



Savant Button Remote Deployment Guide

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This document describes the process for installing and configuring a Savant Button Remote (RTR-1000-xx) and associated SmartControl 3 with IR Learning (SSC-W103I) controller for use with an existing Savant system.

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Important Safety Information - Read First

Before installing, configuring, or operating any equipment and other, Savant recommends that each dealer, integrator, installer, etc. access and read all the relevant technical documentation. Savant technical documentation can be located by visiting Savant.com. Vendor documentation is supplied with the equipment.

Read and understand all safety instructions, cautions, and warnings in this document and the labels on the equipment.

Safety Classifications In this Document

NOTE:	Provides special information for installing, configuring, and operating the equipment.
 IMPORTANT!	Provides special information that is critical to installing, configuring, and operating the equipment.
 CAUTION!	Provides special information for avoiding situations that may cause damage to equipment.
 WARNING!	Provides special information for avoiding situations that may cause physical danger to the installer, end user, etc.

Electric Shock Prevention

 **ELECTRIC SHOCK!** The source power poses an electric shock hazard that has the potential to cause serious injury to installers and end users.

 **ELECTRICAL DISCONNECT:** The source power outlet and power supply input power sockets should be easily accessible to disconnect power in the event of an electrical hazard or malfunction.

Weight Injury Prevention

 **WEIGHT INJURY!** Installing some of the Savant equipment requires two installers to ensure safe handling during installation. Failure to use two installers may result in injury.

Safety Statements

All safety instructions below should be read, understood, and applied under all relevant circumstances when working with this equipment.

1. Follow all input power ratings marked on product near power input!
2. If fuse replacement is required, replacement fuse should match fuse rating marked on the product.
3. Do not use equipment near water.
4. Clean only with dry cloth.
5. Do not block any ventilation openings or install near any heat sources such as heat registers, stoves, radiators, amplifiers, etc.
6. Refer all servicing to qualified service personnel. Servicing is required when any part of the apparatus has been damaged in any way, or fails to operate normally for any reason.
7. Use only attachments/accessories specified by the manufacturer, following all relevant safety precautions for any such attachments/accessories.
8. For applicable equipment, use the included power cord with the grounding prong intact to insure proper grounding of the device.
9. If the provided plug does not fit the desired outlet, contact a licensed electrician to replace the obsolete outlet.
10. Protect any power cord from being walked on, pinched, strained, or otherwise potentially damaged, especially at the outlet or device connections.
11. Disconnect any outlet powered apparatus from its power source during lightning storms or when unused for long periods of time.
12. To completely disconnect equipment from AC mains power, disconnect the power supply cord plug from the AC receptacle on the device.
13. For any hardwired or fixed in-wall apparatus, carefully follow all wiring diagrams and instructions. All electrical wiring and servicing should be performed by a properly licensed electrician.

1. Introduction

The Savant Button Remote product (REM-0300RF) includes a Savant Button Remote (RTR-1000-xx) and a SmartControl 3 with IR Learning Controller (SSC-W103I-00). The controller receives RF commands from the remote and transmits those commands over a twisted pair wire to devices such as a TV or similar. Use this guide to install and configure both the remote and controller into a Savant System.

Before You Begin

Read through this document in its entirety and ensure that the following required items are available:

- Savant Control System running da Vinci 8.8 or higher.....
 - Wi-Fi IR Learning Controller with 3 IR Outputs (SSC-W103I-00).....
 - Button Remote (RTR-1000-06).....
 - Unique ID (UID) for both the remote and controller
 - Ethernet network meeting Savant requirements.....
- See [Appendix C: Network Requirements](#)

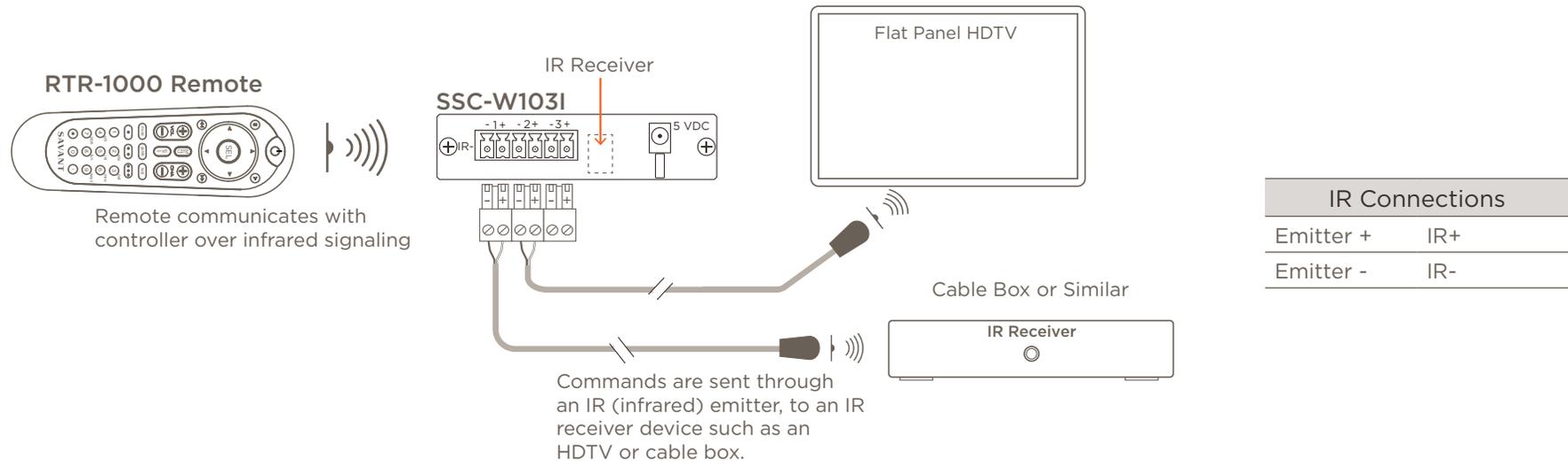
2. Deployment Steps

Follow the steps below to successfully deploy the Savant Button Remote. Use this page as a checklist to record which steps are complete.

1. Review the Overview section
See [Overview](#)
2. Mount the Controller.....
See the [Mount SSC-W103I Controller](#) section.
3. Provision Controller to Network.....
See the [Provision the SSC-W103I Controller](#) section.
4. Pair the Remote with the Controller
See the [Pair the Remote to Controller](#) section.
5. Add Remote to a Blueprint Configuration.....
See the [Blueprint Configuration](#) section.
6. OPTIONAL: Program the Custom Buttons on Remote.....
See the [Program Custom Buttons](#) section.
7. Upload Blueprint Configuration to the Host.....
See the [Upload Blueprint Configuration](#) section

3. Overview

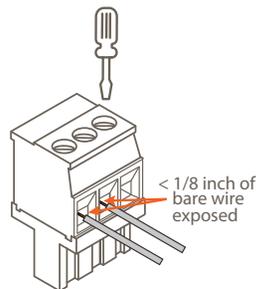
The diagram below shows how the devices in the REM-0300RF button remote system operate. Use the diagram below when making the initial connections.



Making Connections

When making the connections to the 6-pin screw down connector, follow the guidelines set below to ensure a safe and secure connection.

1. With a small slotted screwdriver, turn the screws on the connector counterclockwise (CCW) until the silver crimps open enough to slide a wire into the square slots.
2. Strip back insulation on each wire to 1/4 inch and insert the stripped wire into the proper connection.
3. Turn the screw clockwise (CW) until the crimps tighten around each wire. Tug on each wire a bit to verify they are secure.



HELPFUL INFO

- The IR emitter should be mounted 15 feet (4.6 meters) or less from the controlled equipment.
- Savant does not recommend the use of third party flashing emitters with TalkBack. These types of transmitters can draw voltage away from the IR signal and degrade the IR performance.
- One remote per controller is supported.
- When connecting an IRB-1006-xx infrared emitter cable available from Savant, the connections are as follows:
 - black/white = IR+
 - black = IR-

4. Mount SSC-W103I Controller

Follow the instructions below when mounting the controller, and ensure the following requirements are met:

- The IR emitter must be positioned within 15 feet (4.6 meters) of the device being controlled.
- Maintain a clear, unobstructed line of sight between all components (remote to controller, and IR emitter to controlled device).
- For optimal performance, install the controller and remote in the same room.

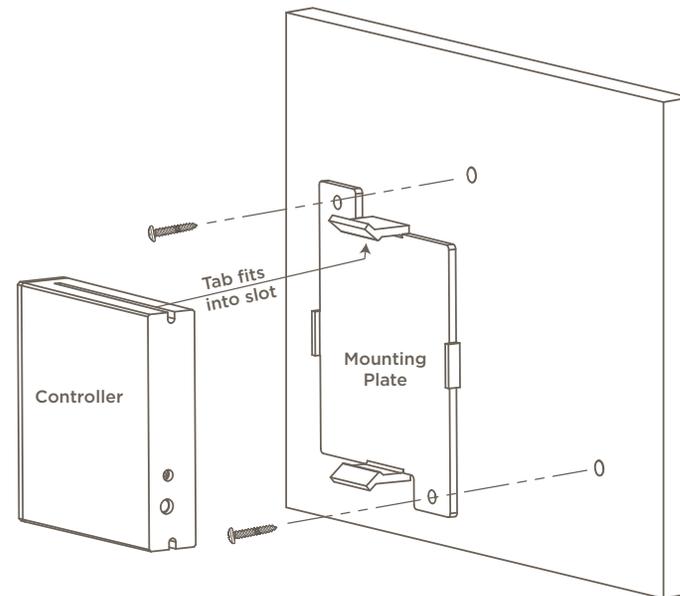
Rack or Cabinet Install

Position the controller on a stable, flat, level surface, and ensure there is a direct line of sight between the remote and the controller. Connect the supplied 5V DC wall wart between the power connection on the rear of the controller and a surge-protected wall outlet.

Wall Mount Install

A mounting plate is supplied with the SSC-W103I. The plate is shipped mounted to the controller. Before removing the mounting plate from the controller, observe how the plate is mounted to get an idea of how the mount and controller are joined.

1. Separate the mounting plate from the controller by bending one of the tabs on the plate outward and removing the controller from the plate.
2. Place the mounting plate against the wall with the tabs oriented as shown in the diagram to the right, to prevent the controller from sliding out of the mount (i.e. tabs that fit into the slots of the controller).
3. Mark the positions of the two screw holes in the mounting plate on the wall.
4. Secure the mounting plate to the wall using the provided screws. Use wall anchors if not screwing directly into a wall stud.
5. Snap the controller into the mounting plate so the tabs seat into the slots of the controller.
6. Plug the supplied 5V DC wall wart between the power connection on the rear of the controller and a surge-protected wall outlet.



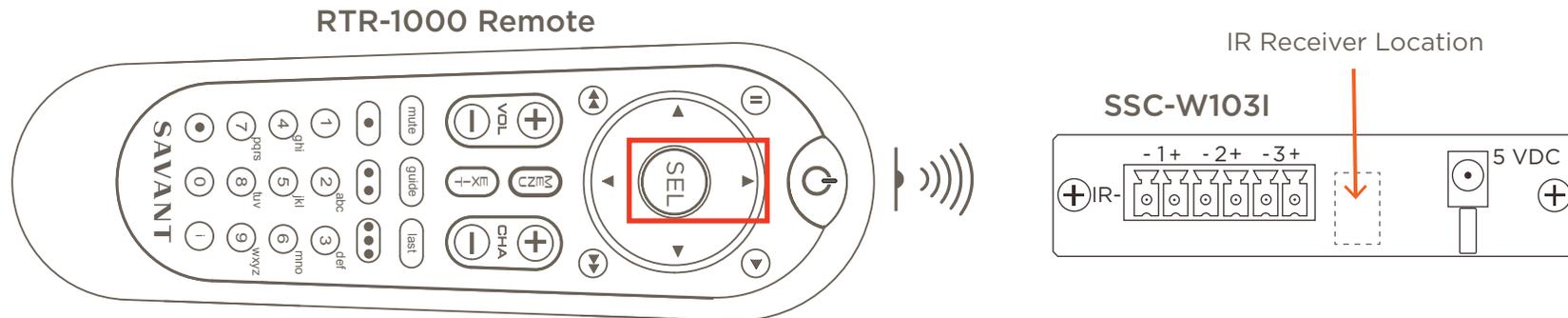
5. Provisioning the SSC-W103I Controller

The controller needs to be provisioned to the local network so it can communicate with the Savant Host. Information on how to provision the controller is available in the SmartControl 3 Wireless Controller Deployment Guide (009-1518-xx) available on the [Savant Community](#). Use this guide when provisioning the controller so it can communicate with the local network. Once provisioned, continue to the section below for information on pairing the remote and controller.

6. Pair the Remote to the Controller

The RTR-1000-xx remote needs to be able to send RF commands to the SSC-W103I controller. To do this, the remote and controller must be paired. The steps below describe how to do this.

1. Verify the batteries in the remote are good. A quick way to verify is to press the power button on the remote and observe that the buttons light up.
2. Ensure power is applied to the SSC-W103I controller and that the controller is not either updating firmware or resetting. The pairing process can be completed with the controller in any state except one of those two states. See [Appendix B: LED Sequencing](#) section below for LED Sequencing information that indicates what the state of the controller is.
3. Press and release the reset button located on the front panel of the controller. The status LED will begin blinking red (blinking red indicates the controller is in pairing mode).
4. Point the remote at the controller and simultaneously press the **SEL** and **UP ARROW** button. After about 5-10 seconds, the status LED will stop blinking red and revert back to the blinking pattern it was in before putting the controller into pairing mode. At this point, the remote and controller are paired together.



Press **SEL** and **UP Arrow** buttons until the LED on the front panel of controller stops blinking red.

Unpair the Remote/Controller

To unpair the remote from the controller, press and hold the reset button on the front panel of the controller until the status LED blinks green rapidly; then release. The controller will reboot and all settings will revert back to factory defaults and no longer be connected to the network. At this point, the remote and controller are no longer paired. Follow sections 5 and 6 above to pair the remote and controller again.

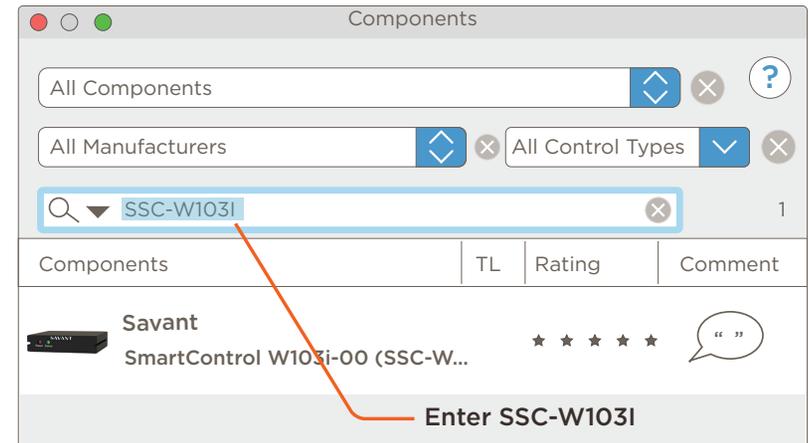
7. Blueprint Configuration

The next few sections describe how to add the remote and controller to a Blueprint configuration.

7.1. Add SSC-W103I Controller

Follow the steps below to add an SSC-W103I controller to an existing Blueprint configuration.

1. Open a Blueprint configuration.
2. Enter **SSC-W103I** into the search field (see image to the right).
3. Select the controller and drag and drop it into a Shared Equipment zone.
4. Enter a unique name that identifies the remote into the dialog box that opens (image not shown).
5. Select **Create**.
6. Drag and drop the controller into the layout frame of Blueprint.



7. Double click the controller to open an inspector window.
8. Enter the 16 character Unique ID (UID) into the Savant UID field.
9. Close the inspector.

 **HELPFUL!** The UID is printed on a sticker on the bottom of the controller.

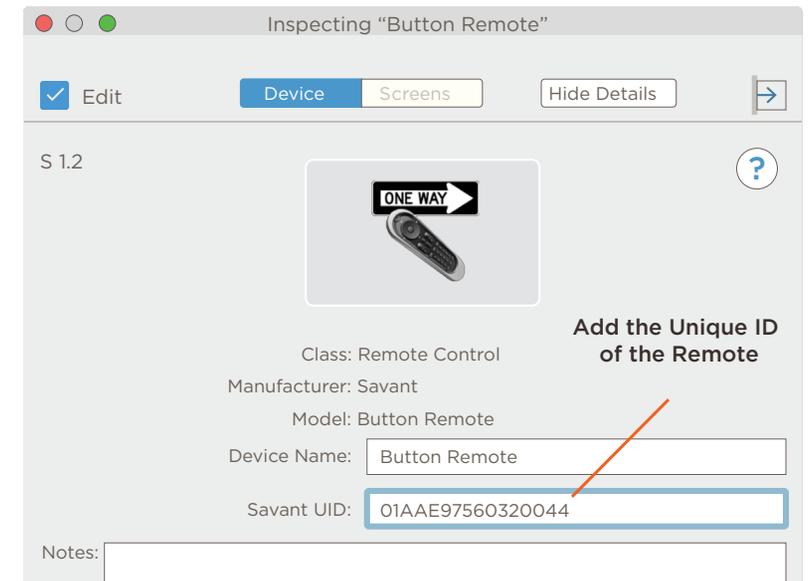
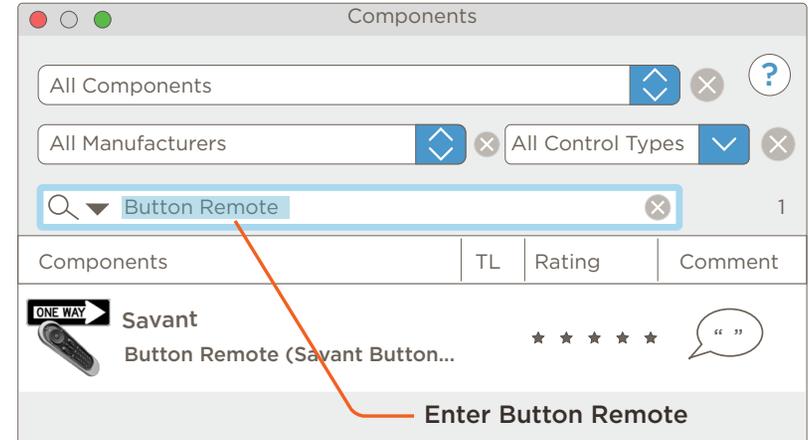


7.2. Add RTR-1000 Remote

Follow the steps below to add an RTR-1000-xx remote to an existing Blueprint configuration.

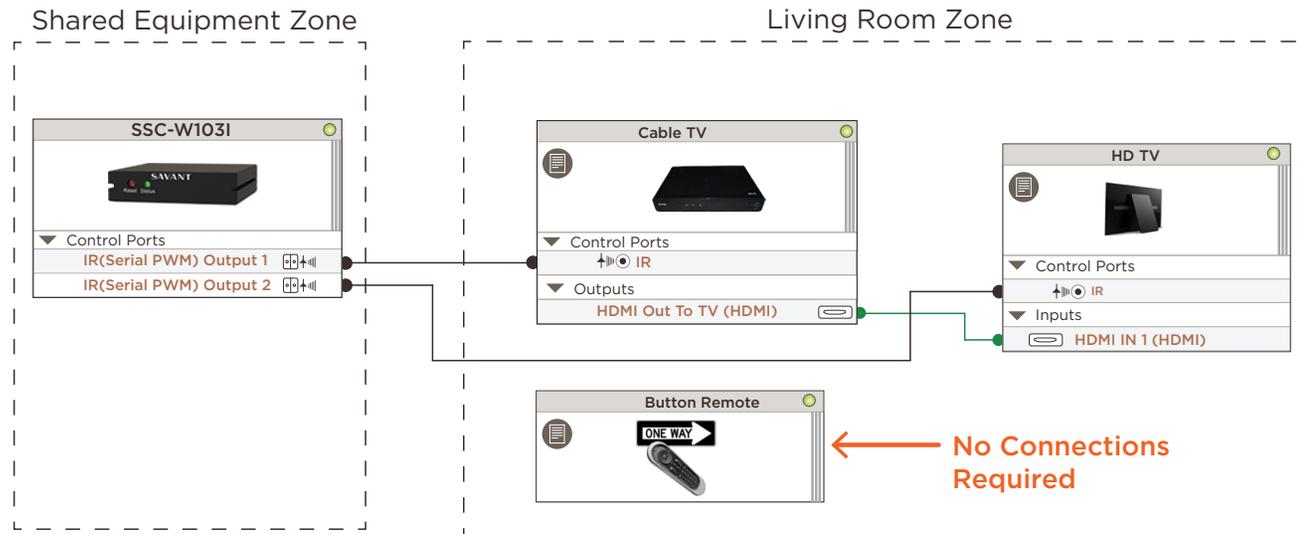
1. Open a Blueprint configuration if not already open.
2. Enter **Button Remote** into the search field (see image to the right).
3. Select the button remote and then drag and drop it into the zone where the remote will be used.
4. Enter a unique name that identifies the remote into the dialog box that opens (image not shown).
5. Select **Create**.
6. Drag and drop the remote into the layout frame of Blueprint.
7. Double-click the remote to open an inspector window.
8. Enter the 16 character Unique ID (UID) into the Savant UID field.
9. Close the inspector.

 **HELPFUL!** The UID is printed on a sticker on the inside of the battery cover



7.3. Make Connections and Generate Services

Refer to the diagram below when making the connections between the remote, the controller, and any third-party devices. The diagram displays the required connections between the controller and a Cable TV box and HDTV. The connections shown below sets up the RTR-1000-xx button remote so it can change the channels of a cable box as well as power on and off an HDTV.

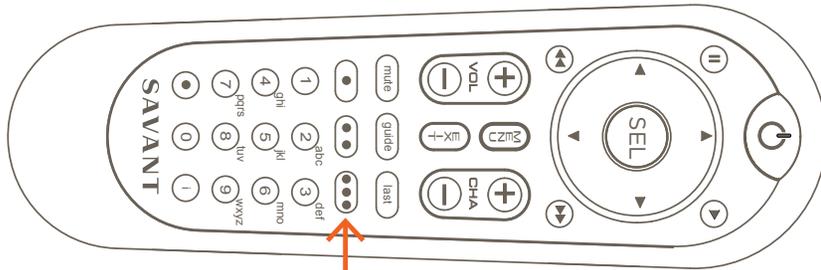


1. Make the connections shown above. The diagram is a basic example that can be used as a template.
2. Select **File > Save** from the Blueprint menu bar to save the updated configuration.
3. Select **Generate Services** from the Blueprint toolbar to create the services required for the button remote to function.

HELPFUL! It is not required that any or all of the components in the zone be controlled by the SSC-W1031 controller. The resources (Cable TV Resource in image) and endpoints (HDTV in image) can also be controlled using any available controller in the configuration.

7.4. OPTIONAL: Program Custom Buttons

The Savant Button Remote includes three buttons that can be programmed within Blueprint to perform custom functions. The steps below show the process for configuring the left button (one dot) to power a cable TV service on or off as an example, but any desired action or workflow can be assigned in the same manner.



Custom Buttons.

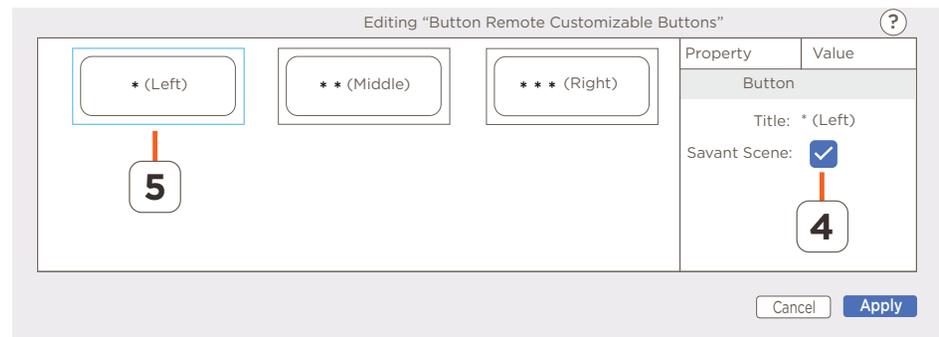
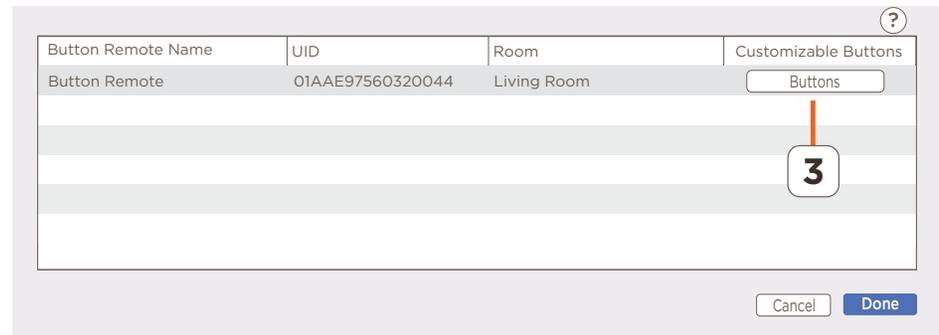
1. Open a Blueprint configuration that includes the button remote and controller already configured, and the services for each created.
2. Select **Tools > Settings > Remotes** from the Blueprint menu bar to open a dialog window listing all the remotes in the Blueprint configuration.

HELPFUL! In da Vinci 9.2.2 and lower, select **Tools > Settings > Button Remote**.

3. Select the **Buttons** icon to open the button editing dialog window.
4. Uncheck the box labeled **Savant Scene**.

HELPFUL! With the Savant Scene box checked, scenes are added to the buttons using the Pro App. See the **Adding a Scene to a Button Application Note** document on the [Savant Community](#) for information on this.

5. Select the **Left** button. The next few steps are an example of how to configure the Left button to power on and off the Cable TV Service available in the zone labeled Living Room.



6. Select the location/zone of the device that will be switched on and off (Living Room in this example).
7. Select the Service associated with the device being switched on and off (Cable TV in this example).
8. Select the **PowerOn** command from the Press Command field. Doing this directs the service selected in step 7, to switch on.
9. Select the **PowerOff** command from the Toggle Press Command field. Doing this directs the service selected from step 7 to switch off.

- HELPFUL!** Pressing the button while the button is in the state from step 8, sends the command set in the Toggle Press Command field. In this example, the Cable TV Service will switch off.
10. Select the **SRS** button to open the Service Request dialog window. The next few steps add a state to the Toggle State field.

Editing "Button Remote Customizable Buttons"

Property | Value

Button

Title: * (Left)

Savant Scene:

Zone: Living Room

Service: Cable TV (Cab)

Commands

Press Command: PowerOn

Hold Command: N/A

Release Command: N/A

Toggle Press Command: PowerOff

Toggle Hold Command: N/A

Toggle Release Command: N/A

Hold

Minimum Hold Time: 0.5

Hold Send Interval: 0.5

Send Release After Hold:

State

Toggle State:

Follow Inverse of State:

Cancel | Apply

11. Select the **Service** tab in the SRS dialog window that opens.
12. Select the **Cable TV Service** from the room the device being controlled is located.
13. Select the **States** tab.
14. Select to highlight the **ServiceActive** state. Drag and drop this state into the **Toggle State** field. See image to the right.

- HELPFUL!** The state added to the **Toggle State** field will be the state of the service after the command in the Press Command field is made active.
15. Select **Apply** to save the changes.
 16. Close the SRS dialog window and then the Savant Remotes window.

SRS for Smith Home

Service | Loads | Component | Other | Scenes

Zone	Service Type	Component	Logical Component	Varian..
Living Room	General Programmable	Smith Home		
Living Room	Cable TV Service	Cable TV	Cable TV Tuner	1
Living Room	Lighting Control Service	Smith Home	Lighting	1
Kitchen	General Programmable	Smith Home		1
Kitchen	Fan Control Service	Smith Home	Lighting	1
Kitchen	Lighting Control Service	Smith Home	Lighting	1

search term(s)

Requests | States

State Name	Type
ServiceState	string
ServiceActive	boolean
ActiveService	string
LastActiveService	string
ZonelsActive	boolean
CurrentVolume	integer

search term(s)

7.5. Upload Blueprint Configuration to Host

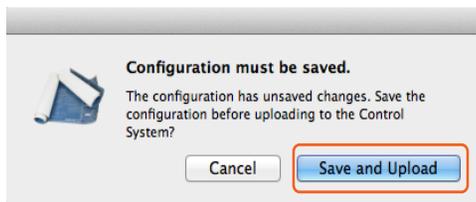
With the updates to the Blueprint configuration complete, the file can now be uploaded to the Savant Host.

1. Select **Generate Services** from the Blueprint toolbar to update the realized services with changes made to the configuration. If using TrueControl II interfaces within the config, select Update All UI Screens to sync with services. The State Icon will change to Green indicating that the new services added were updated.
2. Select **Upload to Master** icon to upload the file to the Savant Host.

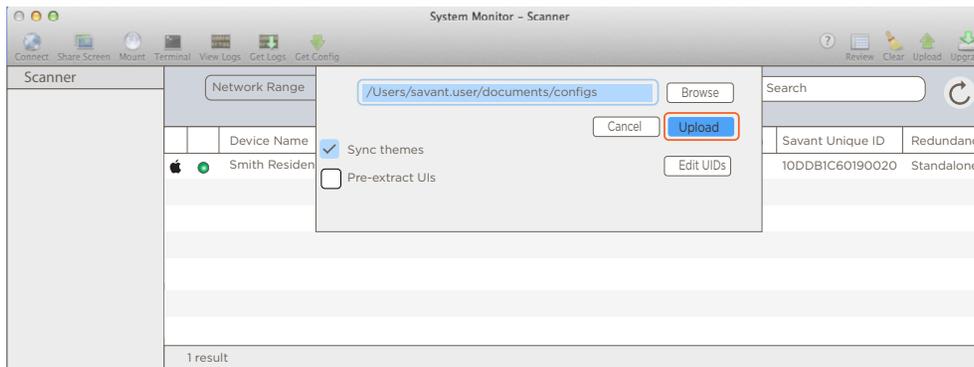


Select the Upload to Master Icon

3. In the **Configuration must be saved** dialog box that opens, read the dialog and select **Save and Upload**.



4. The System Monitor application will open as shown below. Verify the path to the Blueprint configuration file is correct. If not, select **Browse** and locate the file on your local drive (SDE/MacBook). Select **Upload** when satisfied and the configuration will upload to the Host.



5. Once the updated configuration is loaded on the Host, test the remote to verify all functions are working.

Appendix A: Custom Button Property Field Descriptions

When programming the custom buttons, the example described in section above is how to switch on and off the Cable TV Service with the Left button. There are additional functions available to a user when programming. The information below gives a high level description of each field. Use these descriptions as a reference for when programming.

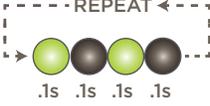
Property	Value
Button	
Title:	* (Left)
Savant Scene:	<input type="checkbox"/>
Zone:	N/A
Service:	N/A
Commands	
Press Command:	N/A
Hold Command:	N/A
Release Command:	N/A
Toggle Press Command:	N/A
Toggle Hold Command:	N/A
Toggle Release Command:	N/A
Hold	
Minimum Hold Time:	0.5
Hold Send Interval:	0.5
Send Release After Hold:	<input type="checkbox"/>
State	
Toggle State:	<input type="checkbox"/>
Follow Inverse of State:	<input type="checkbox"/>

Title	The label given to each custom button is fixed and can't be modified (Left, Middle, Right).
Savant Scene	<p>Box Checked (Default) - The custom buttons can't be programmed using Blueprint. With the box checked, scenes can only be added to the buttons through the Pro App. The Adding a Scene to a Button document on the Savant Community describes how to add scenes using the Pro App.</p> <p>Box Unchecked - The custom buttons on the remote programmed using the fields that appear below it.</p>
Zone	Select the zone/location of the device being controlled.
Service	Select the service that is controlled when pressing the button. Only the services from the zone selected in the Zone field above are made available.
Press Command	Select the command sent when pressing the button.
Hold Command	Select the command sent when the button is pressed and held for a duration that is equal to or greater than the time set in the Minimum Hold Time field.
Release Command	Select the action sent when the button is released (after the button is first pressed).
Toggle Press Command (Toggle type buttons only)	Press the button to send the command set in the Press Command field described above. Press the button a second time to send the command set in the Toggle Press Command field.
Toggle Hold Command (Toggle type buttons only)	Press and hold the button to repeatedly to send the command set in the Hold Command field described above. Press and hold the button a second time to repeatedly send the command set in the Toggle Hold Command field. The hold time must be equal to or greater than the time set in the Minimum Hold Time field.
Toggle Release Command (Toggle type buttons only)	Releasing the button after a press action will send the command set in the Release Command field described above. Press and release the button again to send the command set in the Toggle Release Command field.
Minimum Hold Time	Sets the duration the button must be pressed and held before detecting a Hold or Toggle Hold command. If the button is held for a duration less than the time set in the Minimum Hold Time field, the commands set in the Press, Release, Toggle Press, and Toggle Release are sent.
Hold Send Interval	Sets the amount of time the button must be held down for the command to repeat if held past the time set in the Minimum Hold Time field. As long as the button is held down, the command will be repeated using the time set in the Hold Send Interval field.
Send Release After Hold	<p>Box Checked - The command set in the Release or Toggle Release Command field is sent after a held button is released. Only applicable after a Hold or Toggle Hold Command is sent.</p> <p>Box Unchecked - The command set in the Release or Toggle Release Command field is NOT sent.</p>
Toggle State	Drag and drop a state from the Service Request (SRS)  window. The system will track the state and determine whether or not to send the command set in the Press Command or Toggle Press Command fields.
Follow Inverse of State	Inverts the logic the system uses when determining when to send the command set in the Press Command or Toggle Press Command fields.

Appendix B: SSC-W103I LED Sequencing

The LED sequencing information shown below is displayed on the status LED located on the front panel of the SSC-W103I-xx controller. Additional specifications regarding the Wi-Fi IR Learning Controller (SSC-W103I-xx) and Button Remote (RTR-1000-xx), can be found on their respective QRG documents located on the [Savant Community](#).

- SSC-W103I-xx QRG (009-1580-xx)
- RTR-1000-xx QRG (009-1623-xx)

	Off - No power applied to the controller
	Solid Green - Normal operation. Controller is provisioned, connected to the local network, and communicating with the Savant Host.
	Blinks Green Once - The Controller is in provisioning mode but not connected with the local network. Use one of the provisioning tools to get connected with the local network (SmartConnect, Savant Studio App, Web UI).
	Blinks Green Twice - Controller is establishing a connection with the local network. Seen during the provisioning process.
	Blinks Green Three Times - Controller is connected to the local network and trying to establish communications with a Savant Host.
	Short Off Green Blink - The controller's firmware is updating.
	Rapid Green Blink - The reset button was pressed and held for at least five seconds and the controller has initiated a reset. After the reset, all network settings are cleared and factory defaults are restored.
	Blinks Red - The controller is in pairing mode. Pairing mode is initiated by pressing and releasing the reset button.

Appendix C: Network Requirements

Savant requires the use of business class/commercial grade network equipment throughout the network to ensure the reliability of communication between devices. These higher quality components also allow for more accurate troubleshooting when needed.

Device Network Connections

Connect all Savant devices to the same local area network (LAN) or subnet as the Host. Savant recommends not implementing any type of traffic or packet shaping in your network topology for the Savant devices as this may interfere with performance.

Managing IP Addresses

To ensure that the IP Address will not change due to a power outage, a static IP Address or DHCP reservation should be configured. Savant recommends using DHCP reservation within the router. By using this method, static IP Addresses for all devices can be managed from a single UI avoiding the need to access devices individually. Setting DHCP reservation varies from router to router. Refer to the documentation for the router to configure DHCP reservation.

Network Changes

Savant recommends performing the following to refresh the IP connection after connecting to a new network, changing routers, or if the IP Address range is changed in the current router. This will reset any IP connection and ensure that the Host is communicating with the network correctly.

To refresh the IP Connection to the SSC-W103I controller, follow the steps below:

1. Press and hold the reset button located on the front panel until the status LED blinks green rapidly; then release. Allow the controller to reboot. After the reboot, the IP Address will have cleared and the controller will revert back to factory defaults.



HELPFUL! The controller and button remote will no longer be paired.

2. Provision the controller back onto the network using one of the following tools:
 - SmartConnect (SmartConnect Reference Guide - 009-1046-xx)
 - Savant Studio App Onboarding Utility (Savant Studio App User Guide - 009-1712-xx)

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