ICR-4103

4G LTE + 3x 10/100Base-T(X) Router
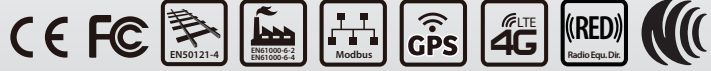
CE FC EN50121-4 EN61000-6-2 EN61000-6-4 Modbus GPS 4G LTE (RED) Radio Equ. Dir.

The ICR-4103 series are high-performance industrial grade 4G-LTE cellular routers. They are designed to offer fast connectivity over cellular network for industrial applications. ICR-4103's Ethernet ports can allow up to 3 Ethernet devices link to the cellular network, provides dual SIM cards and 1 Ethernet WAN port that can automatically re-connect and auto-switch to offer the cellular network redundancy and ensure uninterrupted connectivity. The ICR-4103 cellular router is integrated with WAN, LAN, SIM, VPN, Firewall, built-in DI/DO and Serial port services. In addition, ICR-4103 uses the highest level of industrial grade design for connection in the most demanding environments and is an ideal solution for Industrial Internet of Things (IIoT) and M2M(Machine-to-Machine)applications, such as remote control and monitoring, bus ticketing collection system, CCTV, SCADA, digital signage, kiosk and intelligent traffic systems.

Features

- Supports multi-band connectivity with FDD 4G LTE/ TDD 4G LTE/ 3G WCDMA/2G GSM/ LTE Cat4
- 2 SIM card, 4G LTE antenna, 1x WAN (10/100Base-TX) + 3x LAN (10/100Base-TX UTP), 2x DI + 1x DO, 3x Serial Com port (2x RS232, 1x RS485)
- GPS, GNSS to get your location on earth, and obtains map information using Google Map (Optional)
- Highly reliable and secure for mission-critical cellular communications
- Provide flexible options to configure LAN/ WAN ports
- Built-in dual SIM for network redundancy / failover/ roaming over/ back up
- Integrated dual detachable antenna against radio interference
- 4G LTE and WAN port for seamless connection and redundancy
- Supports 3x Serial port (1x RS484, 2x RS232) for IoT and automation application, ModBus RTU and ModBus/TCP gateway, MQTT
- Supports Routing/Firewall, NAT, Virtual Server, DMZ, Port filtering, MAC Filter, URL Filter, IP Filter, VLAN, Static Routing and RIP 1 & 2, VRRP, OSPF V2 & V3, BGP
- Supports VPN, OpenVPN, IPSec (3DES, AES128, AES196, AES256, MD5, SHA-1, SHA256)
- IPv6/IPv4 dual stack and all applications are IPv6 ready
- Supports DHCP server and client, PPPoE, Static IP, SNTP, DNS Proxy, DDNS, QoS, Virtual Com, UPnP
- Supports Alarm message : DO, SNMP Trap, E-mail
- Supports SNMP, TR069,Web, Telnet, CLI for management
- Supports dual Image firmware upgrade by Web
- CE, FCC, Rail Traffic EN50121-4 certified
- Safety EN60950-1 certified
- Radio RED ETSI EN301 489-1/-19/-52, EN301 908-1, EN303 413, NCC certified
- Heavy industrial grade EMS, EMI, EN61000-6-2, EN61000-6-4 certified
- Rugged metal, IP30 protection & Fanless design
- Wide operating temperature -20 ~ 75°C

Specifications

Standard	
	Cellular MobilComm standard: (Please see order information for optional band) 4G LTE: FDD-LTE, TDD-LTE 3G: WCDMA 2G: GSM/EDGE GNSS: GPS
IEEE 802.3	10Base-T 10Mbit/s Ethernet
IEEE 802.3u	100Base-TX Fast Ethernet
IEEE 802.1Q	Virtual LANs (VLAN)
IEEE 802.3x	Flow control for Full Duplex

Connector	
	Cellular MobilComm and WAN: Built-in dual SIM card for network redundancy / failover/ roaming over/ back up 2 SMA (female) connrctor for Antenna (Please see order information for optional band) 1x 10/100Base-TX RJ45 for WAN port **LAN:** 3x 10/100Base-TX RJ45 **Serial:** 1x RS485 and 2x RS232 (one of RS232 could be configured for console) **Programable DI/DO:** 2xDI and 1x DO

LTE data rate	Cat 4 ,Max download 150Mbps, Max upload 50 Mbps

Removable terminal block	Provides for Power input, DO, DI1, DI2, COM2 (RS232), COM3 (RS485)

Power Supply	Input 12/24 VDC (8.4~36VDC), removable terminal block

Power consumption	<7W

LED	
	System status (Green)
	VPN (Green), SIM 1 (Green), SIM 2 (Green)
	Cell signal Strong / Weak: H/L (Green)

DIP SW for RS485 port	
	DIP 1 Pull Low : OFF: Disable, ON: Enable
	DIP 2 Pull High : OFF: Disable, ON: Enable
	DIP 3 120 ohm terminal resistor : OFF: Disable, ON: Enable

Alarm message	DO for alarm message, with current capacity of 500mA/50VDC maximum SNMP trap, E-mail, SMS, Alarm trigger by DI, VPN or WAN disconnection

Operation Temperature	-20~75°C

Housing	Rugged Metal, Fanless , IP30 grade housing protection

Dimensions (D x W x H)	106 x 62.5 x 135mm

Weight	0.74kg

Installation	Mounting Wall mounting, or DIN Rail mounting (Optional)

MTBF	296,306 Hours (MIL-HDBK-217)

Warranty	5 years

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4-1

Certification	
EMC	CE (EN55024, EN55032)
EMI	FCC Part 15 Subpart B Class A, CE
Railway Traffic	EN50121-4
Immunity for Heavy Industrial Environment	EN61000-6-2
Emission for Heavy Industrial Environment	EN61000-6-4
EMS (Electromagnetic Susceptibility Protection Level)	EN61000-4-2 (ESD) Level 3, Criteria B EN61000-4-3 (RS) Level 3, Criteria A EN61000-4-4 (Burst) Level 3, Criteria A

EMS (Electromagnetic Susceptibility Protection Level)	EN61000-4-5 (Surge) Level 3, Criteria B EN61000-4-6 (CS) Level 3, Criteria A EN61000-4-8 (PFMF, Magnetic Field) Field Strength: 300A/m, Criteria A
Safety	EN60950-1
Radio	RED ETSI EN301 908-1 RED ETSI EN303 413 RED ETSI EN301 489-1 RED ETSI EN301 489-19 RED ETSI EN301 489-52 NCC
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6

Software Specifications

Network Protocols	IPv4, IPv6, IPv4/IPv6 dual stack, DHCP server and client, DNS Proxy, PPPoE, Static IP, SNTP, VRRP, OSPF V2, OSPF V3, BGP, MQTT
Modbus TCP, Modbus RTU	Gatway between Ethernet and COM3 (RS485) port
Routing/Firewall	NAT, Virtual Server, DMZ, Port filtering, MAC Filter, URL Filter, IP Filter, VLAN, Static Routing and RIP 1, RIP 2
VPN	OpenVPN, IPSec (3DES, AES128, AES196, AES256, MD5, SHA-1, SHA256)
MobilComm Connectivity	Two SIM for failover/ roaming over/ back up Seamless multi WAN connections switch (2x SIM and 1x Ethernet WAN)

Others	DDNS, UPnP, QoS
	Virtual Com for serial COM port
Alarm message	Sent by DO, SMS, SNMP Trap, E-mail
Management	Web GUI for remote and local management
	CLI
	Dual Image firmware upgrade by Web GUI
	Syslog monitor
	SNMP
	TR069: TR098 model
	Remote management via Telnet, SSH v2, HTTPS
	Local management via Telnet, SSH v2, HTTP/HTTPS

Application

Figure 1 : Application for Outdoor Digital Signage

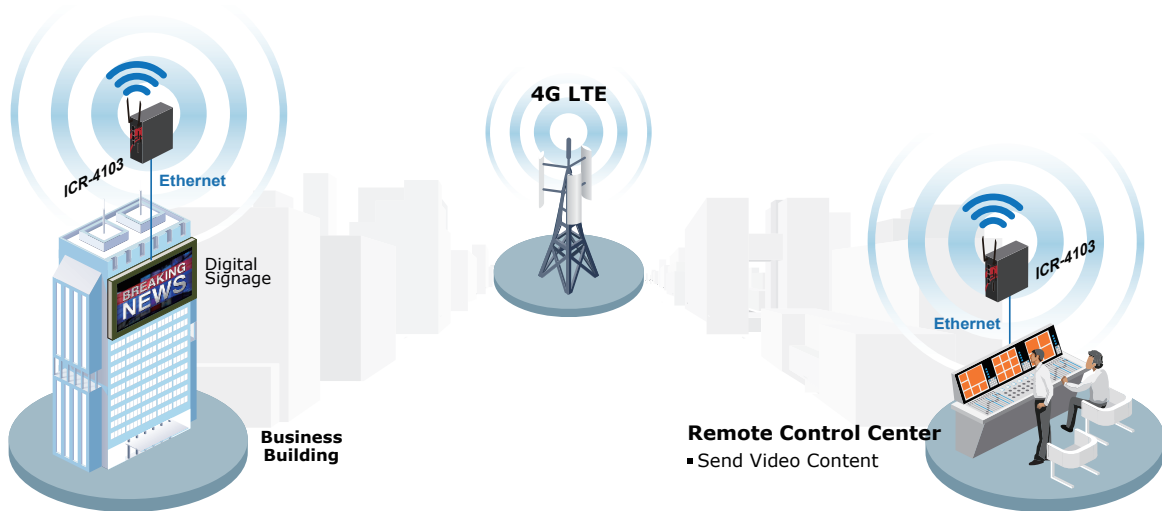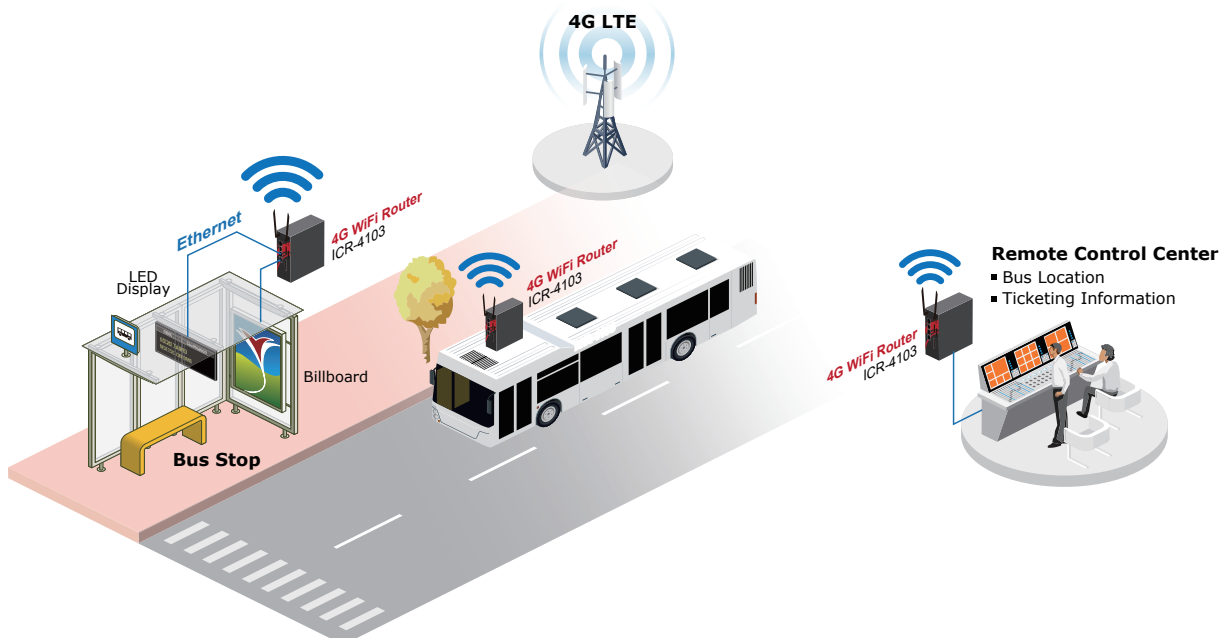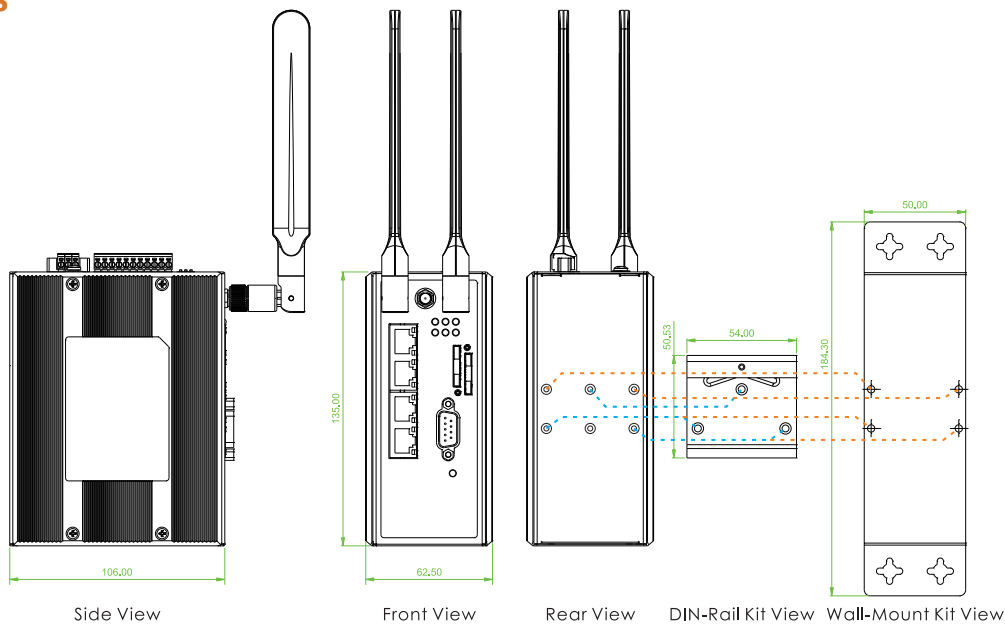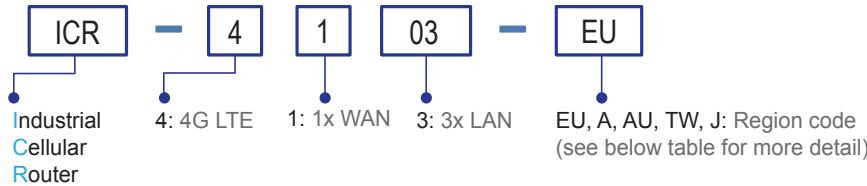**Figure 2 :** Application for Transportation/Bus Communication

4-2

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Dimensions

Side View | Front View | Rear View | DIN-Rail Kit View | Wall-Mount Kit View

Ordering Information

Model Name	Managed	WAN		Local Port			Certification			
		Cellular MobilComm band (2 SIM for Redundant)	10/100Base-TX	10/100Base-TX	RS232	RS485 (ModBus)	Radio	Railway EN50121-4	EN61000-6-2 EN61000-6-4	CE, FCC
ICR-4103-EU	V	see Region code table EU	1	3	2	1	RED	V	V	V
ICR-4103-A	V	see Region code table A	1	3	2	1	RED	V	V	V
ICR-4103-AU	V	see Region code table AU	1	3	2	1	RED	V	V	V
ICR-4103-TW	V	see Region code table TW	1	3	2	1	NCC	V	V	V
ICR-4103-J	V	see Region code table J	1	3	2	1	RED	V	V	V

Model Naming Rule

ICR – 4 1 03 – EU

Industrial **C**ellular **R**outer

4: 4G LTE

1: 1x WAN

3: 3x LAN

EU, A, AU, TW, J: Region code
(see below table for more detail)

MobilComm region Code Optional

Region Code	4G LTE		3G	2G	Region
	FDD LTE	TDD LTE	WCDMA	GSM / EDGE	
EU	B1(2100) , B3(1800), B5(850), B7(2600), B8(900), B20(800)	B38(2600), B40(2300), B41(2500)	B1(2100), B5(850), B8(900)	B3(1800), B8(900)	Europe, Africa, Middle East, Korea,Thailand, India
A	B2(1900), B4(1700), B12(700)		B2(1900), B4(1700), B5(850)		USA (AT&T, T-Mobil)
AU	B1(2100), B2(1900), B3(1800), B4(1700), B5(850), B7(2600), B8(900), B28(700)	B40(2300)	B1(2100), B2(1900), B5(850), B8(900)	B2(1900), B3(1800), B5(850), B8(900)	ANZ, South America
TW	B1(2100), B2(1900), B3(1800), B4(1700), B5(850), B7(2600), B8(900), B28(700)	B40(2300)	B1(2100), B2(1900), B5(850), B8(900)	B2(1900), B3(1800), B5(850), B8(900)	Taiwan
J	B1(2100), B3(1800), B8(900), B18(850), B19(850), B26(850)	B41(2500)	B1(2100), B6(850), B8(900), B19(850)		Japan (KDDI, Docomo, Softbank)

Optional Accessories

■ Antenna accessories

ANT-BASE-01	Antennas Base with Magnetic, SMA (Male) connector, 1 meter extension

■ Wall mount kit accessories

IND-WMK02	Wall Mount kit for Industrial product (Wide) (184 x 50mm)

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4-3