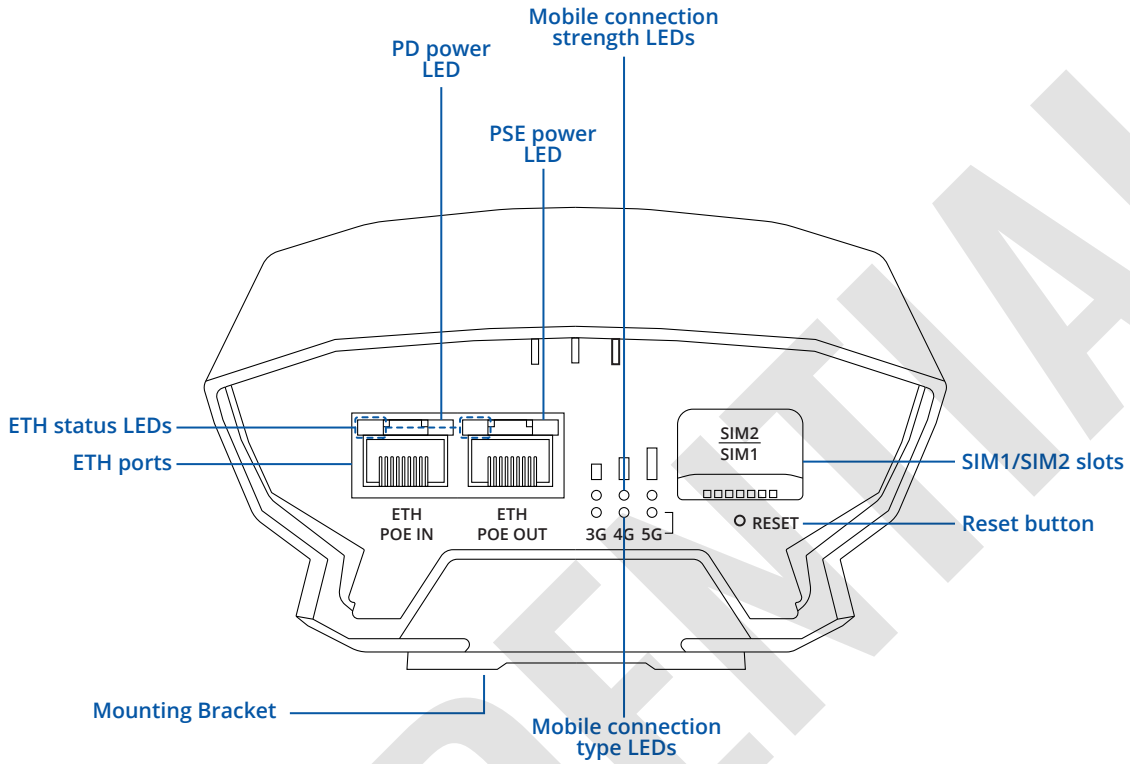
OTD500

Preliminary datasheet

HARDWARE

FRONT VIEW



FEATURES

MOBILE

Mobile module	5G SA Sub-6: Max. 2.4 Gbps (DL)/Max. 900 Mbps (UL); 5G NSA Sub-6: Max. 3.4 Gbps (DL)/Max. 550 Mbps (UL) LTE-FDD: Max. 1.6 Gbps (DL)/Max. 200 Mbps (UL) WCDMA: Max. 42 (DL)/Max. 5.76 (UL)
SIM switch	2 SIM cards, auto-switch cases: weak signal, data limit, SMS limit, roaming, no network, network denied, data connection fail, SIM idle protection
Status	Signal strength (RSSI), SINR, RSRP, RSRQ, EC/IO, RSCP, Bytes sent/received, connected band, IMSI, ICCID
SMS	SMS status, SMS configuration, send/read SMS via HTTP POST/GET, 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
Black/White list	Operator black/white list
Band management	Band lock, Used band status display
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

ETHERNET

LAN	2 x ETH ports (can be configured as WAN), 10/100/1000 Mbps, compliance with IEEE 802.3, IEEE 802.3u, 802.3az standards, supports auto MDI/MDIX crossover

POE IN

PoE ports	1 x PoE In
PoE standards	802.3af/at

POE OUT

PoE ports	1 x PoE Out
PoE standards	802.3af Alternative A
PoE Max Power per Port (at PSE)	15.4 W Max (power supply unit dependent)

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)
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
Firewall status page	View all your Firewall statistics, rules, and rule counters
Ports 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
QoS / Smart Queue Management (SQM)	Traffic priority queuing by source/destination, service, protocol or port, WMM, 802.11e
DDNS	Supported >25 service providers, others can be configured manually
Network backup	VRRP, Wired options, each of which can be used as an automatic Failover
SSHFS	Possibility to mount remote file system via SSH protocol

SECURITY

Authentication	Pre-shared key, digital certificates, X.509 certificates, TACACS+, Radius, IP & Login attempts block
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 and tag-based VLAN separation
Mobile quota control	Mobile data limit, customizable period, start time, warning limit, phone number
WEB filter	Blacklist for blocking out unwanted websites, Whitelist for specifying allowed sites only
Access control	Flexible access control of SSH, Web interface, CLI and Telnet

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	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
SSTP	SSTP client instance support
ZeroTier	ZeroTier VPN client support
WireGuard	WireGuard VPN client and server support
Tinc	Tinc offers encryption, authentication and compression in it's tunnels. Client and server support

OPC UA

Supported modes	Client, Server (planned)
Supported connection types	TCP

MODBUS

Supported modes	Server, Client
Supported connection types	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 Slave 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

DATA TO SERVER

Protocol	HTTP(S), MQTT, Azure MQTT
Data to server	Extract parameters from multiple sources and different protocols, and send them all to a single server

MODBUS MQTT GATEWAY

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

DNP3

Supported modes	Station, Outstation
Supported connection	TCP

DLMS

DLMS Support	DLMS - standard protocol for utility meter data exchange

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, answer/hang-up with a timer
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

Cloud 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, WAN Type and IP, Mobile Cell ID, ICCID, IMEI, Connection Type, Operator, Signal Strength
Azure IoT Hub	Can send device IP, Number of bytes send/received, Temperature, PIN count to Azure IoT Hub server, Mobile 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

SYSTEM CHARACTERISTICS

CPU	Mediatek, Dual-Core, 880 MHz, MIPS1004Kc
RAM	256 MB
FLASH storage	256 MB

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

FIRMWARE CUSTOMIZATION

Operating system	RutOS (OpenWrt based Linux OS)
Supported languages	Busybox shell, Lua, C, C++, and Python, Java in Package manager
Development tools	SDK package with build environment provided
GPL customization	You can now create your own custom firmware and web page application, with some examples to make the creation process easier; and brand our firmware by changing colours, logos, and so on to fit your or your clients' needs

POWER

Connector	RJ45 Socket
Input voltage range for PoE	44–57.0 VDC, reverse polarity protection, voltage surge/transient protection
Power consumption	Idle: < 2.5 W / Max: < 6 W / PoE Max < 21 W

PHYSICAL INTERFACES

Ethernet	2 x RJ45 ports, 10/100/1000 Mbps
Status LEDs	3 x Mobile connection type, 3 x Mobile connection strength, 2 x Ethernet bicolor LEDs and 2 x Power LEDs on RJ45 connector
SIM	2 x SIM slots (Mini SIM – 2FF), 1.8 V/3 V
Power	RJ45, PoE In, 44 – 57.0 VDC
Antennas	4 x Internal antennas
Antennas specifications	1x 617-960/1695-2690 /3300-4200MHz VSWR<3 gain<4.55dBi, Omnidirectional 1x 617-960/1695-2690 /3300-4200MHz VSWR<3 gain<4.47dBi, Omnidirectional 1x 617-960/1695-2690 /3300-4200MHz VSWR<3.5 gain<4.81dBi, Omnidirectional 1x 617-960/1695-2690 /3300-4200MHz VSWR<3.5 gain<4.81dBi, Omnidirectional
Reset	Reboot/User default reset/Factory reset button

PHYSICAL SPECIFICATION

Casing material	Plastic (PC+ASA)
Dimensions (W x H x D)	110 x 49.30 x 235 mm
Weight	855 g
Mounting options	Mounting Bracket (for vertical flat surface or pole mounting)

OPERATING ENVIRONMENT

Operating temperature	-40 °C to 75 °C
Operating humidity	10% to 90% non-condensing
Ingress Protection Rating	IP55

REGULATORY & TYPE APPROVALS

Regulatory	CE, UKCA, EAC, UCRF, RCM

STANDARD PACKAGE*

- OTD500 Router
- Router Holder
- QSG (Quick Start Guide)
- Packaging Box

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

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
OTD500 0***** EMEA/APAC/Brazil	**5G NR:** n1, n3, n5, n7, n8, n20, n28, n38, n40, n41, n71, n75, n76, n77, n78; **4G (LTE-FDD):** B1, B3, B5, B7, B8, B20, B28, B32, B71; **4G (LTE-TDD):** B38, B40, B41, B42, B43, B71; **3G:** B1, B5, B8	OTD500 000000 / Standard Package

The price and lead-times for region (operator) specific versions may vary. For more information please contact us.

1 - Regional availability - excluding Russia & Belarus
2 - For more detailed information about certified carriers, visit our Wiki page

OTD500 SPATIAL MEASUREMENTS

MAIN MEASUREMENTS

W x H x D dimensions for OTD500:

Device housing*:	110 x 49.30 x 235 mm
Box:	355 mm x 175 mm x 60 mm

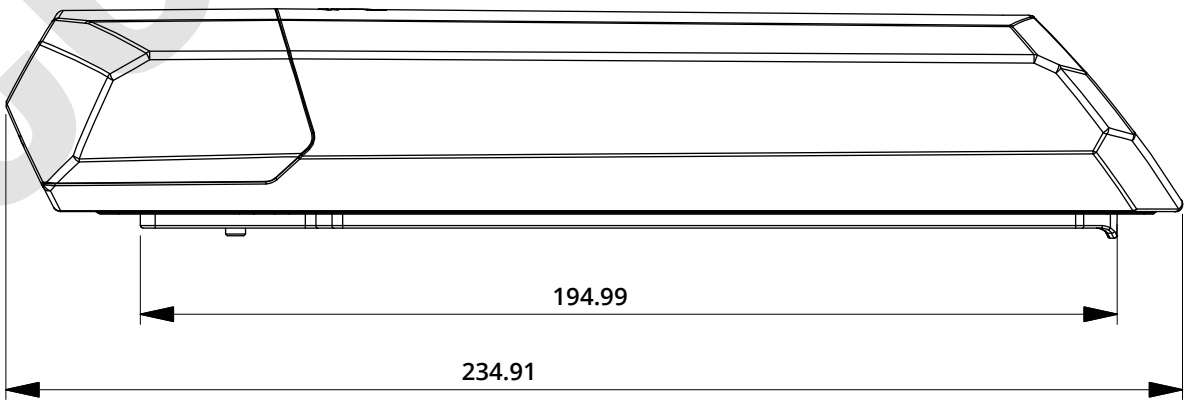
*Housing measurements are presented without antenna connectors and screws; for measurements of other device elements look to the sections below.

TOP VIEW

The figure below depicts the measurements of OTD500 and its components as seen from the top:

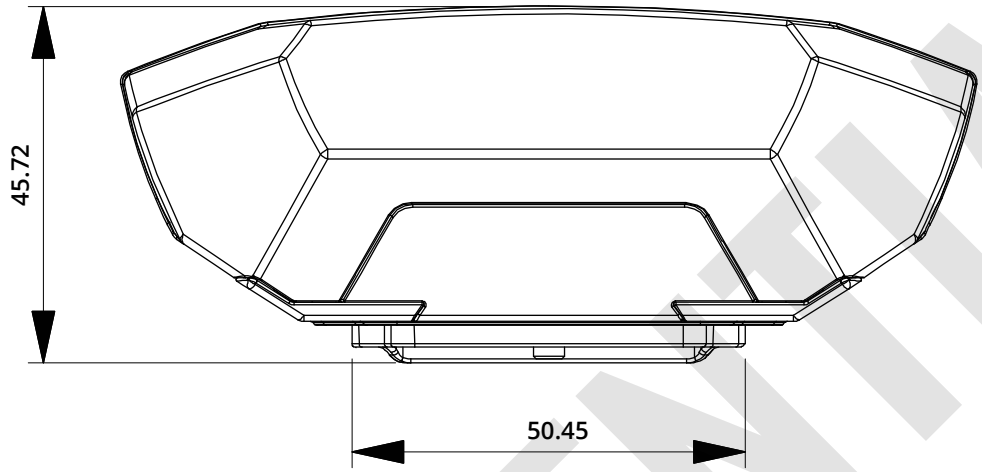
RIGHT VIEW

The figure below depicts the measurements of OTD500 and its components as seen from the right side:



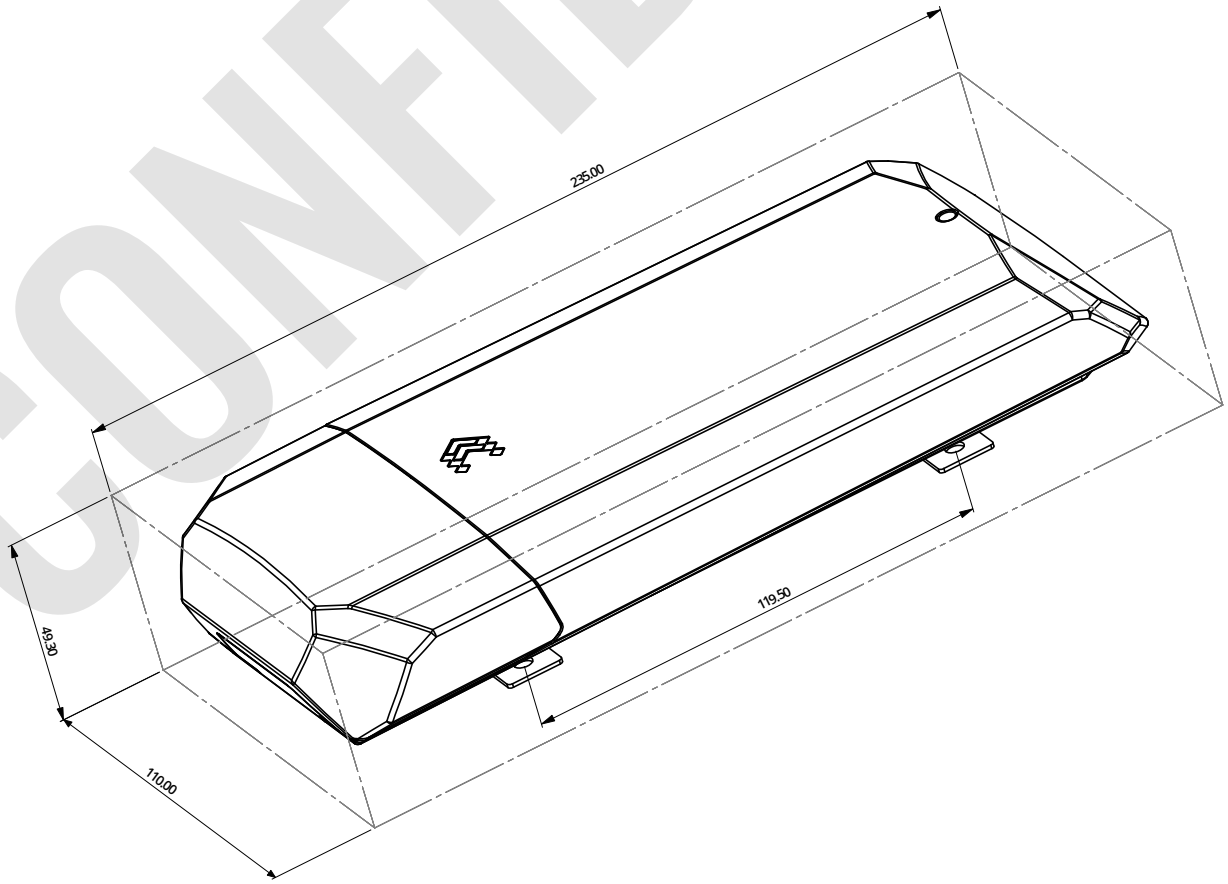
FRONT VIEW

The figure below depicts the measurements of OTD500 and its components as seen from the front panel side:



MOUNTING SPACE REQUIREMENTS

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



MOUNTING SPACE REQUIREMENTS