

MOBILE

Mobile module	2 x 4G (LTE) – Cat 6 up to 300 Mbps, 3G – up to 42 Mbps
SIM/mobile module switch	2 SIM cards, one for each mobile module, auto switch cases: weak signal, data limit, SMS limit, roaming, no network, network denied, data connection fail, SIM idle protection (planned)
Status	Signal strength, SINR, RSRP, RSRQ, Bytes sent/received, Mobile module in use
SMS	SMS status, SMS configuration, send/read SMS via HTTP POST/GET, Email to SMS, SMS to Email, SMS to TTP, SMS to SMS, SMS auto replay, scheduled SMS (planned), SMPP (planned)
Black/White list	Operator black/white list
Multiple PDN (planned)	Possibility to use different PDNs for multiple network access and services
Band management	Band lock, Used band status display
APN	Auto APN
Bridge mode	Direct connection (bridge) between mobile ISP and device on LAN

WIRELESS

Wireless mode	802.11b/g/n/ac (WiFi 5) with data transmission rates up to 867 Mbps (Dual Band, MU-MIMO), 802.11r fast transition, Access Point (AP), Station (STA)
WiFi security	WPA2-Enterprise-PEAP, WPA2-PSK, WPA-PSK, WEP; AES-CCMP, TKIP, Auto Cipher modes, client separation
ESSID	ESSID stealth mode
Wireless Hotspot	Captive portal (Hotspot), internal/external Radius server, built in customizable landing page

ETHERNET

WAN	WAN port (can be configured as LAN) 10/100/1000 Mbps, compliance with IEEE 802.3, IEEE 802.3u, 802.3az standards, supports auto MDI/MDIX crossover
LAN	4 x LAN ports, 10/100/1000 Mbps, compliance with IEEE 802.3, IEEE 802.3u, 802.3az standards, supports auto MDI/MDIX

BLUETOOTH

Bluetooth 4.0	Bluetooth low energy (LE) for short range communication
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NETWORK

Routing	Static routing, Dynamic routing (BGP, OSPF v2, RIP v1/v2, EIGRP, NHRP)
NetSnapper (optional)	Mobile connection management, data compression VPN client (not available in standard FW)
Network protocols	TCP, UDP, IPv4, IPv6, ICMP, NTP, DNS, HTTP, HTTPS, FTP, SMTP, SSL v3, TLS, ARP, VRRP, PPP, PPPoE, UPNP, SSH, DHCP, Telnet client, SNMP, MQTT, Wake on LAN (WOL)
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 forwards, traffic rules, custom rules
DHCP	Static and dynamic IP allocation, DHCP Relay, Relayd
QoS	Traffic priority queuing by source/destination (planned), service (planned), protocol or port (planned), WMM, 802.11e
DDNS	Supported >25 service providers, others can be configured manually
Network backup	VRRP, Mobile, Wired and WiFi WAN options, each of which can be used as an automatic Failover
Load balancing	Balance Internet traffic over multiple WAN connections
SSHFS (optional)	Possibility to mount remote file system via SSH protocol (not available in standard FW)

SECURITY

Authentication	Pre-shared key, digital certificates, X.509 certificates
Firewall	Pre-configured firewall rules can be enabled via WebUI, unlimited firewall configuration via CLI; DMZ; NAT; NAT-T
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 based and tag based VLAN separation
Mobile quota control	Custom data limits for both SIM cards
WEB filter	Blacklist for blocking out unwanted websites, Whitelist for specifying allowed sites only
Access control	Flexible access control of TCP, UDP, ICMP packets, MAC address filter

VPN

OpenVPN	Multiple clients and a server can run simultaneously, 12 encryption methods
OpenVPN Encryption	DES-CBC, RC2-CBC, DES-EDE-CBC, DES-EDE3-CBC, DESX-CBC, BF-CBC, RC2-40-CBC, CAST5-CBC, RC2-64-CBC, AES-128-CBC, AES-192-CBC, AES-256-CBC
IPsec	IKEv1, IKEv2, with 5 encryption methods for IPsec (DES, 3DES, AES128, AES192, AES256)

GRE	GRE tunnel
PPTP, L2TP	Client/Server instances can run simultaneously
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
SSTP	SSTP client instance support

MODBUS

Modbus TCP slave	ID filtering: Respond to one ID in range [1;255] or any Allow remote access: Allow access through WAN Custom registers: Modbus TCP custom register block, which allows to read/write to a file inside the router, and can be used to extend Modbus TCP slave functionality
Modbus TCP master	Supported functions: 01, 02, 03, 04, 05, 06, 15, 16 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)
MQTT gateway	Gateway Allows sending commands and receiving data from Modbus Master trough MQTT broker
Modbus data to server	Protocols HTTP(S), MQTT, Azure MQTT (planned)

MONITORING & MANAGEMENT

WEB UI	HTTP/HTTPS, status, configuration, FW update, CLI, troubleshoot, event log, system log, kernel log
FOTA	Firmware update from server, automatic notification
SSH	SSH (v1, v2)
SMS	SMS status, SMS configuration, send/read SMS via HTTP POST/GET
CALL	Reboot, Status, Mobile data on/off, Output 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
JSON-RPC	Management API over HTTP/HTTPS
Modbus	Modbus TCP status/control
RMS	Teltonika Remote Management System (RMS)

IoT PLATFORMS

Clouds of things	Allows monitoring of: Device data, Mobile data, Network info, Availability
ThingWorx	Allows monitoring of: WAN Type, WAN IP Mobile Operator Name, Mobile Signal Strength, Mobile Network Type
Cumulocity	Allows monitoring of: Device Model, Revision and Serial Number, Mobile Cell ID, ICCID, IMEI, Connection Type, Operator, Signal Strength, WAN Type and IP
Azure IoT Hub	Can send device IP, Number of bytes send/received/ 3G connection state, Network link state, IMEI, ICCID, Model, Manufacturer, Serial, Revision, IMSI, Sim State, PIN state, GSM signal, WCDMA RSCP, WCDMA EC/IO, LTE RSRP, LTE SINR, LTE RSRQ, CELL ID, Operator, Operator number, Connection type, Temperature, PIN count to Azure IoT Hub server

SYSTEM CHARACTERISTICS

CPU	Quad-core ARM Cortex A7, 717 MHz
RAM	256 MB, DDR3
FLASH memory	256 MB Flash

FIRMWARE / CONFIGURATION

WEB UI	Update FW from file, check FW on server, configuration profiles, configuration backup
FOTA	Update FW/configuration from server
RMS	Update FW/configuration for multiple devices at once
Keep settings	Update FW without losing current configuration

FIRMWARE CUSTOMIZATION

Operating system	RutOS (OpenWrt based Linux OS)
Supported languages	Busybox shell, Lua, C, C++
Development tools	SDK package with build environment provided

LOCATION TRACKING

GNSS	GPS, GLONASS, BeiDou, Galileo and QZSS
Coordinates	GNSS coordinates via WebUI, SMS, TAVL, RMS

NMEA	NMEA 0183
Server software	Supported server software: TAVL, RMS
Mobile Network Geolocation	Get approximate device location on RMS based on mobile cell tower position (without using GPS)
Geofencing	Configurable multiple geofence zones

USB

Data rate	USB 2.0
Applications	Samba share, custom scripts (planned)
External devices	Possibility to connect external HDD, flash drive, additional modem, printer (planned)
Storage formats	FAT, FAT32, NTFS

INPUT/OUTPUT

Input	1x Digital Input
Output	1x Digital Output
Events	SMS, Email, RMS

POWER

Connector	4 pin industrial DC power socket
Input voltage range	9 – 50 VDC, reverse polarity protection, voltage surge/transient protection
PoE (passive)	Passive PoE. Possibility to power up through LAN1 port, not compatible with IEEE802.3af and 802.3at standards
Power consumption	Idle: <4 W, Max: <22 W

PHYSICAL INTERFACES (PORTS, LEDS, ANTENNAS, BUTTONS, SIM)

Ethernet	5 x RJ45 ports, 10/100/1000 Mbps
I/Os	1 Digital Input, 1 Digital Output on 4 pin power connector
Status LEDs	6 x connection status LEDs, 6 x connection strength LEDs, 10 x Ethernet port status LEDs, 4 x WAN status LEDs, 1x Power LED, 2.4G and 5G WiFi LEDs
SIM	2 x SIM slots (Mini SIM - 2FF), 1.8 V/3 V, external SIM holders
Power	4 pin DC connector
Antennas	4 x SMA for LTE, 2 x RP-SMA for WiFi, 1 x RP-SMA for Bluetooth, 1 x SMA for GNSS
USB	USB A port for external devices
Reset	Reboot/User default reset/Factory reset button

PHYSICAL SPECIFICATION

Casing material	Full aluminium housing
Dimensions (W x H x D)	132 x 44 x 95 mm
Weight	540 g
Mounting options	DIN rail (can be mounted on two sides), flat surface placement

OPERATING ENVIRONMENT

Operating temperature	-40 C to 75 C
Operating humidity	10 % to 90 % non-condensing