

## ICR-2413

Entry-Level 4G Router



### Features

- LPWA communication Cat-M/Cat-NB
- 450 MHz support (B31, B72, B73)
- 2x SIM for redundancy
- 2x Ethernet 10/100 Mbps
- 1x RS232, 1x RS485
- 1x DI, 1x DO
- Wide operational temperature range
- Wall and DIN mount options
- Linux based OS & SW customization



### Introduction

Industrial cellular router ICR-2413 is designed for wireless communication in the LPWA mobile networks LTE Cat-M/Cat-NB. ICR-2413 is the ideal gateway for global IoT applications because of the large number of cellular frequency bands supported. Among others, the router supports also the European LTE 450 MHz spectrum (bands B31, B72 and B73) that is a key frequency for wireless communication in critical infrastructure e.g. in Energy distribution.

The router is equipped with two independently configurable Ethernet ports (LAN or WAN), 1x serial port RS232, 1x RS485, and with digital I/O connectivity (1x DI, 1x DO). 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.

Router is based on ICR-OS operation system. Open Linux platform enable wide possibilities of programming customer SW applications in Python, C/C++. Router supports uploading of RouterApps (User modules) that would extend standard firmware functionalities. Existing app library ready for free download by customer contains already developed software apps to enhance specific router functionality including industrial protocol conversions, support of IoT platforms such as MS Azure, Cumulocity, and a lot more.

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.



ICR-OS

WebAccess/DMP




RouterApp



python™



### Order Codes

Model no. - Order Codes	REGION	2x Ethernet 10/100 Mbps	RS232 RS485	I/O	1x ANT	2x SIM
 ICR-2413	EMEA	✓	✓	✓	✓	✓

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

### Specifications

System	
CPU	ARM926EJ-S, 600 MHz
Memory	RAM - 128 MB NOR Flash - 64 MB (12 MB for Router Apps, 2 MB for customer data)
Watchdog	HW Watchdog
RTC	Battery backup RTC
Interfaces	
Ethernet	2× Ethernet (1+1), RJ45, 10/100 Mbps, 1.5 kV
Serial Lines	1× RS232 (Tx, Rx, GND, RTS, CTS) 1× RS485 (A(-), B(+), GND) (7-pin terminal block)
I / O	1× Digital Input (48 V / 0.5 mA) 1× Digital Output (Open Drain, 48 V / 100 mA) (6-pin terminal block together with PWR)
Reset Button	Reboot / Factory reset
LED Indicators	System, Signal strength, Data activity, SIM1/SIM2 status, Mobile technology, Input, Output, User, ETH

Environmental	
Power Supply	9 – 48 V DC (6-pin terminal block together with I/O)
Consumption	Idle 2 W / Average 2.4 W / Maximum 2.9 W
Operating Temperature	-40 to +75 °C
Storage Temperature	-40 to +85 °C
Humidity	5 to 95 %
IP Cover	IP30
Physical Characteristics	
Dimensions	103 mm × 95 mm × 25 mm
Enclosure	Metal Case, Grounding Screw
Mounting	Wall mount, * Optional DIN Rail mount
Weight	345 g

Cellular Interface	
SIM Slots	2× SIM (Micro SIM – 3FF)
Antennas	1× SMA connector (1× ANT)
LTE Parameters	Supported Cat-M1 frequencies: B1, B2, B3, B4, B5, B8, B12, B13, B18, B19, B20, B25, B26, B27, B28, B31, B66, B72, B73, B85 Transfer rate: 588 Kbps (DL), 1119 Kbps (UL) Supported Cat-NB2 frequencies: B1, B2, B3, B4, B5, B8, B12, B13, B18, B19, B20, B25, B28, B31, B66, B72, B73, B85 Transfer rate: 127 Kbps (DL), 158.5 Kbps (UL)

Standards & Regulations	
Radio	EN 301 511, EN 301 908-1, EN 301 908-13
EMC	EN 301 489-1, EN 301 489-52, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-11
Safety	EN 62 368-1, IEEE 802.3
Cybersecurity	EN 18031-1
National	CE, UKCA
Mechanical	EN 60529
Climatic	EN 60068-2-1, EN 60068-2-2, EN 60068-2-14, EN 60068-2-30
Environmental	REACH, RoHS3, WEEE

### Accessories

Part Number	Description	Included in the package
CON-ICR2-6-PWR	6-pin PWR / IO connector	✓
CON-ICR2-7-SER	7-pin Serial connector	✓
	Wall mount kit	✓
BB-DIN-ICR32	DIN Clip	
BB-KD-ETH	Ethernet cross cable, length 1.5m	
OPT1-ANT-450M-30	Antenna LTE450, Magnetic mount, cable length 3m	
RPS-ICR2-EU	Power Supply EU, ICR2, 12V/1A, 6-pin, EU plug	

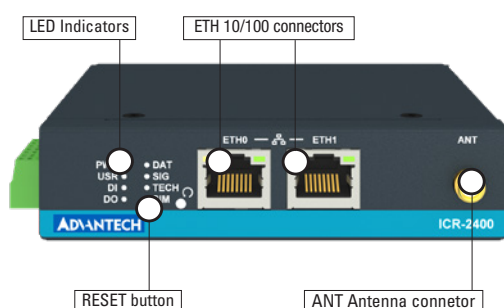
\*For more Antenna accessories visit [www.advantech.com](http://www.advantech.com)

Software	
Operating System	ICR-OS (Linux based)
SW Customization	Router App
Application Development	Open Linux, *Python, BASH, C/C++
Industrial Protocols and IoT	*Modbus RTU/TCP gateway, *IEC 60870-5-101 to 104 gateway, *DF1, *DNP3, *MQTT, *LWM2M
Networking Features and Protocols	DHCP, NAT/PAT, SSH, VRRP, PPPoE, SNMP, SMTP, Dynamic DNS client, DNS proxy, VLAN, QoS, *DMVPN, NTP Client/Server, *Routing protocols RIP, BGP, OSPF, IS-IS, NHRP, Backup Routes, Port Forwarding, Host Port Routing, Ethernet Bridging, Load Balancing, IPv6 Dual Stack
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, *SCEP Encryption – DES, 3DES, AES, RSA up to 3072, Ed25519, MD5, SHA
Firmware Management	Automatic firmware updates – server, locally via LAN or remotely via WAN
Diagnostic/Log	Status – Signal Strength, Data Usage 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) Report Types: SMS, email, SNMP Trap
Configuration	Web server, SSH, Four configuration switchable profiles, Automatic configuration update from server, Backup & Restore configuration
Advanced Software Tools	WebAccess/DMP – Remote Monitoring, Management & VPN Platform <a href="https://wadmp.advantech.com/">https://wadmp.advantech.com/</a>

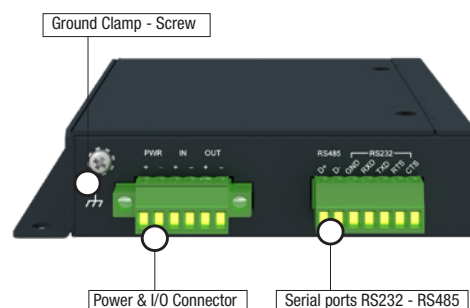
\*Functionality is available with installed Router App

## Views

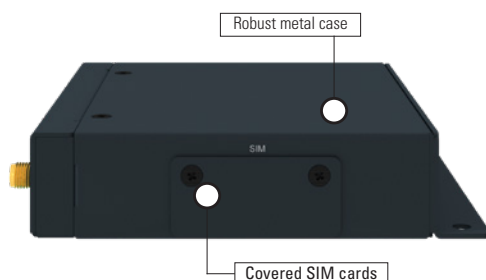
### FRONT VIEW



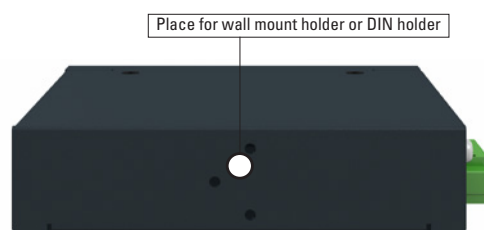
### LEFT SIDE VIEW



### RIGHT SIDE VIEW



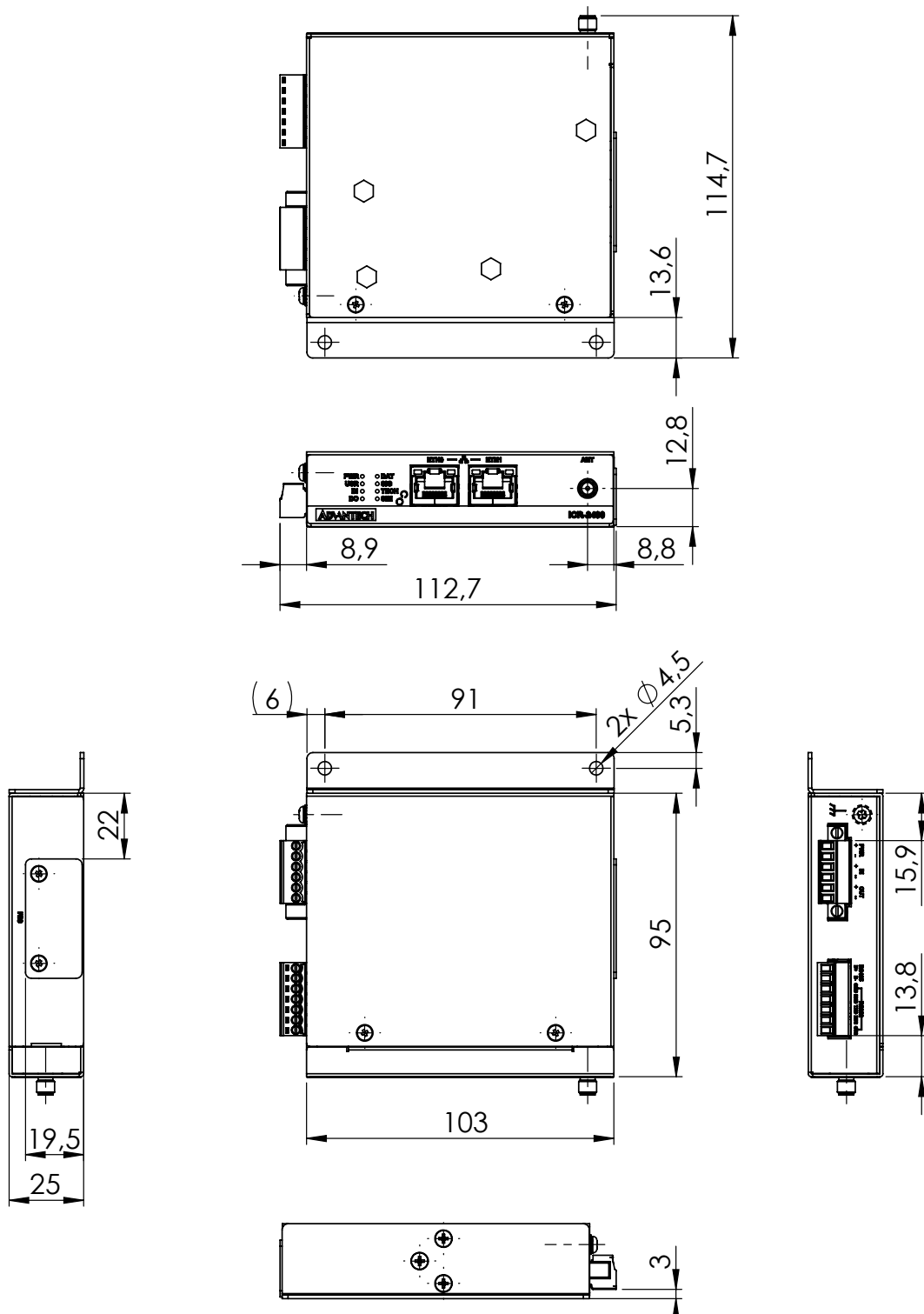
### REAR VIEW



### Dimensions - Technical Drawing

Version with L holder (Wall mount)

Unit: mm



### Dimensions - Technical Drawing

Version with DIN holder (\*Optional Accessories)

Unit: mm

