

# **Industrial Router Pro Series**

## **UR32**

**Quick Start Guide** 





#### **Safety Precautions**

Milesight will not shoulder responsibility for any loss or damage resulting from not following the instructions of this operating guide.

- The device must not be modified in any way.
- Do not place the device close to objects with naked flames.
- Do not place the device where the temperature is below/above the operating range.
- Do not power on the device or connect it to other electrical device when installing.
- Check lightning and water protection when used outdoors.
- Do not connect or power the equipment using cables that have been damaged.

#### **Related Documents**

This Start Guide only explains the installation of Milesight UR32 router. For more functionality and advanced settings, please refer to the relevant documents as below.

Document	Description
UR32 Datasheet	Datasheet for UR32 industrial cellular router.
UR32 User Guide	Users could refer to the guide for instruction on how to log in the web GUI, and how to configure all the settings.

The related documents are available on Milesight website: https://www.milesight-iot.com

#### **Declaration of Conformity**

UR32 are in conformity with the essential requirements and other relevant provisions of the CE, FCC, and RoHS.



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For assistance, please contact Milesight technical support: Email: <u>iot.support@milesight.com</u> Support Portal: <u>support.milesight-iot.com</u> Tel: 86-592-5085280 Fax: 86-592-5023065 Address: Building C09, Software Park III, Xiamen 361024, China

#### **Revision History**

Date	Doc Version	Description
Apr. 26, 2019	V 1.0	Initial version
May 11, 2020	V 1.1	Web interfaces upgrade
Nov. 25, 2020	V 2.0	Layout Replace
Dec 1 2021	V 2.1	1. DI matches to GND
Dec. 1, 2021	V Z.1	2. Update cellular pictures
Oct 21 2022	V 2.2	1. Delete Ethernet cable
Oct. 31, 2022	V Z.Z	2. Loggin page update



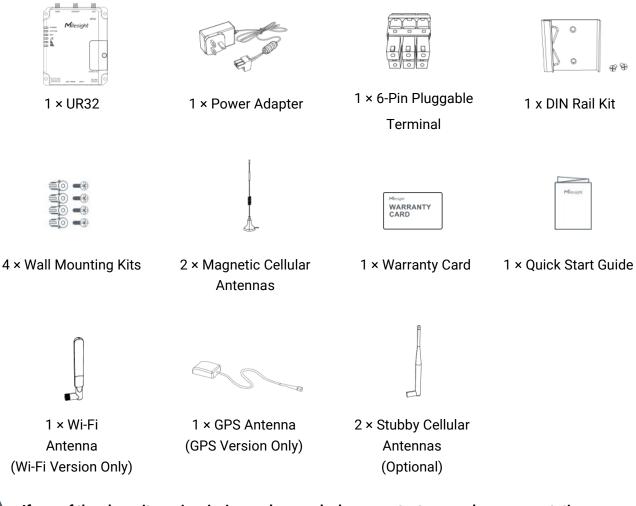
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## 1. Packing List

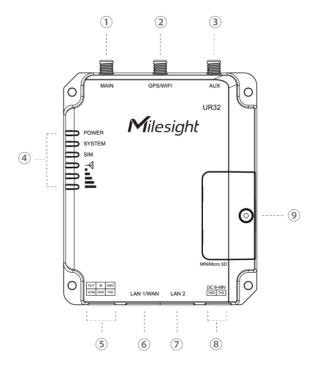
Before you begin to install the UR32 router, please check the package contents to verify that you have received the items below.



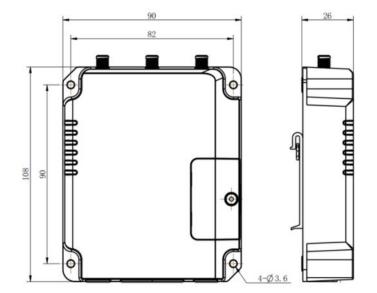
If any of the above items is missing or damaged, please contact your sales representative.

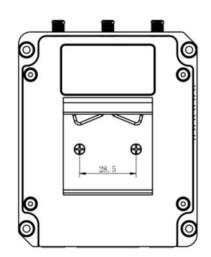
## 2. Hardware Introduction

#### 2.1 Overview



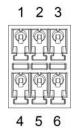
- 1 Main Cellular Antenna Connector
- ② GPS/WIFI Antenna Connector
- ③ AUX Cellular Antenna
- ④ LED Indicator Area POWER: Power Indicator SYSTEM: Status Indicator SIM : Status Indicator
   ▼: Signal Strength Indicator
- 5 Serial Port & I/O
- 6 Ethernet LAN1/WAN Port
- ⑦ Ethernet LAN2 Port
- 8 Power Connector
- (9) SIM and Reset Button Holder





## 2.2 Dimensions (mm)

## 2.3 Serial & IO & Power Pinouts



7 8

PIN	RS232 /RS485*	DI	DO	Description
1			OUT	Digital Output
2		IN		Digital Input
3	GND	GND		Ground
4			COM	Common Ground
5	RXD/B			Receive Data
6	TXD/A			Transmit Data

PIN	Description	Wire Color
7	Positive	Red
8	Negative	Black

\*: Only for -485 model.

## 2.4 LED Indicators

LED	Indication	Status	Description		
POWER	Power Status	Off	The power is switched off		
POWER	Power Status	On	The power is switched on		
		Green Light	Static: Start-up		
SYSTEM	System Status	Green Light	Blinking slowly: the system is running properly		
		Red Light	The system goes wrong		
		Off	SIM1 or SIM2 is registering or fails to register (or there		
		011	are no SIM cards inserted)		
			Blinking slowly: SIM1 has been registered and is ready		
		Green Light	for dial-up		
	SIM Card Status		Blinking rapidly: SIM1 has been registered and is		
			dialing up now		
SIM			Static: SIM1 has been registered and dialed up		
			successfully		
			Blinking slowly: SIM2 has been registered and is ready		
			for dial-up		
		Orange	Blinking rapidly: SIM2 has been registered and is		
		Light	dialing up now		
			Static: SIM2 has been registered and dialed up		
			successfully		
Signal		Off	No signal		
Strength	Signal 1/2/3	Green Light	Static/Off/Off: weak signals with 1-10 ASU (please		
Sachgal		Green Light	check if the antenna is installed correctly, or move the		



antenna to a suitable location to get better signal)			
Static/Static/Off: normal signals with 11-20 ASU			
(average signal strength)			
Static/Static/Static: strong signals with 21-31 ASU			
(signal is good)			

#### 2.5 Reset Button

Reset button is under the SIM slots.

Function	Description		
Function	SYSTEM LED	Action	
Blinking		Press and hold the reset button for more than 5 seconds.	
Reset	Static Green → Rapidly Blinking	Release the button and wait.	
	Off → Blinking	The router is now reset to factory defaults.	

### 2.6 Ethernet Port Indicator

Indicator	Status	Description
	On	Connected
Link Indicator (Orange)	Blinking	Transmitting data
	Off	Disconnected

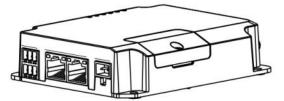
## 3. Hardware Installation

#### **Environmental Requirements**

- Power Input: 9-48 VDC (48 VDC is needed for PoE output)
- Power Consumption: Typical 1.9 W (Max 2.4 W)
- Operating Temperature: -40°C to 70°C (-40°F -158°F)
- Relative Humidity: 0% to 95% (non-condensing) at 25°C/77°F

#### 3.1 SIM Card/Micro SD Card Installation

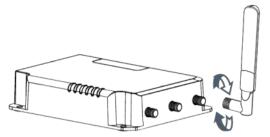
- A. Unscrew the cover of the SIM card then take it off.
- B. Put SIM card/Micro SD into the slot and screw it up.

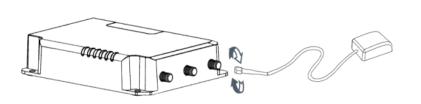


Note: UR32 does not support hot plugging (also called hot swapping). please turn off the power before you insert or take off cards.

#### 3.2 Antenna Installation

Rotate the antenna into the antenna connector accordingly. The external antenna should be installed vertically always on a site with a good signal.





#### **3.3 Router Installation**

The router can be placed on a desktop or mounted to a wall or a DIN rail.

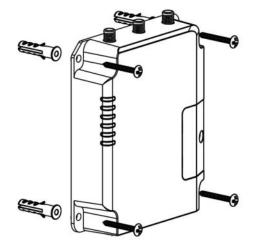
#### 3.3.1 Wall Mounting (Measured in mm)

Use 4 pcs of M3 × 6 flat head Phillips screws to fix the router on the wall.



Recommended torque for mounting is 1.0 N·m, and the maximum allowed is 1.2 N·m.



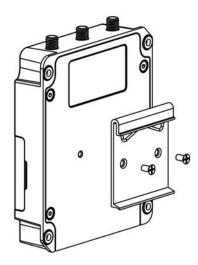


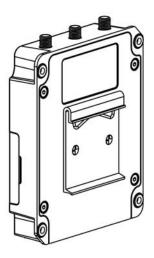
#### 3.3.2 DIN Rail Mounting (Measured in mm)

Use 2 pcs of M3 × 6 flat head Phillips screws to fix the mount clip to the router, and then hang the device to the DIN rail. The width of DIN rail is 3.5 cm.



Recommended torque for mounting is 1.0 N·m, and the maximum allowed is 1.2 N·m.







Please connect PC to LAN port of UR32 router. PC can obtain an IP address, or you can configure a static IP address manually. The following steps are based on Windows 10 operating system for your reference.

IP Address: **192.168.1.1** Username: **admin** Password: **password** 

A. Go to "Control Panel"  $\rightarrow$  "Network and Internet"  $\rightarrow$  "Network and Sharing Center", then click "Ethernet" (May have different names).

Network and Sharing Center			- 0	>
- 🕘 👻 🛧 😫 « Network	and Internet > Network and Sharing Center	~ Č	Search Control Panel	p
Control Panel Home	View your basic network information and set up or		connections	
Change adapter settings	View your active networks			
Change advanced sharing settings	Yeastar5G Private network		Access type: Internet HomeGroup: Ready to create Connections: at Wi-Fi (Yeastar5G)	
	Identifying	Access		
	Change your networking settings	ſ		1
	Set up a new connection or netwo Set up a broadband, dial-up, or VP		Ethernet	
	Troubleshoot problems Diagnose and repair network prob	lems, or get trouble	shooting information.	
			-	
See also				
HomeGroup				
Infrared				
Internet Options				
Windows Firewall				

B. Go to "Properties"  $\rightarrow$  "Internet Protocol Version 4(TCP/IPv4)", select "Obtain an IP address automatically" or "Use the following IP address", then assign a static IP manually within the same subnet of the device.

ternet Protocol Version 4 (TCP/IPv4) Properties	×	Internet Protocol Version 4 (TCP/IPv4) Properties	
General Alternate Configuration		General	
You can get IP settings assigned automatically if your network sup this capability. Otherwise, you need to ask your network administr- for the appropriate IP settings.		You can get IP settings assigned this capability. Otherwise, you no for the appropriate IP settings. 255.255.	r pr
Obtain an IP address automatically		○ Obtain an IP address autom 192.168.	1.1
O Use the following IP address:		Use the following IP address:	
IP address:		IP address: 192 . 168 .	1 . 20
Subnet mask:		Subnet mask: 255 . 255 .	255.0
Default gateway:		Default gateway: 192 . 168 .	1.1
Obtain DNS server address automatically		Obtain DNS server address automatically	
O Use the following DNS server addresses:		• Use the following DNS server addresses:	
Preferred DNS server:		Preferred DNS server: 192 . 168 .	1.1
Alternate DNS server:		Alternate DNS server:	
Validate settings upon exit Advance	ed	Validate settings upon exit 192.168	. 1 .1
OK	Cancel	OK	Cance

C. Open a Web browser on your PC (Chrome is recommended), type in the IP address **192.168.1.1** to access the web GUI.



Λ

D. Enter the username, password, and click "Login".

	Language English 🗸
	and the
2	
	•

If you enter the username or password incorrectly more than 5 times, the login page will be locked for 10 minutes.

E. When you login with the default username and password, you will be asked to modify the password. It's suggested that you change the password for the sake of security.

Old Password
New Password
Confirm New Password

F. After you login the Web GUI, you can view system information and perform configuration on the router.

	102					Far your device sets	only, planne strange the default passworth		
Status		Ovendew	Celular	Network	VEN	Routing	Host List		Holp
									Model Show the model name of router
Vetwork.		System Informa	ation				System Status		Serial Number
		Model		UR32-L00AU	-485		Local Time	2021-85-22 17:47:31 Wednesday	Show the serial number of router
Bystem		Serial Number		6218A175771	11		Uptime	00.07.21	Firmware Version
		Firmware Versier		323.0.2			CPU Load	13%	Show the current firmware version of router
ndestrial		Hardvare Venig							Hardware Version
		Plactware Venus	a	V2.0			RAM (Available/Capacity)	37WB/126MB(28.91%)	Show the current frantwate version of router
Vaintenance							Flash (Available/Capacity)	90MB(128MB(70.31%)	Local Time
	84	Cellular					WAN Christian		Show the current local time of system.
vep.	<u></u>			100000000				- 2020 C	Uptime
		Status		No SIM Card			Status	Online	Show the information on how long the router has been number
		Current SIM		SM2			1Pv4	192 168 22 105/24	CPU Load
		(Pv4		5.0.0.0/0			IPv6	fe80-25e1 24tt fe80 b714/64	Show the correct CPO utilization of the
		(Pv6					MAC	24 of 24 10 h7 16	router
		Connection Dural	tion	0 days, 00 00	00		Connection Ducation	0 days. 00.06.07	RAM (Available/Capacity) Show the RAM available and the capacit
		Data Usage Mon	etaly.	0.0 MB					R4M memory
									Flash (Available/Capacity) Show the Flash available and the capacity
		LAN							Flach memory.
		IP:4		192 168 0 1/2					Current SM
									Show the current SIM card used
		IPv6		1680.5486.78	1960.0519-01				Data Usage Monthly Show the monthly data usage statistics (
		Connected David	85						currently used SIM card.
									Connected Clients
									Amount of clients that connected to router's wireless access point.
								Martual Ratrash 🖌	Autoch Connected Devices
								Marical Rahmah 👻	And a state of the

# 5. Network Configuration

This chapter explains how to connect UR32 to network via WAN connection or cellular.

#### **5.1 Ethernet WAN Configuration**

A. Go to "Network > Interface > Port" to change LAN1 to WAN port.

Status	Link Failover	Cellular	Port	WAN	Bridg	je v	WLAN	Swit	tch	Loopback
Network 👻	Port Setting									
		Port	Status	F	roperty	Speed	1	Duple	x	
Interface		LAN2	up	<ul> <li>✓ lan</li> </ul>	~	auto	~	auto	~	
DHCP	L	AN1/WAN	up	♥ wa	n 🗸	auto	~	auto	~	
Firewall	Save									
QoS										

B. Go to "Network > Interface > WAN" to select connection type and configure WAN parameters, click "Save & Apply" button to make the changes take effect.

Status	Link Failover	Cellular	Port	WAN	Bridge	Switch
Network 👻	— WAN_1					
Interface	Enable	Ĩ	2		- T	
DHCP	Port		LAN1/WAN			
Firewall	Connection Type	e	Static IP	•		
QoS	IPv4 Address		192.168.22.225			
VPN	Netmask		255.255.255.0			
	IPv4 Gateway		192.168.22.1	]		
IP Passthrough	IPv6 Address		fe80::26e1:24ff:	fef0:3192		
Routing	Prefix-length		64			
VRRP	IPv6 Gateway					
DDNS	МТО		1500			
	Primary DNS		8.8.8.8			
System 🕨	Secondary DNS	;				
	Enable NAT	L				

C. Connect WAN port to another network devices like modem.

D. Go to "Network > Interface > Link Failover" to rise the WAN priority to 1.

E. Open your preferred browser on PC, then type any available web address into address bar and see if it is able to visit Internet via UR32 router.

Status	Link Failover	С	ellular	Port	WAN	Bridge	Switch	Loopback
Network	Link Priority							
Interface	Priority	Enable Rule	Link in use	Interface	Connectior	п Туре	IP	Operation
DHCP	î.		•	WAN	Static I	Р	192.168.22.225	
Firewall	2		•	Cellular-SIM1	DHCF	<b>)</b>		
QoS VPN	3	~		Cellular-SIM2	27.5		5	
VPN								

#### 5.2 Cellular Connection Configuration

Take inserting SIM card into SIM1 slot as an example; please refer to the following detailed operations. A. Go to "Network > Interface > Cellular > Cellular Setting" to configure APN, PIN code or other cellular info, click "Save" and "Apply" to save the configuration.

Status	Link Failover Cellul	lar Port W	AN Bridge	Switch	Loopback
Network	Cellular Settings				
		SIM1		SIM2	
Interface	Protocol Type	IPv4	~	IPv4	~
DHCP	APN				
Firewall	Username				
	Password				
QoS	PIN Code				
VPN	Access Number				
IP Passthrough	Authentication Type	Auto	~	Auto	~
Routing	Network Type	Auto	~	Auto	~
routing	PPP Preferred				
VRRP	SMS Center				
DDNS	Enable NAT				

B. Go to "Network > Interface > Link Failover" to enable SIM1 and rise link priority of SIM1.

Status	Î.	Link Failover	C	Cellular	Port	WAN E	ridge Switch	Loopback
Network	-	Link Priority						
Interface		Priority	Enable Rule	Link in use	Interface	Connection Ty	pe IP	Operation
DHCP		1	۲		Cellular-SIM1		2	
Firewall		2			Cellular-SIM2	DHCP	7	
QoS VPN		3	•	•	WAN	Static IP	192.168.22.225	
VPN								

C. Click  $\square$  to configure ICMP ping detection information.

Enable					
IPv4 Primary Server	8.8.8.8				
IPv4 Secondary Server	114.114.114.114				
IPv6 Primary Server	2001:4860:4860::8888				
IPv6 Secondary Server	2400:3200::1				
Interval	300	s			
Retry Interval	5	s			
Timeout	3	s			
Max Ping Retries	3				

D. Click "Status > Cellular" to view the status of the cellular connection. If it shows "Connected", it means SIM1 has dialed up successfully. On the other hand, you can check the status of SIM indicator. If it keeps on green light statically, it means SIM1 has dialed up successfully.

Overview	Cellular	Network	VPN	Routing	Host List	GPS		
Modem			N	etwork				
Status	Ready		S	tatus	Connected	t.		
Model	EC25		IF	P Address	10.2.25.74			
Current SIM	SIM1		N	letmask	255.255.2	55.240		
Signal Level	29asu	(-55dBm)	G	ateway	10.2.25.73	10.2.25.73		
Register Status	Registe	ered (Home network)	C	NS	211.136.17	211.136.17.107		
IMEI	86158	5042050250	C	connection Duration	0 days, 00	:00:34		
IMSI	46004	5927703654	In	ata Usage Monthly				
ICCID	898604	439101880723654	-10.0					
ISP	CHINA	MOBILE	S	IM-1	RX: 0.0 Mi MiB	iB TX: 0.0 <mark>M</mark> iB ALL: 0.0		
Network Type	FDD L	TE	S	IM-2	RX: 0.0 Mi	iB TX: 0.0 MiB ALL: 0.0		
PLMN ID	46000				MiB			
LAC	592f							
Cell ID	271f84	8						

E. Open your preferred browser on PC, then type any available web address into address bar and see if it is able to visit Internet via UR32 router.

#### [END]