DISH Pro Plus 500 + LNBF

Features

- DPP 500+ LNBF is used with the original DISH 500+ antenna to receive 110°W, 118.7°W, and 119°W.
- Three receiver output ports support direct connection to either three single-tuner receivers or three DISH Pro Plus (dual-tuner) receivers (when used with a DPP Separator), or a combination of these receivers.
- Includes an LNB In port to connect a fourth orbital location.
- Default output ports of the DPP 500+ LNBF are 119°W on Port 1, 110°W on Port 2, and 118.7°W on Port 3.
- Upgrade the DPP 500+ LNBF to a DPP 1000+ LNBF assembly by attaching the bracket for 129°W (included in the kit) and a DP Dual or DP Single LNB (not included).
- DPP 500+ LNBF is backwards compatible with the original DISH 500+ LNBF mounting bracket. If desired, the new DPP 500+ LNBF can be mounted on the old bracket once the FSS/DBS Dual Band LNBF and DP Dual LNBF are removed.

Installation Considerations

- The peaking angles used for pointing a DISH 1000+ are slightly different than the DISH 500+. Use the correct angles from the Installation Instructions.
- Peak on 118.7°W (Port 3) using a meter. Run a check switch, and then verify the signal on 110°W, 119°W, and 118.7°W (and 129°W for DISH 1000+) within the receiver’s Point Dish screen. A software download and second check switch may be required to see all of the orbital locations.
- If your peaking meter does not output at least 600 mA of current, connect a receiver to 110°W (Port 2) of the LNBF to power the LNBF while peaking.
- A separate DP Dual LNB is used for the 129°W orbital location; the DPP 500+ kit includes the LNB mounting bracket.
- The only switch compatible with the DPP 500+ LNBF is the DPP44 Switch. The LNBF’s LNB In port is disabled when connected to the switch.
- The DPP 500+ can be used for up to three receivers; for more than three receivers, use a DPP44 Switch.
Legacy Switches

Just like an LNBF, alternates the polarity in a Legacy installation, combines and switches signal from multiple satellite locations.

SW21 Switch
- Supports up to 2 orbital locations
- 1 tuner output
- 2 LNBFs inputs
- Can also be used to cascade a twin and dual LNBF for three orbital locations.

SW44 Switch
- Supports up to 2 orbital locations
- 2 even LNBF inputs
- 2 odd LNBF inputs
- 4 tuner outputs
- A power inserter must be connected to output to receiver port 1
- Only the dual and quad LNBFs can be connected to SW44 and SW64 switches

SW64 Switch
- Supports up to 3 orbital locations
- 3 even LNBF inputs
- 3 odd LNBF inputs
- 4 tuner outputs
- A power inserter must be connected to output to receiver port 1, labeled To Power Inserter

Power Inserter
- Must be installed for SW44 and SW64 switches, by connecting the cable in the tuner output labeled 1
- These switches need the power from the power inserter because of their large power requirements
- Only install the power inserter indoors

Legacy Technology

Legacy Technology

<table>
<thead>
<tr>
<th>Orbital Locations</th>
<th>Tuner Outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>1</td>
</tr>
<tr>
<td>Dual</td>
<td>2 (110° and 119°)</td>
</tr>
<tr>
<td>Twin</td>
<td>2</td>
</tr>
<tr>
<td>Quad</td>
<td>4</td>
</tr>
<tr>
<td>SW21</td>
<td>2</td>
</tr>
<tr>
<td>SW44</td>
<td>Up to 2</td>
</tr>
<tr>
<td>SW64</td>
<td>Up to 3</td>
</tr>
<tr>
<td></td>
<td>4, needs power inserter</td>
</tr>
</tbody>
</table>

Confirm Signal

1. Connect the receiver cable(s) to the DPP 1000.4 LNBF PORT 1 (and PORT 2 and PORT 3, as necessary) and receiver.
2. Run Check Switch test and confirm 61.5°W, 72.7°W, and 77°W reception.
3. Take a software download, if you haven’t already.
4. Run a second Check Switch test and confirm 61.5°W, 72.7°W, and 77°W reception.
5. Install additional receiver(s), if necessary.
6. If applicable, connect a second satellite dish to the DPP 1000.4 LNBF’s LNB IN port.
Legacy Technology

- Legacy technology was the first generation technology used by DISH Network, but is no longer installed.
- You will come across Legacy components in the field
- You need to know how to recognize, install upgrades, and troubleshoot the customer’s issues
- It is recognized by the old DISH Network logo

Legacy technology is based on transponders and polarity.

- Transponders are the part of the satellite that sends a signal to earth using a specific frequency range
- Polarity is the direction of the signal in either a left-hand circular or right-hand circular direction
  - Even numbers transponders use: left-hand polarity
  - Odd numbered transponders use: right-hand polarity

Polarity allows us to broadcast twice the number of channels in a specific frequency range.

- In Legacy installations, the switch or LNBF alternates the two polarities allowing us to reuse the same frequency
- Uses the 950-1450 frequency range and one polarity at a time, without a switch
- If only one coax cable per satellite location is used, such as with an SW21 switch, the LNBF must switch polarities
- If only one polarity is available at a time, the SW21 can support only one set top box

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**Legacy LNBF**

**Single LNBF**
- 1 orbital location
- 1 output
- Directly connects to 1 solo receiver
- Usually used alone with a DISH 300 (single orbital location dish antenna)

**Dual LNBF**
- 1 orbital location
- 2 outputs
- Directly connects up to 2 solo receivers or 1 duo receiver
- Can be used to see only 1 orbital location and for direct connections of up to 2 receivers
- Two dual LNBFs are used in conjunction with a multi-dish switch to view multiple orbital locations

**Twin LNBF**
- 2 orbital locations, 110° and 119°
- 2 outputs
- Directly connects up to 2 solo receivers or 1 duo receiver
- Used only with a DISH 500
- Has internal switch, and therefore cannot be used with any other switch except an SW21, to receive signals from three orbital locations when used with a second dish

**Quad LNBF**
- 2 orbital locations (110° and 119°)
- 4 outputs
- Directly connects up to 4 solo receivers or 2 duo receivers or 2 solo and 1 duo receiver
Orbital Location by Dish Antenna

Choose the correct dish antenna based on orbital locations needed.

<table>
<thead>
<tr>
<th></th>
<th>DBS</th>
<th>FSS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>61.5</td>
<td>72.7</td>
</tr>
<tr>
<td>DISH 500*</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>DISH 1000</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>DISH 500+</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>DISH 1000+</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>DISH 1000.2</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>DISH 1000.4 (WA)</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>DISH 1000.4 (EA)</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>DISH 500AK (Alaska)</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>DISH 500HW (Hawaii West)</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>DISH 500 HE/PR (Hawaii East, Puerto Rico, U.S. Virgin Islands)</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

*The DISH 500 is also used as a single orbital dish or wing dish and can be pointed to any one DBS satellite. See these options on page 2-2.
DISH 500

Antenna Assembly

Assembly Instructions

1. Align the square bolt holes in the reflector with the bolt holes on the skew plate.
2. Insert flat head/carriage bolt into each of the 4 square bolt holes in the reflector.
3. Secure the bolts in place by threading a lock nut onto each bolt on the skew plate side.
4. Securely tighten all 4 bolts with an open end wrench or a socket wrench.
5. Slide the Y-bracket onto the end of the LNBF arm with the nut insert on the top.
6. Place the nut from the hardware pack into the inset.
7. Insert the long screw from the bottom of the Y-bracket through the LNBF arm and secure it with the nut.
8. Hold on to the last 2 long screws they will be used to attach the LNBF to the Y-bracket.

Pointing and Peaking

1. Enter the correct equipment information.
2. Enter the ZIP Code.
3. Set the Skew and Elevation.
4. Connect an RG-6 coaxial cable jumper between the Super Buddy, satellite meter and the switch or LNBF.
5. Power the LNBF.
6. Point the dish.
7. Peak the dish using Limit Scan
8. Obtain a maximized and locked signal on the verified correct satellite locations.
9. Complete a Proof of Performance Scan and save the results.

DISH 500 - Assembly, Pointing, and Peaking

DISH 500 - Assembly, Pointing, and Peaking
Antenna Assembly

Assembly Instructions

1. Align the square bolt holes in the reflector with the bolt holes on the skew plate.
2. Insert flat head/carriage bolt into each of the square bolt holes in the reflector.
3. Secure the bolts in place by threading a lock nut onto each bolt on the skew plate side.
4. Securely tighten all 4 bolts with an open end wrench or a socket wrench.
5. Split the LNBF bracket into the top and bottom halves.
6. Reconnect the LNBF bracket onto the end of the LNBF arm with the round tabs into the guide holes on either side of the arm with the raised text on the top.
7. Place the nuts from the hardware pack into the inserts.
8. Insert the medium length screws from the bottom of the LNBF bracket and secure them with the nuts.
9. Hold on to the 3 long screws they will be used to attach the LNBF to the LNBF bracket.

Pointing and Peaking

1. Enter the correct equipment information.
2. Enter the ZIP Code.
3. Set the Skew and Elevation.
4. Connect an RG-6 coaxial cable jumper between the Super Buddy, satellite meter and the switch or LNBF.
5. Power the LNBF.
6. Point the dish.
7. Peak the dish using Limit Scan
8. Obtain a maximized and locked signal on the verified correct satellite locations.
9. Complete a Proof of Performance Scan and save the results.
1000.4 Dish - Assembly, Pointing, and Peaking

1000.4 Dish - Assembly, Pointing, and Peaking

Assembly Instructions
1. Find Azimuth/Elevation/Skew angles for your location.
2. Find a location for the dish antenna with a clear line of sight and a sturdy mounting surface.
3. Mount the mast, making sure it is absolutely vertical. Attach struts to the mast, using the strut instructions.
4. Assemble the dish antenna, setting the skew and elevation angles in the process.
5. Mount the dish antenna on the mast and point the dish to the azimuth angle.
6. Run cables between the dish antenna and the receiver(s), leaving a service loop around the dish mounting bracket and attaching cables to the mast using zip ties.

Point and Peak Instructions

Rough Point and Peak
1. Using a peaking meter attached to the DPP 1000.4 LNBF PORT 2, rough peak the dish on 72.7°W using transponder 13, 19, or 21 for maximum strength. Lock the mast clamp bolts and re-confirm signal.
**Fine-Tuning Elevation and Azimuth**

1. Using the elevation rod, fine-tune the elevation angle to achieve maximum signal using the following sweep and count method.
   - Using a 1/2" wrench, loosen the top elevation nut to allow the dish to be moved up and down in elevation.
   - Turn the bottom nut in one direction until the signal drops off the meter.
   - Reverse the direction of the wrench while counting the number of turns it takes to have the signal drop off in the opposite direction.
   - Turn the adjuster back once again in the opposite direction by one-half the total number of turns to center the dish on the signal beam.

2. Tighten the top elevation rod nut, and then tighten the side elevation bolts. Reconfirm signal using the push pull method after tightening all elevation bolts.

3. With the signal meter still connected, using the azimuth fine-tune cam, fine-tune the azimuth angle to achieve maximum signal using the following method.
   - First, loosen the three azimuth plate bolts labeled with a ‘T’ just enough to allow the two azimuth plates to rotate.
   - Using the 1/2" wrench slowly turn the cam adjuster clockwise.
   - Watch the signal meter for value changes.

**1000.4 Dish - Assembly, Pointing, and Peaking**

2-8d

**Complete Assembly**

1. Connect the receiver cable(s) to the DPP 1000.4 LNBF PORT 1 (and PORT 2 and PORT 3, as necessary).
2. Run Check Switch test and confirm 61.5°W, 72.7°W, and 77°W reception.
3. Take a software download, if you didn’t already.
4. Run a second Check Switch test and confirm 61.5°W, 72.7°W, and 77° reception.
5. Install additional receiver(s), if necessary.
6. If applicable, connect a second satellite dish to the DPP 1000.4 LNBF’s LNB IN port.
DISH 500+/1000+

Antenna Assembly

Assembly Instructions

1. Add the skew plate and LNBF arm to the reflector.
2. Place the four skew bolts and tighten them.
3. Add the bracket to the end of the LNBF arm.
4. Place the bracket screw and tighten it.
5. Add the LNBF to the end of the bracket.
6. Connect the coaxial cable to port 1 of the LNBF.
7. Place the LNBF screw and tighten it.
8. Adjust the skew angle.
9. Adjust the elevation angle.

Pointing and Peaking

1. Enter the correct equipment information.
2. Enter the ZIP Code.
3. Set the Skew and Elevation.
4. Connect an RG-6 coaxial cable jumper between the Super Buddy, satellite meter and the switch or LNBF.
5. Power the LNBF.
6. Point the dish.
7. Peak the dish using Limit Scan.
8. Obtain a maximized and locked signal on the verified correct satellite locations.
9. Complete a Proof of Performance Scan and save the results.
# Site Survey

## Customer Meet and Greet

<table>
<thead>
<tr>
<th>Did You...</th>
<th>Yes/No</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check direction house faces in relation to southern satellite signal</td>
<td>Y ___</td>
<td>N ___</td>
</tr>
<tr>
<td>Check for an installed antenna that you can see from the street</td>
<td>Y ___</td>
<td>N ___</td>
</tr>
<tr>
<td>Check for obstructions on the property to the Southern sky</td>
<td>Y ___</td>
<td>N ___</td>
</tr>
<tr>
<td>Have the work order with you</td>
<td>Y ___</td>
<td>N ___</td>
</tr>
<tr>
<td>Have the Site survey with you</td>
<td>Y ___</td>
<td>N ___</td>
</tr>
<tr>
<td>Introduce yourselves</td>
<td>Y ___</td>
<td>N ___</td>
</tr>
<tr>
<td>Identify they are with DISH Network</td>
<td>Y ___</td>
<td>N ___</td>
</tr>
<tr>
<td>Explain why they were there</td>
<td>Y ___</td>
<td>N ___</td>
</tr>
<tr>
<td>Ask if the customer is home owner</td>
<td>Y ___</td>
<td>N ___</td>
</tr>
<tr>
<td>Identify the installation job they were there to perform</td>
<td>Y ___</td>
<td>N ___</td>
</tr>
<tr>
<td>Confirm the programming the customer had ordered</td>
<td>Y ___</td>
<td>N ___</td>
</tr>
<tr>
<td>Verify the equipment they had ordered</td>
<td>Y ___</td>
<td>N ___</td>
</tr>
<tr>
<td>Discuss receiver locations with customer</td>
<td>Y ___</td>
<td>N ___</td>
</tr>
</tbody>
</table>

## Interior Site Survey Checklist

<table>
<thead>
<tr>
<th>Interior: Did You...</th>
<th>Yes/No</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check the receiver locations</td>
<td>Y ___</td>
<td>N ___</td>
</tr>
<tr>
<td>Check the receiver model numbers</td>
<td>Y ___</td>
<td>N ___</td>
</tr>
<tr>
<td>Determine usable existing interior cable</td>
<td>Y ___</td>
<td>N ___</td>
</tr>
<tr>
<td>Plan for cable routing</td>
<td>Y ___</td>
<td>N ___</td>
</tr>
<tr>
<td>Check for phone line or Cat-5 Ethernet per receiver</td>
<td>Y ___</td>
<td>N ___</td>
</tr>
<tr>
<td>Check for electrical outlet for each receiver</td>
<td>Y ___</td>
<td>N ___</td>
</tr>
<tr>
<td>Determine no plumbing, HVAC or wiring interference</td>
<td>Y ___</td>
<td>N ___</td>
</tr>
<tr>
<td>Determine if customer has any existing TV services that need to be</td>
<td>Y ___</td>
<td>N ___</td>
</tr>
<tr>
<td>maintained or integrated</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Determine need for drilling or possible damage to the customer home</td>
<td>Y ___</td>
<td>N ___</td>
</tr>
<tr>
<td>Check for safety concerns</td>
<td>Y ___</td>
<td>N ___</td>
</tr>
<tr>
<td>List items to discuss with customer</td>
<td>Y ___</td>
<td>N ___</td>
</tr>
</tbody>
</table>
**Site Survey**

### Exterior Site Survey

<table>
<thead>
<tr>
<th>Exterior: Did You...</th>
<th>Yes/No</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check if existing exterior cables usable</td>
<td>Y ___</td>
<td>N ___</td>
</tr>
<tr>
<td>Check for grounding location</td>
<td>Y ___</td>
<td>N ___</td>
</tr>
<tr>
<td>Determine mounting options</td>
<td>Y ___</td>
<td>N ___</td>
</tr>
<tr>
<td>Check for Line of Sight</td>
<td>Y ___</td>
<td>N ___</td>
</tr>
<tr>
<td>Check for safety concerns</td>
<td>Y ___</td>
<td>N ___</td>
</tr>
<tr>
<td>Check for accessibility</td>
<td>Y ___</td>
<td>N ___</td>
</tr>
<tr>
<td>Consider aesthetics</td>
<td>Y ___</td>
<td>N ___</td>
</tr>
<tr>
<td>Consider customer preferences</td>
<td>Y ___</td>
<td>N ___</td>
</tr>
<tr>
<td>Develop two mounting locations if possible</td>
<td>Y ___</td>
<td>N ___</td>
</tr>
<tr>
<td>Determine what antenna and mount type to use</td>
<td>Y ___</td>
<td>N ___</td>
</tr>
<tr>
<td>Determine if switch is needed</td>
<td>Y ___</td>
<td>N ___</td>
</tr>
<tr>
<td>Record all concerns on your Installation Plan at the bottom under, Items to Discuss with Customer</td>
<td>Y ___</td>
<td>N ___</td>
</tr>
</tbody>
</table>

### Installation Plan Presentation to Customer Checklist

<table>
<thead>
<tr>
<th>Did You...</th>
<th>Yes/No</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display customer service skills</td>
<td>Y ___</td>
<td>N ___</td>
</tr>
<tr>
<td>Explain two possible installation locations</td>
<td>Y ___</td>
<td>N ___</td>
</tr>
<tr>
<td>Explain location of cable runs</td>
<td>Y ___</td>
<td>N ___</td>
</tr>
<tr>
<td>Explain why these locations are required</td>
<td>Y ___</td>
<td>N ___</td>
</tr>
<tr>
<td>Explain concerns about customer maintaining antenna</td>
<td>Y ___</td>
<td>N ___</td>
</tr>
<tr>
<td>Address concerns about aesthetics</td>
<td>Y ___</td>
<td>N ___</td>
</tr>
</tbody>
</table>

**Time Saving Tip:** While conducting your site survey, utilize the site survey form, and take detailed notes specifically on what items you’ll need to complete the install. For example, how many bushings, wall plates, barrels, connector, type, and quantity of cable fasteners. Note any “specialty items” needed. Once back at the van use these notes as a “job inventory” sheet. Knowing exactly what you’ll need for the entire job and stocking yourself accordingly can save you from making multiple trips to back to the van - saving time.

**Time Saving Tip:** Make sure that the customer agrees to all parts of your installation plan before you bring out any equipment, cabling, tools, and start mounting the antenna. This will save you time moving or re-routing cable if the customer does not like where the antenna is mounted or how the cables run.
Direct to Wall

1. Locate the stud using the approved stud finder
   • Locate the center of the stud
   • Do not mount the dish near the edge of the stud
2. Position and hold the footplate so it is centered on a stud
   • Use a level to ensure the footplate is vertical
   • With a pencil, mark all six holes of the footplate to pilot-drill
   • Mark the four outermost round corner holes
   • Mark the two center holes
3. Remove the footplate and pilot-drill the holes
   • Use the 7/32" drill bit in the cordless hammer drill
   • Drill the center holes to a 2 ½" depth
   • Drill the corner holes to a 1 ½" depth
4. Fill each pilot-drilled hole approximately ¾ of the way full with silicone sealant
5. Place the footplate back on the wall

6. Insert the ¼" nut driver into the cordless drill
   • Select the drill icon and set to slow speed

7. Tighten the lag screws to secure the footplate to the wall
8. Use 3" x 5/16" lag screws for the center holes
9. Use 2" x 5/16" lag screws for the corner holes

Remember the center lag screws must be in the stud.

10. Do the final tightening of the footplate screws with a wrench or ratchet and tighten until they are snug against the footplate

11. Attach and plumb the mast to the footplate

Mounting Options

Brick, Cinderblock, and Concrete

1. Place the footplate against the wall in the desired location
   • Do not place more than two holes per block/brick
   • If the wall is brick, place the footplate as close to the center of bricks as possible
2. Using the torpedo level, vertically level the footplate
3. Using a marker or pencil, mark the four outermost round corner holes
4. Remove the footplate
5. Drill the marked holes
   • Use cordless drill; set to hammer drill and high-speed selections
   • Use ½-inch masonry bit
   • Drill holes to a 3-inch depth
6. Hammer a lag shield into each hole until it is flush with the surface
   • A lag shield is used under the foot /mast assembly to seal and protect the mounting holes
   • An expansion anchor shield used with lag screws
7. Completely fill the holes with clear silicone
8. Place the footplate against the wall; align the four corners to the holes
9. Mount the footplate
   • Use a ½-inch socket and ratchet
   • Use 2-inch x 5/16-inch lag screws
   • Tighten the lag screws slowly
10. Plumb the mast
    • Level the mast from at least two sides
11. Install support struts on dish antennas DISH 500+ and larger
    • Install the struts after mount installation is complete
    • Where should you not mount the strut? Do not mount on or around the mortar
**Mount: Telescoping Wall**

1. Using a stud finder, locate a stud
2. Place the mounting base at the desired location
   - Define where the base plate on the mounting insert should be mounted, high or low
   - High mounted base plate
   - The base plate is mounted high if the mounting holes closest to the insert post face down
   - Low mounted base plate
   - The base plate is mounted low if the mounting holes closest to the insert post face up
3. Level the mounting base
4. Mark the base with marker or pencil
5. Remove the mounting base
6. Pre-drill the marked holes
7. Fill holes ¾ full with silicone
8. Mount the mounting base
9. Install the mounting insert
10. Mount the footplate to the base plate on the mounting insert using the included hardware
    - Be sure to secure the footplate snugly against the wall surface so the installation remains safe and secure
    - Plumb the mast/footplate
    - Tighten the mast/footplate set screws on the mounting base

**Mounting Options**

**Mount: VERSATILE™**

1. Place the base plate in the desired location
   - Locate along the roof eave, accessible from a ladder
   - Affixed on tiles located two or more rows from the roof eave, having an unencumbered roof tile surface area of at least sixteen square feet
   - NEVER affix the VERSATILE Mount on any existing cracked, broken, or cut tiles, or on tiles located within three (3) feet of metal flashing, or along hips, ridges, or valleys of the roof body
2. Install the support tongues
   - Gently lift the tiles in the row above the area you selected for the Base Plate, and slide a Support Tongue under them until the Support Tongue's back hook reaches the back edge of the tile below it
   - Lower the Support Tongue then pull it back towards you until the hook has seated itself to the tile below it
   - Repeat with other supplied Support Tongues
3. Install the base plate
   - Place Base Plate so its center is above the joint of the two tiles below it
4. Attach the footplate to the VERSATILE Mount
   - Slightly lift the tiles below the Base Plate and slide its hooks under the tile
   - Install the stiffener bars and fasten together
   - Place Stiffener Bar on top of Support Tongue
   - The center of each Stiffener Bar should be above the joint of the two tiles below it.
   - Line up the pre-drilled holes in the Stiffener Bar and Support Tongue
   - Insert supplied hardware into holes of Base Plate, Support Tongues, and Stiffener Bars
   - Tighten with a wrench until the mounting assembly is level and clamped firmly in place

Version 3.1
**Mount: Soffit**

1. Locate a rafter stud
2. Place soffit mounting base away from house
   - Face front of soffit mounting base away from house
   - Touch front of soffit mounting base to edge of fascia board
   - Center front of soffit mounting base over stud
   - Center back of soffit mounting base over stud.
3. Mount the soffit mounting base.
   - Place and halfway tighten one #10 3-inch wood screw in rear center hole.
   - Place and halfway tighten the one #10 3-inch wood screw in each of four angled holes of soffit mounting base
   - Tighten front screws
   - Tighten back screws
4. Using included bolts, washers, and nuts, attach footplate to base plate on mounting insert
5. Attach footplate to mounting insert
6. Install mounting insert

**Mounting Options**

**Mount: Under Eave**

1. Locate a rafter stud
2. Place soffit mounting base away from house
   - Face front of soffit mounting base away from house
   - Touch front of soffit mounting base to edge of fascia board
   - Center front of soffit mounting base over stud
   - Center back of soffit mounting base over stud.
3. Mount the soffit mounting base.
   - Place and halfway tighten one #10 3-inch wood screw in rear center hole.
   - Place and halfway tighten the one #10 3-inch wood screw in each of four angled holes of soffit mounting base
   - Tighten front screws
   - Tighten back screws
4. Using included bolts, washers, and nuts, attach footplate to base plate on mounting insert
5. Attach footplate to mounting insert
6. Install mounting insert
   - Slide mounting insert with attached dish mast into soffit mounting base until desired depth is achieved
   - Vertically level dish mast
   - Tighten both mast screws on soffit mounting base
Mount: Eave/Gable Fascia

Eave Fascia Installation Instructions
1. Locate the end of the roof rafter behind the fascia board and mark the centerline of the roof rafter on it
2. Position the mounting plate on the fascia board just below the roof flashing

IMPORTANT: The flat side of the fascia mount must be against the fascia board
• The center holes in the mount plate must be placed over the centerline of the roof rafter previously marked
3. Place a level on the side of the mounting plate, level and mark the top two corner holes and top three center holes over the rafter end

Note: Depending upon the width of the fascia board, the bottom center hole may not be used to attach the plate to the structure
4. Drill a pilot hole on each of the marked mounting holes using a 7/32” drill bit for the 5/16” X 3” lag screws supplied
5. Using the machine bolts, washers, and nuts supplied, attach the dish foot plate to the Fascia Mounting Plate using the two lower corner holes and the bottom center hole if it is not used to attach the plate to the fascia

6. Position the dish foot plate and mounting plate assembly over the mounting locations
7. Using the lag screws and washers supplied, thread the lag screws into the previously drilled pilot holes and tighten
8. Tighten the remaining machine bolts installed in step 5 to connect the dish mounting base to the mounting plate

Gable Fascia Installation Instructions
1. Position the mounting plate on the fascia board just below the roof flashing

IMPORTANT: The flat side of the fascia mount must be against the fascia board.
2. Place a level on the side or across the bottom edge of the mounting plate, level, and mark the top two corner holes and top three center holes on the fascia board.

Note: Depending upon the width of the fascia board, or pitch of the roof, the bottom center hole may not be used to attach the plate to the structure.
3. Drill a pilot hole on each of the marked mounting holes using a 7/32” drill bit for the 5/16” X 3” lag screws supplied
4. Using the machine bolts, washers, and nuts supplied, attach the dish foot plate to the Fascia Mounting Plate using the two lower corner holes and the bottom center hole(s) if it is not used to attach the plate to the fascia

• At this time, hand tighten the hardware only

Installation Tips
• When you can only screw into the fascia board, use 1.5” lag screws
• In the center holes, use 3” lag screws to screw into a rafter or stud
• Use the 5/16” hardware (included in the kit) for the lower portion of the mounting plate
• In the center hole, if possible, insert a 3” lag screw into a rafter or stud
• Make sure that the flat side of the fascia mount is against the mounting surface and the raised lip edges are facing away from the structure

Mounting Options

Installation Tips
• When you can only screw into the fascia board, use 1.5” lag screws
• In the center holes, use 3” lag screws to screw into a rafter or stud
• Use the 5/16” hardware (included in the kit) for the lower portion of the mounting plate
• In the center hole, if possible, insert a 3” lag screw into a rafter or stud
• Make sure that the flat side of the fascia mount is against the mounting surface and the raised lip edges are facing away from the structure
Installing Eave/Gable/Fascia Mount to a 4 X 4 post on an existing support structure:

1. Evaluate the 4 X 4 post and existing support structure
2. Fully discuss all possible mounting options with the customer before selecting the final mounting location
3. Position the mounting plate on the 4 x 4 wooden post at the desired height
4. Verify the mounting plate is level using a torpedo level
5. Mark four mounting holes on the 4 x 4 wooden post
6. To ensure you don’t split the wood, drill a pilot hole for each of the marked mounting holes using a 7/32” wood bit
7. Fill the pilot holes with silicone sealant, making sure not to over fill past the hole opening
8. Attach the mast foot plate to the Fascia/Gable Mount’s outer holes using the bolts, washers, and nuts included with the mount
9. Position the mounting plate and mast footplate over the pre drilled holes
10. Use four 3 inch lags to secure the mounting plate and mast footplate to the 4 x 4 wooden post
11. Plumb the mast on a minimum of two sides.

Mounting Options

Mount: Angled Fascia

1. Locate the end of the roof rafter behind the fascia board
2. Mark the centerline of the roof rafter on the fascia board
3. Position the angled fascia mounting plate on the fascia board just below the roof flashing
4. Verify that the mounting plate is level using a torpedo level
5. Mark the six mounting holes on the fascia board
6. Pilot drill a hole on each of the marked mounting holes using a 7/32” wood bit
7. Fill the pilot holes with silicone sealant, making sure not to over fill past the hole opening
8. Position the angled fascia mounting plate over the pilot drilled holes
9. Using the provided lag bolts and washers, thread the lag bolts into the drilled holes and tighten them
   • Two lag bolts run through the center of the mount and mast.
   • The bottom lag bolt secures the mast to the mount. The top lag bolt secures the mast in position once plumbed
Mount: Asphalt Roof

1. Using a stud finder, locate a rafter
2. Place footplate against roof in the desired location on rafter
3. Using torpedo level, vertically level footplate
4. Using a marker or pencil, mark all six holes
5. Remove footplate.
6. Pilot drill marked holes
   • Use cordless drill
   • Use 7/32-inch drill bit
   • Drill center holes to 2½-inch depth
   • Drill corner holes to 1½-inch depth
7. Cover each hole with a large piece of pitch patch
8. Place footplate against roof, aligned to holes
9. Mount the footplate
   • Use ½-inch socket and ratchet
   • Use 3-inch x 5/16-inch lag screws for center holes
   • Use 2-inch x 5/16-inch lag screws for corner holes
10. Tighten lag screws slowly, so don’t damage/strip lag screws
11. Plumb mast
12. Using a torpedo level, vertically level mast
13. Struts must be installed on dish antennas DISH 500+ and larger
14. Mount footplate to roof

Mounting Options

Mount: Pole

1. Dig the Hole a minimum 7 inches wide and 3 feet deep (or below the local frost line)
2. Prepare the Pole
   • To prevent twisting prepare a pole for mounting by
   • Pounding the base of the pole into an oval shape
   • Drilling two or three 3 inch lag screws in base of pole below cement line
   • Drill two 3/16-inch holes in pole 3 inches up from ground level to allow water to drain out of pole
3. Add Concrete
   • Always follow proper safety procedures while using cement
   • Eye Protection, gloves, and dust mask
   • Mix concrete in a 5-gallon bucket with shovel/or pour the mix into the hole and add water
   • Place mixed cement into hole
   • Pat surface of concrete with backside of shovel until all rocks are pushed into concrete, concrete tapers down from pole 2 inches above ground, and surface of concrete is smooth
4. Level the Pole
5. Take readings from two locations 90 degrees apart on side of pole to ensure complete leveling of pole
6. Check readings periodically while cement is drying
7. Immediately wash your hands after working with cement
8. While waiting at least 40-60 minutes (depending upon type of concrete mix used) for cement to dry, work on other aspects of installation before mounting dish to pole. (You must completed step 5 before cement dries.)
9. Attach PVC Angle (Sweep)
   • While cement is still wet, attach a piece of PVC (90° elbow) 1 inch in diameter to pipe where cable enters ground, commonly referred to as a sweep
10. Route Cable
    • Route cable through sweep conduit to provide protection from lawn mowers, weed eaters, squirrels, etc.
    • Route cable from dish by attaching coaxial cable to pole using cable ties
    • Dig a trench to house for burial cable
    • Dig to depth established by local underground utilities
    • Direct burial cable (orange cable) is required in all applications requiring the buried cable when not in conduit
Mount Pole Work Order Process

Initial Truck Roll:
1. Install a permanent pole mount only if DNS standards are met including marked utilities and the hole already dug to required dimensions
2. Call FSM for approval to complete a temporary mount
3. Contact the Underground Utility Company (UUC) if utility lines are not marked
4. Contact Dispatch to set up subsequent pole mount work order after completion of temporary mount install
5. Install a temporary mount if approved
6. Notate the customer account

Subsequent Truck Roll:
1. Confirm utility markings
2. Install a permanent pole mount
3. Return temporary mount to office

Process A: Install a Permanent Pole Mount

<table>
<thead>
<tr>
<th>Step</th>
<th>Task owner</th>
<th>Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Technician</td>
<td>Install permanent pole mount using standard install process</td>
</tr>
</tbody>
</table>

Process B: Temporary Pole Mount Can be Completed

<table>
<thead>
<tr>
<th>Step</th>
<th>Task Owner</th>
<th>Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Technician</td>
<td>Call FSM to inform of reason for temp mount</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If not approved: Follow FSM guidance to complete install</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If approved: Contact Underground Utility Company (UUC) for date to mark ground</td>
</tr>
<tr>
<td>2</td>
<td>Technician</td>
<td>Call UUC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If contacted: Get UUC ticket # and date of markings; notate account: name of approving FSM, why permanent pole mount could not be completed, UUC ticket #, and estimated time for UUC to complete markings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If not contacted: Notate account: name approving FSM &amp; why permanent pole mount could not be completed</td>
</tr>
<tr>
<td>3</td>
<td>Technician</td>
<td>Install temp mount and complete install</td>
</tr>
<tr>
<td>4</td>
<td>Technician</td>
<td>If UUC contacted: Discuss date of permanent install with customer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If UUC not contacted: Inform customer DISH continue to contact UUC for date to mark ground for underground utilities</td>
</tr>
<tr>
<td>5</td>
<td>Technician</td>
<td>Call Dispatch</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If UUC contacted: Inform dispatch of UUC ticket # and marking date --&gt;Proceed to step 11</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If UUC not contacted: Inform dispatch of need for ‘LI-Needs Pole Mount’ tag be added to account--&gt;Proceed step 6</td>
</tr>
<tr>
<td>6</td>
<td>Dispatch</td>
<td>Add ‘LI - Needs Pole Mount’ tag code to the account</td>
</tr>
<tr>
<td>7</td>
<td>Dispatch</td>
<td>Send email to local Dispatch group inbox advising that UUC needs to be contacted</td>
</tr>
<tr>
<td>8</td>
<td>Dispatch</td>
<td>Continue to contact UUC until successfully reached</td>
</tr>
<tr>
<td>9</td>
<td>Dispatch</td>
<td>Get UUC ticket # &amp; date of markings; notate account with: UUC ticket # and estimated time UUC to complete markings</td>
</tr>
<tr>
<td>10</td>
<td>Dispatch</td>
<td>Contact customer to determine date of permanent pole mount work order</td>
</tr>
<tr>
<td>11</td>
<td>Dispatch</td>
<td>Create permanent pole mount work order on date chosen by customer</td>
</tr>
</tbody>
</table>
**Process C: Temporary Mount Cannot be Completed**

<table>
<thead>
<tr>
<th>Step</th>
<th>Task Owner</th>
<th>Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Technician</td>
<td>Call FSM to inform of reason why temp mount cannot be installed</td>
</tr>
<tr>
<td>2</td>
<td>Technician</td>
<td>Call UUC</td>
</tr>
<tr>
<td></td>
<td>If contacted:</td>
<td>Get UUC ticket # and marking date; notate account with the following:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• FSM who was informed that permanent/temporary mount could not be completed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Why the permanent/temporary mount could not be completed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• UUC ticket #</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Estimated time for UUC to complete markings</td>
</tr>
<tr>
<td></td>
<td>If not contacted:</td>
<td>Notate account with the following:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• FSM who was informed that permanent/temporary mount could not be completed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Why the permanent/temporary mount could not be completed</td>
</tr>
<tr>
<td>3</td>
<td>Technician</td>
<td>If UUC contacted: Discuss date of permanent install with customer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If UUC not contacted: Inform customer DISH continue to contact UUC for date to mark ground for underground utilities</td>
</tr>
<tr>
<td>4</td>
<td>Technician</td>
<td>Call Dispatch</td>
</tr>
<tr>
<td></td>
<td>If UUC contacted:</td>
<td>Proceed to step 10</td>
</tr>
<tr>
<td></td>
<td>If UUC not contacted:</td>
<td>Proceed to step 5</td>
</tr>
<tr>
<td>5</td>
<td>Dispatch</td>
<td>Place work order on HOLD - HOUSE/ROOM NOT READY</td>
</tr>
<tr>
<td>6</td>
<td>Dispatch</td>
<td>Send email to local Dispatch group inbox advising that UUC needs to be contacted</td>
</tr>
<tr>
<td>7</td>
<td>Dispatch</td>
<td>Continue to contact UUC until successfully reached</td>
</tr>
<tr>
<td>8</td>
<td>Dispatch</td>
<td>Get UUC ticket # &amp; date of markings; notate account with: UUC ticket # and estimated time UUC to complete markings</td>
</tr>
<tr>
<td>9</td>
<td>Dispatch</td>
<td>Contact customer to determine date of permanent pole mount work order</td>
</tr>
<tr>
<td>10</td>
<td>Dispatch</td>
<td>Re-schedule work order to date chosen by customer using XTRA SUPL NEED reschedule reason</td>
</tr>
</tbody>
</table>

**Mounting Options**

<table>
<thead>
<tr>
<th>Step</th>
<th>Task Owner</th>
<th>Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-10f</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Utility Marker Flags**

Once the need to dig or trench has been determined:

1. Identify two potential installation locations at least seven feet apart at both the proposed pole location and the point where the cable reaches the house.
2. The technician will inform the customer that white flags will be placed in their yard to mark the proposed excavation site for the dish and cable trenching prior to marking by the Underground Utility Company:
   - Explain that two locations have been marked to help prevent the need for a reschedule if there is a conflict due to utility lines
   - Explain that it is very important not to move or remove these flags prior to utility marking
3. Place one white marker flag at the proposed location of the pole mount one at the house and one flag approximately every six feet in between:
   - There should be a minimum of three flags for each marked location
   - The flags should be inserted into the ground a minimum of four inches
   - In snowy conditions, ensure the flag has penetrated the ground and not just the snow layer
4. Contact the Underground Utility Company (811) to have utility lines marked
5. Continue with temporary mount installation

**Truck roll to complete permanent installation:**

1. Confirm utility markings
2. Retrieve white marker flags
3. Install permanent pole mount

**Version 3.1  2/28/2011**
**Mount: Non-Penetrating Roof**

1. Locate a suitable area to assemble the mount
   - Clean, flat and near hauling area
2. Assemble non-penetrating roof mount kit using manufacturer’s assembly instructions
   - Place 4 rail angles forming a square with side with most holes and slots facing ground
   - Connect four corners with nuts and bolts, making sure corners are aligned, and hand tighten
   - Place remaining two rail angles in the center of square, with side with most holes and slots facing ground and backs of rail angles facing each other
   - Align end holes of two upper rail angles with center most slots of lower rail angles and connect them with hand-tightened nuts and bolts
   - Place adaptor rails, verifying that side with most holes and slots facing ground and slotted end aligned, facing ground, to unused center slots of an outer rail angle
   - Hand tighten the nuts and bolts
   - Assemble footplate between two adaptor rails, positioning majority of mast above adaptor rails and aligning edge of footplate
   - Hand tighten nuts and bolts

3. Position mount on desired location
   - Clean area by removing all gravel and debris from that will occupy by non-penetrating roof mount
   - Place regulation rubber mat in desired location
   - Place assembled mount on rubber mat
   - Orient front (side with 2 adaptor rails) of mount towards azimuth used for pointing the dish
   - Level dish mast
   - Evenly place required ballast mount
   - To raise ballast up to a roof, there are two options
     - Option 1
       - This is the preferred option: 2-man use of a hand-line - where production schedules allow. This procedure will involve contacting your manager or another technician for assistance
     - Option 2
       - 1-man use of a hand-line: procedures for this are similar to option 2; however it will require more trips up and down ladder increasing risk of a fall
     - Follow instructions for amount of weight to use
     - Attach and point dish assembly
     - Orient the majority of dish assembly over the non-penetrating roof mount

**Mounting Options**

**Mount: Rail**

1. Determine proper location for Rail Mount on railing
   - Recommended location: where vertical rails intersect with either bottom or top horizontal rail
   - NEVER affix Rail Mount on railing rusted, bent, cracked, has deficient or broken welds/connections to top or bottom horizontal rails, or railing not structurally stable in connection to building
2. Place Plate #1 on top of Plate #2
   - Place first external tooth lock washer and then flat washer onto the ¾” x 20 x 1.5” Bolt
   - Then insert bolt/lock washer/flat washer assembly through slot in Plate #1 and thread into Plate #2
3. Set assembled plates at install location on railing
   - Adjust two plates so as to “lightly clamp” opposing edges of plate assembly to vertical rails and then tighten securely four ¾” x 20 x 1.5” bolts
4. Align Plate #3 with Plate #1/#2 on other side of railing
   - Ensure part label for Part #3 identifying “UP” is in proper direction
5. Lastly, seat mounting foot (not included) onto Plate #3 using the ¾” x 20 x 1/2” bolts with the external tooth lock washer and securely tighten
## Mount Chart

<table>
<thead>
<tr>
<th>Mount</th>
<th>Type</th>
<th>Acceptable Surfaces</th>
<th>Mount Locations</th>
<th>Antenna Rating</th>
<th>Safety Concerns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Mast</td>
<td>Fiber board, wood, brick, cinder block, concrete, asphalt roof</td>
<td>Approved vertical, horizontal or asphalt roof surface</td>
<td>All dishes Note: Struts required for 1000.4 Dish, DISH 500+/1000+</td>
<td>Structure should be solid, mast could be a bump hazard, ladder possibly needed</td>
<td></td>
</tr>
<tr>
<td>Short Mast</td>
<td>Fiber board, wood, brick, cinder block, concrete, asphalt roof</td>
<td>Approved vertical, horizontal or asphalt roof surface</td>
<td>Prescribed for the 1000.4 Dish only</td>
<td>Structure should be solid, mast could be a bump hazard, ladder possibly needed</td>
<td></td>
</tr>
<tr>
<td>Pole Mount</td>
<td>In ground</td>
<td>Approved in-ground location</td>
<td>All dishes Note: Must call Dig Safe (811) before installation</td>
<td>Could hit a gas/electrical line, possible tripping hazard</td>
<td></td>
</tr>
<tr>
<td>Telescoping Wall Mount</td>
<td>Fiber board, wood, brick, concrete, cinder block</td>
<td>Approved vertical surface</td>
<td>Up to DISH 1000.2</td>
<td>Structure should be solid, mast could be a bump hazard, ladder needed</td>
<td></td>
</tr>
<tr>
<td>Soffit Mount</td>
<td>Roof truss or other structural member under the soffit</td>
<td>Soffits</td>
<td>Up to DISH 1000.2</td>
<td>Structure should be solid, mast could be a bump hazard, ladder needed</td>
<td></td>
</tr>
<tr>
<td>Under Eave Mount</td>
<td>Mounts to exposed under-eave rafter. Soffit framing members must be exposed</td>
<td>Soffits</td>
<td>Up to DISH 1000.2</td>
<td>Structure should be solid, ladder possibly needed</td>
<td></td>
</tr>
<tr>
<td>Angled Fascia Mount</td>
<td>Mount to stud, rafter tail, or structural member behind an angled fascia board</td>
<td>Angled fascia board</td>
<td>Up to DISH 1000.2</td>
<td>Structure should be solid, mast could be a bump hazard, ladder needed</td>
<td></td>
</tr>
<tr>
<td>Eave/Gable Mount</td>
<td>Mount to stud, rafter tail, or structural member behind a fascia board, Fascia board on end or gable, 4 x 4 wooden post (part of existing support structure)</td>
<td>Fascia board or end or gable, 4 x 4 wooden post (part of existing support structure)</td>
<td>Up to DISH 1000.4 with short mast</td>
<td>Structure should be solid, mast could be a bump hazard, ladder needed</td>
<td></td>
</tr>
<tr>
<td>Railing Mount</td>
<td>Balcony rail</td>
<td>Balcony/ porch rail</td>
<td>Up to DISH 1000.4 with short mast</td>
<td>Structure should be solid</td>
<td></td>
</tr>
<tr>
<td>Quick Pipe Adapter</td>
<td>Existing 2” or greater in diameter pole or pipe</td>
<td>C-Band or Prime Star antenna masts</td>
<td>Up to DISH 1000.2</td>
<td>Structure should be solid, not for use on vent pipes</td>
<td></td>
</tr>
<tr>
<td>Universal Non-Penetrating Mount</td>
<td>Any flat surface</td>
<td>Flat roof</td>
<td>All dishes</td>
<td>Structure should be solid, ladder needed</td>
<td></td>
</tr>
<tr>
<td>Non-Penetrating Patio Mount</td>
<td>Limited to semi-inclosed areas</td>
<td>Patios/decks</td>
<td>All dishes</td>
<td>Structure should be solid, requires proper block use</td>
<td></td>
</tr>
<tr>
<td>VERSATILE Mount</td>
<td>High-profile, low-profile, flat concrete roofs</td>
<td>Concrete roof</td>
<td>Up to DISH 1000.2</td>
<td>Structure should be solid, mast is a bump hazard, ladder needed</td>
<td></td>
</tr>
</tbody>
</table>
## Legacy Receivers

<table>
<thead>
<tr>
<th>Receiver</th>
<th>HD / SD</th>
<th>Tuners</th>
<th>TVs</th>
<th>DVR</th>
<th>Recording Time</th>
<th>Remote Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1000/1500</td>
<td>SD</td>
<td>Single</td>
<td>1</td>
<td>No</td>
<td>NA</td>
<td>IR</td>
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<td>2700/2800</td>
<td>SD</td>
<td>Single</td>
<td>1</td>
<td>No</td>
<td>NA</td>
<td>IR</td>
</tr>
<tr>
<td>3000/3500/3700/3900</td>
<td>SD</td>
<td>Single</td>
<td>1</td>
<td>No</td>
<td>NA</td>
<td>IR or UHF</td>
</tr>
<tr>
<td>4000</td>
<td>SD</td>
<td>Single</td>
<td>1</td>
<td>No</td>
<td>NA</td>
<td>IR or UHF</td>
</tr>
<tr>
<td>4700/4900</td>
<td>SD</td>
<td>Single</td>
<td>1</td>
<td>No</td>
<td>NA</td>
<td>IR</td>
</tr>
<tr>
<td>5000</td>
<td>SD</td>
<td>Single</td>
<td>1</td>
<td>No</td>
<td>NA</td>
<td>IR or UHF</td>
</tr>
<tr>
<td>6000</td>
<td>SD/HD</td>
<td>Single</td>
<td>1</td>
<td>No</td>
<td>NA</td>
<td>IR/UHF</td>
</tr>
<tr>
<td>7100/7200</td>
<td>SD</td>
<td>Single</td>
<td>1</td>
<td>No</td>
<td>NA</td>
<td>IR</td>
</tr>
<tr>
<td>JVC IRR</td>
<td>SD</td>
<td>Single</td>
<td>1</td>
<td>No</td>
<td>NA</td>
<td>IR/UHF</td>
</tr>
<tr>
<td>DISH 111</td>
<td>SD</td>
<td>Single</td>
<td>1</td>
<td>No</td>
<td>NA</td>
<td>IR</td>
</tr>
<tr>
<td>DISH 301</td>
<td>SD</td>
<td>Single</td>
<td>1</td>
<td>No</td>
<td>NA</td>
<td>IR</td>
</tr>
<tr>
<td>DISH 501</td>
<td>SD</td>
<td>Single</td>
<td>1</td>
<td>Yes</td>
<td>Up to 35 hours</td>
<td>IR/UHF</td>
</tr>
<tr>
<td>DISH 508/510</td>
<td>SD</td>
<td>Single</td>
<td>1</td>
<td>Yes</td>
<td>Up to 60 hours</td>
<td>IR/UHF</td>
</tr>
<tr>
<td>DISH Player-DVR 921</td>
<td>SD/HD</td>
<td>Dual</td>
<td>1</td>
<td>Yes</td>
<td>Up to 180 hours SD Up to 25 hours in HD</td>
<td>IR/UHF Pro</td>
</tr>
<tr>
<td>DISH Player-DVR 942</td>
<td>SD/HD</td>
<td>Dual</td>
<td>2</td>
<td>Yes</td>
<td>Up to 180 hours SD Up to 25 hours in HD</td>
<td>IR/UHF Pro</td>
</tr>
</tbody>
</table>

* All legacy receivers are MPEG-2
ViP®922 SlingLoaded™ DVR

Remote Viewing Requirements

<table>
<thead>
<tr>
<th>PC Requirements</th>
<th>Intel 2.4 GHz Core 2 duo class processor with 2 GB of RAM, DXVA support desirable on graphics card</th>
</tr>
</thead>
<tbody>
<tr>
<td>HD Streaming (on home network)</td>
<td></td>
</tr>
<tr>
<td>SD/QVGA streaming (anywhere)</td>
<td>Pentium IV class</td>
</tr>
<tr>
<td>Operating System</td>
<td>Microsoft XP, Vista, or Windows 7</td>
</tr>
<tr>
<td>Mac Requirements</td>
<td>Intel 2.8 GHz Core 2 duo class processor with 2 GB of RAM</td>
</tr>
<tr>
<td>HD Streaming (on home network)</td>
<td></td>
</tr>
<tr>
<td>SD/QVGA Streaming (anywhere)</td>
<td>Intel 2.8 GHz Core 2 duo class processor with 2 GB of RAM</td>
</tr>
<tr>
<td>Operating System</td>
<td>OS 10.5.7 or higher</td>
</tr>
<tr>
<td>Browser Specifications</td>
<td></td>
</tr>
<tr>
<td>Internet Explorer</td>
<td>Version 7 or higher</td>
</tr>
<tr>
<td>Firefox</td>
<td>Version 3.0 or higher</td>
</tr>
<tr>
<td>Safari</td>
<td>Version 4.0 or higher</td>
</tr>
</tbody>
</table>

32.0 Hot Keys

<table>
<thead>
<tr>
<th>Hot Keys</th>
<th>Red</th>
<th>Green</th>
<th>Yellow</th>
<th>Blue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Live TV</td>
<td>JUMP</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Main Menu</td>
<td>JUMP</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Settings’ Menu</td>
<td>JUMP</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
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<tr>
<td>Settings’ Menu</td>
<td>JUMP</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Connectivity Benefits

Better Technology

Customize Your TV Experience
- Pay your bill and manage your account.
- Caller ID on your TV screen.
- Remote DVR access: access your ViP® DVR remotely via computer or iPhone™.

Access Pay-Per-View with the Touch of a Button
- Rent movies without leaving your home, right through your TV.
- No processing charges/fees, and no need to call.
- Pay for your Pay-Per-View purchase on your next bill.

Access Additional Programming, Games, and More
- Thousands of movies and TV shows are available on demand.
- Interactive Applications: Play games, check weather, news, sports, even shop.

Better Customer Experience

Quality Service
- Diagnose technical problems: connected receivers can track, log and notify us of any problems.
- Access customer support application: get easy troubleshooting tips for the most common problems.

Privacy
- Your privacy is guaranteed: connecting your receiver will not compromise your privacy.

Additional Savings and Flexibility

Stay Connected
- Plugging in your receiver will not interrupt your phone line or Internet connection.
- All required accessories are included at no additional cost.

Connectivity

Connectivity

Connectivity Device Hierarchy

Connectivity Device Usage Priority
- Broadband connection is always the top priority, even when a phone is also present
- Connect a phone line when a broadband connection is unavailable
- Connection of the “Primary” receiver is the main objective

Considerations
- Only use 1 non-direct connectivity device per account (SlingLink / DishCOMM / Phonex)
- Do NOT use Phonex with ViP receivers
- ONLY use Wireless Adapter if:
  o Direct Ethernet is unavailable
  o SlingLink is impossible

To determine the correct connectivity device, use the Mandatory Connectivity Device Matrix below.

Mandatory Connectivity Device Matrix

<table>
<thead>
<tr>
<th>Receiver Configuration</th>
<th>Preference Order</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 ViP receiver on account</td>
<td>1. Ethernet</td>
</tr>
<tr>
<td></td>
<td>2. SlingLink</td>
</tr>
<tr>
<td></td>
<td>3. Wireless Adapter</td>
</tr>
<tr>
<td></td>
<td>4. Phone line</td>
</tr>
<tr>
<td></td>
<td>5. DishCOMM Modem</td>
</tr>
<tr>
<td>2+ ViP receivers on account</td>
<td>1. SlingLink</td>
</tr>
<tr>
<td></td>
<td>2. Ethernet</td>
</tr>
<tr>
<td></td>
<td>3. Wireless Adapter</td>
</tr>
<tr>
<td></td>
<td>4. Phone line</td>
</tr>
<tr>
<td></td>
<td>5. DishCOMM Modem</td>
</tr>
<tr>
<td>No ViP receivers on account</td>
<td>1. Phone line</td>
</tr>
<tr>
<td></td>
<td>2. Phonex*</td>
</tr>
</tbody>
</table>

*Do NOT use Phonex with ViP receivers
Modem

A modem is a network device that converts a broadband cable or DSL line into a single Ethernet cable with access to the Internet. By itself, a standard modem provides Internet access to only one piece of equipment, usually the customer’s computer.

Correct configuration of a modem with a DISH Network receiver

Gateway

A gateway is a network device that combines a modem and a router, allowing multiple connections to the Internet without a separate router.

Correct configuration of a gateway with a DISH Network receiver
**Router**

A router is a network device connected to a modem that splits the Internet from a single Ethernet out port to multiple ports. If a customer only has a standard modem, a router is required.

**Correct configuration of a router with a DISH Network receiver**

**Switch**

A switch is a network device that increases the number of Ethernet ports on a router or gateway. It should only be used when additional ports are needed on the router or gateway. Adding a switch directly to a standard modem without a router does not work.

**Correct configuration of a switch with a DISH Network receiver**
Wireless Adapter

Prior to Installation

Before proceeding with the wireless adapter installation perform the following:

• Follow the Connectivity Hierarchy Matrix (See appendix)
  o Attempt to install direct Ethernet cable
  o Attempt to install SlingLink
• If neither option works, confirm the receiver you wish to connect is compatible with the wireless adapter (622,722,722K)
• Confirm the customer has broadband and a wireless router or gateway
• Confirm the customer has the password to their network (WEP or WPA encryption key or WPA2 pass phrase)
• Let the customer know you will need them present during parts of the installation

Installing the Wireless Adapter

1. Complete the receiver installation and initial software download before attempting to connect the wireless adapter.

2. Plug in the Wi-Fi adapter to the rear USB port on the receiver using the USB extension cable. Never insert the adapter directly into the receiver, always use the supplied cable. This will allow you to position the adapter for the best possible reception.

3. Do not secure with the plastic cradle and Velcro until after you have completed the wireless setup. You will need to reposition the adapter once setup is complete to get the strongest possible signal.

4. Once the receiver recognizes the adapter the following screen will be displayed. Select Setup to enter the wireless adapter setup Wizard.

5. The wireless setup wizard will start. First, it will scan for available networks.

6. Wireless networks displaying two or three bars are preferable. Networks only displaying one bar will not provide the best customer experience due to slower connection rates.

7. Select the name (SSID) of the desired wireless network from the list and select Done. You will need to confirm with your customer which network is the correct one if more than one option appears.

8. Have your customer enter the encryption key or passphrase using the remote and onscreen keypad. Advise them the password is case sensitive.

9. Once the customer has input the wireless network encryption key, select Done.

10. The system will begin testing the network onnection. The following screens will be displayed.

To proceed with this next step the customer must be present. The customer will need to have their Job Aid WEP or WPA encryption key or WPA2 pass phrase available, if any.

Do not enter this data yourself. The customer must enter it to ensure their network remains secure.
11. When testing is successfully completed, the following screen will be displayed. Select Done. If this test fails, refer to the troubleshooting section of this Job Aid.

12. The wireless adapter signal strength screen will display

13. Move the USB adapter to achieve the maximum signal strength. If the signal strength is below 40, skip ahead to the ‘If there are signal strength issues’ section of this job aid.

14. Once the signal strength is acceptable (maintaining higher than 40) select OK.

15. Next, perform send status to ensure your connection is

16. Click Send Status

17. If send status fails go to the troubleshooting section of this job aid

18. Once signal is at an acceptable level and send status is completed, obtain the customers permission and secure the plastic mini-cradle using the included Velcro. Do not secure to a finished surface or to the customer’s television.
Signal Strength Issues

If you cannot achieve signal strength of at least 40 at the time of connection, do not continue with the wireless adapter option.

Use another connectivity solution for the customer if possible and fill out the Connectivity Tracker to capture your experience.

Disconnecting the Adapter

If the wireless adapter is disconnected during setup, a popup will be displayed.

When the wireless adapter is reconnected, the following popup will be displayed.

Select Setup to proceed, you will be taken to the wireless setup screens again.

Troubleshooting

Adapter not recognized

If the adapter isn’t recognized or you don’t have the wireless set up option it means the receiver does not have the most current software version.

Wireless test fail

If the wireless test fails, go through the wireless setup process one more time to make sure the correct network was selected and the correct passwords were entered. If the test fails again, perform the following steps:

- Reset the router
- Reset the modem
- If you complete these steps and test again and it still fails, the wireless adapter is not a good solution for this customer. Connect using a different connection method.

Send status fail

If send status fails, follow the same steps as the wireless test fail
## Connectivity Troubleshooting Matrix

### Broadband Troubleshooting

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Check Broadband Configuration</td>
<td>Check that the wiring between your DISH receiver and your broadband source is configured properly using dish.com/wiring.</td>
</tr>
<tr>
<td>2</td>
<td>Reset Receiver</td>
<td>If the issue is only on ONE receiver, unplug the DISH receiver for 10 seconds and plug back in. It may take up to 5 minutes for the reset process to be completed.</td>
</tr>
<tr>
<td>3</td>
<td>Reset Broadband Router/Modem</td>
<td>Unplug your broadband router or modem for 10 seconds and plug back in.</td>
</tr>
<tr>
<td>4</td>
<td>Check LED lights</td>
<td>Check the DSL light is steady green and the Internet light is steady or flashing green. If there is no light or the light is red, have the customer contact their ISP.</td>
</tr>
<tr>
<td>5</td>
<td>Perform “Send Status”</td>
<td>MENU 6 - “System Setup”, 3 - “Diagnostics” and select “Analysis” and “Send Status”. Check for confirmation of call out success or a confirmation code from STBH Live with all circles under “Status” showing green.</td>
</tr>
<tr>
<td>6</td>
<td>Access Internet Using Home Computer</td>
<td>For DISHOnline, Sling, or DISH Remote Access issues, have the customer access the IP based feature from their home computer.</td>
</tr>
<tr>
<td>7</td>
<td>Transfer to Broadband</td>
<td>Transfer the call to Broadband.</td>
</tr>
<tr>
<td>8</td>
<td>Try different port on Router</td>
<td>Connect the Ethernet cable from the current port on the router to a different known working port.</td>
</tr>
<tr>
<td>9</td>
<td>Bypass Router and Connect to Modem</td>
<td>Bypass the router and connect the computer directly to the modem; if the computer cannot access the Internet, have the customer contact their ISP.</td>
</tr>
<tr>
<td>10</td>
<td>Check the LAN connection is enabled</td>
<td>Windows: Start - Settings - Network Connections - verify Local Area Connections is enabled; if the connection shows Disabled, right click on the connection icon, and select Enable.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mac: System Preferences - Network Preferences - Built in Ethernet is disabled</td>
</tr>
<tr>
<td>11</td>
<td>Contact Manufacturer</td>
<td>Contact the manufacturer of the device directly if you are unable to resolve the issue.</td>
</tr>
</tbody>
</table>

### Connectivity Troubleshooting — Wireless Adaptor

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Check Adapter Connected to Receiver</td>
<td>Check that the wireless adapter’s extension cable is connected to the DISH receiver’s USB port.</td>
</tr>
<tr>
<td>2</td>
<td>Check Connected to correct Network</td>
<td>Verify the DISH receiver is connected to the correct wireless network.</td>
</tr>
<tr>
<td>3</td>
<td>Reset Receiver</td>
<td>If the issue is only on ONE receiver, unplug the DISH receiver for 10 seconds and plug back in. It may take up to 5 minutes for the reset process to be completed.</td>
</tr>
<tr>
<td>4</td>
<td>Reset Broadband Router/Modem</td>
<td>Unplug your broadband router or modem for 10 seconds and plug back in.</td>
</tr>
<tr>
<td>5</td>
<td>Check LED lights</td>
<td>Check the DSL light is steady green and the Internet light is steady or flashing green. If there is no light or the light is red, have the customer contact their ISP.</td>
</tr>
<tr>
<td>6</td>
<td>Check Another Port on the DISH Receiver</td>
<td>Connect the Wireless Adaptor’s Extension Cable to another port on the DISH receiver.</td>
</tr>
<tr>
<td>7</td>
<td>Access Internet Using Home Computer</td>
<td>For DISHOnline, Sling, or DISH Remote Access issues, have the customer access the IP based feature from their home computer.</td>
</tr>
<tr>
<td>8</td>
<td>Connect Hard Wire to Router</td>
<td>If you are able to do so, direct connect the DISH receiver to the home network’s router using an Ethernet cable.</td>
</tr>
<tr>
<td>9</td>
<td>Perform “Send Status”</td>
<td>MENU 6 - “System Setup”, 3 - “Diagnostics” and select “Analysis” and “Send Status”. Check for confirmation of call out success or a confirmation code from STBH Live with all circles under “Status” showing green.</td>
</tr>
<tr>
<td>10</td>
<td>Transfer to Broadband</td>
<td>Transfer the call to Broadband.</td>
</tr>
<tr>
<td>11</td>
<td>Connect Wireless Adaptor to your Home Computer</td>
<td>Connect Wireless Adaptor to your Home Computer and test for connectivity.</td>
</tr>
<tr>
<td>12</td>
<td>Create Wireless Adaptor RA</td>
<td>Create RA for Wireless Adaptor.</td>
</tr>
</tbody>
</table>
SlingLink

Installation Considerations

• When using a SlingLink you must test the circuits you will be using the Home Plug Tester as you have been trained to do already

• If a surge protector is used, it must be approved for use with SlingLink (or HomePlug), and the adapter or satellite receiver must be plugged into the SlingLink outlet of the surge protector

• You may also use the 3-Plug Outlet Adapter (Outlet Splitter - P/N 156672) to provide additional plugs on the circuit if required.

• The SlingLink and any networked receiver must be on the same home electrical circuit to work
  o In some homes, customers have multiple electrical circuits (more than one electrical breaker box in the house)
  o A single SlingLink may not always crossover multiple home electrical circuits

Connecting Receivers Using SlingLink

1. Test the outlet in question using the Home Plug Adapter to ensure the SlingLink will work
2. Connect one end of an Ethernet cable to an available ETHERNET (LAN) port on the router, gateway, or Ethernet switch
3. Connect the other end of the Ethernet cable to the ETHERNET port on the SlingLink
4. Plug the SlingLink into an electrical outlet located near the router
   o The SlingLink and the DISH Network satellite receiver’s power cord should both be plugged directly into an electrical wall outlet
   o Do not plug the adapter or satellite receiver into an outlet that is controlled by a wall switch or into GFI electrical outlets
5. Verify function by checking adapter lights
6. Plug the receiver

Configure Receiver into the Network

1. How to Configure the Receiver into the Network
2. Using the DISH Network remote control for the receiver that is connected to the home network, access the Network Setup screen by pressing MENU, selecting System Setup, Installation, Broadband Setup, and then Network Setup
3. Verify the IP address is populated (not all 0s)
   o If the IP address is all 0s, select Reset Connection
   o An Attention 875 message will display briefly, and then you will return to the Network Setup screen
4. Verify the Connection Status on the Network Setup screen shows Connected Online, and that the IP address does not show all 0s
   o If the IP address shows all 0s or the Connection Status shows Not Connected, refer to the Installer Reference Handbook
5. Select Done to exit the Network Setup screen
6. Verify the receiver can successfully connect to DISH Network by pressing MENU on the remote control, selecting System Setup, then Diagnostics
7. Select Connection to test the Internet connection
   o The Connection option also tests the phone line, if connected. The results should display Broadband Connection OK
   o If a phone line is not connected to the receiver, connection results will display Phone Connection Failure. This is OK

Version 3.1

2/28/2011
Sling Adapter

Sling Adapter Installation

1. Connect the USB connector on the Sling Adapter to the back of the DISH Network receiver
2. The Sling logo on the top of the Sling Adapter should illuminate to indicate it is powered on
3. Click OK on any on-screen messages
   - If you do not receive this message, ensure the ViP722 DVR or ViP722k DVR has the latest software
4. Set the Sling Adapter on the top of the receiver

Note: The Sling Adapter can also be connected to the front USB connection on the DISH Network receiver. This should be the last installation option used as it is not aesthetically pleasing.

Using Remote Viewing

Using their computer customer should:

- Log in to My Account on dish.com
- Click on DISH Remote Access (located at the left of the screen)

Note: If the customer does not have an account, then assist them to create one.

Once logged in, there are a few initial steps to complete before watching live TV.

1. Ensure the receiver with the Sling Adapter connected is listed at top of the screen, if not, select the appropriate receiver
2. Click Watch Live TV (located at the top of the screen)
   - This button appears once the Sling Adapter is connected to the DISH Network receiver
3. Click Accept on the Terms of Use
4. Follow the on-screen instructions to download the plug-in
   - On-screen instructions can change without our knowledge but should always be followed and read completely
   - Setup example: Click the yellow bar and select Install Active X Control

Note: This bar may not appear depending on the customer’s computer settings
5. Click Install
6. Select the desired program via EPG or on-screen controls
   - Click Watch on Web

Educate the customer on how they access TV Everywhere features on their compatible mobile device.

Customers must:

- Download the DISH Remote Access App to their compatible mobile device:
  - iPhone / iPod touch – iTunes Store
  - Blackberry – link available on dish.com/teverywhere/remoteaccess
  - Android – Droid App Market
- Log into the DRA app using the same login to access their DISH account on dish.com
- Select a live or DVR event to remote view on their mobile device

Version 3.1
Sling Adapter FAQs

Q: What receiver models are compatible with the Sling Adapter?
A: Only the 722 and 722k are compatible; the 622 model is not compatible with the Sling Adapter.

Q: If I have a Sling Link am I ready for remote viewing?
A: No, a Sling Link (which is an Ethernet through power-line adapter, also known as a HomePlug) is a connectivity device. The Sling Adapter is an additional device that is needed for Remote Viewing.

Q: Can existing customers order a Sling Adapter for the Technician to deliver and install?
A: No, the Sling Adapter must be ordered through the CSC or at www.Dish.com. The product will then be shipped to the customer for self installation. Do not call to modify an existing customer work order.

Q: Can I modify a New Connect work order to add a Sling Adapter?
A: Yes, New Connect work orders are the only work orders that can be modified to add the Sling Adapter. Once the modification is complete the Technician may deliver and install the product.

Q: Is it possible to use both a Wi-Fi adapter and a Sling Adapter at the same time?
A: Yes, there are front and rear USB ports on the 722 and 722k receivers. Both of these ports may be used simultaneously for a Wi-Fi adapter, a Sling Adapter, or external hard drive.

Q: Can a USB hub be connected to the USB port of a 722 or 722k to connect multiple accessories?
A: No, USB hubs are not currently supported for connection to DISH Network receivers.

Sling Adapter
Receivers and Remotes

Limited Mode

Power Scan Limited Mode
1. Hold TV Mode button until all mode lights flash
2. Enter S001# using number pad
3. Perform powerscan as normal

Easy Limited Mode
1. Ensure remote is programmed to TV
2. Press and hold TV Mode button until all Mode lights flash
3. Press Page Up once then#

Standard Limited Mode
1. Identify Remote Code
2. Enter TV Code and add a 1 to the end (7-4-2-1)

Retrieve Remote Code
1. Hold Mode button until all lights flash
2. Press # # (Pound Twice)
3. Count blinking lights on selected mode button
   Note: Fast Blink = 0  Slow Blink = 1

Aux Volume Control
4. Hold Aux Mode button until all mode Lights flash
5. Press#
6. Press Volume up
7. Press 0
8. Press#

TY Volume Control
1. Hold TV Mode button until all mode Lights flash
2. Press#
3. Press Volume up
4. Press 0
5. Press#

Enable Sat Auto-Tune Feature
1. Program remote to TV
2. Program Recover Button
3. Press and Hold Sat button until all mode lights Flash
4. Press * - Volume Up - #

Disable Sat Auto-Tune Feature
1. Press and Hold Sat button until all mode lights Flash
2. Press * - Volume Up - #

Set Recover Button
1. Hold down TV button until all Mode lights flash
2. Press * - then the 3-digit channel number - # (*-0-6-0-#)

Programming the Aux Button
1. Retrieve code from User’s Manual
2. Hold Aux Mode button until all mode lights flash
3. Press 0 for a second TV, 1 for a second VCR, 2 for a tuner or amplifier
4. Enter device code from manual
5. Press#

Extend Remote Address (17-31)
Open the system info screen on the receiver
6. Press and hold SAT button until all mode buttons flash
7. Press # then press the channel up arrow key

Using the Learning Remote
1. Place Dish Network remote and original equipment remote on a Flat Stable Surface
2. Press and hold the Mode button for the device you are teaching until all Mode lights Flash
3. To start learning commands for this remote
   • If a code is programmed into the remote press and release RECALL then hold RECORD for three seconds
   • If you have not programmed a code for that device, press and hold RECORD for three seconds
4. Point the front of the original device remote to the small square on the front, left-hand side of the Dish Network remote
5. On the Dish Network remote control press the button you want to teach
   •
   •
6. On the original device remote control, press and hold the button you want learned
   • If the Dish Network remote learns the command, the mode light blinks off and then back on
   • If the mode light blinks three times or remains lit, the Dish Network remote did not learn the command
7. Repeat steps 5 & 6 until all commands have been learned
8. To end the learning sequence
   • Press one of the mode buttons, this saves all of the commands
   • To cancel learning process, do not press any buttons for 30 seconds, this will cause the remote to time out

Receivers and Remotes

DISH Satellite Locations

<table>
<thead>
<tr>
<th>Transponder</th>
<th>Point Azimuth</th>
<th>Elevation</th>
<th>Skew</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>15</td>
<td>16</td>
<td>21</td>
</tr>
<tr>
<td>Transponder</td>
<td>SAT – 119°</td>
<td>SAT 110°</td>
<td></td>
</tr>
</tbody>
</table>

Wing Dish (all skews 90) Use DISH 500 With I Bracket

<table>
<thead>
<tr>
<th>MIN</th>
<th>Point Azimuth</th>
<th>Elevation</th>
<th>Skew</th>
</tr>
</thead>
<tbody>
<tr>
<td>61.5°</td>
<td>72.7°</td>
<td>77°</td>
<td>110°</td>
</tr>
</tbody>
</table>
Remote Control Audio/Visual Restoration Table

DISH Network remote controls have many features to enhance customers’ viewing experience. Being able to select the most beneficial feature(s) to setup and discuss them with your customers is key to improving their satellite TV enjoyment.

Use the table on the following pages to select which feature(s) to enable, configure and educate your customers on, based on the Audio/Video connections used.

### Dual Tuner Receiver Installation

<table>
<thead>
<tr>
<th>TV1 viewing location</th>
<th>Setup and Education Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coax Connection</td>
<td>SAT Auto-Tune</td>
</tr>
<tr>
<td>RCA Connection</td>
<td>X</td>
</tr>
<tr>
<td>S-Video Connection</td>
<td>X</td>
</tr>
</tbody>
</table>

Customer has a SD Receiver and connects with:

<table>
<thead>
<tr>
<th>TV1 viewing location</th>
<th>Setup and Education Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coax Connection</td>
<td>SAT Auto-Tune</td>
</tr>
<tr>
<td>RCA Connection</td>
<td>X</td>
</tr>
<tr>
<td>S-Video Connection</td>
<td>X</td>
</tr>
</tbody>
</table>

Customer has a HD Receiver and connects with:

<table>
<thead>
<tr>
<th>TV1 viewing location</th>
<th>Setup and Education Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coax Connection</td>
<td>SAT Auto-Tune</td>
</tr>
<tr>
<td>Component</td>
<td>X</td>
</tr>
<tr>
<td>DVI/HDMI</td>
<td>X</td>
</tr>
</tbody>
</table>

### Single Dual Tuner Receiver Installation

<table>
<thead>
<tr>
<th>TV2 viewing location</th>
<th>Setup and Education Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>TV2 Home Distribution</td>
<td>SAT Auto-Tune</td>
</tr>
<tr>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

* Enable Limited mode if customer is NOT able to manually recover from A/V loss
Extending UHF and UHF Pro Remote Control Range

This section provides ways of extending UHF and UHF Pro remote control range to make remote controls work reliably in difficult installations, where attempts to improve remote control range have been unsuccessful using easier methods.

The solutions shown use additional approved parts to “back-feed” the remote control antenna onto the same cable as the HOME DISTRIBUTION (CH 21-69 or 73-125) Out or CH 3-4 Out for the distant TV location. This allows the remote control antenna to be placed in the room with the TV, extending the range of the UHF or UHF Pro remote control.

**Installation Diagrams**

The following installation diagrams are the approved configurations for extending the UHF and UHF Pro remote control range. Choose the diagram that best matches your installation and follow it closely.

Note: If an over-the-air antenna is installed, the remote control signal cannot be combined onto the same cable as the over-the-air signal.

---

**Diagram 1:**

Dual-tuner, two-TV receiver with remote control antenna combined with HOME DISTRIBUTION (Ch 21-69 or 73-125) output.
Diagram 2:
Single-TV receiver with UHF or UHF Pro Remote Control and remote control antenna combined with CH 3-4 output.

Diagram 3:
Dual-tuner, two-TV receiver with remote control antenna, HOME DISTRIBUTION (Ch 21-69 or 73-125) output, and Satellite In combined on a single cable.
Diagram 4:
Dual-tuner, two-TV receiver with remote control antenna combined with HOME DISTRIBUTION (Ch 21-69 or 73-125) output. Over-the-Air antenna and Satellite In combined using diplexers on a separate cable.

Diagram 5:
Single-TV receiver using IR-UHF Pro or IR-UHF Upgrade Kit and remote control antenna combined with CH 3-4 output.
UHF Remote Interference

If an approved external device is connected to a DISH Network ViP receiver and you notice degradation in the response of the receiver to the UHF remote control, try the following steps, in the order presented, to correct the issue.

After performing each step, try using the remote again to see if operation has improved.

1. Placement and Cables

   Placement:
   
   External devices should not be placed on top of the receiver, as close proximity can cause UHF remote interference. Move the external device away from the receiver and the UHF remote antenna connection points.
   
   - Increase the separation between the receiver and the external device
   - Place the device on a separate shelf from the receiver
   - Place the Sling Adapter flat on the rubber feet off to the side of the receiver
   - Do not position an accessory so that it will block the ventilation openings on the receiver

   As a general rule, the further apart you can get the attached device and the UHF antenna the better.

2. USB Extension Cables:

   Sling Adapter and External Hard Drive:
   
   - USB extension cables can increase interference if used on a Sling Adapter or an external hard drive
     - Do not use USB extension cable with these devices
       - Wi-Fi Adapter
       - The USB extension cable can be used with the Wi-Fi Adapter
       - One USB extension cable is included with the device

3. Change the frequency band for the UHF remote control to use UHF Pro Band B as follows:

   - On a 6.3 or 6.4 remote control:
     
     - Remove the battery cover and slide the small switch inside the compartment to position B, changing the transmitted RF characteristics of the remote control
     - Replace the battery cover and re-link the remote with the receiver using the System Information screen
     - See the Remote Control User Guide for detailed instructions

   - On a 21.0 remote:
     
     - Select an even-numbered remote address (for example, address 2, 4, or 6) which sets this remote to Band B and re-link the remote with the receiver using the System Information screen
     - See the Remote Control User Guide for detailed instructions
     - Note: This step does not apply to ViP211 or ViP211k receivers. It applies to the ViP612 DVR receiver only if a UHF remote control is being used

4. UHF Remote Antenna

   Move the UHF antenna away from the externally connected device and the receiver using a UHF remote-antenna extension cable
   
   - Use a coaxial jumper cable to relocate the antenna
     
     - RG-6 or RG-59 cable
     - This jumper should be four to six feet in length
     - Use a barrel connector to attach the UHF antenna to the jumper
   
   - You may need to try several locations for the UHF remote antenna to find the one that works best in your installation
     
     - Route the cable and place the antenna in such a way that it is aesthetically pleasing to the customer
     - Remember when relocating the UHF antenna to be careful not to damage the customer’s furnishings

5. USB Port

   - If an external device is connected to the USB port on the receiver’s rear panel, try plugging the device into the front-panel USB port instead
     
     - Make sure the IR sensor on the front of the receiver is not blocked

6. Customer Education

   - Educate the customer on the actions you have taken to improve their Remote Control’s operation
   - Inform the customer that the interference could re-occur if they rearrange the devices

    If none of these actions corrects the problem, refer to your manager.
Remote Key Overview

The available keys are shown and explained in the following chart. It’s important to note that the 6.2/6.3/6.4 tabs are not interchangeable with 4.0/6.0 tabs. So in the instance where a customer receives a 6.4 tab to replace their 6.0 tab, they can not use the original tab on the new remote.

<table>
<thead>
<tr>
<th>Receivers</th>
<th>211, 211k, 411, 222, 322, 522, 625 TV1</th>
<th>222, 222k, 622, 722, 722k, only TV1</th>
<th>322, 522, 625 only TV1</th>
<th>222, 522, 622, 625, 722, TV2</th>
<th>501, 508, 510</th>
<th>381, 612</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Green key with green 1</td>
<td>Green key with black 1 and UHF Pro icon</td>
<td>Green key with green 1 and UHF Pro icon</td>
<td>Blue key with black 2 and UHF Pro icon</td>
<td>Black key with UHF icon</td>
<td>Silver key with UHF Pro icon</td>
</tr>
<tr>
<td>SAT mode Sends Out:</td>
<td>IR</td>
<td>UHF Pro only</td>
<td>UHF Pro only</td>
<td>UHF Pro only</td>
<td>UHF &amp; IR</td>
<td>UHF Pro only</td>
</tr>
<tr>
<td>SAT In AUX Mode Sends Out:</td>
<td>IR</td>
<td>UHF &amp; IR</td>
<td>UHF &amp; IR</td>
<td>UHF &amp; IR</td>
<td>UHF &amp; IR</td>
<td>UHF &amp; IR</td>
</tr>
</tbody>
</table>

- The tabs can be broken down into the following:
- TV1 IR: Used for any IR configuration.
- TV1 UHF Pro: Used for TV1 of duo receivers when there is something preventing an IR remote from working correctly; this can include instances of IR interference or a customer having the receiver in a different room from the TV. There are two different

Remote Troubleshooting

TV1 UHF Pro tabs. Green ‘1’ and UHF Pro Icon: This tab should be used for setting up TV1 UHF Pro on a 322, 522 or 625 only. This tab sends out the same signals as a TV2 tab, relying on the receiver’s TV1 UHF PRO Setup to recognize it as a TV1 command.

- Black ‘1’ and UHF Pro Icon: Used for setting up TV1 UHF on VIP Duo receivers. No menu setup is required.
- TV2 UHF Pro: Used to program a remote for TV2 on any Duo receiver.
- UHF Pro: Used for any uhf pro receiver. This should normally be used for UHF Pro solo receivers, but can also be used for duo receivers; this should be avoided so as to prevent confusion stemming from the lack of numbers on the tab.
- IR/UHF: Used for receivers that support UHF rather than UHF Pro. With this tab, the remote sends out both UHF and IR signals in satellite mode. This allows the remote to be used with any IR receiver if we are unable to locate the TV1 IR tab.

Remote A/B Switch Overview

- The internal A/B switch allows selection between two frequencies to help in instances of UHF interference; this can include conflicts with another UHF Pro remote or UHF interference in general. The A/B toggle is located in the battery compartment of the remote control.
- Band A: In band A, the remote uses the 369.5 MHz frequency for TV1, while using 375.3 MHz for TV2. This is the band of UHF Pro recognized by all Dish Network UHF Pro receivers. With 21.0 remotes, odd remote addresses use band A. For this reason, when addressing a remote to a non-VIP receiver we need to ensure the switch is in the ‘A’ position or if we are using a 21.0 remote we need to ensure we use an odd remote address.
- Band B: In band B, the remote uses the 394.3 MHz frequency for TV1, while using 388.3 MHz for TV2. With 21.0 remotes, even remote addresses use band B. This band is only recognized by VIP series receivers.
Mobility Tablet Guidelines

Components and Functionality of Tablet

Indicator lights
- Indicator lights display status of the battery
- Power indicator light is to left of indicator lights

Function keys
- Function keys allow access to most used applications at the touch of a button
  - F1 - touch screen keyboard
  - F2 - show desktop
  - F3 - battery indicator
  - F4 - mouse trap

Touch Screen
Within touch screen, the icons you need are:
- DishNAV
- TechConnect
- VZAccess

Bottom Panel
- Bottom panel as power plug and cradle holes, insert tablet in van cradle correctly, it charges as you drive

Stylus
- Orange stylus is located at back of case, use stylus or finger only to select items on screen

Side Panels
Left Side Function Button
- Toggles between full screen DishNAV to other windows in the background

Right Side Function Button
- Opens volume control tool

Power Switch
- Power on/off button is on left side of case.
- Click and hold power button for one second before letting it go
  - Power on requires 1.5 second
  - Standby recovery requires 0.5 second

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Beginning of Day
- Complete sign out paperwork
- Perform morning functionality confirmation

End of Day
Tablets must be completely powered off each night unless notification has been received that the tablet updates are being sent out.

Check in mobile computer:
- Shut down computer
  - Tap Start, select Shut Down
  - Tap drop-down, select Shut Down, tap OK
- Complete sign in paperwork
- Store tablet in a secure area during charging
- Confirm:
  - Charging cable secure
  - Blinking light

Note: Remote technicians will not sign out daily, but will bring in from the van and charge at night in a secure area.

Processes may vary from location to location. Be sure to verify all processes with your FSM.
Troubleshooting

No Connectivity
- Check connectivity
  - Tap on VZ Access Manager
  - Check number of bars
  - No bars indicates no connectivity
  - Continue to status, pending transactions are stored and sync when connectivity is restored
  - Activation requires connectivity
- Return to using mobile computer when in signal range

Not Charged
- Dock mobile computer and turn on van
- Proceed with computer in dock and allow it to charge
- If unable to status while it charges, seek dispatch support until functional

Tablet not Functioning: Hardware or Application Issue
Prior to departure from office
- Notify FSM and obtain replacement

System Issues
- Reboot computer
- Check connectivity
- Contact Mobility Support Desk, option 8, obtain ticket #
- Contact FSM if no Mobility Support Desk resolution within 10 minutes
  - FSM approves manual process
  - FSM resumes troubleshooting

General Rules
- Handle with CARE
- Don’t place anything on top of tablet

Power Requirements
- Tablet will only charge when vehicle’s ignition is on
  - Tablet should be docked at all times, when vehicle’s ignition is on
  - DishNAV only functions while driving with tablet properly docked
  - Connectivity LED on docking cradle lights a solid color when connection is established
  - Secure tablet by connecting to AC power supply for charging overnight
- When updates are provided overnight, leave tablets powered on, but logged off Windows
  - FSM will alert you when this is needed

Security Requirements
- Ensure tablet is in your possession or properly secured at all times throughout day
- After arriving at customer’s home, place tablet in Standby mode by double tapping Standby icon
- To place table in Standby mode manually
  - Remove tablet from mount and place in charging station bin in back of the vehicle
  - Tap Start menu in bottom left corner of tablet screen
  - Select Shut Down
  - Tap drop down box, select Standby, tap OK
- When installation is complete and system requires activation (NC/RC), retrieve tablet from vehicle and bring into customer’s home
- Return tablet to front vehicle mount before departure, after completion of the work order
- Do not leave tablet in van overnight (including remote technicians)

Other Usage Requirements
- Don’t perform any data entry while vehicle in motion
- Don’t use other electronic navigation devices (Garmin, TomTom, Magellan, etc.)
- Follow all procedures outlined in DNS Mobility Process

Mobility Tablet Guidelines

Mobility Tablet Guidelines
- Ensure tablet is never dropped
- Keep liquids away from tablet at all times
- Only use stylus or finger tip on LCD touch screen
- Don’t expose tablet to rain, snow, sleet, hail, sun, etc.

Version 3.1
Care and Use Tips

Avoid Extreme Temperatures
Remove tablet from vehicle when:
- Outside temperature is 85 degrees or higher
- Outside temperature is 10 degrees or lower
If the tablet must be brought into the customer’s home, it must be placed in a safe location while working.

Power Off the Tablet Nightly
Tablets must be completely powered off each night unless notification has been received that the tablet updates are being sent out.

Protect Power Ports
Power ports can easily be damaged by improperly forcing the tablet into the docking station in the van.
To avoid damage and ensure proper charging:
- Tighten the connector ring on the power cord
- Line up the keyed part of your power plug with the keyed power port
- Push the plug in until it is seated properly

Check Dock Screws
Dock screws are critical to ensure the tablet will dock properly in the vehicle so it can charge throughout the day.
- Check dock screws weekly
- Report missing screws to your FSM for replacement

Safeguard Screen
The tablet’s screen is not ruggedized and must be handled with care to avoid expensive repairs.
- Only the approved stylus or your finger should touch the screen
- Never use a pen or pencil on the screen
- Ensure screen is protected at all times
- Report to FSM when screen becomes scratched or worn for screen protector replacement

Always Use Shoulder Straps
Every tablet must have a shoulder strap attached to avoid dropping the unit.
- Ensure all tablets have shoulder straps
- Use the strap to carry the tablet, ensuring the screen does not make contact with tools or supplies
- Report missing/damaged shoulder straps to your FSM

Prevent Spills
The tablets and docking station keyboard will not work properly if food or drink is spilled on them.
- Keyboards must be cleaned regularly
- If a spill does occur:
  - Immediately unplug the keyboard
  - Wipe the spill with a lightly damp cloth or paper towel
  - Dry it thoroughly
- Once keyboard is dry, plug it back into docking station
- Report the spill to your FSM
- Report the issue to the Mobility Support Desk if functionality does not return

Secure External Battery
The external battery holds the majority of stored energy and if it isn’t operational, the tablet’s power will last approximately one hour.
- Ensure external battery is properly locked into place
- When replacing the battery, gently pull back the latch to avoid damaging the tablet or latch
- Report damaged external battery to your FSM

Ensure tablet bumpers are in good condition
The rubber bumpers on the sides of the tablet are crucial to the ruggedness of the tablet.
- Ensure the bumpers in the tablet are properly secured and not damaged
- Report damaged bumpers to your FSM for repair or replacement
**DishNAV**

**Navigate to Address Procedure**

**Step 1**
Select Dispatch

**Step 2**
Select Find Location

**Step 3**
Select ZIP Code

**Step 4 & 5**
Enter the ZIP Code and click OK

**Step 6**
From the displayed list, click the appropriate city.

**Step 7 and 8**
Enter the street name and click OK

**Step 9**
Select the appropriate street

**Step 10 and 11**
Enter the house number and click OK

**Mobility DishNAV**

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**Version 3.1**

2/28/2011
Step 12
Verify the address and click GO

Listen and drive

Mobility DishNAV

Setting Route Preferences Procedure

Step 1
Click Settings

Step 2
Click Routes

Step 3 and 4
Toggle Use Route With from the Shortest Distance and Shortest Time
To customize the route to avoid certain road types, select Avoidances

Step 5
To change a road type to avoid, click OK
<table>
<thead>
<tr>
<th>Business Rule</th>
<th>Definition</th>
<th>Recommended Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete</td>
<td></td>
<td>XX:XX (time zone) Tech (number) CAO. (signature)</td>
</tr>
<tr>
<td>Completed TC</td>
<td></td>
<td>XX:XX (time zone) Tech (number) CAO. (Describe what was done to resolve)-TC Code (3-digit TC Code) (signature)</td>
</tr>
<tr>
<td>Hold-Aesthetics</td>
<td>Customer does not like how the installation will look</td>
<td>XX:XX (time zone) WO on hold per cust due to aesthetics, (describe aesthetic issue). FSM (name) app. (signature)</td>
</tr>
<tr>
<td>Hold-Bad</td>
<td>Address/Phone Cust address and/or phone number is incorrect</td>
<td>XX:XX (time zone) WO on hold due to (describe address/phone issue). (describe steps taken to resolve) FSM (name) app. (signature)</td>
</tr>
<tr>
<td>Hold-Change Install Date</td>
<td>Customer wants to change date and time of appointment</td>
<td>XX:XX (time zone) WO on hold per cust request , cust not avail for scheduled date, cust will call to r/s. FSM (name) app. (signature)</td>
</tr>
<tr>
<td>Hold-Cust Changed Mind</td>
<td>Customer decides not to become a new customer or does not want upgrade ordered</td>
<td>XX:XX (time zone) Tech is on site. Cust changed mind. Gave number to loyalty. WO being placed on hold. FSM (name) app. (signature)</td>
</tr>
<tr>
<td>Hold-Cust Did Not Order</td>
<td>Customer claims they did not order Dish Network at all, or that they ordered something we do not offer (based on functionality or pricing)</td>
<td>XX:XX (time zone) WO placed on hold due to cust did not order, conf with cust and gave number to loyalty, FSM (name) app. (signature)</td>
</tr>
<tr>
<td>Hold-Grounding SFU, Grounding MDU</td>
<td>Customer has no proper electrical ground for the dish being installed</td>
<td>XX:XX (time zone) WO placed on hold due to no viable ground, cust lives in a SFU, FSM (name) app. (signature), XX:XX (time zone) WO place on hold due to no viable ground, cust lives in a SFU, FSM (name) app. (signature)</td>
</tr>
</tbody>
</table>

**DNS Standardized Notes**

<table>
<thead>
<tr>
<th>Business Rule</th>
<th>Definition</th>
<th>Recommended Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hold-House/Room Not Ready</td>
<td>Construction not completed, cannot get to TV’s or outlets, etc.</td>
<td>XX:XX (time zone) WO placed on hold due to house not ready, conf with cust that house will not be ready for (how long). Adv cust to call 1-800-333-3474 when ready to r/s. FSM (name) app. (signature)</td>
</tr>
<tr>
<td>Hold-Inventory Not Available</td>
<td>Customer ordered product that is not in stock and there is no way to deliver it to the site on the scheduled date.</td>
<td>XX:XX (time zone) WO placed on hold due to equip needed to comp to wo is not avail. Warehouse is uncertain when equip will be avail. Will call cust to r/s when equip is avail. FSM (name) app. (signature)</td>
</tr>
<tr>
<td>Hold-Labor/ Hardware Cost</td>
<td>Customer does not want to pay additional cost of hardware or labor required to meet their needs</td>
<td>XX:XX (time zone) WO placed on hold due to cost of install/receiver. Gave cust number to loyalty. FSM (name) app. (signature)</td>
</tr>
<tr>
<td>Hold-Landlord Permission</td>
<td>Customer does not own their home or building, and has not obtained landlord permission for installation.</td>
<td>XX:XX (time zone) WO placed on hold due to cust not able to receive LLP for install. Gave number to local dispatch to r/s once LLP is obtained. FSM (name) app. (signature)</td>
</tr>
<tr>
<td>Hold-MA Mismatch</td>
<td>The address on the work order does not match the zip code and/or management area.</td>
<td>XX:XX (time zone) WO placed on hold due to MA Mismatch. Cust address is in different MA. Contacted cust to conf address. Sent e-mail to CSC-Area Mismatch to correct. FSM (name) app. (signature)</td>
</tr>
<tr>
<td>Hold-NLOS MDU</td>
<td>Customer has no line of sight for the installation. A verification will be done, but could not be completed while original tech was on site</td>
<td>XX:XX (time zone) WO placed on hold due to NLOS, cust lives in MDU. FSM (name) app hold. Sent info to DNS office for verification. (signature)</td>
</tr>
<tr>
<td>Hold-NLOS SFU</td>
<td></td>
<td>XX:XX (time zone) WO placed on hold due to NLOS, cust lives in SFU. FSM (name) app. Sent info to DNS office for verification. (signature)</td>
</tr>
<tr>
<td>Business Rule</td>
<td>Definition</td>
<td>Recommended Note</td>
</tr>
<tr>
<td>----------------------------</td>
<td>--------------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Hold-No Cust Equip</td>
<td>Customer has no TV’s on site.</td>
<td>XX:XX (time zone) WO placed on hold due to cust does not have (TVs/Receiver) needed for the install. Cust will call 1-800-333-3474 after equip is on site to r/s. FSM (name) app. (signature)</td>
</tr>
<tr>
<td>Hold-Power Outage</td>
<td>No electrical service to the customer’s home.</td>
<td>XX:XX (time stamp) WO placed on hold per cust request. Cust has no power at this time. Cust will call once power is restored to r/s. FSM (name) app. (signature)</td>
</tr>
<tr>
<td>Hold-Prog Unavailable</td>
<td>Customer does not want their job completed until a programming issue has been resolved</td>
<td>XX:XX (time zone) WO placed on hold per cust req. Cust is not able to receive (describe) in their area. Gave number to loyalty. FSM (name) app. (signature)</td>
</tr>
<tr>
<td>Hold-Tech Missed Appt</td>
<td>Technician arrived after scheduled time slot or did not arrive at all</td>
<td>XX:XX (time zone) WO placed on hold. There were no internal techs or subs that would arrive in the time frame and cust was unable to wait. Cust will call to r/s. FSM (name) app. (signature)</td>
</tr>
<tr>
<td>Hold-Unavailable/ Not Home</td>
<td>Customer is not at their home at that time of installation, or the account holder is not available at the time of installation.</td>
<td>XX:XX (time zone) WO placed on hold due to cust not home. (Describe measures used to reach customer). (3 descriptions of residence). FSM (name) app. (signature)</td>
</tr>
<tr>
<td>Hold-Weather</td>
<td>Weather is preventing completion of work order</td>
<td>XX:XX (time zone) WO placed on hold due to weather. Tech not able to travel/access dish due to ice/wind/snow/rain. Will call cust to r/s once weather has cleared. FSM (name) app. (signature)</td>
</tr>
<tr>
<td>Pole Mount Installation Work Order Process</td>
<td></td>
<td>XX:XX (time zone) Cust req dish be installed on pole. Dig Rite/Blue Stake (#) to be completed by (date). Temp mount comp. tech will return on (Date AM/PM) to install PLMT. (signature)</td>
</tr>
</tbody>
</table>

**Established DISH Network Abbreviations**

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Additional Contact #</td>
</tr>
<tr>
<td>AC</td>
<td>Additional Contact #</td>
</tr>
<tr>
<td>ACCT</td>
<td>Account</td>
</tr>
<tr>
<td>ACT</td>
<td>Activation</td>
</tr>
<tr>
<td>ADV</td>
<td>Advised</td>
</tr>
<tr>
<td>AFTR</td>
<td>After</td>
</tr>
<tr>
<td>ALT</td>
<td>Alternate</td>
</tr>
<tr>
<td>APP</td>
<td>Approve</td>
</tr>
<tr>
<td>APV</td>
<td>Appointment Verification Call</td>
</tr>
<tr>
<td>ARR</td>
<td>Arrived</td>
</tr>
<tr>
<td>Attn</td>
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<td>ATR</td>
<td>Advance Technical Representative</td>
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<td>AUTH</td>
<td>Authorize</td>
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<td>AV</td>
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<td>AVAIL</td>
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<td>AZ</td>
<td>Azimuth</td>
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<tr>
<td>B</td>
<td>Black</td>
</tr>
<tr>
<td>B/W</td>
<td>Black and white</td>
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<tr>
<td>BK</td>
<td>Back</td>
</tr>
<tr>
<td>BLDG</td>
<td>Building</td>
</tr>
<tr>
<td>BLK</td>
<td>Black</td>
</tr>
<tr>
<td>BUS</td>
<td>business</td>
</tr>
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<td>C</td>
<td>Call back</td>
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<td>CA</td>
<td>Change of Address</td>
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<td>CAO</td>
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<td>CBL</td>
<td>Cable</td>
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<td>CC</td>
<td>Change of Contact #</td>
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<tr>
<td>CCI</td>
<td>Customer Called In</td>
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<td>CDT</td>
<td>Central Daylight Time</td>
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<tr>
<td>CE</td>
<td>Change of Equipment</td>
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<td>CH</td>
<td>Service Change</td>
</tr>
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<td>CHNL</td>
<td>Channel</td>
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<td>CHRGD</td>
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<td>CI</td>
<td>Called in</td>
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<td>CNR</td>
<td>Hold - Customer Not Ready</td>
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<td>CONF</td>
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<tr>
<td>CONN</td>
<td>Connection(s)</td>
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</table>
DNS Standardized Notes

DNS Standardized Notes

FR Front
FSM Field Service Manager

G
GM General Manager

H
HDMI High Definition Multimedia Interface cable
HDTV High Definition Television
HR Hour

I
IM Installation Manager
INET Internet
INST LR Installer
IR Infrared
IVR Our automated phone system

J
JJJ Jobs in Jeopardy
K
KPI Known Product Issue
KRI Known Receiver Issue

DNS DISH Network Service
DSUP Dispatch Supervisor
DSHMVR Dish Mover
DWN Down
DVR Digital Video Recorder

E
E East
E* EchoStar
EDT Eastern Daylight Time
EQUIP Equipment
ERR Error
ERT Executive Resolution Team
ESC Escalate
EST Eastern Standard Time
ETA Estimated Time of Arrival
ETC Estimated Time of Completion
EXST Existing

F
FAQ A list of frequently asked questions and their answers about a given subject.

L
L1 Line 1/Primary Number
L2 Line 2/Secondary Number
LM Left Message
LNB (or LNBF) Low Noise Block Converter with Integrated Feed
LLP Landlord Permission
LOS Line of Sight
LSC Local service center
LY Saved by Loyalty Team

M
MA Management Area
MC Must Carry
MDL Model
MDT Mountain Daylight Time
MST Mountain Standard Time
MDU Multiple Dwelling Unit
MNTH Month

N
N North
N/A Non Applicable
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Meaning</th>
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<tbody>
<tr>
<td>NA</td>
<td>No Answer/No Voicemail</td>
</tr>
<tr>
<td>NC</td>
<td>New Connect</td>
</tr>
<tr>
<td>NE</td>
<td>Northeast</td>
</tr>
<tr>
<td>NGRND</td>
<td>No ground</td>
</tr>
<tr>
<td>NLOS</td>
<td>No Line Of Sight</td>
</tr>
<tr>
<td>NFOC</td>
<td>National Field Operations Center</td>
</tr>
<tr>
<td>NPF</td>
<td>No problem found</td>
</tr>
<tr>
<td>NR/OA</td>
<td>Not Rated / Adult Only</td>
</tr>
<tr>
<td>NW</td>
<td>Northwest</td>
</tr>
<tr>
<td>OBST</td>
<td>Obstruct/obstruction</td>
</tr>
<tr>
<td>OJT</td>
<td>On the Job Training</td>
</tr>
<tr>
<td>OPID</td>
<td>Operator ID</td>
</tr>
<tr>
<td>PDT</td>
<td>Pacific Daylight Time</td>
</tr>
<tr>
<td>PH</td>
<td>Phone</td>
</tr>
<tr>
<td>PI</td>
<td>Promotion Incorrect</td>
</tr>
<tr>
<td>PLZ</td>
<td>Please</td>
</tr>
<tr>
<td>PRBLM</td>
<td>Problem</td>
</tr>
<tr>
<td>PROG</td>
<td>Programming</td>
</tr>
<tr>
<td>PST</td>
<td>Pacific Standard Time</td>
</tr>
<tr>
<td>PWR</td>
<td>Power</td>
</tr>
<tr>
<td>Q</td>
<td>Quadrature Amplitude Modulation</td>
</tr>
<tr>
<td>QAM</td>
<td>Quality Assurance Supervisor</td>
</tr>
<tr>
<td>QAS</td>
<td>Quad LNBF</td>
</tr>
<tr>
<td>R</td>
<td>Receiver number</td>
</tr>
<tr>
<td>R.A.</td>
<td>Return Authorization</td>
</tr>
<tr>
<td>REP</td>
<td>Representative</td>
</tr>
<tr>
<td>REPL</td>
<td>Replace</td>
</tr>
<tr>
<td>REQ</td>
<td>Request</td>
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<td>RESCHD</td>
<td>Researched</td>
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<td>RFRD</td>
<td>Referred</td>
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<td>RMT</td>
<td>Remote</td>
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<td>RS</td>
<td>Reschedule</td>
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<td>RSTRT</td>
<td>Restart</td>
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<tr>
<td>S</td>
<td>South</td>
</tr>
<tr>
<td>SFTY</td>
<td>Safety reasons</td>
</tr>
<tr>
<td>SIG</td>
<td>Signal</td>
</tr>
<tr>
<td>SLNB</td>
<td>Single LNBF</td>
</tr>
<tr>
<td>SRVC</td>
<td>Service</td>
</tr>
<tr>
<td>STB</td>
<td>Set top box</td>
</tr>
<tr>
<td>SUB</td>
<td>Subcontractor</td>
</tr>
<tr>
<td>SUP</td>
<td>Supervisor</td>
</tr>
<tr>
<td>SW</td>
<td>Switch</td>
</tr>
<tr>
<td>SYS</td>
<td>System</td>
</tr>
<tr>
<td>SCHD</td>
<td>Scheduled</td>
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<td>SDTV</td>
<td>Standard-Definition Television</td>
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<td>SD</td>
<td>SuperDISH</td>
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<td>SE</td>
<td>Southeast</td>
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<td>SFTY</td>
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<td>SIG</td>
<td>Signal</td>
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<tr>
<td>SLNB</td>
<td>Single LNBF</td>
</tr>
<tr>
<td>SRVC</td>
<td>Service</td>
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<td>STB</td>
<td>Set top box</td>
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<td>Subcontractor</td>
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<tr>
<td>SUP</td>
<td>Supervisor</td>
</tr>
<tr>
<td>SW</td>
<td>Switch</td>
</tr>
<tr>
<td>SYS</td>
<td>System</td>
</tr>
<tr>
<td>T</td>
<td>To Be Determined</td>
</tr>
<tr>
<td>TBD</td>
<td>Troubleshoot</td>
</tr>
<tr>
<td>TBLSHT</td>
<td>Trouble Call</td>
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<tr>
<td>TC</td>
<td>Technician</td>
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<td>Technician</td>
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<tr>
<td>TMRW</td>
<td>Tomorrow</td>
</tr>
<tr>
<td>TLNB</td>
<td>Twin LNBF</td>
</tr>
<tr>
<td>TST</td>
<td>Test</td>
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<tr>
<td>U</td>
<td>Unauthorized/Unavailable</td>
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<tr>
<td>W</td>
<td>West</td>
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<tr>
<td>W/</td>
<td>With</td>
</tr>
<tr>
<td>W/B or WNBCK</td>
<td>Loyalty Team</td>
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<tr>
<td>WO</td>
<td>Work Order</td>
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<td>WOV</td>
<td>Work Order Verification</td>
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<td>Warranty</td>
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<td>Weather</td>
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<td>X Y Z</td>
<td>Cross streets</td>
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<td>XFER</td>
<td>Transfer</td>
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<td>XDR</td>
<td>Transponder</td>
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<tr>
<td>YR</td>
<td>Year</td>
</tr>
<tr>
<td>ZIP</td>
<td>ZIP Code</td>
</tr>
</tbody>
</table>
Standardized Customer Education

All sections of Customer Education MUST be completed in the order below on every install!

1. **Hand Customer Remote**
   - Show “Getting Started with Dish” guide (GSG) and reference throughout education

2. Remote Layout
   - Explain remote key 1 or 2 on bottom of remote
   - Point out remote sticker on back of remote
   - Explain tip about SAT mode

3. Turning your TV On and Off
   - **Have customer:** turn TV On and Off
   - Explain screensaver that appears (receiver is off but TV still on)
   - **Have customer:** turn TV back On

4. Turning your Receiver On and Off
   - **Have customer:**
     - Turn the receiver On and Off
     - Turn receiver back on

5. **Have customer:**
   - Staying on the Correct TV Input or Channel
     - Explain the importance of being on the correct input or channel
     - Show the correct input or channel on the GSG and show remote sticker
     - Show what the incorrect input or channel looks like

6. Fixing a Black, Blue, or Snowy Screen
   - **Have customer:**
     - Get back onto correct input or channel
     - Press SAT mode button to ensure the TV is in SAT mode

7. Changing Channels
   - **Have customer:**
     - Explain the 3 ways to change channels

8. **Selecting a Favorites List to Display on Your Program Guide**
   - **Have customer:**
     - Press GUIDE button to display Favorites List Options screen
     - Select All Sub favorites list
     - Select All Chan favorites list

9. Exiting On-Screen Menus
   - **Have customer:**
     - Press GUIDE button and use PAGE DOWN button to get to 110 (Food Network)
     - Explain how PAGE UP and PAGE DOWN buttons work

8. Selecting a Favorites List to Display on Your Program Guide
   - **Have customer:**
     - Press GUIDE button to display Favorites List Options screen
     - Select All Sub favorites list
     - Select All Chan favorites list

9. Exiting On-Screen Menus
   - **Have customer:**
     - Press GUIDE button and use PAGE DOWN button to get to 110 (Food Network)
     - Explain how PAGE UP and PAGE DOWN buttons work

**Additional Tips**

- Ask customer if they are interested in Parental Controls or closed captioning
- If so, program settings for them and point out in GSG where steps are located

If customer does not have a DVR, skip to Troubleshooting

1. Using your DVR while Watching Live TV
   - **Have customer:**
     - Explain what a DVR is and show “Getting Started with your DVR” guide

2. Recording a TV Program
   - **Have customer:**
     - Explain that you can record a program now or in the future
     - Explain the record frequency (all episodes, new episodes, once)

Version 3.1  2/28/2011
1. Press RECORD to record program that is currently on
2. Press STOP to stop recording program
3. Use GUIDE to record a program in the future (create a scheduled timer)
4. Choose recording frequency

3. Watching a Recording
   • **Have customer:**
   • Access my recordings by pressing the DVR button
   • View program that was just recorded

4. Deleting a Recorded Program
   • **Have customer:**
   • Access my recordings by pressing the DVR button
   • Delete program that was just recorded

5. Deleting a Scheduled Timer (Future Recording)
   • **Have customer:**
   • Access My Recordings by pressing the DVR button
   • Select schedule, then select timers
   • Delete scheduled timer that was just created

6. **Troubleshooting**
   • Explain that 75% of all calls received for technical issues are solved with the 5 troubleshooting steps:
   • **Have customer:**
   • Press the SAT mode button (**Step 1**)
   • Get the TV back on the correct input or channel (**Step 2**)
   • Change the Favorites List from one to another (**Step 3**)
   • Explain that removing objects obstructing the signal to the dish (only when safe) or waiting for a storm to pass could solve the issue (**Step 4**)
   • Explain that resetting the receiver by unplugging it from the wall for 10 seconds could solve the issue (**Step 5**)

7. Ask customer if they have any questions

8. Staying on the Correct TV Input or Channel on TV2 (or other TVs)
   • Take customer to TV2 and show the correct Input or Channel on the GSG
   • Show remote sticker and point out that TV2 is on a different Input or Channel than TV1
   • Show what the incorrect Input or Channel looks like
   • Have customer: get TV2 back to the correct Input

Standardized Customer Education
## America's Top Packages

<table>
<thead>
<tr>
<th>Package</th>
<th>America's Top 120</th>
<th>America's Top 120+</th>
<th>America's Top 200</th>
<th>America's Top 250</th>
<th>America's &quot;Everything&quot; Pak</th>
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</thead>
<tbody>
<tr>
<td>Price</td>
<td>$44.99/mo</td>
<td>$49.99/mo</td>
<td>$59.99/mo</td>
<td>$69.99/mo</td>
<td>$104.99/mo</td>
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<tr>
<td>HD Free for Life*</td>
<td>$0.00/mo</td>
<td>$0.00/mo</td>
<td>$0.00/mo</td>
<td>$0.00/mo</td>
<td>$0.00/mo</td>
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<tr>
<td>HD Add-on</td>
<td>$10.00/mo</td>
<td>$10.00/mo</td>
<td>$10.00/mo</td>
<td>$10.00/mo</td>
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## DishLATINO Packages

<table>
<thead>
<tr>
<th>Package</th>
<th>DishMEXICO</th>
<th>DishLATINO Clásico</th>
<th>DishLATINO Plus</th>
<th>DishLATINO Dos</th>
<th>DishLATINO Max</th>
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<tbody>
<tr>
<td>Price</td>
<td>$19.99/mo</td>
<td>$32.99/mo</td>
<td>$37.99/mo</td>
<td>$44.99/mo</td>
<td>$57.99/mo</td>
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<tr>
<td>HD Free for Life*</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>$0.00/mo</td>
<td>$0.00/mo</td>
</tr>
<tr>
<td>HD Add-on</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>$10.00/mo</td>
<td>$10.00/mo</td>
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## HD Only Packages

<table>
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<tr>
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<th>DISH America</th>
<th>DISH America Silver</th>
<th>DISH America Gold</th>
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</thead>
<tbody>
<tr>
<td>Price</td>
<td>$34.99/mo</td>
<td>$49.99/mo</td>
<td>$59.99/mo</td>
</tr>
</tbody>
</table>

Local channels are included in all package prices. Add DISH Platinum to any HD package for $10.00/mo.

* Requires 24-month agreement and AutoPay with Paperless Billing OR $99 One-Time HD Programming Upgrade. $240 Cancellation Fee (prorated at $10/month) applies to HD Free for Life.

### Quarterly Snapshot 2/1/2011

### Quarterly Snapshot 2/1/2011
<table>
<thead>
<tr>
<th>Key Points</th>
<th>DHA24</th>
<th>DHA</th>
<th>Flex24</th>
<th>Flex</th>
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<tbody>
<tr>
<td>Agreement</td>
<td>24-month</td>
<td>None</td>
<td>24-month</td>
<td>None</td>
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<td>Activation Fee</td>
<td>$0</td>
<td>$99</td>
<td>$99</td>
<td>$149</td>
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<tr>
<td>Cancellation Fee</td>
<td>$420</td>
<td>NA</td>
<td>$420</td>
<td>NA</td>
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<td>SSN or Tax ID</td>
<td>Required</td>
<td>Required</td>
<td>Required</td>
<td>NOT Required</td>
</tr>
<tr>
<td>Credit / Debit Card</td>
<td>Required ($1 Hold)</td>
<td>Required ($1 Hold)</td>
<td>Required ($1 Hold)</td>
<td>NOT Required</td>
</tr>
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<td>Payment Collection</td>
<td>1st Bill Upfront</td>
<td>1st Bill Upfront</td>
<td>1st Bill Upfront</td>
<td>1st Bill Upfront</td>
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<tr>
<td>Equipment within Plan</td>
<td>Lease up to 3 Receivers (6 Tuners)</td>
<td>Lease up to 3 Receivers (6 Tuners)</td>
<td>Lease up to 3 Receivers (6 Tuners)</td>
<td>Own up to 1 Receiver (2 Tuners)</td>
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<tr>
<td>Installation</td>
<td>Free Up to 6 Tuners</td>
<td>Free Up to 6 Tuners</td>
<td>Free Up to 6 Tuners</td>
<td>Free Up to 6 Tuners</td>
</tr>
</tbody>
</table>

**Offers**

**NEW DHA24**
$20/15/10 off per mo. for 12 mos (Based on programming)
$20: AT200, AT250, AEP
$15: AT120, AT120+, Dos, Max
$10: All DISH America, Clásico, Plus
Showtime, DISH Platinum, & Playboy Free for 3 Months
Service Plan Free for 6 Months
HD Free for Life

**NEW DHA**
Showtime, DISH Platinum, & Playboy Free for 3 Months
Service Plan Free for 6 Months
HD Free for Life

**NEW Flex24**
$20/15/10 off per mo. for 12 mos (Based on programming)
$20: AT200, AT250, AEP
$15: AT120, AT120+, Dos, Max
$10: All DISH America, Clásico, Plus
Showtime, DISH Platinum, & Playboy Free for 3 Months
Service Plan Free for 6 Months
HD Free for Life

**NEW Flex**
Showtime, DISH Platinum, & Playboy Free for 3 Months
Service Plan Free for 6 Months
HD Free for Life

**Premium Packages**

- 2 Premium Packages: $24/mo
  - HBO: $18.00
  - Cinemax: $13.00
  - Showtime: $13.00
  - Starz: $13.00

- 3 Premium Packages: $33/mo
  - German Language Plus: $29.99
  - Pan-African Bouquet: $24.99
  - Polish Super Pack: $29.99

- 4 Premium Packages: $42/mo
  - Arabic Elite Pack: $34.99
  - Hindi Mega Pack: $49.99
  - Polish Premium Pack: $29.99

**Buy-Through Packages**

- Arabic Elite Pack: $34.99
- Arabic Enhanced Pack: $29.99
- Bangla Elite Pack: $34.99
- Bangla Mega Pack: $29.99
- Bengali Prabasi Pack: $19.99
- Brazil Elite: $34.99
- Great Wall TV: $22.99
- Chinese Elite Pack: $19.99
- Pinoy Mega Pack: $24.99
- French Bouquet: $19.99
- Eurochannel: $19.99
- Malayalam Mega Pack: $29.99

**Additional Services**

- DVR Service Fee: $6/month or $10/month for accounts with a VIP922 (Charged once per month per account with a DVR)
- DVR Integration Fee: $4/month (Charged once per month per account with a Logitech Revue with Google TV)
- Service Plan: $6/month (Free for 6 months for new customers with DHA24, DHA, Flex24, or Flex)
## Standard/Custom Work

<table>
<thead>
<tr>
<th>Category</th>
<th>Standard Work (what’s included)</th>
<th>Custom Work (additional charges may apply)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Status Customer</strong></td>
<td>• Email an order confirmation with appointment date and arrival window (if accurate email is provided).</td>
<td>• Place reminder call the evening prior to the appointment.</td>
</tr>
<tr>
<td></td>
<td>• Place reminder call the evening prior to the appointment.</td>
<td>• Update arrival time status by phone on day of appointment.</td>
</tr>
<tr>
<td><strong>Review Order and Set Up Plan</strong></td>
<td>• Review the order and set-up plan at the start of the appointment, prior to performing any installation work.</td>
<td></td>
</tr>
<tr>
<td><strong>Set Up Dish</strong></td>
<td>• Mount dish on outside wall, balcony, or roof to achieve best line of sight (dish must generally face to the south).</td>
<td>• Bury more than 50’ of cable for pole mount or other purposes (as measured from dish to point of entry into home).</td>
</tr>
<tr>
<td></td>
<td>• Mount dish on pole (up to five feet) if necessary. A second appointment would be required after utility lines are marked.</td>
<td>• Relocate dish due to customer request (aesthetics, new roof, construction etc.) after set-up and appointment is complete.</td>
</tr>
<tr>
<td><strong>Set Up Wiring</strong></td>
<td>• Run DISH-approved RG-6 coax cable from dish to receiver(s) up to 150’.</td>
<td>• Run cable from dish to receiver(s) greater than 150’.</td>
</tr>
<tr>
<td></td>
<td>• Once inside the home, cabling may be run through attics or unfinished basements to the receiver outlet.</td>
<td>• Fishing cable beyond what is required to route cable from the attic/unfinished basement to the receiver outlet.</td>
</tr>
<tr>
<td></td>
<td>• Neatly dress any installed exposed cabling.</td>
<td></td>
</tr>
</tbody>
</table>

**Standard/Custom Work**

18-1

**Standard/Custom Work**

18-2

**Standard/Custom Work**

<table>
<thead>
<tr>
<th>Category</th>
<th>Standard Work (what’s included)</th>
<th>Custom Work (additional charges may apply)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Set Up DISH Receivers</strong></td>
<td>• Connect each receiver to one TV. If a Duo receiver is installed, connect each tuner to one TV.</td>
<td>• Mirror TV (connect more than one TV per tuner).</td>
</tr>
<tr>
<td></td>
<td>• Connect HD receiver to HD TV using HDMI cable.</td>
<td>• Relocate receiver due to customer request (aesthetics, remodel, construction etc.) after set-up and appointment is complete.</td>
</tr>
<tr>
<td></td>
<td>• Connect receiver to broadband or phone line.</td>
<td>• Re-cable to customer relocated TV (aesthetics, remodel, construction etc.) after set-up and appointment is complete.</td>
</tr>
<tr>
<td></td>
<td>• Activate receivers.</td>
<td>• Configure changes to home stereo system, custom remotes or other equipment. (DISH does not currently perform this custom work).</td>
</tr>
<tr>
<td><strong>Set Up Remote Controls</strong></td>
<td>• Program each DISH remote control to applicable DISH receiver and TV.</td>
<td></td>
</tr>
<tr>
<td><strong>Educate Customer</strong></td>
<td>• Provide Getting Started with DISH Guide including 20 minute training.</td>
<td></td>
</tr>
<tr>
<td><strong>Wrap Up</strong></td>
<td>• Clean up all work sites, including removal of boxes and packaging.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Review customer paperwork and obtain required signatures.</td>
<td></td>
</tr>
</tbody>
</table>
## Custom Work

<table>
<thead>
<tr>
<th>Custom Task</th>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set Up Mirrored TV</td>
<td>N=</td>
<td>Install more than 1 TV per tuner</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Eligible for Duo receivers only. Always leave an additional remote for the</td>
</tr>
<tr>
<td></td>
<td></td>
<td>mirrored TV.</td>
</tr>
<tr>
<td>Relocate Dish</td>
<td>?</td>
<td>Relocate dish due to customer request (aesthetics, remodel, new roof,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>construction) after setup and appointment is complete.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The relocation is not due to signal issue resulting from the initial</td>
</tr>
<tr>
<td></td>
<td></td>
<td>installation.</td>
</tr>
<tr>
<td>Relocate Receiver</td>
<td>#</td>
<td>Relocate receiver due to customer request (aesthetics, remodel, construction)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>after setup and appointment is complete.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The relocation is not due to signal issue resulting from the initial</td>
</tr>
<tr>
<td></td>
<td></td>
<td>installation.</td>
</tr>
<tr>
<td>Set Up Customer/Relocated TV</td>
<td>$1</td>
<td>Re-cable to TV due to customer relocating their TV (aesthetics, remodel,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>construction) after setup and appointment is complete.</td>
</tr>
<tr>
<td>Set up Wallfish</td>
<td>:7</td>
<td>Fishing cable beyond what is required to route cable from the attic/unfinished</td>
</tr>
<tr>
<td></td>
<td></td>
<td>basement to the receiver outlet.</td>
</tr>
<tr>
<td>Bury cable over 50 ft</td>
<td>S+</td>
<td>Bury more than 50’ of cable for pole mount or other purposes (as measured</td>
</tr>
<tr>
<td></td>
<td></td>
<td>from dish to point of entry into home).</td>
</tr>
</tbody>
</table>

* Task fee of $50 for each task.  
Truck roll fee of $15 or $95 applies if the task is the reason for the work order.  
* If at the time of the appointment the technician determines that the work required to restore a system is due to the customer moving the TV, receiver or dish, custom work charges may apply.
Logitech Revue with Google TV

Pre-Installation

Ensure customer is aware of the requirements to install the Logitech Revue during the pre-installation walk through.

1. Identify all requirements are met
   - ViP 622 model family receiver (per work order)
   - Broadband or DSL internet service installed and active
   - Router with wireless connectivity
     - If router does not have wireless capability ensure two open ports on router with direct Ethernet connectivity to Logitech Revue and receiver
     - If modem ONLY (no existing router or gateway): provide the DNS router in accordance with router install guidelines and this job aid
   
   NOTE: If direct Ethernet connection is not possible from the DNS router to Logitech Revue and receiver, activate the router’s wireless function to establish connectivity.

2. Review requirements for connecting the Logitech Revue

3. Gain customer agreement before integrating the Logitech Revue with their receiver and home network

4. Determine connection method for Logitech Review and receiver
   - Wirelessly using the Logitech Revue, ensuring Ethernet cable is connected between the Revue and receiver
   - Direct Ethernet from router to Revue and receiver, ensuring both are on the same network

   NOTE: The receiver recognizes this connection as a direct Ethernet connection.

   • Direct Ethernet from router to Revue and receiver, ensuring both are on the same network

Before setting up the Logitech Revue, request that the customer gather the following information (as applicable to their setup):

   - Wireless network name and password
   - TV brand and model
   - Stereo receiver brand and model

Ensure the customer is present when installing the Logitech Revue

Installation Steps

1. Complete the dish installation and receiver download before proceeding with Logitech Revue installation

2. Remove the connection between the receiver and HDTV

3. Connect the receiver to the Logitech Revue with an HDMI cable (HDMI Out on the receiver and HDMI In on the Logitech Revue)

4. Connect Logitech Revue and HDTV with an HDMI cable (HDMI Out on the Logitech Revue and HDMI In on the HDTV)

5. Connect the Logitech Revue to broadband wirelessly or by direct Ethernet

   IMPORTANT: Using a SlingLink solution will NOT work with the Logitech Revue, as it is NOT HomePlug compatible even when two SlingLinks are used

6. Connect Logitech Revue to power source

7. Set up TV & AV
Logitech Revue with Google TV Troubleshooting

When troubleshooting the Logitech Revue is required, be sure to follow the Connectivity Escalate Process:
1. Perform normal troubleshooting by following the steps in this job aid.
2. When you cannot resolve the issue, contact your FSM for further guidance.
3. If there is no resolution, call DASH (866-688-3274) to reach a specialty agent.
   a. Select Option 5
   b. Be prepared to provide the Logitech Revue serial # from the sticker on the bottom of the device.
   c. Additional direction will be provided by the specialty agent.

Video Issues - Black, Blue, Snowy Screen

<table>
<thead>
<tr>
<th>Step</th>
<th>Troubleshooting</th>
<th>How To</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Verify HDMI Connections</td>
<td>Verify HDMI cables are connected from the DISH receiver HDMI Out to the HDMI In of the Revue, and the HDMI Out of the Revue to the HDMI In of the TV.</td>
</tr>
<tr>
<td>2</td>
<td>Reset Revue and DISH Receiver</td>
<td>Unplug both the Revue and DISH receiver for 10 seconds and plug back in. It may take up to 5 minutes for the reset process to be completed.</td>
</tr>
<tr>
<td>3</td>
<td>Check Receiver-to-TV Configuration</td>
<td>Check that the wiring between the DISH receiver and TV is configured properly.</td>
</tr>
<tr>
<td>4</td>
<td>Secure Receiver-to-TV Connections</td>
<td>Check that the connections between your DISH receiver, the TV, and any component(s) (VCR, DVD Player, etc.) in between are secure.</td>
</tr>
<tr>
<td>5</td>
<td>Bypass Revue</td>
<td>Bypass the Revue and directly connect the DISH receiver to the TV using an HDMI cable.</td>
</tr>
</tbody>
</table>

Video Issues - Distorted Video

<table>
<thead>
<tr>
<th>Step</th>
<th>Troubleshooting</th>
<th>How To</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Change Format</td>
<td>For Video Format Issues: Access “Home”, select “Settings”, then “Picture &amp; Sound”. Select “Resolution” and choose the picture format that matches the TV setting.</td>
</tr>
<tr>
<td>2</td>
<td>Reconfigure Screen Size</td>
<td>For Video Size Issues: Access “Home”, select “Settings”, then “Picture &amp; Sound”. Select “Picture Size” to reconfigure the screen size so it fills up the entire TV screen. Note: The Revue will reboot once this step is completed.</td>
</tr>
<tr>
<td>3</td>
<td>Reset Revue and DISH Receiver</td>
<td>Unplug both the Revue and DISH receiver for 10 seconds and plug back in. It may take up to 5 minutes for the reset process to be completed.</td>
</tr>
<tr>
<td>4</td>
<td>Verify Revue HDMI</td>
<td>Verify HDMI cables are connected from the receiver to the HDMI In of the Revue, and the HDMI Out of the Revue to the TV.</td>
</tr>
<tr>
<td>5</td>
<td>Bypass Revue</td>
<td>Bypass the Revue and directly connect the DISH receiver to the TV using an HDMI cable.</td>
</tr>
</tbody>
</table>

Video Issues - Frozen Video

<table>
<thead>
<tr>
<th>Step</th>
<th>Troubleshooting</th>
<th>How To</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Verify Keyboard is On</td>
<td>Verify the keyboard’s power switch is in the “On” position.</td>
</tr>
<tr>
<td>2</td>
<td>Check that Front Panel Can Change Channels</td>
<td>Press the up/down buttons on the front panel of the DISH receiver (some may be inside front panel door) to see if the receiver changes channels.</td>
</tr>
<tr>
<td>3</td>
<td>Reset Revue and DISH Receiver</td>
<td>Unplug both the Revue and DISH receiver for 10 seconds and plug back in. It may take up to 5 minutes for the reset process to be completed.</td>
</tr>
<tr>
<td>4</td>
<td>Bypass Revue</td>
<td>Bypass the Revue and directly connect the DISH receiver to the TV using an HDMI cable.</td>
</tr>
</tbody>
</table>
Connectivity

<table>
<thead>
<tr>
<th>Step</th>
<th>Troubleshooting</th>
<th>How To</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Verify DISH Receiver and Revue Connections</td>
<td>Check that the wiring between the DISH receiver and the Revue is configured properly.</td>
</tr>
<tr>
<td>2</td>
<td>Confirm Network Connections</td>
<td>Access “Home”, select “Settings”, then “Network Connection”. Confirm the status for Wi-Fi Connection. Select “Wi-Fi Settings”. Confirm connected to the correct wireless network. Select “Network Information”, then “Refresh”. If not, troubleshoot wireless or Ethernet.</td>
</tr>
<tr>
<td>3</td>
<td>Reset Revue and DISH Receiver</td>
<td>Unplug both the Revue and DISH receiver for 10 seconds and plug back in. It may take up to 5 minutes for the reset process to be completed.</td>
</tr>
<tr>
<td>4</td>
<td>Reset Broadband Router/ Modem</td>
<td>Unplug the broadband router or modem for 10 seconds and plug back in.</td>
</tr>
<tr>
<td>5</td>
<td>Check LED Lights</td>
<td>Verify the DSL light is steady green and the Internet light is steady or flashing green. If there is no light or the light is red, have the customer contact their Internet Service Provider (ISP).</td>
</tr>
<tr>
<td>6</td>
<td>Access Internet Using Home Computer</td>
<td>Ensure the Internet connection is working correctly by accessing the Internet on a computer. If unable to access the Internet on a computer, have the customer contact their Internet Service Provider (ISP).</td>
</tr>
<tr>
<td>7</td>
<td>Verify Call Out Success</td>
<td>Using the DISH remote control, access “Diagnostics”. Select “Analysis”, then “Send Status”. Check for confirmation of call out success or a confirmation code from STBH Live with all circles under “Status” showing.</td>
</tr>
<tr>
<td>8</td>
<td>Connect Receiver to Router</td>
<td>Directly connect the DISH receiver to the home network’s router using an Ethernet cable.</td>
</tr>
</tbody>
</table>

Unable to Pair DISH Receiver

<table>
<thead>
<tr>
<th>Step</th>
<th>Troubleshooting</th>
<th>How To</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Verify UPnP Enabled</td>
<td>Using the DISH remote control, access “Broadband Setup”, select “IP Devices”, then “Settings”. Verify UPnP is “Enabled”.</td>
</tr>
<tr>
<td>2</td>
<td>Pair Revue with DISH Receiver</td>
<td>Attempt to pair the Revue with the DISH receiver.</td>
</tr>
</tbody>
</table>

Logitech Revue with Google TV Troubleshooting

Setup Wizard

<table>
<thead>
<tr>
<th>Step</th>
<th>Troubleshooting</th>
<th>How To</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Turn On Keyboard</td>
<td>Turn on keyboard controller; navigation overview steps will be provided for assistance.</td>
</tr>
<tr>
<td>2</td>
<td>Adjust Screen Size</td>
<td>Use the keyboard’s navigation keys to adjust the screen size until the black box covers the blue background, select “Next”. If the blue background is still visible, select “Start Over”.</td>
</tr>
<tr>
<td>3</td>
<td>Select Type of Network Connection</td>
<td>Select “Ethernet” or “Wi-Fi” (Wireless) based on the home network connection then select “Next”.</td>
</tr>
<tr>
<td>4</td>
<td>Choose a Wireless Network</td>
<td>For Wi-Fi connection only: Choose the wireless network you want to connect to, select “Next”. If the wireless network is not listed, select “Add Wireless Network”. If required, enter the network password for the wireless network chosen.</td>
</tr>
<tr>
<td>5</td>
<td>Verify Revue Connections</td>
<td>If unable to connect, verify the connection from the Revue to the home’s router. If wireless network, verify that the wireless network is functioning properly with another wireless device.</td>
</tr>
<tr>
<td>6</td>
<td>Install System Update</td>
<td>If a system update is installed, the Revue will reboot and the Setup Wizard will start over. If not, the Setup Wizard will continue.</td>
</tr>
<tr>
<td>7</td>
<td>Log In to Google Account</td>
<td>Have customer log in to their Google account. If they do not have a Google account, select “Create an Account”. For login support visit <a href="http://www.google.com/support/accounts/">http://www.google.com/support/accounts/</a>.</td>
</tr>
<tr>
<td>8</td>
<td>Participate in Google TV Bug Reporting</td>
<td>Select the option “Help Make Google TV Better”. Bug reports will automatically be sent to Google for research if the customer wishes to participate in Google TV bug reporting.</td>
</tr>
<tr>
<td>9</td>
<td>Accept Legal Notice</td>
<td>Accept the Logitech legal notice.</td>
</tr>
<tr>
<td>10</td>
<td>Enter Zip Code</td>
<td>Enter the customer’s Zip Code.</td>
</tr>
<tr>
<td>11</td>
<td>Select Type of TV Service</td>
<td>Select the “I HAVE CABLE, SATELLITE OR OTHER TV SERVICE...”.</td>
</tr>
<tr>
<td>12</td>
<td>Verify Video</td>
<td>Verify video is displayed, select “Next”.</td>
</tr>
<tr>
<td>13</td>
<td>Select DISH Receiver</td>
<td>Select the DISH receiver connected to the Revue. If only ONE receiver is recognized, select “Yes”.</td>
</tr>
<tr>
<td>14</td>
<td>Log In to Google Account to Activate Google TV Service</td>
<td>If the Pairing message appears: Have the customer log in to their account at <a href="http://www.dish.com">http://www.dish.com</a>, then select “Activate Google TV Service”.</td>
</tr>
</tbody>
</table>
## Logitech Revue with Google TV Troubleshooting

<table>
<thead>
<tr>
<th>Step</th>
<th>Troubleshooting</th>
<th>How To</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>Accept DISH Network Agreement</td>
<td>Accept the DISH Network agreement.</td>
</tr>
<tr>
<td>16</td>
<td>Enter Confirmation Code</td>
<td>Enter the confirmation code displayed on the set-top-box pop up.</td>
</tr>
<tr>
<td>17</td>
<td>Sync to Keyboard</td>
<td>For TV Setup: Enter the make and model of the TV to sync the keyboard.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>For AV Receiver Setup: Enter the make and model of the AV Receiver to sync the keyboard.</td>
</tr>
</tbody>
</table>

### Loss of Keyboard Functions with Revue

<table>
<thead>
<tr>
<th>Step</th>
<th>Troubleshooting</th>
<th>How To</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Verify Keyboard is On</td>
<td>Verify the keyboard’s power switch is in the “On” position.</td>
</tr>
<tr>
<td>2</td>
<td>Verify Keyboard’s Batteries are Fresh</td>
<td>Verify the keyboard has fresh batteries installed.</td>
</tr>
<tr>
<td>3</td>
<td>Press Pairing Button</td>
<td>Press and release the pairing button on the back of the Revue.</td>
</tr>
<tr>
<td>4</td>
<td>Power Keyboard On/Off</td>
<td>Power the keyboard on and off and test functionality.</td>
</tr>
</tbody>
</table>

### Loss of Keyboard Functions with TV or AV Equipment

<table>
<thead>
<tr>
<th>Step</th>
<th>Troubleshooting</th>
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</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Verify Keyboard is On</td>
<td>Verify the keyboard’s power switch is in the “On” position.</td>
</tr>
<tr>
<td>2</td>
<td>Verify Keyboard’s Batteries are Fresh</td>
<td>Verify the keyboard has fresh batteries installed.</td>
</tr>
<tr>
<td>3</td>
<td>Access TV &amp; AV Receiver</td>
<td>Access “Home”, select “Settings”, then “TV &amp; AV Receiver”.</td>
</tr>
<tr>
<td>4</td>
<td>Power Keyboard On/Off</td>
<td>Power the keyboard on and off and test functionality.</td>
</tr>
<tr>
<td>5</td>
<td>Sync to Keyboard</td>
<td>For TV Setup: Enter the make and model of the TV to sync the keyboard.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>For AV Receiver Setup: Enter the make and model of the AV Receiver to sync the keyboard.</td>
</tr>
</tbody>
</table>

### Features

<table>
<thead>
<tr>
<th>Step</th>
<th>Troubleshooting</th>
<th>How To</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Verify Features Setting</td>
<td>Verify the features setting are correct using the Community reference page.</td>
</tr>
<tr>
<td>2</td>
<td>Verify Revue Connected to Home Network</td>
<td>Verify the Revue is connected to the home network.</td>
</tr>
<tr>
<td>3</td>
<td>Reset Revue</td>
<td>Unplug the Revue for 10 seconds and plug back in. It may take up to 5 minutes for the reset process to be completed.</td>
</tr>
</tbody>
</table>

### Cannot Access Applications

<table>
<thead>
<tr>
<th>Step</th>
<th>Troubleshooting</th>
<th>How To</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Verify DISH Receiver is Active and Receiving Programming</td>
<td>If the application is DISH branded, verify the DISH receiver is active and receiving programming.</td>
</tr>
<tr>
<td>2</td>
<td>Access the Applications Web Site</td>
<td>If the application is not DISH branded, have the customer access the corresponding web site for the application from their computer; if the site does not work, advise the customer the issue is with the web site.</td>
</tr>
<tr>
<td>3</td>
<td>Verify Revue Connected to Home Network</td>
<td>Verify the Revue is connected to the home network.</td>
</tr>
<tr>
<td>4</td>
<td>Reset Revue</td>
<td>Unplug the Revue for 10 seconds and plug back in. It may take up to 5 minutes for the reset process to be completed.</td>
</tr>
</tbody>
</table>
Logitech Revue FAQs

Q: What receiver models are compatible with the Logitech Revue™ with Google TV?
A: Only the 622, 722, and 722k are compatible. Note that any set top box with an HDMI connection may be connected, but only these 3 models support full integration with the Logitech Revue™.

Q: Can existing customers order a Logitech Revue™ for the Technician to deliver and install?
A: No, the Logitech Revue™ must be ordered through the CSC or at www.Dish.com. The product will then be shipped to the customer for self installation. Do not call to modify an existing customer work order.

Q: Can I modify a New Connect work order to add a Logitech Revue™?
A: Yes, New Connect work orders are the only work orders that can be modified to add the Logitech Revue™. Once the modification is complete the Technician may deliver and install the product.

Q: What’s the best way to connect the Logitech Revue™ and the DISH receiver to the customer’s home network?
A: The best way to connect both devices is to connect a single Ethernet cable between the DISH receiver and the Logitech Revue™ and then set up the Logitech Revue™ to access the customer’s Wi-