ICR-3831
RAILWAY 4G LTE ROUTER & GATEWAY

+ 4G LTE Cat.4 Router for railway applications
+ 2× SIM with cover
+ 1× MicroSD card slot
+ 2× Ethernet 10/100 BaseTX, M12
+ Serial port 1× RS232 and I/O, 1× USB M12
+ GNSS receiver
+ Robust metal cover with wall mount options
+ Optional PoE PD
+ M12 Connectors
+ EN 50155 Certified, E-mark

ICR-3831 cellular LTE Cat. 4 router & and the gateway is designed and EN 50155 certified for rolling stock applications such as railways or trams. The router is E-mark certified for road vehicle use in cars, buses and coaches.
LTE Router provides secure Internet connectivity for devices equipped serial interface and LANs via the cellular networks. With upload speeds of up to 50 Mbps and download speeds of up to 150 Mbps, ICR-3800 provides ample bandwidth, even for applications that require video and fast Internet access.

ICR-3831 is equipped with an extremely powerful Cortex A8 CPU at 1GHz, 256 MB flash memory, 512 MB RAM and 128kB M-RAM, providing full support for LTE (Long Term Evolution) speeds and railway applications.

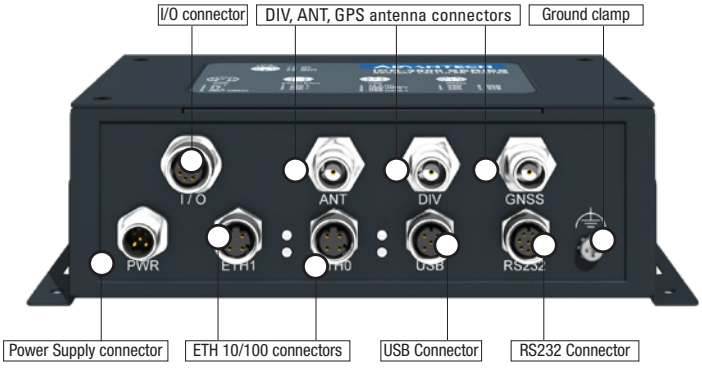
A secure Web interface allows users to configure and manage ICR-3831 cellular LTE router from remote locations. The router can also upgrade its configuration and firmware from the operator's central server, allowing for simultaneous mass reconfiguration of every router on the network. Users may insert Linux scripts and can create multiple configurations for the same router and switch from one configuration to another at any time.

Standard configuration includes 2 Ethernet ports with 2 independent LANs/ IP addresses and also includes 1 USB host port, 1 microSD card holder, 2 SIM card holders for automatic failover to an alternate service provider, 2 binary inputs(I/O), 2 binary outputs (I/O), 1 RS232 port and onboard GPS. All connectors are M12 type. The router has industrial grade operating temperature range is -40 to +70 °C .

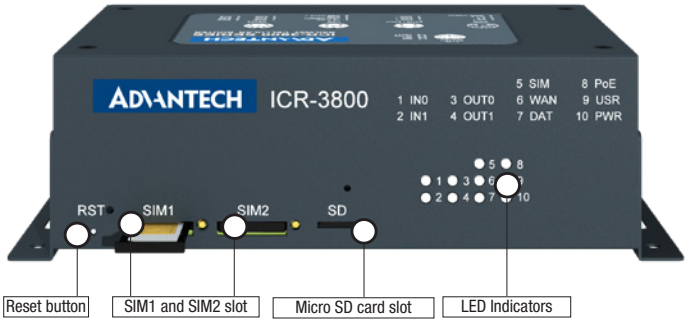
ICR-3831 supports real time data encryption and the creation of VPN tunnels using IPsec, OpenVPN and L2TP. It supports DHCP, NAT, NAT-T, DynDNS, NTP, VRRP, control by SMS, and numerous other functions.

We also support two monitoring platforms. Both platforms are based on a cloud solution. First one is R-SeeNet (using SNMP tramps) and the new, lower cost monitoring and management platform called WebAccess/DMP.

REAR VIEW



FRONT VIEW



MODEL NO. - ORDER CODES		REGION	EN 50155	2× ETHERNET	RS232 RS485	GNSS ANT+DIV	I/O 2/2	POE PD	USB	2x MIMO
	ICR-3281B	EMEA	✓	✓	✓	✓	✓		✓	✓
	ICR-3281BD	EMEA	✓	✓	✓	✓	✓	✓	✓	✓

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SPECIFICATIONS

PORTS, LED, ANTENNAS	
Ethernet	2× LAN port 10/100 Base-TX, 4-pin D-coded M12
SIM	2 Mini SIMs (2FF)
LED indicators	IN0, IN1, OUT0, OUT1, SIM, WAN, DAT, PoE, USR, Power
2× ANT	TNC-F connectors - MAIN + DIV
1× GPS	TNC-F connector - support active/passive antennas
1× RS232	8-pin A-coded M12 (TXD, RXD, DCD, DTR, DSR, RTS, CTS and GND)
I/O	2× opto-coupled digital Inputs (max. 60 V DC, max. 7 mA) 2× opto-coupled digital Outputs (max. 60 V AC/DC, max. 300 mA), 8-pin A-coded M12
USB	2.0 USB host, 5 pin A-coded M12
SD	1× MicroSD, SDHC up to 32 GB, SDXC from 32 GB up to 64 GB

GNNS SPECIFICATIONS	
Antenna	50 Ohms – active/passive
Protocols	NMEA 0183 v3.1
Frequency	1575.42MHz Typical
Sensitivity	-162 dBm
Tracking Sensitivity (Open sky)	Active antenna or LNA: -159 dBm Passive antenna: -156 dBm

CELLULAR MODULE PARAMETERS	
LTE parameters	FDD-LTE - 2100 (B1) / 1800 (B3) / 2600 (B7) / 900 (B8) / 800 (B20)
WCDMA parameters	WCDMA - 2100 (B1) / 900 (B8)
GPRS/EDGE parameters	GSM/EDGE - 1800 (B3) / 900 (B8)

NETWORKING	
Network and Routing	DHCP Server, NAT/PAT, VRRP, Dynamic DNS client, DNS proxy, VLAN, QoS, DMVPN, NTP Client/ Server, IGMP, BGP, OSPF, RIP, SMTP, SMTPS, SNMP v1/ v2c/ v3, Backup Routers, PPP, PPPoE, SSL, Port Forwarding, Host Port Routing, Ethernet Bridging
Security	HTTPS, SSH, VPN tunnels, SFTP, DMZ, Firewall (IP Filtering, MAC address filtering, Inbound and outbound Port filtering)
VPN Tunnelling	Open VPN client and server and P2P, L2TP, PPTP, GRE, EasyVPN, IPSec with IKEv1 and IKEv2
Configuration	Web server, SSH, Four configuration switchable profiles, Automatic configuration update from server, Backup configuration, Restore configuration
Firmware Management	Automatic firmware update from server, Locally via LAN or remotely OTA (HTTP, HTTPS), Over-the-Air cellular module update
Diagnostic	One CLICK report - current configuration / factory identification / system log / kernel log / reboot log / routing table, Remote diagnostics possible via SSH
Status	Network Status, DHCP Status, IPSec Status, Statistics history for last 60days
Log	System Log, Reboot Log, Kernel Log
Controlling and Diagnostic	SMS, SNMP v1/v2c/v3, Statuses
Event Engine - Supported Events	StartUp script & Up/Down script (Bash, Python), Digital Input, Network Parameters, Data Usage, Timer, Power, Device Temperature. Report Types: SMS, email, SNMP Trap
Other	Support of IPv6, Dual Stack
Applications Development	Open Linux, Python, BASH, C/C++, Node-RED

POWER, CONSUMPTION, ENVIRONMENTAL, IP COVER	
Power Supply	12 – 48V DC (5-pin A-coded M12)
*Optional Power over Ethernet (PoE)	PoE+ Powered Device (IEEE 802.3at, Type 2, Class 4)
Power Consumption	4 to 11W
Temperature Range – Operating	-40 to +70 °C
Humidity – Operating / Storage (noncondensing)	0 to 95 % / 0 to 95 %
Cold Start	-40 °C
Operating Altitude	2000 m / 70 kPa
Enclosure Rating	IP40

MECHANICAL	
Metal case, Wall mount kit	Metal
Enclosure Dimensions	203x59x113.1mm
Weight	855g

STANDARDS AND REGULATIONS - ICR3800	
Radio	Europe: – EN 301 511, Radio Requirements GSM – EN 301 908-1 & EN 301 908-2, Radio Requirements UMTS/HSPA – EN 62311, Human Exposure restrictions for EM-Fields
Safety	EN 60950-1
Transportation	EN 50155, EN 50121-4, EN 45545-2 HL3, E8 (road vehicle approval)
Environmental	EN 61000-6-2, EN 301 489, EN 61131 for use in automation environment

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MECHANICAL DRAWING