

Industrial Cellular Routers & Gateways

ICR-1745-EU

5G NR Industrial Connectivity Gateway



Features

- 5G NR Cellular Connectivity, Sub-6GHz
- 3GPP Rel 17 (EU), support both NSA and SA modes
- 2x SIM for redundancy, eSIM(**)
- 5x Ethernet 10/100/1000Mbps
- Terminal block with 1x RS232 + 1x RS485 + 1x DI +1x DO
- Optional 2x 2 Wi-Fi6 (IEEE802.11ax) supports up to 32 clients
- Wide operational temperature range (-30 ~ 75 °C)
- Robust metal cover with wall-mount kit
- Optional DIN-Rail mounting

* The gateway is compatible with cellular networks in the indicated region. The importer/operator needs to check locale legislation (standards, national Telecom approvals, etc.) and compare with standards available for the product if possible to operate the gateway in the target region legally.

** Availability may vary. Please consult your local sales representative for more information.

Introduction



The Industrial Connectivity Gateway ICR-1745 series is designed for wireless communication to enable the connection of IP devices and serial buses to a 5G NR network. Employing future-proof 5G NR technology, the ICR-1745 series features a low latency in data transmission, ensuring real-time responses and offering robust performance, flexibility, and advanced features to support a wide range of industrial M2M and IoT applications, including environmental monitoring, vending machines, and surveillance.

ICR-1745 Industrial connectivity gateway equipped with five Gigabit Ethernet ports and digital I/O (1x DI, 1x DO) and Serial (1x RS232 + 1x RS485) connectivity. The gateway supports VPN tunnel creation using various protocols to ensure safe communications. It also 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 gateway status.

The ICR-1700 connectivity gateway series is based on a system-on-module design that integrates the ICR-OS operating system directly on the cellular module, resulting in a compact and cost-effective solution. ICR-OS Open Linux platform enables wide possibilities of programming customer SW applications in scripts and C/C++. Gateway supports uploading of certain RouterApps that would extend standard firmware functionalities. The existing app library, ready for free download by customers, already contains developed software apps to enhance specific gateway functionality.

The router is easy to manage using WebAccess/DMP, a full-featured, cloud-based platform for device management, provisioning, and monitoring. It is ideal for mass deployment and VPN management, enabling secure remote access.



Order Codes

| Model no. - Order Codes | REGION | 5x Gigabit Ethernet | Micro SIM slot | eSIM | 1x RS232 1x RS485 2x DI/DO | USB | GNSS | WiFi 6 (802.11ax) 2T2R |
|-------------------------|----------------------|---------------------|----------------|------|----------------------------------|-----|------|------------------------|
| | ICR-1745W-EU-A | EMEA, APAC, LATAM | ✓ | 2x | | ✓ | ✓ | ✓ |
| | ICR-1745WE-EU-A (**) | EMEA, APAC, LATAM | ✓ | 1x | 1x | ✓ | ✓ | ✓ |
| | ICR-1745-EU-A | EMEA, APAC, LATAM | ✓ | 2x | | ✓ | ✓ | |
| | ICR-1745E-EU-A (**) | EMEA, APAC, LATAM | ✓ | 1x | 1x | ✓ | ✓ | |

** Availability may vary. Please consult your local sales representative for more information.

Last updated: 8-Jul-2026

Specifications

| System | |
|-------------------------|---|
| CPU | Quad-Core, Cortex A55 up to 2.2 GHz |
| Memory | RAM: 1 GB eMMC: 4 GB (1GB for RouterApps, 491MB for user data) |
| Watchdog | Hardware watchdog |
| Interfaces | |
| Ethernet | 5× Ethernet, RJ45, 10/100/1000Mbps |
| Serial Lines (Optional) | 1× RS232 (Tx, Rx, GND, RTS, CTS) 1× RS485 (Data-, Data+, GND) (10-pin terminal block with Digital I/O) |
| I/O (Optional) | 1× Digital Input (Dry contact) 1× Digital Output (Open Drain, 48 V / 100 mA) (10-pin terminal block together with RS232,RS485) |
| USB | USB 2.0 |
| Reset Button | Reboot (< 4 s) / Factory reset (> 4 s) |
| LED Indicators | PWR: green only, blinking while system is ready SIG: green/orange/red for good/fair/poor signal SIM: green/orange for SIM1/2 USR: user define for WiFi, serial, DI/O etc. USR: user define for WiFi, serial, DI/O etc. ETH0 & ETH1 on RJ45 |

| GNSS | |
|----------------------|---|
| Antenna | 1× SMA female, active antenna, L1, L2, L5 bands |
| Systems | GPS, GLONASS, BDS, Galileo, QZSS |
| Protocol | NMEA |
| Ac Time-to-First-Fix | Cold start: 8.12 s Warm start: 1.22 s Hot start: 0.82 s |

| Environmental | |
|--------------------------|--|
| Power Supply | 9 – 48 VDC (2-pin terminal block) |
| Consumption | ICR-1745-EU: Idle 1W / Average 2.7W / Maximum 5W ICR-1745W-EU: Idle 1.6W / Average 4.1W / Maximum 10W |
| Sleep Mode | No |
| Operating Temperature | -30 to +75 °C (with WiFi) -40 to +75 °C (without WiFi) |
| Storage Temperature | -40 to +85 °C |
| Humidity | 5 to 95 % |
| IP Cover | IP30 |
| Physical Characteristics | |
| Dimensions | 116 × 44 × 113.5mm (4.57" × 1.73" × 4.47") |
| Enclosure | Metal case + aluminum heatsink with grounding screw |
| Mounting | Wallmount DIN-Rail (optional) |
| Weight | ICR-1745W-EU: 655g ICR-1745-EU: 645g 5G/LTE Antenna: 49g (4pcs) WiFi Antenna: 15.4g (2pcs) Wall-mount bracket: 50g |

| WiFi - optional (ICR-1745W) | |
|-----------------------------|--|
| Antenna | 2× R-SMA connectors |
| Standards | IEEE 802.11 a/b/g/n/ac/ax 2.4GHz / 5GHz |
| Data Rate | Up to 1774.5Mbps |
| Security | WEP, TKIP, AES, WPA, WPA2, WPA3, 802.1X |
| Modes | Access Point (up to 32 clients), Station, Multirole STA & AP |

| Cellular Interface | |
|-----------------------|--|
| SIM Slots | 2× SIM (Micro SIM – 3FF) |
| Antennas | 4× SMA Female (ANT1-4) |
| 5G NR frequency bands | NSA n1/ n3/ n5/ n7/ n8/ n20/ n26/ n28/ n38/ n40/ n41/ n75/ n77/ n78 Transfer rate: 4.52 Gbps (DL), 730 Mbps (UL) SA n1/ n3/ n5/ n7/ n8/ n20/ n26/ n28/ n38/ n40/ n41/ n75/ n77/ n78 Transfer rate: 4.67 Gbps (DL), 1.25 Gbps (UL) |
| LTE Parameters | FDD B1/ B3/ B5/ B7/ B8/ B20/ B28/ B32 TDD B38/ B40/ B41/ B42/ B43 Cat 20 (DL), Cat 18 (UL) Transfer rate: 2 Gbps (DL), 211 Mbps (UL) |
| UMTS Parameters | B1/ B5/ B8 Transfer rate: 42 Mbps (DL), 5.76 Mbps (UL) |

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ICR-1745-EU

| Software | |
|-----------------------------------|--|
| Operating System | ICR-OS (Linux based) |
| Application Development | Open Linux, BASH, C |
| Networking Features and Protocols | DHCP, NAT/PAT, SSH, VRRP, PPPoE, SNMP, SMTP, dynamic DNS client, DNS proxy, VLAN, QoS, NTP client/server, backup routes, port forwarding, host port routing, Ethernet bridging, load balancing, IPv6 dual stack |
| Industrial Protocols and IoT | *Modbus TCP2RTU, Modbus to MQTT |
| Security | HTTPS, SSH, SFTP, DMZ, Firewall (IP filtering, MAC address filtering, Inbound and outbound port filtering) VPN tunneling – WireGuard, OpenVPN, IPsec with IKEv1 and IKEv2, GRE, L2TP, PPTP Authentication – RADIUS, TACACS+, 2FA Encryption – DES, 3DES, AES, RSA, MD5, SHA |
| Firmware Management | Automatic firmware updates – server, locally via LAN or remotely via WAN Over-the-Air cellular module firmware updates |
| Diagnostic/Log | Status – Signal strength, data usage, detailed long term statistics One CLICK report – Current configuration, factory identification, routing table Log – System log, reboot log, kernel log Remote diagnostics (via SSH) |
| Event Engine | StartUp script & up/down script (own rules based on digital inputs, network parameters, data usage, timer, power) |
| Configuration | Web server, SSH, four configuration switchable profiles, automatic configuration update from server, backup & restore configuration |
| Advanced Software Tools | WebAccess/DMP – Remote device provisioning, monitoring & management platform |

*Functionality is available with installed Router App

| Standards & Regulations | |
|----------------------------|---|
| Radio | EN 301 908-1, EN 301 908-2, EN 301 908-13, EN 301 908-25, EN 303 413, EN 300 328, EN 301 893, EN 303 687 |
| EMC | EN 301 489-1, EN 301 489-17, EN 301 489-19, EN 301 489-52, EN 610000-6-2, EN 610000-6-3, EN 55032, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6 |
| Safety | EN 62368-1 |
| Cybersecurity | EN 18031-1 |
| National | CE, UKCA |
| Mechanical | EN 60529, EN 60068-2-27, EN 60068-2-64 |
| Climatic | EN 60068-2-2, EN 60068-2-1, EN 60068-2-14, EN 60068-2-78 |
| Environmental | REACH, RoHS3, WEEE |
| Cellular Module Approvals* | Regulatory: CE/ RCM/ GCF |

*- Approvals are valid for the integrated cellular module inside the router only. Cellular module approvals are not always applicable for the whole router – see “Standards and Regulations” chart for complete router approvals available.

Accessories

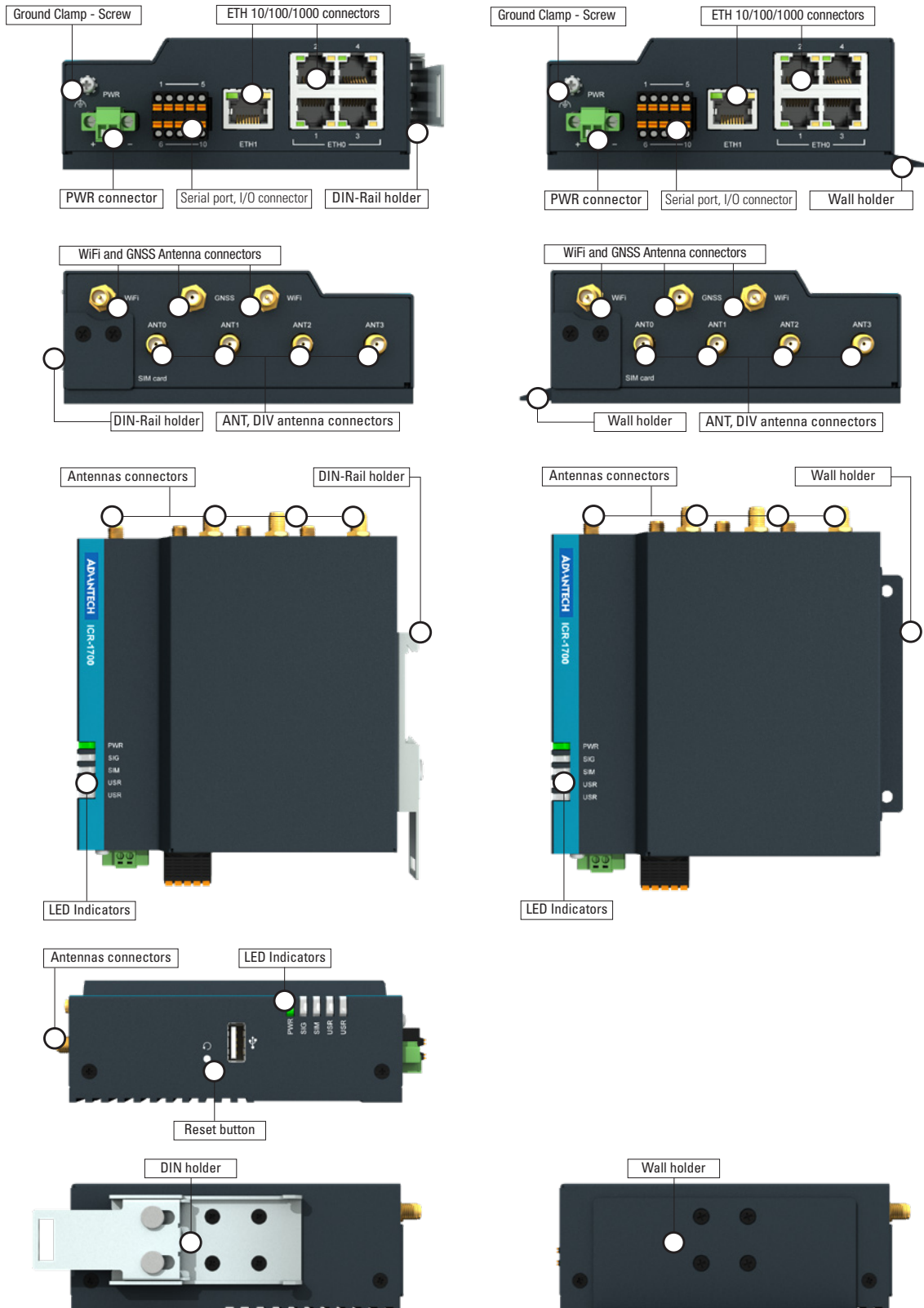
| Part Number | Description | Included in the package |
|-------------------|---|-------------------------|
| 1751000532-01 | 4x LTE/5G Antenna | ✓ |
| 1751000533-01 | 2x WiFi, 2.4/5 GHz (for ICR-1745W only) | |
| 1652008574-01 | 10-pin Serial/ IO connector | |
| 1652002024 | 2-pin Power connector | |
| 1960115642N001 | Wall-mount bracket | No |
| OPT1-DIN-ICR1X-00 | Din-Rail bracket (30mm) optional for ICR-1600/1700 series | |
| OPT1-RPS-1212-EU | Power Supply, 12V/1A, Open ends, EU plug | |
| OPT1-RPS-1212-UK | Power Supply, 12V/1A, Open ends, UK plug | |
| OPT1-RPS-1212-US | Power Supply, 12V/1A, Open ends, US plug | |
| OPT1-RPS-1212-AUS | Power Supply, 12V/1A, Open ends, AUS plug | |

For more Antenna accessories visit www.advantech.com

ICR-1745 Views

DIN mount (Optional)

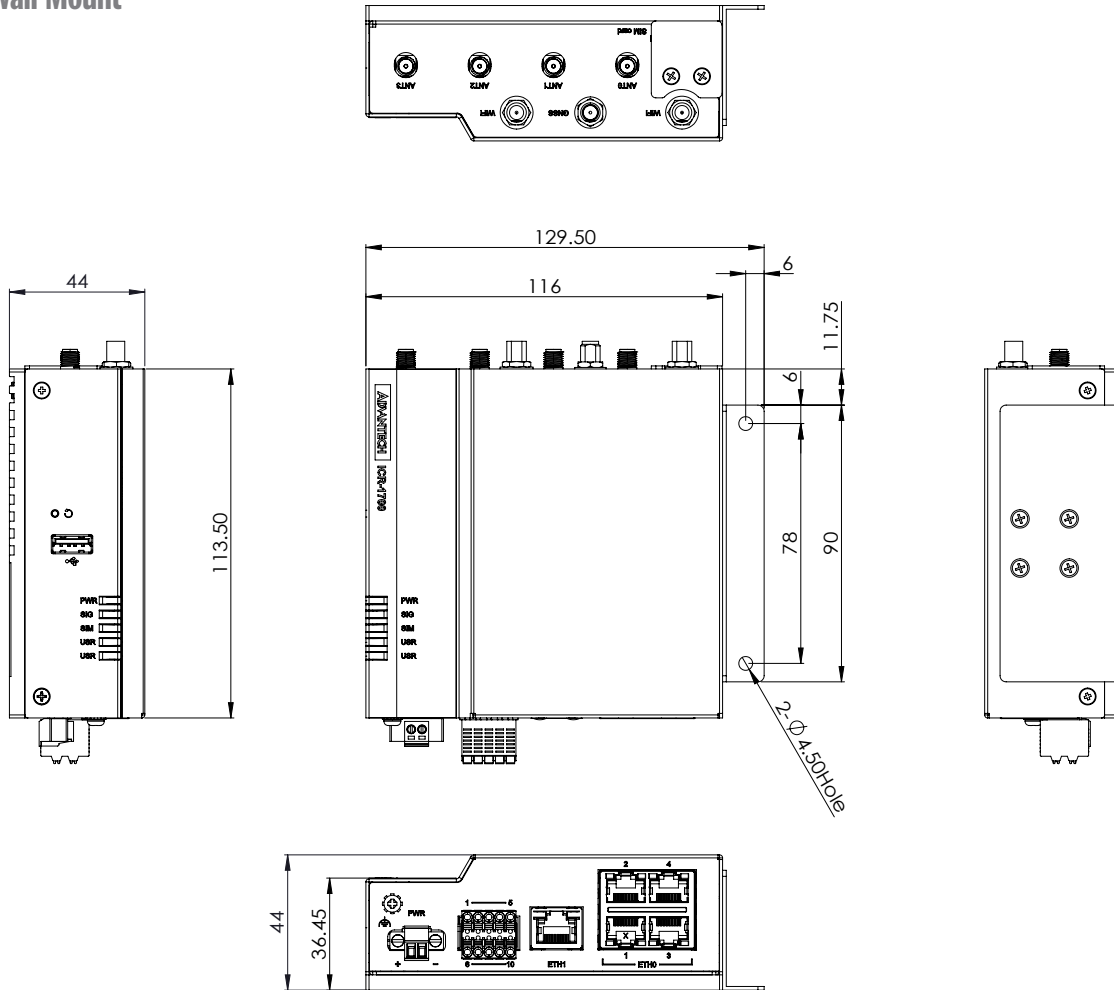
Wall mount



Dimensions - Technical Drawing

Unit: mm

Wall Mount



DIN Mount (Optional)

