

Installation Instructions

DISH 500+ and DISH 1000+

Attention and Warning Symbols

You must be aware of safety when you install and use this system. This guide provides various procedures. If you do some of these procedures carelessly, you could injure or kill yourself or damage equipment or property. Some other procedures require special attention.



Marks a procedure where the following may happen:

- Personal injury or death may occur.
- Equipment or property may be damaged.



Marks the following issues:

- Important operation or maintenance instructions follow.
- Special attention is required.

Important Safety Instructions

You must keep safety in mind when you install and use the DISH 500+ and DISH 1000+ antenna assembly. Refer to the safety instructions in the installation instructions that came with your system. In this guide, the following notes tell you when you need to pay special attention:

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.

Keep the following in mind when you install the DISH 500+ and DISH 1000+ antenna assembly:

- Before you drill any holes in your building, make sure there are no wires or pipes near the holes.
- Install the equipment in accordance with the local building and electrical codes. If you are not sure, call a licensed building inspector or electrician for help.
- Never install the antenna assembly near power lines.
- Don't install the antenna assembly on composite materials such as strand, chip, fiber, or particle board unless the fastener attaches securely to a wall stud, rafter, or other foundation material beneath the surface.

Note to Satellite TV System Installer: This reminder is provided to call the antenna installer's attention to the *National Electrical Code*® (NEC) which provides guidelines for proper bonding and grounding of antennas and their associated cabling.

Installation Instructions



Attention! These installation instructions are intended for use by qualified professional technicians due to the complexity of the installation and compliance to national/local building and electrical codes.



Never handle coax connection installations that are connected to a receiver or accessory when that receiver or accessory is plugged into a live AC outlet.

Overview

Your DISH 500+/DISH 1000+ antenna system consists of a antenna assembly and a separate DISH Pro or DISH Pro Plus LNBF kit.

These instructions guide you through the installation of a DISH 500+ and DISH 1000+ antenna system. The DISH 500+ is capable of receiving digital television signals from three satellite locations: 110°W (DBS), 118.7°W (FSS), and 119°W (DBS). The DISH 1000+ is capable of receiving digital television signals from four satellite locations: 110°W (DBS), 118.7°W (FSS), 119°W (DBS), and 129°W (DBS). These instructions cover wall mounting only. For other mounting options (for example, pole mounting or non-penetrating mounting), see the Retailer Care Site at retailer.dishnetwork.com.

Installation Considerations

This installation supports legacy receivers, but restrictions based on the connected switch must be followed. Refer to the Installation Instructions for the switch used in your installation. Legacy receivers are receivers that do not have the DISH Pro, DISH Pro Plus, or DISH Pro X logo (shown below).



This antenna assembly includes enhanced peaking controls for the azimuth and elevation settings that provide the ability to more easily obtain an optimal peaking of the antenna system. Refer to Figure 1 on page 2 for more details on the enhanced peaking controls.

The fine-tune azimuth and elevation settings require the use of a 1/2" wrench.

About the System

This system supports both DISH Pro and DISH Pro Plus 500+/1000+ LNBF assemblies.

The DISH Pro 500+ LNBF assembly provides reception from the 110°W, 118.7°W, and 119°W orbital locations and supports a switch. Use a DISH Pro 34 (DP34) switch, DISH Pro Plus 33 (DPP33) switch, or DISH Pro Plus 44 (DPP44) switch with the DISH Pro 500+ LNBF.

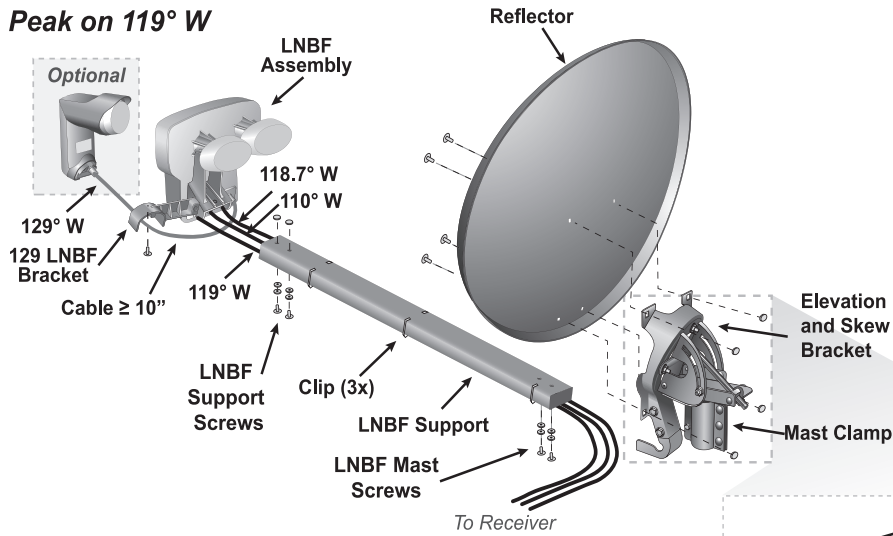
The DISH Pro 1000+ LNBF assembly provides reception from the 110°W, 118.7°W, 119°W, and 129°W orbital locations. Use a DPP44 switch with the DISH 1000+. The DISH Pro 1000+ LNBF assembly uses the included bracket to mount a DISH Pro Dual or DISH Pro Single to the DISH Pro 500+ LNBF assembly to support the 129°W orbital location.

The DISH Pro Plus 500+ LNBF assembly provides reception from the 110°W, 118.7°W, and 119°W orbital locations and does not require a switch for up to three receivers. If there are more than three receivers, a DISH Pro Plus 44 (DPP44) switch can be added to support four receivers.

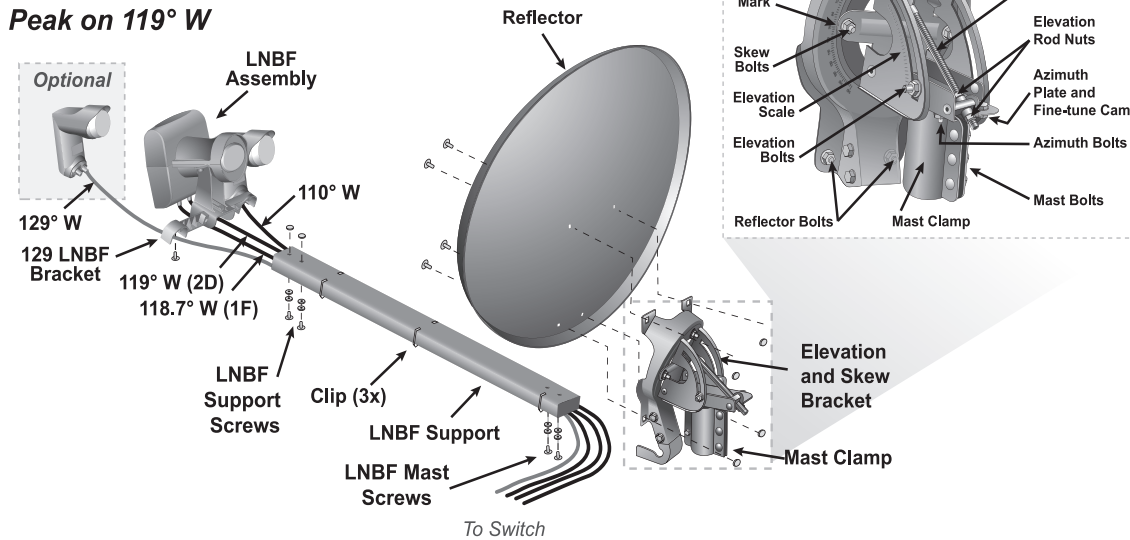
The DISH Pro Plus 1000+ LNBF assembly provides reception from the 110°W, 118.7°W, 119°W, and 129°W orbital locations. The DISH Pro Plus 1000+ LNBF assembly uses the included bracket to mount a DISH Pro Single to the DISH Pro Plus 500+ LNBF assembly to support the 129°W orbital location. The DISH Pro Single connects to the DISH Pro Plus 500+ LNBF through the **LNB In** port.

Quick Installation Instructions

DISH Pro Plus 500+ LNBF Peak on 119° W



DISH Pro 500+ LNBF Peak on 119° W



Do not exceed torque values listed in Table 1, page 9.



Ground the system in accordance with NEC and local electrical codes.

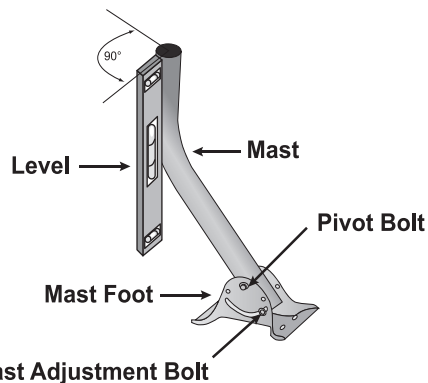


Figure 1. DISH 500+ and DISH 1000+ Antenna System Overview

1. Find Elevation/Skew/Azimuth angles for the DISH 500+ or DISH 1000+ and your location (instructions on page 4 and tables begin on page 15).
2. Find a location for the reflector with a clear line of sight and a sturdy mounting surface (page 4, step 1).
3. Mount the mast, making sure it is absolutely vertical (page 4, steps 2-4). Attach struts to the mast, using the instructions that came with the struts.
4. Assemble the antenna assembly, setting the skew and elevation angles during assembly (pages 4-5, steps 5-7).
5. Mount the antenna assembly on the mast and point the reflector to the azimuth angle (page 6, step 8).
6. For DISH 1000+ only, attach the 1000+ LNBF bracket and a separate DP (Dual or Single) LNBF to the DISH Pro 500+ or DISH Pro Plus 500+ LNBF assembly (page 6, step 9).
7. Run coaxial between the antenna system and the receiver(s) including the Node in DPX installations, leaving a service loop around the Mast Clamp (page 8, step 1).
8. Using a peaking meter attached to either the Dual Band LNBF **Port 2D** (DISH Pro 500+) or **Port 1** (DISH Pro Plus 500+), rough peak the reflector on 119°W using transponder 13 for maximum strength (pages 7-9, steps 1-4). Lock the mast bolts (see Table 1, page 9) and reconfirm signal (see page 9, step 4).
9. For the DISH Pro 500+ LNBF (Dual Band), move the temporary peaking cable from **Port 2D** to **Port 1F**. For the DISH Pro Plus 500+ LNBF and if using a meter **not** capable of selecting orbits, move the temporary peaking cable to **Port 3**. For the DISH Pro Plus 500+ LNBF and if using a meter capable of selecting orbits, continue to the next sentence. Using the azimuth fine-tune cam, fine-tune the azimuth angle to achieve maximum signal, fine-peaking on 118.7°W and transponder 13. Tighten the azimuth bolts labeled with a T and reconfirm signal (see Figure 8, page 10). Do **not** tighten the azimuth fine-tune cam (see page 10, step 5).
10. Using the elevation rod, fine-tune the elevation angle to achieve maximum signal, fine-peaking on 118.7°W. Tighten the top elevation rod nut and then tighten the elevation bolts marked T. Reconfirm signal after tightening all elevation bolts (see page 10, step 6).
11. **For switch installation with DISH Pro 500+ LNBF:** Connect the switch cables from the DISH Pro 500+ LNBF's **Port 1F** (118.7°W) and **Port 2D** (119°W) and the DP Single or DP Dual(s), if being used, to the switch, leaving a service loop around the elevation and skew bracket. Attach cables to the LNBF support using included cable clips (page 11, step 7).
For installation with the DISH Pro Plus 500+ LNBF (supports up to three receivers): Connect cables to **Port 1**, **Port 2**, and **Port 3**, leaving a service loop around the elevation and skew bracket. These cables connect the LNBF to the receive (see step 11). If using a DISH 1000+, run a cable (at least 10 inches) from the port on the DP Single or DP Dual LNBF to the **LNB In** port of the DPP 500+ LNBF. Attach cables to LNBF support using included cable clips (page 11, step 7).
For switch installation with DISH Pro Plus 500+ LNBF (supports up to four receivers): Connect the switch cables from the DISH Pro Plus 500+ LNBF's **Port 1**, **Port 2**, and **Port 3** to the switch, as needed, leaving a service loop around the elevation and skew bracket. If using a DISH 1000+, connect the DP Single or DP Dual to the switch; the **LNB In** port of the DISH Pro Plus 500+ LNBF is disabled with a switch. Attach cables to the LNBF support using included cable clips (page 11, step 7).
12. Connect the cables coming from either the DISH Pro Plus 500+ LNBF or from a switch to either a DPP triplexer or separator or a receiver. If connecting to a DPP triplexer or separator, connect the DPP triplexer or separator to a receiver. Connect the TV to the receiver (page 11, steps 8 and 9). Some restrictions apply when connecting legacy receivers (refer to the switch's installation instructions).
13. If the Receiver Setup Wizard appears, continue with the on-screen prompts; when finished, continue with step 14. If a Receiver Setup Wizard does not appear, run **Check Switch** test and confirm 110°W, and 119°W reception (pages 12-13, steps 10 and 11). You may or may not see the 118.7°W or 129°W locations until steps 14 and 15 below are completed.
14. Take a software download, if you did not already (page 13, step 12).
15. Run a second **Check Switch** test and confirm 110°W, 118.7°W, 119°W, and 129°W (for DISH 1000+) reception (page 14, step 13).
16. Install additional receiver(s), if necessary (page 14, step 14 and pages 11-14, steps 8-13).

Locating the Antenna Assembly

Use the *Reflector Pointing Angles* that begin on page 15 to find the elevation, skew, and azimuth angles using your location's ZIP code. DISH 500+ and DISH 1000+ use slightly different skew angles. Ensure you choose the correct set of angles for the antenna system you are installing. Write the angles in the space provided below.

Elevation: _____ **Skew:** _____ **Azimuth:** _____

Using these elevation and azimuth angles, find a mounting location for the antenna assembly where it can be pointed toward the satellites located at these angles. Use a compass and azimuth angle to find the direction along the horizon where the reflector should be pointed. Then use the elevation angle to find out how high the satellites are in the sky from your location. Make sure this line of sight will not be blocked by future growth of nearby trees or other foliage. Also make sure your mounting location provides sufficient clearance to rotate the reflector as needed to point toward the satellites.

Assembling and Mounting the Antenna System

Follow these instructions to assemble the antenna system, mount it, and point it in the direction of the satellites.

- 1. Find location for the reflector.** Using a compass and the azimuth and elevation angles, find a location for the reflector where it can be pointed toward the satellites located at the angles provided in the *Reflector Pointing Angles* tables. Make sure nothing blocks the line of sight between the reflector and the satellites.
- 2. Mount mast to solid surface.** Mount the mast to a solid surface so that the reflector cannot move or be bumped out of alignment. Keep in mind that physical and environmental conditions can block your reflector's ability to receive a clear satellite signal. Never mount the antenna assembly to a tree or a public utility pole.
- 3. Install struts.** Install struts at this time, using the instructions that came with the struts.
- 4. Align mast vertically.** Align the top part of the mast so that it is absolutely vertical. If the top part of the mast is off vertical by only a few degrees, it will be difficult or maybe even impossible for you to find the satellites. Take at least two readings with a level, on the upper mast, that are 90 degrees apart from one another (see Figure 1).
- 5. Assemble the antenna assembly without LNBF.** Assemble the antenna assembly as shown in Figure 1, except do not attach the LNBF assembly at this time.

- 6. Set skew.** To access the skew bolts, loosen the elevation bolts and elevation rod nuts. Loosen the skew bolts. Set the skew by rotating the elevation and skew bracket to align the mark with the required angle on the skew scale that you entered on page 4 (see Figure 2). Tighten the skew bolts securely to keep the reflector from rotating. See Table 1 on page 9 for the required torque values.

Note: After the skew is set, do not try to fine-tune the skew angle when aiming the reflector.

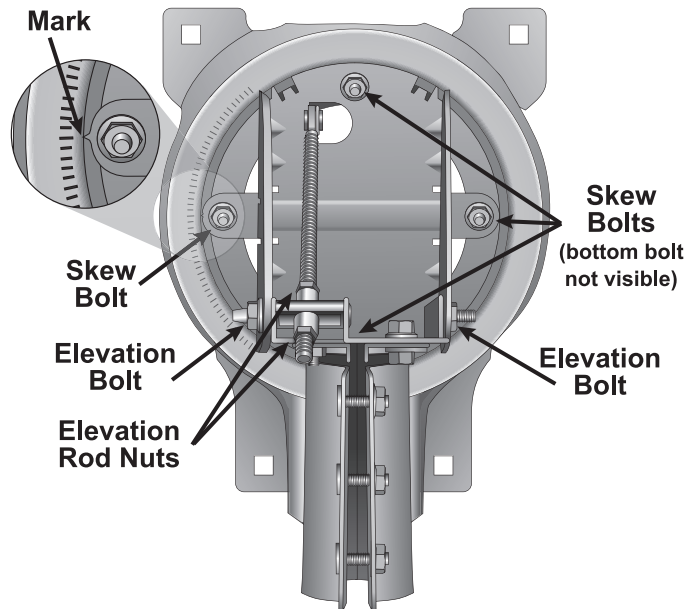


Figure 2. Skew Plate

- 7. Set elevation.** Set the elevation by loosening the elevation bolts and elevation rod nuts. Tilt the elevation and skew bracket to align the edge of the azimuth plate with the required angle on the elevation scale. Tighten both nuts on the elevation rod to hold the elevation, but do not tighten the elevation bolts at this time (see Figure 3).

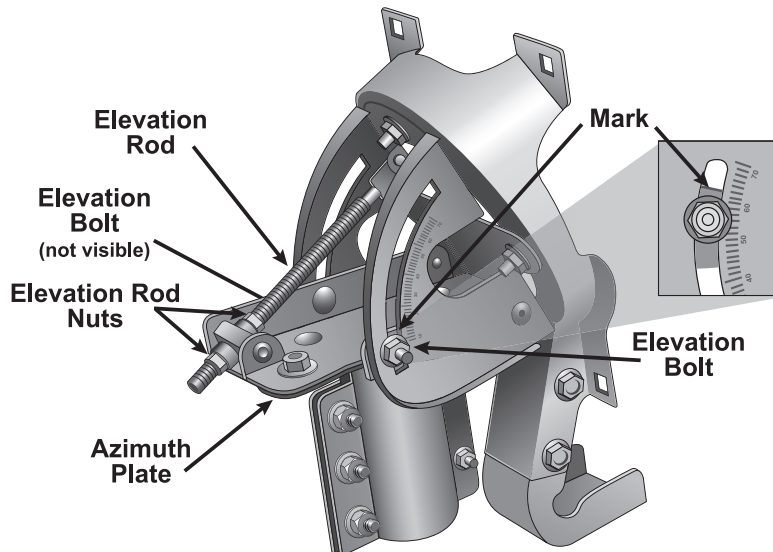


Figure 3. Setting the Rough Elevation Angle

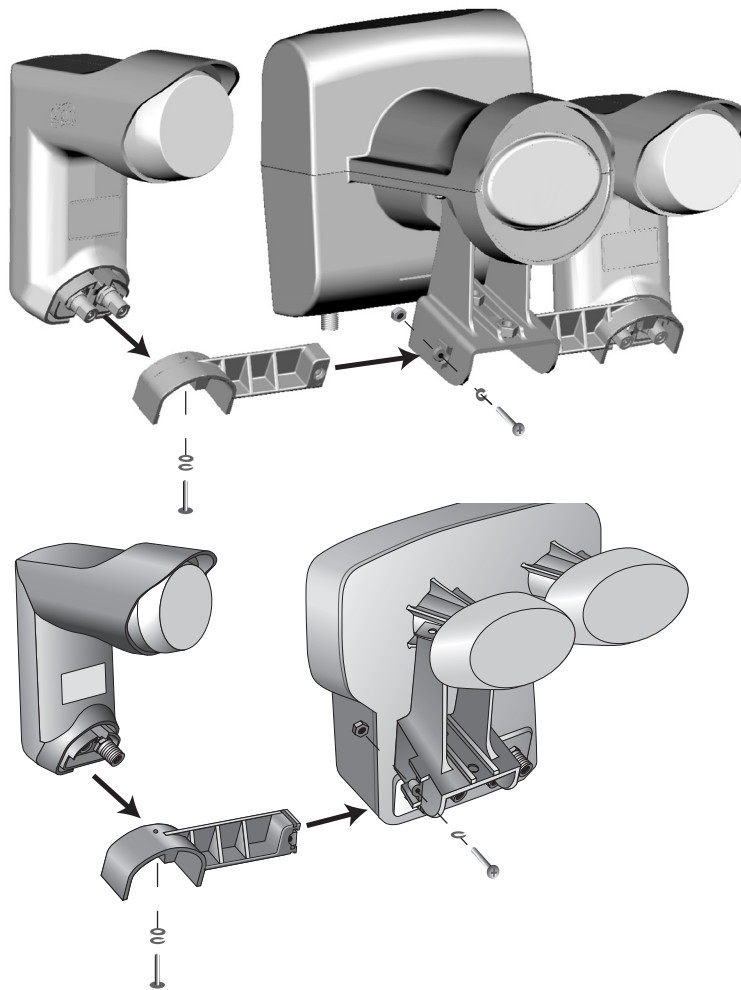
- 8. Mount the reflector on the mast and point the reflector.** Slide the reflector down onto the mast. Make sure the azimuth plate rests on top of the mast. Turn the reflector so that it points in the general direction of the satellites, using the azimuth angle you wrote on page 4.

Note: The DISH 500+ mast clamp may have a gripping feature that helps prevent movement of the mast clamp when fully installed. This gripping feature may have a slightly rough feel when installing the mast clamp onto the mast or when adjusting the azimuth angle.

- 9. For DISH 1000+ installation, attach LNBF.** For DISH 1000+ installations, attach a separate DP Dual (or DP Single) to the 1000+ LNBF bracket using the included washers and screws. Slide the bracket onto the DP 500+ LNBF assembly. Place the nut into the retaining feature on the back of the assembly. Insert the screw from the front of the assembly and tighten according to the torque value (see Table 1 on page 9) to attach the bracket. See Figure 4.

Note: Handle the LNBF assembly using the DBS/FSS Dual Band LNBF. Do not handle it by the 110°W or 129°W brackets or LNBFs.

Figure 4. Optional bracket for attaching DP Dual (or DP Single) for 129°W



Completing Installation

Use the steps below while referring to Figure 1, page 2 for this installation.

Note: Use RG-6 coaxial connections between the antenna system and the switch and from the switch to the receiver location(s), using the following cable requirements. Grounding, other devices, and in-home cabling must also meet these requirements.

- RG-6 coaxial cables rated for at least 950 MHz to 3 GHz must be used in this installation. Do not use existing cables such as RG-59 as it may cause signal loss. Also, be sure that any outdoor connections are made using waterproof F-connectors rated for 3 GHz or greater.
- Follow the installation instructions included with the switch for cable length limitations.



The coaxial connection's center conductor must not extend past the rim of the F-connector; it must be more than flush with the F-connector and no more than the thickness of a nickel.



Tighten all outdoor coaxial connections up to the torque values recommended by the manufacturer to ensure seal against moisture. Damage caused by over-tightening is not covered by the limited warranty. Tighten all indoor coaxial connections to the receiver only by hand. If you use a wrench, you may over-tighten the connections and damage your equipment.

- 1. Mount LNBF onto LNBF support.** Mount the LNBF assembly on the LNBF support as shown on Figure 1 (see page 2).
- 2. Connect peaking meter to LNBF.** Connect a temporary cable to a peaking meter.

For the DISH Pro LNBF assembly: Connect the temporary cable to **Port 2D** (119°W) of the DISH Pro DBS/FSS Dual Band LNBF. **Port 2D** provides signal from the 119°W satellite, while **Port 1F** provides signal from the 118.7°W satellite (see Figure 5).

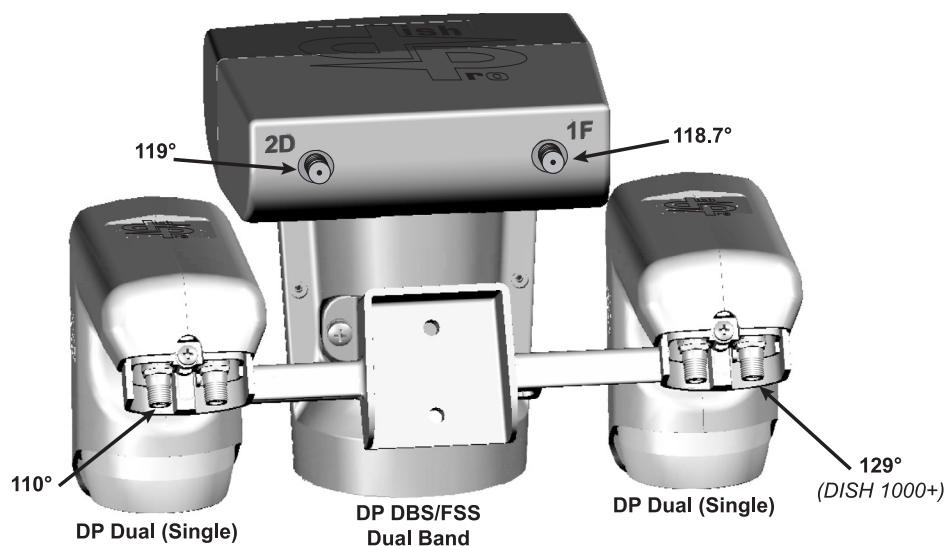


Figure 5: Bottom view of LNBF Assembly showing Port 2D (119°W) and Port 1F (118.7°W) on DBS/FSS Dual Band LNBF

For DISH Pro Plus LNBF assembly: Connect the temporary cable to **Port 1** (119°W) of the LNBF (see Figure 6).

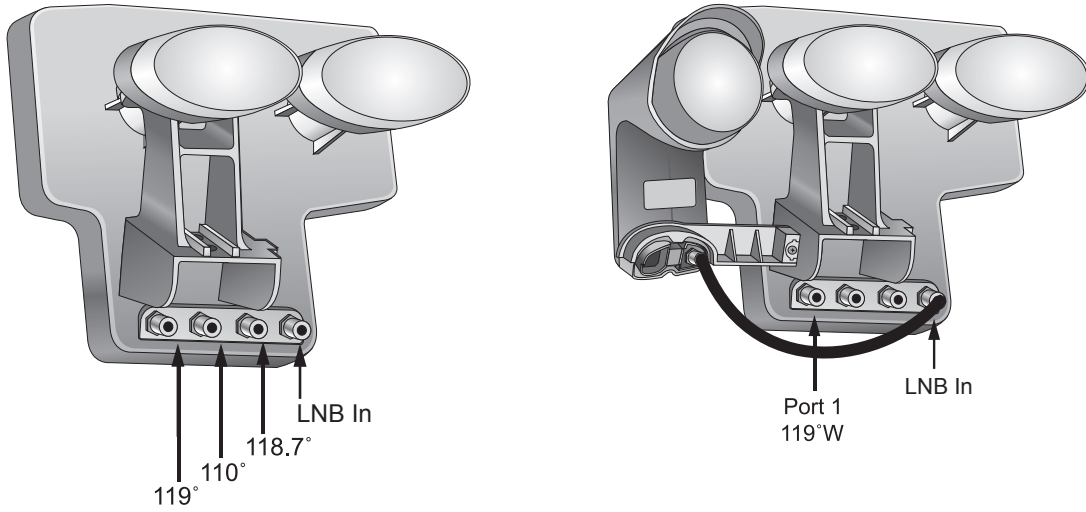


Figure 6: DISH Pro Plus 500+ and 1000+ LNBF Assembly with Port 1 (119°W)

- 3. Peak the reflector for signal on the 119°W.** Peak the reflector for signal on the 119°W satellite sign and transponder 13 using the azimuth and elevation settings you wrote on page 4. Do not adjust the skew.

Note: If you cannot find the 119°W signal, try adjusting the elevation up or down one or two degrees. Ensure you are peaking the reflector using transponder 13.

- 4. Tighten three mast bolts and reconfirm signal strength.** With the peaking meter still connected, tighten the three mast bolts labeled with a T to the torque values listed in Table 1 (see Figure 7). Reconfirm signal strength after tightening the bolts.

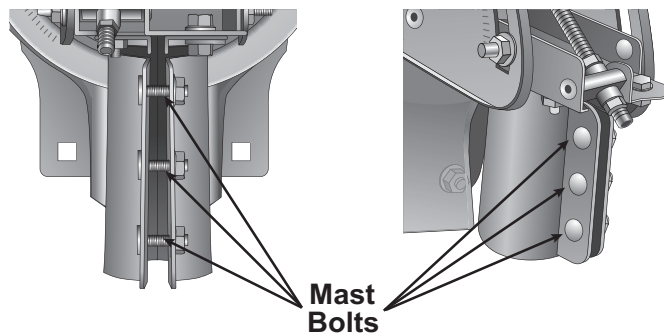


Figure 7. Mast bolts

Table 1: Torque Values

Location	Torque Value (ft-lbs unless otherwise noted)
Pivot bolt (Mast foot; ensure no mast deformation occurs during tightening)	4.5
Mast adjustment bolts	12
Reflector mounting bolts	8
Mast bolts	12
Elevation bolts	12
Elevation rod nuts	Handtight
Azimuth bolts (do not tighten azimuth fine-tune cam)	12
Skew bolts	12
LNBF support to elevation and skew bracket bolts	4
LNBF support to 129 LNBF bracket bolts	2
LNBF and LNBF bracket attachment hardware	2

5. Fine-tune the azimuth angle. For the DISH Pro 500+ (Dual Band) LNBF, move the temporary peaking cable from **Port 2D** to **Port 1F**. For the DISH Pro Plus 500+ LNBF and if using a meter that is **not** capable of selecting orbits, move the temporary peaking cable to **Port 3**. For the DISH Pro Plus 500+ LNBF and if using a meter that is capable of selecting orbits, continue to the next sentence. With the peaking meter still connected, fine-tune the azimuth angle (see Figure 8). Loosen the three azimuth bolts enough so that the two azimuth plates can rotate. Using a 1/2" wrench, rotate the azimuth fine-tune cam to adjust the azimuth angle to achieve maximum signal, using the 118.7°W satellite and transponder 13. After obtaining maximum signal, tighten the three azimuth bolts labeled with a T to the recommended torque value given in Table 1 on page 9. **Do not torque the azimuth fine-tuning cam.**

Note: You can adjust the azimuth angle three degrees in either direction using the azimuth fine-tune cam. If the azimuth angle needs to be adjusted more than three degrees, loosen the mast bolts to make the adjustment.

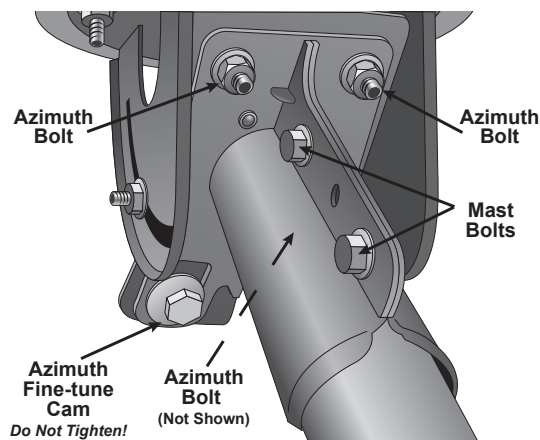


Figure 8. Fine tuning the azimuth angle

- 6. Fine-tune elevation angle.** Using the peaking meter, fine-tune the elevation angle. Using a 1/2" wrench, loosen the top elevation nut on the elevation rod to allow the reflector to be moved up and down in elevation. Move the bottom elevation nut along the elevation rod to adjust the reflector's elevation angle and to achieve maximum signal, using the 118.7°W satellite and transponder 13. After obtaining maximum signal, tighten the top elevation nut on the elevation rod, then tighten the elevation bolts labeled with a T to the recommended torque value given in Table 1 on page 9 (see Figure 9).

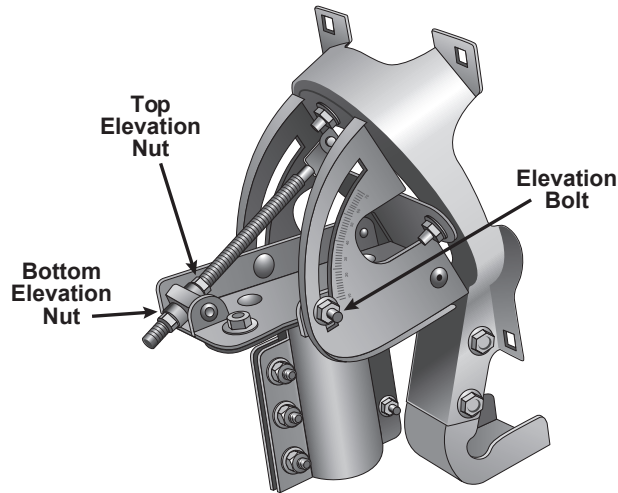


Figure 9. Fine tuning the elevation angle

- 7. Connect cables to LNB and/or switch, if a switch is being used.** Remove the temporary cable used for peaking the reflector.

For switch installation with DISH Pro 500+ LNB. Connect a cable from **Port 2D** (119°W) to **Port 1** of the switch. Connect a cable from **Port 1F** (118.7°W) of the DISH Pro 500+ LNB to the switch (see Figure 10). If a DP Single or a DP Dual LNB(s) is being used (DISH Pro 1000+), connect a cable(s) from the LNB to the switch (see Figure 5). See Figure 10 for DISH Pro 500+ recommended connection order to a DP34 or DPP33 switch and for DISH 1000+ recommended connection order to a DPP44 switch. Refer to the switch's installation instructions for additional details. Leave a service loop around the elevation and skew bracket. Attach the cables to the bottom of the LNB or switch using the included cable clips.

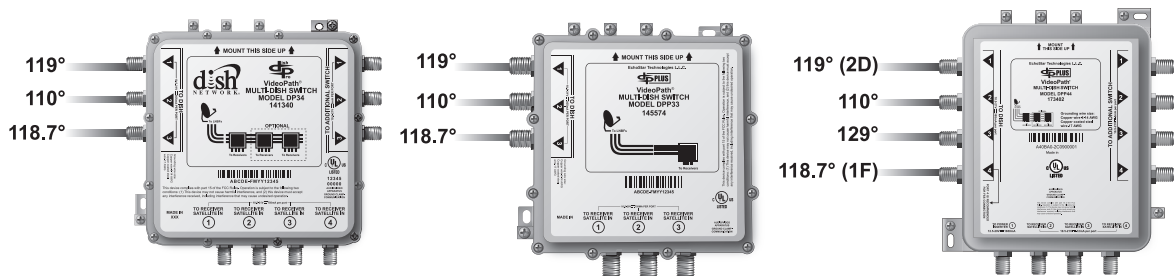


Figure 10. DISH Pro 500+ to DP34 Switch, DISH Pro 500+ to DPP33 Switch, and DISH Pro 1000+, DISH Pro Plus 500+, and DISH Pro Plus 1000+ to DPP44 Switch

For installation of the DISH Pro Plus 500+ LNBF (supports up to three receivers): Connect the cables from **Port 1**, **Port 2**, and **Port 3**, leaving a service loop around the elevation and skew bracket. These cables are using in Step 8 for connecting the receiver or DPP triplexer/separator if needed. If using a DISH 1000+, run a cable, at least 10 inches, from a port on the DP Single LNBF or DP Dual LNBF to the **LNB In** port of the DPP 500+ LNBF. Attach the cables to the bottom of the LNBF support using the included cable clips.

For installation of the DISH Pro Plus 500+ LNBF with a switch (supports four receivers): Connect the switch cables from the DISH Pro Plus 500+ LNBF's **Port 1**, **Port 2**, and **Port 3** to the switch (see Figure 10). If using a DISH 1000+ and a switch, connect the DP Single or DP Dual to the switch (see Figure 10); the **LNB In** port of the DISH Pro Plus 500+ LNBF is disabled when using a switch. Leave a service loop around the elevation and skew bracket. Attach the cables to the bottom of the LNBF support using the included cable clips.

- 8. Connect LNBF and receiver, which is not powered on.** For DP or DPP installations, connect a coaxial connection from either the switch's port(s) or the DPP 500+ LNBF's receiver ports to a DPP triplexer or separator or to a receiver's **Satellite In** connection(s). If connecting to a DPP Triplexer or Separator, connect the DPP Triplexer or Separator to the receiver. For DISH Pro X installations, connect a coaxial connection from either the LNBF **Port 1** (or **Port 2** or **Port 3**) or the switch's port(s) to a Node (two connections to a Single Node and three connections to a Duo Node), and from the Node, connect to the DISH Pro X receiver.

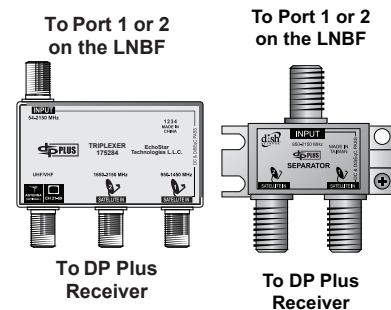


Tighten all indoor coaxial cable connections to the receiver only by hand. If you use a wrench, you may over-tighten the connections and damage your equipment.

Connecting DPP Receivers

To connect DISH Pro Plus (dual-tuner) receivers with a single coaxial connection, install a DISH Pro Plus Triplexer or a DISH Pro Plus Separator as follows:

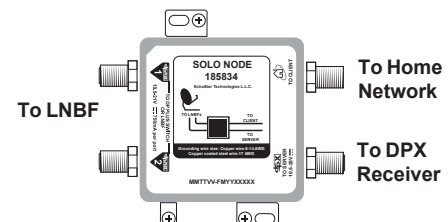
- Connect a coaxial connection from the LNBF output (**Port 1**, **Port 2**, or **Port 3**) to the DISH Pro Plus Triplexer or DISH Pro Plus Separator Input.
- Connect coaxial connections between the receiver's **Satellite In 1** and **Satellite In 2** to **Satellite In 1** and **Satellite In 2** respectively on the DISH Pro Plus Triplexer or DISH Pro Plus Separator.



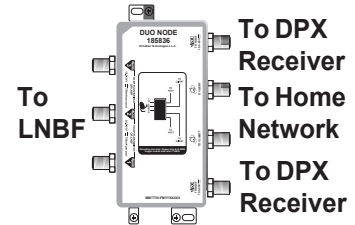
You must use a DISH Pro Plus Triplexer or DISH Pro Plus Separator to achieve a single-coaxial connection installation with a dual-tuner receiver. A splitter or other device will not work in this configuration.

Connecting DPX Receivers

- Connect a coaxial connection from the LNBF output (**Port 1**, **Port 2**, or **Port 3**) to either a Solo or Duo Node. The LNBF output goes into the Node (either **Port 1**, **Port 2**, or **Port 3** for a Duo or **Port 1** or **Port 2** for a Solo Node).



- b. From the Node's **DPX** port, connect a coaxial connection to the DPX receiver's **To Node DPX** port.
- c. Connect the Node to the DPX receiver and to the Home Network. For additional information, see the *Product Launch Bulletin, Whole-Home HD DVR System*.



9. Connect TV and receiver. Connect the receiver(s) to the TV(s) and power on the receiver(s) and the TV(s). If a Receiver Setup Wizard displays, follow the on-screen prompts for this Wizard to program the remote to the receiver, download software, and run Check Switch. Proceed to step 8 after the Receiver Setup Wizard is complete.

Note: The Download Software step of the Receiver Setup Wizard fails to proceed if the reflector is not pointed correctly. If you see a pop-up instructing you to make sure that all cables leading to the receiver are connected securely and correctly, verify your reflector is pointed correctly before selecting **Continue** on this screen.

If a Receiver Setup Wizard does not appear, display the **Point Dish** screen (if not shown, for most receivers, press MENU-1-1 if in Factory software or MENU-6-1-1 if in Production software on the remote control) and continue to step 10.

10. Follow instructions provided in the Installation Wizard or Run Check Switch. If the Receiver Setup Wizard appears, follow the instructions provided and continue with step 13; otherwise, from the **Point Dish** screen, run **Check Switch**. When the Check Switch procedure finishes, you should see an **Installation Summary** screen similar to the ones shown in Figures 11, 12, 13, or 14. Make sure the summary screen shows reception from the 110°W, 118.7°W, and 119°W (and 129°W for DISH 1000+) satellites on all available satellite tuners. The Installation Summary screen only displays if you have run Check Switch.

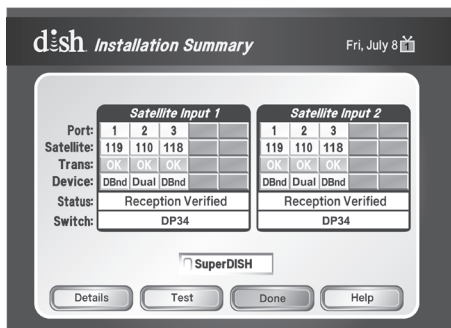


Figure 11. DISH 500+ Installation Summary

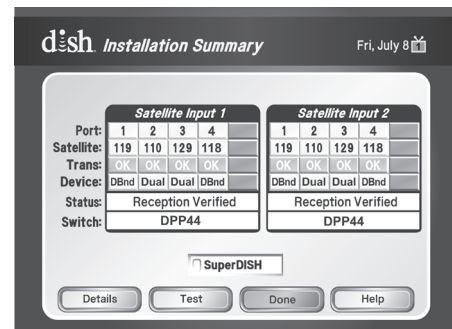


Figure 12. DISH 1000+ Installation Summary

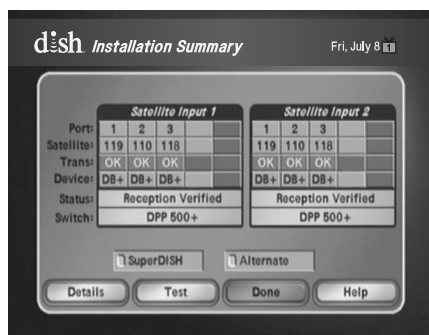


Figure 13. DISH 500+ with DPP 500+ LNB Installation Summary

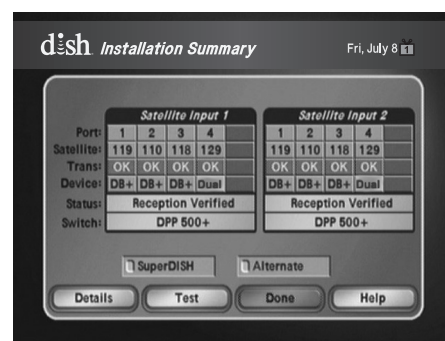


Figure 14. DISH 1000+ with DPP 1000+ LNB Installation Summary

The summary screens below (see Figures 15 and 16) are similar to what should be shown for a legacy receiver connected to the DISH 500+ or DISH 1000+. Make sure the summary screen shows reception from 110°W, 118.7°W, and 119°W (and 129°W for DISH 1000+) satellites on all available satellite tuners. Select 3 SAT or 4 SAT for DISH 500+ or DISH 1000+ on a legacy receiver.

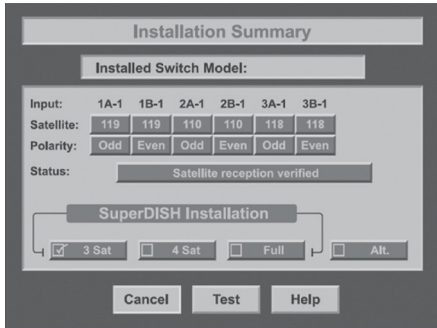


Figure 15. DISH 500+ Installation Summary

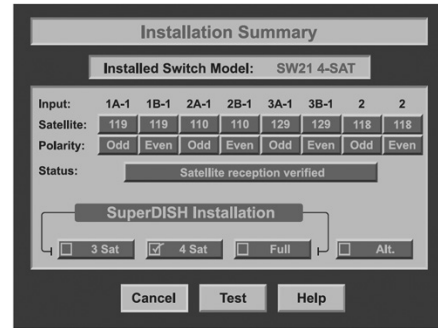


Figure 16. DISH 1000+ Installation Summary

11. Verify signal strength bar is green and locked. Exit the **Installation Summary** screen to display the **Point Dish/Signal** screen. Make sure the signal strength bar is green and locked for the 119°W, 110°W, 118.7°W (and 129°W for DISH 1000+) satellites.

Note: You might not see signal from 118.7°W and/or 129°W until you take a software download and run a check switch in step 10.

12. Take a software download. Exit the **Point Dish/Signal** screen and follow the on-screen instructions for taking a receiver software download. Do not disturb the receiver during the process of downloading software. If exiting the **Point Dish** screen does not start the download process, put the receiver in standby mode for at least 20 minutes (on most receivers) to allow the receiver to take a software download.

13. Run Check Switch. Run **Check Switch** again and confirm reception for 110°W, 119°W, and 118.7°W satellites if using DISH 500+ and for 110°W, 119°W, 129°W, and 118.7°W satellites if using DISH 1000+ (see Figures 17, 18, 19, 20, 21, 22, and 23 depending on your configuration).

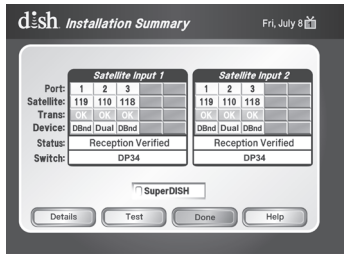


Figure 17. DISH 500+ Installation Summary

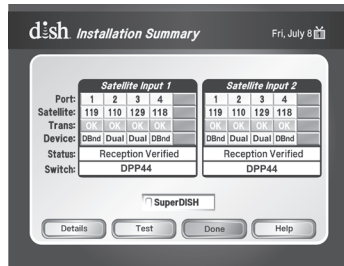


Figure 18. DISH 1000+ Installation Summary

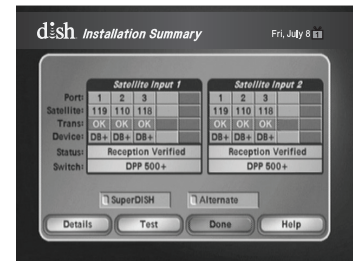


Figure 19. DISH 500+ Installation Summary

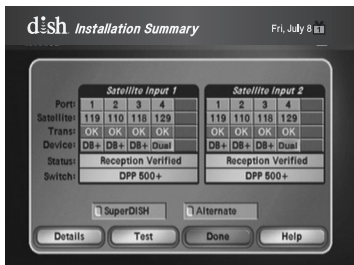


Figure 20. DISH 1000+ Installation Summary

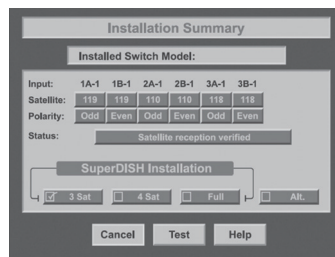


Figure 21. DISH 500+ Installation Summary

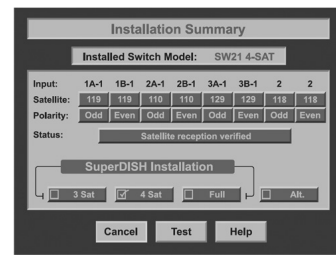


Figure 22. DISH 1000+ Installation Summary



Figure 23. XiP Installation Summary

14. Install additional receivers. If installing an additional receiver, follow steps 7 through 13, pages 10-12. Make sure the **Installation Summary** screen shows reception from the 110°W, 119°W, and 118.7°W satellites for DISH 500+ and from the 110°W, 119°W, 129°W, and 118.7°W satellites for DISH 1000+. If using a legacy receiver, keep a DISH Pro, DISH Pro Plus, or a DISH Pro X receiver connected and powered at all times to power the LNBF.

Reflector Pointing Angles

Use the tables below as follows:

1. Find the ZIP code for your location.
2. Find the row that contains the ZIP code or the first three digits of the ZIP code. For example, the correct row for ZIP code 80112 is 801XX.
3. Write down the number in the EL column in the “Elevation” blank on page 4.
4. Write down the number in the SK column in the “Skew” blank on page 4.
Note: The skew varies if using a DISH 500+ or DISH 1000+. Ensure you select the correct skew for the antenna system you are installing.
5. Write down the number in the AZ column in the “Azimuth” blank on page 4.

ZIP Code	EL	D500+ SK	D1000+ SK	AZ
00001	15	69	71	117
00002	12	77	78	120
00003	17	67	69	117
00004	16	71	73	120
00006	15	73	76	121
00007	9	77	78	116
00008	26	79	83	140
00010	11	69	71	115
00011	17	71	74	121
00013	45	83	89	162
00019	43	83	89	160
00020	46	84	90	164
00022	44	79	85	155
00025	42	83	89	160
00028	44	82	88	160
00031	49	81	88	161
00032	49	82	89	164
00033	44	83	89	162
00034	42	80	86	156
00035	42	82	87	158
00037	44	80	86	157
00038	43	81	87	158
00039	43	80	86	156
00040	46	83	90	164
00044	45	83	90	162
00047	44	81	87	158
00048	44	80	86	158
00049	42	80	85	155
00050	42	80	85	156
00051	45	83	89	161
00052	45	83	89	161
00054	42	79	85	155
00055	42	80	86	156

ZIP Code	EL	D500+ SK	D1000+ SK	AZ
00058	46	83	90	164
00065	44	82	88	161
00087	37	136	140	243
00097	39	139	142	244
00116	45	124	129	222
00119	44	126	131	225
00120	44	126	131	225
00124	44	123	128	222
00125	18	123	126	257
00126	20	124	126	255
00127	19	126	128	259
00128	20	124	126	254
00130	18	125	127	258
00132	19	124	126	257
00133	20	124	127	256
00134	18	126	128	259
00135	19	124	126	257
00136	19	124	126	258
00137	18	124	126	259
00138	18	125	127	258
00139	20	125	127	255
00140	20	124	127	256
00141	18	125	127	259
00145	19	125	127	256
00147	20	125	127	256
00148	18	124	126	259
00151	18	126	128	260
00152	27	129	131	248
00155	28	128	131	246
00156	28	128	131	246
00157	28	128	131	246
00159	22	128	130	254
00160	29	110	113	216

ZIP Code	EL	D500+ SK	D1000+ SK	AZ
00161	29	109	113	214
00164	30	106	110	205
00165	30	106	110	206
00166	30	106	110	206
00168	21	125	127	255
00169	21	125	127	254
00170	20	124	127	254
00172	21	125	127	254
00173	21	125	127	254
00174	21	125	127	254
00176	21	125	127	254
00177	21	125	127	254
00179	21	125	127	254
00180	21	125	127	254
00181	21	125	127	254
00182	21	125	127	254
00183	21	125	127	254
00184	21	125	127	254
00185	21	125	127	254
00186	21	124	127	254
00187	20	124	127	254
00188	51	120	126	214
00189	50	119	126	214
00190	21	124	126	253
00191	21	124	126	254
00192	21	124	126	254
00195	36	81	86	153
00198	17	73	75	121
00199	51	93	100	179
00200	52	92	100	179
00201	51	96	104	183
00203	49	84	91	166
00205	47	84	91	165

ZIP Code	EL	D500+ SK	D1000+ SK	AZ
00206	50	83	91	165
00214	50	81	89	163
00215	51	82	89	164
00216	51	82	90	164
00217	48	84	91	165
00218	44	82	88	160
00219	43	101	107	190
00222	37	134	137	241
00223	38	138	142	244
00225	37	136	139	243
00226	39	139	143	244
00228	38	139	142	245
00229	37	134	138	240
00232	39	136	140	241
00234	38	138	141	244
00236	40	88	94	167
00238	44	123	129	223
00241	29	109	112	213
00243	42	127	131	227
00246	35	93	97	174
00250	47	101	107	189
00252	50	102	109	191
00255	44	111	117	206
00257	39	80	86	155
00258	39	82	87	157
00259	41	81	87	157
00260	38	83	88	156
00266	43	94	100	177
00267	34	84	88	157
00268	37	85	90	160
00270	37	84	89	158
00276	38	94	99	176
00277	34	85	89	158
00278	39	82	87	157
00279	38	93	99	176
00280	45	83	89	162
00281	41	93	99	176
00282	41	93	99	177
00283	28	122	125	238

ZIP Code	EL	D500+ SK	D1000+ SK	AZ
00284	21	124	126	252
00285	25	127	129	250
00286	31	131	134	245
00401	24	126	129	250
00501	24	127	130	251
00544	24	127	130	251
006XX	28	156	157	268
007XX	28	156	157	268
008XX	26	157	158	270
009XX	27	156	157	268
010XX	23	126	129	252
011XX	23	126	129	252
012XX	23	126	128	251
013XX	23	126	128	252
014XX	22	126	129	253
015XX	22	126	129	253
016XX	22	126	129	253
017XX	22	127	129	254
018XX	22	126	129	254
019XX	22	127	129	255
020XX	22	127	129	255
021XX	22	127	129	254
022XX	22	127	129	254
023XX	22	127	130	255
024XX	22	127	129	255
025XX	22	128	130	255
026XX	22	128	130	256
027XX	22	127	130	254
028XX	23	127	130	253
029XX	22	127	130	253
030XX	22	126	128	254
031XX	22	126	128	254
032XX	22	125	128	253
033XX	22	126	128	254
034XX	22	126	128	252
035XX	21	124	127	254
036XX	22	125	128	252
037XX	22	125	127	253
038XX	21	126	128	254

ZIP Code	EL	D500+ SK	D1000+ SK	AZ
039XX	21	126	128	254
040XX	21	126	128	255
041XX	21	126	128	256
042XX	20	125	128	255
043XX	20	126	128	257
044XX	19	125	127	258
045XX	20	126	128	256
046XX	19	126	128	259
047XX	18	124	126	259
048XX	20	126	128	257
049XX	20	125	127	257
050XX	22	125	127	253
051XX	22	125	128	252
052XX	23	125	128	251
053XX	23	125	128	252
054XX	22	124	126	252
055XX	22	126	129	254
056XX	22	124	127	252
057XX	22	124	127	251
058XX	21	124	126	252
059XX	21	124	127	254
060XX	23	126	129	251
061XX	23	126	129	251
062XX	23	127	129	253
063XX	23	127	130	253
064XX	24	127	129	251
065XX	24	127	129	251
066XX	24	127	129	251
067XX	24	126	129	251
068XX	24	127	129	250
069XX	24	127	129	250
070XX	25	127	129	249
071XX	25	127	129	249
072XX	25	127	129	249
073XX	25	127	129	250
074XX	25	126	129	249
075XX	25	126	129	249
076XX	25	127	129	250
077XX	25	127	130	250

ZIP Code	EL	D500+ SK	D1000+ SK	AZ
078XX	25	126	129	248
079XX	25	126	129	249
080XX	26	127	130	248
081XX	26	127	130	248
082XX	26	128	131	249
083XX	26	127	130	248
084XX	26	128	131	249
085XX	25	127	130	248
086XX	26	127	130	248
087XX	25	127	130	249
088XX	25	127	129	248
089XX	25	127	129	248
100XX	25	127	129	250
101XX	25	127	129	250
102XX	25	127	129	250
103XX	25	127	129	250
104XX	25	127	129	250
105XX	24	126	129	250
106XX	24	127	129	250
107XX	25	127	129	250
108XX	24	127	129	250
109XX	25	126	129	252
110XX	25	127	130	250
111XX	25	127	129	250
112XX	25	127	130	250
113XX	25	127	129	250
114XX	25	127	130	250
115XX	25	127	130	250
116XX	25	127	130	250
117XX	24	127	130	250
118XX	24	127	130	250
119XX	24	127	130	252
120XX	24	125	128	250
121XX	24	125	128	250
122XX	23	125	128	250
123XX	23	125	127	250
124XX	24	125	128	249
125XX	24	126	128	250
126XX	24	126	129	249

ZIP Code	EL	D500+ SK	D1000+ SK	AZ
127XX	25	125	128	248
128XX	23	124	127	249
129XX	22	123	126	250
130XX	25	123	126	245
131XX	25	123	126	245
132XX	25	123	126	245
133XX	24	124	126	247
134XX	24	124	126	247
135XX	24	124	127	247
136XX	24	123	125	247
137XX	25	124	127	246
138XX	25	124	127	246
139XX	25	124	127	246
140XX	26	122	125	241
141XX	26	122	125	241
142XX	26	122	125	241
143XX	26	122	125	241
144XX	26	123	125	243
145XX	26	123	126	243
146XX	26	122	125	243
147XX	27	122	125	241
148XX	26	123	126	244
149XX	26	124	127	244
150XX	29	123	126	239
151XX	29	123	127	239
152XX	29	123	127	239
153XX	29	124	127	239
154XX	29	124	127	240
155XX	28	125	128	241
156XX	29	124	127	240
157XX	28	124	127	241
158XX	28	123	126	241
159XX	28	124	127	241
160XX	28	123	126	239
161XX	29	122	126	238
162XX	28	123	126	240
163XX	28	123	126	240
164XX	28	122	125	238
165XX	28	122	125	238

ZIP Code	EL	D500+ SK	D1000+ SK	AZ
166XX	28	124	127	242
167XX	27	123	126	242
168XX	27	124	127	243
169XX	26	124	127	244
170XX	27	125	128	244
171XX	27	126	128	244
172XX	28	125	128	244
173XX	27	126	129	244
174XX	27	126	129	245
175XX	27	126	129	246
176XX	27	126	129	246
177XX	26	124	127	244
178XX	27	125	128	245
179XX	26	125	128	246
180XX	26	126	129	247
181XX	26	126	129	247
182XX	26	125	128	247
183XX	25	126	128	247
184XX	25	125	128	247
185XX	25	125	128	247
186XX	26	125	128	246
187XX	26	125	128	247
188XX	25	125	127	246
189XX	26	126	129	248
190XX	26	127	130	248
191XX	26	127	130	248
192XX	26	127	130	248
193XX	26	127	129	246
194XX	26	126	129	248
195XX	26	126	129	246
196XX	26	126	129	246
197XX	27	127	130	247
198XX	26	127	130	247
199XX	27	128	131	247
200XX	28	127	130	245
201XX	28	126	129	244
202XX	28	127	130	245
203XX	28	127	130	245
204XX	28	127	130	245

ZIP Code	EL	D500+ SK	D1000+ SK	AZ
205XX	28	127	130	245
206XX	28	127	130	245
207XX	28	127	130	245
208XX	28	126	129	245
209XX	28	127	130	245
210XX	27	127	129	245
211XX	27	126	129	245
212XX	27	127	130	245
214XX	28	127	130	245
215XX	29	125	128	242
216XX	27	127	130	247
217XX	28	126	129	244
218XX	27	128	131	248
219XX	27	127	130	246
220XX	28	127	130	244
221XX	28	127	130	244
222XX	28	127	130	245
223XX	28	127	130	245
224XX	28	128	131	245
225XX	28	128	131	245
226XX	29	126	129	243
227XX	29	126	130	243
228XX	29	126	129	241
229XX	30	127	130	242
230XX	29	128	131	245
231XX	29	128	131	245
232XX	29	128	131	244
233XX	28	129	132	247
234XX	28	129	132	247
235XX	29	129	132	247
236XX	29	129	132	247
237XX	29	129	132	247
238XX	29	128	131	245
239XX	30	128	131	243
240XX	31	126	130	240
241XX	31	126	130	240
242XX	33	125	129	236
243XX	32	126	129	238
244XX	30	126	129	241

ZIP Code	EL	D500+ SK	D1000+ SK	AZ
245XX	30	127	130	241
246XX	32	125	129	236
247XX	32	125	129	238
248XX	32	125	129	237
249XX	31	126	129	239
250XX	31	124	128	237
251XX	31	124	128	237
252XX	31	124	127	237
253XX	31	124	128	237
254XX	28	126	129	243
255XX	32	124	127	235
256XX	32	124	128	236
257XX	32	124	127	235
258XX	31	125	128	237
259XX	31	125	129	238
260XX	29	123	126	238
261XX	31	124	127	237
262XX	30	125	128	239
263XX	30	124	127	238
264XX	30	124	127	238
265XX	30	124	127	239
266XX	31	125	128	238
267XX	29	125	128	241
268XX	29	125	129	241
270XX	32	127	131	239
271XX	32	127	131	239
272XX	32	128	131	241
273XX	32	128	131	241
274XX	32	128	131	241
275XX	31	129	132	242
276XX	31	129	132	242
277XX	31	128	132	242
278XX	30	129	133	244
279XX	29	130	133	246
280XX	33	128	131	238
281XX	33	128	131	239
282XX	33	128	131	238
283XX	32	129	133	242
284XX	32	131	134	244

ZIP Code	EL	D500+ SK	D1000+ SK	AZ
285XX	30	131	134	245
286XX	33	127	130	237
287XX	34	126	130	235
288XX	34	126	130	236
289XX	35	126	129	233
290XX	34	129	133	239
291XX	34	129	133	239
292XX	34	129	133	239
293XX	34	127	131	237
294XX	34	131	134	241
295XX	33	130	133	242
296XX	35	127	131	236
297XX	33	128	132	239
298XX	35	129	133	238
299XX	35	131	134	240
300XX	36	127	130	233
301XX	37	126	130	232
302XX	37	127	131	233
303XX	36	127	131	233
304XX	36	130	134	238
305XX	35	126	130	234
306XX	36	127	131	235
307XX	36	125	129	231
308XX	35	129	132	237
309XX	35	129	132	238
310XX	37	129	132	236
311XX	36	127	131	233
312XX	36	128	132	235
313XX	35	131	135	239
314XX	35	131	135	239
315XX	36	131	135	238
316XX	37	131	134	237
317XX	38	129	133	235
318XX	38	128	132	233
319XX	38	128	132	233
320XX	37	132	136	239
321XX	37	134	138	241
322XX	37	133	136	240
323XX	39	130	134	236

ZIP Code	EL	D500+ SK	D1000+ SK	AZ
324XX	40	129	133	233
325XX	41	128	132	231
326XX	38	133	137	239
327XX	37	135	138	241
328XX	37	135	139	242
329XX	37	136	140	243
330XX	38	139	142	244
331XX	38	139	142	245
332XX	38	139	142	245
333XX	38	139	142	245
334XX	38	138	141	245
335XX	38	135	138	241
336XX	39	135	138	240
337XX	39	135	139	239
338XX	38	135	139	241
339XX	39	137	141	242
342XX	39	135	139	240
344XX	38	134	137	240
346XX	39	134	138	239
347XX	38	135	138	241
349XX	37	137	141	244
350XX	38	125	129	229
351XX	38	125	129	229
352XX	38	125	129	228
354XX	39	124	129	228
355XX	39	124	128	227
356XX	38	123	127	227
357XX	37	124	128	229
358XX	37	124	128	229
359XX	37	125	129	230
360XX	39	127	131	231
361XX	39	127	131	230
362XX	38	126	130	231
363XX	39	128	132	233
364XX	40	127	131	230
365XX	41	126	131	228
366XX	41	127	131	228
367XX	40	126	130	229
368XX	38	127	131	232

ZIP Code	EL	D500+ SK	D1000+ SK	AZ
369XX	40	125	129	227
370XX	36	122	126	228
371XX	36	122	126	228
372XX	36	122	126	228
373XX	36	124	128	231
374XX	36	125	129	231
375XX	39	120	125	222
376XX	33	126	129	236
377XX	34	125	128	233
378XX	34	125	128	233
379XX	35	125	129	233
380XX	39	120	125	223
381XX	39	120	125	222
382XX	37	120	125	223
383XX	38	121	126	224
384XX	37	123	127	227
385XX	35	123	127	230
386XX	39	121	126	222
387XX	41	121	126	222
388XX	39	122	127	225
389XX	40	122	126	223
390XX	41	123	127	223
391XX	42	123	128	223
392XX	42	123	128	224
393XX	41	124	129	226
394XX	42	125	129	225
395XX	42	126	131	226
396XX	43	123	128	223
397XX	40	123	127	225
398XX	39	128	128	228
399XX	36	127	130	233
400XX	34	122	125	230
401XX	35	121	125	228
402XX	34	121	125	228
403XX	33	123	126	232
404XX	34	123	127	231
405XX	33	122	126	231
406XX	34	122	126	230
407XX	34	124	127	232

ZIP Code	EL	D500+ SK	D1000+ SK	AZ
408XX	33	124	128	234
409XX	34	124	128	233
410XX	33	122	125	231
411XX	32	123	127	234
412XX	32	124	127	235
413XX	33	124	127	233
414XX	33	124	127	233
415XX	32	125	128	235
416XX	33	124	128	235
417XX	33	124	128	234
418XX	33	124	128	234
420XX	37	120	124	224
421XX	35	122	126	229
422XX	36	121	125	227
423XX	35	121	125	226
424XX	36	120	124	225
425XX	34	123	127	231
426XX	35	123	127	231
427XX	35	122	126	229
430XX	31	122	125	233
431XX	31	122	126	234
432XX	31	122	125	233
433XX	31	121	124	233
434XX	30	120	124	234
435XX	31	120	123	231
436XX	30	120	123	232
437XX	30	123	126	236
438XX	30	122	126	235
439XX	30	123	126	237
440XX	29	121	125	236
441XX	29	121	125	236
442XX	29	122	125	236
443XX	29	122	125	236
444XX	29	122	125	237
445XX	29	122	126	238
446XX	30	122	125	236
447XX	29	122	125	236
448XX	30	121	124	234
449XX	30	121	125	234

ZIP Code	EL	D500+ SK	D1000+ SK	AZ
450XX	32	121	125	231
451XX	32	122	125	232
452XX	33	121	125	231
453XX	32	121	124	231
454XX	32	121	125	231
455XX	32	121	125	231
456XX	32	123	126	234
457XX	31	123	127	236
458XX	31	120	124	230
459XX	33	121	125	231
460XX	33	119	123	227
461XX	33	120	123	227
462XX	33	119	123	227
463XX	32	117	121	225
464XX	32	117	121	225
465XX	32	118	122	227
466XX	32	118	121	227
467XX	32	119	123	228
468XX	32	119	123	228
469XX	32	119	122	227
470XX	33	121	125	230
471XX	34	121	125	228
472XX	33	120	124	228
473XX	32	120	124	229
474XX	34	120	124	227
475XX	35	120	124	226
476XX	35	120	124	226
477XX	35	120	124	226
478XX	34	119	123	225
479XX	33	118	122	226
480XX	29	119	123	233
481XX	30	119	123	231
482XX	29	119	123	233
483XX	29	119	122	232
484XX	29	119	122	232
485XX	29	119	122	232
486XX	29	117	121	230
487XX	29	118	121	231
488XX	30	118	121	230

ZIP Code	EL	D500+ SK	D1000+ SK	AZ
489XX	30	118	122	230
490XX	31	118	121	228
491XX	32	117	121	226
492XX	30	119	122	231
493XX	30	117	121	228
494XX	30	117	120	226
495XX	30	117	121	228
496XX	29	116	119	227
497XX	28	116	119	230
498XX	29	114	117	223
499XX	29	112	115	220
500XX	36	111	116	211
501XX	36	112	116	211
502XX	36	112	116	211
503XX	36	112	116	211
504XX	34	111	115	212
505XX	35	110	115	210
506XX	34	112	116	213
507XX	34	112	116	214
508XX	37	111	116	209
509XX	36	112	116	211
510XX	36	109	113	206
511XX	36	109	113	205
512XX	35	108	113	205
513XX	35	109	114	207
514XX	36	110	114	208
515XX	37	110	115	208
516XX	37	111	115	209
520XX	34	113	117	217
521XX	33	112	116	215
522XX	34	113	117	215
523XX	34	113	117	215
524XX	34	113	117	215
525XX	36	113	118	214
526XX	35	114	118	216
527XX	34	114	118	218
528XX	34	114	118	218
530XX	31	115	119	222
531XX	32	115	119	222

ZIP Code	EL	D500+ SK	D1000+ SK	AZ
532XX	32	115	119	222
534XX	32	116	119	223
535XX	32	114	118	219
537XX	32	114	118	219
538XX	33	113	117	217
539XX	32	114	118	219
540XX	32	110	114	213
541XX	30	114	117	222
542XX	30	114	118	223
543XX	30	114	118	222
544XX	31	113	116	218
545XX	30	112	115	217
546XX	32	112	116	216
547XX	32	111	115	215
548XX	31	110	114	214
549XX	31	114	118	221
550XX	32	110	114	211
551XX	32	110	114	211
553XX	33	109	113	209
554XX	32	110	114	211
555XX	33	109	113	209
556XX	29	110	113	215
557XX	30	109	113	212
558XX	30	109	113	213
559XX	33	111	115	214
560XX	34	110	114	210
561XX	34	108	113	207
562XX	33	108	112	206
563XX	32	108	112	208
564XX	31	108	112	208
565XX	32	106	110	204
566XX	30	107	111	207
567XX	30	105	109	203
570XX	35	107	112	204
571XX	35	108	112	204
572XX	34	106	111	203
573XX	36	106	110	201
574XX	34	105	109	199
575XX	36	104	109	197

ZIP Code	EL	D500+ SK	D1000+ SK	AZ
576XX	35	102	107	194
577XX	37	101	106	191
580XX	32	105	110	201
581XX	32	106	110	203
582XX	31	104	108	200
583XX	31	103	107	197
584XX	33	104	108	198
585XX	34	102	107	194
586XX	34	101	105	190
587XX	32	101	105	192
588XX	33	99	104	188
590XX	36	95	100	180
591XX	36	96	101	180
592XX	33	98	102	185
593XX	35	98	103	185
594XX	35	93	97	174
595XX	34	94	99	176
596XX	36	92	97	173
597XX	37	92	97	173
598XX	36	90	95	169
599XX	34	90	95	168
600XX	32	116	120	223
601XX	33	116	120	222
602XX	32	116	120	223
603XX	32	116	120	223
604XX	33	117	120	223
605XX	33	116	120	222
606XX	32	116	120	223
607XX	32	116	120	223
609XX	33	117	121	223
610XX	33	115	119	220
611XX	33	115	119	220
612XX	34	115	119	218
613XX	34	116	120	221
614XX	35	115	119	219
615XX	34	116	120	219
616XX	34	116	120	221
617XX	34	117	121	221
618XX	34	118	122	224

ZIP Code	EL	D500+ SK	D1000+ SK	AZ
619XX	34	118	122	223
620XX	36	117	121	220
622XX	36	118	122	221
623XX	36	115	119	217
624XX	35	118	122	223
625XX	35	117	121	222
626XX	35	116	120	220
627XX	35	117	121	220
628XX	36	119	123	223
629XX	37	119	123	223
630XX	37	117	121	219
631XX	36	117	121	220
633XX	37	116	120	218
634XX	36	114	119	216
635XX	36	114	118	214
636XX	37	117	122	219
637XX	37	118	123	221
638XX	38	119	124	222
639XX	38	118	123	220
640XX	38	113	118	212
641XX	38	113	117	210
644XX	37	112	116	210
645XX	38	112	117	210
646XX	37	113	118	212
647XX	39	114	118	211
648XX	40	114	119	212
649XX	38	113	117	211
650XX	38	115	120	216
651XX	38	115	120	216
652XX	37	115	119	215
653XX	38	114	119	213
654XX	38	116	121	217
655XX	38	116	121	217
656XX	39	116	120	215
657XX	39	116	120	215
658XX	39	115	120	214
659XX	39	120	120	216
660XX	39	112	117	210
661XX	38	112	117	210

ZIP Code	EL	D500+ SK	D1000+ SK	AZ
662XX	39	112	117	210
664XX	39	111	116	207
665XX	39	111	116	207
666XX	39	111	116	209
667XX	40	113	118	211
668XX	40	111	116	208
669XX	39	109	114	204
670XX	41	110	116	205
671XX	41	110	116	205
672XX	41	111	116	206
673XX	41	113	118	209
674XX	40	109	115	204
675XX	41	109	114	202
676XX	40	107	113	201
677XX	41	106	111	198
678XX	42	107	113	199
679XX	43	106	112	198
680XX	37	109	114	206
681XX	37	110	114	206
683XX	38	109	114	206
684XX	38	110	114	206
685XX	38	109	114	206
686XX	37	108	113	203
687XX	37	107	112	203
688XX	38	107	112	201
689XX	39	107	112	201
690XX	40	105	110	197
691XX	39	104	109	196
692XX	38	104	109	197
693XX	39	102	107	192
700XX	43	125	130	226
701XX	43	125	130	226
703XX	44	125	130	224
704XX	43	125	130	225
705XX	44	123	128	221
706XX	45	122	127	219
707XX	44	124	129	223
708XX	44	124	129	223
710XX	43	119	124	217

ZIP Code	EL	D500+ SK	D1000+ SK	AZ
711XX	44	119	124	216
712XX	43	121	126	220
713XX	44	122	127	221
714XX	44	121	126	219
716XX	41	120	125	220
717XX	42	119	124	217
718XX	43	118	123	215
719XX	42	117	122	216
720XX	41	118	123	218
721XX	41	118	123	218
722XX	41	118	123	218
723XX	39	120	124	221
724XX	39	119	123	220
725XX	40	118	122	218
726XX	40	117	121	215
727XX	41	115	120	213
728XX	41	117	122	215
729XX	41	116	121	213
730XX	43	112	118	207
731XX	43	112	118	207
733XX	48	116	122	210
734XX	44	114	119	209
735XX	45	111	117	206
736XX	44	110	116	203
737XX	43	111	116	205
738XX	43	109	115	202
739XX	44	107	112	198
740XX	42	113	118	209
741XX	42	113	119	209
743XX	41	114	119	211
744XX	42	114	120	211
745XX	43	115	120	211
746XX	42	112	117	208
747XX	43	115	121	212
748XX	43	113	119	209
749XX	42	115	121	213
750XX	45	115	121	210
751XX	45	116	121	211
752XX	45	115	121	211

ZIP Code	EL	D500+ SK	D1000+ SK	AZ
753XX	45	115	121	211
754XX	44	116	121	212
755XX	43	117	123	215
756XX	44	118	123	215
757XX	45	117	123	214
758XX	46	117	123	213
759XX	45	119	125	216
760XX	46	114	120	210
761XX	46	114	120	209
762XX	45	114	120	208
763XX	45	112	118	206
764XX	46	113	119	207
765XX	47	116	122	210
766XX	46	116	122	211
767XX	47	116	122	211
768XX	48	113	119	207
769XX	49	111	118	204
770XX	47	119	125	215
772XX	47	120	125	215
773XX	46	119	125	215
774XX	48	119	125	214
775XX	47	120	126	217
776XX	46	121	126	217
777XX	46	121	126	217
778XX	47	117	123	213
779XX	49	118	125	213
780XX	50	116	122	210
781XX	49	117	123	211
782XX	49	116	122	210
783XX	50	118	125	212
784XX	50	119	125	213
785XX	52	120	126	213
786XX	48	116	122	210
787XX	48	116	122	210
788XX	50	114	120	206
789XX	48	118	124	212
790XX	45	107	113	199
791XX	45	107	113	199
792XX	46	109	115	202

ZIP Code	EL	D500+ SK	D1000+ SK	AZ
793XX	47	108	114	199
794XX	47	108	114	200
795XX	47	111	117	204
796XX	47	112	118	205
797XX	49	108	115	200
798XX	51	106	113	197
799XX	51	103	110	192
800XX	42	101	107	190
801XX	42	101	107	190
802XX	42	101	107	190
803XX	42	101	106	189
804XX	42	100	106	188
805XX	41	101	106	189
806XX	41	101	107	190
807XX	41	103	108	193
808XX	42	103	108	192
809XX	43	102	107	191
810XX	43	103	109	193
811XX	45	101	107	189
812XX	44	100	106	189
813XX	45	98	104	185
814XX	44	98	104	185
815XX	44	97	103	183
816XX	43	98	104	185
820XX	40	100	106	189
821XX	38	94	99	177
822XX	39	101	106	190
823XX	40	98	103	184
824XX	38	96	101	181
825XX	39	96	101	180
826XX	39	98	103	185
827XX	37	99	104	187
828XX	37	97	102	184
829XX	41	95	101	179
830XX	39	94	99	177
831XX	40	94	99	178
832XX	40	92	98	174
833XX	40	90	96	171
834XX	39	92	98	174

ZIP Code	EL	D500+ SK	D1000+ SK	AZ
835XX	37	88	93	165
836XX	39	88	93	167
837XX	40	88	93	167
838XX	35	88	93	165
840XX	42	94	99	177
841XX	42	93	99	176
842XX	42	93	98	175
843XX	41	93	98	175
844XX	42	93	98	175
845XX	44	95	101	180
846XX	44	93	99	177
847XX	46	92	99	176
850XX	50	93	101	180
852XX	51	94	102	181
853XX	51	92	100	177
855XX	50	96	104	183
856XX	52	96	104	183
857XX	52	95	103	182
859XX	49	97	104	184
860XX	48	94	101	180
863XX	49	93	100	178
864XX	49	90	98	175
865XX	47	97	103	183
870XX	47	101	107	189
871XX	47	101	108	189
872XX	47	101	108	190
873XX	47	98	105	185
874XX	46	98	105	185
875XX	46	101	108	190
877XX	46	103	109	192
878XX	49	100	107	188
879XX	50	101	108	189
880XX	50	100	108	189
881XX	47	105	112	196
882XX	49	106	113	196
883XX	49	103	110	193
884XX	46	104	111	195
885XX	51	103	110	192
889XX	48	89	96	172

ZIP Code	EL	D500+ SK	D1000+ SK	AZ
890XX	47	89	95	171
891XX	48	89	96	172
893XX	44	89	95	170
894XX	44	84	91	164
895XX	44	84	90	162
897XX	45	84	90	162
898XX	42	89	94	169
900XX	50	84	92	167
902XX	51	84	92	167
903XX	51	84	92	167
904XX	51	84	92	166
905XX	51	84	92	167
906XX	51	85	92	167
907XX	51	84	92	167
908XX	51	84	92	167
910XX	50	85	92	167
911XX	50	85	92	167
912XX	50	84	92	167
913XX	50	84	91	166
914XX	50	84	92	166
915XX	50	84	92	167
916XX	50	84	92	167
917XX	50	85	93	168
918XX	50	85	92	167
919XX	52	86	94	170
920XX	52	86	94	170
921XX	52	86	94	170
922XX	51	88	95	172
923XX	50	86	94	169
924XX	50	86	93	169
925XX	51	86	93	169
926XX	51	85	93	168
927XX	51	85	93	168
928XX	51	85	92	167
930XX	50	83	91	165
931XX	50	82	90	164
932XX	48	83	90	164
933XX	49	84	91	166
934XX	49	81	89	162

ZIP Code	EL	D500+ SK	D1000+ SK	AZ
935XX	49	85	92	167
936XX	47	83	90	163
937XX	47	83	90	163
938XX	47	83	90	163
939XX	48	80	87	160
940XX	46	80	86	158
941XX	46	80	86	158
942XX	45	81	88	160
943XX	47	80	87	158
944XX	46	80	86	158
945XX	46	80	87	159
946XX	46	80	87	158
947XX	46	80	87	158
948XX	46	80	86	158
949XX	46	80	86	158
950XX	47	80	87	159
951XX	47	80	87	159
952XX	46	82	88	160
953XX	46	82	89	161
954XX	45	79	86	157
955XX	43	79	85	155
956XX	45	82	88	160
957XX	45	82	88	160
958XX	45	81	88	160
959XX	44	81	88	160
960XX	43	81	87	158
961XX	44	83	89	162
967XX	41	30	32	99
968XX	40	30	32	98
970XX	38	82	87	156
971XX	37	81	86	154
972XX	38	82	87	156
973XX	38	81	86	155
974XX	40	81	86	155
975XX	41	81	86	156
976XX	41	83	88	159
977XX	40	84	89	159
978XX	38	86	91	162
979XX	39	87	92	165

ZIP Code	EL	D500+ SK	D1000+ SK	AZ
980XX	35	83	88	155
981XX	35	83	87	155
982XX	34	83	88	155
983XX	35	83	87	155
984XX	36	83	87	155
985XX	36	82	87	154
986XX	37	82	87	156
988XX	35	85	90	159
989XX	36	84	89	159
990XX	35	87	92	163
991XX	35	87	91	162
992XX	35	87	92	163
993XX	37	86	91	161
994XX	37	87	92	164
995XX	15	69	71	118
996XX	15	69	71	117
997XX	11	74	76	118
998XX	23	78	81	135
999XX	25	78	82	138

Federal Communications Commission (FCC) Notification

Regulatory Information

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Do not make changes or modifications to this equipment. This could void the user's authority to operate the equipment.

If none of the remedies stops the radio interference, you should contact a licensed radio/television technician, your satellite dealer, or call the Customer Service Center at 1-800-333-DISH (3474) for assistance.

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Part Number: 196902

Printed in

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