

**CUSTOMER RELEASE NOTES**

***Vertical Horizon  
VH-2402S & VH-2402S2  
Firmware Version 2.05.09  
May 15, 2003***

**INTRODUCTION:**

This maintenance release provides support for the Vertical Horizon 24-port 10/100 Ethernet switch, VH-2402S as well as the new replacement unit, VH-2402S2. The VH-2402S/VH-2402S2 (formerly the ELS100-S24TX2M) is a 24-port dual-speed standalone, stackable or rack-mountable switch. The switch provides 24 10Base-T/100Base-TX ports, plus two rear-panel slots for optional slide-in 100Base-FX, 1000Base-SX or 1000Base-LX modules. One of these slots can also be used for an optional stacking module that allows you to attach up to seven switches to a 4 Gbps high-speed backplane. There is also another rear-panel slot that accepts an optional SNMP-based Management Module. This module supports both in-band and out-of-band access for managing the switch and the attached stack.

The VH-2402S/VH-2402S2 switches can be used in a standalone configuration, or can be stacked up to seven high to form a single logical switch with up to 168, 10/100 Mbps ports. One optional Management Module is required for configuring a standalone switch or an entire stack. The optional stacking Interconnect Module and Interconnect Cables are not included with the base unit and need to be ordered separately.

Management of the switch or stack is provided when an optional Management Module is installed. Management access is provided in-band via Telnet or SNMP or out of band via the serial console port interface either directly or through an attached modem. An imbedded Web agent also provides management capability to any computer on the network via common Http browsers such as Netscape Navigator or Microsoft's Internet Explorer (both browsers should be Version 4.0 or above).

Local Console Management (LCM) allows the user to monitor and configure the VH-2402S/VH-2402S2 from a VT-type terminal. LCM can be used to configure features such as SNMP community names and access rights, Port Enable/Disable, firmware downloads, and Device IP address as well as most other parameters. LCM can also provide statistical and diagnostic information about the entire device or an individual port.

Management of the switch or stack is password protected; the same password is used for LCM and for the Web browser interface. Prior to accessing the Management Module via a network connection, a valid IP address, subnet mask, and in some cases a default gateway must be configured using an out of band connection or the BootP protocol. The management option provides SNMP, RMON (4 groups: 1,2,3,9), and Web management for system control and statistical monitoring.

**It is recommended that one thoroughly review this release note prior to the installation or upgrade of this product.**

**CUSTOMER RELEASE NOTES**

Status	Version No.	Type	Release Date
Current Version	2.05.09	Customer Maintenance	5/15/2003
Previous Version	2.05.02.42	Customer Patch	2/21/2003
Previous Version	2.05.02.31	GA Patch Release	1/16/2003
Previous Version	2.05.02	Customer	9/12/2002
Previous Version	2.05.00.08	GA Patch Release	7/24/2002
Previous Version	2.05.00	Customer	12/21/2002

**HARDWARE COMPATIBILITY:**

The ELS100-S24TX2M PHY chip has changed from Rev. 5208 to 5208R. If you are currently using hardware Rev. "0F" or greater, it is necessary to use firmware version 2.01.04.01 or greater on the ELS100-SMGMT module.

The VH-SMGMT2 module requires firmware release Version 02.05.02 or later. The version of firmware must be installed on the module whether the module is used in a VH-2402S2 or a VH-2402S base unit. If the VH-SMGMT module is used in the VH-2402 base unit it must be running version 02.05.02 or later. No restriction on the VH-STACK or VH-STACK2 card is required.

**BOOTPROM COMPATIBILITY:**

ALL

**NETWORK MANAGEMENT SOFTWARE SUPPORT:**

NMS Platform	Version No.
NetSight Atlas Console	1.0
NetSight Element Manager	3.0 and above

If you install this image, you may not have control of all the latest features of this product until the next version(s) of network management software. Please review the software release notes for your specific network management platform for details.

**CUSTOMER RELEASE NOTES****SUPPORTED FUNCTIONALITY:**

Features	Support
802.1P - Traffic Management	Yes
802.1Q - VLAN tagging and identification (256 VLANs supported)	Yes
Spanning Tree support	Yes
IGMP Snooping	Yes
Address Data Base Maintenance	Yes
Local Management via TELNET (four sessions)	Yes
RMON Groups 1,2,3,9	Yes
Runtime Address Discovery	Yes
Online BOOTP/TFTP	Yes
TFTP download from a host	Yes
Broadcast Suppression	Yes
Trunking	Yes
SNMP	Yes
Modem support	Yes
Imbedded Http Agent	Yes
Port Mirroring	Yes
Auto-Negotiation	Yes
Stacking	Yes
Redundant power support (option)	Yes
Configuration upload/download support	Yes
Port Security (MAC Locking)	Yes

**INSTALLATION AND CONFIGURATION NOTES:**

In general, the VH-SMGMT & VH-SMGMT2 will be shipped to you pre-configured with the latest version of firmware, 2.05.02. If you would like to upgrade an existing VH-SMGMT & VH-SMGMT2 with this patch release, please follow the TFTP download instructions that are included with your firmware image upgrade kit. TFTP download instructions are also available on the Enterasys Networks Support web site at:

<http://www.enterasys.com/support/techtips/tk0020-9.html>.

## CUSTOMER RELEASE NOTES

### FIRMWARE CHANGES AND ENHANCEMENTS:

**Current Release: 2.05.09**

The following Enhancements have been added in this release of firmware.

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| 1. The Logon screen has been updated to reflect the new corporate address.   |
| 2. The Network Configuration view now contains a parameter, "BOOTP-GET-IP", for the IP State field which can be enabled by the user. This will allow the unit to send BootP requests infinitely until an IP address is received. |

The following *known issues* have been fixed in this release of firmware.

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| 1. MAC address learning now works as expected when Port Security is enabled AND management is restricted to one VLAN.   |
| 2. An SNMP trap attack filter was added and padding bytes on all management packets are cleared to prevent eavesdropping on stale buffer data. Packets shorter than minimum Ethernet frame size are now padded with zeroes. This prevents potential security leakage. |
| 3. The "ifName" OID now displays [f/g]e .x. y where x is the unit number and y is the port number. "f" = fast Ethernet, "g" = gigabit Ethernet.   |
| 4. The "ifDescr" OID now displays the description of the port.  |

### PRIOR FIRMWARE CHANGES AND ENHANCEMENTS:

*The following known issues or enhancements made in prior releases of firmware are outlined below. Please refer to the specific release notes of the firmware release for additional information.*

**Prior Release: 2.05.02.42**

The following enhancements have been added in this release of firmware.

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| 1. Support for Gigabit Ethernet interface port trunking has been expanded to include any mixed set of different gigabit physical interface types. For example; a trunk can now be made consisting of a 1000TX, 1000SX and a GBIC port.  |
| 2. In this version of code for either VH-SMGMT or VH-SMGMT2 the RMON memory space is no longer used as a landing pad (memory buffer area) for the firmware image download when upgrading/downgrading from THIS version of code. It is now possible to poll RMON counters while an image download is going on. A reset of the platform will not be required to restore the operation of the RMON capability after a failed firmware upgrade attempt. |

To protect memory resources and guarantee a known outcome this version of code will not allow a configuration file upload (or download) and a firmware image download to occur in parallel. The VH will complete the operation that was first started, and abort the second operation.

## CUSTOMER RELEASE NOTES

The following *known issues* have been fixed in this release of firmware, 2.05.02.42.

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| <p>3. The Spanning Tree path cost for the 1000baseTX interface was corrected.</p>  |
| <p>4. A number of minor inconsistencies in the display views have been corrected in this release of firmware as outlined below:</p> <ul style="list-style-type: none"><li>• Web View GUI properly displays Model name, i.e. VH-2402S2</li><li>• IGMP Entry is now listed properly in the member port table in Web View</li><li>• The Port Information screen in Web View now correctly reflects the Flow Control Status</li><li>• A definition of "ARP Reply Timer" field has been added to Web View help</li><li>• SNMP Communities menu had a blank menu selection. It is now possible to correctly delete entries.</li><li>• Creating trunks using Web View is now refreshed automatically on selecting the unit number/port number</li><li>• Port Trunk Status is properly displayed in Web View</li></ul> |
| <p>3. The issue where VH-2402S modules or stacks with no ports attached will occasionally output console messages for trap allocation errors (shown below) is resolved.</p> <p>Subprogram: trap_QueueEnqueue<br/>Error: L_MEM_Allocate failed!<br/>Subprogram: trap_QueueEnqueue<br/>Error: L_MEM_Allocate failed!<br/>Subprogram: trap_QueueEnqueue<br/>Error: L_MEM_Allocate failed!</p> <p>These "information only" messages are caused by the overflow of the trap queue for "coldstart" trap messages since it is impossible to send the messages because no ports are active. The following "informative" messages may appear on the LM console continuously:</p>  |

## CUSTOMER RELEASE NOTES

### Prior Firmware version: 2.05.02.31

The following Enhancement has been added in this release of firmware 2.05.02.31.

1. The settable parameter configuration file for the Vertical Horizon products (2402S, 2402S2, 4802, 8G) may be uploaded (TFTP) from the devices and stored for management purposes. The file may be copied (downloaded via TFTP) to the device to restore the saved settings. IP address information will not be overwritten as the file is installed on a device so no loss of management will occur. New, with this firmware revision, is the ability to load the configuration file to other VH devices, with the restrictions below:

- Configuration files can always be saved from, and restored to, the same system
- On the exact same hardware, configuration files can be restored to the next higher or next lower firmware revision. This allows configurations to be saved prior to performing code upgrades to products.
- Configurations files can be copied to another system providing it is running the exact same firmware revision, and is version 2.05.02.31 or higher.
- Configurations can be loaded to other systems with the same firmware, and different system configurations of hardware, but, may have partial success in loading the files. Parameters for inconsistent system configuration devices and interfaces will be deleted, and default parameters will be used.
- This capability will work using TFTP.

Other important notes:

- The management interface IP address parameter information will be maintained on the original system even though a new configuration file is loaded. This information is never overwritten.
- Password information is stored in the saved configuration file. The password information IS written from the saved file into any new device the file is loaded onto. Network managers should change the password information **BEFORE** uploading and saving the configuration file from a system if this poses any security concern. Configurations copied from one system to another will overwrite the existing password with the one contained in the configuration file. The binary configuration files may not be edited to remove this data as it will corrupt the file checksums.

2. The VH device will no longer reset on a failed firmware upgrade. The device will continue to operate normally.

## CUSTOMER RELEASE NOTES

The following Known Issues have been fixed in this release of firmware 02.05.02.31.

1. An SNMP trap attack filter was added to resolve the last known issue with SNMP vulnerability.  
**Note:** During an SNMP attack on this device, using packets directed at the IP address of the switch for prolong periods of time, ICMP and SNMP requests to this device, may be delayed or stopped for 5 -15 seconds. Management is restored after the attack ceases.
2. Detection was added for using IBM Type 1 configured cabling.
3. A condition resulting in a random loss of SNMP has been resolved.
4. To protect the management agent (loss of management issue) from excessive levels of broadcast traffic from all ports, the VH-240S2/S2 management agent, when overwhelmed, will drop all broadcast traffic directed to it for periods of time. Under these certain conditions, the switch agent will send unsolicited ARPs (Gratuitous Arp) to each VLAN configured on the switch. This behavior is not detrimental to network operation and ensures that network management communication to the VH-240S2/S2 management agent will not be lost for new connections to the agent. The mechanism runs independently of any broadcast control capability on the switch.  
  
Tuning parameters have been added and are stored in NVRAM. If Gratuitous Arp functionality is enabled, refer to the sample configuration screen in these release notes for set up information.  
  
Refer to the Enterasys Support knowledge base: <http://knowledgebase.enterasys.com/support>, document ent12303 for more information regarding Gratuitous Arp configuration and use.
5. Uploaded configuration files could not be ported previously from one VH switch to another switch. It has been noticed that the parameter "Broadcast Suppression" still sometimes fails to port. All other parameters port OK.
6. Password Recovery is resolved.

## KNOWN RESTRICTIONS AND LIMITATIONS:

1. When a VLAN is set to "Not in Service" and there is an Egress Port assigned to the VLAN traffic with that VLAN tag, traffic is forwarded instead of being dropped.  
**Work-around:** Within the "Bridge Settings" View, change the "VLAN Learning" parameter to IVL mode.  
**Note:** This issue will occur with an agent Module in the same switch within the stack. A "Learning" Broadcast packet will cause this event to happen.
2. Due to a Chip Limitation, the VH-2402S does not support "Admit Only VLAN-tagged frames."
3. The Root Port Cost on a Trunk will change back to the Default Port Cost (i.e. 15) after a respan or a reboot of the VH-2402S/VH-2402S2.
4. Under high broadcast loads, the VH-2402S/VH-2402S2 implements internal mechanisms to limit broadcast and multicast traffic to the Management Agent. This filtering of traffic to the CPU may cause the CPU not to see the IGMP streams for a group for which no "join" messages have been received. The outcome of this event is flooding of the multicast stream until either a "Join" (or "Leave") message is received or until the broadcast and multicast traffic is reduced to a small enough level that the Management Agent can process all of them.

**CUSTOMER RELEASE NOTES**

**KNOWN RESTRICTIONS AND LIMITATIONS CONTINUED:**

5. The VH-2402S2 Filtering Database supports up to 8,000 entries compared to the VH-2402S Filtering Database which supports up to 12,000 entries due to internal chipset memory limitations. While the actual internal memory is slightly smaller in the new chip because of the sparse hashing mechanism used, it is often possible to have many more than 8000 table entries
6. If a Static Router port is configured on a multi-port trunk (link aggregation group), it may not be saved following a reboot of the VH-2402S/VH-2402S2. Note: Static Router ports on other ports are not lost after a reboot. This issue will be fixed in a future release.
7. When VLANs are added in the Port Assignment VLAN Config View, they will not be saved following a reboot until the CPU Agent has had time to place them in NV-RAM. After configuring the Ports with VLANs, wait 5 Minutes before rebooting the Switch.
8. EMAN 3.0 Java Chassis Manager works properly, but at times it may not properly "draw" the VH-2402S2 Stack.  
**Work-around:**
  1. Add the following line to the <install>/Resources/ChMgr.ini file under [ChMgrLayouts]  
etsysOidDevVHx2402S2=7
  2. Add the enterasys-oids-mib to the EMAN 3.0 MIB database.
9. While a TFTP configuration upload is being done, an image download of new firmware cannot be done at the same time. The new firmware can be downloaded as soon as the TFTP configuration upload has finished.
10. When performing a TFTP Image Download over an existing Image or a TFTP Configuration Upload, it has been noticed that the parameter "Broadcast Suppression" will sometimes fail to be retained or port.
11. When modifying Speed/Duplex and Flow Control parameters on more than 8 Ports within the Port Configuration View, only the Speed/Duplex values will be saved after clicking on <OK> or <APPLY>.

**Other Known Issues and Restrictions can be found in the VH-2402S v02.05.00 Release Notes. Any other problems than those listed above should be reported to our Technical Support Staff.**

**COMPLIANCE SUPPORT:**

Compliance Level	Compliant
Year 2000	YES

Known Anomalies: None.

**CUSTOMER RELEASE NOTES**

**IEEE STANDARDS SUPPORT:**

Standard	Title
IEEE 802.1D	Transparent Bridging Specifications (ISO/IEC 10038)
IEEE 802.1p	Traffic Class Expediting and Dynamic Multicast Filtering
IEEE 802.1Q	Virtual Bridged Local Area Networks
IEEE 802.2	Local Area Networks, Logical Link Control (LLC)
IEEE 802.3	CSMA/CD 9 (ISO/IEC 8802-3)
IEEE 802.3I	10Base-T (ISO/IEC 8802-3, clause 14)
IEEE 802.3u	100Base-TX (ISO/IEC 8802-3, clause 25)
IEEE 802.3u	100Base-FX (ISO/IEC 8802-3, clause 26)
IEEE 802.3x	Flow Control
IEEE 802.3z	1000Base-SX, 1000Base-LX

**IETF STANDARDS MIB SUPPORT:**

RFC No.	Title	Groups Supported
1157	Simple Network Management Protocol(SNMP)	
1213	MIB-II	System, Interfaces, IP, ICMP, UDP, Transmission (dot3), and SNMP
1493	Bridge MIB	Spanning Tree and various managed objects for bridges
1573	Interfaces Evolution MIB	MIB-II Interfaces Group extensions
1643	Ethernet-like	Various Ethernet specific aspects
1757	RMON MIB	Statistics, History, Alarm, and Event
2674	Definitions of Managed Objects for Bridges with Traffic Classes, Multicast Filtering and Virtual LAN Extensions	<p>Groups in the P-BRIDGE MIB</p> <p>-----</p> <p>dot1dExtBase OBJECT IDENTIFIER ::= { pBridgeMIBObjects 1 }</p> <p>dot1dPriority OBJECT IDENTIFIER ::= { pBridgeMIBObjects 2 }</p> <p>Groups in the Q-BRIDGE MIB</p> <p>-----</p> <p>dot1qBase OBJECT IDENTIFIER ::= { qBridgeMIBObjects 1 }</p> <p>dot1qTp OBJECT IDENTIFIER ::= { qBridgeMIBObjects 2 }</p> <p>dot1qStatic OBJECT IDENTIFIER ::= { qBridgeMIBObjects 3 }</p> <p>dot1qVlan OBJECT IDENTIFIER ::= { qBridgeMIBObjects 4 }</p>

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**ENTERASYS PRIVATE ENTERPRISE MIB SUPPORT:**

Title	Version
ELS100.MIB	01.00.00

Enterasys Private Enterprise MIBs are available in ASN.1 format from the Enterasys web site at: <http://www.Enterasys.com/support/mibs/> . Indexed MIB documentation is also available.

**SNMP TRAP SUPPORT:**

RFC No.	Title
RFC 1215	coldStart_trap warmStart_trap linkUp_trap authenticationFailure_trap egpNeighborLoss_trap
RFC 1493	ENTERPRISE dot1dBridge NewRoot 1 topologyChange 2
RFC 1573	SnmpTraps linkDown 3 LinkUp 4
RFC 1757	IETF RMON, ENTERPRISE rmon -- 1.3.6.1.2.1.16 risingAlarm 1 fallingAlarm 2

**ENTERASYS PRIVATE ENTERPRISE TRAP SUPPORT:**

None

**GLOBAL SUPPORT:**

By Phone: (603) 332-9400  
By Email: [support@enterasys.com](mailto:support@enterasys.com)  
By Web: <http://www.Enterasys.com/support>  
By Fax: (603) 337-3075  
By Mail: Enterasys Networks  
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For information regarding the latest firmware available, recent release note revisions, or if you require additional assistance, please visit the Enterasys Support web site.