

Solid Signal's

WHITE PAPER



Do you need a
single-wire upgrade?



It's fun to look at old pictures...



but it's not always fun when technology moves on without taking us with it. If you are a longtime DIRECTV customer who hasn't upgrade in a while, you may be in danger of being left behind.

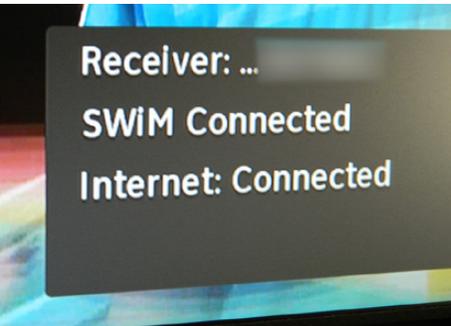
It's called SWiM technology and it's been standard for DIRECTV installs for about three years. Before SWiM, every receiver needed a separate line all the way to the dish or multiswitch... and DVRs needed two lines. This made it hard for installers working with homes pre-wired for cable TV, increasing costs and install times. Homeowners who had cables running through the walls didn't like the idea that they needed more wires, often outside the walls, to get basic service.

DIRECTV SWiM technology was developed to address this. The goals were simpler installation, a single wire to each receiver, and the ability to use splitters across the line in order to make installs go faster.

SWiM technology was introduced with the HR20 DVR and rapidly moved across the equipment line, By 2009 all new DIRECTV equipment was SWiM-capable, but could still be used with the older setups. However, starting in 2012, DIRECTV started making receivers and DVRs that required SWiM technology: the [HR44 Genie DVR](#) and the [H25 HD receiver](#). What can you do if you want to upgrade, but don't have SWiM technology?



How do you know what you have?



Receiver: ...
SWiM Connected
Internet: Connected

There are two ways to know if you have SWiM technology installed already. Start with pushing the {DASH} button on your remote. In newer receivers this will pop up a message like the one shown at left. It's simple... if it says SWiM Connected, you are.

If you can't get to the receiver, you can look at the equipment. Round dishes and the old Phase III dish are not SWiM-compatible. The AT-9 Dish (shown at right) is SWiM-compatible but should be replaced due to reliability issues.



IF YOU HAVE A NEWER DISH...

take a look at it. Is there only one wire coming from it, or four? One wire means that you have SWiM technology. Four means that unless you have an external multiswitch, you don't have SWiM technology. The dish on the left is definitely using SWiM technology.



**Looking for some more advanced tutorials?
Click to read and download these other white papers:**

**[A Guide to DIRECTV Networking](#)
[More than 16 tuners in the home](#)**

UPGRADING AN LNB

Unless you have the Slimline-series dish, you will need to completely replace it in order to upgrade to SWiM technology. If you are unfamiliar with aiming a multisatellite dish and don't have a satellite meter, it can be tough and you might want to find a local expert to call. If you wish to try it yourself, get the basic dish pointing setup from your receiver's satellite setup screens and use the signal strength meter to aim the dish as well as possible.



On the other hand if you do have a Slimline dish with four lines, you can upgrade just the LNB (the front part) with ease, or you can add an external multiswitch. Adding an external multiswitch gives you the option to upgrade easily but is more expensive.

To change out an LNB you need the following:

[**DIRECTV SL5-SWM SlimLine Single Wire Ka/Ku Five LNB With Built-In Multiswitch \(SL5-SWM\)**](#)

[**DIRECTV SWS-8 Satellite 8-Way Wide Band MRV Compatible Splitter \(2 -2150 MHz\)**](#)

[**DIRECTV SWM-PI 29V 1.5A Power Inserter for SWM-8 \(SWM-PI\) from Solid Signal**](#)

[**Solid Signal Custom Cable Lengths RG6 with High Quality Solid Signal Connectors**](#)

(approximately 4' of cable for the dish, plus any additional runs you may need)

You will also need a pencil, a ladder, a 7/16" open-end wrench, screwdrivers and cable ties.

Note: in some installations, you may be able to use a smaller splitter or LNB. Call Solid Signal at 1.877.312.4547 if you have questions.

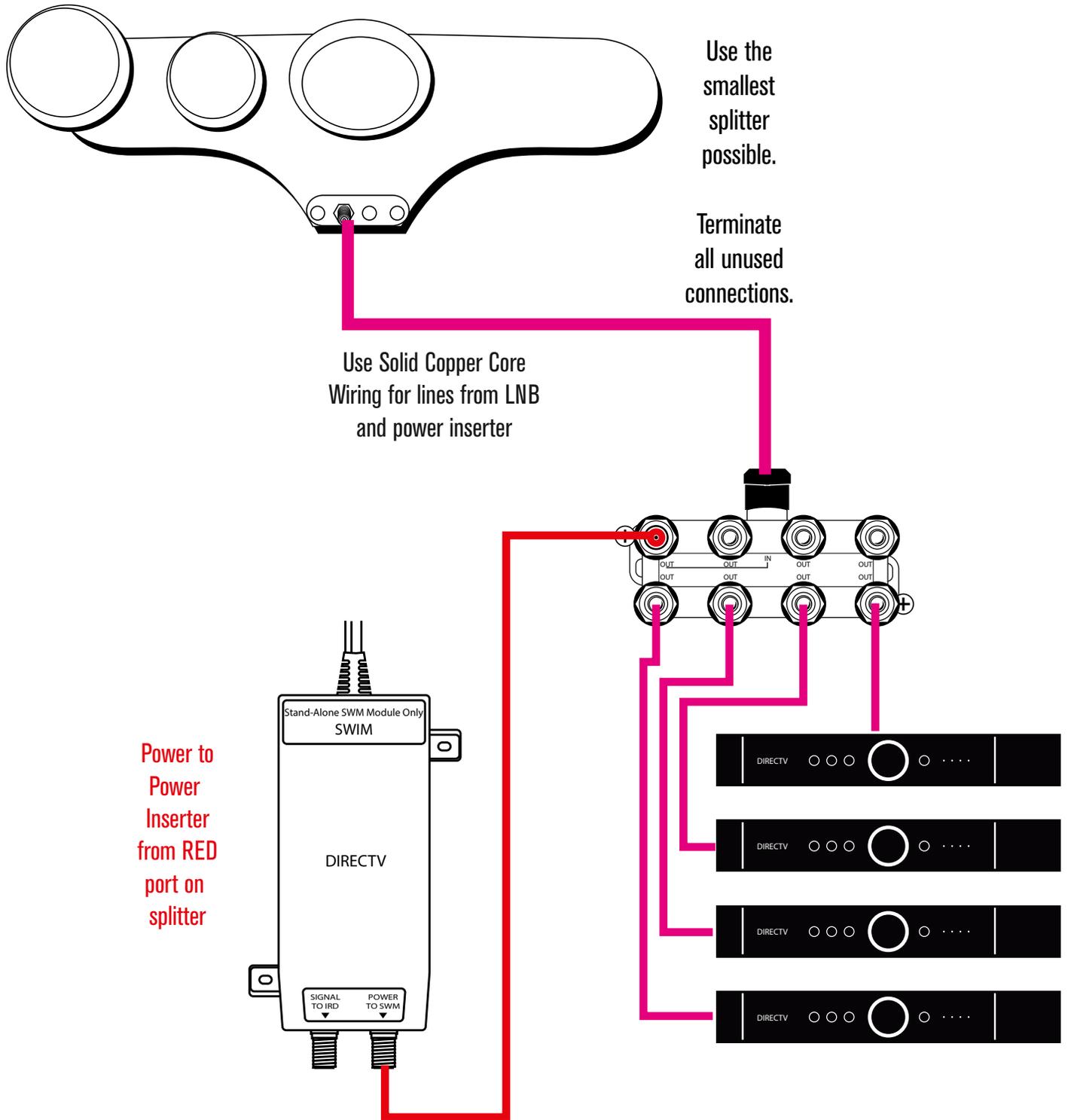
Go up to the dish and before you move anything, use the pencil to mark the position of all mounting and adjustment screws on the back of the dish. If you accidentally bump the dish, you'll know it.

Disconnect the LNB by unscrewing it and removing the coaxial cables. Feed the four cables back through the arm.

Connect the new, single cable to the LNB and feed it through the arm. Connect it to the splitter at the top. Run the four existing cables into the splitter. **You will need a line to a power source connected to port #1 (the red port.) You can use existing lines or run a new one for this purpose.**

The next page shows a diagram of a basic SWM LNB installation.

INSTALLING A SWM-ENABLED LNB



SHOULD YOU CHOOSE A SWM-13 LNB?

DIRECTV's latest LNB gives you the option of 13 tuners on a single line. This may give you the ability to do without an external multiswitch, and that may make your installation easier. On the other hand, the new [SWM-13 LNB](#) is more expensive than the traditional SWM LNB. Should you choose it? Here's a way to decide.



First, the new SWM-13 LNB will not work for you if you're in a market where you need the Slimline-5 LNB. Some markets do need that LNB to get some channels. Our handy, always updated [list of Slimline-5 markets](#) will help you to decide. If you get channels from any of the cities on that list, you'll need a Slimline-5 LNB so the SWM-13 LNB is the wrong choice for you.

You also should decide if you actually need that much capacity. Are you going to have more than 8 tuners? A Genie DVR is 5 tuners, a regular DVR is 2 tuners, and a regular receiver is 1 tuner. (A Genie Mini Client doesn't count as a tuner.) Add up the tuners you'll need and you'll get an idea whether or not you'll be fine with the 8 tuners supplied by the regular SWM LNB.

To install a SWM-13 LNB, follow the instructions in the previous post. Here are the parts you'll need:

[DIRECTV SWM-13 LNB Next-Generation Slimline-3 \(SWM13LNB\) from Solid Signal](#)
[DIRECTV SWS-8 Satellite 8-Way Wide Band MRV Compatible Splitter \(2 -2150 MHz\)](#)
[DIRECTV SWM-PI 29V 1.5A Power Inserter for SWM-8 \(SWM-PI\) from Solid Signal](#)
[Solid Signal Universal Compression Tool \(LCCT-1-SS\)](#)
[Digicon S-Series DS-6 RG-6 Connectors \(Bag of 100\) \(DS6\)](#)
[Solid Signal Custom Cable Lengths RG6 with High Quality Solid Signal Connectors](#)

(one 3' run for the splitter, and any additional runs you may need)

A pencil, a ladder, a 7/16" open-end wrench, screwdrivers and cable ties

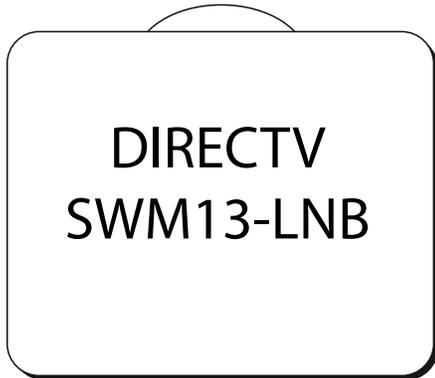
After you decide where the multiswitch should go, cut the four lines to the dish so there is approximately 12" slack. Attach new compression connectors to the lines and connect them to the four ports at the bottom labeled Sat 99/101 and Sat 103/110/119. The flex ports are not used.

Connect a line from the SWM1/PWR port to the splitter. Attach compression connectors to the other side of the line you cut and attach them to the splitter. In general, the SWM2 port is not used. While you can use the SWM1/PWR port just for power and the SWM2 port just for receivers, that is a less stable configuration than using a power-passing splitter. **You will need a line to a power source connected to port #1 (the red port.) You can use existing lines or run a new one for this purpose.**

Make sure that any unused ports are terminated, using terminators you removed from the splitter. The following post shows a basic multiswitch installation.

INSTALLATION: SWM-13 LNB

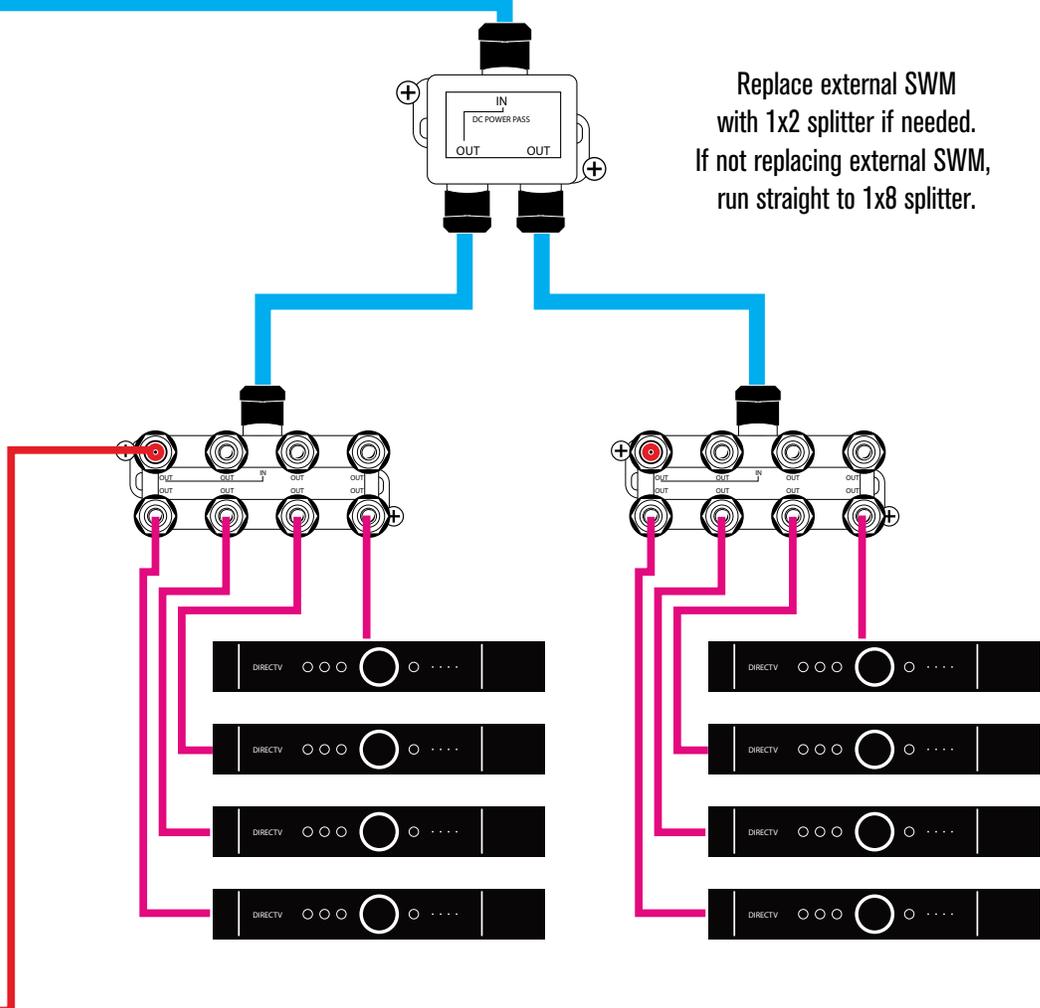
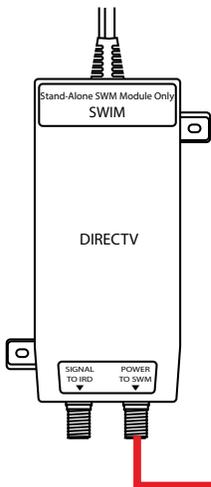
13-tuner Single-Wire Multiswitch



Your installation may vary depending on the number of splitters needed. Always use the smallest number of splitters.

Replace external SWM with 1x2 splitter if needed. If not replacing external SWM, run straight to 1x8 splitter.

Line from power inserter to red port on all splitters.



Total number of tuners cannot exceed 13.
Genie = 5 tuners (each Genie Client = 0 tuners)
DVR = 2 tuners, receiver = 1 tuner



ADDING A MULTISWITCH

Another option for upgrading is the use of an external multiswitch. This will allow you to do the upgrade without touching the dish but is more expensive and will require you to cut cables and attach compression connectors. Once in place, an external multiswitch can be easily upgraded if you find that you need to add receivers.

You'll need the following:

[**DIRECTV SWM-8 Single Wire Multi-Switch With Power Supply \(8 Channel\) \(SWM-8\)**](#)

[**DIRECTV SWS-8 Satellite 8-Way Wide Band MRV Compatible Splitter \(2 -2150 MHz\)**](#)

[**DIRECTV SWM-PI 29V 1.5A Power Inserter for SWM-8 \(SWM-PI\) from Solid Signal**](#)

[**Solid Signal Universal Compression Tool \(LCCT-1-SS\)**](#)

[**Digicon S-Series DS-6 RG-6 Connectors \(Bag of 100\) \(DS6\)**](#)

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(one 3' run for the splitter, and any additional runs you may need)

A pencil, a ladder, a 7/16" open-end wrench, screwdrivers and cable ties

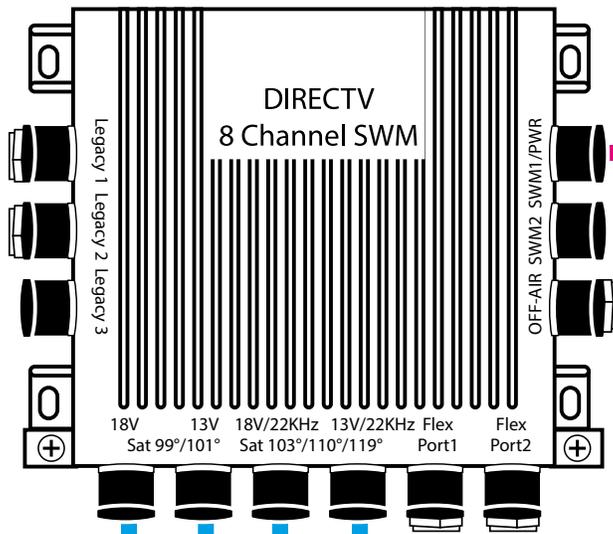
After you decide where the multiswitch should go, cut the four lines to the dish so there is approximately 12" slack. Attach new compression connectors to the lines and connect them to the four ports at the bottom labeled Sat 99/101 and Sat 103/110/119. The flex ports are not used.

Connect a line from the SWM1/PWR port to the splitter. Attach compression connectors to the other side of the line you cut and attach them to the splitter. In general, the SWM2 port is not used. While you can use the SWM1/PWR port just for power and the SWM2 port just for receivers, that is a less stable configuration than using a power-passing splitter. **You will need a line to a power source connected to port #1 (the red port.) You can use existing lines or run a new one for this purpose.**

Make sure that any unused ports are terminated, using terminators you removed from the splitter. The following post shows a basic multiswitch installation.



INSTALLING AN EXTERNAL MULTISWITCH

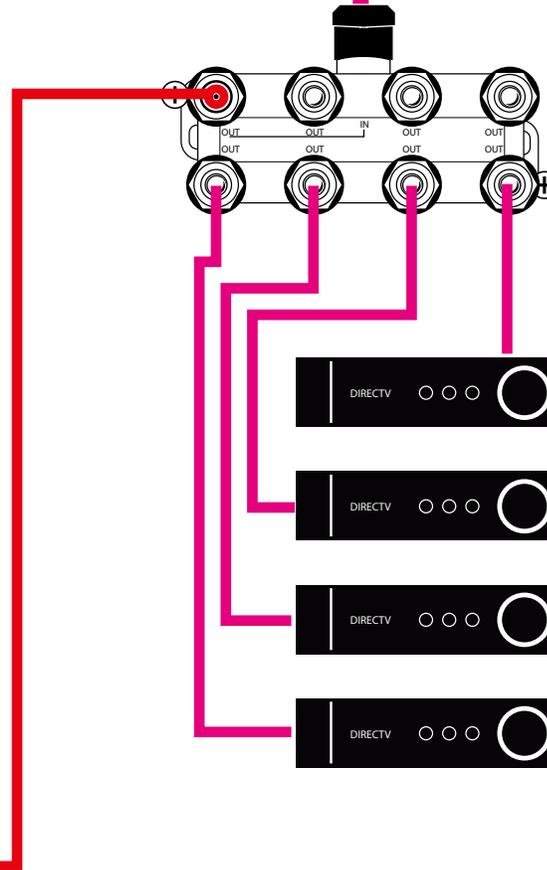
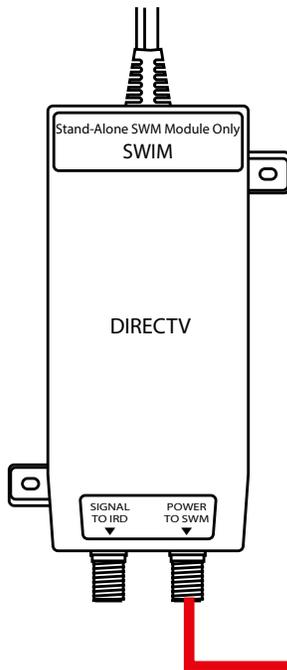


Use the smallest splitter possible.

Terminate all unused connections.

Lines from Dish
(with new connectors)

Power to
Power
Inserter
from RED
port on
splitter



Existing
lines
with new
connectors



ATTACHING THE POWER INSERTER

Whether you upgraded your LNB or added a multiswitch you will need a power inserter. The power inserter makes the SWiM system function. Find a location with AC power at least 15 cable feet from the dish or switch and run a line from the **RED** port on the splitter to the “POWER TO SWM” port. If you have an external switch, you can run a dedicated line from the “Legacy 3” port on the multiswitch instead.



There is a second port on the power inserter labeled SIGNAL TO IRD. This can be used to attach to a receiver, but it's not recommended because of the risk of burning out the receiver if not connected properly.

Preparing the receivers for the new system

After you have connected the power inserter, you are ready to change the receivers over to SWiM. If you have any non-DIRECTV-branded receivers, such as any Hughes, RCA, Sony, or Philips receivers, they should be replaced with new, SWiM-capable receivers. The DIRECTV D10, D11, R10, R15 and H10 receivers are also incompatible with SWiM and should be replaced.

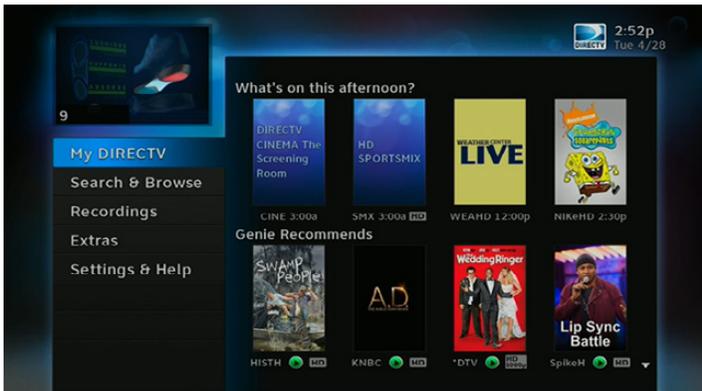
Other receivers and DVRs may have B-band converters on the back. The B-Band converter allows HD receivers to work with the older system and are no longer used. If you see these grey or black boxes connected to the back of your receiver, disconnect them.



If you have DVRs with two lines attached, disconnect the line into “Satellite In 2.” Use a cheap “barrel” connector (available at any home store or discount department store) to add a terminator to these lines if they aren't used.

GOING THROUGH SATELLITE SETUP

You will need to change the satellite setup on every receiver. **Start by pressing {MENU}.**



Arrow down to "Settings & Help" and press {SELECT}. Then, with "Settings" highlighted, press {SELECT} again.



Arrow down to "Satellite" and press {SELECT}. Then, arrow down to "Repeat Satellite Setup" and press {SELECT} again.

Because this process interrupts all programming, **you will have to push the {DASH} button** on the remote to continue. When you do, you will see the Satellite Setup menu. When you do, you will see the Satellite Setup menu. Here you can select the dish type you want and the multiswitch type. The dish type will probably be 04: Slimline 5 unless you have put in a different LNB. If the multiswitch type says "02: Multiswitch," change it to "01: SWM". Then arrow over and down to "Recheck SWM" and press {SELECT}.

You will be shown basic settings for aiming your dish based on the ZIP code you entered when the receiver was set up for the first time. If you need to change that ZIP code, arrow over and down to "Dish Pointing", press {SELECT} and enter a new ZIP code.

When the settings are right, arrow over to "Continue," and press {SELECT}. The receiver will then go through its automatic setup and retrieval of guide data. This can take several minutes. When it's done, you will have the option to set up the remote if you wish. When setup is finally done, you can watch live TV or view the guide.

GETTING CONNECTED

One of the advantages of SWiM is that one connection to the internet can be shared with every receiver. This eliminates the need to run ethernet cables around the home. While coax networking can be confusing, here is a basic guide.

You will need the following:

[DIRECTV Cinema Connection Kit w/ Power Supply \(DECA2PR\)](#)

[DIRECTV Ethernet Coax Adapter DECA \(DECA1MR01\)](#)

(one for every older networkable receiver)

[DIRECTV Band Stop Filter \(BSFR01\)](#)

(one for every non-networkable receiver)



If your receivers have “real buttons” instead of touch panels on the front, you will need a DECA to split out the network signal. In addition, every receiver without an ethernet port must have a band stop filter to prevent damage.

To install a basic coax network:

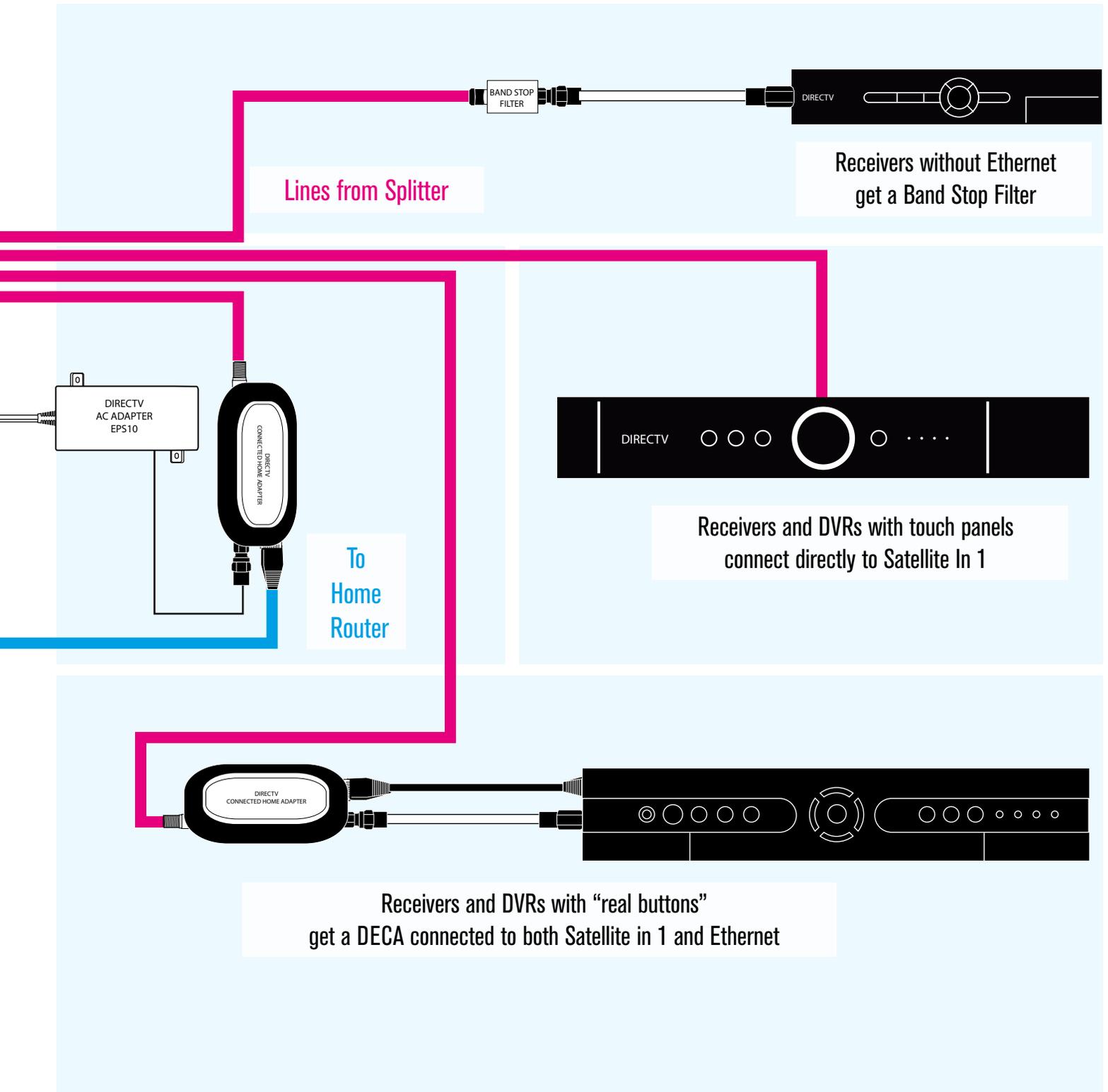
- Run a coax cable to a room with an ethernet connection (like, where your router is.)
- Connect the Cinema Connection Kit to both coax and ethernet.
- Disconnect any older (non-touch-panel) receivers from the satellite line.
 - *For networkable receivers: Connect the satellite line to the DECA, then connect the DECA to both Satellite In 1 and Ethernet on the receiver.*
 - *For non-networkable receivers: Connect the satellite line to the band stop filter, then connect the band stop filter to the receiver.*
- Finally, power up each networked receiver (with or without “real buttons”) and do the following:
 - {MENU}, then Arrow down to “Settings and Help” then press {SELECT}
 - Make sure “Settings” is highlighted and press {SELECT}
 - Arrow down to “Network Setup and press {SELECT}
 - Make sure “Connect Now” is highlighted and press {SELECT}

At this point the lights on every DECA and Cinema Connection Kit should be green and all receivers should say **“Congratulations, your receiver is now connected to the Internet.”**

The following diagram shows a very basic coax networking installation..

BASIC COAX NETWORKING

Some wiring and items have been omitted from this diagram in the interest of clarity. Consult other diagrams for satellite wiring.





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