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TMC2203
IRIG B / PPS Synchronization Card
PCI EXPRESS 1.1 1x

The TMC2203 card is a synchronization card in PCI EXPRESS format allowing and providing a time base of good stability from an IRIG B type synchronization source.

Base time

With a local oscillator, the board maintains an internal time which is synchronized with the reference signal.

This time is made available to the computer hosting the card through registers accessible via the PCI bus.

The internal oscillator is also frequency-controlled on the reference signal so as to ensure a minimum drift of the time delivered when the reference is not available.

The reference signal is configurable (source IRIG B or source 1 PPS).

IRIG B Synchronization

The IRIG B signal is a 1 KHz carrier signal modulated in amplitude (code B12x) or an unmodulated signal.

The card handles IRIG B protocols containing or not the "year" information. For standard IRIG B, information is not present in the code and is managed by the card from an original year provided by the user.

Leap years are also taken into account.

The board also supports the IRIG B TD, H0 and TU/TD composite protocols by configuration.

IRIG B Synchronization

A 1 PPS sync input is available on a sub'D connector. A BNC adapter is available on request.

Oscillator

The internal oscillator is a TCXO synchronized to the reference source which ensures optimization of the stability in stand-alone mode.

In autonomous operation, the intrinsic stability of the oscillator ensures a drift <100µs (typical: 30µs) per hour.

Periodic interrupt

The board can generate a periodic interrupt whose period is programmable in steps of 1 ms with a phasing of 100µs.

Configuration

In order to facilitate the updating of the software of the card by the user, the latter is loaded dynamically at the start of the driver of the card.

Environments

The card is supported for 32-bit and 64-bit Linux environments.

The driver is delivered in source code.

A compatible Windows driver can be supplied on request.

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Specifications

Time Signal Input

1 KHz sinusoidal signal modulated in amplitude1 / 3, 1/1 Level 0.5 to 6 V peak-peaks, Isolated by transformer Impedance 600 Ohms

Signal DCLS level TTL or RS422 (coming)

Time Codes

Compatible with IRIG B12x (x = 0 to 3) according to standard IRIG STANDARD 200-98, AFNOR and IEEE1344 TD, H0 and TU / TD composite time code

Access to information

The card incorporates registers that allow access to time information on the fly and to program modes of operation

Synchronization output

1 PPS level TTL or RS422

1 PPS Input

1 input level TTL / RS422

1 PPS Output

1 output level TTL / RS422

Periodic interruption

Programmable with a Period of ±1 ms and a Phasing of ±100 µs

Leap Years

Automatic management based on the "Initial year" information programmed by the application software

Dimensions

PCI Express card   65 mm x 120 mm

BUS

PCI express 1.1 1x

Weight

0.3 Kg

Operating temperature

From 0 ° C to + 70 ° C
Hygrometry up to 95% non-condensing

The TMC2203 card supports the conditions of recovery of air conditioning after an electrical shutdown for example

The air blown into the false floors which can be at a temperature of 10 ° C will not interfere with the operation of the TMC2203 with a maximum humidity of 95% non-condensing

Power Consumption

 5 W

Safety of operation

MTBF = 110 000 h