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Remote Control Application note

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In addition to manual control elements, many FEMTO amplifiers and photoreceivers feature a digital interface for remote control of all main functions. Depending on the model, gain and filter settings can be remotely controlled. With the LUCI-10 option, the status information like Overload or Unlocked can be read from the device. This is especially useful in automated measurement systems or for remote sensing at places difficult to access.

Switches on the front of the amplifier allow for directly making adjustment to various settings. When you turn the switches into "Remote" or "Zero" position you can remote control the unit.

There are 2 options for remote control operation:

1. LUCI-10 Amplifier Interface USB Control

The optional LUCI-10 USB control interface establishes the link between the FEMTO unit and a standard Windows PC with USB port. The interface is bus-powered through the USB port and the electronics is fully integrated inside the D-Sub hood. This is a very compact and easy to use interface solution. See details in the "Amplifier Interface Software" section of the FEMTO Selector.

2. Remote Control using TTL Signals

Details are described for this method in each datasheet (please check the paragraphs "Remote Control Operation, General remarks and x-Switch"). Each remote-controllable setting or the switch position is presented in a chart that shows the characteristic H- and L-bits at the specific pins of the remote control jack. You have to apply logical H- or L-levels to each pin according to the chart.

To avoid ground loop effects or interaction between analog signals and digital control signals all digital control inputs are opto-isolated and require voltage levels (preferably from an external voltage source) specified under "Remote Digital Control", e.g. TTL level. Control signals are referenced to DGND (digital ground, not connected to analog ground!).

For this method of remote control you do not need special software. You can either make your own remote control unit with the according number of switches or use a PC's I/O switch-board-card. Simply connect the external remote control unit via a multi-wire cable to the amps control jack. For this option the user supplies the external remote control units and cables.