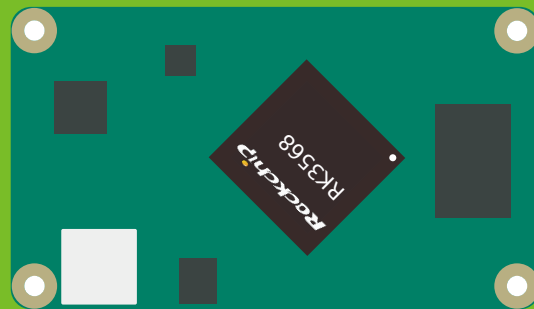

Radxa ROCK 3 Industrial Compute Module

A rich feature embedded system-on-module

Revision 1.0



ROCKPi Trading Limited

2022-03-04

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1 Introduction

Radxa ROCK3 Industrial Compute Module(Radxa CM3 Industrial, CM3I) is an SoM(System on Module) by Radxa based on Rockchip RK3568 or RK3568J SoC in a small form factor at 70mm x 40mm size, integrating CPU/PMU/DRAM/STORAGE/Wireless. Radxa CM3I offers out of box cost-effective solution for multiple purpose applications, accelerates customer's product development. It has the following features:

1.1 Quad core 64 bits High Performance Solution

Radxa CM3I is powered by Rockchip RK3568(J) SoC with 64bits Quad Cortex A55 low power core up to 2.0Ghz, supports up to 8GB RAM and up to 128GB eMMC. With a simple carrier board(4 layer base board is possible with all functions), the customer can quickly put the prototype into production.

1.2 Rich interfaces

Support I2C, SPI, UART, ADC, PWM, GPIO, Ethernet, PDM, I2S, MIPI, SATA, eDP as well as PCIe 2.0/3.0, USB 3.0 high bandwidth buses.

1.3 Multiple display capability

Tripple Video Output Process engine, support tripple display output to any three of: HDMI, eDP, 1x MIPI DSI, 1x MIPI DSI/LVDS combo, resolution up to 4096x2304p60 + 2048x1536p60 + 1920x1080p60.

1.4 Powerful multimedia utility

Support 4K VP9 and 4K 10bits H264/H265 video decoding, up to 60FPS

Support multiple 1080P video formats decoding including VC-1, MPEG-1/2/4, VP8

Support 1080P encoding to H.264, VP8 formats

1.5 Small size and low power

4x 100PIN board to board connector in 70mm x 40mm size, provides industrial compatible form factor and pinout, saves board space.

1.6 Support multiple OS

Support Ubuntu / Debian / Buildroot / Yocto / Android.

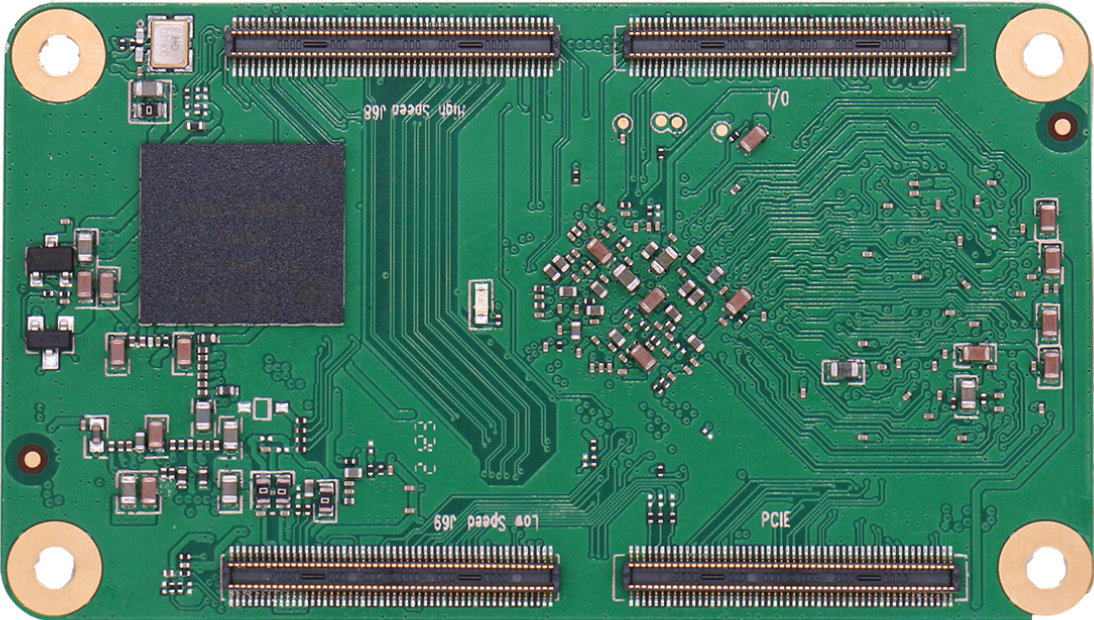
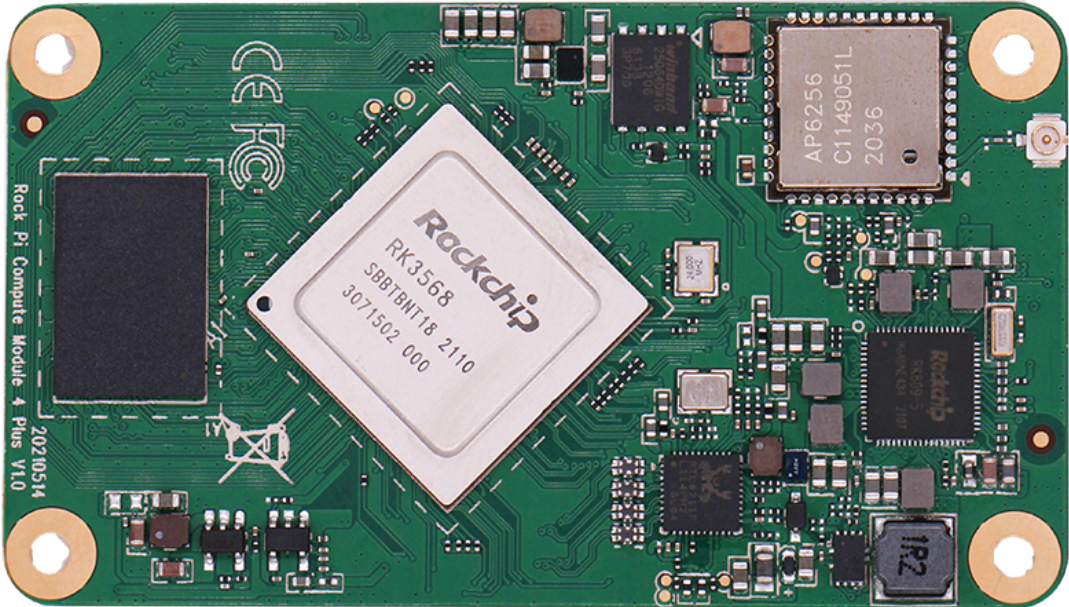
1.7 Open documents and source code

Source code, documents, tools and utilities are freely available, community and commercial support to help you put prototype into production.

1.8 Widely used in varies applications

Ideal SoM for Robotics, HMI, Vending Machines, Smart Home, IOT Gate Way, Industrial Controls, Medical Equipments etc.

2 Photo

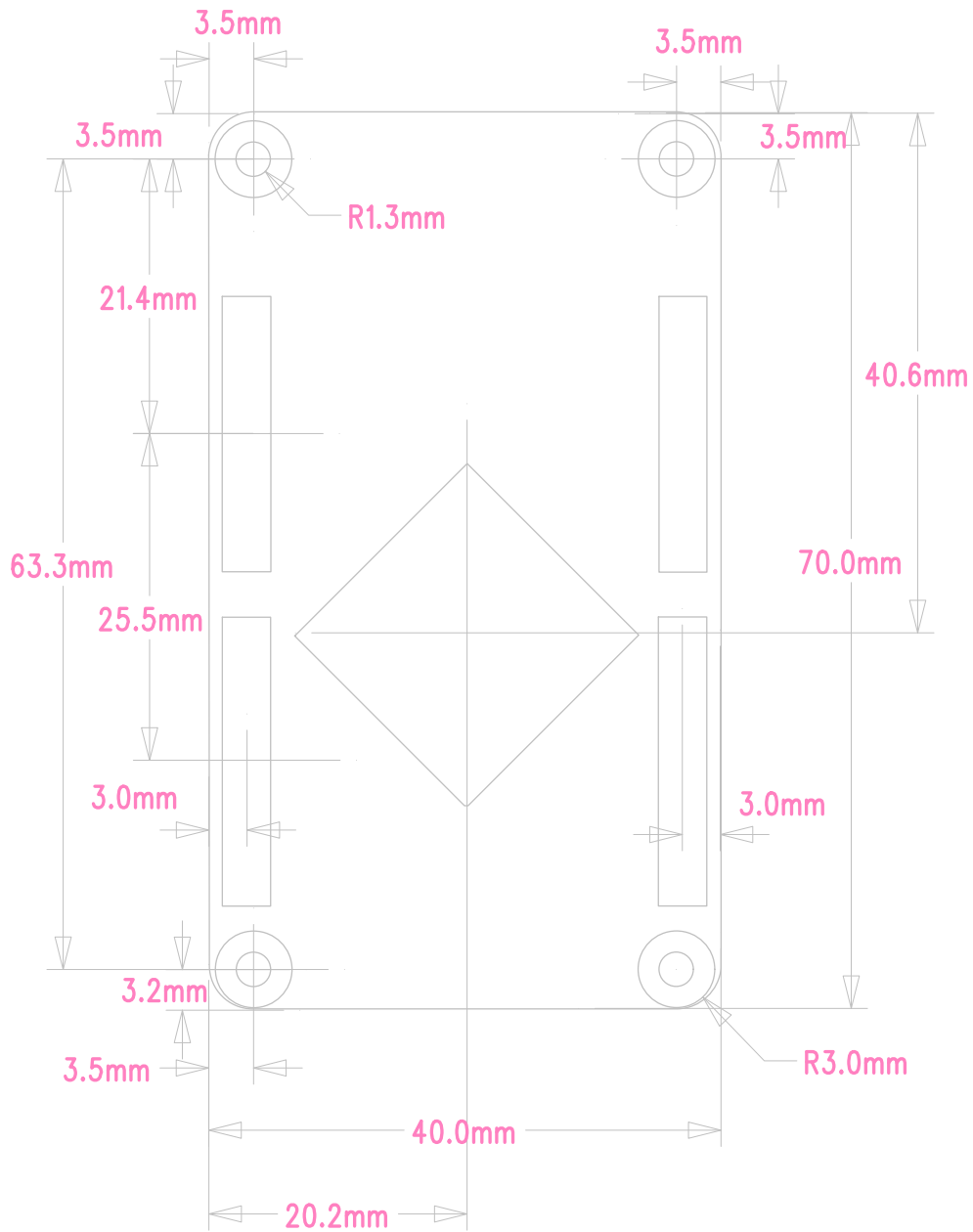


3 Specification

Specification

Form factor:	70 mm × 40 mm
Processor:	Rockchip RK3568(J), Quad core Cortex-A55 (ARM v8) 64-bit SoC @ 2.0GHz
Memory:	1GB, 2GB, 4GB or 8GB LPDDR4 (depending on variant)
Connectivity:	<ul style="list-style-type: none"> • Optional wireless LAN, 2.4GHz and 5.0GHz IEEE 802.11b/g/n/ac wireless, Bluetooth 5.0, BLE with external antenna support • 1x Onboard Gigabit Ethernet PHY, 1x Gigabit Ethernet MAC • 2 × USB 2.0 port (highspeed) • 1 x USB 3.0 HOST port (5Gbps), 1 x USB 3.0 OTG port (5Gbps) • 1 × PCIe 1-lane Host, Gen 2 (5Gbps) • 1 x PCIe 2-lane(1x2, 1x1+1x1) Host, Gen 3 (16Gbps) • 3 x SATA ports, one shared with USB 3 HOST, one shared with PCIe, one shared with USB 3 OTG • 50 × GPIO supporting
Video:	<ul style="list-style-type: none"> • 1x HDMI up to 4K x 2K@60HZ • 1x eDP four lanes, 2.7Gps per lane • 2x MIPI DSI four lanes, 1.6Gbps per lane • 1x LVDS four lanes(muxed with MIPI DSI0)
Audio:	<ul style="list-style-type: none"> • LINEOUT • I2S • PDM, support mic array
Multimedia:	<ul style="list-style-type: none"> • VP9/H.264/H.265 decode 4K@60HZ • H.264/H.265 encode 1080P@100HZ • OpenGL ES 3.2/OpenCL 2.0/Vulkan 1.1 GPU
Input power:	5V DC
Connector	4x 100P 0.4mm pitch B2B connector
Operation temperature	<ul style="list-style-type: none"> • none J model(RK3568): 0° to 60° Celsius degree • J model(RK3568J): -40° to 85° Celsius degree
Production lifetime:	Radxa CM3 Industrial will remain in production until at least Sep 2032

4 Dimension



5 Availability

Radxa guarantees availability Radxa CM3 Industrial until at least September 2032.

6 Order Info

Operation temperature	Wireless	RAM	eMMC	SKU	
0° to 60° Celsius degree	No	1G	-	RM118-D1E0	
			8G	RM118-D1E8	
			16G	RM118-D1E16	
			32G	RM118-D1E32	
		2G	-	RM118-D2E0	
			8G	RM118-D2E8	
			16G	RM118-D2E16	
			32G	RM118-D2E32	
		4G	-	RM118-D4E0	
			8G	RM118-D4E8	
			16G	RM118-D4E16	
			32G	RM118-D4E32	
	8G	64G	RM118-D4E64		
		128G	RM118-D4E128		
		-	RM118-D8E0		
		8G	RM118-D8E8		
16G	16G	RM118-D8E16			
	32G	RM118-D8E32			
	64G	RM118-D8E64			
	128G	RM118-D8E128			
Yes	1G	-	RM118-D1E0W		
		8G	RM118-D1E8W		
		16G	RM118-D1E16W		
		32G	RM118-D1E32W		
	2G	-	RM118-D2E0W		
		8G	RM118-D2E8W		
		16G	RM118-D2E16W		
		32G	RM118-D2E32W		
	4G	-	RM118-D4E0W		
		8G	RM118-D4E8W		
		16G	RM118-D4E16W		
		32G	RM118-D4E32W		
8G	64G	RM118-D4E64W			
	128G	RM118-D4E128W			
	-	RM118-D8E0W			
	8G	RM118-D8E8W			
16G	16G	RM118-D8E16W			
	32G	RM118-D8E32W			
	64G	RM118-D8E64W			
	128G	RM118-D8E128W			

Operation temperature	Wireless	RAM	eMMC	SKU	
-40° to 85° Celsius degree	No	1G	-	RM118-D1E0J	
			8G	RM118-D1E8J	
			16G	RM118-D1E16J	
			32G	RM118-D1E32J	
		2G	-	RM118-D2E0J	
			8G	RM118-D2E8J	
			16G	RM118-D2E16J	
			32G	RM118-D2E32J	
		4G	-	RM118-D4E0J	
			8G	RM118-D4E8J	
			16G	RM118-D4E16J	
			32G	RM118-D4E32J	
	8G	64G	RM118-D4E64J		
		128G	RM118-D4E128J		
		-	RM118-D8E0J		
		8G	RM118-D8E8J		
Yes	1G	-	RM118-D1E0WJ		
		8G	RM118-D1E8WJ		
		16G	RM118-D1E16WJ		
		32G	RM118-D1E32WJ		
	2G	-	RM118-D2E0WJ		
		8G	RM118-D2E8WJ		
		16G	RM118-D2E16WJ		
		32G	RM118-D2E32WJ		
	4G	-	RM118-D4E0WJ		
		8G	RM118-D4E8WJ		
		16G	RM118-D4E16WJ		
		32G	RM118-D4E32WJ		
8G	64G	RM118-D4E64WJ			
	128G	RM118-D4E128WJ			
	-	RM118-D8E0WJ			
	8G	RM118-D8E8WJ			
	16G	RM118-D8E16WJ			
	32G	RM118-D8E32WJ			
	64G	RM118-D8E64WJ			
	128G	RM118-D8E128WJ			

7 Support

For support please see the hardware documentation section of the [Radxa Wiki](#) website and post questions to the [Radxa forum](#).