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
- Carriers support: AT&T
- Anterix U.S. Support – Utility-Focused Private Networks
- Optional WiFi 802.11
- Optional GNSS receiver

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., Azure, Cumulocity).

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	4× Ethernet (3+1), RJ45, 10/100 Mbps, 1.5 kV
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, 2G/3G/4G technology, Input, Output, User, ETH

Environmental

Power Supply	9 – 48 V DC (6-pin terminal block together with I/O)
Consuption	ICR-2545G: Idle 2.4 W / Average 4.0 W / Maximum 6.5 W ICR-2545W: Idle 2.9 W / Average 4.5 W / Maximum 6.7 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	400 g

WiFi - ICR-2545W

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

GNSS - ICR-2545G

Antenna	1× SMA connector, active (100 mA)
Systems	GPS, GLONASS, BeiDou, Galileo, QZSS
Protocols	NMEA 0183
Ac Time-to-First-Fix	Hot start: 1.1 s, Warm start: 22.1 s, Cold start: 29.9 s

Cellular Interface

SIM Slots	2× SIM (Micro SIM – 3FF)
Antennas	2× SMA connector (1× Main, 1× Diversity)
LTE Parameters	FDD frequencies: B1 (2100 MHz), B2 (1900 MHz), B3 (1800 MHz), B4(2100 MHz), B5 (850 MHz), B7 (2600 MHz), B8 (900 MHz), B8_US (900 MHz), B12 (700 MHz), B13 (700 MHz), B14 (700 MHz), B18 (850 MHz), B19 (850 MHz), B20 (800 MHz), B25 (1900 MHz), B26 (850 MHz), B28 (700 MHz), B66 (1700 MHz / 2100 MHz) Transfer rate: 150 Mbps (DL), 50 Mbps (UL)
HSPA+/UMTS Parameters	Supported frequencies: B1 (2100 MHz), B2 (1900 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 PROJECT BASED, T-Mobile PROJECT BASED
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
Cellular Module Approvals*	Regulatory: GCF, CE, FCC, IC, PTCRB, RCM, CCC, KCC, JRL/JTBL, Anatel Carrier: AT&T, Verizon, T-Mobile US, Telstra

* Approvals are valid for the integrated cellular module inside the router only. Cellular module approvals are not always applicable for the whole router – see "Standards and Regulations" chart for complete router approvals available.

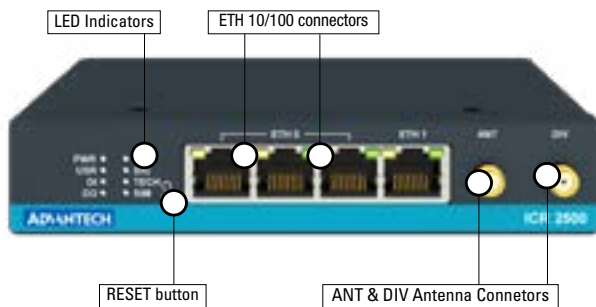| Software	
Operating System	ICR-OS (Linux based)
SW Customization	Router App
Application Development	Open Linux, *Python, BASH, C/C++
Industrial Protocols and IoT	*DF1, *DNP3, *MQTT, *LWM2M
Networking Features and Protocols	DHCP, NAT/PAT, SSH, VRRP, PPPoE, SNMP, SMTP, Dynamic DNS client, DNS proxy, 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 Monitoring, Management & VPN Platform

*Functionality is available with installed Router App

Accessories

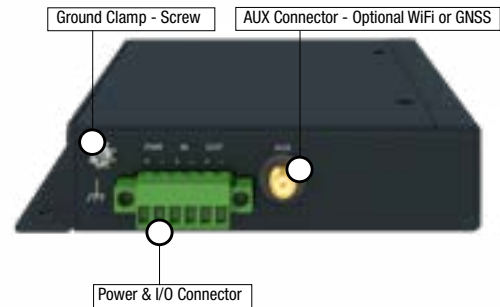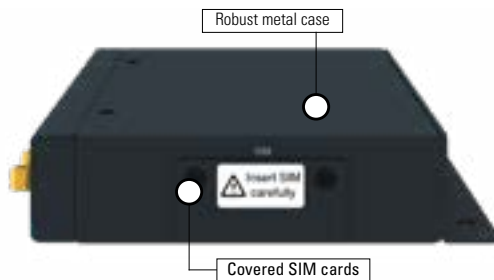| Part Number	Description	Included in the package
CON-ICR2-6-PWR	6-pin PWR / IO connector	✓
	Wall mount kit	✓
BB-DIN-ICR32	DIN Clip	
BB-KD-ETH	Ethernet cross cable, length 1.5m	
ANT-LTEMG3-150	Cellular Antenna with magnetic base	
BB-2J6024BA-150	Cellular MIMO Screw Mount Antenna	
BB-2J6983MPA-150	Cellular MIMO Magnetic / Adhesive Mount antenna	
OPT1-ANT-WFT-06	Antenna Wi-Fi, Terminal	
OPT1-ANT-GNS-20	Antenna GPS/GLONASS, magnetic, cable 2m, SMA-M	
OPT1-RPS-1212-EU	Power Supply, 12V/1A, Open wires, EU plug	
OPT1-RPS-1212-UK	Power Supply, 12V/1A, Open wires, UK plug	
OPT1-RPS-1212-US	Power Supply, 12V/1A, Open wires, US plug	

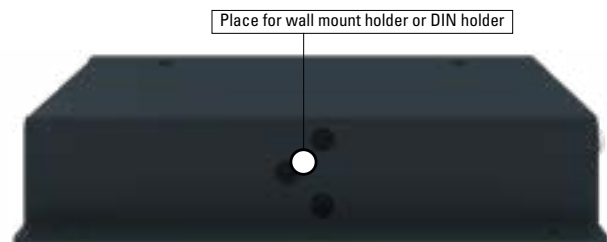*For more Antenna accessories visit www.advantech.com

Views

FRONT VIEW

LED Indicators

ETH 10/100 connectors

RESET button

ANT & DIV Antenna Connetors

LEFT SIDE VIEW

Ground Clamp - Screw

AUX Connector - Optional WiFi or GNSS

Power & I/O Connector

RIGHT SIDE VIEW

Robust metal case

Covered SIM cards

REAR VIEW

Place for wall mount holder or DIN holder

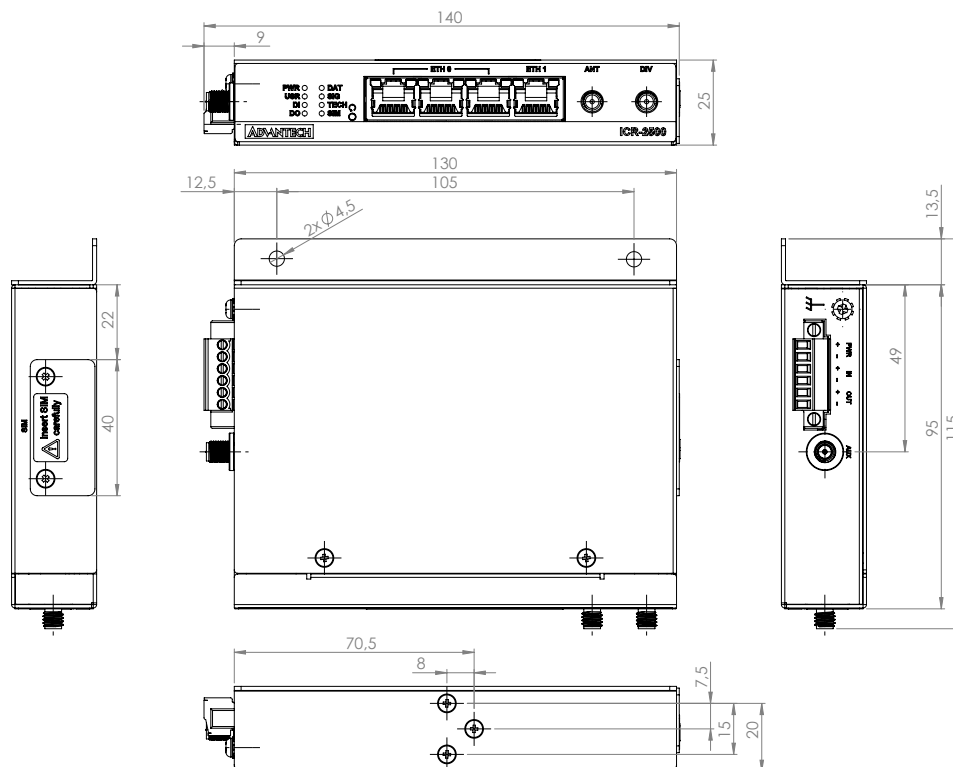## Dimensions - Technical Drawing ICR-2545

Version with L holder (Wall mount) Unit: mm

Version with DIN holder (*Optional Accessories)