






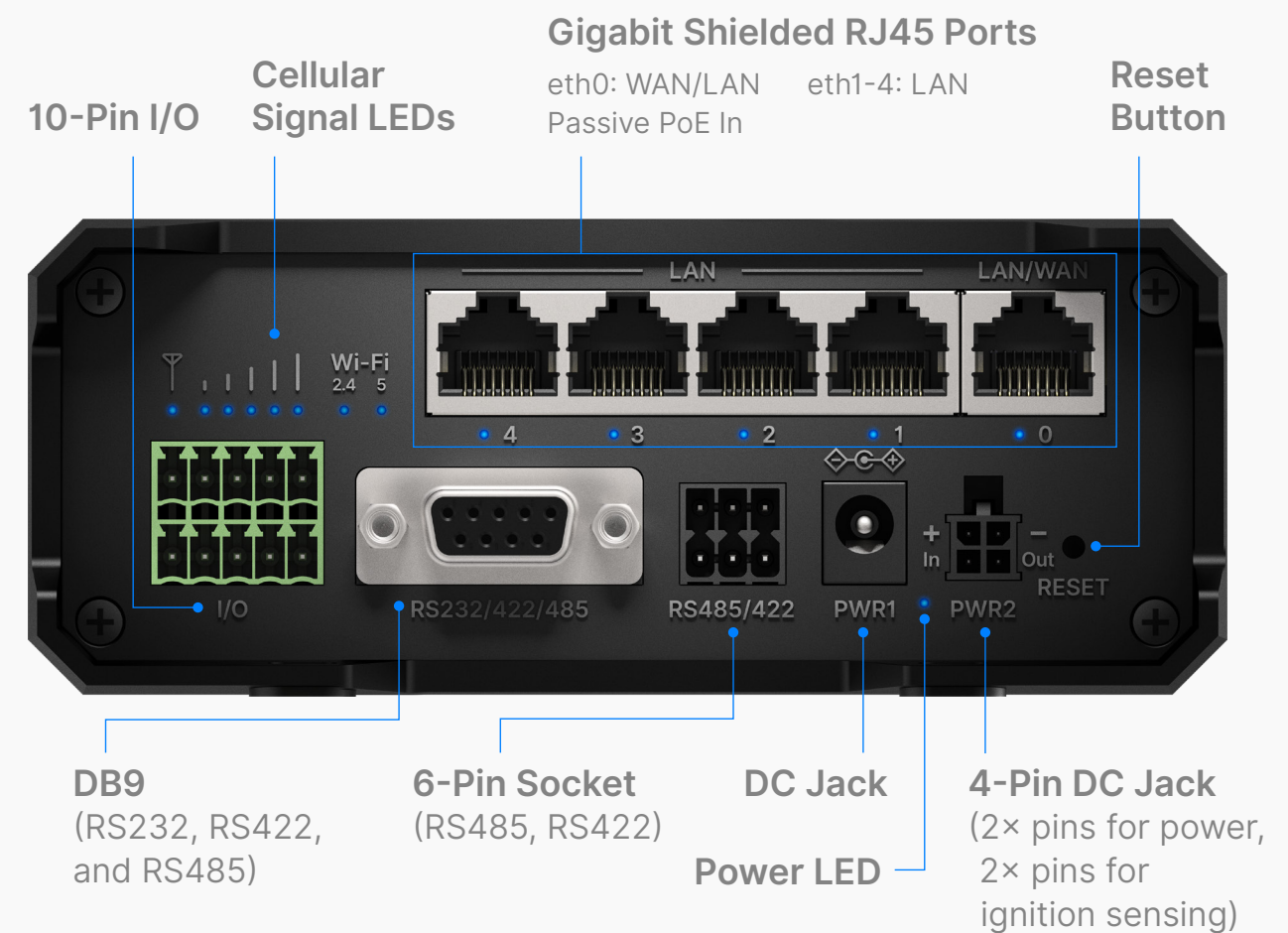
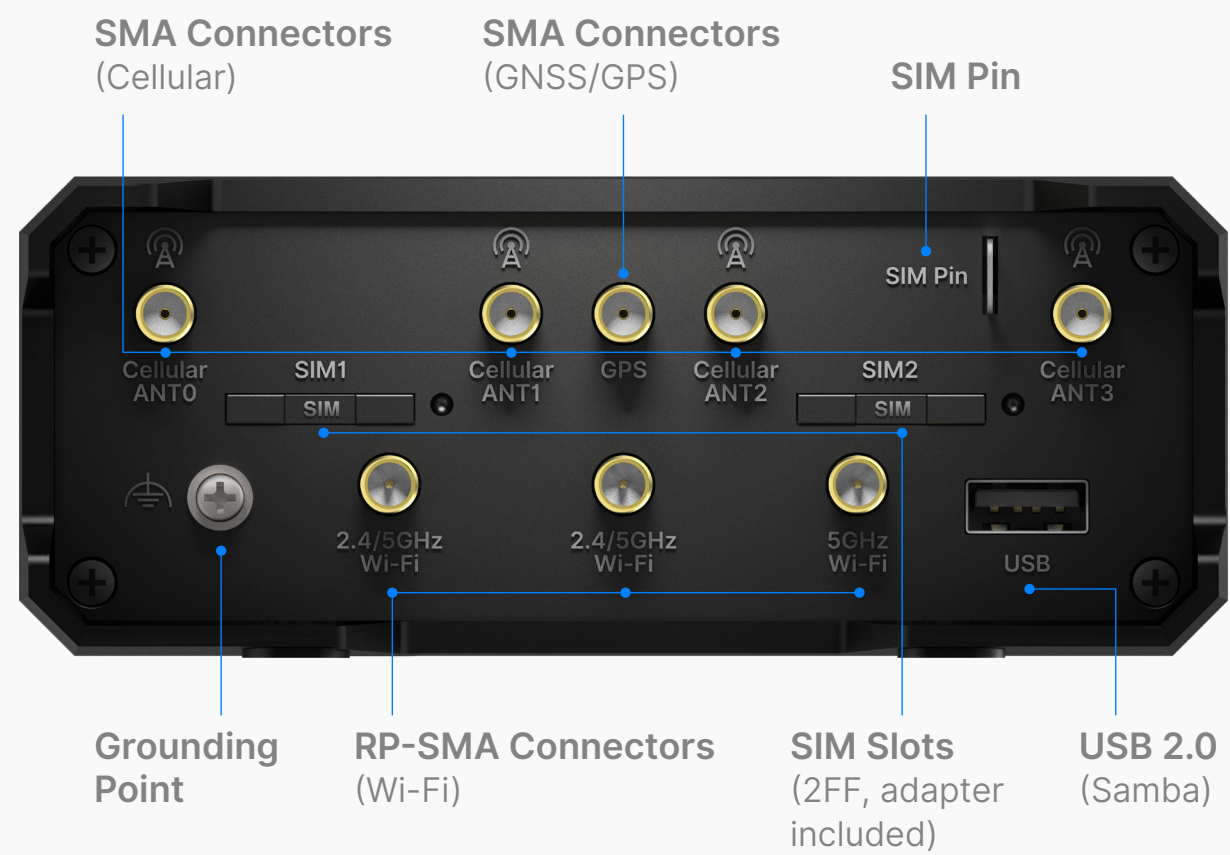
Model: IR5G

5G NR SA/NSA AX3000 Industrial Router

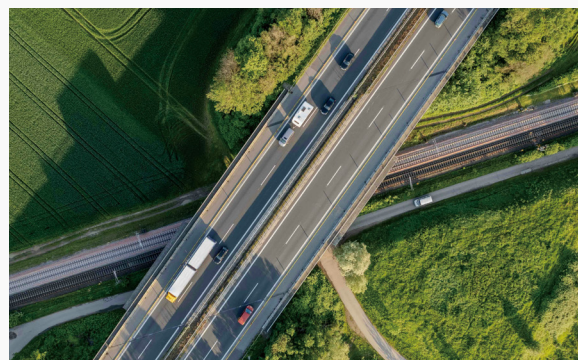
-  5G SA/NSA Dual-Mode
Dual SIM Card Slots
-  Ethernet, RS232, RS422,
RS485, USB, and IO
-  Passive PoE, DC
4-Pin DC with Ignition-Sensing

Datasheet





Built for Tough Environments



Transportation



Retail Enterprise



Power Grid Management



Manufacturing and Automation

Highlights

A cellular Wi-Fi router with mobile connectivity for networking in harsh conditions such as moving vehicles, manufacturing, maritime, oil & gas, and mining.

- 2× SIM Slots
- 2402 Mbps + 574 Mbps Wi-Fi
- Serial (RS232/422/485), IO
- IP30, -40~75°C (-40~167°F), EN61373
- 4-PIN DC with Ignition Sensing
- Level 4 EMC Protection
- DIN-Rail, Wall-Mount

Package Content

- IR5G
- Power Adapter
- Detachable Wi-Fi Antennas
- Detachable Cellular Antennas
- Detachable GNSS Antenna
- 6-PIN Connector
- 10-PIN Connector
- 4-PIN Connector
- Ethernet Cable
- SIM Adapter KIT
- Installation Guide

Hardware Specs

CPU	CPU Details	1.3 GHz Dual-Core, ARM Cortex-A53	
Memory /Storage	Flash/ROM	128 MB (1 Gbit) NAND	
	DDR/RAM	256 MB (2 Gbit) DDR3	
Cellular	Cellular Standards	5G Rel. 15 DL/UL 4G Cat. 12 DL / 4G Cat. 13 UL	
	Cellular Antennas	4× Detachable (1.5 m cable length, customizable length for bulk orders)	
	Antenna Connector	SMA Female	
	SIM Options	2× Mini SIM Slots (2FF)	
	Available Versions	EU, US	
	EU Version Cellular	Suitable Region	Europe, Middle East, Africa, Asia-Pacific, Latin America
		Max DL Speed	3.4 Gbps (NSA), 2.4 Gbps (SA)
Max UL Speed		550 Mbps (NSA), 900 Mbps (SA)	
Advanced		DL/UL 4CA, DL 4×4, UL 2×2 MIMO	
Cellular Bands		5G Sub 6 GHz: n1/3/5/7/8/20/28/38/40/41/71/77/78/79 LTE-FDD: B1/3/5/7/8/18/19/20/28/32 LTE-TDD: B34/38/39/40/41/42 WCDMA: B1/5/8	
US Version Cellular		See Next Page	

Hardware Specs

US Version Cellular	Suitable Region	United States, Canada
	Max DL Speed	3.4 Gbps (NSA), 2.4 Gbps (SA)
	Max UL Speed	550 Mbps (NSA), 900 Mbps (SA)
	Advanced	DL/UL 4CA, DL 4x4, UL 2x2 MIMO
	Cellular Bands	5G Sub 6 GHz: n2/5/7/12/13/14/25/38/41 /48/66/71/77/78 LTE-FDD: B2/4/5/7/12/13/14/17/25/26/66/71 LTE-TDD: B38/41/42/43/48 WCDMA: B2/4/5
Location Tracking	GNSS	GPS, GLONASS, BeiDou, Galileo, and QZSS
	Antennas	1x Detachable (1.5 m cable length, customizable length for bulk orders)
	Detachable GNSS Antennas Connector	SMA
	Wireless	5 GHz Wi-Fi Speed
	2.4 GHz Wi-Fi Speed	300 Mbps
	5 GHz Wi-Fi Streams	3 Spatial Streams
	2.4 GHz Wi-Fi Streams	2T2R (2x2 MIMO)
	Wi-Fi Antennas	3x Detachable (1.5 m cable length, customizable length for bulk orders)
	Antenna Connector	RP-SMA Female
	Beamforming	True
	FEM or PA/LNA	5 GHz: 3x Internal, 2.4 GHz: 2x Internal

Wireless	Range Performance	Max: 170 m (558 ft) Tested in open-space environments with minimal interference. Actual WiFi range may vary depending on layout and wall materials. Refer to the Wall Performance specifications for placement suggestions.	
	Wall Performance	Two wooden walls with thickness < 10 cm (4") One concrete wall with thickness < 20 cm (7")	
Interfaces	Physical Buttons	Reset Button	
	Gigabit RJ45 Ports	5	
	Ethernet Notes	Port 1 is WAN/LAN configurable, and the rest are LAN ports	
	USB Ports	1x USB 2.0	
	10-PIN IO		1x Digital Dry Input (0-1.2V for state 1 1.8-3V for state 0) and GND1 1x Digital Galvanically Isolated Input (0-4V for state 0 9-30V for state 1) and GND2 1x Digital Open Collector Output (30V \Rightarrow 250mA) and 1x GND3 1x +V (<30V) and GND 3 for External VCC for the Digital Output 1x C & NO - Common and Normally Open contacts of the internal Non-Latching Relay respectively (Max. 24V \Rightarrow 4A or 40V~4A) 1x A and GND1 - ADC input. Analog voltage range: 0-24V. The input can be configured for 4-20 mA sensor protocol as current measurement (AcL)



Hardware Specs

Interfaces	Other IO	1× Ignition Sensing and GND on the 4-PIN Power Connector
	DB9	1
	DB9 Protocols	RS232
		RS422
		RS485
	6-PIN Industrial Socket	1
	6-PIN Industrial Socket Protocols	RS485
		RS422
	LED	Power
		Cellular Status
Cellular Signal Strength		
Dual-Band Wi-Fi Status		
Link/ACT of Each Ethernet Port		
Power Input	DC Jack	
	PoE via Ethernet Port	
	4-PIN DC	
Power Input Note	Only two PINs in the 4-PIN power ports are used for powering. The other two are used for ignition sensing.	
Power	Power Methods	DC
		Passive PoE

Power	Power Methods Note	The eth0 port accepts Passive PoE.
	DC	9-57V $\overline{=}$
	4-Pin DC	9-57V $\overline{=}$
	Passive PoE	9-57V $\overline{=}$, Max. 13W
	Power Adapter	Input: 100 ~ 240 V, 50/60 Hz AC
		Output: 12V $\overline{=}$ 2A DC
	Max Power Consumption (W)	13W
Reliability	Grounding Methods	Grounding Point
	EMC	EN55032 Class A
		EN55035 Class A
	EMI	FCC 47 CFR Part 15B Class A
	EMS	IEC/EN 61000-4-2, Level 4 ESD: Contact: 8kV; Air: 15kV
		IEC/EN 61000-4-3, Level 4 RS: 80 MHz to 1 GHz: 10 V/m
		IEC/EN 61000-4-4, Level 4 EFT: Power: 2kV; RJ45: 4kV
		IEC/EN 61000-4-5, Level 4 Surge: Power: DM 2kV, CM 4kV; RJ45: CM 6kV
		IEC/EN 61000-4-6, Level 3 CS: 10V
		IEC/EN 61000-4-8, Level 5 PFMF
IEC/EN 61000-4-9, Level 5		
IEC/EN 61000-4-10, Level 5		



Hardware Specs

Reliability	Power Protection	Polarity Protection
		Overvoltage Protection
		Surge Protection
	Shock	IEC/EN 60068-2-27
	Vibration	IEC/EN 60068-2-6
	Free Fall	IEC 60068-2-32
	Safety	IEC/EN 62368
	Ingress Protection Rating	IP30
	Environment	Operating Temperature:
		-40 °C ~ 75 °C (-40 °F ~167 °F)
Storage Temperature:		
-40 °C ~ 75 °C (-40 °F ~167 °F)		
	Operating Humidity:	
	5% ~ 95% non-condensing	
	Storage Humidity:	
	5% ~ 95% non-condensing	

Certifications	FCC, CE	
Mechanical	Casing Material	Aluminum Alloy
	Dimension	Device: 129.1×124×51.3 mm 5.08×4.88×2.02 inches
		Mounting Space: 174×130×52 mm 6.85×5.12×2.05 inches
	Installation	Wall-mount DIN-Rail



Software Specs

Wireless	Wi-Fi Standards	Wi-Fi 6
	Max Wi-Fi Modulation	1024-QAM
	Max Capacity	512
	Recommended Client Upper Limit	50
	Max Wi-Fi Channel Width	160 MHz
	Wi-Fi Security	WPA/WPA2/WPA3
	Guest Network	2.4 GHz, 5 GHz
	WPS	True (In Web Management)
General	Operation Modes	Cellular Router / Wi-Fi Router WISP
	Cellular APN	Band Select (Band Lock)
		Cellular Mode Select
		Data Roaming
		APN Profile
		Manual APN Profile
	MTU Value	
	Cellular Mode	5G NSA / 5G SA / 4G / 3G / Auto
	WAN Mode	DHCP / Static IP / PPPOE
		L2TP / PPTP
Internet Failover Sequence	WAN / WISP	
	Cellular	

Network	QoS	Per-User Rate Limiting
	DHCP	Address Reservation
		DHCP Client List
		Server
	IP Versions	IPv4 / IPv6
	IPv6 Protocols	Relay
		Dynamic (SLAAC/DHCPv6)
		Static (Fixed IP)
		Passthrough
		464XLAT
	TTL Customization	MAP-E
		DS-Lite
		Extend
	IGMP	Spoof
		Custom
IGMP Proxy		
Forwarding	IGMP Snooping	
	Port Forwarding	
	Port Triggering	
	UPnP	
	DMZ	



Software Specs

Network	Firewall	SPI Firewall
		DoS Protection
		Block PING
	Application Layer Gateway	IPSec Passthrough
		L2TP Passthrough
		PPTP Passthrough
		FTP Passthrough
		TFTP Passthrough
		H323 Passthrough
		SIP Passthrough
RTSP Passthrough		
Utilities	VPN Server & VPN Client	WireGuard
		OpenVPN
		ZeroTier
		PPTP, L2TP, IPSec
	DNS Options	Manual DNS
		Rebind Protection
		Override Clients' DNS

Utilities	DNS over TLS Providers	Cloudflare	
		Google	
		Quad9	
		Custom	
	USB Functions	Samba Server	
	Wake on LAN	True	
	Online Detection	True	
Input/Output	Status Panel	Current Input Status	
		Relay Status Control	
		Isolated Output Control	
		Ignition Output Control	
		Digital Input	
	Input Method Select	Analog Input	
		Digital Input Trigger	Rising
			Falling
	Both		
	Analog Input Trigger	Voltage Change	
		Current Change	
	Input Rules	Type Select	
		Delayed Execution	
Output Type			
Output State			
Revert Period			
Maintain Status after Reboot			



Software Specs

Input/Output	Trigger Actions	Activate Output
		Send SMS
		SIM Switch
		Turn On Wi-Fi
		Turn Off Wi-Fi
		Reboot
	Output Schedulers	Output Type
		Target State
		Repeat
Serial	Modes	TCP Client
		TCP Server
		UDP
		Modbus TCP over Serial Gateway
Management	All Devices Management	Wi-Fi Time Schedule
		MAC Filter
		IP/MAC Binding
	Per-Devices Management	Internet On/Off
		VPN On/Off
		Online Time Schedule
		Device Rename
	Content Management	Domain Filter
		IP Filter

System	Local Control Method	Config Web Page	
		App Control	
	Remote Control Method	App Control	
		Config Page via HTTP	
		Config Page via HTTPS	
		TR069	
	Firmware Upgrade	Local Update	
		App (Over the Air)	
		Online Update	
	Diagnostic Tools	Diagnosis / Ping / Traceroute	
NSLookup / System Log			
Languages	English	Bengali	Catalan
	Czech	German	Greek
	Spanish	French	Hebrew
	Croatian	Hungarian	Italian
	Japanese	Khmer	Korean
	Dutch	Norwegian	Polish
	Portuguese	Romanian	Russian
	Slovak	Swedish	Thai
	Turkish	Ukrainian	Vietnamese
	Simplified Chinese	Traditional Chinese	
	Reliability	Timed Reboot	
		Backup and Restore	



Software Specs

Dashboard

Panel

Internet Status

Devices Management

Cellular Status

WAN Status

LAN Status

WISP Status

Wi-Fi Status

VPN Status

DHCP Server Status

System Version

Charts

Cellular Speed

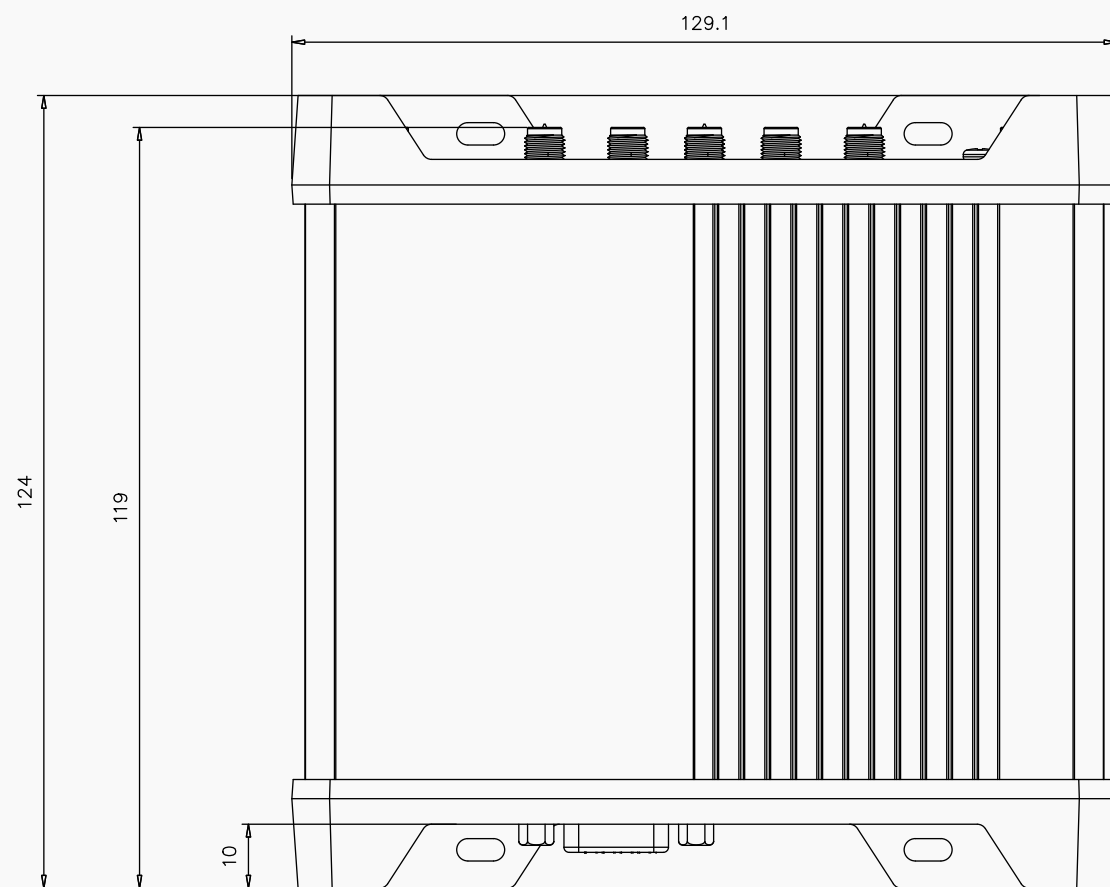
Internet Speed

WISP Speed

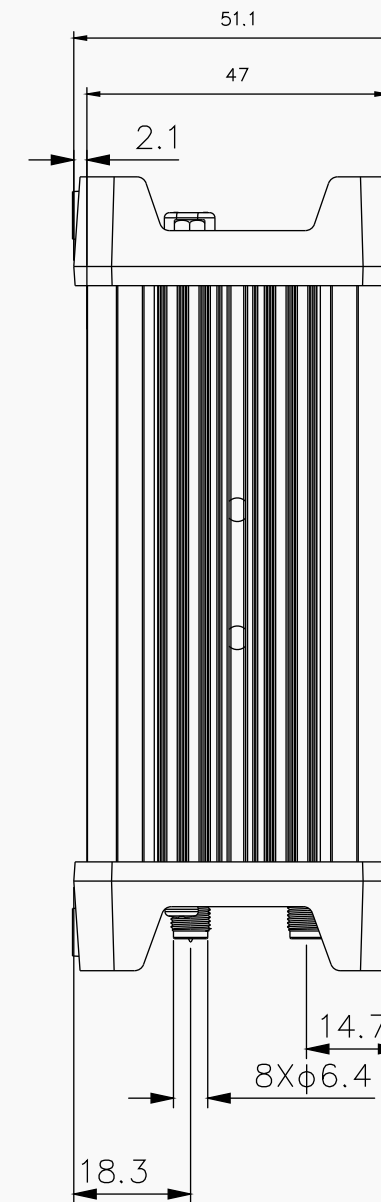
Wi-Fi Speed

Spacial Measurements

TOP VIEW



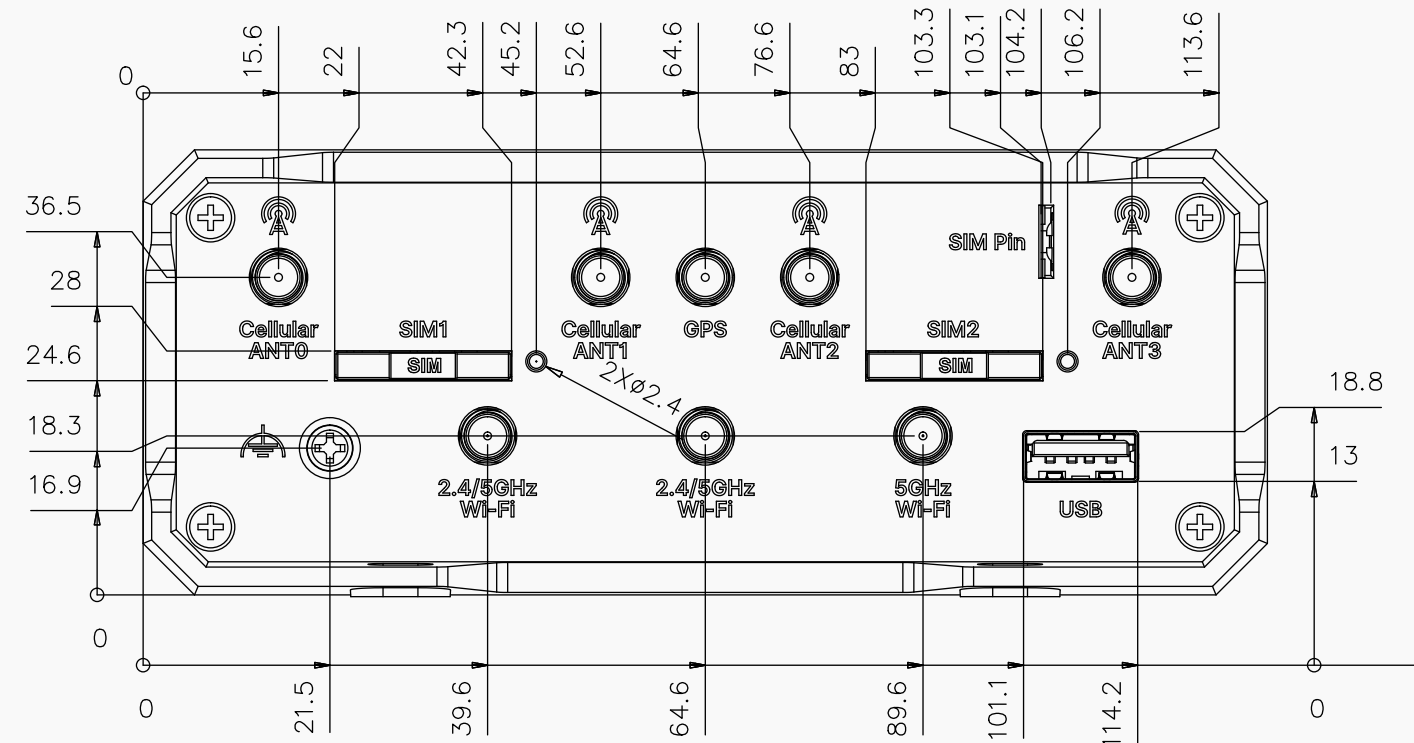
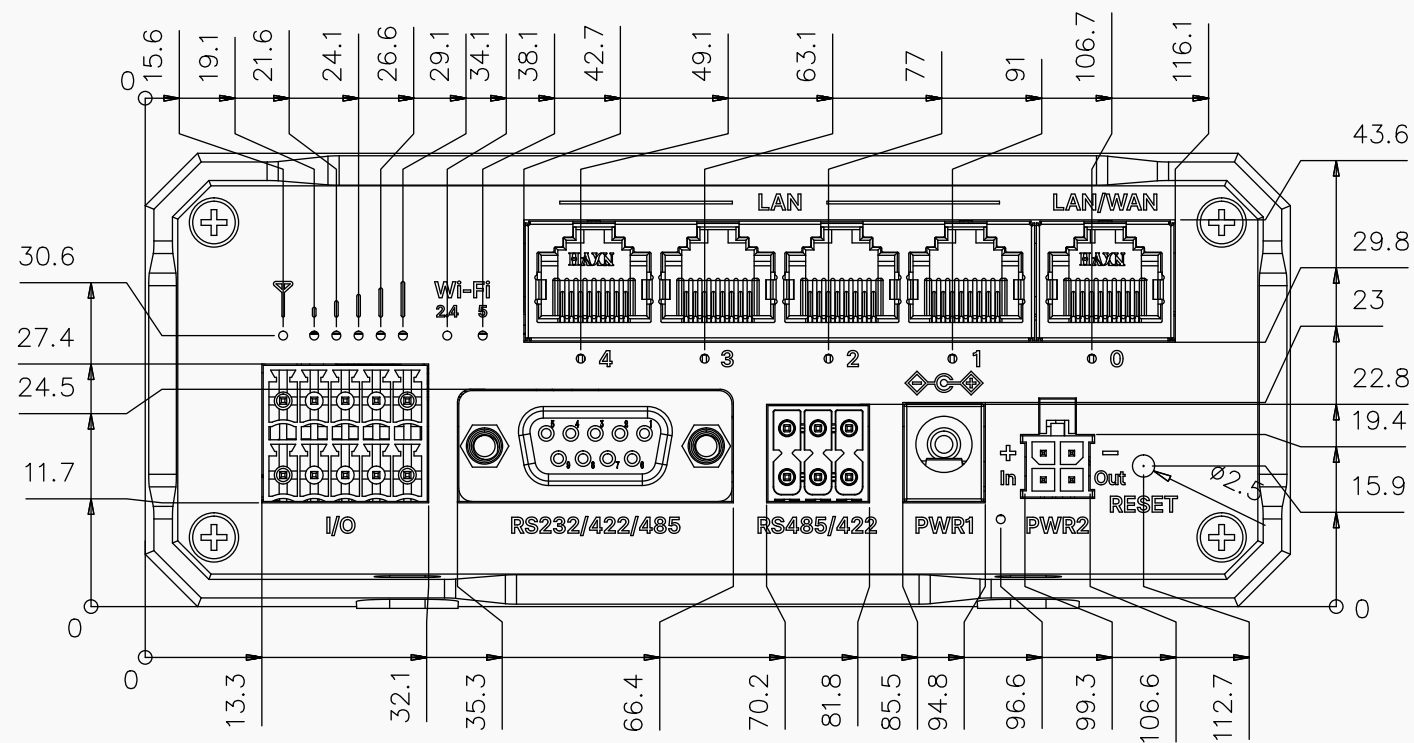
RIGHT VIEW



Spatial Measurements

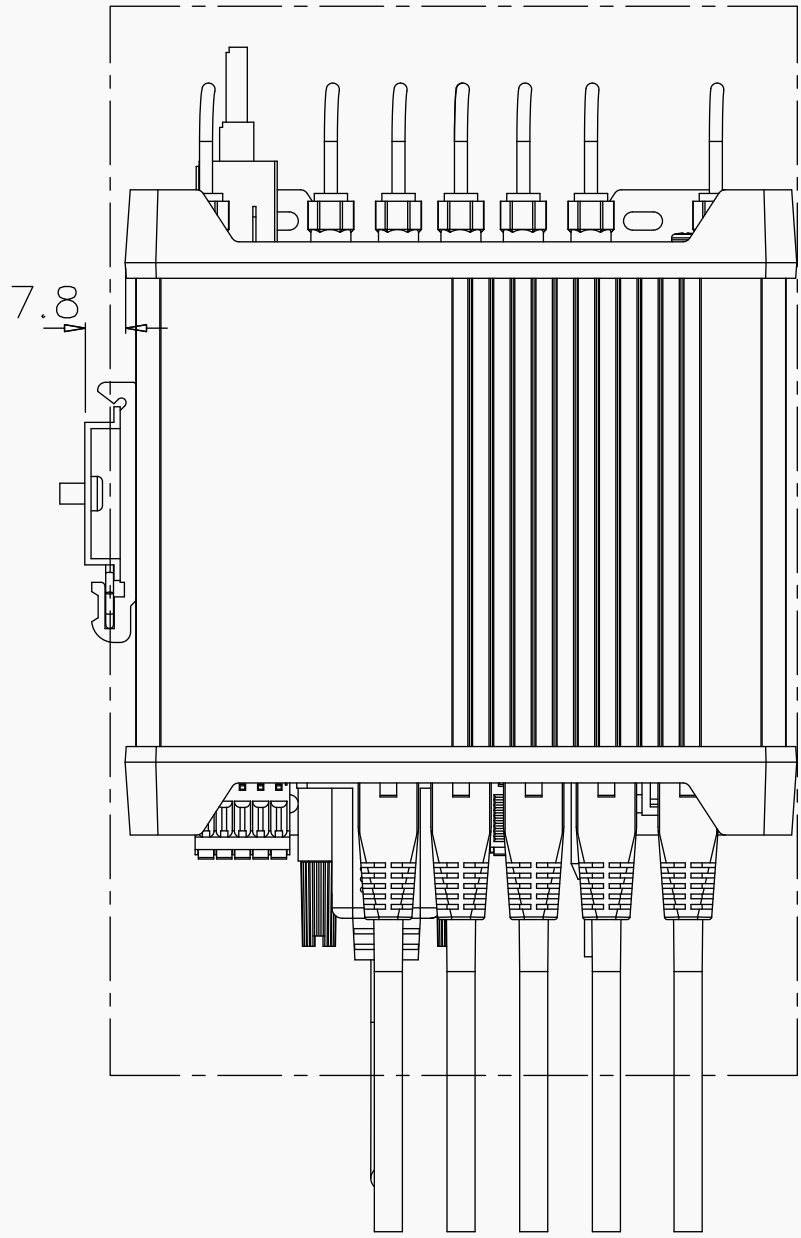
FRONT VIEW

REAR VIEW



Spacial Measurements

DIN RAIL



MOUNTING SPACE REQUIREMENTS

