VIP-4060
Video Image Processor

Operator's Manual

DAKTRONICS

Table of Contents

Section 1:   Introduction

This manual is intended to help Daktronics customers operate the VIP-4060. Daktronics recommends reviewing all of the information in this manual in order to understand the features that the VIP-4060 offers.

This manual assumes the user has a basic working knowledge of the Windows® operating system, including using menus and folders. If a user is unfamiliar with this operating system, there are many resources available to assist in understanding it. Terms that describe commonly used personal computer operations are used frequently in this manual.

1.1   Daktronics Contact Information

Users can access the VIP-4060 Operator's Manual via the blue question mark button in the top-left corner of the screen. If further assistance is required, Daktronics Customer Service is available 24/7 via phone or online connection.

Daktronics Customer Service can be reached via telephone by calling either number below:

- United States and Canada: 1-800-DAKTRON (1-800-325-8766)

- Outside the U.S. and Canada: +1-605-697-4000

Daktronics online customer support can be reached by entering the address below into a web browser:

- www.daktronics.com/support

Section 2:   First-Time System Setup & Launch

2.1   Physical Connections

DVX LED Display

Connecting the VIP-4060 to the DVX LED display requires duplex LC fiber-optic cables. To connect the VIP-4060 to the display, follow the steps below while referring to **Figure 1**:

1. Locate Port A and Port B on the back of the VIP-4060.

    Note: Both ports can be used to connect primary data and back-up data to the display.

2. Insert the duplex LC fiber-optic cables into their corresponding ports. The cables will click into place when seated properly. Match the supplied cable label to the port label.

    Note: Remove fiber dust covers from cables prior to inserting into ports.
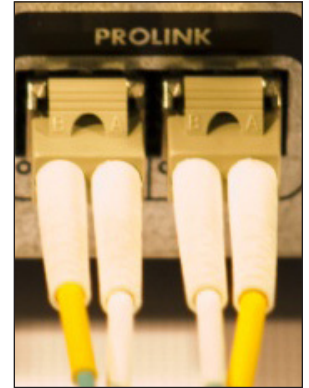
Figure 1: Fiber-Optic Ports

Video System

There are four video feed options - DVI, 720p SDI, 1080p @30fps SDI, or Daktronics V-Max™ signal - for connecting a video feed to the VIP-4060 system. The type of video feed determines which will be used. In stand-alone systems, the options are generally 720p SDI or DVI. Daktronics-supplied control systems use V-Max™ 4 signal output to connect components.

Note: DVI resolutions up to SXGA are supported (i.e. 640x480, 800x600, 1024x720, 1280x720, 1280x960, 1280x1024, 1400x900).

Supported DVI/VGA Resolutions

Video Standard	Resolution (Pixels)	Video Standard	Resolution (Pixels)
VGA	640x480	WXGA	1360x768
SVGA	800x600	SXGA	1280x960
XGA	1024x768	SXGA	1280x1024
WXGA	1280x720	WXGA+	1440x900

Connecting SDI or Daktronics V-Max™ 4 Signal

To connect the video feed to the VIP-4060 system, follow the steps below:

1. Connect the BNC cable to the top SDI/V-Max™ 4 input. Refer to **Figure 2**.

2. Rotate the connector a quarter turn clockwise to lock.

3. Ensure that a 75 ohm terminator is connected to the bottom BNC.

    Note: The bottom BNC does not function as a loop out on the VIP-4060.
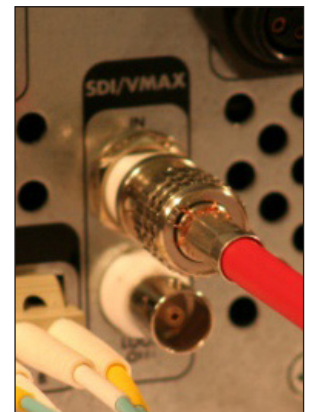
Figure 2: SDI/V-Max™ 4 Input

Connecting DVI Video

To connect the DVI video to the VIP-4060 system, follow the steps below:

1. Insert a male plug into the female jack.

2. Turn the screws on the male plug clockwise to lock. Refer to **Figure 3**.

Temperature and CAN Light Sensors

To enable temperature and light sensors, follow the steps below while referring to **Figure 4**:

1. Connect the Daktronics-supplied sensor cable to the Light/Temp port.

2. Rotate the connector clockwise a quarter turn to lock.

Phoenix Connection

Use the Phoenix connection to enable peripheral devices such as direct light sensors. Refer to **Figure 5**.

Network

To connect the VIP-4060 to the network, follow the steps below:

1. Connect an RJ45 network cable to the network port on the VIP-4060. Refer to **Figure 6**.

2. Connect the other end of the cable to the computer or network.

Power

To connect power to the VIP-4060, follow the steps below:

1. Connect the cord into the jack on the VIP-4060. Refer to **Figure 7**.

2. Plug the cord into an outlet.

2.2   Computer-to-VIP-4060 Communication

Once the physical connections have been made, navigate to the network address of the VIP-4060 to run the configuration application stored within the device. The IP address is located in the documentation that arrived with the equipment or on the label on the back of the VIP-4060.

> **Tech Note:** New customers receive the VIP-4060 with a factory-determined IP address in the equipment documentation. The DisplayFind utility helps technicians in troubleshooting situations.

Figure 3: DVI Input

Figure 4: Sensor Cable and Port

Figure 5: Phoenix Connection

Figure 6: Network Input

Figure 7: Power Port

Downloading DisplayFind Application

Users can download the DisplayFind application from either the control software CD or from the Internet. To download the DisplayFind file from the Internet, follow the steps below:

1. Open a web browser (i.e. Internet Explorer® or Firefox® browser).

2. Navigate to **dakfiles.daktronics.com**.

3. Click **venus1500 > Utils > DisplayFind > DisplayFind.exe**.

4. Select **Run** to download the DisplayFinder utility or **Save** to save the file to the computer for later use.
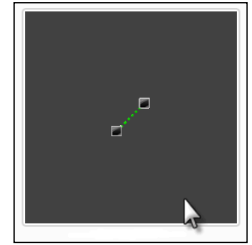
Figure 8: DisplayFind Icon

Launching DisplayFind Utility

The DisplayFind file automatically opens if **Run** was selected in Step 4 above.

If **Save** was selected instead of **Run**, locate where the DisplayFind file was saved during download and double-click the icon to open the program. Refer to **Figure 8**.

DisplayFind Utility

Each item listed at the top of the DisplayFind utility should have a green check mark as shown in **Figure 9**. If an item has a red **X** next to it as shown in **Figure 10**, click it for additional information or to access the download.
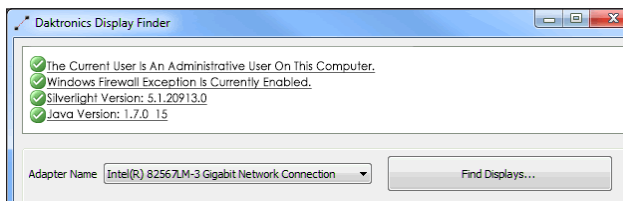
Figure 9: DisplayFind Utility Window
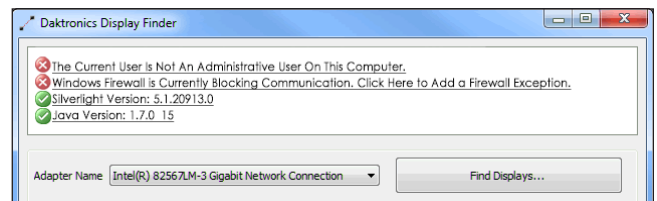
Figure 10: DisplayFind Utility Errors

A red **X** is shown next to **The Current User Is Not An Administrative User On This Computer** if the user does not have administrative rights on the computer being used. Administrative rights are needed to install the Silverlight® application. After installation, administrative rights are no longer necessary.

A red **X** is shown next to **Windows Firewall is Currently Blocking Communication** if the Windows® firewall is not disabled. Windows® firewall should be temporarily disabled to allow discovery responses to be received from any displays. Other third party anti-virus/firewall applications (i.e. McAfee®, Symantec®, ZoneAlarm® software, etc.) should also be temporarily disabled.

Note: Firewall exceptions should be configured to allow inbound TCP and UDP traffic on Port 3702 if temporary disabling is not desired.

A green check mark next to **Silverlight Version** indicates that the Silverlight® application is installed on the computer. A red **X** indicates that the Silverlight® application is not installed or that the installed version is not Silverlight® 2.0 or newer.

Finding the VIP-4060 Network Internet Protocol (IP) Address

After installing the DisplayFind program, follow the steps below to find the network IP address:

1. Start the **DisplayFind** application.

2. Click **Find Displays**. Refer to **Figure 11**.

3. Click the drop-down arrow next to the **Adapter Name** text box and choose the Ethernet adapter to connect to the controller.

4. Select the correct controller name for the site from the list of controllers found.

   Note: If multiple VIP-4060 controllers are found, use the Media Access Control (MAC) address or Dynamic Host Configuration Protocol (DHCP) name from the label on the back of the VIP-4060 to select the appropriate system. The address name begins with **M4** or **DAKT**. Refer to **Figure 12** and **Figure 13** for examples.
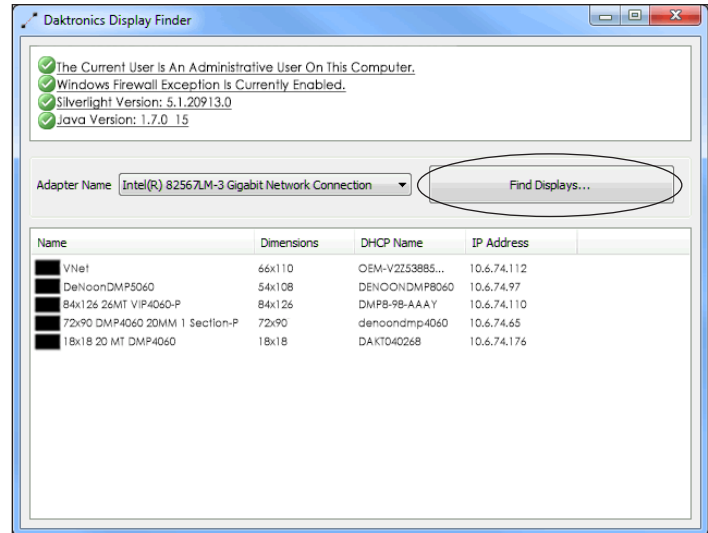
Figure 11: Display Finder
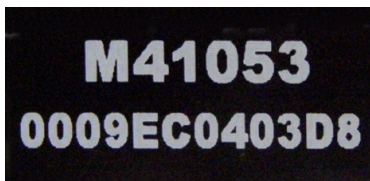
Figure 12: M4 Address Name

Figure 13: DAKT Address Name

2.3   Computer System Requirements

For the best experience, the VIP-4060 requires the following:

- Silverlight® 2.0 application (or newer)

- Java® software 1.6.0.14 (or newer)

- JavaScript® enabled in the browser

For the best browser experience, the VIP-4060 requires the following:

- Internet Explorer® 6.0 browser (or newer)

- Firefox® 3.5 browser (or newer)

2.4 Software Installation

Detecting & Installing Silverlight® Application

If the DisplayFind utility was not used to connect to the display, open a web browser window and follow the steps in the following section to download and install the Silverlight® application.

Silverlight® application version 2.0 or newer is required to use the VIP-4060. The VIP-4060 will indicate if the system needs to install the Silverlight® application or perform an update (internet access required).

Detection

To determine if the Silverlight® application is already installed, open an internet browser window and enter the VIP-4060 system's IP address into the browser's address bar (i.e. http://<IPaddress>).

If the Silverlight® application is installed, the VIP-4060 login window will open; if no login window opens, the Silverlight® application needs to be installed.

Figure 14: Silverlight® Installation Icon

Installation

If the Silverlight® application is not installed on the host machine, the user will see the **Install Microsoft® Silverlight®** icon as shown in **Figure 14**. To install the Silverlight® application, follow the steps below:

1. Click the **Install** icon as shown in **Figure 14**. This will cause the **File Download - Security Warning** window to open.

2. Click **Run** in the security warning window. Refer to **Figure 15**. The **Install Silverlight®** dialog box opens next. Refer to **Figure 16**.

Figure 15: File Download Security Window

3. Click **Install now** in the dialog box to begin installation. The **Installation Status** window tracks the progress of the installation. Refer to **Figure 17**.

4. Click **Close** in the **Installation successful** window to complete the Silverlight® program installation. Refer to **Figure 18**.
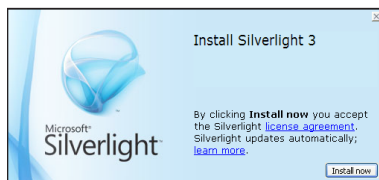
Figure 16: Installation Dialog Box

Figure 17: Status Window
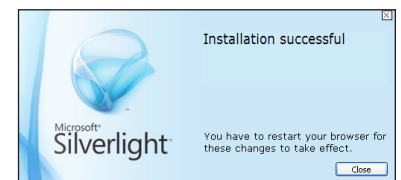
Figure 18: Competed Installation

Following a successful installation, the **Daktronics Remote Display Configuration** window opens to reveal control tabs which include: **Display Control**, **Tools**, **Panel Adjustment**, C**onfiguration**, and **Advanced**. Refer to **Section 4.1**.

Installing Java® Software

Java® software version 1.6.0.14 or newer is required to use the VIP-4060 configuration application. If Java® software is not installed on the computer, the prompt in **Figure 19** will open during login.

Note: It is only necessary to install Java® Runtime Environment software.

Figure 19: Missing Plugins Prompt

To install Java® software, follow the steps below:

1. Click **Install Missing Plugins...** as shown in **Figure 19** or navigate to **http://java.com/en/**. Refer to **Figure 20**.

2. Enter **http://<DHCP name>** in the address bar (i.e. http://M41053) after installing Java® software, and proceed to the login instructions.

   Note: Daktronics recommends disabling the Java® cache. Refer to **Section 6.2**.
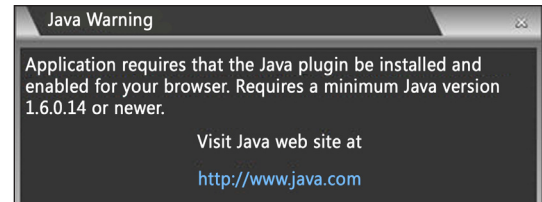
Figure 20: Java® Software Installation Prompt

Enabling JavaScript® Language and Java® Software

JavaScript® language must be enabled to use the VIP-4060 user interface. If JavaScript® language is not enabled, a prompt will open or the user may be asked to install the Silverlight® application when it has already been installed. JavaScript® language may be enabled in either the Internet Explorer® browser or the Firefox® browser.

Internet Explorer® Browser

To enable JavaScript® language in the Internet Explorer® browser, follow the steps below:

1. Open the Internet Explorer® browser and select **Manage add-ons** from the **Tools** menu drop-down list. Refer to **Figure 21**.
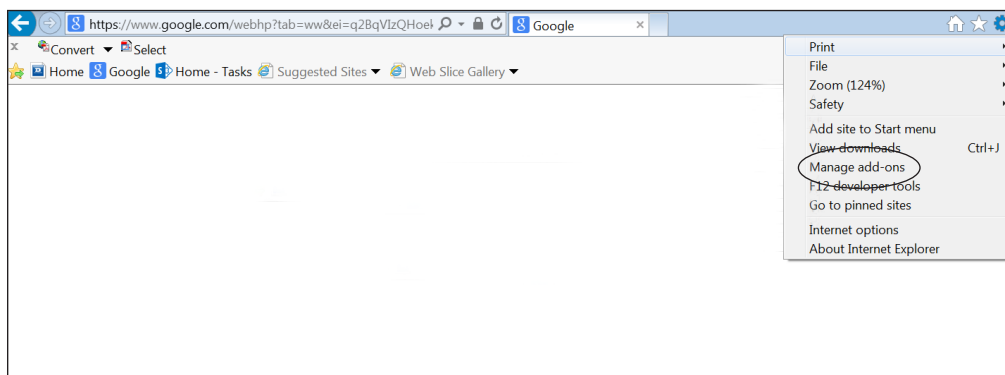
Figure 21: Manage Add-Ons

2. Click the drop-down arrow for the **Show list** and select **All add-ons**. Refer to **Figure 22**.
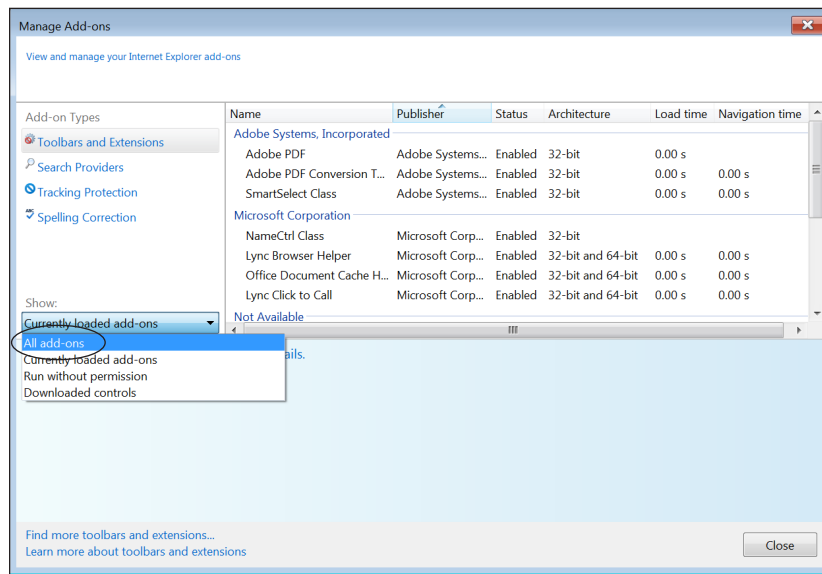
Figure 22: View All Add-Ons

3. Navigate to **Oracle America, Inc.** in the results window using the scroll bar on the right.

4. Select the line for **Java Plug-in 1.60_xx** and click the **Enable** button in the lower-right corner of the window. Refer to **Figure 23**.
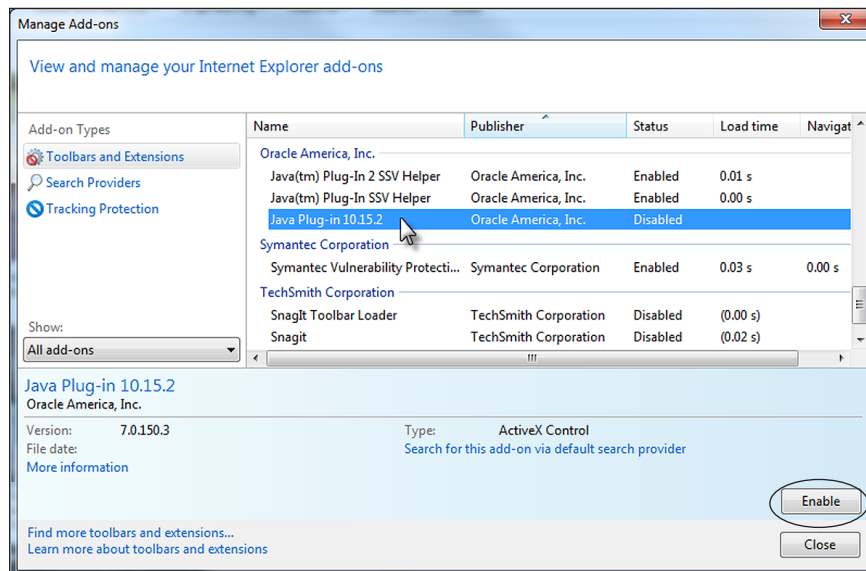
Figure 23: Enable Java® Plug-In

5. Click the **Close** button to exit the window.

6. Restart the internet browser.

Firefox® Browser

To enable JavaScript® language in the Firefox® browser, follow the steps below:

1. Open the Firefox® browser and navigate to **Tools > Options** in the drop-down menu list.

2. Click the **Content** tab in the **Options** dialog box.

3. Check the **Enable Java** and the **Enable JavaScript** boxes. Refer to **Figure 24**.

4. Click **OK**.

2.5 VIP-4060 System Login

To log in to the VIP-4060, follow the steps below:

1. Locate the system's Dynamic Host Configuration Protocol (DHCP) name on the label on the back of the VIP-4060. This label will begin with either **M** or **DAKT**. Refer to **Figure 12** and **Figure 13** on page 6 for examples.

    Note: The Internet Protocol (IP) address may be used in place of the DHCP name.

2. Open an internet browser window and enter **http://<DCHP>** into the address bar (i.e. http://M41053 or http://DAKT020345). This opens the login dialog box shown in **Figure 25**.

3. Type **Dak** in the **Username** text box. The VIP-4060 is factory-configured with no password. Refer to **Figure 25**.

    Note: The display administrator can choose to password-protect the device after initial configuration. Daktronics recommends adding a password.

4. Click **Log In**.

If the above login procedure is not successful, perform the following steps:

1. Open the **DisplayFind** application. Refer to **Launching DisplayFind Utility** on page 5.

2. Click **Find Displays**. Refer to **Figure 26**.

3. Locate and select the controller name.

    Note: If multiple controllers are found, reference the MAC address or DHCP name from the label on the back of the VIP-4060 to select the appropriate system.
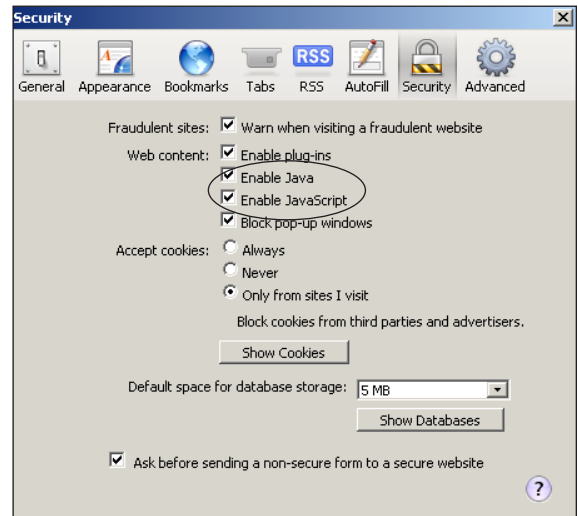
Figure 24: Enable JavaScript® Language
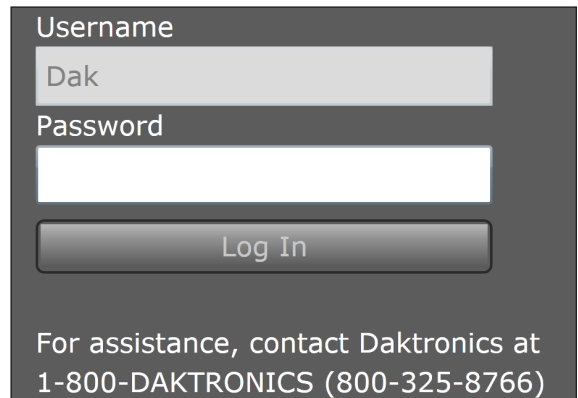
Figure 25: Login Dialog box
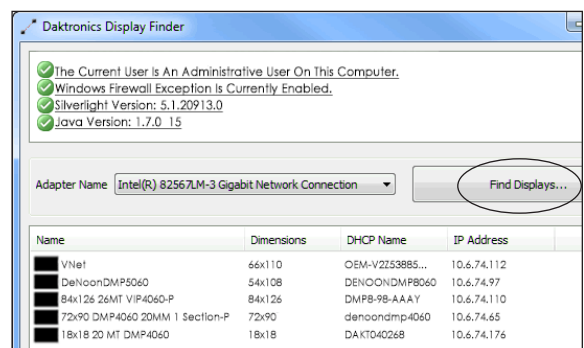
Figure 26: Display Finder

If the login was unsuccessful, an error message will appear in the Log In box. Refer to **Figure 27**. Try logging in again or contact Daktronics for assistance.

Note: If Java® software was installed just prior to login, a series of warning security alerts will open:

- For the **Java has discovered application components that could indicate a security concern** alert, click **Yes**.

- For the series of alerts **The application's digital signature cannot be verified**, click **Run**.

2.6 Choosing a Configuration Port

The default configuration port is 4500. If this is not available, choose a new port by following the steps below:

1. Click the **Communication Settings** icon in the left column of the application menu. Refer to **Figure 28**. This opens the **Settings** dialog box.

2. Select the **Configuration** sub-tab.

3. Uncheck the **Use Default Configuration port** check box. Refer to **Figure 29**.

4. Enter the new configuration port number in the **Configuration Port** text box or use the arrows to change the number.

Note: The new **Configuration Port** setting is saved to a temporary settings file. When the cache is cleared, the temporary settings are deleted and will need to be reconfigured.

2.7 Displaying Initial Video

To quickly output initial video to the display and test the functionality of the system, follow the instructions below. For more detailed information, refer to **Section 4.2**.

Display Control

To show video on the display, follow the steps below:

1. Navigate to the **Display Control** tab and select the **Display mode/Test patterns/Dimming mode** sub-tab. Refer to **Figure 30**.

2. Select a video source (**DVI**, **SDI**, or **V-Max**) from the **Display mode** drop-down list.
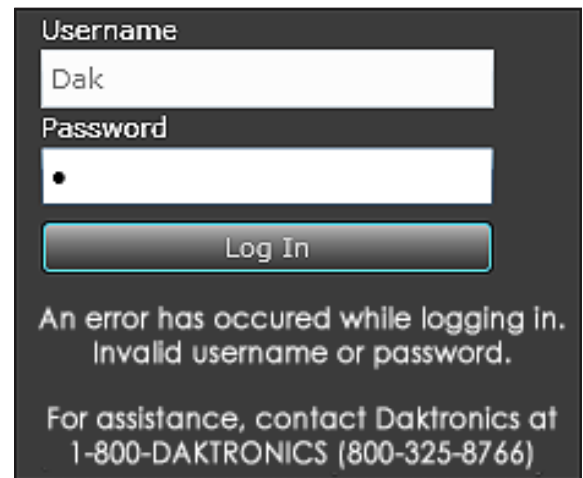
Figure 27: Login Error Message
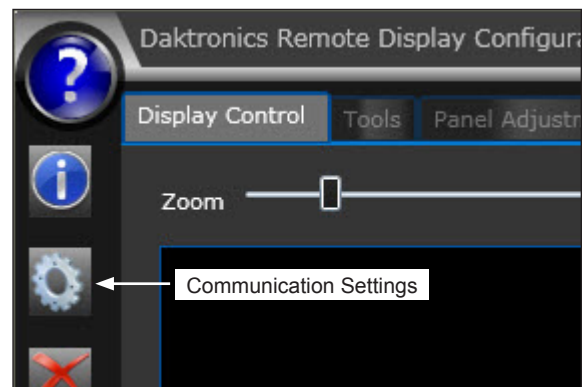
Figure 28: Communication Settings Icon
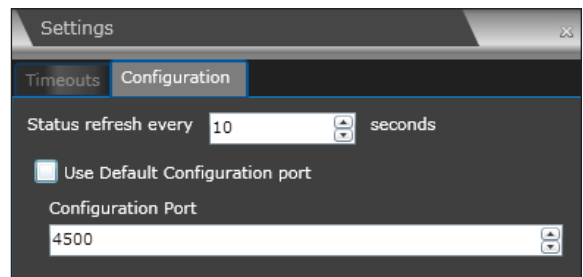
Figure 29: Settings Configuration Tab
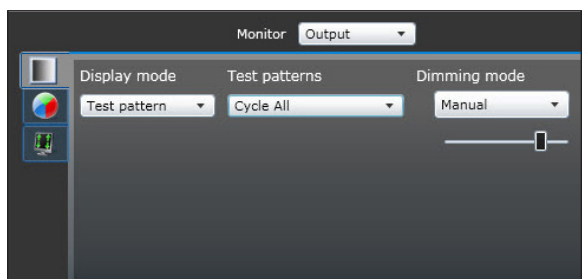
Figure 30: Display Control Sub-Tabs

3. Select the **Monitor** drop-down list. Click **Input** or **Output** to enable easier configuration. Refer to **Figure 31**.

4. Click the **Source & Target** sub-tab and select **Source** to choose the video signal. Refer to **Figure 32**.

5. Choose a fill mode for the display from the **Full**, **Pillar**, and **Letterbox** icons located above the **Source** tab. Refer to **Figure 33**.
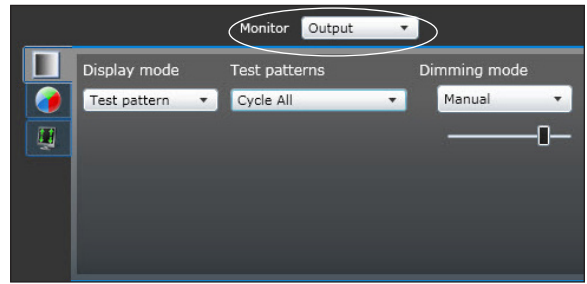
Figure 31: Monitor Drop-Down List
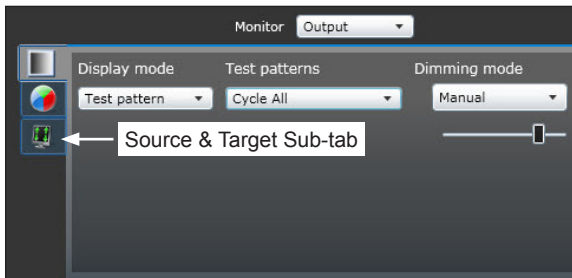
Figure 32: Source & Target Sub-tab
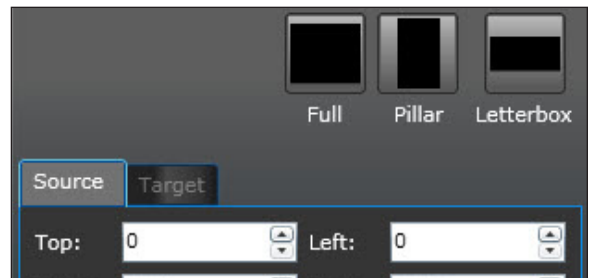
Figure 33: Display Fill Mode

6. Click the **>> tab** on the right-side of the window for additional display information.

Display Adjustments

Click the **Display mode/Test patterns/Dimming mode** sub-tab to open the display adjustment controls.

- **Dimming** – To manually adjust dimming, choose **Manual** from the **Dimming mode** drop-down list and use the slider to select the preferred value. Refer to **Figure 34**. To automatically adjust dimming, click **Auto** from the **Dimming mode** drop-down list and the display's light sensor will adjust the values according to environmental conditions. Dimming can also be determined by the display's location using GPS coordinates. Refer to **Section 4.1** and **Section 5** for additional dimming information.

Figure 34: Dimming Adjustment

- **Gamma** – To adjust gamma, navigate to the **Color Adjustments with Color Space and Gamma** sub-tab. Use the slider to select the preferred gamma value. Refer to **Figure 35**.
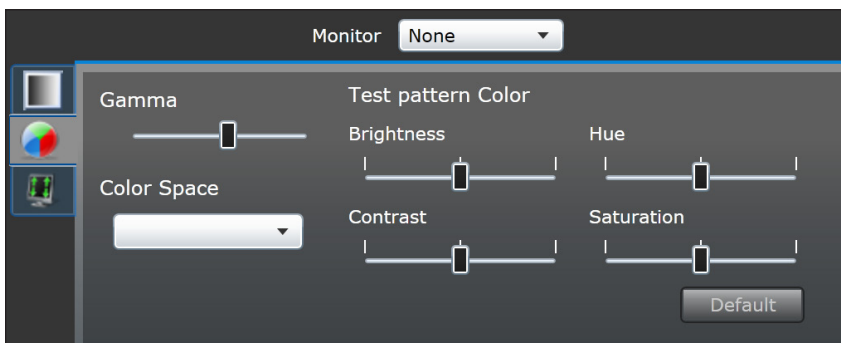
Figure 35: Color Adjustments Sub-tab

Display Backup

Display backup clones all configuration files and the current translation table. It is highly recommended that the system configuration is cloned prior to making any changes. Each machine that accesses the VIP-4060 should include a saved working copy of the controller files.

Note: The **Backup display configuration** function will duplicate all settings and Media Access Control (MAC) addresses and overwrite low-level configuration.

To back up the configuration files, follow the steps below:

1. Click the **Backup display configuration** icon to open the **Save As** window. Refer to **Figure 36**.

2. Choose the **Save As** storage location by using the **Look In** drop-down list or the folder presentation pane. Refer to **Figure 37**.

    Note: All files can be displayed by selecting the **Files of Type** drop-down list.

Figure 36: Backup Icon

3. Type the name of the saved file in the **File name** text box.

    Note: Placing the date of the backup in the file name is useful in cases where the configuration has been changed but the previous settings may be needed again.

4. Click **Save** when finished.

Refer to **Section 3.3** for more information.
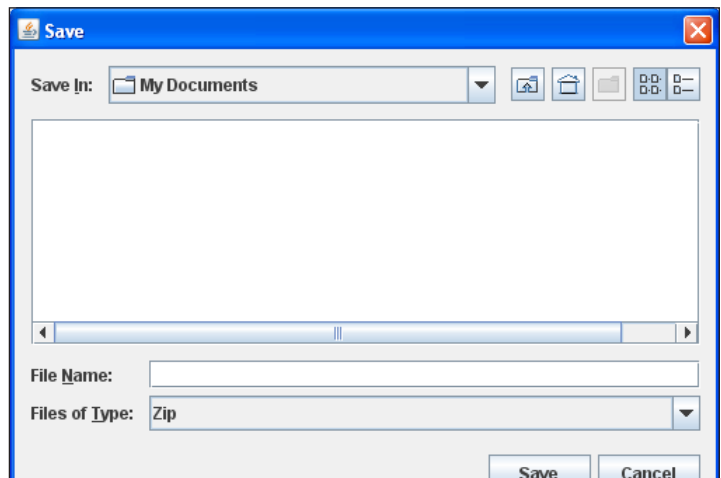
Figure 37: Save As Window

Section 3: User Interface Basics

The VIP-4060 system's application windows share common elements that are always visible to the user, including a basic header bar, presentation area, right column, and left column. Refer to Figure 38.

3.1 Window Basics

- **Header Bar** contains the application title **Daktronics Remote Display Configuration**.

- **Presentation Area** displays elements, information, and data related to current user selections and system triggers. Settings that can be modified by the user are shown in this area.

- **Right Column** indicates the VIP-4060 communication status.

- **Left Column** contains icons and tools. The basic **Help/Manual**, **About**, and **Communication settings** icons are always available. Following login, other icons and tools become available to the user.
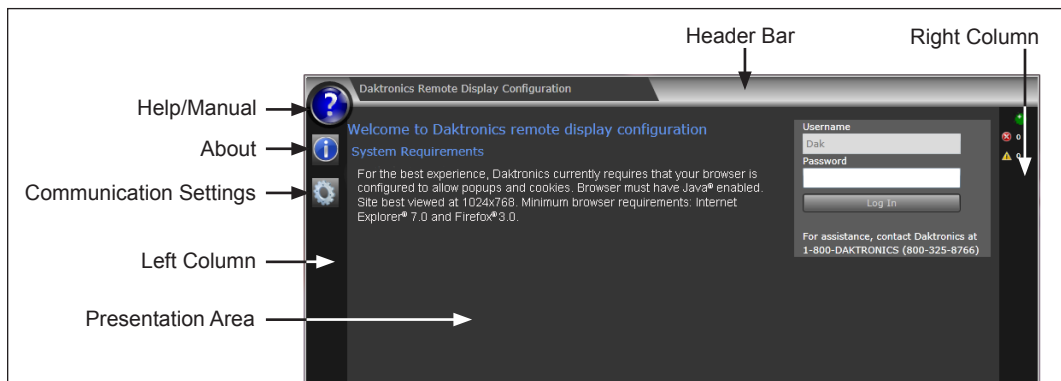
Figure 38: Remote Display Configuration Screen

3.2 Communication Indicators

This section details the tools and features available in the right column. Refer to **Figure 39** and **Figure 40**.

Communication Status

- **Possible** or **Active** – A green light indicates that communication is possible between the application and the VIP-4060. A blinking green light indicates that communication is actively taking place. Refer to **Figure 39**.

  Tasks – Click the green communication status indicator light to view the **Tasks** window. The open **Tasks** window lists the tasks currently pending or recently completed. Each task is listed as failed, completed, or pending. Refer to **Figure 40**. **Note:** Do not drag the Tasks window outside the presentation area.
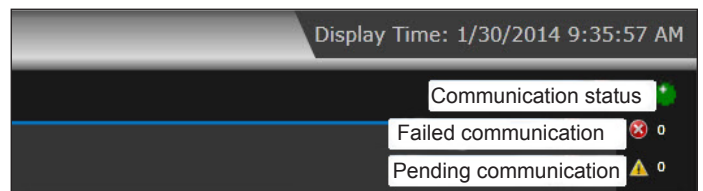
Figure 39: Right Column Communication Features
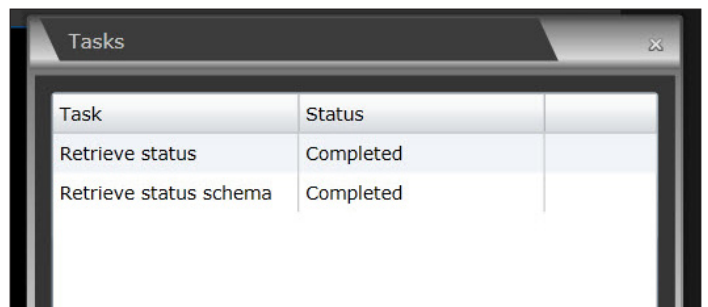
Figure 40: Communication Tasks Window

Failed & Pending Communication

- The **Failed communication** icon, a red dot with an X in the upper-right column, indicates how many failed communications occurred during the current session. Refer to **Figure 39**.

    Note: When the session closes, the browser resets to 0.

- The **Pending communication** icon, a yellow caution dot in the upper-right column, indicates how many communications with the display are pending. Refer to **Figure 39**.

3.3   Application Menu

This section details the tools and features available in the left column. Refer to **Figure 41**.

Help/Manual Icon

The **Help** or **Manual** icon, located at the top of the left column, provides access to the online operator's manual.

About Icon

The **About** icon provides version details and contact information for Daktronics.

Communication Settings Icon

Selecting the **Communication settings** icon opens the **Settings** window which provides quick access to the **Timeouts** tab and the **Configuration** tab.

Timeouts

Adjust the **Communication Timeout** setting by increasing or decreasing the length of time (in seconds) that is allowed to pass before the VIP-4060 reports a connection problem. Refer to **Figure 42**.

Monitor time limit controls how long the monitored stream is presented.

Configuration

Status refresh adjusts how frequently the video processor status is retrieved. Use the controls to set the rate (in seconds) at which the system and display are refreshed with new data. Refer to **Figure 43**.

To modify the configuration port settings, uncheck the **Use Default Configuration port** check box and enter the new port number in the **Configuration Port** text box. Refer to **Section 2.6**.
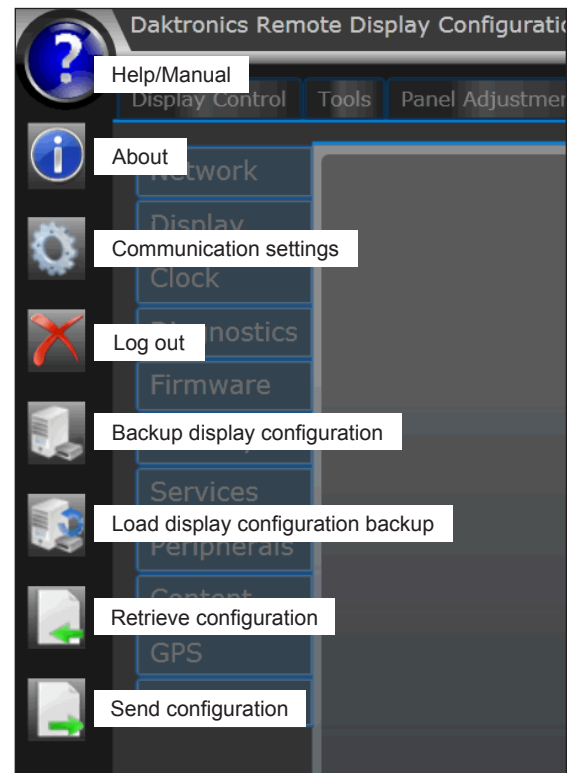
Figure 41: Left Column Application Menu Buttons
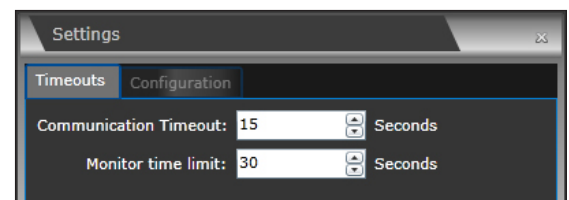
Figure 42: Timeouts Tab
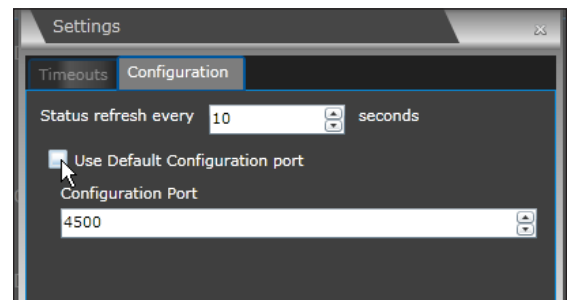
Figure 43: Configuration Tab

Backup Display Configuration Icon

Following successful login, the **Backup display configuration** icon is visible in the left column. Refer to **Figure 41**. This option clones the configuration files and the translation table.

To clone the configuration files, follow the steps below:

1. Click the **Backup display configuration** icon. The **Save As** window opens as shown in **Figure 44**.

2. Choose the **Save As** storage location.

3. Type the name of the saved file in the **File name** text box.

    Note: Placing the date of the backup in the file name is useful in cases where the configuration has been changed but the previous settings may be needed again.

4. Click **Save**.
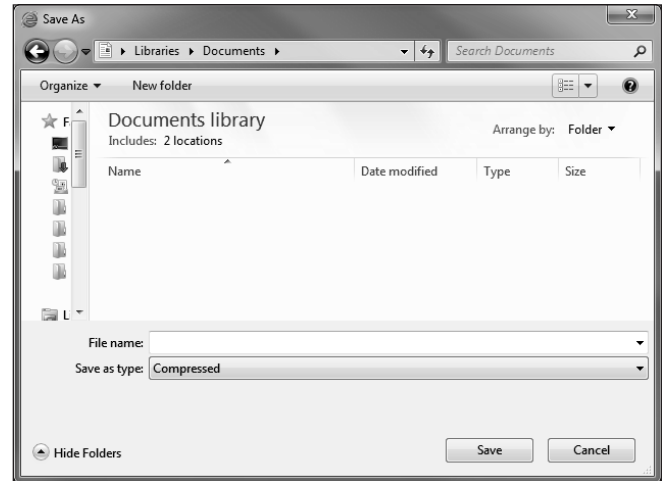
Figure 44: *Save As Window*

Load Display Configuration Backup Icon

Following successful login, the **Load display configuration backup** icon is visible in the left column. Refer to **Figure 41**. This feature provides the ability to reload a stored configuration file from the **Backup display configuration** control.

To reload a stored configuration file, follow the steps below:

1. Click the **Load display configuration backup** icon. The **Open** window appears as shown in **Figure 45**.

2. Use the **Look In** drop-down list or the folder presentation panel to locate the desired file.

3. Select the file to add it to the **File Name** text box.

4. Click **Open**.
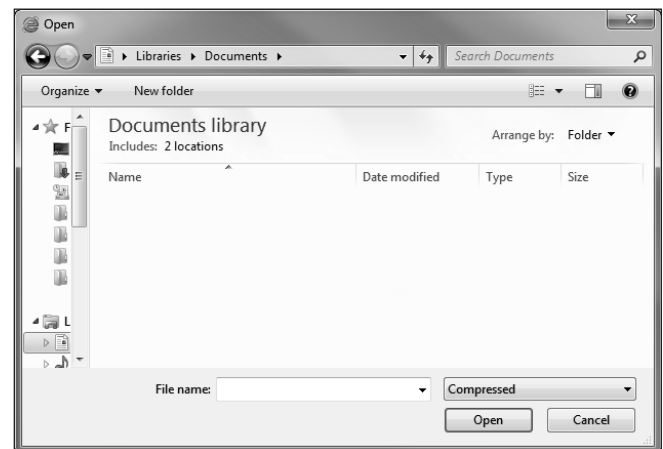
Figure 45: *Open Window*

Retrieve Configuration Icon

When the **Communication Settings** icon is selected, followed by the **Configuration** tab, the **Retrieve Configuration** icon becomes visible in the left column. Refer to **Figure 41**. This feature can be used to quickly back up current VIP-4060 configuration settings.

Send Configuration Icon

When the **Communication Settings** icon is selected, followed by the **Configuration** tab, the **Send Configuration** icon becomes visible in the left column. Refer to **Figure 41**. This control sends advanced configuration settings to the controller.

3.4 Using Primary & Backup VIP-4060 Systems

Displays can be configured to use primary and backup VIP-4060 systems. Both primary and backup systems cannot be **Active** at the same time. To change which VIP-4060 system is active, follow the steps below:

1. Log into the web interfaces of the primary VIP system and the backup VIP system.

2. Use the primary VIP interface to locate the green **Active** switch in the upper-right corner. Refer to **Figure 46**. Click the switch to change this **Active** VIP system to **Inactive**.

Figure 46: Active Switch

3. Click the **Send Configuration** button to complete the switch from active to inactive.

4. Use the backup VIP interface to locate the gray **Inactive** switch in the upper-right corner. Refer to **Figure 47**. Click the switch to change this **Inactive** VIP system to **Active**.

Figure 47: Inactive Switch

5. Click the **Send Configuration** button to complete the switch from inactive to active.

Section 4: VIP-4060 Configuration Tabs

4.1 Display Control Tab

The **Display Control** tab includes tools for setting video sizes and adjusting dimming, display mode, and video appearance controls. Refer to **Figure 48**.

Note: Any changes made in the **Display Control** tab are automatically stored and applied to the display.
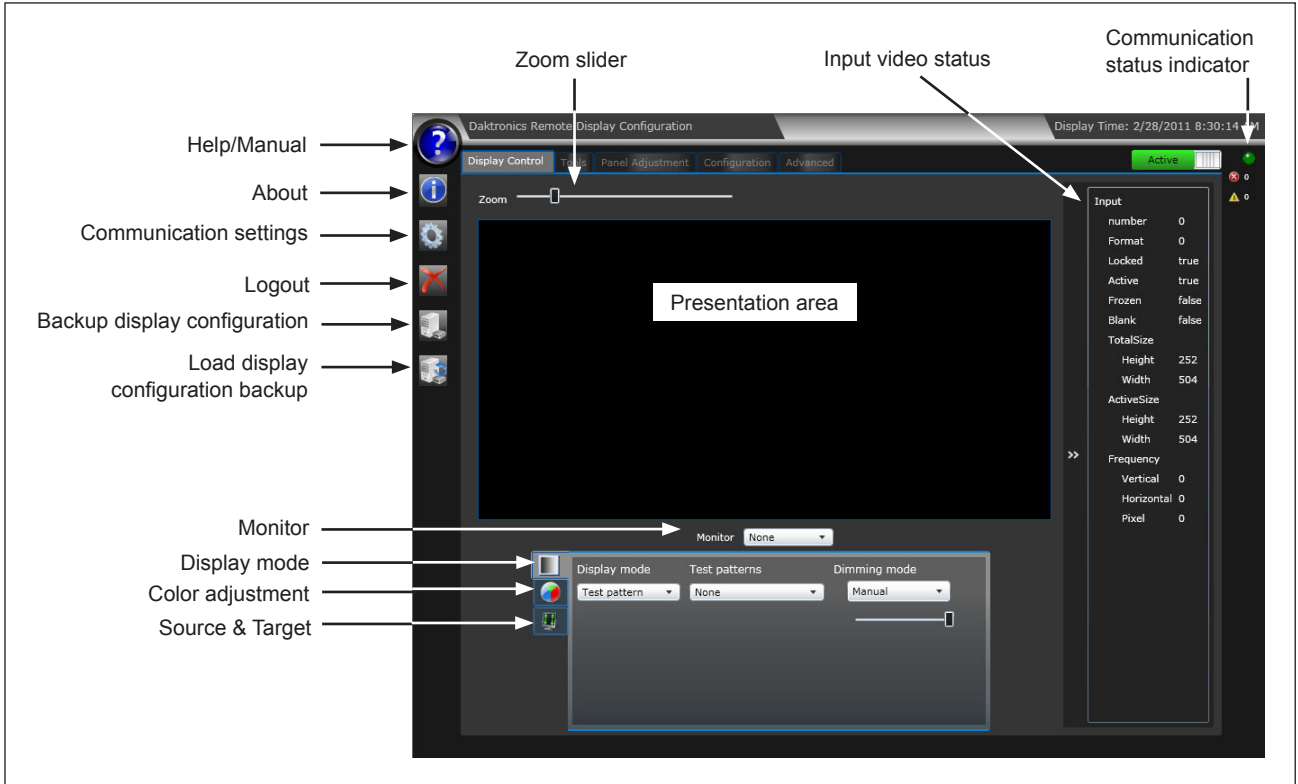
Figure 48: Display Control Tab Features

Refer to the table below for a description of the **Display Contro**l tab features.

Feature	Description
Zoom slider	Adjusts the monitor image larger or smaller.
Input video status	Shows information about the currently selected video source. For more information, refer to page 26.
Presentation area	Displays the monitor image. This screen updates automatically to reflect all user selections. **Note:** Use the monitor image for short periods of time to verify player output or while troubleshooting.
Monitor	Shows data being sent to the display. • **None** disables monitoring to improve user interface responsiveness. • **Output** shows the data being sent to the display in the presentation area. • **Input** shows full incoming image that is selected with the **Display mode**.

Display Mode

Display mode allows the user to select video sources and load images to display as well as choose built-in test patterns from the **Display mode** drop-down list. **Figure 49** shows the available options. Refer to the sections below for additional information on each display mode: **Test pattern**, **DVI**, **SDI**, **VMax**, **Custom Image**, and **Module pattern**.
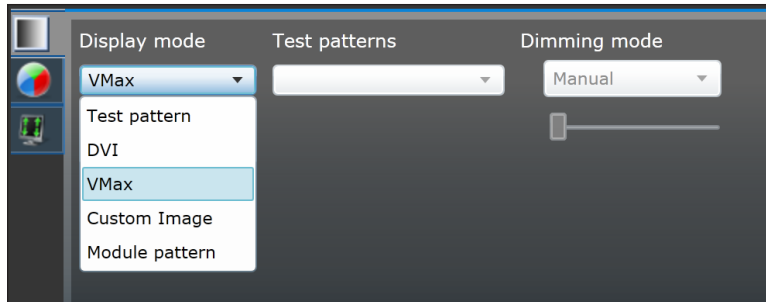
Figure 49: Display Mode Drop-Down List

Test Pattern

Selecting **Test pattern** from the **Display mode** drop-down list triggers the drop-down list of **Test patterns** as shown in **Figure 50**. Test patterns are used during display installation and troubleshooting, and to test display operation when no video sources are available.

When **Test pattern** is selected, sharpness is no longer an adjustable value in the color adjustment tools.

Note: Test patterns play immediately when selected, interrupt any currently playing video, and continue to run until a new selection is made from the **Display mode** drop-down list.
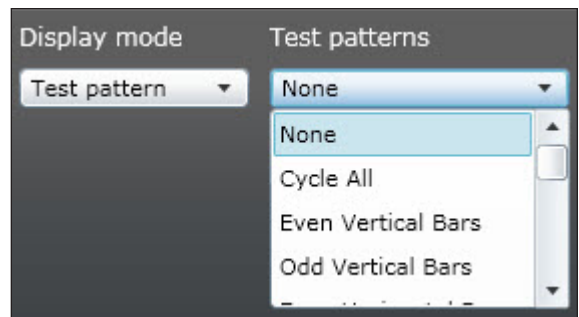
Figure 50: Test Pattern List

Refer to the table below for a list of all available test patterns and their descriptions.

Test Pattern	Description
None	No test pattern.
Color Diagonals	Displays scrolling red, green, and blue diagonal lines from left to right across the display.
All Off	Displays black on the entire display, as the LEDs are turned off.
All On	Displays red, green, blue, and white on the entire display.
All On Red	Displays red on every pixel of the display.
All On Green	Displays green on every pixel of the display.
All On Blue	Displays blue on every pixel of the display.
All On White	Displays white on every pixel of the display.
Module Id	Displays a pattern that numbers each display module.

DVI

DVI selects DVI input.

SDI

SDI selects HD-SDI 720p or 1080p @ 30fps input. This mode may not be available in the drop-down list because the VIP-4060 auto-detects between SDI and V-Max™ 4 signal.

VMax

VMax connects the VIP-4060 to Daktronics control system devices such as VIP-4500 and DMP-7000. V-Max™ 4 is a proprietary Daktronics data language that may be used to control dimming, gamma, color correction, and other configuration settings. When **VMax** is selected, it takes precedence over all other dimming modes except for ERTD dimming. This mode may not be available in the drop-down list because the VIP-4060 auto-detects between V-Max™ 4 and SDI signal.

Custom Image

Custom Image allows the user to load and display an image with the same resolution as the video display. Selecting **Custom Image** triggers the Open window as shown in **Figure 51**. From the Open window, the user can select the bitmap (.bmp), PNG (.png), or JPEG (.jpeg) image type to load.
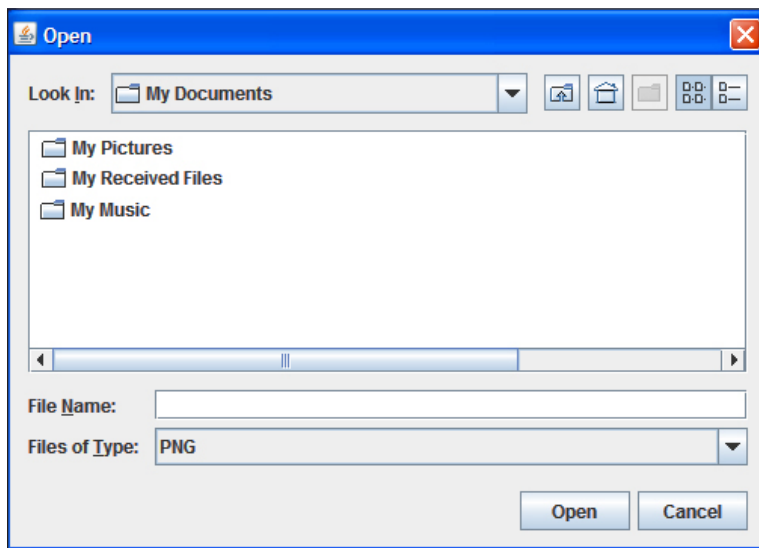
Figure 51: Loading a Custom Image

Module Pattern

Module pattern verifies that all wiring connections are made properly and ensures that components are working correctly.

Before using this function, ensure that the display is visible to the user.

Selecting **Module pattern** from the **Display mode** drop-down list triggers the drop-down list of **Test patterns** as shown in **Figure 52**. When using the **Test patterns** options, the VIP-4060 sends modifiers to the PLR systems causing the modules to turn red or green depending on the selected test. This is done at an interval of every two seconds.

Figure 52: Test Patterns
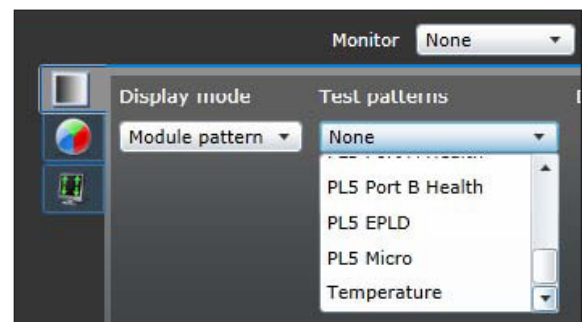
VIP-4060 Configuration Tabs

Before the test can be considered complete, patterns must be run until each pattern displays full green. Green indicates a pass status and red indicates a fail status. **Figure 53** illustrates both passed and failed modules.

Figure 53: Module Pass Status

Note: The **Module pattern** test is only available with display firmware versions of 1.8.56 and above.

Module test patterns are listed below:

- **PL6 Port A Health** tests the ProLink 6 connections via fiber Port A on the PLRs. If a fiber going into Port A on a PLR is disconnected, the module(s) connected to that PLR will turn red. If the PLR has connection and communication via Port A, the module(s) connected to that PLR will turn green.

- **PL6 Port B Health** tests the ProLink 6 connections via fiber Port B on the PLRs. If a fiber going into Port B on a PLR is disconnected, the module(s) connected to that PLR will turn red, as shown in **Figure 54**. If the PLR has connection and communication via Port B, the module(s) connected to that PLR will turn green.

- **PL6 EPLD** tests the EPLD firmware. If all firmware is the same, all the modules will turn green. If there are modules with different firmware, all the modules connected to those PLRs will turn red.

- **PL6 Micro** tests the Micro firmware. If all firmware is the same, all the modules will turn green. If there are modules with different firmware, all the modules connected to those PLRs will turn red.

- **PLR Port A Health** tests the ProLink 5 SATA Port A on the PLR. If there is connection where needed, all the modules will turn green. If there is no connection where needed, all the modules will turn red. Refer to **Figure 55**.

- **PLR Port B Health** tests the ProLink 5 SATA Port B on the PLR. If there is connection where needed, all the modules will turn green. If there is no connection where needed, all the modules will turn red.

Figure 54: PL6 Fail from Fiber Ports
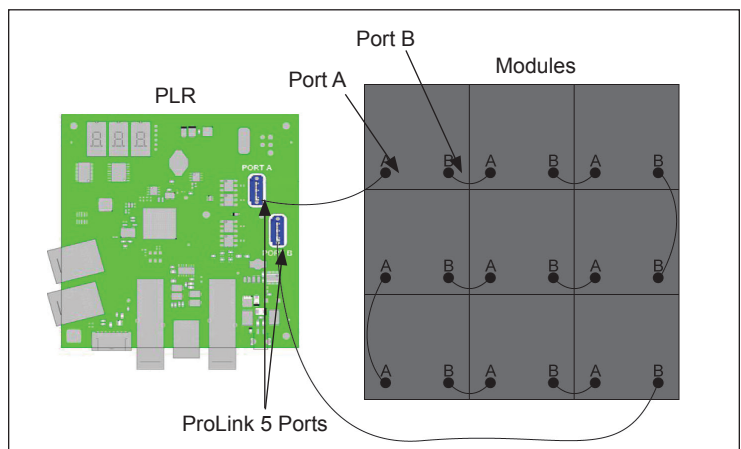
Figure 55: PLR Fail from SATA Ports

Note: Refer to the display's current system translation table to determine where connection is needed. For more information on translation tables, refer to **Section 4.4**.

- **PL5 Port A Health** tests the ProLink 5 connections via SATA Port A on the modules. If a SATA cable coming from Port A on a module is disconnected, the module(s) that do not have a connection in Port A will turn red. If the module has connection via Port A, the module(s) will turn green. Refer to **Figure 56**.
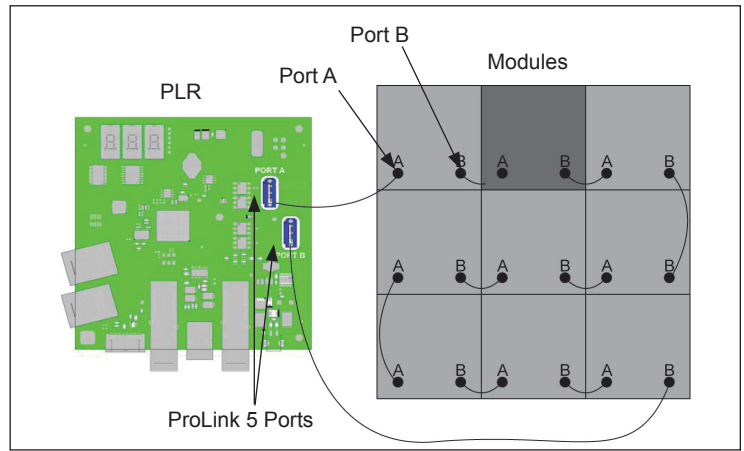
Figure 56: Port A Health Failure

- **PL5 Port B Health** tests the ProLink 5 connections via SATA Port B on the modules. If a SATA cable coming from Port B on a module is disconnected, the module(s) with no connection in Port B will turn red. If the module has connection via Port B, the module(s) will turn green. Refer to **Figure 57**.

- **PL5 EPLD** tests the EPLD firmware. If all firmware is the same, all the modules will turn green. If there are modules with different firmware, all the modules connected to those modules will turn red.
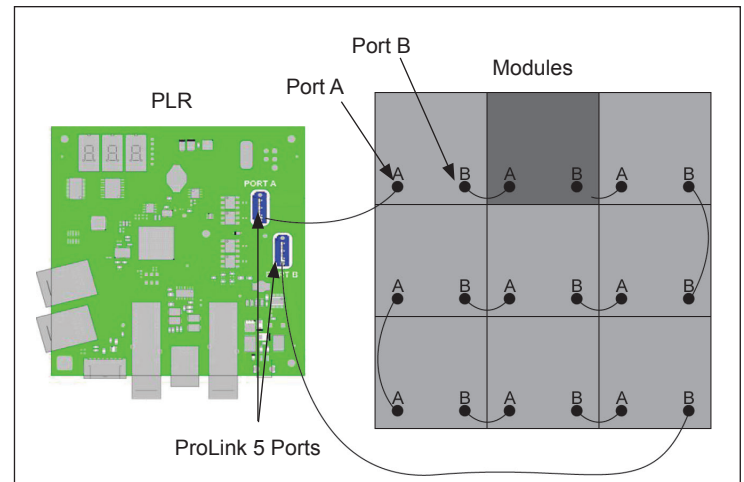
Figure 57: Port B Health Failure

- **PL5 Micro** tests the Micro firmware. If all firmware is the same, all the modules will turn green. If there are PLRs with different firmware, all the modules connected to those PLRs will turn red.

- **Temperature** indicates if a module is too hot or cold. Modules turn red and green to indicate improper and proper temperatures, respectively.

- **None** causes the sign to go blank with a "heartbeat" LED in the display's bottom-right corner.

Dimming Mode

Dimming mode determines how the brightness of the display is controlled. It allows the user to adjust the overall display light output with options in the **Dimming mode** drop-down list. From the drop-down list, the user can choose to match lighting conditions automatically (**Auto**), manually (**Manual**), by the display's location (**GPS**), or according to Enhanced Real-Time Data (**Ertd**). Refer to **Figure 58**.

Note: Although **Schedule** is an option in the **Dimming mode** drop-down list, it is not supported by the VIP-4060 system.
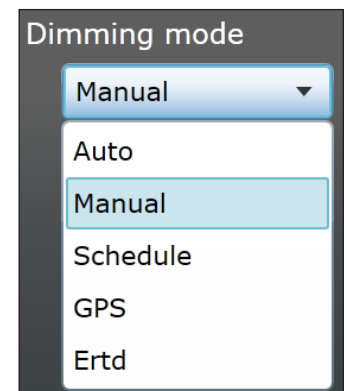
Figure 58: Dimming Options

Under normal conditions, ERTD dimming takes precedence over all other dimming functions including V-Max™ signal. However, when activated, the thermal dimming function overrides all dimming modes including ERTD and V-Max™ signal.

Thermal dimming is triggered automatically during temperature extremes to preserve the life of a display's electrical components. When thermal dimming is active, a visual temperature gauge is visible to the right of Dimming mode drop-down tool. Refer to **Figure 59**.

Figure 59: Thermal Dimming Indicator

Auto

Auto uses light sensor information to automatically adjust dimming values according to ambient conditions. Values vary to reflect the information received from the light sensor.

Dimming is 100 percent of the maximum during the day or in bright areas. At night or in dim areas, the dimming value is a much lower percentage.

Manual

Manual allows the user to enter a dimming value with the slider bar. This value becomes the current setting for the display and the display remains at the selected brightness level until it is adjusted. The range is from 1 to 100 percent. Refer to **Figure 60**.
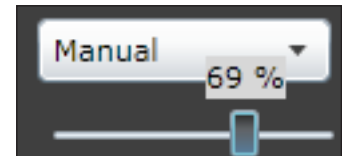
Figure 60: Manual Dimming Slider Bar

Moving the slider bar to the right adjusts the maximum light out of the display and adjusts all color levels equally by the percentage indicated. For example, 100 percent means a full white image shows at the maximum light output of the display. A level of 50 percent means a white image shows at 50 percent of the maximum light output capacity of the display.

GPS

GPS uses the display's location to calculate dimming. Calculations can be based on either **GPS Configuration** values entered under the **Configuration** Tab or GPS sensor information.

- **GPS Configuration:** If no GPS sensor is available, dimming calculations are based on the information entered under the **GPS** sub-tab of the **Configuration** tab. Refer to **Figure 61**.

- **GPS Sensor:** When the **GPS** option is chosen, the system first checks for a GPS sensor on the sign. If a GPS sensor is available, dimming calculations are based on information gathered from the sensor.
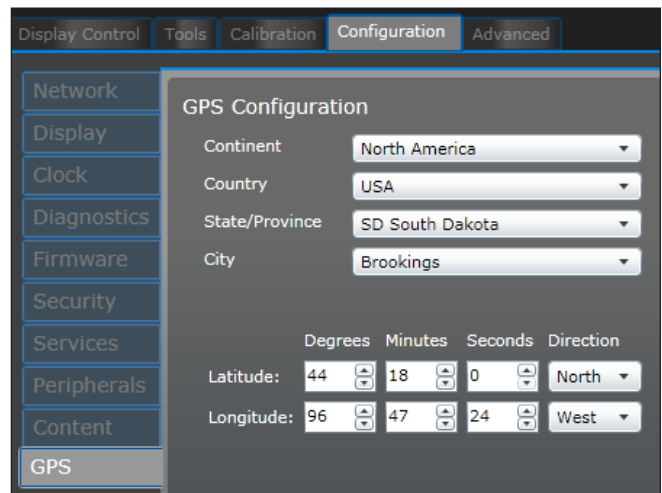
Figure 61: Configuration GPS Settings

ERTD

Enhanced Real-Time Data (ERTD) is a communication protocol which uses scripts to define how the VIP-4060 system controls display dimming. **Ertd** overrules all other dimming modes except when thermal dimming is active. Refer to **Section 5** for additional information.

Color Adjustment

Adjust gamma, brightness, hue, contrast, and saturation of a video source under the **Color adjustment** tab. Each feature is adjusted by a slider bar as shown in **Figure 62**. The adjustment tools available under this tab change depending on which **Display mode** was selected under the **Display mode** tab.

The **Gamma** control adjusts the image's middle ranges of color while leaving the full white and full black values unaltered. The default setting is 2.2 which is the gamma value of most monitors.

The **Color Space** drop-down list is used to match the display color to a selected video input color profile. Common color profiles for computer sources are sRGB and Adobe RGB. The common color profile for SDI video is HDTV. Other color profiles include NTSC, NTSC Obsolete, and PAL.

To return all of the controls to a neutral 50 percent, click the **Default** button.
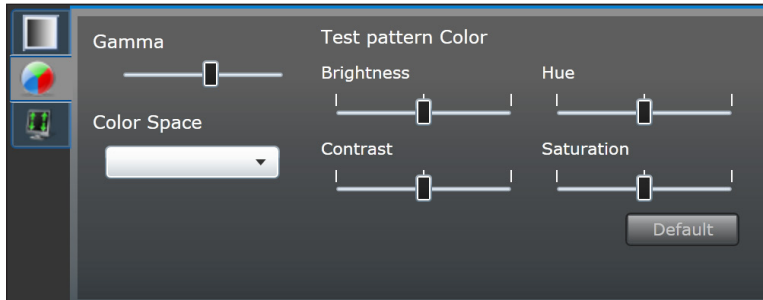
Figure 62: *Color Adjustment Tools*

Adjustment	Description
Brightness	Adjusts the overall gray level of the display. Increasing brightness makes blacks appear gray. Reducing brightness blackens low-level colors. The default is a neutral 50 percent.
Contrast	Adjusts the difference between light and dark. A higher contrast creates a larger difference between dark and light areas. It can appear to improve the sharpness of the display, but it may remove the ability to discern between bright objects and cause low color depth. The default is a neutral 50 percent.
Hue	Rotates colors. Increasing the hue rotates colors (R→B, B→G,G→R), decreasing the hue rotates colors (R→G, G→B, B→R). The default is 50 percent, or no rotation)
Saturation	Adjusts the overall color composition of the video. Decreasing saturation makes colorful images gray. Increasing saturation makes colorful images more color rich, but can over-accentuate the colors of common objects. For example, over-saturated skin tones appear redder. The default is a neutral 50 percent.
Sharpness	Adjusts the detail of content edges. Raising the sharpness level adds artificial edges to objects and increases contrast along the edges. The default is 5 percent.

Source & Target

Source
Using the **Source** tools, the user can define what portion of the incoming video signal should be shown on the display. Refer to **Figure 63**.

Target

Using the **Target** tools, the user can place and position the video on the display. Refer to **Figure 64**.

Figure 63: Source Tools

Display options are **Full**, **Pillar** and **Letterbox**:

- **Full** fits the entire video source on the display without maintaining aspect ratio.

- **Pillar** fits the entire height of the video source on the display and crops the width to maintain aspect ratio.

- **Letterbox** fits the entire width of the video source on the display and crops the height to maintain aspect ratio.

Figure 64: Target Tools

Note: Take care to avoid shifting the output from the display's viewable area.

Input Video Status
Information about the currently selected video source is located to the right of the presentation area. Refer to **Figure 65**. The fields listed in this window are described in the table below.

Information	Description
Number	Shows the unique identifying number for each input source.
Format	Contains format information about the current display mode, including source size dimensions.
Locked	Indicates the selected input is detected and supported.
Active	Indicates the input is receiving frames if the source is locked.
Frozen	Indicates if the input source is a changing image.
Blank	Indicates if the status of the source is blank (black).
TotalSize	Indicates the height and width dimensions of the active portion of the video input.
ActiveSize	Shows the height and width of the selected portion of the input source.
Frequency	Indicates horizontal, vertical, and pixel refresh frequency.
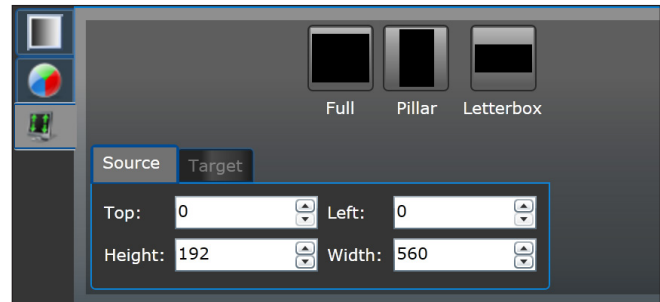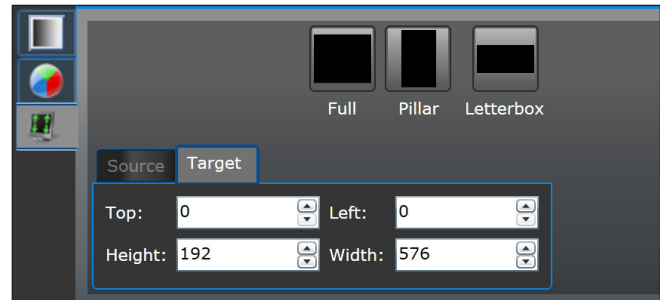
Figure 65: Input Video Status Information

4.2 Tools Tab

The **Tools** tab allows the user to modify various display settings. Features located under the **Tools** tab include **Set Time/Date**, **Run File Check, Reset Display**, and **Start Bandwidth Test**. System status information is presented on the right side of the **Tools** tab. Refer to **Figure 66**.
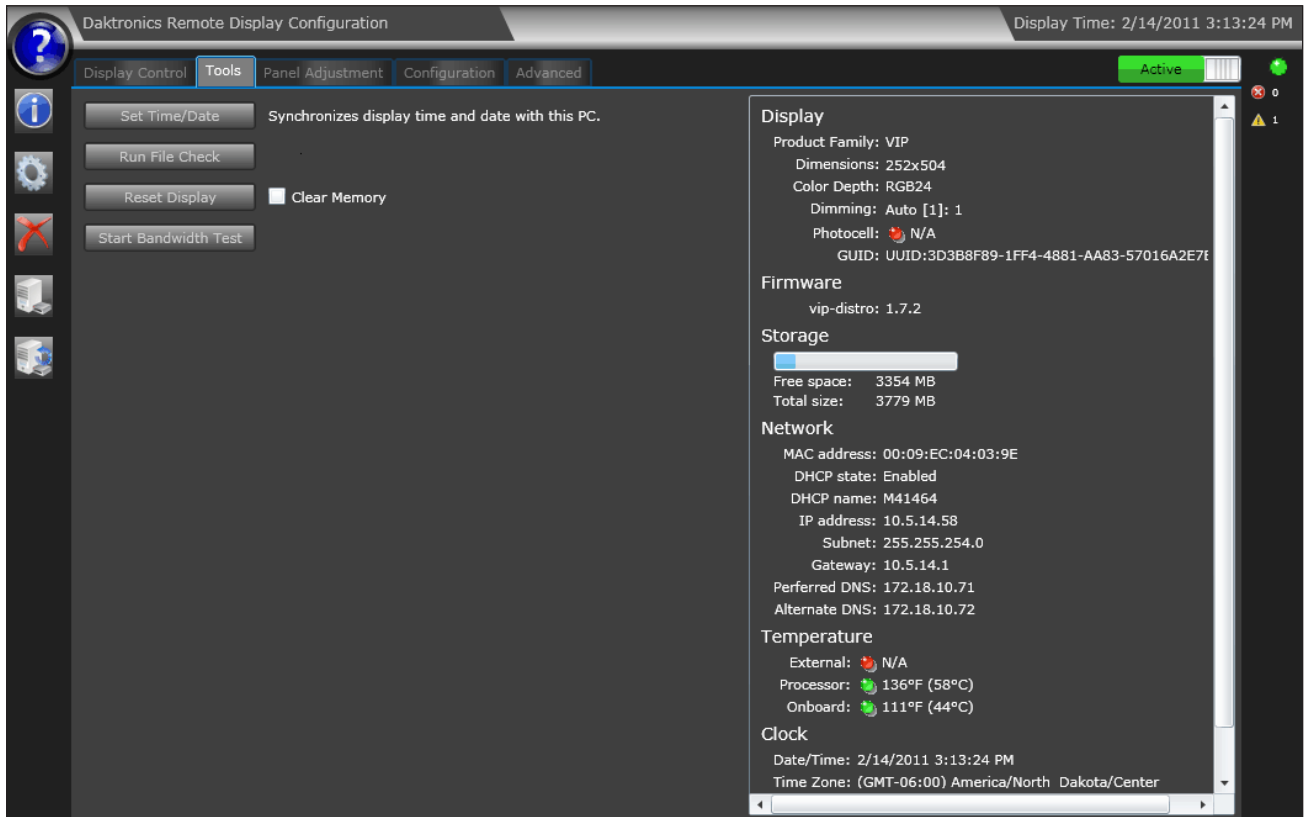
Figure 66: Tools Tab Features

Set Time/Date
The **Set Time/Date** feature synchronizes the display time with the system's (host computer) time. Click the **Set Time/Date** button to perform the time synchronization. All time settings are time zone independent.

Run File Check
The **Run File Check** feature is used to troubleshoot corrupted files on the VIP-4060 system. If prompted to run the file check when logging in to the VIP-4060, the check should be performed as soon as possible. The display will be blank while the check is running. To perform a file check, follow the steps below:

1. Click **Run File Check** while on the **Tools** tab. The **File system check** window opens. Refer to **Figure 67**.

2. Click **Yes** to start the controller reset or **No** to cancel and return to the **Tools** tab.

    The **Resetting display...** window opens indicating that the reset is in progress. Refer to **Figure 68**. When the reset is complete, this window closes and a prompt will open alerting the user that a restart of the display has started.
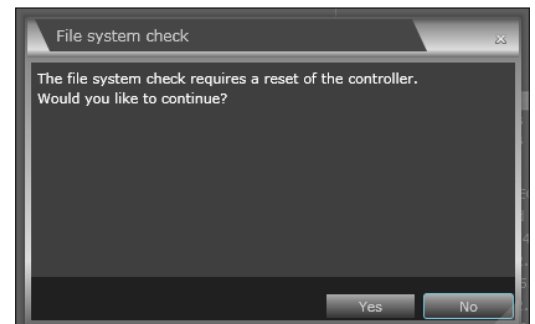
Figure 67: File System Check Window

Note: During the restart period, the display will be unresponsive.

Reset Display

The **Reset Display** feature remotely triggers a restart of the controller. Click **Reset Display** and the **Resetting Display...** window will open indicating that the procedure has started. Refer to **Figure 68**.

When the reset is complete, this window closes and a prompt will open alerting the user that a restart of the display has started.
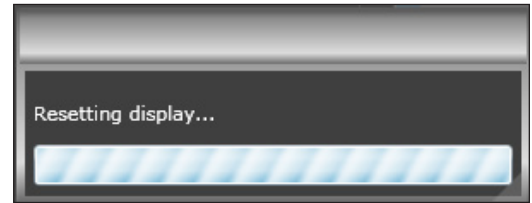
Figure 68: *Resetting Display Window*

Note: During the restart period, the display will be unresponsive.

Clear Memory

The **Clear Memory** function is used to remove any miscellaneous files on the VIP-4060 system that are not required for operation but extend operation for a certain setting such as brightness schedules.

Note: Clearing the memory removes miscellaneous files but leaves the configuration unchanged. It applies only to the reset command.

The **Clear Memory** check box is located to the right of the **Reset Display** button. Refer to **Figure 66**. By default the **Clear Memory** check box is clear. Checking the box will remove files such as font and schedule files during display restart.

To retain miscellaneous files such as font, schedule, and message files, ensure the **Clear Memory** check box is not checked prior to choosing either the **Run File Check** or **Reset Display** functions.

System Status Information

System status information is shown on the right side of the **Tools** tab. Refer to **Figure 66**. Information is available for **Display**, **Firmware**, **Storage**, **Network**, **Temperature**, and **Clock**. Refer to the table below for a additional details for each category.

Category	Information Available
Display	Shows display type as well as dimming information and connection status. **Note:** Red photocell connection status indicates the photocell is not connected and green photocell connection status indicates the photocell is connected.
Firmware	Shows the controller's current firmware version.
Storage	Shows the total size and the amount of free space on the controller.
Network	Shows network information about the device including Media Access Control (MAC) address, Internet Protocol (IP) address, Dynamic Host Configuration Protocol (DHCP) state and name, and Domain Name System (DNS) information and addresses.
Temperature	Shows the temperature and connection state of each sensor within or connected to the controller. The **Onboard** reading shows the operating temperature of the VIP-4060.
Clock	Shows the current date and time, selected time zone, daylight-savings time (DST) status, and clock source (Network Time Protocol or Real-Time Clock).

4.3 Additional Tabs

In addition to the **Display Control** and **Tools** tabs, the VIP-4060 also features **Panel Adjustment**, **Configuration** and **Advanced** tabs. However, users should contact Daktronics Technical Services before modifying the settings in these tabs.

Note: Changes made under the **Panel Adjustment**, **Configuration**, and **Advanced** tabs may adversely affect display operation and image quality. Improper configuration may also result in connectivity loss to the VIP-4060. *Changes to these settings should be made only with instruction from Daktronics Technical Services*.

Section 5: Exchange/Repair & Return Programs

To serve customers' repair and maintenance needs, Daktronics offers both an Exchange Program and a Repair & Return Program.

5.1 Exchange Program

Daktronics unique Exchange Program is a quick service for replacing key parts in need of repair. If a part requires repair or replacement, Daktronics sends the customer a replacement, and the customer sends the defective part to Daktronics. This decreases display downtime.

Before Contacting Daktronics
Identify these important part numbers:

Display Serial Number: _____

Display Model Number: _____

Contract Number: _____

Installation Date: _____

Sign Location (Mile Marker Number): _____

Daktronics Customer ID Number: _____

1. **Call Daktronics Customer Service.**

Market Description	Customer Service Number
Schools (primary through community/junior colleges), religious organizations, municipal clubs, and community centers	877-605-1115
Universities and professional sporting events, live events for auditoriums, and arenas	866-343-6018
Financial institutions, petroleum, sign companies, gaming, and wholesale/retail establishments	866-343-3122
Department of Transportation, mass transits, airports, and parking facilities	800-833-3157

2. **After receiving the new exchange part, mail the old part to Daktronics.**
   If the replacement part fixes the problem, send in the problem part which is being replaced.

   a. Package the old part in the same shipping materials in which the replacement part arrived.
   b. Fill out and attach the enclosed UPS shipping document.
   c. Ship the part to Daktronics.

3. **Daktronics will charge for the replacement part immediately, unless a qualifying service agreement is in place.**
   In most circumstances, the replacement part will be invoiced at the time it is shipped.

4. **If the replacement part does not solve the problem, return the part within 30 working days, or Daktronics will charge the full purchase price.**
   If the part is still defective after the exchange is made, please contact Customer Service immediately. Daktronics expects *immediate return* of an exchange part if it does not solve the problem. The company also reserves the right to refuse parts that have been damaged due to acts of nature or causes other than normal wear and tear.

5.2   Repair & Return Program

For items not subject to exchange, Daktronics offers a Repair & Return Program. To send a part for repair, follow these steps:

1. **Call or fax Daktronics Customer Service.**
    Refer to the telephone number listed on the previous page.
    Fax: 605-697-4444

2. **Receive a Return Materials Authorization (RMA) number before shipping.**
    This expedites repair of the part.

3. **Package and pad the item carefully to prevent damage during shipping.**
    Electronic components, such as printed circuit boards, should be placed in an anti-static bag before boxing. Daktronics does not recommend packing peanuts when shipping.

4. **Enclose:**

    - Contact Name
    - Address
    - Phone number
    - RMA number
    - Clear description of symptoms
    - Case number

Shipping Address
Daktronics Customer Service
P.O. Box 5128
201 Daktronics Dr.
Brookings, SD 57006

5.3   Daktronics Warranty & Limitation of Liability

The Daktronics Warranty & Limitation of Liability is located in **Appendix C**. The warranty is independent of extended service agreements and is the authority in matters of service, repair, and display operation.

Glossary

BNS Cable: Common type of RF (radio frequency) connector used for terminating coaxial cable.

Boot loading: Process that allows changes to the firmware.

Calibration: Process of adjusting the intensity level of each pixel in a Daktronics LED video display as needed to improve the uniform intensity of the entire display.

CAN (Controller Area Network): Serial network of microcontrollers that enables real-time control applications by connecting devices and sensors.

CAN LUX (Controller Area Network Luxmeters): SI measurement of light intensity.

DHCP (Dynamic Host Configuration Protocol): System that includes a server that assigns IP addresses.

Dimming: Adjustment of the overall brightness of a sign. The brightness level should be highest during the day to compete with daylight and lower at night for comfortable viewing. Manual dimming is adjusted by the operator; auto dimming is adjusted by the software based on information received from a light sensor.

Firmware: Software (programs or data) that has been written onto read-only memory as a permanent part of a computing device. It allows software to be read and executed but does not allow modification. Firmware is embedded in a hardware device and is considered a combination of software and hardware.

Gamma Correction: Process used with video images to correct brightness and internal micro-contrast within the image; it allows a change of ratio between the brightest red component and weakest red component.

Refresh Rate: Number of times per second a display is updated or "repainted." NTSC signals have a refresh rate of 30 times per second; PAL signals have a refresh rate of 25 times per second; and LED displays should be refreshed at least 120 times per second.

RGB (Red-Green-Blue): Colors of LEDs used in full-color Daktronics displays. All colors are defined in terms of a combination of these three colors. For example, the RGB abbreviation for the color blue is 0-0-255.

RJ45 (Registered Jack-45): Eight-wire connector commonly used to connect computers to a local area network (LAN), especially Ethernets.

Screen Brightness: Color intensity of an image. An image high in saturation will appear very bright, while an image low in saturation will appear duller and more neutral. A 100 percent saturated color does not contain any white; adding white reduces saturation. An image without any saturation is also referred to as a grayscale image.

Sensor Cable: Wire link between a controller and its corresponding temperature sensor.

Temperature Sensor: Outdoor electrical component used to detect the ambient air temperature outside a display.

Video Image Processor (VIP): Device primarily intended to accept and process live video and/or computer graphics feeds before sending them to a display.

Video Processor: Device used to convert incoming video signals to V-Max™ signal, allowing for direct display of video. It also applies video image enhancement tools.

V-Max™ Signal: Proprietary signal used with Daktronics displays.

Appendix A: Technical Specifications

Refer to the table below for technical specifications of the VIP-4060.

Specification	VIP-4060
Physical Size	8.89 cm (3.5") high 22.23 cm (8.75") wide 31.12 cm (12.25") deep
Weight	3.24 kg (7.15 lb)
Video Compatibility	DVI/VGA, VGA-SXGA, HD-SDI, full 720p, 1080p @ 30fps
Display Inputs	DVI-I, HD/SDI-SDI, V-Max™ 4, Analog Inputs
Display Outputs	ProLink 6 @ 2
Power	15 watts, 120/240 V, 50-60 Hz
Mounting Options	2 RU half rack

Appendix B: Supplementary Documents

This section includes the following:

- **DD1733958** VIP-4060 Quick Guide

The VIP-4060 is the interface that drives video to the display and meets operational needs such as dimming, displaying test patterns, and adjusting gamma and color controls. This quick guide explains basic VIP-4060 connections and setup as shown in Figure 1.
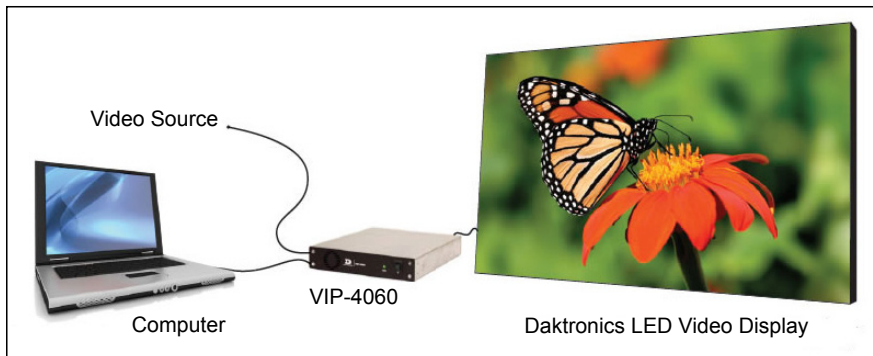
Figure 1: VIP-4060 Connections

Hardware Setup

Connecting to LED Display
1. Locate fiber-optic Port A and Port B on the VIP-4060.

2. Insert duplex LC fiber-optic cables into their corresponding ports. The cables will click into place when seated properly. Refer to **Figure 2**.

   Note: Remove fiber dust covers from the cables prior to inserting into ports.

Connecting Video Source – SDI or V-Max™ Signal
1. Connect the BNC cable to the top SDI/V-Max™ input. Refer to **Figure 3**.

2. Rotate the connector $^1/_4$ turn clockwise to lock.

3. Ensure that a 75 ohm terminator is connected to the bottom BNC.

   Note: The bottom BNC does not function as a loop out.

Connecting Video Source – DVI
1. Insert the male plug into the female jack.

2. Turn the screws on the male plug clockwise to lock. Refer to **Figure 4**.

Figure 2: Fiber-Optic Ports

Figure 3: SDI/V-Max™ 4 Input

Figure 4: DVI Input

Connecting to Network

1. Connect one end of the RJ45 network cable to the network port. Refer to **Figure 5**.

2. Connect the other end of the cable to the computer or network.

Connecting Power

1. Connect the power cord to the power jack. Refer to **Figure 6**.

2. Plug the other end of the cord into an outlet.

Connecting Sensors

1. Connect the sensor cable to the Light/Temp port. Refer to **Figure 7**.

2. Rotate the connector $^1/_4$ turn clockwise to lock.

Computer-to-VIP Communication Setup

Connecting to VIP-4060

1. Dowload the DisplayFind application.

    a. Navigate to **dakfiles.daktronics.com**.

    b. Click **venus1500>Utils>DisplayFind>DisplayFind.exe**.

    c. Click **Run** to download the program or **Save** to save the file for later use.

2. Launch DisplayFind by double-clicking the **DisplayFind** icon. Refer to **Figure 8**.

3. Connect to the display using the DisplayFind utility.

    a. Select the appropriate **Network Adapter**.

    b. Click **Find Displays** to detect displays. Refer to **Figure 9**.

    c. Click the desired display to launch the configuration utility within a web browser.

    Note: If multiple displays are found, use the IP address or name to confirm the identity of the correct display.

Figure 5: *Network Input*

Figure 6: *Power Input*
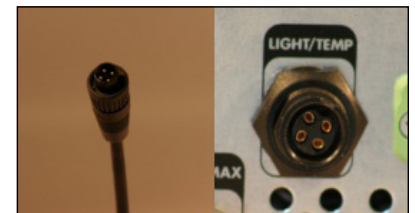
Figure 7: *Sensor Cable and Port*

Figure 8: *DisplayFind Icon*
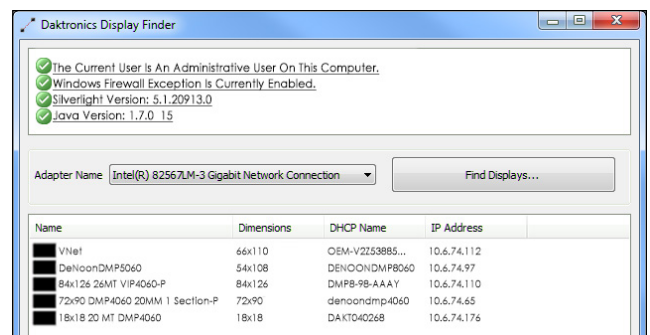
Figure 9: *Daktronics Display Finder*

DD1733958 Rev 05   201 Daktronics Dr. P.O. Box 5128 Brookings, SD 57006
02 March 2015   tel: 800-325-8766 fax: 605-697-4700
www.daktronics.com

Installing Java® Software

If Java® software is not installed on the host machine, a notification will appear.

1. Click the **Java is not installed** notification.

2. Follow the instructions on the page to complete the installation.

The JavaScript® application must be enabled to use the VIP-4060 Configuration Utility. If the JavaScript® application is not enabled, follow the steps below to enable it on a specific web browser:

Internet Explorer® Browser:

1. Select **Manage Add-ons** from the **Tools** menu drop-down list.

2. Click the **drop-down arrow** for the **Show** list and select **All add-ons**. Refer to **Figure 10**.

3. Navigate to **Oracle America, Inc.** in the results window.

4. Select the line for **Java Plug-in 1.60_xx** and click **Enable**. Refer to **Figure 11**.

5. Click **Close** to exit the window.

   Note: Internet Explorer® browser must be restarted to apply new settings.

Figure 10: Java® Installation - Internet Explorer

Mozilla Firefox® Browser:

1. Navigate to **Tools > Options** in the browser's drop-down list.

2. Click the **Content** tab in the **Options** dialog box.

3. Select the **Enable JavaScript** box and the **Enable Java** box. Refer to **Figure 12**.

4. Click **OK** and restart the internet browser.

   Note: The VIP-4060 Configuration Utility does not support the Apple® Safari® browser.

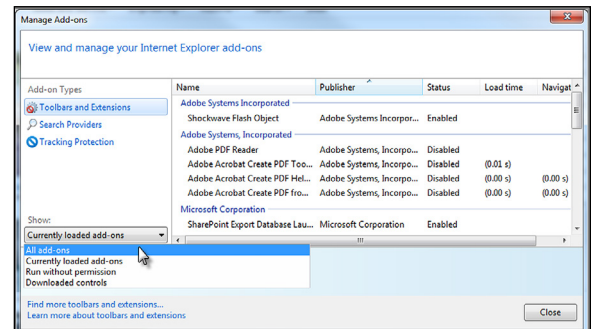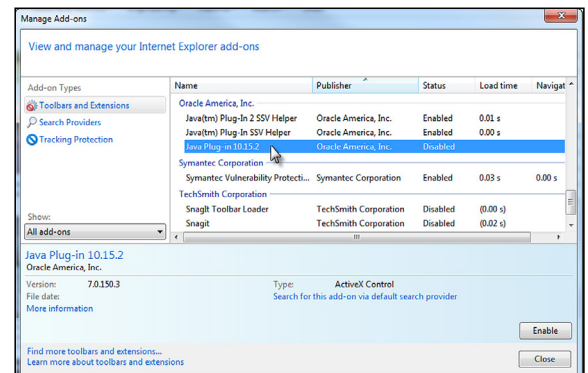*Figure 11: Enable Java® Plug-In*

Figure 12: Enable JavaScript® Application

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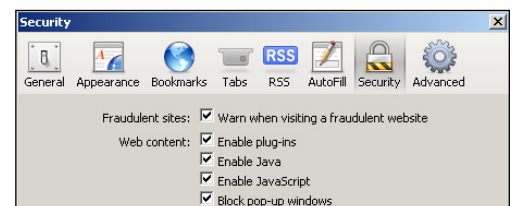201 Daktronics Dr. P.O. Box 5128 Brookings, SD 57006
tel: 800-325-8766 fax: 605-697-4700
www.daktronics.com

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Installing Silverlight® Application

If the Silverlight® application is not installed on the host machine, the **Install Microsoft® Silverlight®** button will appear. Refer to **Figure 13**.

1. Click **Install Microsoft® Silverlight®** to open the download window.

2. Click **Run** and then **Install Now** in the dialog boxes to begin installation.

3. Click **Close** in the final dialog box to complete installation.

Figure 13: Silverlight® Installation Button

Logging in to VIP-4060 System

1. Type **Dak** into the **Username** text box. Refer to **Figure 14**.

2. Click **Log In**. No password is required.

These are the factory-configured login credentials. *Daktronics strongly recommends adding a password after initial configuration.*

Once a password is configured, the new password needs to be entered into the **Password** text box during login.

Note: Do not lose the password; losing it requires a service call.
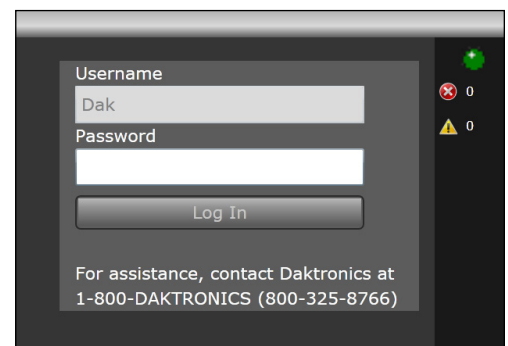
Figure 14: System Login Prompt

System Configuration

Configuring Display

The translation table defines the internal types of display components as well as the internal wiring. This includes basic identifying information such as the table's author, ED number, contract, title, and task. Refer to **Figure 15**.

Contact Daktronics Technical Services before uploading a translation table.

1. Navigate to the **Configuration** tab and click the **Display** sub-tab.

2. Click **Upload** under **Translation Table**.

3. Browse to the translation table provided by the display installer.

4. Click **Open** to upload the file.

   Note: Display output may be temporarily out of sync while the translation table is applied.
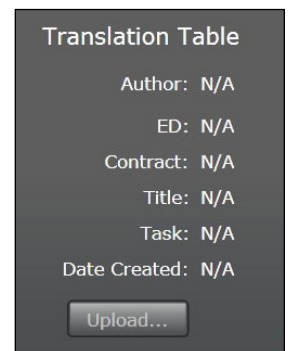
Figure 15: Display Translation Table

Configuring Video

1.   Navigate to the **Display Control** tab and click the **Display mode** sub-tab.

2.   Select a video signal (**DVI**, **SDI**, or **VMax**) from the **Display mode** drop-down list. Refer to **Figure 16**.

3.   Navigate to the **Source & Target** sub-tab and select **Source** to enter display area.

     Note: Refer to the right side of the window for information about limits of the current video source.

Figure 16: Video Signal Mode

Adjusting Display

To adjust dimming, navigate to the **Display mode** sub-tab and choose an option from the **Dimming mode** drop-down list. Refer to **Figure 17**.

- **Auto** – dimming values adjust according to data received from a light sensor.

- **Manual** – dimming values are set at a constant level using a slider bar.
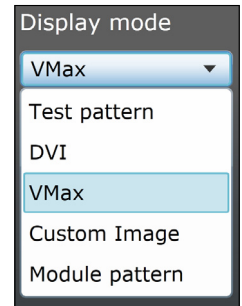
- **GPS** – dimming values are based on either a GPS sensor or Configured GPS values.

- **Ertd** – dimming values are controlled via Enhanced Real Time Data (ERTD) scripts.

- **VMax** – dimming is controlled by a DMP-7000 or VIP-4400/4500.
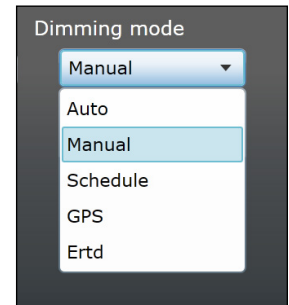
Figure 17: Dimming Mode Adjustment

To adjust gamma, navigate to the **Configuration** tab and click the **Content** sub-tab. Use the slider bar to select the preferred **Gamma** value.

To adjust brightness, contrast, hue, and saturation, navigate to the **Display** tab and then to the **Color Adjustments** sub-tab. Use the respective slider bars to select the preferred values for each adjustment.

Configuring Backup

Follow the steps below to clone configuration files and the translation table:

1.   Click the **Backup Display Configuration** icon. Refer to **Figure 18**.

2.   Choose a location to save the file.

3.   Type a name for the file in the **File Name** text box.

4.   Click **Save**.
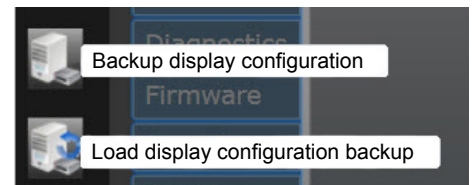
Figure 18: Display Configuration Icons

Follow the steps below to load a stored configuration:

1.   Click the **Load Display Configuration Backup** icon. Refer to **Figure 18**.

2.   Navigate to the file's storage location.

3.   Select the file and click **Open** to reload the configuration.

Contact Info and Where to Get Help

Access the VIP-4060 Operator's Manual via the blue question mark button in the top-left corner of the configuration utility screeen. Refer to **Figure 19**. If further assistance is required, Daktronics Customer Service is also available 24/7 via phone or online connection. Refer to **Figure 20**.

Telephone

- U.S. and Canada: 1-800-DAKTRON (1-800-325-8766)

- Outside the U.S. and Canada: +1-605-697-4000

Online

- http://www.daktronics.com
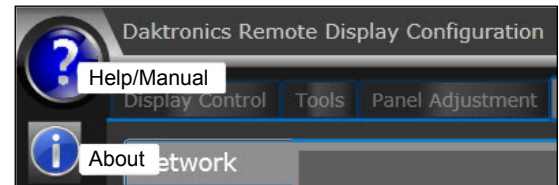
Figure 19: Help Icons
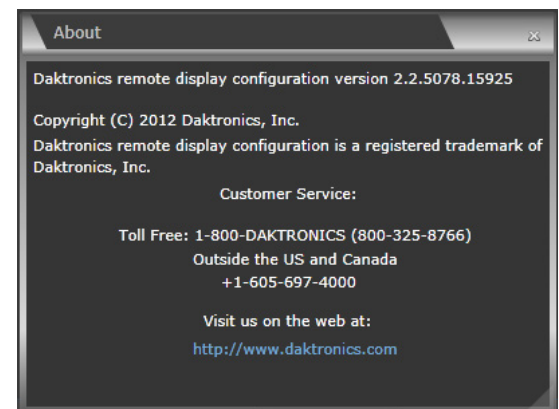
Figure 20: Contact Information

Appendix C: Daktronics Warranty & Limitation of Liability

This section includes the Daktronics Warranty & Limitation of Liability statement.

DAKTRONICS WARRANTY & LIMITATION OF LIABILITY

This Warranty and Limitation of Liability (the "Warranty") sets forth the warranty provided by Daktronics with respect to the Equipment. By accepting delivery of the Equipment, Purchaser agrees to be bound by and accept these terms and conditions. Unless otherwise defined herein, all terms within the Warranty shall have the same meaning and definition as provided elsewhere in the Agreement.

DAKTRONICS WILL ONLY BE OBLIGATED TO HONOR THE WARRANTY SET FORTH IN THESE TERMS AND CONDITIONS UPON RECEIPT OF FULL PAYMENT FOR THE EQUIPMENT.

1. **Warranty Coverage**

   A. Daktronics warrants to the original end-user that the Equipment will be free from Defects (as defined below) in materials and workmanship for a period of one (1) year (the "Warranty Period"). The Warranty Period shall commence on the earlier of: (i) four weeks from the date that the Equipment leaves Daktronics' facility; or (ii) Substantial Completion as defined herein. The Warranty Period shall expire on the first anniversary of the commencement date.

   "Substantial Completion" means the operational availability of the Equipment to the Purchaser in accordance with the Equipment's specifications, without regard to punch-list items, or other non-substantial items which do not affect the operation of the Equipment.

   B. Daktronics' obligation under this Warranty is limited to, at Daktronics' option, replacing or repairing, any Equipment or part thereof that is found by Daktronics not to conform to the Equipment's specifications. Unless otherwise directed by Daktronics, any defective part or component shall be returned to Daktronics for repair or replacement. This Warranty does not include on-site labor charges to remove or install these components. Daktronics may, at its option, provide on-site warranty service. Daktronics shall have a reasonable period of time to make such replacements or repairs and all labor associated therewith shall be performed during regular working hours. Regular working hours are Monday through Friday between 8:00 a.m. and 5:00 p.m. at the location where labor is performed, excluding any holidays observed by either Purchaser or Daktronics.

   C. Daktronics shall pay ground transportation charges for the return of any defective component of the Equipment. All such items shall be shipped by Purchaser DDP Daktronics; designated facility. If returned Equipment is repaired or replaced under the terms of this warranty, Daktronics will prepay ground transportation charges back to Purchaser and shall ship such items DDP Purchaser's designated facility; otherwise, Purchaser shall pay transportation charges to return the Equipment back to the Purchaser and such Equipment shall be shipped Ex Works Daktronics designated facility. All returns must be pre-approved by Daktronics before shipment. Daktronics shall not be obligated to pay freight for any unapproved return. Purchaser shall pay any upgraded or expedited transportation charges.

   D. Any replacement parts or Equipment will be new or serviceably used, comparable in function and performance to the original part or Equipment, and warranted for the remainder of the Warranty Period. Purchasing additional parts or Equipment from the Seller does not extend the Warranty Period.

   E. Defects shall be defined as follows. With regard to the Equipment (excepting LEDs), a "Defect" shall refer to a material variance from the design specifications that prohibit the Equipment from operating for its intended use. With respect to LEDs, "Defects" are defined as LED pixels that cease to emit light. The limited warranty provided by Daktronics does not impose any duty or liability upon Daktronics for partial LED pixel degradation nor does the limited warranty provide for the replacement or installation of communication methods including but not limited to, wire, fiber optic cable, conduit, trenching, or for the purpose of overcoming local site interference radio equipment substitutions.

   EXCEPT AS OTHERWISE EXPRESSLY SET FORTH IN THIS WARRANTY, TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, DAKTRONICS DISCLAIMS ANY AND ALL OTHER PROMISES, REPRESENTATIONS AND WARRANTIES APPLICABLE TO THE EQUIPMENT AND REPLACES ALL OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, ACCURACTY OR QUALITY OF DATA. NO ORAL OR WRITTEN INFORMATION, OR ADVICE GIVEN BY THE COMPANY, ITS AGENTS OR EMPLOYEES, SHALL CREATE A WARRANTY OR IN ANY WAY INCREASE THE SCOPE OF THIS LIMITED WARRANTY.

   THIS LIMITED WARRANTY IS NOT TRANSFERABLE.

2. **Exclusion from Warranty Coverage**

   The limited warranty provided by Daktronics does not impose any duty or liability upon Daktronics for:

   A. Any damage occurring, at any time, during shipment of Equipment unless otherwise provided for in the Agreement. When returning Equipment to Daktronics for repair or replacement, Purchaser assumes all risk of loss or damage, and agrees to use any shipping containers that might be provided by Daktronics and to ship the Equipment in the manner prescribed by Daktronics;

   B. Any damage caused by the improper handling, installation, adjustment, use, repair or service of the Equipment by anyone other than personnel of Daktronics or its authorized repair agents;

   C. Any physical damage which includes, but is not limited to, missing, broken, or cracked components resulting from non-electrical causes; altered, scratched, or fractured electronic traces; missing or gauged solder pads; cuts or clipped wires; crushed, cracked, punctured, or bent circuit boards; or tampering with any electronic connections;

   D. Damage caused by the failure to provide a continuously suitable environment, including, but not limited to: (i) neglect or misuse, (ii) improper power including, without limitation, a failure or sudden surge of electrical power (iii) improper air conditioning, humidity control, or other environmental conditions outside of the Equipment's technical specifications such as extreme temperatures, corrosives and metallic pollutants, or (iv) any other cause other than ordinary use;

E. Damage caused by fire, flood, earthquake, water, wind, lightning or other natural disaster, strike, inability to obtain materials or utilities, war, terrorism, civil disturbance or any other cause beyond Daktronics' reasonable control;

F. Failure to adjust, repair or replace any item of Equipment if it would be impractical for Daktronics personnel to do so because of connection of the Equipment by mechanical or electrical means to another device not supplied by Daktronics, or the existence of general environmental conditions at the site that pose a danger to Daktronics personnel;

G. Any statements made about the product by any salesperson, dealer, distributor or agent, unless such statements are in a written document signed by an officer of Daktronics. Such statements as are not included in a signed writing do not constitute warranties, shall not be relied upon by Purchaser and are not part of the contract of sale;

H. Any damage arising from the use of Daktronics products in any application other than the commercial and industrial applications for which they are intended, unless, upon request, such use is specifically approved in writing by Daktronics;

I.   The security or functionality of the Purchaser's network or systems;

I. Any performance of preventive maintenance;

J.   Third-party systems and other ancillary equipment including without limitation front-end video control systems, audio systems, video processors and players, HVAC equipment, batteries and LCD screens;

K. Incorporation of accessories, attachments, software or other devices not furnished by Daktronics; or

L. Paint or refinishing the Equipment or furnishing material for this purpose.

3.   **Limitation of Liability**

Daktronics shall be under no obligation to furnish continued service under this Warranty if alterations are made to the Equipment without the prior written approval of Daktronics.

It is specifically agreed that the price of the Equipment is based upon the following limitation of liability. In no event shall Daktronics (including its subsidiaries, affiliates, officers, directors, employees, or agents) be liable for any claims asserting or based on (a) loss of use of the facility or equipment, lost business, revenues, or profits, loss of goodwill, failure or increased cost of operations, loss, damage or corruption of data, loss resulting from system or service failure, malfunction, incompatitbility, or breaches in system security, or (b) any special, consequential, incidental or exemplary damages arising out of or in any way connected with the Equipment or otherwise, including but not limited to damages for lost profits, cost of substitute or replacement equipment, down time, lost data, injury to property or any damages or sums paid by Purchaser to third parties, even if Daktronics has been advised of the possibility of such damages. The foregoing limitation of liability shall apply whether any claim is based upon principles of contract, tort or statutory duty, principles of indemnity or contribution, or otherwise.

In no event shall Daktronics be liable to Purchaser or any other party for loss, damage, or injury of any kind or nature arising out of or in connection with this Warranty in excess of the purchase price of the Equipment actually delivered to and paid for by the Purchaser. The Purchaser's remedy in any dispute under this Warranty shall be ultimately limited to the Purchase Price of the Equipment to the extent the Purchase Price has been paid.

4.   **Assignment of Rights**

The Warranty contained herein extends only to the original end-user (which may be the Purchaser) of the Equipment and no attempt to extend the Warranty to any subsequent user-transferee of the Equipment shall be valid or enforceable without the express written consent of Daktronics.

5.   **Governing Law**

The rights and obligations of the parties under this warranty shall not be governed by the provisions of the United Nations Convention on Contracts for the International Sales of Goods of 1980. Both parties consent to the application of the laws of the State of South Dakota to govern, interpret, and enforce all of Purchaser and Daktronics rights, duties, and obligations arising from, or relating in any manner to, the subject matter of this Warranty, without regard to conflict of law principles.

6.   **Availability of Extended Service Agreement**

For Purchaser's protection, in addition to that afforded by the warranties set forth herein, Purchaser may purchase extended warranty services to cover the Equipment. The Extended Service Agreement, available from Daktronics, provides for electronic parts repair and/or on-site labor for an extended period from the date of expiration of this warranty. Alternatively, an Extended Service Agreement may be purchased in conjunction with this warranty for extended additional services. For further information, contact Daktronics Customer Service at 1-800-DAKTRONics (1-800-325-8766).