SmartFlex SR310

Industrial Cellular Routers & Gateways

Flexible 4G Routers & IoT Gateways



Features

- Global LTE Cat.4 high speed connectivity with 3G fallback
- US carriers support; Verizon, AT&T, T-Mobile
- 2× SIM for redundancy
- Flexible port options: 2 – 5× Ethernet 10/100 Mbps, Isolated RS-232/422/485 and isolated 2× DI, 1× DO
- GPS and GLONASS support
- Optional industrial-grade Wi-Fi
- Optional 2× PoE+ PSE or 1× PoE PD
- Wide operational temperature range
- DIN mount
- Linux based OS & SW customization
- Advanced security features

Introduction

SmartFlex SR310 cellular router provides secure Internet connectivity for devices and LANs via cellular networks. It provides automatic wireless failover for wired networks, wireless connectivity for devices in remote locations such as industrial PCs, HMIs, traffic controllers, kiosks, meters, cameras, and much more.

SmartFlex serves well also for applications that require video transmitting because of download speed up to 150 Mbps and upload speed up to 50 Mbps.

Modular SmartFlex design can be ordered in many hardware options. Standard hardware configuration always includes 2 Ethernet 10/100 ports with 2 independent LANs/IP addresses – optionally with POE+ PSE or POE PD feature – 1 USB host port, 1 microSD cardholder, 2 SIM card holders for automatic failover to an alternate service provider, 2 binary inputs (I/O), 1 binary output (I/O), and onboard GPS/Glonass receiver.

As an extension to hardware interface options above can be modified by an additional 3× 10/100 ETH board (so totally up to 5 Ethernet ports configured for 3 independent LANs/IP addresses) or combined Ethernet/RS-232/485 board or RS-232/485 board (isolation strength up to 2.5kV). An optional built-in Wi-Fi module also available with industrial-grade operating temperature ranges from -40 to +75 °C.

SmartFlex transfer intelligence at the network edge with a powerful Cortex A8 CPU, 256 MB flash memory, 512 MB RAM, and 128kB M-RAM.

A secure Web interface allows users to configure and manage SmartFlex from remote locations. The SmartFlex supports real-time data encryption and the creation of VPN tunnels using IPsec, OpenVPN, GRE, etc. It supports standard and advanced networking features like DHCP, NAT, NAT-T, DynDNS, NTP, VRRP, control by SMS, and numerous other functions.

With an open Linux platform and the wide possibility of programming customer SW applications in Python, C/C++ or browser-based flow editor Node-RED the SmartFlex offers a real open development platform for Industrial IoT applications. The Advantech existing Router App library (User modules) with apps already developed to enhance specific router functionalities include industrial protocol conversions and support of IoT platforms such as MS Azure, Cumulocity, and others.

SmartFlex is easy to install individually and in mass deployments scenarios too by using a full-featured configuration and monitoring software tool WebAccess/DMP. Safe remote VPN access to customer devices and PCs connected to routers through Internet can be administrated by additional software WebAccess/VPN.

Ordering Information

Note: Check with your local distributor for availability, options, and HW configuration. Contact Advantech distributors.

SmartFlex Family

SR310 router, 2× ETH, 1× USB, 2× DI, 1× DO, MicroSD reader, 2× SIM reader

BB - SR310BCCDE

Accessories		
	0	No Accessories (DIN holder included)
	1	Accessories with EU power supply
	5	International Power Supply (EU, US, UK, AUS)
Enclosure		
	1	Plastic enclosure
	2	Metal enclosure
Interfaces		
	0	2× ETH
	1	2× ETH, 3× ETH Switch
	3	2× ETH, 1× RS232, 1× RS485/422
	4	3× ETH, 1× RS232, 1× RS485
PoE		
	0	No PoE
	8	2× PoE PSE
	9	PoE PD
WiFi		
	0	No WiFi
	1	WiFi (2.4 & 5 GHz)

RouterApp ICR-OS

WebAccess/DMP WebAccess/VPN

All product specifications are subject to change without notice.

Last updated: 18-May-2023

SmartFlex SR310

Specifications

System	
CPU	ARM Cortex-A8, 1000 MHz
Memory	RAM - 512 MB NOR Flash - 256 MB MRAM - 128 KB (128 MB for Router APPs, 128 kB for customer data)
Watchdog	HW Watchdog
RTC	Battery backup RTC
Interfaces	
Ethernet	2× Ethernet, RJ45, 10/100 Mbps, Isolation 1.5 kV
Port expansion option BB-SR310xx1xx	3-port Ethernet switch, RJ45, 10/100 Mbps, Isolation 1.5 kV
Port expansion option BB-SR310xx3xx	1× RS232 (Tx, Rx, GND, RTS, CTS), 5-pin terminal block, Isolation 2.5 kV 1× RS485/422 (2× TxRx+, 2× TxRx-), 4-pin terminal block, Isolation 2.5 kV
Port expansion option BB-SR310xx4xx	1× Ethernet, RJ45, 10/100 Mbps, Isolation 2.5 kV 1× RS232 (AUX, GND, Tx, Rx), 4-pin terminal block (no isolation) 1× RS485 (TxRx+, TxRx-, GND), 3-pin terminal block, Isolation 2.5 kV
I / O	2× Digital Input (60 V AC/DC, 7 mA) 1× Digital Output (60 V AC/DC 300 mA) (6-Way Molex connector)
USB	1× USB 2.0 Host Connector
MicroSD Card	1× Micro SD Card Slot (SDHC, SDXC)
Reset Button	Factory reset
LED Indicators	System-power, Data activity, 3-level signal strength, SIM1/SIM2 status, PoE status, Input 0 status, Input 1 status, Output state, User, ETH

GNSS	
Antenna	1× SMA connector, active (50 mA)
Systems	GPS, GLONASS, BeiDou, Galileo
Protocol	NMEA 0183 v3.0
Ac Time-to-First-Fix	Hot start 1 s, Warm start: 29 s, Cold 32 s

Environmental	
Power Supply	10 – 60 V DC (2-Way Molex connector)
Consumption	Idle 2.5 W / Average 4 W / Peak 11 W
Sleep Mode	Yes, 10 mW
Operating Temperature	-40 to +75 °C
Storage Temperature	-40 to +85 °C
Humidity	5 to 95 %
IP Cover	IP30
Physical Characteristics	
Dimensions	55 × 97 × 125 mm
Enclosure	Robust Metal Case or Plastic Case
Mounting	DIN Rail
Weight	Metal version: 375 g Plastic version: 170 g

WiFi - Optional	
Antenna	1× R-SMA connectors
Standards	IEEE802.11 a/b/g/n 2.4 GHz / 5 GHz
Security	WEP, TKIP, AES, WPA, WPA2, 802.1X
Modes	Access Point (max 10 clients), Station, Multirole STA & AP

PoE PD: parameters for opposite PSE device - Optional	
Input voltage range	42.5 – 57 V DC, IEEE 802.3af-2003
Power available	25.50 W
Maximum current	600 mA
PoE+ PSE parameters - Optional	
Power supply needed	42.5 – 57 V DC
Power available	2× 25.50 W (ETH0, ETH1), IEEE 802.3at-2009 (PoE+)

Cellular Interface	
SIM Slots	2× SIM (Mini SIMs – 2FF)
Antennas	2× SMA connector (1× Main, 1× Diversity)
LTE Parameters	Supported FDD frequencies: B1 (2100 MHz)/ B2 (1900 MHz)/ B3 (1800 MHz)/ B4 (1700 MHz)/ B5 (850 MHz)/ B7 (2600 MHz)/ B8 (900 MHz)/ B12 (700 MHz)/ B13 (700 MHz)/ B18 (800 MHz)/ B19 (800 MHz)/ B20 (800 MHz)/ B25 (850MHz)/ B26 (850 MHz)/ B28 (700 MHz) Supported TDD frequencies: B38 (2600 MHz)/ B39 (1900 MHz)/ B40 (2300 MHz)/ B41 (2500 MHz) Transfer rate: up to 150 Mbps (DL), 50 Mbps (UL)
HSPA+/UMTS Parameters	Supported frequencies: B1 (2100 MHz)/ B2 (1900 MHz)/ B4 (1700 MHz)/ B5 (850 MHz)/ B6 (800 MHz)/ B8 (900 MHz)/ B19 (800 MHz) Transfer rate: 42 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: 296Kbps (DL), 236.8Kbps (UL)

Standards & Regulations	
Radio	EN 301 511, EN 301 908-1, EN 301 908-2, EN 301 908-13, EN 303 413, EN 301 893, EN 300 328, FCC part 22H, FCC part 24E, FCC part 27, FCC part 90R, PTCRB
EMC	ETSI EN 301 489-1, ETSI EN 301 489-17, ETSI EN 301 489-19, ETSI EN 301 489-52, EN 55032, EN 61000-4-2, EN IEC 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, IEC 61000-6-2, IEC 61000-6-3, FCC Part 15 Subpart B, ICES-003 Issue 6
Safety	EN IEC 62368-1, UL E487720
National	CE, TELEC (Japan), UKCA, FCC, IC
Carrier Approval	AT&T, T-mobile, Verizon
Mechanical	EN 60068-2-64, EN 60068-2-27
Climatic	EN 60068-2-1, EN 60068-2-2, EN 60068-2-14, EN 60068-2-30
Environmental	RoHS3, Reach, WEEE

Software

Operating System	ICR-OS (Linux based)
SW Customization	Router App (User Modules)*
Application Development	Open Linux, *Python, BASH, C/C++, *Node-RED
Industrial Protocols and IoT	*Modbus RTU/TCP gateway, *IEC 60870-5-101 to 104 gateway, *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+, 2FA, *SCEP Encryption – DES, 3DES, AES, RSA, MD5, SHA
Firmware Management	Automatic firmware updates – server, locally via LAN or remotely via WAN Over-the-Air cellular module firmware updates
Diagnostic/Log	Status – Signal Strength, Data Usage, Detailed Long Term Statistics 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, Power, Device Temperature) 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 Device Provisioning, Monitoring & Management Platform WebAccess/VPN – Advanced Secure Networking Platform

**Functionality is available with installed RouterApp (User Module)*

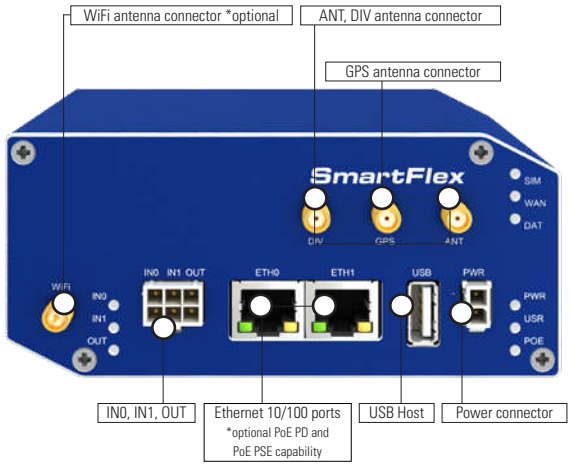
Accessories

Part Number	Description	Included in Package BB-SR310xxxx5	Included in Package BB-SR310xxxx0	Sold Separately
BB-2JW0124Z-C868B	Antenna LTE, Terminal	✓		✓
BB-GA.110.101111	Antenna LTE, Magnet Mount			✓
BB-AW-A2458G-FSRPK	Antenna Wi-Fi, 2.4 & 5.8 GHz	✓ BB-SR3101xxx5		✓
BB-RPS-v3-MO2-M	SmartFlex Power Supply, 12V/1A, EU,US,UK,AU	✓		✓
BB-RPS-v3-MO2-EU	SmartFlex Power Supply, 12V/1A, EU plug			✓
BB-RPS-v3-PSE	SmartFlex Power Supply, 48V/1.35A (power cord required)			✓
BB-PWRCORD-US	US Power Supply Power Cord			✓
BB-PWRCORD-EU	EU Power Supply Power Cord			✓
BB-PWRCORD-UK	UK Power Supply Power Cord			✓
BB-PWRCORD-AU	AU Power Supply Power Cord			✓
BB-SBD40	DIN Rail Clip - metal	✓ BB-SR310xxx2x	✓ BB-SR310xxx20	✓
BB-CPD3	DIN Rail Clip - plastic	✓ BB-SR310xxx1x	✓ BB-SR310xxx10	✓
BB-KN-v3-MO2-3	PS Cable 2-wire, MO 2 pins, 3m, v3 routers		✓	✓
BB-KIO-v3-MO6-3	IO Cable 6-wire, 3m, v3 routers			✓
BB-KD-ETH	Ethernet cross cable	✓		✓

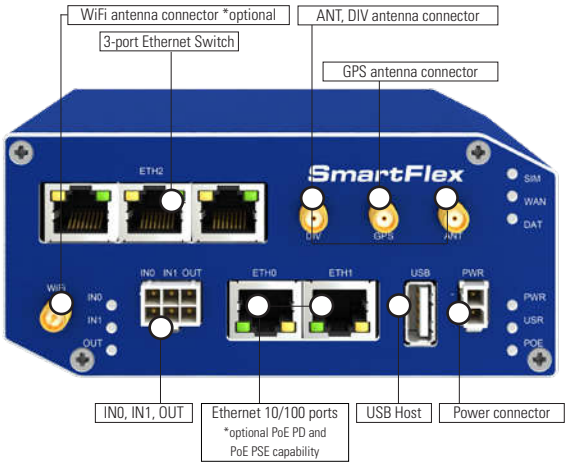
For more Antenna accessories visit www.advantech.com.

Views

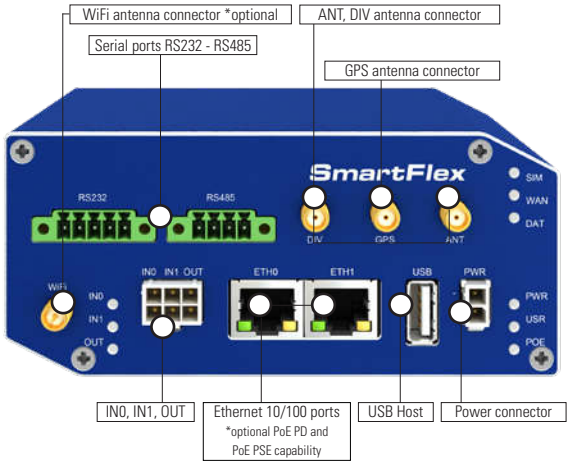
FRONT VIEW - BB-SR310xx0xx



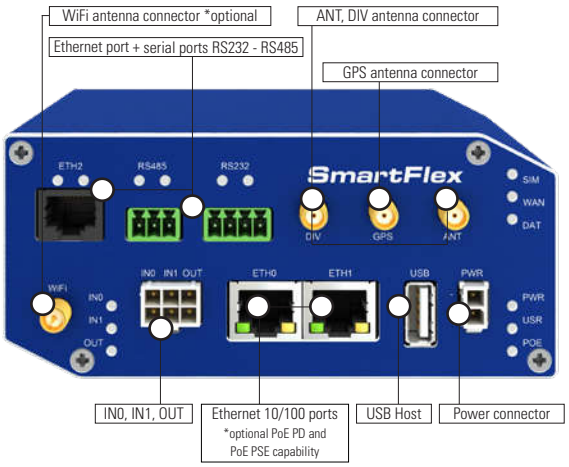
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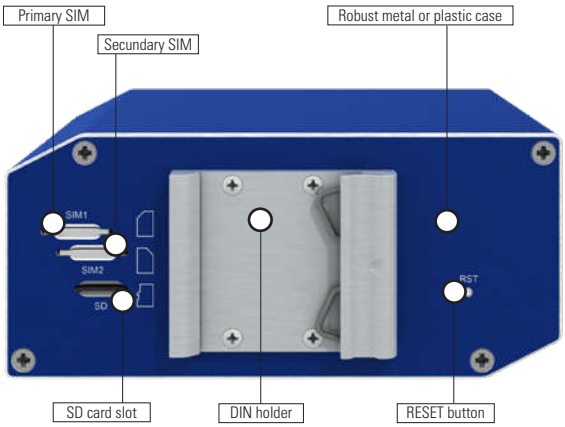
FRONT VIEW - BB-SR310xx3xx



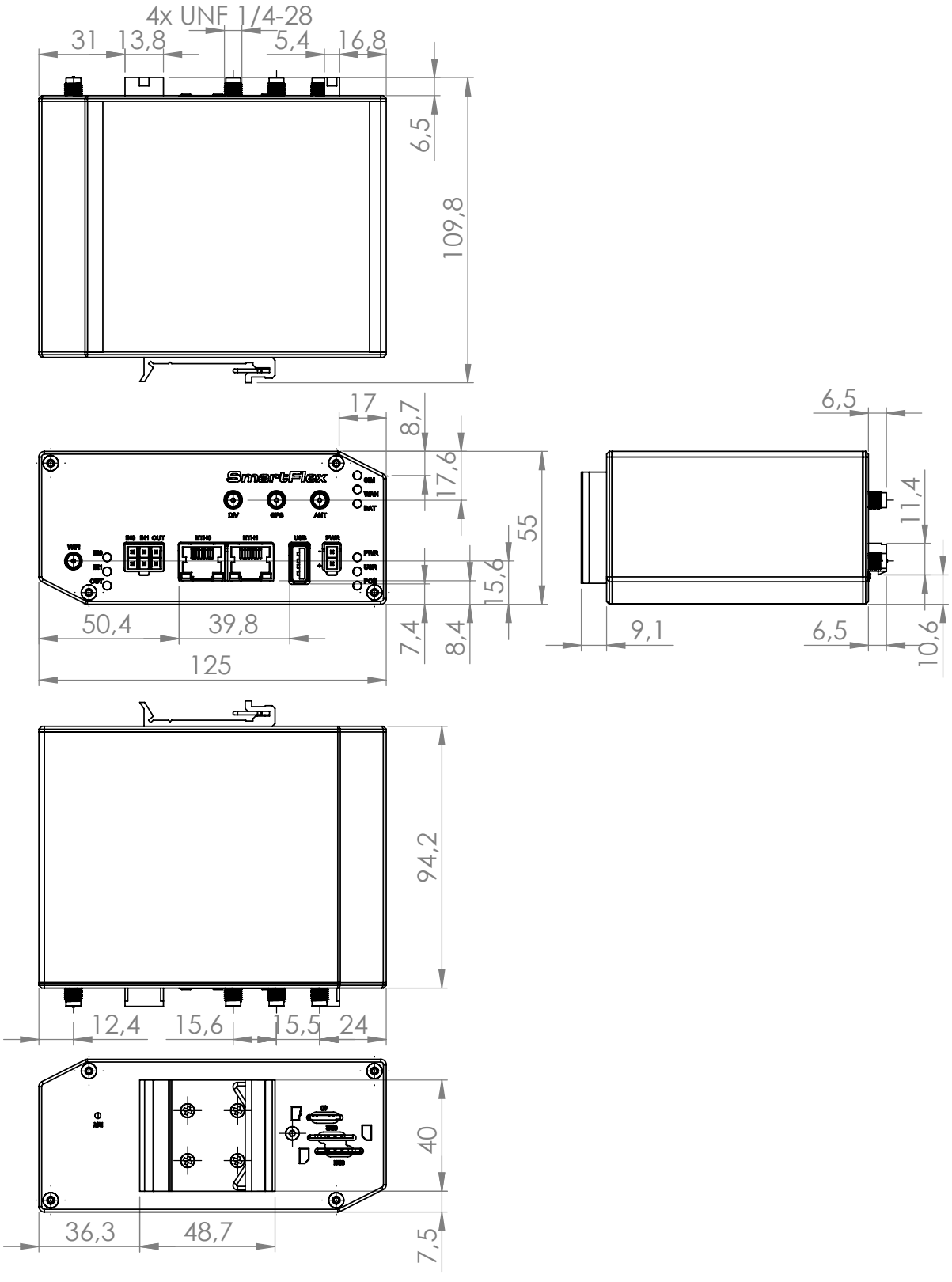
FRONT VIEW - BB-SR310xx4xx



REAR VIEW



Basic Dimensions - Metal version



Basic Dimensions - Plastic version

