The *5200*, *5400* and *5600* series of net time servers provide the time synchronisation solution for complete systems of equipment including computer networks, CCTV security, voice recording, industrial process control, CCC and many other applications requiring accurate time synchronisation.

These units are available as standard with GPS, MSF, DCF and NTP input synchronisation options. Optional redundant dual synchronisation, EBU, IRIG-B, RS232 & RS485 and Optical input modules are available to allow the *5200*, *5400* and *5600* to synchronise to almost any type of time signal.

All models are supplied fitted with a 10/100Base-T Ethernet interface to allow the unit to act as an NTP Time Server on a TCP/IP network. The 56xx network time servers are fitted with dual 10/100Base-T Ethernet interfaces to provide additional system redundancy.

All *5200*, *5400* and *5600* series network time servers are supplied as standard with one RS232 / RS485 serial ASCII Time and Date output. The optional *SER23* output interface can be fitted to provide a total of three RS232/RS485 serial ASCII Time and Date outputs.

Each network time server has either 1 or 2 new zCode digital and analogue clock outputs. Each zCode output can be user programmed to transmit w482 time code, Active MSF, Active DCF or 24V Alternate polarity impulses as required by the connected digital and analogue clocks.

The optional *AFOUT* output interface adds two flexible outputs which can be user programmed to generate either 1Khz amplitude modulated IRIG-B time code for the synchronisation of various voice recording, data logging and distributed control system equipment, or EBU (LTC) time code for use in broadcast applications.

Additional output modules offer switching relays, Fiber optic communication and logic level outputs.

Dual redundant 110V-230V 50/60 Hz mains AC option available on 5400 and 5600 product versions.

Model Number	Case Type	10/100Base-T Network Interfaces	zCode digital and analogue clock Outputs	Option Module Slots
5200	1U high 19" rack	1	2	4
5201	1U high 19" rack	1	1	4
5400	2U high 19" rack	1	2	8
5401	2U high 19" rack	1	1	8
5600	2U high 19" rack	2	2	8
5601	2U high 19" rack	2	1	8

5200, 5400 & 5600 Series Network Time Server

Wharton

Operational

High visibility 6 digit display with 6m viewing distance.

Display and timecode output messages can be referenced to UTC or 'Local' time. 'Set Once' local time zone setup, automatically calculating future time zone changes for local time zone.

Timing accuracy

Standard Integrated TCXO
Unsynchronised: 0.1 sec/day @ 0-45°C

With optional TCXOHQ module fitted
Unsynchronised: 0.01 sec/day @ 0-45°C

Locked to MSF or DCF: within 30mS of UTC
Locked to GPS: within 10uS of UTC

Network Timing Accuracy

Clients typically synchronised within 1-10 milliseconds of network time server timebase depending on network delay and jitter. (NTP)

Standard Synchronisation interfaces

Standard synchronisation interface. Allows synchronisation from external 488HS2 or 488HSX2 GPS receiver or 484 series MSF / DCF radio receiver.

RS232 Serial input, allowing time synchronisation from various standard serial time codes.

NTP/SNTP synchronisation from remote NTP time server located on TCP/IP network.

Standard Output Interfaces

10/100Base-T Ethernet interface which allows them to act as a time server on a TCP/IP network. 5600 is fitted with two 10/100Base-T Ethernet interface.

1 or 2 **zCode** digital and analogue clock synchronisation outputs. Each output programmable for w482, Active MSF, Active DCF and 24V Alternate Polarity Impulses.

Supports up to 100 400A/4000E series digital clocks and time zone displays in w482 time code mode.

In 24V alternate polarity impulse mode, each output programmable for one second, half minute or one minute impulses. Each output rated for 500mA load.
 (5xx0 units have 2 zCode outputs, 5xx1 units have 1 zCode output)

RS232/RS485 serial interface. 1200-57600 Baud, 7/8 data bits, odd/even/no parity. User selectable output from over 80 predefined data formats for specific CCTV and embedded equipment. (Optional SER23 output interface provides 2 additional RS232/RS485 serial ports.)

High accuracy 1 pulse per second output at RS232 levels

Network Protocols Supported

NTP   Network Time Protocol (NTP) v2, v3 and v4 clients are supported in both unicast and broadcast modes of operation. (RFC1305 & RFC1119)

SNTP   Simple Network Time Protocol (SNTP) v3 and v4 clients are supported in both unicast and broadcast modes of operation. (RFC2030 & RFC1769)

TIME   TIME protocol (RFC868) is supported in UDP and TCP mode.

DAYTIME DAYTIME protocol (RFC867) is support in UDP and TCP mode.

Input Option Modules

SYNC2   Second synchronisation interface to give dual redundant functionality. Allows synchronisation from second external 488HS2 or 488HSX2 GPS receiver or 484 series MSF / DCF radio receiver.

AFIN   Allows unit to synchronise to externally generated 25fps EBU LTC time code or 1KHz Amplitude Modulated IRIG-B signal

OPTIN   Optical input, allows unit to synchronise to various optically connected time codes.
ST Fiber Optic connectors - 62.5/125um (820nm).

Output Option Modules

AFOUT   Dual audio time code outputs. Each output user selectable for 25fps EBU LTC time code or 1KHz Amplitude modulated IRIG-B time code.

OPTOUT Dual Fiber Optic output. Can be configured to output demodulated IRIG-B, EBU or Serial ASCII data. ST Fiber Optic connectors - 62.5/125um (820nm).

SER23   Dual RS232/RS485 serial output option. 1200-19200 Baud, 7/8 data bits, odd/even/no parity. User selectable output from over 80 predefined serial messages.

The 5xxx network time server can have a maximum of 3 serial ports, but multiple SER23 modules can still be fitted to the same network time server to provide additional buffered outputs for ports 2 and 3. Dual DB9 connection.[1]

1 Please note that the SER23 module takes up two adjacent slots when fitted

RELAY   Dual 230V mains AC relays for periodic, signalling of error conditions and control of third party equipment.

PPS110   Dual High Voltage PPS periodic outputs rated at 110V DC.

DEMOUT Demodulated time code output. 4 mirrored logic level outputs. Each module can be user configured to output demodulated IRIG-B, MSF or DCF time codes or a PPS / other user selectable periodic signals.

Power Options

DUALAC Dual redundant 110-230V 50/60Hz mains AC power supply option.

Environment

Power supply: Internal PSU 110-240V AC 50/60Hz *
Power consumption < 0.4A @ 230V AC

*   Other power options available on request, please contact our sales team for more information.

Battery Backup: >1 Year. (The battery backup maintains the internal time count during periods of mains failure)

Enclosure: 1u high 19" rack mount case (5200 units)
                  2u high 19" rack mount case (5400 & 5600 units)
Weight: 2.5kg

Operating temperature: 0-50°C
Relative Humidity: 0% to 90% (non-condensing.)
Altitude: 0 to 3,000m
MTBF: > 100,000 hours

Electromagnetic Compatibility & Safety

The *5200*, *5400* & *5600* series network time server when used in accordance with our recommendations, complies with the European Community Electromagnetic Compatibility Directive 2004/108/EC; Low Voltage Directive 2006/95/EC; RoHS2 Directive 2011/65/EC and conforms to the following standards:

EN 50121-4:2006, EN 61000-6-2:2005, EN 61000-6-4:2007+A1:2011, EN 55022:2010, EN 55024:2010, EN 60950-1:2006

Designed and manufactured by:

Specifications subject to change without notice

1.4