SCR300-LTE

Focused on the basics – for industry and buildings

The routers of the SCR series are IoT gateways of the special kind. They provide latest technology in a compact, flexible mountable housing for a very attractive price.

The SCR series is available in LTE and LAN versions, both optionally as I/O variant. Users can connect both, IP-based and serial devices, to this Smart Device locally. This allows to transform elder existing plants in modern IT environments with a retrofit.

The two mounting directions make an SCR suitable for both, a switch cabinet in industrial environments and flat building connection boxes.

Besides the INSYS operating system icom OS, the icom SmartBox is also on board, an integrated Linux environment that allows to execute scripts and programs directly on the router based on so-called containers.

Therefore, an SCR router can not only be used for secure remote maintenance and control, but also for capturing and processing application data within the scope of edge computing. This also allows to monitor the conditions and values of connected devices and realise reporting or benchmarking across different plants thanks to a plug & play connection to Cloud services.

Technical highlights

- Compact, flat housing
- Installation in distribution boxes and switch cabinets
- Wall and DIN rail mounting
- Interfaces for IP-capable and serial devices
- Stateful firewall also in VPN tunnel
- Strengthened operating system
- Integrated Linux environment for edge computing (icom SmartBox)
- PPPoE for external ADSL modem
- Quick start for DELTA LOGIC Connectivity Service
- I/O variant

> The SCR300-LTE professional router is a smart, compact and versatile device for your M2M and IoT applications.

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Technical details

Mobile communication

Frequency bands	4G/LTE*: 700, 800, 900, 1.800, 2.100 MHz (bands 1, 3, 8, 20, 28) LTE Cat. 1 (DL: max. 10.2 Mbps, UL: max. 5.2 Mbps) 2G/GPRS/EDGE: 900, 1.800 MHz; GPRS/EDGE Class 12 (DL: max. 85.6 kbps, UL: max. 85.6 kbps)
Antenna connection	1 x SMA female
SIM	Slot for 1 Mini-SIM card (2FF), locked

Router

Function	Up to 5 IP networks local (LAN) or as WAN, VLAN incl. tags and trunk ports; own DHCP server per IP network, static routing, routing priority configurable; dynamic routing OSPF, BGP, RIP, RIPv2, RIPng; netfilters: DNAT, SNAT, IP/port forwarding, netmapping, DNS relay, dynDNS support
Security	OpenVPN (client and server), IPsec, GRE (incl. multipoint), DMVPN, IP filters (stateful firewall) also in VPN tunnel, several VPN tunnels in parallel possible, MAC filters, PPTP server
Redundancy	WAN chains: several WAN accesses configurable (prioritised and event-controlled), WAN groups: parallel operation of WAN interfaces or VPNs, several OpenVPN servers Dual APN: traffic division across 2 APNs - e.g. for separating payload and management data

Ethernet switch, interfaces

Ports	2 x RJ45, 10/100 MBit/s, full/half-duplex, auto MDI-X, 1.5 kV isolation voltage
Function	Each port can be freely assigned to the IP networks, Link up/down detection, configuration port
I/O variant	2 x digital inputs, high-active (as per EN 61131-2, Type 1) 2 x open collector outputs (24 V/100 mA)
Events (selection)	Change: input, Ethernet port, WAN chain, profile, supply input, cellular field strength; timer expiry, firewall violation, login attempt detection, pulse sequence at digital input, counter
Event-controlled actions (selection)	Messages via e-mail, SMS, SNMP traps, MCIP; switching profile, switching connection, changing modem state, starting timer, switching output or pulse sequence, activating firmware, reset, restart SmartBox container

> Besides a 2-port switch, the cellular LTE router also provides an RS232 interface for connecting serial devices directly to the router and thus integrating them into IP networks. Sensors, actuators and similar devices can be connected via two digital inputs and two digital outputs.

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> Create VPN connection easily and securely.
> With the DELTA LOGIC Connectivity Service.
>
> https://connectivity.deltalogic.de

Serial interface

RS232 (Serial 1)	1 x RS232 / D-Sub-9 (m)
Functions	Serial-Ethernet gateway (incoming and outgoing connections, Modbus TCP/RTU gateway, modem emulation, editable AT answer list, phone number conversion to IP addresses), PPPoE for external ADSL

Operation

Wizards	Configuration of connection incl. VPN, adding LAN networks, quick start of DELTA LOGIC Connectivity Service
Help	Web interface with inline help texts, online help, FAQ, exemplary profiles, plausibility check
Configuration	Local and remote web interface (http, https; with session management), command line interface (CLI), Telnet, SSH, ASCII and binary file (also for backup), configuration management with switchable profiles (event-controlled)
Indications (LEDs)	Power, WAN (Internet connection), Signal (for cellular radio)
Authentication	Several users, different user roles and rights, certificate-based authentication with revocation list
Diagnostics	SNMP traps and agent, configurable system logs, remote syslog, support packet, help functions Diagnosis tools: ping, tcpdump, traceroute, DNS lookup, AT commands
Firmware updates	Incremental, fail-safe, automated via update server (http, ftp, https, ftps)
System time	NTP client and server, real-time clock

Edge Computing

Icom SmartBox	Linux programming environment: creation of LXC containers for programs and scripts (apps), ARMv7 CPU, 448 MB RAM, 7 GB flash memory

Supply

Voltage	12 ... 24 V DC (± 20%)
Terminals	2-pin terminal connectors, rigid/flexible conductors up to 2.5 mm^2
Power consumption	typical approx. 2.0 W, max. 3.0 W Sleep mode: typical approx. 55 mW
Sleep mode	Sleep mode: Energy conservation mode with event-triggered activation, stopping via timer, reset or re-establishing supply

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Ambient conditions

Dimensions (W x D x H) in mm	Industrial distribution box (switch cabinet): 41.5 x 105 x 90 Building distribution box: 105 x 41.5 x 90
Operating temperature	-30...+70 °C -30...+75 °C under restricted conditions (refer to www.insys-icom.com/restricted)
Humidity	0...95% (non-condensing)
Mounting/protection class	DIN rail mounting/housing: IP40, terminals: IP30

Approvals & Standards

Certifications	CE
EMC	Emission: EN 55032 Class B; Immunity: EN 61000-6-2, EN 55024
Security	IEC 62368-1
Environmental conditions	Temperature tests as per EN 60068-2-1, EN 60068-2-2, EN 60068-2-14, EN 60068-30

* Please check the availability of the LTE frequencies in the planned operating area.
Above specified frequencies are currently used in Europe, Middle East, Africa and, to some extent, in the Asia-Pacific region, Australia and South America.

With the integrated icom SmartBox, a Linux environment based on LXC technology, the router provides an operating system-independent platform, for example for local storage and processing of data or executing further programs and scripts (edge computing).