

Embrace Edge AI, Empower Industrial Digitalization.

EC3576-C Series Al System on Module



• RK3576J ARM SoC • 4 x A72 + 4 x A53

· 6TOPs NPU

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

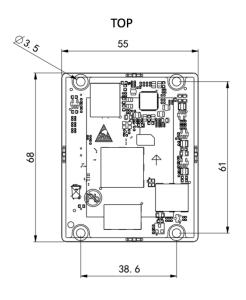
EC3576-C system on module(SoM) is powered by the Rockchip RK3576 processor. This high-performance, low-power, feature-rich application processor is tailored for the AloT and industrial markets. With 4 x ARM Cortex-A72 and 4 x ARM Cortex-A53 cores, plus a built-in 6TOPS NPU, it enhances your Al applications. 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.

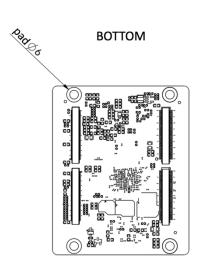
Feature and Advantage

- 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 Al 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: PCle 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 Speci	fications			
Item	EC3576-C			
Basic Specifications				
Processor	Rockchip RK35763 ARM: 4 × Cort ex-A72@ 2.3 GHz + 4 × Cort ex-A53@2. 2 GHz NPU: 6TO P5 INT8, sup ports INT4/IN T8/IN T16/FP16/BF16/TF 32 GPU: ARM Mail-G52 MC3 VPU: Hard Encode: H.264, H.265, 4 K@ 60 fps Hard Decode: H.264, H.265, VP9, AVI, AVS 2, 8 K@ 30 fps or 4 K@ 120 fps			
RAM	8GB LPDDR4			
ROM	256GB UFS			
Power Input	DC 5V			
O per ating Temperature	-40°C ~+85°C			
Package	Board to board connector(4*100 pin, 0.4mm pitch, combined height 1.5mm)			

Software Specifications					
Item	EC3576-C				
OS					
os	And roid 14				
OS flashing method	USB OTG				
Data Acquisition Protocol (*DSA)					
Industrial Protocol	Modbus RTU Master/Slave, Modbus TCP Master/Slave, Ether Net/IP, ISO on TCP, OPC UA Client/Server, Mitsubishi MC 3C/3E/3C OverTCP Mitsubishi CPU Port, FINS UDP, Host Link, PPI				
E lectricity Protocol	DL T645-2007, IEC101/104, DNP3.0				
O the r Prot ocol	BACnet, CNC				
Maintenance and	Management				
Upgrade Met hod	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.				
De viceLive Cloud	Supports cloud-based parameter configuration, container management, application and firmware management				

*DSA:The DeviceSupervisor Agent (DSA), developed by InHand Networks, is a cutting edge intelligencesoftware designed to operate on Edge Computer products. It enables client s to quickly implement data collection, processing, protocol conversion, and cloud connectivity through a "zero code/low code" a prorea of 1 you need the DSA application on the EdgeComputer product, please contact us to obtain the DSA software package.

Hardware Sp	ecifications	5				
Item						
Functional Sp	ecifications					
HDMI/eDPTX 1 MIPI DSI 1		Spec Supports 1x H DMI/eD PTX (multiple xe d) HD MI: HD MIv2.1, up to 4K@ 120H z Supported for m: RGB/YUV44.4/YU V4.22/YUV420 B/10-bits				
		Supports CEC, ARC, HDCP v2.3 and HDCP v1.4 eD P. eD Pv1.3 cont ains Highspeed (HS), Full-speed (FS), and Low-speed (LS) Supports 1x MIPI DS I-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 x160 0@ 60H z Supported for m: RGB(up to 10 bit)				
Paral le I	1	Supports RGB/BT.656/BT1120 Up to 1920×1080@ 60Hz Supported for m: RGB(up to 10 bit)	3x VOP, can support up to 3 displays with different			
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	content			
DP TX	1	Supports one USB/DP combination USB:USB32 Genlx1, Dual-Role Device(DRD); DisplayPort TX DisplayPortv1.4, supports 1/2/4 lanes with lane speed including 1.62, 2.7, 5.4 and 8.16 lps; Up to 4-K@12OH2, supported form: RGB/VIV.44.4/FUV.422/VIV.4208/10- bit; Supports MST; Supports USB Type-C with DP Alt; Supports HDCP v2.3 and HDCP v1.3;				
USB32 2 MIPI-CSI 5		1x USBType-C can support DP. Alt mode; 1x Combo high speed interface				
		Sx CSI-2 Four of them a re 2x D-PHY v12 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 v1.1,2.5Gsps/trio	Can support up to 5 CSI work together			
DVP	1	8/10/12/16-bit standard DVP, up to 150MHz data in put; Supports BT.601/BT.656 and BT.1120VI				
SAI	≤5	SAI 0/1 support 4TX lanes and 4RX lanes; SAI 2/3/4 support 1TX lane and 1RX lane; Supports I2S/TDM/PCM mode (2) Sampling rate up to 192KHz Audioresolution up to 16-32bits				
Digital Audio 1 Codec 1		Supports 2x DAC, each DAC can support.3 blending modes; Supports IZS/PCM, master/slave mode; 16-bit sampling rate; Supports volume controlling				
SDIO	≤2	SD IO v3.0,4-bits				
E the rne t	≤2	2x GM AC, pin out by RGMII/RMIţ 10/10 0/ 100 0MI	pps			
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 supportflow control and RS485				
CAN-FD ≤2		Compliant with CAN and CAN-FD; Supports CAN standard frame and extended frames transcelving. Supports 8192-bit FIFO				
SPI	≤5	Supports master mode and slave mode, each ca selection	ı can support two chips			
12C	≤9	7-bit and 10-bit address modes; Standard mode data rating 100kbits/s, and H5 mode rating 400kbits/s				
PWM	M ≤16 Supports up to 16 on-chip PWMs with interrupt operation, supports capturing mode					

Ordering Guide

Model	СРИ	CPU Clock Spæd	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

In Hand 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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