

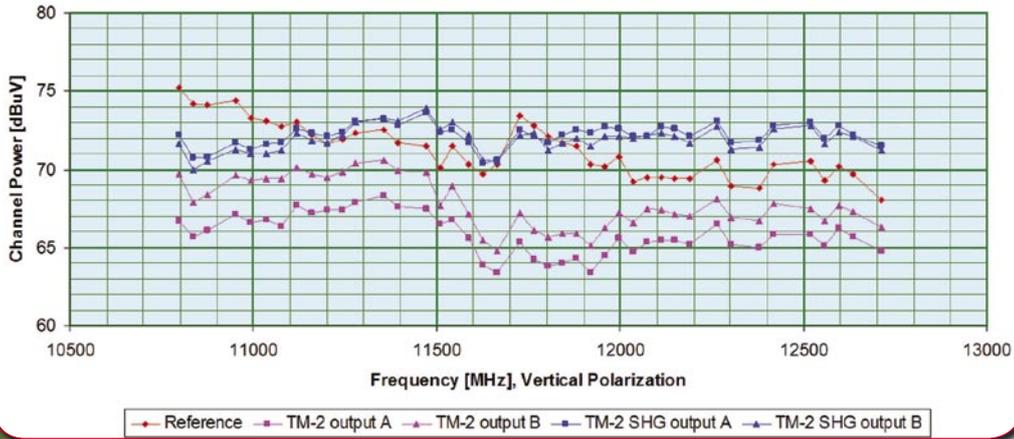
Technomate multiple output models Ku-Band LNB's for more complex installations

Technomate's single LNBs were presented in the previous issue of TELE-satellite. We were very pleased to conclude that their performance was really extraordinary. But Technomate have also multiple output LNB's in their offer. Are they also that good? We took their twin, quad, quattro and octo models for evaluation.

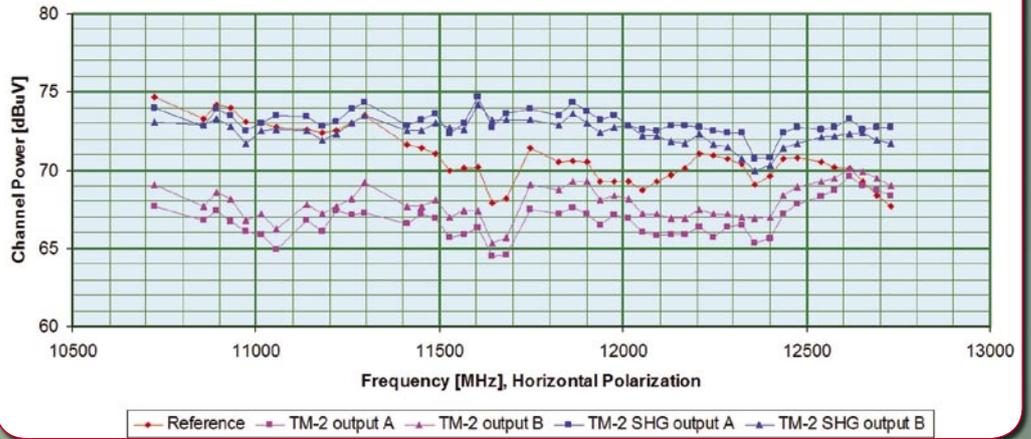


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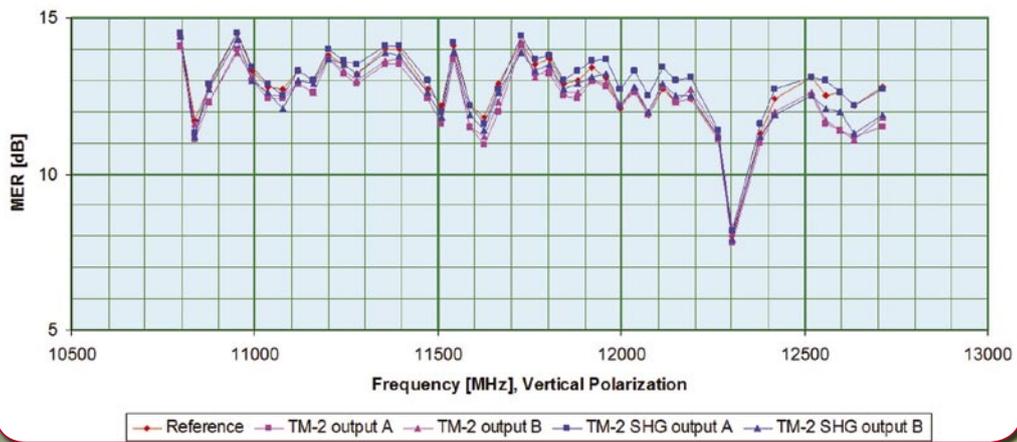
Twin LNB's



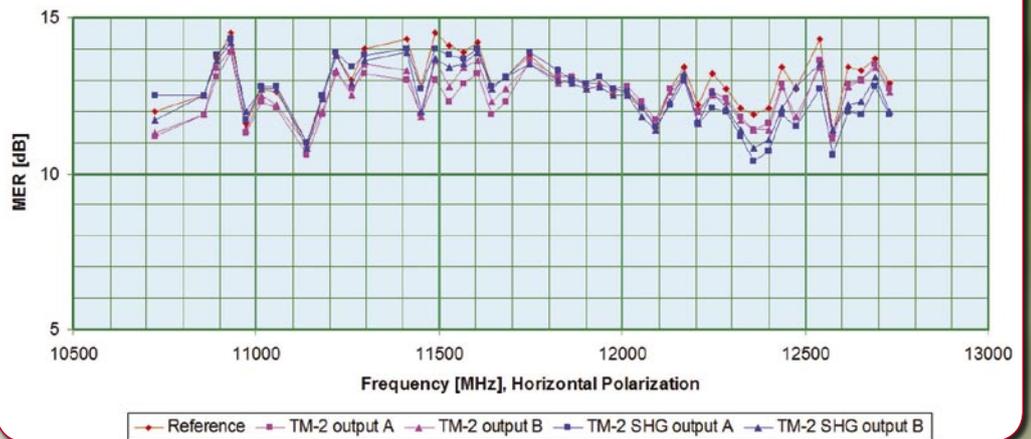
Twin LNB's

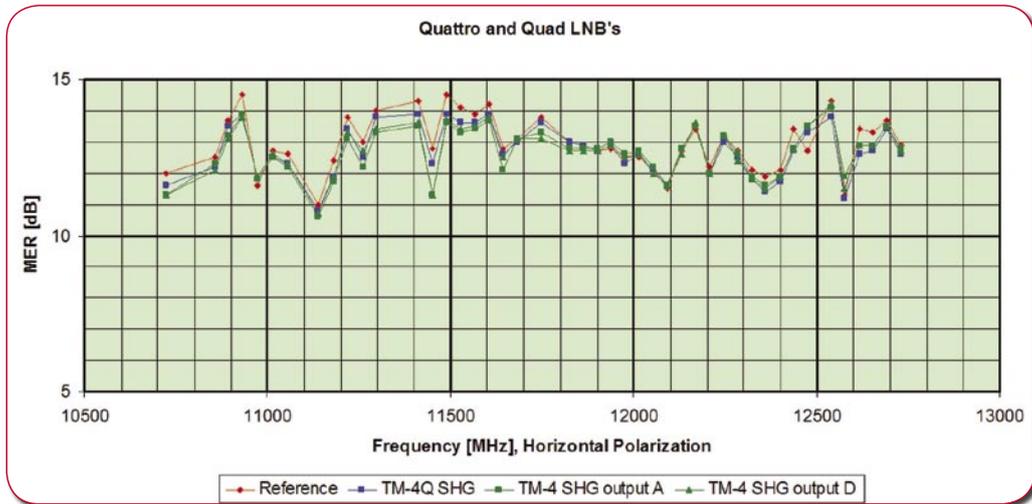
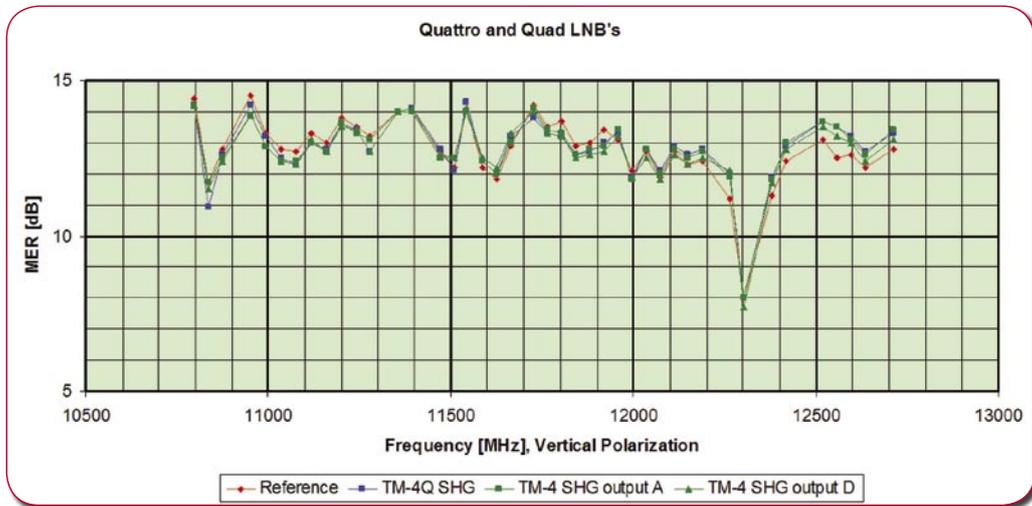
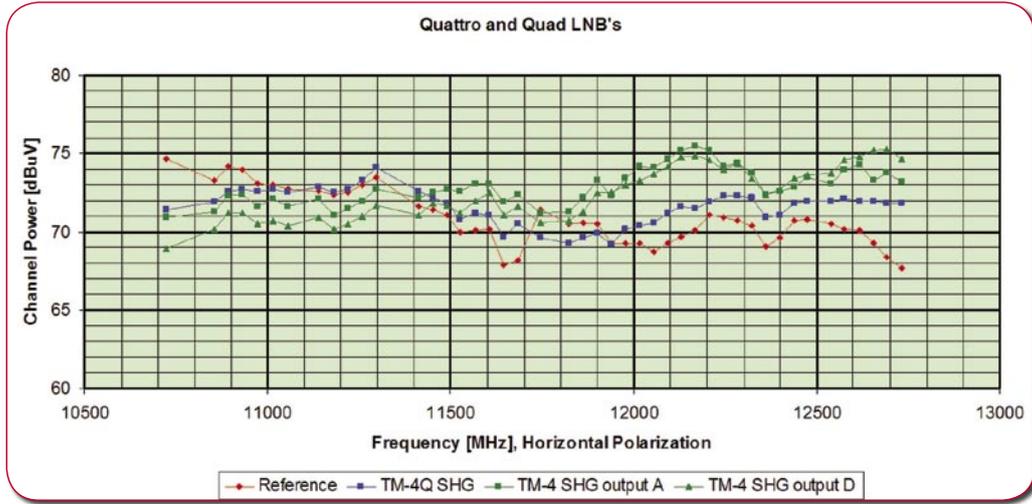
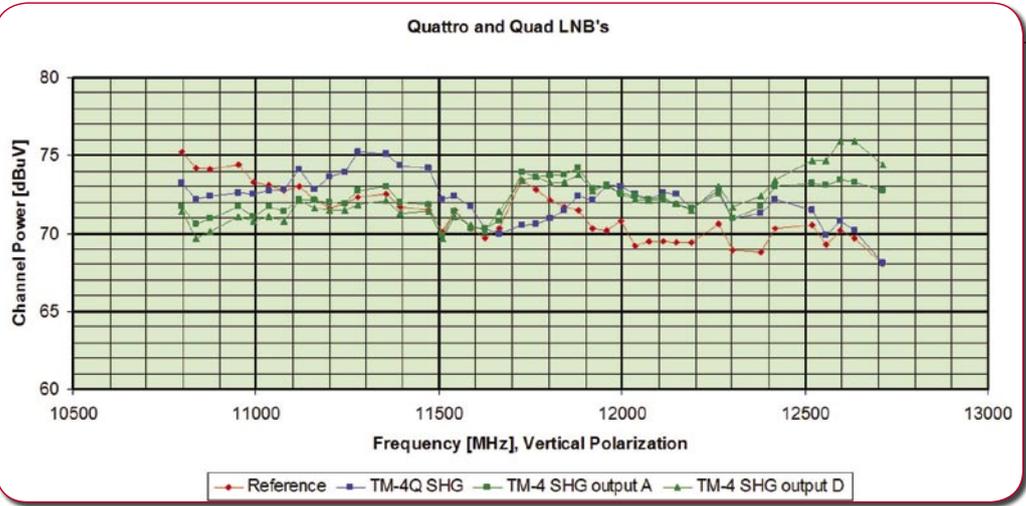


Twin LNB's



Twin LNB's

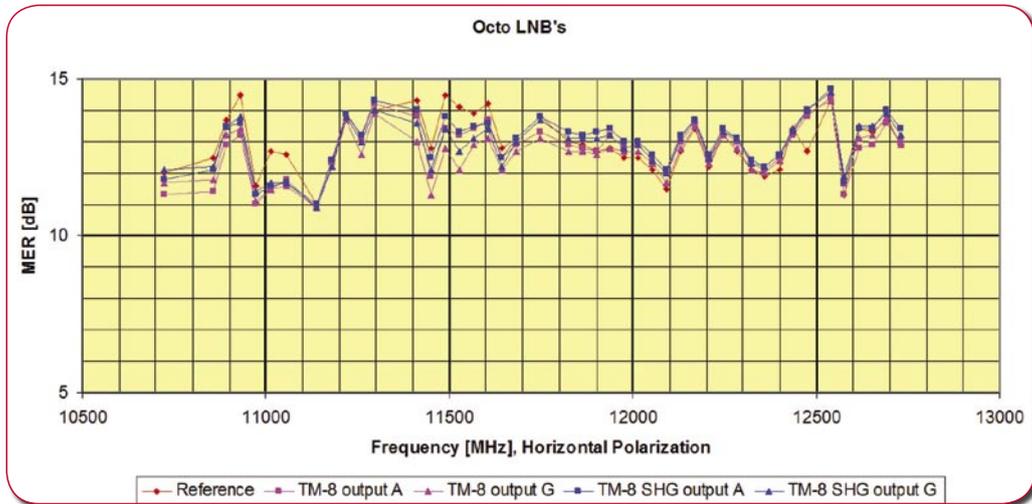
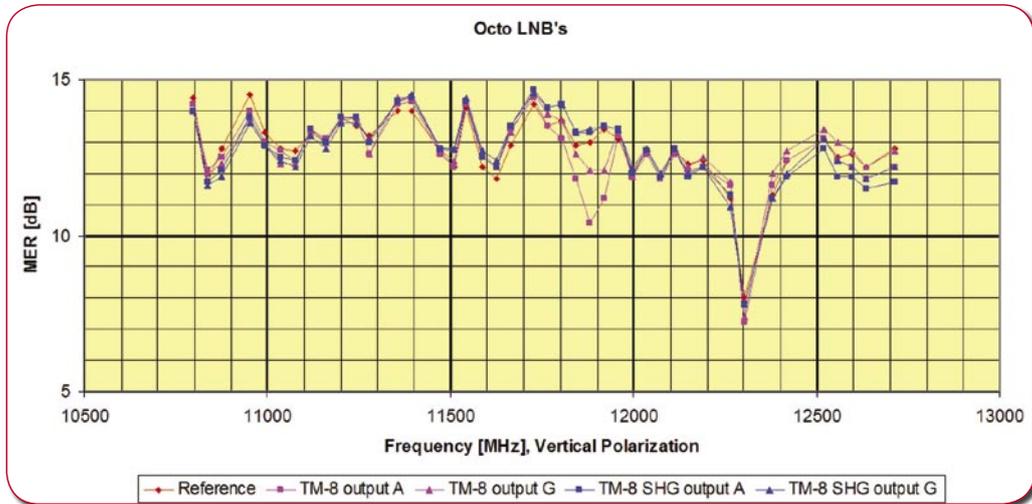
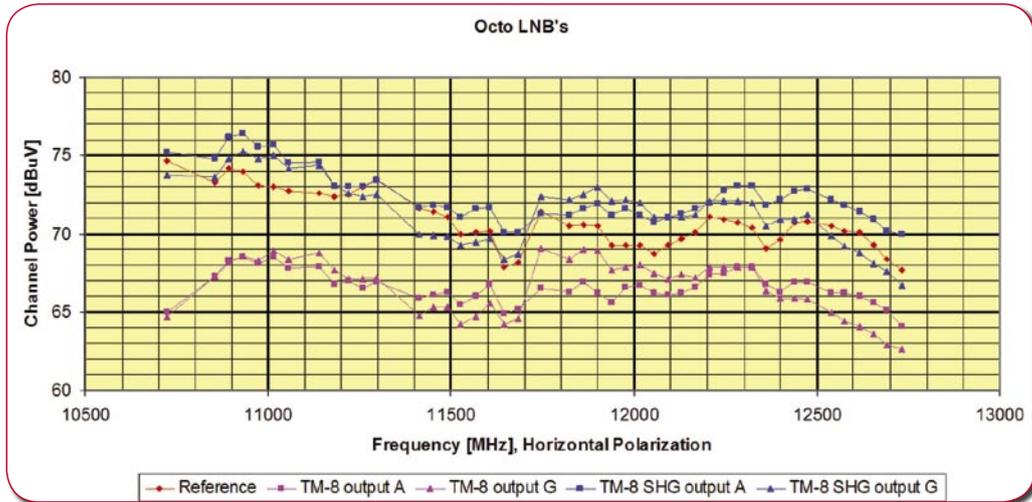
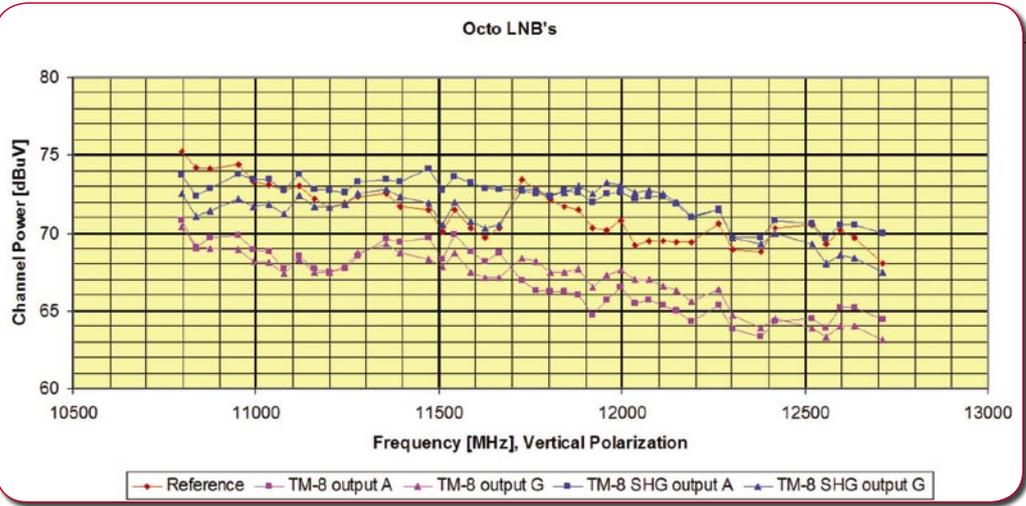




We knew that they can not be as good as their single output models (TM-1's). Nevertheless, we kept as a reference the same very good universal single LNB that we used for testing previously. Not too many contemporary product can be a match for it.

The twins were the first to go. TM-2 was the standard twin model (0.2dB) and TM-2 Super High Gain was the model with increased output level and lower noise figure (0.1dB). And indeed, as you can see in the graphs, the SHG model had the gain greater than our reference by about 2 dB while the standard model was ca. 3 dB below our reference. The SHG dB model was also superior in noise performance but not for all transponders. In the higher sub-band, horizontal polarization, the standard TM-2 was slightly better. Anyway, both models were very close to our reference what is a very good result for the twin LNB. Also the difference between the 2 outputs of every twin device was small.

After finishing the twins, we moved on to quad and quattro models. We took the same measurements as for the twins: channel power which was directly related to LNB gain and MER which was a measure of signal quality at the output of LNB. This time we had only the Super High Gain versions of TM4 (quad)



and TM4Q (quattro). We measured the first and the fourth output of the quad to check the difference between the outputs. Both LNB models beat our reference in terms of output power and were practically equal in noise performance (Modulation Error Ratio). Again: a very good result!

Finally, the time came for "octos". We got the standard TM-8 and TM-8 Super High Gain. As could be expected the Super High Gain model delivered stronger signal at its outputs than its brother. It was even slightly stronger than our reference. Also the SHG was better in signal quality, but again – the difference between both tested models and the reference was really small.

We can conclude that Technomate's LNBs are the best we have ever been able to check in our lab. The Super High Gain models do indeed provide ample of signal power and are the best choice for connecting multiple receivers.



Expert Opinion

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Very good multiple output LNB's comparable to single LNB in terms of signal quality (noise performance). Super High Gain models offer higher output than the standard version (about 5 dB more). You should choose them if long cables are in place. For smaller installation with reasonably short cables (10-20m) the standard units should be equally good. All models have covers to protect F connectors. The difference in performance among the outputs is small. The workmanship is very good indeed.



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Noise figure 0.1 dB seems to be somewhat overclaimed.

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Available online starting from 29 January 2010

TECHNICAL

DATA

Manufacturer	Technomate
E-mail	info@technomate.com
Website	www.technomate.com
Function	Universal multiple LNB's for Ku-Band
Models	Twins: TM-2 and TM-2 Super High Gain Quad: TM-4 Super High Gain Quattro: TM-4Q Super High Gain Octo: TM-8 and TM-8 Super High Gain
Input frequency	10.7~12.75 GHz
Output frequency	0.95~2.15 GHz
LOF's	9.75 and 10.6 GHz
LO temperature drift	±2 MHz (-40~+60° C)
LO Phase Noise	-60 dBc/Hz @ 1kHz offset -80 dBc/Hz @ 10 kHz offset -100 dBc/Hz @ 100 kHz offset
Noise figure	0.2 dB (standard models), 0.1 dB (Super High Gain models)
Conversion Gain	50-56 dB (standard models) 55-62 dB (Super High Gain models)
Gain flatness characteristics	5 dB over entire band
1 dB output compression	0 dBm min.
LO spurious	-60 dBm max.
Intermodulation (1.7 GHz)	-60 dBm max.
Image rejection	40 dB min.
Cross polarization isolation	20 dB min.
Port-to-port isolation	20 dB min.
Reflector type	Offset
F/D ratio	0.6
Operating temperature	-40~+60° C