Home Monitoring Gateway

User Guide

Table of Contents

CHAPTER 1 INTRODUCTION **1**
- **Package Contents** **1**
- **Features** **1**
- **LEDs** **2**

CHAPTER 2 INITIAL INSTALLATION **4**
- **Requirements** **4**
- **Procedure** **4**

CHAPTER 3 BOARD DESCRIPTION **6**
- **Overview** **6**
- **Components and connectors** **6**
- **Router/AP configuration** **10**

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Chapter 1

Introduction

This Chapter provides an overview of the Home Monitoring Gateway's features and capabilities.

Congratulations on the purchase of your new Home Monitoring Gateway. The Home Monitoring Gateway is a consumer electronic device, which is used for home monitoring and security.

Package Contents

The following items should be included:

- The Home Monitoring Gateway Unit
- Power Adapter
- A Stand

If any of the above items are damaged or missing, please contact your dealer immediately.

Features

- BCM5354 processor with16MB Flash and 32MB SDRAM
- Two Ethernet ports with RJ45 connectors.
- Front Panel LEDs
- Z-Wave Transceiver
- Two USB 2.0 ports
- WPS button
- Reset button
- Power In connector
- Internal antenna for WiFi and Z-Wave

LEDs

Front-mounted LEDs

The Home Monitoring Gateway has 8 LEDs.

POWER	• **On** (Green)- Power On • **Off** - Power Off • **On** (Amber) - POST (power on self test) failure or device malfunction
ETH (1~2) (Green)	• **On** (Green)- LAN connection established. • **Off** - No active connection on the corresponding LAN port. • **Flashing** - Data is being transmitted or received via the corresponding LAN (hub) port.
WiFi	• **On** - Wireless connection available • **Off** - No Wireless connection available. • **Flashing** - Data is being transmitted or received via the Wireless connection.
ZWave	• **On** - ZWave function enabled. • **Off** - ZWave function disabled. • **Flashing** - Data is being transmitted or received via the Wireless connection.
USB (1~2)	• **On** (Green)- USB connection established. • **Off** - No active connection on the corresponding USB port. • **Flashing** - Data is being transmitted or received via the corresponding USB port.
Service	• **On** (Green)- Control Point has made a successful activation to the Portal Server. • **Off** - No active connection to the Portal Server. • **Flashing** - Attempting to establish a connection to the Portal Server.

Rear Panel

Reset	This button has two (2) functions: • **Reboot**. When pressed and released, the Home Monitoring Gateway will reboot (restart). • **Clear All Data**. This button can also be used to clear ALL data and restore ALL settings to the factory default values. To Clear All Data and restore the factory default values: 1. Power On. 2. Keep holding the Reset Button down for 8 seconds. Release the Reset Button. The Home Monitoring Gateway is now using the factory default values.
ETH (1~2) Port	Use standard LAN cables (RJ45 connectors) to connect your PCs to these ports.
Z-Wave Button	Click this button to enable the Z-wave function.
USB (1~2) Port	The two connectors are USB hosts with support for mass storage devices.
WPS button	Push the WPS button on the device and on your other wireless device to perform WPS function that easily creates an encryption-secured wireless connection automatically.
Power Port	Connect the supplied power adapter here.

Chapter 2

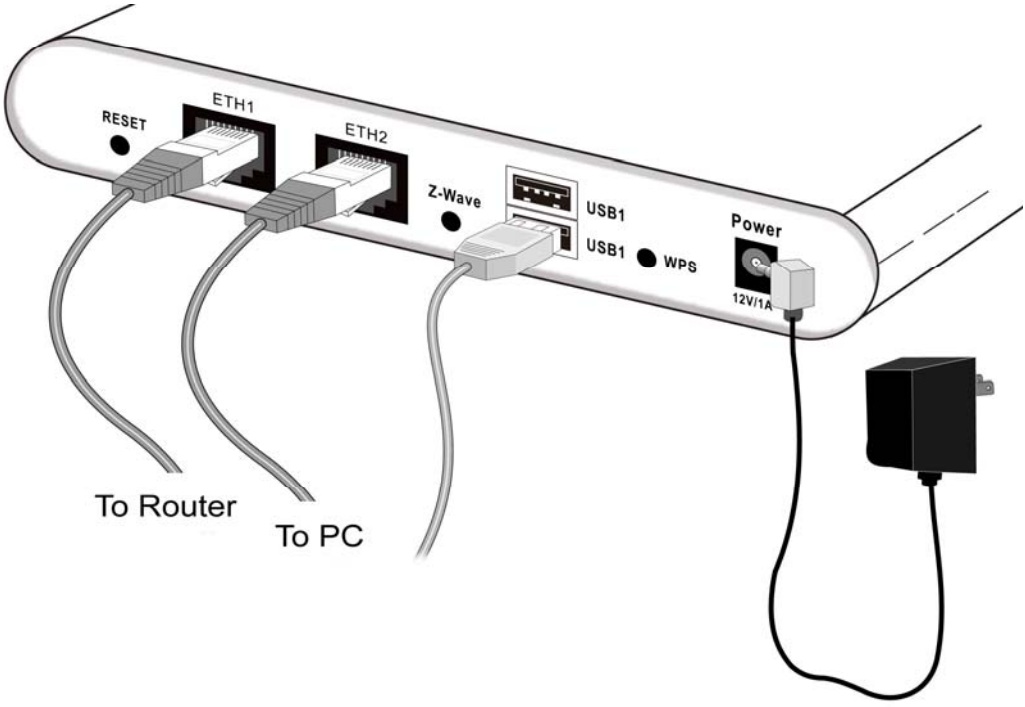
Initial Installation

This Chapter covers the software installation of the Home Monitoring Gateway.

Requirements

- Network cables. Use standard 10/100BaseT network (UTP) cables with RJ45 connectors.

Procedure



1. Choose an Installation Site

Select a suitable place to install the Home Monitoring Gateway.

2. Connect LAN Cables

Use standard LAN cables to connect devices to the Ethernet ports on the Home Monitoring Gateway.

4. Power Up

Connect the supplied power adapter to the Home Monitoring Gateway. Use only the power adapter provided. Using a different one may cause hardware damage.

5. Check the LEDs

- The *POWER* LED should be ON.
- The *ETH* LED should be ON (provided the PC is also ON.)

Chapter 3

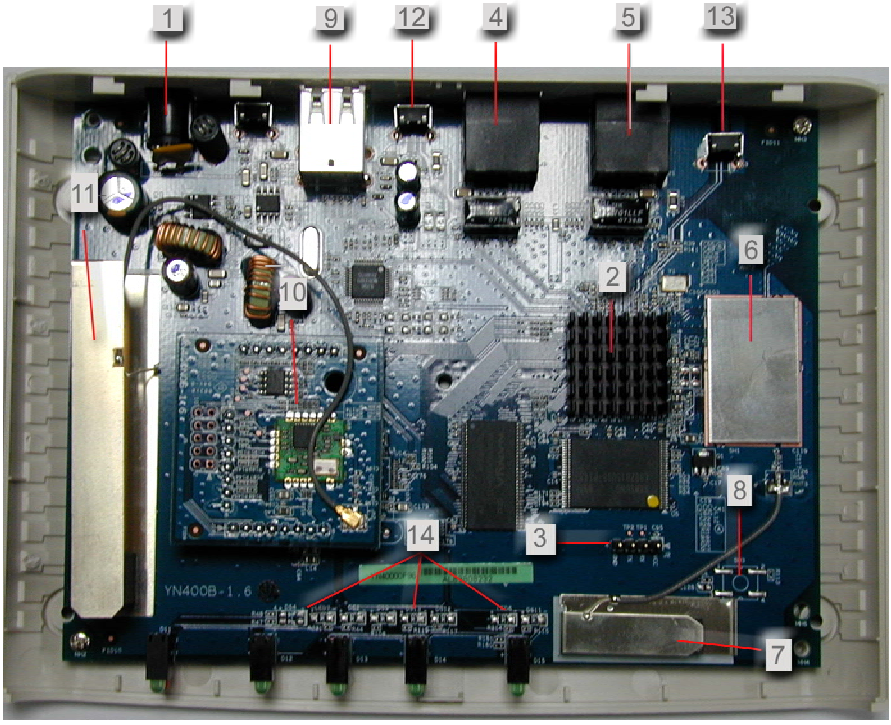
Board Description

This Chapter provides board description for the Home Monitoring Gateway.

Overview

NA401 is a home gateway/automation, monitoring platform based on the Broadcom chip BCM5354. Below is an image of the board showing different connection and interfaces.

Components and connectors



- **1 Power connector** - The power jack connects to DC12V 1A power source.
- **2 BCM 5354** - The platform processor made by Broadcom.
- **3 Console connector** - The RS232 connector is used for debugging purpose. Note interface voltage level is CMOS (3.3V), a logic level converter such as MAX232 will be required.
  Baud rate: 115200
  Data bits: 8
  Stop bits: 1

Parity bit: none
Flow control: none

- **4 RJ-45 (1) connector** - This is the LAN port connector with DHCP server function.
- **5 RJ-45 (2) connector** - This is the WAN port connector.
- **6 WLAN PHY** - This is the wireless LAN physical layer circuitry.
- **7 WLAN antenna** - This is he antenna for wireless LAN.
- **8 WPS push button** - This button is used for WPS function.
- **9 USB connector** - The two connectors are USB hosts with support for mass storage devices.
  Currently, there is no auto detection for plugged in devices; the devices will need to be manually mounted.
- **10 Z-Wave module** - this is a Z-Wave static controller which can monitor/control other Z-Wave based devices/sensors.
- **11 Z-Wave module antenna** - This is the antenna for the Z-Wave module.
- **12 Push button 1** - this push button's state is accessible via GPIO pin 4. If depressed before system power on (or software reboot), system enters download mode. This mode is used by SerComm during mass production, if board is accidentally booted into this mode, power off than power back on.
- **13 Push button 2** - This push button's state is accessible via GPIO pin 6. If depressed before system power on (or software reboot), then release during boot up sequence, the LAN, WAN and wireless LAN settings are restored to default value. However, GPIO pin 6 is also tied to RESET pin of the Z-Wave module. Hence, if push button 2 is depressed during normal operation, Z-Wave functionality may behave unpredictably.
- **14 Programmable LED** - These are seven single coloured and one bi-coloured LED controllable by firmware.

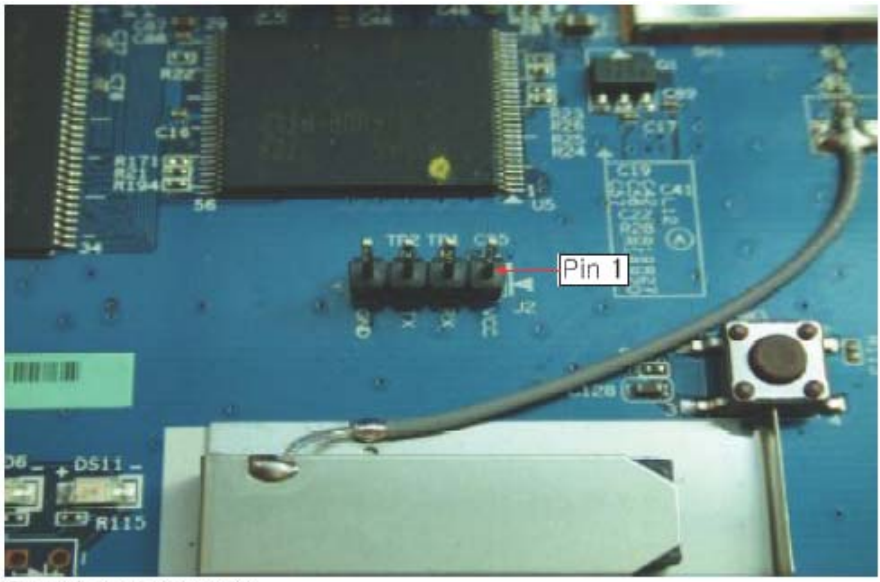
Below is a close up of the console port. The pin definitions are:

Pin 1 - Vcc

Pin 2 - Receive

Pin 3 - Transmit

Pin 4 - Ground



Console port connector

Console port connection guide

For platform debugging, please locate the console cable accompanied with the development kit.

Platform debugging cable

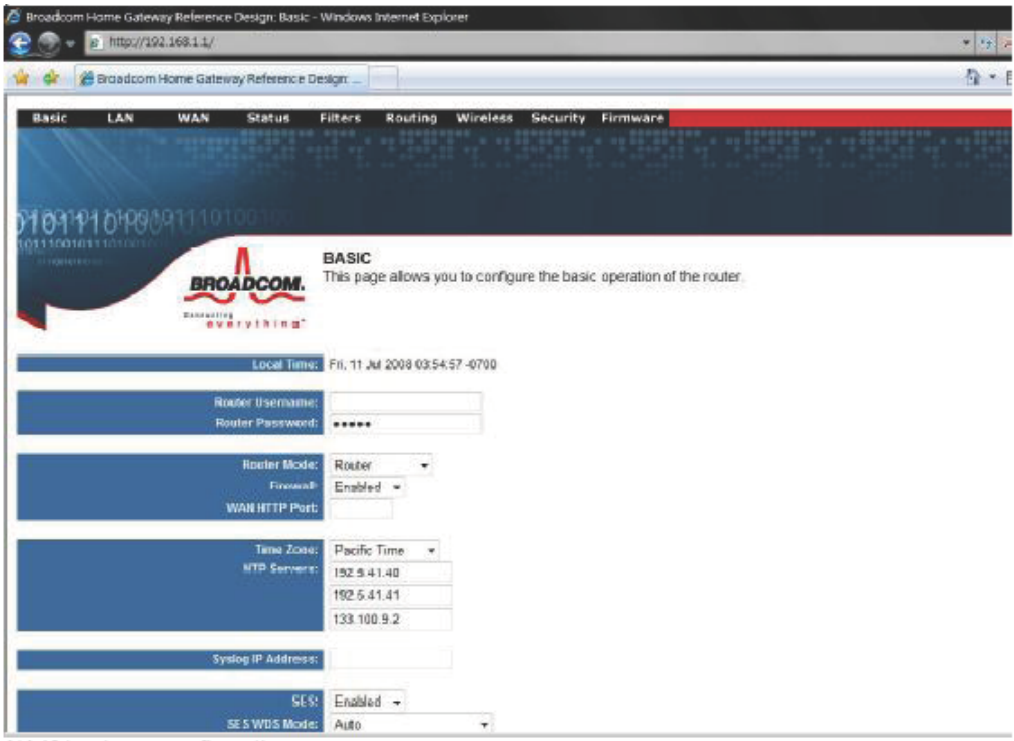
Router/AP configuration

To configure the gateway settings for the NA401, the user simply connects the host to the LAN port. Then using Internet Explorer connect to the URL http://192.168.1.1

The default user name and password is:

User name: (blank)
Password: admin

The image below shows the configuration page once the user has entered the correct username and password.



NA401 gateway configuration page

Class B Equipment

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 instructions, may cause harmful interference to 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, the user is encouraged to try to correct the interference by implementing one or more of the following measures:

- Relocate the unit and antenna (built-in)
- Increase the separation between the equipment and receiver
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or experienced radio/TV technician for help

Modifications

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by manufacturer, may void the user's authority to operate the equipment.

Declaration of conformity for products marked with the FCC log – United States only.

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

1. This device may not cause harmful interferences, and
2. This device must accept any interference received, including interferences that may cause unwanted operation

FCC RF Radiation Exposure Statement:

1. This Transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
2. This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.