

AMSAT-DL QO-100 DownConverter V3d

Downconverter

Downconverter of the NB transponder

This function gave the board its name “AMSAT-DL DownConverter V3d”. The built-in mixer converts the signal to an amateur radio band so that it can be received with common transceivers or SSB receivers. The corresponding reference frequency at the LNB is automatically taken into account.

The pass-through gain from the LNB NB input to the receiver output is about +2dB.



A 10-position switch allows selection of the output frequency. The display refers to the old frequency of the CW beacon. This was originally at 10489.550 MHz and was moved 50 kHz down to 10489.500 Mhz when the narrowband transponder was extended (from 250 kHz to 500 kHz).

Switch position	Output frequency	Band	Comment
0	3.55 MHz	80m	
1	21.55 MHz	15m	
2	28.55 MHz	10m down	
3	29.55 MHz	10m top	
4	50.55 MHz	6m	
5	70.55 MHz	4m	
6	144.55 MHz	2m down	
7	145.55 MHz	2m top	
8	435,55 MHz	70cm center	output filter must be bridged!
9	439,55 MHz	70cm top	

For position 8 and 9 (70cm) the standard 2m filter on the board must be bridged with a wire as short as possible.

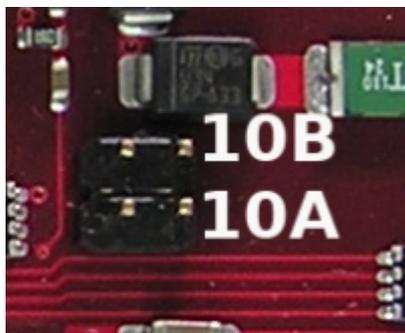
Output frequency of the WB transponder

The attenuation from the LNB WB input to the DATV receiver output is about -2dB, because this is only a passive loop, i.e. there is no further conversion or amplification as with the NB input.

The frequency is referred to the center of the WB transponder range, this is 10495 MHz, and depends

on the LNB frequency set by jumper:

LNB frequency	LNB LO	LNB output frequency
24 MHz (default)	9360 MHz	1135 MHz
25 MHz	9750 MHz	745 MHz
26 MHz	9389 MHz	1106 MHz



both open ... 24 MHz (default)

10A bridged ... 25 MHz (or also for unmodified PLL-LNB)\ 10B bridged ... 26 MHz (for LNB with 27 MHz quartz)\ both bridged ... for future extensions

Usually the 24 MHz setting is used (no jumper). This fits best to many current LNBs incl. the already modified LNB offered by AMSAT-DL. Due to the reference frequency of 24 Mhz the IF is shifted above 1 GHz and can therefore be received for example with the Octagon SF8008 satellite receiver.

25 MHz is used only in conjunction with the minitiouner or software DATV receivers, although 24 MHz is also preferable here.

26 MHz is intended for older LNBs with a 27 MHz crystal.

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