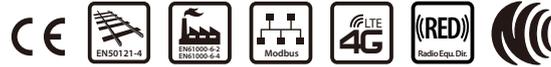# ICR-4103

4G LTE, 2x SIM, 4x FE + 2x DI/1x DO, 1x RS485, 2x RS232

- Multi-band connectivity with FDD 4G LTE/ TDD 4G LTE/ 3G WCDMA/2G GSM
- 4G LTE/ UTP to configure WAN port for failover redundant
- NAT/Port Forward/Routing/IPv6 are compatible with existing IP networks
- Supports 3x Serial port (1x RS485, 2x RS232) for IoT and automation application, Modbus RTU and Modbus/TCP gateway, MQTT
- Various VPN protocols for security, Firewall & IPS, Authentication to enhance access security

CE | EN50121-4 | EN61000-6-2 EN61000-6-4 | Modbus | 4G LTE | (RED) Radio Equ. Dir.

The ICR-4103 is a high-performance, industrial grade, 4G-LTE cellular router which is designed to offer fast connectivity over cellular networks for industrial applications. ICR-4103's Ethernet ports can allow up to 3 Ethernet devices to link to the cellular network. It provides dual SIM card slots and one Ethernet WAN port which can automatically re-connect and auto-switch to offer 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 slots 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)
- 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 RS485, 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), GRE, PPPTP, L2TP
- 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	**LED**	System status (Green)
			VPN (Green), SIM 1 (Green), SIM 2 (Green)
	IEEE 802.3 — 10Base-T 10Mbit/s Ethernet		Cell signal Strong / Weak: H/L (Green)
	IEEE 802.3u — 100Base-TX Fast Ethernet	**DIP SW for RS485 port**	DIP 1 Pull Low : OFF: Disable, ON: Enable
	IEEE 802.1Q — Virtual LANs (VLAN)		DIP 2 Pull High : OFF: Disable, ON: Enable
	IEEE 802.3x — Flow control for Full Duplex		DIP 3 120 ohm terminal resistor : OFF: Disable, ON: Enable
Connector	**Cellular MobilComm and WAN:** Built-in dual SIM card slots for network redundancy / failover/ roaming over/ back up 2 SMA (female) connector for Antenna (Please see ordering information for optional accessories) 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) **Programmable DI/DO:** 2xDI and 1x DO	**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
		Operating Humidity	5% to 95% (Non-condensing)
		Storage Temperature	-40 ~ 85°C
LTE data rate	Cat 4 ,Max download 150Mbps, Max upload 50 Mbps	**Housing**	Rugged Metal, Fanless , IP30 grade housing protection
Removable terminal block	Provides for Power input, DO, DI1, DI2, COM2 (RS232), COM3 (RS485)	**Dimensions (D x W x H)**	106 x 62.5 x 135mm
		Weight	0.74kg
Power Supply	Input 10-32VDC removable terminal block	**Installation**	Mounting : DIN Rail mounting or Wall mounting (Optional)
Power consumption	<7W		

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MTBF	296,306 Hours (MIL-HDBK-217)
Warranty	5 years
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 (ICR-4103-TW)
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, TCP, UDP, ARP
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), GRE, PPPTP, L2TP
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, TFTP
	Syslog monitor
	SNMP V1, V2c, V3
	TR069: TR098 model
	Access Control list, SSH v2
	Remote management via Telnet, SSH v2, HTTPS
	Local management via Telnet, SSH v2, HTTP/HTTPS

Application

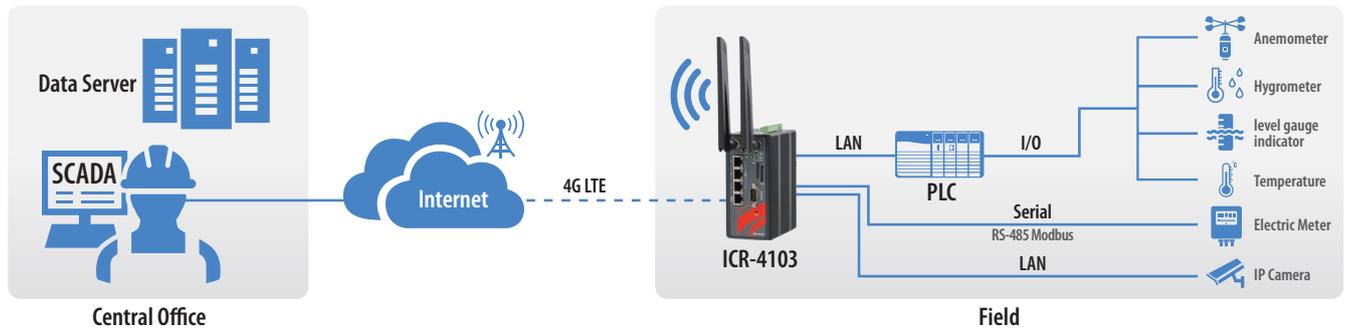**Figure 1 :** Application for Environmental Monitoring
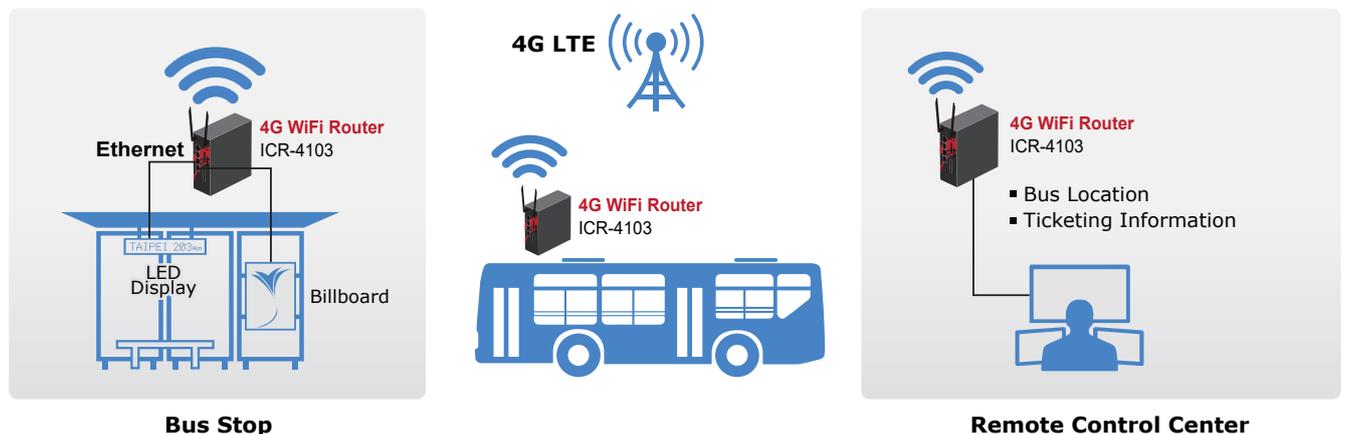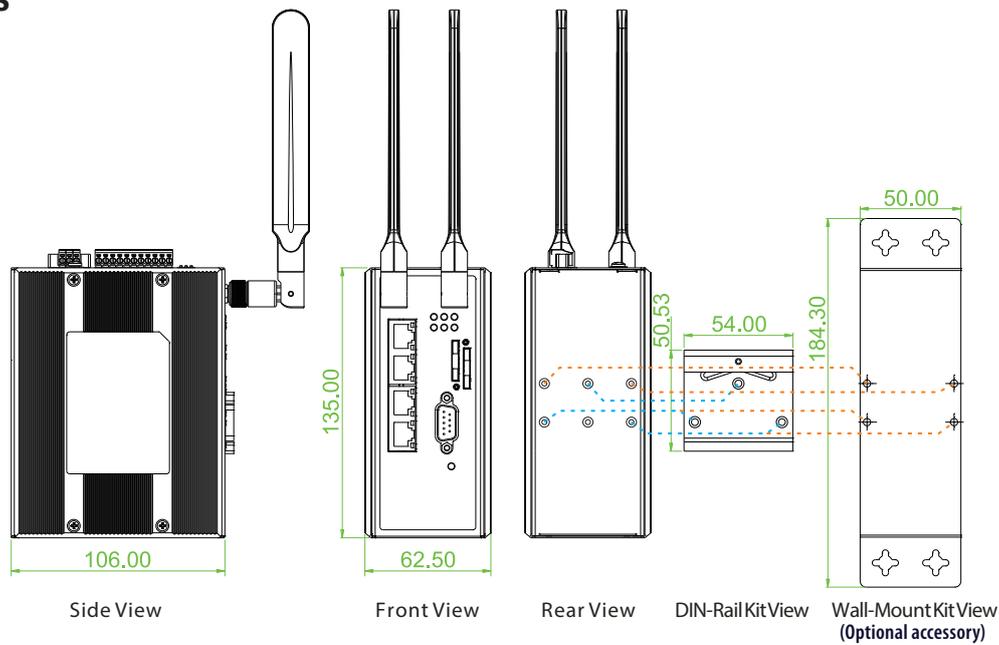

Figure 2 : Application for Transportation/Bus Communication

2-12

2021 V1.0

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Specifications & design are subject to change without prior notice. Please visit CTC Union website for more details.

Dimensions

Side View	Front View	Rear View	DIN-Rail Kit View	Wall-Mount Kit View **(Optional accessory)**

Ordering Information

Model Name	Managed	WAN		LAN			Certification			
		Cellular MobilComm band (2 SIM for Redundancy)	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

MobilComm Region Code Options

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-Mobile)
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, 1.5meter for 4G LTE extension

■ Wall Mount Kit Accessories

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

ANT-BASE-01

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2-13