

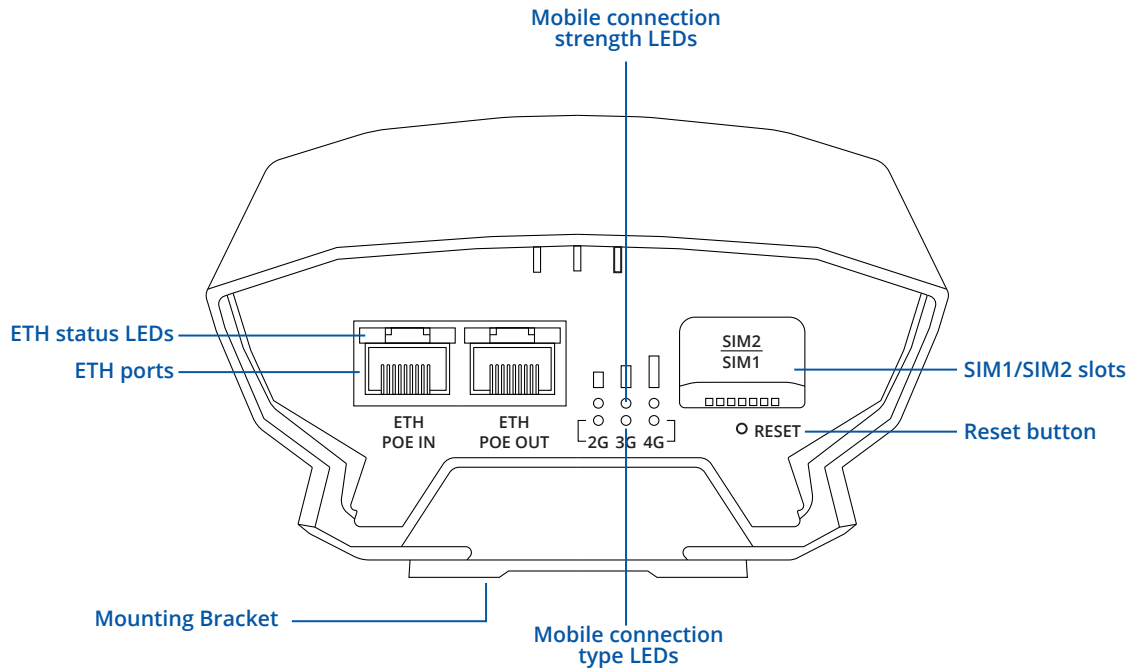


# OTD140



# HARDWARE

## FRONT VIEW



## RJ45 LED MEANING



## FEATURES

### MOBILE

|                  |   |
|------------------|---|
| Mobile module    | 4G (LTE) - LTE Cat 4 150 Mbps DL, 50 Mbps UL; 3G - 21 Mbps DL, 5.76 Mbps UL; 2G - 236.8 kbps DL, 236.8 kbps 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 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 B                  |
| PoE Max Power per Port (at PSE) | 15 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  |
| Hotspot                            | Captive portal (Hotspot), internal/external Radius server, SMS authorization, internal/external landing page, walled garden, user scripts, URL parameters, user groups, individual user or group limitations, user management, 9 default customizable themes and option to upload and download customised hotspot themes |
| SSHFS                              | Possibility to mount remote file system via SSH protoco  |

## 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, 580 MHz, MIPS 24KEc |
| RAM           | 128 MB                        |
| FLASH storage | 16 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 |

## INPUT / OUTPUT

|        |                 |
|--------|-----------------|
| Events | Email, RMS, SMS |
|--------|-----------------|

## POWER

|                             |  |
|-----------------------------|--|
| Connector                   | RJ45 Socket  |
| Input voltage range for PoE | 42.5-57.0 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 Mbps   |
| Status LEDs             | 3 x Mobile connection type, 3 x Mobile connection strength, 4 x ETH status LEDs |
| SIM                     | 2 x SIM slots (Mini SIM – 2FF), 1.8 V/3 V                                       |
| Power                   | RJ45, PoE In, 42.5 – 57.0 VDC   |
| Antennas                | 2 x Internal antennas   |
| Antennas specifications | 2 x 698 - 960 / 1710 - 2690MHz, 50 Ω, VSWR <3, gain <4.5 dBi, omnidirectional   |
| Reset                   | Reboot/User default reset/Factory reset button                                  |

## PHYSICAL SPECIFICATION

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|                        |   |
|------------------------|---|
| 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) |

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## OPERATING ENVIRONMENT

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

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## REGULATORY & TYPE APPROVALS

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|            |                          |
|------------|--------------------------|
| Regulatory | CE, UKCA, EAC, UCRF, RCM |
|------------|--------------------------|

## STANDARD PACKAGE\*

- OTD140 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 |
|--|---|--|
| OTD140 0*****<br>Australia, Europe, Asia-Pacific | 4G (LTE-FDD): B1, B3, B5, B7, B8, B20, B28<br>4G (LTE-TDD): B38, B40, B41<br>3G: B1, B5, B8<br>2G: B3, B8 | OTD140 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

# OTD140 SPATIAL MEASUREMENTS

## MAIN MEASUREMENTS

W x H x D dimensions for OTD140:

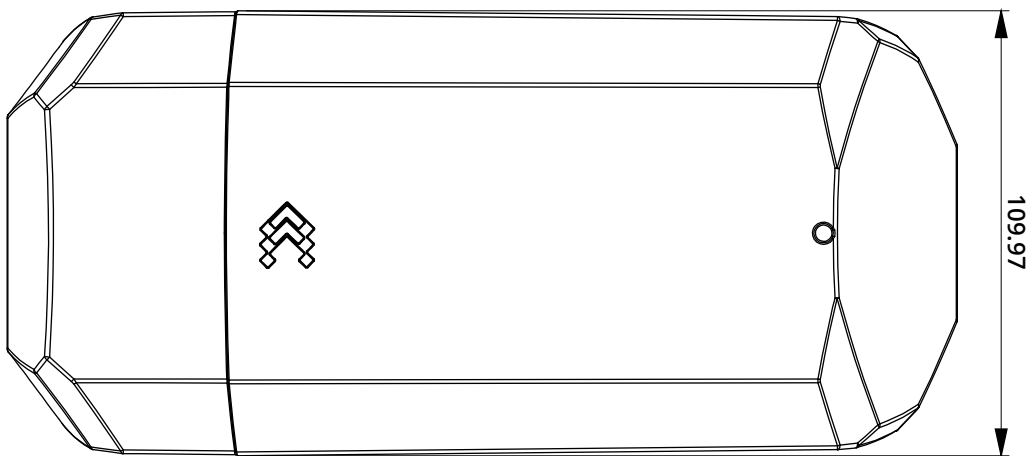
Device housing\*: 110 x 49.30 x 235 mm

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.

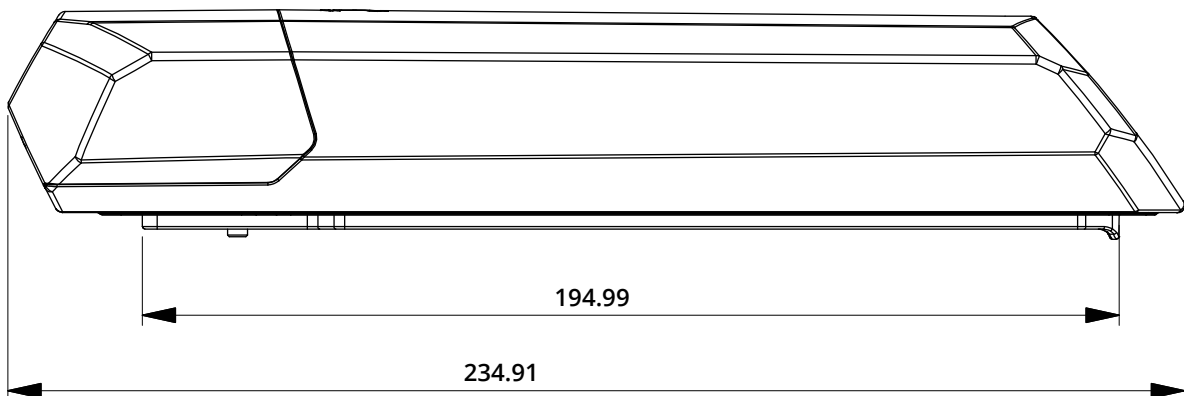
## TOP VIEW

The figure below depicts the measurements of OTD140 and its components as seen from the top:



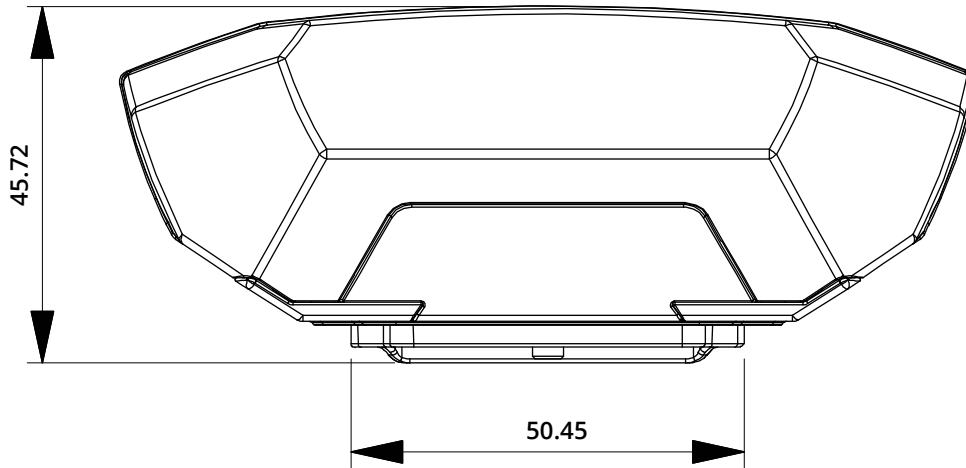
## RIGHT VIEW

The figure below depicts the measurements of OTD140 and its components as seen from the right side:



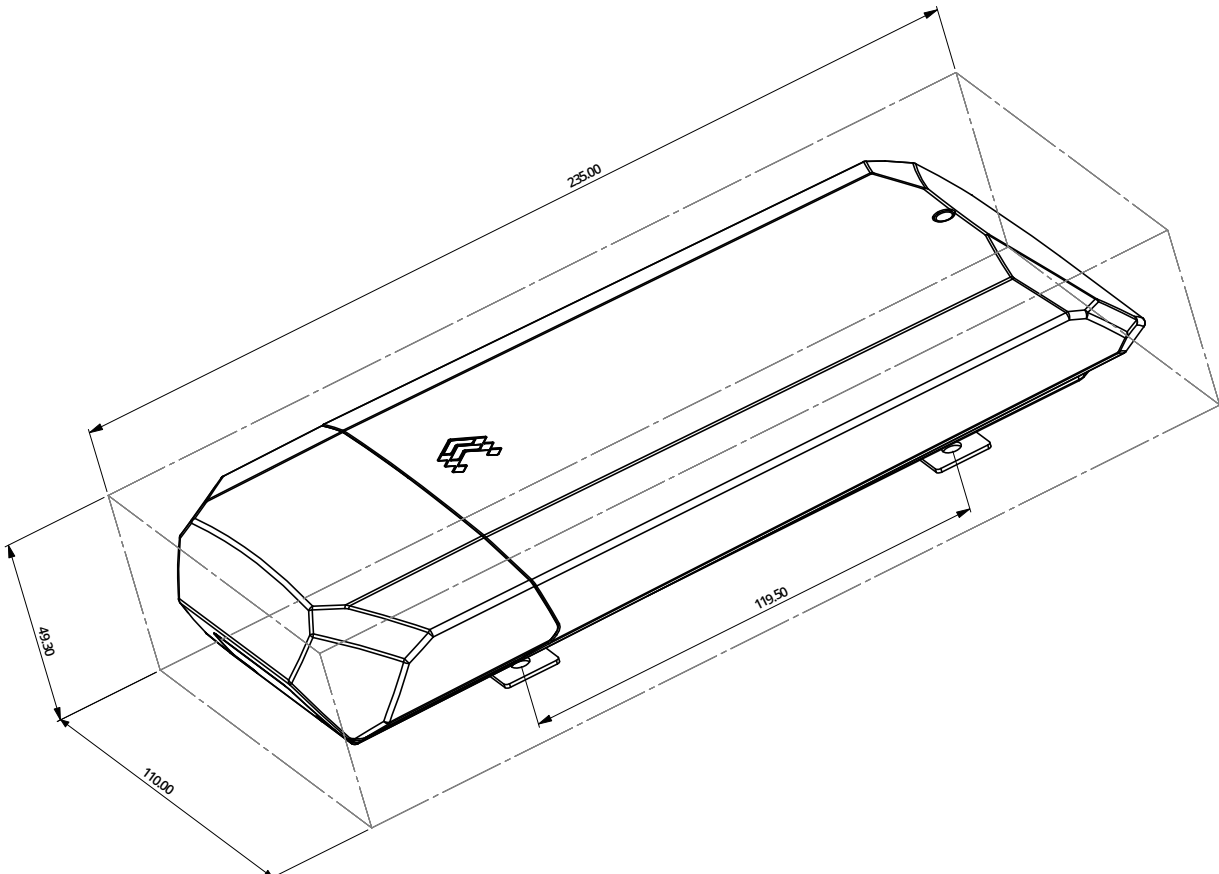
**FRONT VIEW**

The figure below depicts the measurements of OTD140 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

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