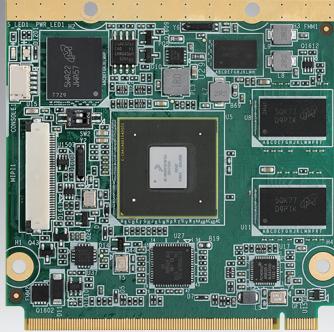


# ROM-7421

## NXP ARM Cortex-A9 i.MX6 Qseven 2.0 Module



### Features

- NXP ARM Cortex-A9 i.MX6 Solo/Dual Plus/Quad Plus 1 GHz high performance processor
- Onboard DDR3 memory 1 GB/2 GB
- Onboard eMMC NAND Flash 4 GB
- Supports OpenGL ES 2.0 and OpenVG 1.1 hardware accelerators, full HD 1080p video codec
- HDMI, Dual Channel 24bit LVDS
- 1 CAN, 2 UART, 2 I<sup>2</sup>C, 8 GPIO, 1 I<sup>2</sup>S
- 4 USB, 1 SDIO, 1 SATA II
- 1 10/100/1000 Mbps Ethernet; 1 PCIe x1 Gen2
- Optional thermal solution



### Introduction

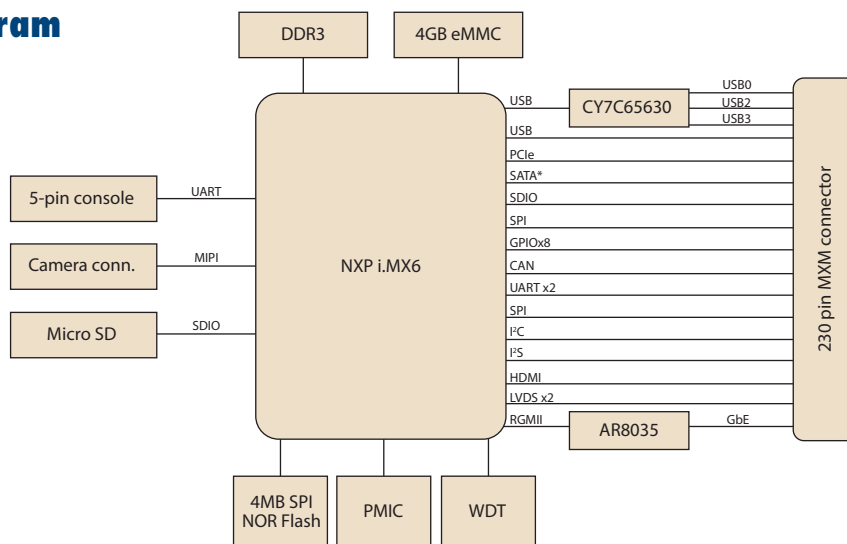
ROM-7421 Qseven Module integrates ARM Cortex-A9 NXP i.MX6 series ultra low power SoC and I/O solution chips to be Linux support ready. NXP i.MX6 supports 2D, 3D graphics acceleration, full HD 1080P video decoding and an HD 1080p video encoding hardware engine.

ROM-7421 has Advantech ROM-DB7501 Evaluation Carrier Board for easy integration and design reference; we also offer referenced schematics and layout checklists for carrier board development. Additionally, Linux BSP, test utilities, HW design utilities and reference codes are ready for application development and device integration.

### Specifications

Form Factor		Qseven 2.0
Processor System	CPU	NXP ARM Cortex-A9 i.MX6 Solo/Dual Plus/Quad Plus 1 GHz
Memory	Technology	DDR3 1066 MHz
	Capacity	On-board DDR3 1 GB/2 GB
	Flash	4 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader
Graphics	LVDS	2 x 24-bit LVDS, 1366 x 768 for 1ch; 1920 x 1080 for 2ch
	HDMI	1920 x 1080
	Graphics Engine	2 IPUs, OpenGL ES 2.0 for 3D, BitBlit 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		HW Watchdog Timer
I/O (Edge finger)	PCIe	1 PCIe, 1 x Lane
	SATA	1 SATA II
	USB	4 USB 2.0 (1 USB OTG)
	Audio	I <sup>2</sup> S
	SPDIF	-
	SDIO	1
	Serial Port	2 UART (4 wire)
	SPI	1
	CAN	1
	GPIO	8
	I <sup>2</sup> C	2
	System Bus	-
	Touch	-
Keypad	-	
I/O (On board)	UART	1 (for console)
	SD	1 microSD
	Camera	1 MIPI Video Capture Port
Power	Power Supply Voltage	5 V
	Power Consumption	4.4 Watts (Max)
Environment	Operational Temperature	0 ~ 60° C
	Operating Humidity	0% ~ 90% relative humidity, non-condensing
Mechanical	Dimensions (W x D)	70 x 70 mm
Operating System		Linux Kernel v3.14.52
Certifications		CE/FCC Class B

## Block Diagram



\* Solo SKU doesn't support

## Ordering Information

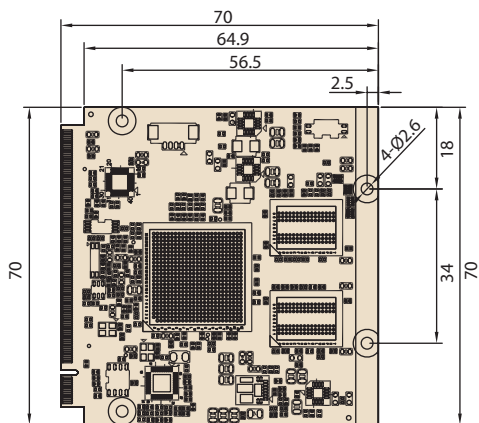
Part No.	CPU	Memory	Flash Memory	UART	LAN	USB Host	USB OTG	Display	SATA	PCIe	HDMI	SD	CANbus	I <sup>2</sup> C	SPI	Size	Power Input	Operating Temperature
ROM-7421CE-MDA1E	i.MX6 Dual Plus 1 GHz	1 GB	4 GB	2	1	4	1	2 x 24-bit LVDS	1	1	1	1	1	2	1	70 x 70 x 5mm	5V	0 ~ 60° C
ROM-7421CU-MEA1E	i.MX6 Quad Plus 1 GHz	2 GB	4 GB	2	1	4	1	2 x 24-bit LVDS	1	1	1	1	1	2	1	70 x 70 x 5mm	5V	0 ~ 60° C
ROM-7421CX-MDA1E	i.MX6 Solo 1 GHz	1GB	4GB	2	1	4	1	2x24bit LVDS	-	1	1	1	1	2	1	70 x 70 x 5mm	5V	0 ~ 60° C

## Development Board

Part No.	Description
ROM-DB7501-SCA1E	Development board for RISC Qseven 2.0 module

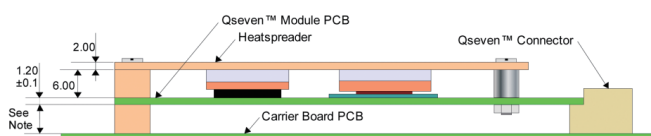
## Dimensions

Unit: mm



## Optional Accessories

Part No.	Description
1700022373-01	Debug Port Cable for ROM-7421
9696ED2000E	Debug Port Adapter for ROM-7421
96PSA-A36W12R1	ADAPTER 100-240V 36W 12V 3A
1700001524	Power Cord 3P UL 10A 125V 180cm
170203183C	Power Cord 3P Europe (WS-010+WS-083)183cm
170203180A	Power Cord 3P UK 2.5A/3A 250V 1.83M
1700008921	Power Cord 3P PSE 183cm
SQF-ISDS1-2G-86E	SQFlash SD card SLC 2G, 1CH (-40 ~ 85° C)
EWM-W142F01E	802.11 b/g/n, AR9287, 2T2R, Full size Mini PCIe
1750007050-01	WiFi RP-SMA short SMA Jack(9.5mm) to U.FL_100mm (WiFi Cable)
1750000318	EMI Antenna 2DBI 2.4GHz SMA CONN for ARK-3384 (WiFi Antenna)
968EMW0093	Telit HE910-D Mini PCIE
1750007156-01	Cellular/GPS SMA Short JACK(9.5MM) L=100mm (3G Cable)
1750005865	Antenna L=10.9cm 500hm AN8921F-5701SM (3G Antenna)
1960061913N001	Heatsink O-Freescale-S-5W 70x63x8-SC ROM-7420-60



Note: Dimension is dependent on connector height used

All measurements are in millimeters  
All dimensions without tolerance ±0.2mm