# ICR-3241, ICR-3241W

## INDUSTRIAL IoT 4G LTE ROUTER & GATEWAY

+ 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
+ 2× SIM with cover, Dual SIM + eSIM
+ 2× 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 posibilities 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.

Bluetooth 5 ready

FIRSTNET Built with AT&T

AT&T

T-Mobile

ROGERS

verizon

## ORDERING INFORMATION – Antennas & Power Supplies Sold Separately

| MODEL NO. - ORDER CODES | | REGION | FirstNet CERTIFICATION | 2× ETHERNET | RS232 RS485 | GNSS (ANT) | I/O | ANT + DIV | 2× 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



All product specifications are subject to change without notice.
ICR3241 - June 3, 2020 7:15 AM

# ICR-3241, ICR-3241W

## INDUSTRIAL IoT 4G LTE ROUTER & GATEWAY

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

| CPU, MEMORY | |
|---|---|
| CPU | Cortex-A8, 1000 MHz |
| RAM | 512 MB |
| Flash memory | eMMC - 4096 MB (838 MB for Router Apps, 512 MB for customer data) |

| MECHANICAL | |
|---|---|
| Metal case, Metal DIN rail, Wall mount kit | Metal |
| Enclosure Dimensions | 31.2 × 94 × 129 mm |
| Weight - ICR-3241 | 457 g |
| Weight - ICR-3241W | 477 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)<br>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<br>Bit rates: 4.2 Mbps (DL) / 2.2 Mbps (UL) |

# ICR-3241, ICR-3241W

## INDUSTRIAL IoT 4G LTE ROUTER & GATEWAY

## SPECIFICATIONS - CONTINUED

| POWER, CONSUMPTION, ENVIRONMENTAL, IP COVER | |
|---|---|
| Power Supply | 9–36VDC (2-Way Terminal block) |
| Power Consumptionwith 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 |

| Wi-Fi* | |
|---|---|
| Antenna Connector | 2× 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 |

| 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 |

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

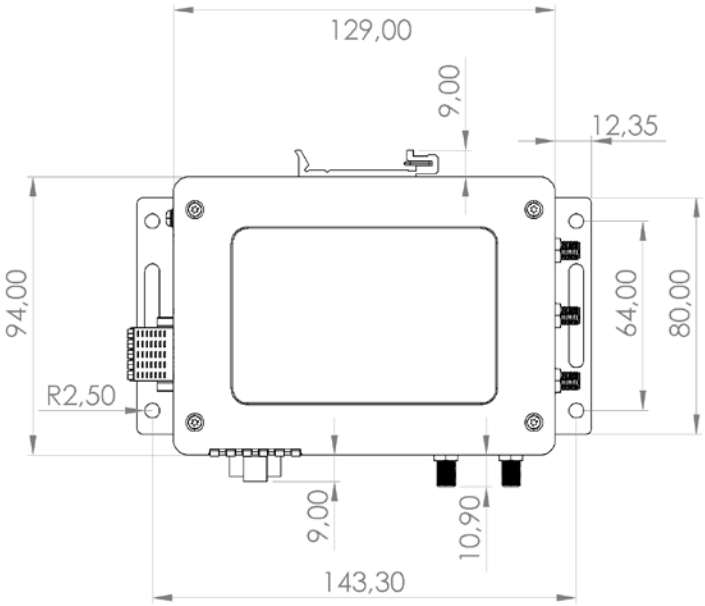
| Bluetooth specifications* | |
|---|---|
| Version | Bluetooth 5.1, class 1 |
| Support data rate | 1 Mbps (GFSK), 2 Mbps (π/4-DQPSK), 3 Mbps (8-DPSK) |
| | Bluetooth®SIG Qualification |

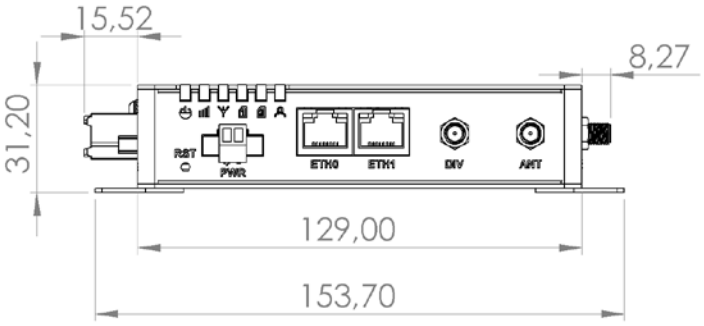
* Available only in "W" variant of the cellular router.

# ICR-3241, ICR-3241W

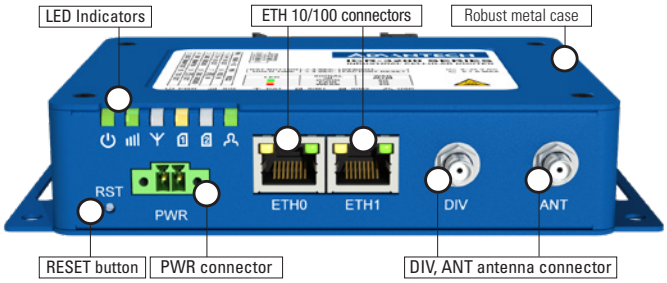
## INDUSTRIAL IoT 4G LTE ROUTER & GATEWAY

## MECHANICAL DRAWING

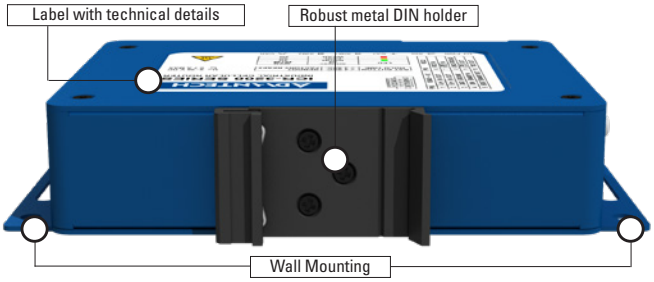


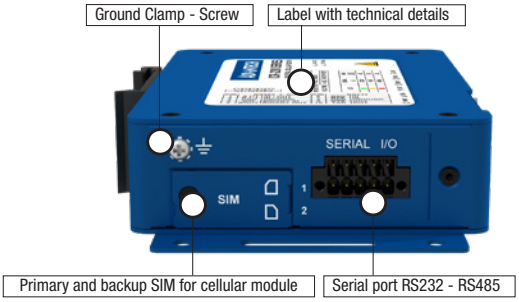

## FRONT VIEW



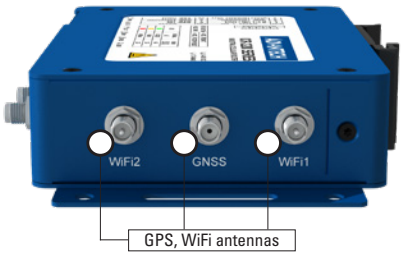

## REAR VIEW




## LEFT SIDE VIEW




## RIGHT SIDE VIEW

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