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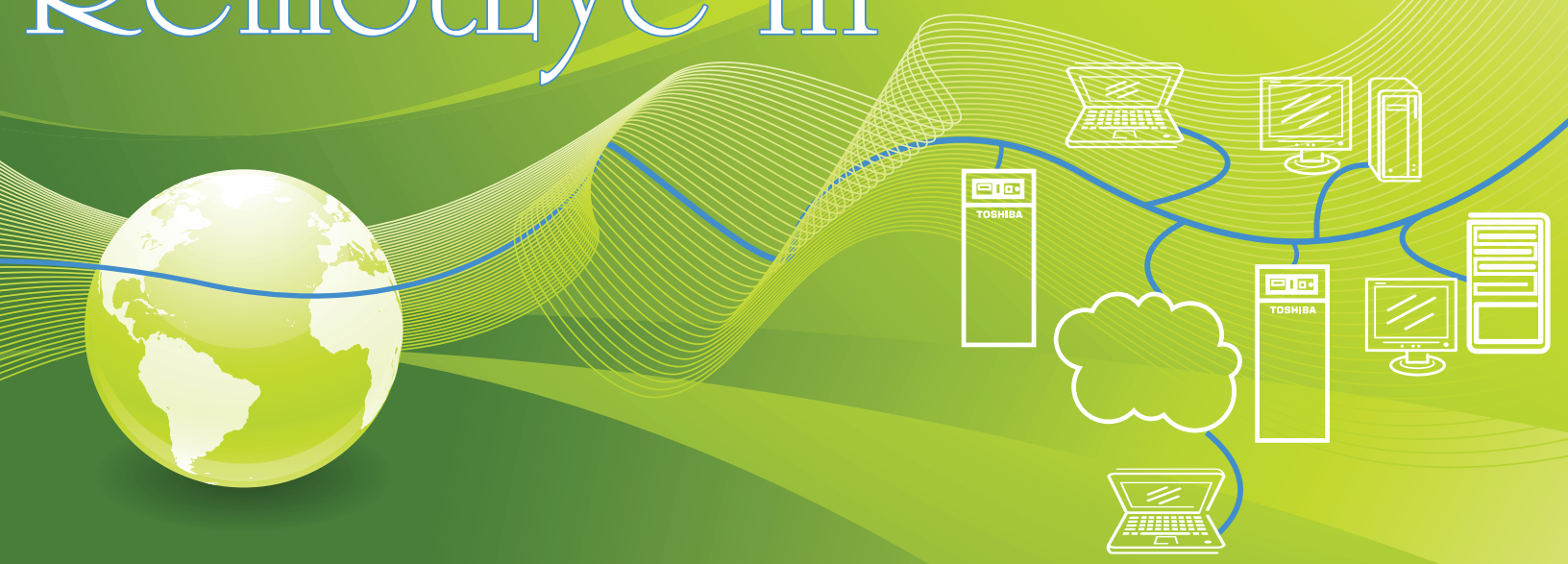
RemotEye® III



www.toshibaups.com

RemotEye® III

User Manual
Document Number: 62330-005
August 2015

8/15/15

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 III 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 III 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 III 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 6 p.m. (CST), Monday through Friday.

Email us at: *toshibaups1@tic.toshiba.com*

You may also contact TOSHIBA by writing to:

TOSHIBA International Corporation - UPS
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.

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 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.

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.

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 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.

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.

Table of Contents

Introduction

Congratulations on the purchase of your new Toshiba Uninterruptible Power Supply (UPS) system remote management tool: the RemotEye III! The RemotEye III 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), Modbus TCP, and Hypertext Transfer Protocol (HTTP) methods.

This user manual describes the configuration and operation of the RemotEye III. The RemotEye III is a circuit board that is inserted into the option slot of the UPS. The circuit board is connected to the UPS via the RemotEye III card edge connector.

Package Contents

Listed below are the items included in the RemotEye III package:

1. The RemotEye III printed circuit board.
2. PC cable, a DB9 female to RJ45 cable (Workstation COM port to RemotEye III COM port).
3. A CD-ROM containing the following:
    a. The RemotEye III Quick Installation Guide.
    b. RemotEye III User Manual
    c. 1600XP Mib File
    d. 4200FA/4300 Mib File
    e. RemotEye III Firmware Upgrade Utility Software Tool
    f. Shutdown Clients Software
    g. Auto-Save Log Utility Software Tool

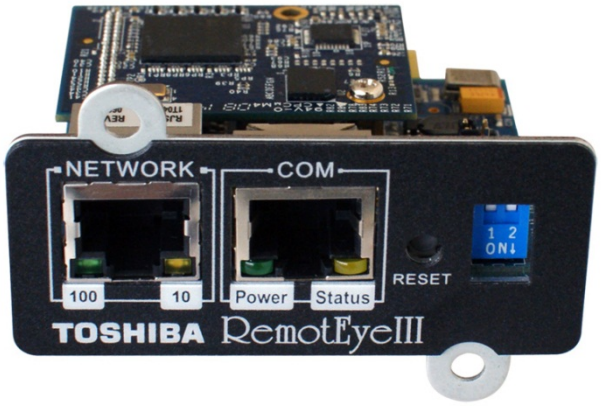


Figure 1: RemotEye III Circuit Card

Features

The RemotEye III has several support options for managing your Toshiba UPS.

HTTP Web Access

Allow access data from RemotEye III publicly or privately using a web browser. Web access includes Secure Sockets Layer (SSL) Configurations (See Figure 2: HTTP Web Access Example).

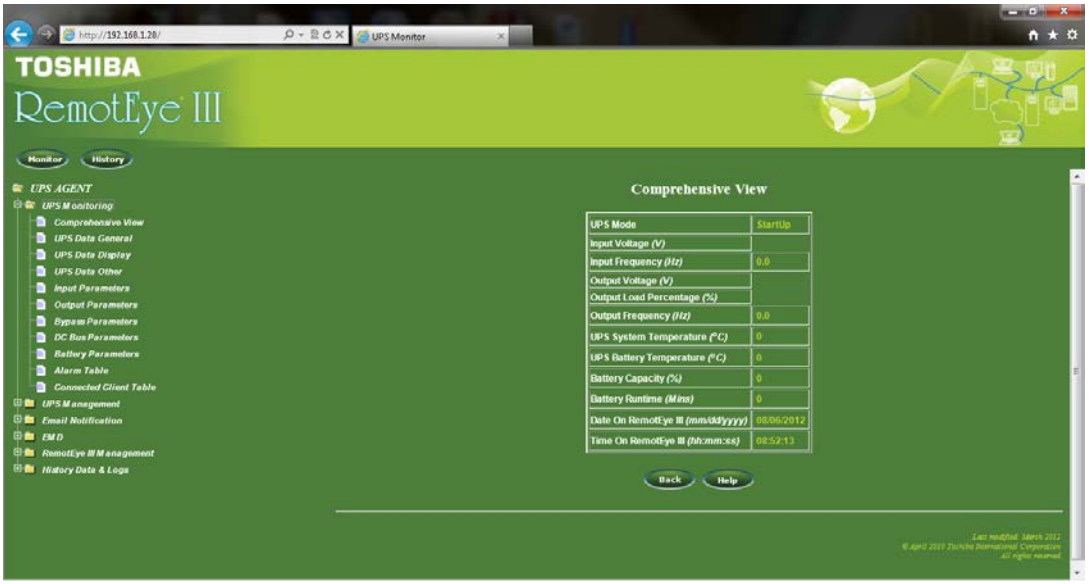


Figure 2: HTTP Web Access Example

SNMP Access

RemotEye III provides enhanced SNMP security with option of SNMPv3, default protocol is SNMPv1. It is compatible with the United States Standard UPS MIB, RFC1628, and Japanese Standard UPS MIB (See SNMP example using iReasoning MIB Browser Software in Figure 3: SNMP Access Example).

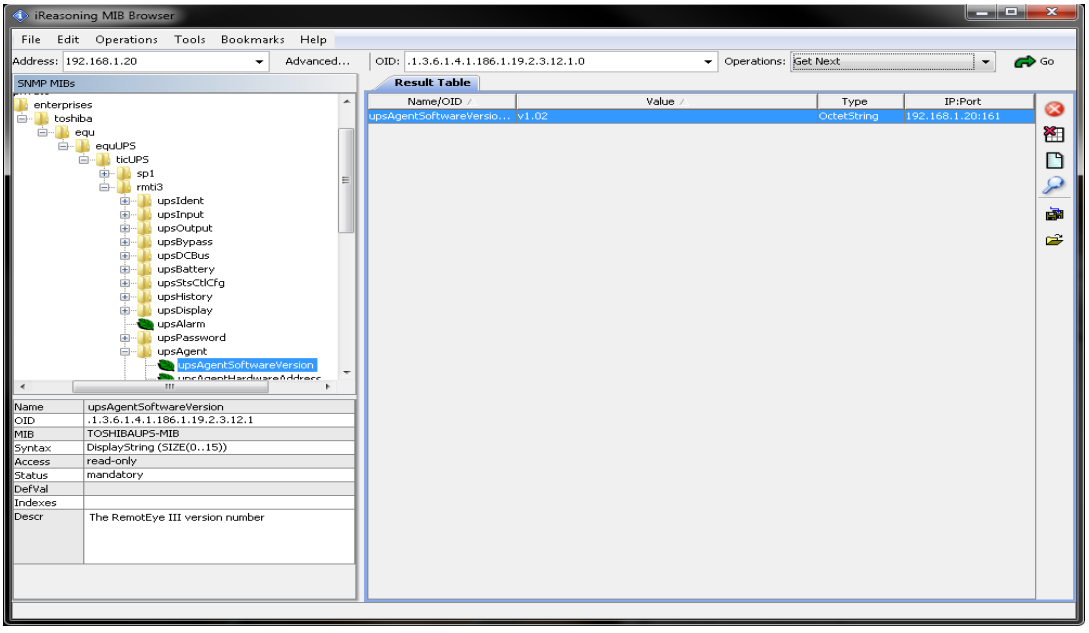


Figure 3: SNMP Access Example

Serial Communication (RS232), Terminal Access

Allow access RemotEye III configuration settings through a Terminal Emulator Software for example, HyperTermnianl or Tera Term (See Figure 4: Serial Communication Example).

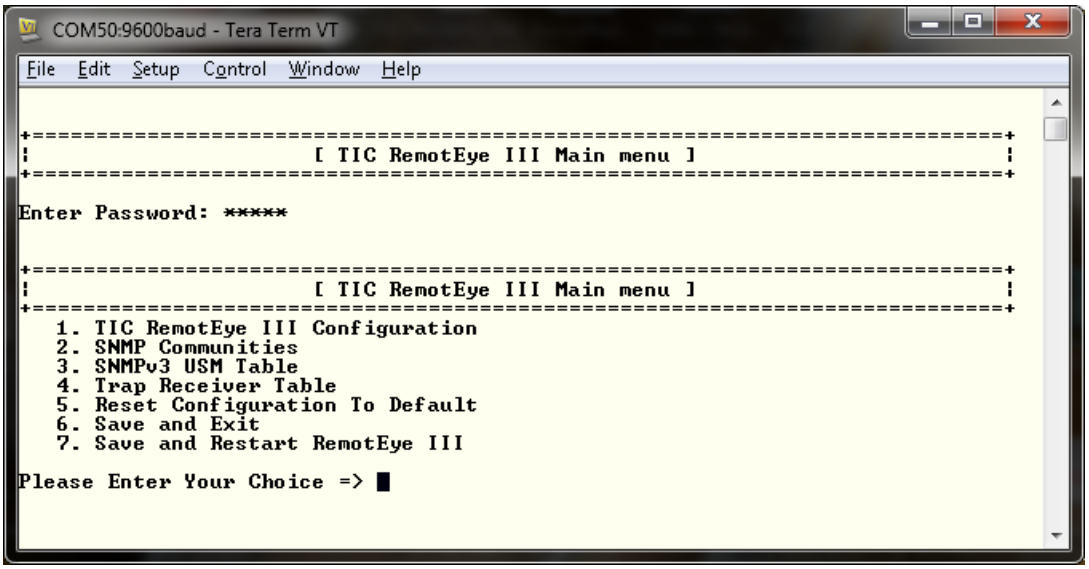


Figure 4: Serial Communication Example

Telnet, Terminal Access

Allow access to RemotEye III configuration settings through Telnet which includes Secure Shell (SSH) protocol. This can be done using a Terminal Emulator Software such us HyperTerminal or Tera Term (See Figure 5: Telnet Access Example).

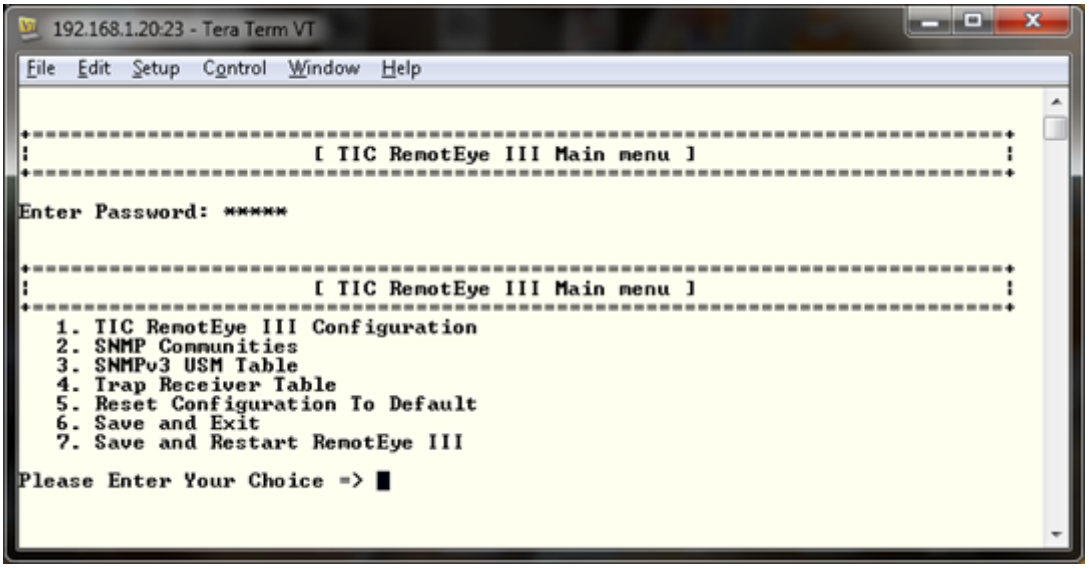


Figure 5: Telnet Access Example

Additional Features:

BOOTP/DHCP Requests

The RemotEye III can automatically retrieve its network identity, IP address, from a network server using the Boot Protocol (BOOTP) or Dynamic Host Configuration Protocol (DHCP).

Real-Time Clock (RTC)

The RemotEye III contains its own RTC which is used for time-stamping data logs and for executing any scheduled events.

UPS Event Notification

The RemotEye III can send out notification of UPS events via Email or SNMP Traps.

UPS Event Notification Filtering

The administrator has the ability to configure which event notifications to receive via Email or SNMP Traps, and which to filter out. NOTE: When configuring the filtering settings, it will affect both Email notifications and SNMP Traps.

Graphic User Interface (GUI)

User-friendly GUI on the web interface pages and Java applets.

Power Quality Monitor

Java applets provide an on-screen visual indication of power quality through its dynamic graphics (See Figure 6: Java Applet Example).

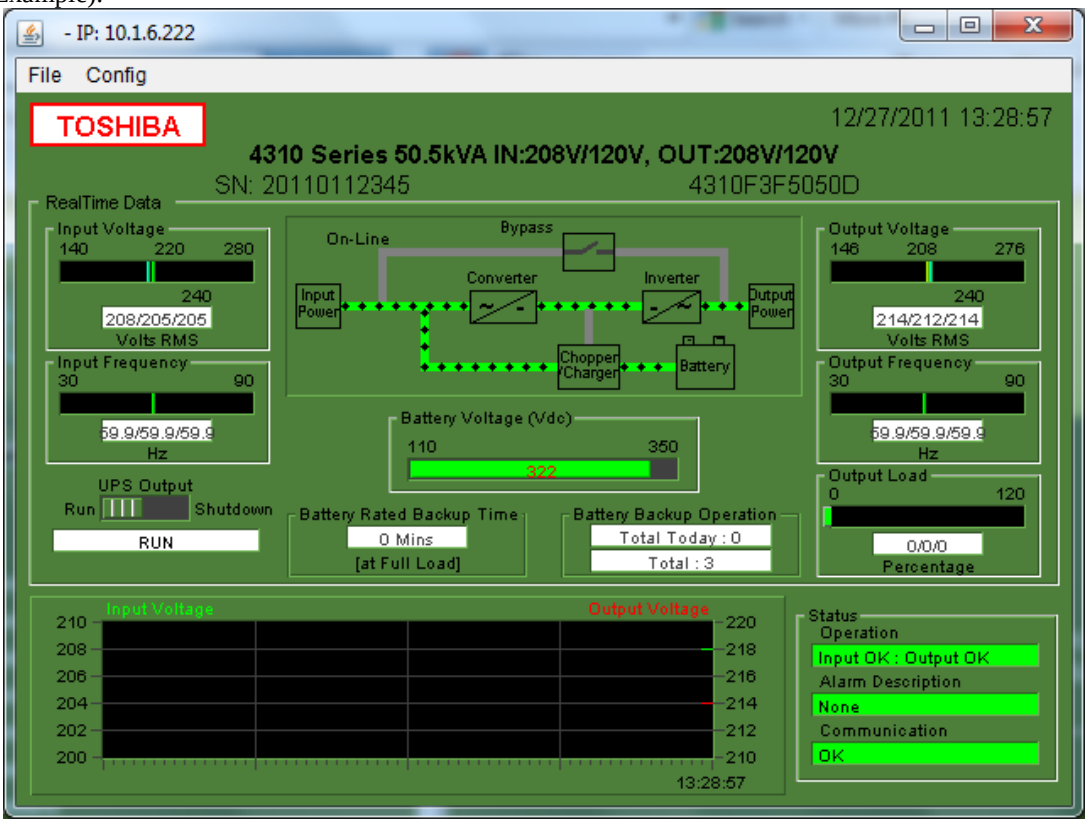


Figure 6: Java Applet Example

Versatile Remote UPS Management

Allow monitoring and management of Toshiba UPS via SNMP and HTTP (Web Interface) communication protocols.

Versatile UPS Configuration

RemotEye III has the ability to set the UPS parameters from any SNMP management station or through internet web browsers using HTTP protocol.

Data Log Retention

RemotEye III stores history file containing UPS power events, power quality, UPS status, and battery condition in its non-volatile memory.

Automatic UPS Shutdown

The RemotEye III provides unattended and on-demand UPS shutdown; either pre-programmed or when the UPS reports a low battery condition, input power failure, overload condition, overheating condition, weekly schedule, special events, and EMD (Environmental Monitoring Device) sold separately, triggered events. NOTE: this feature only available for the 1600XP.

RADIUS Authenication

Allows the RemotEye III to work with a centralized RADIUS server before allowing the user to access monitor or manage the Toshiba UPS.

Additional Software Applicaitons:

Network Firmware Upgrade Tool

RemotEye III Firmware Upgrade Utility is an easy to use network upgrade utility tool that allows user to upgrade to a newer firmware version when available.

Auto Save Log Tool

RemotEye III Save (Auto) Log Application Program is an easy to configure utility tool that allows administrators to automatically save history logs from one to multiple RemotEye IIIs at the same time to a computer's hard drive.

Toshiba Client Shutdown Software

RemotEye III Windows Clients Shutdown Program is software that is installed onto the client's computer system. This allows the RemotEye III to communicate with the Client Software to broadcast system failure messages via an IP (Internet Protocol) packet and to perform unattended graceful shutdown of up to 250 clients operating under a variety of platforms.

RemotEye III Add-Ons:

Environmental Monitoring Device (EMD) (Sold Separately)

The EMD gives the ability for the RemotEye III to monitor environmental temperature and humidity. It also provides two dry contact closures, which can be used with our RemotEye Sensor Pack (sold separately), that can be set for normally open, normally closed, active high, or active low conditions. When an EMD event is triggered the RemotEye III can send an email notification and SNMP Trap with the description of the event (See Figure 7: EMD Module).

Figure 7: EMD Module

RemotEye Sensor Pack for EMD (Sold Separately)

This sensor package extends the EMD monitoring capabilities (See Figure 8: EMD Sensor Pack). The sensor package consists of the following:

1. Intrusion Sensor
2. Vibration Sensor
3. Water Sensor
4. Smoke Detector Sensor

Please contact Toshiba directly or a Toshiba vendor for more information.

Figure 8: EMD Sensor Pack

RemotRadar Software (Sold Separately)

Is a real-time monitoring solution software application that allows monitoring up to 5,000 RemotEye II/IIIs all at-once (See Figure 9: RemotRadar Example). It also has the ability to send SMS and Email notifications when an event occurs to one of the Toshiba UPS. Please contact Toshiba directly or a Toshiba vendor for more information.

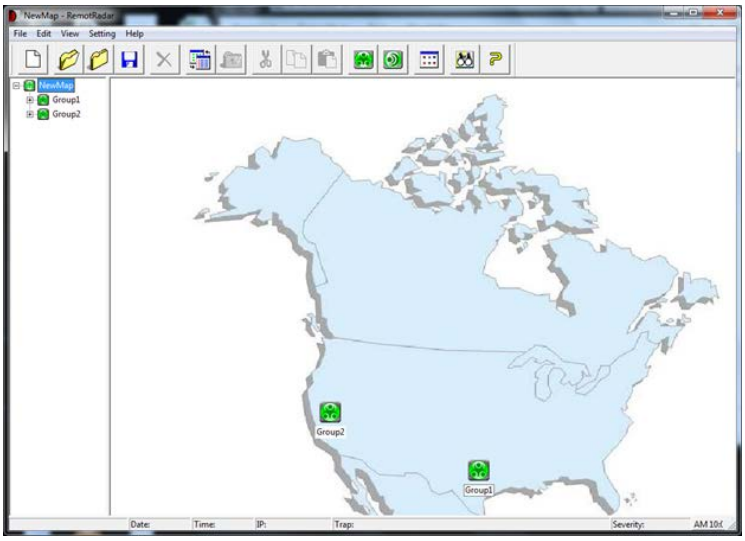


Figure 9: RemotRadar Example

Installation

System Compatibility

The RemotEye III works with 1600XP, 4200FA, and 4300 Series Toshiba UPS system family:

Installing RemotEye III

Follow these steps to install the RemotEye III card.

1. Turn the UPS off using the proper shutdown procedure as explained in the UPS manual.
2. Slide the RemotEye III printed circuit board into the extension option slot of the UPS.
3. Secure the printed circuit board using the UPS supplied screws.(See Figure 10: RemotEye III Location in 1600XP UPS, Figure 12: RemotEye III in 4300 UPS)

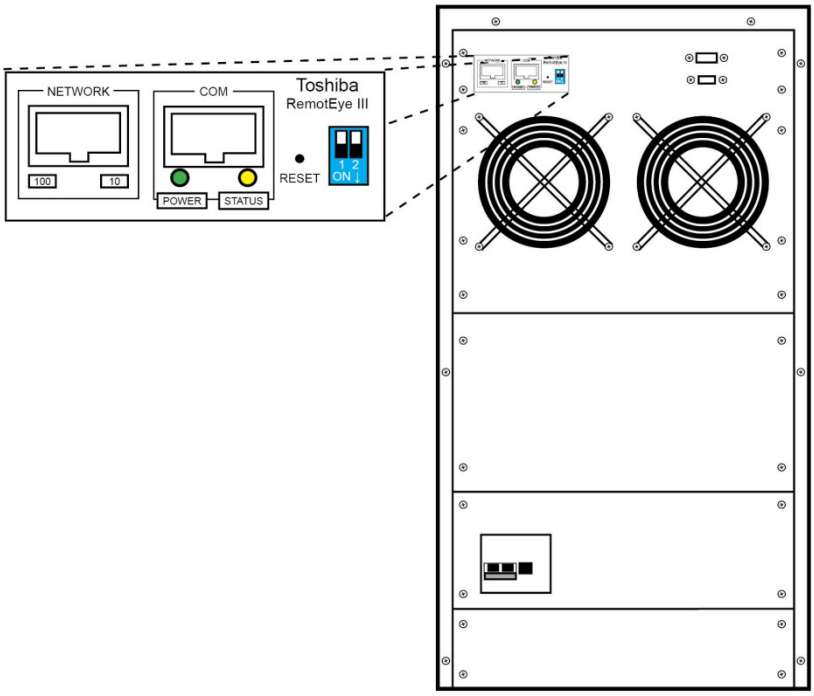


Figure 10: RemotEye III Location in 1600XP UPS

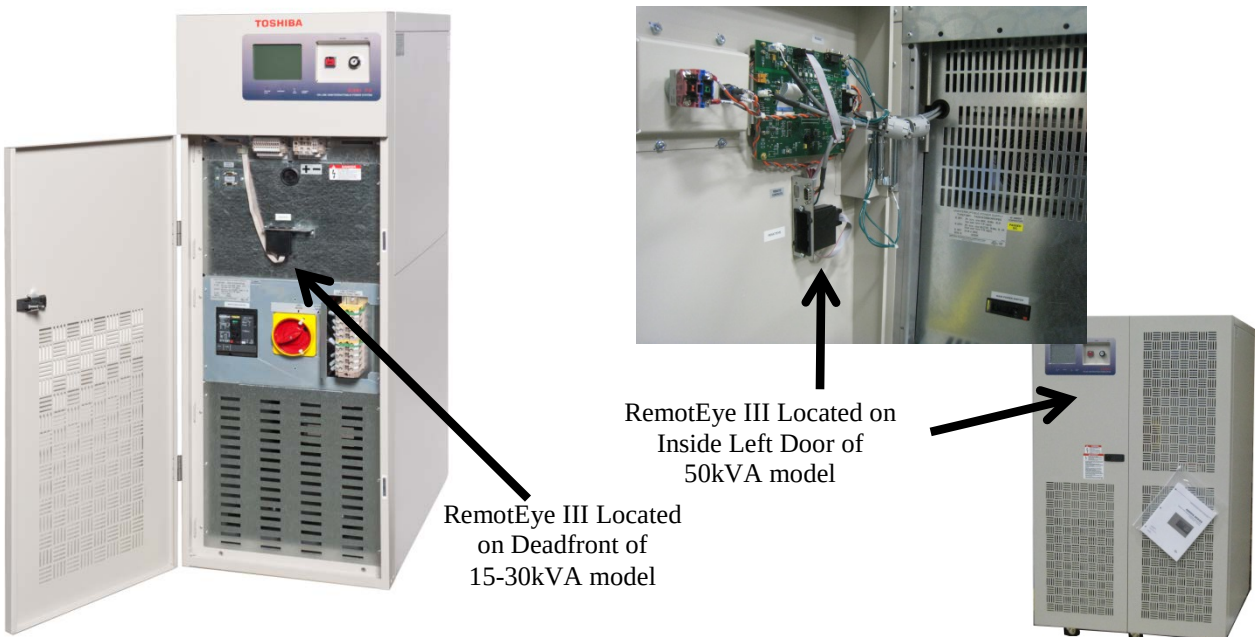


Figure 11 RemotEye III Location in 4200FA

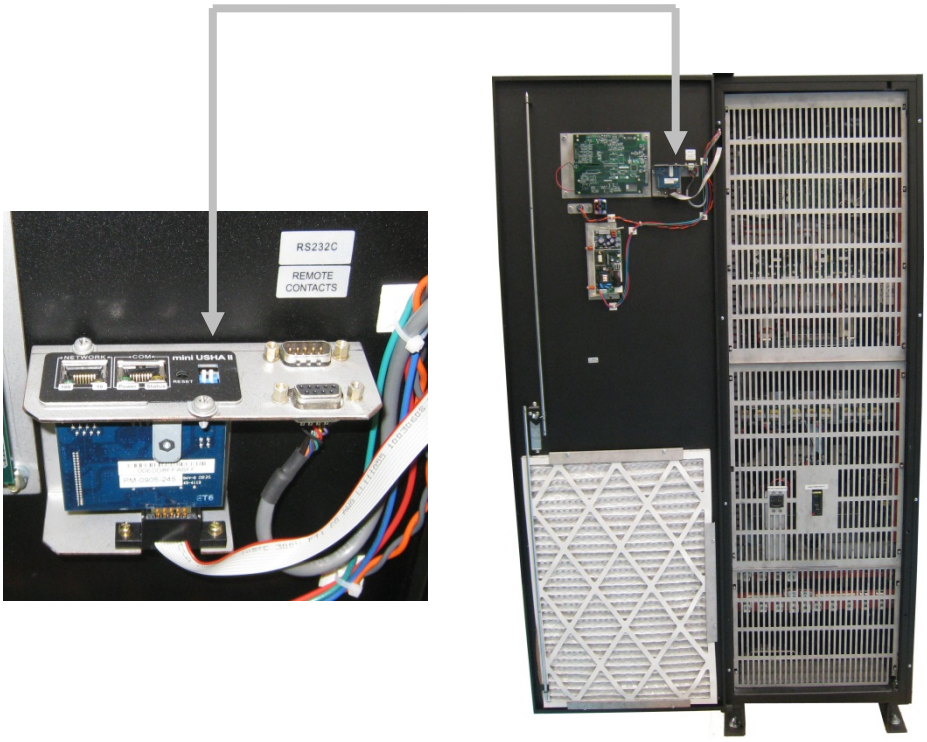


Figure 12: RemotEye III in 4300 UPS

Making the Network Connection

Each Ethernet network is different. Therefore, the following steps should be used as an outline for connecting the RemotEye III to a network (See Figure 13: Network Connection Example):

1. Connect one end of a Category 5 cable to the NETWORK RJ45 receptacle of RemotEye III.
2. Connect the other end of the Category 5 cable to a designated network switch, hub, or computer. A network administrator will need allocate an available port/IP address.
3. Verify a network link has been established. Confirm the left-most green LED is illuminated for 100Mbit/s or right-most amber LED is illuminated for 10Mbit/s.

Note: The RemotEye III's "DHCP/BOOTP" setting comes enable by default. If there is a DHCP/BOOTP server within the network, the DHCP/BOOTP server will allocate (lease) an IP address to the RemotEye III. This setting has to be disabled if using static IP address by going to "RemotEye III Management" → "RemotEye III Control" on its web interface.

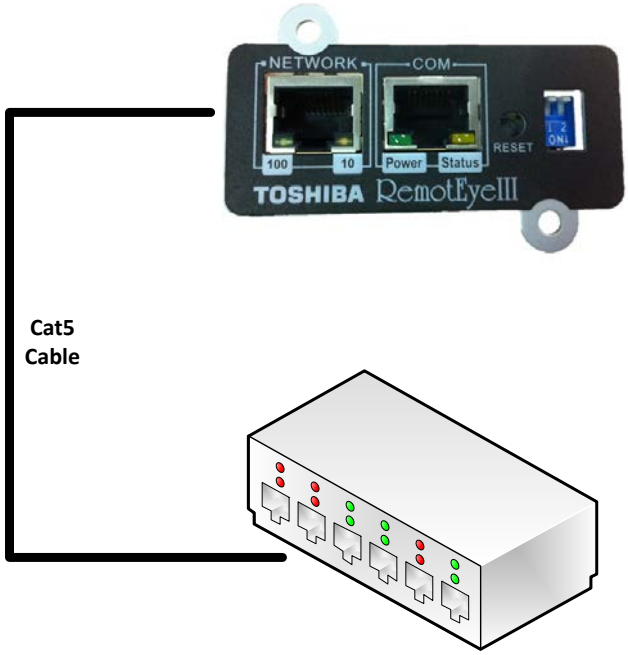


Figure 13: Network Connection Example

Configuration

RemotEye III must be configured for proper operation on its network which can be done by three convenient methods.

Preliminary Issues

RemotEye III is a network device. Several items should be considered prior to communicating with RemotEye III 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 III. This label is affixed at the bottom of every RemotEye III printed circuit board (See Figure 14: RemotEye III MAC Address Label).

Figure 14: RemotEye III MAC Address Label

For each RemotEye III, 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 III 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 III device.

Default IP Address

The RemotEye III 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 III MAC address of 00 E0 D8 0C 01 3F would have a default IP address of 172.18.1.63.
This places RemotEye III on a 172.18.0.0 IP network.

Default Network Mask

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

Default Gateway

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

Configuring via Terminal

The RemotEye III can be configured via a Terminal Emulator Software.

Hardware Setup

Direct configuration is accomplished through the provided RJ45 to DB9 female connector PC cable. Follow these steps to setup the hardware for direct RemotEye III configuration (See Figure 15: Serial Communication Physical Connection Example):

1. Connect the DB9 female end of the PC cable to the terminal or workstation COM port. NOTE: if no COM port is available, use a USB-to-Serial (RS-232) converter.
2. Connect the RJ45 end of the PC cable to the COM port of RemotEye III.

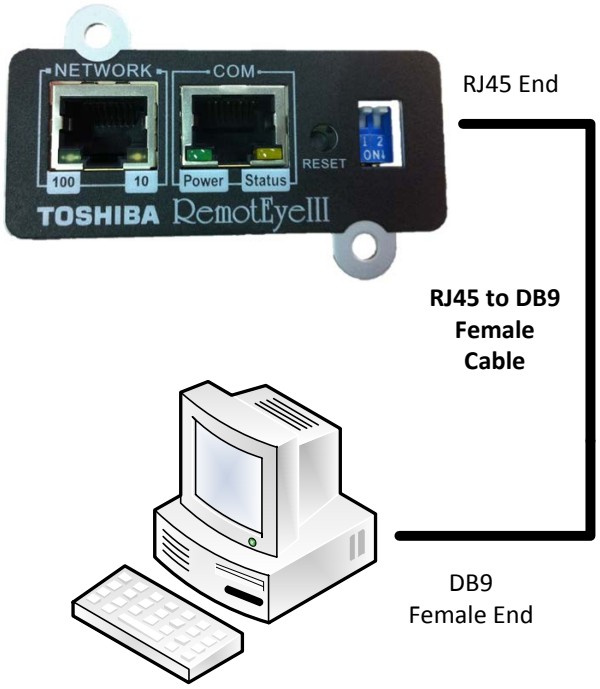


Figure 15: Serial Communication Physical Connection Example

Software Setup

The direct communication can be performed from a workstation that is running a Terminal Emulator Software (TES) such as HyperTerminal. The direct configuration is accomplished by RS232 communication protocol. If a Terminal Emulator Software is not available, download “Tera Term” from the internet for free. The serial communication settings are discussed in the next section.

Establishing Comminication

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 RemotEye III from a Windows platform, use HyperTerminal (Except in Windows Vista, 7, or 8). If HyperTerminal is not available, download "Tera Term" for free from the internet. (Contact Toshiba for additional information)

HyperTerminal is a standard terminal emulator packaged with all Windows operating systems except in Vista/7. Launch the HyperTerminal program by navigating to Start → Programs → Accessories → Communication → HyperTerminal, and follow the prompts.

Enter a name (e.g. RemotEye III) and select an icon for the application at the Connection Dialog box.

Select a direct connection to an appropriate COM port listed in the "Connect Using" pull-down menu.

Ensure that the Properties dialog box is setup accordingly.

- Baud Rate — 9600
- Data Bits — 8
- Parity — None
- Stop Bits — 1
- Flow Control —-None

Press [Enter] and the RemotEye III version and Password field will be displayed (See Figure 16).

RemotEye III retains the password of the UPS it is connected to. If the RemotEye is brand new right out of the box the default password is "ADMIN."

Password (case sensitive): **ADMIN**

Once connected to the UPS, RemotEye will try to verify the password by using the default. There are two ways this password can be changed on the RemotEye:

1.) Once RemotEye has verified password on UPS; if users manually changed the admin password on the UPS while RemotEye is still connected then RemotEye will retain the new password.

2.) If password on UPS was changed before RemotEye was connected: users should follow these steps.

a.) Plug RemotEye into the UPS

b.) Open RemotEye html page.

c.) Enter as administrator using the new password.

Once RemotEye enters admin page using the new password, RemotEye will retain this password.

Enter the password and press [Enter] to display the RemotEye III Main Menu.

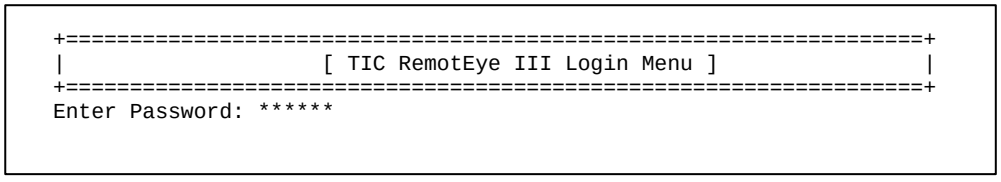


Figure 16: Console Login Screen

The seven options provided in the RemotEye III Main Menu provide access to all system RemotEye III configuration parameters. These options and their submenus are discussed in more detail in the next section.

RemotEye III Configuration Menu Navigation

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

RemotEye III Main Menu		
(1) TIC RemotEye III Configuration	(1) System Group	RemotEye III Agent Version
		Ethernet Address
		(1) IP Address
		(2) Gateway Address
		(3) Network Mask
		(4) Date and Time
		(5) Dump Modules CRC value
		(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
		(9) HTTP(s) Authentication
		(0) Return to Previous Menu
	(3) Parameter Group	(1) System Contact
		(2) System Name
		(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
		(9) Authentication Method
		(0) Return to Previous Menu
	(5) EMD Group	(1) Temperature Group
		(2) Humidity Group
		(3) Alarm-1 Group

(1) TIC RemotEye III Configuration (CONT)	(5)EMD Group (CONT)	(4) Alarm-2 Group
		(5) Device Status
		(0) Return to Previous Menu
	(6) Web Authentication Group	(1) RADIUS Group
		(0) Return to previous menu
	(0) Return to Previous Menu	
(2) SNMP Communities		(1) Modify
		(2) Reset
		(0) Return to Previous Menu
(3) SNMPV3 USM Table		(1) Modify
		(2) Reset
		(0) Return to Previous Menu
(4) Trap Receiver Table		(1) Modify
		(2) Reset
		(0) Return to Previous Menu
(5) Reset Configuration to Default		Reset Configuration (y/n)?
(6) Save and Exit		
(7) Save and Restart RemotEye III		Restart Agent (y/n)?

Table 1: Menu Map for RemotEye III Console

Main Menu Description

The Main Menu of the RemotEye III consists of the following options (See

Figure 17: Console Main Menu Description):

1. Toshiba RemotEye III 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].

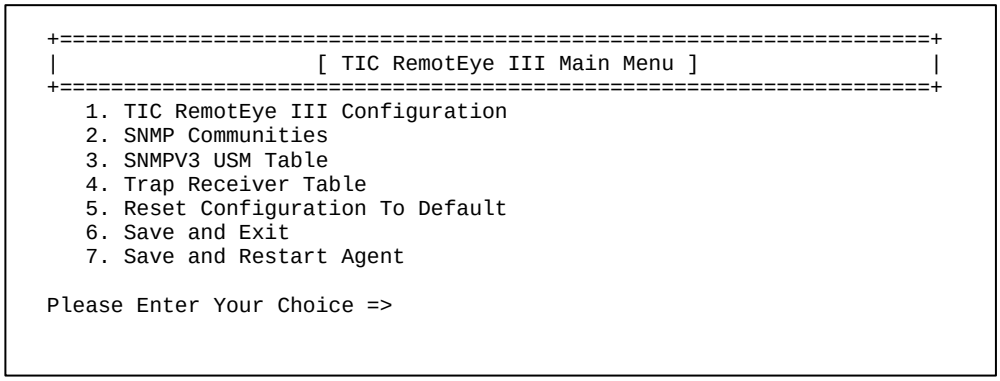


Figure 17: Console Main Menu Description

TIC RemotEye III Configuration

Main Menu → (1) Toshiba RemotEye III Configuration (See

Figure 18: Console Configuration Menu Description).

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

1. System Group
2. Control Group
3. Parameter Group
4. Email Group
5. EMD Group
6. Web Authentication Group
0. Return to Previous Menu

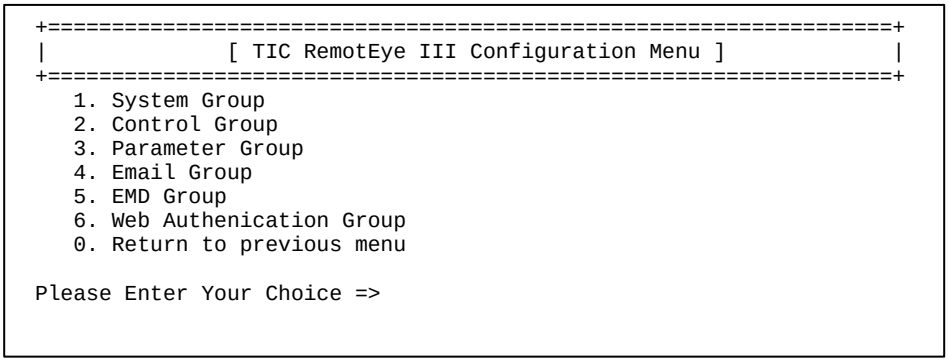


Figure 18: Console Configuration Menu Description

System Group

Main Menu → (1) Toshiba RemotEye III Configuration → (1) System Group (See

Figure 19: 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 III IP address.
2. Gateway Address — The gateway IP address (if a router is necessary).
3. Network Mask — The network mask for the RemotEye III network.
4. Date and Time — The RemotEye III date and time format is MM/DD/YYYY, and HH:MM:SS respectively. RemotEye III supports the Network Time Protocol (NTP) and NTP. These two features enable the UPS to synchronize its date and time with a NTP server. (See
   Figure 20: Date & Time Menu Description).
5. Dump modules CRC value

0. Return to Previous Menu.

```
+=====================================================================+
|                      [ System Group Menu ]                          |
+=====================================================================+
      RemotEye III Agent Version : TIC RemotEye III v1.03
      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
   5. Dump Modules CRC value
   0. Return to previous menu

Please Enter Your Choice =>
```

Figure 19: Console System Group Menu Description

```
+=====================================================================+
|                     [ Date and Time Menu ]                          |
+=====================================================================+
   1. System Date (dd/mm/yyyy)     : 03/01/2012
   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 20: Date & Time Menu Description

Control Group

NOTE: MODBUS TCP protocol can only be set up via HTTP (web browser). See page 38.

Main Menu → (1) Toshiba RemotEye III Configuration → (2) Control Group (See Figure 21: Console Control Group Menu Description)

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 Username — The login username 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 "admin".) 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 III. (The default setting is "Enabled").
5. Telnet Control — This parameter is used to enable or disable remote RemotEye III 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 III 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 III through the web, and write privileges are automatically assumed. When disabled, any machine can access RemotEye III 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 enabled, administrators has the options to set for SNMPv1 or SNMPv3.
9. HTTP(s) Authentication — This parameter allows the administrators to select what type of authentication is required to gain access to the RemotEye III web content. There are three options Local User, Radius, or both. If "Local User" is selected, the user will be authenticated when accessing the RemotEye III web content. If "Radius" is selected, the user will have to be authenticated first by a RADIUS server in order to access the RemotEye III web content. If "both" is selected, then the user can be either authenticated through Radius or through the RemotEye III web authentication feature. (The default setting is Local User)

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. Network Upgrade Control : Disabled
 7. HTTP Security Control   : Disabled
 8. SNMP Version Control    : Disabled
 9. HTTP<s> Authenication   : Local User
 0. Return to previous menu

Please Enter Your Choice =>
```

Figure 21: Console Control Group Menu Description

Parameter Group

Main Menu → (1) Toshiba RemotEye III Configuration → (3) Parameter Group (See

Figure 22: 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 III system administrator. This string can be changed by administrator as desired.
2. System Name — The alias of the RemotEye III. This string serves as the RemotEye III Client Identifier (CID) in DHCP systems.
3. System Location — The RemotEye III physical location. This string can be changed by administrator as desired.
4. Poll Rate — The polling rate in seconds. This determines how frequently RemotEye III updates its data from the Toshiba UPS. (The default setting is 5 seconds)

0. Return to previous menu.

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

Example: RemotEye III@Toshiba

```
+=====================================================================+
|                     [ Parameter Group Menu ]                        |
+=====================================================================+
   1. System Contact  : TIC Local Technical Support
   2. System Name     : RemotEye III
   3. System Location : Toshiba
   4. Poll Rate       : 5
   0. Return to previous menu

Please Enter Your Choice =>
```

Figure 22: Console Parameter Group Menu Description

Email Group

Main Menu → (1) Toshiba RemotEye III Configuration → (4) Email Group (See

Figure 23: Console Email Group Menu Description)

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 5.
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 (Network Name) of the mail server (e.g. Tic.Toshiba.com).
5. DNS IP Address — Domain Name System Server IP address is required if a hostname is used for Mail Server (If hostname is used in the setting 1). Otherwise, this field can be 0.0.0.0.
6. Daily Status Report — This parameter is used to set the time to send RemotEye III daily status report that are listed in the "Mail Receivers" setting (7).
7. Mail Receivers — This Parameter is used to enter up to four recipients email address and select the "Mail Type" for each recipient. Here is the list on the three different Mail Types:
    a. None: Disable option to send email to recipients.
    b. Events – Current events will be sent to recipients.
    c. Events with Status – Current events, History log and Event log will be sent to email recipients when events occurred.

    The recipients include users who use Short Message System (SMS) in Email address format, such as phonenumber@telcompany.com. Check with service carrier for the correct format to receive text messages.
8. Test Email Configuration — This parameter allows the administrator to send out a test email to verify system operation is configured correctly. If instant email is not received after the test, please check the configuration.
9. Authentication Method

0 Return to Previous Menu

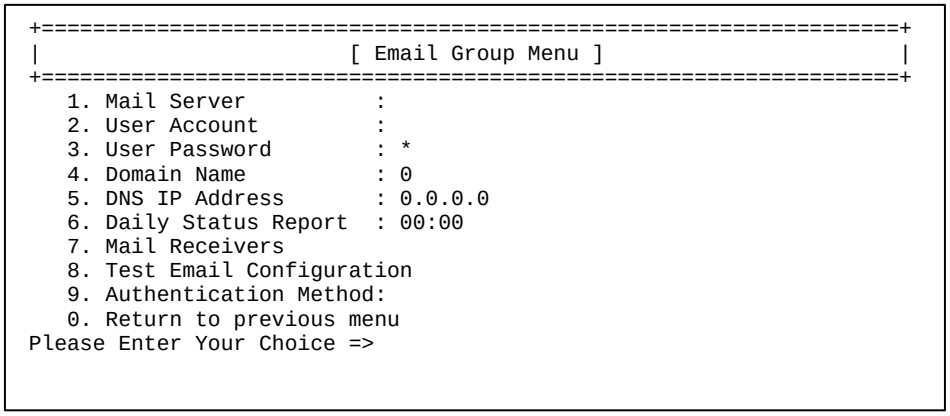


Figure 23: Console Email Group Menu Description

EMD Group

Main Menu → (1) Toshiba RemotEye III Configuration → (5) EMD Group (See Figure 24: Console EMD Group Menu Description)

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 allows the administrator to allow RemotEye III to auto-detect EMD or to disable. "Auto" will enable the RemotEye III to auto detect the EMD that is connected to its COM port.

Note: These features apply to EMD module only. EMD sold separately.

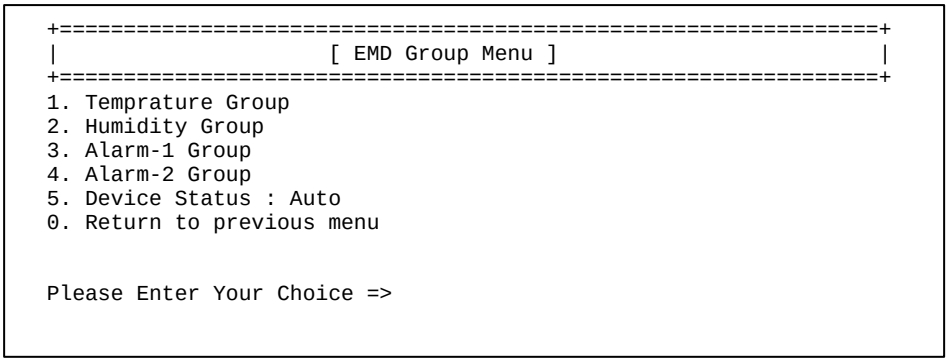


Figure 24: Console EMD Group Menu Description

SNMP Communities

Main Menu → (2) SNMP Communities (See Figure 25: 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 III.

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 100 for a more detailed explanation on Get/Set.)

Access: Select Access Type:

1. Read Only
2. Read/Write
3. No Access

```
+=====================================================================+
|   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 25: SNMP Communities Description

SNMPv3 USM Table

Main Menu → (3) SNMPv3 USM Table (See Figure 26: 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 III.

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

User Name: The User ID for the authorized individual.

Authentication Password: The password string for the authorized individual.

Privacy Password: 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 authentication password and 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 26: SNMPv3 USM Menu Description

Trap Receiver Table

Main Menu → (4) Trap Receiver Parameters (see Figure 27: 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.

Trap Type:

1. None
2. Toshiba Trap
3. JEMA Trap
4. IETF Trap

Description: Description of the NMS. This is administrator defined (max 10 characters)

Severity Level:

Informational – The receiver will receive the following trap types “Fault”, “Warning” and “Informational”.

Warning – The receiver will receive the following trap types “Fault” and “Warning”.

Severe – The receiver will receive the following trap type only “Fault”.

```
+=============================================================================+
|   IP Address       Community String     Trap-Type    Severity           Desc   |
+=============================================================================+
[1] 192.168.1.50     *                    Toshiba Trap Informational
[2] 0.0.0.0          *                    None         Informational
[3] 0.0.0.0          *                    None         Informational
[4] 0.0.0.0          *                    None         Informational
[5] 0.0.0.0          *                    None         Informational
[6] 0.0.0.0          *                    None         Informational
[7] 0.0.0.0          *                    None         Informational
[8] 0.0.0.0          *                    None         Informational

   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 27: Console Trap Receiver Table Description

Reset Configuration to Default

Main Menu → (5) Reset Configuration to Default.

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

Note: This will reset every configuration including the IP settings.

From the Main Menu, press 5 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 III configuration and exits the program. The new configuration takes effect immediately.

Save and Restart RemotEye III

Main Menu → (7) Save and Restart RemotEye III.

When executed, the system saves the RemotEye III configuration and restarts RemotEye III program.

Configuring the RemotEye III via Telnet

The RemotEye III 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 RemotEye III for a telnet session:

Verify network cable connection to NETWORK port of RemotEye III.

Verify active link to LAN or Network.

For further information on the network connection, refer to “Making the Network Connection” on page 18.

Software Setup

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

Verify workstation is loaded with Telnet application. If using Windows operating system, “Command Prompt” application software that is packed with Windows can be used. If a Telnet application is not available or Command Prompt, download “Tera Term” software from the internet for free.

Note: If using Windows 7 or Vista, make sure that Telnet feature is enabled. By default, Windows 7 and Vista Operating System have this feature disabled for security reasons. To enable this feature, follow these steps:

1. Click on “Start”
2. Go to and click on “Control Panel”
3. Go to and click on “Programs and Features”
4. On the left side column, click on “Turn Windows features on or off” (See Figure 28: Enable Telnet Feature on Windows 7/Vista). Now look for “Telnet Client” and click on the check box to enable. Then click on the “Ok” button and wait till feature is enabled.

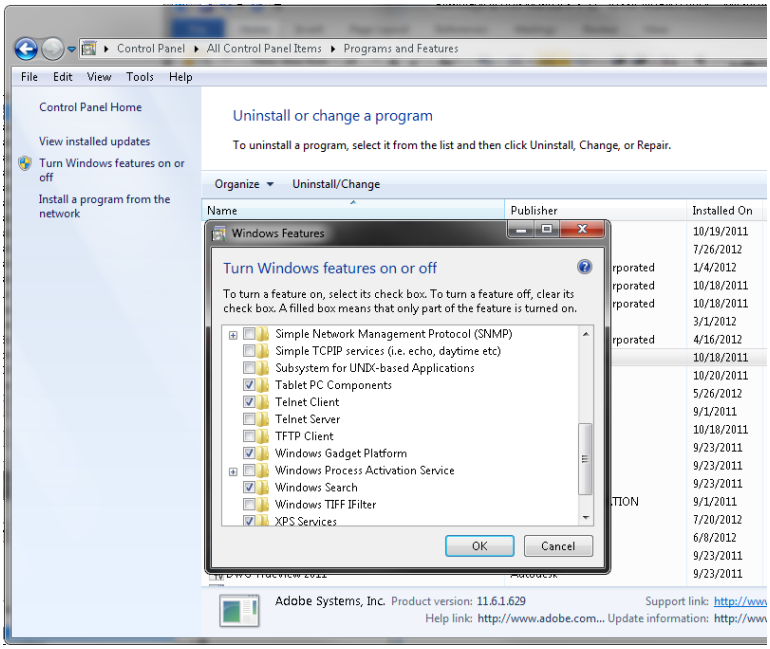


Figure 28: Enable Telnet Feature on Windows 7/Vista

Verify a valid network path exists between the RemotEye III and the workstation. If performing the Telnet configuration from a workstation that is located on the same network, then proceed to the next section "

Connecting to the RemotEye III via Telnet" on page 37.

Routing to the RemotEye III

If the workstation is not on the same network as the RemotEye III, the system may require the addition of a network route. This is typically only necessary when RemotEye III 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 III 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 (e.g. Command Prompt in Windows OS):

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 III via Telnet

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

1. Type telnet followed by the IP address of RemotEye III to a telnet application (e.g. telnet 192.168.1.50).
2. Press [Enter].
3. Key in the password when prompted.

   Default Password (case sensitive): **ADMIN**

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

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

RemotEye III Telnet Menu Navigation

The configuration menus for telnet configuration are identical to those presented by a direct configuration session. Refer to page 23 for detailed guidance through configuration menus of RemotEye III.

Configuring the RemotEye III via HTTP

The RemotEye III can be configured by opening a web session (e.g. Internet Explorer, Firefox, and Google Chrome).

Hardware Setup

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

1. Verify network cable connection to NETWORK port of RemotEye III.
2. Verify active link to LAN or Network.
3. For further information on the network connection, refer to “Making the Network Connection” on page 18.

Software Setup

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

1. Verify workstation is loaded with web browser application (e.g. Internet Explorer).
2. Verify a valid network path exists between RemotEye III 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 III” on page 37.

System Setup

To access the RemotEye III via the web, enter the IP address of the RemotEye III in the URL field of the browser and press Enter (See Figure 29: RemotEye III with Internet Explorer Example). If unable to access the RemotEye III due to a firewall, contact the network administrator for information on bypassing the firewall of the LAN.

Figure 29: RemotEye III with Internet Explorer Example

The HTTP Security Control setting may also affect the user's ability to access the RemotEye III. The HTTP Security Control setting may be set or viewed from: Main Menu → (1) TIC RemotEye III Configuration →(2) Control Group → (7) HTTP Security Control (See Figure 30: HTTP Security Control Window).

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 III pages will be met with a request to enter a password (See Figure 30: HTTP Security Control Window).

Login: **TOSHIBA**

Password: **ADMIN**

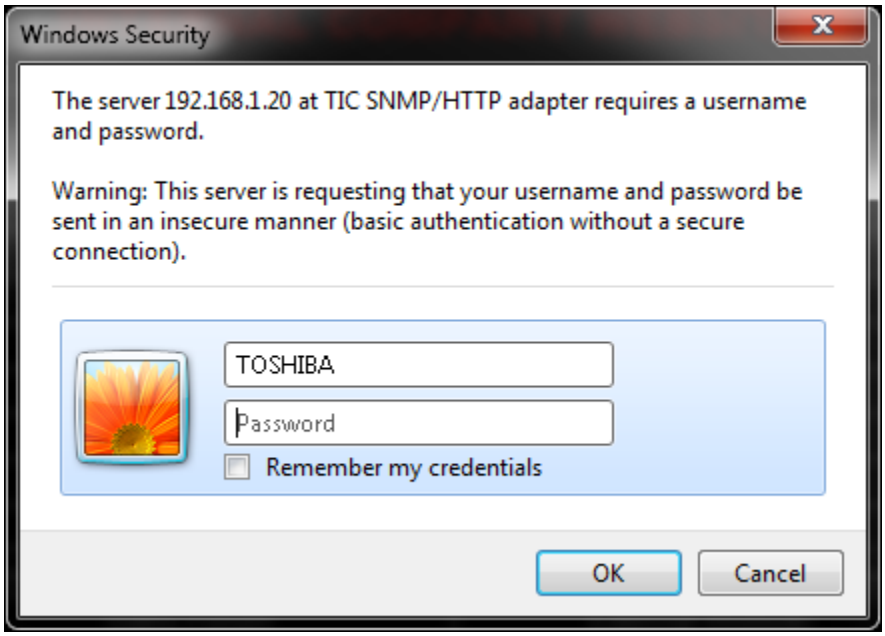


Figure 30: HTTP Security Control Window

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 via Telnet or Serial RS-232 communication: Main Menu → (1) Toshiba RemotEye III Configuration → (2) Control Group → (3) Community Read/Write).

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

Connecting to the RemotEye III 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 (e.g. Internet Explorer).
2. Enter the URL for RemotEye III in the browser's address field. For example, http://172.18.1.63. The home page of the RemotEye III will be displayed once a connection is established (See Figure 31: RemotEye III HTTP Page).

Perform the following procedure to setup the RemotEye III Static IP address, protocols and Date/Time using its provided web configuration pages.

1. Select "RemotEye III Management" → "RemotEye III Configuration" to configure RemotEye III.
2. Click the Become Administrator button at the bottom of the screen. The password is case sensitive.
   Login: TOSHIBA
   Password: ADMIN
   Non-DHCP users continue on to step 3. DHCP users may skip steps 3 to 6.
3. Enter the RemotEye III IP address.
4. Enter the RemotEye III Gateway address in the network.
5. Enter the RemotEye III Network Mask of the network.
6. Click Set Value to save the settings.
7. Select "RemotEye III Management" → "Date and Time" to set date and time.
8. Enter the appropriate date and time in the specified format.
9. Click Set Value to save the settings.
10. Select "RemotEye III Management" → "RemotEye III Control" to enable or disable the network protocols.
    Note: Disable "RemotEye III DHCP Control" setting if using static IP.

Figure 31**: RemotEye III HTTP Page**

RemotEye III Web Menu Navigation

The RemotEye III home page is comprised of six primary menus:

- UPS Monitoring
- UPS Management
- Email Notification
- EMD
- RemotEye III Management
- History Data and Logs.

The six primary menus provide access to UPS and RemotEye III 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 (See Figure 32: RemotEye III Web UPS Monitoring Directory).

1. Comprehensive View
2. UPS Data General
3. UPS Data Display
4. UPS Data Other (Not Available for 4300)
5. Input Parameters
6. Output Parameters
7. Bypass Parameters
8. DC Bus Parameters
9. Battery Parameters
10. Alarm Table
11. Connected Client Table

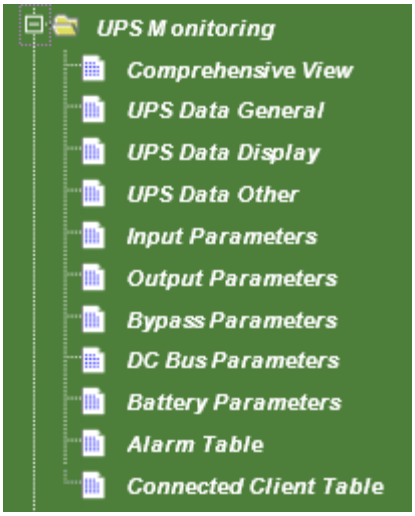


Figure 32: RemotEye III Web UPS Monitoring Directory

Comprehensive View

This web 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 III Management" → "HTTP Page Refresh Rates" in the RemotEye III web interface.

Comprehensive View Parameters					
Parameter #	Object	Description	1600XP	4200FA	4300
1	UPS Mode	This field shows the present UPS system mode. These readings include: Start-Up, On-Line, Bypass, Backup, Battery Test, and Shutdown.	✓	✓	✓
2	Input Voltage (V)	This field shows the present UPS input voltage in VAC.	✓	✓	✓
3	Input Frequency (Hz)	This field shows the present UPS input frequency in Hz.	✓	✓	✓
4	Output Voltage (V)	This field shows the present UPS output voltage in VAC.	✓	✓	✓
5	Output Load Percentage (%)	This field shows the present UPS load in % of kVA.	✓	×	×
6	Output Frequency (Hz)	This field shows the present UPS output frequency in Hz.	✓	✓	✓
7	UPS System Temperature (°C)	This field shows the present UPS temperature in °C.	✓	×	×
8	UPS Battery Temperature (°C)	This field shows the present UPS battery temperature in °C.	✓	×	×
9	Battery Capacity (%)	This field shows the present UPS battery capacity in percentage.	✓	×	×
10	Battery Runtime (Mins)	This field shows the present UPS battery runtime in minutes.	✓	×	×
11	Date On RemotEye III (mm/dd/yyyy)	This field shows the RemotEye III date setting. This value is displayed in the mm/dd/yyyy format.	✓	✓	✓
12	Time On RemotEye III (hh:mm:ss)	This field shows the RemotEye III 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 Data General

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

UPS Data General Parameters					
Parameter #	Object	Description	1600XP	4200FS	4300
1	UPS Manufacture	This field shows the name of the UPS manufacturer.	✓	✓	✓
2	UPS Typeform	This field shows the typeform of the UPS to which RemotEye III is presently attached.	✓	✓	✓
3	UPS Description	This field shows the model description of the UPS to which RemotEye III is presently attached.	✓	✓	✓
4	UPS Serial Number	This field shows the UPS manufactured serial number for the UPS which RemotEye III is presently attached.	✓	✓	✓
5	UPS Main Firmware Version	This field shows the present firmware version for the UPS. This is for informational	✓	×	×
6	UPS Main Boot Sector Version	This field shows the present boot sector version for the UPS. This is for informational purpose.	✓	×	×
7	UPS Main Boot Loader Version	This field shows the present boot loader version for the UPS. This is for informational	✓	×	×
8	UPS Job Number	This field shows the present job number for the UPS. This is for informational purpose.	✓	×	×
9	UPS Test Date	This field shows the date the UPS was last tested. This is for informational purpose.	✓	×	×
10	UPS Hardware Build Date	This field shows the date the UPS was built. This is for informational purpose.	✓	×	×
11	UPS EEPROM Version	This field shows the present EEPROM version for the UPS. This is for informational	✓	×	×
12	UPS System Name	This field shows the administrator-configured name of the UPS. For configuration, please refer to UPS	✓	✓	✓
13	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.	✓	✓	✓
14	UPS Installation Date	This field shows the date the UPS was installed. For configuration, refer to the UPS Configuration menu.	✓	✓	✓

UPS Data Display

This page shows the UPS Display Information. This page will refresh automatically at a user-defined rate. To change or view the refresh rate setting, select "RemotEye III Management" → "HTTP Page Refresh Rates" in the RemotEye III web interface.

UPS Data Display Parameters					
Parameter #	Object	Description	1600XP	4200FA	4300
1	Display Firmware Version	This field shows the present firmware version for the display. This is for informational purpose.	✓	✓	✓
2	Display Boot Sector Version	This field shows the present boot sector version for the display. This is for informational	✓	×	×
3	Display Boot Loader Version	This field shows the present boot loader version for the display. This is for informational	✓	×	×
4	Display Sleep Timer (Mins)	This field shows the amount of time the display will remain active before it will enter to sleep mode.	✓	×	×
5	Display Buzzer Mode	This field shows the current buzzer mode. Users can specify at what conditions the buzzer can	✓	×	×
6	Display Buzzer Status	This field shows the current status of the buzzer. This will determine if the alarm is silenced or sound if an alarm should	✓	✓	✓
7	Display Firmware Built Date	This field shows the Firmware built date for the display. This is for informational purpose.	×	✓	✓
8	Display Firmware Built Time	This field shows the Firmware built time for the display. This is for informational purpose.	×	✓	✓

UPS Data – Other

This page shows the UPS states. This page will refresh automatically at a user-defined rate. To change or view the current refresh setting, select "RemotEye III Management" → "HTTP Page Refresh Rates" in the RemotEye III web interface.

UPS Data-Other Parameters					
Parameter #	Object	Description	1600XP	4200FA	4300
1	EPO Contact State	This field shows the current contact state of the Emergency Power Off (EPO).	✓	×	×
2	UPS Run Stop Switch Status	This field shows the current state of the run (On-Line)/stop (Bbypass) switch on the UPS.	✓	×	×
3	UPS Service Port Status	This field shows the current status of the UPS Service Port on the UPS. This will inform users if an error has occurred.	✓	×	×
4	Internal Communication Status	This field shows the internal communication status for the UPS. This will inform users if an error has occurred.	✓	×	×

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 III Management" → "HTTP Page Refresh Rates" in the RemotEye III web interface.

Input Parameters					
Parameter #	Object	Description	1600XP	4300	4300
1	Input Power Supply Configuration	This field shows the present power supply information at the input for the UPS.	✓	×	×
2	Input Number of Lines	This field shows the number of input lines for the UPS.	✓	✓	✓
3	input Voltage (V)	This field shows the UPS input voltage in VAC.	✓	✓	✓
4	Input Voltage Percent (%)	This field shows the UPS input voltage in percent.	✓	✓	✓
5	Input Rated Voltage (V)	This field shows the input rated voltage of the UPS. This can be changed by the administrator.	✓	×	×
6	Input Current (Amps)	This field shows the present UPS input current in Amps.	✓	✓	✓
7	Input Current Percent (%)	This field shows the UPS input current in percent.	✓	×	×
8	Input Rated Current (Amps)	This field shows the input rated current of the UPS in Amps.	✓	✓	✓
9	Input Frequency (Hz)	This field shows the UPS input frequency in Hz.	✓	✓	✓
10	Input Rated Frequency (Hz)	This field shows the input rated frequency of the UPS.	✓	×	×
11	Input Active Power (Watts)	This field shows the present UPS input active power in Watts.	✓	×	×
12	Input Rated Active Power (Watts)	This field shows the present UPS input rated active power in Watts.	✓	×	×
13	Input Apparent Power (VA)	This field shows the present UPS input apparent power in Volt-Amps.	✓	×	×
14	input Power Factor	This field shows the present UPS input power factor.	✓	×	×
15	Input Line to Neutral Voltage (V)	This field shows the UPS input Line to Neutral in VAC.	×	✓	✓
16	Input Rated Line to Line Voltage (V)	This field shows the rated input Line to Line voltage in VAC.	×	✓	✓
17	Input Rated Line to Neutral Voltage (V)	This field shows the rated input line to neutral voltage in VAC.	×	✓	✓
18	Input Rated Power (Watts)	This field shows the input rated power in Watts.	×	✓	✓
19	Input Rated Power (VA)	This field shows the input rated power in VA.	×	✓	✓
20	VIUV Detection Level (%)	This field shows the Voltage Input Under-Voltage detection level in percent.	×	✓	✓
21	VIOV Detection Level (%)	This field shows the Voltage Input Over-Voltage detection level in percent.	×	✓	✓
22	Input Phase Check	This field shows the present status of input phase check. When enabled it detects phase rotation error.	×	✓	✓

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 III Management" → "HTTP Page Refresh Rates" in the RemotEye III web interface.

Output Parameters					
Parameter #	Object	Description	1600XP	4300FA	4300
1	Output Power Supply Configuration	This field shows the present power supply information at the output for the UPS.	✓	×	×
2	Output Number of Lines	This field shows the present phase of the output of the UPS.	✓	✓	✓
3	Output Voltage (V)	This field shows the UPS output voltage in VAC.	✓	✓	✓
4	Output Rated Voltage (V)	This field shows the output rated voltage of the UPS. This can be changed by the administrator.	✓	×	×
5	Output Under Voltage Level (%)	This field shows the minimum allowable voltage before it falls into under voltage range.	✓	×	×
6	Output Over Voltage Level (%)	This field shows the maximum limit of the output voltage before it the UPS enters the over voltage state.	✓	×	×
7	Output Current (Amps)	This field shows the present UPS output current in Amps.	✓	✓	✓
8	Output Rated Current (Amps)	This field shows the present UPS output rated current in Amps.	✓	✓	✓
9	Output Load Percentage (%)	This field shows the UPS load as a percentage of the maximum load setting.	✓	×	×
10	Output Frequency (Hz)	This field shows the present UPS output requnecy in Hz.	✓	✓	✓
11	Output Rated Frequency (Hz)	This field shows the present UPS output rated frequency in Hertz.	✓	×	×
12	Output Frequency Synch Range (Hz)	This field shows the allowable range for synchronizing output frequency.	✓	×	×
13	Output Active Power (Watts)	This field shows the present UPS output active power in Watts.	✓	×	×
14	Output Rated Active Power (Watts)	This field shows the present UPS output rated active power in Watts.	✓	×	×
15	Output Apparent Power (VA)	This field shows the present UPS apparent power in VA.	✓	×	×
16	Output Rated Apparent Power (VA)	TThis field shows the present UPS output rated apparent power in VA.	✓	×	×
17	Output Rated Power Factor	This field shows the present UPS output power factor.	✓	×	×

16	Output Rated Apparent Power (VA)	TThis field shows the present UPS output rated apparent power in VA.	✓	×	×
17	Output Rated Power Factor	This field shows the present UPS rated output power factor.	✓	×	×
18	Output Line to Neutral Voltage (V)	This field shows the UPS output line to neutral voltage in VAC.	×	✓	✓
19	Output Voltage Percent (%)	This field shows the UPS output voltage in percent.	×	✓	✓
20	Output Total Current Percent (%)	This field shows the present UPS output total current in percent.	×	✓	✓
21	Output Current Percent (%)	This field shows the present UPS output current in percent.	×	✓	✓
22	Output Total Active Power (KW)	This field shows the present UPS output active power in Kilowatts.	×	✓	✓
23	Output Total Active Power Percent (%)	This field shows the present UPS output active power in percent.	×	✓	✓
24	Output Power Factor	This field shows the present UPS output power factor.	×	✓	✓
25	Output Rated Line to Line Voltage (V)	This field shows the UPS rated output line to line voltage in VAC.	×	✓	✓
28	Output Rated Line to Neutral Voltage (V)	This field shows the UPS rated output line to neutral voltage in VAC.	×	✓	✓
29	Output Rated Power (Watts)	This field shows the present UPS output rated power in Watts.	×	✓	✓
30	Output Rated Power (VA)	This field shows the present UPS output rated power in VA.	×	✓	✓
31	Output Under Voltage Detection Level (V)	This field shows the minimum allowable voltage before it falls into output under voltage range.	×	✓	✓
32	Output Over Voltage Detection Level (V)	This field shows the maximum limit of the output voltage before the UPS detect enters the Output over voltage state.	×	✓	✓

Bypass Parameters

This page shows the UPS bypass values. This page will refresh automatically at a user-defined rate. To change or view the current refresh setting, select "RemotEye III Management" → "HTTP Page Refresh Rates" in the RemotEye III web interface.

Bypass Parameters					
Parameter #	Object	Description	1600XP	4200FA	4300
1	Bypass Power Supply Configuration	This field shows the present power supply information during bypass for the UPS.	✓	×	×
2	Bypass Number of Lines	This field shows the number of bypass lines for the UPS.	✓	✓	✓
3	Bypass Voltage (V)	This field shows the UPS voltage during bypass in VAC.	✓	✓	✓
4	Bypass Current (Amps)	This field shows the present UPS bypass current in Amps.	✓	×	×
5	Bypass Frequency (Hz)	This field shows the present UPS bypass frequency in Hertz.	✓	✓	✓
6	Bypass Apparent Power (VA)	This field shows the present UPS bypass apparent power in VA.	✓	×	×
7	Bypass Under Voltage Detection (%)	This field shows the minimum allowable voltage before it falls into bypass under voltage range.	✓	×	×
8	Bypass Under Voltage Recovery (%)	This field shows the allowable voltage that it can recover from under voltage.	✓	×	×
9	Bypass Over Voltage Detection (V)	This field shows the maximum allowable voltage before it falls into over voltage range.	✓	×	×
10	Bypass Over Voltage Recovery (V)	This field shows the allowable voltage that it can recover from over voltage.	✓	×	×
11	Bypass Line to Neutral Voltage (V)	This field shows the present UPS bypass line to neutral voltage.	×	✓	✓
12	Bypass Voltage Percent (%)	This field shows the UPS bypass voltage in percent.	×	✓	✓
13	Bypass Under Voltage Detection Level (%)	This field shows the UPS bypass under voltage detection in percent.	×	✓	✓
14	Bypass Over Voltage Detection Level (%)	This field shows the UPS bypass over voltage detection level in percent.	×	✓	✓

DC Bus Parameters

This page shows the UPS DC Bus values. This page will refresh automatically at a user-defined rate. To change or view the current refresh setting, select "RemotEye III Management" → "HTTP Page Refresh Rates" in the RemotEye III web interface.

DC Bus Parameters					
Parameter #	Object	Description	1600XP	4200FA	4300
1	DC Bus Total Volatage (V)	This field shows the DC Bus voltage in VDC.	✓	✓	✓
2	DC Bus Positive Voltage (V)	This field shows the positive DC Bus voltage in VDC.	✓	×	×
3	DC Bus Negative Voltage (V)	This field shows the negative DC Bus voltage in VDC.	✓	×	×
4	DC Bus Rated Voltage (V)	This field shows the rated DC Bus voltage in VDC.	✓	×	×

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 III Management" → "HTTP Page Refresh Rates" in the RemotEye III web interface.

Battery Parameters					
Parameter #	Object	Description	1600XP	4200FA	4300
1	UPS Battery Status	This field shows the status of the UPS batteries. These readings include: Unknown, Normal, Low, Depleted, Discharging, and Failure.	✓	✓	✓
2	Elapsed Time on Battery Power (Secs)	This field shows the elapsed time (in seconds) since the UPS switched to battery power.	✓	✓	✓
3	Battery Voltage (Vdc)	This field shows the battery voltage in VDC.	✓	✓	✓
4	Calculated Battery Shutdown Voltage (Vdc)	This field shows the battery's shutdown voltage in VDC.	✓	×	×
5	Battery Discharge Current (Adc)	This field shows the battery's discharge current in Amps.	✓	✓	✓
6	Battery Charge Status	This field shows the present Battery Charge status.	✓	×	×
7	Number of Discharge	This field shows the present number of battery discharges.	✓	×	×
8	Battery Life Reaming (Month)	This field shows the remaining battery life. The maximum battery lifetime is 5 years. This shows the remaining battery lifetime in months.	✓	×	×
9	Battery Rated Ampere Hour (Ahr)	This field shows the present battery capacity in Ampere Hour.	✓	✓	✓
10	Battery in Series	This field shows the number of batteries connected in series.	✓	✓	✓
11	Battery in Parallel	This field shows the number of batteries connected in parallel.	✓	✓	✓
12	Battery Installation Date	This field shows the last installation 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	✓	✓	✓

13	Battery Voltage Shutdown Level (%)	This field shows the present battery voltage shutdown level in percent.	✓	×	×
14	Battery Low Level (%)	This field shows the battery low level in	✓	×	×
15	Battery Capacity (%)	The UPS battery capacity in percent.	✓	×	×
16	Battery Runtime (Mins)	The UPS battery runtime in minutes.	✓	×	×
17	Battery Charge Over Voltage Delay (Secs)	This field shows the battery charge over voltage delay in seconds.	✓	×	×
18	Calculate Low Battery level (Vdc)	This field shows the calculated low battery level in VDC.	✓	×	×
19	External Battery Install Status	This field shows installation status of the external battery. It can be installed or uninstalled.	✓	×	×
20	External Battery in Series	This field shows the number of external batteries connected in series.	✓	×	×
21	External Battery in parallel	This field shows the number of external batteries connected in parallel.	✓	×	×
22	External Battery Rated Ampere Hour (Ahr).	This field shows the present external battery capacity in Ampere Hour.	✓	×	×
23	External Battery C Rate	This field shows the present external battery C Rate.	✓	×	×
24	External Battery Install Date	This field shows the installation date of the external battery.	✓	×	×
26	Equalize Charge Time (Hours)	This field shows the battery equaliztion charge time in hours.	×	✓	✓
27	Float Charge Voltage (Vdc)	This field shows the float charge voltage in Vdc.	×	✓	✓
28	Battery Low Detection Level (Vdc)	This field shows the minimum battery voltage in Vdc.	×	✓	✓

Alarm Table

This page provides past and active UPS alarm activity and descriptions. This page will refresh automatically at a user-defined rate (See Figure 33: RemotEye III Alarm Table Example). To change or view the refresh rate setting, select "RemotEye III Management" → "HTTP Page Refresh Rates" in the RemotEye III web interface.

Figure 33: RemotEye III Alarm Table Example

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

Lastest Alarm
This field shows the last recorded UPS alarm in the format Date, Time, and Information about the 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 III reboot.

Alarm Time
This field shows the RemotEye III alarm time stamp. This value is displayed in the hh:mm mm/dd/yyyy format. Note: The time depends on the RemotEye III clock setting.

Alarm Description
Info: UPS has encountered a change of state condition such as switching from on-line to bypass state.

Warning: UPS has encountered a noncritical abnormal condition that requires attention.

Fault: UPS has encountered a critical abnormal condition and requires attention. Please refer to the UPS manual for possible causes and solutions. If more information is needed or additional assistance is required, contact Toshiba authorized service center for Service.

1600XP Alarm/Trap Table

ID	Alarm Occur Message	SNMP Trap Add	Level	SNMP Trap Remove
1	upsAlarmFault	upsTrapFault	Fault	upsTrapFaultClear
2	upsAlarmOpenFuse	upsTrapOpenFuse	Fault	upsTrapOpenFuseClear
3	upsAlarmCurrentLimitFault	upsTrapCurrentLimitFault	Fault	upsTrapCurrentLimitFaultClear
4	upsAlarmDCBusOverCurrent	upsTrapDCBusOverCurrent	Fault	upsTrapDCBusOverCurrentClear
5	upsAlarmDCOverVoltage	upsTrapDCOverVoltage	Fault	upsTrapDCOverVoltageClear
6	upsAlarmDCBusImbalance	upsTrapDCBusImbalance	Fault	upsTrapDCBusImbalanceClear
7	upsAlarmOutputUnderVoltage	upsTrapOutputUnderVoltage	Fault	upsTrapOutputUnderVoltageClear
8	upsAlarmOutputOverVoltage	upsTrapOutputOverVoltage	Fault	upsTrapOutputOverVoltageClear
9	upsAlarmHeatSinkOverheat	upsTrapHeatSinkOverheat	Fault	upsTrapHeatSinkOverheatClear
10	upsAlarmBypassOverload	upsTrapBypassOverload	Fault	upsTrapBypassOverloadClear
11	upsAlarmChargerOverVoltage Fault	upsTrapChargerOverVoltage Fault	Fault	upsTrapChargerOverVoltage FaultClear
12	upsAlarmOutputOverCurrent	upsTrapOutputOverCurrent	Fault	upsTrapOutputOverCurrentClear

1600XP Alarm/Trap Table				
ID	**Alarm Occur Message**	**SNMP Trap Add**	**Level**	**SNMP Trap Remove**
13	upsAlarmDCUnderVoltAtBoostUp	upsTrapDCUnderVoltAtBoostUp	Fault	upsTrapDCUnderVoltAtBoostUp Clear
14	upsAlarmDCUnderVoltAt Charge	upsTrapDCUnderVoltAtCharge	Fault	upsTrapDCUnderVoltAtCharge Clear
15	upsAlarmBypassOverheat	upsTrapBypassOverheat	Fault	upsTrapBypassOverheatClear
16	upsAlarmResettableInverter Overload	upsTrapResettableInverterOverload	Fault	upsTrapResettableInverter OverloadClear
17	upsAlarmUnresettableInverter Overload	upsTrapUnresettableInverter Overload	Fault	upsTrapUnresettableInverter OverloadClear
18	upsAlarmInputOverVoltage	upsTrapInputOverVoltage	Warning	upsTrapInputOverVoltageClear
19	upsAlarmInputUnderVoltage	upsTrapInputUnderVoltage	Warning	upsTrapInputUnderVoltageClear
20	upsAlarmInputFrequencyError	upsTrapInputFrequencyError	Warning	upsTrapInputFrequencyErrorClear
21	upsAlarmBypassOverVoltage	upsTrapBypassOverVoltage	Warning	upsTrapBypassOverVoltageClear
22	upsAlarmBypassUnderVoltage	upsTrapBypassUnderVoltage	Warning	upsTrapBypassUnderVoltageClear
23	upsAlarmBypassFrequency Error	upsTrapBypassFrequencyError	Warning	upsTrapBypassFrequencyError Clear
24	upsAlarmDCUnderVoltAtBattTest	upsTrapDCUnderVoltAtBattTest	Warning	upsTrapDCUnderVoltAtBattTestClear
25	upsAlarmBatteryLow	upsTrapBatteryLow	Warning	upsTrapBatteryLowClear
26	upsAlarmBatteryAtShutdown level	upsTrapBatteryAtShutdownlevel	Warning	upsTrapBatteryAtShutdownlevel Clear
27	upsAlarmReplaceBattery	upsTrapReplaceBattery	Warning	upsTrapReplaceBatteryClear
28	upsAlarmChargerOverVoltage Warning	upsTrapChargerOverVoltage Warning	Warning	upsTrapChargerOverVoltage WarningClear
29	upsAlarmBatteryTestFailed	upsTrapBatteryTestFailed	Warning	upsTrapBatteryTestFailedClear
30	upsAlarmBatteryDepleted	upsTrapBatteryDepleted	Warning	upsTrapBatteryDepletedClear
31	upsAlarmBatteryOverheat	upsTrapBatteryOverheat	Warning	upsTrapBatteryOverheatClear
32	upsAlarmSystemOverheat	upsTrapSystemOverheat	Warning	upsTrapSystemOverheatClear
33	upsAlarmOutputOverload Warning	upsTrapOutputOverloadWarning	Warning	upsTrapOutputOverloadWarning Clear
34	upsAlarmCurrentLimitWarning	upsTrapCurrentLimitWarning	Warning	upsTrapCurrentLimitWarningClear
35	upsAlarmAsyncOperation	upsTrapAsyncOperation	Warning	upsTrapAsyncOperationClear
36	upsAlarmServiceUPS	upsTrapServiceUPS	Warning	upsTrapServiceUPSClear
37	upsAlarmBatteryNear Expiration	upsTrapBatteryNearExpiration	Warning	upsTrapBatteryNearExpiration Clear
38	upsAlarmBatteryExpired	upsTrapBatteryExpired	Warning	upsTrapBatteryExpiredClear
39	upsAlarmDisplayCableError	upsTrapDisplayCableError	Warning	upsTrapDisplayCableErrorClear

1600XP Alarm/Trap Table				
ID	**Alarm Occur Message**	**SNMP Trap Add**	**Level**	**SNMP Trap Remove**
40	upsAlarmRemotEyeCommError	upsTrapRemotEyeCommError	Warning	upsTrapRemotEyeCommError Clear
41	upsAlarmRemotEyeUplink CommError	upsTrapRemotEyeUplink CommError	Warning	upsTrapRemotEyeUplink CommErrorClear
42	upsAlarmServicePortComm Error	upsTrapServicePortCommError	Warning	upsTrapServicePortCommError Clear
43	upsAlarmDispCommError	upsTrapDispCommError	Warning	upsTrapDispCommErrorClear
44	upsAlarmSystemTestFailed	upsTrapSystemTestFailed	Warning	upsTrapSystemTestFailedClear
45	upsAlarmBypassOn	upsTrapBypassOn	Info	upsTrapBypassOnClear
46	upsAlarmPowerFailure	upsTrapPowerFailure	Info	upsTrapPowerFailureClear
47	upsAlarmShutdownPending	upsTrapShutdownPending	Info	upsTrapShutdownPendingClear
48	upsAlarmOutputOffAs Requested	upsTrapOutputOffAsRequested	Info	upsTrapOutputOffAsRequested Clear
49	upsAlarmOutputOff	upsTrapOutputOff	Info	upsTrapOutputOffClear
50	upsAlarmBatteryTestInProgress	upsTrapBatteryTestInProgress	Info	upsTrapBatteryTestInProgress Clear
51	upsAlarmBatteryOn	upsTrapBatteryOn	Info	upsTrapBatteryOnClear
52	upsAlarmEMDSensor1Alarm Triggered	upsTrapEMDSensor1Alarm Triggered	Info	upsTrapEMDSensor1Alarm TriggeredClear
53	upsAlarmEMDSensor2Alarm Triggered	upsTrapEMDSensor2Alarm Triggered	Info	upsTrapEMDSensor2Alarm TriggeredClear
54	upsAlarmEMDHumidityAtLow CiriticalPoint	upsTrapEMDHumidityAtLow CriticalPoint	Info	upsTrapEMDHumidityAtLow CriticalPointClear
55	upsAlarmEMDHumidityAtHigh CiriticalPoint	upsTrapEMDHumidityAtHigh CriticalPoint	Info	upsTrapEMDHumidityAtHigh CriticalPointClear
56	upsAlarmEMDHumidityAtLow WarningPoint	upsTrapEMDHumidityAtLow WarningPoint	Info	upsTrapEMDHumidityAtLow WarningPointClear
57	upsAlarmEMDHumidityAtHigh WarningPoint	upsTrapEMDHumidityAtHigh WarningPoint	Info	upsTrapEMDHumidityAtHigh WarningPointClear
58	upsAlarmEMDTemperatureAtLow CiriticalPoint	upsTrapEMDTemperatureAtLow CriticalPoint	Info	upsTrapEMDTemperatureAtLow CriticalPointClear
59	upsAlarmEMDTemperatureAtHigh CiriticalPoint	upsTrapEMDTemperatureAtHigh CriticalPoint	Info	upsTrapEMDTemperatureAtHigh CriticalPointClear
60	upsAlarmEMDTemperatureAtLow WarningPoint	upsTrapEMDTemperatureAtLow WarningPoint	Info	upsTrapEMDTemperatureAtLow WarningPointClear
61	upsAlarmEMDTemperatureAtHigh WarningPoint	upsTrapEMDTemperatureAtHigh WarningPoint	Info	upsTrapEMDTemperatureAtHigh WarningPointClear

1600XP Alarm/Trap Table				
ID	**Alarm Occur Message**	**SNMP Trap Add**	**Level**	**SNMP Trap Remove**
62	upsAlarmLogInError	upsTrapLogInError	Info	upsTrapLogInErrorClear

4200FA/4300 Alarm/Trap Table				
ID	**Alarm Occur Message**	**SNMP Trap Add**	**Level**	**SNMP Trap Remove**
1	upsAlarmFault	upsTrapFault	Fault	upsTrapFaultClear
2	upsAlarmOpenFuse	upsTrapOpenFuse	Fault	upsTrapOpenFuseClear
3	upsAlarmCurrentLimitFault	upsTrapCurrentLimitFault	Fault	upsTrapCurrentLimitFaultClear
4	upsAlarmDCBusOverCurrent	upsTrapDCBusOverCurrent	Fault	upsTrapDCBusOverCurrentClear
5	upsAlarmDCOverVoltage	upsTrapDCOverVoltage	Fault	upsTrapDCOverVoltageClear
6	upsAlarmDCBusImbalance	upsTrapDCBusImbalance	Fault	upsTrapDCBusImbalanceClear
7	upsAlarmOutputUnderVoltage	upsTrapOutputUnderVoltage	Fault	upsTrapOutputUnderVoltageClear
8	upsAlarmOutputOverVoltage	upsTrapOutputOverVoltage	Fault	upsTrapOutputOverVoltageClear
9	upsAlarmHeatSinkOverheat	upsTrapHeatSinkOverheat	Fault	upsTrapHeatSinkOverheatClear
10	upsAlarmUPSOverload	upsTrapUPSOverload	Fault	upsTrapUPSOverloadClear
11	upsAlarmChargerOverVoltage Fault	upsTrapChargerOverVoltage Fault	Fault	upsTrapChargerOverVoltage FaultClear
12	upsAlarmOutputOverCurrent	upsTrapOutputOverCurrent	Fault	upsTrapOutputOverCurrentClear
13	upsAlarmDCUnderVoltAtBoostUp	upsTrapDCUnderVoltAtBoostUp	Fault	upsTrapDCUnderVoltAtBoostUp Clear
14	upsAlarmDCUnderVoltAtCharge	upsTrapDCUnderVoltAtCharge	Fault	upsTrapDCUnderVoltAtCharge Clear
15	upsAlarmBypassOverheat	upsTrapBypassOverheat	Fault	upsTrapBypassOverheatClear
16	upsAlarmInputPhaseRotationError	upsTrapInputPhaseRotationError	Fault	upsTrapInputPhaseRotationErrorClear
17	upsAlarmBypassPhaseRotationError	upsTrapBypassPhaseRotationError	Fault	upsTrapBypassPhaseRotationErrorClear
18	upsAlarmWarning	upsTrapWarning	Warning	upsTrapWarningClear
19	upsAlarmInputOverVoltage	upsTrapInputOverVoltage	Warning	upsTrapInputOverVoltageClear
20	upsAlarmInputUnderVoltage	upsTrapInputUnderVoltage	Warning	upsTrapInputUnderVoltageClear
21	upsAlarmBatteryTestFailed	upsTrapBatteryTestFailed	Warning	upsTrapBatteryTestFailedClear
22	upsAlarmSystemTestFailed	upsTrapSystemTestFailed	Warning	upsTrapSystemTestFailedClear
23	upsAlarmBatteryLow	upsTrapBatteryLow	Warning	upsTrapBatteryLow Clear
24	upsAlarmBatteryAtShutdownlevel	upsTrapBatteryAtShutdownlevel	Warning	upsTrapBatteryAtShutdownlevelClear
25	upsAlarmBatteryVoltageNotGood	upsTrapBatteryVoltageNotGood	Warning	upsTrapBatteryVoltageNotGoodClear
26	upsAlarmBatteryMCCBOff	upsTrapBatteryMCCBOff	Warning	upsTrapBatteryMCCBOff Clear
27	upsAlarmBypass	upsTrapBypass	Warning	upsTrapBypassClear

4200FA/4300 Alarm/Trap Table				
ID	**Alarm Occur Message**	**SNMP Trap Add**	**Level**	**SNMP Trap Remove**
28	upsAlarmChargerOverVoltage	upsTrapChargerOverVoltage	Warning	upsTrapChargerOverVoltageClear
29	upsAlarmBatteryOverheat	upsTrapBatteryOverheat	Warning	upsTrapBatteryOverheatClear
30	upsAlarmBatteryDepleted	upsTrapBatteryDepleted	Warning	upsTrapBatteryDepletedClear
31	upsAlarmBatteryOverheat	upsTrapBatteryOverheat	Warning	upsTrapBatteryOverheatClear
32	upsAlarmSystemOverheat	upsTrapSystemOverheat	Warning	upsTrapSystemOverheatClear
33	upsAlarmInverterOverloadWarning	upsTrapInverterOverloadWarning	Warning	upsTrapInverterOverloadWarning Clear
34	upsAlarmOuputOverloadWarning	upsTrapOutputOverloadWarning	Warning	upsTrapOutputOverloadWarningClear
35	upsAlarmCurrentLimitWarning	upsTrapCurrentLimitWarning	Warning	upsTrapCurrentLimitWarningClear
36	upsAlarmAsyncOperation	upsTrapAsyncOperation	Warning	upsTrapAsyncOperationClear
37	upsAlarmServiceUPS	upsTrapServiceUPS	Warning	upsTrapServiceUPSClear Clear
38	upsAlarmBatteryNearExpiration	upsTrapBatteryNearExpiration	Warning	upsTrapBatteryNearExpirationClear
39	upsAlarmBatteryExpired	upsTrapBatteryExpired	Warning	upsTrapBatteryExpiredClear
40	upsAlarmDispCommError	upsTrapDispCommError	Warning	upsTrapDispCommError Clear
41	upsAlarmRemotEyeUplink CommError	upsTrapRemotEyeUplink CommError	Warning	upsTrapRemotEyeUplink CommErrorClear
42	upsAlarmRemotEyeDownlinkCommError	upsTrapRemotEyeDownlinkCommError	Warning	upsTrapRemotEyeDownlinkCommErrorClear
43	upsAlarmRemotEyeUplinkCommError	upsTrapRemotEyeUplinkCommError	Warning	upsTrapRemotEyeUplinkCommError Clear
44	upsAlarmServicePortCommError	upsTrapServicePortCommError	Warning	upsTrapServicePortCommErrorClear
45	upsAlarmROMtoEEPROMError	upsTrapROMtoEEPROMError	Warning	upsTrapROMtoEEPROMErrorClear
46	upsAlarmEEPROMtoRAMError	upsTrapEEPROMtoRAMError	Warning	upsTrapEEPROMtoRAMErrorClear
47	upsAlarmMCCBTrip	upsTrapMCCBTrip	Warning	upsTrapMCCBTripClear
48	upsAlarmEEUpdateError	upsTrapEEUpdateError	Warning	upsTrapEEUpdateError Clear
49	upsAlarmOnBypass	upsTrapOnBypass	Info	upsTrapOnBypassClear
50	upsAlarmPowerFailure	upsTrapPowerFailure	Info	upsTrapPowerFailure Clear
51	upsAlarmEPOTripped	upsTrapEPOTripped	Info	upsTrapEPOTrippedClear
52	upsAlarmTimedShutdown	upsTrapTimedShutdown	Info	upsTrapTimedShutdownClear
53	upsAlarmLANShutdown	upsTrapLANShutdown	Info	upsTrapLANShutdownClear
54	upsAlarmRemoteShutdown	upsTrapRemoteShutdown	Info	upsTrapRemoteShutdownClear

4200FA/4300 Alarm/Trap Table				
ID	**Alarm Occur Message**	**SNMP Trap Add**	**Level**	**SNMP Trap Remove**
55	upsAlarmDelayStartup	upsTrapDelayStartup	Info	upsTrapDelayStartupClear
56	upsAlarmRemoteSwitch	upsTrapRemoteSwitch	Info	upsTrapRemoteSwitchClear
57	upsAlarmAutoReTransfer	upsTrapAutoReTransfer	Info	upsTrapAutoReTransferClear
58	upsAlarmProtectiveCharging	upsTrapProtectiveCharging	Info	upsTrapProtectiveCharingClear
59	upsAlarmEqualizedCharging	upsTrapEqualizedCharging	Info	upsTrapEqualizedChargingClear
60	upsAlarmManualMode	upsTrapManualMode	Info	upsTrapManualModeClear
61	upsAlarmOutputFrequency	upsTrapOutputFrequency	Info	upsTrapOutputFrequencyClear
62	upsAlarmInverterStartup	upsTrapInverterStartup	Info	upsTrapInverterStartupClear
63	upsAlarmBatteryTestInProgress	upsTrapBatteryTestInProgress	Info	upsTrapBatteryTestInProgressClear
64	upsAlarmForcedBypass	upsTrapForcedBypass	Info	upsTrapForcedBypassClear
65	upsAlarmLocalRun	upsTrapLocalRun	Info	upsTrapLocalRunClear
66	upsAlarmRemoteRun	upsTrapRemoteRun	Info	upsTrapRemoteRunClear
67	upsAlarmFirmwareUpdate	upsTrapFirmwareUpdate	Info	upsTrapFirmwareUpdateClear
68	upsAlarmBypassEnable	upsTrapBypassEnable	Info	upsTrapBypassEnableClear
69	upsAlarmBatteryTestDisabled	upsTrapBatteryTestDisabled	Info	upsTrapBatteryTestDisabledClear
70	upsAlarmDefaultCalibration	upsTrapDefaultCalibration	Info	upsTrapDefaultCalibrationClear
71	upsAlarmShutdownPending	upsTrapShutdownPending	Info	upsTrapShutdownPendingClear
72	upsAlarmOutputOffAsRequested	upsTrapOutputOffAsRequested	Info	upsTrapOutputOffAsRequestedClear
73	upsAlarmOutputOff	upsTrapOutputOff	Info	upsTrapOutputOffClear
74	upsAlarmBatteryOn	upsTrapBatteryOn	Info	upsTrapBatteryOnClear

Connected Client Table

This page lists the protected registered clients of the RemotEye III that are running during the execution of the RemotEye III Shutdown application (See Figure 34: RemotEye III Client Table Web Page). Go to section "Toshiba RemotEye Client Software" on page 103 for more details on the software application. This page will refresh automatically at a user-defined rate. To change or view the current refresh rate setting, select "RemotEye III Management" → "HTTP Page Refresh Rates" in the RemotEye III web interface.

Figure 34: RemotEye III Client Table Web Page

Connected Client Number
This field shows the total number of RemotEye III-UPS clients running Shutdown Application Software which are presently registered with the RemotEye III. Up to 250 clients may be registered at one time.

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

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

Client Name
This field shows the computer/Server names of the registered clients of the RemotEye III.

Connected Time
This field shows how long each registered client has been connected to RemotEye III.

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

Note: To download the Shutdown software application please visit the following web link:
http://www.toshibaups.com

UPS Management

This menu contains the control parameters of the UPS system connected to the RemotEye III.

UPS Configuration General

This section shows the identification, installed date, input and output electrical parameters of the UPS. This page also allows the administrator to select which Alarm E-Mail notifications/SNMP Traps to receive.

UPS Confgiuration General					
Parameter #	Object	Description	1600XP	4200FA	4300
1	UPS Sytem Name	This field shows the specific name to identify a particular UPS.	✓	✓	✓
2	UPS Attached Devices	This field allows the administrator to assign a description of load devices that attach to the UPS or to view the current setting.	✓	✓	✓
3	UPS Instalation Date	This field allows the administrator to change the date the UPS was installed.	✓	✓	✓
4	Input Rated Voltage (V)	This field shows the input rated voltage of the UPS. This can be changed by the administrator.	✓	×	×
5	Ouput Rated Voltage (V)	This field shows the output rated voltage of the UPS.	✓	×	×
6	UPS Service Comm Port Setting	This field shows the external communication port settings of the UPS. The 4300 Series default Comm Port Setting is set to 57600.	✓	✓	✓
7	Input Frequency Setp when Error	This field shows the frequency to set if the UPS cannot determine the input frequency after 3 seconds. This can be changed by the administrator. Users can only input 50.0 Hz or 60.0 Hz	✓	×	×
8	Battery Rated Backup Time (Mins)	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.	✓	✓	✓
9	Battery in Series	This field allows the administrator to configure the total number of batteries in series of the UPS system.	×	✓	✓
10	Battery In Parallel	This field allows the administrator to configure the the total number of batteries in parallel of the UPS system.	×	✓	✓
11	Battery Rated Ampere Hour (Ahr)	This field allows the adminstrator to configure the Battery Rated Ampere Hour (Ahr).	×	✓	✓

UPS Alarm E-Mail/SNMP Trap Configuration

This section allows the administrator to select which faults, warnings, and informational notifications to receive via E-mail or SNMP Traps. If a checkbox is not filled, RemotEye III will not send that particular alarm. By default, all of the alarms are turned ON (See Figure 35: RemotEye III Selectable E-mail/SNMP Traps Notifications).

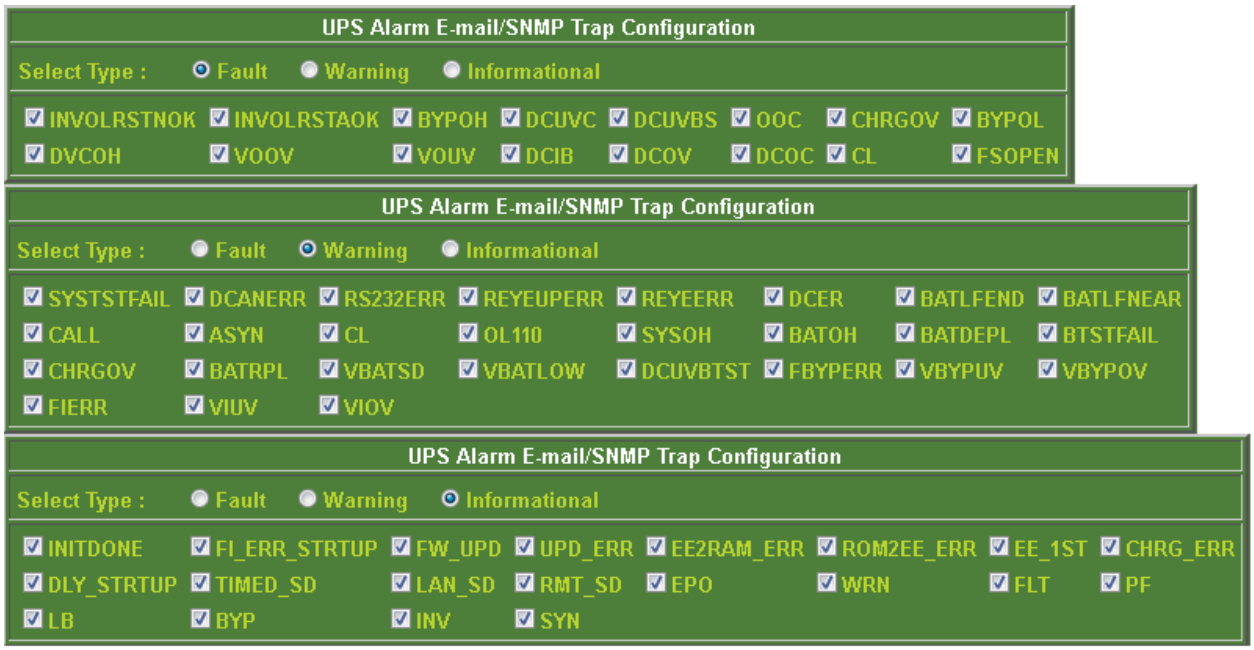


Figure 35: RemotEye III Selectable E-mail/SNMP Traps Notifications

UPS Configuration Display (Applicable to 1600XP Only)

This section shows the display parameters of the UPS.

Display Sleep Timer (Mins)
This field shows the amount of time the display will remain active before it will go to “sleep”.

Display Buzzer Mode
This field shows the Buzzer status as Enabled or Disabled.

UPS Control for 1600XP

This page shows the adjustable settings of the 1600XP UPS.

Output Voltage Adjust
This field shows the manual voltage adjustment for the output of the UPS.

Range – -5 to +5 (One increment ~1Vrms)

Default Value = 0

UPS Enable RMTI-3 To Control Mode
This field shows the present mode of the control that the RemotEye III has on the UPS. This allows the RemotEye to enable or disable control the UPS Bypass and On-Line mode. It is set by the administrator.UPS Mode Change Delay (secs)

0 – Disable

1 – Enable

Default Value = Enable

UPS Mode Change Delay (secs)
This field shows the amount of time, in seconds, before the UPS will change state.

Range – 0 to 800 seconds

Default Value = 0

UPS Mode Change Request
This field shows the mode the UPS can switch to. Users can notify the UPS to switch to Shutdown, Bypass, On-Line, using this feature. Choices are:

1- Shutdown Request
2- Bypass Request: ***UPS Enable RMTI-3 To Control Mode*** must be Enabled in order to function.
3- On-Line Request: ***UPS Enable RMTI-3 To Control Mode*** must be Enabled in order to function

Default Value = None

UPS Start Up Delay Enable
This field shows the present state of the UPS Start Up delay. It can be enabled or disabled. It is set by the administrator.

0 – Disable

1 – Enable

Default Value = Disable

UPS Start Up Delay (secs)
This field shows the time delay, in seconds, before UPS Start Up immediately following a shutdown. It is set by the administrator.

Range – 0 to 800 seconds: ***UPS Start Up Delay Enable*** must be Enabled in order to function.

Default Value = 0

UPS Start Up Delay Mode
This field shows the mode at which to enter following the start-up delay. It can either enter Bypass state or On-Line state. It is set by the administrator.

0- Bypass: ***UPS Start Up Delay Enable*** must be Enabled in order to function.
1- On-Line

Default Value = Bypass

UPS Restart After Battery Shutdown Enable
This field shows the present mode set for UPS input power detection immediately after a shutdown while on batteries. It is set by the administrator.

0 – Disable

1 – Enable

Default Value = Enable

UPS Restart After Battery Shutdown Delay (secs)
This field shows the time delay, in seconds, before UPS Start Up immediately following a shutdown while on batteries. It is set by the administrator.

Range – 0 to 800 seconds: ***UPS Restart After Battery Shutdown Enable*** must be Enabled in order to function.

Default Value = 10

UPS Restart Mode
This field shows the mode at which to enter when UPS is restarted. It can either enter Bypass state or On-Line state. It is set by the administrator.

0- Bypass: ***UPS Restart After Battery Shutdown Enable*** must be Enabled in order to function.
1- On-Line

Default Value = On-Line

UPS Auto Transfer Enable
This field shows the present mode for the auto transfer of the UPS. This allows the UPS to transfer from On-Line to Bypass or vise-versa. It can be enabled or disabled. It is set by the administrator.

0 – Disable

1 – Enable

Default Value = Enable

UPS Auto Retransfer Delay (secs)
This field shows the time period to wait after fault occurrence before attempting transfer back On-Line. It is set by the administrator.

Range – 0 to 600 seconds: UPS ***Auto Transfer Enable*** must be Enabled in order to function.

Default Value = 3

Remote Contact Shutdown State
This field shows the present state of the remote contacts shutdown control. It can be open or closed.

0 – Open (Software Defined)

Invert Remote Contact Shutdown Logic
This field shows the logic state of the remote contact shutdown. It can be non-inverted or inverted. It is set by the administrator.

0 – Not Inverted

1 – Inverted

Default Value = Not Inverted

Remote Contact Shutdown Mode Selection
This field shows the mode of the remote contact shutdown. It is set by the administrator.

0 – Bypass

1 – Shutdown while contact closed

Default Value = Bypass

Dry Contact LAN Shutdown Enable

This field shows the present mode for Dry Contact LAN Shutdown. It is set by the administrator.

0 – Disable

1 – Enable

Default Value = Enable

Dry Contact LAN Shutdown Delay (secs)

This field shows the time delay between actual event occurrence and dry contact closure. It is set by the administrator.

Range – 0 to 800 seconds: ***Dry Contact LAN Shutdown Enable*** must be Enabled in order to function

Default Value = 600

Dry Contact On Battery Delay Timer (secs)

This field shows the time delay between actual event occurrence and dry contact closure. It is set by the administrator.

Range – 0 to 800 seconds

Default Value = 10

Dry Contact Low Battery Delay Timer (secs)

This field shows the time delay between actual event occurrence and dry contact closure. It is set by the administrator.

Range – 0 to 800 seconds

Default Value = 0

UPS Control for 4200FA/4300

This page shows the adjustable settings of the 4200FA/4300 UPS.

UPS Auto Restart
This field shows the mode at which to enter when UPS is restarted. It can be enabled or disabled. It is set by the administrator.
0-Disable
1-Enable

UPS Remote Bypass Switch
This field allows the user to remotely transfer the UPS to bypass. It can be enabled or disabled. It is set by the administrator.
0-Disable
1 – Enable
Note: UPS must be in On-Line mode before this feature can be enabled.

UPS Auto Retransfer
This field shows the present mode for the auto retransfer function of the UPS. It can be enabled or disabled. It is set by the administrator.
0 - Disable
1 - Enable

Battery Auto Test
This field shows the present status for the UPS battery auto test function. It can be enabled or disabled. It is set by the administrator.
0 - Disable
1 - Enable

Battery Auto Test Interval
This field shows the test interval at which UPS should automatically test the batteries. It can be set daily, weekly, or monthly. It is set by the administrator.
0 - Daily
1 - Weekly
2 - Monthly

Battery Test at Start Up
This field shows the present mode for the UPS battery test at startup function. It can be enabled or disabled. It is set by the administrator.
0 - Disable
1 - Enable

Battery Power Fail Equalize Duration (secs)
This field shows the minimum amount of time, in seconds, required for the UPS to remain in battery backup mode before it will trigger equalize charge mode.
Range - 60 to 315 seconds

Battery Start Equalize Charge
This field shows the present mode of the UPS Battery Start Equalize Charge function. It can be enabled or disabled. It is set by the administrator.
0 - Disable
1 - Enable

UPS Battery Test (Applicable to 1600XP Only)

This page shows history, results, and configuration for UPS battery test.

- **Last Test Start Time** – Displays the date and the time when the last battery test was initiated.
- **Last Test Elapsed Time** – Displays the duration of the battery test.
- **Last Test Result** – Displays whether the battery test passed or failed.
- **Battery Test Command**:
  - None - No action.
  - Quick Test (10 sec) - Quick test for 10 seconds.
  - Cancel Test - Cancel the current battery test.
  - Clear Test Result - Clear the last battery test result recorded by RemotEye III.

UPS Startup Batt Test Enable
This field allows the RemotEye to force a battery test when UPS starts following a shutdown. It is enabled by the administrator.

UPS Battery Test Enable
This field allows the RemotEye to enable or disable a battery test. It is set by the administrator.

UPS Battery Test Condition Status
This field specifies the availability of the battery test feature. Note: the battery test can only be done once a day.

UPS Battery Test Schedule (Applicable only to 1600XP)

This page allows configuring the battery test schedule for the UPS.

Index
This field shows the battery test number.

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 hh:mm format.

Actions
This field shows the battery test type option.

- None – No action
- Quick Test (10 Sec) – Quick test for 10 seconds

UPS Shutdown Events (Applicable to 1600XP only)

This page allows the administrator to modify the output shutdown parameters of the UPS that depends on the event.

UPS Output Shutdown Delay (secs)
This field allows the administrator 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 Toshiba RemotEye Client Shutdown Software program for all connected clients (See page 103 Toshiba RemotEye Client Software for more information). To avoid improper shutdown of the clients, the "UPS output shutdown delay" time setting in the RemotEye III should always be greater than the Toshiba RemotEye Client Shutdown Software Service program's shutdown delay setting.

UPS Event
This field column shows the event attributed to a shutdown action.

- **Input Power Failure** – This field shows the action taken upon detection of an input power failure. Default: Client Warning
- **Battery Low** – This field shows the action taken upon detection of a battery low condition.
- **Default: Client Warning**
- **UPS Overload** – This field shows the action taken upon detection of a UPS Overload condition:
- **Default: Client Warning**
- **UPS System Overheat** – This field shows the action taken upon detection of a UPS over temperature condition.
- **Default: Client Warning**
- **EMD Temperature Over Threshold** – This field shows action taken upon detection of a EMD Temperature Over Threshold condition.
- **Default: Disabled.**
- **EMD Alarm-1** - This field shows action taken upon detection of a EMD Alarm-1 condition.
- **Default: Disabled**.
- **EMD Alarm-2** – This field shows action taken upon detection of a EMD Alarm-2 condition.
- **Default: Disabled**.
- **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**.

Action
This field allows the administrator to set a course of action to be taken in the event of a fault that are listed in the "UPS Event" column.

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

Client Warning - A warning message will be broadcasted to the connected clients. Note: The Toshiba RemoteEye Client Shutdown Software has to be installed on the client.

Client Shutdown - A warning message will be broadcasted and the shutdown command will be sent to the connected clients. Note: The Toshiba RemoteEye Client Shutdown Software has to be installed on the client.

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

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

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

Recurring On/Off Schedule (Applicable only to 1600XP)

This page allows the administrator to create a recurring UPS shutdown and restart schedule. Ensure that the Recurring On/Off Schedule option is enabled in the "UPS Shutdown Events" web menu (See UPS Shutdown Events on page 69 for more information) in order to activate any scheduled events.

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

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

Restart Time (hh:mm)
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 24-hour format (e.g., 8:30 p.m. is 20:30).

Note: to turn off this feature for a particular date type 99:99 in the time fields.

Non-Recurring On/Off Schedule (Applicable to 1600XP Only)

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

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

Output Shutdown Date (mm/dd/yyyy)
This field allows the administrator to configure the specific date of the UPS output shutdown or to view the current setting.

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

Restart Date (mm/dd/yyyy)
This field allows the administrator to configure the UPS restart date or to view the current setting.

Restart Time (hh:mm)
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 24-hour format (i.e. 8:30 p.m. is 20:30).

Note: to turn off this feature for a particular date type 99:99 in the time fields.

Email Notification

This page allows the administrator to set the RemotEye III 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 RemotEye III. If entering a Hostname, the Domain Name Server (DNS) IP address is required in the DNS field.

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

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

Note: Not all SMTP Server requires login name and password. Please check with SMTP administrator.

Domain Name
This field allows the administrator to set the domain name of the LAN for 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 the email address recipients that are selected to receive Daily Status Reports. The time is set in a 24-hour format hh:mm.

Choose the attached log data file for Daily Status Report
This field allows the administrator to select which logs to send daily to the user's mail account which is set in the E-mail recipient account table.

Records Options are**:**

1. General Records
2. RemotEye III Events Log
3. Test Records (Not available for 4200FA/4300)
4. Backup Records
5. Fault Records
6. Operation Mode Records
7. Warning Records (Not available for 4200FA/4300)
8. System Setting Change Record (Not available for 4200FA/4300).

Choose the attached log data file for Event Status Report
This field allows the administrator to select which logs to send to the user's mail account which set in E-mail recipient account table, when it encounters an event condition.

Records Options are**:**

1. General Records
2. RemotEye III Events Log
3. Test Records (Not available for 4200FA/4300)
4. Backup Records
5. Fault Records
6. Operation Mode Records
7. Warning Records (Not available for 4200FA/4300)
8. System Setting Change Record (Not available for 4200FA/4300).

E-mail Account Recipients Table

The second table lists the E-mail recipients' accounts and the level of reporting they will receive.

Mail Account
This field allows the administrator to set the E-mail address of the recipients who will receive the events or/add the daily 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 ("systemName" and "SystemLoaction" can be set in the RemotEye III Configuration menu, see "RemotEye III Configuration" on page 78)
- Daily Status – Logs selected by administrator will be sent daily to the email recipients at the designated time (See "Choose the attached log data file for Daily Status Report" on page 71).
- Events with Status – Events along with logs selected by the administrator will be sent to email recipients when events occur (See "Choose the attached log data file for Event Status Report" on page 71).

Info Level
This field allows the administrator to select

Informational: Refers to changes in the state of the UPS. This is based on which "Informational" alarms are selected in the "UPS Configuration General" page.

Warning: UPS has encountered a non-critical abnormal condition that requires attention. This is based on which "Warning" alarms are selected in the "UPS Configuration General" page.

Fault: UPS has encountered a critical abnormal condition and requires attention. This is based on which "Fault" alarms are selected in the "UPS Configuration General" page. Please refer to the manual for possible causes and solutions.

EMD (Environmental Monitoring Device)

The Environmental Monitoring Device (EMD) is a monitoring device that provides real time comprehensive remote monitoring of environment temperature, environment humidity, and other environmental conditions via a web browser and SNMP. The EMD also provides two users defined dry contacts for additional environmental monitoring. These dry contacts can be used with devices that provide normally-open or normally-closed results, such as door sensors, smoke detectors, motion detectors, and liquid detectors. The EMD is connected to the RemotEye III using an Ethernet cable. One end, of the Ethernet cable, is connected to the RJ45 port of the EMD and the other end to the "COM" port of the RemotEye III. Note: The EMD module is separate device which can be purchased from a Toshiba UPS distributor.

EMD Installation

This section will explain the how to setup/install the EMD to RemotEye III.

1) Use the Cat5 (straight) cable and connect one end to the "010101" port on the EMD.

2) Now connect the other end of the Cat5 (straight) cable to the "COM" port of the RemotEye III.

3) Make sure that the "Communication Status" green LED blinks periodically. If the LED does not blink, verify that the Cat5 cable if functional.

5) Check the "Device Status" under the "EMD Configuration" page and make sure that it is set to "Auto" (See "EMD Configuration" on page 75).

Figure 36: EMD RemotEye III Installation

EMD Parameter

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

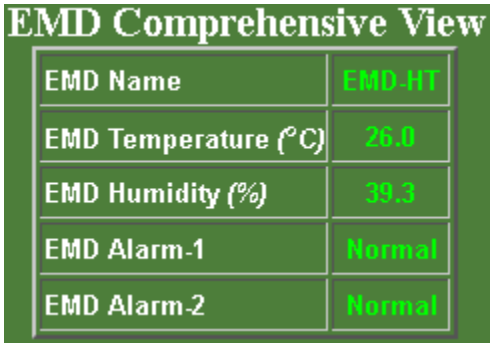


Figure 37: EMD Green Web Status (Normal)

- YELLOW: “warning” status

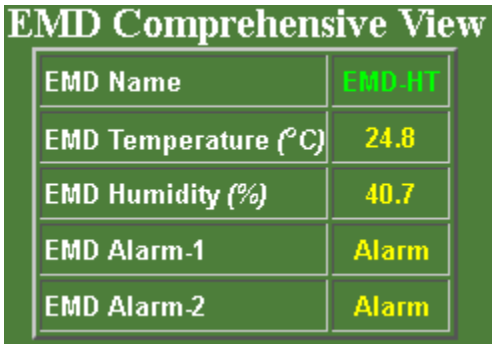


Figure 38: EMD Yellow Web Status (Warning)

- RED: “critical” status

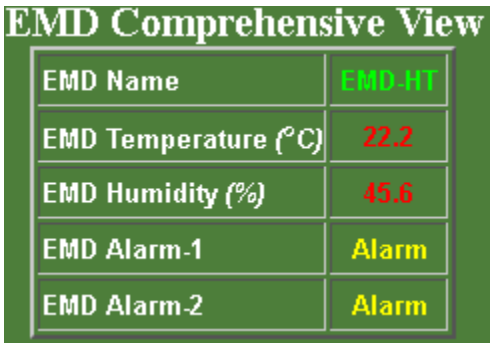


Figure 39: EMD Red Web Status (Critical)

- GREY: “unknown” value

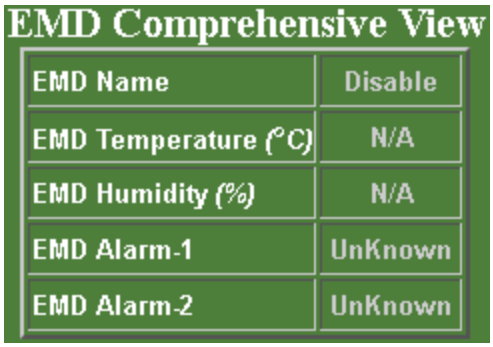


Figure 40: EMD Gray Web Status (Unknown)

The EMD provides the measurements for room (ambient) temperature, room (ambient) humidity, and two alarms (two dry contacts). The warning/critical thresholds can be setup via the "EMD Setup" page.

The table Comprehensive View shows the following parameters:
EMD Name - This field displays the EMD Status as followed:

- "EMD-HT" – When the EMD is connected and working correctly.

"Disable" – Whenever the EMD is connected but the "Device Status" is disabled in the EMD configuration settings (See "

- EMD Configuration" in page 75).
- "Unknown" – Whenever the EMD is not connected to the RemotEye III.

EMD Temperature (°C) - This field displays the temperature in Celsius degrees.

EMD Humidity (%) - This field displays the humidity in %.

EMD Alarm-1 - This field displays the Alarm-1 status.

EMD Alarm-2 - This field displays the Alarm-2 status.

EMD Configuration

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

Sensors
The sensors column parameters consist of the following:

1. Temperature (°C)
2. Humidity (%)
3. Alarm-1 (Sec)
4. Alarm-2 (Sec)
5. Device Status

Set Point (Low)
The low threshold(s) at which the sensor (temperature or humidity) will trigger an alarm(s). The EMD can be configured to activate at two set points on the low limit Warning, and Critical. 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°C to 65°C, and for Humidity threshold setting is 5% to 95%.

Set Point (High)
The high threshold(s) at which the sensor (temperature or humidity) will trigger an alarm(s). The EMD can be configured to activate two high set points Warning, and Critical. 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°C to 65°C, and for Humidity threshold setting is 5% to 95%.

Hysteresis
A sensors value could float around its threshold triggering multiple nuisance alarms. Setting the hysteresis will help to prevent the alarm bouncing between active and inactive. For example, if the High Warning threshold set point is 40°C and hysteresis is 3, then the alarm will activate when the value reaches 40°C but it will not become inactive again until the sensor value reaches 37°C.

For the contact alarm sensors (Alarm-1 and Alaarm-2), 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-1 (Sec) & Alarm-2 (Sec)
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 or would like to turn of the EMD feature. The EMD type will be auto detected by the RemotEye III if configured as "Auto" and if the EMD is plugged into the COM port.

RemotEye III Management

This menu allows the administrator to view the RemotEye III settings/control parameters. The security levels are as followed: Users have read-only privileges, whereas the administrators have read/write access.

Date and Time

This page shows the Date & Time options setting/parameters for RemotEye III.

Date On RemotEye III (mm/dd/yyyy)
This field show the current date stored in the RemotEye III. Please see the following sections that explain how to change RemotEye III's date. The date value is displayed in the MM/DD/YYYY format (i.e., Aug 18, 2012 is 08/18/2012).

Time On RemotEye III (hh:mm:ss)
This field shows the current time stored in the RemotEye III. Please see the following sections that explain how to change RemotEye III's time. 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 (Computer Date & Computer Time)
If this option is selected, the administrator is allowing the RemotEye III's date and time to be synchronized with the end user's computer date and time.

Synchronize with NTP Server (IP Address)
If this option is selected, an NTP (Network Time Protocol) server IP address must be entered and select the correct time zone to activate this option. After configuration, the RemotEye III will synchronize its time and date with the server periodically.

Set Manually (Date (mm/dd/yyyy) & Time (hh:mm:ss))
If this option is selected, will allow the administrator to configure the RemotEye III's date and time manually,

Time Zone
This field allows the administrator to set the local time zone and compensate for Daylight Savings Time when setting the RemotEye III date and time manually or via an NTP server.

RemotEye III Configuration

This page shows the configurable settings/parameters of the RemotEye III.

RemotEye III Software Revision
This field shows the software revision of RemotEye III.

RemotEye III Hardware (MAC) Address
This field shows the RemotEye III MAC address. MAC address format is 00 E0 D8 XX XX XX.

RemotEye III IP Address
This field allows the administrator to set the IP address of the RemotEye III or to view the current setting (i.e., 192.168.1.20).

RemotEye III Gateway Address
This field allows the administrator to set the IP address of the gateway or to view the current setting (i.e., 192.168.1.1). This is used to allow the RemotEye III to communicate to another network. If no gateway is used, 0.0.0.0 can be entered to this field.

RemotEye III Subnet Mask
This field allows the administrator to set the subnet mask of the RemotEye III or to view the current setting (i.e., 255.255.255.0). This identifies the network address that the RemotEye III belongs too.

RemotEye III Installation Date
This field shows the date the RemotEye was installed.

RemotEye III Install Status
This field notifies to the UPS that an external device is connected to the UPS.

RemotEye III Data Link
This field will display two different possibilities between RemotEye III and the UPS:

- Link Down: Disconnected
- Link Up: Connected

RemotEye III Network Link
This field will display two different possibilities between RemotEye III and the Network:

- Link Down: Disconnected
- Link Up: Connected

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

RemotEye III Baud Rate (bps) (Not avilable for the 4200FA/4300)
This field shows the data transmission rate between the UPS and the RemotEye III.

RemotEye III General Records Logs Frequency (secs)
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 into the UPS history log. The longer the polling rate the longer the time frame of records.

RemotEye III 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 III Client Identifier (CID) in DHCP systems (e.g. *SystemName*.tic.toshiba.com)

RemotEye III System Contact

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

RemotEye III System Location

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

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

RemotEye III Control

This page allows the administrator to Enable/Disable the available RemotEye III communication protocols. In addition, it allows the administrator to restart or reset (default settings) the RemotEye III.

RemotEye III DHCP Control
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.

RemotEye III Telnet Control
This field allows the administrator to Enable/Disable the terminal-to-server application (Telnet) control process (i.e., telnet 192.168.1.20).

RemotEye III TFTP Network Upgrade Control
This field allows the administrator to Enable/Disable the Trivial File Transfer Protocol (TFTP) upgrade control or to view the current setting. The Windows firmware upgrade utility, Tugrade (See "Network Firmware Upgrade Tool" on page 14), is used to upgrade the RemotEye III to the latest firmware when enabled.

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

HTTP(s) Autehnication
This field allows the administrator to select from Local User or RADIUS. If "Local User" is selected, the user will be authenticated by the RemotEye III stored credentials. If "RADIUS" is selected, the RemotEye III will communicate with a RADIUS server to verify the user's credentials.

RemotEye III Reset to Default
This field allows the administrator to Enable/Disable the RemotEye III Reset function. When enabled, all parameters in the RemotEye III will be reset to default setting (includes network settings, password, etc.).

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

RADIUS Configuration

This page allows the administrator to input the RADIUS server parameters. RADIUS is networking protocol that provides a centralized authentication to use its network service. The RemotEye III has the ability to communicate with a RADIUS server which will determine if the user has access to RemotEye III services. Here are the parameters required to enable the Radius feature:

RADIUS UDP Port
This field shows the default UDP port for RADIUS Authentication. (Read-Only)

Primary RADIUS Server
This field allows the administrator to set the IP address of the primary RADIUS server.

Secondary RADIUS Server
This field allows the administrator to set the IP address of the secondary RADIUS server, in case the primary server does not respond.

Share Secret of Primary Server
This allows the administrator to input the case-sensitive text sting (password) into the text field to access the RADIUS server.

Share Secret of Secondary Server
This allows the administrator to input the case-sensitive text sting (password) into the text field to access the RADIUS server.

Packet Timeout Interval (sec)
User can set the Packet Timeout Interval in seconds.

Packet Retry Times
User can set the packet retry times.

Modbus TCP Configuration

Node ID
Node ID can be any number from 1 to 255.

Port Number
Default Modbus TCP port number is 502.

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 (8 Max).

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 (Protocol Data Unit) 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: The specified NMS will not receive traps.
Toshiba Trap: Traps are received based on the Toshiba MIB.

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

Info Receiving Severity level
Informational: Refers to changes in the state of the UPS. Please see UPS manual for additional information

Warning: UPS has encountered a noncritical abnormal condition that requires attention. Please refer to the UPS manual for possible causes and solutions.

Fault: UPS has encountered a critical abnormal condition that requires attention. Please refer to the UPS manual for possible causes and solutions. If more information is needed or additional assistance is required, contact Toshiba authorized service center for Service.

Description
This field shows the administrator description string (text).

SNMP Communities /HTTP Access Control

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

Index
This field shows the index numbers for the table entries (8 Max).

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 192.168.1.255 indicates clients with IP address within the range of 192.168.1.0 to 192.168.1.255 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.

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

Access Mode
This field allows the administrator to set the access type for the client machines (NMS) or to view the current setting.

- No Access
- Read Only
- Read/Write

HTTP Page Refresh Rates

This page allows the administrator to set the HTTP page refresh interval rate (in seconds) of the following pages or to view the current setting.

- Comprehensive Page (secs)
- Input Parameter (secs)
- Output Parameter (secs)
- Bypass Parameter (secs)
- DC Bus Parameter (secs)
- Battery Parameter (secs)
- Alarm Table (secs)
- Connected Client Table (secs)

History Data & Logs

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

UPS History Summary

This page shows various UPS historical information. This information is based on the data accumulating since the start of the UPS

UPS History System Operation Time (Secs)
This field specifies how long the UPS has been operating (includes On-Line, Bypass, Backup) in seconds.

UPS History Inverter Operation Time (Secs)
This field specifies how long the UPS has been running in Inverter (On-Line) mode in seconds.

UPS History Backup Operation Time (Secs) (Not available for 4200FA/4300)
This field specifies how long the UPS has been running in battery backup mode in seconds.

UPS History Lifetime Remaining (Month) (Not available for 4200FA/4300)
This field specifies the remaining lifetime of the UPS in month.

UPS History Highest System Temp (°C) (Not available for 4200FA/4300)
This field shows the highest system temperature recorded of the UPS in Celsius.

UPS History Highest Battery Temp (Not available for 4200FA/4300)
This field shows the highest battery temperature recorded of the UPS in Celsius.

UPS History Total Number Input Under Voltage (Not available for 4200FA/4300)
This field shows the total number of times the UPS has entered under voltage state.

UPS History Total Number Overload (Not available for 4200FA/4300)
This field shows the total number of times the UPS has overloaded.

UPS History Total Number Test (Not available for 4200FA/4300)
This field shows the total number of tests that has been conducted on the UPS.

UPS History Total Number Backup
The field shows the total number of times the UPS has switched to battery backup mode.

UPS History Total Number Faults
This field shows the total number of faults the UPS has encountered.

UPS History Total Number Operation Mode Change
This field shows the total number of operational mode change the UPS has encountered.

UPS History Total Number Warnings (Not available for 4200FA/4300)
This field shows the total number of warnings the UPS has encountered.

UPS History Total Number System Settings Changed (Not available for 4200FA/4300)
This field shows the total number of UPS system setting changes the UPS has encountered.

UPS History Total Number Resets (Not available for 4200FA/4300)
This field shows the total number of resets occurred on the UPS.

General Records

This page lists the fundamental UPS parameters. Consolidation intervals may be changed by the administrator by modifying the variable General Records Log Frequency from the RemotEye III Configuration page (See "RemotEye III General Records Logs Frequency (secs)" on page 78). 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 (See "Clear & Save Log Data" on page 90).

General Records Log Index Page

This index lists the system status records as a series of blocks each containing up to 32 records. Each block is named "From (date) (time) To (Date) (Time)." The RemotEye will record up to a maximum of 1870 records, and then each additional new record will replace the oldest stored General Record.

Click on any index listing to see the UPS History Log Data Table for that period.

The 1600XP General Records Log Data Table has the following headings:

- Log Date (mm/dd/yyyy) - This field shows the date of the recording
- Log Time - This field shows the time that the values were recorded. Time is displayed in the hh:mm:ss 24-hour format (i.e., 8:30 p.m. is 20:30:00).
- Input Voltage (V)
- Input Frequency (Hz)
- Output Voltage (V)
- Battery Voltage (Vdc)
- Output Status
- Output Frequency (Hz)
- Output Current (Amps)

The 4200FA/4300 General Records Log Data Table has the following headings:

- Log Date (mm/dd/yyyy) - This field shows the date of the recording
- Log Time - This field shows the time that the values were recorded. Time is displayed in the hh:mm:ss 24-hour format (i.e., 8:30 p.m. is 20:30:00).
- Input Voltage (V) (V1, V2, V3)
- Input Power (%)
- Output Voltage (V) (V1, V2, V3)
- Battery Voltage (Vdc)
- Output Status
- Output Power Total (%)
- Output Current Total (%)

Test Records (Applicable to 1600XP Only)

This table lists the detail history of test that has occurred on the UPS. The Log can store a maximum of 680 records. If more events are recorded, the new record replaces the oldest record.

1. Log Date – This field shows the date of the recording.
2. Log Time - This field shows the time that the values were recorded. Time is displayed in the hh:mm:ss 24-hour format (i.e., 8:30 p.m. is 20:30:00).
3. Record Number - Maximum number of records is 255.

4. System Input Type
5. System Output Type
6. Input Voltage (%)
7. Output Voltage (%)
8. Output Load (%)
9. DC Input Voltage (%)
10. Battery Voltage
11. Test Type
12. RSV
13. PASS
14. Trigger Source

Backup Records

This table lists the detail history of backup that has occurred on the UPS. The Log can store a maximum of 680 records. If more events are recorded, the new record replaces the oldest record.

1600XP Backup Record Log Format

- Log Date – This field shows the date of the recording.
- Log Time - This field shows the time that the values were recorded. Time is displayed in the hh:mm:ss 24-hour format (i.e., 8:30 p.m. is 20:30:00).
- Record Number - Maximum number of records is 255.
- System Input Type
- System Output Type
- Input Voltage (%)
- Output Voltage (%)
- Output Load (%)
- DC Input Voltage (%)
- Battery Voltage start (%)
- Battery Voltage end (%)
- Trigger Source
- Backup Duration

4200FA/4300 Backup Record Log Format

- Log Date – This field shows the date of the recording.
- Log Time - This field shows the time for backup record. Time is displayed in the hh:mm:ss 24-hour format (i.e., 8:30 p.m. is 20:30:00).
- Record Number - Maximum number of records is 255.
- VBAT End – Battery Voltage recorded at the end of the event.
- Factor – Description of the event that occurred.
- Backup Time (Sec) – The amount of the time the UPS remained in battery backup.

Fault Records

This table lists the detailed history of faults that have occurred on the UPS. The Log can store a maximum of 680 records. If more events are recorded, the new record replaces the oldest record.

1600XP Fault Records Log Format

- Log Date – This field shows the date of the recording.
- Log Time - This field shows the time that the values were recorded. Time is displayed in the hh:mm:ss 24-hour format (i.e., 8:30 p.m. is 20:30:00).

- Record Number - Maximum number of records is 255.
- System Input Type
- System Output Type
- Input Voltage
- Output Voltage
- Output Load
- DC Input Voltage
- Battery Voltage
- Slot Location
- Fault

4200FA/4300 Fault Records Log Format

- Log Date – This field shows the date of the recording.
- Log Time - This field shows the time that the values were recorded. Time is displayed in the hh:mm:ss 24-hour format (i.e., 8:30 p.m. is 20:30:00).
- Record Number – Maximuan number of record is 255.
- Fault 1 – Description of fault detected.
- Fault 2 – Description of fault detected.

Following is a table of the possible UPS fault codes and their meanings. Please refer to UPS manual for more specific details.

Fault Code	Description
FSOPEN	Fuse opened
CL	Current limit fault occurred
DCOC	DC bus over current fault occurred
DCOV	DC bus over voltage occurred
DCIB	DC bus imbalance occurred
VOUV	Output voltage undervoltage occurred
VOOV	Output voltage overvoltage occurred
DVCOH	Device overheat occurred
BYPOL	Bypass overload occurred
CHRGOV	Charger overvoltage occurred
OOC	Output overcurrent occurred
DCUVBS	DC bus under voltage occurred at boostup UPS state
DCUVC	DC bus under voltage occurred at charging of UPS state
BYPOH	Bypass overheat occurred
INVOLRSTAOK	Inverter overload occurred and it is resettable
INVOLRSTNOK	Inverter overload occurred and it is NOT resettable
OH	UPS Overheat
DCUB	DC Imbalance
OL	UPS Overlaod
PHIRER	Phase Error
PHBRER	Bypass Phase Error
EPO	Emergency Power Off

Table 2: UPS Fault Codes

Operation Mode Records

This table lists the detail history of operation mode changes that has occurred on the UPS. The Log can store a maximum of 680 records. If more events are recorded, the new record replaces the oldest record.

1600XP Operation Mode Records Log Format

- Log Date – This field shows the date of the recording.
- Log Time - This field shows the time that the values were recorded. Time is displayed in the hh:mm:ss 24-hour format (i.e., 8:30 p.m. is 20:30:00).
- Record Number - Maximum number of records is 255.
- System Input Type
- System Output Type
- Input Voltage (%)
- Output Voltage (%)
- Output Load (%)
- DC Input Voltage (%)
- Battery Voltage (%)
- From
- To
- Branch (Used for Technical Support)
- Cause (Used for Technical Support)

4200FA/4300 Operation Mode Records Log Format

- Log Date – This field shows the date of the recording.
- Log Time - This field shows the time that the values were recorded. Time is displayed in the hh:mm:ss 24-hour format (i.e., 8:30 p.m. is 20:30:00).
- Record Number – Maximaum Number of records is 255.
- Next – State of the UPS.
- Condition 1: List of possible conditions:
    - Input voltage undervoltage
    - Input voltage overvoltage
    - Input voltage out of spec
    - Bypass Voltage Undervoltage
    - Bypass Voltage Overvoltage
    - Output Voltage Undervoltage
    - Output Voltage Overvoltage
    - DC Bus Undervoltage
- Condition 2: List of possible conditions:
    - DC bus out of spec
    - Battery Voltage low
    - Battery voltage reached shutdown level
    - Power Failure
    - DC Bus low
    - Battery voltage out of spec
- Status: List of possible conditions:
    - Input Frequency Detection
    - Input Phase Rotation Error
    - Input Frequency Error

- Feedback Detection
- Bypass Phase Rotation Error
- Feedback Error
- Output Frequency Detection
- Synchronous

Warning Records

This table lists the detail history of warnings that has occurred on the UPS. The Log can store a maximum of 680 records. If more events are recorded, the new record replaces the oldest record.

1600XP Warning Records Log Format

- Log Date – This field shows the date of the recording.
- Log Time - This field shows the time that the values were recorded. Time is displayed in the hh:mm:ss 24-hour format (i.e., 8:30 p.m. is 20:30:00).
- Record Number - Maximum number of records is 255.
- System Input Type
- System Output Type
- Input Voltage (%)
- Output Voltage (%)
- Output Load (%)
- DC Input Voltage (%)
- Battery Voltage (%)
- Slot Location
- Warning

4200FA/4300 Warning Records Log Format

- Log Date – This field shows the date of the recording.
- Log Time - This field shows the time that the values were recorded. Time is displayed in the hh:mm:ss 24-hour format (i.e., 8:30 p.m. is 20:30:00).
- Record Number - Maximum number of records is 255.
- System Input Type
- System Output Type
- Input Voltage (%)
- Output Voltage (%)
- Output Load (%)
- DC Input Voltage (%)
- Battery Voltage (%)
- Slot Location
- Warning

Following is a table of the possible UPS warning codes and their meanings.

Warning Code	Description
CL	Current limit occurred
ASYN	Input and output are not synchronized
CALL	UPS needs servicing
BATLFNEAR	Battery life near to end
BATLFEND	Battery life end
DCER	Display cable error occurred
REYEERR	RemotEye communication error (RS232)
REYEUPERR	RemotEye communication error (NET)
RS232ERR	Service port communication error
DCANERR	Display CAN communication error
SYSTSTFAIL	System test fail
VIOV	Input over voltage occurred
VIUV	Input under voltage occurred
FIERR	Input frequency error occurred
VBYPOV	Bypass overvoltage occurred
VBYPUV	Bypass undervoltage occurred
FBYPERR	Bypass frequency error occurred
DCUVBST	DC bus uvdervoltage at battery test
VBATLOW	Battery voltage low
VBATSD	Battery voltage has reached shutdown level
BATRPL	Battery replace event occurred
CHRGOV	Charger overvoltege occurred
BTSTFAIL	Battery test failed
BATDEPL	Battery depleted
BATOH	Battery overheat occurred
SYSOH	System overheat occurred
OL110	Overload occurred

Table 3: UPS Warning Codes

System Setting Change Record (Applicable to 1600XP Only)

This table lists the detail history of system changes that has occurred on the UPS. The Log can store a maximum of 680 records. If more events are recorded, the new record replaces the oldest record.

- Log Date – This field shows the date of the recording.
- Log Time - This field shows the time that the values were recorded. Time is displayed in the hh:mm:ss 24-hour format (i.e., 8:30 p.m. is 20:30:00).
- Record Number - Maximum number of records is 255.
- System Input Type
- System Output Type
- Input Voltage (%)
- Output Voltage (%)
- Output Load (%)
- DC Input Voltage (%)
- Battery Voltage (%)
- Block
- Item
- Written
- Trigger Source

RemotEye III Events Log

This table lists the RemotEye III events since the table was last cleared. If changes have been made by the administrator, it will display if it was made through "Telnet" or "HTTP" communication following with the IP address of the user. The existing values are overwritten when the maximum number of entries has been reached.

- Event Date
- Event Time
- Event Description

Clear & Save Log Data

This allows the administrator to save the RemotEye III log data to a file. The saved files are given a .csv extension, which allows it to be opened using Microsoft© Excel. Specific log data may be cleared by the administrator 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 **General Records, RemotEyeIII Events Log, UPS Events Log, Test Records, Backup Records, Fault Records, Operation Mode Records, Warning Records or System Setting Change Record.**

Note: If the option "Clear Log Data after saving the log file" is selected, once the "Save Log Data" is clicked, the clear log function will be performed even if the user cancels the "Save Log Data" action. To clear any of the logs, must be logged in as an administrator.

These are the available logs for the 4200FA/4300 UPS:

General Records	Backup Records	Fault records
Operation Mode Records	RemotEye III Events Log	

Figure 41: 4200FA/4300 Clear and Save Log Data

These are the available logs available for the 1600XP UPS:

General Records	Test Records	Backup Records
Fault records	Operation Mode Records	Warning Records
System Setting Change Record	RemotEye III Events Log	

Figure 42: 1600XP Clear and Save Log Data

Managing the UPS Via Java

The RemotEye III provides 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.

Monitor

Clicking the Monitor button at the top-left side of the RemotEye III home page will open the UPS Monitor screen in a separate window (See Figure 43: RemotEye III Web Interface Buttons).

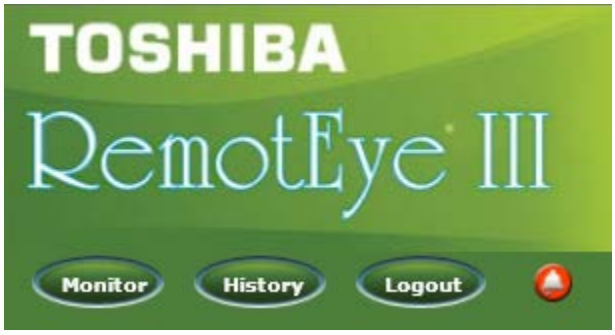


Figure 43: RemotEye III Web Interface Buttons

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 (See Figure 44: HTTP Monitor Screen):

System Name	UPS Model	Serial Number
Date and Time	Input Voltage, Input Frequency	UPS Temperatures
Output Voltage, Output Frequency	UPS Load	Battery Voltage
UPS Output	Estimated Battery Backup Time	Battery Backup Operation
Operation Status	Alarm Status	Communication Status

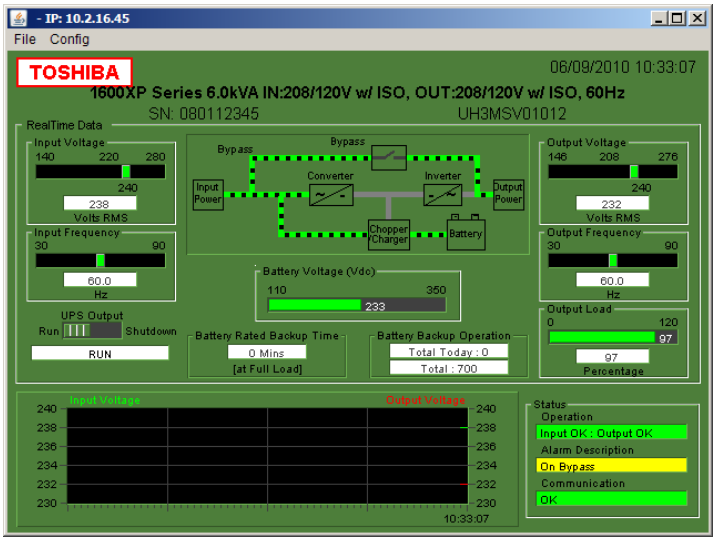


Figure 44: HTTP Monitor Screen

History

Clicking the History button at the top-left side of the RemotEye III home page (See Figure 43: RemotEye III Web Interface Buttons), Figure 45: HTTP History Data Screen on page 94 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

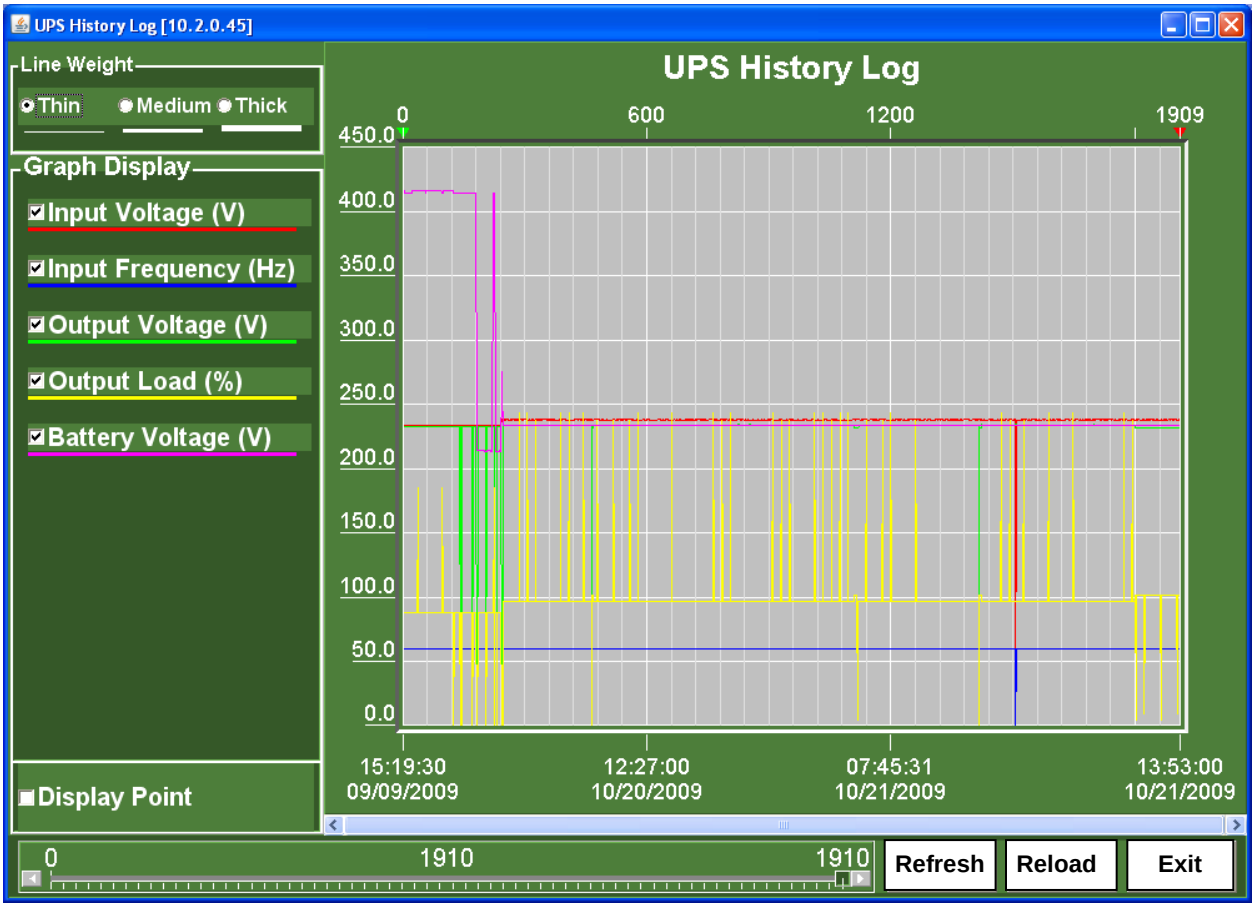


Figure 45: HTTP History Data Screen

Configuring the Remoteye III via SNMP

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

Note: This section will focus entirely on RemotEye III operation.

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 III provides an Agent for a Toshiba UPS (1600XP, 4200FA, or 4300). 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:

- RemotRadar V3.00 (Visit www.ToshibaUPS.com for more information)
- Cabletron Spectrum
- DEC Polycenter
- HP OpenView
- IBM NetView
- Novell Managewise
- SunNet Manager

Preliminary Issues

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

- The IP Address of the RemotEye III.
- The Gateway Address of the RemotEye III.
- The IP Address of the Network Management Station.

RemotEye III (Agent) Settings

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

Examining Network Pathway

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

The IP Address of RemotEye III 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 III and the NMS must exist.

The Gateway Address indicated in RemotEye III must identify a network device providing access to the network of the NMS. For instruction on defining which gateway RemotEye III uses, consult the System Group section on page 27.

The MIB System Group of RemotEye III must match that of the NMS (see the section titled System Group on page 27 for further information). This parameter will allow an NMS within the group to access RemotEye III data.

Granting Write Access

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

By default, the RemotEye III will allow any workstation the ability to write new configuration information to RemotEye III 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 III must be programmed accordingly. See the section entitled SNMP Communities on page 32 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 III. First, the Manager software on the NMS must be prepared to handle the RemotEye III Management Information Base (MIB), and second, the Manager must be configured to receive any traps the RemotEye III sends.

Importing the MIB File

The MIB file 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.

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, ToshibaRMTI3.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 III. See Trap Receiver Table section on page 34 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.

Follow the following steps to setup trap receivers.

1. Open RemotEye III on internet browser and go to RemotEye III Management -> RemotEye III Control to check SNMP version

Figure 46: SNMP Version Menu

2. Go to RemotEye III Management -> SNMP TRAP Receivers and Become Administrator

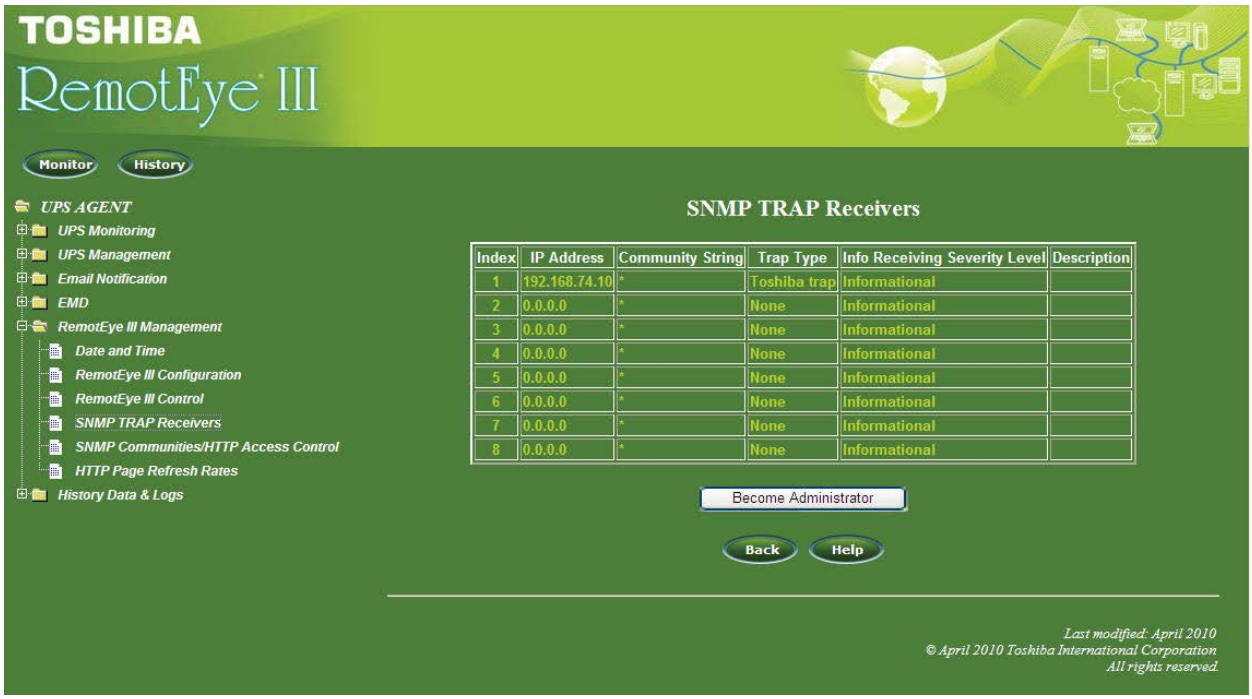


Figure 47: SNMP Trap Receivers Menu

3. Enter trap receiver IP address and select Trap Type as Toshiba or JEMA or IETF then set value.

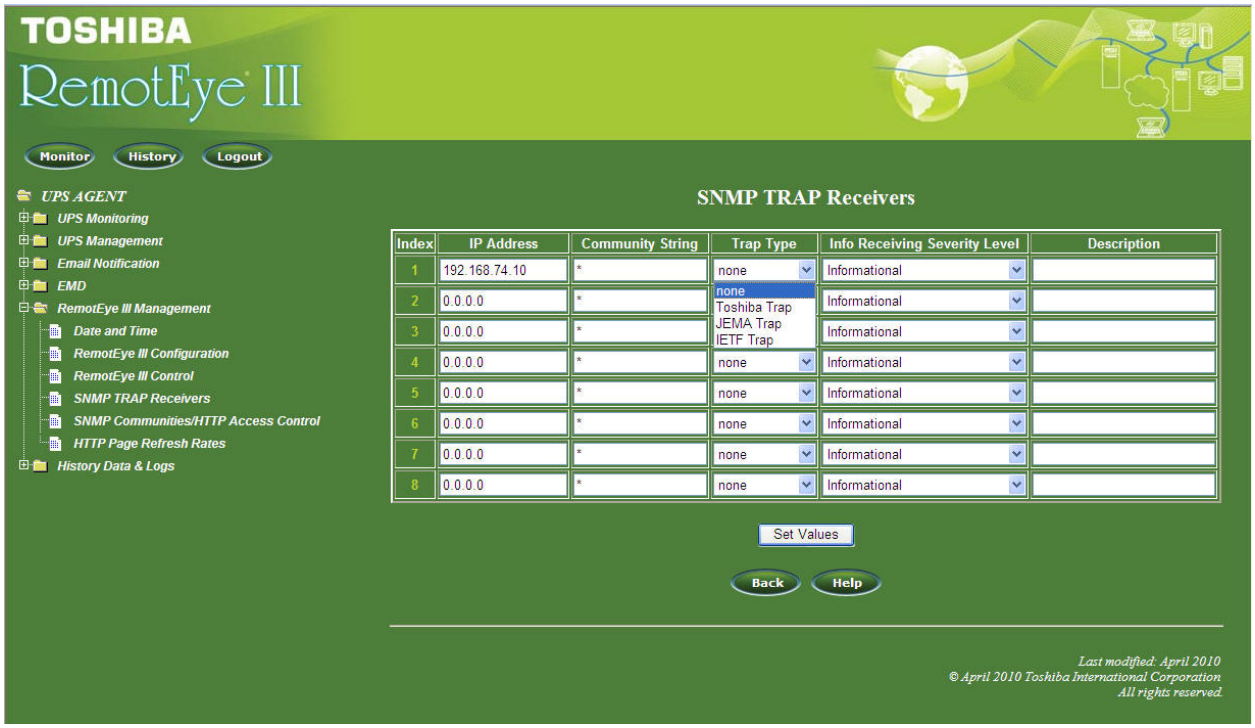


Figure 48: SNMP Trap Type Menu

Trap Example

Following shows an example of a trap trigger by Battery Test Command as “Quick Test (10 Sec)”. Note: Battery Test feature not available for 4200FA/4300 Series UPS.

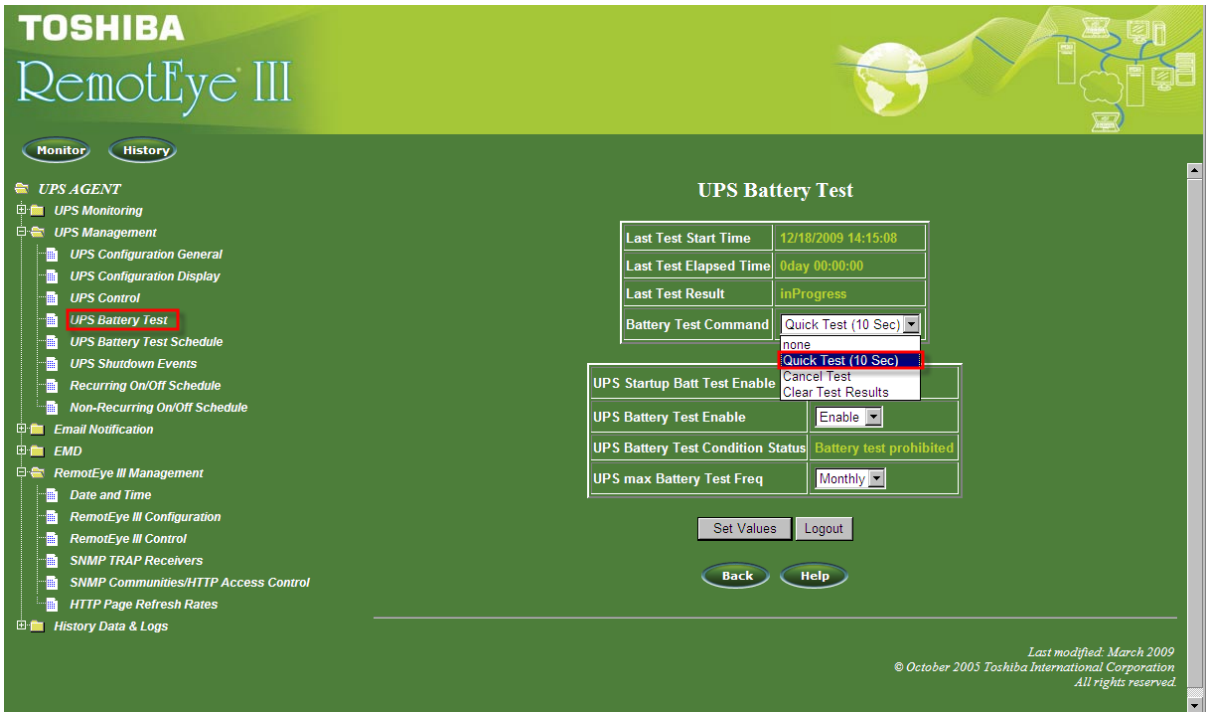


Figure 49: RemotEye III Trap Example

User will receive battery test in progress trap

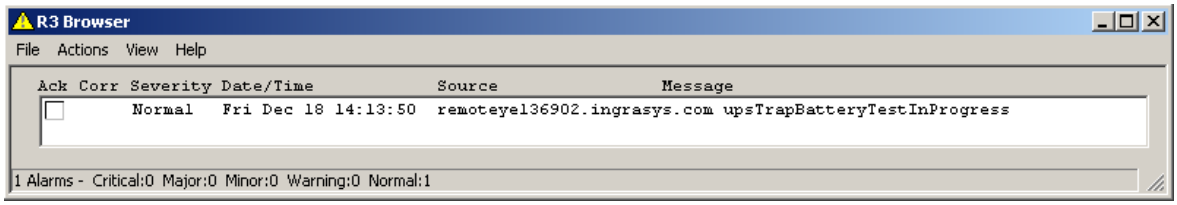


Figure 50: SNMP Trap Example

Note: If SNMP version is SNMPv1, SNMP tool must be SNMPv1 compatible.

Connecting to the RemotEye III via SNMP

Executing SNMP Gets and Sets

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

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

The RemotEye III uses the community values listed in the RemotEye III 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 III communities are used for evaluation. The global communities are set within the Control Group table of the RemotEye III. 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 III. 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 honoured when using ronly or rwrite community string. Any NMS set requests will be honoured 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 172.18.63.1 will be honoured 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 honoured 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 honoured.

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.

Toshiba 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 requests.

The RemotEye III communication implements standard MIB III and the following MIBs for TOSHIBA UPS:

1) Toshiba Enterprise RMTI-3 1600XP MIB File

2) Toshiba Enterprise RMTI-3 4200FA/4300 MIB File

3) Toshiba Japanese JEMA-Compliant MIB File

Connecting to the RemotEye III via MODBUS

Executing SNMP Gets and Sets

Log into the RemotEye III using the HTTP interface. Verify the Modbus configuration as follows:

1. On the RemotEye III Main Screen, open *RemotEye Management*.
2. Click on *Modbus TCP Configuration*. The Modbus configuration window will open. See Fig. 50.

Figure 51: RemotEye III Modbus TCP Configuration

3. Verify the Modbus configuration is correct. The default settings are show in Figure 50. If unsure of the available options, click the HELP button.

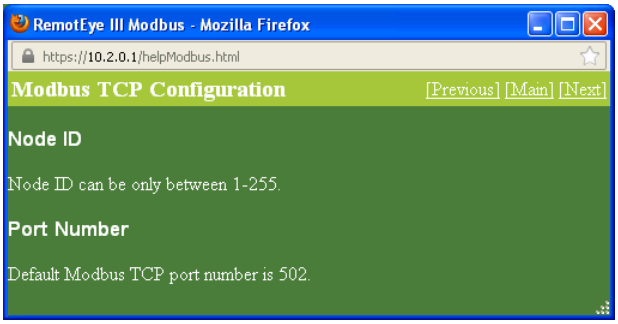


Figure 52 Modbus Configuration HELP Screen

4. Click on *Set Values*.
5. Click on Back to return to the Main screen.
6. RemotEye III is now ready for Modbus.

   The Input Registers and Input Coils tables are listed in Appendix B.

Toshiba RemotEye Application Programs

Toshiba RemotEye Client Software

The Toshiba RemotEye Client Software runs on servers/PCs and connects to a designated RemotEye III. When the servers/PCs start up the RemotEye III scans for the UPS status. When UPS power events are detected, the RemotEye III broadcasts a Shutdown command to the workstation. The Toshiba RemotEye Client Software will broadcast warning messages (on the screen of the servers/PCs) and then shut down the server/PCs gracefully. See page 69, for more details on the Shutdown Events configurations.

Install RemotEye III Client Shutdown software on VMware ESXi 5

See Appendix A for details of installing the Clinet Shutdown Software on VMware ESXi servers

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Installation of RemotEye III Client using Windows 9x/2000/NT/XP/Vista/7/8 or Windows Server 2003/2008/2012

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

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

A configuration window box will be displayed on the screen, type in the IP address of the designated RemotEye, 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 53: Toshiba RemotEye Client Software).

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

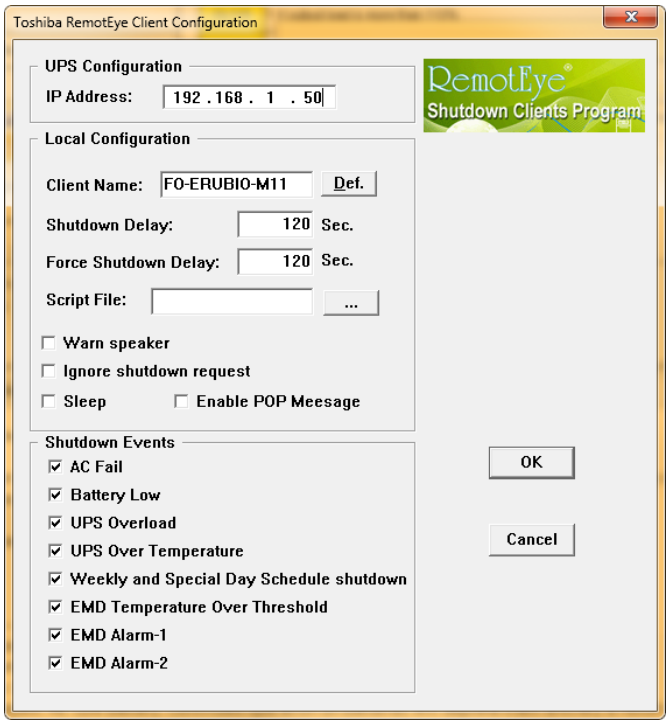


Figure 53: Toshiba RemotEye Client Software

UPS Configuration

IP Address: Input RemotEye III IP address.

Local Configuration

This allows the administrator to set the client's name and how it will handle a shutdown command sent by the RemotEye III.

Client Name: Allows the administrator to enter the client's name or to click the "Def." button to capture the system's "Computer Name".
Shutdown Delay: Allows the administrator to type how many seconds till the actual client system shuts down if no script is being executed. NOTE: Make sure that the "UPS Output Shutdown Delay (secs)" under the "UPS Management → UPS Shutdown Events" is longer than the seconds typed into this field. This will help avoid an unwanted system shutdown format.
Force Shutdown Delay: Allows the user to input another delay after the "Shutdown Delay" has expired. During this time delay the tool will execute the script that has been uploaded. When the "Force Shutdown Delay" expires it will force shutdown the client.
Script File: The administrator can upload their script file so that it can be executed after shutdown delay time is expired (e.g. close database).
Warn Speaker: Allows the administrator to enable the "beep" sound alarm whenever there is a warning.
Ignore Shutdown Request: Allows the administrator to cancel any shutdown command sent from RemotEye III.
Sleep: Allows the administrator to send the client system to hibernate instead of shutting down. (Administrator must first enable hibernation setting in the O.S.)
Enable POP Message: Allows the administrator to enable or disable the POP up warning messages.

Shutdown Events

This section allows the administrator to check the boxes on which conditions should the client system to be shutdown. When setting this make sure that these are also enabled in the RemotEye III "UPS Shutdown Events" (UPS Management → UPS Shutdown Events, see page 69) section. These are the following conditions:

- AC Fail
- Battery Low
- UPS Overload
- UPS Over Temperature
- Weekly and Special Day Schedule shutdown
- EMD Temperature Over Threshold
- EMD Alarm-1
- EMD Alarm-2

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

View the Connected Client via HTTP

Run the Web Browser on any machine.

Type in the RemotEye III's IP address in the URL.

For example, type 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 54: HTTP Connected Client Table

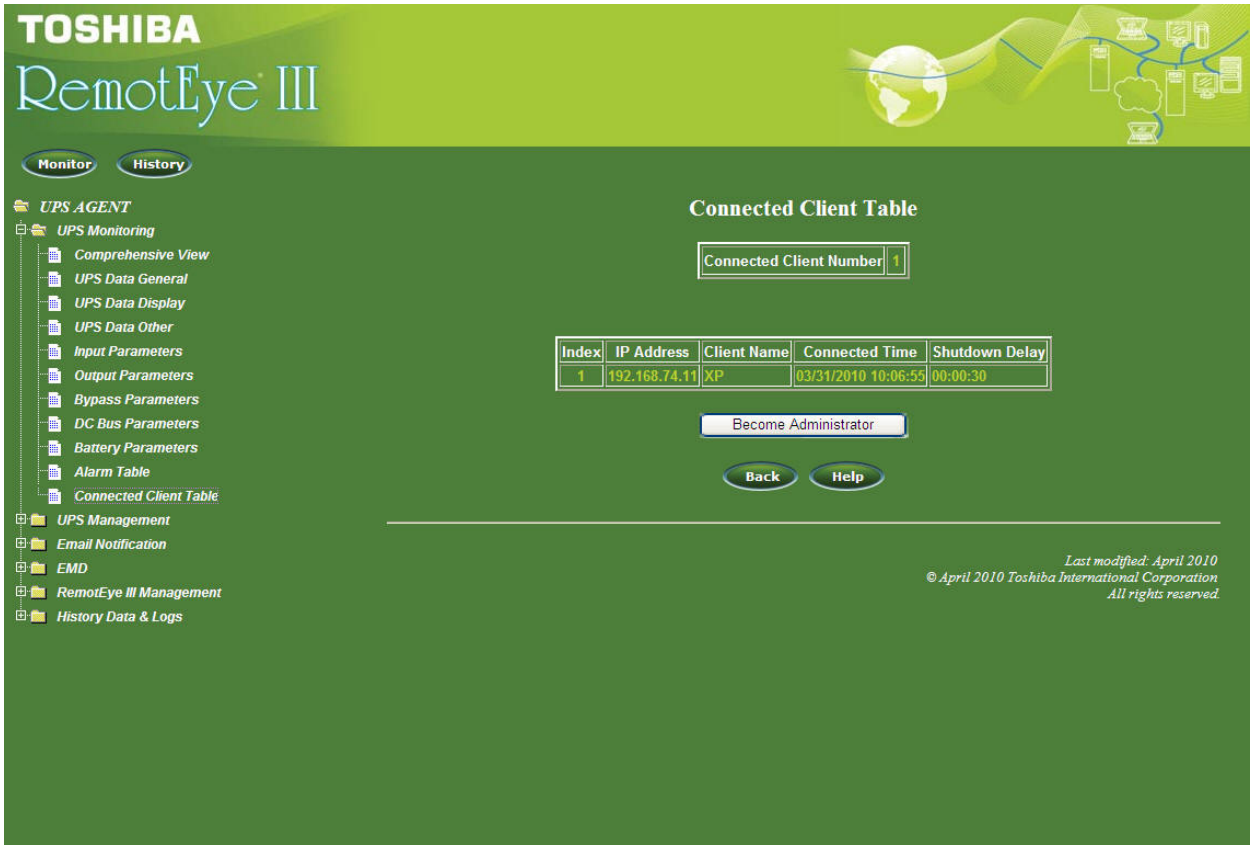


Figure 54: HTTP Connected Client Table

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

Shutdown Process in Windows 9x/NT/2000/XP//Vista/7/8 & Server 2003/2008/2012

When RemotEye detects a power event, for example, AC power failure, the RemotEye 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 shutting down. Only checked events in the RemotEye III Client Configuration - Shutdown Events box will trigger a pop-up message and shutdown the Client. See the flow chart below for a graphical view of the interactions of the shutdown delays. Note: UPS Output Shutdown Delay not applicable to 4200FA/4300 UPS series.

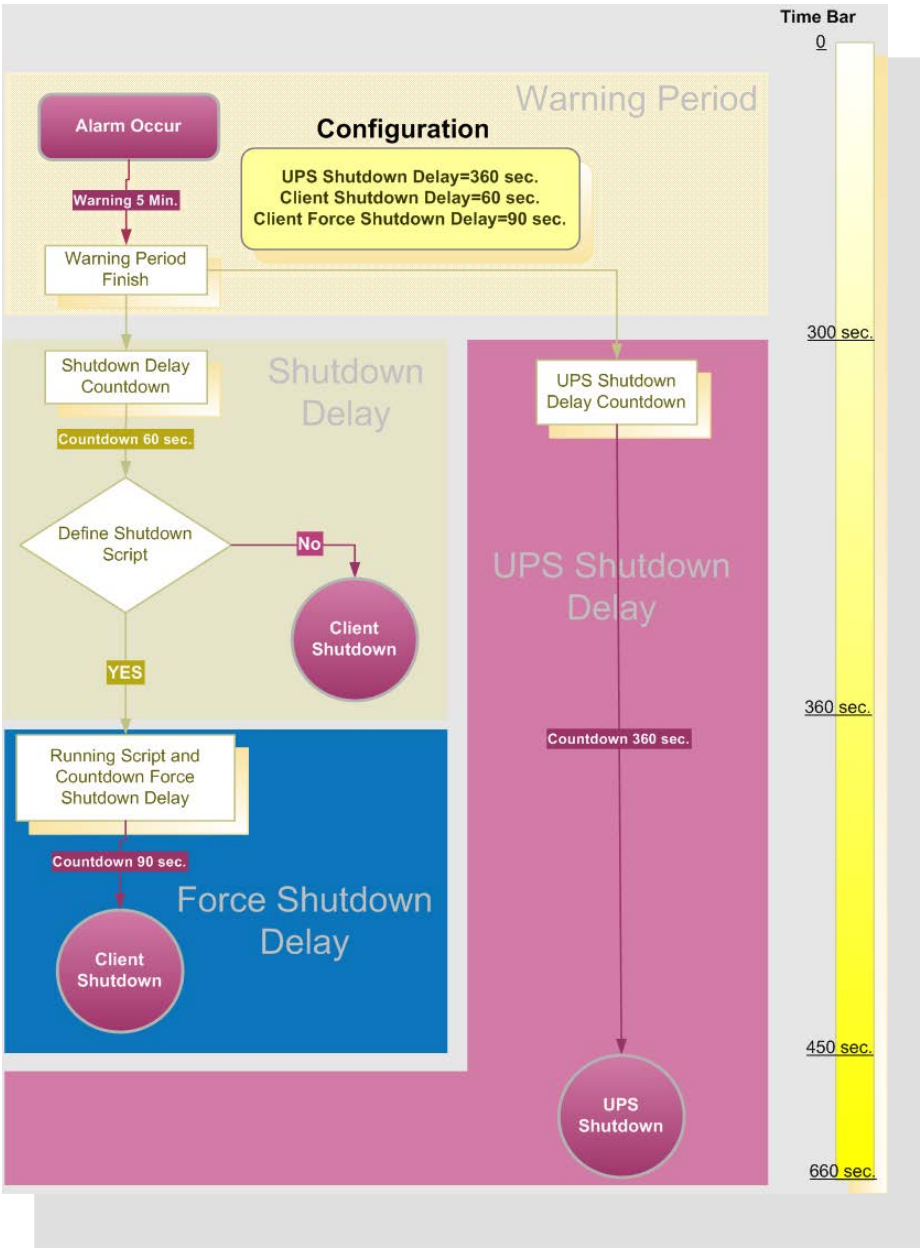


Figure 55: Toshiba RemotEye Client Software

The user can select "Shutdown Now" to start the shutdown process or "Close" to minimize the shutdown window message. Toshiba RemotEye 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.

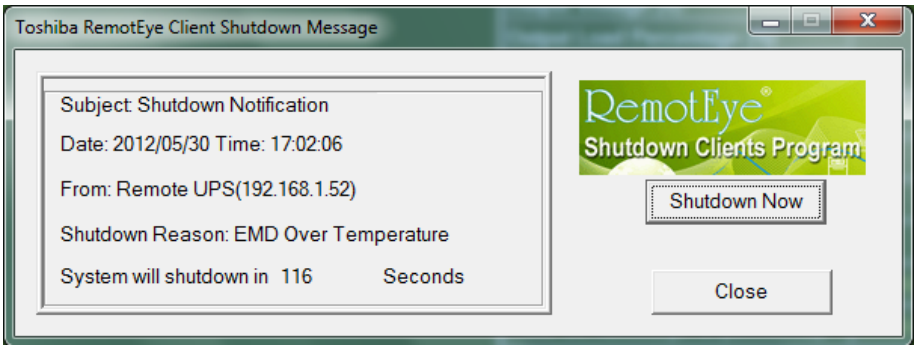


Figure 56: Toshiba RemotEye Client Software Shutdown Warning Message

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

UPS Connection OK. (Green Background)

Trying to locate UPS. (Blue Background)

Local machine is about to shutdown. (Red Background)

The service is suspended. (Green Background)

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

NOTE: to cancel the shutdown process, right mouse click the red “battery” icon that is located in the bottom right side on the taskbar during the “local machine is about to shutdown” state and select the cancel shutdown option.

Uninstalling Toshiba Remoteye III Client Software

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

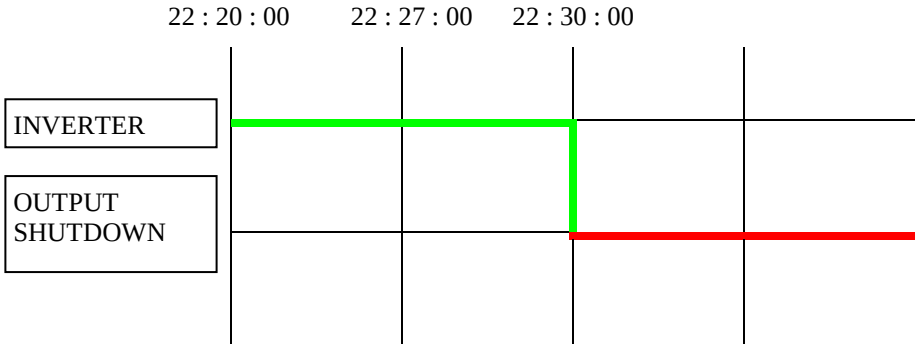
UPS Shutdown Events

RemotEye III can initiate output shutdown upon the occurrence of nine different UPS events Input Power Failure, Low Battery, UPS Overload, UPS System Overheat, EMD Temperature Over Threshold, EMD Alarm-1, EMD Alarm-2, Recurring On/Off Schedule and Non-recurring On/Off Schedule. Users can view the current setting of these events on

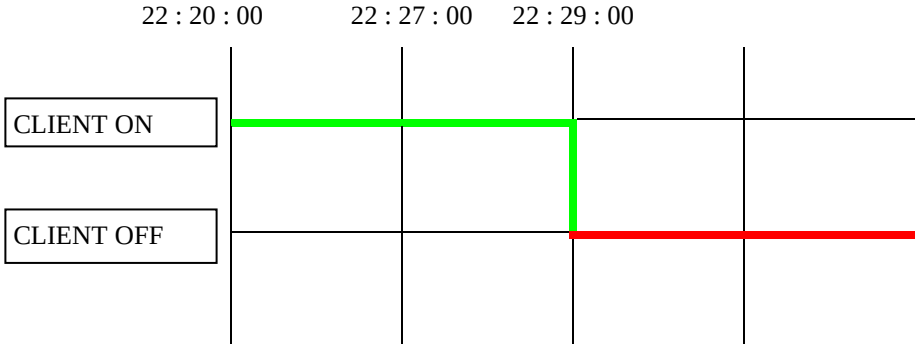
UPS Shutdown Events page in UPS Management menu. To alter these settings, log in as an administrator, and configure the UPS shutdown events action and delay times accordingly. Click the Set Value button when finished. (See Pg. 69 for details)

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 (Applicable to 1600XP Only)

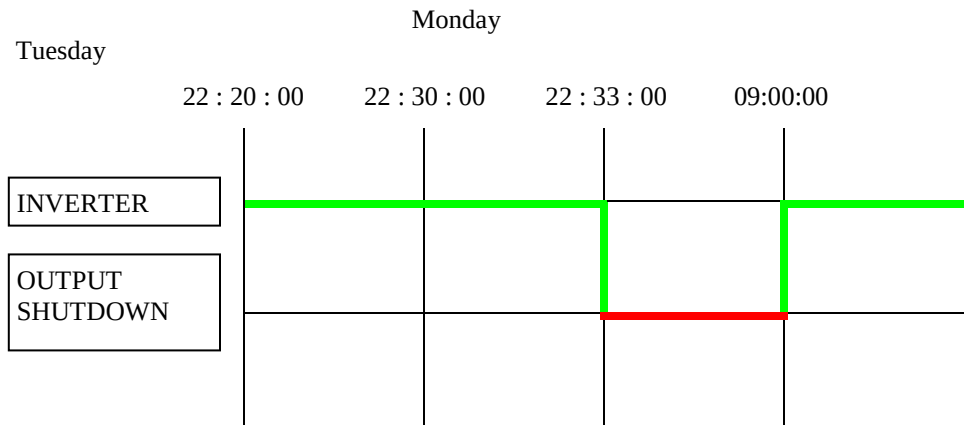
RemotEye III supports two output shutdown schedule – (1) Recurring Schedule; (2) Non-recurring Schedule.

Note: Before managing the UPS Shutdown Schedule, please make sure that the Date and Time configured in RemotEye III 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 III will ignore the Restart Time on Monday, and the Shutdown time on Tuesday.



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 pages 83.

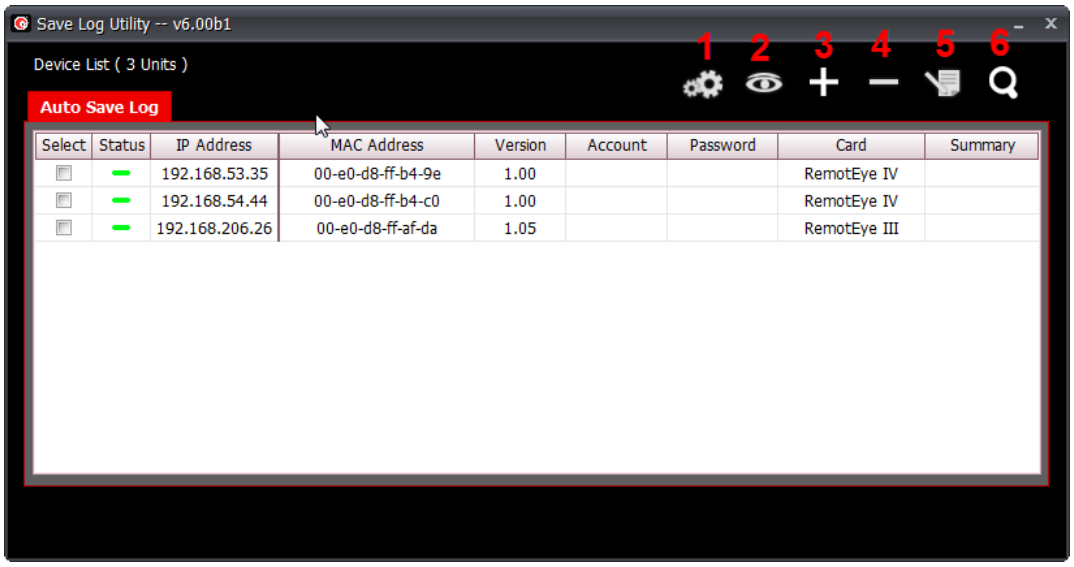
The Auto Save log software will automatically save the RemotEye list and settings. This eliminates having to re-enter the information again after the program is closed or when the workstation running the software is shutdown.

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 III → 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 57: 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.

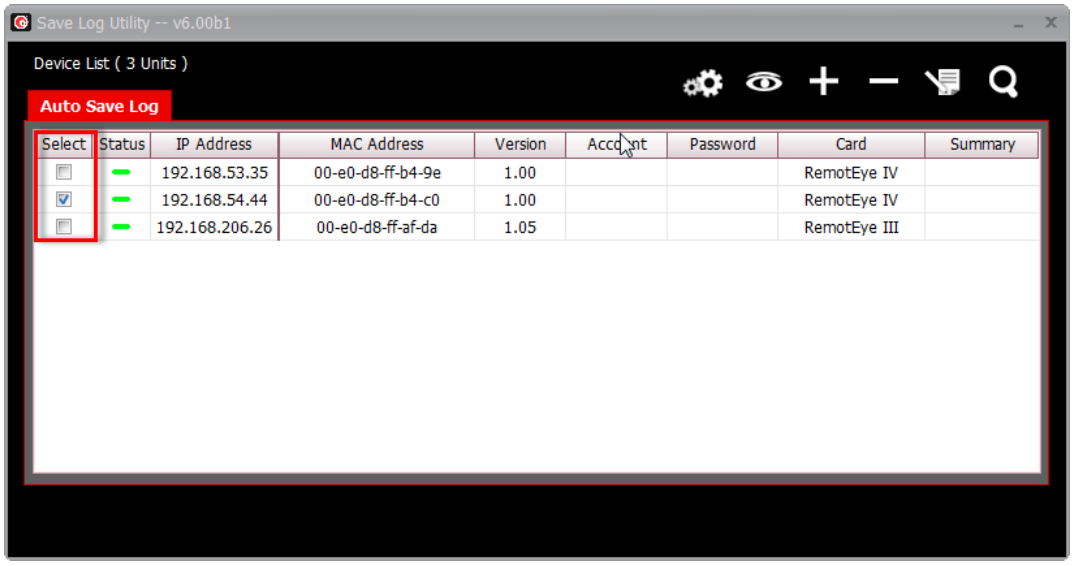


Figure 58: RemotEye Save Log Utility - RemotEye – Selecting

Device List

Display the number of devices in the list.

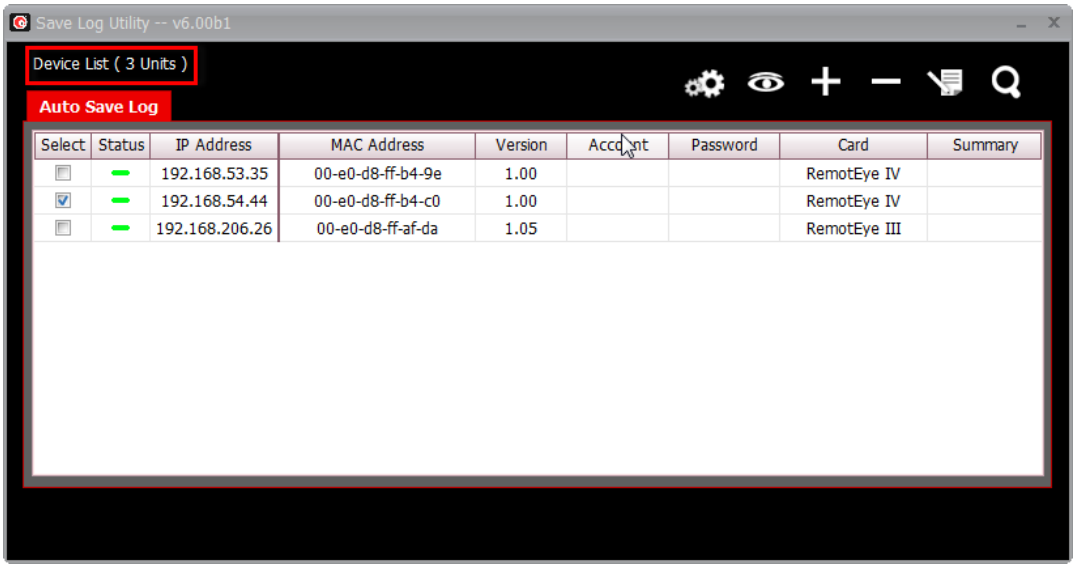


Figure 59: RemotEye Save Log Utility – Device List

Status

Green color indicates good connection and red color indicates disconnect.

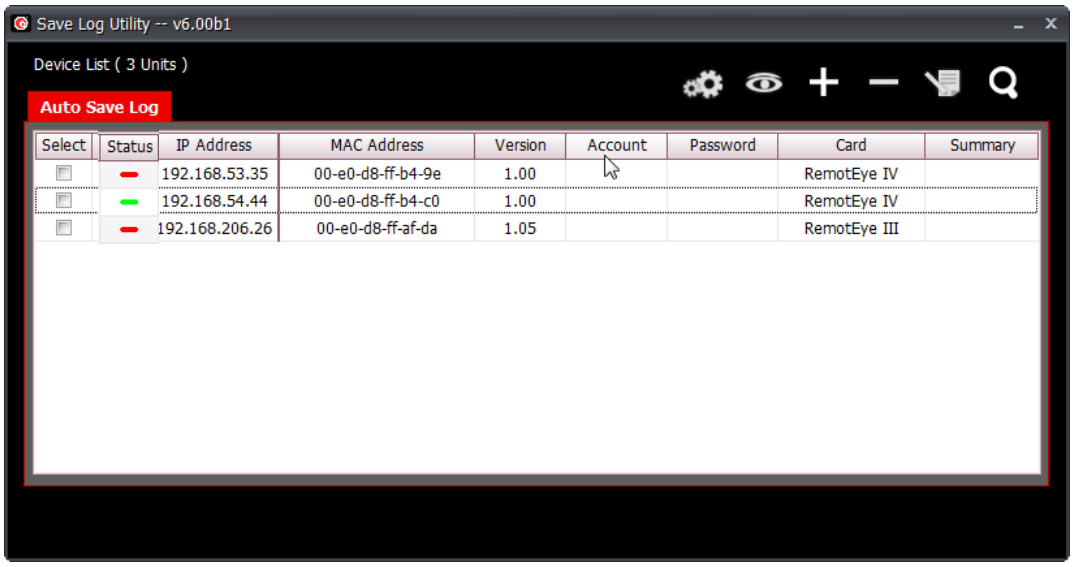


Figure 60: RemotEye Save Log Utility – Status

Save Log Setting

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

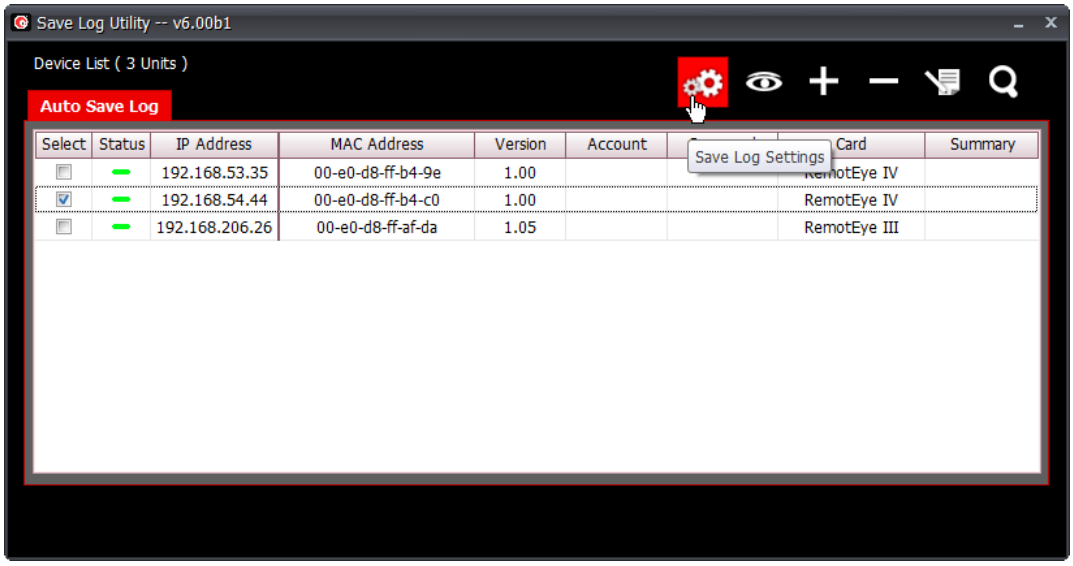


Figure 61: RemotEye Save Log Utility – Settings

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

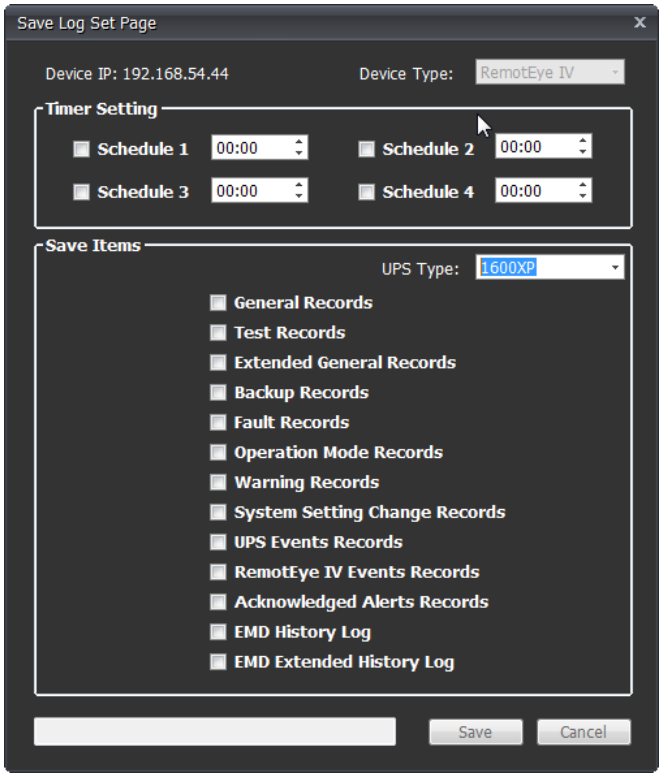


Figure 62: RemotEye Save Log Utility – Set Page

Tupgrade Firmware Tool

General information

To perform a firmware upgrade, the RemotEye III must be connected to the same network as the workstation from which the upgrade file is to be sent. In the RemotEye III make sure the **Network Upgrade** Control is enabled, under **RemotEye III 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 III Management → RemotEye III Control** menu then Enable **Network Upgrade Control**.

   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.

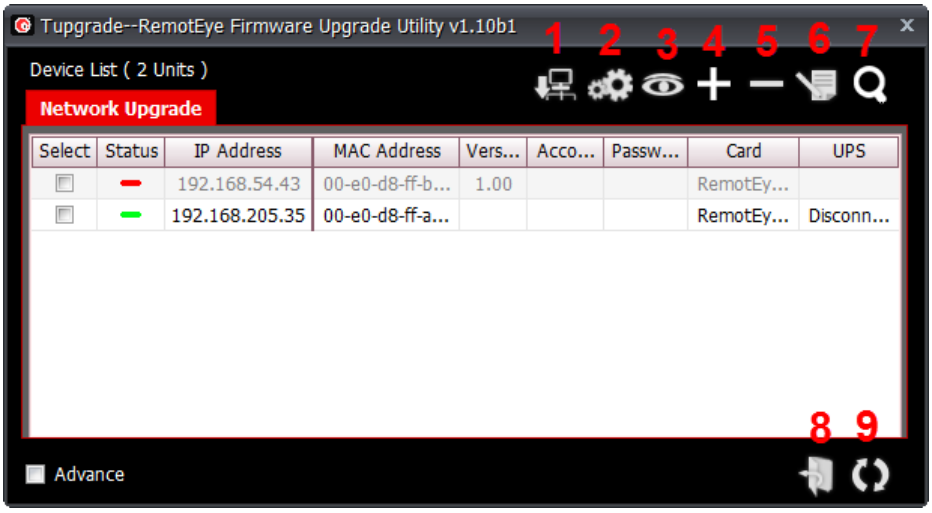


Figure 63: Tupgrade Utility – Opening Display

Table 4: Tupgrade Toolbar Functions

Toolbar 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 III Config file:

1) **Discover** or **Manually** add the RemotEye III to the list.

2) **Select the check box** of the RemotEye III 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 III:

1) **Discover** or **Manually** add the RemotEye III to the list.

2) **Select the check box** of the RemotEye III 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 III Firmware from UNIX

The RemotEye III 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 III, 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 III IP address.
       Example: 172.168.1.18.
put          : PUT command.
<filename>   : Name of the file containing the firmware image.
       Example: \TSB100.bin.
upgrade      : Upgrade key word.
@            : Character separator.
<password>   : Community Read/Write string.
<username>   : HTTP login user name.
```

RemotEye III Specifications

RemotEye III Feature Summary

CPU	16-Bits AC1106 Fast Ethernet RISC Processor
Memory	2MB(1Mbit x16) TFBGA Flash ROM 2MB (1Mbit x16) SDRAM
Network	Support 10/100 Mbits RJ45 LAN Connector
Serial Communication	Two UART Channels, one RJ-45, one Gold finger.
Serial Connection	Console - RJ45 Connecter (FULL Function /RS-232 Level) UPS - Gold finger (TXD, RXD/RS-232 Level)
Jumper	Two bits for upgrade mode configure.
DIP Switch	Two bits for operating mode configure.
LED	Power x1 (Green) Status x1 (Yellow) LAN 10 Link/Activity x 1 (Yellow) LAN 100 Link/Activity x 1 (Green)
Reset Button	One Push Button
RTC	Real time clock

System Specifications

Description	Specification
Power Input	+8V ~ +15VDC
Power Consumption	3.0 Watts Maximum +8V DC 1.56 Watts +15V DC 1.7 Watts
Temperature Operating	0◦C ~ +60◦C
Temperature Non-operating	-10◦C ~ +70◦C
Humidity Operating	10 ~ 80 %
Humidity Non-operating	5 ~ 95 %
Board dimension	65.8x 60 x 15.2 mm (LxWxH)
Weight	45 gm
Regulation	CE,FCC class B

Firmware Specifications

Network Protocols	SNMP over UDP/IP, HTTP over TCP/IP ARP, RARP, DHCP, DNS, BOOTP, SMTP, SNTP, TFTP, SSL, SSH, PPP, ICMP, RADIUS
SNMP	RFC 1628, JEMA MIB, TOSHIBA MIB
UPS Protocol	TOSHIBA UPS protocol

LED Key

Front →

Figure 64: RemotEye III/Internal Top View

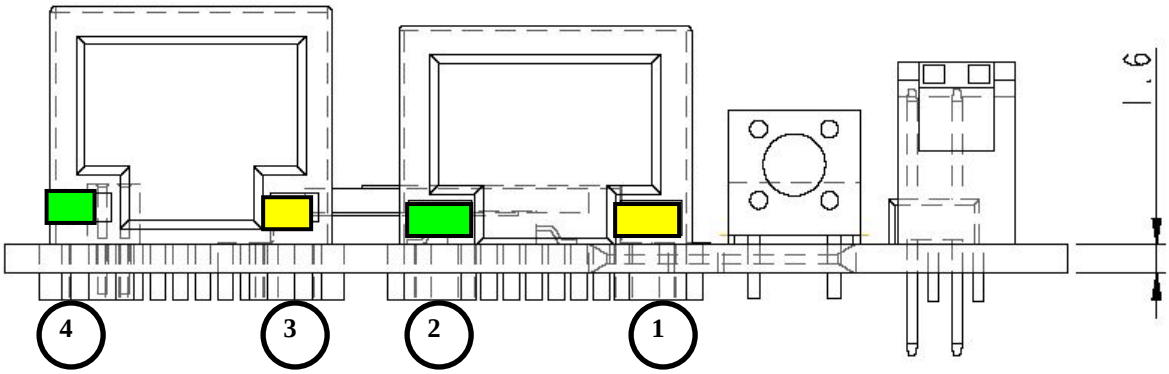


Figure 65: Front View – LED location

(1)	Status LED (Yellow) J2	(3)	LAN 10 Link/Activity LED (Yellow)
(2)	Power LED (Green)	(4)	J3 LAN 100 Link/Activity LED (Green)

Table 3. LED define list

Jumper Setting

J4 Jumper

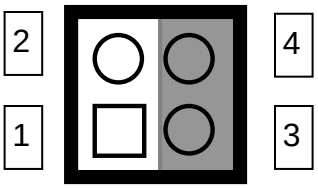
Pin1/2	Pin3/4	Function
1	1	Reserved
1	0	Clear Password
0	1	Reserved
0	0	Reserved
1: Jumper short ; 0 : Jumper open		

Table 4. J4 Jumper Setting Table

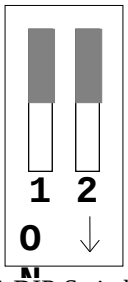
※ Example: Setup Serial Upgrade Z-modem Mode (S1 DIP Switch must Setup: S1-1 on, S1-2 off)

Pin1/2: Jumper open.

Pin3/4: Jumper short.



DIP Switch Setting



S1 DIP Switch

S1-1(PIN1/4)	S1-2(PIN2/3)	Function
ON	ON	Manufacturing Diagnostic Mode
OFF	ON	Debug Mode
ON	OFF	Serial Upgrade Mode
OFF	OFF	Operational Mode (Default)

Table 5. S1 DIP Switch Setting Table

LAN connector (J2)

Pin	Signals	Function
1	TX+ / TDP	OUTPUT +
2	TX- / TDN	OUTPUT -
3	RX+ / RDP	INPUT +
4	NC	NO CONNECT
5	NC	NO CONNECT
6	RX- / RXN	INPUT -
7	NC	NO CONNECT
8	NC	NO CONNECT

Table 6. RJ45 LAN connector pin descriptions

Console connector (J3)

Pin	Signals	Function
1	RTSPC#	Request To Send – RS232 level
2	DTRPC#	Data Terminal Ready – RS232 level
3	TXDPC#	Serial Data Out (to PC) – RS232 level
4	COM	GND
5	DCDPC#	Data Carrier Detector – RS232 level
6	RXDPC#	Serial Data In (from PC) – RS232 level
7	DSRPC#	Data Set Ready – RS232 level
8	CTSPC#	Clear To Send– RS232 level

Table 7. RJ45 Console connector pin descriptions

Gold Finger GF1

PIN Num.	Signals	Note
1	GND	
2	UPSVCC	8~15Vdc
3	TXDUPS(to UPS) – RS-232 level	
4	RXDUPS(from UPS) – RS-232 level	
5	NC	
6	NC	
7	NC	
8	D+	Detect+
9	GND	
10	D-	Detect-

Table 8. Gold finger GF1 pin descriptions

Appendix A: Install RemotEye 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 Firmware v1.05 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

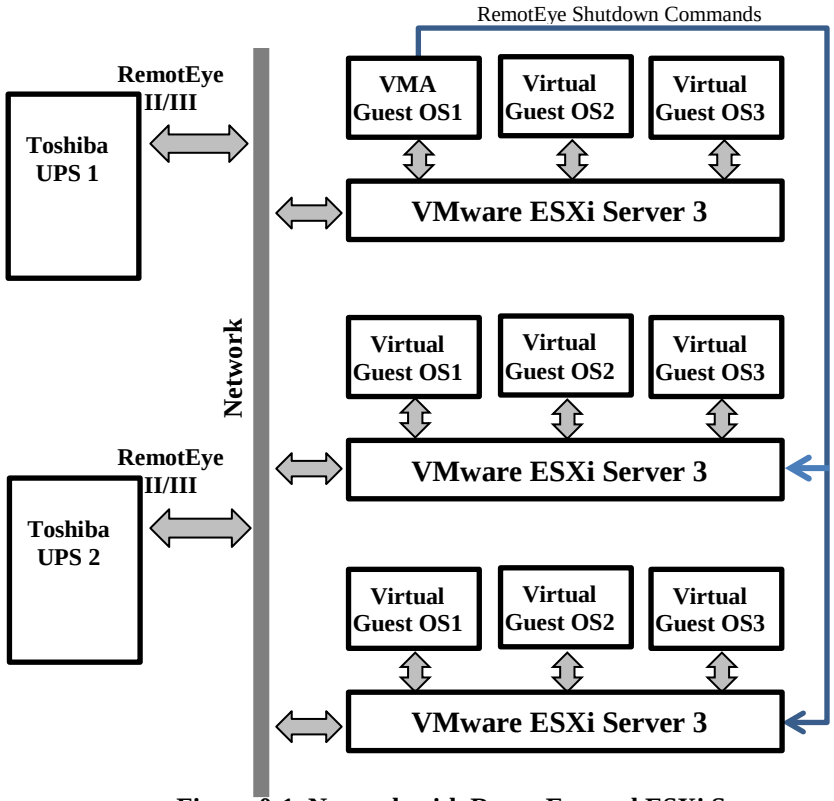


Figure 0-1 Network with RemotEye and ESXi Servers

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.*

1. Confirm that ESXi is a Full or Evaluation version. (The Free version does not support this function.)
2. 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.
3. Install vMA OS (SUSE OS) on ESXi server by navigating to **File > Deploy OVF Template** and follow the instructions.
4. Run vMA OS.

   Note: Default username is **vi-admin**. When prompted for the password, just press the **Enter** key.
5. Change the vMA settings. Ensure RemotEye has access to the vMA network. (Example: Assign the IP to 10.2.0.11)
6. Create the Super User password:

   6.1. Type "**sudo passwd"** into the command line prompt and press **Enter**. Follow the instructions to create the root password.

   6.2. 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)

```
vi-admin@localhost:/root> sudo passwd
vi-admin's password:
Changing password for root.
New UNIX password:
Retype new UNIX password:
Password changed.
vi-admin@localhost:/root> su root
Password:
localhost:~ # _
```

Figure 0-2 Text turns RED in Super User Mode

7. 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)

```
localhost:~ # vifp addserver 10.1.10.220
```

Figure 0-3 Add Server to vMA

8. 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)

```
localhost:~ # vifp listservers
10.1.10.220     ESXi
```

Figure 0-4 ESXi Added to VMA

9. Enable SSH in vMA (if not Enabled).

   9.1. On the command line prompt type: "**vi /etc/hosts.allow**" and press **Enter**.

   9.2. Type "**l**" and press **Enter**. (edits file)

   9.3. Type "**sshd: ALL: ALLOW**" and press **Enter**.

   9.4. Press the **ESC** key.

9.5. Type "**w**" and press **Enter**. (writes to file)

9.6. Type "**q**" and press **Enter**. (exits file)

10. Connect to vMA using WinSCP software to transfer the RemotEye Client shutdown software.

    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)

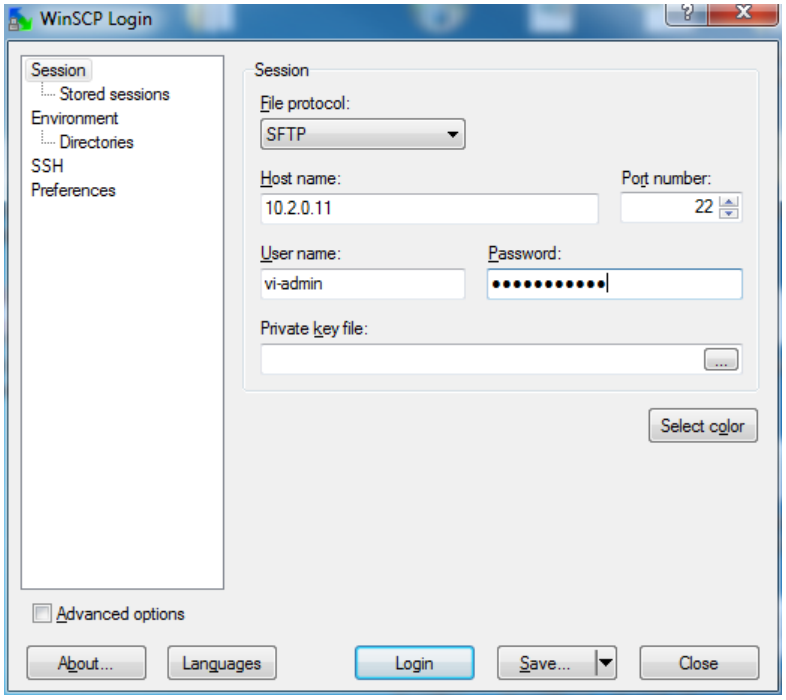


Figure 0-5 WinSCP Login Screen

10.1. 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)

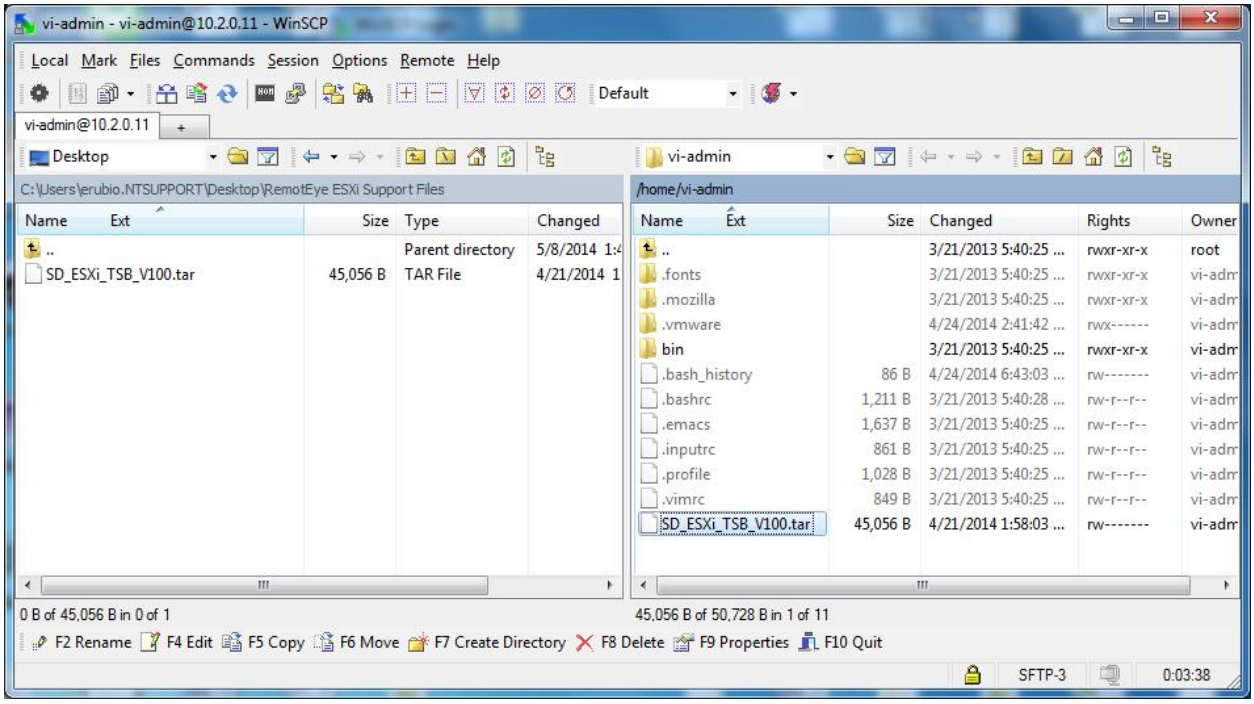


Figure 0-6 WinSCP vi-admin Screen

10.2. Close WinSCP program.

11. Return to the vMA command prompt and change the directory where the **SD_ESXi_TSB_V100.tar** was placed in step 10.

12. Extract the software: Type "**tar xvf SD_ESCi_V100.tar**" in the command prompt and press **Enter**.

13. Go to the newly created folder *SD_ESXi_TSB*: Type "**cd SD_ESXi_TSB**" and press **Enter**.

14. Install the software: Type "**sh install.sh**" in the command prompt and press **Enter**. Follow the instruction prompts. (See Figure 0-7)

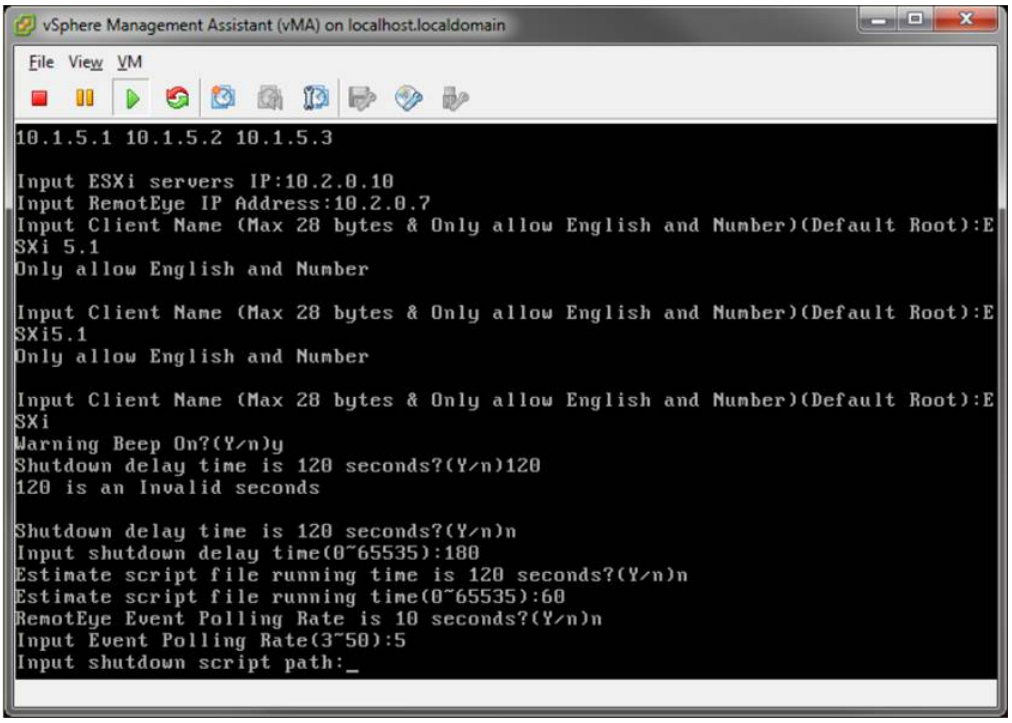


Figure 0-7 Install Screen Shot

15. 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)

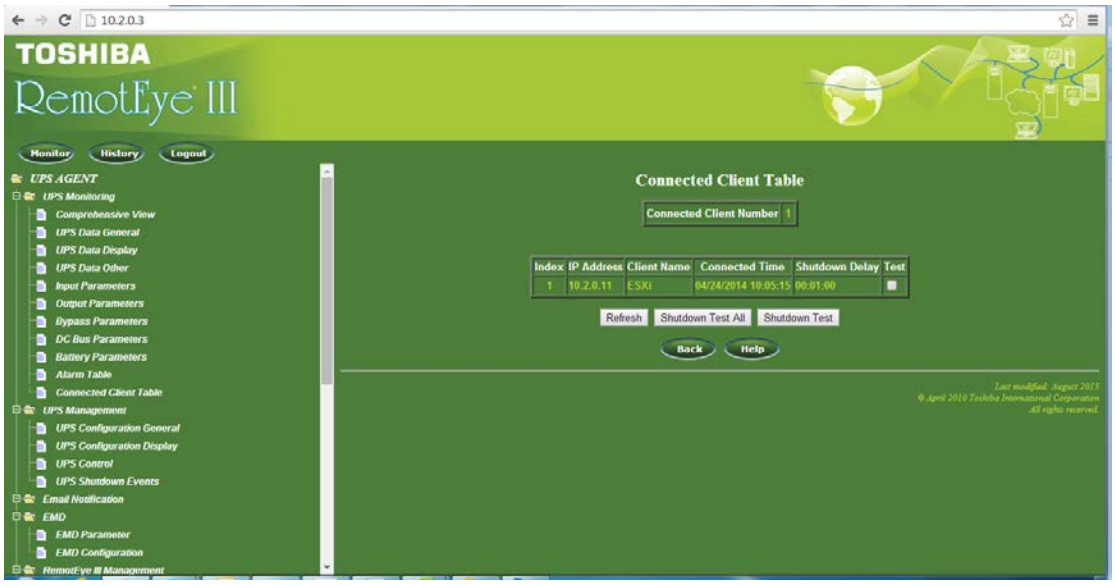


Figure 0-8 Connected Client Table in RemotEye III

16. 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.

    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)

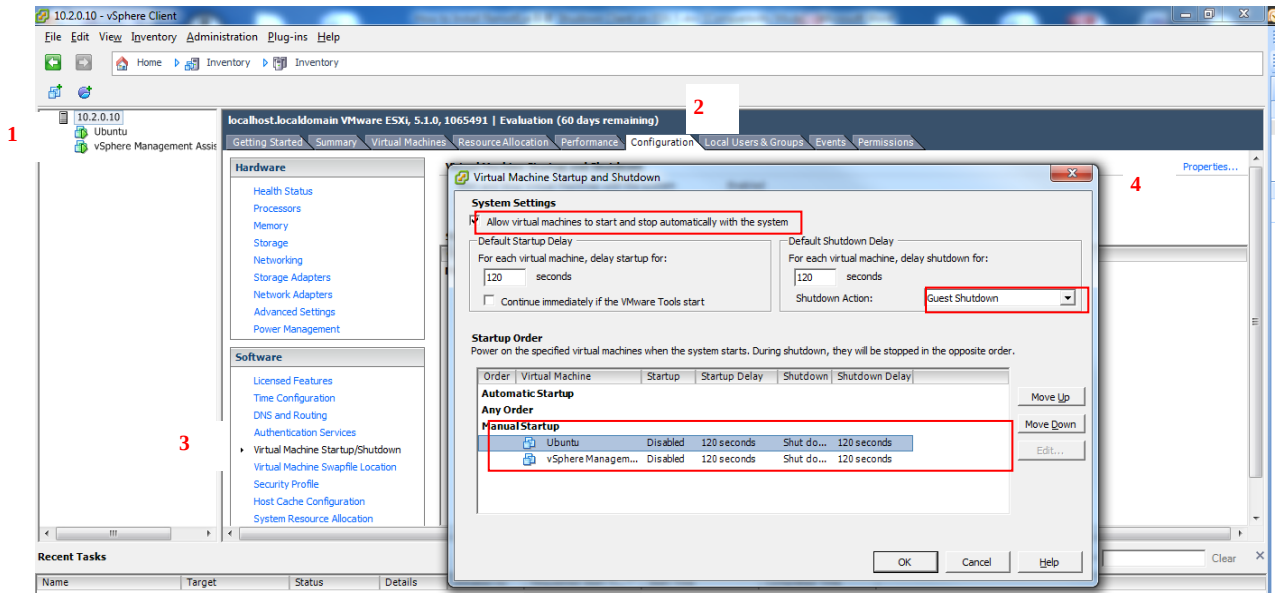


Figure 0-9 vSphere Management Asistant Screen Shot

17. Install **WMware Tools** for the client OSs by going to **Inventory** -> **Virtual Machine** -> **Guest** -> **Install/Upgrade VMware Tools**.

    *NOTE: If **VMware Tools** are not installed, the graceful system shutdown will not be carried out properly.*

18. 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.

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

        18.1.1. 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 **Error! Reference source not found.** and Figure 0-10)

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

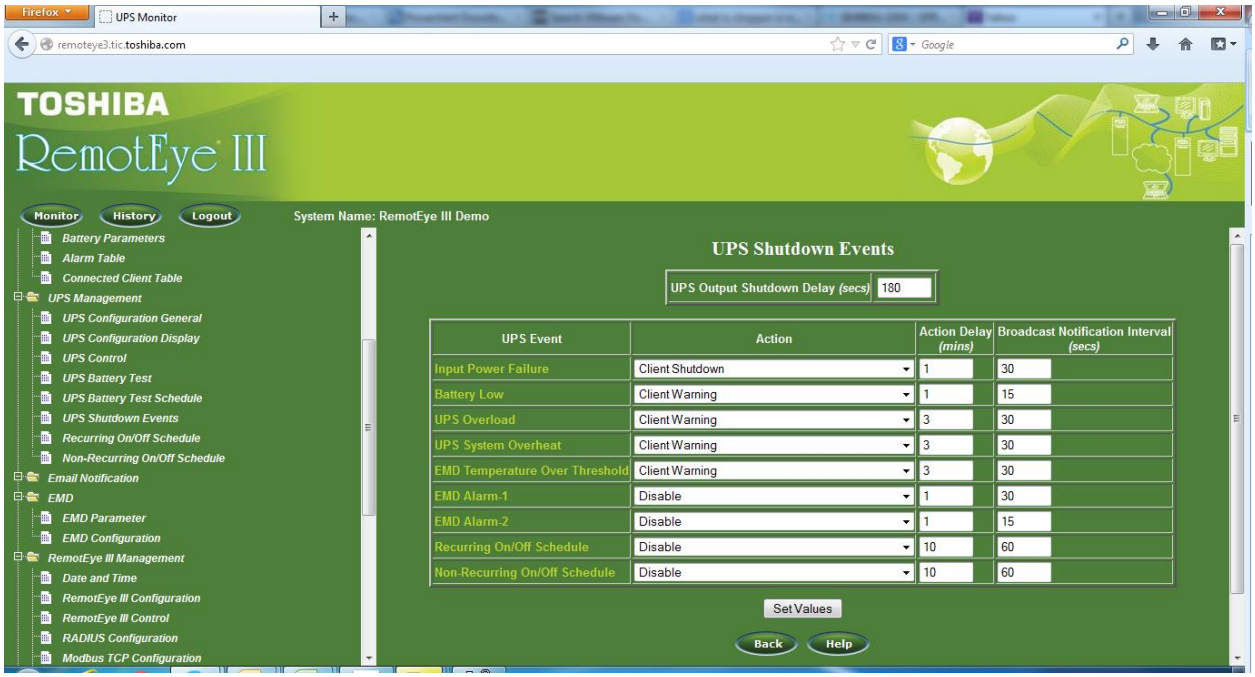


Figure 0-10 RemotEye III UPS Shutdown Events Table

19. Test it. (See Figure 0-11)

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

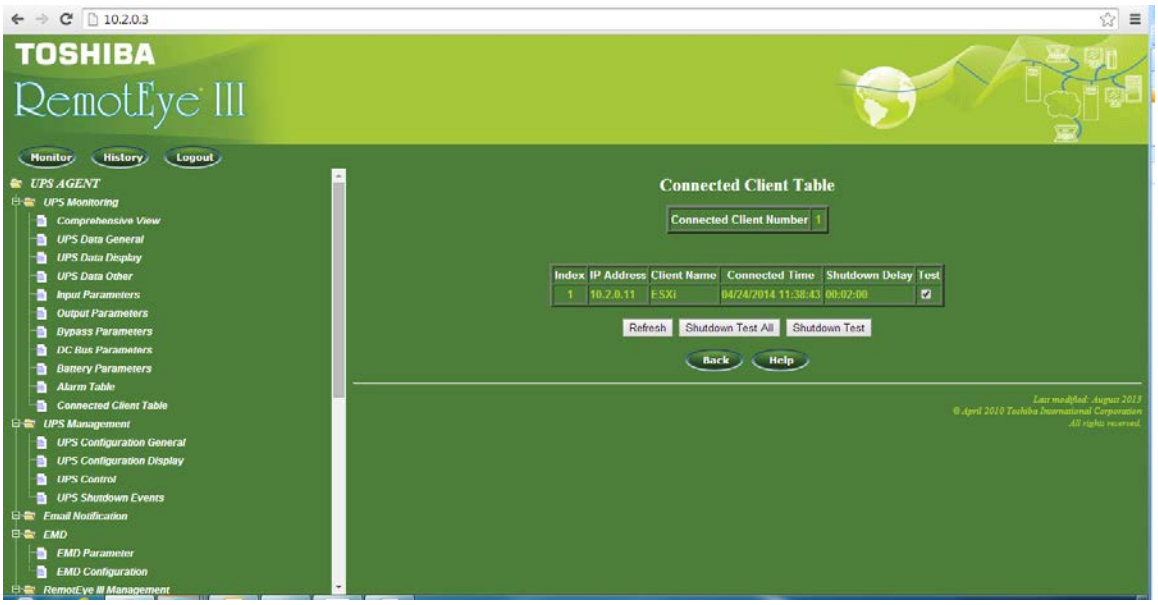


Figure 0-11 RemotEye III Main Display with Shutdown Test Buttons

Appendix B – Modbus Registers

Modbus Input Register for 1600XP: MONITORING

NOTE: Items Lined out (e.g. ~~Lined Out~~) are not supported at this time.

	Registers	Data Type	Size	Description	Units	Multiplier	Comments
RMTI-3 System Information	30001	Unsigned Integer	16-Bit	RemotEye III Software Version	Firmware	X 0.01	Example: Value received is 103 ☐
	30002	Unsigned Integer	16-Bit	RemotEye III Slave ID Number	ID	X 1	
	30003	Unsigned Integer	16-Bit	IP Address First Byte	IP Address	X 1	Example: "192" from 192.168.1.150
	30004	Unsigned Integer	16-Bit	IP Address Second Byte	IP Address	X 1	Example: "168" from 192.168.1.150
	30005	Unsigned Integer	16-Bit Read Only	IP Address Third Byte	IP Address	X 1	Example: "1" from 192.168.1.150
	30006	Unsigned Integer	16-Bit	IP Address Fourth Byte	IP Address	X 1	Example: "150" from 192.168.1.150
	30007	Unsigned Integer	16-Bit	Subnet Mask First Byte	Subnet Mask	X 1	Example: "255" from 255.255.255.0
	30008	Unsigned Integer	16-Bit	Subnet Mask Second Byte	Subnet Mask	X 1	Example: "255" from 255.255.255.0
	30009	Unsigned Integer	16-Bit	Subnet Mask Third Byte	Subnet Mask	X 1	Example: "255" from 255.255.255.0
	30010	Unsigned Integer	16-Bit	Subnet Mask Fourth Byte	Subnet Mask	X 1	Example: "0" from 255.255.255.0
	30011	Unsigned Integer	16-Bit	Gateway IP Address First Byte	IP Address	X 1	Example: "192" from 192.168.1.1
	30012	Unsigned Integer	16-Bit	Gateway IP Address Second Byte	IP Address	X 1	Example: "168" from 192.168.1.1
	30013	Unsigned Integer	16-Bit	Gateway IP Address Third Byte	IP Address	X 1	Example: "1" from 192.168.1.1
	30014	Unsigned Integer	16-Bit	Gateway IP Address Fourth Byte	IP Address	X 1	Example: "1" from 192.168.1.1
	30015	Unsigned Integer	16-Bit	RemotEye III Installation Date	Month	X 1	Month Format: MM
	30016	Unsigned Integer	16-Bit	RemotEye III Installation Date	Day	X 1	Day Format: DD
	30017	Unsigned Integer	16-Bit	RemotEye III Installation Date	Year	X 1	Year Format: YYYY
	30018	Unsigned Integer	16-Bit	Date on RemotEye III	Month	X 1	Month Format: MM
	30019	Unsigned Integer	16-Bit	Date on RemotEye III	Day	X 1	Day Format: DD
	30020	Unsigned Integer	16-Bit	Date on RemotEye III	Year	X 1	Year Format: YYYY
	30021	Unsigned Integer	16-Bit	Time on RemotEye III	Hour	X 1	Hour Format: HH

	Registers	Data Type	Size	Description	Units	Multiplier	Comments
	30022	Unsigned Integer	16-Bit	Time on RemotEye III	Minute	X 1	Minute Format: MM
	30023	Unsigned Integer	16-Bit	Time on RemotEye III	Seconds	X 1	Seconds Format: SS
UPS System Information	30024	ASCII String	16-Bit	Manufacture (first two characters)	Characters	None	Constant: "To" from Toshiba
	30025	ASCII String	16-Bit	Manufacture (third and fourth characters)	Characters	None	Constant: "sh" from Toshiba
	30026	ASCII String	16-Bit	Manufacture (fifth and sixth characters)	Characters	None	Constant: "ib" from Toshiba
	30027	ASCII String	16-Bit	Manufacture (seventh character)	Characters	None	Constant: "a" from Toshiba
	30028	ASCII String	16-Bit	UPS Typeform (first two characters)	Characters	None	UPS Typeform Example: UH3G2L036C61TPA3
	30029	ASCII String	16-Bit	UPS Typeform (third and fourth characters)	Characters	None	UPS Typeform Example: UH3G2L036C61TPA3
	30030	ASCII String	16-Bit	UPS Typeform (fifth and sixth characters)	Characters	None	UPS Typeform Example: UH3G2L036C61TPA3
	30031	ASCII String	16-Bit	UPS Typeform (seventh and eighth characters)	Characters	None	UPS Typeform Example: UH3G2L036C61TPA3
	30032	ASCII String	16-Bit	UPS Typeform (ninth and tenth characters)	Characters	None	UPS Typeform Example: UH3G2L036C61TPA3
	30033	ASCII String	16-Bit	UPS Typeform (eleventh and twelve characters)	Characters	None	UPS Typeform Example: UH3G2L036C61TPA3
	30034	ASCII String	16-Bit	UPS Typeform (thirteen and fourteen characters)*	Characters	None	UPS Typeform Example: UH3G2L036C61TPA3
	30035	ASCII String	16-Bit	UPS Typeform (fifteen and sixteen characters)*	Characters	None	UPS Typeform Example: UH3G2L036C61TPA3
	30036	ASCII String	16-Bit	UPS Serial Number (first two characters)	Characters	None	Serial # Example: 2012101234567891
	30037	ASCII String	16-Bit	UPS Serial Number (third and fourth characters)	Characters	None	Serial # Example: 2012101234567891
	30038	ASCII String	16-Bit	UPS Serial Number (fifth and sixth characters)	Characters	None	Serial # Example: 2012101234567891
	30039	ASCII String	16-Bit	UPS Serial Number (seventh and eighth characters)	Characters	None	Serial # Example: 2012101234567891
	30040	ASCII String	16-Bit	UPS Serial Number (ninth and tenth characters)	Characters	None	Serial # Example: 2012101234567891

	Registers	Data Type	Size	Description	Units	Multiplier	Comments
	30041	ASCII String	16-Bit	UPS Serial Number (eleventh and twelve characters)	Characters	None	Serial # Example: 201210123456 7891
	30042	ASCII String	16-Bit	UPS Serial Number (thirteen and fourteen characters)	Characters	None	Serial # Example: 2012101234567 891
	30043	ASCII String	16-Bit	UPS Serial Number (fifteen and sixteen characters)	Characters	None	Serial # Example: 20121012345678 91
	30044	Unsigned Integer	16-Bit	UPS Capacity	kVA	X 1	
	30045	Unsigned Integer	16-Bit	UPS Installation Date	Month	X 1	Month Format: MM
	30046	Unsigned Integer	16-Bit	UPS Installation Date	Day	X 1	Day Format: DD
	30047	Unsigned Integer	16-Bit	UPS Installation Date	Year	X 1	Year Format: YYYY
	30048	Unsigned Integer	16-Bit	UPS Hardware Build Date	Month	X 1	Month Format: MM
	30049	Unsigned Integer	16-Bit	UPS Hardware Build Date	Day	X 1	Day Format: DD
	30050	Unsigned Integer	16-Bit	UPS Hardware Build Date	Year	X 1	Year Format: YYYY
	30051	Unsigned Integer	16-Bit	UPS Test Date	Month	X 1	Month Format: MM
	30052	Unsigned Integer	16-Bit	UPS Test Date	Day	X 1	Day Format: DD
	30053	Unsigned Integer	16-Bit	UPS Test Date	Year	X 1	Year Format: YYYY
Temperature Parameters	30054	Unsigned Integer	16-Bit	UPS System Temperature	°C	X 1	
	30055	Unsigned Integer	16-Bit	UPS System Temperature	°F	X 1	RemotEye Converts °C to °F
	30056	Unsigned Integer	16-Bit	UPS Battery Temperature	°C	X 1	
	30057	Unsigned Integer	16-Bit	UPS Battery Temperature	°F	X 1	RemotEye Converts °C to °F
Input Parameters	30058	Unsigned Integer	16-Bit	Input Numbers of Phases	Phase	X 1	
	30059	Unsigned Integer	16-Bit	Input Voltage	Volts	X 1	
	30060	N/A	N/A	N/A	N/A	N/A	
	30061	N/A	N/A	N/A	N/A	N/A	
	30062	N/A	N/A	N/A	N/A	N/A	
	30063	N/A	N/A	N/A	N/A	N/A	
	30064	N/A	N/A	N/A	N/A	N/A	
	30065	Unsigned Integer	16-Bit	Input Voltage Percent	%	X 1	
	30066	N/A	N/A	N/A	N/A	N/A	

	Registers	Data Type	Size	Description	Units	Multiplier	Comments
	30067	N/A	N/A	N/A	N/A	N/A	
	30068	Unsigned Integer	16-Bit	Input Rated Voltage (V)	Volts	X 1	
	30069	N/A	N/A	N/A	N/A	N/A	
	30070	Unsigned Integer	16-Bit	Input Current	Amps	X 1	
	30071	Unsigned Integer	16-Bit	Input Current Percent	%	X 1	
	30072	Unsigned Integer	16-Bit	Input Rated Current	Amps	X 0.1	
	30073	Unsigned Integer	16-Bit	Input Frequency	Hz	X 0.1	
	30074	N/A	N/A	N/A	N/A	N/A	
	30075	N/A	N/A	N/A	N/A	N/A	
	30076	N/A	N/A	N/A	N/A	N/A	
	30077	N/A	N/A	N/A	N/A	N/A	
	30078	Unsigned Integer	16-Bit	Input Rated Frequency	Hz	X 0.1	
	30079	Unsigned Integer	16-Bit	Input Active Power (Part 1 of 2)	Watts	X 1	Use this formula: (Register (30079) * 0x10000) + Register (30080)
	30080	Unsigned Integer	16-Bit	Input Active Power (Part 2 of 2)	Watts	X 1	
	30081	Unsigned Integer	16-Bit	Input Rated Active Power	KWatts	X 1	
	30082	Unsigned Integer	16-Bit	Input Apparent Power (Part 1 of 2)	VA	X 1	Use this formula: (Register (30082) * 0x10000) + Register (30083)
	30083	Unsigned Integer	16-Bit	Input Apparent Power (Part 2 of 2)	VA	X 1	
	30084	N/A	N/A	N/A	N/A	N/A	
	30085	Unsigned Integer	16-Bit	Input Power Factor	PF	X 1	
Output Parameters	30086	Unsigned Integer	16-Bit	Output Number of Phases	Phase	X 1	
	30087	Unsigned Integer	16-Bit	Output Voltage	Volts	X 1	
	30088	N/A	N/A	N/A	N/A	N/A	
	30089	N/A	N/A	N/A	N/A	N/A	
	30090	N/A	N/A	N/A	N/A	N/A	
	30091	N/A	N/A	N/A	N/A	N/A	
	30092	N/A	N/A	N/A	N/A	N/A	
	30093	N/A	N/A	N/A	N/A	N/A	

	Registers	Data Type	Size	Description	Units	Multiplier	Comments
	30094	N/A	N/A	N/A	N/A	N/A	
	30095	N/A	N/A	N/A	N/A	N/A	
	30096	N/A	N/A	N/A	N/A	N/A	
	30097	N/A	N/A	N/A	N/A	N/A	
	30098	N/A	N/A	N/A	N/A	N/A	
	30099	N/A	N/A	N/A	N/A	N/A	
	30100	Unsigned Integer	16-Bit	Output Under Voltage Level	%	X 1	
	30101	Unsigned Integer	16-Bit	Output Over Voltage Level	%	X1	
	30102	Unsigned Integer	16-Bit	Output Rated Voltage	Volts	X 1	
	30103	Unsigned Integer	16-Bit	Output Current	Amps	X 0.1	
	30104	N/A	N/A	N/A	N/A	N/A	
	30105	N/A	N/A	N/A	N/A	N/A	
	30106	N/A	N/A	N/A	N/A	N/A	
	30107	N/A	N/A	N/A	N/A	N/A	
	30108	N/A	N/A	N/A	N/A	N/A	
	30109	N/A	N/A	N/A	N/A	N/A	
	30110	Unsigned Integer	16-Bit	Output Load Percentage	%	X 1	
	30111	Unsigned Integer	16-Bit	Output Rated Current	Amps	X 0.1	
	30112	Unsigned Integer	16-Bit	Output Frequency	Hz	X 0.1	
	30113	N/A	N/A	N/A	N/A	N/A	
	30114	N/A	N/A	N/A	N/A	N/A	
	30115	Unsigned Integer	16-Bit	Output Frequency Synch Range	Hz	X 0.1	
	30116	Unsigned Integer	16-Bit	Output Rated Frequency	Hz	X 0.1	
	30117	Unsigned Integer	16-Bit	Output Active Power (Part 1 of 2)	Watts	X 1	Use this formula: (Register (30117) * 0x10000) + Register (30118)
	30118	Unsigned Integer	16-Bit	Output Active Power (Part 2 of 2)	Watts	X 1	
	30119	N/A	N/A	N/A	N/A	N/A	
	30120	Unsigned Integer	16-Bit	Output Rated Active Power	KWatts	X 1	

	Registers	Data Type	Size	Description	Units	Multiplier	Comments
	30121	Unsigned Integer	16-Bit	Output Apparent Power (Part 1 of 2)	VA	X 1	Use this formula: (Register (30121) * 0x10000) + Register (30122)
	30122	Unsigned Integer	16-Bit	Output Apparent Power (Part 2 of 2)	VA	X 1	
	30123	Unsigned Integer	16-Bit	Output Rated Apparent Power	KVA	X 1	
	30124	N/A	N/A	N/A	N/A	N/A	
	30125	Unsigned Integer	16-Bit	Output Rated Power Factor	PF	X 1	
Bypass Parameters	30126	Unsigned Integer	16-Bit	Bypass Number of Phases	Phase	X 1	
	30127	Unsigned Integer	16-Bit	Bypass Voltage	Volts	X 1	
	30128	N/A	N/A	N/A	N/A	N/A	
	30129	N/A	N/A	N/A	N/A	N/A	
	30130	N/A	N/A	N/A	N/A	N/A	
	30131	N/A	N/A	N/A	N/A	N/A	
	30132	N/A	N/A	N/A	N/A	N/A	
	30133	N/A	N/A	N/A	N/A	N/A	
	30134	N/A	N/A	N/A	N/A	N/A	
	30135	N/A	N/A	N/A	N/A	N/A	
	30136	Unsigned Integer	16-Bit	Bypass Under Voltage Detection	%	X 1	
	30137	N/A	N/A	N/A	N/A	N/A	
	30138	Unsigned Integer	16-Bit	Bypass Under Voltage Recovery	%	X 1	
	30139	Unsigned Integer	16-Bit	Bypass Over Voltage Detection	Volts	X 1	
	30140	Unsigned Integer	16-Bit	Bypass Over Voltage Recovery	Volts	X 1	
	30141	Unsigned Integer	16-Bit	Bypass Current	Amps	X 0.1	
	30142	Unsigned Integer	16-Bit	Bypass Frequency	Hz	X 0.1	
	30143	N/A	N/A	N/A	N/A	N/A	
	30144	N/A	N/A	N/A	N/A	N/A	
	30145	Unsigned Integer	16-Bit	Bypass Apparent Power (Part 1 of 2)	VA	X 1	Use this formula: (Register (30145) *

	Registers	Data Type	Size	Description	Units	Multiplier	Comments
	30146	Unsigned Integer	16-Bit	Bypass Apparent Power (Part 2 of 2)	VA	X 1	0x10000) + Register (30146)
DC Bus Parameters	30147	Unsigned Integer	16-Bit	DC Bus Total Voltage	Volts	X 1	
	30148	Unsigned Integer	16-Bit	DC Bus Positive Voltage	Volts	X 1	
	30149	Unsigned Integer	16-Bit	DC Bus Negative Voltage	Volts	X 1	
	30150	Unsigned Integer	16-Bit	DC Bus Rated Voltage	Volts	X 1	
Battery Parameters	30151	Unsigned Integer	16-Bit	Battery Installation Date	Month	X 1	Month Format: MM
	30152	Unsigned Integer	16-Bit	Battery Installation Date	Day	X 1	Day Format: DD
	30153	Unsigned Integer	16-Bit	Battery Installation Date	Year	X 1	Year Format: YYYY
	30154	Unsigned Integer	16-Bit	Estimated Battery Runtime	Minutes	X 1	
	30155	Unsigned Integer	16-Bit	Number of Discharges	Times	X 1	
	30156	Unsigned Integer	16-Bit	Elapsed Time on Battery Power	Seconds	X 1	
	30157	Unsigned Integer	16-Bit	Estimated Battery Life Remaining	Months	X 1	
	30158	Unsigned Integer	16-Bit	Battery Voltage	Vdc	X 1	
	30159	Unsigned Integer	16-Bit	Battery Capacity	%	X 1	
	30160	Unsigned Integer	16-Bit	Battery Discharge Current	Adc	X 0.1	
	30161	Unsigned Integer	16-Bit	Battery Charge Over Voltage Delay	Seconds	X 1	
	30162	N/A	N/A	N/A	N/A	N/A	
	30163	N/A	N/A	N/A	N/A	N/A	
	30164	N/A	N/A	N/A	N/A	N/A	
	30165	Unsigned Integer	16-Bit	Rated Low Battery Voltage	Vdc	X 1	
	30166	Unsigned Integer	16-Bit	Rated Low Battery Level	%	X 1	
	30167	Unsigned Integer	16-Bit	Rated Battery Shutdown Voltage	Vdc	X 1	
	30168	Unsigned Integer	16-Bit	Rated Voltage Shutdown Level	%	X 1	
	30169	Unsigned Integer	16-Bit	Rated Battery Ampere Hour	Ahr	X 1	
	30170	Unsigned Integer	16-Bit	Batteries in Series	Batteries	X 1	
	30171	Unsigned Integer	16-Bit	Batteries in Parallel (Strings)	Strings	X 1	
Ca bin	30172	Unsigned Integer	16-Bit	External Battery Installation Date	Month	X 1	Month Format: MM

	Registers	Data Type	Size	Description	Units	Multiplier	Comments
	30173	Unsigned Integer	16-Bit	External Battery Installation Date	Day	X 1	Day Format: DD
	30174	Unsigned Integer	16-Bit	External Battery Installation Date	Year	X 1	Year Format: YYYY
	30175	Unsigned Integer	16-Bit	External Battery Rated Ampere Hour	Ahr	X 1	
	30176	Unsigned Integer	16-Bit	External Battery C Rate	C	X 1	
	30177	Unsigned Integer	16-Bit	External Batteries in Series	Batteries	X 1	
	30178	Unsigned Integer	16-Bit	External Batteries in Parallel (Strings)	Batteries	X 1	
External Battery Cabinet W/Smart Charger Parameters	30179	ASCII String	16-Bit	Battery Cabinet 1 Serial Number UH23XXX1	Serial #	X 1	First two character of serial number
	30180	ASCII String	16-Bit	Battery Cabinet 1 Serial Number UH23XXX1	Serial #	X 1	Third and fourth characters of serial number
	30181	ASCII String	16-Bit	Battery Cabinet 1 Serial Number UH23XXX1	Serial #	X 1	Fifth and sixth characters of serial number
	30182	ASCII String	16-Bit	Battery Cabinet 1 Serial Number UH23XXX1	Serial #	X 1	Last two characters of serial number
	30183	ASCII String	16-Bit	Battery Cabinet 1 Firmware Version ex. 000015	FW Ver.	X 1	First two characters of Firmware Version
	30184	ASCII String	16-Bit	Battery Cabinet 1 Firmware Version ex. 000015	FW Ver.	X 1	Third and fourth characters of Firmware Version
	30185	ASCII String	16-Bit	Battery Cabinet 1 Firmware Version ex. 000015	FW Ver.	X 1	Last two characters of Firmware Version
	30186	Unsigned Integer	16-Bit	Battery Cabinet 1 Charger Current	Amps	X 0.01	
	30187	Unsigned Integer	16-Bit	Battery cabinet 1 Charger Voltage	Volts	x 0.1	
	30188	Signed Integer	16-Bit	Battery Cabinet 1 Ambient Temperature	°C	X 1	

	Registers	Data Type	Size	Description	Units	Multiplier	Comments
	30189	Signed Integer	16-Bit	Battery Cabinet 1 Ambient Temperature	°F	x 1	
	30190	ASCII String	16-Bit	Battery Cabinet 2 Serial Number UH23XXX1	Serial #	X 1	First two character of serial number
	30191	ASCII String	16-Bit	Battery Cabinet 2 Serial Number UH23XXX1	Serial #	X 1	Third and fourth characters of serial number
	30192	ASCII String	16-Bit	Battery Cabinet 2 Serial Number UH23XXX1	Serial #	X 1	Fifth and sixth characters of serial number
	30193	ASCII String	16-Bit	Battery Cabinet 2 Serial Number UH23XXX1	Serial #	X 1	Last two characters of serial number
	30194	ASCII String	16-Bit	Battery Cabinet 2 Firmware Version ex. 000015	FW Ver.	X 1	First two characters of Firmware Version
	30195	ASCII String	16-Bit	Battery Cabinet 2 Firmware Version ex. 000015	FW Ver.	X 1	Third and fourth characters of Firmware Version
	30196	ASCII String	16-Bit	Battery Cabinet 2 Firmware Version ex. 000015	FW Ver.	X 1	Last two characters of Firmware Version
	30197	Unsigned Integer	16-Bit	Battery Cabinet 2 Charger Current	Amps	X 0.01	
	30198	Unsigned Integer	16-Bit	Battery cabinet 2 Charger Voltage	Volts	x 0.1	
	30199	Signed Integer	16-Bit	Battery Cabinet 2 Ambient Temperature	°C	X 1	
	30200	Signed Integer	16-Bit	Battery Cabinet 2 Ambient Temperature	°F	x 1	
EMD	30201	Signed Integer	16-Bit	Temperature in Celsius	°C	X 1	Note: "-1" means disabled or not connected
	30202	Signed Integer	16-Bit	Temperature Fahrenheit	°F	X 1	Note: "-1" means disabled or not connected
	30203	Signed Integer	16-Bit	Humidity	%	X 1	Note: "-1" means disabled or not connected

	Registers	Data Type	Size	Description	Units	Multiplier	Comments
UPS History Summary	30204	Unsigned Integer	16-Bit	UPS History System Operation Time	Days	X 1	RE3 Convert Seconds -> Days
	30205	N/A	N/A	N/A	N/A	N/A	
	30206	N/A	N/A	N/A	N/A	N/A	
	30207	Unsigned Integer	16-Bit	UPS History Inverter Operation Time	Days	X 1	RE3 Convert Seconds -> Days
	30208	N/A	N/A	N/A	N/A	N/A	
	30209	N/A	N/A	N/A	N/A	N/A	
	30210	Unsigned Integer	16-Bit	UPS History Backup Operation Time	Mins	X 1	RE3 Convert Seconds -> Minutes
	30211	Unsigned Integer	16-Bit	UPS Lifetime Remaining	Months	X 1	
	30212	N/A	N/A	N/A	N/A	N/A	
	30213	N/A	N/A	N/A	N/A	N/A	
	30214	N/A	N/A	N/A	N/A	N/A	
	30215	N/A	N/A	N/A	N/A	N/A	
	30216	N/A	N/A	N/A	N/A	N/A	
	30217	N/A	N/A	N/A	N/A	N/A	
	30218	N/A	N/A	N/A	N/A	N/A	
	30219	Signed Integer	16-Bit	UPS History Highest System Temperature	°C	X 1	
	30220	Signed Integer	16-Bit	UPS History Highest System Temperature	°F	X 1	
	30221	Signed Integer	16-Bit	UPS History Highest Battery Temperature	°C	X 1	
	30222	Signed Integer	16-Bit	UPS History Highest Battery Temperature	°F	X 1	
	30223	Unsigned Integer	16-Bit	UPS History Total Number Input Under Voltage	Times	X 1	
	30224	Unsigned Integer	16-Bit	UPS History Total Number Overloads	Times	X 1	

	Registers	Data Type	Size	Description	Units	Multiplier	Comments
	30225	Unsigned Integer	16-Bit	UPS History Total Number Tests	Times	X 1	
	30226	Unsigned Integer	16-Bit	UPS History Total Number Backup	Times	X 1	
	30227	Unsigned Integer	16-Bit	UPS History Total Number Faults	Times	X 1	
	30228	Unsigned Integer	16-Bit	UPS History Total Number Operation Mode Change	Times	X 1	
	30229	Unsigned Integer	16-Bit	UPS History Total Number Warnings	Times	X 1	
	30230	Unsigned Integer	16-Bit	UPS History Total Number System Settings Changed	Times	X 1	
	30231	Unsigned Integer	16-Bit	UPS History Total Number Resets	Times	X 1	

Modbus Input Coil for 1600XP: ALARMS and STATUS

NOTE: Items Lined out (e.g. ~~Lined Out~~) are not supported at this time.

	Registers	Data Type	Size	Description	Units	Comments
RMTI-3 Status	10001	Discrete	1-Bit	RemotEye III Data Link	True/False (1/0)	0 = Link Up; 1 = Link Down
	10002	Discrete	1-Bit	RemotEye III Network Link	True/False (1/0)	0 = Link Up; 1 = Link Down
UPS Mode	10003	Discrete	1-Bit	Startup Mode	True/False (1/0)	
	10004	Discrete	1-Bit	Online Mode	True/False (1/0)	
	10005	Discrete	1-Bit	Backup Mode	True/False (1/0)	
	10006	Discrete	1-Bit	Bypass Mode	True/False (1/0)	Reflects Bypass Mode when: BYP Normal, BYP Init, & BYP Shutdown
	10007	Discrete	1-Bit	Shutdown Mode	True/False (1/0)	Reflects Shutdown Mode when: Shutdown, Initial Charge, & Boost up
	10008	Discrete	1-Bit	Battery Test Mode	True/False (1/0)	
Battery Status	10009	Discrete	1-Bit	UPS Battery Status Unknown	True/False (1/0)	
	10010	Discrete	1-Bit	UPS Battery Status Normal	True/False (1/0)	
	10011	Discrete	1-Bit	UPS Battery Status Low	True/False (1/0)	
	10012	Discrete	1-Bit	UPS Battery Status Depleted	True/False (1/0)	
	10013	Discrete	1-Bit	UPS Battery Status Discharging	True/False (1/0)	
	10014	Discrete	1-Bit	UPS Battery Status Failure	True/False (1/0)	

	Registers	Data Type	Size	Description	Units	Comments
Battery Charge Status	10015	N/A	N/A	N/A	N/A	
	10016	N/A	N/A	N/A	N/A	
	10017	Discrete	1-Bit	Battery Charger Status Normal Charging	True/False (1/0)	
	10018	Discrete	1-Bit	Battery Charger Status Preventative Charging	True/False (1/0)	
	10019	Discrete	1-Bit	Battery Charger Status Stop Charging	True/False (1/0)	
Battery Test	10020	N/A	N/A	N/A	N/A	
	10021	Discrete	1-Bit	Battery Test in Progress	True/False (1/0)	1 = Currently Testing; 0 = Not Testing
	10022	Discrete	1-Bit	Ok to Perform Battery Test	True/False (1/0)	1= Ok to perform; 0 = Test prohibited
	10023	Discrete	1-Bit	Last Battery Test Result	True/False (1/0)	1 = Passed; 0 = Failed (If no test has been performed it should be blank)
External Battery Cabinet Status	10024	Discrete	1-Bit	External Battery Install Status	True/False (1/0)	1 = Installed; 0 = Uninstalled

	Registers	Data Type	Size	Description	Units	Comments
External Battery Cabinet W/ Smart Charger Status	10025	Discrete	1-Bit	Battery Cabinet 1 Enabled	True/False (1/0)	1 = Enabled; 0 = Disabled
	10026	Discrete	1-Bit	Battery Cabinet 2 Enabled	True/False (1/0)	1 = Enabled; 0 = Disabled
EMD	10027	Discrete	1-Bit	EMD Enabled	True/False (1/0)	
	10028	Discrete	1-Bit	EMD Alarm-1	True/False (1/0)	0 = no Alarm; 1 = Alarm Triggered
	10029	Discrete	1-Bit	EMD Alarm-2	True/False (1/0)	0 = no Alarm; 1 = Alarm Triggered
Faults	10030	Discrete	1-Bit	General Alarm Fault	True/False (1/0)	1 = One or more fault reported, see below for cause; 0 = No Faults
	10031	Discrete	1-Bit	Open Fuse Fault	True/False (1/0)	
	10032	Discrete	1-Bit	Current Limit Fault	True/False (1/0)	
	10033	Discrete	1-Bit	Output Overcurrent Fault	True/False (1/0)	
	10034	Discrete	1-Bit	DC Bus Overcurrent Fault	True/False (1/0)	
	10035	Discrete	1-Bit	DC Bus Overvoltage Fault	True/False (1/0)	
	10036	Discrete	1-Bit	DC Bus Imbalance Fault	True/False (1/0)	
	10037	Discrete	1-Bit	DC Bus Under Voltage During Boost-up Fault	True/False (1/0)	
	10038	Discrete	1-Bit	DC Bus Under Voltage During Charging Fault	True/False (1/0)	
	10039	Discrete	1-Bit	Charger Overvoltage Fault	True/False (1/0)	
	10040	Discrete	1-Bit	Output Under voltage Fault	True/False (1/0)	

	Registers	Data Type	Size	Description	Units	Comments
	10041	Discrete	1-Bit	Output Overvoltage Fault	True/False (1/0)	
	10042	Discrete	1-Bit	Heatsink Overheat Fault	True/False (1/0)	
	10043	N/A	N/A	N/A	N/A	
	10044	Discrete	1-Bit	Bypass Overload Fault	True/False (1/0)	
	10045	Discrete	1-Bit	Resettable Inverter Overload Fault	True/False (1/0)	
	10046	Discrete	1-Bit	Un-Resettable Inverter Overload Fault	True/False (1/0)	
	10047	Discrete	1-Bit	Bypass Overheat Fault	True/False (1/0)	
	10048	N/A	N/A	N/A	N/A	
	10049	N/A	N/A	N/A	N/A	
	10050	N/A	N/A	N/A	N/A	
Warnings	10051	Discrete	1-Bit	Input Overvoltage Warning	True/False (1/0)	
	10052	Discrete	1-Bit	Input Under voltage Warning	True/False (1/0)	
	10053	Discrete	1-Bit	Input Frequency Error Warning	True/False (1/0)	
	10054	N/A	N/A	N/A	N/A	
	10055	Discrete	1-Bit	Bypass Overvoltage Warning	True/False (1/0)	
	10056	Discrete	1-Bit	Bypass Under voltage Warning	True/False (1/0)	
	10057	Discrete	1-Bit	Bypass Input Frequency Error Warning	True/False (1/0)	
	10058	N/A	N/A	N/A	N/A	
	10059	Discrete	1-Bit	Output Overload Warning	True/False (1/0)	
	10060	Discrete	1-Bit	Current Limit Warning	True/False (1/0)	
	10061	Discrete	1-Bit	Battery Test Failed Warning	True/False (1/0)	
	10062	Discrete	1-Bit	Low Battery Level Reached Warning	True/False (1/0)	
	10063	Discrete	1-Bit	Shutdown Battery Level Reached Warning	True/False (1/0)	
	10064	Discrete	1-Bit	Replace Battery Warning	True/False (1/0)	
	10065	Discrete	1-Bit	Battery Overheat Warning	True/False (1/0)	
	10066	Discrete	1-Bit	Battery Near Expiration Warning (Replace batteries soon)	True/False (1/0)	

	Registers	Data Type	Size	Description	Units	Comments
	10067	Discrete	1-Bit	Battery Expired Warning (Replace Batteries)	True/False (1/0)	
	10068	N/A	N/A	N/A	N/A	
	10069	Discrete	1-Bit	Battery Depleted Warning	True/False (1/0)	
	10070	Discrete	1-Bit	Charger Overvoltage Warning	True/False (1/0)	
	10071	Discrete	1-Bit	DC Bus Under Voltage During Battery Test Warning	True/False (1/0)	
	10072	Discrete	1-Bit	System Test Failed Warning	True/False (1/0)	
	10073	Discrete	1-Bit	System Overheat Warning	True/False (1/0)	
	10074	Discrete	1-Bit	Asynchronous Operation Warning	True/False (1/0)	
	10075	N/A	N/A	N/A	N/A	
	10076	Discrete	1-Bit	Service UPS Soon Warning	True/False (1/0)	
	10077	Discrete	1-Bit	Display Cable Error Warning	True/False (1/0)	
	10078	Discrete	1-Bit	Display and UPS Communication Error Warning	True/False (1/0)	
	10079	Discrete	1-Bit	UPS and RemotEye Communication Error Warning	True/False (1/0)	
	10080	Discrete	1-Bit	RemotEye and Network Communication Error Warning	True/False (1/0)	
	10081	Discrete	1-Bit	UPS and Service Port Communication Error Warning	True/False (1/0)	
	10082	N/A	N/A	N/A	N/A	
	10083	N/A	N/A	N/A	N/A	
	10084	N/A	N/A	N/A	N/A	
	~~10085~~	~~Discrete~~	~~1-Bit~~	~~EMD Sensor 1 Alarm Triggered~~	~~True/False (1/0)~~	
	~~10086~~	~~Discrete~~	~~1-Bit~~	~~EMD Sensor 2 Alarm Triggered~~	~~True/False (1/0)~~	

	Registers	Data Type	Size	Description	Units	Comments
	10087	Discrete	1-Bit	EMD Humidity is at Low Critical Point	True/False (1/0)	
	10088	Discrete	1-Bit	EMD Humidity is at High Critical Point	True/False (1/0)	
	10089	Discrete	1-Bit	EMD Humidity at Low Warning Point	True/False (1/0)	
	10090	Discrete	1-Bit	EMD Humidity at High Warning Point	True/False (1/0)	
	10091	Discrete	1-Bit	EMD Temperature at Low Critical Point	True/False (1/0)	
	10092	Discrete	1-Bit	EMD Temperature at High Critical Point	True/False (1/0)	
	10093	Discrete	1-Bit	EMD Temperature at Low Warning Point	True/False (1/0)	
	10094	Discrete	1-Bit	EMD Temperature at High Warning Point	True/False (1/0)	
Informational	10095	Discrete	1-Bit	Input Power Failure	True/False (1/0)	
	10096	N/A	N/A	N/A	N/A	
	10097	N/A	N/A	N/A	N/A	
	10098	N/A	N/A	N/A	N/A	
	10099	N/A	N/A	N/A	N/A	
	10100	N/A	N/A	N/A	N/A	
	10101	N/A	N/A	N/A	N/A	
	10102	N/A	N/A	N/A	N/A	
	10103	N/A	N/A	N/A	N/A	
	10104	N/A	N/A	N/A	N/A	
	10105	N/A	N/A	N/A	N/A	
	10106	N/A	N/A	N/A	N/A	
	10107	N/A	N/A	N/A	N/A	
	10108	N/A	N/A	N/A	N/A	
	10109	N/A	N/A	N/A	N/A	
	10110	N/A	N/A	N/A	N/A	
	10111	N/A	N/A	N/A	N/A	

	Registers	Data Type	Size	Description	Units	Comments
	10112	N/A	N/A	N/A	N/A	
	10113	Discrete	1-Bit	UPS Output Shutdown in Progress	True/False (1/0)	
	10114	Discrete	1-Bit	UPS Output is Off	True/False (1/0)	
	10115	Discrete	1-Bit	Unsuccessful Login (Username/Password incorrect)	True/False (1/0)	
External Battery Cabinet W/Smart Charger Status	10116	Discrete	1-Bit	Battery Cabinet 1 String 1 Disconnected	True/False (1/0)	
	10117	Discrete	1-Bit	Battery Cabinet 1 String 2 Disconnected	True/False (1/0)	
	10118	Discrete	1-Bit	Battery Cabinet 1 String 3 Disconnected	True/False (1/0)	
	10119	Discrete	1-Bit	Battery Cabinet 1 String 1 Loose HCT Connection	True/False (1/0)	
	10120	Discrete	1-Bit	Battery Cabinet 1 String 2 Loose HCT Connection	True/False (1/0)	
	10121	Discrete	1-Bit	Battery Cabinet 1 String 3 Loose HCT Connection	True/False (1/0)	
	10122	Discrete	1-Bit	Battery Cabinet 1 Over Temperature Warning	True/False (1/0)	
	10123	Discrete	1-Bit	Reserved	True/False (1/0)	
	10124	Discrete	1-Bit	Battery Cabinet 1 Charger Over Voltage Fault	True/False (1/0)	
	10125	Discrete	1-Bit	Battery Cabinet 1 Charger Over Current Fault	True/False (1/0)	
	10126	Discrete	1-Bit	Battery Cabinet 1 Lost Communication	True/False (1/0)	
	10127	Discrete	1-Bit	Battery Cabinet 2 String 1 Disconnected	True/False (1/0)	
	10128	Discrete	1-Bit	Battery Cabinet 2 String 2 Disconnected	True/False (1/0)	
	10129	Discrete	1-Bit	Battery Cabinet 2 String 3 Disconnected	True/False (1/0)	
	10130	Discrete	1-Bit	Battery Cabinet 2 String 1 Loose HCT Connection	True/False (1/0)	
	10131	Discrete	1-Bit	Battery Cabinet 2 String 2 Loose HCT	True/False (1/0)	

	Registers	Data Type	Size	Description	Units	Comments
				Connection		
	10132	Discrete	1-Bit	Battery Cabinet 2 String 3 Loose HCT Connection	True/False (1/0)	
	10133	Discrete	1-Bit	Battery Cabinet 2 Over Temperature Warning	True/False (1/0)	
	10134	Discrete	1-Bit	Reserved	True/False (1/0)	
	10135	Discrete	1-Bit	Battery Cabinet 2 Charger Over Voltage Fault	True/False (1/0)	
	10136	Discrete	1-Bit	Battery Cabinet 2 Charger Over Current Fault	True/False (1/0)	
	10137	Discrete	1-Bit	Battery Cabinet 2 Lost Communication	True/False (1/0)	

Modbus Input Register for 4200FA/4300: MONITORING

NOTE: Items Lined out (e.g. ~~Lined Out~~) are not supported at this time.

	Registers	Data Type	Size	Description	Units	Multiplier	Comments
RMTI-3 System Information	30001	Unsigned Integer	16-Bit	RemotEye III Software Version	Firmware	X 1	
	30002	Unsigned Integer	16-Bit	RemotEye III Slave ID Number	ID	X 1	
	30003	Unsigned Integer	16-Bit	IP Address First Byte	IP Address	X 1	Example: "192" from 192.168.1.150
	30004	Unsigned Integer	16-Bit	IP Address Second Byte	IP Address	X 1	Example: "168" from 192.168.1.150
	30005	Unsigned Integer	16-Bit	IP Address Third Byte	IP Address	X 1	Example: "1" from 192.168.1.150
	30006	Unsigned Integer	16-Bit	IP Address Fourth Byte	IP Address	X 1	Example: "150" from 192.168.1.150
	30007	Unsigned Integer	16-Bit	Subnet Mask First Byte	Subnet Mask	X 1	Example: "255" from 255.255.255.0
	30008	Unsigned Integer	16-Bit	Subnet Mask Second Byte	Subnet Mask	X 1	Example: "255" from 255.255.255.0
	30009	Unsigned Integer	16-Bit	Subnet Mask Third Byte	Subnet Mask	X 1	Example: "255" from 255.255.255.0
	30010	Unsigned Integer	16-Bit	Subnet Mask Fourth Byte	Subnet Mask	X 1	Example: "0" from 255.255.255.0
	30011	Unsigned Integer	16-Bit	Gateway IP Address First Byte	IP Address	X 1	Example: "192" from 192.168.1.1
	30012	Unsigned Integer	16-Bit	Gateway IP Address Second Byte	IP Address	X 1	Example: "168" from 192.168.1.1
	30013	Unsigned Integer	16-Bit	Gateway IP Address Third Byte	IP Address	X 1	Example: "1" from 192.168.1.1
	30014	Unsigned Integer	16-Bit	Gateway IP Address Fourth Byte	IP Address	X 1	Example: "1" from 192.168.1.1
	30015	Unsigned Integer	16-Bit	RemotEye III Installation Date	Month	X 1	Month Format: MM
	30016	Unsigned Integer	16-Bit	RemotEye III Installation Date	Day	X 1	Day Format: DD
	30017	Unsigned Integer	16-Bit	RemotEye III Installation Date	Year	X 1	Year Format: YYYY
	30018	Unsigned Integer	16-Bit	Date on RemotEye III	Month	X 1	Month Format: MM
	30019	Unsigned Integer	16-Bit	Date on RemotEye III	Day	X 1	Day Format: DD
	30020	Unsigned Integer	16-Bit	Date on RemotEye III	Year	X 1	Year Format: YYYY
	30021	Unsigned Integer	16-Bit	Time on RemotEye III	Hour	X 1	Hour Format: HH
	30022	Unsigned Integer	16-Bit	Time on RemotEye III	Minute	X 1	Minute Format: MM
	30023	Unsigned Integer	16-Bit	Time on RemotEye III	Seconds	X 1	Seconds Format: SS

	Registers	Data Type	Size	Description	Units	Multiplier	Comments
UPS System Information	30024	ASCII String	16-Bit	Manufacture (first two characters)	Characters	None	Constant: "To" from Toshiba
	30025	ASCII String	16-Bit	Manufacture (third and fourth two characters)	Characters	None	Constant: "sh" from Toshiba
	30026	ASCII String	16-Bit	Manufacture (fifth and sixth characters)	Characters	None	Constant: "ib" from Toshiba
	30027	ASCII String	16-Bit	Manufacture (seventh characters)	Characters	None	Constant: "a" from Toshiba
	30028	ASCII String	16-Bit	UPS Typeform (first two characters)	Characters	None	UPS Typeform Example: 4310F3F500FAXXXX
	30029	ASCII String	16-Bit	UPS Typeform (third and fourth characters)	Characters	None	UPS Typeform Example: 4310F3F500FAXXXX
	30030	ASCII String	16-Bit	UPS Typeform (fifth and sixth characters)	Characters	None	UPS Typeform Example: 4310F3F500FAXXXX
	30031	ASCII String	16-Bit	UPS Typeform (seventh and eighth characters)	Characters	None	UPS Typeform Example: 4310F3F500FAXXXX
	30032	ASCII String	16-Bit	UPS Typeform (ninth and tenth characters)	Characters	None	UPS Typeform Example: 4310F3F500FAXXXX
	30033	ASCII String	16-Bit	UPS Typeform (eleventh and twelve characters)	Characters	None	UPS Typeform Example: 4310F3F500FAXXXX
	30034	ASCII String	16-Bit	UPS Typeform (thirteen and fourteen characters)*	Characters	None	UPS Typeform Example: 4310F3F500FAXXXX
	30035	ASCII String	16-Bit	UPS Typeform (fifteen and sixteen characters)*	Characters	None	UPS Typeform Example: 4310F3F500FAXXXX
	30036	ASCII String	16-Bit	UPS Serial Number (first two characters)	Characters	None	Serial # Example: 2012101234567891
	30037	ASCII String	16-Bit	UPS Serial Number (third and fourth characters)	Characters	None	Serial # Example: 2012101234567891
	30038	ASCII String	16-Bit	UPS Serial Number (fifth and sixth characters)	Characters	None	Serial # Example: 2012101234567891
	30039	ASCII String	16-Bit	UPS Serial Number (seventh and eighth characters)	Characters	None	Serial # Example: 2012101234567891
	30040	ASCII String	16-Bit	UPS Serial Number (ninth and tenth characters)	Characters	None	Serial # Example: 2012101234567891
	30041	ASCII String	16-Bit	UPS Serial Number (eleventh and twelve characters)	Characters	None	Serial # Example: 2012101234567891

	Registers	Data Type	Size	Description	Units	Multiplier	Comments
	30042	ASCII String	16-Bit	UPS Serial Number (thirteen and fourteen characters)	Characters	None	Serial # Example: 2012101234567891
	30043	ASCII String	16-Bit	UPS Serial Number (fifteen and sixteen characters)	Characters	None	Serial # Example: 2012101234567891
	30044	Unsigned Integer	16-Bit	UPS Capacity	kVA	X 1	
	30045	Unsigned Integer	16-Bit	UPS Installation Date	Month	X 1	Month Format: MM
	30046	Unsigned Integer	16-Bit	UPS Installation Date	Day	X 1	Day Format: DD
	30047	Unsigned Integer	16-Bit	UPS Installation Date	Year	X 1	Year Format: YYYY
	30048	Unsigned Integer	16-Bit	UPS Display Firmware Built Date	Month	X 1	Month Format: MM
	30049	Unsigned Integer	16-Bit	UPS Display Firmware Built Date	Day	X 1	Day Format: DD
	30050	Unsigned Integer	16-Bit	UPS Display Firmware Built Date	Year	X 1	Year Format: YYYY
	30051	N/A	N/A	N/A	N/A	N/A	N/A
	30052	N/A	N/A	N/A	N/A	N/A	N/A
	30053	N/A	N/A	N/A	N/A	N/A	N/A
N/A	30054	N/A	N/A	N/A	N/A	N/A	N/A
	30055	N/A	N/A	N/A	N/A	N/A	N/A
	30056	N/A	N/A	N/A	N/A	N/A	N/A
	30057	N/A	N/A	N/A	N/A	N/A	N/A
Input Parameters	30058	Unsigned Integer	16-Bit	Input Numbers of Phases	Phase	X 1	
	30059	Unsigned Integer	16-Bit	Input Voltage Phase A (L-L)	Volts	X 1	
	30060	Unsigned Integer	16-Bit	Input Voltage Phase B (L-L)	Volts	X 1	
	30061	Unsigned Integer	16-Bit	Input Voltage Phase C (L-L)	Volts	X 1	
	30062	Unsigned Integer	16-Bit	Input Voltage Phase AB (L-N)	Volts	X 1	
	30063	Unsigned Integer	16-Bit	Input Voltage Phase BC (L-N)	Volts	X 1	
	30064	Unsigned Integer	16-Bit	Input Voltage Phase CA (L-N)	Volts	X 1	
	30065	Unsigned Integer	16-Bit	Input Voltage Percent Phase A	%	X 1	

	Registers	Data Type	Size	Description	Units	Multiplier	Comments
	30066	Unsigned Integer	16-Bit	Input Voltage Percent Phase B	%	X 1	
	30067	Unsigned Integer	16-Bit	Input Voltage Percent Phase C	%	X 1	
	30068	Unsigned Integer	16-Bit	Input Rated Voltage (L-L)	Volts	X 1	
	30069	Unsigned Integer	16-Bit	Input Rated Voltage (L-N)	Volts	X 1	
	30070	Unsigned Integer	16-Bit	Input Current	Amps	X 1	
	30071	N/A	N/A	N/A	N/A	N/A	
	30072	Unsigned Integer	16-Bit	Input Rated Current	Amps	X 0.1	
	30073	Unsigned Integer	16-Bit	Input Frequency Phase A	Hz	X 0.1	
	30074	Unsigned Integer	16-Bit	Input Frequency Phase B	Hz	X 0.1	
	30075	Unsigned Integer	16-Bit	Input Frequency Phase C	Hz	X 0.1	
	30076	Unsigned Integer	16-Bit	Voltage Input Under Voltage Detection Level	%	X 1	
	30077	Unsigned Integer	16-Bit	Voltage Input Over Voltage Detection Level	%	X 1	
	30078	N/A	N/A	N/A	N/A	N/A	
	30079	N/A	N/A	N/A	N/A	N/A	
	30080	N/A	N/A	N/A	N/A	N/A	
	30081	Unsigned Integer	16-Bit	Input Rated Active Power	KWatts	X 1	
	30082	N/A	N/A	N/A	N/A	N/A	
	30083	N/A	N/A	N/A	N/A	N/A	
	30084	Unsigned Integer	16-Bit	Input Rated Apparent Power	KVA	X 1	
	30085	N/A	N/A	N/A	N/A	N/A	
Output Parameters	30086	Unsigned Integer	16-Bit	Output Number of Phases	Phase	X 1	
	30087	Unsigned Integer	16-Bit	Output Voltage Phase A (L-L)	Volts	X 1	
	30088	Unsigned Integer	16-Bit	Output Voltage Phase B (L-L)	Volts	X 1	
	30089	Unsigned Integer	16-Bit	Output Voltage Phase C (L-L)	Volts	X 1	
	30090	Unsigned Integer	16-Bit	Output Rated Voltage (L-L)	Volts	X 1	
	30091	Unsigned Integer	16-Bit	Output Voltage Phase AB (L-N)	Volts	X 1	

	Registers	Data Type	Size	Description	Units	Multiplier	Comments
	30092	Unsigned Integer	16-Bit	Output Voltage Phase BC (L-N)	Volts	X 1	
	30093	Unsigned Integer	16-Bit	Output Voltage Phase CA (L-N)	Volts	X 1	
	30094	Unsigned Integer	16-bit	Output Rated Voltage (L-N)	Volts	X 1	
	30095	Unsigned Integer	16-Bit	Output Voltage Phase A	%	X 1	
	30096	Unsigned Integer	16-Bit	Output Voltage Phase B	%	X 1	
	30097	Unsigned Integer	16-Bit	Output Voltage Phase C	%	X 1	
	30098	Unsigned Integer	16-Bit	Output Under Voltage Detection Level	Volts	X 1	
	30099	Unsigned Integer	16-Bit	Output Over Voltage Detection Level	Volts	X 1	
	30100	N/A	N/A	N/A	N/A	N/A	
	30101	N/A	N/A	N/A	N/A	N/A	
	30102	N/A	N/A	N/A	N/A	N/A	
	30103	Unsigned Integer	16-Bit	Output Current Phase A	Amps	X 1	
	30104	Unsigned Integer	16-Bit	Output Current Phase B	Amps	X 1	
	30105	Unsigned Integer	16-Bit	Output Current Phase C	Amps	X 1	
	30106	Unsigned Integer	16-Bit	Output Current Phase A	%	X 1	
	30107	Unsigned Integer	16-Bit	Output Current Phase B	%	X 1	
	30108	Unsigned Integer	16-Bit	Output Current Phase C	%	X 1	
	30109	Unsigned Integer	16-Bit	Output Total Current	%	X 1	
	30110	N/A	N/A	N/A	N/A	N/A	
	30111	Unsigned Integer	16-Bit	Output Rated Current	Amps	X 1	
	30112	Unsigned Integer	16-Bit	Output Frequency Phase A	Hz	X 0.1	
	30113	Unsigned Integer	16-Bit	Output Frequency Phase B	Hz	X 0.1	
	30114	Unsigned Integer	16-Bit	Output Frequency Phase C	Hz	X 0.1	
	30115	N/A	N/A	N/A	N/A	N/A	
	30116	N/A	N/A	N/A	N/A	N/A	
	30117	N/A	N/A	N/A	N/A	N/A	
	30118	Unsigned Integer	16-Bit	Output Total Active Power	KWatts	X 1	

	Registers	Data Type	Size	Description	Units	Multiplier	Comments
	30119	Unsigned Integer	16-Bit	Output Total Active Power Percent	%	X 1	
	30120	Unsigned Integer	16-Bit	Output Rated Active Power	KWatts	X 1	
	30121	N/A	N/A	N/A	N/A	N/A	
	30122	N/A	N/A	N/A	N/A	N/A	
	30123	Unsigned Integer	16-Bit	Output Rated Apparent Power	KVA	X 1	
	30124	Unsigned Integer	16-Bit	Output Power Factor	PF	X 0.01	
	30125	N/A	N/A	N/A	N/A	N/A	
Bypass Parameters	30126	Unsigned Integer	16-Bit	Bypass Number of Phases	Phase	X 1	
	30127	Unsigned Integer	16-Bit	Bypass Voltage Phase A (L-L)	Volts	X 1	
	30128	Unsigned Integer	16-Bit	Bypass Voltage Phase B (L-L)	Volts	X 1	
	30129	Unsigned Integer	16-Bit	Bypass Voltage Phase C (L-L)	Volts	X 1	
	30130	Unsigned Integer	16-Bit	Bypass Voltage Phase AB (L-N)	Volts	X 1	
	30131	Unsigned Integer	16-Bit	Bypass Voltage Phase BC (L-N)	Volts	X 1	
	30132	Unsigned Integer	16-Bit	Bypass Voltage Phase CA (L-N)	Volts	X 1	
	30133	Unsigned Integer	16-Bit	Bypass Voltage Phase A	%	X 1	
	30134	Unsigned Integer	16-Bit	Bypass Voltage Phase B	%	X 1	
	30135	Unsigned Integer	16-Bit	Bypass Voltage Phase C	%	X 1	
	30136	Unsigned Integer	16-Bit	Bypass Under Voltage Detection Level	%	X 1	
	30137	Unsigned Integer	16-Bit	Bypass Over Voltage Detection Level	%	X 1	
	30138	N/A	N/A	N/A	N/A	N/A	
	30139	N/A	N/A	N/A	N/A	N/A	
	30140	N/A	N/A	N/A	N/A	N/A	
	30141	N/A	N/A	N/A	N/A	N/A	
	30142	Unsigned Integer	16-Bit	Bypass Frequency Phase 1	Hz	X 0.1	
	30143	Unsigned Integer	16-Bit	Bypass Frequency Phase 2	Hz	X 0.1	
	30144	Unsigned Integer	16-Bit	Bypass Frequency Phase 3	Hz	X 0.1	
	30145	N/A	N/A	N/A	N/A	N/A	

	Registers	Data Type	Size	Description	Units	Multiplier	Comments
	30146	N/A	N/A	N/A	N/A	N/A	
DC Bus	30147	Unsigned Integer	16-Bit	DC Bus Total Voltage	Volts	X 1	
	30148	N/A	N/A	N/A	N/A	N/A	
	30149	N/A	N/A	N/A	N/A	N/A	
	30150	N/A	N/A	N/A	N/A	N/A	
Battery Parameters	30151	Unsigned Integer	16-Bit	Battery Installation Date	Month	X 1	Month Format: MM
	30152	Unsigned Integer	16-Bit	Battery Installation Date	Day	X 1	Day Format: DD
	30153	Unsigned Integer	16-Bit	Battery Installation Date	Year	X 1	Year Format: YYYY
	30154	N/A	N/A	N/A	N/A	N/A	
	30155	N/A	N/A	N/A	N/A	N/A	
	30156	Unsigned Integer	16-Bit	Elapsed Time on Battery Power	Seconds	X 1	
	30157	N/A	N/A	N/A	N/A	N/A	
	30158	Unsigned Integer	16-Bit	Battery Voltage	Vdc	X 1	
	30159	N/A	N/A	N/A	N/A	N/A	
	30160	Unsigned Integer	16-Bit	Battery Discharge Current	Adc	X 1	
	30161	N/A	N/A	N/A	N/A	N/A	
	30162	Unsigned Integer	16-Bit	Battery Low Detection Level	Vdc	X 1	
	30163	Unsigned Integer	16-Bit	Float Charge Voltage	Vdc	X 1	
	30164	Unsigned Integer	16-Bit	Equalize Charge Time	Hours	X 1	
	30165	N/A	N/A	N/A	N/A	N/A	
	30166	N/A	N/A	N/A	N/A	N/A	
	30167	N/A	N/A	N/A	N/A	N/A	
	30168	N/A	N/A	N/A	N/A	N/A	
	30169	Unsigned Integer	16-Bit	Battery Rated Ampere Hour	Ahr	X 1	
	30170	Unsigned Integer	16-Bit	Batteries in Series	Batteries	X 1	
	30171	Unsigned Integer	16-Bit	Batteries in Parallel	Batteries	X 1	

	Registers	Data Type	Size	Description	Units	Multiplier	Comments
N/A	30172	N/A	N/A	N/A	N/A	N/A	
	30173	N/A	N/A	N/A	N/A	N/A	
	30174	N/A	N/A	N/A	N/A	N/A	
	30175	N/A	N/A	N/A	N/A	N/A	
	30176	N/A	N/A	N/A	N/A	N/A	
	30177	N/A	N/A	N/A	N/A	N/A	
	30178	N/A	N/A	N/A	N/A	N/A	
N/A	30179	N/A	N/A	N/A	N/A	N/A	
	30180	N/A	N/A	N/A	N/A	N/A	
	30181	N/A	N/A	N/A	N/A	N/A	
	30182	N/A	N/A	N/A	N/A	N/A	
	30183	N/A	N/A	N/A	N/A	N/A	
	30184	N/A	N/A	N/A	N/A	N/A	
	30185	N/A	N/A	N/A	N/A	N/A	
	30186	N/A	N/A	N/A	N/A	N/A	
	30187	N/A	N/A	N/A	N/A	N/A	
	30188	N/A	N/A	N/A	N/A	N/A	
	30189	N/A	N/A	N/A	N/A	N/A	
	30190	N/A	N/A	N/A	N/A	N/A	
	30191	N/A	N/A	N/A	N/A	N/A	
	30192	N/A	N/A	N/A	N/A	N/A	
	30193	N/A	N/A	N/A	N/A	N/A	
	30194	N/A	N/A	N/A	N/A	N/A	
	30195	N/A	N/A	N/A	N/A	N/A	
	30196	N/A	N/A	N/A	N/A	N/A	
	30197	N/A	N/A	N/A	N/A	N/A	
	30198	N/A	N/A	N/A	N/A	N/A	

	Registers	Data Type	Size	Description	Units	Multiplier	Comments
	30199	N/A	N/A	N/A	N/A	N/A	
	30200	N/A	N/A	N/A	N/A	N/A	
EMD	30201	Signed Integer	16-Bit	Temperature in Celsius	°C	X 1	
	30202	Signed Integer	16-Bit	Temperature Fahrenheit	°F	X 1	
	30203	Signed Integer	16-Bit	Humidity	%	X 1	
UPS History Summary	30204	Unsigned Integer	16-Bit	UPS History System Operation Time	Days	X 1	
	30205	Unsigned Integer	16-Bit	UPS History System Operation Time	Hours	X 1	
	30206	Unsigned Integer	16-Bit	UPS History System Operation Time	Mins	X 1	
	30207	Unsigned Integer	16-Bit	UPS History Inverter Operation Time	Days	X 1	
	30208	Unsigned Integer	16-Bit	UPS History Inverter Operation Time	Hours	X 1	
	30209	Unsigned Integer	16-Bit	UPS History Inverter Operation Time	Mins	X 1	
	30210	N/A	N/A	N/A	N/A	N/A	
	30211	N/A	N/A	N/A	N/A	N/A	
	30212	N/A	N/A	N/A	N/A	N/A	
	30213	N/A	N/A	N/A	N/A	N/A	
	30214	N/A	N/A	N/A	N/A	N/A	
	30215	N/A	N/A	N/A	N/A	N/A	
	30216	N/A	N/A	N/A	N/A	N/A	
	30217	N/A	N/A	N/A	N/A	N/A	
	30218	N/A	N/A	N/A	N/A	N/A	
	30219	N/A	N/A	N/A	N/A	N/A	
	30220	N/A	N/A	N/A	N/A	N/A	
	30221	N/A	N/A	N/A	N/A	N/A	
	30222	N/A	N/A	N/A	N/A	N/A	
	30223	N/A	N/A	N/A	N/A	N/A	
	30224	N/A	N/A	N/A	N/A	N/A	
	30225	N/A	N/A	N/A	N/A	N/A	

	Registers	Data Type	Size	Description	Units	Multiplier	Comments
	30226	Unsigned Integer	16-Bit	UPS History Total Number of Backups	Times	X 1	
	30227	Unsigned Integer	16-Bit	UPS History Total Number of Faults	Times	X 1	
	30228	Unsigned Integer	16-Bit	UPS History Total Number Operation Mode Change	Times	X 1	
	30229	N/A	N/A	N/A	N/A	N/A	
	30230	N/A	N/A	N/A	N/A	N/A	
	30231	N/A	N/A	N/A	N/A	N/A	

Modbus Input Coil for 4200FA/4300: ALARMS and STATUS

NOTE: Items Lined out (e.g. ~~Lined Out~~) are not supported at this time.

	Registers	Data Type	Size	Description	Units	Comments
RMTI-3 Status	10001	Discrete	1-Bit	RemotEye III Data Link	True/False (1/0)	0 = Link Up; 1 = Link Down
	10002	Discrete	1-Bit	RemotEye III Network Link	True/False (1/0)	0 = Link Up; 1 = Link Down
UPS Mode	10003	N/A	N/A	N/A	N/A	
	10004	Discrete	1-Bit	Online Mode	True/False (1/0)	
	10005	Discrete	1-Bit	Backup Mode	True/False (1/0)	
	10006	Discrete	1-Bit	Bypass Mode	True/False (1/0)	
	10007	Discrete	1-Bit	Shutdown Mode	True/False (1/0)	
	10008	N/A	N/A	N/A	N/A	
Battery Status	10009	Discrete	1-Bit	UPS Battery Status Unknown	True/False (1/0)	
	10010	Discrete	1-Bit	UPS Battery Status Normal	True/False (1/0)	
	10011	Discrete	1-Bit	UPS Battery Status Low	True/False (1/0)	
	10012	Discrete	1-Bit	UPS Battery Status Depleted	True/False (1/0)	
	10013	Discrete	1-Bit	UPS Battery Status Discharging	True/False (1/0)	
	10014	Discrete	1-Bit	UPS Battery Status Test Failure	True/False (1/0)	
Battery Charge Status	10015	Discrete	1-Bit	Protective Charging Set	True/False (1/0)	
	10016	Discrete	1-Bit	Equalized Charging Set	True/False (1/0)	
	10017	N/A	N/A	N/A	N/A	
	10018	N/A	N/A	N/A	N/A	
	10019	N/A	N/A	N/A	N/A	

	Registers	Data Type	Size	Description	Units	Comments
Battery Test	10020	Discrete	1-Bit	Battery Test Disabled	True/False (1/0)	
	10021	Discrete	1-Bit	Battery Test in Progress	True/False (1/0)	
	10022	N/A	N/A	N/A	N/A	
	10023	N/A	N/A	N/A	N/A	
N/A	10024	N/A	N/A	N/A	N/A	
N/A	10025	N/A	N/A	N/A	N/A	
	10026	N/A	N/A	N/A	N/A	
EMD	10027	Discrete	1-Bit	EMD Enabled	True/False (1/0)	
	10028	Discrete	1-Bit	EMD Alarm-1	True/False (1/0)	0 = no Alarm; 1 = Alarm Triggered
	10029	Discrete	1-Bit	EMD Alarm-2	True/False (1/0)	0 = no Alarm; 1 = Alarm Triggered
Faults	10030	Discrete	1-Bit	General Alarm Fault	True/False (1/0)	0 = No Faults, 1 = One or more fault reported, see below for cause;
	10031	Discrete	1-Bit	Open Fuse Fault	True/False (1/0)	
	10032	Discrete	1-Bit	Current Limit Fault	True/False (1/0)	
	10033	N/A	N/A	N/A	N/A	
	10034	Discrete	1-Bit	DC Bus Overcurrent Fault	True/False (1/0)	
	10035	Discrete	1-Bit	DC Bus Overvoltage Fault	True/False (1/0)	
	10036	Discrete	1-Bit	DC Bus Imbalance Fault	True/False (1/0)	
	10037	Discrete	1-Bit	DC Bus Under Voltage During Boost-up Fault	True/False (1/0)	
	10038	Discrete	1-Bit	DC Bus Under Voltage During Charging Fault	True/False (1/0)	
	10039	Discrete	1-Bit	Charger Overvoltage Fault	True/False (1/0)	
	10040	Discrete	1-Bit	Output Under Voltage Fault	True/False (1/0)	
	10041	Discrete	1-Bit	Output Overvoltage Fault	True/False (1/0)	
	10042	Discrete	1-Bit	Heatsink Overheat Fault	True/False (1/0)	
	10043	Discrete	1-Bit	UPS Overload Fault	True/False (1/0)	
	10044	N/A	N/A	N/A	N/A	N/A
	10045	N/A	N/A	N/A	N/A	N/A

	Registers	Data Type	Size	Description	Units	Comments
	10046	N/A	N/A	N/A	N/A	N/A
	10047	Discrete	1-Bit	Bypass Overheat Fault	True/False (1/0)	
	10048	Discrete	1-Bit	Output Overcurrent Fault	True/False (1/0)	
	10049	Discrete	1-Bit	Input Phase Rotation Error	True/False (1/0)	
	10050	Discrete	1-Bit	Bypass Phase Rotation Error	True/False (1/0)	
Warnings	10051	Discrete	1-Bit	Input Overvoltage Warning	True/False (1/0)	
	10052	Discrete	1-Bit	Input Under voltage Warning	True/False (1/0)	
	10053	N/A	N/A	N/A	N/A	
	10054	Discrete	1-Bit	Input MCCB Tripped Warning	True/False (1/0)	
	10055	Discrete	1-Bit	Bypass Overvoltage Warning	True/False (1/0)	
	10056	Discrete	1-Bit	Bypass Under voltage Warning	True/False (1/0)	
	10057	Discrete	1-Bit	Bypass Input Frequency Error Warning	True/False (1/0)	
	10058	Discrete	1-Bit	Inverter Overload Warning	True/False (1/0)	
	10059	Discrete	1-Bit	Output Overload Warning	True/False (1/0)	
	10060	Discrete	1-Bit	Current Limit Warning	True/False (1/0)	
	10061	Discrete	1-Bit	Battery Test Failed Warning	True/False (1/0)	
	10062	Discrete	1-Bit	Low Battery Level Reached Warning	True/False (1/0)	
	10063	Discrete	1-Bit	Shutdown Battery Level Reached Warning	True/False (1/0)	
	10068	Discrete	1-Bit	Battery MCCB is Off Warning	True/False (1/0)	
	10069	N/A	N/A	N/A	N/A	
	10070	Discrete	1-Bit	Charger Overvoltage Warning	True/False (1/0)	
	10071	N/A	N/A	N/A	N/A	
	10072	Discrete	1-Bit	System Test Failed Warning	True/False (1/0)	
	10073	Discrete	1-Bit	System Overheat Warning	True/False (1/0)	
	10076	N/A	N/A	N/A	N/A	
	10078	N/A	N/A	N/A	N/A	
	10079	Discrete	1-Bit	UPS and RemotEye Communication Error Warning	True/False (1/0)	
	10087	Discrete	1-Bit	EMD Humidity is at Low Critical	True/False (1/0)	

	Registers	Data Type	Size	Description	Units	Comments
				Point		
	10088	Discrete	1-Bit	EMD Humidity is at High Critical Point	True/False (1/0)	
	10089	Discrete	1-Bit	EMD Humidity at Low Warning Point	True/False (1/0)	
	10090	Discrete	1-Bit	EMD Humidity at High Warning Point	True/False (1/0)	
	10091	Discrete	1-Bit	EMD Temperature at Low Critical Point	True/False (1/0)	
	10092	Discrete	1-Bit	EMD Temperature at High Critical Point	True/False (1/0)	
	10093	Discrete	1-Bit	EMD Temperature at Low Warning Point	True/False (1/0)	
	10094	Discrete	1-Bit	EMD Temperature at High Warning Point	True/False (1/0)	
Informational	10095	Discrete	1-Bit	Input Power Failure	True/False (1/0)	
	10096	Discrete	1-Bit	EPO has Tripped	True/False (1/0)	
	10100	Discrete	1-Bit	UPS is Waiting at a Specified Time by User before Start-up	True/False (1/0)	
	10101	Discrete	1-Bit	Remote Switch Control Enabled	True/False (1/0)	
	10102	Discrete	1-Bit	Auto Re-Transfer Enabled	True/False (1/0)	
	10103	Discrete	1-Bit	Manual Mode Selected	True/False (1/0)	
	10104	Discrete	1-Bit	UPS has Immediately switch to inverter at startup	True/False (1/0)	
	10105	Discrete	1-Bit	UPS has been forced to Bypass	True/False (1/0)	
	10106	Discrete	1-Bit	Local Run Command Issued	True/False (1/0)	
	10107	Discrete	1-Bit	Remote Run Command Issued	True/False (1/0)	
	10108	Discrete	1-Bit	Firmware has been Updated	True/False (1/0)	
	10113	N/A	N/A	N/A	N/A	
	10114	Discrete	1-Bit	UPS Output is Off	True/False (1/0)	

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