



Meinberg Radio Clocks

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IMS-PIO: Versatile I/O module for output and measurement of PPS and 10 MHz signals

This product is only compatible with Meinberg's line of modular **IMS LANTIME** systems.
Visit the [1][IMS Information Page](#) to learn more.

The four I/O ports of the IMS module PIO180 (PIO=Programmable Input/Output) can be used as inputs as well as outputs. Primarily, the module was developed to perform measurements of e.g. PPS signals of external systems against the internal reference time.

Functionality

The offset from the external reference against the high-precision time of the internal oscillator is measured with an accuracy of 5ns (measurement resolution 1ns). With the SyncMon in the LANTIME web interface these measurements can be logged and analyzed.

If the ports of the PIO180 are to be used as outputs, the signal direction can be set to "Output" in the web GUI of the LANTIME.

Key Features

- Highly accurate measurements of PPS and 10 MHz signals
- Detailed monitoring and analysis using SyncMon
- Signals individually switchable to input or output

Description

Compatibility

The PIO180 is an IMS module which is compatible with all systems of the IMS family. It can also be used on any slot (MRI, ESI, I/O). For example, it is possible to build up a central measurement system with a LANTIME M3000, which can log and analyze the accuracy of up to 40 PPS signals of external systems with the help of the SyncMon, which acts as a central measurement system with a PIO180 module.

Application Areas

- * Proof of signal accuracy for compliance with standards e.g. Directive 2014/65/EU on markets in financial instruments MiFID 2
- * Quality assurance
- * Checking the correct synchronization of external systems
- * Highly accurate measurement of the time offset with an accuracy of 5ns (measurement resolution 1ns)

Characteristics

Status Indicators	LED St: PIO status LED In: Status of the input / output signals LED P: display for preset PPS LED C: display for preset 10 MHz
BNC Connectors	4 x BNC female connectors * Input or output signal, individually switchable via web interface * Signal option: PPS or 10 MHz (selectable via jumper) * Signal level: TTL * Impedance: 50
Operating Voltage	+5 V DC
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

The English manual is available as a PDF file: [2][Download \(PDF\)](#)

Links:

[1] <https://www.meinbergglobal.com/english/products/modular-sync-system.htm>

[2] <https://www.meinbergglobal.com/download/docs/manuals/english/ims-pio.pdf>