

## ICR-2545

Entry-Level 4G Router



### Features

- LTE Cat.4 with 3G/2G fallback
- 2× SIM slots for redundancy
- 4× Ethernet ports (10/100 Mbps, 3+1 RJ45)
- 1× DI, 1× DO
- Wide operating temperature range
- Wall and DIN rail mounting options
- Linux-based OS with software customization options
- WiFi 802.11n or GNSS functionality



### Introduction



The industrial cellular router ICR-2545 is designed for wireless communication in mobile networks and uses traditional cellular technologies. The primary purpose of this router is to support Category 4 (Cat.4) services on LTE cellular networks, providing a peak downlink data rate of approximately 150 Mbps and a peak uplink data rate of 50 Mbps.

There are two versions of the router: one equipped with WiFi 802.11 a/b/g/n (with support for AP, Client, and Multirole modes) and another version with GNSS functionality.

The router features four Ethernet ports, three of which are switched, and one is separated. Both the 3× ETH0 and 1× ETH1 ports can be independently configured as LAN or WAN interfaces. The router supports VPN tunnel creation using various protocols to ensure secure communications. It also provides diagnostic functions, including automatic monitoring of wireless and wired connections, automatic restart in the event of connection loss, and a hardware watchdog that monitors the router's status.

With an open Linux platform, the router offers extensive possibilities for custom software applications in Python and C/C++. Additionally, it supports Advantech's existing Router Apps library, which includes pre-developed apps to enhance specific router functionalities, such as industrial protocol conversions and IoT platform support (e.g., MS Azure, Cumulocity, and ThingWorx).



Model no. - Order Codes	REGION	4× Ethernet 10/100 Mbps	I/O	1× ANT 1× DIV	2× SIM	WiFi	GNSS
 ICR-2545W	GLOBAL	✓	✓	✓	✓	✓	
 ICR-2545G	GLOBAL	✓	✓	✓	✓		✓

\* - 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	4x Ethernet (3+1), RJ45, 10/100 Mbps, 1.5 kV
I / O	1x Digital Input (48 V / 0.5 mA) 1x 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, 2G/3G/4G technology, Input, Output, User, ETH

Environmental	
Power Supply	9 – 48 V DC (6-pin terminal block together with I/O)
Consumption	ICR-2545G: Idle 2.9 W / Average 4.2 W / Maximum 6.9 W ICR-2545W: Idle 3 W / Average 4.5 W / Maximum 8.4 W
Operating Temperature	-40 to +75 °C
Storage Temperature	-40 to +85 °C
Humidity	5 to 95 %, non-condensing
IP Cover	IP30
Physical Characteristics	
Dimensions	130 mm x 95 mm x 25 mm
Enclosure	Metal Case, Grounding Screw
Mounting	Wall mount, *Optional DIN Rail mount
Weight	ICR-2545W: 395 g, ICR-2545G: 400 g

WiFi - ICR-2545W	
Antenna	1x 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

GNSS - ICR-2545G	
Antenna	1x SMA connector, active (40 mA)
Systems	1x SMA connector, active (40 mA)
Protocols	NMEA 0183

Cellular Interface	
SIM Slots	2x SIM (Micro SIM – 3FF)
Antennas	2x SMA connector (1x Main, 1x Diversity)
LTE Parameters	Supported FDD frequencies: B1 (2100 MHz), B2 (1900 MHz), B3 (1800 MHz), B4(2100 MHz), B5 (850 MHz), B7 (2600 MHz), B8 (900 MHz), B12 (700 MHz), B13 (700 MHz), B18 (850 MHz), B19 (850 MHz), B20 (800 MHz), B26 (850 MHz), B28 (700 MHz), B66 (1700 MHz / 2100 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), B2 (1900 MHz), B3 (1800 MHz), B4 (2100 MHz), B5 (850 MHz), B6 (850 MHz), B8 (900 MHz), B19 (850 MHz) Transfer rate: 14.4 Mbps (DL), 5.76 Mbps (UL)
EDGE/GPRS Parameters	Supported frequencies: B2 (1900 MHz), B3 (1800 MHz), B5 (850 MHz), B8 (900 MHz) Transfer rate: 237 kbps (DL), 237 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, FCC part 22H, FCC part 24E, FCC part 27, FCC part 90, PTCRB
EMC	ETSI EN 301489-1, ETSI EN 301489-17, ETSI EN 301489-19, ETSI EN 301489-52, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, IEC 61000-6-2, IEC 61000-6-3, EN 55032, FCC part 15B, ICES-003 Issue 6
Safety	EN IEC 62 368-1, IEEE 802.3
National	CE, UKCA, FCC, IC
Carrier Approval	AT&T, Verizon, T-mobile
Mechanical	EN 60529
Climatic	EN 60068-2-1, EN 60068-2-2, EN 60068-2-14, EN 60068-2-30, MIL-STD-810G, SAE J1455
Environmental	REACH, RoHS3, WEEE

# Industrial Cellular Routers & Gateways

ICR-2545

Software	
Operating System	ICR-OS (Linux based)
SW Customization	Router App
Application Development	Open Linux, *Python, BASH, C/C++
Industrial Protocols and IoT	*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, *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
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 Device Provisioning, Monitoring & Management Platform WebAccess/VPN – Advanced Secure Networking Platform

\*Functionality is available with installed Router App

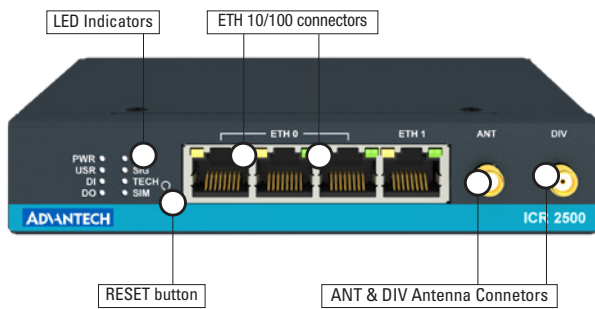
## Accessories

Part Number	Description	Included in the package
CON-ICR2-6-PWR	6-pin PWR / IO connector	✓
	Wall mount kit	✓
BB-DIN-ICR32	DIN Clip	
BB-KD-ETH	Ethernet cross cable, length 1.5m	
ANT-LTE5G-025	Antenna 5G/LTE, Terminal, SMA-M	
OPT1-ANT-WFT-06	Antenna Wi-Fi, Terminal	
OPT1-ANT-GNS-20	Antenna GNSS, Magnetic mount	
RPS-ICR2-EU	Power Supply EU, ICR2, 12V/1A, 6-pin, EU plug	
RPS-ICR2-UK	Power Supply UK, ICR2, 12V/1A, 6-pin, UK plug	
RPS-ICR2-US	Power Supply US, ICR2, 12V/1A, 6-pin, US plug	
ACC-KIT-ICR2-001	ICR-2000 family accessory kit, 2x LTE ANT, EU Power Supply, ETH cable	

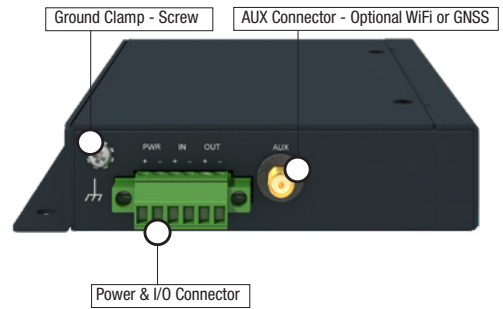
\*For more Antenna accessories visit [www.advantech.com](http://www.advantech.com)

### Views

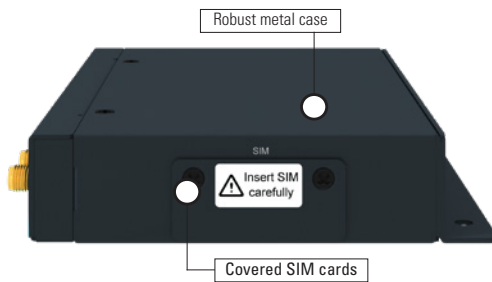
#### FRONT VIEW



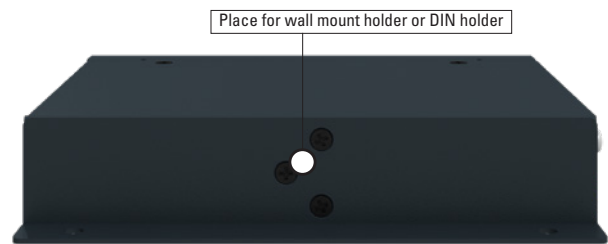
#### LEFT SIDE VIEW



#### RIGHT SIDE VIEW



#### REAR VIEW

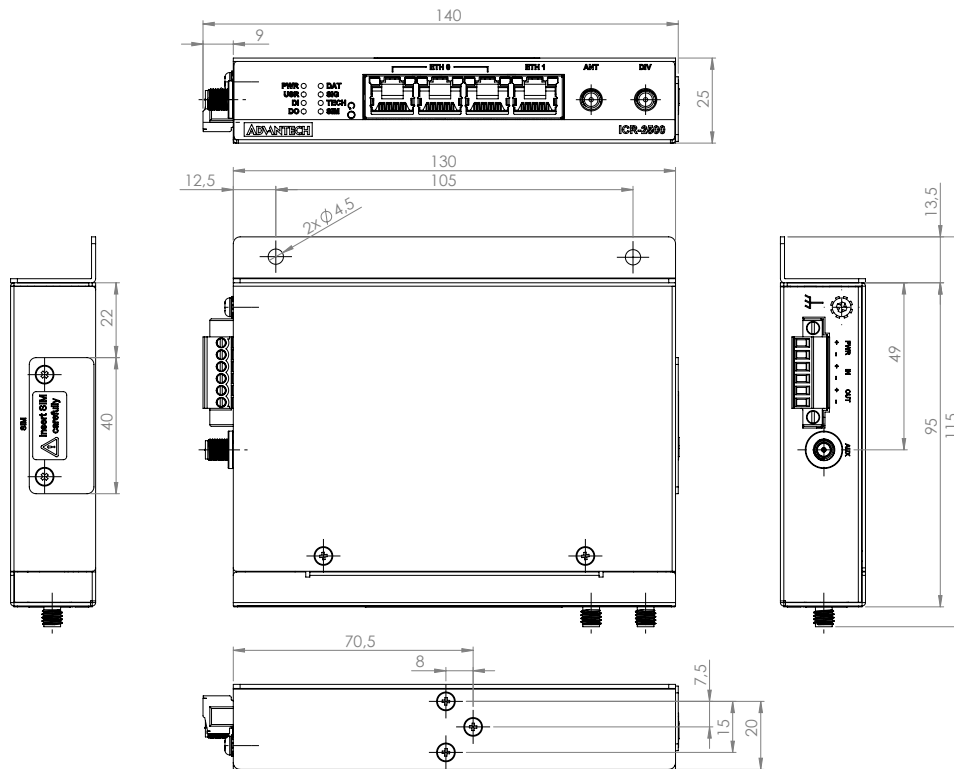


## Dimensions - Technical Drawing

ICR-2545

### Version with L holder (Wall mount)

Unit: mm



### Version with DIN holder (\*Optional Accessories)

