

WS2000 SSMATE

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March, 2006**

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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. It has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15, Subpart J of the FCC rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. 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.

The FCC label can be found on the right side of the shelf assembly. The label includes the following information:

This device complies with Part 15 of the FCC Rules.

Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.

Revision History

Rev Level	Issue Date	Reason for Reissue
A	July, 2001	First Release
B	March, 2006	Contact Information updated

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1 Product Description

1.1 Overview

The WS2000 SSMATE is a software and hardware bundle that will allow GPI (General Purpose Interface) control of any function of the network element enabling either manual or automated control.

The functionality of the SSMATE is limited to monitoring the 32 discrete inputs and issuing a unique ASCII text command string from 1 to 5 serial output ports. Discrete inputs, command string content and output port associations are user definable in the configuration process.

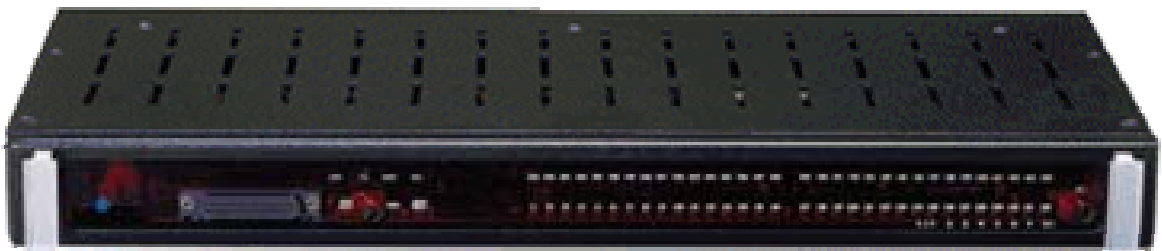


Figure 1-1 WS2000 SSMATE Front Panel

The SSMATE feature set and capacity capabilities are:

- 32 Discrete Inputs
- 5 RS-232/RS-422/RS-485 serial ports for transmitting user-defined ASCII command strings
- 1 RS-232 craft port for configuring the SSMATE either through an ASCII terminal or using the supplied PC based configuration software package
- Up to 5 string records each containing a maximum length of 45 characters, described as a “text block”, can be individually associated with each of the 32 discrete inputs
- Configuration files can be uploaded and downloaded from the SSMATE craft port to the user’s PC.
- Each configuration change can be individually downloaded to the SSMATE rather than downloading the entire configuration.

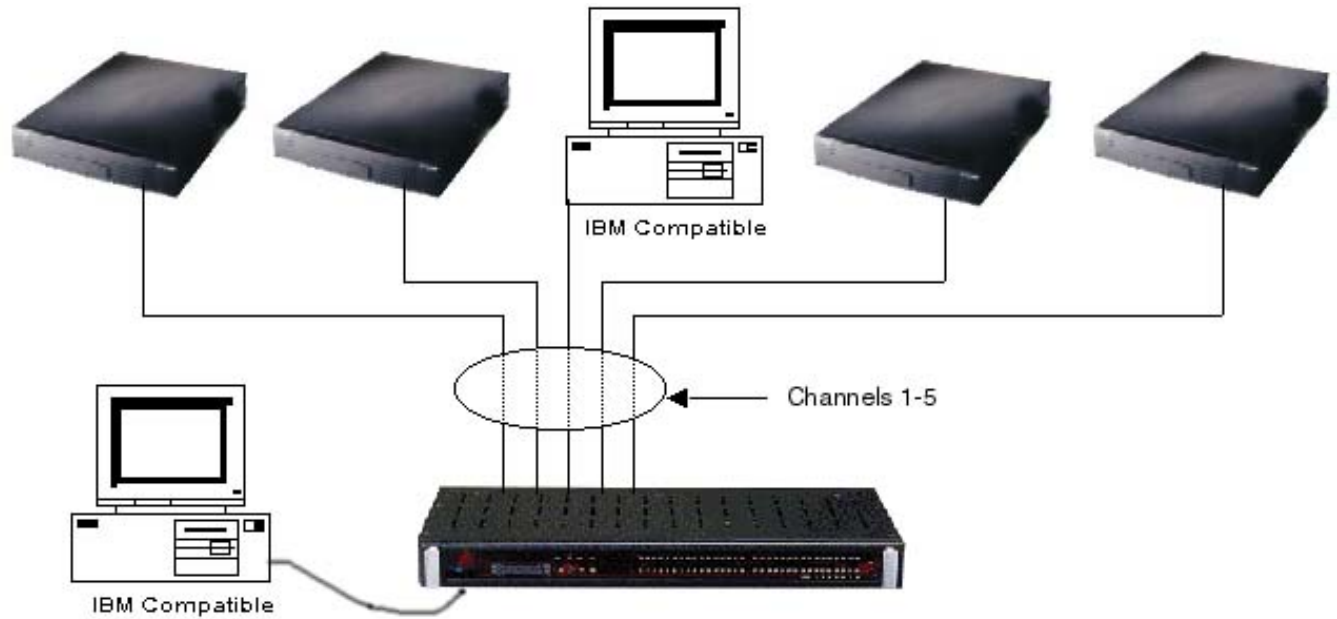


Figure 1-2 Overview of WS2000 SSMATE typical installation

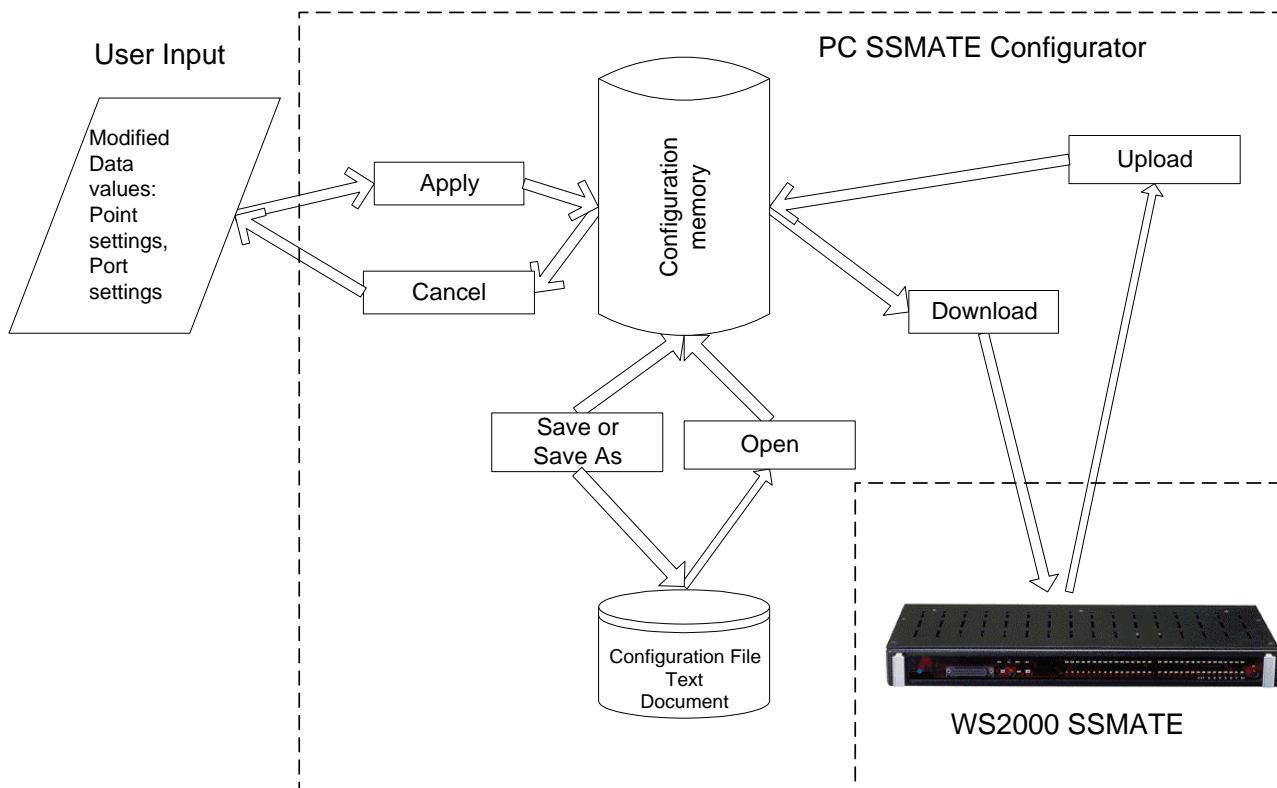


Figure 1-3 Overview of WS2000 SSMATE Configuration process

1.2 WS2000 SSMATE Configurations and optional equipment

Table 1-1 lists part numbers for ordering the WS2000 SSMATE, accessories, and spares.

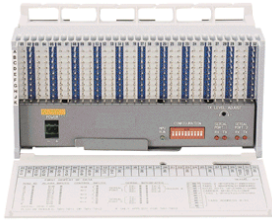
Table 1-1 WS2000 SSMATE Equipment Part Numbers

WS2000						
Part No	Plugin	Description	Serial Ports	Discrete I/O		Modem Type
				Input	Output	
590-T325	500-T191	SSMATE	5 HOST, 1 CRAFT	32		–
Accessories						
567-T060	–	SSMATE Configuration Software		–	–	–
533-T030	–	19-inch Telzon Wire-Wrap Block		64	16	–
533-T011	–	23-inch Telzon Wire-Wrap Block		64	16	–
533-T032	–	Front-Access Wire-Wrap Interface Assy		64	16	–
585-T034	–	Rear-Access Wire-Wrap Interface Assy		64	16	–
520-T007	–	Audible/Visual Alarm Panel (Monitors one RTU)		–	–	–
520-T025	–	Universal External Alarm Panel (Monitors eight RTUs)		–	–	–
620-0077	–	8-Pin Serial Connector (Ten are included in 585-0005)		–	–	–
620-0078	–	50-Pin Delta Connector		–	–	–
620-T030	–	50-Pin Delta Connector w/Wire-Wrap pins.		–	–	–
990-0150	–	Serial Insertion Tool (One is included in 585-0005)		–	–	–
977-T032	–	Cable, PC-WESMAINT, DEB9-DB25		–	–	–
977-T042	–	JB3 Termination Plug		–	–	–
585-0005	–	Serial Connector Kit (Includes 12 connectors, one tool)		–	–	–
500-2000	–	19-inch Shelf Assembly		–	–	–
585-T055	–	23-inch Rack Adapter Kit		–	–	–
994-T059	–	WS2000 SSMATE Technical Manual		–	–	–

1.3 Other Products From Westronic

The following provides information about other Westronic products that are available to meet alarm system needs. Call **972-235-5292** to talk with a Westronic representative to learn more about these and other Westronic Systems, Inc. products.

1.3.1 WS1000



The WS1000 product line complements many operations and network management systems by providing an economical, flexible means of converting varying quantities of discrete (dry-contact) alarm, status, and control data to a simple, easy-to-handle TABS or TBOS interface.

Available configurations provide the flexibility to select the unit best suited for various applications. Choose 64/128 discrete inputs with 8/16 discrete outputs.

Small size and flexible mounting requirements allow placement of the unit close to the source of discrete interfaces. WS1000 can mount in an equipment bay or on a distribution frame as the application demands. This flexibility results in considerable reduction in the amount of required wiring. The basic structure of a front-facing wire-wrap block, commonly found on distribution frames, provides a sturdy housing for the Terminator. Located on the easily removable module contained within the housing are all the active components. WS1000 is the ideal way to collect discrete alarms throughout a site or service area with feeDBack to a WS2000 or WS3000 hub.

1.3.2 C1000



The C1000 complements many operation support systems by providing an economical and flexible means of collecting small to large quantities (32 – 256 points) of discrete alarm and status data and converting them to simple, easy-to-handle TABS or TBOS interface.

Different versions of the C1000 allow communications with either a TABS or TBOS host. The C1000 can pass-through polls for other addresses, permitting multiple chaining of C1000 units in larger configurations and permitting the C1000 and local NE telemetry data to combine into a single channel. In some cases, data can combine through a single modem.

The C1000 requires only one vertical space (1.75 inch) in either a 19-inch or 23-inch equipment rack, allowing location as close as possible to the source of discrete interfaces. The result is a large reduction in the amount of wiring required to pick up alarm and status data. The reduction in wiring eliminates the possibility of losing data

through unknown, disconnected, moved, or cut wiring. Serial and discrete interfaces are through standard 9-pin subminiature and 50-pin connectors, making installation and replacement exceptionally fast and simple.

The C1000 is equipped with two serial ports:

- The first, a host port, serves as a TABS or TBOS host communications interface that can be equipped with an optional 1200-bps Bell 202T-compatible internal modem, allowing the C1000 to be located beyond the range of standard RS-422/RS-485 interfaces.
- The second, an expansion port, serves as a TABS or TBOS data collection interface.

The housing can accommodate a maximum of eight 50-pin discrete interface connectors. All the different configurations use this same housing.

1.3.3 WS3000

The WS3000 is a powerful telemetry unit that combines a high-speed processor and large database capacity with the most useful functions of discrete and serial alarm collection, mediation, and access. The WS3000 is the ideal bridge between today's telemetry networks and the advanced protocols now appearing. WS3000 features include the following:



- Optional

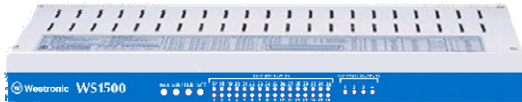
Ethernet interface

- Available solutions for remote alarm monitoring over TL1 (ASCII) TCP/IP Ethernet, OSI Ethernet, and asynchronous communications
- Data collection using TBOS, TABS, and Teltrac protocols and discrete dry contacts
- 5 serial ports supporting user-selectable RS-232/RS-422/RS-485 interfaces from 1200 – 9600 bps
- 4 serial ports supporting RS-422 interfaces from 1200 – 9600 bps
- 32 – 512 discrete alarm/status inputs and 8 – 128 discrete control outputs with capability to support a maximum of 30,000 alarm points (about 2,000 SIDs)
- Remote database configuration and software upgrade through exchanging PCMCIA cards or downloading through a Trivial File Transfer Protocol (TFTP) server or X-modem
- Switched Network Software (SNS, also referred to as String TABS) to control network access devices, such as PADs, terminal servers, and modems, for monitoring network elements and remotes

- Fault-Tolerant Monitor (FTM, also referred to as TABS2) software to provide redundant 2-way monitoring of long-distance network elements
- Custom protocols are available on a special assembly basis

1.3.4 WS1500 e-Scanner

Designed to meet NEBS Level 3 testing, the WS1500 e-Scanner augments Westronic's current product line by adding an economically priced product to collect smaller point counts and interface with SNMP networks.

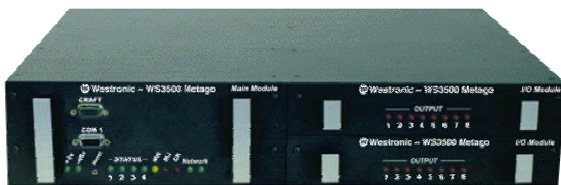


Westronic Systems products have traditionally focused on collecting and concentrating large amounts of discrete and serial alarm data into

TABS, E2A or TL1 protocols. The initial WS1500 offering includes 32 discrete collection point remote with a TCP/IP interface capable of communicating to the host via SNMP. This unit provides 4, Form-C control outputs with common wiper for wetted voltage applications. Front panel visual indicators instantly report active alarms and controls as well as MPU and IP activity. Compact in size, the WS1500 takes only 1 VU rack height (1.75"). Hardware is included for 19" or 23" rack or optional wall-mount installations.

The WS1500 e-Scanner is configured locally or remotely using a VT100, SNMP, or Telnet session. Remote configuration and upgrade capabilities ensures the WS1500 features will evolve with market demands. The configuration is stored in non-volatile memory and can be updated "on the fly". Simplicity in configuration and ease of use mean low cost to install and maintain.

1.3.5 WS3500 Metago



WS3500 Metago intelligent remote telemetry unit is certified to NEBS Level 3 testing requirements by NTSC. The WS3500 Metago augments Westronic's current product line by adding a NEBS 3 product to collect serial and discrete telemetry information while interfacing with industry standard management systems via TL1 (Transaction Language 1). The WS3500 offering is

modular in design allowing customers to configure a unit to their specific collection requirements. Available configurations include from 0 to 512 discrete inputs, 128 analog inputs, and up to 24 serial ports, which can be configured as RS-422/485 or RS-232. Reporting to host management systems can be accomplished via RS-232, modems, TCP/IP and CDPD. Front panel visual indicators instantly report active controls as well as MPU and network activity. Additionally, with an

integrated web-server, status of the alarms and controls may be viewed with any web browser. Compact in size, the WS3500 takes only 4 VU rack units and hardware is included for 19" and 23" mounting. Remote configuration and upgrade capabilities ensures the WS3500 features will evolve with market demands. The configuration is stored in non-volatile memory and can be updated "on the fly". Simplicity in configuration and ease of use means low cost to install and maintain.

1.3.6 1:7 Digital Bridge

The Westronic Digital Bridge is an ideal solution for achieving all-digital datacom networks. It allows you to deploy multi-point asynchronous networks, including telemetry and data acquisition. It eliminates the complexity of analog equipment such as modems, data station terminations and analog bridges. As a result, bandwidth is freed, speeds are improved and maintenance is reduced throughout your telemetry network.



The Westronic Digital Bridge broadcasts host system polls to all stations, routing the one responding station back to the host. In peer-to-peer applications, any message from a station on the bridge is replicated to all other stations in the network.

1.3.7 Dual/Quad Modem

The Westronic Dual and Quad Modems are an effective way to connect telemetry equipment to analog facilities. Created specifically for central office telecommunications applications, the unit's simple, low maintenance design ensures trouble free operation.



User-selectable digital interfaces configurable for RS-232, RS-422 or RS-485 separate the Westronic Quad Modem from its competitors in the telecommunications industry. The RS-485 option permits a single remote telemetry unit or collection port to connect up to 32 modems. This configuration allows each remote site to operate in a point-to-point arrangement, thus eliminating troublesome analog bridges.

2 Hardware Description

2.1 Front-Panel Indicators and Controls

Figure 2-1 is an illustration of the WS2000 front panel, showing the location of the front-panel indicators and controls.

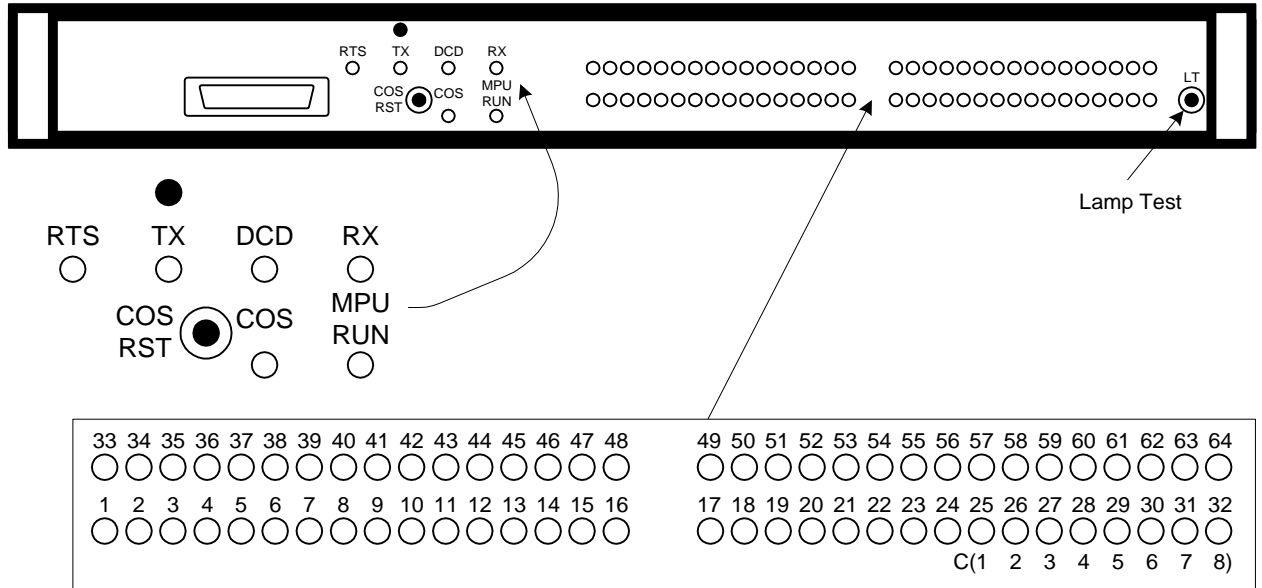


Figure 2-1 WS2000 Front Panel

When the WS2000 detects a new alarm, it lights the front-panel LED for the associated alarmed input (1 – 32) and activates the COS relay, which lights the **COS LED**. The front-panel alarm LED, the **COS LED**, and the COS relay remain active. At this point, this is an unacknowledged alarm.

However, you can acknowledge the new alarm or multiple unacknowledged alarms by pressing the **COS RST** pushbutton or an external pushbutton that temporarily grounds the COS Reset terminal on TB1. The COS relay then deactivates and extinguishes the **COS LED**, but the front-panel LED for the alarmed inputs (1 – 32) remains lit until the alarms clear.

If the COS relay outputs on TB1 drive an external audible device, the device will sound following an alarmed input until the alarm is acknowledged by pressing the **COS RST** pushbutton.

Any new alarm detected after you release the **COS RST** pushbutton reactivates the COS relay, **COS LED**, and the external audible device, if connected.

2.1.1 Indicators

Table 2-1 Front Panel Indicators

Indicator	Title	Function
MPU RUN	Microprocessor Run LED	Indicates proper initialization and operation of microcomputer and real-time operating system software. Failure indicated if "Off"
COS	Change-of-State LED	Indicates input (serial/discrete) change-of-state (alarm). The COS LED mirrors the state of the COS relay (Figure 3-10): lit when the relay is activated and extinguished when the relay is deactivated.
STATUS/ALARM LED (1-32)	Input Indications	Alarm present on point (1-32). LED's 25-32 are indications for control outputs 1-8 if backplane jumper Z7 is installed
STATUS/ALARM LED (33-64)	Input Indications (<i>NOT USED ON SSMATE</i>)	Alarm present on point (33-64). LED's 57-64 are indications for control outputs 9-16 if backplane jumper Z9 is installed
RTS	Request-To-Send	Carrier Output
TX	Transmit	Transmit data indication
DCD	Data Carrier Detect	Carrier Frequency Received
RX	Receive	Receive data indication

2.1.2 Pushbuttons

Table 2-2 Front Panel Pushbuttons

Button	Title	Function
COS RST	Change-of-State Reset	Reset COS LED and central office alarm annunciator (ACO)
LT	Lamp Test	Lights all Status/Alarm LEDs

WS2000 has the following front-panel pushbuttons:

COS RST – Change-of-State Reset – Resets the COS relay (Figure 3-10) and extinguishes the **COS** LED to acknowledge an alarm condition on serial/discrete inputs to the WS2000.

LT – Lamp Test – Lights all Status/Alarm LEDs.

2.2 Interfaces

2.2.1 Discrete Interfaces

The WS2000 SSMATE senses 32 status/alarm inputs. The front panel LEDs indicate the status of the individual input.

The WS2000 32/8 is equipped with 8 Control Output relay closures. These Control outputs are inactive when the WS2000 SSMATE software is installed.

2.2.2 Serial Interfaces

The WS2000 SSMATE comes equipped with six serial ports:

- Channel 0 (Craft) supports Asynchronous communications using RS-232 interface. Factory settings are 9600, 8-data bits, no parity and 1 stop bit. There is no provision for the user to change the Craft port parameters in the SSMATE application.
- Channels 1-5 are configurable RS-232/RS-422/RS-485 serial ports for transmitting user-defined ASCII command strings. Each channel is configurable can be configured with the following selectable parameters:

Speed: 1200, 2400, 4800 and 9600 bps.

Data Bits: 7 or 8

Parity: Even, Odd or none

Stop bits: 1 or 2

Service: RS-232, RS-422 or RS-485

2.3 Configuration and Diagnostics

The Craft port, channel 0, is used for making all configuration changes to the SSMATE unit. The craft port is accessible through the DB-25 D-subminiature connector (JB3) located on the front panel of the WS2000.

2.4 Specifications

This section provides detailed information on the electrical, environmental, and mechanical specifications of the WS2000 product

line. Also included are detailed data for the parallel, serial, and host ports, and auxiliary interfaces.

2.4.1 Electrical

The following are typical power and electrical requirements:

- Input voltage range: –20 Vdc to –60 Vdc
- Power requirements:
 - 5.0 Watts (No input sense currents)
 - 24.0 Watts (64 inputs sense currents)
- Fusing of WS2000 units: See Table 3-6.
- External switching power available from the WS2000 unit
- WS2000 supply outputs:
 - + 5.0 Vdc \pm 5% at 1.5 Amps (maximum)
 - +12.0 Vdc \pm 10% at 400 mA each (maximum)
 - 12.0 Watts total output power

2.4.2 Environmental

- Operating ambient temperature range: 0° C to +55° C
- Humidity: < 95% noncondensing

2.4.3 Mechanical

The following lists WS2000 mechanical characteristics:

Dimensions

- Height: 1.75 inches (4.4 cm)
- Width: 17.4 inches (44.1 cm)
- Depth: 8.0 inches (20.3 cm)

Mounting

- 19-inch (48.3 cm) rack mounting
- 23-inch (58.4 cm) rack mounting with optional adapters

Weight

- 5.3 lbs (2.4 kg) maximum unpackaged; 8 lbs (3.6 kg) packaged

Connectors

- Power, analog, and auxiliary connections: TB1
14-pin, dual-level compression terminal block that accepts #14 to #24 AWG wire

-
- Serial and digital host port connections: P1 – P6, P8 – P13 eight-position header terminal connectors. Mating connectors manufactured by:
 - Methode: PN 1300-108-424 or PN 130F-108-424
 - Westronic: PN 620-0077 or PN 690-T006/690-T007
 - WPIB connection: P7 (not used)
34-position (2 x 17) ribbon cable header. Mating connector manufactured by:
 - Amp: PN 746094-8
 - Robinson Nugent: PN IDS-C34PK-SR-TR
 - Assmann: PN AWP 34-7241
 - Discrete connections: J1, J2
50-position, female, Delta-type connectors. Mating connector manufactured by:
 - TRW: PN 97-12500-180 or PN 97-12500-181
 - Westronic: PN 620-0078

2.4.4 Interfaces

This section provides detailed data on each of the WS2000 interfaces.

2.4.4.1 Serial Ports

Serial Output Channels 1–5

- Asynchronous Communications:
 - 1200, 2400, 4800, or 9600 bps (9600 is default)
 - 7 or 8 data-bit characters (8 is default)
 - Even, Odd or No parity (None is default)
 - 1 or 2 stop bits (1 is default)

RS-232/RS-422/RS-485 selectable (RS-232 is default)

- Connectors:
 - Channel 1 P12 (RS-232), P6 (RS-422) and P13 (RS-485)
 - Channel 2 P4 (RS-232/RS-422/RS-485)
 - Channel 3 P11 (RS-232/RS-422/RS-485)
 - Channel 4 P3 (RS-232/RS-422/RS-485)

Configurator (Craft) Channel 0

- Asynchronous Communications:
Factory set to RS-232, 9600bps, 8-data bits, no parity and 1 stop bit.

- Connectors:
Use only one connector concurrently.

P5 (rear)

JB3 (front-access DB25)

- Prog En (Program Enable/EEPROM Write Enable)
P5 (rear) Strap P5 pins 3 to 6

JB3 (front-access DB25) Strap JB3 pins 18 to 25.

2.4.4.2 Alarm Sensor Inputs

- 32 photo-coupled inputs arranged in groups of eight with a single common for all inputs
- Input voltage: -48 Vdc Battery, (+) Battery Return
- Input current: 3 – 5 mA for each point
- Logic levels:

Input Power	Logic Level	Voltage
-48 Vdc	0 (Off)	Input open or -40 Vdc to -60 Vdc
	1 (On)	Input greater than -12.0 Vdc

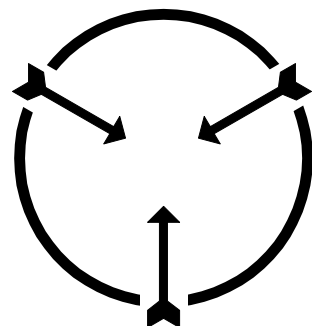
3 Installation

3.1 Overview

This section contains detailed installation instructions, tables, and diagrams that define all hardware configuration options, special material handling considerations, and precautions. Included are descriptions of the physical layout of the unit and optional equipment. Not all hardware, connections, wiring, and strapping are applicable to all WS2000 versions or applications.

3.2 Handling Considerations and Precautions

WS2000 modules contain Complementary Metal-Oxide Semiconductor (CMOS) and N-Channel Metal Oxide Semiconductor (NMOS) integrated circuits to maximize noise immunity and promote low power consumption. These components are Electro-Static Discharge (ESD) sensitive and can be damaged if subjected to high static voltage levels. Therefore, ensure familiarization with the ESD procedures that follow. Packaging containing CMOS and NMOS components has a label as shown in Figure 3-1.



Static Sensitive
Maintain Antistatic Protection

Figure 3-1 Electrostatic Discharge (ESD) Label

CMOS and NMOS devices are equipped with protection diodes, but incorrect handling that allows excessive static energy to enter the devices can still cause device failure. These failures are not readily detected and, in time, can lead to premature device failure.

Adhering to the following guidelines significantly reduces the possibility of electrostatic damage on CMOS or NMOS components, thus improving system reliability and keeping downtime to a minimum:

-
- Before removing or inserting modules, always verify they are not carrying static charges. Always wear a personal grounding device, such as an ESD heel or wrist strap.
 - When extracting a module, always place it in an antistatic bag or covering for transportation/storage.
 - Perform repair work on modules in an antistatic workstation. All personnel performing repair work must be grounded through wrist straps and antistatic matting in the workstation.
 - Exercise extreme care when handling CMOS/NMOS components. Do not touch the pins and always place components in antistatic foam for storage and transportation.
 - Ensure that desoldering tools have static reduction. Some desoldering tools can actually generate large static voltages that damage CMOS and NMOS devices.

3.3 Module Substitution

The following are general procedures that must be followed when replacing or substituting WS2000 modules:

- Turn power off when removing or inserting modules. The boards are designed to withstand removal and insertion with power on, but a highly recommended practice is to remove the system power when substituting modules.
- Make sure the substitute board is of the same type (part number) and contains the same options.
- Substitute modules only with modules that contain identical jumper connections. Observe the jumper and mini-jumper arrangements on the original board and ensure they are identical on the replacement module. Failure to do so can cause module failure, point displacement because of incorrect board addresses, communication failure with the host, and other related failures.
- Make sure an EEPROM with current firmware is installed on the replacement board. Always make sure that substitute or replacement EEPROMs are properly seated in the socket with correct pin alignment. Verify that all pins insert into the socket and none are bent inward/outward.
- Make sure replacement modules mate properly with the connectors at the rear of the bin. Never force a board into position because this can damage rear connectors. In case of insertion problems, determine why the module does not

easily plug into position and take appropriate action. To plug a module into position, push firmly with the thumbs on the lower portion of the front. Remove a module by gently rocking it while drawing it from the bin until it is free of the connectors at the rear.

Only qualified electronics service personnel who are familiar with microcomputers and Input/Output (I/O) interfacing should carry out actual module repair. Attendance by such personnel in a WS2000 training course to learn special circuit concepts and applications is highly recommended. When returning a faulty module, describe the suspected problem, fault, or symptom on the documentation that accompanies the module.

3.4 Installation Procedures

The following describes how to install the WS2000 and ancillary products into a permanent location. Refer to the checklist at the end of this section for a step-by-step WS2000 installation guide. After you work through the installation steps, the WS2000 unit is ready for software configuration. Refer to Sections **Error! Reference source not found.** and 4 for these procedures.

3.4.1 Inspecting the WS2000

Before applying power, remove the WS2000 main board assembly from its housing and confirm that the plug-in expansion boards are seated properly. Strap options are preset in the factory, however, they can be changed according to user requirements.

3.4.2 Installing the WS2000

The WS2000 requires one vertical space (1.75 inches) in a 19-inch standard telecommunications rack. Rack adapters are included with the unit for mounting in 23-inch wide racks. Figure 3-2 shows the various dimensions for the WS2000, which are the same for discrete expander units.

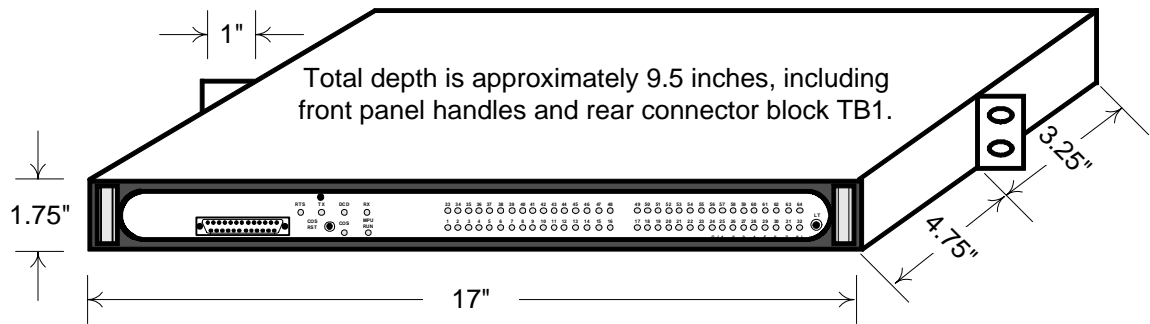


Figure 3-2 WS2000 SSMATE

3.4.3 Configuring the WS2000

The following presents strap options for the main board, internal modem boards, and the backplane. Consider in all cases that the internal modem is not used. Option straps on the main board determine the following:

- Source of Channel 1 RTS and TX signals
- Memory size (8K or 32K) and type (EPROM, EEPROM, or RAM), Write Enable for EEPROM, and address range for RAM
- Device size (28/32 pins)
- Watchdog enabled/disabled
- Memory bank switching

The backplane option straps establish the serial port receive side terminations when operating RS-422 or RS-485.

3.4.3.1 Main Board

With over 13,000 installations of the WS2000 worldwide, a typical WS2000 manual must cover main board iterations manufactured since 1991. The normal E2A, TABS and TBOS WS2000 manuals refers to four main boards (referred to as Type 1, Type 2, Type 3, and Type 4) being available. The WS2000 SSMATE is manufactured using the latest Type 4 (revision 12) main board.

Note: All strap options are preset at the factory.

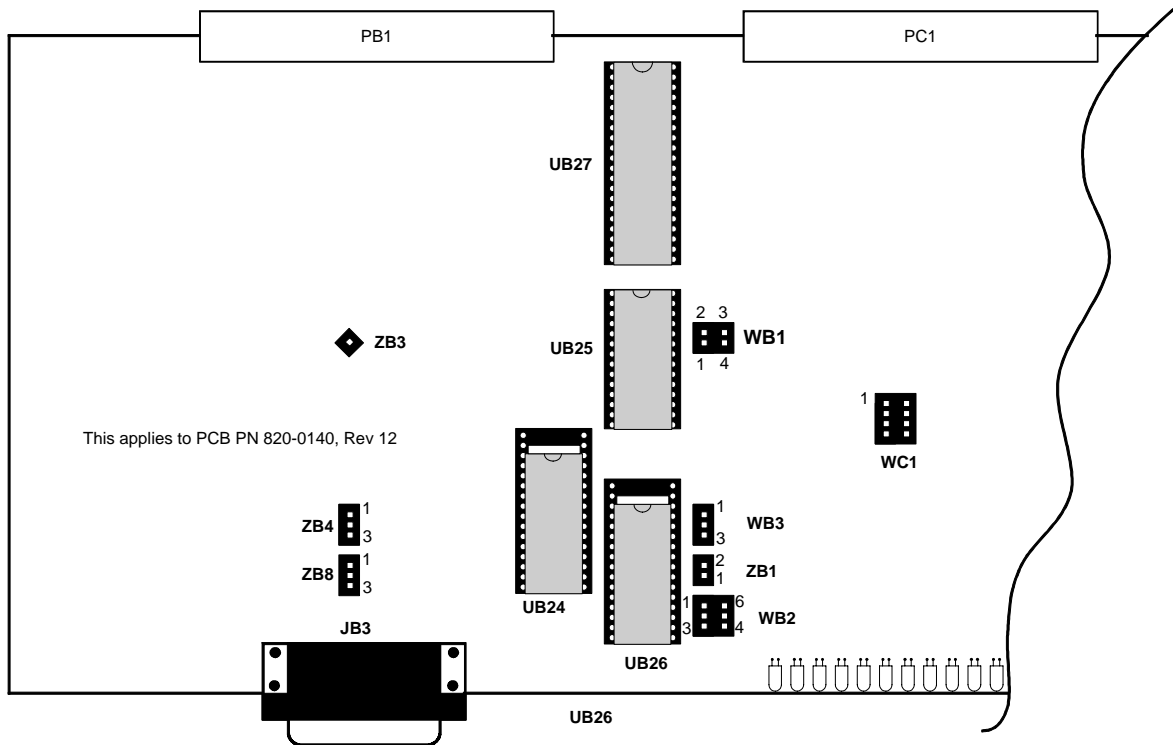


Figure 3-3 Strap Arrangements for Type 4 main Board

Table 3-1 Strap Arrangements for Type 4 Main Board

Block	Pin	Function
WB1	1 – 4	Channel 1 RTS (modem) from Main board. Remove when daughter board provides source.
	2 – 3	Channel 1 Tx (modem) from Main board. Remove when daughter board provides source.
WB2	1 – 6	Do Not Install. UB24 RAM address range
	2 – 5	Do Not Install. UB24 RAM address range
	3 – 4	Write enable when UB25 is EEPROM
WB3	1 – 2	UB26 is 32-pin device.
	2 – 3	UB26 is 28-pin device; Default (Note).
WC1	Not Used	Board ID
ZB1	None	Watch Dog Enabled (Auto Restart)
	1 – 2	Watch Dog Disabled
ZB4, ZB8	1 – 2	Not Applicable
	2 – 3	UB25/UB26 bank switchable; Default

Table 3-1 Strap Arrangements for Type 4 Main Board

Block	Pin	Function
ZB3	None	For Testing Purposes

Note: When UB26 is a 28-pin device, insert it in the pins closest to the front of the board.

3.4.3.2 Backplane

Figure 3-4 shows the location of the discrete input point connectors (J1), the serial port connectors (P1 – P6, P8 – P13), and option jumper blocks Z1 – Z9.

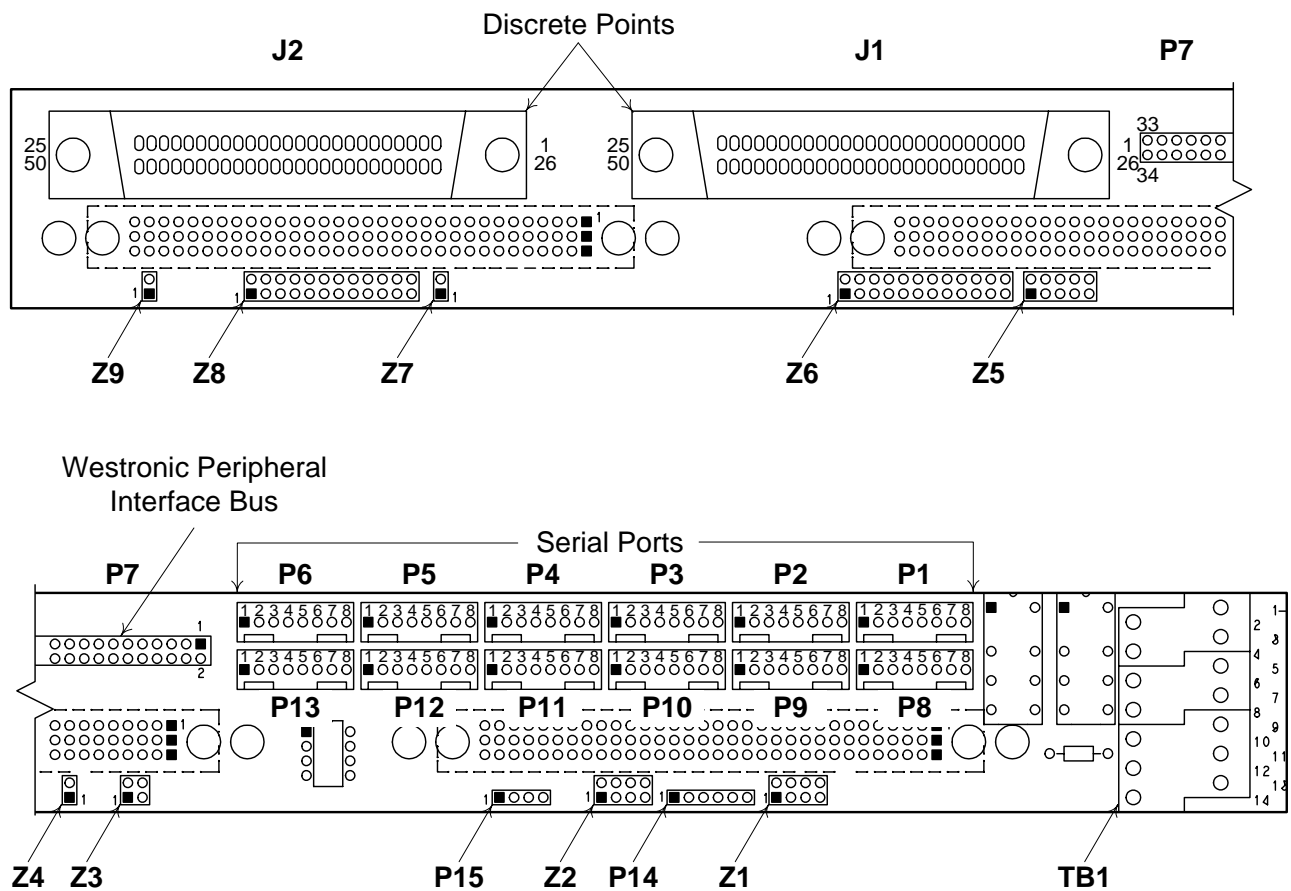


Figure 3-4 WS2000 Backplane

3.4.3.2.1 Serial Output Port Terminations

Applications using RS-232 interface operation require no straps on jumper blocks Z2 and Z3.

If a connected port uses RS-422 or RS-485 interface operation, the port interface requires termination resistors (180Ω) on the receive side.

Install the appropriate jumper straps on blocks Z2 and Z3 to provide termination resistors for Channels 1–5. Table 3-2 lists the jumper strap arrangements for blocks Z2 and Z3.

Recommendation: Install terminating resistors on the receiver terminal of all RS-422 circuits and on the furthest receiver terminal of an RS-485 circuit.

Table 3-2 Z2, Z3 Jumper Strap Arrangements for RS-422/RS-485 Receiver Termination

Strap Pins	Function	
	Z2	Z3 (Note)
1 – 8	Chan 2 Rx	Chan 1 CTS
2 – 7	Chan 3 Rx	Chan 1 Rx
3 – 6	Chan 4 Rx	Chan 1 Rx C
4 – 5	Chan 5 Rx	Chan 1 Tx C
1 – 4	N/A	Chan 1 CTS
2 – 3	N/A	Chan 1 Rx

3.4.4 Cabling the WS2000

Figure 3-4, a rear view of the WS2000 unit, shows how the connections are grouped on the WS2000 backplane. This section provides connection details for cabling the WS2000 to the network and office equipment in the following order (the order is not critical; vary according to your needs/optional equipment):

- Make all RS-232/RS-422/RS-485 serial connections to channels 1-5 using eight-pin Methode connectors wired according to Table 3-4.
- Connect discrete inputs 1-32 and through 50-pin connector J1 found in Table 3-5.
- Make power and local annunciator (if used) connections at TB1. See Figure 3-10
- Connect optional accessory interface equipment, such as the Telzon termination panel, the front-access wire-wrap kit, or the rear-access wire-wrap kit.
- **Note:** The front-access wire-wrap kit handles serial port, discrete input/control output, and TB1 connections. The rear-access wire-wrap kit and the Telzon termination block handle serial port and discrete input/control output connections.

3.4.4.1 Front-Panel Craft Port

Pinout information and pin layout for the front-panel DB25 Craft port connector (JB3) appears in Figure 3-5.

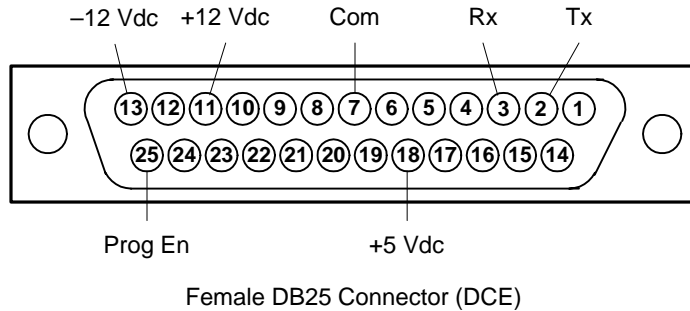


Figure 3-5 Front-Panel Connector JB3

Pins 18-25 must be connected to enable writing to the WS2000 memory. The Wesmaint cable 977-T032 has this jumper in place.

Table 3-3 Front-Panel Wesmaint Connector JB3

Pin	Function
2	Transmit
3	Receive
7	Common
11	+12 Vdc
13	-12 Vdc
18	+5 Vdc
25	Program Write Enable

3.4.4.2 SSMATE Configurator Connections

Connection of a PC to the WS2000 SSMATE requires the PC cable (977-T032) included with the software package (567-T060). Connect the cable to the PC COM1 (Factory Set). If the PC uses a 25-pin COM port, use the supplied DE9 to DB25 adapter to adapt the cable to the COM port. If the application requires an extension cable, use a standard RS-232 cable to connect the cable to the WS2000 SSMATE.

3.4.4.3 Serial Port Connections

Serial port cable assemblies use the supplied Methode IDC connectors (PN1300-108-424 or 30F-108-424 or Westronic PN 620-0077). The Methode hand insertion tool, JT-11-100-ST (Westronic PN 990-0150), is also supplied to assemble the required cables.

Each serial cable must be fitted with a ferrite Electromagnetic Interference (EMI) filter (provided with each WS2000) during installation. The cable must wrap a minimum of two times around the ferrite and snap securely shut.

CAUTION: The Methode connectors are designed for #24 AWG solid wiring. Use of smaller or larger diameter wiring, multiple terminations in the same contact, or stranded wire can result in intermittent connections.

Figure 3-6 illustrates the portion of the backplane containing the serial port connectors. The figure shows the port locations, their channel associations, the pin designations, and the type of serial interface.

The serial output ports use different pin connections, depending on the chosen interface type. Select the Channel in column 1 then the desired interface (RS-232, RS-422 or RS-485) in column 3. Wire the Methode connector according to the pins listed on the associated table row.

Table 3-4 lists the cable interface data for the serial inputs and outputs, and the rear port for Craft maintenance (P5). Figure 3-7 diagrams the serial port interface connections for direct connection or connection through external modems.

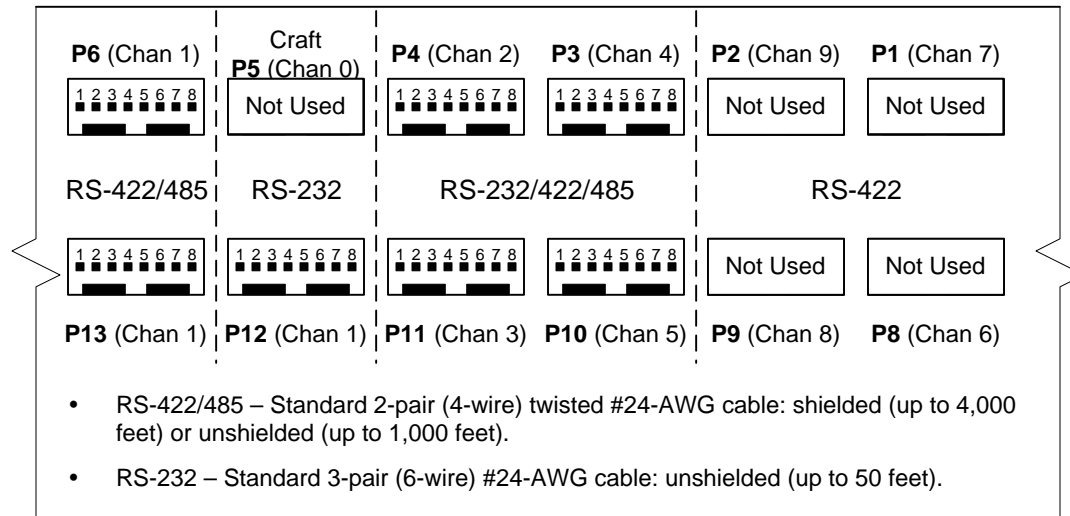


Figure 3-6 Rear View of WS2000 Serial Port Connectors (Methode)

Table 3-4 Cabling Interface Data for Serial Input/Output

Chan	Conn	Intfc RS-	Methode Pin Number							
			1	2	3	4	5	6	7	8
1	P12	232	Tx	RTS	CTS	Com	Rx	DCD	–	–
	P6	422	–	–	–	Com	Rx–	Rx+	Tx–	Tx+
		485	RTS–	RTS+	–	Com	Rx–	Rx+	Tx–	Tx+
2	P4	232	Tx	RTS	CTS	Com	Rx	DCD	–	–
		422	–	–	–		Rx–	Rx+	Tx–	Tx+
		485	–	–	–		Rx–	Rx+	Tx–	Tx+
3	P11	232	Tx	RTS	CTS	Com	Rx	DCD	–	–
		422	–	–	–		Rx–	Rx+	Tx–	Tx+
		485	–	–	–		Rx–	Rx+	Tx–	Tx+
4	P3	232	Tx	RTS	CTS	Com	Rx	DCD	–	–
		422	–	–	–		Rx–	Rx+	Tx–	Tx+
		485	–	–	–		Rx–	Rx+	Tx–	Tx+
5	P10	232	Tx	RTS	CTS	Com	Rx	DCD	–	–
		422	–	–	–		Rx–	Rx+	Tx–	Tx+
		485	–	–	–		Rx–	Rx+	Tx–	Tx+

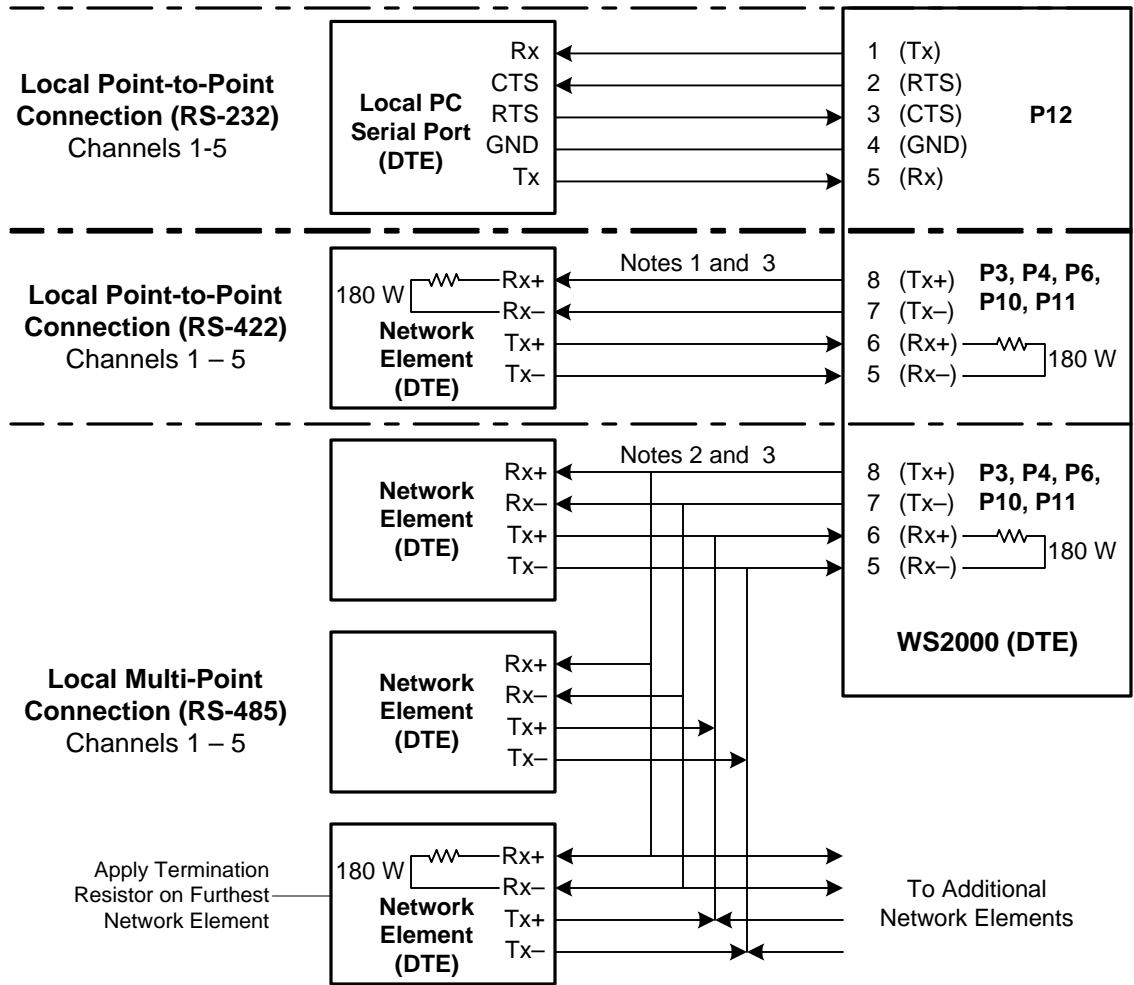


Figure 3-7 Serial Port Interface Connections for WS2000

The following notes are to Figure 3-7.

Any of the WS2000 serial data collection ports and the host port can interconnect to NEs using RS-422. The WS2000 is considered Data Terminal Equipment (DTE). If the NE to be connected is DTE, the WS2000 transmit signal lines terminate into the NE receive inputs and the WS2000 receive signal lines terminate into the NE transmit outputs (that is, transmit-receive crossover connection).

Five of the WS2000 serial data ports (Channels 1 – 5) can interconnect to NEs using RS-485. Connections are the same as for the RS-422 interface. Observe that for a multi-drop RS-485 interface, the end network element should have terminating resistors installed for the channel receiver. Refer to paragraph 3.4.3.2.1 for appropriate backplane strapping. Intermediate units do not require channel termination.

Common terminology for balanced line connections is plus (+) and minus (-). Other naming conventions are as follows:

- Plus = tip (T) = A = true (T)
- Minus = ring (R) = B = false (F) = invert

3.4.4.4 Discrete Connections

WS2000 backplane connector J1 handles the cable connections for discrete inputs. See Table 3-5 Pinouts for WS2000 Discrete Interface Connector J1 for connector pin layouts.

The WS2000 SSMATE uses only the first 32 discrete points routed through J1 backplane connection. J2 is used to route discrete inputs 33-64 that may be used in future expansions of this WS2000 model type.

Figure 3-8 shows a rear view of the WS2000 with the connector layouts.

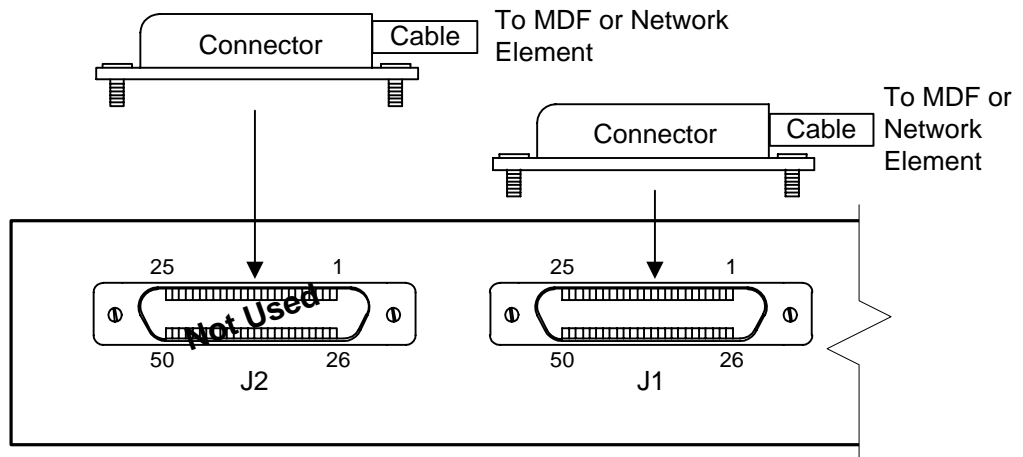


Figure 3-8 Rear View of the WS2000 Discrete Connectors

Connector

Delta 50-pin male connector. Use either of the following connector assemblies:

- Westronic 50-pin connector assembly: PN 620-0078
- Cinch: PN 97-12500-180 or 97-12500-181

Cable

Standard 25-pair (50 wires) unshielded telephone cable; #24 AWG single-strand wire

Table 3-5 list the connections to the discrete interface connector, J1 located on the backplane.

Table 3-5 Pinouts for WS2000 Discrete Interface Connector J1

Function	Pin		Function
Control Output 1, Not Applicable	1	26	Control Output 1, Not Applicable
Control Output 2, Not Applicable	2	27	Control Output 2, Not Applicable
Control Output 3, Not Applicable	3	28	Control Output 3, Not Applicable
Control Output 4, Not Applicable	4	29	Control Output 4, Not Applicable
Control Output 5, Not Applicable	5	30	Control Output 5, Not Applicable
Control Output 6, Not Applicable	6	31	Control Output 6, Not Applicable
Control Output 7, Not Applicable	7	32	Control Output 7, Not Applicable
Control Output 8, Not Applicable	8	33	Control Output 8, Not Applicable
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	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

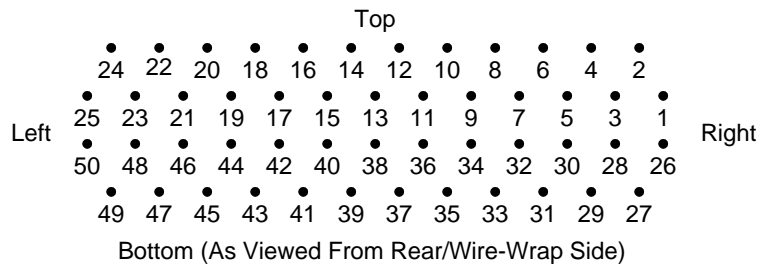
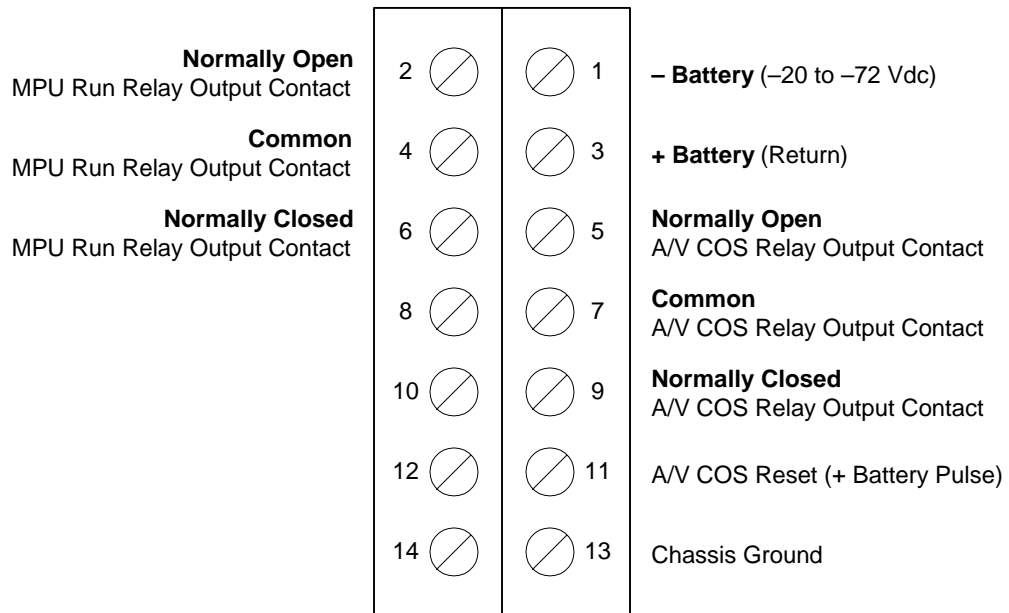


Figure 3-9 620-T030 Wire-Wrap Rear Connector

3.4.4.5 Terminal Board TB1 Connections

Figure 3-10 shows connections to TB1.



Use #14 – #24 AWG Solid Wire for All TB1 Connections

A/V Audio/Visual
 AWG American Wire Gauge
 COS Change of State
 MPU Microprocessor Unit

Figure 3-10 WS2000 Rear Connector TB1

3.4.5 Powering the WS2000

The procedure to apply power to the WS2000 can vary, depending on the equipment installed. The following describes how to apply power to a WS2000 equipped without discrete expanders.

Using #14 – #24 AWG power wire, connect input power to WS2000 TB1 through a fused source. Table 3-6 provides fuse requirements. The input voltage ranges from –20 Vdc to –60 Vdc. Verify that the plug-in board assembly is installed and that the power input leads are terminated before inserting the fuse.

Table 3-6 WS2000 Fusing Requirements

–48 Vdc		–24 Vdc	
GMT	Type 70	GMT	Type 70
0.75 A	0.75 A	1.3 A	1.3

Each WS2000 unit pulls a maximum load of 24 Watts, assuming all discrete inputs are active and the WS2000 application includes a rack-mount modem.

1. Install the appropriate fuse at the power distribution panel to power the WS2000 up. The front-panel **MPU RUN** LED lights and remains lit.
2. Connect a PC to the DB25 connector (JB3) on the WS2000 front panel.
 - **CAUTION:** Do not power down the WS2000 without first disconnecting the PC unit connected to the front DB25 connector.

3.5 Installation Check List

Use the following check list when installing the WS2000 hardware:

- A. Mount the unit.
 - Verify strap options on the main board. Refer to Figure 3-3 and Table 3-1.
- B. Verify backplane strap options (Figure 3-3) for the serial RS-422 receive side terminations (Z2, Z3, Table 3-2)
- C. Cable the unit
 - Verify serial port connections (DTE/DCE or DTE/DTE):
 - Figure 3-6 Rear View of WS2000 Serial Port Connectors (Method)
 - Figure 3-7 Serial Port Interface Connections for WS2000
 - Table 3-4 Cabling Interface Data for Serial Input/Output
 - Verify discrete connections:

-
- Figure 3-8 Rear View of the WS2000 Discrete Connectors
 - Table 3-5 Pinouts for WS2000 Discrete Interface Connector J1
 - Figure 3-9 620-T030 Wire-Wrap Rear Connector)
 - Verify power connections (Figure 3-10)

The unit is now ready for software configuration. See Section **Error! Reference source not found.** for configuration information using the CLI and Section 4 for using the SSMATE Configuration Software.

4 SSMATE Configurator

This section explains the step-by-step procedures for installing and using the WS2000 SSMATE Configurator software (567-T060) supplied with each unit.

Configuring the WS2000 SSMATE can involve some or all the of the following:

- Starting the SSMATE Configurator application
- Creating a database
- Modifying an existing database text file
- Uploading/Downloading a WS2000 database
- Establishing the PC COM port
- Configuring the WS2000 serial port settings
- Resetting a port's parameters
- Configuring the ASCII strings for each point
- Initializing ports and string blocks

4.1 Overview

The SSMATE Configurator is a user-friendly Windows 95/98 based application with a Graphical User Interface (GUI) that enables you to more efficiently configure a WS2000 SSMATE. Using the Configurator provides these additional capabilities over using an ASCII terminal and the CLI configuration tool described in **Error! Reference source not found.**:

- View and Print the entire database contents from a single PC window.
- Change or modify a single point or port setting as well as change the entire database with a single keystroke action.
- Upload a complete SSMATE database from the WS2000 SSMATE to the PC and save it as a .txt file.
- Load a previously saved database file and download it to the WS2000 SSMATE.
- Use the SSMATE Configurator to generate a database offline.

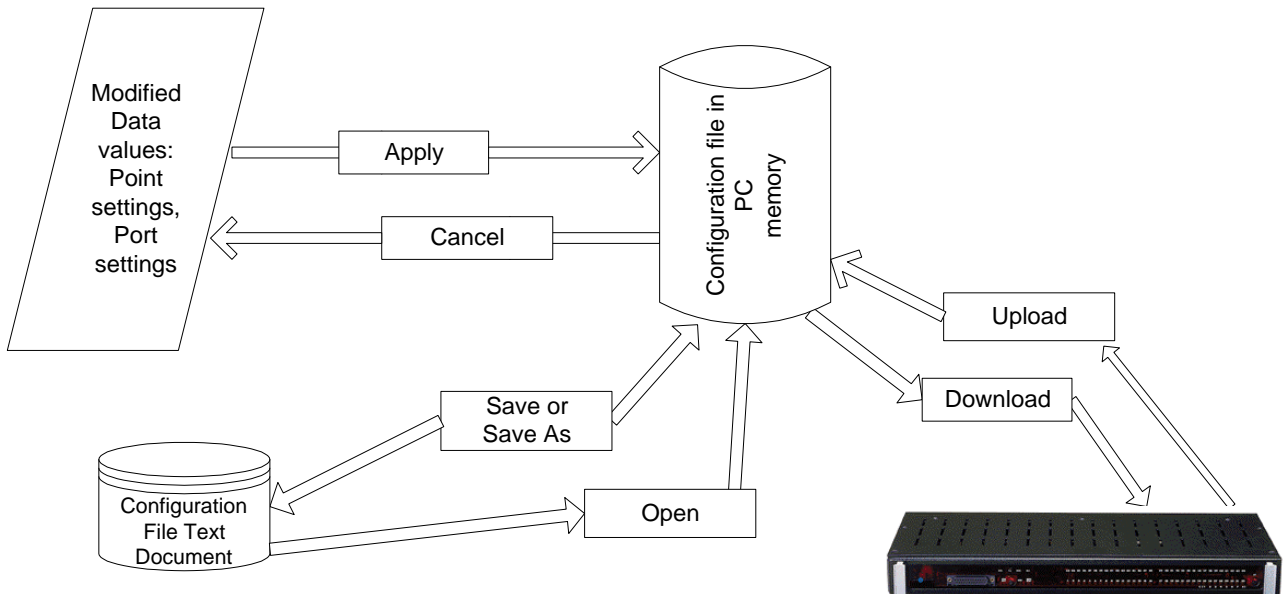


Figure 4-1 Configurator Overview

To explain the interface between the Configurator software, database files and the WS2000 SSMATE unit, Figure 4-1, with a little explanation should clearly illustrate the relationships.

The Configurator software utilizes three separate locations to store and retrieve database configuration files to and from. A brief description of each will help explain the use of the commands described later. Figure 4-1 shows these memory locations:

1. Current Configuration file in PC Memory. Displayed as the current configuration during the use of the SSMATE Configurator.
2. Saved Configuration (.txt) file located on PC non-volatile memory device i.e. floppy or disk file.
3. Hardware Configuration image located in the WS2000 EEPROM memory.

The Configurator software can obtain a configuration database and place it in the current configuration, either from the WS2000 SSMATE by simply invoking the “upload” command or “load” a database file from a PC memory device. The actions “Save” and “Download” actions allow the storage of the current configuration to a file or the WS2000 memory.

When changes are made to the current configuration using the COM or Configure drop-down menus, the program ask if you want to save the changes before exiting the screen. This is only a reminder that you have not saved the changes to the configuration file. To recap, the action items that appear on several of the Configurator screens.

- **APPLY** Applies the changes made in the Configurator screen to the current database located in PC resident memory **ONLY**. This action does not save the configuration to the WS2000 SSMATE or to a PC File
- **DOWNLOAD** Download the current configuration database in the PC resident memory to the WS2000 SSMATE memory
- **CANCEL** Disregard changes and revert to previous values
- **SAVE** Save current database to a PC memory device
- **SAVE AS** Save current database to a PC memory device and input a file name
- **OPEN** Open a database .txt file and load into PC resident memory as the current database

4.2 System Requirements

The SSMATE Configurator operates only under a Windows[®] 95/98 operating system on IBM 32-bit or compatible machines. The Configurator application fits into a screen with a minimum resolution of 800 x 600, preferably higher.

The PC using the Configurator application requires the following:

- RS-232 serial COM 1 port
- PC mouse. Can use the keyboard with the SSMATE Configurator.
- IBM 32-bit or compatible processors with Windows 95/98
- Minimum recommended screen resolution of 800 x 600
- Versatile PC Com Port selection
- Automated Windows installation and uninstall functions
- Ability to open tab- or comma-delimited SSMATE database text file
- Ability to save a tab-delimited SSMATE database text file

4.3 Installing and Starting the WS2000 SSMATE Configurator

Load the SSMATE Configuration program (567-T060) onto the Personal Computer (PC) following normal Windows installation procedures.

The Install Shield 5 installation development program automates SSMATE installation. You only need to insert the installation disk and execute the setup.exe file located on the disk.

The installation program will create a folder named “WS-TOOLS” located in C:\WINDOWS\Desktop\WS-Tools. The folder will contain the SSMATE Configurator and Uninstall SSMATE Cfgr shortcut icons. These icons can be copied or moved as desired using normal Windows procedures. Start either application by double-clicking the appropriate icon

If the target PC already has other programs distributed by Westronic, such as the WS2000 PC Wesmaint or the WS3000 TL1 Configurator, the Setup program adds the Configurator to the existing WS-Tools program group.

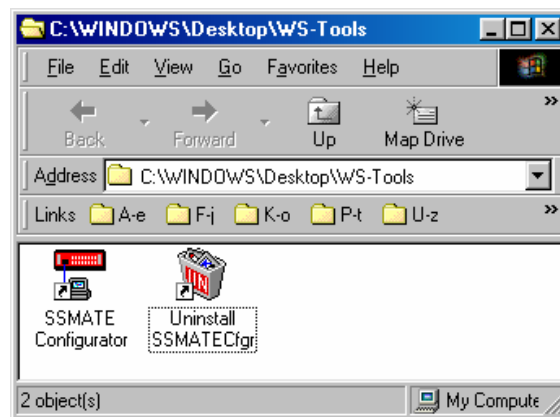


Figure 4-2 WS-Tools Desktop Folder

The Configurator connects to the WS2000 SSMATE front-panel Craft port using the Wesmaint cable 977-T032 shipped with the Configurator. If the cable is lost or not readily available, one can quickly be made using the diagram illustrated in **Error! Reference source not found.**

4.4 Working with Databases

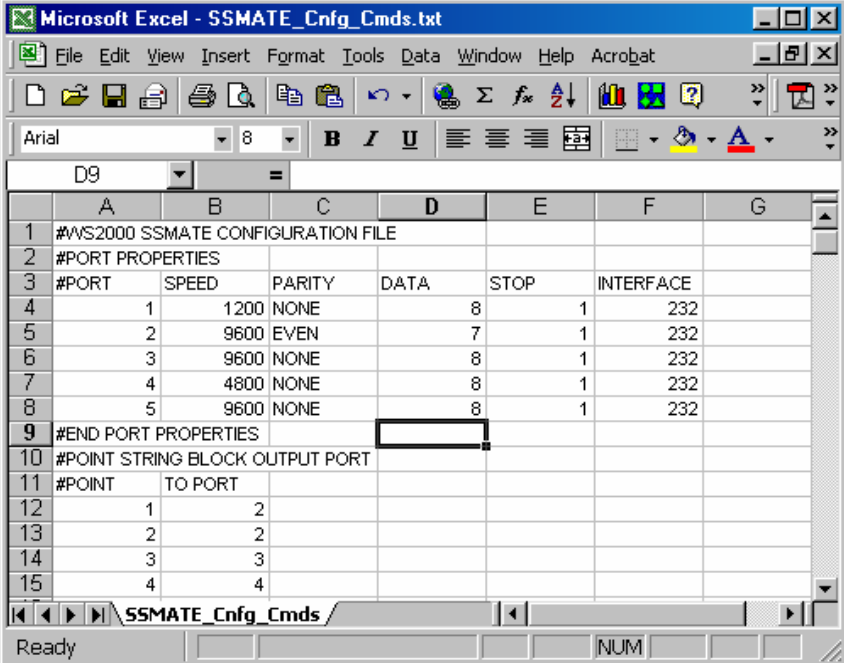
The WS2000 SSMATE is shipped with a default configuration database stored in its memory (EEPROM). The first exercise the new user

should do is to upload the default database and save it in a file labelled “default DB.txt”. You will then always have a default database to go back to in case a problem arises.

You can upload the current database from the WS2000 SSMATE to the PC Configurator program and make modifications as needed, apply the changes to that database file, then download the configuration to the WS2000 SSMATE. As mentioned earlier, you can also save the database as a text (.txt) in the PC memory device. Good record keeping and file naming should be used in this process to avoid confusion in the future.

You can create or modify a database configuration in an Excel spreadsheet as a comma-separated (.csv) or tab-delimited text (.txt) file. You can open an existing file with any spreadsheet application to modify it, and then save it as a tab-delimited text file for future use.

The Configurator can import only files with “.txt” extensions. Figure 4-3 illustrates a portion of a configuration database file in MS Excel.



	A	B	C	D	E	F	G
1	#WS2000 SSMATE CONFIGURATION FILE						
2	#PORT PROPERTIES						
3	#PORT	SPEED	PARITY	DATA	STOP	INTERFACE	
4	1	1200	NONE	8	1	232	
5	2	9600	EVEN	7	1	232	
6	3	9600	NONE	8	1	232	
7	4	4800	NONE	8	1	232	
8	5	9600	NONE	8	1	232	
9	#END PORT PROPERTIES						
10	#POINT STRING BLOCK OUTPUT PORT						
11	#POINT	TO PORT					
12	1	2					
13	2	2					
14	3	3					
15	4	4					

Figure 4-3 WS2000 SSMATE Configuration Database file

4.5 SSMATE Windows

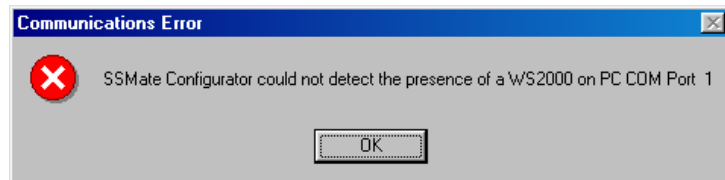
As a Graphical User Interface (GUI) application, the SSMATE Configurator has several screens that enable you to easily configure the WS2000 SSMATE.

When you first launch the application the SSMATE Configurator temporarily displays a “splash” screen (Figure 4-4) while it is loading and checking PC COM Port 1 for presence of a WS2000 SSMATE.



Figure 4-4 SSMATE Splash Screen

If the SSMATE Configurator does not detect a working WS2000 SSMATE craft port on COM PORT 1, the following error screen is displayed.



Common cause is a mismatch of the PC’s COM port 1 parameters. They should be set to RS-232 at 9600bps, 8 data bits, no parity and 1 stop bit. Select “OK” to continue to work in the off-line mode. If a different COM port than COM1 is used to connect with the WS2000, refer to paragraph 4.5.2 to change the COM port selection.

Figure 4-5 illustrates how the main screen will appear if there was not a valid WS2000 SSMATE craft port connected. The “CLI” selection in the main toolbar is unavailable and will be greyed. The CLI selection will indicate a valid craft port connection anytime one is made while in this off-line mode. There is no need to restart the Configurator.

The SSMATE Configurator can operate in the off-line mode without a WS2000 SSMATE unit connected to it. All functions will be operable except the Upload and Download and the CLI commands. Refer to the overview illustration in Figure 4-1.

After the SSMATE Configurator has loaded and completed its check of COM Port 1, the SSMATE Configurator main screen appears (Figure 4-5). The main screen contains all the command menus required for working with databases, setting up the PC communication ports, and configuring the WS2000 SSMATE.

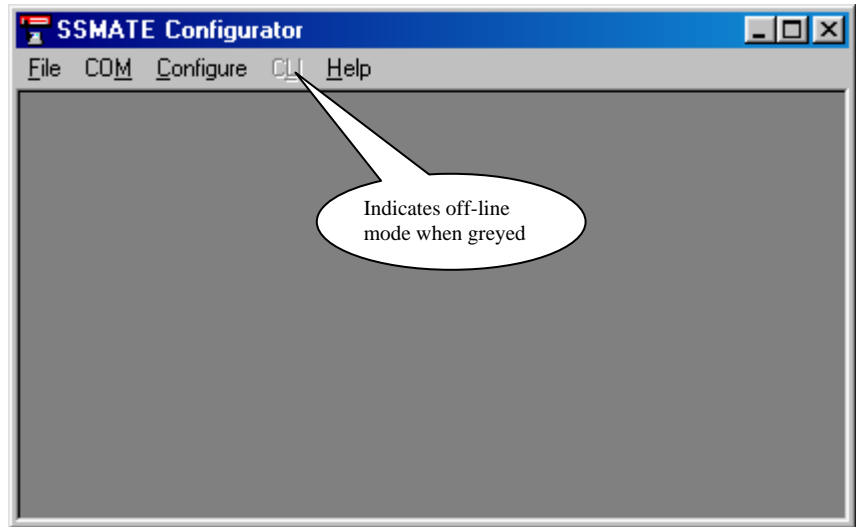


Figure 4-5 SSMATE Configurator Main Screen

The figures that follow (Figure 4-6 through Figure 4-14) illustrate the main toolbar command menus and sub menus.

4.5.1 File Menu

The **File** menu (Figure 4-6) is the central control panel for the SSMATE Configurator. The File menu contains all the command functions to load a configuration database into the Configurator program from either a file or from the SSMATE. The File menu also provides a means to save the database on a memory device or download it to a SSMATE unit.

The function of each command is described below.

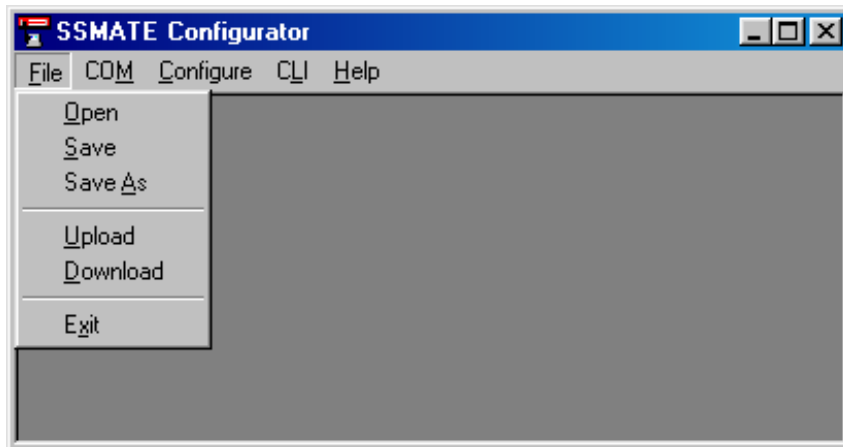
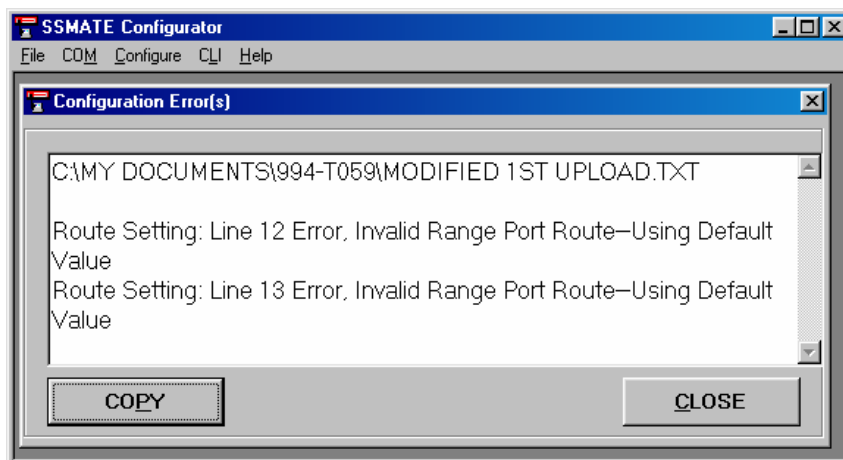


Figure 4-6 File Menu Options

4.5.1.1 Open:

This command opens a standard dialog screen that allows you to select and load an existing WS2000 configuration database file into the Configurator program. The SSMATE Configurator is expecting a comma- or tab-delimited file with an extension of .txt.

The Configurator performs an error check on the file as it is loading. If there are errors in the file, the Configurator will display and list the errors in an Error(s) window as shown. The user is given the choice to “COPY” the errors listed to the Windows Clipboard or close the screen.



In this example the program is reporting an error on line 12 of the input file. The error is an “Invalid Range Port Route”. The program will also ignore this error and revert to a default value. Examining the input file, the cause of the error is the entry “port 2” in the port column instead of the correct entry “2”.

4.5.1.2 Save:

This command saves the current configuration database text file to a memory media support by the PC system. If the file began as a comma-delimited text file, the application saves it as a tab-delimited file. If the file is one that you created (did not open as a text file), the command automatically functions as a “Save As” command.

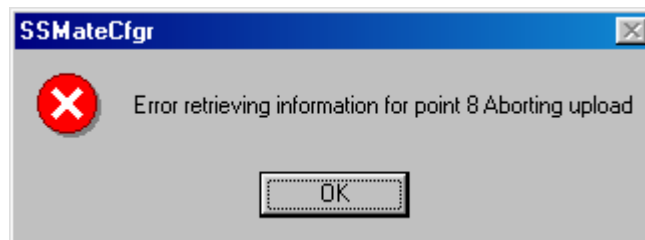
4.5.1.3 Save As:

This command opens a standard dialog screen requesting a new file name and location to save the current configuration database text file to. If you select the same name as that previously opened, the application returns a warning window. You are warned that the file already exists and gives you the option of replacing it or aborting the command.

4.5.1.4 Upload:

This command retrieves a WS2000 SSMATE database from a WS2000 connected to the PC, usually through COM Port 1, and loads the database into PC RAM for editing. The **Upload** command is available only when the PC can communicate with a WS2000 SSMATE via COM port 1. Otherwise, the command will be greyed out.

If there is an error uploading the configuration from the SSMATE the following error message will appear and the upload will be aborted. In the following example the greater-than character “>” was present in a text string.



For a closer examination of the SSMATE configuration you can use the built-in Command Line Interface tool set explained in paragraph **Error! Reference source not found.** found on page **Error! Bookmark not defined.**

4.5.1.5 Download:

This command sends the current configuration stored in PC RAM to a WS2000 connected to the PC, usually through COM Port 1. The

Download command is available only when the PC can communicate with a WS2000 SSMATE connected to the PC. Like the Upload command, the download command will be greyed in the off-line mode.

4.5.1.6 Exit:

This command terminates the SSMATE Configurator application. If you apply this command when you have not saved the current configuration, the application presents an error message.

4.5.2 Select the PC COM Port Menu

From the **COM** menu (Figure 4-7), you can select the PC COM to use to connect to the WS2000 SSMATE. The default port is COM Port 1 when the SSMATE Configurator boots up. Change the selected PC COM port properties, such as data rate, number of data and stop/start bits, and parity using the Properties selection.

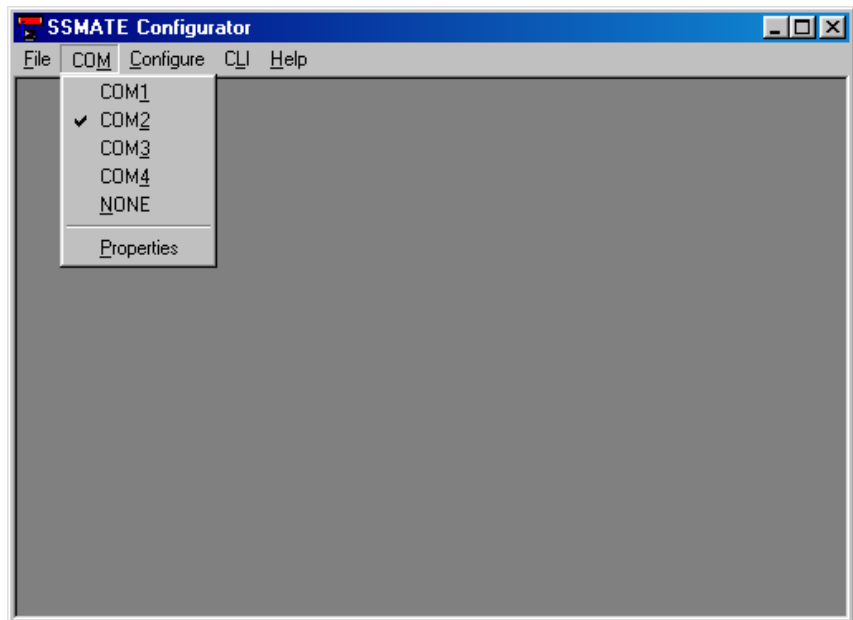


Figure 4-7 PC ComPort Selections

4.5.2.1 COM₁ – COM₄:

These choices allow you to temporarily select the PC COM port 2, 3 or 4 to connect to the WS2000 SSMATE unit's craft port. COM₁ is always the default setting at program start-up.

A check mark beside the COM_x selection indicates the selected port. During boot-up, the Configurator tests Port 1 for the presence of a connected WS2000 SSMATE and, if one is not present, it sets the COM

setting to **NONE** and disables (grey out) **File > Upload, File > Download**, and the **CLI** menu. When a valid COM port selection is made and the Configurator senses a SSMATE craft connection, the Configurator enables the **CLI** and **File** menu items.

4.5.2.2 **NONE:**

To disconnect the Configurator from the SSMATE and work offline, select **NONE**

4.5.2.3 **Properties:**

Use this selection to set the selected PC COM port to 9600bps, 8 data baits, no parity and 1 stop bit. Refer to Figure 4-8 for a screen sample.

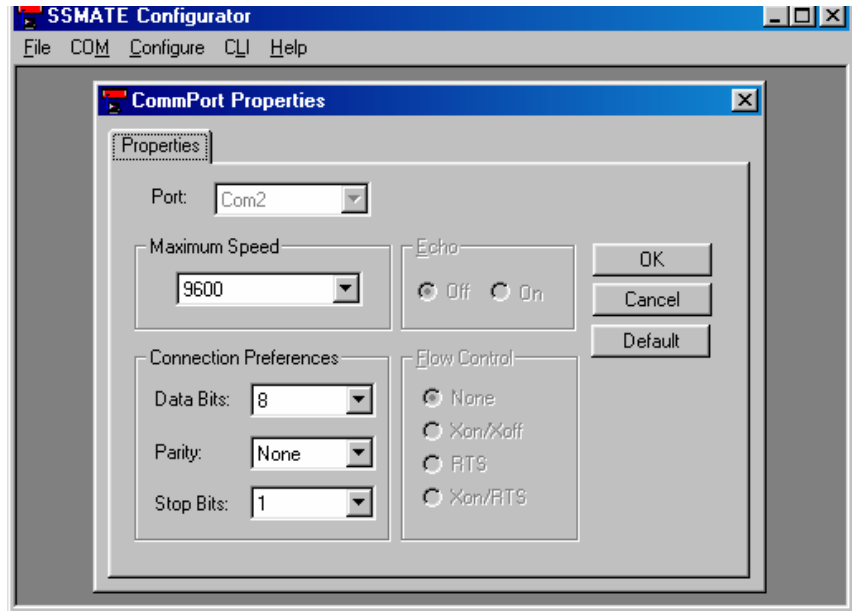


Figure 4-8 COM Port Properties

The WS2000 SSMATE craft port parameters are not configurable from this or any other screen. The WS2000 Craft port is always set to 9600bps, 8 data bits, no parity and 1 stop bit.

4.5.3 **Configure Menu**

Use the **Configure** drop-down menus to set the port and string settings of the WS2000 SSMATE. From the Configure menu (Figure 4-9), select the Configure Port Settings or the Configure Point Strings screens. Only one selection can be opened at a time.

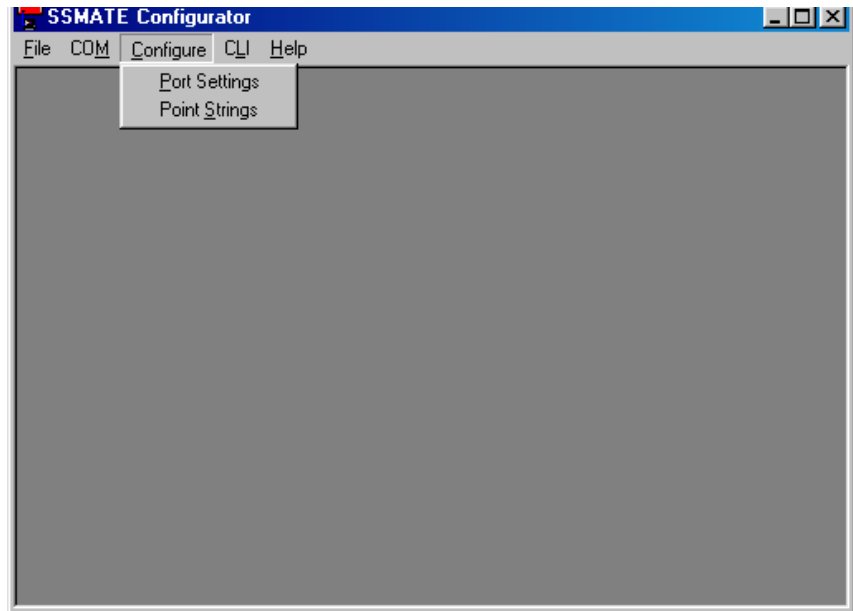
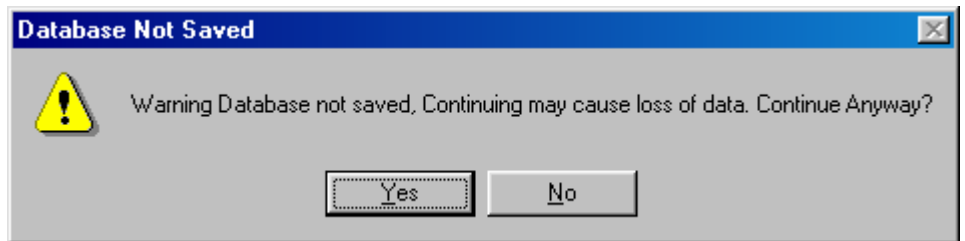


Figure 4-9 Configurator Menu

The Port Settings and Point Strings screens are illustrated on the next page.

Reminder: When a change is made to a port or a string and the screen is terminated before the configuration is saved, the following message will appear:



A response of "Yes" simply closes the screen with the values of the current configuration remaining intact. If the program is terminated before the File > Save command is invoked, there is no permanent file of these latest changes. If Download is selected from either screen, the changes are loaded to the WS2000 memory. Following Download, the upload command can be used to restore the latest changes.

4.5.3.1 Port Properties:

This command loads Configure Port Settings screen (Figure 4-10). This screen is used to set the serial port parameters for ports 1-5 of the WS2000 SSMATE. Configurable parameters are port speed, data rate, parity, stop bits and signalling service.

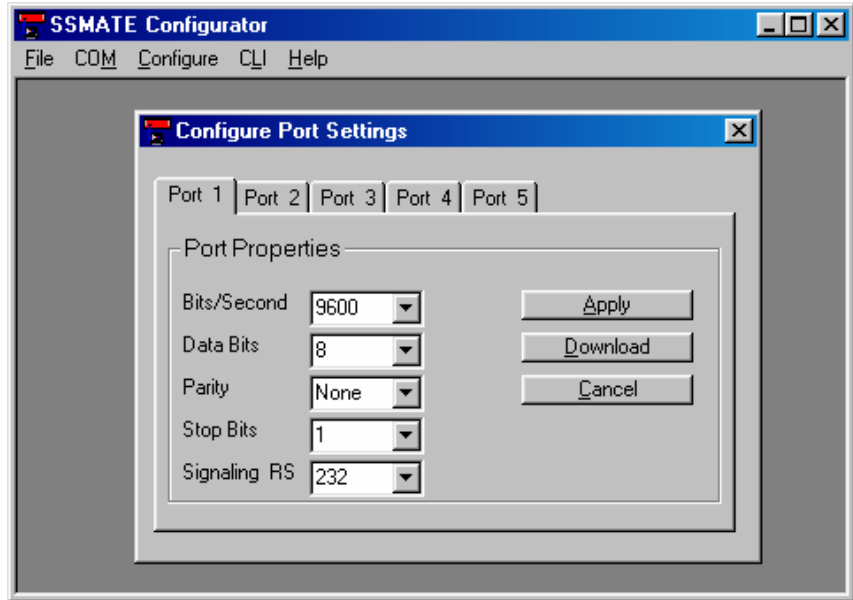
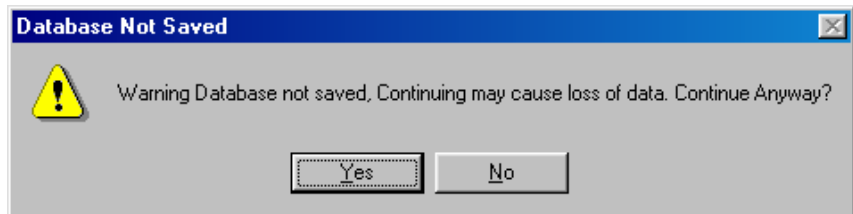


Figure 4-10 Configure Port Settings Screen

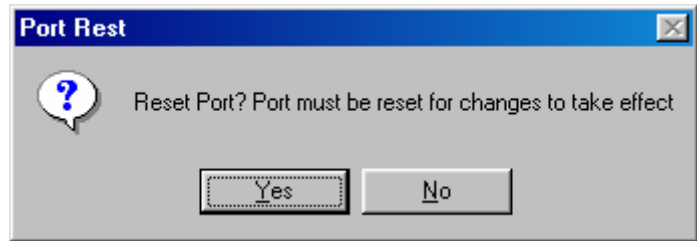
Select Port 1 through Port 5 tags. Once a change is made to a port you will be prompted to save the new setting before proceeding to a new port or exiting the Configure Port screen.



Use the “Apply”, “Download” and “Cancel” option buttons to:

Apply The current settings to the Current Configuration settings

Download Download the current settings to the WS2000 SSMATE. You will be prompted to reset the SSMATE port for the



changes to take affect. This command also invokes the Apply selection.

Cancel Cancel changes and revert to previously set values. The settings for the currently displayed port will return to the previously set values. The screen will display these values.

Reminder: The values set in this screen are loaded to the WS2000 SSMATE unit when the Download selection is made. The Reset Port command must be invoked before the changes take affect on the WS2000 ports.

4.5.3.2 Point Strings:

This command opens the Configure Point Strings screen (Figure 4-11). Select points 1-32 by mouse clicking the appropriate tab. View or modify the five text strings and make port assignments for the string block to be sent from. In the following example the 5 text strings will be sent out port 2 of the SSMATE unit when point 1 becomes active (grounded).

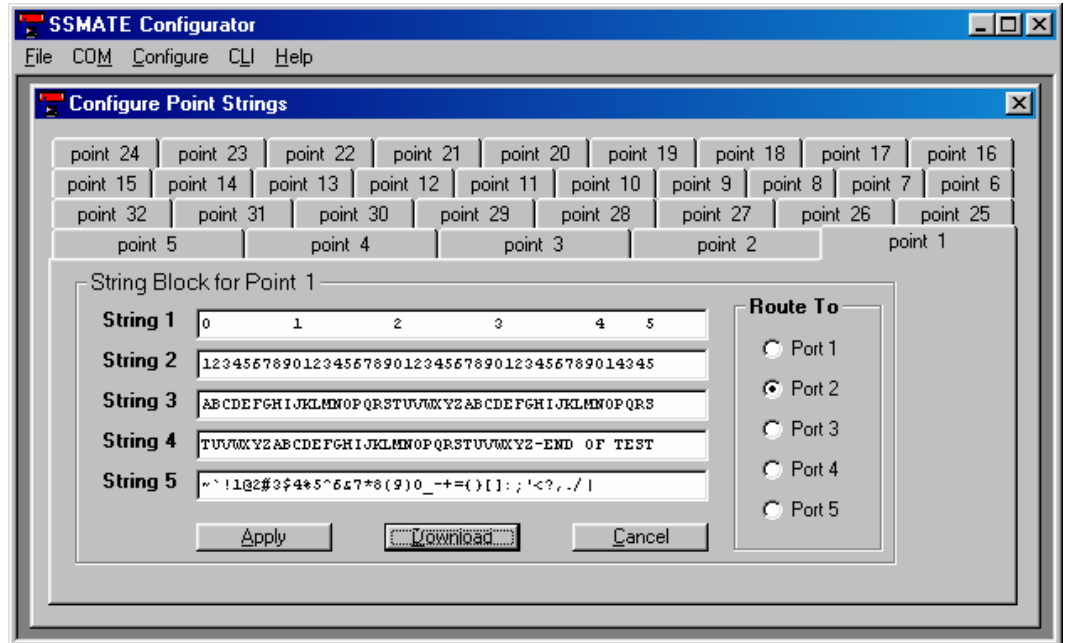


Figure 4-11 Configure Point Strings Screen

Use the “Apply”, “Download” and “Cancel” option buttons to:

Apply The current settings to the Current Configuration settings

Download Download the changed string(s) setting to the WS2000 SSMATE. This command also invokes the Apply selection.

Cancel Cancel changes and revert to previously set values. The settings for the currently displayed port will return to the previously set values. The screen will display these values.

4.5.4 CLI (Command Line Interface)

The selections on this page parallel the CLI commands described in section 4.

From the **CLI** (Command Line Interface) menu (Figure 4-12), you can select the **Version**, **Port Reset**, and **Initialize** WS2000 SSMATE CLI commands. These commands present a screen relevant to the command that shows the command response from the WS2000 SSMATE. While in these screens, you do not have direct access to the WS2000 SSMATE.

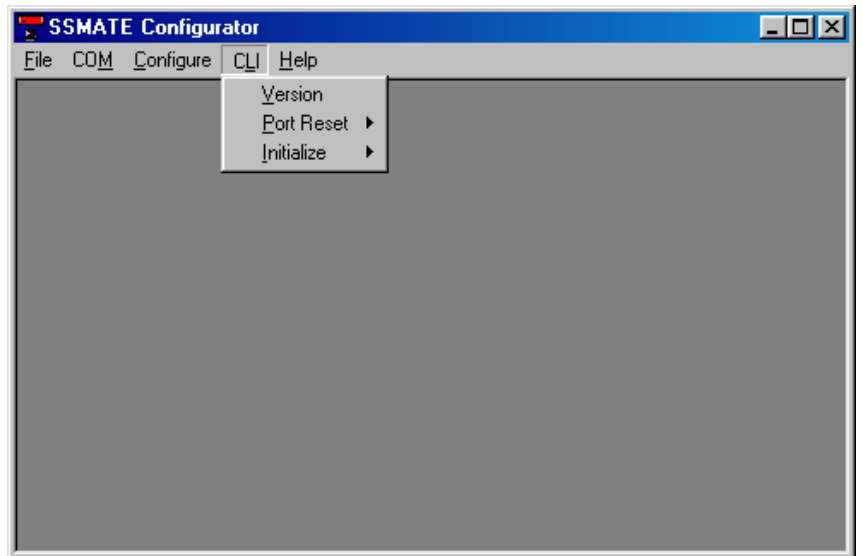
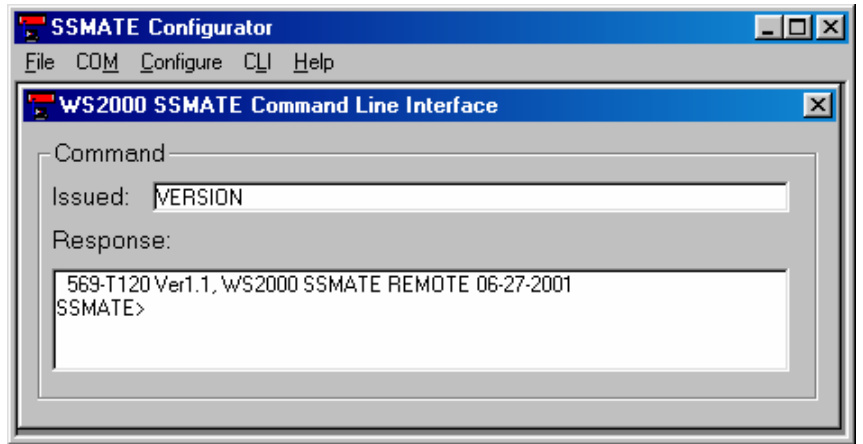


Figure 4-12 CLI Menu

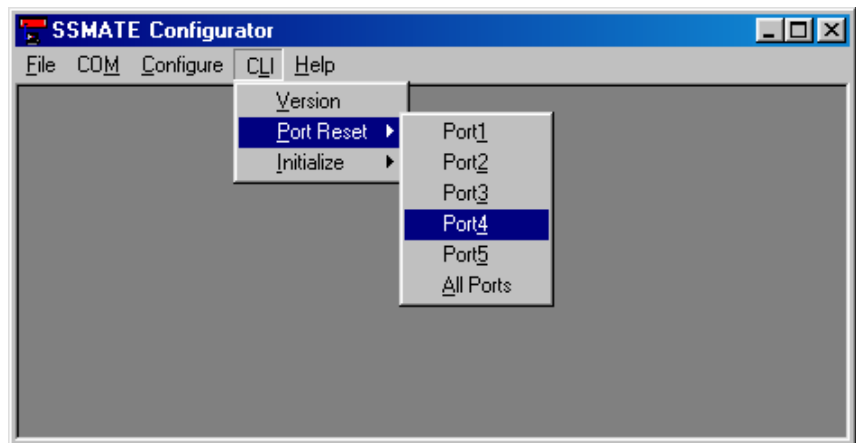
4.5.4.1 Version:

This command displays the WS2000 SSMATE Command Line Interface screen displaying the software revision level loaded into the WS2000 SSMATE.

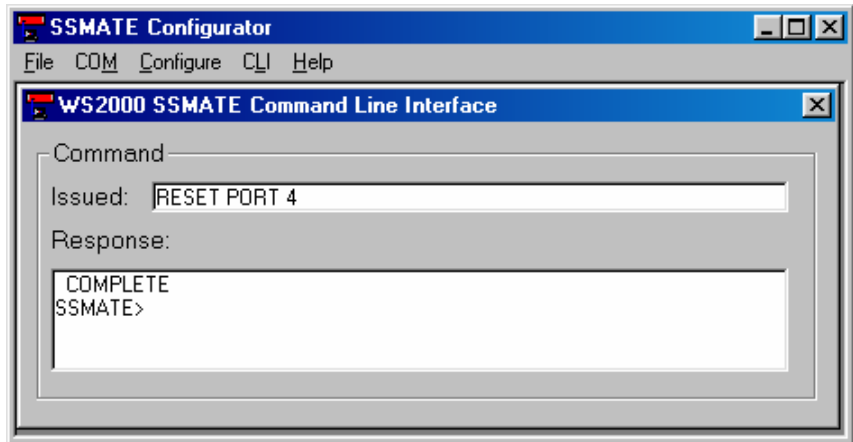


4.5.4.2 Port Reset:

This menu item sends a **Reset Port** command to the WS2000 SSMATE with the same affect explained in paragraph **Error! Reference source not found..** found on page **Error! Bookmark not defined..**



From this menu, Ports 1 through 5 or All Ports can be reset to the values downloaded from the Set Port screen. The following screen is returned when Reset Port 4 is selected.



4.5.4.3 Initialize:

This command returns the ALL port settings, All string settings, or both to the factory default settings. See Figure 4-13.

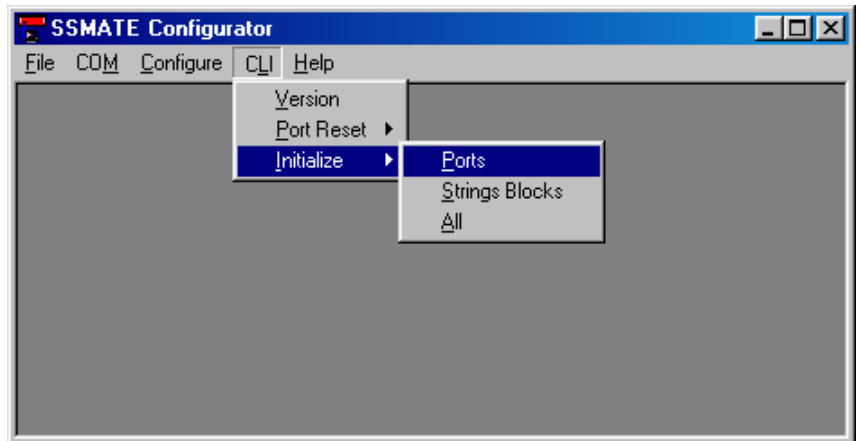
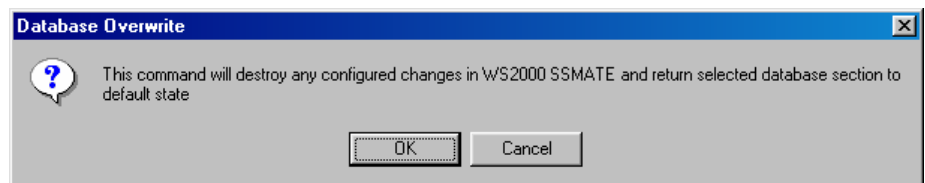


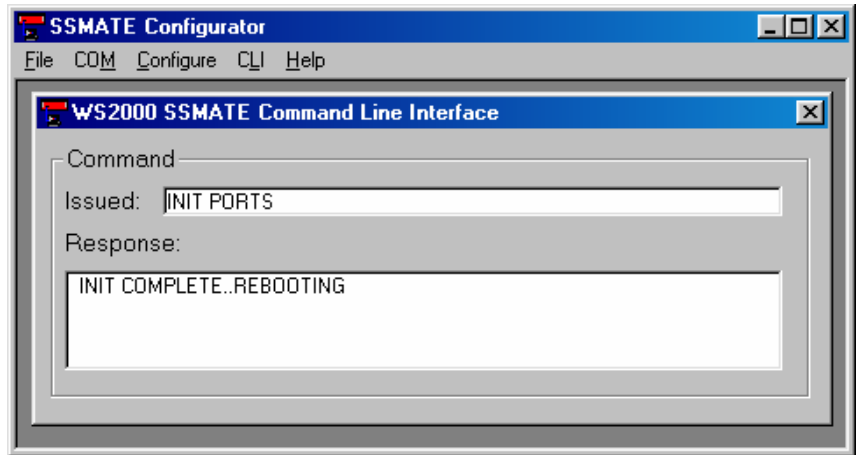
Figure 4-13 CLI Initialize Ports

The program will request a verification to affirm that the Initialize command is indeed what you want to do. Respond by mouse-clicking the “OK” or “Cancel” selection.



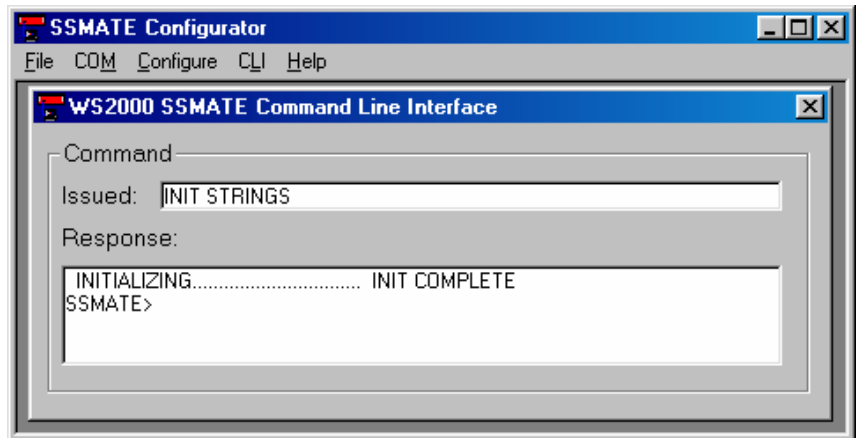
4.5.4.4 Initialize Ports

Following the Initialize Ports command the SSMATE unit will reboot.



4.5.4.5 Initialize String Blocks

Initializing the String Blocks does not invoke a reboot upon completion.



4.5.5 Help Menu

The **Help** menu gives you access to various Help topics related to the WS2000 SSMATE Configurator. Use the "About" to display the version of the Configurator running on your machine.

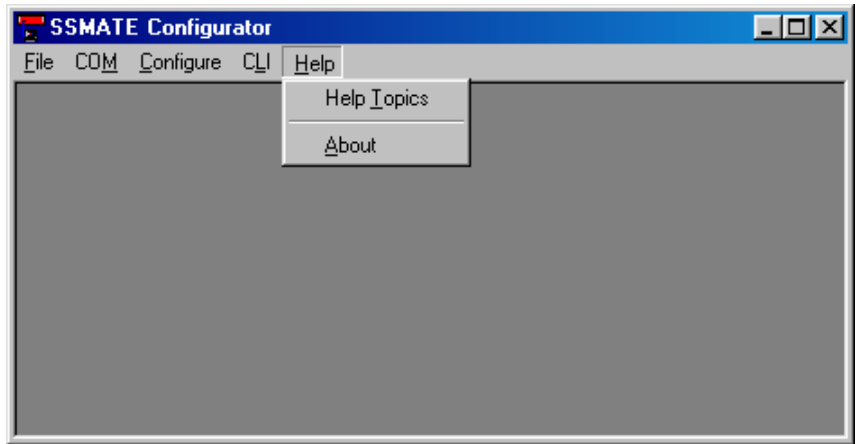


Figure 4-14 Help Menu

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