SE5901 (SDK) Series

1-Port Industrial Ethernet to Serial Embedded Computer

FEATURED HIGHLIGHTS

- Ideal for IoT and IIoT applications.
- Wide -40°C~85°C temperature range for Industrial-grade reliability
- 2 x 10/100Mbps Ethernet port
- 1 x RS-232/422/485 port – baud rate up to 921.6 Kbps
- 1 x USB2.0 high speed OTG port
- Optional 802.3af PoE models can be powered by Ethernet cable
- ATOP customized Linux SDK environment with reliable APIs
- Rugged metal housing with wall or DIN-Rail mount support
- Industrial EMC protection

PRODUCT DESCRIPTION

Providing connectivity for the Internet of Things

ATOP's Industrial Embedded Computer is your ideal flexible Gateway to the Internet of Things. It provides Serial and Ethernet connectivity in a reliable and powerful Industrial Grade platform that can unlock your potential. Based on your specific application, it allowing almost any serial device to be connected, providing and retrieving the data you need to and from the cloud, no matter what provider you're using.

Programmability

Write your customized application in C language and Run it on its powerful Industrial low-power 800MHz ARM Cortex A8 TI Sitara AM3354 CPU. Make flexible use of your peripherals, no matter storage, Serial, or USB are needed.

SE5901 is available as a SDK/BSP. The SDK development environment reserves the maximum flexibility. Bottom to top editable software architecture allowed easily to customize or add the IoT applications for different using scenarios. Included Linux kernel source extend the capability of the kernel layer. Changeable WEB pages allowed to easily customize proprietary style. With the SE5901, it will extend your possibility while building your IoT applications.

Rugged and flexible for advanced developments

SE5901 embeds *high EMC protection, wide temperature operation*, programming and installation flexibility in one device. A dedicated *PoE version* allows you to power the device through Power over Ethernet (IEEE 802.3af) technology, without the need of a separate space consuming power supply.

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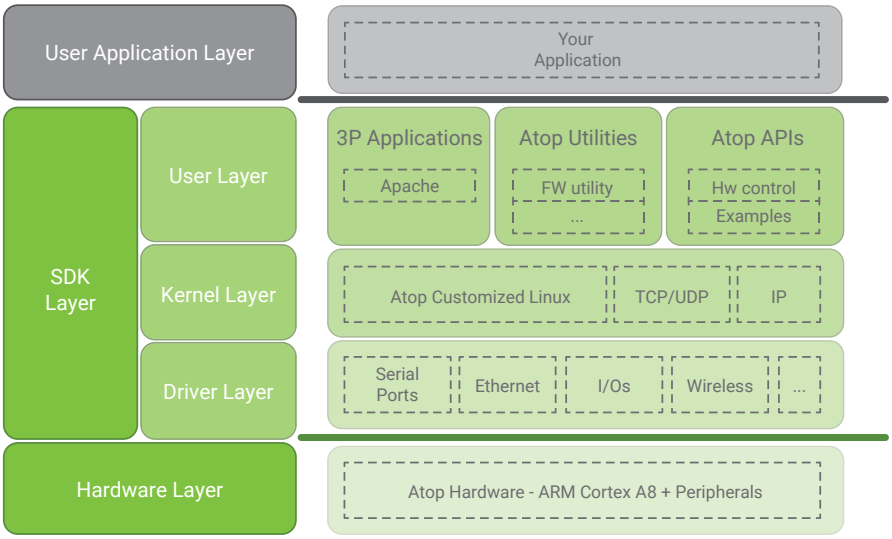
APPLICATION

The **IoT** (Internet of Things) or **IIoT** (Industrial Internet of Things) is a trending topic these days. It's all about bringing devices, sensors, actuators, data and commands to the cloud, with the ultimate goal to improve the quality of life, the services Smart Cities can offer, saving energy or saving money. This requires two things: to vehiculate the collected data to the cloud in a format that can be recognized and processed and to process, compute and analyze all this amount of data in real time.
It is not a concept far from reality. Imagine you'd like to bridge a Modbus Sensor to the cloud. And you'd like to have the application running on the cloud to be able to process multiple sensors' data, and to trigger some event in some specific stations along the network. You may also have the need to override the cloud control and manage the application locally. Any application has its story.

Here at ATOP, we understand these different needs and we are providing you different working models, based on what your needs are.

Use the Standard SDK, programmable embedded computer if:

- You are familiar with Linux OS
- You have ANSI C programming skills
- Your application is strictly time/ performance sensitive
- Your application has very critical exception handling requirements



Our SDK products provide:

- *Ported, proven and tested peripherals (such as I/ Os, Ethernet, Serial, Relays) and integrated drivers*
- *ATOP customized Linux Kernel and network protocols*
- *Ported, debugged and proven third party applications*
- *Utilities and APIs to control the hardware in an easy and effective way*
- *Opened software architecture to create your own system image*
- *Linux source code to extend the kernel capability*
- *Modifiable WEB contents to customize proprietary WEB style*
- *Example of source code*

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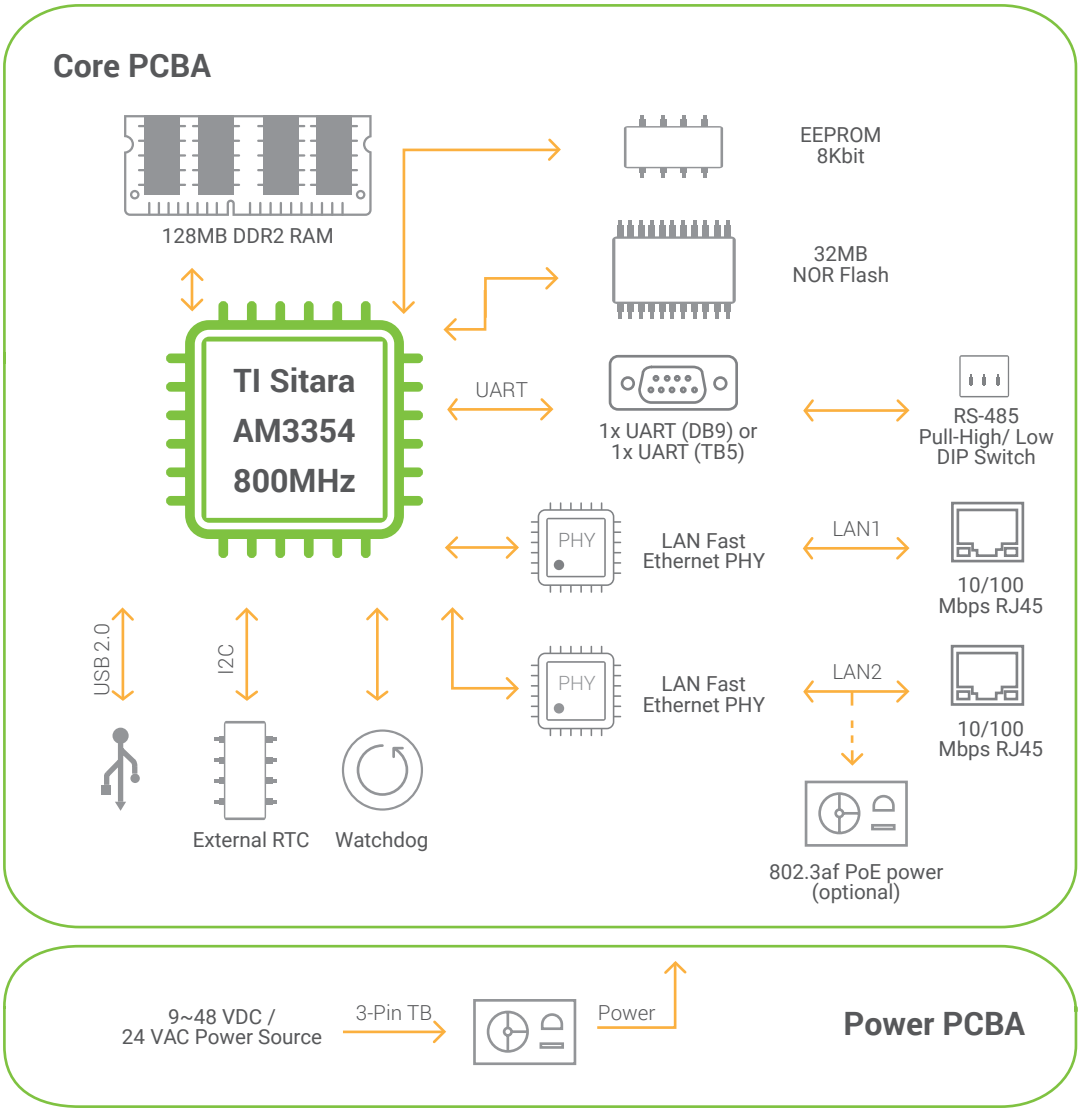
BLOCK DIAGRAM



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SPECIFICATIONS

Hardware Specifications		
CPU	Texas Instruments Sitara ARM Cortex A8 AM3354 800MHz	
Flash	64 MB NOR Flash	
RAM	SDK version: 256 MB DDR2	
EEPROM	24LC64	
Watchdog	ADM706	
Real Time Clock (RTC)	Yes - with external chip	
Buzzer	Yes	
Console port	Yes - on-board connector	
Reset button	Yes	
Network Interface		
Standards	IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT(X)	
Ethernet Ports	2x 10/100BASE-TX RJ-45	
Power over Ethernet	IEEE 802.3af on LAN2 (PoE version only)	
Serial Interface		
Connector	D-Sub9 RS-232/485 software selectable (DB model) 5-Pin 5.08mm Terminal Block	
Ports	1 port RS-232/422/485 (2 and 4-wire)	
Pull-high / Pull-low /Term. resistors	Selectable by DIP switch.	
Configuration	Baud Rate Data Bits Stop Bits Flow Control	50 ~ 921,600bps 7, 8 1, 2 None, Xon/Xoff, RTS/CTS (RS-232 only)
Other interfaces		
USB ports	1 x USB A Type (USB 2.0) - High-Speed OTG + power	
Software		
Bootloader	U-boot 2014.07	
Linux kernel	Linux 3.14.26	
Linux toolchain	Linux 32 bits toolchain gcc (C/C++ PC cross compiler), glibc	
Linux sample code	RS232, RS485, RTC, watchdog, LED, Buzzer, Button, network socket	
Power		
Input Voltage	9~48 VDC 24 VAC	
Connector	3-Pin 5.08mm Lockable Terminal Block	
Power Consumption	0.65A @ 9VDC (6 W Max)	
Reverse Polarity Protection	Yes	

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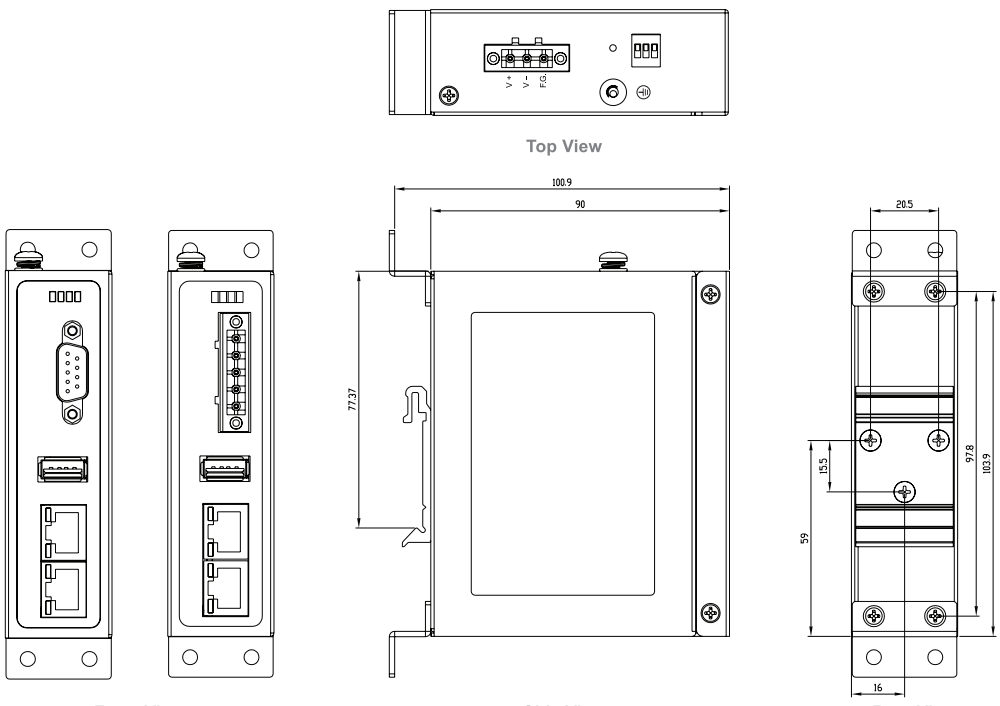
Environmental limits	
Operating Temperature	-40°C~85°C (-40°F~185°F)
Storage Temperature	-40°C~85°C (-40°F~185°F)
Ambient Relative Humidity	5%~95%, (Non-condensing)
Mechanicals	
Housing	IP30 protection, SPCC metal housing
Dimensions(W x H x D)	32 x 110 x 90 mm (1.26 x 4.33 x 3.54 in)
Installation	DIN-Rail or Wall-Mount (optional kit)
Weight	400 g
Reset Button	Yes

DIMENSIONS & LAYOUT



Top View

Front View

Side View

Rear View

Bottom View

※ The wall mount kit illustrated in this document is for reference only and not included in the package.

REGULATORY APPROVALS

Regulatory Approvals				
Safety	EN60950-1:2006			
EMC	FCC Part 15, Subpart B, Class A EN 55032, EN 55024, EN 61000-3-2, EN 61000-3-3, EN 61000-6-2, EN 61000-6-4			
Test	**Item**		**Value**	**Level**
IEC 61000-4-2	ESD	Contact Discharge Air Discharge	±8kV ±15kV	4 4
IEC 61000-4-3	RS	Radiated (enclosure)	10 V/m	3
IEC 61000-4-4	EFT	DC Power Port Signal Port	±2.0KV ±2.0KV	3 3
IEC 61000-4-5	Surge	DC Power Port DC Power Port Signal Port	Line-to Line±1.0KV Line-to Earth±2.0KV Line-to Earth±2.0KV	3 3 3
IEC 61000-4-6	CS	Conducted (enclosure)	10 V rms	3
IEC 61000-4-8	PFMF	Enclosure	10 A/m	3
IEC 61000-4-11	DIP	Power Port	-	A
Shock Drop (Freefall) Vibration	IEC 60068-2-27 IEC 60068-2-32 IEC 60068-2-6			
RoHS II	Yes			
MTBF	21.16 Years			
Warranty	5 years			

ORDERING INFORMATION

Ordering information		
Model name	**Part Number**	**Description**
SE5901-DB	Contact Headquarter	1-port RS-232/422/485 Ind. Serial Device Server, DB9
SE5901-TB	Contact Headquarter	1-port RS-232/422/485 Ind. Serial Device Server, TB5
SE5901-PoE-DB	Contact Headquarter	1-port RS-232/422/485 Ind. Serial Server, DB9,PoE Pwrd
SE5901-PoE-TB	Contact Headquarter	1-port RS-232/422/485 Ind. Serial Server, TB,PoE Pwrd

Optional Accessoriese		
Model name	**Part Number**	**Description**
UN315-1212 (US-Y)	50500151120003G	Y-Type power adaptor, 100~240VAC input, 1.25A @ 12VDC output, US plug, LV6
UNE315-1212 (EU-Y)	50500151120013G	Y-Type power adaptor, 100~240VAC input, 1.25A @ 12VDC output, EU plug, LV6
ADP-DB9(F)-TB5	59906231G	Female DB9 to Female 3.81 TB5 Converter
WMK-315-Black	70100000000050G	Black Aluminum Wall Mount Kit