JVC-8100

Version 1.0

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A

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⚠

ESD

(ESD, electrostatic sensitive devices)

ESD

- ESD
-
- ESD
- ESD
- ESD

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1

1.1

ℳC-8100 D2000 BOX UOS
IO

1.2

	- ℳC-8100	- ℳC-8100
	- D2000/8 2.3GHz 8C 25W	
	- 2 x 260-pin DDR4 2666MHz SODIMM max 64GB	
	- 2 x 2.5 ” HDD/SSD	
	- LVDS - 1 x VGA VGA 1920*1200@60Hz - 1 x HDMI HDMI 4096*2160@24Hz	
	- 1 x Mic-in 1 x Line-out amp	
	- 2 x R⅁45	
USB	- 4 x USB3.0 - 4 x USB2.0	
COM	- 2 x RS232/422/485 - 10 x RS232	
GPIO	- 2 x DB9 8bit GPIO	
LED	- 1 x Power 1 x HDD	
	- 1 x Mini-pcie - 1 x M.2 B-key 3052 Micro SIM 5G	- 1 x Mini-pcie - 1 x M.2 B-key 3052 Micro SIM 5G - 1 x PCIe x8 + PCI 2 x PCI
Watch Dog	- 255 /	
	- 12V DC-in - 2-Pole Phoenix DC plug in	
	- -40 85	

2

2.1

2.2

-40 80

0% 90%

10cm

50cm

⚠

12

2.3

2.3.1

-
-
-
-
-

2.4

-
-
-
- 50mm 100mm
- (
-
- I/O 0.5V

3

3.1

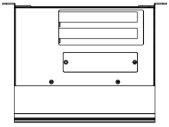
□19″ ■ □
■ □VESA □
□ _____

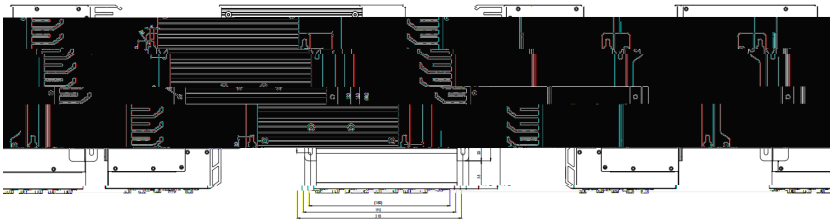
3.2

mm

3.2.1 JVC-8100

3.2.2 JVC-8100





4

4.1

4.2

DCIN	

5

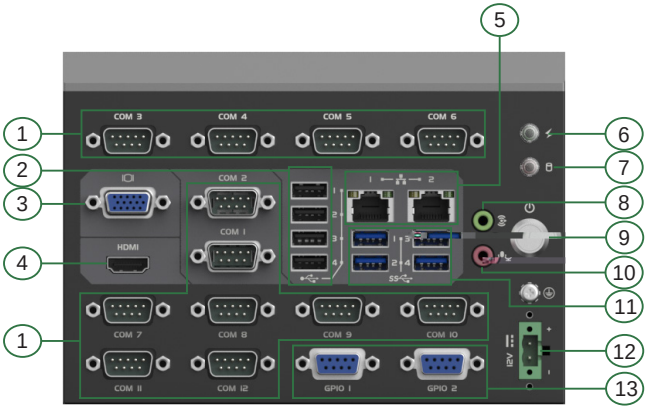
5.1

5.1.1 JVC-8100

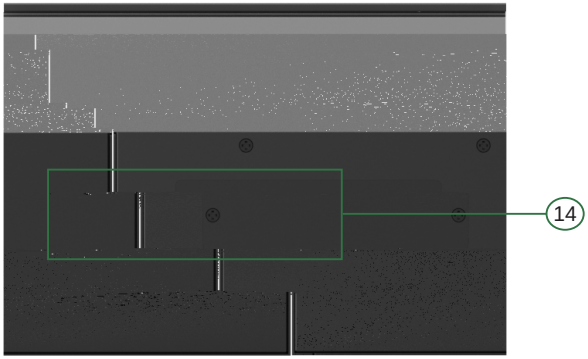
5.1.2 JVC-8100

5.2 IO

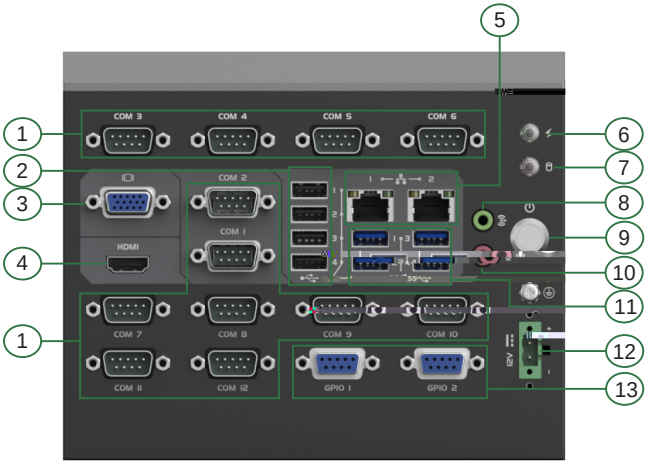
5.2.1 JVC-8100 IO



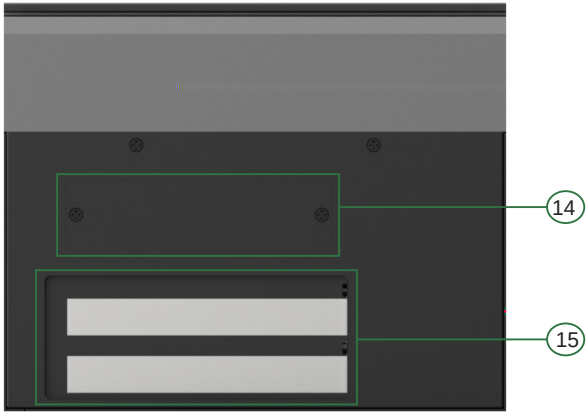
5.2.2 JVC-8100 IO



5.2.3 JVC-8100 IO



5.2.4 JVC-8100 IO



1. COM1/2/3/4/5/6/7/8/9/10/11/12
2. USB2.0 USB2.0
3. VGA VGA
4. HDMI HDMI
5. LAN1/2 RJ45
6. PWR
7. HDD
8. LINE OUT
9. PWR Button
10. MIC IN
11. USB3.0 USB3.0
12. DC_IN DC
13. GPIO1/2 GPIO
14. Idoor
15. Expansion slot

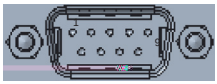
5.3

		LED	
PWR	PC		PC
HDD			

5.4 DC_IN

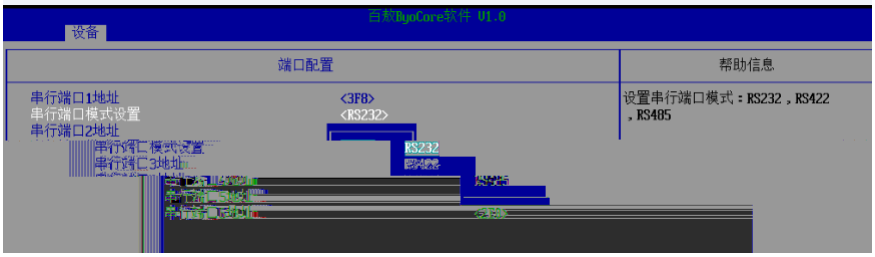
	+	DC_IN
	-	GND

5.5 COM1/2



PIN	RS232	RS422	RS485
1	DCD	422TX-	485-
2	SIN	422TX+	485+
3	SOUT	422RX+	/
4	DTR	422RX-	/
5	GND	/	/
6	DSR	/	/
7	RTS	/	/
8	CTS	/	/
9	RI	/	/

COM1-2 RS232/422/485 BIOS



5.6

5.6.1 JLVDS1

	1	+V3.3
	2	LVDS Power
	3	+V5

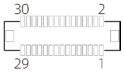
5.6.2 JLVDS2

	1	NC
	2	LVDS Power
	3	+V12

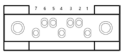
5.6.3 INVT1

	1	+V12
	2	GND
	3	BKL_EN
	4	BKL_PWM
	5	+V5

5.6.4 LVDS1

	1	LVDS Power	2	LVDS Power
	3	LVDS Power	4	GND
	5	GND	6	GND
	7	LVDS1_D0N	8	LVDS1_D0P
	9	LVDS1_D1N	10	LVDS1_D1P
	11	LVDS1_D2N	12	LVDS1_D2P
	13	GND	14	GND
	15	LVDS1_CLK1N	16	LVDS1_CLK1P
	17	LVDS1_D3N	18	LVDS1_D3P
	19	LVDS1_D4N	20	LVDS1_D4P
	21	LVDS1_D5N	22	LVDS1_D5P
	23	LVDS1_D6N	24	LVDS1_D6P
	25	GND	26	GND
	27	LVDS1_CLK2N	28	LVDS1_CLK2P
	29	LVDS1_D7N	30	LVDS1_D7P

5.6.5 SATA1/2

	1	GND
	2	SATA_TX_P
	3	SATA_TX_N
	4	GND
	5	SATA_RX_N
	6	SATA_RX_P
	7	GND

5.6.6 SATA_POWER1

	1	+V5
	2	GND
	3	+V12
	4	GND

5.6.7 GPIO1

	1	GPIO1_0	2	GPIO1_4
	3	GPIO1_1	4	GPIO1_5
	5	GPIO1_2	6	GPIO1_6
	7	GPIO1_3	8	GPIO1_7
	9	PVCC_GPIO	10	GND

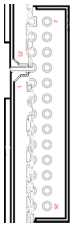
5.6.8 GPIO2

	1	GPIO2_0	2	GPIO2_4
	3	GPIO2_1	4	GPIO2_5
	5	GPIO2_2	6	GPIO2_6
	7	GPIO2_3	8	GPIO2_7
	9	PVCC_GPIO	10	GND

5.6.9 COM3/4/5/6

	1	COM_SIN	2	COM_DCD
	3	COM_DTR	4	COM_SOUT
	5	COM_DSR	6	GND
	7	COM_CTS	8	COM_RTS
			10	COM_RI

5.6.10 COM7_14

	1	GND	2	GND
	3	COM7_SOUT	4	COM11_SOUT
	5	COM7_SIN	6	COM11_SIN
	7	GND	8	GND
	9	COM8_SOUT	10	COM12_SOUT
	11	COM8_SIN	12	COM12_SIN
	13	GND	14	GND
	15	COM9_SOUT	16	COM13_SOUT
	17	COM9_SIN	18	COM13_SIN
	19	GND	20	GND
	21	COM10_SOUT	22	COM14_SOUT
	23	COM10_SIN	24	COM14_SIN
	25	GND	26	GND

5.6.11 USB2_2

	1	+V5	2	+V5
	3	USB2_HUB_N6	4	USB2_HUB_N5
	5	USB2_HUB_P6	6	USB2_HUB_P5
	7	GND	8	GND
			10	GND

5.6.12 JFP1

	1	UART1_TXD	2	UART1_RXD
	3	PWRBTN#	4	GND
	5	RESET#	6	GND
	7	POWER_LED+	8	GND
	9	SATA_LED+	10	SATA_LED-

5.6.13 ATX_IN1

	1	GND	2	GND
	3	+12V	4	+12V

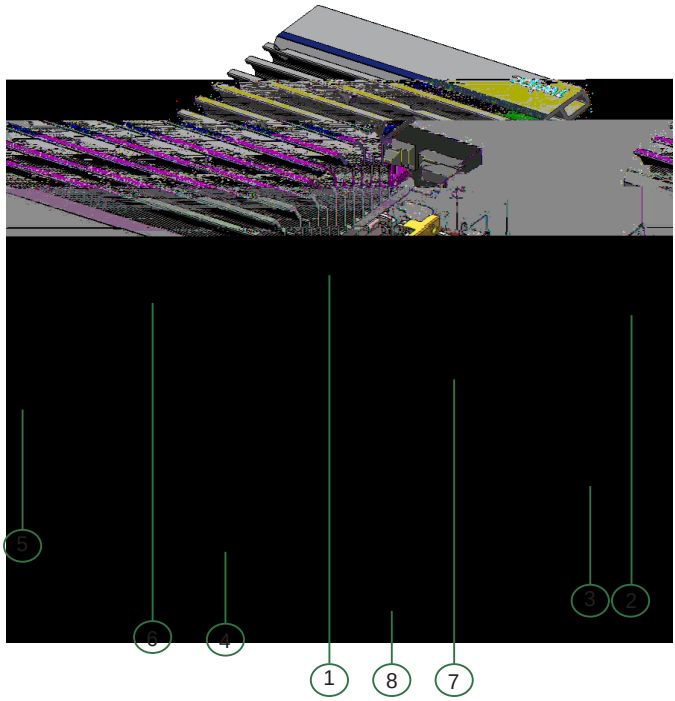
5.6.14 GPIO_PWR1

	1	+V5
	2	PVCC_GPIO
	3	+V3.3

6

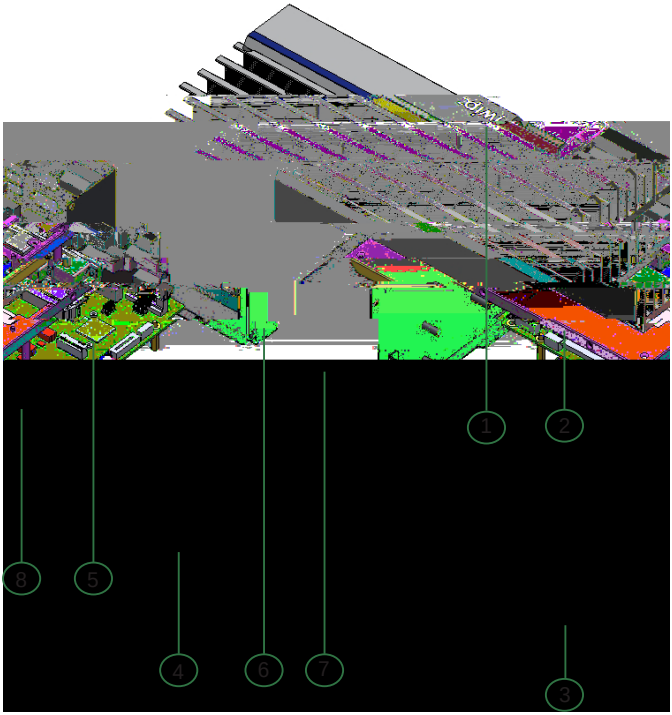
6.1

6.1.1 JVC-8100



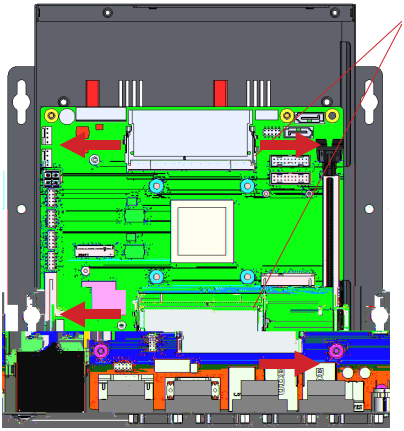
1		2		3	
4		5		6	
7		8			

6.2.2 JVC-8100



1		2		3	
4		5		6	
7		8			

6.3

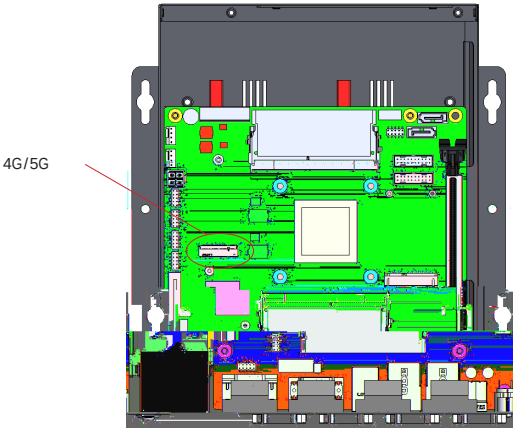


( )

DIMM

1.
2.
3. DIMM
4. DIMM 30°

6.4 4G/5G

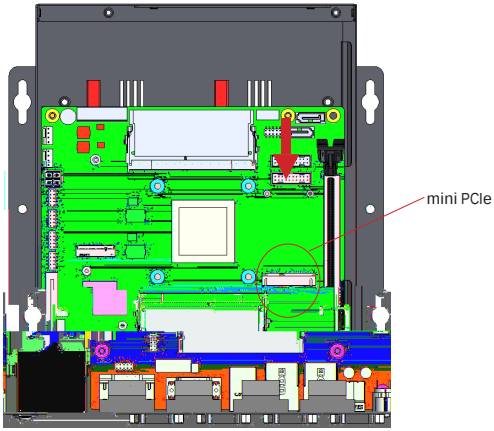


( )

4G/5G

4G/5G 30°

6.5 mini PCIe



( )

mini PCIe

mini PCIe 30°

7 BIOS

7.1 BIOS

BIOS BIOS Basic Input Output System (
ROM Read-Only Memory) BIOS

a. POST(Power On Self Test)
b.
c.
d. SETUP
BIOS CMOS RAM
BIOS CMOS
BIOS

7.2 BIOS

BIOS Setup BIOS

SETUP
a. SETUP
b.

BIOS BIOS

7.2.1 BIOS

<F2> BIOS

7.2.2

<Enter> <F1> <Esc>

← / →	
↑ / ↓	
+/ -	
<Enter>	
<ESC>	
<F1>	
<F9>	
<F10>	

7.3 BIOS

		BIOS
		BIOS
		BIOS
		BIOS

7.4

7.5

GMAC

SATA

SATA

PCI

PCI

USB

USB

SIO

SIO

SATA <Enter>

S.M.A.R.T

S.M.A.R.T

PCI <Enter>

PCI

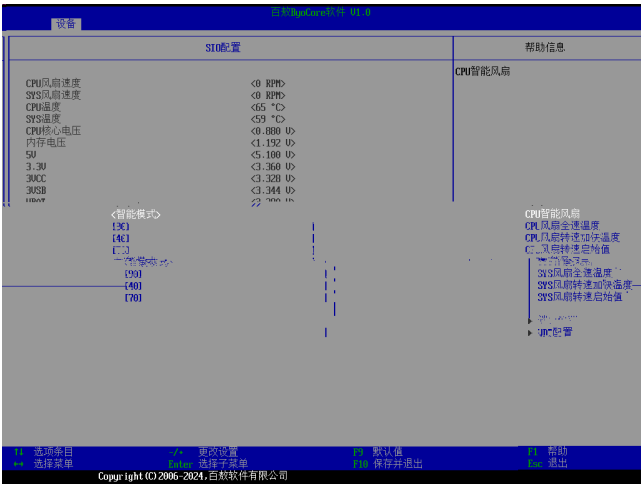
3 USB <Enter>

USB

:

,

SIO <Enter>



CPU/SYS

CPU/SYS

CPU/SYS

CPU/SYS

CPU/SYS

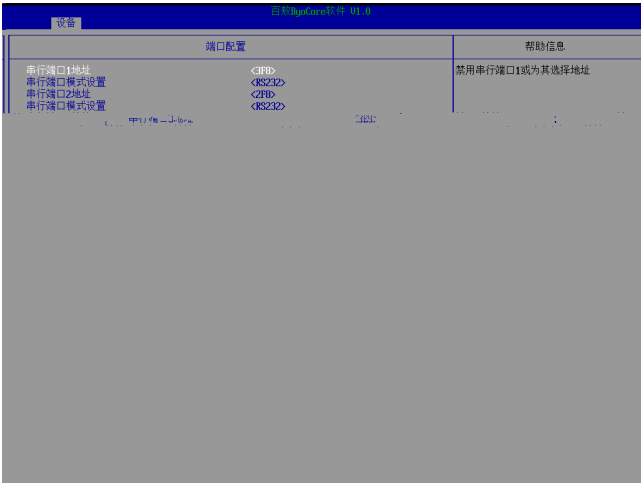
CPU/SYS

CPU/SYS

CPU/SYS

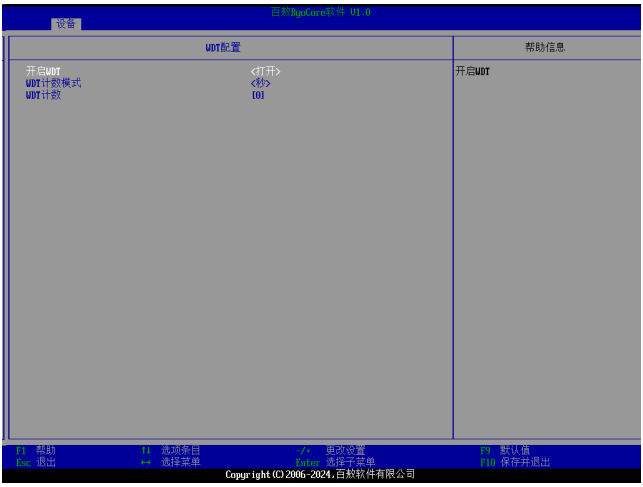
WDT

<Enter>



1/2/3/4/5/6

WDT <Enter>



WDT

WDT

WDT

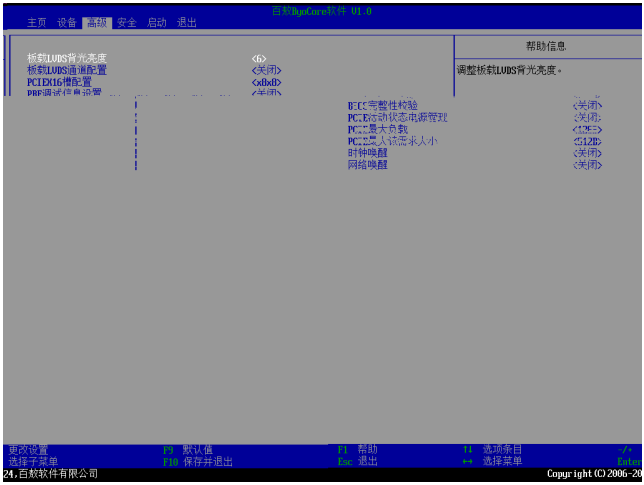
WDT

WDT

WDT

0-255

7.6



LVDS

LVDS

1 2 3 4 5 6

LVDS

LVDS

PCIEX16

PCIEX16

x8x8 x16

PBF

PBF

BIOS

BIOS

PCIE

PCIE

L0s L1 L0s&L1

PCIE

PCIE

128B 256B

PCIE

PCIE

256B 512B

7.7

<Enter>

SHA-256 Hash SM3 Hash

<Enter>

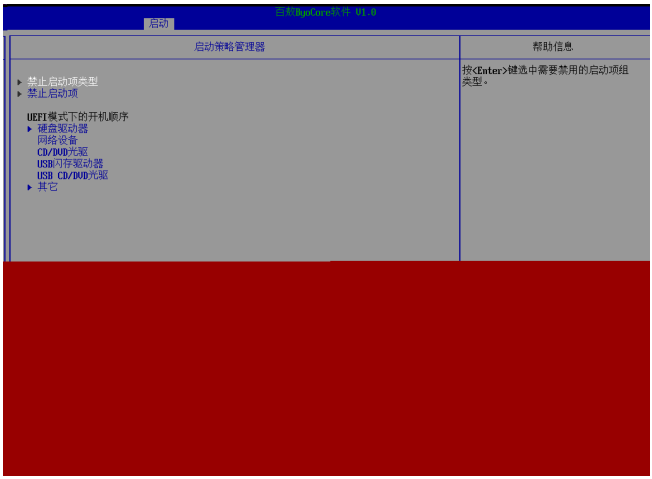
<Enter>

安全
安全启动
帮助信息
系统模式
设定模式
安全启动
<关闭>
恢复出厂设置
<进入>
重置为设定模式
<进入>
进入审计模式
<进入>
进入部署模式
<进入>
安全设置项管理
【打开】打开安全启动，BIOS 会阻止未被授权的系统被调起。【关闭】关闭安全启动。
F1 帮助
↑↓ 选项条目
-/+ 更改设置
F9 默认值
Esc 退出
←→ 选择菜单
Enter 选择子菜单
F10 保存并退出
Copyright (C) 2006-2024,百敖软件有限公司

<Enter>

启动
启动管理器
帮助信息
启动管理器菜单
kylin(UEFI SATA 0: Hoodisk SSD)
Internal EDK Shell
使用 <↑> 和 <↓> 键选择启动选项，使用 <Enter> 键选中启动选项，使用 <Esc> 键退出启动管理器菜单。
Device Path :
PciRoot(0x0)/Pci(0x2,0x0)/Pci(0x0,0x0)/Sata(0x0,0xFFFF,0x0)/HD(1,GPT,342FC78D-95D7-4E04-90BA-55CACBBFD7A5,0x800,0x100000)/\EFI\kylin\grubaa64.efi
F1 帮助
Esc 退出
↑↓ 选项条目
↔ 选择菜单
/ 更改设置
Enter 选择子菜单
F9 默认值
F10 保存并退出
Copyright (C) 2006-2024, 百敏软件有限公司

<Enter>


启动
启动策略管理器
帮助信息
禁止启动项类型
禁止启动项
UEFI模式下的开机顺序
硬盘驱动器
网络设备
CD/DVD光驱
USB闪存驱动器
USB CD/DVD光驱
其它
按<Enter>键选中需要禁用的启动项组类型。

7.9

BIOS
BIOS
BIOS
BIOS

8 WDT

```
#define SuperIo_Index_Port 0x2E
#define SuperIo_Data_Port 0x2F
#define GPIO_LDN8_DEVICE 0x08
UINT8 Data8

//a.        Super IO    Configuration Mode
IoWrite8(SuperIo_Index_Port, 0x87);
IoWrite8(SuperIo_Index_Port, 0x87);

//b.                    GPIO, LDN 8
IoWrite8(SuperIo_Index_Port, 0x07);
IoWrite8(SuperIo_Data_Port, GPIO_LDN8_DEVICE);

//c. Enabled WDT
IoWrite8(SuperIo_Index_Port, 0x30);
IoWrite8(SuperIo_Data_Port, IoRead8(SuperIo_Data_Port) | 0x01);

//d.        WDT                         Register 0xF0    Bit3          1                    0
IoWrite8(SuperIo_Index_Port, 0xF0);
//
IoWrite8(SuperIo_Data_Port, IoRead8(SuperIo_Data_Port) | 0x08);
//
// IoWrite8(SuperIo_Data_Port, IoRead8(SuperIo_Data_Port) & 0xF7);

//e.       WDT                5    /
IoWrite8(SuperIo_Index_Port, 0xF1);
IoWrite8(SuperIo_Data_Port, 0x5);

//f.       Super IO    Configuration Mode
IoWrite8(SuperIo_Index_Port, 0xAA); //        Super IO Configuration Mode        SuperIO
                                    ,                  Configuration Mode
```

9 GPIO

JVC-8100 GPIO I2C :

(1) 9555 I2C-1

(2) Slave address 1 0x20

(3) GPIO0 I0.0 I0.1 I0.2 I0.3 I0.4 I0.5 I0.6 I0.7 /

(4)GPIO1 I1.0 I1.1 I1.2 I1.3 I1.4 I1.5 I1.6 I1.7 /

(5) I2C Command GPIO 3

a. 6 7 GPIO0 GPIO1d 0-7bit Ix.0-Ix.7

bit 0 1 / 1 0

b. 0 1 GPIO0 GPIO1 0-7bit Ix.0-Ix.7

0 1 GPIO0 GPIO1

c. 2 3 GPIO0 GPIO1 0-7bit Ix.0-Ix.7

2 3 GPIO0 GPIO1

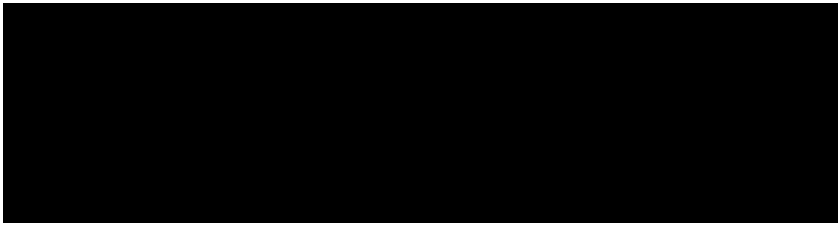
(6) i2c sudo apt install libi2c-dev

(7)

```
#include <stdio.h>
#include <stdlib.h>
#include <fcntl.h>
#include <sys/ioctl.h>
#include <linux/i2c.h>
#include <unistd.h>
```

(8)

a.



b.

```
int file;
char filename[20];
unsigned char reg_addr;
sprintf(filename, I2C_DEV);
    file = open(filename, O_RDWR);
    if(file < 0){
        perror("Failed to open the i2c bus");
        exit(1);
        }
```

```
   if(ioctl(file, I2C_SLAVE, I2C_SLAVE_ADDR) < 0){
       perror("Failed to acquire bus access talk to slave");
       close(file);
       exit(1);
   }
```

c. 6 GPIO0 GPIO0 I0.0

```
          unsigned char num = 0;
                                  unsigned char config_buffer[2] = {I2C_REG_CONFIG_PORT0, 0 << num};
                                  if(write(file, config_buffer, 2) != 2){
                                      perror("Failed to write to the i2c bus config");
                                      close(file);
                                      exit(1);
                                  }
                                  unsigned char output_buffer[2] = {I2C_REG_OUTPUT_PORT0, status << num
ile, output_buffer, 2) != 2){                                                                    if(write(f
("Failed to write to the i2c bus output");                                                           perror(
file);                                                                                               close(f
);                                                                                                   exit(1)
                                                                                                 }
```

d. read ioctl

```
          unsigned char read_data;
          if(read(file, &reg_addr, 1) != 1 || read(file, &read_data, 1) != 1){
              perror("Failed to read from the i2c bus");
              close(file);
              exit(1);
          }
                                  unsigned char read_pin_state = 0;
                                  read_pin_state = (read_data >> 0) & 0x01;
                                  printf("引脚2的输出为：%d\n", read_pin_state);
```

(9)

a.

```
#define I2C_DEV "/dev/i2c-1" //定义总线
#define I2C_SLAVE_ADDR 0x20  //定义从机地址

#define I2C_REG_CONFIG_PORT0 0x06 //配置 GPIO0 的模式寄存器
#define I2C_REG_INPUT_PORT0 0x00 //获取 GPIO0 输出状态的输入寄存器
#define I2C_REG_CONFIG_PORT1 0x07 //配置 GPIO1 的模式寄存器
#define I2C_REG_INPUT_PORT1 0x01 //获取 GPIO1 输入状态的输入寄存器
```

b.

```
int file;
char filename[20];
snprintf(filename, 19, I2C_DEV);
file = open(filename, O_RDWR);
if(file < 0){
    perror("Failed to open the i2c bus");
    exit(1);
}
```

```
if(ioctl(file, I2C_SLAVE, I2C_SLAVE_ADDR) < 0){
                                                    perror(
                                                    close(file);
                                                    exit(1);
                                                }
```

c. 6 GPIO0 GPIO0

```
if (i2c_smbus_write_byte_data(file, I2C_REG_CONFIG_PORT0, 0xFF) < 0)
    {
        perror("Failed to set configuration for port 0");
        exit(1);
    }
```

```
int Port0 = i2c_smbus_read_byte_data(file, I2C_REG_INPUT_PORT0);
```

d. GPIO GPIO0 I0.0

```
                                    = ((
```

10

10.1

		/
		1 2 12
	“ ”	
		1 2 3
		Winpe
I O		PCI ISA
	BIOS	BIOS Setup BIOS Setup
BIOS		
Boot device not found	BIOS	BIOS “ ” (Boot)
USB	USB 2.0 USB 2.0	USB 2.0
	USB	1 USB Legacy Support USB 2 USB