

# RSB-6410

## NXP ARM® Cortex®-A9 i.MX6 Dual/Quad Mini-ITX Motherboard



### Features

- NXP ARM® Cortex®-A9 i.MX6 Dual/Quad 1GHz high performance processor
- On board DDR3 1066MHz 1GB/2GB memory and 8GB EMMC NAND flash
- Supports Triple Display: VGA/HDMI/LVDS
- Supports 1 x PCIe, 1 x mini-PCIe, 5 x serial ports, 6 x USB, 1 x M.2 socket, 18 x GPIO, 1 x CAN
- Low power consumption, fanless design
- Supports Linux and Android BSP

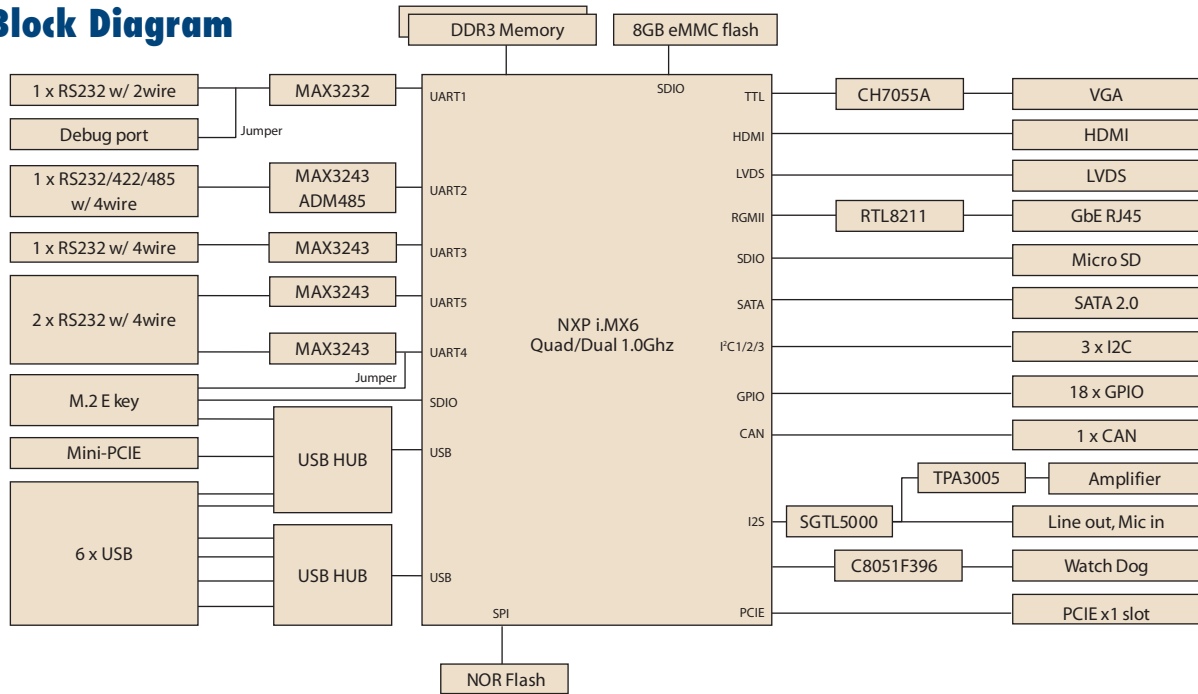
### Introduction

RSB-6410 is the world's first RISC-based Mini-ITX motherboard computer which integrates an NXP i.MX6D/Q Cortex-A9 1.0GHz high performance processor. This embedded motherboard provides the ideal solution for industrial applications such as machine control and self-service machine systems that require high performance graphic interfaces, multiple I/O and networking connectivity but with low power consumption.

### Specifications

Processor	CPU (40nm)	NXP i.MX 6D	NXP i.MX 6Q
	Core Number	2	4
	Max Speed	1.0 GHz	1.0 GHz
	L2 Cache	1MB	1MB
Expansion Slot	PCI	-	
	Mini-PCIe	1 (USB signal only)	
	M.2	1 (E-Key)	
	PCIe	1	
Memory	Technology	Single channel DDR3 1066MHz SDRAM on board	
	Max. Capacity	1G	2G
	Flash	8GB EMMC NAND Flash for O.S & 4MB SPI NOR Flash for ADV loader	
Graphics	Controller	NXP i.MX6 integrated hardware accelerators	
	VGA	1920 x 1080	
	LVDS	1 x 24bit dual channel LVDS with up to 1920x1080 resolution, 2 x 24bit single channel LVDS with up to 1366x768 resolution (option)	
	HDMI	1920 x 1080	
	Triple Display	Extended Mode: HDMI + LVDS, VGA+HDMI, VGA+LVDS, VGA+HDMI+LVDS (by application) Clone Mode: HDMI + LVDS, VGA+HDMI, VGA+LVDS, 2 single channel LVDS	
Ethernet	Chipset	NXP i.MX6 integrated RMII	
	Speed	1x 10/100/1000 Mbps	
SATA	Max Data Transfer Rate	300 MB/s (SATA 2.0)	
	Channel	1	
EIDE	Mode	None	
	Channel	None	
SSD	CFast CompactFlash	-	
Rear I/O	CRT	1	
	HDMI	1	
	Ethernet	1	
	USB	6 (USB2.0 HOST)	
	Audio	1 Line out, 1 Mic, 1 Amplifier (6W)	
	Serial	2 (1 of RS-232 w/ 4wire, 1 of RS-232/422/485 w/ 4wire)	
	KB/MS	-	
	DC jack	1 (2.5 mm)	
	Internal Connector	LVDS & Inverter	1/1
eDP		-	
USB		-	
Serial		3 (2 x 4 wire RS232, 1 x 2 wire RS232/debug port by jumper), only com5 supply 5V/12V	
IDE		None	
PC		3	
CAN		1	
SATA		1 (SATA 2.0)	
SATA PWR Connector		1	
SD		1	
Parallel		None	
Watchdog Timer		Output	System reset
	Interval	time out : 0.1~6553.5s, power on/off 4s	
Power	Power Type	Single voltage 12V DC input; 1 x External DC jack; 1 x Internal 4-pin (2x2) power connector; Supports AT/ATX mode	
	Typical Power Consumption	8W (system burning)	
Operating System	Android	Android4.4.2@ Kernel V3.0.35/Android6.0@kernel V4.1.15	
	Linux	Yocto1.7, Kernel V3.14.28/Yocto2.1@Kernel V4.1.15	
Environment	Operating	Non-Operating	
	Temperature	0 ~ 60 °C (32 ~ 140 °F)      -40 ~ 85 °C (-40 ~ 185 °F)	
Physical Characteristics	Dimensions	170 mm x 170 mm (6.69" x 6.69")	

### Block Diagram



### Ordering Information

Part No.	CPU	Memory	eMMC	HDMI	VGA	LVDS	LAN	Serial Port	SATA	USB	SD	CAN bus	Operating Temperature
RSB-6410CD-PNA1E	i.MX6D	1G	8G	1	1	1	1	4xRS232, 1xRS422/485/232	1	6	1	1	0 ~ 60 °C
RSB-6410CQ-VNA1E	i.MX6Q	2G	8G	1	1	1	1	4xRS232, 1xRS422/485/232	1	6	1	1	0 ~ 60 °C

### Packing List

Part Number	Description	Quantity
9696R20001E/11E	RSB-6410 mother board	1
1700021565-11	Debug cable	1
1700025732-01	RS232 1-to-2 cable	1
1960074075T000	IO Port bracket	1

### Optional Accessories

Part Number	Description	Quantity
96PSA-A36W12R1	A/D 100 ~ 240 V, 36 W, 12 V	1
1700001524	Power Cord 3P UL 10A 125 V 180 cm	1
1700019146	Power Cord CCC 3P 10A 250V 183cm	1
170203180A	Power Cord 3P UK 2.5A/3A 250V 1.83cm	1
170203183C	Power Cord 3P Europe 183cm	1
1700026610-01	GPIO cable, A cable D-SUB 9P(F)/2*11P-2.0 20CM	1
1700023575-01	Can cable, A cable D-SUB 9P(M)/1*4P-2.0 20cm	1
IDK-1107WR-40WVA1E	7" LED PANEL 2.5A/3A 250V 1.83cm400N with 4WR touch, 800 x 480 (G)	1
1700025779-01	LVDS cable for IDK-1107WR	1
1700025767-01	LCD backlight cable for IDK-1107WR	1
SQF-ISDS1-4G-82C	SQF SDHC C10 SLC 4G, 1CH (0 ~ 70 °C)	1
SQF-ISDS1-8G-82C	SQF SDHC C10 SLC 8G, 1CH (0 ~ 70 °C)	1
SQF-ISDS1-8G-82E	SQF SDHC C10 SLC 8G, 1CH (-40 ~ 85 °C)	1
968AD00018	Wifi BT module AW-NB136NF	1
1750002842	Wireless Antenna R-AN2450-5701RS R/P SM	2
1750007965-01	Antenna Cable R/P SMA (M) to MHF4, 300mm	2
968AD00081	Qucetel EC20CEFA Mini-PCle 4G module	1
1750006264	Antenna cable SMA(F)/MHF 15cm	1
1750007990-01	Antenna 4G/LTE full band L=11 cm 50 Ohm	1
PCIE-1602C	2-Port RS232/422/485 PCIE card	1
96NIC-1G-PE-IN	INTEL NIC 10/100/1000M PCIEx1 DESKTOP(G) 82574	1

### Dimensions

Unit: mm

