

» MC500

HIGH ACCURACY TIMING FOR INDUSTRIAL NETWORKS AND CCTV SYSTEMS



KEY BENEFITS

Accurate synchronised timing across your network

Security hardened network stack

Flexible synchronisation options

Synchronise non-IP equipment using the multi-format RS-232 output

High accuracy PPS output

The MC500 is the ideal master clock solution for time synchronisation of industrial networks and CCTV systems.

When paired with a remote GNSS decoder, the MC500 provides synchronised timing across your facility.

NETWORK TIME SYNCHRONISATION

With its integral Ethernet port, the MC500 synchronises the devices on your network via NTP/SNTP protocols. Utilising a proprietary security hardened TCP/IP network stack and purpose designed hardware, the MC500 can respond with class leading accuracy to many thousands of NTP/SNTP requests per second.

RS-232 TIME & DATE OUTPUT

The RS-232 serial port enables synchronisation of third-party equipment. With 20+ serial data formats, the MC500 is the solution for the synchronisation of CCTV and access control systems or legacy equipment.

PPS OUTPUT

High accuracy timing of third-party equipment can be achieved using the user-programmable PPS (pulse per second) output. Class leading performance provides a PPS accuracy of 1 μ sec and jitter of 100 nsec.

FLEXIBLE SYNC INPUT OPTIONS

The MC500 is designed to connect to a remote GNSS decoder. A range of compatible antenna, lightning arrester and cabling options are available.

For mission-critical applications, a second GNSS decoder and separate GNSS antenna can be installed for use as a live backup.

Typical Performance Specifications:

Synchronised internal timing accuracy:	Dependent on synchronisation source accuracy, time elapsed from first lock and cable lengths. Typically within 100nsec of source after 30 mins.
NTP timestamp accuracy:	Typically within 30 µsec of internal time base.
NTP client accuracy:	Dependent on network architecture, utilisation, delays and jitter. Clients typically synchronised to within 200 µsec to 2 msec of MC500 on a LAN.
NTP performance:	5000 NTP requests per second
RS-232 output accuracy:	50 µsec
PPS output accuracy:	1 µsec
PPS output jitter:	100 nsec

Supported Protocols:

Protocols:	NTP v2 (RFC 1119), NTP v3 (RFC 1305), NTP v4 (RFC 5905), SNTP v3 (RFC 1769), SNTP v4 (RFC 4330), DHCP
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I/O Connections:

Ethernet connection:	10BASE-T / 100BASE-TX auto-sensing
RS-232 / PPS:	DB-9 (DE-9) female D-Sub (DCE)
Software update:	USB Specification 2.0 compliant full-speed (12 Mbit/s)
Synchronisation inputs:	2 x dual-redundant 1000 series antenna connection ports
Power input:	24 VDC power input, supplied with external power adapter

Mechanical, Electrical and Environmental Specifications:

Enclosure dimensions:	1U high 19" rack mounting - 483 x 44 x 120 mm (19.0" x 1.73" x 4.72")
Weight:	2 kg
Power consumption:	0.5 AMPS (@ 24 VDC)
Operating temperature:	0 to 50 °C
Relative humidity:	0% - 95%, noncondensing

Warranty & Support:

Warranty:	5 years
Support:	Free-of-charge lifetime technical support

Standards Compliance (v2 hardware):

Safety requirements:	BS EN 62368-1: 2024
Emission requirements:	BS EN 55032: 2015 +A1:2020
Immunity requirements:	BS EN 55035: 2017 +A1:2020
CE / UKCA:	Meets all applicable directives
RoHS:	RoHS-Compliant



Front view



Rear view