Milesight

Industrial Router Pro Series

UR35

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 UR35 router. For more functionality and advanced settings, please refer to the relevant documents as below.

Document	Description
UR35 Datasheet	Datasheet for UR35 industrial cellular router.
UR35 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: <u>https://www.milesight-iot.com</u>

Declaration of Conformity

UR35 are in conformity with the essential requirements and other relevant provisions of the CE, FCC, and RoHS.



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Revision History

Date	Doc Version	Description
Aug. 1, 2019	V 1.0	Initial version
Feb. 11, 2020	V 1.1	1. Replace serial port picture;
Feb. 11, 2020	V 1.1	2. Delete reboot descriptions of reset button
Aug. 26, 2020	V 1.2	1. Web GUI change;
	V 1.Z	2. 2.Add -485 model
Nov. 20, 2020	V 2.0	Layout replace
Dec. 1, 2021	V 2.1	Update cellular pictures
h	V22	1. Wall mounting bracket customizable
June 8, 2022	V Z.Z	2. Web GUI logo update

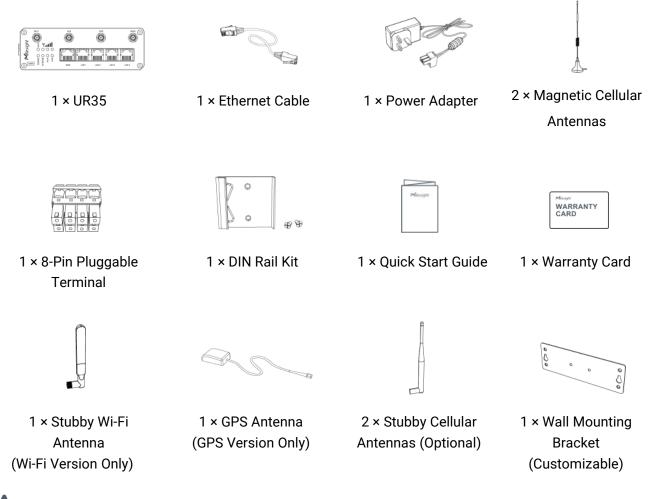
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1. Packing List

Before you begin to install the UR35 router, please check the package contents to verify that you have received the items below.

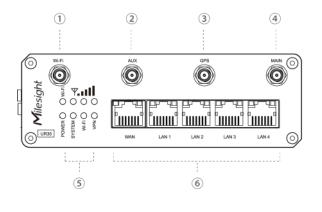


If any of the above items is missing or damaged, please contact your sales representative.

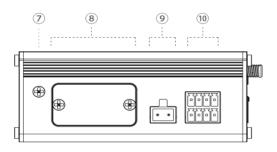
2. Hardware Introduction

2.1 Overview

A. Front Panel

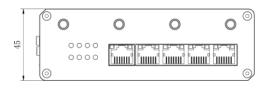


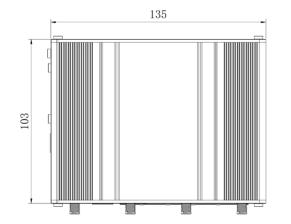
B. Left Side Panel

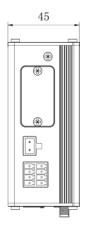


- ① Wi-Fi Antenna Connector
- (2)AUX Antenna Cellular Connector
- ③ GPS Antenna Connector
- (4)MAIN Cellular Antenna Connector
- (5) LED Indicator Area **POWER: Power Indicator** SYSTEM: Status Indicator Wi-Fi: Wi-Fi Indicator **VPN: VPN Indicator** SIM : SIM Status Indicator ♥: Signal Strength Indicator
- Ethernet Port & Indicator (6)
- Grounding Stud (7)
- SIM and Reset Button Holder (8)
- (9)**Power Connector**
- (10) Serial Port & I/O

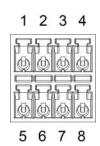
2.2 Dimensions (mm)







2.3 Serial & IO & Power Pinouts



PIN	RS232	RS485	DI	DO	Description
1			IN		Digital Input
2	GND		GND		Ground
3		В			Data -
4	TXD				Transmit Data
5				COM	Common Ground
6				OUT	Digital Output
7		А			Data +
8	RXD				Receive Data

Note: For -RS485 model, RXD--->A, TXD--->B.

9 10

PIN	Description	Wire Color
9	Positive	Red
10	Negative	Black

2.4 LED Indicators

LED	Indication	Status	Description	
	Dower Statue	Off	The power is switched off	
POWER	Power Status	On	The power is switched on	
		Croop Light	Static: Start-up	
SYSTEM	System Status	Green Light	Blinking slowly: the system is running properly	
		Red Light	The system goes wrong	
VPN	VPN Status	Off	VPN is disconnected	
VEIN	VFN Status	Green Light	VPN is connected	
		Off	Wi-Fi is disabled	
Wi-Fi	Wi-Fi Status	Green Light	Static: Wi-Fi is enabled	
			Blinking slowly: sending or receiving data via Wi-Fi	
		Off	SIM1 or SIM2 is registering or fails to register (or there	
			are no SIM cards inserted)	
		Green Light	Blinking slowly: SIM1 (as primary SIM) has been	
			registered and is ready for dial-up	
			Blinking rapidly: SIM1(as primary SIM) has been	
SIM	SIM Card Status		registered and is dialing up now	
			Static: SIM1 (as primary SIM) has been registered and	
			dialed up successfully	
		Orange Light	Blinking slowly: SIM2 (as primary SIM) has been	
			registered and is ready for dial-up	
			Blinking rapidly: SIM2 (as primary SIM) has been	

			registered and is dialing up now
			Static: SIM2 (as primary SIM) has been registered and dialed up eucocoefully.
dialed up successful Off No signal			
		UII	No signal
Signal Strength	Signal 1/2/3		Static/Off/Off: weak signals with 1-10 ASU (please check if the antenna is installed correctly, or move the antenna to a suitable location to get better signal)
		Green Light	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 3.9 W (Max 4.6 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

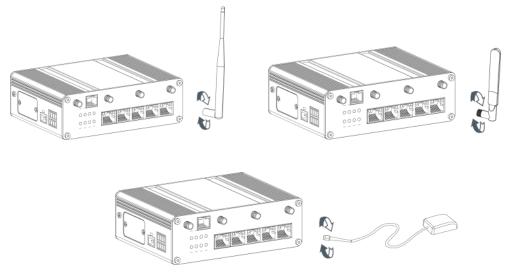
UR35 do not support hot-plug. Please cut off the power before insert or take off cards.

- 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.



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

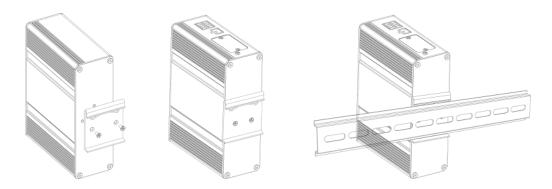
The router can be placed on a desktop or mounted to a wall or a DIN rail.

3.3.1 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 3.5cm.



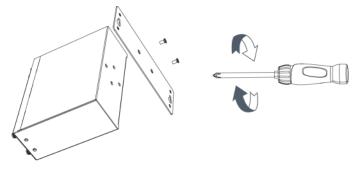
Recommended torque for mounting is 1.0 N·m, and the maximum allowed is 1.2 N·m.



3.3.2 Wall Mounting (Measured in mm)

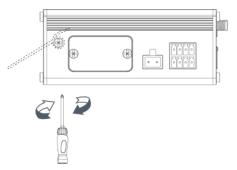
Use 2 pcs of M3 × 6 flat head Phillips screws to fix the wall mounting bracket to the router, and then use 2 pcs of M3 drywall screws to mount the router associated with the wall plugs on the wall.

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



3.4 Protective Grounding Installation

Remove the grounding nut, then connect the grounding ring of the cabinet's grounding wire onto the grounding stud and screw up the grounding nut.



The router must be grounded when deployed. According to operating environment, the ground wire should be connected with grounding stud of router.

4. Log in the Web GUI of Router

Please connect PC to LAN port of UR35 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" → "Network and Internet" → "Network and Sharing Center", then click "Ethernet" (May have different names).

Network and Sharing Center		- 0	2
- 🕘 * 🛧 😫 « Network	and Internet > Network and Sharing Center	Search Control Panel	3
Control Panel Home	View your basic network information	n and set up connections	
Change adapter settings	View your active networks		
Change advanced sharing settings	Yeastar5G Private network	Access type: Internet HomeGroup: Ready to create Connections: Wi-Fi (Yeastar5G)	
	ldentifying	Access type: No network access Connections: U <u>Ethernet</u>	
	Change your networking settings		
	Set up a new connection or network Set up a broadband, dial-up, or VPN o	connection: Ethernet	
	Troubleshoot problems Diagnose and repair network problem	is, or get troubleshooting information.	
See also			
HomeGroup			
Infrared			
Internet Options			
Windows Firewall			

B. Go to "Properties" → "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/	Pv4) Properties ×	Internet Protocol Version 4 (TCP/IPv4) Properties	>
General Alternate Configuration		General	
	automatically if your network supports ed to ask your network administrator	You can get IP settings assigned this capability. Otherwise, you no for the appropriate IP settings. 255.255.255	1
Obtain an IP address autom	atically	○ Obtain an IP address autor 192.168. 1	.1
OUse 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 a	automatically	Obtain DNS server address automatically	
Use the following DNS serve	r addresses:	Our 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	Advanced	Validate settings upon exit 192.168.1	.1
	OK Cancel	OK	Cancel

C. Open a Web browser on your PC (Chrome is recommended), type in the IP address 192.168.1.1, and press Enter on your keyboard.

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

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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. Click "Cancel" button if you want to modify it later.

Change P	assword	
Old Password]
New Password]
Confirm New Password]
Save	Cancel	

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

Status		Overview	Cellular	Network	WLAN	VPN	Routing	Host List	GPS	Help
Network		System Information			Syst	em Status				Model Show the model name of router.
		Model	UR35-L(00E-G-P-W	Loca	il Time	2021-10-27	03.26.27 Wednesday		Serial Number
System	•	Serial Number	6219A39	942925	Upti	me	12days, 23	52:45		Show the serial number of router.
		Firmware Version	35 3.0.2		CPU	Load	19%			Firmware Version
Industrial	· ·	Hardware Version	V2.0		RAN	(Available/Capacity)	26MB/128M	B(20.31%)		version of router
Maintenance					Flas	h (Available/Capacity)	88MB/128M	B(68.75%)		Hardware Version Show the current hardware version of router.
APP		Cellular			WAN	Link in use				Local Time
		Status	No SIM	Card	Stat	15	Online			Show the current local time of system.
		Current SIM	SIM1		IPv4		192.168.5.63	3/24		Uptime
		IPv4	0.0.0.0/0)	IPv6		fe80:26e1.2	4ff.fef1.641/64		Show the information on ho long the router has been
		IPv6	-		MAC	5	24:e1:24:f1:0	06:43		running
		Connection Duration	0 days, I	00:00:00	Con	nection Duration	0 days, 03:0	7:25		CPU Load Show the current CPU utilization of the router.

5. Network Configuration

This chapter explains how to connect UR35 to network via WAN connection or cellular.

5.1 Ethernet WAN Configuration

A. 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
Network	WAN Settings				
Interface	— WAN_1				
DHCP	Enable				1
Firewall	Port		WAN		
QoS	Connection Type	3	Static IP	۲	
VPN	Netmask		255.255.255.0		
IP Passthrough	IPv4 Gateway		192.168.22.1		
Routing	IPv6 Address		fe80::26e1:24ff	fef0:3ee0	
VRRP	Prefix-length		64		
DDNS	IPv6 Gateway				
Svstem 🕨	MTU Primary DNS		8.8.8.8		
System 🕨	Secondary DNS				
Industrial 🕨 🕨	Enable NAT				

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

C. Go to "Network" \rightarrow "Interface" \rightarrow "Link Failover" to rise the WAN priority to 1.

D. 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 UR35 router.

Status	Link Failover	Ce	llular	Port	WAN	Bridge	Switch	Loopback
Network 🗸	Link Priority							
Interface	Priority	Enable Rule	Link in use	Interface	Connectio	n Type	IP	Operation
DHCP	1	•	•	WAN	Static	IP	192.168.22.225	
Firewall	2		•	Cellular-SIM1	DHC	P	-	
QoS VPN	3		•	Cellular-SIM2	9 7 9		-	
VPIN								

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

Link Failover Cellular Cellular Settings Protocol Type APN	Port WAN SIM1 IPv4	Bridge	Switch SIM2 IPv4	Loopback
Protocol Type		•		
0-104411		•		
0-104411	IPv4	~	IPv4	
APN			/ L	•
Username				
Password				
PIN Code				
Access Number				
Authentication Type	Auto	~	Auto	~
Network Type	Auto	~	Auto	~
PPP Preferred				
SMS Center				
	Password PIN Code Access Number Authentication Type Network Type PPP Preferred SMS Center	Password PIN Code Access Number Authentication Type Auto PPP Preferred	Password PIN Code Access Number Authentication Type Auto PPP Preferred SMS Center	Password PIN Code Access Number Access Number Auto Auto Auto Network Type Auto Auto Auto PPP Preferred SMS Center

cellular info, click "Save" and "Apply" to save the configuration.

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

Status	Î	Link Failover	C	ellular	Port	WAN	Bridge	Switch	Loopback
Network	-	Link Priority							
Interface		Priority	Enable Rule	Link in use	Interface	Connection	Туре	IP	Operation
DHCP		1	S		Cellular-SIM1	-		e e	
Firewall		2		•	Cellular-SIM2	DHCP	ĸ	5	
QoS		3			WAN	Static I	Ρ	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	
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" \rightarrow "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	Connecte	d
Model	EC25		IF	Address	10.2.25.7	4
Current SIM	SIM1		N	etmask	255.255.2	255.240
Signal Level	29asu	(-55dBm)	G	ateway	10.2.25.7	3
Register Status	Registe	ered (Home network)	D	NS	2 1 1.136.1	17.107
IMEI	86158	5042050250	с	onnection Duration	0 days, 0	0:00:34
IMSI	46004	5927703654		ata Usage Monthly		
ICCID	898604	439101880723654	I D	ata Osage Monthly		
ISP	CHINA	MOBILE	S	IM-1	RX: 0.0 N MiB	1iB TX: 0.0 MiB ALL: 0.0
Network Type	FDD L	TE	s	IM-2	RX: 0.0 N	11B 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 UR35 router.

[END]