SuperData

Software

OPERATIONS MANUAL

DISCLAIMER

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SuperData Communications (SDIO.exe)

SDIO Introduction

The SuperData Comms application (SDIO.exe) is the communications program that provides up to 127 channels of serial communications to configured instruments and builds shared data tables for other applications to access instrument data. The communications program supports up to 8 serial ports and 120 Ethernet/TCP ports. Each port may be configured with a different serial protocol (e.g. MMI, Modbus, CPL, DF1, etc.). This provides the flexibility to connect to a wide variety of industrial controllers.

The following functions are provided by the SuperData Communications application:

1. Automatic polling for configured instruments.
2. Shared data tables for other applications to access instrument data.
3. Automatic data logging of all configured instruments on a minute-by-minute basis.
4. Real Time updates of process data.
5. Message handling system to allow other applications to read and write to configured instruments.
6. Provide communications statistics.
7. Provide communications error handling.
8. Periodic compression of logged data.
9. Provides an application event log for communications error and warning messages. The event log may be viewed using the Windows event log viewer.

Starting SDIO

SDIO must be configured prior to running the application. Configuration consists of defining:

- File locations
- Serial Ports
- Instrument types, addresses and polling

Configuration is normally accomplished by Service personnel when SuperData is installed. The *SDIO Configuration* section contains details on how to configure SDIO.

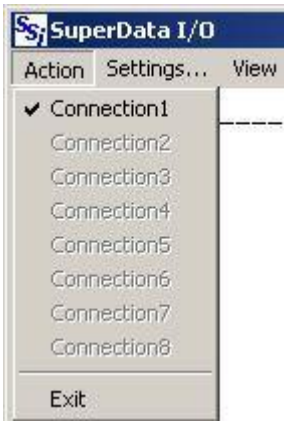
SDIO.exe is normally located in the \SSI\BIN directory and may be started manually from the directory by clicking on the application file. However, SDIO is designed to run all of the time (24/7) and is normally started as a service. When SDIO is run as a service, it will start automatically any time the computer is turned on (logon is not required). To setup SDIO as a service, see the section *SDCommSrv* in the *Communications Utilities* section.

When SDIO is running, you will see the SDIO icon in the Quick Launch Toolbar portion of the Taskbar (normally on the lower right portion of the desktop). When communications are normal, the dot above the "i" in the icon will blink rapidly. Clicking the icon will bring the SDIO window to the foreground. Only one instance of SDIO is allowed to run on a computer.

Menu Options

The following menu options are available on the *SuperData Communications* menu bar:

Action Menu

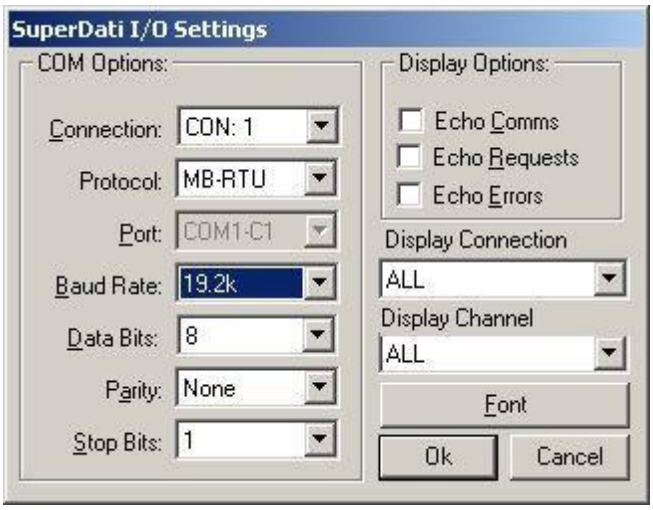


The **Action** menu dropdown shows the 8 serial connections. Configured connections are in normal text. Connections that are not configured are shown in dimmed text. Clicking on a connection will toggle between connect and disconnect. This is a useful tool to reinitialize the communications port without having to shutdown and restart SDIO. A connection with a checkmark is connected. A disconnected connection will only remain disconnected for a max of 30 minutes. This is useful to re-initialize the communications port without having to shut down and restart SDIO.

The **Exit** menu item stops the communications program.

Settings Menu.

The **Settings** menu item displays the following Settings dialog box:



The **COM Options** section of this dialog is used to view or set the communications options for each connection. Setting the communications options with this dialog is ***temporary***. When the program restarts, the settings will revert to the settings in the configuration file (SCSPSYS.CFG). To make settings ***permanent***, you must change the configuration file. To make temporary communications changes, the associated connection must first be disconnected. The PORT dropdown will display the connection assigned to the port.

The **Display options** section is used to set the information is to be displayed in the **Comm view.** The **Display Connection** and **Display Channel** dropdowns select which connections and channels are to be displayed in the **Comm. View**. The **Display Channel** selection is used to set the channel to view data in the **Chan Data view**.

The **Font** button is used to open the Font selector dialog.

View Menu

The View Menu is used to select the **Comms**, **Status** or **Chan Data** view. This menu may also be used to turn the view **off**. When the view is turned off, the display will stop updating until the comm. or Status view is selected.

The **Comms view** displays messages and errors for selected channels as configured in settings.

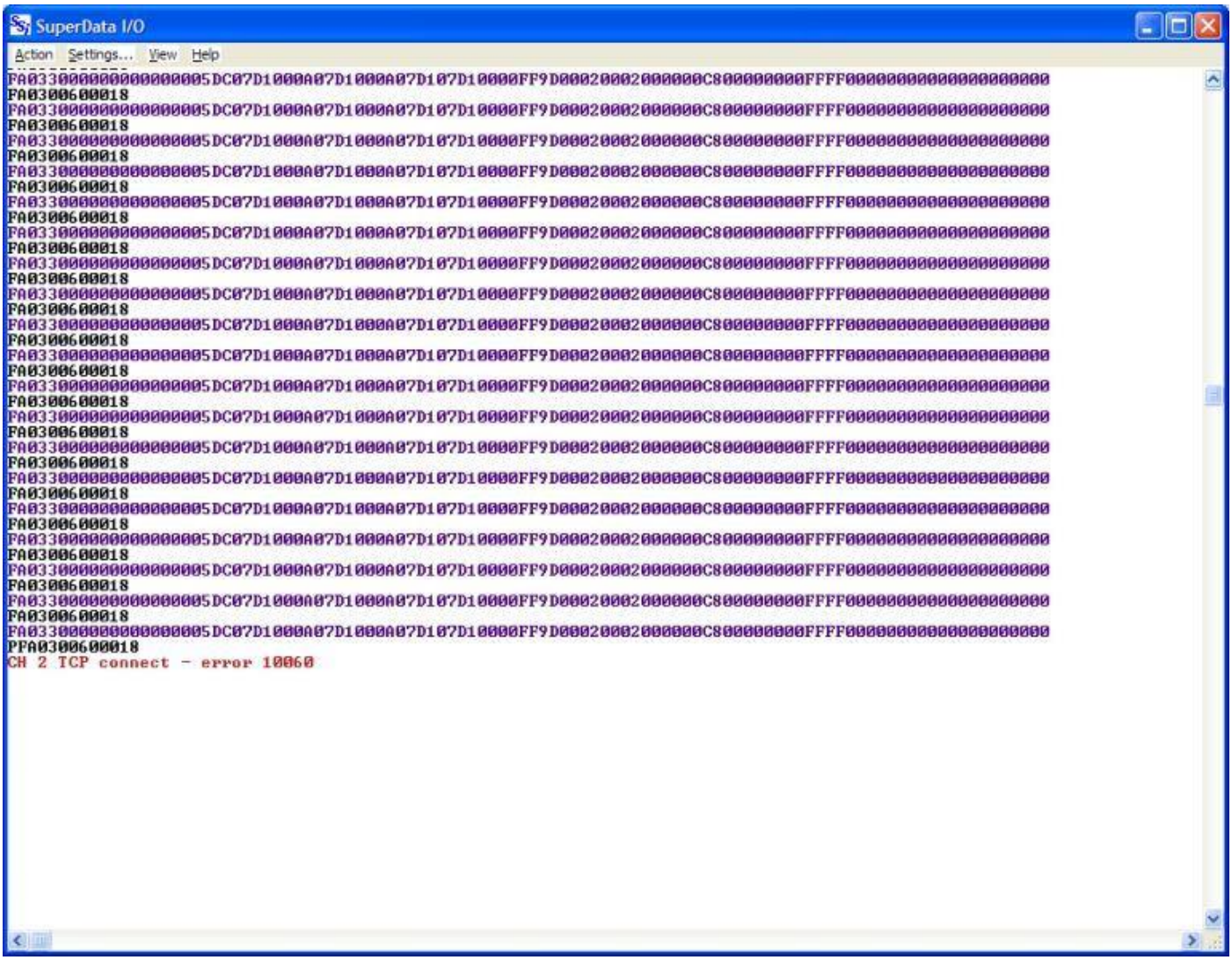
The **status view** displays an overall status of the communications.

The **Chan Data view** displays the polled data received from the instrument.

SDIO will normally be in the Status view.

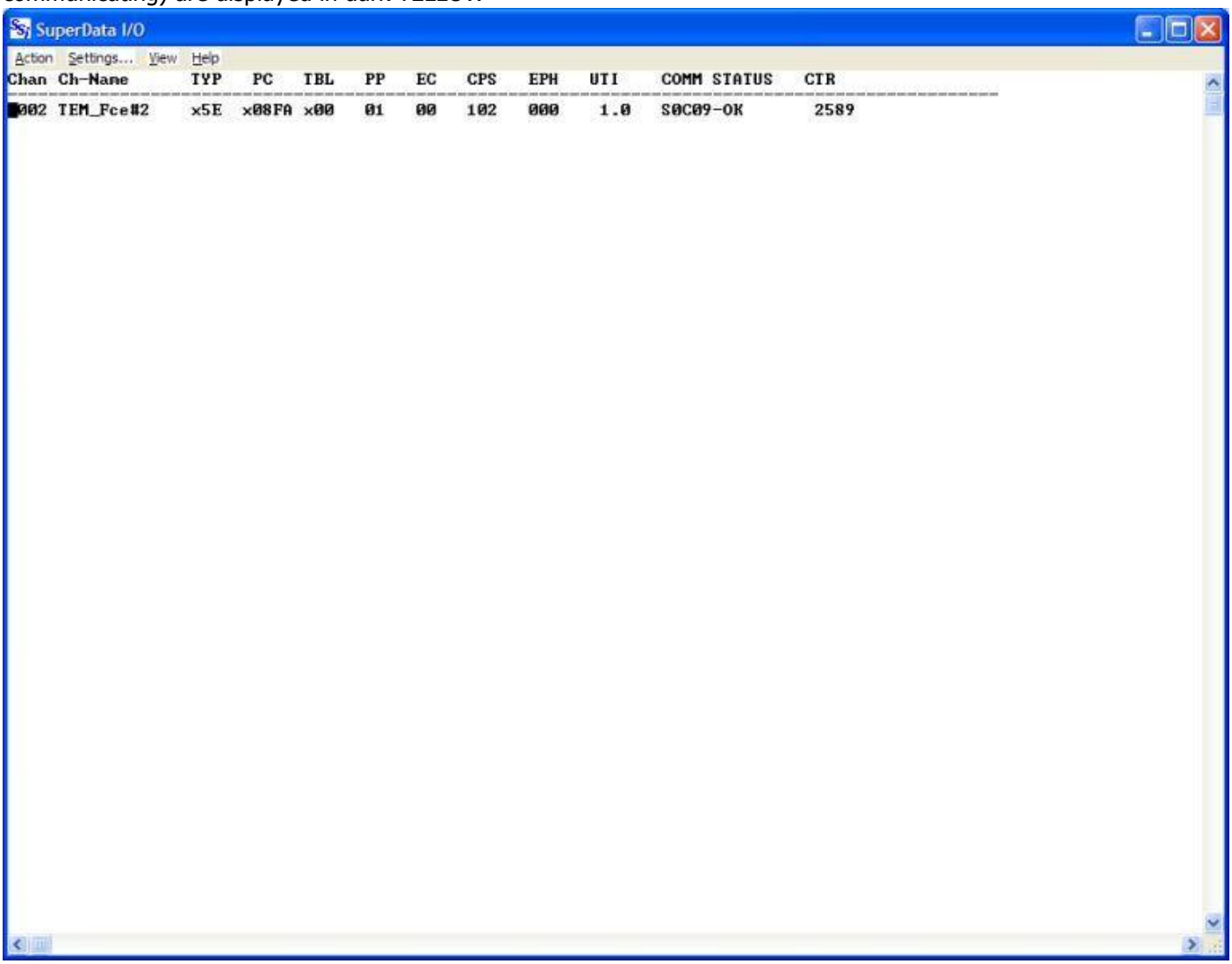
Comms View

The Comms view is normally used for trouble-shooting communications. Leaving the comm view open can slow down communications throughput so it is best to return to the status view when not using the comms view. Transmitted messages from the Comms program are displayed in BLACK, responses from the instrument are displayed in PURPLE, and errors are displayed in RED. The screen scrolls as messages are transmitted and received. To stop scrolling, use the "View Off" menu.



Status View

There will be one line for each configured instrument. Normally communicating instruments will be displayed in BLACK, disconnected instruments will be displayed in dimmed text (GREY), invalid instruments (instruments that are incompatible with the connection protocol) are displayed in RED, and instruments with errors (i.e. valid but not communicating) are displayed in dark YELLOW



The following columns are displayed for each channel:

Chan – the logical channel number (1-127)

Ch-Name – the channel's name (up to 11 characters)

TYP – the channel's type identifier followed by L (logged channel) or N (not logged).

PC – the physical channel (in HEX). The first hex character is the connection (0-7 for serial connections 1-8; 8 – 127 for TCP connections), the remaining 2 hex characters identify the instrument's physical address.

TBL – an optional Table identifier.

PP – the current polling priority (1-3). If communications are good, polling priority will be 1. When the instrument has 10 or more consecutive errors, polling priority will be set to 2 and the SDIO will only try to reconnect to the instrument every 30 secs, when the consecutive error count exceeds 20 errors, priority will be set to 3 and communications will attempt to reconnect every 2 minutes.

EC – the current consecutive error count.

CPS – the estimated communications throughput in characters per second.

EPH – the estimated error rate in errors per hour.

UTI – the estimated update time interval in seconds (time between complete updates for the instrument).

COMM STATUS – identifies the instruments Station, Connection ID and current status. In most configurations the Station will be zero.

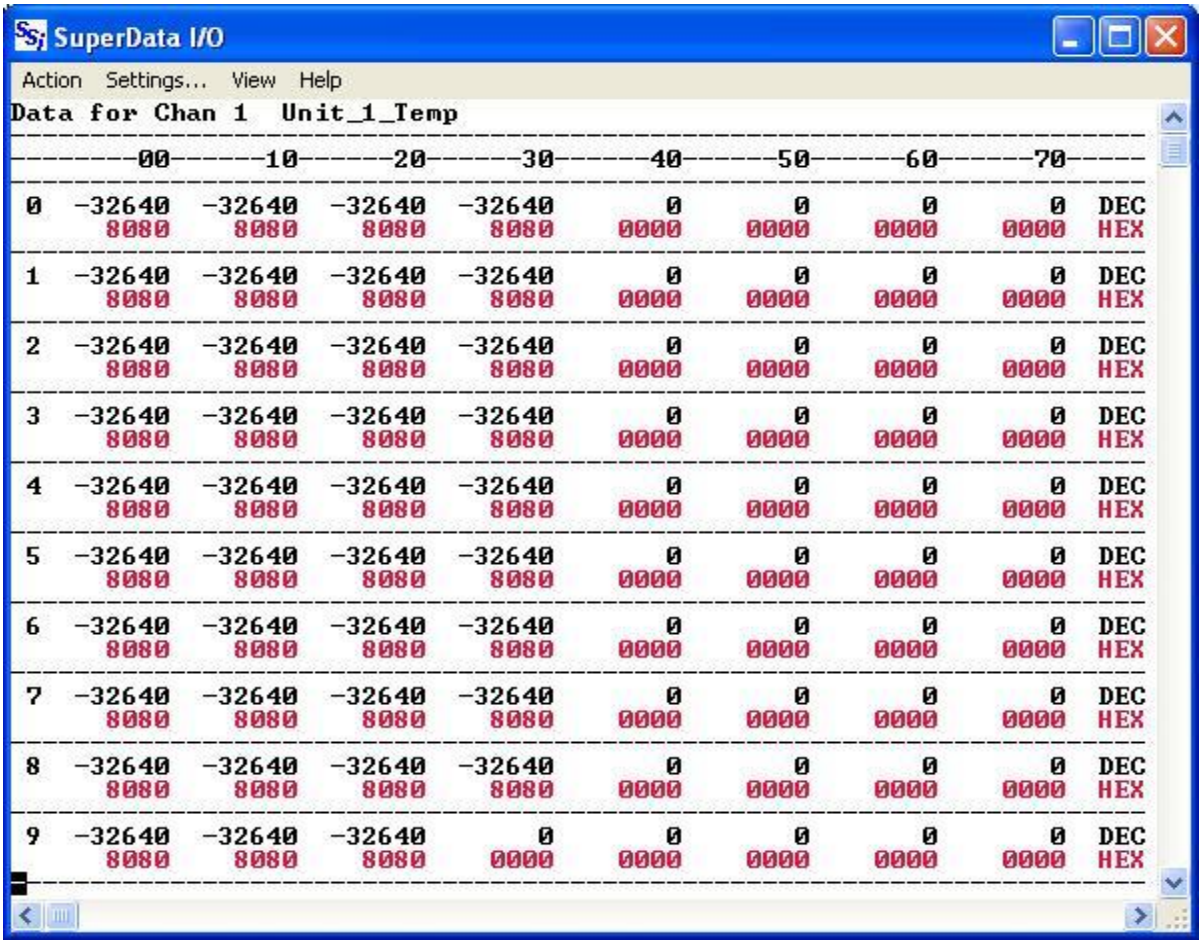
CTR – update counter, counts the number of times the channel has been updated (rolls over at 9999 counts.)

Note ***- System Channels (maintained by other applications) are a special case. SDIO does not know their communications status. They will always contain the following column values***:

TYP - x14
PC – x000
TBL – x00
PP – 01
EC – 00
CPS – 001
EPH – 000
UTI – 999.9
COMM STATUS – SC01-OK
CTR – 0001

Chan Data View

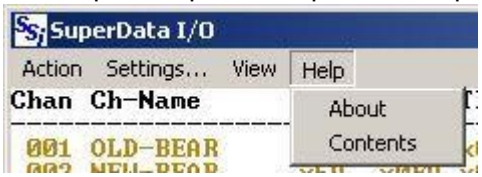
This table displays the current value of all 80 slots of the Channel selected in the Settings Menu.



The values displayed in black are decimal while the ones in red are in hexadecimal format. ***Note – Slots 78 and 79 are reserved for use by SDIO***. Slot 78 is used for CPS, and slot 79 is used for special alarm purposes (ABC configuration).

Help Menu

The Help Menu provides options to display the help file or to display the SuperData Communications about box.



SDIO Installation

***Note – The person installing the SD_Comms Software must have administrative rights on the computer(s) where the installation is taking place for the installation to be successful*.**

Insert the SuperData Installation CD into the computer's optical drive and navigate to the SuperData folder. Double-click on the setup file - SDComms_Setup.msi - to start the auto-installation. If there is no version of the SD_Comms running on the computer, the installation will display a splash screen.

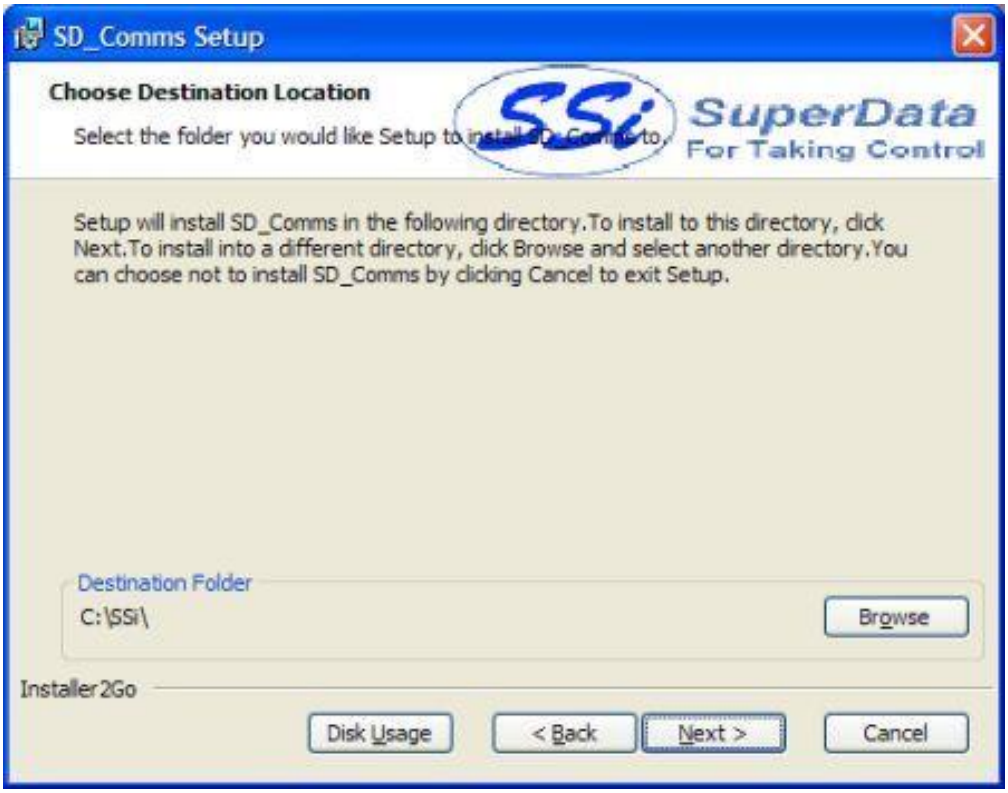
Clicking the **Next >** button will continue with the installation process.

Clicking on the **Cancel** button will cancel the installation process. The user will have to confirm the cancellation.

If there is a version of the SD_Comms already installed on the computer, The following screen will be displayed:

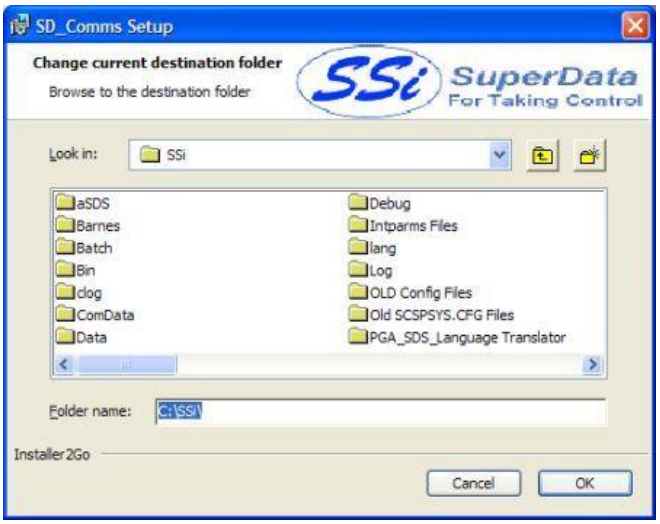
The installer will either re-install the software (**Repair** button) or remove the software from the computer (**Remove** button). Clicking on the **Cancel** button will cancel the actions. The user will have to confirm the cancellation. ***Note - the installer does not remove any subfolders in the main SSI folder. These files will have to be manually removed***. The Repair option will allow the user to repair the installed files. This option is useful if the installation was interrupted in some way and did not finish on its own.

The Remove option will remove the main executable file from the computer.

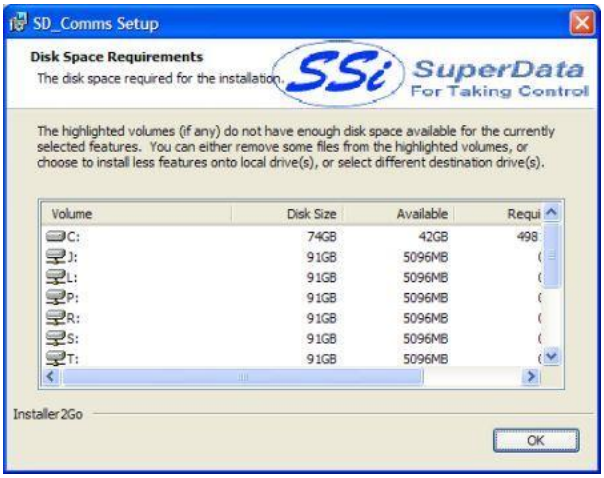


The next screen will prompt the user for the download location. The default location is "C:\SSI\". Note: The installer will automatically create a "Bin" folder to install the files to. For example, if the default location, "C:\SSi\" is used, then the files will be installed to "C:\SSi\Bin".

The user can click on the **Browse** button to select an alternate location (right).



Clicking on the **Disk Usage** button will display the available computer drives onto which the application can be downloaded, as well as the total space, available space and total space required (below). Clicking on the **OK** button will close out the disk usage screen.



Clicking on the **< Back** button will display the previous screen.

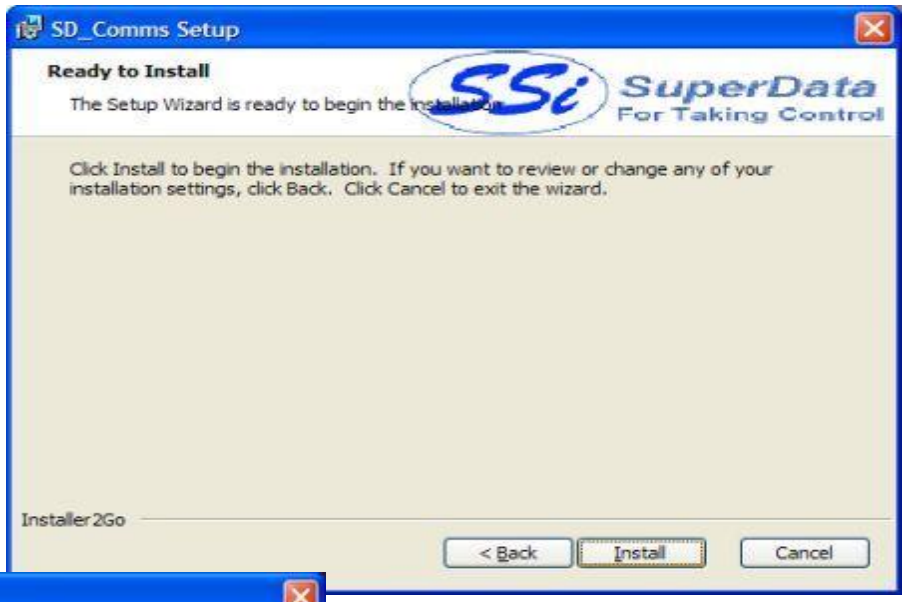
Clicking the **Next >** button will continue with the installation process.

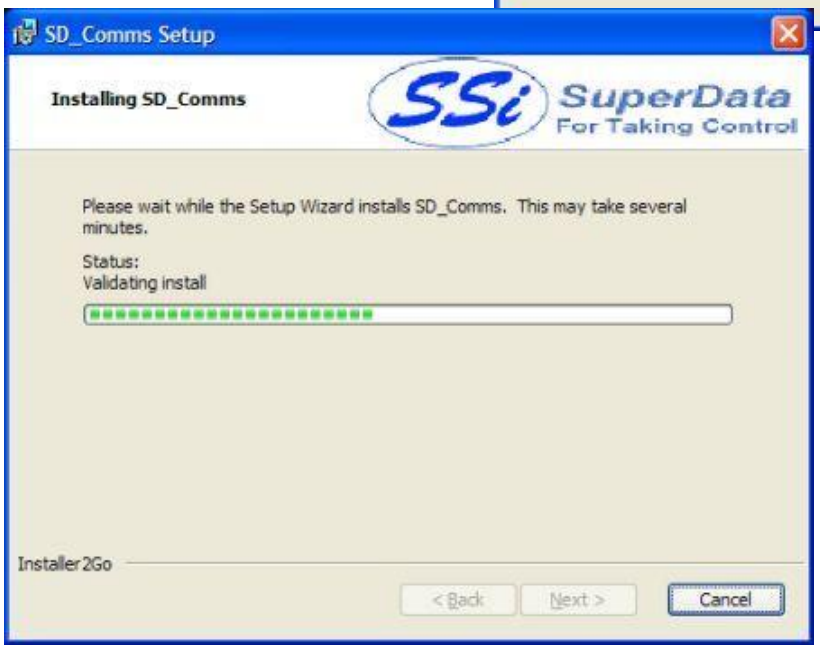
Clicking on the **Cancel** button will cancel the installation process. The user will have to confirm the cancellation.

Clicking on the **Cancel** button will cancel the installation process. The user will have to confirm the cancellation.

Clicking on the **< Back** button will display the previous page.

Clicking on the **Install** button will install the software to the specified location.





Click **Finish** to complete the installation process.

SD_Comms Minimum System Requirements

• Computer with a minimum of 600 MHz processor clock speed (Intel, AMD, etc).

• Operating System – Microsoft Windows 98/2000/XP/Vista

• Memory – 256 MB RAM or higher

• Disk Space - Minimum of 1 GB storage space

• CD-ROM drive or DVD-ROM drive

• Keyboard and mouse

• Monitor with 1024 x 768 resolution or higher and 256 colors

SDIO Configuration

Overview

SuperData Comms Configuration File (SCSPSYS.CFG)

SuperData Comms is configured using a configuration file called SCSPSYS.CFG. This file is normally found in the C:\SSi directory and may be edited using the configuration tool **SDIOConfig.exe**, (see Page 46), or any text editor (e.g. Notepad, WordPad, TextPad, etc). When editing this file, always save this file as an ASCII text file. Anytime the file is modified SuperData Comms will automatically reconfigure – there is no need to stop and restart SuperData Comms (SDIO).

The configuration file consists the following sections:

RES– the basic communications parameters.
CONx– the communications configuration for each connection used (up to 8 sections)
INST – the instrument configuration parameters
ABC– optional section containing custom Alarm Block Configurations

Protocols

The following protocols are currently supported by SDIO:

MB-RTU Protocol is used for any instrument capable of Modbus RTU comms. This protocol is a binary protocol. Modbus is capable of using integer or floating point data; However, SDIO converts all floating point data to integer data for data logging and display. Modbus instruments may be connected using either RS485 2-wire or RS485 4-wire. A wide variety of control instruments now use Modbus RTU comms including: Super Systems, Eurotherm, Honeywell, Yokogawa etc.

ModbusTCP This protocol is Modbus over Ethernet used for any instrument capable of ModbusTCP or may be used on Modbus RTU instruments with the addition of a Ethernet to Serial converter. Super Systems 9000 series instruments directly support ModbusTCP.

HW-CPL Protocol is used with the Honeywell DCP550 controller. This protocol is a variation of PC Link. Data is transmitted as a mix of binary and ASCII values. Instruments may be connected using either RS485 2-wire or RS485 4-wire.

MMI-MSI Protocol is used for all Marathon Instruments. This protocol is an ASCII protocol and always uses 7 data bits, EVEN parity and 1 stop bit. Baud rates depend on the instrument type. This is the only protocol that can be used with the Marathon COMMUX board. Data is transmitted by WORDS (16 bit integers) or BLOCKs of 24 WORDS. Instruments are always connected using RS485 2-wire. Note: SuperS ystems does not recommend using the Marathon COMMUX board - it is no longer in production and no longer supported by Marathon Sensors.

YOK-CPL Protocol is used with Yokogawa UT series controllers. This protocol is a variation of PC Link. Data is transmitted as a mix of binary and ASCII values. Instruments may be connected using either RS485 2-wire or RS485 4-wire. Note: Most Yokogawa instruments now support Modbus RTU protocol and Modbus is the preferred method of communications to those instruments.

AB-DF1 Protocol is used with AllenBradley PLC controllers. Typically, these controllers use RS232 ports. For long distance, multidrop connections, each controller will require an RS232 to RS485 converter. Note: SDIO supports only a limited subset of the DF1 protocol. The preferred method of talking to Allen Bradley PLCs is RSLinx (an OPC Server) with Super Data's OPCBridge.

Note - If the instrument in use does not support one of the above protocols, SuperData may still communicate with the instrument if there is an OPC Server available. Software Toolbox's TOPServer supports numerous control instruments. If an OPC Server is available - Super Data's OPCBridge - see the *OPCBridge* section to learn how to map data from the OPC Server to SDIO. This allows SuperData to communicate with nearly all instruments used in the Heat Treat Industry.

Instrument Types

Overview

Supported Instrument Types

SuperData Communications supports a variety of control instruments used in the Heat Treating industry. In the following sections, the instrument ID (indicated in CAPS) is used to identify the instrument in the SCSPSYS.CFG file. The instrument type code (numeric) follows each ID and is displayed in decimal and Hex. The Hex value is displayed as the type on the SDIO status display and the ChStat display. Instruments that are not specifically supported, may be supported by using an OPC Server in conjunction with SuperData's OPCBridge.

System Instruments

System Channels

SYS

System channels are SDIO channels that are maintained by an external application. SDIO does not provide direct communications with these instruments. SDIO does log the data in these channels and makes the data available for trending and screen display applications.

Examples of System channels:

OPCBridge channels
ComRBridge channels
Load Tracking applications
Dummy channels used for test/development

Physical Instruments

Super Systems Instruments

Super Systems Controllers

SSI_CON
MOD_SMPP
MOD_SSI

SSI-9000
SSI-9200
SSI-9205
SSI-9205V2
SSI-9210
SSI-9220

Note - For the 9000 Series instruments Slots 0 through 25 are predefined. Specific Modbus blocks can be added starting at Slot 26.

Generic MODBUS Instruments

MOD_PMC	note 1
MMI_MOD	note 2

Note 1. This protocol uses Modbus FN 03 to read registers and FN 6 or FN 16 to write registers. Values to be polled are specified in the instrument configuration line.
Note 2. This protocol uses Modbus FN 04 to read registers and FN 6 or FN 16 to write registers. Values to be polled are specified in the instrument configuration line.

Eurotherm Instruments

Eurotherm Controllers

MOD_ET2200	note 1.
MOD_ET2400	note 1.

MOD_ET2600 note 1.

Note 1. Configured the same as Generic Modbus.

Generic MODBUS Instruments

MOD_PMC note 1
MMI_MOD note 2

Note 1. This protocol uses Modbus FN 03 to read registers and FN 6 or FN 16 to write registers. Values to be polled are specified in the instrument configuration line.
Note 2. This protocol uses Modbus FN 04 to read registers and FN 6 or FN 16 to write registers. Values to be polled are specified in the instrument configuration line.

Honeywell Instruments

Generic Honeywell CPL Instrument

CPL_HW note1.

Note 1. The only instrument tested using this protocol is the Honeywell DCP550. . Values to be polled are specified in the instrument configuration line.

Honeywell Modbus Instruments

HWM_DPR3000	note 1
HWM_GEN	note 2
HWM_DPR100	note 2
HWM_DPR180	note 2
HWM_DPR250	note 2
HWM_RSX	note 2
HWM_VRX	note 2
HWM_VPR	note 2
HWM_DR4300	note 2
HWM_DR4500	note 2
HWM_UDC2300	note 2
·HWM_UDC3300	note 2
HWM_UDC5300	note 2

Note 1. Supports READ only using Modbus FN 04. Data inputs are read in register pairs, one register for the mantissa and one for the decimal indicator. Data inputs are converted to integer with implied decimal location for SuperData. Inputs to be read are selected in the instrument configuration line.
Note 2. Generic Instrument for Honeywell Modbus using Modbus FN 03 For reading data . Data is read as either Integer single registers or Floating-point as register pairs, each pair representing an IEEE floating point number. Data inputs are converted to integer with implied decimal location for SuperData. Data to be read are selected in the instrument configuration line.

Generic MODBUS Instruments

Honeywell instruments may be configured as Generic Modbus instruments. In this case, only integer data is supported.

MOD_PMC note 1
MMI_MOD note 2

Note 1. This protocol uses Modbus FN 03 to read registers and FN 6 or FN 16 to write registers. Values to be polled are specified in the instrument configuration line.
Note 2. This protocol uses Modbus FN 04 to read registers and FN 6 or FN 16 to write registers. Values to be polled are specified in the instrument configuration line.

Yokogawa Instruments

Yokogawa CPL Instruments

CPL_YOK note 1

Note 1. Testing was on a UT750. The following instruments use the same protocol and should communicate with this protocol: UT550 series and UT350 series. These instruments are slower to respond than most.
Most Yokogawa instruments now support the Modbus RTU protocol.

Generic MODBUS Instruments

MOD_PMC	note 1
MMI_MOD	note 2

Note 1. This protocol uses Modbus FN 03 to read registers and FN 6 or FN 16 to write registers. Values to be polled are specified in the instrument configuration line.
Note 2. This protocol uses Modbus FN 04 to read registers and FN 6 or FN 16 to write registers. Values to be polled are specified in the instrument configuration line.

Marathon Instruments

Marathon Instruments

MMI 10Pro Series and Barber Coleman 560 Instruments

BARBER-COLEMAN 560	
10PRO	note 1

Note 1. The 10Pro-E (series) may be configured as either a 10Pro or as an MMIGEN-V4.0 instrument. Configure it as an MMIGEN-V4.0 to use the 10Pro-E's block transfer communications capability for faster communication throughput.

MMI V3x Instruments

MCARB-V3.0	
UCARB-V3.0	
UCARB-V3.5	
MCARB-IR	note 1.
MCARB-IR-V3.5	note 1.
UNIPRO	
UNIPRO-V3.5	

Note 1. These are obsolete versions of the Multicarb-IR. New versions (with Siemens analyzers) support block communications and must be configured as either DUALPRO-V4.0 or MMIGEN-V4.0.

MMI V4x Instruments

DUALPRO-V4.0	note 1,2.
CARBPRO-V4.0	
UNIPRO-V4.0	
MMIGEN-V4.0	note 1,3.
DPSTD-V4.0	note 1,4

Note 1. For communications purposes, the MMI Multipro is the same as a Dualpro and must be configured as a DUALPRO-V4.0, MMIGEN-V4.0 or DPSTD-V4.0.
Note 2. Later model Dualpro and Multipro instruments are also capable of communicating with MODUS protocol on either the Host or Aux port. For MODBUS comms these instruments must be configured as MMI_MOD instruments.
Note 3. MMIGEN-V4.0 instrument type may be used for any instrument that uses the V4.0 communications protocol. This includes, but is not limited to, 10Pro-E, 10Pro-L, AACC2000 (series), and DualPro/MultiPro instruments. The user specifies the Blocks (up to 3) to be polled.
Note 4. This instrument definition should be used for a DualPro that is not running a BackGround program to populate data collection parameters. This will collect most of the DualPro's useful data and populate it in the integer table. Do not use this definition if the DualPro is running a standard Background program.

MMI CARB-PC Instruments

CARB-PC	note 1.

Note 1. The CARB-PC supports both word and block communications and may be configured as either 10PRO or CARB-PC. When configures as CARB-PC, the block transfer mode is used.

Other Instruments

AllenBradley DF1 Instruments

AB_PLC
AB_SLC

Note 1. The SuperData support for DF1 is a very limited subset of the AllenBradley DF1 protocol.
Note 2: The preferred method for SuperData comms to an AB PLC is via RSLinx (an OPC server) and SuperData's OPCBridge. This method brings much more flexibility to the overall application.

TypeID Reference

The "Type Name" is used in the Scspsys.cfg file to identify the instrument type. The "Type Number" is displayed in the SDIO Status View "TYP" column.

Type Name	Type Number (Hex)
CPL_HW	(x01)
CPL_YOK	(x02)
MOD_PMC	(x10)
SSI_CON	(x10)
MMI_MOD	(x12)
SYS	(x14)
BARBER-COLEMAN 560	(x18)
10PRO	(x18)
MCARB-V3.0	(x21,x22)
UCARB-V3.0	(x23,x24)
UCARB-V3.5	(x25,x26)
MCARB-IR	(x29,x2A)
MCARB-IR-V3.5	(x2B,x2C)
DPSTD-V4.0	(x2E)
DUALPRO-V4.0	(x2F)
CARBPRO-V4.0	(x2F)
MMIGEN-V4.0	(x30)
UNIPRO	(x33,x34)
UNIPRO-V3.5	(x35,x36)
CARB-PC	(x39)
UNIPRO-V4.0	(x3F)
HWM_GEN	(x46)
HWM_DPR3000	(x47)
HWM_DPR100	(x48)
HWM_DPR180	(x49)
HWM_DPR250	(x4A)
HWM_RSX	(x4B)
HWM_VRX	(x4C)
HWM_VPR	(x4D)
HWM_DR4300	(x4E)
HWM_DR4500	(x4F)
HWM_UDC2300	(x50)
HWM_UDC3300	(x51)
HWM_UDC5300	(x52)
MOD_ET2200	(x55)
MOD_ET2400	(x56)
MOD_ET2600	(x57)
MOD_SMPP	(x5A)
SSI_CON	(x5B)

SSI_9000	(x5C)
SSI_9005	(x5D)
SSI_9010	(x5E)
SSI_9200	(x5F)
SSI_9205	(x60)
SSI_9210	(x61)
SSI_9215	(x62)
SSI_9220	(x63)

Configuration File

The configuration file, SCSPSYS.CFG consists the following sections:

RES– the basic communications parameters.
CONx– the comm configuration for each connection used (up to 8 sections)
INST – the instrument configuration parameters
ABC– optional section containing custom Alarm Block Configurations

RES Section

Serial communications is provided through one or more of the computer's comm ports or the Ethernet connection. SDIO is capable of using up to 8 serial ports. These ports may be RS232 or RS485 ports. RS232 ports provide point-to-point short distance comms, to use RS232 ports for long distance multidrop communications, they must be routed through a RS232 to RS485 converter. Multiport RS485 cards may be installed in the computer and used without a converter.

The **RES** section specifies general information for the communications program and may be used for the **Connection 1** setup information. This section is started by "{SRES}" and ends with "{ERES}". A sample RES section follows:

{SRES}
COMMUX BOARD = "NO"
PORT = "COM1"
PROTOCOL="MB-RTU"
BAUD = "57600"
DBITS = "7"
PARITY = "NONE"
SBITS = "1"
STA = "0"
KRUNCH = "03:15AM"
{ERES}

Options:

COMMUX BOARD - "NO" if not using a COMMUX board "16" if using a COMMUX board.
PROTOCOL-The desired protocol for connection 1.
PORT-Computer's comm port "COM1", "COM2", etc. (ports 1-16 are supported)
BAUD-Baud rate "1200", "2400", "4800", "9600", "19200", "38400" or "57600"
DBITS-The number of Data bits. (7 or 8)
PARITY-The type of parity. (ODD, EVEN, or NONE)
SBITS-The number of stop bits. (1 or 2)
STA-The station number of the computer (Normally 0).
KRUNCH-Sets the time of day to automatically run the datalog compression program.

Note: It is generally best to use the highest reliable BAUD rate available. The port configuration must match the instrument communication configuration for all instruments attached to the connection.

CONx Section

Serial communications is provided through one or more of the computer's comm ports or the Ethernet port. SDIO is capable of using up to 8 serial ports. These ports may be RS232 or RS485 ports. A serial Connection is a communications link to one of the installed Comm Ports using a specific protocol. A port only supports one protocol. You cannot have multiple protocols defined for one port. The characteristics of a connection are specified in the CONx sections. There may be 8 (CON1 thru CON8) connections configured. The Ethernet connection is CON9 and is not configurable. A sample CONx section follows:

{SCON2}
COMMUX BOARD = "NO"
PORT = "COM13"
PROTOCOL="AB-DF1"
BAUD = "9600"
DBITS = "8"
PARITY = "EVEN"
SBITS = "1"
NADDR = "7"
{ECON2}

Options:

COMMUX BOARD - "NO" if not using a COMMUX board "16" if using a COMMUX board.
PROTOCOL-The desired protocol for connection 1.
PORT-Computer's comm port "COM1", "COM2", etc. (ports 1-16 are supported). Use "none" to disable the connection.
BAUD-Baud rate "1200", "2400", "4800", "9600", "19200", "38400" or "57600"
DBITS-The number of Data bits. (7 or 8)
PARITY-The type of parity. (ODD, EVEN, or NONE)
SBITS-The number of stop bits. (1 or 2)
NADDR-The Host computers Node Address (required only for AllenBradley DF1 Protocol).

Instrument Section

Each line in the instrument configuration section specifies a logical channel attached to an instrument. The following items apply to all types of instruments. For additional items see the configuration section for the specific instrument type.

[C]CH#LLL(PPP) = "ID,[...Instrument Specific Configuration...],[NOLOG], [ABC] " = "tag "

Note: Items enclosed in brackets [ ] are optional but may be required for certain instrument types.

Item	Definition
C	**Optional**. Applies to ALL instruments. Specifies the Connection Identifier (1-8 for serial connections and 9 for Ethernet). The protocol for the connection must match the protocol for the instrument. If not included, defaults to Connection 1.
LLL	**Required**. Applies to ALL instruments. The logical channel number assigned (1-128).
PPP	**Required**. Applies to ALL instruments. The physical address of the instrument.
ID	**Required**. Applies to ALL instruments. The instrument ID (e.g., SSI-CON)
NOLOG	**Optional.** Applies to ALL instruments. Do not log data from this channel. Include this when communications are required for real-time data but are not required for historical data logging. If this is not included, the channel will be data logged at one minute intervals.
ABC	**Optional**. Applies to ALL instruments. Alarm Block Configuration . Caution: any specified channel can use either ALM or ABC but not both. Allows a custom Alarm Block Bitmap (one word) to be setup for any instrument but generally used only for non-programmable instruments that are not capable of maintaining alarm bitmaps. See the section on Custom Alarm Block Configuration.
TAG	**Required.** Applies to ALL instruments. Instrument name. Limited to 12 Characters with no spaces.

System Channels

[C]CH#LLL(PPP) = "ID,[NOLOG],[ALM]" = "tag "

Examples:

1CH#12(0) = "SYS, ALM (0,800,66,0,12)" = "System"

Note: Items enclosed in brackets [ ] are optional but may be required for certain instrument types.

Note: When the system channel is an OPCBridge or ComRBridge channel, these applications will automatically add the System channel to the SCSPSYS.cfg file.

Item	Definition
C	**Optional**. These are non-communications channels and may be used on any Connection. Protocol is not important.
LLL	**Required**. Applies to ALL instruments. The logical channel number assigned (1-128).
PPP	**Required**. Applies to ALL instruments. Always use physical address 0 for system channels. Physical address is ignored.
ID	**Required**. Applies to ALL instruments. The instrument ID: **SYS. Note:** Any ID may be changed to a **SYS** channel by prefixing the **ID** with the letters **SYS, e.g. SYSSSI-CON**
NOLOG	**Optional.** Applies to ALL instruments. Do not log data from this channel. Include this when communications are required for real-time data but are not required for historical data logging. If this is not included, the channel will be data logged at one minute intervals.
ALM	**Optional**. Applies to Channels that contain bitmapped alarms. The ALARM configuration setup. ALM(PAL slot, Alarm offset, Alarm Bitmap Start Slot,

	Alarm ACK Bitmap Slot, Number of Bitmap Slots). Normally this will be configured by SSI personnel familiar with the application. If you are not sure, do not include Bitmapped support. Invalid configurations may cause spurious invalid alarms to be reported on RealTime and in AlarmReports.
ABC	**Optional**. Applies to ALL instruments. Alarm Block Configuration . Caution: any specified channel can use either ALM or ABC but not both. Allows a custom Alarm Block Bitmap (one word) to be setup for any instrument but generally used only for non-programmable instruments that are not capable of maintaining alarm bitmaps. See the section on Custom Alarm Block Configuration.
TAG	**Required.** Applies to ALL instruments. Instrument name. Limited to 12 Characters with no spaces.

Super Systems Instruments

[C]CH#LLL(PPP) = "ID,[ALM],[NOLOG],[ABC]" = "tag "

Examples:

SSi 7 series - may also be used for 20Q or 20PQ
2CH#5(1) = "SSI-CON,MB:122-2,MB:130-1,MB:137-2" = "SSIS7"

SSi AC20 series
2CH#6(2) = "SSI-CON,MB:122-9,MB:137-7" = "SSIAC20"

AC20 with events
2CH#7(2) = "SSI-CON,MB:122-9,MB:137-7,EB:300-8,EB:310-10" = "SSIAC20"

SSi SPP
2CH#7(3) = "MOD_PMC,MB:96-24,ALM(0,100,19,0,1)" = "SSISPP"
2CH#1(4) = "SSI-SPP,ALM(23,100,19,1)" = "9000"

SSi 9200 series
2CH#1(4) = "SSI-SPP,ALM(23,100,19,1)" = "9000"
2CH#1(4) = "MOD_PMC,IP:192.168.1.201,MB:100-78" = "SSi9200"

Same instrument over ethernet
9CH#1(250) = "SSI-SPP,IP:192.168.1.220,ALM(23,100,19,0,1)" = "9000"
9CH#1(250) = "MOD_PMC,IP:192.168.1.201,MB:100-78" = "SSi9200"

For the SSI9xxx instruments, a predefined , model specific ID may be used that automatically reads the first 25 slots of Model # 9000, 9010, 9200, 9205, 9210, 9220, or 30 slots of Model #9005 and 9215. The unused slots (26 or 30 - 77) may be added using MB:Ofst-count specifiers.

CH#17(1) = "SSI9200, MB:1000-20" = "SSi218A"
CH#26(2) = "SSI9005-1,MB:1000-20" = "SSi221A"
CH#27(3) = "SSI9005-2 ,MB:1000-10" = "SSi221B"
CH#28(4) = "SSI9010, MB:1000-5" = "SSi221C"
CH#29(5) = "SSI9215, MB:1000-5 ,ALM(23,100,19,0,1) " = "SSi222"
CH#30(6) = "SSI9220, MB:1000-2 , ALM(23,100,19,0,1) " = "SSii223"

The following are examples with Ethernet comms. Note that the connection number is always 9 and the physical channel is always 250 when Ethernet comms is used.

9CH#17(250) = "SSI9200,IP:192.168.1.218,PI:1,MB:1000-20" = "SSi218A"
9CH#26(250) = "SSI9005-1,IP:192.168.1.221, PI:1,MB:1000-20" = "SSi221A"
9CH#27(250) = "SSI9005-2,IP:192.168.1.221, PI:1,MB:1000-10" = "SSi221B"
9CH#28(250) = "SSI9005-3,IP:192.168.1.221, PI:1,MB:1000-5" = "SSi221C"
9CH#29(250) = "SSI9220,IP:192.168.1.221, PI:1,MB:1000-2 ,ALM(23,100,19,0,1)" = "SSi221D"

Item	Definition
C	**Optional**. Applies to ALL instruments. Specifies the Connection Identifier (1-8 for serial connections and 9 for Ethernet). The protocol for the connection must match the protocol for the instrument. If not included, defaults to Connection 1.
LLL	**Required**. Applies to ALL instruments. The logical channel number assigned (1-128).
PPP	**Required**. Applies to ALL instruments. Always use physical address 0 for system channels. Physical address is ignored.
ID	**Required**. Applies to ALL instruments. The instrument ID (e.g., SSI-CON)
IP:	**Required,** Applies to ALL **Ethernet** instruments. The Ethernet address of the instrument.
PI:	**Required,** Applies to ALL **Ethernet** instruments. The target polling interval in seconds. Range 1-10 seconds.
NOLOG	**Optional.** Applies to ALL instruments. Do not log data from this channel. Include this when communications are required for real-time data but are not required for historical data logging. If this is not included, the channel will be data logged at one minute intervals.
ALM	**Optional**. Applies to Channels that contain bitmapped alarms. The ALARM configuration setup. ALM(PAL slot, Alarm offset, Alarm Bitmap Start Slot, Alarm ACK Bitmap Slot, Number of Bitmap Slots). Normally this will be configured by SSI personnel familiar with the application. If you are not sure, do not include Bitmapped support. Invalid configurations may cause spurious invalid alarms to be reported on RealTime and in AlarmReports.
ABC	**Optional**. Applies to ALL instruments. Alarm Block Configuration . Caution: any specified channel can use either ALM or ABC but not both. Allows a custom Alarm Block Bitmap (one word) to be setup for any instrument but generally used only for non-programmable instruments that are not capable of maintaining alarm bitmaps. See the section on Custom Alarm Block Configuration.
TAG	**Required.** Applies to ALL instruments. Instrument name. Limited to 12 Characters with no spaces.

Generic MODBUS Instruments

[C]CH#LLL(PPP) = "ID,[MB:xxx-yyy-t],...,[MB:xxx-yyy-t], [SMULT:SSxVALUE,...,SSxVALUE],[ALM],[NOLOG],[ABC]" = "tag "

Examples:

5CH#24(5) = "MOD_PMC,MB:6144-30-F" = "HWCHART"
6CH#114(2) = "MMI_MOD,MB:0-10" = "MP-MOD2"
4CH#70(1) = "MOD_PMC,MB:0-50,MB:50-25" = "1RB01"

The following are examples with Ethernet comms.

9CH#24(250) = "MOD_PMC, IP:192.168.1.221, PI:1,MB:6144-30-F" = "HWCHART"
9CH#114(250) = "MMI_MOD, IP:192.168.1.221, PI:1,MB:0-10" = "MP-MOD2"
9CH#70(250) = "MOD_PMC, IP:192.168.1.221, PI:1,MB:0-50,MB:50-25" = "1RB01"

Note: Items enclosed in brackets [ ] are optional but may be required for certain instrument types.

Item	Definition
C	**Optional**. Applies to ALL instruments. Specifies the Connection Identifier (1-8 for serial connections and 9 for Ethernet). The protocol for the connection must match the protocol for the instrument. If not included, defaults to Connection

	1.
LLL	**Required**. Applies to ALL instruments. The logical channel number assigned (1-128).
PPP	**Required**. Applies to ALL instruments. The physical address of the instrument. For MODBUS instruments the address is in the range 1-247.
ID	**Required**. Applies to ALL instruments. The instrument ID. **MOD_PMC** (Uses FN Code 03 for reading) **MMI_MOD** (Uses FN Code 04 for reading)
IP:	**Required,** Applies to ALL **Ethernet** instruments. The Ethernet address of the instrument.
PI:	**Required,** Applies to ALL **Ethernet** instruments. The target polling interval in seconds. Range 1-10 seconds.
MB:	**Required.** Specifies the Data block(s) to be polled. Up to 20 blocks may be specified. Blocks are specified as **xxx-yyy-t** where **xxx**=address offset, **yyy**=count of words to be read and **t** = data type. Total word count may not exceed 78 words. The data type is either I for integer or F for IEEE floating-point, defaults to integer if not specified. Floating point data is converted to integer for SuperData, use slot multipliers as required. Example: to read 2 blocks of integer data, specify MB:1-10,MB:100-6. To read floating point data, specify MB:1-10-F.
SMULT:	**Optional.** Specifies Slot Multipliers. A multiplier may be specified for any of the 78 slots (slots 0-77). Format as follows: SMULT:SSxVALUE,…,SSxVALUE Example: SMULT:2x100,12x0.01 The example applies a multiplier of 100 to slot 2 and a multiplier of 0.01 to slot 12. If not specified, the default multiplier is 1. Note: In the MODBUS protocol data is sent as binary WORD registers, one WORD normally represents an Integer value. However, two words may be used to send an IEEE floating point value. In SuperData all data is stored as Integer with implied decimal locations. Thus a floating point value of 1.12 would normally be stored in SuperData as 1. To store the value in SuperData as 112 with implied decimal of 2, specify a slot multiplier for the associated slot.
NOLOG	**Optional.** Applies to ALL instruments. Do not log data from this channel. Include this when communications are required for real-time data but are not required for historical data logging. If this is not included, the channel will be data logged at one minute intervals.
ALM	**Optional**. Applies to Channels that contain bitmapped alarms. The ALARM configuration setup. ALM(PAL slot, Alarm offset, Alarm Bitmap Start Slot, Alarm ACK Bitmap Slot, Number of Bitmap Slots). Normally this will be configured by SSI personnel familiar with the application. If you are not sure, do not include Bitmapped support. Invalid configurations may cause spurious invalid alarms to be reported on RealTime and in AlarmReports.
ABC	**Optional**. Applies to ALL instruments. Alarm Block Configuration . Caution: any specified channel can use either ALM or ABC but not both. Allows a custom Alarm Block Bitmap (one word) to be setup for any instrument but generally used only for non-programmable instruments that are not capable of maintaining alarm bitmaps. See the section on Custom Alarm Block Configuration.
TAG	**Required.** Applies to ALL instruments. Instrument name. Limited to 12 Characters with no spaces.

MMI 10Pro and Barber Coleman 560 Instrument

(Note: the 10PRO-E may also be polled in block mode using the MMIGEN-V4.0 instrument type polling block 1).

[C]CH#LLL(PPP) = "ID,[NOLOG],[ABC] " = "tag "

Examples:

1CH#10(5)="10PRO"="Temper_1"
1CH#12(6)="BARBER-COLEMAN-560,NOLOG"="Temper_2"

Note: Items enclosed in brackets [ ] are optional but may be required for certain instrument types.

Item	Definition
C	**Optional**. Applies to ALL instruments. Specifies the Connection Identifier (1-8 for serial connections and 9 for Ethernet). The protocol for the connection must match the protocol for the instrument. If not included, defaults to Connection 1.
LLL	**Required**. Applies to ALL instruments. The logical channel number assigned (1-128).
PPP	**Required**. Applies to ALL instruments. (see MMI Instrument Physical Addresses)
ID	**Required**. Applies to ALL instruments. The instrument ID: **10PRO or BARBER-COLEMAN-560**
NOLOG	**Optional.** Applies to ALL instruments. Do not log data from this channel. Include this when communications are required for real-time data but are not required for historical data logging. If this is not included, the channel will be data logged at one minute intervals.
ABC	**Optional**. Applies to ALL instruments. Alarm Block Configuration . Caution: any specified channel can use either ALM or ABC but not both. Allows a custom Alarm Block Bitmap (one word) to be setup for any instrument but generally used only for non-programmable instruments that are not capable of maintaining alarm bitmaps. See the section on Custom Alarm Block Configuration.
TAG	**Required.** Applies to ALL instruments. Instrument name. Limited to 12 Characters with no spaces.

MMI V3 and V3.5 Instruments

[C]CH#LLL(PPP) = "ID,[PROG],[BC CONT],[AEVT],[EVT],[NOLOG],[ABC] " = "tag "

Examples:

2CH#22(2)=" UCARB-V3.0,PROG(3),BC_CONT,EVT(4)"="FCE_2"

2CH#23(3)=" UNIPRO,PROG(3),EVT(4)"="TEMPER_1"

Note: Items enclosed in brackets [ ] are optional but may be required for certain instrument types.

Item	Definition
C	**Optional**. Applies to ALL instruments. Specifies the Connection Identifier (1-8 for serial connections and 9 for Ethernet). The protocol for the connection must match the protocol for the instrument. If not included, defaults to Connection 1.
LLL	**Required**. Applies to ALL instruments. The logical channel number assigned (1-128).
PPP	**Required**. Applies to ALL instruments. (see MMI Instrument Physical Addresses)
ID	**Required**. Applies to ALL instruments. The instrument ID: **MCARB-V3.0, UCARB-V3.0, UCARB-V3.5, MCARB-IR, MCARB-IR-V3.5, UNIPRO, UNIPRO-V3.5**
PROG	**Optional.** Always set this to PROG(3) for V3 and V3.5 Instruments..
BC CONT	**Optional.** Used to indicate if a V3.x Carb instrument has an attached BC560 or 10Pro controller for temperature.
AEVT	**Optional**. Used to indicate if a V3.x instrument has attached analog events on the events port. Indicate the number of analog modules: e.g. AEVT(4).
EVT	**Optional**. Used to indicate if a V3.x instrument has attached digital events on the events port. Indicate the number of digital modules: e.g. EVT(4).

NOLOG	**Optional.** Applies to ALL instruments. Do not log data from this channel. Include this when communications are required for real-time data but are not required for historical data logging. If this is not included, the channel will be data logged at one minute intervals.
ABC	**Optional**. Applies to ALL instruments. Alarm Block Configuration . Caution: any specified channel can use either ALM or ABC but not both. Allows a custom Alarm Block Bitmap (one word) to be setup for any instrument but generally used only for non-programmable instruments that are not capable of maintaining alarm bitmaps. See the section on Custom Alarm Block Configuration.
TAG	**Required.** Applies to ALL instruments. Instrument name. Limited to 12 Characters with no spaces.

MMI V4 Instruments

[C]CH#LLL(PPP) = "ID,[PROG],[ACW],[BLK],[NOLOG],[DPOL],[ALM],[ABC] " = "tag "

Examples:

CH#1(1) = "DUALPRO-V4.0, PROG(1), ACW:E3, ALM(36,0,0,0,0)" = "CH1"
CH#20(1-29) = "MMIGEN-V4.0, BLK:012,ALM(1,800,2,14,12)" = "CH1_T29"
CH#21(1-27) = "MMIGEN-V4.0, BLK:345, NOLOG" = "1_XXX"
CH#2(2) = "DUALPRO-V4.0, PROG(3), ACW:E3, ALM(36,0,0,0,0)" = "CH2"

Note: Items enclosed in brackets [ ] are optional but may be required for certain instrument types.

Item	Definition
C	**Optional**. Applies to ALL instruments. Specifies the Connection Identifier (1-8 for serial connections and 9 for Ethernet). The protocol for the connection must match the protocol for the instrument. If not included, defaults to Connection 1.
LLL	**Required**. Applies to ALL instruments. The logical channel number assigned (1-128).
PPP	**Required**. Applies to ALL instruments. (see MMI Instrument Physical Addresses)
ID	**Required**. Applies to ALL instruments. The instrument ID: **DUALPRO-V4.0, CARBPRO-V4.0, UNIPRO-V4.0, MMIGEN-V4.0, DPSTD-V4.0**
PROG	**Optional**. Applies to DUALPRO-V4.0, DPSTD-V4.0. Type of programs run in the Foreground of a Dualpro instrument. Set this as PROG(1) if using LOGIC programs in the Foreground. as PROG(2) for RECIPE programs in older Dualpros (ver 4.87 and earlier) and as PROG(3) for RECIPE programs in all newer Dualpros.
ACW	**Optional**. Applies to DUALPRO-V4.0. Alarm Control Word. Used with Dualpros running special applications. Set this to the Hex parameter of the ACW defined in the Dualpro's Background application program (e.g., ACW:EF).
BLK	**Optional**. Applies to MMIGEN-V4.0. Poll blocks. Used with MMIGEN-V4.0 to specify which blocks to poll (3 maximum) (e.g., BLK:038 will poll blocks 0, 3, and 8). Each block contains 24 words of data. Block 0 = words 0-23 (x00-x17) Block 1 = words 24-47 (x18-x2F) Note: the 10Pro-E and 10Pro-L have only 1 block: Block 0. All other instruments will normally have 10 blocks: Blocks 0-9
DPOL	**Optional**. Applies to MMIGEN-V4.0. Poll this channel only on demand. Normally, all channels are continuously polled. When demand polling is set, the channel will be polled only when the Demand Poll Word (DPW) changes. If used, the DPW will be defined in the Dualpro's Background program and the parameter specified here must match that definition. (e.g., DPOL:EE).
ALM	**Optional**. Applies to DUALPRO-V4.0, MMIGEN-V4.0. The ALARM configuration

	setup. ALM(PAL slot, Alarm offset, Alarm Bitmap Start Slot, Alarm ACK Bitmap Slot, Number of Bitmap Slots). e.g., ALM(36,0,0,0,0) for standard Dualpro e.g. ALM(36,400,60,64,4) for a Dualpro with Bitmapped alarm support. Bitmapped alarm support is a custom feature in the Dualpro and is implemented by some Dualpro programs. Normally this will be configured by SSI personnel familiar with the DualPro programs. If you are not sure, do not include Bitmapped support. Invalid configurations may cause spurious invalid alarms to be reported on RealTime and in AlarmReports.
NOLOG	**Optional.** Applies to ALL instruments. Do not log data from this channel. Include this when communications are required for real-time data but are not required for historical data logging. If this is not included, the channel will be data logged at one minute intervals.
ABC	**Optional**. Applies to ALL instruments. Alarm Block Configuration . Caution: any specified channel can use either ALM or ABC but not both. Allows a custom Alarm Block Bitmap (one word) to be setup for any instrument but generally used only for non-programmable instruments that are not capable of maintaining alarm bitmaps. See the section on Custom Alarm Block Configuration.
· **TAG**	**Required.** Applies to ALL instruments. Instrument name. Limited to 12 Characters with no spaces.

MMI Instrument Physical Addresses

The physical address is made up from the instruments address (1-15) , the Commux bank (if used) and an optional table number. The address takes the form (CCC-TT) where CCC = channel and TT = table.
The table is optional and is only used with DUALPRO & MMIGEN type instruments. The table may be 1-31 corresponding to the Dualpro's slave tables. The channel is derived from the instrument address and the communications bank. If a MMI UCON is used, 15 physical channels are available and the bank is always assumed to be 0. If a MMI COMMUX is used, 120 physical channels are available, 15 on each of 8 banks.

When a MMI COMMUX is used, construct the channel address as follows:

COMMUX								
BANK	1	2	3	4	5	6	7	8
ADDR 01	1	17	33	49	65	81	97	113
ADDR 02	2	18	34	50	66	82	98	114
ADDR 03	3	19	35	51	67	83	99	115
ADDR 04	4	20	36	52	68	84	100	116
ADDR 05	5	21	37	53	69	85	101	117
ADDR 06	6	22	38	54	70	86	102	118
ADDR 07	7	23	39	55	71	87	103	119
ADDR 08	8	24	40	56	72	88	104	120
ADDR 09	9	25	41	57	73	89	105	121
ADDR 10	10	26	42	58	74	90	106	122
ADDR 11	11	27	43	59	75	91	107	123
ADDR 12	12	28	44	60	76	92	108	124
ADDR 13	13	29	45	61	77	93	109	125
ADDR 14	14	30	46	62	78	94	110	126
ADDR 15	15	31	47	63	79	95	111	127

Note: If you view the physical channel as a Hex value, the left digit is (bank-1) and the right digit is the instrument address**.**

e.g. bank 5 address 12 = physical channel 76 = x4C.
or physical channel 86 = x56 = bank 6 address 6.

Hex is a more convenient way of viewing the address when using a COMMUX board**.**

MMI CARB-PC Instruments

(Note: This instrument may also be polled as a 10PRO. When polled as a CARB-PC polling is done using block mode and more data is available from the instrument.)

[C]CH#LLL(PPP) = "ID,[NOLOG],[ABC] " = "tag "

Example:

CH#3(17) = "CARB-PC" = "CH4-CPC"

Note: Items enclosed in brackets [ ] are optional but may be required for certain instrument types.

Item	Definition
C	**Optional**. Applies to ALL instruments. Specifies the Connection Identifier (1-8 for serial connections and 9 for Ethernet). The protocol for the connection must match the protocol for the instrument. If not included, defaults to Connection 1.
LLL	**Required**. Applies to ALL instruments. The logical channel number assigned (1-128).
PPP	**Required**. Applies to ALL instruments. The physical address of the instrument. (see MMI Instrument Physical Addresses)
ID	**Required**. Applies to ALL instruments. The instrument ID: **CARB-PC**
NOLOG	**Optional.** Applies to ALL instruments. Do not log data from this channel. Include this when communications are required for real-time data but are not required for historical data logging. If this is not included, the channel will be data logged at one minute intervals.
ABC	**Optional**. Applies to ALL instruments. Alarm Block Configuration . Caution: any specified channel can use either ALM or ABC but not both. Allows a custom Alarm Block Bitmap (one word) to be setup for any instrument but generally used only for non-programmable instruments that are not capable of maintaining alarm bitmaps. See the section on Custom Alarm Block Configuration.
· **TAG**	**Required.** Applies to ALL instruments. Instrument name. Limited to 12 Characters with no spaces.

Honeywell CPL Instruments

[C]CH#LLL(PPP) = "ID,[CB:xxx-yyy],...,[CB:xxx-yyy],[SMULT:SSxVALUE,...,SSxVALUE],[NOLOG],[ABC] " = "tag "

Example:

3CH#34(102)="CPL_HW,CB:256-6,CB:601-4,SMULT:3x100,4x10)="DCP550"

Note: Items enclosed in brackets [ ] are optional but may be required for certain instrument types.

Item	Definition
C	**Optional**. Applies to ALL instruments. Specifies the Connection Identifier (1-8 for serial connections and 9 for Ethernet). The protocol for the connection must match the protocol for the instrument. If not included, defaults to Connection 1.
LLL	**Required**. Applies to ALL instruments. The logical channel number assigned (1-128).
PPP	**Required**. Applies to ALL instruments. The physical address of the instrument. For Honeywell CPL instruments, the address range is 1-127.
ID	**Required**. Applies to ALL instruments. The instrument ID: **CPL_HW**
CB:	**Required.** Specifies the CPL Data block(s) to be polled. Up to 20 blocks may be specified. Blocks are specified as xxx-yyy where xxx=address offset and yyy=count of words to be read. Total word count may not exceed 78 words.

	Example: to read 2 blocks of data, specify CB:256-10,CB:601-6. For detailed information on data addresses, refer to Honeywell Manual EN1I-6154 (DigitroniK CPL Communication DCP550 Instruction Manual)
SMULT:	SMULT: **Optional.** Specifies Slot Multipliers. A multiplier may be specified for any of the 78 slots (slots 0-77). Format as follows: SMULT:SSxVALUE,…,SSxVALUE Example: SMULT:2x100,12x0.01 The example applies a multiplier of 100 to slot 2 and a multiplier of 0.01 to slot 12. If not specified, the default multiplier is 1. Note: In the CPL protocol data is sent as an ASCII string and may be integer or floating point. In SuperData all data is stored as Integer with implied decimal locations. Thus a value of 1.12 would normally be stored in SuperData as 1. To store the value in SuperData as 112 with implied decimal of 2, specify a slot multiplier for the associated slot.
NOLOG	**Optional.** Applies to ALL instruments. Do not log data from this channel. Include this when communications are required for real-time data but are not required for historical data logging. If this is not included, the channel will be data logged at one minute intervals.
ALM	**Optional**. Applies to Channels that contain bitmapped alarms. The ALARM configuration setup. ALM(PAL slot, Alarm offset, Alarm Bitmap Start Slot, Alarm ACK Bitmap Slot, Number of Bitmap Slots). Normally this will be configured by SSI personnel familiar with the application. If you are not sure, do not include Bitmapped support. Invalid configurations may cause spurious invalid alarms to be reported on RealTime and in AlarmReports.
ABC	**Optional**. Applies to ALL instruments. Alarm Block Configuration . Caution: any specified channel can use either ALM or ABC but not both. Allows a custom Alarm Block Bitmap (one word) to be setup for any instrument but generally used only for non-programmable instruments that are not capable of maintaining alarm bitmaps. See the section on Custom Alarm Block Configuration.
TAG	**Required.** Applies to ALL instruments. Instrument name. Limited to 12 Characters with no spaces.

Honeywell MODBUS Instruments

[C]CH#LLL(PPP) = "ID,[L:x],[A:xx],[CV:xx],[MV:xx],[T:xx],[AB:xxx],[ASP:xx],[PG:xx],[SMULT:SSxVALUE,...,SSxVALUE],[ALM],[NOLOG],[ABC]" = "tag "

Examples:

4CH#16(1)="HWM_GEN,L:1,A:2,T:1,A:4,ASP:4,PG:1,SMULT:2x10,4x0.01" = "HW3300x"
4CH#20(1)="HWM_UDC3300,L:1,A:2,T:1,A:4,ASP:4,PG:1,SMULT:2x10,4x0.01"="HW3300"
4CH#21(2)="HWM_UDC2300,L:1,A:2,T:1,A:4,ASP:4,SMULT:2x10,4x0.01" = "HW2300"
4CH#17(7)="HWM_DPR180,A:8,CV:8,MV:8,SMULT:17x100.0,18x1000,19x100"="DPR180"
1CH#22(3)="HWM_UDC5300,L:1,A:2,T:1,A:4,ASP:4,PG:1,SMULT:2x10"="HW5300"
1CH#23(4)="HWM_VRX,A:8,CV:8,MV:8" = "HWVRX"

Note: Items enclosed in brackets [ ] are optional but may be required for certain instrument types.

Item	Definition
C	**Optional**. Applies to ALL instruments. Specifies the Connection Identifier (1-8 for serial connections and 9 for Ethernet). The protocol for the connection must match the protocol for the instrument. If not included, defaults to Connection 1.
LLL	**Required**. Applies to ALL instruments. The logical channel number assigned (1-128).
PPP	**Required**. Applies to ALL instruments. The physical address of the instrument.

	For MODBUS instruments the address is in the range 1-247.
ID	**Required**. Applies to ALL instruments. The instrument ID. **Note:** Most newer Honeywell instruments use common addresses based on type of data. To configure SDIO to read these instruments you must specify the data to be read by type and count. The maximum counts for each type are specified next to the instrument type below. The values read are mapped to slots (0-77) in the order specified above. Maximum slots per logical channel is 78, this must be considered when configuring one of these instruments. For additional information on Honeywell MODBUS data addressing refer to Honeywell Manual 51-52-25-66F (Modbus RTU Serial Communications Manual). **HWM_GEN** (max L:16,A:64,CV:32,MV:64,T:12,AB:120,ASP:64,PG:4) **HWM_DPR100** (max L:0,A:6,CV:6,MV:6,T:0,AB:12,ASP:12,PG:0) **HWM_DPR180** (max L:0,A:24,CV:24,MV:24,T:0,AB:48,ASP:48,PG:0) **HWM_DPR250** (max L:0,A:64,CV:32,MV:32,T:0,AB:64,ASP:64,PG:0) **HWM_RSX** (max L:2,A:6,CV:10,MV:24,T:6,AB:12,ASP:12,PG:0) **HWM_VRX** (max L:2,A:12,CV:16,MV:32,T:12,AB:16,ASP:16,PG:1) **HWM_VPR** (max L:4,A:12,CV:16,MV:32,T:3,AB:16,ASP:16,PG:4) **HWM_DR4300** (max L:1,A:1,CV:0,MV:0,T:1,AB:2,ASP:2,PG:1) **HWM_DR4500** (max L:2,A:4,CV:0,MV:1,T:4,AB:6,ASP:6,PG:2) **HWM_UDC2300** (max L:1,A:2,CV:0,MV:0,T:0,AB:2,ASP:2,PG:1) **HWM_UDC3300** (max L:2,A:3,CV:0,MV:2,T:1,AB:2,ASP:2,PG:1) **HWM_UDC5300** (max L:2,A:3,CV:9,MV:16,T:0,AB:4,ASP:4,PG:1)
L	**Optional.** Specifies the number of LOOPS to read. 7 slots are used for each LOOP read (PV,RV,WSP,OUT,IN1,IN2,STATUS). Examples: L:1 reads LOOP 1 and uses 7 slots. L:2 reads LOOPS 1 and 2 and uses 14 slots.
A	**Optional.** Specifies the number of ANALOG INPUTS to read. 1 slot is used for each input read. Example: A:4 reads ANALOG INPUTS 1-4 and uses 4 slots.
CV	**Optional.** Specifies the number of COMM or CONSTANT values to be read. 1 slot is used for each value read. Example: CV:3 reads CONSTANT Values 1-3 and uses 3 slots.
MV	**Optional.** Specifies the number of MATH or CALCULATED values to be read. 1 slot is used for each value read. Example: MV:6 reads MATH Values 1-6 and uses 6 slots.
T	**Optional.** Specifies the number of TOTALIZER values to be read. 1 slot is used for each value read. Example: T:2 reads TOTALIZER Values 1-2 and uses 2 slots.
AB	**Optional.** Specifies the number of ALARM BITS to be read. 1 slot is used for each group of 16 alarm bits read. Examples: AB:2 reads 2 ALARM BITS and uses 1 slot. AB:12 reads 12 ALARM BITS and uses 1 slot. AB:16 reads 16 ALARM BITS and uses 1 slot. AB:20 reads 20 ALARM BITS and uses 2 slots.
ASP	**Optional.** Specifies the number of ALARM SETPOINT values to be read. 1 slot is used for each value read. Example: ASP:2 reads ALARM SETPOINT Values 1-2 and uses 2 slots.
PG	**Optional.** Specifies the number of SETPOINT PROGRAMMER records be read. 7 slots are used for each record read. The slots contain: 1. Setpoint Programmer Output 2. Current Seg Number 3. Elapsed Time

	4. Active Time 5. Remaining Time 6. Segment Events 7. Status. Example: PG:1 reads SETPOINT PROGRAMMER record 1 and uses 7 slots.
SMULT:	**Optional.** Specifies Slot Multipliers. A multiplier may be specified for any of the 78 slots (slots 0-77). Format as follows: SMULT:SSxVALUE,…,SSxVALUE Example: SMULT:2x100,12x0.01 The example applies a multiplier of 100 to slot 2 and a multiplier of 0.01 to slot 12. If not specified, the default multiplier is 1. Note: In the MODBUS protocol data is sent as binary WORD registers, one WORD normally represents an Integer value. However, two words may be used to send an IEEE floating point value. In SuperData all data is stored as Integer with implied decimal locations. Thus a floating point value of 1.12 would normally be stored in SuperData as 1. To store the value in SuperData as 112 with implied decimal of 2, specify a slot multiplier for the associated slot.
NOLOG	**Optional.** Applies to ALL instruments. Do not log data from this channel. Include this when communications are required for real-time data but are not required for historical data logging. If this is not included, the channel will be data logged at one minute intervals.
ALM	**Optional**. Applies to Channels that contain bitmapped alarms. The ALARM configuration setup. ALM(PAL slot, Alarm offset, Alarm Bitmap Start Slot, Alarm ACK Bitmap Slot, Number of Bitmap Slots). Normally this will be configured by SSI personnel familiar with the application. Bitmapped alarms are supported by Honeywell MODBUS instruments reading Alarm Bits (AB:xxx). If you are not sure, do not include Bitmapped support. Invalid configurations may cause spurious invalid alarms to be reported on RealTime and in AlarmReports.
ABC	**Optional**. Applies to ALL instruments. Alarm Block Configuration . Caution: any specified channel can use either ALM or ABC but not both. Allows a custom Alarm Block Bitmap (one word) to be setup for any instrument but generally used only for non-programmable instruments that are not capable of maintaining alarm bitmaps. See the section on Custom Alarm Block Configuration..
TAG	**Required.** Applies to ALL instruments. Instrument name. Limited to 12 Characters with no spaces.

Honeywell DPR3000 Instruments

[C]CH#LLL(PPP) = "ID,[IN:xx],[DIN:xx],[AB:xxx],[SMULT:SSxVALUE,...,SSxVALUE],[ALM],[NOLOG],[ABC]" = "tag "

Example:
4CH#18(5) = "HWM_DPR3000,IN:8,DIN:2,AB:8" = "DPR3000"

Note: Items enclosed in brackets [ ] are optional but may be required for certain instrument types.

Item	Definition
C	**Optional**. Applies to ALL instruments. Specifies the Connection Identifier (1-8 for serial connections and 9 for Ethernet). The protocol for the connection must match the protocol for the instrument. If not included, defaults to Connection 1.
LLL	**Required**. Applies to ALL instruments. The logical channel number assigned (1-128).
PPP	**Required**. Applies to ALL instruments. The physical address of the instrument. For MODBUS instruments the address is in the range 1-247.
ID	**Required**. Applies to ALL instruments. The instrument ID: **HWM_DPR3000** **Note:** The DPR3000 is an older Honeywell MODBUS instruments and does not conform to the common addresses used in newer Honeywell Instruments.

	To configure SDIO to read this instrument you must specify the data to be read by type and count. The maximum counts for each type are specified next to the instrument type below. The values read are mapped to slots (0-77) in the order specified above. Maximum slots per logical channel is 78, this must be considered when configuring this instrument. For additional information on Honeywell DPR3000 data addressing refer to Honeywell Manual EN1l-6127 (DPR3000 250mm Strip Chart Recorder Modbus RTU Communications Option Manual). HWM_DPR3000 (max IN:32,DIN:12,AB:192)
IN:	**Optional.** Specifies the number of ANALOG INPUTS to read. 1 slot is used for each input read. Example: · IN:4 reads ANALOG INPUTS 1-4 and uses 4 slots.
DIN:	**Optional.** Specifies the number of DIGITAL INPUT values to be read. 1 slot is used for each value read. Example: DIN:3 reads DIGITAL INPUT Values 1-3 and uses 3 slots.
AB:	**Optional.** Specifies the number of ALARM BITS to be read. 1 slot is used for each group of 16 alarm bits read. Examples: AB:2 reads 2 ALARM BITS and uses 1 slot. AB:12 reads 12 ALARM BITS and uses 1 slot. AB:16 reads 16 ALARM BITS and uses 1 slot. AB:20 reads 20 ALARM BITS and uses 2 slots.
SMULT:	**Optional.** Specifies Slot Multipliers. A multiplier may be specified for any of the 78 slots (slots 0-77). Format as follows: SMULT:SSxVALUE,…,SSxVALUE Example: SMULT:2x100,12x0.01 The example applies a multiplier of 100 to slot 2 and a multiplier of 0.01 to slot 12. If not specified, the default multiplier is 1. Note: In the MODBUS protocol data is sent as binary WORD registers, one WORD normally represents an Integer value. However, in this protocol, two words are used to send floating point data as MANTISSA and DECIMAL indicator. In SuperData all data is stored as Integer with implied decimal locations. Thus a floating point value of 1.12 would normally be stored in SuperData as 1. To store the value in SuperData as 112 with implied decimal of 2, specify a slot multiplier for the associated slot.
NOLOG	**Optional.** Applies to ALL instruments. Do not log data from this channel. Include this when communications are required for real-time data but are not required for historical data logging. If this is not included, the channel will be data logged at one minute intervals.
ALM	**Optional**. Applies to Channels that contain bitmapped alarms. The ALARM configuration setup. ALM(PAL slot, Alarm offset, Alarm Bitmap Start Slot, Alarm ACK Bitmap Slot, Number of Bitmap Slots). Normally this will be configured by SSI personnel familiar with the application. If you are not sure, do not include Bitmapped support. Invalid configurations may cause spurious invalid alarms to be reported on RealTime and in AlarmReports.
ABC	**Optional**. Applies to ALL instruments. Alarm Block Configuration . Caution: any specified channel can use either ALM or ABC but not both. Allows a custom Alarm Block Bitmap (one word) to be setup for any instrument but generally used only for non-programmable instruments that are not capable of maintaining alarm bitmaps. See the section on Custom Alarm Block Configuration.
TAG	**Required.** Applies to ALL instruments. Instrument name. Limited to 12 Characters with no spaces.

Yokogawa CPL Instruments

[C]CH#LLL(PPP) = "ID,[CB:xxx-yyy],…,[CB:xxx-yyy],[SMULT:SSxVALUE,…,SSxVALUE],[NOLOG],[ABC] " = "tag "

Example:
3CH#34(72)="CPL_YOK,CB:0-10,SMULT:3x100,4x10)="UT750"

Note: Items enclosed in brackets [ ] are optional but may be required for certain instrument types.

Item	Definition
C	**Optional**. Applies to ALL instruments. Specifies the Connection Identifier (1-8 for serial connections and 9 for Ethernet). The protocol for the connection must match the protocol for the instrument. If not included, defaults to Connection 1.
LLL	**Required**. Applies to ALL instruments. The logical channel number assigned (1-128).
PPP	**Required**. Applies to ALL instruments. The physical address of the instrument. For Yokogawa CPL instruments, the address range is 1-99.
ID	**Required**. Applies to ALL instruments. The instrument ID: **CPL_YOK**
CB:	**Required.** Specifies the CPL Data block(s) to be polled. Up to 20 blocks may be specified. Blocks are specified as xxx-yyy where xxx=address offset and yyy=count of words to be read. Total word count may not exceed 78 words. Example: to read 2 blocks of data, specify CB:256-10,CB:601-6. For detailed information on data addresses, refer to Yokogawa Manuals IM 5D1D01-10E (Green Series Communications Functions) or TI 5d1B01-01E (UT750 Digital Indicating Controller Control and Communication Functions).
SMULT:	**Optional.** Specifies Slot Multipliers. A multiplier may be specified for any of the 78 slots (slots 0-77). Format as follows: SMULT:SSxVALUE,…,SSxVALUE Example: SMULT:2x100,12x0.01 The example applies a multiplier of 100 to slot 2 and a multiplier of 0.01 to slot 12. If not specified, the default multiplier is 1. Note: In the CPL protocol data is sent as an ASCII string and may be integer or floating point. In SuperData all data is stored as Integer with implied decimal locations. Thus a value of 1.12 would normally be stored in SuperData as 1. To store the value in SuperData as 112 with implied decimal of 2, specify a slot multiplier for the associated slot.
NOLOG	**Optional.** Applies to ALL instruments. Do not log data from this channel. Include this when communications are required for real-time data but are not required for historical data logging. If this is not included, the channel will be data logged at one minute intervals.
ALM	**Optional**. Applies to Channels that contain bitmapped alarms. The ALARM configuration setup. ALM(PAL slot, Alarm offset, Alarm Bitmap Start Slot, Alarm ACK Bitmap Slot, Number of Bitmap Slots). Normally this will be configured by SSI personnel familiar with the application. If you are not sure, do not include Bitmapped support. Invalid configurations may cause spurious invalid alarms to be reported on RealTime and in AlarmReports.
ABC	**Optional**. Applies to ALL instruments. Alarm Block Configuration . Caution: any specified channel can use either ALM or ABC but not both. Allows a custom Alarm Block Bitmap (one word) to be setup for any instrument but generally used only for non-programmable instruments that are not capable of maintaining alarm bitmaps. See the section on Custom Alarm Block Configuration.
TAG	**Required.** Applies to ALL instruments. Instrument name. Limited to 12 Characters with no spaces.

AllenBradley DF1 Instruments

[C]CH#LLL(PPP) = "ID,[DB:xxx-yyy],…,[DB:xxx-yyy], [ALM],[NOLOG],[ABC] " = "tag "
Examples:
5CH#11(1-7) = "AB_PLC,DB:0-30,DB:30-10" = "AB-PLC5"

5CH#8(1-9) = "AB_SLC,DB:1-36,DB:50-40" = "SLC-N9"

Note: SDIO only supports reading and writing Integer tables using DF1 Protocol.
Note: Items enclosed in brackets [ ] are optional but may be required for certain instrument types.

Item	Definition
C	**Optional**. Applies to ALL instruments. Specifies the Connection Identifier (1-8 for serial connections and 9 for Ethernet). The protocol for the connection must match the protocol for the instrument. If not included, defaults to Connection 1.
LLL	**Required**. Applies to ALL instruments. The logical channel number assigned (1-128).
PPP	**Required**. Applies to ALL instruments. The physical address of the instrument. For AllenBradley Instruments, specify the PLC Address followed by the Integer Table to be used. Example: • 5CH#11(3-9) Specifies PLC Address 3 using Integer Table 9.
ID	**Required**. Applies to ALL instruments. The instrument ID: **AB_PLC, AB_SLC**
DB:	**Required.** Specifies the Data block(s) to be polled. Up to 20 blocks may be specified. Blocks are specified as xxx-yyy where xxx=address offset and yyy=count of words to be read. Total word count may not exceed 78 words. Example: • to read 2 blocks of data, specify DB:1-10,DB:100-6.
NOLOG	**Optional.** Applies to ALL instruments. Do not log data from this channel. Include this when communications are required for real-time data but are not required for historical data logging. If this is not included, the channel will be data logged at one minute intervals.
ALM	**Optional**. **Optional**. The ALARM configuration setup. ALM(PAL slot, Alarm offset, Alarm Bitmap Start Slot, Alarm ACK Bitmap Slot, Number of Bitmap Slots). e.g. ALM(10,400,60,64,4) for a PLC with Bitmapped alarm support. Bitmapped alarm support is a custom feature in the PLC Logic and is implemented by some PLC programs. Normally this will be configured by personnel familiar with the PLC programs. If you are not sure, do not include Bitmapped support. Invalid configurations may cause spurious invalid alarms to be reported on RealTime and in AlarmReports.
ABC	**Optional**. Applies to ALL instruments. Alarm Block Configuration . Caution: any specified channel can use either ALM or ABC but not both. Allows a custom Alarm Block Bitmap (one word) to be setup for any instrument but generally used only for non-programmable instruments that are not capable of maintaining alarm bitmaps. See the section on Custom Alarm Block Configuration.
TAG	**Required.** Applies to ALL instruments. Instrument name. Limited to 12 Characters with no spaces.

Eurotherm Controllers

[C]CH#LLL(PPP) = "ID,[MB:xxx-yyy],...,[MB:xxx-yyy], [SMULT:SSxVALUE,...,SSxVALUE],[ALM],[NOLOG],[ABC]" = "tag "

Examples:
5CH#24(5) = "ET2400,MB:6144-30-F" = "ET2404"
Note: Items enclosed in brackets [ ] are optional but may be required for certain instrument types.

Item	Definition
C	**Optional**. Applies to ALL instruments. Specifies the Connection Identifier (1-8 for serial connections and 9 for Ethernet). The protocol for the connection must match the protocol for the instrument. If not included, defaults to Connection 1.
LLL	**Required**. Applies to ALL instruments. The logical channel number assigned (1-128).
PPP	**Required**. Applies to ALL instruments. The physical address of the instrument. For MODBUS instruments the address is in the range 1-247.
ID	**Required**. Applies to ALL instruments. The instrument ID: **MOD_PMC, ET2200, ET2400, ET2600**
MB:	**Required.** Specifies the Data block(s) to be polled. Up to 20 blocks may be specified. Blocks are specified as **xxx-yyy** where **xxx**=address offset and **yyy**=count of words to be read. Total word count may not exceed 78 words. For detailed information on Modbus data addresses for these instruments refer to Eurotherm Manual: HA 026230 Series 2000 Communications Handbook. Example: to read 2 blocks of integer data, specify MB:1-10,MB:100-6.
SMULT:	**Optional.** Specifies Slot Multipliers. A multiplier may be specified for any of the 78 slots (slots 0-77). Format as follows: SMULT:SSxVALUE,…,SSxVALUE Example: SMULT:2x100,12x0.01 The example applies a multiplier of 100 to slot 2 and a multiplier of 0.01 to slot 12. If not specified, the default multiplier is 1. Note: Eurotherm Instruments use Integer data with implied decimal locations. **It is not normally necessary to use slot multipliers with these instruments.**
NOLOG	**Optional.** Applies to ALL instruments. Do not log data from this channel. Include this when communications are required for real-time data but are not required for historical data logging. If this is not included, the channel will be data logged at one minute intervals.
ALM	**Optional**. Applies to Channels that contain bitmapped alarms. The ALARM configuration setup. ALM(PAL slot, Alarm offset, Alarm Bitmap Start Slot, Alarm ACK Bitmap Slot, Number of Bitmap Slots). Normally this will be configured by SSI personnel familiar with the application. If you are not sure, do not include Bitmapped support. Invalid configurations may cause spurious invalid alarms to be reported on RealTime and in AlarmReports.
ABC	**Optional**. Applies to ALL instruments. Alarm Block Configuration . Caution: any specified channel can use either ALM or ABC but not both. Allows a custom Alarm Block Bitmap (one word) to be setup for any instrument but generally used only for non-programmable instruments that are not capable of maintaining alarm bitmaps. See the section on Custom Alarm Block Configuration.
TAG	**Required.** Applies to ALL instruments. Instrument name. Limited to 12 Characters with no spaces.

Sample SCSPSYS.CFG File

***Note ANY line starting with a * is treated as a remark.**

{SRES }
*Configures connection 1 and general data
COMMUX BOARD = "16"
PROTOCOL="MMI-MSI"
PORT = "COM1"
BAUD = "57600"

STA = "0"
Krunch="03:15AM"
{ERES}

{SCON2}
*configures connection 2 for MODBUS
PROTOCOL="MB-RTU"
PORT ="COM6"
BAUD ="19200"
DBITS = "8"
PARITY = "NONE"
SBITS = "1"
{ECON2}

{SCON3}
*configures connection 3 for Honeywell CPL
PROTOCOL="HW-CPL"
PORT ="COM7"
BAUD ="9600"
DBITS = "8"
PARITY = "EVEN"
SBITS = "1"
{ECON3}

{SCON4}
*configures connection 4 for Yokogawa CPL
PROTOCOL="YOK-CPL"
PORT ="COM4"
BAUD ="9600"
DBITS = "8"
PARITY = "NONE"
SBITS = "1"
{ECON4}

{SCON5}
*configures connection 5 for Honeywell UDC protocol
PROTOCOL="HW_UDC"
PORT ="COM10"
BAUD ="4800"
DBITS = "7"
PARITY = "EVEN"
SBITS = "1"
{ECON5}

{SCON6}
*configures connection 6 for AllenBradley DF1 protocol
PROTOCOL="AB-DF1"
PORT = "COM2"
BAUD = "9600"
DBITS = "8"
PARITY = "EVEN"
SBITS = "1"
NADDR = "7"
{ECON6}

{SCON8}

*configures connection 8 for Honeywell UDC protocol
*note, Port is set to "none" which keeps this connection disconnected
PROTOCOL="HW-UDC"
PORT = "none"
BAUD = "4800"
DBITS = "7"
PARITY = "EVEN"
SBITS = "1"
{ECON8}

{SINST }
*sample instrument configurations
***MMI_MSI Instruments on Connection 1**
*DUALPRO MASTER INSTRUMENT WITH V4 LOGIC PROGRAMS IN THE FOREGROUND
1CH#1(1) = "DUALPRO-V4.0, PROG(1), ACW:E3, ALM(36,0,0,0,0)" = "CH1"
*DUALPRO(GENERIC) SLAVE TABLE 29 BLOCKS 0,1 AND 2
1CH#20(1-29) = "MMIGEN-V4.0, BLK:012,ALM(1,800,2,14,12)" = "CH1_T29"
*DUALPRO(GENERIC) SLAVE TABLE 27 BLOCKS 3,4 AND 5 WITHOUT DATALOGGING
1CH#21(1-27) = "MMIGEN-V4.0, BLK:345, NOLOG" = "1_XXX"
*DUALPRO MASTER INSTRUMENT WITH V3.5 RECIPES IN THE FOREGROUND
1CH#2(2) = "DUALPRO-V4.0, PROG(3), ACW:E3, ALM(36,0,0,0,0)" = "CH2"
*CARB-PC ON BANK 2
1CH#3(17) = "CARB-PC" = "CH4-CPC"
*10PRO, 10PRO-E, 10PRO-L, BC-560
1CH#4(33) = "10PRO" = "CH4-10P"
*10PRO-E OR 10PRO-L IN BLOCK MODE
1CH#5(34) = "MMIGEN-V4.0, BLK:0,ABC:01" = "CH5-10PB"
*V3.0 CARBPRO
1CH#6(49) = "UCARB-V3.0, BC CONT, PROG(3), ALM(36,0,0,0,0)" = "CH6-V3CP"
*V3.0 MULTICARB
1CH#7(50) = "MCARB-V3.0, BC CONT, PROG(3), ALM(36,0,0,0,0)" = "CH7-V3MC"
*V3.0 UNIPRO
1CH#8(51) = "UNIPRO-V3.0, BC CONT, PROG(3), ALM(36,0,0,0,0)" = "CH8-V3UP"
*V3.5 CARBPRO
1CH#9(65) = "UCARB-V3.5, BC CONT, PROG(3), ALM(36,0,0,0,0)" = "CH9-V35CP"
*AACC2000 INSTRUMENT
1CH#10(66) = "MMIGEN-V4.0, BLK:012,ABC:02" = "AACC2"
***Modbus Instruments on connection 2**
2CH#16(1)="HWM_GEN,L:1,A:2,T:1,A:4,ASP:4,PG:1,SMULT:2x10,4x0.01" = "HW3300x"
2CH#30(1)="HWM_UDC3300,L:1,A:2,T:1,A:4,ASP:4,PG:1,SMULT:2x10,4x0.01"="HW3300"
2CH#31(2)="HWM_UDC2300,L:1,A:2,T:1,A:4,ASP:4,SMULT:2x10,4x0.01" = "HW2300"
2CH#17(7)="HWM_DPR180,A:8,CV:8,MV:8,SMULT:17x100.0,18x1000,19x100"="DPR180"
2CH#32(3)="HWM_UDC5300,L:1,A:2,T:1,A:4,ASP:4,PG:1,SMULT:2x10"="HW5300"
2CH#33(4)="HWM_VRX,A:8,CV:8,MV:8" = "HWVRX"
2CH#11(12) = "MMI_MOD,MB:0-10" = "MP-MOD2"
2CH#70(5) = "MOD_PMC,MB:0-50,MB:50-25" = "1RB01"
2CH#18(9) = "HWM_DPR3000,IN:8,DIN:2,AB:8" = "DPR3000"
***Honeywell CPL Instruments on Connection 3**
3CH#34(102)="CPL_HW,CB:256-6,CB:601-4,SMULT:3x100,4x10)="DCP550"
***Yokogawa CPL Instruments on Connection 4**
4CH#40(72)="CPL_YOK,CB:0-10,SMULT:3x100,4x10)="UT750"
***Honeywell UDC Instruments on Connection 5**
5CH#35(78)="UDC3000"="UDC3000"
***AllenBradley DF1 Instruments on Connection 6**
6CH#81(1-7) = "AB_PLC,DB:0-30,DB:30-10" = "AB-PLC5"
6CH#82(1-9) = "AB_SLC,DB:1-36,DB:50-40" = "SLC-N9"

{EINST}

{SABC }

```
*ALARM BLOCK CONFIG
ABC01 IS FOR 10PROE IN BLOCK MODE
ABC01-SALM = 100                        *STARTING ALARM NUMBER
ABC01-B0-ALM = 0,4,&1,10          *DEV FROM REMOTE SETPOINT, BAND 10DEG
ABC01-B1-ALM = 0,4,&2,10          *DEV FROM LOCAL SETPOINT, BAND 10DEG
ABC01-B2-ALM = 5,5,0              *TIMER VALUE IS 0
ABC01-B3-ALM = 5,21,1             *CONTROL IN MANUAL
ABC01-B4-ALM = 8,22,0             *USING LOCAL SETPOINT
ABC01-B5-ALM = 3,19,80            *CONTROL OUT ABOVE 80%
*ABC02 IS FOR AACC 2000 (POLLED AS MMIGEN-V4.0, BLK:012)
ABC02-SALM = 200                        *STARTING ALARM NUMBER
ABC02-B0-ALM = 0,1,&2,10          *DEV FROM SETPOINT, BAND 10
ABC02-B1-ALM = 3,14,&30           *PROBE RCVY TIME > MAX RCVY TIME
ABC02-B2-ALM = 3,20,90            *CAB TEMP > 90 DEG
ABC02-B3-ALM = 3,22,&27           *PROBE IMP > MAX IMP
ABC02-B4-ALM = 4,10,1400          *PROBE TEMP < 1400 DEG
ABC02-B5-ALM = 4,11,1100          *PROBE MV < 1100
ABC02-B6-ALM = 5,3,1              *CONTROL IN MANUAL
```

{EABC}

Alarm Block Configuration

Any instrument may use an Alarm Block Configuration (ABC) setup to supply 1 bitmapped alarm word (slot 79). To configure the instrument, use ABC:xx in the instrument configuration line:

Example: CH#4(4) = "MMIGEN-V4.0, BLK:0, ABC:01" = "10P-BLK"

Use of the ABC:xx configuration will override the ALM(x,x,x,x,x,) configuration (cannot use both). Generally, the ABC:xx alarm configuration should only be used for instruments that do not have alarm bitmaps.
The Alarm Block Configuration is defined in the {SABC} section of the SCSPSYS.CFG file. The custom configuration allows you to generate alarms based on the data being polled from the instrument. Consequently, configuring the Block requires knowledge of what values will be polled from the instrument.

The configured alarm bitmap will always be one WORD and will be logged as slot 79. The configuration parameters are as follows:

ABCxx-SALM = AAAA
WHERE xx: IS THE ALARM BLOCK ID (01-99)
AAAA: IS THE STARTING ALARM NUMBER

ABCxx-Bx-ALM = TYPE, SLOT, CPVAL, AUXDATA

WHERE Bx: SPECIFIES THE BIT (B0 - B15)
TYPE: 0=DEV BAND ALARM,
1=DEV HI ALARM,
2=DEV LO ALARM
3=GT ALARM,
4=LT ALARM,
5=EQUAL ALARM,

6=NOT EQUAL ALARM
7=BIT ON ALARM,
8=BIT OFF ALARM

SLOT: IS THE SLOT TO TEST
CPVAL: IS THE TEST COMPARE VALUE
USE NUMBER FOR CONSTANT VALUE
USE "&SLOT" FOR A SLOT VALUE
USE BIT NUMBER FOR TYPE 7,8 BIT ALARMS

AUXDATA: FOR DEV BAND ALARMS, SPECIFIES THE BANDWIDTH
USE NUMBER FOR CONSTANT VALUE
USE "&SLOT" FOR A SLOT VALUE

Example: ABC01 IS FOR a 10PROE IN BLOCK MODE
ABC01-SALM = 100 *STARTING ALARM NUMBER
ABC01-B0-ALM = 3,36,0,0 *IS PA>0
ABC01-B1-ALM = 0,4,&2,10 *DEV FROM LOCAL SETPOINT, BAND 10DEG
ABC01-B2-ALM = 5,5,0 *TIMER VALUE IS 0
ABC01-B3-ALM = 5,21,1 *CONTROL IN MANUAL
ABC01-B4-ALM = 8,22,0 *USING LOCAL SETPOINT
ABC01-B5-ALM = 3,19,80 *CONTROL OUT ABOVE 80%

Example: ABC02 IS FOR an AACC 2000 (POLLED AS MMIGEN-V4.0, BLK:012)
ABC02-SALM = 200 *STARTING ALARM NUMBER
ABC02-B0-ALM = 0,1,&2,10 *DEV FROM SETPOINT, BAND 10
ABC02-B1-ALM = 3,14,&30 *PROBE RCVY TIME > MAX RCVY TIME
ABC02-B2-ALM = 3,20,90 *CAB TEMP > 90 DEG
ABC02-B3-ALM = 3,22,&27 *PROBE IMP > MAX IMP
ABC02-B4-ALM = 4,10,1400 *PROBE TEMP < 1400 DEG
ABC02-B5-ALM = 4,11,1100 *PROBE MV < 1100
ABC02-B6-ALM = 5,3,1 *CONTROL IN MANUAL
{EABC}

Communications Utilities

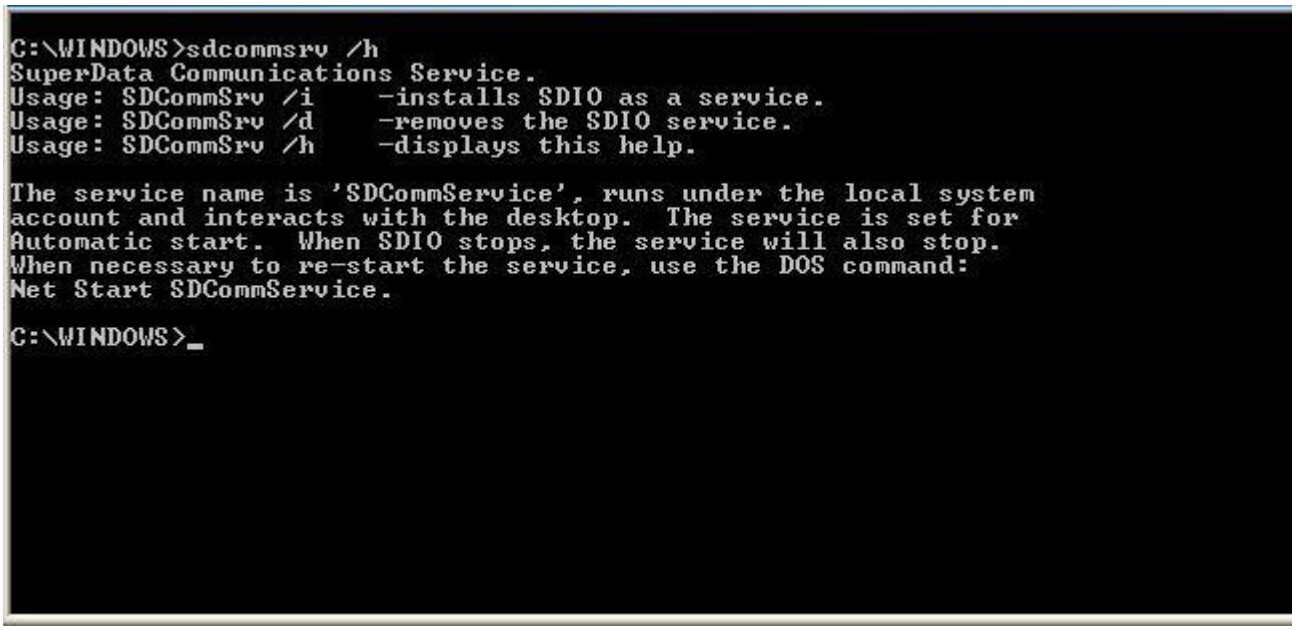
Utilities

The following is a list of SuperData Communications utilities. These utilities are included on the SuperData Installation CD shipped with the project documentation package and are installed during software configuration.

- **SDCommSrv - Used to setup SDIO to run as a service.**
- **ChStat - Used to check SDIO channel status from a remote computer.**
- **ComRBridge - Used to map comm data from a remotely running SDIO.**
- **SDIOConfig - Configuration utility for configuring SDIO.**
- **Krunch - Used to compress datalog files.**
- **CompDT - Used to decode compressed datalog filenames.**
- **ComSlots - Used to read/write communications slots.**
- **GetBuff - Command utility used to read a current slot value.**
- **PutBuff - Command utility used to write a current slot value.**
- **RWI - Command utility used to read/write data to an instrument.**
- **GetData - Command utility to read logged data.**
- **GetStats - Command utility to read summary statistics from logged data.**

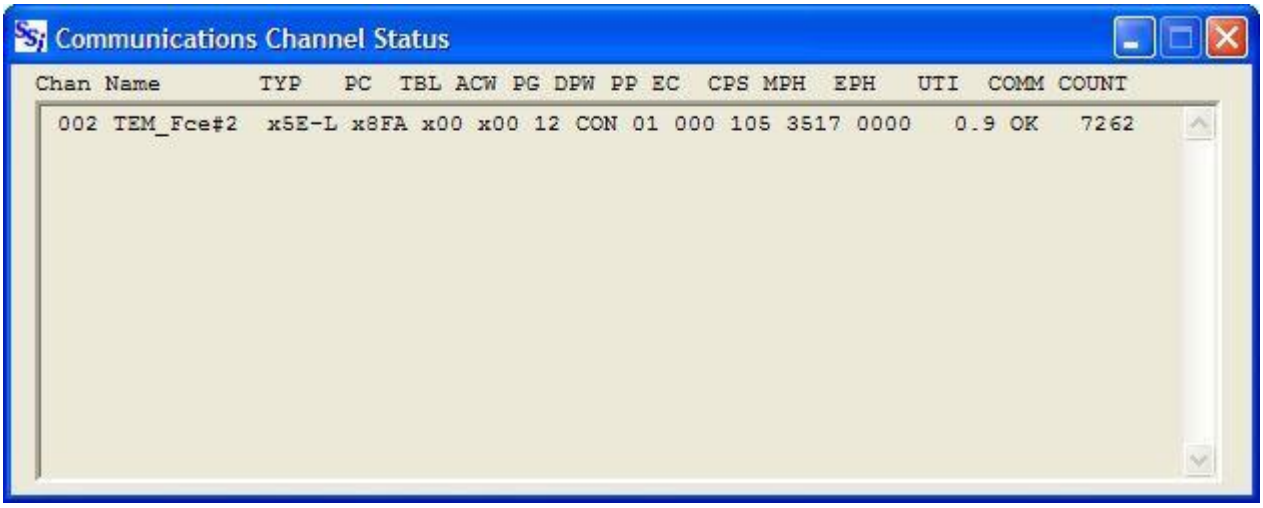
SDCommSrv

SDCommSrv.exe is a utility used to setup SDIO.exe to run as a service. Running SDIO as a service in the local system account allows SDIO to start automatically on reboot and runs regardless of logon status. The SDCommSrv.exe file is located in the Windows directory.



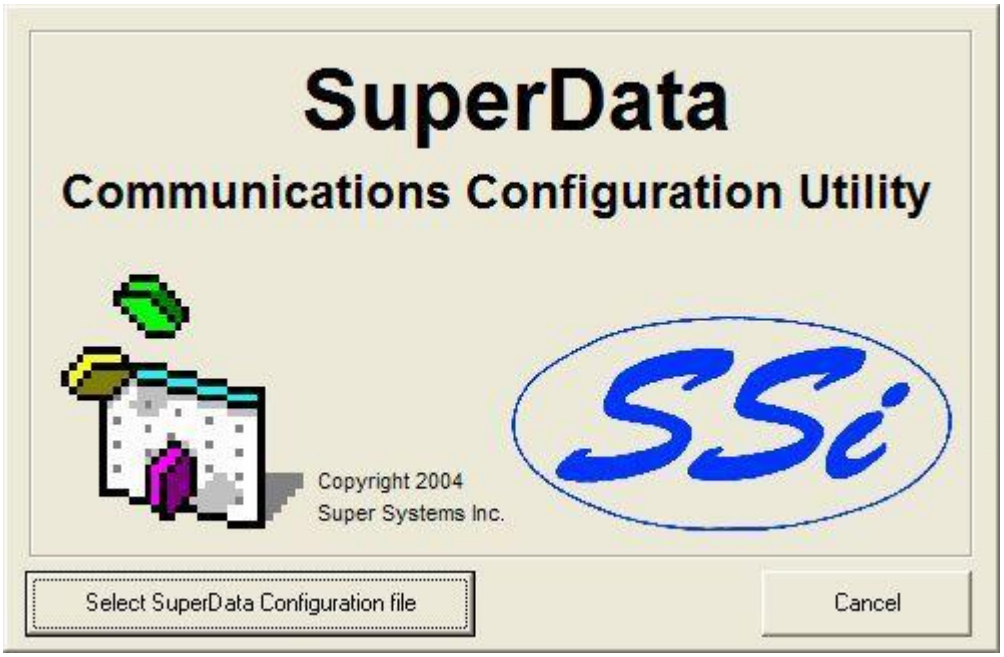
ChStat

ChStat is a utility that displays the communications status of all configured instruments at a remote computer (i.e. a computer other than the computer running SDIO.) The display is similar to SDIO's Status View.

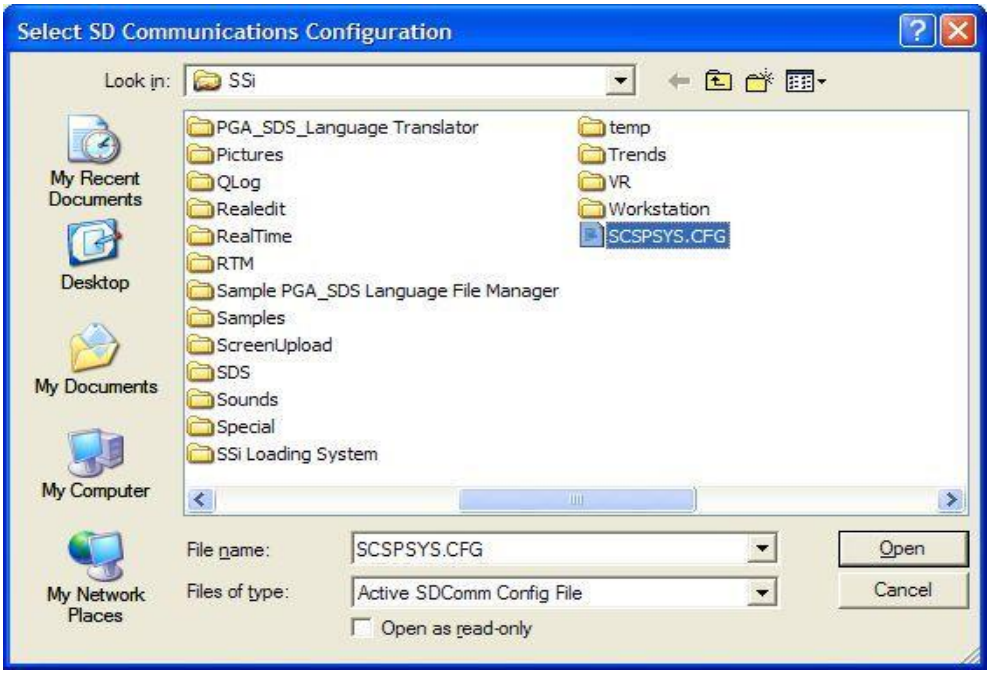


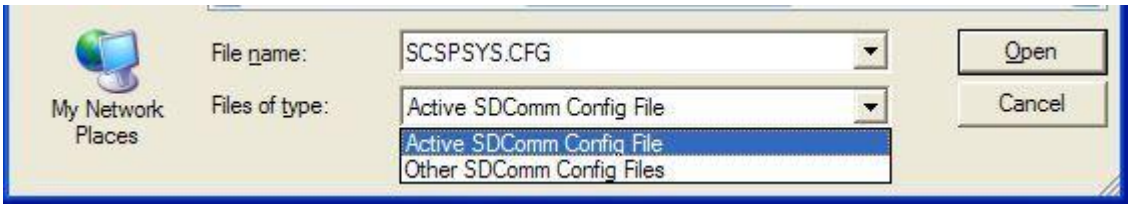
SDIOConfig

SDIOConfig is an SDIO Configuration tool. SDIO is configured using the Scspsys.cfg file. SDIOConfig (or any text file editor) may be used to edit the scspsys.cfg file. SDIOConfig is specifically designed for SDIO and contains features to assist in designing your communications.



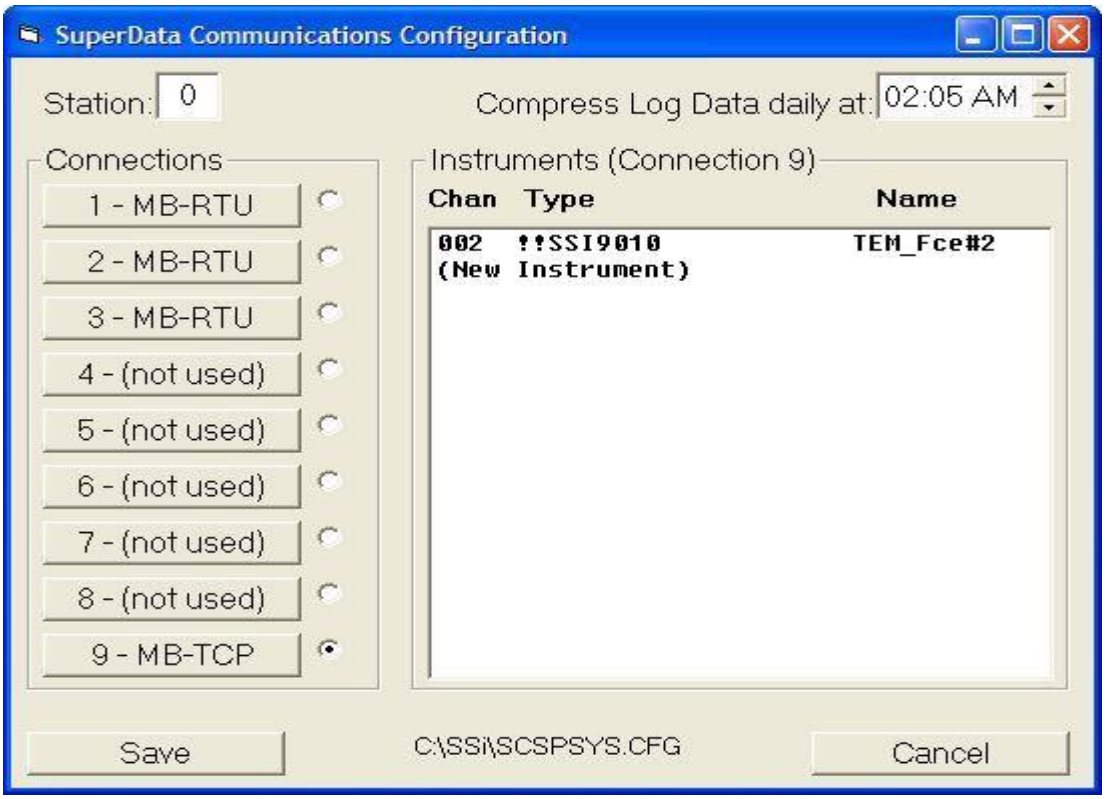
When SDIOConfig opens, you are presented with a splash screen that asks you to select the SuperData Configuration file. Clicking on this button will open the following dialog:



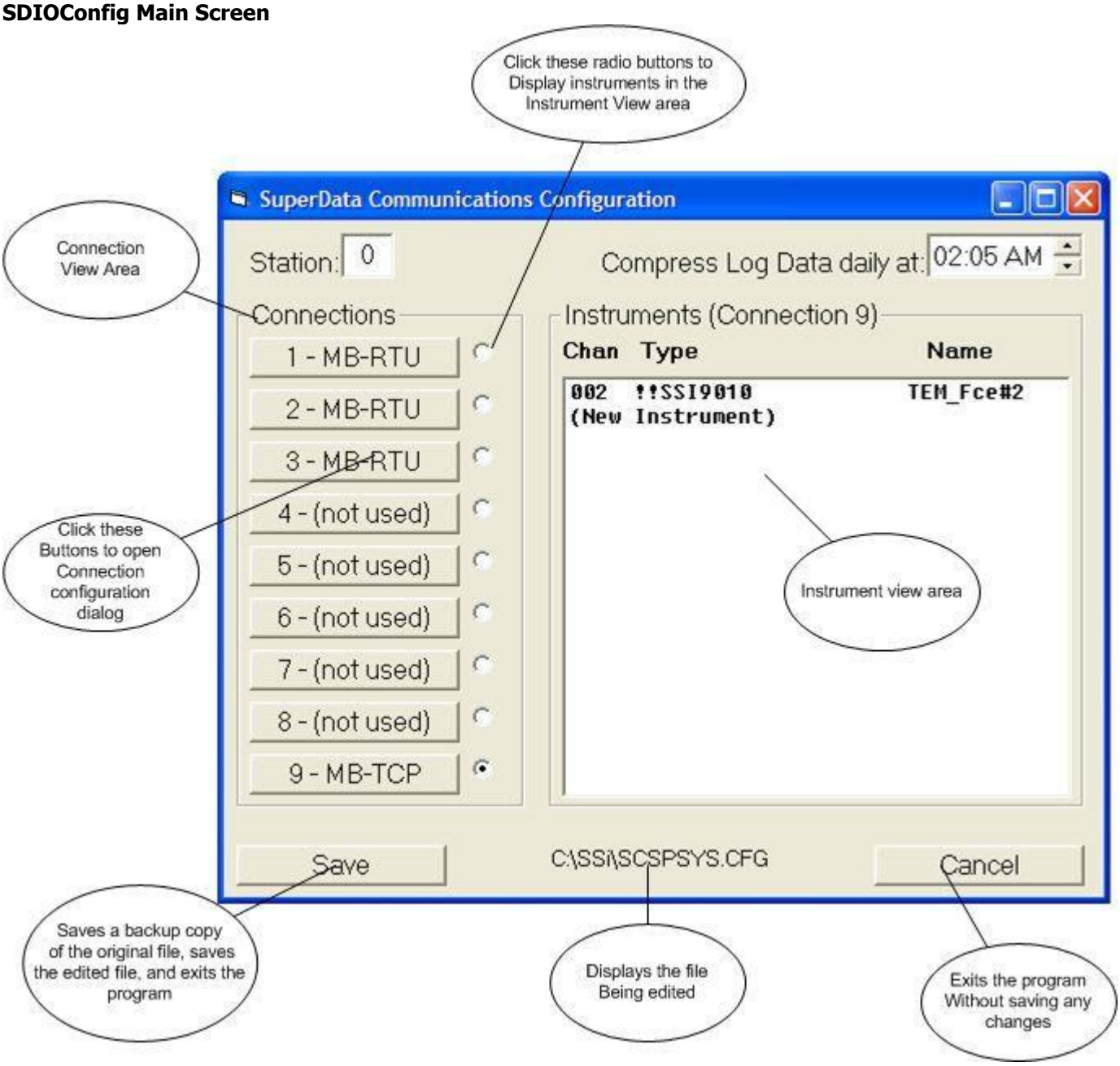


By selecting Files of type: Other SDComm Config files, you will be able to edit any files that have "scspsys" in the filename. Examples: scspsys.bak, scspsys_old.cfg, scspsys_save.txt etc.

After opening the configuration file, the main screen is presented.

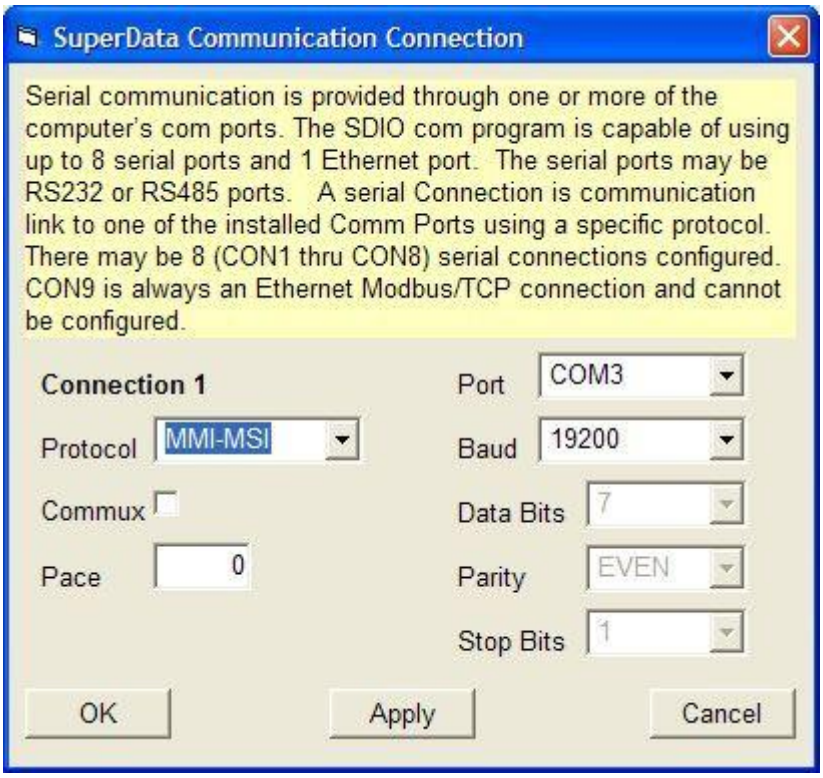


SDIOConfig Main Screen



- **Station** - Identifies the station (defaults to 0). Station 0 is the main communications server and maintains the datalog files. Any other station should be configured by SSi field service personnel.
- **Instrument Edit** - clicking on an instrument in the instrument view area opens the Instrument Edit Dialog.
- **New Instruments** - clicking on "new instrument" in the instrument view area opens the Instrument Edit Dialog for a new instrument.

SDIOConfig Connection Dialog

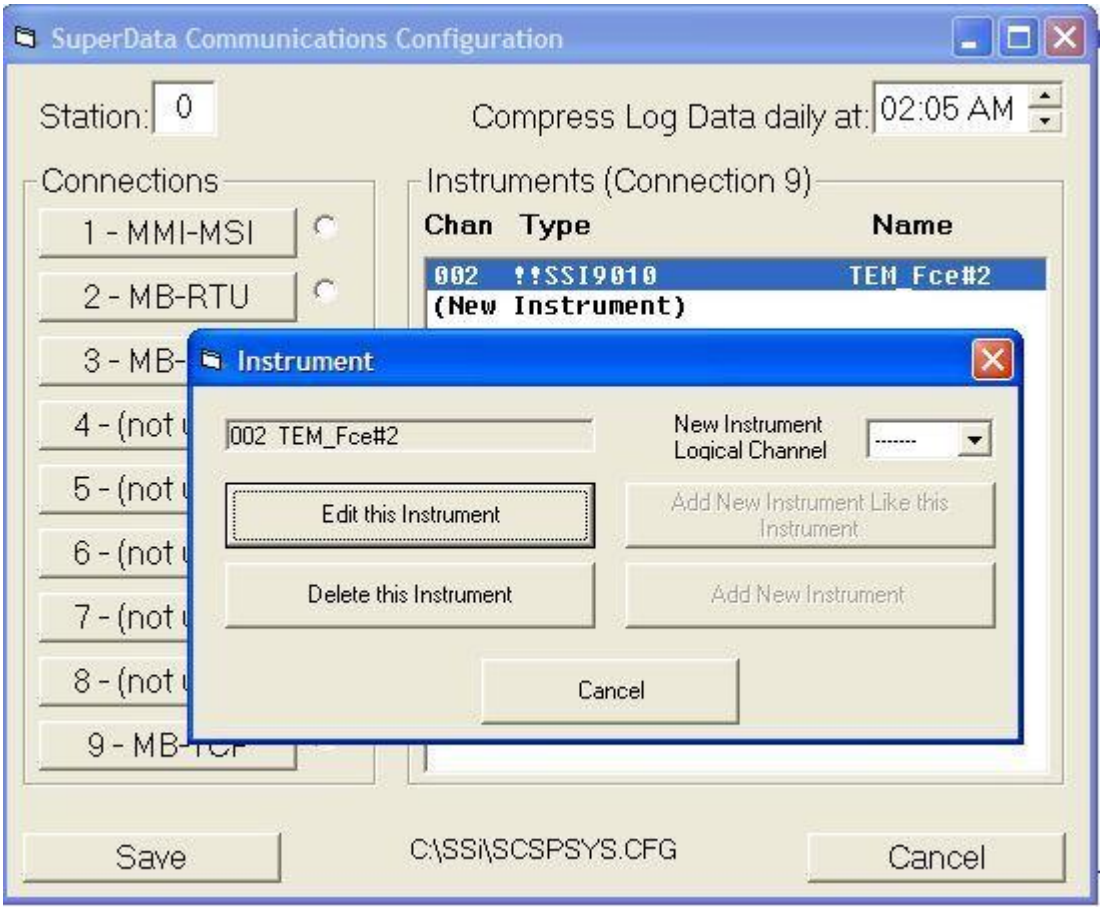


Note: Inactive controls (dimmed) cannot be modified for the selected protocol. Additional items may appear for some selected protocols.

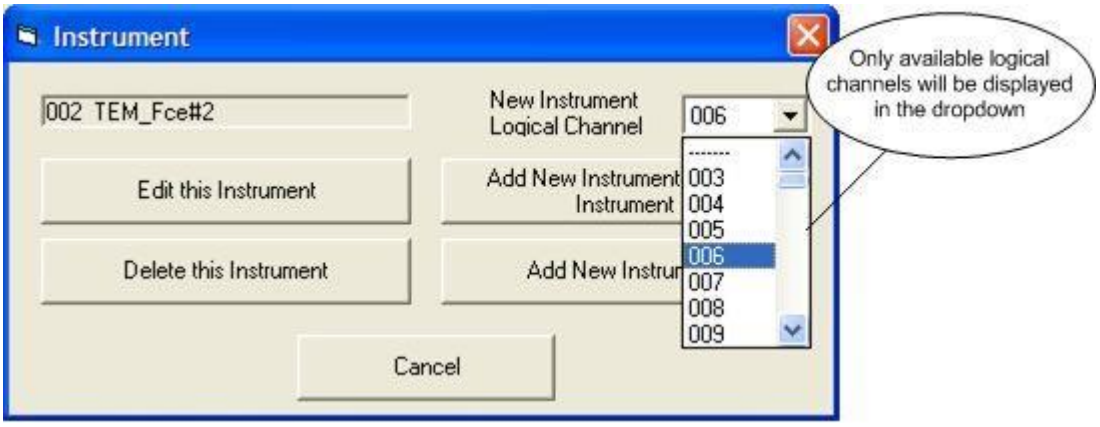
Note: If you change the protocol, any instruments on the connection that are not supported by the new protocol will be flagged with "!!" in the Main Screen's instrument view.

SDIOConfig Instrument Configuration

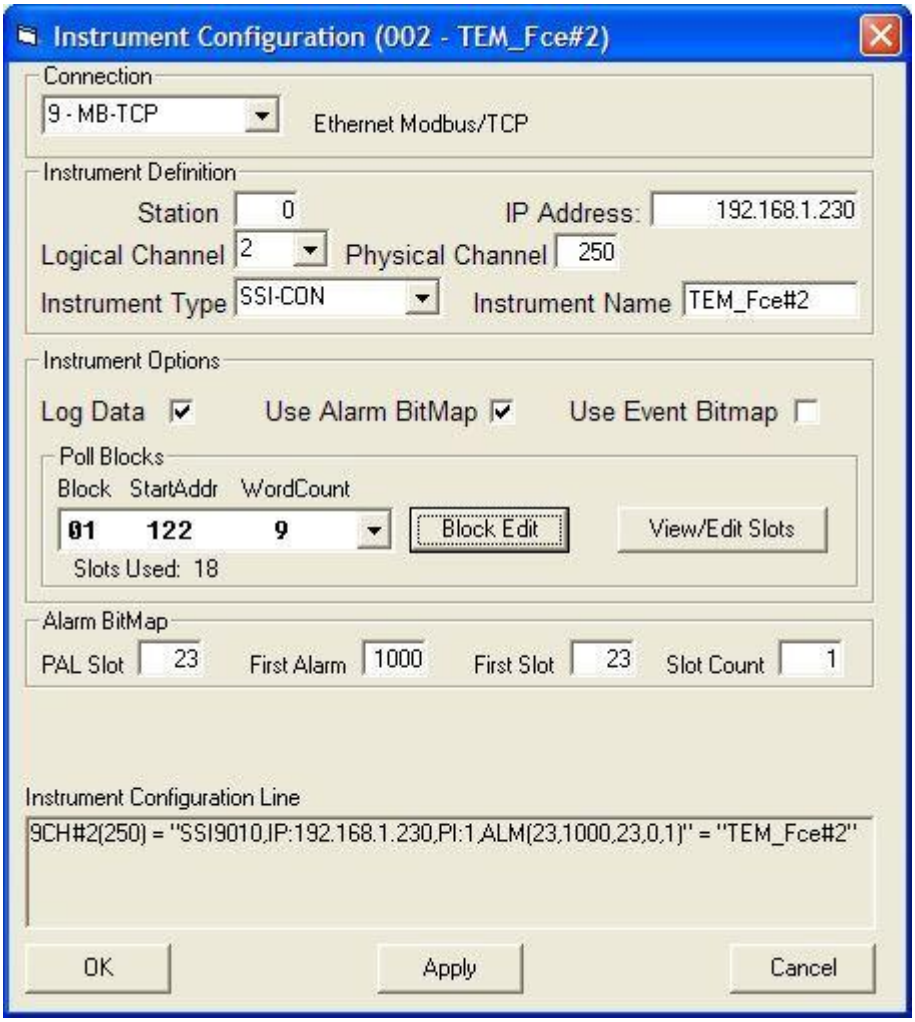
Clicking on an Instrument name in the Instrument View area opens the Instrument dialog.



- **Edit** - Opens the Instrument Configuration dialog for the selected instrument.
- **Delete** - Deletes the selected instrument.
- **New Instrument Logical Channel** - Selects a NEW Logical Channel and activates the right 2 buttons.



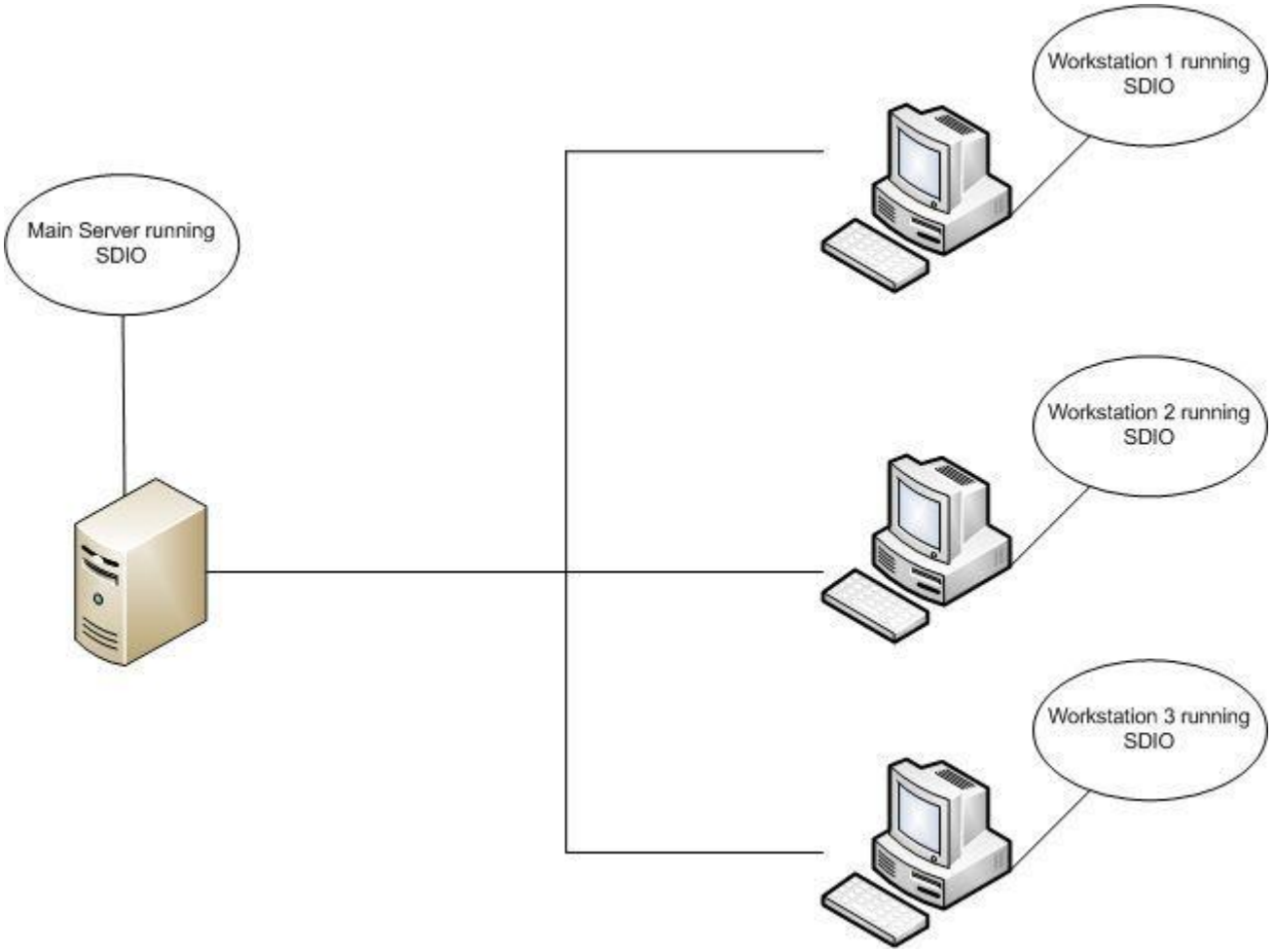
- Add New Instrument Like this Instrument - Opens the instrument configuration dialog for a new instrument with all values copied from the selected instrument except the logical channel.
- Add New Instrument - Opens the instrument configuration dialog for a new instrument (does not pre-fill screen) Note: this is the same as clicking on "(New Instrument)" in the instrument view.



This screen will vary depending on the connection, instrument type and instrument options selected. For full information on configuring instruments, see the section on SDIO Configuration in this help file. Clicking on the "Apply" button will check the configuration and update the configuration line. Fields displayed in RED are invalid and must be corrected in order to save with ent "OK" button. Fields displayed in YELLOW are acceptable but not normal and should be verified.

ComRBridge

ComRBridge is used to bridge remote comm data from one comm server (SDIO) to another SDIO running on a different computer. ComRBridge is setup using the ComRBridge.cfg file - this will normally be done by SSi Engineering or Field Service personnel.



Remote channels may be mapped by "channel" OR by "channel/slot". When mapping by channel, all slots from the remote channel are mapped to corresponding slots in the local channel. This reduces configuration and has the advantage that Realtime screens and SDRec charts can be the same on both computers with the possible exception of the channel number.

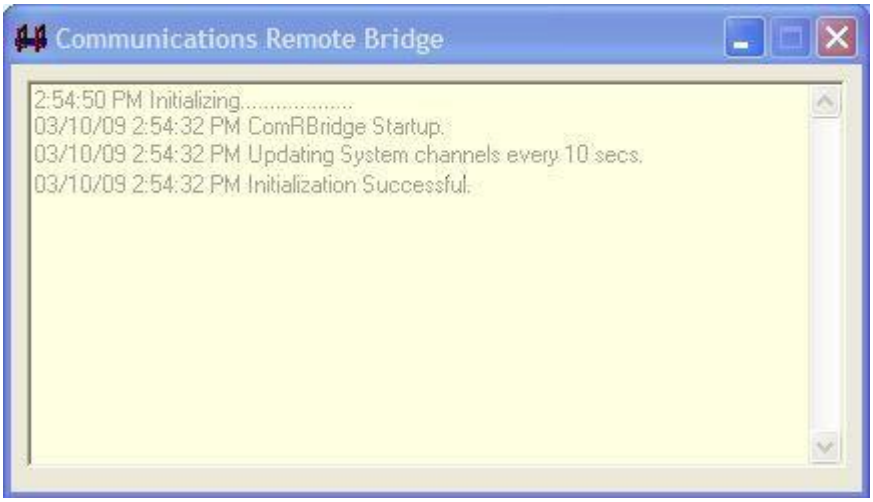
When the remote channel is a system channel (e.g. OPCBridge channel), putbuffs to the local channel can be reflected back to the remote channel. This allows writes back to the system channel (and in the case of OPCBridge channels, back to the source). E.G, suppose a workstation is running RSlinx with PMComms and OPCBridge. The server may use ComRBridge to map the OPC channels to the server (this is already being done at several locations). When the server sees a local data change, it will reflect the data change back to the workstation's inttbl.dat, the OPCBridge will see the data change and write the new data to the RSLinx OPC Server. This write reflection only works when the remote channel is a SYS or SYSOPC channel. Write reflection is NOT currently implemented for serial/ethernet communication channels - they are read only.

When ComRBridge initializes, it modifies the local scspsys.cfg file to add the mapped channels. If alarm bitmaps are mapped, ComRBridge will include the ALM configuration in the instrument line.

When 2 or more remote sources are gathering the same data, a remote source may have 1 or 2 alternate sources

(RSxxAx). The primary source is always used first, if it fails either because a) the inttbl.dat is not found (e.g. remote computer off or disconnected) or b) the communications on the remote computer is stopped (monitors CommsWD in chan 0 slot 2) it then attempts the next alternate source. Write reflection moves to the source currently in use. Note: This feature maye be useful when setting up a redundant furnace control system. Each Workstation is independent and there are redundant comms.

When ComRBridge is running there is a status and info dialog available (normally minimized).



Following is a sample ComRbridge.cfg file

[Remote Sources]

*RSxx=path to remote inttbl.dat,name

RS01=\\WS1\ssi\comdata,MyWS1

RS01A1=\\WS2\ssi\comdata,MyWS2

RS02=\\WS3\ssi\comdata,MyWS3

[Local Sys Channels]

*SCxx=logical channel,channel name

SC01=101,WS1CH2

SC02=102,SlotMap

*For each system channel a section to define the mapping

[xxx]

*can use either CHAN to map an entire channel or SLxx to define how each

*slot is mapped

KEY: CHAN=remote source, remote chan, IsSysCh (1=Yes, 0=No)

*Note: Can Read/Write to remote system channels Only

*for non-system channels, ComRMap is read only

OR map all slots

*KEY: SLxx=remote source,remote chan,remote slot,slot name,IsSysCh (1=Yes, 0=No)

*SL00=1,2,49,TID-VEST

*SL01=1,2,51,TID-FCE

*SL02=1,2,53,TID-QNCH

KEY: ALM=(pal slot,first bit mapped alarm,first BM slot,0,bm slot count)

*Note: ALM is used to put the ALM data in the local system channel

[WS1CH2] *this maps entire channel 2 from WS1 to channel 101 on main server.

CHAN=1,2,1

ALM=(0,1000,60,0,5)

[SlotMap] *this maps selected slots from various sources

SL00=1,2,49,Temp SP,0 *maps WS1 ch2 slot 49 to server's ch 102 slot 0

SL01=1,2,50,Temp Actual,0 *maps WS1 ch2 slot 50 to server's ch 102 slot 1

SL02=2,1,02,TID,0 *maps WS2 ch1 slot 2 to server's ch 102 slot 02

SL03=3,22,04,Flow,0 *maps WS2 ch22 slot 4 to server's ch 102 slot 03

ComRBridgeSrv

ComRBridge may be setup to run as a service using the "ComRBridgeSrv.exe" utility.

Krunch

Krunch is used to compress all instrument data and save this compressed data to directory/folder "ssi\clog". This compressed process data may be retrieved by the SDRecorder, Alarm Reporter, RealTime Screens and other SuperData applications. Instrument data is logged minute by minute in hourly files. These hourly data files are then compressed by Krunch into daily files which reduces the space required to store logged data on your computer. Krunch may be run from the Command prompt; however, Krunch is normally run daily as an automatic process. Krunch is normally scheduled to run at 2:05 AM each day. Krunch is scheduled in the configuration file (scspsys.cfg).

If you run Krunch from a command prompt with the "/?" option you will receive the following help:

```
C:\WINDOWS>Krunch /?
Krunch v1.0 - (c) 2001 Super Systems Inc.


Krunch compacts one day of hourly datalog files into one compressed
data file.

Usage: Krunch [days] [-dt?]
     [days] specifies how many days to look back (default 7 days)
       [-d] debug mode.
       [-t] test mode. (All files assumed to be in the default directory
            of drive C: and hourly files are not deleted.
       [-?] prints this screen.
```

CompDT

The CompDT utility is used to find the date for a given compressed datalog file or to find the datalog filename for a given date. When you enter CompDT no argument, you will receive the following help:

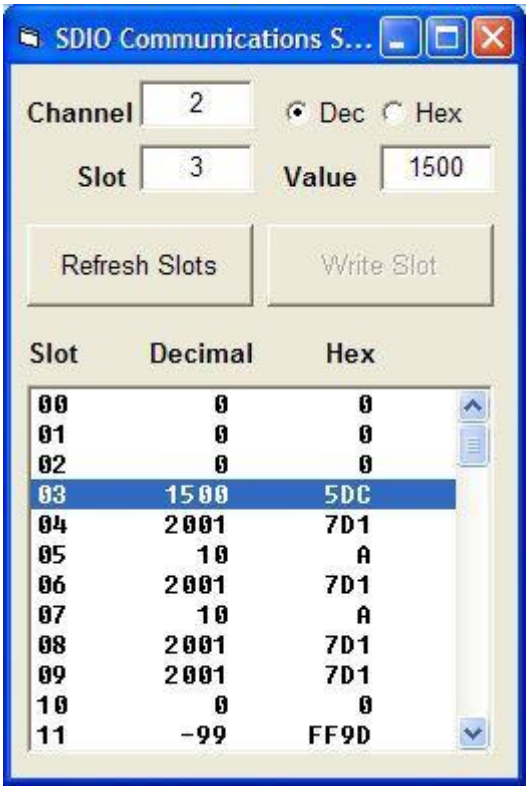
```
C:\WINDOWS>compdt
COMPDT returns the date for a given compressed data filename.
    or returns the compressed data filename for a given date.

Usage: COMPDT [filename or date]
where: filename is COMPDT00.001 through COMPDT21.184.
       date is 1/1/1978 through 12/31/2035.
       date format 1/1/78 through 12/31/35 also acceptable.
C:\WINDOWS>
```

Examples:

```
C:\WINDOWS>compdt09.055
'compdt09.055' is not recognized as an internal or external command,
operable program or batch file.

C:\WINDOWS>
```

ComSlots

CommSlots.exe is a windows utility that combines "GetBuff" and "PutBuff" in a visual display. This utility is primarily used for debugging and testing realtime screens.



GetBuff

The GetBuff utility is a SDIO utility that is used to read a current data value from the communications integer table. When you enter GetBuff with the "/?" option, you will receive the following help:

```
USAGE: GETBUFF channel_# slot_# [divisor_#]
```

Where: channel = the logical channel number

Slot = the integer table slot to read

[divisor] =an optional value used to divide the returned value

Example:

C:\ssi\getbuff 1 24 2

GETBUFF v6.0 - © 1996

Channel 1 - Slot 24 = 11 (0x000B) [5]

PutBuff

The PutBuff utility is a SDIO utility that is used to write a data value to the communications integer table. When you enter PutBuff with the "/?" option, you will receive the following help:

```
USAGE: PUTBUFF channel slot value
```

Where: channel = the logical channel number

Slot = the integer table slot to read

Value = the value used to be written

Example:

C:\ssi\putbuff 1 24 2000

PUTBUFF v6.0 - © 1996

Channel 1 - Slot 24 = 2000 (0x07D0)

RWI

The RWI utility is used to read/write instrument data. This utility is used primarily by Service personnel for debugging purposes. When you enter RWI with the "/?" option, you will receive the following help:

Examples:

C:>rwi 3:3F .READ. (reads parameter 3F (hex) from MMI instrument channel 3)

C:>rwi 24:1401 .read. (reads register 1401 from a modbus instrument channel 24)

C:>rwi 24:x1800R .read. (reads register the register pair x1800,x1801 as an IEEE floating point number from a modbus instrument channel 24)

GetData

The GetData utility is used to extract data from the Datalog and Compressed Data files. GetData is primarily used for debugging and special applications. Data is normally extracted using the "SDRecorder" or other SuperData applications. When you enter GetData with the "/?" option, you will receive the following help:

```
C:\SSi>getdata /?
GETDATA - (c) 2002 Super Systems Inc.

Usage: GETDATA
   or: GETDATA @ifile
where: infile is filename of optional input file
   or: GETDATA sdate stime edate etime int opt dval lfile ofile
where: sdate  is start date MM/DD/YY
       stime  is start time HH:MM
       edate  is end date MM/DD/YY
       etime  is end time HH:MM
       int    is report interval in minutes
       opt    is invalid data option, 0=bridge with previous value
                                      1=replace with dval
       dval   is optional value used to replace invalid data
       lfile  is filename of file containing channel-slot pairs
                 *last chan-slot must be 0 0
                  example: 10 1 19 29 101 36 0 0
       ofile  is filename of output file.  If prn extension is specified
                 MMI prn format is used, otherwise fixed column format.
```

GetStats

The GetStats utility is used to extract summary data from the Datalog and Compressed Data files. GetStats is primarily used for debugging and special applications. When you enter GetStats with the "/?" option, you will receive the following help:

```
C:\SSi>GETSTATS /?
GETSTATS - (c) 2002 Super Systems Inc.

Usage: GETSTATS
   or: GETSTATS @ifile
where: infile is filename of optional input file
   or: GETSTATS sdate stime edate etime int opt dval lfile ofile
where: sdate  is start date MM/DD/YY
       stime  is start time HH:MM
       edate  is end date MM/DD/YY
       etime  is end time HH:MM
       int    is report interval in minutes
       opt    is invalid data option, 0=bridge with previous value
                                      1=replace with dval
       dval   is optional value used to replace invalid data
       lfile  is filename of file containing channel-slot pairs
                 *last chan-slot must be 0 0
                  example: 10 1 19 29 101 36 0 0
       ofile  is filename of output file.
```

SuperData OPC Communications

OPCBridge

OPCBridge.exe is an OPC client application designed to bridge data communications between a variety of OPC data servers and the SuperData communications integer table. The application is capable of interfacing with multiple servers simultaneously. All data is processed in 16 bit integer format.

OPCBridge Graphical Enviornment

The OPCBridge window layout contains drop down menus, a horizontal toolbar across the top, a communications network tree area on the left side, a data display area on the top right pane and an status message area on the bottom right pane. A current status bar along the bottom of the application window displays the current status of communications.

Starting OPCBridge

OPCBridge.exe is normally located in the \SSI\BIN directory and may be started manually from the directory by clicking on the application file. However, OPCBridge is designed to run all of the time (24/7) and is normally started as a service. When OPCBridge is run as a service, it will start automatically any time the computer is turned on (logon is not required). To setup OPCBridge as a service, see the section *OPCBridgeSrv.exe*.

Upon opening the application will:

- Check for any other instances of OPCBridge on the network, (if found what happens ??)
- Retrieve the last saved configuration, (located at windows\OPCBridge.ini).
- Initiate all previously configured OPC communication channels

Menu Options

The following menu options are available on the menubar:

File Menu.

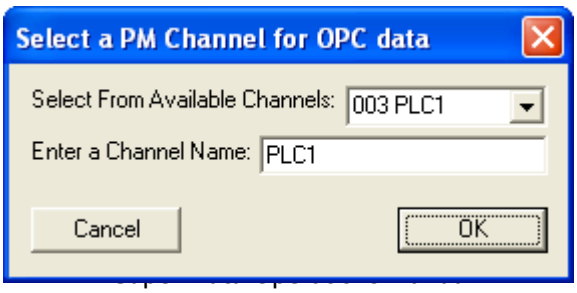
Save Configuration – Saves the current OPC communication configuration to a file titled OPCBridge.ini and located in the Windows directory.

The **Exit** menu item stops the program.

Chanel Menu.

The **Chanel** menu item displays the following selections:

Select – Displays the following dialog box:

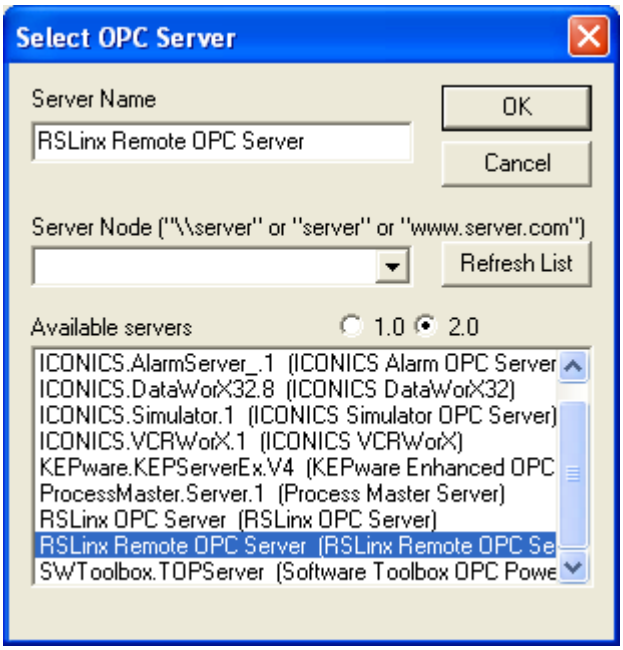


The user can select any available SuperData communications channel for editing. If the channel was previously configured the configured name will be displayed. If its an un-configured channel then you must enter the channel name.

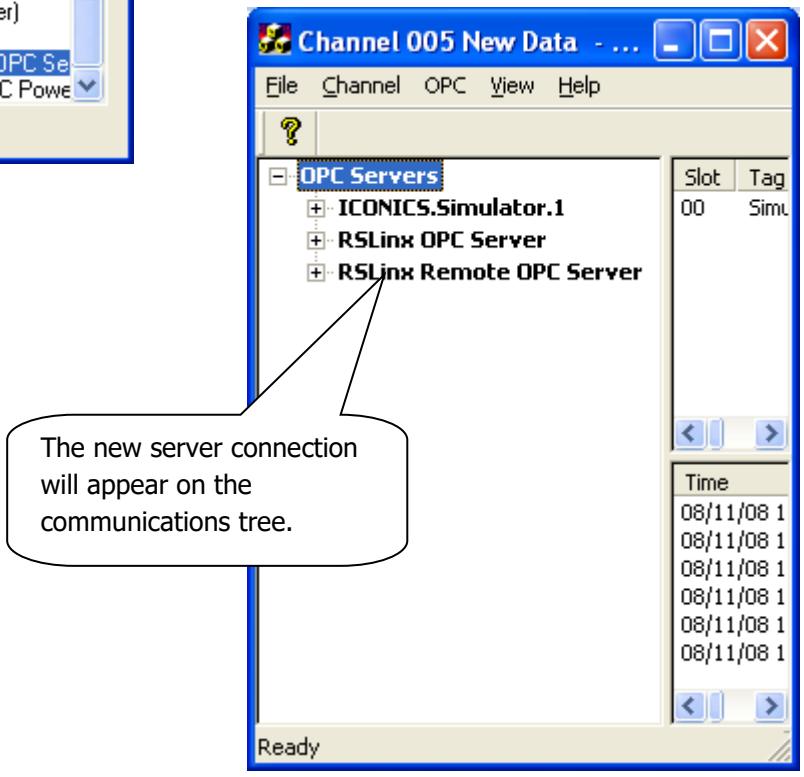
Remove – Deletes the currently selected channel from the configuration.

OPC

The Connect… menu item displays the following dialog box:



All locally available servers are displayed by default. If a remote server is required enter the server node path and click Refresh List button. Select the desired server to add and click OK.



View

Toolbar - Toggles the display of the tool bar at the top of the window.

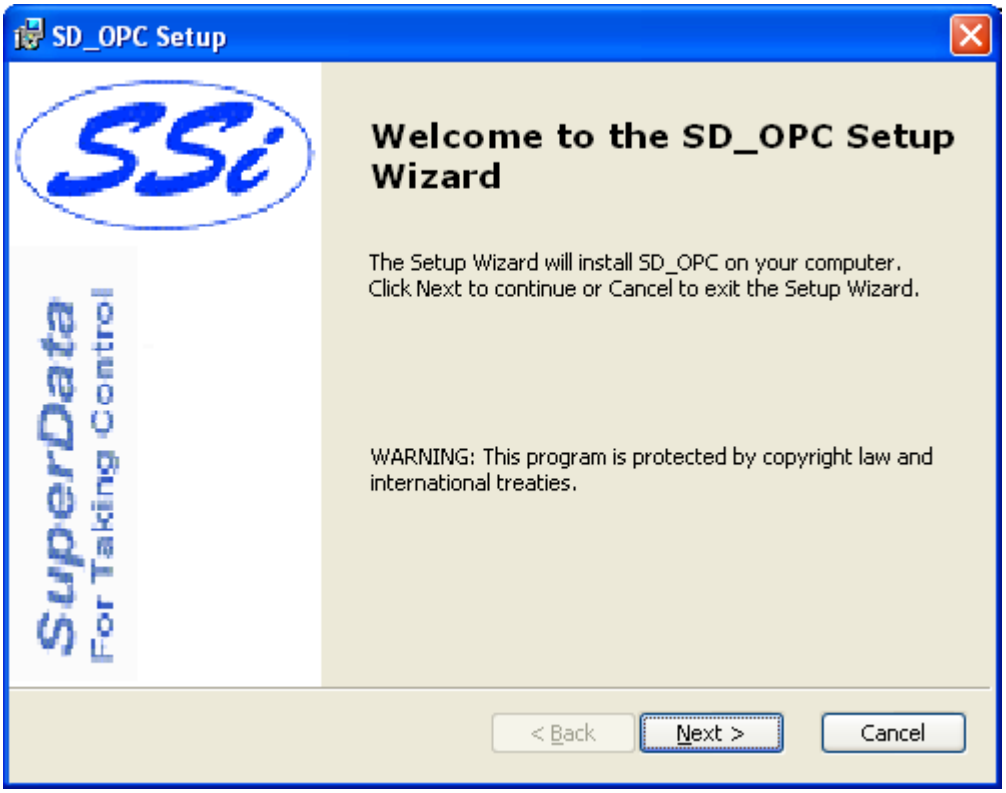
Status – Toggles the display of the current status at the bottom of the window.

Help
About OPCBridge... - displays the application version info.

SDOPC Installation

Note – The person installing the SDOPC Software must have administrative rights on the computer(s) where the installation is taking place for the installation to be successful.

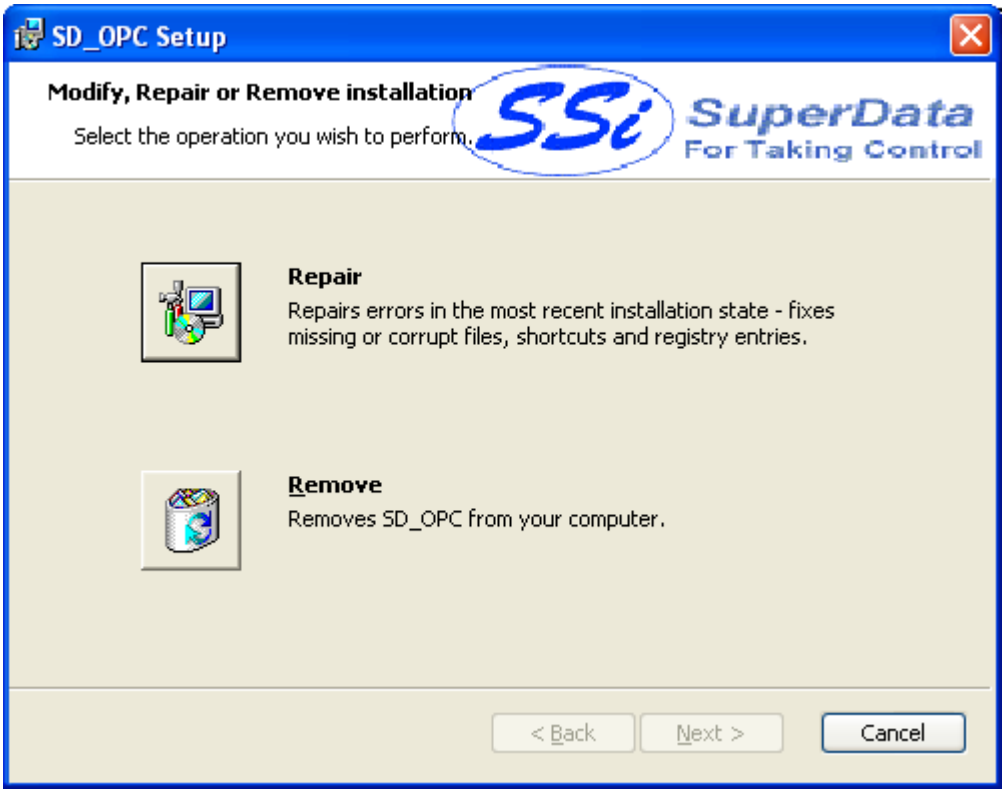
Insert the SuperData Installation CD into the computer's optical drive and navigate to the SuperData folder. Double-click on the setup file, SDOPCSetup.msi to start the auto-installation. If there is no version of the OPCBridge installed on the computer, the installation will display a splash screen.



Clicking the **Next >** button will continue with the installation process.

Clicking on the **Cancel** button will cancel the installation process. The user will have to confirm the cancellation.

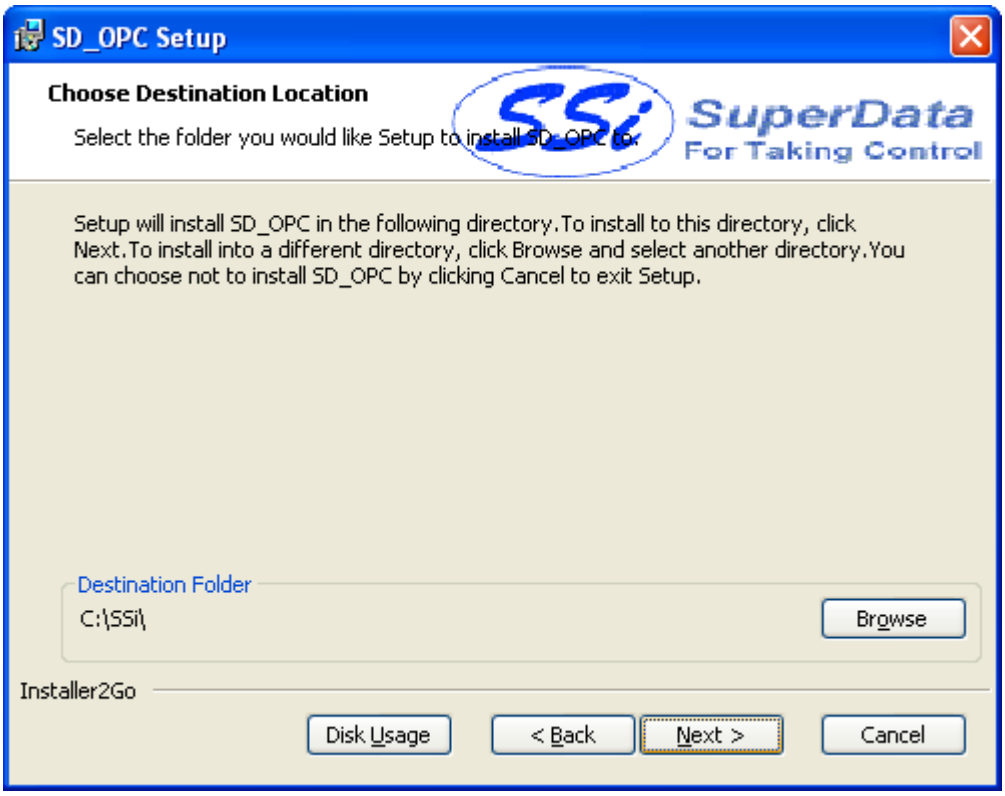
If there is a version of the SD_OPCSetup already installed on the computer, The following screen will be displayed:



The installer will either re-install the software (**Repair** button) or remove the software from the computer (**Remove** button). Clicking on the **Cancel** button will cancel the actions. The user will have to confirm the cancellation. Note: the installer does not remove any subfolders in the main SSI folder. These files will have to be manually removed.

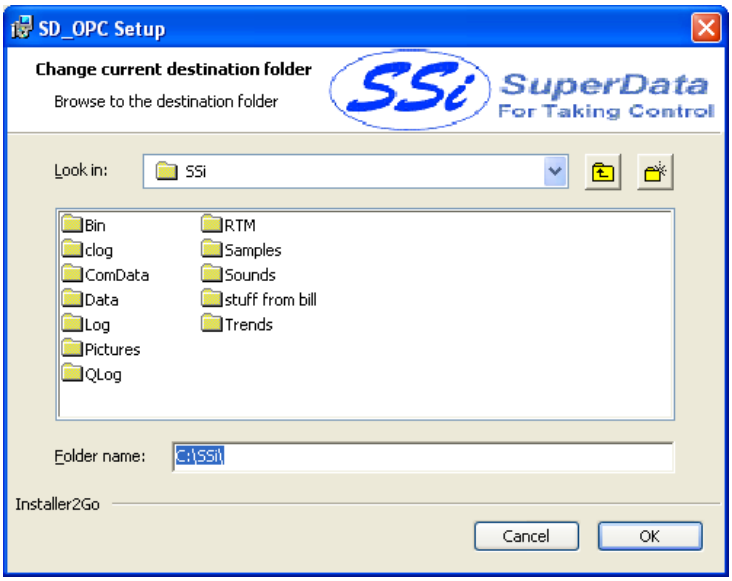
The Repair option will allow the user to repair the installed files. This option is useful if the installation was interrupted in some way and did not finish on its own.

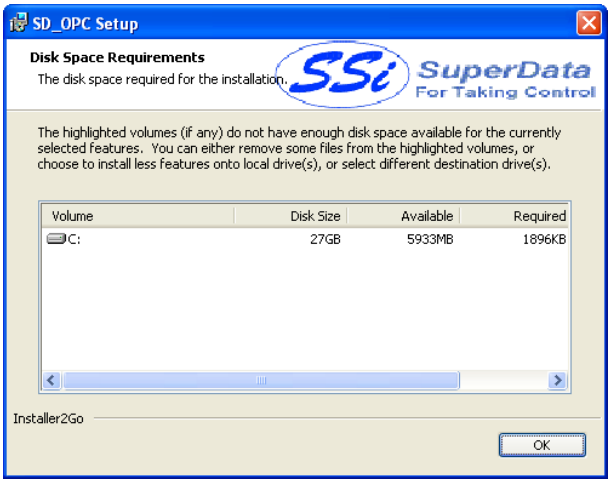
The Remove option will remove the main executable file from the computer.



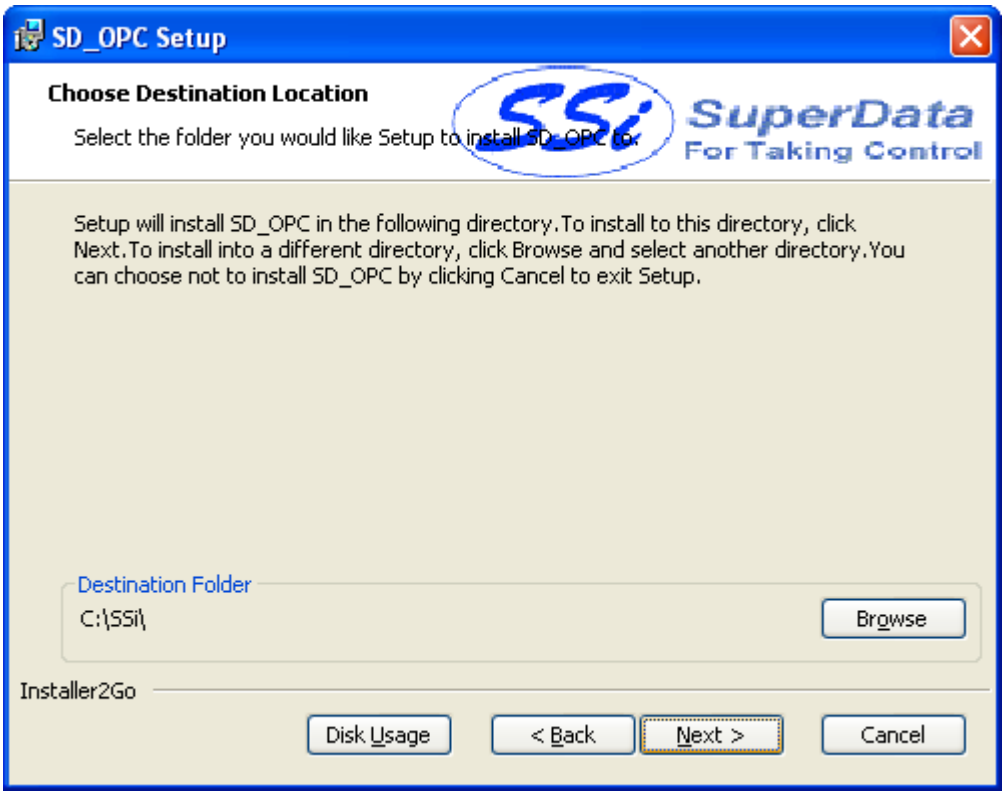
The screen will prompt the user for the download location. The default location is "C:\SSI\". Note: The installer will automatically create a "Bin" folder to install the files to. For example, if the default location, "C:\SSi\" is used, then the files will be installed to "C:\SSi\Bin".

Click on the **Browse** button to select an alternate location.





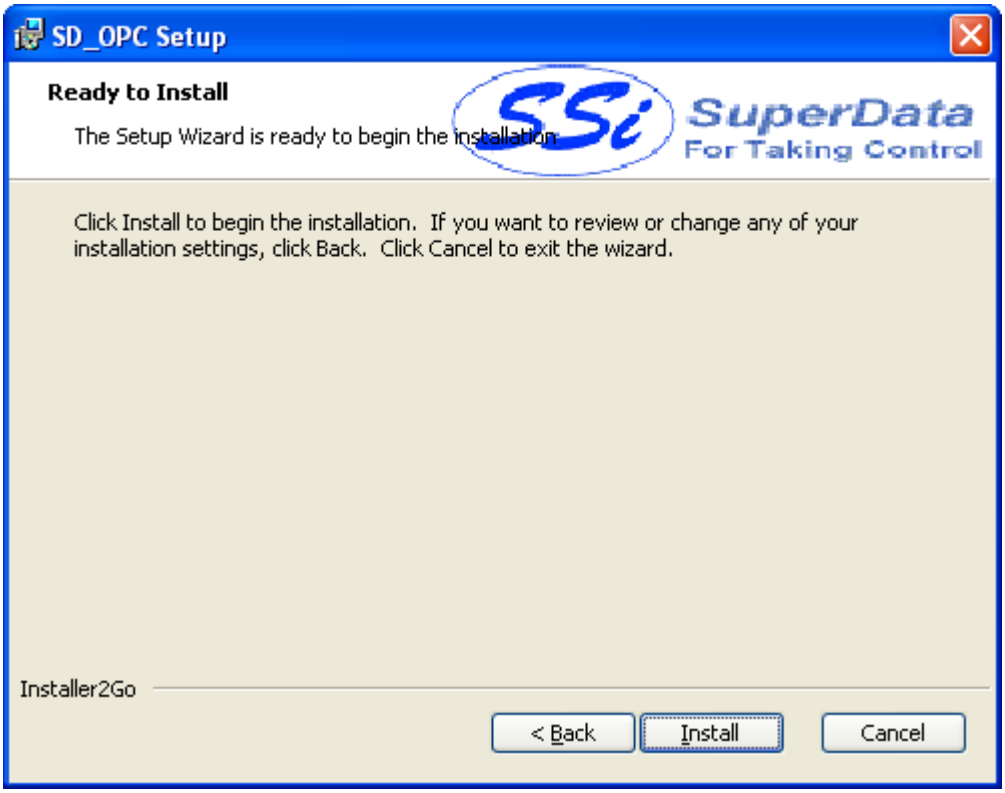
Clicking on the **Disk Usage** button will display the available computer drives onto which the application can be downloaded, as well as the total space, available space and total space required. Clicking on the **OK** button will close out the disk usage screen.



Clicking on the **< Back** button will display the previous screen.

Clicking the **Next >** button will continue with the installation process.

Clicking on the **Cancel** button will cancel the installation process. The user will have to confirm the cancellation.

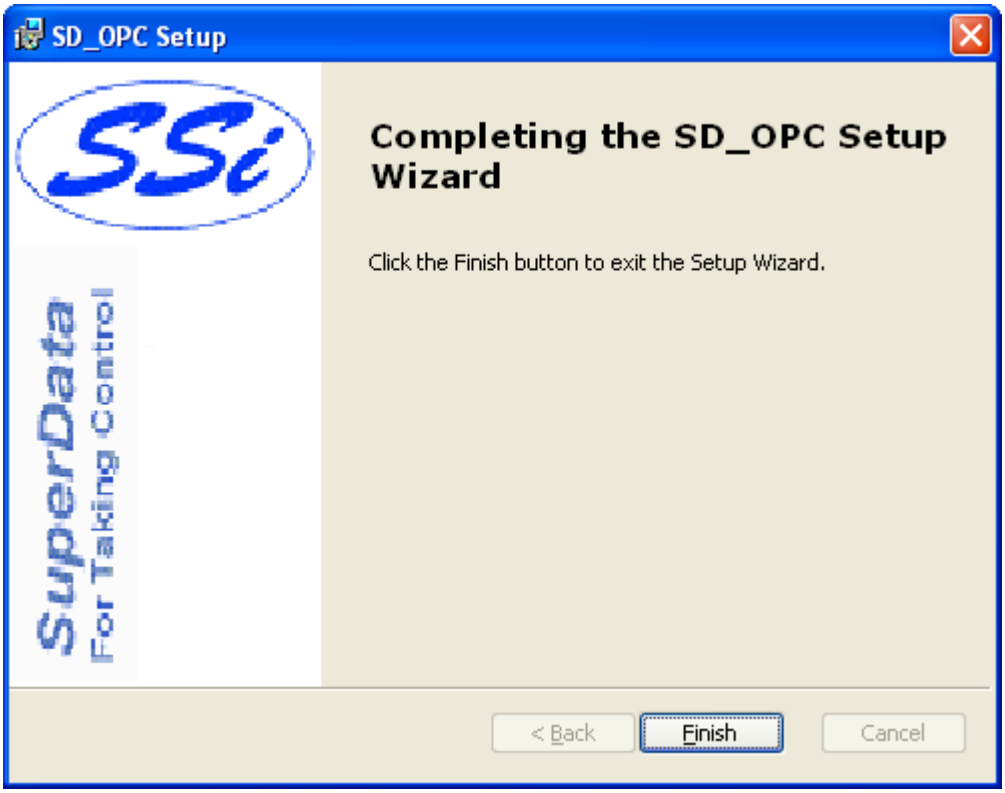


Clicking on the **Cancel** button will cancel the installation process. The user will have to confirm the cancellation.

Clicking on the **< Back** button will display the previous page.

Clicking on the **Install** button will install the software to the specified location.

Once the software has been installed, the following screen will be displayed



Click **Finish** to complete the installation process.

SDOPC Minimum System Requirements

• Computer with a minimum of 600 MHz processor clock speed (Intel, AMD, etc).

• Operating System – Microsoft Windows 98/2000/XP/Vista

• Memory – 256 MB RAM or higher

• Disk Space - Minimum of 1 GB storage space

• CD-ROM drive or DVD-ROM drive

• Keyboard and mouse

• Monitor with 1024 x 768 resolution or higher and 256 colors

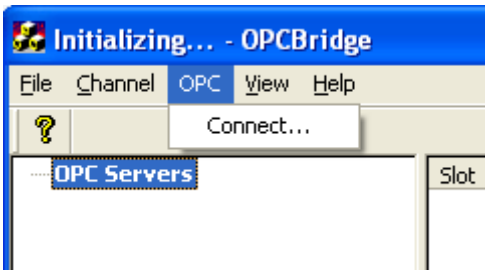
OPCBridgeSrv.exe

OPCBridgeSrv.exe is a utility used to setup OPCBridge.exe to run as a service. Running OPCBridge as a service in the local system account allows OPCBridge to start automatically on reboot and runs regardless of logon status. The OPCBridgeSrv.exe file is located in the Windows directory.

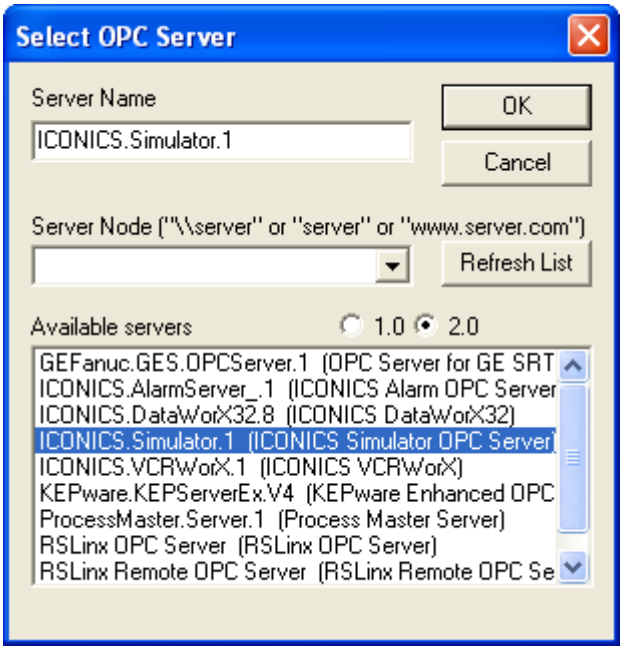
```
C:\SuperData\Support\EXEs>opcbridgesrv.exe /h
SuperData OPCBridge Service.
Usage: OPCBridgeSrv /i [/d-service]   -installs OPCBridge as a service.
 where /d-service is optional and specifies service's dependency.
Usage: OPCBridgeSrv /d    -removes the OPCBridge service.
Usage: OPCBridgeSrv /h    -displays this help.

The service name is 'OPCBridgeService', runs under the local system
account and interacts with the desktop.  The service is set for
Automatic start.  When OPCBridge stops, the service will also stop.
When necessary to re-start the service, use the DOS command:
Net Start OPCBridgeService.
```

OPCBridge Configuration

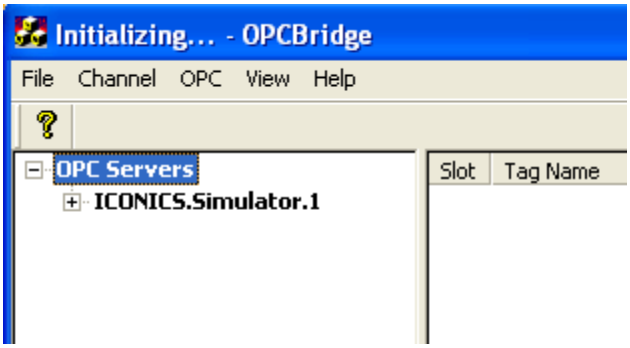
The first step in configuring OPCBridge is to connect to an OPC server. This is accomplished by clicking "Connect" under the OPC menu item.



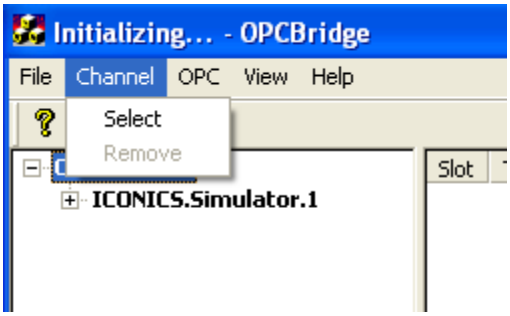
A "Select OPC Server" dialog box will be displayed listing all the servers available to the computer.



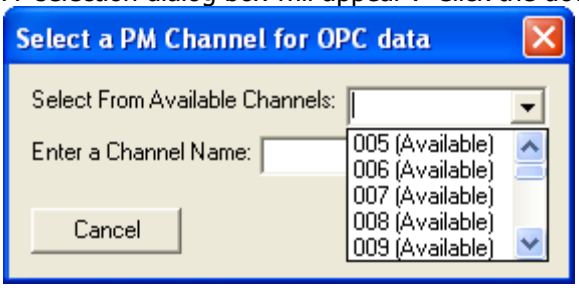
Select the desired OPC server and click OK. The selected OPC server will appear in the left hand pane of the main window.



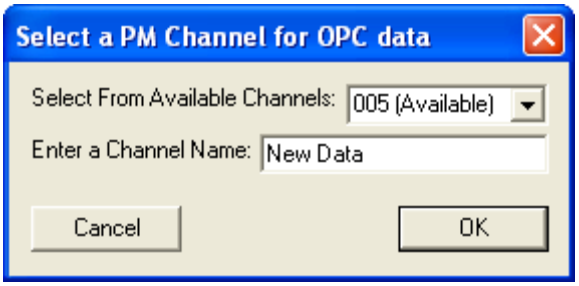
We next have to select a SuperData channel to log the data to. Click "Select" under the Channel menu item.



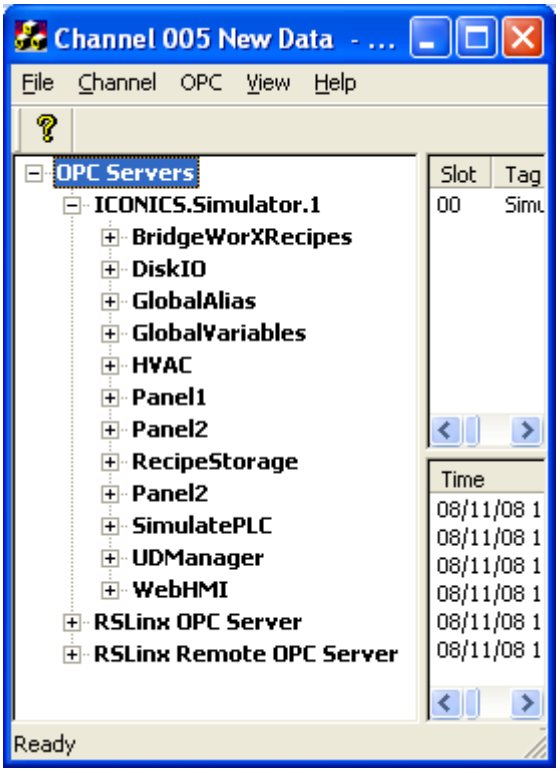
A selection dialog box will appear . Click the down arrow to show the list of available SuperData channels .



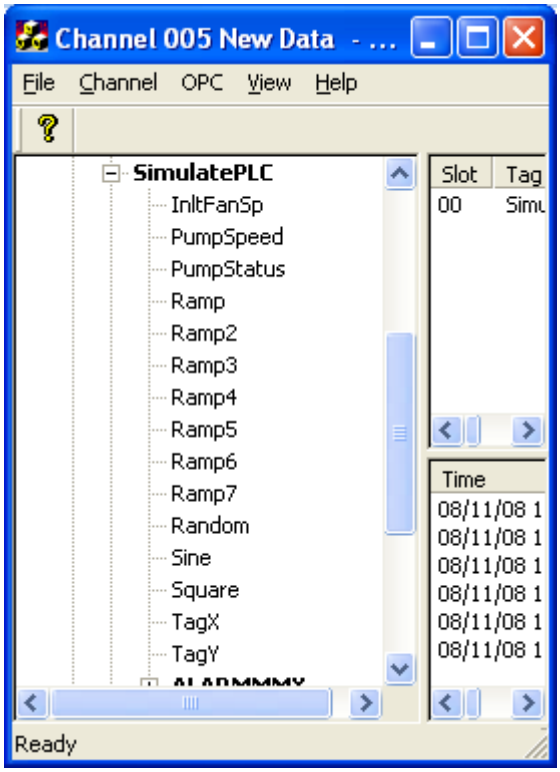
Select the SuperData channel you wish to edit. In this case we selected an unused channel number 5 and named it "New Data". Click OK

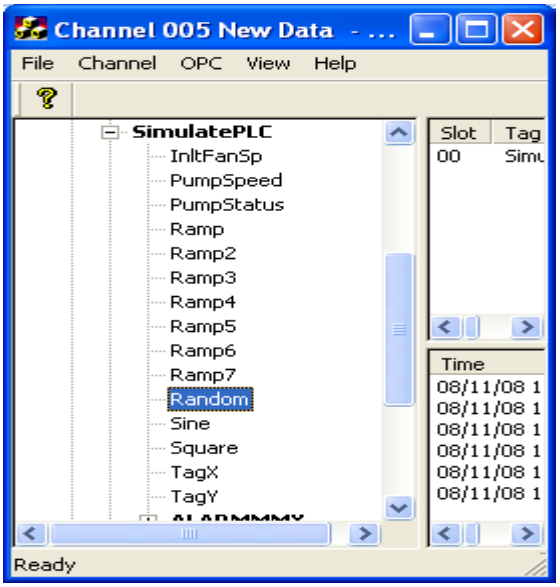


Expand the target OPC server by clicking on the + icon to the left of the server name. A listing of all the available topic s will appear.

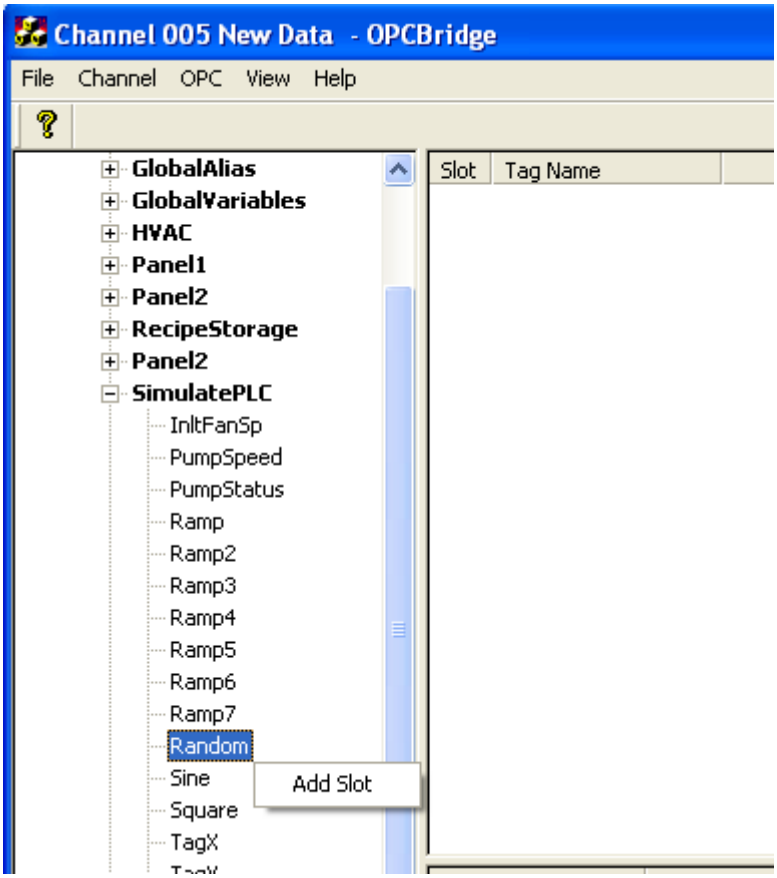


Again expand the topic by clicking on the + icon to the left of the topic name. All of the available data items will appear as shown below.

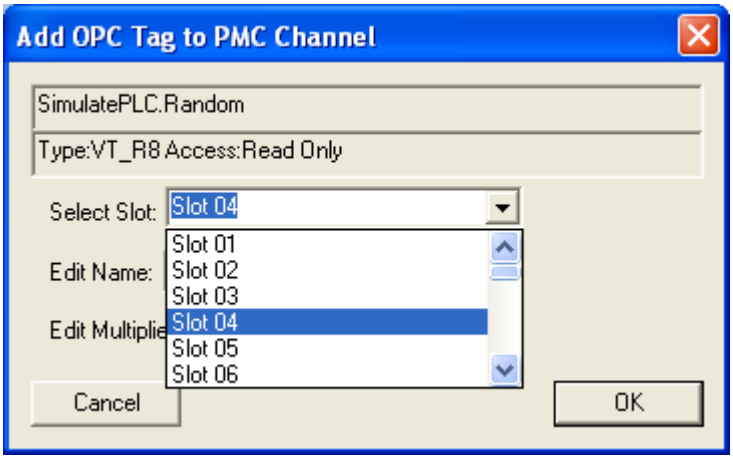




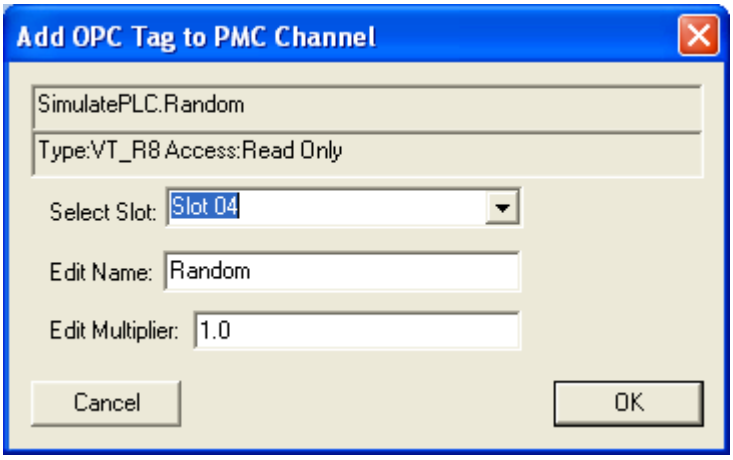
Right click on the desired data item , an Add Slot button will appear.



Left click on that button and a Add OPC Tag dialog box will appear.



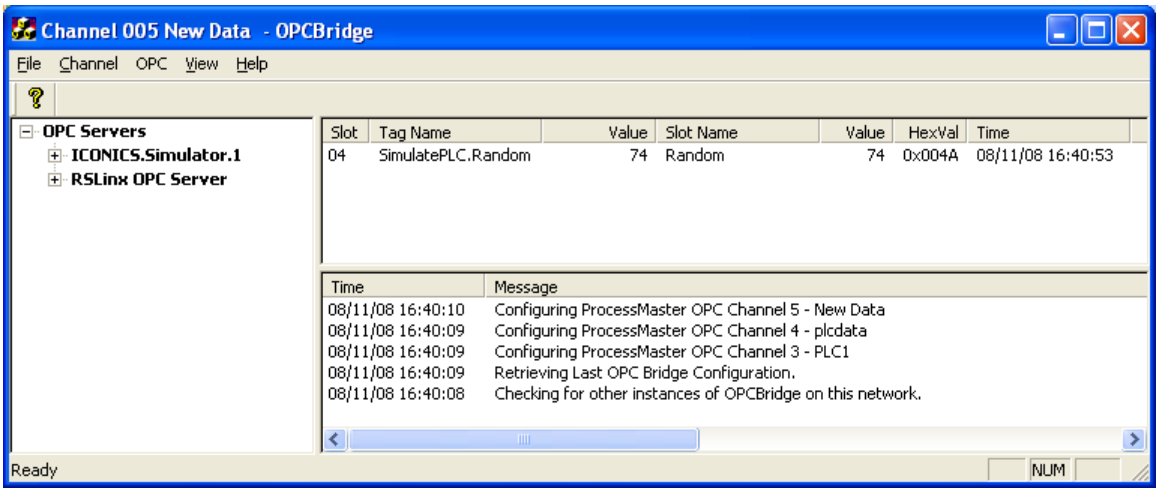
Select the desired communications slot you wish to store the selected data in.



The tag name defaults to the existing name from the server. You may change that name if you wish.

If you need to scale the integer value by a multiplier, enter it now.

Click OK.



The configured slot data appears in the data window showing the slot number, the server tag name, the server value , the SuperData slot name the SuperData sot value, the value in hex and the last update date and time.

Note – The OPCBridge application displays current data for only one SuperData channel at a time. However the application is continuously logging data for all configured channels. You may view the current values for any configured channel by switching channels from the Channel menu item.

RealEdit.exe

RealEdit is the RealTime Screen editing module for SDIO. It provides the capability for creating new and modifying existing RealTime screens in a graphical user environment.

RealEdit also automates some of the creation process by allowing the user to set Realedit parameters for Data Process and Data Value creation as well as protecting the user from inadvertently creating screens that will not fit on certain resolution monitors.

The Realedit window layout contains drop down menus, a horizontal toolbar across the top, a vertical toolbar down the right side and an editing area which comprises all the remaining area of the Window.

RealEdit Graphical Environment

RealEdit is composed of drop down menus, a horizontal toolbar across the top, a vertical toolbar down the right side and an editing area which comprises all the remaining area of the Window.

Menus

File

New: Creates a new RealTime screen of the variety selected from the fly out menu.

Open: Opens an existing screen.

Close: Closes the active screen in the editor. If changes have been made to the screen, the user will be prompted to save changes.

Save: Saves the active screen in the editor.

Save As: Enables the user to save a screen with another name and/or in a new location.

Print Setup: Printer Configuration settings.

Exit: Closes Realedit. The user will be prompted to save changes for any open screen that has had changes made but not saved.

Edit

Undo: Undoes the most recent action performed. Realedit must reload the screen from an Undo backup, so it will take a moment to complete this task.

Text View: Displays the text .RTM file of a screen.

Cut: Common cut control for removing an object and placing it on the clipboard.

Copy: Common copy control. For placing a copy of an object on the clipboard without disturbing the original object.

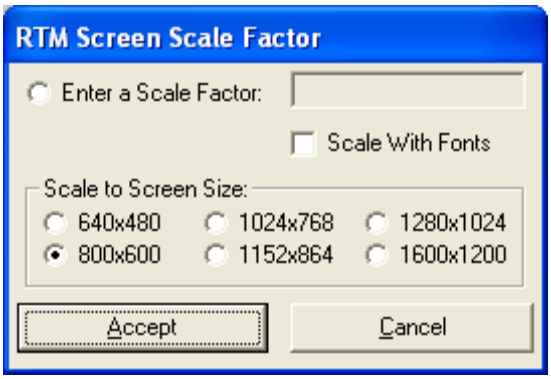
Paste: Common paste control. For placing the contents of the clipboard in the selected location.

Delete: Common delete control. For removing an object from the screen. Note: the object is not actually removed to preserve indexing throughout the rest of the screen. Rather, it is marked (deleted) and left until the next object added takes its place.

Bring to Front: Lays the selected object on top of any overlapping objects.

Send to Back: Drops the selected object behind any overlapping objects.

Scale RTM Screen:



Scales an already created screen so that it will fit the target resolution selected. The user may opt to enter a scale factor manually or specify a target resolution. Entering a manual scale factor will cause the screen and all the objects on the screen to change to match the factor. For example, entering a 2 will double the size of all objects. The effects of selecting a target resolution vary depending on the resolution of the screen RealEdit is running on. Scaling to a lower resolution will naturally cause the screen's size to shrink in the current editor. Scaling to the same resolution will leave the screen unchanged and scaling to higher resolution will enlarge the screen.

Because fonts are often botched by re-scaling, it is an option to exclude changing them on the newly sized screen.

Verify RTM Items and Resources: Checks for offending or undefined data in a screen.

View

Tool Bar : Simply allows the user to hide the top toolbar.

Data Values: Displays a table of the current Data Values related to the RealTime Screen being edited.

Options

Generic Comm Channel Info: This selection allows the user to select any of the 128 possible logical channels when making a Comm Channel Definition.

Installed Comm Channel Info: This selection lists the actual Installed Channels by tag name and fills (not used) into the unused channels.

Screen Item Locking: The user cannot move or resize screen items. By default, Realedit opens any existing screen with the screen items locked.

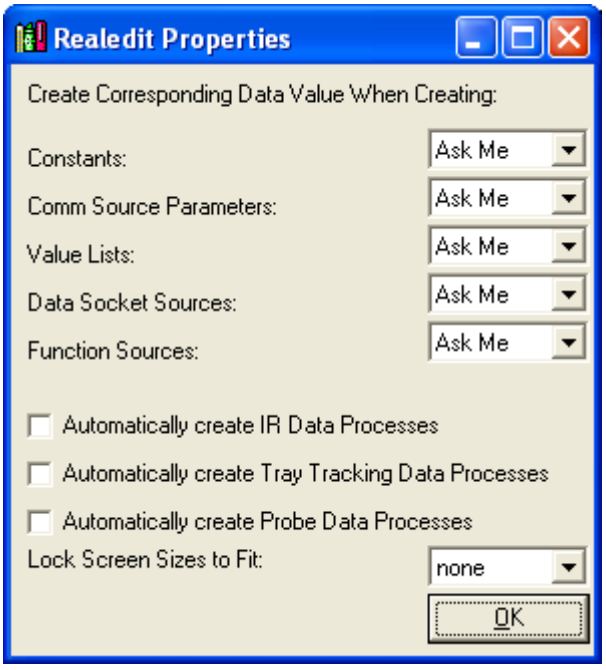
Alignment to Grid: Controls the granularity of screen object movement and sizing.

Live Data: If this item is selected, data from the current SDIO integer file is shown on the screen being edited.

Live Objects: If this item is selected, data dependent object properties will be modified by the dependent data values in the current SDIO integer file.

Settings: Displays the following dialog box:

The settings dialog controls the behavior of Realedit on a machine-by-machine basis. It allows three settings for automatic creation of corresponding data values, Always, Ask Me and Never. The first two settings instruct Realedit to create an appropriate Data Value with the same name as the Constant, Comm Source Parameter or Value List created. The default values are all Ask Me. Advanced automatic Data Process creation can be controlled by checking or clearing the check boxes in this dialog. The default values are all cleared. Finally, Lock Screen Sizes to Fit will prevent a user from creating or enlarging a screen that exceeds the parameters indicated by the selection. The "none" selection removes any size checking.



Window

Cascade: Cascades multiple open screens in the editor.

Tile Vertically: Tiles all open screens vertically in the editor.

Tile Horizontally: Tiles all open screens horizontally in the editor.

At the bottom of the menu is an updated list of the open files, with a check box next to the active screen. This is handy for switching between open screens.

Help

Contents: Access to this help file.

About Realedit: Technical Information about the version of Realedit in use.

Toolbar

The buttons, from left to right are:

- Creates a new screen. Clicking directly on the button creates a standard RealTime screen. The dropdown button reveals the Wizard for creating an ODBC Table Edit Screen.
- Opens an existing RealEdit .RTM file.
- Saves the active screen.
- Undo button
- Locks/Unlocks the screen objects of the active screen for editing (locked position shown).
- Four buttons – from left to right decrease the granularity of the RealEdit screen object move and resize. Analogous to the Alignment to Grid menu selector.

Coolbar

The Coolbar replaces the RealEdit 6/7 Toolbox. It allows the user to control the content of a RealTime screen. The Coolbar can be adjusted by grabbing one of its 2 bands and dragging up or down for simple resizing, to the left for placing the two bands side-by-side or by dragging one band over the top of another to change the order in which the bands lay. Double clicking on a band' description will immediately maximize the selected band. Each band is comprised of three separate pieces.

The toolbox section allows the user to select the group item from which to add modify or remove members from, such as fonts, data values or auto labels.

Once a selection is made either by the corresponding button on the toolbox section or by selecting the object on a screen in the editor, the object type is displayed in the text box directly below the toolbox.

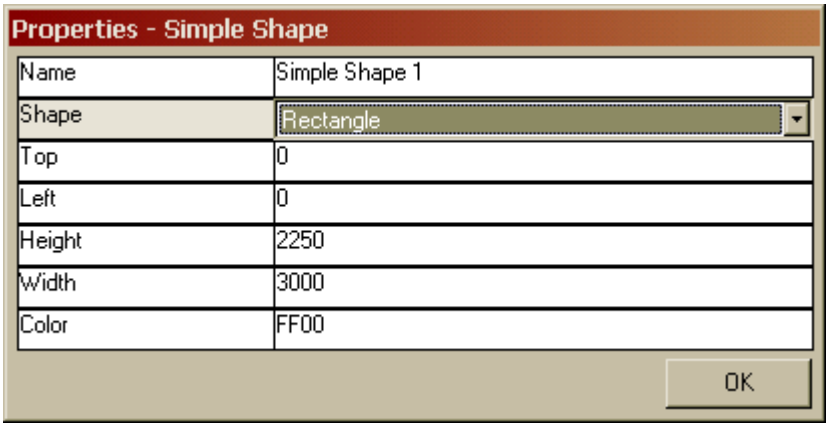
Simultaneously, any existing objects for this item, along with an [Add New] entry are placed in the list box below the description text. Selecting any existing item will display that item's Property Sheet. Selecting [Add New] will open a new Property Sheet for adding a new item.

RealEdit Common Forms

Certain forms are used commonly throughout RealEdit. Included in this group are:

Property Edit Sheet

The Property Edit sheet is the primary means of altering a RealTime Object in a particular screen. When the Object is double clicked in the Object List or, if it is Screen Object, right clicked on the actual screen form, the Property Edit Sheet for the selected Object will appear.



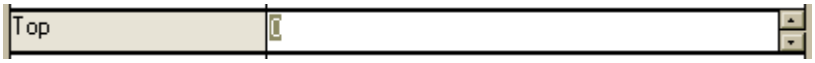
The Property Edit Sheet controls all aspects of the selected Object. When a new Object is to be created, the Cancel Add button appears next to the OK button. In this case, the user may Cancel Add to discard the new Object before it is committed to the screen.

Features of the Property Edit Sheet are enabled in response to a particular property type or Object type.

Colors:

Change a color by clicking on the colored button at the far right side. The color represents the described color (in this case, FF00) and will open the Color Dialog for new color selection. Additionally, a color value may be manually filled in by typing in the hexadecimal field containing up to 6 characters (0 - black to FFFFFF - white). The colors are controlled as such: the first two characters, (0 – FF) are Red, the next two are Green and the final two are Blue and the various combinations create different colors.

Size and Position:

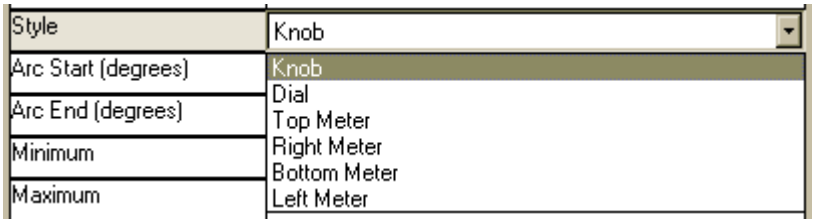


Size and position can be changed only when a screen is in the Unlocked position. The user may simply double click the Object and move or resize it using the red sizing handles or use the Property Edit Sheet. A new value can be simply typed in to the text field, or one may use the up and down arrows to alter the value. Keep in mind that the grid granularity control on the screen dictates how small an increment or decrement can be made to one of these properties.

Lists:

A list of items is indicated by (list) in the property value box. Selecting (list) will activate the List Selector form.

Combo Box:



If a property has a distinct list of Objects or styles that can be applied to it, those properties and styles will be displayed in a drop down combo box.

The Toggle button appears on Button controls to allow the user to show the On and Off states of the button being edited.

The Step List button appears on Logic Boxes and RealTime Event Buttons to allow the user to display all the states of the box or button being edited.

Properties edited are committed at the moment the edit is made. Therefore, no cancel button is supplied. Selecting OK really only hides the Property Edit Sheet until the next use.

Color Dialog

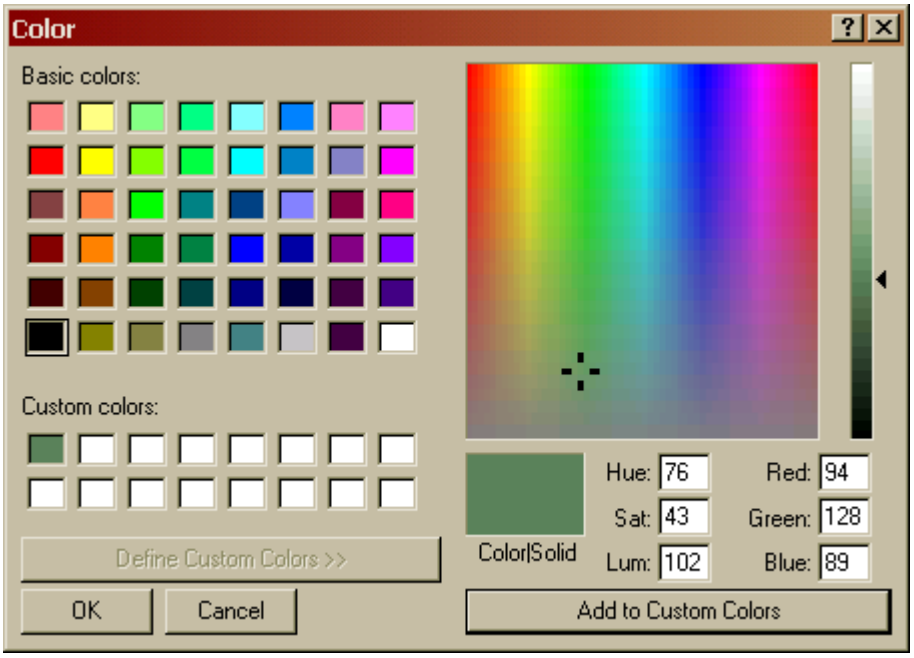
The Color Dialog is the standard dialog box for selecting a color.

The user may simply click on the desired color to apply it to the property selected.

Cancel will discard all changes.

OK will apply black, as it is the default color selected.

Define Custom Colors opens a Custom Color dialog for the user to select colors which will be applied to an entire screen that are not part of the Basic color set.



Add to Custom Colors will apply a new color to the Custom Color box selected on the left. Note: if a box is not selected on the left, the first Custom Color will be overwritten. This will not affect properties originally using the replaced color, as colors do not operate on indexes anymore.

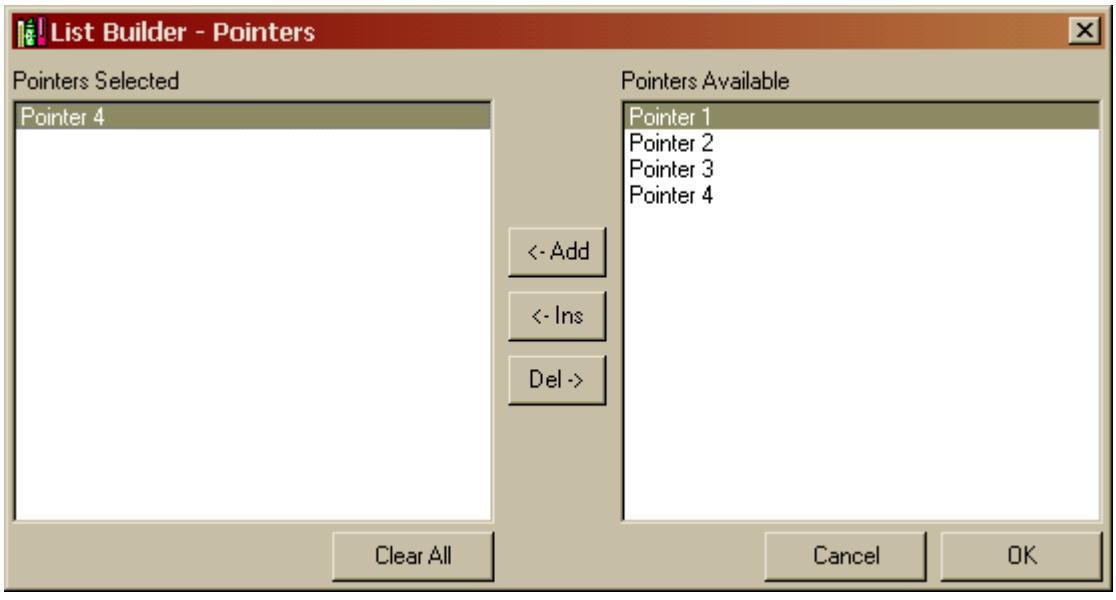
Caveats with the Color Dialog

Only 16 custom colors will be available for any single screen. The user may manually fill in more unique values or re-select Custom Colors using the dialog, but the 48 basic and 16 Custom are as many as the dialog can control at once.

Also, the Color Dialog is a Custom implementation of the Common Dialog and presently cannot be made to stay on top. This is a bug. If the dialog falls to the background, the user must retrieve the original dialog – it is important not to open another Color Dialog.

List Builder

The List Builder form is the tool the user employs to maintain list items for a Screen Object. It is a traditional list form:



On the left hand side is a list of items applied to this list. The right hand list shows all available items of this list type.

Add appends the item selected on the right hand side to the list on the left.

Ins inserts the item selected on the right into the position marked on the left.

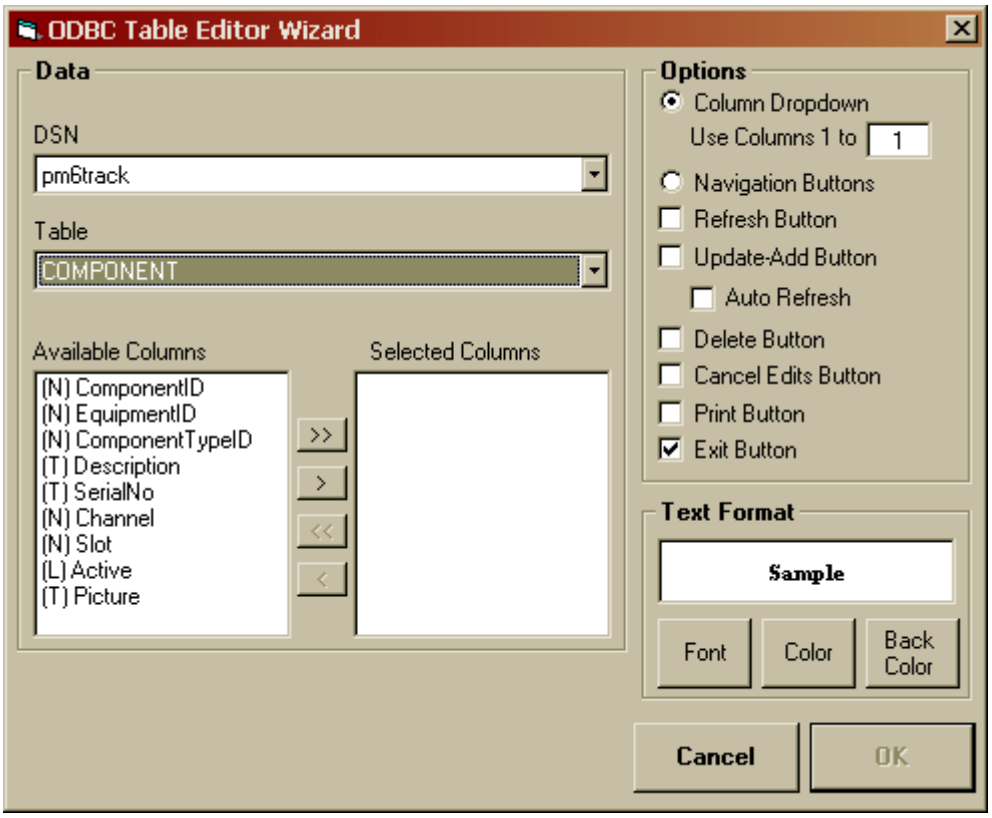
Del removes the item selected on the left.

Clear All empties the list of applied items. Bear in mind that any Object with a list of items in its definition will require at least one item in the list. The user will receive an error message if OK is selected with no items applied to the Selected List.

Multiple iterations of an item on the right may be placed in the list on the left, therefore when an item is Added or Inserted into the Selected List it is not removed from the Available List. This is different from some list builder tools, but the behavior is by design for our purposes. Unlike the Property Edit Sheet, List Builder does not apply changes until the OK button is pressed, so the user may discard changes made to the list at any time by pressing Cancel to abort the operation.

ODBC Edit Wizard

The ODBC Edit Wizard is invoked when a new ODBC table edit screen is created.



This dialog is designed to aid the user in creating the necessary screen items for a basic database table editing screen.

DSN: Data Source Name created by the user in the ODBC Data Sources applet located in Control Panel.

Table: The list of tables is created after the DSN is selected and is extracted from the database. For dBase databases, the tables will be the file names in the directory pointed to by the selected DSN. For Access or SQL, the tables are internal to the database.

Available Columns: The fields in the table selected are listed in the Available Columns list. The double greater than and less than buttons move all items in the direction indicated. The single, greater than and less than buttons send only the selected item in the indicated direction. Each selected column will become an Auto Label with the corresponding field name as a Simple Label on the newly created RealTime screen.

Column Dropdown/Navigation Buttons: Determines whether the records are selected using a dropdown combo box on the key or by using left/right arrow buttons to select the next or previous record.

Refresh Button: Adds a button that re-queries the database on demand.

Update-Add Button: Useful when the table edit screen will be used to edit or add records. Causes the new record to be appended or edits to be applied to the database.

Auto Refresh: Automatically updates the database after changes are made to the form.

Delete Button: Removes the selected record from the database.

Cancel Edits Button: Discards the edits made since the last database update/refresh.

Print Button: Prints the selected record.

Exit Button: Standard RealTime Exit button to Exit the screen.

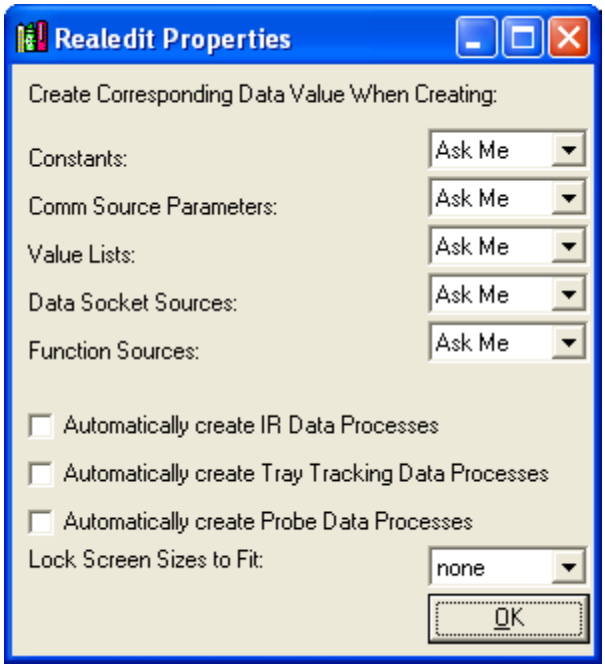
Font: Adjusts the font used in the new table edit screen.

Color: Adjusts the foreground color of the screen.

Back Color: Adjusts the background color of the screen.

RealEdit Settings

This dialog adjusts the settings for RealEdit on the individual computer it is applied to.



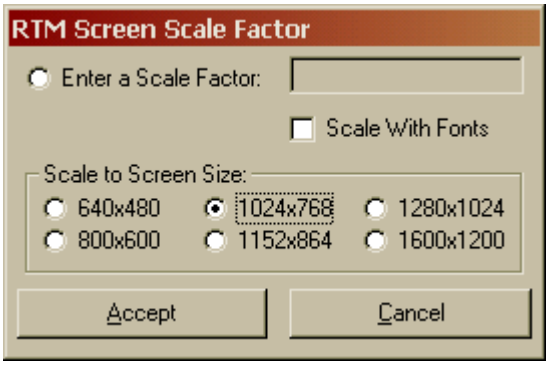
Create Corresponding Data Values controls automated data value creation. Each entry – Constants, Comm Source Parameters and Value Lists can have one of three settings: Always, Ask Me, Never. Default is Ask Me. When Always is selected, RealEdit will automatically create a Data Value with the same name as the Constant, Comm Source or Value List created manually. Ask Me will prompt the user as to whether the Data Value should be created. Never allows RealEdit to function in much the same way it used to, with all automatic Data Value creation turned off.

RealEdit can also be made to automatically create more data processes at screen creation. Check boxes mark whether IR, Tray Tracking or Probe Data Processes will be created.

Finally, RealEdit can monitor maximum screen size for a given target resolution and disallow the user to enlarge a screen beyond the pre selected safe boundary. In the example, RealEdit will prevent screen creation that cannot be viewed in its entirety by a monitor displaying 1024x768 resolution.

Scale Factor

The Scale Factor dialog will allow the user to attempt to scale improperly sized screens to fit a new resolution.



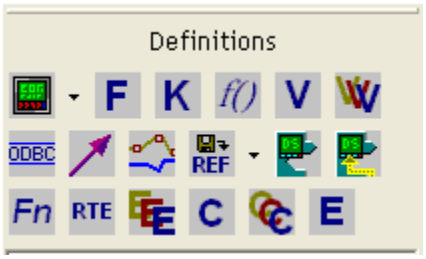
The user may opt to enter a scale factor manually or specify a target resolution. Entering a manual scale factor will cause the screen and all the objects on the screen to change to match the factor. For example, entering a 2 will double the size of all objects. The effects of selecting a target resolution vary depending on the resolution of the screen RealEdit is running on. Scaling to a lower resolution will naturally cause the screen's size to shrink in the current editor. Scaling to the same resolution will leave the screen unchanged and scaling to higher resolution will enlarge the screen.

Because fonts are often botched by re-scaling, it is an option to exclude changing them on the newly sized screen.

RealEdit Objects

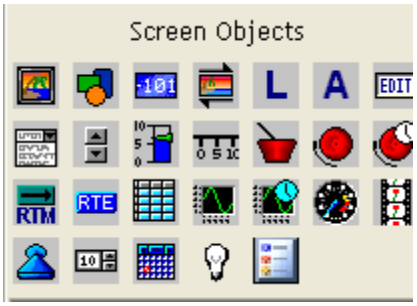
The corresponding buttons are defined in each section from left to right, top to bottom.

Definitions



- Communications
- Fonts
- Constants
- Processes
- Data Values
- Data Value Lists
- ODBC Connections
- Pointers
- Trend Lines
- File References
- Data Socket Sources
- Data Socket Destinations
- Function Sources
- RealTime Events
- Event Lists
- Colors
- Color Lists
- Event Triggers

Screen Objects



- Image Boxes
- Simple Shapes
- Logic Boxes
- Portable Images
- Simple Labels
- Auto Labels
- Edit Boxes
- Lookup Lists
- Spin Buttons
- Meters
- Simple Scales
- Recipe Boxes
- Alarm Lists
- Link Screen Buttons
- RT Event Buttons
- Data Grids
- Graphs
- Historical Graphs
- Dials
- Animations
- Toggle Buttons
- Numeric Edits
- Date Pickers
- iTools
- Event Lists
- SSI Recipe Viewer

Communications

All Communications Setup is now under the Communications Source Button on the Definitions band. The drop down reveals the Communications Channel Definitions, Communications Source Parameters Definitions, and the Communications Destination Parameters.

Communications Channel Definitions

A communication channel is a reference to a Super Data Logical Channel as configured in the SCSPSYS.CFG file.

Properties

Name – The name of the channel. It is a good idea to use the same name as defined in the SCSPSYS.CFG file.

Fixed Channel - SCSPSYS.CFG Logical Channel [number] TAGNAME

Variable Channel – If checked the Logical Chanel number will be defined by a Data Value.

Data Value Channel – the Data Value that defines the logical communications channel to be used.

Communications Channel Source Parameter

A Communications Channel Source Parameter is a reference to a particular slot, or 16-bit word, in a Communications Channel.

Properties

Name - The Name property makes the object easier for the RealEdit programmer to identify. Often it is a good idea to use the same name for related objects, such as a Data Value that represents a Constant.

Channel - SCSPSYS.CFG Logical Channel [number] TAGNAME

Slot - Process Master slot number with description (if applicable).

Data Type - Represents the expected type of data. Data Types are:

Number

Text

Logical

Date/Time Serial Number

Alarm Code

Chars in Word - Select 1 or 2 characters in each word (slot). Used when reading text from an instrument

No.Chars - The number of characters to read successively from the instrument. This in effect reads successive slots from the instrument

Communications Channel Destination Parameter

A Communications Channel Destination Parameter is a reference to an exact parameter in a particular instrument (NOT a slot as defined in Communications Channel Sources) into which data is to be written.

Properties

Name - The Name property makes the object easier for the RealEdit programmer to identify. Often it is a good idea to use the same name for related objects, such as a Data Value that represents a Constant.

Channel - Reference to the Communications Channel to apply

Slave Table - Hex table from instrument – only used with Marathon instruments.

Parameter - Hex parameter from instrument to write data to.

Data Type - Represents the expected type of data. Data Types are:

Number

Text

Logical

Date/Time Serial Number

Alarm Code

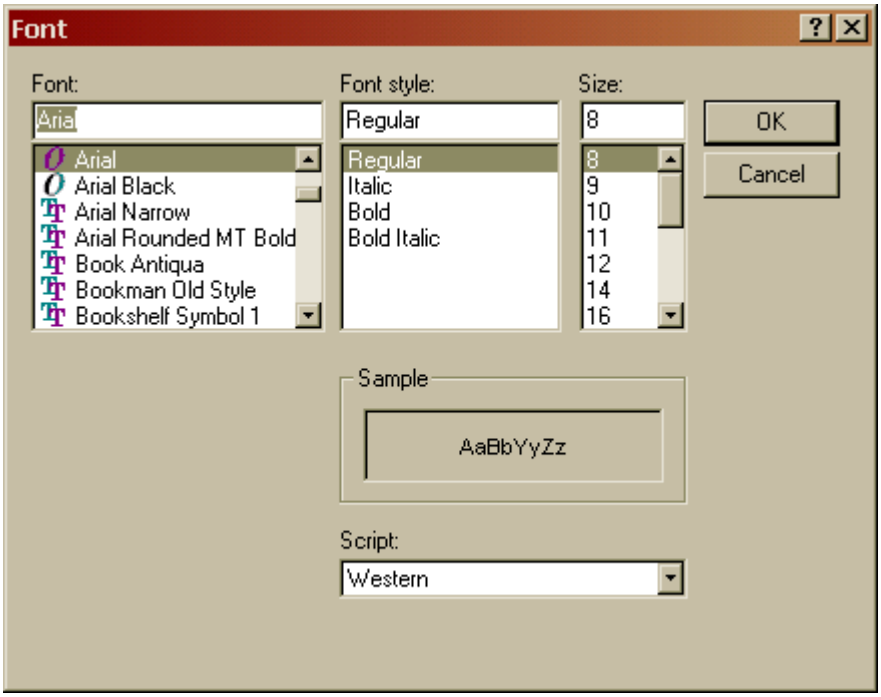
Chars in Word - Select 1 or 2 characters in each word (slot). Used when reading text from an instrument

No. Chars - The number of characters to read successively from the instrument. This in effect reads successive slots from the instrument

REQUIREMENTS: For Source/Destination Parameters, Communication Channel Reference must be added to the screen.

Fonts

A font is a reference to a system font. Fonts are used in many objects to display text. The user can choose a new font using the tools provided. A new screen is equipped with one fixed width and one variable width default fonts with three sizes each, making six font definitions.



The Font selector is the common dialog for fonts. All available system fonts are listed; all possible styles and sizes for the selected font are selectable here, as well. Users should be careful of using very unusual fonts, as every computer must have the font on the system to use the selected font. Installing fonts is easy, but it is just one more detail. Among the most readable variable width fonts are MS Sans Serif and Arial. Courier is a good choice in fixed width fonts.

Properties

Name - The Name property makes the object easier for the RealEdit programmer to identify. Often it is a good idea to use the same name for related objects, such as a Data Value that represents a Constant.

Typeface - The font name

Size - The font size

Bold - True/False value indicating whether the specified item will be applied to this object

Underline - True/False value indicating whether the specified item will be applied to this object

Italic - True/False value indicating whether the specified item will be applied to this object

StrikeThru - True/False value indicating whether the specified item will be applied to this object

Once a font is created, it gets a Property Sheet like any other object. The Browse button will open the font Common Control again to change typeface more easily and to preview your adjusted font. The Property Sheet mainly allows the user to quickly change size, underline, bold, italic or strikethrough properties.

Constants

A Constant Source is static data of any type. Because a Constant is generally used with a corresponding Data Value, a RealEdit Setting that can be selected is to Always create a Data Value with the same name as the Constant Source created.

Properties

Name - The Name property makes the object easier for the RealEdit programmer to identify. Often it is a good idea to use the same name for related objects, such as a Data Value that represents a Constant.

Value - A raw data value that is assigned only through the object's property sheet and cannot be changed elsewhere

Data Type - Represents the expected type of data. Data Types are:

Number

Text

Logical

Date/Time Serial Number

Alarm Code

Data Processes

A Data Process is a transformation routine through which data must pass between the source and the actual posting of a Data Value.

Name - The Name property makes the object easier for the RealEdit programmer to identify. Often it is a good idea to use the same name for related objects, such as a Data Value that represents a Constant.
Units - The display units for a Data Value (DP, cfm, °F, etc…). These will be applied when the Show Units field is set to True on an Auto Label.

Function Type - The function to perform on a Data Value through the Process object. Function Types include:

Basic Numeric Process
No Process
Date/Time Process
Speed to Time Conversion Process
Function: Applies the Function String to the Data Value

Display Format - Sets the decimal and precision adjustment for display

Right Shifts - Decimal right shifts to apply to the Data Value

AND Mask - AND Mask applied to the Data Value

Offset - Offset applied to the Data Value

Span - Span applied to the Data Value

Min Value - A standard numeric value for the minimum the object can represent.

Max Value - A standard numeric value for the maximum the object can represent.

Function String - NOTE: This functionality has been superseded by the Function Source definition. The Function String is retained only for backward compatibility.

Data Values

A Data Value is the fundamental unit in RealTime screens. Before any raw data from any source can be displayed in any way, it must become a valid Data Value. A Data Value comes from one of several possible Data Source types through a Data Process. A Data Value may be text, a number, a logical, an alarm code, or a date/time serial number (depending on the source data type). During development of a screen, a key debugging tool is the Options-Data Value Snapshot menu selection in RealTime. This view gives an instantaneous view of all Data Values, whether they are represented on the screen visually or not. If there is any problem with the data source or data process from which data is being derived, the value may become an error message:

*TBL*ERR*	table in an MDB File does not exist
*FIL*ERR*	data file (any type) is corrupt or does not exist
*REC*ERR*	record in DBF File Source, MDB File, or Flat File Source does not exist
*FLD*ERR*	field in DBF, MDB or Flat File Source does not exist
*COM*ERR*	channel is not communicating properly
*ALM*ERR*	alarm data has no corresponding text available
*DAT*ERR*	data value source is in error
*VAL*ERR*	Value list source function code is producing an error
*DLG*ERR*	Datalog data cannot be accessed
*SRC*ERR*	source (any type) is not able to produce data
*SQL*ERR*	SQL Query from an ODBC source has an error

Properties

Name - The Name property makes the object easier for the RealEdit programmer to identify. Often it is a good idea to use the same name for related objects, such as a Data Value that represents a Constant.

Source Type - The type of object of the value source.

Source - The object which is the source of the values for this object. This will be a dropdown combo box with all the defined objects of the selected source type.

Process - The Data Process performed on the value.

Use Select Index - True/False value indicating whether the specified item will be applied to this object

Select Index - Selects the field from the returned string of an SQL query

Get From Global Index Gets a value from the global index

Put In Global Index Sets a value from the global index

Most values in RealTime are known only to the screen they belong to (scope is limited to the screen). You can pass one (but only one) value from one screen to another when you open the new screen (this is the "pass value").

Sometimes it would be convenient to have some values that are available to all opened screens, i.e. values with global scope with respect to the current realtime application - Hence "global" variables.

In RealTime, there is an array of 20 "system global variables", indexed 1 to 20. A data value can be linked to one of these global variables by setting either the "Get from Global index" (sources the value from the global variable) or the "Put in Global Index" (writes the value to the global variable). This allows sharing of some data between screens.

Data Value Lists

A Value List is a data source. It is actually a collection of individual Data Values that have been grouped together for some purpose. The function employed in the value list determines what data is produced. When the function is set to return the indexed value, the Record Pointer property defines an external data value that will point to the value in the list to return as the result. When loading a lookup list from a Value List Source, the Record Pointer has no effect; all data values in the list are loaded. It is possible to develop an irresolvable circular reference using a value list. For example, if one of the values in the list is actually based on the value list as its data source, it will be impossible to make sense of the result. This sort of situation will not cause a problem for the RealTime program, but it will almost certainly produce unreliable results. Because a Value List is generally used with a corresponding Data Value, a RealEdit Setting that can be selected is to Always create a Data Value with the same name as the Value List created.

Properties

Name - The Name property makes the object easier for the RealEdit programmer to identify. Often it is a good idea to use the same name for related objects, such as a Data Value that represents a Constant.

Record Pointer - A Data Value indicating the record to select

Function - Functions include:

Return Indexed Value

Return Sum

Return First Value Minus Second

Return Average Value

Return Std Deviation

Return Min Value

Return Max Value

Return First Value Multiplied by Second

Return First Value Divided by Second

Return First Non-Zero Value in List

Return Concatenated String

Return Concatenated String (space delimited)

Return Concatenated String (comma delimited)

Return True/False on Comparison of All Values

Return First Value

Return First Non-Null Value in List

Return True/False on Comparison of Non-Null Values

Return Average Value (exclude Zeros)

Return Std. Deviation (exclude Zeros)

Return Min Value (exclude Zeros)

Return Max Value (exclude Zeros)

Return Count of Non-Zero Values

Return First Value if Record Pointer True Else Second

Return True/False on Comparison of All Non-Zero Values

Return True/False on Unique Non-Null/Non-Zero Values

List - This is a list of any object type. Selecting (list) invokes the List Builder Dialog.

REQUIREMENTS: 1 Data Value

ODBC Connections

The ODBC (Open Database Connectivity) source is a very powerful tool that can get data out of an external database system of almost any type. The user must first create a Data Source Name on the system. This identifies the database or tables that will be accessed via the ODBC Reference.

Properties

Name - The Name property makes the object easier for the RealEdit programmer to identify. Often it is a good idea to use the same name for related objects, such as a Data Value that represents a Constant.

DSN - Data Source Name defined in the computer's ODBC setup

SQL Query - Text SQL query which makes the selection from the database

Data Type - Represents the expected type of data. Data Types are:

Number

Text

Logical

Date/Time Serial Number

Alarm Code

Data Value %1-%4 - The Data Value which replaces %n in the SQL query.

Pointers

Pointers are the indicators or controls on a Meter or a Dial/Knob Screen Object. If a Pointer is to simply indicate, it will display the value listed in the Value field. If it is to control a Data Value, the user must first create the control-type Pointer, then create a Data Value with Pointer as the Source Type for the Data Value (followed by selecting the previously created Pointer). Multiple Pointers can be applied to a single Meter or Dial. Pointer styles include Invisible which, when combined with Fill To Max or Fill To Min can create Redlines or markers for additional traditional Pointers to indicate the safe ranges for values.

Properties

Name - The Name property makes the object easier for the RealEdit programmer to identify. Often it is a good idea to use the same name for related objects, such as a Data Value that represents a Constant.

Pointer Mode - Indicator: Value cannot be adjusted by the user. Normally displays a specified Data Value in the object. Control: Controls a separate data value.

Pointer Style - Pointer Styles:

Normal (thin line)

Invisible

Left/Bottom Arrow (Meters only)

Right/Top Arrow (Meters only)

3-D (Dials only)

Pointer Color - Color adjusted by red, green and blue hex values or invoking the Color Dialog.

Fill Style - Fill Styles:

No Fill

Fill to Max

Fill to Min

Fill to Next Greater Pointer

Fill to Next Lesser Pointer

Fill Color - Color adjusted by red, green and blue hex values or invoking the Color Dialog.

Value - The fundamental data unit for RealTime. A Data Value may be changed by a Data Process and can be derived from any number of Data Sources.

REQUIREMENTS: 1 Data Value for Indicators

Trend Lines

A trend line is an invisible item that is used to feed data into charts and historical charts. A trend line takes any data value and adds scaling and color information needed by the chart.

Points mark the exact value on a chart. Only useful on very short charts (usually trend charts), as a point will be plotted every minute. Scale Min/Scale Max are the limits of the trend. This will determine the scale limits on the applied chart. When set equal, the trend will automatically scale. This should be used with caution, as one value far out of range can skew the trend line. This is more likely useful on historical charts where known good data populates the range given. Line Styles are helpful on charts printed on black and white printers.

Properties

Name - The Name property makes the object easier for the RealEdit programmer to identify. Often it is a good idea to use the same name for related objects, such as a Data Value that represents a Constant.

Data Value - The fundamental data unit for RealTime. A Data Value may be changed by a Data Process and can be derived from any number of Data Sources.

Color - Color adjusted by red, green and blue hex values or invoking the Color Dialog.

Scale Min - A standard numeric value for the minimum the object can represent.

Scale Max - A standard numeric value for the maximum the object can represent.

Pen Width - Tip width of the pen drawing the Trend Line.

Axis Caption - Descriptive display text.

Line Style - Line Style:

None (invisible) select if no line is desired
Solid (default)
Step XY
Step YX
Dash
Dot
Dash Dot
Dash Dot Dot

Point Style - Point Styles:

None (invisible) select if no points are desired
Empty Square
Solid Square
Asterisk
Dotted Empty Square
Dotted Solid Square
Solid Diamond
Empty Square with X
Empty Square with Cross

Empty Circle
Solid Circle
Dotted Empty Circle
Dotted Solid Circle
X
Bold X
Small X
Cross
Bold Cross
Small Cross
Small Empty Square
Small Solid Square
Simple Dot
Empty Diamond

Point Color - Color adjusted by red, green and blue hex values or invoking the Color Dialog.

REQUIREMENTS: 1 Data Value

File References

Picture File References

A Picture File Reference is used to reference a picture to be used for screen display on a button or in an Image Box or Logic Box. The Property Edit sheet displays the picture selected in the lower left hand corner.

Properties

Name - The Name property makes the object easier for the RealEdit programmer to identify. Often it is a good idea to use the same name for related objects, such as a Data Value that represents a Constant.

File - The full path and file name to the reference file

Application File References

An application file is a reference to an external executable (.exe, .com, .bat, or .pif) to run. An application file is executed with a RealTime Event.

Properties

Name - The Name property makes the object easier for the RealEdit programmer to identify. Often it is a good idea to use the same name for related objects, such as a Data Value that represents a Constant.

File - The full path and file name to the reference file

Command Line - Any command line switches for the program to be run

Disallow Multiples - Prevent RealTime from running a duplicate copy of the program

INI File References

An INI File Source is a reference to a particular data item in a Windows style configuration (.INI) file. These are hierarchical text files that have sections (enclosed in brackets) and items (which precede equal signs) which lead to the desired data. Actual data follows an equal sign, and may be enclosed in quotes if desired (the quotes will be discarded).

Properties

Name - The Name property makes the object easier for the RealEdit programmer to identify. Often it is a good idea to use the same name for related objects, such as a Data Value that represents a Constant.

File - The full path and file name to the reference file

Section - Typical INI file section name. Section names are enclosed in brackets in the INI file.

Item - Item in the INI File Section specified

Data Type - Represents the expected type of data. Data Types are:

Number
Text
Logical
Date/Time Serial Number
Alarm Code

Flat ASCII File References

A Flat ASCII File source is a reference to data in an external comma-delimited text file. Each line that starts with a numeric will be interpreted as a line of data; all others will be ignored. The first field in each line is an index number used to order the rest of the data (lines do not have to be in order in the file).

Properties

Name - The Name property makes the object easier for the RealEdit programmer to identify. Often it is a good idea to use the same name for related objects, such as a Data Value that represents a Constant.

File - The full path and file name to the reference file

Line Item - The field in the line. Line Item 1 is always the index number.

Data Type - Represents the expected type of data. Data Types are:

Number

Text

Logical

Date/Time Serial Number

Alarm Code

Record Pointer - Defines a data value that will be matched against index numbers in the file to return data from a particular line when needed. For example, if the Record Pointer was equal to "2" in the above file, data returned for Line Item 2 would be "XYZ987". When loading a lookup list from a flat file, the Record Pointer has no effect; all records found are loaded.

Example:

;This file contains a line of data for each part to be run.

;Fields are:

;<index number>,<part no.>,<piece weight>,<recipe no.>

1,”ABC123”,.24,142

2,”XYZ987”,5.1,64

3,”MNO456”,.12,37

Link Screen File References

A Link Screen File reference is a reference to another Realtime (.RTM) screen. It is used by either a Realtime Link Button or a Realtime Event Button to open another Realtime screen.

Properties

Name – The Name property makes the object easier for the RealEdit programmer to identify. Often it is a good idea to use the same name for related objects, such as a Data Value that represents a Constant.

File - The full path and file name to the reference file

Crystal Report File References

A Report File Reference is a reference to an external Crystal Reports (.RPT) file. A Report File is actually executed using a RealTime Event that causes the Crystal Reports runtime engine to process the report.

Properties

Name - The Name property makes the object easier for the RealEdit programmer to identify. Often it is a good idea to use the same name for related objects, such as a Data Value that represents a Constant.

File - The full path and file name to the reference file

Data Value Select - The fundamental data unit for RealTime. A Data Value may be changed by a Data Process and can be derived from any number of Data Sources.

Data Value Group - The fundamental data unit for RealTime. A Data Value may be changed by a Data Process and can be derived from any number of Data Sources.

Parm 1-3 Field Name - The field name of the table

Data Value Parm 1-3 - The fundamental data unit for RealTime. A Data Value may be changed by a Data Process and can be derived from any number of Data Sources.

Datalog File References

A datalog source is similar to a Communications Source, except the data comes from datalog files rather than from RealTime communications. Whatever process is applied in the Data Value will be automatically applied to the datalog result. Therefore, any data value that is based on the datalog source should use just a Pass-Through Data Process.

Properties

Name - The Name property makes the object easier for the RealEdit programmer to identify. Often it is a good idea to use the same name for related objects, such as a Data Value that represents a Constant.

Data Value - The fundamental data unit for RealTime. A Data Value may be changed by a Data Process and can be derived from any number of Data Sources.

Data Value Date/Time - The fundamental data unit for RealTime. A Data Value may be changed by a Data Process and can be derived from any number of Data Sources.

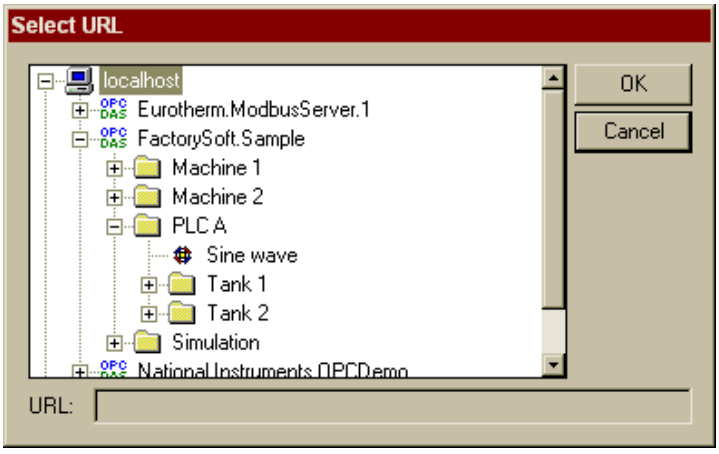
Data Socket Sources

Data Socket Sources use the Component Works Data Socket control to access any OPC Server on the network and query the server for information.

Properties

Name - The Name property makes the object easier for the RealEdit programmer to identify. Often it is a good idea to use the same name for related objects, such as a Data Value that represents a Constant.

OPC URL - OPC URL is the OPC address of the Server and Parameter you will query. A browser is included in RealEdit to help find the proper Server for your application:



Select the local host or browse Network Neighborhood to find the computer which is running the OPC Server and select the parameter to assign to this Data Socket Source.

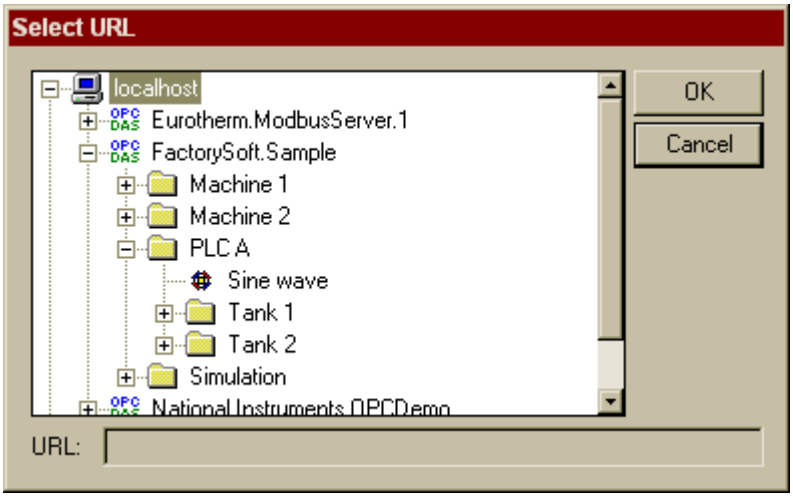
Data Socket Destinations

Data Socket Destinations use the Component Works Data Socket control to access any OPC Server on the network and write information to a selected parameter.

Properties

Name - The Name property makes the object easier for the RealEdit programmer to identify. Often it is a good idea to use the same name for related objects, such as a Data Value that represents a Constant.

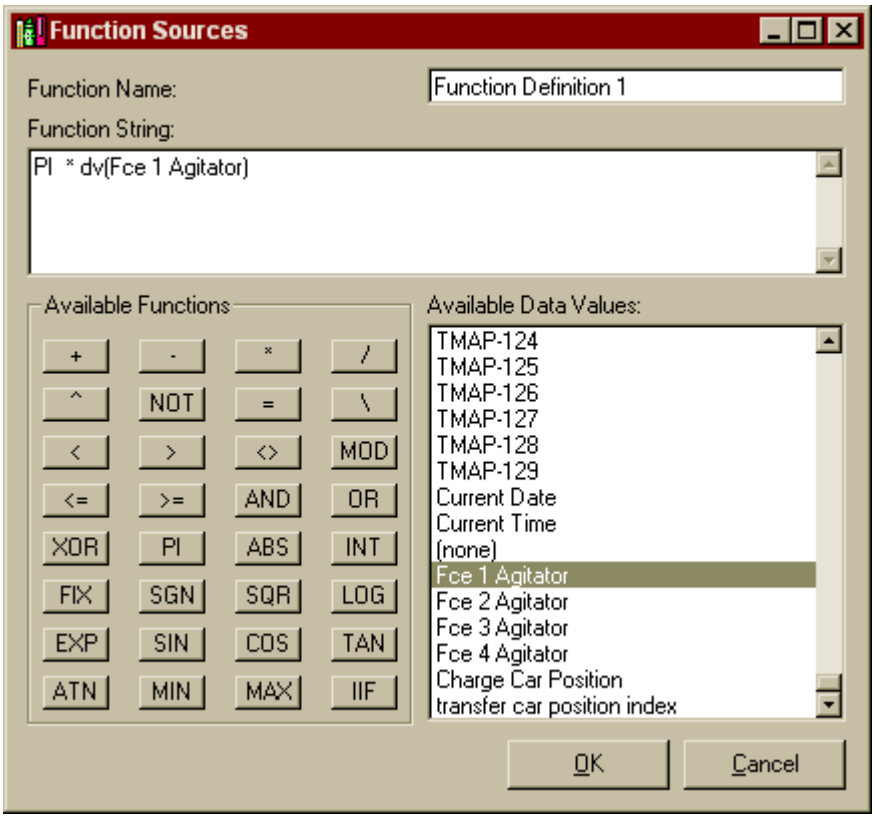
OPC URL - OPC URL is the OPC address of the Server and parameter you will send data to. A browser is included in RealEdit to help find the proper Server for your application:



Select the local host or browse Network Neighborhood to find the computer which is running the OPC Server and select the parameter to assign to this Data Socket Destination.

Function Sources

Function Sources are a Data Value source which can mathematically manipulate existing Data Values or hard-coded values. A Function Source has a different Property Edit screen than any other object:



Properties

Function Name - The Name property makes the object easier for the RealEdit programmer to identify. Often it is a good idea to use the same name for related objects, such as a Data Value that represents a Constant.

Function String - This is defined by selecting the desired operator or constant from Available Functions, filling in appropriate hard-coded numeric values and/or double clicking the proper Data Values from Available Data Values to perform the calculation. A brief description of the functions follows:

NOT: Performs logical negation on an expression
^: exponential
*: multiply
/: divide
\: Used to divide two numbers and return an integer result
MOD: Divides two numbers and returns only the remainder
+: add
-: subtract
=: is equal
<: is less than
<=: is less than or equal to
>: is greater than
>=: is greater than or equal to

<>: is not equal
AND: Performs a logical conjunction on two expressions
OR: Performs a logical disjunction on two expressions
XOR: Performs a logical exclusion on two expressions
PI: Pi constant
ABS: Returns the absolute value of a number
INT: Returns the integer portion of a number, for negative the next number <= number is returned
FIX: Returns the integer portion of a number, for negative the next number >= number is returned
SGN: Returns an integer indicating the sign of a number
SQR: Returns the square root of a number
LOG: Returns the natural logarithm of a number
EXP: Returns *e* (the base of natural logarithms) raised to a power
SIN: Returns the sine of an angle
COS: Returns the cosine of an angle
TAN: Returns the tangent of an angle
ATN: Returns the arctangent of a number
MIN: Returns the lesser of two supplied numbers
MAX: Returns the greater of two supplied numbers
IIF: Returns one of two parts, depending on the evaluation of an expression – IIF(expr, true, false)

Image Boxes

An image box is used to display a picture file. The picture can be a complete background over which other objects can be placed, or it can be a stand-alone figure.

Properties

Name - The Name property makes the object easier for the RealEdit programmer to identify. Often it is a good idea to use the same name for related objects, such as a Data Value that represents a Constant.

Picture - Name of the picture reference to apply.

Top - The top position, in twips, of the object.

Left - The Left position, in twips, of the object.

Height - The Height value, in twips, of the object.

Width - The Width value, in twips, of the object.

Sizing - The control placed on the resizing of an object to preserve aspect ratio. Sizing methods may be:

No Aspect Lock: No control over the aspect ratio.
Aspect Lock By Height: Adjusts the width when the height is changed.
Aspect Lock By Width: Adjusts the height when the width is changed.

REQUIREMENTS: 1 Picture File Reference

Simple Shapes

A simple shape is a graphic drawing object that can be used as a decoration for the screen.

Properties

Name - The Name property makes the object easier for the RealEdit programmer to identify. Often it is a good idea to use the same name for related objects, such as a Data Value that represents a Constant.

Shape - Available Shapes:

Rectangle
Square
Oval
Circle
Rounded Rectangle
Rounded Square

Top - The top position, in twips, of the object.

Left - The Left position, in twips, of the object.

Height - The Height value, in twips, of the object.

Width - The Width value, in twips, of the object.

Color - Color adjusted by red, green and blue hex values or invoking the Color Dialog.

REQUIREMENTS: none

Logic Boxes

A logic box is used to provide a quick, visual representation to a state condition. Although most state conditions are defined in terms of on/off, true/false, ok/error, etc., the logic box actually supports tri-state status indication (n < 0, n = 0, n > 0). The logic box can change any or all of three visual cues in response to a state change: text, color, and/or picture, based on a designated numeric data value being negative, 0, or positive. The logic box is always rectangular in shape. A color will fill the entire box as a background to any text or pictures, either of which will originate in the upper left-hand corner.

Properties

Name - The Name property makes the object easier for the RealEdit programmer to identify. Often it is a good idea to use the same name for related objects, such as a Data Value that represents a Constant.

Top - The top position, in twips, of the object.

Left - The Left position, in twips, of the object.

Height - The Height value, in twips, of the object.

Width - The Width value, in twips, of the object.

Data Value - The fundamental data unit for RealTime. A Data Value may be changed by a Data Process and can be derived from any number of Data Sources.

Disp.Data Value < 0 - Value displayed when Data Value is < 0

Disp.Data Value = 0 - Value displayed when Data Value is = 0

Disp.Data Value > 0 - Value displayed when Data Value is > 0

Font - The type face selected for this particular text.

Text Color - Color adjusted by red, green and blue hex values or invoking the Color Dialog.

Color < 0 - Color of Logic Box background when Data Value < 0

Color = 0 - Color of Logic Box background when Data Value = 0

Color > 0 - Color of Logic Box background when Data Value > 0

Picture < 0 - Picture on Logic Box when Data Value < 0

Picture = 0 - Picture on Logic Box when Data Value = 0

Picture > 0 - Picture on Logic Box when Data Value > 0

Tip - ToolTip text to display. The ToolTip text floats over the object when the mouse pointer is hovered within the object's bounds.

Editable - True or False, whether or not the user can edit an object.

REQUIREMENTS: 1 Data Value. 1 Picture File Reference if pictures are displayed.

Portable Images

A portable image is a picture that can be relocated on the screen to the Top and Left locations specified by the indicated Data Values. Portable Images no longer use Screen Points for control. To make an image that moves across the screen left to right, one would assign the Top value to a constant and the Left value to a data value that increases, thereby moving the image left to right in a horizontal line.

Properties

Name - The Name property makes the object easier for the RealEdit programmer to identify. Often it is a good idea to use the same name for related objects, such as a Data Value that represents a Constant.

Height - The Height value, in twips, of the object.

Width - The Width value, in twips, of the object.

Sizing - The control placed on the resizing of an object to preserve aspect ratio. Sizing methods may be:

No Aspect Lock:	No control over the aspect ratio.
Aspect Lock By Height:	Adjusts the width when the height is changed.
Aspect Lock By Width:	Adjusts the height when the width is changed.

Left Data Value - The fundamental data unit for RealTime. A Data Value may be changed by a Data Process and can be derived from any number of Data Sources.

Top Data Value - The fundamental data unit for RealTime. A Data Value may be changed by a Data Process and can be derived from any number of Data Sources.

REQUIREMENTS: 1 Data Value, 1 Picture File Reference

Simple Labels

A simple label is used to display static text on the screen.

Properties

Name - The Name property makes the object easier for the RealEdit programmer to identify. Often it is a good idea to use the same name for related objects, such as a Data Value that represents a Constant.

Top - The top position, in twips, of the object.

Left - The Left position, in twips, of the object.

Font - The type face selected for this particular text.

Color - Color adjusted by red, green and blue hex values or invoking the Color Dialog.

REQUIREMENTS: none

Auto Labels

An auto label is the simplest, most direct way of displaying a data value. An Auto Label is also a way to send data the other direction; simply make it editable and use the Send Pending Edit RealTime Event to transmit a manually entered value to a destination.

Properties

Name - The Name property makes the object easier for the RealEdit programmer to identify. Often it is a good idea to use the same name for related objects, such as a Data Value that represents a Constant.

Top - The top position, in twips, of the object.

Left - The Left position, in twips, of the object.

Height - The Height value, in twips, of the object.

Width - The Width value, in twips, of the object.

Alignment – Left, Center, or Right justification of text

Display Value - The fundamental data unit for RealTime. A Data Value may be changed by a Data Process and can be derived from any number of Data Sources.

Font - The type face selected for this particular text.

Color - Color of the object's display text

Sample Data - Text filled in at design time

Editable - True or False, whether or not the user can edit an object.

Show Units - True/False value indicating whether the specified item will be applied to this object

Tip - ToolTip text to display. The ToolTip text floats over the object when the mouse pointer is hovered within the object's bounds.

Show Background - True/False value indicating whether the specified item will be applied to this object

Back Color - Color of the Object's background

Tab Index - Controls the order in which objects are selected by using the tab key. This value is this objects position in the sequence.

REQUIREMENTS: 1 Data Value

Edit Boxes

An Edit Box is a data source that can supply manually entered data of any type. In RealTime, an Edit Box updates the Data Values attached to it when the user hits the Enter key after entering new data.

Properties

Name - The Name property makes the object easier for the RealEdit programmer to identify. Often it is a good idea to use the same name for related objects, such as a Data Value that represents a Constant.

Top - The top position, in twips, of the object.

Left - The Left position, in twips, of the object.

Height – The Height value, in twips, of the object.

Width – The Width value, in twips, of the object.

Font – The type face selected for this particular text.

Text Color – Color of the object's display text

Back Color – Color of the Object's background

Data Type – Represents the expected type of data. Data Types are:

Number
Text
Logical
Date/Time Serial Number
Alarm Code

Tip – ToolTip text to display. The ToolTip text floats over the object when the mouse pointer is hovered within the object's bounds.

Hide Text – True/False whether to suppress the text in an Edit Box

Tab Index – Controls the order in which objects are selected by using the tab key. This value is this objects position in the sequence

Alignment – Left, Center, or Right justification of text

REQUIREMENTS: none

Lookup Lists

A Lookup List is a data source used to select an entry from a list. A Lookup List can be modified with RealTime Events.

Properties

Name – The Name property makes the object easier for the RealEdit programmer to identify. Often it is a good idea to use the same name for related objects, such as a Data Value that represents a Constant.

Top – The top position, in twips, of the object.

Left – The Left position, in twips, of the object.

Height – The Height value, in twips, of the object.

Width – The Width value, in twips, of the object.

Font - The type face selected for this particular text.

Text Color - Color of the object's display text

Back Color - Color of the Object's background

Source Type - The type of object of the value source.

Source - The object which is the source of the values for this object. This will be a dropdown combo box with all the defined objects of the selected source type.

Data Type - Represents the expected type of data. Data Types are:

Number
Text
Logical
Date/Time Serial Number
Alarm Code

Pre-Select - No Selection: Display box starts out empty until selection made

First Item Selected: Display box filled with first item in list (must be one item in list)

Keep Value After Update: Display text maintains position

Tip - ToolTip text to display. The ToolTip text floats over the object when the mouse pointer is hovered within the object's bounds.

Tab Index - Controls the order in which objects are selected by using the tab key. This value is this objects position in the sequence.

RTEventsList - This is a list of any object type. Selecting (list) invokes the List Builder Dialog.

REQUIREMENTS: none

Spin Buttons

A spin button is a data source that allows the user to increment or decrement a number with an Up-Down Control.

Properties

Name - The Name property makes the object easier for the RealEdit programmer to identify. Often it is a good idea to use the same name for related objects, such as a Data Value that represents a Constant.

Top - The top position, in twips, of the object.

Left - The Left position, in twips, of the object.

Height - The Height value, in twips, of the object.

Width - The Width value, in twips, of the object.

Min - A standard numeric value for the minimum the object can represent.

Max - A standard numeric value for the maximum the object can represent.

Increment - Normal increment/decrement span

Start Value - The fundamental data unit for RealTime. A Data Value may be changed by a Data Process and can be derived from any number of Data Sources.

Data Type - Represents the expected type of data. Data Types are:

Number
Text
Logical
Date/Time Serial Number
Alarm Code

Tip - ToolTip text to display. The ToolTip text floats over the object when the mouse pointer is hovered within the object's bounds.

REQUIREMENTS: none

Meters

A meter allows analog representation of numeric data. The data displayed is based upon the defined Pointers that are applied to the Meter.

Properties

Name - The Name property makes the object easier for the RealEdit programmer to identify. Often it is a good idea to use the same name for related objects, such as a Data Value that represents a Constant.

Scale Min - A standard numeric value for the minimum the object can represent.

Scale Max - A standard numeric value for the maximum the object can represent.

Scale Display - Controls the position of the object - Top, Bottom, Left or Right

Scale Caption - Descriptive display text.

Meter Caption - Descriptive display text.

Top - The top position, in twips, of the object.

Left - The Left position, in twips, of the object.

Height - The Height value, in twips, of the object.

Width - The Width value, in twips, of the object.

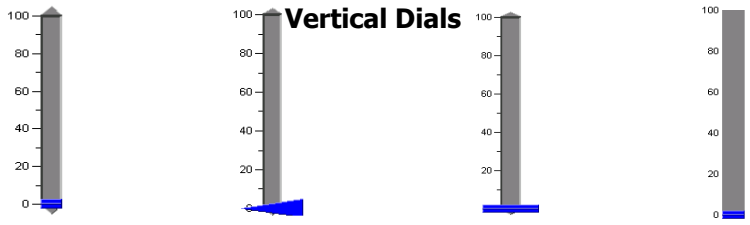
Background Color - Color of the Object's background

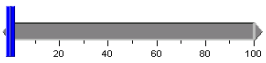
Unfilled Color - Color adjusted by red, green and blue hex values or invoking the Color Dialog.

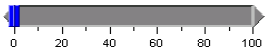
Text Color - Color of the object's display text

Meter Style - Meter Styles

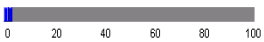
Vertical Dials

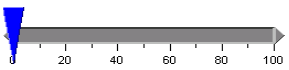




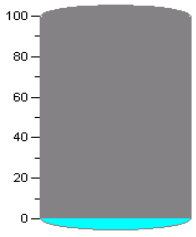


Horizontal Dial

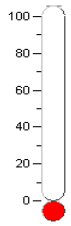




Tank Dial



Thermometer Dial



Font - The type face selected for this particular text.

Tip - ToolTip text to display. The ToolTip text floats over the object when the mouse pointer is hovered within the object's bounds.

Pointer List - This is a list of any object type. Selecting (list) invokes the List Builder Dialog.

Simple Scales

A simple scale is used to display a graduated, annotated scale on the screen.

Properties

Name - The Name property makes the object easier for the RealEdit programmer to identify. Often it is a good idea to use the same name for related objects, such as a Data Value that represents a Constant.

Top - The top position, in twips, of the object.

Left - The Left position, in twips, of the object.

Height - The Height value, in twips, of the object.

Width - The Width value, in twips, of the object.

Font - The type face selected for this particular text.

Text Color - Color of the object's display text

Back Color - Color of the Object's background

Orientation - Horizontal or Vertical Orientation

Caption - Descriptive display text.

Caption Position - Controls the position of the object - Top, Bottom, Left or Right

Major Divisions - Major Divisions: Number of Major tick marks

Minor Divisions: Number of sub divisions of major tick marks

Sub Divisions - Major Divisions: Number of Major tick marks

Minor Divisions: Number of sub divisions of major tick marks

Min Value - A standard numeric value for the minimum the object can represent.

Max Value - A standard numeric value for the maximum the object can represent.

Decimals - The number of decimal places to display

Extend Line - True/False value indicating whether the specified item will be applied to this object

Recipe Boxes

The recipe box allows an MMI/MSI V3.5 recipe to be shown as a complete text item, with the current step highlighted. Normally two of these are used side-by-side to show a main and sub program.

Properties

Name - The Name property makes the object easier for the RealEdit programmer to identify. Often it is a good idea to use the same name for related objects, such as a Data Value that represents a Constant.

Channel - Reference to the Communications Channel to apply

Program - Sub or Main Program

Status Line - True/False value indicating whether the specified item will be applied to this object

Long Opcodes - True/False value indicating whether the specified item will be applied to this object

Top - The top position, in twips, of the object.

Left - The Left position, in twips, of the object.

Font - The type face selected for this particular text.

Text Color - Color of the object's display text

Text HiLight - Color of the object's display text

Back Color - Color of the Object's background

Tip - ToolTip text to display. The ToolTip text floats over the object when the mouse pointer is hovered within the object's bounds.

REQUIREMENTS: 1 Communications Channel Definition

Alarm Lists

The alarm list is an object that will list alarm information about one or more communications channels in the system. Any Communications channel included in an Alarm List must be configured in SCSPSYS.CFG for support of alarm handling. If the Alarm List is to contain historical alarms, information is supplied from the datalog system to initialize the list. The Alarm List draws the alarm messages from the [GLOBAL ALARM TEXT] section of the ALARMS.INI file.

Properties

Name - The Name property makes the object easier for the RealEdit programmer to identify. Often it is a good idea to use the same name for related objects, such as a Data Value that represents a Constant.

Top - The top position, in twips, of the object.

Left - The Left position, in twips, of the object.

Height - The Height value, in twips, of the object.

Width - The Width value, in twips, of the object.

Alarms To List - Which alarms should be listed:

- Pending, not acknowledged
- Pending, acknowledged
- Pending all
- Historical only
- All

Historical Minutes - The length of time sampled, in minutes

Font - The type face selected for this particular text.

Text Color - Color of the object's display text

Back Color - Color of the Object's background

Tip - ToolTip text to display. The ToolTip text floats over the object when the mouse pointer is hovered within the object's bounds.

CommChannel List - This is a list of any object type. Selecting (list) invokes the List Builder Dialog.

Alarm Priorities to List - Filters the alarm priorities to display

- ALL Alarms
- HI Priority Alarms
- MED Priority Alarms
- LOW Priority

When the user clicks on an alarm message in an Alarm List, a dialog box will appear that shows information in more detail, including text from the [GLOBAL ALARM CAUSE] and [GLOBAL ALARM ACTION] sections of the ALARMS.INI file.

The Alarm List also notes the start, acknowledge, and ending times associated with any alarm, using the following logic:

1. Alarms are marked started by either of two means (whichever happens first):

a. A positive leading edge on a bit in the alarm bitmap, or

b. The appearance of an alarm number in the PAL slot.

Note: An alarm whose start time cannot be determined with certainty will never be marked with a start time.

2. Alarms are marked Acknowledged by either of two means (whichever happens first):

a. A positive leading edge on the appropriate bit in the acknowledge bitmap, or

b. The disappearance of a previously started alarm from the PAL slot.

Note: An alarm that was not acknowledged before it ended will never be marked acknowledged. If none of the Communications channels included in an Alarm List use Acknowledge bitmap support, no Acknowledge information is included at all.

3. Right Click the desired item from the Application File References list.

a. A negative trailing edge on a bit in the alarm bitmap, or

b. If no bitmap support is used, or the alarm is outside of the bitmap range, the disappearance of a previously started alarm from the PAL slot.

Link Screen Buttons

A Link Screen Button is a button that will cause a new screen to be loaded and started. Link screen buttons can have their background color changed by a separate data value. If the text and background colors happen to be the same, the button is disabled (grayed out) and will not work until the background color is changed. A Link Screen Button can send a Data Value in the current screen (the Pass Value) to the new screen, where it will be known as the Inherited Value.

Properties

Name - The Name property makes the object easier for the RealEdit programmer to identify. Often it is a good idea to use the same name for related objects, such as a Data Value that represents a Constant.

Screen - The File Reference of the Screen file

Top - The top position, in twips, of the object.

Left - The Left position, in twips, of the object.

Height - The Height value, in twips, of the object.

Width - The Width value, in twips, of the object.

Font - The type face selected for this particular text.

Value To Pass - The fundamental data unit for RealTime. A Data Value may be changed by a Data Process and can be derived from any number of Data Sources.

Text Color - Color of the object's display text

Clear Parent Screen - True/False value indicating whether the specified item will be applied to this object

Back Color Idx - The Value that determines which background color from the list will be displayed

Tip - ToolTip text to display. The ToolTip text floats over the object when the mouse pointer is hovered within the object's bounds.

Back Color List - This is a list of any object type. Selecting (list) invokes the List Builder Dialog.

Tab Index - Controls the order in which objects are selected by using the tab key. This value is this objects position in the sequence.

Use As Color Display - True/False value indicating whether the specified item will be applied to this object

RealTime Event Buttons

A RealTime Event Button is a button that when clicked by the user will cause a list of attached RealTime Events to execute.

Properties

Name - The Name property makes the object easier for the RealEdit programmer to identify. Often it is a good idea to use the same name for related objects, such as a Data Value that represents a Constant.

Top - The top position, in twips, of the object.

Left - The Left position, in twips, of the object.

Height - The Height value, in twips, of the object.

Width - The Width value, in twips, of the object.

Font - The type face selected for this particular text.

Text Color - Color of the object's display text

Back Color - Color of the Object's background

Tip - ToolTip text to display. The ToolTip text floats over the object when the mouse pointer is hovered within the object's bounds.

RTEvent List - This is a list of any object type. Selecting (list) invokes the List Builder Dialog.

Use Enable Value - True/False value indicating whether the specified item will be applied to this object

Data Value Enable - Data Value used to determine if the button is enabled or disabled when Use Enable Value is True

Text - Descriptive display text.

Use Picture File - True/False value indicating whether the specified item will be applied to this object

Picture Reference - Name of the picture reference to apply.

Tab Index - Controls the order in which objects are selected by using the tab key. This value is this objects position in the sequence.

Data Grids

Data grids are used to display data from an ODBC connection.

Properties

Name - The Name property makes the object easier for the RealEdit programmer to identify. Often it is a good idea to use the same name for related objects, such as a Data Value that represents a Constant.

Caption - Descriptive display text.

Top - The top position, in twips, of the object.

Left - The Left position, in twips, of the object.

Height - The Height value, in twips, of the object.

Width - The Width value, in twips, of the object.

Allow Add New - Creating a new record through the datagrid object is enabled.

Allow Delete - Deleting a displayed record through the datagrid is allowed.

Allow Update - Updating the recordset in the datagrid is allowed.
Font - The type face selected for this particular text.

Cell ForeColor - Color adjusted by red, green and blue hex values or invoking the Color Dialog.

Cell BackColor - Color adjusted by red, green and blue hex values or invoking the Color Dialog.

Column Headers - Show the column headers (column headers will correspond to the field names in the database recordset.

Tab Index - Controls the order in which objects are selected by using the tab key. This value is this objects position in the sequence.

Tip - ToolTip text to display. The ToolTip text floats over the object when the mouse pointer is hovered within the object's bounds.

ODBC Source Name - ODBC source that the data in the datagrid control is populated from.

Use Navigation Bar - Uses navigation bar to walk through recordset records.

Graphs

A Graph is used to display data values in a RealTime trend format. Any numeric data value may be trended, but only those values derived from Communication sources can be back filled from datalog data at startup. The chart always is horizontal, with present time represented on the right. The grid lines act like they are printed on the paper; they move as the Graph travels from right to left. The Graph will automatically add scaling and captioning for each Trend represented and will color trend text to match the line.

Properties

Name - The Name property makes the object easier for the RealEdit programmer to identify. Often it is a good idea to use the same name for related objects, such as a Data Value that represents a Constant.

Top - The top position, in twips, of the object.

Left - The Left position, in twips, of the object.

Height - The Height value, in twips, of the object.

Width - The Width value, in twips, of the object.

Minutes Long - The length of time sampled, in minutes

Grid Color - Color adjusted by red, green and blue hex values or invoking the Color Dialog.

Paper Color - Color adjusted by red, green and blue hex values or invoking the Color Dialog.

Background Color - Color adjusted by red, green and blue hex values or invoking the Color Dialog.

Tip - ToolTip text to display. The ToolTip text floats over the object when the mouse pointer is hovered within the object's bounds.

TrendLine List - This is a list of any object type. Selecting (list) invokes the List Builder Dialog.

Historical Graphs

The Historical Graph is similar to the RealTime chart, except the data comes from datalog files rather than RealTime data. The basic assignment is similar to the standard trend chart, with data values controlling the start and end times. Added are color assignments for Cursors. Cursors are controlled along with the rest of the Historical Graphs functionality from RealTime. By right clicking on the graph at runtime, a context menu pops up with selectors for controlling Zoom and Pan and a second measurement cursor. Data Values can be assigned to these cursors so that the x-value, y-value combination can be displayed or manipulated. The trick in assigning the data value is in the Select Index assignment. The Select Index must be set to True and 0 = Cursor 1, 1 = Cursor 2, 2 = the difference between Cursor 1 and Cursor 2. At any time, the graph can be restored to its original settings by selecting Restore Graph from the Context Menu.

Properties

Name - The Name property makes the object easier for the RealEdit programmer to identify. Often it is a good idea to use the same name for related objects, such as a Data Value that represents a Constant.

Top - The top position, in twips, of the object.

Left - The Left position, in twips, of the object.

Height - The Height value, in twips, of the object.

Width - The Width value, in twips, of the object.

Data Value Start - Data Value controlling the Graph's starting time

Data Value End - Data Value controlling the Graph's ending time

Grid Color - Color adjusted by red, green and blue hex values or invoking the Color Dialog.

Paper Color - Color adjusted by red, green and blue hex values or invoking the Color Dialog.

Background Color - Color adjusted by red, green and blue hex values or invoking the Color Dialog.

Tip - ToolTip text to display. The ToolTip text floats over the object when the mouse pointer is hovered within the object's bounds.

Font -

Cursor 1 Color - Color adjusted by red, green and blue hex values or invoking the Color Dialog.

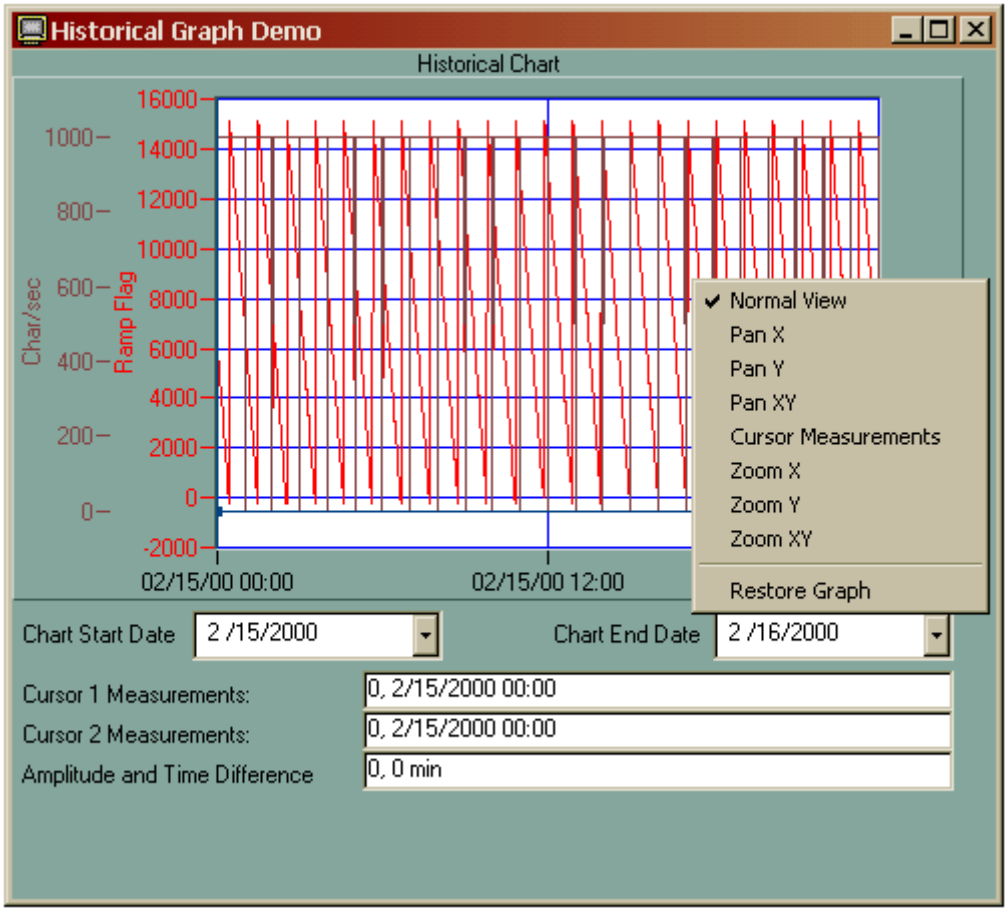
Cursor 2 Color - Color adjusted by red, green and blue hex values or invoking the Color Dialog.

TrendLine List - This is a list of any object type. Selecting (list) invokes the List Builder Dialog.

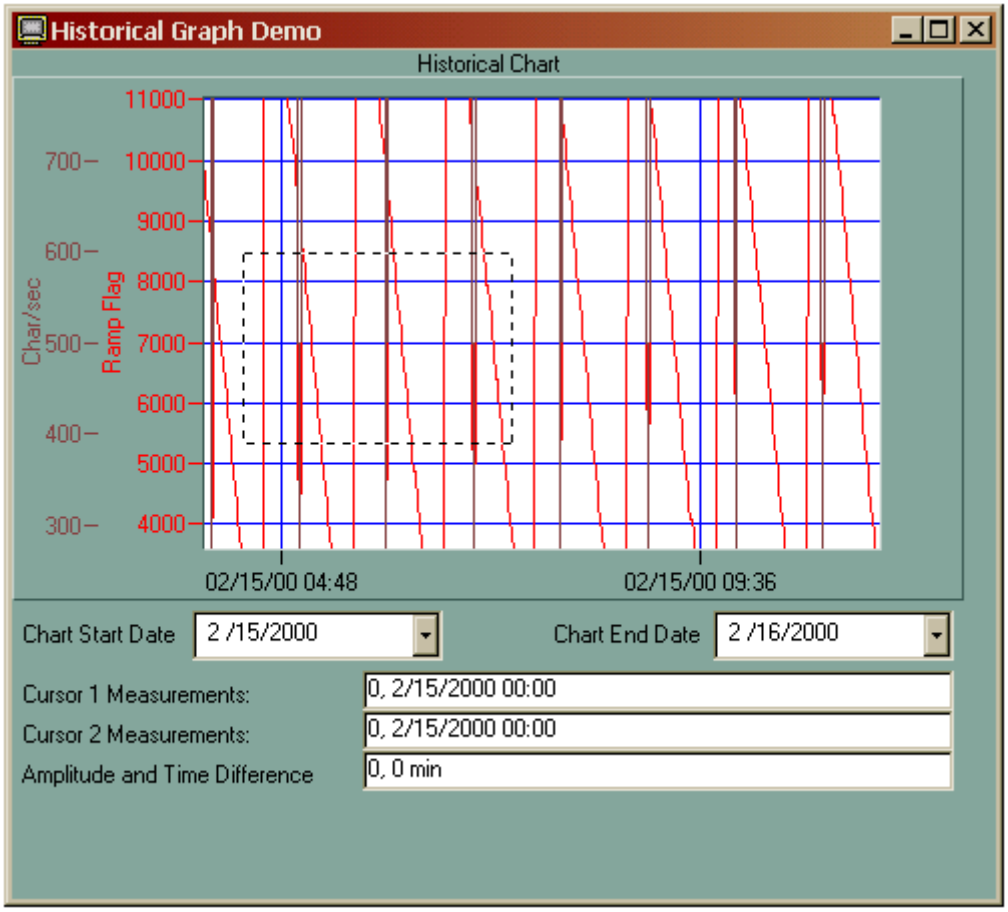
REQUIREMENTS: 1 Trend Line

Historical Graph Cursor Notes: Data Values can be assigned to these cursors so that the x-value, y-value combination can be displayed or manipulated. The trick in assigning the data value is in the Select Index assignment. The Select Index must be set to True and 0 = Cursor 1, 1 = Cursor 2, 2 = the difference between Cursor 1 and Cursor 2. At any time, the graph can be restored to its original settings by selecting Restore Graph from the Context Menu.

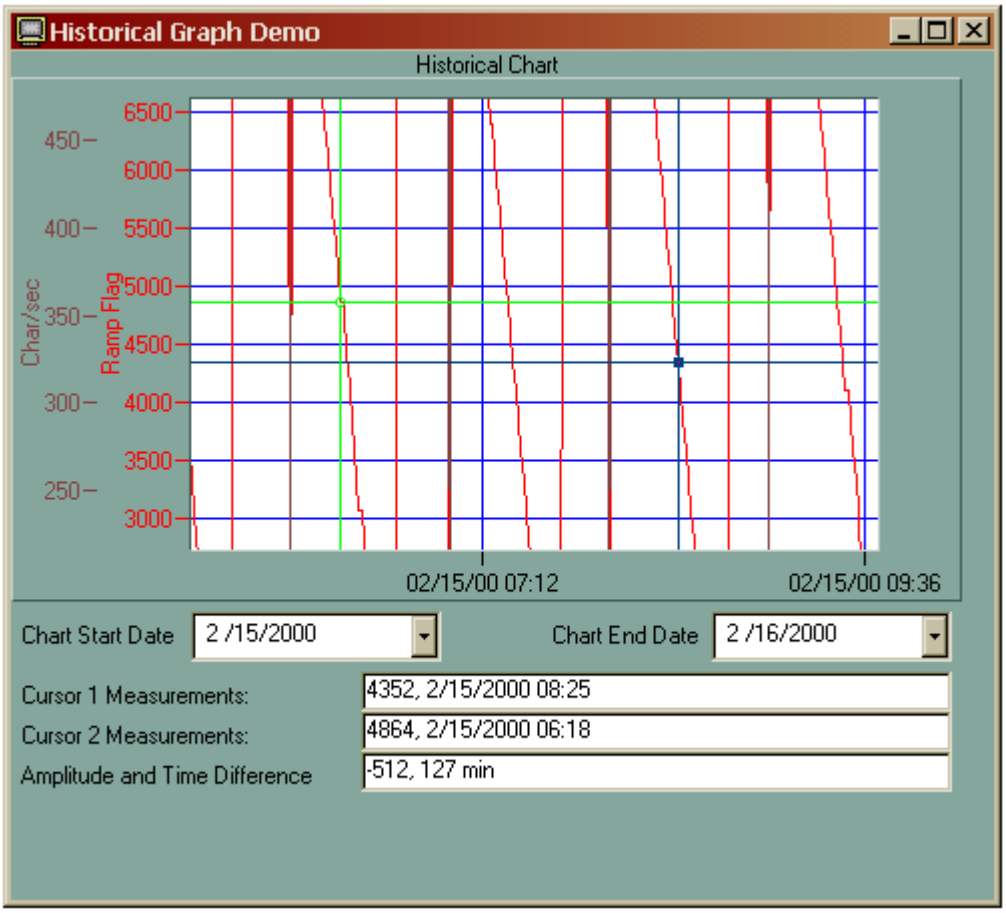
Historical Graph with right click menu opened



Historical Chart with XY Zoom Box selecting area to zoom



Cursor measurements display



Dials

Dials function similarly to Meters. Dials are based on Pointer Definitions and have 6 Styles to choose from.

Properties

Name - The Name property makes the object easier for the RealEdit programmer to identify. Often it is a good idea to use the same name for related objects, such as a Data Value that represents a Constant.

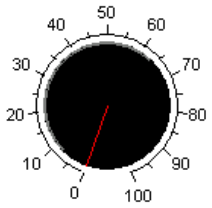
Top - The top position, in twips, of the object.

Left - The Left position, in twips, of the object.

Height - The Height value, in twips, of the object.

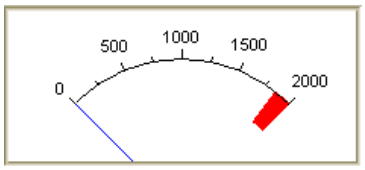
Width - The Width value, in twips, of the object.

Style -

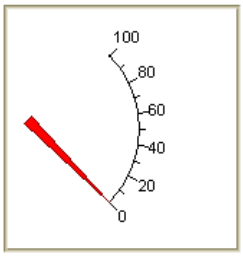


Knob, normal pointer

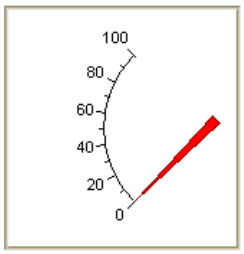
Dial, 3-D pointer



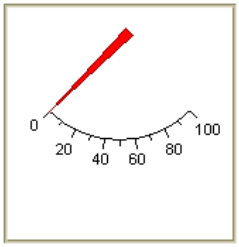
Top Meter, normal pointer, invisible pointer with fill to max at 1850 for redline indicator



Right Meter, 3-D pointer



Left Meter, 3-D pointer



Bottom Meter, 3-D pointer

Arc Start (degrees) - Position of the maximum value on the Dial
Arc End (degrees) - Position of the minimum value on the Dial
Minimum - A standard numeric value for the minimum the object can represent.
Maximum - A standard numeric value for the maximum the object can represent.
Background Color - Color of the Object's background
Face Color - Color adjusted by red, green and blue hex values or invoking the Color Dialog.
Alphanumeric Color - Color of the object's display text
Font - The type face selected for this particular text.
Dial Caption - Descriptive display text.
Axis Caption - Descriptive display text.
Pointer List - This is a list of any object type. Selecting (list) invokes the List Builder Dialog.

Toggle Buttons

The Logical Button can be used to display or control data values which have only two states (on or off). There are various styles which can be assigned to each button and certain images and text can be used to indicate on or off. If Use Picture File is set to True, user assigned picture files are used to indicate the value state.

Properties

Name - The Name property makes the object easier for the RealEdit programmer to identify. Often it is a good idea to use the same name for related objects, such as a Data Value that represents a Constant.

Top - The top position, in twips, of the object.

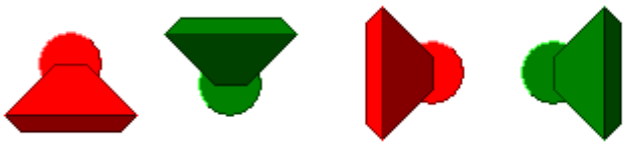
Left - The Left position, in twips, of the object.

Height - The Height value, in twips, of the object.

Width - The Width value, in twips, of the object.

Button Style –

Toggle



Vertical Horizontal

Square LED

Standard Star

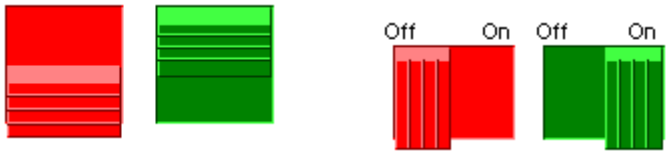
Round LED

Standard Star

Pushbutton

Round Square

3D Slide



Vertical Horizontal

Standard Slide

Vertical Horizontal

On/Off Toggle Button: maintains it's On or Off appearance and text until clicked again

Command Button: functions like a standard button

And can hold a bitmap…

Custom Bitmap Button: displays the specified bitmaps

Font - The type face selected for this particular text.

Caption - Descriptive display text.

Caption Color - Color adjusted by red, green and blue hex values or invoking the Color Dialog.

Background Color - Color of the Object's background

On Color - Color of button when in On position

Text On Color - Color of button On text

Text On - The text displayed when the button is in the On position

Off Color - Color of button when in Off position

Text Off Color - Color of button Off text

Text Off - The text displayed when the button is in the Off position

Button Mode – Indicator Mode: Value cannot be adjusted by the user. Normally displays a specified Data Value in the object.

Control Mode: Controls a separate data value.

Data Value - The fundamental data unit for RealTime. A Data Value may be changed by a Data Process and can be derived from any number of Data Sources.

Tip - ToolTip text to display. The ToolTip text floats over the object when the mouse pointer is hovered within the object's bounds.

Use Picture File - True/False value indicating whether the specified item will be applied to this object

Picture On - Image to display when button is in On position

Picture Off - Image to display when picture is in Off position

Tab Index - Controls the order in which objects are selected by using the tab key. This value is this objects position in the sequence.

The Toggle Button on the Property Edit sheet flips the values of the button so the user can see what it will look like before running the screen.

Numeric Edits

The Numeric Edit Control is similar to an Auto Label with a Spin Button already attached. It can only display numeric values. Formatting and accelerated values are all controlled from the Numeric Edit property screen. Minimum and maximum values lock the Numeric Edit into a specific range. It ignores spin button requests to exceed the min/max limits and will reset any values manually entered to the minimum or maximum depending upon which value was exceeded.

Properties

Name - The Name property makes the object easier for the RealEdit programmer to identify. Often it is a good idea to use the same name for related objects, such as a Data Value that represents a Constant.

Top - The top position, in twips, of the object.

Left - The Left position, in twips, of the object.

Height - The Height value, in twips, of the object.

Width - The Width value, in twips, of the object.

Font - The type face selected for this particular text.

Text Color - Color of the object's display text

Back Color - Color of the Object's background

Accel Delay Time (**sec**) - Mouse button down time before accelerated increment/decrement span is used

Accel Increment Value - Increment/Decrement span in accelerated mode

Inc/**Dec Button Position** - Controls the position of the object - Top, Bottom, Left or Right

Increment Value - Normal increment/decrement span

Minimum Value - A standard numeric value for the minimum the object can represent.

Maximum Value - A standard numeric value for the maximum the object can represent.

Display Format - Sets the decimal and precision adjustment for display

Date Pickers

The Date Picker is a slick control used to select dates. A handy calendar can easily be scrolled day-to-day, month-to-month or year-to-year. In addition, it will change it's display for International customers, showing the proper month and day names and formatting the string accordingly. The Date Picker text box background is always white and the text is always black. This is so, despite the ability to change fonts and all calendar colors.

Properties

Name - The Name property makes the object easier for the RealEdit programmer to identify. Often it is a good idea to use the same name for related objects, such as a Data Value that represents a Constant.

Top - The top position, in twips, of the object.

Left - The Left position, in twips, of the object.

Height - The Height value, in twips, of the object.

Width - The Width value, in twips, of the object.

Date/Time Format - Format of the display date

M = short month (1, 2, 3…)
MMM = abbreviated month (Jan, Feb, Mar…)
MMMM = full month (January, February, March…)
d = short day (12, 13, 14…)
dddd = long day of week (Sunday, Monday, Tuesday…)
yy = two digit year (98, 99, 00…)
yyy = four digit year (1998, 1999, 2000…)
hh = hour (12 or 12 hour, depending on whether tt is present)
mm = minute
tt = AM/PM With tt, hour becomes 12 hour format, 24 without

Font - The type face selected for this particular text

Cal Background Color - Cal Background Color

Cal Foreground Color - Cal Foreground Color

Cal Background Title Color - Cal Background Title Color

Cal Foreground Color - Cal Foreground Color

Cal Trailing Color - Cal Trailing Color

iTools

This control allows the user to create a matching front panel interface through OPC for Eurotherm instrumentation.

Properties

Name - The Name property makes the object easier for the RealEdit programmer to identify. Often it is a good idea to use the same name for related objects, such as a Data Value that represents a Constant.

Top - The top position, in twips, of the object.

Left - The Left position, in twips, of the object.

Height - The Height value, in twips, of the object.

Width - The Width value, in twips, of the object.

Device Name - The OPC Device Name of the object.

Animations

New animations that require an AVI file. The advantages are that the animation is contained in one file. The other advantage is that the animation runs with virtually no CPU time, so the system's performance will not suffer.

Properties

Name - The Name property makes the object easier for the RealEdit programmer to identify. Often it is a good idea to use the same name for related objects, such as a Data Value that represents a Constant.

Top - The top position, in twips, of the object.

Left - The Left position, in twips, of the object.

Height - The Height value, in twips, of the object.

Width - The Width value, in twips, of the object.

Animation (.**AVI**) **File** - The full path and file name to the reference file

Tip - ToolTip text to display. The ToolTip text floats over the object when the mouse pointer is hovered within the object's bounds.

Visible When Inactive - True: Image freezes when animation is inactive, False: Image disappears

AVI Animation Caveats: The animation cannot be resized by changing the size of the area the animation will cover. The animation must be an AVI file. We have free AVI editors, so send in the pictures you would like assembled and they can be snapped together in only a few minutes. The animation can only be started or stopped.

Event Lists

Event Lists show the current status of all configured Events bits on the selected channels.

Properties

Name - The Name property makes the object easier for the RealEdit programmer to identify. Often it is a good idea to use the same name for related objects, such as a Data Value that represents a Constant.

Top - The top position, in twips, of the object.

Left - The Left position, in twips, of the object.

Height - The Height value, in twips, of the object.

Width - The Width value, in twips, of the object.

Font - The type face selected for this particular text.

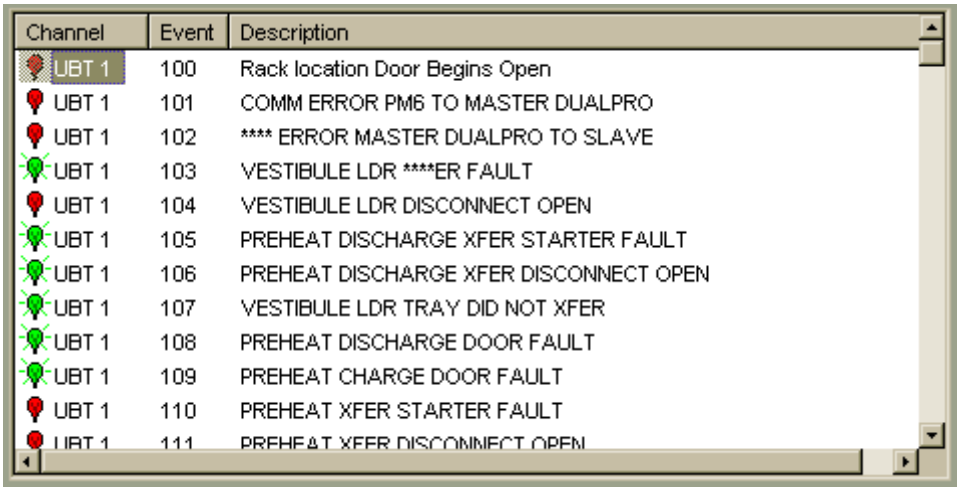
Text Color - Color of the object's display text

Back Color - Color of the Object's background

Tip - ToolTip text to display. The ToolTip text floats over the object when the mouse pointer is hovered within the object's bounds.

Show Only Active Events - True/False value indicating whether the specified item will be applied to this object

Comm Channel List - This is a list of any object type. Selecting (list) invokes the List Builder Dialog.



Channel	Event	Description
UBT 1	100	Rack location Door Begins Open
UBT 1	101	COMM ERROR PM6 TO MASTER DUALPRO
UBT 1	102	**** ERROR MASTER DUALPRO TO SLAVE
UBT 1	103	VESTIBULE LDR ****ER FAULT
UBT 1	104	VESTIBULE LDR DISCONNECT OPEN
UBT 1	105	PREHEAT DISCHARGE XFER STARTER FAULT
UBT 1	106	PREHEAT DISCHARGE XFER DISCONNECT OPEN
UBT 1	107	VESTIBULE LDR TRAY DID NOT XFER
UBT 1	108	PREHEAT DISCHARGE DOOR FAULT
UBT 1	109	PREHEAT CHARGE DOOR FAULT
UBT 1	110	PREHEAT XFER STARTER FAULT
UBT 1	111	PREHEAT XFER DISCONNECT OPEN

Red indicates OFF or zero (0) in the bit and green indicates ON or one (1) in the bit. The Channel name is listed, along with the event number and description. In RealTime, clicking on the event line brings up the event description editor and allows the user to change the text of the description.

RealTime Events

The following table describes the RTEvents available in RealEdit/RealTime and the functions of their sub components Data Value X, Data Value Y, and Destination. Note that even when a sub component is marked N/A in the table, ***it still must exist***. Under these circumstances, it is suggested that the stock data value name "(none)" be selected for Data Values X and/or Y, while the stock Constant Destination named "(none)" be selected for the destination.

Copy Data Value X to Destination.

Description: Copies the current value of Data Value X to the specified Destination.
Data Value X: Data Value that contains the current value to be copied.
Data Value Y: N/A
Destination: INI File; Flat File; Comm Destination; DBF File Reference; MDB Table Reference; Lookup List; Constant; Edit Box; Lookup Index; Value List; Data Value; System Parameter; Spin Button; ODBC Reference; Datalog.

Copy Pending Edit of Data Value X to Destination.

Description: Copies the pending edit of Data Value X to the specified Destination without resetting the pending edit to zero.
Data Value X: Data Value that contains the pending edit value to be copied.
Data Value Y: N/A
Destination: INI File; Flat File; Comm Destination; DBF File Reference; MDB Table Reference; Lookup List; Constant; Edit Box; Lookup Index; Value List; Data Value; System Parameter; Spin Button; ODBC Reference; Datalog.

Append Blank Record.

Description: Appends a blank record to a database table.
Data Value X: N/A
Data Value Y: N/A
Destination: ODBC Reference; DBF File Reference; MDB Table Reference.

Show Hourglass Mouse Cursor.

Description: Makes the mouse cursor into an hourglass (Used before starting a lengthy process in the RTEvent List).
Data Value X: N/A
Data Value Y: N/A
Destination: N/A

Clear Hourglass Mouse Cursor.

Description: Sets the mouse cursor back to its default appearance (Used after a lengthy process in the RTEvent List).
Data Value X: N/A
Data Value Y: N/A
Destination: N/A

Delete Database Record.

Description: Deletes the current database record.
Data Value X: N/A
Data Value Y: N/A
Destination: ODBC Reference; DBF File Reference; MDB Table Reference.

Send Pending Edit.

Description: Sends the pending edit of Data Value X to the specified Destination and resets the pending edit to zero.

Data Value X: Data Value that contains the pending edit value to be sent.
Data Value Y: N/A
Destination: INI File; Flat File; Comm Destination; DBF File Reference; MDB Table Reference; Lookup List; Constant; Edit Box; Lookup Index; Value List; Data Value; System Parameter; Spin Button; ODBC Reference; Datalog.

Cancel All Pending Edits.

Description: Cancels all pending edit operations on the current screen file.
Data Value X: N/A
Data Value Y: N/A
Destination: N/A

Discard Current Screen.

Description: Closes the current Screen File (Should be last in an RTEvent List).
Data Value X: N/A
Data Value Y: N/A
Destination: N/A

Show Message with No Buttons.

Description: Displays a message (All other RTEvents in the list will continue to execute).
Data Value X: Data Value that contains the message you want displayed.
Data Value Y: N/A
Destination: N/A

Show Message with Abort Button Only.

Description: Displays a message with an Abort Button (All other RTEvents in the list will continue to execute until the list is finished or the Abort Button is pressed).
Data Value X: Data Value that contains the message you want displayed.
Data Value Y: N/A
Destination: N/A

Show Message with Continue Button Only.

Description: Displays a message with a Continue Button (All other RTEvents in the list will continue to execute).
Data Value X: Data Value that contains the message you want displayed.
Data Value Y: N/A
Destination: N/A

Show Message with Abort and Continue Buttons.

Description: Displays a message with a Continue and an Abort Button (All other RTEvents in the list will continue to execute until the list is finished or the Abort Button is pressed).
Data Value X: Data Value that contains the message you want displayed.
Data Value Y: N/A
Destination: N/A

Wait For Continue Button.

Description: Halts execution of the RTEvent List until the Continue Button is pressed.
Data Value X: N/A
Data Value Y: N/A
Destination: N/A

Wait For Data Value X = Data Value Y.

Description: Halts the execution of the RTEvent List until Data Value X equals Data Value Y (Should be used with a message Abort Button).

Data Value X: Any Data Value.
Data Value Y: Any Data Value.
Destination: N/A

Hide a Message.

Description: Hides a previously displayed message and accompanying buttons (Used after a Wait for Continue Button RTEvent.
Data Value X: N/A
Data Value Y: N/A
Destination: N/A

Refresh All Files.

Description: Rereads the contents of all data files from their respective data sources (Data files are automatically refreshed whenever a screen file is started so this RTEvent should be used when there is an application(s) that is altering the data files).
Data Value X: N/A
Data Value Y: N/A
Destination: N/A

Reload All Lookup List.

Description: Reloads the contents of all lookup list from their respective data sources (Lookup List are automatically load when ever a screen file is started so this RTEvent should be used when there is changes to the data source and used after a Refresh All Files RTEvent).
Data Value X: N/A
Data Value Y: N/A
Destination: N/A

Unconditional Screen Update.

Description: Updates all screen items on the current screen (Screen items get updated automatically whenever a screen file is started).
Data Value X: N/A
Data Value Y: N/A
Destination: N/A

Discard All Other Screens.

Description: Close all screen files.
Data Value X: N/A
Data Value Y: N/A
Destination: N/A

Abort Button Branch Point.

Description: This is the starting point in the RTEvent List to start execution when an Abort Button is pressed.
Data Value X: N/A
Data Value Y: N/A
Destination: N/A

Append and Copy Value List to Destination.

Description: Appends a Value List to a database table if the lookup field does not exist or if the lookup field does exist then this RTEvent will overwrite the record that matches the lookup field.
Data Value X: Data Value containing the Value List.
Data Value Y: N/A
Destination: DBF File Reference; MDB Table Reference; ODBC Reference.

Copy Value List to Destination.

Description: Copies a Value List to a database table overwriting the current record.
Data Value X: Data Value containing the Value List.
Data Value Y: N/A
Destination: DBF File Reference; MDB Table Reference; ODBC Reference.

End RealTime.

Description: Ends the session of RealTime.
Data Value X: N/A
Data Value Y: N/A
Destination: N/A

Exit Event if Data Value X = Data Value Y.

Description: Stops the execution of RTEvents in the list if Data Value X = Data Value Y.
Data Value X: Any Data Value.
Data Value Y: Any Data Value.
Destination: N/A

Update All Edit Boxes on the Screen.

Description: Causes all Edit Boxes on the current screen file to be processed into corresponding Data Values.
Data Value X: N/A
Data Value Y: N/A
Destination: N/A

Clear Database Fields for Current Record.

Description: Sets all fields in the current record of a database table to blanks.
Data Value X: N/A
Data Value Y: N/A
Destination: DBF File Reference; MDB Table Reference; ODBC Reference.

Send a Report to the Screen.

Description: Send a Crystal Report File to view on the screen.
Data Value X: Data Value that contains the report index value (Created from a Constant Source based on the number assigned to a Crystal Report File belonging to the current screen file).
Data Value Y: N/A
Destination: N/A

Send a Report to The Printer.

Description: Send a Crystal Report File to the printer.
Data Value X: Data Value that contains the report index value (Created from a Constant Source based on the number assigned to a Crystal Report File belonging to the current screen file).
Data Value Y: N/A
Destination: N/A

Run an External Application File.

Description: Runs an external application from RealTime.
Data Value X: Data Value that contains the application index value (Created from a constant source based on the number assigned to an Application File belonging to the current screen file).
Data Value Y: N/A
Destination: N/A

End RealTime and Run an External Application File.

Description: Ends RealTime and runs an external application from RealTime.
Data Value X: Data Value that contains the application index value (Created from a constant source based on the number assigned to an Application File belonging to the current screen file).
Data Value Y: N/A
Destination: N/A

Start New Screen.

Description: Starts a new screen file.
Data Value X: Data Value that contains the screen file index value (Created from a constant source based on the number assigned to a Link Screen File belonging to the current screen file).
Data Value Y: N/A
Destination: N/A

Start v3.5 Recipe Program.

Description: Starts a v3.5 foreground program in an MMI v3.5/4.0 instrument.
Data Value X: Data Value containing the program number to start (1-200).
Data Value Y: N/A
Destination: Comm Destination.

Stop v3.5 Recipe Program.

Description: Stops a v3.5 foreground program in an MMI v3.5/4.0 instrument.
Data Value X: N/A
Data Value Y: N/A
Destination: Comm Destination.

Search Datalog Data.

Description: Searches datalog data for changes in a specific logged value, if there is a change then the change is logged to the destination in the format of:1-Occurrence; 2-Data Value; 3-Start Date; 4-Start Time; 5-End Date;6-End Time; 7-Channel Name; 8-Formated String("MMDDHHNN.XXXX") containing Start Date/Time and Data; 9-Start Date/Time in floating point notation; 10-End Date/Time in floating point notation.
Data Value X: Data Value containing start Date/Time value (if Date/Time = 0 then the start begins three weeks before the current date).
Data Value Y: Data Value containing a Comm Source Parameter used to search the Datalog Data and look for any change based on this Comm Source Parameter.
Destination: Flat ASCII File Reference.

Erase a Destination File.

Description: Deletes the file specified in the destination.
Data Value X: N/A
Data Value Y: N/A
Destination: Any file that exists on a drive.

Print Current RealTime Screen.

Description: Print the current screen file to the printer.
Data Value X: N/A
Data Value Y: N/A
Destination: N/A

Minimize Current RealTime Screen.

Description: Minimizes the current screen file to an icon at the bottom of the screen.

Data Value X: N/A
Data Value Y: N/A
Destination: N/A

Maximize Current RealTime Screen.

Description: Maximizes the current screen file to the size of the viewing screen.
Data Value X: N/A
Data Value Y: N/A
Destination: N/A

Normal Size Current RealTime Screen.

Description: Sets the current screen file to its normal size (Not Maximized or Minimized).
Data Value X: N/A
Data Value Y: N/A
Destination: N/A

Set a Bit (Data Value X) in Destination.

Description: Sets a bit to 1 in a numeric 16-bit destination.
Data Value X: Data Value containing the bit number (0-15) to be set.
Data Value Y: N/A
Destination: Destination for bit operation.

Reset a Bit (Data Value X) in Destination.

Description: Sets a bit to 0 in a numeric 16-bit destination.
Data Value X: Data Value containing the bit number (0-15) to be set.
Data Value Y: N/A
Destination: Destination for bit operation.

Toggle a Bit (Data Value X) in Destination.

Description: Toggles a bit (0 to 1) or (1 to 0) in a numeric 16 bit destination.
Data Value X: Data Value containing the bit number (0-15) to be set.
Data Value Y: N/A
Destination: Destination for bit operation.

Refresh ODBC Specified in Destination.

Description: Reruns the ODBC query in the specified destination.
Data Value X: N/A
Data Value Y: N/A
Destination: ODBC Reference.

Copy Data Value X to Pending Edit Value.

Description: Copies a Data Values value to the Pending Edit value of a Data Value.
Data Value X: Data Value with the value to be copied.
Data Value Y: N/A
Destination: Data Value that will receive Data Value X as its Pending Edit value.

Move to First Record.

Description: Moves the record pointer in a database table to the first record specified in the destination.
Data Value X: N/A
Data Value Y: N/A
Destination: ODBC Reference; DBF File Reference; MDB Table Reference.

Move to Previous Record.

Description: Moves the record pointer in a database table to the previous record specified in the destination.
Data Value X: N/A
Data Value Y: N/A
Destination: ODBC Reference; DBF File Reference; MDB Table Reference.

Move to Next Record.

Description: Moves the record pointer in a database table to the next record specified in the destination.
Data Value X: N/A
Data Value Y: N/A
Destination: ODBC Reference; DBF File Reference; MDB Table Reference.

Move to Last Record.

Description: Moves the record pointer in a database table to the last record specified in the destination.
Data Value X: N/A
Data Value Y: N/A
Destination: ODBC Reference; DBF File Reference; MDB Table Reference.

Copy pending edit value X to Destination

Y: Description: Copies value X into the specified destination object
Data Value X: Edit value to be copied.
Data Value N/A
Destination: Object to receive data value X.

Append Value List to ODBC Destination as New Record.

Description: Appends a Value List to the specified ODBC Reference in the Destination as a new record.
Data Value X: Data Value containing the Value List.
Data Value Y: N/A
Destination: ODBC Reference.

Exit to abort branch point if Data value X =Data Value Y

Description: Compares data value X to data value Y and jumps to abort branch point if they are equal
Data Value X: Comparison data value 1
Data Value Y: Comparison data value 2
Destination: N/A

Exit RTEvents

Description: Quits execution of a list of RT Events
Data Value X: N/A
Data Value Y: N/A
Destination: N/A

Jump to next Abort branch point

Description: Jumps unconditionally to Abort branch point in Events list
Data Value X: N/A

Data Value Y: N/A
Destination: N/A

Do while (data value X)<=(data value Y)

Description: ??
Data Value X:
Data Value Y:
Destination:

While end (must follow Do While Event)

Description: ??
Data Value X:
Data Value Y:
Destination:

For 1 to (Data value X)

Description: ??
Data Value X:
Data Value Y:
Destination:

Next (must follow for loop)

Description: ??
Data Value X:
Data Value Y:
Destination:

Suspend Execution for X milliseconds

Description: Suspend program execution for X milliseconds
Data Value X: Time to suspend execution
Data Value Y: N/A
Destination: N/A

Enable/Disable Screen Object

Description: Enables or disables a screen object
Data Value X: 0 disables, all other values enable the specified screen object
Data Value Y: N/A
Destination: The object to enable/disable

Start SSI Recipe

Description: Starts a recipe in an SSI recipe programmer
Data Value X: recipe number to start
Data Value Y: recipe step to start
Destination: Channel of the attached programmer to start the recipe on.

Stop SSI Recipe

Description: Stops an SSI recipe
Data Value X: N/A
Data Value Y: N/A
Destination: Channel of the attached programmer to stop the recipe on

Hold SSI Recipe

Description: Puts an SSI recipe in hold
Data Value X: N/A
Data Value Y: N/A
Destination: Channel of the attached programmer to hold the recipe on

Resume SSI Recipe

Description: Resumes an SSI recipe
Data Value X: N/A
Data Value Y: N/A
Destination: Channel of the attached programmer to resume the recipe on

Advance SSI Recipe

Description: Advances an SSI recipe 1 step
Data Value X: N/A
Data Value Y: N/A
Destination: Channel of the attached programmer to advance the recipe on

Edit SSI Recipe

Description: Loads a recipe into the edit buffer and displays it on the control
Data Value X: Recipe to edit
Data Value Y:
Destination: Channel of the attached programmer to edit the recipe on

Run Edited SSI Recipe

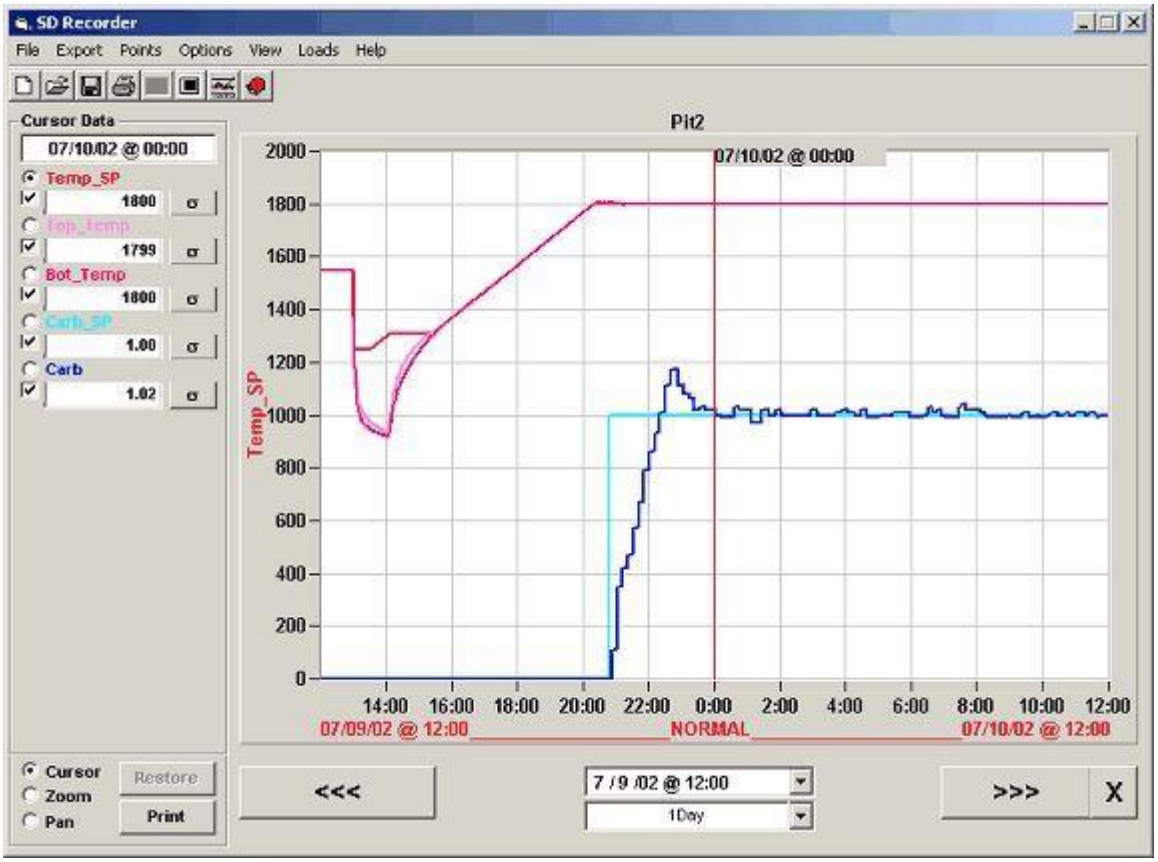
Description: Takes recipe control out of edit mode and runs edited recipe. Recipe MUST be in edit mode before calling this RTE.
Data Value X: Step number to start recipe on
Data Value Y:
Destination: Channel of the attached programmer

Cancel SSI Recipe

Description: Takes recipe control out of edit mode and resumes display of running (or last run) recipe
Data Value X:
Data Value Y:
Destination: Channel of the attached programmer

SuperData Recorder

Overview



The SuperDATA Recorder application is a paperless Trend Charting program that is used to trend RealTime and Historical data collected and logged by the Super Systems communication program (SDIO).

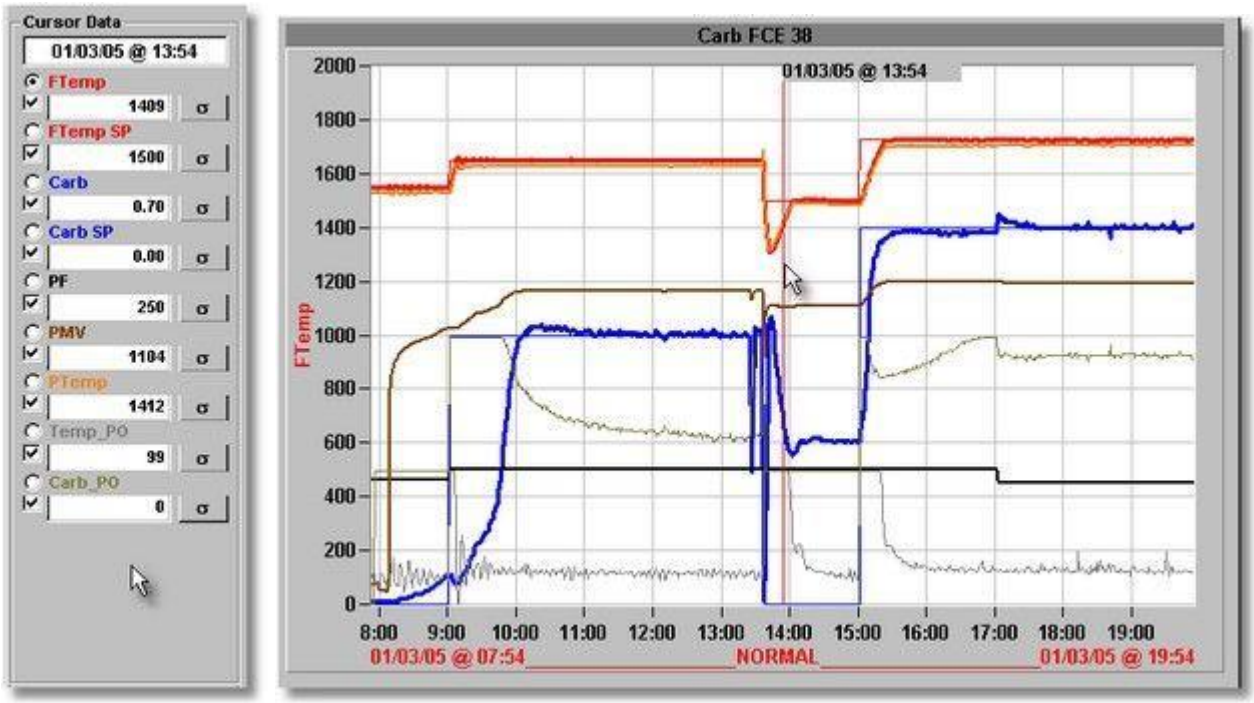
SuperDATA Recorder Features include:

- **Integrated Historical and Realtime mode.**
- **Display width selectable between 1 Hr and 7 Days.**
- **Up to 12 Pens on one chart.**
- **Tabular Data Grid view of data displayed on chart.**
- **Cursor, Zoom and Pan functions.**
- **Summary statistics for data in display window.**
- **Create new chart templates.**
- **Edit chart templates.**
- **Integration with Load Tracking Database.**

Display

Components of SDRecorder Display

Menu and ToolBar area – provides access to the Recorder's functions and options

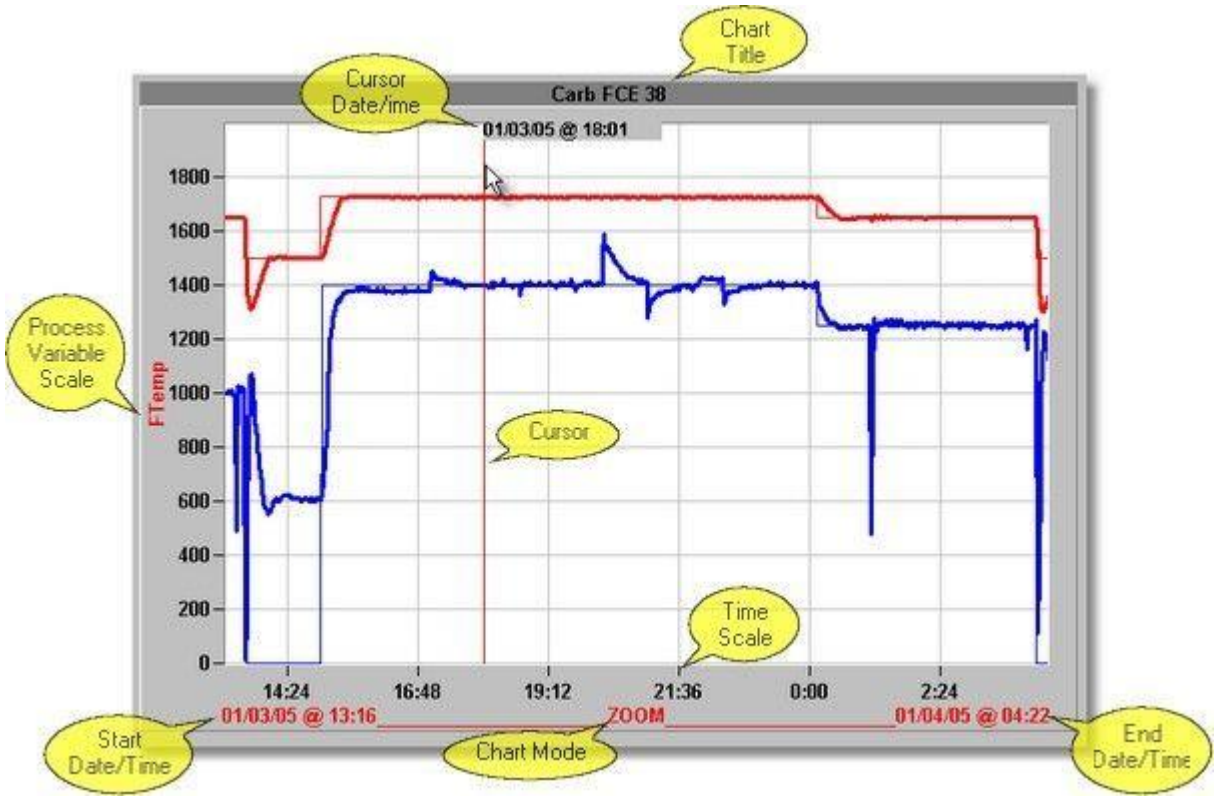


Cursor Data Display area – displays the process data values at the cursor

Trend Chart View area – Displays Chart title, trend lines, scales, cursor

Chart Control area – provides controls that affect the displayed chart

Chart View



Trend Chart View area

Chart Title – Appears at the top of the Chart.

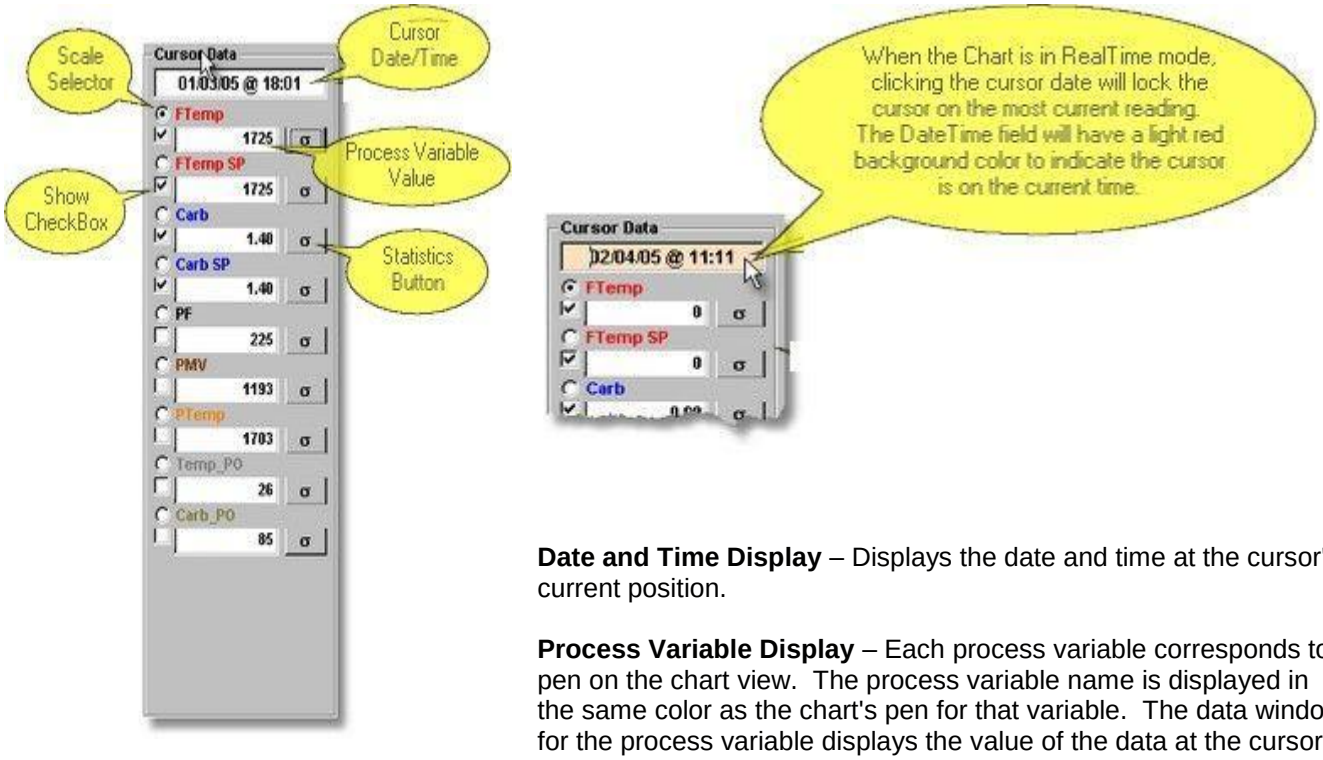
Cursor – Red vertical line through the chart, date and time displayed with the cursor. The cursor may be dragged with the mouse (left click on the cursor and drag with mouse). You can also right click the mouse and the cursor will jump to the clicked position.

Process Scale – A single scale appears on the left hand of the chart. Only one process scale is displayed at a time, the scale to be displayed can be selected by clicking the radial button next to the process variable in the cursor data area.

Time Scale – The time scale is from right to left at the bottom of the chart view.

Time Range – The time range is displayed at the bottom of the view, this line will also indicate the chart mode (NORMAL, HISTORICAL LOAD, PAN, ZOOM etc).

Cursor Data Area

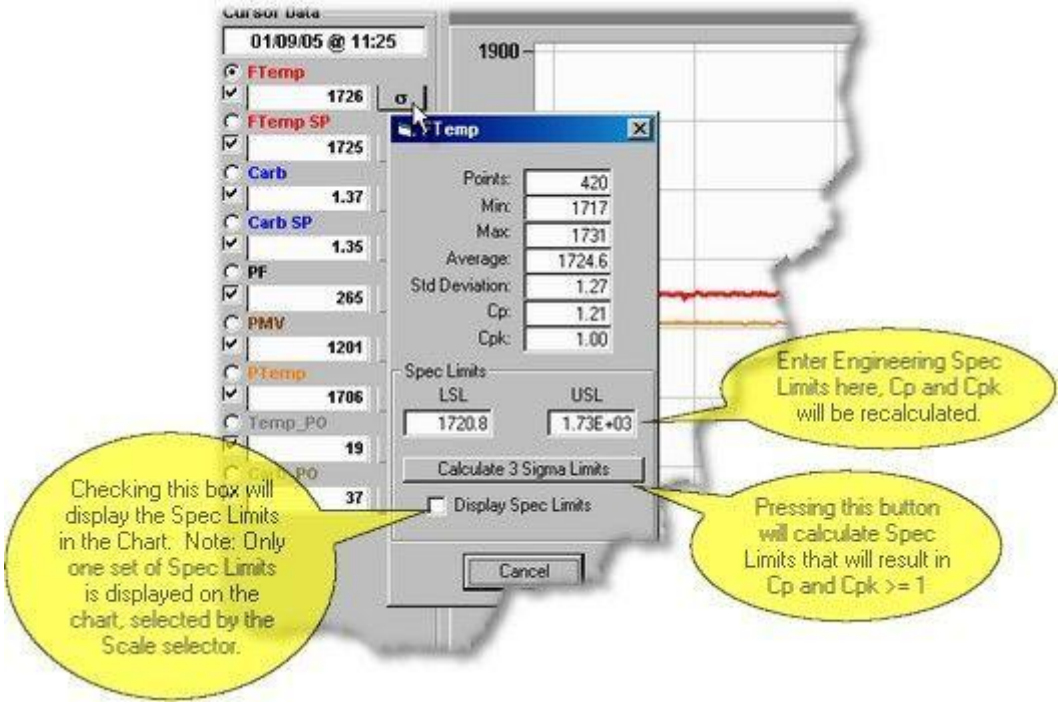


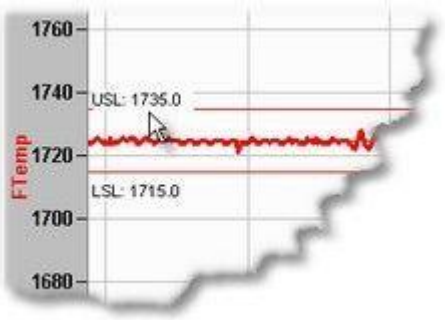
Date and Time Display – Displays the date and time at the cursor's current position.

Process Variable Display – Each process variable corresponds to a pen on the chart view. The process variable name is displayed in the same color as the chart's pen for that variable. The data window for the process variable displays the value of the data at the cursor's current position.

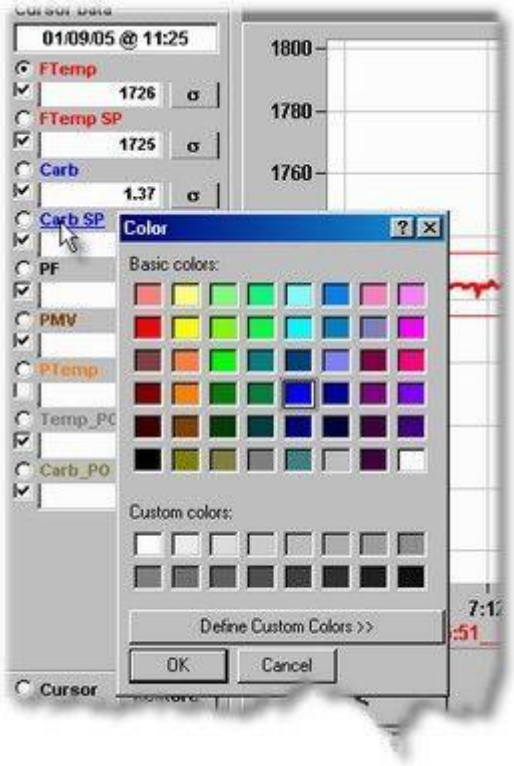
Scale Selector – The radial buttons next to each process variable name are used to select which scale will be displayed in the chart view. Only one scale is displayed. Note: when printing, all **unique** scales will be displayed on the printed chart.

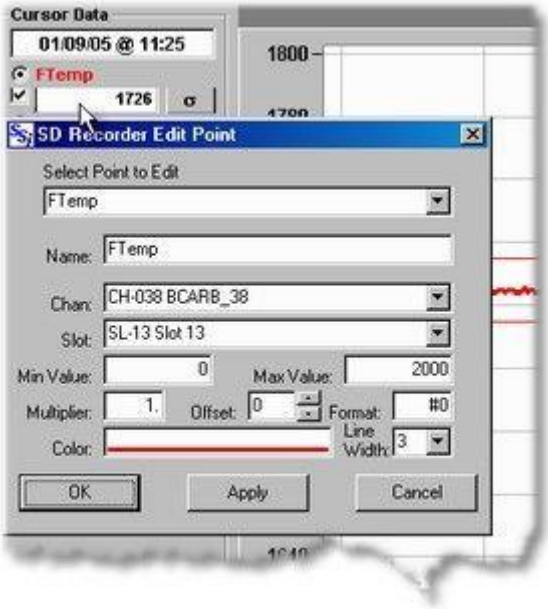
Show Checkbox – The checkboxes next to each process variable data window are used to turn the pen on or off in the chart view. When checked, the pen will be on and the trend for that process variable will be displayed.





Summary Statistics Button – This button will open a window to display summary statistics for the process variable. The statistics are for the time displayed in the current view. The statistics window shows the following data: number of points, Minimum value, Maximum value, average value, standard deviation, Cp and Cpk. Cp and Cpk are based on the Spec Limits entered for LSL (Lower Spec Limit) and USL (Upper Spec Limit). When this display opens, default Spec Limits are calculated to result in both Cp and Cpk values of at least 1. After opening the display, you may change the LSL and USL as required. Changes will result in re-calculating both Cp and Cpk. Spec Limits are displayed on the Chart for the variable that is the active scale variable (selected by the scale selector).

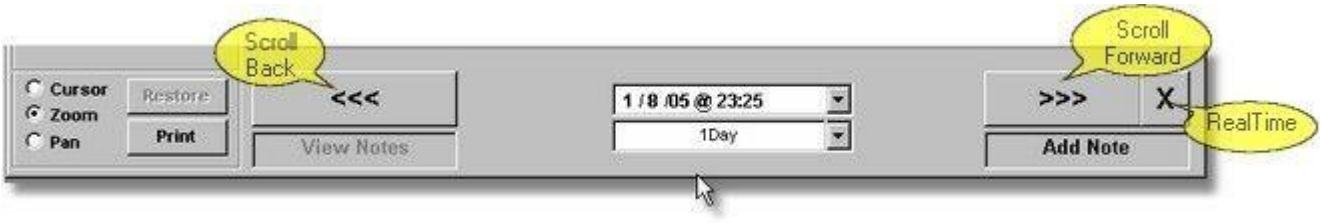




Pen Color – Right clicking on the Process Variable name will allow you the change the pen color for that variable.

Process Variable Editing – Left clicking on a Process Variable data value will allow you to edit the associated pens definition. See editing points.

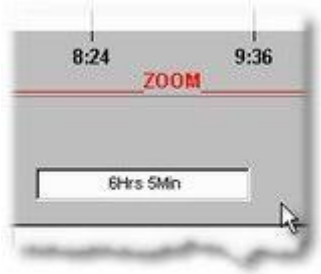
Chart Control Area



Scroll Buttons – The left and right scroll buttons scroll the chart view backwards or forwards by one half the display width. Using these buttons refreshes the data and will cancel any Zoom or Pan in effect.

RealTime Button – The realtime button (button next to the right scroll button) allows you to go directly to the current time for data. The chart will begin updating once a minute when in realtime mode. This button will be dimmed (inactive) when you are already in realtime mode.

Display Width – Use this dropdown to select the chart display width (from 1 Hr to 7 Days).



The box also displays the actual display width (in days, hours, min) when the chart view is zoomed.

Date Selector – The date selector allows you to set a specific start date and time for the chart data.

Cursor – Selecting cursor mode enables the cursor. When the cursor is enabled, you ca clicking the cursor and dragging the mouse or you can right click any position in the chart that position.

Zoom – Selecting zoom enables the zoom feature. When the zoom feature is enabled, you can zoom the chart view by left clicking the mouse in the chart view, drag a rectangle and release the left mouse button. When the left mouse button is released, the chart will redraw to the area of the rectangle. If you attempt to zoom in to too small an area, the chart will revert to cursor mode.

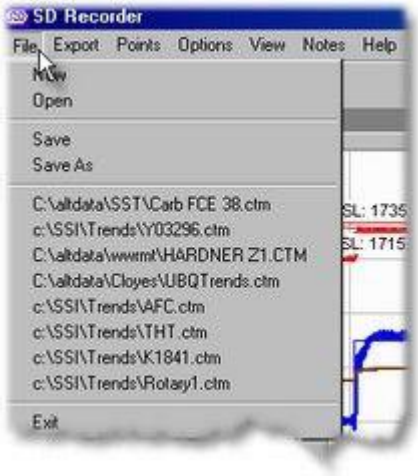
Pan – Selecting pan enables the pan feature. When the pan feature is enabled, left clicking the mouse in the chart view and dragging the mouse to the right or left will pan through the data. When you reach the limits of the chart's data, the chart will revert to cursor mode.

Restore – Clicking the restore button will undo any zoom or pan in effect and the full data view will be restored.

Print – The print button is used to print the current chart view. Note: The print view differs slightly from the normal chart view. A print preview will be displayed. The print view will not display the cursor or cursor data but will display multiple scales. See printing charts.

Menus

File Menu



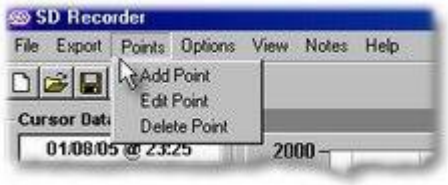
- **New** – Used to create a new chart file.
- **Open** – Used to open an existing chart file.
- **Save** – Used to save a chart file.
- **Save as** – Used to save a chart file with a different name.
- **List of Most Recently Used chart files** – selecting any one of these will open the chart file.
- **Exit** – used to exit SuperData Recorder

Note: Chart files are templates that define the pens in a chart. Display times are not part of the chart definition. See the section on creating/editing charts.

Export Menu

- **Interval Time** - Sets the time interval time for the exported data.
- **to CSV file** – Used to export the data in the current chart view to a CSV (comma separated) file for use in other applications (e.g. Excell).
- **to TSV file**– Used to export the data in the current chart view to a TSV (tab separated) file for use in other applications (e.g. Excell).
- **to TXT file**– Used to export the data in the current chart view to a text file.

Points Menu



- **Add Point** – Used to add points (pens) to the chart.
- **Edit Point** – Used to edit points (pens) on the chart.
- **Delete Point** – Used to delete points (pens) from the chart.

Options Menu

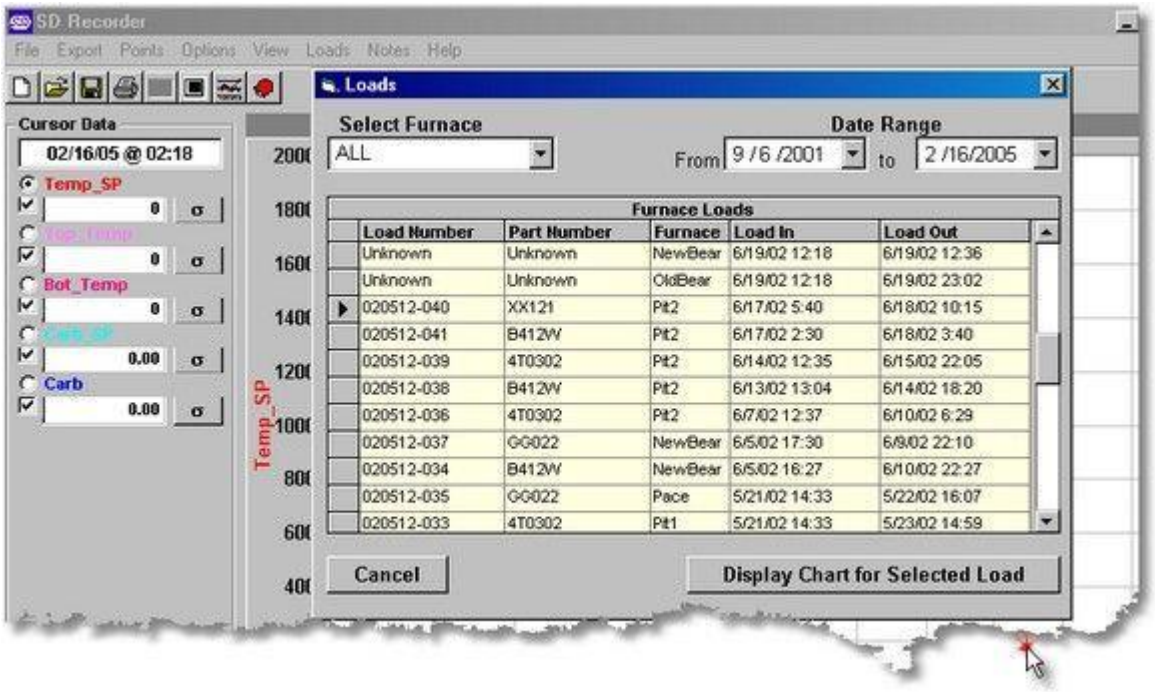
- **Alternate Data** – Allows selection of an alternate path for data. Normally, SDRecorder uses the SuperData configured paths to locate data files (configured in the SDIO.INI file). When an alternate path is selected, SDRecorder will look in that directory for all required files.
- **Use SSi Comms** – Use Super Systems Communications (default).
- **Use PMC Comms** – Use Process Master Controls Communications. This feature allows SDRecorder to be used with Process Master systems.

View Menu

- **Chart -** Displays data in the Trend Chart View.
- **Grid** - Displays data in a Grid View.

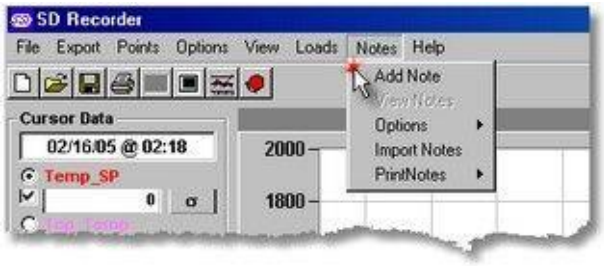
Note: The Trend Chart Cursor and the Grid View Selected Row are synchronized when switching between views.

Loads Menu



The **Loads** Menu is only available when SDRecorder is configured to use a Load Tracking Database. Clicking on Loads opens a Load Selector Dialog. Selecting a Load from the Dialog and clicking "Display Chart for Selected Load" will open the chart for the selected Load. Note: The Loads Menu is not available when using the "AltData" option.

Notes Menu



- **Add Note -** Opens the Note input window at the current cursor position.
- **View Notes** - Displays notes on the chart (enabled only when notes are available within the chart's time frame)
- **Options** - Allows you to select between "Notes for the current chart" or "Notes for All Charts"
- **Import Notes** - Allows you to import notes from an alternate source (usually from an external source, e.g. a 9200 Operator Interface)
- **PrintNotes** - Sets options for printing notes when the chart is printed.

Help Menu

- **Contents** – Opens this help file.
- **About** – Opens the About dialog.

ToolBar

New – Used to create a new chart file.

Open – Used to open an existing chart file.

Save – Used to save a chart file.

Print – Used to print the current chart.

Trend Chart View – Used to select the Trend Chart View.

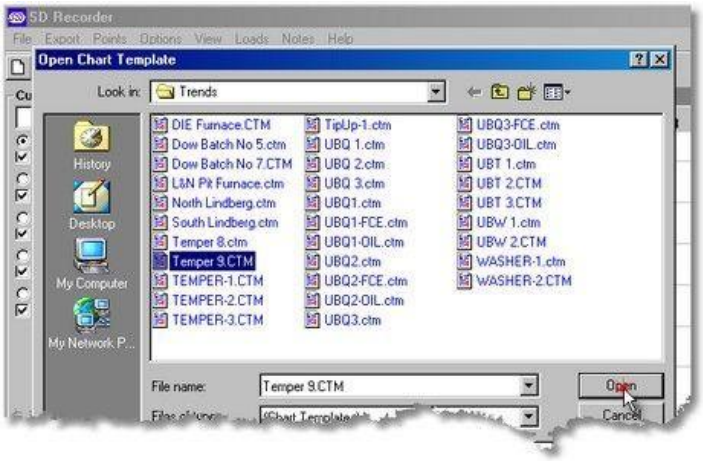
Data Grid View – Used to select the Data Grid View.

Historical Load Charts – Used to open the Load Selector Dialog.

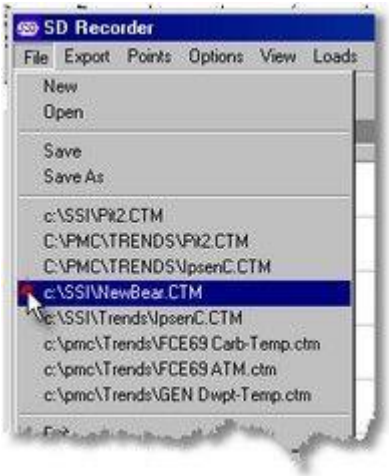
Alarm Reports – Used to open an Alarm Report for the current Chart View.

How To

Open a Chart



- Select **File Open** from the **File Menu** and select the chart file from the **Open Chart Template Dialog**. (Note: all chart files have the file extension .CTM)



- Or Select a file from the **Most Recently Used File List**.

- Or Click the **Open** icon on the **ToolBar**

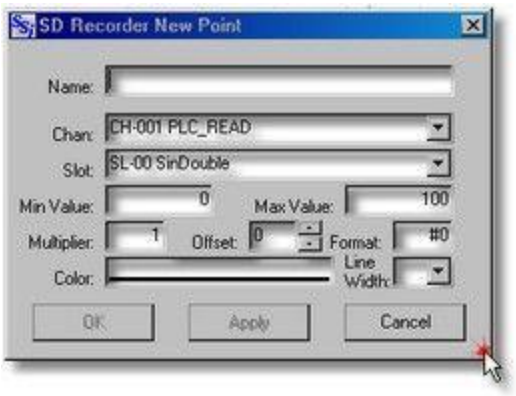
Create a Chart

You can create a chart by opening a new chart using the **File New menu command** or the **New toolbar Icon**

or you can create a new chart by opening an existing file, modifying it and saving it as a new chart using the **Save As** file menu command. When using the **New** menu or Icon, you will open a blank file. Use the **Add Points, Edit Points or Delete Points** to modify the file as desired. When saving the file, use the **Save As** menu command and give the new chart file a descriptive file name.

Add a Chart Pen

A **Chart Pen** or **Point** corresponds to a **Process Variable** that has been logged by the communications system. To add a point to a new or existing chart, select **Add Point** from the **Points** menu, this will open the **Add Points Dialog**.



- **Name** – The name you want to give this new point. It is best to keep names short but descriptive. If the name is too long, it will be truncated in the chart cursor and legend area.
- **Chan:** - Use this selector to select the datalog communications channel for the new point. The selector will display both the Channel Number (1-128) and the Channel Name (if assigned).
- **Slot:** - Use this selector to select the slot from the communications channel that is used to log the desired point data. The selector will display both the Slot Number (0-78) and the Slot Name (if assigned).
- **Min Value** – Enter the Minimum scale value for this point.
- **Max Value** – Enter the Maximum scale value for this point.
- **Multiplier** – Enter a multiplier to be applied to the raw data for this point. Note: The communications system logs all data as integer with implied decimal locations. Thus if the raw data were 100 and the multiplier is defined as 0.01, then the charted data would be 1.00.
- **Format** – Enter a format string for this data point. A "#" indicates a number, a "." Indicates a decimal point and a "0" is a number but forces leading or trailing zeros. E.g. if the data is 1.205 then the following format strings would display as indicated:

#	1
#.#	1.205
0.0	1.2

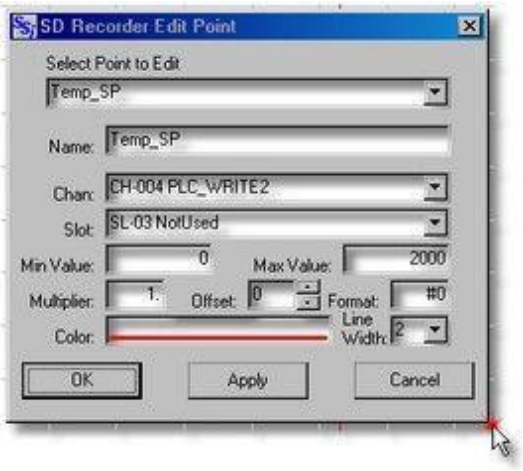
- **Color** – Select the color for this pen.
- **Line Width** – Select the Line Width for this pen.

When all dialog fields have been set, click the **Apply** or **OK** button to add the point to the chart. If you want to add more than one point, use the Apply button and continue to add points. When finished adding points, click the OK button. Use the **Cancel** button to cancel the point you are currently adding. If points have been added using the Apply button, they will not be removed when you use the Cancel button.

Edit a Chart Pen

To edit a point on an existing chart, select **Edit Point** from the **Points** menu, this will open the **Edit Points Dialog.** You can also get to the **Edit Points Dialog** by left clicking the Points Process Variable Display area.

In the **Edit Points Dialog** you can modify any of the point data as desired.



Reasons to Edit a point:

- **Rename the Point**
- **Change data source (chan and slot)**
- **Change scale (min and max values)**
- **Change multiplier**
- **Change display format**
- **Change color or line width**

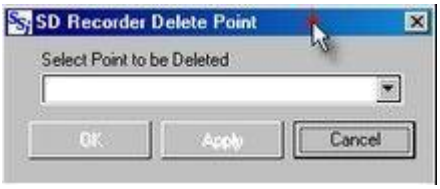
- **Name** – The name you want to give this new point. It is best to keep names short but descriptive. If the name is too long, it will be truncated in the chart cursor and legend area.
- **Chan:** - Use this selector to select the datalog communications channel for the new point. The selector will display both the Channel Number (1-128) and the Channel Name (if assigned).
- **Slot:** - Use this selector to select the slot from the communications channel that is used to log the desired point data. The selector will display both the Slot Number (0-78) and the Slot Name (if assigned).
- **Min Value** – Enter the Minimum scale value for this point.
- **Max Value** – Enter the Maximum scale value for this point.
- **Multiplier** – Enter a multiplier to be applied to the raw data for this point. Note: The communications system logs all data as integer with implied decimal locations. Thus if the raw data were 100 and the multiplier is defined as 0.01, then the charted data would be 1.00.
- **Format** – Enter a format string for this data point. A "#" indicates a number, a "." Indicates a decimal point and a "0" is a number but forces leading or trailing zeros. E.g. if the data is 1.205 then the following format strings would display as indicated:

#	1
#.#	1.205
0.0	1.2

- **Color** – Select the color for this pen.
- **Line Width** – Select the Line Width for this pen.

Delete a Chart Pen

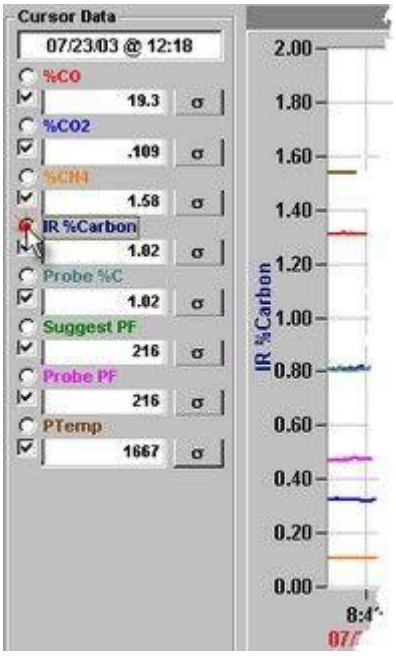
To delete a point on an existing chart, select **DeletePoint** from the **Points** menu, this will open the **Delete Points Dialog.**



Select the point to be deleted and click OK or Apply.

Select a Process Scale

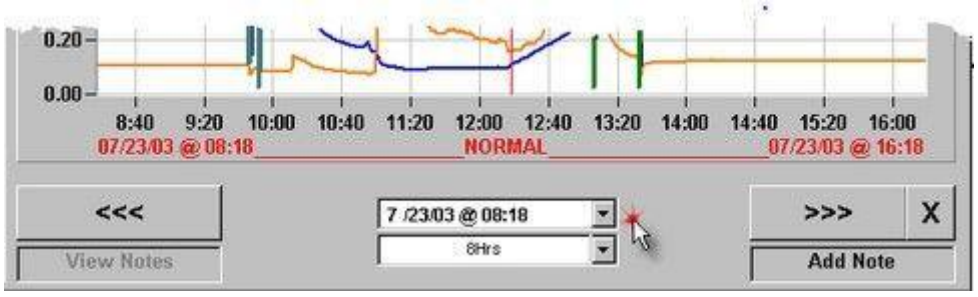
In the Trend Chart View only one chart scale is displayed at a time. To select the displayed chart scale, click the scale selector button in the cursor data area.



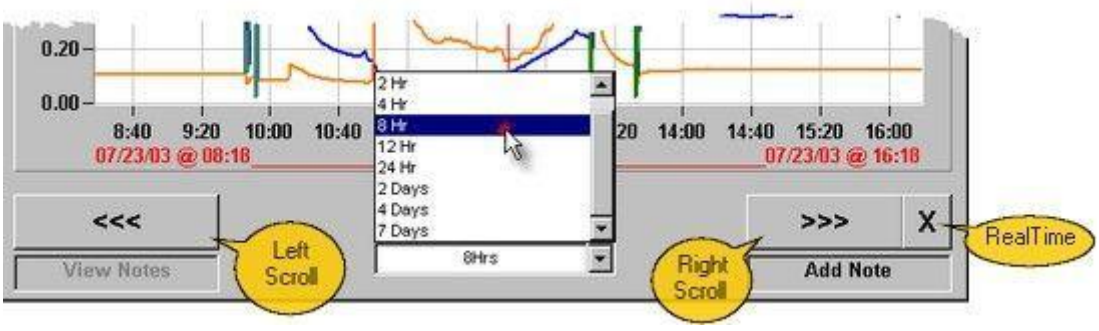
In this chart, the "**IR %Carb**" scale is selected.
Note: When a chart is printed, all unique scales will be printed.

Set Chart Times

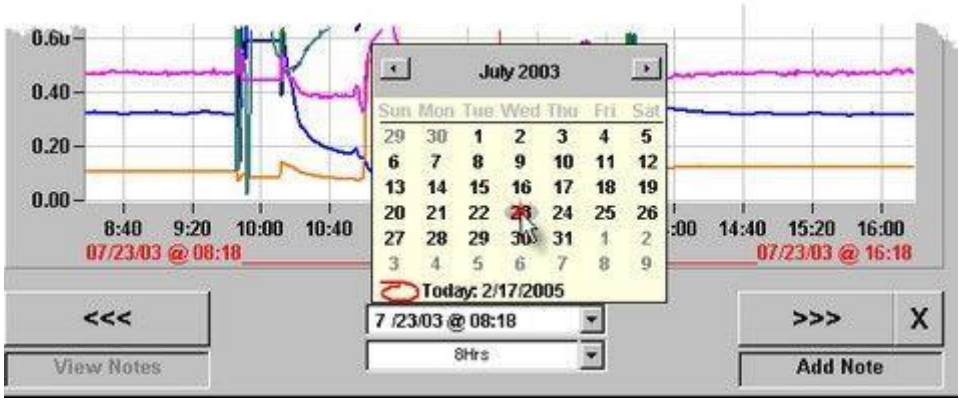
The chart time scale is automatic and depends on the Chart's Window Width and chart start time. When the chart opens in "normal" mode, the right end of the time scale will be current time and will update every minute – this is the "realtime" mode.



The chart opens with a default "window width" of 12 Hrs. In the "realtime" mode, the right scroll button and the "realtime" button are disabled (dimmed).



The window width may be changed from 1 Hour thru 7 days. Changing the window width will cause the data to be refreshed and the chart will be redrawn. The Left scroll button will cause the chart to exit realtime mode and move the chart back in time by ½ of the window width. The right scroll button will move the chart forward in time by ½ of the window width. You may resume "realtime" mode by clicking on the "realtime" button next to the right scroll button.



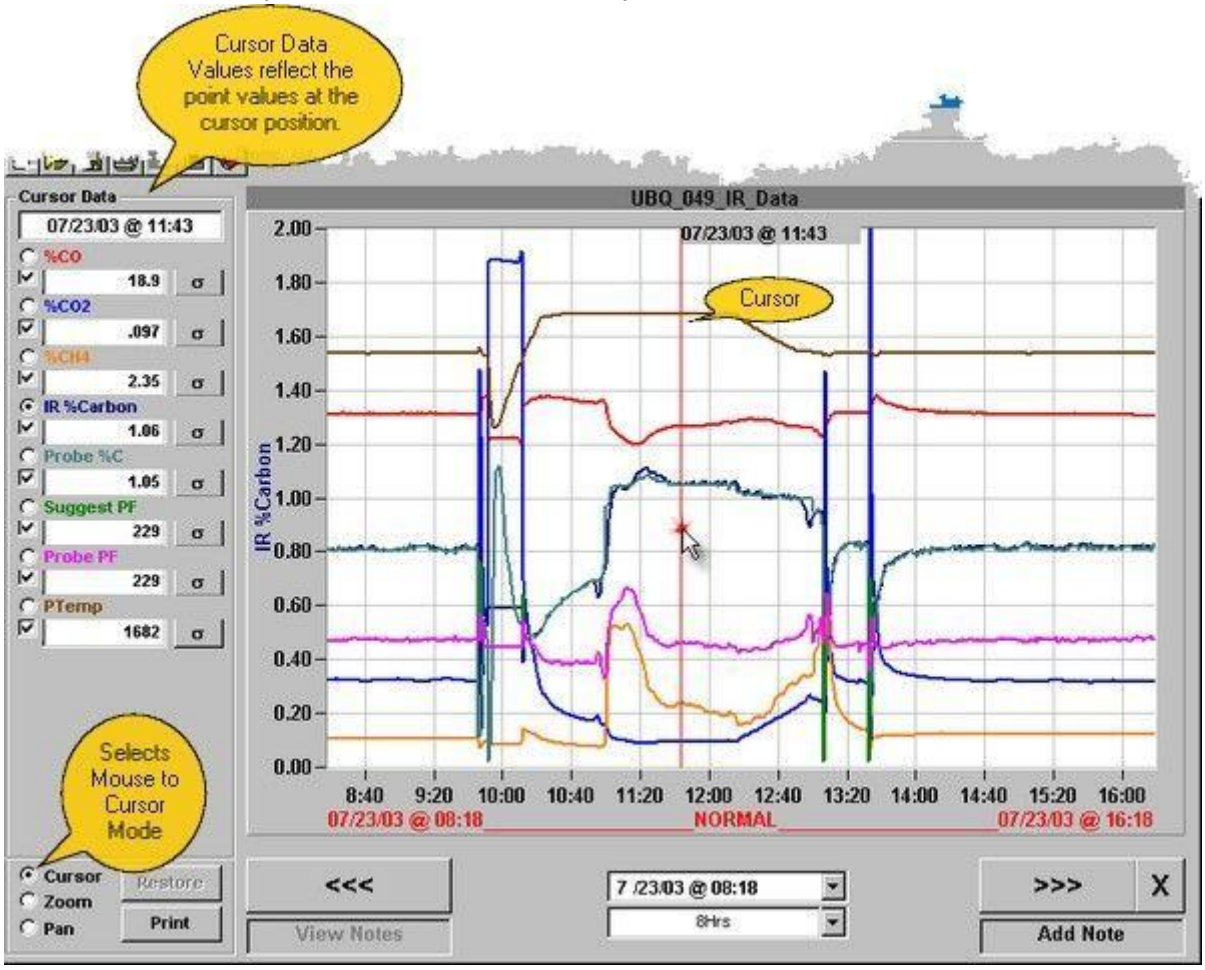
The date selector opens a calendar dialog that allows you to go directly to a given date. You may also change the start time.

Any of the "time control" buttons or selectors will cause new data to be retrieved. You will see a brief message "Retrieving Historical Data" .

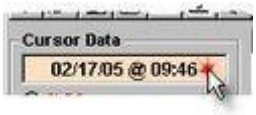
The Zoom and Pan functions operate within the currently held data and do not retrieve new data; however, the time scales are automatically adjusted during zoom and pan operations. Also, during zoom operation, the displayed window width reflects the visible chart width.

Use the Cursor

The cursor is the **red** vertical line in the chart view area. The data values displayed in the cursor data area reflect the data at the current cursor position. To move the cursor, you must have the Cursor mode selected.



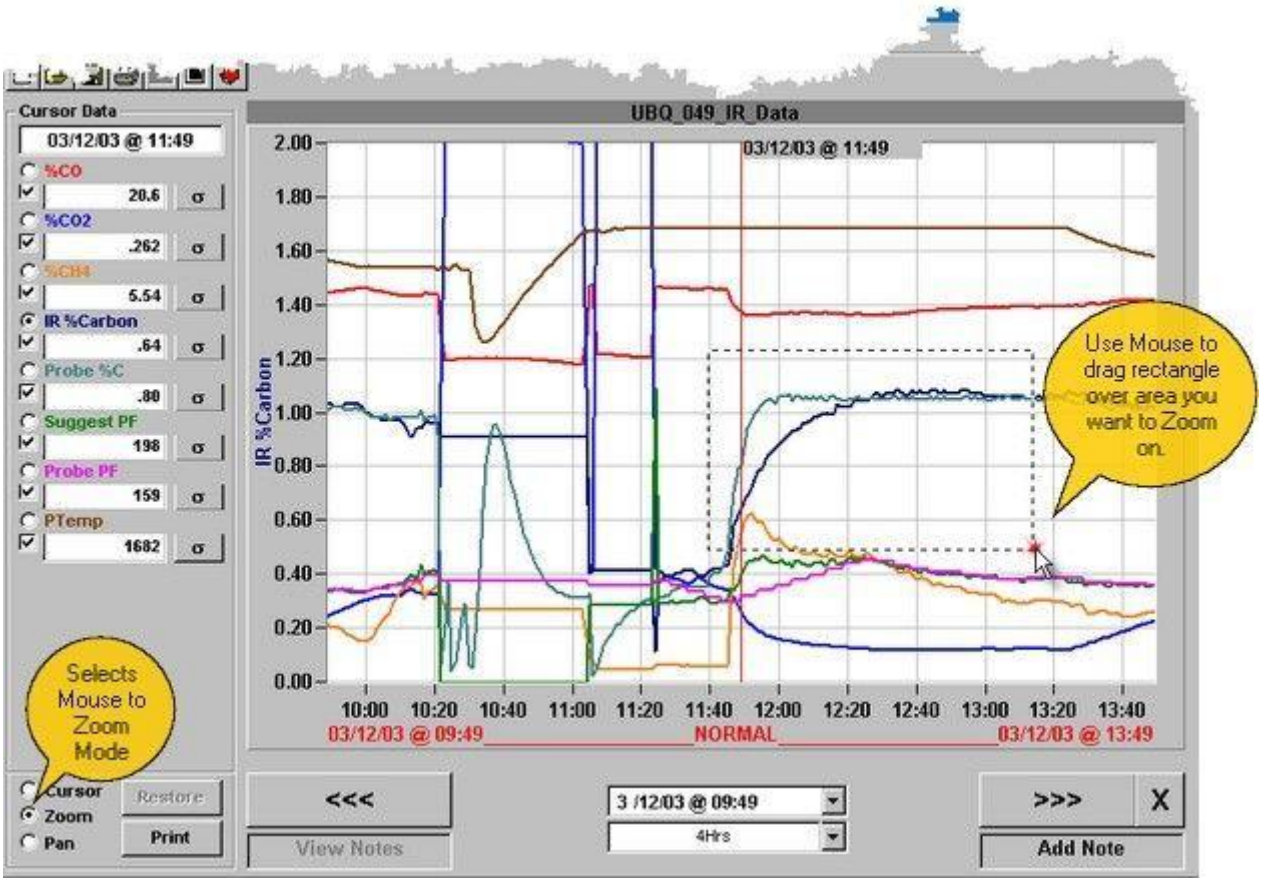
To reposition the cursor, position the mouse on the cursor, hold the left click mouse button down and drag to the desired location. You can also reposition the cursor by positioning the mouse where you want the cursor to be and then right clicking the mouse.



When in RealTime mode, you can "lock" the cursor on the current value by clicking the mouse on the Cursor Data DateTime display. When locked the DateTime background color will change to light red.

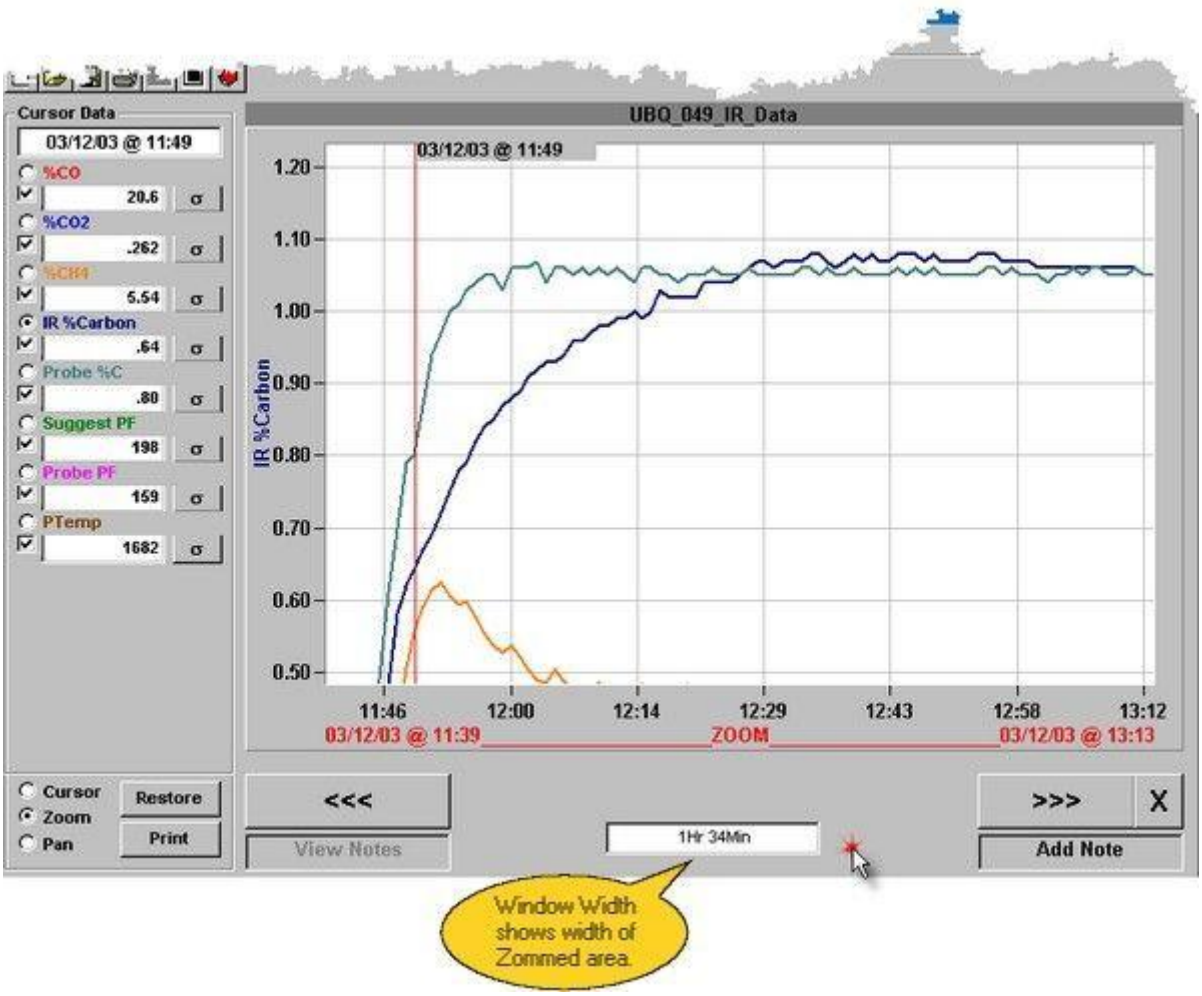
Zoom

To use the Zoom feature, you must select the **Zoom** mode.



In the chart view area, outline the area to be zoomed by holding the left mouse button down and dragging a rectangle around the area to be zoomed.

When you release the mouse button, the outlined area will fill the chart view, the scales will automatically adjust and the window width display will indicate the new width of the chart view. To undo the zoom, click the restore button.



Pan

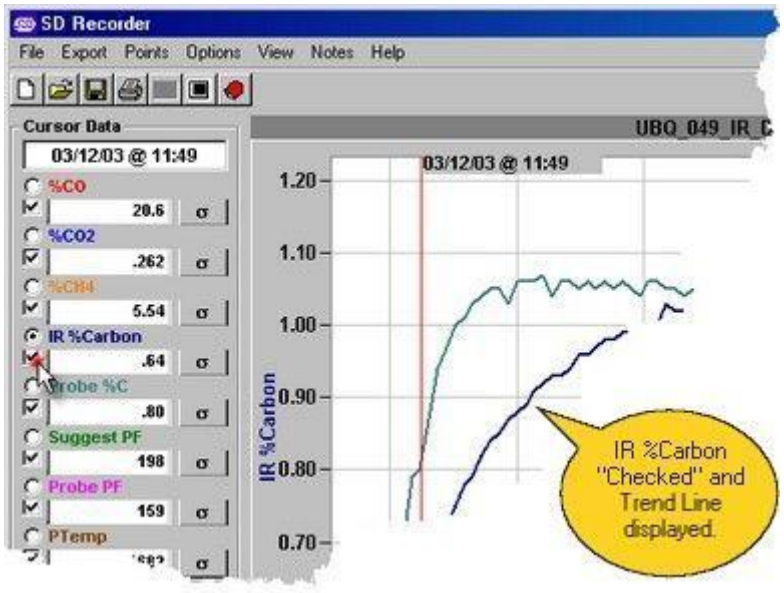
To use the Pan feature you must select the Pan mode.

To pan the view, hold the left mouse button down and drag the mouse horizontally across the chart. The chart view window will follow the cursor. Use the restore button to undo the pan view.

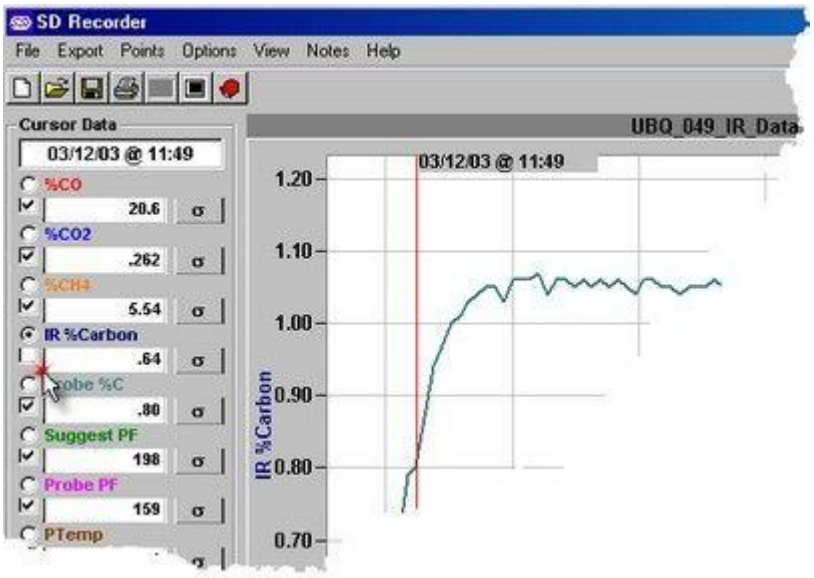
Note: When you pan beyond the limits of the currently held data, the chart mode will revert to cursor mode. To view more data, you must use the right or left scroll buttons.

Hide a Pen

To hide a pen (without deleting the point), uncheck the Display Check Box for the associated pen in the cursor data area.

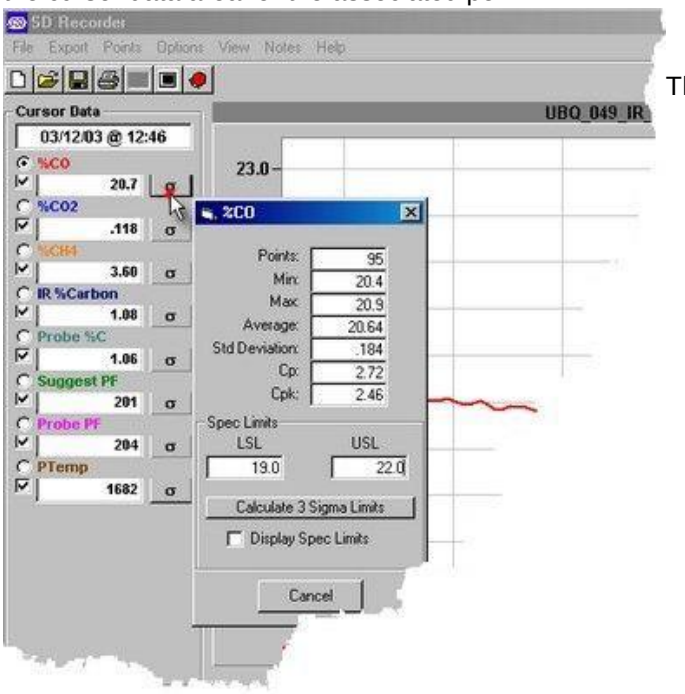


Un checking the "IR %Carbon" point removes the trend line from the chart view as indicated below:



View a Pen's Statistics

To view a pen's statistics, click on the Statistics Icon in the cursor data area for the associated pen.

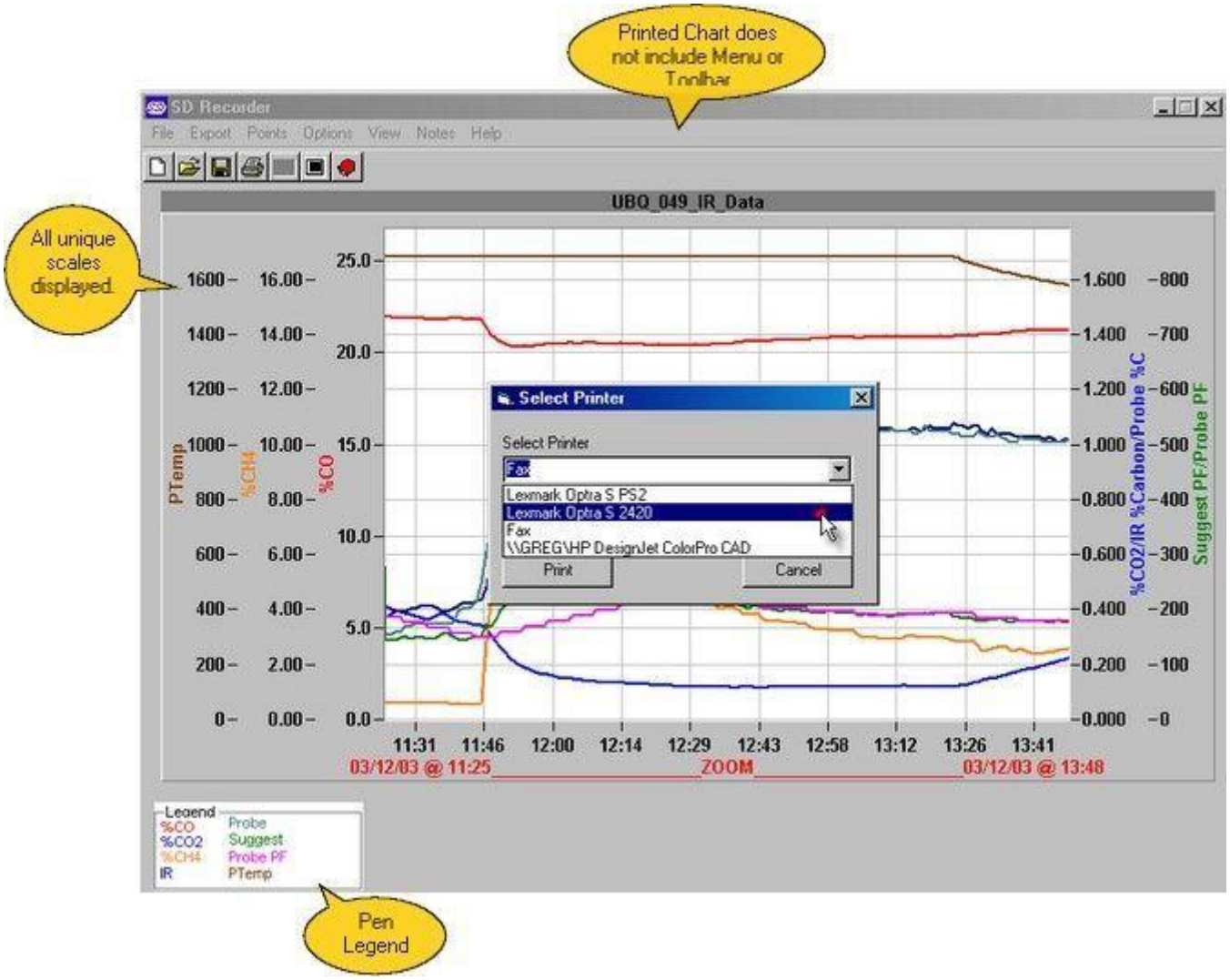


The statistics dialog displays:

- Number of Points (one point per minute) The number of points is the number of minutes in the current chart view.
- Minimum value
- Maximum value
- Average value
- Standard deviation
- Cp
- Cpk
- Spec Limits used for calculating Cp and Cpk (When the Statistics dialog is opened and no Spec Limits have been set, default spec limits are calculated such that both Cp and Cpk will have values of at least 1.0. Spec Limits may be modified in the dialog. When modified, new values for Cp and Cpk will be calculated.
- Calculate 3 Sigma Limits - click this to generate Spec Limits that will provide Cp and Cpk of >= 1.0.
- Display Spec Limits (checkbox) - when checked, the spec Limits will display on the chart when the point's "Scale Select button is on.
- Note: Summary statistics are of most use when the process variable is in a steady or controlled state (e.g. statistics for a temperature would be of little value when the process is ramping up to temperature). For this reason, it is best to zoom in on an area where the process variable in question is relatively constant before looking at the statistics

Print a Chart

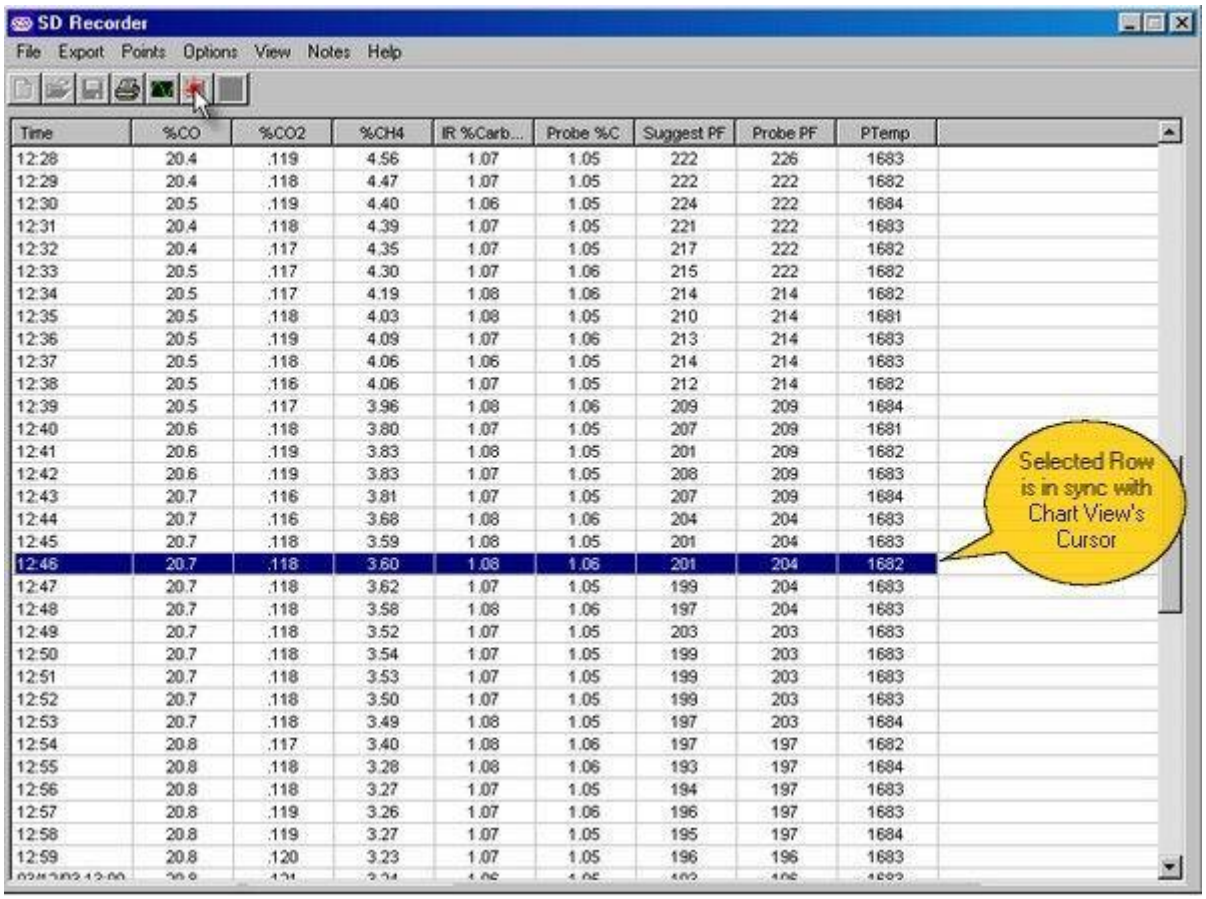
To print a chart, click on the Print button or the Printer Icon in the ToolBar. The chart will be displayed in "**Print Preview**" mode.



In this mode, the cursor, cursor data and chart controls are not displayed. A chart legend and all unique scales will be displayed. Select a Printer and click "Print" to send to the printer or "Cancel" to return without printing.

View the Data Grid

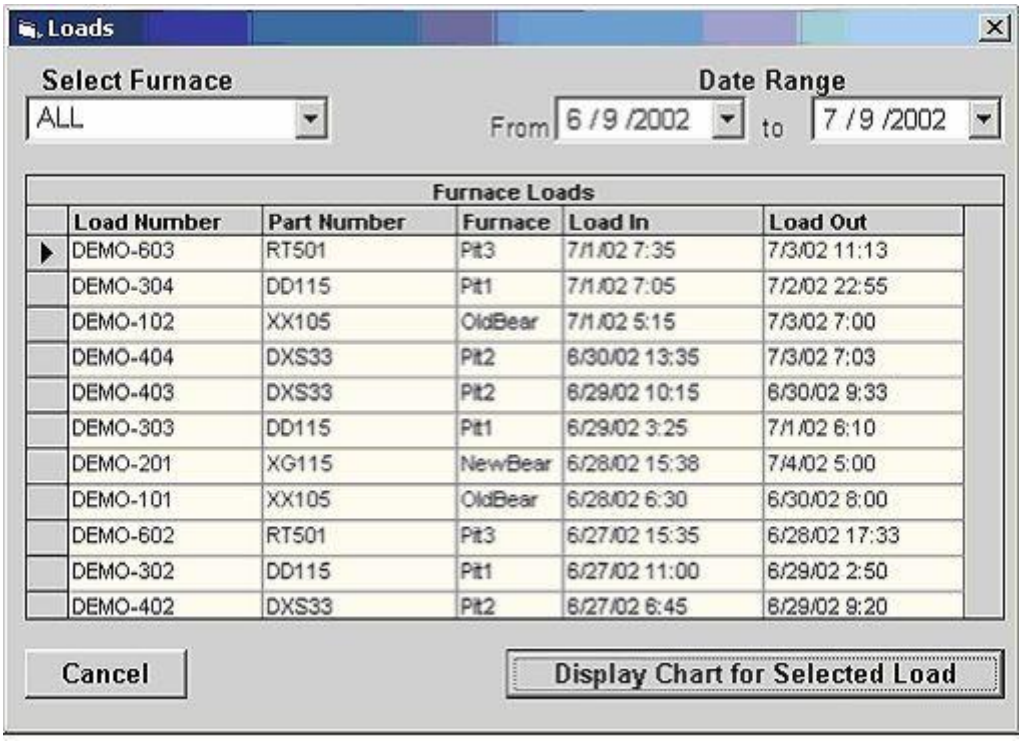
To view the **Data Grid**, select select **Grid** from the View menu, or click on the **Data Grid Icon** on the ToolBar.The Data Grid is displayed in a spreadsheet format. The grid will contain the same points as are displayed in the current chart view and the time of the chart's cursor will become the selected row. To switch back to the Chart View, select View, Chart or click on the Chart View Icon. When switching back to the chart view, the currently selected row on the grid will become the cursor position on the chart.



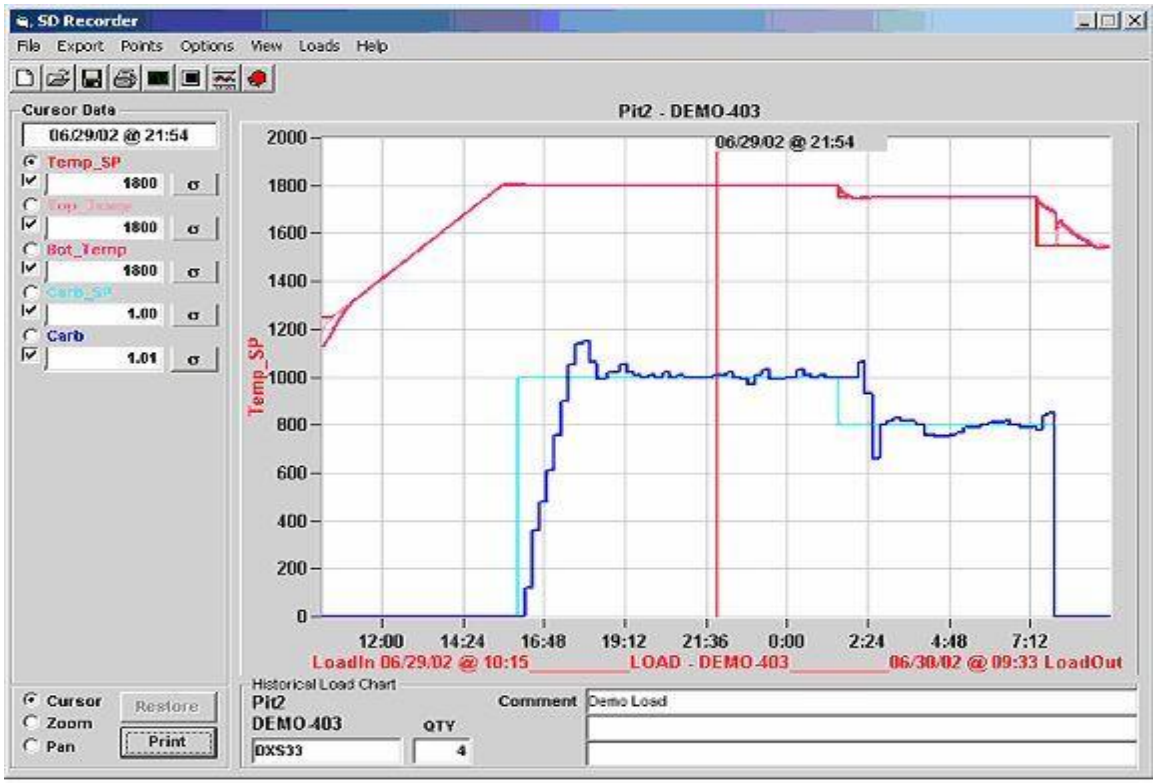
Time	%CO	%CO2	%CH4	IR %Carb...	Probe %C	Suggest PF	Probe PF	PTemp
12:28	20.4	.119	4.56	1.07	1.05	222	226	1683
12:29	20.4	.118	4.47	1.07	1.05	222	222	1682
12:30	20.5	.119	4.40	1.06	1.05	224	222	1684
12:31	20.4	.118	4.39	1.07	1.05	221	222	1683
12:32	20.4	.117	4.35	1.07	1.05	217	222	1682
12:33	20.5	.117	4.30	1.07	1.06	215	222	1682
12:34	20.5	.117	4.19	1.08	1.06	214	214	1682
12:35	20.5	.118	4.03	1.08	1.05	210	214	1681
12:36	20.5	.119	4.09	1.07	1.06	213	214	1683
12:37	20.5	.118	4.06	1.06	1.05	214	214	1683
12:38	20.5	.116	4.06	1.07	1.05	212	214	1682
12:39	20.5	.117	3.96	1.08	1.06	209	209	1684
12:40	20.6	.118	3.80	1.07	1.05	207	209	1681
12:41	20.6	.119	3.83	1.08	1.05	201	209	1682
12:42	20.6	.119	3.83	1.07	1.05	208	209	1683
12:43	20.7	.116	3.81	1.07	1.05	207	209	1684
12:44	20.7	.116	3.68	1.08	1.06	204	204	1683
12:45	20.7	.118	3.59	1.08	1.05	201	204	1683
12:46	20.7	.118	3.60	1.08	1.06	201	204	1682
12:47	20.7	.118	3.62	1.07	1.05	199	204	1683
12:48	20.7	.118	3.58	1.08	1.06	197	204	1683
12:49	20.7	.118	3.52	1.07	1.05	203	203	1683
12:50	20.7	.118	3.54	1.07	1.05	199	203	1683
12:51	20.7	.118	3.53	1.07	1.05	199	203	1683
12:52	20.7	.118	3.50	1.07	1.05	199	203	1683
12:53	20.7	.118	3.49	1.08	1.05	197	203	1684
12:54	20.8	.117	3.40	1.08	1.06	197	197	1682
12:55	20.8	.118	3.28	1.08	1.06	193	197	1684
12:56	20.8	.118	3.27	1.07	1.05	194	197	1683
12:57	20.8	.119	3.26	1.07	1.06	196	197	1683
12:58	20.8	.119	3.27	1.07	1.05	195	197	1684
12:59	20.8	.120	3.23	1.07	1.05	196	196	1683

Historical Load Chart

Historical Load Charts are only available if there exists a "Load Tracking Database" in the system and if SDRecorder is configured to use the database. If Historical Load Charts are not configured, the Loads menu and the Historical Loads Icon will not be visible. To view a Historical Load Chart, select the Loads menu or click on the Historical Loads Icon to open the Load Selector dialog.



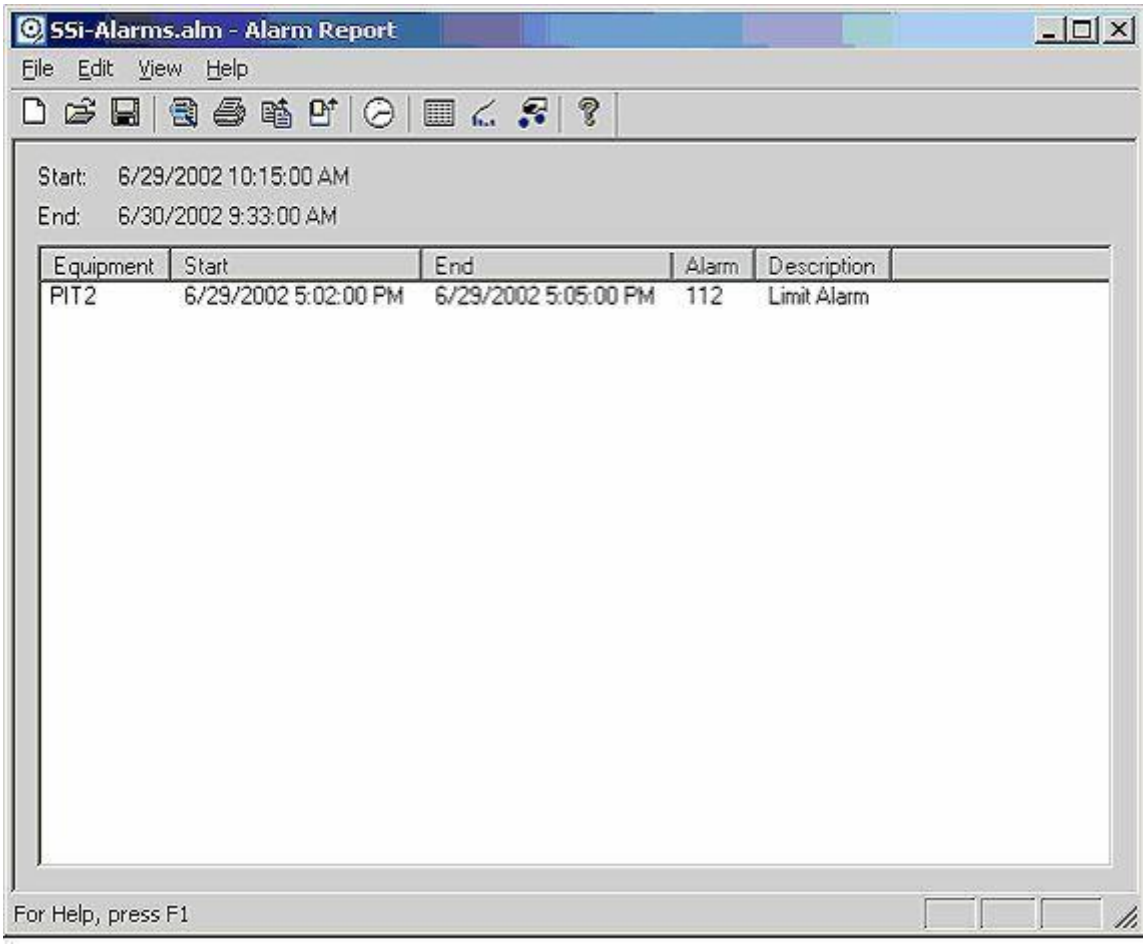
The dialog opens with the Furnace selector dropdown set to "ALL" and the Date Range selectors set for the last 30 days. The Loads are ordered by "Load In" date/time with most recent at the top. The "Selected Load" is indicated by the row-selector (leftmost column in the grid). You can use the Furnace selector dropdown and the Date Range selectors to restrict the loads displayed in the Furnace Loads grid. Clicking on the "Display Chart for Selected Load" will close the dialog and retrieve the chart for the selected load.



Historical Load Charts are displayed differently from a normal chart. The Horizontal Time scale is fixed by the "Load In" and "Load Out" times and there are no scroll buttons or window width selector. The Loads Database data is displayed below the chart. The database data (part, qty and comment fields) may be edited from here. When any of the data is edited, a save button will appear in the lower right corner. When printing, the database data will be printed with the chart.

View an Alarm Report

To View an Alarm Report, click on the **Alarm Report Icon** on the ToolBar. The Alarm reporter will open for the time range indicated by the current chart view. Alarms from all channels from which the chart's data points are derived will be included in the report. Thus, if you are viewing a Historical Load Chart, the alarm report will reflect all alarms for the selected load.



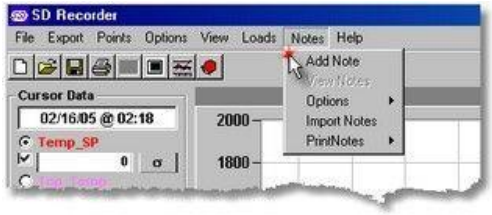
Use Notes

SuperData Recorder has the ability to keep track of notes associated with a chart and maintained in an Access Database. The database is named "SDRecNotes.mdb" and normally located in the c:\ssi\data directory. The database is accessed through ODBC with DSN=SDRecNotes. The database has the following fields:

NoteTime	DateTime of the Note
ChartNote	The text of the Note (max length 255)
ChartName	The Chart Name (filename of .CTM file) that owns the note
NoteID	Autonumber ID field

Notes may be viewed in the Chart View or printed on Charts. Notes may be added from the Chart View or may be imported from an external source. In some instances, notes may be "auto generated" by an external application.

Notes Menu

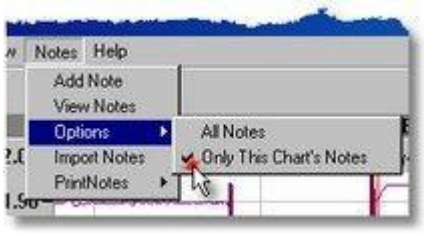


- **Add Note -** Opens the Note input window at the current cursor position.
- **View Notes** - Displays notes on the chart (enabled only when notes are available within the chart's time frame)
- **Options** - Allows you to select between "Notes for the current chart" or "Notes for All Charts"
- **Import Notes** - Allows you to import notes from

an alternate source (usually from an external source, e.g. a 9200 Operator Interface)

- **PrintNotes** - Sets options for printing notes when the chart is printed.

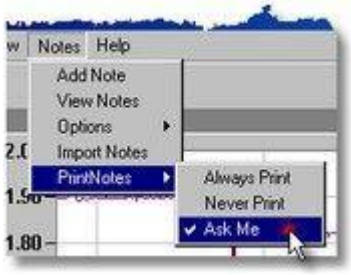
Options



- **All Notes** - Makes all notes available for display (ignores "ChartName" field in the Note Records).
- **Only This Chart's Notes** - Makes only notes associated with the current ChartName available for display. This is the normal mode.

These settings are retained when you close SDRecorder

PrintNotes

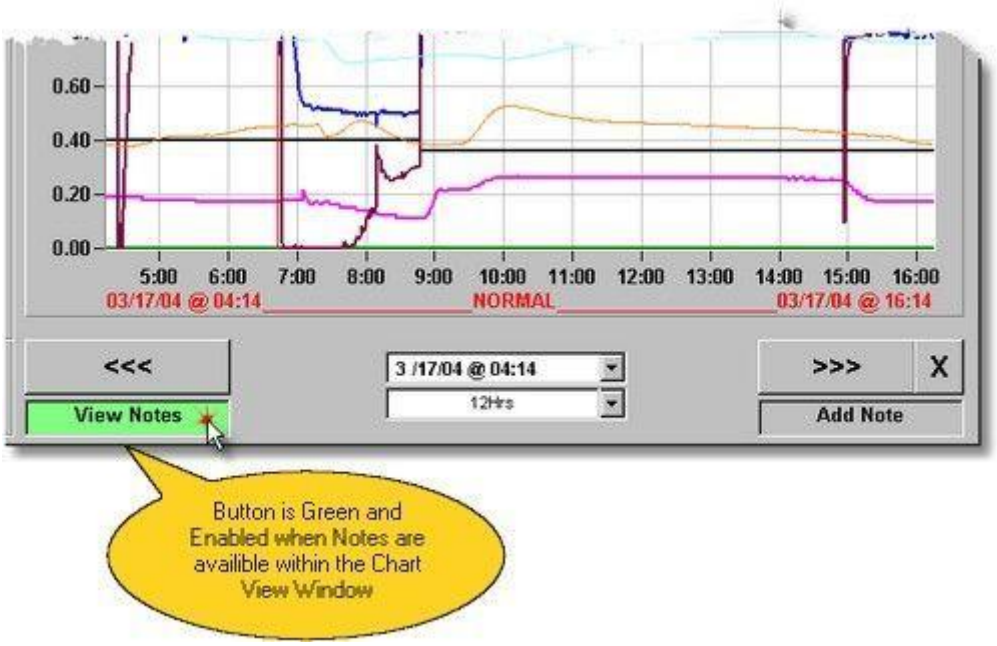


- **Always Print -** Always prints notes without prompting.
- **Never Print** - Never prints notes. No prompting.
- **Ask Me** - Always prompts "Show Notes on Print?", This is the normal mode.

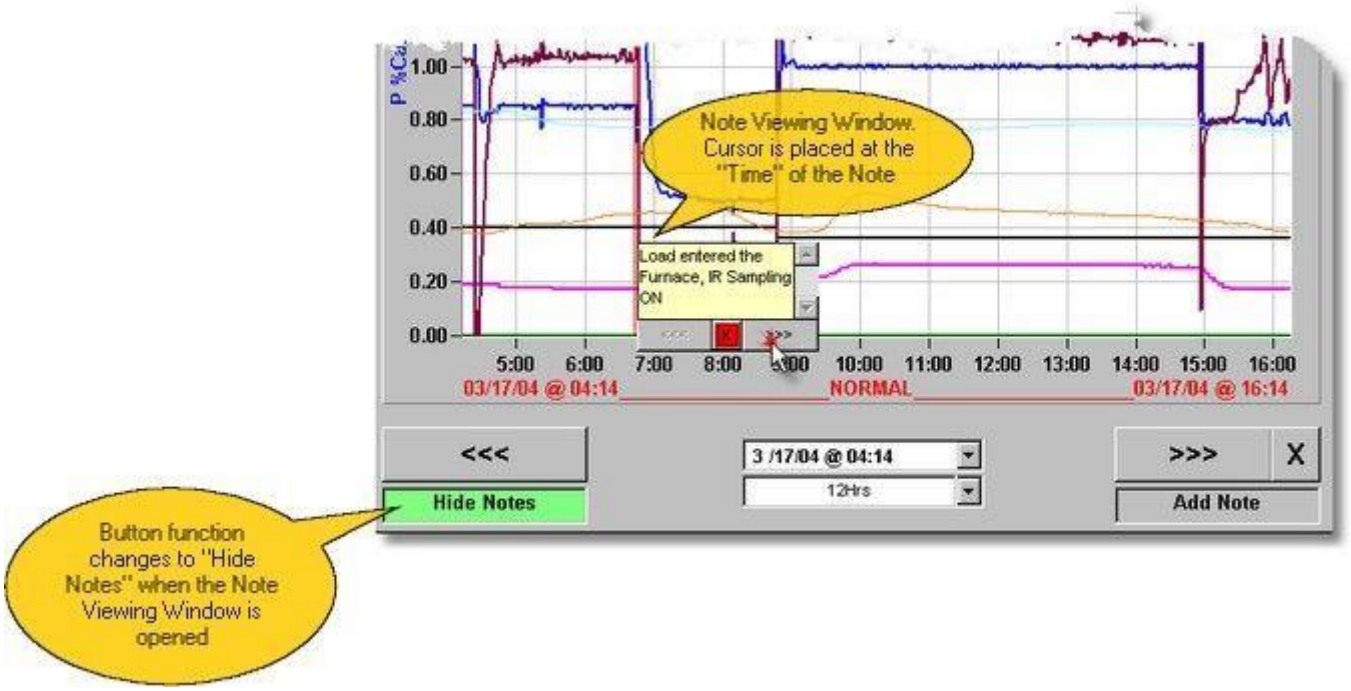
These settings are retained when you close SDRecorder

Viewing Notes

Notes are displayed one at a time in the Note Viewing Window. When a chart is printed amd notes are available, you will be prompted to "show Notes?" on the printout. On the printed chart, all notes will be displayed and positioned approximately at the time of the note.

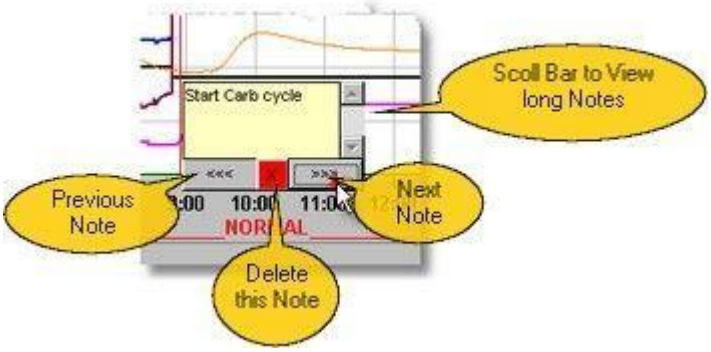


To view notes, click on the "View Notes" button.

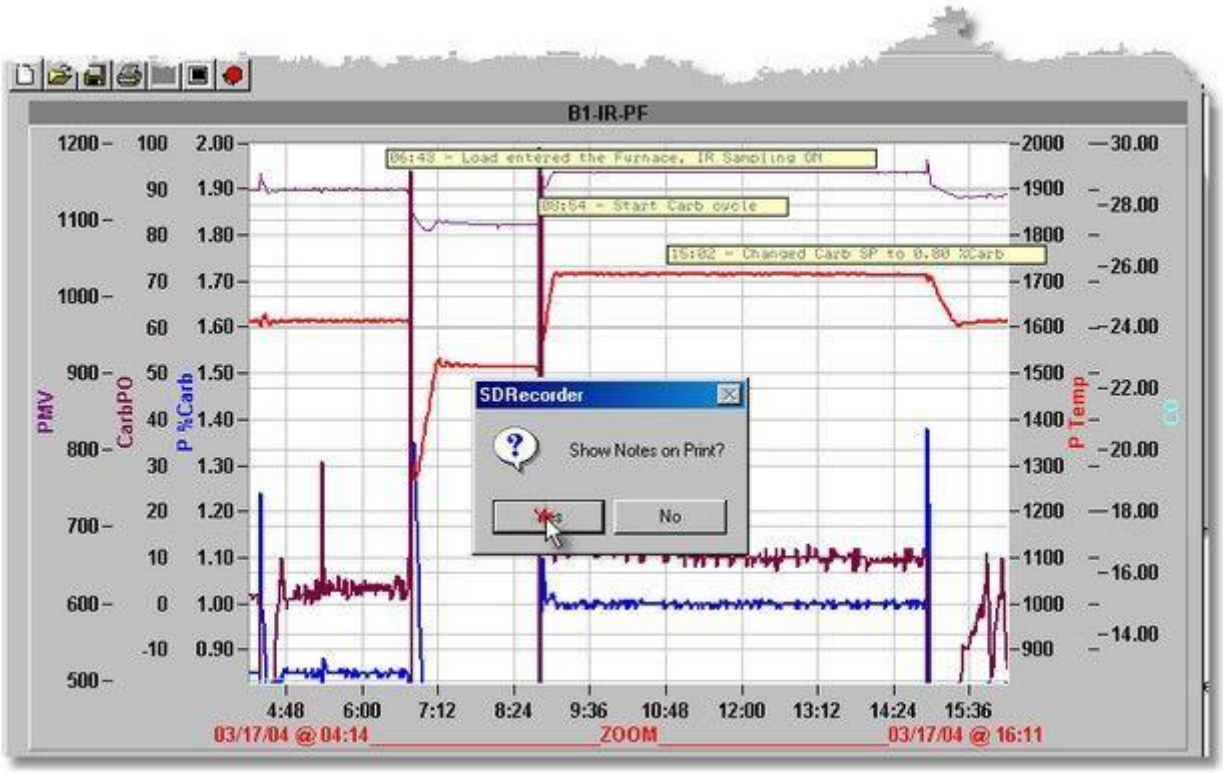


The Note Viewing Window

In the Chart View, only one note is displayed at a time. The Note Viewing Window contains controls to navigate through Multiple notes in the Chart View

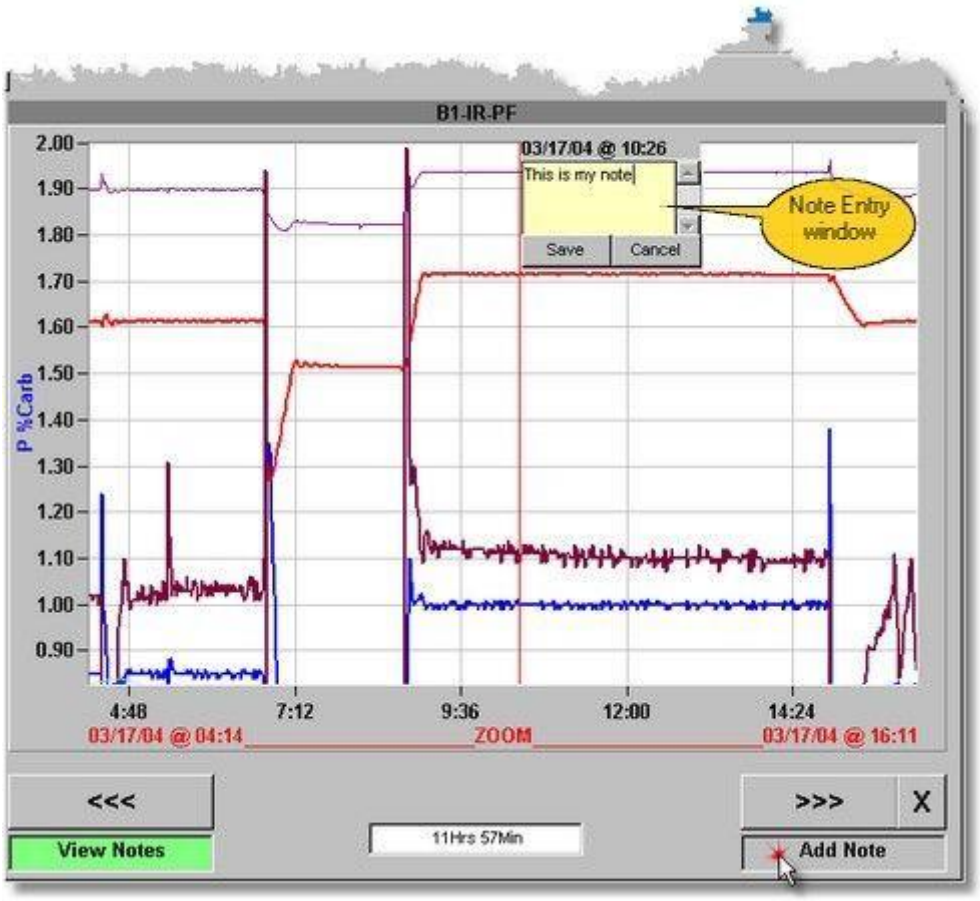


Printed Notes



Adding Notes

To add a note, First position the cursor at the Time you would like the note to be displayed, then click on the "Add Note" button. The Note Entry Window will open, enter your note text and click the Save button.



Files and Configuration

SDRec Files

SuperDATA Recorder uses the following files:

- **SDRec.exe** – The SuperDATA Recorder application file. Normally located in the c:\ssi\bin directory.
- **SDRec.ini** - The SuperDATA Recorder configuration file. Normally located in the c:\ssi\bin directory. (note 1)
- **filename.CTM** – These are the chart template files. Normally located in the C:\ssi\Trends directory. (note 1)
- **SDIO.ini** – The SuperDATA I/O configuration file. Normally located in the C:\WINNT or C:\WINDOWS directory.
- **Intparms.xxx** – These files assign process variable names to channel slots, one file for each configured communications channel where ".xxx" is the channel number. These files are normally located in the C:\ssi directory. (note 1)
- **SSI-Alarms.ALM** – This is an alarm template file used by SDRecorder to link to the alarm recorder. This file is normally located in the C:\ssi directory.
- **Chlst.txt** – This file is generated by SuperDATA I/O program (SDIO.exe) and used by SDRecorder to identify channel names with channel numbers. This file is normally located in the C:\ssi\rtm directory. (note 1)
- **DATALOGx.xxx** - Hourly Datalog files generated by SuperDATA I/O program. These files are normally located in the c:\ssi\log directory. (note 1)
- **COMPDTxx.xxx** – Daily compressed datalog files. These files are normally located in the C:\ssi\clog directory. (note 1)

Note 1. When using the AltData option in SDRecorder, these files should be put in the AltData path directory.

SDRec Configuration

The SuperDATA Recorder configuration file (SDRec.ini) is used to configure the SDRecorder and to enable it to be used with a "Load Tracking Database". The sections of the file are as follows:

The "Files" section of the file keeps track of the last chart and the "Most Recently Used" chart files (up to 8). This section is maintained by the application.

[FILES]
LAST=c:\ssi\NewBear Carb-Temp.ctm
MRU01=c:\ssi\NewBear Carb-Temp.ctm
MRU02=c:\ssi\Pit1 Carb-Temp.ctm
MRU03=c:\ssi\Pit1 ATM.ctm
MRU04=c:\ssi\OldBear Carb-Temp.ctm
MRU05=c:\ssi\OldBear ATM.ctm
MRU06=c:\ssi\Pace Carb-Temp.ctm
MRU07=c:\ssi\Pace ATM.ctm

The "Paths" section keeps track of the Alternate data path.

[PATHS]
ALTDATA=C:\ALTDATA

The "Options" section keeps track of the various Options. (Note: The USEFUNCTIONS Option is an advanced feature for special applications and is normally configured by SSi Engineering department. This feature should normally be set to NO)

[OPTIONS]

CLIP=YES – This option will limit the statistics calculations (min, max, average, and standard deviation) to use the min and max values based on the chart's scale. **NO** = Use the full range of data; **YES** = use the min and max based on the chart scale.
PRINTNOTES=0 – The Print Notes feature will allow the chart to be printed with any available notes. **0** = Ask Me before printing notes; **1** = Always print notes; **2** = Never print notes.
EXPORTINT=1 – The Export Interval option will set the interval used during an export of the chart data. **1** = 1 minute; **2** = 2 minutes; **5** = 5 minutes; **15** = 15 minutes; **30** = 30 minutes. Any other option will default back to1 minute.
SHOWNOTES=1 – The Show Notes option will allow the notes for the opened chart to be displayed, or for all notes regardless of chart to be displayed. **0** = Show only opened chart's notes; **1** = Show all notes.
USEFUNCTIONS=NO – This option will allow the use of a special function editor when editing a trend line. **NO** = do not allow special function editor (this will hide the editor); **YES** = allow the special function editor.
PRINTWITHCURSORDATA=1 - The Print with Cursor Data option will allow the chart to be printed with the cursor data and the cursor (the legend box is not printed). **0** = Don't print; **1** = Print
TOPMOST=0 – The top most option will allow SD Recorder to always be the form that is displayed "on top" of all the other forms in the stack. **1** = Set SD Recorder as the top most form; **0** (or any other value) = Don't set SD Recorder as the top most form.
STARTREALTIME=NO – This option will allow SD Recorder to start in Real-time mode. **NO**/**FALSE** or **YES**/**TRUE** are valid options.
STARTHOURS=4 – This option will start SD Recorder with the selected number of hours as the time interval. **1**, **2**, **4**, **6**, **8**, **12**, **24**, **48**, **96**, **168** are valid options. **12** is used if an invalid entry is used.
NOTEMODE=0 – This option will allow the use of NADCAP requirements for the notes. **0** = Normal note mode; **1** = NADCAP features. Note – In NADCAP mode, you must have the new SDRecNotes.mdb file ("Time Created" date/time field is the fourth field; you cannot edit or delete notes; the note view box will have the "Time Created" in a label above the note.
ALLOWMULT – This option will allow multiple copies of SD Recorder to be opened. **NO** = only allow 1 copy of SD Recorder; **Yes** = multiple copies can be opened.

The following sections are required only when used with a "Load Tracking" Database. Normally, Load Tracking systems are custom projects configured by SSi Engineering department.

The "Furnaces" section configures which furnaces are configured for Load Tracking and associates a channel and furnace name with each configured furnace. Previously, SD Recorder could display historical load charts from a loads database only if all of the load data existed in one database. With the advent of applications such as BBRec, there are situations where data will be located in multiple databases. SD Recorder now has the option to use multiple databases based off of the furnace name.

[FURNACES]
The furnace definition is FCEXX=Primary Channel, Furnace Name
The primary channel is the channel that has the "alarm bit map" (if any).
The furnace name is the name of the furnace and furnace name = chart name for historical chart = "key name" for SDRec database definition.
FCE01=1,62404
FCE02=5,62427
FCE03=4,62428
FCE04=2,62429
FCE05=3,62432
FCE06=1,TipUp-1

The "Loads" section configures SDRecorder for use with the "Load Tracking Database". The database may be an Access or SQL Server database. The Database is accessed through ODBC and must be given a DSN (Data Set Name) and configured in ODBC.

[LOADS]
METHOND=1 (Default is 1; methods 2,3, and 4 are special for PM2000 DB)
EDIT=No (Defines whether edits are allowed – if YES, the data must be from a single editable table)
DSN=MyLoads (This is the database's ODBC name; methods 2,3, and 4 require **DSN=PM200DB**)
T_LOAD=Load (This identifies the Table containing the Load Data)
F_ID=LID (This identifies the Field in the Load Table containing the Record ID)
F_LOADNO=LoadName (This identifies the Field in the Load Table containing the Load Name)
F_PARTNO=PartNo (This identifies the Field in the Load Table containing the Part Number)

F_QTY=QTY (This identifies the Field in the Load Table containing the quantity)
F_FCE=FCEName (This identifies the Field in the Load Table containing the Furnace Name)
F_TIMEIN=DT_In (This identifies the Field in the Load Table containing the Load in DateTime)
F_TIMEOUT=DT_Out (This identifies the Field in the Load Table containing the Load Out DateTime)
User fields – Up to 3 User fields may be configured.
For each field,

F_USRx=database field name (always a text field)
L_USRx=label to print next to the field on the historical chart
P_USRx=password used to restrict editing of the field data

If a field name is not supplied, the field appears as an editable textbox on the Historical Chart but is not linked to the database.
If a label is not supplied, the field appears on the Historical Chart without a label.
If a password is not supplied, the field will not be password protected.

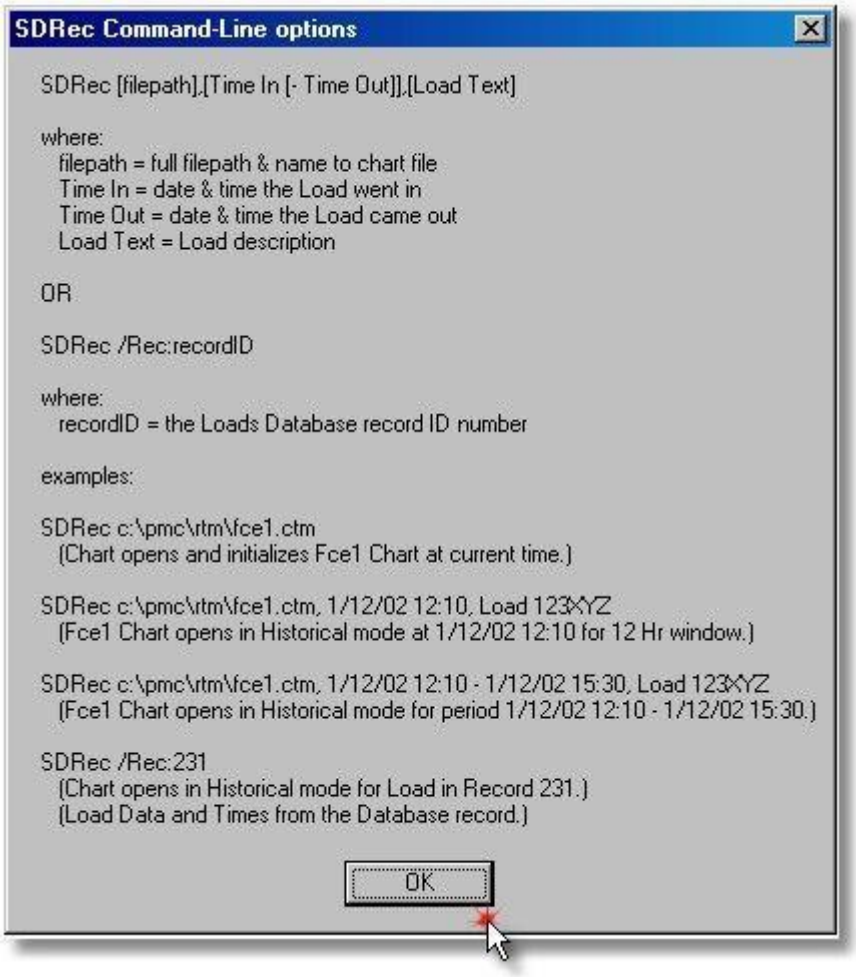
F_USR1=LoadRemarks
F_USR2=
F_USR3=
L_USR1=Comments
L_USR2=
L_USR3=
P_USR1=SSI
P_USR2=
P_USR3=

You may have multiple [LOADS] sections renamed to the furnace name. In SD Recorder's Loads screen, when the furnace selector is "ALL", it will use the default database ([LOADS]), but when the furnace selector is selected to a furnace that has a <[LOADS]> section (i.e., TipUp-1 below), then that database will be used.

[TipUp-1]
DSN=SSiBCS
T_LOAD=Loads
F_ID=ID
F_LOADNO=LoadNo
F_PARTNO=Part
F_QTY=QTY
F_FCE=FceName
F_TIMEIN=StartDT
F_TIMEOUT=EndDT
F_USR1=Recipe
F_USR2=Comment
F_USR3=AddParts
L_USR1=Recipe
L_USR2=Comment
L_USR3=Parts
P_USR1=ssi
P_USR2=
P_USR3=

Command Line

SDRecorder can be called by another application. When calling from another application, certain command line options may be passed to start a chart. If you start SDRec from a Command Prompt with the /h argument, (e.g. C:\ssi\bin\sdrec /h) you can view the command line options.



Alternate Command Line:

Sdrec [file] [T:hh:mm][W:hh]

File = the chart file

T:hh:mm = specifies a start time in 24-hour format

W:hh = specifies a window width in hours (Default is 12 hours)

Example:

Sdrec test.ctm T:06:00 W:18 – This will open the test.ctm chart with a start time of 6 AM and a window width of 18 hours.

Revision History

Rev.	Description	Date	MCO #
-	Initial Release	3/13/09	N/A