3onedata
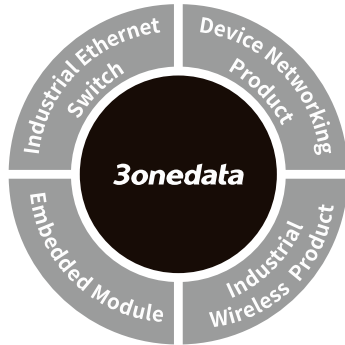Make network communication more reliable

IRT5300-AW-5T2D
Industrial 4G Router
Quick Installation Guide

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【Package Checklist】

Please check whether the package and accessories are intact while using the industrial 4G router for the first time.

1. 4G router x1
2. Quick installation guide
3. CD
4. DIN-Rail mounting attachment
5. LTE antenna x2
6. WIFI antenna x2
7. Power adapter
8. Warranty card
9. Certification

If any of these items are damaged or lost, please contact our company or dealers, we will solve it ASAP.
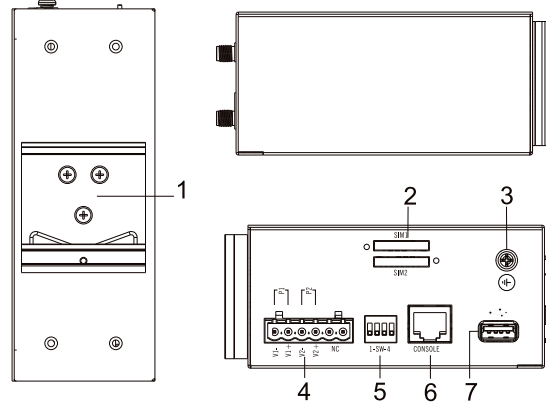
【Product Overview】

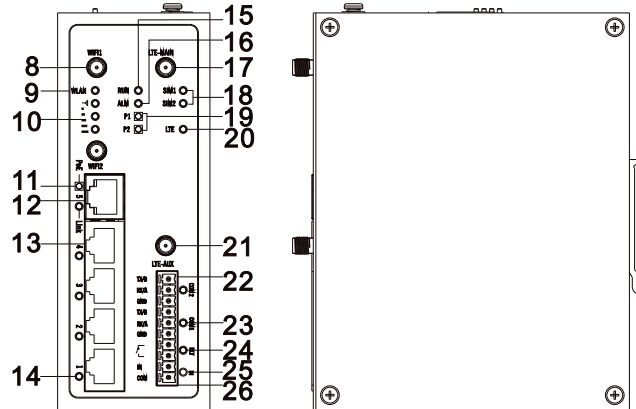The product is an industrial DIN-Rail 4G router with high performance and cost-effectiveness. Its model is IRT5300-AW-5T2D(2 WIFI antenna interfaces + 2 LTE antenna interfaces + 5 100M copper ports + 2 RS-232/485 serial ports).

【Panel Design】

➢ **Top view, bottom view and rear view**
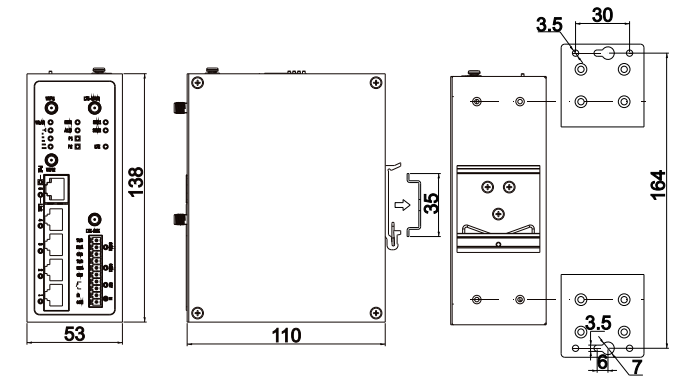

➢ **Front view and side view**

1. DIN-Rail mount
2. SIM slot
3. Grounding screw
4. Terminal block of power supply input
5. DIP switch
6. Console port
7. USB interface
8. WIFI antenna interface
9. WLAN indicator
10. LTE signal strength indicator
11. PoE indicator
12. 100M PoE copper port
13. 100M copper port
14. Copper port connection indicator
15. Running indicator
16. Alarm indicator
17. LTE master antenna interface
18. SIM indicator
19. Power supply indicator
20. LTE indicator
21. LTE slave antenna interface
22. Serial port
23. Serial port indicator
24. RLY indicator
25. DI indicator
26. I/O port

【Mounting Dimension】

Unit: mm

Note:

The right side of the picture above is a wall-mounted hanging panel. It requires an additional purchase while it is not an accessory that comes with the product.
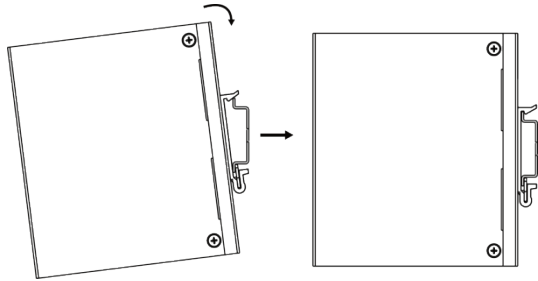
⚠ **Note before mounting:**

● Don't place or install the device in area near water or moist, keep the relative humidity of the device

surrounding between 5%~95% without condensation.

- Before power on, please confirm the supported power supply specification to avoid over-voltage damaging the device.
- The device surface temperature is high after running, please avoid any direct contact in case of scalding.

【DIN-Rail Mounting】

For convenient usage in industrial environments, the product adopts 35mm DIN-Rail mounting, mounting steps as below:

Step 1   Check if the DIN-Rail mounting kit is installed firmly.

Step 2   Insert the bottom of DIN-Rail mounting kit (one side with spring support) into DIN-Rail, and then insert the top into DIN-Rail.

Tips:
Insert a little to the bottom, lift upward and then insert to the top.

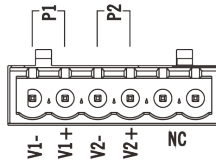Step 3   Check and confirm the product is firmly installed on DIN-Rail, then mounting ends.

【Disassembling DIN-Rail】

Step 1   Device power off.

Step 2   After lift the device upward slightly, first shift out the top of DIN-Rail mounting kit, then shift out the bottom of DIN-Rail, disassembling ends.

【Power Supply Connection】

➢ **DC power supply**

The device provides 6-pin 5.08mm pitch power supply input terminal blocks and two independent DC power supply

systems, P1 and P2, which enables two terminals to connect to the device. It could ensure the normal operation of the device when one of the systems fails, thus improving the reliability of network operation. Voltage range: 12~48VDC.

➢ **48VDC POE power supply input**

Port 5 of this device supports PoE power receiving.

Note:

- Power ON operation: first connect power line to the connection terminal of device power supply, then power on.
- Power OFF operation: first unpin the power plug, then remove the power line, please note the operation order above.

【DIP Switch Setting】

 This device provides 4-bit DIP switch for function setting, where "ON" is enable valid terminal. The definitions of DIP switch are as follows:

1. Restore factory setting   2. Reboot
3. Reserved   4. Reserved

【Console Port Connection】

This device provides 1 program debugging port based on RS232 serial port which can conduct device CLI command line management by connecting to PC. The interface adopts RJ45 port. Its pin definitions are as follows:

No.	2	3	5
Pin Definition	TXD	RXD	GND

【USB Port Connection】
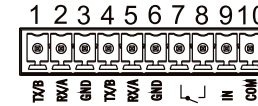
Reserved

【SIM Slot】

This device provides 2 SIM slots. It would pops up after you inserting a retrieve card pin in the little hole beside the SIM slot, and then you should put the SIM card in the slot correctly and insert the slot back in the router.

Note:

If the SIM card needs to be changed, the device should be power off first in case of damaging the card.

【Serial Port Connection】

 This device provides 10-pin 3.81mm pitch serial port input terminal blocks (the left 6-pin is serial port) and supports 2 RS-232 or 2 RS-485 serial ports. Its pin definitions are as follows:

PIN	1	2	3	4	5	6
RS-232	TXD	RXD	GND	TXD	RXD	GND
RS-485	Data-(B)	Data+(A)	GND	Data-(B)	Data+(A)	GND

【I/O Connection】

This device provides 10-pin 3.81mm pitch I/O input terminal blocks (I/O port is the right 4-pin) ,
this function is temporarily reserved as the picture shows above

【Checking LED Indicator】

The device provides LED indicators to monitor its operating status, which has simplified the overall troubleshooting process. The function of each LED is described in the table below:

LED	Status	Description
WLAN	ON	WIFI is running normally
	OFF	WIFI is running abnormally or closed
▼.▪▪▮▮	○ ○ ○	All indicators are out. It means the LTE signal of the opposite end is weak or no signal.
	● ○ ○	One indicator is on. It means the LTE signal of the opposite end is weak
	● ● ○	Two indicators are on. It means the LTE signal of the opposite

LED	Status	Description
		end is normal
	○ ○ ○	All indicators are on. It means the LTE signal of the opposite end is strong
RUN	ON	Device is powered on or running abnormally
	OFF	Device is powered off or running abnormally
	Blinking	Device is running normally
ALM	ON	Power supply, port link has alarm
	OFF	Power supply, port link has no alarm
P(1-2)	ON	Power supply is connected and running normally
	OFF	Power supply is disconnected and running abnormally.
SIM(1-2)	ON	With SIM card
	OFF	Without SIM card
GPS	Reserved	Reserved
LTE	Blinking	LTE module is operating normally
	OFF	LTE module isn't operating
PoE	ON	POE power supply is operating normally
	OFF	POE power supply is operating abnormally
Link(1-5)	ON	Copper port has established an active network connection
	Blinking	Copper port is in an active network state
	OFF	Copper port hasn't established an active network connection
COM(1-2)	ON	Serial port has established an active network connection
	Blinking	Serial port is in an active network state
	OFF	Serial port hasn't established an

LED	Status	Description
		active network connection
RLY	ON	DO output relay with output
	OFF	DO output relay without output
DI	ON	DI input connect to DC-5-30V high level
	OFF	DI input connect to DC-0-3V low level

【Specification】

Standard	
Standard	IEEE802.3, IEEE802.3u, IEEE802.11b/g/n, IEEE802.11i, IEEE802.11r, IEEE802.3af/at
Protocol	IP, Ping, Traceroute, DHCP Server/ Client, Dynamic DNS, SSH, HTTP, HTTPS, TFTP, FTP VLAN IP route, static route, RIP, OSPF
Panel	
Copper port	5 10/100Base-T(X) RJ45 ports, which could be configured to 5 LAN or 4 LAN+1 WAN. The copper port 5 supports POE48VDC power supply input.
Serial port	2 RS-232 or 2 RS-485 serial port
I/O port	Reserved
SIM slot	2 SIM slots, redundancy backup, support 1.8V/3V SIM card
Antenna interface	2 LTE antenna interfaces, SMA-K type (female) • Master antenna is used for sending/receiving information • Slave antenna is used for receiving information
	2 WIFI antenna interfaces, RP-SMA-K type (female)
Indicator	WLAN indicator, LTE signal strength indicator, running indicator, alarm

	indicator, power supply indicator, SIM indicator, LTE indicator, PoE indicator, copper port connection indicator, serial port connection indicator, RLY indicator, DI indicator
WIFI Transmission Rate	
802.11n	6.5~300Mbps
802.11b	11/5.5/2/1Mbps
802.11g	54/48/36/24/18/12/9/6Mbps
WIFI RF	
Channel	2.412GHz~2.4835GHz
RF power output	23dBm
Modulation scheme	DBPSK, DQPSK, CCK, OFDM, 16-QAM, 64-QAM
WIFI Receiving Sensitivity	
802.11n_HT40	-82dBm@MCS0, -64dBm@MCS7
802.11n_HT20	-85dBm@MCS0, -67dBm@MCS7
802.11g	-91dBm@6Mbps, -72dBm@54Mbps
802.11b	-93dBm@1Mbps, -87dBm@11Mbps
WIFI Transmission Power	
802.11n_HT40	23dBm@MCS0, 20dBm@MCS7
802.11n_HT20	23dBm@MCS0, 20dBm@MCS7
802.11g	23dBm@6Mbps, 20dBm@54Mbps
802.11b	23dBm@1Mbps, 23dBm@11Mbps
LTE Operating Frequency Band	
TDD-LTE	Band38/39/40/41
FDD-LTE	Band1/3/5/7/8/20
WCDMA	Band1/5/8
TD-SCDMA	B34/39

EVDO/CDMA1X	BC0	1X	
GSM	Band3/8	GSM850/900	33±2dBm
LTE Bandwidth (downward, upward)		GSM1800/1900	30±2dBm
		Power Supply	
TDD-LTE	Rel 9 Cat4 TDD-LTE 112Mbps/30Mbps	Input power supply	• Dual power supply redundancy, voltage range: 12～48VDC, support non-polarity, reverse polarity protection, built-in overcurrent 2.0 protection • 48VDC POE power supply
FDD-LTE	Rel 9 Cat4 FDD-LTE 150Mbps/50Mbps		
DC-HSPA+	42Mbps/5.76Mbps		
HSPA+	21Mbps/5.76Mbps		
UMTS	384kbps/384kbps		
EVDO RevA	3.1Mbps/1.8Mbps	Terminal block	6-pin 5.08mm pitch terminal blocks(power supply occupies 4 pins)
EVDO Rev0	2.4Mbps/153.6kbps	**Power Consumption**	
TD-HSPA	4.2Mbps/2.2Mbps		
TD- SCDMA	2.8Mbps/2.2Mbps	No-load	3.38W@24VDC
CDMA 1x	153.6kbps/153.6kbps	Full-load	7.15W@24VDC
EDGE	236.8kbps/236.8kbps	**Operating Environment**	
GPRS	85.6kbps/85.6kbps		
LTE Sensitivity		Operating temperature	-40～75℃
GSM	<-108dBm		
WCDMA	<-109dBm	Storage temperature	-40～75℃
TD-SCDMA	<-108dBm		
TDD-LTE	• Band38/39/40: <-100dBm @5MHz BW • Band41: <-98dBm @5MHz BW	Relative humidity	5%～95%(no condensation)
		Protection grade	IP30(metal)
FDD-LTE	• Band1: <-100dBm @5MHzBW • Band3/8: <-97dBm @5MHzBW • Band5: <-98dBm @5MHzBW		
CDMA	<-108dBm		
EVDO	<-108dBm		
Maximum Transmission Power of LTE			
LTE-FDD/TDD	23 ±2dBm		
WCDMA	24 +1/-3dBm		
TD-SCDMA	24 +1/-3dBm		
EVDO/CDMA	24 ±1dBm		