TOSHIBA

TOSHIBA
Leading Innovation

RemotEye® II

User Manual
Document Number: 50024-014
August 2015

About This Manual

This manual was written by the TOSHIBA Engineering and Marketing Groups. These groups are tasked with providing technical documentation for the RemotEye II system. Every effort has been made to provide accurate and concise information to you, our customer.

This manual provides information on how to safely install, operate, and maintain your RemotEye II system. This manual includes a section of general safety instructions that describes the warning labels and symbols that are used throughout the manual. Read the manual completely before installing, operating, or performing maintenance on this equipment.

The information in this manual is subject to change without notice.

The Toshiba International Corporation shall not be liable for direct, indirect, special, or consequential damages resulting from the use of the information contained within this manual.

Contacting TOSHIBA's Customer Support Center

TOSHIBA's Customer Support Center can be contacted to obtain help in resolving any RemotEye II system problem that you may experience or to provide application information.

The Support Center can be reached at 877-867-8773 (toll free) or 713-466-0277. The center is open from 8 a.m. to 5 p.m. (CST), Monday through Friday.

You may also contact TOSHIBA by writing to:

TOSHIBA International Corporation

13131 West Little York Road

Houston, Texas 77041-9990.

For further information on TOSHIBA's products and services, please visit our website at HTTP://WWW.TOSHIBA.COM/IND.

Important Notice

This user manual may not cover all of the variations in equipment, nor may it provide information on every possible contingency concerning installation, operation, or maintenance.

The contents of this manual shall not become a part of or modify any prior agreement, commitment, or relationship between the customer and the TOSHIBA International Corporation's UPS Division. The sales contract contains the entire obligation of the TOSHIBA International Corporation's UPS Division. The warranty contained in the contract between the parties is the sole warranty of the TOSHIBA International Corporation's UPS Division, and any statements contained herein do not create new warranties or modify the existing warranty.

Any electrical or mechanical modifications to this equipment without prior written consent of the TOSHIBA International Corporation will void all warranties and may void the UL/CUL listing or other safety certifications. Unauthorized modifications may also result in equipment damage or personal injury.

When used on UPS supporting safety critical equipment, carefully analyze the impact of allowing remote access of the UPS control features.

Table of Contents

General Safety Instructions

DO NOT attempt to install, operate, maintain or dispose of this equipment until you have read and understood all of the product safety information and directions that are contained in this manual.

Safety Alert Symbol

The Safety Alert Symbol indicates that a potential personal injury hazard exists. The symbol is comprised of an equilateral triangle enclosing an exclamation mark.

SIGNAL WORDS

Listed below are the signal words that are used throughout this manual followed by their descriptions and associated symbols. When the words DANGER, WARNING and CAUTION are used in this manual they will be followed by important safety information that must be carefully adhered to.

The word DANGER preceded by the safety alert symbol indicates that an imminently hazardous situation exists that, if not avoided, will result in death or serious injury to personnel.

DANGER

The word WARNING in capital letters preceded by the safety alert symbol indicates that a potentially hazardous situation exists that, if not avoided, could result in death or serious injury to personnel.

WARNING

The word CAUTION or ATTENTION in capital letters preceded by the safety alert symbol indicates that a potentially hazardous situation exists which, if not avoided, may result in minor or moderate injury.

CAUTION / ATTENTION

The word CAUTION in capital letters without the safety alert symbol indicates a potentially hazardous situation exists which, if not avoided, may result in equipment and property damage.

Special Symbols

To identify special hazards, other symbols may appear in conjunction with the DANGER, WARNING and CAUTION signal words. These symbols indicate areas that require special and/or strict adherence to the procedures to prevent serious injury to personnel or death.

Electrical Hazard Symbol

A symbol which indicates a hazard of injury from electrical shock or burn. It is comprised of an equilateral triangle enclosing a lightning bolt.

Explosion Hazard Symbol

A symbol which indicates a hazard of injury from exploding parts. It is comprised of an equilateral triangle enclosing an explosion image.

Equipment Warning Labels

DO NOT attempt to install, operate, maintain, or dispose of this equipment until you have read and understood all of the product warnings and user directions that are contained in this instruction manual.

DO NOT remove or cover any of the labels. If the labels are damaged or if additional labels are required, contact your Toshiba representative for additional labels.

Labels attached to the equipment are there to provide useful information or to indicate an imminently hazardous situation that may result in serious injury, severe property and equipment damage, or death if the instructions are not followed.

Important Safety Instructions

This manual contains important instructions that should be followed during the installation, maintenance, and operation of the UPS and its batteries to assure safe and proper operation.

Turn off, lockout, and tagout all power sources before connecting the power wiring to the equipment or when performing maintenance.

Unauthorized personnel should not service batteries.

Contact your nearest Toshiba authorized service center for battery replacement.

Qualified Personnel ONLY!

Qualified Personnel is one that has the skills and knowledge relating to the construction, installation, operation, and maintenance of the electrical equipment and has received safety training on the hazards involved (Refer to the latest edition of NFPA 70E for additional safety requirements).

Qualified Personnel shall:

Have read the entire operation manual of the system being serviced.

Be trained and authorized to safely energize, de-energize, ground, lockout and tag circuits and equipment, and clear faults in accordance with established safety practices.

Be trained in the proper care and use of protective equipment such as safety shoes, rubber gloves, hard hats, safety glasses, face shields, flash clothing, etc., in accordance with established safety practices.

Be trained in rendering first aid.

Be knowledgeable of batteries and the required handling and maintenance precautions.

WARNING

Misuse of this equipment could result in injury and equipment damage. In no event will Toshiba Corporation be responsible or liable for either indirect or consequential damage or injury that may result from the misuse of this equipment.

CAUTION

Installation Precautions

Install the unit in a well-ventilated location; allow at least 10 cm (4 inches) on all sides for air ventilation and for maintenance.

Install the unit in a stable level and upright position that is free of excessive vibration.

Install the unit where the ambient temperature is within the specified range.

Do not install the unit in areas that are subject to high humidity.

Do not install the unit in areas that allow exposure to direct sunlight.

Do not install the unit in areas that allow exposure to high levels of airborne dust, metal particles, or flammable gases.

Do not install the unit in areas near sources of electrical noise. Ensuring a proper earth ground will reduce the effects of electrical noise and will reduce the potential for electrical shock.

Do not install the unit in areas that would allow fluids or any foreign object to get inside the unit.

For further information on workplace safety visit www.osha.gov.

Introduction

Congratulations on the purchase of your new Toshiba Uninterruptible Power Supply (UPS) system management tool: the RemotEye II! The RemotEye II supplies a 10/100 base-T network card that allows network administrators to monitor and control Toshiba UPS systems remotely via Simple Network Management Protocol (SNMP) and Hypertext Transfer Protocol (HTTP) methods.

This user manual describes the configuration and operation of the RemotEye II. The RemotEye II is available as a circuit board that is inserted into the option slot of the UPS or as an external device that connects to the UPS via a provided cable.

The RemotEye II/Internal is designed for the Toshiba UPS that has the option slot. The circuit board is connected to the UPS via the RemotEye II/Internal card edge connector.

The RemotEye II/External is designed primarily for use with the Toshiba UPS that does not have the extension option slot, but it may also be used in a UPS system that has an extension option slot. The RemotEye II/External communicates with the UPS via a provided cable.

Package Contents

Listed below are the items included in the RemotEye II/Internal and RemotEye II/External packages.

RemotEye II/Internal Contents

The RemotEye II/Internal printed circuit board and bracket for securing the board within the UPS extension slot.

A CD-ROM containing the following:

Toshiba.mib, the Toshiba version 1.2 MIB file (RFC1628-compatible),

Tupgrade.exe, the RemotEye II upgrade utility,

Tsb4xx.bin, the Current RemotEye II image file,

Window.exe, Toshiba RemotEye II Client Software installation file for Window,

Unix.exe, Toshiba RemotEye II Client Software installation file for UNIX OS, and

RemotEye II User Manual in PDF format.

PC cable, a DB9 female to RJ45 cable (Workstation COM port to RemotEye II/Internal COM port).

The RemotEye II Quick Installation Guide.

RemotEye II/External Contents

The RemotEye II/External device.
A power adapter.
A CD-ROM containing the following:
Toshiba.mib, the Toshiba version MIB file (RFC1628-compatible),
Tupgrade.exe, the RemotEye II upgrade utility,
Tsb4xx.bin, the Current RemotEye II image file,
Window.exe, Toshiba RemotEye II Client Software installation file for Window,
Unix.exe, Toshiba RemotEye II Client Software installation file for UNIX OS, and
RemotEye II User Manual in PDF format.
PC cable, a DB9 female to RJ45 cable (Workstation COM port to RemotEye II/External PC port).
UPS cable, a DB9 male to RJ45 cable (Toshiba UPS RS232 port to RemotEye II/External UPS port).
The RemotEye II Quick Installation Guide.

RemotEye II Features

Included in the RemotEye II are several support options for managing Toshiba UPS.

BOOTP/DHCP Requests
The RemotEye II can automatically retrieve its network identity from a network server using the Boot Protocol (BOOTP) or Dynamic Host Configuration (DHCP) automatic configuration technique.

HTTP Web Access
Web access includes Secure Sockets Layer (SSL) Configurations. This allows users to access data from RemotEye publicly or privately using the web.

Telnet, Terminal Access
Telnet includes Secure Shell (SSH) protocol configuration.

SNMP Access
RemotEye II provides enhanced SNMP security with option of SNMPv3, default protocol is SNMPv1. It is compatible with the United States Standard UPS MIB, RFC1628 and also with Japanese Standard UPS MIB.

Additional features of the RemotEye II include:

Real-Time Clock
The RemotEye II contains its own RTC. This clock is used for time-stamping of its data log and for executing any scheduled events.

UPS Event Notification
RemotEye II sends out notification of UPS events via Email, SNMP Traps and Java Applets.

Graphic User Interface (GUI)
User-friendly GUI for web pages and Java applets

Power Quality Monitor
Java applets provide on-screen visual indication of power quality through dynamic graphics.

Versatile Remote UPS Management
Allows monitoring of the UPS via SNMP and HTTP communication. Also provides Java monitoring applets accessible through an internet browser.

Versatile UPS Configuration
RemotEye II has the ability to set the UPS parameters from any SNMP management station or through internet web browsers using HTTP forms and objects.

Data Log Retention
RemotEye II stores history file containing UPS power events, power quality, UPS status, and battery condition in non-volatile memory.

Automatic UPS Shutdown
The Toshiba RemotEye II Client Software provides unattended and on-demand UPS shutdown; either pre-programmed by the administrator or when the UPS reports a low battery condition.

RemotEye II also supports the following external applications:

Network Upgrade
Tupgrade.exe, a network upgrade utility, allows user to upgrade to a newer version of the RemotEye.

Auto Save Log
This utility allows users to save logs from several RemotEye(s) at the same time to a same or different computer.

Client Shutdown
The Toshiba RemotEye II Client Software can broadcast system failure messages via an IP (Internet Protocol) packet and perform unattended shutdown of up to 32 clients operating under a variety of platforms.

Environmental Monitoring Device (EMD) (Optional)
EMD allows monitoring of the environment temperature and humidity. Also provides 2 contact closures.

Installation

System Compatibility

The RemotEye II is supported by workstations using the following operating systems:
Windows 95/98/NT/2000/XP/Vista,
Macintosh, and
Unix.
The RemotEye II supports the following Toshiba UPS system families:
1000 Series (External RemotEye II requires a null-modem cable)
1400 S(E) (Plus), 1400 XL Plus, 1400 Super XL Plus Series,
1500 (Plus) Series,
1600 (Plus) Series,
1700 (Plus) Series,
1800 (Plus) Series,
4200 (Plus) Series,
G8000 Series,
G8000MM Series,
G9000 Series.

Installing RemotEye II/Internal

Follow these steps to install the RemotEye II/Internal card.

1. Turn the UPS off using the proper shutdown procedure as explained in the UPS manual.
2. Slide the RemotEye II/Internal printed circuit board into the extension option slot of the UPS.
3. Secure the printed circuit board using the UPS supplied screws.(See Figure 1: RemotEye II/Internal)

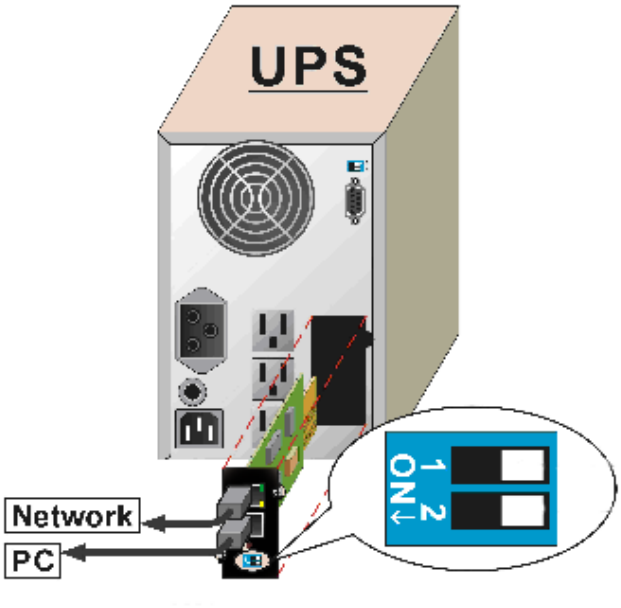


Figure 1: RemotEye II/Internal

Installing RemotEye II/External

Follow these steps to install the RemotEye II/External device.

1. Insert the power adapter cable of the RemotEye II into the 12 VDC power receptacle of the RemotEye II device.
2. Plug the RemotEye II power adapter into a 120/220 VAC power source. For best results, be sure outlet is powered by a Toshiba UPS.
3. Connect the UPS cable from the RS232 serial port of the Toshiba UPS to the RemotEye II/External UPS port.(See Figure 2: RemotEye II/External)

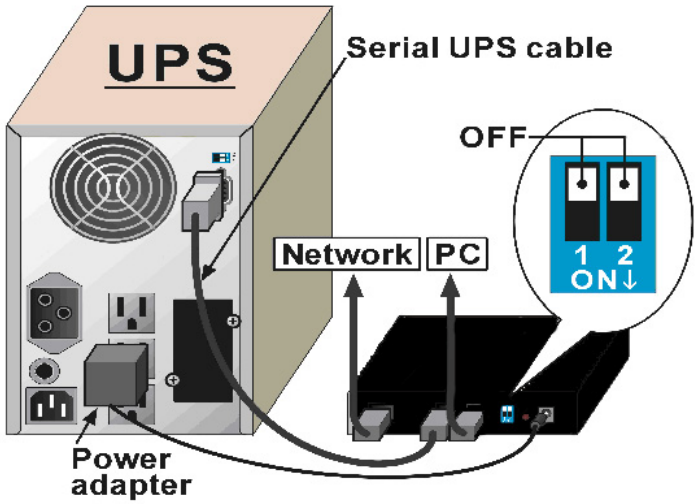


Figure 2: RemotEye II/External

Making the Network Connection

Each Ethernet network is different. Therefore, the following steps should be used as an outline for connecting the RemotEye II to a network:

1. Connect one end of a Category 5 cable to the NETWORK RJ45 receptacle of RemotEye II.
2. Connect the other end of the Category 5 cable to a designated network switch or hub. A network administrator will allocate an available port.
3. Verify a network link has been established. On RemotEye II/External, confirm Traffic LED on RemotEye II is illuminated. On RemotEye II/Internal, confirm the leftmost, green LED is illuminated.

Configuration

RemotEye II must be configured for proper operation on its network. The RemotEye II offers three convenient methods for configuration.

Preliminary Issues

RemotEye II is a network device. Several items should be considered prior to communicating with RemotEye II over the network. The following sections cover important topics when placing a device on an Ethernet network.

MAC Address

The Media Access Control (MAC) address is an identification number which uniquely identifies each Ethernet device on a network. The MAC address (sometimes called the physical address) is made up of 6 hexadecimal bytes.

A label marked with the MAC address is included with each RemotEye II. This label is affixed to the bottom of every RemotEye II /External, and this label is affixed to the top of every RemotEye II /Internal printed circuit board.

For each RemotEye II, the MAC address is created using the following format: 00 E0 D8 LL MM NN. The first half of this code, 00 E0 D8, identifies the manufacturer of the Ethernet board. Since every RemotEye II is produced by the same manufacturer, these 3 hexadecimal bytes remain constant. The LL MM NN characters identify the serial number of the device in hexadecimal form. The serial number is unique for each RemotEye II device.

Default IP Address

The RemotEye II is initially configured with a default Internet Protocol (IP) address. By default, the 4 bytes composing the default IP address are derived from the MAC address in the following way:

172.18.xxx.yyy where xxx is the decimal value of the MM MAC address byte and yyy is the decimal value of the NN MAC address byte.

Example: A RemotEye II MAC address of 00 E0 D8 0C 01 3F would have a default IP address of 172.18.1.63.

This places RemotEye II on a 172.18.0.0 IP network.

Default Network Mask

The RemotEye II is initially configured with a default Network Mask. This default value is always: 255.255.0.0. This places RemotEye II on a Class B network.

Default Gateway

The RemotEye II is initially configured with a Gateway address of 0.0.0.0. This value indicates RemotEye II will not attempt to use a gateway when transmitting.

Configuring the RemotEye II via Terminal

The RemotEye II can be configured by directly connecting to the device.

Hardware Setup

Direct configuration is accomplished through the provided cable. Follow these steps to setup the hardware for direct RemotEye II configuration:

Connect the DB9 female end of the PC cable to the terminal or workstation COM port.

Connect the RJ45 end of the PC cable to the PC port of RemotEye II/External or the COM port of the RemotEye II/Internal.

Software Setup

The direct configuration is accomplished by using the RS232 communication protocol. The direct communication can be performed from a workstation running Terminal Emulator Software (TES)

Connecting to the RemotEye II via Terminal

A direct configuration session can easily be established once the hardware and software are properly set up. Follow these steps to begin configuration:

Terminal Emulator Example

To configure the RemotEye II from a Windows platform, use HyperTerminal. (Except Windows Vista. Hyper Terminal is not available with Windows Vista. Hyper Terminal software is available through various sources on the Internet. Contact Toshiba for additional information.)

HyperTerminal is a standard terminal emulator packaged with all Windows operating systems except Vista. Launch the HyperTerminal program by navigating to Start → Programs → Accessories → HyperTerminal → HyperTerminal, and follow the prompts.

Enter a name and select an icon for the application at the Connection Dialog box.

Select a direct connection to an appropriate com port listed in the pull-down menu.

Ensure that the Properties dialog box is setup according to preceding .

Baud Rate — 9600

Data Bits — 8

Parity — None

Stop Bits — 1

Flow Control —- None

Press [Enter] and the RemotEye II version and Password field will be displayed (see

Figure 3: Console Login Screen).

Enter the password (default is “public”) and press [Enter] to display the RemotEye II Main Menu.

```
+=====================================================================+
|                    [ TIC RemotEye II Login Menu ]                   |
+=====================================================================+
Enter Password: ******
```

Figure 3: Console Login Screen

The seven options provided in the RemotEye II Main Menu provide access to all system RemotEye II configuration parameters. These options (see the Main Menu Description on **Figure 4: Console Main Menu**) and their submenus are discussed in more detail in the next section.

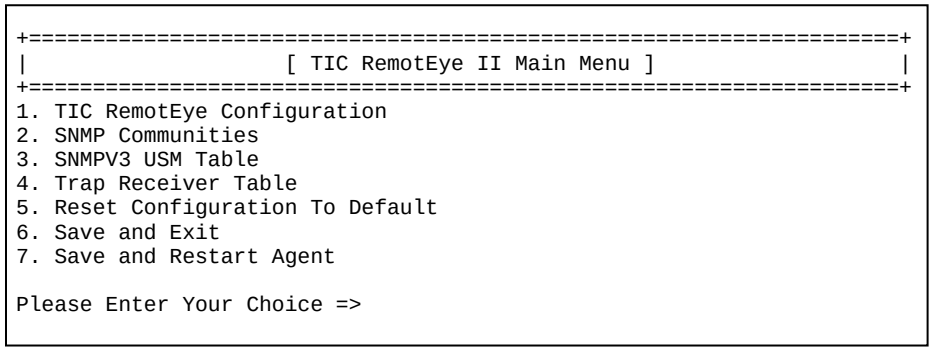


Figure 4: Console Main Menu

RemotEye II Configuration Menu Navigation

The main menu of the RemotEye II provides access to configuration parameters. The table below (table 1) provides an overview of the entire menu structure. When navigating through these menus, all alpha-numeric characters are acceptable and are case-sensitive.

RemotEye II Main Menu		
(1) Toshiba RemotEye II Configuration	(1) System Group	RemotEye II Agent Version
		Ethernet Address
		(1) IP Address
		(2) Gateway Address
		(3) Network Mask
		(4) System Date and Time
		(0) Return to Previous Menu
	(2) Control Group	(1) HTTP Login Username
		(2) Community Read-On1y
		(3) Community Read/Write
		(4) BOOTP/DHCP Control
		(5) Telnet Control
		(6) Network Upgrade Control
		(7) HTTP Security Control
		(8) SNMP Version Control
		(0) Return to Previous Menu
	(3) Parameter Group	(1) System Contact
		(2) System Name (CID)
		(3) System Location
		(4) Poll Rate
		(0) Return to Previous Menu
	(4) Email Group	(1) Mail Server
		(2) User Account
		(3) User Password
		(4) Domain Name
		(5) DNS IP Address
		(6) Daily Status Report
		(7) Mail Receivers
		(8) Test Email Configuration
		(0) Return to Previous Menu
	(4) EMD Group	(1) Temperature Group
		(2) Humidity Group
		(3) Alarm-1 Group
		(4) Alarm-2 Group
		(5) Devide Status
		(0) Return to Previous Menu
(2) SNMP Communities		(1) Modify Table Entry

	(2) Reset to Default Setting
	(0) Return to Previous Menu
(3) SNMPV3 USM Table	(1) Modify Table Entry
	(2) Reset to Default Setting
	(0) Return to Previous Menu
(4) Trap Receiver Table	(1) Modify Table Entry
	(2) Reset to Default Setting
	(0) Return to Previous Menu
(5) Reset Configuration to Default	
(6) Save and Exit	
(7) Save and Restart Agent	

Table 1: Menu Map for RemotEye II Console

Main Menu Description

The Main Menu of the RemotEye II consists of the following options (see Figure 5: Console Main Menu Description):

1. Toshiba RemotEye II Configuration
2. SNMP Communities
3. SNMPv3 USM Table
4. Trap Receiver Table
5. Reset Configuration to Default.
6. Save and Exit.
7. Save and Restart Agent.

Press the number of the associated selection and press Enter.

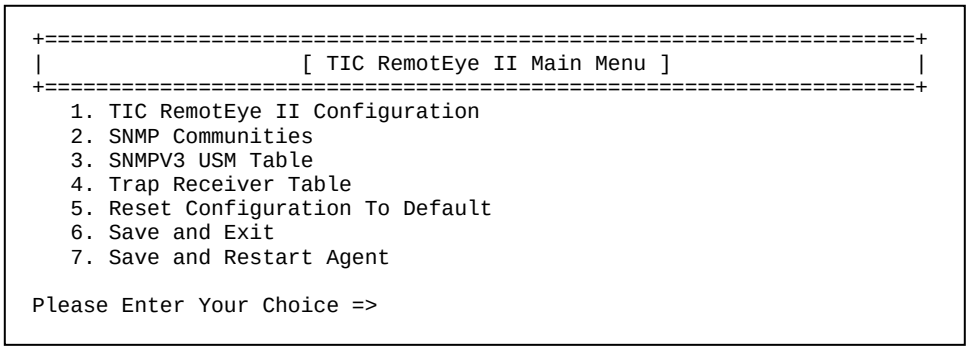


Figure 5: Console Main Menu Description

Toshiba RemotEye II Configuration

Main Menu → (1) Toshiba RemotEye II Configuration (see Figure 6: Console Configuration Menu Description).

The Toshiba RemotEye II Configuration option provides access to the following system settings:

1. System Group
2. Control Group
3. Parameter Group
4. Email Group
5. EMD Group

0. Return to Previous Menu

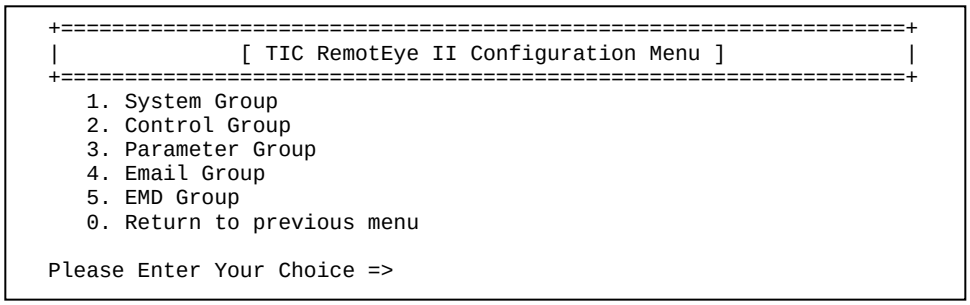


Figure 6: Console Configuration Menu Description

System Group

Main Menu → (1) □Toshiba RemotEye II Configuration → (1) System Group (see Figure 7: Console System Group Menu Description).

The System Group provides access to the system settings listed below. The settings may be viewed or changed from this screen. When using the Dynamic Host Configuration Protocol (DHCP), items 1 – 3 will be retrieved automatically.

1. IP Address — RemotEye II IP address.
2. Gateway Address — The gateway IP address (if a router is necessary).
3. Network Mask — The network mask for the RemotEye II network.
4. Date and Time — The RemotEye II date in the MM/DD/YYYY format The RemotEye II time in the HH:MM:SS format. RemotEye II supports the Network Time Protocol (NTP) and NTP Time Zone features. These two features enable the UPS to synchronize its date and time with a NTP server and with the options of daylight saving time control. (see Figure 8: Date & Time Menu Description).

0. Return to Previous Menu.

```
+=====================================================================+
|                      [ System Group Menu ]                          |
+=====================================================================+
      RemotEye II Agent Version : TIC RemotEye II v3.00
      Ethernet address   : 00 E0 D8 08 80 0D
   1. Ip Address         : 172.18.1.63
   2. Gateway Address    : 172.18.1.1
   3. Network Mask       : 255.255.240.0
   4. Date and Time
   0. Return to previous menu

Please Enter Your Choice =>
```

Figure 7: Console System Group Menu Description

```
+=====================================================================+
|                     [ Date and Time Menu ]                          |
+=====================================================================+
   1. System Date (dd/mm/yyyy)     : 09/24/2005
   2. System Time (hh:mm:ss)       : 12:22:21
   3. NTP Server                   : 0.0.0.0
   4. NTP Time Zone                : -06:00
   5. Daylight Saving Time Control : Enabled
   6. NTP Control                  : Enabled
   0. Return to previous menu

Please Enter Your Choice =>
```

Figure 8: Date & Time Menu Description

Control Group

Main Menu → (1) ☐Toshiba RemotEye II Configuration → (2) Control Group (see Figure 9: Console Control Group Menu Description on page 30)

The Control Group menu provides access to the system settings listed below. The settings may be viewed and changed from this screen.

1. HTTP Login User Name — The login user name grants write access from a web browser (the default setting is TOSHIBA).
2. Community Read-Only — This common community name provides read-only access to devices within this community. (The default setting is public.)
3. Community Read/Write — This common community name provides read and write access to devices within this community. (The default setting is public.) This value is equivalent to the terminal/telnet login password.
4. BOOTP/DHCP Control — This parameter is used to enable or disable the BOOTP/ DHCP requests from RemotEye II. (The default setting is Enabled).
5. Telnet Control — This parameter is used to enable or disable remote RemotEye II configuration through telnet applications. (The default setting is Enabled).
6. Network Upgrade Control — This parameter is used to enable or disable the Trivial File Transfer Protocol image upgrade. When disabled, RemotEye II will block any attempts to upgrade. (The default setting is Disabled.)
7. HTTP Security Control — This parameter is used to enable or disable the web password protection feature. When enabled, a password is required to access RemotEye II through the web, and write privileges are automatically assumed. When disabled, any machine can access RemotEye II over the web, but a password is required prior to assuming write privileges. (The default setting is Disabled.)
8. SNMP Version Control —This parameter is used to enable and disable the Simple Network Management Protocol security level. When enable, administrators has the options to set for SNMPv1 or SNMPv3.

0. Return to Previous Menu

```
+=====================================================================+
|                      [ Control Group Menu ]                         |
+=====================================================================+
 1. HTTP Login Username   : TOSHIBA
 2. Community Read-Only   : public
 3. Community Read/Write  : *
 4. BOOTP/DHCP Control    : Enabled
 5. Telnet Control        : Enabled
 6. TFTP Upgrade Control  : Disabled
 7. HTTP Security Control : Disabled
 8. SNMP Version Control  : Disabled
 0. Return to previous menu

Please Enter Your Choice =>
```

Figure 9: Console Control Group Menu Description

Parameter Group

Main Menu → (1) □Toshiba RemotEye II Configuration → (3) Parameter Group (see Figure 10: Console Parameter Group Menu Description)

The Parameter Group provides access to the system settings listed below. The settings may be viewed or changed from this screen.

1. System Contact — The RemotEye II system administrator. (The default setting is TIC Local Technical Support.)
2. System Name — The alias of the RemotEye II. This string serves as the RemotEye II Client Identifier (CID) in DHCP systems.
3. System location — The RemotEye II physical location.
4. Poll Rate — The polling rate in seconds. This determines how frequently RemotEye II updates its data from the Toshiba UPS. (The default setting is 5.)

0. Return to previous menu.

NOTE: System will label each event email with the system Name and Location, in the format: systemName@SystemLocation

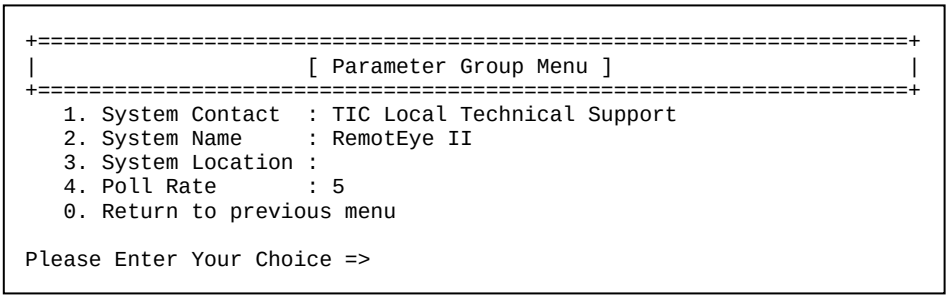


Figure 10: Console Parameter Group Menu Description

Email Group

Main Menu → (1)□Toshiba RemotEye II Configuration → (4) Email Group (see Figure 11: Console Email Group Menu Description on page 32)

The Email Group menu provides access to the system settings listed below. The settings may be viewed and changed from this screen.

1. Mail Server — The Simple Mail Transfer Protocol (SMTP) mail server IP address. If a hostname is used, such as smtp.tic.toshiba.com, the Domain Name Server (DNS) IP address is required on setting #4.
2. User Account — The user account login name for the SMTP mail server.
3. User Password — The user account password for the SMTP mail server.

Note: Not all servers require login name and password, please check with SMTP administrator.

4. Domain Name — The domain Name of the mail server.
5. DNS IP Address — Domain Name Server IP address is required if a hostname is used for Mail Server. Otherwise, this field can be 0.0.0.0.
6. Daily Status Report — This parameter is used to set the time to send RemotEye II daily status report
7. Mail Receivers — RemotEye II sends email notification to four recipients. The recipients include users who use Short Message System (SMS) in Email address format, such as phonenumber@telcompany.com

   Mail Account — This parameter is used to enter the recipients' email Address

   Mail Type

   1. None – Disable option to send email to recipients.
   2. Events – Current events will be sent to recipients.
   3. Daily Status – Daily History log and Events log will be sent to the email recipients at the designated time.
   4. Events with Status – Current events, History log and Events log will be sent to email recipients when events occurred.

8. Test Email Configuration — This parameter is used to perform instant email test. If instant email is not received after the test, please check the configuration.

```
+=====================================================================+
|                        [ Email Group Menu ]                         |
+=====================================================================+
   1. Mail Server          :
   2. User Account         :
   3. User Password        : *
   4. Domain Name          : 0
   5. DNS IP Address       : 0.0.0.0
   6. Daily Status Report  : 00:00
   7. Mail Receivers
   8. Test Email Configuration
   0. Return to previous menu
Please Enter Your Choice =>
```

Figure 11: Console Email Group Menu Description

EMD Group

Main Menu → (1) Toshiba RemotEye II Configuration → (5) EMD Group (see on page 33)

The EMD Group menu provides access to the system settings listed below. The settings may be viewed and changed from this screen.

1. Temperature Group — The Temperature Group provides the options to setup the low and high warning and critical points. Users also have the options to setup the hysteresis and calibration offset from this group.
2. Humidity Group — The Humidity Group provides the options to setup the low and high warning and critical points. Users also have the options to setup the hysteresis and calibration offset from this group..
3. Alarm-1 Group — The Alarm-1 Group provides the option to setup this dry contact as normal close, normal open, high active, low active and disabled.
4. Alarm-2 Group — The Alarm-2 Group provides the option to setup this dry contact as normal close, normal open, high active, low active and disabled.
5. Device Status — The Device Status provides the options of disabled and auto. Auto will enable the RemotEye II to auto detect the EMD that connected to it PC port.

```
+================================================================+
|                     [ EMD Group Menu ]                         |
+================================================================+
1. Temprature Group
2. Humidity Group
3. Alarm-1 Group
4. Alarm-2 Group
5. Device Status : Auto
0. Return to previous menu

Please Enter Your Choice =>
```

Figure 12: Console EMD Group Menu Description

SNMP Communities

Main Menu → (2) SNMP Communities (see Figure 13: SNMP Communities Description).

The SNMP Communities lists the status and configuration of access rights that are currently granted and the applicable level of access. The entries in this table are largely responsible for restricting SNMP communication with RemotEye II.

The configuration of the SNMP communities shall be as follows:

IP Address: IP address of the NMS

Community String: NMS Get/Set Community String

(Please refer to SNMP Get/Set Criteria on page 82 for a more detailed explanation on Get/Set.)

Access: Select Access Type:

1. Read Only
2. Read/Write
3. NoAccess

```
+=====================================================================+
|   IP Address       Community String      Access                     |
+=====================================================================+
[1] 0.0.0.0          *                     No Access
[2] 0.0.0.0          *                     No Access
[3] 0.0.0.0          *                     No Access
[4] 0.0.0.0          *                     No Access
[5] 0.0.0.0          *                     No Access
[6] 0.0.0.0          *                     No Access
[7] 0.0.0.0          *                     No Access
[8] 0.0.0.0          *                     No Access

   COMMANDS -
   1. Modify - Modify an entry of table
   2. Reset - Reset an entry to default from table
   0. Return to previous menu

Please Enter Your Choice =>
```

Figure 13: SNMP Communities Description

SNMPv3 USM Table

Main Menu → (3) SNMPv3 USM Table (see Figure 14: SNMPv3 USM Menu Description).

The SNMPv3 USM Table lists the status and configuration of access rights that are currently granted and the applicable level of access. The entries in this table are largely responsible restricting SNMPv3 security with RemotEye II.

The configuration of the SNMPv3 USM table shall be as follows:

User Name: The User ID for the authorized individual.

Authentication Passowrd: The password string for the authorized individual.

Privacy Passowrd: The privacy password string for the authorized individual.

Security: The security level provides the following 3 options:

1. noAuthNoPriv – with no authentication and no privacy passwords
2. authNoPriv - with authentication password but no privacy password
3. authPriv – with no authentication password but with privacy password

Authentication format: The authentication format provides the following options:

1. HMAC-MD5
2. HMAC-SHA

Status Type: The status shows the authentication status, Ready or not being used.

```
+=====================================================================+
| User Name             Authentication. Password    Privacy Password |
| Security              Authentication Format       Status Type      |
+=====================================================================+
[1]
  noAuthNoPriv             HMAC-MD5                 Not Use
[2]
  noAuthNoPriv             HMAC-MD5                 Not Use
[3]
  noAuthNoPriv             HMAC-MD5                 Not Use
[4]
  noAuthNoPriv             HMAC-MD5                 Not Use

   COMMANDS -
   1. Modify - Modify an entry of table
   2. Reset - Reset an entry to default from table
   0. Return to previous menu

Please Enter Your Choice =>
```

Figure 14: SNMPv3 USM Menu Description

Trap Receiver Table

Main Menu →(4) Trap Receiver Parameters (see Figure 15: Console Trap Receiver Table Description).

The Trap Receiver Table lists IP addresses of the administrative machines that have been assigned to receive traps.

The configuration of the trap receivers shall be as follows:

IP Address: IP address of the NMS.

Community String: NMS community string.

Select Trap Type:

1. None
2. Toshiba Trap
3. JEMA Trap
4. RFC 1628 Trap

Description: Description of the NMS.

```
+=================================================================+
|   IP Address       Community String     Trap-Type    Description   |
+=================================================================+
[1] 0.0.0.0          *
[2] 0.0.0.0          *
[3] 0.0.0.0          *
[4] 0.0.0.0          *
[5] 0.0.0.0          *
[6] 0.0.0.0          *
[7] 0.0.0.0          *
[8] 0.0.0.0          *

   1. Modify - Modify an entry of table
   2. Reset - Reset an entry to default from table
   0. Return to previous menu

Please Enter Your Choice =>
```

Figure 15: Console Trap Receiver Table Description

Reset Configuration to Default

Main Menu → (5) Reset Configuration to Default.

Selecting this option restores all RemotEye II card settings to its original default values.

From the Main Menu, press 4 to access the Reset Configuration to the Original Setting screen.

Save and Exit

Main Menu → (6) Save and Exit.

When executed, the system saves the RemotEye II configuration and exits the program. The new configuration takes effect immediately.

Save and Restart Agent

Main Menu → (7) Save and Restart Agent.

When executed, the system saves the RemotEye II configuration and restarts the RemotEye II.

Configuring the RemotEye II via Telnet

The RemotEye II can be configured by establishing a telnet session with the device.

Hardware Setup

Telnet configuration is accomplished through a network link. Follow these steps to setup the hardware for telnet RemotEye II configuration:

Verify network cable connection to NETWORK port of RemotEye II.

Verify active link to LAN or Network.

For further information on the network connection, refer to Making the Network Connection on page 19.

Software Setup

The telnet configuration is accomplished through a TCP/IP network connection. A telnet connection can be established with RemotEye II by using any telnet application. Follow these steps to setup the software for telnet RemotEye II configuration:

Verify workstation is loaded with Telnet application.

Verify a valid network path exists between the RemotEye II and the workstation. If performing the telnet configuration from a workstation that is located on the same network, then proceed to the next section to the section, Connecting to the RemotEye II via Telnet on page 40, otherwise, continue with the next section Routing to the RemotEye II on page 39.

Routing to the RemotEye II

If the workstation is not on the same network as the RemotEye II, the system may require the addition of a network route. This is typically only necessary when RemotEye II is using its default address.

Consult operating system documentation pertaining to the addition of network routes for instruction.

Example Route Addition

Windows operating systems provide the command Route Add for adding network routes.

Assume the default IP Address of the RemotEye II is 172.18.1.63, and assume the IP Address of the workstation is 210.67.192.147. To add the appropriate network route between these two devices, follow these steps:

Turn on the workstation, and setup the TCP/IP protocol (if necessary).

Enter the following command to add a routing condition:

Route add 172.18.1.63 210.67.192.147

See the Windows manual for further information on how to add a routing condition to a workstation.

Connecting to the RemotEye II via Telnet

A telnet configuration session can be established once the hardware and software are prepared. Follow these steps to begin configuration:

1. Type telnet followed by the IP address of RemotEye II at a Unix console or a DOS prompt.
2. Press [Enter].
3. Key in the password (default is public) when prompted.

For more information on using telnet, please refer to telnet application Windows help.

The RemotEye II will only accept 2 telnet clients simultaneously. The telnet connection will time-out after 60 seconds of inactivity.

RemotEye II Telnet Menu Navigation

The configuration menus for telnet configuration are identical to those presented by a direct configuration session. Refer to page 25 for detailed guidance through configuration menus of RemotEye II.

Configuring the RemotEye II via HTTP

The RemotEye II can be configured by opening a web session with the device.

Hardware Setup

Web configuration is accomplished through a network link. Follow these steps to prepare the hardware for HTTP RemotEye II configuration:

1. Verify network cable connection to NETWORK port of RemotEye II.
2. Verify active link to LAN or Network.
3. For further information on the network connection, refer to Making the Network Connection on page 19.

Software Setup

The web configuration is accomplished through a TCP/IP network connection. A web connection can be established with RemotEye II by using any Internet Browser application (for example, Netscape). Follow these steps to setup the software for web-based RemotEye II configuration:

1. Verify workstation is loaded with web browser application.
2. Verify a valid network path exists between RemotEye II and the workstation. If performing the web configuration from a workstation that is located on the same network, then proceed to the next section; otherwise, refer back to the section entitled Routing to the RemotEye II on page 39.

System Setup

To access the RemotEye II via the web, enter the IP address of the RemotEye II in the URL field of the browser and press Enter. If unable to access the RemotEye II due to a firewall, contact the network administrator for information on bypassing the firewall of the LAN.

The HTTP Security Control setting may also affect the user's ability to access the RemotEye II. The HTTP Security Control setting may be set or viewed from: Main Menu → (1) TIC RemotEye II Configuration →(2) Control Group → (7) HTTP Security Control.

If the HTTP Security Control setting is Disabled, the user is granted read-only access. If the HTTP Security Control is Enabled, any attempt to access RemotEye II pages will be met with a request to enter a password. Once the password has been entered in the user will be able to not only view the information, but make changes accordingly. The password is the same as the Community Read/Write string (see Main Menu → (1) Toshiba RemotEye II Configuration → (2) Control Group → (3) Community Read/Write).

Once access to the RemotEye II is achieved, refer to this section for information on how to use the web-based administration interface to monitor and maintain the RemotEye II. This section also provides information on the built-in administrative functions of the RemotEye II.

To prevent unauthorized users from configuring the RemotEye II via HTTP, the IP address of the workstation must be entered in the RemotEye II SNMP Communities with no access permissions (via RS232 or Telnet) or the SNMP/ HTTP Access Control (via Web Browser) of the RemotEye II. Otherwise, the RemotEye II will provide only read access to its parameters.

Connecting to the RemotEye II via HTTP

A web session can be established once the hardware and software have been prepared. Follow these steps to begin configuration:

1. Launch the web browser.
2. Enter the URL for RemotEye II in the browser's address field. For example, http://172.18.1.63. The home page of the RemotEye II will be displayed once a connection is established (see Figure 16: RemotEye II HTTP Page on page 42).

Perform the following procedure to setup the RemotEye II using its provided web configuration pages.

1. Select RemotEye II Management → RemotEye II Configuration to configure RemotEye II.
2. Click the Become Super User button at the bottom of the screen. Enter TOSHIBA as the login name and public as the password (case sensitive). Non-DHCP users continue on to step b. DHCP users may skip steps b to d.
3. Enter the RemotEye II IP address.
4. Enter the RemotEye II Gateway address in the network.
5. Enter the RemotEye II Network Mask of the network.
6. Enter the IP address of the Primary Time Server and Secondary Time Server in the network.
7. Click Set Value to save the settings.
8. Select RemotEye II Management → Date and Time to set date and time.
9. Enter the appropriate date and time in the specified format.
10. Click Set Value to save the settings.
11. Select RemotEye II Management → RemotEye II Control to enable or disable the network protocols.

Figure 16: RemotEye II HTTP Page

RemotEye II Web Menu Navigation

The RemotEye II home page is comprised of Six primary menus:

- UPS Monitoring,
- UPS Management
- Email Notification
- EMD Configuration,
- RemotEye II Management, and
- UPS History.

The six primary menus provide access to UPS and RemotEye monitoring and control functions, and each is discussed in detail in the following sections.

UPS Monitoring

This menu allows the user to view the collected data from the UPS measurements. The UPS measured parameters are listed below and are allowed only to be read.

UPS Comprehensive View

This page lists the UPS parameters. This page will refresh automatically at a user-defined rate. To change or view the refresh rate setting, select RemotEye II Management - HTTP Page Refresh Rates.

UPS Mode
This field shows the present UPS system mode. These readings include: Other, None, On-Line, Bypass, Battery, Testing, and Output Shutdown.

Input Voltage
This field shows the present UPS input voltage in VAC.

Output Voltage
This field shows the present UPS output voltage in VAC.

Output Load
This field shows the present UPS load in % of kVA.

Battery Capacity Remaining (option)
This field shows the present remaining battery capacity expressed as a percentage of the battery's full capacity.

Battery Temperature (option)
This field shows the present UPS battery temperature in ^{o}C.

Input Frequency
This field shows the present UPS input frequency in Hz.

Output Frequency
This field shows the present UPS output frequency in Hz.

Date on RemotEye II
This field shows the RemotEye II date setting. This value is displayed in the mm/dd/yyyy format.

Time on RemotEye II
This field shows the RemotEye II time setting. This value is displayed in the hh:mm:ss 24-hour format (i.e. 8:30 p.m. is 20:30:00).

UPS Identification

This page allows the user to retrieve the UPS identification and revision information.

UPS Model
This field shows the model name of the UPS (i.e., 1600 Series 8kVA 240/208/120Vac USA)to which RemotEye II is presently attached .

UPS Name
This field shows the administrator-configured name of the UPS. For configuration, please refer to UPS Configuration menu.

UPS Firmware Revision
This field shows the revision of the UPS firmware.

UPS RemotEye II Agent Revision
This field shows the revision of RemotEye II.

UPS Manufacturer
This field shows the name of the UPS manufacturer.

UPS Attached Devices
This field shows the administrator configured description of the load devices that attached to the UPS (e.g. computers, communication devices, etc). For configuration, please refer to UPS Configuration menu.

UPS Serial Number
This field shows the UPS manufactured serial number for the UPS which RemotEye II is presently attached.

Battery Parameters

This page provides the battery status and battery run-time information. This page will refresh automatically at a user-defined rate. To change or view the refresh rate setting, select RemotEye II Management - HTTP Page Refresh Rates.

Battery Status

This field shows the status of the UPS batteries. These readings include: Unknown, Normal, Low, Depleted, Discharging, and Failure.

Elapsed Time On Battery Power

This field shows the elapsed time (in seconds) since the UPS switched to battery power.

Battery Capacity Remaining (option)

This field shows the remaining battery capacity expressed as a percentage of full capacity.

Battery Estimated Minutes Remaining (option)

This field shows the remaining minutes of the UPS to sustain the current load.

Battery Voltage

This field shows the battery voltage in VDC.

Battery Voltage Percent

This field shows the battery voltage in %.

Battery Current (option)

This field shows the present battery current in %.

Battery Temperature (option)

This field shows the internal UPS temperature expressed in ^{o}C.

Battery Last Replaced Date

This field shows the last replacement date of the UPS system's batteries. This value is displayed in the dd/mm/yyyy format. When the UPS batteries are replaced, this value should be adjusted accordingly by the service center.

Battery Life Remaining

This field shows the remaining battery life. The maximum battery lifetime is 5 years. This shows the remaining battery lifetime in months.

Battery Rated Backup Time

This field allows the administrator to configure the estimated battery backup time (in minutes) during power failure at 100% load. The default is 0 minutes.

Input Parameters

This page shows the UPS line voltage input readings. This page will refresh automatically at a user-defined rate. To change or view the current refresh rate setting, select RemotEye II Management - HTTP Page Refresh Rates..

Input Voltage
This field shows the UPS input voltage in VAC.

Max. Input Voltage During Last 60 Seconds
This field shows the maximum UPS input voltage during the last 60 seconds.

Min. Input Voltage During Last 60 Seconds
This field shows the minimum UPS input voltage during the last 60 seconds.

Input Current (option)
This field shows the present UPS input current in Amps.

Input Active Power (option)
This field shows the present UPS input active power in Watts.

Input Frequency
This field shows the UPS input frequency in Hz.

Output Parameters

This page shows the UPS output voltage source and readings. This page will refresh automatically at a user-defined rate. To change or view the current refresh setting, select RemotEye II Management - HTTP Page Refresh Rates..

Output Status
This field shows the status of the output. These readings include: Other, None, On-Line, Bypass, Battery and Output Shutdown.

Output Voltage
This field shows the UPS output voltage in VAC.

Output Load
This field shows the UPS load as a percentage of the maximum load setting.

Output Active Power
This field shows the present UPS output active power in Watts

Output Apparent Power
This field shows the present UPS apparent power in VA

Output Power Factor (option)
This field shows the present UPS power factor.

Output Frequency
This field shows the present UPS output frequency in Hz.

Alarm Table

This page provides past and active UPS alarm activity and descriptions. This page will refresh automatically at a user-defined rate. To change or view the refresh rate setting, select RemotEye II Management - HTTP Page Refresh Rates.

Number of Present Alarms
This field shows the number of active UPS alarms.

Lastest Alarm
This field shows the last recorded UPS alarm.

Alarm ID
This field shows the sequential number associated with the alarm; it indicates the activation sequence of the alarms. This number will be reset after a RemotEye II reboot.

Alarm Time
This field shows the RemotEye II alarm time stamp. This value is displayed in the hh:mm mm/dd/yyyy format.

Note: The time depends on the RemotEye II clock setting.

Alarm Description
This field shows the UPS alarm description. Please refer .Table 2: UPS Alarm Table for detail description.

Connected Client Table

This page lists the protected registered clients of the RemotEye II that are running during the execution of the RemotEye II Shutdown application. This page will refresh automatically at a user-defined rate. To change or view the current refresh rate setting, select RemotEye II Management - HTTP Page Refresh Rates.

Connected Client Number
This field shows the total number of RemotEye II clients running the RemotEye II Shutdown Application that are presently registered with the RemotEye II. Up to 32 clients may be registered at one time.

Index
This field shows the serialized index numbers of the RemotEye II registered clients that are running during the execution of the RemotEye II Shutdown application.

IP Address
This field shows the IP addresses of the registered clients of the RemotEye II.

Client Name
This field shows the computer names of the registered clients of the RemotEye II.

Connected Time
This field shows the connection duration of the registered clients of the RemotEye II.

Shutdown Delay
This field shows the shutdown delay of the RemotEye II registered client machines.

UPS Management

This menu contains the control parameters of the UPS system that is connected to the RemotEye II.

UPS Configuration

This page shows the input and output electrical parameters and the thermal parameters of the UPS.

UPS Name
This field shows the specific name to identify a particular UPS.

UPS Attached Devices
This field allows the administrator to assign a description of load devices that attached to the UPS or to view the current setting.

Input Voltage
This field allows the administrator to configure the input voltage or to view the current setting.

Note: The administrator must change this field to 208V if 208V is used for the input.

Input Frequency
This field allows the user to view the expected input frequency for the UPS.

Output Voltage
This field allows the user to view the expected output frequency for the UPS.

Output Frequency

This field allows the user to view the expected output frequency for the UPS.

Output VA Rating
This field allows the user to view the maximum output VA rating, defined as the maximum output voltage multiplied by the maximum output current of the UPS.

Output Power Rating
This field allows the user to view the maximum output power rating expressed in Watts.

Battery Model
This field allows the administrator to configure the model of batteries in the UPS system.

Number of Batteries in Series
This field allows the administrator to configure the total number of batteries in series of the UPS system.

Number of Batteries in Parallel
This field allows the administrator to configure the total number of batteries in parallel of the UPS system.

Battery Rated Backup Time
This field allows the administrator to configure the estimated battery backup time (in minutes) during power failure at 100% load.

UPS Control

This page lists the automatic switching and shutdown parameters.

UPS Output Shutdown Delay
This field allows the user to configure or view the delay (in seconds) of the UPS switching from the Run (Inverter) mode to the Output Shutdown mode after receiving the Output Shutdown command. The UPS output shutdown delay time count down will be synchronized with the output shutdown delay time setting in the RemotEye II Shutdown Service program for all connected clients. (Up to 32 clients may be connected simultaneously.) To avoid improper output shutdown of the clients, the UPS output shutdown delay time setting in the RemotEye II should always be greater than the RemotEye II Shutdown Service program's shutdown delay setting. Please refer to RemotEye II manual for instruction on how to setup RemotEye II Shutdown Service.

Set UPS to Output Shutdown Mode after Delay (option)
This option switches the UPS from the Run (Inverter) mode to the Output Shutdown mode.

UPS Run (Inverter) Mode Delay
This field allows the administrator to configure or view the duration (in minutes) of the UPS switching from the Output Shutdown mode to the Run (Inverter) mode after receiving the Run (Inverter) command.

Set UPS to Run (Inverter) Mode after Delay (option)
This option switches the UPS from Output Shutdown mode to the Run (Inverter) mode.

Set UPS to Run (Inverter) Mode AND Cancel Any Impending Shutdown (option)
This option cancels any impending shutdown to the UPS and set the UPS to Run (Inverter) mode.

Switch UPS between Stop (Bypass) Mode and Run (Inverter) Mode (option)
This option switches the UPS between the Run (Inverter) mode and the Bypass or Stop mode.

UPS Auto Start after Input Power Recovery Control
This field allows the administrator to enable or to disable the auto start feature of the UPS. Enabled, this control will switch the UPS system to Run (Inverter) after power recovery from power failure.

UPS Auto Retransfer Control (option)
This field allows the administrator to enable or to disable the auto retransfer feature of the UPS. Enabled, this control will switch the UPS system to Run (Inverter) after UPS recovered from fault alarms.

UPS Cold Start Control (option)
This field allows the administrator to enable or to disable the Cold Start feature of the UPS. Enabled, this control, allows the administrator to start up using battery power when no input AC is available.

UPS Load Shed Control (option)
This field allows the administrator to enable or to disable the load shed feature of the UPS. When enabled, the UPS load shed level is reached, the UPS will shutdown the low priority load, to conserve power for more critical load.

UPS Load Shed Level (%) (option)
This field allows the administrator to set the level of load shed. When the level is reached and load shed control is enabled, UPS will shutdown the low priority load, to conserve power for more critical load.

UPS Shed Relay off Delay (secs) (option)
This field allows the administrator to set the delay in seconds for the low priority load shutdown.

UPS Fan Speed (option)
The fans in the 1700 Series will operate at any of four different speeds depending on the environment and system conditions. In the first stage the fans are off. As the load and or the ambient temperature increase the fans will subsequently go to low, medium or high speed as required.

UPS Battery Test

This menu allows the administrator to select the battery mode. The available menu options will be a function of the UPS type.

Last Test Start Time
This field shows the start time of the last battery test. This value is displayed in the hh:mm:ss 24-hour format (i.e., 8:30 p.m. is 20:30:00).

Last Test Elapsed Time
This field shows the elapsed time (in seconds) of the last battery test.

Last Test Results
This field shows the test results of the last battery test.

Battery Test Command
None : No action

Quick Test (10 sec) : Perform battery test for ten seconds.

Cancel Test : Cancel the battery test (not more than 1 minute).

Clear Test Results : Clear the last battery test data recorded by the RemotEye II.

UPS Battery Test Schedule

This page provides information on the battery test schedule.

Index
This field shows the battery test schedule.

Test Day
This field allows the administrator to set the day of the week that the battery test is to be performed or to view the current setting.

Test Time
This field allows the administrator to set the time that the battery test is to be performed or to view the current setting. This value is displayed in the in hh:mm format.

Action
This field shows the battery test type options.

Available options are:

None - No action.

Quick Test (10 sec) - Quick test for 10 seconds.

UPS Shutdown Events

This page allows the administrator to modify the output shutdown parameters. Refer to the RemotEye II Manual for details on the output shutdown sequence.

UPS Event
This field shows the event that to which is assigned a shutdown action

Action
This field allows the administrator to set a course of action to be taken in the event of a fault.

Available actions are:

Disabled - Action is disabled; no action will be taken.

Client Warning - A warning message will be broadcast to the connected clients.

Client Shutdown - A warning message will be broadcast and the shutdown command will be sent to the connected clients.

UPS Output Shutdown - A warning message will be broadcast, the output shutdown command will be sent to the connected clients, and the UPS will be set to output shutdown

Shutdown Delay (min)

This field allows the administrator to set the delay (in minutes) of the output shutdown message broadcast or to view the current setting.

Broadcast Notification Interval (secs)
This field allows the administrator to set the broadcast interval (in seconds) of the warning message or to view the current setting.

Different Events

Input Power Failure
This field shows the action taken upon detection of an input power failure. Default: Warning.

Battery Low
This field shows the action taken upon detection of a battery low condition. Default: Warning

UPS Overload
This field shows the action taken upon detection of a UPS Overload condition: Default: Warning. The UPS Overload setting may be viewed from the UPS Configuration menu.

UPS Over Temperature
This field shows the action taken upon detection of a UPS over temperature condition. Default: Warning

Recurring On/Off Schedule
This field shows the programmed Recurring On/Off Schedule setting. Default: Disabled.

Non-Recurring On/Off Schedule
This field shows the programmed Non-Recurring On/Off Schedule setting. Default: Disabled.

Recurring On/Off Schedule (option)

This page allows the administrator to create a recurring UPS shutdown or restart schedule. Ensure that the Recurring On/Off Schedule option is enabled in the UPS Shutdown menu.

Event Index
This field shows the reference number for the shutdown or restart event.

Output Shutdown & Restart Day
This field allows the administrator to set the day of the week to output shutdown & restart the UPS, or to view the current setting. The schedules are configured in the same-day format.

Output Shutdown Time
This field allows the administrator to configure the UPS to output shutdown, or to view the current settings. This value is displayed in the hh:mm:ss 24-hour format (i.e., 8:30 p.m. is 20:30:00).

Restart Time
This field allows the administrator to configure the restart time of the UPS or to view the current settings. This value is displayed in the hh:mm:ss 24-hour format (i.e., 8:30 p.m. is 20:30:00).

Non-Recurring On/Off Schedule (option)

This page allows the administrator to set the output shutdown/restart schedule for the UPS.

Event Index
This field shows the reference number for the output shutdown/restart event.

Output Shutdown Date
This field allows the administrator to configure the specific date of the UPS output shutdown or to view the current setting.

Output Shutdown Time
This field allows the administrator to set the UPS shutdown time. This value is displayed in the hh:mm:ss 24-hour format (i.e. 8:30 p.m. is 20:30:00).

Restart Date
This field allows the administrator to configure the UPS restart date or to view the current setting.

Restart Time
This field allows the administrator to configure the restart time of the UPS or to view the current setting. This value is displayed in the hh:mm:ss 24-hour format (i.e. 8:30 p.m. is 20:30:00).

Email Notification

This page allows the administrator to set the RemotEye II email notification configuration parameters.

Mail Server
This field allows the administrator to set the IP Address or Hostname of a Simple Mail Transfer Protocol (SMTP) mail server that will be used to send email messages from the RemotEye II. If entering a Hostname, the Domain Name Server (DNS) address is required in the DNS field.

User Account
This field allows the administrator to set User Account login name of the SMTP mail server.

User Password
This field allows the administrator to set User Account password of the SMTP mail server.

Note: Not all SMTP Server requires login name and password, please check with the SMTP administrator.

Domain Name
This field allows the administrator to set the domain name of the LAN. Example, tic.toshiba.com.

DNS Address
This field allows the administrator to set the IP address of the network DNS server if a Hostname is entered for the Mail Server. Otherwise, this field can be 0.0.0.0.

Mail Daily Status Report At (hh:mm)
This field allows the administrator to set the time to send a Daily Status report to select email address (Mail Accounts), The time is set in 24-hour format.

Mail Account
This field allows the administrator to set the email address of the recipients who will receive the events or/add the status reports.

Description
This field allows the administrator to set the description of the recipients.

Mail Type
This field allows the administrator to select the mail type

None – Disable option to send email to recipients.

Events – Current events will be sent to recipients.

NOTE: System will label each event email with the system Name and Location, in the format: systemName@SystemLocation

Daily Status – Daily History log and Events log will be sent to the email recipients at the designated time.

Events with Status – Current events, History log and Events log will be sent to email recipients when events occurred

EMD Configuration

Comprehensive View

This page gives a snapshot of all EMD parameters; the parameters will be updated automatically every 5 seconds.

The text color of the parameter indicates its status based on the administrator-configurable threshold.

The list below indicates the parameter status.

GREEN : 'normal' status.

YELLOW : 'warning' status,

RED : 'critical' status.

GREY : 'unknown' value.

The EMD provides the measurements for room temperature, room humidity,

and two alarms.

The warning/critical thresholds can be setup via the "EMD Setup" page.

EMD Setup

This page allows administrator to configure all necessary parameters of an EMD.

Set Point
The threshold of a sensor (temperature or humidity) will trigger an alarm, whenever the measurement is over (high) or under (low) the set point. The alarm can be configured to activate at warning or critical levels. If the checkbox is not filled, the threshold is disabled and the alarm will not be triggered. The valid range for the Temperature threshold setting is 5 to 65, and 5 to 95 for Humidity.

Hysteresis
A sensors value could be floating around its threshold triggering multiple alarms. Setting the hysteresis will help to prevent the alarm bouncing between active and inactive. For example, if the low warning threshold set point is 20 and hysteresis is 3, then the alarm will activate when the value reaches 20 but it will not become inactive again until the sensor value reaches 23.

For the contact alarm sensors, the hysteresis can be used to adjust the sensitivity of an alarm. The alarm will be active or inactive only after the alarm stays in the same state for the duration of the hysteresis value (in seconds). For example, if the hysteresis is 5 for an alarm, the alarm will NOT activate until the same state has persisted for 5 seconds. This ruling also applies in reverse so that the alarm has to stay in an inactive state for 5 seconds before the sensor status is recorded as normal.

Calibration Offset
If the measurement value of a sensor does not, for whatever reason, comply with the actual environment, the 'Calibration Offset' setting can be configured to adjust the final value of the sensor. For example, if a sensor reports 43% humidity for a 45% humidity environment, the administrator can configure the humidity offset as 2% so the sensor can then adjust its final value to 45%.

Alarm Type
If an alarm sensor (water leak, security, etc) is connected to the EMD, the administrator can configure the alarm as 'Disabled', 'Normal Open', 'Normal Close', 'High Active', or 'Low Active'. A 'Disabled' setting will mean the alarm is inactive.

'Normal Open' and 'Normal Close' are used for a two-wire detector that will emulate an open/close state. When the wires are closed to 'loopback' (the signal for the sensor), the sensor will detect the state as closed. The sensor will NOT activate the alarm for 'Normal Close' in this case, although the alarm will be activated if configured as 'Normal Open'.

'High Active' and 'Low Active' can be configured when a 'contact closure' type detector is attached. The administrator should connect the wire to the right side of the alarm (marked as arrow-in), and 8 to 12 VDC should be able to be detected by the EMD as 'high' state.

Device Status

The EMD can be configured as 'Disabled' or 'Auto'. The setup should be configured as 'Disabled' if an EMD is not attached to the port. The EMD type will be auto detected by the EMD if configured as 'Auto' and if the EMD is plugged into the port.

RemotEye II Management

This menu allows the administrator to view the RemotEye II control parameters. Users have read-only privileges, whereas the administrators have read/write access.

RemotEye II System Date and System Time

This page shows the options on setting RemotEye II date and time.

Date and Time
These two fields show the current Date and Time of the RemotEye II. This can be changed to synchronize with a computer, an enquiry from a timeserver (NTP) or can be set manually. The date value is displayed in the MM/DD/YYYY format (i.e., Jan 18, 2005 is 01/18/2005). The time value is displayed in the hh:mm:ss 24-hour format (i.e., 8:30 p.m. is 20:30:00).

Synchronize with computer time
This field allows the administrator to synchronize the RemotEye II date and time to the computer clock, which the end user is using.

Synchronize with NTP server
NTP server IP and correct time zone must be selected to activate this option. After configuration, the RemotEye II will synchronize its time with the server periodically. If Daylight Saving Time is enabled, the time will be one hour earlier than NTP server time.

Set Manually
This field allows the administrator to configure the RemotEye II date and time manually.

RemotEye II Configuration

This page allows the administrator to set the RemotEye II local network configuration parameters. Within the parameters, the Primary Time Server and the Secondary Time Server can only send out the correct time information to a client that has the Shutdown program installed.

RemotEye II IP Address
This field allows the administrator to set the IP address of the RemotEye II or to view the current setting (i.e., 192.9.60.229).

RemotEye II Gateway Address
This field allows the administrator to set the IP address of the gateway or to view the current setting (i.e., 192.9.60.10).

RemotEye II Network Mask
This field allows the administrator to set the subnet mask of the RemotEye II or to view the current setting (i.e., 255.255.255.0).

System Name
This field allows the administrator to set the value in System name that is defined in MIB-II or to view the current setting. This string also serves as the RemotEye II Client Identifier (CID) in DHCP systems.

System Contact
This field allows the administrator to set the value in System manager (System Contact) that is defined in MIB-II or to view the current setting.

NOTE: System will label each event email with the system Name and Location, in the format: systemName@SystemLocation

System Location
This field allows the administrator to set the value in System installation place (System Location) that is defined in MIB-II or to view the current setting.

History Log Interval
This field allows the administrator to set the polling time (in seconds) of the Input Voltage, Output Voltage, Output Load, Battery Voltage, Input Frequency, and the UPS Output Source. The readings will be stored in the history log.

Extended Log Interval
This field allows the administrator to set the consolidation interval (in minutes) to use in the creation of the extended history log. The UPS parameters will be consolidated to provide the minimum, maximum, and average values of the parameters that will be recorded in the extended history log.

RemotEye II Polling Rate
This field allows the administrator to set the time interval of the RemotEye II updates that are received from the UPS.

RemotEye II Baud Rate
This field shows the data transmission rate between the UPS and the RemotEye II.

Default Language
This field allows the administrator to set the default language: English or Japanese. The RemotEye II homepage will be displayed using the language set in the internet browser. If the language is not supported by the RemotEye II, the RemotEye II will respond with the default language.

RemotEye II Control

This page allows the administrator to Enable/Disable the available RemotEye II communication protocols. In addition, it allows the administrator to restart or reset the RemotEye II.

BootP/DHCP Status
This field allows the administrator to Enable/Disable the Boot Protocol (BootP)/ Dynamic Host Configuration Protocol (DHCP) support or to view the current settings. These protocols are Internet standards and are used to obtain a dynamic IP address from a BootP/DHCP server.

Telnet Connection
This field allows the administrator to Enable/Disable the terminal-to-server application (Telnet) control process (i.e., telnet 192.168.7.18).

Network Upgrade
This field allows the administrator to Enable/Disable the Trivial File Transfer Protocol (TFTP) upgrade control or to view the current setting. The Windows upgrade utility, Tugrade, may be used to upgrade the RemotEye II when enabled.

Reset the RemotEye II to Default
This field allows the administrator to Enable/Disable the RemotEye II Reset function. When enabled, all parameters in the RemotEye II will be reset to default setting.

Restart the RemotEye II
This field allows the administrator to Enable/Disable the RemotEye II Restart function. When enabled, the RemotEye II may be restarted.

SNMP Version Control
This field allows the administrator to enable and disable the Simple Network Management Protocol security level. When enable, administrators has the options to set for SNMPv1 or SNMPv3

SNMP/HTTP Access Control

This page displays a list of the Network Management Stations (NMS) that have RemotEye II read and write access.

Index
This field shows the index numbers of the table entries.

NMS IP Address
This field allows the administrator to set the management station's IP address or to view the current settings. 0.0.0.0 means entry not configured. (i.e., An entry of 192.168.7.255 indicates clients with IP address within the range of 192.168.7.0 to 192.168.7.255 are valid network management stations set by the user).

Community String
This field allows the administrator to set the low level password of the associated IP address or to view the current setting.

Access Type
This field allows the administrator to set the access type for the client machines or to view the current setting.

The available options are:

No Access,

Read Only, and

Read/Write

Note: An entry of 255.255.255.255 grants the user access rights to all IP addresses.

SNMPv3 USM Security

This page displays a list of the Network Management Stations (NMS) that have RemotEye II read and write access.

Index
This field shows the index numbers of the table entries.

User Name
This field allows the administrator to set the specific user name for the user that allows to access the RemotEye II via SNMPv3.

Authentication Password
This field allows the administrator to set the authentication password of the associated user.

Privacy Password
This field allows the administrator to set the privacy password of the associated user.

Security
This field allows the administrator to set the access type for the user

1. noAuthNoPriv – with no authentication and no privacy passwords
2. authNoPriv - with authentication password but no privacy password
3. authPriv – with no authentication password but with privacy password

Authentication
This field allows the administrator to set the authentication format, HMAC-MD5 or HMAC-SHA.

Status
This field shows the authentication status, whether it is Ready or not being used.

SNMP Trap Receivers

This page lists the parameters for SNMP trap receivers (for SNMP Network Management).

Index
This field shows the index numbers for the table entries.

NMS IP Address
This field allows the administrator to set the IP Address of the NMS station to which the traps should be sent or to view the current setting.

Community String
This field allows the administrator to set the community string of the trap's PDU to be sent or to view the current setting. The maximum length of the string is 19 characters.

Trap Type
This field allows the administrator to set the types of traps to be received or to view the current settings.

Setting options are:

None : Traps are not being received.

Toshiba Trap : Traps are received based on the Toshiba MIB.

JEMA Trap: Traps are received based on the JEMA MIB.

RFC 1628 Trap: Traps are received based on the RFC 1628 MIB.

Description
This field shows the customer description string.

HTTP Page Refresh Rates

This page allows the administrator to set the HTTP page refresh interval.

Comprehensive Page
This field allows the administrator to set the refresh rate (in seconds) of the Comprehensive View menu or to view the current setting.

Battery Group Page
This field allows the administrator to set the refresh rate (in seconds) of the Battery Parameters menu or to view the current setting.

Input Group Page
This field allows the administrator to set the refresh rate (in seconds) of the Input Parameters menu or to view the current setting.

Output Group Page
This field allows the administrator to set the refresh rate (in seconds) of the Output Parameters menu or to view the current setting.

Alarm Group Page
This field allows the administrator to set the refresh rate (in seconds) of the Alarm Table menu or to view the current setting.

Connected Client Group Page
This field allows the administrator to set the refresh rate (in seconds) of the Client Table menu or to view the current setting.

UPS History

This menu allows the user to view UPS & RemotEye II log messages, such as the UPS History Log, UPS Extended Log, UPS Events Log, and Agent Events Log. The log messages are displayed in chronological order and are used to help detect and diagnose problems with the RemotEye II.

UPS History Log

This page lists the fundamental UPS parameters. Consolidation intervals may be changed by the administrator by modifying the variable History Log Interval from the RemotEye II Configuration page. The existing values are overwritten when the maximum number of entries has been reached. The log data may be cleared from the Clear & Save Log Data menu.

Log Date
This field shows the date of the recording.

LogTime
This field shows the time that the values were recorded. This value is displayed in the hh:mm:ss 24-hour format (i.e., 8:30 p.m. is 20:30:00).

Input Voltage
This field shows the UPS input voltage in VAC.

Input Frequency
This field shows the UPS input frequency in Hz.

Output Voltage
This field shows the UPS output voltage in VAC.

Load Pecentage
This field shows the UPS load in %.

Battery Voltage
This field shows the battery voltage in VDC.

Output Status
This field shows the status of the output status. These readings include: Other, None, On-Line (Normal), Bypass, Battery & Shutdown

UPS Extended Log

This page provides a consolidated view of the UPS parameters that have been taken over a specified period of time. For each of the UPS parameters, the minimum, maximum, and average values are shown in each of the records. The administrator may change the consolidation intervals by modifying the variable Extended Log Interval from the RemotEye II Configuration page. The existing values are overwritten when the maximum number of entries has been reached. The log data may be cleared from the Clear & Save Log Data menu.

Interval Start Date
This field shows record start date.

Interval Start Time
This field shows the time of the recording. This value is displayed in the hh:mm:ss 24-hour format (i.e., 8:30 p.m. is 20:30:00).

Interval End Date
This field shows the ending date of the consolidation interval for the record.

Interval End Time
This field shows the ending time of the consolidation interval for the record.

Input Voltage
This field shows the minimum, maximum, and average values of the input voltage of the consolidated interval.

Input Frequency
This field shows the minimum, maximum, and the average UPS input frequency values of the consolidated interval.

Output Voltage
This field shows the minimum, maximum, and the average UPS output voltage values of the consolidated interval.

Load Percentage
This field shows the minimum, maximum, and the average UPS load values of the consolidated interval.

Battery Voltage
This field shows the minimum, maximum, and the average battery voltage levels of the consolidated interval.

UPS Events Log

This table lists the UPS events since the table was last cleared. The existing values are overwritten when the maximum number of entries has been reached. The log data may be cleared from the Clear & Save Log Data menu.

Event Date
This field shows the event date and is displayed in the mm/dd/yyyy format.

Event Time
This field shows the event time and is displayed in the hh:mm:ss 24-hour format (i.e., 8:30 p.m. is 20:30:00).

Event Description
This field shows the recorded UPS event.

RemotEye II Events Log

This table lists the RemotEye II events since the table was last cleared. The existing values are overwritten when the maximum number of entries has been reached. The log data may be cleared from the Clear & Save Log Data menu.

Event Date
This field shows the date of the event in the dd/mm/yyyy format.

Event Time
This field shows the time of the event in the hh:mm:ss 24-hour format (i.e., 8:30 p.m. is 20:30:00).

Event Description
This field shows the time of the recorded events.

Clear & Save Log Data

This allows the user to save the RemotEye II log data to a file. The saved file is given a .csv extension, which allows it to be opened using Microsoft® Excel. Specific log data may be cleared by the user or the entire log data record may be cleared after saving the .csv file.

Clear Log Data
This field allows the administrator to the clear log data by checking the applicable box and clicking the Clear button.

Clear Log Data after saving the log file
The log data may be cleared after saving the file as a .CSV file by clicking YES at the Clear Log Data after saving the log radio button.

Save Log Data
The log data may be saved as a .CSV file by clicking UPS History Log, UPS Extended Log, UPS Events Log or Agent Events Log.

Note: A mouse click on any of the hyperlinks of this page while the Clear the corresponding log data as you click the hyperlink below selection is set to Yes will clear the log data even if the operation is cancelled.

Managing the UPS Via Java

The RemotEye II provides three real-time graphical user interfaces written in Java Applet to provide a means to monitor a Toshiba UPS over a LAN or a WAN.

Monitor — Displays the UPS key parameters graphically.

History — Displays the UPS history log graphically.

Trend — Displays the UPS extended history log graphically.

Monitor

By clicking the Monitor button at the top-left side of the RemotEye II home page, Figure 17: HTTP Monitor Screen on page 71, will open in a separate window. The Monitor applet provides a visual representation of the UPS system. It contains a status bar that can display the current UPS status, an alarm window that can display the current UPS alarms, and a display of the following UPS key parameters:

Input Voltage	Input Frequency	UPS Output
Battery Voltage	Estimated Battery Time	Battery Backup Operation
Output Voltage	Output Frequency	Output Load
Typeform	Serial Number	Software Version
Date and Time	Battery Capacity	UPS Load
UPS Temperatures		

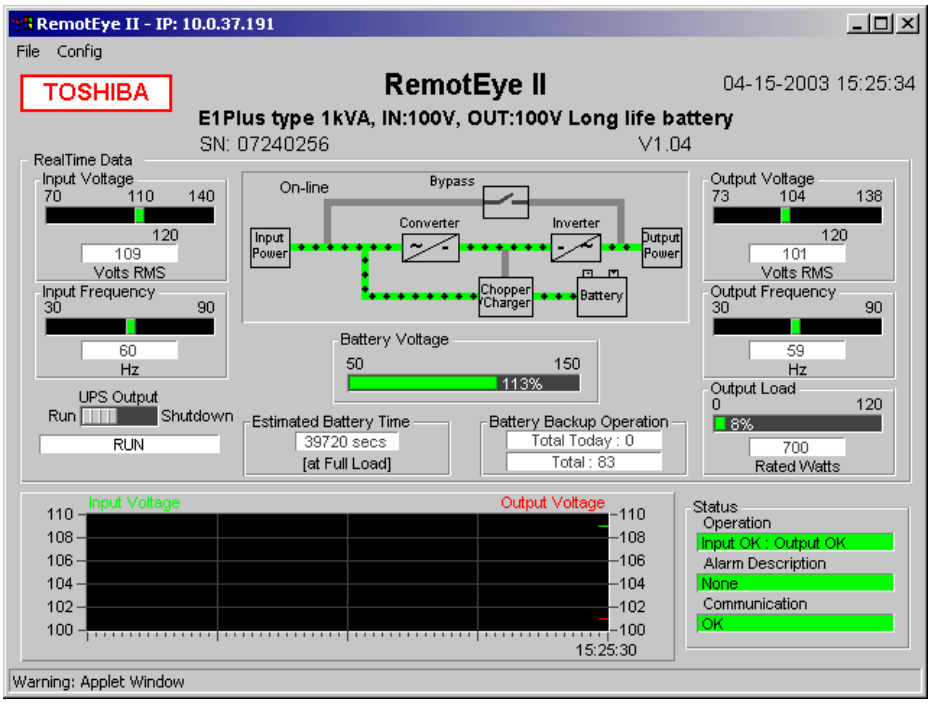


Figure 17: HTTP Monitor Screen

History

Clicking the History button at the top-left side of the RemotEye II home page, Figure 18: HTTP History Data Screen on page 72 will open in a separate window. This screen displays the UPS history log as a line graph. By default, all of the UPS parameters will be displayed on the same graph. The user may select any combination of parameters to be displayed on the graph by clicking the check box beside a parameter on the monitor screen and clicking the Refresh button.

Display Point — Displays the log interval on the graph.

Refresh — Click the Refresh button after changing any settings on the History page for the changes to take effect.

Reload — Updates the History page and resets the right display margin.

Exit — Closes the History window.

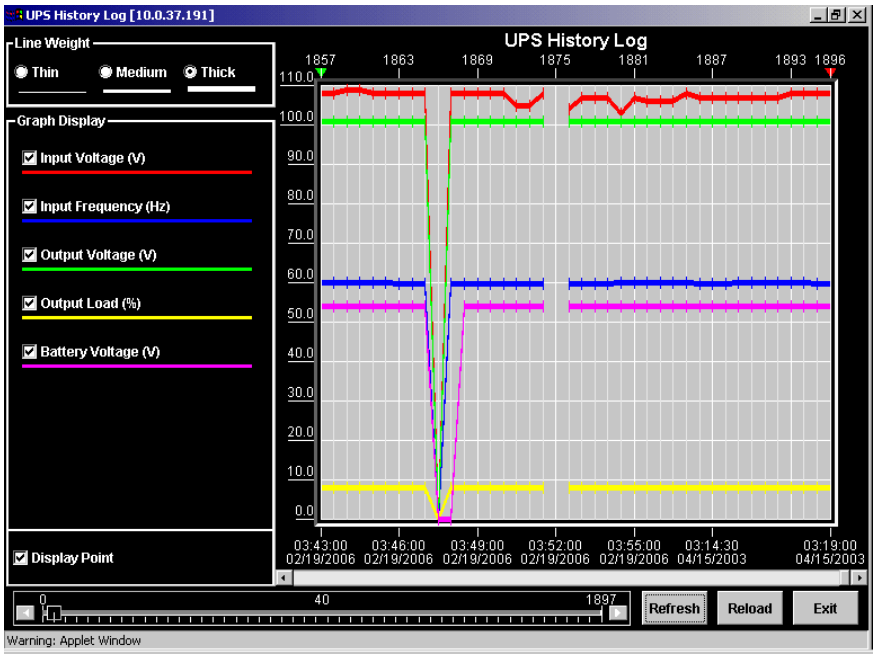


Figure 18: HTTP History Data Screen

Trend

Clicking the Trend button at the top-left side of the RemotEye II home page, Figure 19: HTTP Trend Data Screen on page 73 will open in a separate window. This screen displays the UPS history log as a line graph. By default, all the UPS parameters will be displayed on the same graph. The user may select any combination of parameters to be displayed on the graph by clicking the check box beside a parameter on the monitor screen and clicking the Refresh button.

Display Point — Displays the log interval on the graph.

Refresh — Click the Refresh button after changing any settings on the UPS History Log Monitor for the changes to take effect.

Reload — Update the UPS History Log Monitor and reset the right display margin.

Exit — Closes the UPS History Log Monitor window.

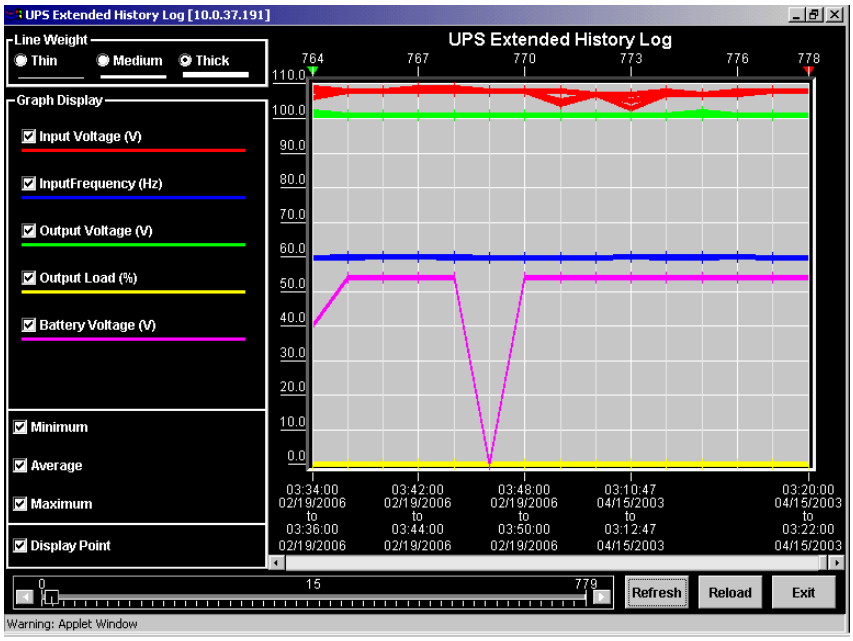


Figure 19: HTTP Trend Data Screen

Configuring the Remoteye II via SNMP

The RemotEye II supports SNMP. Any workstation with SNMP management software can manage a Toshiba UPS through RemotEye II.

Note: This section will focus entirely on RemotEye II operation in conjunction with the RFC1628-compatible MIB, Toshiba.mib.

System Requirements

There are two components of an SNMP system: an Agent and a Manager. The Agent collects information about a network node. The Manager collects information from the Agent.

The RemotEye II provides an Agent for a Toshiba UPS. The Manager is a software application that is provided separately. A workstation running Manager software is considered a Network Management Station (NMS).

There are many Manager applications available. Some commonly used applications are listed below:

Cabletron Spectrum,

DEC Polycenter,

HP OpenView,

IBM NetView,

Novell Managewise, and

SunNet Manager.

The RemotEye II and the Manager software must be configured to communicate with one another.

Preliminary Issues

There are several pieces of information to collect before setting up the RemotEye II and an NMS. As a bare minimum, know the following prior to system setup:

The IP Address of the RemotEye II.

The Gateway Address of the RemotEye II.

The IP Address of the Network Management Station.

RemotEye II (Agent) Settings

Before using the RemotEye II in an SNMP environment, the RemotEye II must be programmed to coordinate with a particular NMS.

Examining Network Pathway

Several RemotEye II parameters determine the networks available for RemotEye II data transmission. These parameters are the IP Address, the Gateway Address, and the MIB System Group.

The IP Address of RemotEye II must place it on the same network as the NMS. If the two elements are not located on the same network, a gateway between the RemotEye II and the NMS must exist.

The Gateway Address indicated in RemotEye II must identify a network device providing access to the network of the NMS. For instruction on defining which gateway RemotEye II uses, consult the System Group section on page 29.

The MIB System Group of RemotEye II must match that of the NMS (see the section titled System Group on page 29 for further information). This parameter will allow an NMS within the group to access RemotEye II data.

Granting Write Access

The RemotEye II controls permissions for workstations. Any workstation attempting to alter UPS parameters through RemotEye II must have permission.

By default, the RemotEye II will allow any workstation the ability to write new configuration information to RemotEye II and its attached Toshiba UPS. This is accomplished through SNMP sets using the default read/write community string.

To restrict access to only NMS machines, the SNMP Communities and Control Group of RemotEye II must be programmed accordingly. See the section entitled SNMP Communities on page 34 for details on adding workstations to the SNMP Communities.

If the IP address of the NMS is not added to the SNMP Communities with Read/Write permissions, the NMS software can only read the status of the UPS, and changes to UPS parameters will be prohibited.

NMS (Manager) Settings

There are two areas of consideration when coordinating an NMS with a RemotEye II. First, the Manager software on the NMS must be prepared to handle the RemotEye II Management Information Base (MIB), and second, the Manager must be configured to receive any traps the RemotEye II sends.

Importing the MIB File

The MIB file, Toshiba.mib, is contained on the included CD-ROM. This file describes the information that is attainable from a Toshiba UPS.

The Toshiba MIB file must be manually entered (imported or compiled) into the Manger database. For instruction on incorporating private MIB files into the Manager, consult the Manager software documentation.

Prior to importing the Toshiba MIB file, the MIB file RFC1213.MIB (not provided) must also be imported. This file outlines the SNMP MIB-II standard used by RemotEye II.

MIB Import Example

This example shows how to incorporate the Toshiba MIB into the Manager application HP OpenView Workgroup Node Manager. The software runs on the Windows platform.

Launch HP OpenView Workgroup Node Manager.

From the Control pull down menu, click SNMP Manager → Manage Database → Select → (map to the MIB file, Toshiba.mib, on the included CDROM) → click ADD.

Click Close to close the SNMP Manager Database.

Specifying Trap Receivers

To send traps to an NMS, the NMS must be designated as a trap receiver of the RemotEye II. See Trap Receiver Table section on page 36 for instruction on defining a trap receiver.

Configuring the Trap Receiver

The trap handler of a Manager application varies between software developers. For specific information about a trap handler, consult the Manager software documentation.

Understanding RemotEye II Specific Traps

The RemotEye II offers four specific traps. The traps provided are outlined below:

Specific 1: Sent initially when the UPS enters the Battery Backup mode. Persists at 60 second intervals thereafter.

Specific 2: Sent after a UPS test has completed.

Specific 3: Sent whenever a UPS alarm condition has been added to the RemotEye II alarm table.

Specific 4: Sent whenever a UPS alarm condition has been removed from the RemotEye II alarm table.

Definition of RemotEye II Trap Attributes

Each specific trap contains additional information called attributes. The number and the information available differ for each specific trap.

The number of attributes available for each trap is shown below:

Specific Number	Description	Number of Available Attributes
1	UPS On Battery	3
2	UPS Test Completed	3
3	UPS Alarm Added	2
4	UPS Alarm Removed	2

The information of the attributes present is shown in the following:

Specific Trap #1:

Attribute #1 – MIB value upsBatteryStatus. Integer value 1 to 4 that indicates battery health.

Attribute #2 – MIB value upsSecondsOnBattery. Integer value that represents the amount of time, in consecutive seconds, that the UPS has been in battery backup operation mode.

Attribute #3 – MIB value upsEstimatedMinutesRemaining that represents the amount of time, in minutes, that the UPS can currently provide battery backup, should backup operation be necessary.

Specific Trap #2:

Attribute #1 – MIB value upsTestID. Integer value that represents the test. This number resets to value 0 each time RemotEye II is reset.

Attribute #2 – MIB value upsTestSpinLock. Integer value that acts as a key granting or refusing permission to initiate a test.

Attribute #3 – MIB value upsTestResultsSummary. Integer value that represents the results of a test.

Specific Trap #3:

Attribute #1 – MIB value upsAlarmID. This is an integer representing the sequence in which the trap was added to the alarms browser. This sequence will repeat when the agent is reset.

Attribute #2 – MIB value upsAlarmDesc. This is a MIB Description (whether numerical or textual) of the fault that has added.

Specific Trap #4:

Attribute #1 – MIB value upsAlarmID. This is an integer representing the sequence in which the trap was cleared from the alarms browser. This sequence will repeat when the agent is reset.

Attribute #2 – MIB value upsAlarmDesc. This is a MIB Description (whether numerical or textual) of the fault that has cleared.

Trap Receiver Configuration Example

This example shows how to setup the trap receiver for the NMS application HP OpenView Workstation.
Open the file DEVICES in C:\OV\OVFILES (or the directory where HP Open View resides).
Add the following text to the last line:
Toshiba RemotEye II 1.3.6.1.4.1.186.1.19.2.1 0x1347 POWERSUPPLY 0
Start HP OpenView Workgroup Node Manager.
Open the Customize Traps Alarms from the Monitor/Customize Trap… pull-down menu.
Click Add Devices Class… and select Toshiba RemotEye II.
Click the Add Trap… button.
Add specific traps 1 through 4, as desired.
The table below suggests messages to use for each specific trap:
Trap Conditions

Customized Traps	Description
6 Specific: 1	on Battery time=$1 $2 $3
6 Specific: 2	Test $3 $1
6 Specific: 3	Add $1 $2
6 Specific: 4	Remove $1 $2

The above descriptions make use of the HP OpenView tool $# to retrieve the attributes of the traps.

UPS Alarm List

ID	Object	Alarm Occur Message	Alarm Removal Message
1	…/upsAlarmBatteryBad	Battery test has detected battery failure. Contact Toshiba authorized service center for replacement.	Battery failure condition, detected by previous battery test, has been removed.
2	…/upsAlarmOnBattery	The UPS is on batteries; it is supplying output power from its batteries.	The UPS is no longer on batteries; output power is not being supplied from its batteries.
3	…/upsAlarmLowBattery	Low battery. Continued operation on batteries will deplete them entirely & result in UPS Output shutdown.	The UPS is no longer reporting a state of Low Batteries.
4	…/upsAlarmDepletedBattery	UPS has depleted batteries & unable to support critical loads. Turn off excess equipment to reduce load.	The batteries are no longer depleted; they have been charged to a supportive level.
5	…/upsAlarmTempBad	The UPS is overheating. Check for UPS fan failure or high ambient temperature (> 40°C / 104°F)	The UPS is no longer overheating.
6	…/upsAlarmInputBad	The input voltage is out of tolerance. UPS may switch to Battery Mode to support the load.	The input voltage is back within tolerance.
7	…/upsAlarmOutputBad	The output voltage is out of tolerance. Check the output voltage.	N/A
8	…/upsAlarmOutputOverload	UPS is overloaded. UPS will switch to bypass or shutdown. Turn off excess equipment to reduce load.	The UPS is no longer being overloaded.
9	…/upsAlarmOnBypass	The UPS is in Stop (Bypass) mode.	The UPS is no longer in Stop (Bypass) mode.
10	…/upsAlarmBypassBad	A bypass condition is out of tolerance. Check the input and output voltage.	N/A
11	…/upsAlarmOutputOffAsRequested	The UPS output has shutdown as requested.	N/A
12	…/upsAlarmUpsOffAsRequested	The UPS system has shutdown as requested.	N/A
13	…/upsAlarmChargerFailed	An uncorrected problem has been detected within the UPS charger subsystem.	N/A
14	…/upsAlarmUpsOutputOff	The UPS output is off.	

15	…/upsAlarmUpsSystemOff	The UPS system is off.	N/A
16	…/upsAlarmFanFailure	Fan failure! UPS system possibly overheating. Contact Toshiba authorized service center immediately.	Fans are no longer failing.
17	…/upsAlarmFuseFailure	The failure of one or more fuses has been detected. Contact your Toshiba authorized service center.	N/A
18	…/upsAlarmGeneralFault	A UPS fault condition exists. Contact your Toshiba authorized service center immediately.	The UPS fault condition has been removed. Good work.
19	…/upsAlarmDiagnosticTestFailed	The result of the last diagnostic test indicates a failure.	N/A
20	…/upsAlarmCommunicationLost	Communication lost between the RemotEye II and the UPS.	Communication has been restored between the RemotEye II and the UPS.
21	…/upsAlarmAwaitingPower	N/A	N/A
22	…/upsAlarmShutdownPending	A UPS output shutdown command has been issued; Output will turn off after delay.	OK
23	…/upsAlarmShutdownImminent	The UPS output will be shutdown in less than 30 seconds due to previously issued shutdown command.	N/A
24	…/upsAlarmTestInProgress	A UPS battery test is in progress.	Battery test completed.
25	…/upsAlarmPhaseRotation	Input phase rotation is incorrect. Check input wiring for clockwise rotation.	Input phase rotation has been corrected.
26	…/upsAlarmReplaceBattSoon	Batteries nearing end of expected lifetime. Contact Toshiba authorized service center for replacement.	Battery lifetime monitor has been reset.
27	…/upsAlarmAsyncOperation	Inverter can not sync to input. UPS cannot switch from Run to Stop until input frequency stabilizes.	N/A
28	…/upsAlarmInputOverCurrent	UPS reporting Input Overcurrent. Contact Toshiba authorized service center for examination of fault.	The cause of the Input Overcurrent condition has been removed. The UPS is no longer in a INOC fault mode.

29	…/upsAlarmDCOverCurrent	UPS reporting DC bus Overcurrent. Contact Toshiba authorized service center for examination of fault.	The cause of the DC bus overcurrent condition has been removed. The UPS is no longer at fault.
30	…/upsAlarmDCOverVoltage	UPS reporting DC bus Overvoltage. Contact Toshiba authorized service center for examination of fault.	The cause of the DC bus overvoltage condition has been removed. The UPS is no longer at fault.
31	…/upsAlarmDCUnderVoltage	UPS reporting DC bus Undervoltage. Contact Toshiba authorized service center for examination of fault.	The cause of the DC bus undervoltage condition has been removed. The UPS is no longer at fault.
32	…/upsAlarmOutputUnderVoltage	UPS reporting output Undervoltage. Contact Toshiba authorized service center for examination of fault.	The cause of the output undervoltage has been removed. The UPS is no longer at fault.
33	…/upsAlarmOutputOverVoltage	UPS reporting output Overvoltage. Contact Toshiba authorized service center for examination of fault.	The cause of the output overvoltage condition has been removed. The UPS is no longer at fault.
34	…/upsAlarmEepromError	UPS reporting EEPROM error. Shutdown UPS and contact Toshiba authorized service center for replacement.	The cause of the EEPROM error condition has been removed. The UPS is no longer at fault.

Table 2: UPS Alarm Table

Connecting to the RemotEye II via SNMP

Executing SNMP Gets and Sets

Besides receiving traps, an NMS can perform the valuable functions of SNMP gets and sets through RemotEye II.

An SNMP get entails retrieving information. This is a request from a Manager to an Agent for information the Agent has collected.

An SNMP set entails configuring a device parameter. This is a command from a Manager to an Agent instructing the Agent to change some setup parameter. The setup parameter may apply to the agent or the agent's network device for which it is responsible.

SNMP Get/Set Criteria

Successful SNMP gets and sets from an NMS depend upon RemotEye II settings. The RemotEye II acts as a shield, refusing access to machines that do not meet its setup criteria. If the RemotEye II provides an NMS with Read access, SNMP gets are allowed, if RemotEye II provides NMS with Write access, both SNMP gets and SNMP sets are allowed.

The RemotEye II uses the community values listed in the RemotEye II Control Group and the entries listed in the SNMP Communities to render get/set requests from network machines. The evaluation techniques are described in the following sections.

NMS Unlisted in SNMP Communities

If an NMS is not listed in the SNMP Communities, the global RemotEye II communities are used for evaluation. The global communities are set within the Control Group table of the RemotEye II. If a get request matches either the Community Read-Only or the Community Read/Write values, the request is honored. A set, however, is only allowed if the request includes the Community Read/Write value.

NMS Listed in SNMP Communities

If the NMS appears in the SNMP Communities with Read or Read/Write Access rights, the corresponding community name and privileges listed within this table, in conjunction with the global community values, are used to evaluate the request.

If the NMS community listing matches any of the global communities, the SNMP Communities table listing will override the permissions established by the global listings. First, the SNMP Communities entry negates both global values, and second, the permissions for this entry will apply to requests from the NMS.

If the NMS appears in the SNMP Communities multiple times, using the same community, the entry with the highest priority (lowest line number) is used to evaluate the request though this community name.

If a NoAccess listing for the NMS appears anywhere in the table, the permissions assigned by the global community names are negated. Any request from the NMS using the global community names will be refused. In addition, only SNMP Communities entries with higher priority are applicable. To complete SNMP get or sets from this NMS, an entry above the NoAccess line must assign the NMS Read or Read/Write permissions.

If the highest priority listing for an NMS in the SNMP Communities labels the machine with access rights as NoAccess, no get/set requests from this machine, regardless of its community string, are permitted.

SNMP Get/Set Examples

The following scenarios can be used to provide guidelines when configuring RemotEye II. In all the examples, assume the Control Group settings are:

Community Read-Only: ronly

Community Read/Write: rwrite

Also, assume the NMS has the IP Address 172.18.63.1.

Case #1: NMS is not listed in the SNMP Communities
Assume the SNMP Communities Table is empty.

Analysis: Any NMS get request will be honored when using ronly or rwrite community string. Any NMS set requests will be honored only when using rwrite community string.

Case #2: NMS is listed in SNMP Communities with additional community strings
SNMP Communities settings:

[1] 172.18.63.1 foobar Read/Write

[2] 172.18.63.1 reading Read

Analysis: Get requests from the NMS with IP 10 will be honored when using the reading, foobar, rwrite or the ronly community strings. The NMS will have set ability when using either the foobar or the rwrite community strings.

Case #3: NMS is listed in the SNMP Communities using one of the global community strings.
SNMP Communities settings:

[1] 172.18.63.1 ronly Read/Write

Analysis: Both get and set requests from this NMS will be honored when using the ronly community string. Any requests from NMS using rwrite, however, will be denied.

Case #4: NMS is listed in the SNMP Communities multiple times using the same community string.
SNMP Communities settings:

[1] 172.18.63.1 foobar Read

[2] 172.18.63.1 foobar Read/Write

Analysis: The NMS will only be allowed to use SNMP gets when using the community string foobar. This NMS can still use global community strings ronly for gets or rwrite for gets and sets as well.

Case #5: NMS is listed in the SNMP Communities under No Access.

SNMP Communities settings:

[1] 10.0.7.31 foobar Read

[2] 10.0.7.31 public No Access

Analysis: The NMS can perform only gets using the community string foobar. No other set or get requests will be honored.

Case #6: NMS's first listing is in the SNMP Communities under NoAccess
Community Read-Only: ronly

Community Read/Write: rwrite

[1] 10.0.7.31 foobar No Access

[2] 10.0.7.31 public Read/Write

Analysis: All NMS get or set requests are refused.

Using the Toshiba MIB Passwords

RemotEye II provides the ability to change some UPS and RemotEye II parameters. These adjustable parameters are protected by a collection of passwords. The three categories of MIB objects protected by passwords are:

RemotEye II passwords; protected by upsPasswordAccess.

UPS configuration parameters; protected by upsConfigPassword.

UPS control parameters; protected by upsControlPassword.

Description

upsPasswordAccess – Member of the upsPassword group. This password must be authenticated through an SNMP set before an NMS is allowed to alter other RemotEye II passwords.

upsControlPassword – Member of the upsControl group. This password, when authenticated through an SNMP set, allows an NMS the ability to manipulate parameters in the upsControl group.

upsConfigPassword – Member of the upsConfig group. This password, when authenticated through an SNMP set, allows an NMS the ability to manipulate parameters within the upsConfig table.

Manipulating Parameters With RemotEye II

All passwords protect the writable members of their applicable groups, or tables. An authentication of any password enables writing its respective table.

For example, upsConfigPassword protects the writable parameters of the upsConfig table. Authenticating this password enables writing ability to parameters within the upsConfig table. The next authentication of this password disables writing ability to parameters within the upsConfig table.

The general progression for altering any parameters within a password-protected table is the following:

Send an SNMP set request of upsConfigPassword, or upsControlPassword, depending upon the group of parameters in which access is desired. This prepares the writable parameters in the table for modification.

Send SNMP set requests of all writable parameters requiring modification within the enabled table.

Send an SNMP set request of upsConfigPassword, or upsControlPassword, depending upon which table contains the recently modified parameters. This action closes the table and secures the writable parameters inside the table.

Manipulating Passwords of RemotEye II

It may be desirable to change one or more of the protective passwords sometime during the RemotEye II lifetime. An authentication of upsPasswordAccess password enables the upsPassword group for manipulation. The passwords included in this group are:

upsPassword

upsPasswordControlAccess

upsPasswordCurrentPassword

Description

upsPassword –This MIB object protects the upsPassword group.

upsPasswordControlPassword – This MIB object controls the value of upsControlPassword.

upsPasswordCurrent Password – This MIB object controls the value of upsPassword.

Manipulating RemotEye II Passwords

The general progression for altering any passwords within the Toshiba MIB is the following:

Send an SNMP set request of upsPasswordAccess to RemotEye II. This enables the upsPassword table.

Send an SNMP set request of upsPasswordCurrent Password, or upsPasswordControlPassword, depending on which password requires alteration.

Send an SNMP set request of upsPasswordAccess to RemotEye II.. This disables the upsPassword table and secures the passwords.

Default Passwords

The default values for the passwords are:

upsPasswordAccess – The default value is toshibA factorY passworD. However, this MIB object will always accept the value of upsPasswordCurrent Password as well.

upsPasswordControlPassword – The default value is v2password.

upsPasswordCurrent Password – The default value is v2password.

MIB

The MIB is a set of objects that are processed via a network protocol. These objects determine what UPS parameters may be monitored and controlled using SNMP request.

The RemotEye II communication implements standard MIB II and the following MIBs for TOSHIBA UPS (Toshiba V2.50 MIB).

The Toshiba V2.50 UPS SNMP MIB contains objects that have been divided into 11 distinct groups according to their functions.

Toshiba MIB

UPS MIB for Toshiba Uninterruptible Power Supplies

{ iso(1) org(3) dod(6) internet(1) private(4) enterprises(1) toshiba(186) equ(1) equUPS(19) ticUPS(2) sp1(1)}

==========

TOSHIBA1UPS-MIB DEFINITIONS ::= BEGIN

==========

IMPORTS

enterprises

FROM RFC1155-SMI

OBJECT-TYPE

FROM RFC-1212

DisplayString

FROM RFC1213-MIB

TRAP-TYPE

FROM RFC-1215;

toshiba OBJECT IDENTIFIER ::= { enterprises 186 }

equ OBJECT IDENTIFIER ::= { toshiba 1 }

equUPS OBJECT IDENTIFIER ::= { equ 19 }

ticUPS OBJECT IDENTIFIER ::= { equUPS 2 }

sp1 OBJECT IDENTIFIER ::= { ticUPS 1 }

upsIdent OBJECT IDENTIFIER ::= { sp1 1 }

upsBattery OBJECT IDENTIFIER ::= { sp1 2 }

upsInput OBJECT IDENTIFIER ::= { sp1 3 }

upsOutput OBJECT IDENTIFIER ::= { sp1 4 }

upsBypass OBJECT IDENTIFIER ::= { sp1 5 }

upsAlarm OBJECT IDENTIFIER ::= { sp1 6 }

upsTest OBJECT IDENTIFIER ::= { sp1 7 }

upsControl OBJECT IDENTIFIER ::= { sp1 8 }

upsConfig OBJECT IDENTIFIER ::= { sp1 9 }

upsPassword OBJECT IDENTIFIER ::= { sp1 10 }

upsTime OBJECT IDENTIFIER ::= { sp1 11 }

upsIdent (1.3.6.1.4.1.186.1.19.2.1.1)

upsIdentManufacturer OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.1.1)

upsIdentModel OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.1.2)

upsIdentUPSSoftwareVersion OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.1.3)

upsIdentAgentSoftwareVersion OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.1.4)

upsIdentName OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.1.5)
upsIdentAttachedDevices OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.1.6)
upsIdentUPSSerialNumber OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.1.7)
upsIdentDateOfManufacture OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.1.8)
upsBattery (1.3.6.1.4.1.186.1.19.2.1.2)
upsBatteryStatus OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.2.1)
upsSecondsOnBattery OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.2.2)
upsEstimatedMinutesRemaining OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.2.3)
upsEstimatedChargeRemaining OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.2.4)
upsBatteryVoltage OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.2.5)
upsBatteryCurrent OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.2.6)
upsBatteryTemperature OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.2.7)
upsBatteryLastReplacedDate OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.2.8)
upsBatteryLifeRemaining OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.2.9)
upsBatteryVoltagePercent OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.2.10)
upsBatteryModel OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.2.11)
upsBatteryRatedHoldingTime OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.2.12)
upsInput (1.3.6.1.4.1.186.1.19.2.1.3)
upsInputLineBads OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.3.1)
upsInputNumLines OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.3.2)
upsInputTable OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.3.3)
upsInputEntry OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.3.3.1)
upsInputLineIndex OBJECT-TYPE
upsInputFrequency OBJECT-TYPE
upsInputVoltage OBJECT-TYPE
upsInputCurrent OBJECT-TYPE
upsInputActivePower OBJECT-TYPE
upsOutput (1.3.6.1.4.1.186.1.19.2.1.4)
upsOutputSource OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.4.1)
upsOutputFrequency OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.4.2)
upsOutputNumLines OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.4.3)
upsOutputTable OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.4.4)
upsOutputEntry OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.4.4.1)
upsOutputLineIndex OBJECT-TYPE
upsOutputVoltage OBJECT-TYPE
upsOutputCurrent OBJECT-TYPE
upsOutputActivePower OBJECT-TYPE
upsOutputPercentLoad OBJECT-TYPE
upsOutputApparentPower OBJECT-TYPE
upsOutputPowerFactor OBJECT-TYPE
upsBypass (1.3.6.1.4.1.186.1.19.2.1.5)
upsBypassFrequency OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.5.1)
upsBypassNumLines OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.5.2)

upsBypassTable OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.5.3)
upsBypassEntry OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.5.3.1)
upsBypassLineIndex OBJECT-TYPE
upsBypassVoltage OBJECT-TYPE
upsBypassCurrent OBJECT-TYPE
upsBypassActivePower OBJECT-TYPE
upsBypassApparentPower OBJECT-TYPE
upsBypassPowerFactor OBJECT-TYPE
upsAlarm (1.3.6.1.4.1.186.1.19.2.1.6)
upsAlarmsPresent OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.6.1)
upsAlarmTable OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.6.2)
upsAlarmEntry OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.6.2.1)
upsAlarmId OBJECT-TYPE
upsAlarmDescr OBJECT-TYPE
upsAlarmTime OBJECT-TYPE
upsWellKnownAlarms OBJECT (1.3.6.1.4.1.186.1.19.2.1.6.3)
upsAlarmBatteryBad OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.6.3.1)
upsAlarmOnBattery OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.6.3.2)
upsAlarmLowBattery OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.6.3.3)
upsAlarmDepletedBattery OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.6.3.4)
upsAlarmTempBad OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.6.3.5)
upsAlarmInputBad OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.6.3.6)
upsAlarmOutputBad OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.6.3.7)
upsAlarmOutputOverload OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.6.3.8)
upsAlarmOnBypass OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.6.3.9)
upsAlarmBypassBad OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.6.3.10)
upsAlarmOutputOffAsRequested OBJECT-TYPE(1.3.6.1.4.1.186.1.19.2.1.6.3.11)
upsAlarmUpsOffAsRequested OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.6.3.12)
upsAlarmChargerFailed OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.6.3.13)
upsAlarmUpsOutputOff OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.6.3.14)
upsAlarmUpsSystemOff OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.6.3.15)
upsAlarmFanFailure OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.6.3.16)
upsAlarmFuseFailure OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.6.3.17)
upsAlarmGeneralFault OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.6.3.18)
upsAlarmDiagnosticTestFailed OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.6.3.19)
upsAlarmCommunicationLost OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.6.3.20)
upsAlarmAwaitingPower OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.6.3.21)
upsAlarmShutdownPending OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.6.3.22)
upsAlarmShutdownImminent OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.6.3.23)
upsAlarmTestInProgress OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.6.3.24)
upsAlarmPhaseRotation OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.6.3.25)
upsAlarmReplaceBattSoon OBJECT-TYPE(1.3.6.1.4.1.186.1.19.2.1.6.3.26)
upsAlarmAsyncOperation OBJECT-TYPE(1.3.6.1.4.1.186.1.19.2.1.6.3.27)

upsAlarmInputOverCurrent OBJECT-TYPE(1.3.6.1.4.1.186.1.19.2.1.6.3.28)
upsAlarmDCOverCurrent OBJECT-TYPE(1.3.6.1.4.1.186.1.19.2.1.6.3.29)
upsAlarmDCOverVoltage OBJECT-TYPE(1.3.6.1.4.1.186.1.19.2.1.6.3.30)
upsAlarmDCUnderVoltage OBJECT-TYPE(1.3.6.1.4.1.186.1.19.2.1.6.3.31)
upsAlarmOutputUnderVoltage OBJECT-TYPE(1.3.6.1.4.1.186.1.19.2.1.6.3.32)
upsAlarmOutputOverVoltage OBJECT-TYPE(1.3.6.1.4.1.186.1.19.2.1.6.3.33)
upsAlarmEepromError OBJECT-TYPE(1.3.6.1.4.1.186.1.19.2.1.6.3.34)
UPS Test (1.3.6.1.4.1.186.1.19.2.1.7)
upsTestId OBJECT-TYPE(1.3.6.1.4.1.186.1.19.2.1.7.1)
upsTestSpinLock OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.7.2)
upsTestResultsSummary OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.7.3)
upsTestResultsDetail OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.7.4)
upsTestStartTime OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.7.5)
upsTestElapsedTime OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.7.6)
upsWellKnownTests OBJECT (1.3.6.1.4.1.186.1.19.2.1.7.7)
upsTestNoTestsInitiated OBJECT-TYPE(1.3.6.1.4.1.186.1.19.2.1.7.7.1)
upsTestAbortTestInProgress OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.7.7.2)
upsTestGeneralSystemsTest OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.7.7.3)
upsTestQuickBatteryTest OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.7.7.4)
upsDeepBatteryCalibration OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.7.7.5)
upsControl (1.3.6.1.4.1.186.1.19.2.1.8)
upsShutdownType OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.8.1)
upsShutdownAfterDelay OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.8.2)
upsStartupAfterDelay OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.8.3)
upsRebootWithDuration OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.8.4)
upsAutoRestart OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.8.5)
upsRunStopControl OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.8.6)
upsShutdownAfterLB OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.8.7)
upsControlRefreshNextBoot OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.8.8)
upsControlNextPMDate OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.8.9)
upsControlPassword OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.8.10)
upsControlOutputVoltageIncrement OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.8.11)
upsControlOutputVoltageDecrement OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.8.12)
upsLowBatteryDelay OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.8.13)
upsBatteryModeSignalDelay OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.8.14)
upsShutdownAfterPowerUp OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.8.15)
upsAutoTransferEnabled OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.8.16)
upsColdStartEnabled (1.3.6.1.4.1.186.1.19.2.1.8.17)
upsLoadShedEnabled (1.3.6.1.4.1.186.1.19.2.1.8.18)
upsLoadShedLevel (1.3.6.1.4.1.186.1.19.2.1.8.19)
upsLoadShedRelayOffDelay (1.3.6.1.4.1.186.1.19.2.1.8.20)
UPSTemperature (1.3.6.1.4.1.186.1.19.2.1.8.21)
UPSFanSpeed (1.3.6.1.4.1.186.1.19.2.1.8.22)

upsConfig (1.3.6.1.4.1.186.1.19.2.1.9)
upsConfigModelIDString OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.9.1)
upsConfigUPSSoftwareVersion OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.9.2)
upsConfigUPSSerialNumber OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.9.3)
upsConfigDateOfManufacture OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.9.4)
upsConfigInputNumLines OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.9.5)
upsConfigInputFreq OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.9.6)
upsConfigInputVoltage OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.9.7)
upsConfigInputVACoeff OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.9.8)
upsConfigInputPF OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.9.9)
upsConfigOutputNumLines OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.9.10)
upsConfigOutputFreq OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.9.11)
upsConfigOutputVoltage OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.9.12)
upsConfigOutputVACoeff OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.9.13)
upsConfigOutputVA OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.9.14)
upsConfigOutputActivePower OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.9.15)
upsConfigOutputPF OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.9.16)
upsConfigLowBattTime OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.9.17)
upsConfigAudibleStatus OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.9.18)
upsConfigLowVoltageTransferPoint OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.9.19)
upsConfigHighVoltageTransferPoint OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.9.20)
upsConfigBattInstalledDate OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.9.21)
upsConfigNumBattSeries OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.9.22)
upsConfigNumBattStrings OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.9.23)
upsConfig1BattVoltage OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.9.24)
upsConfigPassword OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.9.25)
upsConfigBattModel OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.9.26)
upsConfigBattRatedHoldingTime OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.9.27)
upsPassword (1.3.6.1.4.1.186.1.19.2.1.10)
upsPasswordControlAccess OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.10.1)
upsPasswordAccess OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.10.3)
upsPasswordCurrentPassword OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.10.4)
upsTime (1.3.6.1.4.1.186.1.19.2.1.11)
upsTimeGetOperationTime OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.11.1)
upsTimeViewOperationTime OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.11.2)
upsTimeRealDate OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.11.3)
upsTimeRealTime OBJECT-TYPE (1.3.6.1.4.1.186.1.19.2.1.11.4)
upsTrap
upsTrapOnBattery TRAP-TYPE
Variables { upsEstimatedMinutesRemaining, upsSecondsOnBattery,
UpsConfigLowBattTime }
upsTrapTestCompleted TRAP-TYPE
Variables { upsTestId, upsTestSpinLock, upsTestResultsSummary, upsTestResultsDetail,
upsTestStartTime, upsTestElapsedTime }

upsTrapAlarmEntryAdded TRAP-TYPE
Variables { upsAlarmId, upsAlarmDescr }
upsTrapAlarmEntryRemoved TRAP-TYPE
Variables { upsAlarmId, upsAlarmDescr }
END

Toshiba RemotEye II Application Program

Toshiba RemotEye II Client Software

The Toshiba RemotEye II Client Software runs on servers and connects to a designated RemotEye II. When the servers start up the RemotEye II scans for the UPS status. When UPS power events are detected, the RemotEye II broadcasts a Shutdown command to the workstation. The Toshiba RemotEye II Client Software will broadcast warning messages (on the screen of the servers) and then shutdown the server gracefully.

Installation of RemotEye II Client using Windows 9x/2000/NT/XP

Insert the RemotEye II CD-ROM into the CD-ROM drive.

Run the Installer.exe program (on the CD-ROM).

A dialog box will be displayed on the screen, type in the IP address of the designated RemotEye II, its Client Name, and its Shutdown Delay Time. Click the Def. button to enter the workstation's name as the Client Name setting (see Figure 20:).

Upon completion of the setup screen's entries, click OK and the RemotEye II service will connect to the RemotEye II automatically.

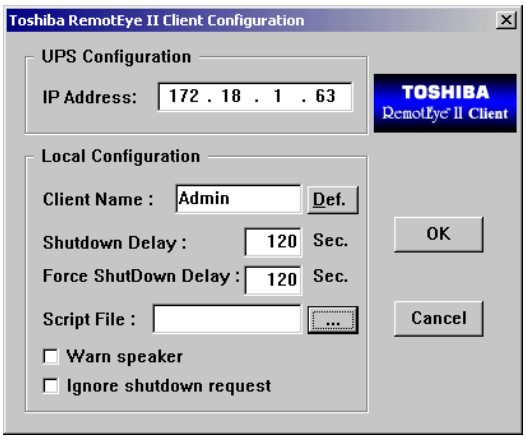


Figure 20: Toshiba RemotEye II Client Software

View the Connected Client via HTTP

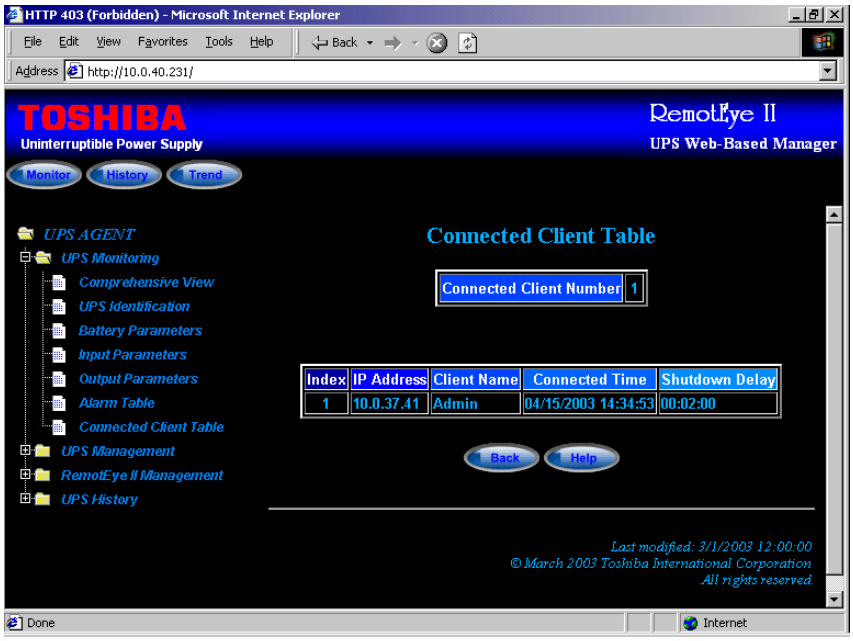
Run the Web Browser on any machine.

Browse the RemotEye II IP address.

For example, browse http://172.18.1.63

Select Connected Client Table from UPS Monitoring of the main menu and the list of the connected devices will be shown on the screen Figure 21: HTTP Connected Client Table

Figure 21: HTTP Connected Client Table



Note: The client local shutdown delay must not be greater than the UPS shutdown delay configured in RemotEye II

Shutdown Process in Windows 9x/ NT / 2000

When RemotEye II detects a power event, for example, AC power failure, the RemotEye II will send the shutdown command to its connected clients. The clients will post a dialog box to notify the user that the system will be shutdown.

Figure 22: Toshiba RemotEye II Client Software Shutdown Warning Message). The user can select "Shutdown Now" to start the shutdown process or "Cancel" to cancel the shutdown process. Toshiba RemotEye II Client Software will proceed with the shutdown process and the host or server will be shutdown automatically if nothing is selected after the counter has counted down to zero.

Figure 22: Toshiba RemotEye II Client Software Shutdown Warning Message

There are five kinds of state for Toshiba RemotEye II Client Software.

UPS Connection OK. (Green Background)

Trying to locate UPS. (Blue Background)

Local machine is about to shut down. (Red Background)

The service is suspended. (Green Background)

Remote UPS is about to shut down or has shut down. (Grey Background)

Uninstalling Toshiba Remoteye II Client Software

To uninstall the Toshiba RemotEye II Client Software, the following procedure should be followed.

1. Right mouse click the “battery” icon in the taskbar and select "Exit” to stop the shutdown service.
2. Select the "Add/Remove programs" icon from the Control Panel.
3. Select the "RemotEye II Service", and then click the "Add/ Remove" icon to remove the software.

Installation of RemotEye Client using UNIX

Introduction

RSH is a software daemon which is able to get/set specific command from/into RemotEye. The major intention of this software is to shutdown the local machine before the UPS runs out of power. This program is composed by shell scripts, written in bash, and virtually portable under any UNIX operating system. The program consists of three phases: the installation phase, the execution phase, and the configuration phase.

- The installation phase will help the user setup the program properly by asking a few questions.
- The execution phase will keep track of the status of a UPS via RemotEye.
- The configuration phase will guide user to reconfigure the setting that is made in installation phase.

Program Overview

When installing this program, the shutdown shell application will check the target machine's Operating System (OS) and determine whether it is a predefined OS from the recognized OS list. If it is not, the user will be prompted to answer some questions regarding system information (such as cmd name, path, etc). During the configuration phase, the program will ask user for information regarding the RemotEye (such as its IP address, name, etc). The reconfiguration phase allows the user to change the settings for later use. After installation, users can execute the program immediately or during the next system reboot.

Supported Operating System

1. Red Hat Advance Server release 2.1 AS
2. Sun Solaris 8 (x86)
3. Sun Solaris 8 (SPARC)
4. HP-UX (PA-RISC)

Installation

During the installation phase, the following steps are taken to help users install this program:

The program will automatically detect the target machine's OS and OS's distribution. User needs to select the correct item by entering the item number:

1. Please choose your OS:
2. Please choose your OS_Name:

If the target system is NOT on the predefined OS-list, the user will be prompted the following questions (questions 3~8)

3. "/dev" is your system device directory: [y/n]

- If "n" is selected,

4. Input device directory:

- Using "rsh" for remote shell:[y/n]
- If "n" is selected,

5. Input remote shell:

- Using "/sbin/init0" to shut down your system:[y/n]
- If "n" is selected,

6. Input shut down command:

- Please input your system's initial directory at boot time:
- Please input run level's directory to boot into:
- Do you have other run levels that need input?[y/n]
- If "n" is selected,

7. Please input run level directory:

- Install to folder /etc[y/n]
- If "n" is selected,

8. Input install folder:

- Do you want to start the daemon now?[y/n]

Execution

After successful installation of the program, users can use the uGuard.sh script to perform the following action.

Usage: ./uGuard.sh -[h][v][s][S][u][U][d][l][e][g] where

h: This manual page.

v: Show revision information.

s: Start the program now.

S: Start the program at next boot up time.

u: Unload program.

U: Unload program, don't restart at next boot time.

d: Suspend program.

l: List configurations.

e: Modify configurations.

g: See log [/var/log/usha/ug_usha.log].

Configuration

In this phase, users are able to change the parameters for the program. Users can change the setting to fit their needs at any time by executing “uGuard.sh –e”. After the first configuration process, this phase will show the last setting value as a default setting.

Input USHA IP Address:

Input Client Name:

Warning Beep On? [y/n]

Shutdown delay time is 120 seconds?[y/n]

If “n” is selected,

Input shut down delay time:

Shut down script is loaded?[y/n]

If “n” is selected,

Input shut down script:

Force shut down delay time is 120 seconds?[y/n]

If “n” is selected,

Input force shut down delay time:

Shut Down Enable?[y/n]

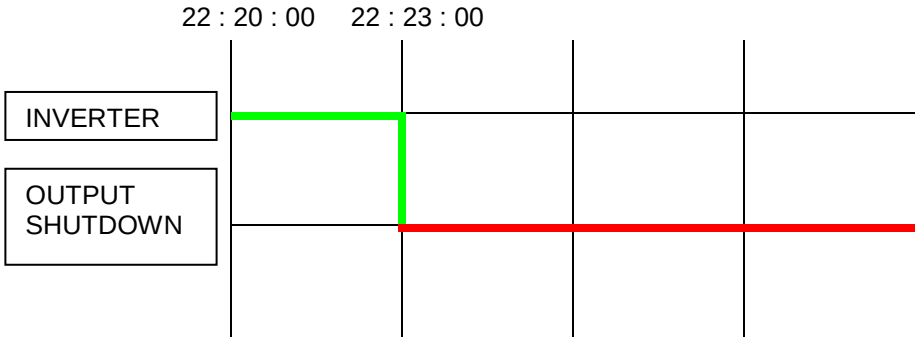
Toshiba UPS Power Management

RemotEye II can help further protect critical load systems connected to a UPS by initiating automated shutdowns on that equipment. RemotEye II can shutdown servers upon detection of three UPS events; Input power failure, low battery, and overload. Also, RemotEye II can be used to coordinate automatic system shutdowns during weekends or holidays. This section highlights the manners in which RemotEye II can be used in conjunction with a UPS to manage power to UPS loads.

Set UPS to Output Shutdown Mode After Delay

Administrators can issue an output shutdown to Toshiba UPS via RemotEye II in any cases. To issue an output shutdown command, go to UPS Control in the UPS Management menu. Login as an administrator. Select the radio button beside Set UPS to Output Shutdown Mode After Delay and click the Apply button.

Scenario:
UPS Output Shutdown Delay (sec): 180(default)
Set UPS to Output Shutdown Mode After Delay: 22:20:00



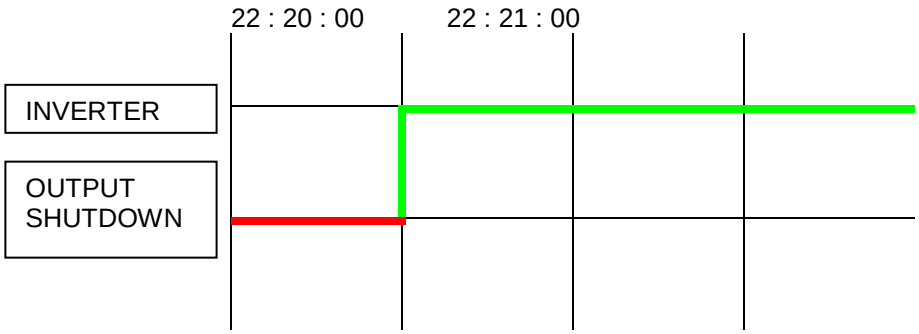
Set UPS to Run (Inverter) Mode After Delay

When there is a need to set the UPS to run (inverter) mode immediately, go to UPS Control on page 51 in the UPS Management menu. Then, login as an administrator and select the radio button beside Set UPS to Run (Inverter) Mode After Delay. Lastly , click the Apply button.

Scenario:

UPS Run (Inverter) Mode Delay (mins): 1 min(default)

Set UPS to Run (Inverter) Mode After Delay: 22:20:00

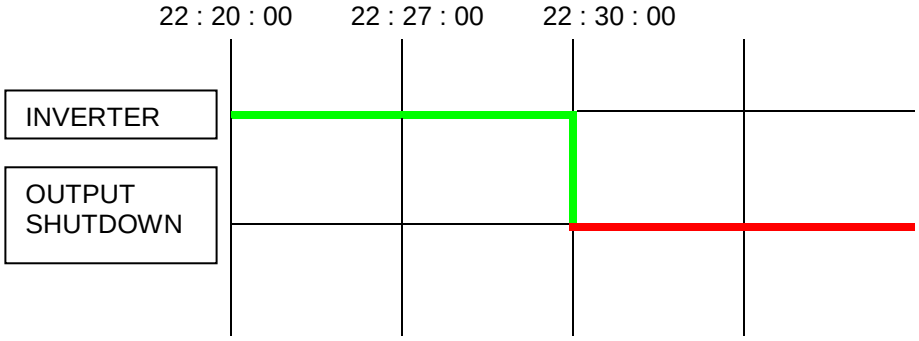


UPS Shutdown Events

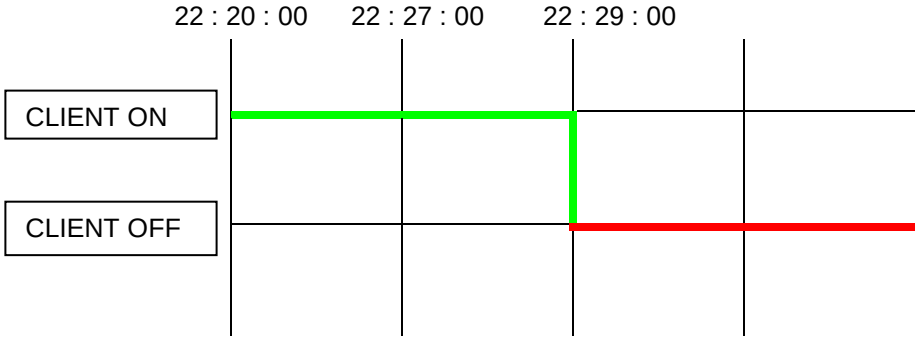
RemotEye II can initiate output shutdown upon the occurrence of six different UPS events, Input Power Failure, Low Battery, UPS Overload, UPS Over Temperature, Recurring Schedule and Non-recurring Schedule. Users can view the current setting of these events on UPS Shutdown Events page in UPS Management menu. To alter these settings, log in as an administrator, and configure the UPS shutdown events action and delay times accordingly. Click the Set Value button when finish. (See Pg. 54 for details)

Scenario:

Shutdown Event:	AC Failed
Status:	Client Shutdown
Delay (Min):	7 (default)
Warning Interval (sec):	30 (default)
UPS Output Shutdown Delay (Sec)	180(default)
UPS Events - AC failed	22:20:00



Client's local shutdown delay (Sec):120(default)



Managing the UPS Recurring & Non-recurring Schedule

RemotEye II supports two output shutdown schedule – (1) Recurring Schedule; (2) Non-recurring Schedule.

Note: Before managing the UPS Shutdown Schedule, please make sure that the Date and Time configured in RemotEye II is correct.

Scenario

Shutdown Event: Recurring Schedule

Status: UPS Output shutdown

Delay (Min): 10(default)

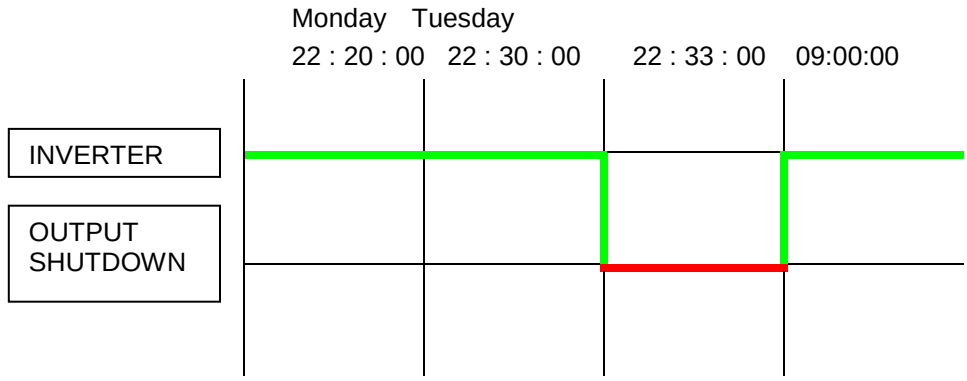
Warning Interval (sec): 60(default)

UPS Shutdown Delay (Sec): 180(default)

Shutdown & Restart day & time: Monday 22:20:00 ----- 99:99:99

Shutdown & Restart day & time: Tuesday 99:99:99 ----- 09:00:00

Note: 99:99:99 indicates the RemotEye II will ignore the Restart Time on Monday, and the Shutdown time on Tuesday.



Multi-Machine Configuration (MMC)

The Multi-Machine Configuration (MMC) software configures and operates the Toshiba RemotEye II Client software for multiple machines. In order to run this software, the RemotEye II Client software must first be installed.

Installation of MMC Software

1. The software for the Multi-Machine Configuration can be located at www.toshibaups.com and clicking on the following paths: RemotEye II-> Download RemotEye Files-> Multiple Configuration
2. Download the software and run the MMC_install.exe program.
3. Once installation is complete, click on MMC.exe to open the program and a window should be displayed like the one shown below.
4.

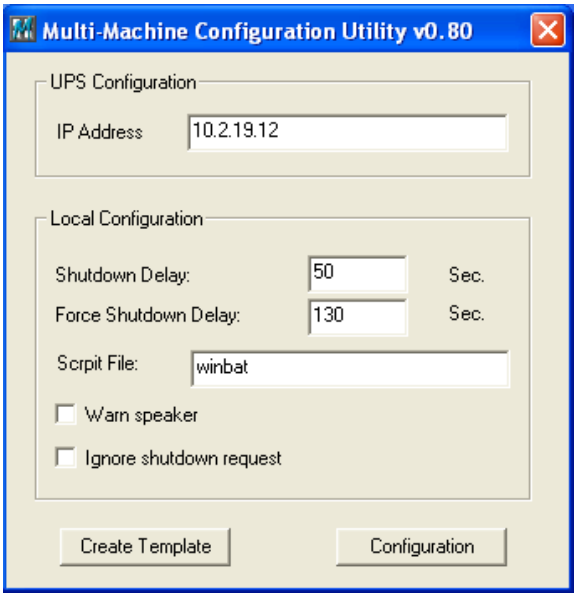


Figure 23: MMC window

Configuration Groups

The Multi-Machine Configuration Utility window shown in Figure 8 contains two configuration groups: UPS Configuration and Local Configuration. These configurations adjust the settings in the RemotEye II Client software.

UPS Configuration
IP Address – allows the user to change the IP Address of the RemotEye II client

Local Configuration
Shutdown Delay – The amount of time after the AC power has been interrupted for proper shutdown of the client side.

Force Shutdown Delay – Amount of time to properly shutdown the computer using the Script File after proper shutdown of the Client.

Script File – File used for proper shutdown of the system.

Warn Speaker – produces a tone along with a warning message to indicate that an error has occurred. The tone will only be produce if the box is checked; otherwise it will display only the warning message.

Ignore shutdown request – Request to shutdown the system. If the box is checked, then the systems will NOT shutdown the system. Otherwise, it will execute shutdown.

Function Button Description

Create Template
Selecting the Create Template button will create a template file according to the configurations of UPS Configuration and Local Configuration. This file should be named as template.ini.

Configuration
Select the Configuration button on the local machine side and the application will begin searching for the location of the file upsconfig.ini. This file is created when the Multi-Machine Configuration is installed on the computer. Once the file is located, it will modify the associated configurations according to template.ini.

Auto Save-Log Software

Save-Log is utility software which is able to save logs from one or more RemotEyes at the same time. It also has the capability to save logs periodically. These logs are useful in identifying problems with the UPS. There are different types of logs, each with their own functionality. Information on these types of logs is found in UPS History page 68.

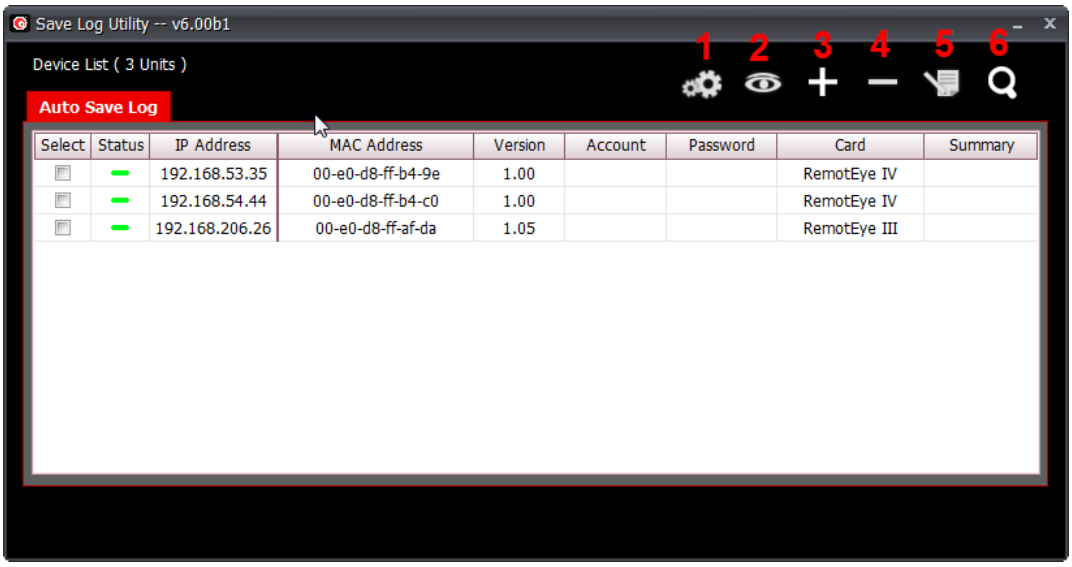
The Auto Save log software will automatically save the RemotEye list and settings. This eliminates having to re-enter the information again after the program is closed or when the workstation running the software is shutdown.

Installation of Save-Log

1. The software for the Auto Save log is loaded on the CD included in the RemotEye package. It also be downloaded from the Toshiba website at www.toshiba.com/ind and clicking on the following path: **RemotEye II → Download RemotEye Files → Save Log**.
2. Download the software from the CD or the internet and run the program **Savelog_install.exe** and follow the setup installation instructions.
3. After installation has finished click on the icon, **TOSHIBA_AutoSaveLog** under the **All Programs** start menu in order to execute.

Basic Layout

When opening the Save Log utility software, it will display a window like the one shown below. This window displays a top row of tabs listing the UPS product lines and an Overview tab.



Toolbar ID	Item Name	Description
1	Save Log Setting	The saving history log settings
2	Browse	Using default browser to open homepage of selected device
3	Add	Pop-up Add dialog to add one device
4	Delete	Delete selected device which one or more
5	Edit	Pop-up Edit dialog to input correct account and password
6	Discover	Discover all devices on the network

Figure 24 Save Log Utility RemotEye – Auto Save Log Tab

Selecting

Unit must be selected then **Save Log Settings**, **Acquire**, **Browse**, **Delete**, **Edit** and **Open File** become available.

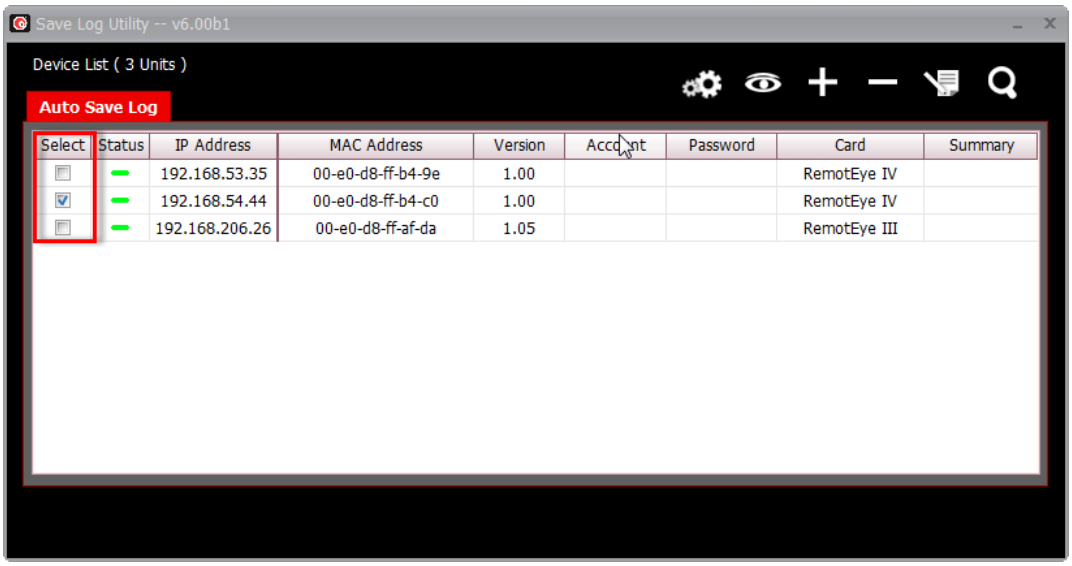


Figure 25: RemotEye Save Log Utility - RemotEye – Selecting

Device List

Display the number of devices in the list.

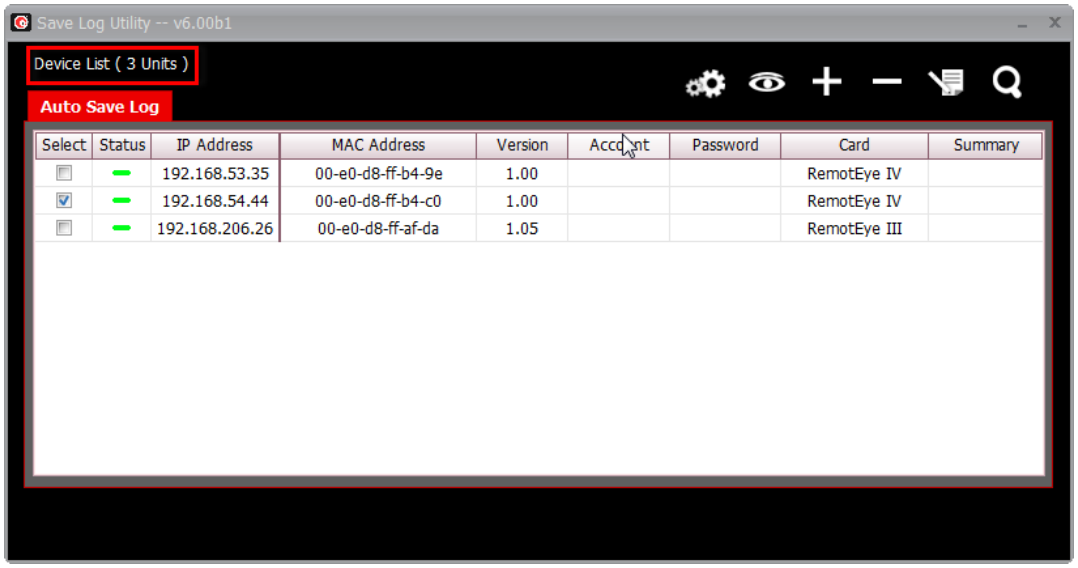


Figure 26: RemotEye Save Log Utility – Device List

Status

Green color indicates good connection and red color indicates disconnect.

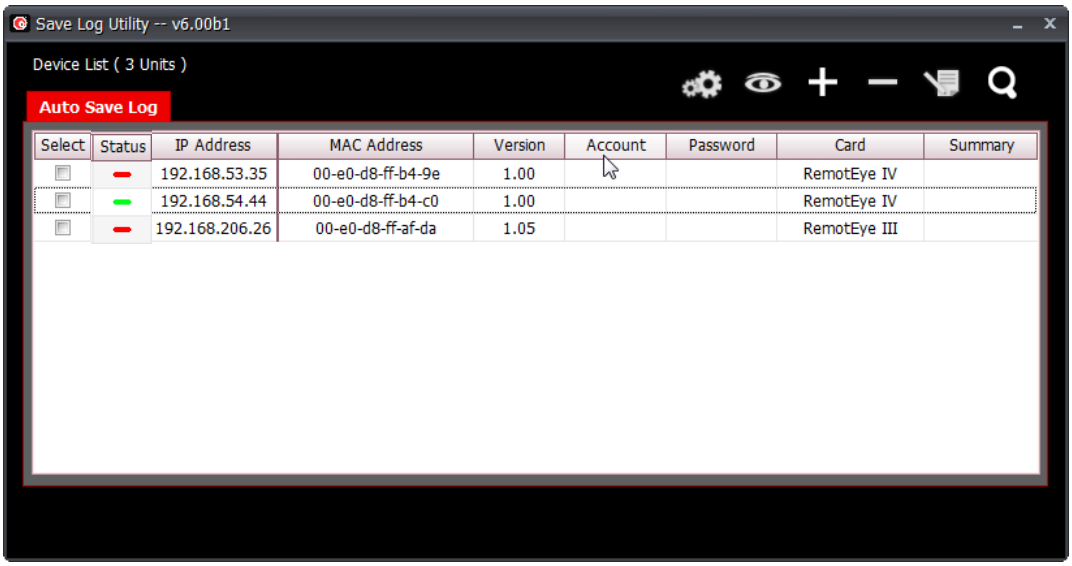


Figure 27: RemotEye Save Log Utility – Status

Save Log Setting

When the unit has been selected and clicked **Save Log Settings** button becomes available.

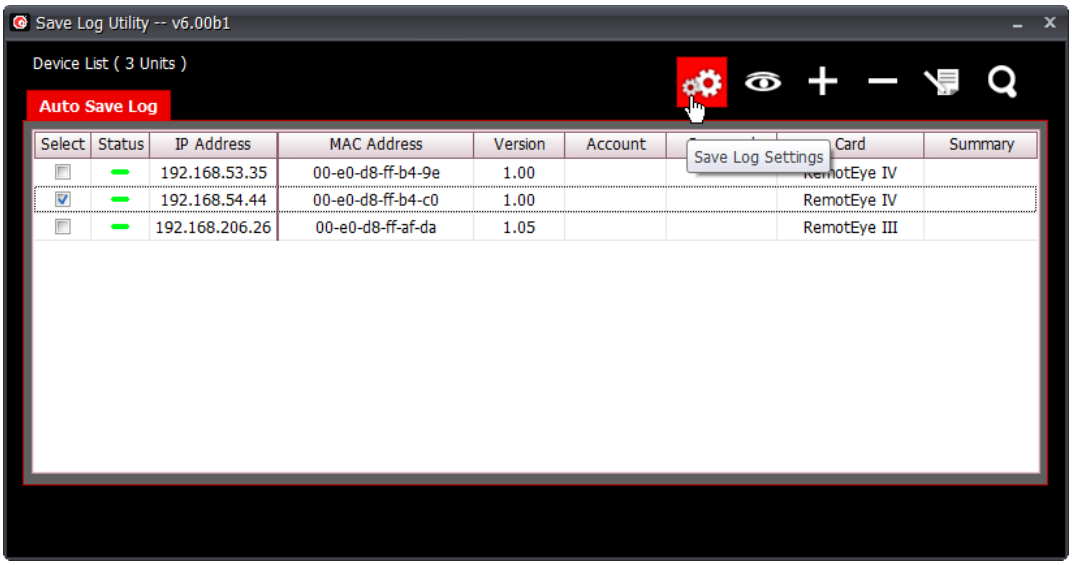


Figure 28: RemotEye Save Log Utility – Settings

Once the Save Log Setting is clicked, the save items will appear. The history logs displayed depends on UPS model selected.

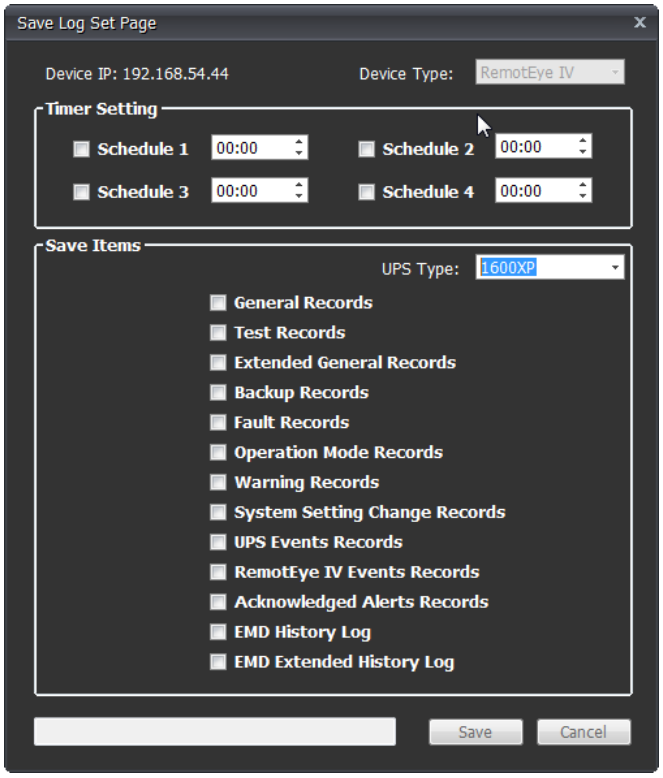


Figure 29: RemotEye Save Log Utility – Set Page

Tupgrade Firmware Tool

General information

To perform a firmware upgrade, the RemotEye II must be connected to the same network as the workstation from which the upgrade file is to be sent. In the RemotEye II make sure the **Network Upgrade** Control is enabled, under **RemotEye II Control**, and that users have the Admin login and Password string information.

Here is the way to manually upgrade RemotEye Firmware:

1) Web Interface: Go to **RemotEye II Management → RemotEye II Control** menu then Enable **Network Upgrade Control**.

1.1. Note: To enable the **Network Upgrade** *user has to change the security level to administrator by logging in as Administrator.*

2) Open the **Tupgrade** application software and click on the **Discover** icon. If no RemotEye units auto populate the list, press on the **+** icon and enter the IP, Username, and Password. If it still does not appear check your network security and your computer firewall.

3) **Select the check box** right next to the RemotEye that will be updated.

4) Select the **Edit** button and enter the Username and Password.

5) Select the **Open File** button and select the firmware to be uploaded.

6) Select the **Upgrade Firmware** button to start the upgrade process.

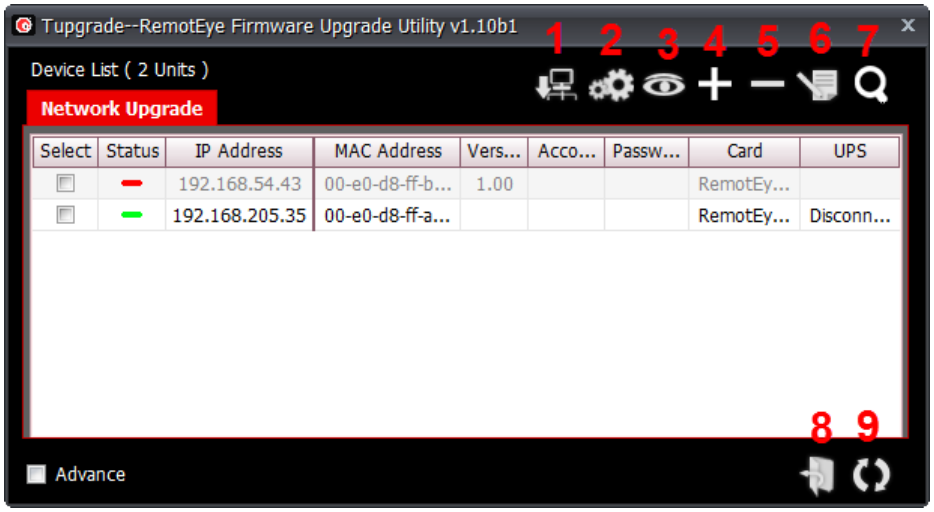


Figure 30: Tugrade Utility – Opening Display

Figure 31: Tugrade Toolbar Functions

ID	Icon Name	Description/Function
1	Set IP	Manually set found device IP address, subnet mask and gateway
2	Acquire	Get all device parameters. This generates a config file.
3	Browse	Use default browser to open homepage of selected device
4	Add	Pop-up *Add* dialog to add one device
5	Delete	Delete one or more selected devices.
6	Edit	Pop-up Edit dialog to modify a device configuration.
7	Discover	Discover all RemotEye devices on the network.
8	Open file	Open the location (directory) of uploaded file.
9	Upgrade Firmware	Upgrade firmware after unit selected and file uploaded

Used in conjunction with the **RemoteConfig** Tool, the Tupgrade Tool can push/save a RemotEye Config file to one or more selected RemotEyes simultaneously, making for a quick system setup.

To save RemotEye II Config file:

1) **Discover** or **Manually** add the RemotEye II to the list.
2) **Select the check box** of the RemotEye II to acquire config file.
3) Press the **Edit** button and enter administrator login credentials.
4) Press the **Acquire** button and select the config file destination.

Load Config file to RemotEye II:

1) **Discover** or **Manually** add the RemotEye II to the list.
2) **Select the check box** of the RemotEye II to load the config file.
3) Press the **Edit** button and enter administrator login credentials.
4) Press the **Open file** button and select the config file to be uploaded.
5) Press the **Upgrade Firmware** button to upload the selected config file.

Upgrading RemotEye II Firmware from UNIX

The RemotEye II firmware may be upgraded from a Unix platform by performing the procedure below. To upgrade the firmware using a UNIX operating system, the tftp command must be installed on the system.

To upload the new firmware to the RemotEye II, execute the following command line:

```
# tftp
tftp> binary
tftp> connect <host>
tftp> put <filename> upgrade@<password>@<username>
```

where:

binary : Binary data download mode.
<host> : RemotEye II IP address.
Example: 172.168.1.18.
put : PUT command.
<filename> : Name of the file containing the firmware image.
Example: \TSB300.bin.
upgrade : Upgrade key word.
@ : Character separator.
<password> : Community Read/Write string.
<username> : HTTP login user name.

Hardware Specifications

RemotEye II/Internal Hardware Specification

CPU	16 bits CPU -100MHZ
Memory	2MB (1Mbit x16) TFBGA Flash ROM, 2MB (1Mbit x16) SDRAM
Network Controller	10/100 Mbits Ethernet Controller
Network Connection	RJ-45 Connector
Serial Communication	Two Asynchronous Serial Ports
Serial Connection	One RJ45 Connector to Network One Golden Figure to UPS
RTC	Battery Backup RTC
DIP Switch	Two Dip-switch for configuration SW1 SW2 OFF OFF = Normal ON OFF = Firmware Upgrade OFF ON = Debug Mode ON ON = MFG Mode
LED	Power (Green) Status (Amber) LAN 10 Link/Activity (Amber) LAN 100 Link/Activity (Green)
Jumpers	Clear Password
Reset Button	Reset System
UPS Protocol	Toshiba UPS Communication Protocol
Network Protocol	SNMP over UDP/IP HTTP over TCP/IP ARP,RARP,TFTP and ICMP
Supported MIB	MIB_II TOSHIBA V2.50 MIB RFC 1628 MIB
Operating Temperature	0 ~ 40° C
Operating Humidity	10 ~ 80 %
Power Input	+7V ~ 16VDC
Power Consumption	3.0 Watts Maximum +7V DC 1.11 Watts +12V DC 1.26 Watts
Size	130 mm x 60 mm (L x W)
Weight	80 gm
Regulatory	FCC class A CE class A

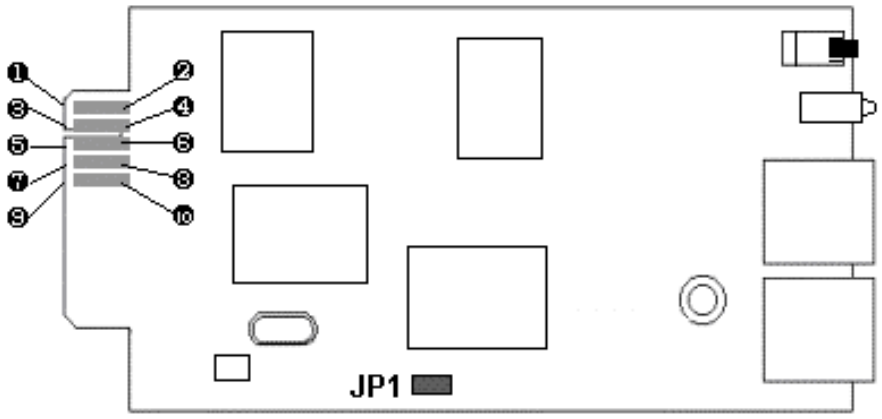


Figure 32: RemotEye II/Internal Top View

Pin Assignment

Bottom Side		Component Side	
Pin 1	GND	Pin 2	DC (7-16V)
Pin 3	Txd_UPS	Pin 4	Rxd_UPS
Pin 5	NC	Pin 6	NC
Pin 7	NC	Pin 8	Short to pin 10
Pin 9	GND	Pin 10	Short to pin 8

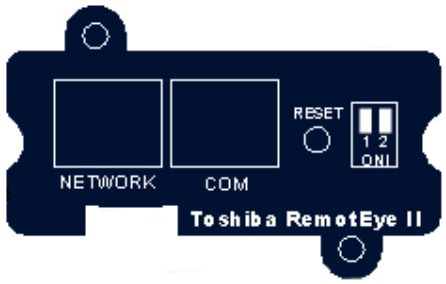


Figure 33: RemotEye II/Internal Front View

DIP-Switch Description

No.	SW1	SW2	Function Mode
1	ON	ON	Manufacture Diagnostic Mode
2	OFF	ON	Debug Mode
3	ON	OFF	Firmware Upgrade
4	OFF	OFF	Operating Mode

LED Indicator

No.	Green LED	Amber LED	Function Mode
1	Solid ON	Solid OFF	Normal operation
2	Flashing	Solid OFF	Ethernet traffic
3	Solid OFF	Flashing	IP address is default value
4	Solid ON	Solid ON	RemotEye II/Internal error
5	Solid OFF	Solid OFF	UPS power low
6	Flashing	Flashing	No connection to UPS
7	Solid ON	Flashing	Upgrade Mode

RemotEye II/External Hardware Specification

CPU	16 bits CPU -100MHZ
Memory	2MB (1Mbit x16) TFBGA Flash ROM, 2MB (1Mbit x16) SDRAM
Network Controller	10/100 Mbits Ethernet Controller
Network Connection	RJ-45 Connector
Serial Communication	Two Asynchronous Serial Ports
Serial Connection	One RJ45 Connector to Network One Golden Figure to UPS
RTC	Battery Backup RTC
DIP Switch	Two Dip-switch for configuration SW1 SW2 OFF OFF = Normal ON OFF = Firmware Upgrade OFF ON = Debug Mode ON ON = MFG Mode
LED	Power (Green) Status (Amber) LAN 10 Link/Activity (Amber) LAN 100 Link/Activity (Green)
Jumpers	Clear Password
Reset Button	Reset System
UPS Protocol	Toshiba UPS Communication Protocol
Network Protocol	SNMP over UDP/IP HTTP over TCP/IP ARP,RARP,TFTP and ICMP
Supported MIB	MIB_II TOSHIBA V2.50 MIB RFC 1628 MIB
Operating Temperature	0 ~ 40° C
Operating Humidity	10 ~ 80 %
Power Input	+7V ~ 16VDC
Power Consumption	3.0 Watts Maximum +7V DC 1.11 Watts +12V DC 1.26 Watts
Size	137mm x 87mm x 29mm (L x W x H)
Regulatory	FCC class A,UL,CUL,CE

Figure 32: RemotEye II/External Front View

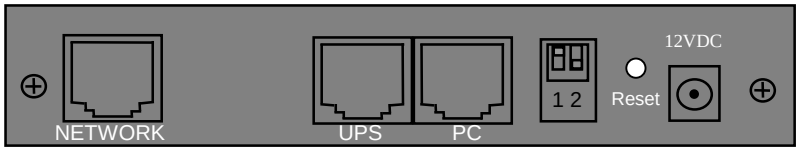


Figure 33: RemotEye II/External Back View

DIP-Switch Description

No.	SW1	SW2	Function Mode
1	ON	ON	Manufacture Diagnostic Mode
2	OFF	ON	Debug Mode
3	ON	OFF	Firmware Upgrade
4	OFF	OFF	Operating Mode

LED Indicator

N	Status	Traffic	Function Mode
1	Solid	Solid ON	Normal operation
2	Solid	Flashing	Ethernet traffic
3	Flashing	Solid OFF	IP address is default
4	Solid ON	Solid ON	RemotEye II/External
5	Solid	Solid OFF	UPS power low
6	Flashing	Flashing	No connection to UPS
7	Solid ON	Flashing	Set-up mode

Cables Definition

The UPS Cable of RemotEye II/External

Ite	Description	RJ4	DB9(Male
1.	Ready to Send	1	
2.	Transmitted	3	2
3.	Signal Ground	4	5
4.	Chassis Ground	5	Case
5.	Received Data	6	3
6.	Clear to Send	8	-

Note: Pin 2 and pin 7 of the RJ45 connector are connected internally.

The PC Cable of RemotEye II/External & RemotEye II/Internal

Item	Description	RJ45	DB9(Female)
1.	Ready to Send	1	-
2.	Transmitted Data	3	2
3.	Signal Ground	4	5
4.	Chassis Ground	5	Case GND
5.	Received Data	6	3
6.	Clear to Send	8	-

Note: Pin 2 and pin 7 of the RJ45 connector are connected internally.

Appendix A: RemotEye II/III Client Shutdown software on VMware ESXi 5

The following steps detail how to install and configure the Remote Shutdown Client software to work with ESXi servers. Figure 0-1 shows an array of ESXi servers hosting a variety of Guest OS which are shut down gracefully by the vMA Guest which is controlled by the RemotEye.

Software Needed

Toshiba Provided:

- RemotEye II Firmware v4.10 or higher
- RemotEye III
- RemotEye 4 with firmware v1.00 or higher.
- RemotEye ESXi Client Shutdown Daemon (TAR file)

Customer Provided:

- ESXi 5 OS (Operating System) – Full or Evaluation Version (not the Free version)
- VMware vSphere Client for Windows (Allows Windows access to ESXi)
- vSphere Management Assistant (vMA) Operating System
- WinSCP
- Basic knowledge of UNIX/Linux commands

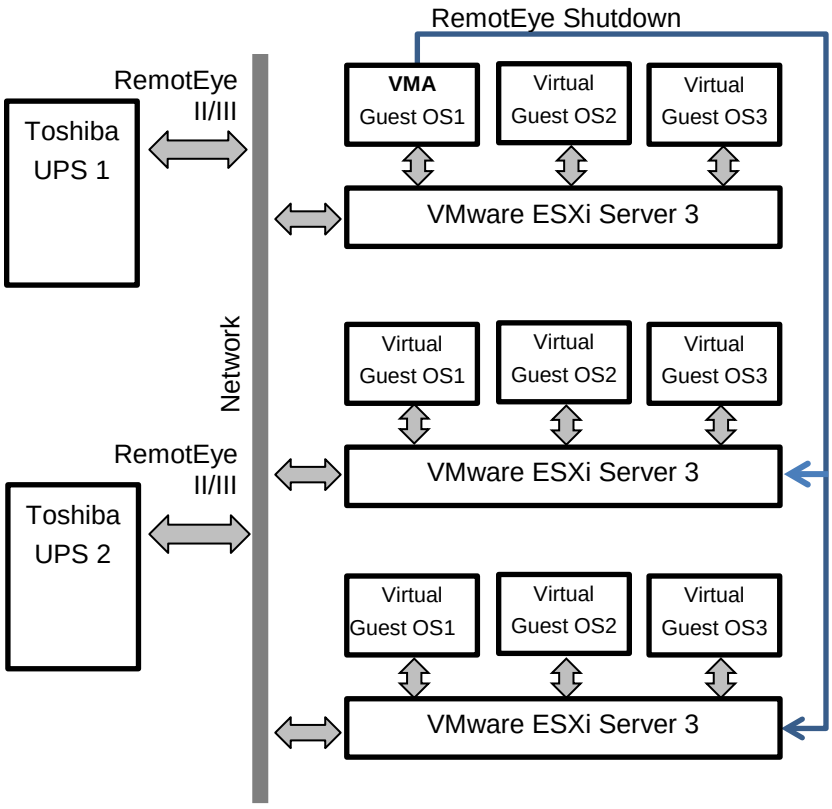


Figure 0-1 Network with RemotEye and ESXi Servers

Setup Procedure for RemotEye ESXi Client Shutdown Daemon*

** Daemon – A program on Unix/Linux-like operating systems that runs unobtrusively in the background, waiting to be activated by the occurrence of a specific event or condition.*

2. Confirm that ESXi is a Full or Evaluation version. (The Free version does not support this function.)
3. If vMA is already installed in ESXi skip to Step 7. Otherwise, download vMA OS (SUSE OS) from the Downloads section of the VMware website, www.vmware.com.
4. Install vMA OS (SUSE OS) on ESXi server by navigating to **File > Deploy OVF Template** and follow the instructions.
5. Run vMA OS.

Note: Default username is **vi-admin**. When prompted for the password, just press the **Enter** key.

6. Change the vMA settings. Ensure RemotEye has access to the vMA network. (Example: Assign the IP to 10.2.0.11)
7. Create the Super User password:
   - 7.1. Type "**sudo passwd"** into the command line prompt and press **Enter**. Follow the instructions to create the root password.
   - 7.2. Type "**su root"** into command prompt and press **Enter.** Follow the instructions to log in as root. Note: When logged in as Super User, text color turns **RED**. (See Figure 0-2)

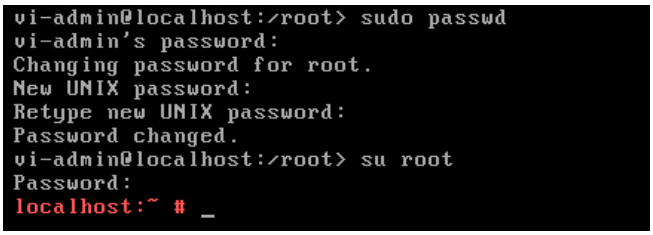


Figure 0-2 Text turns RED in Super User Mode

8. Add the server to vMA using "**vfip addserve**r [ESXi Server IP]", then enter the ESXi password. (Example: IP=10.1.10.220) (See Figure 0-3)

Figure 0-3 Add Server to vMA

9. Confirm ESXi was added to vMA: On the command line type "**vifp listservers**" and press **Enter.** The command returns: **10.1.10.220 ESXi** (See Figure 0-4)

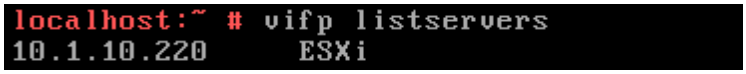


Figure 0-4 ESXi Added to VMA

10. Enable SSH in vMA (if not Enabled).
    - 10.1. On the command line prompt type: "**vi /etc/hosts.allow**" and press **Enter**.
    - 10.2. Type "**I**" and press **Enter**. (edits file)
    - 10.3. Type "sshd: ALL: ALLOW" and press Enter.
    - 10.4. Press the **ESC** key.
    - 10.5. Type "**w**" and press **Enter**. (writes to file)
    - 10.6. Type "**q**" and press **Enter**. (exits file)
11. Connect to vMA using WinSCP software to transfer the RemotEye Client shutdown software.

11.1. Open WinSCP and select either SFTP or SCP for the file protocol, and enter the vMA IP address/**Host Name**, **User name**, and **Password**. (Example: **Host Name** - 10.2.0.11.) Then click the **Login** button. (See Figure 0-5)

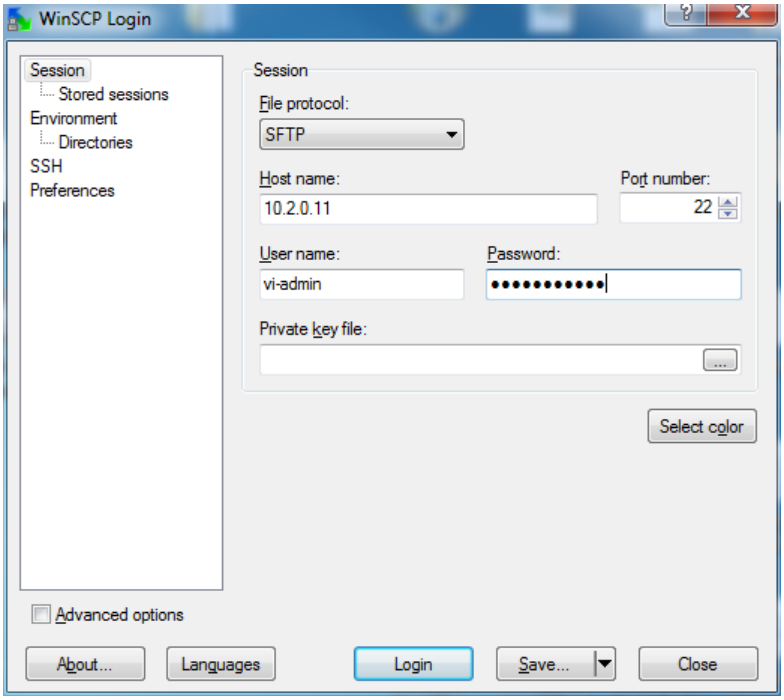


Figure 0-5 WinSCP Login Screen

11.2. Locate **SD_ESXi_TSB_V100.tar** file (left side), then select the directory where you want it stored on the vMA (right side) and press the **F5** key. (See Figure 0-6)

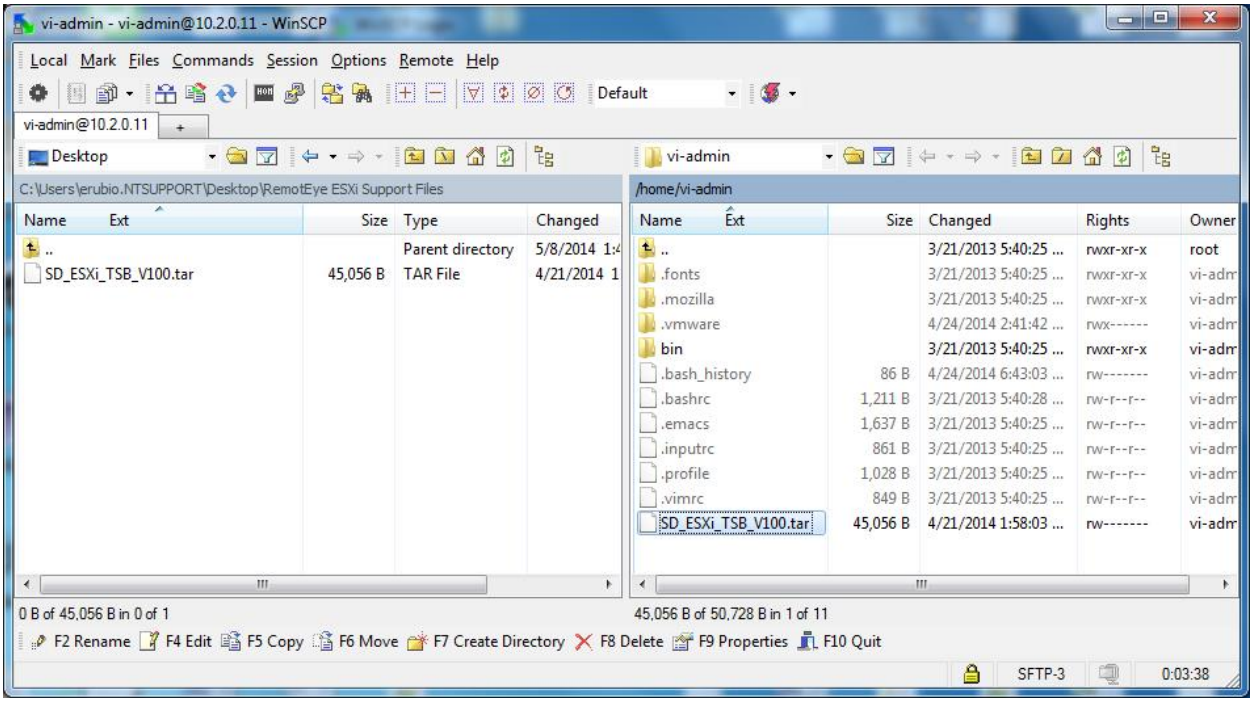


Figure 0-6 WinSCP vi-admin Screen

11.3. Close WinSCP program.

12. Return to the vMA command prompt and change the directory where the **SD_ESXi_TSB_V100.tar** was placed in step 10.
13. Extract the software: Type "**tar xvf SD_ESCi_V100.tar**" in the command prompt and press **Enter**.
14. Go to the newly created folder SD_ESXi_TSB: Type "**cd SD_ESXi_TSB**" and press **Enter**.
15. Install the software: Type "**sh install.sh**" in the command prompt and press **Enter**. Follow the instruction prompts. (See Figure 0-7)

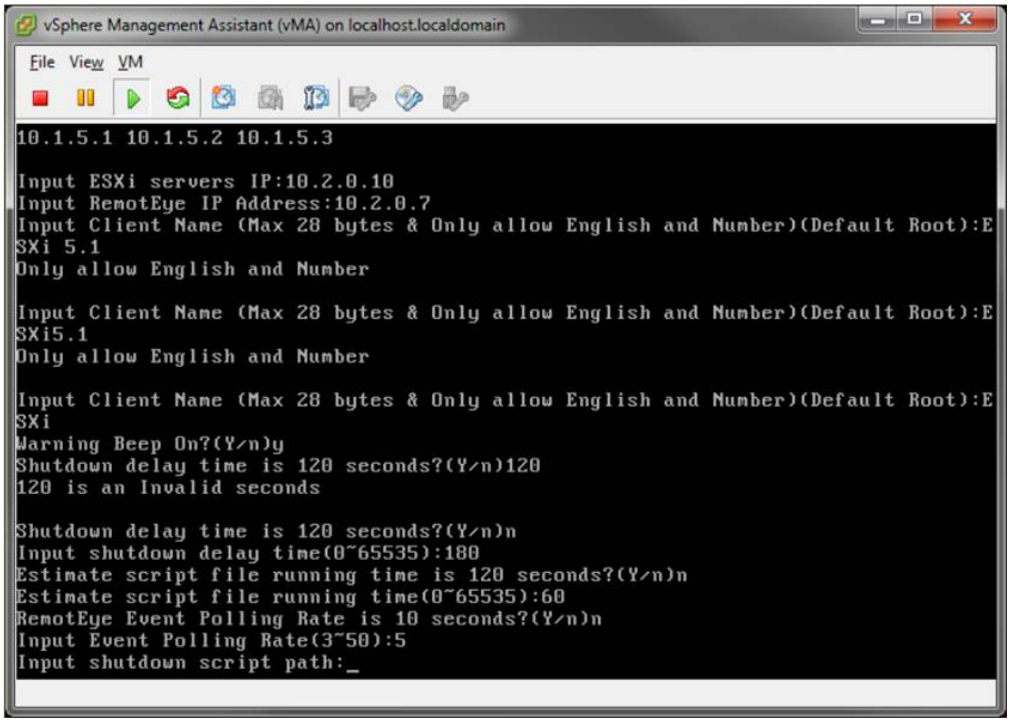


Figure 0-7 Install Screen Shot

16. Verify that RemotEye and ESXi server are communicating. Go to RemotEye web interface and look for the "**Connected Client Table**" web page. Open the **Connected Client Table** web page. (See Figure 0-8)

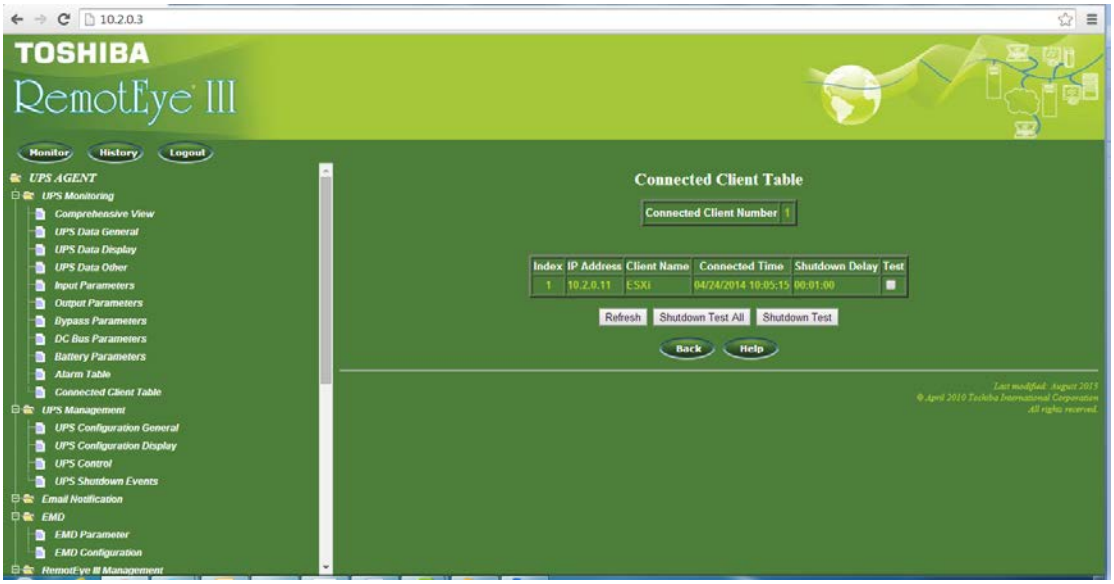


Figure 0-8 Connected Client Table in RemotEye III

17. Go back to **VMware vSphere Client** program and select the **ESXi server IP address** -> **Configuration** -> **Virtual Machine Startup/Shutdown** -> **Properties…** to set up Client OSs (guests) to shut down before the vSphere Management Assistant (vMA) as shown in Figure 0-9.

    17.1. Make sure that the check box for **Allow virtual machines to start and stop automatically with the system** is checked and the **Shutdown Action** is set to **Guest Shutdown**. (See Figure 0-9)

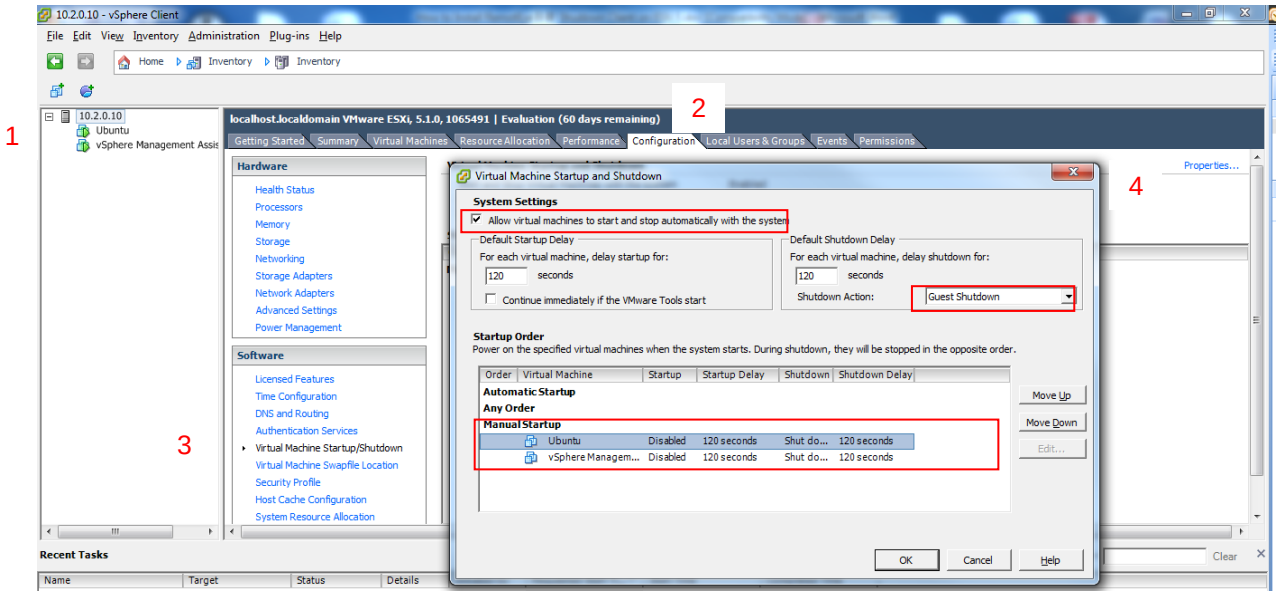


Figure 0-9 vSphere Management Asistant Screen Shot

18. Install WMware Tools for the client OSs by going to Inventory -> Virtual Machine -> Guest -> Install/Upgrade VMware Tools.
19. Enter UPS Shutdown Events in RemotEye. This designates those UPS Events whose occurrence trigger the RemotEye to send the shutdown command to the ESXi server.

    19.1. Open RemotEye II/III and click on UPS Agent > UPS Management > UPS Shutdown.

19.1.1. In the UPS Shutdown Events table, select the action (Disable, Client Warning, or Client Shutdown) and Shutdown Delay (if applicable), for each event listed in the UPS Event column. (See and Figure 0-10 and Figure 0-11)

19.1.2. Click the **Set Values** button when completed.

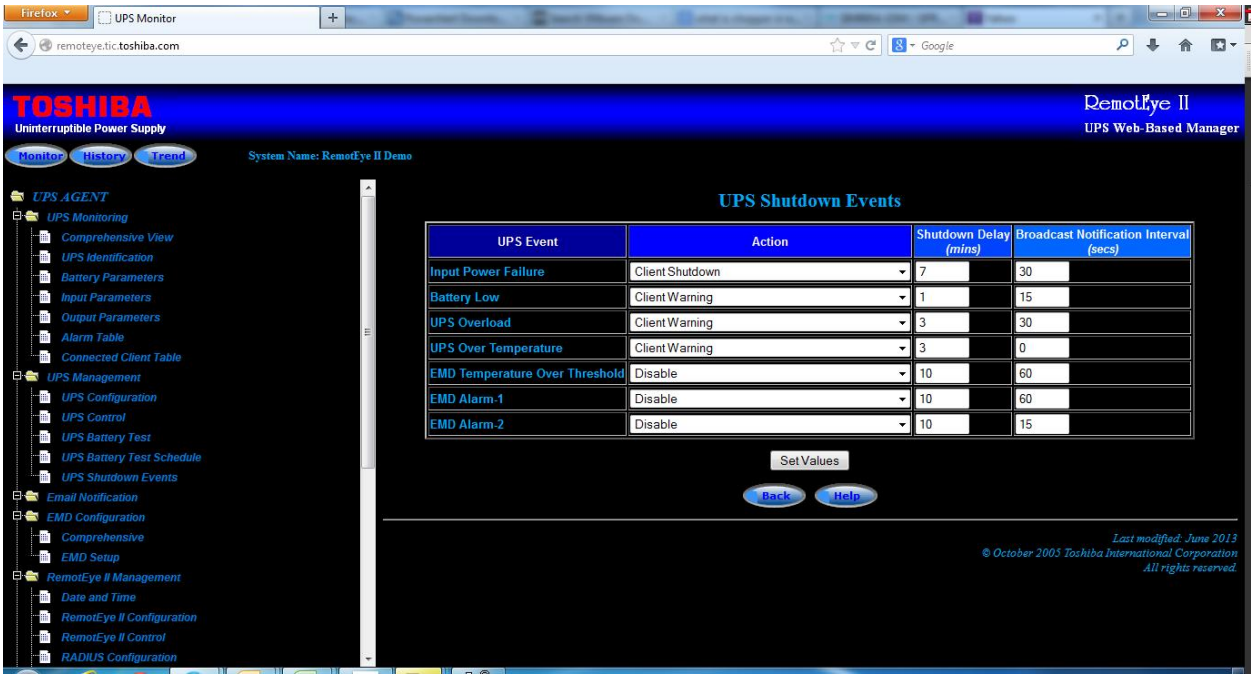


Figure 0-10 RemotEye II UPS Shutdown Events Table

Figure 0-11 RemotEye III UPS Shutdown Events Table

20. Test it. (See Figure 0-12)

NOTE: Testing the SHUT DOWN function will shut down all affected servers.

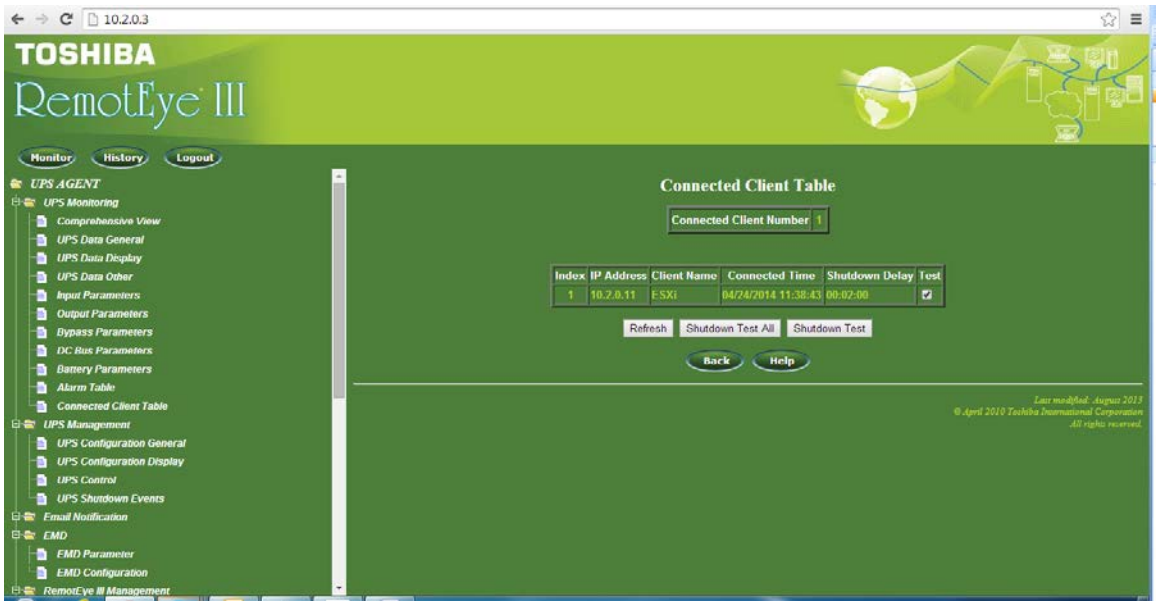


Figure 0-12 RemotEye III Main Display with Shutdown Test Buttons

TOSHIBA

TOSHIBA INTERNATIONAL CORPORATION

INDUSTRIAL DIVISION

13131 West Little York Road, Houston, Texas 77041
Tel 713/466-0277 Fax 713/466-8773
US 800/231-1412 Canada 800/872-2192 Mexico 01/800/527-1204
www.toshiba.com/ind/