



## CATV Balun II (500302)

### Frequently Asked Questions (FAQ)

- 1. What is the bandwidth limitation of the CATV Balun II?** The CATV Balun II has a bandwidth limitation of 900 MHz, which corresponds to North American CATV channel 142.
- 2. Does the CATV Balun II support satellite dish RF?** No. Due to the bandwidth limitation of the balun and the signal attenuation of unshielded twisted pair, the CATV Balun II does not support satellite RF.
- 3. Which pins of the CATV Balun II carry the signal?** Pins 7&8 of the RJ45 carry the signal. The pin numbering is from left to right looking into the jack with the tab down.
- 4. Does the CATV Balun II support digital cable and HDTV channel programming?** Yes, providing the digital cable channels are modulated onto channel frequencies that are within the 900 MHz bandwidth of the CATV Balun II.
- 5. Does the CATV Balun II support broadband Internet?** Yes. Broadband Internet typically occupies channel frequencies up to 864 MHz and is within the bandwidth of the balun.
- 6. If Category 7 cable is used, will better distance performance be achieved?** Yes. Marginally better distance performance will be achieved due to the higher bandwidth of Cat7 cable. For additional information, please refer to MuxLab's CATV Balun II Application Guide.
- 7. How do I know whether distance has been exceeded?** Some of the channels display a snowy image, indicating insufficient signal power. In this case, it may be necessary to insert an RF amplifier ahead of the CATV Balun II in order to boost the signal at the receiver.
- 8. Can the CATV Balun II be used to allow the coax cable between a satellite dish and satellite receiver be replaced by Cat5 UTP?** No. The bandwidth of the balun and the Cat5 are insufficient to support RF video transmission in the satellite frequency range. Satellite dish signals are typically in the gigahertz range.
- 9. Can the CATV Balun II be used between the RF output of a satellite receiver box and the TV tuner?** Yes. The RF output of the satellite receiver is within the 860 MHz range and therefore is supported by the balun and Cat5E/6 cable.
- 10. Will doubling up the twisted pairs improve performance?** No. In regard to the CATV Balun and based on testing by MuxLab's R&D dept, there is performance degradation if the twisted pairs are doubled up. In the lab, it was found that there was 55% more signal loss versus no doubling. The lower performance is mainly due to impedance mismatch since the doubled twisted pairs present a 50-ohm impedance to the balun instead of 100 ohms. The test was performed using a 200 ft length of Category 5e UTP cable and a second Cat5e cable with pins 7&8 "doubled up". The result was approximately 6.8 dB (55%) more signal loss than if there was no doubling-up. Consequently it is not recommended to double-up twisted pairs when using the CATV Balun in the RF environment.
- 11. Does the CATV Balun II (500302) work in conjunction with the CATV Balun (500006)?** Yes. However, if the 500006 is used with the 500302, the performance specifications are in accordance with the 500006.
- 12. Does the CATV Balun II support off-air local channel active antennas?** Yes. Active local antennas typically support channel frequencies up to 864 MHz which is within the bandwidth performance of the CATV Balun II.
- 13. When using the CATV Balun II, can RF video co-exist with other low-voltage services such as voice and data under the same Category 5 cable bundle?** Yes, the crosstalk immunity of the CATV Balun II and twisted pair cable is excellent.

14. **Does the CATV Balun II support over-the-air (OTA) digital channels?** Yes. The 500302 and Cat5e/6 support OTA digital channels. However, due to the low signal power from a passive OTA antenna, it may be necessary to add an RF amplifier in front of the source balun or use an active OTA antenna.
15. **Does the CATV Balun II support Direct TV?** The CATV Balun II (500302) allows coax cable to be replaced by Cat5e cable provided that the Direct TV coax cable is from a cable TV provider and not from a satellite dish.
16. **When using the CATV Balun II, there is ghosting. Is there any remedy?** The ghosting is likely due to a local off-air station that is broadcasting at high power and is interfering with the CATV channel. One solution is to amplify the CATV feed so that it is stronger than the off-air station signal.
17. **Does the CATV Balun II support QAM?** Yes. Providing the frequency range is between 5 and 860 MHz.
18. **Does the CATV Balun II support 50 ohm (RG8) radio frequency microphone?** No. The impedance is not the same and therefore there would be too much signal loss.
19. **Can the 500302 be used to send an IP signal over coax instead of using Cat5e/6?** No. The 500302 will not work for IP because: a) IP requires 2 twisted pairs and 500302 supports only 1 pair and b) the components inside the 500302 are designed for analog RF and not data (IP).
20. **What is the maximum allowable RF input signal power in order to pass FCC Class A?** The maximum RF input power levels in order to pass FCC Class A are as follows:
  - CATV Balun II (500302) in pairs: 25dBmV
  - CATV 8 Port Hub (500301): 16 dBmV
  - CATV 16 Port Hub (500304): 13 dBmV

For more information, please contact MuxLab Customer Technical Support at 877-689-5228 (North America) or (+1) 514-905-0588 or at [videoease@muxlab.com](mailto:videoease@muxlab.com) or visit <http://www.muxlab.com/>.