

ACP-5212

21.5" Fanless Multi-Touch Panel PC
Intel® Atom™ D510 Processor
Anti-Scratch Surface

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Packing List

Before you begin installing your Medical Station, please make sure that the following items have been shipped:

- 1 ACP-5212 Infotainment Multi-Touch Panel PC
- 4 HDD screws
- 4 VESA screws
- 5 Anti-drop kits
- 1 Product DVD

Contains User's Manual (in PDF format), Drivers and Utilities

If any of these items are missing or damaged, you should contact your distributor or sales representative immediately.

Safety & Warranty

1. Read these safety instructions carefully.
2. Keep this user's manual for later reference.
3. Disconnect this equipment from any AC outlet before cleaning. Do not use liquid or spray detergents for cleaning. Use a damp cloth.
4. For pluggable equipment, the power outlet must be installed near the equipment and must be easily accessible.
5. Keep this equipment away from humidity.
6. Put this equipment on a reliable surface during installation. Dropping it or letting it fall could cause damage.
7. The openings on the enclosure are for air convection. Protect the equipment from overheating. **DO NOT COVER THE OPENINGS.**
- 8. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.**
9. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
10. All cautions and warnings on the equipment should be noted.
11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient over-voltage.
12. Never pour any liquid into an opening. This could cause fire or electrical shock.
13. Never open the equipment. For safety reasons, only qualified service personnel should open the equipment.

- 14. If any of the following situations arises, get the equipment checked by service personnel:**
- The power cord or plug is damaged.
 - Liquid has penetrated into the equipment.
 - The equipment has been exposed to moisture.
 - The equipment does not work well, or you cannot get it to work according to the users manual.
 - The equipment has been dropped and damaged.
 - The equipment has obvious signs of breakage.
- 15. DO NOT LEAVE THIS EQUIPMENT IN AN UNCONTROLLED ENVIRONMENT WHERE THE STORAGE TEMPERATURE IS BELOW -20° C (-4°F) OR ABOVE 60° C (140° F). IT MAY DAMAGE THE EQUIPMENT.**
- 16. External equipment intended for connection to signal input/output or other connectors, shall comply with relevant UL / IEC standard (e.g. UL 1950 for IT equipment and UL 60601-1 / IEC 60601 series for systems – shall comply with the standard IEC 60601-1-1, Safety requirements for medical electrical systems. Equipment not complying with UL 60601-1 shall be kept outside the patient environment, as defined in the standard.**

Caution:

It may cause the danger of explosion if battery is incorrectly replaced. Replace only with same or equivalent type recommended by the manufacturer.

Classification

1. Degree of protection against electric shock: not classified
2. Degree of protection against the ingress of water: IPX0
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


FCC

Warning!







This device complies with Part 15 FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received including interference that may cause undesired operation.

UL Module Description

 The logo features the word "CLASSIFIED" in a curved path at the top. Below it is a circular emblem containing the letters "UL". To the left of the circle is the letter "C" and to the right is "US".	<p><i>ACP-5212 AC modules are developed to suitable for the Classification Mark requirement</i></p>
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Safety Symbol Description

The following safety symbols are the further explanations for your reference.

	<p><i>Medical equipment with respect to electric shock, fire and mechanical hazards only in accordance with UL 60601-1, and CAN/CSA C22.2 NO. 601.1</i></p>
	<p><i>Attention, consult ACCOMPANYING DOCUMENTS.</i></p>
	<p><i>Ground wire Protective Ground wire.</i></p>
	<p><i>Medical equipment with respect to electric shock, fire and mechanical hazards only in accordance with UL 60601-1, and CAN/CSA C22.2 NO. 601.1</i></p>

Below Table for China RoHS Requirements

产品中有毒有害物质或元素名称及含量

AAEON Panel PC/ Workstation

部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
印刷电路板 及其电子组件	×	○	○	○	○	○
外部信号 连接器及线材	×	○	○	○	○	○
外壳	×	○	○	○	○	○
中央处理器 与内存	×	○	○	○	○	○
硬盘	×	○	○	○	○	○
液晶模块	×	○	○	○	○	○
光驱	×	○	○	○	○	○
触控模块	×	○	○	○	○	○
电源	×	○	○	○	○	○

O: 表示该有毒有害物质在该部件所有均质材料中的含量均在
SJ/T 11363-2006 标准规定的限量要求以下。

X: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出
SJ/T 11363-2006 标准规定的限量要求。

备注:

- 一、此产品所标示之环保使用期限，系指在一般正常使用状况下。
- 二、上述部件物质中央处理器、内存、硬盘、光驱、触控模块为选购品。

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Chapter

1

**General
Information**

1.1 Introduction

The ACP-5212 is a Multi-Touch Infotainment Panel PC with superior onboard Intel® Atom™ D510 processor-based computer. It is a PC-based system with 21.5" true color TFT LCD display, integrated multimedia functions make them the perfect platforms to build comprehensive lifestyle computing applications.

The ACP-5212 includes all the features of a powerful computer into a slim and attractive chassis. The ACP-5212 has 250 nits TFT display with 1366 x 768 resolution. This model equips two-point Multi-Touch Window design and is easy to clean. Moreover, it is IP-65 front bezel and IPx1 back chassis that can be installed in harsh environments. In addition, the ACP-5212 deploys 7H hardness Anti-Scratch Surface to avoid accidentally damage.

The ACP-5212 supports one 2.5" Hard Disk Drive and one internal Compactflash™ slot for the storage functions, and two Mini-Card expansions. Moreover, it supports smart card reader, RFID, MSR, Skype phone, and camera for fulfilling the demands of versatile applications.

1.2 Features

- 21.5" WXGA (1366 x 768) Fanless TFT LCD Display
- Superior Onboard Intel® Dual Core Atom™ D510 Processor
- Easy-To-Clean: Multi-Touch Window Design (Two-Point)
- IP-65 Front Bezel And IPx1 Back Chassis
- Anti-Scratch Surface (7H Hardness)
- Smart Card Reader/ RFID/ MSR/ Skype Phone/ Camera Support (Optional)

1.3 Specification

System

- Processor Onboard Intel® Atom™ D510 1.66 GHz Processor
- System Memory DDR2 SODIMM x 1, Max. 2 GB
- LCD / CRT Controller Integrated in Processor
- Ethernet 10/100/1000Base-TX, RJ-45 x 2
- I/O Port
 - USB2.0 x 6 (2 on side; 4 on bottom)
 - RS-232 x 1
 - RS-232/422/485 x 1
 - Line-out x 1
 - VGA x 1
- Storage Disk Drive CompactFlash™ slot x 1 (Internal)
2.5" SATA Hard Disk Drive x 1
- Expansion Mini Card x 2
- OS Support Windows® XP (T/S: Single point), Linux
Fedora (T/S: Single point) Windows®7
(T/S: Multi-point)

Mechanical

- Construction IP-65/ NEMA4 for plastic front bezel,
IPX1 for plastic chassis
- Mounting VESA 75/100
- Dimension 21.5"(W) x 13.7"(H) x 2.34"(D) (546mm x

- Carton Dimension 348mm x 59.4mm
26" x 19.52" x 7.87 (661mm x 496mm x 200mm)
- Net Weight 18.3 lb (8.3 kg)
- Gross Weight 14.57 lb (6.61 kg)

Environmental

- Operating Temperature 32°F~104°F (0°C~40°C) (No Airflow)
- Storage Temperature -4°F~140°F (-20°C~60°C)
- Operating Humidity 10%~95% @ 40°C, non-condensing
- Vibration 1 g rms/ 5-500Hz/ Random Operation (HDD)
- Shock 15 G peak acceleration (11 msec. duration)
- EMC CE/FCC Class A

Power Supply

- DC Input 70W DC 12V, w/AC power adapter w/lock

LCD

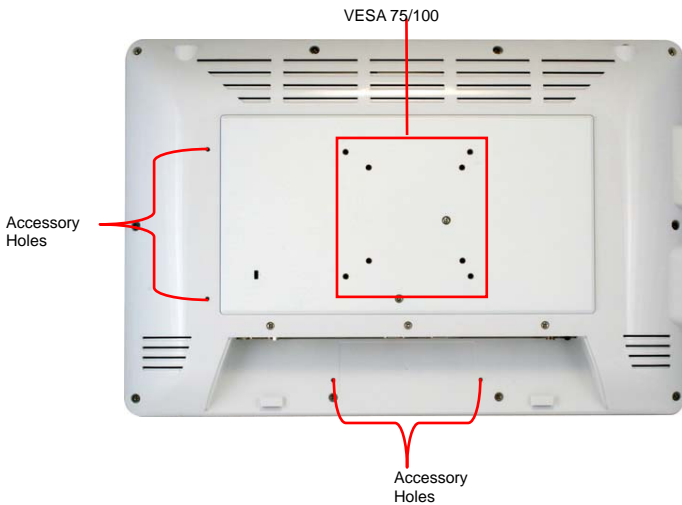
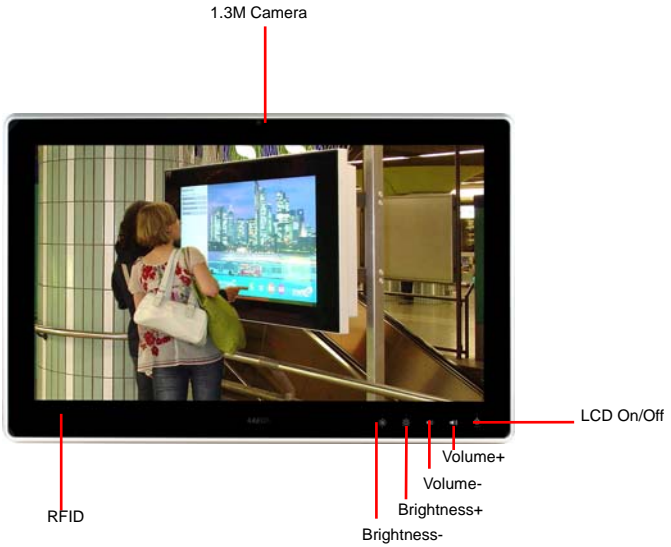
- Display Type 21.5" TFT-LCD, CCFL
- Max. Resolution 1366 x 768
- Max. Colors 16.7 M colors (6/8-bit for R, G, B)
- Luminance (cd/m²) 250 cd/m²
- Viewing Angle 170° (H), 160° (V)

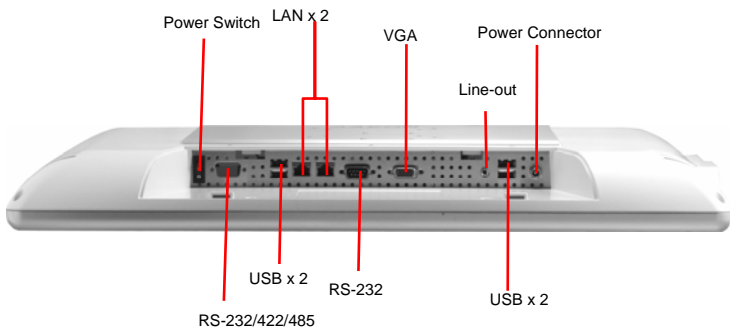
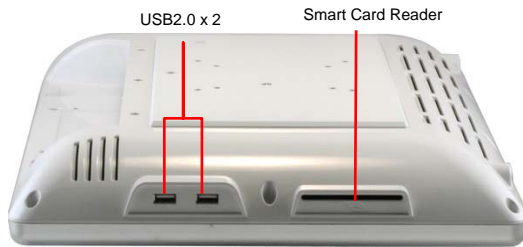
- Backlight CCFL
- Backlight MTBF (Hours) 50,000

Touchscreen

- Type Projected Capacitive Multi-Touch
(Windows® 7)
- Light Transmission 90%

1.4 General Information





Chapter

2

**Hardware
Installation**

2.1 Safety Precautions

Warning!

Always completely disconnect the power cord from your board whenever you are working on it. Do not make connections while the power is on, because a sudden rush of power can damage sensitive electronic components.

Caution!

Always ground yourself to remove any static charge before touching the board. Modern electronic devices are very sensitive to static electric charges. Use a grounding wrist strap at all times. Place all electronic components on a static-dissipative surface or in a static-shielded bag when they are not in the chassis

2.2 A Quick Tour of the ACP-5212

Front



Rear



I/O



Cable Cover (Optional)



Note 1: You may turn on the power by cutting and destroying the protective cover as it shows below.



Note 2: The “Anti-Drop Kit” can help on preventing the cable drop from the

connector



Note 3: The Anti-theft cable is an optional accessory to prevent from stealing



2.3 2.5" Hard Disk Drive (HDD) Installation

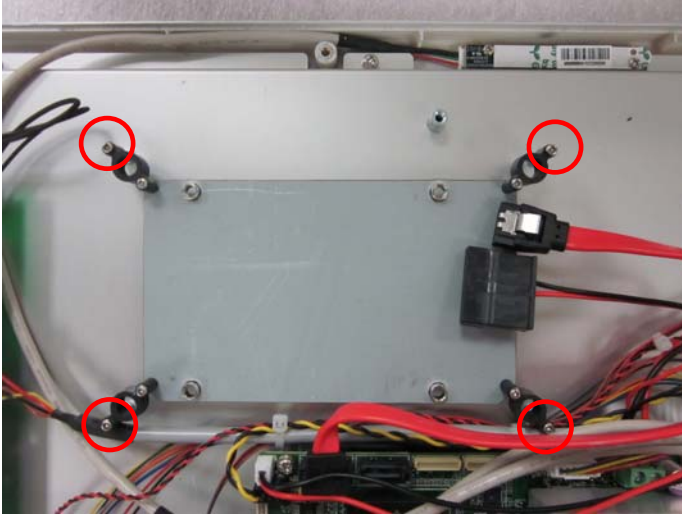
Step 1: Unscrew the rear cover screws (15 screws)



Step 2: Remove EMI Cover (5 screws)



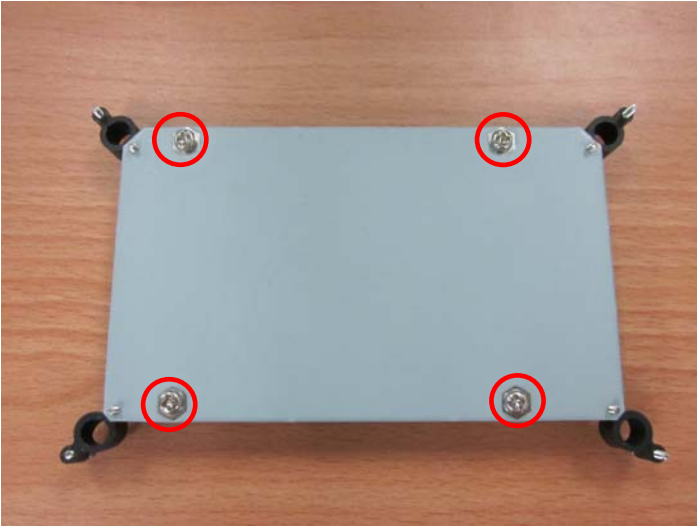
Step 3: Remove HDD Bracket (4 screws)



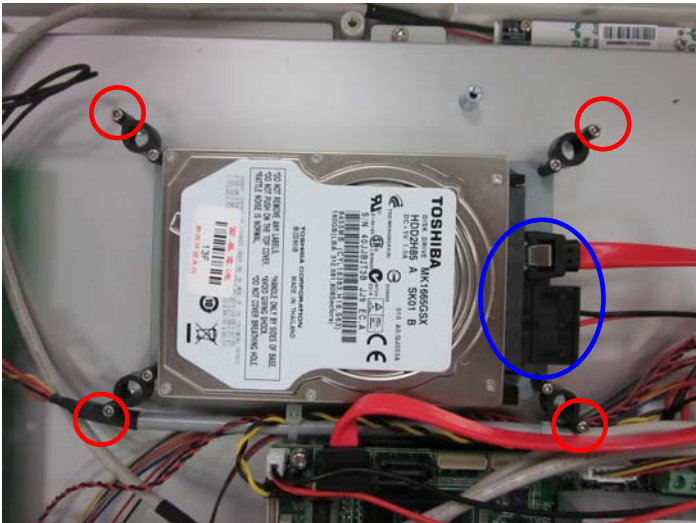
Step 4: Get the HDD and HDD Bracket ready



Step 5: Fasten the four screws to fix HDD Bracket and HDD



Step 6: Connect the SATA and power cables to the HDD and fasten the four screws to fix the HDD Bracket



Chapter

3

**AMI
BIOS Setup**

3.1 System Test and Initialization

These routines test and initialize board hardware. If the routines encounter an error during the tests, you will either hear a few short beeps or see an error message on the screen. There are two kinds of errors: fatal and non-fatal. The system can usually continue the boot up sequence with non-fatal errors.

System configuration verification

These routines check the current system configuration against the values stored in the CMOS memory. If they do not match, the program outputs an error message. You will then need to run the BIOS setup program to set the configuration information in memory.

There are three situations in which you will need to change the CMOS settings:

1. You are starting your system for the first time
2. You have changed the hardware attached to your system
3. The CMOS memory has lost power and the configuration information has been erased.

The ACP-5212 CMOS memory has an integral lithium battery backup for data retention. However, you will need to replace the complete unit when it finally runs down.

3.2 AMI BIOS Setup

AMI BIOS ROM has a built-in Setup program that allows users to modify the basic system configuration. This type of information is stored in battery-backed CMOS RAM so that it retains the Setup information when the power is turned off.

Entering Setup

Power on the computer and press or <F2> immediately. This will allow you to enter Setup.

Main

Set the date, use tab to switch between date elements.

Advanced

Enable/disable boot option for legacy network devices.

Chipset

host bridge parameters.

Boot

Enables/disables quiet boot option.

Security

Set setup administrator password.

Save&Exit

Exit system setup after saving the changes.

Chapter

4

**Driver
Installation**

The ACP-5212 comes with an AutoRun CD-ROM that contains all drivers and utilities that can help you to install the driver automatically.

Insert the driver CD, the driver CD-title will auto start and show the installation guide. If not, please follow the sequence below to install the drivers.

Follow the sequence below to install the drivers:

- Step 1 – Install Chipset Driver
- Step 2 – Install VGA Driver
- Step 3 – Install Audio Driver
- Step 4 – Install LAN Driver
- Step 5 – Install WiFi & Bluetooth Driver
- Step 6 – Install Smart Card Reader Driver

Please read instructions below for further detailed installations.

4.1 Installation:

Insert the ACP-5212 CD-ROM into the CD-ROM drive. And install the drivers from Step 1 to Step 6 in order.

Step 1 – Install Chipset Driver

1. Click on the **STEP1–CHIPSET** folder and select the OS folder your system is
2. Double click on the **infinst_autol.exe** file located in each OS folder
3. Follow the instructions that the window shows
4. The system will help you install the driver automatically

Step 2 – Install VGA Driver

1. Click on the **STEP2–VGA** folder and select the OS folder your system is
2. Double click on the **Setup.exe** located in each OS folder
3. Follow the instructions that the window shows
4. The system will help you install the driver automatically

Step 3 – Install AUDIO Driver

1. Click on the **STEP3–AUDIO** folder and select the OS folder your system is
2. Double click on the **Setup.exe** located in each OS folder
3. Follow the instructions that the window shows
4. The system will help you install the driver automatically

Step 4 –Install LAN Driver

1. Click on the **STEP4–LAN** folder and select the OS folder your system is
2. Double click on the **PROWin32.exe** file located in each OS folder
3. Follow the instructions that the window shows
4. The system will help you install the driver automatically

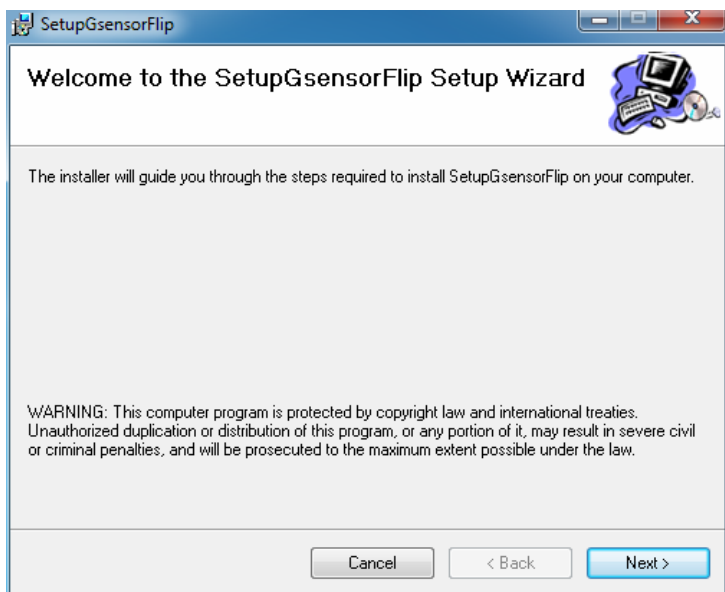
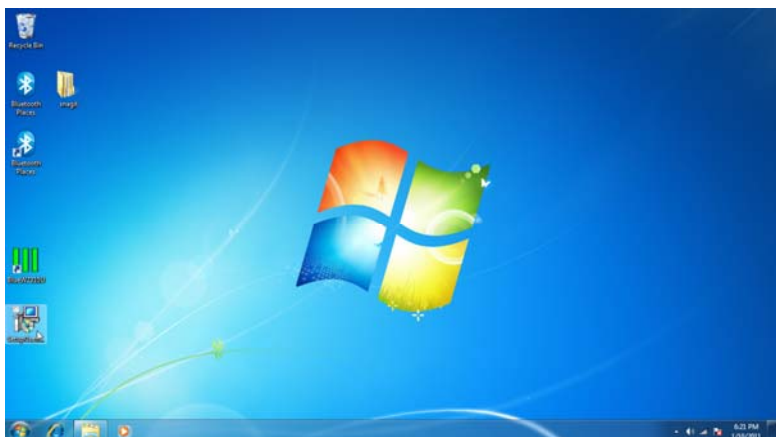
Step 5 – Install WiFi & Bluetooth Driver

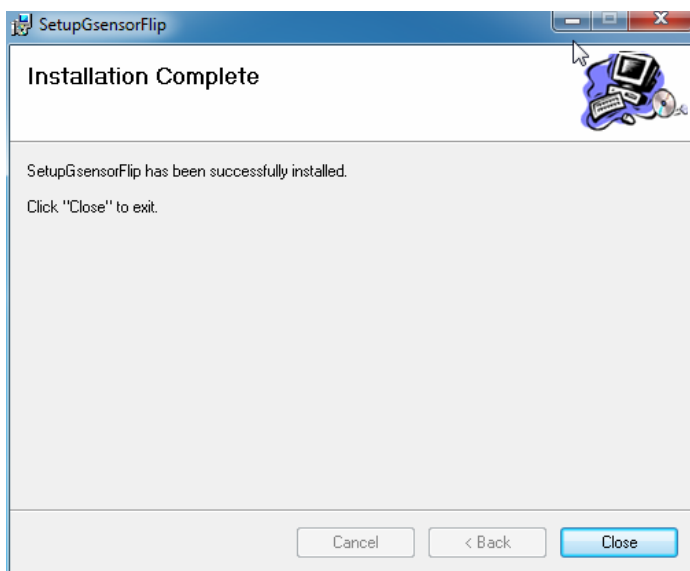
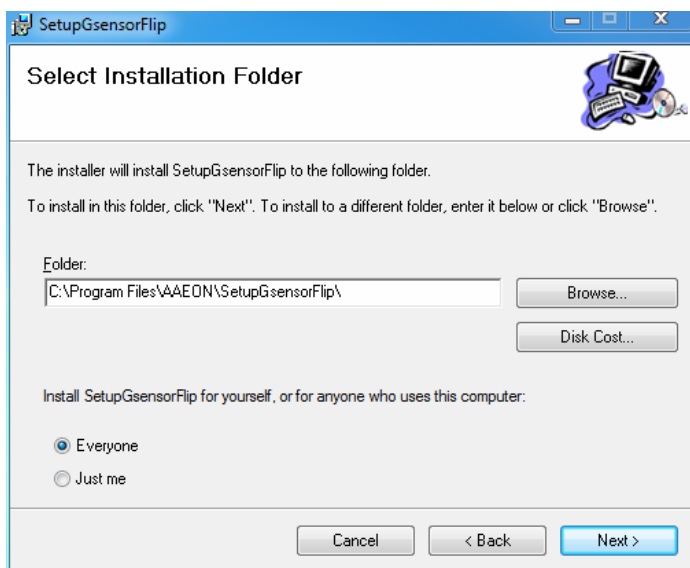
1. Click on the **STEP5–WIFI&BLUETOOTH** folder and select the OS folder your system is
2. Double click on the **.exe** file located in each OS folder
3. Follow the instructions that the window shows
4. The system will help you install the driver automatically

Step 6 – Install Smart Card Reader Driver

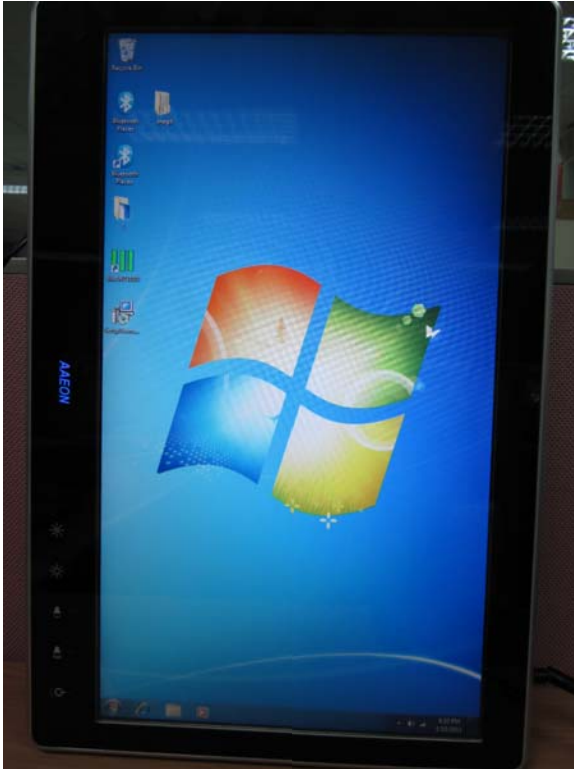
1. Click on the **STEP6–SMART CARD READER** folder and select the OS folder your system is
2. Double click on the **setup.exe** located in each OS folder
3. Follow the instructions that the window shows
4. The system will help you install the driver automatically

After installing the drivers, you may install the G-sensor Driver (STEP7-GSENSOR) to enable the function of screen rotation if necessary.





If you have done installing the G-sensor program, the screen will be rotated automatically when you rotate the ACP-5212.



Appendix

A

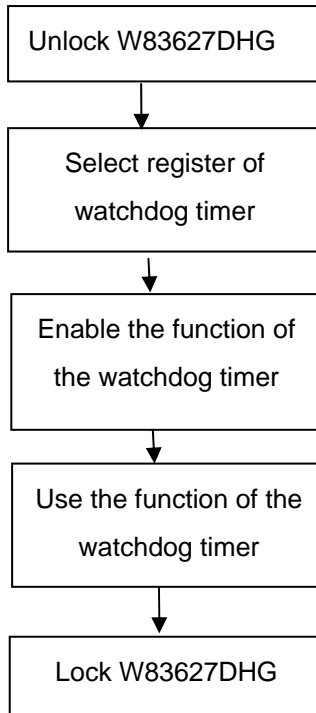
Programming the Watchdog Timer

A.1 Programming

ACP-5212 utilizes W83627DHG-P chipset as its watchdog timer controller.

Below are the procedures to complete its configuration and the AAEMON initial watchdog timer program is also attached based on which you can develop customized program to fit your application.

Configuring Sequence Description



There are three steps to complete the configuration setup:

- (1) Enter the W83627DHG config Mode
- (2) Modify the data of configuration registers

- (3) Exit the W83627DHG config Mode. Undesired result may occur if the config Mode is not exited normally.

(1) Enter the W83627DHG config Mode

To enter the W83627DHG config Mode, two special I/O write operations are to be performed during Wait for Key state. To ensure the initial state of the key-check logic, it is necessary to perform two write operations to the Special Address port (2EH). The different enter keys are provided to select configuration ports (2Eh/2Fh) of the next step.

	Address Port	Data Port
87h,87h:	2Eh	2Fh

(2) Modify the Data of the Registers

All configuration registers can be accessed after entering the config Mode. Before accessing a selected register, the content of Index 07h must be changed to the LDN to which the register belongs, except some Global registers.

(3) Exit the W83627DHG config Mode

The exit key is provided to select configuration ports (2Eh/2Fh) of the next step.

	Address Port	Data Port
0aah:	2Eh	2Fh

WatchDog Timer Register I (Index=F5h, Default=00h)

CRF5 (PLED and KBC P20 Control Mode Register)

Bit 7-5 : select PLED mode

= 000 Power LED pin is driven high.

= 001 Power LED pin outputs 0.5Hz pulse with 50% duty cycle.

= 010 Power LED pin is driven low.

= 011 Power LED pin outputs 2Hz pulse with 50% duty cycle.

= 100 Power LED pin outputs 1Hz pulse with 50% duty cycle.

= 101 Power LED pin outputs 4Hz pulse with 50% duty cycle.

= 110 Power LED pin outputs 0.25Hz pulse with 50% duty cycle.

=111 Power LED pin outputs 0.25Hz pulse with 50% duty cycle..

Bit 4 : WDTO# count mode is 1000 times faster.

= 0 Disable.

= 1 Enable.

Bit 3 : select WDTO# count mode.

= 0 second

= 1 minute

Bit 2 : Enable the rising edge of keyboard Reset (P20) to force Time-out event.

= 0 Disable

= 1 Enable

Bit 1 : Disable / Enable the WDTO# output low pulse to the KBRST# pin (PIN60)

= 0 Disable

= 1 Enable

Bit 0 : Reserved.

WatchDog Timer Register II (Index=F6h, Default=00h)

- Bit 7-0** = 0 x 00 Time-out Disable
 = 0 x 01 Time-out occurs after 1 second/minute
 = 0 x 02 Time-out occurs after 2 second/minutes
 = 0 x 03 Time-out occurs after 3 second/minutes

 = 0 x FF Time-out occurs after 255 second/minutes

WatchDog Timer Register III (Index=F7h, Default=00h)

- Bit 7** : Mouse interrupt reset Enable or Disable
 = 1 Watchdog Timer is reset upon a Mouse interrupt
 = 0 Watchdog Timer is not affected by Mouse interrupt
- Bit 6** : Keyboard interrupt reset Enable or Disable
 = 1 Watchdog Timer is reset upon a Keyboard interrupt
 = 0 Watchdog Timer is not affected by Keyboard interrupt
- Bit 5** : Force Watchdog Timer Time-out. Write Only

- = 1 Force Watchdog Timer time-out event: this bit is self-clearing
- Bit 4** : Watchdog Timer Status. R/W
- = 1 Watchdog Timer time-out occurred
- = 0 Watchdog Timer counting
- Bit 3-0** : These bits select IRQ resource for Watchdog. Setting of 2 selects SMI.

A.2 W83627DHG Watchdog Timer Initial Program

Example: Setting 10 sec. as Watchdog timeout interval

```
;/;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
```

```
Mov dx,2eh           ;Enter W83627DHG config mode
```

```
Mov al,87h          (out 87h to 2eh twice)
```

```
Out dx,al
```

```
Out dx,al
```

```
;/;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
```

```
Mov al,07h
```

```
Out dx,al
```

```
Inc dx
```

```
Mov al,08h          ;Select Logical Device 8 (GPIO Port  
2)
```

```
Out dx,al
```

```
;/;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
```

```
Dec dx
```

```
Mov al,30h          ;CR30 (GP20~GP27)
```

```
Out dx,al
```

```
Inc dx
```

```
Mov al,01h          ;Activate GPIO2
```

```
Out dx,al
```

```
;/;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;/
Dec dx
Mov al,0f5h           ;CRF5 (PLED mode register)
Out dx,al
Inc dx
In al,dx
And al,not 08h       ;Set second as counting unit
Out dx,al
;/;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;/
Dec dx
Mov al,0f6h           ; CRF6
Out dx,al
Inc dx
Mov al,10             ;Set timeout interval as 10 sec.
Out dx,al
;/;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;/
Dec dx                 ;Exit W83627DHG config mode
Mov al,0aah           (out 0aah to 2eh once)
Out dx,al
;/;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;/
```





























Appendix

B

I/O Information

B.1 I/O Address Map

Input/output (IO)	
[00000000 - 0000000F]	Direct memory access controller
[00000000 - 00000CF7]	PCI bus
[00000010 - 0000001F]	Motherboard resources
[00000020 - 00000021]	Programmable interrupt controller
[00000022 - 0000003F]	Motherboard resources
[00000040 - 00000043]	System timer
[00000044 - 0000005F]	Motherboard resources
[00000060 - 00000060]	Standard 101/102-Key or Microsoft Natural PS/2 Keyboard
[00000061 - 00000061]	System speaker
[00000062 - 00000063]	Motherboard resources
[00000064 - 00000064]	Standard 101/102-Key or Microsoft Natural PS/2 Keyboard
[00000065 - 0000006D]	Motherboard resources
[00000070 - 00000071]	System CMOS/real time clock
[00000072 - 0000007F]	Motherboard resources
[00000080 - 00000080]	Motherboard resources
[00000081 - 00000083]	Direct memory access controller
[00000084 - 00000086]	Motherboard resources
[00000087 - 00000087]	Direct memory access controller
[00000088 - 00000088]	Motherboard resources
[00000089 - 0000008B]	Direct memory access controller
[0000008C - 0000008E]	Motherboard resources
[0000008F - 0000008F]	Direct memory access controller
[00000090 - 0000009F]	Motherboard resources
[000000A0 - 000000A1]	Programmable interrupt controller
[000000A2 - 000000BF]	Motherboard resources
[000000C0 - 000000DF]	Direct memory access controller
[000000E0 - 000000EF]	Motherboard resources
[000000F0 - 000000FF]	Numeric data processor
[00000170 - 00000177]	Secondary IDE Channel
[000001F0 - 000001F7]	Primary IDE Channel
[00000274 - 00000277]	ISAPNP Read Data Port
[00000279 - 00000279]	ISAPNP Read Data Port
[00000295 - 000002A4]	Motherboard resources
[000002E0 - 000002E7]	Communications Port (COM5)
[000002E8 - 000002EF]	Communications Port (COM4)
[000002F0 - 000002F7]	Communications Port (COM6)
[000002F8 - 000002FF]	Communications Port (COM2)
[00000376 - 00000376]	Secondary IDE Channel

	[00000378 - 0000037F] Printer Port (LPT1)
	[00000380 - 000003BB] Intel(R) Graphics Media Accelerator 3150
	[000003C0 - 000003DF] Intel(R) Graphics Media Accelerator 3150
	[000003E8 - 000003EF] Communications Port (COM3)
	[000003F6 - 000003F6] Primary IDE Channel
	[000003F8 - 000003FF] Communications Port (COM1)
	[00000480 - 000004BF] Motherboard resources
	[000004D0 - 000004D1] Motherboard resources
	[00000800 - 0000087F] Motherboard resources
	[00000A79 - 00000A79] ISAPNP Read Data Port
	[00000D00 - 0000FFFF] PCI bus
	[0000E000 - 0000E01F] Intel(R) 82583V Gigabit Network Connection
	[0000E000 - 0000EFFF] Intel(R) ICH8 Family PCI Express Root Port 1 - 283F
	[0000F000 - 0000F01F] Intel(R) ICH8 Family SMBus Controller - 283E
	[0000F020 - 0000F03F] Intel(R) ICH8 Family USB Universal Host Controller - 2832
	[0000F040 - 0000F05F] Intel(R) ICH8 Family USB Universal Host Controller - 2831
	[0000F060 - 0000F07F] Intel(R) ICH8 Family USB Universal Host Controller - 2830
	[0000F080 - 0000F09F] Intel(R) ICH8 Family USB Universal Host Controller - 2835
	[0000F0A0 - 0000F0BF] Intel(R) ICH8 Family USB Universal Host Controller - 2834
	[0000F0C0 - 0000F0DF] Intel(R) 82567V-3 Gigabit Network Connection
	[0000F0E0 - 0000F0EF] Intel(R) ICH8M 3 port Serial ATA Storage Controller - 2828
	[0000F0F0 - 0000F0FF] Intel(R) ICH8M 3 port Serial ATA Storage Controller - 2828
	[0000F100 - 0000F103] Intel(R) ICH8M 3 port Serial ATA Storage Controller - 2828
	[0000F110 - 0000F117] Intel(R) ICH8M 3 port Serial ATA Storage Controller - 2828
	[0000F120 - 0000F123] Intel(R) ICH8M 3 port Serial ATA Storage Controller - 2828
	[0000F130 - 0000F137] Intel(R) ICH8M 3 port Serial ATA Storage Controller - 2828
	[0000F140 - 0000F14F] Intel(R) ICH8M Ultra ATA Storage Controllers - 2850
	[0000F190 - 0000F197] Intel(R) Graphics Media Accelerator 3150

B.2 1st MB Memory Address Map

Address Range	Device
[000A0000 - 000BFFFF]	Intel(R) Graphics Media Accelerator 3150
[000A0000 - 000BFFFF]	PCI bus
[1F700000 - FFFFFFFF]	PCI bus
[E0000000 - EFFFFFFF]	Intel(R) Graphics Media Accelerator 3150
[F0000000 - F3FFFFFF]	System board
[FE800000 - FE8FFFFFF]	Intel(R) Graphics Media Accelerator 3150
[FE900000 - FE91FFFF]	Intel(R) 82583V Gigabit Network Connection
[FE900000 - FE9FFFFFF]	Intel(R) ICH8 Family PCI Express Root Port 1 - 283F
[FE920000 - FE923FFF]	Intel(R) 82583V Gigabit Network Connection
[FEA00000 - FEA7FFFF]	Intel(R) Graphics Media Accelerator 3150
[FEA80000 - FEAFFFFFF]	Intel(R) Graphics Media Accelerator 3150
[FEB00000 - FEB1FFFF]	Intel(R) 82567V-3 Gigabit Network Connection
[FEB20000 - FEB23FFF]	Microsoft UAA Bus Driver for High Definition Audio
[FEB24000 - FEB240FF]	Intel(R) ICH8 Family SMBus Controller - 283E
[FEB25000 - FEB253FF]	Intel(R) ICH8 Family USB2 Enhanced Host Controller - 2836
[FEB26000 - FEB263FF]	Intel(R) ICH8 Family USB2 Enhanced Host Controller - 283A
[FEB27000 - FEB27FFF]	Intel(R) 82567V-3 Gigabit Network Connection
[FEC00000 - FEC0FFFF]	Motherboard resources
[FED14000 - FED19FFF]	System board
[FED1C000 - FED1FFFF]	Motherboard resources
[FED20000 - FED8FFFF]	Motherboard resources
[FEE00000 - FEE00FFF]	Motherboard resources
[FFE00000 - FFFFFFFF]	Motherboard resources

B.3 IRQ Mapping Chart

Interrupt request (IRQ)	Device
(ISA) 0	System timer
(ISA) 1	Standard 101/102-Key or Microsoft Natural PS/2 Keyboard
(ISA) 3	Communications Port (COM2)
(ISA) 4	Communications Port (COM1)
(ISA) 8	System CMOS/real time clock
(ISA) 9	Microsoft ACPI-Compliant System
(ISA) 10	Communications Port (COM3)
(ISA) 10	Communications Port (COM4)
(ISA) 10	Communications Port (COM5)
(ISA) 10	Communications Port (COM6)
(ISA) 12	Microsoft PS/2 Mouse
(ISA) 13	Numeric data processor
(ISA) 14	Primary IDE Channel
(ISA) 15	Secondary IDE Channel
(PCI) 7	Intel(R) ICH8 Family SMBus Controller - 283E
(PCI) 16	Intel(R) 82583V Gigabit Network Connection
(PCI) 16	Intel(R) Graphics Media Accelerator 3150
(PCI) 16	Intel(R) ICH8 Family USB Universal Host Controller - 2834
(PCI) 18	Intel(R) ICH8 Family USB Universal Host Controller - 2832
(PCI) 18	Intel(R) ICH8 Family USB2 Enhanced Host Controller - 283A
(PCI) 18	Intel(R) ICH8M 3 port Serial ATA Storage Controller - 2828
(PCI) 19	Intel(R) ICH8 Family USB Universal Host Controller - 2831
(PCI) 21	Intel(R) ICH8 Family USB Universal Host Controller - 2835
(PCI) 21	Microsoft UAA Bus Driver for High Definition Audio
(PCI) 22	Intel(R) ICH8 Family PCI Express Root Port 1 - 283F
(PCI) 23	Intel(R) 82567V-3 Gigabit Network Connection
(PCI) 23	Intel(R) ICH8 Family USB Universal Host Controller - 2830
(PCI) 23	Intel(R) ICH8 Family USB2 Enhanced Host Controller - 2836
+	Memory

B.4 DMA Channel Assignments

-	Direct memory access (DMA)
	4 Direct memory access controller
+	Input/output (IO)
+	Interrupt request (IRQ)
+	Memory

Appendix

C

Miscellanea

C.1 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. Never spray or squirt the liquids directly onto any computer component. If you need to clean the device, please rub it with a piece of dry cloth.
2. Be cautious of the tiny removable components when you use a vacuum cleaner to 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.

C.2 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 tips.

- **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 swabs** - Cotton swabs 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.

Note:

We strongly recommended that you should shut down the system before you start to clean any single components.

Please follow the steps below.

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

C.3 Scrap Computer Recycling

If the computer equipments need the maintenance or are beyond repair, we strongly recommended that you should inform us as soon as possible for the suitable solution. For the computers that are no longer useful or work well, please contact with worldwide distributors for recycling.

The worldwide distributors show on the following website:

<http://www.aaeon.com/?TabIndex=Contact&TabID=Distributors>

Note:

Follow the national requirements to dispose unit

C.4 Installing Accessories

Skype Phone Installation



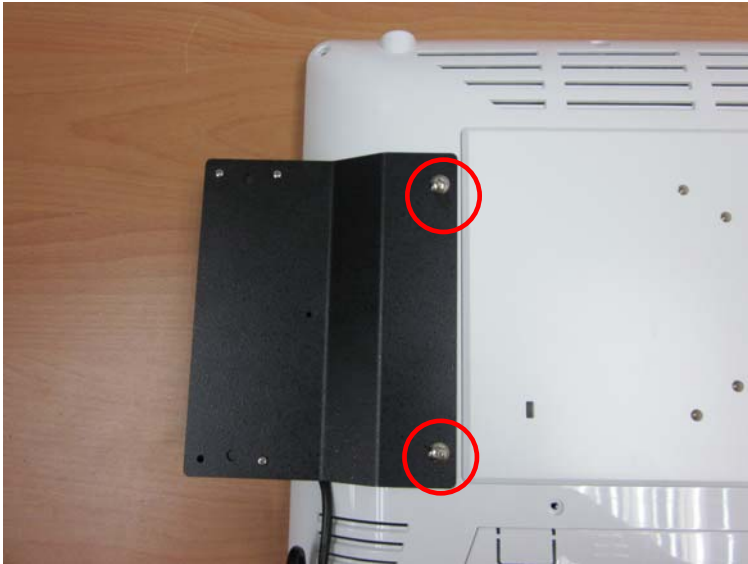
Step 1: Fasten the two screws(2-SELF TAPPING SCREWS) to fix the Skype Bracket with the ACP-5212



MSR Installation



Step 1: Fasten the two screws (2-SELF TAPPING SCREWS) to fix the MSR Bracket with the ACP-5212



Bar Code Scanner Installation



Step 1: Fasten the three screws to fix the Bar Code Scanner with the

bucket



Step 2: Fasten the two screws (2-SELF TAPPING SCREWS) to fix the Bar Code Scanner with the ACP-5212

