

Embrace Edge AI,
Empower Industrial Digitalization.

EC3576-C Series AI System on Module

· RK3576J ARM SoC

· 4 x A72 + 4 x A53

· 6TOPs NPU

· 8K video codec, 8K@30fps display out



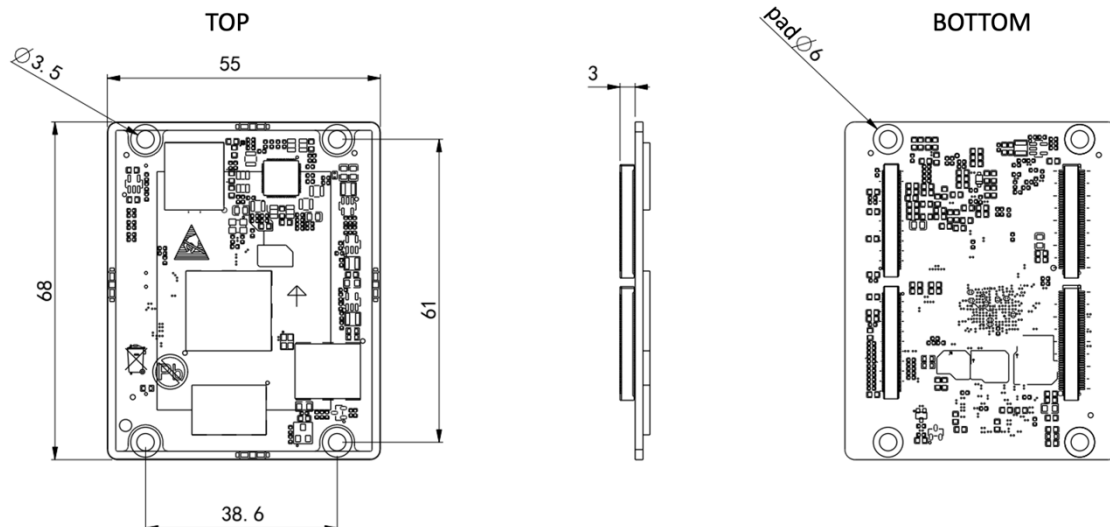
EC3576-C system on module (SoM) is powered by the Rockchip RK3576 processor. This high-performance, low-power, feature-rich application processor is tailored for the AIoT and industrial markets. With 4 x ARM Cortex-A72 and 4 x ARM Cortex-A53 cores, plus a built-in 6TOPs NPU, it enhances your AI applications. Octa-core 64-bit high-performance ARM processor, with rich high-speed interfaces such as PCIe/USB3.0/SATA/GMAC and low-speed interfaces such as CAN FD/DSMC/UART/SPI/I2C/I3C. One platform can be quickly deployed with multiple applications.

The EC3576-C SoM is a mid-to-high-end solution designed for edge computing, intelligent terminals, industrial control, HMI, multimedia interaction, visual AI, and other application scenarios.

Feature and Advantage

- 8nm process, quad-core Cortex-A72 + quad-core Cortex-A53
- ARM Mali-G52 MC3 GPU, embedded high performance 2D image acceleration module
- 6.0 TOPs NPU, enable various AI applications
- H.265 decoding up to 8K resolution
- Multiple display interfaces: HDMI/eDP, MIPI DSI, Parallel, EBC, DP
- Supports three displays working together with different content
- Various high-speed peripherals: PCIe 2.1, USB 3.2, CAN-FD, etc.
- The SoM designed with 4x100-pin ultra thin connectors, combined connector height is only 1.5mm

Dimensions (mm)



Product Specifications

Hardware Specifications	
Item	EC3576-C
Basic Specifications	
Processor	Rockchip RK3576J ARM: 4 × Cortex-A72@2.3GHz + 4 × Cortex-A53@2.2GHz NPU: 6TOPS INT8, supports INT4/INT8/INT16/FP16/BF16/TF32 GPU: ARM Mali-G52 MC3 VPU: Hard Encode: H264, H265, 4K@60fps Hard Decode: H264, H265, VP9, AV1, AVS2, 8K@30fps or 4K@120fps
RAM	8GB LPDDR4
ROM	256GB UFS
Power Input	DC 5V
Operating Temperature	-40°C ~ +85°C
Package	Board to board connector(4*100pin, 0.4mm pitch, combined height 1.5mm)

Software Specifications	
Item	EC3576-C
OS	
OS	Android 14
OS flashing method	USB OTG
Data Acquisition Protocol(*DSA)	
Industrial Protocol	Modbus RTU Master/Slave, Modbus TCP Master/Slave, Ethernet/IP, ISO on TCP, OPC UA Client/Server, Mitsubishi MC3C/3E/3C OverTCP, Mitsubishi CPU Port, FINS UDP, HostLink, PPI
Electricity Protocol	DLT645-2007, IEC101/104, DNP3.0
Other Protocol	BACnet, CNC
Maintenance and Management	
Upgrade Method	Supports patent upgrade mechanism, local or remote firmware upgrade
Log	Support local system logs, remote logs, and important log power-off preservation
Remote Management	InHand DeviceLive, HTTP, HTTPS, SSH etc.
DeviceLive Cloud	Supports cloud-based parameter configuration, container management, application and firmware management

*DSA: The Device Supervisor Agent (DSA), developed by InHand Networks, is a cutting-edge intelligence software designed to operate on Edge Computer products. It enables clients to quickly implement data collection, processing, protocol conversion, and cloud connectivity through a "zero code/low code" approach. If you need the DSA application on the Edge Computer product, please contact us too bta in the DSA software package.

Hardware Specifications		
Item	EC3576-C	
Functional Specifications		
Interface	QTY	Spec
HDMI/eDP TX	1	Supports 1x HDMI/eDP TX (multiple xed) HDMI: HDMI v2.1, up to 4K@ 120Hz Supported for m: RGB/YUV444/YU V422/YUV420 8/10-bits Supports CEC, ARC, HDCP v2.3 and HDCP v1.4 eDP: eDP v1.3 contains
MIPI DSI	1	Highspeed (HS), Full-speed (FS), and Low-speed (LS) Supports 1x MIPI DSI-2 TX D-PHY v2.0 or C-PHY v1.1: 4 data lanes on D-PHY 3 data trios on C-PHY Up to 2560×1600@60Hz Supported for m: RGB (up to 10bit)
Parallel	1	Supports RGB/BT.656/BT1120 Up to 1920×1080@60Hz Supported for m: RGB (up to 10bit)
EBC	1	Supports E-Ink EPD (Electronic paper Display) Supports 2560×1920 hard decoding Supported data bus width: 16-bit Up to 32 level gray scale Supports Direct mode, LUT mode and 3-window mode Supports window display mode
DP TX	1	Supports one USB/ DP combination USB: USB 3.2 Gen1x1, Dual-Role Device(DRD); DisplayPort TX: DisplayPort v1.4, supports 1/2/4 lanes with lanes speed including 162, 27, 5.4 and 81Gbps; Up to 4K@120Hz, supported for m: RGB/YUV444/UV422/YUV420 8/10-bit; Supports MST; Supports USB Type-C with DP Alt; Supports HDCP v2.3 and HDCP v1.3;
USB3.2	2	1x USB Type-C can support DP Alt mode; 1x Combo high speed interface
MIPI-CSI	5	5x CSI-2 Four of them are 2x D-PHY v1.2 data-lane, 2.5Gbps/lane, and they can combine to two interfaces each with 4 data lanes; Another one supports 4 D-PHY data-lane or 3 C-PHY trios: D-PHY v2.0, 4.5Gbps/lane C-PHY v1.1, 2.5Gbps/trio
DVP	1	8/10/12/16-bit standard DVP, up to 150MHz data input; Supports BT.601/BT.656 and BT.1120 VI
SAI	≤ 5	SAI 0/1 support 4 TX lanes and 4 RX lanes; SAI 2/3/4 support 1 TX lane and 1 RX lane; Supports I2S/TDM/PCM mode (2) Sampling rate up to 192KHz Audio resolution up to 16~32bits
Digital Audio Codec	1	Supports 2x DAC, each DAC can support 3 blending modes; Supports I2S/PCM, master/slave mode; 16-bit sampling rate; Supports volume controlling
SDIO	≤2	SDIO v3.0, 4-bits
Ethernet	≤2	2x GMAC, pin out by RGMII/ RMI10/ 100/ 1000Mbps
USB 2.0 OTG	2	
UART	≤12	2 built-in 64 bits FIFO for TX and RX; Supports 5/6/7/8-bit serial trasceving, up to 4Mbps; All 12 UARTs can support flow control and RS485
CAN-FD	≤2	Compliant with CAN and CAN-FD; Supports CAN standard frame and extended frames trasceving; Supports 8192-bit FIFO
SPI	≤5	Supports master mode and slave mode, each can support two chips selection
I2C	≤9	7-bit and 10-bit address modes; Standard mode data rating 100kbit/s, and HS mode rating 400kbit/s
PWM	≤16	Supports up to 16 on-chip PWMs with interrupt operation, supports capturing mode

Model	CPU	CPU Clock Speed	RAM	ROM	Operating Temperature
EC3576-C	4 x A72 + 4 x A53	A72@2.3GHz A53@2.2GHz	8 GB	256 GB	-40°C ~ +85°C

About Us

InHand Networks is a leading IoT solutions provider founded in 2001, dedicated to driving digital transformation across industries and empowering customers to unlock their full potential and achieve accelerated growth.

We specialize in delivering industrial-grade connectivity solutions for diverse sectors, such as enterprise networks, industrial and building IoT, digital energy, smart commerce, and mobility. Our comprehensive product portfolio and services cater to various applications worldwide, including smart manufacturing, smart grid, intelligent transportation, smart retail, etc. With a global footprint spanning over 60 countries, we serve customers in China, the United States, France, Germany, the United Kingdom, Italy, and beyond.



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