

# Outdoor Smart City Box All In One

- PoE+, Firewall VPN Router, LTE/Wireless LAN, Modbus Serial, DI/DO, USB
- Private Cloud- ThingsMaster®; Public Cloud- AWS®/Azure®,
- Over The Air Software- ThingsMaster OTA®

## SCB400/SCB400A

The new generation Smart City Box SCB400 integrates Smart City and Industrial Internet of Thing (IIoT) applications in one IP67 metal enclosure including two IEEE 802.3at PoE+ ports, one GbE WAN port, and SCB400A with one extra serial port, two DIs and one DO in weatherproof connectors. Both have AC or DC powered models. Data can be stored locally in internal USB, or connected remotely by wireless LTE Cat 4/6, LTE M1/NB1, Wireless LAN 802.11 ac/a/n with additional wireless modules.

The outdoor SCB400A can act as an IoT gateway and controller by Modbus Serial and DIO, a wireless LAN AP, a cellular VPN/NAT/Firewall router, and a PoE injector for IP cameras at the same time. Comparing with traditional assembled cabinets, the SCB400/400A brings unique values in saving time/cost in system integration, as well as friendly user interface for large group deployment, management, and status visualization in your mobile device. The data can be sent to public AWS/Azure or user-defined cloud server, or to private IoT platform ThingsMaster by WoMaster.



### Features & Benefits

#### Weatherproof IP67 Design

- IP67 Metal Housing with Effective heat dissipation design for operating in -40~70°C environments
- One RJ-45 GbE WAN port and two PoE+ ports
- (SCB400A) M8 5-pin connector for one RS232/422/485 with Modbus support for sensors / meters
- (SCB400A) M8 5-pin connector for two Digital Inputs from sensor or push button
- (SCB400A) M8 5-pin connector for one Digital Output for Alarm or on/off
- M12 T-code connector
  - DC48V(46~57V) power input
  - AC100~240V Input
- Internal USB for Storage

#### PoE Capability

- Two 10/100M PoE+ 802.3at Ports with 30W/per port
- M12 T-code for high current power source
- Complete PoE management including per-port Power Budget Control, PoE Scheduling and PoE Status
- Up to 60W power budget by AC110V or DC48V power

#### Wireless Expansion

- mPCIe & SIM socket for wireless expansion
- SCB LTE Module and Antenna Kit
  - LTE Cat.4 Cellular Module
  - LTE/GPS Antenna on the top of the box
  - 150M UL, 50M DL, FDD/TDD-LTE
- SCB Industrial WLAN Module
  - N-Type Antenna Socket on the top of the box
  - 5G/2.4G 802.11ac/n Wi-Fi

#### Dynamic Routing with Redundancy Protection

- RIPv1&v2, OSPFv1&v2 for intra-domain routing within an autonomous system
- Efficient unicast/multicast\* static routing
- VRRP guarantees sustainable routing in a single point of failure
- Wireless Redundancy: WAN to LTE redundancy

#### Enhanced Cyber Security for Critical Application

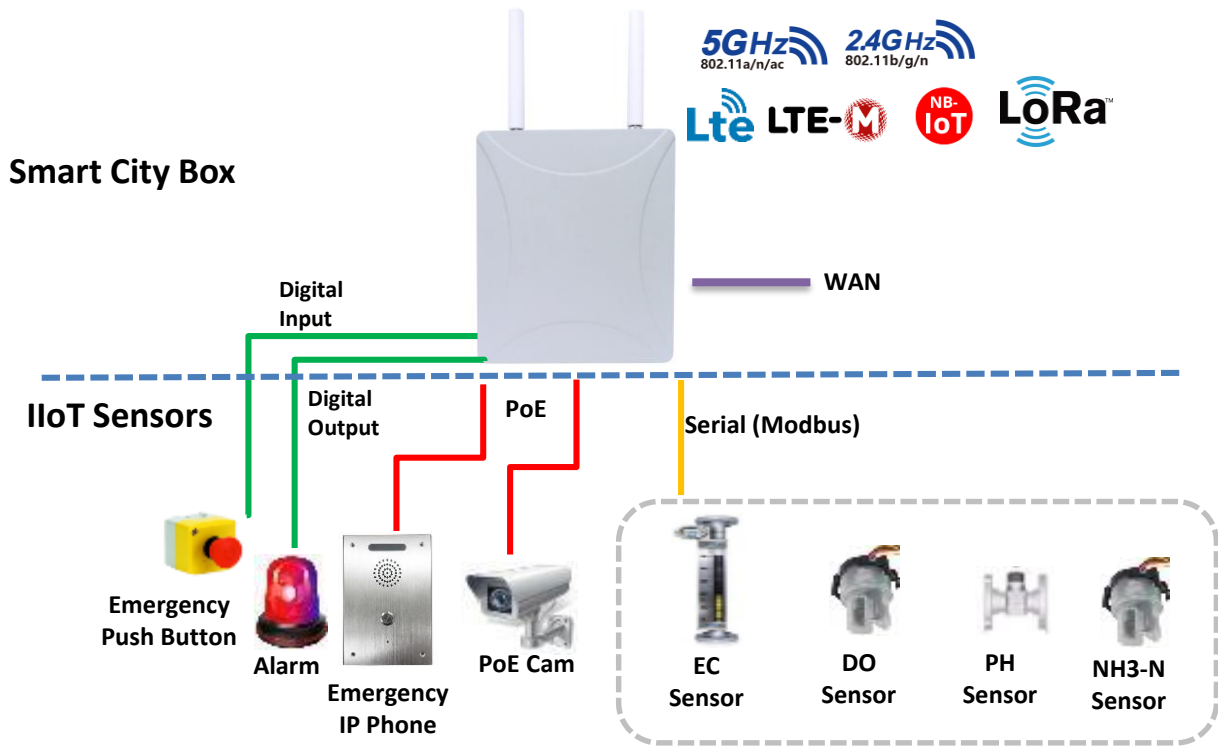
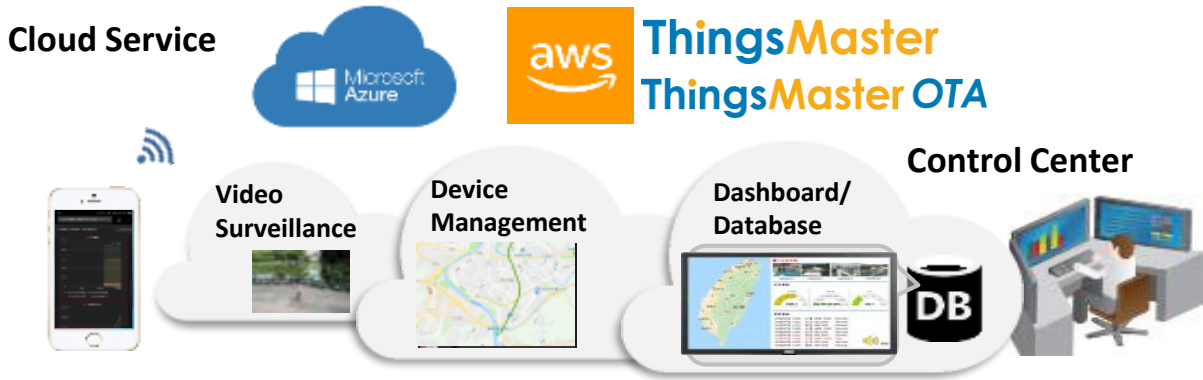
- Firewall with Stateful Inspection
- DMZ, Port forwarding, NAT for LAN protection
- OpenVPN, IPSec, L2TP, GRE for secure connection
- Port Security
- HTTPS/SSH secure login, TACACS+

#### Industrial IoT LAN & Cloud Management

- Various configuration paths, including CGI WebGUI, CLI, SNMP and RMON\*
- WoMaster Software Utilities
  - **NetMaster:** Network Management System with VLAN visualization\* and ERPS\* Ring
  - **ViewMaster:** Configuration Management
  - **ThingMaster:** Interactive monitoring dashboard by Modbus Tag to collect data from Modbus devices
  - **ThingMaster OTA:** Realtime map showing the status, signal strength, location of the remote devices, over-the-air batch device registration, configuration and firmware update\*, alerts on critical events to prevent downtime
- Support MQTT protocol, ready to use AWS/Azure and Private Cloud Agent for cloud management
- LLDP\* for topology control, auto-topology drawing
- USB for easy field configuration and firmware update
- Diagnostic tool includes Ping, TFTP, SNMP Trap, E-mail Alert and System Log
- LTE watchdog, auto-reconnect cellular connection

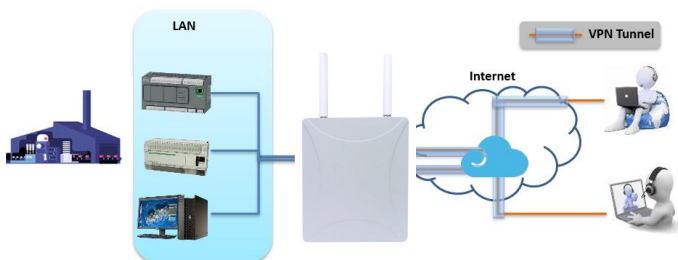


✓ Ready Total Solution for IoT and Smart City



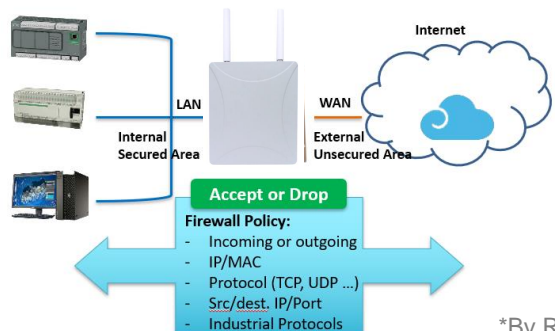
✓ Secured Remote Access by VPN

SCB400 can act as VPN server for data encryption and dynamic remote access. Multiple VPN protocols are supported such as IPSec, OpenVPN, GRE, and L2TP. The channels between multiple networks, ex. private/public/hybrid networks are fully secured and with authentication features.



✓ Cyber Security Guard

A stateful firewall monitor is in place to monitor the state of the connection at all times. Multiple industrial fieldbus protocols, ex. Modbus TCP\*, EtherNet/IP\* are also supported for factory automation applications.



\*By Request

### Secure IoT Modbus Tags

- Tag-based data acquisition with MQTT support
- MQTT client acting as publisher and subscriber
- The latest TLS encryption and X.509 authentication
- Selectable serial port and data type. Sensor alive check and display sensor value.

### GPS/BDS/GLONASS/Galileo

- Latitude
- Longitude
- Altitude
- Speed



Home > IoT > Modbus Device

AWS IoT | Azure IoT | Private IoT | **Modbus Device** | RMS

### Modbus Logging

Modbus Logging  Enable

Name:  // Tag Name

Serial:

Slave ID:

PLC Address:

Function:  // Slave Address

Data Type:

// Data Address, Register Address

### Modbus RTU Slave Tag List

Select	Name	Serial	Slave ID	Address	Function Code	Data Type	Edit	Alive	Value
<input type="checkbox"/>	PM1	1	4	1	03	int16	<input type="button" value="Edit"/>	Yes	10
<input type="checkbox"/>	PM2_5	1	4	2	03	uint16	<input type="button" value="Edit"/>	Yes	13
<input type="checkbox"/>	PM10	1	4	3	03	uint16	<input type="button" value="Edit"/>	Yes	13
<input type="checkbox"/>	CO2	1	1	562	03	uint16	<input type="button" value="Edit"/>	Yes	1107
<input type="checkbox"/>	Temperature	1	1	564	03	int16	<input type="button" value="Edit"/>	Yes	255
<input type="checkbox"/>	Humidity	1	1	566	03	int16	<input type="button" value="Edit"/>	Yes	629
<input type="checkbox"/>	Temperature_f	1	1	1	03	float	<input type="button" value="Edit"/>	Yes	25.490820

Home > GPS > GPS Status

**GPS Status** | GPS Setting

### GPS Status

GPS

Status: OK

Date: 140518

UTC: 035331.0

Latitude: 24 58.4485N

Longitude: 121 32.9141E

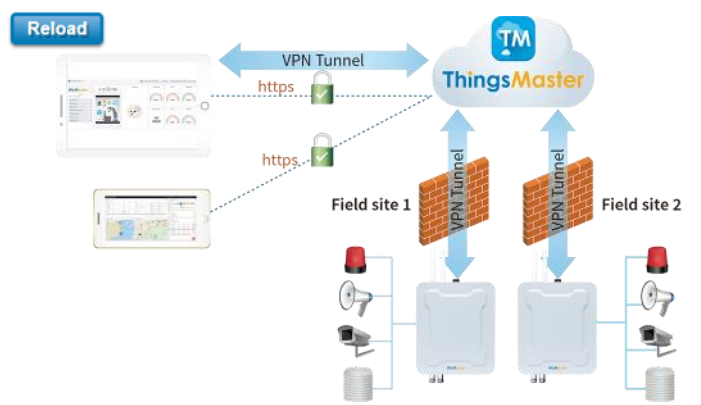
Altitude(m): 110.0

Speed over ground(Km/h): 0.0

Number of satellites: 9

### Secured Multi-sites Management

- N to N VPN
- Latest TLS encryption and X.509 authentication



✓ ThingsMaster OTA (device management over the air)

The OTA agent embedded in SCB400 upgrades device management over the air, anywhere you are and any time you want over your mobile devices. ThingsMaster OTA is a secured local OTA software that can be installed in a private or public server or even QNAP NAS (network attached storage). With OTA, all device information such as location, warning event can be shown in real time. The maintenance such as configuration reload or device reboot can also be run by group.

The screenshot shows the ThingsMaster Device Management OTA interface. It includes a table of devices with columns for device name, ID, status, and location. There are also maps showing device locations and a log of events.

### Batch Configuration and Reboot OTA

Group Selection

Select entities

Import device config

Drop a file or click to select a file to upload



# Ready To Use Cloud Solution



## Smart Energy Solution

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



## Industrial 4.0 Solution

Monitor machine downtime, speed, utilization rate, yield rate, productivity, etc.



## Smart Farming Solution

Monitor silos weights, silos temperature, silos humidity, etc



## Smart Bus Tracking Solution

Monitor bus route, speed, passenger count, fuel etc.



## Smart Environment Solution

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



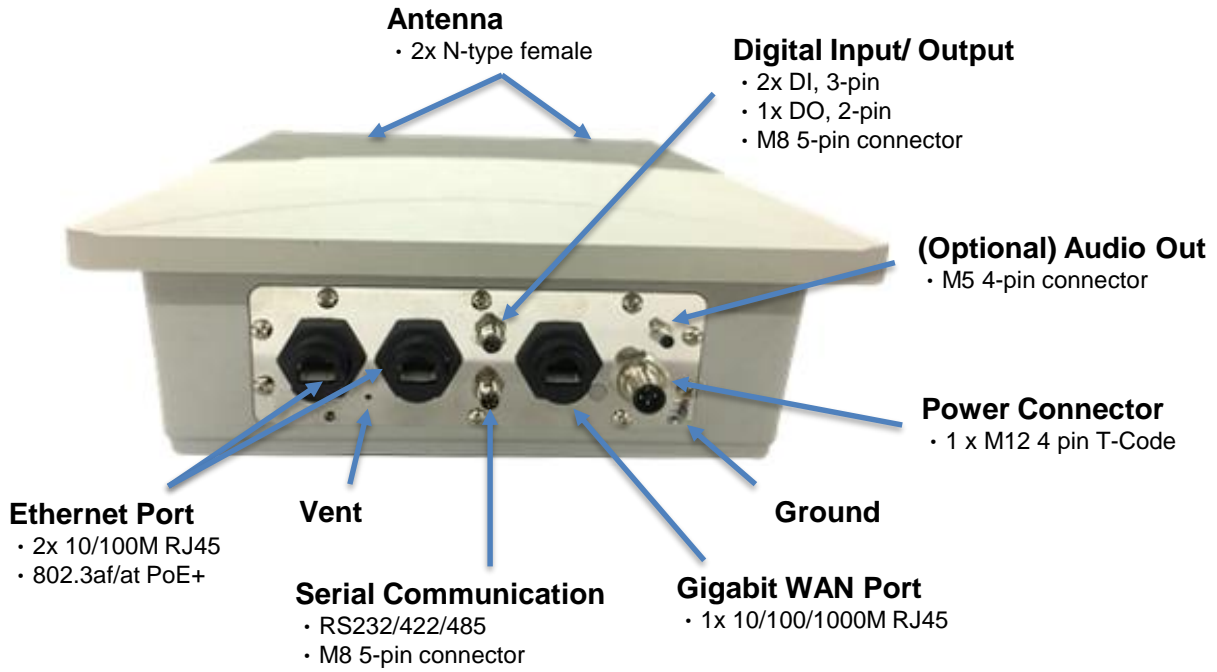
## Smart Metering Solution

Monitor district energy consumed, water consumed, etc.

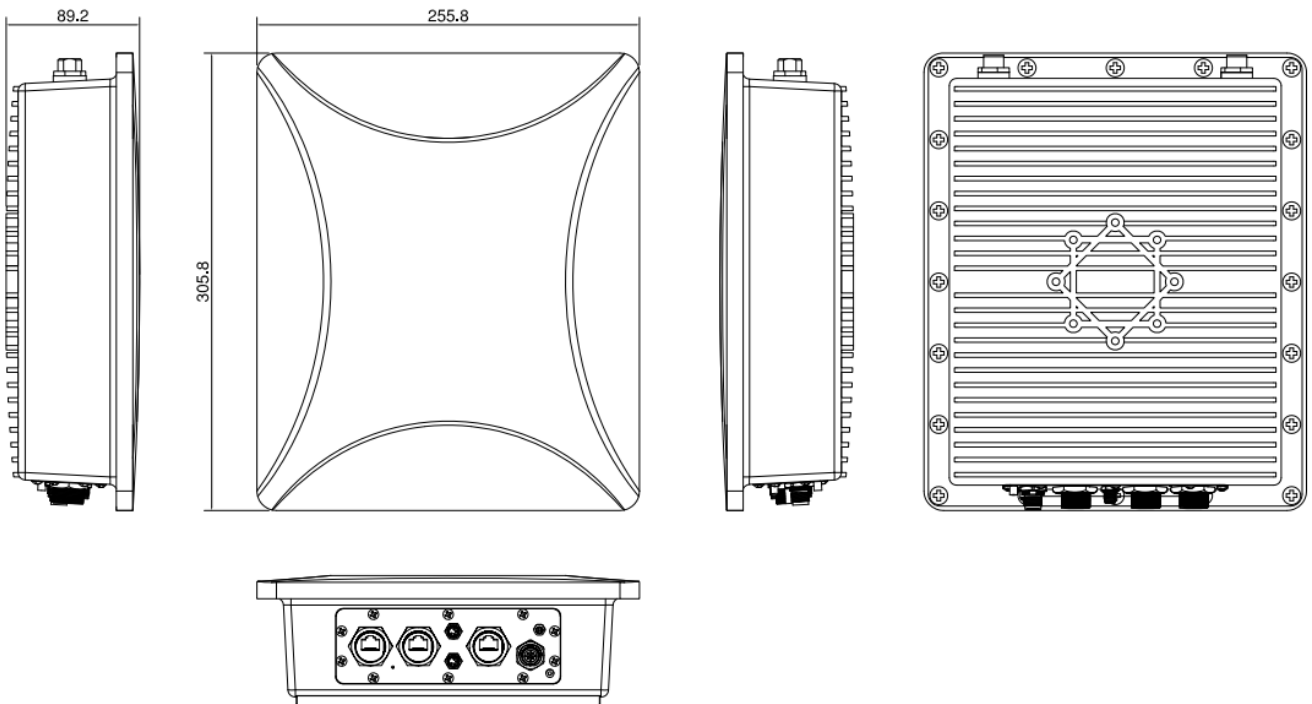


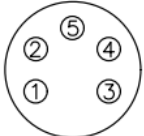
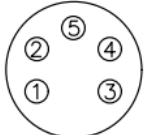
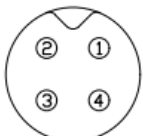


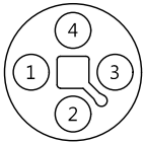
## Interfaces



## Dimensions



Technology																									
<b>Standard</b>	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																									
<b>Ethernet Port</b>	SCB400: 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, Weatherproof RJ-45 connector SCB400-NP: LAN: 2 x 10/100Base-TX Ethernet, Auto MDI/MDI-X, Weatherproof RJ-45 connector WAN: 1 x 10/100/1000Base-T Ethernet, Auto MDI/MDI-X, Weatherproof RJ-45 connector																								
<b>Power Input</b>	Power Input, 4-pin M12 T-code power connector AC Model: 100~240V AC DC Model: 48V, range from 46~57V																								
<b>Serial</b>	1 x Software selectable RS232/422/485 interfaces, M8 5-pin connector 15 KV ESD protection for all signals  <table border="1" data-bbox="997 884 1476 1052"> <thead> <tr> <th>Pin</th> <th>RS232</th> <th>RS485-4w/422</th> <th>RS485-2w</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-</td> <td>TX-</td> <td>Data-</td> </tr> <tr> <td>2</td> <td>TXD</td> <td>RX+</td> <td>-</td> </tr> <tr> <td>3</td> <td>RXD</td> <td>TX+</td> <td>Data+</td> </tr> <tr> <td>4</td> <td>-</td> <td>RX-</td> <td>-</td> </tr> <tr> <td>5</td> <td>GND</td> <td>GND</td> <td>GND</td> </tr> </tbody> </table>	Pin	RS232	RS485-4w/422	RS485-2w	1	-	TX-	Data-	2	TXD	RX+	-	3	RXD	TX+	Data+	4	-	RX-	-	5	GND	GND	GND
Pin	RS232	RS485-4w/422	RS485-2w																						
1	-	TX-	Data-																						
2	TXD	RX+	-																						
3	RXD	TX+	Data+																						
4	-	RX-	-																						
5	GND	GND	GND																						
<b>Digital Input/ Relay</b>	M8 5-pin connector 2 x Digital Inputs, Low: 0~1V, High: 2~30V 1x Dry Relay Outputs, 0.5A/24VDC  <table border="1" data-bbox="1141 1075 1476 1243"> <thead> <tr> <th>Pin</th> <th>DI</th> <th>Relay</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>DI1+</td> <td>-</td> </tr> <tr> <td>2</td> <td>DI2+</td> <td>-</td> </tr> <tr> <td>3</td> <td>-</td> <td>Relay</td> </tr> <tr> <td>4</td> <td>-</td> <td>Relay</td> </tr> <tr> <td>5</td> <td>DI_GND</td> <td>-</td> </tr> </tbody> </table>	Pin	DI	Relay	1	DI1+	-	2	DI2+	-	3	-	Relay	4	-	Relay	5	DI_GND	-						
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1	DI1+	-																							
2	DI2+	-																							
3	-	Relay																							
4	-	Relay																							
5	DI_GND	-																							
<b>Voice (Optional by request)</b>	1x Audio Line Out, M5 4-pin connector  <table border="1" data-bbox="1244 1265 1476 1411"> <thead> <tr> <th>Pin</th> <th>Power</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Line+</td> </tr> <tr> <td>2</td> <td>Not Connected</td> </tr> <tr> <td>3</td> <td>Not Connected</td> </tr> <tr> <td>4</td> <td>Line-</td> </tr> </tbody> </table>	Pin	Power	1	Line+	2	Not Connected	3	Not Connected	4	Line-														
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<b>mPCIe Socket (Reserved for Optional Wireless)</b>	2 x mPCIe sockets mPCIe/USB bus, available for both LTE and 802.11ac/n/g/a/b WLAN expansion Note: Select the optional LTE or WLAN module from accessory list or contact your sales for suggestion.																								
<b>SIM Socket (Reserved)</b>	2 x NANO SIM sockets inside, only available for SCB LTE model Reserved eSIM for project based eSIM requirement																								
<b>Antenna Socket (Reserved)</b>	2 x N-Type female Sockets for SCB LTE or WLAN module expansion																								
<b>USB (Reserved)</b>	Internal 1x USB A-Type socket inside the box Optional by request: Industrial grade USB flash disk as storage																								

Power Requirement											
<b>Power Connector</b>	1 x 4 Pin IP66/67 M12 T-Code power connector <div style="display: flex; align-items: center; margin-top: 10px;">  <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Pin</th> <th>Power</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>V-</td> </tr> <tr> <td>2</td> <td>Not Connected</td> </tr> <tr> <td>3</td> <td>V+</td> </tr> <tr> <td>4</td> <td>Not Connected</td> </tr> </tbody> </table> </div>	Pin	Power	1	V-	2	Not Connected	3	V+	4	Not Connected
Pin	Power										
1	V-										
2	Not Connected										
3	V+										
4	Not Connected										
<b>Power Input Voltage</b>	AC Model: 100~240VAC DC Model: 48VDC (46~57VDC, 50~57VDC suggested for IEEE802.3at) SCB400-NP Series: 24VDC (8~32VDC)										
<b>Reverse Polarity Protect</b>	Yes										
<b>Power Consumption</b>	Max. 12W full traffic without PD loading @ 110VAC Input, suggest to reserve 15% tolerance										
PoE											
<b>Power forwarding mode</b>	802.3at Alternative A										
<b>PoE Power Budget</b>	System: Max 60W@55°C, 30W@70°C Port: 4-pair IEEE 802.3af/at, Max. 30W										
<b>PoE Standard</b>	IEEE 802.3af/at										
<b>Management</b>	System/Port Power Budget Control, PoE Scheduling, Priority, PD Alive Check, PoE Status										
Software											
<b>Management</b>	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)										
<b>Traffic Management</b>	Flow Control, Traffic shaping										
<b>Filter</b>	IEEE802.1Q VLAN										
<b>Security</b>	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)										
<b>Advanced Security</b>	TACACS+, Multi-user authentication										
<b>Time Management</b>	NTP, SNTP, Cellular Time										
<b>Redundancy Protocol</b>	WAN/LTE Redundancy										
<b>WAN/Router/NAT/Firewall/VPN</b>	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*										
<b>IIoT Industrial Protocol</b>	Modbus RTU, MQTT, RESTful API										
<b>Private Cloud</b>	ThingsMaster, ThingMaster OTA										
<b>Public Cloud</b>	AWS Agent, Azure Agent										
<b>Location</b>	Google map, Baidu map										
<b>MIB</b>	MIB-II, Entity MIB, WoMaster Private MIB										
<b>Utility</b>	ViewMaster, NetMaster, Ping, Traceroute										
<b>Serial communication</b>	TCP Server/TCP Client/UDP mode, TCP Alive check, Force TX Delimiter/Timeout/interval/length, Long Distance Termination										
<b>Cellular Configuration (By Optional module)</b>	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)										
<b>WLAN Configuration (By Optional module)</b>	WLAN Basic Settings: Radio on/off, 2.4G 11n/5G 11ac Band and Frequency selection, SSID/Multi-SSID configuration, SSID broadcast, Cellular to WLAN Auto Offload and advanced WLAN settings, 802.1X										
Mechanical											
<b>Installation</b>	Wall-mount, Pole-mount										
<b>Enclosure Material</b>	Aluminum										
<b>GND</b>	Grounding Nut with Washer										
<b>Dimension</b>	256 x 306 x 90mm (W x H x D) / without wall-mount poles										
<b>Ingress Protection</b>	IP67										
<b>Weight</b>	SCB400-AC/ SCB400-NP-AC: ~3.8kg SCB400-DC/ SCB400-NP-DC: ~3.6kg										

Environmental	
Operating Temperature & Humidity	-40°C~70°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 Roadside	EN50121-4 Compliance

## Ordering Information

Model Name	Description
SCB400-AC	Industrial Smart City Box with 2xFE PoE+, 1GT WAN, AC Input
SCB400-DC	Industrial Smart City Box with 2xFE PoE+, 1GT WAN, 48V(46-57V)DC Input
SCB400A-AC	Industrial Smart City Box with 2xFE PoE+, 1GT WAN, 1xSerial+2xDI+1xDO, AC Input
SCB400A-DC	Industrial Smart City Box with 2xFE PoE+, 1GT WAN, 1xSerial+2xDI+1xDO, 48V(46-57V)DC Input
SCB400A-NP-AC	Industrial Smart City Box with 2xFE, 1GT WAN, 1xSerial+2xDI+1xDO, AC Input
SCB400A-NP-DC	Industrial Smart City Box with 2xFE, 1GT WAN, 1xSerial+2xDI+1xDO, 24V(8-32V)DC Input
Package List	
	Product Unit
	Quick Installation Guide
	Mounting Kit Including the Sealing Insert, Clamping Claw, Sealing Nut
	<b>SCB400 Assembly Cable Package</b> 1xM12 T-code Power Cable, 1m 2xM8 5-pin Signal Cable for Serial and 2DI+1DO, 1.5m 3xWaterproof RJ-45 Ethernet Plug, Field-attachable Bayonet Locking type for Ethernet ports

## Optional Accessory

Wireless Accessory	
SCB400 LTE Module and Antenna Kit, EU Band	Industrial SCB400 LTE Cellular Module, EU Band EU: FDD B1/B3/B5/B7/B8/B20, TDD B38/B40/B41, WCDMA: B1/B5/B8, GSM: B3/B8 GNSS- GPS/GLONASS/BeiDou/Galileo Antenna: 1 or 2x Wide Frequency outdoor Omni-Antenna for LTE/GPS * Check LTE band for your country before purchase, pre-installed service is available.
SCB400 LTE Module and Antenna Kit, CN Band	Industrial SCB400 LTE Cellular Module, CN Band CN: FDD B1/B3/B8, TDD B38/B39/B40/B41, TDSCDMA: B34/B39, WCDMA: B1/B8, GSM:900/1800 GNSS- GPS/GLONASS/BeiDou/Galileo Antenna: 1 or 2x Wide Frequency outdoor Omni-Antenna for LTE/GPS * Check LTE band for your country before purchase, pre-installed service is available.
SCB400 LTE Module and Antenna Kit, US Band	Industrial SCB400 LTE Cellular Module, US Band US: FDD B2/B4/B12, WCDMA: B2/B4/B5 GNSS-GPS/GLONASS/BeiDou/Galileo Antenna: 1 or 2x Wide Frequency outdoor Omni-Antenna for LTE/GPS * Check LTE band for your country before purchase, pre-installed service is available.
SCB400 Industrial WLAN Module	Industrial 5G/2.4G 802.11ac/n Wi-Fi 2T2R Module Antenna: 1 or 2x External 2.4G/5G outdoor Omni-Antennas
EN110	Industrial RS485/ModBus_RTU to LoRa Convertor
Antenna Surge Protector	Antenna Surge Protector by request