ICR-2701

Industrial Wired Router & IoT Gateway



- 2× Ethernet 10/100 Mbps
- USB Host 2.0
- Optional dual-band Wi-Fi 802.11n
- 4 GB eMMC storage for customer applications
- Metal or plastic case, DIN Rail mounting
- Wide operational temperature range
- Backup real-time clock and Sleep mode
- **IEC 62443-4-2 SL 2 certified** (S1 versions)

Project based customization: Last-gasp Supercapacitor, TPM 2.0)

Order Codes

Model no. - Order Codes		REGION	2× Ethernet 10/100 Mbps	WiFi	1× USB Host 2.0	Metal Case	Plastic Case	Accessories	IEC 62443-4-2 S1 Router
	ICR-2701	GLOBAL*	✓		✓	✓			
	ICR-2701P	GLOBAL*	✓		✓		✓		
	ICR-2701A01	GLOBAL*	✓		✓	✓		✓ EU Power Supply	
	ICR-2701PA01	GLOBAL*	✓		✓		✓	✓ EU Power Supply	
	ICR-2701A02	GLOBAL*	✓		✓	✓		✓ UK Power Supply	
	ICR-2701PA02	GLOBAL*	✓		✓		✓	✓ UK Power Supply	
	ICR-2701W	GLOBAL*	✓	✓	✓	✓			
	ICR-2701WP	GLOBAL*	✓	✓	✓		✓		
	ICR-2701WA01	GLOBAL*	✓	✓	✓	✓		✓ EU Power Supply	
	ICR-2701WPA01	GLOBAL*	✓	✓	✓		✓	✓ EU Power Supply	
	ICR-2701WA02	GLOBAL*	✓	✓	✓	✓		✓ UK Power Supply	
	ICR-2701WPA02	GLOBAL*	✓	✓	✓		✓	✓ UK Power Supply	
	ICR-2701-S1	GLOBAL*	✓	✓	✓	✓			✓
	ICR-2701A01-S1	GLOBAL*	✓	✓	✓	✓		✓ EU Power Supply	✓
	ICR-2701WA01-S1	GLOBAL*	✓	✓	✓	✓		✓ EU Power Supply	✓

*- Importer/operator needs to check locale legislation (standards, national approvals etc.) and compare with standards available for product if possible to operate the router in target region legally.

BASIC CHARACTERISTICS

The platform provides reliable wired network connectivity. Engineered for mission-critical applications, the devices ensure high network availability for real-time remote monitoring, edge computing, precision process control, and large-scale IoT deployments. Their robust mechanical design enables continuous operation in harsh industrial environments, making them ideal for manufacturing, transportation, utilities, and other demanding applications.

ENHANCED CYBERSECURIT Y

Certified according to IEC 62443-4-2 Security Level 2 (SL 2), S1 versions provide enhanced cybersecurity for industrial applications. Enhanced cybersecurity features are available on selected router models. All models can be equipped with a TPM 2.0 (Trusted Platform Module) for secure cryptographic key storage and device integrity verification. Additional security measures are implemented through the "S1" production process.
Standard versions without the "S1" designation do not carry this certification and do not include the full set of enhanced cybersecurity features.

All product specifications are subject to change without notice.

ICR-2701

HARDWARE AND INTERFACE

Built on the proven ARM9 architecture, the platform features a 32-bit ARM926EJ-S processor running at 600 MHz, combined with 128 MB of RAM and 4 GB of eMMC storage. The available storage includes 838 MB for Router Apps and 512 MB for customer data.
The hardware configuration provides two 10/100 Mbps Ethernet ports and a USB 2.0 Host interface. A TPM 2.0 security module is integrated, providing hardware-based security capabilities.



WIRELESS TECHNOLOGY

Models with the "W" suffix additionally support local wireless connectivity via dual-band Wi-Fi 5 (IEEE 802.11a/b/g/n/ac, 2.4 GHz and 5 GHz)..



SOFTWARE

ICR-OS is Advantech's Linux-based operating system, specifically developed for ICR-series industrial cellular routers. It provides comprehensive networking, connectivity and security features, managed through an intuitive web-based graphical user interface (GUI).

The operating system includes advanced networking capabilities such as DHCP, NAT, VLAN, QoS, routing, VPN (WireGuard, OpenVPN, IPsec), firewall, encryption and IPv6 support. An open platform for custom scripting and Router Apps enables users to extend router functionality with modular applications without modifying the core firmware.

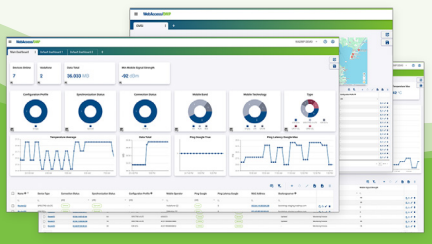
The platform supports custom C++ and Python applications, allowing users to implement application-specific functionality and industrial integrations.

ICR-OS RouterApp python C++

DMP CENTRAL ROUTER & VPN MANAGEMENT SYSTEM

POWERFUL, **FLEXIBLE**, and **SECURE** - Advantech DMP is a centralized platform for remote management, monitoring and maintenance of industrial cellular routers. Configure devices, deploy firmware updates, manage Router Apps and monitor your entire router fleet from a single interface – without on-site visits. This software tool enables centralized management, provisioning, and monitoring of multiple routers, simplifying the process of scaling and maintaining a network infrastructure or centralize management of VPN connections.
Zero-touch provisioning, REST APIs and AI integration simplify deployment, enable integration with external systems and support intelligent network management.

VPN MANAGEMENT & REMOTE ACCESS - Simple, secure and effortless. Remotely access routers and connected devices without complicated VPN configuration or manual setup. Secure VPN connections are managed centrally and powered by the efficient WireGuard VPN technology.
Available as a cloud-hosted SaaS solution or bare-metal on-premises deployment. Get started for free - no payment details required.



TRY IT OUT
www.wadmp3.com
FREE

ICR-2701

Specifications

System	
CPU	ARM926EJ-S, 600 MHz
Memory	RAM - 128 MB eMMC - 4096 MB (838 MB for Router Apps, 512 MB for customer data)
Watchdog	HW Watchdog
RTC	Battery backup RTC
TPM*	Trusted Platform Module (TPM) 2.0
Supercap*	Last-gasp Supercapacitor
Interfaces	
Ethernet	2× Ethernet, RJ45, 10/100 Mbps, Isolation 1.5 kV
USB	1× USB 2.0 Host Connector
Reset Button	Reboot / Factory reset
LED Indicators	System, ETH

* Project based customization

Environmental	
Power Supply	9 – 48 V DC (2-pin terminal block)
Consuption	Idle 1.8 W / Average 1.9 W / Maximum 5.8 W
Sleep Mode	Yes, 3 mW
Operating Temperature	-40 to +75 °C
Storage Temperature	-40 to +85 °C
Humidity	5 to 95 %
IP Cover	IP30
Physical Characteristics	
Dimensions (without DIN holder)	Metal Case: 42 × 80.3 × 113.2 mm Plastic Case: 51.4 × 83.8 × 117 mm
Enclosure	Metal Case with grounding screw or Plastic Case
Mounting	DIN-Rail
Weight	Metal Case: 230 g Plastic Case: 170 g

WiFi - ICR-2701Wxxxx	
Antenna	1× R-SMA connector
Standards	IEEE802.11 ac/a/b/g/n 2.4 GHz / 5 GHz
Security	WEP, TKIP, AES, WPA, WPA2, WPA3, 802.1X
Modes	Access Point (up to 8 clients), Station, Multirole STA & AP

Standards & Regulations	
Radio	EN 300 328, EN 301 893
EMC	EN 301 489-17, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-11, IEC 61000-6-2, IEC 61000-6-3
Safety	IEC 62368-1, IEEE 802.3
Cybersecurity	IEC 62443-4-2 SL 2 certified (S1 versions), EN 18031-1
Transportation	E-mark (not applicable to WiFi option ICR-2701Wxxx)
National	CE, UKCA
Mechanical	EN 60529, EN 60068-2-27, EN 60068-2-64
Climatic	EN 60068-2-1, EN 60068-2-2, EN 60068-2-14, EN 60068-2-30
Environmental	REACH, RoHS3, WEEE

ICR-2701

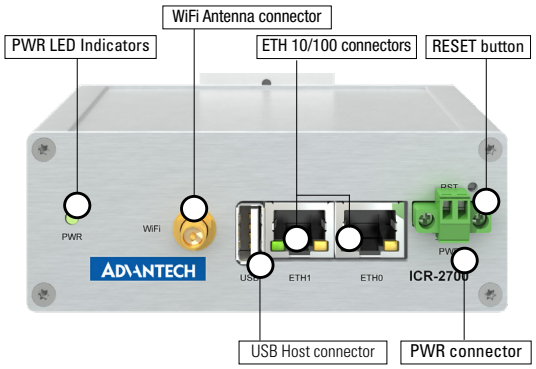
Software	
Operating System	ICR-OS (Linux based)
SW Customization	Router App
Application Development	**Open Linux, *Python, BASH, C/C++
Industrial Protocols and IoT	*Modbus RTU/TCP gateway, *IEC 60870-5-101 to 104 gateway, *DF1, *DNP3, *MQTT, *LWM2M
Networking Features and Protocols	DHCP, NAT/PAT, SSH, 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 S1 Routers only: IEC 62443-4-2 SL2 certified, Secure Boot, Encrypted firmware image, Read-only filesystem, Integrity check, Advanced Intrusion Detection Environment (AIDE)
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, Power, Device Temperature) Report Types: SMS, *email, *SNMP Trap, *Event notificator
Configuration	Web server, SSH, Four configuration switchable profiles, Automatic configuration update from server, Backup & Restore configuration
Advanced Software Tools	DMP – Remote Device Provisioning, Monitoring, VPN & Management Platform

*Functionality is available with the installed Router App

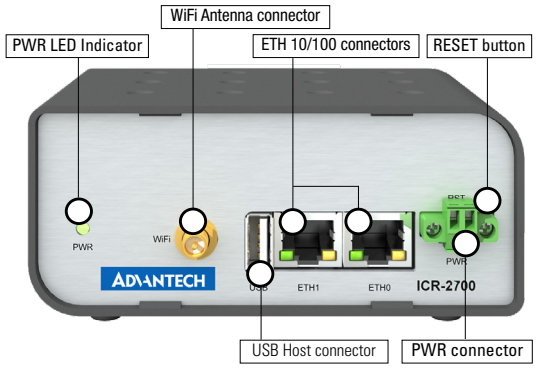
Views

FRONT VIEWS

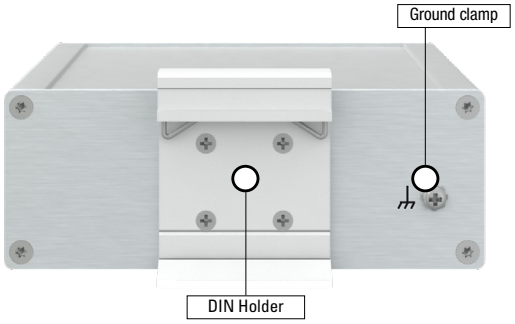
METAL VERSION

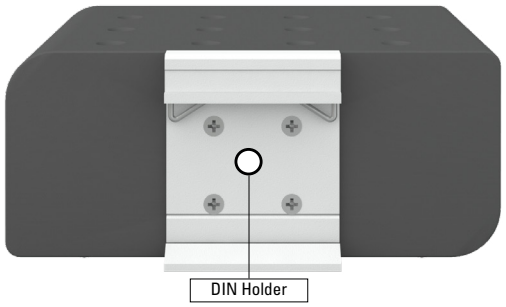


PLASTIC VERSION



REAR VIEWS





Accessories

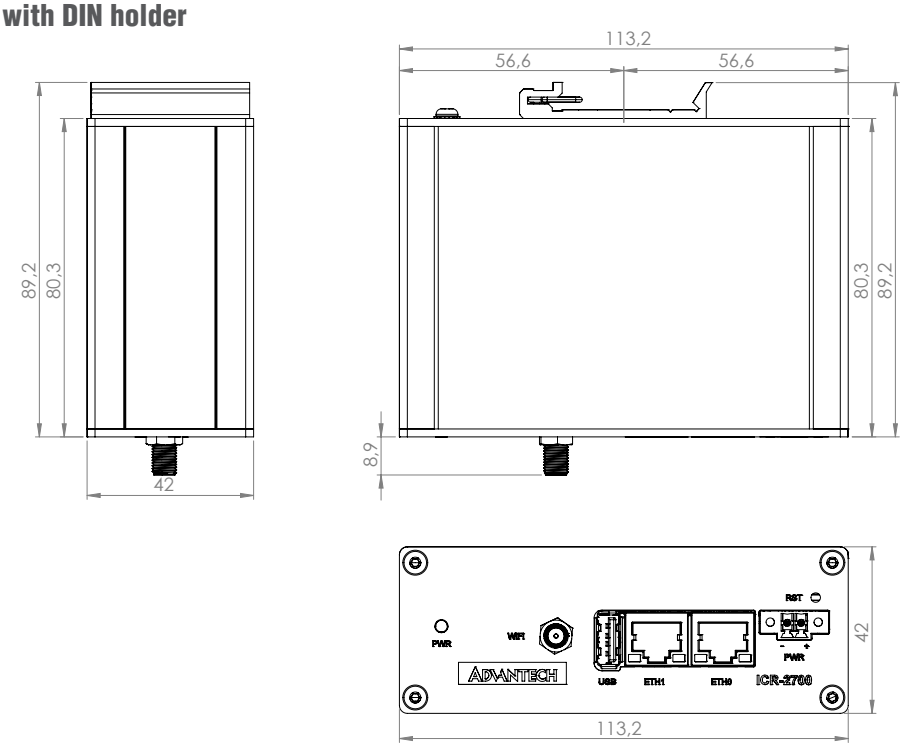
		Included in the package						Sold Separately
Part Number	**Description**	ICR-2701(-S1) ICR-2701W	ICR-2701P ICR-2701WP	ICR-2701A01(-S1) ICR-2701WA01(-S1)	ICR-2701PA01 ICR-2701WPA01	ICR-2701A02 ICR-2701WA02	ICR-2701PA02 ICR-2701WPA02	
BB-CON-WR2	2-pin PWR connector	✓	✓	✓ (Mounted on PSU)	✓ (Mounted on PSU)	✓ (Mounted on PSU)	✓ (Mounted on PSU)	✓
BB-SBD40	DIN clip	✓		✓		✓		✓
BB-SBD40P	DIN clip		✓		✓		✓	✓
BB-KD-ETH	Ethernet cross cable			✓	✓	✓	✓	✓
OPT1-RPS-1212-EU	Power Supply, 12V/1A, Open wires, EU plug			✓ (Mounted PWR connector)	✓ (Mounted PWR connector)			✓
OPT1-RPS-1212-UK	Power Supply, 12V/1A, Open wires, UK plug					✓ (Mounted PWR connector)	✓ (Mounted PWR connector)	✓
OPT1-ANT-WFT-06	Antenna Wi-Fi, Terminal			ICR-2701WA01(-S1)	ICR-2701WPA01	ICR-2701WA02	ICR-2701WPA02	✓

For more accessories (Antennas, Power Supplies) visit www.advantech.com

Dimensions - Technical Drawing

Unit: mm

Metal version with DIN holder



Plastic version with DIN holder

