TSR-310
Handheld Touch Screen Remote

Supplemental Guide

Crestron Electronics, Inc.

Original Instructions
The U.S. English version of this document is the original instructions.
All other languages are a translation of the original instructions.

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

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TSR-310: Handheld Touch Screen Remote

Introduction

The Crestron® TSR-310 is a durable handheld remote with a 3 in. color touch screen, backlit buttons, voice control capability, and enhanced Wi-Fi® network wireless communications. Movement sensing wakes the remote when it is handled so that it is always ready to be used. The TSR-310 may also be paired with Crestron Pyng® OS 2 and other Crestron control solutions for complete control over audio, video, lighting, shades, and other amenities.

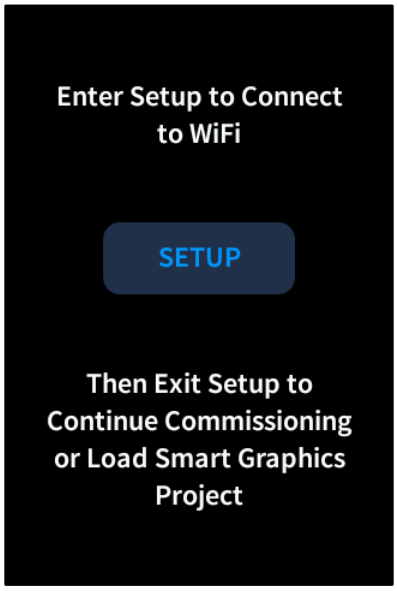
The following supplemental documents are available at www.crestron.com/manuals:

- For more information on the TSR-310, refer to the TSR-310 Quick Start (Doc. 8225).
- For more information on configuring the TSR-310 with Crestron-approved WAPs (wireless access points), refer to the TSR-310 Wireless Access Points Configuration Guide (Doc. 8309).
- For more information on Performance UI software, which is preinstalled on the TSR-310 and provides an advanced user interface for controlling a Crestron Pyng OS 2 system, refer to the Performance UI for TSR-310 Operations Guide (Doc. 8410) and the TSR-310 User Guide (Doc. 8421).

Commission the TSR-310

If the TSR-310 ships with Performance UI mode enabled by default, the following screen is displayed once the TSR-310 wakes from low power mode (after power is applied for the first time). For more information on powering the device, refer to the TSR-310 Quick Start (Doc. 8225).

Wi-Fi Connection Screen



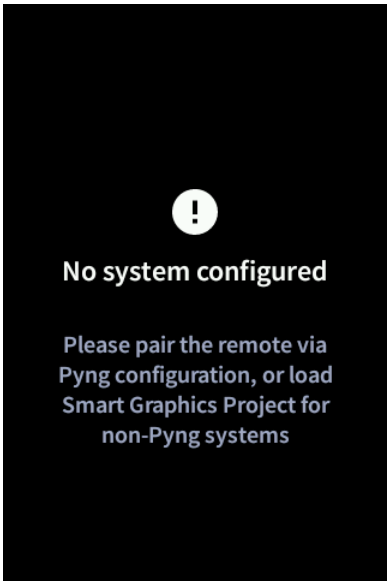
NOTE: For older TSR-310 devices that did not ship with Performance UI mode enabled by default, Performance UI mode can be enabled manually through Crestron Toolbox™ software after upgrading the device to the latest firmware. For more information, refer to the Performance UI for TSR-310 Operations Guide (Doc. 8410).

Tap **SETUP** to enter the device setup screens and to connect the TSR-310 to a Wi-Fi network.

- For more information on the device setup screens, refer to "Access the Setup Screens" on page 4.
- For more information on connecting to a Wi-Fi network, refer to "Select an Access Point" on page 8.

Once the TSR-310 is connected to a valid Wi-Fi network, the following screen displayed after exiting the setup screens.

No System Configured Screen



The TSR-310 may be set up to run the built-in Performance UI software or a custom Smart Graphics® technology project.

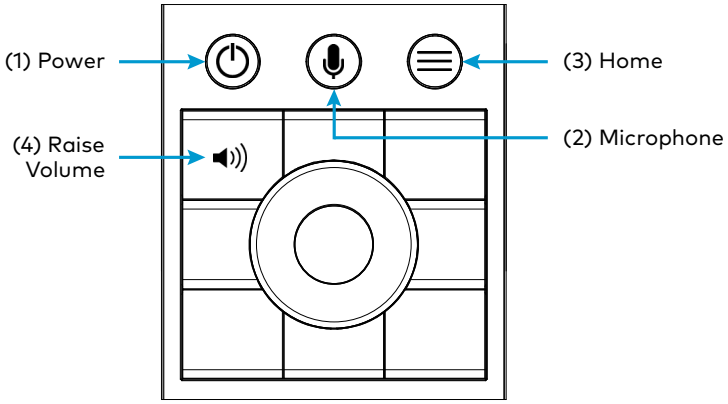
- To use the built-in Performance UI software, pair the TSR-310 to an existing Crestron Pyng OS 2 system via the Crestron Pyng configuration app. For more information, refer to the Performance UI for TSR-310 Operations Guide (Doc. 8410).
- To use a custom Smart Graphics project, upload the custom project to the TSR-310 using Crestron Toolbox software. For more information, refer to the Crestron Toolbox help file.

Access the Setup Screens

The setup screens enable basic configuration prior to regular operation of the TSR-310.

To access the setup screens during regular operation, press the power (1), microphone (2), home (3), and raise volume (4) buttons twice in sequence (1, 2, 3, 4, 1, 2, 3, 4) within five seconds. Refer to the illustration below for button locations on the TSR-310.

TSR-310 Button Press Locations



NOTE: The TSR-310 also provides a web configuration interface that may be used to view and configure various TSR-310 settings. For more information, refer to "Configuration via Web Interface," starting on page 34.

The TSR-310 main setup screen is displayed.

TSR-310 Setup Screen

The setup screen provides buttons for the display setup, wireless setup, IP table setup, voice control, standby timeouts, and diagnostics. There is also a button to toggle system messages on or off and an **About** button that provides information about the TSR-310.

Additionally, the setup screen displays the signal level of the wireless connection and the battery level of the TSR-310.

The functions of each button are detailed in the following pages of this guide.

NOTE: A toolbar is present on the bottom of all setup screens. The toolbar provides a gear button that may be tapped to return to the main setup screen and a **Save & Exit** button that may be tapped to save all settings, to exit the setup screens, and to return to the main project.

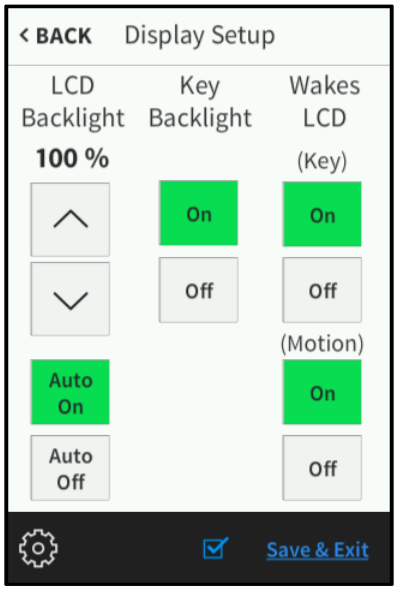
Configure the TSR-310

Refer to the following sections for information about each TSR-310 setup screen.

Display Setup

On the setup screen, tap **Display Setup** to display the **Display Setup** screen.

Display Setup Screen



Use the **Display Setup** screen to adjust LCD backlight and hard button backlight settings:

- If **Auto Off** is selected below, tap the up and down arrows under **LCD Backlight** to raise or lower the brightness level of the LCD backlight from 0 to 100%.
- Tap **Auto On** or **Auto Off** under **LCD Backlight** to turn setting the brightness of the LCD backlight automatically on or off.
- Tap **On** or **Off** under **Key Backlight** to turn the key (hard button) backlight on or off.
- Tap **On** or **Off** under **Wakes LCD (Key)** to turn the ability to wake the LCD by pressing any button on the remote on or off.

> NOTE: If **Wakes LCD (Key)** is set to **Off**, the LCD wakes only when the power, microphone, or home buttons are pressed. Refer to the illustration on page 1 for button locations.

- Tap **On** or **Off** under **Wakes LCD (Motion)** to turn the ability to wake the LCD by moving the remote on or off.

  NOTE: If **Wakes LCD (Motion)** is set to **On**, this behavior is only applicable when the remote is undocked.

Tap **< BACK** to return to the main setup screen.

Wireless Setup

On the setup screen, tap **Wireless Setup** to display the **Wireless Setup** screen.

Wireless Setup Screen

Use the **Wireless Setup** screen to view wireless connection details, to connect to a WAP, to manage existing WAPs, and to configure IP settings.

The **Wireless Setup** screen also displays the SSID (service set identifier) and IP address of the current WAP connection, the strength of the wireless connection, and a **Link** indicator that indicates the status of the wireless connection. (Green indicates that the wireless connection is active.)

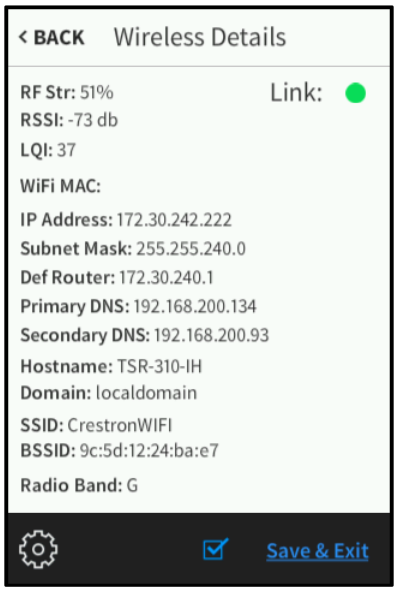
The functions of each **Wireless Setup** button are described in the following sections.

NOTE: For more information on configuring WAP settings for optimal device performance, refer to the TSR-310 Wireless Access Points Configuration Guide (Doc. 8309).

Wireless Details

On the **Wireless Settings** screen, tap **Details** to display the **Wireless Details** screen.

Wireless Details Screen



Use the **Wireless Details** screen to view various wireless connection details for the TSR-310 and the current WAP. A **Link** indicator is also provided to indicate the status of the wireless connection. (Green indicates that the wireless connection is active.)

Tap **< Back** to return to the **Wireless Setup** screen.

Select an Access Point

On the **Wireless Settings** screen, tap **Connect to WAP** to display the **Select Access Point** screen.

Select Access Point Screen

Use the **Select Access Point** screen to connect the TSR-310 to an existing WAP that is in range or to configure a new WAP.

NOTE: The TSR-310 alerts the user if the desired WAP is not included in Crestron's list of recommended WAP brands. The TSR-310 has been tested and verified to work with the following WAP brands:

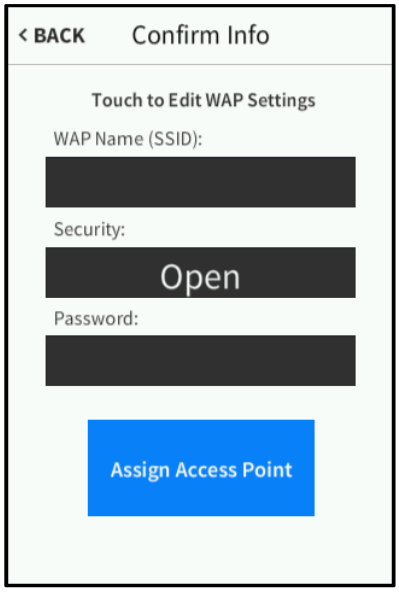
- Aruba Networks® access points
- Cisco® access points
- Crestron access points
- Luxul access points
- Pakedge® access points
- Ruckus® access points
- Ubiquiti® access points

To set up a Wi-Fi network connection:

NOTE: If the desired WAP is already listed, tap the access point, tap **Connect**, and then proceed to step 9 in the following procedure.

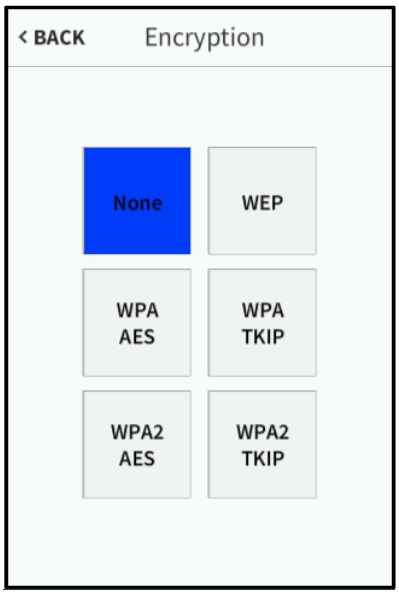
1. Tap **Add new** in the list of WAPs.
2. Tap **Connect**. The **Confirm Info** screen is displayed.

Confirm Info Screen



3. Tap the **WAP Name (SSID)** field.
4. Enter the name of the WAP using the on-screen keyboard.
5. Tap **SAVE** to save the access point name or **CANCEL** to discard any changes.
6. Tap the **Security** field on the **Confirm Info** screen. The **Encryption** screen is displayed.

Encryption Screen

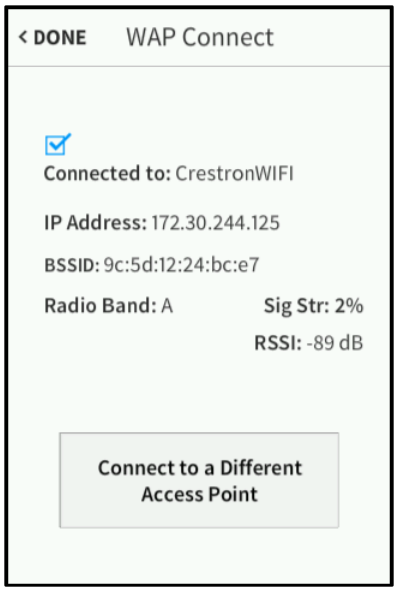


7. Tap the appropriate type of encryption used by the access point.
8. Tap **< BACK**.
9. Tap the **Password** field on the **Confirm Info** screen.
10. Enter the access point connection password using the on-screen keyboard.
11. Tap **SAVE** to save the password or **CANCEL** to discard any changes.
12. Tap **Assign Access Point** on the **Confirm Info** screen once all access point information is entered. The **WAP Connect** screen is displayed.

WAP Connect Screen

If the WAP connection is successful, the **WAP Connect** screen indicates that the connection is active.

WAP Connect Screen - Connected



NOTE: If four WAPs have already been assigned, the **WAP Connect** screen indicates that the preferred WAP list is full. Tap **Delete an access point?** to display the **Manage WAPs** screen, where an existing WAP may be deleted, or tap **< DONE** to cancel adding the new WAP. For more information, refer to "Manage WAPs" on the next page.

Tap **< DONE** to return to the **Wireless Setup** screen.

Manage WAPs

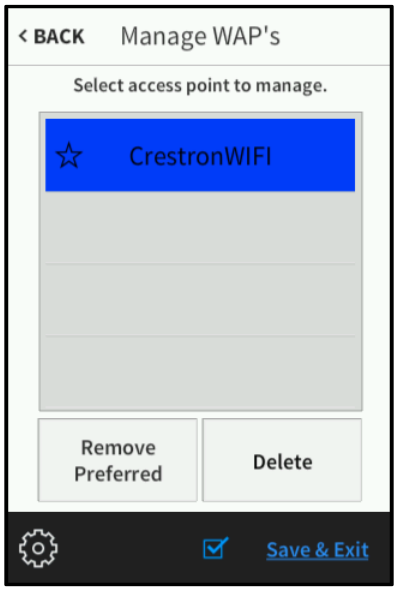
On the **Wireless Settings** screen, tap **Manage WAPs** to display the **Manage WAPs** screen.

Manage WAPs Screen

Use the **Manage WAPs** screen to manage settings for up to four saved WAPs. Tap one of the listed WAPs to display buttons for managing the selected WAP.

NOTE: For most applications, Crestron does not recommend using more than one saved WAP at any given time.

Manage WAPs Screen - WAP Selected



- Tap **Set as Preferred** to set the selected WAP as the preferred WAP. Tap **Remove Preferred** to remove the selected WAP as preferred.

  NOTES:

  - The TSR-310 attempts to establish a connection to the preferred WAP by default.
  - A star icon displays to the left of the preferred WAP on the **Manage WAPs** screen to indicate that the WAP is selected as preferred.

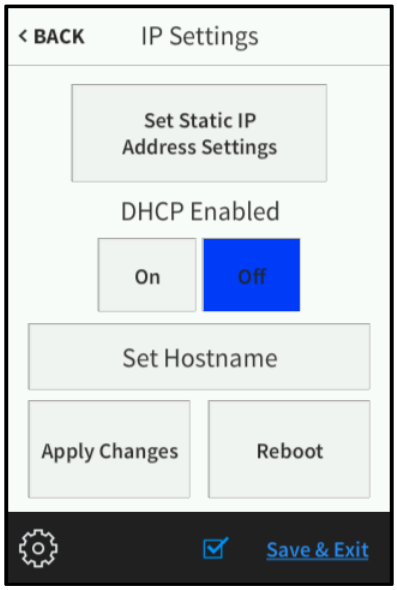
- Tap **Delete** to delete the selected WAP. If a WAP is deleted, it must be added back to the list using the procedures described in "Select an Access Point" on page 8.

Tap **< BACK** to return to the **Wireless Setup** screen.

IP Settings

On the **Wireless Settings** screen, tap **IP Settings** to display the **IP Settings** screen.

IP Settings Screen



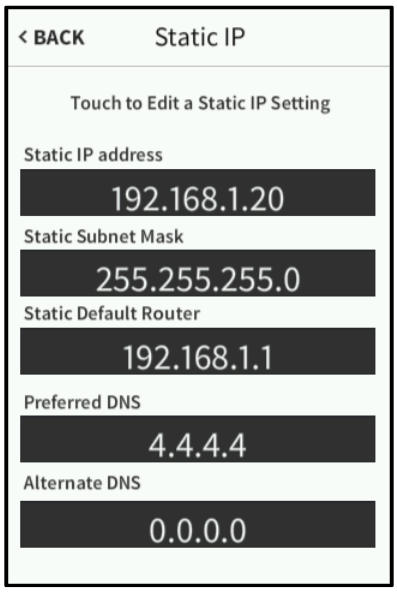
Use the **IP Settings** screen to configure IP, DHCP (dynamic host configuration protocol), and hostname settings for the TSR-310.

DHCP may be enabled or disabled by tapping **On** or **Off** under **DHCP Enabled**. When DHCP is disabled, the **Set Static IP Address Settings** button is used to configure static IP address settings.

NOTE: DHCP is enabled by default.

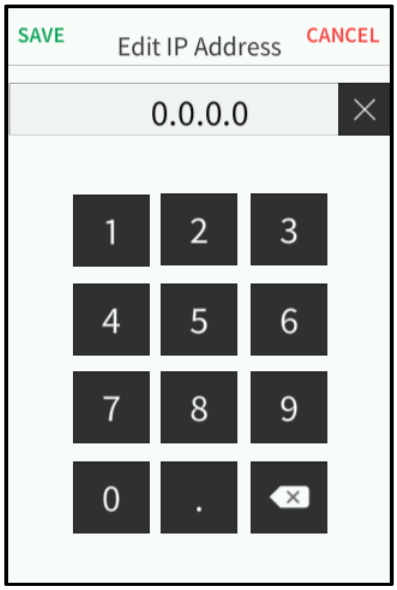
To change a static IP address, tap **Off** under **DHCP Enabled**, and then tap **Set Static IP Address Settings** to display the **Static IP** screen.

Static IP Screen



To edit the static IP address, the static subnet mask address, the default router address, and the preferred and alternate DNS addresses, tap the text field underneath the setting name. An on-screen keypad is displayed.

Edit IP Address On-Screen Keypad



- Use the keypad to make the new entry.
- Tap the clear button ⊗ in the text field to clear any previous entry.
- Tap the delete button ⌫ to delete the last digit.
- Tap **Save** to save a new entry or tap **Cancel** to discard any changes. The display returns to the **Static IP** screen.

On the **Static IP** screen, tap **< BACK** to return to the **IP Settings** screen.

On the **IP Settings** screen, tap **Set Hostname** to enter the TSR-310 hostname.

IP Settings Screen - Enter Hostname

Tap the text field underneath **Enter Hostname** to display a keyboard. Enter the hostname using the keyboard, and then tap **Save** to save the new hostname or **Cancel** to cancel editing the hostname. The display returns to the **IP Settings** screen.

After new settings have been saved, tap **Apply Changes** on the **IP Settings** screen to apply the new settings and to stay in setup mode. Tap **Reboot** to exit setup mode and to reboot the TSR-310.

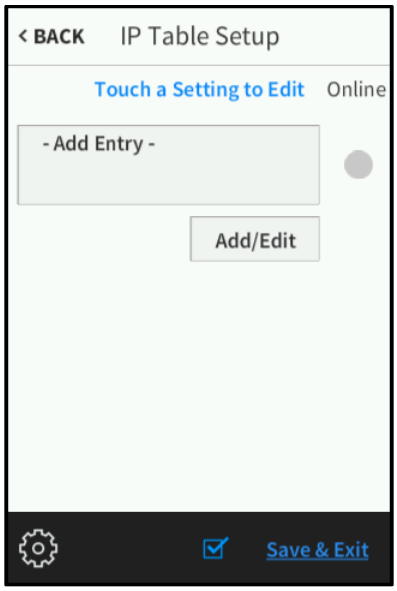
Tap **< BACK** to return to the main setup screen.

IP Table Setup

On the setup screen, tap **IP Table Setup** to display the **IP Table Setup** screen.

NOTE: IP table setup is not required if the TSR-310 is in Performance UI mode.

IP Table Setup Screen



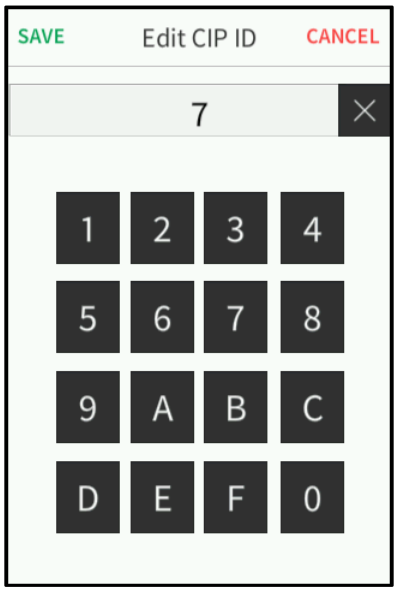
Use the **IP Table Setup** screen to view and edit the IP table settings for connecting the TSR-310 to a control system. The **IP Table Setup** screen also provides an **Online** indicator for the IP table entry. (Green indicates that the control system is online.)

To add or edit an entry, tap **Add/Edit**. The **Edit IP Table Setup** screen is displayed,

Edit IP Table Setup Screen

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

Edit CIP IP On-Screen Hex Keypad



- Use the keypad to make the new entry.
- Tap the clear button ⊗ in the text field to clear any previous entry.
- Tap **SAVE** to save a new entry or tap **CANCEL** to discard any changes. The display returns to the **Edit IP Table Setup** screen.

On the **IP Table Setup** screen, tap the **IP Address / Hostname** text field to display an on-screen keyboard.

NOTE: Depending on the network configuration, using a static IP address may yield slightly faster connections when the remote wakes.

- Use the keypad to make the new entry.
- Tap the clear button ⊗ in the text field to clear any previous entry.
- Tap the delete button ⌫ to delete the last digit.
- Tap **SAVE** to save a new entry or tap **CANCEL** to discard any changes. The display returns to the **Edit IP Table Setup** screen.

On the **Edit IP Table Setup** screen, tap **Save** to save the current entry or **Delete** to clear the entry. If no changes are made, tap **< BACK** to return to the **IP Table Setup** screen.

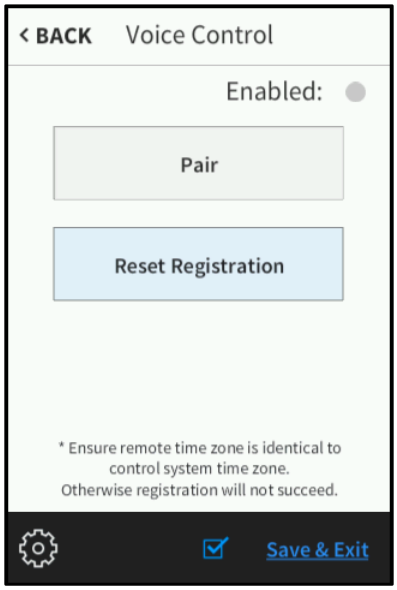
Tap **< BACK** again to return to the main setup screen.

Voice Control

On the setup screen, tap **Voice Control** to display the **Voice Control** screen.

NOTE: The **Voice Control** screen is used to pair the TSR-310 with a voice services provider if a Smart Graphics program has been loaded to the remote. If the TSR-310 is in Performance UI mode, voice control is set up through Performance UI. For more information, refer to the Performance UI for TSR-310 Operations Guide (Doc. 8410)

Voice Control Screen



Use the **Voice Control** screen to enable or disable pairing the TSR-310 with the voice control services provided by an Amazon® software or a Google® software account.

NOTES:

- The TSR-310 must be connected over IP to a control system that has been programmed and registered for voice control services. For more information, refer to "Appendix B: Set Up Voice Control Services," starting on page 49.
- As long as the TSR-310 is connected to a valid WAP and has been registered with a voice control provider, voice control continues to function even if it becomes disconnected from the control system. However, if the TSR-310 is restarted after disconnecting from the control system, voice control no longer functions.
- Once the TSR-310 is paired with a voice services provider, the TSR-310 shows as paired even if it is no longer connected to the control system. To register the TSR-310 with a different control system, either unpair the TSR-310 prior to modifying the IP table configuration, or reset the existing registration if the IP table configuration has already been modified.

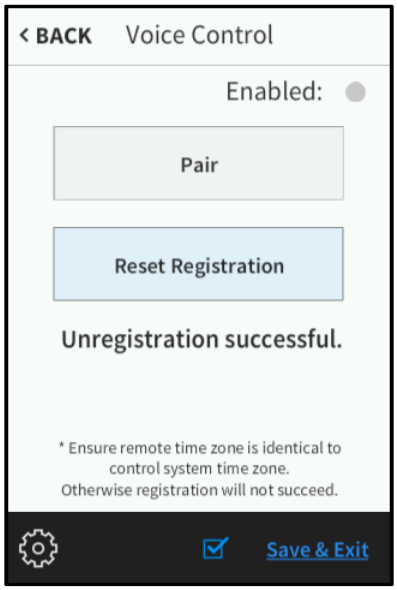
Tap **Pair** to pair the TSR-310 with the voice control provider. If the registration is successful, a "Registration successful" message displays, and the **Enabled** indicator on the top right of the screen turns green.

Voice Control Screen - Registration Successful

NOTE: If a registration error displays, ensure that the TSR-310 is connected to the control system over IP, the control system is connected to the voice services provider, the voice registration program is running and has been programmed correctly, and the time zone has been set correctly. For more information, refer to "Appendix B: Set Up Voice Control Services," starting on page 49.

If voice services are enabled, tap **Unpair** to unpair the TSR-310 from the voice control provider. An "Unregistration successful" message displays if the unpair is successful.

Voice Control Screen - Unregistration Successful



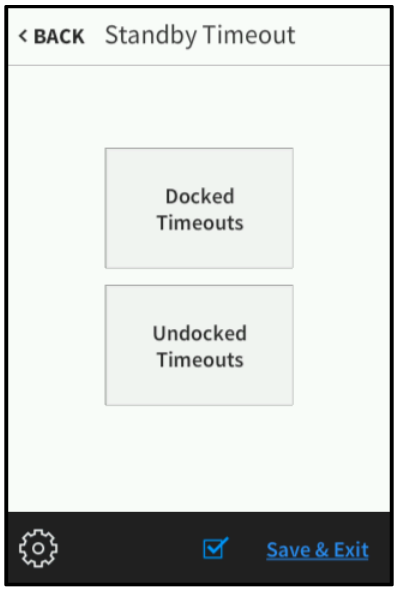
Tap **Reset Registration** to force the TSR-310 to clear all local registration information. Use this function only if the TSR-310 is unable to register or unregister successfully.

Tap **< BACK** again to return to the main setup screen.

Standby Timeout

On the setup screen, tap **Timeouts** to display the **Standby Timeout** screen.

Standby Timeout Screen



Use the **Standby Timeout** screen to set the standby timeout settings for the TSR-310.

Tap **Docked Timeouts** to display the **Docked Timeout** screen.

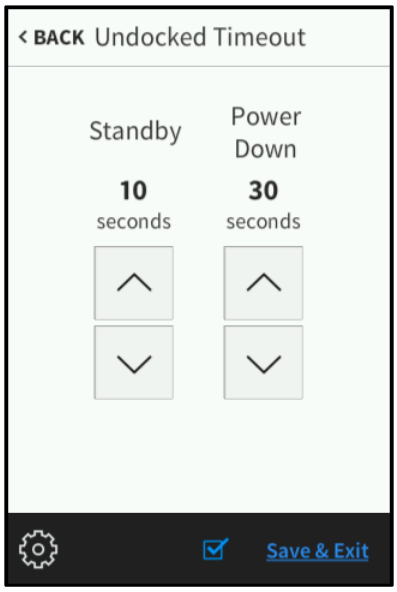
Docked Timeout Screen

Tap the up and down arrows to increase or decrease the standby timeout duration when the TSR-310 is docked from 0 to 120 seconds.

Tap **< BACK** to return to the **Standby Timeout** screen.

On the **Standby Timeout** screen, tap **Undocked Timeouts** to display the **Undocked Timeout** screen.

Undocked Timeout Screen



- Tap the up and down arrows under **Standby** to increase or decrease the standby timeout duration when the TSR-310 is not docked from 0 to 120 seconds.
- Tap the up and down arrows under **Power Down** to increase or decrease the duration before the TSR-310 powers down when not docked from 0 to 240 seconds.

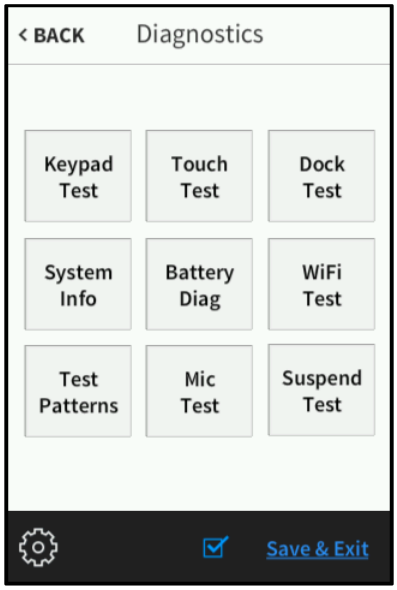
Tap **< BACK** to return to the **Standby Timeout** screen.

Tap **< BACK** again to return to the main setup screen.

Diagnostics

On the setup screen, tap **Diagnostics** to display the **Diagnostics** screen.

Diagnostics Screen



Use the **Diagnostics** screen to access various diagnostic test screens for the TSR-310. Each test screen is described in the sections that follow.

Keypad Test

On the **Diagnostics** screen, tap **Keypad Test** to display the **Keypad Test** screen.

Keypad Test Screen

Use the **Keypad Test** screen to test the functionality of the remote buttons. When one of the buttons is pressed, its respective indicator lights on the screen.

If a button on the lower button pad is pressed, the **Keypad Test** screen switches automatically to display the lower buttons on the screen.

Keypad Test Screen - Lower Buttons

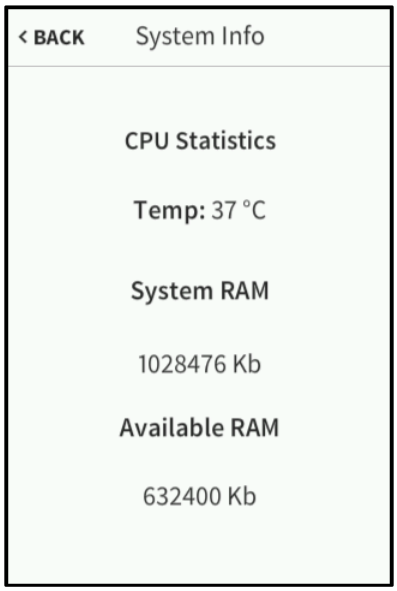
Pressing any of the buttons shown in the first **Keypad Test** screen switches the screen back to displaying the upper buttons.

Tap **< BACK** to return to the **Diagnostics** screen.

System Info

On the **Diagnostics** screen, tap **System Info** to display the **System Info** screen.

System Info Screen



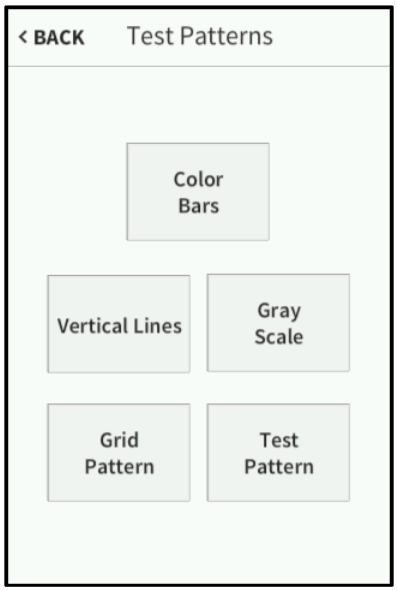
Use the **System Info** screen to view the TSR-310 CPU temperature and available memory.

Tap **< BACK** to return to the **Diagnostics** screen.

Test Patterns

On the **Diagnostics** screen, tap **Test Patterns** to display the **Test Patterns** screen.

System Info Screen



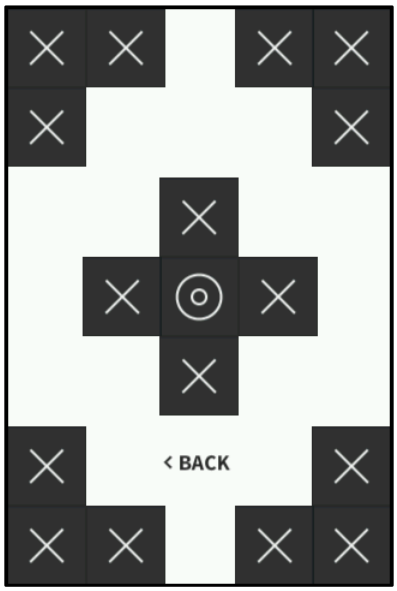
Use the **Test Patterns** screen to display any of the available test patterns. Tap one of the buttons on the screen to load its respective test pattern.

Tap **< BACK** to return to the **Diagnostics** screen.

Touch Test

On the **Diagnostics** screen, tap **Touch Test** to display the touch test screen.

Touch Test Screen



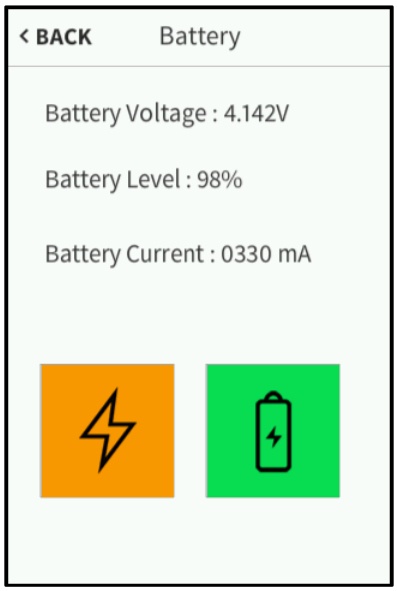
Use the touch test screen to test the touch functionality of the display. When a location button is tapped, its respective indicator lights on the screen.

Tap **< Back** to return to the **Diagnostics** screen.

Battery

On the **Diagnostics** screen, tap **Battery Diag** to display the **Battery** screen.

Battery Screen



Use the **Battery** screen to view the TSR-310 battery voltage, charge, and current levels.

The **Battery** screen also indicates the power source and battery charge behavior as follows:

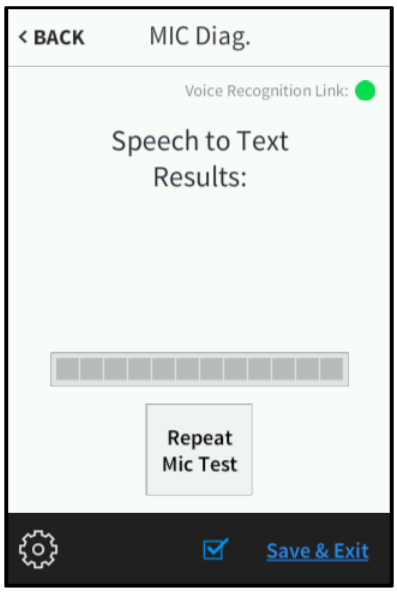
- If the TSR-310 is receiving external power through the dock, an orange lightning bolt icon is shown. If the TSR-310 is receiving power from its battery, a green battery icon is shown.
- If the TSR-310 battery is charging, a green charging battery icon is shown. If the TSR-310 battery is not charging, a white, empty battery icon is shown.

Tap **< BACK** to return to the **Diagnostics** screen.

MIC Diag.

On the **Diagnostics** screen, tap **Mic Test** to display the **MIC Diag.** screen and to begin a microphone test.

MIC Diag. Screen



Use the **MIC Diag.** screen to test the TSR-310 built-in microphone and the voice recognition feature. A **Voice Recognition Link** indicator is also provided to indicate the status of the voice recognition feature. (Green indicates that the feature is active.)

During a microphone test, the TSR-310 microphone records sound until a word or phrase is recognized. The TSR-310 voice recognition service then translates the recorded speech into text and displays the result on the screen.

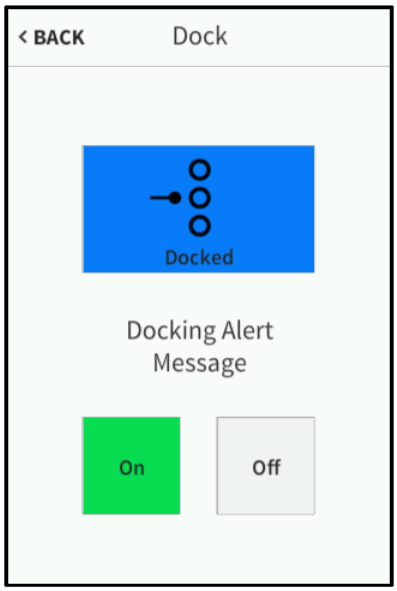
To repeat the microphone test, tap the **Repeat Mic Test** button. The microphone test proceeds as described in the paragraph above.

Tap **< BACK** to return to the **Diagnostics** screen.

Dock

On the **Diagnostics** screen, tap **Dock Test** to display the **Dock** screen.

Dock Screen



Use the **Dock** screen to view the docking status and to configure dock alert message settings.

If the remote is docked, a blue **Docked** icon displays. If the remote is not docked, a white **Not Docked** icon displays.

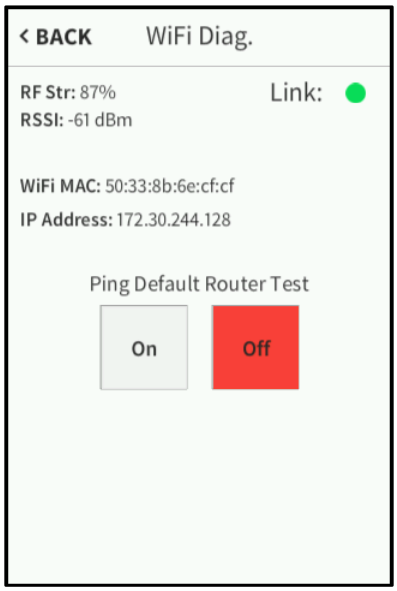
Tap **On** under **Docking Alert Message** to turn on displaying docking message alerts on the TSR-310. Tap **Off** to turn off displaying docking message alerts on the TSR-310.

Tap **< BACK** to return to the **Diagnostics** screen.

Wi-Fi Test

On the **Diagnostics** screen, tap **Wi-Fi Test** to display the **Wi-Fi Diag.** screen.

Wi-Fi Diag. Screen



Use the **Wi-Fi Diag.** screen to view and test the Wi-Fi network connection. The **Wi-Fi Diag.** screen displays the Wi-Fi connection RF strength, RSSI (received signal strength indication), MAC address, and IP address. A **Link** indicator is also provided to indicate the status of the Wi-Fi connection. (Green indicates that the Wi-Fi connection is active.)

The **Wi-Fi Diag.** screen also provides controls to test the connection to the default router. Tap **On** to begin the test and **Off** to end the test.

During the router test, the TSR-310 pings the default router. If the router is communicating with the TSR-310, connection data displays below the ping test controls within five seconds. The connection data updates after every successive ping.

Tap **< BACK** to return to the **Diagnostics** screen.

Suspend Test

On the **Diagnostics** screen, tap **Suspend Test** to begin a suspend test.

Suspend Test Screen

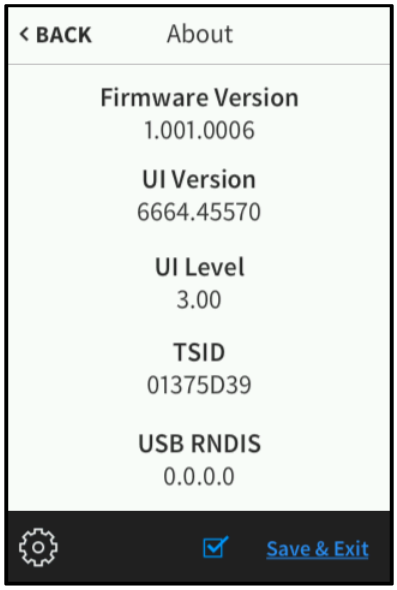
During a suspend test, the TSR-310 enters suspend mode. To exit suspend mode, pick up the TSR-310, tap any of the hard buttons, or touch the LCD display. The TSR-310 wakes and returns to the **Diagnostics** screen.

On the **Diagnostics** screen, tap **< BACK** to return to the main setup screen.

About

On the setup screen, tap **About** to display the **About** screen.

About Screen



Use the **About** screen to view information about the TSR-310, including the loaded firmware, the operating system versions, and the device RNDIS address (if the TSR-310 is connected to a computer via USB).

Tap **< BACK** to return to the main setup screen.

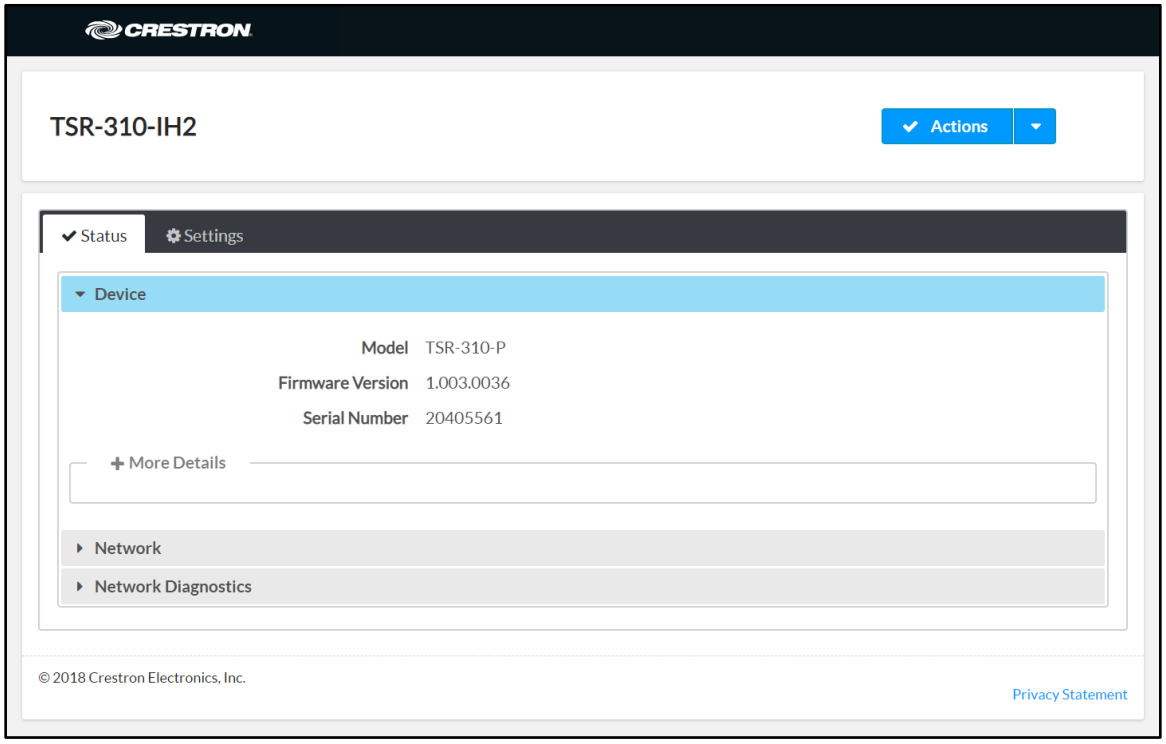
Configuration via Web Interface

The TSR-310 may be monitored and configured using the included web configuration interface. The configuration interface is accessible from a web browser if the TSR-310 IP address is known.

To access the configuration interface:

1. Open a web browser.
2. Enter the TSR-310 IP address into the browser URL field. The configuration interface is displayed.

TSR-310 Configuration Interface



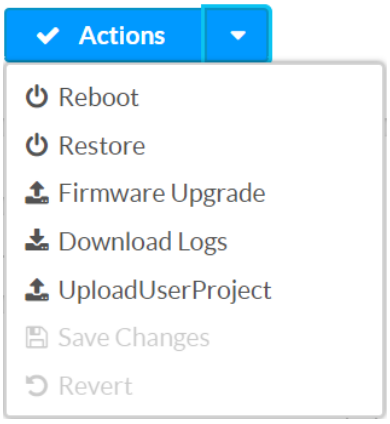
The configuration interface provides a **Status** tab for monitoring device settings and a **Settings** tab for configuring device settings. The device hostname is displayed at the top left of the page.

The **Status** tab is the default tab that loads, as shown in the image above.

Actions Menu

The configuration interface provides an **Actions** drop-down menu on the top right of the page. The **Actions** menu may be accessed at any time.

Actions Menu



Once any changes have been made to the TSR-310 configuration, the **Actions** button changes to a **Save Changes** button. Click **Save Changes** to save changes to the configuration settings.

If a reboot is required after changes have been saved, a dialog box is displayed asking whether the reboot should be performed. Select **Yes** to reboot the device or **No** to cancel the reboot.

The **Actions** menu provides the following selections.

Reboot

Click **Reboot** to reboot the TSR-310.

After **Reboot** is selected, a dialog box is displayed asking whether the TSR-310 should be rebooted. Select **Yes** to reboot the device or **No** to cancel the reboot.

Restore

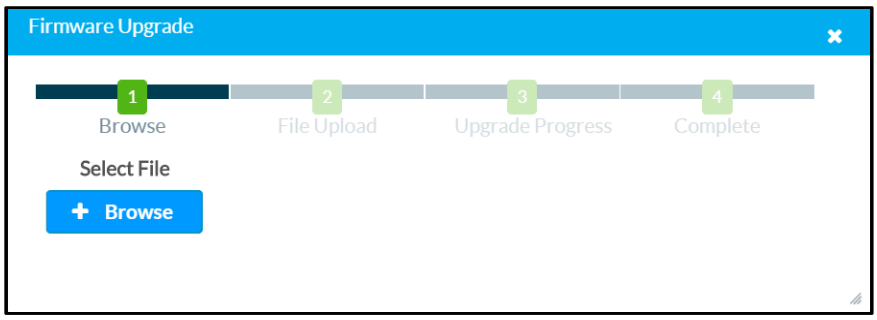
Click **Restore** to restore the TSR-310 configuration settings to their default values.

After **Restore** is selected, a dialog box is displayed asking whether the device settings should be restored. Select **Yes** to restore the settings or **No** to cancel the restore.

Firmware Upgrade

Click **Firmware Upgrade** to upgrade the TSR-310 firmware manually with a downloaded PUF (package update file). The **Firmware Upgrade** dialog box opens.

Firmware Upgrade Dialog Box



To upload a firmware PUF through the web configuration interface:

NOTE: Visit www.crestron.com/firmware to download the latest firmware PUF.

1. Click **Browse**, and then navigate to the firmware PUF on the host computer.
2. Select the firmware PUF, and then click **Open**.
3. Click **Load** to load the PUF to the TSR-310. The upload progress is shown in the dialog box.
4. Once the TSR-310 has completed the firmware upgrade, click **OK**.

Click the **x** button to close the **Firmware Upgrade** dialog box at any time during the upgrade process. Clicking the **x** button before the PUF is uploaded to the TSR-310 cancels the upgrade.

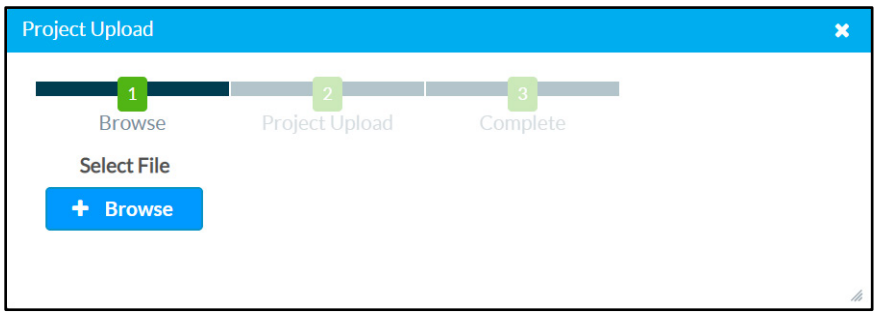
Download Logs

Click **Download Logs** to download the TSR-310 message logs for diagnostic purposes. The message files download as a compressed .tgz file. Once the compressed file is downloaded, extract the message log files to view them.

Project Upload

Click **UploadUserProject** to upload a custom user project to the TSR-310. A **Project Upload** dialog box opens.

Project Upload Dialog Box



NOTE: If the TSR-310 is running in Performance UI mode, uploading a custom user project switches the TSR-310 into user project mode automatically. For more information, refer to the Performance UI for TSR-310 Operations Guide (Doc. 8410).

To upload a custom user project:

1. Click **Browse**, and then navigate to the project .vtz file on the host computer.
2. Select the project .vtz file, and then click **Open**.
3. Click **Load** to load the project .vtz file to the TSR-310. The upload progress is shown in the dialog box.
4. Once the TSR-310 has completed the project upload, click **OK**.

Click the **x** button to close the **Project Upload** dialog box at any time during the upgrade process. Clicking the **x** button before the project file is uploaded to the TSR-310 cancels the upload.

Save Changes

Click **Save Changes** to save any changes made to the configuration settings.

Revert

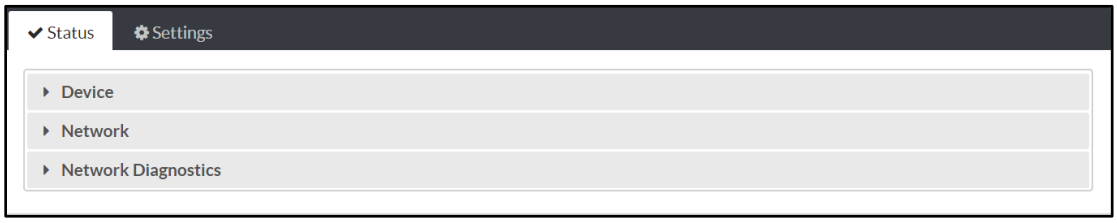
Click **Revert** to revert the TSR-310 back to the last saved configuration settings.

Status

Click the **Status** tab on the top left of the configuration interface to display selections for viewing the status of device, system, and network settings.

Click on a selection name to expand the selection. If the selection is expanded, click the selection name again to collapse the section.

Status Tab Selections

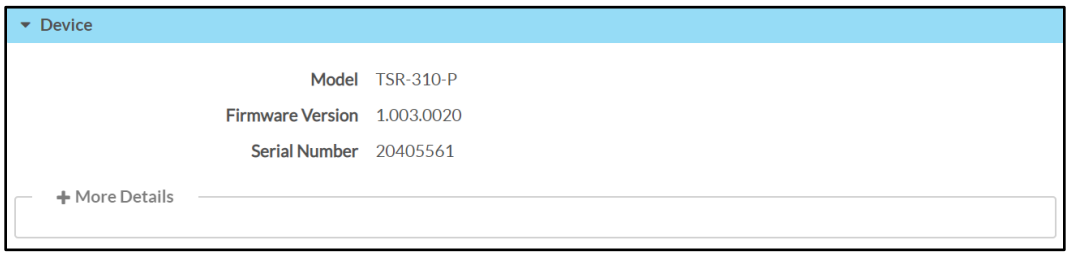


Each selection is described in the sections that follow.

Device

Click **Device** to view device information.

Status Tab - Device



The following **Device** information is displayed:

- **Model:** The TSR-310 model name

  NOTE: If the TSR-310 is in Performance UI mode, the model name reports as "TSR-310-P." If the TSR-310 is not in Performance UI mode, the model name reports as "TSR-310."

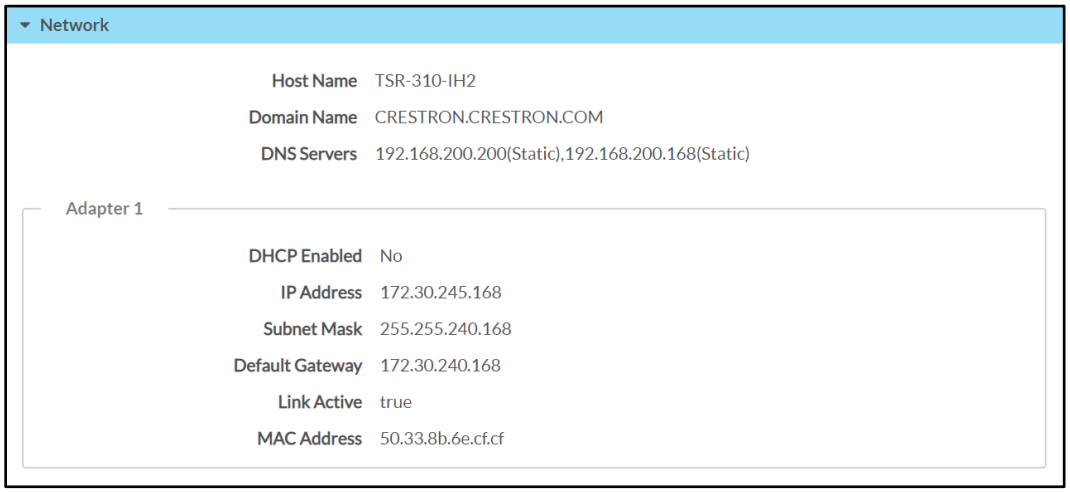
- **Firmware Version:** The firmware version loaded onto the TSR-310
- **Serial Number:** The TSR-310 serial number

Click **+ More details** at the bottom of the **Device** tab to display an expanded section that shows additional TSR-310 information (for Crestron internal use only). If **+ More Details** is selected, click **- Less details** to collapse the section.

Network

Click **Network** to view the status of the network settings for the TSR-310.

Status Tab - Network



The following **Network** information is displayed:

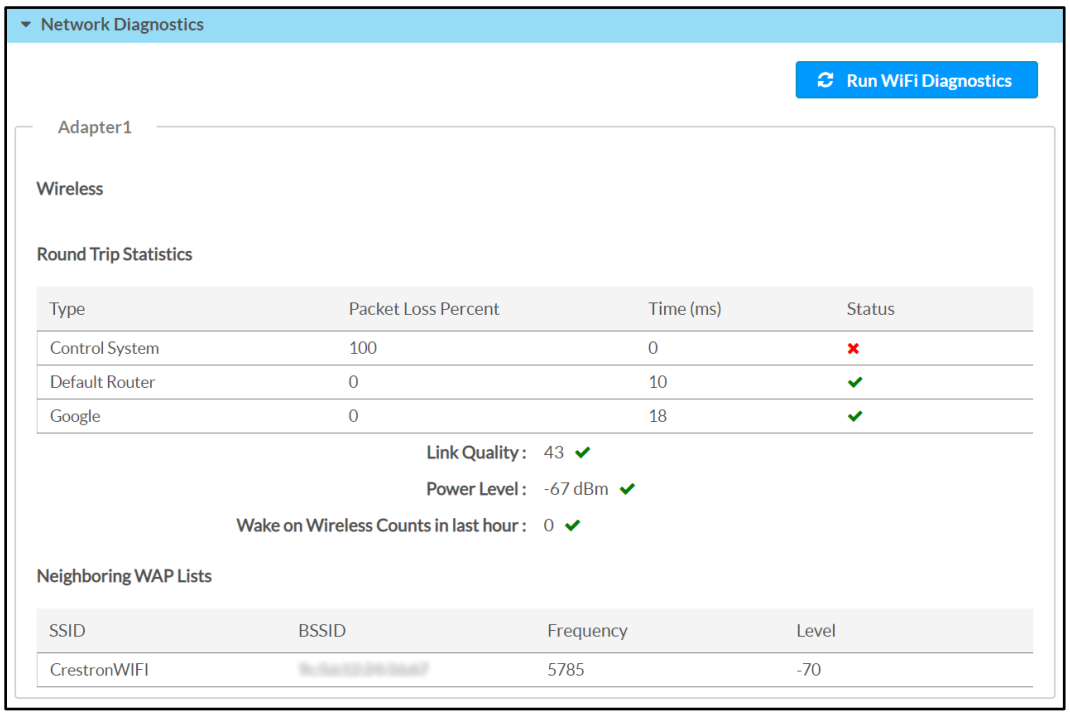
- **Host Name:** The TSR-310 hostname
- **Domain Name:** The TSR-310 domain name
- **DNS Servers:** The DNS (domain name server) addresses used to resolve the TSR-310 domain to an IP address
- **DHCP Enabled:** Reports whether the IP address is static (**Yes**) or dynamic (**No**)
- **IP Address:** The TSR-310 IP address
- **Subnet Mask:** The TSR-310 subnet mask address
- **Default Gateway:** The gateway router address
- **Link Active:** Reports the status of the Ethernet connection (A **true** message indicates that the Ethernet connection is active, while a **false** message indicates that the Ethernet connection is inactive.)
- **MAC Address:** The unique TSR-310 MAC (media access control) address

For more information on configuring network settings, refer to "Network" on page 43.

Network Diagnostics

Click **Network Diagnostics** to view the status of the wireless connection and to run network diagnostic tests.

Status - Network Diagnostics



Click **Run Wi-Fi Diagnostics** at the top of the page to run a diagnostic test for the Wi-Fi connection. Once the diagnostic test has completed, the configuration utility refreshes to display the current values for the connection data.

The following **Network Diagnostics** > **Adapter** > **Wireless** information is displayed:

- **Round Trip Statistics:** The round trip connection statistics for each of the listed wireless connections:
  - Type: The wireless connection type
  - Packet Loss Percent: The percentage of data packets that are lost during the round trip data transmission (0 to 100%)
  - Time (ms): The duration it takes for the wireless signal to be sent and received in milliseconds
  - Status: The quality of the round trip connection (A green check icon ✔ indicates that the connection is optimal, while a red x icon ✖ indicates that the connection is suboptimal or not active.)
- **Link Quality:** The qualitative value of the signal strength and signal interference (A green check icon ✔ indicates that the link quality is optimal, while a red x icon ✖ indicates that the link quality is suboptimal.)

- **Power Level:** The power level of the wireless connection (A green check icon ✔ indicates that the power level is optimal, while a red x icon ✖ indicates that the power level is suboptimal.)
- **Wake on Wireless Counts in last hour:** The number of occurrences where the TSR-310 was woken by the wireless LAN over the last hour (A green check icon ✔ indicates that the number of occurrences is optimal, while a red x icon ✖ indicates that the number of occurrences is suboptimal.)

The following **Network Diagnostics** > **Adapter** > **Neighboring WAP Lists** information is displayed for each neighboring WAP:

- **SSID:** The wireless access point hostname
- **BSSID:** The wireless access point MAC address
- **Frequency:** The frequency of the wireless access point
- **Level:** The power level of the wireless access point

Settings

Click the **Settings** tab on the top left of the configuration interface to display selections for configuring various TSR-310 settings.

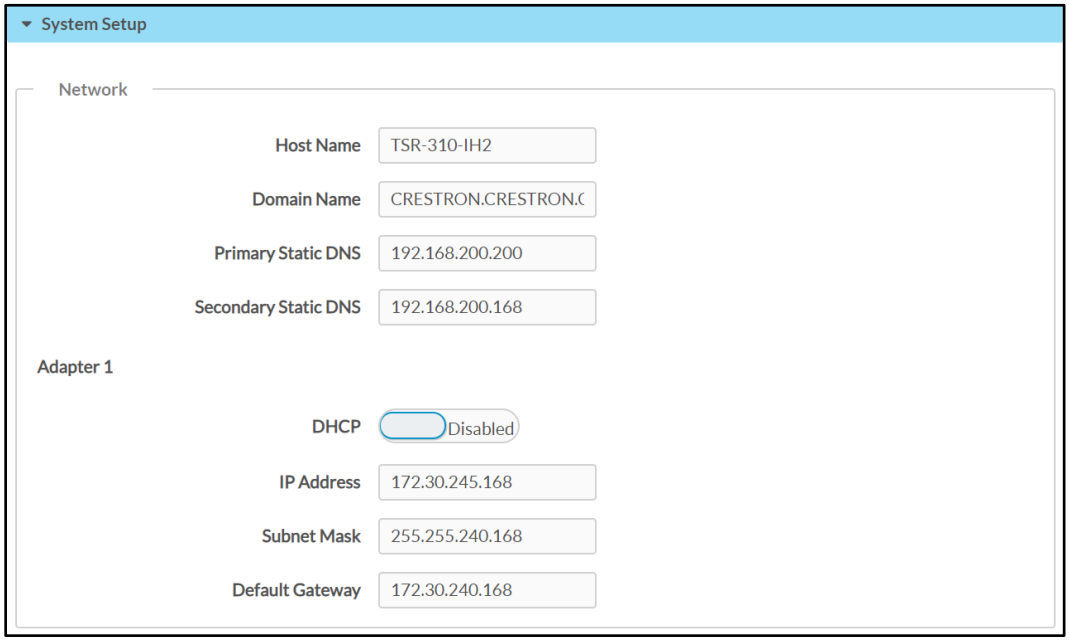
Settings Selections

Each selection is described in the sections that follow.

System Setup

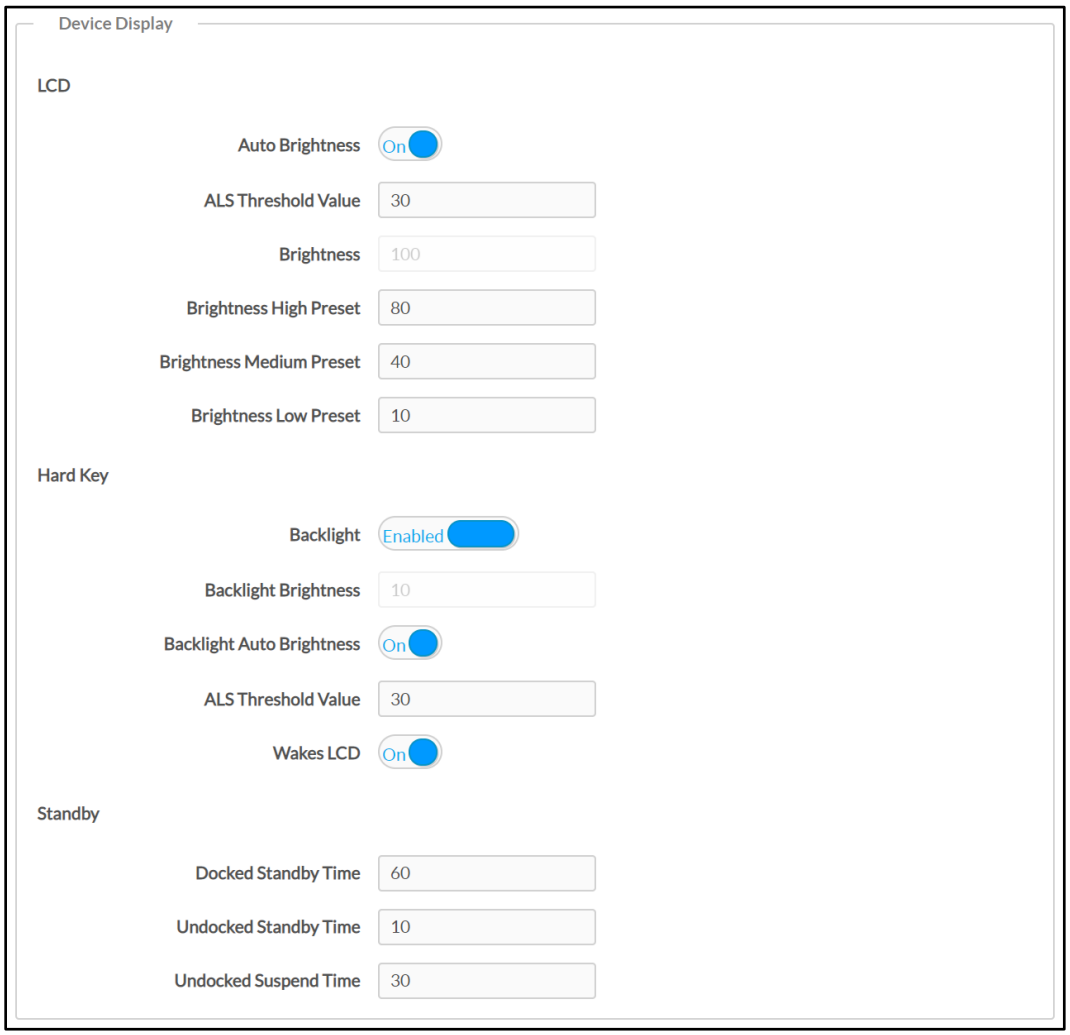
Click **System Settings** to configure general network and TSR-310 settings.

Settings Tab - System Setup



(continued on following page)

Settings Tab - System Setup (continued)



Network

NOTE: The **IP Address**, **Subnet Mask**, and **Default Gateway** fields are required only if DHCP is set to **Disabled**.

- **Host Name:** Enter the TSR-310 hostname.
- **Domain Name:** Enter the fully qualified domain name on the network.
- **Primary Static DNS:** Enter the primary DNS address.
- **Secondary Static DNS:** Enter the secondary DNS address.
- **DHCP:** Toggle the switch to enable or disable using DHCP.

  NOTE: If DHCP is enabled, IP does not function until a reply has been received from the server. The TSR-310 broadcasts requests for an IP address periodically.

- **IP Address:** Enter the TSR-310 IP address on the network.

- **Subnet Mask:** Enter the TSR-310 subnet mask address on the network.
- **Default Gateway:** Enter the gateway router address on the network.

Device Display

- LCD
  - **Auto Brightness:** Toggle the switch to turn automatic brightness control for the TSR-310 LCD display on or off.
  - **ALS Threshold Value:** If **Auto Brightness** is turned on, enter a value (1–100) for the ALS (ambient light sensor) threshold, which is used for switching between high and low auto-brightness presets.
  - **Brightness:** If **Auto Brightness** is turned off, enter a value (1–100) for the LCD display brightness.
  - **Brightness High Preset:** Enter a value (1–100) for the LCD display high brightness preset.
  - **Brightness Medium Preset:** Enter a value (1–100) for the LCD display medium brightness preset.
  - **Brightness Low Preset:** Enter a value (1–100) for the LCD display low brightness preset.
- Hard Key
  - **Backlight:** Toggle the switch to enable or disable the hard button backlight.
  - **Backlight Brightness:** If **Backlight** is enabled, enter a value (1–100) for the button backlight brightness.
  - **Backlight Auto Brightness:** If **Backlight** is enabled, toggle the switch to turn automatic brightness control for the button backlight on or off.
  - **ALS Threshold Value:** If **Backlight** and **Backlight Auto Brightness** are both enabled, enter a value (1–100) for the backlight button ALS threshold, which is used for switching between high and low auto-brightness presets.
  - **Wakes LCD:** Toggle the switch to turn the ability to wake the LCD display by tapping the hard keys on or off.

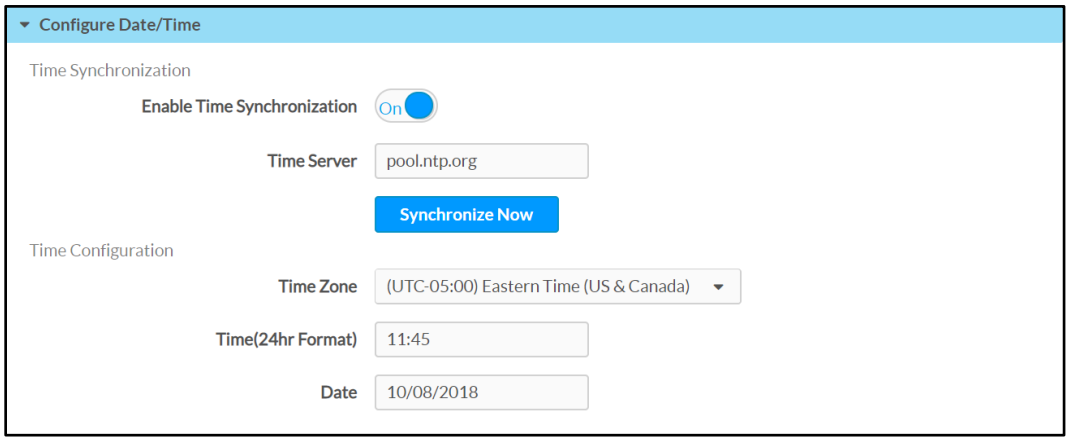
    NOTE: If **Wakes LCD** is set to Off, the LCD wakes only when the power, microphone, or home buttons are pressed. Refer to the illustration on page 4 for button locations.

- **Standby**
  - **Docked Standby Time:** Enter a standby timeout (0–120 seconds) for when the TSR-310 is docked.
  - **Undocked Standby Time:** Enter a standby timeout duration (0–120 seconds) for when the TSR-310 is undocked.
  - **Undocked Suspend Time:** Enter a duration (0–240 seconds) before the TSR-310 enters suspend mode when is it undocked.

Configure Date/Time

Click **Configure Date/Time** to configure date and time settings for the TSR-310.

Settings Tab - Configure Date/Time

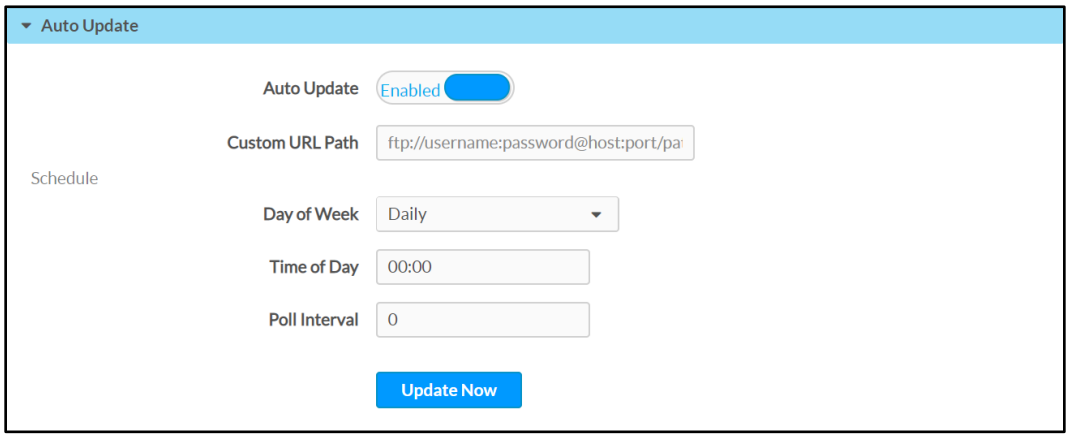


- **Time Synchronization**
  - **Enable Time Synchronization:** Toggle the switch to turn time synchronization via SNTP (Simple Network Time Protocol) on or off.
  - **Time Server:** With **Enable Time Synchronization** set to **On**, enter the SNTP server used to synchronize the date and time for the TSR-310.
  - **Synchronize Now:** With **Enable Time Synchronization** set to **On**, tap **Synchronize Now** to synchronize the TSR-310 with the SNTP server entered for **Time Server**.
- **Time Configuration**
  - **Time Zone:** Select a time zone for the TSR-310 using the drop-down menu.
  - **Time(24hr Format):** Select the time for the TSR-310 (in 24-hour format) using the pop-up menu that is displayed.
  - **Date:** Select the date for the TSR-310 using the pop-up calendar that is displayed.

Auto Update

Click **Auto Update** to configure automatic firmware updates for the TSR-310.

Settings Tab - Auto Update



- **Auto Update:** Toggle the switch to enable or disable automatic firmware updates.

  When **Auto Update** is enabled, the TSR-310 connects to a secure Crestron file server to check for new firmware at the scheduled day and time. If new firmware is available, the TSR-310 attempts to download and install the firmware.

- **Custom URL Path:** Enter a custom file transfer server URL for downloading firmware updates.

- **Day of Week:** Use the drop-down menu to select the day of the week when the TSR-310 checks for new firmware. Select **Daily** to check for firmware every day.

- **Time of Day:** Enter the time (in 24-hour format) when the TSR-310 checks for new firmware.

- **Poll Interval:** Enter the duration (in minutes) that the TSR-310 waits to poll the network for firmware updates if the updates are not pushed to the device.

Click **Update Now** to check the file server for new firmware and to update the TSR-310 immediately if new firmware is available.

Appendix A: Load Firmware via USB

Firmware updates require a wired or wireless connection to Crestron Toolbox™ software.

NOTE: Visit www.crestron.com/firmware to download the latest firmware PUF file.

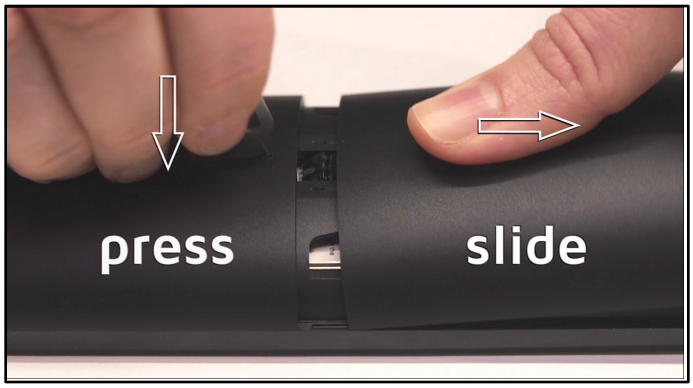
- If the TSR-310 battery level is over 40%, firmware updates may be applied while the remote is off the charging dock.
- If the TSR-310 battery level is under 40%, the TSR-310 must be placed on the charging dock prior to applying firmware updates.

To update the firmware over a wired connection, use the micro USB port located inside the TSR-310 battery compartment. Refer to the following procedure.

NOTE: The micro USB port is accessible only when the remote is undocked.

1. Place the TSR-310 on a clean, soft surface with the screen side facing down. Use care to avoid scratching the front surface of the TSR-310.
2. Align the t-pin tool (included with the TSR-310) with the small hole on the rear of the TSR-310.
3. Slide the battery cover away from the TSR-310 while pressing the t-pin down and into the hole.

Removing the Battery Cover



4. Lift the battery cover up and off the TSR-310.
5. Connect the micro USB connector of a USB A to USB Micro B cable (not included) to the micro USB port inside of the battery compartment, and connect the USB A connector to a computer running Crestron Toolbox.
6. Perform the firmware update using the Package Update Tool in Crestron Toolbox. For more information on using the Package Update Tool, refer to the embedded Crestron Toolbox help file.
7. Once the firmware update has completed, remove the cable from the micro USB port inside the battery compartment.

8. Lower the battery cover onto the remote so that the two tabs inside the battery cover engage the two slots on either side of the battery compartment.
9. Slide the battery cover up and into the remote until the cover snaps into place.

Appendix B: Set Up Voice Control Services

Prior to registering the TSR-310 with a voice control services provider, the TSR-310 must be connected to a Crestron control system that has been registered with the provider via custom programming.

NOTE: The procedures in the appendix are required only if a Smart Graphics program has been loaded to the remote. If the TSR-310 is in Performance UI mode, no custom programming is necessary to activate voice control services. For more information, refer to the Performance UI for TSR-310 Operations Guide (Doc. 8410)

To register the control system with a voice control services provider:

1. Configure the time zone on the TSR-310 to match the control system.
   a. Open the **Text Console** tool, and establish a connection to the control system.
   b. Issue the `timezone` command, and note the time zone that is reported for the control system.
   c. Establish a connection to the TSR-310 web configuration interface.
   d. Navigate to **Settings** > **Configure Date/Time**.
   e. Use the **Time Zone** drop-down menu to select the time zone that correlates with the time zone that is reported by the control system.
   f. Issue the `sntp sync` command to the control system to sync the control system with the SNTP server.
   g. Verify that the time shown in the TSR-310 web configuration interface matches the time reported by the control system.
   h. Reboot the TSR-310 to start the remote in the updated time zone.
2. Create a new voice registration program for the control system in SIMPL Windows or Crestron Studio® software.

   NOTE: If the TSR-310 is configured with the Crestron Pyng® OS 2, creating a new voice registration program is not required. Voice control is enabled through the Crestron Pyng system configuration utility. For more information, refer to the Crestron Pyng OS 2 for CP3-R Product Manual (Doc. 8356) at www.crestron.com/manuals.

   a. Add the TSR-310 to an open slot in the control system IP table.
   b. Insert the **TSR-310 Dialog Client** device extender, and then populate all digital and serial signals for the extender.
   c. Add the **Voice Control Registration v1.1.1 (cm)** module to the program **Logic** node, and then populate all signals for the extender.
   d. Drag the **Dialog Client Pairing Verification_fb** serial signal from the dialog client into the **VerificationRequest** signal in the voice registration module.

e. Add the **Make String Permanent** logic symbol to the program's **Logic** node, and drag it ahead of the voice registration module within the node.

f. Drag the **Dialog Cloud URL** serial signal from the dialog client into the **string-i1$** signal in the **Make String Permanent** symbol, and enter "255" in the **PermanentStringSize** field.

g. Add the **Analog Buffer** logic symbol to the program **Logic** node.

   i. Enter "1" as the enable signal.

   ii. Drag the **DialogServiceURL** signal from the voice registration module into the **ain1** signal in the analog buffer.

   iii. Drag the **Dialog Cloud URL** serial signal from the dialog client into the **aout1** signal in the analog buffer.

h. If adding voice-controlled rooms to the program, add **Voice Control Room v1.3.2 (cm)** modules for each room that requires voice control, and then populate or adjust any programming signals as needed.

i. Save and compile the program, and then upload it to the appropriate program slot in the control system.

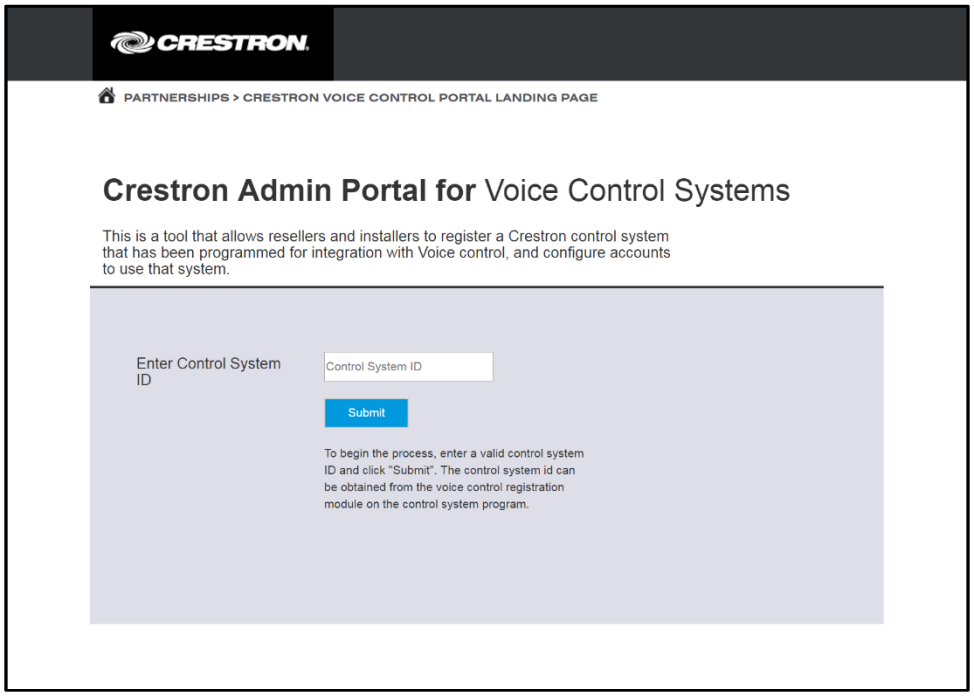
3. Open the appropriate control system registration portal in a web browser.

   a. Navigate to https://voicereg-a-na.crestron.io for Amazon accounts in the North America region.

   b. Navigate to https://voicereg-g-na.crestron.io for Google accounts in the North America region.

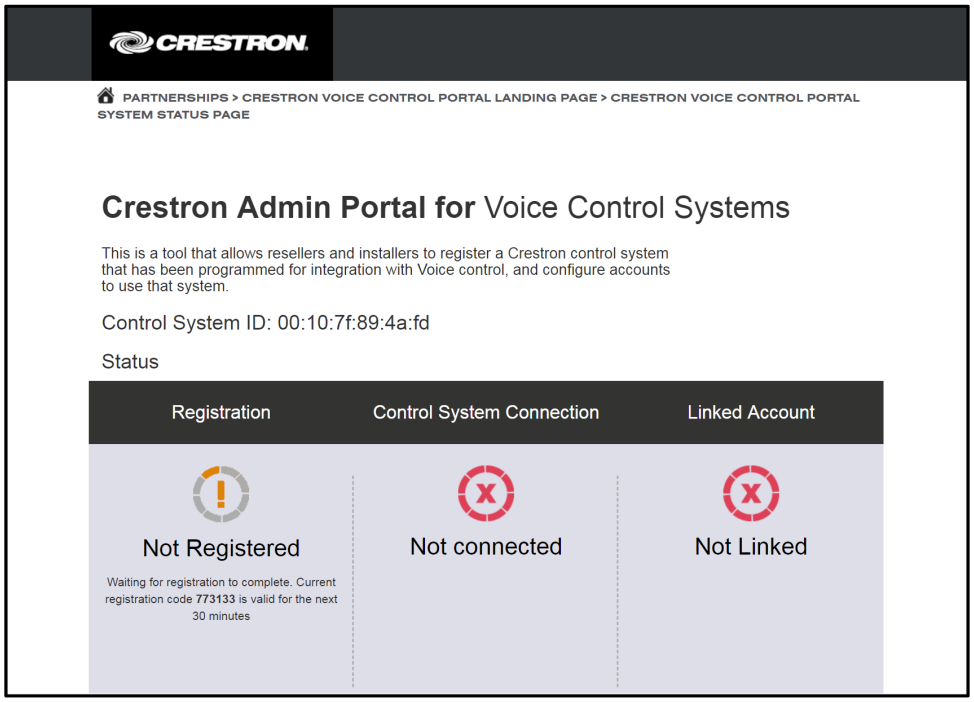
4. Enter the control system MAC address in the **Enter Control System ID** text field, and tap **Submit**.

Crestron Admin Portal - Enter Control System ID



5. Click **Register** at the bottom of the **Registration** column to display a six-digit registration code. Record the code for later use.

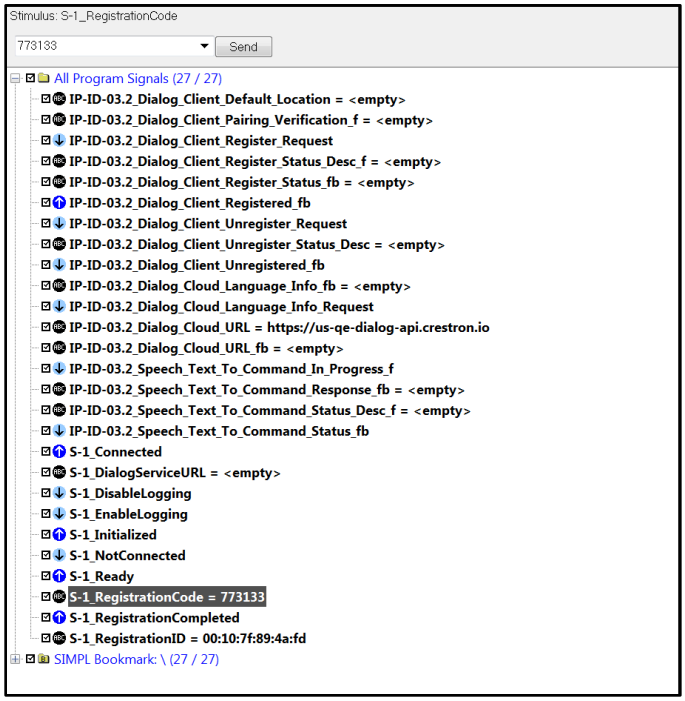
Crestron Admin Portal - Status (Not Registered)



6. Open the **SIMPL Debugger** tool in Crestron Toolbox software.

7. Select the **RegistrationCode** signal from the registration program.
8. Enter the six-digit registration code as a stimulus for the signal, and click **Send**.

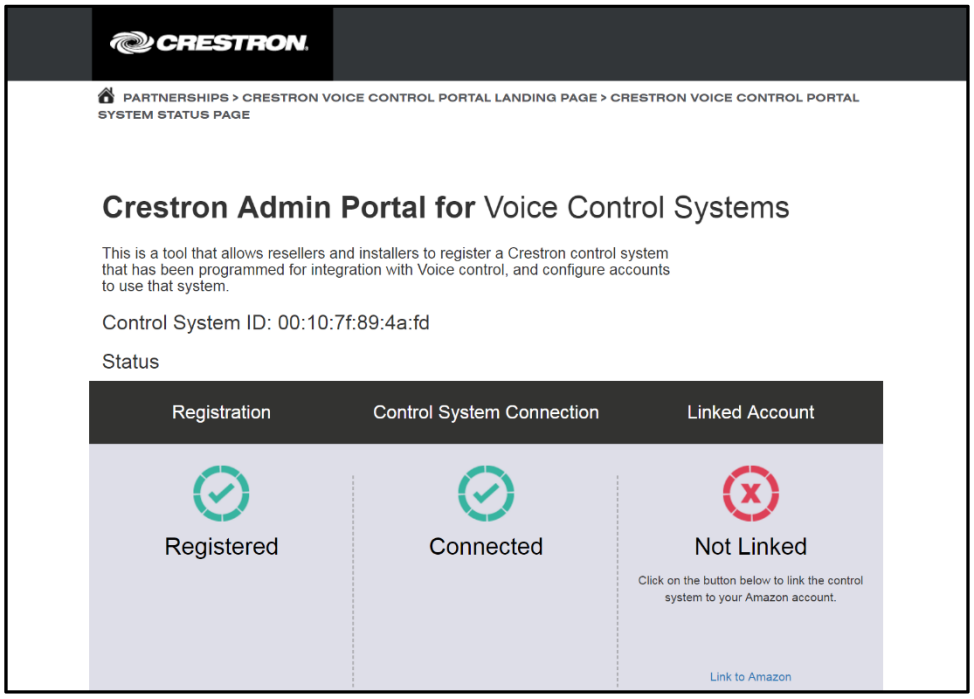
SIMPL Debugger - RegistrationCode



9. Return to the control system registration portal, and click the link at the bottom of the **Linked Account** column to register the control system with the chosen voice services provider.

   The page for registering with an Amazon account is shown below.

Crestron Admin Portal - Status (Connected)



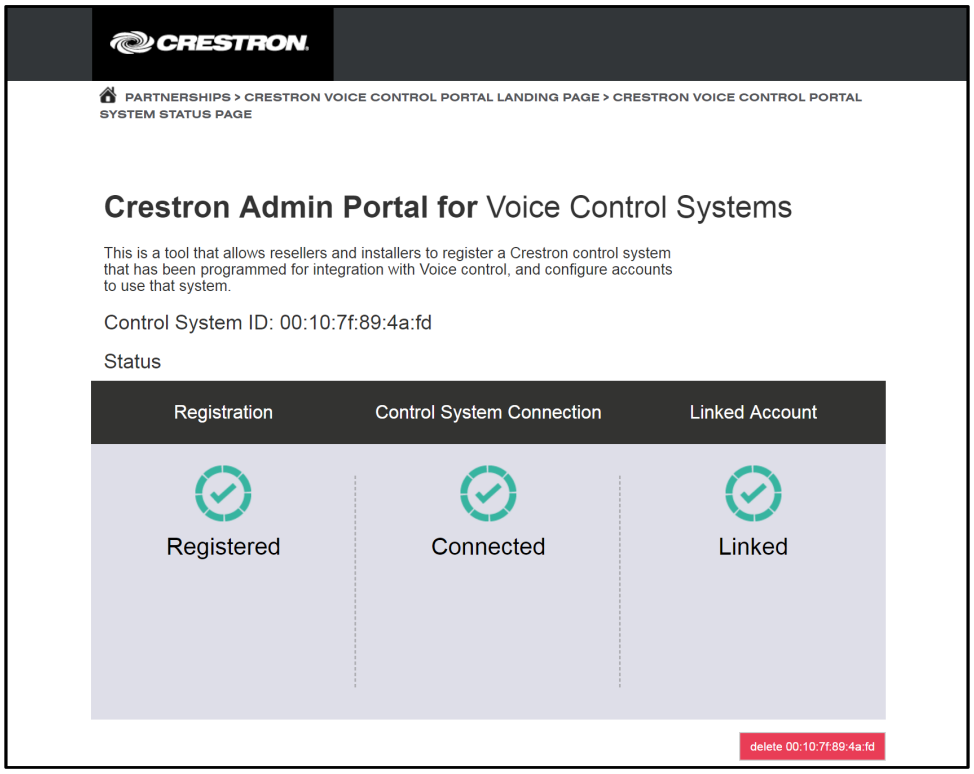
10. A pop-up window displays with a privacy statement. Click **Agree** to agree to the terms of the statement or **Cancel** to cancel linking the voice services provider.
11. Complete the additional registration steps for the chosen voice services provider.

NOTES:

- If the control system is registered with an Amazon account, a dialog box is displayed asking whether the linked account is for a smart home or for an Alexa for Business (AWS) account. Tap **Smart Home** (Alexa for Business accounts are not supported by the TSR-310.)
- If an Amazon Alexa™ device will be used in addition to the TSR-310, register the control system with an Amazon account. If a Google Assistant device will be used in addition to the TSR-310, register the control system with a Google account.

If the registration process is successful, the **Linked Account** status changes to **Linked**.

Crestron Admin Portal - Status (Linked)



NOTES:

- To unregister the control system from the voice services provider, tap the red button at the bottom right of the page. The registration process must be completed again to reregister the control system with the voice services provider.
- The control system must be unregistered from the same registration portal (Amazon or Google) that was used to register the control system.
- If the control system is restored after it has been registered, voice control does not work on the TSR-310 unless the control system is unregistered from the voice services provider and then reregistered.

12. Use the TSR-310 setup pages or web configuration utility to enter the IP address or hostname of the control system linked to the voice service provider, and enter the IP ID assigned to the TSR-310 in the voice registration program.
13. Navigate to **Voice Control** in the TSR-310 setup screens.
14. Tap **Pair** to pair the TSR-310 with the voice control provider. If the registration is successful, a "Registration successful" message displays, and the **Enabled** indicator on the top right of the screen turns green.

Voice Control Screen - Registration Successful

NOTE: If a registration error displays, ensure that the TSR-310 is connected to the control system over IP, that the control system is connected to the voice services provider, that the voice registration program is running and has been programmed correctly, and that the time zone has been set correctly.

Crestron Electronics, Inc.
15 Volvo Drive, Rockleigh, NJ 07647
Tel: 888.CRESTRON
Fax: 201.767.7576
www.crestron.com

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