



## **MM3S NTP TIMESERVER**

### **Extended Features:**

- USB Memory-Stick slot for software update and configuration transport
- Expandable Ethernet adapter up to (3) RJ45/10/100MBit
- Extended statistic support

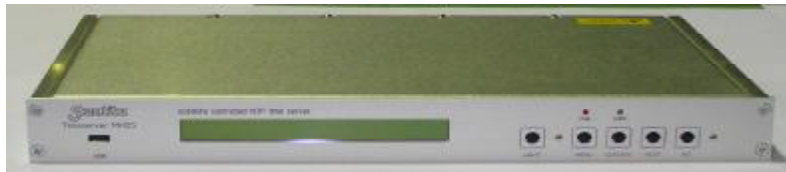
### **Options:**

- USB Memory-Stick
- IRIG B output
- Up to 2 additional Ethernet connections via RJ45 connectors
- Up to four 10 MHz sine wave frequency outputs via BNC connectors
- Optional OCXO oscillators

### **MM3 S™**

GPS Referenced Network Timeserver (NTS)

MM3 S is a stratum-1 standalone timeserver, which provides a high-accuracy reference time to IP networks via the Network Time Protocol (NTP). MM3 S is assembled in a modular case, which includes, GPS receiver, a single board computer, and a power supply unit. Configurable settings can be modified via menus on the 2 row x 40-character LC display with backlight and the four buttons in the front panel.



The single board computer runs a Linux Operating System, which is loaded, from flash disk into RAM at power-up. In addition to NTP, the Linux operating system supports other network services like SSH, HTTP (S), SNMP. The system supports IPv4 and IPv6 which allows remote configuration or monitoring across the network, e.g. using a common web browser. Remote access from the network can also be disabled for security reasons.

Changes in the GPS receiver status, error conditions, and other events generated error messages can be logged on either the local Linux system, or on another syslog server in the network. Additionally, those messages can be sent to a management console by SNMP traps, automatic emails, by Windows Popup-Messages or optional remote NTP displays. If it is necessary to provide redundancy against hardware failure then it's also possible to install several MM3 S timeservers in the same network



### **USB Port on the MM3S**



### **Rear Panel of M3S**



TUV Essen.  
[www.steatite.co.uk](http://www.steatite.co.uk)



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## MM3S NTP TIMESERVER

### SPECIFICATION: -

#### MM3S™

##### GPS Receiver:

- 6 channel C/A code receiver
- External antenna, 1000 V DC insulated, connected with up to 250m of standard coaxial cable RG58
- Accuracy of frequency:  $\pm 1.10^{-9}$  after synchronization and 20 minutes of operation
- Accuracy of pulses:  $\pm 250$  nsec after synchronization and 20 minutes of operation

##### Output Signals:

- 2 RS232 interfaces, independent, configurable output strings
- Pulse per second and pulse per minute, TTL, active high
- 10MHz frequency output, TTL into 50 ohm
- Alarm relay output, changeover contact, 3 pin DFK connector

##### Physical Dimensions:

19" slimline chassis

Height: 43mm

Width: 483mm

Depth: 290mm

Accuracy of frequency: After sync. and 20 min of operation  $\pm 1 \times 10^{-9}$

Accuracy of frequency: During first 20 minutes of operation  $\pm 2 \times 10^{-8}$  One day, free-running  $\pm 2 \times 10^{-8}$  (Quartz)

One year, free-running  $\pm 5 \times 10^{-7}$   $\leq 10$  sec, GPS controlled  $\pm 1 \times 10^{-9}$

Time stability:  $\leq 10$  sec, free running  $\pm 3 \times 10^{-9}$  Free running  $\pm 2 \times 10^{-7}$

Temperature drift: SSB

phase noise: -101 dB/Hz @ 10KHz - 76dB/Hz @ 1 KHz -60 dB/Hz @ 100 Hz

##### Product includes:

- NTP timeserver
- GPS antenna
- Mounting mast with clamps
- 20m RG58 cable
- Printed manual
- Power cord

##### Supported Network Protocols

(via RJ45 auto-sensing 10/100Base-T Ethernet):

- NTP v2, v3, v4
- NFS
- NTP broadcast mode
- DHCP client
- NTP multicast
- FTP
- NTP symmetric keys
- TELNET
- NTP Auto-key full crypto support
- NETBIOS
- External NTP timeserver
- SSH2
- SAMBA (WinMail client)
- SNMP v1,2,3
- TIME
- SNMP TRAP - HTTP
- SNMP get NTP, Refclock and configuration
- SNMP set full configuration
- HTTPS with OpenSSL
- Notification management
- IPv6
- Email
- 3 global IPv6 addresses
- SNMP Trap
- Autoconf feature
- Windows Message Popup
- Supports NTP, SSH, HTTP (S), SNMP

#### ORDER OPTIONS

- IRIG-B Output
- USB Memory Stick
- Additional 2 Ethernet ports
- 10 MHz sine outputs
- DCXO

#### OPTIONAL ACCESSORIES

- Lightning Arrester Kit
- Antenna Diplexer
- Long Antenna Cables

#### ORDER REF

MM3S

Ask your local representative for order numbers for the IRIG-B Option, Special Cable Lengths, Lightning Arrester Kit, and Antenna Diplexer.



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