SE3000

Software Encoder Product Manual

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Part No. 255367B
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IMPORTANT SAFETY NOTICES

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance instructions.

- Read and Follow Instructions - All the safety and operating instructions should be read before the SE3000 is operated. Follow all instructions in this manual.

- Retain Instructions - The safety and operating instructions are located in the software and can be accessed by clicking the “Help” button.

- Heed Warnings - All warnings on the SE3000 and in the operating instructions should be adhered to.

- Programming Warning – The SE3000 may fail to operate as intended if programmed incorrectly. Programming should only be performed by personnel thoroughly familiar with the SE3000’s operating instructions and the intended method of use.

- Screen resolution should be set to 1024 by 768 pixels for full screen viewing. Go to Window’s Display Properties, Settings, Screen resolution to adjust the resolution setting.

- The SE3000 must be correctly programmed per the user’s specific application before placing into use. Programming should only be performed after thoroughly reading this manual. Always test the SE3000 for proper operation after programming and before placing into use.

- When the SE3000 is used for personnel warning applications, a warning plan should be developed and all users should be trained on the use of the warning system.

Table of Contents

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In this Agreement, words importing the singular include the plural and vice versa. Words importing gender include all genders and words importing persons include corporations and vice versa. The division of this Agreement into sections and the insertion of headings are for convenience of reference only and shall not affect the construction or interpretation of this Agreement or any part of it.

Installation of the Server / Encoder

Ensure the software has been properly installed before connecting the modem to the PC. Running the install program installs the main SE3000 software. It also leaves the files for the driver for the virtual com port that the Modem-MSK board will use. After SE3000 installs, the install program will install the USB Drivers if they have not been previously installed.

This will install the necessary driver files in the default directory "C:\Program Files\Texas Instruments".

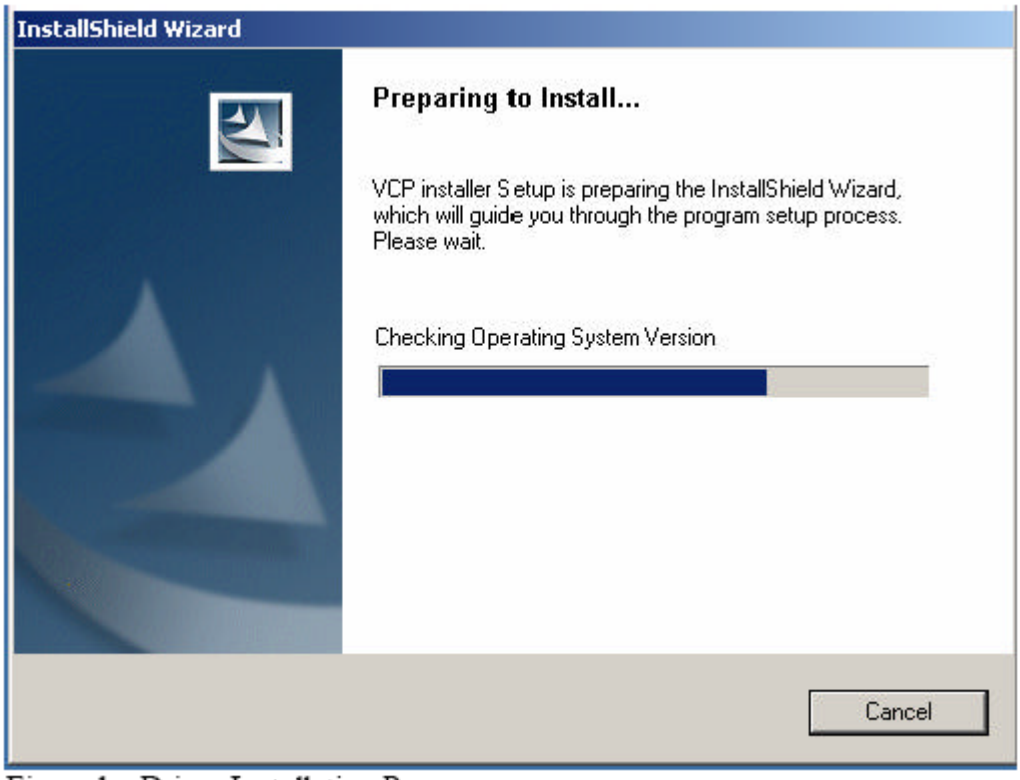


Figure 1 - Driver Installation Progress

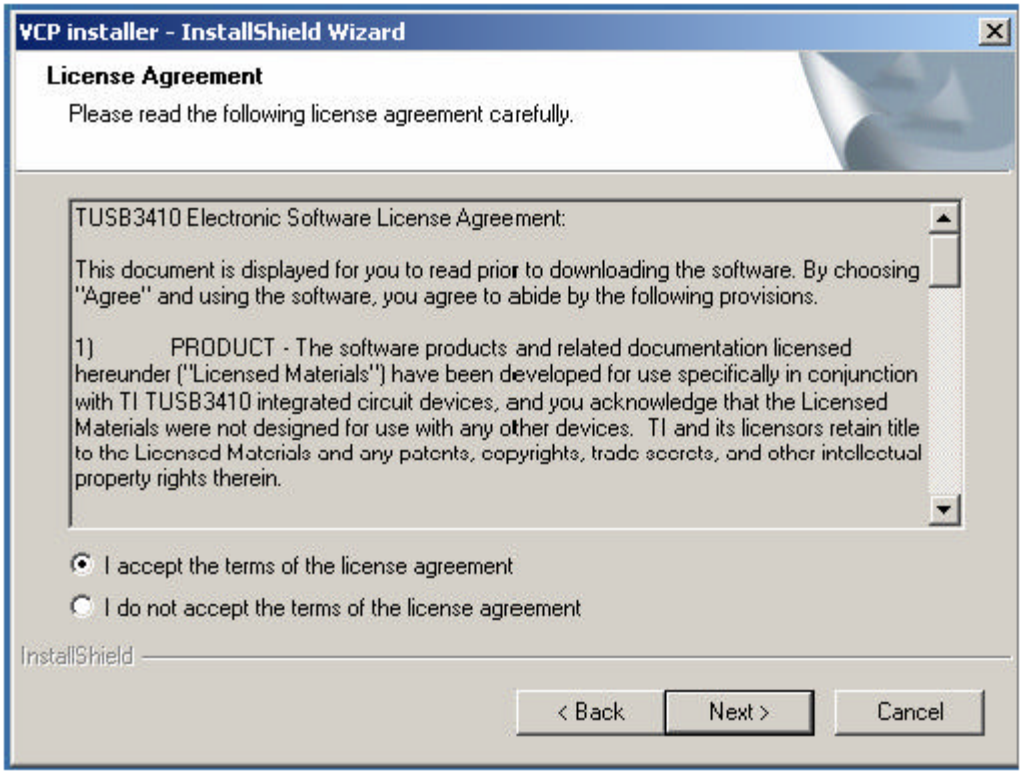


Figure 2 - License agreement

Although the drivers have not been certified by Microsoft WHQL, TI testing has shown that they pass the HCT test suite used by the WHQL labs. TI plans to obtain official certification in 2Q2005. Contact TI for the latest information.

Because the drivers are not yet certified, the software installation warnings shown in Figure 3 and Figure 4 are generated. The reason two warnings are generated is that the driver is composed of two separate modules, one for the USB functionality and one for the serial port. Choose "Continue Anyway" to install the drivers.

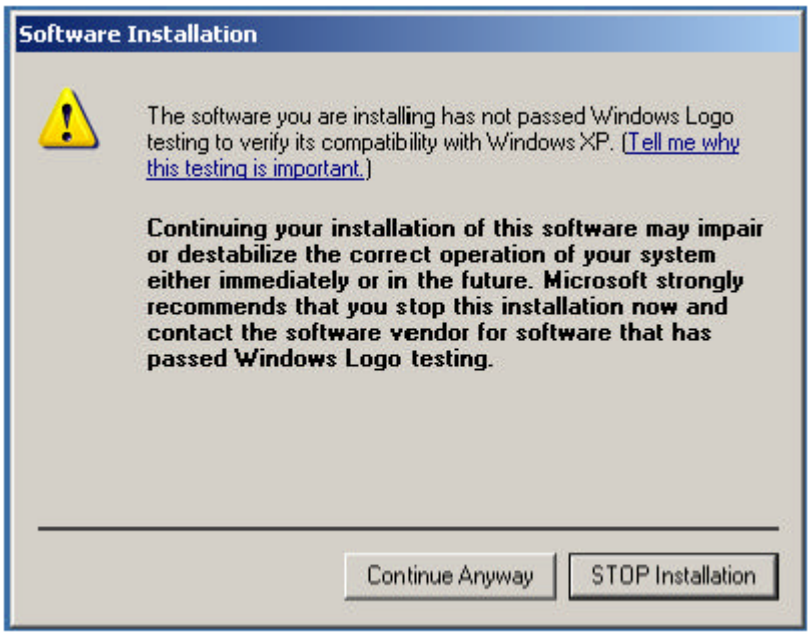


Figure 3 - Installation Warning (first of two warnings)

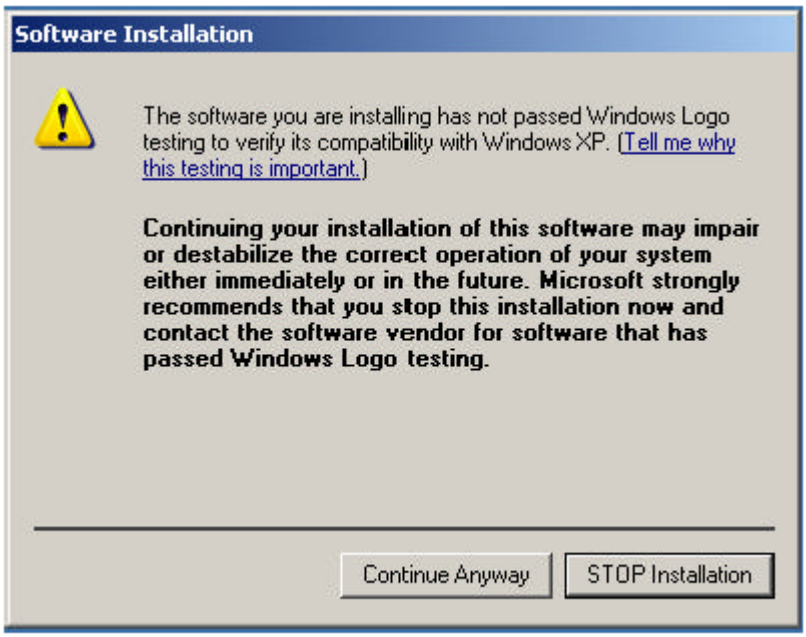


Figure 4 - Installation Warning (second of two warnings)

Click "Finish" as shown in Figure 5 to complete pre-installation of the drivers.

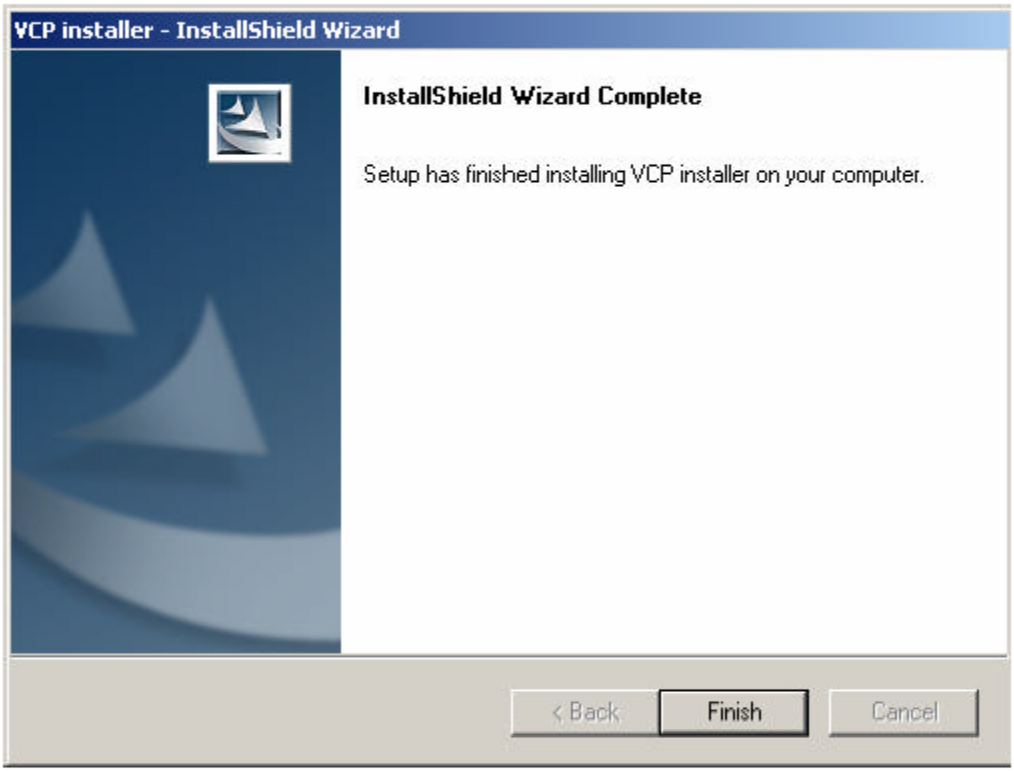


Figure 5 - Pre-installation of drivers complete

STEP 2. Connect the USB-to-serial hardware to the PC. Windows displays the Found New Hardware dialog box ("TUSB3410 device"). Select the "Install the software automatically" option and click on "Next" in Figure 6.

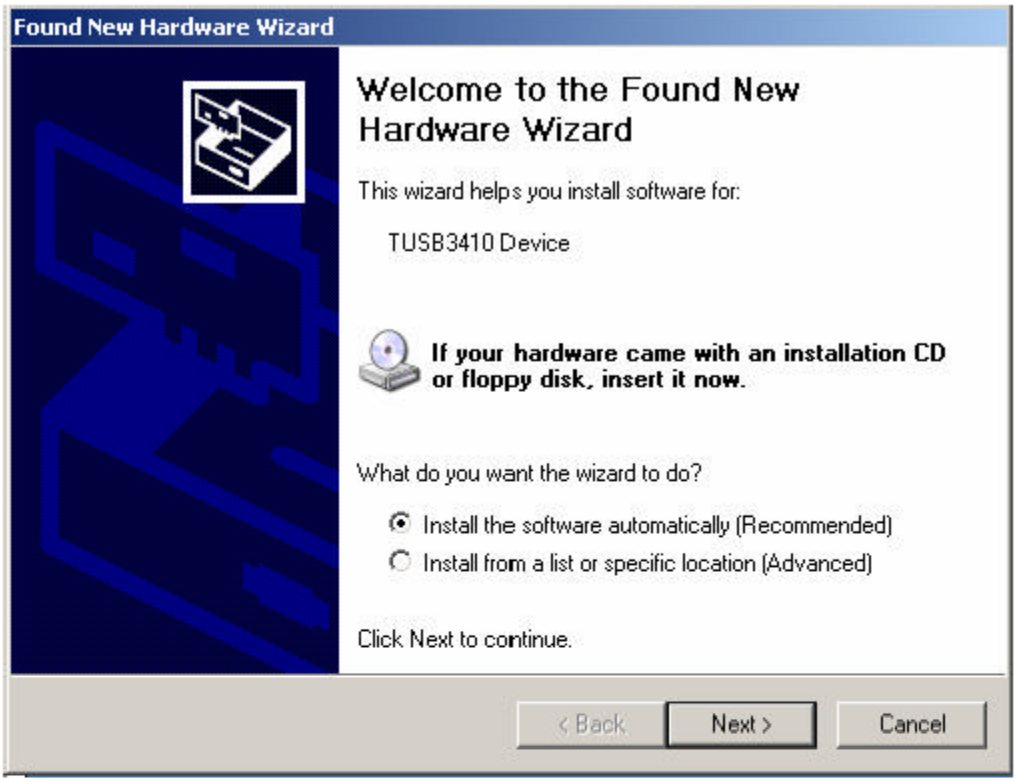


Figure 6 - Found New Hardware ("TUSB3410 Device")

Once again, choose "Continue Anyway" to install the drivers.

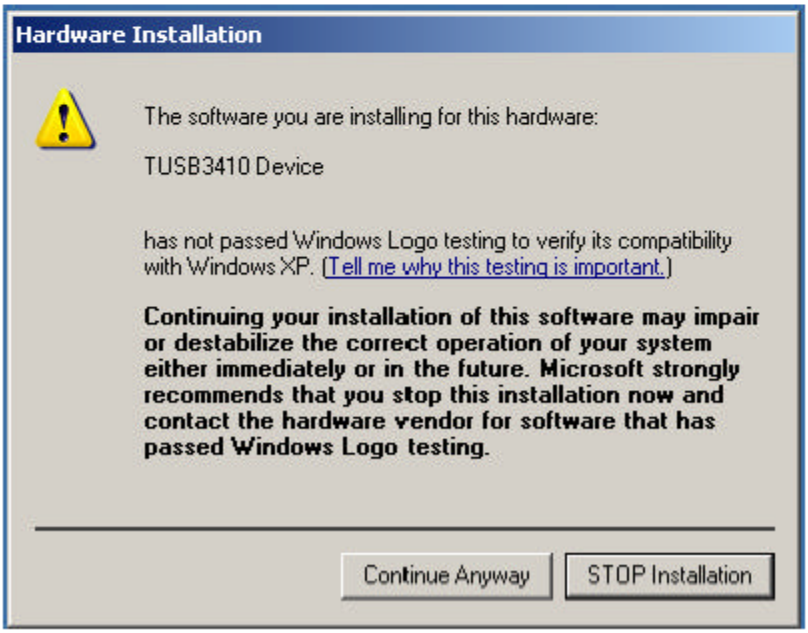


Figure 7 - Hardware Installation Warning ("TUSB3410 Device")

Click on "Finish" to complete the installation of the device as shown in Figure 8 below.

Figure 8 - Device installation complete.

STEP 3: Windows displays the Found New Hardware dialog box (USB-Serial Port). Select the "Install the software automatically" option and click on "Next" in Figure 9

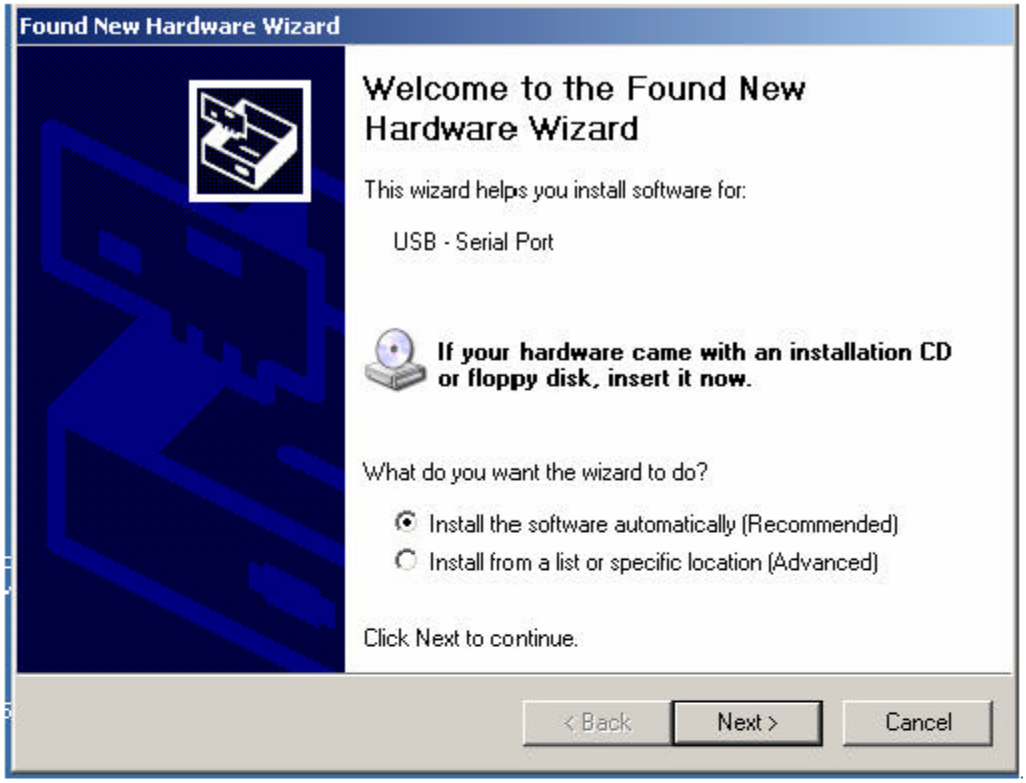


Figure 9 - Found New Hardware (USB – Serial Port)

Once again, choose "Continue Anyway" to install the drivers.

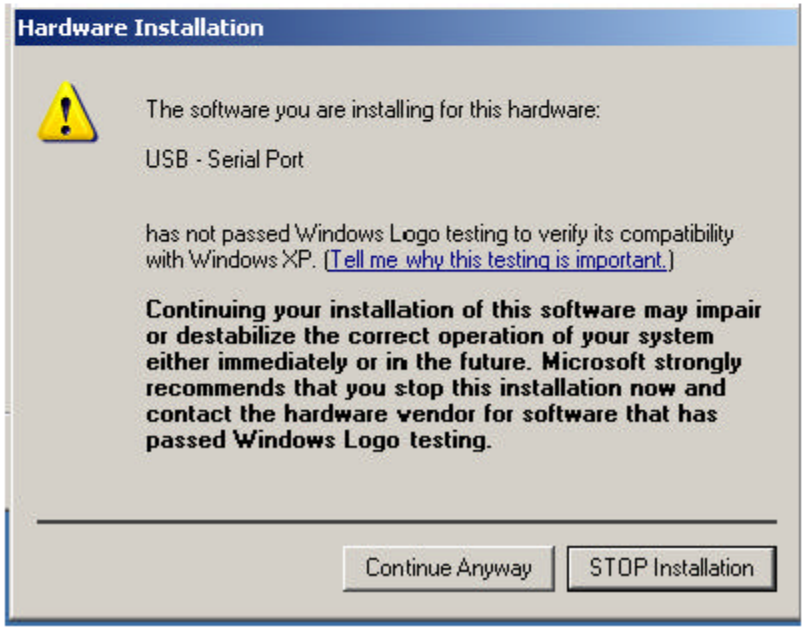


Figure 10 - Hardware Installation Warning (USB-Serial Port)

Click on "Finish" to complete the installation of the USB-Serial port device as shown in Figure 11 below

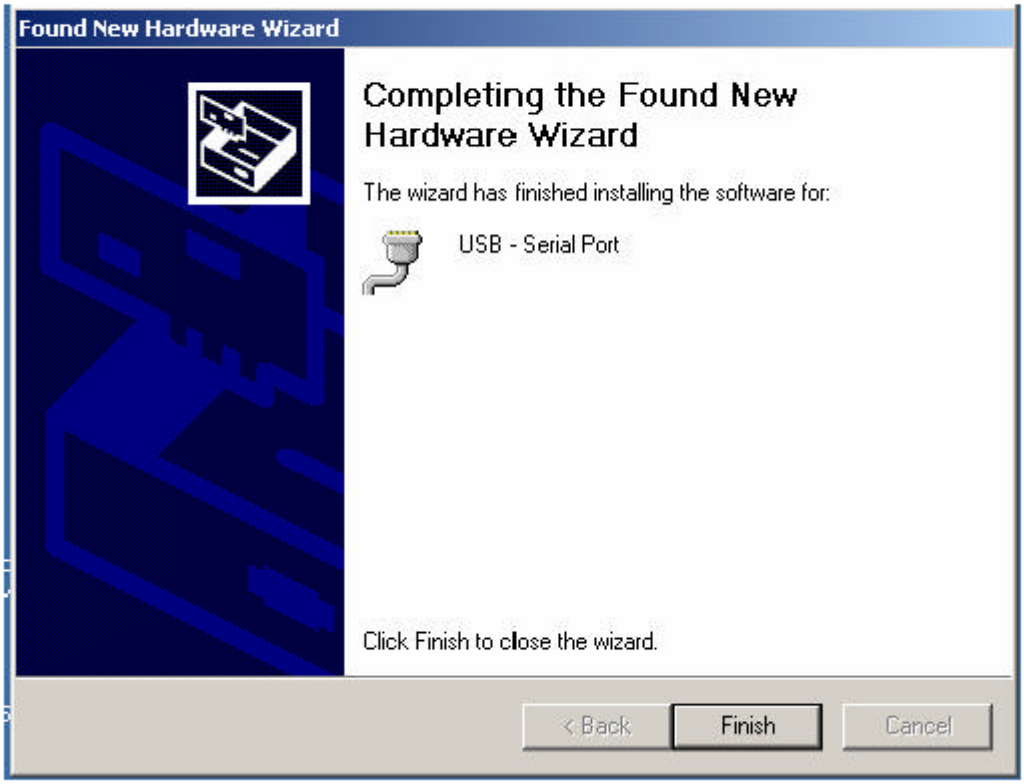
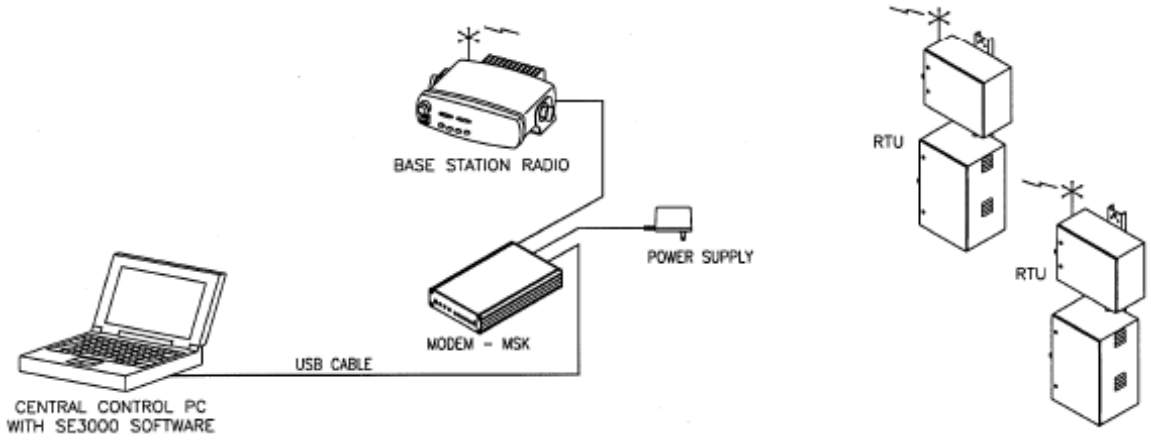


Figure 11 - USB-Serial port installation complete

Components



The SE3000 software encoder is made up of four main components:

SE3000 Software installed on a CCU (Central Computer Unit)
Modem-MSK (Siren Controller / Radio Modem Terminal Unit)
Base Station Radio
RTU (Remote Terminal Unit or Siren Controller at remote site)

Note: The SE3000 model includes the following items: SE3000 software on CD, USB cable, and Modem-MSK with manual and power supply.

OPTIONS:
Additional options to the SE3000 include:

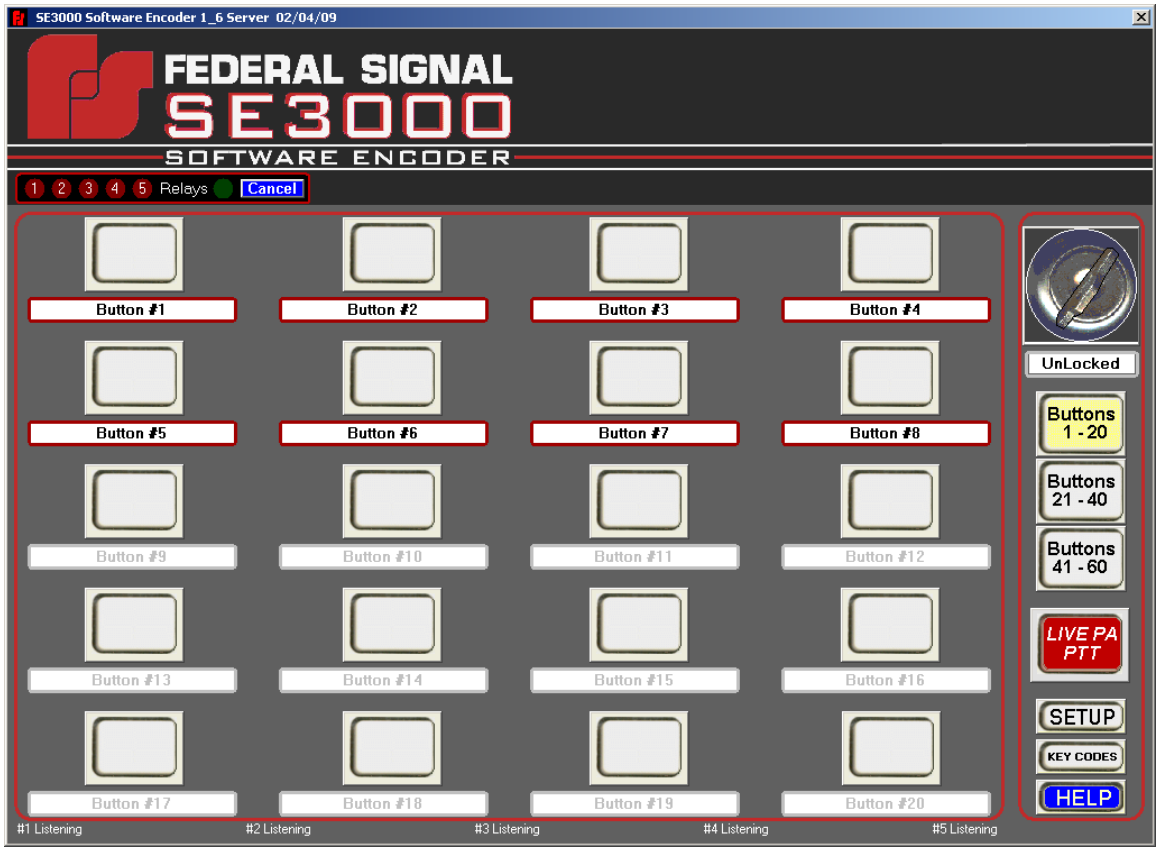
MODEM-MTG-KIT Mounting Bracket for the Modem-MSK. Includes 12V DC Vehicle power plug

Operating Requirements

Personal Computer with:

- MS Windows XP® operating system
- CD ROM drive
- 30MB free Hard drive space
- PCI card slot if I/O card is required
- USB Port or RS232 port
- Mouse

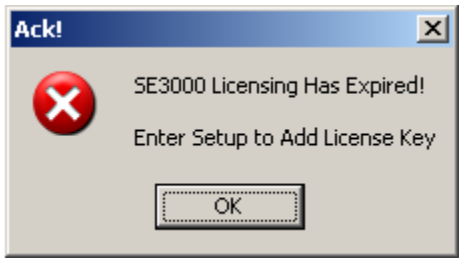
SE3000 Server / Encoder Main Screen Layout



Software Instructions / Server

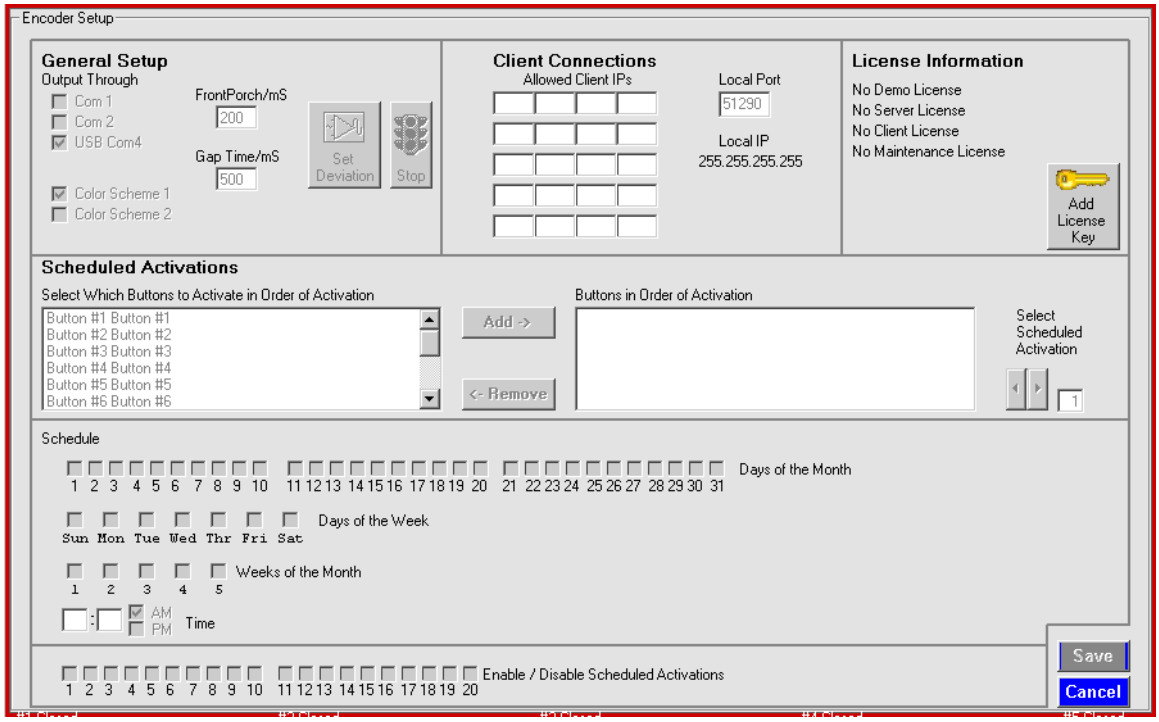
First Time Start-up / Adding License Keys

The software will display this message the first time it is started. One or more license keys will have to be added to enable the software to work.



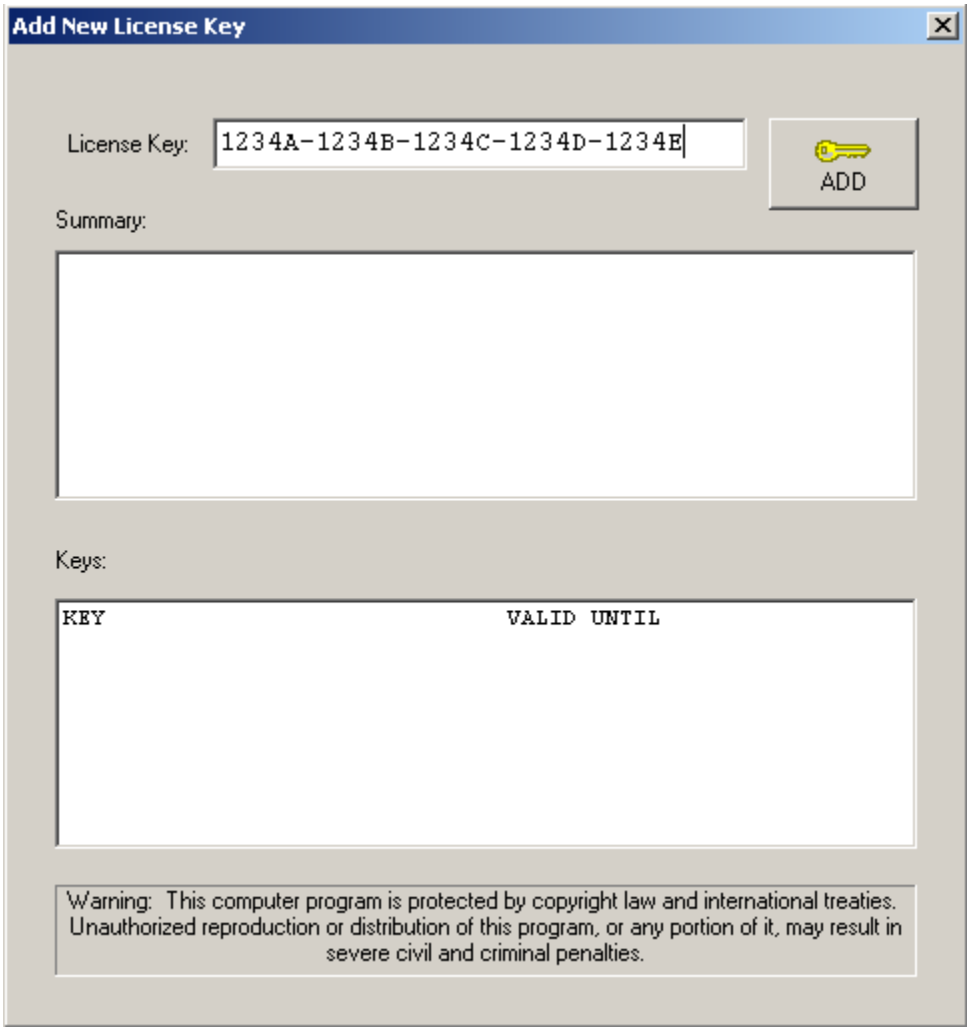
Click OK on the message then Click on the “Setup” button.

The Setup Screen will appear;



Click on “Add License Key”.

Enter the key and click “ADD”. If you have more than one key, repeat this for the next key.



When all of the keys are added, click on the “X” in the upper right to close this form.

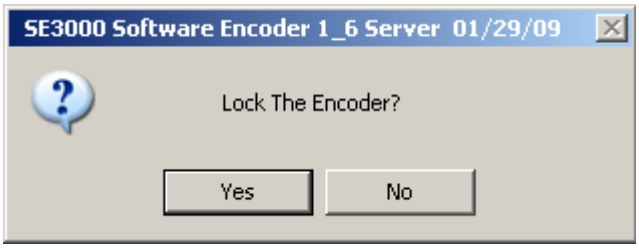
Unlocking the Encoder

When the SE3000 Program is started it will come up in a locked state.

To unlock the encoder, click on the Key-Switch symbol and a Key Code entry box will pop up. Enter the Master Key Code or the user defined Key Code if one has already been setup. The default Master Key Code is: 2135.

Click on the “Enter” button.
The labels of the buttons that have not been programmed will remain grayed out. Buttons that the key code does not have permission to use will be disabled.

To lock the encoder, Click on the Key-Switch and the Click on the “Yes” button.



Programming Key Codes

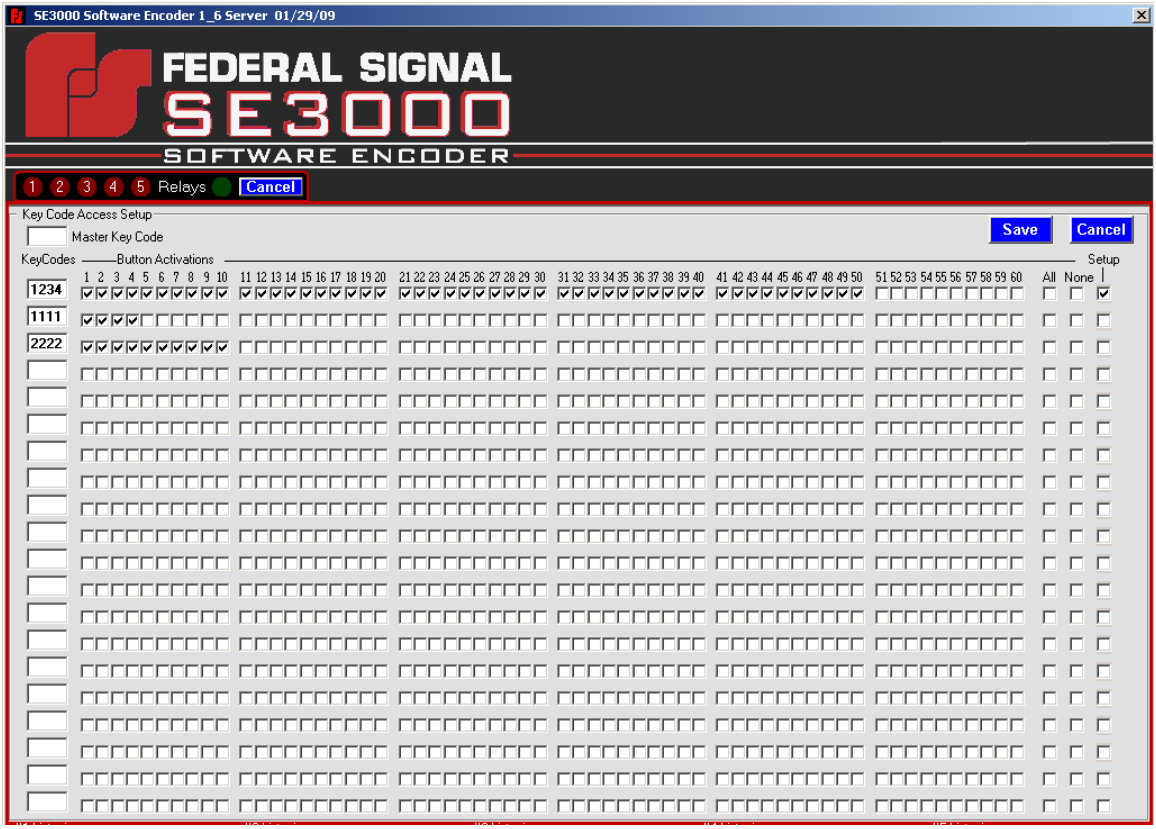
To setup the Key Codes, click on the “Key Codes” button.

A Key Code Setup pop up will appear.

Enter the Master Key Code in the entry box and click on the “Enter” button. Only the Master Key Code can open the Key Code setup.

The Master Key Code

The entry box in the upper left-hand corner of the setup form is for the Master Key Code. If the master Key Code needs to be changed, enter the new Master Key Code here. The Master Key Code will not be changed until the “Save” button has been clicked.



Adding New Key Codes

Up to 20 additional Key Codes can be entered. To add a new Key Code, Enter the Key Code in the entry box at the left. The Key Code must be four numbers long.

Select which buttons this Key Code is allowed to activate, if any. The “All” or “None” check boxes at the right will select all or none of the buttons respectively.

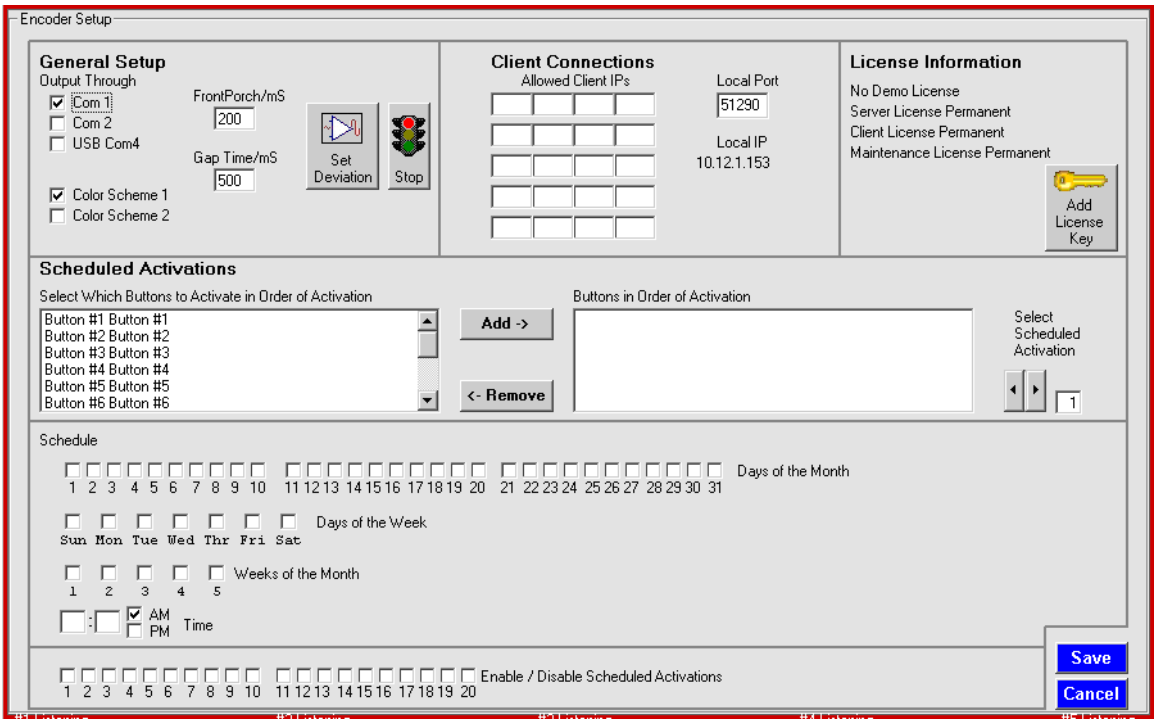
The Setup check box at the right allows this Key Code to be able to change the encoder’s general encoder setup parameters, and the codes that are configured for each button.

Finally, when all of the Key Codes are entered click the “Save” button.

Changing the Setup

Click on the “Setup” button.

If the Key Code used to unlock the encoder has permission to change the setup, the Encoder setup menu will appear.



If not, you will have to lock the encoder then unlock it with an appropriate Key Code.

General Setup Parameters

Output Selection: Com1 / Com2 / USB

The sound data is streamed out either serial ports “Com 1”, or “Com 2”, or through a USB port. The Com port or USB port would be connected to a Federal Signal MSK Modem which converts the data into audio and feeds it to a transceiver.

Click on the appropriate check box for the type of output required.

Front Porch

The “Front Porch” is how long the encoder will key up it’s transmitter before it starts to send the encode signal. It takes some time for a transmitter to come up to full power and for the receivers to open up. This

can take even longer if the radios are working through a repeater. You want to wait, giving this time to happen before you start sending the encode signal. The front porch is usually about 200 mS (2/10 of a second) if the radios are not working through a repeater and about 500 mS if they are working through a repeater.

Inter-Code Gap Time

The “Gap Time” is how long of a pause the encoder will put between the codes programmed for a button. This is usually set for 500 mS (1/2 of a second), but should never be set less than this.

Set Deviation

Clicking on the “Set Deviation” button will cause the encoder to generate a 8 second 1000 Hz tone. If a transmitter and MSK Modem are being used, this can be used to set the deviation level of the transmitter.

If the sound card is being used, the “Sound Card Output Level” slider can be used to set the level. This slider control only works for the sound card output not the MSK Modem.

The “Stop” button will turn off the tone.

Changing the Color Scheme

There are two color schemes available. “Color Scheme 1” will select the red/black/silver color scheme. “Color Scheme 2” will select the brown/beige/green color scheme. The color scheme will not change until the “Save” button has been clicked.

Save / Cancel

When all of the encoder setup parameters are set, click on the “Save” button to save the settings.

Client Connection Setup

Allowed Client IPs

The fixed IP addresses of any clients that will connect to this server / encoder need to be entered here. If all of the fields are empty then the server / encoder will allow a client from any IP address to connect.

Local Port

This port number (usually 51290) plus the next four port numbers are the port numbers that the server / encoder will watch for traffic from clients. If

the server and clients are on a secure network with a firewall, these port numbers will have to be allowed by the network administrator.

License Information

This displays the license information for this install. The “Add License Key” button can be used to add or upgrade license keys.

Scheduled Activations

To create a scheduled activation;
First, select which buttons you want to have activated in the order they are to be activated. This is done by clicking on the desired button and clicking the “ADD” button or double clicking on the desired button.

Next, select the day or days on which this the activation is to happen. You can select particular days of the month (1^{st} – 31^{st}) OR you can select to have the activation happen on a particular day of the week. Activations set for particular days of the month will happen every month unless they are disabled.

If days of the week are selected, you will need to select which weeks of the month. If you want an activation on the second Tuesday of the month then select Tuesday for the day of the week and “2” for weeks of the month. If you want the activation to happen every week, select “1” through “5” for weeks of the month.

Next, enter the time at which the activation is to happen.

When this is done, you can use the “Select Scheduled Activation” button at the right to change to the next scheduled activation. These arrows can be used to move forwards and backwards through the scheduled activations to review or edit them. Up to twenty scheduled activations can be programmed.

Finally, at the bottom you will need to select which scheduled activations are enabled. Then be sure to click “Save” or none of the changes made will be saved.

Selecting Which Bank or Page of Buttons

The encoder has 60 buttons that can be configured to send out codes. At the right are three buttons used to select which page of buttons to use. Button “1-20” selects the first bank of 20 buttons. Button “21-40” selects the second bank of 20 buttons. Button “41-60” selects the last bank of 20 buttons.

Configuring a Button

To configure the codes to be sent for a button, Right click on the button. This will bring up the “Button Configuration” form.

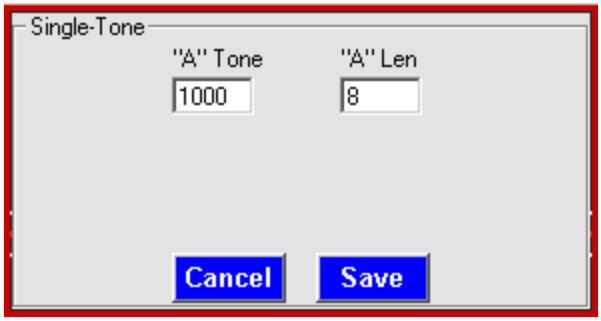
Button Name

Enter the name for the button in the entry box of at the top of the “Button Configuration” form. Limit up to 19 characters.

Select a Code Type

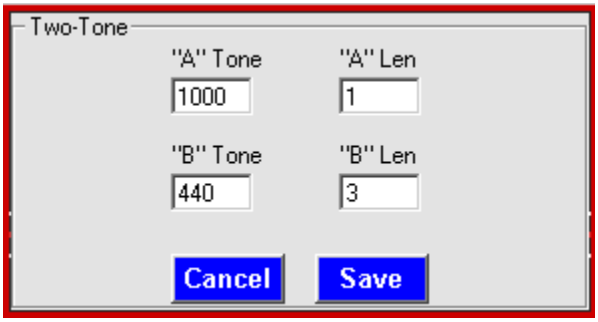
Use the drop-down menu to select the type of code to be sent.

Single Tone



Enter the frequency of the Single Tone to be sent in the “A” Tone entry box. Entry must be between 300-3000Hz. Enter the duration in seconds of the Single Tone in the “A” Len entry box.
Click on “Save” to save this code.

Two-Tone

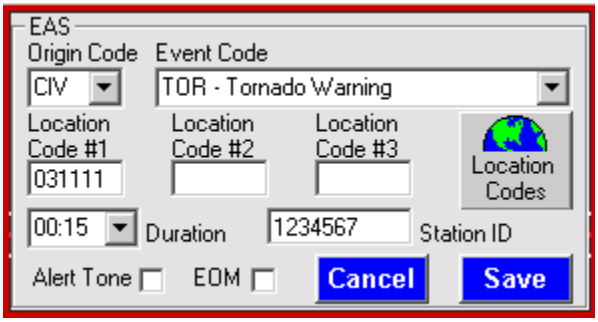


Enter the frequency of the first tone to be sent in the “A” Tone entry box. Entry must be between 300-3000Hz. Enter the duration in seconds of the first tone in the “A” Len entry box. Enter the frequency of the second tone to be sent in the “B” Tone entry box. Entry must be between 300-3000Hz. Enter the duration in seconds of the second tone in the “B” Len entry box.
Click on “Save” to save this code.

DTMF

Enter the DTMF code (up to 16 digits) to be sent in the entry box.
Enter the duration of the individual DTMF digits in the “DTMF Time/mS” entry box. This is usually set for 50 to 100 mS.
Enter the duration of the pause between DTMF digits in the “Gap Time/mS” entry box. This is usually 50 to 100 mS.
Click on “Save” to save this code.

EAS



<u>If the code is to be an activation code:</u>
The origination code indicates the authority that is sending the EAS alert. This is usually set for “CIV” which indicates civilian authority. Use the “Origination Code” drop down menu to select the appropriate origination code.

EAN - Emergency Action Notification Network
EAS - Broadcast station or cable system
CIV - Civil authorities
PEP - Primary Entry Point System
WXR - National Weather Service

Use the “Event Code” drop down menu to select the type of event warning being sent.

ADR - Administrative Message
AVA - Avalanche Watch
AVW - Avalanche Warning
BZW - Blizzard Warning
CAE - Child Abduction Emergency
CDA - Civil Danger Watch
CDW - Civil Danger Warning
CEM - Civil Emergency Message
CFA - Coastal Flood Watch
CFW - Coastal Flood Warning
DMO - Practice/Demo Message
DSW - Dust Storm Warning
EAN - Emergency Action Notification
EAT - Emergency Action Termination
EQW - Earthquake Warning
EVI - Evacuation Immediate
FFS - Flash Flood Statement
FFA - Flash Flood Watch
FFW - Flash Flood Warning
FLS - Flood Statement
FLA - Flood Watch
FLW - Flood Warning
FRW - Fire Warning
HLS – Hurricane Statement
HMW - Hazardous Material Warning
HUA - Hurricane Watch
HUW - Hurricane Warning
HWA - High Wind Watch
HWW - High Wind Warning
IEW - Immediate Evacuation Warning
LAE - Local Area Emergency
LEW - Law Enforcement Warning
NIC - National Information Center
NMN - Network Message Notification
NPT - National Periodic Test

NUW - Nuclear Power Plant Warning
RHW - Radiological Hazard Warning
RMT - Required Monthly Test
RWT - Required Weekly Test
SMW - Special Marine Warning
SPS - Special Weather Statement
SPW - Shelter-In-Place Warning
SVS - Severe Weather Statement
SVA - Severe Thunderstorm Watch
SVR - Severe Thunderstorm Warning
SVW - Severe Thunderstorm Warning
TOA - Tornado Watch
TOE - 911 Telephone Outage Emergency
TOR - Tornado Warning
TOW - Tornado Warning
TRA - Tropical Storm Watch
TRW - Tropical Storm Warning
TSA - Tsunami Watch
TSW - Tsunami Warning
VOW - Volcano Warning
WSA - Winter Storm Watch
WSW - Winter Storm Warning

Enter the location code in the “Location Code #1” entry box. Additional location codes can be entered in the “Location Code #2” and the “Location Code #3” entry boxes. The “Location Codes” button can help you find the code for all US states and provinces

Select the duration of the event from the “Duration” drop-down box then enter the “Station ID” for this activation.

<u>If the code is to be an EAS Alert tone:</u>

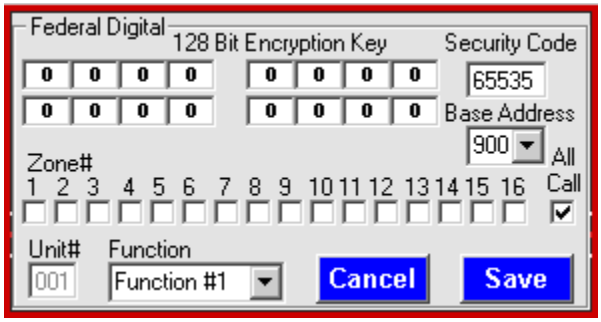
If the “Alert Tone” check box is selected, an EAS alert tone only will be sent for this code.

<u>If the code is to be an End Of Message code:</u>

If the “EOM” check box is selected, an End Of Message signal only will be sent for this code.

An EAS transmission will usually consist of an activation containing the event code in one code followed by an alert tone or a wave file containing a voice message in the next code, then an EOM in the last code. Then when the codes for that button are sent the three codes will go out in sequence, i.e. Activation, message, EOM. Click on “Save” to save this code.

Federal Digital



Enter the 128 bit Encryption Key in the 16 Encryption key entry boxes. A “0” entered in each box equals no encryption.

Enter the Security Code in the “Security Code” entry box.
A security code of “65535” equals no security.

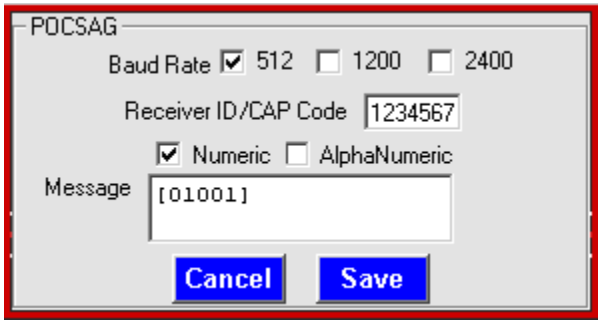
Select the “Base Address” from the drop-down box. This is required because a Federal Signal digital system can have more than one base.

If this code is intended for a specific zone, then click on the check box for the desired zone. If it is intended for all zones then click on the “All Call” check box.

If the code is intended for a specific unit number then enter the unit number in the “Unit #” entry box. No unit number is needed for an “All Call” code.

Select the function that is to be performed when this code is received from the “Function” drop down menu.
Click on “Save” to save this code.

POCSAG



POCSAG codes contain very low frequencies (down to 5 Hz). Because of this the POCSAG encode will only work with MSK Modem with the output jumpers set to “Direct”. The modem must be connected to a transmitter with an input capable of coupling these low frequencies.

Use the check boxes to select the baud rate of the POCSAG signal (512, 1200 or 2400).
Enter the receiver’s ID or “CAP Code” in the “Receiver ID/CAP Code” entry box.

Select the message type to be sent using either “Numeric” or “Alphanumeric”.

A Numeric message can contain:

Displayed Character
0
1
2
3
4
5
6
7
8
9
Spare
U (urgent)
Space
Hyphen
]
[

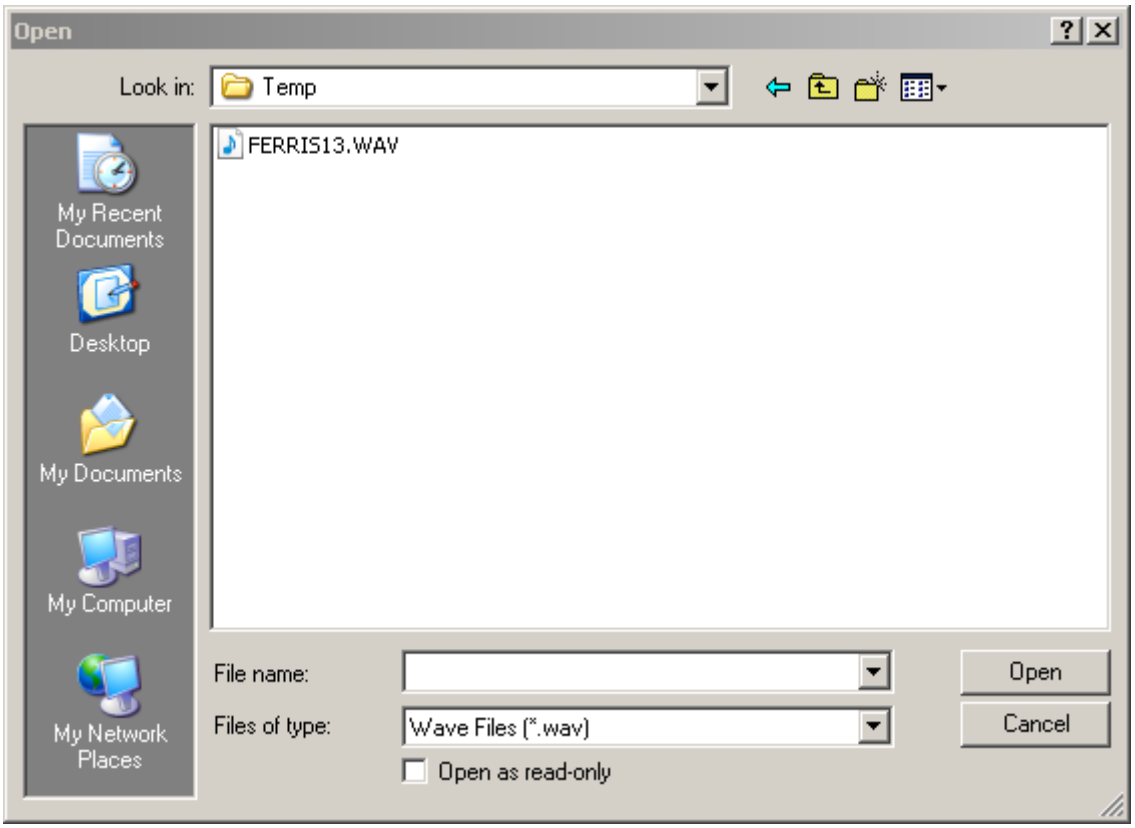
An Alphanumeric message can contain:

NUL	DLE	SP	0		P		p
SOH	DC	!	1	A	Q	a	q
STX	DC	"	2	B	R	b	r
ETX	DC	#	3	C	S	c	s
EOT	DC	$	4	D	T	d	t
ENQ	NAK	%	5	E	U	e	u
ACK	SYN	&	6	F	V	f	v
BEL	ETB	'	7	G	W	g	w
BS	CAN	(	8	H	X	h	x
HT	EM	)	9	I	Y	i	y
LF	SUB	*	:	J	Z	j	z
VT	ESC	+	;	K		k	
FF	FS	,	<	L		l	
CR	GS	-	=	M		m	
SO	RS	.	>	N	^	n	
SI	US	/	?	O	_	o	DEL

Enter the message to be sent in the “Message” entry box.

Click on “Save” to save this code.

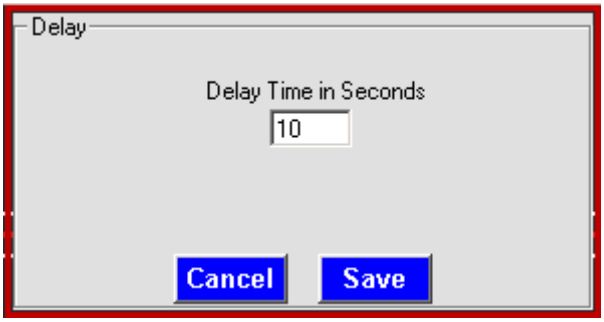
Wave File



When “Wave File” is selected, a file browser will appear which will allow you to find the wave file you want to send.

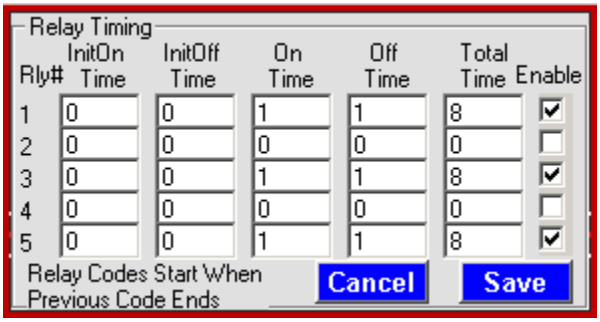
The encoder works with 8 bit, Mono, 11025 sample rate files. The encoder can convert Mono or Stereo files of 8 or 16 bits with sample rates from 22050 to 44100 samples per second. But the file will sound best if it does not have to be converted.

Delay

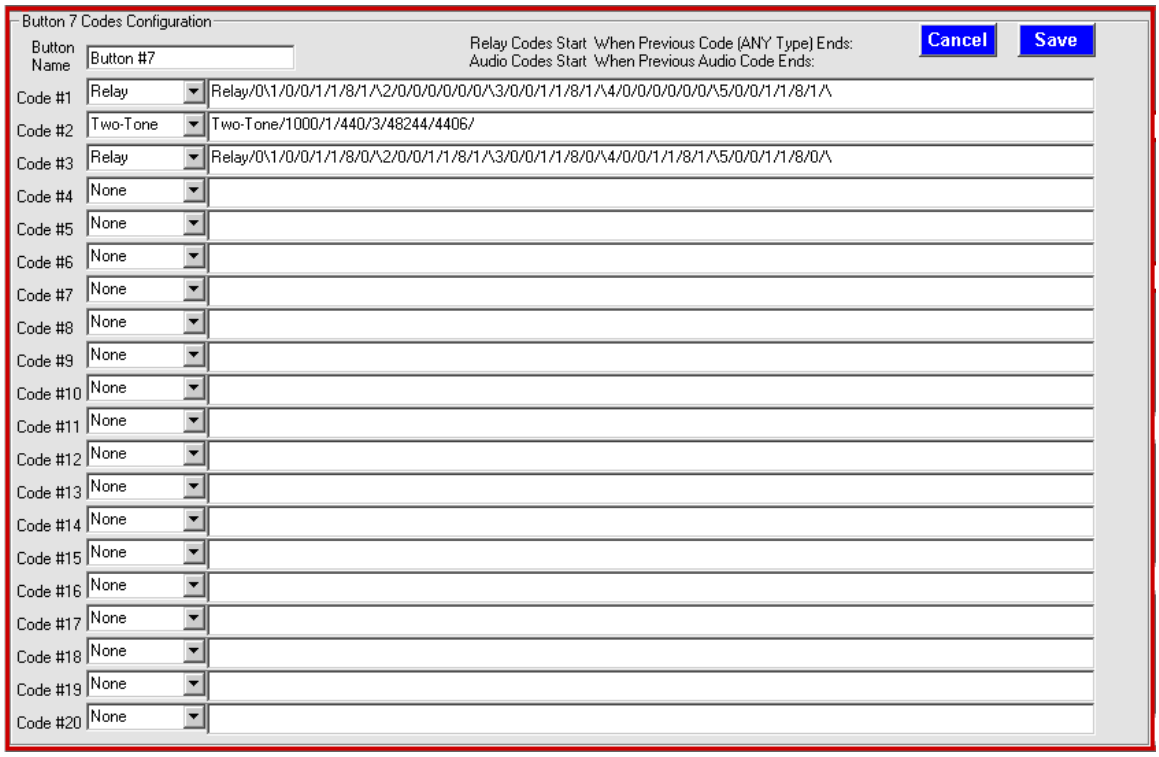


The “Delay” code allows you to insert a pause of given duration between codes being sent.
Enter the duration of the pause in the “Delay Time in Seconds” entry box.
Click on “Save” to save this code.

Relay Outputs / If I/O Card is Installed



The relay outputs allow you to close relays and activate external equipment. The relays can be programmed to come on steady for a set time or cycle. The relays can be set to activate in sequence with the other codes stacked in a button’s configuration. The I/O card provides 5, form C (SPDT) relay outputs rated for 6A at 120VAC or 28VDC (resistive).



When the encoder is executing the codes configured for a button and it finds a “Relay” code, the encoder will wait until the previous code has finished before starting the relay code.

If the previous code is an audible code (a sounding code, not relay) the encoder waits until this code has finished before starting the relay code. If the previous code was a relay code the encoder waits until this relay code has ended before starting the relay code.

When the encoder finds an audible code (a sounding code, not relay), the encoder will wait until the previous audible code has finished sounding before starting it.

Audible codes do not wait for a previous relay code to finish. So, as in the case above, the audible code (Code #2) and the relay code (Code #1) will start at the same time. When the audible code (Code #2) has finished the encoder will start Code #3 because Code #3’s previous code has finished.

Code #3 and Code #1 are both relay codes. If Code #1 has not finished when Code #3 is started, Codes #3 will start anyway because Code #3’s previous code has finished.

If Code #1 and Code #3 use the same relay then the relay will start running Code #3. If Code #1 and Code #3 use different relays then Code #1 will continue to run it's relay and Code #3 will run it's relay.
Any relay codes that are running are canceled if the "Send" button is clicked.

Remote Activation Inputs / If I/O Card is Installed

The I/O card provides 8 isolated inputs that are activated by a DC, 5 to 28 Volt input. Inputs number 1 through 8 activate buttons 1 through 8 of the encoder program.

Save / Cancel
Click on "Save" to save the codes configured for this button.
The label for buttons which have not been programmed are grayed out.
If the current key code does not have permission to activate a button it is disabled.

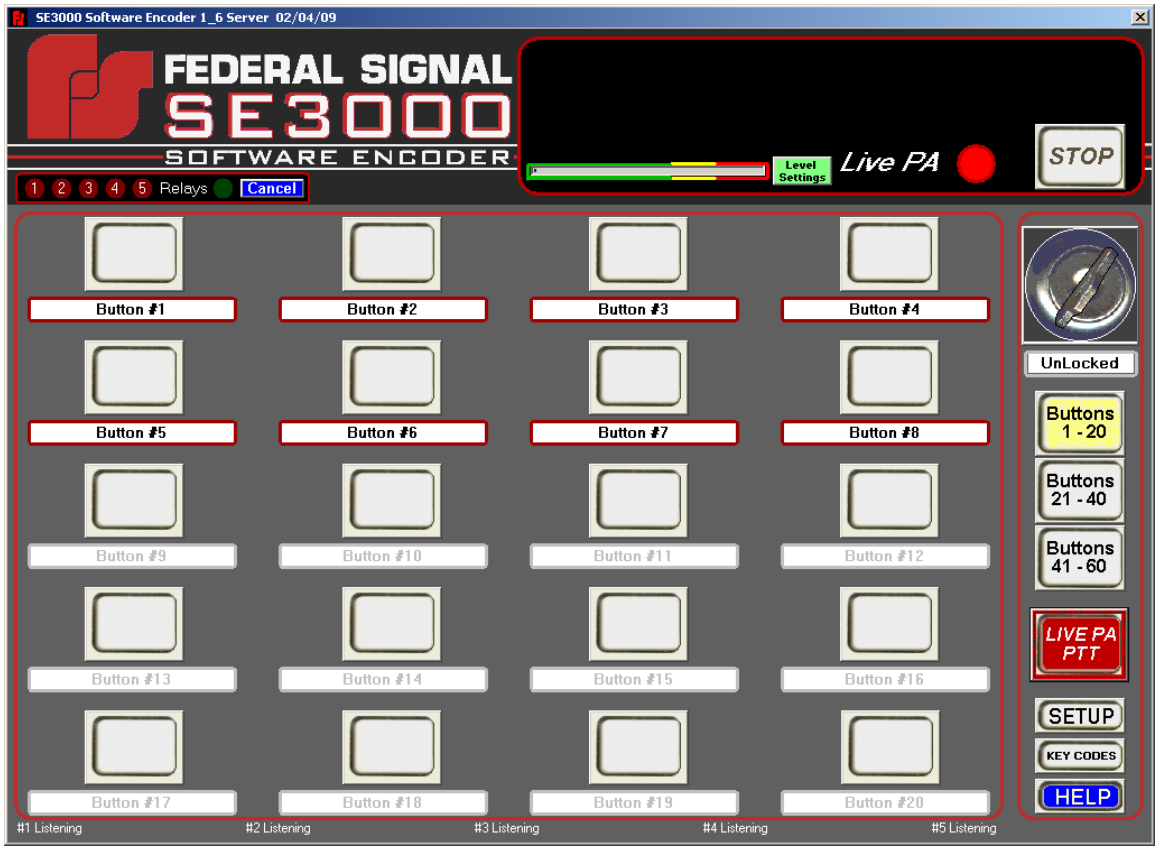
Activating a Button

Click on the button or buttons to be sent. Buttons can be selected from any or all of the three pages of buttons. As each button is selected it is added to the "Send Queue" which appears at the top of the encoder screen. The button is also highlighted indicating that is waiting to be sent.

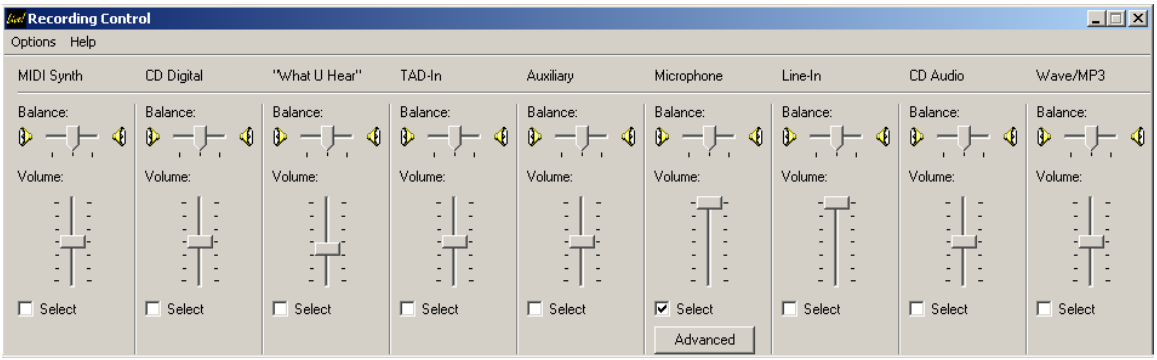
When all of the buttons have been selected, clicking on the "Send" button will cause the encoder to start sending the codes. The name of the button will appear below the "Send Queue" when it is being sent. Clicking the "Stop" button will end the process.

Using Live PA

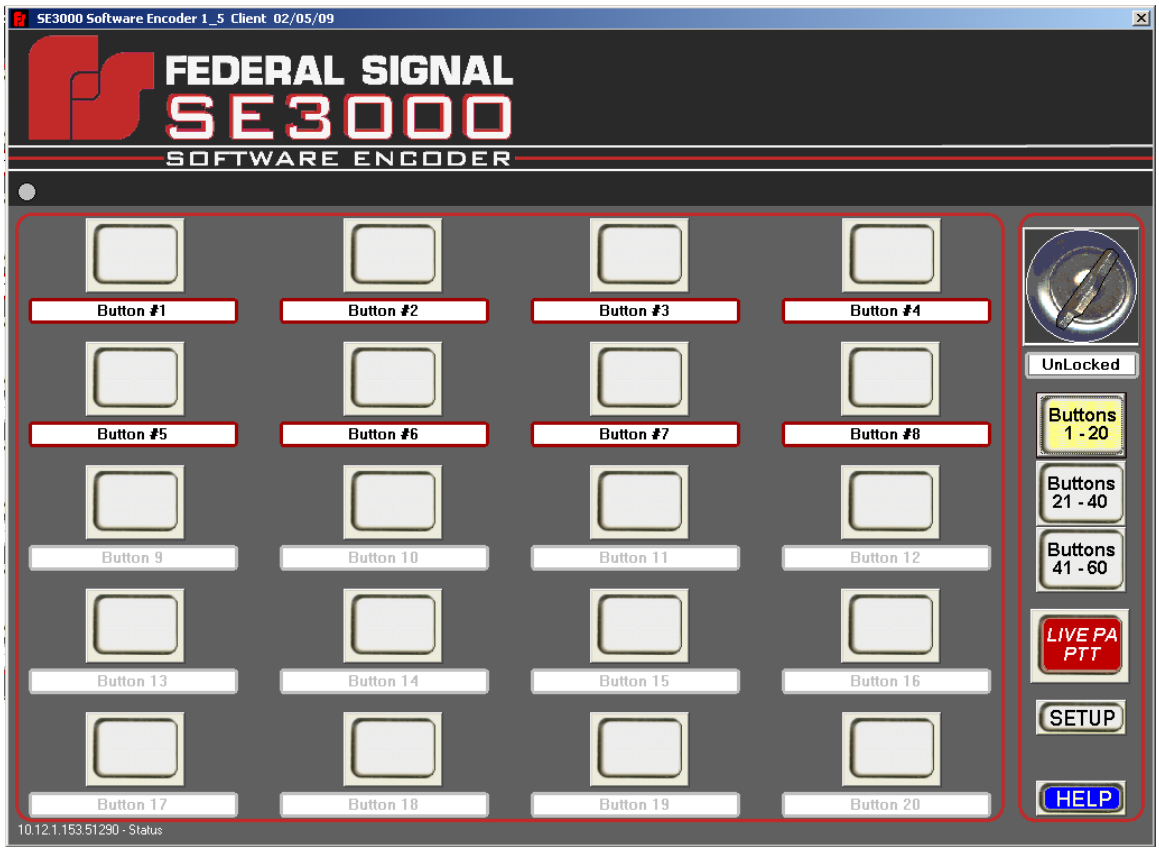
The “Live PA PTT” button will send audio captured from a mic plugged into the PC to the MSK modem board sent out over the transmitter. A button will need to be configured with a code to put the RTU’s in “Live PA” mode. This button is sent then, the “Live PA PTT” button is clicked to begin sending audio to the RTUs.



Clicking on the “Level Setting” button will bring up the PC’s mixer panel and allow you to select which input to use as well as set the level.


Recording Control
Options Help
MIDI Synth
CD Digital
"What U Hear"
TAD-In
Auxiliary
Microphone
Line-In
CD Audio
Wave/MP3
Balance:
Volume:
Select
Advanced

SE3000 Client / Encoder Main Screen Layout



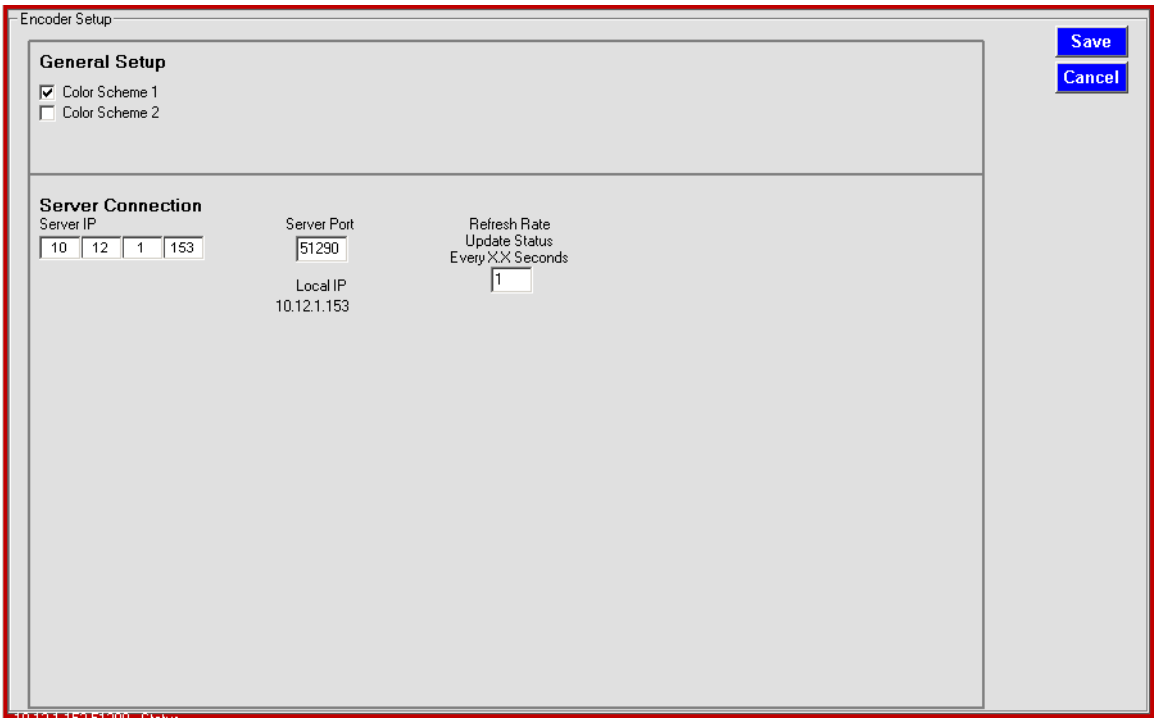
Software Instructions / Clients

The SE3000 Client software is essentially remote push buttons and display for the Server / Encoder. Anything that happens at the server, button activations or Live PA, rather they be from the server or from other clients, will be reflected in the display of the clients. When started, the client will attempt to make a connection with the server on one of it's ports. After the connection is made, the client will get updates of the status of the server at regular intervals.

First Time Start-up

Click on the "Setup" button.

The Setup Screen will appear;



Changing the Color Scheme

There are two color schemes available. “Color Scheme 1” will select the red/black/silver color scheme. “Color Scheme 2” will select the brown/beige/green color scheme. The color scheme will not change until the “Save” button has been clicked.

Server Connection / Server IP

Enter the fixed IP of the Server / Encoder.

Server Port

This port number (usually 51290) plus the next four port numbers are the port numbers that the server / encoder will watch for traffic from clients. If the server and clients are on a secure network with a firewall, these port numbers will have to be allowed by the network administrator.

Refresh Rate / Update Status

Enter how often the client will communicate with the server to update is status. This is usually set for every 1 seconds.

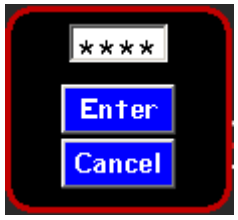
Save / Cancel

When all of the encoder setup parameters are set, click on the “Save” button to save the settings.

Unlocking the Encoder

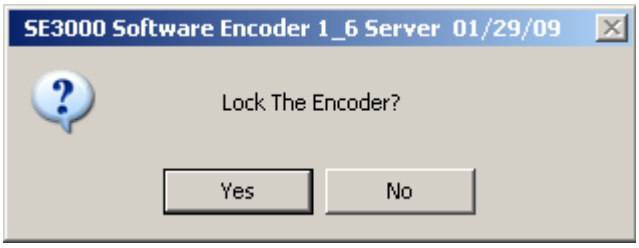
When the SE3000 Client Program is started it will come up in a locked state.

To unlock the encoder, click on the Key-Switch symbol and a Key Code entry box will pop up. A Key Code must be set up at the server for the client to use when connecting. Enter the Key Code if one has already been setup.



Click on the “Enter” button.
The client will get the button labels and the permissions for which buttons, this key code can activate from the server. The labels of the buttons that have not been programmed will remain grayed out. Buttons that the key code does not have permission to use will be disabled.

To lock the encoder, Click on the Key-Switch and the Click on the “Yes” button.



Selecting Which Bank or Page of Buttons

The client / encoder has 60 buttons that will activate the corresponding button at the server. At the right are three buttons used to select which page of buttons to use. Button “1-20” selects the first bank of 20 buttons. Button “21-40” selects the second bank of 20 buttons. Button “41-60” selects the last bank of 20 buttons.

Activating a Button

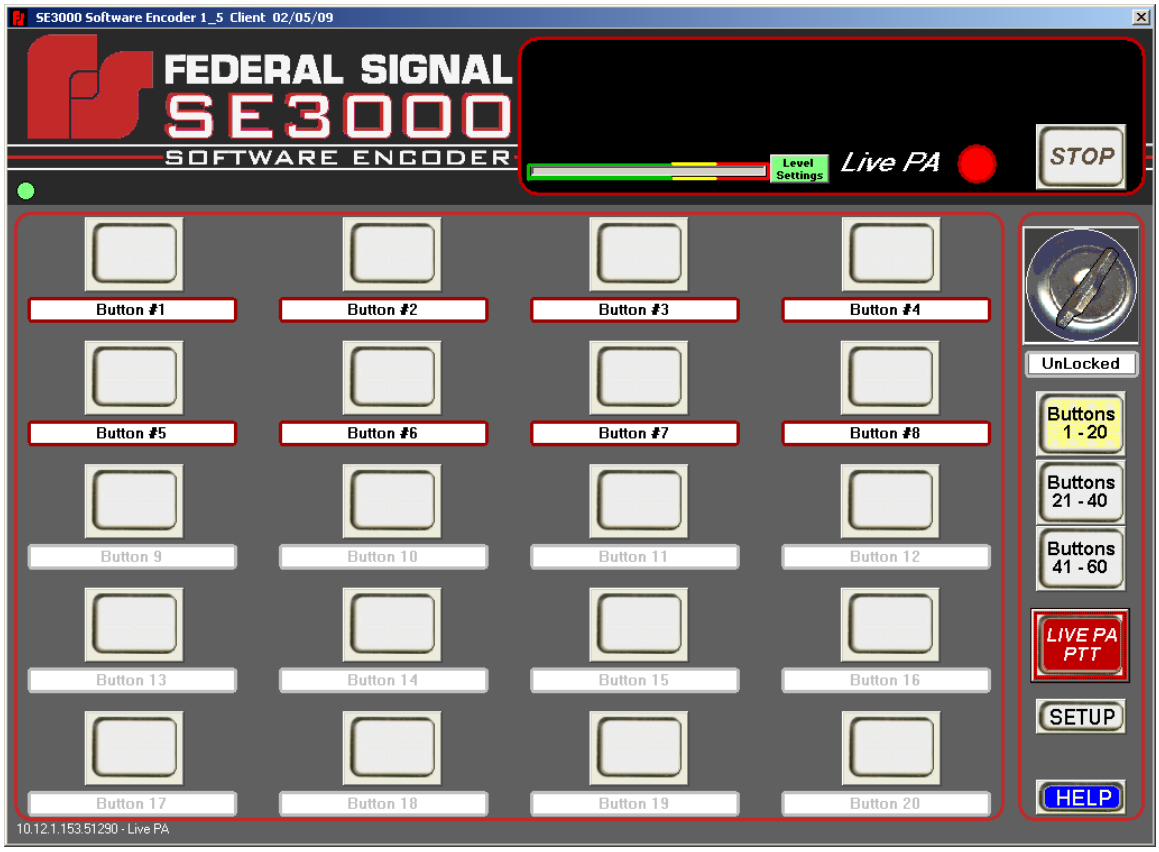
Click on the button or buttons to be sent. Buttons can be selected from any or all of the three pages of buttons. As each button is selected it is sent to the server. The server adds them to the “Send Queue” which appears at the top of the encoder screen. When the client gets an update of the server’s status it will display a “Send Queue” to match the server’s. The button is also highlighted indicating that is waiting to be sent.

When all of the buttons have been selected, clicking on the “Send” button will cause the encoder to start sending the codes. The name of the button will appear below the “Send Queue” when it is being sent. Clicking the “Stop” button will end the process.

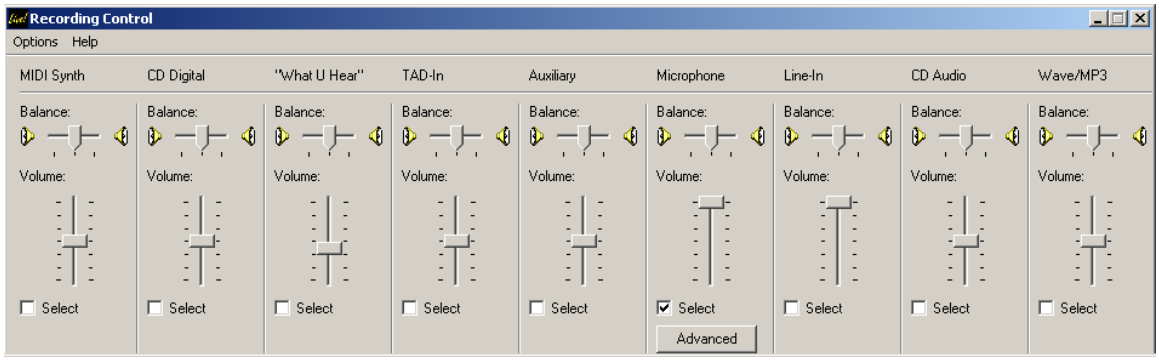
Using Live PA

The “Live PA PTT” button will send audio captured from a mic plugged into the PC back to the server which will send it on to the MSK modem board and out over the transmitter. A button will need to be configured with a code to put the RTU’s in “Live PA” mode. This button is sent then, the “Live PA PTT” button is clicked to begin sending audio to the RTUs.

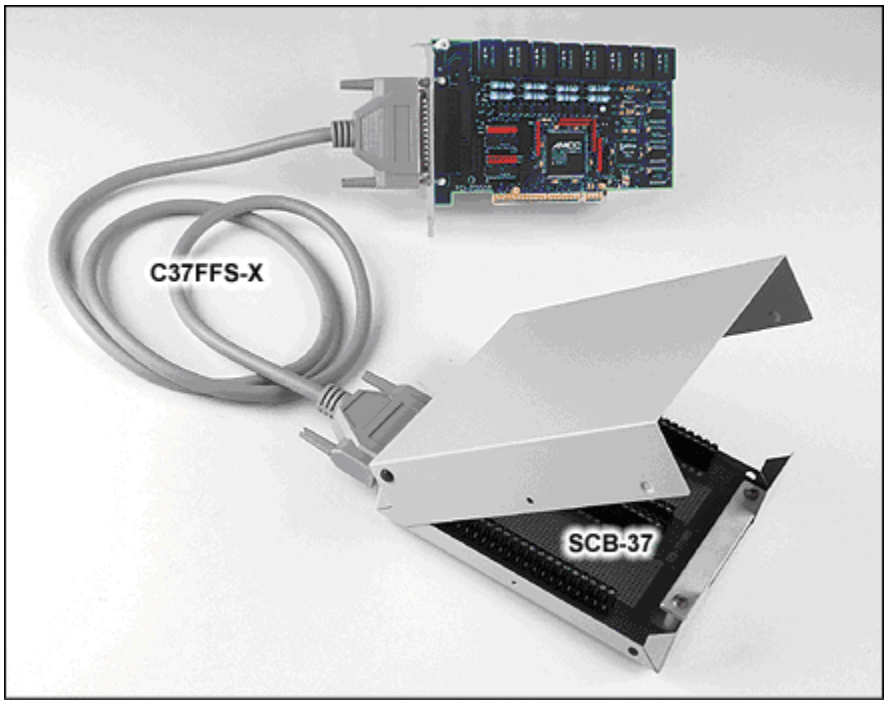
The “Live PA PTT” button will put the encoder in Live PA mode. When the button is selected the PA command is sent to the server. The server enters PA mode using this client as the source and blocking all others. When the client gets an update of the server’s status it will display a “Live PA” to match the server.



Clicking on the “Level Setting” button will bring up the PC’s mixer panel and allow you to select which input to use as well as set the level.

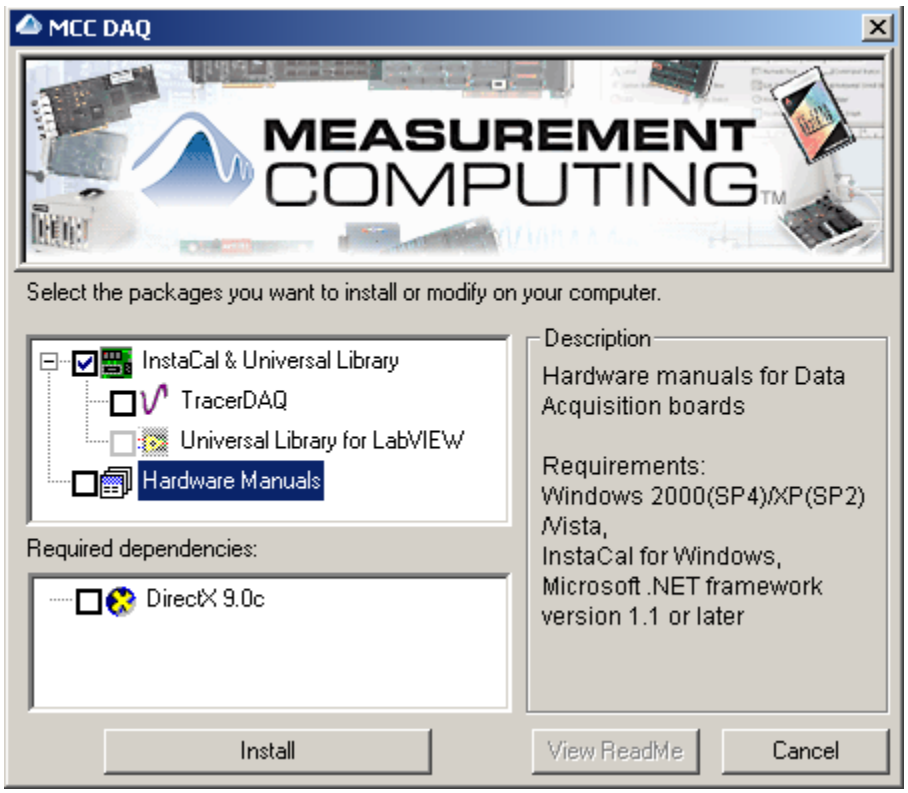


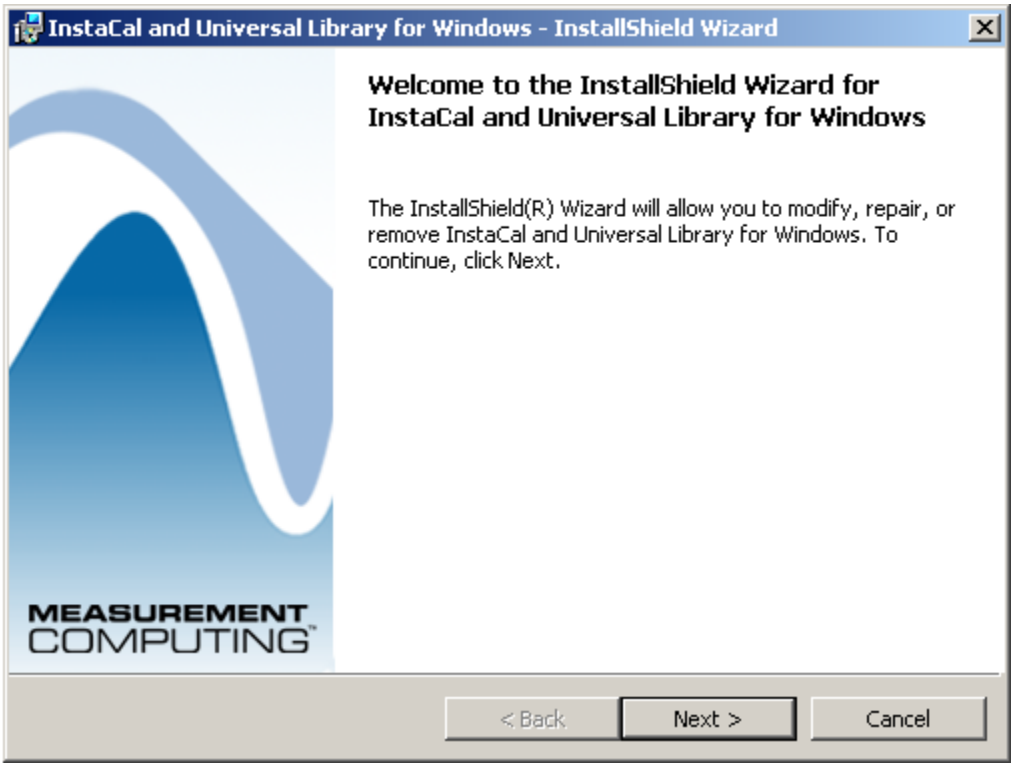
Activation Inputs And Relay Outputs

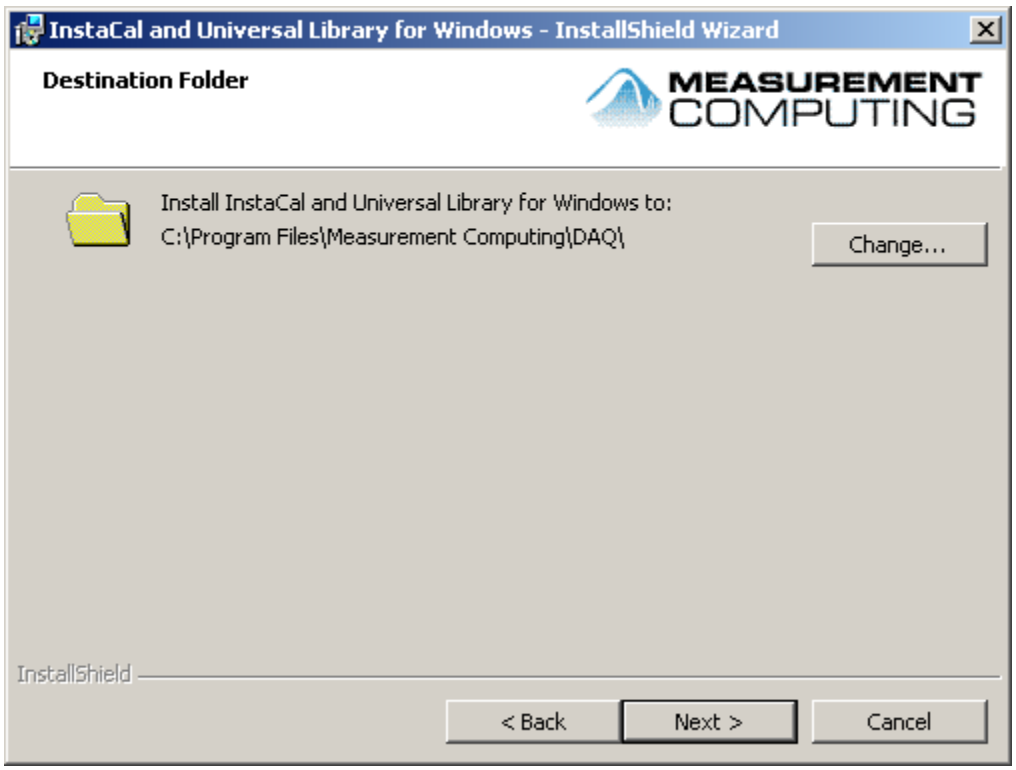


Installing the Driver Software

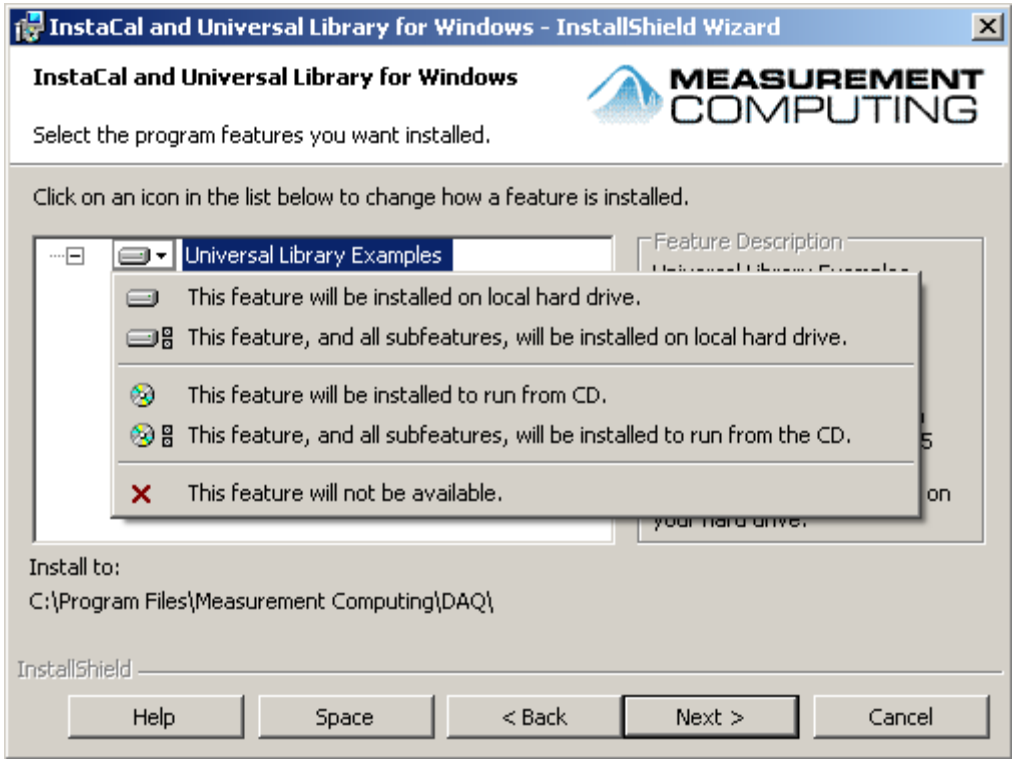
The driver needed to run your board is installed with the MCC DAQ software. Therefore, you need to install the MCC DAQ software before you install your board. You will need to install the “InstaCal & Universal Library”. The rest of the install features won’t be needed.

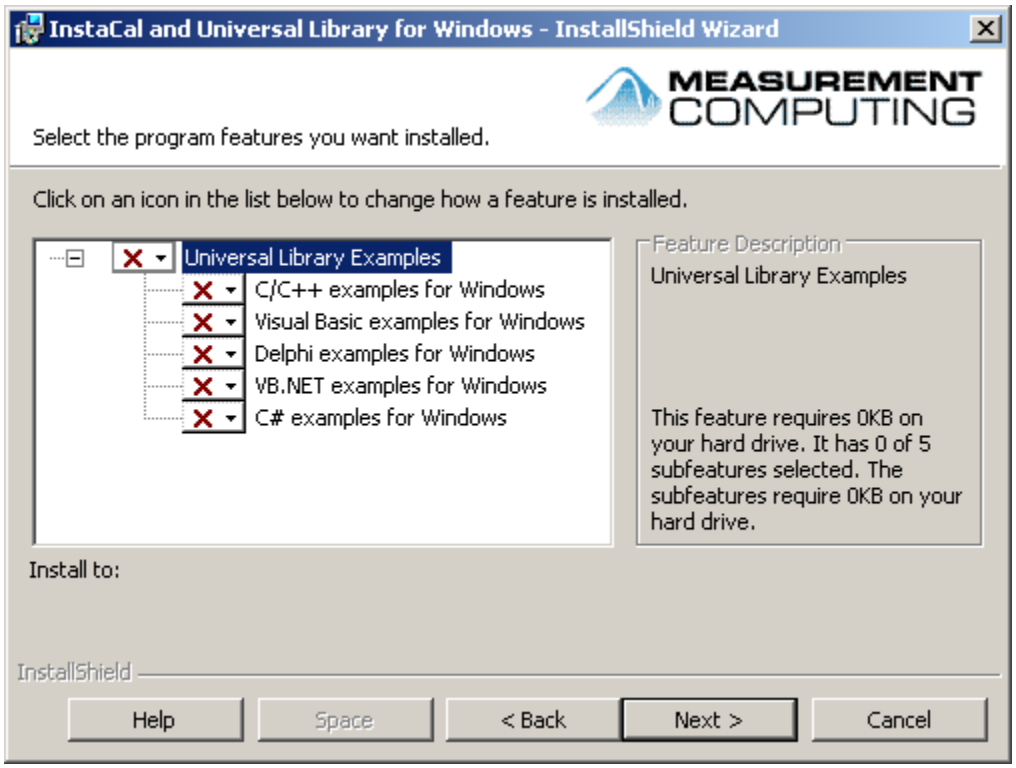

MCC DAQ
MEASUREMENT COMPUTING
Select the packages you want to install or modify on your computer.
InstaCal & Universal Library
TracerDAQ
Universal Library for LabVIEW
Hardware Manuals
Description
Hardware manuals for Data Acquisition boards
Requirements:
Windows 2000(SP4)/XP(SP2) /Vista,
InstaCal for Windows,
Microsoft .NET framework version 1.1 or later
Required dependencies:
DirectX 9.0c
Install
View ReadMe
Cancel

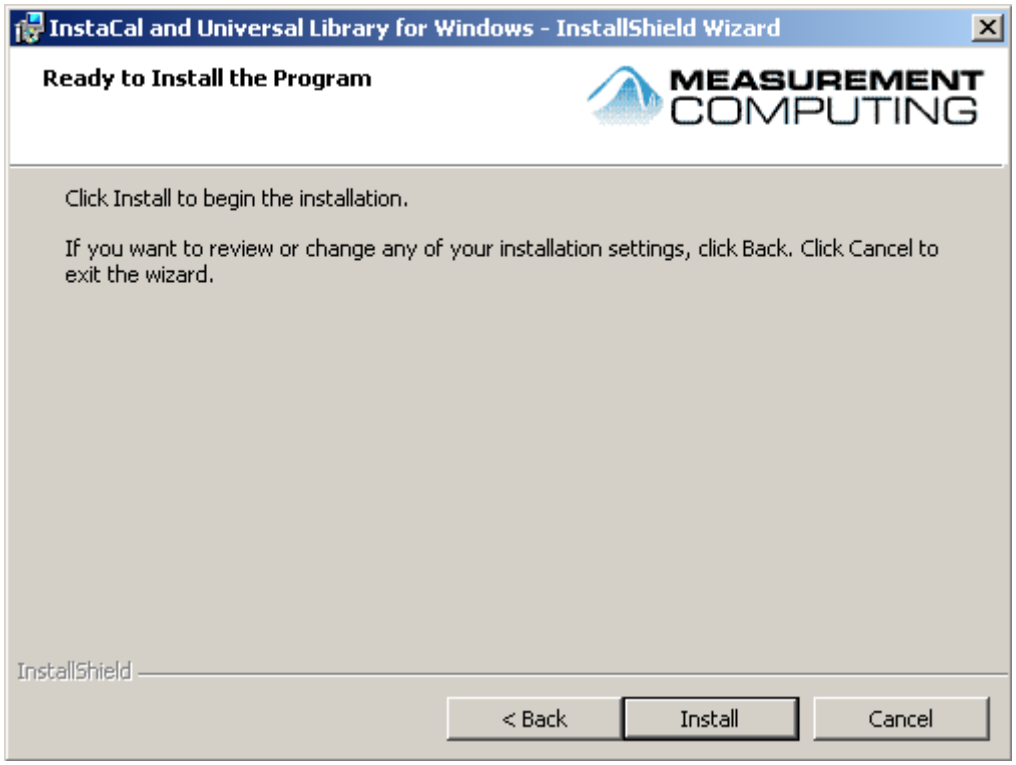

InstaCal and Universal Library for Windows - InstallShield Wizard
Welcome to the InstallShield Wizard for InstaCal and Universal Library for Windows
The InstallShield(R) Wizard will allow you to modify, repair, or remove InstaCal and Universal Library for Windows. To continue, click Next.
MEASUREMENT COMPUTING
< Back
Next >
Cancel

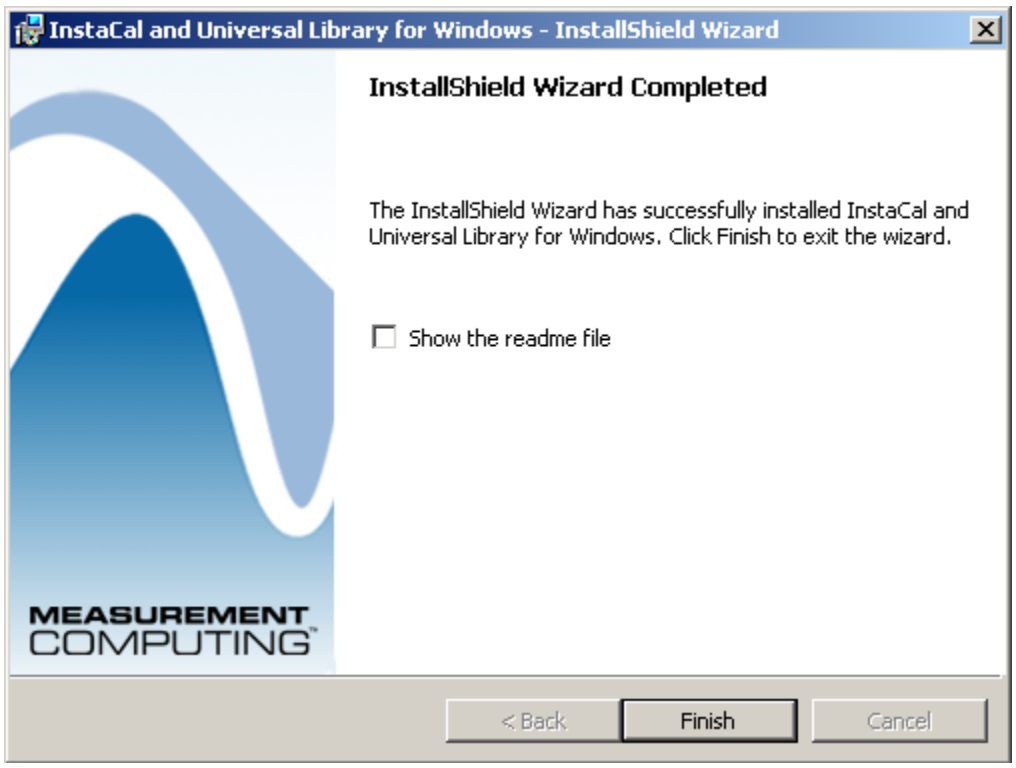


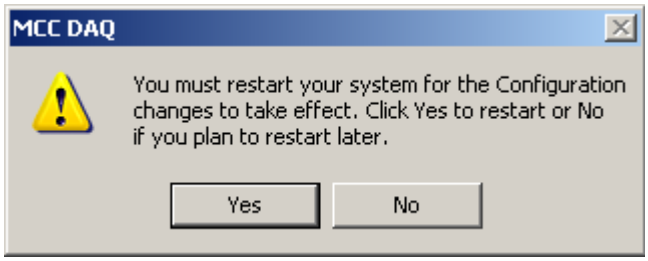
Click on the "Universal Library Examples" and select the red "X", "This Feature will not be available".




InstaCal and Universal Library for Windows - InstallShield Wizard
MEASUREMENT COMPUTING
Select the program features you want installed.
Click on an icon in the list below to change how a feature is installed.
Universal Library Examples
C/C++ examples for Windows
Visual Basic examples for Windows
Delphi examples for Windows
VB.NET examples for Windows
C# examples for Windows
Feature Description
Universal Library Examples
This feature requires 0KB on your hard drive. It has 0 of 5 subfeatures selected. The subfeatures require 0KB on your hard drive.
Install to:
InstallShield
Help
Space
< Back
Next >
Cancel


InstaCal and Universal Library for Windows - InstallShield Wizard
Ready to Install the Program
MEASUREMENT COMPUTING
Click Install to begin the installation.
If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.
InstallShield
< Back
Install
Cancel

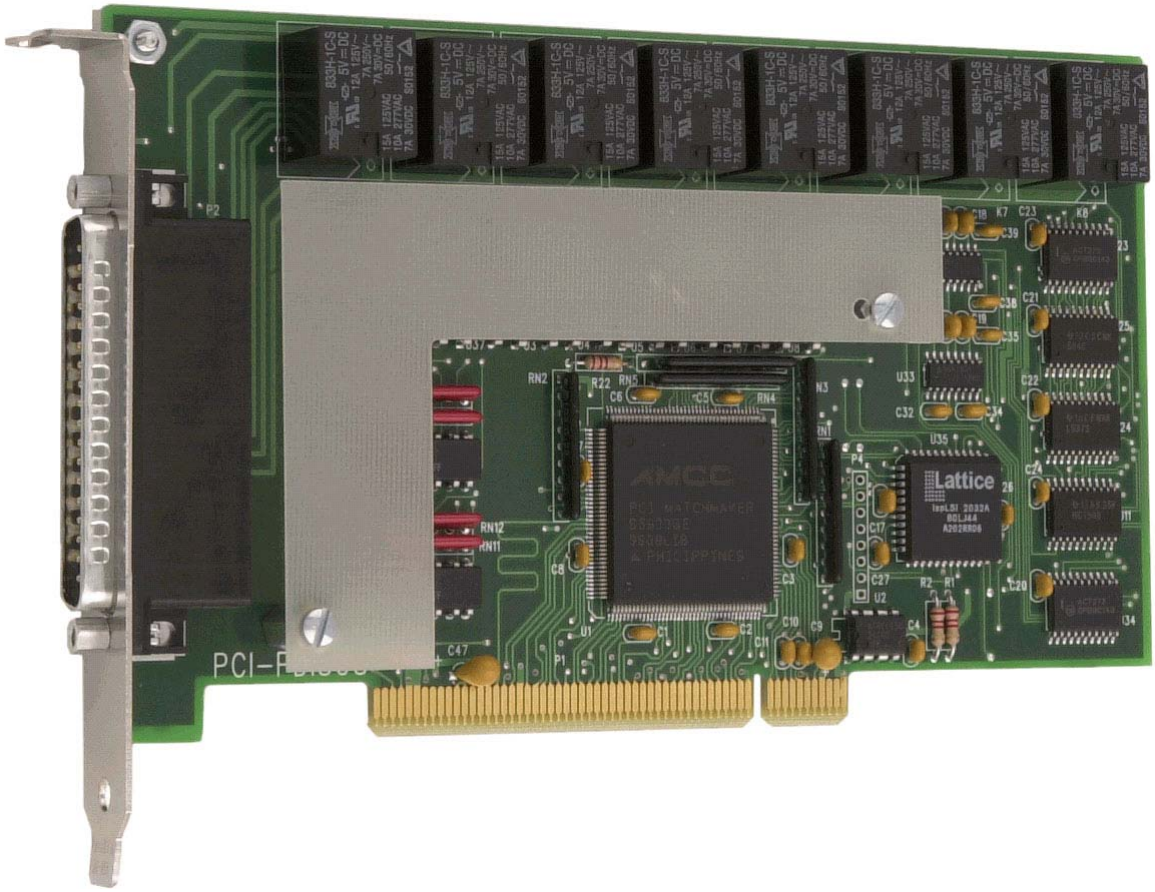

InstaCal and Universal Library for Windows - InstallShield Wizard
InstallShield Wizard Completed
The InstallShield Wizard has successfully installed InstaCal and Universal Library for Windows. Click Finish to exit the wizard.
Show the readme file
MEASUREMENT COMPUTING
< Back
Finish
Cancel


MCC DAQ
You must restart your system for the Configuration changes to take effect. Click Yes to restart or No if you plan to restart later.
Yes
No

Installing the hardware

The PCI-PDISO8 board is completely plug-and-play. There are no switches or jumpers to set on the board. Configuration is controlled by your system's BIOS. To install your board, follow the steps below.

Install the MCC DAQ software before you install your board.



1. Turn your computer off, open it up, and insert your board into an available PCI slot.

2. Close your computer and turn it on.
If you are using an operating system with support for plug-and-play (such as Windows 2000 or Windows XP), a dialog box pops up as the system loads indicating that new hardware has been detected.

If the information file for this board is not already loaded onto your PC, you will be prompted for the disk containing this file. The MCC DAQ software contains this file. If required, insert the *Measurement Computing Data Acquisition Software* CD and click **OK**.

Connections to the I/O Card

Isolated inputs

The PCI-PDISO8 has eight isolated input channels. A schematic of a single channel is shown in Figure 4-3. The signals are routed through a bridge rectifier so that the inputs are not polarity sensitive.

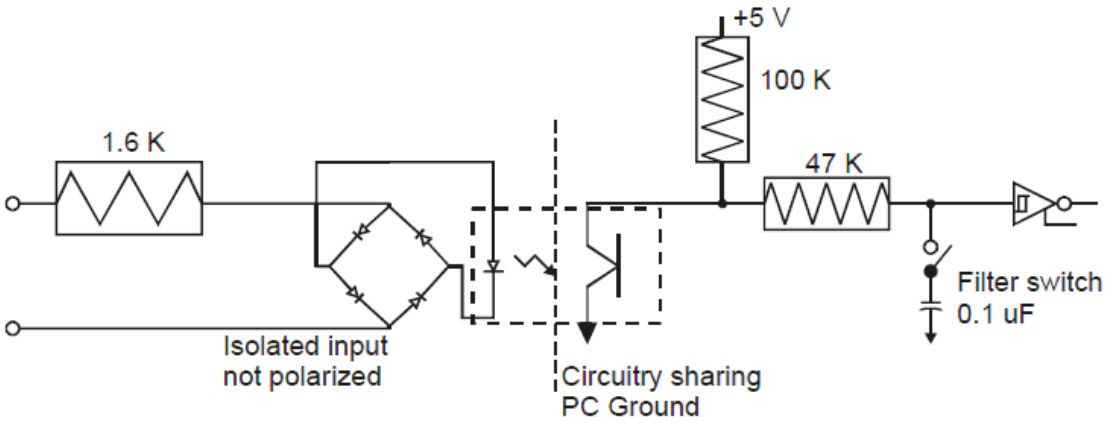
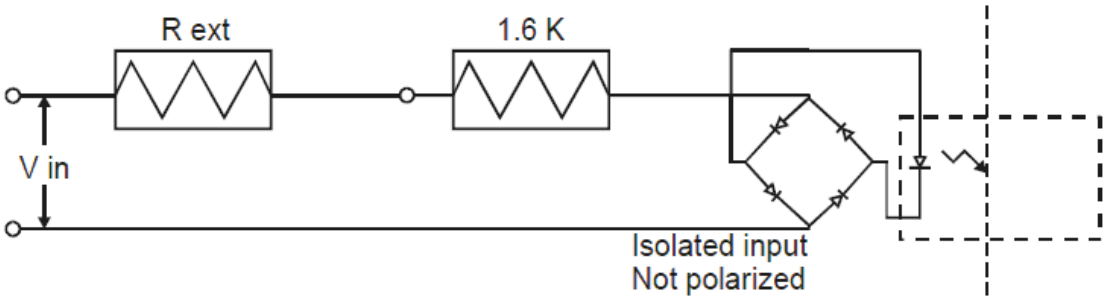


Figure 4-3. Isolated input schematic - simplified

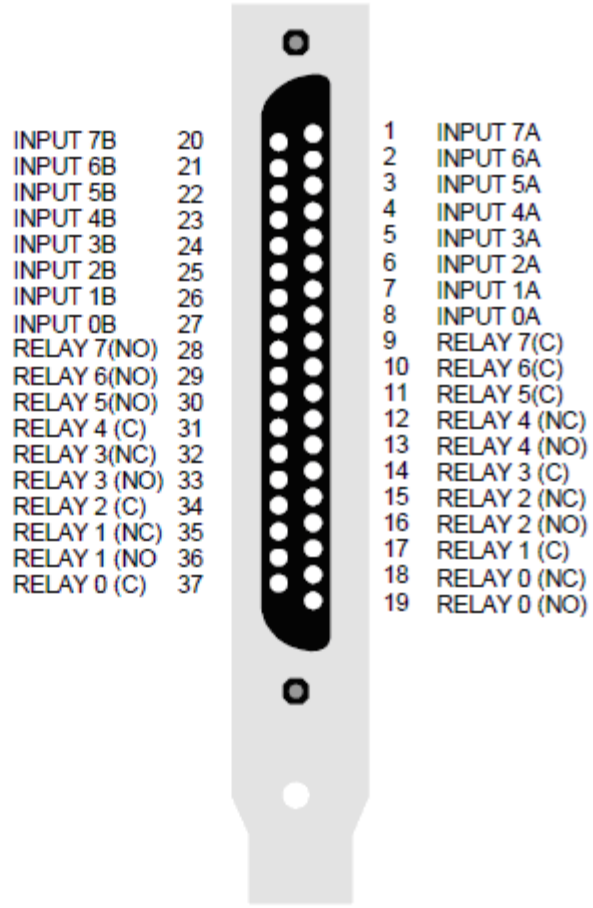
Extending the input range

To extend the input range beyond the 5-28V specified, add an external resistor. Figure 4-4 shows the resistor and the equations used to calculate resistor values for a given V_{in}.



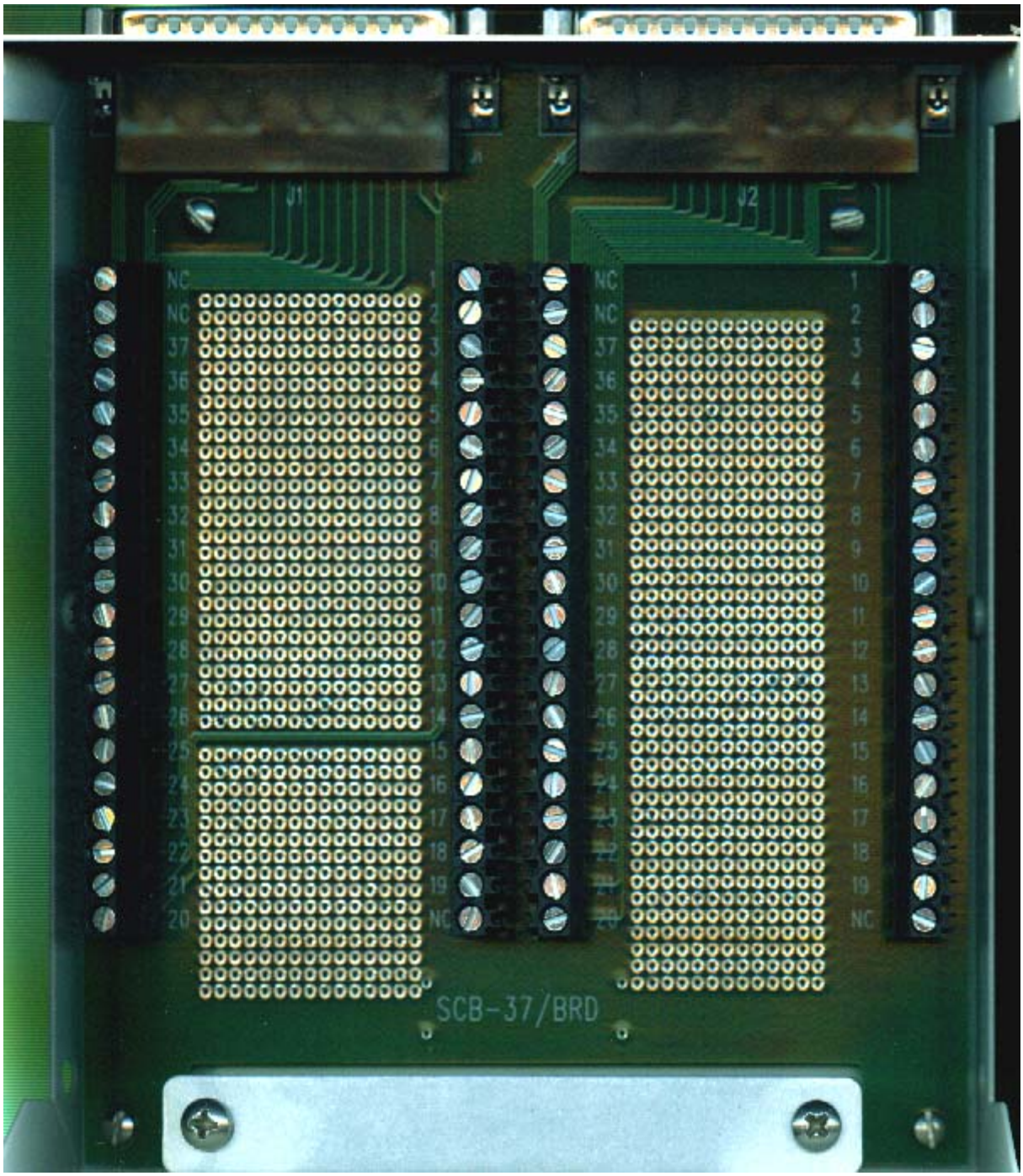
R ext = 100 * (V in - 28)
Pw = R ext / 10,000

Pin out – main I/O connector



37 PIN CONNECTOR - (NO) = Normally Open, (C) = Common, (NC) = Normally Closed.

The pin numbers of the main I/O connector correspond to the terminal numbers of the SB37 terminal box. For example; the first input, Input0, can be activated by supplying a voltage to pins 8 and 27 of the main I/O connector or 8 and 27 of the SB37 terminal box.


J1
J2
SCB-37/BRD

I/O Card Specifications

Relay specifications

Table 1. Relay specifications

Number	5
Contact configuration	5 FORM C (SPDT) RELAY 0 through RELAY 4
Contact rating	*6 A @ 120 VAC or 28 VDC resistive (see connector rating below)*
Contact resistance	100 milliohms max
Operate time	*20 milliseconds max*
Release time	*10 milliseconds max*
Vibration	*10 to 55 Hz (Dual amplitude 1.5 mm)*
Shock	*10 G (11 milliseconds)*
Dielectric isolation	*500 V (1 minute)*
Life expectancy	*10 million mechanical operations, min*
Power on RESET state	Not energized. NC in contact to Common.

Isolated inputs

Table 2. Isolated input specifications

Number	8	
Isolation	*500 V*	
Resistance	1.6 k Ohms min.	
Voltage range	DC:	5 to 28 V (Not TTL compatible)
	AC:	5 to 28 V (50 to 1000 Hz)
Input 'High' level	>5V min (positive or negative input voltage - not TTL compatible)	
Input 'Low' level	<2.5V max (positive or negative input voltage)	
Response	w/o filter:	20 µS
	w/filter:	5 mS
Filters	Time constant:	5 mS (200 Hz)
	Filter control:	Software programmable at each input
	Power-up /reset:	Filters off

Environmental

Table 4. Environmental specifications

Operating temperature range	0 to 70 °C
Storage temperature range	-40 to 100 °C
Humidity	0 to 90% non-condensing

Main connector and pin out

Table 5. Main connector specifications

I/O connector type	37-pin D connector
Compatible cable	C37FF-x, where x = length in feet C37FFS-x, where x =5 or 10 feet
Compatible accessory products (with the C37FFS-x and C37FF-x cables)	CIO-MINI37 SCB-37
Max current	5 A

Table 6. Connector pin out

Pin	Signal Name	Pin	Signal Name
1	Input 7A	20	Input 7B
2	Input 6A	21	Input 6B
3	Input 5A	22	Input 5B
4	Input 4A	23	Input 4B
5	Input 3A	24	Input 3B
6	Input 2A	25	Input 2B
7	Input 1A	26	Input 1B
8	Input 0A	27	Input 0B
9	Relay 7 (C)	28	Relay 7 (NO)
10	Relay 6 (C)	29	Relay 6 (NO)
11	Relay 5 (C)	30	Relay 5 (NO)
12	Relay 4 (NC)	31	Relay 4 (C)
13	Relay 4 (NO)	32	Relay 3 (NC)
14	Relay 3 (C)	33	Relay 3 (NO)
15	Relay 2 (NC)	34	Relay 2 (C)
16	Relay 2 (NO)	35	Relay 1 (NC)
17	Relay 1 (C)	36	Relay 1 (NO)
18	Relay 0 (NC)	37	Relay 0 (C)
19	Relay 0 (NO)		

Customer Care and Technical Support

Prior to calling, please have the model number of the equipment, order number, user's manual and SMV number if applicable. Typically this information is on a sticker on the unit. The model number is also available from the manual.

Customer Care Department (non-technical): 1-800-548-7229
Technical support: 1-800-524-3021

Hours of Operation: Monday through Friday, 8 AM to 4:30 PM, Central Time

The factory is closed the following days:
New Years Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and the day after, Christmas Eve, Christmas Day, New Years Eve.

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