Chess Edition II LNB's of Max Communication

0.2dB LNB's – are they different from 0.3 dB devices?

What is the reason to change your existing LNB? Does the new TV standard (HDTV) require this? Or perhaps the new compression method (MPEG-4) is the reason? What about DVB-S2? No, no, and no. None of these things requires you to change the LNB. You can enjoy watching HDTV compressed with MPEG-4 and modulated in accordance with DVB-S2 on the same existing device. Only your receiver must be replaced with its most modern successor.

So what makes LNB manufacturers think that people will replace their old LNB with new devices? Except for the hardware malfunctions, there is only one reason – new devices have lower noise figure. Every electronic device except for the function it is designed to do, introduces extra noise to the signal.

One cannot produce absolutely noiseless amplifier or frequency converter. The new LNB's are much better with respect to noise than the older devices. If you have read our previous test reports concerning 0.3dB LNB's, you already know that there is a significant difference between 0.8 dB and 0.3 dB devices. But can we notice any difference between 0.3 dB and 0.2 dB?

When Max Communication supplied us with their new Chess Edition II LNB's, we were very anxious. We got a complete set: single, twin, quatro and quad devices (models 1001, 1002, 1004 and 1004-S). Previously we tested their 0.3 dB LNB's (Platinum Edition models). They performed quite well, and the difference between them and 0.8 dB unit was very distinctive.

So this time, we took the Platinum Edition Model 801 (single, NF=0.3 dB) as the benchmark. We used the transponder 11.766 GHz, SR 27500, ¾, Horizontal from Sirius 5° E as a test signal. Figure 1 presents the signal strength produced by different LNB's at their outputs. The first column corresponds to the benchmark device.

Generally, the higher - the better. Although the channel power is not the most crucial parameter.

Time to show the noise related measurement results. Figure 2 shows, the so called MER (Modulation Error Rate). The higher it is, the bigger separation between the signal and noise.

As you can see, the best was twin LNB (model 1002). The single LNB was practically identical to the benchmark and 2 out-

Figure 1. Channel Power dBuV

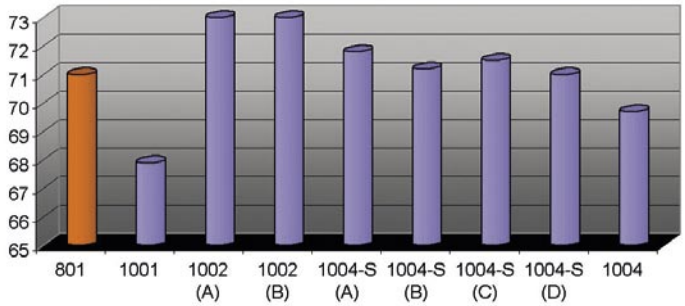
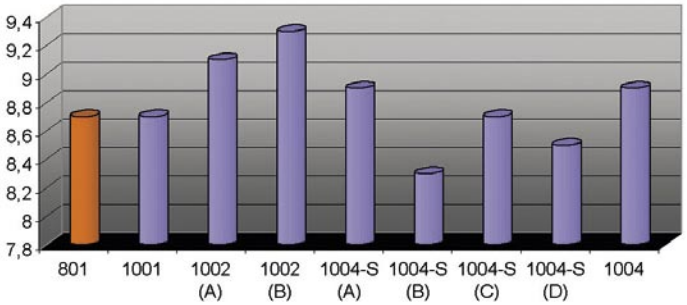


Figure 2. Modulation Error Rate dB



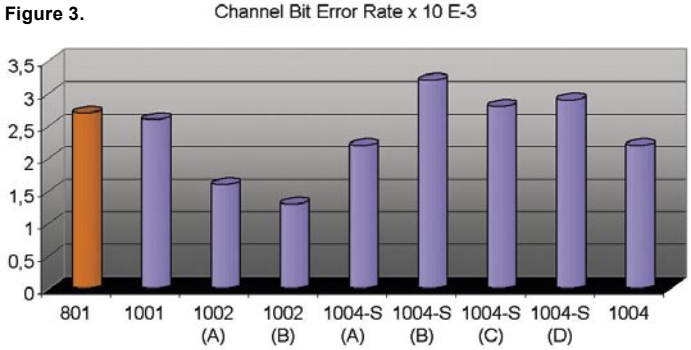
puts from the new quad device were even worse than the benchmark. Except for the MER, we also measured the CBER (Channel Bit Error Rate). It is a number which tells us how often an erroneous bit appears in a data stream due to noise. For example, if CBER is equal to 1 x 10 E-3, it means that on average, one false bit happens every 1,000 true bits. The lower the value the better. Figure 3 shows the measurement results of the CBER.

As expected, the LNB that had the best MER, had also the lowest CBER. The same applies to the worst one. As you can see, some of the new models were slightly better than the benchmark but some were somewhat poorer. However, we can say that statistically, the 0.2 dB LNB's were slightly better than the 0.3 dB benchmark.

The problem with the commercial LNB's is that their noise performance is specified as "typical" value. While this is very convenient for the marketing people, it is a nightmare for the engineers who are supposed to answer simple question: "Will I see a difference if I replace 0.3 dB with a 0.2 dB LNB?". The honest answer is: sometimes yes, sometimes not. Depending how lucky you are and what actual noise figure you will get, and of course what the actual noise figure of your existing LNB is. Certainly, you should keep in mind that the difference will not be striking.

But if you want to get the utmost out of your system, it is worth to give it a chance.

Figure 3.



TECHNIC DATA

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E-mail	info@max-communication.de
Telephone	+49 4101 6060-0
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Models	1001 (single)
	1002 (twin)
	1004 (quatro)
	1004-S (quad)
Description	Universal LNBF's for Offset Dishes
Noise Figure	0.2 dB (typical)
LOF	9.750 and 10.600 GHz

Expert conclusion

Peter Miller
TELE-satellite
Test Center
Poland

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The workmanship of Chess Edition II LNB's of Max Communication leaves nothing to be desired. The slide-down protector (to protect F connectors) is a quite practical feature. Our tests have shown that statistically, 0.2 dB LNB's are better than 0.3 dB models.

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Due to the nature of commercial LNB production, the real noise figures will vary a bit around the 0.2 dB figure for each individual LNB