DoorBird v1.0.5
Crestron Home™ Driver Application Guide

Description

This Crestron Home Driver controls a variety of DoorBird door stations. If the specific model you have is not listed below, please contact us.

A1121, D10x, D20x, B10x, D1101xV, D1812, D110xFV, D1101KH, D210xV, D210xKV, D21DKH, D21DKV and Holovision models 230, 232, 332, 430, 432, 567, 568, 569, 572, 573, 576, 577, 578, 731, 732, 831, 832, 925, 976, 977, 1032(Holovision note: Only the DoorBird components are available for control and status) Door Stations running firmware 000102 and above.

This driver supports DoorBird to Touch Screen intercom, native and external (from a connected I/O controller) relay functions, doorbell, RFID, motion, fingerprint, keypad, and generic events. Additionally, this drier supports the A series keypads with RFID and keypad events.

This Crestron Home driver uses an Instance License that can be obtained at https://store.controlworks.com/products/DoorBird-Crestron-Home-License. Each combination of Crestron Home processor and DoorBird device requires a separate license in order to function. See below for detailed instructions on license ordering and activation.

To use a DoorBird Module in SIMPL Windows see our module at https://store.controlworks.com/products/DoorBird-SIMPL-Module.

Supported Processors

This Driver is supported in a Crestron Home processor running Crestron Home OS version 3.014.0087 or later. This driver is **not** supported in SIMPL Windows.

Contents

Network Requirements

This Driver utilizes an online activation method and downloads licensing and configuration information from ControlWorks servers during initial setup and licensing. The Driver is not required to have an active connection to the Internet after setup and licensing is complete. Activation and configuration are stored on the processor, and communication with DoorBird is local.

For more information on configuring ethernet settings including how to setup DNS, please visit: https://docs.crestron.com/en-us/8525/Content/CP4R/Installer-Settings/Sys-Config/Ethernet-Settings.htm

Locating DoorBird devices on your LAN

There are a number ways to locate your DoorBird device on the LAN. DoorBird offers a device discovery tool using the DoorBird iOS/Android app. Since the module requires registering a new account on the door station, we will focus on using the mobile App which will also be used later to create the necessary account.

Using your mobile device, download and install the latest DoorBird App from your platform's app store. Ensure your mobile device is connected to the same network (and VLAN if applicable) as the DoorBird and launch the DoorBird app. Select *Settings* (Gear Icon in the footer) -> *Administration* -> *Magnifying Glass* (Figure 1). The App will display a list of devices by MAC address, with their associated IP address (Figure 2).

If you have multiple DoorBird devices on the same LAN, locate the Digital Passport that came with each DoorBird. The Digital Passport contains the MAC address that you can use to associate the discovery results to real world devices.

Note that at this time, it is not possible to configure the DoorBird with a static IP address. ControlWorks recommends that a DHCP reservation be created for each DoorBird.
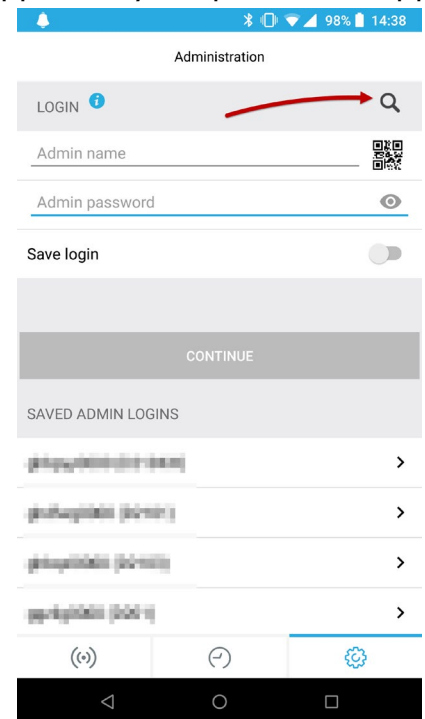
Figure 1 - Device Discovery

Figure 2 - Successful Device Discovery Example

Configuring the DoorBird

Below are the steps needed to configure the DoorBird to function with the Driver:

1. Review the DoorBird Usernames, Passwords, and Permissions section below.

2. That's it! Once the Driver has been added to Crestron Home and is communicating with the DoorBird, the Driver will do the remaining setup required.

DoorBird Usernames, Passwords, and Permissions

For control of the DoorBird, this Driver uses an account that must be manually created on the DoorBird and **does not exist by default**.

To create the account, using the DoorBird app on your mobile device, tap *Settings* (Gear Icon in the footer) -> *Administration* and login to the device using the administration account. The administration account can be found on the digital passport provided with the DoorBird and has a username ending in 0000). Once in the Administration view under the "User" heading select "Settings", tap *Add* (figure 3), this will create a new account. Next, in the *Name (comment)* field, enter *Crestron* and take note of the Username and Password (figure 5).

Next tap *Permissions* and ensure all Permissions are enabled with a checkmark. Once all the permissions have been set, press Back then Save (figure 4).
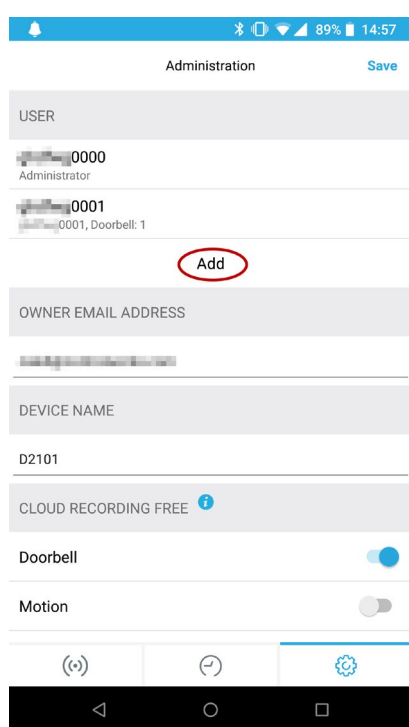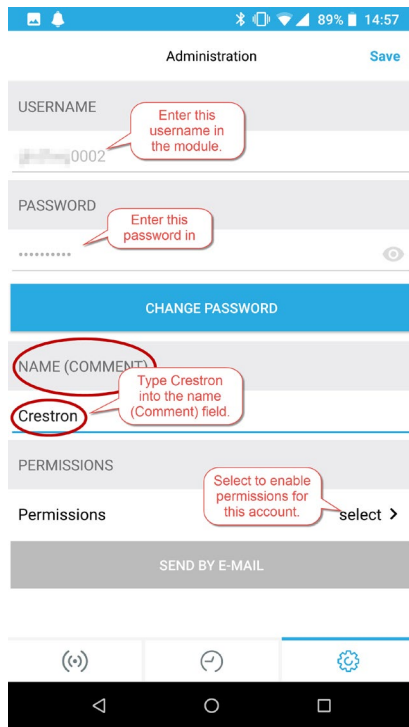

Figure 3 - Adding User
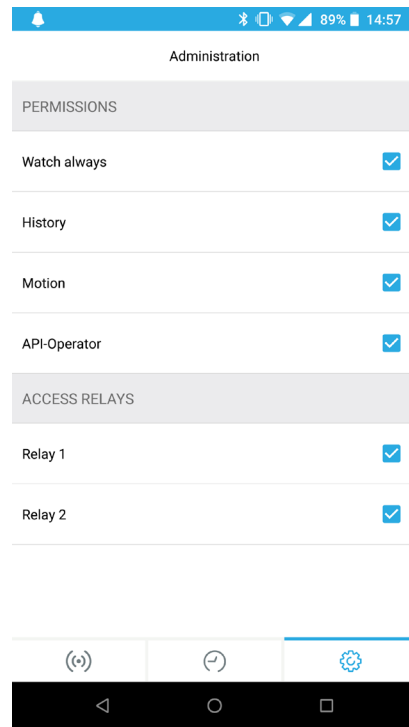

Figure 5 - Name Field

Figure 4 - Permissions

Driver License Overview

We encourage the use of our 30-minute Trial Period prior to purchasing a License to allow for testing and evaluation of the Driver.

This driver requires an Instance License that can be purchased from https://store.controlworks.com/products/DoorBird-Crestron-Home-License. Each instance of the Driver in a Crestron Home system requires a separate license in order to function. Licenses are unique to the combination of a specific Crestron Home processor and a specific DoorBird. To activate a License, follow the steps in Steps for Purchasing a License.

License Changes

If either the DoorBird or Crestron Processor is replaced for any reason the license will need to be updated. ControlWorks offers one complimentary update of the license as described in the ControlWorks Consulting, LLC License Agreement. A small administrative fee will apply for subsequent updates of the license.

Trial Period

To aid testing, the Driver includes a complimentary Trial Period of 30 minutes; during this time the Driver is fully functional. Trial functionality can be enabled only for systems that have an active Internet connection and are able to reach ControlWorks' Activation servers.

When Crestron Home starts or the Driver is added to a Crestron Home system, the Driver automatically attempts License Activation. If the Driver has not been previously licensed and isn't able to locate a valid license when checking ControlWorks Activation servers, the 30-minute Trial Period is enabled. After 30 minutes, the Driver automatically attempts reactivation. If a license has been purchased during this time, the Driver will retain full functionality; otherwise the Driver functionality will be disabled and displays "OFFLINE" in the Crestron Home tile. If you require additional trial time, simply restart the Crestron Home processor to reset the Trial period.

To prevent abuse of this service, the total number of Trial activations for any individual DoorBird or Crestron Processor may be limited at ControlWorks sole discretion.

Adding the Driver to a Crestron Home System

Note: These instructions and screenshots have been prepared with CP4-R Crestron Home version v3.012.0137. Future updates to Crestron Home may result in changes to the appearance or the steps required to implement the Driver.

1. Ensure your Crestron processor is connected to the network, and is able to reach the internet. Internet access is required for driver activation and the Trial Mode to function. For additional details on network requirements, please see Network Requirements.

2. Setup the DoorBird(if not done already) – The DoorBird Driver uses an account on the DoorBird that does not exist by default to communicate. You must setup a new account on the DoorBird, and give the account the permissions as outlined in DoorBird Usernames, Passwords, and Permissions.

3. Add the Driver to Crestron Home - Open the Crestron Home Setup Xpanel or Mobile App, navigate to the drivers by pressing Menu > Settings > Configure System > Pair Devices > Drivers.
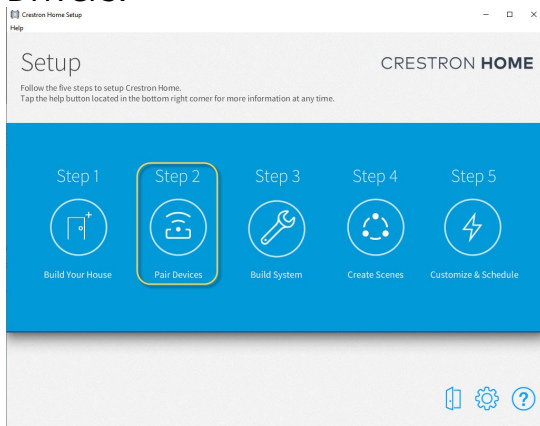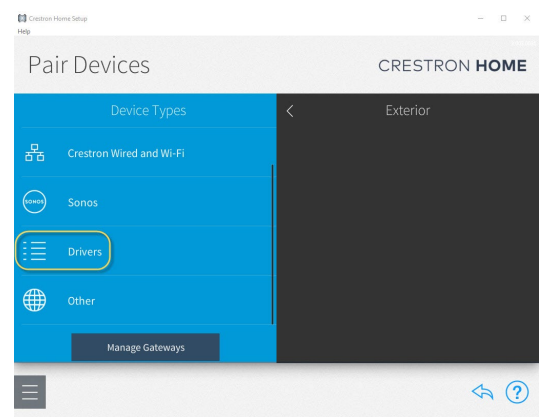

Figure 6 - Pair Devices

Figure 7 - Drivers

4. After Crestron Home refreshes the Driver list, scroll the list of Drivers to locate and select the Doorbell category, then select Doorbell.
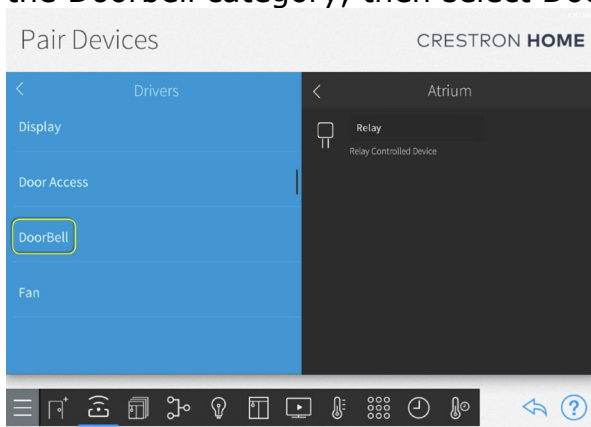
Figure 8 - Locating Doorbell
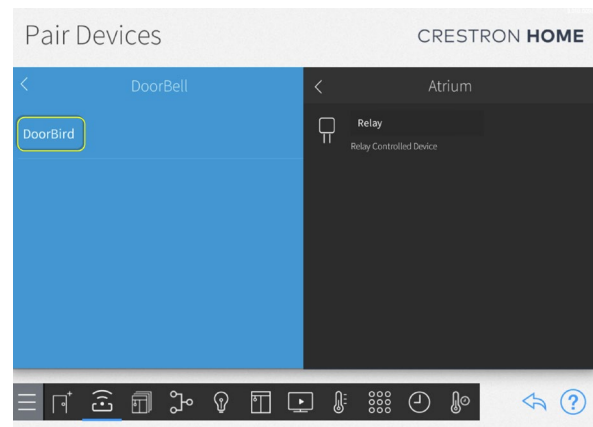
Figure 9 - Select DoorBird

5. You must add a DoorBird to a Room. To add the DoorBird to a Room, choose a Room from the "Select a Room" list that the DoorBird is to be added to, then select the + button next to the DoorBird Driver to add the Driver to the Room.
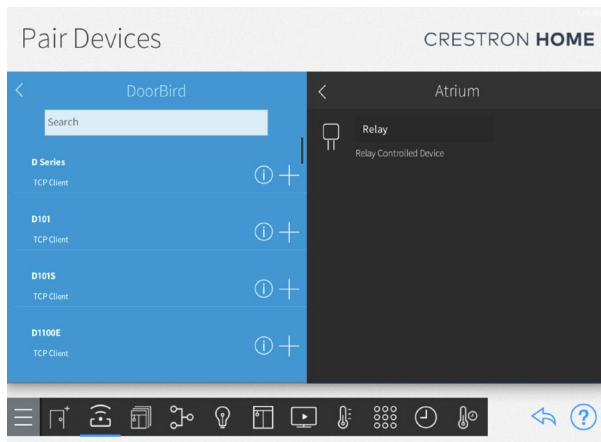
Figure 10 - + Button to Add

6. Enter a name of your choosing for the Driver, and enter the IP Address of the DoorBird. The name you entered will be displayed on the Room and Home Page tile. See Locating device on your LAN if you are unsure of your DoorBird's IP address. The IP Port is prepopulated with 80, and in most cases should not be changed. Leave "Requires Authentication" unchecked.

Figure 11 - Adding Description and IP Address

7. Press OK, and the Driver will be added to the System.

8. The Driver will ask you for the DoorBird account credentials; enter the username and password generated when you created the new account in step 2. If you have not yet created a new account on the DoorBird, you must setup a new account on the DoorBird, and give the account the permissions as outlined in DoorBird Usernames, Passwords, and Permissions.

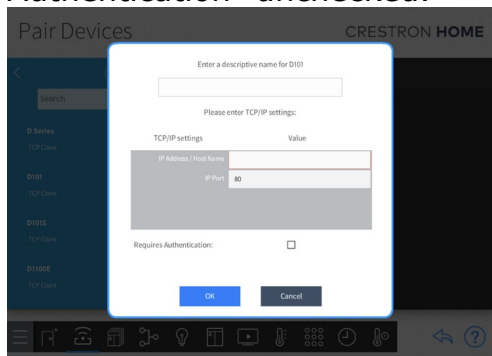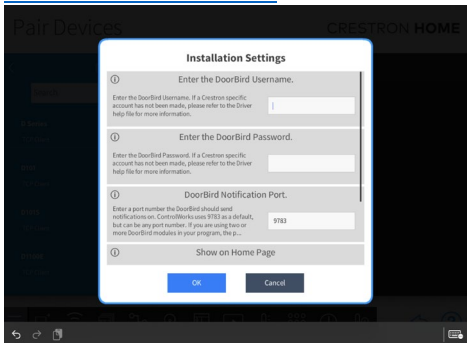**Figure 12 – Username Password and Notification Port**

9. Driver will show the Notification Port. This must be a unique TCP port that is not in use by any other Driver, or elsewhere in the Crestron Home Processor. In most cases 9783 is preferred, but it may be changed if needed. If more than one DoorBird Drivers will be used in the same Crestron Home system, **each Driver's Notification Port must be unique**.

10. The option to enable displaying the DoorBird tile on the Home page or Room page, and changing the Page Title is also available at this time.
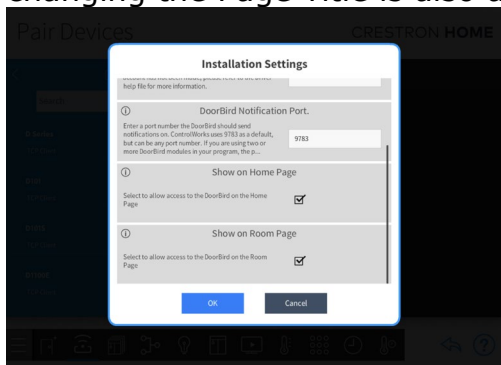
Figure 13 - Show On Home, Show On Room

11. MDU Unit ID – A MDU Unit ID of 0 should be used in non-MDU applications where a single Crestron processor is communicating with a DoorBird device. Changing this value significantly changes the operation of the module. If using the Driver in a MDU application, please review the MDU Applications section of this help file.

12. Once added, the Driver will automatically check for a license on the ControlWorks Activation server. If an existing license has not been found the Trial Mode will start. The Driver will be fully functional during the trial period of 30 minutes, which may be restarted by restarting the Crestron Home processor.
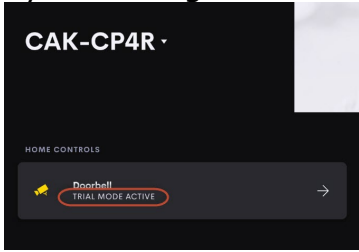
Figure 14 – Trial Mode Active On Home Tile

Steps for Purchasing a License

Licenses are unique to the specific Crestron Processor and DoorBird combination. The steps below outline how to purchase a license and activate your driver.

1. Ensure the Crestron Home Processor has been configured to have Internet access **including** DNS Servers defined

   - For more information on configuring Crestron Home Ethernet Settings, please visit https://docs.crestron.com/en-us/8525/Content/CP4R/Installer-Settings/Sys-Config/Ethernet-Settings.htm

2. Ensure the DoorBird driver has been added to the Crestron Home system, and is connected. The DoorBird Tile on the Crestron Home or Room Page should say "TRIAL MODE ACTIVE" and not "Offline". Additionally, when navigating to the DoorBird page, the UI will display "License Required" with an option to view the license details.

   - If the Tile indicates "Offline", either the trial period has expired, or the processor cannot connect to the DoorBird. If the DoorBird is offline because Trial Mode has expired, you may simply reboot the Crestron Home processor and the Trial Period will restart.

   - If you have rebooted the processor and the Tile still indicates "Offline", please check the Crestron processor's Error Log for more information. The processor's error log retrieved using Crestron Toolbox will include information needed to diagnose reasons why the Driver cannot connect to the DoorBird.

3. Retrieve the Activation Key using one of the following options:

   - Using the Crestron Home Setup App, navigate to the Driver by pressing Menu > Settings > Configure System > Pair Devices > Select the Room the DoorBird was added to, then select the gear icon to access the driver settings. Select Installer settings and navigate to the bottom of the settings. You will see the Activation Key and a URL that will take you directly to the website, and pre-populate the Activation Key on the website.
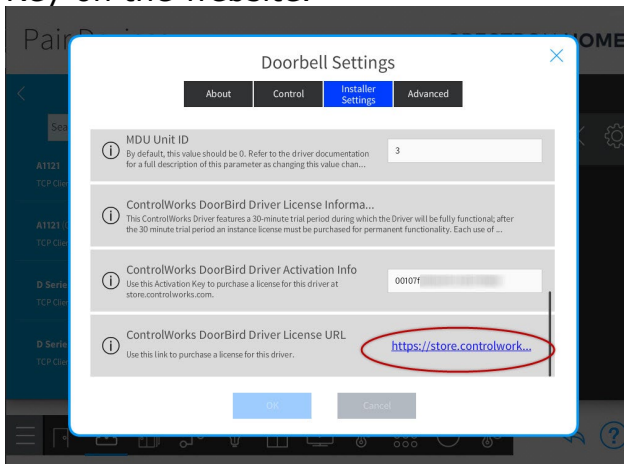
   - Touch the DoorBird Tile on the Home or Room page. At the top of the page, if the Driver is in Trial Mode, "License Required" will be displayed. Touching the "Details" button will display the License information page, which includes a field for the Activation Key. Make note of the Activation Key.
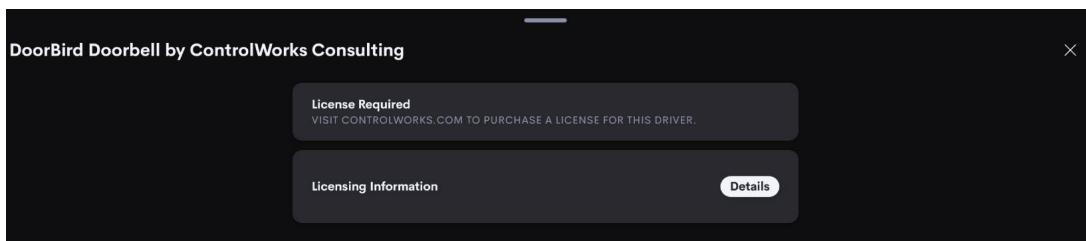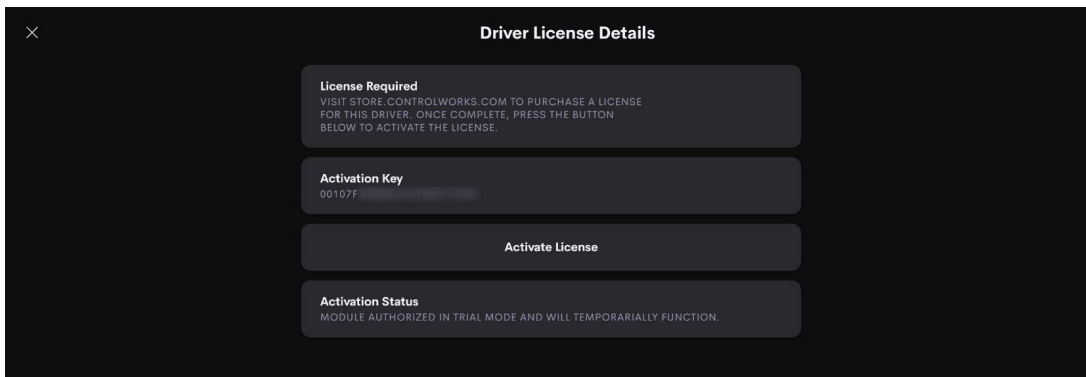
Figure 15 - Licensing Information

Figure 16 - License Details

- Using the Crestron Home Setup App, navigate to the Driver by pressing Menu > Settings > Configure System > Pair Devices > Select the Room the DoorBird was added to, then select the gear icon to access the driver settings. Select Installer settings and copy the Activation Key.
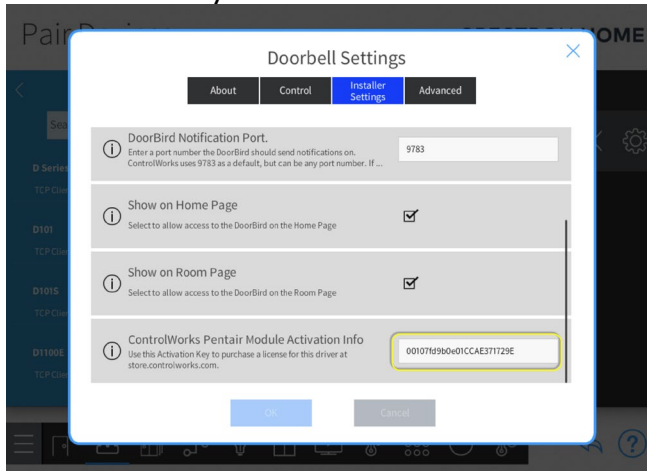

Figure 17 - Activation Key

4. Purchase the License

   - In a web browser, navigate to https://store.controlworks.com/products/DoorBird-Crestron-Home-License. Enter the Activation Key copied from the previous step and enter a Site Name where prompted. The Site Name may be any descriptive text you wish. The Site Name is not part of the license but is used for to aid in future support and for your reference. Finally, click the "Order Online to Activate License" button.

   - Your License will be added to the Shopping Cart. Complete the checkout process. When checkout is completed the License will be immediately generated by ControlWorks' activation servers and available for retrieval by the Crestron Home Processor.

5. Finally, for the Driver to retrieve the newly purchased License, the driver must check in with our Activation Servers. This can be done several ways:

   - Touch the DoorBird Tile on the Home or Room page. At the top of the page, if the Driver is in Trial Mode, "License Required" will appear. Touching the "Details" button will display the License Information page, Touch the "Activate License" button and the Driver will connect to our Activation Servers to validate the purchase; or,

   - If the Home Tile indicates "TRIAL MODE ACTIVE", the Driver will automatically check the Activation Servers for a license when the trial mode expires. If a license is found, the Driver will be activated automatically; or,

   - Restart the Crestron Home processor. If the Driver has not previously received a license, the driver will reach out to the Activation Server to check for a License when the Crestron Home processor restarts; or,

   - Open Crestron Toolbox and connect to the Crestron Home processor using Text Console in Crestron Toolbox. Issue the command [CWCOMMAND RETRYAUTH], and the Driver will check for a license.

Once the Driver has retrieved its License, the License information is cached on the Processor and the Driver will not need to contact ControlWorks Activation servers in the future. Certain Crestron

recovery or troubleshooting procedures may clear the license information; if this occurs the Driver will automatically check for a license with ControlWorks Activation Servers to check for the License. If this becomes necessary, the process will occur automatically and transparently as long as the processor has Internet access. (Refer to step 1 for additional information).

User Interface Overview

This section describes the general operation of the customer facing user interface; however the exact configuration and display of the Driver is dependent on factors such as the size of the user interface being used and the configuration of your DoorBird.

Home Tile

Crestron Home displays the Driver on the Home page as a Tile which is created automatically when the Driver is added to a System. The name of the Driver specified while Adding the Driver to a Crestron Home System, will be displayed in the Tile. To access the Driver's controls, select the DoorBird Tile.
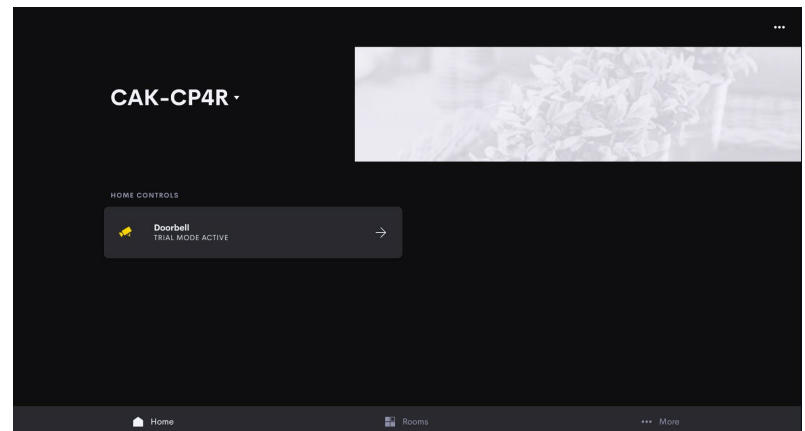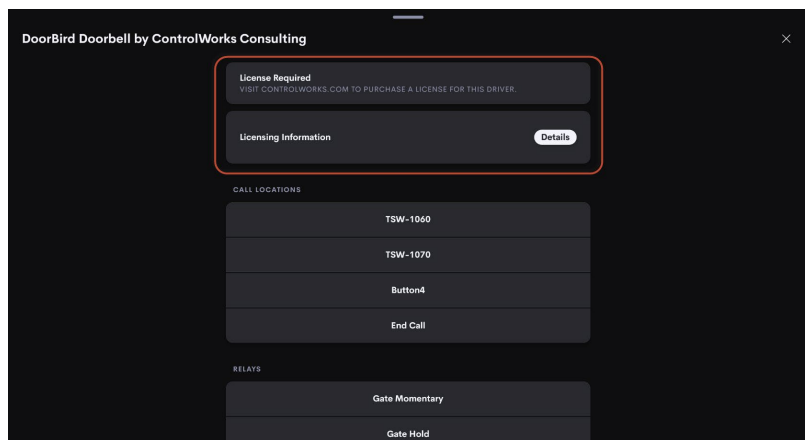

Figure 18 - Home Tile

Trial Mode

If the Driver is operating in Trial Mode, an indicator will be displayed on the Driver controls page. Pressing the "Details" button will take the user to the Driver License details.

These fields do not appear once the Driver is properly licensed.

Call Locations

(Door Stations Only) This Driver supports up to 25 Call location buttons that are built from a [text file](#) on the Crestron Home processor. The text file contains the name, IP address, and an enabled flag for each button.

When the user touches a call location, the Driver instructs the DoorBird to call the address configured for that button, and the

Figure 20 - Call Locations

call controls are temporarily disabled for 30 seconds to allow the call to be executed. When the DoorBird calls a Touch Screen, the Touch Screen displays the Crestron Home Intercom page including the DoorBird video, and makes an incoming call sound. Answering the call on the Touch Screen starts two-way audio.

When the Driver is first loaded, no call locations are displayed. The text file on the processor must be modified to display any call locations, as detailed in [Editing the Call Locations File](#).

Relay Controls

The DoorBird Driver supports relays on a physical DoorBird device as well as relays from I/O controller paired with the DoorBird.

When the Driver is loaded, the Driver queries all available relays for the connected DoorBird. All discovered relays will be displayed in the UI with generic names.

Figure 21 - Relays

Touching a relay button will activate a relay as configured in the DoorBird. Since the DoorBird does not support discrete relay states, if a relay type is set as momentary, touching the button will trigger the momentary relay. If the relay is type is setup a latched, each time the corresponding button is touched will change the relay's state (e.g. open to closed or closed to open).

To change the names displayed for each relay or to hide relays, you must modify the relay data file. See **Editing Relay Data File**.

Touch Screen/NAX Notifications when a DoorBird Button is Pressed

At the time this document was written, there is not a way to link an extension event to directly invoke a doorbell notification in Crestron Home. There is a workaround for this is, which requires an unused relay and digital input or Versaport on your Crestron processor:

1. Ensure the DoorBird has been added in Crestron Home.

2. Using the Crestron Home Setup App, add a Doorbell device by touching Pair Devices -> Other -> Doorbell in the Crestron Home setup app. Then select a Digital Input on the Crestron processor that the Doorbell will monitor.
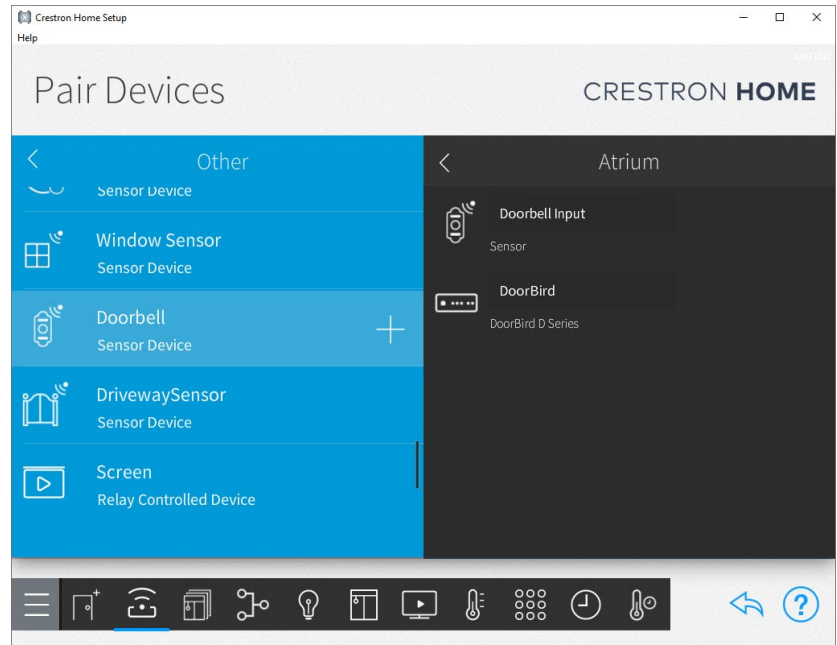
Figure 22 - Add Doorbell

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3. Add a Generic Relay: Using the Crestron Home setup app -> Pair Devices -> Other -> Generic Relay.
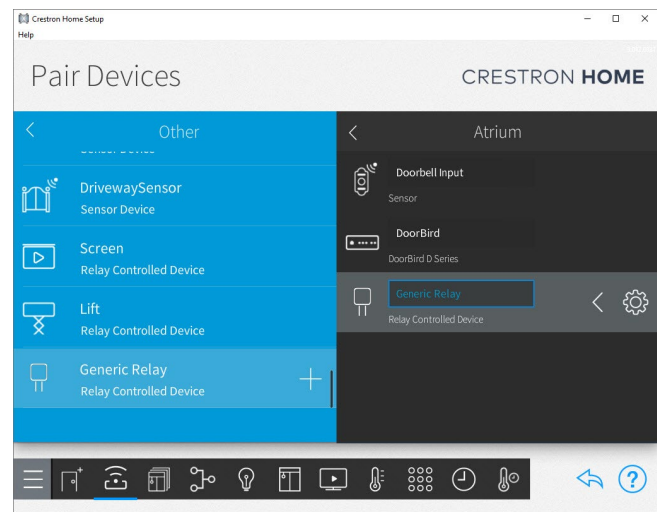
Figure 23 - Adding Relay

Setup the Relay as a Momentary Relay, and select an available Relay port.
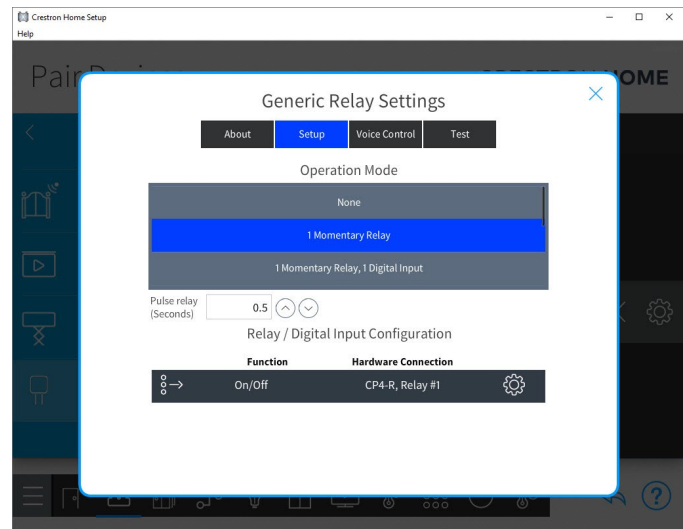
Figure 24 - Relay Setup

4. Connect a physical wire between one terminal on the Relay output on your processor, the Input as defined in step 2. Connect the other terminal on the Relay output, and any Ground (G) port on the Crestron Home Processor.
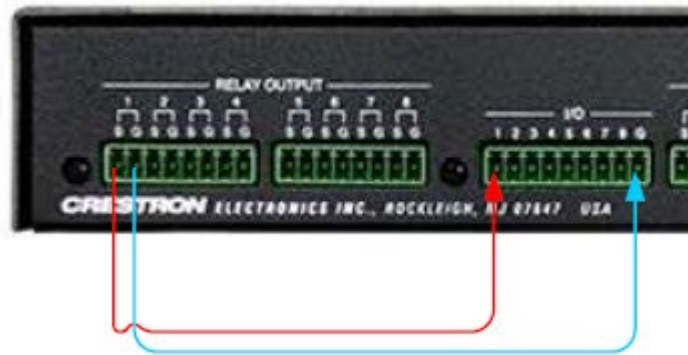
Figure 25 - CP4-R Relay Wiring

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5. Next, using the Crestron Home setup app, navigate to "Customize and Schedule" -> "Customize Actions & Events" and Select the room the DoorBird is in.

6. In the "Select an Item" view, select the DoorBird -> Doorbell Button x, where x corresponds to the button that should activate the doorbell.
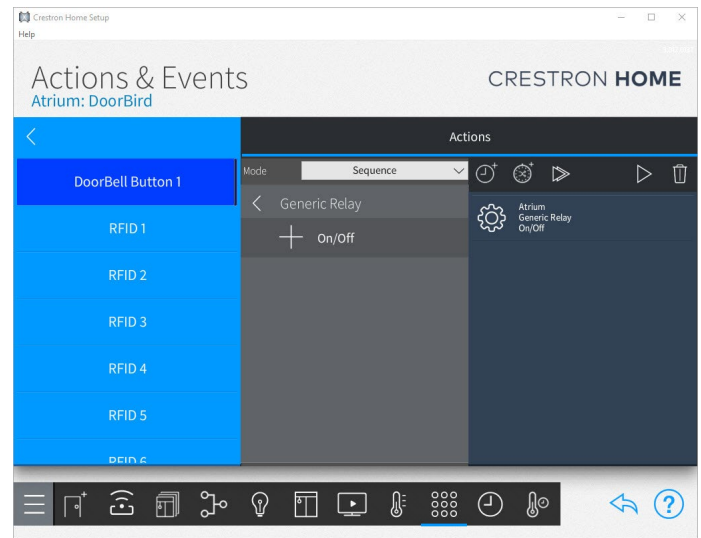
Figure 26 - Connecting DoorBird Event to Relay

7. In the Actions pane, under mode, select Sequence -> select the Room the previously added Relay is in -> select the Relay -> select the "+" next to On/Off.

After competing these steps, when the DoorBird Button is pressed, the Crestron Home Processor will momentarily close the generic relay, the doorbell input will see the relay closure, and the Touch Screens and NAX will play the notification sound.

SIP Calling

The DoorBird supports generic point to point SIP calls and works with Crestron Home Touch Screens that support SIP in Peer to Peer Mode ("Rava"). The DoorBird is unable to place "Rava Group" calls. Each SIP call automatically terminates 180 seconds after it was initiated, unless the Touch Screen hangs up or you send the hang up command to the DoorBird via the Driver before this timeout occurs. The DoorBird supports only one SIP call across all devices at any time, including the DoorBird mobile app.

Viewing the Camera

Due to limitations in Crestron Home at this time the DoorBird Driver does not support viewing the camera on the drivers control page. There are two ways to view the camera at this time:
- During a SIP call, the intercom page displays the DoorBird Camera.
- As an ONVIF Camera.

Subscription to Doorbell Presses, and Motion Sensor events

The DoorBird provides unsolicited feedback for Doorbell Presses, RFID Events, Fingerprint events, and Motion Sensors. A single parameter (Notification Port Number) on the Driver provides the connection information so the DoorBird can contact the Crestron processor for an event.

By default, ControlWorks uses port 9783 however this is an arbitrary port number and can be changed. Care should be taken to ensure that this port is not in use by other devices or in other drivers. **If two or more DoorBird's modules are in use on a processor, each Driver instance must be assigned a unique port number**.

Additional Relays using DoorBird I/O Door Controller

This Driver supports accessing additional DoorBird relays using the DoorBird I/O Door Controller.

Simply follow the instructions provided with the DoorBird I/O Door Controller to add the device to the DoorBird., Once the controller has been added, restart the Crestron Home processor, and the Driver will discover the additional relays. The relays will automatically be displayed on the Crestron Home user interface and names can be modified via the Relay Data File. See Editing the Relay Data File.

Sequences and Quick Actions

Quick Actions

The full steps to create Quick Actions and Events in Crestron Home can be found here: https://docs.crestron.com/en-us/8525/Content/CP4R/Installer-Config/Configure-Quick-Actions.htm.

The DoorBird Driver supports triggering any Relay on the DoorBird through a Quick Action.

Navigate to the Customize & Schedule in the Crestron Home setup App, Select Customize Actions & Events, select the room the DoorBird is in, select Quick Actions, create a Quick Action, then select Sequence in the Settings Tab. Navigate to the room the DoorBird is in, Select the DoorBird Driver, Select Trigger Relay, then select the desired DoorBird Relay to trigger to add it to a Quick Action.

Events

The DoorBird Driver supports a variety of events such as DoorBell(Door Stations Only), Motion(Door Stations Only), 20 Fingerprint Events(models equipped with fingerprint reader) 20 RFID events(models equipped with a RFID Reader), 20 Keypad Events(devices equipped with keypads) and 20 Generic events. Only the events that are supported by the device are created when the Driver loads into Crestron Home.

Navigate to the Customize & Schedule in the Crestron Home setup App, select the DoorBird in the Select an Item list, and the available Events will be displayed. Select an Event, then program the desired Actions.

Note: updating or removing the Driver will break the link to the Driver and any Quick Actions. Upon adding a new or updated Driver, any quick actions will have to be re-added manually. This is a Crestron Home limitation.

Enabling/Disabling the Setup Controls Buttons on the User Interface

Enabling and disabling the Setup Controls on the DoorBird user interface are accomplished using the Crestron Home Setup app. Locate the Driver in the Pair Devices view. Select the gear to display the DoorBird Driver settings. Select Installer Settings, scroll to "Display Setup Controls on User Interfaces" and check or uncheck the box to display or hide the controls on the user interface.

Typically these controls should be hidden (unchecked) after successfully deploying the Driver and desired functionality.

Editing the SIP Call Locations File

This Driver utilizes a file on the Crestron Home Processor to store information related to the Call Location Buttons. These Buttons are intended to represent Crestron Touch Screen locations within your Crestron Home system that the DoorBird can call. At this time, the DoorBird can only call select native Crestron Home Touch Screens and does not support iOS devices.

The Driver supports up to 25 call location buttons. Each call location button contains the name that should be displayed on the button, the IP Address that will be used when the call location button is pressed, and a flag used to display or hide the button.

When the Driver is placed into the Crestron Home system, the Driver will attempt to load the file; if the file is present, the file is loaded and updates the user interfaces as necessary. If the file is not present, the Driver will generate a template file that may be modified.

This file can be retrieved using the File Manager tool within Crestron Toolbox, and connecting to your Crestron Home processor and selecting "Internal Flash". The file name is made up of the Activation Key, a period, and ends with DoorBirdCallButtons, for example. 00107FDEADBE1CCAE0123456A.DoorBirdCallButtons

Right click on the file, and select "Send Files To…". Save the file to your PC, and open the file using a text file editor of your choice, such as Notepad in Windows.

The file is formatted in JSON, and care should be taken to ensure you are only modifying the attributes for a Call Button and that you do not inadvertently add or remove any special characters such as the quotation mark ("), curly brace ({ or }), comma (,) or colon (:).

As an example, we will reference a button within this portion of the JSON file, specifically we will be modifying button 1:

```
"CallButtons": {
    "1": {
      "Name": "Room 1",
      "IPAddress": "192.168.1.1",
      "Enabled": false
    },
    "2": {
      "Name": "Room 2",
      "IPAddress": "192.168.1.2",
      "Enabled": false
    },
```

In the call buttons list, locate object "1". The data below the "1" is the data for Button 1 on the Crestron Home UI.

```
"CallButtons": {
    "1": {
      "Name": "Room 1",
```

```
      "IPAddress": "192.168.1.1",
      "Enabled": false
   },
   "2": {
      "Name": "Room 2",
      "IPAddress": "192.168.1.2",
      "Enabled": false
   },
```

To change the Name of the button, locate the "Name" attribute for button 1, and enter your desired location name between the quotation marks, for example "Living Room":

```
"1": {
      "Name": "Room 1",
      "IPAddress": "192.168.1.1",
      "Enabled": false
   },
```

Is changed to:

```
"1": {
      "Name": "Living Room",
      "IPAddress": "192.168.1.1",
      "Enabled": false
   },
```

The IP Address field is what is sent to the DoorBird to call that Touch Screen when the user touches the corresponding button. This should be set to the IP Address of the Touch Screen we just named. To modify the IP Address, locate the "IPAddress" attribute, and change the value inside the quotation marks:

(Note: DHCP Reservations or static IP Address assignment should be used to ensure that the IP Address for the touch panel does not change)

```
"1": {
      "Name": " Living Room",
      "IPAddress": "192.168.1.1",
      "Enabled": false
   },
```

Is changed to:

```
"1": {
      "Name": "Living Room",
      "IPAddress": "10.22.1.100",
      "Enabled": false
   },
```

Finally, for this information to appear on the first button in Crestron Home, the Enabled attribute must be set to true. Unlike the previous two items that are enclosed by quotation marks, the Enabled value does not utilize the quotation marks. Only `true` or `false` are valid. Change the value from `false` to `true`:

```
"1": {
     "Name": " Living Room",
     "IPAddress": "10.22.1.100",
     "Enabled": false
   },
```

Is changed to:

```
"1": {
     "Name": "Living Room",
     "IPAddress": "10.22.1.100",
     "Enabled": true
   },
```

Save the file using the same file name, and place the file in the Internal Flash directory of the processor using File Manager within Crestron Toolbox . To load the updated configuration, on a Crestron Home Touch Screen, select the DoorBird Tile. If "Setup Controls" are displayed at the bottom of the DoorBird User Interface, press the "Reload Call Button JSON" button to load your changes; If the Setup Controls are not visible, follow the steps in Enabling/Disabling Setup Controls to enable them, then return to this step.

The Driver will attempt to read the JSON file and upon successfully reading the file, the Driver will display the enabled Call Buttons.

Editing the Relay Data File

This Driver utilizes a file on the Crestron Home Processor to store DoorBird Relay configuration information. When the Driver is first placed into the Crestron Home system, the Driver discovers all relays the DoorBird has made available for control, and writes a file to the Crestron processor with this default information.

This file contains a configurable display name and if the relay should be visible on the Crestron Home user interfaces. This file can be retrieved using the File Manager tool within Crestron Toolbox, and connecting to your Crestron Home Processor. When connected, select "Internal Flash". The file name is made up of the activationKey, a period, and ends with DoorBirdRelayData, for example. 00107FDEADBE1CCAE0123456A.DoorBirdRelayData.

Right click on the file, and select "Send Files To…". Save the file to your PC, and open the file using a text file editor of your choice, such as Notepad in Windows.

The file is formatted in JSON, and care should be taken to ensure you are only modifying the attributes for a Relay and that you do not inadvertently add or remove any special characters such as the quotation mark ("), curly brace ({ or }), comma (,) or colon (:).

As an example, we will modify Relay 1 to change the name to "Gate Momentary", and hide the remaining relays within this example JSON file:

```
{
  "1": {
    "Visible": true,
    "DisplayName": "Relay 1"
  },
  "2": {
    "Visible": true,
    "DisplayName": "Relay 2"
  },
  "ghbznd@1": {
    "Visible": true,
    "DisplayName": "Relay ghbznd@1"
  }
}
```

First, locate the data for Relay 1.

```
"1": {
    "Visible": true,
    "DisplayName": "Relay 1"
  },
```

Locate the DisplayName attribute for Relay 1, and change the text within the quotes the desired name -- "Gate Momentary".

```
"1": {
    "Visible": true,
    "DisplayName": "Gate Momentary"
  },
```

While we're here, to hide the second relay, set the visible flag to `false`. Locate Relay 2 and the "Visible" attribute.

```
{
  "1": {
    "Visible": true,
    "DisplayName": "Relay 1"
  },
  "2": {
    "Visible": true,
    "DisplayName": "Relay 2"
  },
  "ghbznd@1": {
    "Visible": true,
    "DisplayName": "Relay ghbznd@1"
  }
```

```
}
```

Unlike the previous field where the data is surrounded in quotation marks, the Visible value does not utilize the quotation marks. The only valid values are `true` or `false`. To hide this relay, change the value from `true` to `false`:

```
{
  "1": {
    "Visible": true,
    "DisplayName": "Relay 1"
  },
  "2": {
    "Visible": false,
    "DisplayName": "Relay 2"
  },
  "ghbznd@1": {
    "Visible": true,
    "DisplayName": "Relay ghbznd@1"
  }
}
```

This example also contains a relay from an I/O Controller. This can be identified by the presence of a username followed by an @ sign and the relay number.

```
{
  "1": {
    "Visible": true,
    "DisplayName": "Relay 1"
  },
  "2": {
    "Visible": false,
    "DisplayName": "Relay 2"
  },
  "ghbznd@1": {
    "Visible": true,
    "DisplayName": "Relay ghbznd@1"
  }
}
```

Save the file using the same file name, and place the file in the Internal Flash directory of the processor using File Manager within Crestron Toolbox. To load the updated configuration, on a Crestron Home Touch Screen, select the DoorBird Tile. If Setup Controls are displayed at the bottom of the DoorBird User Interface, press the "Reload Relay Button JSON" button to load your changes; If the Setup Controls are not visible, follow the steps in Enabling/Disabling Setup Controls, then return to this step.

The Driver will attempt to read the JSON file and upon successfully reading the file, the driver will display buttons that have the Visible attribute set to True.

Special Notes for D21DKV/D21DKH Doorbell Events

The D21DKx devices does not have a physical doorbell button like smaller DoorBird doorstations do. Each doorbell pressed output on the Driver must be linked to either the default "bell" button, or to a Keypad Code.

To assign events to Keypad Code, ensure the Driver has been loaded to the Crestron Home processor, and is activated or running in Trial Mode. When the Driver detects a D21DKV or D21DKH, it will create 18 doorbell button links corresponding to Crestron Home Quick Actions that need to be assigned to a Keypad Code to function. In the DoorBird iOS/Android app, navigate to the administration settings of the device: *Settings (Gear Icon in the footer) -> Administration* and login to the device using the administration account (found on the digital passport provided with the DoorBird). In the Administration view under the heading *Keypad*, tap *Settings* (figure 27), then select an existing Keypad Code, or add a new Keypad Code. Select Schedule for Actions (figure 28).
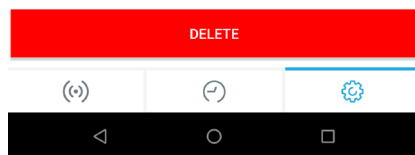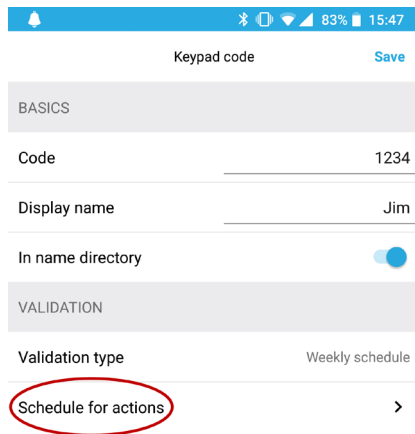
Figure 27 - Keypad Settings

Tap the bell icon, and tap the globe icon for HTTP Calls (figure 23). Touch the text that appears in the middle of the page next to the globe icon, then select an event. (figure 29) Each of CW-IDx _DoorBell1 through 18 correspond the 18 Quick Actions in Crestron Home. Tap the desired event, then press the "toggle all times" button on the right to enable all times, indicated with all cells displayed in blue. Press Back and press Save to save the schedule.

If a guest doesn't know a Keypad Code, they can press the physical bell button without selecting a user. In this case, the default Bell Action is used. An event can be assigned to the default bell using a process similar to the steps described above. In the Keypad settings within the Administration view, create a Keypad Code to be used by the default bell button. Schedule the Keypad Code for an actions using the previous steps. Press back, and save the schedule. Administration, navigate to the Keypad heading and select Default for

Figure 28 - Schedule for Actions

Bell. Assign the Keypad Code from the previous step to the Bell. Each time a user presses only the Bell button on the device, it will ring that Keypad Code, and will pulse in Crestron to the assigned doorbell output.
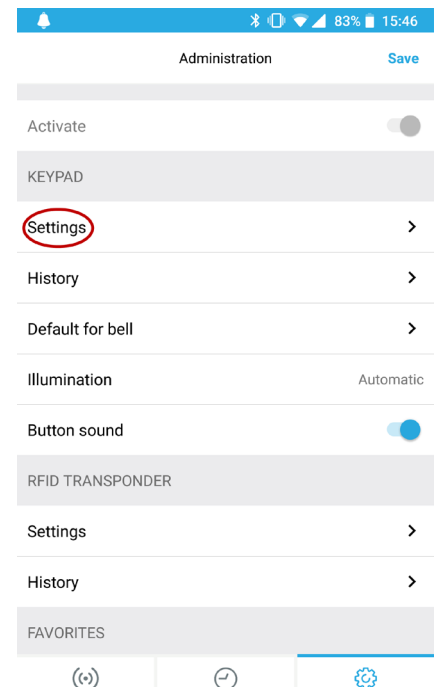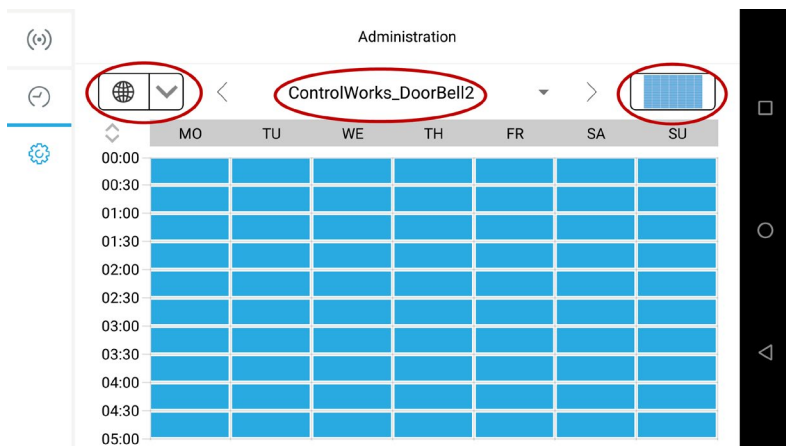
Figure 29 - Assigning a Doorbell event

Monitoring RFID Events

At the time of writing this document, only the D2101, D2102, D2103, D2101KV, D21DKH, D21DKV, Holovison 572 and 567 support reading RFID tags. To monitor RFID events in Crestron Home, ensure the Driver has been loaded, and is either activated or running in Trial Mode. When the Driver detects a DoorBird device type that supports RFID tags, the Driver will create 20 RFID favorites that correspond to 20 Crestron Home Quick Actions that can be tied to an RFID card.

To assign a favorite to a RFID tag, navigate to the RFID Transponder settings in the app: *Settings* (Gear Icon in the footer) -> *Administration* and login to the device using the administration account. *Scroll to RFID Transponder, select settings.*

Select a learned tag; if no tags have been learned, refer to the DoorBird instructions on learning tags. Tap *Schedule for Actions* (figure 30). Next tap the bell icon, and tap the globe icon for HTTP Calls (figure 31). Touch the text that appears in the in the middle of the page next to globe icon to select a favorite. Each CW-IDx_RFID1-20 correspond the 20 Crestron Home Quick Actions. Select the desired favorite, then press the "toggle all times" button on the right to enable all times. Press back and press Save to save the schedule.

Figure 30 - Schedule for actions with an RFID tag
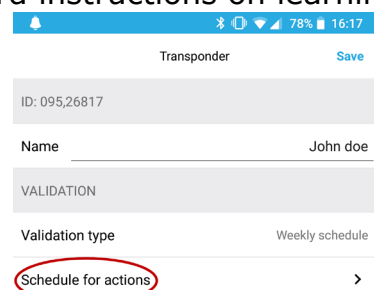
Figure 31 - Adding RFID Links to schedule for actions

Monitoring Keypad Events

To monitor Keypad Entries in Crestron Home, ensure the Driver has been loaded, and is either activated or running in Trial Mode.

When the Driver detects a DoorBird device type that supports a keypad, the Driver will create 20 Keypad Favorites on the DoorBird that correspond to 20 Crestron Home Quick Actions. These Favorites, when triggered in DoorBird, invoke a corresponding event in Crestron Home.

To assign a favorite to a keypad code, navigate to the keypad settings in the DoorBird app: *Settings* (Gear Icon in the footer) -> *Administration* and login to the device using the administration account. *Scroll to KEYPAD, select settings.*

Select a keypad code; if no codes have been created, refer to the DoorBird instructions on adding codes. Tap *Schedule for Actions* (figure 32). Next tap the bell icon, and tap the globe icon for HTTP Calls (figure 33). Touch the text that appears in the in the middle of the page next to globe icon to select a favorite. Each favorite CW-IDx_RFID1-20 correspond to 20 Crestron Home Quick Actions. Select the desired favorite, then press the "toggle all times" button on the right to enable all times. Press back and press Save to save the schedule.
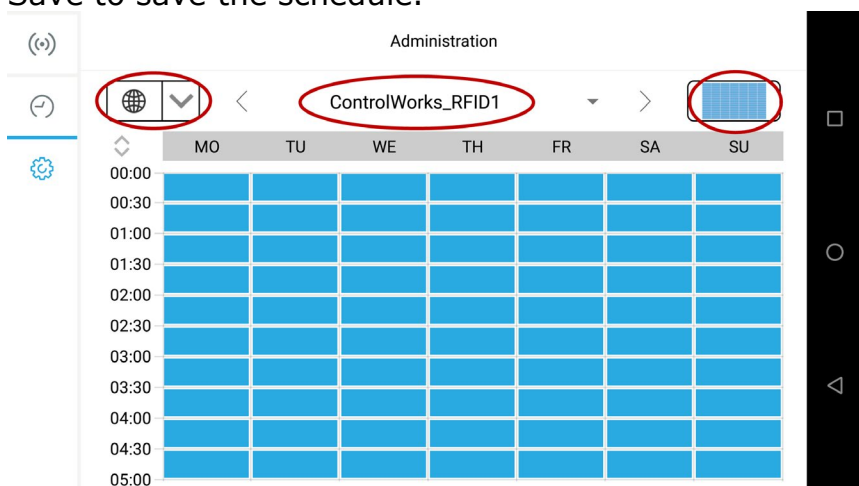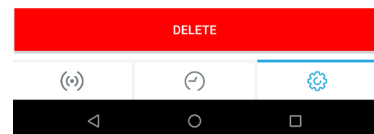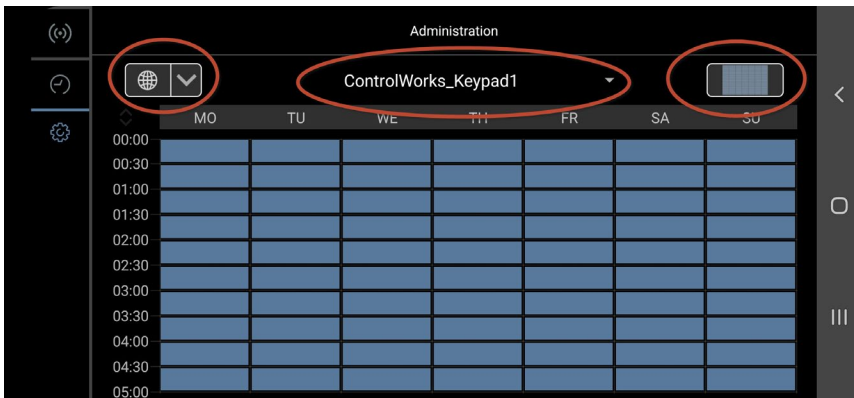

Figure 32 - Adding RFID Links to schedule for actions
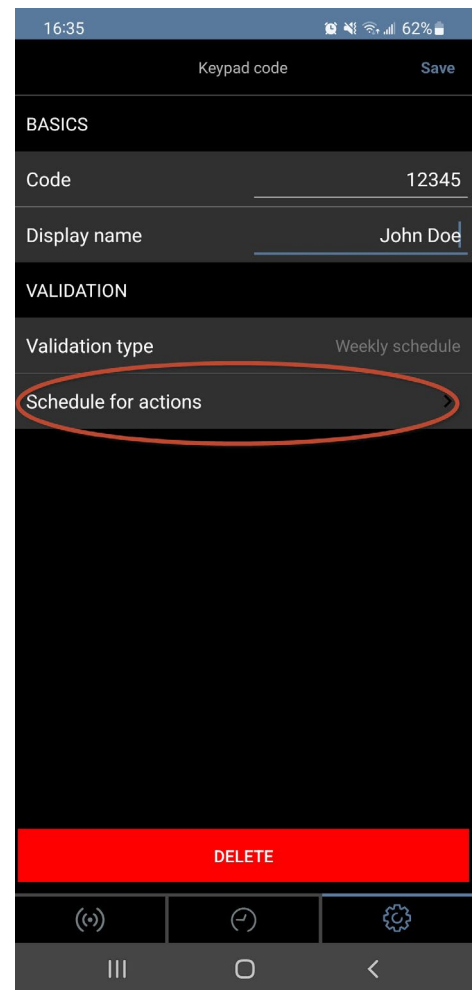
Figure 32 - Schedule for actions with a keypad code

A1121 Keypad Notes

- This device, unlike a doorbell that have motion and SIP calling compatibilities, this device only has a keypad, RFID Reader, and relays.

- The Crestron Home user interface for these device types will display relay buttons only.

- RFID events and keypad events are managed through Events and Quick Actions. There are no user interface controls for the keypad or RFID reader. To setup an event in Crestron home when a Keypad or RFID Tag is read:

  1. Setup the ControlWorks Favorite for an RFID tag or Keypad code. See Monitoring RFID Events or Monitoring Keypad Events to set those events up.

  2. Using the Crestron Home setup app, in the setup screen navigate to "Customize and Schedule" -> "Customize Actions & Events" and select the room the DoorBird is in.

  3. Select the DoorBird device, and the actions and events list will populate with events from the DoorBird. These events correspond to the favorites that are discussed in Monitoring RFID Events or Monitoring Keypad Events.

  4. Select an event from the actions list, and then program your desired sequence or quick action.

MDU Applications

This Driver will work in MDU applications where multiple Crestron processors need access to a single DoorBird. Note that communication with the DoorBird occurs on the local network and not over the Internet, so all Crestron Processors must be able to directly access the DoorBird, and the DoorBird must be able to directly access the Crestron processor using various TCP and UDP Ports.

An understanding of how DoorBird handles scheduling favorites is necessary for MDU operation. Please review the sections on [D21DKV/D21DKH Doorbell Events](#), [Setup for RFID, Keypad, Fingerprint, and Generic Events](#) as you will be required to follow those steps in each module deployment.

Functionality differences between MDU Unit ID's:

- A MDU Unit ID of 0d should be used in non-MDU applications where a single Crestron processor is the only Crestron processor communicating with a DoorBird device. This behavior is the same as prior versions of the module with the exception of updated favorite names.

- All modules with a MDU Unit ID that is not 0d will create favorites for doorbell buttons (multiple buttons for models that support up to 18), generic events, RFID events (if applicable), and fingerprint events (if applicable). All the favorites created will be labeled as CW-IDx_event_name (i.e. CW-ID0_DoorBell1)

- Modules with MDU Unit ID's 1d, 2d, and 3d will always attempt to attach themselves to a single button on a unit that supports multiple buttons (for example the D2103 supports 18 buttons, but comes with 3 on the faceplate). If a Driver with Unit ID 0d has already subscribed to the button, Drivers with MDU Unit ID's 1d, 2d, and 3d will always overwrite the existing subscription/schedule. (Note: A Driver with MDU Unit ID 0d will never overwrite an existing schedule)

- Drivers with MDU Unit ID's 4d and greater will only create favorites on the DoorBird. It is up to the installing dealer to manually assign a favorite to a button/event.

- Drivers with MDU Unit ID greater than 0d and connected to MDU DoorBird Devices (such as a D21DKV or D21DKH that only support a keypad and LCD screen to navigate a directory) the module will only create favorites. It is up to the integrator to manually assign a favorite to a unit number on the device. Please review the sections on [D21DKV/D21DKH Doorbell Events](#), [Setup for RFID, Keypad, Fingerprint, and Generic Events](#) for help with assigning a favorite to keypad code.

Motion events are not available with any MDU Unit ID greater than 0d. Only Drivers with MDU Unit ID 0d will work with motion; configuring multiple Crestron processors to communicate with a single DoorBird with MDU Unit 0d is not supported.

Future Release Features

If you find a specific feature missing, or want to request specific functionality, please contact us with your suggestions.

Knowledge Base

Please be sure to visit our Knowledge Base for additional information that can assist in deploying your Crestron Home solution using ControlWorks drivers at http://controlworks.com/ResourceLibrary/KnowledgeBase.aspx.

Support

This Driver is supported by ControlWorks Consulting, LLC. Should you need support for this Driver please email support@controlworks.com or call us at 440-449-1100. ControlWorks normal office hours are 9AM to 5PM US Eastern Time, Monday through Friday, excluding US holidays.

Before calling for support, please ensure that you have the Driver loaded into the Crestron Home system, and have reviewed the Crestron Home processor's Error Log which will contain valuable troubleshooting and diagnostic information.

Driver Updates, when available, are automatically distributed via the drivers.crestron.io portal or Email notification to the address entered when the Driver was purchased from our store. In addition, updates may be downloaded using your username and password at https://www.controlworks.com/Customers/Login.aspx.

Distribution Package Contents

The distribution package for this module should include:

Distribution Contents	
DoorBirdCH.pkg	Crestron Home Driver
DoorBird_Crestron-Home_V1.0.4_Help_(ControlWorks).pdf	This Help file

Revision History

V1.0.5 caleb@controlworks.com 2023.02.23
- Update for using the Driver in an MDU application. Refer to MDU Applications for operational differences.

V1.0.4 caleb@controlworks.com 2022.10.24
- Support for A1121 family of devices.

V1.0.3 caleb@controlworks.com 2022.07.22
- Bug fix to ensure SIP is enabled on the DoorBird.

V1.0.2 caleb@controlworks.com 2022.05.10
- Added support for SIP calling.
- Added call locations buttons and file management.
- Added relay file management.
- Added the ability to reload the call locations and relay configuration files.
- Added the ability to hide the reload configuration file buttons.
- Added support for Fingerprint reads.
- Added ability to change the Driver page title.
- Added enhanced license management from the driver UI page.

V1.0.0 caleb@controlworks.com 2022.01.05
- Initial Release for Crestron Home OS

Development Environment

This Driver version was developed on the following hardware and software. Different versions of hardware or software may or may not operate properly. If you have questions, please contact us.

Testing Environment	
Manufacturer Hardware	**Software Version**
DoorBird D2101	131
Doorbird D2101FV	131
DoorBird A1121	131
Crestron Hardware	**Firmware Version**
CP4-R Processor	3.017.0100
SDK Version	V 15.0000.0006
TS-1070	V1.006.0046
TSW-1060	v3.001.0026

ControlWorks Consulting, LLC Driver License Agreement

Definitions:
ControlWorks, *We*, and *Us* refer to ControlWorks Consulting, LLC, with headquarters located at 8228 Mayfield Road, Suite 6B Rear Chesterland, Ohio 44026. *You* and *Dealer* refer to the entity purchasing the Driver. *Client* and *End User* refer to the person or entity for whom the Crestron Home System installed and/or will utilize the installed system. *System* refers to all components described herein as well as other components, services, or utilities required to achieve the functionality described herein. Instance License refers to a Driver license that is granted to a specific combination of a Crestron Processor and a single Controlled Device (for example, based on the respective serial numbers or other uniquely identifying information); a separate Instance License must be purchased for each such combination. *Driver* or *Crestron Home Driver* refers to the files required to implement the functionality in the Crestron Home environment. *Software* refers to all files provided by ControlWorks in conjunction with the Driver.

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Provision of Support
We provide limited levels of technical support only for the most recent version of the Driver as determined by Us. We do not provide support for previous version of the Driver, modifications to the Driver not made by Us, to persons who have not purchased the Driver, or corresponding license(s) from Us. We may withdraw Driver, or corresponding license(s) from sale and discontinue providing support at any time and for any reason, including, for example, if the equipment or Application Programming Interface ("API") or control protocol for which the Driver is written is discontinued or substantially modified. The remainder of your rights and obligations pursuant to this license will not be affected should ControlWorks discontinue support for a Module or Driver.

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You may not decrypt (if encrypted), reverse engineer, modify, translate, disassemble, or de-compile the Driver in whole or part. Any modifications to the Driver shall immediately terminate any licenses purchased or granted with respect thereto. In no event will ControlWorks Consulting, LLC be liable for direct, indirect, incidental or consequential damages resulting from You modifying the Software in any manner.

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We grant You a non-exclusive license to use the Software in a Crestron Home System on either a limited (Trial License) or perpetual (Purchased License) basis. For each License you may use the Software in a single Crestron Home system to interface with a single Controlled Device.

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DoorBird Crestron Home Driver v1.0.5   ControlWorks Consulting, LLC
Telephone: (+1)440-449-1100   support@controlworks.com   http://www.controlworks.com