

# Connectivity

## TABLE OF CONTENTS

[Modem](#) on page

[Gateway](#) on page

[Router](#) on page 3

[Switch](#) on page 4

[Hopper/Joey System Connectivity Hierarchy Tech Steps](#) on page 5

## MODEM

### What is a Modem?

o

A network device that converts a broadband cable or DSL line into a single Ethernet cable with access to the Internet

- A modem by itself provides internet access to only 1 device (usually a computer)
- To connect multiple devices to the internet, a modem must be connected to a router
- Adding a switch to a modem without a router does not work
- Some modems have router capabilities - these devices are known as [Gateways](#)

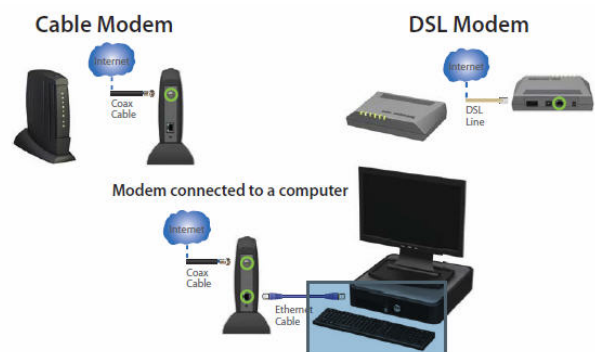
o

### Identifying a Modem

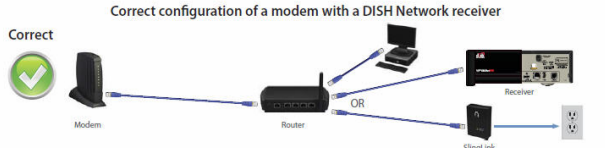
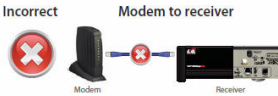

o

There are 2 types of modems: CABLE and DSL

- Generally, the word "Modem" will be printed on the device
- A modem will have a cable or DSL line connected to it and only 1 Ethernet out port
  - A modem may also have a USB port but only 1 Ethernet out port
- Sometimes it is difficult to tell the difference between a modem and a modem with router capabilities



### Connecting a DISH Network Receiver

<p>o</p> <p>Connecting a receiver to the internet using an Ethernet cable or a SlingLink requires an open Ethernet out port</p> <ul style="list-style-type: none"> <li>• A modem by itself only has 1 Ethernet out port which is usually connected to a computer</li> <li>• If a receiver is connected to a modem's only Ethernet out port the Subscriber's computer will no longer have internet access</li> <li>• Adding a switch to a modem does not work - only a router can be added to a modem to add additional Ethernet out ports</li> <li>• A modem must be connected to a router with an open Ethernet out port to connect a receiver to the internet</li> <li>• Use an open Ethernet out port on the router to connect the Ethernet cable or SlingLink</li> </ul>	<p>o</p> <p><b>Correct configuration of a modem with a DISH Network receiver</b></p> <p><b>Correct</b></p>  <p><b>Incorrect</b></p> <p><b>Modem to receiver</b></p>  <p><b>Modem switch to receiver</b></p> 
--	---

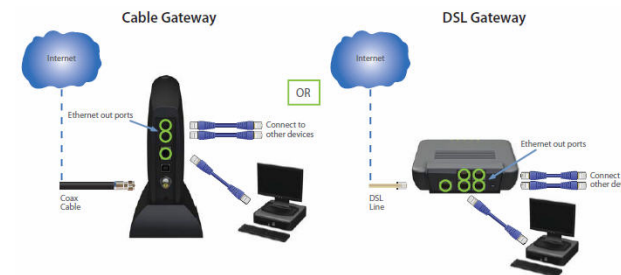
[Return to Top](#) on page

**GATEWAY**

**What is a Gateway?**

<p>o</p> <p>A network device that combines a modem and a router</p> <ul style="list-style-type: none"> <li>• Allows multiple devices to connect to the internet without a separate router</li> <li>• Adding a switch to a gateway will allow you to expand the number of open Ethernet out ports</li> </ul> <p>o</p>	
--	--

**Identifying a Gateway**

<p>o</p> <p>There are 2 types of gateways: Cable and DSL</p> <ul style="list-style-type: none"> <li>• Generally, the word "Gateway" will be printed on the device</li> <li>• A gateway will look like a modem but it will have extra Ethernet out ports</li> <li>• Gateways can be a challenge to identify because they look so much like modems</li> </ul>	<p>o</p> 
---	---

**Connecting a DISH Network Receiver**

o Connecting a receiver to the internet using an Ethernet cable or a SlingLink requires an open Ethernet out port

- A gateway will have multiple Ethernet out ports - one is usually connected to a computer
- Connect an Ethernet cable from the gateway to the DISH receiver if there are open Ethernet out ports on the gateway
- If there are no open Ethernet out ports on the gateway a switch needs to be installed

Correct configuration of a gateway with a DISH Network receiver

Correct

Gateway to Receiver

Gateway to Switch to Receiver

[Return to Top](#) on page

**ROUTER**

**What is a Router?**

o A network device connected to a modem that splits the internet from a single Ethernet out port to multiple ports

- If a Subscriber only has a modem, a router is required
- If there are no open Ethernet out ports on a router, a switch needs to be installed to increase the number of open ports

o

**Identifying a Router**

o There are 2 types of routers: Wireless (WiFi) and Wired (Non-WiFi)

- Generally, the word “Router” will be printed on the device
- Both types of routers have Ethernet out ports that provide Ethernet cable connections to other equipment
- Typically, a router will have 5 ports (1 in and 4 out)

Router

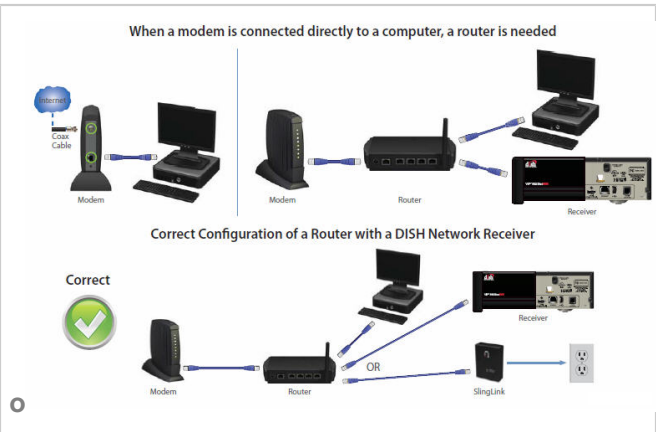
Many routers are capable of wireless networking and will have an antenna. Not all wireless routers have antennas

Ethernet in port for connecting the modem to the router

4 out ports for Ethernet cables to be connected from the router to equipment (computer, video game, receiver, SlingLink, etc)

**Connecting a DISH Network Receiver**

- 
- A modem must be connected to a router to connect a receiver to the internet
- Most routers require software to work properly with the Subscriber’s computer, it is usually packaged with the router

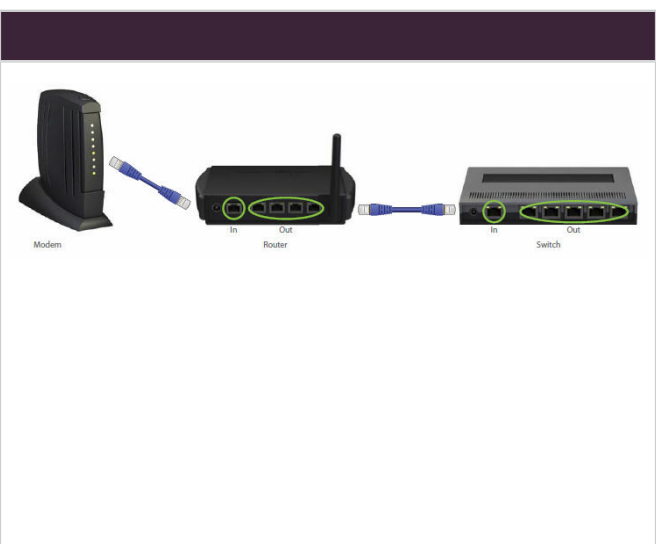


[Return to Top](#) on page

**SWITCH**

- What is a Switch?**
- - A network device that increases the number of Ethernet out ports on a router
  - To connect multiple devices to the internet, a router must be used
  - Adding a switch to a modem without a router does not work
- 

- Identifying a Switch**
- - A switch can be used with a router or a gateway, but it will not provide multiple Ethernet out ports if connected directly to a modem
  - Generally, the word “Switch” will be printed on the device
  - The switch is connected to a router or gateway’s Ethernet out port using an Ethernet cable
  - A switch is provided by DISH Network when the Subscriber’s router or gateway does not have enough open Ethernet out ports



**Connecting a DISH Network Receiver**

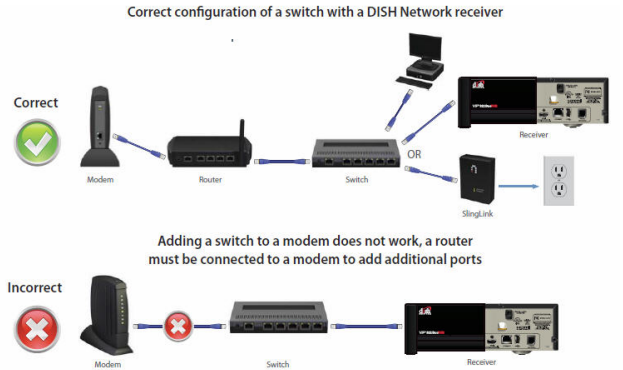
○



## Connectivity

If there are no open Ethernet out ports on the router or gateway, a switch needs to be installed:

- Disconnect an Ethernet cable from one of the used Ethernet out ports on the router/gateway
- Connect an Ethernet cable from the open Ethernet out port on the router/gateway to the switch
- Connect an Ethernet cable from an open Ethernet out port on the switch to the DISH receiver
- Connect the cable you disconnected to an open Ethernet out port on the switch
- Have the Subscriber verify all of their connected equipment is all still able to access the internet



[Return to Top](#) on page

## HOPPER/JOEY SYSTEM CONNECTIVITY HIERARCHY TECH STEPS

### Direct Ethernet Connection To Hopper

- o
- Direct Ethernet cable connection from router/switch to Hopper is always the preferred connection if the router is nearby
  - Hopper manages the features that are IP-dependent (IPVOD, On-Demand, etc.)
- Least degradation to bandwidth for TV Everywhere
- If Hopper is IP-connected, it shares connection with all linked Joeys so they can enjoy IP features as well



o

### Hopper Internet Connector (HIC) - Use Existing Cable

- o
- New connectivity device that uses coaxial wiring feeding Hoppers and Joeys to connect them to the Internet
- Used with existing pre-wired cable or when using the PASS-THRU to a Joey
- Preferred method of connectivity if Subscriber wants to use TV Everywhere



o

### USB Wi-Fi Adapter On Hopper

## Connectivity

- 
- Wi-Fi Adapter offers convenient, fast installation to connect Hop
- Hopper shares connections with all linked Joeys so they can enjoy IP features as well
- If Subscriber isn't likely to use TV Everywhere, achieves minimum connectivity needs (Order PPV with remote)
- Primarily an offer to existing DISH Subscribers, but used on new installations



○

### Hopper Internet Connector (HIC) - Running New Cable

- 
- New connectivity device that uses coaxial wiring feeding Hoppers and Joeys to connect them to the Internet
- Used when running to cable to the HIC/Router location
- Preferred method of connectivity if Subscriber wants to use TV Everywhere



○

[Return to Top on page](#)