ICR-2031

Entry-Level 4G Router

Features

- LTE Cat.4 with 3G/2G fallback
- 1× SIM
- 1× Ethernet, RJ45, 10/100 Mbps
- 1× DI, 1× DO
- Wide operational temperature range
- Wall and DIN mount options
- Linux based OS & SW customization

RoHS COMPLIANT 2002/95/EC CE

Introduction

Industrial cellular router ICR-2031 is designed for wireless communication in the mobile networks that make use of traditional cellular technologies. The primary purpose of this router is its use in the Category 4 (Cat.4) services on the cellular LTE network. Cat.4 rated ICR-2031 router is capable of achieving better typical speeds in 4G coverage areas where the network is enabled with 20 MHz of contiguous spectrum. The peak downlink data rate for a Category 4 is approximately 150 Mbps. Also in the uplink, LTE Category 4 provides a peak data rate of 50 Mbps.

The router is equipped with one Ethernet port and with digital I/O connectivity (1× DI, 1× 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.

With open Linux platform and wide possibilities of programming customer SW applications in Python, C/C++. The Advantech existing app library Router Apps (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.

Accessories

Part Number	Description	Included in the package
	6-pin PWR / IO connector	✓
	Wall Mount Kit	✓
BB-DIN-ICR32	DIN Clip	

All product specifications are subject to change without notice.

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	1× Ethernet, RJ45, 10/100 Mbps
I / O	1× Digital Input (36V/0.5 mA) 1× Digital Output (Open Drain, 36 V/ 100 mA) (6-pin terminal block together with PWR)
Reset Button	Reboot / Factory reset
LED Indicators	System, Signal strength, Data activity, SIM status, 2G/3G/4G technology, Input, Output, User, ETH, ETH

Environmental	
Power Supply	9 – 48 V DC (6-pin terminal block together with I/O)
Consuption	Idle 2 W / Average 3,5 W / Peak 10 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 x 95 mm x 25 mm
Enclosure	Metal Case, Grounding Screw
Mounting	Wall mount, * Optional DIN Rail mount
Weight	290 g

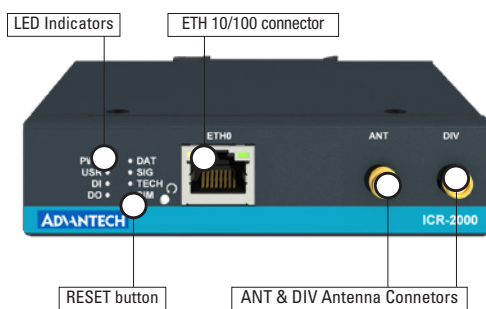| Cellular Interface	
SIM Slots	1× SIM (Micro SIM – 3FF)
Antennas	2× SMA connector (1× Main, 1× Diversity)
LTE Parameters	Supported FDD frequencies: B1 (2100 MHz), B3 (1800 MHz), B7 (2600 MHz), B8 (900 MHz), B20 (800 MHz), B28A (700 MHz) Supported TDD frequencies: B38 (2600 MHz), B40 (2300 MHz), B41 (2500 MHz) Transfer rate: 150 Mbps (DL), 50 Mbps (UL)
HSPA+/UMTS Parameters	Supported frequencies: B1 (2100 MHz), B8 (900 MHz) Transfer rate: 42 Mbps (DL), 5.76 Mbps (UL)
EDGE/GPRS Parameters	Supported frequencies: B3 (1800 MHz), B8 (900 MHz) Transfer rate: 296 kbps (DL), 236.8 kbps (UL)

Standards & Regulations	
Radio	EN 301 511, EN 301 908-1, EN 301 908-2, EN 301 908-13, EN 301 893, EN 300 328
EMC	EN 301 489-1, EN 301 489-17, 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
National	CE
Mechanical	EN 60529
Climatic	EN 60068-2-1, EN 60068-2-2, EN 60068-2-14, EN 60068-2-30
Environmental	REACH, RoHS3, WEEE

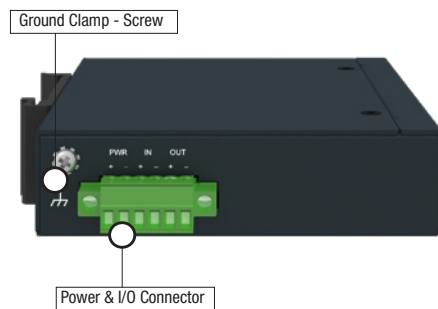| Software	
Operating System	Conel OS (Linux based)
SW Customization	Router App (User Modules)*
Application Development	Open Linux, *Python, BASH, C/C++
Networking Protocols	IPv4, IPv6, PPP, PPPoE, SNMP v1/v2c/v3, TCP, UDP, DHCP, *RIP, *BGP, *OSPF, *IS-IS, ICMP, NAT, HTTP, HTTPs, DNS, ARP, NTP, SMTP, Telnet, VLAN, SSH, DDNS, Telnet, MQTT
Industrial Protocols	*DF1, *DNP3
Networking Features	DHCP, NAT/PAT, VRRP, Dynamic DNS client, DNS proxy, VLAN, QoS, *DMVPN, *WOL, NTP Client/Server, 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 – OpenVPN, *EasyVPN, IPsec with IKEv1 and IKEv2, GRE, L2TP, PPTP Authentication – RADIUS, TACACS+, *SCEP 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, Device Temperature) 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 Device Provisioning, Monitoring & Management Platform WebAccess/VPN – Advanced Secure Networking Platform

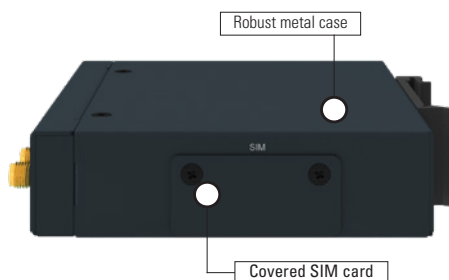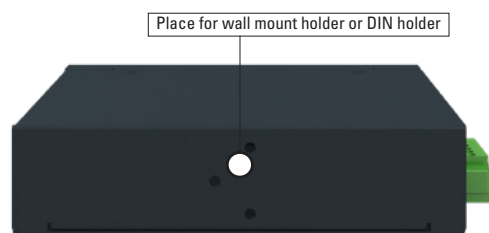*Functionality is available with installed Router App (User Module)

Views

FRONT VIEW

LED Indicators

ETH 10/100 connector

RESET button

ANT & DIV Antenna Connetors

LEFT SIDE VIEW

Ground Clamp - Screw

Power & I/O Connector

RIGHT SIDE VIEW

Robust metal case

Covered SIM card

REAR VIEW

Place for wall mount holder or DIN holder

Dimensions - Technical Drawing

Unit: mm

110,1

9

12,8

8,9　16　8,8

112,7

22

15,9

95

19,5

25

103

3,4

28