ICR-2701

Industrial Wired Router & IoT Gateway

- 1.3 GB eMMC storage to host customer SW applications
- 2× Ethernet 10/100
- Optional WiFi 802.11n
- USB Host 2.0
- TPM 2.0 (project based customization)
- Optional Metal or Plastic case
- DIN Rail mounting
- Wide operational temperature range
- Backup real time clock
- Sleep mode
- Last-gasp Supercapacitor (project based customization)
- Security based on IEC 62443-4-2 level 1 (S1 Routers only)

Introduction

Ruggedized LAN router for industrial use, designed as a successor to Advantech's LAN router platform v2. Fully compatible in form, configuration, and operating system with Advantech cellular routers, enabling unified communication structures and the same tools for cellular and non-cellular applications.

Equipped with 2× Ethernet 10/100 ports with two independent LANs/IP addresses and 1× USB 2.0 host port. Optional built-in WiFi 802.11 a,b,g,n with AP, Client, and Multirole modes are available.

On a project-based agreement, the router can be produced as an S1 Router in compliance with IEC 62443-4-2 SL1 (Level 1) and optionally equipped with a TPM 2.0 chip for enhanced cybersecurity resilience.

Powered by the Linux-based ICR-OS operating system with secure remote management. Supports real-time encryption and VPN tunnels (IPsec, WireGuard, OpenVPN, GRE) and advanced networking functions (DHCP, NAT, VRRP, DynDNS, SMS control, and more).

Provides 1.3 GB eMMC storage with an open development platform for user applications in Python and C/C++. The Router App library includes industrial protocol conversions, dynamic protocols, and IoT platform support (Azure, Cumulocity, etc.).

Easy to manage using WebAccess/DMP cloud-based device management, provisioning, and monitoring platform, ideal for mass deployment and VPN management.

Popular use cases include LAN-to-WAN gateways, VPN appliances, monitoring, and data acquisition systems in both industrial and non-industrial environments.

Order Codes

| Model no. - Order Codes	REGION	2× Ethernet 10/100 Mbps	WiFi	1× USB Host 2.0	Metal Case	Plastic Case	Accessories	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-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.

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

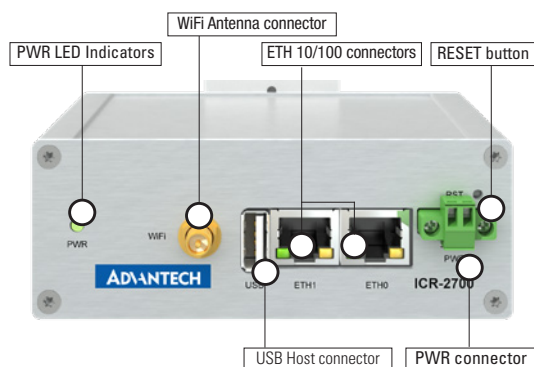|	
Radio	EN 300 328, EN 301 893
EMC	EN 301 489-17, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-11, IEC 61000-6-2, IEC 61000-6-3
Safety	IEC 62368-1, IEEE 802.3
Cybersecurity	EN 18031-1
Transportation	E-mark (not applicable to WiFi option ICR-2701Wxxx)
National	CE, 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

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 – 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: *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, VPN & Management Platform

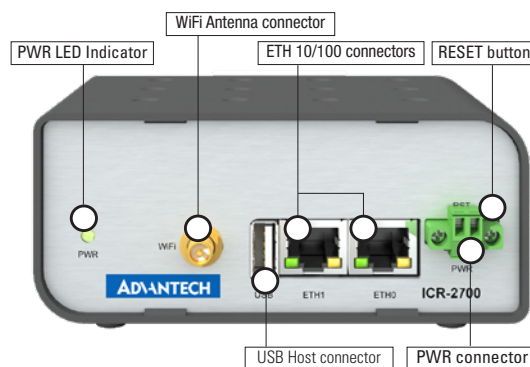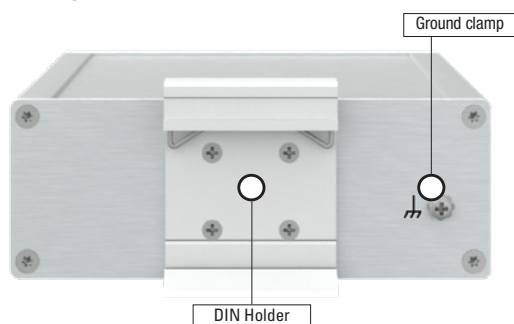*Functionality is available with installed Router App

Views

FRONT VIEWS
METAL VERSION

PWR LED Indicators | WiFi Antenna connector | ETH 10/100 connectors | RESET button | USB Host connector | PWR connector

PLASTIC VERSION

PWR LED Indicator | WiFi Antenna connector | ETH 10/100 connectors | RESET button | USB Host connector | PWR connector

REAR VIEWS

Ground clamp | DIN Holder

DIN Holder

Accessories

Part Number	Description	Included in the package						Sold Separately
		ICR-2701 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	Wall mount Power supply, 12V/1A, EU plug			✓ (Mounted PWR connector)	✓ (Mounted PWR connector)			✓
OPT1-RPS-1212-UK	Wall mount Power supply, 12V/1A, 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

Metal version with DIN holder

Unit: mm
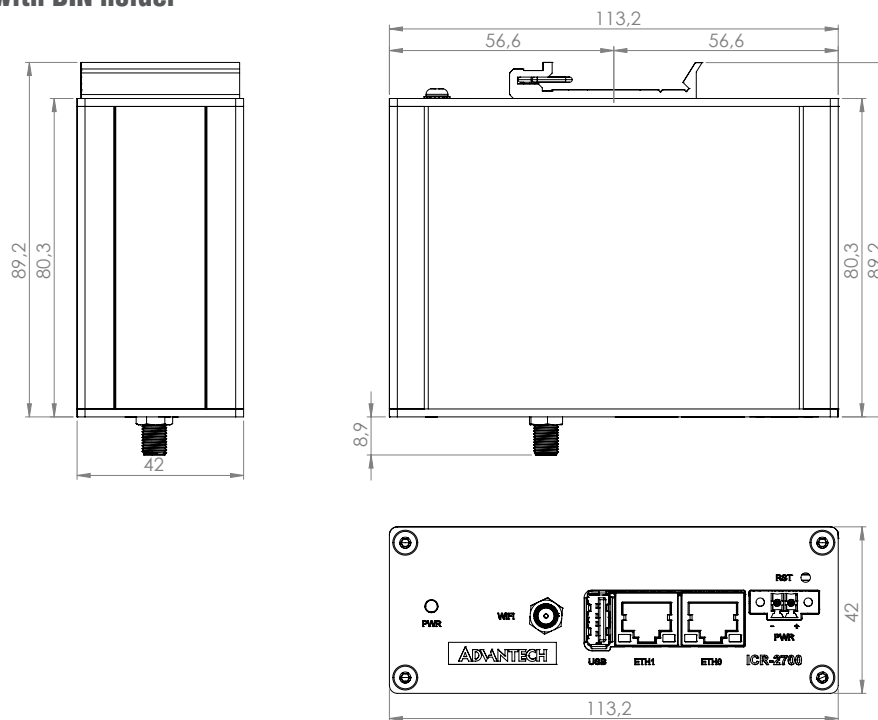
Plastic version with DIN holder