U12-NTH

OEM board-only version of the LabJack U12.

There are 2 OEM board-only versions of the U12 available for customers interested in designing the U12 into another product.

LabJack U12-PH (OEM Version): This -PH board has pin-headers installed (component side) instead of screw-terminals, and the LED is mounted on the component side.

LabJack U12-NTH (OEM Version): This -NTH board does not have any through-hole components installed (screw-terminals, pin-headers, LED, USB connector, and DB25 connector). The OEM versions do not include anything besides the board itself. Dimensional drawings and software are available on the U12 downloads page.

- 8 Single-Ended, 4 Differential 12-Bit Analog Inputs
- ±10 Volt Analog Input Range
- PGA with Gains of 1, 2, 4, 5, 8, 10, 16, or 20 V/V
- Up to 8 kSamples/Sec (Burst) or 1.2 kSamples/Second (Stream)

- Supports Software or Hardware Timed Acquisition
- 2 Analog Outputs
- 20 Digital I/O (Up to 50 Hz per I/O)
- 32-Bit Counter
- Watchdog Timer Function
- USB 2.0/1.1 Low Speed Interface (Data Rate Information)
- Connect Up to 80 LabJacks to One USB Host
- Complete Software Control, No Jumpers or Switches
- No Power Supply Needed
- Includes Sample Applications and Drivers
- Includes LabVIEW VIs
- Works with Windows 98SE, ME, 2000, XP, or Vista
- Includes Cable and Screwdriver
- Money Back Guarantee

- Approximately 4″ x 6″ x 1″
- Rated for Industrial Temperature Range
- OEM Board-Only Versions Available
- Complete specifications in Appendix A of User's Guide

Analog Inputs:

The LabJack U12 has 8 screw terminals for analog input signals (AI0-AI7). These can be configured individually as 8 single-ended channels, 4 differential channels, or combinations in between. Each input has a ±10 volt input range, 12-bit resolution, and an input bias current of ±90 microamps. Differential channels can make use of the low noise precision PGA to provide gains up to 20.

The LabJack U12 is capable of both software and hardware timed acquisition. When using software timed acquisition (also called command/response), the PC sends a command to the LabJack, and it responds with data. This mode can acquire 4 channels at up to 50 samples/second per channel, or 8 channels at up to 25 samples/second per channel. When using hardware timed acquisition, the PC sends a command to the LabJack telling it to start a burst or stream mode acquisition. Both burst and stream mode take advantage of the LabJack's precision timing crystal and high-speed sample buffer. In burst mode, up to 4,096 samples will be acquired from 1-4 channels at up to 8,192 samples/second and stored in the buffer. After the acquisition is complete, the data is transferred to the PC. A hardware trigger can be configured for burst mode that starts the acquisition when a digital input changes state. In stream mode, data is acquired from 1-4 channels at up to 1,200 samples/second and stored in the LabJack buffer. Simultaneously, the data is transferred from the LabJack buffer to the PC buffer, allowing the data to be streamed to disk continuously. Click here for more info on data rates.

Analog Outputs:

The LabJack U12 has 2 screw terminals for analog output signals (AO0 & AO1). Each analog output can be set to a voltage between 0 and the supply voltage (+5 volts nominal) with 10-bits of resolution. The analog outputs are controlled in command/response mode at up to 50 Hz per channel.

Digital I/O:

The LabJack U12 has 20 digital I/O channels which can be individually configured as input or output.

Connections to 4 of the digital I/O are made with the built-in screw terminals (IO0-IO3). These 4 channels have built-in overvoltage/short-circuit protection. As inputs or outputs, they are controlled/read in command/response mode at up to 50 Hz per bit. As inputs only, they can be read with the high-speed burst and stream modes.

The remaining 16 digital I/O are accessed through the DB-25 connector and controlled/read in command/response mode at up to 50 Hz per bit. These channels can sink or source up to 25 mA each (total sink or source current of 200 mA max for all 16), allowing direct interface to many relays.

Counter:

There is one 32-bit counter available on the LabJack U12 (screw terminal CNT), capable of counting frequencies up to 1 MHz. The counter is read in command/response mode at up to 50 Hz or up to 300 Hz in hardware timed stream mode.

Watchdog Timer Function for Unattended Operation:

The LabJack U12 also has a watchdog timer function available which can change the states of digital I/O if the LabJack does not successfully communicate with the PC within a specified timeout period. This function could be used to reboot the PC allowing for reliable unattended operation.

Portable Data Acquisition and Control:

When used with a notebook PC, the LabJack U12 becomes a convenient portable data acquisition and control system. The watchdog timer function allows the development of a system which has the reliability of a datalogger with the power of a PC. The low-power design of the LabJack U12 allows it to draw all it’s power from the USB port. Also, no UPS is needed when using a LabJack U12 with a notebook PC. In the event of power loss, both the LabJack and the notebook will continue to operate.

High Channel Count Applications:

By using USB hubs, up to 80 LabJacks can be connected to a single USB host, providing an inexpensive solution for low-speed high channel count applications.

Free Example Application Software:

Includes various example applications, including LJlogger and LJscope. LJlogger provides datalogger type functionality. It reads all inputs, controls all outputs, writes real time data to disk, and sends email when events are triggered. LJscope is a simple virtual oscilloscope program. This software is free and can be downloaded from the U12 Support page for evaluation.

Free Driver Software:

Drivers are provided as a DLL which can be called from most programming languages. Also included are an ActiveX wrapper and LabVIEW VIs which call all the functions in the DLL. Most driver functions have a demo input, so applications can be developed and tested without hardware.

Includes Everything for Out-of-the-Box Operation:

Everything needed (software, screwdriver, and USB cable) is included with the LabJack U12. Installation is very simple and takes just a few minutes:

1. Connect to the USB port on a PC running Windows 98SE/ME/2000/XP/Vista/7/8 using the included cable. The low-level drivers, which come with Windows, will be installed automatically.

1. Run the LabJack installation program to install the high-level drivers and example applications.