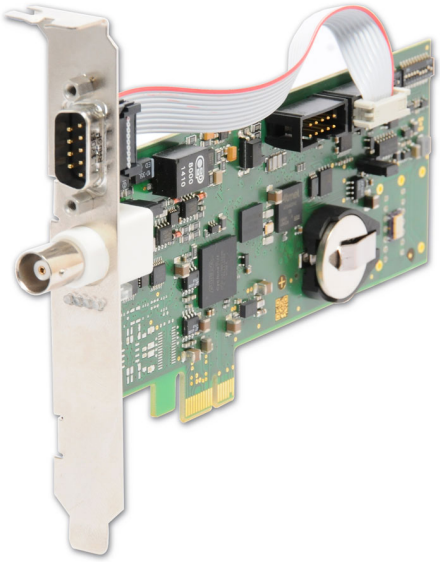

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TCR180PEX-EL: IRIG Time Code Reader for Computers (PCI Express)

The TCR180PEX-EL receives [1]IRIG-A/B/G, IEEE 1344, IEEE C37.118 or AFNOR NF S87-500 time codes and can be used for synchronizing the system time of its host PC.

Key Features

- 2 time-trigger-inputs
- PCI Express Interface
- Plug and play
- Fix pulse output PPS (TTL or RS232) and PPM (TTL) on D-Sub connector.
- Memory Mapped I/O time reads for high access rates
- 2 RS-232 interfaces
- Status LEDs
- Reception of time code formats IRIG-A/B/G, IEEE 1344, IEEE C37.118 or AFNOR NF S87-500
- Configurable time zone
- Driver software for all popular operating systems
- Optional optical input for time codes

Description

The board TCR180PEX-EL has been designed to receive IRIG-A/B/G, IEEE 1344, IEEE C37.118 or AFNOR NF S87-500 time codes.

It is used in applications like data acquisition, standalone computer time synchronization (for systems without a network connection or higher accuracy requirements).

Receiver: the module provides two input channels for decoding of modulated and unmodulated time codes in IRIG-A/B/G, IEEE 1344, IEEE C37.118 or AFNOR format. The receiver's automatic gain control (AGC) allows the reception of modulated timecode signals within an amplitude range from 600 mVpp to 8 Vpp. In addition, the TCR180PEX-EL provides an optocoupler input for decoding unmodulated codes with TTL- or RS-422 level for example. **The board can be delivered with an optical input for unmodulated codes optionally.**

The decoded date and time can be read via the PCI Express interface and is also transmitted via the board's RS-232 port. A buffered real time clock keeps time and date after power down.

The **Windows** driver package includes a time synchronization service which runs in the background and adjusts the Windows system time continuously and invisibly. This package also includes a monitor program to enable the user to check the status of the device and time adjustment service. If the monitor program is run with administrator rights, it can also be used to modify configurable parameters.

The **Linux** and **FreeBSD** driver packages include a kernel driver which allows the product to be used as a reference time source for the NTP daemon included in most Unix-like operating systems. This also allows the computer to be used as an NTP time server to provide accurate time to NTP clients on the network. Some command line tools can be used to modify configurable parameters and monitor the status of the clock in use.
Please contact Meinberg's Support Team for more information on using the card with other operating systems: techsupport@meinberg.de.

The device's serial port is not required for operation but can be used to update the card's firmware, or to provide another computer with the current time via a serial time string.

If you are going to use the TCR180PEX-EL in your own applications, please download our software development kit which contains libraries and sample code and shows how to access the card from within your software.

All drivers and API sample source code can be downloaded free of charges from our website and we are happy to assist you if you face any difficulties in using the Meinberg driver API in your software development process.

Characteristics

Status Indicators	**Status info by 4 LED light indicators (2mm light pipes)** * Init - blue: while the receiver passes through the initialization phase * Data - green: correct time code detected * Tele - green: telegramm consistent * Fail - red: the internal timing is in holdover mode
Input signal	Modulated IRIG A/B/G, IEEE1344, IEEE C37.118 or AFNOR NF S87-500 signal, input insulated by transformer, input impedance 50 ohm, 600 ohm or 5 kohm selectable by jumper. Unmodulated (DC level shift) IRIG A/B/G, IEEE1344, IEEE C37.118 or AFNOR NF S87-500 signal, input insulated by photocoupler.
Accuracy free run	±1·E-6 if the decoder was synchronous for at least 1 h
IRIG Time Code Input	IRIG - A002/A132, A003/A133, A006/A136, A007/A137, B002/B122, B003/B123, B006/B126, B007/B127, G002/G142, G006/G146, IEEE 1344, AFNOR NFS 87-500 and IEEE C37.118 (other codes on request)
Frequency Outputs	10MHz TTL
Pulse Outputs	Fix pulse output PPS (TTL or RS232) and PPM (TTL) on D-Sub connector.
Precision of timebase	±750 nsec compared to IRIG reference marker Required accuracy of time code source: ±100ppm
Interface	Two independant serial RS232 interfaces
Serial Time String Output	Baud rate: 300 Bd...115200 Bd Data format: 7E2, 8N1, 8N2, 8E1, 7N2, 7E1, 801 Time telegram: [2]Meinberg Standard Time String , SAT, Uni Erlangen (NTP), SPA, RACAL, COMPUTIME, ION or [3]Capture String
Statusbyte	Information about holdover mode, synchronisation since last reset and the validity of the RTC data.
Time-Trigger inputs	Triggered by falling TTL slope Time of trigger event readable via computer slot or optional second RS232-interface
Electrical Connectors	Female BNC-connector for input signal male 9-pole D-Sub connector

Computer interface	Single lane (x1) PCI Express (PCIe) Interface PCI Express r1.0a compatible
Backup Battery Type	When main power supply fails, hardware clock runs free on quartz basis, life time of lithium battery min. 10 years
Board type	Low Profile card (68,90 x 150 mm)
Supported Temperature	Operational: 0 - 50 °C (32 - 122 °F) Storage: -20 - 70 °C (-4 - 158 °F)
Supported Humidity	Max. 85 % (non-condensing) at 40 °C
Warranty	Three-year warranty
RoHS Status of Product	This product is fully RoHS-compliant.
WEEE Status of Product	This product is handled as a B2B (Business to Business) category product. To ensure that the product is disposed of in a WEEE-compliant fashion, it can be returned to the manufacturer. Any transportation expenses for returning this product (at end-of-life) must be covered by the end user, while Meinberg will bear the costs for the waste disposal itself.

Manual

There is no online manual available for this product.: [4]Contact us

Links:

[1] https://www.meinbergglobal.com/english/info/irig.htm
[2] https://www.meinbergglobal.com/english/specs/timestr.htm
[3] https://www.meinbergglobal.com/english/specs/capstr.htm
[4] mailto:info@meinberg.de