



# MPC175-873 Series

17" TFT Fanless Medical Grade Panel Computer with Intel<sup>®</sup> Core<sup>™</sup> i7/i5/i3 Processor

**User's Manual** 



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### **Safety Approvals**

- CE Marking
- EN60601-1, UL60601-1
- FCC Class B

#### • FCC Compliance

This equipment has been tested in compliance with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are meant to provide reasonable protection against harmful interference in a residential installation. If not installed and used in accordance with proper instructions, this equipment might generate or radiate radio frequency energy and cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following methods:

- 1. Reorient or relocate the receiving antenna.
- 2. Increase the separation between the equipment and receiver.
- 3. Connect the equipment to another outlet of a circuit that doesn't connect with the receiver.
- 4. Consult the dealer or an experienced radio/TV technician for help.

Shielded interface cables must be used in order to comply with the emission limits.

#### **Safety Precautions**

Before getting started, read the following important safety precautions.

- 1. The **MPC175-873 Series** does not come equipped with an operating system. An operating system must be loaded first before installing any software into the computer.
- 2. Be sure to ground yourself to prevent static charge when installing the internal components. Use a grounding wrist strap and place all electronic components in any static-shielded devices. Most electronic components are sensitive to static electrical charge.
- 3. Disconnect the power cord from the **MPC175-873 Series** before any installation. Be sure both the system and external devices are turned OFF. A sudden surge of power could ruin sensitive components that the **MPC175-873 Series** must be properly grounded.
- 4. Make sure it is the correct voltage of the power source before connecting the equipment to the power outlet.
- 5. The brightness of the flat panel display will be getting weaker as a result of frequent usage. However, the operating period varies depending on the application environment.
- 6. Turn OFF the system power before cleaning. Clean the system using a cloth only. Do not spray any liquid cleaner directly onto the screen. The **MPC175-873 Series** may come with or w/o a touchscreen. Although the touchscreen is chemical resistant, it is recommended that you spray the liquid cleaner on a cloth first before wiping the screen. In case your system comes without the touchscreen, you must follow the same procedure and not spray any cleaner on the flat panel directly.
- 7. Avoid using sharp objects to operate the touchscreen. Scratches on the touchscreen may cause malfunction or internal failure to the touchscreen.
- 8. The flat panel display is not susceptible to shock or vibration. When assembling the **MPC175-873 Series**, make sure it is securely installed.
- 9. Do not leave this equipment in an uncontrolled environment where the storage temperature is below -20°C or above 60°C. It may damage the equipment.
- 10. External equipment intended for connection to signal input/out or other connectors shall comply with relevant UL/IEC standard.
- 11. Do not open the system's back cover. If opening the cover for maintenance is a must, only a trained technician is allowed to do so. Integrated circuits on computer boards are sensitive to static electricity. To avoid damaging chips from electrostatic discharge, observe the following precautions:
  - Before handling a board or integrated circuit, touch an unpainted portion of the system unit chassis for a few seconds. This will help to discharge any static electricity on your body.
  - When handling boards and components, wear a wrist-grounding strap, available from most electronic component stores.

#### Classification

- 1. Degree of production against electric shock: not classified
- 2. Degree of protection against the ingress of water: IPX1
- 3. Equipment not suitable for use in the presence of a flammable anesthetic mixture with air or with oxygen or nitrous oxide.
- 4. Mode of operation: Continuous
- 5. Type of protection against electric shock: Class I equipment

#### **IMPORTANT SAFETY INSTRUCTIONS**

READ BEFORE OPERATING EQUIPMENT

This product was designed and manufactured to meet strict quality and safety standards. There are, however, some installation and operation precautions which you should be particularly aware of.

- 1. Read these instructions.
- 2. Keep these instructions.
- 3. Heed all warnings.
- 4. Follow all instructions.
- 5. Classification Class I ME Equipment.
- 6. External Power Adapter, Input: 100 240 Vac, 50 60 Hz
- 7. The medical panel computer is certified with medical certifications to meet medical grade approval standards. The fan-less design and against enclosure allow it to operate reliably and quietly, it applied in any medical environments.
- 8. WARNING: To avoid risk of electric shock, this equipment must only be connected to a supply mains with protective earth
- 9. Accessory equipment connected to the analog and digital interfaces must be in compliance with the respective nationally harmonized IEC standards (i.e. IEC 60601-1 for medical equipment, IEC 60950-1 for ITE equipment) Furthermore all configurations shall comply with the system standard in IEC 60601-1. Anyone who connects additional equipment to the signal input part or signal output part is configuring a medical system, and is therefore, responsible that the system complies with the requirements of the system standard IEC 60601-1
- 10. Power supply is specified as a part of ME EQUIPMENT.
- 11. For pluggable equipment, the mains connector shall be installed near the equipment and shall be easily accessible.
- 12. Follow the national requirement to dispose unit/accessories/waste products/residues etc.
- 13. Warning : Do not modify this equipment without authorization of the manufacturer.
- 14. Warning: the operator not to touch the connectors and the patient at the same time.

### General Cleaning Tips

You may need the following precautions before you begin to clean the computer. When you clean any single part or component for the computer, please read and understand the details below fully.

- 1. When you need to clean the device, please rub it with a piece of dry cloth.
- Be cautious of the tiny removable components when you use a vacuum cleaner to 2 absorb the dirt on the floor.
- 3. Turn the system off before you start to clean up the component or computer.
- 4. Never drop the components inside the computer or get circuit board damp or wet.
- 5. Be cautious of all kinds of cleaning solvents or chemicals when you use it for the sake of cleaning. Some individuals may be allergic to the ingredients.
- 6. Try not to put any food, drink or cigarette around the computer.

#### **Cleaning Tools:**

Although many companies have created products to help improve the process of cleaning your computer and peripherals users can also use household items to clean their computers and peripherals. Below is a listing of items you may need or want to use while cleaning your computer or computer peripherals.

Keep in mind that some components in your computer may only be able to be cleaned using a product designed for cleaning that component, if this is the case it will be mentioned in the cleaning.

- Cloth: A piece of cloth is the best tool to use when rubbing up a component. Although paper towels or tissues can be used on most hardware as well, we still recommend you to rub it with a piece of cloth.
- Water or rubbing alcohol: You may moisten a piece of cloth a bit with some water or rubbing alcohol and rub it on the computer. Unknown solvents may be harmful to the plastics parts.
- Vacuum cleaner: Absorb the dust, dirt, hair, cigarette particles, and other particles out of a computer can be one of the best methods of cleaning a computer. Over time these items can restrict the airflow in a computer and cause circuitry to corrode.
- Cotton swaps: Cotton swaps moistened with rubbing alcohol or water are excellent tools for wiping hard to reach areas in your keyboard, mouse, and other locations.
- Foam swabs: Whenever possible it is better to use lint free swabs such as foam swabs.

 $\overset{\scriptstyle imes}{\scriptstyle Note}$  We strongly recommended that you should shut down the system before you start to clean any single components.

#### Please follow the steps below:

- Close all application programs 1.
- 2. Close operating software
- 3. Turn off power switch
- 4. Remove all device
- Pull out power cable 5.

#### **Scrap Computer Recycling**

If the computer equipments need the maintenance or are beyond repair, we strongly recommended that you should inform your Axiomtek distributor as soon as possible for the suitable solution. For the computers that are no longer useful or no longer work well, please contact your Axiomtek distributor for recycling and we will make the proper arrangement.

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## CHAPTER 1 INTRODUCTION

This chapter contains general information and detailed specifications of the **MPC175-873 Series**. Chapter 1 includes the following sections:

- General Description
- Features
- System Specification
- Dimensions
- I/O Outlets
- Package List

#### **1.1 General Description**

The MPC175-873 is an ultra slim panel computer equipped with 17-inch 350nits brightness SXGA LCD display and supports superior  $2^{nd}$  and  $3^{rd}$  Generation Intel<sup>®</sup> Core<sup>TM</sup> i7/i5/i3/Pentium/Celeron processor up to 35W and up to 16GB of dual-channel DDR3 system memory. Powered by Intel<sup>®</sup> the mobile Intel QM77 express chipset, it offers excellent 3D graphics and dual-view capability. The medical panel computer is certified with medical certifications to meet medical grade approval standards. The fanless design and waterproof enclosure allow it to operate reliably and quietly, it applied in any medical environments.

The panel also supports Dual View and multiple I/O options. Furthermore, the MPC175-873 supports a PCI or PCIe interface for flexibility and an internal antenna for wireless expansion. With a built-in 5 mega pixels camera and speakers, this durable panel computer is also the best solutions for VoIP and remote monitoring. This safe, reliable and user-friendly medical panel computer can ensure customer's project success and best suited for eHealthcare, Point of Care, and telemedicine.

#### 1.2 Features

- 17" (350nits) SXGA TFT LCD, resolution 1280 x 1024
- Fanless 2<sup>nd</sup> & 3<sup>rd</sup> Generation Intel<sup>®</sup> Core<sup>TM</sup> i7/i5/i3/Pentium/ Celeron<sup>®</sup> processor
- UL60601-1/ EN60601-1, CE & FCC class B certified
- Spill and dust resistant design (front panel: IP65, whole enclosure: IPX1)
- Optional 1 PCI or PCIe x 4 expansion slot
- Isolated COM, USB, Ethernet ports
- Front 5 mega pixels camera
- Optional Wi-Fi/ Bluetooth / HSDPA / LTE communication module

### **1.3 System Specifications**

Front Bezel	Plastic ABS			
	Display Type	17" SXGA TFT		
	Brightness (Cd/M <sup>2</sup> )	350 nits		
LCD Panel	Resolution	1280 x 1024		
	Viewing Angle (H/V)	80º(Right) 80º(Left) / 60º(UP) 80º(Down)		
	CPU	Fanless socket rPGA988B 2 <sup>nd</sup> & 3 <sup>rd</sup> Generation Intel <sup>®</sup> Core <sup>TM</sup> i7/i5/i3/Pentium/Celeron <sup>®</sup> processor, TDP is up to <b>35W</b>		
	Chipset	Intel <sup>®</sup> QM77 PCH		
Main System	System Memory	Supports 2 DDR3 SODIMM memory up to 16 GB		
	Storage	1 x 2.5" SATA HDD 1 x mSATA SSD		
	Optical Drive	1 x Super Multi DVD (optional)		
	1 x RS-232/422/485	i (COM 1, isolated 4KV)		
	2 x USB2.0 (isolated	d 4KV)		
	2 x USB3.0			
I/O Connectors	1 x Dual-mode DisplayPort			
	2 x 10/100/1000 Mb	ayr Ull		
	2 x 10/100/1000 Mid			
	1 x PCI or PCIe slot (optional)			
Expansion	1 x full-size PCIe Mini Card slot (support mSATA)			
Interface	1 x half-size PCIe Mini Card slot with SIM socket			
Speakers	2 x 2W internal spe	akers		
Camera	1 X 5 Mega Pixels Camera			
	Five Wired Resistive Type			
Touchscreen	Light Transmission: 80%			
	Touch Lifetime: 35 Million Touches			
OSD Function Key	LCD brightness up/	down, audio volume up/down, and touch on/off		
Power Supply	100~240V AC-DC Medical Adapter			
Dimensions	437.21mm (17.21") (W) x 88mm (3.46") (D) x 375.78mm (14.79") (H)			
Weight	8.098 kg (17.85 lb)			
	Operation Temperature: 0°C~40°C (32°F~104°F)			
Environmental	Storage Temperature: -20°C~60°C (-4°F~140°F)			
	Relative Humidity: 1	/: 10%~95%, Non-Condesing		
Certification	CE, FCC classB, EN6060101, UL60601-1			

Note 1.All specifications and images are subject to change without notice. If choosing 45W Core i7 processor, the operation temperature of MPC175-873 is 0°C~35°C.

2. Two Isolated USB ports share 0.5A together.

### 1.4 Dimensions

The following diagrams show you dimensions and outlines of the MPC175-873 Series.



### 1.5 I/O Outlets

The following figures show you the locations of the MPC175-873 Series I/O outlets.



NO	CONNECTOR
1	Brightness Adjust Buttons
2	Volume Adjust Buttons
3	LED indicator
4	MIC
5	Touch on/off button



### 1.6 Packing List

The package bundled with your **MPC175-873 Series** should contain the following items:

- MPC175-873 Series Unit x 1
- 100~240V AC-DC Medical Adapter
- Driver/Utility Disc x 1 (For Driver and User's Manual)
- Super Multi DVD Cover x 2 (For Super-multi DVD type)
- Wall-Mount Bracket x 1

If you cannot find this package or any items are missing, please contact AXIOMTEK distributors immediately.

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# CHAPTER 2 HARDWARE INSTALLATION

The **MPC175-873 Series** are convenient for your various hardware configurations, such as CPU (Central Processing Unit) and HDD (Hard Disk Drive). The chapter 2 will show you how to install the hardware. It includes:

### 2.1 CPU and DRAM Installation

The MPC175-873 provides socket rPGA988B for processor and two 204-pin DDR3 SO-DIMM sockets that support system memory up to 16GB. Please follow steps below to install the memory modules:

**Step 1** Turn off the system, and unplug the Power cord.



**Step 2** Locate and release these screws to open the back cover.

Step 3 Please open the back cover by lifting the joint part as marked.



Step 4 Open the back cover and find main board and locate the SO-DIMM socket and CPU cooler.



Step 5 Release these screws as marked.



**Step 6** Align pins of the CPU with pin holes of the socket. Be careful of the CPU's orientation that you need to align the arrow mark on the CPU with the arrow key on the socket. Place the CPU into the socket, and use a screwdriver to lock it onto the socket as marked.



**Step 7** Place the heat sink on the CPU, and lock it down as marked.





Step 8 Push down latches on each side of the SO-DIMM socket.

Step 9 Install the memory module into the socket and push it firmly down until it is fully seated. The socket latches are levered upwards and clipped on to the edges of the SO-DIMM.



### 2.2 Hard Disk Drive Installation

The **MPC175-873 Series** offers a convenient drive bay module for users to install HDD. The system offers users one 2.5" Hard Disk Drive for installation. Please follow the steps:

**Step 1** Turn off the system, and unplug the Power cord.

**Step 2** Locate and release these screws to open the back cover.



**Step 3** Please open the back cover by lifting the joint part as marked.



**Step 4** Find the HDD bracket on accessory package and fine HDD socket on main board as marked.



- **Step 5** Use assembly parts to fix HDD with the bracket.
  - 1. HDD Bracket x1
  - 2. 2.5 inch Hard-disk
  - 3. Screw x 4
  - 4. Fix four screw holes on the bracket, and assembly the HDD with the bracket.







<u>Note</u> Please follow the direction of Hard-disk installation. "Hard-disk PCB faceup".

**Step 6** Install the HDD bracket inside the system. Plug the HDD in the SATA connector on main board. Fix two screw holes on main board as marked



**Step 7** Close the back cover to the chassis, and fasten all screws.



### 2.3 Serial Ports Interface

The MPC175-873 series has three serial ports, COM1 (RS-232/ 422/ 485) with isolated 4KV.

Pin	Signal	Pin	Signal
1	Data Carrier Detect (DCD)	6	Data Set Ready (DSR)
2	Receive Data (RXD)	7	Request To Send (RTS)
3	Transmit Data (TXD)	8	Clear To Send (CTS)
4	Data Terminal Ready (DTR)	9	Ring Indicator (RI)
5	Ground (GND)		



In addition, COM1 can be set for RS-232/422/485 via BIOS.

In BIOS, user can change transmission mode in following menu.

Advanced→NCT6106D Super IO Configuration→Serial Port 0 Configuration→Transmission Mode

Please refer to Chapter 3 for BIOS setting.

When COM1 is set to RS-422 or RS-485, the pin assignments are listed below:

Dim	Signal Name		
PIN	RS-422	RS-485	
1	TX-	DATA-	
2	TX+	DATA+	
3	RX+	No connector	
4	RX-	No connector	
5	No connector	No connector	
6	No connector	No connector	
7	No connector	No connector	
8	No connector	No connector	
9	No connector	No connector	

### 2.4 PCIe Mini Card Module Installation

You can follow the steps below to install PCIe mini card modules.

- **Step 1** Turn off the system, and unplug the Power cord.
- **Step 2** Locate and release these screws to open the back cover.



**Step 3** Please open the back cover by lifting the joint part as marked.



**Step 4** There are two slots. One is full-size mini card slot which supports mSATA. The other is half-size mini card slot with a SIM card socket.



**Step 5** The socket latches are clipped on to the edges of the mini card. Install mini card to the socket.



Step 6 Install mini card to the socket and fasten screws.



Step 7	If installing mSA	TA, please	adjust JP3	jumper.
				J

Jumper	Default Setting	Jumper Setting
	PCIe device (default setting)	Short 1-2
JP3	mSATA device	Short 2-3

**Step 8** If installing wireless or 3G module, find the built-in antenna cable and connect it to the connector on wireless or 3G module.



Step 9 Close the back cover to the chassis, and fasten all screws.



### 2.5 Add-on card Installation (Optional)

You can follow the steps below to install an optional add-on card.

- **Step 1** Turn off the system, and unplug the Power cord.
- Step 2 Locate and release these screws to open the back cover.



**Step 3** Please open the back cover by lifting the joint part as marked.





**Step 4** Release the screw as marked. And remove plates.

**Step 5** Insert the add-on card in the socket firmly until it is completely seated.



**Step 6** Fasten the screw as marked





**Step 7** Close the back cover to the chassis, and fasten all screws.

Please note that users only can install either expansion card or optical drive.

### 2.6 Mount

There are several mounting ways for the **MPC175-873 Series**, Wall mount, VESA and Desktop mountings as below:

#### 2.6.1 Wall mount

The mounting for MPC175-873 Series is Wall mount as below:

**Step 1** Prepare all parts for installing the wall mount kit and assemble the wall mount kit by using screws to fix the backplane.



#### 2.6.2 VESA Mount

The mounting for MPC175-873 Series is VESA-Arm as below:

Assemble VESA-Arm by using screws to fix the backplane.



#### 2.6.3 Desktop Stand (Optional)

The MPC175-873 Series provides you with an optional Desktop Stand that you can follow the steps below:



**Step 1** Prepare the parts of desktop stand.

Step 2 Assemble the desktop stand. Fix the screws as marked on the bottom side of chassis. (Use Screw A)







**Step 3** Assemble the desktop stand by fixing it onto the system. (Use Screw B).

**Step 4** Assembly the hinge cover and fix the screws as marked on the back side of chassis (Use Screw C).



**Step 5** Fix the desktop stand finish.



# CHAPTER 3 BIOS SETUP UTILITY

This chapter provides users with detailed description how to set up basic system configuration through the AMIBIOS8 BIOS setup utility.

#### 3.1 Starting

To enter the setup screens, follow the steps below:

- 1. Turn on the computer and press the <Del> key immediately.
- After you press the <Delete> key, the main BIOS setup menu displays. You can access the other setup screens from the main BIOS setup menu, such as the Chipset and Power menus.

#### 3.2 Navigation Keys

The BIOS setup/utility uses a key-based navigation system called hot keys. Most of the BIOS setup utility hot keys can be used at any time during the setup navigation process. These keys include <F1>, <F2>, <F3>, <F4>, <Enter>, <ESC>, <Arrow> keys, and so on.

← Left/Right	The Left and Right < Arrow> keys allow you to select a setup screen.	
<b>↑</b> ↓ Up/Down	The Up and Down <arrow> keys allow you to select a setup screen or sub- screen.</arrow>	
+– Plus/Minus	The Plus and Minus < Arrow> keys allow you to change the field value of a particular setup item.	
Tab	The <tab> key allows you to select setup fields.</tab>	
F1	The <f1> key allows you to display the General Help screen.</f1>	
F2	The <f2> key allows you to load previous value</f2>	
F3	The <f3> key allows you to Load Optimized Defaults.</f3>	
F4	The <f4> key allows you to save any changes you have made and exit Setup. Press the <f4> key to save your changes.</f4></f4>	
Esc	The <esc> key allows you to discard any changes you have made and exit the Setup. Press the</esc>	
	<esc> key to exit the setup without saving your changes.</esc>	
Enter	The <enter> key allows you to display or change the setup option listed for a particular setup item. The <enter> key can also allow you to display the setup sub- screens.</enter></enter>	

**Note** Some of navigation keys differ from one screen to another.

#### 3.3 Main Menu

When you first enter the setup utility, you will enter the Main setup screen. You can always return to the Main setup screen by selecting the Main tab. System Time/Date can be set up as described below. The Main BIOS setup screen is shown below.

Ar Main Advanced	n <mark>tio Setup Utility – Copyright (C) 2011 American</mark> Chipset Boot Security Save & Exit	Megatrends, Inc.
BIOS Version Build Date	SBC87873 X008 01/13/2014	Set the Date. Use Tab to switch between Date elements.
System Date System Time	[Wed 07/17/2013] [10:55:51]	
Access Level	Administrator	
		ti: Select Item Enter: Select
		+/-: Change Opt. F1: General Help F2: Previous Values
		F3: Optimized Defaults F4: Save & Exit FSC: Exit
1	/ersion 2.14.1219. Copyright (C) 2011 American Me	egatrends, Inc.

#### System Time/Date

Use this option to change the system time and date. Highlight *System Time* or *System Date* using the <Arrow> keys. Enter new values through the keyboard. Press the <Tab> key or the <Arrow> keys to move between fields. The date must be entered in MM/DD/YY format. The time is entered in HH:MM:SS format.
### 3.4 Advanced Menu

The Advanced menu allows users to set configuration of the CPU and other system devices. You can select any of the items in the left frame of the screen to go to the sub menus:

- ACPI Settings
- S5 RTC Wake Settings
- CPU Configuration
- SATA Configuration
- PCH-FW Configuration
- USB Configuration
- NCT6106D Super IO Configuration
- NCT6106D H/W Monitor

For items marked with "▶", please press <Enter> for more options.

Aptio Setup Utility - Copyr Main <mark>Advanced</mark> Chipset Boot Security	ght (C) 2011 American Megatrends, Inc. Save & Exit
<ul> <li>ACPI Settings</li> <li>S5 RTC Wake Setting</li> <li>Trusted Computing</li> <li>CPU Configuration</li> <li>SATA Configuration</li> <li>PCH-FW Configuration</li> <li>AMT Configuration</li> <li>USB Configuration</li> <li>NCT6106D Super IO Configuration</li> <li>NCT6106D HW Monitor</li> </ul>	System ACPI Parameters. ++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.14.1219. Copyrig	t (C) 2011 American Megatrends, Inc.

### • ACPI Settings

You can use this screen to select options for the ACPI configuration, and change the value of the selected option. A description of the selected item appears on the right side of the screen.



### **ACPI Sleep State**

Allow you to select the Advanced Configuration and Power Interface (ACPI) sleep state. Here are the options for your selection: S1 (CPU Stop Clock) and S3 (Suspend to RAM). The S3 (Suspend to RAM) option selects the highest ACPI sleep state the system will enter when SUSPEND button is pressed.

### • S5 RTC Wake Setting

Use this option to wake on the system on the setting time. When enabled System will wake on the time specified

Aptio Setup Ut: Advanced	ility – Copyright (C) 2011 Ame	rican Megatrends, Inc.
Advanced Wake system with Fixed Time	[Disabled]	Enable or disable System wake on alarm event. When enabled, System will wake on the hruminused specified ++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults E4: Save 0. Evit
		ESC: Exit
Version 2.14.:	1219. Copyright (C) 2011 Ameri	can Megatrends, Inc.

### • CPU Configuration

This screen shows the CPU Configuration, and you can change the value of the selected option.

PU Configuration		Enabled for Windows XP and
ntel(R) Core(TM) 13-3110M CPU @	2.406Hz	Huper-Threading Technology)
PU Signature	306a9	and Disabled for other OS (OS
icrocode Patch	c	not optimized for
ax CPU Speed	2400 MHz	Hyper-Threading Technology).
in CPU Speed	1200 MHz	When Disabled only one thread
PU Speed	2400 MHz	per enabled core is enabled.
rocessor Cores	2	
ntel HT Technology	Supported	
ntel VT-x Technology	Supported	
ntel SMX Technology	Not Supported	
4-bit	Supported	
		++: Select Screen
1 Data Cache	32 KB x 2	11: Select Item
1 Code Cache	32 kB x 2	Enter: Select
2 Cache	256 kB x 2	+/-: Change Opt.
3 Cache	3072 KB	F1: General Help
		F2: Previous Values
yper-threading	[Enabled]	F3: Optimized Defaults
ctive Processor Cores	[A11]	F4: Save & Exit
imit CPUID Maximum	[Disabled]	ESC: Exit
xecute Disable Bit	[Enabled]	
ntel Virtualization Technologu	[Enabled]	

### Hyper-threading

Enabled for Windows XP and Linux and disabled for other OS which do not optimized for Hyper-threating technology.

#### Active Processor Cores

Number of cores to enable in each processor package.

### Limit CPUID Maximum

Set limit CPUID Maximum value. Should be set as "disabled" for Windows XP.

### Execute Disable Bit

No-Execution page protection technology is able to force the XD feature flag to always return 0.

### Intel Virtualization Technology

Allow you to enable or disable Intel Virtualization Technology. When enabled, a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology .

### • SATA Configuration

In the SATA Configuration menu, you can see the currently installed hardware in the SATA ports. During system boot up, the BIOS automatically detects the presence of SATA devices.

Aptio Setup Utility - Advanced	- Copyright (C) 2011 American	Megatrends, Inc.
SATA Mode Selection SATA Controller Speed	[AHCI] [Gen3]	Determines how SATA controller(s) operate.
Serial ATA Port O Software Preserve Serial ATA Port 1 Software Preserve Serial ATA Port 2	Empty Unknown INTEL SSDSC2BB (120.0 SUPPORTED Empty	
		<pre>++: Select Screen f1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>
Version 2.14.1219. (	Copyright (C) 2011 American M	legatrends, Inc.

### SATA Mode Selection

Use this item to choose the SATA operation mode. Here are the options for your selection: IDE Mode and AHCI Mode.

### SATA Controller Speed

Use this item to choose the SATA speed. Here are the options for your selection: Gen1, Gen2, Gen3  $\,$ 

#### • PCH-FW Configuration

You can use this screen to confirm ME Firmware version.



### • USB Configuration

You can use this screen to select options for the Isolation USB Configuration, and change the value of the selected option.

Isolation USB ports can support two kind of speed: Low Speed / Full Speed. Depending on your speed of USB device, user must select relative USB speed. Otherwise, the USB device may not work properly. Please remove the USB devices and reboot if you want to change the speed of USB.

Aptio Setup Advanced	Utility – Copyright (C) 2011 American	n Megatrends, Inc.
USB Configuration USB Devices: 1 Keyboard, 1 Point		Isolation USB Function
Isolation USB Speed	[Full Speed] Isolation USB Speed Low Speed Full Speed	++: Select Screen f1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.	14.1219. Copyright (C) 2011 American M	Megatrends, Inc.

Note If the USB device is high speed, please make sure it can support full or low speed, Note If the USB device is high speed, please make sure it can support full or low speed, USB and select relative speed in BIOS when user would like to connect it to isolated USB port.

### • NCT6106D Super IO Configuration

You can use this screen to select options for the Super IO Configuration, and change the value of the selected option. A description of the selected item appears on the right side of the screen. For items marked with " $\blacktriangleright$ ", please press <Enter> for more options.

Aptio Setup Utility Advanced	– Copyright (C) 2011 Amer	rican Megatrends, Inc.
NCT6106D Super IO Configuration		Set Parameters of Serial Port
NCT6106D Super IO Chip Serial Port 0 Configuration Serial Port 1 Configuration Serial Port 2 Configuration	NCT6106D	<pre>0 (CDMA) ++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>
Version 2.14.1219.	Copyright (C) 2011 Americ	an Megatrends, Inc.

### • Serial Port 0 Configuration

Aptio Setup Utility – ( Advanced	Copyright	(C) 2011 American	Megatrends, Inc.
Serial Port O Configuration			Option Serial Port Transmission Mode
Device Settings	IO=3F8h;	IRQ=4;	
Transmission Mode	[RS232]		
			++: Select Screen †↓: Select Item
			Enter: Select +/-: Change Opt. F1: General Help
			F2: Previous Values F3: Optimized Defaults F4: Save & Exit
			ESP: EXI
Version 2 14 1219 - Co	nucight ((	) 2011 American Ma	gatrends Inc

### Serial Port

Use this item to enable or disable serial port 0. The optimal setting for base I/O address is 3F8h and for interrupt request line is IRQ4.

### **Transmission Mode**

Use this item to configure serial port 0. Here are the options for your selection:

RS232

RS422

RS485

### • NCT6106D HW Monitor

This screen shows the Hardware Health Configuration.



## 3.5 Chipset Menu

The Chipset menu allows users to change the advanced chipset settings. You can select any of the items in the left frame of the screen to go to the sub menus:

- ► PCH-IO Configuration
- System Agent (SA) Configuration

For items marked with "▶", please press <Enter> for more options.

Aptio S Main Advanced C	Setup Utility - Copyright (C) 2011 American <mark>Chipset</mark> Boot Security Save & Exit	Megatrends, Inc.
▶ PCH-IO Configuration ▶ System Agent (SA) Cor	nfiguration	PCH Parameters
		<pre>++: Select Screen  \$ 1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>
Versi	on 2.14.1219. Copyright (C) 2011 American M	egatrends. Inc.

### • PCH-IO Configuration

This screen allows users to set PCH parameters.

Aptio Setup Ut Main Advanced <mark>Chipset</mark>	ility - Copyright (C) 2011 Ame Boot Security Save & Exit	erican Megatrends, Inc. t
Intel PCH RC Version Intel PCH SKU Name Intel PCH Rev ID	1.1.0.0 QM77 04/C1	Controls the execution of UEFI and Legacy OpROM
Launch PXE OpROM policy		
		<pre> ++: Select Screen  11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit</pre>
	1010 converte (c) 2011 march	ESC: Exit

### Lanuch PXE OpROM policy

Controls the execution of UEFI and Legacy OpROM

### • System Agent (SA) Configuration

This screen shows System Agent information and provides function for specifying related parameters. For items marked with "▶", please press <Enter> for more options.

Aptio Setup Utili Chipset	ty - Copyright (C) 2011 A	xmerican Megatrends, Inc.
System Agent Bridge Name System Agent RC Version VT-d Capability	IvyBridge 1.1.0.0 Supported	Check to enable VT-d function on MCH.
<pre>VT-d</pre> ► Graphics Configuration ► NB PCIE Configuration ► Memory Configuration		
		<pre> ++: Select Screen  ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>
Version 2.14.12	L9. Copyright (C) 2011 Am	erican Megatrends, Inc.

### VT-d

Enable or disable Intel<sup>®</sup> chipset virtualization technology for directed I/O. VT-d can help end users improve security and reliability of the systems and also improve performance of I/O devices in virtualized environment.

### • Graphics Configuration

This option allows users to change the integrated graphic device settings.

Aptic	Setup Utility - Copyright (C) 201: Chipset	1 American Megatrends, Inc.
Graphics Configurat Primary Display ►LCD Control	ion [Auto]	Select which of IGFX/PEG/PCI Graphics device should be Primary Display Or select SG for Switchable Gfx.
		<pre>++: Select Screen  11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>
Ver	sion 2.14.1219, Copyright (C) 2011	American Megatrends, Inc.

### **Primary Display**

Allow you to select which graphics controller to use as the primary boot device.

### • LCD Control

Select LCD panel used by Internal Graphics Device by selecting the appropriate setup item.

	Aptio Setup Utility - Copyright (C) 2011 American	n Megatrends, Inc.
LCD Control Model	[MPC225]	Select LCD panel used by Internal Graphics Device by selecting the appropriate setup item
		<pre>&gt;+: Select Screen  11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Select Screen F5: Sel</pre>
	Version 2.14.1219. Copyright (C) 2011 American	F4: Save & Exit ESC: Exit Megatrends, Inc.

### • Memory Configuration

This screen displays system memory information.

Aptio Setup Ut Chipset	ility - Copyright (C) 2011 Amer	ican Megatrends, Inc.
Memory Information		
Memory RC Version Memory Frequency Total Memory DIMMA1 DIMMB1	1.1.0.0 1067 Mhz 1024 MB (DDR3) 1024 MB (DDR3) Not Present	
		<pre> ++: Select Screen  \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$</pre>

## 3.6 Boot Menu

The Boot menu allows users to change boot options of the system.

Aptio Setup Ut Main Advanced Chipset	ility - Copyright (C) 2011 America Boot Security Save & Exit	n Megatrends, Inc.
Boot Configuration Setup Prompt Timeout	1	Number of seconds to wait for setup activation key. 65535(0XFFFF) means indefinite
Boot Option Priorities		waiting.
		<pre>→+: Select Screen  ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>
Version 2.14	.1219. Copyright (C) 2011 American	Megatrends. Inc.

### Setup Prompt Timeout

Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting.

### **Boot Option Priorities**

These are settings for boot priority. Specify the boot device priority sequence from the available devices.

## 3.7 Security Menu

The Security menu allows users to change the security settings for the system.

Aptio Set Main Advanced Chip	up Utility - Copyright o set Boot Security	(C) 2011 American Megatrends, Inc. Save & Exit
Password Description If ONLY the Administrate then this only limits are only asked for when ente If ONLY the User's pass is a power on password a boot or enter Setup. In have Administrator righ The password length mus- in the following range: Minimum length	or's password is set, ccess to Setup and is ering Setup. word is set, then this and must be entered to Setup the User will ts. t be	Set Administrator Password
Maximum length Administrator Password User Password	20	<pre>++: Select Screen  \$ 1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>
Version	2.14.1219, Copyright (C	) 2011 American Megatrends, Inc.

#### **Administrator Password**

This item indicates whether an administrator password has been set (installed or uninstalled).

### **User Password**

This item indicates whether an user password has been set (installed or uninstalled).

## 3.8 Save & Exit Menu

The Save & Exit menu allows users to load your system configuration with optimal or fail-safe default values.

Aptio Setup Utility – Copyright (C) 2011 American Main Advanced Chipset Boot Security <mark>Save &amp; Exit</mark>	Megatrends, Inc.
Save Changes and Exit Discard Changes and Exit Save Changes and Reset Discard Changes and Reset	Exit system setup after saving the changes.
Save Options Save Changes Discard Changes	
Restore Defaults Save as User Defaults Restore User Defaults	
Boot Override UEFI: Built-in EFI Shell P1: INTEL SSDSC2BB120G4	<pre>++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>
Version 2.14.1219. Copyright (C) 2011 American Mo	egatrends, Inc.

### Save Changes and Exit

When you have completed the system configuration changes, select this option to leave Setup and return to Main Menu. Select Save Changes and Exit from the Save & Exit menu and press <Enter>. Select Yes to save changes and exit.

### Discard Changes and Exit

Select this option to quit Setup without making any permanent changes to the system configuration and return to Main Menu. Select Discard Changes and Exit from the Save & Exit menu and press <Enter>. Select Yes to discard changes and exit.

### Save Changes and Reset

When you have completed the system configuration changes, select this option to leave Setup and reboot the computer so the new system configuration parameters can take effect. Select Save Changes and Reset from the Save & Exit menu and press <Enter>. Select Yes to save changes and reset.

#### **Discard Changes and Reset**

Select this option to quit Setup without making any permanent changes to the system configuration and reboot the computer. Select Discard Changes and Reset from the Save & Exit menu and press <Enter>. Select Yes to discard changes and reset.

#### **Save Changes**

When you have completed the system configuration changes, select this option to save changes. Select Save Changes from the Save & Exit menu and press <Enter>. Select Yes to save changes.

### **Discard Changes**

Select this option to quit Setup without making any permanent changes to the system configuration. Select Discard Changes from the Save & Exit menu and press <Enter>. Select Yes to discard changes.

#### **Restore Defaults**

It automatically sets all Setup options to a complete set of default settings when you select this option. Select Restore Defaults from the Save & Exit menu and press <Enter>.

#### Save as User Defaults

Select this option to save system configuration changes done so far as User Defaults. Select Save as User Defaults from the Save & Exit menu and press <Enter>.

### **Restore User Defaults**

It automatically sets all Setup options to a complete set of User Defaults when you select this option. Select Restore User Defaults from the Save & Exit menu and press <Enter>.

#### **Boot Override**

Select a drive to immediately boot that device regardless of the current boot order.

# CHAPTER 4 DRIVER INSTALLATION

## 4.1 System

MPC175-873 supports Windows XP/ Windows 7/8 to facilitate the installation of system driver, please carefully read the instructions in this chapter before start installing.

1. Insert Driver Disc in the disk, and select the \MPC175-873\Driver\..



2. Please follow folder Step 1 to Step 8 for MPC175-873 driver installation.

### 4.2 Touch Screen

### 4.2.1 Specification

Touch Screen	For 5-wire analog resistive type	
Touch Screen Controller	PenMount 6000 microcontroller	
Communications	USB	
Resolution	1024 x 1024	
Power Input	5V	
Power Consumption	Standby Mode : 13.4mA; Active Mode: 24.6mA	
	(VCC=5V, Top sheet Panel Resistance: 274 ohm, Bottom sheet Panel Resistance: 770 ohm)	

### 4.2.2 Driver Installation

The **MPC175-873 Series** provides a driver of the touch screen that users can install it under operating system Windows XP/7/8. To facilitate this touch screen driver installation, users should read the instructions in this chapter carefully before start the installation.

1. Insert Driver CD and select the D:\MPC175-873\Driver\Step7 - Touch



- 2. Follow the installing procedure and press OK.
- 3. Click Start menu and select "PenMount Control Panel", and then double click PenMount 6000 USB.

PenMount Control Panel      Device Tools About	
Select a device to configure.	
Configure Refresh	ОК

4. Click the "Standard Calibration" button.

Calibrate   Edge Compensation   Abou	t)
	Advanced Mode 9 -
Standard <u>C</u> alibration	<u>A</u> dvanced Calibration
Standard <u>Calibration</u>	Advanced Calibration
	ОК

5. Calibration:

To adjust the display with touch panel, click "Calibration" and follow the calibrate point to do calibration; there are five points on screen for calibration.

4	
	Touch the red square.

6. Press OK.

## 4.3 OSD sync service install/uninstall

This OSD sync service can let front OSD key synchronize brightness and volume adjustment with Windows OS and also show OSD notification bar on the screen.

1. Insert Driver CD and select the D:\MPC175-873\Driver\Step7 - Touch



- 2. For 64bit OS, run Setup\_x64.msi. For 32bit OS, run Setup\_x86.msi.
- 3. Follow the installing procedure and press OK.

<u>Note</u> In Windows XP and Windows 8, it requires .NET Framework 3.5 to install OSD Sync Service. User needs to connect to Internet to get .NET Framework 3.5 from Microsoft. If user doesn't install this service, the brightness front OSD keys still can work. But it cannot synchronize with OS and cannot show OSD notification bar on the screen. The volume front OSD keys don't work without OSD sync service

## 4.4 Front OSD function keys



Key	MPC Function
Key 1	Brightness-
Key 2	Brightness+
Key 3	Volume-
Key 4	Volume+
Key 5	Touch enable/disable
Key 1+2 (Press 2 second)	Power on/off
Key 3+4	Mute enable/disable

Key 1, 2, 3, 4 will be triggered repeatedly after long pressing one seconed.

## 4.5 LED indicator status

- Power on(S0): Green
- Power off(S5): Black
- LCD off: Orange
- Touch off: Orange flash

OSD & notification bar & setup information

When pressing front OSD key, OS will show OSD notification status as following.



#### User can find service as following.





## 4.6 Uninstall this service

1. double click OSD Sync from programs and features of control panel

Control Panel Home View installed updates Turn Windows features on c	Uninstall or change a pro To uninstall a program, select it i	ogram from the list and then clic	k Uninstall, Change, or Rep	pair.
off	Organize 🔻 Uninstall Change	Organize 🕶 Uninstall Change Repair		EE • 🕡
	Name	Pu	ublisher	Installed Or
Prog	ams and Features		vare	2/1/2009
	Are you sure you want to uninstall OSE	D Sync?	in in	2/1/2009 2/1/2009 2/1/2009 2/1/2009
(m)	In the future, do not show me this dialog	hox Yes	No	2/10/2009

2. Choose "Automatically close applications" and click ok



3. uninstalling



4. restart computer

You must re	estart your system	m for the configur	ation
changes m	ade to OSD Syn	ic to take effect. (	Click Yes
LU Testait In		nan to manually re	SLOIL
later.			
later.			

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# APPENDIX A WATCHDOG TIMER

## About Watchdog Timer

Software stability is major issue in most application. Some embedded systems are not watched by human for 24 hours. It is usually too slow to wait for someone to reboot when computer hangs. The systems need to be able to reset automatically when things go wrong. The watchdog timer gives us solution.

The watchdog timer is a counter that triggers a system reset when it counts down to zero from a preset value. The software starts counter with an initial value and must reset it periodically. If the counter ever reaches zero which means the software has crashed, the system will reboot.

### How to Use the Watchdog Timer

(Following is example to enable configuration by using debug tool)

### Enable WDT

### **Disable WDT**

1.Enable configuration -O 2E 87 -O 2E 87 2. Select Logic device: -O 2E 07 -O 2F 08 3. WDT Device Disable -O 2E 30 -O 2F 00

**Digital I/O Software Programming** (Following is example to enable configuration by using debug tool) **1.Enable SIO configuration** -O 2E 87 -O 2E 87 2. Select Logic device: -O 2E 07 -O 2F 07 3. GPIO2 Enable -O 2E 30 -0 2F DC -O 2E 1C -O 2F 1D 4. Set IO register (set GP20-23: input, GP24-27: output) -O 2E E8 -O 2F 0F  $\rightarrow$  (1: input port, 0: output port) 5. Data register -O 2E E9 -O 2F 00 -> GP24-27 output ports = low GP20-23 input ports is read only - I 2F - GP20-23 input ports read (default is high) S <u>Note</u> Pin Assignment GP20 =Bit0 GP21 =Bit1 GP20 1 0 2 GP24 GP21 **O** O GP25 GP22 =Bit2 GP26 GP22 0 0 GP27 GP23 =Bit3 GP23 00 GND 9 0 0 10 GND GP24 =Bit4 GP25 =Bit5

GP26 =Bit6 GP27 =Bit7

# APPENDIX B INTEL iAMT SETTINGS

The Intel<sup>®</sup> Active Management Technology (Intel<sup>®</sup> iAMT) has decreased a major barrier to IT efficiency that uses built-in platform capabilities and popular third-party management and security applications to allow IT a better discovering, healing, and protection their networked computing assets.

In order to utilize Intel<sup>®</sup> iAMT you must enter the ME BIOS (<Ctrl + P> during system startup), change the ME BIOS password, and then select "Intel<sup>®</sup> iAMT" as the manageability feature.

## **Entering MEBx**

- 1. You must go to BIOS to enable Intel<sup>®</sup> iAMT function.
- 2. Exit from BIOS after starting Intel<sup>®</sup> iAMT, and press <Ctrl + P> to enter MEBx Setting.



## Set and Change Password

1. You will be asked to set a password when first log in. The default password is "admin".

Intel(R) Management Engine BIOS Extension v8.0.0.0061/Intel(R) ME v8.1.0.1265 Copyright(C) 2003-12 Intel Corporation. All Rights Reserved.
MAIN MENU
<pre>MEBx Login &gt; Intel(R) ME General Settings &gt; Intel(R) Standard Manageability Configuration MEBx Exit Intel(R) ME Password</pre>
Intel(R) ME Password
[↓↑] = Move Highlight [Enter] = Enter Entry [Esc] = Exit

2. You will be asked to change the password before setting ME.

Intel(R) Management Engine BIOS Extension v8.0.0.0061/Intel(R) ME v8.1.0.1265 Copyright(C) 2003-12 Intel Corporation. All Rights Reserved.				
MAIN MENU				
<pre>MEBx Login &gt; Intel(R) ME General Settings &gt; Intel(R) Standard Manageability Configuration MEBx Exit Intel(R) ME Password</pre>				
Intel(R) ME Password				
[↓↑] = Move Highlight [Enter] = Enter Entry [Esc] = Exit				

- 3. You must confirm your new password while revising. The new password must contain: (example: **!!11qqQQ**) (default value).
  - Eight characters
  - One upper case
  - One lower case
  - One number
  - One special symbol, such as ! 
     \$ or ;

Underline (  $\_$  ) and space are valid characters for password, but they won't make higher complexity.

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# APPENDIX C INTEL iAMT WEB CONSOLE

1. From a web browser, please type http://(IP ADDRESS):16992, which connects to  $\text{Intel}^{\text{®}}$  iAMT Web.

Example: http://10.1.40.214:16992

CIntel® Active Management Technology - Windows Internet Ex	xplorer		_ # X
😋 💽 👻 http://10.1.40.214:16992/logon.htm		Google	<b>P</b> -
😪 🛠 🎉 Intel® Active Management Technology		🟠 🔹 🔝 👘 🖶 🔹 🔂 網頁(P)	• ۞ 工具(0) • "
Intel® Active Management Technology			(intel)
Log On Log on to Intel® Active Management Technology on this computer.			
Log On			
			~
		😜 網際網路	💐 100% 🔻 🖉

 To log on, you will be required to type in username and password for access to the Web. USER: admin (default value)
 PASS: (MEBx password) 3. Enter the iAMT Web.

🟉 Intel® Active Manageme	nt Technology - Windows Interr	net Explorer			- • ×
😋 🕞 👻 🙋 http://10.1	.40.214:16992/index.htm			🖌 🔶 🗙 Google	P -
🚖 🕸 🌈 Intel® Active M	Nanagement Technology			👌 • 🔊 - 🖶 ·	· 忌 網頁(P) • ۞ 工具(O) • "
Intel <sup>®</sup> Active Mar Computer: AMT	nagement Technolo	ду			(intel)
System Status	System Status				
Hardware Information System	Power	On			
Processor	IP address	10.1.40.214			
Disk	System ID	03000200-0400-0500-0006-00	0700080009		
Event Log	Date	10/20/2008			
Remote Control Power Policies	Time	1:50 pm			
Network Settings	Refresh				
User Accounts					
					≣
		Copyright @ 2005-2008 Intel Corp. Intel® Ac	tive Management Technology firmwa	re version: 5.0.2-build 1121	
				AD1097-4000	×

4. Click Remote Control, and select commands on the right side.

🌈 Intel® Active Manager	nent Technology - Windows Internet Explorer		
🗿 🗸 🔊 http://192	2.168.1.5:16992/remote htm	Google	• ٩
档案(E) 编辑(E) 核規(C)	9 約約長至(4) 工具(1) 民時(1) → 開始。(1) (2) - (2) 春田 - <sup>Paythan</sup> - (3) (1日現代) <sup>(2)</sup> 田学校寺 - [2] 田子 - (▲ 田咲和 - (4)		
A Chine Street	Management Technology		ATU - () ILO - "
Intel <sup>®</sup> Active Ma Computer: IntelAMT	nagement Technology		intel
System Status Hardware Information	Remote Control		
System Processor	Power state: On		
Event Log Remote Control Power Policies Retwork Settings User Accounts	Orum power off     Select a bot option:       Dect from local CDDVD drive       Bot from local and drive       Caution: These commands may cause user application data loss.   Send Command		
			M 1006 -
	🚳 » 🌈 Intel® Active Manage 📲 末端名 - 小童家 🔄 文件1 - Microsoft Word CH		四回行 A 上于11:45

5. When you have finished using the iAMT Web console, close the Web browser.
# APPENDIX D NOTE

This product conforms to the provisions of the EC directive 93/42/EEC (Medical Device Directive). And also complies with following standards (included but not limited):

CE

## Safety standard:

- ANSI/AAMI ES60601-1 (2005) + A1 (2012)(Medical Electrical Equipment - Part 1: General Requirements for Basic Safety and Essential Performance)
- CAN/CSA-C22.2 No. 60601-1 (2014) (Medical Electrical Equipment - Part 1: General Requirements for Basic Safety and Essential Performance).
- EN 60601-1 Medical electrical equipment part 1: General requirements for safety

## EMC standard:

EN 60601-1-2 Medical electrical equipment part 1-2: General requirements for safety- Collateral standard: Electromagnetic compatibility- Requirements and tests



Follow instructions for use.



Discard the used product to the recycling collection point according to local regulations.

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# APPENDIX E EMC STATEMENT

## WARNING:

- MEDICAL ELECTRICAL EQUIPMENT needs special precautions regarding EMC and needs to be installed and put into service according to the EMC information provided in this manual.
- Portable and mobile RF communications equipment can affect MEDICAL ELECTRICAL EQUIPMENT.
- The use of accessories, transducers and cables other than those specified by Alter-G Incorporated, may result in increased EMISSIONS or decreased IMMUNITY of the EQUIPMENT.
- This EQUIPMENT should not be used adjacent to or stacked with other equipment and that if adjacent or stacked use is necessary, the EQUIPMENT should be observed to verify normal operation in the configuration in which it will be used.

#### Guidance and manufacturer's declaration - electromagnetic emissions

The device is intended for use in the electromagnetic environments listed below, and should only be used in such environments:

Emission Test	Compliance	Electromagnetic Environment – Guidance
RF emissions CISPR 11	Group 1	RF energy is used only to maintain device's operation. Therefore, its RF emissions are so low that it's not likely to cause any interference in nearby electronic equipment.
RF emissions	Class B	
CISPR 11	Class B	
Harmonic emissions		The device is suitable for use in all establishments, including
IEC 61000-3-2	Class A	domestic establishments, and those directly connected to the public low-voltage power supply network that supplies
Voltage fluctuations/	Meet the	buildings used for domestic purposes.
flicker emissions		
IEC 61000-3-3	roquironioni	

## Guidance and manufacturer's declaration - electromagnetic immunity

The device is intended for use in the electromagnetic environments listed below, and should only be used in such environments:

lmmunity Test	IEC 60601 Test Level	Compliance Level	Electromagnetic Environment – Guidance
Conducted RF IEC 61000-4-6 Radiated RF IEC 61000-4-3	3Vrms 150kHz to 80MHz	3V/m	Portable and mobile RF communications equipment should be used no closer to any part of the device, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. <b>Recommended separation distance</b> d = [3.5/V1] TP d = [3.5/E1] TP 80MHz to 800MHz d = [7/E1] TP 800MHz to 2,5GHz where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in metres (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey <sup>a</sup> should be less than the compliance level in each frequency range <sup>b</sup> .
			the following symbol.
Note 1: At 80MHz	and 800MHz, the high	er frequency range	applies.
Note 2: These gui absorption and re	delines may not apply i flection from structures	in all situations. Ele , objects and peopl	ectromagnetic propagation is affected by le.
<sup>a</sup> Field strengths f land, mobile radic theoretically with electromagnetic s the device is used verify normal oper such as reorientin	rom fixed transmitters, bs, amateur radio, AM a accuracy. To assess th ite survey should be co d exceeds the applicabl ration. If abnormal perfo g or relocating the dev	such as base station nd FM radio broad e electromagnetic onsidered. If the me e RF compliance le ormance is observe ice.	ons for radio (cellular/cordless) telephones and cast and TV broadcast cannot be predicted environment due to fixed RF transmitters, an easured field strength in the location in which evel above, the device should be observed to ed, additional measures may be necessary,

<sup>b</sup> Over the frequency range 150kHz to 80 MHz, field strengths should be less than 3V/m.

# Guidance and manufacturer's declaration - electromagnetic immunity

The device is intended for use in the electromagnetic environments listed below, and should only be used in such environments:

lmmunity Test	IEC 60601-1-2 Test Level	Compliance Level	Electromagnetic Environment – Guidance
Electrostatic	6kV contact	6kV contact	Floors should be wood, concrete or
Discharge (ESD)	8kV air	8kV air	ceramic tile. If floors are covered
IEC 61000-4-2			with synthetic material, the relative
			humidity should be at least 30%.
Electrical Fast	±2kV applied on	±2kV applied on AC	Mains power quality should be that
Transient (EFT)	AC power lines	power port	environment.
IEC 61000-4-4			
	±1kV applied on RJ45 port	±1kV applied on RJ45 port	
Surge Immunity Test (Surge)	±1kV line to line	$\pm 1 \text{kV}$ line to line	Mains power quality should be that of a typical commercial or hospital
IFC 61000-4-5			environment.
	±2kV line to earth		
Power Frequency	3A/m	3A/m	Power frequency magnetic fields
(50/60Hz)			a typical location in a typical
magnetic field			commercial or hospital environment.
(PFMF)			
IEC 61000-4-8			
Voltage Dip &	0% UT	0% UT	Mains power quality should be that
Interruptions	(100% dip in U⊤)	(100% dip in U⊤)	environment.
	for 0.5 cycle	for 0.5 cycle	
	40% U⊤	40% UT	If a dips or an interruption of mains
	(60% dip in U⊤)	(60% dip in U⊤)	power occurs, the current of the
	for 5 cycles	for 5 cycles	display series may be dropped off from normal level it may be
	70% U⊤	70% UT	necessary to use uninterruptible
	(30% dip in U⊤)	(30% dip in U⊤)	power supply or a battery.
	for 25 cycles	for 25 cycles	
	0% U <sub>T</sub>	0% U <sub>T</sub>	
	(100% interruptions in U⊤)	(100% interruptions in U⊤)	
	for 5s	for 5 s	
Note: U⊤ is the AC m	nains voltage prior to ap	plication of the test level	l.

#### Recommended separation distances between portable and mobile RF communication

#### equipment and the device.

The device is intended for use in an electromagnetic environment where radiated RF disturbances are under control. User can help prevent electromagnetic interference by keeping the device at a minimum distance from portable and mobile RF communications equipment (transmitters). Below table details the maximum output power of transmitter:

Rated maximum output	Separation distance according to frequency of transmitter			
power of transmitter	150kHz to 80MHz	80MHz to 800MHz	800MHz to 2,5GHz	
W	d = [3.5/V1] ∫ <sub>P</sub>	d = [3.5/E1] √P	d = [7/E1] ∫P	
0.01	0.12	0.12	0.23	
0.1	0.37	0.37	0.74	
1	1.17	1.17	2.33	
10	3.69	3.69	7.39	
100	11.67	11.67	23.33	

For transmitters rated at a maximum output power not listed above, the recommended separation distance d in metres (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

Note 1: At 80MHz and 800MHz, the separation distance for the higher frequency range applies.

Note 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

# APPENDIX F TPM STATEMENT

Trusted Platform Module (TPM) is an international standard for a secure cryptoprocessor, which is a dedicated microcontroller designed to secure hardware by integrating cryptographic keys into devices. TPM's technical specification was written by a computer industry consortium called Trusted Computing Group (TCG).

Trusted Platform Module offers facilities for the secure generation of cryptographic keys, and limitation of their use, in addition to a random number generator. It also includes capabilities such as remote attestation and sealed storage, as follows:

Remote attestation – creates a nearly unforgeable hash key summary of the hardware and software configuration. The program hashing the configuration data determines the extent of the summary of the software. This allows a third party to verify that the software has not been changed.

Binding – encrypts data using TPM bind key, a unique RSA key descended from a storage key.

Sealing – encrypts data in a similar manner to binding, but in addition specifies a state in which TPM must be, in order for the data to be decrypted (unsealed).

Software can use a Trusted Platform Module to authenticate hardware devices. Since each TPM chip has a unique and secret RSA key burned in as it is produced, it is capable of performing platform authentication.

Generally, pushing the security down to the hardware level in conjunction with software provides more protection than a software-only solution.

## **TPM Setting Steps**

#### Step 1:

Log in BIOS system and set "Enable" under "Security Device Support". Save and restart.



## Step 2:

Log in BIOS system again and set "Enable" under TPM Status. Save and restart.



# Step 3:

Install driver into OS.



#### Step 4:

After install driver and restart system, then update driver under device manager.

A: Computer Management	
File Action View Help	
<ul> <li>Computer Management (Local</li> <li>System Toise</li> <li>Task Scheduler</li> <li>Event Viewer</li> <li>Shared Foldes</li> <li>Deick drives</li> <li>Disk Management</li> <li>Storage</li> <li>Dick Management</li> <li>Storage</li> <l< th=""><th>Actions Device Manager More Actions</th></l<></ul>	Actions Device Manager More Actions
m     turner     Isunches the Update Driver Software Wizard for the selected device.	

#### Step 5:

After updated, see this device under "system devices".



# Step 6:

Open TPM utility and set TPM password.

fo	User Settings	Backup	Migration	Password Reset	t		
Ba	sic User Passwor	d	_				
[	Change	)	Cha is re cer	ange your Basic U equired to access tificates.	Jser Passw Security F	vord. This Natform ke	password ys and
Se	curity Platform Fe	atures		-			
l Ir	fineon Security	Platform	Settings T	lool	and international		1000
		6					
(	The Secularity Initializat	urity Platfo tion now?	orm state i	s "Not initialized	d⁼. Do you	u want to	start
(	The Seco initializat	urity Platfo tion now?	orm state i	s "Not initialized	d". Do you Yes	u want to	start No
(	The Secu initializat	urity Platfution now?	orm state i	s "Not initialized	d". Do you Yes	u want to	start
(	The Secu	urity Platf	orm state i	s "Not initialized	d". Do you Yes	u want to	start No
(	The Secular	urity Platf.	orm state i	s "Not initialized	d". Do you Yes	u want to	start No

# Step 7:

Choose "advanced initialization".

	Welcome to the Security Platform Quick Initialization Wizard
(infineon	Please select an initialization method:
	Quick initialization (recommended for most users)
	Uses random secret data for administration and emergencies, default data file locations and default feature settings. You are recommended to use a removable media to store important passwords and data.
10000	Please insert removable media
трм	Advanced initialization (for expert users) Allows advanced configuration of secret data, data file locations and features. Required to configure Enhanced Authentication.
10000000000000000	

## Step 8:

Set the first Password (used to be 11111)

Create Security Platform Owner Provide Security Platform Owner Password	
The Security Platform Initialization must be completed bef Features. After finishing this wizard, you will be Security P Jowner functions is protected with the Owner Password. Note: You should memorize the Security Platform Owner I you will not be able to perform critical administrative Secu ater.	ore individual users can use Security Platform latform Owner. Access to the Security Platform Password or save it to file. If you forget this password rity Platform tasks. You can change this password
Password:	
	Random
Confirm password:	To File
Confirm password:	To File Print

## Step 9:

Create a new file on desktop and save "SPSsystemBackup.xml".

Backup Set up automatic backups
Automatic scheduled backups will save Security Platform credentials and settings to a Backup Archive.
Backup location:
C:\Users\henry\Desktop\SPSystemBackup\SPSystemBackup xml Browse
By default, the backup will be scheduled to run automatically at 12 PM every day. Click "Schedule" to view and modify the backup scheduling.
You will have an opportunity to run backup immediately on the completion of this wizard.

#### Step 10:

Click browse to create a file on desktop is named "SPEmRecToken", then click save. Set the second Password (used to be 222222).

Infineon Security Pla	tform Settings Tool
Thineon Security Platform Initiation	ialization Wizard
Emergency Recovery Configure Emergency Recovery	ery Token
Emergency Recovery requires a	a Recovery Token. This Token is protected with a dedicated password.
<ul> <li>Create a new Recovery</li> </ul>	7 Token
O Use existing Recovery	Token
File location:	C:\Users\henry\Desktop\SPEmRecToken\SF Browse
Recommendation: Sa flash drive) which is k Enter the token password (6	ave the Emergency Recovery Token on a removable media (e.g. USB ept safely. 256 characters).
Password:	•••••
Confirm Password:	•••••
V Hide typing	
	< Back Next > Cancel Help
	Close Help

#### Step 11:

Click browse to create a file on desktop is named "SPPwdResetToken", then click save. Set the third Password (used to be 333333)

Infineon Security Platfor	m Settings Tool
Infineon Security Platform Initializ	ation Wizard
Password Reset Configure Password Reset Toker	
Resetting user's password requires password.	a Password Reset Token. This Token is protected with a dedicated
Create a new Token	
Use an existing Token	
File location:	C:\Users\henry\Desktop\SPPwdResetToken' Browse
Recommendation: Save t drive) which is kept safely Enter the token password (6 256	the Password Reset Token on a removable media (e.g. USB flash /. i characters).
Password:	•••••
Confirm Password:	•••••
Hide typing	
	< Back Next > Cancel Help
	Close Help

#### Step 12:

Restart TPM software by double click from bottom right after step 11. Set the fourth Basic User Password (used to be 444444)

Infineon Security Platform Settings Tool	
2 Infineon Security Platform User Initialization Wizard	
Basic User Password Set your password	<b></b>
Please set your Basic User Password. This password will p	rotect your Basic User Key.
Password:	
•••••	
Confirm Password:	
•••••	
Use different passwords for different purposes. Length: 6 256 characters.	
V Hide typing	
< Back	Next > Cancel Help
	Close Help

## Step 13:

Save the "SPPwdResetSecret" in "SPPwdResetSecret" file which is located on desktop.

Enable the rese	functionality for my l	Basic User Password		-8-8-8-
C Enable the m	esetting of my Basic I	User Password in case of an e	mergency.	
A Personal Sect Specify the path	et is going to be writt and file name.	en to a file.		
Personal Secret	location:			
C:\Users\henry	\Desktop\SPPwdRe	esetSecret\SPPwdResetSecre	t.xml	Browse
1	lease keep this file in Iser Password in cas	n a safe location. You will need e of an emergency.	it if you have to res	et your Basic
i 🚺	Iser Password in cas	e of an emergency.	it il you nave to rea	er your i

## Step 14:

All setting steps are completed. User could use right click Encrypt to choose files to add password.

	Open	
	Encrypt	
	Share with	•
	Restore previous versions	
	Personal Secure Drive	•
	Include in library	•
	Send to	•
	Cut	
	Сору	
	Create shortcut	
	Delete	
~	Rename	
	Properties	

## Step 15:

When user open the execute file will be asked input password. Basic User Password (used to be 444444)

Organice • Capyright 8 Infineon Sa	ologies AG	linfineon		00.70049.76404_551_01_00         ++         Second process27875	nn.en.
Deski Down An app Recen Basic U	Ication needs access Joer Password:	a to a protected key.		10	
Docu     Musik     Pictu     Video     This dalog will	automatically be can	Remember password for all applications OK Cancel Group	Help		
	g nangun	17/10/00/10/8	composition over	and kn	
Computer	(9) ISSetup.dll	9/11/2008 6-26 PM	Application extens	540 KII	
Local Disk (C:)	Li layout.bin	5/7/2009 5:09 PM	BIN File	1 KB	
Ca Personal Secure Driv	Ed Setup	4/20/2009 7-28 PM	Application	384 KB	
	[] setup	12/13/2005 10:55	lcon	2 KB	
Network	@] Setup	5/25/2009 1:15 PM	Configuration sett	1 KB	
	L] setup.mx	4/22/2009 10:28 AM	ITEX FILE	290 KB	
	setup iss	4/3/2009 5:05 PM	ISS File	1 KB	
17 items					

#### Step 16:

Using right click on the file to choose Decrypt could cancel password.

Organize + 🔭 Open	Include in libr	ary • Share with •	Burn New folder			i - Ci 0
🔆 Favorites	Name	*	Date modified	Туре	Size	
Devidop Downloads	1 (200517)	Open Open in new window Decrypt	212 234 PM	File folder		
Decuments Music Pictures		Share with Restore previous versions Personal Secure Drive Include in Ibrary	:			
Videos		Send to Cut	•			
🕞 Personal Secure Driv		Copy Create shortcut Delete Rename				
		Properties				

#### Step 17:

Restart system to BIOS main menu and choose TPM Clear.



## Step 18:

Go to BIOS main menu again and choose "TPM State Enabled" after step 17.

Aptio Setup Utility Advanced	– Copyright (C) 2011 Americ	can Megatrends, Inc.
Configuration Security Device Support TPM State Pending operation	[Enable] [Enabled] [None]	Enable/Disable Security Device. NOTE: Your Computer will reboot during restart in order to change State of the Device.
Current Status Information TPM Enabled Status: TPM Active Status: TPM Owner Status:	[Enabled] [Activated] [Unowned] TPM State Disabled Enabled	<pre>++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>
Version 2.14.1219.	Copyright (C) 2011 American	n Megatrends, Inc.

## Step 19:

Enter TPM OS to choose Restoration

	Welcome to the Security Platform Quick Initialization Wizard
(infineon	Please select an initialization method:
	Quick initialization (recommended for most users)
	Uses default data file location and default feature settings. You are recommended to use a removable media to store important data.
-0-	Which drive do you want to use?
and the second sec	Please insert removable media 👻
TPM	

## Step 20:

Please click browse to choose file "SPSsystemBackup.xml" by step 9

Restore Configure restore settings		
Restoration reason:		
Broken hard disk or lost	data	
New Trusted Platform Mo	odule	
New Security Platform to	be initialized	
Specify the file from where the	backup data should be restored:	
C:\Users\henry\Desktop\SPS	iystemBackup\SPSystemBackup xml	Browse

## Step 21:

Enter the first password: 111111 by step 8.

Provide Security Platform Owner Password	
The Security Platform Initialization must be completed before indiv Features. After finishing this wizard, you will be Security Platform O Owner functions is protected with the Owner Password. Note: You should memorize the Security Platform Owner Passwor you will not be able to perform critical administrative. Security Platfor later.	ridual users can use Security Platform Owner. Access to the Security Platform d or save it to file. If you forget this password, orm tasks. You can change this password
Password:	Random
	nanuom
Carlim assessed	To File
Commini passworu.	Print
••••••	110 8.00
•••••• Use different passwords for different purposes. Length: 6 256 characters.  I Hide typing	

#### Step 22:

Please click browse to choose file "SPEmRecToken.xml" by step 10 Enter the second password: 222222.

Select Token Select Emergency Recovery Token	
While configuring the Emergency Recovery data for all users, a Recov	ery Token was written to a file.
Specify the Emergency Recovery Token location:	
C:\Users\henry\Documents\Security Platform\SPEmRecToken.xml	Browse
Enter the password protecting this file.	
Password:	
•••••	
No password required for tokens which are not password-protected.	
V Hide typing	

#### Step 23:

Enter the fourth password:444444 could recover TPM situation.

Infineon Security Platform Backup Wiz	tard		l	x
Basic User Password Enter your password			8- <mark>8-8-</mark> 8-8-8	
Please enter your Basic User Password	to authorize restorati	on to this computer.		
Password:				
•••••				
III Hide typing				
	< Back	Next > Ca	ancel Help	