

AP402-SCB Datasheet

Aiming to create better and safer working environments and life experiences through the products we deliver.



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Outdoor Smart City Box AIO Machine

- PoE+, Firewall VPN Router, LTE/WLAN, Modbus Serial, DI/DO, USB

- Private cloud ATMS®; Public Cloud AWS®/Azure®
- Over-the-Air Software ATMS OTA®

AP402-SCB

The next-generation Smart City Box AP402-SCB integrates smart city and IIoT applications into an IP67 metal enclosure and includes two IEEE 802.3at PoE+ ports, a GbE WAN port. AP402A-SCB with an additional serial port, two DI and a DO weatherproof connector. Both are available in AC or DC powered models. Data can be stored locally in an internal USB or remotely connected to other wireless modules via wireless LTE Cat 4/6, LTE M1/NB1, wireless LAN 802.11 ac/a/n.

The outdoor AP402A-SCB as both an IoT gateway and controller through Modbus Serial, DIO, wireless LAN AP, cellular VPN/NAT/firewall routers, and PoE for IP cameras. Compared to traditional assembly cabinets, the AP402-SCB/402A is uniquely valuable in terms of saving time/cost of system integration and provides a user-friendly interface for large group deployment, management, and status visualization in your mobile devices. Data can be sent to public AWS/Azure or user-defined cloud servers, or AVCOMM private IoT platform ATMS.



-40~70°C



Waterproof IP67 Design

- IP67 metal housing, effective heat dissipation design for operating -40 ~ 70 °C environment
- 1xRJ-45 GbE WAN port and two PoE+ ports
- M8 5-pin connector for1x RS232/422/485 supporting Modbus sensor/meter
- M8 5-pin connector for two digital inputs for sensors or buttons
- M8 5-pin connector for a digital output for alarm or on/off M12 T-code connector
 - DC48V (46~57V) power input
 - AC100~240V input for internal USB for storage

IIoT LAN and Cloud Management

- Various configuration paths, including CGI WebGUI, CLI, SNMP, and RMON*
- AVCOMM Software Utility
 -ANMS: Network management system with VLAN
 - Visualization* and ERPS* Ring

-AIAS: Configuration management

ATMS: Interactive monitoring dashboard via Modbus tab for collecting data from Modbus devices
ATMS OTA: Real-time maps show remote device status, signal strength, location, wireless bulk device registration, configuration and firmware updates*,

critical event alerts to prevent downtime

- Support for MQTT protocol, AWS/Azure and private cloud brokers for cloud management
- LLDP* for topology control, automatic topology drawing, USB for field configuration and firmware updates, diagnostic tools including Ping, TFTP, SNMP Trap, Email Alert, and System Log
- LTE watchdog, automatically reconnects the cellular

Dynamic Routing with Redundant Protection

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- RIPv1&v2 and OSPFv1&v2 are used for intra-domain routing within autonomous systems
- Efficient unicast/multicast* static routing
- VRRP guarantees sustainable routing in a single point of failure
- Wireless redundancy: WAN to LTE redundancy

Enhance Cyber Security for Critical Applications

- Firewall with stateful inspection
- DMZ, port forwarding, NAT for LAN protection
- OpenVPN, IPSec, L2TP, GRE for secure connections
- Port security
- HTTPS/SSH secure login, TACACS+

Powerful PoE Power Supply

- 2x10/100M PoE+ 802.3at ports, each 30W
- M12 T-code high current power
- Complete PoE management, including per-port power budget control, PoE schedule, and PoE status
- AC110V or DC48V power supply
- Available in power budgets up to 60W

Wireless extensions

- mPCIe and SIM slots for wireless expansion
- SCB LTE module and antenna kit
- LTE Cat.4 cellular module
- LTE/GPS antenna on the top of the box
- 150M uplink, 50M downlink, FDD/TDD-LTE
- SCB Industrial WLAN Module
- N-type antenna socket on the top of the box
- 5G/2.4G 802.11ac/n wireless network





✓ Secure Remote Access Via VPN

AP402-SCB can as a VPN server for data encryption and dynamic remote access. Supports multiple VPN protocols such as IPSec, OpenVPN, GRE, and L2TP. Channels between multiple networks such as private/public/hybrid networks are completely secure and have authentication capabilities.



A stateful firewall can monitor the status of connection at any time. Multiple industrial fieldbus protocols such as Modbus TCP* and Ethernet/IP* are supported factory automation applications.





Secure IoT Modbus Tags

N to N VPN

Tag-based data acquisition with MQTT support

MQTT client acting as publisher and subscriber

The latest TLS encryption and X.509 authentication

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✓ ATMS OTA (Device Management Over-the-Air)

Latest TLS encryption and X.509 authentication

The OTA agent embedded in the AP402-SCB is managed via over-the-air upgrade devices, anywhere and anytime you want from your mobile device. ATMS OTA is a secure local OTA software that can be installed on private or public servers, or even QNAP NAS (Network Attached Storage). All device information can be displayed in real time via OTA, such as location, alarm events, etc. Maintenance, such as configuration reloading, or device restarts, can also run in groups.

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Smart Energy Solution -Monitor meter voltage, frequency, power, current, energy consumption, etc.



Smart Farming Solution Monitor silos weights, silos temperature, silos humidity, etc



Smart Environment Solution Monitor PM1/2.5/10, CO2, temperature, humidity, radiation, wind speed, etc.



Industrial 4.0 Solution Monitor machine downtime, speed, utilization rate, yield rate, productivity, etc.



Smart Bus Tracking Solution Monitor bus route, speed, passenger count, fuel etc.



Smart Metering Solution Monitor district energy consumed, water consumed, etc.

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🐺 Ordering	Information	
Model Name	Description	

AP402-SCB Industrial Wireless IIoT Smart City Box, IP67, 2GT PoE, 1GT WAN, 1xCOM,2xDI,1xDO,Voice, 1xUSB, 8-32V DC or AC Input



Technology									
Standard	IEEE 802.11ac wireless local area network (WLAN), Backward support 802.11n/g/a/b Wireless LAN (By Request)								
	3GPP GSM/GPRS/EDGE/UMTS/HSPA/LTE (By Request)								
	IEEE 802.3 10Base-TX Ethernet								
	IEEE 802.3u 100Base-TX Fast Ethernet								
	IEEE 802.3ab 1000Base-T Gigabit Ethernet copper								
	IEEE 802.3af/at Power-over-Ethernet								
	IEEE 802.1Q for VLAN								
Interface									
Ethernet Port	AP402-SCB: LAN: 2 x 10/100Base-TX 802.3at/af PoE+, Auto MDI/MDI-X, Weatherproof RJ-45 connector WAN: 1 x 10/100/1000Base-T Ethernet, Auto MDI/MDI-X, waterproof RJ-45 connector LAN: 2 x 10/100Base-TX Ethernet, Auto MDI/MDI-X, waterproof RJ-45 connector WAN: 1 x 10/100/1000Base-T Ethernet, Auto MDI/MDI-X, waterproof RJ-45 connector								
Power Input	4-pin M12 T-code power connector AC model: 100~240V AC DC model: 48V, range from 46~57V								
Serial	1 x Software optional RS232/422/485 interface, M8 5-pin connector 15 KV ESD protects all signalsPinRS232 4w/422RS485- 4w/422RS485-2w 4w/4221-TX-Data-2TXDRX+-3RXDTX+Data+4-RX5GNDGNDGND								
Digital Input/Relay	M8 5-pin connector 2 x digital inputs, low: 0~1V, high: 2~30V 1x dry relay output, 0.5A/24VDC								
Voice(optional by request)	Ix audio line output, M5 4-pin connector Pin Power ③ ④ 1 Line+ 2 Not Connected 3 Not Connected 3 4 Line-								
mPCle Socket (reserved for optional wireless)	2 mPCIe sockets mPCIe/USB bus for LTE and 802.11ac/n/g/a/b WLAN extensions Note: Select LTE or Wi-Fi module from the list of accessories								
SIM Socket (reserve)	2 internal NANO SIM sockets for SCB LTE models only Reserve eSIM for project-based eSIM requirements								
Antenna Socket (reserve)	N-type female sockets for SCB LTE or WLAN module expansion								
USB (reserve)	Internal 1x USB A-Type socket inside the box Optional by request: Industrial-grade USB flash drive as storage								



Power Requirement	
Power Connector	4PinPower1 x 4 Pin IP66/67 M12 T-Code power connector1V-2Not Connected3V+4Not Connected
Power Input Voltage	AC Model: 100~240VAC DC Model: 48VDC (46~57VDC, 50~57VDC suggested for IEEE802.3at) AP402-SCB-NP Series: 24VDC (8~32VDC)
Reverse Polarity Protect	Yes
Power Consumption	Max 12W@110VAC full traffic without PD loading, suggest reserving 15% fault tolerance
РоЕ	
Power forwarding mode	802.3at Alternative A
PoE Power Budget	System: Max 60W@55°C, 30W@70°C Port: 4-pair IEEE 802.3af/at, Max. 30W
PoE Standard	IEEE 802.3af/at
Management	System/Port Power Budget Control, PoE Scheduling, Priority, PD Alive Check, PoE Status
Software	
Management	CGI WebGUI, Command Line Interface (CLI), IPv4/IPv6*, Telnet, SNMP v1/v2c/v3, DDNS, DHCP server/client, DHCP Relay, TFTP, System Log, SMTP, ARP response over 802.2 LLC SNAP, Proxy ARP, DNS (client/proxy)
Traffic Management	Flow Control*, Traffic shaping
Filter	IEEE802.1Q VLAN*
Security	IEEE 802.1X/RADIUS, TLS v1.2, HTTPs/SSH, First login password management WLAN AP Security: Share Key, WPA/WPA2-PSK(Pre-Shared Key), WPA/WPA2 Enterprise Encryption: 64/128-bit WEP(Wired Equivalent Privacy), TKIP(WPA-PSK), AES(WPA2-PSK)
Advanced Security	TACACS+, Multiple-user authentication
Time Management	NTP, SNTP, Cellular Time
Redundancy Protocol	WAN/LTE Redundancy
WAN/Routing/NAT/Firewall/ VPN	Routing: RIPv2, OSPFv2, VRRPv2 NAT: 1-1 NAT, NAPT(SNAT/DNAT), DMZ Firewall: Stateful Inspection firewall, IP/Port Filter, MAC Filter* VPN: IPSec, OpenVPN, L2TP, GRE, PPTP*
IIoT Industrial Protocol	Modbus RTU, MQTT, RESTful API
Private Cloud	ATMS, ATMS OTA
Public Cloud	AWS Agent, Azure Agent
Location	Google map, Baidu map
MIB	MIB-II, Entity MIB, AVCOMM private MIB
Utility	AIAS, ANMS, Ping, Traceroute
Serial Communication	TCP Server/TCP Client/UDP mode, TCP Alive check, Force TX Delimiter/Timeout/interval/length, Long Distance Termination
Cellular Configuration (optional modules)	Radio on/off, 4G LTE/3G HSPA configuration, SIM Security, Connection Status, Cellular to Eth-WAN Redundancy, GPS positioning, Backup SIM Retry (1-10 times)
WLAN Configuration (optional modules)	WLAN Basic Settings: Radio on/off, 2.4G 11n/5G 11ac Frequency selection, SSID/Multi-SSID configuration, SSID broadcast, Cellular to WLAN Auto Offload and advanced WLAN settings, 802.1X



Mechanical	
Installation	Wall-mount, Pole-mount
Enclosure Material	Aluminum
GND	Grounding Nut with Washer
Dimension	256 x 306 x 90mm (W x H x D) /without wall-mount poles
Ingress Protection	IP67
Weight	AP402-SCB-AC/ AP402-SCB-NP-AC: ~3.8kg AP402-SCB-DC/ AP402-SCB-NP-DC: ~3.6kg
Environmental	
Operating Temperature & Humidity	-40°C~75°C, 5%~95% Non-Condensing
Storage Temperature	-40°C~85°C
MTBF	>200,000 hours
Warranty	5 years (DC Model), 3 years (AC Model)
Approval	
CE/FCC	CE (EN501214 Level) / FCC Part 15B
Railway	EN50121-4 Compliance





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