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ARK-3383

Seven USB 2.0, Four Serial, Dual LAN and AC97 Audio Fanless Embedded Box Computer

User Manual

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Part No. 2006338302 Edition 3

Printed in Taiwan August 2008

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CE

This product has passed the CE test for environmental specifications when shielded cables are used for external wiring. We recommend the use of shielded cables. This kind of cable is available from Advantech. Please contact your local supplier for ordering information.

FCC Class A

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his/her own expense.

Technical Support and Assistance

Step 1.

Visit the Advantech web site at www.advantech.com/support where you can find the latest information about the product.

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Contact your distributor, sales representative, or Advantech's customer service center for technical support if you need additional assistance.

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- Product name and serial number
- Description of your peripheral attachments
- Description of your software (operating system, version, application software, etc.)
- A complete description of the problem
- The exact wording of any error messages

ARK-3383 Series Model

There are two sub-models in ARK-3383 series listed below:

ARK-3383 Model list

Model Number	Description
ARK-3383-2S0B1E	ULV Celeron® M 1.0 GHz Embedded Box Computer, with 1 x VGA, 1 x LVDS, 2 x LAN, 4 x COM, 7 x USB 2.0 and AC97 Audio, 1 x 8 bits DIO
ARK-3383-2S4B1E	LV Pentium® M 1.4 GHz Embedded Box Computer, with 1 x VGA, 1 x LVDS, 2 x LAN, 4 x COM, 7 x USB 2.0 and AC97 Audio, 1 x 8 bits DIO

Packing list

- 1 x ARK-3383 Unit
- 1 x DIN-Rail Mounting Kit
- 1 x PS2 Keyboard/Mouse Cable (P/N: 1700060202)
- 1 x Driver and Utility CD for ARK-3383 series
- 1 x Flat Cable Supports RS-485/RS-422 Mode for COM2 Serial Port (P/N: 1700001967)
- 1 x 2-P Phoenix to DC-Jack Power Cable (P/N: 1700001394)

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

Document Feedback

To assist us in making improvements to this manual, we would welcome comments and constructive criticism. Please send all such - in writing to: support@advantech.com

Safety Instructions

1. Please read these safety instructions carefully.
2. Please keep this User‘s Manual for later reference.
3. Please disconnect this equipment from AC outlet before cleaning. Use a damp cloth. Don‘t use liquid or sprayed detergent for cleaning. Use moisture sheet or clothe for cleaning.
4. For plugable equipment, the socket-outlet shall near the equipment and shall be easily accessible.
5. Please keep this equipment from humidity.
6. Lay this equipment on a reliable surface when install. A drop or fall could cause injury.
7. Do not leave this equipment in an uncontrolled environment; storage temperatures above 60ºC may damage the equipment.
8. The openings on the enclosure are for air convection hence protecting the equipment from overheating. DO NOT COVER THE OPENINGS.
9. Make sure the voltage of the power source when connecting the equipment to the power outlet.
10. Place the power cord such a way that people cannot step on it. Do not place anything over the power cord. The power cord must be rated for the product and for the voltage and current marked on the product’s electrical ratings label. The voltage and current rating of the cord should be greater than the voltage and current rating marked on the product.
11. All cautions and warnings on the equipment should be noted.
12. If the equipment is not used for long time, disconnect the equipment from mains to avoid being damaged by transient over-voltage.
13. Never pour any liquid into ventilation openings; this could cause fire or electrical shock.
14. Never open the equipment. For safety reasons, only qualified service personnel should open the equipment.
15. If one of the following situations arise, get the equipment checked by service personnel:

    a.The Power cord or plug is damaged.

    b.Liquid has penetrated the equipment.

    c.The equipment has been exposed to moisture.

d.The equipment has not worked well or you can not get it work according to user‘s manual.

e.The equipment has been dropped and damaged.

f.The equipment has obvious signs of breakage

Caution!



THIS COMPUTER IS PROVIDED WITH A BATTERY-POWERED REAL-TIME CLOCK CIRCUIT. THERE IS A DANGER OF EXPLOSION IF THE BATTERY IS INCORRECTLY REPLACED. REPLACE ONLY WITH SAME OR EQUIVLENT TYPE RECOMMENDED BY THE MANUFACTURE. DISCARD USED BATTERIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.

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CHAPTER 1

Overview

This chapter gives background information on the ARK-3383. It shows you the ARK-3383 overview and specifications.

Sections include:

- Introduction
- Hardware Specifications
- Chassis Dimension

Chapter 1 Overview

1.1 Introduction

The ARK-3383 fanless Embedded Box Computer combines seven USB 2.0 ports, four 4 serial ports, dual fast Ethernet and AC97 audio as well as other industrial features into a rugged, compact Aluminum chassis for intensive control and communication based applications. The fanless operation provides noise protection for the platform to be deployed in external environments. The ARK-3383 Embedded Box Computer is ideally suited for diverse embedded and standalone applications, all electronics are protected in a compact sealed housing.

1.2 Features

1.2.1 Seven USB Ports and Four Serial Ports with Dual Fast Ethernet

- ARK-3383 enables you to access USB peripherals such as storage subsystems, security ID devices, card readers, bar code scanners, multifunction printers and scanners individually dedicated or shared among users and configured via the network to maximize your USB device investment.
- In addition to seven USB 2.0 ports, ARK-3383 is also equipped with dual fast Ethernet and four serial ports that make ARK-3383 an ideal solution to communicate with many field level devices and perform control operations for automation applications, such as embedded device servers for storage, image printing, medical applications and security & access control for POI/POS/Kiosks.

1.2.2 Highly Scalable Performance with low power consumption

- Scalable Low Voltage and Ultra Low Voltage Pentium® M class processors bring high computing performance with low power consumption

1.2.3 Highly Robust Casting Construction

- Fanless operation in an Aluminum sealed construction
- A special cushioned design that absorbs vibration ensures maximum reliability under harsh conditions

1.2.4 Highly Compact Size

- With its maximum mounting height of 69mm, the ARK-3383 can be used under space critical installation conditions.

1.2.5 Optimized Integration

- Few parts, easy integration, and easy maintenance to reduce investment
- Systems are supplied ready to run
- Long life cycle support for product continuity

1.2.6 Accepts Wide Range of DC Power Input, and ATX

- The ARK-3383 allows a wide range power input of DC 12 V ~ 24 V, and also supports ATX; that offers system integrators the flexibility and excellent power management for various embedded application environments.

1.3 Hardware Specification

1.3.1 Processor Core Logic System

- **CPU**

  Intel® Ultra Low Voltage Celeron® M or Intel® Low Voltage Pentium® M Processor, µFC-BGA 479 Package:

  • ULV Celeron® M 1.0 GHz (for Model of ARK-3383-2S0B1E)

  • LV Pentium® M 1.4 GHz (for Model of ARK-3383-2S4B1E)

- **System Chipset**

  • Intel® 852GM or Intel® 855GME Graphic Memory Controller Hub (GMCH) Chipset:

  - Intel® 852GM for model of ARK-3383-2S0B1E

  - Intel® 855GME for model of ARK-3383-2S4B1E

  • Intel® FW82801DB I/O Controller Hub (ICH4) Chipset

  • 400 MHz FSB

- **BIOS:** 4Mbit Flash BIOS, supports Plug & Play
- **Power Management:** Supports ATX, APM Rev 1.2 and ACPI
- **System Memory**

  • One 200 pin SO-DIMM socket

  • Supports DDR SDRAM Up to 1GB

1.3.2 Display

- **Chipset:**

  • Integrated built-in graphics Intel® 852GM GMCH, or Intel® 855GME GMCH chipsets utilizing Intel® Extreme Graphics 2 technology

- **Display Memory:**

  • Dynamic video memory allocation up to 64 MB

- **Display Interface support:**

  • CRT Interface

  • 36-bit LVDS interface

1.3.3 Ethernet

- **Dual Ethernet Controller:** Two Intel® 82551QM Ethernet Controllers support LAN1 and LAN2
- **Speed:** 10/100 Mbps, IEEE 802.3u (100 BASE-T) protocol compatible

1.3.4 USB

- **Dual USB Controller supports 7 USB 2.0 ports:**

  • Integrated USB 2.0 controller built-in ICH4 chipset supports USB 0 ~ USB 2

  • One NEC uD720101 PCI USB 2.0 controller supports USB 3 ~ USB 6

1.3.5 Audio

• Audio controller on the ICH4 chip.

• AC97 stereo sound, dual 2.2 W amplifier

1.3.6 Serial Port

- **Serial Interface:**

  • Built-in Winbond 83627HF super I/O controller supports:

  COM1: Full functional RS-232 serial port

  COM2: RS-232/422/485 serial port, by system internal jumper selection

  Note: *The default setting of COM2 is RS-232. The RS-422/485 mode of COM2 can be supported via replacing the internal cable and adjusting the jumper inside the system.*

  • Built-in SMSC SCH3114 LPC serial port controller supports:

COM3: RS-232/422/485 serial port, by BIOS selection and setup

COM4: RS-232/422/485 serial port, by BIOS selection and setup

1.3.7 Other

• **Watchdog Timer:** 255 levels timer interval, setup by software

• **Keyboard/Mouse:** One PS/2 port to support PS/2 mouse and PS/2 Keyboard

- **DIO:** ARK-3383 provides one D-sub 8 bits Female connectors, which offers Digital IO communication interface ports.

1.3.8 Storage

• Supports a drive bay space for 2.5” HDD

• Supports a Compact Flash socket for Type I/II Compact Flash disk

1.3.9 Mechanical

• **Construction:** Aluminum housing

• **Mounting:** DIN-rail mounting, Desk/wall mounting

• **Dimension (W x H x D):** 264.5 mm x 69.2 mm x 137.25 mm (10.41”x 2.72”x 4.4”)

• **Weight:** 2 KG

1.3.10 Power Supply

• **Output Rating:** 46 W

• **Fuse Rating:** 7 A @ 125 V

• I**nput Voltage:** 12 VDC ~ 24 VDC,

Typical:

12 VDC @ 4.5 A,

16 VDC @ 3.4 A,

19 VDC @ 2.9 A,

24 VDC @ 2.3 A,

1.3.11 Environment Specifications

- **Operating Temperature:**

  • When System is equipped with industrial grade Compact Flash Disk temperature range is -20 to 60° C

  • When System is equipped with 2.5-inch Hard Disk temperature range is 0 to 45° C

- **Relative humidity:** 95 % @ 40° C (non-condensing)

- **Vibration loading during operation:**
  - When system is equipped with Compact Flash Disk only:
  5 Grms, IEC 68-2-64, random, 5~500 Hz, 1 Oct./min, 1hr/axis.
  - When system is equipped with 2.5-inch hard disk:
  1 Grms, IEC 68-2-64, random, 5~500 Hz, 1 Oct./min, 1hr/axis.
- **Shock during operation:**
  - When system is equipped with Compact Flash Disk only:
  50 Grms, IEC 68-2-27, half sine, 11 ms duration
  - When system is equipped with Hard Disk:
  20 Grms, IEC 68-2-27, half sine, 11 ms duration
- **EMC Approved:** CE, FCC Class A
- **Safety Approved:** UL

1.4 Chassis Dimensions

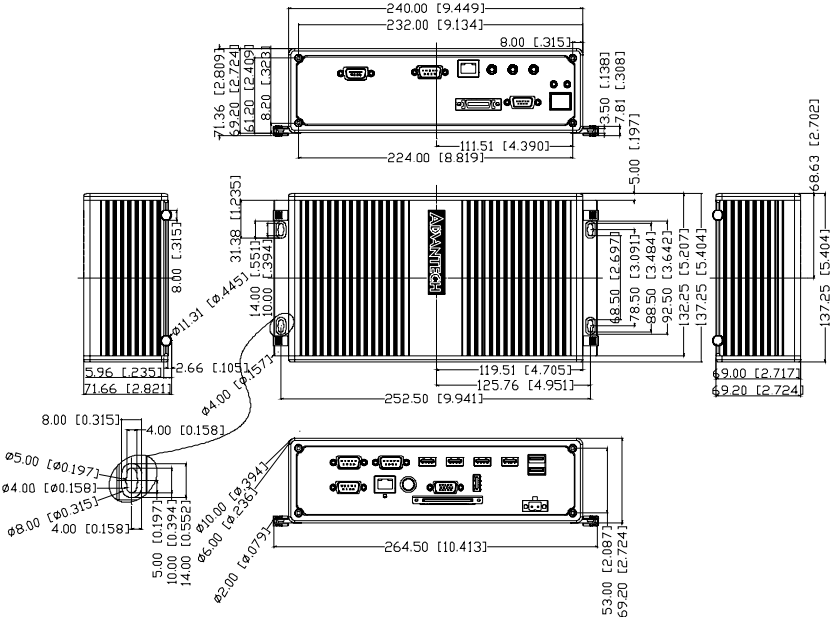


Figure 1.1: Chassis Dimensions

CHAPTER 2

Hardware Functionality

This chapter shows how to set up the ARK-3383's hardware functions, including connecting peripherals, switches and indicators.

Sections include:

- Introduction of ARK-3383 External I/O Connectors
- ARK-3383 front metal faceplate external I/O connectors
- ARK-3383 rear metal faceplate external I/O connectors

Chapter 2 Hardware Functionality

2.1 Introduction of ARK-3383 External I/O Connectors

The following two figures show the external I/O connectors on ARK-3383. The following sections give you detailed information about the functions of each I/O connector.

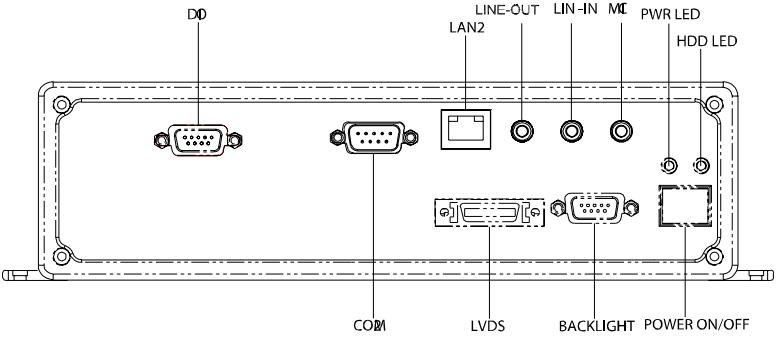


Figure 2.1: ARK-3383 front metal face plate external I/O connectors

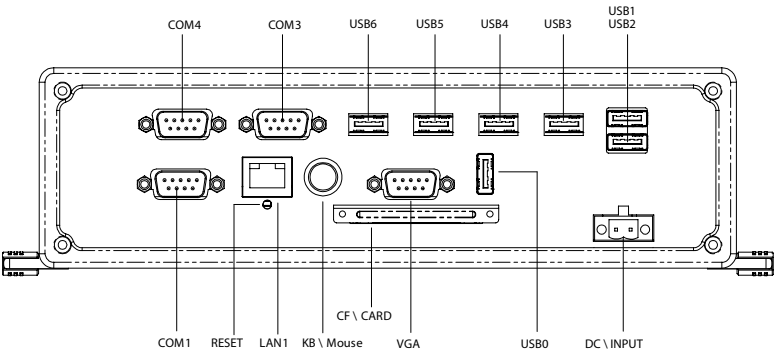


Figure 2.2: ARK-3383 rear metal face plate external I/O connectors

2.2 ARK-3383 front metal faceplate external I/O connectors

2.2.1 Power ON/OFF Button

The ARK-3383 ATX power On/Off button supports dual function Soft Power On/Off (Instant off or Delay 4 Second), and Suspend.

2.2.2 LED Indicators

There are two LEDs on the ARK-3383 faceplate for indicating system status: Flashing Green color is the PWR LED for power status; and the Flashing Red color HDD LED is for hard disk and compact flash disk status.

2.2.3 LVDS Connectors

The ARK-3383 comes with a D-Sub 26-pin connector that carries LVDS signal output, and can directly connect to the LVDS LCD Display via external cable. The system also provides a jumper for JP6 on the internal PCM-9380 or PCM-9386 motherboard for selecting the LCD signal power of 5 V or 3.3 V, please refer to section 3.6 for the jumper table of JP6, and Chapter 8 of "Full disassembly procedure" to set it up. The default setting of JP6 is 5 V.

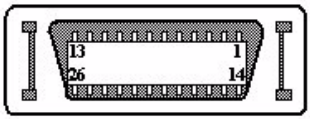


Figure 2.3: LVDS connector

Table 2.1: LVDS Connector Pin Assignment

Pin	Signal name	Pin	Signal name
1	LVDS_CLKBP	14	LVDS_CLKBM
2	GND	15	LVDS_YAM0
3	LVDS_YAP0	16	LVDS_YAM1
4	LVDS_YAP1	17	LVDS_YAM2
5	LVDS_YAP2	18	LVDS_CLKAM
6	LVDS_CLKAP	19	GND
7	+3.3 or +5V	20	+3.3 or +5V
8	GND	21	LVDS_YAM3
9	LVDS_YAP3	22	LVDS_YBM0

Table 2.1: LVDS Connector Pin Assignment			
10	LVDS_YBP0	23	LVDS_YBM1
11	LVDS_YBP1	24	LVDS_YBM2
12	LVDS_YBP2	25	LVDS_YBM3
13	LVDS_YBP3	26	GND

2.2.4 LCD Backlight On/Off control Connector

The ARK-3383 comes with a D-Sub 9-pin connector which provides BKLTEN signal as well as +12 V, +5 V and Ground Pin signals that allow you to connect these signals to an LCD inverter to implement the LCD On/Off control.

- BKLTEN provides signals that the inverter module requires for controlling the on/off
- Provides 12 V, 5 V as the Inverter Power Source.

The additional VBR signal pin should be connected to the LCD's Inverter which allows you to implement brightness adjustments through customer's software utility.

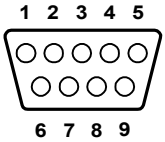


Figure 2.4: LCD Backlight connector

Table 2.2: LCD Backlight Connector Pin Assig	
Pin	Signal name
1	+12V
2	GND
3	BKLTEN
4	VBR
5	+5V
6	LVDS_DCLK
7	LVDS_DDAT
8	Reserved
9	Reserved

2.2.5 Audio Connector

The ARK-3382 offers AC97 stereo Audio output ports through three phone jack connectors of Speaker-Out, Mic-In and Line-In.

Table 2.3: Line_In connector	
Line-In Connector	
Footprint	Phone Jack 3.5Ø 5P, 90 Degree, Female, BLUE color, SHIELDED

Table 2.4: Speaker_Out connector	
Speaker-Out Connector	
Footprint	Phone Jack 3.5Ø 5P, 90 Degree, Female, LIME color, SHIELDED

Table 2.5: Mic_In connector	
Mic-In Connector	
Footprint	Phone Jack 3.5Ø 5P, 90 Degree, Female, PINK color, SHIELDED

2.2.6 Ethernet Connector: LAN2

The ARK-3383 is equipped with two Intel 82551QM Ethernet controllers and two Ethernet ports that are fully compliant with IEEE 802.3u 10/100Base-T CSMA/CD standards. The Ethernet ports provide two standard RJ-45 jack connectors:

LAN1: located on rear faceplate

LAN2: located on front faceplate

Both LAN1 and LAN2 also comes with LED indicators to show their Active/Link status (Green LED) and Speed status (Orange LED).

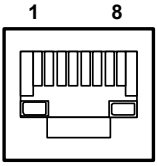


Figure 2.5: Ethernet Connector

Table 2.6: RJ-45 Connector pin assignments	
Pin	10/100BaseT Signal Name
1	XMT+
2	XMT-
3	RCV+

Table 2.6: RJ-45 Connector pin assignments	
4	NC
5	NC
6	RCV-
7	NC
8	NC

2.2.7 COM2 Connector: RS-232/422/485 port

The COM2 serial communication interface port can be configured to support RS-232, RS-422 or RS-485 interface functionality by jumpers setting.

The COM 2 serial communication interface port can be configured to support RS-232, RS-422 or RS-485 interface functionality by jumpers setting. The default setting of COM 2 is RS-232 mode. Please see below table for COM 2 RS-422/485 modes setting.

Table 2.7: ARK-3383 COM2 RS-232/422/485 Setting Table			
	RS-232	RS-422	RS-485
On Main Board J3	Close	Open	Open
On Main Board J4	Open	Close	Open
On Main Board J5	Open	Open	Close
On MIO Board JP1	1-3, 2-4 Close	3-5, 4-6 Close	3-5, 4-6 Close
On MIO Board JP2	1-3, 2-4 Close	3-5, 4-6 Close	3-5, 4-6 Close

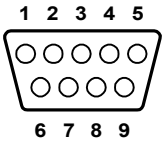


Figure 2.6: COM2 Connector

2.3 DIO Connector

ARK-3383 provides one D-sub 9-pin Female connectors, which offers Digital IO communication interface ports. If you want to use DIO, you can find the Pin assignment as following.

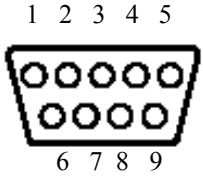


Figure 2.7: DIO connector

Table 2.8: DIO	
Pin	Signal Name
1	DIO0
2	DIO1
3	DIO2
4	DIO3
5	DIO4
6	DIO5
7	DIO6
8	DIO7
9	GND

2.4 ARK-3383 rear face plate external I/O connectors

2.4.1 Power Input Connector

The ARK-3383 comes with a Phoenix connector that carries 12~24 VDC external power input

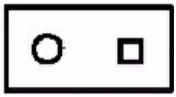


Figure 2.8: Power Input Connector

Table 2.9: Power connector pin assignments	
Pin	Signal Name
1	GND
2	DC +12~24V

2.4.2 USB Connectors (USB0 ~ USB6)

The Rear Metal faceplate of ARK-3383 provides seven USB 2.0 interface connectors: USB 0, USB 1, USB 2, USB 3, USB 4, USB 5 and USB 6; each USB port provides complete Plug & Play and hot swapping for external devices. The USB interface complies with USB UHCI, Rev. 2.0 spec.

The USB connectors are used for connecting any device that conforms to the USB interface. Many recent digital devices conform to this standard. The USB interface supports Plug and Play, which enables you to connect or disconnect a device whenever you want, without turning off the computer.

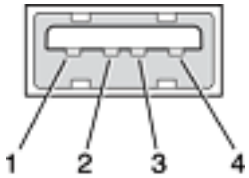


Figure 2.9: USB connector

Table 2.10: USB Connector	
Pin	Signal name
1	VCC
2	USB_P0-
3	USB_P0+
4	GND

2.4.3 VGA Connector

The ARK-3383 provides a high resolution VGA interface by a D-sub 15-pin connector to support a VGA CRT monitor. It supports VGA and VESA, up to 1600 x 1200 @85-Hz resolution and up to 32 MB of shared memory.

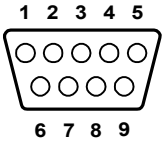


Figure 2.10: VGA connector

Table 2.11: VGA adaptor cable pin assignment					
Pin	Signal name	Pin	Signal name	Pin	Signal name
1	Red	6	GND	11	NC
2	Green	7	GND	12	NC
3	Blue	8	GND	13	H-SYNC
4	NC	9	NC	14	V-SYNC
5	GND	10	GND	15	NC

2.4.4 PS/2 Keyboard/Mouse Connector

The ARK-3383 provides a PS/2 keyboard/mouse connector. A 6-pin mini-DIN connector is located on the rear panel of the ARK-3383. The ARK-3383 comes with an adapter cable to convert from the 6-pin mini-DIN connector to two 6-pin mini-DIN connectors for PS/2 keyboard and PS/2 mouse connection.

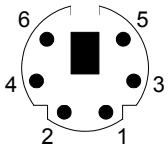


Figure 2.11: P/S2 connector

Table 2.12: PS/2 Keyboard/Mouse connector pin assignments	
Pin	Signal name
1	PS2_KBDAT
2	PS2_MSDAT
3	GND
4	VCC
5	PS2_KBCLK
6	PS2_MSCLK

2.4.5 Ethernet Connector: LAN 1

The ARK-3383 is equipped with two Intel 82551QM Ethernet controllers and two Ethernet ports that are fully compliant with IEEE 802.3u 10/100Base-T CSMA/CD standards. The Ethernet ports provide two standard RJ-45 jack connectors:

LAN1: located on rear faceplate

LAN2: located on front faceplate

Both LAN 1 and LAN 2 come with LED indicators to show their Active/Link status (Green LED) and Speed status (Orange LED).

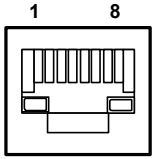


Figure 2.12: Ethernet Connector

Table 2.13: RJ-45 Connector pin assignments

Pin	10/100BaseT Signal Name
1	XMT+
2	XMT-
3	RCV+
4	NC
5	NC
6	RCV-
7	NC
8	NC

2.4.6 Reset Button

Press the "Reset" button to activate the reset function.

2.4.7 COM 1 Connector: Standard RS-232 port

The ARK-3383 provides a D-sub 9-pin connector, which offers one standard RS-232 serial communication interface port of COM 1.

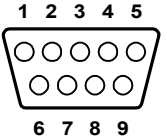


Figure 2.13: COM 1 Connector

Table 2.14: COM1 Serial port pin assignments

Pin	Signal Name
1	DCD
2	RxD
3	TxD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI

2.4.8 COM 3 Connector: RS-232/422/485 port

The COM 3 serial communication interface port can be configured to support RS-232, RS-422 or RS-485 interface functionality by adjusting the BIOS setting.

The default setting of COM 3 is RS-232. The RS-422/485 mode of COM 3 can be configured via adjusting “COM 3 Mode” of “Integrated Peripherals” at the BIOS setting. Please refer to Chapter 3 “Hardware installation and upgrade” and Chapter 4 “Award BIOS Setup” to select.

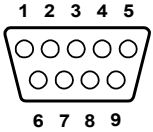


Figure 2.14: COM3 Connector

2.4.9 COM 4 Connector: RS-232/422/485 port

The COM 4 serial communication interface port can be configured to support RS-232, RS-422 or RS-485 interface functionality by adjusting the BIOS setting.

The default setting of COM 4 is RS-232. The RS-422/485 mode of COM 4 can be configured via adjusting “COM 4 Mode” of “Integrated Peripherals” at the BIOS setting. Please refer to Chapter 3 “Hardware installation and upgrade” and Chapter 4 “Award BIOS Setup” to select.

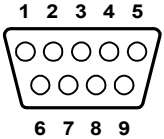


Figure 2.15: COM 4 Connector

CHAPTER 3

Hardware Installation and Upgrade

This chapter introduces how to initialize the ARK-3383.

Sections include:

- Jumpers and Connectors
- Installing the DDR SDRAM Memory Module
- Inserting a Compact Flash Card
- Installing the 2.5" Hard Disk Drive (HDD)
- Connecting Power
- Installing the DIN Rail Mounting

Chapter 3 Hardware Installation and Upgrade

3.1 Jumpers and Connectors

The ARK-3383 Embedded Box Computer consists of a PC-based computer that is housed in an aluminum top cover, a metal bottom case with accessible bottom cover and front/ rear metal faceplates. The HDD, and SDRAM DIMM, are all readily accessible by removing the easily accessible bottom cover. Any maintenance or hardware upgrades can be easily completed after removing the top cover, front and rear metal faceplates. If you are a systems integrator and need to know how to completely disassemble the embedded box computer, you can find more useful information in Chapter 8.

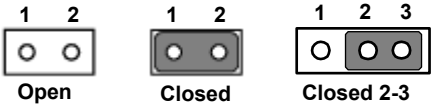
Warning! *Do not remove any mechanical parts, such as the top cover, bottom cover and front/rear faceplates until you have verified that no power is flowing within the Embedded Box Computer. Power must be switched off and the power cord must be unplugged. Every time you service the Embedded Box Computer, you should be aware of this.*

3.2 Setting jumpers

You can configure your ARK-3383 to match the needs of your application by setting jumpers. A jumper is the simplest kind of electrical switch. It consists of two metal pins and a small metal clip (often protected by a plastic cover) that slides over the pins to connect them. To “close” a jumper, you connect the pins with the clip. To “open” a jumper you remove the clip. Sometimes a jumper will have three pins, labeled 1, 2, and 3. In this case, you would connect either pins 1 and 2 or pins 2 and 3.



The jumper settings are schematically depicted in this manual as follows:



A pair of needle-nose pliers may be helpful when working with jumpers. If you have any doubts about the best hardware configuration for your application, contact your local distributor or sales representative before you make any changes.

3.3 COM 2 RS-232/422/485 Jumper setting (J3/J4/J5 Located on internal motherboard)

The COM 2 port located on front faceplate of ARK-3383 unit which can be configured to operate in RS-232, RS-422 or RS-485 mode by setting up the Jumper Pins of J3/J4/J5 located on internal motherboard of ARK-3383 unit. The default setting of COM 2 is RS-232.

Table 3.1: COM 2 RS-232/422/485 Jumper Select

Function	Setting
RS-232 *	J3 (1-2 closed) (J4, J5 open)
RS-422	J4 (1-2 closed) (J3, J5 open)
RS-485	J5 (1-2 closed) (J3, J4 open)
(*): means default setting of the jumper/function	

Please also refer to Chapter 8 “Full Disassembly Procedure”.

3.4 COM 3 RS-232/422/486 BIOS setting

The COM 3 port connector located on rear face plate of ARK-3383 unit can be configured to operate in RS-232, RS-422 or RS-485 mode by adjusting “COM 3 Mode” of “Integrated Peripherals” at the BIOS setting. Please refer to Chapter 4 “Award BIOS Setup” to select. The default setting value of COM3 has been set for RS-232.

3.5 COM 4 RS-232/422/486 BIOS setting

The COM 4 port connector located on rear face plate of ARK-3383 unit can be configured to operate in RS-232, RS-422 or RS-485 mode by adjusting “COM 4 Mode” of “Integrated Peripherals” at the BIOS setting. Please refer to Chapter 4 “Award BIOS Setup” to select. The default setting value of COM4 has been set for RS-232.

3.6 LCD Power Jumper Setting (J6)

The ARK-3383 series of embedded box computers provide a jumper-JP6 located on internal PCM-9380 or PCM-9386 motherboard for selecting the LCD signal power of 5 V or 3.3 V. When you connect your LVDS LCD Panel display, you need to set up JP6 for the LCD power setting selection. for your display.

Table 3.2: LCD Power Setting (J6)

Close pins	Function
1-2	+5V*
2-3	+3.3V
(*): means default setting of the jumper/function	

Please also refer to Chapter 8 “Full Disassembly Procedure” to set up. The default setting of J6 is 5 V.

3.7 Installing the DDR SDRAM Memory Module

The ARK-3383 provides one 200-pin SODIMM (Small Outline Dual Inline Memory Module) socket and supports 2.5 V DDR SDRAM. You can install from 64 MB to 1 GB of DDR SDRAM memory. The procedure for installing a DDR SDRAM SODIMM into the ARK-3383 is detailed below, please follow these steps carefully.

- Remove the power cord.
- Unscrew the four screws from the bottom cover of ARK-3383.
- Remove the bottom cover.
- Plug a DDR SDRAM SODIMM into the onboard SODIMM socket.
- Replace the bottom cover with the four screws.

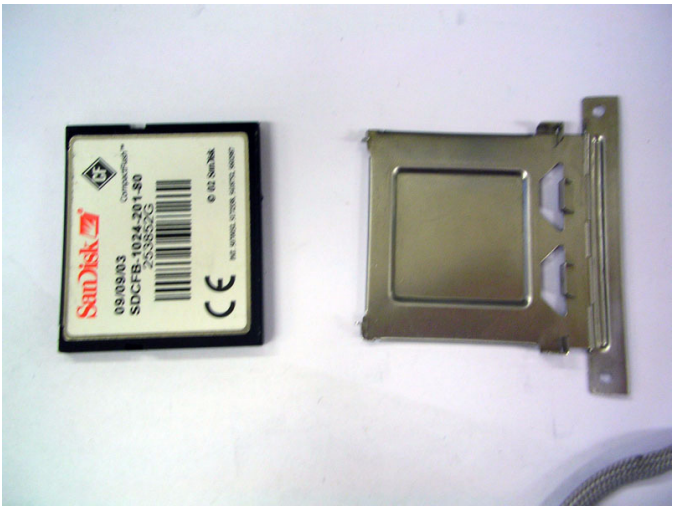
3.8 Installing a Compact Flash Card

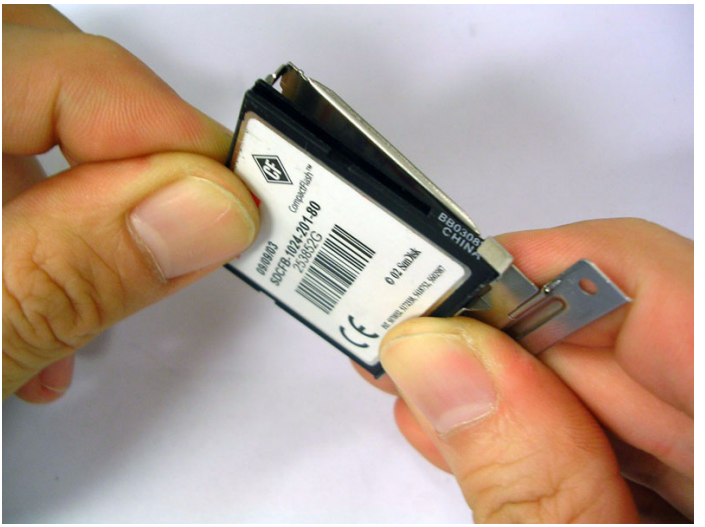
The procedure for installing a CompactFlash card into the ARK-3383 is detailed below, please follow these steps carefully.

- Remove the power cord.
- Unscrew the two screws from the CF door located on rear face plate of the ARK-3383 embedded box computer.

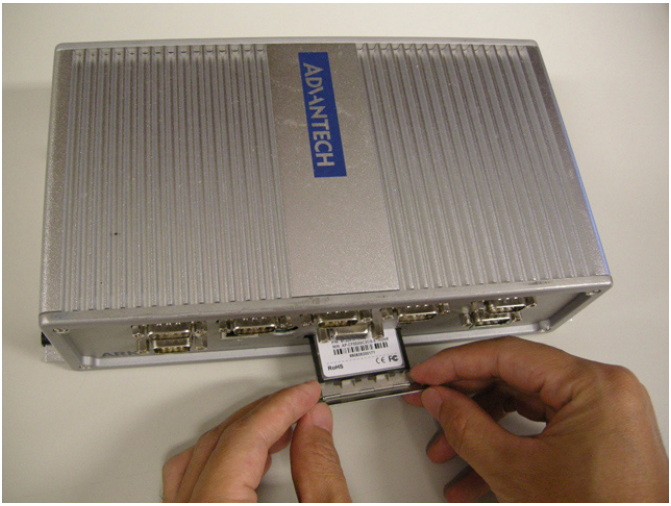


- Remove the CF carrier.
- Place a Compact Flash card with your OS or application program into the CF carrier.





- Insert the CF carrier back and reassemble with the 2 screws to the CF door located on the rear face plate of ARK-3383.



Note: *The Compact Flash socket is allocated as Secondary IDE Master.*

3.9 Installing the 2.5" Hard Disk Drive (HDD)

You can attach one Serial ATA (SATA) hard disk drive to the ARK-3383's internal controller. The following are instructions for installation:

- Remove the power cord.
- Unscrew the four screws from bottom cover of the ARK-3383.
- Remove the bottom cover of the ARK-3383.
- Assemble the hard disk to the bottom cover.
- Connect the SATA cable to the connector and the hard disk.
- Screw back the bottom cover with the four screws.

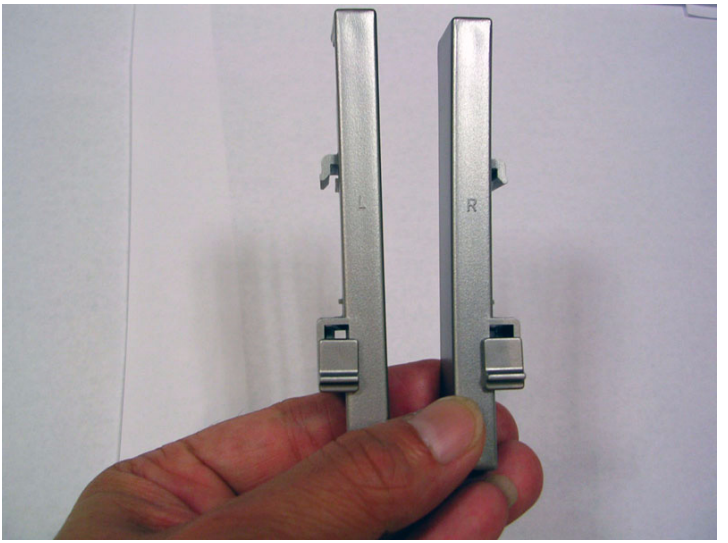
3.10 Connecting Power

Connect the ARK-3383 to a 12~24 VDC power source. The power source can either be from a power adapter or an in-house power source.

3.11 Installation of Din Rail Mounting

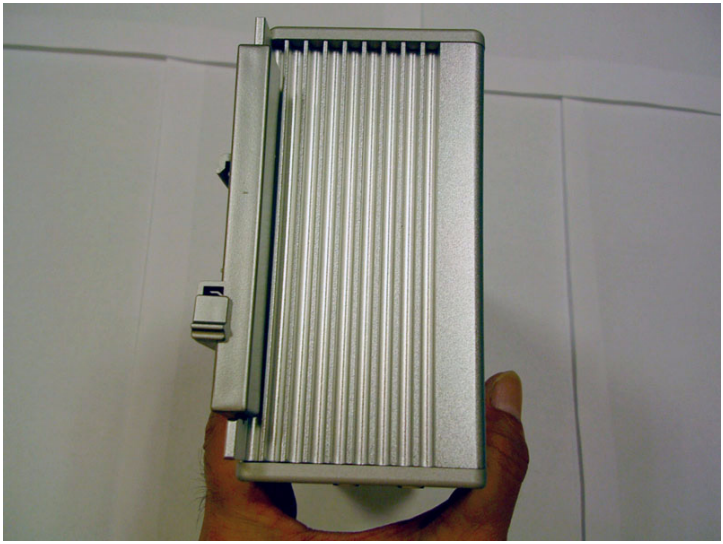
The procedure for installing the ARK-3383 on the rail is detailed below, please follow these steps carefully.

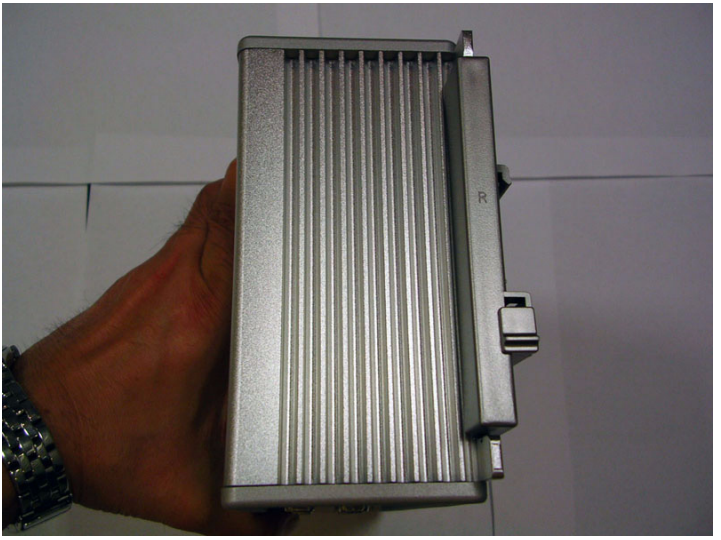
- Remove the rubber feet from the ARK-3383.
- Find the DIN Rail Mounting Kit in the ARK-3383 accessory box. This kit has 2 pieces: an L DIN Rail Mounting Module (Left) and a R DIN Rail Mounting Module (Right).



- Attach the L-Din Rail Mounting module and R-Din Rail Mounting module to the ARK-3383 unit.



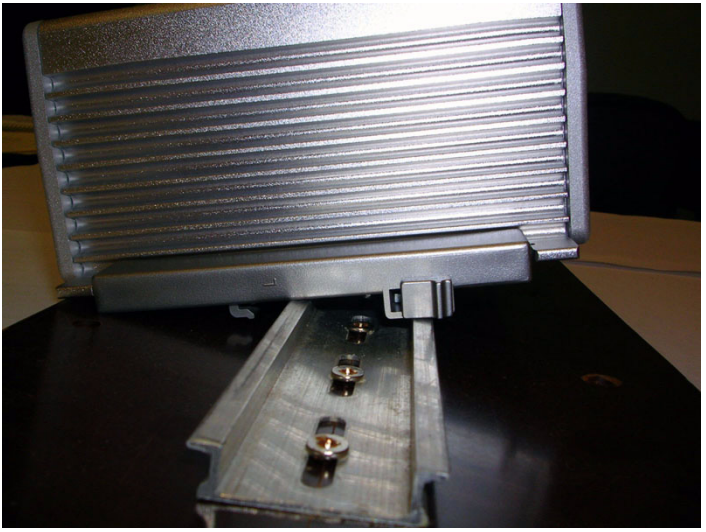


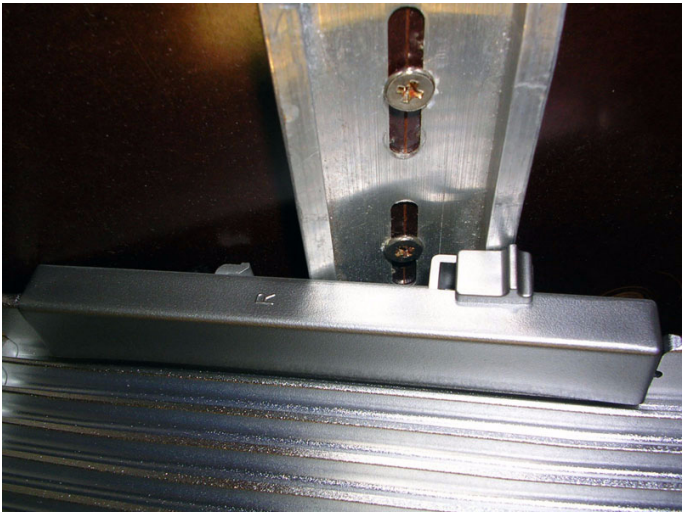


- The sample figure of the DIN-Rail unit as it is below



- Install the ARK-3383 unit to the rail, please make sure the hook of the Din-Rail mounting kit on the ARK-3383 unit will contact with tooth of the DIN-Rail firmly.





- Push the Hook Switch to fix the mounting between ARK-3383 unit and DIN-Rail.

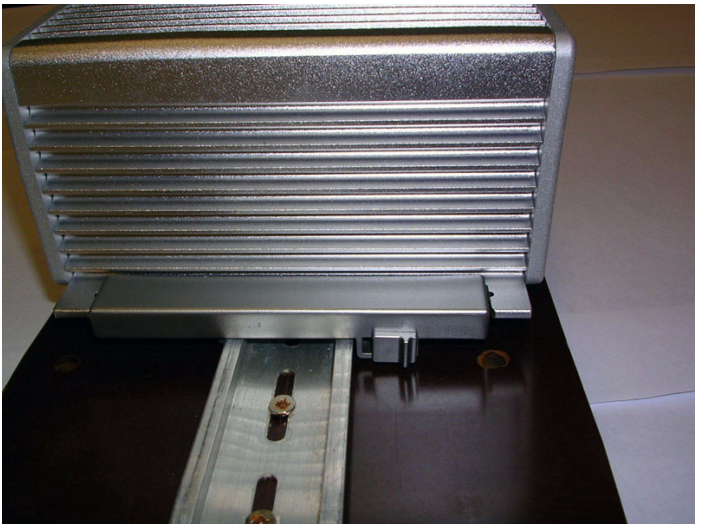


Figure 3.1: Left Side View

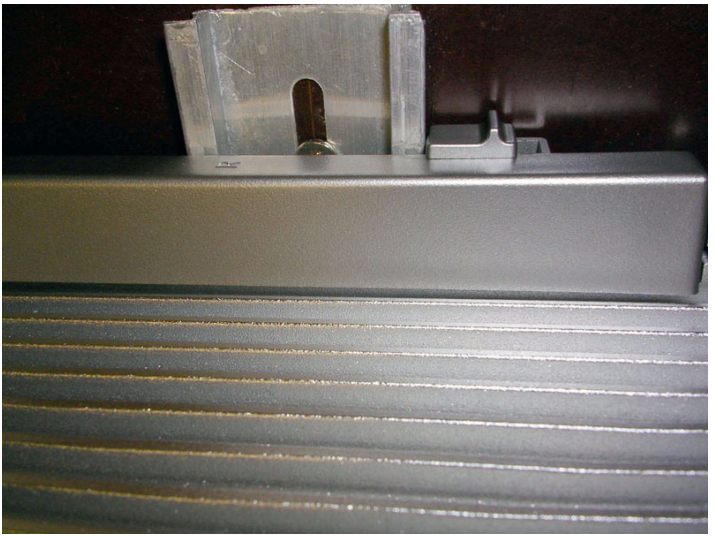


Figure 3.2: Right Side View

- The final Figure shows ARK-3383 unit mounted on the rail with the DIN-Rail mounting kit.

CHAPTER 4

Award BIOS Setup

Chapter 4 Award BIOS Setup

4.1 Introduction

The Award BIOS ROM has a built-in setup program that allows users to modify the basic system configuration. This information is stored in battery-backed memory (CMOS RAM) and it retains the setup information when the power is turned off.

4.1.1 CMOS RAM Auto-backup and Restore

The CMOS RAM is powered by a system board button cell battery. When BIOS setup is completed, the data in CMOS RAM is automatically backed up to Flash ROM. If operating in a harsh industrial environment causes a software error, BIOS will recheck the data in CMOS RAM and automatically restore the original data from Flash ROM to CMOS RAM for booting.

Note: *If you intend to change the CMOS setting without restoring the previous backup, <Del> must be pressed within two seconds of the "CMOS checksum error..." display screen message appearing. Then enter the "Setup" screen to modify the data. If the "CMOS checksum error..." message appears again and again, please check to see if the system battery needs to be replaced.*

4.2 Entering Setup

Turn on the computer and check for the .patch code. If there is a number assigned to the patch code, it means that the BIOS supports your CPU. If there is no number assigned to the patch code, please contact an Advantech application engineer to obtain an up-to-date patch code file. This will ensure that your CPU system status is valid. After ensuring that a number is assigned to the patch code, press <Del> to enter Setup.

CONTROL KEYS	
< ↑ >< ↓ >< ← >< → >	Move to highlight item
<Enter>	Select Item
<Esc>	Main Menu - Quit without saving changes into CMOS
	Sub Menu - Exit current page and return to Main Menu
<Page Up/+>	Increase the numeric value or make changes
<Page Down/->	Decrease the numeric value or make changes
<F1>	General help, for Setup Sub Menu
<F2>	Item Help
<F5>	Load Previous Values
<F7>	Load Optimized Defaults
<F10>	Save all CMOS changes

4.2.1 Main Menu

During bootup, press <Del> to enter AwardBIOS CMOS Setup Utility; the Main Menu will appear on the screen. Use arrow keys to select among the items and press <Enter> to accept or enter a sub-menu.

- **Standard CMOS Features**

  This setup page includes all the items in standard compatible BIOS.

- **Advanced BIOS Features**

  This setup page includes all the Award advanced BIOS features items.

- **Advanced Chipset Features**

  This setup page includes all the advanced chipset configuration items.

- **Integrated Peripherals**

  This setup page includes all onboard peripheral devices.

- **Power Management Setup**

  This setup page includes all the Power Management features items.

- **PnP/PCI Configurations**

  This setup page includes PnP OS and PCI device configuration.

- **Frequency/Voltage Control**

  This setup page includes CPU host clock control, frequency ratio and voltage.

- **Load Optimized Defaults**

  This setup page loads system optimized values, for the best system performance configuration.

- **Set Password**

  Establish, change, or disable password.

- **Save & Exit Setup**

  Save CMOS value settings to CMOS and exit BIOS setup.

- **Exit Without Saving**

  Abandon all CMOS value changes and exit BIOS setup.

4.2.2 Standard CMOS Features

- **Date**

  The date format is <weekday>, <month>, <day>, <year>.

Weekday	From Sun to Sat, determined and displayed by BIOS only
Month	From Jan to Dec
Day	From 1 to 31
Year	From 1999 through 2098

- **Time**

  The time format is <hour> : <minute> : <second>, based on 24-hour time.

- **IDE Primary Master/Slave**

  2.5” HDD Auto-Detection Press "Enter" for automatic device detection.

- **IDE Secondary Master/Slave**

  CF Card Auto-Detection Press "Enter" for automatic device detection.

- **Halt on**

  This item determines whether the computer will stop if an error is detected during power up.

No Errors	The system boot will not stop for any error.
All Errors	Whenever the BIOS detects a non-fatal error the system will be stopped.
All, But Keyboard	The system boot will not stop for a keyboard error; it will stop for all other errors. (Default value)
All, But Diskette	The system boot will not stop for a disk error; it will stop for all other errors.
All, But Disk/Key	The system boot will not stop for a keyboard or disk error; it will stop for al other errors.

- **Base Memory**

  The POST of the BIOS will determine the amount of base (or conventional) memory installed in the system.

- **Extended Memory**

  The POST of the BIOS will determine the amount of extended memory (above 1 MB in CPU’s memory address map) installed in the system.

- **Total Memory**

  This item displays the total system memory size.

4.2.3 Advanced BIOS Features

- **CPU Feature**

  This item allows the user to adjust CPU features, CPU ratio, VID and Thermal and special features such as XD flag.

- **Virus Warning [Disabled]**

  This item allows the user to choose the VIRUS Warning feature for IDE Hard Disk boot sector protection.

- **CPU L1 & L2 Cache [Enabled]**

  This item allows the user to enable CPU L1 & L2 cache.

- **CPU L3 Cache [Enabled]**

  This item allows the user to enable CPU L3 cache.

- **Quick Power On Self Test [Enabled]**

  This field speeds up the Power-On Self Test (POST) routine by skipping retesting a second, third and fourth time. Default is enabled.

- **First / Second / Third Boot Device**

  Assign bootup priorities.

Floppy	Floppy drive gets this priority.
LS120	LS120 gets this priority.
Hard Disk	Hard Disk gets this priority.
CDROM	CDROM gets this priority.
ZIP	ZIP drive gets this priority.
USB-FDD	USB-FDD gets this priority.
USB-ZIP	USB-ZIP gets this priority.
USB-CDROM	USB-CDROM gets this priority.
USB-HDD	USB-HDD gets this priority.
LAN	LAN gets this priority.
Disabled	Disable this boot function.

- **Boot Other Device [Enabled]**

  Use this to add yet another device to the bootup queue. If First, Second, and Third Boot Devices are not present or fail, the system will boot from the next available device.

- **Boot Up NumLock Status [On]**

  When ON, system boots to keypad NumLock activated.

- **Gate A20 Option [On]**

  Options are On (default), and Off.

  On means that the chipset controls GateA20, and gives fast GateA20 speed.

  Off means that the keyboard controller controls GateA20. This gives normal GateA20 speed.

- **Typematic Rate Setting**

  This item enables users to set the two typematic control items.

  - Typematic Rate (Chars/Sec)

    This item controls the speed at which system registers repeated keystrokes.

    The eight settings are 6, 8, 10, 12, 15, 20, 24 and 30.

  - Typematic Delay (Msec)

    This item sets the time interval before automatic character repetition kicks in. The four delay options are 250, 500, 750 and 1000.

- **Security Option [Setup]**

System	System will not boot and will not access Setup page unless the correct password is entered at the prompt.
Setup	System will boot, but access to Setup is denied unless correct password is entered at the prompt. (Default value)

- **ACPI Mode [Enable]**

  This item sets the operating in Advanced Configuration and Power Interface in Windows 2000-based computer for power saving Function.

4.2.4 Advanced Chipset Features

Note: *The "Advanced Chipset Features" options control the configuration of the board's chipset. This page is developed for the particular chipset, to control chipset register settings, and fine tune system performance. It is strongly recommended that only technical users make changes to the default settings.*

- **DRAM Timing Selectable [By SPD]**

  This option refers to the method by which the DRAM timing is selected.

  The default is "By SPD".

  Manual This item provides DRAM clock/drive for The user selection.

  By SPD This item provides DRAM clock/drive for SPD (Serial Presence Detect).

- **MGM Core Frequency [Auto Max 266 MHz]**

  This field sets the frequency of the DRAM memory installed. The default setting is Auto Max 266MHz.

- **System BIOS Cacheable [Enabled]**

  This item allows the system BIOS to be cached to allow faster execution and better performance.

- **Video BIOS Cacheable [Disabled]**

  This item allows the video BIOS to be cached to allow faster execution and better performance.

- **Memory Hole [Disabled]**

  This item reserves 15 MB-16 MB memory address space to ISA expansion cards that specifically require the setting. When enabled, memory from 15 MB-16 MB will be unavailable to the system because only the expansion cards can access memory in this area.

- **Delayed Transaction [Enabled]**

  The chipset has an embedded 32-bit posted write buffer to support delay transaction cycles. Select Enabled to support compliance with PCI specification version 2.1.

- **Delay Prior to Thermal [16Min]**

  This field activates the CPU thermal monitoring function after the system is given time to boot for a set number of minutes. Options are 16Min and 64 Min.

- **AGP Aperture Size [64]**

  The field sets aperture size of the graphics. The aperture is a portion of the PCI memory address range dedicated for graphics memory address space. Host cycles that hit the aperture range are forwarded to the AGP without any translation. The default setting is 64 M.

- **On-Chip VGA [Enableed]**

  This item is setting for start up video output from an add-on-card or onboard device.

- **On-Chip Frame Buffer Size [32 MB]**

  The options available are: 1 MB, 4 MB, 8 MB, 16 MB, and 32 MB. 32 MB is the default setting.

- **Boot Display [VBIOS Default]**

  The default setting is VBIOS Default. The options available include CRT, LFP, and LFP + CRT.

- **Panel Scaling [Auto]**

  The default setting is Auto. The other options are On and Off.

- **Panel Type [800X600]**

  Use this field to select the LCD Panel type. The options are:

  640 x 480

  800 x 600

  1024 x 768

  1280 x 1024

  1600 x 1200

4.2.5 Integrated Peripherals

Note: *These "Integrated Peripherals" options include configuration of the board's chipset, with settings for IDE, ATA, SATA, USB, Super IO and sensor devices. This page is chipset dependent.*

- **IDE Cable Detect [Enabled]**

  Some UDMA cables use a hole in the ribbon cable as a cable detect mechanism to determine if a UDMA IDE or standard IDE cable is installed. The default setting is: Enabled.

- **DIO Group 1/2 Direction [Output / Input]**

  This item allows users to set the OnChip DIO status.

- **OnChip IDE Device [Press Enter]**

  This item enables users to set the OnChip IDE device status; it includes enabling IDE devices and setting PIO and DMA access mode, and in some new chipsets also supports SATA devices (Serial-ATA).

- **Onboard Device [Press Enter]**

  This item enables users to set the Onboard device status, including enabling USB, AC97, MC97 and LAN devices.

  - Onboard LAN Control (82551 Only) [Enabled]

    Options are Enabled and Disabled. Select Disabled if the user does not want to use onboard LAN controller1.

  - USB Control [Enabled]

    Select Enabled if your system contains a Universal Serial Bus (USB) controller and you have USB peripherals. The choices: Enabled, Disabled.

  - USB 2.0 Control [Enabled]

    Select Enabled if your system includes Universal Serial Bus (USB) controller support USB 2.0 and you have USB peripherals. The choices: Enabled, Disabled.

  - USB Keyboard/Mouse Support [Enabled]

    Select Enabled if the user plans to use a USB keyboard. The choices: Enabled, Disabled.

- **Super IO Device [Press Enter]**

  This item enables users to set the Super IO device status, including enable Floppy, COM, LPT, IR and control GPIO and Power fail status.

- Onboard Serial Port 1 [3F8/IRQ4]

  This item allows the user to select I/O port address. Range is from 2E8 to 3F8.

- Onboard Serial Port 2 [2F8/IRQ3]

  This item allows the user to select I/O port address. Range is from 2E8 to 3F8.

- **Watch Dog Timer Select [Disabled]**

  This item allows the user to enable or disable the watch dog timer. If enabled, a timer value may be set in either minutes or seconds.

4.2.6 Power Management Setup

Note: *Use "Power management Setup" options to configure the system for most effective energy utilization still consistent with intended computer use.*

- **ACPI Function [Enabled]**

  This item defines the ACPI (Advanced Configuration and Power Interface) feature that makes hardware status information available to the operating system, allowing PC and system devices to communicate to improve power management.

- **ACPI Suspend Type [S1 (POS)]**

  This item allows the user to select sleep state when in suspend, but this system is limited to S1 Mode.

S1(POS)	The suspend mode is equivalent to a software power down;
S3(STR)	The system shuts down with the exception of a refresh current to the system memory.
S1(POS) &S3(STR)	This item supports two modes, with software selection.

- **Power Management Option [User Define]**

  This item allows the user to select system power saving mode.

Min Saving	Minimum power management. Suspend Mode=1 hr.
Max Saving	Maximum power management. Suspend Mode=1 min.
User Define	Allows the user to set each mode individually. Suspend Mode= Disabled or 1 min ~1 hr.

- **Video Off Method [DPMS]**

  This item allows the user to determine the manner in which the monitor is blanked.

  V/H SYNC+Blank This option will cause system to turn off vertical and horizontal synchronization ports and write blanks to the video buffer.

  Blank Screen This option only writes blanks to the video buffer.

  DPMS Initial display power management signaling.

- **Video Off in suspend [Yes]**

  This item allows the user to determine the manner is which the monitor is blanked.

  No Screen is off when system goes into suspend mode.

  Yes Screen is never turned off.

- **Suspend Type [Stop Grant]**

  This option controls the suspend state. Stop Grant only halts power to the processor. It is set as default to facilitate quick awakening performance.

  PwrOn Suspend saves more power during suspend, and is recommended when greater power saving is desired.

  Stop Grant When in this state, the CPU has internal clock running and may respond to interrupts and other signals. The CPU may transition from Stop Grant state to Normal state, AutoHalt mode and Sleep mode.

  PwrOn Suspend When in this state, the CPU remains in low-power status with power still on.

- **Modem use IRQ [3]**

  This item allows the user to determine which IRQ the MODEM can use.

- **Suspend Mode [Disabled]**

  This item allows the user to enable or disable suspend mode. When enabled, the user can set the delay before suspend.

- **HDD Power Down [Disabled]**

  This item allows the user to enable or disable HDD power down. When enabled, the user can set the delay before HDD power down.

- **Soft-Off by PWR-BTTN [Instant-Off]**

  This item allows the user to adjust the function of the power button.

Instant-Off	Press power button then Power off instantly.
Delay 4 Sec	Press power button 4 sec. to Power off.

- **Wakeup By PCI Card [Press Enter]**

  This item allows the user to select wake up by PCI Device.

- **Power On By Ring [Disabled]**

  This item allows the user to enable system resume by modem ring. System default is set to “Disabled”.

- **Resume By Alarm [Disabled]**

  This item allows the user to enable and key in Date/time to power on system.

Disabled	Disable this function.
Enabled	Enable alarm function to power on system
Date (of month)	Alarm 1-31

  Resume Time (HH:MM:SS) Alarm(0-23) : (0-59) : 0-59)

- **PWRON After PWR-Fail [Off]**

  This item allows the user to select power fail function. The functions depend on chipset design.

4.2.7 PnP/PCI Configurations

Note: *This "PnP/PCI Configurations" screen is for setting up the IRQ and DMA (both PnP and PCI) bus assignments.*

- **Reset Configuration Data [Disabled]**

  This item allows the user to clear any PnP configuration data stored in the BIOS.

- **Resources Controlled By [Auto (ESCD)]**

  - IRQ Resources

    This item allows the user to assign interrupt types to IRQ-3, 4, 5, 7, 9, 10, 11, 12, 14, and 15, respectively.

  - PCI / VGA Palette Snoop [Disabled]

    The item is designed to solve problems caused by some non-standard VGA cards. A built-in VGA system does not need this function.

4.2.8 Frequency/Voltage Control

Note: *This "Frequency/Voltage Control" option controls the CPU Host and PCI frequency, this page is CPU and Chipset dependent; some items will show up when a processor which supports those items is installed.*

- **Auto Detect PCI Clk [Enabled]**

  This item enables or disables automatic PCI clock detection.

- **Spread Spectrum [Disabled]**

  This item enables or disables spread spectrum modulation.

- **CPU Host/3V66/PCI Clock [Default]**

  This item enables users to set the CPU Host, AGP and PCI clock, either by automatic detection or manually.

4.2.9 Load Optimized Defaults

NOTE: *Load Optimized Defaults loads the default system values directly from ROM. If the stored record created by the Setup program should ever become corrupted (and therefore unusable), these defaults will load automatically when the ARK-339X Series system is turned on.*

4.2.10 Set Password

Note: *To enable this feature, first go to the Advanced BIOS Features menu, choose the Security Option, and select either Setup or System, depending on which aspect you want password protected. Setup requires a password only to enter Setup. System requires the password either to enter Setup or to boot the system. A password may be at most 8 characters long.*

To Establish Password

1. Choose the Set Password option from the CMOS Setup Utility main menu and press <Enter>.
2. When you see “Enter Password”, enter the desired password and press <Enter>.
3. At the “Confirm Password” prompt, retype the desired password, then press <Enter>.
4. Select Save to CMOS and EXIT, type <Y>, then <Enter>.

To Change Password

1. Choose the Set Password option from the CMOS Setup Utility main menu and press <Enter>.
2. When you see “Enter Password”, enter the existing password and press <Enter>.
3. You will see “Confirm Password”. Type it again, and press <Enter>.
4. Select Set Password again, and at the “Enter Password” prompt, enter the new password and press <Enter>.
5. At the “Confirm Password” prompt, retype the new password, and press <Enter>.
6. Select Save to CMOS and EXIT, type <Y>, then <Enter>.

To Disable Password

1. Choose the Set Password option from the CMOS Setup Utility main menu and press <Enter>.
2. When you see “Enter Password”, enter the existing password and press <Enter>.
3. You will see “Confirm Password”. Type it again, and press <Enter>.
4. Select Set Password again, and at the “Enter Password” prompt, do not enter anything; just press <Enter>.
5. At the “Confirm Password” prompt, again, do not type in anything; just press <Enter>.
6. Select Save to CMOS and EXIT, type <Y>, then <Enter>.

4.2.11 Save & Exit Setup

Note:

Typing “Y” quits the BIOS Setup Utility and saves user-set values to CMOS.

Typing “N” returns to BIOS Setup Utility.

4.2.12 Quit Without Saving

Note:

Typing “Y” quits the BIOS Setup Utility without saving to CMOS.

Typing “N” returns to BIOS Setup Utility.

CHAPTER 5

SVGA/LCD Setup

This chapter details the display software configuration information. It shows you how to configure the VGA to match your application requirements.

Sections include:

- Introduction
- Installation of SVGA drivers for Windows 2000/XP
- Further information

Chapter 5 SVGA/LCD Setup

5.1 Introduction

The ARK-3383 has an onboard Intel 852GM/855GME chipset for its AGP/SVGA controller. It supports LVDS LCD displays and conventional analog CRT monitors with 64 MB frame buffer shared with system memory. The VGA controller can drive CRT displays with resolutions up to 1600 x 1200 @ 85 Hz and 2048 x 536 @ 75 Hz and supports 2 channel LVDS display mode up to UXGA panel resolution with frequency range from 25 MHz to 112 MHz

5.1.1 CMOS setting for Boot Display type

The ARK-3383 system BIOS and custom drivers are located in a 4 Mbit, Flash ROM device, designated U7 on the system motherboard of ARK-3383. A single Flash chip holds the system BIOS, VGA BIOS and network Boot ROM image. The display can be configured via CMOS settings, by choice the selection items of “Boot display” of Advanced Chipset Features sections of Award BIOS Setup.

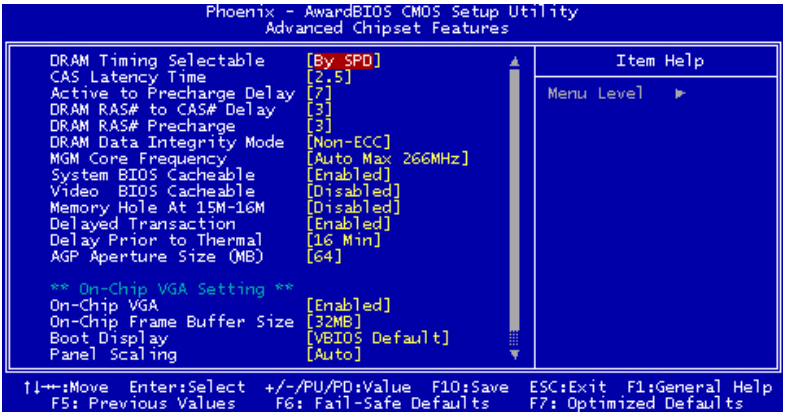


Figure 5.1: Advanced Chipset features screen

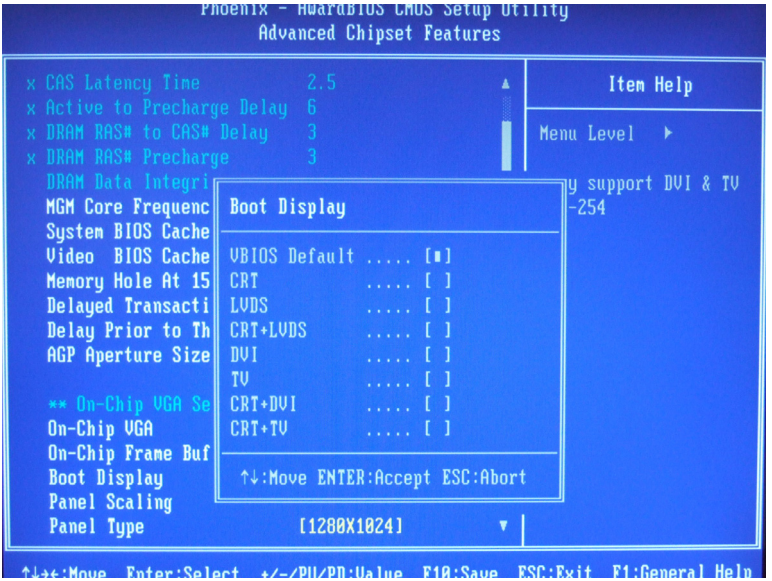


Figure 5.2: Boot Display Selection

The ARK-3383 can be set in one of four configurations: on a CRT, on a LVDS based flat panel display, or on both CRT+LVDS for simultaneous or dual independent displays. The system is initially set to "VBIOS-Default" to allow system to detect the connected display devices automatically.

5.1.2 Dual Independent Display

The ARK-3383 uses an Intel 855GME or Intel 852GM controller that is capable of providing multiple views and simultaneous displays with mixed video and graphics on a flat panel and CRT. To set up dual display under 2000/XP, please follow these steps:

1. Select “Start”, “Control panel”, “Display”, "Setting", "Advanced", "Graphics Properties", "Device".

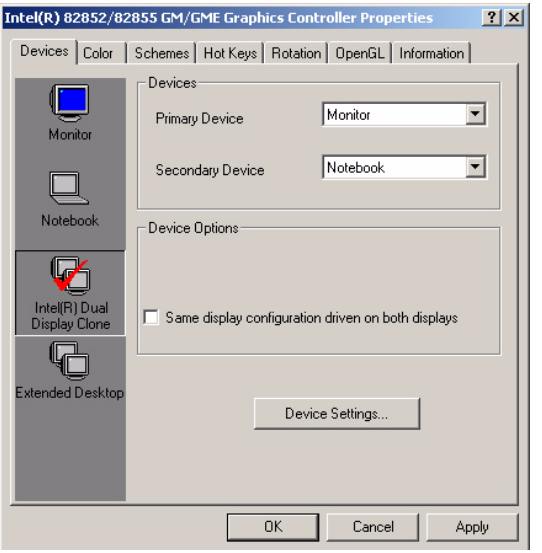


Figure 5.3: Intel® 82852/82855 GM/GME Graphics Controller Properties – Devices

2. Select “1” for current display, or “2” for second display.

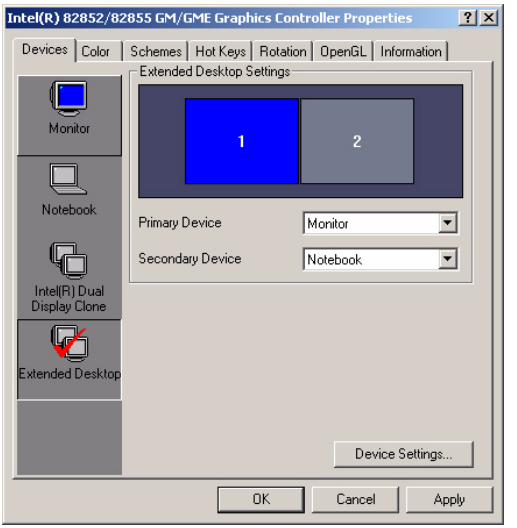


Figure 5.4: Intel® 82852/82855 GM/GME Graphics Controller Properties – Extended Desktop Settings

3. Enable “Extend my Windows desktop onto this monitor”.
4. Click “OK”.

5.2 Installation of the SVGA Driver

Complete the following steps to install the SVGA driver. Follow the procedures in the flow chart that apply to the operating system that you are using within your ARK-3383.

5.2.1 Installation for Windows 2000/XP

To install the SVGA driver for Window 2000/XP, please run the setup wizard “Intel Extreme Graphic 2” on the CD-ROM. An example installation is shown below:

1. You can find Win2000/XP VGA driver from the path at the directory of ARK-3383 CD-ROM: D:\ARK-3383 Series Software Device Driver\2_VGA\win2k_xp141.exe, then double click “win2k_xp141” to run “Install Shield Wizard”

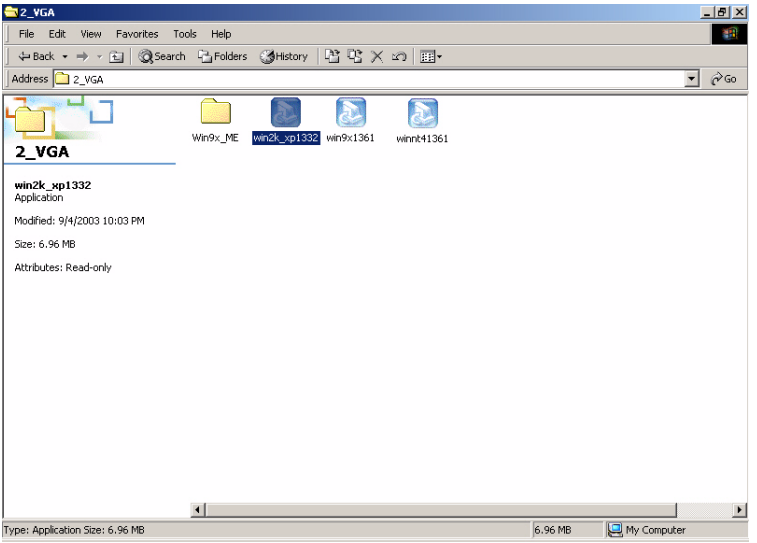


Figure 5.5: CD Directory “2.VGA”

Note:

- *The windows illustrations in this chapter are intended as examples only. Please follow the listed steps, and pay attention to the instructions which appear on your screen.*
- *For convenience, the CD-ROM drive is designated as "D" throughout this chapter.*

2. Double click "setup" and "next" into setup wizard.

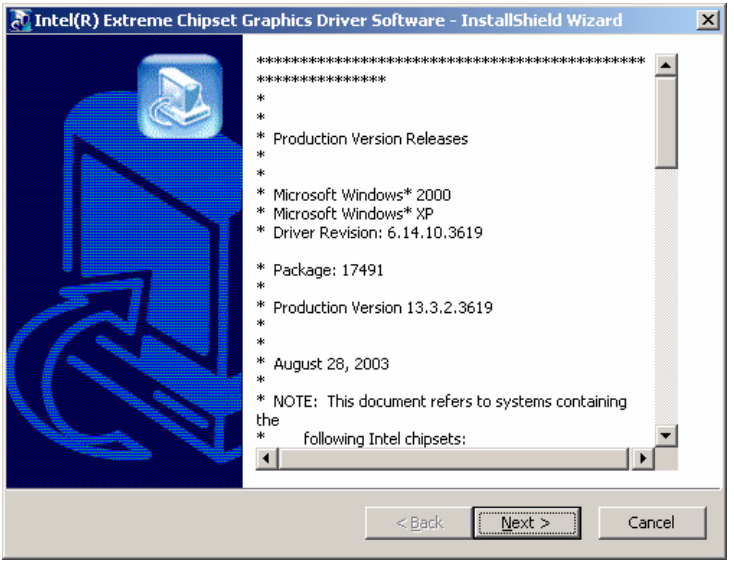


Figure 5.6: Intel® Extreme Chipset Graphics Driver Software Install Wizard



Figure 5.7: Intel® Extreme Graphics Driver Setup

3. Restart computer when installation has finished.

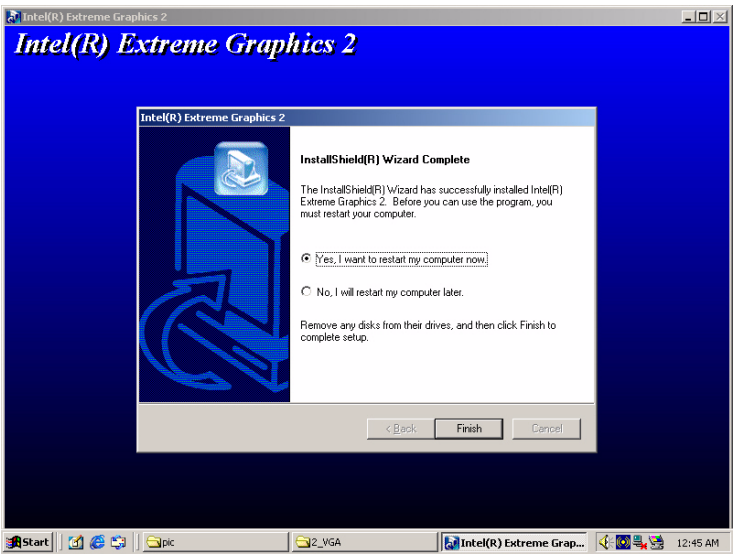


Figure 5.8: InstallShield® Wizard Complete

5.3 Further information

For further information about the AGP/VGA installation in your ARK-3383, including driver updates, troubleshooting guides and FAQ lists, visit the following web resources:

Intel website: www.intel.com

Advantech websites: www.advantech.com, or www.advantech.com.tw

CHAPTER 6

Audio Setup

Chapter 6 Audio Setup

6.1 Introduction

The ARK-3383's audio interface provides high-quality stereo sound and FM music synthesis (ESFM) by using the Intel ICH4 audio controller. The audio interface can record, compress, and play back voice, sound, and music with built-in mixer control.

6.2 Driver installation

6.2.1 Before you begin

Please read the instructions in this chapter carefully before you attempt installation. The audio drivers for the ARK-3383 board are located on the audio driver CD. Run the supplied SETUP program to install the drivers; don't copy the files manually.

Note: *The files on the software installation diskette are compressed. Do not attempt to install the drivers by copying the files manually. You must use the supplied SETUP program to install the drivers.*

6.2.2 Windows 2000/XP drivers

1. Find Win 2000/XP Audio driver folder at the directory "5_Audio" from the Driver & Utility CD-ROM disk, click "setup" to start the installation process.

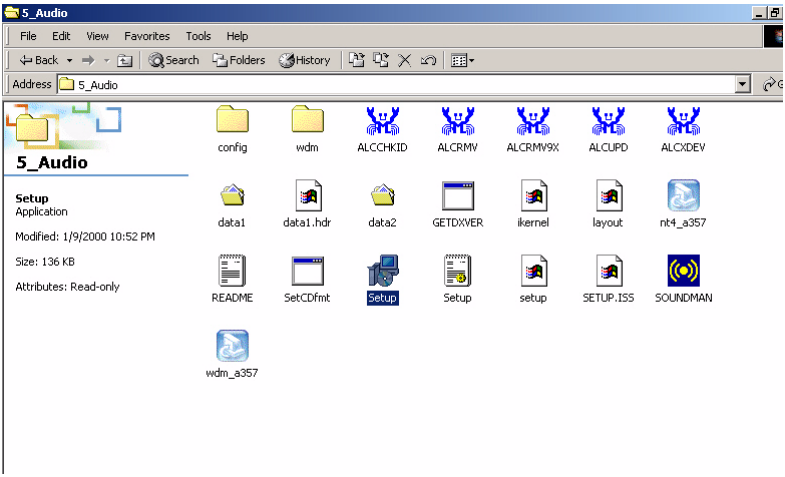


Figure 6.1: Directory of Audio Driver

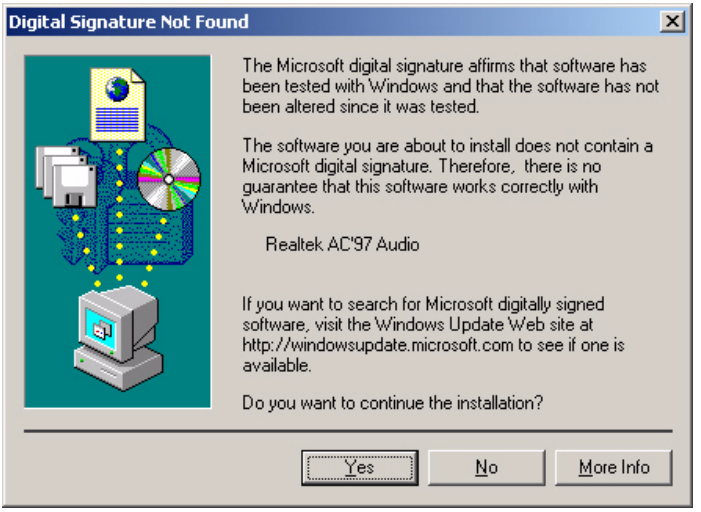


Figure 6.2: AC97 Audio Driver Installation

2. Click "yes" to reboot your computer.

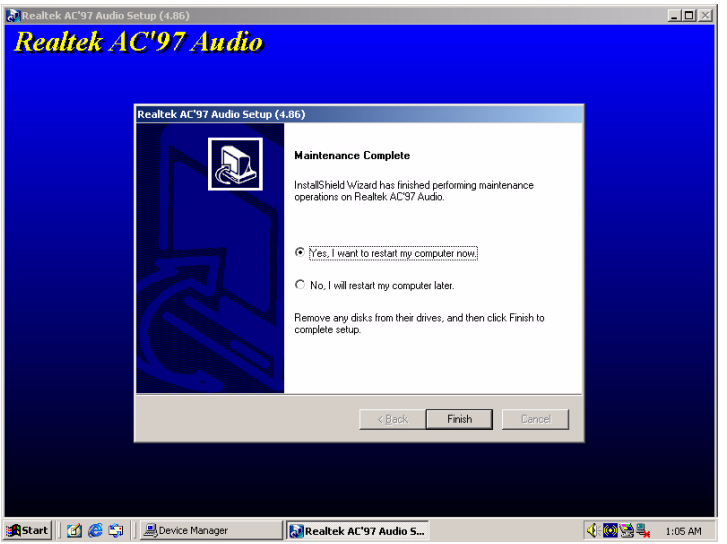


Figure 6.3: Installation Complete of AC97 Audio Driver

CHAPTER 7

Ethernet Interface

This chapter provides information on Ethernet configuration.

Sections include:

- Introduction
- Installation of Ethernet drivers for Windows 2000/XP
- Further information

Chapter 7 Ethernet Interface

7.1 Introduction

The ARK-3383 is equipped with dual high performance 32-bit Ethernet chipsets which are fully compliant with IEEE 802.3 100 Mbps CSMA/CD standards. They are supported by major network operating systems. They are also both 100Base-T and 10Base-T compatible. The network boot feature can be utilized by incorporating the boot ROM image files for the appropriate network operating system. The boot ROM BIOS files are combined with system BIOS, which can be enabled/disabled in the BIOS setup.

7.2 Installation of Ethernet driver

Before installing the Ethernet driver, note the procedures below. You must know which operating system you are using in your ARK-3383 series, and then refer to the corresponding installation flow chart. Then just follow the steps described in the flow chart. You will quickly and successfully complete the installation, even if you are not familiar with instructions for MS-DOS or Windows.

7.2.1 Installation for Windows 2000/XP

1. Select "Start", "Settings". "Control Panel".
   Note:*The windows illustrations in this chapter are examples only. Follow the steps and pay attention to the instructions which appear on your screen.*
2. Double click "Add/Remove Hardware".

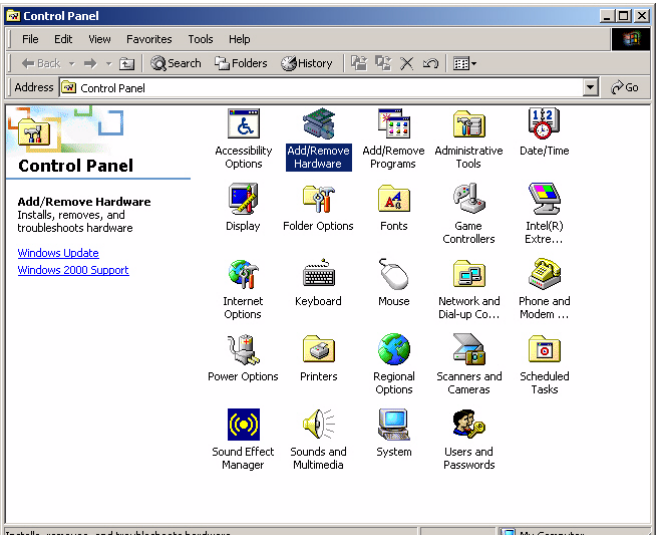


Figure 7.1: Windows Control Panel Screen

3. Click “Next” and prepare to install the network function



Figure 7.2: Add/Remove Hardware Wizard

4. Choose “Add/Troubleshoot a device” and click “Next”.

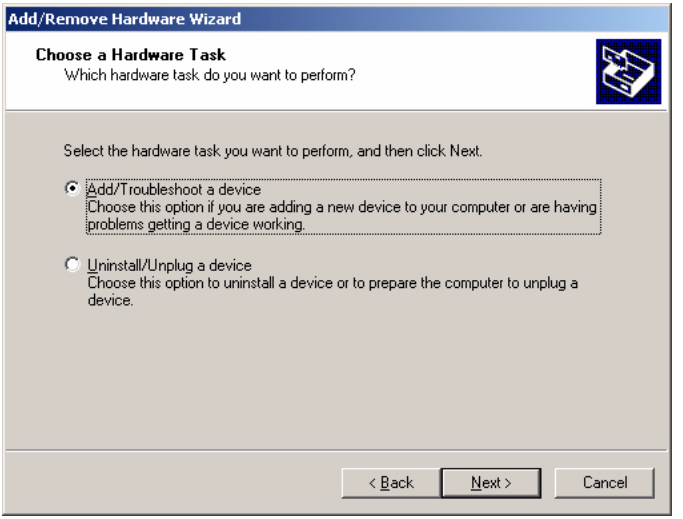


Figure 7.3: Choose a Hardware Task Screen

5. Choose Hardware Device “Ethernet Controller”

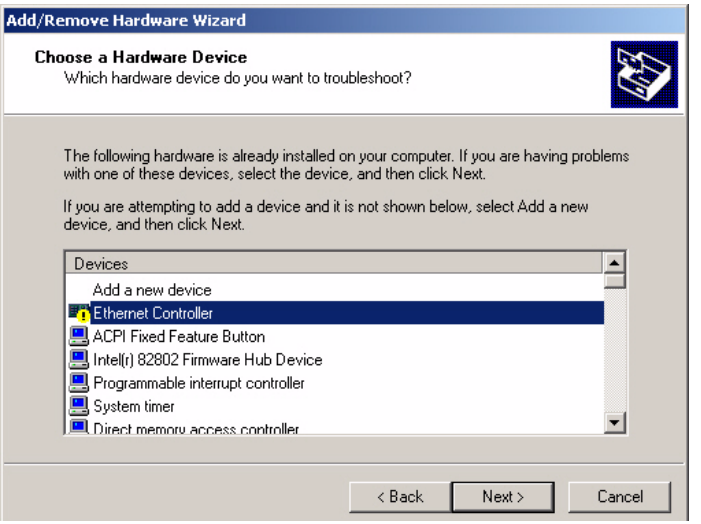


Figure 7.4: Choose a Hardware Device

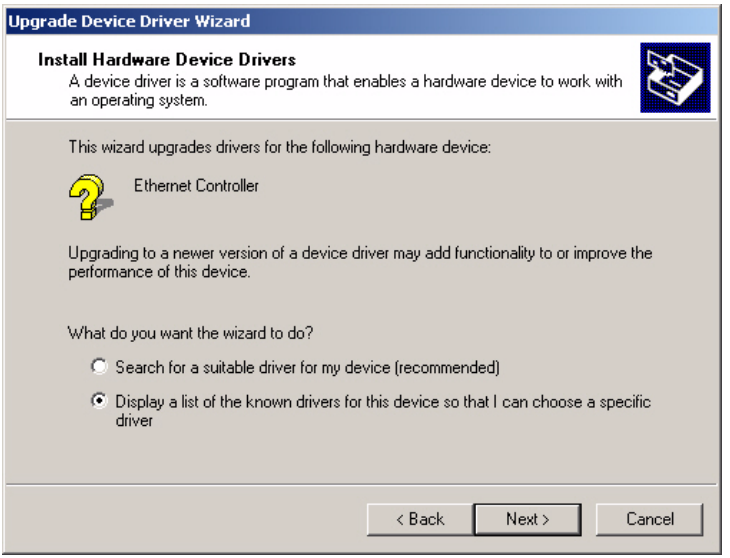


Figure 7.5: Install Ethernet Controller Screen

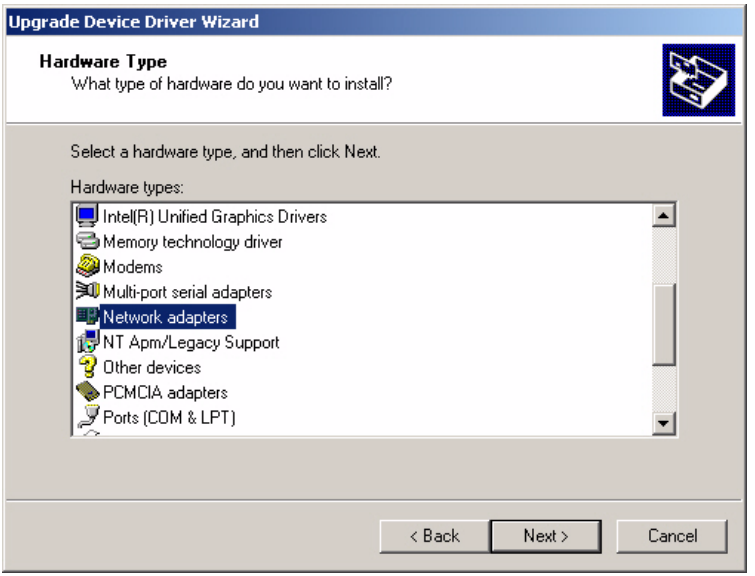


Figure 7.6: Hardware Type Screen

6. Insert the ARK-3383's Driver & Utility CD-ROM Disk into D: drive

6-1. Find the driver of chipset folder "82551QM" at the directory of "D:\ARK-3383 Series Software Device Driver\3_LAN" from ARK-3383's Driver & Utility CD-ROM Disk.

6-2. Click "OK".



Figure 7.7: Install From Disk Screen

7. Choose the "Intel 8255x-based PCI Ethernet Adapter (10/100)" item. Click "Next".

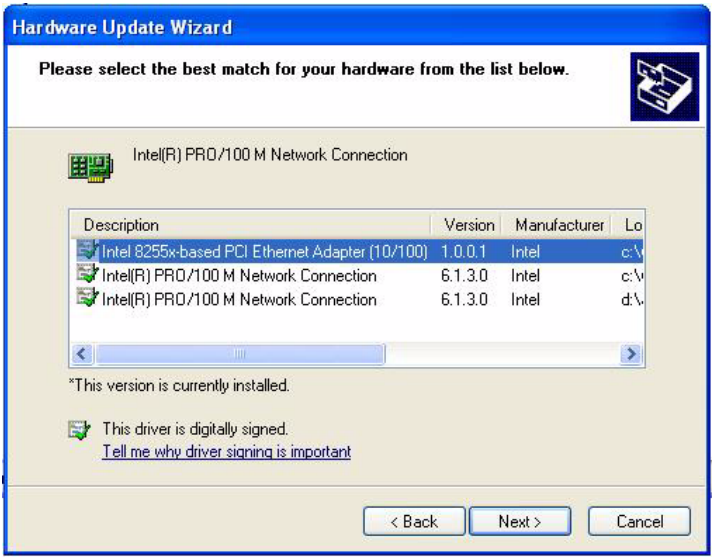


Figure 7.8: Network Adapter Selection Screen

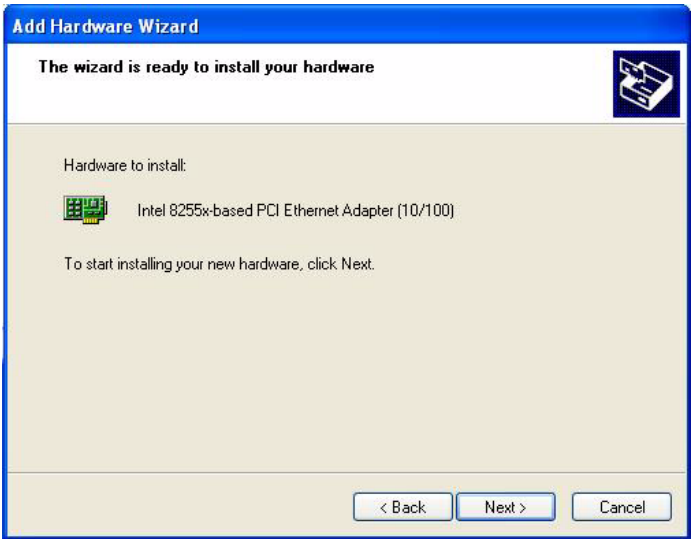


Figure 7.9: Start Device Driver Installation

8. Please wait while the wizard installs the software.

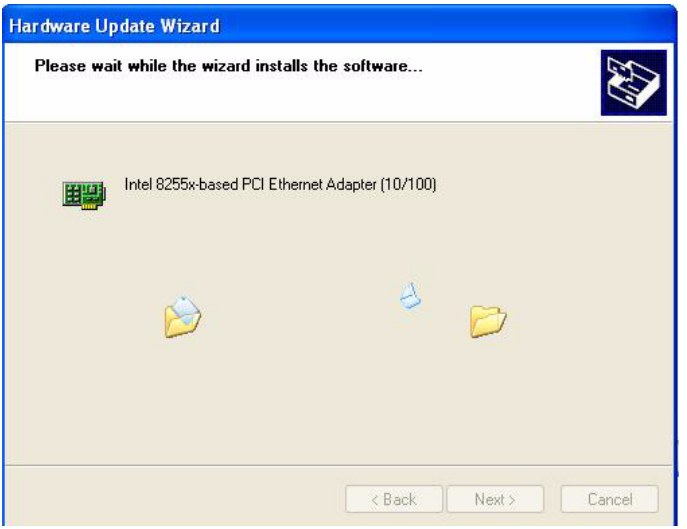


Figure 7.10: Intel Ethernet Adapter driver installation screen

9. Click “Finish”.

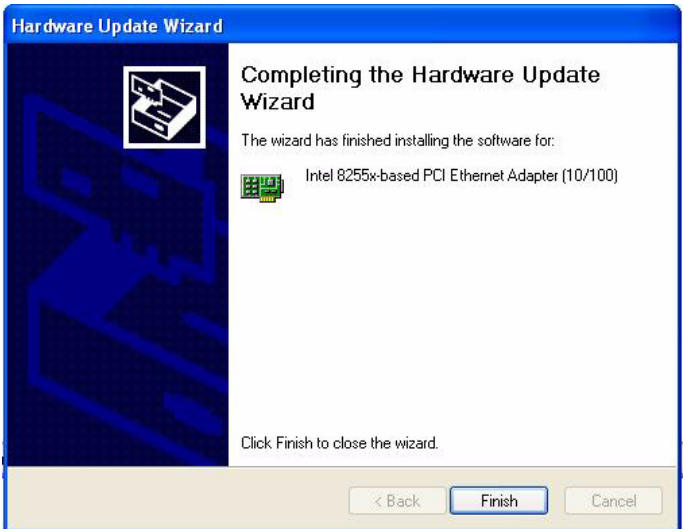


Figure 7.11: Intel Ethernet Adapter Driver Installation Complete Screen

CHAPTER 8

Full Disassembly Procedure

This chapter details the system disassembling procedure for setting up the jumpers and for maintenance.

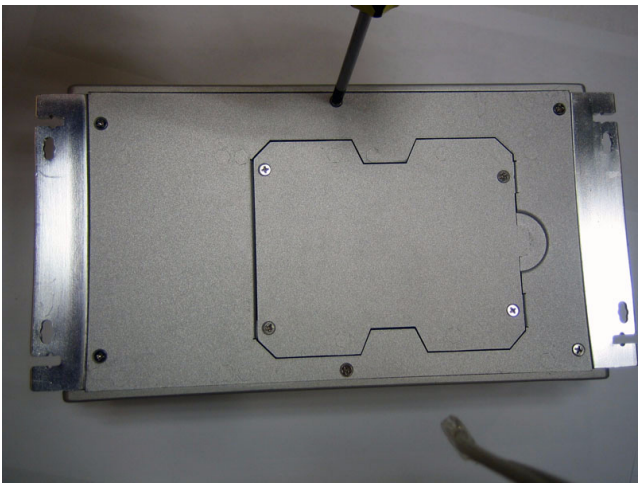
Sections include:

Chapter 8 Full Disassembly Procedure

8.1 Introduction

If you want to completely disassemble the Embedded Box Computer, follow the step-by-step procedures below. Users should be aware that Advantech Co., Ltd. takes no responsibility whatsoever for any problems or damage caused by the user disassembly of the embedded box computer. Make sure the power cord of the embedded box computer is unplugged before you start disassembly. The following procedures do not include the detailed disassembly procedures for the HDD, Compact Flash Disk and SRAM; all of which can be found in Chapter 3.

1. Unscrew the 2 screws on the bottom side.



2. Unscrew the screws of the frame bracket on the front side of system.

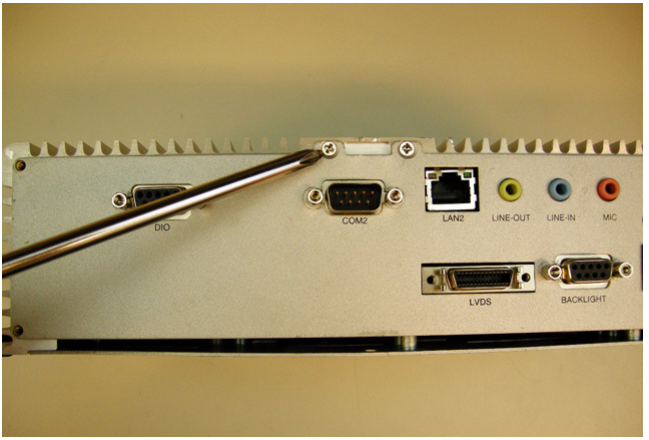


3. Remove the front frame bracket by carefully pulling and lifting the bracket in order to unlock it.

4. The Front Frame Bracket removed.



5. Unscrew the 2 screws which are located on top of the Front Metal Faceplate.



6. Unscrew the 2 hexagonal bolts which are located on left side and right side of COM 2.



7. The Front Metal Faceplate removed

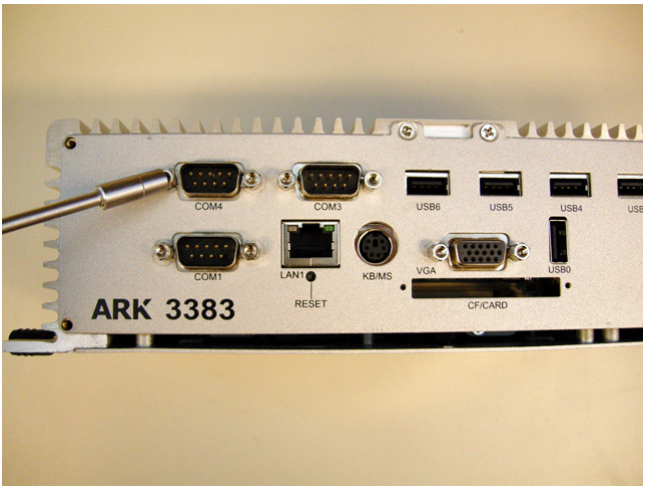
Warning! *Do not use too much pressure when removing the front metal face plate as the power button cable is still attached and could be damaged.*

8. Unscrew the 4 screws of the frame bracket on the rear side of system

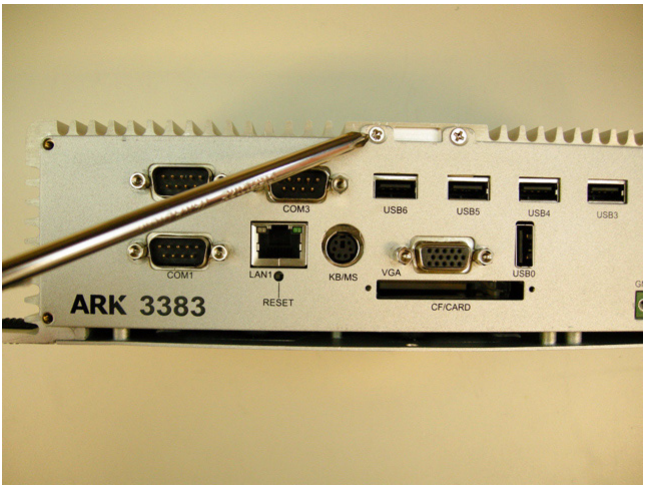
9. Remove the rear frame bracket by carefully pulling and lifting the bracket in order to unlock it



10. Unscrew the 2 hexagonal bolts which are located on left side and right side of COM 3 and COM 4.

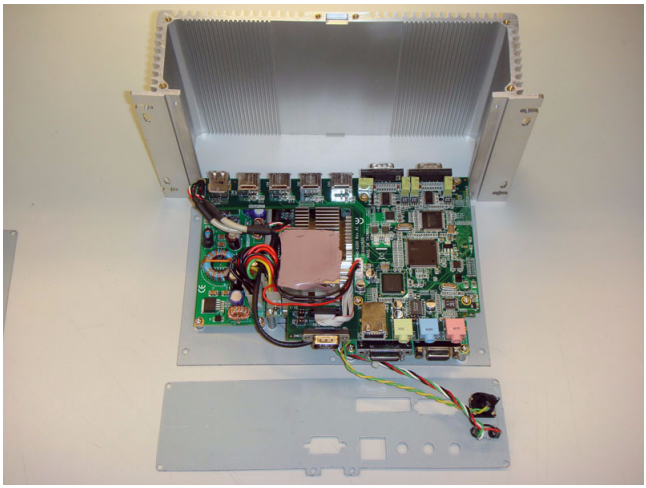


11. Unscrew the 2 screws which are located on the rear metal faceplate.

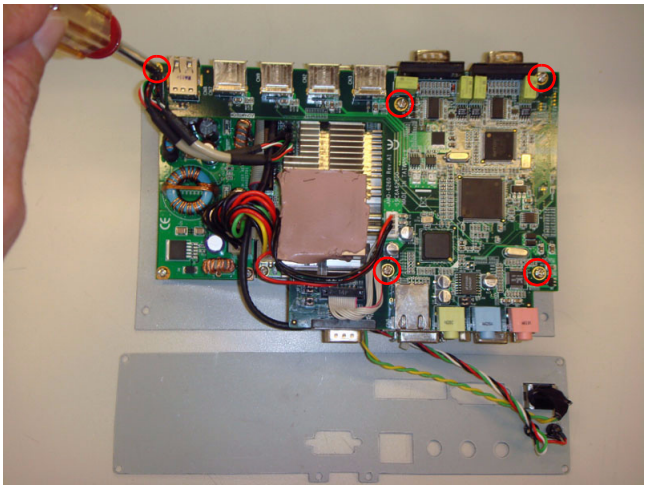


12. The Rear Metal Faceplate Removed

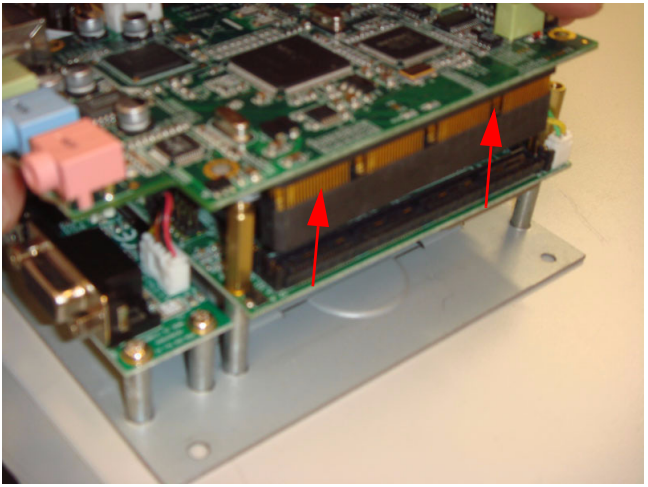
13. The system after the top cover has been removed



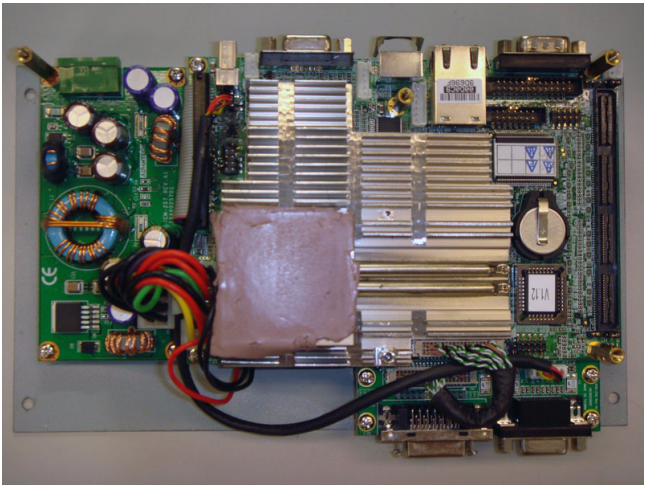
14. Unscrew the 6 screws which fix the AM0-6260 Module I/O board to the system board.



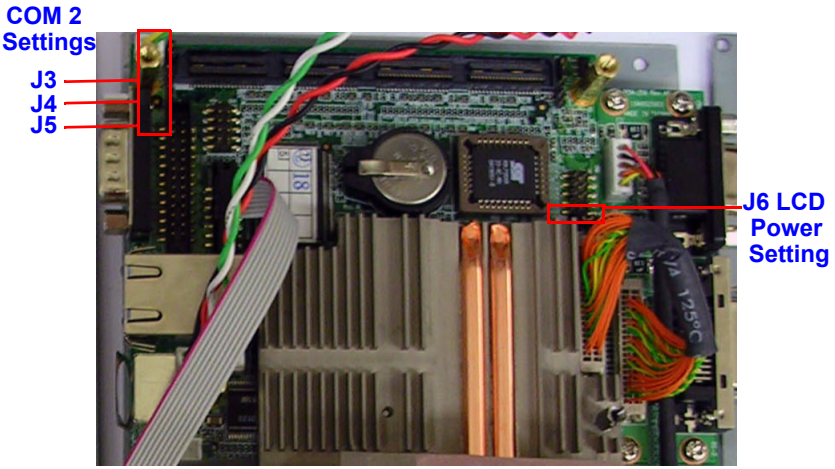
15. Remove AM0-6260 Module I/O board from MIO Socket on the system board.



16. The System after AMO-6260 Module I/O board has been removed.



17. Jumper Location on PCM-9380/PCM-9386 Motherboard.



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