GT-Sat GT-LST40/GT-T40/ GT-QD40/GT-QDCIR40

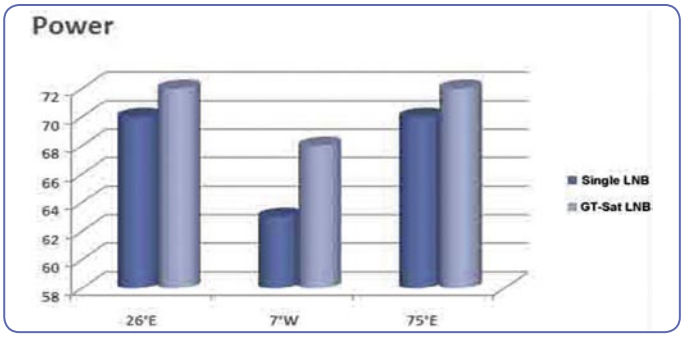
High Quality LNBs for Every Application

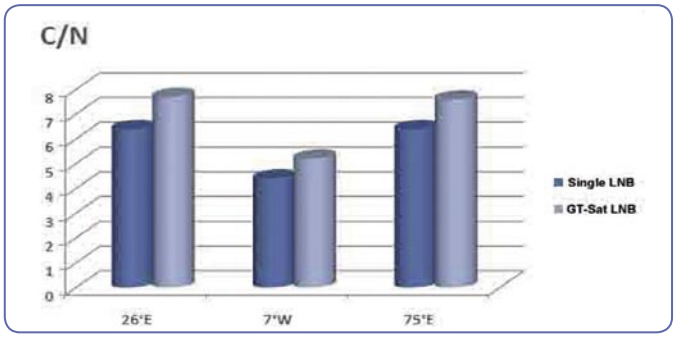
GT-Sat LNB series

Over the past few months, dozens of new LNBs found their way into our test center and while we had to reject most of them because they were of very poor quality, we were pleasantly surprised by the LNB series from GT-Sat in Luxembourg. We were not only impressed by the high quality manufacturing but also because of the various LNB types within the series. What other manufacturer offers a complete series of single, twin, quattro and quad LNBs for linear and circular polarization? We decided to take a closer look at them so that we can tell you all what they are all about.

At first glance, the grey and white colored LNBs look very inconspicuous but you can easily recognize that it's a high quality product. The LNBs are solidly built and the housing is absolutely waterproof. The feed itself is protected by a solid cover that is also resistant to high temperatures. While the single version is equipped with a plastic cover to protect the connecting cable from weather, all the other models are equipped with a solid cover to prevent moisture from reaching the connectors. All of the linear polarized models are available with 40mm and 23mm feed diameters so you can use them on any standard offset dish. They are also ideally suited for use on multifeed antennas. Furthermore, the single LNB is being offered in both straight and angled versions. LNB makers would love to market their LNBs with a "0 dB noise figure", but, of course, we all know that this is impossible. GT-Sat knows this too and markets their LNBs with a 0.2dB noise figure. The input frequency range for the linear model is between 10.7 and 12.75 GHz with the output frequency (IF) between 950 and 2150 MHz using local oscillator frequencies (LOF) that are 9.750 and 10.600 GHz. The circularly polarized models can only receive signals in the upper frequency range that lies between 11.7 and 12.75 GHz with an output frequency of 950 to 2000 MHz and an LOF of 10.750 GHz. Each model comes with a conversion gain between 56 and 60 dB. Polarization switching is controlled by the LNB supply voltage where a voltage of 11~14VDC is used for vertical/left circularly polarized signals and 16~20VDC is used for horizontal/right circular signals. The cross polarization isolation is very good at 25 dB and switching between low and high band is simply done by using a 22 KHz signal. The manufacturer claims an operating temperature range from -40° to +70° C, so you should be able to use the LNBs either in ice cold Siberia or piping hot Dubai without having to worry about temperature related problems.

Thus far we've only told you what the manufacturer states these LNBs can do. But the only way to really find out their capabilities was to put them to the test, and that's exactly what we did. We performed several tests in our Austrian test center on weaker signals such as those on EUROBIRD2 at 26° east, NILESAT at 7° west and LMI1 at 75° east and compared them to a single LNB that has been in use in our test center for the past several months and has surprised us again





Russian TV on EUTELSATW4 at 36° east (circular polarized

and again with very good reception results. We installed both LNBs on a properly aligned motorized Kathrein CAS120 dish. First the GT-Sat LNB had to prove its abilities and we were quite surprised with the results (power and C/N) as can be seen in Table 1. The GT-Sat performed better than our old LNB in all frequency ranges. Especially interesting was the difference in the horizontal high band on EUROBIRD 2 at 26° east. Additionally, we were also able to measure higher c/n values on the weak horizontal transponders on NILESAT at 7° west. This LNB allowed us to view these signals for the very first time. With the old LNB, the signals appeared on our analyzer as peaks but they could not be viewed. Further tests on LMI1 at 75° east were also very positive. Here we were once again surprised with the quite high c/n values that we were able to measure. Next we checked out the capabilities of the GT-Sat LNB on the weaker signals of the ASTRA2D satellite at 28.2° from our test center in Munich, Germany using a one-meter dish and were yet again pleasantly surprised with the results. In the end we can safely say that GT-Sat offers a high-quality, very sensitive LNB with a realistic noise figure of 0.2 dB.

GT-Sat not only manufactures LNBs for the reception of linearly polarized signals, but for circularly polarized ones as well. Circularly polarized signals are actually quite common in parts of eastern Europe and North America. From our test center in Vienna, Austria, it was nearly impossible to receive the circularly polarized signals from EUTELSATW4 at 36° east with a 1.2m dish and so we were quite eager to give it a try with the GT-QDCIR40. From the outside, this Quad LNB looks quite similar to its linear cousins and it is available in both single and twin models. We first installed it in the focal point of our dish and rotated the antenna to the 36° east position and were amazed at how much better the signal levels had suddenly become. We knew that using a linear LNB for circular signals would result in some signal loss, however we would have never believed that this loss would be so high. Even when we moved the LNB out of the focal point and installed it next to a linear LNB, we were still able to receive the channels from EUTELSATW4 at 36° east with exceptional signal quality. The linearly polarized LNB was used for reception of all the other European satellites. The GT-QDCIR40 can switch between left and right polarization by using the 14/18V control signal. This worked very well during our tests and contrary to the linear models, both left and right circular polarizations could now each be individually received with maximum signal strength.

Expert conclusion

Thomas Haring
TELE-satellite
Test Center
Austria

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GT-Sat, with its new line of LNBs, now has something for everyone. It doesn't matter if you need a single, twin, quattro, quad or even a circular LNB, you will always find the correct LNB for your application. The manufacturing quality is very good and the noise figures we measured matched that in the technical data sheets provided by GT-Sat.

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For the moment GT-Sat does not offer any of its LNBs with a flange type of connector and therefore they cannot be installed on prime focus antennas.

TECHNIC

DATA

Manufacturer	GT-SAT International SARL, Luxemburg
Fax	+352-26432204
E-Mail	info@gt-sat.com
Model	GT-LST40, GT-T40, GT-QD40, GTQDCIR40
Function	LNB series for linearly and circularly polarized signals
Input Frequency Range	10.7~11.7 GHz/ 11.7~12.75 GHz linear bzw. 11.7~12.75 GHz circular
Output Frequency Range	950~1950 MHz / 1100~2150 MHz
L.O. Frequency	9.75GHz / 10.6GHz linear bzw. 10.75GHz circular
Conversion Gain	56-60dB
Band Switching	22 KHz
Polarization Switching	14/18V
Noise Figure	0,2db (Typ.)
Connector	75 Ohm F Type (fem.)