525

Network Application Platform

User's Manual

Rev: 1.0

Date: 2012.03

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Chapter 1 Package Contents

Your mainboard package contains the following items:

- 1 One D525 mainboard
- 2 SATA data cable
- 3 Drives installed CD
- 4 One user's manual

Chapter 2 Introduction Key Features: -Chipset: Intel ATOM D525 + ICH8M

-CPU:

An onboard low-power INTEL Atom® processors, main frequency D525 as 1.80GHZ, 1MB L2 cache, supports Hyper-Threading technology, which is run at the two thread task. -Memory:

Supports DDR3 800 Single Channel Mode Provides 200pin SO-DIMM DDR3 slots

-I/O :

Provides two channel connecting two SATA drives
With speed up to 300MB/S
Four serial port
One LPT port
One VGA port
Four USB ports

-Onboard network Card Onboard two RTL8111DL network Card

-Expansion slot:

One 32-bit PCI slots 2.3 specification compliant One Mini PCIE port

-Power supply: ATX standard power mode.





Chapter 4 Rear panel sketch map

Rear Panel	
	The rear panel provides the following connectors



Chapter 5 Installation The Interface Definition

5.1.1 Function Port Panel

FPIO1



5.1.2 USB Extension Interface

USB2

VCC	1		2	VCC
USB-	З	00	4	USB-
U SB+	5	00	6	USB+
GND	7	00	8	GND
		0	10	GND

5.1.3 COM2-COM4 Extension Interface

	Pin #	Signal Name
2 10	1	DCD, Data carrier detect
	2	DSR, Data set ready
	3	RXD, Receive data
	4	RTS, Request to send
1 9	5	TXD, Transmit data
	6	CTS, Clear to send
	7	DTR, Data terminal ready
	8	RI, Ring indicator
	9	GND, ground
	10	COM VCC

5.1.4 LVDS Flat Panel Connector:LVDS CON





Jumper Settings 5.2.1 Jumper Presentation

	Pins 1 and 2 are shorted with a jumper cap.
1 2 3	
	Pins 2 and 3 are shorted with a jumper cap.

1 2 3

5.2.2 Clear CMOS

J1 is used to clear the CMOS Data in the RTC.

J1	Description
	Normal
	Clear CMOS

5.2.3 LVDS Power Selection Jumper:LCD-PWR

JP5		
\bigcirc	0	

Pin #	MODE
1 &2short	+3.3V
2 &3short	+5V

MODE

+12V +5V

5.2.4 Inverter Power Jumper: INVERTER-PWR

	Pin #
JP4	1 &2short
$\bigcirc \bigcirc$	2 &3short

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	~	
	۰.	
۰.		

Memory installation

5.3.1 The system board supports One DDRIII SO-DIMM

- Single Channel (SC)
 Data will be accessed in chunks of 64 bits (8B) from the memory channels.
- 2. A DIM module simply snaps into a DIMM socket on the system board. Pin 1 of the DIM module must correspond with Pin 1 of the socket.
- 1). Pull the "tabs" which are at the ends of the socket to the side.
- 2). Position the DIMM above the socket with the "notch" in the module aligned with the "key" on the socket.



3). Seat the module ver tickly into the socket. Make sure it is completely seated. The tabs will hold the DIMM in place.

5.3.2 IDE Devices Installation

IDE devices include hard disk drives, high-density diskette drives, and CD-ROM or DVD-ROM drives, among others.

The mainboard support one or two IDE devices. If you connect two



devices to a single cable, you must configure one of the drives as Master and one of the drives as Slave. The documentation of the IDE device will tell you how to configure the device as a Master or Slave device. The Master device connects to the end of the cable.

Other Device Installation

5.4.1 Serial ATA Installation

(7-Pin SATA1/SATA3)

The motherboard bundles the new Serial ATA technology through the SATA interfaces onboard. The SATA specification allows for thinner, more flexible cables with lower pin count, reduced voltage requirement. These connectors support Serial ATA HDDs and allow up to 300MB/s data transfer rate using thin 4-conductor SATA cables. faster than the standard parallel ATA with 133MB/s(Ultra ATA/133)

Note1: The Serial ATA cable is smaller and more flexible allowing easier routing inside the chassis. The lower pin count of the Serial ATA cable eliminates the problem caused by the wide, flat ribbon cables of the Parallel ATA interface.

Hot plug support for Serial ATA drive and connections are not available in this motherboard.

5.4.2 Clear CMOS (Clear RTC RAM)

This jumper allows you to clear the Real Time Clock (RTC) RAM in CMOS. You can clear the CMOS memory of date, time, and system setup parameters by erasing the CMOS RTC RAM data. The RAM data in CMOS, that include system setup information such as system passwords, is powered by the onboard button cell battery.

- 1. Turn OFF the computer and unplug the power cord.
- 2. Move the jumper cap from pin 1-2(default) to pin 2-3.Keep the cap on pin 2-3 for about 5-10 seconds, and then move the cap back to pins1-2.
- 3. Plug the power cord and turn ON the computer.
- Hold down the<F1> key during the boot process and enter BIOS setup to re-enter data.

Note1: Except when clearing RTC RAM, never remove the cap on CLRTC1 jumper default position. Removing the cap will cause system boot failure! Note2: You do not need to clear the RTC when the system hangs due to over clocking. For system failure due to over clocking, use the C.P.R. (CPU Parameter Recall) feature. Shut down and reboot the system so BIOS can automatically reset parameter settings to default values.

Chapter 6 Driver Installation

6.1 Installation Directory

The utility CD is supplied with that mainboard the connects contained in it is showed as below:

Directory	Driver	OS
Inf\INF_9.2.0.1021	Intel chipset software	Windows 2000/XP/Vista
VGA\D410_D510	Intel onboard VGA driver	Windows 2000/XP/Vista
Network\Intel\intel 82574	onboard NETWORK driver	Windows 2000/XP/Vista

Before installing audio driver, you must identify the mode of HD Audio codec. Fox

example: If you use Related serial codec, you need to enter into the Related directory installing.

6.2 Intel Chipset Software Setup

Insert the driver CD, running driver software CD, choose the directory: $\ CD-ROM: Inf INF_9.2.0.1021 INF_allOS_9.2.0.1021_PV$



Click"NEXT"to continue



Select"YES" to continue

tel® Chipset Device So	oftware			
Intel® Chipset Readme File Info	Device So rmation	ftware		(intel)
Refer to the Readme file be Press the Page Down key to * Product: Inte * Release: Prod * Version: 8.3. * Target Chipse * Date: March O *******	low to view the sys view the rest of th (R) Chipset uction Versi 0.1013 t#: Q33/G33/ 5 2007	tem requirements a ne file. Device Soft on G31/P35	and installation in	nformation.
<				>
		< <u>B</u> ack	<u>N</u> ext > Intel® Instal	Cancel

Select"NEXT" to continue





Select"FINISH" to complete the installation.

6.3 VGA Driver Setup

Insert the driver CD, running driver software CD, choose the directory:\CD-ROM:\ VGA\D410_D510\



Select"Yes"to continue

Intel(R) Graphics Me	dia Accelerator Driver
(intel)	Readme File Information Refer to the Readme file below to view the system requirements and installation information. Press the Page Down key to view the rest of the file.
	* * * * * * * * * * * * * * * * * * *
	< Back Next > Cancel Intel(R) Installation Framework

Select"Next"to continue

Intel(R) Graphics M	edia Accelerator Driver
(intol)	Setup Progress
linter	Please wait while the following components are installed:
	Copying file: igxpun.exe Copying file: difxapi.dll Copying file: ScrNB.bmp Copying file: ScrNB.bmp Copying file: MomENU.dll Creating key: HKLM\System\CurrentControlSet\Control\\Windows\SystemDirecto Creating key: HKLM\System\CurrentControlSet\Services\ialm\Device1\System Creating key: HKLM\System\CurrentControlSet\Services\ialm\Device1\System Creating key: HKLM\Spstem\CurrentControlSet\Services\ialm\Device1\System Creating key: HKLM\Spstem\CurrentControlSet\Services\ialm\Device1\System Creating key: HKLM\SpTFWARE\Microsoft\Windows\CurrentVersion\Uninstall Creating key: HKLM\SDFTWARE\Microsoft\Windows\CurrentVersion\Uninstall Installing Driver: Intel(R) G33/G31 Express Chipset Family Version: 6:14.10.4947
	4
	Next
	Intel(R) Installation Framework

Continue



Select"Finish"to complete the installation

6.4 NETWORK Driver Setup

Insert the driver DVD, running driver software DVD, choose the directory: DVD-ROM: Network Intel 82574

谚 Intel(R) Network Connections - InstallShield Wizard Welcome to the InstallShield Wizard for Intel(R) Network Connections	(intel)
Installs drivers, Intel(R) PROSet for Windows* Device Manager, and Advanced Networking Services.	
WARNING: This program is protected by copyright law and international treaties.	
InstallShield	Cancel

Select"Next"to continue

记 Intel(R) Network Connections - InstallShield Wizard	X
License Agreement Please read the following license agreement carefully.	(intel)
INTEL SOFTWARE LICENSE AGREEMENT (Final, Li	cense) 🚔
IMPORTANT - READ BEFORE COPYING, INSTALLIN USING.	IG OR
Do not use or load this software and any associated materials (collectively, the "Software") until you have carefully read the following terms and conditions. By loading or using the Software, you agree to the terms	s of this 💌
I accept the terms in the license agreement I do not accept the terms in the license agreement	Print
u iskalisi nelu	Cancel

Select"Next"to continue

Intel(R) Network Connections	
Setup Options Select the program features you want installed.	(intel)
Install:	
Drivers Jintel(R) PROSet for Windows* Device Manager Jord Advanced Network Services Jintel(R) Network Connections SNMP Agent	
Feature Description	Next > Cancel

Select"Next"to continue





Select"Install"to continue

谩 Intel(R) Network Connections - InstallShield Wizard InstallShield Wizard Completed	(intel)
To access new features, open Device Manager, and view th properties of the network adapters.	ie
InstallShield	Cancel

Select "Finish" to continue



Chapter 7 BIOS Setup 7.1 Entering Setup

Power on the computer and the system will start POST (Power On Self Test) process. when the message below appears on the screen, press key to enter Setup.

Press to run Setup

If the message disappears before you respond and you still wish to enter setup, restart the system by turning it OFF and On or pressing the RESET button. You may also restart the system by simultaneously pressing <Ctrl>,<Alt>,and<Delete>keys.

2.Use the arrow keys to select the item and press <Enter> to accept or enter the sub-menu

7.2 Control keys

The BIOS setup program provides a General Help screen. You can call up this screen from any menu by simply pressing <F1>. The Help screen lists the appropriate keys to use and the possible selections for the highlighted item. Press <Esc> to exit the Help screen.



7.3 The Menu Bar

-			BIOS SE	TUP UTILITY		
lain	Advanced	PCIPnP	Boot	Secur i ty	Chipset	Exit
System	Overview				Use	(ENTER), (TAB)
AMIBIO	S	6			sele	ct a field.
Build	Date:08/24/1 :TESTA00	1 5			Use conf	[+] or [-] to Tigure system Time.
Proces Intel(Speed Count	sor R) Atom(TM) :1800MHz :1	CPU D525	@ 1.800	iHz		
System Size	Memory :2038MB				+ 11	Select Screen Select Item Change Field
Systen Systen	Time Date		[10:5 [Sat	i2:24] 02/11/2012]	Tab F1 F10 ESC	Select Field General Help Save and Exit Exit

♦ Main

Use this menu for basic system configurations, such as time, date, etc.

♦ Advanced

Use this menu to set up the items of special enhanced features.

♦ PCIPnP

Setup PnP and PCI interface parameter.

♦ Boot

Use this menu to specify the priority of boot devices.

♦ Security

Use this menu to set supervisor and user passwords.

♦ Chipset

This menu controls the advanced features of the onboard Host Bridge and South Bridge.

♦ Exit

This menu allows you to load the BIOS default values or factory default settings into the BIOS and exit the BIOS setup utility or without changes.

7.4 Main menu

	1	BIOS SET	UP UTILITY		
Hain Advanced	PCIPnP	Boot	Secur i ty	Chipset	Exit
System Overview				Use or ((ENTER), (TAB) SHIFT-TAB] to
AMIBIOS Version :08.00.16 Build Date:08/24/11				se le Use	ct a field. [+] or [-] to
ID :TESTA005 Processor				conf	igure system Time.
Intel(R) Atom(TM) C Speed :1800MHz Count :1	PU D525 0	1.80G	łz		
System Memory Size :2038MB				+ 11 +-	Select Screen Select Item Change Field
Systen Tine Systen Date		[10:52 [Sat (2:24] 02/11/2012]	Tab F1 F10 ESC	Select Field General Help Save and Exit Exit
v02.68 (C) Comuriant	1985-20	09, America	n Megatren	ds. Inc.

♦ AMIBIOS (read only)

These items show the BIOS version, write the date and BIOS ID

 \diamond **Processor** (read only)

These items show the CPU information

♦ System Memory

Display the size of the computer memory

♦ System Time

This setting allows you to set the system time, format for hours/minutes/sec

♦ System Date

This setting allows you to set the system date, format for the week/month/day/year

7.5 Advanced

			BIOS SE	TUP UTILITY		
Main	Advanced	PCIPnP	Boot	Security.	Chipset	Exit
Advance	d Settings				Conf	igure CPU.
WARNING	: Setting w may cause	rong value system to	s in bel malfunc	ow sections tion.		
 CPU C IDE C Hardw ACPI AFCI AFS C MPS C PCI E Smbic Trust USB C 	ionfiguratio ionfiguratio are Health Configurati Configuratio ionfiguratio ionfiguratio xpress Configura is Configura ced Computin ionfiguratio	n Configurat on on n iguration tion g n	ion		+ †1 Ente F1 F10 ESC	Select Screen Select Item er Go to Sub Screen General Help Saue and Exit Exit

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Feature	Option	Description
Advanced Settings		
CPU Configuration	Menu item	Options for CPU
IDE Configuration	Menu item	Configure the IDE devices
Hardware Health	Menu item	Configure/monitor the
Configuration		Hardware Health
ACPI Configuration	Menu item	Section for Advanced
		ACPI Configuration
AHCI Configuration	Menu item	Section for Advanced
		AHCI Configuration
ASF Configuration	Menu item	Options for ASF
MPS Configuration	Menu item	MPS Version Control for OS
PCI Express Configuration	Menu item	PCI Device Settings options
Smbios Configuration	Menu item	System Management BIOS
Trusted Computing	Menu item	Whether to support the
		TCG/TPM
USB Configuration	Menu item	USB Device Settings options

∻ **CPU Configuration**

- \diamond Max CPUID Value Limit
- Execute-Disable Bit Capability
- \diamond Hyper Threading Technology
- Intel® SpeedStep (tm) tech
- ∻ Intel® C-STATE tech
- ∻ Enhanced C-States

∻ **IDE** Configuration

- ∻ ATA/IDE Configuration
- ∻ Legacy IDE Channels
- Default: Compatible Default: SATA Pri, PATA Sec

Default: Host & Device

Default: Enabled

Default: 35

Default: Disabled

Default: Enabled

Default: Enabled

Default: Disabled

Default: Enabled

Default: Enabled

- ∻ Primary IDE /Secondary Master/Slave Press <Enter> to enter the sub menu of detailed options. Ordinarily, The BIOS will automatically detect the IDE drives type. Default: Disabled
- ∻ Hard Disk Write Protect
- ∻ IDE Detect Time Out (Sec)
- ∻ ATA(PI) 80Pin Cable Detection ∻
 - Enhanced C-States

∻ **ACPI Configuration**

BIOS SETUP UTILITY Advanced General ACPI Configuration settings ACPI Settings General ACPI Configuration Advanced ACPI Configuration Chipset ACPI Configuration Select Screen t4 Select Item Enter Go to Sub Screen F1 General Help F10 Save and Exit ESC Exit v02.68 (C)Copyright 1985

∻ **General ACPI Configuration**

- ∻ Suspend mode ∻ Repost Video on S3 Resume
- Default: Auto Default: No

∻ **Advanced ACPI Configuration**

- $\diamond \\ \diamond$ **ACPI Version Features**
- ACPI APIC support
- ∻ AMI OEMB table
- ∻ Headless mode

∻ **Chipset ACPI Configuration**

- ∻ Energy Lake Feature
- ∻ APIC ACPI SCI IRQ
- ∻ USB Device Wakeup From S3/S4
- ∻ High Performance Event Timer
- ∻ HPET Memory Address

AHCI Configuration ∻

∻

S.M.A.R.T

Default: Enabled Default: Enabled Default: Disabled Default: Disabled

Default: ACPI v1.0

Default: Disabled Default: Disabled Default: Enabled Default: FED00000h

AHCI Port0		Select the type
Device :Not Detecte	d	to the system.
SATA Port0 S.M.A.R.T.	[Auto] [Enabled]	
		 Select Screen Select Iten Change Option F1 General Help F10 Save and Exit ESC Exit
v02.68 (C)Co	pyright 1985-2009, Americ	an Megatrends, Inc.
♦ SATA Port0		Default: Auto

Default: Auto Default: Enabled

SATA Port0: Select the type of device connected to the system

S.M.A.R.T: (Self-Monitoring Analysis and Reporting Technology) is a utility that

monitors your disk status to predict hard disk failure.

∻ **PCI Express Configuration**

- Relaxed Ordering
- $\diamond \\ \diamond$ Default: Auto Maximum Payload Size Default: Auto $\diamond \\\diamond$ Extended Tag Field Default: Auto Default: Auto
- No Snoop
- ∻ Maximum Read Request Size
- ∻ Active State Power Management Default: Disabled Default: Auto

Default: Auto

Default: Enabled

Default: Enabled

Default: Enabled

Default: Auto

∻ Extended Synch

∻ **USB** Configuration

- Legacy USB Support Default: Enabled USB 2.0 Controller Mode Default: HiSpeed
- BIOS EHCI Hand-Off
- USB 3.0 Controller Mode
- BIOS XHCI Hand-OFF
- ∻ Hotplug USB FDD Support

∻ **USB Mass Storage Device Configuration**

- ∻ USB Mass Storage Reset Delay Default: 20 Sec Default: Auto
- ∻ **Emulation Type**

7.6 PCIPnP

Advanced PCI/PnP Settings ∻

\diamond	Clear NVRAM	Default: No
\diamond	Plug & Play O/S	Default: No
\diamond	PCI Latency Timer	Default: 64
\diamond	Allocate IRQ to PCI VGA	Default: Yes
\diamond	Palette Snooping	Default: Disabled
\diamond	PCI IDE BusMaster	Default: Enabled
\diamond	OffBoard PCI/ISA IDE Card	Default: Auto
\diamond	IRQ3	Default: Available
\diamond	IRQ4	Default: Available
\diamond	IRQ5	Default: Available
\diamond	IRQ7	Default: Available
\diamond	IRQ9	Default: Available
\diamond	IRQ10	Default: Available
\diamond	IRQ11	Default: Available
\diamond	IRQ14	Default: Available
\diamond	IRQ15	Default: Available

7.7 Boot

♦ Boot Settings Configuration

\diamond	Quick Boot	Default: Enabled
\diamond	Quiet Boot	Default: Disabled
\diamond	AddOn ROM Display Mode	Default: Force BIOS
\diamond	Bootup Num-Lock	Default: On
\diamond	PS/2 Mouse Support	Default: Auto
\diamond	Wait For 'F1' If Error	Default: Enabled
\diamond	Hit 'DEL' Message Display	Default: Enabled
\diamond	Interrupt 19 Capture	Default: Disabled
\diamond	Boot Settings Configuration	
\diamond	1 st Boot Device	[USB:USB Hotplug FD]
\diamond	2 st Boot Device	[SATA: xxxxxxxx]

Specifies the boot sequence from the available devices.

Click [+] [-] can change the boot sequence

7.8 Security

	•	
\diamond	Change Supervisor Password	Default: Not Installed
\diamond	Change User Password	Default: Not Installed
♦	Boot Sector Virus Protection	Default: Disabled

If you highlight this item and press Enter, a dialog box appears that you can enter a supervisor password. You can enter no more than six letters or numbers. Press Enter after you have typed in the password. There will be the second dialog box asking you to retype the password for confirmation. Press Enter after you have retyped it correctly. Then the password is required for the access to the setup utility or for it at start-up, depending on the setting of the password check item in advanced setup.

7.9 Chipset

♦ North Bridge Chipset Configuration

\diamond	DRAM Frequency Configure DRAM Timing by SPD	Default: Auto Default: Enabled
¢	Initate Graphic Adapter	Default: IGD
♦	Internal Graphics Mode Select	Default: Enabled, 8MB

PEG Port Configuration

Video Function Configuration

♦ Video Function Configuration

\diamond	DVMT Mode Select	Default: DVMT Mode
\diamond	DVMT/FIXED Memory	Default: 256MB
\diamond	Boot Display Device	Default: VBIOS-Default
\diamond	Flat Panel Type	Default: 640x480LVDS
\diamond	Backlight Control Support	Default: VBIOS-Default
\diamond	BIA Connector	Default: VBIOS-Default
\diamond	TV Standard	Default: VBIOS-Default
\diamond	Spread Spectrum Clock	Default: Disabled
\diamond	South Bridge Chipset Configuration	
\diamond	USB Functions	Default: 10 USB Ports
\diamond	USB 2.0 Controller	Default: Enabled
\diamond	HDA Controller	Default: Disabled
\diamond	SMBUS Controller	Default: Enabled
\diamond	SLP_S4# Min. Assertion Width	Default: 1 to 2 seconds
\diamond	Restore on AC Power Loss	Default: Last State
\diamond	Bypass1	Default: Disabled
\diamond	Bypass2	Default: Disabled
\diamond	PCIE Ports Configuration	
\diamond	PCIE Port 0	Default: Auto
\diamond	PCIE Port 1	Default: Auto
\diamond	PCIE Port 2	Default: Auto
\diamond	PCIE Port 3	Default: Auto
\diamond	PCIE Port 4	Default: Auto
\diamond	PCIE Port 5	Default: Auto
\diamond	PCIE High Priority Port	Default: Disabled
\diamond	PCIE Port 0 IOxAPIC Enable	Default: Disabled
\diamond	PCIE Port 1 IOxAPIC Enable	Default: Disabled
\diamond	PCIE Port 2 IOxAPIC Enable	Default: Disabled
\diamond	PCIE Port 3 IOxAPIC Enable	Default: Disabled

- \diamond PCIE Port 3 IOxAPIC Enable
- ∻ PCIE Port 4 IOxAPIC Enable
- ∻ PCIE Port 5 IOxAPIC Enable
- $\label{eq:product} \diamond \quad \mbox{PCIE Port 0-PCIE Port 5 Default value selection Disabled, can be closed nic 1-5} \, .$

Default: Disabled

Default: Disabled

7.10 EXIT

\diamond Save Changes and Exit

After you have finished the configuration of BIOS, save your settings and exit setup utility. Select "Save Changes and Exit" and press <Enter>, the following message will display, type "Y" and press <Enter> to confirm.

♦ Discard Changes and Exit

After you have finished the configuration of BIOS, If you do not want to save the settings and exit setup utility. Select "Discard Changes and Exit" and press <Enter>, the following message will display, type "Y" and press <Enter> to confirm.

♦ Discard Changes

If you do not want to save the settings, select "Discard Changes" to don't exit setup utility without saving any change.

♦ Load Optimal Defaults

If you select this item and press enter a dialog box appears.

If you press Y, and then Enter, the setup utility loads a set of best-performance default values. These default values are quite demanding and your system might not function properly if you are using slower memory chips or other low-performance components.

♦ Load Failsafe Defaults

The safest default settings. You can use this function to detect the errors. Select this item and press <Enter>, the following message will display, type in "Y" to load the default values, type "N" to cancel.



Chapter 8 Watchdog Programming Instructions

Port explain

2EH:	Addres	s register	

2FH: Data registers

Example

Set Watchdog Timer for 30 seconds

♦ In the DOS mode DEBUG command

C:\>debug	
-o 2e 87	
-o 2e 87	; unlock
-o 2e 2d	
-o 2f e0	; bit4=0, set pin as wathdog func
-o 2e 07	
-o 2f 08	; Choose logic device
-o 2e 30	
-o 2f 01	; Activate logic device
-o 2e f5	
-o 2f 00	; Set time unit for seconds (Set time unit for minutes o 2f 08)
-o 2e f6	
-o 2f 30	; Set Timer Count h 30h= 48 seconds
-o 2e aa	; Lock registers
-q	
C:\>	

After the last line of user input after enter, system in 48 seconds after time reboot

♦ C++ language Reference code

outputb (0x2e, 0x87)	
outputb (0x2e, 0x87)	//open SUPER IO register
outputb (0x2e, 0x2D)	
outputb (0x2f, 0xE0)	//bit4=0, set pin as watchdog func
outputb (0x2E, 0x07)	
outputb (0x2F, 0x08)	//Select logical device
outputb (0x2e, 0x30)	
outputb (0x2f, 0x01)	//active the device
outputb (0x2e, 0xF5)	
outputb (0x2f, 0x00)	//Set time unit for seconds (Set minutes outputb (0x2f, 0x08)
outputb (0x2e, 0xF6)	
outputb (0x2f, 0x30)	// Set Timer Count h 30h= 48 seconds
outputb (0x2E, 0xAA)	// Lock SUPER IO registers
// code end	

If there was a system crash, through the watchdog function make the system reboot.

Chapter 10 Environment

- ♦ Operating temperature:0°C to 60°C
- ♦ Storage temperature:-20 $^{\circ}$ C to 80 $^{\circ}$ C
- ♦ Relative humidity:10% to 90% (Non self-solidifying)