

# PRODUCT DESCRIPTIONS

## IP Clock System(NTP-100)

Network Time Protocol(NTP-100) with Master Clock via GPS Interface for a secure and stable time source.

### GENERAL DESCRIPTION

The NTP-100 provides secure synchronized timing for ship network system. The NTP Server is the solution for stable and precise timing on your network with GPS via Marine Master Clock System. The MRC (MCS-980) master clock system ensures the synchronization of all IT devices on the same network. Typically, this is done through the network time protocol (NTP) on the active portion of the communications infrastructure.

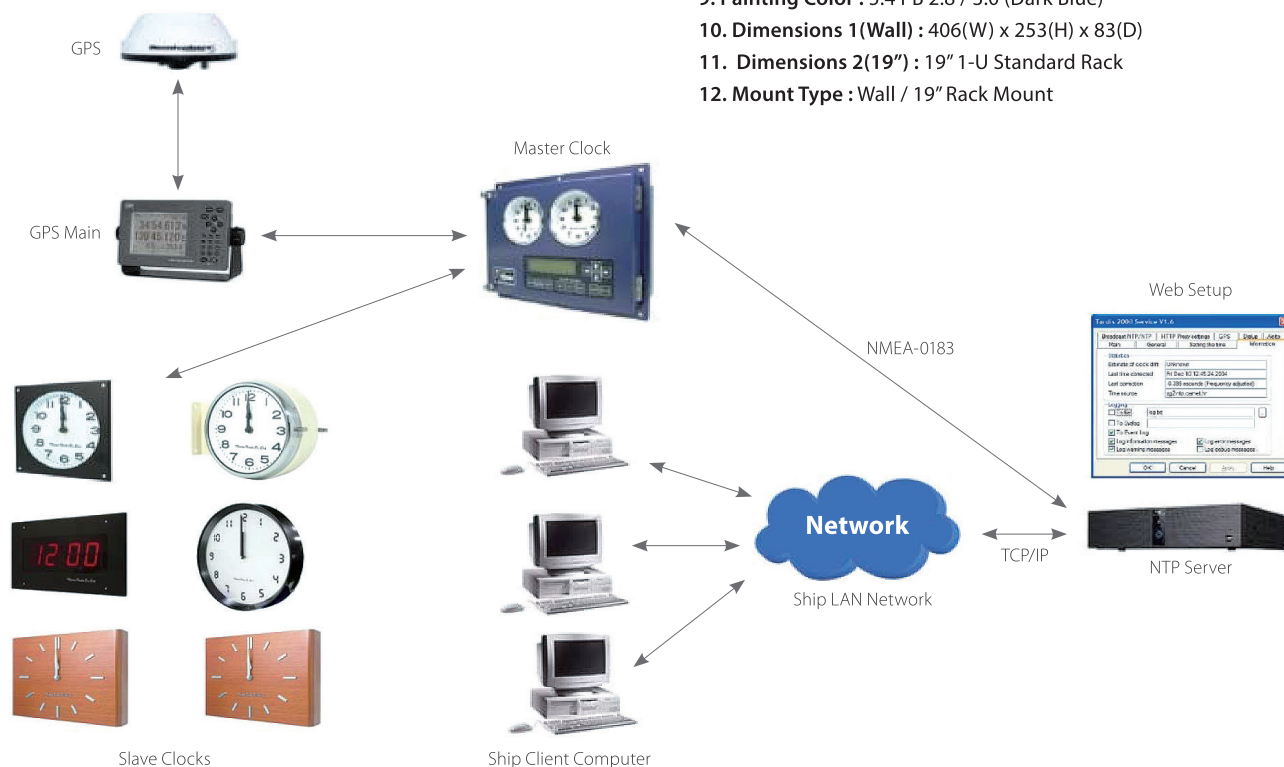
The MRC NTP-100 is based on GPS and Master clock system technology for synchronizing to satellites' atomic clocks. This enables computer networks to synchronize all elements of network hardware and software (Including system logs) to the millisecond over LANs and/or WANs anywhere on the vessel.

#### Key Benefits

- Synchronized timing via your network using NTP / SNTP protocols
- Master Clock (Compatible with a range of GPS)
- ZDA, NMEA-0183(NMEA-2000, NMEA-OneNet, Option)
- Simple setup and internal oscillator included

#### System Features

1. Power Source : 90 ~ 264VAC, 1Ø, 50 / 60 Hz
2. Em'cy Power(Optional) : AC or 24VDC (Ripple less than 5%)
3. Power Consumption : AC, approximately 10VA  
DC, less than 1A (At 24VDC)
4. Automatically power changeover between DC & AC (Option)
5. Timing Accuracy : Better than 50ms
6. Temperature : -20°C ~ +45°C
7. Humidity : Less than 90%
8. Net Weight : App. 5.2Kg
9. Painting Color : 5.4 PB 2.8 / 3.0 (Dark Blue)
10. Dimensions 1(Wall) : 406(W) x 253(H) x 83(D)
11. Dimensions 2(19") : 19" 1-U Standard Rack
12. Mount Type : Wall / 19" Rack Mount



#### Capacity & function of the System

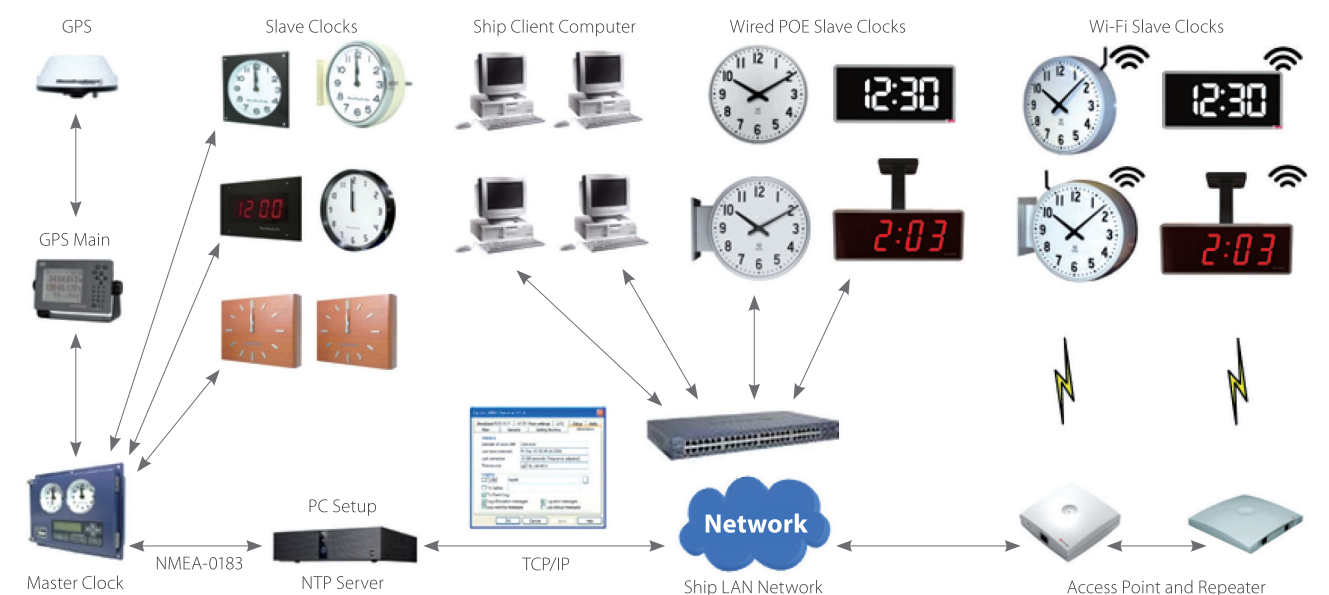
1. Platform : 32bit ARM Processor
2. Input (Master Clock/GPS) : NMEA-0183, RS-422, ZDA Format
3. Baud Rate Input (NMEA-0183) : 4800 / 9600 / 19200 / 38400
4. Output : SNTP / NTP (IEC61162-450) for Ethernet TCP / IP, RJ-45
5. Protocol : NTP4 (RFC-2030), NTP v4/3/2, SNTP v4
6. Local time / UTC : Selectable on individual outputs.
7. Setup interface : Using the Web-Browser (Password-protected) for system configuration and management.
8. Fault Alarm : Dry contact (NMEA Input, Power Fail)
9. Free firmware upgrades via network
10. Applicable : ECDIS, Radar, Conning, Auto Pilot, VDR, IAS, Fire Alarm and et cetera for all PC based equipment
11. Standard 1-Year and 2-year warranty on parts

#### Wall Type NTP Server

1. Size : 406(W) x 253(H) x 83(D)
2. 19" 1U : Available
3. AC Main Power
4. Dual Power : Option
5. Fail Output
6. App. 5.2Kg
7. -20°C ~ +45°C
8. Humidity : L / T 90%

#### NTP Server Interface

1. Input : NMEA-0183, IEC1162-1, RS-422 Compatible, \$xxZDA
2. Baud Rate Pre-set : 4800BPS (4800 / 9600 / 19200 / 38400 Compatible)
3. Standard Data Format : 4800-N-8-1(BR-Data-Parity-Stop), ZDA
4. Output : Ethernet 10 / 100 Base-T, RJ-45 (Auto sensing)



[ Wiring Diagram of NTP Server with Marine Electric Clock (MCS-980) & GPS System ]