NTP001

NTP SERVER



Energy & utilities

Enterprise

Industrial & automation

Retail

Smart city

NETWORK TIME SYNCHRONIZATION

Accurate & low-cost NTP server

MULTIPLE INTERFACES

Featuring RJ45, RS232, RS485 & I/Os

SECURITY

Authentication, access control & more

PLUG-AND-PLAY

Simple installation & configuration at minimum effort

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Ethernet	
LAN	1 x LAN port, 10/100 Mbps, compliance with IEEE 802.3, IEEE 802.3u, 802.3az standards, supports auto MDI/MDIX crossover

Network	
Network protocols	TCP, UDP, IPv4, IPv6, ICMP, NTP, DNS, HTTP, HTTPS, SSL/TLS, ARP, SSH, DHCP, SNMP, MQTT
Connection monitoring	Ping Reboot, Wget Reboot, Periodic Reboot
Network topology	Visual representation of your network, showing which devices are connected to which other devices
DDNS	Supported >77 service providers, others can be configured manually

Security	
Authentication	Pre-shared key, digital certificates, X.509 certificates, TACACS+, Internal & External RADIUS users authentication, IP & login attempts block, time-based login blocking, built-in random password generator
WEB filter	Block list for blocking out unwanted websites, allow list for specifying allowed sites only
Access control	Flexible access control of SSH, Web interface, CLI and Telnet
802.1x	Port-based network access control client

MQTT Gateway	
Modbus MQTT Gateway	Allows sending commands and receiving data from MODBUS Server through MQTT broker

MODBUS	
Supported modes	Server, Client
Supported connection types	RTU (RS232, RS485), TCP
Custom registers	MODBUS TCP custom register block requests, which read/write to a file inside the router, and can be used to extend MODBUS TCP Client functionality
Supported data formats	8-bit: INT, UINT; 16-bit: INT, UINT (MSB or LSB first); 32-bit: float, INT, UINT (ABCD (big-endian), DCBA (little-endian), CDAB, BADC), HEX, ASCII

TIME SYNCHRONIZATION	
Acquisition Sensitivity	Acquisition Sensitivity -146 dBm, Reacquisition Sensitivity -157 dBm, Tracking Sensitivity -157 dBm
Time Source	GPS 1575.42 ±1.023 MHz, GLONASS 1597.5–1605.8 MHz, Galileo 1575.42 ±2.046 MHz, BDS 1561.098 ±2.046 MHz
Startup	Cold GPS acquisition in <120 seconds

API	
Teltonika Networks Web API (beta) support	Expand your device's possibilities by using a set of configurable API endpoints to retrieve or change data. For more information, please refer to this documentation: https://developers.teltonika-networks.com

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Monitoring & Management	
WEB UI	HTTP/HTTPS, status, configuration, FW update, CLI, troubleshoot, multiple event log servers, firmware update availability notifications, event log, system log, kernel log, Internet status
SSH	SSH (v1, v2)
SNMP	SNMP (v1, v2, v3), SNMP Trap, Brute force protection
JSON-RPC	Management API over HTTP/HTTPS
MODBUS	MODBUS TCP status/control

System Characteristics	
CPU	Mediatek, 580 MHz, MIPS 24KEc
RAM	128 MB, DDR2
FLASH storage	16 MB, NOR Flash

Firmware/Configuration	
WEB UI	Update FW from file, check FW on server, configuration profiles, configuration backup
Keep settings	Update FW without losing current configuration
Factory settings reset	A full factory reset restores all system settings, including the IP address, PIN, and user data to the default manufacturer's configuration

FIRMWARE CUSTOMISATION	
Operating system	RutOS (OpenWrt based Linux OS)
Supported languages	Busybox shell (ash), Lua 5.1, C, C++
Development tools	SDK package with build environment provided
GPL customization	You can create your own custom, branded firmware and web page application by changing colours, logos, and other elements in our firmware to fit your or your clients' needs

Serial	
RS232	Terminal block connector: TX, RX, RTS, CTS
RS485	Terminal block connector: D+, D-, R+, R- (2 or 4 wire interface)

Input/Output	
Input	3 x Digital Input, 0 - 6 V detected as logic low, 1 x Analog input, 8 - 30 V detected as logic high
Output	3 x Digital Output, Open collector output, max output 30 V, 300 mA

Power	
Connector	2-pin in 16-pin industrial terminal block
Input voltage range	9 - 30 VDC, Overvoltage protection, Reverse polarity protection, Surge protection +/- 1kV 50 uS Max
Power consumption	Idle: < 2 W, Max: < 3.5 W

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Physical Interfaces

Ethernet	1 x RJ45 ports, 10/100 Mbps
I/O's	3 x Configurable I/O, 1 x Analog input in 16-pin terminal block
Status LEDs	1 x Power, 2x GNSS status LEDs, 1x NTP Server status LED, 3 x IO status LEDs
Power	1 x 16-pin terminal block
Antennas	1 x SMA for GNSS
RS232	4-pin in 16-pin terminal block (TX, RX, RTS, CTS)
RS485	4-pin in 16-pin terminal block (D+, D-, R+, R-)
Reset	Reboot/User default reset/Factory reset button

Physical Specification

Casing material	Anodised aluminium housing and panels
Dimensions (W x H x D)	83 x 25 x 82.6 mm
Weight	180 g
Mounting options	DIN rail, wall mount, flat surface (all require additional kit)

Operating Environment

Operating temperature	-40 °C to 75 °C
Operating humidity	10% to 90% non-condensing
Ingress Protection Rating	IP30

NTP

Supported modes	Server - Receive time from GPS and act as a NTP server to broadcast time for other devices (Stratum 1). Broadcast time through UDP or over Serial (RS232, RS485)
Daytime Protocol	TCP/UDP
Date over Serial	RS232/RS485
NTP	NTPv4, NTP authentication (MD5/SHA1), Unicast/Multicast/Broadcast mode
Protocol	NTP Stratum 1 Time Server (NTPv4)
NTP Accuracy	Ethernet NTP ±1ms overall
NTP Performance	>300 NTP requests per second (wire speed)
Synchronization Accuracy	LAN synchronization typically 1–10ms

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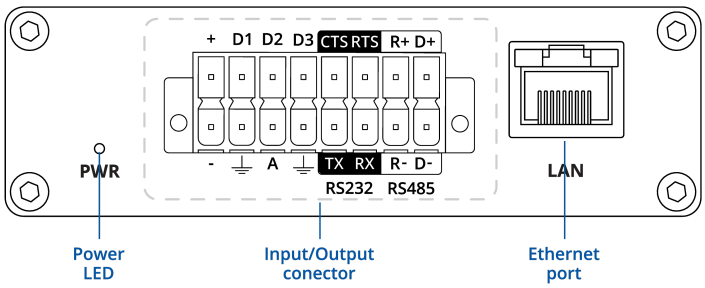
Certification

EMEA	NTP001 CE/RED NTP001 UKCA NTP001 RoHS NTP001 REACH NTP001 Kenya NTP001 ICASA NTP001 ANRT
APAC	NTP001 RCM
MISCELLANEOUS	NTP001 CB Scheme
SAFETY & ENVIROINMENTAL	NTP001 WEEE

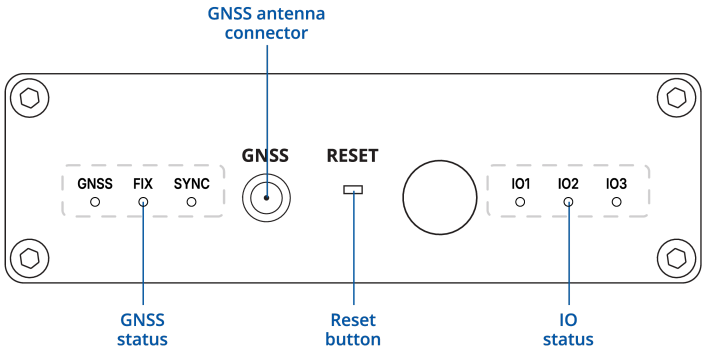
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Hardware

FRONT VIEW

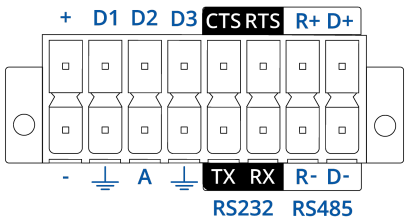


BACK VIEW



INPUT/OUTPUT CONNECTOR PINOUT

D1, D2, D3 - Configurable digital Input/Output pins. Open collector output, max output 30 V, 300 mA or Digital input where 0-6 V detected as logic low and 8-30 V – logic high.
+ - 9-30 VDC positive power pin
CTS - RS232 clear data to send pin (output).
RTS - RS232 request data to send pin (input).
R+ - RS485 receiver positive signal pin.
D+ - RS485 driver positive signal pin.
- - Negative/ground power pin.
⏚ - Ground pins for D1, D2, D3, A, RS232 and RS485.
A - Analog input pin. Analog voltage range 0-30 V.
TX - RS232 transmitted data (input).
RX - RS232 received data (output).
R- - RS485 receiver negative signal.
D- - RS485 driver negative signal.



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Ordering

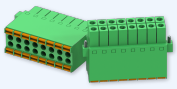
Standard package*



NTP001



QUICK START GUIDE



2X8PIN CONNECTOR

*Standard package contents may differ based on standard order codes.

For more information on all available packaging options – please contact us directly.

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Classification codes

HS Code: 851762
HTS: 8517.62.00

For more information on all available packaging options – please contact us directly.

Available versions

Hardware version	Supported frequencies	Standard order code / Package Contains
NTP001 **0*******	N/A	NTP001000000 / Standard package NTP001000200 / Mass packing code

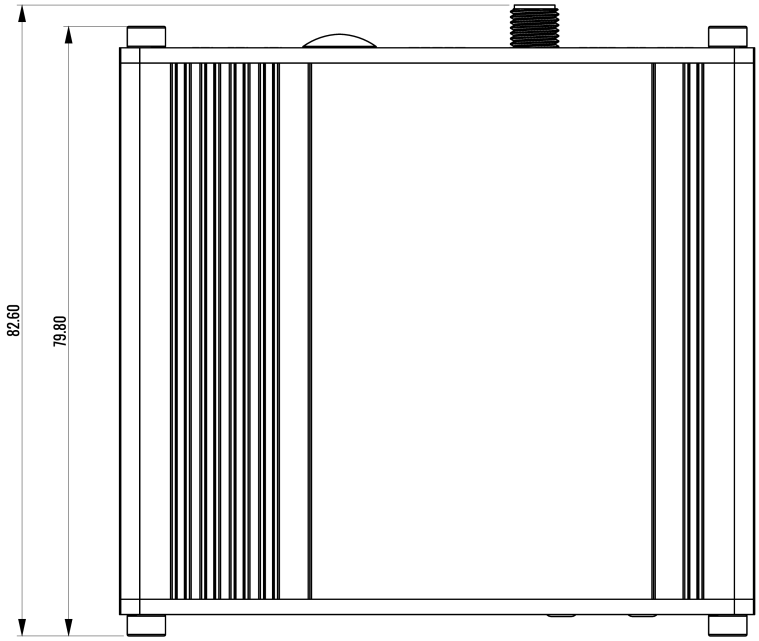
NTP001 spatial measurements

Available versions	
Box (W x H x D):	111 x 31 x 89 mm
Device housing (W x H x D)	83 x 25 x 82.6 mm

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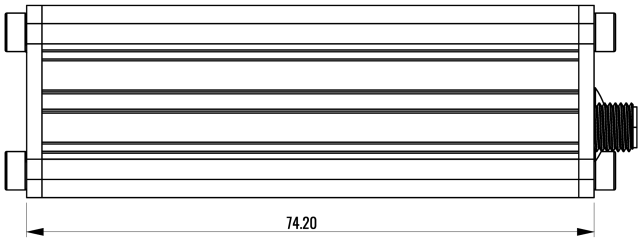
TOP VIEW

The figure below depicts the measurements of device and its components as seen from the top:



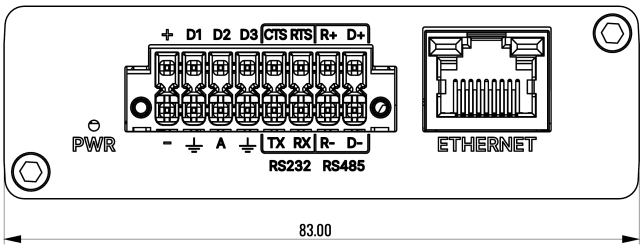
RIGHT VIEW

The figure below depicts the measurements of device and its components as seen from the right:



FRONT VIEW

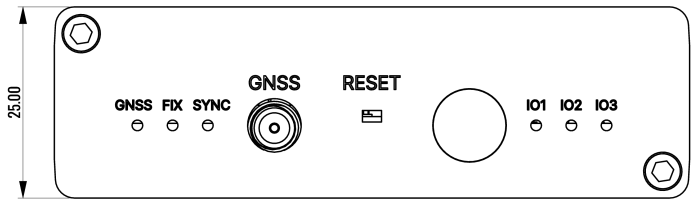
The figure below depicts the measurements of device and its components as seen from the front panel side:



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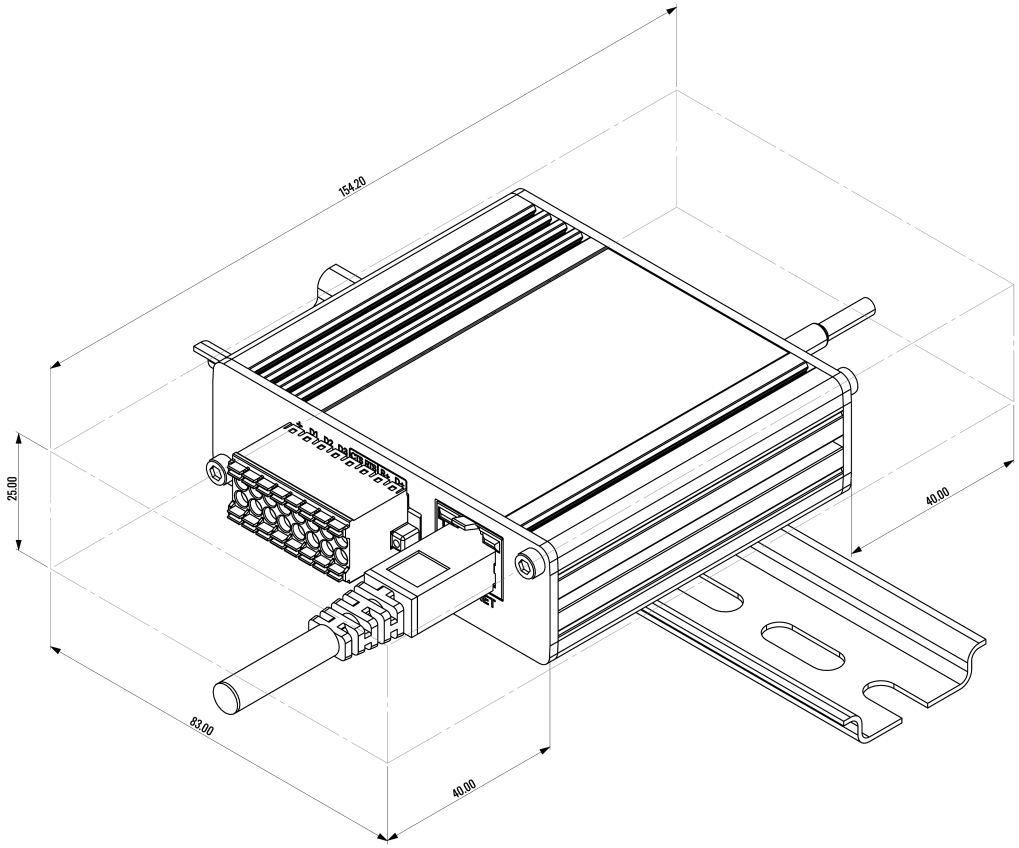
REAR VIEW

The figure below depicts the measurements of device and its components as seen from the back panel side:



MOUNTING SPACE REQUIREMENTS

The figure below depicts an approximation of the device's dimensions when cables and antennas are attached:



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Millbeck.

IoT Connectivity

ABOUT

Millbeck is a UK-based IoT and M2M connectivity specialist, supplying the SIM technology, networking hardware and technical expertise that keep connected devices online, wherever they're deployed.

With over 20 years' experience in cellular networking, our team has built deep sector knowledge and strong partnerships with leading carriers and hardware manufacturers across the UK, Europe and globally.

TIMELINE

2002 — MILLBECK FOUNDED
Business connectivity for UK SMEs

2008 — FIRST IOT SIM SOLUTION PROVIDED
Cellular SIM solutions commence

2018 — ROAMING IOT SIMS LAUNCHED
The next step in IoT connectivity begins

2024 — TELTONIKA DIAMOND PARTNER
Millbeck appointed as a key Teltonika partner

NOW — UK, EUROPE & GLOBAL DEPLOYMENTS
Connecting devices across every sector

EXPERTISE

- Routers
- Antennas
- Networking
- IoT SIMs
- IoT Consultancy

SIM TECHNOLOGIES

- 2G/3G, 4G LTE, 5G, CAT-M1, LTE-M, VoLTE & NB-IoT
- eUICC
- eSIM
- Fixed Public IP
- Fixed Private IP
- IPSec VPN
- SSL VPN

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