

Visionary HD/SD Overlay System

Hardware Installation and Configuration Manual



think ahead.



Trilithic Company Profile

Trilithic is a privately held manufacturer founded in 1986 as an engineering and assembly company that built and designed customer-directed products for telecommunications, military, and industrial customers. From its modest beginnings as a two-man engineering team, Trilithic grew over the years and broadened its offerings of RF and microwave components by adding broadband solutions to its product line. This was accomplished with the acquisition of components manufacturer Cir-Q-Tel and instruments manufacturer Texscan.

Today, Trilithic is an industry leader, providing telecommunications solutions for major broadband, RF and microwave markets around the world. As an ISO 9000:2001 certified company with over 40 years of collective expertise in engineering and custom assembly, Trilithic is dedicated to providing quality products, services and communications solutions that exceed customer expectations.

Trilithic is comprised of five major divisions:

- **Broadband Instruments and Systems**
Offers test, analysis, and quality management solutions for the major cable television systems worldwide.
- **RF Microwave Components**
Provides components and custom subsystems for companies specializing in cellular, military, and other wireless applications.
- **Emergency Alert Systems**
Leading supplier of government-mandated emergency alert systems used by broadcast TV, cable TV, IPTV, DBS, and radio stations.
- **XFTP**
Offers a specialty line of field technical products for cable operators and technicians, as well as a line of products for installing electronics in the home of the future.
- **Network Services**
Provides network data management and support services to safeguard and protect your network and data by employing certified, experienced, and dedicated network engineers.

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Chapter 1

General Information

Unpacking and Inspection

When the Visionary HD/SD Overlay System arrives, immediately inspect the shipping container and contents for visible damage. Keep all packing materials until the equipment's intended performance characteristics have been verified. If any of the equipment is damaged or fails to operate properly due to transportation damage, immediately file a claim with the transportation company or, if insured separately, with the insurance company.

Each Visionary will arrive in its own shipping container. The container will, at a minimum, include the following components:

- 1 CD which contains the Windows-based configuration program
- 1 CD which contains the Visionary Editor software
- 1 null-MODEM 9-pin serial data cable
- 1 AC power cord
- 1 Ethernet cable

Claims for Damage in Shipment

Claims for shipping damage should be directed to the shipping and/or freight delivery service used. Claims should be made within 7 days to insure prompt handling of the claim.

Helpful Website

The following website contains general information which may be of interest:

<http://www.trilithic.com>

Trilithic's website contains product specifications and information, tips, release information, marketing information, Frequently Asked Questions (FAQs), bulletins, and other technical information. This website can be referenced for product updates.

Where to Get Technical Support

Trilithic technical support is available Monday through Friday from 8:00AM to 5:00PM EST. Callers in North America can dial 1-317-895-3600 or 1-800-344-2412 (toll free). International callers should dial 1-317-895-3600 or fax questions to 1-317-895-3613. You can also e-mail technical support at EASysupport@trilithic.com.

For quicker support response when calling or sending e-mail, please provide the following information:

- Your name and your company name
- The technical point of contact (name, phone number, e-mail)
- The serial number of the Visionary HD/SD Overlay System
- A detailed description of the problem you are having, including any error or information messages

Before any Trilithic Visionary can be returned for repair, Trilithic will issue a return material authorization (RMA) number. **NO RETURNED EQUIPMENT WILL BE ACCEPTED WHICH DOES NOT HAVE AN RMA NUMBER PROMINENTLY DISPLAYED ON THE OUTSIDE SHIPPING CARTON AND ON THE SHIPPING LABEL.** A complete and full description, in writing, regarding the service issues with the equipment must be supplied inside the shipping container with each piece of equipment for which an RMA number has been issued.



NOTE

Hardware or software modifications and changes may occur at any time during production, shipping, and/or during the equipment's life span. These changes may occur or be implemented by Trilithic, Inc. without prior written notice or warning.

How this Manual is Organized

This installation manual addresses hardware installation concerns for the Visionary HD/SD Overlay System.

This manual is divided into the following chapters:

- Chapter 1, “General Information,” provides Trilithic contact information and describes how this installation manual is structured.
- Chapter 2, “Understanding the Visionary,” introduces the Visionary HD/SD Overlay System and describes what it does. The chapter discusses the practical application of the Visionary and explains the Visionary’s indicators and connection terminals.
- Chapter 3, “Installing and Wiring the Visionary,” describes the steps to install and connect the Visionary.
- Chapter 4, “Configuring the Visionary,” describes the procedure to configure the Visionary, using the provided configuration software.
- Chapter 5, “Specifications,” outlines the technical specifications of the Visionary.

Conventions Used in this Manual

This manual has several standard conventions for presenting information:

- Connections, menus, menu options, and user-entered text and commands appear in **bold**.
- Section names, web and e-mail addresses appear in *italics*.



A ***NOTE*** is information that will be of assistance to you related to the current step or procedure.



A ***CAUTION*** alerts you to any condition that could cause a mechanical failure or potential loss of data.



A ***WARNING*** alerts you to any condition that could cause personal injury.

Precautions



Do not use the Visionary HD/SD Overlay System in any manner not recommended by the manufacturer.

Understanding the Visionary

Introduction

This section includes an overview and description of the Visionary HD/SD Overlay System, including front and rear panel controls, connectors, and displays. Visit www.trilithic.com to view or download updates, manuals, and application notes for Trilithic EAS products.

The Visionary is available in two formats: high-definition (HD) and standard definition (SD). The HD version supports both high and standard definition video. The following part numbers are unique to each of the Visionarys:

Visionary HD SDI (high-definition) - **P/N 2011186002**

Visionary SD SDI (standard-definition) - **P/N 2011186001**

What Does the Visionary HD/SD Overlay System Do?

The Visionary HD/SD Overlay System enables broadcasters to present emergency alert messages, graphics, and station identification logos on digital broadcasts. The Visionary works with Trilithic's EASyCAST encoder/decoder to provide EAS messaging and logos for HD-SDI and SD-SDI broadcast programming (1080i, 720p, and 480i), including embedded audio and six channels of AES-EBU audio.

The Visionary receives EAS alerts from the encoder/decoder and places them on a broadcast channel as a message crawl, with EAS audio. The Visionary also allows broadcasters to display station logos and other event-specific graphics with broadcasted EAS message alerts.

The Visionary can display non-EAS messages as a crawl, static text, image, full-page graphic, or a combination of text and images. If a broadcaster needs to display maintenance messages – even from a remote location – the message can be presented on the broadcast channel using the Visionary system. Non-EAS messaging is generally handled using a PC and the Visionary Editor software.

The Visionary connects to the EASyCAST encoder/decoder via an Ethernet connection. A single encoder/decoder can communicate with multiple Visionary devices on a network. Broadcasters can place a Visionary on each program channel and only have to maintain and program a single EASyCAST encoder/decoder to distribute EAS messages.

Features and Capabilities of the Visionary System

In addition to receipt and redistribution of EAS messaging from the EASyCAST encoder/decoder, the Visionary gives station operators the ability to create custom messages. Through the Visionary Editor software, custom messages and graphics can be inserted into the broadcast display.

Custom EAS Messages

The Editor software allows the creation of custom messaging in the form of static text, crawl text, and custom logo insertion. Static text can be placed anywhere on the screen, and all movement parameters for text crawls can be controlled. Customizable text properties include position, font, size, color, background color, transparency, crawl speed, and the number of times the crawl is repeated.

Logo Display

Multiple logos/images can be placed on the screen, with independent control over location, transparency, and fade in/out for each graphic.

How the Visionary System Functions in an EAS Activation

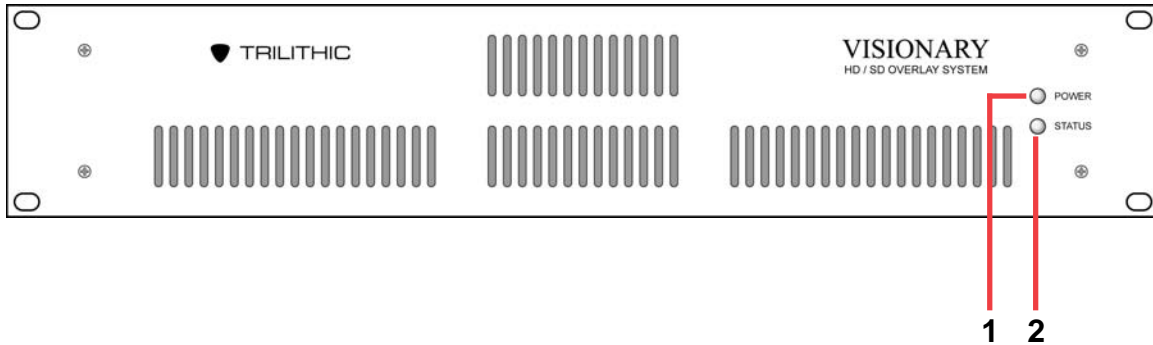
During normal broadcasting, video is routed through the Visionary SDI input and output. Audio is routed through the Visionary embedded in the SDI, or through the baseband audio or AES/EBU inputs and outputs.

During EAS activations, the EASyCAST encoder/decoder sends EAS crawl and custom image information to the Visionary over the Ethernet interface. EAS audio is supplied to the Visionary baseband audio inputs, or sent over Ethernet as an audio file (.wav).

Using contact closure inputs, automation and commercial insertion equipment can be used to hold off EAS messages during commercials or other important programming. The Visionary will hold all messages in queue until automation equipment or an operator provides a trigger to release queued messages. Operators can also trigger the Visionary using Ethernet commands from a PC-based software application.

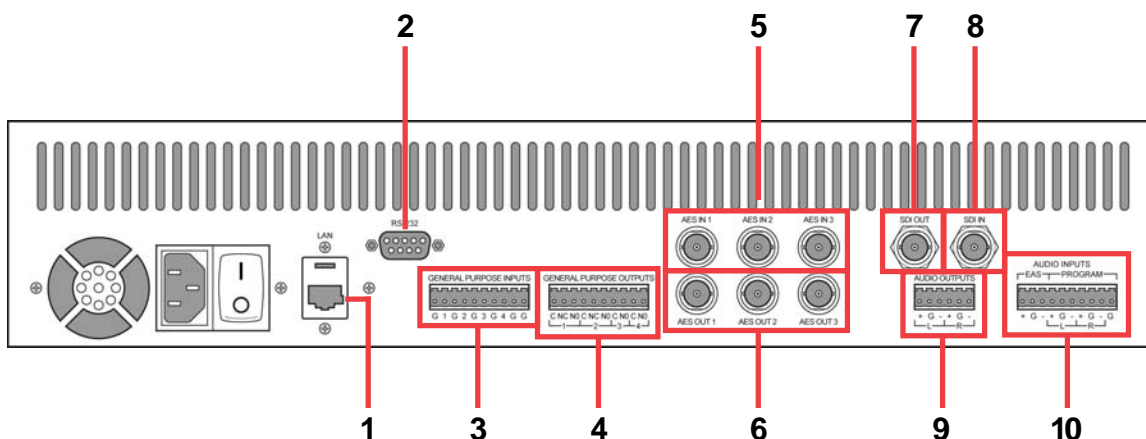
Overview of the Visionary HD/SD Overlay System

Front Panel View



1. **Power LED** - Indicates whether the Visionary is powered on or off.
2. **Status LED** - Indicates whether the Visionary control firmware has been initialized and is running. The status LED will not illuminate until the firmware has been fully initialized. After the firmware has been initialized, the LED will blink on and off.

Rear Panel View



1. **Ethernet port (RJ-45)** - Ethernet port used for configuration, control, and audio delivery from the EASyCAST EAS encoder/decoder or a host computer.
2. **COM 1 (RS-232)** - Connects to a host computer during initial configuration of the Visionary IP address.
3. **General purpose inputs** - Contact closure inputs allows external devices – such as commercial insertion equipment – or operators to control message activation.
4. **General purpose outputs** - Used for distribution/routing equipment that requires a contact closure for activation. Also used to control indicator lamps or alarms for studio personnel.
5. **AES audio inputs** - Normal program audio is routed to these inputs for replacement during EAS activations.
6. **AES audio outputs** - These outputs provide normal program audio except during EAS activations, at which time they contain EAS audio.
7. **SDI output** - This output provides normal program video (with embedded audio) except during overlay operations, at which time it can provide program video with a graphic and text overlay and embedded audio replacement.
8. **SDI input** - Input for normal program video with or without embedded audio.
9. **Audio output** - This output provides normal program audio except during EAS activations, at which time it contains EAS audio.
10. **Audio inputs** - Baseband inputs for program audio, and EAS audio from the EASyCAST encoder/decoder.

Rear Panel Details

Ethernet port (RJ-45 connection): Used for configuration, control, and upgrading the Visionary's firmware. EAS messaging is sent to the Visionary via the Ethernet port.

COM 1 (RS-232 connection): 9-pin RS-232C DTE interface used for initial configuration, via a 9-pin NULL-MODEM cable.

- Pin 1:** Not used
- Pin 2:** Receive data*
- Pin 3:** Transmit data*
- Pin 4:** Data terminal ready
- Pin 5:** Signal ground*
- Pin 6:** Data set ready
- Pin 7:** Request to send
- Pin 8:** Clear to send
- Pin 9:** Ring indicator

* Required signal

General purpose inputs: Contact closure inputs for controlling the output of the Visionary; including EAS message timing, activation, or hold-off control.

(G) - Ground for general purpose input 1

(1) - Abort message in progress: When closed, causes the message currently being played to stop and the next message in queue to be played.

(G) - Ground for general purpose input 2

(2) - Trigger EAS message: Starts playback of the first EAS message in the message queue.

(G) - Ground for general purpose input 3

(3) - Trigger normal message: If no EAS messages are in the queue, causes the first normal-priority message to be displayed. When the Visionary is programmed with a recurring GPI-controlled message, the message will be displayed while this contact is closed, and removed when this contact is opened.

(G) - Ground for general purpose input 4

(4) - Hold-off: Prevents EAS or user-generated messages from being displayed or played back until the contact is opened. Once the hold-off is released (opened), closing it again will not stop the message playback.

(G) - Unused grounded pin

(G) - Unused grounded pin

General purpose outputs: Used as contact closures for distribution/routing equipment that requires a contact closure for activation, or for operator alarms during EAS operations.

Contact closure 1, message queued: This contact closure is closed when a message has been received, but is waiting for an activation trigger.

- (C)** Common contact
- (NC)** Normally closed contact
- (NO)** Normally open contact

Contact closure 2, message active: This contact closure is closed whenever a video overlay or audio playback is in progress. It can be used to control indicator lights or external switching/routing equipment.

- (C)** Common contact
- (NC)** Normally closed contact
- (NO)** Normally open contact

Contact closure 3, audio active: This contact closure is closed whenever audio playback is in progress. It can be used to control indicator lights or external switching/routing equipment.

- (C)** Common contact
- (NO)** Normally open contact

Contact closure 4, programmable: This contact will close if a message is being played in which the user-programmable contact-closure option is turned on.

- (C)** Common contact
- (NO)** Normally open contact

AES/EBU Audio: Provides a synchronized AES/EBU audio path for in-line replacement of programming audio during EAS operations. If an input is provided (from a station source), the output sample rate will be equal to the input sample rate. If no input is provided, the output sample rate will be 48 KHz.

AES/EBU input: 110 Ω XLR female

Pin 1: Ground/drain

Pin 2: Balanced (+)

Pin 3: Balanced (-)

AES/EBU output: 110 Ω XLR male

Pin 1: Ground/drain

Pin 2: Balanced (+)

Pin 3: Balanced (-)

SDI OUT: 75 Ω BNC serial digital interface output compliant with SMPTE 259M, 292M, and 274M standards. Supports embedded audio, audio replacement, and video overlay. SDI OUT is synchronized with the SDI IN signal. If the SDI IN signal is lost, SDI OUT continues to provide video at the last sampled input rate. On power failure, the SDI IN signal is routed to the SDI OUT connection using a fail-safe relay.

SDI IN: 75 Ω BNC serial digital interface input compliant with SMPTE 259M, 292M, and 274M standards.

Audio outputs: 600 Ω balanced audio stereo pair provides the program audio input signal during normal operation. During EAS or auxiliary audio operations the Visionary internal audio is supplied to these outputs.

Audio inputs (program): 600 Ω balanced audio stereo pair routed to the audio outputs through relays during normal operation. During audio replacement operations the program audio inputs are disconnected from the audio outputs.

Audio inputs (EAS): 600 Ω balanced audio input is normally connected to an audio output from the EASyCAST EAS encoder/decoder. It provides a means to deliver EAS audio to the internal circuitry of the Visionary for audio replacement operations.

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Installing and Wiring the Visionary

Overview

Typical installation of the Visionary involves routing the normal station audio and video through the Visionary, so that they can be modified or replaced during message operations. In addition, the Visionary must be connected and configured for network operation and the EASyCAST EAS encoder/decoder must be configured to communicate with the Visionary.

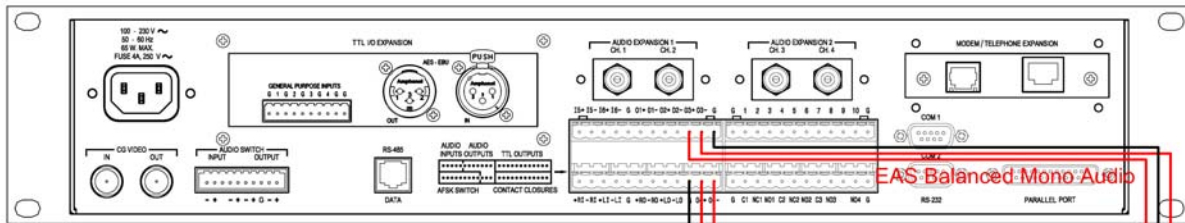
- The station's final SDI video signal should be routed to the SDI IN on the Visionary, and the SDI OUT of the Visionary connected to complete the signal path. Typically, the Visionary will be inserted just prior to the MPEG encoder or channel multiplexer.
- The station's audio is intercepted and routed through the Visionary audio inputs and outputs. Up to six AES/EBU channels, two baseband balanced audio channels, and eight channels of embedded audio can be processed by the Visionary. Typically the audio input to the MPEG encoder is rerouted through the Visionary.
- The Visionary Ethernet port is connected to a switch or router on the station's network. The Visionary must be configured for a valid IP address, subnet, and gateway. Routers and firewalls may need to be configured to allow communications between the EASyCAST EAS encoder, the Visionary, and any PCs used for configuration or control over the Visionary.
- If possible, one of the audio outputs from the EASyCAST EAS encoder should be connected to the EAS audio input on the Visionary. This reduces network traffic and increases audio quality during national EAS alerts.
- If used, the Visionary configuration software, editing software, and EAS Console application should be installed on a PC with IP connectivity to the Visionary. The default TCP/UDP ports used by the Visionary are 59901 (configuration and control), 59902 (streaming audio), 21 (FTP audio), and 123 (SNTP).
- Initial IP configuration is performed using a Windows PC with an RS-232 connection to the Visionary, or over an Ethernet connection if the PC can be re-configured for an IP within the 10.1.65 subnet (the default IP of the Visionary is 10.1.65.80).

Wiring Recommendations

Shielded audio wire for all contact closures and audio connections

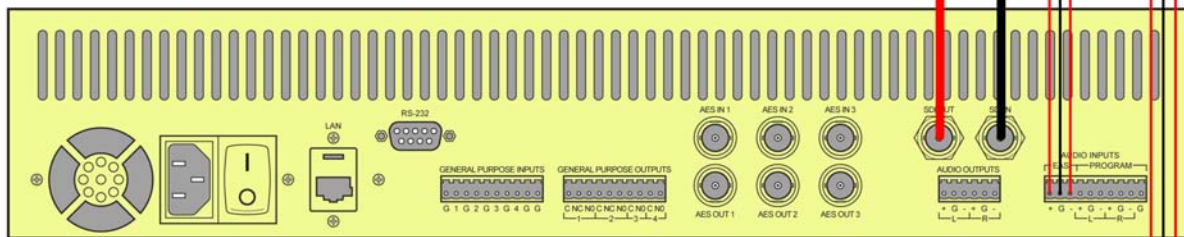
- Shielded RS-232 cables
- Shielded (coaxial) SDI video cables
- Category 5 or 6 Ethernet cable

EASyCAST and Visionary Integration (Sample)



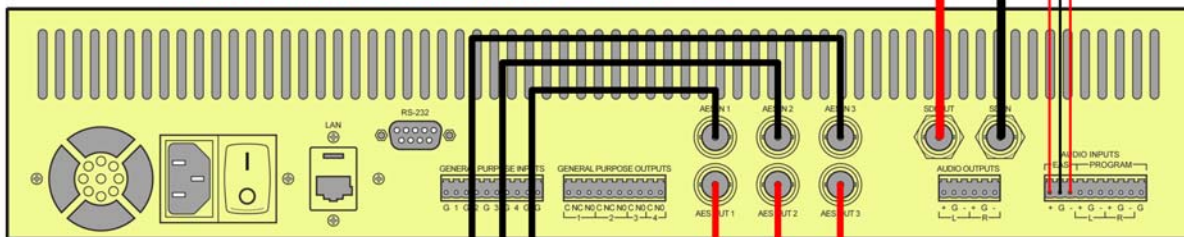
Normal Station SD-SDI Video with Embedded Audio

SD-SDI Video with EAS Overlay and EAS Audio to MPEG Encoder



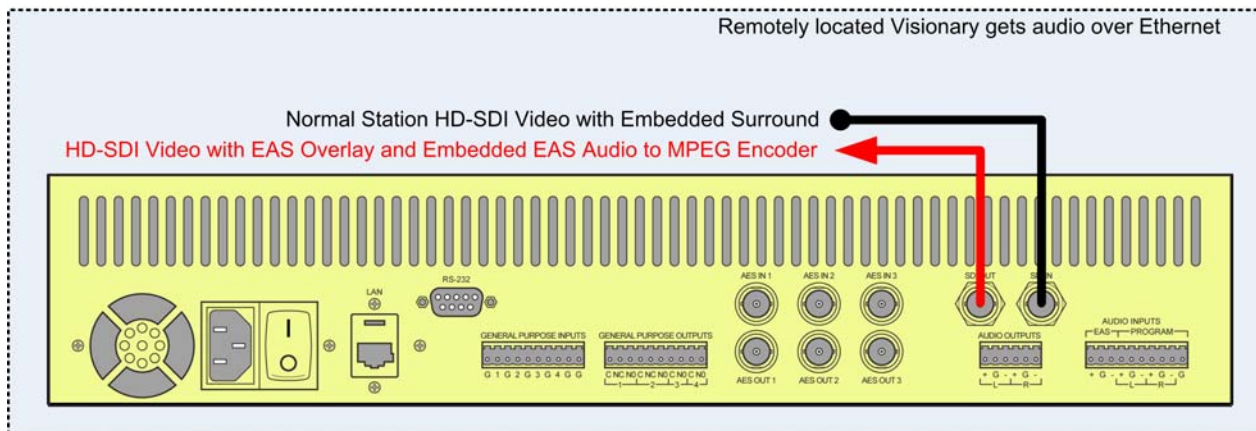
Normal Station SD-SDI Video

SD-SDI Video with EAS Overlay to MPEG Encoder



Normal Station Surround Audio on Three AES feeds

Surround Audio with EAS to MPEG Encoder



Remotely located Visionary gets audio over Ethernet

Normal Station HD-SDI Video with Embedded Surround

HD-SDI Video with EAS Overlay and Embedded EAS Audio to MPEG Encoder

Configuring the Visionary

Overview

The Visionary Overlay System must be configured before it can be set up and operated. Once the initial configuration is complete, additional configuration changes typically are not necessary. The Visionary configuration software must be installed and used to set up the Visionary so that other hardware devices can communicate with the Visionary. The configuration software does not directly control the operation of the Visionary.

Computer System Requirements

Computer equipment required to install the Visionary configuration software:

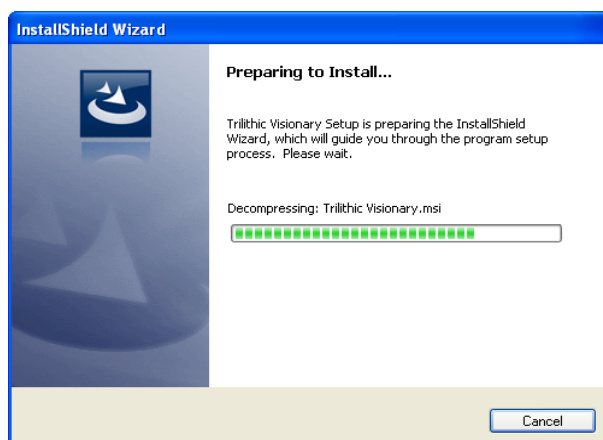
- Windows XP® operating system or newer, or Windows Server® 2003 operating system or newer
- May require an Ethernet connection or RS-232 communication port
- User account must allow permission to install new software and to edit TCP/IP settings

Installing the Configuration Software

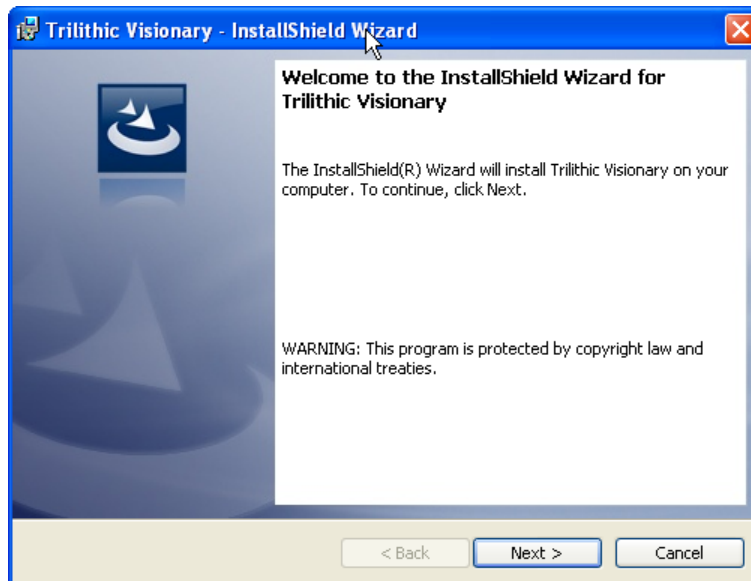
Installation of the configuration software on a host computer is required for initial configuration of the Visionary.

To install the Visionary configuration software:

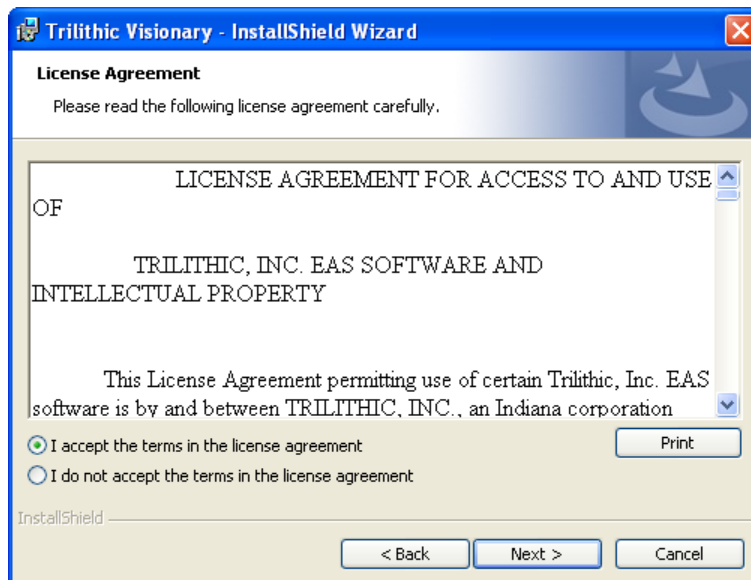
1. Download the configuration software to the host computer's desktop.
2. Double-click the **setup.exe** file to begin the installation. The "Preparing to Install..." window opens.



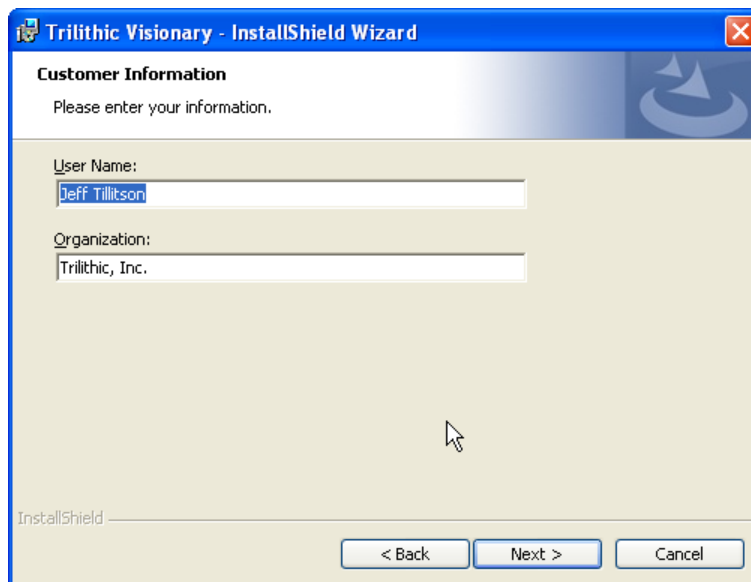
3. The “Welcome to the InstallShield Wizard” dialog box appears. Select the **Next** button to initialize the InstallShield Wizard.



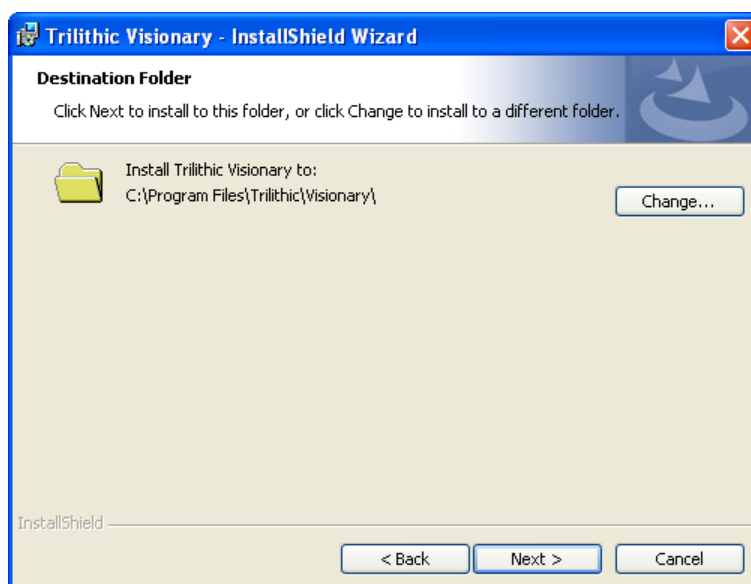
4. The “License Agreement” screen appears. Select the **radio button** which corresponds to the acceptance of the license agreement, then click the **Next** button.



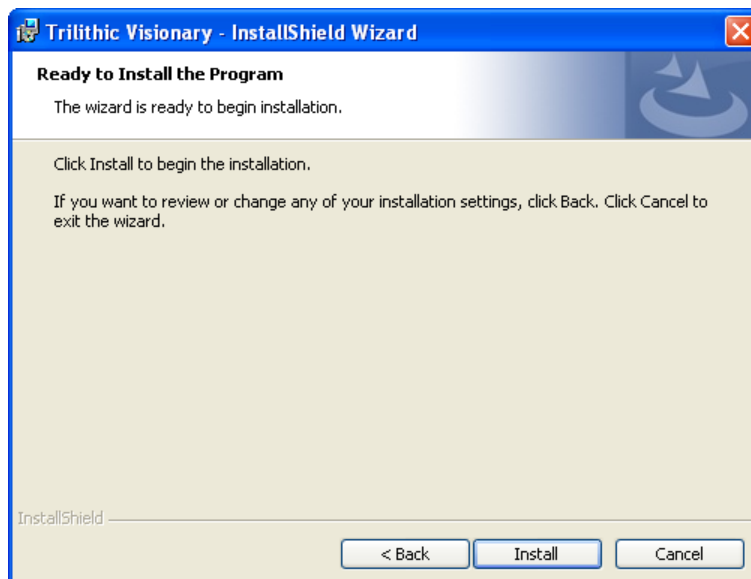
5. The “Customer Information” window appears. Click the **Next** button to continue with the installation procedure.



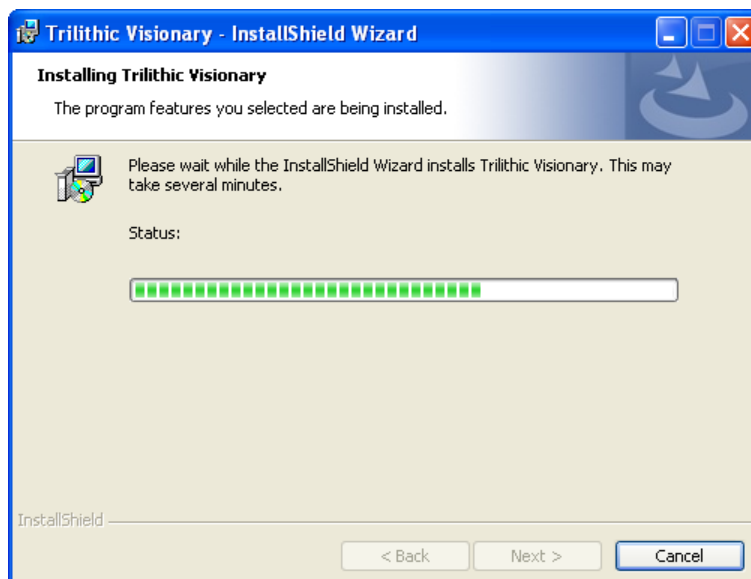
6. The “Destination Folder” window appears. The default location for the Visionary configuration software is displayed. To change the installation path, click the **Change** button and specify the new file path. To accept the default file path, click the **Next** button.



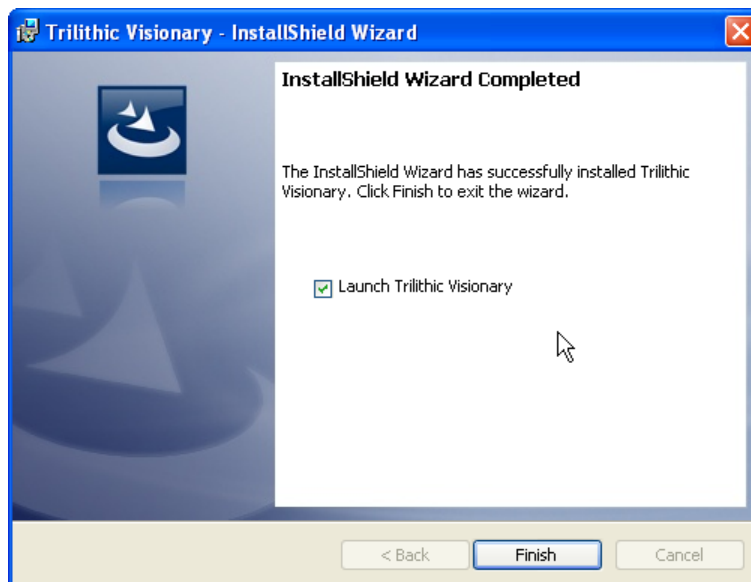
7. The “Ready to Install the Program” window appears. Click the **Install** button to continue with the installation procedure.



8. The “Installing Trilithic Visionary” window briefly appears.



9. The “Install Shield Wizard Completed” window appears, signifying that the Visionary configuration software has successfully been installed. Click the **Finish** button to close the installation wizard without opening the Visionary configuration software. To open the configuration software, select the **Launch Trilithic Visionary** check box prior to clicking the **Finish** button. To start the configuration software, use the Visionary icons located on the desktop, or in the Windows **Start** menu under **Programs, Trilithic, Visionary**.



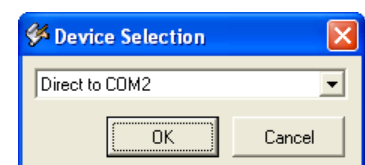
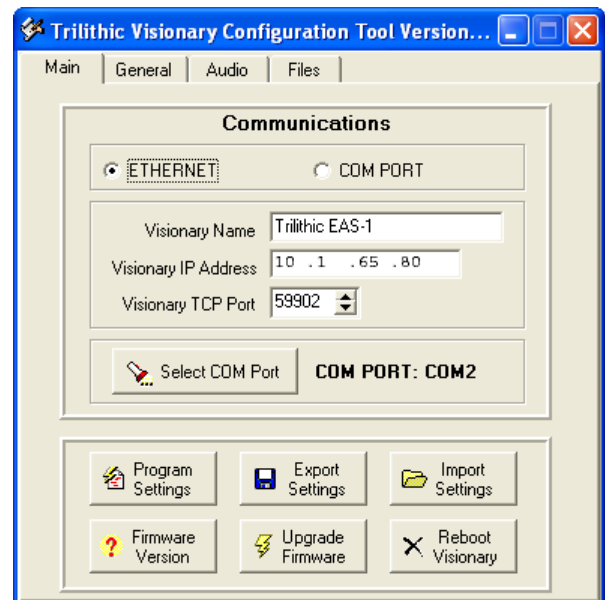
Configuration Procedure

In order to configure the IP Address of the Visionary, either an RS-232 connection between the host computer and the Visionary must be established, or the host PC must be configured to communicate over Ethernet within the default subnet of the Visionary. If Ethernet communication is used, the host computer's network settings should be restored to their original settings once configuration has been completed.

General Communication Configuration

Perform the following steps to establish communication between the host computer and the Visionary:

1. If using the RS-232 port, connect the host computer to the Visionary using the RS-232 serial cable that was shipped with the Visionary. Connect the Visionary to your local network switch or router using the Ethernet cable that was shipped with the Visionary.
2. Power up the Visionary. After 30 seconds, the Visionary will have completed its boot-up cycle, and the green status light will be blinking.
3. Start the Visionary configuration software by selecting the link from the host computer's Windows **Start** menu, or by double-clicking the **Visionary** icon on the desktop.
4. If using RS-232, select the **COM PORT** radio button on the **Main** tab of the program's interface. This instructs the Visionary configuration software to communicate with the Visionary over the serial cable.
5. If using RS-232, click the **Select COM Port** button. From the pop-up **Device Selection** window, use the drop-down menu to select the COM that is connected to the Visionary.

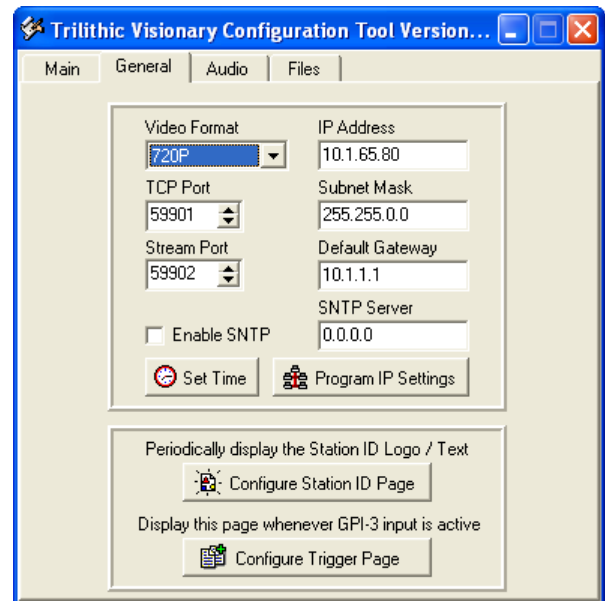




NOTE

*If no COM port is available on the host computer, the host computer can be re-configured for an IP address within the 10.1.65 subnet (e.g.: 10.1.65.77). On the Main tab, select the **ETHERNET** radio button and enter the default Visionary address of 10.1.65.80 in the Visionary IP Address box.*

6. On the **General** tab of the Visionary configuration software, enter the desired **IP Address**. This is the network address that the Visionary will be set to, and should be assigned by your network administrator.
7. Enter the **Subnet Mask**, as specified by your network administrator. In combination with the IP address, the subnet mask helps determine which addresses the Visionary can contact directly, and which addresses must be contacted through the default gateway.
8. Enter the address for the **Default Gateway**, as specified by your network administrator. The gateway is used to access IP addresses outside of the subnet (non-local addresses). The default gateway is not required if the Visionary will not communicate with hardware outside of the subnet, but should be set to an unused IP address within the subnet.
9. From the **Video Format** pull-down menu, select the default video format for the Visionary. When the Visionary is powered on, if no video input is detected, the Visionary will output the default video format. Once video is detected at the input, the Visionary will lock to the incoming video format.
10. Set the **TCP Port** to **59901**, unless your network administrator specifies a different setting for the TCP port. This is the main communication port for the Visionary and is used for configuration and control, including EAS control.



NOTE

FTP Port 21 is used in conjunction with the TCP Port for EAS operation, custom display operation, and configuring the Visionary. Port 21 should be accessible (not blocked) between the Visionary, the EAS encoder/decoder, and any PC containing Visionary or EAS software.

11. Set the **Stream Port** to **59902**, unless your network administrator specifies a different setting for the stream port. The stream port is used to transfer audio of indefinite length, such as a presidential message (EAN), in near-real time.
12. Click the **Program IP Config** button. The Visionary will automatically re-boot. After 30 seconds, the Visionary will return to normal operation. Check to ensure that the green status light on the front of the Visionary is blinking.

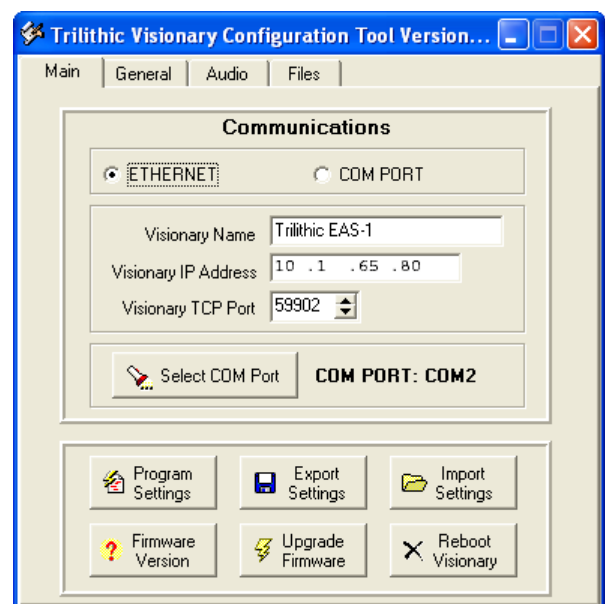
Visionary Configuration

After completing the general communication configuration, the Visionary should be accessible on the network using its own IP address, as provided by your company's network administrator. On the **Main** tab of the Visionary configuration software, enter the new IP address in the **Visionary IP Address** text box.

The Visionary configuration software should be installed on the computer which will ultimately have long-term control of the Visionary's operation. Note that the controlling computer is not necessarily the same computer as was used in the initial network configuration procedure.

Should the Visionary configuration software need to be installed on a different computer than was used for the initial configuration, refer to ***Chapter 4: Installing the Configuration Software***, for the installation procedure.

To set up the Visionary configuration software to communicate with the Visionary at its new IP address, select the radio button which corresponds to **Ethernet** on the **Main** tab of the Visionary configuration software. Then, enter the Visionary's assigned IP address in the **Visionary IP Address** text box.



Configuring Multiple, Independent Visionarys

The **Main** tab of Visionary configuration software includes buttons for importing and exporting the Visionary's configuration settings to a file on the host computer's hard drive. It also includes a **Visionary Name** field to help identify a given configuration. If more than one Visionary is being configured from the same computer, fill in the **Visionary Name** field to identify the unit being configured, then click the **Export Settings** button to save the configuration to a file.

Before changing the configuration on a Visionary, click the **Import Settings** button to retrieve the previous configuration, then make any configuration changes. Once the changes have been programmed (using the **Program Settings** button), save the changes to the host computer's hard drive by clicking the **Export Settings** button and overwriting the existing configuration file.

By following this "import, modify, upload, export" procedure, multiple Visionarys can be maintained without inadvertently transposing configuration information between Visionarys (for example, accidentally programming two Visionarys with the same IP address).

System Time Configuration

The Visionary configuration software provides two choices for programming the time settings; the Visionary can synchronize its internal time to the computer on which the configuration software is installed, or the Visionary can be automatically configured to retrieve its time settings from a remote server.

It is not necessary to set the time on the Visionary if the periodically-displayed Station ID page is not being used.

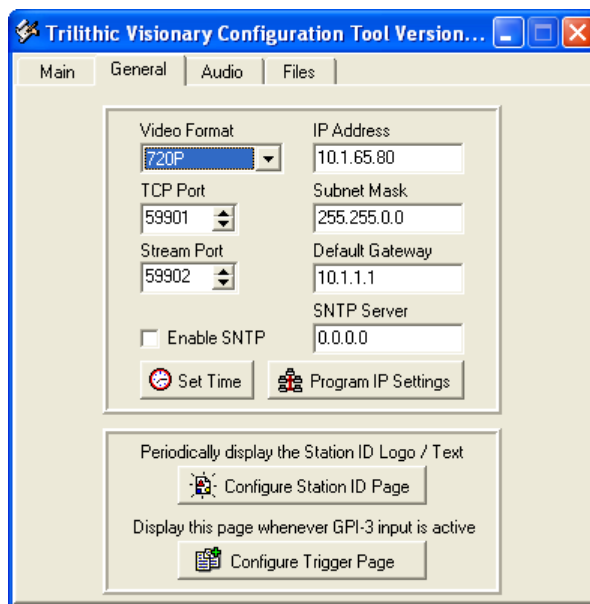
Computer Synchronization

To manually set the Visionary's time, click the **Set Time** button on the **General** tab. The Visionary's time is synchronized to the system time on the configuration software's host computer. It may be necessary to periodically repeat this process to ensure the Visionary's internal time remains accurate.

SNTP Synchronization

The Visionary's time configuration can be managed through a connection to a Network Time Protocol (NTP) server. Once configured, the Visionary will periodically synchronize its internal clock with the NTP server using the SNTP (Simple NTP) protocol.

To configure the Visionary to automatically retrieve time settings, in the **General** tab, enter an address of a known NTP server in the **SNTP Server** text box. Select the **Enable SNTP** check box to instruct the Visionary to retrieve time settings from the NTP server.

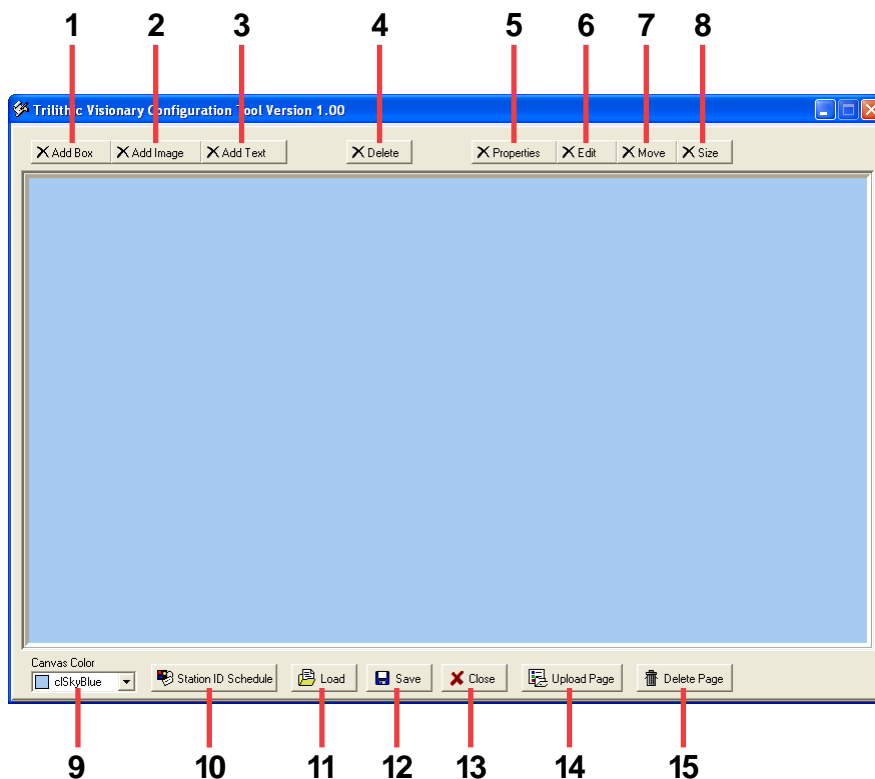


Configure Station Identification and Trigger Pages

The Visionary allows an operator to create custom messages which will appear in the broadcast stream. With the Station ID and Trigger Page configuration utilities within the Visionary configuration software, the operator can create text, text crawl, logo, and graphic overlay pages for periodic display. Unlike EAS and Editor pages, these remain in the memory of the Visionary for repeated use.

Station Identification Page

The station identification page is an overlay screen which is displayed periodically. The purpose of the station identification page is to display the broadcast station's channel number, call letters, and logo to meet federal broadcast regulations. The configuration utility allows operators to set the appearance of the page, as well as schedule when it will appear.



1. **Add Box** - Click the **Add Box** button to place a square or rectangular object on the screen. Click the mouse where the top-left corner of the box should be placed. The **Box Properties** window will appear. The properties of the shape are set and edited in the box properties window. After setting or editing the properties, click the **OK** button to accept the changes. Box size and location can be changed after placement.

2. **Add Image** - Click the **Add Image** button to place an image, such as a station logo, photograph, or any other graphic, on the screen. Click the mouse where the top-left corner of the image should be placed. The **Load Image** window will appear. Select the image file. Click the **Open** button to load the image; click the **Cancel** button to abort the operation.



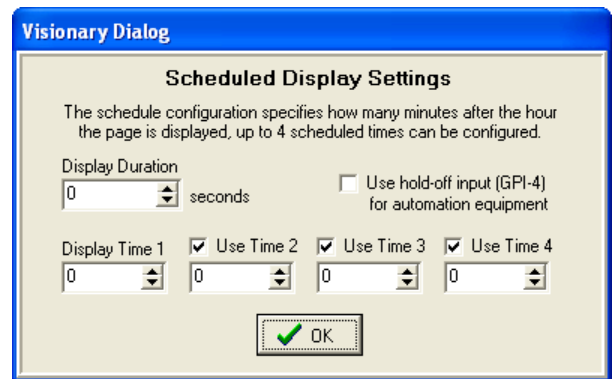
Only PNG (portable network graphics) formatted image files can be displayed by the Visionary.

3. **Add Text** - Click the **Add Text** button to place text on the screen. Click the mouse where the top-left corner of the text string should be placed. The **Text Properties** window will appear. The properties of the shape are set and edited in the text properties window. After setting or editing the properties, click the **OK** button to accept the changes; click the **Cancel** button to abort the operation.
4. **Delete** - Click the **Delete** button to delete a box, image, or text string from the screen. After selecting the **Delete** button, click the object to be deleted.
5. **Properties** - Select the **Properties** button to edit the properties of a box, image, or text string that has been placed on the screen. After selecting the properties button, click the object to be edited. The respective **Edit Properties** window will appear for the selected object. After editing the object properties, click the **OK** button to accept the changes; click the **Cancel** button to abort the operation.
6. **Edit** - Click the **Edit** button to edit a text string. After selecting the **Edit** button, select the text string to be edited. After editing the text string, click the **Edit** button again to complete editing.
7. **Move** - Click the **Move** button to move a box, image, or text string that has been placed on the screen. After selecting the **Move** button, select the object to be moved. Drag the object to be moved to a new location on the screen and release the mouse button.



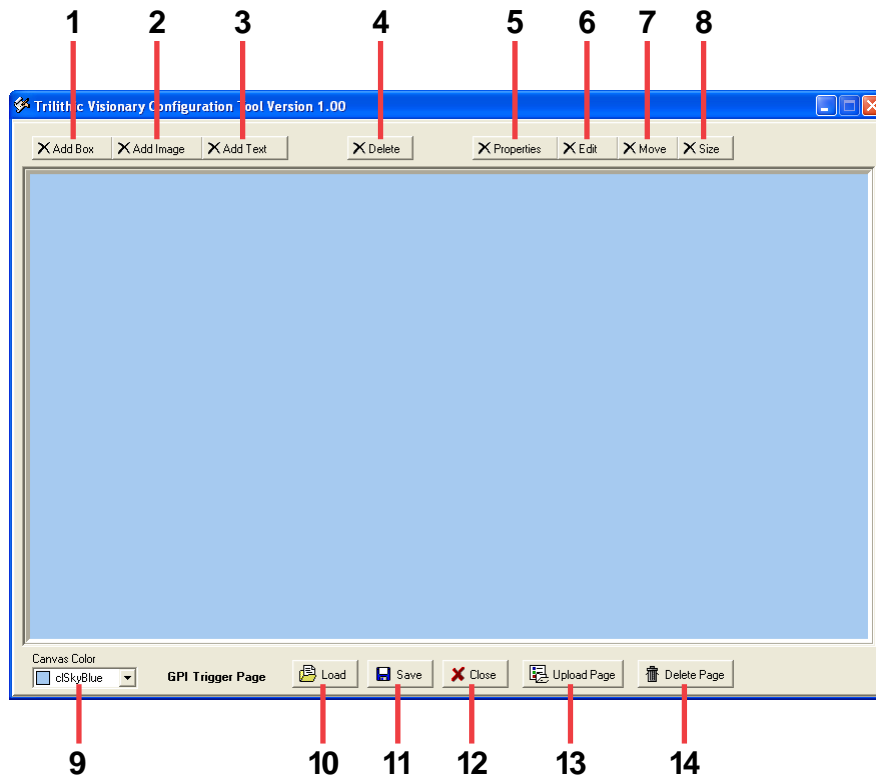
If any portion of an object (box, image, or text string) extends off the edge of the screen, select the Properties button, then select the object; the object will automatically move onto the page.

8. **Size** - Click the **Size** button to re-size a box or a text string. After clicking the **Size** button, click and drag on the box or text string to be re-sized. The object can be scaled up or scaled down by dragging. Release the mouse button to complete the re-sizing operation.
9. **Canvas Color** - Click the **Canvas Color** pull-down menu to change the color of the background of the Visionary Editor screen. Pick from any of the standard colors in the pull-down menu, or select the **Custom** option to create a color that is not defined in the pull-down menu. This has no effect on the Visionary display but is included to assist in editing.
10. **Station ID Schedule** - Click the **Station ID Schedule** button to configure the time that the station identification page is displayed. Set the **Display Duration** in seconds, that the station identification page will be displayed. Set the **Display Time, 1 through 4**, for when the station identification page will be displayed. Each display time is set in minutes after the top of the hour. Select the check boxes corresponding to **Time 2, Time 3, and Time 4** for each additional scheduled time if desired.
11. **Load** - Click the **Load** button to load a station identification page that had been previously created and saved. The **Load Visionary Message from a File** window will appear. Select the message file to upload to the Visionary Editor software. Click the **Open** button to load the message; click the **Cancel** button to abort the operation.
12. **Save** - Click the **Save** button to save a station identification page that has been created. Type a name in the **File Name** edit box and click the **Save** button in the pop-up dialog window.
13. **Close** - Click the **Close** button to close the **Visionary Editor** window and return to the **Visionary Configuration** window.
14. **Upload Page** - Click the **Upload Page** button to send the displayed station identification page to the Visionary.
15. **Delete Page** - Click the **Delete Page** button to remove the stored station identification page from the Visionary.



Trigger Page

The trigger page is a static screen which is displayed periodically under the control of automation equipment. Unlike the station identification page, the trigger is not scheduled, but is activate by shorting contact closure three on the Visionary's back panel. The trigger page display ends when the contact is opened.



1. **Add Box** - Click the **Add Box** button to place a square or rectangular object on the screen. Click the mouse where the top-left corner of the box should be placed. The **Box Properties** window will appear. The properties of the shape are edited in the **Box Properties** window. After setting or the properties, click the **OK** button to accept the changes; click the **Cancel** button to abort the operation.
2. **Add Image** - Click the **Add Image** button to place an image, such as a station logo, photograph, or any other graphic, on the screen. Click the mouse where the top-left corner of the image should be placed. The **Load Image** window will appear. Select the image. Click the **Open** button to load the image; click the **Cancel** button to abort the operation.

3. **Add Text** - Click the **Add Text** button to place text on the screen. Click the mouse where the top-left corner of the text string should be placed. The **Text Properties** window will appear. The properties of the shape are set and edited in the **Text Properties** window. After setting or editing the properties, click the **OK** button to accept the changes; click the **Cancel** button to abort the operation.



Only PNG (portable network graphics) formatted files can be displayed by the Visionary.

NOTE

4. **Delete** - Click the **Delete** button to delete a box, image, or text string from the screen. After selecting the **Delete** button, click the object to be deleted.
5. **Properties** - Click the **Properties** button to edit the properties of a box, image, or text string that has been placed on the screen. After selecting the **Properties** button, click the object to be edited. After editing the object properties, click the **OK** button to accept the changes; click the **Cancel** button to abort the operation.
6. **Edit** - Click the **Edit** button to edit a text string. After selecting the **Edit** button, select the text string to be edited. After editing the text string, click the **Edit** button again to complete editing.
7. **Move** - Click the **Move** button to move a box, image, or text string that has been placed on the screen. After selecting the **Move** button, click the object to be moved and drag it to a new location on the screen. Release the mouse button to complete the operation.
8. **Size** - Click the **Size** button to re-size a box or a text string. After selecting the **Size** button, click and drag on the box or text string to be re-sized. The object can be scaled up or scaled down by dragging. After re-sizing the object, release the mouse button to complete the operation.



If any portion of an object (box, image, or text string) extends off the edge of the screen, select the Properties button, then select the object; the object will automatically move onto the page.

NOTE

9. **Canvas Color** - Click the **Canvas Color** pull-down menu to change the color of the background of the Visionary Editor screen. Pick from any of the standard colors in the pull-down menu, or click the **Custom** option to create a color that is not defined in the pull-down menu.

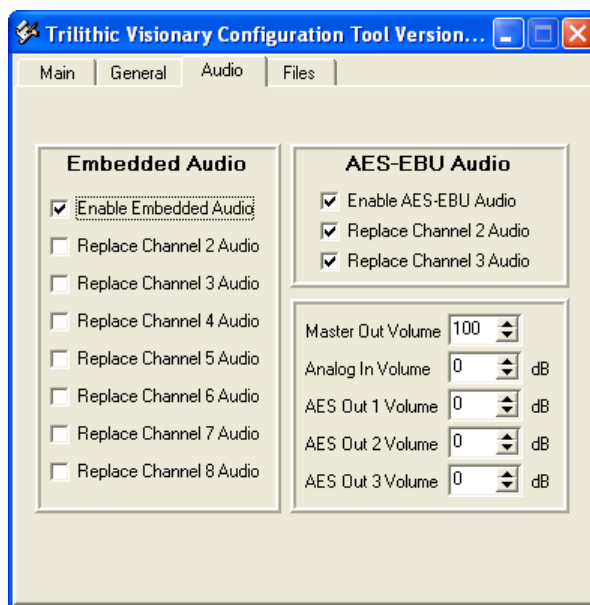
- 10. Load** - Click the **Load** button to load a trigger page that has been previously created and saved. The **Load Visionary Message from a File** window will appear. Select the message file and click the **Open** button to load the message; click the **Cancel** button to abort the operation.
- 11. Save** - Click the **Save** button to save a trigger page that has been created. Type a name in the **File Name** text box and click the **Save** button in the pop-up window.
- 12. Close** - Click the **Close** button to close the Visionary Editor window and return to the Visionary configuration window.
- 13. Upload Page** - Click the **Upload Page** button to send the displayed trigger page to the Visionary.
- 14. Delete Page** - Click the **Delete Page** button to remove the stored trigger page from the Visionary.

Audio Configuration

Changes in the way in which the Visionary handles audio can be made in the **Audio** tab of the Visionary configuration software window.

Embedded Audio Panel

If audio is embedded into the SDI programming and should be replaced during EAS activations, select the **Enable Embedded Audio** check box. This automatically selects the audio on channel pair 1 to be replaced during EAS activations. Additional audio channel pairs can be selected for embedded audio replacement. If embedded audio is enabled, deselected channel pairs will be muted during EAS audio playback.



AES/EBU Audio Panel

Select the **Enable AES-EBU Audio** check box to allow the Visionary to replace program audio with EAS audio for AES/EBU (AES 3) channel 1. Select the check boxes corresponding to **Replace Channel 2 Audio** and **Replace Channel 3 Audio** to replace program audio with EAS audio on AES/EBU channels 2 and 3.

The **Master Out Volume** control adjusts the AES/EBU and baseband output volume during the playback of digital audio (wave or streaming audio). The range is 0 (no audio) to 100 (loudest).

The EAS audio input volume can be amplified or attenuated with the **Analog In Volume** setting. The range of amplification or attenuation is ± 12 dB. The **Analog In Volume** setting applies to the baseband EAS audio input on the back of the Visionary.

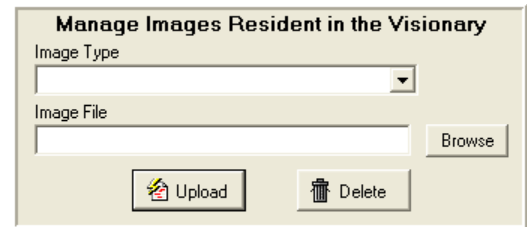
The **AES/EBU Out** volume on channels 1, 2, and 3 can be attenuated with the **AES Out** settings. The volume attenuation range is from 0 dB to -9 dB.

Image Configuration

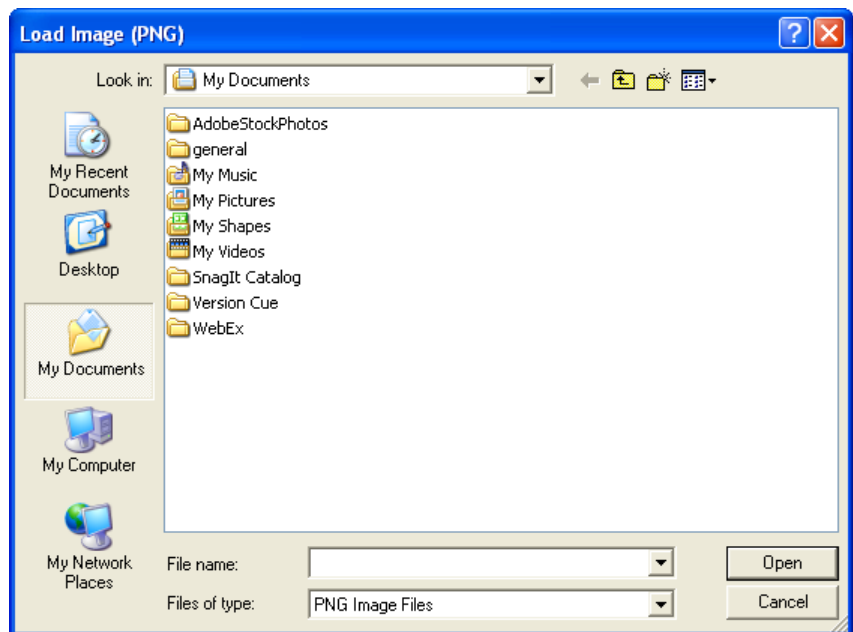
The Visionary configuration software allows multiple images to be stored in the Visionary's memory. These images are used for station identification or to accompany various EAS alerts.

To upload images to the Visionary, perform the following procedure:

1. In the **Files** tab, on the **Manage Images Resident Within the Visionary** panel, click the **Browse** button. The **Load Image** dialog box will open.



2. Navigate to the file to be uploaded, select the file, then click the **Open** button.
3. On the **Manage Images Resident Within the Visionary** panel, in the **Image Type** drop-down list, select the EAS event for the image or station logo, if applicable.
4. Click the **Upload** button to save the image to the Visionary.



Only PNG (portable network graphics) formatted files can be displayed by the Visionary.

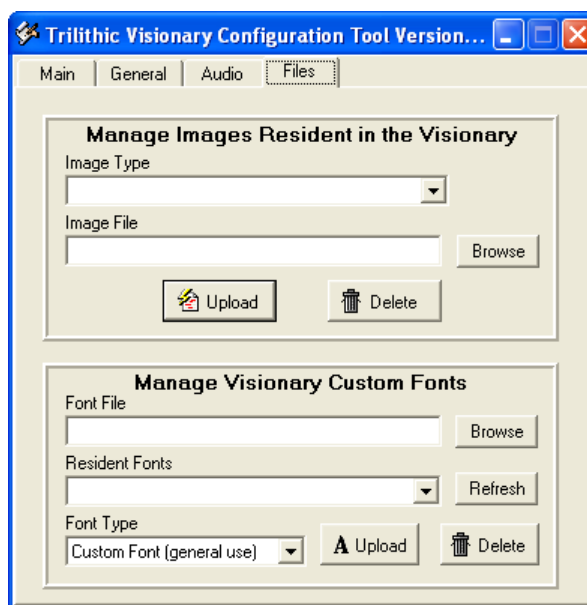
Font Configuration

The Visionary configuration software allows you to select and manage fonts that will be used for EAS activations and other displays. Managing fonts within the Visionary is performed with the following procedures.

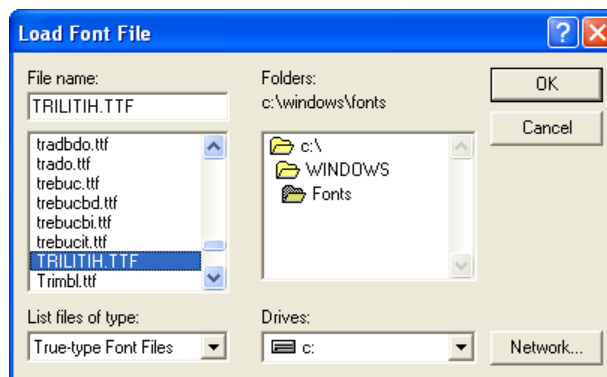
Font files are loaded using the file name of the font, not the font name. Many fonts require multiple files to accommodate bold, italics, etc., type face treatments. Make sure that all the required font files are loaded into the Visionary.

Upload a Font to the Visionary

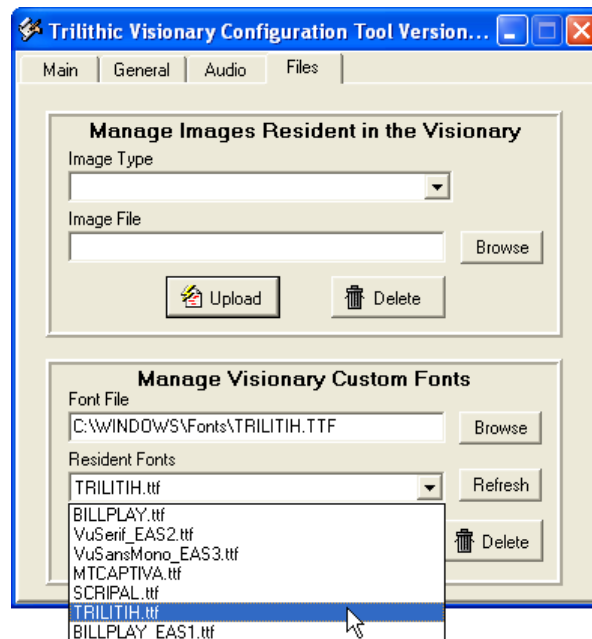
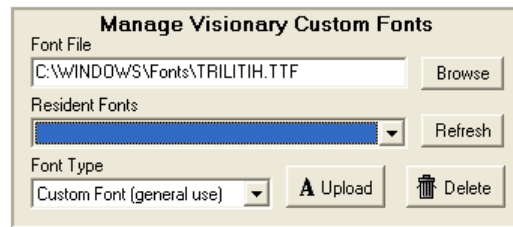
1. On the **Files** tab of the Visionary configuration software, click the **Browse** button in the **Manage Visionary Custom Fonts** panel. The **Load Font File** window will open.



2. Locate and select the font file to be uploaded, then click the **OK** button.
3. Select the font type from the **Font Type** pull-down list, then click the **Upload** button to copy the font file to the Visionary. Note that the EAS custom fonts (1-3) are used by the EASyCAST EAS encoder/decoder for EAS messaging.



4. Click the **Refresh** button to update the **Resident Fonts** list and display the fonts that have been loaded to the Visionary.



The font files installed on the Visionary must have been legally obtained or purchased.



The Font Configuration utility functions independently from the Windows system fonts, however the Windows system fonts are used for display purposes during message editing. Each font file should be installed in the Windows fonts folder to be correctly displayed in the Visionary Editor software.

Load a Font to the Windows Font Folder

In order to properly preview Visionary screens in the Visionary editing software, all the fonts loaded in the Visionary must also be installed on the PC. To load font files to Windows, perform the following procedure:

1. Drag and drop the font file to the Windows **Fonts** folder, in the following location: *C:\Windows\System\Fonts*. Windows will automatically install the font or fonts as they are dragged to the **Fonts** window.

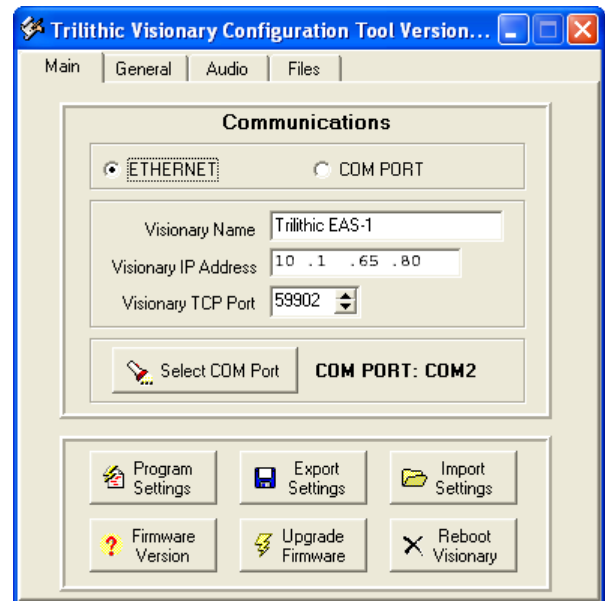
Delete a Font from the Visionary

1. Select the font to be deleted from the **Resident Fonts** pull-down menu.
2. Click the **Delete** button to remove the font file from the Visionary. This will not removed the font file from the host computer on which the Visionary configuration software is installed.

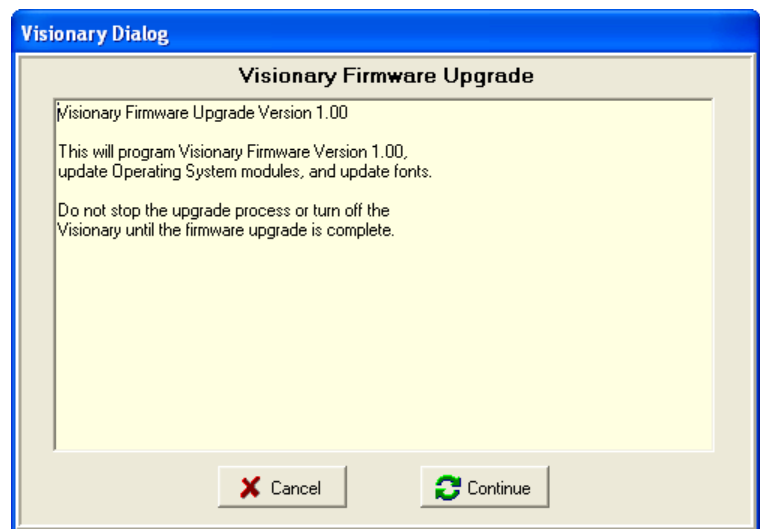
Upgrading the Firmware

Occasionally, Trilithic may release updates for the Visionary's firmware. Firmware updates are included in new configuration utility releases. To update the Firmware on a Visionary, perform the following procedure:

1. Install the latest configuration utility on a PC.
2. Open the Visionary configuration software.
3. Establish an Ethernet connection between the host computer on which the Visionary configuration software is installed, and the Visionary (refer to **Chapter 4: Configuring the Visionary, Configuration Procedure, General Communication Configuration, and Visionary Configuration** sections).



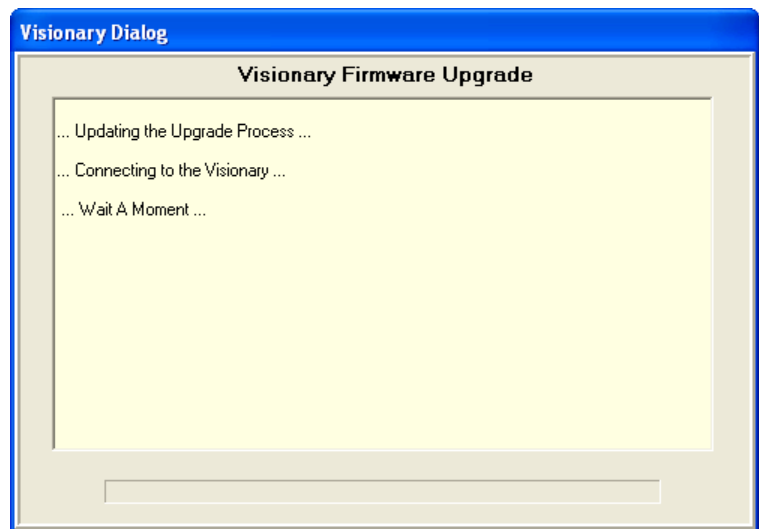
2. On the **Main** tab, click the **Upgrade Firmware** button.
3. Click the **Continue** button to begin the firmware upgrade procedure. To abort the upgrade procedure, click the **Cancel** button.



CAUTION

Do not power-off the Visionary or the host computer, or interfere with Ethernet communications between the Visionary and the computer during the upgrade procedure. Doing so may cause damage to the Visionary that requires factory repair.

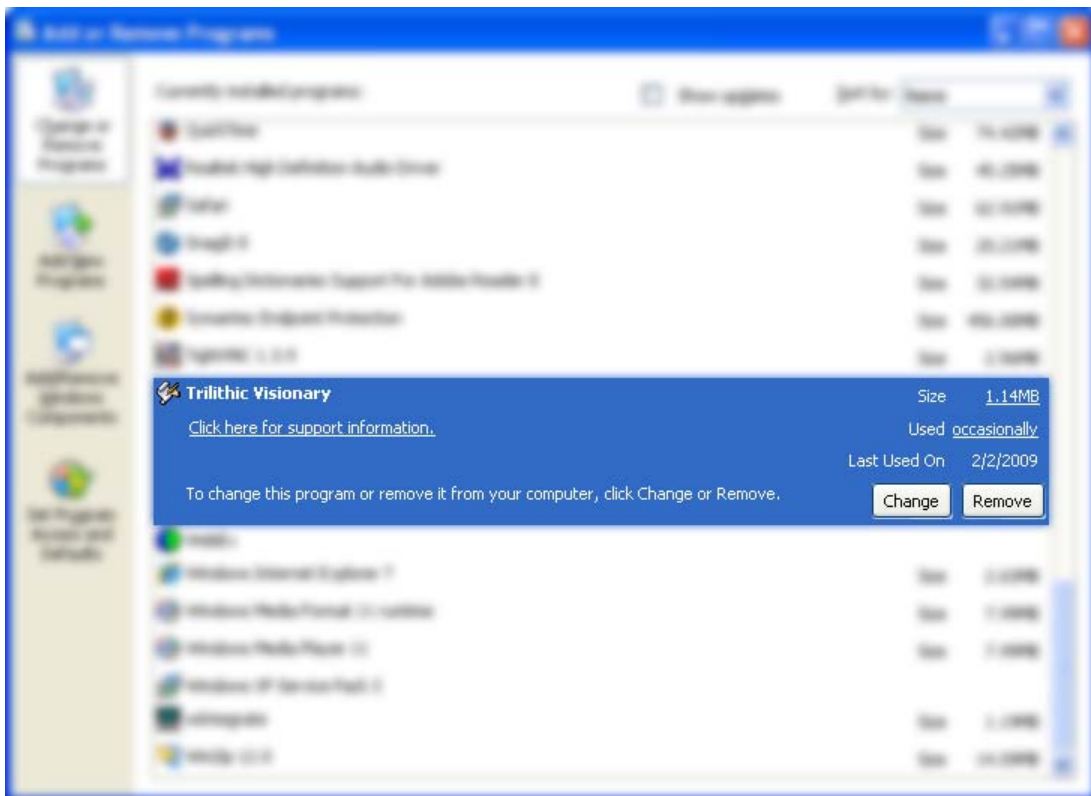
4. A status window will appear, indicating the progress of the firmware upgrade. Do not power-off the Visionary or interfere with the configuration procedure during the upgrade. The Visionary may reboot during the procedure.
5. While the files for the firmware upgrade are being sent to the Visionary, the status light on the front of the Visionary will not be blinking; it will be constant-on or constant-off.
6. When the configuration utility indicates that the update is complete, wait for a steady blink from the Visionary status light, then power-off the Visionary.
7. Wait five seconds, then power-on the Visionary. The Visionary should be operational within approximately 30 seconds, as indicated by the green blinking status light.



Removing the Configuration Software

Should it be necessary to remove the configuration software from the host computer, the Windows Add or Remove Programs utility can be used to remove the software. Perform the following procedure to remove the configuration software:

1. Open the Add or Remove Programs utility by clicking the Windows **Start** button, then the **Control Panel** button. From the Control Panel, click the **Add or Remove Programs** link.
2. In the program list, scroll to find **Trilithic Visionary**. To remove the program, select the program by clicking once on the entry, then click the **Remove** button.



3. A pop-up window will appear, confirming your decision to remove the Visionary configuration software. Click the **Yes** button to remove the Visionary configuration software; click the **No** button to cancel the program deletion.

Technical Specifications

Chassis

- 2U x 19" x 11" rack-mount enclosure

Serial Digital Video

- SMPTE 259M (standard-definition only), SMPTE 274M, SMPTE 296M
- Genlock to video input
- 75 Ω BNC connectors
- Video bypass relay for fail-safe operation
- Standard Definition (480i): 480i @ 59.94 Hz
- High Definition (720p): 720p @ 29.97 Hz
- High Definition (1080p): 1080p @ 29.97 Hz
- High Definition (1080i): 1080i @ 59.94 Hz

Audio

- (6) channels of AES-EBU audio inputs, unbalanced, three 75 Ω BNC connectors
- (6) channels of AES-EBU audio outputs, unbalanced, three 75 Ω BNC connectors
- (8) channels of embedded audio
- Balanced stereo analog audio switch
- Analog-to-digital convertor for analog to AES-EBU and embedded audio
- Audio file storage and playback, inserted into AES-EBU and embedded audio channels
- Insert EAS or alternate audio onto program audio broadcasts (AES-EBU and embedded audio)

Character/Graphics Generation

- 32-bit color with alpha channel
- True Type font support, ships with (2) resident fonts (serif and sans serif); supports additional fonts
- Linear key to overlay characters and graphics over the video programming
- Supports transparency and fades
- Static text can be positioned anywhere on the screen; maximum of (48) text objects on a page
- (1) crawl message per page with up to 4000 characters
- Text properties include: position, font, size, color, background color, transparency, speed, and repeats
- Images can be positioned on the screen with a maximum of (8) images per page; transparency supported
- Compatible with PNG graphic files, with transparency
- All graphic objects (text, boxes, images) can be faded on and off the screen
- Message queue handles multiple messages

Command and Control

- (1) 10/100/1000 Base-T Ethernet connection on an RJ-45 terminal
- (1) RS-232 port on a DB-9 terminal
- (4) general purpose inputs, opto-isolated, active low, provided on modular screw terminals
- (4) general purpose outputs, contact-closures, provided on modular screw terminals

Warranty Information

Trilithic, Inc. warrants that each part of this product will be free from defects in materials and workmanship, under normal use, operating conditions and service for a period of two (2) years from date of delivery. Trilithic, Inc.'s obligation under this Warranty shall be limited, at Trilithic, Inc.'s sole option, to replacing the product, or to replacing or repairing any defective part, F.O.B. Indianapolis, Indiana; provided that the Buyer shall give Trilithic, Inc. written notice.

Batteries are not included by this warranty.

The remedy set forth herein shall be the only remedy available to the Buyer under this Warranty and in no event shall Trilithic, Inc. be liable for incidental or consequential damages for any alleged breach of this Warranty. This Warranty shall not apply to any part of the product which, without fault of Trilithic, Inc., has been subject to alteration, failure caused by a part not supplied by Trilithic, Inc., accident, fire or other casualty, negligence or misuse, or to any cause whatsoever other than as a result of a defect.

Except for the warranty and exclusions set forth above, and the warranties, if any, available to the Buyer from those who supply Trilithic, Inc., there are no warranties, expressed or implied (including without limitation, any implied warranties of merchantability or fitness), with respect to the condition of the product or its suitability for any use intended for it by the Buyer or by the purchaser from the Buyer.

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