

# ***KeyTV***

## **MSSC Troubleshooting Guide**

v2018-11-08



## 1. Is the Blue LED power indicator illuminated?

### 1.1. NO:

1.1.1. Are the Red Wire (+), Black Wire (-) power wires properly connected to MSSC?

1.1.1.1. NO – Make proper wire termination ensuring good contact

1.1.1.2. YES – Proceed to next step.

1.1.2. Is 12VDC available at power wires connected to MSSC?

1.1.2.1. NO – Ensure electrical circuit is active. MSSC must have 12VDC for operation.

1.1.2.2. YES – Replace MSSC.

### 1.2. YES:

1.2.1. Proceed to next step

## 2. Does ONLY ONE or MULTIPLE television locations have an issue?

2.1. ONE television location has a problem.

2.1.1. Proceed to step 3

2.2. MULTIPLE television locations have a problem.

2.2.1. Proceed to step 4

## 3. ONLY ONE location has one or multiple of the following signal(s) not working:

### 3.1. ANT:

3.1.1. CATV and SAT both work, but ANT doesn't

3.1.1.1. ANT signals will not be present if CATV signals are present. Ensure the CATV cable is disconnected from MSSC.

3.1.1.2. Ensure television is set to ANT mode within channel setup menu.

3.1.2. CATV and ANT both do not work, but SAT does work.

3.1.2.1. Ensure the CATV cable is disconnected from MSSC.

3.1.2.2. Ensure television is set to ANT mode within channel setup menu.

3.1.2.3. Replace Diplexer

3.1.3. All three signals (CATV, ANT and SAT) all do not work.

3.1.3.1. Proceed to step 3.4

### 3.2. CATV:

3.2.1. ANT and SAT both work, but CATV doesn't

3.2.1.1. Ensure coax cable is connected to CATV port of MSSC.

3.2.1.2. Ensure television is set to CATV mode.

3.2.1.3. Ensure RV Park Cable Signal strength is  $\geq -50$ dbm

3.2.2. SAT works, but ANT and CATV do not work:

3.2.2.1. Ensure television is set to CATV mode within channel setup menu.

3.2.2.2. Replace Diplexer.

3.2.3. All three signals (CATV, ANT and SAT) all do not work.

3.2.3.1. Proceed to step 3.4

### 3.3. SAT:

3.3.1. Does another television location receive SAT signals?

3.3.1.1. NO – Proceed to next step

3.3.1.2. YES, and I only have one receiver connected – Proceed to next step.

- 3.3.1.3. YES, and I wish to have two or more receivers – Note that MSSC only supports one satellite receiver at any one location within the RV. Refer to “work-around” diagrams for resolution. However DirecTV SWM systems do allow multiple televisions with the MSSC. If you are using a DirecTV SWM system, proceed to the next step.
- 3.3.2. Does ANT or CATV work?
  - 3.3.2.1. NO – None of the signals are working: Proceed to step 3.4
  - 3.3.2.2. YES – At least one or both ANT and CATV work: Proceed to next step.
- 3.3.3. Reconfirm that SAT does work at another television location within the RV?
  - 3.3.3.1. NO – Confirm coax cable length is 25 feet or less when connected to SAT port of MSSC. If no resolution, proceed to step 4.4
  - 3.3.3.2. YES – Another location does work with SAT signals. Confirm coax cable length is 25 feet or less when connected to SAT port of MSSC. If no resolution, proceed to next step.
- 3.3.4. Swap Diplexers with location that now works and location that was in question.
  - 3.3.4.1. If SAT signals are now viewable at the original location but not at known working location, replace Diplexer. If no resolution, proceed to next step.
  - 3.3.4.2. If SAT signals are not viewable at original location, exchange TV-X port at the MSSC with another known working TV-port. Now a known working TV-port at the MSSC and a known working diplexer are connected to the location in question. Does original location now work?
    - 3.3.4.2.1. NO – Reevaluate F-Connector connections are tight. If that doesn’t work, replace F-Connectors. If that doesn’t work, replace coax cable.
    - 3.3.4.2.2. YES – Confirm whether new television location is working too. If not, MSSC may need replacement.
- 3.4. All three signals (ANT, CATV and SAT) do NOT work:
  - 3.4.1. Ensure TV-X coax wire has a good connection on MSSC
  - 3.4.2. Ensure TV-X coax wire has a good connection on Diplexer
  - 3.4.3. At the MSSC, exchange coax cables of TV-X Port that is not working to another known TV-Y port that is working.
    - 3.4.3.1. Does television location in question now work?
      - 3.4.3.1.1. YES, but TV-Y doesn’t work: Replace MSSC
      - 3.4.3.1.2. NO – Double check Coax Connections and if that still doesn’t work, proceed to next step.
  - 3.4.4. Replace Diplexer with another Diplexer known to work from another location within the RV.
    - 3.4.4.1. If known Diplexer works, replace old Diplexer.
    - 3.4.4.2. If known Diplexer doesn’t work, replace F-Connections at each end of Coax Cable.
    - 3.4.4.3. If new connections still do not work, proceed to next step.
  - 3.4.5. Replace Coax Cable

## 4. MULTIPLE locations have one or multiple signals not working:

- 4.1. ANT doesn't work at all locations, but CATV and SAT do work at all locations
  - 4.1.1. Disconnect CATV cable from MSSC.
  - 4.1.2. Is 12VDC present at ANT port of MSSC?
    - 4.1.2.1. NO – but Blue Light is on, replace MSSC.
    - 4.1.2.2. YES – check 12VDC is present at Antenna.
    - 4.1.2.3. If 12VDC present at Antenna, replace Antenna.
    - 4.1.2.4. If 12VDC not present at Antenna, ensure F-connections are installed properly.
    - 4.1.2.5. If F-Connectors are not installed correctly, replace connections.
    - 4.1.2.6. If F-Connectors are installed correctly, replace coax cable.
- 4.2. ANT and CATV do not work at all locations, but SAT does work.
  - 4.2.1. Ensure all F-Connectors at MSSC have a good connection
  - 4.2.2. Replace MSSC
- 4.3. CATV doesn't work at all locations, but ANT and SAT do work at all locations
  - 4.3.1. Ensure CATV wire is connected to MSSC
  - 4.3.2. Ensure Television is set to appropriate tuner (CATV mode, not ANT)
  - 4.3.3. Replace MSSC
- 4.4. SAT doesn't work at all locations, but ANT and/or CATV does work at all locations.
  - 4.4.1. For Portable Satellite Dish Antenna being used:
    - 4.4.1.1. Do you have the coax cable connected to the MAIN port of the satellite antenna?
      - 4.4.1.1.1. NO – Make coax cable connection.
      - 4.4.1.1.2. YES – Proceed to next step
    - 4.4.1.2. Do you have the coax cable connected to the SAT port of the MSSC?
      - 4.4.1.2.1. NO – Make coax cable connection.
      - 4.4.1.2.2. YES – Proceed to next step
    - 4.4.1.3. Did you refresh your receivers so they are available for use at your RV location?
      - 4.4.1.3.1. NO – Contact service provider and refresh service for RV use.
      - 4.4.1.3.2. YES – Proceed to next step
    - 4.4.1.4. Is your cable length 25 feet or less?
      - 4.4.1.4.1. NO – Replace with shorter cable that is 25 feet or less.
      - 4.4.1.4.2. YES – Proceed to next step.
    - 4.4.1.5. Do you see a setup screen seeking to scan?
      - 4.4.1.5.1. NO – Try connecting portable satellite dish directly to satellite receiver. Do you now get a setup screen? If yes
      - 4.4.1.5.2. YES – Scan and proceed to next step
    - 4.4.1.6. Once setup is complete do you have programming available?
      - 4.4.1.6.1. YES, no further action is needed.
      - 4.4.1.6.2. YES, but only limited programming – Some Satellite Dish Antennas perform better than others and some even have software updates available to help with obtaining a stronger

signal. Most Satellite Receiver manuals discuss low look angles and geographic location as potential issues for satellite programming. Elevating the portable satellite dish to the rooftop may help.

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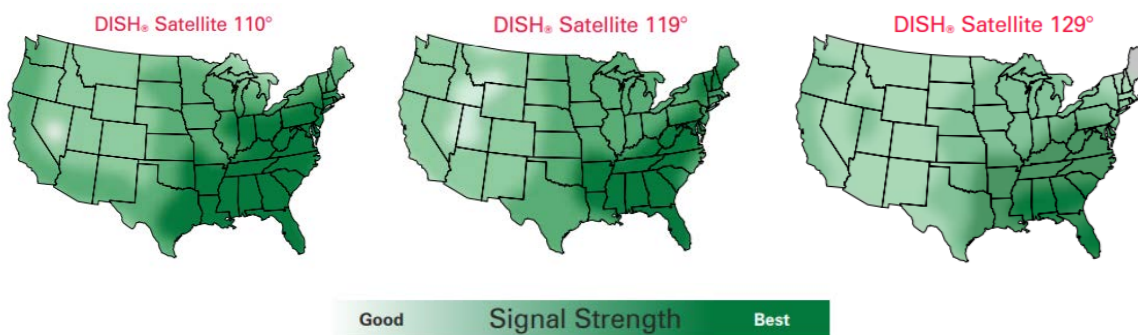
## 5. Referenced Content from Portable Satellite Dish Manuals

### ABOUT SATELLITE TV RECEPTION

Satellite television uses satellites in a geostationary orbit over the earth. This type of orbit enables the satellites to stay aligned over one place on the surface of the earth and to transmit your television programming to the KING Tailgater when pointed at the appropriate satellite.

Your television programming is delivered from up to 3 satellites located at the 110°, 119°, and 129° west longitudes. The KING Tailgater will automatically find and then switch between satellites as you change channels to offer you the ideal viewing experience.

Due to the low look angle for the 129 satellite in the northeastern region of the United States, you may experience difficulty viewing programming from the 129 satellite while in this area. (Programming from the 110 and 119 satellites should still be available.)



**NOTE** A 25 foot coaxial cable is included and recommended for use with the antenna. If using an alternate cable, all cabling should be RG6 with a maximum length of 50' from Playmaker to Receiver.

## 6. Troubleshooting Scenarios

### Scenario A – All Televisions have no signal at any location within RV.

#### Symptoms/Diagnosis:

- Blue LED is not illuminated.
- MSSC Red and Black wires are connected properly
- 12VDC not present at power cables

#### Possible Causes/Solutions:

- Circuit tripped, fuse blown: Reset breaker or replace fuse.
- Power is available at MSSC: Replace MSSC.

### Scenario B – Television in Living Room does not receiver Antenna programming.

#### Symptoms/Diagnosis:

- Blue LED is illuminated
- Antenna programming is also not viewable at other locations.
- CATV does work at all locations when connected to Park Cable

#### Possible Causes/Solutions:

- CATV coax cable is installed at MSSC: Remove CATV coax cable from MSSC.
- MSSC port doesn't provide 12VDC at ANT port: Replace MSSC.
- MSSC provides 12VDC at ANT, coax cable connection at Antenna doesn't have power: Check coax connections at MSSC and Antenna. Replace f-connector and/or coax cable.
- MSSC provides 12VDC at ANT, coax cable connection at ANT also has power: Replace Antenna

### Scenario C – Television in Bedroom does not receive Satellite programming.

#### Symptoms/Diagnosis:

- Blue LED is illuminated
- Antenna programming is viewable at all locations
- Satellite programming works if receiver is moved to other locations within the RV.
- Satellite programming available when receiver is directly connected to Satellite Antenna.

#### Possible Causes/Solutions:

- Coax cable length is too long: Ensure coax cable between MSSC and Satellite Antenna is 25 feet or less.
- Weak signal due to geographic location: Elevate Satellite Antenna and/or clear any obstructions south of Satellite Antenna.

## 7. Multiple Satellite Receiver “work-arounds”

Although KeyTV does not support more than one satellite receiver at a time (other than DirecTV SWM systems), there are “work-arounds” to support two televisions. Below are some potential scenarios.

### DISH Network

Portable Satellite Dish with two connections (“MAIN” + “SEC”) and user wishes to have two satellite receivers active.

- Some portable satellite dish antennas are capable of connecting to two receivers. However one will be a master receiver, which is connected to the “MAIN” port of the unit, and one receiver will be a slave, which is connected to the “SEC” port of the unit.
- The “MAIN” port of the satellite dish antenna is to be connected to the SAT port of the MSSC. This allows any one location within the RV to have satellite programming via the Diplexer Wall Plate and will become the master receiver location.
- The “SEC” port of the satellite dish antenna is to be connected to a receiver nearby the second television of choice.

*NOTE: The master receiver is able to tune to any satellite programming subscribed while the slave receiver is limited to tune to a channel corresponding to a satellite for which the master receiver is pointed toward.*

Dish Network 1000.2 Dish Pro Plus LNB Satellite Dish and user wishes to have two or more satellite receivers active.

- Connect LNB port 119 to the SAT port of the MSSC. This allows any one location within the RV to have satellite programming via the Diplexer Wall Plate.
- The remaining two LNB ports (110 or 129) can be connected directly to additional receivers at locations desired for independent program viewing.

### DIRECTV

Portable Satellite Dish with two connections (“MAIN” + “AUX”) and user wishes to have two or more satellite receivers active.

- User can utilize a SWM8 system to connect multiple televisions to a DIRECTV portable satellite dish antenna. The SWM8 system requires a power inserter to operate.
- Connect the “MAIN” port of the dish antenna to the 18V port of the SWM8. Some portable dish antennas require their own separate power inserter, which is to be installed between the ports mentioned above.
- Connect the “AUX” port of the dish antenna to the 13V port of the SWM8.
- Connect the “SWM1/PWR” port of the SMW8 to the “TO SWM” port of the SWM8 Power Inserter
- Connect the “TO IRD” port of the SWM8 Power Inserter to the SAT port of the MSSC.

*NOTE: The SWM8 allows all four of the MSSC TV-ports to be independently controlled by a SWM ready receiver at any location within the RV.*

## **8. Typical Wiring Diagrams**

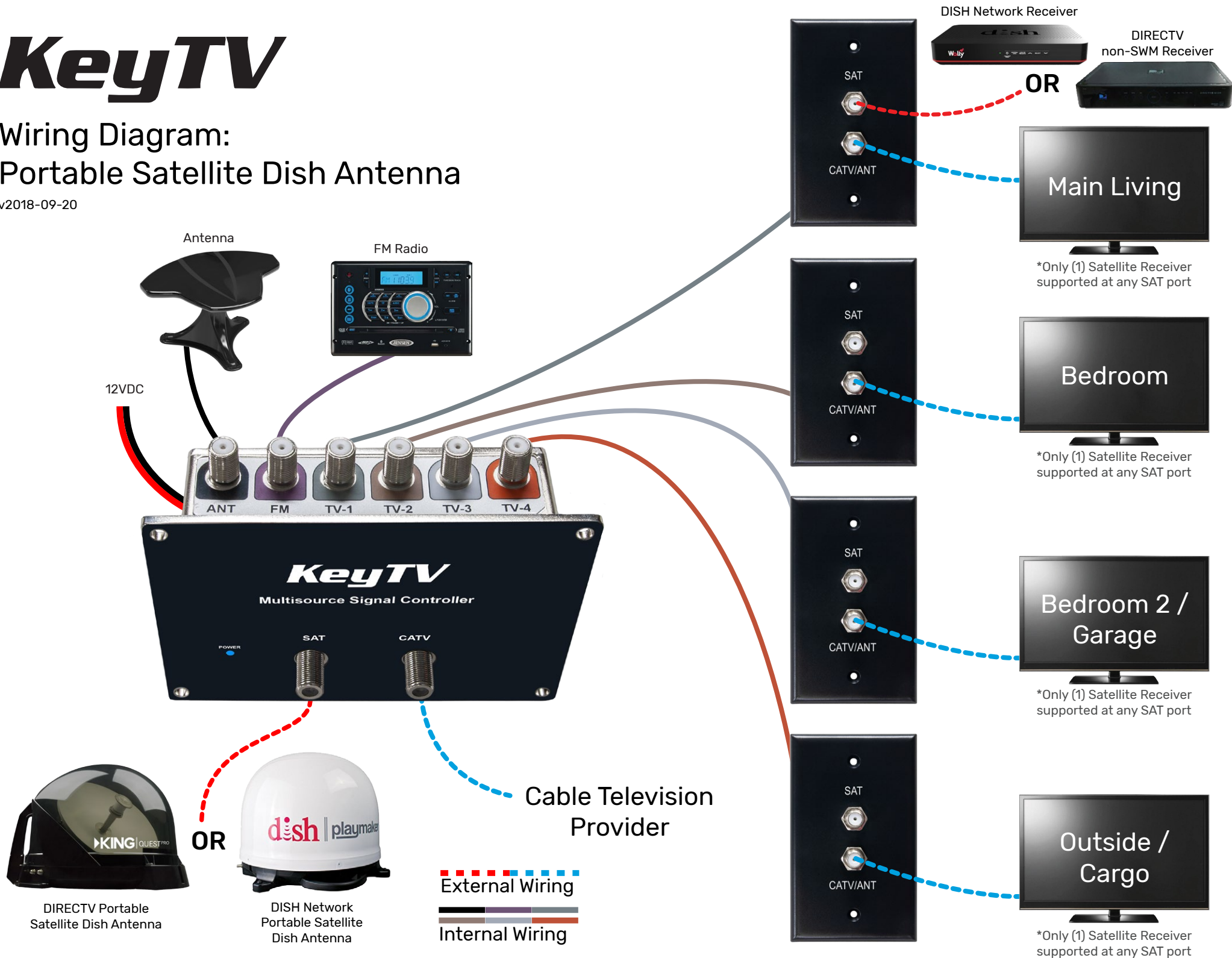
*(Following pages)*



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## Wiring Diagram: Portable Satellite Dish Antenna

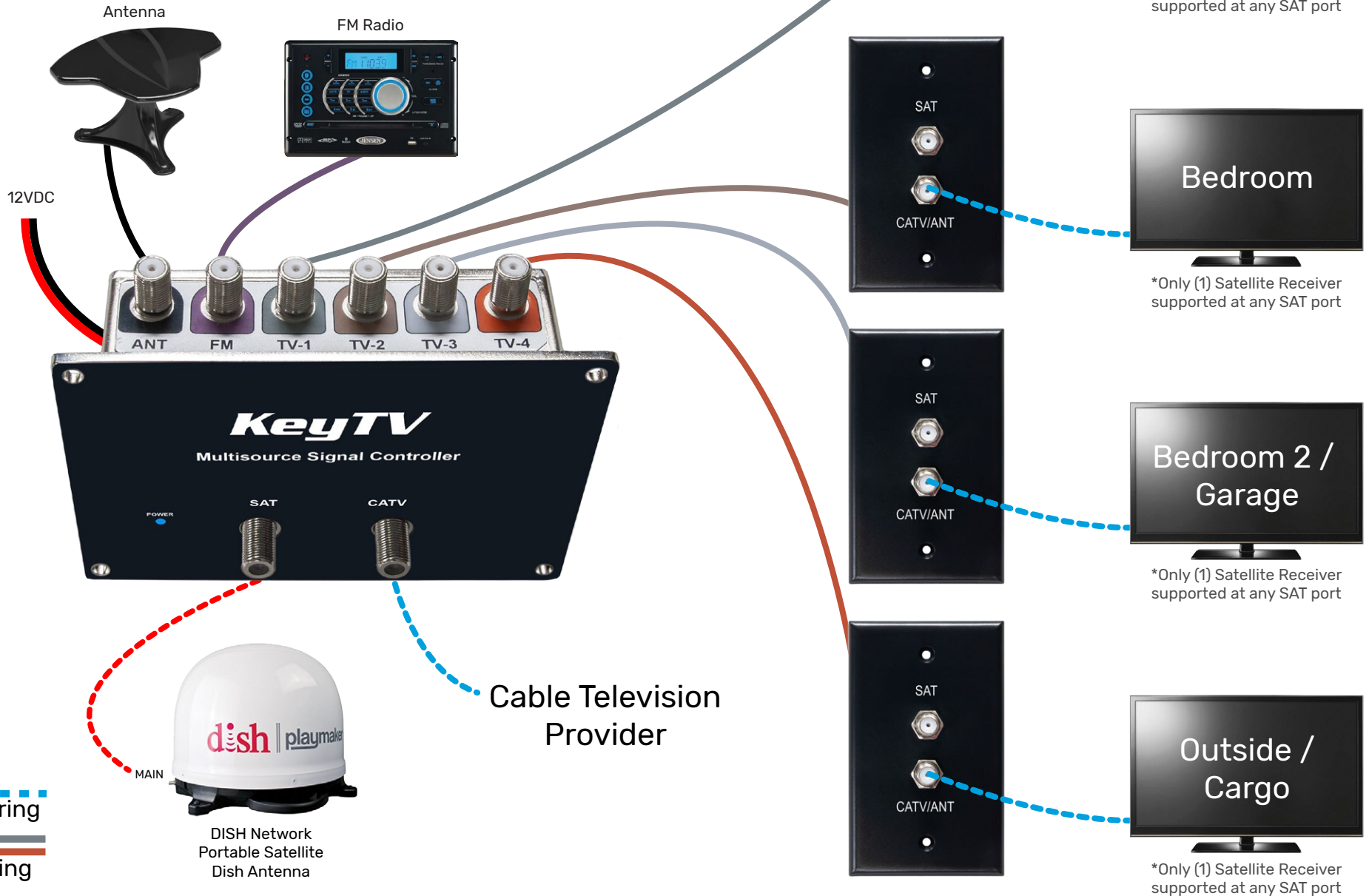
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## Wiring Diagram: DISH Network Portable Dish

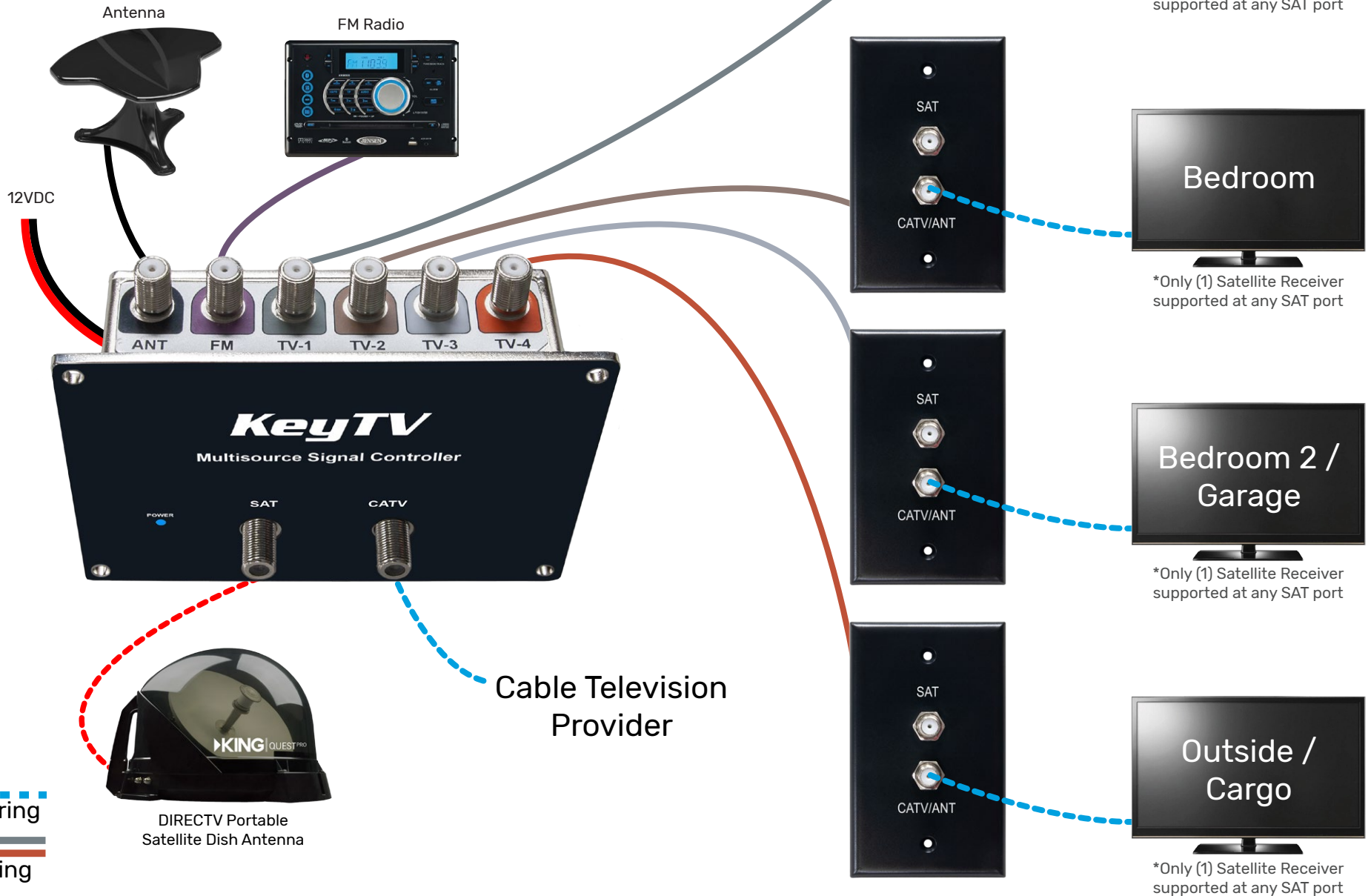
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## Wiring Diagram: DIRECTV Portable Dish

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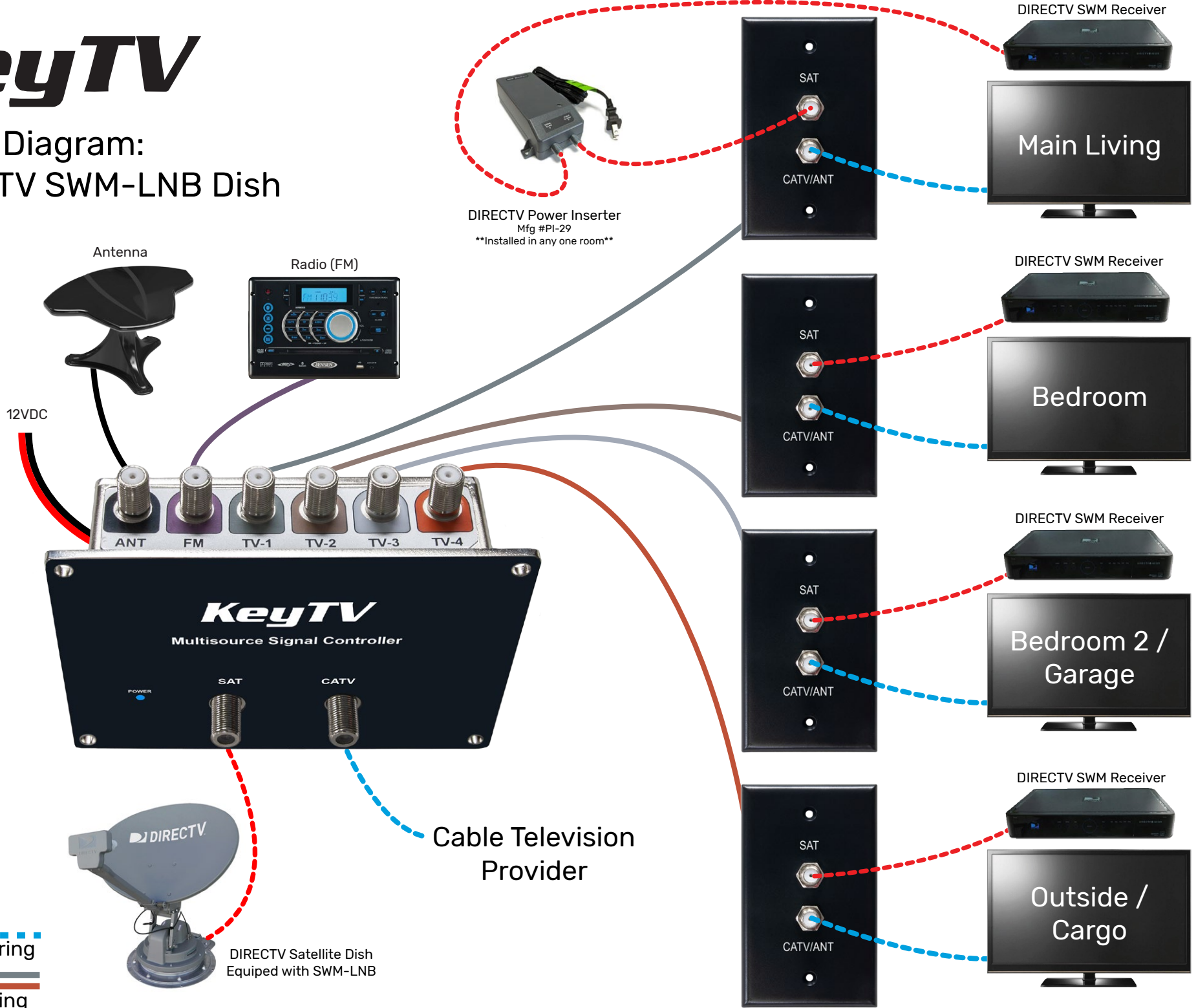




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## Wiring Diagram: DIRECTV SWM-LNB Dish

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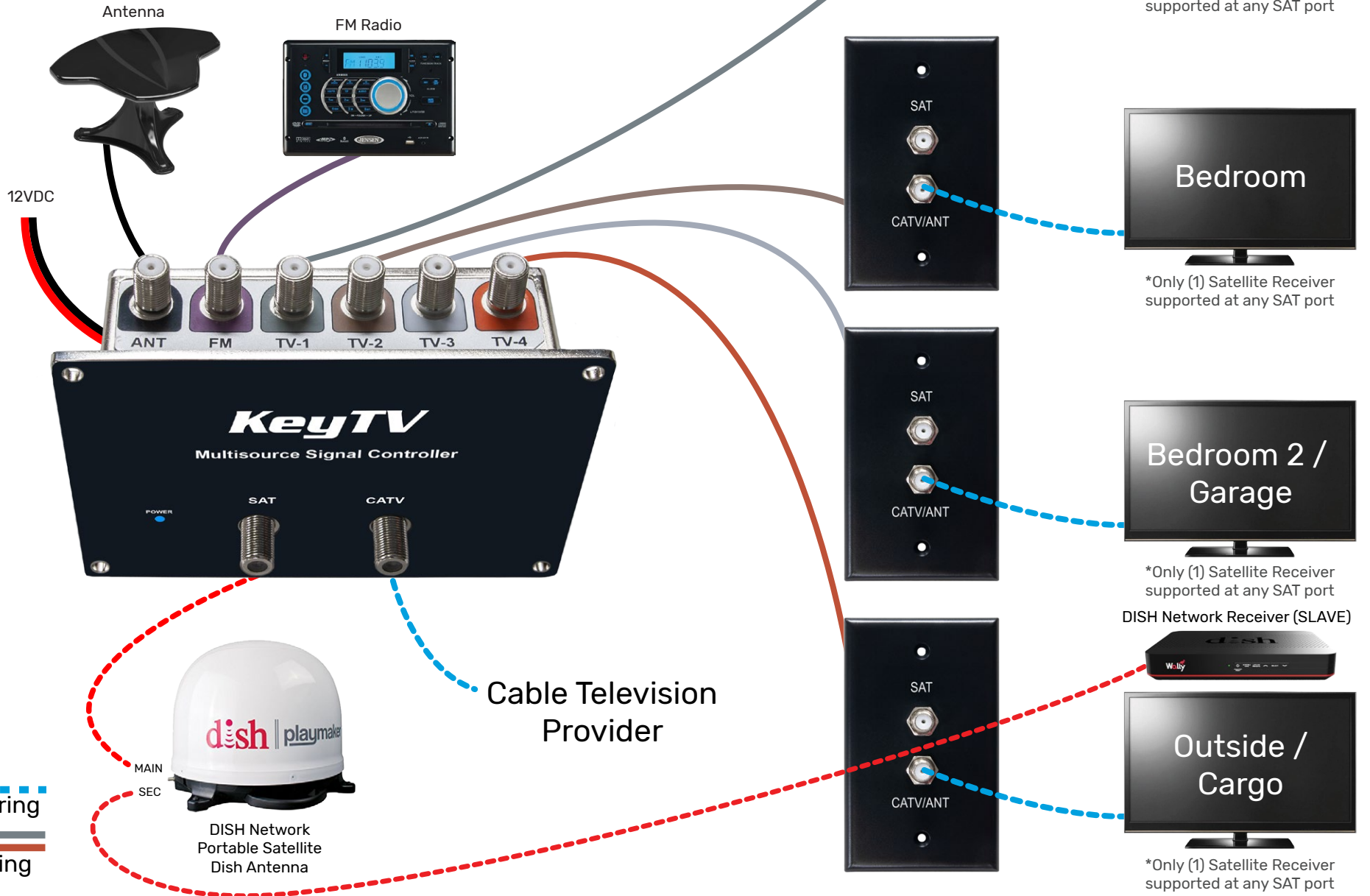
## 9. “Work-around” Wiring Diagrams

*(Following pages)*

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## Wiring Diagram: DISH Network Portable Dish for 2 Receivers

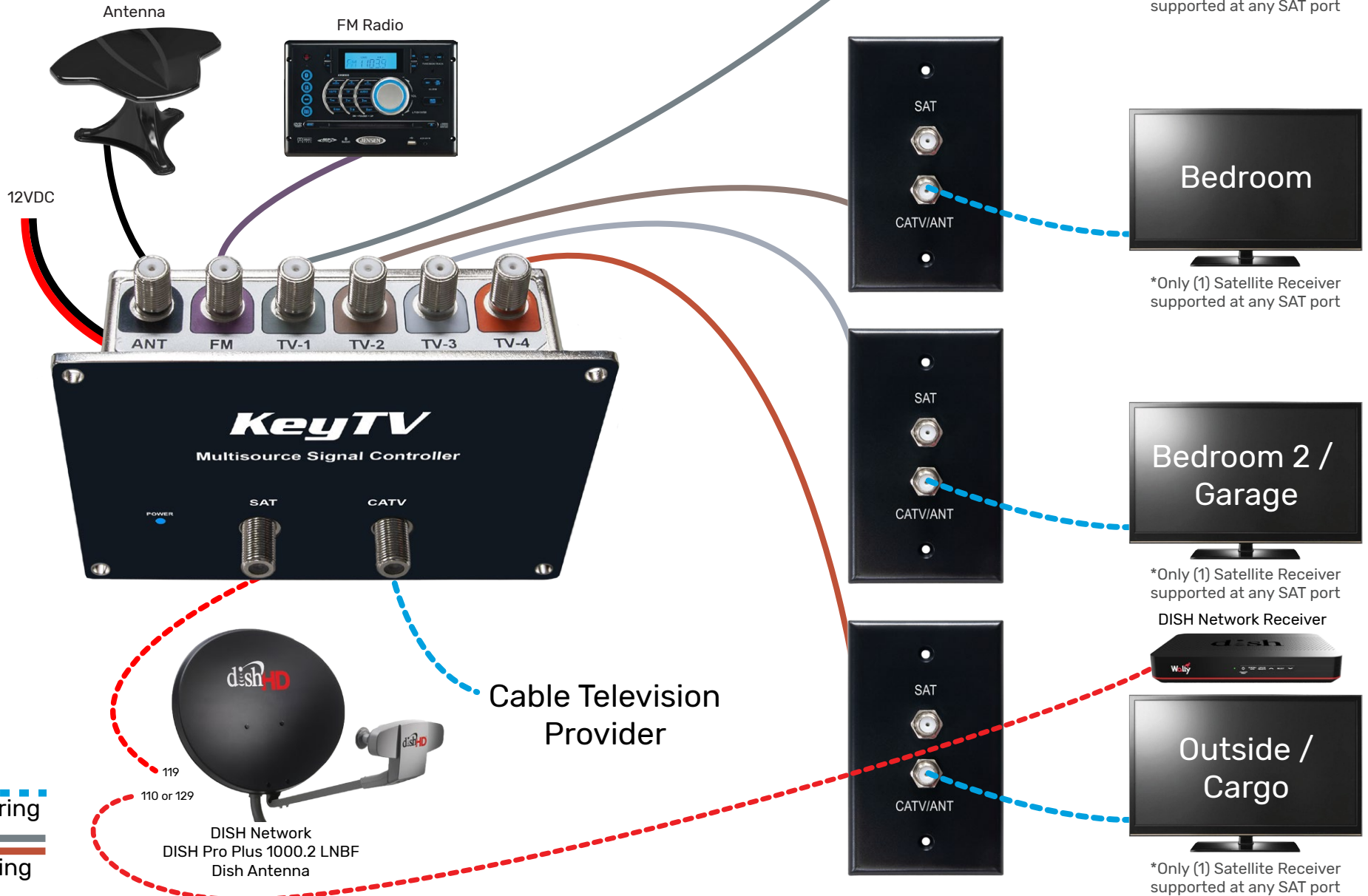
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## Wiring Diagram: DISH Network 1000.2 with Multiple Receivers

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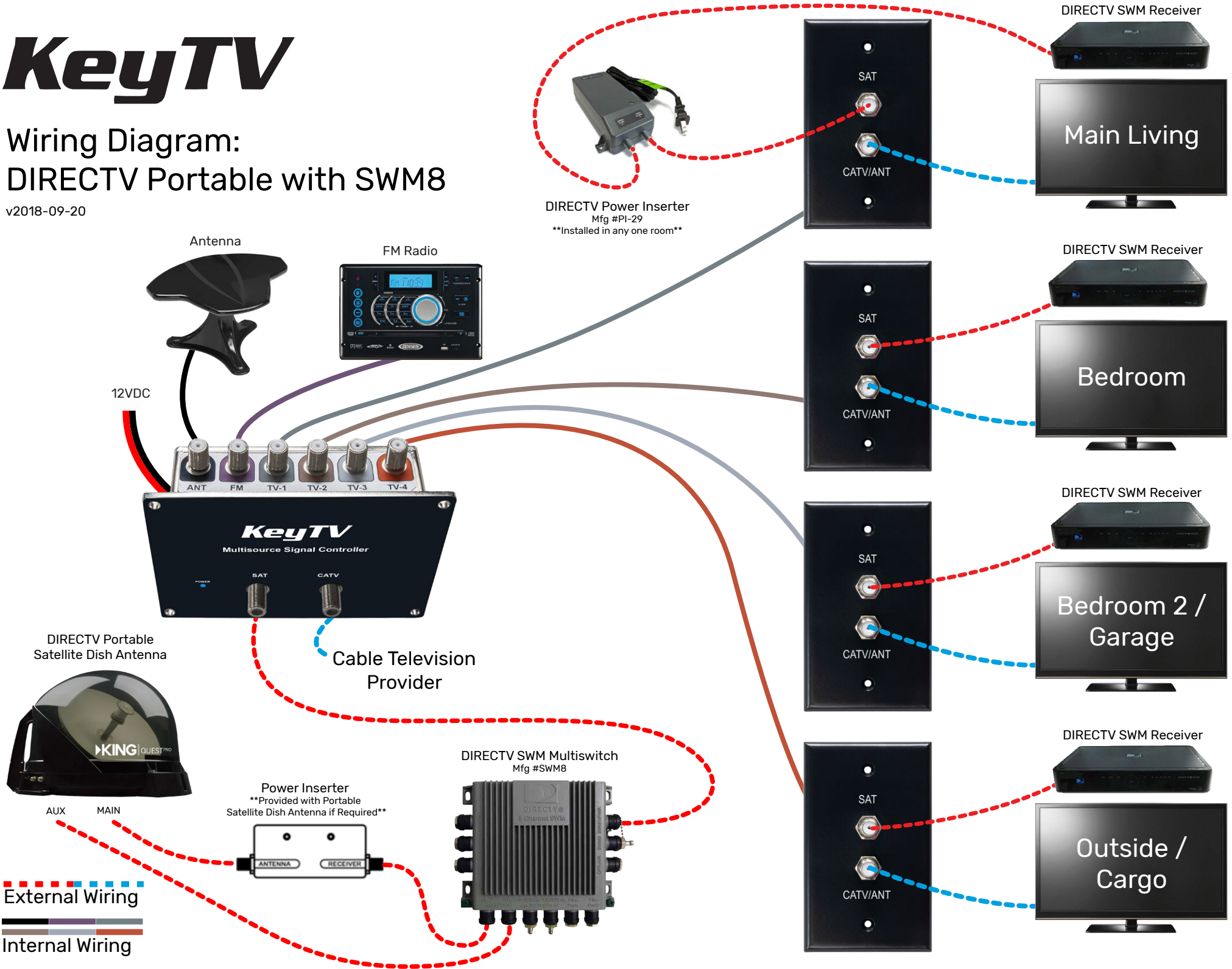




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## Wiring Diagram: DIRECTV Portable with SWM8

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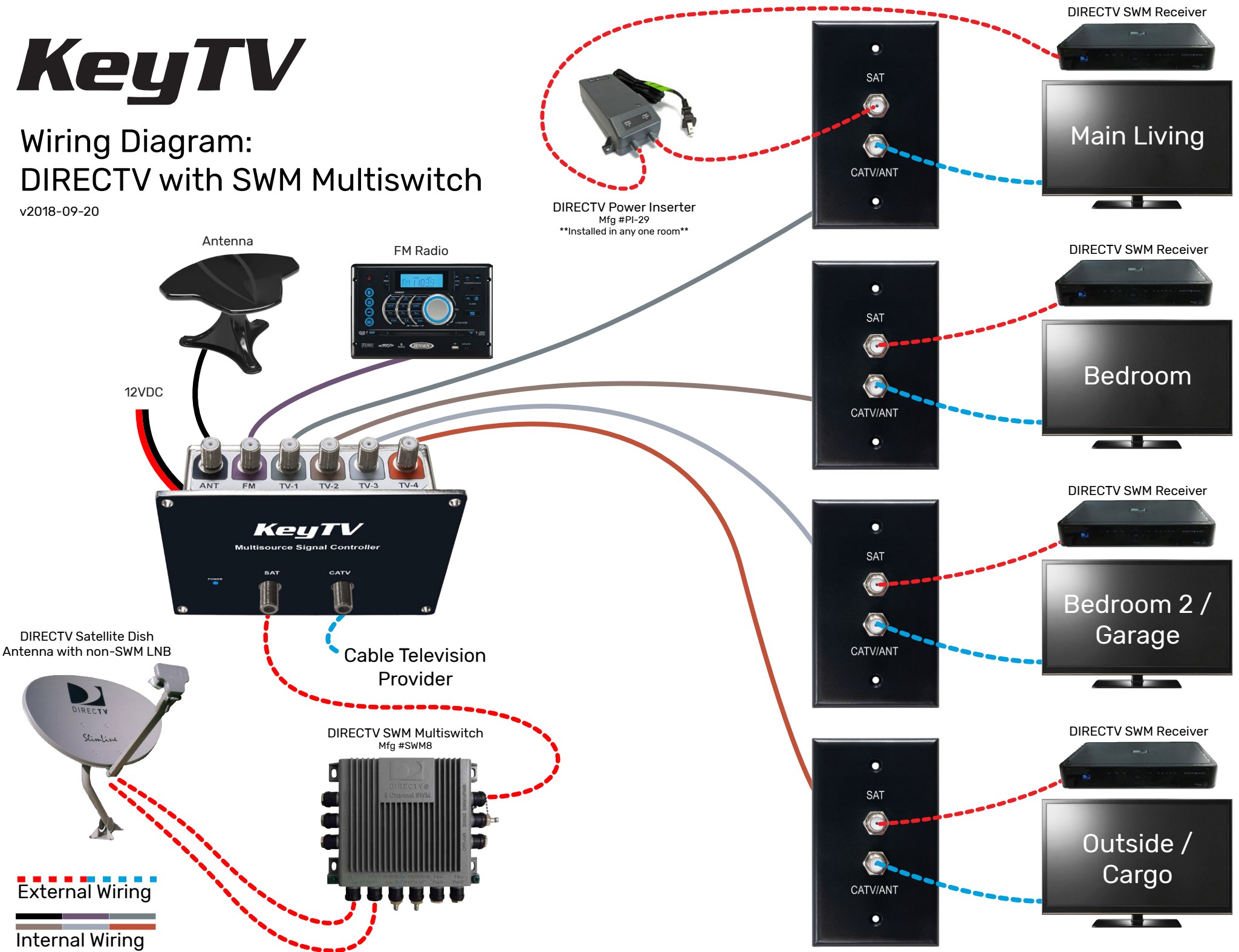




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## Wiring Diagram: DIRECTV with SWM Multiswitch

v2018-09-20



External Wiring  
Internal Wiring

DIRECTV Power Inserter  
Mfg #PI-29  
\*\*Installed in any one room\*\*

DIRECTV SWM Multiswitch  
Mfg #SWM8

Cable Television  
Provider

DIRECTV SWM Receiver

DIRECTV SWM Receiver

DIRECTV SWM Receiver

DIRECTV SWM Receiver

Main Living

Bedroom

Bedroom 2 /  
Garage

Outside /  
Cargo