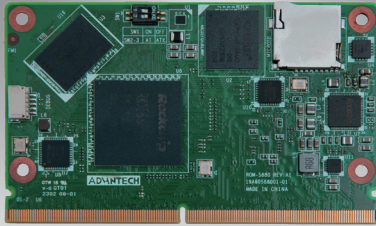


ROM-5880

Rockchip RK3568 Cortex®-A55 SMARC 2.1 Computer-on-Module



Features

- Rockchip RK3568 Arm Quad Cortex-A55 up to 2.0GHz
- Onboard 2/4GB LPDDR4 memory and 16/32GB eMMC
- Built-in NPU with processing performance of up to 0.8 TOPS
- Supports 1 x HDMI 2.0 4K, 1 x signal LVDS or 1 x MIPI-DSI
- Supports 4K H.264/H.265 video decoder
- 2 x USB 3.0, 2 x USB 2.0, 4 x UART, 14 x GPIO
- 2 x PCIe 3.0, 1 x SATA, 1 x MIPI CSI, 2 x Gigabit LAN
- Supports Linux Debian 10 & Android 12



Introduction

Advantech ROM-5880 SMARC 2.1 Computer-on-Module is powered by the Rockchip RK3568 SOC, which includes a Quad-Core Arm Cortex-A55 processor and Arm Mali-G52 3D graphics engine. It provides a rich display interface: HDMI 4K @ 60Hz, LVDS or DSI, or eDP to meet specific requirements. It also features USB 3.0, PCIe 3.0, SATA, Gigabit Ethernet, and MIPI-CSI for embedded applications. It is the ideal solution for POS, vending, infotainment, and media applications.

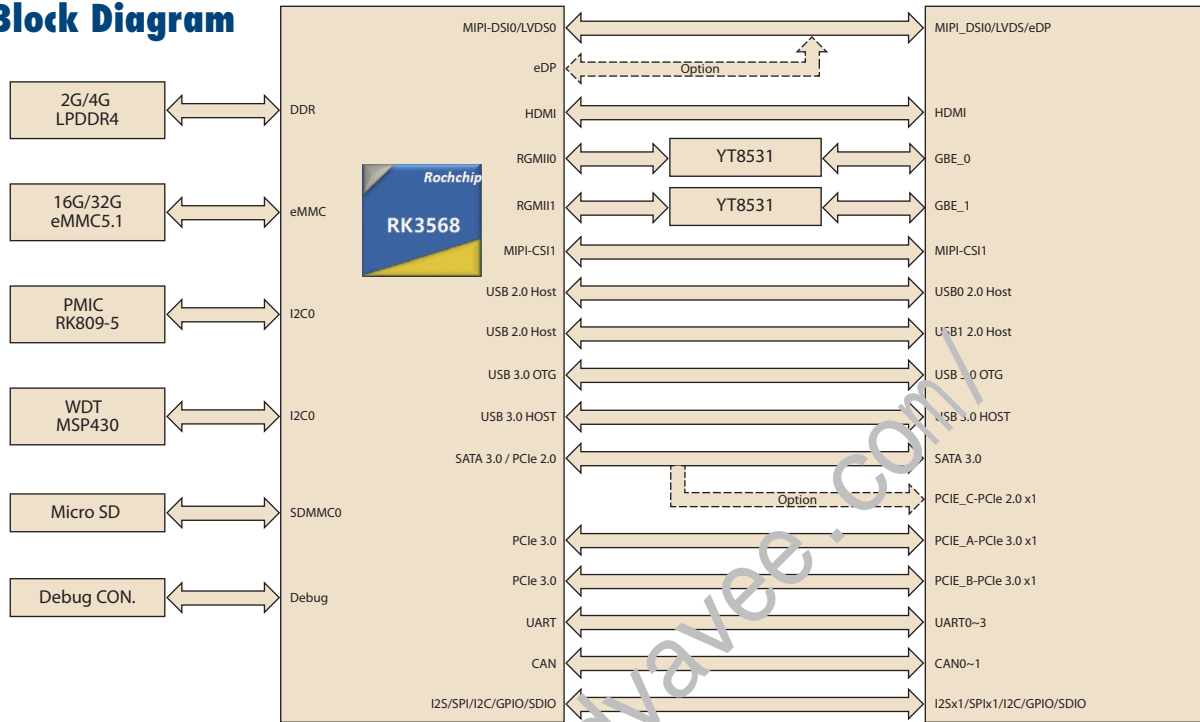
ROM-5880 is paired with the Advantech SOM-DB2510 SMARC 2.1 development board for faster end-product peripheral integration and time-to-market. The reference schematics and layout checklist documentation for carrier board development is provided along with the open-sourced Linux BSP, test utilities, hardware design utilities, and reference drivers.

Specifications

Form Factor		SMARC 2.1
Processor System	CPU	Rockchip RK3568 Arm Quad-Core Cortex-A55, up to 2.0 GHz
	NPU	0.8 TOPS
Memory	Technology	LPDDR4
	Capacity	Onboard 2/4GB LPDDR4
	Flash	16/32 GB eMMC NAND Flash for OS and boot loader
Graphics	LVDS	1 x Single Channel 24-bit LVDS(Default) or 1 x 4-lane MIPI-DSI
	HDMI	1 x HDMI 2.0, up to 4096x2304@60Hz
	eDP	1 x eDP, up to 2560x1600@60Hz (shared with LVDS, by BOM Option)
	Graphics Engine	Arm Mali-G52 GPU, supports OpenGL ES1.1/2.0/3.2, OpenCL 2.0, Vulkan 1.0/1.1
	H/W Video Codec	Decoder: H.265 up to 4096x2304 @ 60fps, H.264, VP9, VP8 Encoder: H.264/ up to 1920x1080 @ 100fps, H.265 up to 1920x1080 @ 100fps (4096x4096 @ 10fps with TILE)
Ethernet	Chipset	2 x YT8531
	Speed	2 x 10/100/1000 Mbps
RTC	RTC	Yes
Watchdog Timer		HW watchdog by MCU, 1-6527s, default 60s, power on/off 1s
I/O	PCIe	2 x PCIe 3.0 x1, 1 x PCIe 2.0 x1 (shared with SATA, by BOM option)
	SATA	1, (default)
	USB	1 x USB 3.0, 2 x USB 2.0, 1 x USB 3.0 OTG
	Audio	1 x IFS
	S/PDIF	-
	SDIO	1
	Serial Port	2 x 2-wire UART 2 x 4-wire UART
	Debug	1 x debug
	SPI	1
	CAN2.0 B	2
	GPIO	14
	I ² C	5
	Camera Input	1 x 4-lane MIPI CSI*
	System Bus	-
Touch	-	
Keypad	-	
Power	Power Supply Voltage	4.75-5.25V DC source
	Power Consumption	4.57W @ 5V (Max) 1.90W @ 5V (Idle)
Environment	Operating Temperature Range	0 - 60°C / -40 - 85°C
	Operating Humidity	5 - 95% relative humidity, non-condensing
Mechanical	Dimensions (W x D)	82 x 50 mm
Operating System		Linux Debian 10 and Android 12
Certifications		CE/UKCA/FCC Class B

* In addition to 1 x 4-lane MIPI CSI, RX0/1 can be configured as 1 x 2-lane MIPI CSI, RX2/3 can be configured with the CSI_CLK as another 1 x 2-lane CSI.

Block Diagram



Ordering Information

DDR and eMMC of other capacity and Display are available through project-based support. Please contact us for details.

Part No.	CPU	Memory	Flash Memory	UART	LAN	USB 3.0/2.0	Display	PCIe 3.0	SD	SATA	PC	SPI	CAN	Power input	Operating Temperature
ROM-5880CQ-REA1	RK3568B2	2 GB	16 GB	4	2	1 USB 3.0 2 USB 2.0 1 USB 3.0 OTG	1 x HDMI 2.0 1 x LVDS or 1 x MIPI DSI	2	1	1	5	1	2	5V	0 ~ 60°C
ROM-5880CQ-RFA1	RK3568B2	4 GB	32 GB	4	2	1 USB 3.0 2 USB 2.0 1 USB 3.0 OTG	1 x HDMI 2.0 1 x LVDS or 1 x MIPI DSI	2	1	1	5	1	2	5V	0 ~ 60°C
ROM-5880WQ-REA1	RK3568J	2 GB	16 GB	4	2	1 USB 3.0 2 USB 2.0 1 USB 3.0 OTG	1 x HDMI 2.0 1 x LVDS or 1 x MIPI DSI	2	1	1	5	1	2	5V	-40 ~ 85°C

Development Board

Part No.	Description
SOM-DB2510-R0A1	Development board for SMARC 2.1 RISC Module

Optional Accessories

Part No.	Description
1700022373-01	Debug port cable for ROM-5880
ROM-ED20-00A1E	Debug port adapter board
1970005667T001	Heat spreader
1970004755T001	Heat sink
1930004835	Screws for heat spreader and semi heat sink
96PSA-A36W12R1-3	ADAPTER 100-240V 36W 12V 3A
1700001524	Power cord 3P UL 10A 125V 180cm
170203183C	Power cord 3P Europe (WS-010+WS-083)183cm
1700008921	Power cord 3P PSE 183cm
170203180A	Power cord 3P UK 2.5A/3A 250V 1.83m
SQF-ISDM1-16G-21C	SQ Flash SD card UHS-I MLC 16GB (0 ~ 70 °C)
SQF-ISDM1-16G-21E	SQ Flash SD card UHS-I MLC 16GB (-40 ~ 85 °C)
EWM-W169M201E	Wi-Fi 802.11ac/abgn 2T2R and BT 4.2
1750008671-01	Dipole Ant.SMA/M-R 2.4/5G 2.5/4dBi BLK 109mm
1750007965-01	Antenna cable, SMA (M) to MHF4, 300mm
968AD00479*	4G module LTE Cat 4 for China
1750007990-01	Antenna 4G/LTE full band L=11cm 50 Ohm
1750006009	Antenna Cable SMA (F) to MHF 1.32 25cm

*Please contact us to get a suitable cellular module for your region.

Dimensions

Unit: mm

