networking	TCP/IP, DHCP Server/Client, NAT
PLC	Lonworks/Echelon
RF	IEEE 802.15.4
Power Source	Power Source : 110-220VAC Frequency : 50Hz/60Hz Power Consumption : 7W
Temperature and Humidity	Operation Temperature : 32˚F~104˚F Storage Temperature : 32˚F~158˚F Humidity : 0~90%
Size (LxWxH)	9 x 4.7 x 1.78 inches (230 x 120 x 45 mm)
Weight	24.7oz (700g)

Maximum Number of Ports

Fast Ethernet	WAN : 1 port LAN : 4 port
Serial	Port 1 : RS-232C

Board Types built on Home Gateway

Board	Items	Specifications
Mother Board	Main Control Unit Board	CPU S3C2510A, 166MHz, SAMSUNG
	Memory	Flash Memory – Boot Rom(512KB), Program Rom(16MB) SDRAM – 64MB
	Serial/HA Interface	RS-232C/RS-485 – For console or HA connection
	Ethernet LAN Switch	– IEEE 802.3 CSMA/CD compliant – 4 port 10/100Base-T/Tx
	WAN	– IEEE 802.3 CSMA/CD compliant – 1 port 10/100Base-T/Tx – Able to connect ADSL/Cable Modem
PLC Board (Power Line Communication)	CPU Interface	UART
	Specification	LonWorks – Data rates : 5.4Kbps – Nodes : 127 nodes in a subnet – Bandwidth : 132KHz, 115KHz
RF Board	Specification	IEEE 802.15.4 – Data rates : 250Kbps – Rated Output Power : 4 dBm – Operating frequency : 2405~2475MHz

HOME GATEWAY SYSTEM

PART 2

Others

Refer to this section for solutions to problems that can occur while using the Home Gateway.

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Maintenance and Troubleshooting

Caution

Users must not attempt to remove the cover or disassemble the product. Service must only be conducted by your dealer. If the device does not work normally during operation, contact your dealer.

System Power Source related problem	Power Source of Home Gateway is down.	Ensure that the power cord is properly plugged. In particular, the system connections and the outlet part of the power source should be checked.
Operation related problem	Home Network does not work properly.	Unplug the power cord and plug it in again.

Glossary

Terms	Descriptions
ADSL	Asymmetric Digital Subscriber Line
ANT.	Antenna
AP	Access Point
CO	Central Office
CSMA/CD	Carrier Sense Multiple Access/Collision Detect
DHCP	Dynamic Host Configuration Protocol
DNS	Domain Name System
DSLAM	Digital Subscriber Line Access Multiplexer
ESP	Encapsulating Security Payload
FTP	File Transfer Protocol
GND	Ground
HA	Home Automation
HTTP	Hypertext Transfer Protocol
LAN	Local Area Network
MCU	Main Control Unit
PLC	Power Line Communication
PPPoE	Point-to-Point Protocol Over Ethernet
PSTN	Public Switched Telephone Network
SMS	Short Message Service
TCP/IP	Transmission Control Protocol/Internet Protocol
USB	Universal Serial Bus
UTP	Unshielded Twisted Pair
WAN	Wide Area Network

FCC Notices

➢ CAUTION

Any changes or modifications in construction of this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

➢ INFORMATION TO THE USER

This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer's instruction manual, may cause interference with radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, you are encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.

➢ NOTE

To comply with FCC requirements in section 1.1307, a minimum separation distance of 1cm is required between the antenna and all persons.

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