



**SIMPLIFY
ACCESS &
CONTROL**

Harding DXL Panel Guide

Harding DXL Panel Guide

Intelli-Site

Security Management Software

Harding DXL Panel Guide

Harding DXL Panel Guide

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Harding DXL Panel Guide

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When calling, please be at the computer prepared to provide the following information:

- Product version number, found by selecting the  **About** button from the Intelli-Site Application Menu.
- The type of computer being used including, operating system, processor type, speed, amount of memory, type of display, etc.
- Exact wording of any messages that appear on the screen.
- What was occurring when the problem was detected?
- What steps have been taken to reproduce the problem?
- It is highly recommended that the user generate a support package for transmission to Intelli-Site technical support staff. To generate the package, run the Intelli-Site Configuration Utility. *Create Support Package...* is the last option in the **Tools** menu.

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Harding DXL Panel Guide

Introduction

Intelli-Site supports the Harding DXL also known as MicroComm DXL. This integration was written using the DXL Host Specification document, FS6800141 rev. 22.

This guide explains managing and controlling the Harding DXL with Intelli-Site Security Management Software.

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Installation Guide

Harding DXL Setup

Before we begin, please ensure the Harding DXL is fully configured. There are two basic types of Harding DXL hosts, ASCII based and registered based. Intelli-Site requires register based. This property can be found using the MicroComm DXL Administrator application to edit the DXL configuration file. Locate the *Host Ports* in the Configure drop-down list. Select the host port that Intelli-Site will be controlling. Click the **Properties...** button then switch to the **Protocol** tab of the Host Port's **Properties** dialog. Ensure **Register Based Messages** is selected.

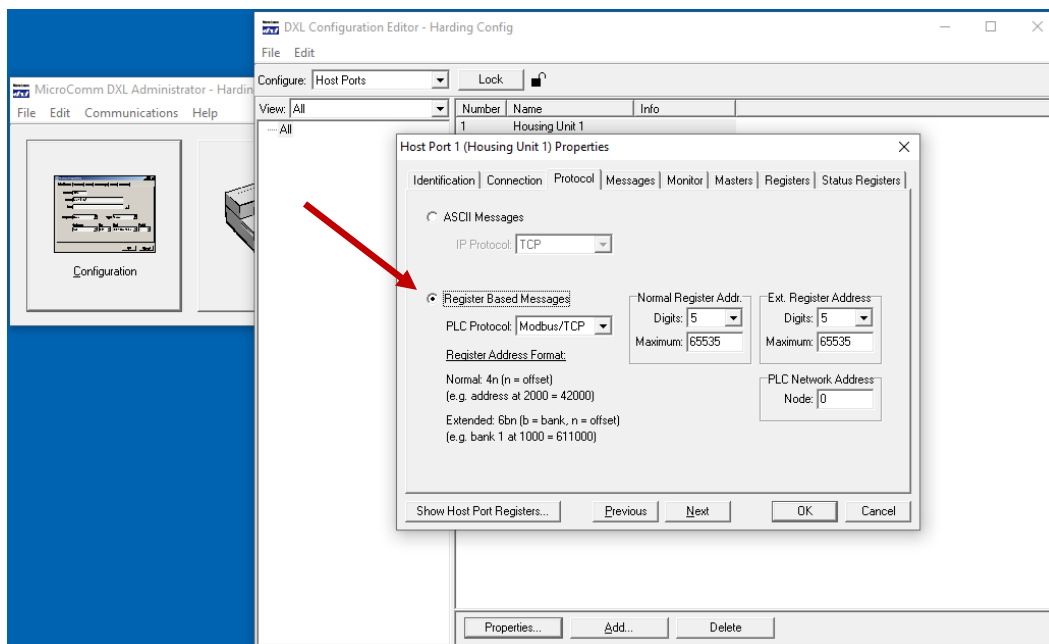


Figure 1 - DXL Configuration Editor - Host Port Properties: Protocol tab

Every master should have the Command register defined to receive commands from Intelli-Site as well as the Connection Status register. Each Station and Page Zone should have their Connection Status registers defined as well. To verify they have been set, click **Show Host Port Registers...**. The host port's **Registers** dialog displays. Scroll through the table to verify the command and status registers have been set.

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Conflict	Start	End	Length	Register Function	Device Kind	Number	Device Name
0	400001	400005	5	Command	Master	11	HU1-MASTER1
0	400006	400007	2	Master Connection Status	Master	11	HU1-MASTER1
0	400011	400015	5	Command	Master	14	HU1-MASTER2
0	400016	400017	2	Master Connection Status	Master	14	HU1-MASTER2
0	401001	401001	1	Station Call Status	Station	1101	CELL A.01
0	401002	401002	1	Station Call Status	Station	1102	CELL A.02
0	401003	401003	1	Station Call Status	Station	1103	CELL A.03
0	401004	401004	1	Station Call Status	Station	1104	CELL A.04
0	401005	401005	1	Station Call Status	Station	1105	CELL A.05
0	401006	401006	1	Station Call Status	Station	1106	CELL A.06
0	401007	401007	1	Station Call Status	Station	1107	CELL A.07
0	401008	401008	1	Station Call Status	Station	1108	CELL A.08
0	401009	401009	1	Station Call Status	Station	1109	CELL A.09
0	401010	401010	1	Station Call Status	Station	1110	CELL A.10
0	401011	401011	1	Station Call Status	Station	1111	CELL A.11
0	401012	401012	1	Station Call Status	Station	1112	CELL A.12
0	401013	401013	1	Station Call Status	Station	1113	CELL A.13
0	401014	401014	1	Station Call Status	Station	1114	CELL A.14
0	401015	401015	1	Station Call Status	Station	1115	CELL A.15
0	401016	401016	1	Station Call Status	Station	1116	CELL A.16
0	401017	401017	1	Station Call Status	Station	1201	CELL B.01
0	401018	401018	1	Station Call Status	Station	1202	CELL B.02
0	401019	401019	1	Station Call Status	Station	1203	CELL B.03
0	401020	401020	1	Station Call Status	Station	1204	CELL B.04
0	401021	401021	1	Station Call Status	Station	1205	CELL B.05
0	401022	401022	1	Station Call Status	Station	1206	CELL B.06
0	401023	401023	1	Station Call Status	Station	1207	CELL B.07
0	401024	401024	1	Station Call Status	Station	1208	CELL B.08
0	401025	401025	1	Station Call Status	Station	1209	CELL B.09
0	401026	401026	1	Station Call Status	Station	1210	CELL B.10

Figure 2 - Host Port Registers dialog

If anything is missing, the master Command register is defined on the **Masters** tab, and the status registers are set on the **Status Registers** tab.

Gather the IP address and TCP/UDP Port number for each exchange assigned to each host port that Intelli-Site will communicate with. This data is located on the **Connection** tab.

Installing the Driver in Intelli-Site

The Harding DXL driver in Intelli-Site must be installed. No external software is needed on the host computer.

If Intelli-Site has been installed without the Harding DXL driver, run the Intelli-Site installer again and select **Modify**.

During the installation or modify installation process, you are presented with the **Select the drivers you want to install** window.

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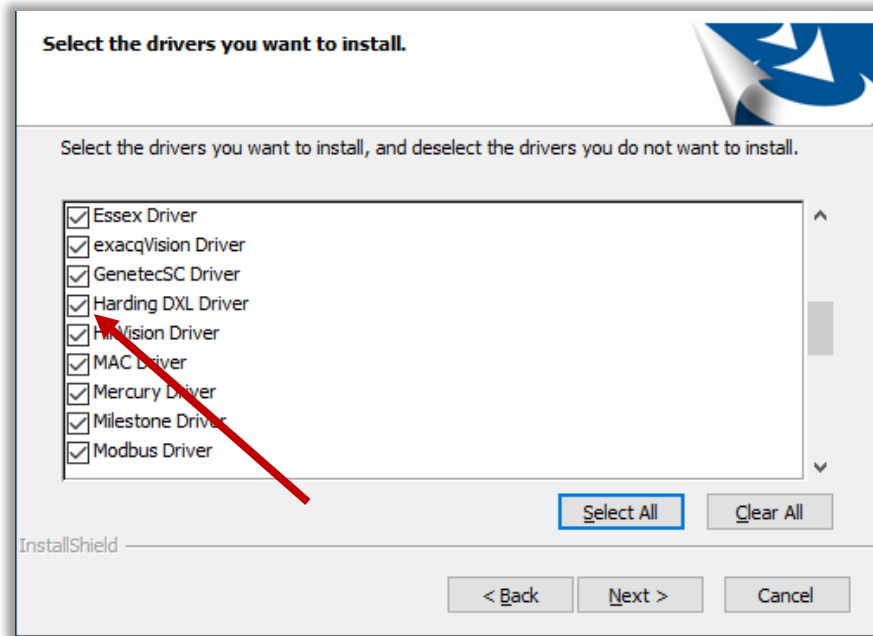


Figure 3 - Select the drivers you want to install

Ensure the **Harding DXL Driver** option is checked then continue with the installation or modification.

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Hardware Management View

The Harding DXL driver and Harding DXL panel are best configured in  **Hardware Management View**.

Setup

A Harding DXL panel is a DXL exchange/DCC. For the purposes of Intelli-Site, an exchange and its DCC are treated as if they are one and the same. There is one DCC per exchange; therefore, when this document refers to an exchange or to the panel, it can be either the exchange or the DCC as appropriate. Since each exchange has its own IP Address, there must be a separate Harding DXL Driver per Harding DXL panel.

In the Installation Guide, you were instructed to collect the IP addresses and port numbers of each exchange found on the **Connection** tab of the Host Port's properties. Armed with that information, we may proceed.

Setting up the Harding DXL Driver and Harding DXL panel is straightforward. The process is:

1. Add a Harding DXL driver
2. Add a communication method
3. Add a Harding DXL panel
4. Configure the Harding DXL panel

Add a Harding DXL Driver

Adding an Harding DXL driver is simple, but important. Without it, no communication with the Harding DXL panel can occur.

Hardware is managed in the  **Hardware Management View**. If you are not in  **Hardware Management View**, click on  and select .

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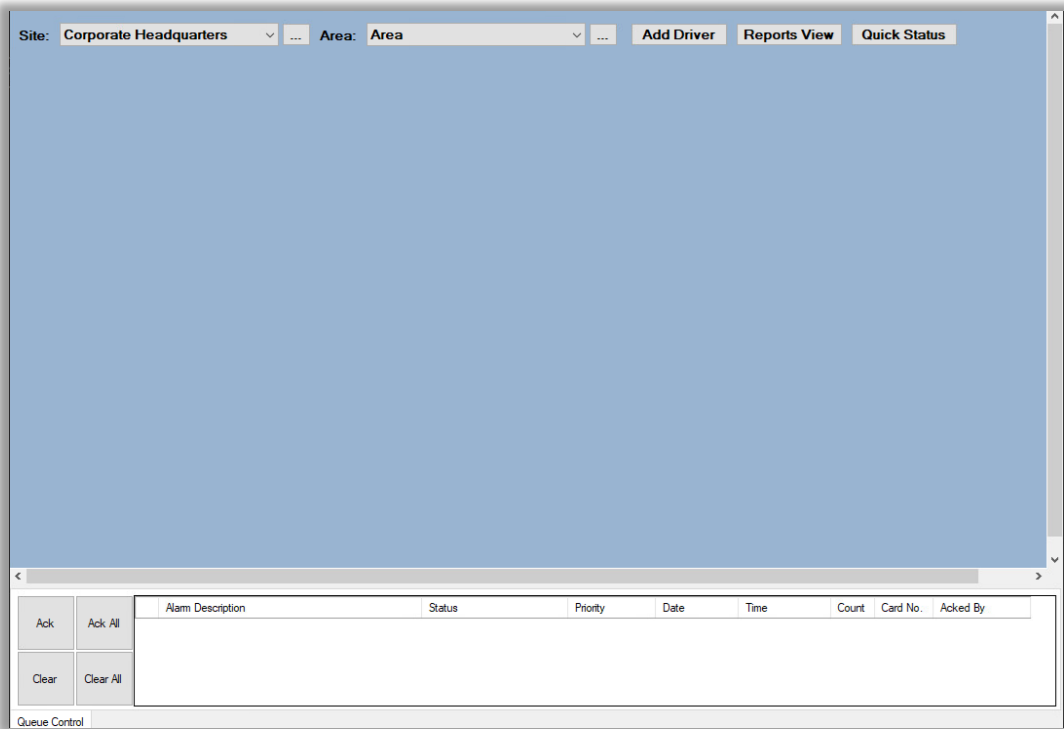


Figure 4 - Hardware Management View

To add the Harding DXL driver, click the **Add Driver** button. The **Choose Driver Type** dialog displays.

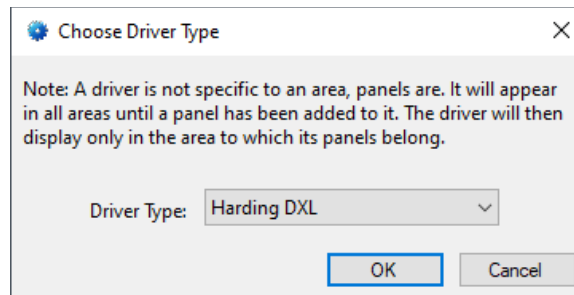


Figure 5 - Choose Driver Type Dialog

Select *Harding DXL* from the **Driver Type** drop-down list in the **Choose Driver Type** dialog. Click **OK**. A new Harding DXL driver icon is added to the screen and its properties dialog opens.

Harding DXL Panel Guide

[1323] New Harding DXL Driver

Properties

Name: New Harding DXL Driver ID: 1323

User Level: All Access

Notes:

Enabled: ☐

Default Retry Start Delay: ☒

Retry Start Delay: 15

Send Queue

Retries: 3

Timeout: 1000

Interval: 250

Panel List:

Computer List: [4] LATWin10

OK Cancel

Figure 6 - Harding DXL Driver Properties Dialog

Note: For an explanation of all of the driver properties, see [Harding DXL Driver Node](#).

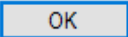
Please change the **Name** of the driver to reflect the use and/or location of the panel that this driver will manage. The default values of the rest of the properties are usually correct. Click  to save the changes.



Figure 7 - Harding DXL Driver icon

Notice the alert icon on the driver icon. That indicates the communication method is missing. Let's add it now.

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Add a Communication Method

To add a communication method, right click on the driver icon and select *Comm Method -> Add Comm Method*.

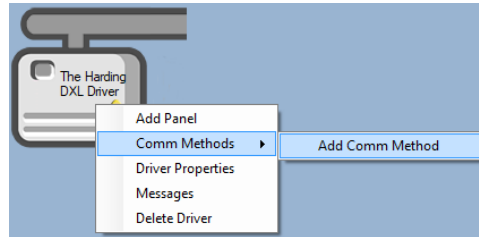


Figure 8 - Driver Context Menu: Comm Methods -> Add Comm Method

A **Choose Communication Method Type** dialog appears.

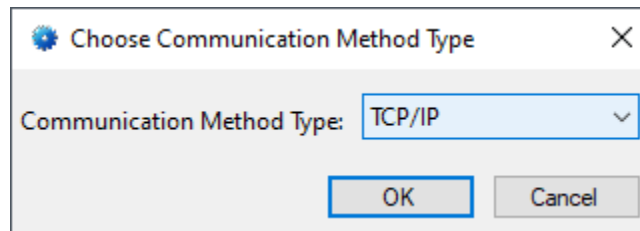


Figure 9 - Choose Communication Method Type dialog

There is only one possible communication method type, TCP/IP. Click the **OK** button. A **New TCP/IP Comm Method** dialog displays.

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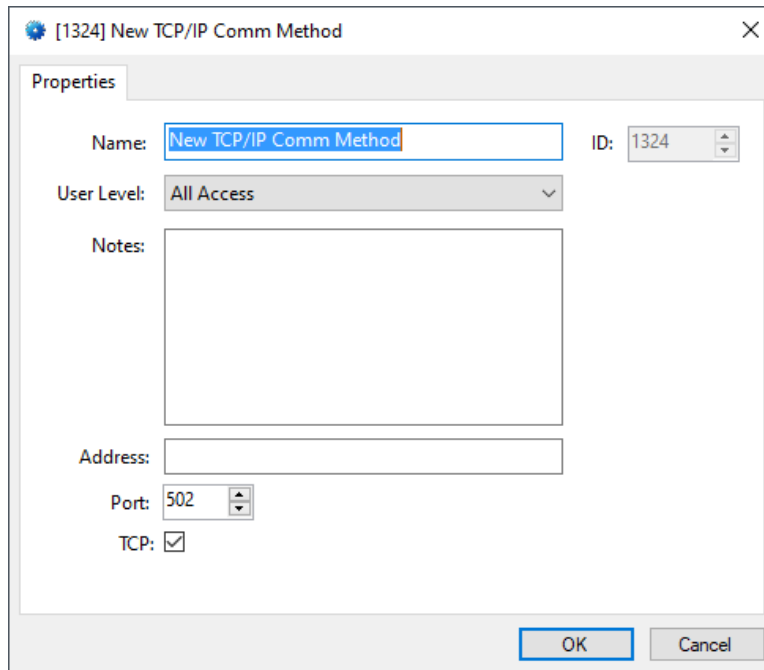


Figure 10 – New TCP/IP Comm Method dialog

Please set the **Name** to one that indicates which Harding DXL panel this driver will be communicating with.

Set the **Address** to the IP address of the exchange which can be found on the **Connection** tab of the Host Port's properties.

The **Port** is the TCP/UDP port number for the exchange found on the **Connection** tab of the Host Port's properties.

Next, add a Harding DXL Panel for the exchange.

Add a Harding DXL Panel

Once an Harding DXL driver is added and its communication method configured, it's time to add an Harding DXL panel to it.

Right-click on the Harding DXL driver icon and select *Add Panel*. The **Add Panel** dialog displays.

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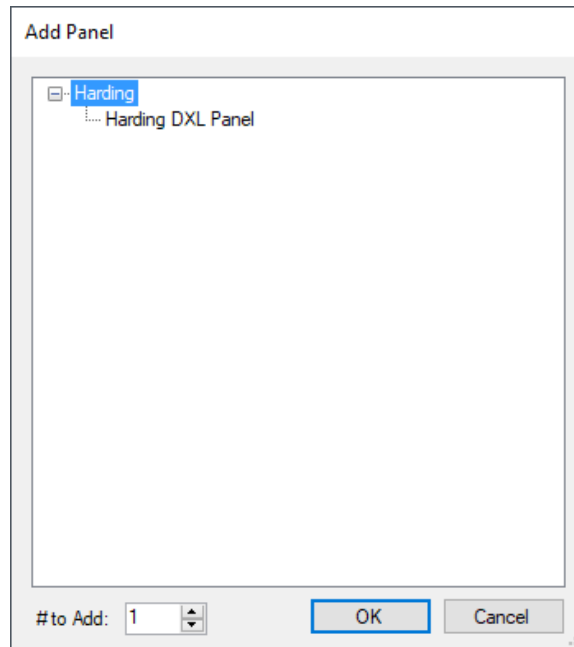


Figure 11 - Add Panel Dialog

Select *Harding DXL Panel*. Leave **# to Add** at 1. Click **OK**. A **New Harding DXL Panel** icon is added to the target driver.



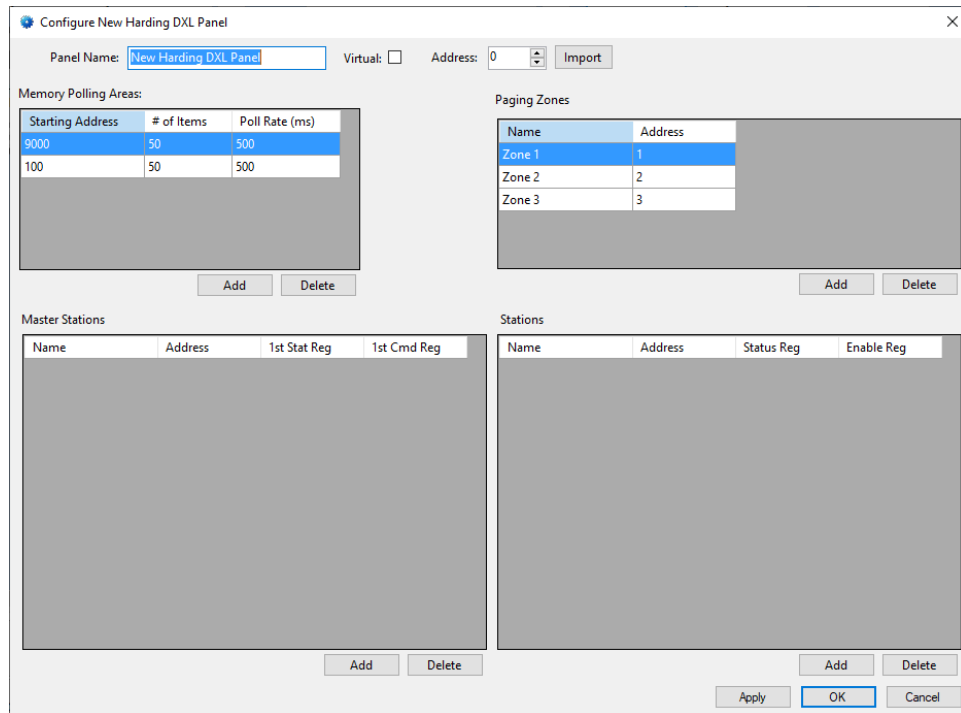
Figure 12 - A new panel

Next comes configuring the panel.

Configure the Harding DXL Panel

The Harding DXL panel is configured using the **Quick Config** dialog. To open the **Quick Config** dialog, right-click on the Harding DXL panel icon and select *Quick Config*.

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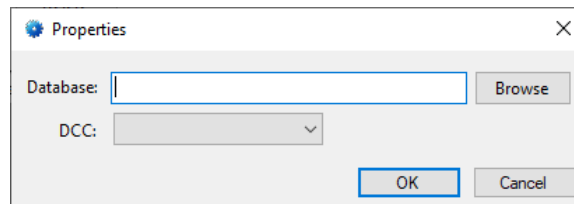
The dialog box is titled "Configure New Harding DXL Panel". It contains several sections for configuration:

- Panel Name:** A text field with "New Harding DXL Panel" entered.
- Virtual:** A checkbox that is currently unchecked.
- Address:** A numeric field with "0" entered and an "Import" button next to it.
- Memory Polling Areas:** A table with columns "Starting Address", "# of Items", and "Poll Rate (ms)". It contains two rows: (9000, 50, 500) and (100, 50, 500). Below the table are "Add" and "Delete" buttons.
- Paging Zones:** A table with columns "Name" and "Address". It contains three rows: (Zone 1, 1), (Zone 2, 2), and (Zone 3, 3). Below the table are "Add" and "Delete" buttons.
- Master Stations:** A table with columns "Name", "Address", "1st Stat Reg", and "1st Cmd Reg". It is currently empty. Below the table are "Add" and "Delete" buttons.
- Stations:** A table with columns "Name", "Address", "Status Reg", and "Enable Reg". It is currently empty. Below the table are "Add" and "Delete" buttons.

At the bottom right, there are "Apply", "OK", and "Cancel" buttons.

Figure 13 - Harding DXL Quick Config dialog

Change the **Name** of the panel to describe its use or location. Click the **Import** button to load the Harding DXL panel's configuration. A **Properties** dialog appears.



The dialog box is titled "Properties". It contains:

- Database:** A text field with a "Browse" button next to it.
- DCC:** A drop-down menu.

At the bottom right, there are "OK" and "Cancel" buttons.

Figure 14 - Properties dialog

Click **Browse** and locate the Configuration.db file for the Harding DXL. When the configuration db file is opened, the names of the DCCs are loaded into the **DCC** drop-down list.

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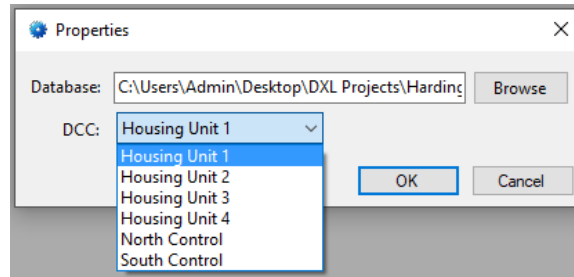


Figure 15 - Example DCC drop-down list after database selection

Select the DCC whose IP address is the one used for the communication method of the driver. Then click **OK**. The configuration for the selected DCC is loaded into the Quick Config dialog.

The image shows the 'Configure New Harding DXL Panel' dialog box. The 'Panel Name' is 'Housing Unit 1 Harding DXL Panel'. The 'Virtual' checkbox is unchecked, and the 'Address' is '0'. There is an 'Import' button. Below are four sections:

- Memory Polling Areas:** A table with columns 'Starting Address', '# of Items', and 'Poll Rate (ms)'. It contains three rows: (1, 17, 250), (1001, 136, 250), and (30003, 11, 250). Below the table are 'Add' and 'Delete' buttons.
- Paging Zones:** A table with columns 'Name' and 'Address'. It contains four rows: (Zone 1, 1), (Zone 2, 2), (Zone 3, 3), and (ALL PAGE HU1, 1990). Below the table are 'Add' and 'Delete' buttons.
- Master Stations:** A table with columns 'Name', 'Address', '1st Stat Reg', and '1st Cmd Reg'. It contains two rows: (HU1-MASTER1, 11, 6, 1) and (HU1-MASTER2, 14, 16, 11). Below the table are 'Add' and 'Delete' buttons.
- Stations:** A table with columns 'Name', 'Address', 'Status Reg', and 'Enable Reg'. It contains ten rows: (A.00 DAYROOM, 1100, 1121,), (B.00 DAYROOM, 1200, 1122,), (BARBER, 1706, 1102,), (C.00 DAYROOM, 1300, 1123,), (CELL A.01, 1101, 1001,), (CELL A.02, 1102, 1002,), (CELL A.03, 1103, 1003,), (CELL A.04, 1104, 1004,), (CELL A.05, 1105, 1005,), (CELL A.06, 1106, 1006,), (CELL A.07, 1107, 1007,), (CELL A.08, 1108, 1008,), and (CELL A.09, 1109, 1009,). Below the table are 'Add', 'Delete', 'Apply', 'OK' (highlighted), and 'Cancel' buttons.

Figure 16 - Panel Quick Config dialog after import

Then click **OK** to save the changes.

Note: Changes to the DXL configuration made outside of Intelli-Site will require the user to make the corresponding changes in Intelli-Site. DO NOT import again unless you want to start from scratch in Intelli-Site.

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Repeat this process for every DCC/exchange that Intelli-Site is expected to monitor and control. When all the panels have been added to  **Hardware Management View**, assign the master stations to the computer nodes in  **Design View** to use as the default master station for each computer.

Note: *After adding all the drivers and panels, it is strongly suggested the Master Stations be assigned to the computer nodes that will be using them. See [Assign the Master Stations to Computer nodes](#)*

Panel Control Screen

Every panel has a **Panel Control Screen**. The Harding DXL **Panel Control Screen** is only provided for the sake of completeness. At this time there is no reason or way to monitor the whole panel at once. That is not the standard usage of the Harding DXL system.

Clicking on the Harding DXL panel icon opens the **Panel Control Screen** of the target panel.

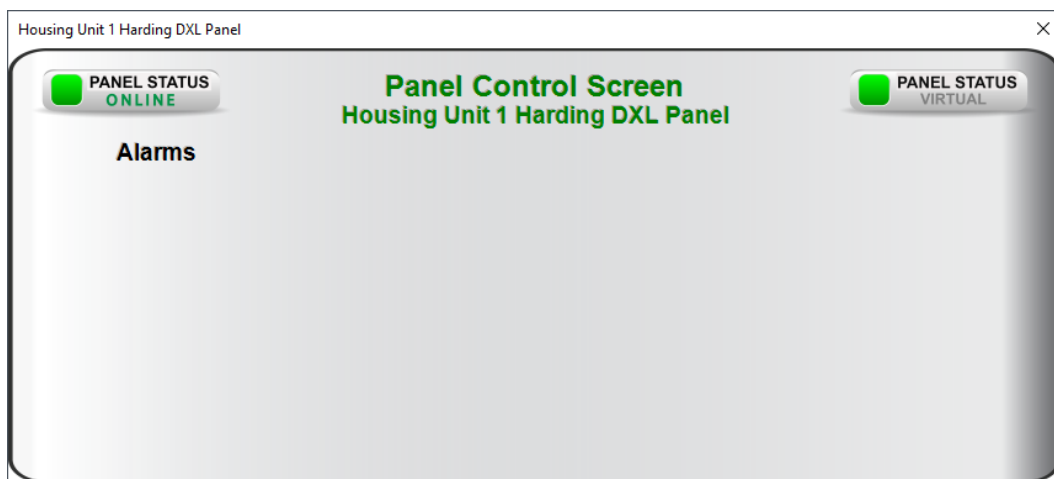


Figure 17 - Harding DXL Panel Status

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Design View

 **Design View** is the home of the Project Node Tree and the place where screens and screen objects are programmed. The following sections explain the Harding DXL driver node properties, the Harding DXL node properties, the Lock node properties, and screen object programming especially the automatically created screen objects.

Harding DXL Driver Node

The Harding DXL driver node is found by expanding **Setup->Computer Setup->Drivers**.



Figure 18 - Harding DXL Driver node in the Project Node Tree

Right-click on the driver node and select *Properties* to open the properties dialog. This dialog contains the standard driver properties that govern the basic operation of the driver.

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The screenshot shows the 'The Harding DXL Driver' properties dialog box. The title bar indicates the driver ID is 1323. The 'Properties' section includes a 'Name' field with the text 'The Harding DXL Driver', an 'ID' field with the value 1323, a 'User Level' dropdown set to 'All Access', and a large 'Notes' text area. Below these is an 'Enabled' checkbox which is currently unchecked. The 'Default Retry Start Delay' is checked, and the 'Retry Start Delay' is set to 15 seconds. The 'Send Queue' section contains three spinners: 'Retries' set to 3, 'Timeout' set to 1000, and 'Interval' set to 250. At the bottom, there are two list boxes: 'Panel List' containing '[1325] New Harding DXL Panel' and 'Computer List' containing '[4] LATWin10'. The dialog concludes with 'OK' and 'Cancel' buttons.

Figure 19 - Harding DXL Driver properties dialog

The fields **Name**, **ID**, **User Level**, and **Notes** are standard on all I/O Point nodes. The fields specific to this node are defined as follows.

Enabled – checkbox; when checked the driver is enabled

Default Retry Start Delay – checkbox (default: checked); if the driver did not connect, pause before attempting to connect again

Retry Start Delay – numeric (default: 15); number of seconds to wait between retries on connection attempts

Send Queue group box

Retry Start Delay – numeric (default: 15); number of seconds to wait between retries on connection attempts

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Retries – numeric (default: 3); number of retries for sending a packet

Timeout – numeric (default: 1000); number of milliseconds to wait for a response before assuming the packet was not received

Interval – numeric (default: 25); number of milliseconds to wait after a timeout before sending the packet again

Panel List – drop box; the Harding DXL panels attached to this driver

Computer List – drop box (default: the computer on which the Engine is running); the computer node on which this driver is running; in a redundant system, there may be multiple computers

Harding DXL Panel Node

The Harding DXL panel node is found by expanding **System Layout** then the Site and Area to which the Harding DXL panel was added in  **Hardware Management View**. In the example below, the panel was added to the site named **Corporate Headquarters** and the area named **Area**.

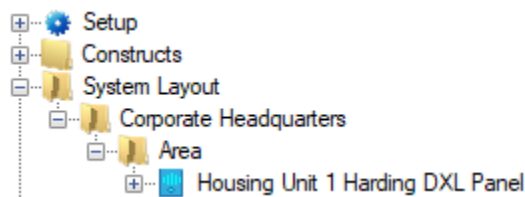


Figure 20 - The Harding DXL panel node in the Project Node Tree

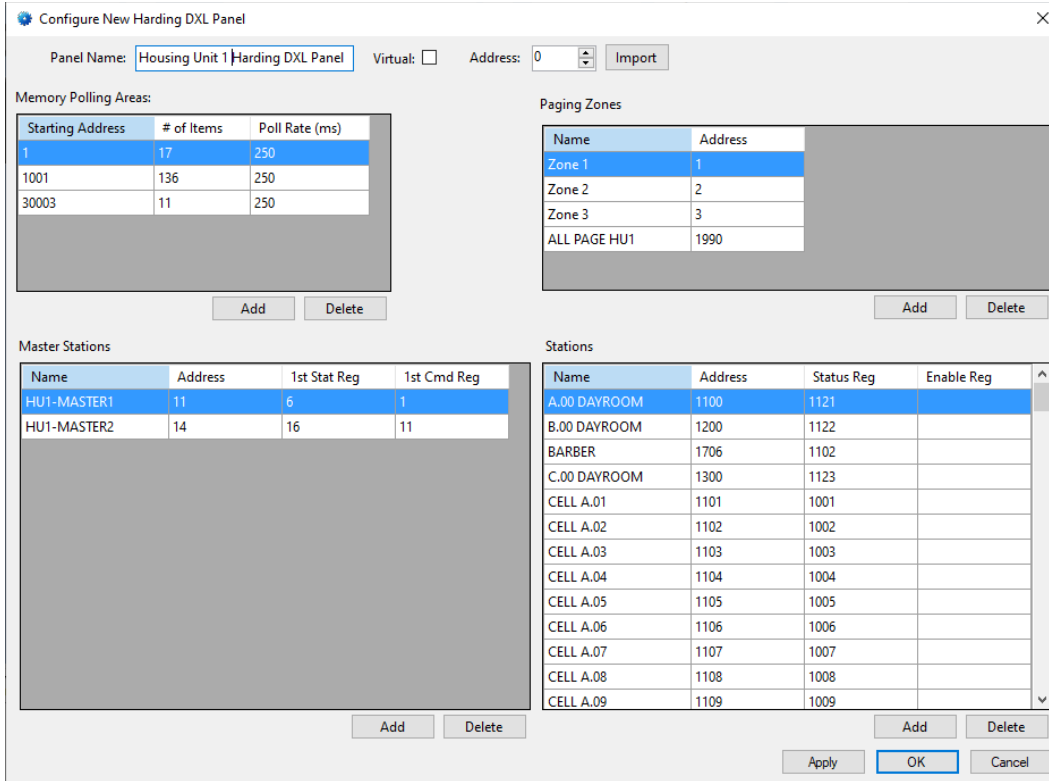
The Harding DXL panel node is the root node for the panel. The following sections will explain:

- The properties of the Harding DXL panel node
- The configuration of the Harding DXL panel (a.k.a. **Quick Config**)
- The child nodes of the Harding DXL panel

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Harding DXL Panel Quick Config Dialog

The **Quick Config** dialog is accessible either in  **Hardware Management View** or in  **Design View**. To open the **Quick Config** dialog, right-click on the Harding DXL panel node and select *Quick Config*.



The dialog box is titled "Configure New Harding DXL Panel". It contains several sections for configuring the panel:

- Panel Name:** A text box containing "Housing Unit 1 Harding DXL Panel".
- Virtual:** A checkbox that is currently unchecked.
- Address:** A numeric field set to "0" with an "Import" button next to it.
- Memory Polling Areas:** A table with columns "Starting Address", "# of Items", and "Poll Rate (ms)". It contains three rows: (1, 17, 250), (1001, 136, 250), and (30003, 11, 250). Below the table are "Add" and "Delete" buttons.
- Paging Zones:** A table with columns "Name" and "Address". It contains four rows: (Zone 1, 1), (Zone 2, 2), (Zone 3, 3), and (ALL PAGE HU1, 1990). Below the table are "Add" and "Delete" buttons.
- Master Stations:** A table with columns "Name", "Address", "1st Stat Reg", and "1st Cmd Reg". It contains two rows: (HU1-MASTER1, 11, 6, 1) and (HU1-MASTER2, 14, 16, 11). Below the table are "Add" and "Delete" buttons.
- Stations:** A table with columns "Name", "Address", "Status Reg", and "Enable Reg". It contains ten rows: (A.00 DAYROOM, 1100, 1121,), (B.00 DAYROOM, 1200, 1122,), (BARBER, 1706, 1102,), (C.00 DAYROOM, 1300, 1123,), (CELL A.01, 1101, 1001,), (CELL A.02, 1102, 1002,), (CELL A.03, 1103, 1003,), (CELL A.04, 1104, 1004,), (CELL A.05, 1105, 1005,), (CELL A.06, 1106, 1006,), (CELL A.07, 1107, 1007,), (CELL A.08, 1108, 1008,), and (CELL A.09, 1109, 1009,). Below the table are "Add" and "Delete" buttons.

At the bottom right of the dialog are "Apply", "OK", and "Cancel" buttons.

Figure 21 - Harding DXL Quick Config dialog

Panel Name – text box; the name of the panel

Virtual – check box; when checked the panel is virtualized, allowing the driver to be brought online without having the physical panel available

Address – numeric; the first address of the DCC

 – button; import the Harding DXL exchange configuration instead of programming it by hand

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Memory Polling Areas – table; the areas of memory in the DCC that the Driver will need to read from and/or write to; maximum size of a **Memory Polling Area** is 125

Starting Address – numeric; the first address of the polling area

of Items - numeric; the number of units to request

Poll Rate (ms) - (default: 250); microseconds; how often to request the data for this area

 - button; add a row to the **Memory Polling Areas** table

 - button; delete the highlighted row from the **Memory Polling Areas** table

Paging Zones – table; the paging zones of the DCC

Name – text; the name of the paging zone

Address – numeric; address of the paging zone

 - button; add a row to the **Paging Zones** table

 - button; delete the highlighted row from the **Paging Zones** table

Master Stations – table; the master stations information

Name – text; the name of the master station

Address - numeric; the register address of the master station

1st Stat Reg - numeric; the location of the first register of the status registers

1st Cmd Reg – numeric; the location of the first register of the command registers

 - button; add a row to the **Master Stations** table

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 - button; delete the highlighted row from the **Master Stations** table

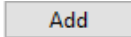
Stations – table; the stations information

Name – text; the name of the station

Address - numeric; the register address of the station

Status Reg - numeric; the location of the station's status register

Enable Reg – numeric; the location of station's enable register

 - button; add a row to the **Stations** table

 - button; delete the highlighted row from the **Stations** table

Harding DXL Panel Node Properties Dialog

Right-click on the Harding DXL panel node and select *Properties* to open the properties dialog. There are very few fields. These fields are not used in the regular configuration of the panel. One usually only opens the properties dialog at the request of tech support.

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[1325] Housing Unit 1 Harding DXL Panel

Properties

Name: ID:

User Level:

Notes:

Address:

Virtual: ☐ Virtual Point:

Memory Polling Areas:

Starting Address	# of Items	Poll Rate (ms)
1	17	250
1001	136	250
30003	11	250

Add Delete

Apply OK Cancel

Figure 22 - Harding DXL panel Properties dialog

The fields **Name**, **ID**, **User Level**, and **Notes** are standard on all I/O Point nodes. The fields specific to this node are defined as follows.

Address – numeric; the first address of the DCC

Virtual – check box; when checked the panel is virtualized, allowing the driver to be brought online without having the physical panel available

Virtual Point – drop box; this I/O Point will be set when the panel is virtualized, clear when it is not

Harding DXL Panel Guide

Memory Polling Areas – table; the areas of memory in the DCC that the Driver will need to read from and/or write to; maximum size of a **Memory Polling Area** is 125

Starting Address – numeric; the first address of the polling area

of Items - numeric; the number of units to request

Poll Rate (ms) - (default: 250); microseconds; how often to request the data for this area

 - button; add a row to the **Memory Polling Areas** table

 - button; delete the highlighted row from the **Memory Polling Areas** table

Harding DXL Child Nodes

The Harding DXL child nodes are the **Alarms** node, **Master Stations** group node, **Stations** group node, and the **Commands** group node. Any points added to the group in the **Quick Config** are added to the Tree as child nodes of the group node. The alarms are children of the **Alarms** node.

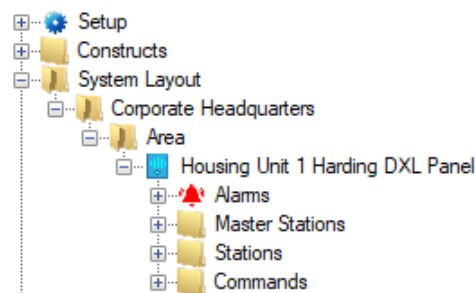


Figure 23 - Example panel node and its child nodes

Alarms

The alarm for the Harding DXL is located under the **Alarms** node. There is one (1) alarm, **Panel Status**.

Harding DXL Panel Guide

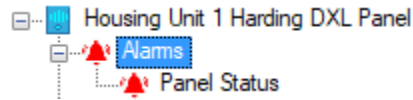


Figure 24 - Harding DXL panel Alarms child nodes

The **Panel Status** point is high when the panel is offline (assuming the driver is online, and the panel is not virtualized).

Master Stations

The master stations are child nodes of the **Master Stations** node. There is a master station node for each master station configured in the DCC.

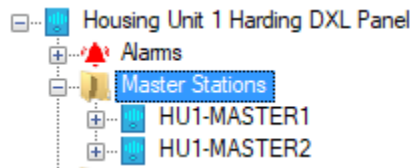


Figure 25 - Example master station child nodes

Each master station node is an I/O Point.

Harding DXL Panel Guide

Master Station Properties Dialog

Each master station node is an I/O Point with a few extra properties.

The screenshot shows a software dialog box titled "[1382] Housing Unit 1 Harding DXL Panel\Master Stations\HU1-MASTER1". It features four tabs: "Properties", "Operation", "Alarm Queue", and "Actions". The "Properties" tab is selected and displays the following fields: "Name" with the value "HU1-MASTER1", "ID" with the value "1382", "User Level" set to "All Access", a large empty "Notes" text area, "Address" set to "11", "First Status Register" set to "6", and "First Command Register" set to "1". "OK" and "Cancel" buttons are located at the bottom right of the dialog.

Figure 26 - Point node properties dialog

Address - numeric; the register address of the master station

First Status Register - numeric; the location of the first register of the status registers

First Command Register – numeric; the location of the first register of the command registers

Sub-value Nodes

The master station node has child nodes of its own. There is a child node for each of the stations that it can directly connect to. There is a special node named 'master station' **Disconnected**. A station child node will be set high if the master station is connected to it.

Harding DXL Panel Guide

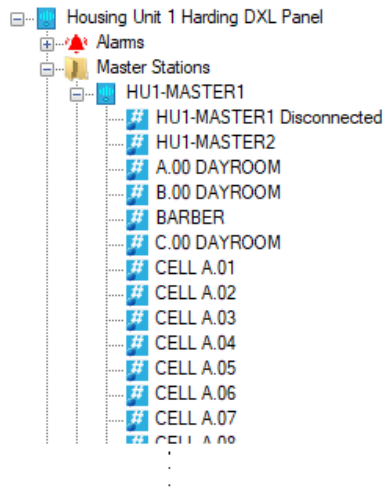


Figure 27 - Example sub-value nodes

Sub-value nodes are I/O Points with an additional field. This field can be found on the **Properties** tab of the **Properties** dialog.

Figure 28 - Example Master Station's Station child node

The **Value** field is the register number of the station.

Harding DXL Panel Guide

These sub-value nodes are similar to counter value nodes in that their state is tied to the current value of their parent node. When the master station is connected to another station, the master station point is high, and the corresponding sub-value point is high as well. When the master station is not connected to any station, the master station point will be cleared, and its **Disconnected** point will be high.

Like a counter value, when a value sub-node is the target of a **SendCommand** action, the parent node is acted on by the value child node if possible.

	Action	Target
▶ 1	Play	[1195] Click.wav
2	SendCommand	[1389] HU1-MASTER1\CELL A.01
3		
4		
5		
6		

Mouse Down Mouse Up Active Inactive Mouse Enter Mouse Leave

Figure 29 - SendCommand with a sub-value node target

In the figure above, the **SendCommand** requests the **HU1-MASTER1** master station to connect to the **CELL A.01** station.

Stations

The stations are child nodes of the **Stations** node. There is a station node for each station configured in the DCC.

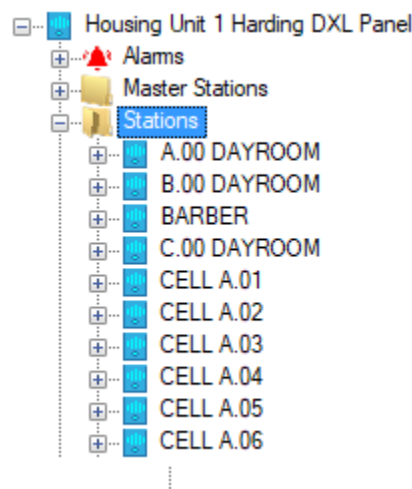
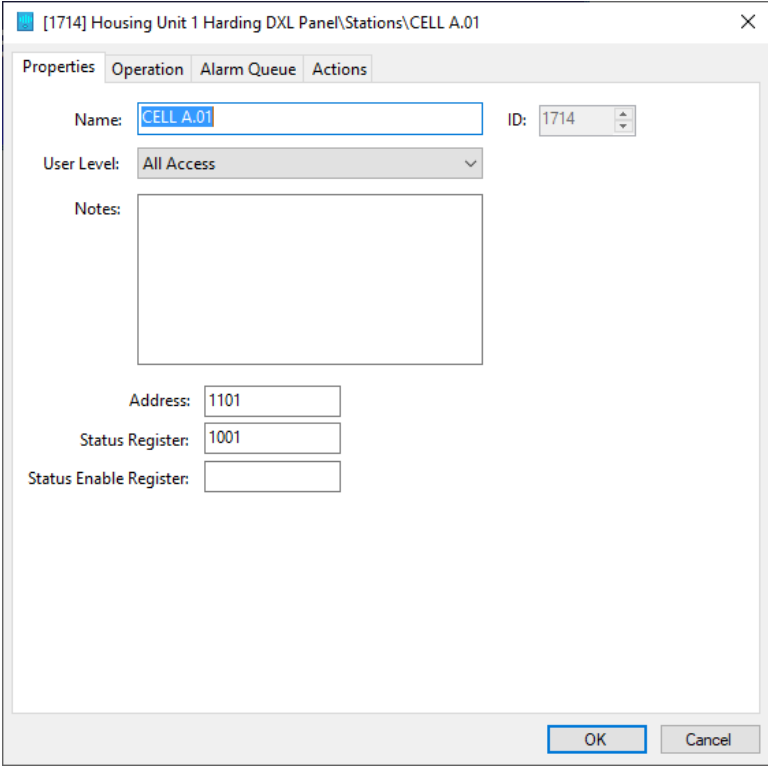


Figure 30 - Example station child nodes

Harding DXL Panel Guide

Station Properties Dialog

Each station node is an I/O Point with a few properties specific to stations.



The image shows a software dialog box titled "[1714] Housing Unit 1 Harding DXL Panel\Stations\CELL A.01". It has four tabs: "Properties", "Operation", "Alarm Queue", and "Actions". The "Properties" tab is active. Inside the tab, there are several fields: "Name" with the value "CELL A.01", "ID" with the value "1714", "User Level" with a dropdown menu showing "All Access", a large empty "Notes" text area, "Address" with the value "1101", "Status Register" with the value "1001", and an empty "Status Enable Register" field. At the bottom right of the dialog are "OK" and "Cancel" buttons.

Figure 31 - Station Properties dialog

Address - numeric; the register address of the master station

First Status Register - numeric; the location of the first register of the status registers

First Command Register – numeric; the location of the first register of the command registers

Status Enabled Register – numeric; the location of the status enabled register

Station Status Nodes

Each station node has a set of child nodes that corresponds to the station's status.

Harding DXL Panel Guide

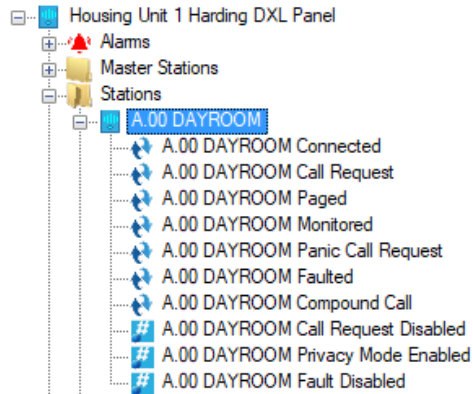


Figure 32 - Example station child nodes

Each of these nodes correspond to a bit in the status registers for the station.

[1678] A.00 DAYROOM\A.00 DAYROOM Call Request Disabled

Properties Operation Alarm Queue Actions

Name: A.00 DAYROOM Call Request Disabled ID: 1678

User Level: All Access

Notes:

Value: 1b0

OK Cancel

Figure 33 - Station status node Properties dialog

The field **Value** is the bit number in the status registers.

Commands

The commands are child nodes of the **Commands** node.

Harding DXL Panel Guide

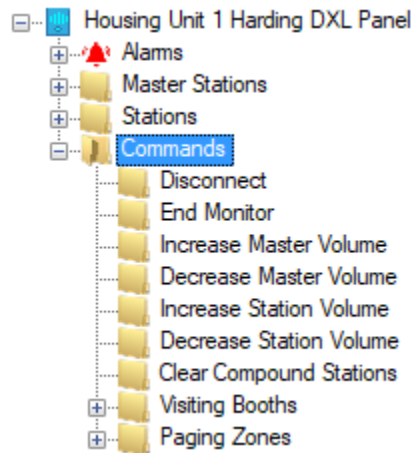


Figure 34 - Commands nodes

Disconnect through **Clear Compound Stations** are general DXL commands. The child nodes of the **Visiting Booths** node and the **Paging Zones** node have commands specific to visiting booths and paging zones.

Command Properties dialog

Each command node is a GenProto node.

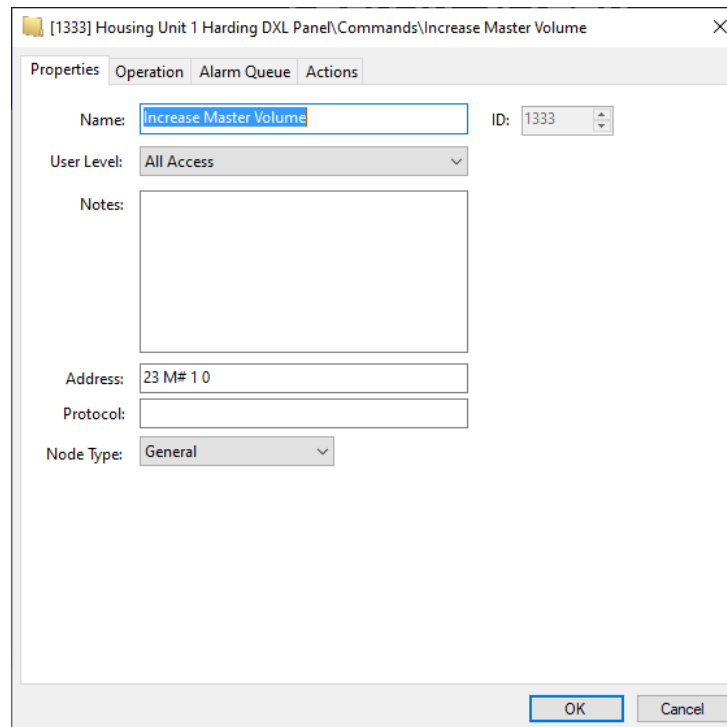


Figure 35 - Command node Properties dialog

Harding DXL Panel Guide

The only field that applies to command nodes is the **Address** field. The **Address** field contains the command information to send to the panel. The command starts with the Register Function Code followed by the required parameters for the code. Within the **Address** there may be 'M#' and/or 'P#'. 'P#' is Intelli-Site for "this node's parent". 'M#' means the active master station. If no master station has been expressly defined, Intelli-Site uses the master station that has been assigned to the current computer. See [Assign the Master Stations to Computer nodes](#).

Visiting Booths

The commands available for visiting booths are stored as child nodes of each individual visiting booth.

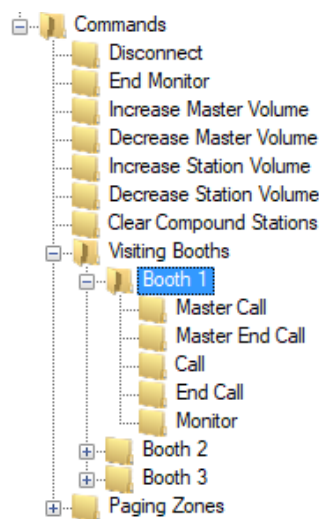


Figure 36 - Booth command nodes

The commands related to a visiting booth must provide the master station and the specific visiting booth number as parameters. The booth number is stored in the **Address** field of the properties of the booth node that is the parent of the command node.

Harding DXL Panel Guide

[1339] Housing Unit 1 Harding DXL Panel\Visiting Booths\Booth 1

Properties Operation Alarm Queue Actions

Name: ID:

User Level:

Notes:

Address:

Protocol:

Node Type:

OK Cancel

Figure 37 - Booth node Properties dialog

Paging Zones

The commands available for paging zones are stored as child nodes of each individual paging zone.

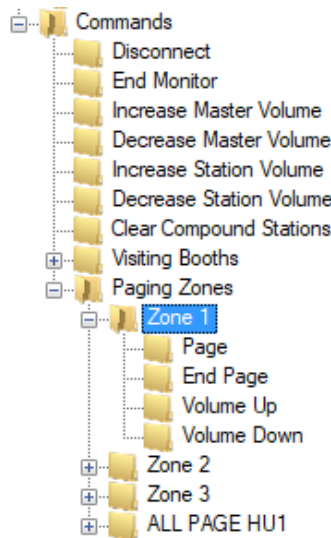


Figure 38 – Paging Zone command nodes

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The commands related to a paging zone must provide the master station and the specific paging zone number as parameters. The paging zone number is stored in the **Address** field of the properties of the paging zone node that is the parent of the command node.

The screenshot shows a software dialog box titled "[1359] Housing Unit 1 Harding DXL Panel\Zone 1\Page". It features four tabs: "Properties", "Operation", "Alarm Queue", and "Actions". The "Properties" tab is selected and displays the following fields:

- Name:** A text box containing the word "Page".
- ID:** A numeric spinner box set to "1359".
- User Level:** A dropdown menu currently showing "All Access".
- Notes:** A large, empty text area for additional information.
- Address:** A text box containing the text "9 M# P#".
- Protocol:** An empty text box.
- Node Type:** A dropdown menu currently showing "General".

At the bottom right of the dialog are two buttons: "OK" and "Cancel".

Figure 39 – Paging Zone node Properties dialog

Harding DXL Panel Guide

Project Programming

The various points of the Harding DXL driver and panel can be used in programming the Project. All programming takes place in  **Design View**.

Assign the Master Stations to Computer nodes

Assigning a master station to a computer node is important for all project programming, especially automatically generated programming using drag-and-drop. When Intelli-Site sends a command, it often needs to know the master station. By specifying the **Intercom** point on a computer node, the default master station is defined for anyone logged into Intelli-Site from that computer.

In  **Design View**, expand the **Setup -> Computer** node to reveal the computers that are allowed to login to Intelli-Site. There is at least one node here. It is the computer on which Intelli-Site was installed. One assumes all of the computers at the facility that will login to Intelli-Site have been added. If not, now would be a good time to add them.

Locate a computer node that is to be assigned a master station. Right-click on the node and select *Properties* from the context-menu. Click in the **Intercom** field. A **Select Tree Item** dialog displays. Expand the panel until the individual master stations are revealed.

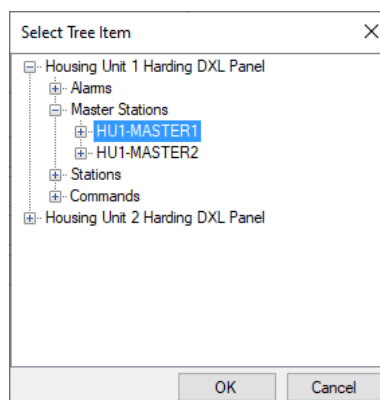
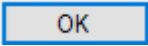


Figure 40 - Select Tree Item dialog

Harding DXL Panel Guide

Highlight the desired master station then click . The field now contains the selected master station node.

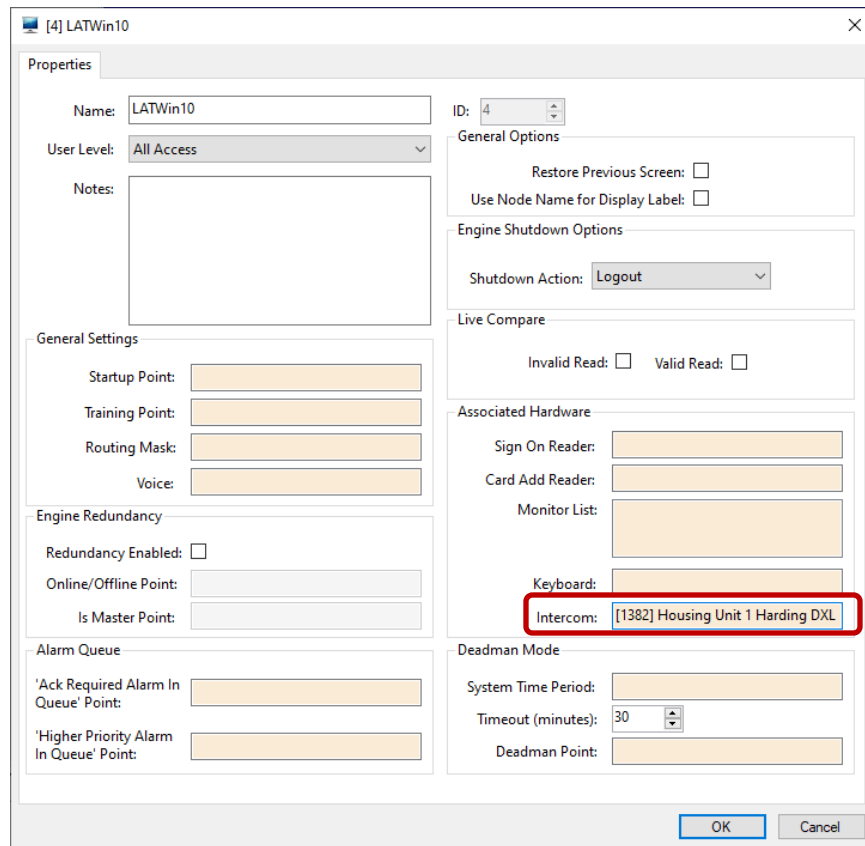
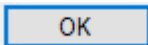


Figure 41 - Computer Properties dialog with a master station

Click  to save the changes to this node's properties.

Automatically Created Screen Objects

The point nodes can be used as evaluation points for the evaluation grids of screen objects and targets of commands in actions grids. This allows the user to monitor and control the state of each point. But instead of programming the screen objects by hand, drag and drop the nodes onto the screen to automatically create screen objects that are programmed based on the type of point it is.

Harding DXL Panel Guide

Most of the points of the Harding DXL panel can be dragged and dropped onto the screen. They are GenProto or I/O Points. But it doesn't make sense programmatically to do so for the functionality of the Harding DXL system. A few of the points have complex programming. We will examine the screen objects created by dragging and dropping those points onto the screen.

Station Screen Object

When a station node, found under the **Stations** node, is dragged and dropped onto the screen a button screen object is created. The number of states varies depending on the number of computers with assigned master stations, $4+2(\# \text{ computers with assigned master stations})$.



Figure 42 – Sample station button screen object

Harding DXL Panel Guide

State 0 – Normal

State 0 is the base state. It displays when the evaluation grid on the other states do not evaluate to true. Stated more simply, when the point is off, this state displays.

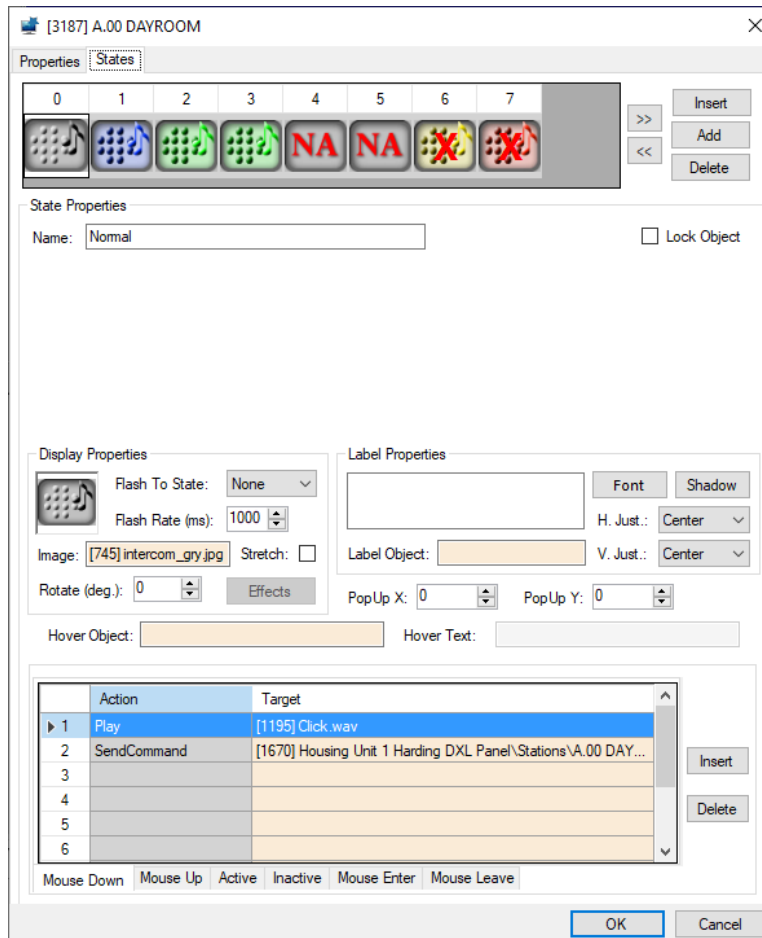


Figure 43 - Sample station point button properties dialog: State 0

Notice the **Action** grid. When this button is clicked, a **SendCommand** with this station node as the target is issued. The master station of the current computer will attempt to connect to the station.

State 1 – Call Request Pending

This state displays when the station's **Call Request** point is high. Basically, the call button on the physical station was pushed.

Harding DXL Panel Guide

See the evaluation grid. The evaluation grid is programmed to return true when the station's **Call Request** point state is evaluated as high.

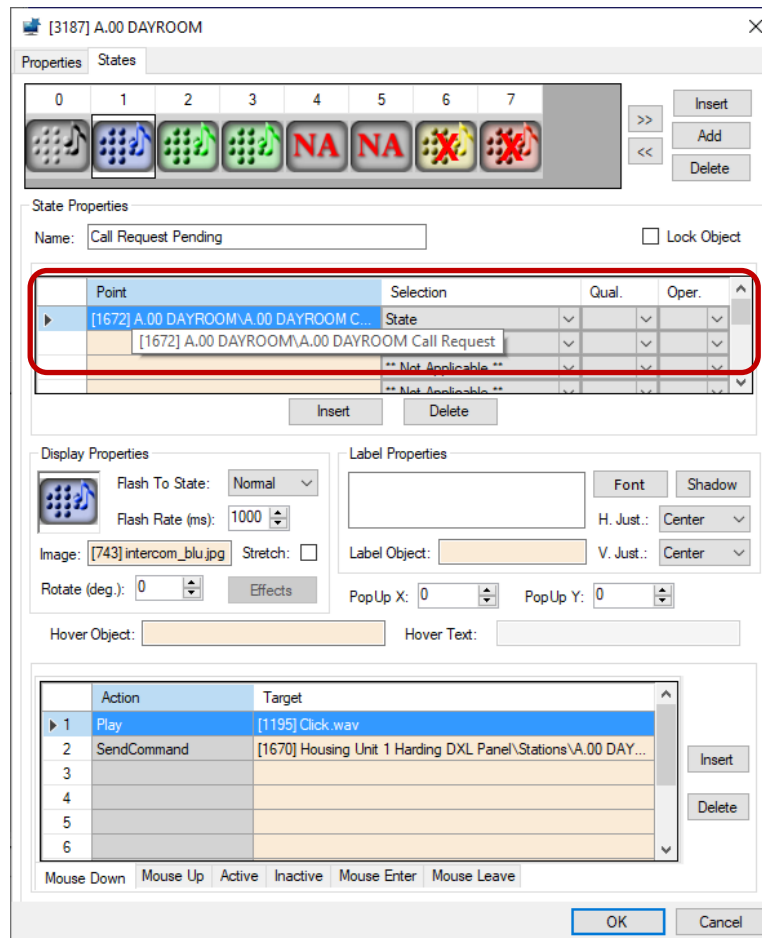


Figure 44 - Sample station point button properties dialog: State 1

Notice the **Action** grid. When this button is clicked while in this state, a **SendCommand** with this station node as the target is issued. The master station of the current computer will attempt to connect to the station.

State 2 – Connected to 'Master Station'

This state displays when the station is connected to the master station whose name matches 'Master Station' and that master station is the one assigned to the current computer. There are **N** copies of this state where **N** equals the number of computer nodes with assigned master stations.

Harding DXL Panel Guide

See the evaluation grid. It is testing to see if current computer is LATWin10. If so, we need to determine if this station is connected to the assigned master station of this computer. The **Intercom** field of LATWin10 properties is HU1-MASTER1. Therefore, check to see if the status point for A.00 DAYROOM of that master station is high. If so, this state evaluates as true.

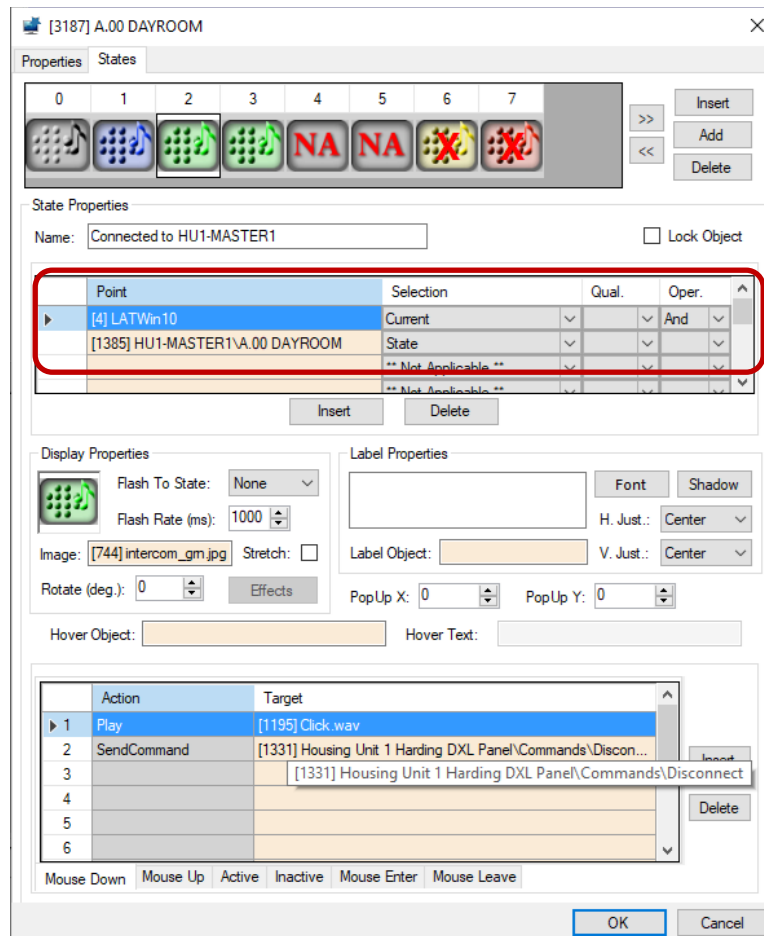


Figure 45 - Sample station point button properties dialog: State 2

Notice the **Action** grid. When this button is clicked in this state, a **SendCommand** with the **Disconnect** command node as the target is sent which causes the master station to disconnect.

Harding DXL Panel Guide

State 2 + N – Not available to 'Master Station'

This state displays when the station is connected to a master station, but it is NOT connected to the 'Master Station' assigned to the current computer. There are **N** copies of this state where **N** equals the number of computer nodes with assigned master stations.

See the evaluation grid. It is testing to see if current computer is LATWin10. If so, we need to determine if this station is connected and if it is connected to the assigned master station of this computer. The **Intercom** field of LATWin10 properties is HU1-MASTER1. Therefore, check to see if the status point for A.00 DAYROOM of that master station is high. If so, this state evaluates as true.

The screenshot shows the 'State Properties' dialog box for a station point button. The dialog has a 'Properties' tab and a 'States' tab. The 'States' tab shows a grid of states (0-7) with icons. State 4 is highlighted with a red box. The 'State Properties' section shows a table with columns: Point, Selection, Qual., and Oper. The table contains three rows: [4] LATWin10, [1671] A.00 DAYROOM\A.00 DAYROOM C..., and [1385] HU1-MASTER1\A.00 DAYROOM. The 'Display Properties' section shows a preview of the button with the text 'NA' and a red background. The 'Label Properties' section shows a text box and a label object. The 'Action' and 'Target' table is also visible.

Point	Selection	Qual.	Oper.
[4] LATWin10	Current		And
[1671] A.00 DAYROOM\A.00 DAYROOM C...	State		And
[1385] HU1-MASTER1\A.00 DAYROOM	State	Not	

Action	Target
1	
2	
3	
4	
5	
6	

Figure 46 - Sample station point button properties dialog: State 2+N

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Clicking on the button in this state does nothing. There are no actions in the **Action** grid.

State 2 + 2N – Call Request Disabled

This state displays when the station's **Call Request Disabled** point is high.

See the evaluation grid.

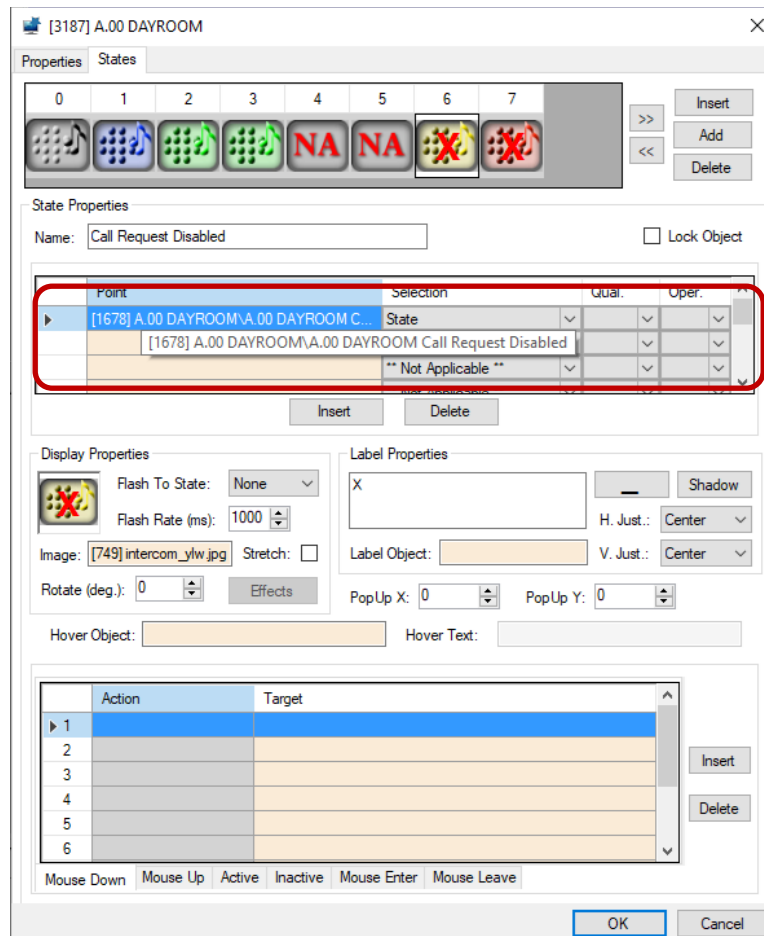


Figure 47 - Sample station point button properties dialog: State 2+2N

Clicking on the button in this state does nothing. There are no actions in the **Action** grid. Call requests have been disabled. No calls to this station can be completed until call requests have been enabled again.

State 2 + 2N + 1 – Faulted

This state displays when the station's **Faulted** point is high.

Harding DXL Panel Guide

See the evaluation grid.

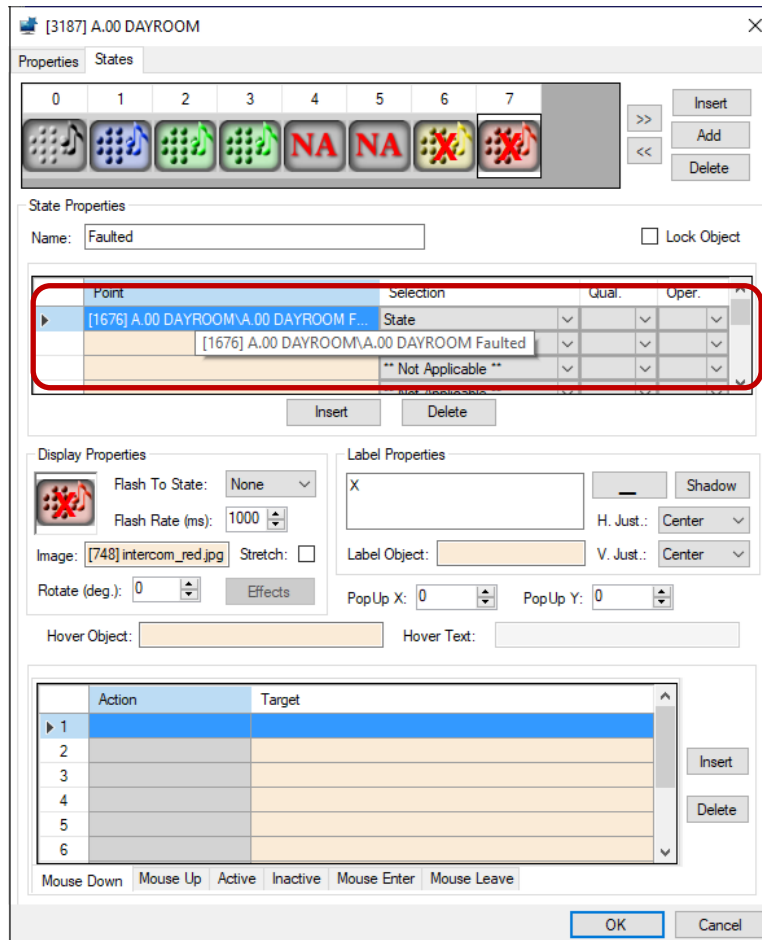


Figure 48 - Sample station point button properties dialog: State 2+2N+1

Clicking on the button in this state does nothing. There are no actions in the **Action** grid. The station is in the **Faulted** state. The fault needs to be cleared before the station is usable.

Add Hover Text

The station screen object has nothing about it to easily identify which station this screen object was created from. Adding hover text can help.

The **Properties** tab of the screen object properties dialog as two properties that cause text to appear when the cursor hovers over the screen object.

Harding DXL Panel Guide

The screenshot shows a software window titled "[3187] A.00 DAYROOM" with a close button (X) in the top right corner. It has two tabs: "Properties" (selected) and "States".

Properties Tab:

- Name:** A.00 DAYROOM (text field)
- ID:** 3187 (spin box)
- User Level:** All Access (dropdown menu)
- Log When Selected:** ☒ (checkbox)
- Display Setup:**
 - A preview window showing a button icon with a musical note.
- Attributes:**
 - Freeze Edit:** ☐ (checkbox)
- Location:**
 - X Position:** 162 (spin box)
 - Y Position:** 500 (spin box)
 - Width:** 55 (spin box)
 - Height:** 45 (spin box)
- Frame Style:** None (dropdown menu)
- Hover Object:** (empty text field, highlighted with a red rectangle)
- Hover Text:** (empty text field, highlighted with a red rectangle)
- Notes:** (empty text area)

At the bottom right are "OK" and "Cancel" buttons.

Figure 49 - Example station screen object properties dialog: Properties tab

Drop the station node into **Hover Object**. The **Hover Text** field needs a **Hover Text** node.

To add a hover text node, expand **Screen Control** in the Project Node Tree. Right click on **Hover Texts** and select *Add Node and Edit...* A new group node is added and the properties dialog displays. Name it something that makes sense, like "Station Hover Texts Group".

Right-click on this new group node and select *Add Node and Edit...* A new hover text node is added and its properties dialog displays.

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The screenshot shows a dialog box titled "[3185] Name Only Hover Text". It has a "Properties" tab. The "Name" field is highlighted with a blue border and contains the text "NewHover Text". The "ID" field is a spin box showing "3185". The "User Level" dropdown is set to "All Access". The "Notes" field is a large empty text area. The "Header Style" dropdown is set to "Name". The "Custom Header" field is empty. The "Body Style" dropdown is set to "Operator Instructions". The "Custom Body" field is empty. The "Show Extra" checkbox is unchecked. The "OK" button is highlighted with a blue border.

Figure 50 - New Hover Text Properties dialog

Change the **Name** to "Name Only Hover Text". Set **Header Style** to *Name*. Set **Body Style** to *None*. Then click **OK**.

Drag and drop this new hover text node into the **Hover Text** field of the station screen object properties.

Harding DXL Panel Guide

Figure 51 - Example Station screen object properties with hover text defined

Now when the cursor hovers over the station screen object, the name of the station will display for a couple seconds.

Evaluation Grids

The driver, panel, and point nodes can be used in evaluation grids and action grids.

	Point	Selection	Qual.	Oper.	
▶	[1323] The Harding DXL Driver	Enabled	▼	▼	▼
		Enabled	▼	▼	▼
		Disabled	▼	▼	▼
		** Not Applicable **	▼	▼	▼

Insert
Delete

Figure 52 - Example Evaluation Grid

Note: The Commands node and the individual command nodes can be used in evaluation grids, but their state never changes.

Harding DXL Panel Guide

The Driver Node

When a driver node is used in the evaluation grid, there are two **Selection** options.

- *Enabled*
- *Disabled*

When **Selection** is set to *Enabled* and the driver is virtualized, this line in the evaluation grid evaluates to true. When **Selection** is set to *Disabled* and the driver is disabled, this line evaluates to true.

The Panel Node

When a panel node is used in the evaluation grid, there are two **Selection** options.

- *Virtual* and
- *Driver Offline*

When the **Selection** is *Virtual*, this line evaluates to true if the panel has been virtualized. When the **Selection** is *Driver Offline*, this line evaluates to true if the panel is offline. It could be offline because the driver is disabled or that the driver cannot communicate with the panel.

The Master Station Nodes and the Sub-value Nodes

When a master station node or any of the sub-value nodes is used in an evaluation grid, there are two **Selection** option.

- *State*
- *Shunted*

When the node is high, and **Selection** is *State* this evaluation grid line evaluates to true.

The Station Nodes and Station Status Nodes

When a station node or any of the status nodes is used in an evaluation grid, there are two **Selection** option.

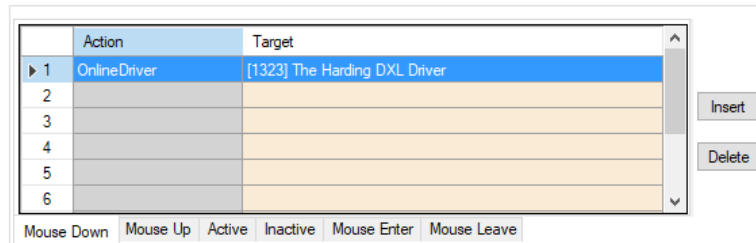
- *State*
- *Shunted*

Harding DXL Panel Guide

When the **Point** is a station node, the station node is high, and **Selection** is *State* this evaluation grid line evaluates to true. When the **Point** is a status node, and the status node is high with the **Selection** set to *State*, this line evaluates to true.

Action Grids

The driver, panel, and point nodes can be used in action grids.



	Action	Target
1	OnlineDriver	[1323] The Harding DXL Driver
2		
3		
4		
5		
6		

Mouse Down Mouse Up Active Inactive Mouse Enter Mouse Leave

Insert Delete

Figure 53 - Example Action Grid

Each node can be the target of a different set of actions.

The Driver Node

The driver node can be used in action grids as the target of the following actions:

- **OnlineDriver**
- **OfflineDriver**

The Panel Node

The panel node can be used in action grids as the target of the following actions:

- **VirtualizePanel**
- **UnvirtualizePanel**

The Master Station Nodes and the Sub-value Nodes

The master station and the Sub-value nodes have a different set of commands they can be used with.

Harding DXL Panel Guide

A master station node can be the target of two commands.

- **SetOn**
- **SendCommand**

The sub-value nodes can only be the target of a **SendCommand**.

SetOn is used to set the "hot" master station. Every message that targets station nodes or the Sub-value nodes will use the "hot" master station as the master station required by the messages sent to the panel. Under normal circumstances, the "hot" master station is the one that was assigned to the **Intercom** field of the current computer node, the computer the user is logged in from. If this field was not defined on the current computer or if the user needs to override this field, **SetOn** will set the "hot" master station to the specified node. It will remain the "hot" master station for the duration of the login session or until another **SetOn** action that targets a master station is issued.

SendCommand targeting a master node or a sub-value node means to send a message to the panel to connect the "hot" master station to the targeted station. If the target is the "hot" master station, nothing happens. The master station cannot connect to itself.

The Station Nodes and Station Status Nodes

A station node can only be the target of a **SendCommand** action. When it is the target of a **SendCommand**, a message is sent to the "hot" master station to connect to the station node.

A station status node can only be the target of a **SendCommand** action as well. This action sends a state toggle request to station. If the status is low, it will toggle to the state to high. If it is currently high, the state will toggle to low. The action sends a request to toggle the state. For example,

SendCommand Entrance\Entrance Call Request Disabled

The first time this command is sent, the state of **Entrance Call Request Disabled** goes from low to high. All call requests are disabled from the Entrance station.

Harding DXL Panel Guide

The second time this very same command is sent, the state of **Entrance Call Request Disabled** is toggled from high to low. Call requests are enabled.

Compound Calls

Intelli-Site treats compound calls as conference calls or group calls. Stations can be added and removed as needed. The software initiates the compound call by connecting master station to one of its compound station. It then adds stations to it using the station's **Compound Call** status node. To disconnect a station, the software uses the same message. When the compound call is over, the software sends a master station **Disconnect** followed by a **Clear Compound Calls** when the master stations **Disconnected** node is high.

A compound call station must exist in the Harding DXL.

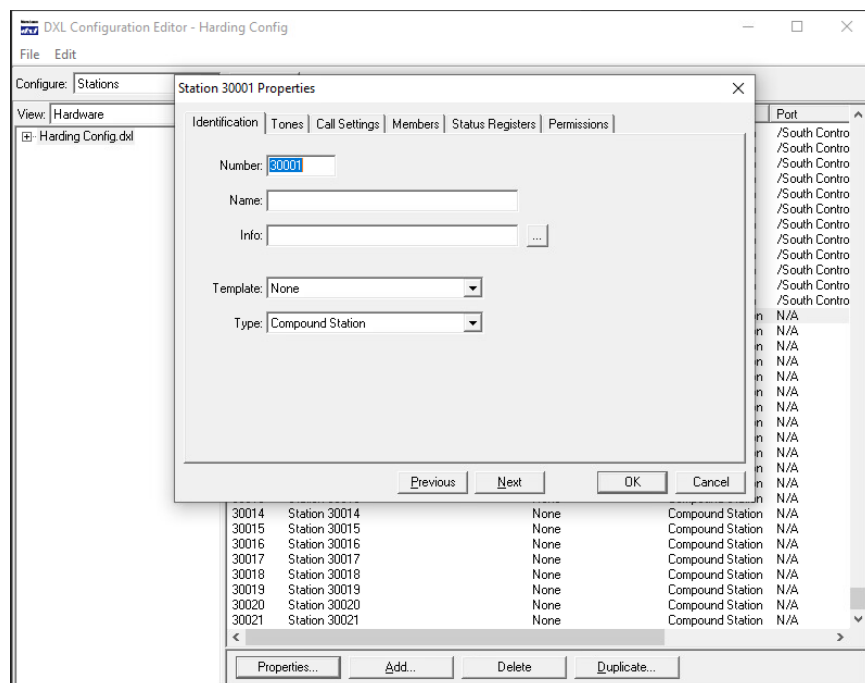


Figure 54 - Compound Station properties in DXL Configuration Editor

Since the way Intelli-Site uses compound calls will remove all members of the call when the call is ended, no member stations need to be added here. If you want to treat a compound station as a call to a single group of stations, be mindful of how the stations are removed from the call at end.

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Let's consider the following unrealistic example.

The warden needs to talk to both Officer Harris and Officer Kingston. Officer Harris is at SALLYPORT A/G and Officer Kingston is at SALLYPORT B/H. Since this isn't a compound call that is used often, we'll use a compound station defined for these types of ad hoc calls. We named it **Compound Station**.

Since **Compound Station** is meant to have no member stations when it is first connected to, let's add the logic to remove the members of the compound call when the call is disconnected.

We know the compound call is complete when the state of the **Compound Station Connected** point changes from high (connected is true) to low (connected is false). Therefore, we need to send the **Clear Compound Stations** command when the point toggles from high to low.

Locate the compound station node in the Project Node Tree and expand it. Right-click on the compound station's **Connected** status point and select *Properties...*. The **Properties** dialog displays.

Switch to the **Actions** tab.

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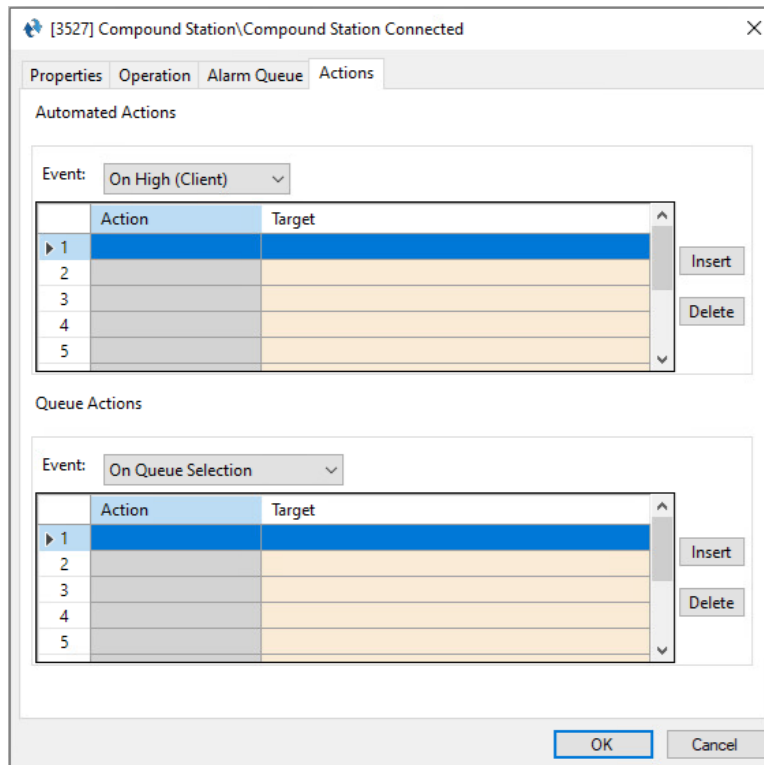


Figure 55 - Example Compound Station Connected Properties dialog: Actions tab

In the **Event** drop-down menu, select *On Low (Client)*. Add **SendCommand** with the target being the **Clear Compound Stations** node. It has to be the *On Low (Client)* event grid because it is a client-driven operation. The master station is associated with a computer. The computer is defined by the location the user logged in from.

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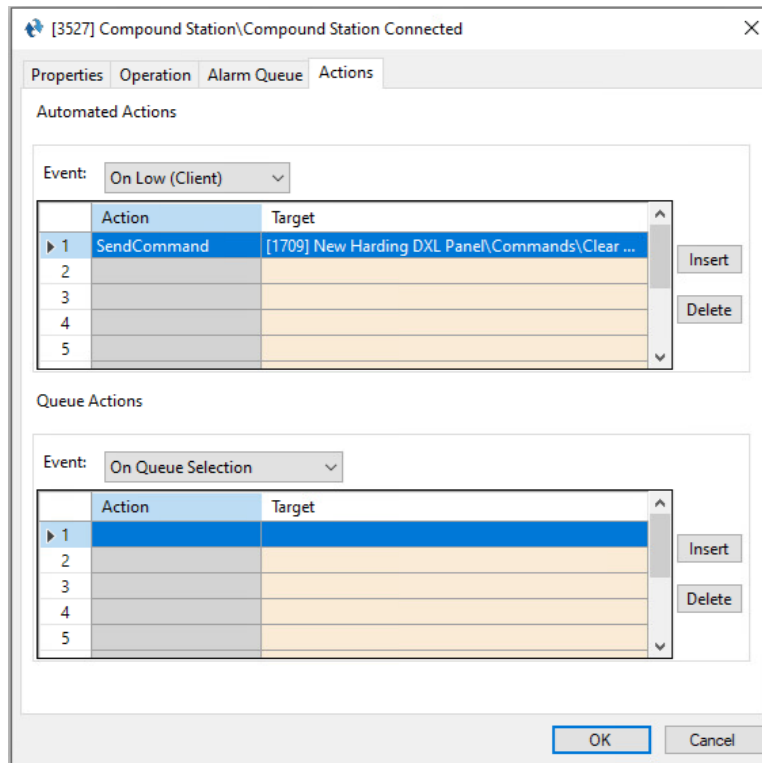


Figure 56- Example Compound Station Connected Properties dialog: Actions tab w/SendCommand On Low

Now, when the compound station becomes disconnected the command will be sent.

The next step is to program a button to connect the master to the compound station and buttons to add other stations to the compound call. Since there can be a lot of screen objects involved, let's create a second screen for this. Make sure to put a button on the main screen to go to the new screen and a button on the new screen to get back to the main screen.

The Button to Connect the Master Station to the Compound Station

Add a button to the screen and open its **Properties** dialog. Switch to the **States** tab. In the **Action** grid, add **SendCommand** with the compound station as the target.

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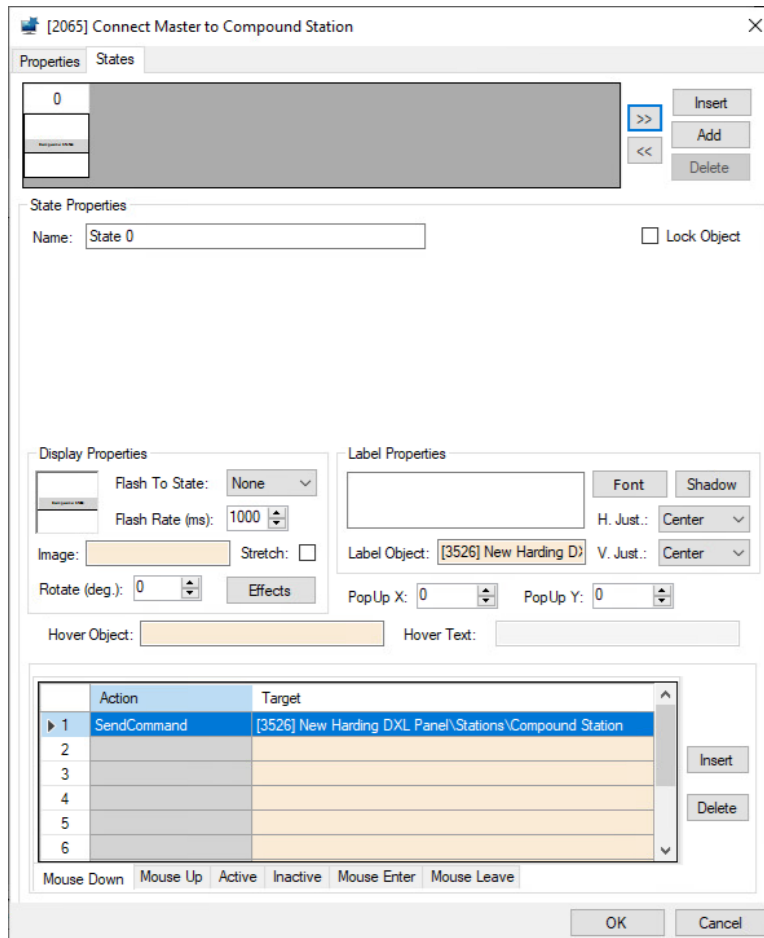


Figure 57 - Button properties - State 0 programmed

It would be good to add a warm fuzzy to let the user know the click happened. Now add another state. On the pop-up dialog, click the yes button to copy the current state.

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The screenshot shows the 'Properties' window for 'State 1' in the 'Connect Master to Compound Station' project. The window is divided into several sections:

- Properties / States:** A tabbed interface with 'Properties' and 'States' tabs. The 'States' tab shows a list of states (0, 1) and buttons for 'Insert', 'Add', and 'Delete'.
- State Properties:** A section for configuring the state. It includes a 'Name' field (State 1), a 'Lock Object' checkbox, and a table for defining state properties.
- Display Properties:** A section for configuring the display of the state. It includes fields for 'Flash To State' (None), 'Flash Rate (ms)' (1000), 'Image' (a button icon), 'Stretch' (checkbox), 'Rotate (deg.)' (0), 'Effects' (button), 'Label Properties' (font, shadow, H. Just., V. Just.), 'PopUp X' (0), 'PopUp Y' (0), 'Hover Object' (a button icon), and 'Hover Text'.
- Action Grid:** A table for defining actions and their targets.

Point	Selection	Qual.	Oper.
▶	** Not Applicable **	▼	▼
	** Not Applicable **	▼	▼
	** Not Applicable **	▼	▼
	** Not Applicable **	▼	▼

Action	Target
▶ 1 SendCommand	[3526] New Harding DXL Panel\Stations\Compound Station
2 Play	[1195] Click.wav
3	
4	
5	
6	

At the bottom of the window, there are buttons for 'OK' and 'Cancel'.

Figure 58 - Button properties - State 1

In the evaluation grid, add the compound station's Connected point in the **Point** field. In the **Action** grid, change the target of the **SendCommand** to the **Disconnect** command found under **Commands**. Then change the **Display Properties** to differentiate this state from state 0.

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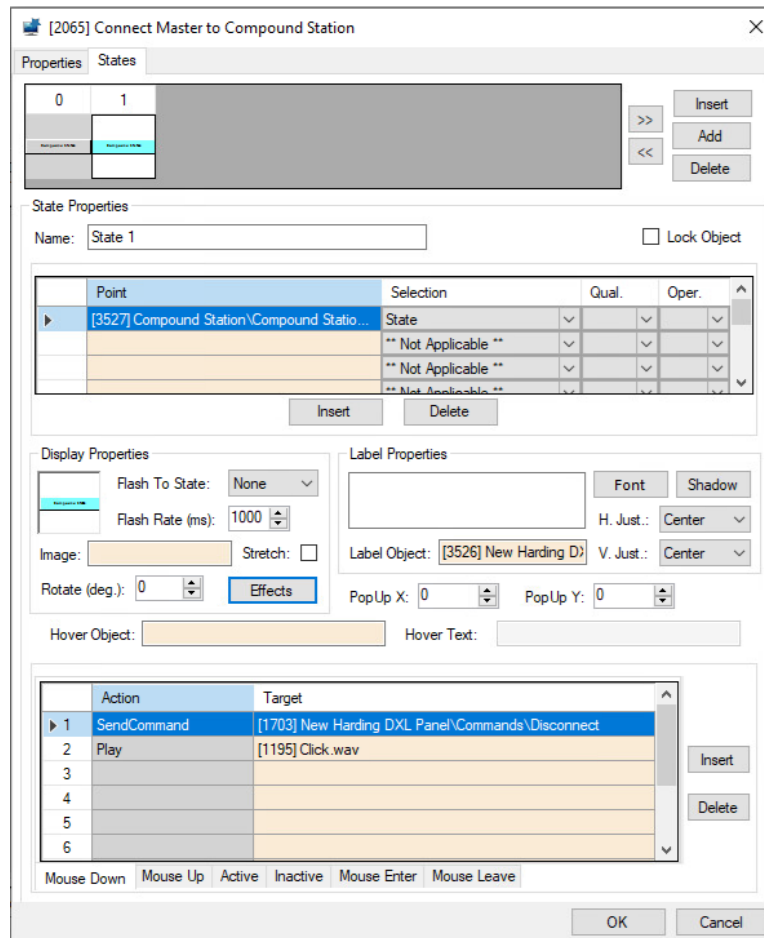


Figure 59 - Button properties - State 1 programmed

Click the OK button to save the changes.

The Buttons to Add a Station to the Compound Call

Let's create the first of the buttons to add a station to the compound call and then use replicate to create the rest. Drag and drop the first station's **Compound Call** point onto the screen. Open up the **Properties** dialog and change the **Label Object** on each state to the station node. Click the OK button to save the changes.

Next, replicate this button for each of the other station. Locate the button object in the Project Node Tree. Right-click on the button object and select *Replicate*. Adjust the rows and columns to make it pretty on the screen then click the OK button. A button for each of the stations is created, programmed for each station following the original button as the template.

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Now it's ready to go. When the request comes in to create a compound call, the user switches to this screen, clicks on the button to connect the master to the compound station, then clicks on each of the station buttons that are to be included in the call. When the call is over, the user clicks on the first button again to disconnect the master from the station.

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Revision History

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