

**WS1500 Quick Reference
Configuration Guide**
994-T060 Rev B January, 2002

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REGULATORY INFORMATION

WARNING: This equipment generates, uses, and can radiate radio frequency energy, and, if not installed and used in accordance with the installation manual, may cause interference to radio communications. Operation of the equipment in a residential area is likely to cause interference, in which case the user, at his own expense, will be required to take whatever measures may be required to correct the interference.

CAUTION: Changes or modifications not expressly approved by Westronic could void the user's authority to operate this equipment.

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Table of Contents

1	Introduction	1
2	Hardware Description	1
2.1	Front Panel Indicators.....	1
2.2	Rear Panel Connections.....	1
3	Installation	2
3.1	Mounting	2
3.2	Wiring.....	2
3.3	Powering the WS1500.....	4
4	SNMP Manager Configuration	4
5	WS1500 e-Scanner Configuration Overview	4
6	The WS1500 e-Scanner Configurator	5
6.1	Installation of the WS1500 e-Scanner Configurator	5
6.2	Connecting To the WS1500	5
6.3	Uploading the Current WS1500 Configuration.....	6
6.4	Editing the System Configuration	6
6.5	Editing the Discrete Input Properties	7
6.6	Editing the Control Output Properties.....	7
6.7	Applying and Saving Changes to the Configuration.....	8
6.8	Changing the Password	8
6.9	Downloading a Database to the WS1500	9
6.10	Testing the Control Outputs	10
6.11	Testing the Discrete Inputs.....	10
6.12	Closing the WS1500 e-Scanner Configurator	10
7	Command Line Interface Configuration	11
7.1	Accessing the Main Menu	11
7.2	Changing the Password	12
7.3	Configuration Menu	12
7.4	Editing the IP Address.....	12
7.5	Editing the Host IP and Community Name.....	13
7.6	Configuring Discrete Inputs	13
7.7	Editing Control Outputs	14
7.8	Saving Configuration to Flash.....	14
7.9	Setting the Real Time Clock.....	14
7.10	Logging Out.....	14
7.11	Testing Discrete Inputs.....	15
7.12	Testing Control Outputs	15

1 Introduction

This document is intended as a quick reference in the initial test and turn-up for the WS1500 e-Scanner product. The WS1500 is loaded with a factory configuration that only requires the WS1500 IP, Netmask, and Router as well as the host properties to be set. Additional detailed information about the product will be available in the User Manual upon release. This document will outline the basic installation and configuration of the WS1500 to allow for initial test and turn-up.

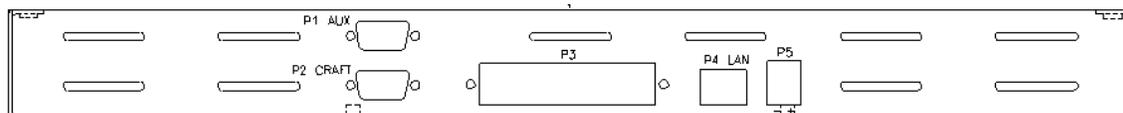
2 Hardware Description

2.1 Front Panel Indicators



PWR	Illuminates green when the power leads are applied correctly and red if reversed
MPU	Flashes slowly to indicate normal operation of the processor
LNK	Green when connected to a network device such as a hub or router
ACT	Illuminates to indicate LAN activity
Discrete	Current state of each of the 32 discrete inputs
Control	Current state of each of the 4 control outputs

2.2 Rear Panel Connections



P1 AUX	RS232 port used for firmware changes and factory use
P2 CRAFT	RS232 port used for WS1500 configuration
P3	50-pin connector used for discrete inputs and control outputs
P4 LAN	RJ45 connector for LAN connection
P5	Quick connect power connector
GND	Ground lug for chassis ground

3 Installation

Before installing or applying power, remove the WS1500 from the packing carton and inspect the entire unit for possible damage that may have occurred in shipment and post-shipment handling. If visible damage is present, it may be necessary to return the unit to the factory for replacement. Proper ESD precautions and procedures should be followed when installing or working with the WS1500.

3.1 Mounting

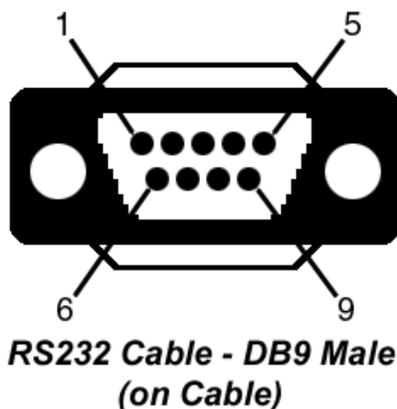
The WS1500 e-Scanner can be installed into both 19" and 23" racks using the mounting hardware included with the unit. The WS1500 can also be wall mounted using the same hardware by rotating the mounting ears by 90 degrees.

3.2 Wiring

All connections made to the WS1500 are on the backplane. The following tables describe the pin-outs for the Craft and Aux communications ports, the Discrete Connector P3, and the RJ45 LAN connector P4. The power connection pin-outs are printed on the backplane of the WS1500.

P1 AUX & P2 Craft RS232 Connections

VT100/PC (9-Pin DTE)	P1 Aux (9-Pin DCE)	P2 Craft (9-Pin DCE)
Pin 2 (Rx)	Pin 2 (Rx)	Pin 2 (Rx)
Pin 3 (Tx)	Pin 3 (Tx)	Pin 3 (Tx)
Pin 5 (Com)	Pin 5 (Com)	Pin 5 (Com)
Port Properties: 9600 bps, 8 Data Bits, No Parity, 1 Stop Bit, No Flow Control		



Pin-outs for W1500 e-Scanner Discrete Interface Connector P3			
Function	Pin		Function
Control Output 1, Normally Closed	1	26	Control Output 1, Normally Open
Control Output 2, Normally Closed	2	27	Control Output 2, Normally Open
Control Output 3, Normally Closed	3	28	Control Output 3, Normally Open
Control Output 4, Normally Closed	4	29	Control Output 4, Normally Open
Ground	5	30	Ground
Ground	6	31	Ground
Ground	7	32	Ground
Ground	8	33	Ground
Ground	9	34	Control Output Common Voltage
Status/Alarm Input 1	10	35	Status/Alarm Input 2
Status/Alarm Input 3	11	36	Status/Alarm Input 4
Status/Alarm Input 5	12	37	Status/Alarm Input 6
Status/Alarm Input 7	13	38	Status/Alarm Input 8
Status/Alarm Input 9	14	39	Status/Alarm Input 10
Status/Alarm Input 11	15	40	Status/Alarm Input 12
Status/Alarm Input 13	16	41	Status/Alarm Input 14
Status/Alarm Input 15	17	42	Status/Alarm Input 16
Status/Alarm Input 17	18	43	Status/Alarm Input 18
Status/Alarm Input 19	19	44	Status/Alarm Input 20
Status/Alarm Input 21	20	45	Status/Alarm Input 22
Status/Alarm Input 23	21	46	Status/Alarm Input 24
Status/Alarm Input 25	22	47	Status/Alarm Input 26
Status/Alarm Input 27	23	48	Status/Alarm Input 28
Status/Alarm Input 29	24	49	Status/Alarm Input 30
Status/Alarm Input 31	25	50	Status/Alarm Input 32

LAN Connection P4

RJ-45	Circuit	Description
1	TxD+	Transmit Data +
2	TxD-	Transmit Data -
3	RxD+	Received Data +
4	NU	
5	NU	
6	RxD-	Received Data -
7	NU	
8	NU	

3.3 *Powering the WS1500*

The WS1500 will operate with input voltage from -20 Vdc to -60 Vdc. The following table provides the fusing requirements.

-48 Vdc		-24 Vdc	
GMT	Type 70	GMT	Type 70
0.5 A	0.5 A	0.75 A	0.75 A

4 **SNMP Manager Configuration**

The WS1500 includes a MIB file that must be compiled into the SNMP Management software being used before communication between the SNMP Manager and the WS1500 can be established. The Westronic MIB file is included on a CD ROM and can be identified by the filename “westvXX.mib”, where XX = the version of the MIB. Refer to the appropriate documentation included with the SNMP Manager Software being used for instruction on how to compile the WS1500 MIB. Once the MIB is compiled into the SNMP Manager and communication with the WS1500 has been established it is a good idea to test all WS1500 discrete inputs and control outputs to ensure that the SNMP traps are being properly reported.

5 **WS1500 e-Scanner Configuration Overview**

The WS1500 comes with a factory installed configuration to provide fast and simple installations. However, some basic configuration is required before the WS1500 can successfully begin communication with a SNMP Manager. The following steps must be completed:

1. Set the IP, Netmask, and Router addresses for the WS1500.
2. At least one host must be enabled as well as the Host IP and Community name set.
3. The password for the WS1500 must be set.

Although additional information is provided, such as configuring controls and discrete inputs, the above three steps are all that are required to set up a WS1500 with an SNMP Manager.

There are two methods in configuring the WS1500 e-Scanner. The first is to use the PC Based Configuration software included with each WS1500. This allows uploading and downloading of the WS1500 configuration. The second is a menu driven Command Line Interface (CLI) utilizing an ASCII terminal emulation program connected to the Craft Port (P2). Section 6 describes the methods of configuration using the WS1500 Configurator and section 7 describes the Command Line Interface methods. Either method can be used and is entirely based on preference. The WS1500 Configurator does provide an intuitive, visual method that may prove easier for first time configuration.

6 The WS1500 e-Scanner Configurator

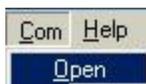
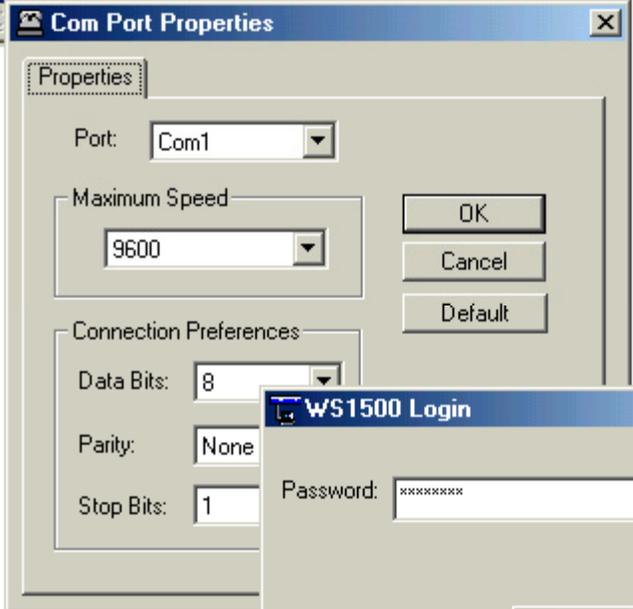


The WS1500 Configurator is a Microsoft Windows based program that gives the user a graphical interface to configure the WS1500. It allows the user to work offline and to save configurations for later use or to upload configurations to save as backups. The WS1500 Configurator uses an available Com port on a PC to connect to the craft port of the WS1500.

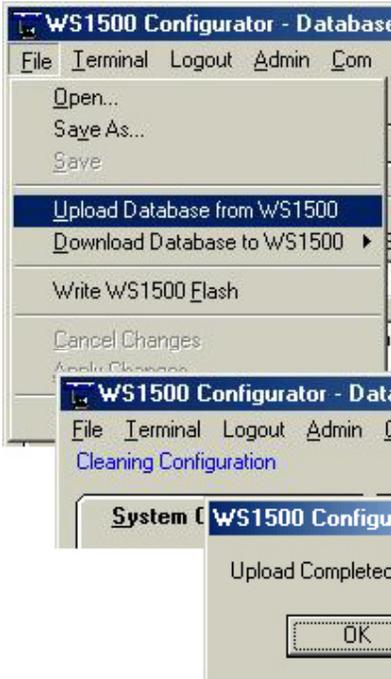
6.1 Installation of the WS1500 e-Scanner Configurator

The installation program automates the installation of the WS1500 e-Scanner Configurator application. To install the application, insert the installation CD and execute the setup.exe program located on the CD. The WS1500 e-Scanner Configurator creates a program group called Westronic and adds a WS1500 e-Scanner Configurator program item to the group. If the target PC has other programs distributed by Westronic Systems, the setup program adds WS1500 e-Scanner Configurator to the existing Westronic program group containing those programs.

6.2 Connecting To the WS1500

1. To establish a connection to the WS1500 select Com from the menu bar. Click Open.
2. A Com Port Properties box will appear. The connection properties of the WS1500 craft port are 9600 bps, 8 data bits, no parity and 1 stop bit. Clicking on Default will restore these default values. Click OK when done.
3. A WS1500 Login box will appear. Enter the password for the WS1500. The default password is "password". Click OK.
4. A Login Successful box will appear. Click OK.

6.3 Uploading the Current WS1500 Configuration

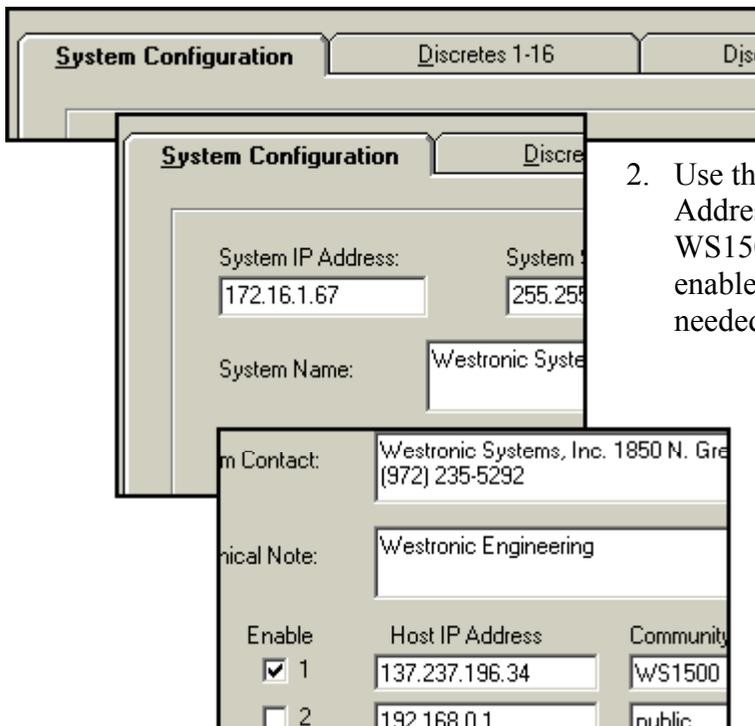


1. The WS1500 and the WS1500 Configurator both have default Databases which are identical. If this is the first time a unit has been configured it is not necessary to upload the configuration. This step can be skipped. Otherwise, to upload the configuration from the WS1500 select **F**ile from the menu bar and click on **U**pload Database from WS1500.

2. A progress bar will appear toward the top of the main screen to indicate the status of the Upload.

3. When the Upload function has completed an Upload Completed box will appear. Click OK.

6.4 Editing the System Configuration

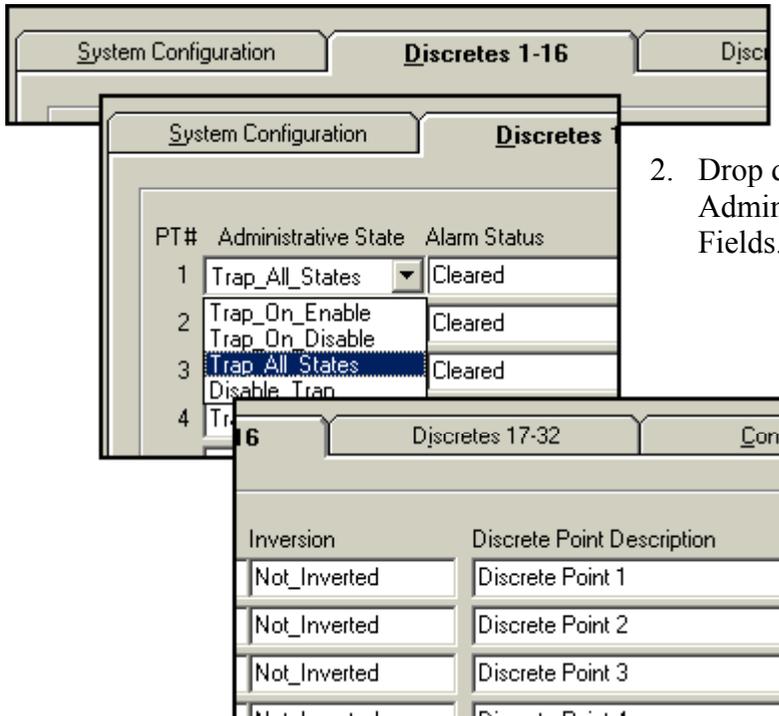


1. Use the Tabs to switch between System Configuration, Discrete and Control fields.

2. Use the System Configuration Fields to set the IP Address, Subnet and Router information for the WS1500. Also, ensure that the RTU traps are enabled. Other system information can be set as needed.

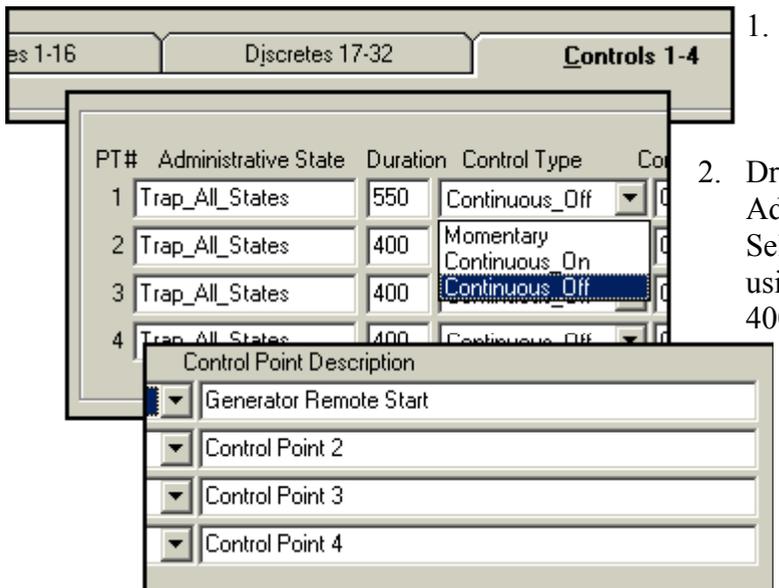
3. Before the WS1500 can communicate with a SNMP host at least 1 host must be enabled in the configuration. Use the **E**nable check box and enter a valid host IP. A Community Name of "public" will have read only access; any other Community name will have read/write access.

6.5 Editing the Discrete Input Properties



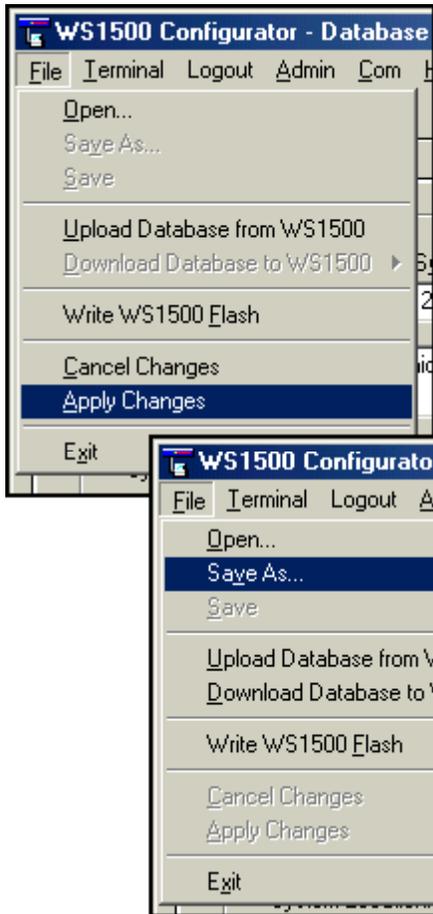
1. Use the Tabs to switch between System Configuration, Discrete and Control Fields.
2. Drop down boxes will appear on the Administrative State, Alarm Status and Inversion Fields. Select from the valid options as required.
3. Click in the Discrete Point Description field and type up to 32 characters for a description. To clear the field, spaces can be used. Some SNMP Managers may not recognize spaces as a valid description.

6.6 Editing the Control Output Properties



1. Use the Tabs to switch between System Configuration, Discrete and Control Fields.
2. Drop down boxes will appear for the Administrative State and Control Type fields. Select from the valid choices as required. If using momentary control, enter a number from 400 to 999 ms.
3. Type a description for the control points up to 32 characters.

6.7 Applying and Saving Changes to the Configuration



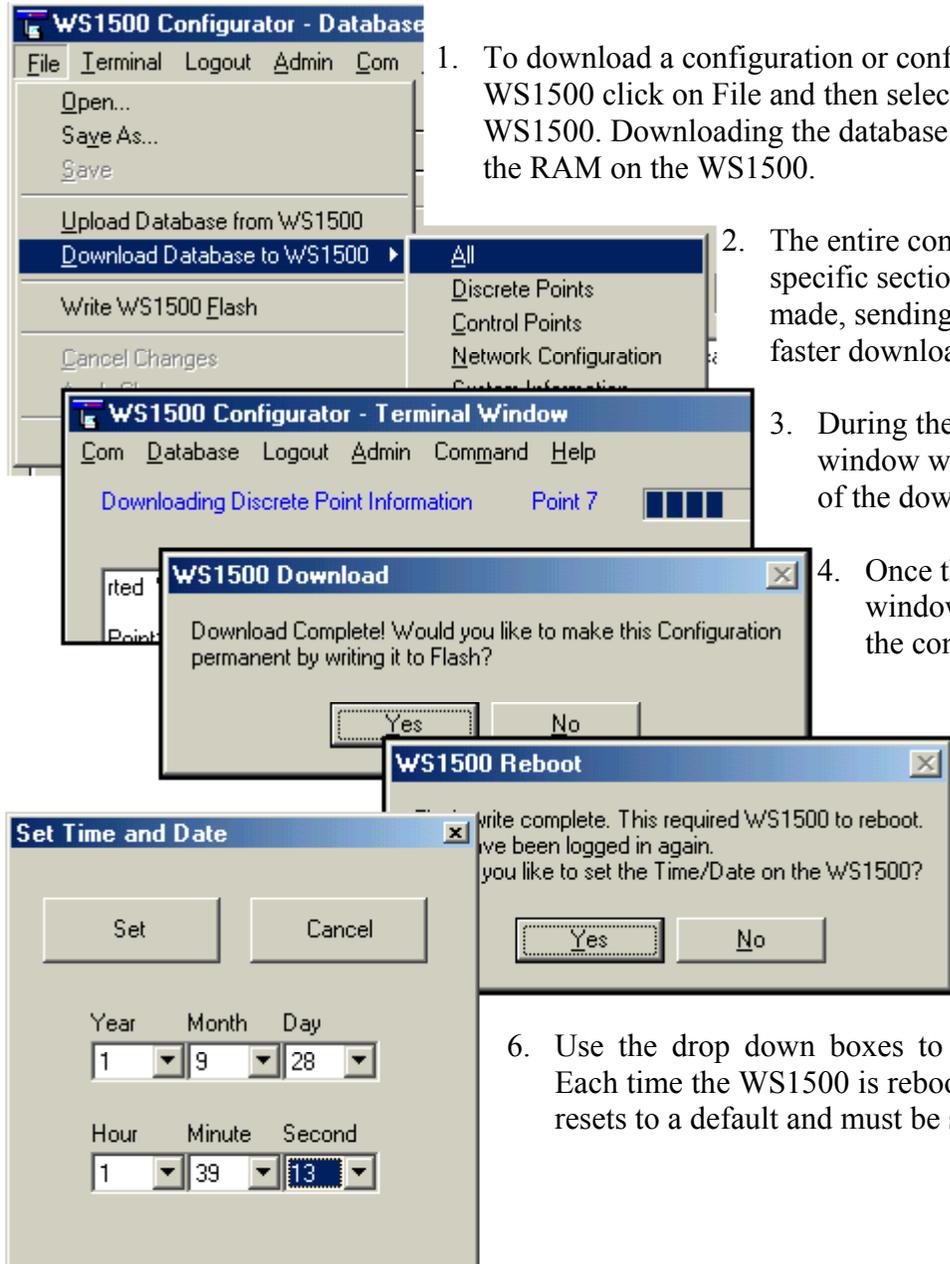
1. After changes are made to the WS1500 Configuration you must apply them. Click on File and then select Apply Changes. To cancel any changes made since a saved configuration was opened or an upload operation was performed, click File and select Cancel Changes.
2. It is recommended to save the configuration into a text file as a backup and/or for offline editing. The file can be loaded into the WS1500 Configurator and downloaded to the WS1500 at any time.

6.8 Changing the Password



1. For network security it may be desired to change the password for the WS1500. From the menu bar select Admin and then Set Password.
2. A WS1500 login box will appear. Type in the new password using up to 20 characters and then type it again in the Confirm box. Click OK when done. The new password will take effect immediately but will not be permanent until it is written to flash. Writing to flash is described in section 6.9.

6.9 Downloading a Database to the WS1500



1. To download a configuration or configuration changes to a WS1500 click on File and then select Download Database to WS1500. Downloading the database will send the configuration to the RAM on the WS1500.
2. The entire configuration can be sent or specific sections. If only a few changes are made, sending specific parts will result in a faster download.
3. During the download a Terminal window will appear indicating the status of the download.
4. Once the download is done a window will appear asking to write the configuration to flash. Click Yes.
5. The WS1500 will reboot and ask to set the time on the WS1500. Click Yes.
6. Use the drop down boxes to set the time in the WS1500. Each time the WS1500 is rebooted or powered down the time resets to a default and must be set.

The configuration of the WS1500 should now be complete. It is recommended that the discrete input and control outputs be tested once the installation and configuration is complete. The WS1500 should now be able to establish communication to a SNMP Manager. Sections 6.10 and 6.11 describe how to test the discrete inputs and control output locally using the WS1500 Configurator.

6.10 Testing the Control Outputs

To test the control outputs using the WS1500 Configurator select Terminal from the menu bar. This will change the display to a terminal type window where the actual activity on the craft port can be monitored. Select Admin and then Remote Control; an Activate Control window will appear. Use this window to issue controls. Verify on the front panel that the controls operate as expected.

6.11 Testing the Discrete Inputs

To test the discrete inputs using the WS1500 Configurator, select Terminal from the menu bar if not already in Terminal Window. This will change the display to a terminal type window where a user can view the actual activity on the craft session. Select Command and then click on View Craft OutPut. This will take the craft port to an online mode where trappable events can be viewed. Discrete inputs can now be tested by causing a short on the appropriate pins on P3. Verify that the LED on the front panel illuminates as expected. Also verify on the craft port that an event was reported. It is recommended that all 32 discrete inputs are tested and behave as configured during the configuration process.

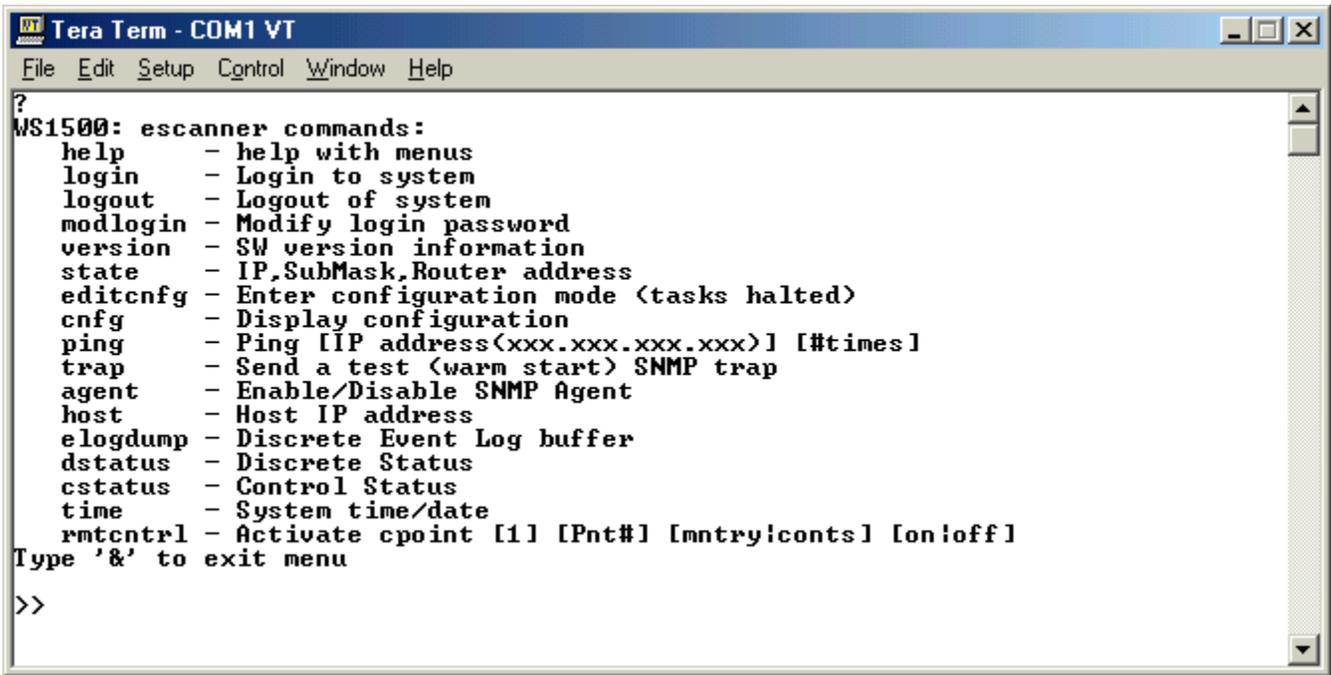
6.12 Closing the WS1500 e-Scanner Configurator

When the WS1500 Configurator is closed, the program automatically logs the user off and returns the WS1500 to a fully operational state.

7 Command Line Interface Configuration

Connect a cable to the Craft Port and ensure the terminal emulation being used has the port parameters set to 8 data bits, no parity, 1 stop bit and no flow control.

7.1 Accessing the Main Menu



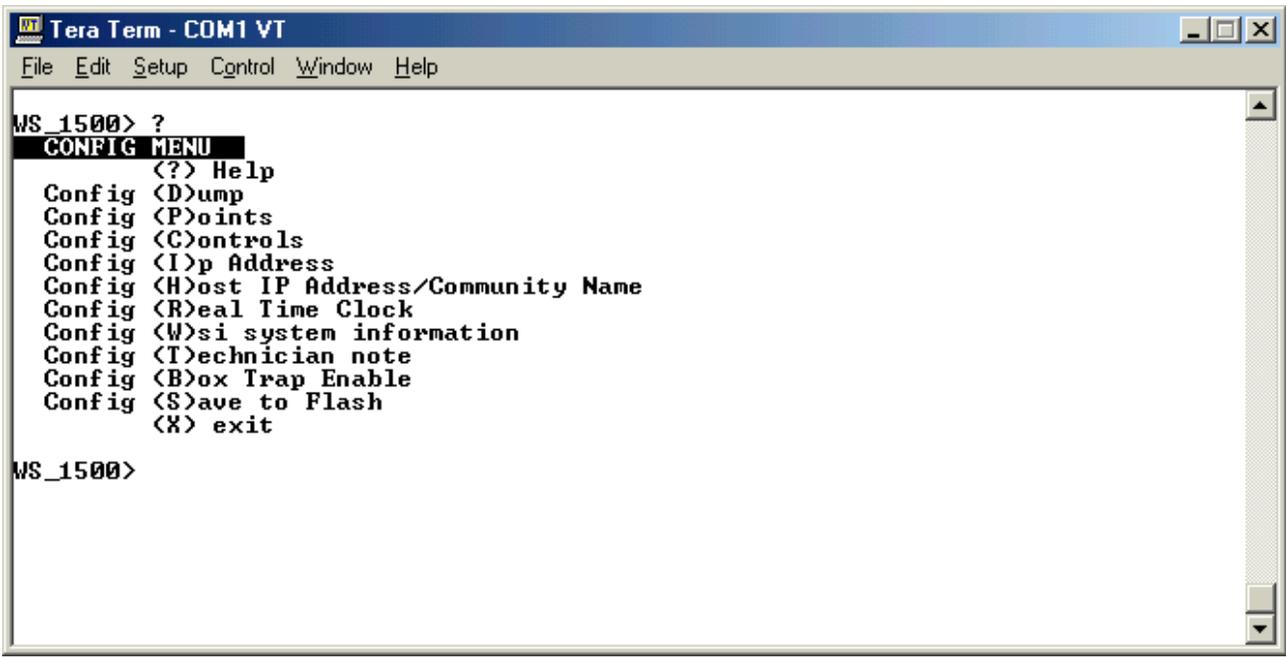
```
Tera Term - COM1 VT
File Edit Setup Control Window Help
?
WS1500: escanner commands:
  help      - help with menus
  login     - Login to system
  logout    - Logout of system
  modlogin  - Modify login password
  version   - SW version information
  state     - IP,SubMask,Router address
  editcnfg  - Enter configuration mode (tasks halted)
  cnfg      - Display configuration
  ping      - Ping [IP address<xxx.xxx.xxx.xxx>] [#times]
  trap      - Send a test (warm start) SNMP trap
  agent     - Enable/Disable SNMP Agent
  host      - Host IP address
  elogdump  - Discrete Event Log buffer
  dstatus   - Discrete Status
  cstatus   - Control Status
  time      - System time/date
  rmtcntrl  - Activate cpoint [1] [Pnt#] [mntry!conts] [on!off]
Type '&' to exit menu
>>
```

1. Type the '?' key and then the ENTER key.
2. A '>' prompt will appear to indicate that a user is in the main menu, but not logged in. While in the main menu the WS1500 continues to function in full capacity. The main menu is non-intrusive therefore craft reporting of trappable events will not be visible. Normal SNMP functions continue to run on the network session.
3. Typing a '?' and then ENTER to execute the command will result in a listing of the main menu as shown above. Entering the "help" command will have the same results.
4. At this point the only command that can be executed is the "Version" command without a valid login. To login type 'login' and then ENTER. When asked for a password, type the appropriate password and then ENTER. The factory set password for the WS1500 is "password" Once a valid password is entered and the "System Logged In" message has appeared a ">>" prompt will appear to show that the user has successfully logged in.
5. Now all commands in the main menu can be used. The main menu includes commands to view the current configuration and parameters and other useful utilities. Any changes to the configuration must be made by accessing the Configuration Menu.

7.2 Changing the Password

1. At the '>>' prompt type "modlogin" and then ENTER.
2. The message "Enter Old Password:" will appear. Type the old password, press ENTER.
3. A new password prompt will appear. Type a password of up to 20 characters, then ENTER.
4. Confirm the new password by typing it again and then ENTER. Passwords are case sensitive.
5. The message "Password changed" will appear. The new password will take effect the next time the user logs in. However, the new password will not be permanent until the changes are written to flash as discussed in section 6.8.

7.3 Configuration Menu



```
Tera Term - COM1 VT
File Edit Setup Control Window Help
WS_1500> ?
CONFIG MENU
(?) Help
Config (D)ump
Config (P)oints
Config (C)ontrols
Config (I)p Address
Config (H)ost IP Address/Community Name
Config (R)eal Time Clock
Config (W)si system information
Config (T)echnician note
Config (B)ox Trap Enable
Config (S)ave to Flash
(X) exit
WS_1500>
```

1. At the '>>' prompt type "editcnfg" and then ENTER. This will result in a 'WS_1500>' prompt. At this point the WS1500 is in configuration mode and all tasks are stopped.
2. Typing '?' and ENTER will display a list of all the configuration options as shown above.

7.4 Editing the IP Address

1. At the 'WS_1500>' prompt type 'I' and then ENTER.
2. The current IP address of the WS1500 will be shown and a prompt for a new IP address. If the current IP is correct press ENTER, otherwise type in the new IP address [xxx.xxx.xxx.xxx] and then ENTER.
3. The current Router IP will be displayed and a prompt to change it. To continue with no changes press ENTER. Otherwise, enter a new IP address and then press ENTER.
4. The current Subnet Mask will be displayed and a prompt to change it. To make no changes press ENTER, otherwise type in new subnet and press ENTER.
5. The 'WS_1500>' prompt will be displayed once all data is entered.

7.5 Editing the Host IP and Community Name

1. At the 'WS_1500>' prompt type 'H' and then ENTER.
2. A summary of all five host configurations will appear at the top of the screen and a 'Host #' prompt will appear. At this point pressing the 'Esc' key will return the user to the 'WS_1500>' prompt and no changes will be made. Typing a number from 1 to 5 will allow a user to configure a specific host. Pressing the ENTER key will step the user through the host process. At least 1 host must be configured before the WS1500 can communicate with a SNMP Manager.
3. At the 'Host Addr:' prompt, type in the IP address of the host. If the current IP address is correct pressing ENTER will take the user to the next field without making any changes.
4. At the 'Name:' prompt specify the community name. A Community Name of "public" will give read only access. Any other Community Name will give read/write access. Press ENTER to make no changes or enter a Community Name of up to 32 characters and press ENTER.
5. A Trap Enable prompt will appear. Use the Tab, Spacebar or Arrow keys to toggle between Enable and Disable. At least one host must be enabled for communication with a SNMP Manager. Press ENTER when the appropriate selection is visible.
6. The user will again see a 'Host #' prompt. At this point pressing the 'Esc' key will return the user to the 'WS_1500>' prompt. ENTER will continue to the next host and a number from 1 to 5 will bring the user to a specific host configuration.

7.6 Configuring Discrete Inputs

1. At the 'WS_1500>' prompt type 'P' and then ENTER.
2. The current configuration of Discrete Input #1 will be displayed at the top of the screen. At this point pressing the 'Esc' key will return a user to the 'WS_1500>' prompt and no changes will be made to the discrete inputs. Typing a valid point number will allow the user to configure a specific point. Pressing ENTER will step the user one point at a time through the point configuration process.
3. The first parameter to be displayed is the 'Admin State'. Use the 'Tab' key, spacebar or arrow keys to step through the different options. When the desired selection is visible press the ENTER key to continue.
4. The next parameter to be displayed is 'Severity'. Use the 'Tab' key, spacebar or arrow keys to step through the different options. When the desired selection is visible press the ENTER key to continue.
5. The next parameter to be displayed is 'Inversion'. Use the 'Tab' key, spacebar or arrow keys to step through the different options. When the desired selection is visible press the ENTER key to continue.
6. The next parameter to be displayed is the point description. The current description will be displayed. To change the description, type a description using up to 32 characters and then ENTER. To keep the current description press the ENTER key.
7. At this point the configuration of the next status point will be displayed. To keep editing the status points press the ENTER key. Otherwise, press 'Esc' to return to the configuration menu or type in a valid point number to configure a specific point. Repeat steps 2-7 for all 32 points.

7.7 Editing Control Outputs

1. At the 'WS_1500>' prompt type 'C' and then ENTER.
2. The top of the screen will display the current configuration of all 4 control outputs. At the 'Point #' prompt a user can type in a specific control to configure, press the 'Esc' key to return to the 'WS_1500>' prompt or press ENTER to step through the control point configuration process.
3. The first parameter is 'Admin State'. Use the 'Tab' key, spacebar, or arrow keys to toggle between the valid choices. Press the ENTER key to proceed to the next parameter.
4. The next parameter is 'Type'. Use the 'Tab' key, spacebar, or arrow keys to toggle between the valid choices. Press the ENTER key to proceed to the next parameter.
5. The next parameter is 'Duration#'. Enter a value between 400-999 ms; once a 3 digit number is entered it will proceed automatically to the next parameter.
6. The final parameter is 'Text'. Enter up to 32 characters for the description of the control output. Press the ENTER key when done.
7. The user will be returned to the 'Point #' prompt. Repeat steps 2-7 until required changes are complete.

7.8 Saving Configuration to Flash

1. Any changes that are made to the configuration of the WS1500 must be saved to flash for the changes to be retained during a power cycle. At the 'WS_1500' prompt press the 'S' key and then enter.
2. A confirmation message will appear. Type 'Y' and then ENTER.
3. The configuration will now be written to the on board flash memory and the WS1500 rebooted.

7.9 Setting the Real Time Clock

1. The WS1500 does not retain the system time or date during a power cycle or reboot sequence and must be set each time the unit is reset.
2. Access the Main Menu and login as described in section 7.1.
3. Access the Configuration Menu as described in section 7.3.
4. At the 'WS_1500' prompt type 'R' and then ENTER.
5. Follow the prompts to enter the time and date.
6. Type the 'X' key and then ENTER to exit the Configuration Menu.

7.10 Logging Out

1. It is important to log out of the WS1500 when configuration is complete. If a user fails to log out the system will automatically log the user out after 30 minutes of inactivity on the craft port.
2. At the '>>' prompt type 'logout' and then ENTER.
3. A message will appear to indicate the system has been logged out and a '>' will remain.
4. Type '&' to exit the main menu.

7.11 Testing Discrete Inputs

1. Connect a terminal session to the craft port as described earlier in the document. Ensure that the Main Menu is not active meaning there are no active prompts.
2. Create an alarm on discrete input #1 by shorting pin 10 to ground on the J3 connector.
3. Verify that the Discrete Input #1 LED illuminates on the front of the WS1500.
4. Verify that an ASCII message has been reported on the craft port showing that discrete input #1 has been enabled.
5. Remove the alarm and verify that the LED clears and that another message is displayed on the craft session indicating the alarm has disabled.
6. Repeat for all 32 Discrete Inputs.

7.12 Testing Control Outputs

1. Connect a terminal session and enter the main menu as described previously in this document. Log into the WS1500.
2. Use the Rmtcntrl command to issue the first control as follows:

```
>>rmtcntrl 1 1 conts on
```

3. Verify that the Control Output #1 LED illuminates.
4. Use the Rmtcntrl command to release the control as follows:

```
>>rmtcntrl 1 1 conts off
```

5. Verify that the Control Output #2 LED clears.
6. Repeat above steps for all 4 Control Outputs. Hint: The next command would be as follows:

```
>>rmtcntrl 1 2 conts on
```

7. Make sure to logout and exit the main menu when finished

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