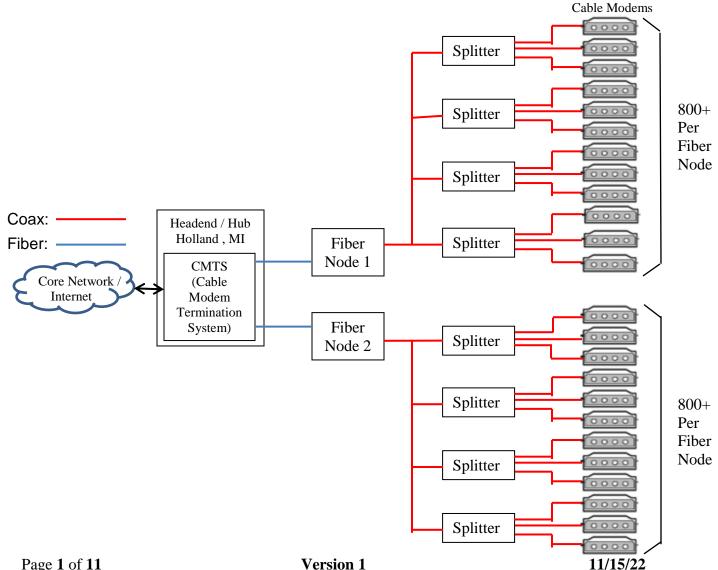
1. INTRODUCTION

During the 2022-2023 "off season", Spectrum will be changing the current Enterprise TV clear QAM unencrypted broadcast system to the same type of TV service that residential customers receive. That requires these changes:

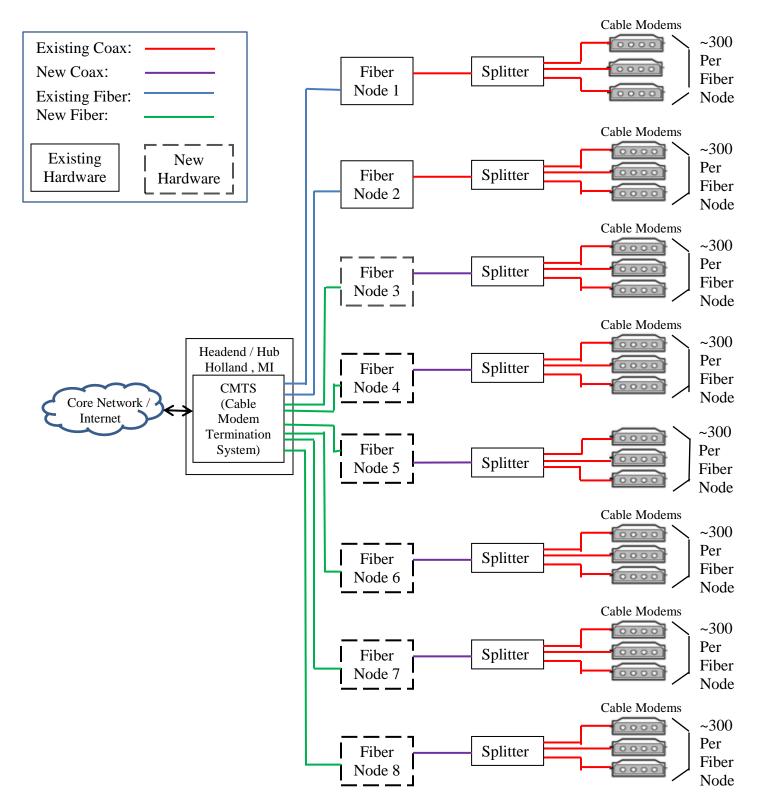
- a. Broadcast TV signal will become encrypted and therefore require a cable receiver per TV to decode the TV signal. One cable receiver box can be ordered from Spectrum for no charge. Additional cable receivers can be ordered from Spectrum for \$6.99 per month rental fee.
- b. Each site will have a Spectrum account, which provides members a Username & Password to use the Spectrum TV App to stream TV channels / content via the internet. The Spectrum TV App can be used both at Sandy Pines and also remotely (e.g. at home). NOTE: Not all content / channels may be available when used remotely.
- c. Each site will receive a DOCSIS 3.1 cable modem and a WiFi 6 capable router (2 separate units). If you have recently received a cable modem (e.g. in 2022), it may be DOCSIS 3.1 compliant, in which case you may just receive the new router and not a new cable modem.

2. INTERNET NETWORK CONFIGURATION

The current Hybrid Fiber / Coax (HFC) network configuration for internet access looks like this:



In order to handle the data demands resulting from the use of streaming Apps like the Spectrum TV App, the network will be expanded to provide additional data handling capacity by adding additional Fiber Nodes to handle the ~2200 cable modems for every site / condo. Existing coax cabling to each site will not be affected unless it is defective and requires replacement:



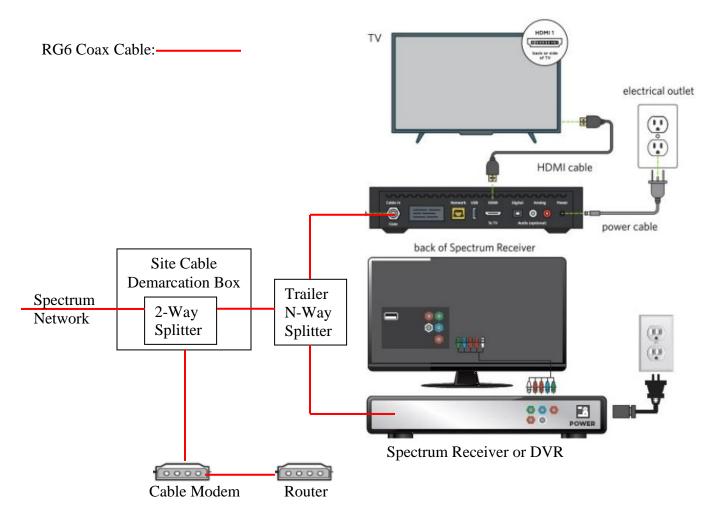
3. CONNECTION OPTIONS

To view cable TV, you can choose to use only cable receivers and/or DVRs, only the Spectrum TV App, or a combination of both:

a. Cable Receiver and/or DVR Only:

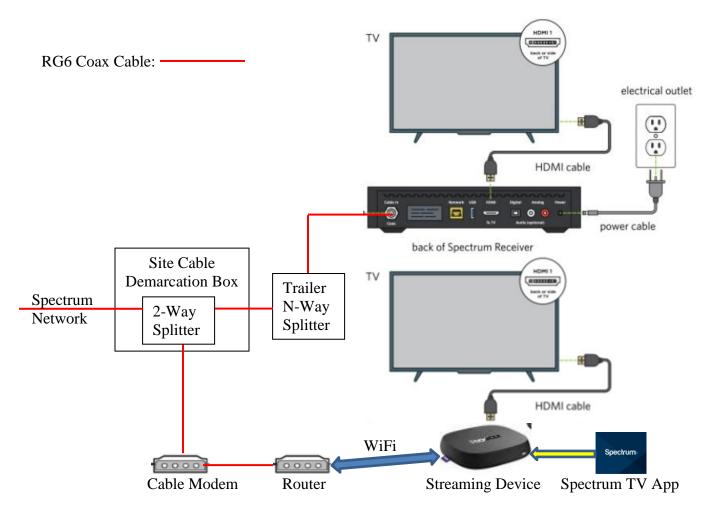
Ref: https://www.spectrum.net/support/tv/connecting-your-hdtv-your-cable-box-digitalreceiver

One rental free cable receiver can be ordered per site. Additional cable receivers per TV are \$6.99 per month. Single DVR receiver is \$12.99 per month. DVR package with 2-4 receivers, i.e. for 2-4 TVs, is \$19.99 per month. Connect each receiver to TV via HDMI cable, Component audio/video cable, or RCA audio/video cable. Note that the ideal cabling configuration is to use a 2 way splitter in the Demarcation Box so that TVs and cable modem are on separate cable runs:



b. Cable Receiver + Spectrum TV App:

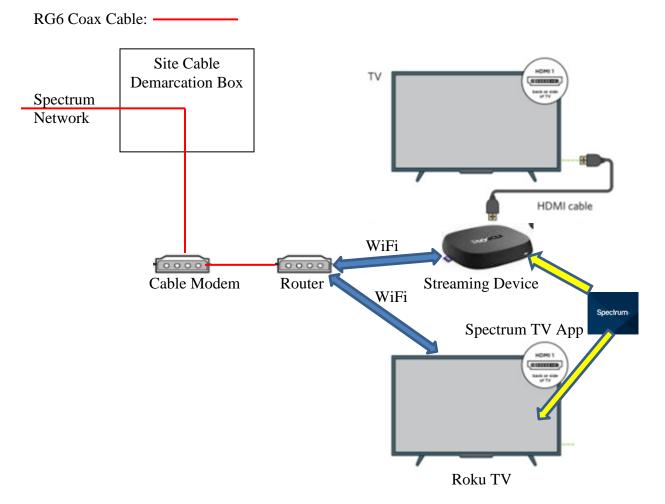
Another option is to use the rent free cable receiver on one TV, and then use the free Spectrum TV app on your other TVs. This option provides the most flexibility at the lowest cost, i.e. if your internet goes out, you may be able to still watch broadcast TV on the TV with the free cable receiver. The following diagram shows one way to do that:



Of course, you could configure a cable receiver and the Spectrum TV App on the same TV, and then select which one to use based on the HDMI input selected on that TV.

c. Spectrum TV App only:

Another option is to just use the free Spectrum TV App on all your TVs. With this option, the ideal configuration is to connect the incoming coax cable from the demarcation box directly to your cable modem, i.e. not connected at all to your trailer. This minimizes background noise & interference that can be generated from bad coax cabling, splitters, & uncapped coax wall ports in your trailer.



If the streaming device you use has HDMI output, but your TV doesn't have HDMI inputs or doesn't have any spare HDMI inputs, you can use a HDMI to RCA converter to connect the device to the RCA inputs on your TV, e.g.:



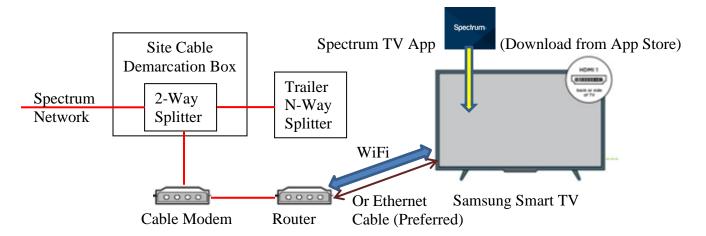
4. SPECTRUM TV APP CONFIGURATIONS

To use the Spectrum TV App, you need to create a Username by following these instructions: <u>https://www.spectrum.net/support/manage-account/creating-username</u> NOTE: Allow at least 24 to 72 hours after creating your Spectrum.net Username before you sign into the Spectrum TV App.

The following sections show the different hardware configurations that support the use of the Spectrum TV APP. NOTE: Not every site has a grey cable demarcation box. If not, the demarcation place is where the incoming Spectrum cable is connected to your site cable.

This document does not describe how to use the Spectrum TV App, only how to configure it. Info on how to use the App can be found here: <u>https://www.spectrum.net/support/tv/explore-spectrum-tv-app</u>

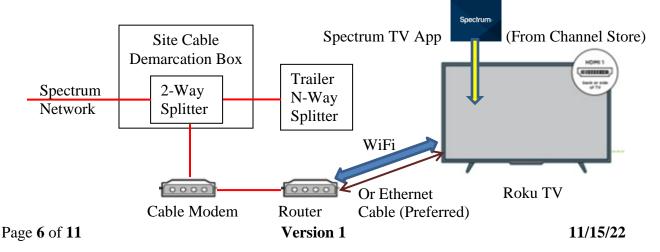
a. Samsung Smart TV (Model years 2012 & newer): Ref: https://www.samsung.com/us/appstore/app/G00009313465



 B. Roku TV (excluding first & second generation models): Ref:

https://channelstore.roku.com/details/99564b2547ed970e603a8a2624804263/spectrum-tv

Press **Home button.** Then select Settings > System > About to verify generation model of your device.

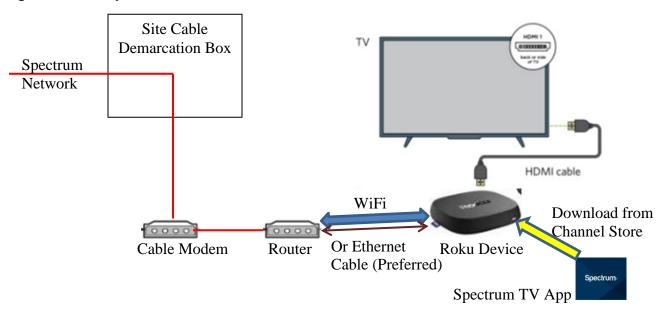


c. Roku Players:

Ref:

https://channelstore.roku.com/details/99564b2547ed970e603a8a2624804263/spectrum-tv

Spectrum TV App is available on Roku Ultra, Roku Premiere, Roku Premiere+, Roku Express, Roku Express+, Roku 4, Roku 3, Roku 2, Roku Streambar, and Roku Stream Stick devices. Press **Home button.** Then select Settings > System > About to verify model & generation of your Roku device.

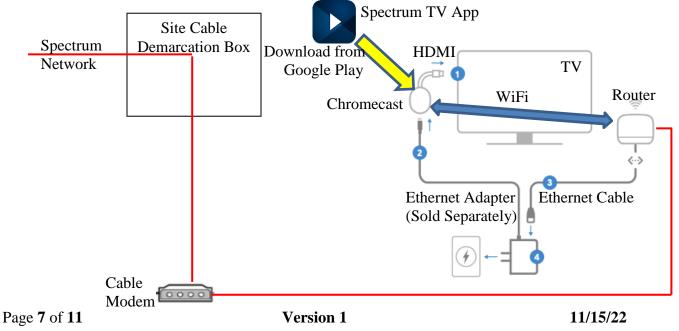


NOTE: Ethernet connection is directly supported on Roku Ultra, Ultra LT, Roku 2, Roku 3, & Roku 4. Ethernet connection is supported on Roku Express, Express+, and Streambar but requires optional USB<->Ethernet Adapter. Ethernet connection is not supported on Roku Premier & Stream Stick – WiFi only. Stream Stick plugs directly into HDMI input on your TV.

d. Google Chromecast

Ref:

https://www.spectrum.net/support/tv/using-chromecast-spectrum-tv-app-spectrumtvcom

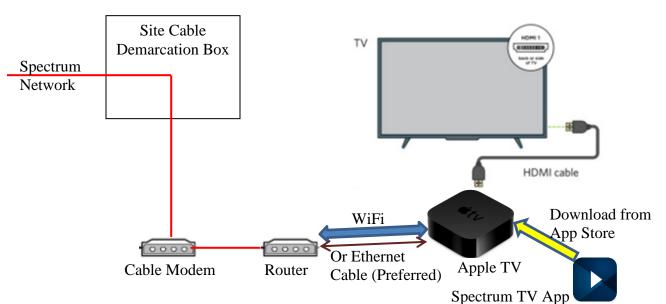


Google Chromecast streaming device can be connected to your router either via WiFi or Ethernet as shown. Ethernet connection is preferred but requires an Ethernet Adapter which is sold separately:

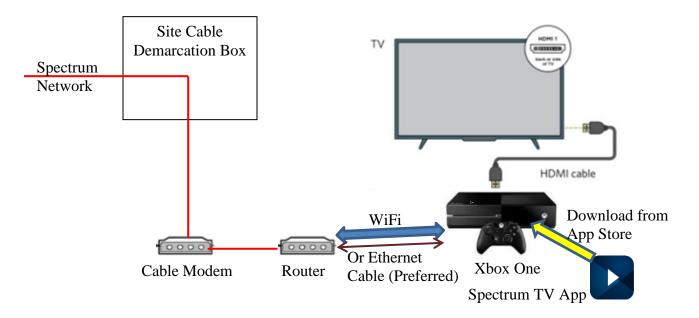
https://support.google.com/chromecast/answer/6178505?hl=en

e. Apple TV (Fourth Generation or newer, i.e. Apple TV HD or Apple TV 4K) Ref:

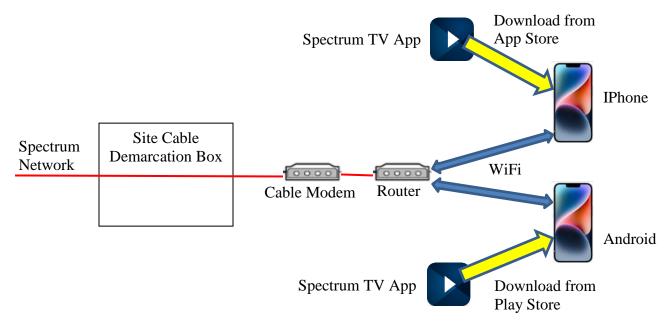
https://www.spectrum.net/support/tv/explore-spectrum-tv-app-apple-tv





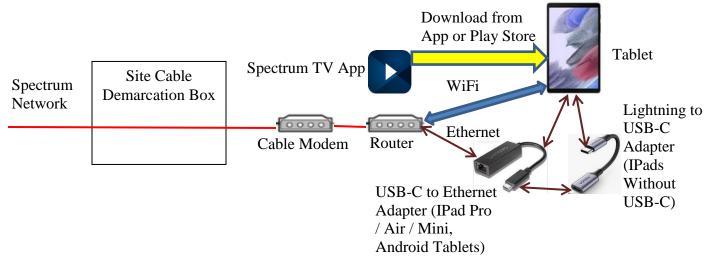


g. Phones : IPhone (iOS 12.0 & higher) or Android Phone (Android 5.0 OS or higher)



NOTE: It is possible to connect phones via Ethernet using adapters as shown in the next section. However, since WiFi is the most common method, only that option is shown here.

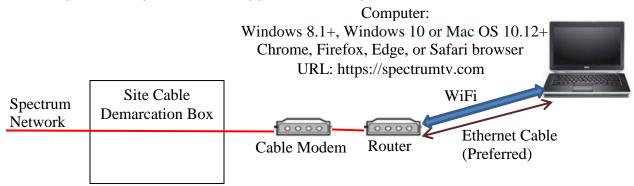
h. Tablets : Android, Kindle Fire & Fire HDX (excluding first generation), IPad & IPad mini (iOS 12.0 & higher), IPod Touch (iOS 12.0 & higher)



NOTE: Kindle Fire & IPod Touch are Wifi Only tablet devices.

i. Computer

Ref: https://www.spectrum.net/support/tv/about-spectrumtvcom



j. Casting & Mirroring

Ref: https://www.spectrum.net/support/tv/explore-spectrum-tv-app

Casting and mirroring allow you to redirect and/or duplicate the audio / video on a device screen to another device screen, typically from a smaller screen to a larger screen. Casting is a function of the Spectrum TV App which just forwards the incoming video/audio stream to another device that supports casting. That allows you to continue to use the device running the TV App for other purposes. Mirroring is a function of the device screen to the Spectrum TV App and duplicates anything being displayed on your device screen to the other device screen. That means you cannot use your device running the TV app for other purposes while streaming content. Note that casting and mirroring introduce lag and latency into the streaming experience, and therefore are not always an ideal solution for viewing content.

Casting via Spectrum TV App is only supported to Google Chromecast from Android phones, Android tablets, and Kindle tablets:

- 1. Verify Chromecast is connected to TV and configured
- 2. Verify Chromecast and phone or tablet device are connected to same WiFi network / router.
- 3. Bring up Spectrum TV App on phone or tablet.



5. From the TV selection list, click on the desired Google Chromecast device connected to your TV. The content being displayed on your phone / tablet should now also be displayed on your TV.

Casting can also be done to Google Chromecast from a computer:

- 1. Verify Chromecast is connected to TV and configured
- 2. Verify Chromecast and computer is connected to same WiFi network / router.
- 3. Using web browser, go to <u>https://spectrumtv.com</u> and login to Spectrum account.
- 4. On upper right, click on 'Watch TV', then click 'Continue'.
- 5. On the lower right, click on the TV Cast Icon:
- 6. From the TV selection list, click on the desired Google Chromecast device connected to your TV. The content being displayed on your computer should now also be displayed on your TV.

:Mirroring is supported via Apple Airplay from an iPhone (iOS 12 or higher) to an Apple TV (2nd generation or later):

- 1. Ensure that your iPhone and Apple TV are connected to your WiFi network.
- 2. Open the Spectrum TV app on your iPhone.
- 3. On your iPhone, swipe down from the bottom of your screen to open the **Control Center**.
- 4. Select **Airplay Mirroring** and then select your Apple TV or Mac computer from the list. If prompted, enter your AirPlay passcode.

Mirroring can also be done on Samsung phones and Samsung Galaxy tablets to Samsung Smart TVs via Samsung Smart View:

- 1. Ensure that your phone / tablet and your TV are connected to your WiFi Network.
- 2. Open the Spectrum TV app on your phone or tablet
- 3. On your phone or tablet, swipe down with two fingers to display Quick Settings. Scroll left / right to find & click on the 'Smart View' icon.
- 4. After searching local network, a list of both available Samsung Smart TVs and Google Chromecast devices will be displayed. Select the device you wish to mirror your phone or tablet screen. That device may show a notification to allow display from your phone or tablet. Select 'Allow' to begin mirroring.

Mirroring can also be done from a phone or tablet by connecting it via the appropriate HDMI cable directly to the HDMI input on your TV. You then use the Spectrum TV App on that phone or tablet and select the appropriate HDMI input on your TV to view the content.

DISCLAIMER: These are some of the ways that TV content can be redirected from one device to another, but does not necessarily comprise a complete or exhaustive list of methods.