

# IMS-PZF182

## Product Highlights

- | Long-wave receiver and clock module for optimum reception of the DCF77 signal transmitted from Mainflingen, Germany
- | Supports pseudo-random code demodulation for more efficient and more reliable decoding of time signal
- | Ease of configuration through web interface of base IMS unit



## A High-Accuracy Clock Module for DCF77 Reception

The IMS-PZF182 clock module for Meinberg's IMS family of modular time servers is a robust long-wave receiver and clock module capable of acquiring DCF77 time signal transmitted by the PTB in Mainflingen, Germany and using these to generate highly accurate 10 MHz frequency signals, 1PPS clock signals, and time strings for high-accuracy timekeeping.

The IMS-PZF182 features a dedicated 9-pin RS-232 D-Sub port for the output of specifically formatted time strings.

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## Basic Specifications

<b>Receiver Type</b>	Long-wave 77.5 MHz kHz receiver with pseudo-random code demodulation
<b>Compatible Antennas</b>	Meinberg AW02 77 kHz outdoor antenna Meinberg AI01 77 kHz indoor antenna

## Oscillator Options

The IMS-PZF182 is shipped as standard with a “**OCXO SQ**” type oscillator (oven-controlled crystal oscillator), which provides excellent holdover performance if your IMS system loses synchronization with its upstream references for any reason. The IMS-PZF182 may also be shipped on request with a more powerful holdover solution; the options available and their performance metrics are listed below:

Type	Short-Term Stability ( $\tau = 1$ second)	Holdover Temperature Drift	Holdover Performance (1 Day) <sup>1</sup>	Holdover Performance (1 Year) <sup>1</sup>
OCXO SQ	$5 \times 10^{-9}$	$\pm 1 \times 10^{-7}$ (-10 to 70 °C)	$\pm 220 \mu\text{s}$	$\pm 4.7 \text{ s}$
OCXO MQ	$2 \times 10^{-10}$	$\pm 5 \times 10^{-8}$ (-20 to 70 °C)	$\pm 65 \mu\text{s}$	$\pm 1.6 \text{ s}$
OCXO HQ	$5 \times 10^{-12}$	$\pm 1 \times 10^{-8}$ (5 to 70 °C)	$\pm 22 \mu\text{s}$	$\pm 788 \text{ ms}$
XHE <sup>Rb</sup> Rubidium	$2 \times 10^{-11}$	$\pm 6 \times 10^{-10}$ (-25 to 70 °C)	$\pm 800 \text{ ns}$	$\pm 8 \text{ ms}$

<sup>1</sup> Full holdover performance requires the system to have been synchronized for 24 hours previously.

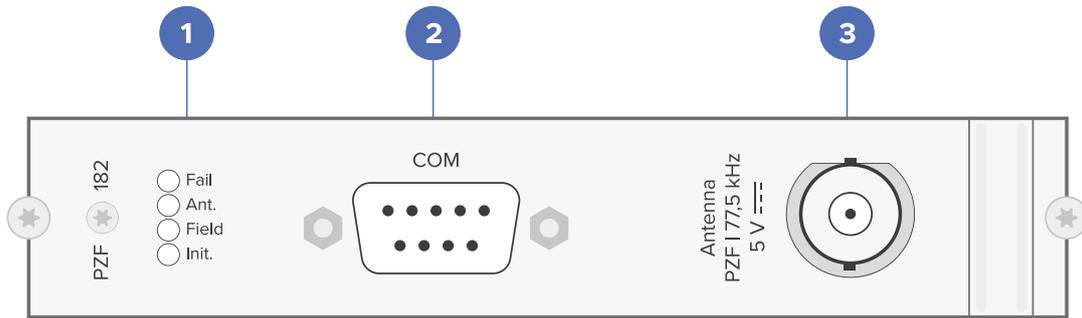
<sup>2</sup> IMS-GPS183 modules with OCXO DHQ oscillators are only available in two-slot wide models due to the size of the oscillator.

## Accessories Included

- | A Meinberg AW02 antenna for outdoor installation, a mounting kit containing all the accessories required to mount the antenna, and a 10 m (32.8 ft) RG 58 coaxial cable with pre-fitted connectors as standard\*.
- | Optional: MBG-S-PRO surge protector for in-line installation between the antenna and your IMS-PZF182 module.

\* Meinberg also offers customized antenna cables to accommodate your specific installation requirements. Please reach out to your Meinberg Sales Representative for more information

# Connectors

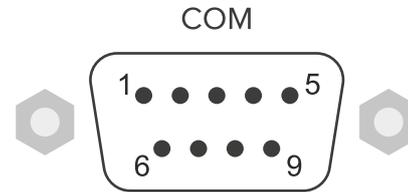


## 1 LED Status Indicators

“Fail” LED System Status	“Ant.” LED Reference Signal Status	“Field” LED Reference Signal Status	“Init.” LED Initialization Status
Indicates that the clock is running in free-run mode off the onboard oscillator	Indicates whether the antenna is correctly connected and functional and whether a signal is received	Indicates whether the antenna is correctly connected and functional and whether a signal has been received	Indicates initialization by the operating system and the warm-up state of the onboard oscillator

## 2 RS-232 COM Serial Time String Output

Pin	Function
1	PPS In
2	RxD (Receive)
3	TxD (Transmit)
5	GND (Ground)



<b>Connector Type</b>	D-Sub 9-pin Male
<b>Supported Time Strings</b>	Meinberg Standard ( <i>Default</i> ), Meinberg Capture, Meinberg GPS, SAT, NMEA RMC, NMEA GGA, NMEA ZDA, NMEA RMC GGA ( <i>RMC followed by GGA</i> ), NMEA GGA ZDA ( <i>GGA followed by ZDA</i> ), Uni Erlangen, Computime, Sysplex 1, SPA, RACAL, ION, ION Blanked, IRIG-J-1, 6021, Freelance
<b>Baud Rates</b>	300, 600, 1200, 2400, 4800, 9600, 19200 ( <i>Default</i> )
<b>Framing Options</b>	7N2, 7E1, 7E2, 8N1 ( <i>Default</i> ), 8N2, 8E1, 7O1, 7O2, 8O1, 8E2

## 3 PZF Antenna Input

<b>Connector Type</b>	Bayonet Neill-Concelman (BNC) connector for coaxial cable
<b>Power Supply</b>	5 V to antenna via antenna cable
<b>Supported Cable Length</b>	Max. 300 m (RG 58)

# IMS System Bus Connector Specifications

## Connector Type

96-pin DIN 41612 connector  
IMS clock pin layout standard

Pin No.	Row A	Row B	Row C
1	V <sub>CC</sub> in (+5V)	V <sub>CC</sub> in (+5V)	V <sub>CC</sub> in (+5V)
2	V <sub>CC</sub> in (+12V)	V <sub>CC</sub> in (+12V)	V <sub>CC</sub> in (+12V)
3	V <sub>DD</sub> in (TCXO/OCXO)	V <sub>DD</sub> in (TCXO/OCXO)	V <sub>DD</sub> in (TCXO/OCXO)
4	Reserved (FreqAdjust Out)	PPS_OUT_IMS	PPO3_OUT
5	F_OUT_FF	GND	10MHZ_IN
6	PPS_EXT_IN	Not connected	PPS_OUT
7	TC_EXT_IN (DCLS)	GND	PPS2_IN
8	EXT_CLK_IN	Not connected	PPM_OUT
9	10MHZ_SIN_OUT	Not connected	Not connected
10	100KHZ_OUT	Not connected	PPO0_OUT
11	1MHZ_OUT	Not connected	PPO1_OUT
12	10MHZ_SQW_OUT	Not connected	PPO2_OUT
13	TC_DCLS_OUT	Not connected	Not connected
14	TC_AM_OUT	GND	RXD4_OUT
15	RXD2_OUT	Not connected	Not connected
16	TXD2_OUT	Not connected	Not connected
17	RXD3_OUT	Not connected	DCF_MARK_OUT
18	TXD3_OUT	Not connected	C18
19	GND	Not connected	TIME_SYN_OUT
20	GND	GND	Not connected
21	GND	Not connected	SYNTH_SQW_OUT
22	GND	GND	SYNTH_OD_OUT
23	GND	Not connected	SYNTH_SIN_OUT
24	GND	Not connected	TXD1_OUT
25	GND	SLOT_ID0	TXD4_OUT
26	GND	SLOT_ID1	TXD0_OUT
27	GND	SLOT_ID2	USRCAP1
28	GND	SLOT_ID3	USRCAP0
29	GND	+USB	RXD1_IN
30	GND	-USB	RXD0_IN
31	GND	GND	GND
32	GND	GND	GND

## IMS System Compatibility

<b>Compatible Base Chassis Types</b>	All IMS LANTIME systems (M500, M1000(S), 2000S, M3000(S), M4000)
<b>Compatible Slots</b>	CLK (Clock)
<b>LANTIME OS Requirements</b>	Requires LANTIME OS Version 7.08 for full feature support

## Miscellaneous Technical Information

<b>Card Type</b>	Eurocard format
<b>Power Consumption (Maximum)</b>	4.4 W to 8.5 W (depending on oscillator)
<b>Current Draw (Maximum)</b>	0.88 A to 1.7 A (depending on oscillator)
<b>Operating Voltage</b>	5 V
<b>Supported Operating Temp.</b>	0 to 55 °C (32 to 131 °F)
<b>Supported Humidity Conditions</b>	Max. 95 % (non-condensing)

## Miscellaneous Support & Compliance Information

<b>Technical Support</b>	Free lifetime support via telephone and email, including firmware updates
<b>Warranty</b>	Three-year warranty, extendable upon request
<b>Firmware Updates</b>	Firmware is field-upgradeable; updates can be installed directly from the unit or via a remote network connection. Software updates are provided free of charge for the lifetime of your Meinberg product.
<b>RoHS Compliance</b>	The product is fully RoHS-compliant.
<b>WEEE Status</b>	The purchase of this product is considered to be a “B2B” transaction (non-household product) for the purposes of the European Union Waste of Electrical and Electronic Equipment Directive; the product falls under Category 6, “Small IT and Telecommunications Equipment”. For disposal, it must be returned to the manufacturer to ensure WEEE compliance. Any transportation expenses for returning this product (at end-of-life) must be covered by the end user, while Meinberg will cover the costs for the waste disposal itself.