



QY-9263S Single Board Computer
Hardware Manual

Version No. : 1.0

2008.07

Company Profile:

Hangzhou Qiyang Intelligent Technology Co., Ltd. is located at the bank of the beautiful West Lake. It is a high and new technology enterprise which is specializing in R&D, manufacture and sell embedded computer main board with high performance, low power consumption, low cost, small volume, and provides embedded hardware solutions.

We Offer:

◆ Research & develop, manufacture and sell embedded module products which have independent intellectual property rights, and cooperate with TI, ATMEL, Cirrus Logic, Freescale, and other famous processor manufacturers. It has launched a series of hardware products, such as ARM development board, ARM core module, ARM industrial board, sound/video decoding transmission platform, supporting tools and software resources which support user for their next embedded design.

◆ We give full play to the technical accumulation in ARM platform and Windows CE, Linux, Android operating system for many users providing custom service (OEM/ODM), to realize embedded products into the market stably, reliably and quickly.

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Catalogue

I . Preface.....	4
1.1 Company Profile	4
1.2 Suggestion for Using QY-9263S Single Board Computer	5
II . System Composition	6
2.1 Mainboard Resource:	6
2.2 Mainboard Interface Basic Function	8
III. Hardware Specification.....	10
3.1 SDRAM.....	10
3.2 DataFlash.....	10
3.3 NandFlash.....	10
3.4 USB	10
3.5 Ethernet	10
3.6 Audio	11
3.7 LCD.....	11
3.8 Matrix Keyboard	11
3.9 PIO	12
3.10 MISC	12
3.11 CAN Bus	13
3.12 RTC	13
3.13 UART	13
3.14 Power.....	14
IV. Remark	14

I . Preface

1.1 Company Profile

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1.2 Suggestion for Using QY-9263S single board computer

1. Please read the instructions first, before using the single board computer;
2. Before using, please check the packing list and see whether there is a missing file in the CD;
3. Please understand the basic structure and composition of the SBC, including the hardware resource allocation etc.;
4. If you need to develop on Linux system and burn program into the development board, in addition to this document, we also suggest reading another document *QY-9263S Linux User Manual*.



Picture 1

II. System Composition

2.1 Mainboard Resource:

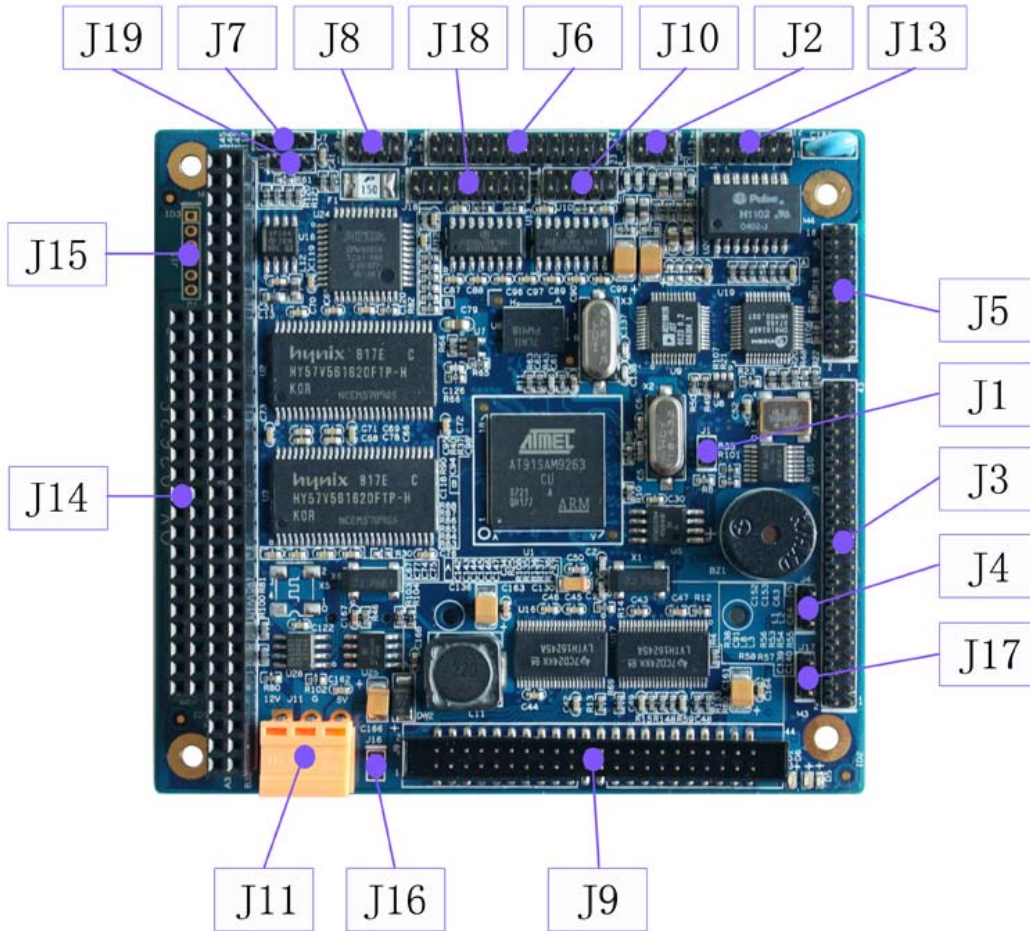
QY-9263S is of a high performance of ARM9 CPU structure single board computer based on standard PC104.

Products Introduction :

Chip Specification:	ATMEL AT91SAM9263 ARM9, 200MHz
Core:	ARM926EJ-S
SDRAM:	64MB
Flash:	128 MB NandFlash ,2 MB DataFlash
OS:	Linux 2.6.30
External interface	
Storage	IDE & CF Card
USB	2* USB2.0 Host,1 USB2.0 Device
Debugging Port	1-ch Debugging port, 3-ch common port, supporting hardware flow control and RS485 Bus standard
LCD	Support 1-ch TFT-LCD interface, 3.5'-17'TFT-LCD ,resolution up to 2048x 2048
Touch Panel	4-wire resistive touch panel
Input Interface	8 * 8 matrix keyboard
CAN	Support CAN2.0A and CAN2.0B
Audio	AC97 Audio output, provide dual-track line input interface
LAN	10/100M Ethernet interface
Other	JTAG/Reset circuit/ Real-time clock/

Power	+6V~+23V wide range power supply
Power Consumption	≤1W
Mechanical and Environmental	
Size	96mm * 90mm, standard PC104
PCB Specification	8-layer
Operating Temperature	-20°C~+70°C
Relative Humidity	5%~95%,Non-Condensing;

2.2 Mainboard Interface Basic Function



Picture 2

Basic Interface Function

Label	Name	Function	Specification
J1	Burning Jumper	Burning Program	Burning Program
J2	AUDIO	Audio input and output	For audio application
J3	LCD	LCD	LCD with touch panel
J4	LCD Level Jumper	+3.3V/+5V	For all sizes of LCD level requirement

J5	PIO	GPIO Function	For all I/O Function
J6	UART	Debugging port and Common port	Debugging Port and Common Port Application
J7	USB Device	USB	Download program, Communication
J8	2*USB HOST	USB Host	USB Host application
J9	IDE	Connect to IDE device	Used for mounting IDE Bus device
J10	MISC	Combo Interface	SPI、PWM、Timer
J11	Power	System power supply	+5V DC Power Supply
J12(back)	SD card socket	SD card interface	Expand storage application conveniently and stably
J13	Ethernet	10/100MEthernet	Program download,communication
J14	PC104	PC/104	Suitable for all PC/104 external module
J15	JTAG	CPLD Download	CPLD Program downloading
J16	Reset Pin	Reset Function	Reset Function
J17	IDE Jumper	5V/3.3V	Hard disk and CF Card select
J18	Keyboard	8*8 keyboard interface	For keyboard input or I/O
J19	CAN	CAN 2.0	CAN2.0 A/B,

III. Hardware Specification

3.1 SDRAM

QY-9263S mainboard includes 64M SDRAM, used for running mainboard.

3.2 DataFlash

QY-9263S mainboard includes 2M Data Flash, for storing Boot Code.

3.3 NandFlash

QY-9263S mainboard provides with 128MB NAND Flash storage, can satisfy client's storage requirements and also can be adjusted by client's requirement. This NAND Flash is used for storing Linux kernel Image file, root file system.

3.4 USB

QY-9263S development board with 3-ch USB interface provides 1-ch USB Device (J17) to download program and USB communication, other 2-ch USB Host (J8) is used for Host Application ,support all kinds of USB Device (mouse, keyboard, USB Drive etc).

3.5 Ethernet

AT91SAM9263 integrated MAC circuit with PHY Chip DM9161.

QY-9263S can set IP and MAC(address can be changed) when making net communication.

PIN style interface, connect to Internet with matched net expanding wire.

Ethernet port Pin definition is as follows:

1	NET_TX+	2	NET_TX-
3	NET_RX+	4	NET_CT
5	NET_CT	6	NET_RX-
7	NET_CT	8	NET_CT
9	LED_LNK	10	LED_LNK
11	LED_SPD-	12	LED_SPD+

3.6 Audio

It adopts AD1981B chip, provides 1-ch audio input and 1-ch audio output. Mainboard with PIN style interface can connect to audio signal with matched audio expanding wire.

3.7 LCD

QY-9263S provides 44 pin LCD/touch panel interface (J3). Support 16-bpp and 24-bpp TFT-LCD with different sizes screen 640*480, 800*600, 800*480. J4 is LCD power supply interface, clients can choose by yourselves:

PIN1 connect PIN2, LCD power supply voltage is 3.3V

PIN2 connect PIN3, LCD power supply voltage is 5V

3.8 Matrix Keyboard

QY-9263S mainboard brings out 16 pin 8*8 Matrix keyboard interface(J18), clients can use according to requirements. It can also used as I\O interface. Pin definition as follows:

1	KEY_X0	2	KEY_Y0
3	KEY_X1	4	KEY_Y1

5	KEY_X2	6	KEY_Y2
7	KEY_X3	8	KEY_Y3
9	KEY_X4	10	KEY_Y4
11	KEY_X5	12	KEY_Y5
13	KEY_X6	14	KEY_Y6
15	KEY_X7	16	KEY_Y7

3.9 PIO

QY-9263S development board provides PIO interface(J5), clients can use it as I/O interface according to requirements. J5 Pin definition as follows:

1	+3.3V	2	PIO_D0
3	PIO_D1	4	PIO_D2
5	PIO_D3	6	PIO_D4
7	PIO_D5	8	PIO_D6
9	PIO_D7	10	PIO_D8
11	PIO_D9	12	PIO_D10
13	PIO_D11	14	PIO_D12
15	PIO_D13	16	PIO_D14
17	PIO_D15	18	GND

3.10 MISC

QY-9263S development board provides MISC combo interface(J10), including SPI interface, PWM interface and timer I/O, PIN definition as follows:

1	SPI_MISO	2	TIOA0
3	SPI_MOSI	4	TIOB0

5	SPI_SPCK	6	PWM1
7	SPI_nCS0	8	PWM2
9	GND	10	GND

3.11 CAN Bus

AT91SAM9263 integrated CAN Bus controller. QY-9263S development board provides 1-ch CAN Bus interface, which can meet CAN2.0A and CAN2.0B. Pin definition is as follows:

1	CANH
2	CANL
3	GND

3.12 RTC

QY-9263S development board provides 1 RTC with DS1337, adopts 1* button battery CR1220 to make RTC keep working after the power off. When power on, power supply provides RTC.

3.13 UART

QY-9263S development board provides UART(J5), including 1-ch debugging port and 3-ch common port. 3-ch common port can used as RS232 Port while 2-ch can used as RS485 port.

1	RXD0	2	TXD0
3	CTS0	4	RTS0
5	GND	6	GND
7	RXD1	8	TXD1

9	GND	10	GND
11	RXD2	12	TXD2
13	GND	14	GND
15	DRXD	16	DTXD
17	GND	18	GND
19	RS485-B1	20	RS485-A1
21	GND	22	GND
23	RS485-B2	24	RS485-A2

3.14 Power

J11 is QY-9263S development board power supply interface with 3 Pins

The pin definition is as follows:

1	+12V
2	GND
3	+5V

5V interface can supply power for chip and other external interface. Forbid to connect 12V power to 5V power interface(Please refer to schematics for details).

IV. Remark

1. Before connect to LCD, confirm LCD power specification.
2. Please use the original connecting accessories, avoid damaging the main board.
3. We ensure offering communication technology support through E-mail, telephone for lifelong technical support service.
4. We ensure offering 6 months repair service for free, if malfunction occurs

in warranty because of quality problem, contact our retailer or our company with purchase receipt in warranty period, we will repair or replace it.

5. Under these circumstances, we do not offer repair for free:

- Over warranty time;
- Do not have purchase receipt;
- Liquid inlet, Damp or Mold;
- Malfunction and damage is not due to product quality but drops, intense shaking, arbitrarily modify, disoperation after purchase;
- Damage of force majeure.

6. We reserve intellectual property for the software and hardware technical data of IAC-335X-Kit; users can only use them for teaching, testing, researching. Shall not be engaged in any commercial purpose. Shall not distribute them on the Internet. Shall not intercept, modify them to tamper copyright.

7. We accept batch order; we can offer technical support and service.

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