

# KVH Tri-Sat AutoSwitch™ Kit Installation and Operation Instructions for TracVision® R6

The following instructions explain how to install and operate the Tri-Sat AutoSwitch Kit on a TracVision R6 system.

The Tri-Sat AutoSwitch Kit allows DIRECTV HDTV subscribers to enjoy the Ku-band portion of the overall high-definition (HD) programming package and switch automatically among the DIRECTV 101, 110, and 119 satellites when using a DIRECTV H21-200 or H20-600 receiver.

| For information on:      | Refer to: |
|--------------------------|-----------|
| Installation             | Page 2    |
| Operation                | Page 6    |
| Advanced Wiring Diagrams | Page 9    |

*NOTE: This procedure requires a PC with the latest version of the KVH Flash Update Wizard installed. The Flash Update Wizard is available to KVH-authorized dealers through the KVH Partner Portal.*

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## Who Should Install the System?

To ensure a safe and effective installation, KVH recommends that a KVH-authorized technician install the Tri-Sat AutoSwitch Kit. To find a technician near you, please visit [www.kvh.com/wheretogetservice](http://www.kvh.com/wheretogetservice).

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## Technical Support

If you need technical assistance, please contact KVH Technical Support:

Phone: +1 401 847-3327

E-mail: [techs@kvh.com](mailto:techs@kvh.com)



# Installing the Tri-Sat AutoSwitch Kit

This section explains how to install the Tri-Sat AutoSwitch Kit. These instructions require additional/alternate installation steps than those specified in the TracVision Installation Guide. These instructions supersede the TracVision installation and operation instructions where applicable.

## Step 1 - Check for Flash Wizard Updates

You need to check for flash file updates to ensure you have the most current software available (see Figure 1). Follow the Flash Update Wizard's onscreen instructions to check for updates. This procedure requires a PC with the latest version of the KVH Flash Update Wizard installed and an Internet connection.

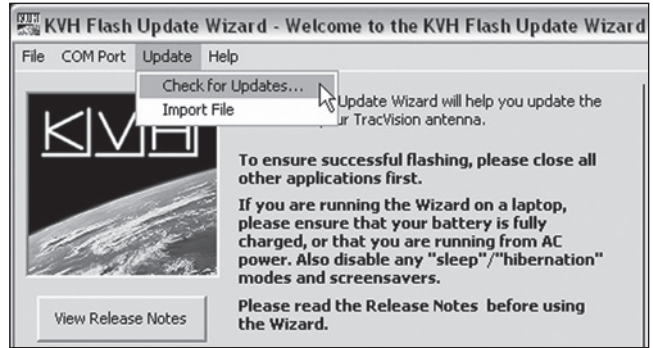
*NOTE: Refer to the Flash Update Wizard's Help file for details on checking for updates.*

## Step 2 - Flash the System Boards

Follow the Flash Update Wizard's onscreen instructions to flash the TracVision system's main board, RF board, and interface box board.

*NOTE: Refer to the Flash Update Wizard's Help file for details on flashing the system.*

Figure 1 Flash Wizard Check for Updates Option



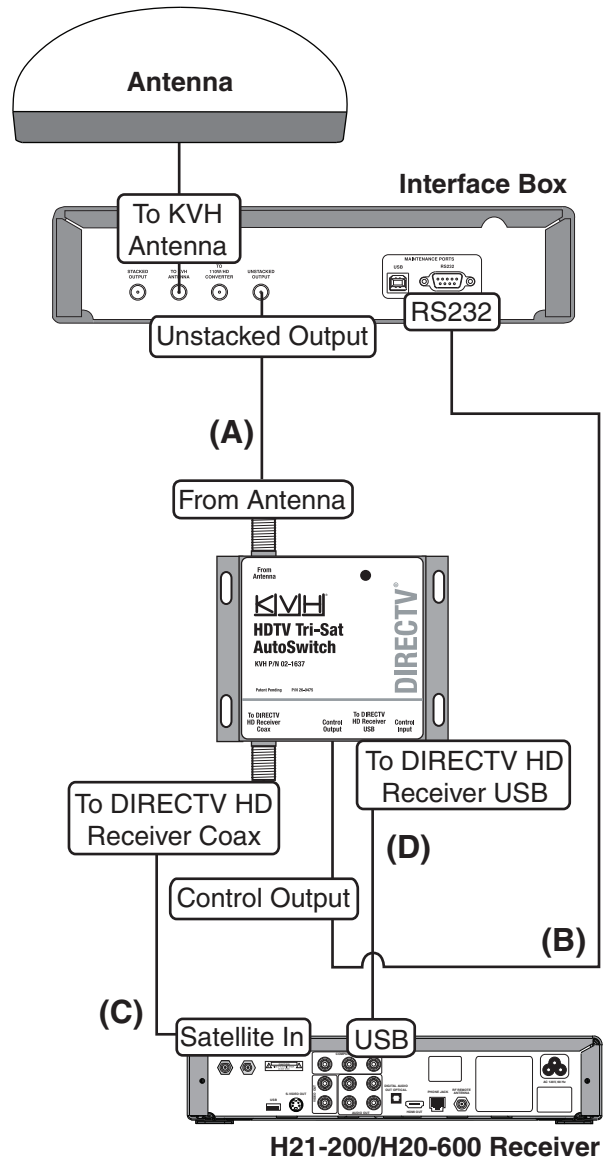
### Step 3 - Connect the Tri-Sat AutoSwitch Kit

Follow the steps below to connect the Tri-Sat AutoSwitch Kit and a DIRECTV H21-200/H20-600 receiver.

**NOTE:** For information on wiring additional components, refer to the Appendix on page 9.

- a. Connect a coaxial cable (A) from the “Unstacked Output” connector on the interface box to the “From Antenna” connector on the Tri-Sat AutoSwitch (see Figure 2).
- b. Connect the DB9-end of the data cable (B) to the “RS232” connector on the interface box. Connect the other end to the “Control Output” connector on the Tri-Sat AutoSwitch (see Figure 2).
- c. Connect a coaxial cable (C) from the “To DIRECTV HD Receiver Coax” connector on the Tri-Sat AutoSwitch to the “Satellite In” connector on the DIRECTV H21-200 or H20-600 receiver.
- d. Connect the USB cable (D) from the “To DIRECTV HD Receiver USB” connector on the Tri-Sat AutoSwitch to the “USB” connector on the DIRECTV H21-200 or H20-600 receiver (see Figure 2).

Figure 2 Tri-Sat AutoSwitch Wiring Diagram



## Receiver Installation

Be sure to follow these guidelines when installing the receiver.

- The Tri-Sat AutoSwitch Kit is compatible only with DIRECTV model H21 receivers that have manufacturer ID 200 and DIRECTV model H20 receivers that have manufacturer ID 600.

*TIP: Model and manufacturer ID information is printed on the back of the receiver.*

- The DIRECTV H21-200 or H20-600 receiver must be configured as an "Oval, 3, LNB" dish type. Refer to the receiver manual for configuration instructions.
- Upon startup, the receiver might take up to 30 minutes or more to fully load the program guide for all three DIRECTV satellites. Be sure to only select channels carried on the 101 satellite until the program guide is fully loaded.

### Step 4 - Reset the System (if necessary)

If the interface box does not display the "System Needs Setup" screen (see Figure 3), you need to reset the system before you can set it up for Tri-Sat AutoSwitch Kit use.

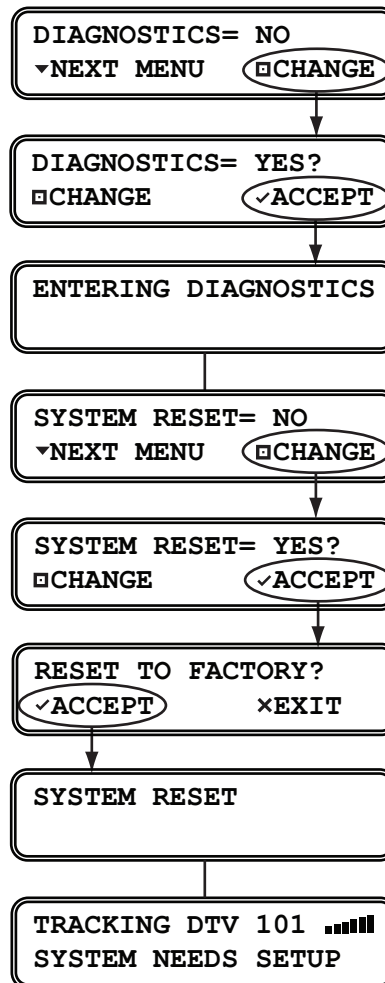
Use the interface box buttons and the flowchart in Figure 4 to reset the system.

Figure 3 System Needs Setup Screen



Figure 4 System Reset Procedure

Select MENUS until DIAGNOSTICS= No is displayed.



## Step 5 - Set Up the System

Use the flowchart in Figure 5 to set up the system for Tri-Sat AutoSwitch use.

## Step 6 - Test the System

Now you need to test the system to ensure proper operation.

**NOTE:** Do not use the interface box buttons to change satellites or attempt to change satellites at the receiver's signal strength screen; the Tri-Sat AutoSwitch does not detect changes at that screen. For complete operation instructions, see "Using the Tri-Sat AutoSwitch Kit" on page 6.

- a. Select channel 490 using the Tri-Sat AutoSwitch-equipped receiver's remote. Verify that the TV screen displays the test channel text at the bottom of the screen and the interface box status screen indicates "Tri-Sat Auto Mode" and the appropriate DIRECTV satellite (see Figure 6).
- b. Repeat this procedure for each channel listed in Figure 6.

Figure 5 System Setup for Tri-Sat AutoSwitch

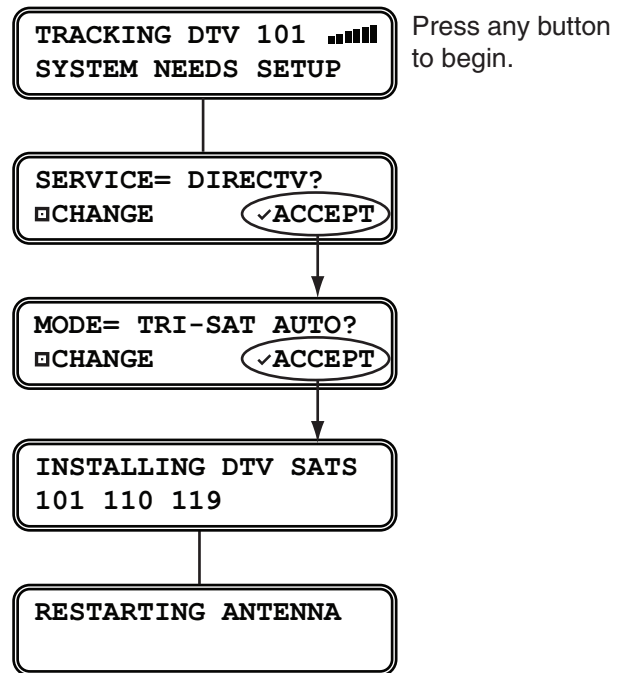


Figure 6 Tri-Sat AutoSwitch Testing

| Channel Number | Interface Box Display/  |
|----------------|---|
|                | TV Screen Text  |
| 490            | <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">           TRACKING DTV 101 [Signal Strength]<br/>           TRI-SAT AUTO MODE         </div> <div style="background-color: black; color: white; padding: 5px; text-align: center;">           Test 1 SAT A (101) Odd Txp 13v         </div>  |
| 494            | <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">           TRACKING DTV 110 [Signal Strength]<br/>           TRI-SAT AUTO MODE         </div> <div style="background-color: black; color: white; padding: 5px; text-align: center;">           Test 5 SAT C (110) Even Txp 18v         </div> |
| 492            | <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">           TRACKING DTV 119 [Signal Strength]<br/>           TRI-SAT AUTO MODE         </div> <div style="background-color: black; color: white; padding: 5px; text-align: center;">           Test 3 SAT B (119) Odd Txp 13v         </div>  |

## Using the Tri-Sat AutoSwitch Kit

This section explains how to operate the TracVision system with the Tri-Sat AutoSwitch Kit installed.

### Switching Satellites

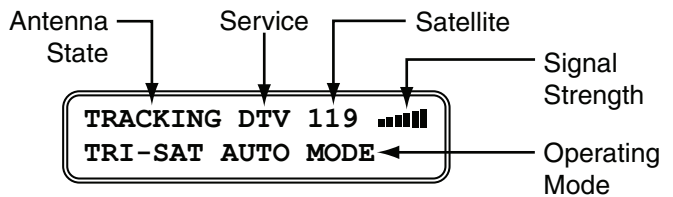
When the Tri-Sat AutoSwitch Kit is coupled with a DIRECTV H21-200 or H20-600 receiver, you do not need to press buttons on the interface box to change satellites or channels; the antenna automatically switches among the Ku-band portion of the DIRECTV 101, 110, and 119 satellites as you change channels using the receiver's remote.

The interface box status screen displays the currently tracked satellite and indicates the antenna is operating in "Tri-Sat Auto Mode" (see Figure 7).

**NOTE:** The receiver might take up to 30 seconds to display video when changing channels, switching between satellites, and/or switching between standard-definition and high-definition channels.

**TIP:** For your convenience, KVH lists the DIRECTV Ku-band HDTV channels, and the DIRECTV satellites that carry them, on the web at [www.kvh.com/HDTV](http://www.kvh.com/HDTV). Since DIRECTV changes its channel lineup frequently, KVH can e-mail updates to you whenever the HDTV lineup changes. Register for this free service when you visit the website for the first time.

Figure 7 Interface Box Status Screen



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## **Using the Tri-Sat AutoSwitch Kit with Multiple Receivers**

Since the antenna can only track one satellite at a time, all receivers can only view channels carried by the currently tracked satellite. Therefore, switching channels on one Tri-Sat AutoSwitch-equipped receiver might cause televisions connected to other receivers to display different programming, no programming, or an error message. TV viewers can simply change the channel until they select a channel carried by the new satellite, or they can use any Tri-Sat AutoSwitch-equipped receiver to switch back to the original satellite.

*NOTE: Only Tri-Sat AutoSwitch-equipped DIRECTV H21-200 and H20-600 receivers control satellite selection. Other receiver models and additional DIRECTV H21-200 and H20-600 receivers without a mated Tri-Sat AutoSwitch cannot control satellite selection, but they can change channels on the currently selected satellite.*

## **Using the Tri-Sat AutoSwitch Kit with Additional Tri-Sat AutoSwitch-equipped DIRECTV H21-200 or H20-600 Receivers**

The Tri-Sat AutoSwitch enables automatic satellite switching for one DIRECTV H21-200 or H20-600 receiver. However, when two or more Tri-Sat AutoSwitches are installed, any Tri-Sat AutoSwitch-equipped receiver can control satellite selection. The last Tri-Sat AutoSwitch-equipped receiver to change satellites controls satellite selection until another Tri-Sat AutoSwitch-equipped receiver changes satellites.

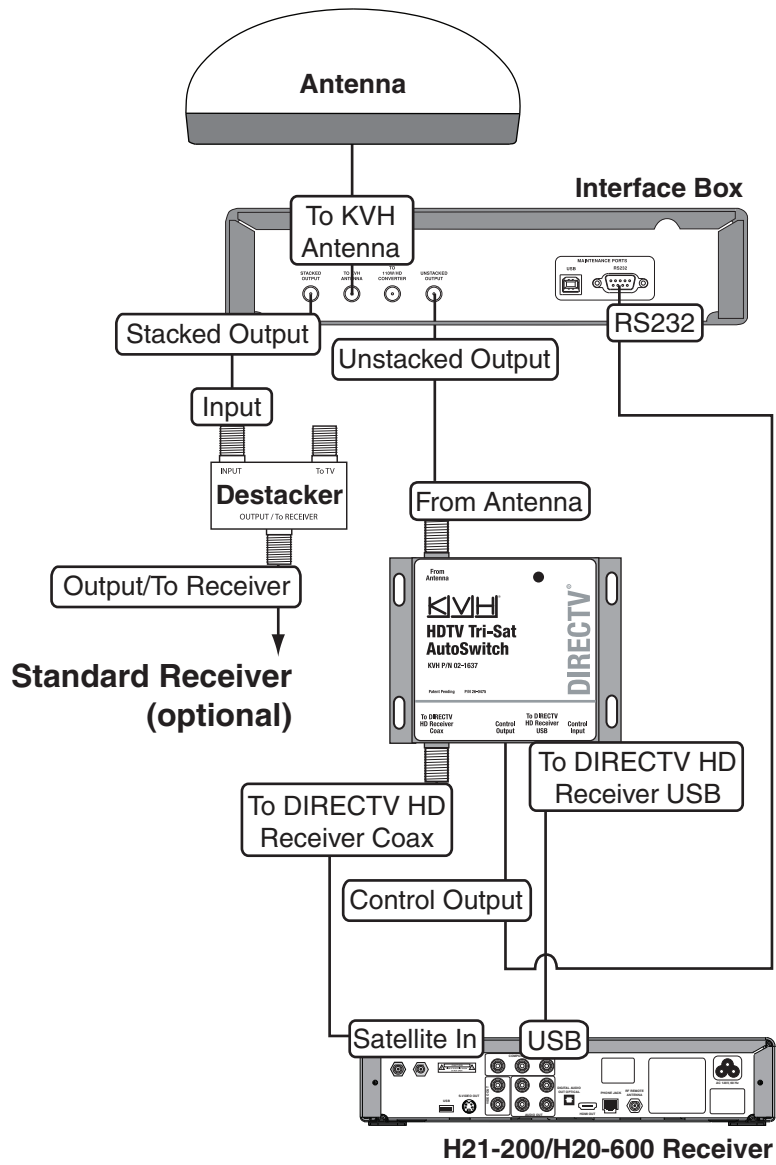
# Appendix

A standard wiring diagram is provided in Figure 2 on page 3. However, if you need to wire additional components, refer to the table below to determine the appropriate wiring diagram for your configuration.

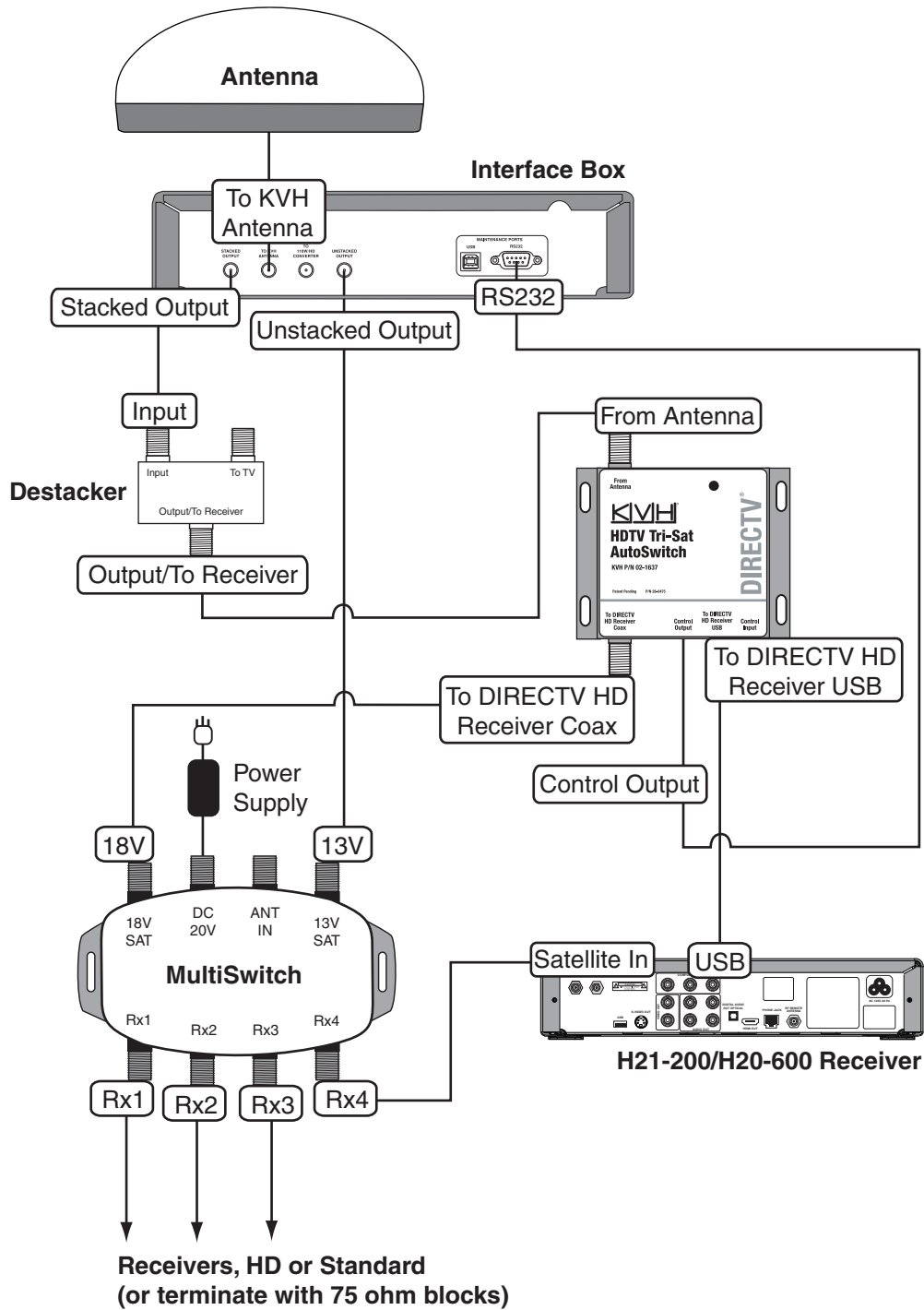
***NOTE:** If you need to wire additional components not supported in the following diagrams, please contact KVH Technical Support.*

| <b>To Install:</b>   | <b>Refer to:</b> |
|--|------------------|
| Tri-Sat AutoSwitch Kit, 1 DIRECTV H21-200 or H20-600 Receiver, and 1 Standard Receiver   | Page 10          |
| Tri-Sat AutoSwitch Kit, 1 DIRECTV H21-200 or H20-600 Receiver, and 2 or 3 Additional Receivers                                   | Page 11          |
| Tri-Sat AutoSwitch Kit, 1 DIRECTV H21-200 or H20-600 Receiver, 1 DVR, and 0 or 1 Additional Receivers                            | Page 12          |
| Tri-Sat AutoSwitch Kit, 2 DIRECTV H21-200 or H20-600 Receivers, and 1 Additional Tri-Sat AutoSwitch                              | Page 13          |
| Tri-Sat AutoSwitch Kit, 2 DIRECTV H21-200 or H20-600 Receivers, 1 Additional Tri-Sat AutoSwitch, and 1 or 2 Additional Receivers | Page 14          |
| Tri-Sat AutoSwitch Kit, 2 DIRECTV H21-200 or H20-600 Receivers, 1 Additional Tri-Sat AutoSwitch, and 1 DVR                       | Page 15          |

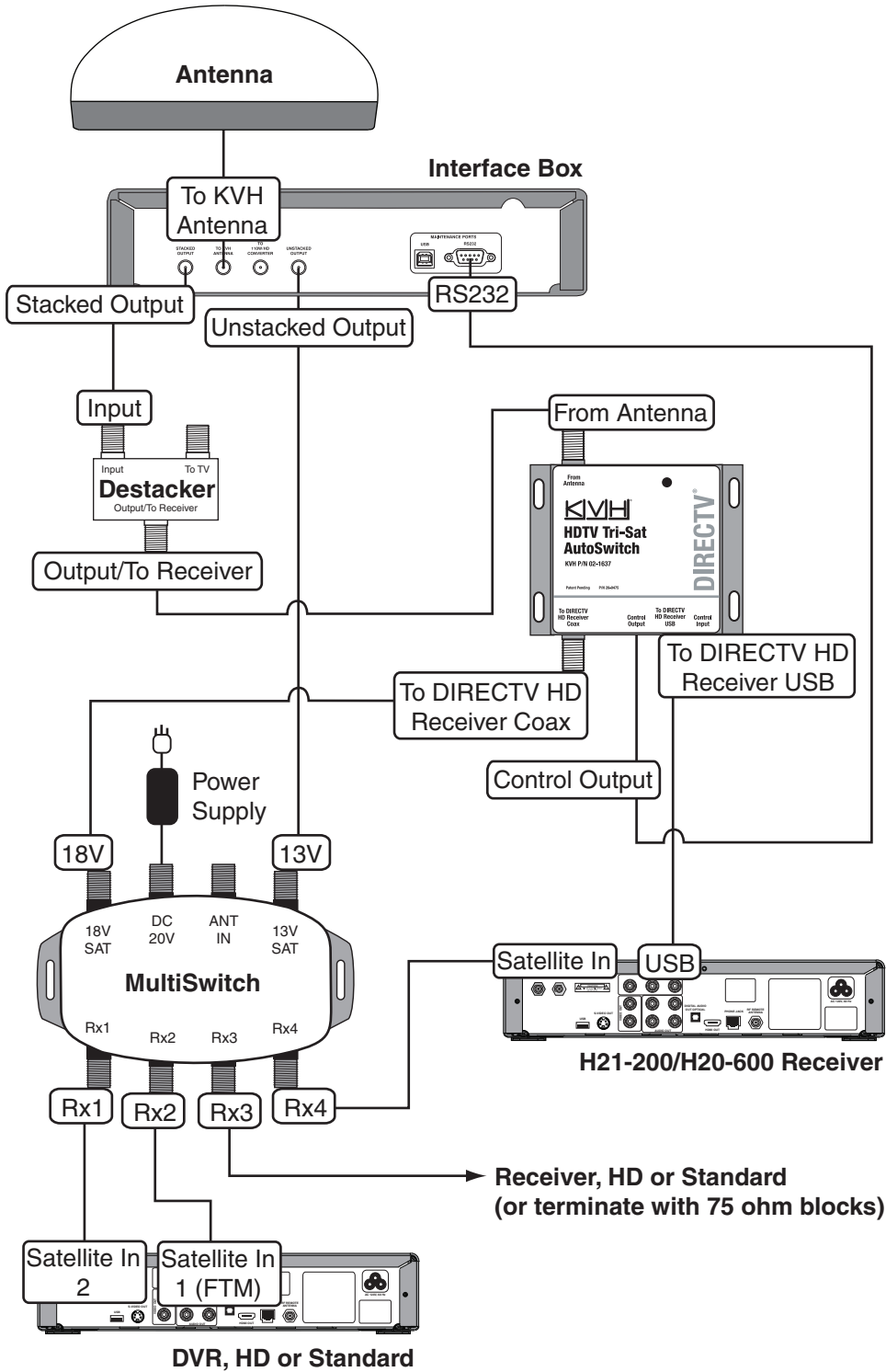
**Tri-Sat AutoSwitch Kit, 1 DIRECTV H21-200/  
H20-600 Receiver, and 1 Standard Receiver**



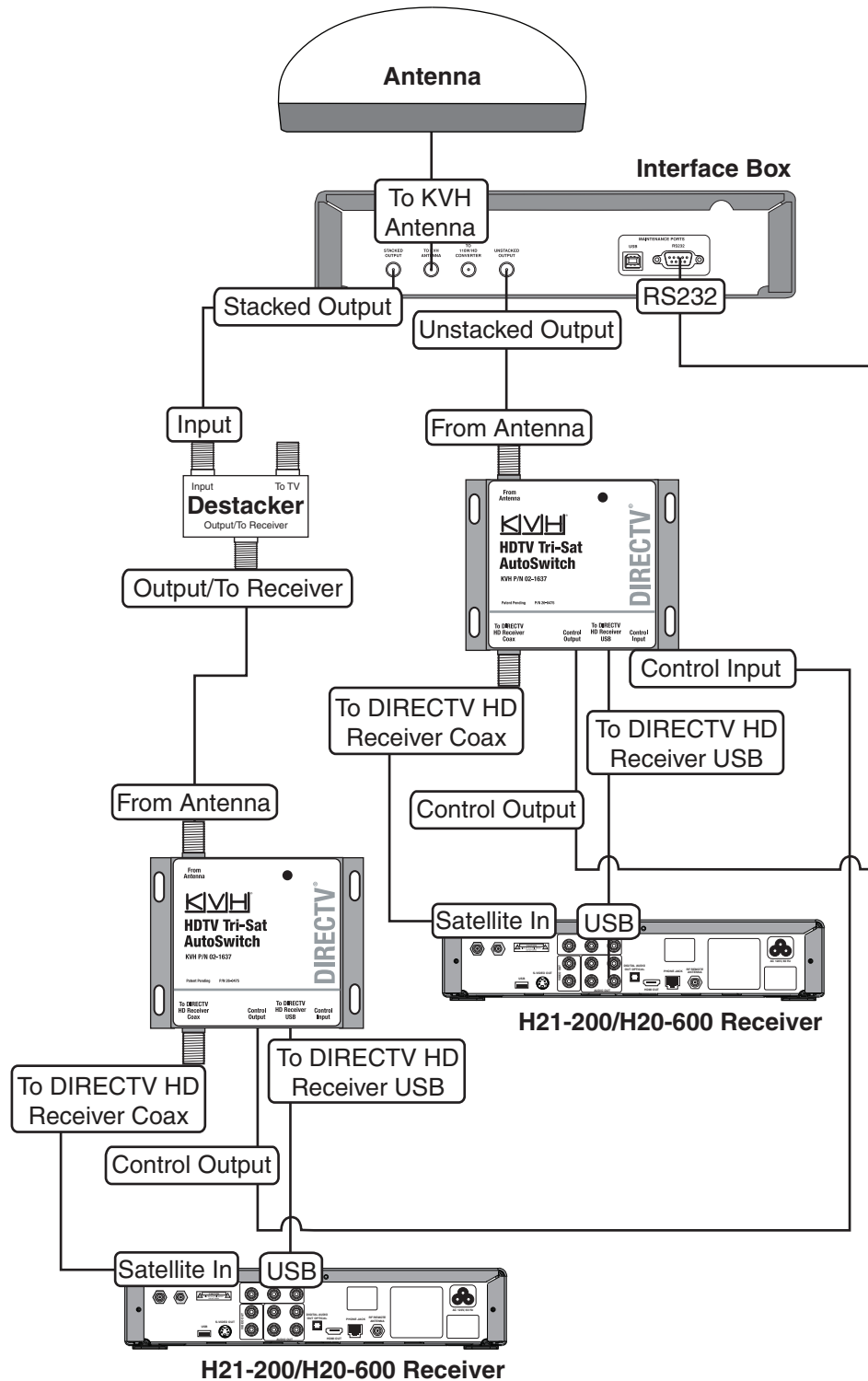
# Tri-Sat AutoSwitch Kit, 1 DIRECTV H21-200/ H20-600 Receiver, and 2 or 3 Additional Receivers



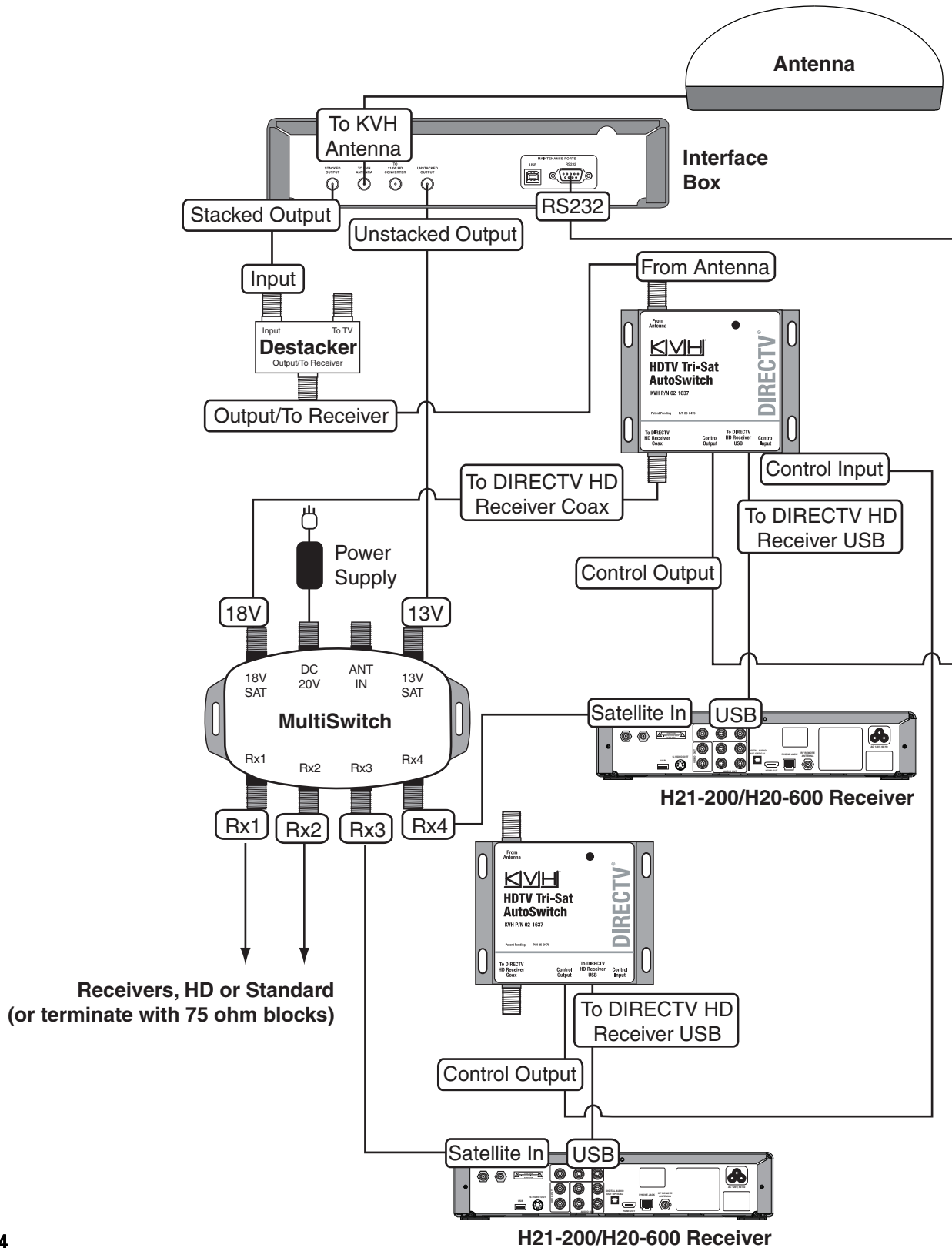
**Tri-Sat AutoSwitch Kit, 1 DIRECTV H21-200/  
H20-600 Receiver, 1 DVR, and  
0 or 1 Additional Receivers**



# Tri-Sat AutoSwitch Kit, 2 DIRECTV H21-200/ H20-600 Receivers, and 1 Additional Tri-Sat AutoSwitch



**Tri-Sat AutoSwitch Kit, 2 DIRECTV H21-200/H20-600 Receivers, 1 Additional Tri-Sat AutoSwitch, and 1 or 2 Additional Receivers**



**Tri-Sat AutoSwitch Kit, 2 DIRECTV H21-200/  
H20-600 Receivers, 1 Additional Tri-Sat  
AutoSwitch, and 1 DVR**

