UR41(L)

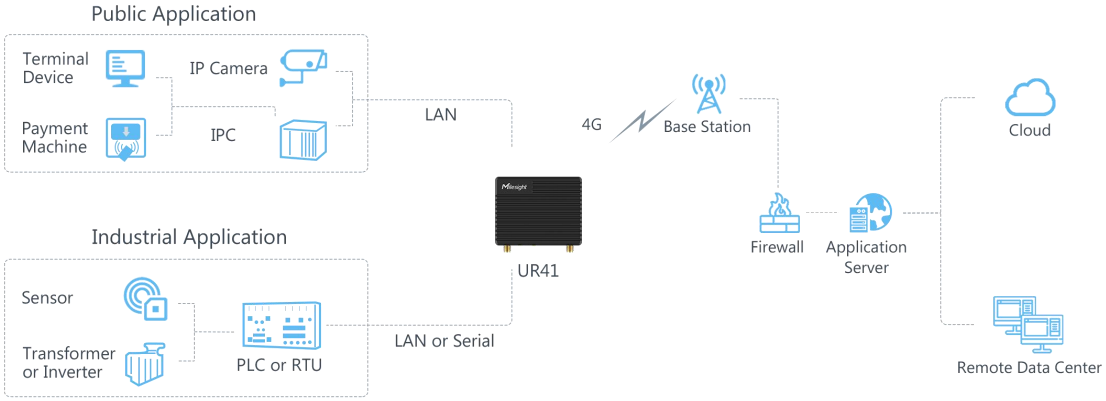
Mini Industrial Router



Milesight mini industrial router UR41(L) supports 4G connection, and also satisfies multi-type local data access requirements through rich industrial interfaces, including DI, DO, RS232 or RS485. UR41(L) make it easy for forming a reliable, secure, and maintainable solution through its built-in watchdog and secure VPN tunnels, realizing stable data transmission and high-speed mobile connectivity.

With a compact size and industry-grade design, UR41(L) is more flexible in a variety of installation and deployment scenarios. UR41(L) adopts a power-saving design with both idle mode and standby mode for providing users with an energy-saving option. UR41(L) could be managed and monitored remotely by Milesight DeviceHub and Milesight Development Platform Milesight , UR41(L) could be applied in wide scenarios including vending machines, robots, industrial equipment, and other IoT applications with optimal cost and performance.

◆ Application Example



◆ Features

Highlight Features

- Compact size for suiting small embedded scenarios
- Global 4G LTE network with multiple carrier networks
- Multi-APN for simultaneous access to different network services (UR41 Only)
- Easy to connect with diverse wired devices through DI/DO/RS232/RS485 interfaces
- Power-saving design for both idle mode and standby mode for providing users with an energy-saving option

Industrial-Grade Design

- NXP industrial grade processor
- Rugged enclosure with IP30 protection
- Desk, wall or DIN rail mounting
- Wide operating temperature range from -40 °C to 60 °C/-40 °F to +140 °F

Security & Reliability

- Secure transmission with VPN tunnels like IPsec/OpenVPN/GRE/L2TP/PPTP /DMVPN/WireGuard/ZeroTier
- Embeds hardware watchdog to automatically recover from various failures, ensuring highest level of availability
- Supports access control lists, DMZ, DDoS Protection, Filters, SPI firewalls, etc
- Establishes a secured mechanism on centralized authentication and authorization of d evice accessed by supporting AAA (Radius, TACACS+, LDAP, local Authentication) and multiple levels of user authority

Easy Maintenance

- DeviceHub and Milesight Development Platform provides easy setup, mass configuration, and centralized management of remote devices
- The user-friendly web interface design and more than one option of upgrade help administrators 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

◆ Hardware Specifications

Model	UR41L	UR41
Hardware System		
CPU	ARM Cortex-A7, 528 MHz	
Memory	128 MB DDR3 RAM and 128 MB Flash	
Cellular Interface		
Network	4G LTE (CAT 1)	4G LTE (CAT 4)/WCDMA/GSM
Antenna Connector	1 × 50 Ω SMA Connector (Center PIN: SMA Female)	
SIM Slot	1 (Nano SIM-4FF)	
Tx Power	LTE: Class 3 (23 dBm ± 2 dB)	
Ethernet Interface		
Numbers	1 × RJ45 10/100 Mbps LAN Port	
Mode	Full or Half Duplex (Auto-Sensing)	
Ethernet Isolation	1.5 kV RMS	
GNSS		
Antenna Connector	---	1 × 50 Ω SMA Connector (Center PIN: SMA Female)
Technology	---	GPS/GLONASS/Beidou/Galileo/QZSS
Positioning Accuracy	---	2.5m CEP (Open Air)
Serial Port		
Number	1 × RS232 or 1 × RS485 (Software Switchable)	
Connector	3.5mm Terminal Block	
Terminal Resistor	1 × 120 Ω Resister Switch (for RS485)	
Baud Rate	300bps to 230400bps	
DI/DO		
Numbers	1 × DI + 1 × DO, Galvanic Isolation	
Connector	3.5mm Terminal Block	
Digital Input	Dry Contact	
Digital Output	Wet Contact, maximum 0.3A@30VDC (DO)	
Others		
Button	1 × RESET	
USB	1 × USB 2.0 (Type-C) for Power Supply, Network Supply and Debug	
LED Indicators	1 × SYSTEM, 1 × SIM	
Power Connector	1 × 2-pin 3.5 mm Terminal Block, with Surge-Protection and Reverse Polarity	

	Protection	
Built-in	Watchdog, Timer	
Power Supply and Consumption		
Power Input	1) 5-24 VDC by 2-pin 3.5 mm Terminal Block 2) 5V/1A by USB Type-C Port	
Power Consumption*	Standby mode: 6.3 mA@12V Idle mode: 70mA@12V Data link : 157mA @12V	Standby mode: 6.3 mA@12V Idle mode: 78mA@12V Data link: 226mA @12V
Physical Characteristics		
Ingress Protection	IP30	
Housing & Color	Metal, Black	
Weight	103g	
Dimension	70 × 55 × 22 mm (2.76 × 2.17 × 0.87 in) (Antenna Connector Excluded)	
Installation	Desktop, Wall Mounting, DIN Rail Mounting	
Environmental		
Operating Temperature	-40°C to +60°C (-40°F to +140°F)	
Storage Temperature	-40°C to +85°C (-40°F to +185°F)	
Relative Humidity	0% to 95% (Non-condensing)	
Approvals		
Regulatory	CE	CE, FCC
Environmental	RoHS	

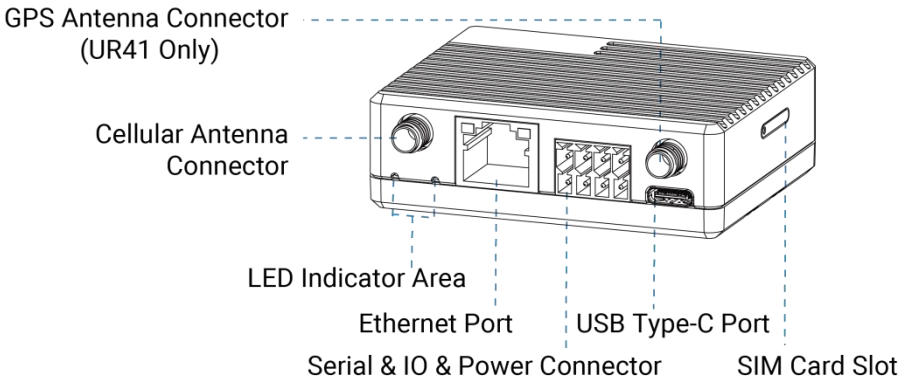
*: Tested under laboratory conditions and for guideline purposes only.

◆ Software Specifications

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

	Debugger, Firewall iptables Debugger
GNSS (UR41 Only)	
Protocol	NMEA0183, PMTK
Work Type	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)
AAA	Radius, Tacacs+, LDAP, Local Authentication
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
Others	
Serial Mode	Transparent(TCP Client/Server, UDP Server, MQTT Client), Modbus TCP/RTU Client, Modbus Gateway (Modbus RTU to Modbus TCP), DLMS Client
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
Power Management	Support standby mode, and waking up by schedule, SMS, DI, etc.
Management	
Configuration	Web, CLI (SSH/Telnet), On-demand dial up, SMS, SNMP v1/v2c/v3, TR069, DeviceHub, Milesight Development Platform
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
Event Alarm	System Startup/Reboot, Network Up/Down, Wakeup, etc.

◆ Hardware Overview



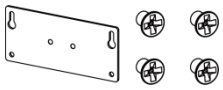
◆ Accessories



1 × Power Adapter



1 × 8-Pin Pluggable Terminal



1 x Wall Mounting Bracket with Screws



4 × Wall Mounting Kits



1 × SIM Card Ejector Tool



1 × Magnetic Cellular Antenna



1 × GPS Antenna **(UR41 Only)**



1 × 108mm Stubby Cellular Antenna **(Optional)**



1 × Mini Stubby Cellular Antenna **(Optional)**



1 × USB 2.0 Cable **(Optional)**



1 × DIN Rail Clip Kit **(Optional)**

***Note:** Contact us if you need any other special accessories or customized accessories.

◆ Dimensions(mm)

