# **NTP-100S**

# Private Network Time Server

User's Manual First Edition

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# **Package Contents**

QUANTITY	ITEM DESCRIPTION
1	NTP-100S
1	GPS Receiver with 10 meters long PS2 cable
1	RJ-45 Network Cable
1	Power Adapter
1	Installation CD

If any item is missing or broken upon opening of the package, please contact your dealer immediately.

# **Panel Descriptions**

### **Top Panel**



LED	Color	Status	Indicating
Power	Green	- Solid - Off	- Power On - Power Off
Program	Green	- Solid - Off	- System is ready - System is not ready
LAN	Green	- Solid - Flashing - Off	<ul> <li>Network link established</li> <li>Network data activity</li> <li>Network link not established</li> </ul>
GPS	Green	- Solid - Off	<ul> <li>GPS signals is acquired</li> <li>Acquiring GPS signal or GPS not found</li> </ul>

### **Rear Panel**



- LAN: RJ-45 Ethernet jack
- RS-232: Pin5 & Pin9 output 1PPS signals for time correction
- Reset: Reset to factory settings
- GPS Ant.: GPS Receiver input jack
- DC 12V: Power jack

### **GPS Receiver**



### **Connection Diagram**

Connect the NTP-100S to the network as shown in the following diagram.



The NTP-100S Time Server is designed to provide very accurate time obtained from GPS satellites, so that all PCs in the same network can be precisely synchronized without accessing any outside NTP servers.

### Installing NTPClock Client Software

In order to obtain time from the NTP-100S, the PC needs to have the NTPClock client software installed.

1. Insert the installation CD and open the NTP Clock folder. Double-click setup.exe. The following dialog box will appear:



### 2. Click Next.

B NTPClock	_ <b></b>
Select Installation Folder	
The installer will install NTPClock to the following folder.	
To install in this folder, click "Next". To install to a different folder, enter it below of	click "Browse".
Eolder: C:\Program Files (x86)\NTPClock\	Browse
	Disk Cost
Install NTPClock for yourself, or for anyone who uses this computer:	
© Everyone	
⊚ Just <u>m</u> e	
Cancel Cancel	Next >

### 3. Click Next.

MTPClock	
Confirm Installation	
The installer is ready to install NTPClock on your computer. Click "Next" to start the installation.	
Cancel < <u>B</u> ack	Next>

### 4. NTPClock is installing..

MTPClock	
Installing NTPClock	
NTPClock is being installed.	
Please wait	
Cancel < Back	Next>

5. Click Close to finish the installation.

MTPClock	_ <b></b>
Installation Complete	-
NTPClock has been successfully installed.	
Click "Close" to exit.	
Please use Windows Update to check for any critical updates to the .NET Frame	ework.
Cancel < <u>B</u> ack	Close

6. After installation, a NTPClock icon will be created on the Windows desktop.



7. Execution of the NTPClock program requires administrator privilege. If you are not logged in as administrator, you must do the following:

Right click on the NTPClock icon and select Properties.



When the following dialog box opens, select the Compatibility tab. Check the box for "Run this program as an administrator", then click OK.

Note that the dialog box may look different on your PC due to different Widows versions.

NTPClock Proper	ties	×	
Security	Details	Previous Versions	
General	Shortcut	Compatibility	
If you have problem an earlier version of matches that earlier Help me choose t	s with this program and Windows, select the o version.	d it worked correctly on compatibility mode that	
Compatibility mode	e		
Windows XP (S	gram in compatibility mo Service Pack 3)	ede for:	
Settings			
Run in 256 colors			
Run in 640 x 480 screen resolution			
Disable visua	al themes		
Disable desk	top composition		
Disable displ	ay scaling on high DPI	settings	
Privilege Level			
Change settings for all users			
	ОК	Cancel Apply	

8. Double-click the icon and a clock icon will appear:



A red clock indicates that the PC has not linked with the NTP-100S.



A yellow clock indicates that the PC has linked with the NTP-100S but the GPS is not working properly.



A white clock indicates that the PC has linked with the NTP-100S and the GPS is working properly.

9. Right-click the clock. The following dialog box will appear:

□     Actions       SyncInterval     3600       UpdateLocalDateTime     True       □     Connection       □     RemoteSNTPServer       192.168.1.100:123       Timeout     5000       VersionNumber     Version3	S	SNTP Client Settings		
SyncInterval     3600       UpdateLocalDateTime     True       Connection     192.168.1.100:123       Timeout     5000       VersionNumber     Version3	Ξ	Actions		
UpdateLocalDateTime True Connection RemoteSNTPServer 192.168.1.100:123 Timeout 5000 VersionNumber Version3		SyncInterval	3600	
Connection           RemoteSNTPServer         192.168.1.100:123           Timeout         5000           VersionNumber         Version3		UpdateLocalDateTime	True	
B         RemoteSNTPServer         192.168.1.100:123           Timeout         5000           VersionNumber         Version3	Ξ	Connection		
Timeout 5000 VersionNumber Version3	Ŧ	RemoteSNTPServer	192.168.1.100:123	
VersionNumber Version3		Timeout	5000	
		VersionNumber	Version3	
RemoteSNTPServer	R			
The server to use.				
Save		Save		Quit

**SyncInterval :** The time synchronization interval between the PC and the NTP100. Default is 3600 second (1 hour), minimum setting is 1 second.

**UpdateLocalDateTime :** If set to False, time synchronization will be disabled but the color of the clock will remain white as long as the PC can maintain communication with the NTP-100S.

RemoteSNTPServer : Enter the IP address and port number of the NTP-100S.

**Timeout :** If the PC fails to get a response from the NTP-100S within this period then the color of the clock icon will turn red. The default is 5000 milliseconds (5 seconds).

**VersionNumber :** The Internet Protocol Version to be used. Version3 is for IPv4 and Version4 is for IPv6.

10. To stop communication with the NTP-100S, double-click the clock icon and quit the NTPClock program. Time synchronization will also be stopped.



# **LCD** Information

Power up the NTP-100S, the following screens will appear.



A few moments later the following screen will appear showing current Internet protocol version and IP address.



About 30 seconds later, following screen will appear showing NTP-100S is searching for GPS signal.



Following screen will appear when GPS signal is locked



A few moments later the following screen will appear showing UTC and local date and time.

UTC	*
2022/08/23	23:14:56
Local Time	
2022/08/24	07:14:56

## **Device Configuration**

The NTP-100S has a default IP address of 192.168.1.100. In order for the NTP-100S to be accessible to a PC, its IP addresses must be changed (if necessary) to be in the same subnet as the PC's.

The first step is to change your PC's IP address to 192.168.1.xxx, so you can log in the NTP-100S and change its IP address. If you are not sure how to change your PC's IP address, please consult with your IT personnel.

### **Device Login**

1. On web browser, type the NTP-100S's IP address and press Enter.



2. Enter user name (default = ntp100) and password (default = 1234) then click OK.



#### 3. The following screen will appear.

③ 192.168.1.100 × +	-		×
← → C (① Not secure   192.168.1.100	• 🕁	θ	:
Eletech NTP Server Setup			
IP: 192.168.1.100			
Net Mask : 255.255.255.0			
Gateway : 192.168.1.1			
HTTP Port : 80			
NTP Port : 123			
Time Adjustment : 1150			
DNS : 8.8.8			
Password :			
Time Zone : 480			
Save			
click "Save" button to save and reboot device.			

#### IP Address (IPv4)

The factory default value is "192.168.1.100" which needs to be changed if it is not in the same subnet as the LAN where the device is to be installed.

#### Net Mask

The default subnet mask is "255.255.255.0" which works well in most cases.

#### Gateway

The gateway address should be set to the router's IP address. Consult with your IT personnel if you are not sure.

#### **Http Port**

The port 80 is standard port used and recommended for most installations.

#### **NTP Port**

The port 123 is standard port used and recommended for most installations.

#### **Time Adjustment**

Default setting is 1150, If PC time faster than local standard time, try to adjust the value to 1100 or if PC time slower than local standard time, then adjust the value to 1200

### DNS

Please leave it as default.

#### Password

Changing the password from default is recommended.

### Time Zone

Enter an offset value (in minutes) based on your time zone. For example, the time zone for Singapore, which is 8 hours east of UTC, has an offset of +480

# Appendix A:

GPS Receiver Specifications				
Chip	MediaTek MT	MediaTek MT3337 (Rom Version)		
Frequency	GPS, GALILE	EO, QZSS: L1 1575.42MHz, C/A code		
Channels	Support 66 channels			
Update rate	1Hz default, up to 10Hz			
S	Tracking	-162dBm, up to -165dBm (with external LNA)		
Sensitivity	Cold Start	-143.5dBm, up to -148dBm (with external LNA)		
Acquisition	Hot Start (Open Sky)	< 1s		
Time	Cold Start	< 38s		
	(Open Sky)	< 18s 7 with AGPS		
Position	Autonomous	5m (2D RMS)		
Accuracy	SBAS	2.5m (depends on accuracy of correction data)		
Max. Altitude	< 18,000 m, up to 50,000m by request			
Max. Velocity	< 515 m/s			
Protocol Support	NMEA 01839600 bps, 8 data bits, no parity, 1 stop bits (default) 1Hz: GGA, GLL, GSA, GSV, RMC, VTG			
Dimensions	55.0mm * 46.0 mm * 14.5mm ±0.2mm			