Getting to Know the "SuperDISH" Antenna

The SuperDISH antenna gives us the advantage of receiving more programming (such as locals or international) using a single dish solution. The SuperDISH antenna features the ability to receive signals from three orbital locations: 110° and 119° in the **DBS spectrum**, and one orbital location in the **FSS spectrum** (either 105° or 121°). The DBS spectrum is the band of space our service looks at today, in the 12.2 to 12.7 GHz ("gigahertz") range; the new FSS spectrum is 11.7 to 12.2 GHz. As of now, locals will be broadcast from 105°, and locals and International channels will be broadcast from 121°, but stay tuned for updates.

The Dish Reflector

The size/shape of the dish reflector used for SuperDISH is larger than what we are used to with the mostly-round 20" DISH 500 reflector – SuperDISH's elliptical reflector is just under 36" wide by just over 20" tall.

Why it's bigger: the DBS spectrum requires that satellite locations be separated by 9°. For example, our orbital locations 110° and 119° are nine degrees apart. DirecTV's 101° orbital location is nine degrees from our 110° orbital location. Since each satellite is 9° apart, the DBS satellites can broadcast their signal using higher power without interfering with each other. Because the DBS satellites broadcast with high power, we use a smaller dish reflector size to receive the signal: 18" to view one orbital location; 20" (DISH 500) for two orbital locations.

In the FSS spectrum, satellites are spaced only 2° apart. Because of that, satellites in the FSS spectrum are required to broadcast at a lower power – otherwise, they'd interfere with each other. So, the dish reflector needs to be larger, to receive the signal from the lower power satellites in this spectrum, and to provide sufficient "signal rejection" from the 2° spaced neighbor satellites. The larger the reflector, the narrower it will focus the signal beam, providing better reception from a lower-power signal.

Two Types of Reflectors: You may encounter two types of reflectors. Type 1 is metal, like the DISH 500. Type 1 requires metric tools. Type 2 is a composite material with a webbed back. Type 2 uses standard tools.

Reflector's Mast and Foot: To accommodate the larger reflector, SuperDISH's foot and mast design are slightly larger than our current DISH 500 dish antenna design. Type 1 uses a 2" mast; Type 2 uses a 2-3/8" mast. Also, this dish requires a more secure mounting surface than that required for DISH 500.

The SuperDISH LNBs

Our typical LNBF ("Low Noise Block converter with integrated Feedhorn") contains both the electronics to down-convert the DBS spectrum (12.2 GHz to 12.7 GHz) to the frequency range the receiver and cable can handle (950 to 2150 MHz), as well as the "eye" that receives the signal bounced off the dish reflector. The FSS LNB converts a different spectrum (11.7 GHz to 12.2 GHz) to the 950 to 2150 MHz frequency range, so we can't just simply add three DISH Pro LNBFs to the SuperDISH arm and say we're done.

FSS antennas are also built differently than what we're used to – not only the size, as discussed above, but the FSS signal must be placed in the center of the dish reflector (also called the "bore sight"), which means the FSS LNB and feedhorn are in the center of the dish antenna. We had to specially design the full LNB/feedhorn assembly we're using to fit the two DBS LNB/feedhorns PLUS the FSS LNB/feedhorn. For example, when focusing on the 121° FSS orbital location, the 119° LNB/feedhorn doesn't have a lot of "space" to see its area "in space". As a result, you will see two different options for the LNB/feedhorn assembly: one version for the 105° SuperDISH and another for the 121° version. There are also unique LNB assemblies for each dish reflector type (Type 1 and Type 2).

The Switch: No matter which LNB assembly is used, a DP34 switch is used to connect the LNBs to the receivers. All DISH Pro rules still apply (e.g. max of three DP34 switches trunked together, RG-6 copper clad center conductor cable or better with a maximum distance of 200 feet from the LNB assembly to the furthest receivers, etc.).

Compatible satellite receivers

Our current satellite receivers (and OEM equivalents) will need new software to be able to view the channels broadcast from the FSS orbital location(s). **The following receivers can be placed within a SuperDISH installation, but will only receive signals from 110° and 119°: Models 1000, 2000, 3000, 4000, 5000, DISHPlayer, JVC-DVHS ("IRR") and PCI**. Commercial Able ("COMA") models will not work at all within a SuperDISH installation.

Legacy receivers (those without a DISH Pro logo) must use a DISH Pro Adapter to connect to the DP34 switch.