

# Pro Series

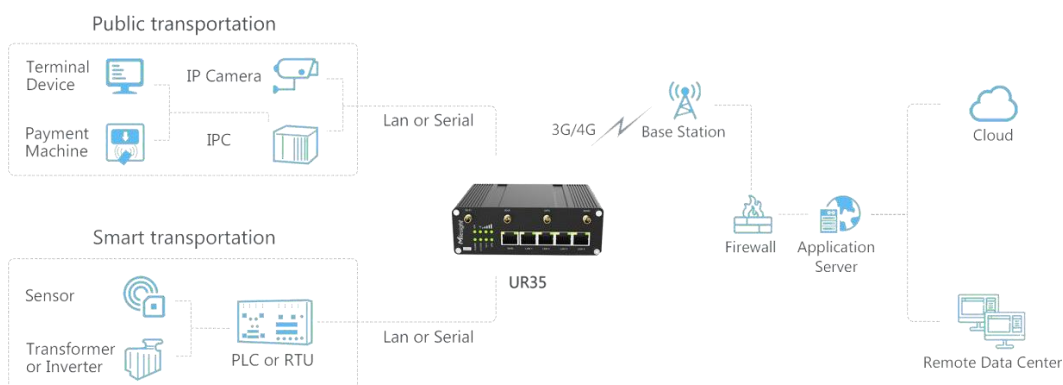
## Industrial Router

### UR35-OAWA



UR35-OAWA is a cost-effective industrial cellular router with embedded intelligent features that are designed for multifarious 4G LTE carrier support. It makes this drop-in connectivity a great help for operators in maximizing uptime. Integrating embedded cellular modem and dual SIM function, the UR35-OAWA provides 4G cellular network with maximum 150Mbps download and 50Mbps uplink, it also has 5 fast Ethernet ports and supports Wi-Fi that complies with 802.11b/g/n standard. All these capabilities deliver users an uninterrupted internet access. Easy deployment and comprehensive remote device management makes UR35-OAWA versatile in most of IoT/M2M applications.

### ◆ Application Example



## ◆ Benefits

- NXP industrial grade processor
- Global 4G LTE network with dual SIM cards for backup between multiple carrier networks
- Embedded Python SDK for secondary development
- Flexible modular design provides users with different connection modules like Ethernet, I/O, serial port, Wi-Fi, GPS for connecting diverse field assets
- Rugged enclosure, optimized for DIN rail or shelf mounting
- 3-year warranty included

## ◆ Security & Reliability

- Automated failover/failback between Ethernet, Cellular (dual SIM) and Wi-Fi
- Secure transmission with VPN tunnels like IPsec/OpenVPN/GRE/L2TP/PPTP/DMVPN/WireGuard/ZeroTier
- Embeds hardware watchdog to automatically recover from various failure, ensure highest level of availability
- Establishes a secured mechanism on centralized authentication and authorization of device access by supporting AAA (Radius, TACACS+, LDAP, local Authentication) and multiple levels of user authority

## ◆ Easy Maintenance

- DeviceHub and Milesight Development Platform provide easy setup, mass configuration, and centralized management of remote devices
- The user-friendly web interface design and more than one option of upgrade help administrator to manage the device as easy as pie
- WEB GUI and CLI enable the admin to achieve simple management and quick configuration among a large quantity of devices
- Efficiently manage the remote routers on the existing platform through the industrial standard SNMP and TR069

## ◆ Capabilities

- Link remote devices in an environment where communication technologies are constantly changing
- Support 802.11 b/g/n, as AP or client mode, to establish versatile wireless network or be the backup WAN link for 4G
- Support rich protocols like SNMP, TR069, MQTT, Modbus bridging, RIP, OSPF
- Provide power to 802.3af/at standard PoE devices and support power management
- Support wide operating temperature ranging from -40°C to +70°C/-40°F to +158°F

## ◆ Hardware Specifications

| <b>Hardware System</b>            |   |
|-----------------------------------|---|
| CPU                               | ARM Cortex-A7, 528 MHz                                  |
| Memory                            | 128 MB DDR3 RAM and 128MB Flash                         |
| Extendable Storage                | 1 × Micro SD Slot                                       |
| <b>Cellular Interface</b>         |   |
| Network                           | 4G LTE (CAT 4)/GSM (Differ as regions)                  |
| Antenna Connector                 | 2 × 50 Ω SMA Connectors (Center PIN: SMA Female)        |
| SIM                               | 2 × SIM Slot (Mini SIM-2FF), 1.8V/3V                    |
| <b>Ethernet Interface</b>         |   |
| Numbers                           | 5 × RJ45 10/100 Mbps                                    |
| Property                          | 1 × WAN + 4 × LAN                                       |
| Mode                              | Full or half duplex (Auto-Sensing)                      |
| Ethernet Isolation                | 1.5 kV RMS  |
| PoE (Optional)                    | 4 × 802.3 af/at PoE PSE on LAN Ports                    |
| <b>Wi-Fi Interface (Optional)</b> |   |
| Antenna Connector                 | 1 × 50 Ω SMA Connector (Center PIN: RP-SMA Female)      |
| Standards                         | IEEE 802.11 b/g/n, 2.4GHz                               |
| Tx Power                          | 802.11b: 16 dBm +/-1.5 dBm (11 Mbps)                    |
|                                   | 802.11g: 14 dBm +/-1.5 dBm (54 Mbps)                    |
|                                   | 802.11n: 13 dBm +/-1.5 dBm (65 Mbps, HT20/40 MCS7)      |
| <b>GNSS (Optional)</b>            |   |
| Antenna Connector                 | 1 × 50 Ω SMA Connector (Center PIN: SMA Female)         |
| Technology                        | GPS/GLONASS/BDS/Galileo/QZSS                            |
| Positioning Accuracy              | 2.5m CEP (Open Air)                                     |
| <b>Serial Port</b>                |   |
| Numbers                           | 1 × RS232 + 1 × RS485 (2 × RS485 Hardware Customizable) |
| Connector                         | 3.5mm Terminal Block                                    |
| Baud Rate                         | 300bps to 230400bps                                     |
| <b>DI/DO</b>                      |   |
| Numbers                           | 1 × DI + 1 × DO, Galvanic Isolation                     |
| Connector                         | 3.5mm Terminal Block                                    |
| Digital Input                     | Dry Contact   |
| Digital Output                    | Wet Contact, maximum 0.3A@30VDC                         |

| <b>Others</b>                       |   |
|-------------------------------------|---|
| Reset Button                        | 1 × RESET   |
| LED Indicators                      | 1 × POWER, 1 × SYSTEM, 1 × SIM, 1 × Wi-Fi, 1 × VPN, 3 × Signal strength                 |
| Power Connector                     | 1 × 2-pin 5.08 mm Terminal Block, with Surge-Protection and Reverse Polarity Protection |
| Built-in                            | Watchdog, Timer   |
| <b>Power Supply and Consumption</b> |   |
| Power Input                         | 9-48 VDC(48V is need for PoE)   |
| Power Output<br>(Optional)          | 4 × 802.3 af/at PoE PSE on LAN Ports<br>Per Port 30W Max., Total 60W Max.               |
| Power Consumption                   | Typical 3.9 W, Max 4.6 W (In Non-PoE mode)  |
| <b>Physical Characteristics</b>     |   |
| Ingress Protection                  | IP30  |
| Housing & Color                     | Metal, Black  |
| Weight                              | 485 g   |
| Dimension                           | 135 x 103 x 45 mm (5.31 x 4.06 x 1.77 in)   |
| Installation                        | Desktop, Wall Screw Mounting, DIN Rail Mounting   |
| <b>Environmental</b>                |   |
| Operating Temperature               | -40°C to +70°C (-40°F to +158°F)<br>Reduced Cellular Performance Above 60°C             |
| Storage Temperature                 | -40°C to +85°C (-40°F to +185°F)  |
| Relative Humidity                   | 0% to 95% (non-condensing) at 25°C/77°F   |
| <b>Approvals</b>                    |   |
| Regulatory                          | CE, FCC, RCM, JATE, Telec   |
| Environmental                       | RoHS  |
| EMC                                 | EN 55032, EN 55035  |
| EMS                                 | IEC 61000-4-2 Level 3   |
|                                     | IEC 61000-4-3 Level 2   |
|                                     | IEC 61000-4-4 Level 3   |
|                                     | IEC 61000-4-5 Level 3   |
|                                     | IEC 61000-4-6 Level 3   |
|                                     | IEC 61000-4-8 Level 4   |
| Radio Frequency                     | IEC 61000-4-11 Level 3  |
|                                     | EN 301 489-1/17/19/52, EN 301 511, EN 301 908-1/2/13, EN 303 413, EN300 328             |

Safety

EN62368-1

## ◆ Software Specifications

### Network

|                   |  |
|-------------------|--|
| Network Protocols | IPv4/IPv6, PPP, PPPoE, SNMP v1/v2c/v3, TCP, UDP, DHCP, RIPv1/v2, OSPF, DDNS, VRRP, HTTP, HTTPS, DNS, ARP, QoS, SNMP, Telnet, VLAN, SSH, MQTT, MQTTS, TR069, etc. |
| Routing           | Static Routing, RIP, OSPF  |
| DDNS              | Supported >16 service providers, others can be configured manually   |
| QoS               | Upload/Download Bandwidth Limit  |
| IP Passthrough    | Support to assign WAN IP address to the device on LAN  |
| Reliability       | VRRP, WAN Failover, Dual SIM Backup  |
| Diagnostics Tools | Ping, Traceroute, TCPDUMP, QXDM, Log Server, Cellular AT Command Debugger, Firewall iptables Debugger  |

### Wi-Fi Interface (Optional)

|             |   |
|-------------|---|
| Modes       | AP or Client mode   |
| Security    | WEP/WPA-PSK/WPA2-PSK/WPA-EAP/WPA2-EAP authentication, TKIP/AES encryption |
| Wi-Fi Users | Up to 15 simultaneous connections   |
| MAC Filter  | Blacklist, Whitelist  |

### GNSS (Optional)

|          |   |
|----------|---|
| Protocol | NMEA0183, PMTK  |
| Mode     | Support reading by Serial Port, MQTT, TCP Client/Server, UDP Server |

### Security

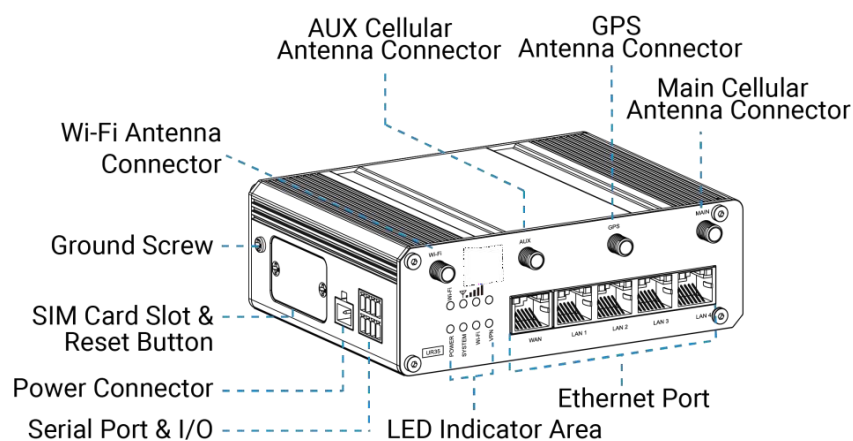
|                      |  |
|----------------------|--|
| Firewalls            | Access Control, DMZ, Port Mapping, MAC Binding, SPI Firewalls, DoS&DDoS Protection, Filtering(IP&Domain) |
| VLAN                 | Port and tag-based VLAN separation   |
| AAA                  | Radius, Tacacs+, LDAP, Local Authentication, 802.1x  |
| Multilevel Authority | Multiple Levels of User Authority  |

### VPN

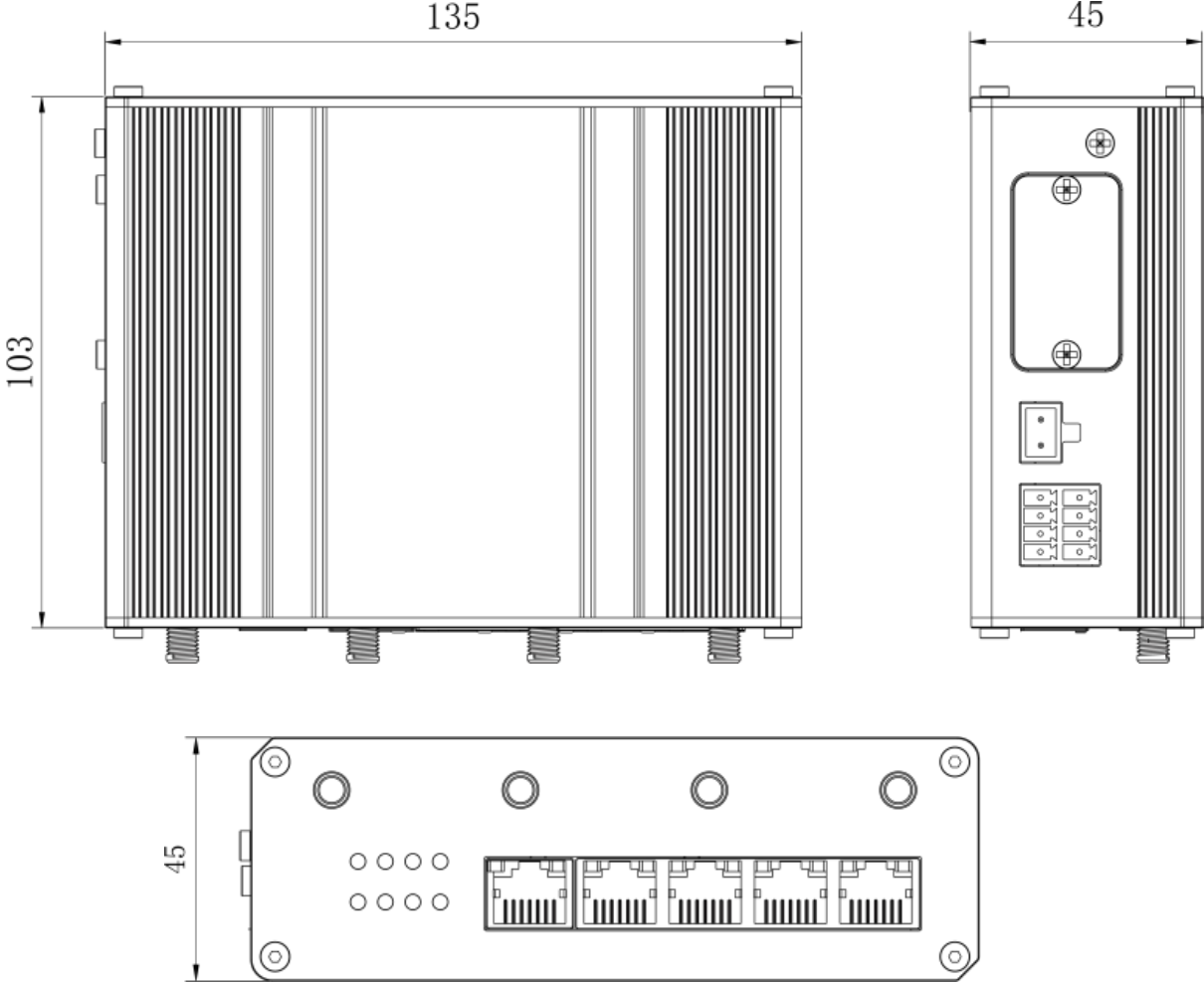
|         |                                       |
|---------|---------------------------------------|
| OpenVPN | Multiple Clients and a Server Support |
| IPsec   | Multiple Clients and a Server Support |
| GRE     | GRE Tunnel Support                    |
| L2TP    | L2TP Client Support                   |

|                   |  |
|-------------------|--|
| PPTP              | PPTP Client Support  |
| DMVPN             | DMVPN Spoke Support  |
| WireGuard         | Support  |
| ZeroTier          | Support  |
| <b>Others</b>     |  |
| Serial Mode       | Transparent(TCP Client/Server, UDP Server, MQTT Client), Modbus Server/Client, Modbus Gateway (Modbus RTU to Modbus TCP)     |
| Digital Input     | Support reading by SMS, Email, CLI, Modbus TCP/RTU Server, MQTT  |
| Digital Output    | Support triggering by DI, SMS, CLI, Modbus TCP/RTU Server, MQTT  |
| App               | Python SDK   |
| <b>Management</b> |  |
| Configuration     | Web, CLI (SSH/Telnet), SMS, On-demand dial up, SNMP v1/v2c/v3, TR069, DeviceHub, Milesight Development Platform, HTTP(s) API |
| Update            | Web, DeviceHub, Milesight Development Platform   |
| Device Management | DeviceHub, Milesight Development Platform, MilesightVPN  |
| SNMP              | SNMP v1/v2/v3, Support SNMP Trap   |
| TR069             | Support  |
| SMS               | Send/Receive SMS, SMS Control, SMS Configuration   |
| Event Alarm       | System Restart/Reboot, Network Up/Down, Link Switch, etc.  |

## ◆ Hardware Overview



◆ Dimensions(mm)



## FCC Warning Statement

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesired operation.

### RF Exposure Statement

To maintain compliance with FCC's RF Exposure guidelines, This equipment should be installed and operated with minimum distance of 20cm the radiator your body. This device and its antenna(s) must not be co-located or operation in conjunction with any other antenna or transmitter.