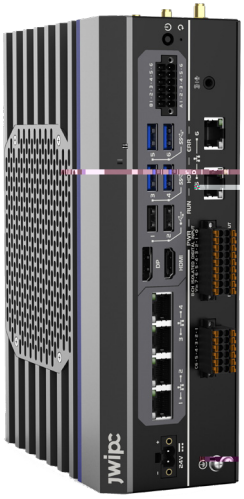
PAS-7512



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ESD

(ESD, electrostatic sensitive devices)

ESD

- ESD
-
- ESD
- ESD
- ESD

7.6 Chipset 21
7.7 Security 22
7.8 Boot 23
7.9 Save&Exit 24
8 25
8.1 WDT 25
8.2 8.2 GPIO 27
9 30
9.1 30

1

1.1

PAS-7512
ą Intel LGA1700 12&13 i9/i7/i5/i3/G CPU TDP 65W
ą 2 DDR5-SODIMM 64GB
ą DP+HDMI
ą 4 USB3.0 2 USB2.0 USB3.0 1.5A HUB
ą 12pin 485/232 1 3 CAN
ą 4 :2 Intel i226-V 2.5Gb RJ45 1 Intel i219LM RJ45 1 Intel i210-AT RJ45 POE
ą 1 M.2 NVME X4 2242/2280 1 M.2 USB+PCIEx1 3042/3052
ą SLB9670 TPM2.0
ą 1 4*COM 16GPIO 1*AUDIO 1*CAN M.2 2230 2242/2280
ą PAS-7512 POE , PoE

	- PAS-7512
	- ŵ ȝ

2	COM	- 2 RS232/485/422 2
	PSE	- POE+ 4
	GPIO	- 16 I/O 8 8
		- 2 Intel i226-V 2.5Gb RJ45
		- Mic-in,Line-out)
		- 1 M.2 Key-E 2230 Wif BT - M.2 2280/2242 NVME PCIE X1)
	USB	- USB2.0 Type A
		- 255 /
		- DC 24V 2Pin
BIOS		- AMI UEFI BIOS
		- Win10 x64 Win11 x64 Linux Ubuntu 21.04
L*W*H		- 230mm(L)*165mm(W)*71.5mm(H)

2

2.1

2.2

0 40

20% 85%

10cm

50cm

⚠

12

2.3

2.3.1

-
-
-
-

2.4

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

3

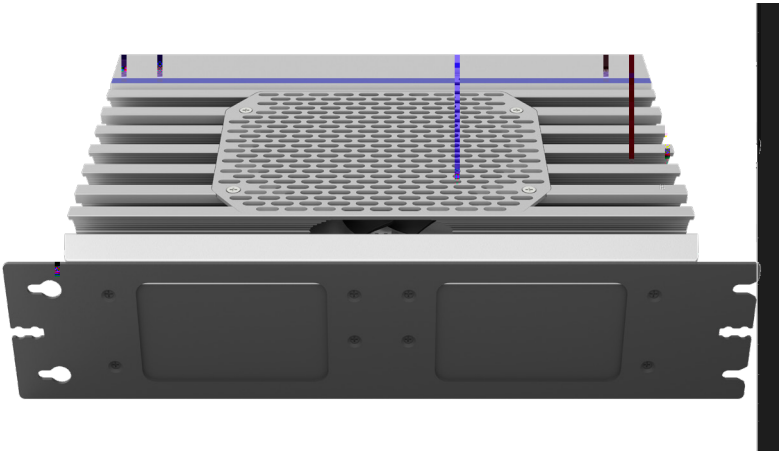
3.1

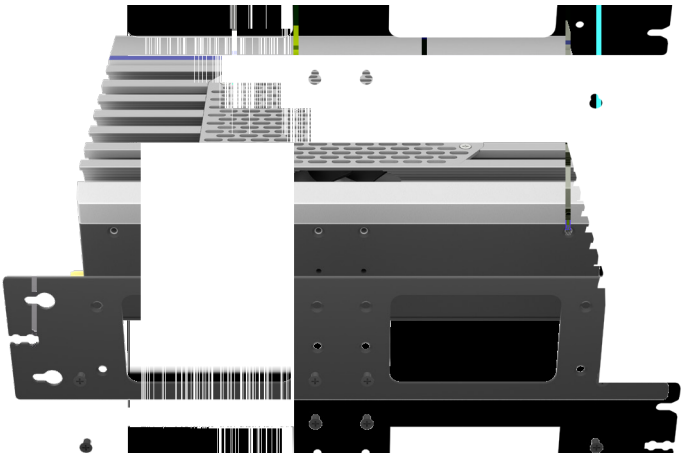
□ 19″ ■ □
■ □ VESA □
■ DIN

3.2 PAS-7512

mm

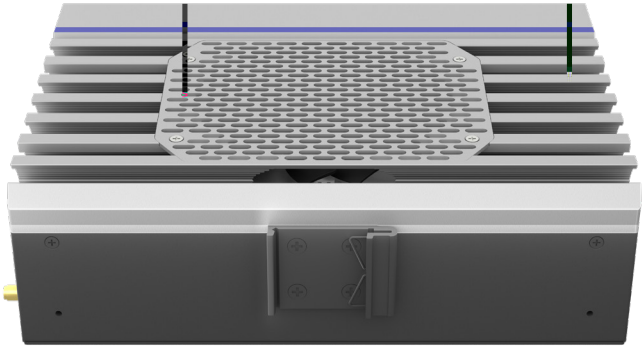
3.3 PAS-7512



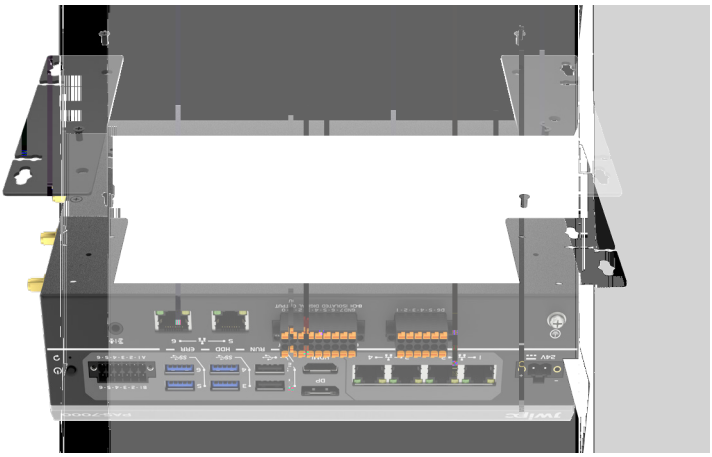


2 , M3x5.6

3.4 PAS-7512



3.5 PAS-7512



4

4.1

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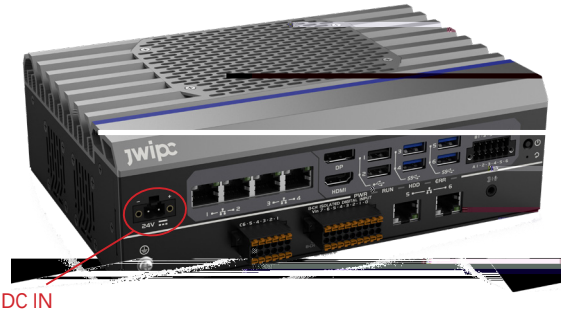
I/O USB I/O

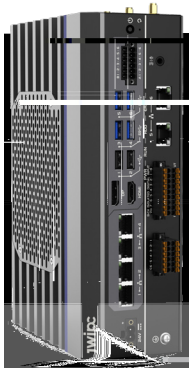
4.2

DCIN	

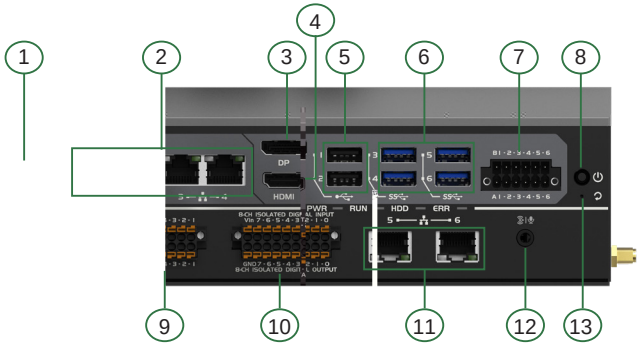
⚠

5

5.1 PAS-7512

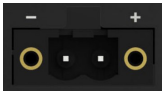


5.2 PAS-7512 IO



1. DC_IN DC
2. LAN RJ45
3.DP DP
4.HDMI
5.USB2.0 USB2.0
6.USB3.0 USB3.0
7.COM_CAN RS232+ RS485+CAN
8.Power Button
9.COM RS232+ RS422+ RS485
10.DIO /
11. LAN RJ45
12.Combo Jack Combo
13.RECOVER 5 CMOS

5.3

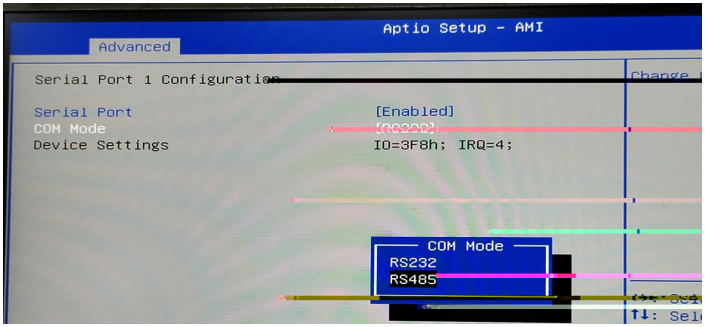


1	DC-
2	DC+

5.4 COM_CAN

PIN	RS232	RS422	RS485	CAN	
A1	COM1_DCD	/	COM1_485-	/	/
A2	COM1_SIN	/	COM1_485+	/	/
A3	COM1_SOUT	/	/	/	/
A4	/	/	/	/	GND
A5	/	/	/	/	GND
A6	/	/	/	/	PWRBTN#
B1	COM2_DCD	/	COM2_485-	/	/
B2	COM2_SIN	/	COM2_485+	/	/
B3	COM2_SOUT	/	/	/	/
B4	/	/	/	GND	/
B5	/	/	/	CAN1_H	/
B6	/	/	/	CAN1_L	/

COM1/2 RS232/485 BIOS

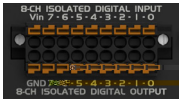


5.5 COM3_4

	PIN	RS232	RS422	RS485	
	C1	COM3_DCD	COM3_422TX-	COM3_485-	/
	C2	COM3_SIN	COM3_422TX+	COM3_485+	/
	C3	COM3_SOUT	COM3_422RX+	/	/
	C4	COM3_DTR	COM3_422RX-	/	/
	C5	/	/	/	GND
	C6	/	/	/	/
	D1	COM4_DCD	COM4_422TX-	COM4_485-	/
	D2	COM4_SIN	COM4_422TX+	COM4_485+	/
	D3	COM4_SOUT	COM4_422RX+	/	/
	D4	COM4_DTR	COM4_422RX-	/	/
	D5	/	/	/	GND
	D6	/	/	/	/

COM3/4 RS232/RS422/RS485

5.6 DIO

				
	1	DI_0	2	DO_0
	3	DI_1	4	DO_1
	5	DI_2	6	DO_2
	7	DI_3	8	DO_3
	9	DI_4	10	DO_4
	11	DI_5	12	DO_5
	13	DI_6	14	DO_6
	15	DI_7	16	DO_7
	17	VCC	18	GND

5.7

5.7.1 ATX-M1

1-2	ATX Mode
2-3	AT Mode

5.7.2 FAN

1	GND
2	+5V
3	PWM_IN
4	PWM_OUT

5.7.3 BAT

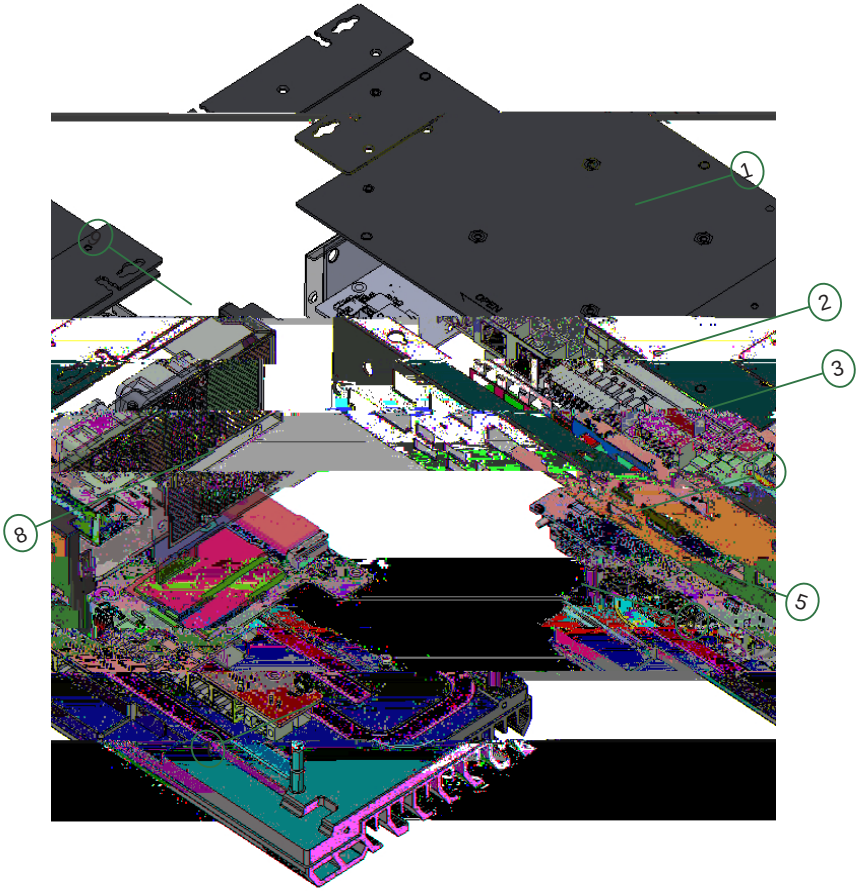
1	BAT+
2	BAT-

5.7.4 PWRBTN

1	+
2	GND

6

6.1 PAS-7512



1		2		3	
4		5		6	
7		8	IO	9	

7 BIOS

7.1 BIOS

AMI 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

<DEL> BIOS

Puevv <DeoeWe> wr eqweu SETUP

Puevv <F11> wr eqweu Brrw Meqx

7.2.2

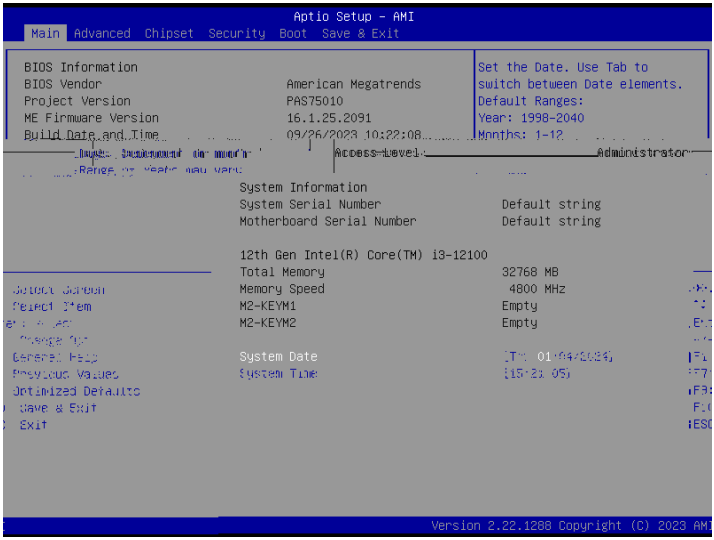
<Enter> <F1> <Esc>

/	
/	
+/ -	/
<Enter>	
<ESC>	CMOS SETUP
<F1>	
<F7>	
<F9>	
<F10>	CMOS

7.3 BIOS

Main		BIOS
Advanced		BIOS
Chipset		
Security		
Boot		
Save & Exit		BIOS

7.4 Malq



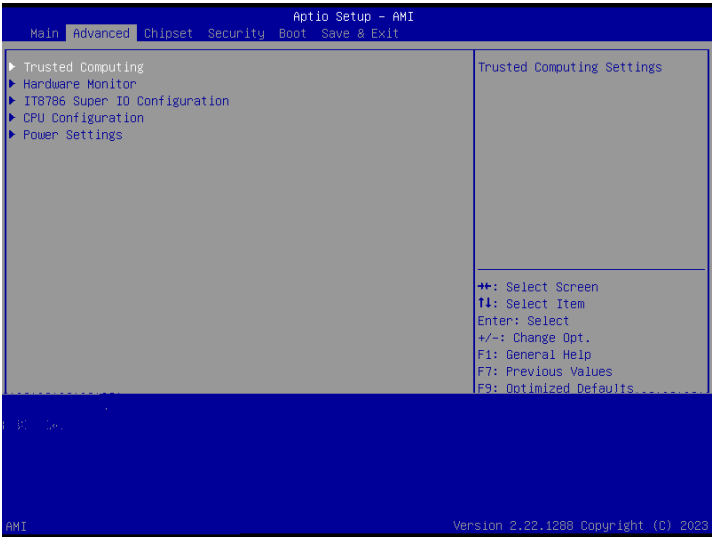
S|vwep Dawe ( )

, “ , / / ”

S|vwep Tlpe

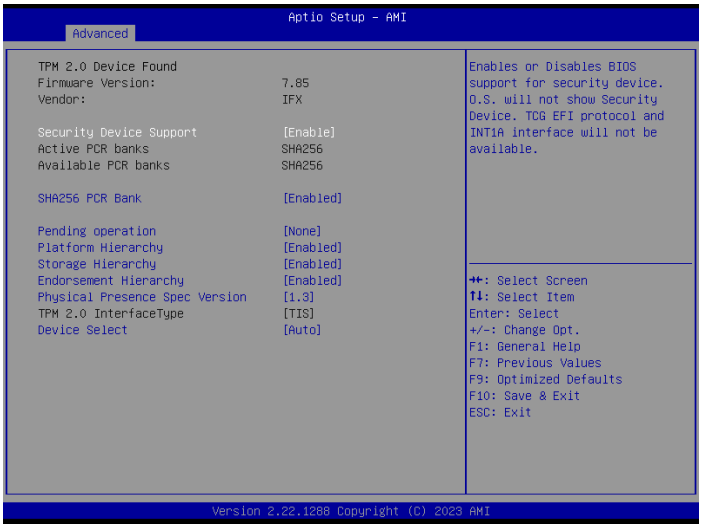
< >< >< >

7.5 Adyaqced



Tuxvwed Cr p sxwlq j		
Haud z aue M r qlwr u		
IT8786 Sx seu IO C r q j xuawl r q	Super IO	
CPU C r q j xuawl r q	CPU	
P r z eu Sewwlq j v		

- Trusted Conf guration <Enter>



Secxulw| Deylce Sxss ruw

BIOS

Disable,Enable.

SHA256 PCR Baqn

SHA256 PCR Bank

Enabled,Disabled.

Peqdlqj rseuawlrq

None, TPM Clear.

Poawfru p Hleuauck|

Enabled,Disabled.

Swrua j e Hleuauck|

Enabled,Disabled.

Eqd ruve p eqw Hleuauck|

Enabled,Disabled.

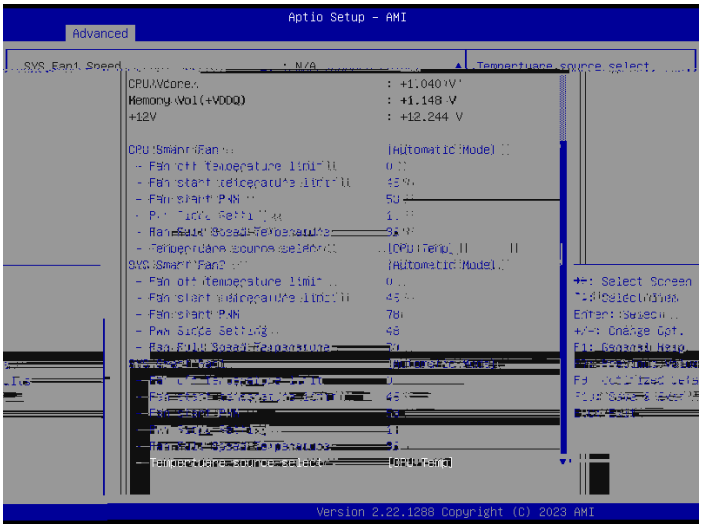
Pk|vlca0 Pueveqce Ssec Veuvlrq

1.2, 1.3.

Deylce Se0ecw

TPM 1.2 ,TPM 2.0 ,Auto.

- Hardware Monitor <Enter>



CPU S p auw Faq

CPU

Full on Mode,Automatic Mode,Manual Mode.

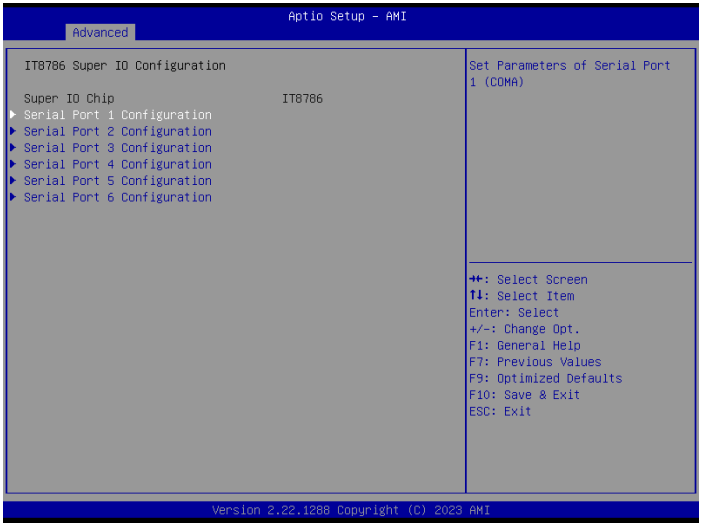
SYS S p auw Faq2/1

Full on Mode,Automatic Mode,Manual Mode.

Te p seuwxaue v r xuce ve0ecw

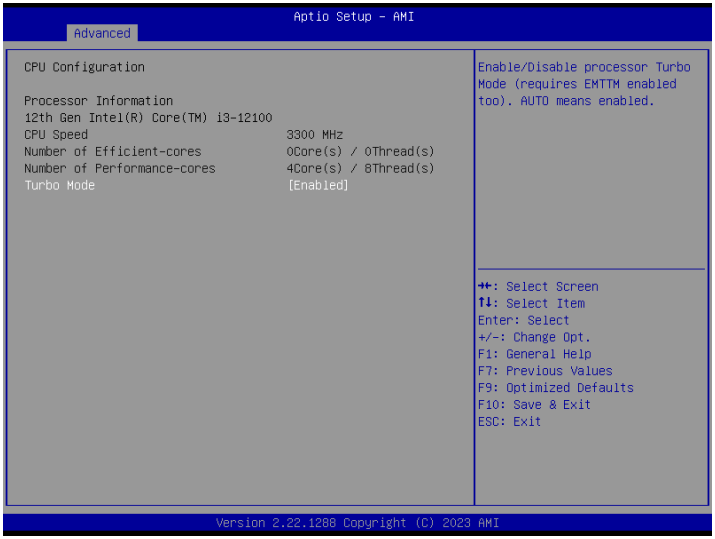
CPU Temp,SYS Temperature.

- IT8786 Super IO Configuration <Enter>



Seula0 Pruw 1/2/3/4/5/6 Crq jxuawlrq

- CPU Configuration <Enter>

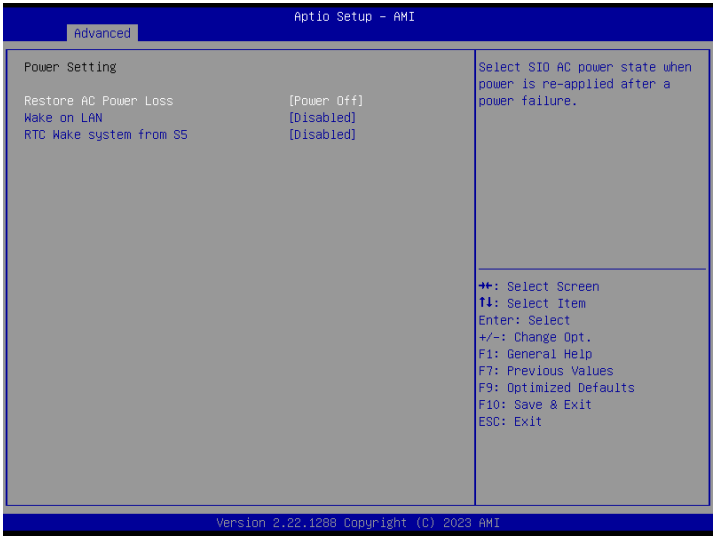


Txubr Mrde

Turbo

Enabled,Disabled.

- Power Con f guration <Enter>



Revwrue AC Przeu Lrvv

Power Of ,Power On,Last State.

Wane rq LAN

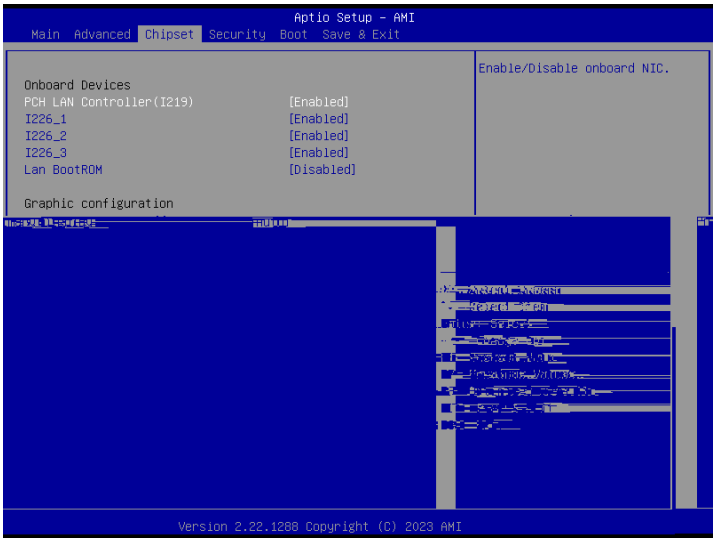
Disable,Enable.

RTC Wane v|vwep furp S5

RTC

Disable,Enable.

7.6 CkIsveW



PCH LAN C r qwu r ooeu(I219)

Enabled,Disabled.

I226_1/2/3

Disable,Enable.

Laq B r rwROM

ROM

Disable,Enable.

Pul p au| DIvsoa|

Auto,Enabled,Disabled.

7.7 Secxulw|

Ad p lqlvwuawru Pavvz rud

1. Administrator Password <Enter>
2. “ Create New Password ” 3~20

<Enter> “ Confrm Password ”

“ Invalid Password! ”

“ Administrator Password ” “ Enter Current Password ”

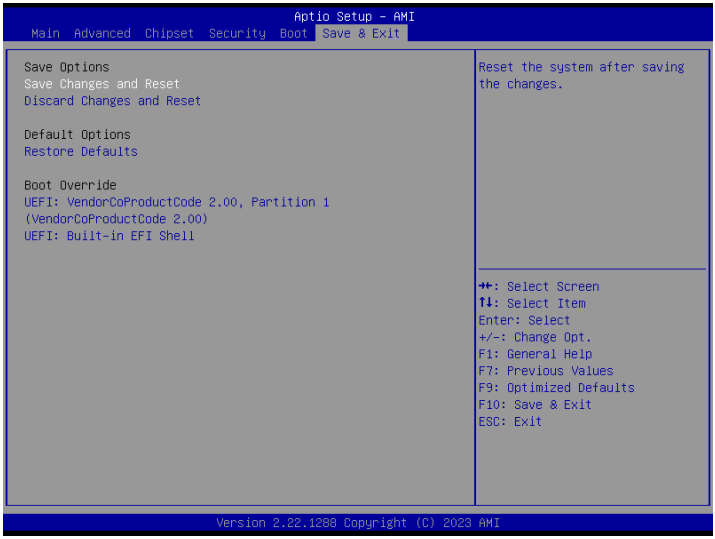
“ Create New Password ” <Enter>

Pavvz rud ckecn

BIOS

Setup,Setup&Post

7.9 Saye&E{lw



Saye Ckaqjev aqd Revew

Dlvcaud Ckaqjev aqd Revew

Revwrue Defaxowv

8

8.1 WDT

WDT SIO LDN DEV7, 0X72 BIT7 1 0
0XF3 0X72 BIT7 1 0XF3 0X20 32

8.1.1

```
//enter ite config
        IoWrite8(SioIndexPort,0x87);
        IoWrite8(SioIndexPort,0x01);
        IoWrite8(SioIndexPort,0x55);
        IoWrite8(SioIndexPort,0x55);

//select watchdog device
        IoWrite8(SioIndexPort,0x07);
        IoWrite8(SioDataPort,0x07);
        IoWrite8(SioIndexPort, 0xF1);
        temp_data = IoRead8(SioDataPort);
        temp_data &= 0xBB;
        temp_data |= 0x44;
        IoWrite8(SioIndexPort, 0xF1);
        IoWrite8(SioDataPort, temp_data);

//MAP to GP10
        IoWrite8(SioIndexPort, 0xF4);
        temp_data = IoRead8(SioDataPort);
        temp_data &= 0xC0;
        temp_data |= 0x08;
        IoWrite8(SioIndexPort, 0xF4);
//wdt start
if(ite_watch_dog_element->wdt_operator==START_WDT){

//clear status
IoWrite8(SioIndexPort, 0x71);
temp_data = IoRead8(SioDataPort);
temp_data &= 0xfe;
IoWrite8(SioIndexPort, 0x71);
IoWrite8(SioDataPort, temp_data);

IoWrite8(SioIndexPort, 0x72);
temp_data = IoRead8(SioDataPort);

temp_data &= 0x1f;
temp_data |= 0xC0;
//minute or second BIT7 1->second  0->minute
if(ite_watch_dog_element->wdt_unit == 1){
temp_data &= 0x7f;
}

IoWrite8(SioIndexPort, 0x72);
IoWrite8(SioDataPort, temp_data);
```

```
    //Clear Status
    IoWrite8(SioIndexPort, 0x71);
    temp_data = IoRead8(SioDataPort);
    temp_data &= 0xfe;
    IoWrite8(SioIndexPort, 0x71);
    IoWrite8(SioDataPort, temp_data);

    //Count
    IoWrite8(SioIndexPort, 0x74);
    IoWrite8(SioDataPort, 0x0);
    IoWrite8(SioIndexPort, 0x73);
    IoWrite8(SioDataPort, ite_watch_dog_element->wdt_time);
        //printf("wdt start:%x\n",IoRead8(data));
  }
```

8.1.2

```
    //wdt stop
```

8.10.7 Watch Dog Timer Configuration Register (Index=72h, Default=001s0000b)

Bit	Description
7	**WDT Time-out Value Select 1** 1: Second 0: Minute
6	**WDT Output through KRST (pulse) Enable** 1: Enable 0: Disable
5	**WDT Time-out Value Extra Select** 1: 62.5ms x WDT Timer-out value (default = 3.5s) 0: Determined by WDT Time-out value select 1 (bit 7 of this register)
4	**Reserved**
3-0	**Interrupt Level Select for WDT** Please refer to Table 8-15. Interrupt Level Mapping Table on page 83.

8.10.8 Watch Dog Timer Time-out Value (LSB) Register (Index=73h, Default=38h)

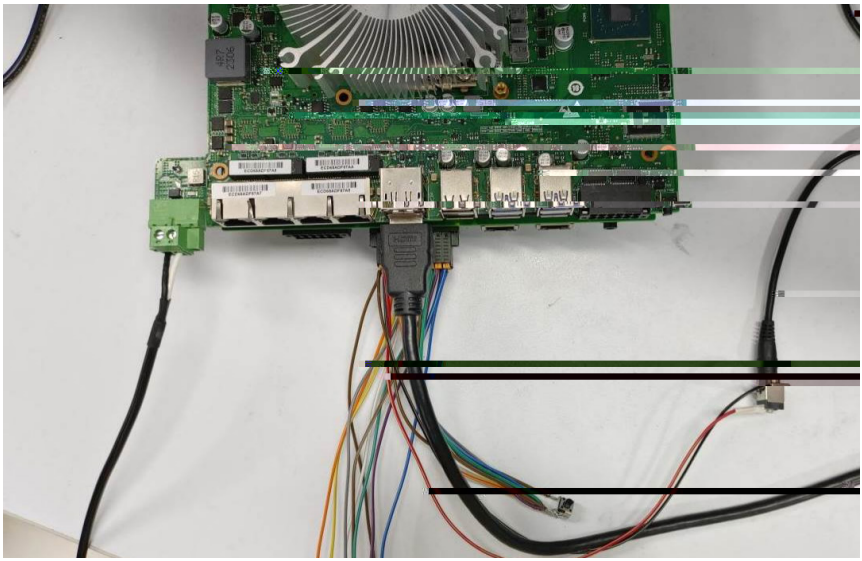
Bit	Description
7-0	**WDT Time-out Value 7-0**

8.10.9 Watch Dog Timer Time-out Value (MSB) Register (Index=74h, Default=00h)

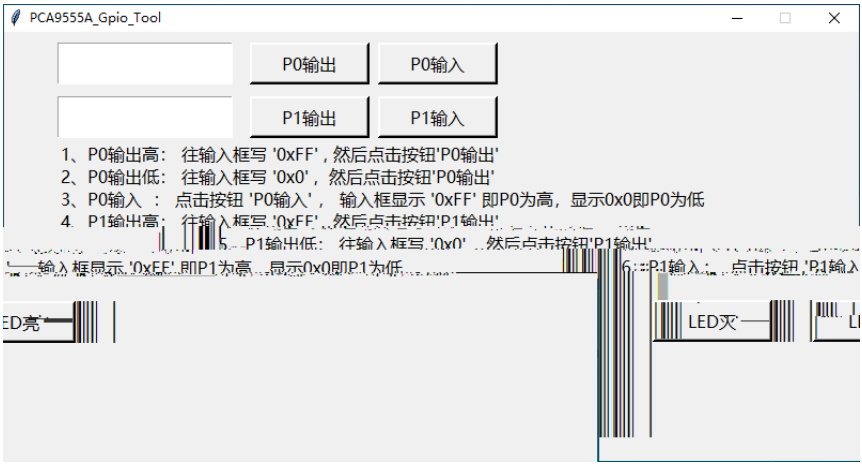
Bit	Description
7-0	**WDT Time-out Value 15-8**

8.2 GPIO

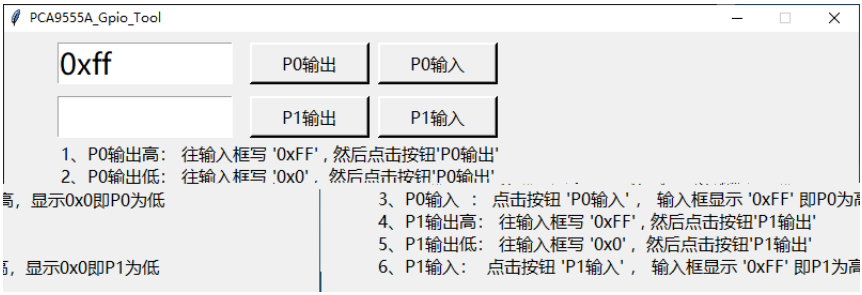
1 5V LED 5V 12V 24V



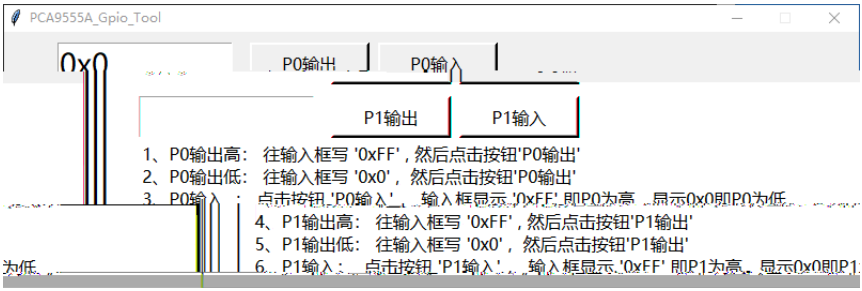
2 PCA9555A_Gpio_Tool



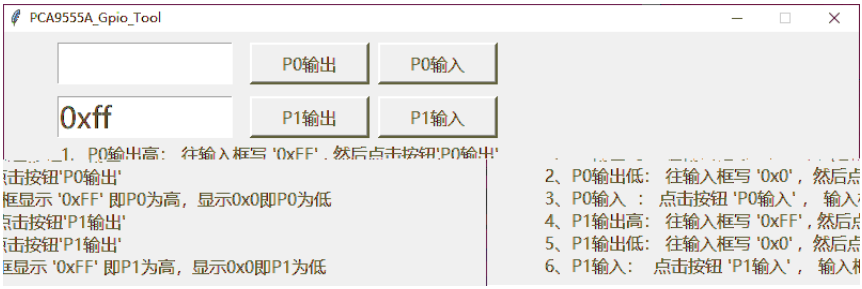
3 “ P0 ” 0x f



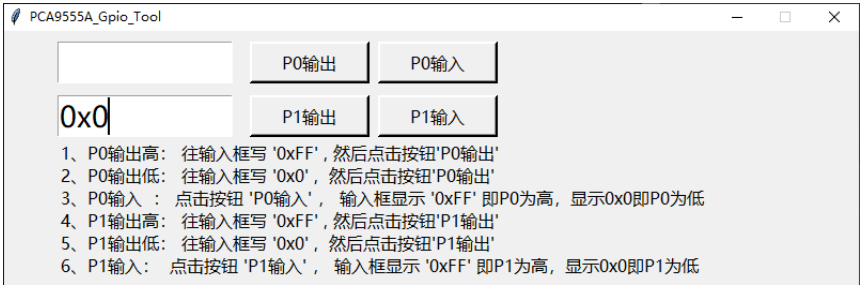
4 “ P0 ” 0x0



5 “P1” 0xf “P1” 0xf “P1”



6 “P1” 0x0 “P1”



Sample code PCA9555A_Gpio_Tool_LED_Program_source_code

9

9.1

		/
		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