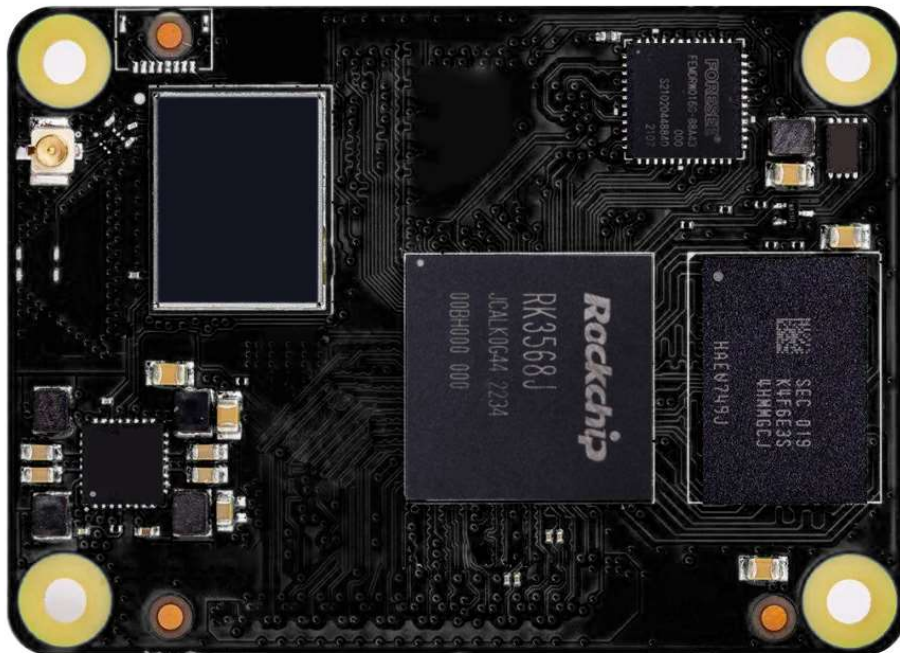


深圳金亚太科技有限公司

Shenzhen Geniatech Co.,Ltd.

SPECIFICATION

MODEL:XPI-3568-CM4



Confirmation

APPROVED BY GENIATECH		
PREPARED BY 编写	CHECKED BY 审核	APPROVED BY 批准

Please return the original copy after approved by your company with seal and signature.
请在贵公司盖章并签字后寄回正本一份。

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COMMENTS 确认意见	APPROVED BY 批准签字	COMPANY SEAL 盖章

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Revision History

VERSION	DATE	BOARD ID	PAGE	DESCRIPTION	AUTHOR
V1.0	20230325			Initial Version	

1. GENERAL DESCRIPTION

The XPI-3568-CM4 is a SOM board with fully compatible with Raspberry Pi CM4 module by Geniatech based on the Rock-Chip 3568 platform, it is suitable for the field of smart home applications, programming education for teenagers and other IoT projects.

This product's key features including a Rock-Chip RK3568 high-performance and low power 64-bit quad-core processor, HDMI display support at resolutions up to 4KP60 , hardware video decode at up to 4KP60, hardware video encode at up to 1080P60, 1GB LPDDR, up to 8GB, Type-C for USB OTG, Bluetooth 5.0, dual-band 2.4/5 GHz wireless LAN.

Below is the detailed specification

(I) Form factor: 55mm*40mm

(II) Processor: Rockchip RK3568 with Quad-core Cortex-A55 up to 1.8GHz

(III) Memory: 1GB LPDDR RAM(up to 8GB) , 8GB eMMC flash (up to 128GB)

(IV) Display:

- HDMI interface (up to 4Kp60 supported)
- 4-lane MIPI DSI display interface
- 4-lane MIPI CSI camera interface

(V) Support Android 11.0, Linux (Debian 10) or Raspberry PI OS.

(VI) Connectivity:

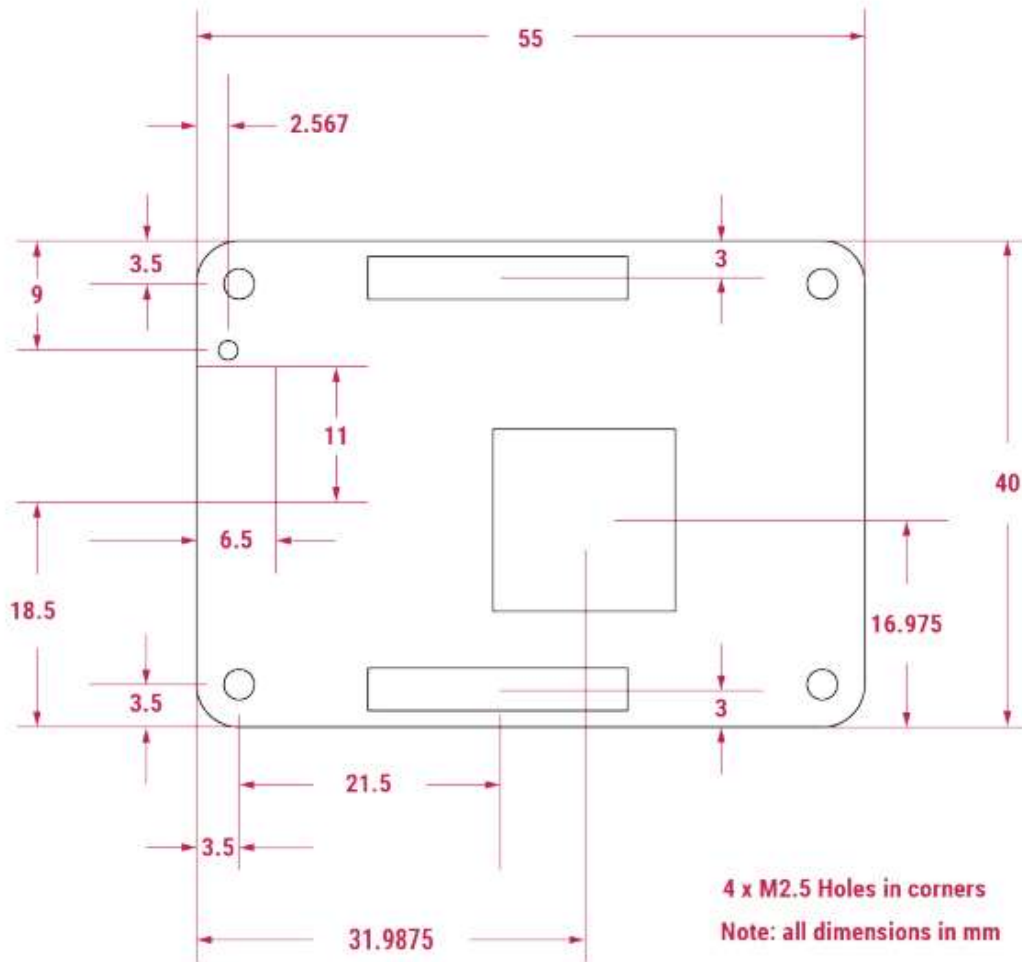
- Optional wireless LAN, 2.4GHz and 5.0GHz IEEE 802.11b/g/n/ ac wireless, Bluetooth 5.0, BLE with onboard and external antenna options
- Onboard Gigabit Ethernet PHY supporting IEEE1588
- 1 × USB 2.0 interface
- PCIe Gen 2 x1 interface
- 28 GPIO signals
- SD card interface for SD card or external eMMC (for use only with Compute Module 4 variants without eMMC)

2. PRODUCT OVERVIEW

Below picture is for reference only, please prevail in kind.



3. BOARD DIMENSIONS



4. SPECIFICATIONS

CHIPSET	RK 3568	
MARKET AREA	Global	
Processor	OS	Android 11/Debian 10 /Raspberry PI OS
	CPU	Quad-core ARM Cortex-A55 CPU up to 1.8GHz
	GPU	ARM G52 2EE GPU; Supports OpenGL ES 1.1/2.0/3.2. OpenCL 2.0. Vulkan 1.1 Embedded high-performance 2D acceleration hardware
	NPU	Integrated RKNN NPU AI accelerator, 1Tops@INT8

		Supports one-click switching of Caffe/TensorFlow/TFLite/ONNX/PyTorch/Keras/Darknet
	LPDDR4	1G (up to 8GB optional)
	EMMC FLASH	8GB eMMC (up to 128GB Optional)
NETWORK	Wired Network	Onboard Gigabit Ethernet PHY supporting IEEE1588
	WiFi	WiFi Module 2.4G/5.8G
	Bluetooth	BT5.0(integrated in the WiFi module)
Interface	HDMI Out	*1
	USB	*1 USB 2.0
	MIPI-CSI	*1(4 Lane)
	MIPI DSI	*1(4 Lane)
	PCIe	*2
	GPIO	*1 Standard 40-pin GPIO header Can be expanded to UART, SPI, I2C ,PWM function
Adapter	DC 5V / 2A	
Dimensions	65*30mm	

5. SUPPORT FORMATS

Audio

- I2S0 with 8 channel
 - Up to 8 channels TX and 8 channels RX path
 - Audio resolution from 16bits to 32bits
 - Sample rate up to 192KHz
 - Provides master and slave work mode, software configurable
 - Support 3 I2S formats (normal, left-justified, right-justified)
 - Only for HDMI inside
- I2S1 with 8 channel
 - Up to 8 channels TX and 8 channels RX path
 - Audio resolution from 16bits to 32bits
 - Sample rate up to 192KHz
 - Provides master and slave work mode, software configurable
 - Support 3 I2S formats (normal, left-justified, right-justified)
 - Support 4 PCM formats (early, late1, late2, late3)
 - I2S and PCM mode cannot be used at the same time
- I2S2/I2S3 with 2 channel
 - Up to 2 channels TX and 2 channels RX path
 - Audio resolution from 16bits to 32bits
 - Sample rate up to 192KHz
 - Provides master and slave work mode, software configurable

- Support 3 I2S formats (normal, left-justified, right-justified)
- Support 4 PCM formats (early, late1, late2, late3)
- I2S and PCM mode cannot be used at the same time
- PDM
 - Up to 8 channels
 - Audio resolution from 16bits to 24bits
 - Sample rate up to 192KHz
 - Support PDM master receive mode
- TDM
 - supports up to 8 channels for TX and 8 channels RX path
 - Audio resolution from 16bits to 32bits
 - Sample rate up to 192KHz v Provides master and slave work mode, software configurable
 - Support 3 I2S formats (normal, left-justified, right-justified)
 - Support 4 PCM formats (early, late1, late2, late3)
- Voice Activity Detection(VAD)
 - Support read voice data from I2S/PDM
 - Support voice amplitude detection v Support Multi-Mic array data storing
 - Support a level combined interrupt

Video Codec

- Video Decoder
 - H.265 HEVC/MVC Main10 Profile yuv420@L5.1 up to 4096x2304@60fps
 - H.264 AVC/MVC Main10 Profile yuv400/yuv420/yuv422/@L5.1 up to 4096x2304@60fps
 - VP9 Profile0/2 yuv420@L5.1 up to 4096x2304@60fps
 - VP8 version2, up to 1920x1088@60fps
 - VC1 Simple Profile@low, medium, high levels, Main Profile@low, medium, high levels, Advanced Profile@level0~3, up to 1920x1088@60fps
 - MPEG-4 Simple Profile@L0~6, Advanced Simple Profile@L0~5, up to 1920x1088@60fps
 - MPEG-2 Main Profile, low, medium and high levels, up to 1920x1088@60fps
 - MPEG-1 Main Profile, low, medium and high levels, up to 1920x1088@60fps
 - H.263 Profile0, levels 10-70, up to 720x576@60fps
- Video Encoder
 - H.264/AVC BP/MP/HP@level4.2, up to 1920x1080@60fps
 - H.265/HEVC MP@level4.1, up to 1920x1080@60fps (4096x4096@10fps with TILE)
 - Support YUV/RGB video source with rotation and mirror

JPEG CODEC

- JPEG decoder
 - Decoder size is from 48x48 to 65536x65536
 - Support YUV400/YUV411/YUV420/YUV422/YUV440/YUV444
 - Support 1920x1080@120fps

- Support MJPEG
- JPEG encoder
 - Baseline Non-progressive
 - up to 8192x8192
 - up to 90 million pixels per second

6. PRECAUTIONS FOR USE

1. Relative humidity: 10% ~ 90% .
2. Storage temperature: 0 ~ 85°C (or -40°C~105°C)
3. Operation temperature: commercial (0 °C ~60 °C)/ Industrial -40°C~85°C
4. Do not squeeze、 distort or disassemble the board.
5. Keep the board away from static electricity .
6. Keep the board away from water and other liquid.
7. Clean the board with soft and clean dry cloth when it's dirty.
8. Don't use long connect wires which may affect performance and image quality.