

MOBILE

Mobile module	4G LTE Cat 4 up to 150 DL/50 UL Mbps; 3G up to 21 DL/5.76 UL Mbps; 2G up to 236.8 DL/236.8 UL kbps
3GPP Release	Release 9
SIM switch	2 SIM cards, auto-switch cases: weak signal, data limit, SMS limit, roaming, no network, network denied, data connection fail
Status	IMSI, ICCID, operator, operator state, data connection state, network type, bandwidth, connected band, signal strength (RSSI), SINR, RSRP, RSRQ, EC/IO, RSCP, data sent/received, LAC, TAC, cell ID, ARFCN, UARFCN, EARFCN, MCC, and MNC
SMS	SMS status, SMS configuration, EMAIL to SMS, SMS to EMAIL, SMS to HTTP, SMS to SMS, scheduled SMS, SMS autoreply, SMPP
USSD	Supports sending and reading Unstructured Supplementary Service Data messages
Block/Allow list	Operator block/allow list (by country or separate operators)
Multiple PDN	Possibility to use different PDNs for multiple network access and services
Band management	Band lock, Used band status display
SIM PIN code management	SIM PIN code management enables setting, changing, or disabling the SIM card's PIN
APN	Auto APN

Bridge Direct connection (bridge) between mobile ISP and device on LAN

Passthrough Router assigns its mobile WAN IP address to another device on LAN

WIRELESS

Wireless mode 802.11b/g/n (Wi-Fi 4), Access Point (AP), Station (STA)

Wi-Fi security WPA2-Enterprise: PEAP, WPA2-PSK, WPA-EAP, WPA-PSK, WPA3-SAE, WPA3-EAP, OWE; AES-CCMP, TKIP, Auto-cipher modes, client separation, EAP-TLS with PKCS#12 certificates, disable auto-reconnect, 802.11w Protected Management Frames (PMF)

SSID/ESSID SSID stealth mode and access control based on MAC address

Wi-Fi users Up to 50 simultaneous connections

Wireless Connectivity Features Fast roaming (802.11r), Relayd, BSS transition management (802.11v), radio resource measurement (802.11k)

Wireless MAC filter Allowlist, blocklist

Wireless QR code generator Once scanned, a user will automatically enter your network without needing to input login information

TravelMate Forward Wi-Fi hotspot landing page to a subsequent connected device

ETHERNET

WAN	1 x WAN port 10/100 Mbps, compliance with IEEE 802.3, IEEE 802.3u, 802.3az standards, supports auto MDI/MDIX crossover
LAN	1 x LAN port, 10/100 Mbps, compliance with IEEE 802.3, IEEE 802.3u standards, supports auto MDI/MDIX crossover
NETWORK	
Routing	Static routing, Dynamic routing (BGP, OSPF v2, RIP v1/v2, EIGRP, NHRP), Policy based routing
Network protocols	TCP, UDP, IPv4, IPv6, ICMP, NTP, DNS, HTTP, HTTPS, SFTP, FTP, SMTP, SSL/TLS, ARP, VRRP, PPP, PPPoE, UPNP, SSH, DHCP, Telnet, SMPP, SNMP, MQTT, Wake On Lan (WOL), VXLAN
VoIP passthrough support	H.323 and SIP-alg protocol NAT helpers, allowing proper routing of VoIP packets
Connection monitoring	Ping Reboot, Wget Reboot, Periodic Reboot, LCP and ICMP for link inspection
Firewall	Port forward, traffic rules, custom rules, TTL target customisation
Firewall status page	View all your Firewall statistics, rules, and rule counters
Port management	View device ports, enable and disable each of them, turn auto-configuration on or off, change their transmission speed, and so on
Network topology	Visual representation of your network, showing which devices are connected to which other devices

DHCP	Static and dynamic IP allocation, DHCP relay, DHCP server configuration, status, static leases: MAC with wildcards
QoS / Smart Queue Management (SQM)	Traffic priority queuing by source/destination, service, protocol or port, WMM, 802.11e
DDNS	Supported >77 service providers, others can be configured manually
DNS over HTTPS	DNS over HTTPS proxy enables secure DNS resolution by routing DNS queries over HTTPS
Network backup	Wi-Fi WAN, Mobile, VRRP, Wired options, each of which can be used as an automatic Failover
Load balancing	Balance Internet traffic over multiple WAN connections
SSHFS	Possibility to mount remote file system via SSH protocol
Traffic Management	Real-time monitoring, wireless signal charts, traffic usage history
Hotspot	Captive portal (hotspot), internal/external Radius server, Radius MAC authentication, SMS authorisation, SSO authentication, internal/external landing page, walled garden, user scripts, URL parameters, user groups, individual user or group limitations, user management, 9 default customisable themes and optionality to upload and download customised hotspot themes
Hotspot 2.0	Hotspot 2.0 is a Wi-Fi standard that enables seamless, secure, and automatic connection to

trusted wireless networks

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
Firewall	Preconfigured firewall rules can be enabled via WebUI, unlimited firewall configuration via CLI, DMZ, NAT, NAT-T, NAT64
Attack prevention	DDOS prevention (SYN flood protection, SSH attack prevention, HTTP/HTTPS attack prevention), port scan prevention (SYN-FIN, SYN-RST, X-mas, NULL flags, FIN scan attacks)
VLAN	Port and tag-based VLAN separation
Mobile quota control	Mobile data limit, customizable period, start time, warning limit, phone number
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
Certificate Manager	Certificate creation tool allows to create CA, server, client, let's encrypt, SCEP certificates
802.1x	Port-based network access control server

VPN

OpenVPN	Multiple clients and a server can run simultaneously, 27 encryption methods
OpenVPN Encryption	DES-CBC 64, RC2-CBC 128, DES-EDE-CBC 128, DES-EDE3-CBC 192, DESX-CBC 192, BF-CBC 128, RC2-40-CBC 40, CAST5-CBC 128, RC2-64-CBC 64, AES-128-CBC 128, AES-128-CFB 128, AES-128-CFB1 128, AES-128-CFB8 128, AES-128-OFB 128, AES-128-GCM 128, AES-192-CFB 192, AES-192-CFB1 192, AES-192-CFB8 192, AES-192-OFB 192, AES-192-CBC 192, AES-192-GCM 192, AES-256-GCM 256, AES-256-CFB 256, AES-256-CFB1 256, AES-256-CFB8 256, AES-256-OFB 256, AES-256-CBC 256
IPsec	XFRM, IKEv1, IKEv2, with 14 encryption methods for IPsec (3DES, DES, AES128, AES192, AES256, AES128GCM8, AES192GCM8, AES256GCM8, AES128GCM12, AES192GCM12, AES256GCM12, AES128GCM16, AES192GCM16, AES256GCM16)
GRE	GRE tunnel, GRE tunnel over IPsec support
PPTP, L2TP	Client/Server instances can run simultaneously, L2TPv3, L2TP over IPsec support
Stunnel	Proxy designed to add TLS encryption functionality to existing clients and servers without any changes in the program's code
DMVPN	Method of building scalable IPsec VPNs, Phase 2 and Phase 3 and Dual Hub support
SSTP	SSTP client instance support

ZeroTier	ZeroTier VPN client support
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WireGuard	WireGuard VPN client and server support
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Tinc	Tinc offers encryption, authentication and compression in it's tunnels. Client and server support.
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OpenConnect	Cross-platform multi-protocol SSL VPN client which supports a number of VPN protocols
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EoIP	Ethernet over IP (EoIP) tunnelling is a protocol based on GRE RFC 1701 that creates an Ethernet tunnel between two routers on top of an IP connection
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OPC UA

Supported modes	Client, Server
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Supported connection types	TCP
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BACNET

Supported modes	Router
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Supported connection types	TCP
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Configuration options	Support for multiple BACnet/IP interfaces, Network number assignment, Preconfigured BDT entries for BBMD (BACnet Broadcast Management Device)
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MODBUS

Supported modes	Server, Client
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Supported connection types	TCP
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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
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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
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DATA TO SERVER

Protocol	HTTP(S), MQTT, Azure MQTT
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Data to server	Extract parameters from multiple sources and different protocols, and send them all to a single server; Custom LUA scripting, allowing scripts to utilize the router's Data to server feature
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MQTT GATEWAY

Modbus MQTT Gateway	Allows sending commands and receiving data from MODBUS Server through MQTT broker
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DNP3

Supported modes	Station, Outstation
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Supported connection	TCP
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DLMS/COSEM

DLMS Support	DLMS - standard protocol for utility meter data exchange
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Supported modes	Client
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Supported connection types	TCP
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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>

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
FOTA	Firmware update from server, automatic notification
SSH	SSH (v1, v2)
SMS	SMS status, SMS configuration
Call	Reboot, Status, Mobile data on/off, Output on/off, answer/hang-up with a timer, Wi-Fi on/off
TR-069	OpenACS, EasyCwmp, ACSLite, tGem, LibreACS, GenieACS, FreeACS, LibCWMP, Friendly tech, AVSystem
MQTT	MQTT Broker, MQTT publisher
SNMP	SNMP (v1, v2, v3), SNMP Trap, Brute force protection
JSON-RPC	Management API over HTTP/HTTPS

RMS

Teltonika Remote Management System
(RMS)

IOT PLATFORMS

ThingWorx

Allows monitoring of: WAN Type, WAN IP, Mobile Operator Name, Mobile Signal Strength, Mobile Network Type

Cumulocity - Cloud of Things

Allows monitoring of: Device Model, Revision and Serial Number, WAN Type and IP, Mobile Cell ID, ICCID, IMEI, Connection Type, Operator, Signal Strength. Has reboot and firmware upgrade actions

Azure IoT Hub

Can be configured with Data to Server to send all the available parameters to the cloud. Has Direct method support which allows to execute RutOS API calls on the IoT Hub. Also has Plug and Play integration with Device Provisioning Service that allows zero-touch device provisioning to IoT Hubs

AWS IoT Core

Utility to interact with the AWS cloud platform. Jobs Support: Call the device's API using AWS Jobs functionality

SYSTEM CHARACTERISTICS

CPU

Mediatek, 580 MHz, MIPS 24KEc

RAM

128 MB, DDR2

FLASH storage

32 MB, SPI Flash

FIRMWARE/CONFIGURATION

WEB UI

Update FW from file, check FW on server, configuration profiles, configuration backup

FOTA	Update FW
RMS	Update FW/configuration for multiple devices at once
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, Lua, 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
Package Manager	The Package Manager is a service used to install additional software on the device

INPUT/OUTPUT

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

Events Email, RMS, SMS

I/O juggler Allows to set certain I/O conditions to initiate event

POWER

Connector 4-pin industrial DC power socket

Input voltage range 9 – 30 VDC, reverse polarity protection; surge protection >31 VDC 10us max

PoE (passive) Passive PoE over spare pairs. Possibility to power up through LAN1 port, not compatible with IEEE802.3af, 802.3at and 802.3bt standards, Mode B, 9 - 30 VDC

Power consumption < 6.5 W Max

PHYSICAL INTERFACES

Ethernet 2 x RJ45 ports, 10/100 Mbps

I/O's 1 x Digital Input, 1 x Digital Output on 4-pin power connector

Status LEDs 3 x Connection type status LEDs, 3 x Connection strength LEDs, 2 x LAN status LEDs, 1 x Power LED

SIM 2 x SIM slot (Mini SIM – 2FF), 1.8 V/3 V, internal SIM holders

Power 1 x 4-pin power connector

Antennas 2 x SMA for LTE, 1 x RP-SMA for Wi-Fi antenna connectors

Reset

Reboot/User default reset/Factory reset
button

PHYSICAL SPECIFICATION

Casing material

Anodized aluminum housing and panels

Dimensions (W x H x D)

83 x 25 x 83 mm

Weight

130 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

REGULATORY & TYPE APPROVALS

Regulatory

CE, UKCA, RCM, CB, WEEE

Vehicle

E-mark