

## FCC COMPLIANCE STATEMENTS

FCC ID: MQR4HXX2000

### FCC Part 15 Registration

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 off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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

*Caution: Change or modification not expressly approved by party responsible for compliance could void the user's authority to operate the equipment.*

## FCC Part 68 Registration

This equipment complies with Part 68 of the FCC Rules. On the bottom of this equipment is label that contains, among other information, the FCC registration Number and Ringer equipment Number (REN) for the equipment. If requested, this information must be given to the Telephone Company.

The REN is useful to determine the quantity of devices you may connect to your telephone line and still have all of those devices ring when your telephone number is called. In most, but not all areas, the sum of the REN's of all devices connected to one line should not exceed five (5.0). To be certain of the number of devices you're local telephone company to determine the maximum REN for you're calling area. If your telephone equipment cause harm to the telephone network, the Telephone Company may discontinue your service temporarily. If possible, they will notify you in advance. But if advance notice isn't practical, you will be informed of your right to file a complaint with the FCC.

Your telephone company may changes in its facilities, equipment, operations or procedures that could affect the proper functioning of your equipment. If they do, you will be notified in advance to given you and opportunity to maintain uninterrupted telephone service. If you experience trouble with this telephone equipment, please contact the following address and phone number for information on obtaining service or repairs. The telephone company may ask that your disconnect this equipment from the network until the problem has been corrected or until you are sure that the equipment is not malfunctioning. This equipment may not be used on coin service provide by the telephone company. Connection to party lines is subject to state tariffs.

## INTRODUCTION

The HB200, HCA2000, and HL2000 are HomeNet to Ethernet Bridge. HB2000 serve as a bridge between the well-known Ethernet segment and current home network (hereafter refer as HomeNet) . It filters the error packets and switches good packets between these two networks. HCA2000 or HL2000 is not only a bridge but also a NAT router build-in a DHCP server. It serves as an IP (Internet Protocol) sharing device. In terms of HCA2000, the DHCP server is implemented at the HomeNet segment, while the HL2000 implement the DHCP server at the Ethernet segment. The other segment of HL2000 or HCA2000 was separate as an internet (or Intranet) by a set of legal network parameters. All DHCP clients access the Internet resource through the NAT routing protocol that was built into HL2000 or HCA2000. HB2000 is useful to interface the home-networking device to Ethernet. HCA2000 or HL2000 is benefit to interface the HomeNet to Ethernet. For home and office users, that use one connection (a cable modem or a ADSL modem which was assigned a formal IP address ) to access the internet resource, while multiple user (PCs) would like to share the same connection to the internet, using a HCA2000 or HL2000 to connect all the PCs through the exist telephone line is simply the best solution to access internet.

### Features

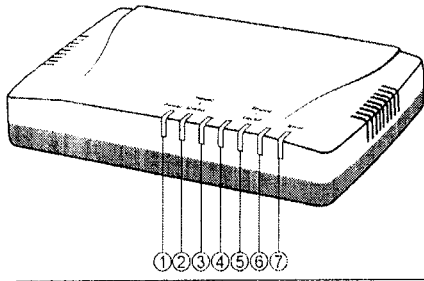
- Stores and forwards switching architecture
- Link two LAN segments into a single logical network
- Supports one 10Mbps Ethernet port
- Support one 1Mbps home network port
- LED indicators
- ⤿ Flash memory for firmware upgrade
- FCC Class B & VCCI Class II certification
- New home networking technology using exist telephone line
- Compliant with 1M HomePNA specifications 1.1
- Compliant with IEEE 802.3 10BaseT standard
- Transparent most of the netwotrk protocols
- External switching power adapter

⤿

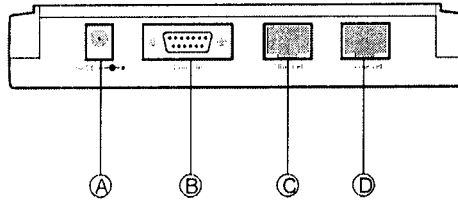
# HARDWARE INSTALLATION

## Parts Names and Functions

### LED Indicators on the Front Panel




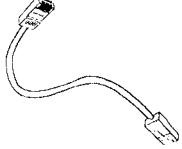

### Ports on the Rear Panel




LED Indicator	Active Color	Status		
		Glowing	Dimming	Flashing
① Power	Green	DC 5v power feeding in	Not powered	N/A
② HomeNet Link/Act	Green	N/A	Disconnected from any HomePNA device	Connected to a HomePNA device
③ (reserved)	N/A	N/A	N/A	N/A.
④ (reserved)	N/A	N/A	N/A	N/A.
⑤ Ethernet Link/Act	Green	Connected to a LAN device	Disconnected from any LAN device	Receiving data
⑥ (reserved)	N/A	N/A.	N/A.	N/A.
⑦ Error	Red	Components malfunctioning	N/A.	N/A.

	Port Name	Type	Functions
A	5V DC	DC	Connects the power adapter plug.
B	Console	DB-9 female	Connects a RS-232 serial cable to your computer for firmware upgrade.
C	Ethernet	RJ-45	Connects to a Ethernet device.
D	HomeNet	RJ-11	Connects to the HomePNA device.

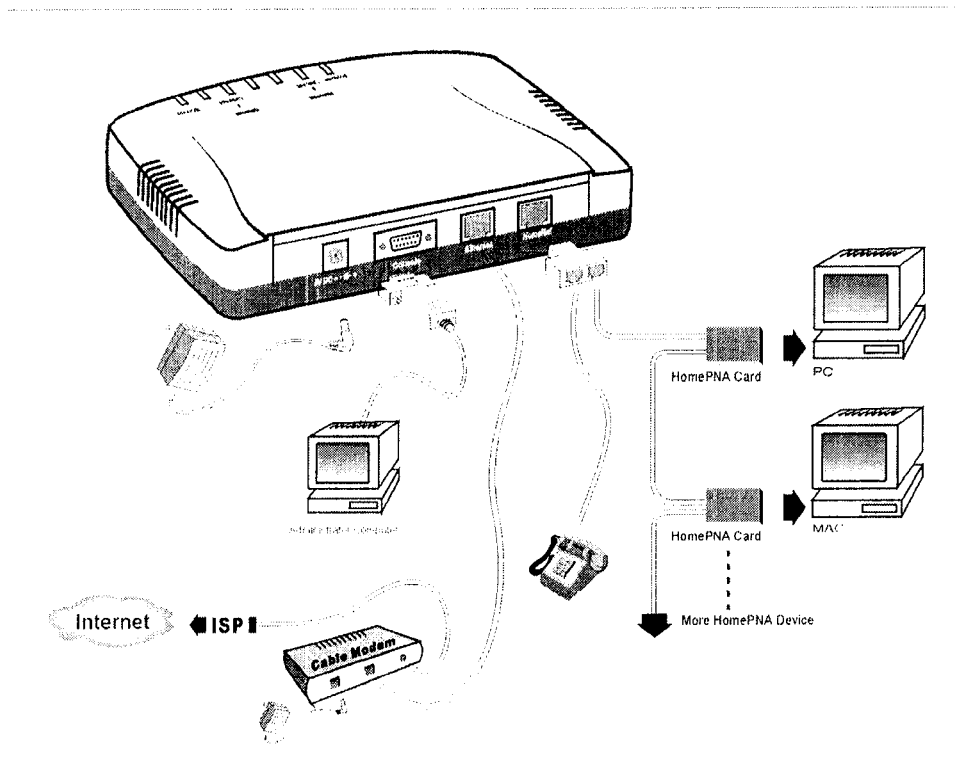
### Hardware Requirements

Item Included in Standard package	Description	Connections	
		From	To
	Standard telephone line	HomeNet Port	RJ-11 jack of wall outlet
	UTP CAT.5 cable	Ethernet Port	RJ-45 port of Ethernet device
	DC 5V Power adapter	Power Port	Wall outlet

Self-Prepared Items	Description	Connections	
		From	To
	RS-232 cable (For firmware upgrade only)	Console Port	COM port of PC

## Hardware Connections

1. Select a convenient location for the HomeNet Bridge near the PC or Ethernet device to which it will be connected.
2. Using a standard telephone line to connect HomeNet port with HomePNA device.
3. Using a UTP CAT.5 (a cross-over cable may be used if the linked port is MDI-II port ) connect to a 10BaseT (or compatible) device.
4. Connect the Power Adapter to feed the power.



The figure above shows how to connect a cable modem to a Home network using HomePNA devices (here 2 PCs installed a HomePNA card were pictured). Follow the same steps to connect any device with an Ethernet 10BASE-T interface (such as a HUB or printer) to a Home network. If multiple PCs require accessing the internet through a cable modem, a HCA2000 can be used. If only one PC is required, HB2000 is enough. HL2000 is designed for HomePNA interface to internet. Now you should have connected the Ethernet port, HomeNet port and the Power to the appropriate devices.

## FIRMWARE UPGRADE

### System Requirements

- One free COM port on PC.
- A pin-to-pin RS-232 cable. One end is 9 pin male connector, the other end is 9 or 25 pin female connector depends on the COM port.
- FWLOAD.EXE : This is a DOS program for firmware upload. You can run it directly from Windows NT/95 also.
- HB2KFW.BIN : This is a firmware image file. This file MUST reside in the same subdirectory with FWLOAD.EXE.

For better disk access speed, it is recommended that you copy these two files in your hard disk before they are uploaded.

### Getting Uploaded

1. Connect RS-232 cable from the Console port of this Bridge to the PC COM port.
2. At the DOS prompt, run FWLOAD.EXE with COM port specified. You can type "FWLOAD -?" first for reference. For example:  
To use port COM 1 to upload firmware, type command as: *C:\> FWLOAD 1*
3. Turn on the Bridge. FWLOAD.EXE will automatically detect the Bridge and complete the uploading. The following messages appear in sequence:

System firmware upload program, ver 1.0.

Copyright 1999.

FWLOAD -? for usage help.

press <ESC> to abort.

Uploading . . .

=> 100992 bytes transmitted

OK: upload succeeded.

Please power on the device again.

If any error message appears, check the cable connectivity and make sure that you have selected an correct COM port, then go through these steps again.

When completed, restart the Bridge by turning off and on to activate the new firmware.

## SPECIFICATIONS

QTK2000-F006

### Standards

FCCID: M24HXX2000

- IEEE802.3 10BASE-T Ethernet compliant
- HomePNA 1.0 specifications compliant

### Data Rates

- HomeNetwork: 1 Mbps
- Ethernet: 10 Mbps

### Distances

- Home Networking: maximum 150 meter between two farthest nodes on the LAN
- Ethernet: maximum 100 meter between two farthest nodes on the LAN

**Power consumption: DC 5V Input, Less than 4W.**

### Certifications:

- FCC Part 15 Class B
- FCC Part 68
- VCCI Class II

### LEDs

- Power
- HomeNet Link/Activity
- Ethernet Link/Activity
- Error

### Connectors

- One RJ-11 for connecting with the HomeNet device
- One RJ-45 for connecting with a 10BASE-T network

### Cables

- HomeNetwork: Standard home telephone line
- Ethernet: UTP CAT.3 or CAT.5