

# ICR-3241, ICR-3241W

## INDUSTRIAL IoT 4G LTE ROUTER & GATEWAY

# ADVANTECH



- + 4G LTE Cat.4 VPN Gateway for Industrial IoT applications
- + Carriers support; Verizon, AT&T, T-Mobile, FirstNet (Public Safety)
- + Powerful CPU with 1.3 GB storage to host customer SW applications
- + 2x SIM with cover, Dual SIM + eSIM
- + 2x Ethernet 10/100, 1x RS232, 1x RS485 and I/O
- + Optional Wi-Fi 802.11ac using MU-MIMO technology
- + Optional GNSS receiver
- + Robust metal cover with DIN and Wall mount options
- + Operational temperature range from -40 °C to +75 °C
- + Sleep mode & Power ignition & Backup real time clock

The ICR-3200 LTE gateway is the perfect way to connect IP or serial devices to a cellular network. Industrial M2M and IoT applications include kiosks, industrial PCs, HMIs, traffic controllers, meters, UPS systems, and much more.

With LTE Cat.4 upload speeds of up to 50 Mbps and download speeds of up to 150 Mbps, the router provides ample bandwidth for high data demand applications such as CCTV or public Wi-Fi hotspots.

In addition to its two independent or switched Ethernet ports, serial ports RS232 and RS485, ICR-3200 has built-in digital I/O connectivity, backup real-time clock and sleep mode support. The device has two SIM readers protected by metallic cover for carrier failover redundancy. As an addition the router is ready to use internal eSIM.

Optional built-in GNSS chipset provides information about the accurate position of the router. An optional built-in Wi-Fi and Bluetooth v5.1 module (class 1) are also available. WiFi with 802.11a,b,g,n,ac modes, and MU-MIMO support is appropriate for on-board Wi-Fi transport applications.

The router supports VPN tunnel creation using various protocols to ensure safe communications. The router provides diagnostic functions which include automatic monitoring of the wireless and wired connections, automatic restart in case of connection losses, and a hardware watchdog that monitors the router status.

The ICR-3200 places intelligence at the network edge with an extremely powerful Cortex A8 CPU at 1GHz, 512 MB RAM and 4 GB EMMC FLASH memory in pSLC mode for a long-lifetime and critical industrial applications. 1.3 GB of memory space is allocated for customer SW applications and data. With open Linux platform and wide possibilities of programming customer SW applications in Python, C/C++ or browser-based flow editor Node-RED the ICR-3200 offers a real open development platform for Industrial IoT applications. The Advantech existing app library (User modules) with apps already developed to enhance specific router functionality including industrial protocol conversions and support of IoT platforms such as MS Azure, Cumulocity, ThingWorx and others are supported on the router.

ICR-3200 is easy to install using WebAccess/DMP, a full featured configuration and monitoring tool for mass deployment. The router also supports additional traffic and health monitoring software R-SeeNet.



### ORDERING INFORMATION - Antennas & Power Supplies Sold Separately

MODEL NO. - ORDER CODES	REGION	FirstNet CERTIFICATION	2x ETHERNET	RS232 RS485	GNSS (ANT)	I/O	ANT + DIV	2x SIM	WI-FI 802ac	2x MIMO	WEBACCESS/DMP
ICR-3241	NAM		✓	✓		✓	✓	✓			✓
ICR-3241W	NAM		✓	✓	✓	✓	✓	✓	✓	✓	✓
ICR-3241-1ND	NAM	✓	✓	✓		✓	✓	✓			✓
ICR-3241W-1ND	NAM	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

\* Check availability of another models for various world regions at our corporate website or with your local distributor.

**WebAccess/DMP**

**WebAccess/VPN**

python

Node-RED



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### ACCESSORIES - INCLUDED

DESCRIPTION	
Wall mount kit	
DIN clip	BB-DIN-ICR32
Serial / IO connector	BB-CON-ICR32-10
PWR connector	BB-CON-WR2
Quick Start Guide	

### ACCESSORIES - SOLD SEPARATELY

ORDER CODE	DESCRIPTION
BB-GA.110.101111	Antenna LTE, Magnet Mount
BB-TG.10.0113	Antenna LTE, Terminal
BB-AW-A2458G-FSRPK	Antenna Wi-Fi 2.4 & 5.8 GHz
BB-AP-AGNSS-SMA	Ant GPS/GLONASS, magnetic, cable 3m, SMA-M
BB-RPS-v2-WR2-AUS	Wall mount Power Supply 12V/1A, AUS plug
BB-RPS-v2-WR2-EU	Wall mount Power Supply 12V/1A, EU plug
BB-RPS-v2-WR2-UK	Wall mount Power Supply 12V/1A, UK plug
BB-RPS-v2-WR2-US	Wall mount Power Supply 12V/1A, US plug

### SPECIFICATIONS

NETWORKING	
Network and Routing	DHCP Server, NAT/PAT, VRRP, Dynamic DNS client, DNS proxy, VLAN, QoS, DMVPN, NTP Client/ Server, IGMP, BGP, OSPF, RIP, SMTP, SMTPS, SNMP v1/ v2c/ v3, Backup Routers, PPP, PPPoE, SSL, Port Forwarding, Host Port Routing, Ethernet Bridging
Security	HTTPS, SSH, VPN tunnels, SFTP, DMZ, Firewall (IP Filtering, MAC address filtering, Inbound and outbound Port filtering)
VPN Tunnelling	Open VPN client and server and P2P, L2TP, PPTP, GRE, EasyVPN, IPSec with IKEv1 and IKEv2
Configuration	Web server, SSH, Four configuration switchable profiles, Automatic configuration update from server, Backup configuration, Restore configuration
Firmware Management	Automatic firmware update from server, Locally via LAN or remotely OTA (HTTP, HTTPS), Over-the-Air software updates, Over-the-Air cellular module update from FW
Diagnostic	One CLICK report - current configuration / factory identification / system log / kernel log / reboot log / routing table, Remote diagnostics possible via SSH
Status	Network Status, DHCP Status, IPSec Status, Statistics history for last 60days
Log	System Log, Reboot Log, Kernel Log
Controlling and Diagnostic	SMS, SNMP v1/v2c/v3, Statuses
Event Engine	StartUp script & Up/Down script (Bash, Python), Digital Input, Network Parameters, Data Usage, Timer, Power, Device Temperature. Report Types: SMS, email, SNMP Trap
Other	Support of IPv6
Applications Development	Open Linux, Python, BASH, C/C++, Node-RED

PORTS, LED, ANTENNAS	
2x Ethernet	RJ45, 10/100 Mbps
2x SIM	Mini SIMs (2FF)
LED indicators	PWR, SIGNAL, DAT, SIM1, SIM2, USR, ETH
2x ANT	SMA connectors
GNSS (GPS, GLONASS) - *optional	SMA connector
2x MIMO WiFi antenna - *optional	R-SMA connector
1x RS232, 1x RS485	(10-Way Terminal block)
I/O	1x Digital Input (On Voltage: 2.7V to 36VDC) 1x Binary Output (10-Way Terminal block)

CPU, MEMORY	
CPU power	2 DMIPS per MHz
RAM	512 MB
Flash memory	2x 256 MB FW 512 MB - User data storage 838 MB - Space for User Modules

MECHANICAL	
Metal case, Metal DIN rail, Wall mount kit	Metal
Enclosure Dimensions	55 x 97 x 125 mm (150mm including DIN)
Weight version without WiFi - ICR3241	477 g
Weight version with WiFi - ICR-3241W	497 g

CELLULAR MODULE PARAMETERS	
LTE parameters	LTE: Cat.4, 3GPP E-UTRA Release 11 LTE technology FDD frequencies: 600 MHz (B71), 700 MHz (B12, B13, B14), 850 MHz (B5), 1700 MHz (B4, B66), 1900 MHz (B2) LTE FDD bit rates: 150 Mbps (DL) / 50 Mbps (UL) Supported bandwidths: 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz
WCDMA parameters	Supported frequencies: 850 MHz, 1700 MHz, 1900 MHz Bit rates: 4.2 Mbps (DL) / 2.2 Mbps (UL)

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### SPECIFICATIONS - CONTINUED

POWER, CONSUMPTION, ENVIRONMENTAL, IP COVER	
Power Supply	9–36VDC (2-Way Terminal block)
Power Consumption with WiFi - Idle / Average / Peak / Sleep Mode	2.5 / 4 W / 11 W / 10 mW
Temperature Range – Operating / Storage	-40 to +75 °C / -40 to +85 °C
Humidity – Operating / Storage (noncondensing)	0 to 95 % / 0 to 95 %
Cold Start	-40 °C
Operating Altitude	2000 m / 70 kPa
Enclosure Rating	IP30

STANDARDS AND REGULATIONS FOR NAM ROUTERS - ICR-3241	
EMC	EN 61000-6-2, FCC part 15.B, ICES-003 Issue 6
Radio	FCC part 22H, FCC part 24E, FCC part 27, PTCRB
Safety	UL 62368-1
Mechanical	EN 60068-2-27, EN 60068-2-64, EN 60068-2-64, MIL-STD-810G, SAE J1455
Climatic	EN 60068-2-2, EN 60068-2-1, EN 60068-2-14, EN 60068-2-78, MIL-STD-810G, SAE J1455
Transportation	E-mark, EN 45545-2
Environmental	RoHS, Reach, WEEE
Carrier Approvals	FirstNet, AT&T, Verizon

Wi-Fi*	
Antenna Connector	2x R-SMA – 50 Ohms (MU-MIMO)
Supported WiFi Band	2.4 GHz to 2.495, 5.15 GHz to 5.825 GHz
Standards	IEEE 802.11ac Wave 2, 802.11d, 802.11e, 802.11h, 802.11i, 802.11r
Security - Standards	WEP, WPA, WPA2
Security - Encryption	WEP, TKIP, AES
Security - EAP Types	EAP-FAST, EAP-TLS, EAP-TTLS, PEAP-GTC, PEAP-MSCHAPv2, PEAP-TLS, LEAP
WiFi Standards	802.11a, 802.11b, 802.11g, 802.11n, 802.11ac Wave 2 WPA Enterprise, WPA2 Enterprise
Type of Device	Access point, Client

GNSS specifications*	
Antenna	50ohm - active
Protocols	NMEA 0183
GNSS Systems	GPS, GLONASS, BeiDou, Galileo, QZSS
Frequency	GPS/Galileo/QZSS: 1575.42±1.023MHz GLONASS: 1597.5 – 1605.8MHz BeiDou: 1561.098±2.046MHz
Sensitivity (autonomous)	Tracking: -157dBm Reacquisition: -157dBm Cold start: -146dBm
Acquisition time (autonomous)	Hot start: 2.5 s Warm start: 26 s Cold start: 35 s
Accuracy	< 1.5m

Bluetooth specifications*	
Version	Bluetooth 5.1, class 1
Support data rate	1 Mbps (GFSK), 2 Mbps ( $\pi/4$ -DQPSK), 3 Mbps (8-DPSK)
	Bluetooth@SIG Qualification

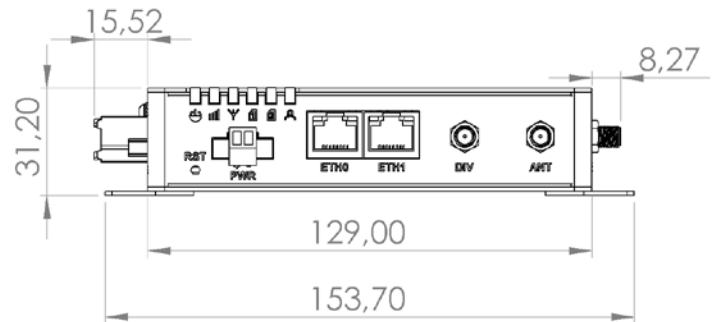
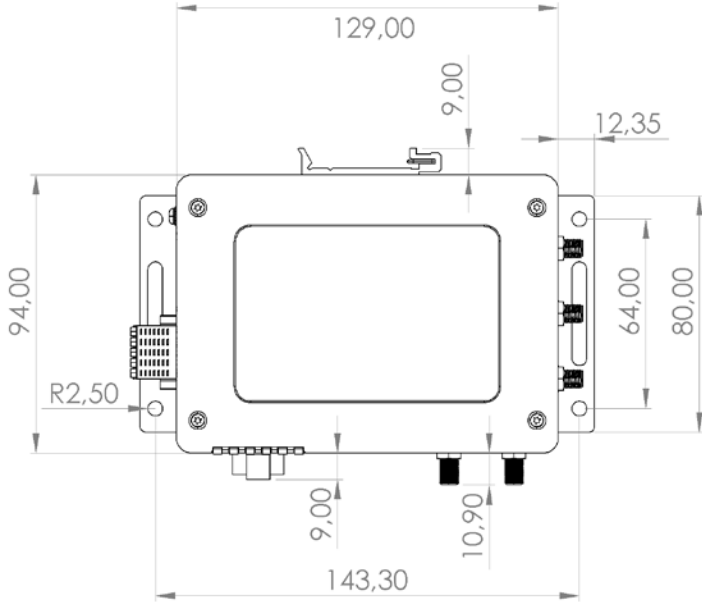
\* Available only in "W" variant of the cellular router.

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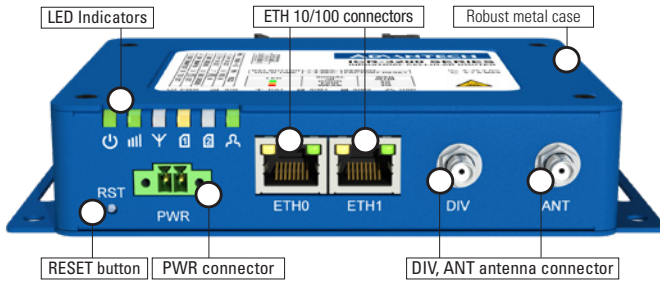
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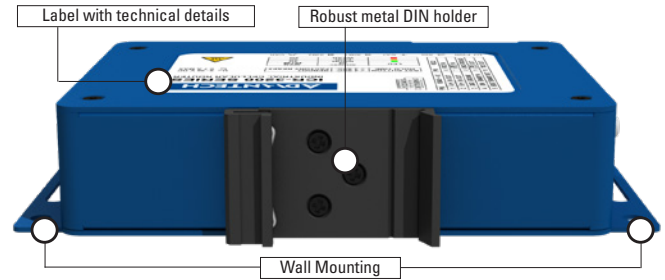
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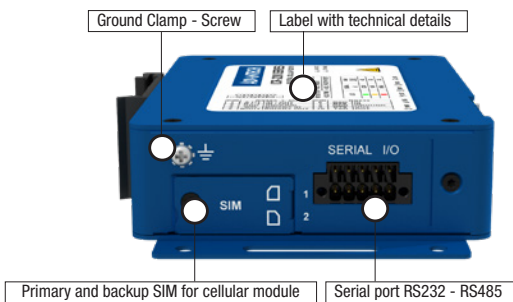
### FRONT VIEW



### REAR VIEW



### LEFT SIDE VIEW



### RIGHT SIDE VIEW

