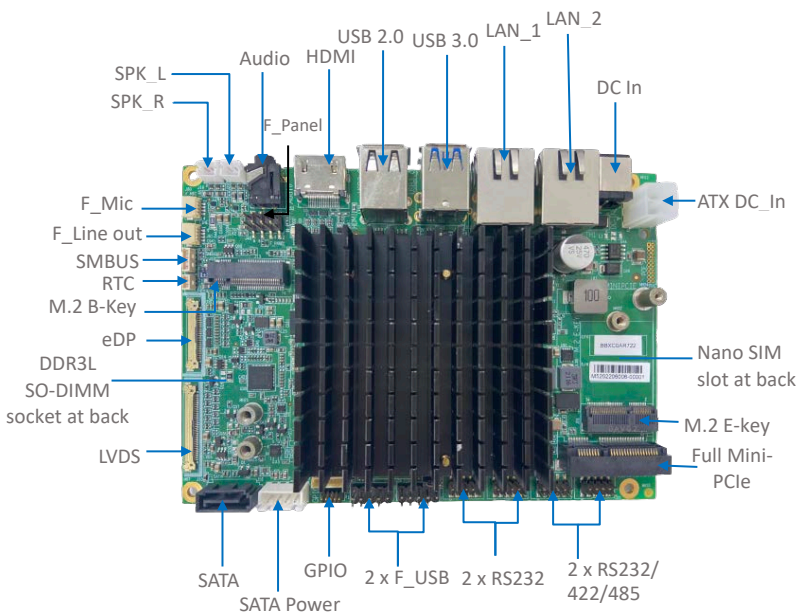# VT-SBC35-APL Single Board Computer

Product Brief

VT-SBC35-APL Single Board Computer features a thinner and smaller form factor that is easy to integrate. It is powered by the high-performance Intel® Atom™ processor with large storage capacity. It supports multi-channel display outputs and high-definition video encoding and decoding technology to provide outstanding visual experience. Meanwhile customers have the choice between wired and wireless network accesses. The board provides rich on-board interfaces and customer expansion options to meet different application scenarios including smart retail, self-service terminals, industrial automation, intelligent medical health, and digital media.

Featuring high flexibility and high performance, the board could work under extreme environments with extended temperatures ranging from -20℃ to +60℃, making it a reliable solution for industrial IoT applications.

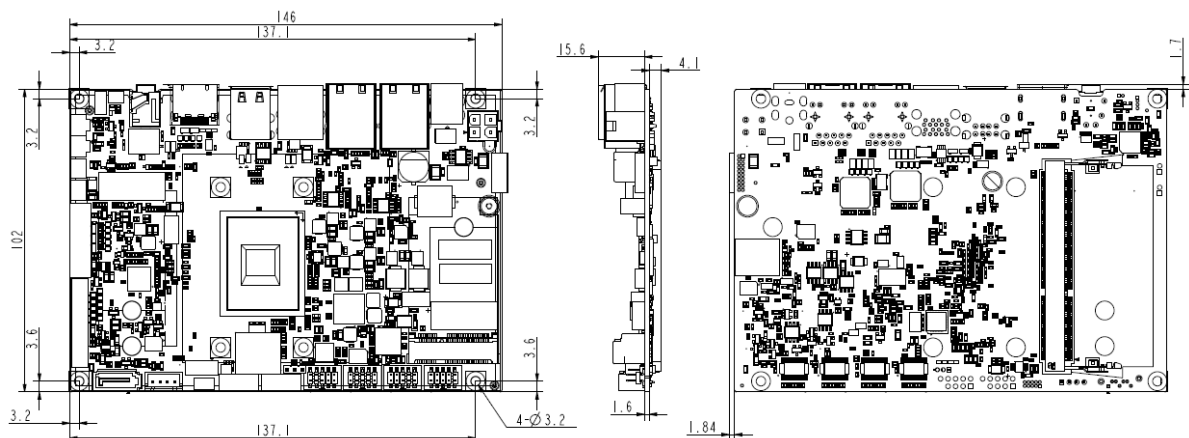## Exterior and Features

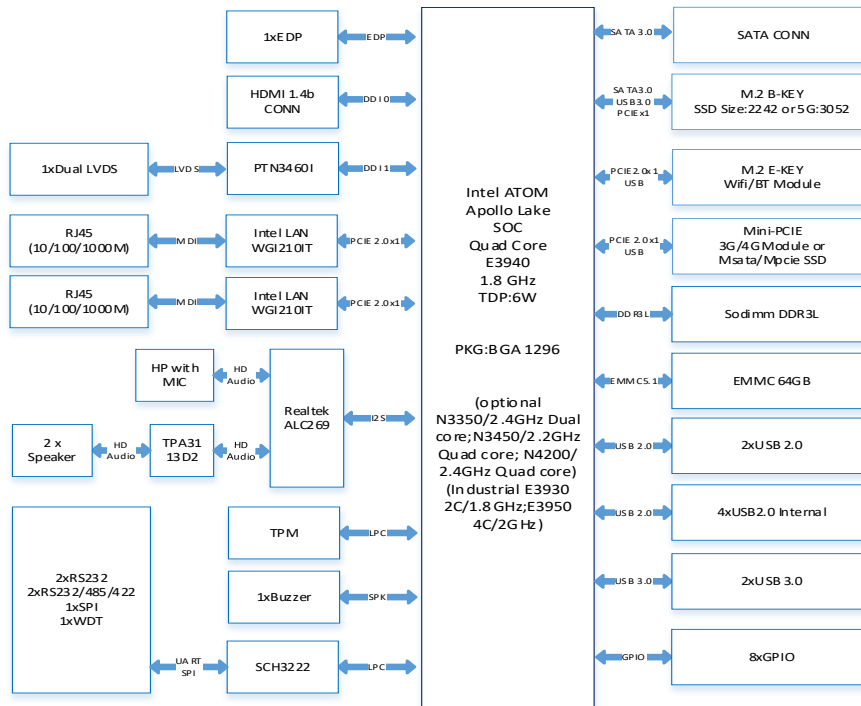| VT-SBC35-APL |
| --- |
| Up to 8GB DDR3L SODIMM |
| Rich interfaces, flexible expansion |
| SDK for the development of self-defined apps |
| High-definition video encoding and decoding |
| RTC supported |
| TPM module |
| USB 2.0 & USB 3.0 |
| Wide temperature range supported |

VT-SBC35-APL Single Board Computer Datasheet

VT-SBC35-APL			
System	CPU	Intel® ATOM™, APL-I E3940 Quad-core processor, 1.8GHz (Max)	
	Memory	DDR3L SO-DIMM socket, up to 8GB	
	Storage	64GB eMMC (Optional) 1 x SATA 3.0, 6Gb/s, up to 2TB Expandable by an M.2 B-key slot (2242), up to 256GB	
Communication	Ethernet	2 x RJ45, 10/100/1000-Base T, Intel I210	
Media	Display	1 x HDMI (Standard), 3840 x 2160 @30Hz 1 x Dual LVDS (up to 1.4b), 3840 x 2160 @30Hz 1 x eDP, 4096 x 2160 @60Hz	
	Audio	1 x 3.5mm Combo audio jack 1 x Audio connector	1 x Mic connector 2 x Speaker connector
I/Os	Serial	2 x RS232/RS422/RS485	2 x RS232
	USB	2 x USB 2.0 host Type-A 2 x USB 3.0 host Type-A	4 x Built-in USB 2.0
	GPIO	8 x GPIO	
	SMBus	1 x SMBus	
	RTC	Supported	
	Watchdog	Supported	
Expansion	M.2/Mini PCIe	1 x Full Mini-PCIe for 4G/LTE expansion with a SIM slot 1 x M.2 B-key (2242, PCIe x4/SATA for SSD expansion) 1 x M.2 E-key (2230, PCIe x1/USB 2.0 for Wi-Fi & BT expansion)	
Security	TPM	1 x TPM module	
Power	Input	12V-36V DC	
	Consumption	10W+	
Software	Operating system	Windows 10, Linux	
	OTA tool	BlueSphere OTA	
	SDK	Available	
Mechanical	Dimensions	146mm x 102mm	
	Cooling mode	Fanless, heat sink	
Environment Condition	Temperature	Operating: -20℃~+60℃	Storage: -40℃~+85℃
	Humidity	RH 5%-95% (Non-condensing)	
	Certifications	FCC, IC, RoHS	

Product Outlines

Block Diagram

Left Blocks	Connection	Center	Connection	Right Blocks
1xEDP	EDP		SATA 3.0	SATA CONN
HDMI 1.4b CONN	DDIO		SATA3.0 USB3.0 PCIE x1	M.2 B-KEY SSD Size:2242 or 5G:3052
1xDual LVDS → PTN3460I	LVDS / DDI1	Intel ATOM Apollo Lake SOC Quad Core E3940 1.8 GHz TDP:6W	PCIE 2.0x1 USB	M.2 E-KEY Wifi/BT Module
RJ45 (10/100/1000M) → Intel LAN WGI210IT	MDI / PCIE 2.0x1	PKG:BGA 1296	PCIE 2.0x1 USB	Mini-PCIE 3G/4G Module or Msata/Mpcie SSD
RJ45 (10/100/1000M) → Intel LAN WGI210IT	MDI / PCIE 2.0x1		DDR3L	Sodimm DDR3L
HP with MIC → Realtek ALC269	HD Audio / I2S	(optional N3350/2.4GHz Dual core;N3450/2.2GHz Quad core; N4200/2.4GHz Quad core)	EMMCS.1	EMMC 64GB
2 x Speaker → TPA3113D2 → Realtek ALC269	HD Audio	(Industrial E3930 2C/1.8GHz;E3950 4C/2GHz)	USB 2.0	2xUSB 2.0
2xRS232 2xRS232/485/422 1xSPI 1xWDT			USB 2.0	4xUSB2.0 Internal
TPM	LPC		USB 3.0	2xUSB 3.0
1xBuzzer	SPK		GPIO	8xGPIO
SCH3222	UART SPI / LPC			

Company Profile

Since 2002 established by two Silicon Valley entrepreneurs, Vantron Technology has been a pioneer in connected IoT devices and IoT platform solutions. Today, Vantron serves countless customers all over the world, some of them are Fortune 500 companies. Products lines cover edge intelligent hardware, IoT communication devices, industrial displays and BlueSphere cloud device management platform.

Vantron has 20 years of experience in R&D of embedded edge intelligent hardware like SOM board and motherboard, and provided users with various embedded solutions with ARM and X86 architecture. From Linux to Windows, from embedded to desktop level, from gateway to server. At the same time, we provide our users with system clipping, driver transplantation and other services.

Vantron IoT communication devices support multi-protocol connection of industrial equipment, edge computing of local data. Abundant wired and wireless connectivity make remote operations and maintenance possible. From electricity and transportation to smart retail, medical and warehousing, Vantron IoT communication device can be deployed anywhere in any business section. Vantron believes its IoT solution to help many companies finish their digital transformation, efficiency of manufacturing and productivities have been improved significantly.

Vantron industrial display systems, ARM and X86 series, are equipped with Rockchip, NXP, MediaTek, Intel and other high-performance processors. It supports various operating systems such as Windows, Linux, and Android. Diverse wireless communications keep your device online all the time. Multiple installation methods make it suitable for a variety of application scenarios. Features like waterproof, dustproof, shatter resistant guarantee the best performance in any environment.

Vantron BlueSphere device management platform, a software product, is playing a big role in Vantron overall IoT solution. Today, Vantron puts more focus on offering complete cost effective, leading-edge yet reliable solutions to help customers carry out their visions.