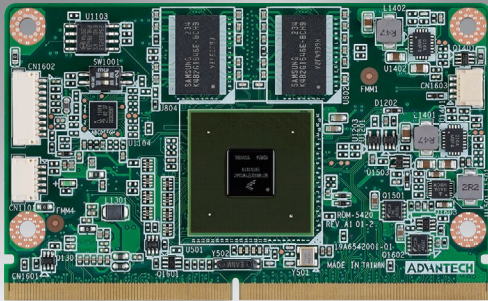


# ROM-5420

Freescale ARM Cortex-A9  
i.MX6 SMARC v1.0 Module

NEW



## Features

- Freescale ARM Cortex-A9 i.MX6 Dual 1 GHz high performance processor
- Onboard DDR3 1 GB
- Parallel RGB, HDMI, Single channel 18/24-bit LVDS, 1366 x 768
- Supports 4 GB eMMC Flash, 1 SD/MMC, 1 SATA
- 2 CAN, 4 UART, 5 I<sup>2</sup>C, 12 GPIO, 1 PCIe, 1 camera input and 1 Gigabit LAN
- Supports OpenGL ES 2.0 and OpenVG 1.1 hardware accelerators
- Supports full HD hardware encode/decode engine
- Supports image protection



## Introduction

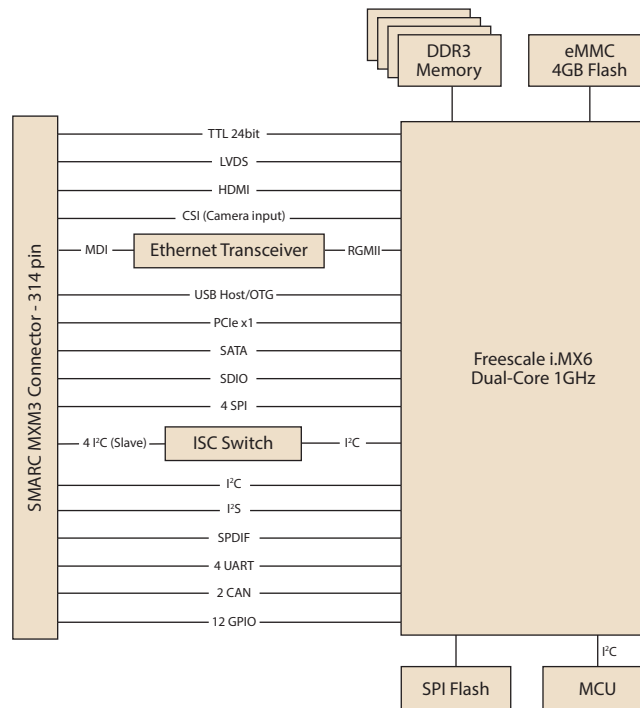
ROM-5420 series SMARC module has an integrated Freescale i.MX6 Cortex-A9 SoC. Freescale i.MX6 supports 2D/3D graphics accelerators, a full HD 1080p encode/decode hardware engine and two independent display outputs. ROM-5420 series support security protection and it protects user image from plagiarism. The camera input and power input +3V~5.25V support are specially designed for portable applications.

ROM-5420 SMARC module has 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	Freescale ARM Cortex-A9 i.MX6 Dual 1 GHz
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 18/24-bit LVDS, 1366 x 768
	HDMI	1920 x 1080
	Parallel RGB	1 24-bit TTL, 2048 x 1536
	VGA	-
	Graphics Engine	3 GPUs, 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	Freescale i.MX6 integrated RGMII
	Speed	1 x 10/100/1000 Mbps
RTC	RTC	Yes
WatchDog Timer		S/W WDT, 256-level timer interval from 0 ~ 128 sec
I/O	PCIe	1 PCIe, 1 x Lane
	SATA	1 SATA II
	USB	1 USB 2.0, 1 USB 2.0 OTG
	Audio	I <sup>2</sup> S
	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
	I <sup>2</sup> C	5
	Camera Input	1 MIPI v1.0, 4x Lane
	System Bus	-
	Touch	-
Keypad	-	
Power	Power Supply Voltage	+3 ~ 5.25 V
	Power Consumption	Kernel idle: 1.25 W/ Maximum: 3.4W
	Operational Temperature	0 ~ 60° C/ -40 ~ 85° C
Environment	Operating Humidity	0% ~ 90% relative humidity, non-condensing
Mechanical	Dimensions (W x D)	82 x 50 mm
Operating System		Ltlib Linux Kernel v3.0.35/Android v4.2.2
Certifications		CE/FCC Class B

## Block Diagram

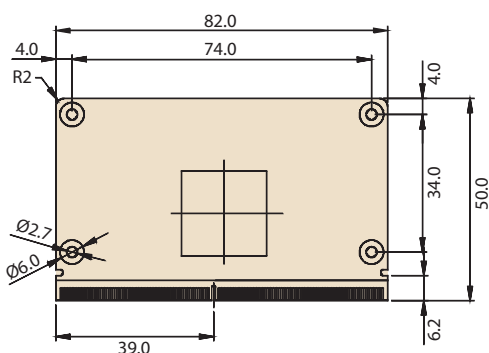


## Ordering Information

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

## Dimensions

Unit: mm



## Development Board

Part No.	Description
ROM-DB5900-SWA1E	Development Board for SMARC v1.0
ROM-DK5420-F0A1E	SMARC v1.0 EVK kit

## Optional Accessories

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