LNB

LNB

- AMSAT-DL - QO-100 modified LNB

Since LNBs are designed for the reception of TV signals, they are not suitable for the reception of narrowband radio signals such as SSB, as their oscillators are too unstable. If they are not modified to this effect, the receiving frequency drifts away by a few kHz within a short time. An SSB signal also sounds very rough and incomprehensible, it wobbles.

Inexpensive LNB's with PLL can also be modified yourself. LNBs from OPTICUM are a partial exception. Due to the high quality of the crystal oscillator, wobbling cannot be detected, but the receiving frequency still runs away. After a certain time, however, the frequency stabilizes to such an extent that manual readjustment with the RIT is even possible and a QSO can be conveniently processed (as of 2019).

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Note from BATC: We recommend that you do not make any changes to connect your
LNB to an external oscillator (OCXO / TCXO) for DATV reception, as it is
assumed that these changes can worsen DATV reception because they cause phase
noise of the LNB.
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The LNB (type Astra) requires a DC power supply that is fed to the coaxial cable. This also selects the polarization. One 12 V supply for vertical polarization, one 18 V supply for horizontal polarization. Standard LNBs have two local oscillator frequencies, LO 9.75 GHz and 10.6 GHz. The higher value is chosen by adding a 22kHz signal to the DC power supply. For the QO-100, the lower LO is used and this 22kHz tone is not required. Some newer broadband LNBs for SkyQ are different. So be careful.

The 12V or 18V LNB supply and reception signals share the same coax. A bias T is required to separate the DC voltage from the high frequency, this can be very simple. Either buy one or make it with an RF choke and DC blocking capacitor. It is also possible to use a standard satellite receiver or MiniTiouner to provide the DC power and split the signals using a power splitter. For the NB transponder, 12 volts are used for vertical polarization and for the WB transponder (DATV) 18 volts are used for horizontal polarization. Alternatively, the LNB can be rotated 90 degrees for DATV operation only and operated at 12V.

- AMSAT-UK - LNB Bias T and reference injection – blank PCB
- FUNKAMATEUR Online-Shop - HF-Bias-T
- BATC - LNB Bias T
- SV1AFN.com - Bias-T DC Injector 100 MHZ - 3 GHZ

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