



## Meinberg Radio Clocks

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## UA509: DCF77 Radio Clock

DCF77 Radio Clock UA509 with 2 serial interfaces, pulses per minute and per second, and a 2.5mm LED Display.

### Key Features

- Direct conversion Quadrature Receiver
- Pulses per second and per minute
- 20mA input/output circuits
- 2,5mm LED-display
- 2 RS232 interfaces
- Receiver status LEDs
- Buffered hardware clock
- Flash-EPROM with bootstrap loader

## Description

The hardware of UA509 is a 100mm x 160mm microprocessor board. The 20mm wide front panel contains an 8-digit LED display (2.5mm), three LED indicators and a time/date switch. The receiver is connected to the external ferrite antenna AI01 that is included in the scope of supply by the 5 meter 50 ohm coaxial cable (other lengths available). The radio controlled clock UA509 has been designed for applications where two independent serial interfaces are needed. The UA509 contains a flash EPROM with bootstrap loader that allows to upload a new firmware via the serial interface without removal of the clock.

## Characteristics

<b>Type of receiver</b>	Narrowband DCF77 quadrature receiver with automatic gain control, bandwidth: approx. 20Hz
<b>Display</b>	8 digit 7-segment LED display (2.5mm) for time or date (switch-selectable) optional: 20HP (100mm) wide front panel with 10mm height 7-segment LED display
<b>Status info</b>	Modulation and field strength visualized by LEDs Free running state visualized by LED after switching to free running quartz clock mode
<b>Synchronization time</b>	2-3 minutes after correct DCF77 signal reception
<b>Accuracy free run</b>	Accuracy of the quartz base after min. 24hrs of synchronized operation: $\pm 1 \cdot 10^{-6}$
<b>Reception Control</b>	Multiple check of received time telegram Plausibility control by using two complete time telegrams
<b>Pulse outputs</b>	Pulse per second and pulse per minute (TTL), pulse duration: 200msec
<b>Interface</b>	Two independent serial RS232/current loop interfaces, configurable
<b>Data format of interfaces</b>	COM0: Baudrate: 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600 baud Framing: 7E2 or 8N1 (others on request) 2 active and 2 passive 20mA current loop outputs 1 active/passive 20mA current loop input COM1: Baudrate: 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600 baud Framing: 7E2 or 8N1 (others on request) 1 active and 1 passive 20mA current loop output 1 active/passive 20mA current loop input <a href="#">[1] Output string</a> : 32 ASCII characters with date, time and status information
<b>Dimensions of the front panel</b>	4HP/3U (20mm x 128mm)
<b>Electrical connectors</b>	64-pin rear VG edge connector DIN 41612 SMB male connector
<b>Current consumption</b>	approx. 250mA
<b>Backup battery type</b>	In case of supply voltage failure the on-board RTC keeps the time based on XTAL for more than 150 hours (buffer capacitor) Optional: lithium backup battery (life time: 10 years)

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<b>Board type</b>	Eurocard
<b>Board dimensions</b>	160mm x 100mm , 1,5mm Epoxy
<b>Power supply</b>	+5V DC
<b>Ambient temperature</b>	0 ... 50°C / 32 ... 122°F
<b>Humidity</b>	Max. 85%
<b>Scope of supply</b>	Scope of supply includes an active ferrite antenna [2] <a href="#">AI01</a> and 5m of RG174 coaxial cable with BNC connectors. Optional: [3] <a href="#">AW02</a> with RG58 and patch cord, other length of cable
<b>RoHS-Status of the product</b>	This product is fully RoHS compliant
<b>WEEE status of the product</b>	This product is handled as a B2B category product. In order to secure a WEEE compliant waste disposal it has to be returned to the manufacturer. Any transportation expenses for returning this product (at its end of life) have to be incurred by the end user, whereas Meinberg will bear the costs for the waste disposal itself.

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#### Manual

The english manual is available as a PDF file: [4][Download \(PDF\)](#)

#### Links:

[1] <http://www.meinberg.de/english/products/./specs/timestr.htm>

[2] <http://www.meinberg.de/english/products/ai01.htm>

[3] <http://www.meinberg.de/english/products/aw02.htm>

[4] <http://www.meinberg.de/download/docs/manuals/english/ua509.pdf>