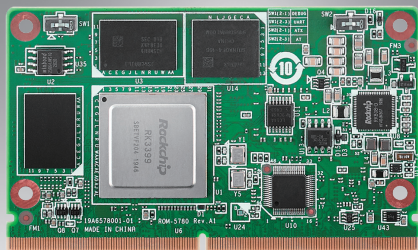


ROM-5780

Rockchip RK3399 Cortex®-A72+A53 SMARC 2.1 Computer-on-Module



Introduction

Advantech ROM-5780 SMARC 2.1 Computer-on-Module is powered by Rockchip RK3399 SOC which includes dual-core Arm Cortex-A72 and quad-core Arm Cortex-A53 processors and Arm Mali-T860MP4 3D graphics engine. It provides rich display interface: HDMI 4K@60Hz, eDP and LVDS to meet different requirement. It also features USB3.0, PCIe 2.0, SATA, Gigabit Ethernet, MIPI-CSI for embedded applications. It is the ideal solution for POS, vending, infotainment, Medical.

ROM-5780 is paired with the Advantech ROM-DB5901 SMARC2.0 development board for faster end product peripheral integration and time-to-market. The reference schematics and layout checklist documentations for carrier board development will be provided along with the open-sourced Linux BSP, test utilities, hardware design utilities and reference drivers.



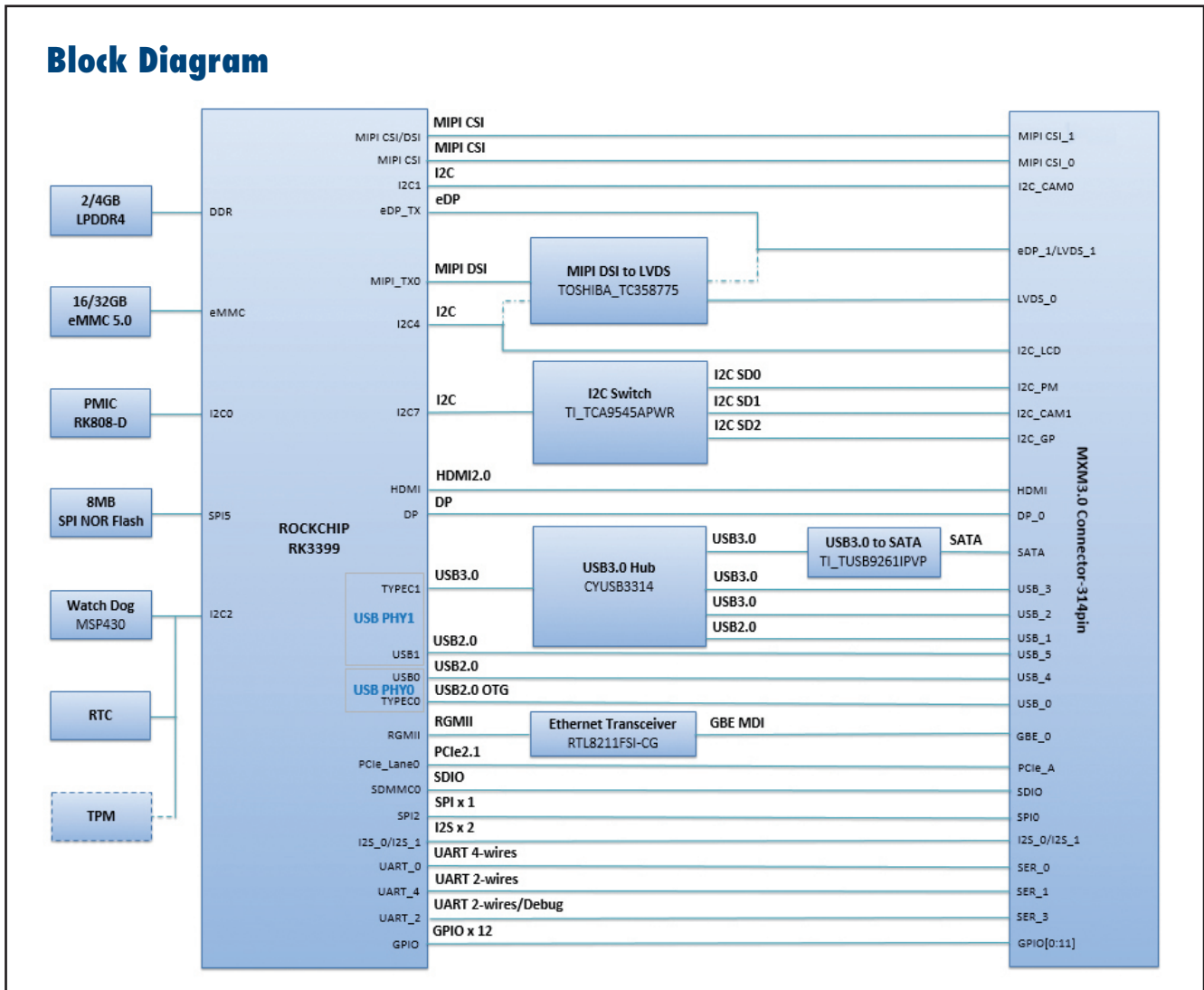
Features

- Rockchip RK3399 Arm dual Cortex-A72 and quad Cortex-A53 1.8 GHz
- Onboard 2/4GB LPDDR4 memory and 16/32GB eMMC
- Support HDMI2.0 4K, 1 x eDP, 1 x LVDS
- Support 4K H.264/H.265 Video decoder
- 2 x USB3.0, 3 x USB2.0, 1 x USB2.0 OTG, 3 x UART, 12 x GPIO
- 1 x PCIe2.0, 1 x SATA, 2 x MIPI CSI, Gigabit LAN
- Support Linux and Android

Specifications

Form Factor		SMARC 2.1	
Processor System	CPU	Rockchip RK3399 Arm dual-core Cortex-A72 and quad-core Cortex-A53, up to 1.8 GHz	
Memory	Technology	LPDDR4- 3732 MT/s	
	Capacity	Onboard 2/4GB LPDDR4	
	Flash	16/32 GB eMMC NAND Flash for O.S. and boot loader; 8 MB SPI NOR Flash	
Graphics	LVDS	1 x Single Channel 24-bits LVDS(Default) or 1 x Dual Channel 24-bits LVDS(Shared with eDP, by BOM Option)	
	HDMI	1 x HDMI2.0, up to 4096 x 2160	
	eDP	1 x eDP 1.3	
	Graphics Engine	Arm Mali-T860MP4 GPU, support OpenGL ES1.1/2.0/3.0, OpenGL1.2, DirectX11.1 etc.	
	H/W Video Codec	Decoder:H.265 up to 4Kx2K @ 60fps, H.264, H.263, VC-1, VP9, VP8, MVC .MPEG-1/2/4 Encoder:H.264 UP to HP@level4.1, MVC and VP8	
Ethernet	Chipset	1 x RTL8211FSI	
	Speed	1 x 10/100/1000 Mbps	
RTC	RTC	Yes	
WatchDog Timer		1-6553s, default 60s, power on/off 1s	
Security		TPM2.0 (Optional)	
I/O	PCIe	1 x PCIe 2.0 x 1	
	SATA	1	
	USB	2 USB3.0, 3 USB2.0, 1 USB2.0 OTG	
	Audio	2 x I ² S	
	SPDIF	-	
	SDIO	1	
	Serial Port		1 x 2-wire UART/Debug by switch selection
			1 x 2-wire UART
			1 x 4-wire UART
			-
	SPI		1
	CAN		-
	GPIO		12
	I ² C		5
Camera Input		1 x 4-lane MIPI CSI, 1 x 2-lane MIPI CSI	
System Bus		-	
Touch		-	
Keypad		-	
Power	Power Supply Voltage	4.75-5.25V DC source	
	Power Consumption	8.52W @ 5V (Max) 4.13W @ 5V (Idle)	
Environment	Operating Temperature	0 - 60 °C / -20 - 85 °C	
	Operating Humidity	5 - 95% relative humidity, non-condensing	
Mechanical	Dimensions (W x D)	82 x 50 mm	
Operation System		Linux & Android	
Certifications		CE/FCC Class B	

Block Diagram



Ordering Information

Part No.	CPU	Memory	Flash Memory	UART	LAN	USB3.0/2.0	Display	PCIe 2.0	SD	SATA	I ² C	SPI	Size	Power input	Operating Temperature
ROM-5780CO-REA1E	RK3399	2 GB	16 GB	3	1	2 USB3.0, 3 USB2.0 1 USB2.0 OTG	1 x HDMI 2.0 1 x eDP 1 x LVDS	1	1	1	5	1	82 x 50 x 5 mm	5V	0 ~ 60 °C
ROM-5780WO-REA1E	RK3399K	2 GB	16 GB	3	1	2 USB3.0, 3 USB2.0 1 USB2.0 OTG	1 x HDMI 2.0 1 x eDP 1 x LVDS	1	1	1	5	1	82 x 50 x 5 mm	5V	-20 ~ 85 °C
ROM-5780CO-RFA1E	RK3399	4 GB	32 GB	3	1	2 USB3.0, 3 USB2.0 1 USB2.0 OTG	1 x HDMI 2.0 1 x eDP 1 x LVDS	1	1	1	5	1	82 x 50 x 5 mm	5V	0 ~ 60 °C
ROM-5780CO-RLA1E	RK3399	2 GB	16 GB	3	1	2 USB3.0, 3 USB2.0 1 USB2.0 OTG	1 x HDMI 2.0 1 x eDP	1	1	-	5	1	82 x 50 x 5 mm	5V	0 ~ 60 °C

Development Board

Part No.	Description
ROM-DB5901-SWA1	Development board for SMARC v2.0 RISC Module series

Optional Accessories

Part No.	Description
1701100300	Debug port cable for ROM-5780
1970004750T001	Heat spreader
1970004755T001	Semi Heat sink for 0 ~ 60°C
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-W188M201E	WiFi 802.11ac/abgn 2T2R and BT4.2
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=11 cm 50 Ohm
1750006009	Antenna Cable SMA (F) to MHF 1.32 25cm

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

Dimensions

Unit: mm

