

ECcomTM

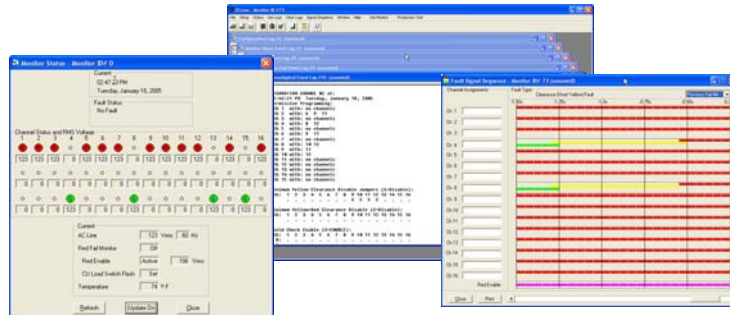
Signal Monitor Communications Software Operations Manual

THIS MANUAL CONTAINS TECHNICAL INFORMATION FOR THE *ECcom*TM SIGNAL MONITOR COMMUNICATIONS SOFTWARE.

INFORMATION CONTAINED HEREIN IS PROPRIETARY TECHNICAL INFORMATION OF EBERLE DESIGN INC. PUBLICATION, REPRODUCTION OR USE IN WHOLE OR PART IS NOT PERMITTED EXCEPT UNDER TERMS AGREED UPON IN WRITING. *ECcom* IS A TRADEMARK OF EBERLE DESIGN INC. © COPYRIGHT 2008 EDI.

VERSION 3.7.0

REVISION: DECEMBER 2008
pn 888-1000-001



EBERLE DESIGN, INC.

3819 East LaSalle Street Tel: 480-968-6407
Phoenix, AZ 85040 USA Fax: 602-437-1996
www.EDITraffic.com



<blank>

Table of Contents

Section 1 General	1
1.1 Introduction	1
1.2 <i>ECcom</i> Functions.....	1
1.2.1 General Data	1
1.2.2 Current Status (S).....	1
1.2.3 Previous Fault (PF) Event Log	1
1.2.4 AC Line (AC) Event Log	2
1.2.5 Monitor Reset (MR) Event Log	2
1.2.6 Configuration (CF) Event Log	2
1.2.7 Signal Sequence Log	2
Section 2 Installation	3
2.1 Hardware Requirements	3
2.2 Software Installation.....	3
2.3 Software Updates	3
2.4 EIA-232 Cable.....	3
2.4.1 CMU-212 Cable	4
2.5 Ethernet LAN Cable	4
Section 3 Main Menus	5
3.1 File Menu	5
3.1.1 OPEN FILE.....	5
3.1.2 SAVE FILE AS... ..	5
3.1.3 PRINT FILE	5
3.1.4 NEW CONFIG	5
3.1.5 CONFIG REPORT	6
3.1.6 EXIT	6
3.2 Setup Menu.....	6
3.2.1 COMM PORT	6
3.2.1.1 EIA-232 PORT.....	6
3.2.1.1.1 SETTINGS.....	6
3.2.1.1.2 GET MONITOR SETTINGS	7
3.2.1.2 ETHERNET LAN PORT	7
3.2.1.2.1 SETTINGS.....	7
3.2.1.2.2 LAN PORT TEST.....	7
3.2.1.2.3 LAN SEARCH.....	7
3.2.1.3 OPEN PORT	8
3.2.1.4 CLOSE PORT	8
3.2.1.5 DIAL MODEM.....	8
3.2.1.6 HANGUP MODEM	8
3.2.2 PREFERENCES.....	8
3.2.2.1 UPDATE	8
3.2.2.2 PRINT COLOR	8
3.2.2.3 TEMPERATURE SCALE	8
3.3 Status Menu.....	9
3.3.1 GET STATUS	9
3.3.1.1 REFRESH	9
3.3.1.2 UPDATE	9
3.3.1.3 MMU-16E (Type 12 mode) Status Window Example.....	9
3.3.2 TIME.....	9
3.3.2.1 GET TIME.....	9
3.3.2.2 SET TIME	9

3.3.3 MONITOR ID.....	9
3.3.3.1 GET MONITOR ID	9
3.3.3.2 SET MONITOR ID.....	10
3.3.4 MONITOR CONFIGURATION	10
3.3.4.1 210ECL and 2010ECL Configuration Window Example	10
3.3.5 SET OPTIONS.....	10
3.3.6 GET CONFIGURATION CHECK VALUE.....	11
3.3.7 GET BT233 STATUS	11
3.4 Get Logs Menu	11
3.4.1 ALL LOGS	11
3.4.2 PREVIOUS FAIL LOG	11
3.4.3 AC LINE LOG	11
3.4.4 MONITOR RESET LOG	11
3.4.5 CONFIGURATION LOG.....	11
3.5 Clear Logs Menu.....	12
3.5.1 ALL LOGS	12
3.5.2 PREVIOUS FAIL LOG	12
3.5.3 AC LINE LOG	12
3.5.4 MONITOR RESET LOG	12
3.5.5 CONFIGURATION LOG.....	12
3.6 Signal Sequence Menu.....	12
3.6.1 GET SIGNAL SEQUENCE LOG	12
3.6.2 OPEN SIGNAL SEQUENCE LOG	13
3.6.3 SAVE SIGNAL SEQUENCE LOG	13
3.6.4 PRINT SIGNAL SEQUENCE WINDOW.....	13
3.7 Help Menu.....	13
3.7.1 ABOUT MONITOR	13
3.7.2 ABOUT ECcom.....	13
3.8 Init Monitor Menu	13
Section 4 Trouble Shooting	14
4.1 Cable Problems	14
4.2 Communication Parameter Problems.....	14
4.3 SSM-LE Compatibility	14
4.4 Error Messages.....	14
4.4.1 Open Port Error	14
4.4.2 Comm Settings Error	14
4.4.3 Rx Timeout Error	14
4.4.4 Checksum Error.....	14
4.4.5 Invalid Data Error.....	15
4.4.6 Bad Data Error.....	15
4.4.7 Sort Error	15
4.4.8 Monitor ID Error	15
4.5 Technical Support.....	15

Section 1 General

1.1 INTRODUCTION

This manual covers the installation and operation of the EDI *ECcom*TM Software package running on a Microsoft WindowsTM based Personal Computer (PC). It provides the user with a general understanding of the operating principles necessary to install and operate the *ECcom*TM software.

The *ECcom*TM Software is used to interface a PC to the model 210ECL, 2010ECL, 2018KCL, SSM-LE, MMU-16E, MMU-16LE *SmartMonitor*TM and CMU-212 Signal Monitor. These models provide an EIA-232 serial port or Ethernet LAN port that gives the signal monitor the capability to communicate with a Controller Unit or PC based operational software for status and fault event data. These models also include an enhanced event logging capability for full time-stamped event historical reporting.

Where not specified otherwise, the information in this manual will apply to all models. Information applying only to a specific model will be noted as such.

Please note that not all SSM-LE series monitors have the capability to communicate with the *ECcom*TM software depending on their date of manufacture. Compatible SSM-LE units have been manufactured after January of 2001 and will have the words "RMS-Engine" in the sine wave logo on the front panel. Please consult the factory for any further compatibility assistance.

1.2 ECCOM FUNCTIONS

The *ECcom*TM program will display the unit Status, Configuration, Previous Fault event log, AC Line event log, Manual Reset event log, Configuration event log and Signal Sequence Log. All events are time stamped with the time and date of the event. The Chronological event log will sort all four event types by time and date.

The following data is available:

1.2.1 GENERAL DATA

Monitor ID#: a four digit (0001-9999) ID number may be assigned to the monitor.

Time and Date: each event is marked with the time and date of occurrence.

Monitor Name: a thirty character name may be assigned to the monitor

Event Number: identifies the record number in the log. Event #1 is the most recent event.

1.2.2 CURRENT STATUS (S)

Fault Type: the fault type description.

Field Status: the current RYG(W) field status if the monitor is not in the fault state or the latched field status and fault channel status at the time of the fault.

Cabinet Temperature: the current temperature if the monitor is not in the fault state or the latched temperature at the time of the fault.

AC Line Voltage: the current AC Line voltage if the monitor is not in the fault state or the AC Line voltage at the time of the fault.

Control Input Status: the current state of the Red Enable input and other control inputs if the monitor is not in the fault state or the status latched at the time of the fault.

1.2.3 PREVIOUS FAULT (PF) EVENT LOG

Fault Type: the fault type description.

Field Status: the latched field status and RMS voltages and fault channel status at the time of the fault.

Cabinet Temperature: the current temperature if the monitor is not in the fault state or the latched temperature at the time of the fault.

AC Line Voltage: the current AC Line voltage if the monitor is not in the fault state or the AC Line voltage at the time of the fault.

Control Input Status: the current state of the Red Enable input and other control inputs if the monitor is not in the fault state or the status latched at the time of the fault.

1.2.4 AC LINE (AC) EVENT LOG

Event Type: describes the type of AC Line event that occurred.

Power-up: - AC on, monitor performed a cold start

Brown-out: - AC Line < drop-out level

Restore: - AC restored from AC brown-out or AC interruption, no cold start

AC Line Voltage: the AC Line voltage at the time of the event.

1.2.5 MONITOR RESET (MR) EVENT LOG

The monitor was reset from a fault by the front panel Reset button or External Reset input or non-latching fault clear.

1.2.6 CONFIGURATION (CF) EVENT LOG

Program Card Matrix: the permissive programming for each channel.

All other programming parameters including switches, jumpers, or control inputs:

1.2.7 SIGNAL SEQUENCE LOG

Show all channel states for up to 30 seconds prior to the current fault trigger point. Display resolution is 50 milliseconds.

Section 2 Installation

2.1 HARDWARE REQUIREMENTS

To run *ECcom*TM, the following hardware is required:

Personal computer running Microsoft Windows 2000, NT, XP or Vista.

At least 32 Mb of ram.

At least 10 Mb of free space on the PC hard disk.

Available serial port (COM1 – COM32767) or LAN Network port

2.2 SOFTWARE INSTALLATION

CD-ROM Media:

Insert the *ECcom*TM installation CD-ROM in the PC CD-ROM drive.

Choose Start menu and select Run. Then type X:setup (where X is the drive letter of the CD-ROM drive and press Enter.

The Installation Wizard will check the system and the installation process will begin. Answer the questions asked by the installation program.

Once installation is complete, the *ECcom*TM program icon will be added to the Windows system. The icon is found by selecting Start/Programs/Eberle Design/EDI *ECcom*.

The time and date formats and colors used by *ECcom*TM are determined by the system settings in Windows. See the Windows Control Panel for details.

2.3 SOFTWARE UPDATES

The most current version of the *ECcom*TM software can be downloaded from the Eberle Design web site at www.editraffic.com. **Before installing a new update, the currently installed version of the *ECcom*TM program should first be uninstalled from the computer.**

2.4 EIA-232 CABLE

Typically a straight through cable can be used when connecting the monitor unit to a PC COMM port with a DB-9 connector.**

Refer to the following lists to properly configure an interconnect cable between the PC serial communications port and the Monitor EIA-232 port before running the program. The following is typical but should be verified with the operation guide for the PC being used.

A typical cable assembly for a DB-9 connector on the PC would be as follows:

<u>PC DB-9</u>		<u>Monitor DB-9</u>
RX pin 2	connect to	TX pin 2
TX pin 3	connect to	RX pin 3
DTR pin 4	connect to	DTR pin 4 (optional)
GND pin 5	connect to	GND pin 5

For non-PC ports, some handshake signals may need to be connected on the cable to satisfy the communications handshaking inputs of the device; DTR, DSR, and CTS are typically tied together for the device handshake signals. If this handshake connection is required, DTR pin 4 should be connected to

DSR pin 6 and CTS pin 8 on the device DB-9 connector. Alternatively, jumper options on the monitor can be used to provide this handshake wrap around if required. A standard cable may then be used. DTR in the low state can be used to hold the Monitor transmitter.

A typical cable assembly for a DB-25 connector on the PC would be as follows:

<u>PC DB-25</u>		<u>Monitor DB-9</u>	
RX pin 3	connect to	TX pin 2	
TX pin 2	connect to	RX pin 3	
DTR pin 20	connect to	DTR pin 4	(optional)
GND pin 7	connect to	GND pin 5	

For non-PC ports, some handshake signals may need to be connected on the cable to satisfy the communications handshaking inputs of the device; DTR, DSR, and CTS are typically tied together for the device handshake signals. If this handshake connection is required, DTR pin 20 should be connected to DSR pin 6 and CTS pin 5 on the device DB-25 connector. Alternatively, jumper options on the monitor can be used to provide this handshake wrap around if required. A standard cable may then be used. DTR in the low state can be used to hold the Monitor transmitter.

2.4.1 CMU-212 CABLE

****NOTE: The model CMU-212 ITS Cabinet Monitor Unit requires a null modem cable to communicate with a PC.** The connections are as follows:

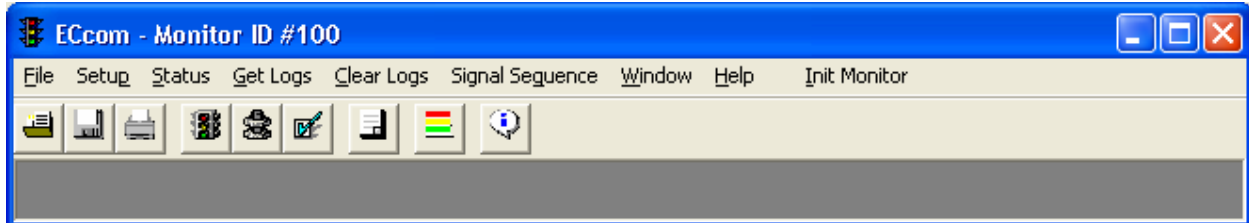
<u>PC DB-9</u>		<u>Monitor DB-9</u>	
RX pin 2	connect to	TX pin 3	
TX pin 3	connect to	RX pin 2	
GND pin 5	connect to	GND pin 5	

2.5 ETHERNET LAN CABLE

The LAN cable required is a typical Cat-5 network cable using the 8 pin RJ-45 connector. If the connection is from the monitor to a switch or hub, a standard LAN cable is needed. If the connection is from the monitor directly to a network adaptor (PC), a cross-over or patch cable is needed.

Section 3 Main Menus

Once the *ECcom*TM program is launched, the Main page will initially appear as shown below:




3.1 FILE MENU

3.1.1 OPEN FILE...

The FILE / OPEN FILE menu item is used to open saved Event Log files (.LOG) or Signal Sequence files (.SSQ) or MMU16LE *SmartMonitor* Configuration files (.CFG). The file type filter parameter defaults to “.LOG”. The filter offers values of “*.LOG” or “*.SSQ” or “*.CFG”.

Event Logs are saved as standard DOS text files with the “.LOG” extension. The Signal Sequence files are saved in a proprietary *ECcom*TM format with the “.SSQ” extension.




The  tool button will also provide the OPEN FILE function.

3.1.2 SAVE FILE AS...

The FILE / SAVE FILE AS menu item is used to save individual Event Logs or Signal Sequence Logs to disk. The log file name will then be displayed in the Log window title area. If the current active Log has not yet been saved, this menu item will query for a name and path.

Event Logs are saved as standard DOS text files with the “.LOG” extension. The Signal Sequence files are saved in a binary *ECcom*TM format with the “.SSQ” extension.




The  tool button will also provide the SAVE FILE AS function.

3.1.3 PRINT FILE

The FILE / PRINT FILE menu item is used to print the active Event Log or Signal Sequence Log to the current Windows default printer. The Windows Printer Setup application should be used to configure any desired printer options.



The  tool button will also provide the PRINT FILE function.

3.1.4 NEW CONFIG

The FILE / NEW CONFIG menu item is used to open a default MMU16LE *SmartMonitor* Configuration Form without having a monitor connected. All parameters may be set including those marked as READ ONLY. The final configuration may then be saved to disk as a file (SAVE PARAMETERS TO FILE) or uploaded to a *SmartMonitor* (SAVE PARAMETERS TO MONITOR).

If READ ONLY parameters are modified on the Configuration form they will not affect the settings of the *SmartMonitor* when uploaded to the monitor. They will be saved in the disk file format for documentation

purposes.

Configuration files are saved as binary files with the “.CFG” extension.

3.1.5 CONFIG REPORT

The FILE / CONFIG REPORT menu item is used to print an MMU16LE SmartMonitor Configuration Form for a hardcopy text report.

3.1.6 EXIT

The FILE / EXIT menu item will close all active windows and exit *ECcom*TM.

3.2 SETUP MENU

3.2.1 COMM PORT

The *ECcom*TM program is capable of serial asynchronous communications to the monitor via a standard EIA-232 type Comm port available on most PCs. To configure this mode, select the EIA-232 option in the PORT SELECT frame of the Communications window. *ECcom*TM is also capable of using a network LAN port to communicate to an Ethernet capable monitor. To configure this mode, select the LAN option in the PORT SELECT frame of the Communications window. See sections 3.2.1.1.1 and 3.2.1.2.1.

3.2.1.1 EIA-232 PORT

3.2.1.1.1 SETTINGS...

The SETUP / COMM / SETTINGS menu item is used to configure the PC communications port. The default settings are 9600 baud, Even parity, COM1, and Rx Timeout of 1 second. Some monitors have the capability to accept and set these parameters in the monitor if it is connected to the PC when the OK button is pressed. For this synchronization to occur correctly the PC port parameters must initially match the monitor port parameters. **Older monitor products may only support 1200 baud rates.**

The COM port selected can be specified as 1 through 32767. The pull down menu values for the COM PORT NUMBER will offer values from 1 through 10. The COM PORT NUMBER can also be directly typed into the text field to select any value from 1 through 32767.

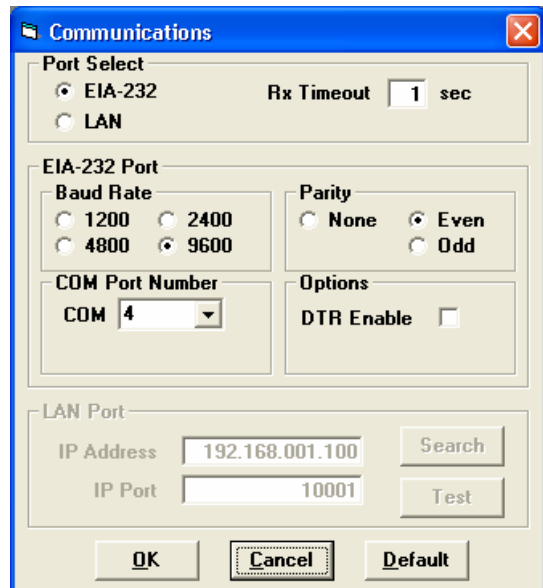
A command line option for the COM PORT NUMBER can also be added to the *ECcom*TM shortcut used to launch the program. The command line should be specified as follows:

```
"<path>\ECcom.exe" /comm=X
```

Where X is the COM PORT NUMBER port to be connected to. The software accommodates COMM1 through COMM32767 (X = 1 through 32767). The <path> parameter is dependant on the installation location of the *ECcom*TM software and is "C:\Program Files\EDI ECcom" by default.

The RX TIMEOUT parameter determines how long the *ECcom*TM software should wait for a response from the monitor before generating an error message. This parameter may vary depending on system communications latency. For direct connections to a PC, the default of 1 second is usually adequate.

The DTR ENABLE option can be used to enable or disable the DTR handshaking requirement in the monitor unit. If the DTR ENABLE box is checked, the DTR input of the monitor must be in the high state for the monitor to transmit a response message. Not all monitors have this capability. Consult the appropriate Operations Manual for the monitor unit.



3.2.1.1.2 GET MONITOR SETTINGS

The SETUP / COMM / GET MONITOR SETTINGS menu item is used to poll the monitor for its current baud rate, parity, and DTR handshake settings. Once the settings have been detected the SETTINGS window opens to show the parameters. The parameters can then be modified if desired. This function may take several seconds to complete depending on the RX TIMEOUT parameter value.

3.2.1.2 ETHERNET LAN PORT

3.2.1.2.1 SETTINGS...

The SETUP / COMM / SETTINGS menu item is used to configure the PC communications port.

The IP Address field is the IP Address of the monitor unit to be connected to. The software accommodates standard format for IP addresses such as "192.168.1.100" for example. If operating on a Windows server network, a Windows DNS "friendly" name may also be supplied. Note that digits of the IP address and Subnet Mask can be supplied in Octal, Hex, and Decimal.

A command line option for the IP Address can also be added to the ECcom™ shortcut used to launch the program. The command line should be specified as follows:

"<path>\ECcom.exe" /ipad=X

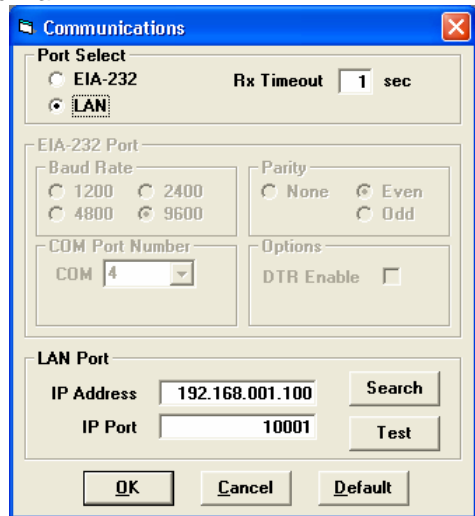
Where X is the IP address of the device to be connected with, for example, 192.168.1.100. The <path> parameter is dependant on the installation location of the ECcom™ software and is "C:\Program Files\EDI ECcom" by default.

The IP Port value should be left at the default value of 10001. If needed, a different IP Port value can be supplied with a command line option as follows:

"<path>\ECcom.exe" /ippo=X

The RX TIMEOUT parameter determines how long the ECcom™ software should wait for a response from the monitor before generating an error message. This parameter may vary depending on system communications latency. For direct connections to a PC, the default of 1 second is usually adequate.

The monitor LAN port should not require configuration by the user other than the Network Parameters. To set the network parameters of the monitor use the ECcom "Search" function located on the SETUP / COMM / SETTINGS window (see Section 3.2.1.2.3).

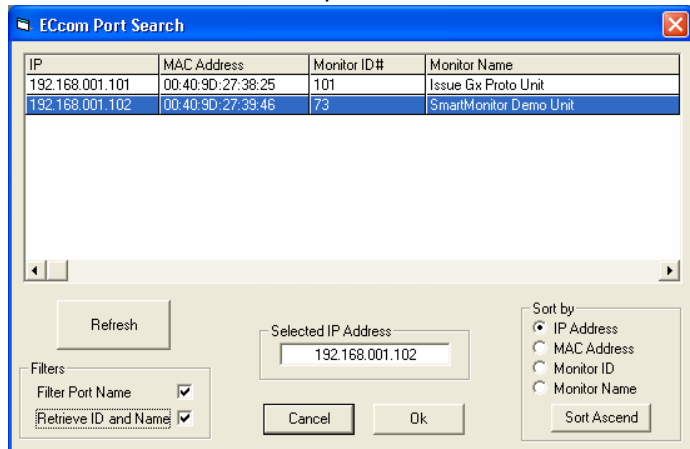


3.2.1.2.2 LAN PORT TEST

Once an IP address has been selected by manual entry, command line option, or as a result of the Search function (see section 3.2.1.2.3), the TEST button can be used to verify a valid connection with the monitor. If the network connection is complete, the monitor should respond with the About Monitor window as shown in section 3.7.1.

3.2.1.2.3 LAN SEARCH

The SEARCH function can be used to obtain a list of monitors connected to the LAN network port. The Search function runs on any system capable of sending multicast IP/UDP packets on a network. Search allows ECcom™ to identify all LAN enabled monitors attached to a network by sending out a multicast packet. The monitors respond to the multicast packet and identify themselves to the ECcom™ program. The Filter Port Name check box will cause ECcom to filter the



search responses to only those network devices that are configured as EDI monitors (Port Name = EDI).

Once a monitor has identified itself, the network configuration parameters may be modified if necessary by right clicking on the table entry. This provides mechanism for configuring the IP address, subnet mask, and default gateway of the monitor port. Note that the network parameters are accepted only in decimal notation, hex and octal digits are not allowed. The Monitor ID can also be displayed. If the Retrieve ID and Name box is checked, the Monitor ID and Monitor Name will be retrieved from each identified monitor. Checking this box will slow the Search function dramatically.

3.2.1.3 OPEN PORT

The SETUP / COMM / OPEN PORT menu item is used to open the selected PC communications port. When the port is opened, Windows reserves the use of that port for *ECcom*TM. Other applications may not use the port. If the port is already being used by another application, a "Device Not Available" or "Port Already Open" error message is generated.

Selecting the SETUP / COMM / OPEN PORT menu item will toggle the state of the port from Closed to Open.

3.2.1.4 CLOSE PORT

The SETUP / COMM / CLOSE PORT menu item is used to close the selected PC communications port.

Selecting the SETUP / COMM / CLOSE PORT menu item will toggle the state of the port from Open to Closed.

The communications port must be open to provide access to the remaining main menu items. *ECcom*TM will attempt to open the port when launched.

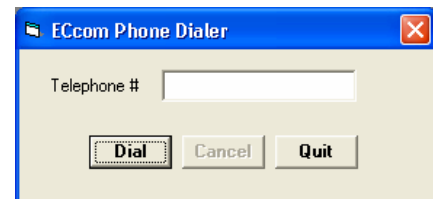
3.2.1.5 DIAL MODEM...

The SETUP / COMM / DIAL MODEM menu item is used to input a telephone number for the modem connected to the PC communications port to dial.

A command line option to supply the telephone number can also be added to the *ECcom*TM shortcut used to launch the program. The command line should be specified as follows:

`"<path>\ECcom.exe" /dial=X`

Where X is the telephone number to be dialed. The <path> parameter is dependant on the installation location of the *ECcom*TM software and is "C:\Program Files\EDI ECcom" by default.



The DIAL button will command the modem connected to the PC communications port to dial the number and connect to the receiving modem. Once connected, the Dial Modem window can be closed.

3.2.1.6 HANGUP MODEM

Once connected, the SETUP / COMM / DIAL MODEM menu item will then be changed to SETUP / COMM / HANGUP MODEM. Clicking on the SETUP / COMM / HANGUP MODEM menu item will cause the modem to disconnect and hang-up the telephone line.

3.2.2 PREFERENCES...

3.2.2.1 UPDATE

The refresh rate (1:99 seconds) of the Get Status window is set here.

3.2.2.2 PRINT COLOR

The Signal Sequence Log can be printed in color if the attached printer has the capability. If a Black & White or Greyscale printer is connected, select Black & White.

3.2.2.3 TEMPERATURE SCALE

Temperature readings can be scaled in Fahrenheit degrees or Celsius degrees.

3.3 STATUS MENU

3.3.1 GET STATUS

The STATUS / GET STATUS menu item will retrieve and display a snapshot of the current monitor status. If the monitor is not in the fault state, the Status Window will show the current monitor status. If the monitor is in the fault state, the Status Window will show the monitor status at the time of the fault.



The  tool button will also provide the GET STATUS function.

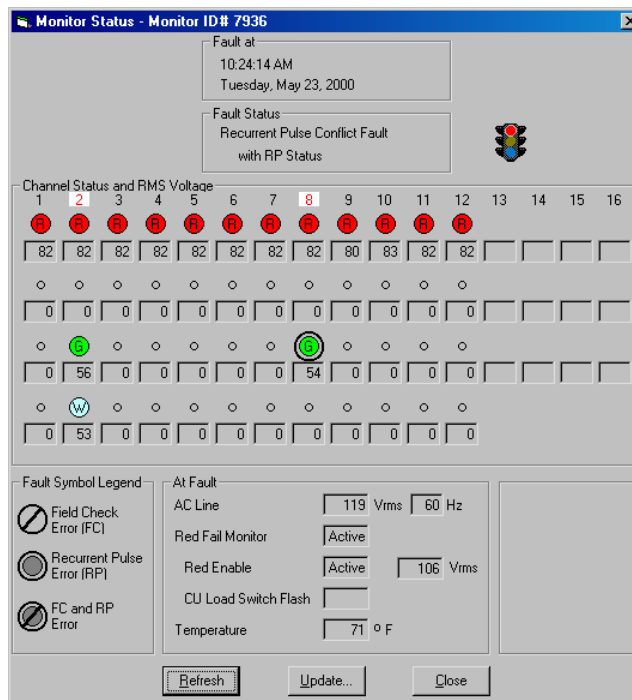
3.3.1.1 REFRESH

The REFRESH control button is used to refresh the Status window once with new data from the monitor.

3.3.1.2 UPDATE

The UPDATE control button is used to set the automatic refresh mode of the Status window. The refresh rate is set in the SETUP / PREFERENCES menu item. The default rate is 1 second.

3.3.1.3 MMU-16E (TYPE 12 MODE) STATUS WINDOW EXAMPLE



3.3.2 TIME...

3.3.2.1 GET TIME

The STATUS / TIME / GET TIME menu item will retrieve and display the current time and date from the monitor.

3.3.2.2 SET TIME

The STATUS / TIME / SET TIME menu item will set the current time and date in the monitor to the system time and date of the PC.

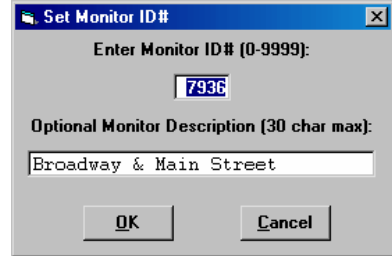
3.3.3 MONITOR ID...

3.3.3.1 GET MONITOR ID

The STATUS / MONITOR ID / GET MONITOR ID menu item will retrieve and display the four digit ID assigned to the monitor. This ID number is stored in the monitor unit.

3.3.3.2 SET MONITOR ID


The STATUS / MONITOR ID / SET MONITOR ID menu item will set the four digit ID assigned to the monitor. The ID value may range from 0 to 9999. The optional Monitor Description (if supported) can be up to 30 printable characters.



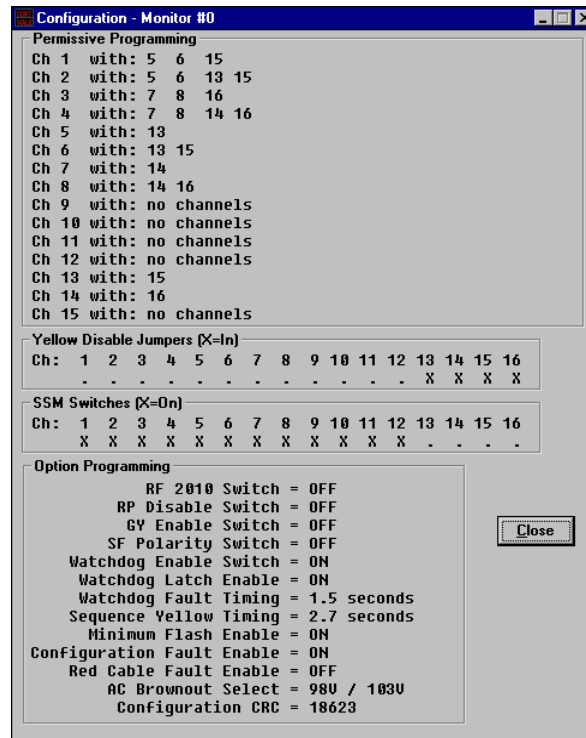
3.3.4 MONITOR CONFIGURATION

The STATUS / MONITOR CONFIGURATION menu item will retrieve and display all monitor configuration settings.



The  tool button will also provide the MONITOR CONFIGURATION function.

3.3.4.1 210ECL AND 2010ECL CONFIGURATION WINDOW EXAMPLE



3.3.5 SET OPTIONS

The STATUS / SET OPTIONS menu item is used to retrieve, display, and set the Daylight Savings Time enable flag.



3.3.6 GET CONFIGURATION CHECK VALUE

The STATUS / GET CONFIGURATION CHECK VALUE menu item is used to retrieve and display a check value for the current monitor configuration. This check value is composed of all hardware settings on the monitor including the conflict matrix, switches, and jumpers.



The  tool button will also provide the GET CONFIGURATION CHECK VALUE function.

3.3.7 GET BT233 STATUS

The STATUS / GET BT233 STATUS menu item is used to retrieve an image of the status message normally sent to the BI Tran Systems 233 operational software when used with the 210ECL or 2010ECL models.

3.4 GET LOGS MENU

The GET LOGS menu items are used to retrieve and display event logs from the monitor. Each event log has a header that contains the monitor ID number, download time and date, and number of event records. Event records are sorted with the newest event first (#1) and the oldest event last (#n) in the log.

Event logs are given a reference number as they are retrieved which is incremented for each new log. Event logs can be sized or minimized as desired. The File menu on the Main window is used to save or load event logs to and from file storage. Event logs are stored in Ascii (DOS) text format.

3.4.1 ALL LOGS

The GET LOGS / ALL LOGS menu item will retrieve all four event logs including the Previous Fail log, AC Line Event log, Monitor Reset Event log, Configuration Change Event log, and then produce a fifth chronologically sorted log of all four event categories. This Chronological Event log contains all the information of the four main logs.



The  tool button will also provide the GET ALL LOGS function.

3.4.2 PREVIOUS FAIL LOG

The GET LOGS / PREVIOUS FAIL LOG menu item is used to retrieve only the Previous Failure event log from the monitor. The records are a copy of the monitor status at the time of the fault.

3.4.3 AC LINE LOG

The GET LOGS / AC LINE LOG menu item is used to retrieve only the AC Line event log from the monitor. AC Line event types are defined as follows:

- Power-up: AC on, monitor performed a cold start.
- Power-down: AC off.
- Brownout: AC Line voltage below the dropout threshold for AC Line (AC) or Watchdog Disable (WDT).
- Restore: AC Line voltage above the restore threshold for AC Line (AC) or Watchdog Disable (WDT), or Interrupt, no cold start.

3.4.4 MONITOR RESET LOG

The GET LOGS / MONITOR RESET LOG menu item is used to retrieve only the Monitor Reset event log from the monitor. A Monitor Reset event is generated each time the monitor is reset from the fault state by the Reset button or External Reset input or a non-latching fault reset.

3.4.5 CONFIGURATION LOG

The GET LOGS / CONFIGURATION LOG menu item is used to retrieve only the Configuration Change event log from the monitor. A Configuration Change event is generated each time the monitor recognizes the configuration settings are different from the last event record.

The *> symbol is used to identify a line in the current record (event #n) which has changed from the previous Configuration event (event #n+1).

3.5 CLEAR LOGS MENU

The Clear Logs menu items are used to clear event logs in the monitor.

3.5.1 ALL LOGS

The CLEAR LOGS / ALL LOGS menu item will clear all four event logs including the Previous Fail log, AC Line Event log, Monitor Reset Event log, and Configuration Change Event log.

3.5.2 PREVIOUS FAIL LOG

The CLEAR LOGS / PREVIOUS FAIL LOG menu item is used to clear only the Previous Failure event log in the monitor.

3.5.3 AC LINE LOG

The CLEAR LOGS / AC LINE LOG menu item is used to clear only the AC Line event log in the monitor.

3.5.4 MONITOR RESET LOG

The CLEAR LOGS / MONITOR RESET LOG menu item is used to clear only the Monitor Reset event log in the monitor.

3.5.5 CONFIGURATION LOG


The CLEAR LOGS / CONFIGURATION LOG menu item is used to clear only the Configuration Change event log in the monitor.

3.6 SIGNAL SEQUENCE MENU

3.6.1 GET SIGNAL SEQUENCE LOG

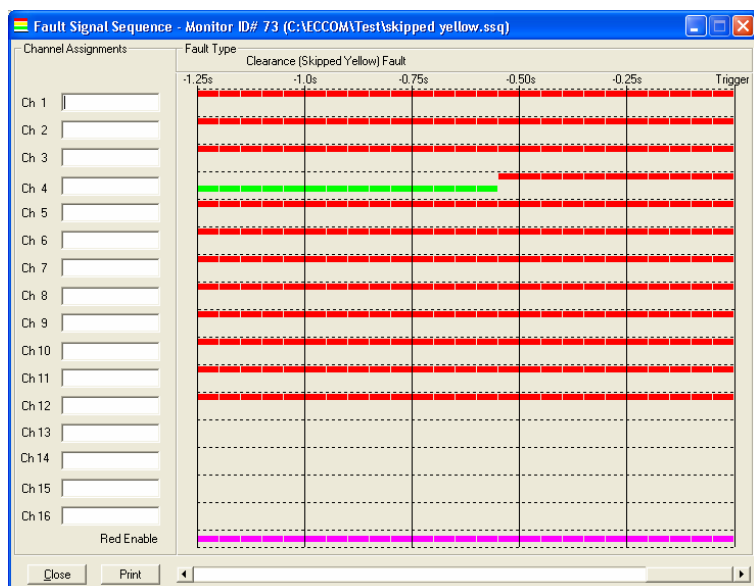
The SIGNAL SEQUENCE / GET SIGNAL SEQUENCE LOG menu item is used to view the field signal sequence history of the current fault. This history log is stored in the monitor until another fault records over it. Resetting the monitor does not clear the Signal Sequence data. The Fault Type window indicates the fault that corresponds to the Signal Sequence view. More detailed data can be obtained by reviewing the Previous Fail event log entry #1.



The  tool button will also provide the GET SIGNAL SEQUENCE LOG function.

The field signal and Red Enable states are displayed up to the point that the monitor was triggered into the fault mode. This point is displayed as the "Trigger" point. Time is viewed as progressing from left to right. Signal Sequence history is recorded in steps of 50 milliseconds. Signal states that change at a more rapid rate may not be displayed accurately.

The text boxes for each channel can be edited with the phase description of the monitor channel if desired. These channel labels are stored in the PC with the ID number of the monitor and will be retrieved and displayed when a Signal Sequence History log is loaded for a monitor with the same ID number.



3.6.2 OPEN SIGNAL SEQUENCE LOG

The SIGNAL SEQUENCE / OPEN SIGNAL SEQUENCE LOG menu item is used to open previously saved Signal Sequence trace log files. These file names have a default extension of SSQ. The text box descriptions will be loaded for the new file according to the monitor ID number. The FILE / OPEN FILE menu item can also be used to open a saved Signal Sequence file.




The  tool button will also provide the OPEN SIGNAL SEQUENCE LOG function.

3.6.3 SAVE SIGNAL SEQUENCE LOG

The SIGNAL SEQUENCE / SAVE SIGNAL SEQUENCE LOG menu item is used to save the current Signal Sequence History log to disk. These file names have a default extension of SSQ. The FILE / SAVE FILE menu item can also be used to save a Signal Sequence file.



The  tool button will also provide the SAVE SIGNAL SEQUENCE LOG function.

3.6.4 PRINT SIGNAL SEQUENCE WINDOW

The SIGNAL SEQUENCE / PRINT SIGNAL SEQUENCE WINDOW menu item is used to print the Signal Sequence History log to the current Windows default printer. The Windows Printer Setup application should be used to configure any desired printer options. The FILE / PRINT FILE menu item can also be used to print a saved Signal Sequence file.




The  tool button will also provide the PRINT SIGNAL SEQUENCE LOG function.

3.7 HELP MENU

3.7.1 ABOUT MONITOR

The HELP / ABOUT MONITOR menu item is used to display the following parameters from the monitor: Monitor model name, Monitor ID, Monitor firmware type, Monitor firmware version, Monitor communications module version, RMS-Engine firmware type, and RMS-Engine firmware version.



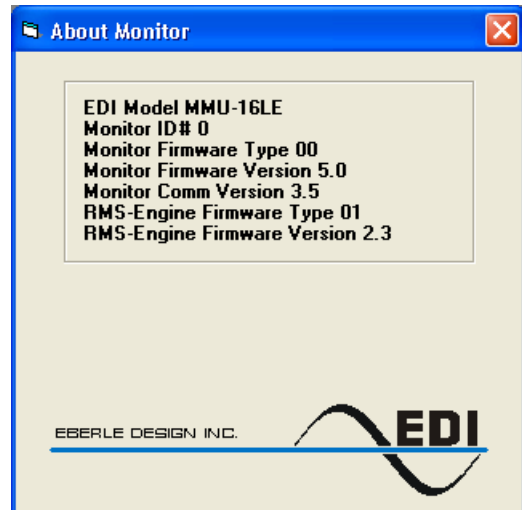
The  tool button will also provide the ABOUT MONITOR function.

3.7.2 ABOUT ECCOM

The HELP / ABOUT ECCOM menu item is used to display the version number of ECcom™ and contact information for Eberle Design Inc.

3.8 INIT MONITOR MENU

The INIT MONITOR menu item can be used to clear all monitor event logs, set the monitor ID to 0000, and set the monitor clock in one operation. The monitor event logs should always be cleared before installing a monitor unit with data from a previous cabinet or test operation.



Section 4 Trouble Shooting

4.1 CABLE PROBLEMS

Most communication problems with *ECcom*TM are caused by improper or damaged cable assemblies. Be sure that the cable is correctly built and wired to the pin list shown in Section 2.4. Hand shaking signals to the PC port should be wired in the PC connector or jumpers used on the monitor interface port (See the Signal Monitor Operations Manual) if required.

4.2 COMMUNICATION PARAMETER PROBLEMS

The serial port settings for both the *ECcom*TM software and the monitor port must match for correct communications to occur. Be sure that the settings in SETUP / COMM PORT / SETTINGS match the parameters for the monitor serial port. If the settings of the monitor unit are not known, the SETUP / COMM PORT / GET MONITOR SETTINGS menu item can be used to retrieve the monitor settings. See Section 3.2.1.1.2.

4.3 SSM-LE COMPATIBILITY

Please note that not all SSM-LE series monitors have the capability to communicate with the *ECcom*TM software depending on their date of manufacture. Compatible SSM-LE units have been manufactured after January of 2001 and will have the words "RMS-Engine" in the sine wave logo on the front panel. Please consult the factory for any further compatibility assistance.

4.4 ERROR MESSAGES

4.4.1 OPEN PORT ERROR

In order to use the serial port of the PC to communicate with the monitor, *ECcom*TM must reserve the COMM port resource from the Windows operating system. If another application has already reserved the specified serial port, *ECcom*TM will generate a "Device Not Available" or "Port already Open" message.

To verify that *ECcom*TM has opened the selected port, the SETUP / COMM PORT / CLOSE PORT menu will be displayed. If the port is not open the SETUP / COMM PORT / OPEN PORT menu will be displayed.

4.4.2 COMM SETTINGS ERROR

Current monitor products use the default settings of the SETUP / COMM / SETTINGS menu item (9600 baud, Even parity). Verify that the port settings use the default values and the communications cable is plugged into the selected port. Improper settings will result in a Rx Timeout Error. Some older monitor products only support 1200 baud.

4.4.3 RX TIMEOUT ERROR

If the monitor does not respond to an *ECcom*TM command correctly before the Rx Timeout parameter value times out (set in the SETUP / COMM PORT / SETTINGS window), an Rx Timeout Error will be generated. The *ECcom*TM software will make one automatic retry before the error is reported. A choice to retry or cancel the operation is given. Be sure the cable is connected and the monitor power is on. PC Comm Port settings should also be verified.

4.4.4 CHECKSUM ERROR

A checksum error can occur when data is corrupted during transmission from the monitor to the PC. This may be due to a poor or intermittent cable connection, or the PC is not receiving characters correctly

during receive mode. Closing all other active Windows applications during *ECcom*TM use may also help alleviate the problem.

4.4.5 INVALID DATA ERROR

An Invalid Data error is caused by corrupted data in an event log or monitor response. Clearing the event log should eliminate the problem. The data in the event log will be lost.

4.4.6 BAD DATA ERROR

A Bad Data error is caused by corrupted data in an event log or monitor response. This may indicate that the monitor time and date are set to an invalid value. Set the monitor clock and then clear the event log. The data in the event log will be lost.

4.4.7 SORT ERROR

During the Chronological sort of the event records, a bad value of time or date was encountered.

4.4.8 MONITOR ID ERROR

The monitor needs to have the Monitor ID value set to a valid number in the range of 0 to 9999.

4.5 TECHNICAL SUPPORT

Further technical support may be obtained by contacting Eberle Design Inc.

Eberle Design Inc.
3819 East La Salle Street
Phoenix, AZ 85040
telephone (480) 968-6407
fax (602) 437-1996
e-mail support@EDltraffic.com
Web site www.EDltraffic.com

Visit the Eberle Design Inc web site to download the current version of the *ECcom*TM software and Operations Manual.