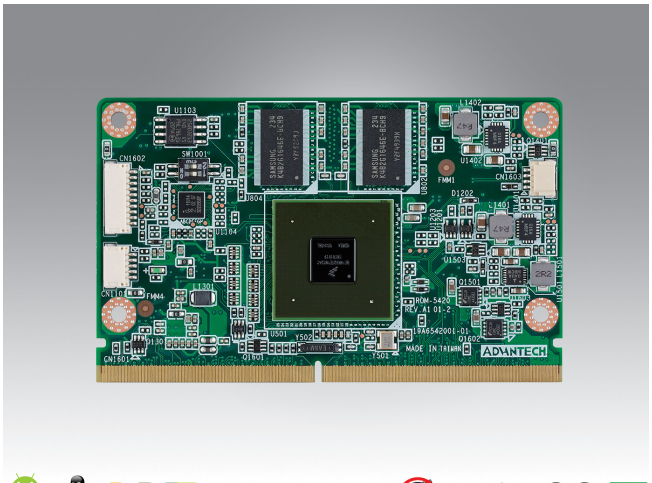
ROM-5420

NXP ARM® Cortex®-A9 i.MX6 SMARC v1.0 Module



Features

- NXP ARM® Cortex®-A9 i.MX6 high performance processor
- Onbard DDR3 memory and eMMC 4GB
- Parallel RGB, HDMI, single channel 18/24-bit LVDS, 1366 x 768
- 2 x CAN, 4 x UART, 5 x I²C, 12 x GPIO, 1 x PCIe, 1 x camera input and 1 x Gigabit LAN
- Supports OpenGL ES 2.0 and OpenVG 1.1 hardware accelerators
- Supports full HD hardware encode/decode engine
- Low power consumption, fanless desgin
- Supports Linux and Android BSP

Introduction

ROM-5420 series SMARC module has an integrated NXP i.MX6 Cortex-A9 SoC. NXP i.MX6 supports 2D/3D graphics accelerators, a full HD 1080p encode/decode hardware engine and two independent display ouputs. ROM-5420 series support security protection to prevent a user's image from plagiarism. The camera and power input is rated at +3v~5.25v and is specially designed for portable applications.

ROM-5420 SMARC module offers an Advantech ROM-DB5900 evaluation carrier board for easy integration and hardware design reference, and also provides Linux BSP, a schematic check tool, test utilities and reference codes for application development and device integration.

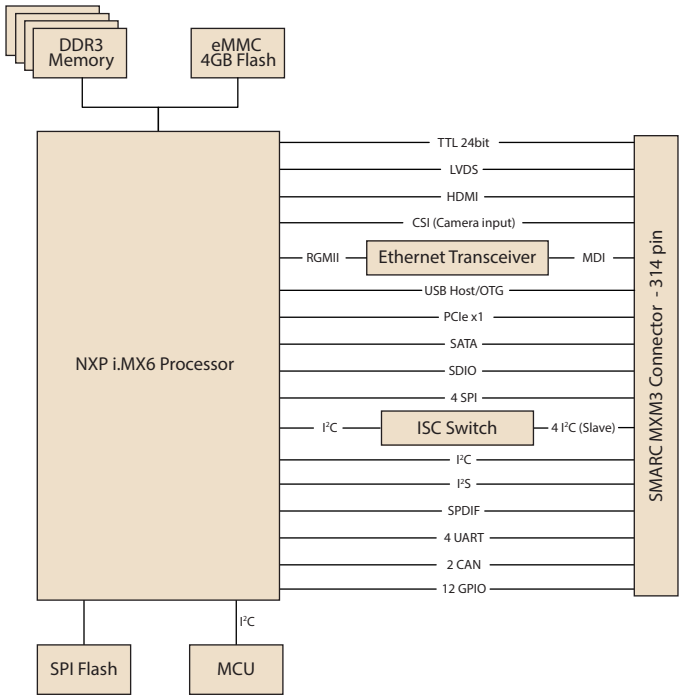
Specifications

Form Factor		SMARC v1.0
Processor System	CPU	NXP ARM Cortex-A9 i.MX6 1GHz
Memory	Technology	DDR3 1066 MHz
	Capacity	On-board DDR3 1 GB
	Flash	4 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader
Graphics	LVDS	1 Single 24-bit LVDS, 1366 x 768 at 60Hz
	HDMI	1920 x 1080 at 60Hz
	Parallel RGB	1 24-bit TTL, 1920 x 1200 at 60Hz
	VGA	-
	Graphics Engine	2 IPUs. OpenGL ES 2.0 for 3D, BitBlt for 2D and OpenVG 1.1
	H/W Video Codec	Decoder: MPEG-4 ASP, H.264 HP, H.263, MPEG-2 MP, MJPEG BP Encoder: MPEG-4 SP, H.264 BP, H.263, MJPEG BP
Ethernet	Chipset	NXP i.MX6 integrated RGMII
	Speed	1 x 10/100/1000 Mbps
RTC	RTC	Yes
WatchDog Timer		256-level timer interval, from 0 ~ 128 sec
I/O	PCIe	1 PCIe x 1
	SATA	1 SATA II
	USB	1 USB 2.0, 1 USB 2.0 OTG
	Audio	I²S
	SPDIF	1
	SDIO	1
	Serial Port	4 UART (2 x 2 wire, 2 x 4 wire w/ 3.3V)
	SPI	4
	CAN	2 x CAN bus 2.0B
	GPIO	12
	I²C	5
	Camera Input	1 MIPI v1.0, 4x Lane
	System Bus	-
	Touch	-
	Keypad	-
Power	Power Supply Voltage	+3 ~ 5.25 V
	Power Consumption	3.4W (Max)
Environment	Operating Temperature	0 ~ 60 °C/ -40 ~ 85 °C
	Operating Humidity	0% ~ 90% relative humidity, non-condensing
Mechanical	Dimensions (W x D)	82 x 50 mm
Operation System		Linux & Android
Certifications		CE/FCC Class B

All product specifications are subject to change without notice

Last updated: 10-Mar-2016

Block Diagram



Ordering Information

Part No.	CPU	Memory	Flash Memory	UART	LAN	USB Host	USB OTG	Display	SATA	PCIe	HDMI	SD	CANbus	I²C	SPI	Size	Power input	Operating Temperature
ROM-5420CD-MDA1E	i.mx6 Dual 1GHz	1 GB	4 GB	4	1	1	1	1x 24bit LVDS 1x 24bit TTL 1x HDMI	1	1	1	1	2	5	4	82 x 50 x 5 mm	3 ~ 5.25V	0 ~ 60 °C
ROM-5420WD-MDA1E	i.mx6 Dual 1GHz	1 GB	4 GB	4	1	1	1	1x 24bit LVDS 1x 24bit TTL 1x HDMI	1	1	1	1	2	5	4	82 x 50 x 5 mm	3 ~ 5.25V	-40 ~ 85 °C

Development Board

Part No.	Description
ROM-DB5900-SWA1E	Developmemt Board for SMARC v1.0
ROM-DK5420-F0A1E	ROM-5420 EVK Kit (SMARC v1.0)

Optional Accessories

Part No.	Description
1700022373-01	Debug port cable for ROM-3420/5420
9696ED2000E	Debug adapter board
1960063090N001	Heat spreader
1930005215	Screws for heat spreader
1960063089N001	Semi heat sink
1930004835	Screws for heat spreader and semi heat sink

Dimensions

Unit: mm

