

Solid Signal's

HANDS-ON REVIEW



Televes
Mast-Mounted
Amplifiers



Televes mast-mounted amps



Televes' mast-mounted amplifiers are a little different from other amplifiers you'll find on the market. They're sort of a mix between preamplifier and distribution amplifier -- the power levels are extremely high, but then you have the ability to combine multiple signals and, at least according to the manufacturer, there's a higher noise figure than you normally find in a true preamp.

The company is really addressing the way amplifiers are used in the 21st century. When all TV broadcasting was analog, the preamp itself was more important for pulling in distant signals, and the noise figure was something that was absolutely all-important. After all, it was possible to pull in a very weak signal and amplify it so it would be stronger, but you certainly didn't want to add a lot of noise as well.

Today, the main reason for amplifying is to overcome long cable runs or distribute the signal to multiple TVs.

Televes' engineers built their amplifiers for that purpose, making them super-powerful, and also adding the ability to power antennas that, themselves, are already amplified. It's supposed to be the best of both worlds... but does it really work?

We reviewed and tested Televes' [two-input](#) and [three-input](#) amplifiers to see if we thought they were made to hold up to decades of use.

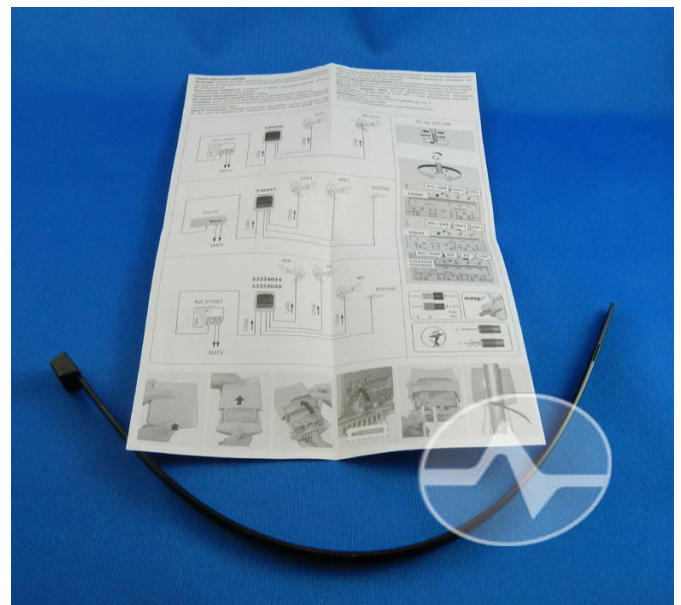
Ready for a new antenna?

Televes antennas are designed to the highest standards of quality and performance. They're perfect for the cord-cutter who is looking for that one antenna to last a lifetime. If you thought it was impossible to find old-school quality at a 21st-century price point, check out [Televes' line of antennas, exclusively at Solid Signal.](#)

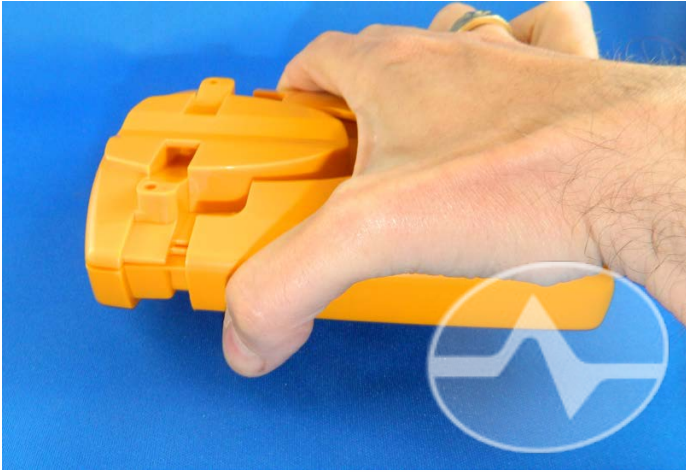
What's in the box

Televes amplifiers are packaged in simple cardboard printed in black and the customary orange that you see with every televes product. The same box is used for the entire line, with only a sticker to let you know which one is which. No matter which amplifier you choose, the unboxing experience is pretty much the same. What you get is this shiny little orange box, which looks

solid and weatherproof and seems to be very high quality plastic. The back side has a notch through which you can put a sturdy zip tie, for easy attachment to a mast, and a zip tie is provided, as well as a printed instruction manual. That's all there is to it.



Opening up the amplifier



It's a good idea to get the amplifier wired and ready before zip tying it to the mast. To open the amp enclosure, firmly grasp it at its widest point and slide upwards. Even though the picture shows one hand (to make it easier for you to see what's going on) this is really a two-handed affair. If you grab the base with one hand, the top part will slide up easily with the other hand.



There is actually a plastic screwdriver attached near the bottom, visible in the picture above. It can be used for adjusting power levels if needed, or any precision screwdriver will work.



With the enclosure lifted you can get to most of the controls, but the switches that control DC power passing are still hidden. To get to them, push on the sides of the plastic enclosure to release the tabs holding the enclosure in place. When you do this, the entire top will lift off. Replacing the top is easy, just slide it back on and push gently on the tabs on each side.

There is a swing-up panel that makes it easy to insert coaxial cables. This amplifier uses the "Easy F" system for attaching cables without the need for connectors.

Two-input amplifier



For those who want to use one or two antennas, the [536040 Two-input amplifier](#) is the best choice. Shown above, it lets you combine two antennas -- one UHF only and one UHF/VHF, and adjust the power level of the UHF/VHF antenna to help with any issues that can come with combining the two. For example, you could reduce the amplification of the UHF section of the UHF/VHF antenna and let the UHF-only antenna shine through.

This amplifier will pass power to both antennas if you choose by making sure the switches on top are set to "on." In general it is not necessary to double-amplify and it can cause distortion to the signal, but you do have the choice here.

The three adjustment screws on this amplifier control the UHF/VHF connection. The rightmost one is UHF and the leftmost one, labeled BIII, is for VHF. The middle one is for DAB, a European broadcast frequency around 225MHz, between US channels 13 and 14.

Both this amplifier and the three-input model feature LTE filtering, meaning that cell phone signals will not ruin your signal. The US-spec frequency of 698MHz is filtered out here.

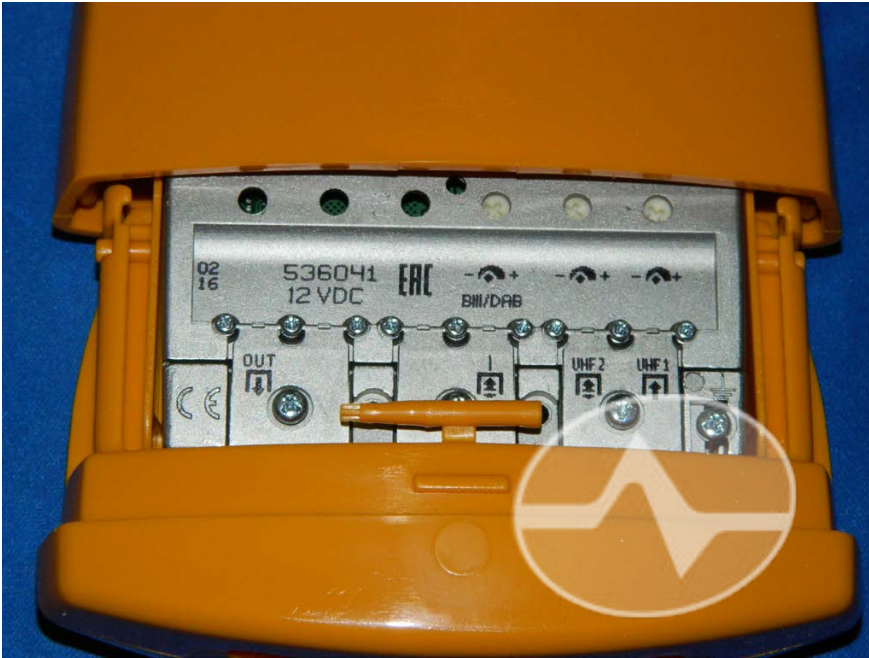
The Power Injector

The Televes amplifiers are powered using the same power injector as is used in the DAT series of antennas. However, in this case, the amplifiers will not work without power. The power injector will power the amplifier itself and, if you choose, will also power the internal amplifiers found in the DAT790 antennas from Televes. As they're simply providing 12 volts DC, they will probably power other devices as well but neither Televes nor another company is going to honor a warranty in a case like that.

The left port on the power injector goes up to the amplifier, while the rightmost port provides the strongest signal output. While you can use this injector to run two televisions, the rightmost port should be used if you only plan to run one television.



Three-input amplifier



The three input version goes by the unassuming name of [536041 Three Input Mast Amplifier](#), and as you can see, it shares the same basic design as the two-input model. It's really more specialized, and designed for people who want to put up two UHF antennas and a VHF antenna and control the gain of each.

Because this antenna has specific frequency ranges for each input, you would not normally choose it unless you have three antennas to combine, which is more common in densely populated suburbs between major cities.

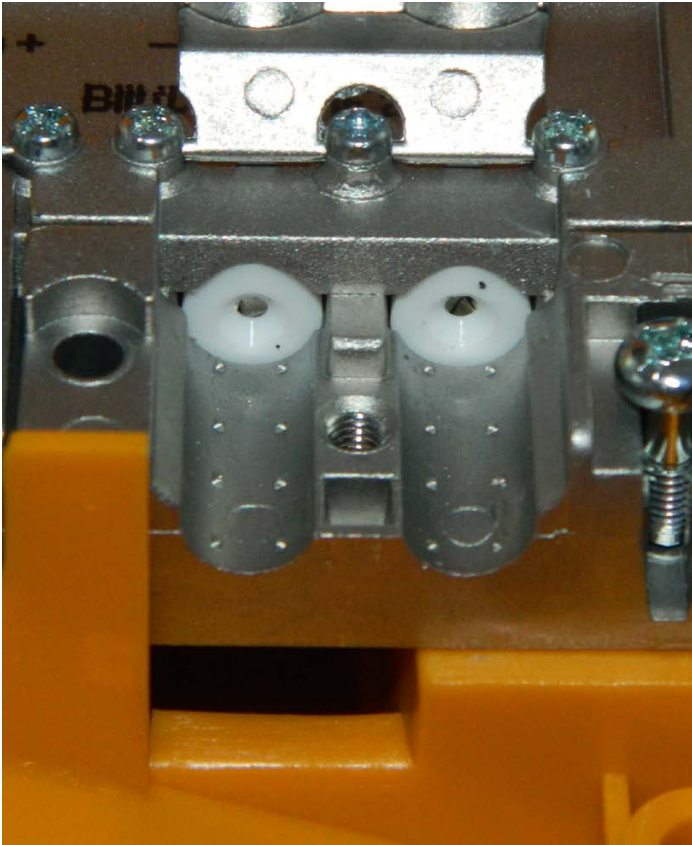


Without the plastic shell, you see that only the rightmost input will pass power if the switch at top is turned on. The other two antennas will not pass power. In this case the three adjustment screws correspond to the three inputs, making it easy to control the amount of amplification. Both

amplifiers have some auto gain control, meaning that it's not generally going to be necessary to make these adjustments.

As with the two-input version, US LTE frequencies at 698MHz are blocked, meaning that a cell phone signal will not mess with the auto gain control circuitry.

Making “Easy F” connections



Televes amplifiers stand apart in the quality of workmanship and the different ways they can be configured. There isn't any other line of amps that combine LTE filtering, adjustable DC blocking, and variable padding. One of the key features of this amplifier line is that they connect to RG6 cables without the use of F connectors. This cuts down on insertion loss and makes for a more secure and weatherproof connection than would otherwise be possible. The Easy F connection system is just like it says -- easy -- once you know how to do it.

If you are familiar with making RG6 cables this will be the same process... strip the cable as you normally would and then instead of adding a connector, simply push the center conductor into the open area in the amplifier.

Who is Televes?

They're not a well-known company in the US... yet. Solid Signal chose to partner with Televes after an extensive worldwide search because Televes stands for the same things we stand for: quality, performance, and customer satisfaction. Televes is based in Spain and designs and manufactures all their products in Europe. The manufacturing quality is far above other similar products.

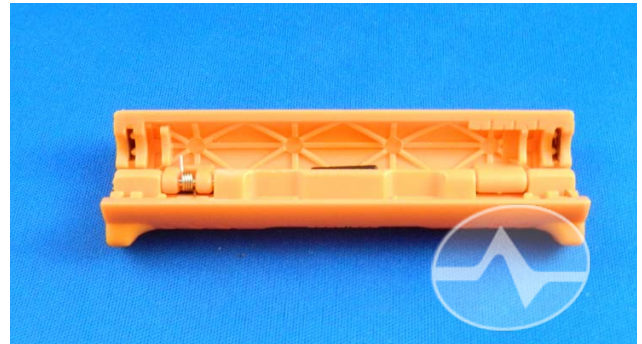
The company has been around since 1958 and is a worldwide leader in antennas, satellite products and test equipment. They're used by all the major satellite companies for their own test and measurement systems.

If you think Televes products look similar to Chinese-made products, there's a reason for that; they're the most popular antenna brand in Europe and therefore an easy target for reverse-engineering. The difference is obvious when you actually get your hands on an antenna, though. This is a solidly-built product designed to last for years.

Solid Signal is the exclusive direct retailer and distributor of Televes products in the US and we've worked hard to bring Televes antennas to our customers at a price that compares to much lower-quality antennas.



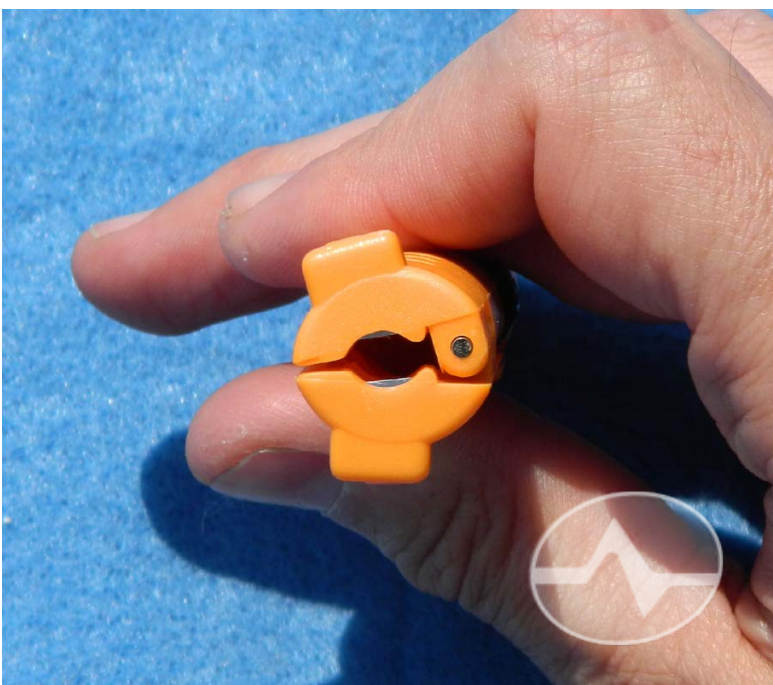
What you'll need



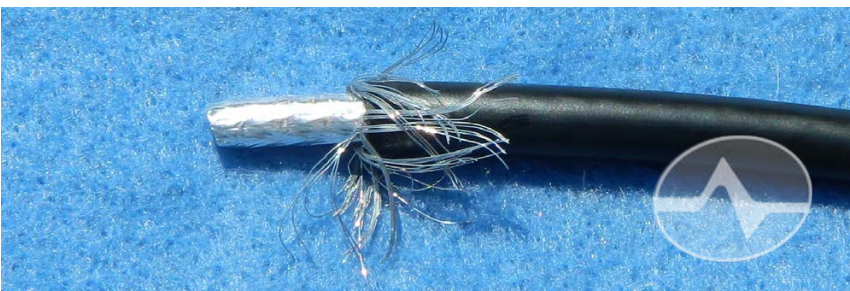
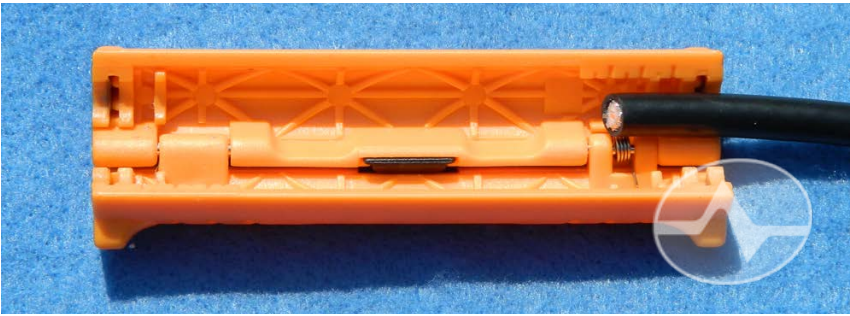
The only tool you'll need, besides RG6 cable and the amplifier itself, is a cable cutter. You can use almost any cable cutter, but the Televes 2162 was used here because it does the exact job required, because it's fairly priced and because, hey, we're promoting Televes products here. This is a compact, general purpose cable cutter that can be used for satellite or antenna use and is adaptable to many different thicknesses of cable.

The cutter has a spring-loaded latch and when open, you'll see that there are markings to help you measure the correct amount of cable to put in the cutter.

There are two cutting surfaces on the cutter, labeled "A" and "B" and you can see that the "A" side (bottom picture) has a bigger gap. This side cuts the outer sheath of the cable and the "B" side cuts the dielectric, which is the white foam part of the cable.



The first cut



Start with a cleanly cut piece of cable. Pretty much any [cable cutter](#) will do here, but don't use needlenose pliers or "dykes" pliers if you can avoid it. A cable cutter with a curved blade will give a clean cut without pinching the cable down. That's less important with antenna cables than with satellite but it's still nice to start with a cleanly cut cable, as it makes everything easier.

There are measurement notches in the tool. Lay the cable down so that no more than .75" of cable sits in the cutter past where the blades are. Close the cutter firmly and it should take no more than one full revolution with the cutter closed to cut the outer sheath.

You want to keep the braid intact. Because you're connecting this cable directly to the amplifier, the braid makes contact with the amplifier. If it doesn't (because you've cut it off) the cable connection will not work.

As gently as possible, fold the braid over to sit over the rubber sheath. It's perfectly normal to lose a few little wires during this process, but be as careful as possible. If you cut through the braid while cutting through the sheath, start over with a fresh cut.

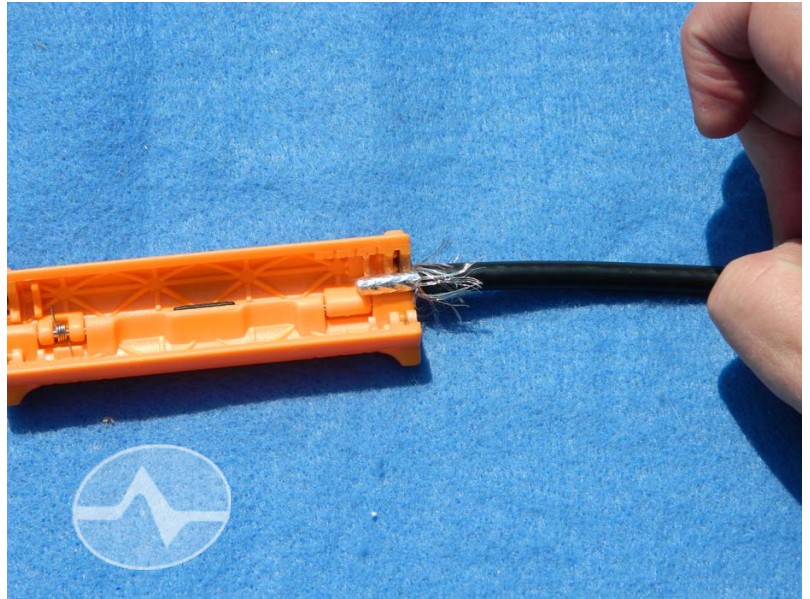
The second cut

Put the cable into the other side of the cutter. Here you want to have no more than .3" between the end of the cable and the blade. A quarter inch is just fine.

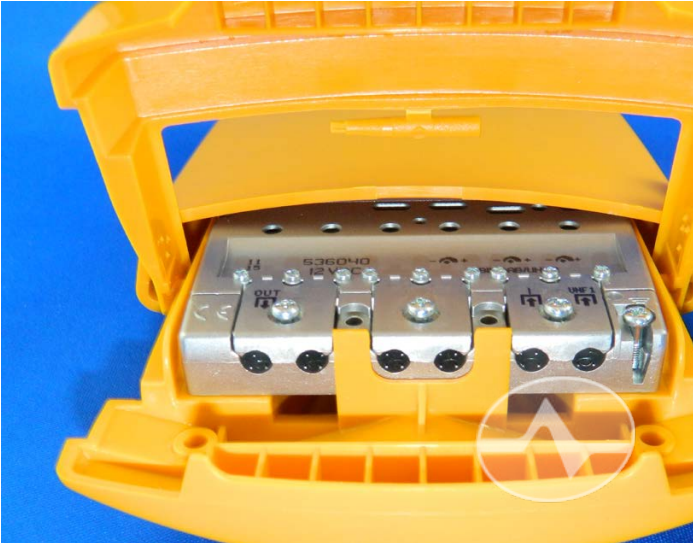
Again, close the cutter tightly and make one full rotation. The dielectric should slight right off, leaving you a cable that looks like the one below.

It's not important that the braid look perfect, but it is very important that there is enough of it to make good contact with the amplifier. Therefore, it's best to resist the urge to "groom" the braid too much because the individual wires will break, leaving you with a poor-quality connection. You can use a needlenose to trim excessively long wires if need be.

If the dielectric is covered in foil like the cable you see here, it's not necessary to remove it.



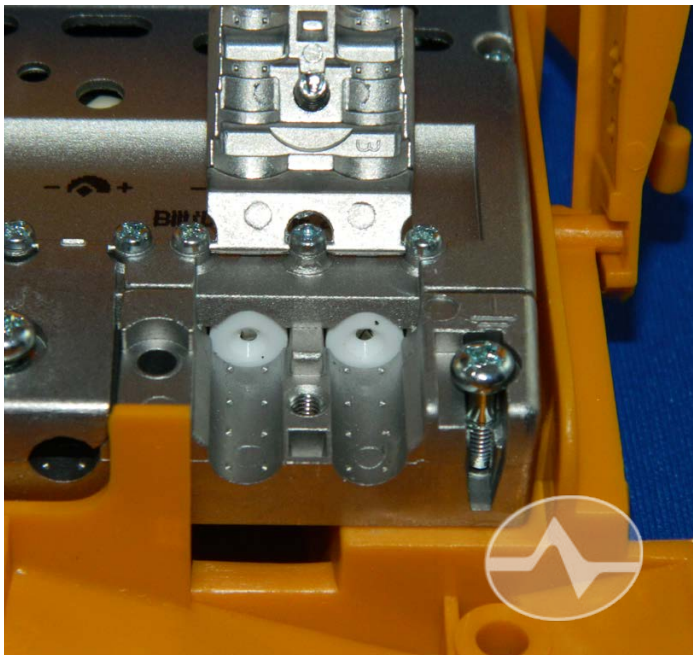
Making the connection



This is a view of the Televes 536040 Mast Amplifier. It's a general-purpose, 25dB amplifier that also combines two antenna feeds. Other mast-mounted amplifiers are very similar in the way they look.

With one of the hinges raised you can see how the cable goes in. You don't have to raise the hinge all the way if you don't want to. Just unscrew it enough so that the cable goes in smoothly.

The center conductor of the cable goes into the center hole you see there (surrounded by white plastic.) The braid makes contact with the metal surface of the amplifier.

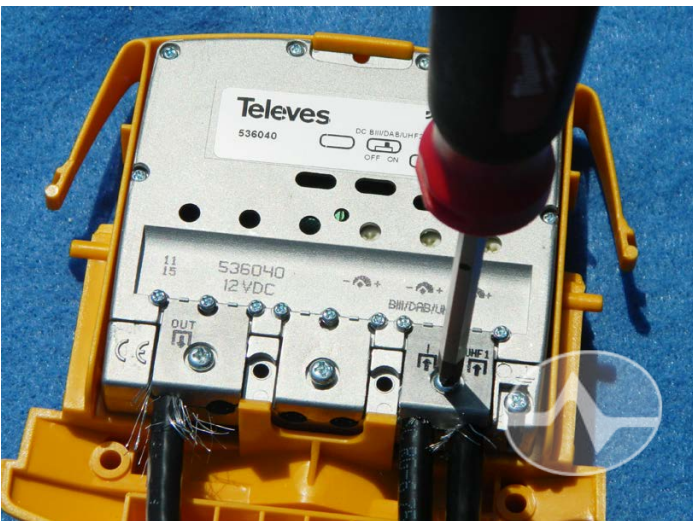


Tighten down the screw to the point where the cable won't come out, but not so tightly that you significantly pinch it. It probably will not tighten down all the way and that's just fine.

If you need to attach multiple cables, you can put them in at the same time and then tighten down the screw only once.

That's all it takes to attach a coaxial cable to a Televes amplifier. If you are getting absolutely no reception, it generally means the cable isn't put in tightly enough or the amplifier isn't receiving power. Check all your connections and make sure there's enough exposed braid to make good contact with the amplifier in all connections.

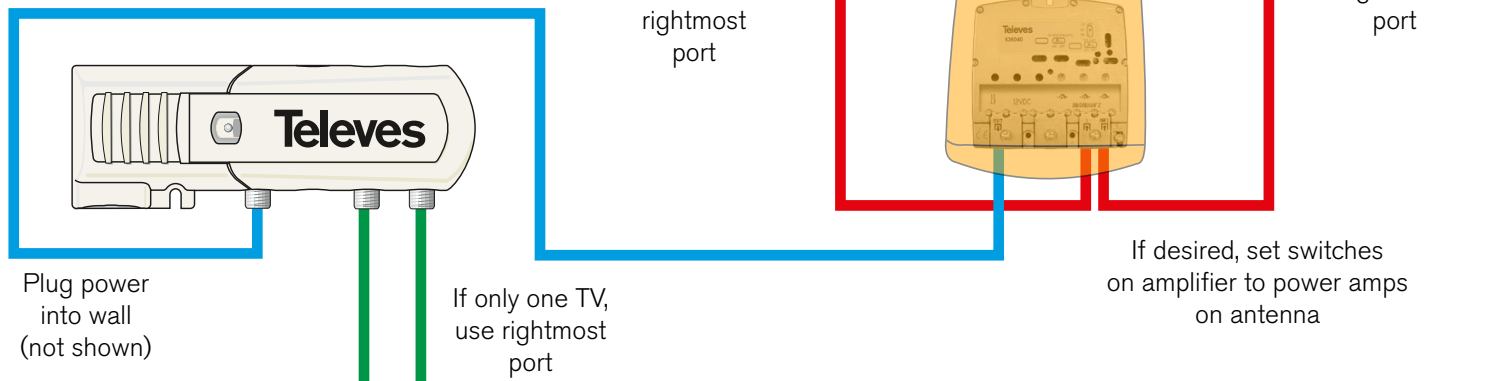
[Click the image below](#) for a video showing the same process (video opens in browser.)



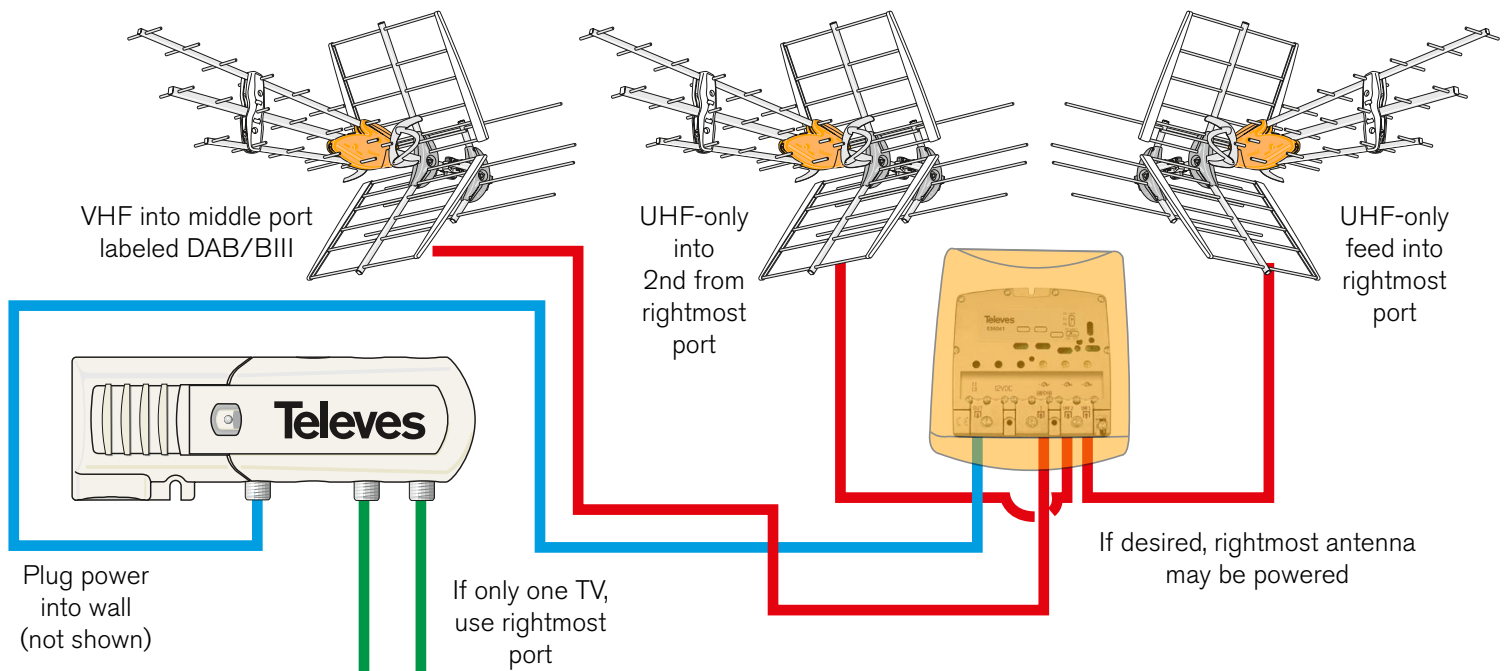
COMBINING ANTENNAS USING TELEVES AMPLIFIERS

Two Antennas using part 536040

**RG6 Cables
must have
solid copper
center conductor**

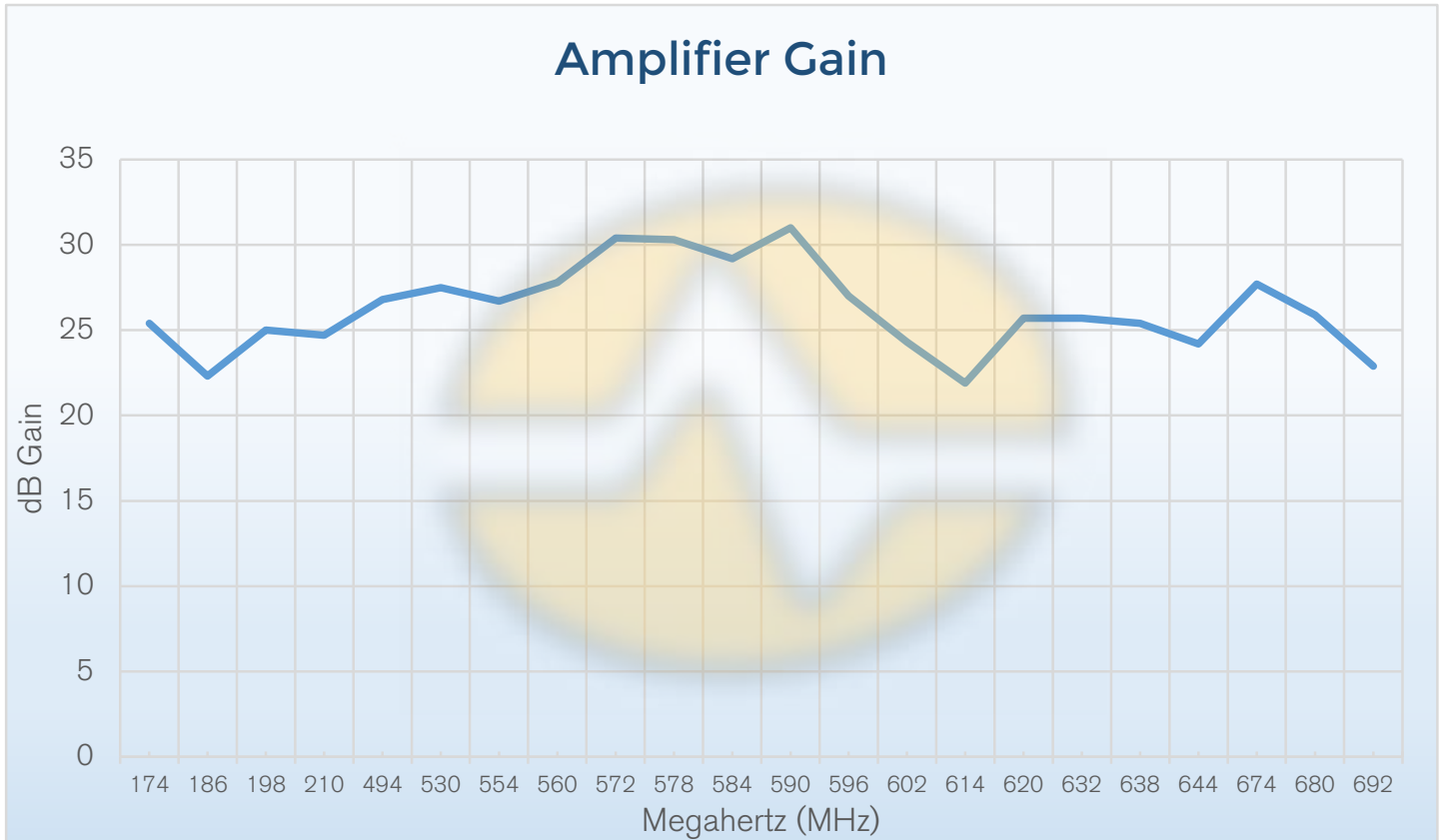


Three Antennas using part 536041



Follow all local grounding ordinances

Testing and Performance



In real world testing, gain from this amplifier was extraordinarily high, averaging 26dB throughout the usable range. As you can see from the chart, the strongest gain was in the lower end of the UHF spectrum which is perfect for most broadcast applications as the majority of broadcasts are in that range.

Various documents available on the web put the noise figure of these amps between 7.5 and 10 dB. That seemed very high even for a distribution amplifier, which is more of what this amp is. Without a full laboratory to test, our labs tried two different methods to derive the real-world effect of noise on the amplifier.

Using mathematics and analyzing the difference between the signal-to-noise ratios of unamplified and amplified modes, the data suggest that the amplifiers add about 2.75dB of noise when operating, far less than the rated number.

Using a secondary methodology, the antenna's output was "padded" by 26dB to remove the increase in gain. Therefore, the difference between the signal-to-noise ratio of an unamplified antenna and the signal-to-noise ratio of an amplified antenna should be the amount of noise inherent in the amplifier. The result, 3.15dB, is very consistent with the mathematical result and the difference between the two numbers could be attributed to minor differences in reception as the tests were taking place.

As a control test, the same measurements and methods were applied to a Winegard LNA100 amplifier, which has a published noise figure of 1dB. The Winegard amp's number, using those methods, was 1.15dB, which suggests that the calculations are reasonably accurate.

When it comes to Televes' published specs, they seem largely attributable to extreme honesty and scrutiny in the testing process and real-world results for this amp are far more consistent with other amplifiers with similar power levels.

LTE Filtering



Televes antennas are the only brand to incorporate LTE filtering into their full antenna line. Every single antenna is designed to reject LTE signals from US carriers. This is incredibly important because as cell carriers build more towers, there's an ever-growing chance that your home or office is going to be very near one, and that the LTE signal will be a lot stronger than distant antenna signals.

LTE provides wireless internet to cell phones using frequencies that were once used for TV antennas. Even though those frequencies aren't used anymore, older antennas will still pick them up, and newer

antennas can as well depending on their manufacture. LTE signals can even affect channels on "fractional" frequencies -- For example LTE transmissions at 792MHz can also affect broadcasts at 396 and 198MHz, which are half and one-quarter of the frequency used by LTE. By blocking LTE transmissions completely you have the best chance of picking up all the channels you want, interference-free.

Most of Televes' antennas incorporate LTE filtering for US frequencies as part of their design, but by adding a Televes mast amplifier will allow you to filter out these frequencies while using any antenna. This is especially important with older antennas that were actually designed to receive the very frequencies that LTE now uses, because at one time TV reception extended up into those frequencies.

Conclusion

Not everyone needs an amplifier and combiner with up to 30dB of power, especially one with variable inputs and industrial design. However, using an ampifier like these could help you eliminate a rotator in your antenna setup, which is especially important since today's rotators have a tendency to last no more than five years. Televes' amplifiers continue in their tradition of quality and value and bring industrial-level performance to the home user with easy installation and a "set-it-and-forget-it" strategy that will keep you in the living room watching TV instead of up on the roof adjusting the amplifiers.

[Shop for Televes amplifiers now at Solid Signal!](#)

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