



## 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.

### 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This product is no longer available and may have been replaced by a newer product.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.

### Key Features

- Direct conversion Quadrature Receiver
- Pulses per second and per minute
- 20mA input/output circuits
- 2,5mm LED-display
- 2 RS-232 interfaces
- Reception status indicated by LED
- 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>Receiver Type</b>	Narrowband DCF77 quadrature receiver with automatic gain control, bandwidth: approx. 20Hz
<b>Status Indicators</b>	Modulation and field strength visualized by LEDs Free running state visualized by LED after switching to free running quartz clock mode
<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>Synchronization Time</b>	2
<b>Accuracy free run</b>	Accuracy of the quartz base after min. 24hrs of synchronized operation: $\pm 1 \cdot 10^{-6}$
<b>Reception Monitoring</b>	Incoming time string undergoes multiple checks Plausibility test using two full consecutive time strings
<b>Pulse Outputs</b>	Pulse per second (PPS) and pulse per minute (PPM). TTL level, pulse width: 200 msec
<b>Interface</b>	Two independent serial RS232/current loop interfaces, configurable
<b>Serial Time String Output</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 [2] <a href="#">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>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)
<b>Operating Voltage</b>	+5V DC
<b>Current Draw</b>	approx. 250mA
<b>Board type</b>	Eurocard
<b>Board Dimensions</b>	160 mm x 100 mm, 1,5 mm Epoxy
<b>Supported Temperature</b>	Operational: 0 - 50 °C (32 - 122 °F) Storage: -20 - 70 °C (-4 - 158 °F)
<b>Supported Humidity</b>	Max. 85 % (non-condensing) at 40 °C
<b>Contents of Shipment</b>	Scope of supply includes an active ferrite antenna [3] <a href="#">AI01</a> and 5m of RG174 coaxial cable with BNC connectors. Optional: [4] <a href="#">AW02</a> with RG58 and patch cord, other length of cable
<b>RoHS Status of Product</b>	This product is fully RoHS-compliant.
<b>WEEE Status of Product</b>	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: [5][Download \(PDF\)](#)

## Links:

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

[2] <https://www.meinbergglobal.com/english/specs/timestr.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/english/ua509.pdf>