.AV Framework™ Base Software for the DMPS3 Series, DM-MD8X1-4K-C, and HD-MD8X1-4K

Operations Guide

Crestron Electronics, Inc.

This document was written by the Technical Publications department at Crestron.

Contents

.AV Framework Base Software for the DMPS3 Series, DM-MD8X1-4K-C, and HD-MD8X1-4K

Introduction

The Crestron® DMPS3 Series of DigitalMedia™ Presentation Systems, the DM-MD8X1-4K-C 4K Scaling Presentation Switcher, and the HD-MD8X1-4K 4K Scaling Presentation Switcher come with the built-in .AV Framework™ Base program that enables complete system configuration and control.

The latest version of the program and all projects are available on the product web pages for the DMPS3 Series, the DM-MD8X1-4K-C, and the HD-MD8X1-4K as well as in the firmware upgrade zip file. The zipped package file includes the following:

- The .AV Framework Base program
- The TSW-752 .AV Framework project
- The Xpanel .AV Framework project and installer files for Macintosh® and Windows® operating systems
- The .AV Framework project for iPad® tablets

In addition to operating with a TSW-752, an iPad, an MP-B10 Media Presentation Button Panel, or XPanel, the program offers direct integration with Crestron Connect It™ devices, such as the TT-100 Presentation Interface, and with the AirMedia® Presentation Gateway.

A special version of the TSW-752 Touch Screen (TSW-752-B-DMPS3 PAK KIT) is available for use with the DMPS3 Series. This version of the touch screen comes with the .AV Framework project preloaded.

NOTE: The DM-MD8X1-4K-C and the HD-MD8X1-4K may optionally be controlled by an external control system rather than by the built-in .AV Framework functionality. When a control system is added to the IP table, the .AV Framework functionality is disabled.

Many items within this document refer to the DMPS3 Series, the DM-MD8X1-4K-C, and the HD-MD8X1-4K. For simplicity within this guide, the term ".AV Framework host device" is used except where noted.

Interface Setup

This section provides information on how to connect each interface to the control system.

TSW-752

To connect a TSW-752, use the following procedure:

NOTE: With TSW-752 models other than the TSW-752-B-DMPS3 PAK KIT, the .AV Framework project must be loaded on the touch screen.

NOTE: The .AV Framework Base program requires IP ID 03 from the TSW-752. Out of the box, the value should already be set.

1. On the **Setup** screen, tap **IP Table Setup** to display the **Ethernet Setup – IP Table** screen. The **Ethernet Setup – IP Table** screen displays up to four IP table settings, each of which has an **Online** indicator.

   Ethernet Setup – IP Table Screen

2. To add or edit an entry, tap the corresponding **Add/Edit** button. The **Ethernet Setup – Edit IP Table Entry** screen is displayed.

   Ethernet Setup – Edit IP Table Entry Screen

3. Tap the **CIP ID** field to display the on-screen hex keypad.

Edit CIP ID Screen

4. Use the keypad to make the new entry. Tap **Save** to save the new entry or  to return to the **Ethernet Setup – Edit IP Table Entry** screen.
5. Tap the **IP Address/Hostname** field to display the on-screen keyboard.

Edit IP/Host Screen

6. Enter the IP address or hostname of your .AV Framework host device using the on-screen keyboard. Tap **Save** to save the new entry and return to the **Ethernet Setup – Edit IP Table Entry** screen. Tap **Cancel** to return to the **Ethernet Setup – Edit IP Table Entry** screen.
7. On the **Ethernet Setup – Edit IP Table Entry** screen, tap **Save Entry** to save the current entry or **Delete Entry** to clear it.

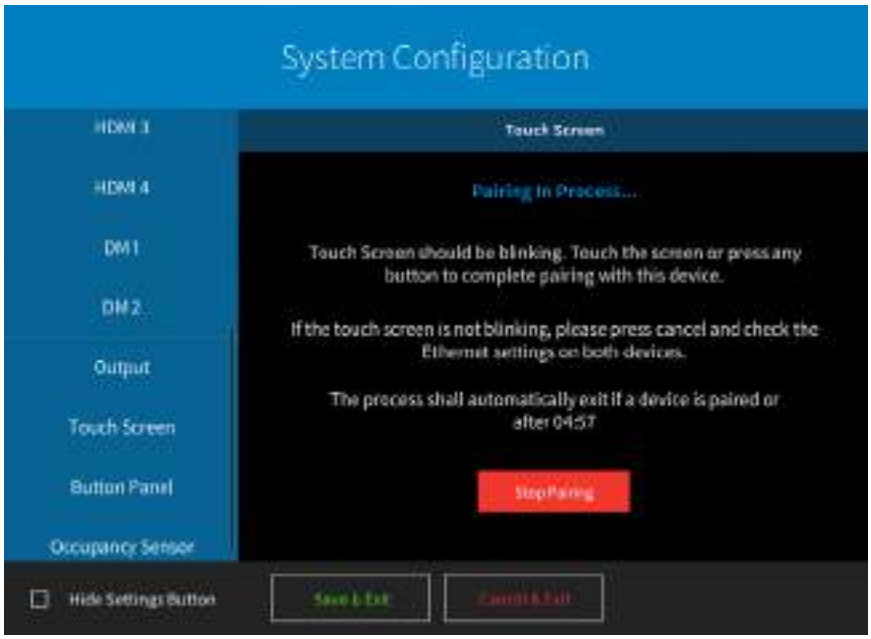
To pair a TSW-752 via the on-screen interface, use the following procedure:

1. Tap the  (gear) icon to display the **System Configuration** screen.

   System Configuration Screen

2. Scroll down the list on the left side of the screen and tap **Touch Screen**.
3. Tap **Pair** to begin the pairing process. The screen will display a message saying to touch the screen of the device to be paired. The TSW-752 screen begins to flash.

   Pairing in Process



4. Touch the TSW-752 screen to complete the process.

Pairing Complete

Crestron App for iPad (CRESTRON-APP-PAD)

NOTE: The form at www.crestron.com/crestronmobilesetup should be completed by an authorized Crestron installer if the customer is to configure the device. Upon completion, the instructions in this guide are e-mailed to the customer to provide assistance with the installation and start-up of the app from the device.

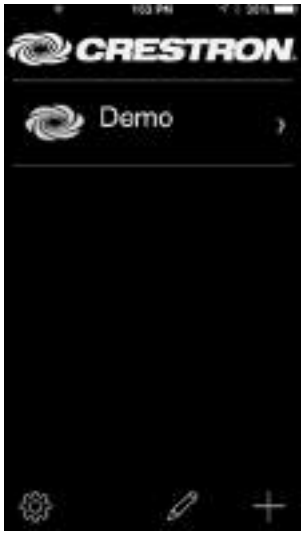
NOTE: The iPad .AV Framework project requires the full paid version of the Crestron App for iPad. It will not work with the free version of the app.

To connect with the Crestron App for iPad, use the following procedure:

NOTE: The .AV Framework Base program requires IP ID 04 from this app.

1. On the home screen, tap the Crestron swirl logo to start the app. A list of systems is displayed. When the app is first configured, the screen appears empty.

   Home Screen

2. Tap + to configure a system. The Add Location screen is displayed.

Add Location Screen

3. In the **Address 1 (Typically Local LAN)** section, enter the configuration information for a Wi-Fi® connection.
    - Tap the **Friendly Name / Location** field, and enter the name or location of the .AV Framework host device to be connected. The field is for user reference only and is not a host name.
    - If the iOS® device is to host the project, tap **Use Local Project** until **ON** is displayed. If using the control system to host the project, tap **Use Local Project** until **OFF** is displayed. The .AV Framework host device comes with the iPad project preloaded.
    - Tap the **Host Name or IP Address** field, and enter the host name or IP address of the .AV Framework host device.

      NOTE: If using DHCP, enter a host name rather than an IP address, as the DHCP server may change the IP address periodically.

    - Tap the **HTTP Port** field. If SSL is enabled, ensure it is set to 443. If SSL is disabled, ensure it is set to 80.
    - Tap the **IP ID** field and ensure it is set to 04.
    - Tap the **CIP** field and ensure it is set to 41794.
4. Tap **Save**. The setup screen is displayed, listing the control system that has been added.

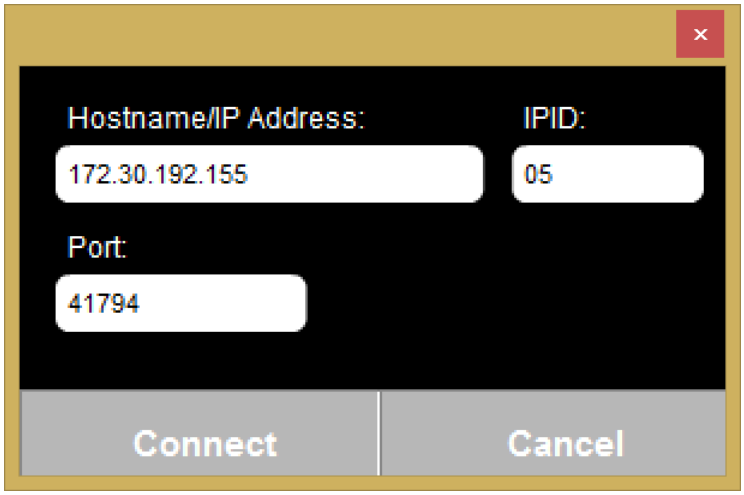
XPanel

To connect with XPanel, use the following procedure:

NOTE: The .AV Framework Base program requires IP ID 05 from XPanel.

1. Install XPanel by running **Crestron XPanel installer.air** (for Macintosh) or **Crestron XPanel installer.exe** (for Windows).
2. Launch the XPanel project by double-clicking **dmps_.avframework_XPanel_vx.x.c3p**. This file can be found in the **Display Files\dmps_.avframework_XPanel_vx.x.c3prj** directory in the .AV Framework package.
3. Access the configuration screen by selecting **Options** > **Host Settings**.
4. Enter the IP address of the control system and set the IP ID to 05.

   Configuration Screen



AM-100 (for DMPS3-4K-150-C only)

To connect with an AM-100, use the following procedure:

NOTE: The .AV Framework Base program requires IP ID 20 from the AM-100.

NOTE: The AM-100 must be connected to HDMI® interface Input 4.

1. Use a web browser to connect the device to the AirMedia IP address.
2. Click **Device Administration** to open the login page. The default password is **admin**.
3. After logging in, select **Crestron Services Setup** from the column on the left side of the page.

Crestron Services Setup

4. Enter the IP address of the .AV Framework host device. This can be found in the .AV Framework on the System Configuration screen (refer to the illustration on page 19).
5. Set the IP ID to 20.
6. Set the Port to 41974.
7. Click Apply.

TT-100 (for DMPS3-4K-150-C only)

Each TT-100 connects to a USB port on the .AV Framework host device. The TT-100 connected to USB 1 routes to either HDMI 1 or VGA 1 (whichever is in use). The TT-100 units connected to USB 2, USB 3, and USB 4 route to either HDMI or VGA 2, 3, or 4 (whichever is in use).

For more information, refer to “Signal Routing Behavior” on page 27.

MP-B10 (for DMPS3-4K-150-C only)

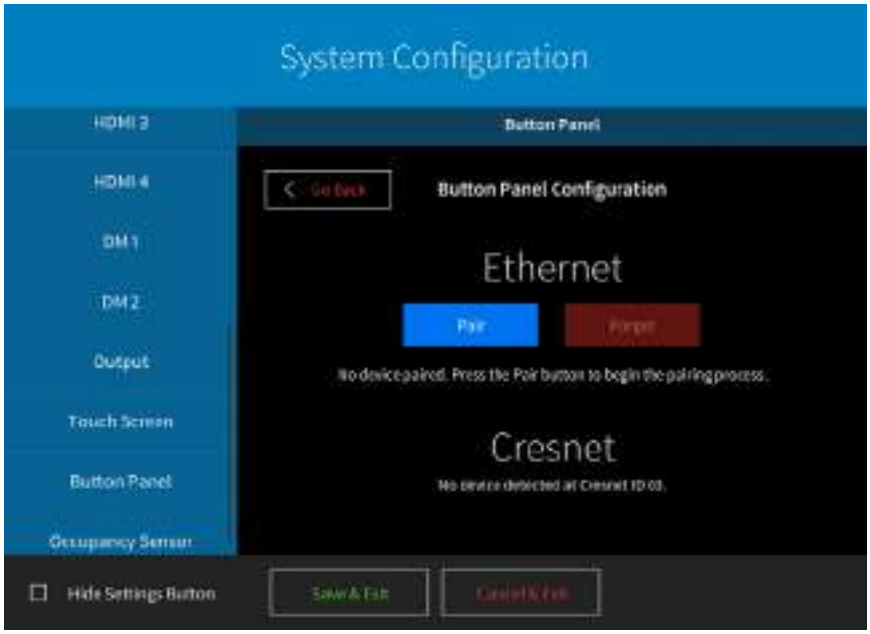
To pair an MP-B10 Media Presentation Button Panel with an .AV Framework host device, use a TSW-752, an iPad, or an XPanel, and the following procedure:

1. Tap the  (gear) icon to display the **System Configuration** screen.
2. Scroll down the list on the left side of the screen and tap **Button Panel**.

   System Configuration Screen

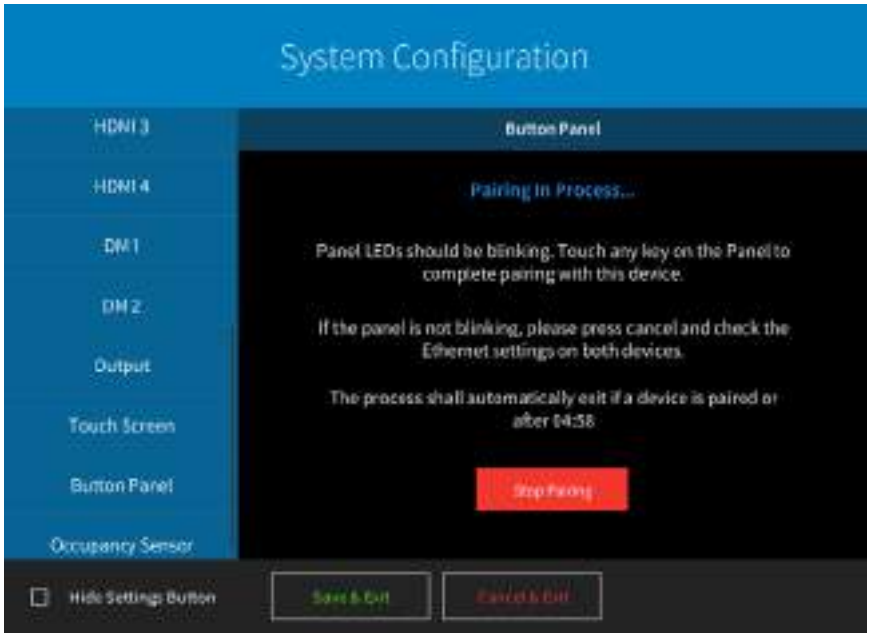
3. Tap **Pair Panel** to access the button panel configuration controls.

   Button Panel Configuration



4. Tap **Pair** to begin the pairing process. All the LEDs on the MP-B10 will blink. (On units with older firmware, only one LED will blink.)

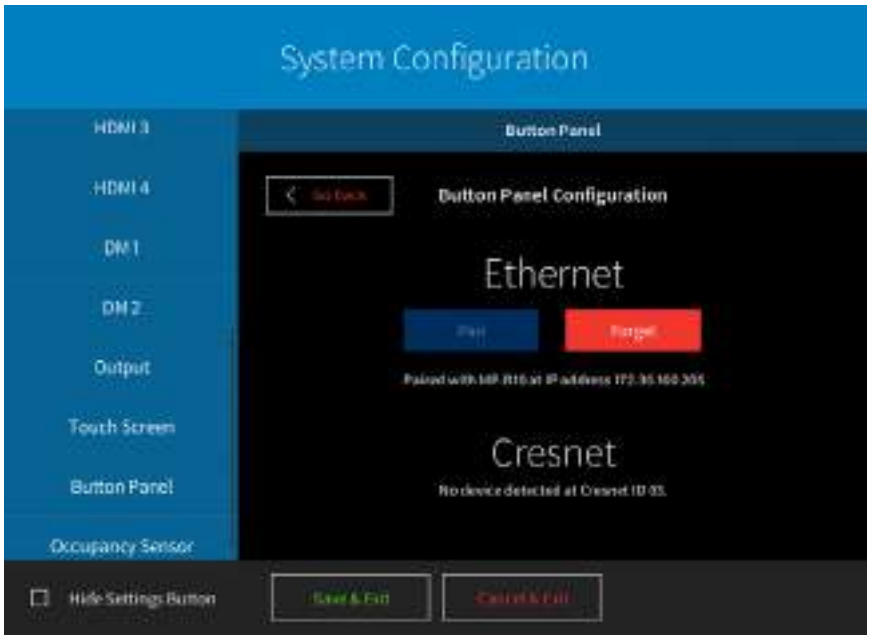
Pairing in Process



5. Push any button on the MP-B10 to complete the process. The screen will indicate the .AV Framework host device is paired with the MP-B10.

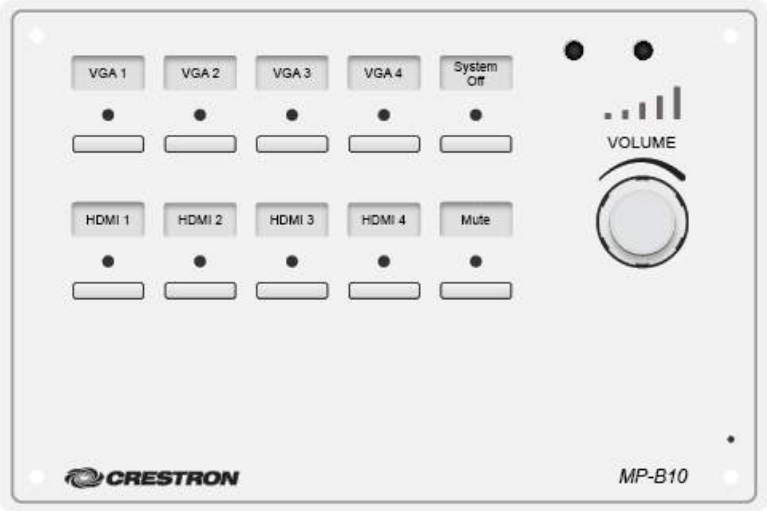
NOTE: On units with older firmware where only one LED is flashing, press the **SETUP** button. (Refer to the MP-B10 documentation for details.)

Pairing Complete



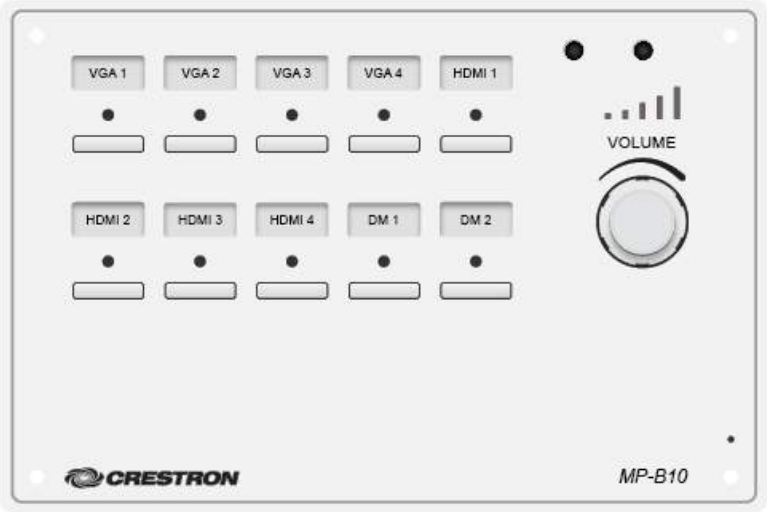
When the MP-B10 is used with a DM-MD8X1-4K-C or an HD-MD8X1-4K, eight buttons are used for routing, one button is used for power, and one button is used for muting audio.

MP-B10 Buttons with DM-MD-8X1-4K-C



When the MP-B10 is used with a DMPS3-4K-150-C, all ten buttons are used for routing.

MP-B10 Buttons with DMPS3-4K-150-C



The scroll wheel on the MP-B10 adjusts volume level.

6. Tap **Exit**.

NOTE: An MP-B10 can also be paired directly with a DMPS3-4K-150-C via Cresnet® network ID 03. With the direct Cresnet connection between these devices, pairing is automatic.

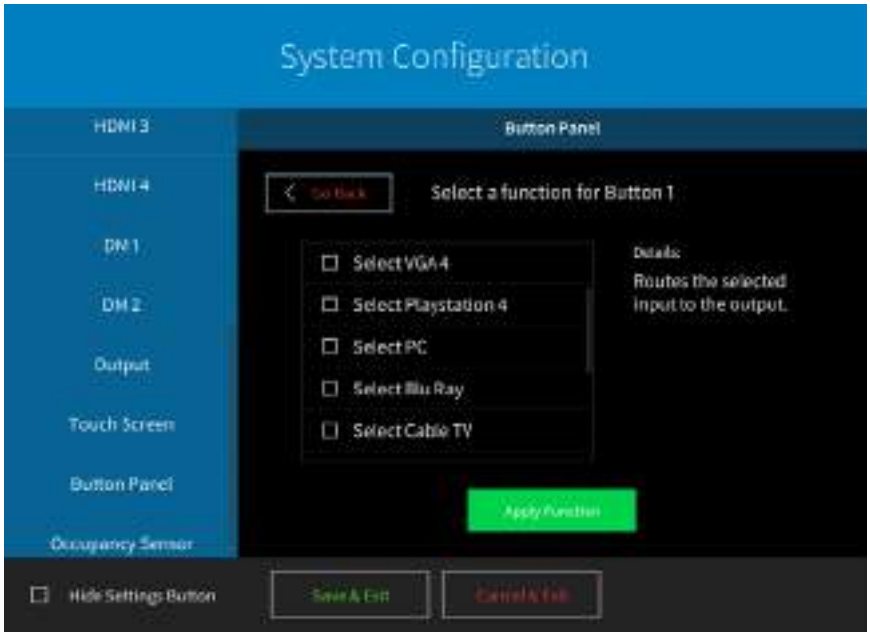
The MP-B10 configuration interface allows user-assignable button functions. To assign a button, use the following procedure:

1. Tap the  (gear) icon to display the **System Configuration** screen.
2. Scroll down the list on the left side of the screen and tap **Button Panel**.

   System Configuration Screen

3. Tap the button to be assigned.

   System Configuration Screen – Button Assignment



4. Select the desired function by tapping its check box, and then tap **Apply Function**.

GLS-ODT-C-CN

To connect a GLS-ODT-C-CN Occupancy Sensor, use the following procedure:

1. Tap the (gear) icon to display the **System Configuration** screen.
2. Scroll down the list on the left side of the screen and tap **Occupancy Sensor**.

System Configuration Screen

NOTE: The GLS-ODT-C-CN is detected at Cresnet ID 97.

If **Turn system On When Occupancy Detected** is selected, the input will be routed to the destination selected from the list on the right side of the screen.

Fusion RV

Connect

To connect with the Fusion RV® application, use the following procedure:

NOTE: The .AV Framework Base program requires IP ID F1 from Fusion RV.

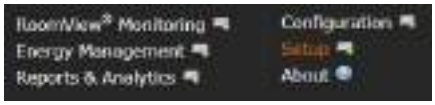
1. Log in to the Crestron Fusion® application.
2. From the Crestron Fusion header tab, click **Open**.

   Crestron Fusion Header Tab

3. From the pull-down tab, click **Setup**.

   Pull-Down Tab

4. Click the **+** symbol next to the **Root** node to expand the tree. Click the **Rooms** node to expand the tree again.

   Root Node

5. Click **Add**. From the drop-down list, click **Add Room**. The **Add – Room to Root** dialog box opens.

   Add Drop-Down List

   Add – Room to Root Dialog Box

6. Click **Add room without template** and then click **OK**. The **Add Room to 'Rooms'** window opens with the **Room Details** tab selected.

Room Details Tab

7. Enter information into the required fields as indicated by the red asterisks. Enter optional information as desired.
8. Click the **Scheduling Details** tab.
9. In the **Server Access** field, select **RoomView Calendar** from the drop-down list.

NOTE: The user can change to another scheduling calendar at a later time.

10. Click the **Processors** tab and then click **Add**. The **Add Processor to 'Room'** dialog box opens.

Processors Tab

Add Processor to 'Room' Dialog Box

11. Enter information into the required fields as indicated by the red asterisks. Enter optional information as desired.

NOTE: If the **Discover Symbols** check box is selected in the **Add Processor to 'Room'** dialog box, and the control program symbol being used is version 7.2 or later, the Symbol Discover feature automatically imports the symbol information into the Crestron Fusion database.

NOTE: In the SystemBuilder™ application, the Symbol Discover feature is not supported on symbols earlier than version 7.2.

12. Click **Save & Close** to return to the **Processors** tab.

Control and Monitor

Room monitoring and control in Crestron Fusion use the following attributes:

Controls (Read/Write)

TYPE	FUNCTION
Digital	System On
Digital	System Off
Digital	System Mute Toggle

Monitors (Read Only)

TYPE	FUNCTION
Digital	System Power
Digital	System Muted
Analog	Program Volume Level
Serial	Fusion Error Message
Serial	Fusion Log Text
Serial	Fusion Device Usage
Serial	Input 1 Source Name
Serial	Input 2 Source Name
Serial	Input 3 Source Name
Serial	Input 4 Source Name
Serial	Input 5 Source Name
Serial	Input 6 Source Name
Serial	Input 7 Source Name
Serial	Input 8 Source Name
Serial	Input 9 Source Name
Serial	Input 10 Source Name

Monitor the assets connected to the system using the following attributes:

Displays 1 through 4 (Read Only)

TYPE	FUNCTION
Digital	Display Power
Digital	Display Online
Digital	Display Offline Timeout Alert

TSW-752 (Read Only)

TYPE	FUNCTION
Digital	Connected

iPad (Read Only)

TYPE	FUNCTION
Digital	Connected

XPanel (Read Only)

TYPE	FUNCTION
Digital	Connected

AM-100 (Read Only)

TYPE	FUNCTION
Digital	Connected

MP-B10 (Read Only)

TYPE	FUNCTION
Digital	Connected

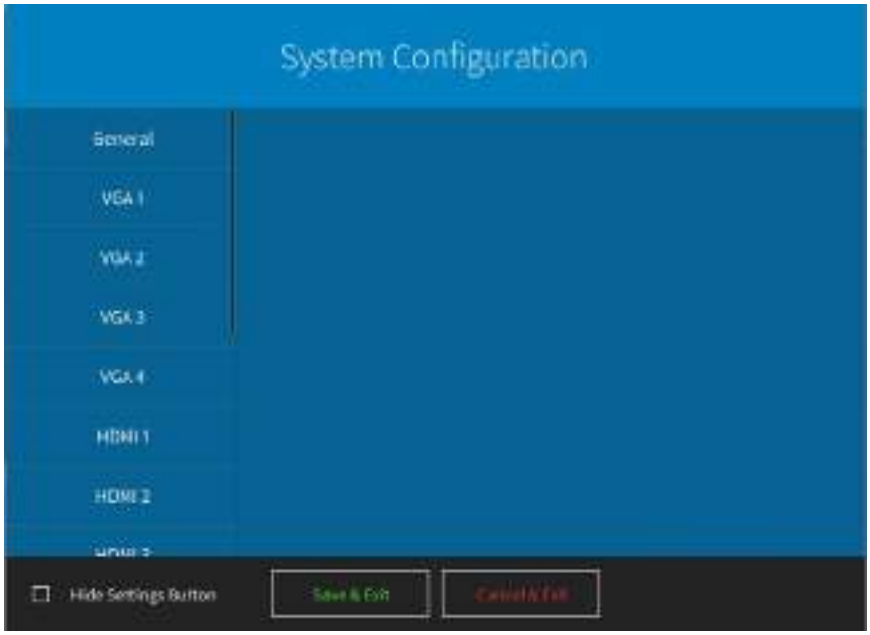
System Configuration

Upon connection to an .AV Framework host device, prior to setup, the initial screen appears as shown.

Initial Screen

Tap the (gear) icon to the right of the (power) button to display the **System Configuration** screen. If the gear icon is not visible on the main screen, touch and hold the bottom right corner of the screen for 10 seconds to display the **System Configuration** screen.

System Configuration Screen



The **System Configuration** screen contains buttons to select specific setup screens. There is a **General** entry, plus an entry for each input and output.

The screen also contains a **Hide Settings Button** check box that, when checked, hides the gear icon in the lower right corner of the main screen.

Tap **Cancel & Exit** to return to the main screen without changing any settings. Tap **Save & Exit** to save all changes before returning to the main screen.

General

Tap **General**, and then use the **Name** text box to enter the system name you want to display on the main screen.

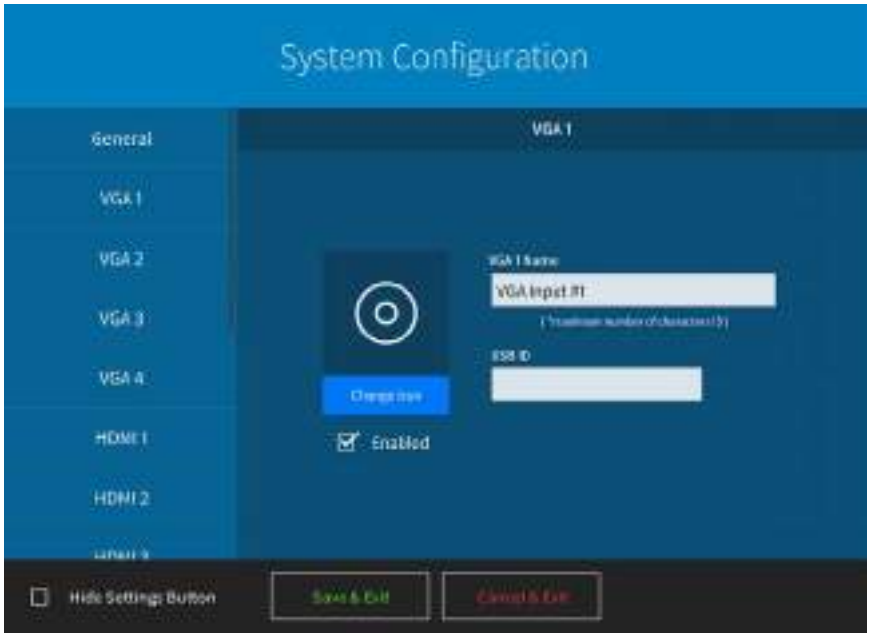
NOTE: When the text box is tapped, an on-screen keyboard appears on the bottom of the screen.

System Configuration – General Screen

Input

Tap one of the input buttons to adjust the input's settings.

System Configuration – VGA Input 1 Screen



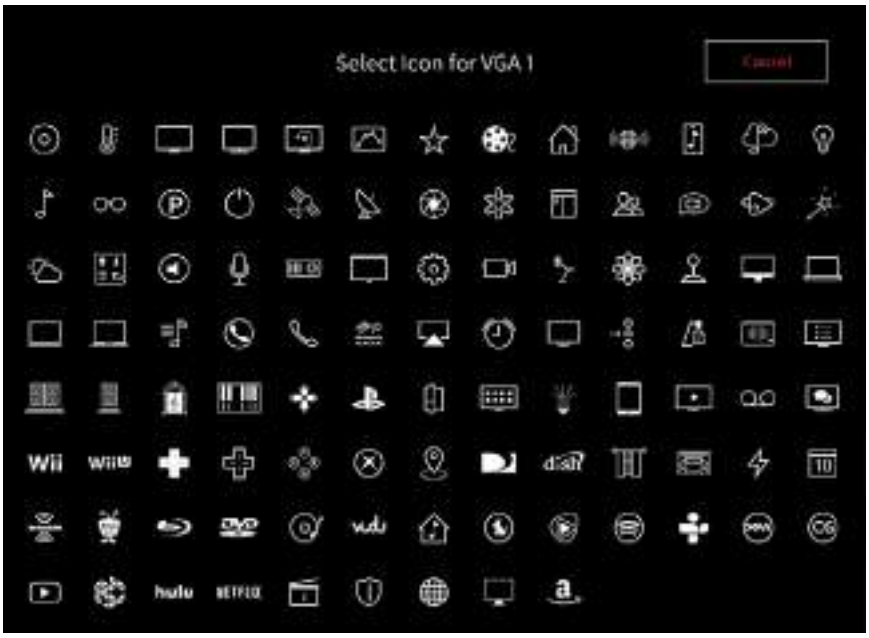
Use the Name text box to enter the input name you want to display on the source selection screen (shown on page 22).

To utilize the USB switching functionality, enter the USB ID of the remote USB-EXT-DM device that is connected to the input. The USB ID of the device is the last six characters of the MAC address, which can be found on a label on the device itself.

The Enabled check box determines whether this input is displayed on the source selection screen. By default, the box is checked to enable the display of this input.

Tap the Icon button to display the icon selection screen.

Icon Selection Screen



Tap an icon to assign it as the icon for the selected input.

Output

Tap **Output** to adjust the output settings.

System Configuration – Output Screen

Use the **Name** text box to enter the output name you want to display on the main screen.

To utilize the USB switching functionality, enter the USB ID of the local USB-EXT-DM device that is connected to the output. The USB ID of the device is the last six characters of the MAC address, which can be found on a label on the device itself.

The **Allow Digital Audio Out** check box determines whether audio is sent to the display as well as to the analog audio output. By default, the box is not checked, so audio is sent only to the analog audio output.

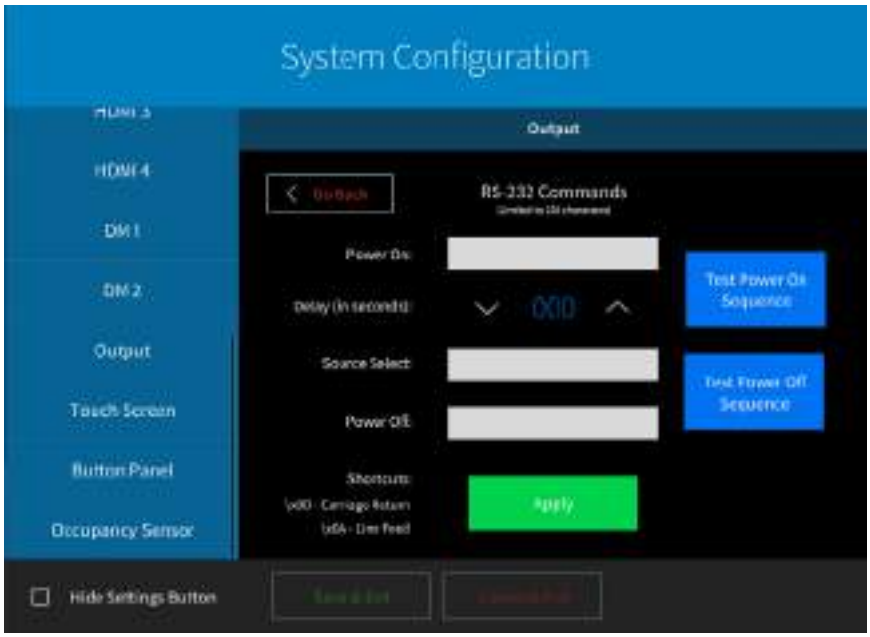
Use **Display Type** to select the type of display being used.

When a display is selected, the .AV Framework host device sends a power command to turn the display on or off with the system. The Display Power On command is sent when a source is selected. The Power Off command is sent after the system shutdown is confirmed.

NOTE: The power commands are sent via RS-232 using either the output of the "DM Roombox" or the COM A port on the .AV Framework host device. Both outputs are active simultaneously, but to prevent feedback loops, only one at a time can be connected.

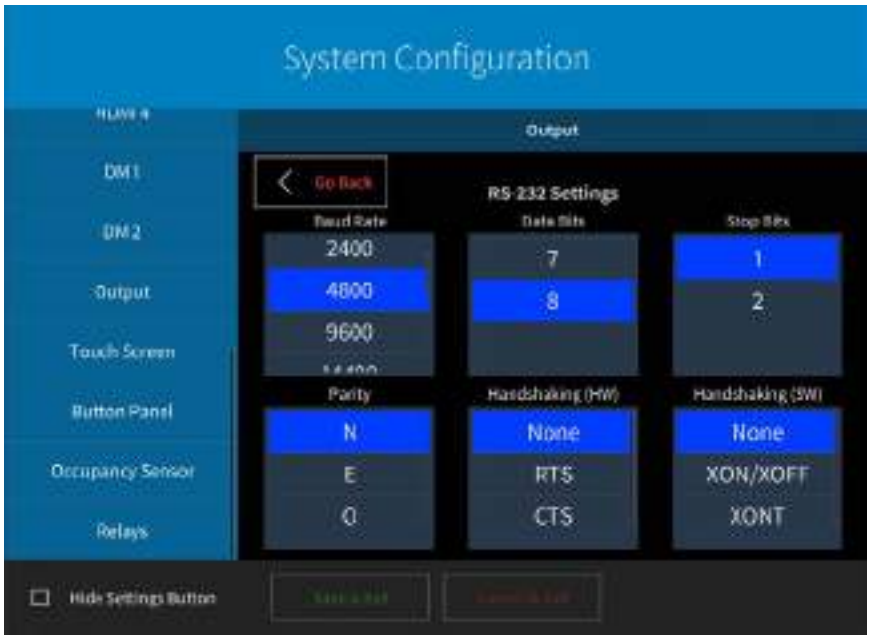
If **Generic RS-232 Control** is selected, tap **RS-232 Commands** to display the command configuration screen.

System Configuration – Output (RS-232 Commands)



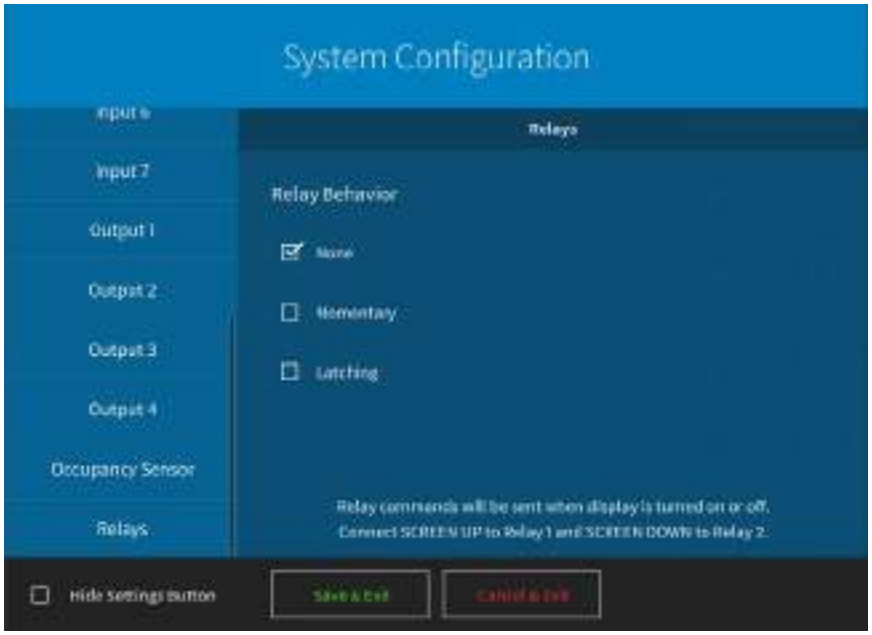
Tap **Go Back** to return to the **Output** screen, and then tap **RS-232 Settings** to display the settings configuration screen

System Configuration – Output (RS-232 Settings)



Tap **Relays** to display the relays configuration screen.

System Configuration – Relays Screen



Relay commands are sent when the display is turned on or off. Connect SCREEN UP to Relay 1 and SCREEN DOWN to Relay 2.

The **Relay Behavior** check boxes select the relay mode and associated functionality:

- **None** – The relays will not be activated.
- **Momentary** – When the command is triggered, the relays will be closed for 1/2 second.

- Latching – When the command is triggered, the relays close, and do not reopen until the other screen command is issued. When both relays are open, there should be a 1/2-second delay between relay closings.

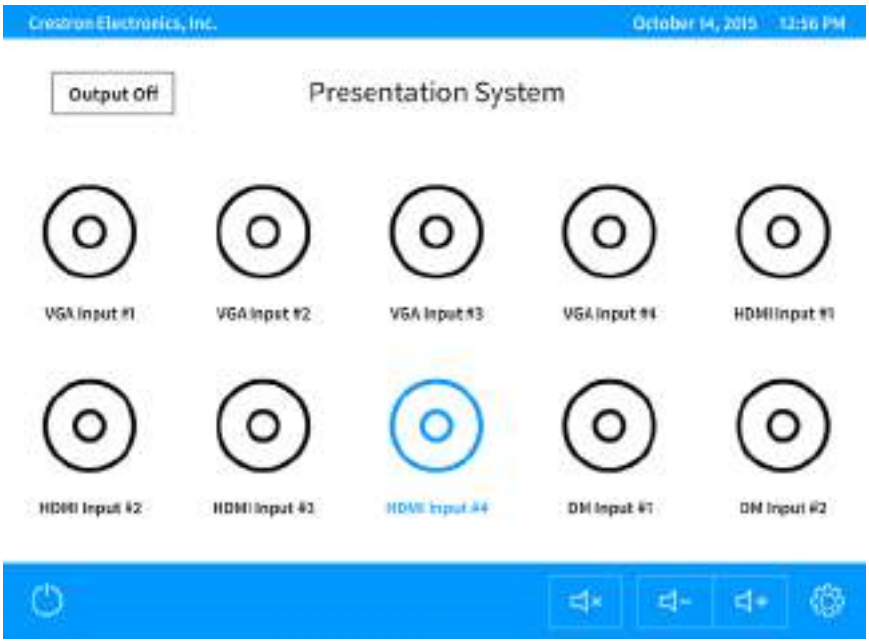
Upon system startup, all relays will be in the open position.

Program Setup

The initial screen is shown below. Tap the (power) button to turn on the .AV Framework host device.

Initial Screen

Source Selection Screen



All enabled inputs are shown on this screen. Tap an input to route it to the output while the associated audio is routed to the analog audio output.

Signal Routing Behavior

The behavior of the .AV Framework Base program's routing feature depends on the components that make up the system. System combinations may include the following products:

- TT-100 Crestron Connect It Presentation Interface
- AM-100 AirMedia Presentation Gateway

  NOTE: The AM-100 must be connected to HDMI Input 4.

- TSW-752 7" Touch Screen

Signal routing behavior of the program is as follows:

- If none of the supported peripheral control devices are connected to the system, signals are routed as they are detected by the auto-routing algorithm.
- If TT-100s are in use, the signal is routed when either button on a TT-100 is pressed.
- If an AM-100 is in use in either of the two scenarios above, establishing a connection to the AM-100 will auto-route the AM-100.
- In any of the above scenarios, the system will shut down using the standby timeout.
- If a TSW-752 is connected to the system, the signal is routed to the input selected on the touch screen. System power is controlled by the power buttons on the touch screen.

.AV Framework Updates

The firmware .zip file for the .AV Framework host device includes a copy of the .AV Framework Base program and the iPad project. If the firmware detects an older version of the .AV Framework Base program in slot 1 when the update is applied, it will update the program. If no program is detected, or if a user program is detected, the program update will not be applied.

Deleting the Program

The .AV Framework Base program can be deleted from the .AV Framework host device in the same way any other program can be deleted:

1. In the Crestron Toolbox™ application, select Tools > System Info.
2. Connect to the .AV Framework host device.
3. .AV Framework will be in Program 01. Click the ▶ button. A new dialog box will open.
4. Click Erase, and another dialog box will open.
5. In the new dialog box, click Erase All Program Files.
6. When the confirmation dialog box opens, click Yes.

The program can also be overwritten by a custom user program.

Program Resource Utilization

The following resources are used by the .AV Framework Base program and will not be available to other programs:

- COM 01
- IP ID 03 (TSW-752)
- IP ID 04 (Crestron App)
- IP ID 05 (XPanel)
- IP ID 0B (Display connected to the (RoomView® application)
- IP ID 0C (RoomView connected display)
- IP ID 0D (RoomView connected display)
- IP ID 0E (RoomView connected display)
- IP ID 10 (MP-B10)
- IP ID 20 (AM-100)
- IP ID F1 (Fusion RV)
- Connect It Device Slot 01
- Connect It Device Slot 02
- Connect It Device Slot 03
- Connect It Device Slot 04

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