# Web Hub

WH-2400M
WH-2400S

**Web/SNMP Manageable Ethernet Hub**

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# FCC Warning

This device has been tested and found to comply with limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the user's manual, may cause interference in which case user will be required to correct the interference at his own expense.

# CE Mark Warning

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

# Reversion

User's manual for PLANET Web Hub
Models: WH-2400M / WH-2400S
Rev: 1.0 (Feb. 1998)

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# Introduction

## About Web Hub

Web Hub is a versatile network solution with extensive management capabilities, either through Console, Web or SNMP.

Web Hub's (LRSC) Long Range Star Topology makes connecting networks spread over large areas easy and convenient.

The LED Indicator Panel provides an effective means for monitoring the network with extensive LED indicators for easy viewing ports Activity, Utilization, Collision and other functions.
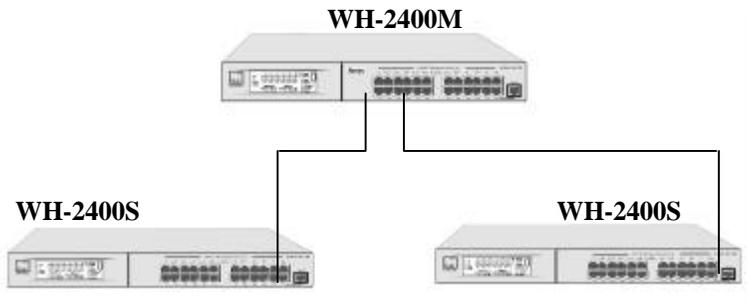


*Figure 1.1 Web Hub WH-2400M/WH-2400S*

# Key Features

- 24 10Base-T (RJ-45) ports.

- 1-AUI Backbone port.

- Memory for Network Management (WH-2400M only)

    ♦ Flash memory: 1MB

    ♦ EEPROM: 8KB

    ♦ DRAM: 2MB

    ♦ CPU: RISC CPU at 20MHz.

- (LRSC) Long Range Star Cascaded Hub Stack providing:

    ♦ More reliability than the conventional daisy-chain solutions as any link failure affects the particular slave hub only, the rest of the network continues to function and managed.

    ♦ Low per port management cost, as up to 208 ports (8 slaves) can be managed by a single Master.

    ♦ Substantial saving in the cost of cabling as the slave hubs can be distributed 100m away from the Master hub.

    ♦ Large network area coverage – 4 times that of any conventional solution as the radius of the wiring area becomes 200m as against 100m with any other solution.

    ♦ Single link (UTP cable) for network and Mgmt. traffic flowing separately.

- WEB Based Management

    ♦ Management from anywhere and any platform using a WEB Browser.

    ♦ Complete web server embedded in device.

    ♦ Integrated HTML forms and Java™ applets for dynamic, real-time status update and monitoring.

- ♦ Standard web server security for total network protection.

- ♦ Easy-to-use familiar point & click interface.

- ♦ Photographic-Quality View to configure/monitor the device.

- SNMP Network Management

  - ♦ Supporting standard RFC 1157 SNMP, RFC 1213 MIB-II, RFC 1516 Repeater MIBs, and PLANET proprietary MIBs.

  - ♦ Supporting RFC 1757 RMON Groups 1,2,3 and 9.

  - ♦ In-band/ ∗ Out-of-band management.

  - ♦ Bootp server and TFTP software download supported.

  - ♦ Console management via RS-232 (DB-9) port using a VT100 terminal/PC emulating terminal.

  - ♦ Device Managers for Standard platforms such as HP- OpenView and SNMPc.

- Extensive front panel LEDs viz. SNMP, WWW, Unit ID, Collision ratio, Utilization ratio , FCS/Align, Runts, Late Collisions, Link, Disable, Rx, Partition for complete status indication.

- Wide variety of ports including MDI-X, MDI-II uplink, and AUI (flexible in future) backbone ports to facilitate easy network design and integration.

- Automatic Unit I.D. setting on all the hubs in the stack.

- Simple and Cost-effective upgrade by means of a WH-2400M master hub to Switch 1000M swap, without losing on the port-level management.

- Unmatched price/performance – Value for money.

C h a p t e r   2

# Hardware Overview

This Chapter describes the hardware in detail, complete with illustrations of every feature for a quick and easy understanding of Web Hub. The common features of both the Master and Slave are described together and specific features to each individual device are described separately.

## Front Panel Layout

The Master Hub's (WH-2400) front panel combines an LED Panel, 24 MDI-X ports and an MDI-II port as shown in Fig. 2.1.



*Figure 2.1 WH-2400M Font Panel.*

The Slave Hub's (WH-2400S) front panel combines an LED Panel, 24 MDI-X ports and an M-Link port as shown in Fig. 2.1.



*Figure 2.2 WH-2400S Font Panel.*

# Ports

There are 25 10Mbps UTP ports on the front panel of both WH-2400M and WH-2400S. In the case of WH-2400M ports 1~8 are shared M-Link ports for Uplink Slave hubs (WH-2400S) network traffic. As well as Management traffic these ports could also be used to connect workstations as any other MDI-X ports. There is also an MDI-II interface port that is shared with Port 24 as shown in Fig. 2.3.
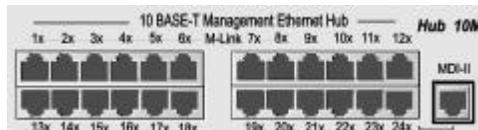


*Figure 2.3 WH-2400M Ports.*

In the case of WH-2400S there are 24 MDI-X ports and an M-Link port (MDI-II Interface port) used for cascading to the Master hub as shown in Fig. 2.4.
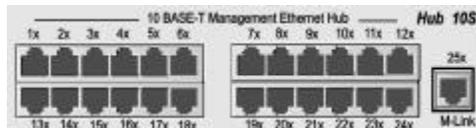


*Figure 2.4 WH-2400S Ports.*

# LEDs

The LED panels for both, WH-2400M and WH-2400S are a storehouse of information, which visually indicate the physical connections, traffic flow, Utilization, and Collision. The LED functions are described under Common LEDs for those that are common to both WH-2400M and WH-2400S and Exclusive LEDs for those are exclusive to either WH-2400M or WH-2400S.

Fig. 2.5 illustrates the LED Panel for WH-2400M.
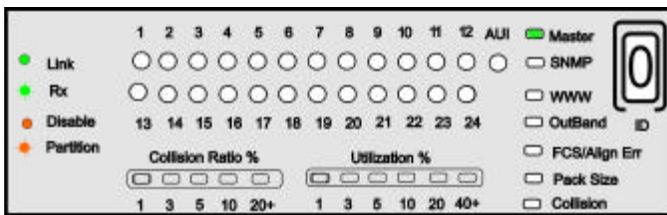


*Figure 2.5 WH-2400M LED Panel.*

Fig. 2.6 illustrates the LED Panel for WH-2400S.
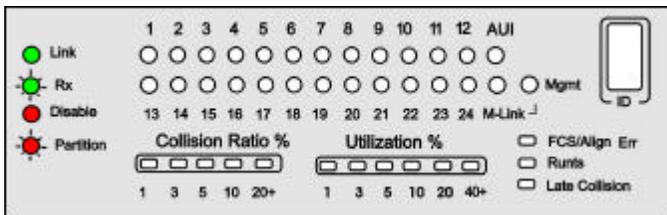


*Figure 2.6 WH-2400S LED Panel.*

# Common LEDs

Most LEDs that are common to both WH-2400M & WH-2400S and are explained in this section.

## Port

There is an LED for every port indicating the following status conditions of the port. The legend located on the left of the ports LED shows the relationship between the LEDs and the ports status at any given time.

- *Link:* The LED glows green in color indicating a link is up on any particular port.

- *RX:* The LED blinks green in color indicating a port is receiving data.

- *Disable:*The LED glows amber in color indicating a port has been disabled by the administrator.

- *Partition:* The LED blinks amber in color indicating the port has been partitioned OFF in the event of a malfunction.The LED goes off as soon as the port has recovered.
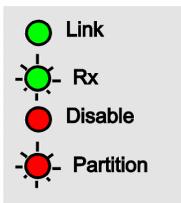


*Figure 2.7 LED Legend.*

# Unit ID

A Unit ID is automatically assigned to each hub in the stack as soon as the machine boots up. The ID LED indicates the assigned Unit ID number. In a stand-alone case, the ID number will be read as "0".



*Figure 2.8 WH-2400M ID LED.*

When slave hubs are cascaded to the Master hub they are automatically assigned the numbers 2~9, while the Master assumes ID "1"



## Utilization %

The Utilization % LEDs indicate the usage percent of the network bandwidth. It is dynamic in nature, changing with the bandwidth usage at any given time.
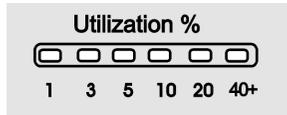


*Figure 2.9 Utilization % LED.*

## Collision Ratio %

The Collision % LEDs indicate the percentage of collision. Collisions occur when two or more devices connected to a hub attempt to transmit data simultaneously. When a collision occurs, the system aborts then transmits after a random wait period.
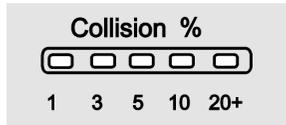


*Figure 2.10 Collision %.*

The Collision percent can be calculated using the following formula.

Collision Ratio = (number of packets collided / number of packets transmitted) * 100.

## FCS/Align Err

The FCS/Align Err LED glows, amber indicating there were corrupted packets during transmissions. Alignment error occurs, when not all the bytes in a packet are received.



*Figure 2.11 FCS/Align LED.*

## Runts

The Runts LED glows amber when the packets received are smaller than 64 bytes, the minimum valid Ethernet packet-size.



*Figure 2.12 Runts.*

## Late Collision

The Late Collision LED glows, amber when collisions occur after 512 bits are received causing an incomplete transmission.



*Figure 2.13 Late Collision.*

# Exclusive LEDs

Some LEDs are exclusive to either WH-2400M or WH-2400S, their purpose is described in this section.

### Master

The Master LED is exclusive to WH-2400M and glows green in color indicating the hub is a Master hub. The LED at port 24 glows, green indicating the Uplink.



*Figure 2.14 Master.*

## SNMP

The SNMP LED is exclusive to WH-2400M and glows green in color indicating the hub is being monitored through the SNMP management program. The LED at port 24 glows, green indicating the Uplink.



*Figure 2.15 SNMP.*

## WWW

The WWW LED is exclusive to WH-2400M and glows green in color indicating the hub is being monitored through the WWW management program. The LED at port 24 glows, green indicating the Uplink.
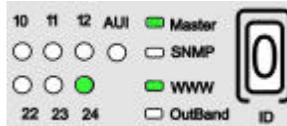


*Figure 2.16 WWW.*

## Out-Of-Band

The Out-Of-Band LED is exclusive to WH-2400M and glows green in color indicating the hub is being monitored through the Console management program.
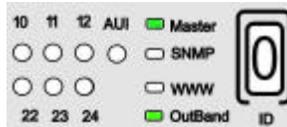


*Figure 2.17 Out-Of-Band.*

## M Link

This LED is exclusive to WH-2400S and glows green in color indicating that the Slave is connected to one of the Master's M-Link ports (1~8).
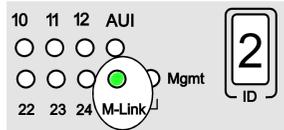


*Figure 2.18 M-Link LED.*

## Mgmt

When a WH-2400S slave is connected to one of WH-2400M's M-Link ports (1~8) and is being managed through a management program, both WH-2400S's M-Link and Mgmt LEDs glows green in color.
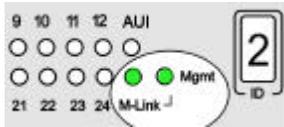


*Figure 2.19 Mgmt LED.*

# Rear Panel Layout

On WH-2400M's rear panel there is an AUI port for linking to a backbone and a
Console Port (RS 232 Port) used in Out-Of-Band SNMP management.



*Figure 2.20 HubWH-2400M Rear Panel.*

On WH-2400S's rear panel there is an AUI port for linking to a backbone.



*Figure 2.21 HubWH-2400S Rear Panel.*

C h a p t e r   3

# Installation

## Before You Begin

The hardware should be installed in a cool dry place. Leave at least 10 cm of space around the hub for proper ventilation. In regards to power requirements, Web Hub can operate in the input range of 100-240V AC.

## Rack Mounting

Web Hub is 1.25U high and can be mounted in standard EIA 19" racks. Align the mounting ears on the sides of the unit with the slot over the holes. Secure screws tightly to fix the brackets to the device. Then place the device into the 19 inch rack and affix it with screws. Please ensure that the ventilation holes remain unblocked.



*Figure 3.1 Rack Mounting.*

# Star Topology

The stack is built based on Star Topology, which offers the following advantages over Daisy Chaining.

- Allows up to 8 Managed Slave hubs to be uplinked through ports 1~8.

- Maximum 100 meter segments allow very flexible physical configurations.

- Additional unmanaged hub can be linked to ports 9~24.

## Star Cascading M-Link Ports
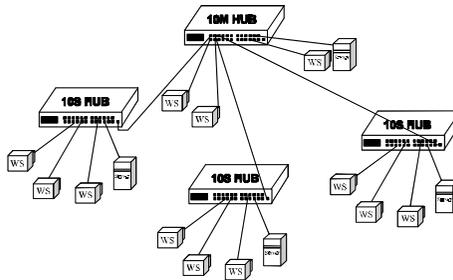


*Figure 3.2 Star Topology.*

# Using the AUI Port

The AUI port located on the hubs rear panel is used to link to a backbone or to integrate with a legacy LAN.
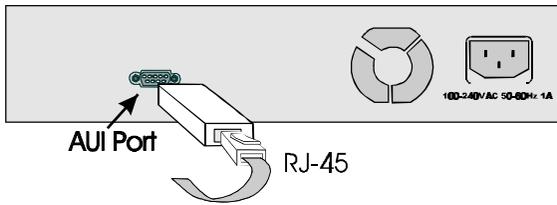


*Figure 3.3 AUI Port.*

# Using the Console Port

Connect an RS 232 serial cable to the Console Port of WH-2400M and to a PC or Notebook computer's available COM port.
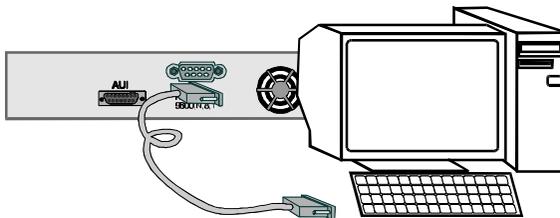


*Figure 3.4 Console Port.*

# Connecting Other Devices

Other devices such as Workstations, Servers, Switches etc. can be easily be connected to Web Hub.

# Connecting Workstations

Workstations can be connected to Web Hub's Master or Slaves MDI-X Ports (UTP Port) as shown in Fig. 3.5.
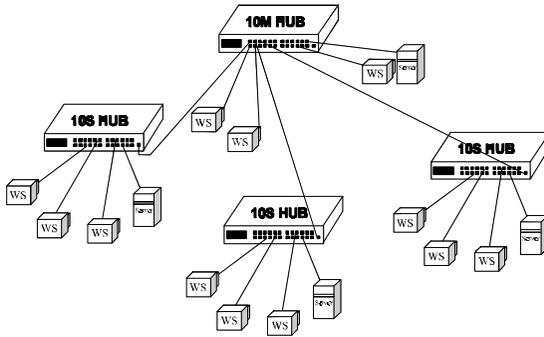


*Figure 3.5 Connecting Workstations.*

# Connecting Switches

A Web Hub domain can be connected to switch as shown in Fig. 3.6.
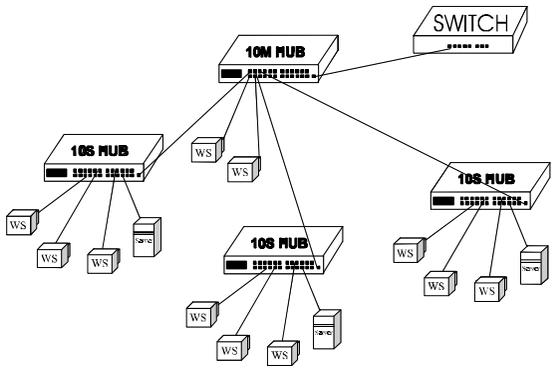


*Figure 3.6 Connecting Switches.*

C h a p t e r   4

# Console Operations

# Software Setup

Web Hub's internal software must be configured to enable its management features. The first time, a minimal configuration must be done using the System Console, thereafter further configuration, monitoring and other management can be done several ways, including the System Console, Web Management and SNMP management.

## Configuring the System

To configure the system, connect an RS-232 serial cable to a COM port on a PC or notebook computer and to the serial port of the Master Hub as show below.

Note:        Do not use a null mode cable.
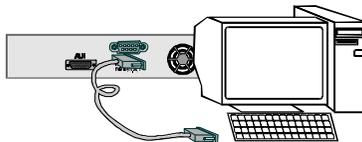


*Figure 4.1 Connecting a PC via Console Port.*

# Terminal Program

A Terminal Program is required to communicate with WH-2400M internal software. Windows95 provides a suitable program called "HyperTerminal" and is accessed from the Start menu. Click START, then Programs, Accessories and then HyperTerminal.
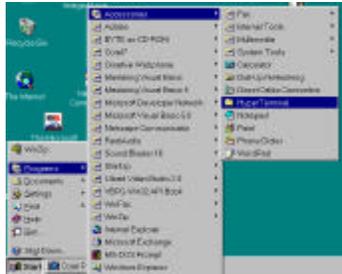


*Figure 4.2 Terminal Program.*

An MS-DOS type terminal program can also make the connection with the Master Hubs built in software, however this section describes using Windows 95s HyperTerminal.

From the **HyperTerminal Screen** double click the Hypertrm.exe icon.



*Figure 4.3 Hypertrm.exe Icon*

The **Connection Description Screen** is displayed. Type a name in the Name panel to identify the connection, choose an icon (optional) and click **OK**.
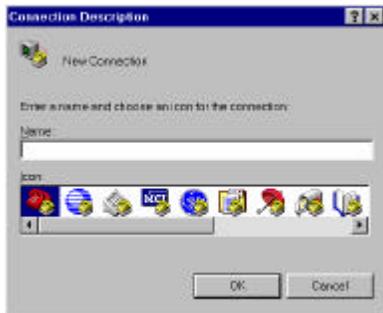
*Figure 4.4 New Connection Screen.*

The following screen prompts for your country info, area code, telephone number and the modem type. Since you won't be dialing out via a modem you only need to set the COM port. Click the arrow at the right of the "Connect using" label.



*Figure 4.5 Phone Number Screen.*

Select the correct COM port and press ENTER on the keyboard.



*Figure 4.6 Selecting a COM port.*

In the final screen all settings must be set correctly, Bits/sec "9600", Data bits "8", Parity "None", Stop bits "1" and Flow Control "Hardware" as in the figure below. Click the OK button and the link to Web Hub will be complete.
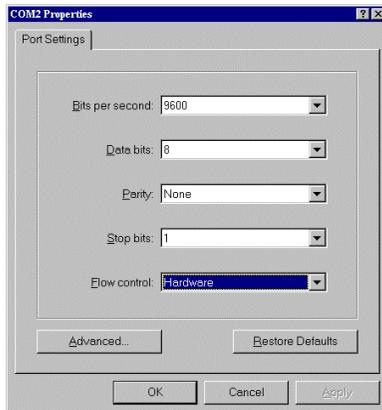


*Figure 4.7 Port Settings.*

# Login Screen

The login screen appears, similar to Figure 4.8. Enter the User Name and Password (**case sensitive**). If there is no text in the Hyper Terminal screen at this point, try entering the User Name and press Enter, the text should then appear.

The Error message "*Input incorrect !!!!    Press <Enter> to retry*", appears at the bottom of the login screen if the Password or User Name is entered incorrectly. Press ENTER to reset the User Name and Password fields to nothing and enter them again making sure the spelling is correct. Press ENTER on the keyboard to load the Main Menu.

```
                        WH-2400M/WH-2400S


        W       W   EEEEE  BBBBB   H    H  U     U  BBBBB
        W  W  W   E EEE    BBBB      HHHH  U     U  BBBB
         W    W     EEEEE  BBBBB   H    H  UU     BBBBB



                 User name      [ |            ]

                 Password       [              ]
```
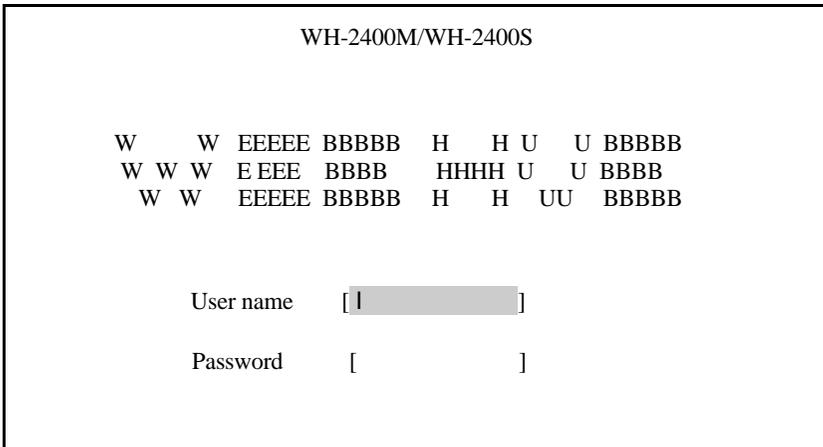
*Figure 4.8 Main Banner of Run Time Local Console Menu.*

# Main Menu

The Main Menu Screen appears similar to Fig. 4.9 with 5 menu items.

Use the following keyboards keys to navigate through the menu and select a sub-menu. These keyboard commands are common to all menus.

- **TAB KEY:** Use the TAB key to select any of the six sub menus.

- **ENTER KEY:** Press the ENTER key after selecting a menu item with the TAB key to view the selection's sub-menu.

- **EXIT:** Return to the previous menu.

- **HELP:** Select HELP, to view keyboard commands.

```
┌─────────────────────────────────────────────────────────┐
│                    WH-2400M/WH-2400S                     │
│                       -Main Menu-                        │
│                                                          │
│                                                          │
│            System Information                            │
│                                                          │
│            Management Setup                              │
│                                                          │
│            Device Control                                │
│                                                          │
│            User Authentication                           │
│                                                          │
│            System Utility                                │
│                                                          │
│                              EXIT       HELP             │
│                                                          │
│       Use <Tab> key to select the item, and press the <Enter>...  │
└─────────────────────────────────────────────────────────┘
```
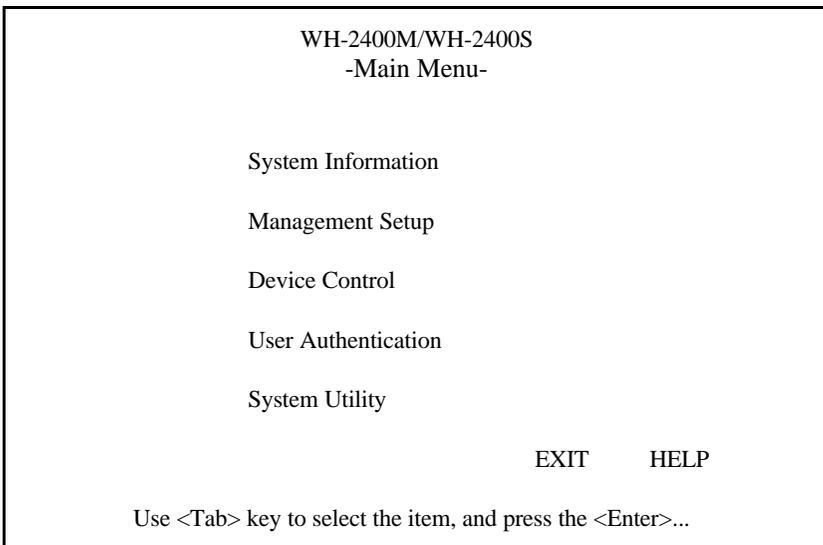
*Figure 4.9 Main Menu of Run Time Local Console.*

Help Menu

The help menu explains additional keyboards commands that can be used throughout the Console Program. Press ESC to return to previous menu.

```
                        WH-2400M/WH-2400S
                           -Help Menu-


      <Ctrl>-Q   : Invoke Help Menu

      <Ctrl>-R   : Refresh Screen


      [Enter]     : Confirm Input
      [TAB]       : Go to next Tabstop
      <Ctrl>-Z   : Go to next Tabstop
      <Ctrl>-W   : Go to previous Tabstop
      <Ctrl>-S/<Ctrl>-A   :     Select/Toggle <FIELD> value



          [ESC]  TO GO BACK

```
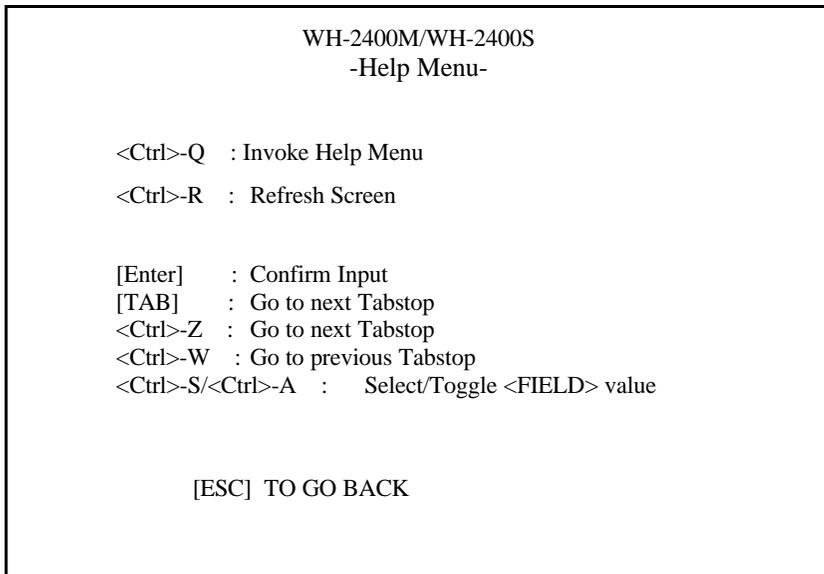
*Figure 4.10 Help Menu.*

# 1. System Information Menu

The System Information Menu provides version identification for the hardware and software. The System Contact and System Location fields can be customized, and saved. Use the following keyboard commands to navigate the menu.

- ♦ SAVE: Saves the configuration settings without confirmation.

- ♦ EXIT: Exits up one menu level.

- ♦ TO MAIN MENU: Returns to the Main Menu Screen.

- ♦ HELP: Goes to the help screen.

```
                         WH-2400M/WH-2400S
                       -System Information Menu-




       System Description: Intelligent Ethernet Hub10M

               Product Version:          V 1
               BOOT ROM Version:         V 2.1.1
               System Software Version:  V 2.1.1
               Web-Page Version:         V 2.1.1
       System Object ID:      1.3.6.1.4.200.1...
       System Up Time:        0 days 0 hr. 0 min. 0 sec.
       System Contact:     [                              ]
       System Name:        [10Mbps Ethernet Hub          ]
       System Location:    [                              ]
       System Manager:     Web and SNMP

       MIB Supported:

          RFC 1213, RFC1215, RFC1516, PLANET proprietary MIB


                  SAVE     EXIT     TO MAIN MENU  HELP
```

*Figure 4.11 System Information Menu*

# **2.** Management Setup Menu

The Management Setup Menu has 5 sub-menus used to configure the Network, Serial Port, SNMP, Trap, and Web.

- Network Configuration: Configure Network address's.

- Serial Port Configuration: View serial port configuration.

- SNMP Community Setup: Configure community names and access.

- Trap Community Setup: Setup community trap address's.

- Web Configuration: Enable or Disable Web access.

```
                        WH-2400M/WH-2400S
                        -Management Setup Menu-

                        Network Configuration

                        Serial Port Configuration

                        SNMP Community Setup

                        Trap Manager Community Setup

                        Web Configuration




                EXIT        TO MAIN MENU            HELP
        Use <Tab> key to select the item, and press the <Enter>...
```
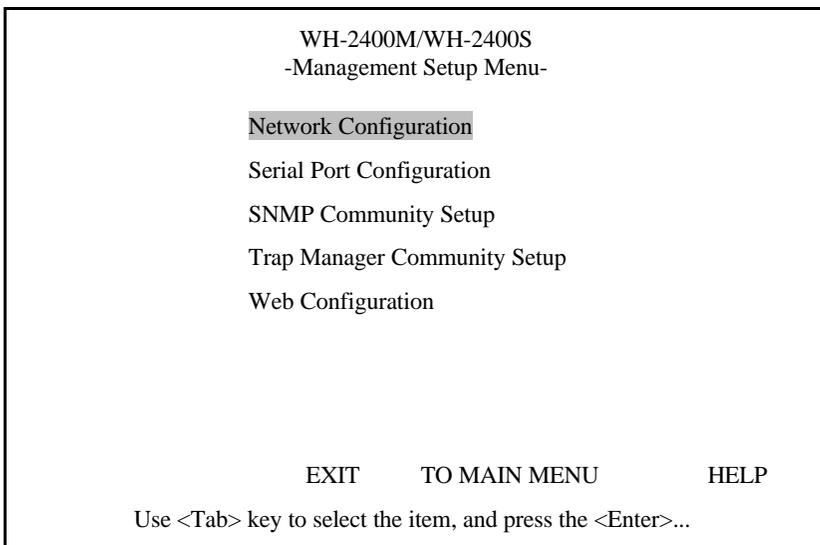
*Figure 4.12 Management Setup Menu of WH-2400M Console.*

## **a.** Network Configuration

The Network Configuration Menu displays the configuration settings and allows for new configuration settings. New settings can be entered under the "New" column and saved without confirmation by selecting SAVE and pressing Enter.

```
+-----------------------------------------------------------------+
|                     WH-2400M/WH-2400S                           |
|                  -Network Configuration Menu-                   |
|                                                                 |
|  Network Interface:     <1>                                     |
|                                                                 |
|        Interface Type:                                          |
|        MAC Address:        00-E0-95-00-00-06                     |
|                                                                 |
|  Configuration:           Current        New                    |
|                                                                 |
|        IP Address:         210.68.0.98     [210.68. 0.98]        |
|        Subnet Mask:        255.255.255.0   [255.255.255.0]       |
|        Default Gateway:    0.0.0.0         [0.0.0.0]             |
|                                                                 |
|                                                                 |
|                SAVE     EXIT     TO MAIN MENU     HELP           |
+-----------------------------------------------------------------+
```
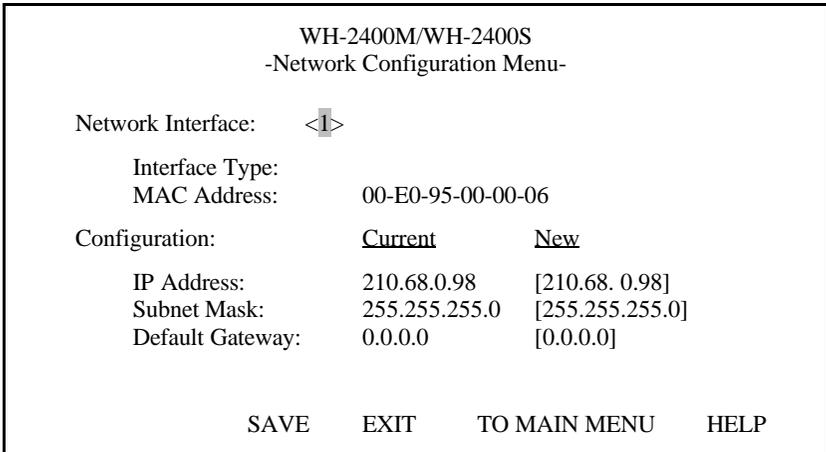
*Figure 4.13 Network Configuration Menu.*

## **b.** Serial Port Configuration

Serial Port Configurations menu displays the serial port configuration. These settings are fixed as set through the Terminal Program, discussed at the beginning of this chapter.

```
┌─────────────────────────────────────────────────────────────┐
│                    WH-2400M/WH-2400S                        │
│                 -Serial Port Configuration Menu-            │
│                                                             │
│      Operation Mode: <CONSOLE>Mode                          │
│                                                             │
│                                                             │
│      Baud Rate:           9600 Bps                          │
│      Character Size:      8    Bits                         │
│      Parity:              N    Parity                       │
│      Stop Bits:           1    Bits                         │
│                                                             │
│                                                             │
│      *** Fixed configuration, can not be changed. ***       │
│                                                             │
│                                                             │
│            EXIT      TO MAIN MENU          HELP             │
└─────────────────────────────────────────────────────────────┘
```

*Figure 4.14 CONSOLE Mode Configuration Menu*

## c.  SNMP Community Setup

The SNMP Community Setup is used to enter and edit community names and set their Access Rights and Status. To add a community name, enter the new name in the Input panel, and press the TAB key to highlight the Access Rights panel, use the arrow keys (or CTRL + S) to set the Access Rights. Next press the TAB key to highlight the Status panel and set the status. Select one of the following commands:

♦ Add: Adds the new name entered in the Input panel.

♦ Delete: Deletes the name entered in the Input panel.

♦ Update: Updates the settings of the name entered in the Input panel.

```
                      WH-2400M/WH-2400S
                      -SNMP Community Menu-

   Index     SNMP Community Name      Access Right     Status
  ----------  --------------------------------  ------------------  --------------
   1                 public           <Read Only>    <Disable>

   2                 private          <Read/Write>   <Enable>

   3

   4

   5

   6
  -------   ----------------------------    -----------------   -------------
   Input:    [                    ]        <Read Only>    <Disable>


             ADD  DELETE     UPDATE    EXIT TO MAIN MENU  HELP
```

*Figure 4.15 SNMP Community Configuration Menu*

### d. Trap Manager Community Configuration Menu

```
                        WH-2400M/WH-2400S
                     Trap Manager Community Menu - 1

    Index      Trap Manager Community Name   IP Address        Status
    ----------  ------------------------------------- ----------------...--------------

    1                                                  [0.0.0.0]      <Inactive>

    2                                                  [0.0.0.0]      <Inactive>

    3                                                  [0.0.0.0]      <Inactive>

    4                                                  [0.0.0.0]      <Inactive>

    5                                                  [0.0.0.0]      <Inactive>

    6                                                  [0.0.0.0]      <Inactive>


        ***Use <Tab> or arrow keys to select index <Enter> to EDIT***

                                    EXIT TO MAIN MENU      HELP
```

*Figure 4.16 Trap Manager Community Configuration Menu*

## **e.** Web Configuration

The Web Configuration can be enabled or disabled and determine whether Web Management can be implemented. Press Ctrl + S keys to toggle between Enable/Disable. Save the new setting.

♦ Enable: Web Management is enabled.

♦ Disable: Web Management is disabled.

```
                        WH-2400M/WH-2400S
                       -Web Configuration Menu-


  Web Management Function:  <Enable>




                  SAVE     EXIT     TO MAIN MENU     HELP
```
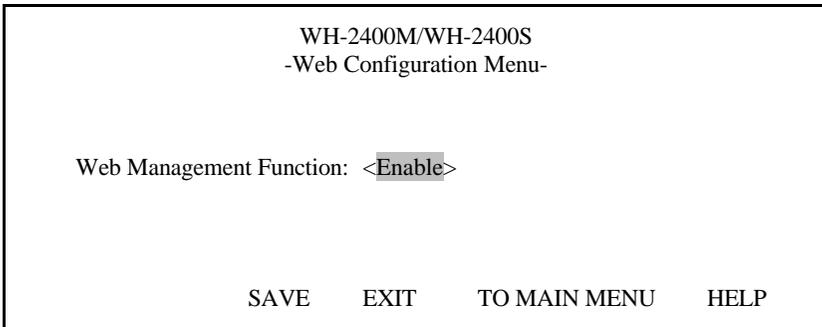
*Figure 4.17 Web Configuration Menu*

# 3. Device Control Menu

The Device Control Menu is used to view and or configure each hub and its ports.

Repeater Group Control/Status menu item provides a menu for configuring each hub in the stack, such as naming the hub, and setting administration status.

Repeater Port Control/Status menu item provides a menu for configuring each port of the selected hub, such as naming ports and and setting administration status.

```
                    WH-2400M/WH-2400S
                   -Device Control Menu-



            Repeater Group Control/Status

            Repeater Port Control/Status






              EXIT    TO MAIN MENU    HELP

  Use <Tab> key to select the item, and press the <Enter>
```
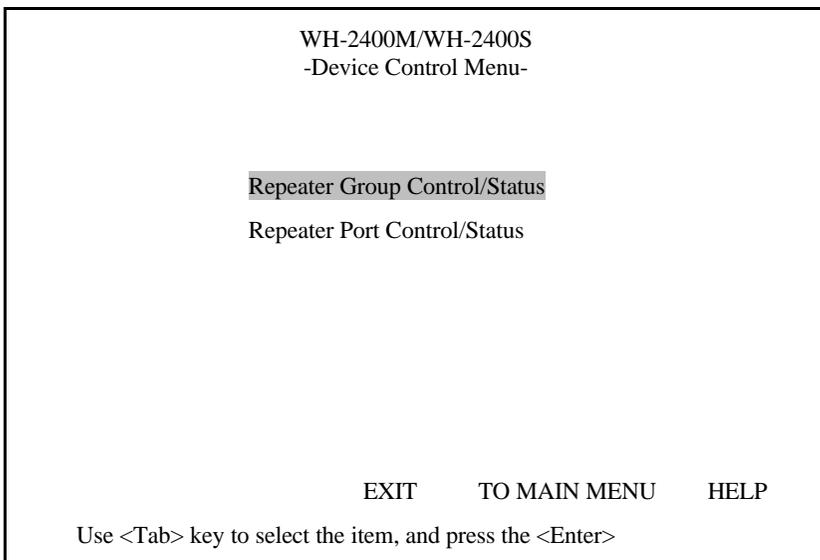
*Figure 4.18 Device Control Menu*

## a.   Repeater Group Control/Status

Group Number (Unit ID) refers to the hub ID, a hub ID number can be entered via the keyboard or use Prev. Group, Next Group commands.

♦ Prev Group/Next Group: Cycle through Hub ID numbers press Enter when the desired hub ID is reached.

Group Admin. State can be set to Enable or Disable by pressing Ctrl + S to cycle the options.

A Device Name of up to 24 character can be entered to name the selected hub. The Device Role panel displays a hub as Master or Slave.

The new settings must be saved before taking effect.

```
                       WH-2400M/WH-2400S
                  -Repeater Group Control/Status Menu-

        Group Number (Unit ID):        [ 1 ]
        -----------------------------------------------

        Group Status:          Operation

        Group Admin. State:    < Enable >

        Device Serial Number: 00000000

        Device Name:           [                              ]

        Device Role:           Master


PRE GROUP  NEXT GROUP     SAVE       EXIT      TO MAIN MENU     HELP
```

*Figure 4.19 Repeater Group Control/Status Menu*

## b.  Repeater Port Control/Status

Repeater Port Control/Status menu is used to view the status and configure the ports of the hubs in the stack. Select the Hub ID in the Group Number panel, then select the Port Number.

The Port Status will be displayed and Port State and Port Name can be configured for ports that are Link Up or Link Down.

```
                    WH-2400M/WH-2400S
               Repeater Port Control/Status Menu

    >>Group Number: [ 1 ]              Port Number: [ 1 ]

    ----------------------------------------------------------------

    Port Status:

            Link:                 Link Up / Link Down
            Link Polarity:        Normal / Reversed
            Auto Partition:       Not Partitioned / Auto Partitioned
            Interface Type:       10Base / AUI / UpLink
            Operation Status:     Yes


    Port State:

            Link Test             < Enable >
            Auto Polarity Reversal    Enable
            Administrator State   < Disable >

    Port Name:  [              ] (max 8 bytes)

PRE GROUP   NEXT PORT   PRE GROUP NEXT GROUP     SAVE   EXIT   TO MAIN MENU        HELP
```

*Figure 4.20 Repeater Port Control/Status Menu*

# **4.** User Authentication Menu

User Name, Passwords and Privilege can be added, deleted and updated through the User Authentication menu and sub menu.

Highlight the desired Index number and press Enter to bring up the sub menu. Through the sub menu edit, add and update the system with up to six user logon configurations.

- ♦ User Name: Up to 12 characters and case sensitive.

- ♦ Password: Up to 6 characters and case sensitive.

- ♦ Privilege: Read/Write or Read Only.

```
                        WH-2400M/WH-2400S
                       User Authentication Menu

        Index      User Name      Password      Privilege
        --------   -------------  -----------   -----------
        1          [HUB10]        [*****]       Read/Write

        2          [GUEST]        [*****]       Read Only

        3

        4

        5

        6
     ***Use <Tab> key to select the item, and press the <Enter>***

                           SAVE      EXIT  TO MAIN MENU  HELP
```

*Figure 4.21 User Authentication Menu*

## a.  User Authentication Sub-Menu

Enter a new User Name and Password configuration or edit an existing configuration and set the Privilege status.

♦ User Name: Up to 12 characters and case sensitive.

♦ Password: Up to 6 characters and case sensitive.

♦ Read/Write: User can logon with Read and Write privileges.

♦ Read Only: User can logon with Read Only privileges.

♦ Add: Use the Add command for new User configuration.

♦ Update: Use the Update command when editing existing configurations.

♦ Delete: Use delete to remove a configuration.

```
                        WH-2400M/WH-2400S
                       User Authentication Menu - 1-

         User Name        Password        Privilege
         -------------     -----------     -----------
         [HUB10]           [*****]         Read/Write




         ***Use <Tab> key to select the item, and press the <Enter>***

                   ADD   DELETE  UPDATE  EXIT   TO MAIN MENU  HELP
```

*Figure 4.22 User Authentication Menu-1*

# **5.** System Utility

The System Utility menu has 3 sub menus to download system software, restart the system and reset to factory settings.

- System Download: This utility can be used to download upgrade versions of the system software should they become available.

- System Restart: Restarts the system from the Console Program.

- Factory Reset: Resets all settings back to factory settings including user name and password.

```
                        WH-2400M/WH-2400S
                        -System Utility Menu-

                        System Download

                        System Restart

                        Factory Reset


                        EXIT TO MAIN MENU        HELP

      Use <Tab> key to select the item, and press the <Enter>...
```
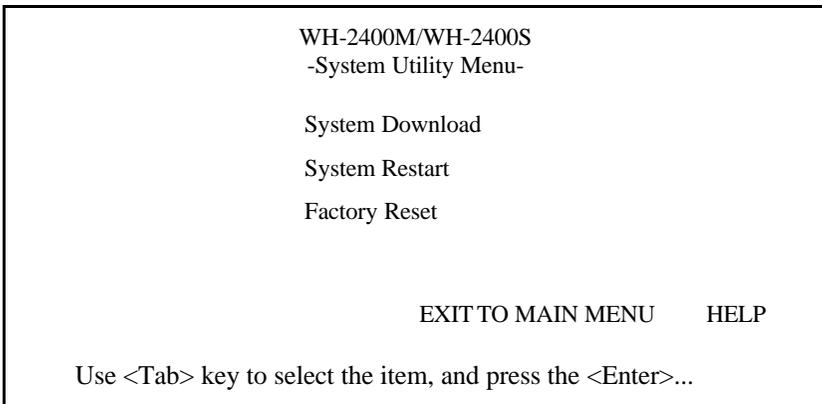
*Figure 4.23 System Utility Menu of Web Hub Local Console*

## a. System Download Menu

To download system files the Boot Server IP Address must be known as well as the name and location of the files.

Press Crtl S to select "Bootp Request (so that an X appears in the brackets). Enter the Boot Server IP Address, then select System Software Download and enter the file name complete with the path.

Follow the same procedure for Web-Pages Database Information Download.

Highlight SAVE and press enter to save the download settings.

```
          WH-2400M/WH-2400S-System Download Menu


(   )         Bootp Request

File Download Request:

     Boot Server IP Address:        [0.0.0.0]




     (   )         System Software Download

                   Filename:  [c:\WHUB1.CDE                    ]

     (   )         Web-Pages Database Information Download

                   Filename:  [c:\WH24.CDE                     ]



                   SAVE       EXIT TO MAIN MENU        HELP
```

*Figure 4.24 System Download Menu*

The download will start after restarting the system. If a download is incomplete, it may be necessary to do a Factory Reset, thereby loosing all custom settings.

## **b.**      System Restart Menu

The system can be restarted "cold" or "warm" started. Use Crtl S to toggle between the two settings and then select the EXECUTE command and press Enter. The system will reload and the logon screen will prompt for user name and password.

```
┌─────────────────────────────────────────────────────────┐
│                  WH-2400M/WH-2400S                      │
│                  -System Restart Menu-                  │
│                                                         │
│                                                         │
│                                                         │
│         System Restart: <     Cold Start >              │
│                                                         │
│                                                         │
│                                                         │
│              EXECUTE   EXIT TO MAIN MENU  HELP          │
└─────────────────────────────────────────────────────────┘
```
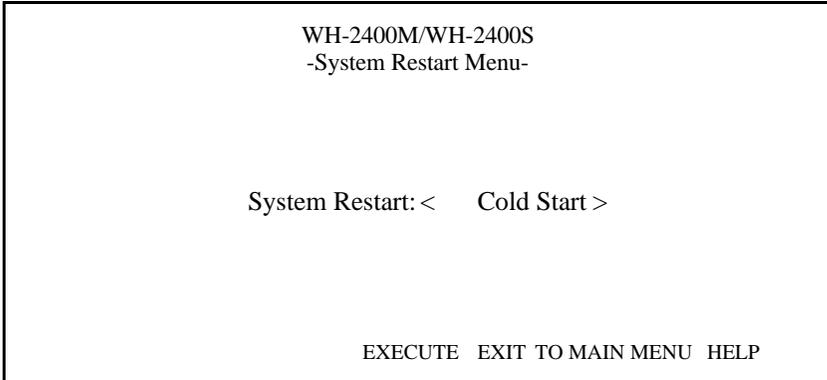
*Figure 4.25 System Reset Menu*

### c. Factory Reset

The setting for Network Configuration is "Not Reset", "Reset from BOOTP" or "Reset to Factory Default", use Ctrl + S to toggle the settings.

User Authentication Configuration setting is "Not Reset" or "Reset to Factory Default", use Ctrl + S to toggle the settings.

All customized settings including passwords will be lost and returned to the factory settings.
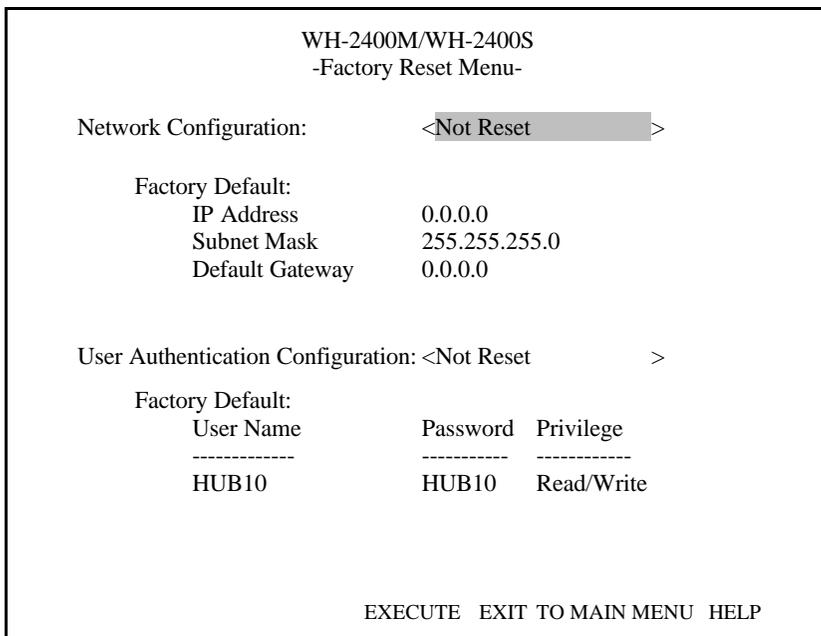
```
                        WH-2400M/WH-2400S
                         -Factory Reset Menu-

 Network Configuration:          <Not Reset              >

        Factory Default:
              IP Address         0.0.0.0
              Subnet Mask        255.255.255.0
              Default Gateway    0.0.0.0


 User Authentication Configuration: <Not Reset              >

        Factory Default:
              User Name          Password   Privilege
              -------------      -----------  ------------
              HUB10              HUB10      Read/Write




                        EXECUTE   EXIT TO MAIN MENU  HELP
```

*Figure 4.26 Factory Reset System Configuration Data*

C h a p t e r   5

# SNMP and Web Management: Overview

## SNMP Management

SNMP (Simple Network Management Protocol), is a protocol designed to give a user the capability to remotely manage a computer network. The management functions fall into four types:

- Configuration

     Configuration Management is used to make the desired settings for devices and their ports, such as naming them so that they can be identified quickly and easily.

- Monitoring

     Monitoring the Status of hubs and their ports is essential in order to analyze and optimize overall network performance.

- Security

     Security has several purposes such as protecting the systems configuration from being inadvertently altered by unknowledgeable users to safeguarding sensitive information from unauthorized persons.

- Failure

     Failure Management is two-fold in nature, that is Prevention and Correction.

     ♦ Prevention is preparing the system for possible problems before they happen.

     ♦ Correction is the ability fix problems that can't be prevented, quickly as possible to minimize the disruption of the network.

# In-band

In-band management is accomplished from within the network, that is, by any device that is linked up, either by cable or through the web.

# Out-of-band

Out-of-band management is accomplished through the Console Management Program via the Console (serial) port and cannot be accomplished from within the network.

# Managing from

## SNMPc Platform

## HP Overview Platform

HP Overview Platform is Hewlett Packard's management program.

# Web Management

WH-2400M embedded web server integrates HTML forms and Java™ applets for dynamic, real-time status update and monitoring and Standard Web Server security for total network protection.

For a complete understanding of Web Management, see Web Hub Software Manual.

Appendix  A

# Technical Specifications

| Models | WH-2400M | WH-2400S |
|---|---|---|
| Standards Compliance | IEEE 802.3 10BASE-T & 10BASE-5 Ethernet | |
| Number of Ports | 24 10BASE-T (RJ-45) ports | |
| | 8 M-Link master ports shared with ports 1~8<br>1 MDI-II Uplink port (RJ-45) shared with port 24<br>1 Console port (RS-232-C DB-9) | 1 M-Link port with MDI-II Interface |
| LED Display | Unit ID, Collision ratio, Utilization ratio, FCS/Align, Runts, and Late Collision per unit, Link, Rx, Disable, & Partition per port | |
| | Master, SNMP, WWW and Outband (console) port | M-Link |
| Management Topology | -Star Connection using M-Link ports on the master<br>-Up to 8 slave hubs per master on UTP media<br>Distributed slave hubs: 100 meters away from the master<br>Single link (UTP cable) for network and Mgnt. traffic, flowing separately<br>-Automatic Unit I.D. assignment | |
| Memory for Network Management | Flash memory: 1MB<br>EEPROM: 8KB<br>DRAM: 2MB<br>CPU: RISC CPU at 20MHz | N/A |
| Web Based Management | -Complete web server embedded in device<br>-Integrated HTML forms and Java™ applets for dynamic, real-time status update and monitor<br>-Standard web server security for total network protection<br>-Easy–to-use familiar point & click interface<br>-Photographic-quality views to configure/monitor the device<br>-Management form anywhere and any platform using a WEB browser. | |
| SNMP Network Monitoring | -Supporting standard RFC 1157 SNMP, RFC 1213 MIB-II, RFC 1516 Repeater MIBs, and PLANET proprietary MIBs<br>-Supporting RFC 1757 RMON Groups 1,2,3, and 9 *<br>-In-band & Out-of-band management*<br>-Bootp server and TFTP software download supported<br>-Console management via RS-232 (DB-9) port using a VT-100 terminal/PC emulating a terminal | |
| Power Requirements | 90-240 VAC, 50/60 Hz<br>Internal universal power supply | |
| Environment | Operating Temperature: 0°C to 50° C<br>Storage Temperature: -30° C to 60° C | |
| | Operating Humidity: 5% to 95% non-condensing | |
| Safety Regulations | CUL (UL & CSA), LVD | |
| EMI Certifications | CE Mark, FCC Class A, VCCI Class 1 | |
| Dimensions | W x D x H: 440 x 221 x 56.5 mm (1.25 U height) | |
| Weight | 5.0 kg | |
| Mounting | Standard EIA19" rack mounting | |

**EMWH2400M/S**