



Meinberg Radio Clocks

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PZF509: DCF77 Correlation Receiver (Eurocard)

DCF77 correlation receiver with high accuracy for generation of standard frequencies and pulses

Important Note

This product is no longer available and may have been replaced by a newer product. We will, of course, continue to provide support for units that have already been purchased and are still in use. Please contact our [1][Sales Department](#) for further details.

This product has been discontinued and has been replaced with: [2]

Key Features

- Pulses per second and per minute
- Alphanumeric display
- 2 RS-232 interfaces
- Reception status indicated by LED
- Buffered hardware clock
- DDS frequency synthesizer
- DCF77-simulation
- Standard frequency outputs
- Flash-EEPROM with bootstrap loader

Description

By evaluating the pseudo-random sequence (PZF), which is part of the DCF77 signal in addition to the amplitude modulation, the PZF509 is capable to reproduce a time pattern in the range of microseconds. This allows generation of high precision pulses and an accurate adjustment of the main oscillator of the system. Besides various standard frequencies, the board provides a programmable frequency output. Additional features of PZF509 are pulses per second (PPS) and per minute (PPM) and two RS232 interfaces.

Characteristics

Receiver Type	DCF77 correlation receiver Preamplifier with two post-connected receiver channels
Status Indicators	Indication of a DCF-signal with at least minimum field strength by 'Feld'-LED 'Syn.'-LED indicates the calculation of an insufficient correlation coefficient (strong interference or loss of reception) The 'Freil.'-LED indicates that the internal hardware clock is not synchronized by DCF77
Type of Antenna	Modified active ferrite antenna AW02
Display	8-digit alphanumeric dot matrix display, digit size 5 mm
Synchronization Time	2
Accuracy free run	Accuracy in case of lost reception: $\pm 1 \cdot 10^{-8}$ for one hour
Frequency Outputs	77.5 kHz, 155 kHz, 310 kHz, 100 kHz, 1 MHz, 10 MHz standard frequencies, TTL-level DDS-frequency synthesizer with TTL, sine wave and open drain outputs, 1/3 Hz...9.999 MHz
Accuracy of Frequency Outputs	Short term stability: $\pm 5 \cdot 10^{-9}$ (standard frequencies and synthesizer up to 10 kHz) ± 2.35 mHz for synthesizer frequency > 10 kHz Holdover: $\pm 1 \cdot 10^{-8}$ for one hour
Pulse Outputs	High and low active pulses per second and per minute (TTL-level), pulse duration 200 msec
Accuracy of Pulse Outputs	Time delay between two systems with max. distance of 50 km: typ. 20 μ sec, max 50 μ sec Time shift of successive pulses: max 1.5 μ sec
Interface	Two independent serial RS-232-interfaces, menu configurable
Serial Time String Output	Baudrate: 600, 1200, 2400, 9600 baud Framing: 7O2, 7N2, 7E1, 7E2, 8N1, 8N2, 8E1 Output string: 32 ASCII characters with date, time and status information
Dimensions of the front panel	12HP/3U (60mm x 128mm)

Electrical Connectors	64-pin rear VG edge connector DIN 41612 SMB male connector
Power Consumption	1.6 W
Backup Battery Type	When main power supply fails, hardware clock runs free on quartz basis, life time of lithium battery min. 10 years
Cable Type	Coaxial cable RG58 indoor or outdoor usage (BNC-, N-Norm-connector)
Operating Voltage	+5 V DC
Firmware	Flash-EPROM, bootstrap loader
Current Draw	ca. 330 mA
Board type	Eurocard
Board Dimensions	160 mm x 100 mm, 1,5 mm Epoxy
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
Contents of Shipment	Scope of supply includes an active ferrite antenna [3] AI01 and 5m of RG174 coaxial cable with BNC connectors. Optional: [4] AW02 with RG58 and patch cord, other length of cable
Options	OCXO version: Short term stability: $\pm 1 \cdot 10^{-9}$ Holdover: $\pm 2 \cdot 10^{-8}$ for one day

Manual

German manual: [5][Download \(PDF\)](#)

Links:

[1] <mailto:sales@meinberg.de>

[2] <https://www.meinbergglobal.com/english/products/pzf180.htm>

[3] <https://www.meinbergglobal.com/english/products/dcf77-indoor-antenna.htm>

[4] <https://www.meinbergglobal.com/english/products/dcf77-outdoor-antenna.htm>

[5] <https://www.meinbergglobal.com/download/docs/manuals/german/pzf509.pdf>