



Expert mouseCLOCK

DCF77 & HGB Standard Time Receivers



DESCRIPTION

Time signal

DCF77: The *Physikalisch-Technische Bundesanstalt* (PTB) in Braunschweig runs one of the most accurate caesium atomic clocks of the world. It deviates less than one second in 300.000 years. The longwave transmitter with the callsign DCF77 is located at Mainflingen near Frankfurt and sends time and date signals on a carrier frequency of 77,5 kHz.

The following modules receive the DCF77 signal:

Expert mouseCLOCK

Expert mouseCLOCK BNC (with BNC plug for an active antenna)

Expert mouseCLOCK extreme (wasserproof up to 5m)

HGB: The *Bundesamt für Metrologie und Akkreditierung Schweiz* (METAS) is in charge of the HGB longwave transmitter in Prangins correspondingly. This transmitter diffuses at 75 kHz the official time signals synchronised to Universal Time Coordinated.

The following module receives the HGB signal:

Expert mouseCLOCK HGB

Both signals can be received within a distance of about 2000 km around the transmitter's location.

More information on both time signals can be found at the websites:

www.ptb.de and www.metas.ch

Radio clocks:

Both DCF77 and HGB signal are received by the corresponding module and are transmitted to the PC via a serial or USB port.

Please notice that all modules work only in conjunction with the PC clock. Besides all modules must keep dry (except **Expert mouseCLOCK extreme**).

The following comments are valid for all modules!



INSTALLATION OF THE HARDWARE

Usage at a serial port

Connect **Expert mouseCLOCK** to a 9 pin serial port. With the help of a usual adaptor the module can also be connected to a 25 pin serial port.

Usage at an USB Port

1. First make sure that your PC is supporting USB devices and that your USB Hub is installed properly. Perhaps you have to activate USB Support at BIOS first (more information on this can be found in the PC manual).
2. Connect **Expert mouseCLOCK** with the **USB Adaptor**.
3. Connect the **USB Adaptor** to your PC and insert the driver disk.
4. After Windows has detected the USB device, a new driver is requested. It can be found in the main directory of the driver disk (Usbmouse.inf).
5. After having installed **Expert mouseCLOCK USB** successfully, it will be displayed in the device manager.

INSTALLATION OF THE SOFTWARE

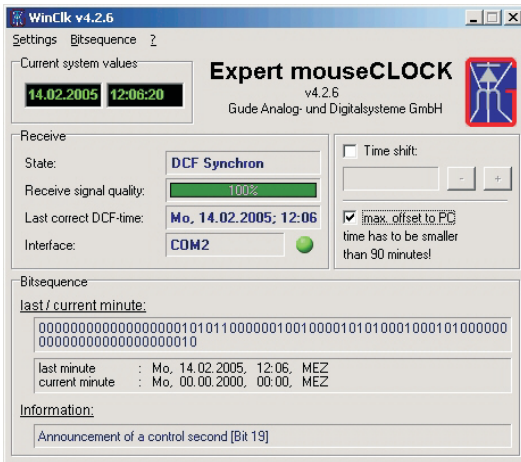
Usage under Windows 9x/ME/NT/2000/XP

1. In case of using **Expert mouseCLOCK** at a serial port, please make sure that the FIFO buffer of the serial port is deactivated!
2. Insert the driver disk. The setup program should launch automatically. If not, start SETUP.EXE from the main directory of the CD manually. Follow the instructions which will guide you through the installation process.



The Windowssoftware

The enclosed windows software converts the received MET/MEST signal into UTC and adjusts the PC's system time regularly. The local (displayed) time results from the adjusted system time and the operating systems's settings (time zone, daylight saving changings). Detailed information can be found in the software help menu under "Timesynchronisation at Windows".



Software Options

◆ Menu *Bitsequence*

The received bits (0,1) of the last two minutes are displayed here. Both rows should "fill" with bits completely. The bit's meaning ist displayed beneath the rows.

◆ Option *Time shift*

A constant offset to the received time signal can be set here. Normally, this option should be deactivated. Before using this option please read the comments on it in the software's help menu.

◆ Option *max. offset...*

If this option is enabled the time will be adjusted only if the difference between received time and current time is less than 90 minutes. Using this option is only advisable in case of bad receive. Before using this option please read the comments on it in the software's help menu.



Usage under Linux/Unix

(only for DCF77 models)

Expert mouseCLOCK can be used under Linux with the help of the XNTP package both as serial and USB version. With NTP it is possible to built up your own NTP server which retrieves the data from **Expert mouseCLOCK** and provides the time and date information on the network. A detailed description of the usage under Linux can be found at our website www.gude.info.

ALIGNMENT OF THE MODULE

After having installed **Expert mouseCLOCK** the LED at the module should blink green and flash red once per second.

If the LED doesn't shine, please check the connection of the module. If the LED shines only red, the module is



The signal undulates from the transmitter's location. Therefore the receive is best when aligning the module as shown in the picture.

likely to be placed too near by a monitor. Irregular blinking indicates a bad receive or a disturbance of the signal. Causes could be monitors (screen frequency of 77 and 75KHz respectively), electrical devices, or contact with other modules which are magnetical or contain iron.

In case of disturbances change the screen frequency, replace disturbing devices or change the position of the module.

After having found a good position fix the module with the enclosed sellotape. After two minutes the PC clock will be synchronised.



SUPPORT

- ◆ The windows software contains a detailed help menu. There you can find more information on **Expert mouseCLOCK** and the various software options as well as a detailed FAQ list.
- ◆ Both the latest software and driver are free available at our website www.gude.info.
- ◆ If you have further questions, please contact our team .



Eintrachtstraße 113
50668 Köln
Germany
Phone: +49-221-912 90 97
Fax: +49-221-912 90 98

www.gude.info
info@gude.info

