Hardware

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Monday, 07 August 2006

USB interface

This USB interface board receives the orders coming from the PC on the USB bus and send them to the target module which can be a PWM driver, or a Device Controller or a Train Detector.

It also polls the PWM and Train Detector modules to scan for the train presence.

The USB Interface module has a single USB bus connected to the PC and it can supervise one or two serial busses for communicating with the control modules. The second bus is optional and it is only recommenced for controlling layouts with more than 25 modules.

Here is a picture of the USB interface board wired in its minimal configuration.

{mospagebreak title=Control Modules I&heading=USB interface}

CONTROL MODULES

Dedicated electronic modules have been developed for electrically controlling a layout using the "block" method. The two main module types are:

- The "Throttle controller" or "PWM Controller" Module

The main module task of the PWM control modules is to deliver the block power supplies. Each module controls 4 blocks. "PWM": stands for "Pulse Width Modulation". The PWM modules also inform CATrain about the block occupation. They detect the presence of a train by its electrical power consumption

- The Device controller Module

This module controls the layout devices, like signals and switches. A single "Device Controller" module delivers 8 independent pulses to drive 4 twin coil devices, or 8 simple devices (e.g. LED signal, relays, ...)

{mospagebreaktitle=Control Modules II}

- The Train Detector Module and its complementary Current Sensing Module

This is an optional module which detects the passage of the trains.

It can be coupled with a "current sensing" device which detects the locomotive electrical power consumption.