

AMB-VDX3H2

An ISA Half-Size Board with DM&P Vortex86DX3 CPU

- AMB-VDX3H2-A (1GHz CPU, 512MB Memory, 1x RS232, 1x RS232/RS422/ RS485, CF+IDE)
- AMB-VDX3H2-A1 (1GHz CPU, 512MB Memory, 1x RS232, 1x RS232/RS422/ RS485, CF+mSATA)



User Manual

Acrosser Technology Co., Ltd. www.acrosser.com



Disclaimer

For the purpose of improving reliability, design and function, the information in this document is subject to change without prior notice and does not represent a commitment on the part of Acrosser Technology Co., Ltd.

In no event will Acrosser Technology Co., Ltd. be liable for direct, indirect, special, incidental, or consequential damages arising out of the use or inability to use the product or documentation, even if advised of the possibility of such damages.

Copyright

This document contains proprietary information protected by copyright. All rights are reserved. No part of this manual may be reproduced by any mechanical, electronic, or other means in any form without prior written permission of Acrosser Technology Co., Ltd.

Trademarks

The product names appear in this manual are for identification purpose only. The trademarks and product names or brand names appear in this manual are the property of their respective owners.

Purpose

This document is intended to provide the information about the features and use of the product.

Audience

The intended audiences are technical personnel, not for general audiences.

WARNING

Danger of explosion if batteries are incorrectly replaced. Always replace the battery with the same specifications. Dispose of used batteries according to the manufacturer's instructions.

Before running the system, make sure the power cord is firmly plugged into the socket.

CAUTION



E IEC 60417-6172 (2012-09)

All power cords must be disconnected during product repair.

Ver: 100-005 Date: Mar. 10, 2022

To read this User Manual on your smart phone, you will have to install an APP that can read PDF file format first. Please find the APP you prefer from the APP Market.



Table of Contents

| 1. | Int | roduction | 5 |
|----|------|---|----|
| | 1.1. | Specifications | 5 |
| | 1.2. | Packing List | 7 |
| | 1.3. | Block Diagram | 7 |
| 2. | На | rdware Information | 8 |
| | 2.1. | Mainboard Layout | 8 |
| | | 2.1.1. Top View | 8 |
| | | 2.1.2. IO View | 9 |
| | | 2.1.3. Bottom View | 9 |
| | 2.2. | Headers/Connectors Pin Define & Jumper Setting (Top) | 10 |
| | 2.3. | Headers/Connectors Pin Define & Jumper Setting (Bottom) | 14 |
| | 2.4. | Panel I/O Connectors Definition | 15 |
| | 2.5. | Board Dimension | 16 |
| 3. | BIC | DS Settings | 17 |
| | 3.1. | Main Setup | 17 |
| | 3.2. | Advanced Setup | 18 |
| | | 3.2.1. IDE Configuration | 18 |
| | | 3.2.2. Serial/Parellel Port Configuration | 19 |
| | | 3.2.3. USB Configuration | 20 |
| | 3.3. | PCIPnP Setup | 21 |
| | 3.4. | Boot Setup | 22 |
| | | 3.4.1. Boot Settings Configuration | 22 |
| | 3.5. | Security Setup | 23 |
| | 3.6. | Chipset Setup | 24 |
| | 3.7. | Exit Setup | 26 |
| 4. | Uti | ility Installation | 27 |
| 5. | So | ftware Installation and Programming Guide | 30 |
| | 5.1. | Introduction | 30 |
| | | 5.1.1. Environment | 30 |
| | | 5.1.2. GPIO and Watchdog | 30 |
| | 5.2. | API List and Descriptions | 30 |
| | | 5.2.1. General | 30 |
| | | 5.2.2. GPIO | 31 |



| | 5.2.3. | Watchdog | |
|----|------------|---|----|
| | 5.2.4. | I2C | |
| 6. | FAQ | | 34 |
| | Q 1. Where | e can I find the serial number of this product? | |



1. Introduction

AMB-VDX3H2 Series is an ISA half-size board that is equipped with DM&P Vortex86 DX3 Dual-core CPU, which is an evolution version versus the AMB-VDX3H1 of the past model, meanwhile, it can help to solve several issues now we facing in the client.

For now, the Vortex Vortex 86 CPU is still the best choice of ISA card for industrial SBC of the factory automation environment.

1.1. Specifications

| General | | | | |
|--------------------|---|--|--|--|
| CPU | DM&P Vortex86DX3, Single Core 1GHz CPU | | | |
| Memory | Onboard DDR3 512MB | | | |
| BIOS | Onboard SPI Flash | | | |
| Real Time Clock | 1x System RTC | | | |
| Battery | 1x Lithium Battery, 3V 220mAH (CR2032) | | | |
| Video | | | | |
| Graphic Controller | Integrated | | | |
| Video Interface | • 1x VGA | | | |
| Storage | | | | |
| IDE | 1x IDE, For AMB-VDX3H2-A only | | | |
| CF | 1x CF Socket | | | |
| mSATA | 1x mSATA Connector, For AMB-VDX3H2-A1 only | | | |
| Communication a | and I/O | | | |
| Expansion | 1x PC/104 Connector | | | |
| ISA | 1x ISA Gold Finger | | | |
| Ethernet | • 1x RJ45 10/100Mbps LAN | | | |
| Serial Ports | COM1 RS-232 (DB9) COM2 RS232/RS422/RS485 (Pin Header, Jumper select) | | | |
| USB Ports | • 4x USB 2.0 | | | |
| GPIO | 16 bit GPIO (1~8 = Header 1, 9~16 = Header 2) | | | |
| 12C | • 1x I2C Pin | | | |
| | | | | |



| Keyboard/Mouse | 1x PS/2 Connector1x JST Pin Header | | |
|----------------|---|--|--|
| | * There is only one type can be worked at the same time. | | |
| Indicator | Power LED HDD LED | | |

Hardware Features

| Watchdog Timer | Software Programmable 0 ~ 511 Seconds, (0=disable timer) |
|----------------|--|
| Buzzer | 1x Onboard |

Power Requirement

| Power Input • | ISA Gold Finger or 4-pin ATX Peripheral Power Connector +5V Only for system boot up, +12V for ISA |
|---------------|---|
| | |

Software

| OS support | • DOS |
|------------|--|
| | Windows XP (32 bit) |
| | Windows 7 (32 bit) |
| | • Win CE 6.0 (32 bit) |
| | (IDE port cannot support Windows XP & Windows 7) |

Mechanical & Environment

| Dimension | • 185mm x 122mm (7.29" x 4.81") |
|-------------------|--|
| Operating Temp. | • 0 ~ 60°C (32 ~ 140°F) |
| Storage Temp. | • -20 ~ 80°C (-4 ~ 176°F) |
| Relative Humidity | 0 ~ 90% @ 40°C, non-condensing |
| Safety | CE, FCC Class A |



1.2. Packing List

Check if the following items are included in the package.

| Item | Q'ty |
|-------------------------|------|
| AMB-VDX3H2 Series Board | 1 |
| Quick Guide | 1 |

1.3. Block Diagram





2. Hardware Information

2.1. Mainboard Layout

2.1.1. Top View





2.1.2. IO View



2.1.3. Bottom View





2.2. Headers/Connectors Pin Define & Jumper Setting (Top)

| ISA1 (DC Power in option 1) | Standard ISA Edge Finger | | | | |
|--------------------------------|---|------------------|-------------|--------------|---------------|
| CN_PWR1 | ATX 4Pin DC +5V & +12V Power in Peripheral Connector | | | | |
| (DC Power in option 2) | | Pin # | | Signa | |
| | | 4 | +12 | V (1.2A | min) |
| | | 3 | GND | | |
| | | 2 | | GND | |
| | | 1 | +5 | V (4A r | nin) |
| CN1 | Standard PC/104 Modu | ile Con | nector | | |
| CN2 | | | | | |
| IDE1 | Standard IDE 44-pin Connector | | | | |
| | PS: Pin 41, 42: +5V/1.5A max | | | | |
| JP_IDE2 | IDE1 Vcc Jumper Setti | ng (Pit | ch: 2.54mm) | | |
| | | Sho | ort | Funct | ion |
| | | 1-2 | 2 +5V / 1. | 5A (def | ault for HDD) |
| | | 2-3 | 3 | +3.3V / 1.5A | |
| CN_FPIO1 | Power/HDD LED & Reset Button Cable Connector (Pitch: 2.54mm) | | | | |
| | | Pin # | Signal | Pin # | Signal |
| | | 1 | HDD LED+ | 2 | Power LED+ |
| | | 3 | HDD LED- | 4 | Power LED- |
| | 5 Reset SW+ | | 6 | NC | |
| | | 7 Reset SW- 8 NC | | NC | |

NC

10

NC

9



CN_COM2

RS-232/422/485 Port Multi-protocol Connector: (Pitch: 2.54mm)

Note: RTS is the TX enable signal of RS-485. RS-485 will have output only when RTS is Low.

| RS-232 Mode (SW | COM2 must set 001) |
|-----------------|--------------------|

| 1 0 | Pin # | Signal | Pin # | Signal |
|-----|-------|--------|-------|--------|
| | 1 | DCD | 2 | DSR |
| | 3 | RxD | 4 | RTS |
| | 5 | TxD | 6 | CTS |
| | 7 | DTR | 8 | RI |
| | 9 | GND | 10 | NC |

RS-422 Mode (SW_COM2 must set 000 or 100)

| 1 | Pin # | Signal | Pin # | Signal |
|---|-------|--------|-------|--------|
| | 1 | TX(B) | 2 | |
| | 3 | TX(A) | 4 | |
| | 5 | RX(A) | 6 | |
| | 7 | RX(B) | 8 | |
| | 9 | GND | 10 | |

RS-485 Mode (SW_COM2 must set 010 or 110)

| 1 | Pin # | Signal | Pin # | Signal |
|---|-------|--------|-------|--------|
| | 1 | D- (B) | 2 | |
| | 3 | D+ (A) | 4 | |
| | 5 | | 6 | |
| | 7 | | 8 | |
| | 9 | GND | 10 | |



SW_COM2



CN_COM2 Jumper Setting (Pitch: 2mm)

| Mode | Pin 9-10 | Pin 7-8 | Pin 5-6 | Pin 3-4 | Pin 1-2 | Mode Description |
|------|-------------|------------|------------|------------|------------|---|
| 000 | Open | Open | Short | Short | Short | RS422 Full Duplex |
| 001 | Open | Open | Short | Short | Open | RS232 Pure |
| 010 | Open | Open | Short | Open | Short | RS485 Half Duplex (TXEN#) |
| 100 | Open | Open | Open | Short | Short | RS422 Full Duplex w/ termination |
| 101 | Open | Open | Open | Short | Open | Reserved |
| 110 | Open | Open | Open | Open | Short | RS485 Half Duplex w/ termination (TXEN#) |
| 111 | Open | Open | Open | Open | Open | Reserved |

CN_KM1

KB/MS Cable Connector (Pitch: 2mm)

| Pin # | Signal |
|-------|--------|
| 1 | MS DAT |
| 2 | KB DAT |
| 3 | GND |
| 4 | +5V |
| 5 | MS CLK |
| 6 | KB CLK |

CN_USB1 CN_USB2

USB 2.0 Cable Connector (Pitch: 2.54mm)

| | Pin # | Signal | Pin # | Signal |
|--|-------|--------------|-------|--------------|
| | 1 | +5V | 2 | +5V |
| | 3 | USB Port A - | 4 | USB Port B - |
| | 5 | USB Port A + | 6 | USB Port B + |
| | 7 | GND | 8 | GND |
| | 9 | NC | 10 | NC |



CN_I2C1

I2C Cable Connector (Pitch: 2.54mm)

| | Pin # | Signal |
|--|-------|------------------------|
| | 1 | Vcc Setting by JP_I2C1 |
| | 2 | DAT |
| | 3 | CLK |
| | 4 | NC |
| | 5 | GND |

JP_I2C1

CN_I2C1 Vcc Jumper Setting (Pitch: 2.54mm)

| Short | Function |
|-------|------------------------|
| 1-2 | +3.3V / 1.5A (default) |
| 2-3 | +5V / 1.5A |

CN_GP1

CN_GP2

16bits GPIO Cable Connector (Pitch: 2mm)

| | Pin # | Signal | Pin # | Signal |
|----------|-------|-------------|-------|--------------------------|
| | 1 | GP00 / GP10 | 2 | GP07 / GP17 |
| | 3 | GP01 / GP11 | 4 | GP06 / GP16 |
| | 5 | GP02 / GP12 | 6 | GP05 / GP15 |
| | 7 | GP03 / GP13 | 8 | GP04 / GP14 |
| قرف فالم | 9 | GND | 10 | Vcc setting by JP_GP1 |

Note 1: w/o protection & isolation. Note 2: 3.3V w/ 5V I/O tolerant.

JP_GP1

CN_GP1 & CN_GP2 Vcc Jumper Setting (Pitch: 2.54mm)

| Short | Function |
|-------|------------------------|
| 1-2 | +3.3V / 1.5A (default) |
| 2-3 | +5V / 1.5A |

CN_BAT1

CR2032 Battery Holder





2.3. Headers/Connectors Pin Define & Jumper Setting (Bottom)





2.4. Panel I/O Connectors Definition



VGA1

Standard VGA (D-Sub15 / Female) Connector



LAN1

Standard IEEE802.3 & RJ45 Connector

| LED2 LED1 | LED | | 10Mbps | 100Mbps |
|------------|------|--------|--------------------|--------------------|
| ाईन-न्हेंग | LED1 | Link | Green | Green |
| | LED2 | Active | Yellow Blinking | Yellow Blinking |

COM1

Standard RS232/DTE (D-Sub9 / Male) Connector

| | F |
|---|---|
| | |
| $\left(\begin{array}{c}1\\\circ\circ\circ\circ\end{array}\right)$ | |
| | |
| | |
| | |

| | Pin # | Signal | Pin # | Signal |
|---|-------|--------|-------|--------|
| _ | 1 | DCD | 2 | RX |
| | 3 | TX | 4 | DTR |
| | 5 | GND | 6 | DSR |
| | 7 | RTS | 8 | CTS |
| | 9 | RI | | |

KM1

PS/2 Keyboard & Mouse Mixed Connector

| | Pin # | Signal | Pin # | Signal |
|-------|-------|--------|-------|--------|
| 8 0 6 | 1 | KB_DAT | 2 | MS_DAT |
| | 3 | GND | 5 | +5V |
| | 6 | KB_CLK | 8 | MS_CLK |



2.5. Board Dimension

(Unit: mm)





3. BIOS Settings

This chapter describes the BIOS menu displays and explains how to perform common tasks needed to get the system up. It also gives detailed explanation of the elements found in each of the BIOS menus. The following topics are covered:

- Main Setup
- Advanced Setup
- PCIPnP Setup
- · Boot Setup
- Security Setup
- Chipset Setup
- Exit Setup

3.1. Main Setup

| BIOS SETUP UTILITY | | | | | | | |
|--|---------------------------------|-----------------|------------------------------|-----------------------|-----|-------------------------------|---|
| Main | Advanced | PCIPnP | Boot | Security | Chi | ipset | Exit |
| System | Overview | | | | | Use (| ENTER], [TAB] HIFT-TAB] to |
| System System | Time Date | | [<mark>18</mark> :1 [Thu | [7:57] 01/11/2018] | | selec Use [| t a field. +] or [-] to |
| Product | Name : AMB | -VDX3H2A 0 | 10-011 | | | confi | gure system Time. |
| Process Type Speed Count | or : DMP (: 1000) : 1 | R) A9126 MHz | | | | | |
| System | Memory | D | | | | | |
| Size Speed | :448n :667M | B Hz | | | | ←→ ↑↓ | Select Screen Select Item |
| Mac :0 | 0 1B EB 11 7 | 2A 46 | | | | +- Tab F1 F10 ESC | Change Field Select Field General Help Save and Exit Exit |

• System Time

Set the system time. Use [ENTER], [TAB], or [SHIFT-TAB] to select a field. Use [+] or [-] to configure system time.

System Date

Set the system date. Use [ENTER], [TAB], or [SHIFT-TAB] to select a field. Use [+] or [-] to configure system date.



3.2. Advanced Setup

| | | BIOS SE | TUP UTILITY | | | |
|-----------------------------|-------------------------------|---------------------|----------------------|-----|---------------------------------------|---|
| Main Advanced | PCIPnP | Boot | Security | Chi | pset | Exit |
| Advanced Setting | S | | | | Config | gure the IDE |
| WARNING: Setting may cau | r wrong value se system to | s in bel malfunc | ow sections tion. | | uev IC | c (5) . |
| IDE Configurat | ion | | | | | |
| ▶ Serial/Paralle | el Port Confi | guration | 1 | | | |
| ▶ USB Configurat | ion | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | ¢→ †↓ Enter F1 F10 ESC | Select Screen Select Item Go to Sub Screen General Help Save and Exit Exit |

3.2.1. IDE Configuration

| Advanced | BIOS SETUP UTILITY | |
|--|--|---|
| IDE Configuration Primary IDE Master Primary IDE Slave Secondary IDE Master Secondary IDE Slave IDE Compatibility | [Not Detected] [Not Detected] [Not Detected] [Not Detected] [Disabled] | While entering setup, BIOS auto detects the presence of IDE devices. This displays the status of auto detection of IDE devices. |
| | | ←→ Select Screen ↑↓ Select Item Enter Go to Sub Screen F1 General Help F10 Save and Exit ESC Exit |

These settings allow you to configure the features of the integrated IDE controllers.



3.2.2. Serial/Parellel Port Configuration

| | BIOS SETUP UTILITY | |
|------------------------|--------------------|-----------------------------------|
| Advanced | | |
| Serial/Parallel Port C | Configuration | SB Internal UART — Serial Port |
| SB Serial Port1 | [3F8] | |
| IRQ Select | CIRQ41 | — |
| Baud Rate | [115200 BPS] | |
| SB Serial Port2 | [2F8] | |
| IRQ Select | [IRQ3] | |
| Baud Rate | [115200 BPS] | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | ↔ Select Screen |
| | | ↑↓ Select Item |
| | | +- Change Option |
| | | F1 General Help |
| | | F10 Save and Exit |
| | | ESC Exit |
| | | |
| | | |

These options specify the serial port address and the parallel port mode and select the IRQ of Serial/Parallel Port.

- SB Serial Port1 ~ Port2 SB Internal UART Serial Port.
- IRQ Select SB Internal UART Serial Port. Serial Port IRQ Select.
- Baud Rate

SB Internal UART Serial Port. Serial Port Baud Rtae Settings.





3.2.3. USB Configuration

| BIOS SETUP UTILITY | | | | |
|-------------------------------|-----------|----------------|----------------------------|--|
| Advanced | | | | |
| USB Configuration | | Enabl | es support for | |
| Module Version - 3.0.0-14.4 | | optio | n disables u support if | |
| USB Devices Enabled : Nome | | no US conne | B devices are cted. | |
| Legacy USB Support | [Enabled] | | | |
| USB Storage Device Support | [Enabled] | | | |
| USB 2.0 Controller Mode | [HiSpeed] | | | |
| | LEHADIEUJ | | | |
| | | | | |
| | | | | |
| | | > 11 | Select Screen | |
| | | +- | Change Option | |
| | | F1 | General Help | |
| | | F10 | Save and Exit | |
| | | Lac | LXIT | |
| | | | | |

Legacy USB Support

The Legacy USB support settings allow a USB mouse and keyboard to control the system even if no USB drivers are loaded on the system.

USB Storage Device Support Select Enabled for USB Mass Storage Driver support.

USB 2.0 Controller Mode Allows you to select the HiSpeed (480Mbps) or FullSpeed (12Mbps).

BIOS EHCI Hand-Off

This is a workaround for OSes without EHCI hand-off support. The EHCI ownership change shoulle claim by EHCI driver.



3.3. PCIPnP Setup

| | BIOS SE | TUP UTILITY | | |
|------------------------------|---|----------------------|-------|---------------|
| Main Advanced | PCIPnP Boot | Security Ch | ipset | Exit |
| Advanced PCI/PnP | Settings | | Clear | NVRAM during |
| WARNING: Setting may caus | wrong values in bel se system to malfunc | ow sections tion. | | |
| Clear NVRAM | [No] | | | |
| Plug & Play O/S | [No] | | | |
| PCI Latency Time | r [64] | | | |
| | | | | |
| IRQ3 | [Ava i | lable] | | |
| IRQ4 | [Ava i | lable] | 1 | |
| IRQ5 | [Ava i | lablel | 1 | |
| IRQ6 | [Ava i | lablel | | |
| IRQ7 | ERese | rvedl | 1 | |
| IRQ9 | ERese | rvedl | €-> | Select Screen |
| IRQ10 | ERese | rvedl | ↓†↓ | Select Item |
| IRQ11 | [Ava i | lablel | +- | Change Option |
| IRQ12 | [Ava i | lablel | F1 | General Help |
| IR014 | [Ava i | lable] | F10 | Save and Exit |
| IR015 | [Ava i | lable] | ESC | Exit |
| | | | | |

Clear NVRAM

Clear NVRAM during system boot.

Plug & Play O/S

No: Lets the BIOS configure all the devices in the system.

Yes: Lets the operating system configure Plug & Play (PnP) devices not required for boot if your system has a Plug & Play operating system.

• PCI Latency Timer

Allow you to select the value in units of PCI clocks for all of the PCI device latency timer register. Configuration option: 32, 64, 96, 128, 160, 192, 224, 248.

IRQ

Available: The specified IRQ is available to be used by PCI/PnP devices.

Reserved: The specified IRQ is reserved for use by legacy ISA devices.



3.4. Boot Setup

| | | | BIOS SE | TUP UTILITY | | Contraction of the local division of the loc | |
|--------|-------------|------------|---------|-------------|-----|--|--|
| Main | Advanced | PCIPnP | Boot | Secur i ty | Chi | pset | Exit |
| Boot S | ettings | | | | | Config | ure Settings Sustem Boot |
| ► Boot | Settings Co | nfiguratio | n | | | uar rng | ogoten boot. |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | ←→ ↑↓ Enter | Select Screen Select Item Go to Sub Screen |
| | | | | | | F1 F10 F80 | General Help Save and Exit |
| | | | | | | LOU | LAIL |

3.4.1. Boot Settings Configuration

| BIOS SETUP UTILITY Boot | | | | | |
|---|--|--|--|--|--|
| Boot Settings Configurati Quick Boot Full Screen Logo Bootup Num-Lock PS/2 Mouse Support Beep Function | Boot om [Enabled] [Cnabled] [Cn] [Auto] [Disabled] | Allows BIOS to skip certain tests while booting. This will decrease the time needed to boot the system. | | | |
| | | ↔ Select Screen ↑↓ Select Item ← Change Option F1 General Help F10 Save and Exit ESC Exit | | | |

Quick Boot

Allows BIOS to skip certain tests while booting. This will decrease the time needed to boot the system.

Full Screen Logo

Disabled: Displays normal POST messages. Enabled: Displays OEM Logo instead of POST messages.



- Boot-up Num-Lock Select Power-on state for Numlock.
- PS/2 Mouse Support Select support for PS/2 mouse.
- Beep Function Enable or Disable beep function.

3.5. Security Setup

The Security menu items allow you to change the system security settings. Select an item then press <Enter> key to display the configuration options.

| | | | BIOS SET | UP UTILITY | | | |
|---------|---------------|----------|----------|------------|-----|-------------|-----------------------|
| Main | Advanced | PCIPnP | Boot | Security | Chi | pset | Exit |
| Secur i | ty Settings | | | | | Insta | ll or Change the |
| Superv | isor Password | 1 | Not] | Installed | | μασσω | oru. |
| Change | Supervisor 1 | Password | 1 | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | ←→ | Select Screen |
| | | | | | | ⊺↓ Enter | Select Item Change |
| | | | | | | F1 | General Help |
| | | | | | | F 10 ESC | Exit |
| | | | | | | | |

- Supervisor Password Indicate whether a supervisor password has been set. If the password has been installed, <u>Installed</u> displays. If not, <u>Not Installed</u> displays.
- Change Supervisor Password Install or change the password.



Chipset Setup 3.6.

| BIOS SETUP UTILITY | |
|---|---|
| Main Advanced PCIPnP Boot Security Ch | ipset Exit |
| Advanced Chipset Settings | Options for SB |
| WARNING: Setting wrong values in below sections may cause system to malfunction. | |
| SouthBridge Configuration | |
| | |
| | |
| | |
| | |
| | |
| | ↔ Select Screen ↑↓ Select Item Enter Go to Sub Screen F1 General Help F10 Save and Exit ESC Exit |

٠

SouthBridge Configuration Select options for the South Bridge Configuration.

| BIOS | UTILITY | |
|---------------------------------------|---------|--------------------------------------|
| | Chi | pset |
| South Bridge Chipset Configuration | | |
| ISA Configuration | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | ←→ Select Screen |
| | | Enter Go to Sub Screen |
| | | F1 General Help F10 Saue and Frit |
| | | ESC Exit |
| | | |



ISA Configuration

| | BIOS SETU LITY | |
|---|---|---|
| | | Chipset |
| ISA Configuration | | Options |
| ISA Clock ISA Refresh Control ISA SA31-SA24 ISA 16bits I/O wait-state ISA 8bits I/O wait-state ISA 16bits Memory wait-state ISA 8bits Memory wait-state | [8.3MHz][Disabled][Disabled][8 clock][8 clock][5 clock][5 clock][8 clock] | €.3MHz 16.6MHz ** Select Screen *1 Select Item *- Change Option F1 General Help F10 Save and Exit ESC Exit |

This allows you to set the ISA bus frequency and to select the clock value of I/O and Memory.

The ISA bus default speed is 8.3MHz. It can be set to 16.6MHz for increased performance. The number of wait states can also be modified for optimum performance. Not all add-on boards will support higher speed or different wait state settings. If your system does not behave reliably, reset the settings to their default values.



3.7. Exit Setup

| | | | BIOS SET | UP UTILITY | | |
|--------------|----------|--------|----------|------------|-----|---|
| Main Adva | mced | PCIPnP | Boot | Security | Chi | pset Exit |
| Exit Options | \$ | | | | | Exit system setup after saving the |
| Save Changes | s and Ex | it | | | | changes. |
| Discard Chai | nges and | Exit | | | | |
| Discard Chai | nges | | | | | F10 key can be used for this operation. |
| Load Optima | l Defaul | ts | | | | |
| Load Failsa | fe Defau | lts | | | | |
| Lord fuctor | Default | | | | | |
| Save Custom | Default | s | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | ↔ Select Screen †∔ Select Item |
| | | | | | | Enter Go to Sub Screen |
| | | | | | | F1 General Help |
| | | | | | | F10 Save and Exit |
| | | | | | | ESC EXIT |
| | | | | | | |

• Save Changes and Exit Exit system setup after saving the changes. F10 key can be used for this operation.

- Discard Changes and Exit Exit system setup without saving any changes. ESC key can be used for this operation.
- **Discard Changes** Discard changes done so far to any of the setup questions. F7 key can be used for this operation.
- Load Optimal Defaults Load Optimal Default values for all the setup questions. F9 key can be used for this operation.
- Load Failsafe Defaults
 Load Failsafe Default values for all the setup questions. F8 key can be used for this operation.



4. Utility Installation

To test the utility, put the Driver CD into your CD-ROM drive.

Step 1: Enter the "Utility" folder. Run the excution file.

| (P. | | | | | | | x |
|---|--------------------|-------|----|------------------|-----------|-------|-----|
| G → ● ● ● ● ● ■ ■ ● BD-ROM 光磁機 (G:) VDX | 3H1-M801-010- 🕨 | | | ▼ 5 搜尋 BD-ROM 光母 | 『穠 (G:) V | DX3H1 | · P |
| 組合管理 ▼ 共用對象 ▼ 焼柴 | | | | | 855 💌 | | 0 |
| 名稿 ^ | 修改日期 | 類型 | 大小 | | | | |
| J Application | 2018/5/31 上午 09:41 | 檔案資料夾 | | | | | |
| Documents | 2018/5/21 下午 12:28 | 福宾資料夾 | | | | | |
| Drivers | 2018/5/21 下午 12:28 | 福案資料夾 | | | | | |
| Utility | 2018/5/21 下午 12:28 | 檔案資料夾 | | | | | |
| Windows CE 6 | 2018/5/31 上午 09:53 | 檔案資料夾 | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| C ATER | | | | | | | |
| 2回項日 | | | | | | | |
| COLSOM | | | | | | | |

Step 2: The "Test Utility" screen appears.





Click Test Item:

| # VDX3H1 TestUtili | ty 010-001 🛛 🚺 🚺 | < |
|---------------------------|-------------------------------|---|
| Test Item About Exit | _ | |
| GPIO TEST | | |
| WatchDog TEST | | |
| I2C TEST | | |
| Acrosser | OSSER Technology Co., Ltd. | |

Select (1) GPIO TEST Utility:





Select (2) WatchDog TEST Utility:

| WatchDog TEST | | | | × |
|---------------|-------|-------|------|---|
| value = 1~255 | | | | |
| 1 | Start | Reset | Stop | |
| | | | | |

Select (3) I2C TEST Utility:

| # I2C TE | ST | | X |
|------------|------------------------|------|-------|
| Get I2C Va | ilue (Hex) S Offset | | |
| 0 | 0 | | Read |
| Set I2C Va | lue (Hex) | | |
| Address | offset | Data | |
| 0 | 0 | 0 | Write |
| | · | | |



5. Software Installation and Programming Guide

5.1. Introduction

5.1.1. Environment

This test utility develop based on Windows CE 6.0, Windows XP (32bit), and Windows 7 (32bit).

5.1.2. GPIO and Watchdog

This model provides both GPIO interface and Watchdog timer. Users can use the GPIO and Watchdog APIs to configure and to access the GPIO interface and the Watchdog timer. he GPIO has 16 input or output pins. The Watchdog timer can be set to 1~511 seconds. Setting the timer to zero disables the timer. The remaining seconds of the timer to reboot can be read from the timer.

5.2. API List and Descriptions

5.2.1. General

| Syntax: | lib_init(void) |
|---------------|--|
| Description: | library initialization, using this library must call this function first. |
| | Note: The initialization may have to wait for 1 minute due to scan pic port. |
| Parameters: | None |
| Return Value: | 0: Successful, -1: Fail. |
| | |
| Syntax: | lib_close(void) |
| Description: | library close, when not using this library must call this function. |
| Parameters: | None |
| Return Value: | 0: Successful1: Fail. |



5.2.2. GPIO

The GPIO port 0 and 1 are always free for use normally.

GPIO direction and data registers:

| | Port 0 | Port 1 | Description |
|--------------------|--------|--------|---|
| Data Register | 78H | 79H | |
| Direction Register | 98H | 99H | 0: GPIO pin is input mode 1: GPIO pin is output mode |

If send value 0FH to port 98H, it means that GPIO port0 [7-4] are input mode and port[3-0] are output mode.

If send value 00H to port 98H, it means that GPIO port0 [7-0] are input mode.

If send value FFH to port 98H, it means that GPIO port0 [7-0] are output mode.

If send value 03H to port 98H, it means that GPIO port0 [7-2] are input mode and port[1-0] are output mode.

| Syntax: | byte readPort (byte nPort) | | | |
|---------------|--|--|--|--|
| Description: | Get the status of GPIO data register | | | |
| Parameters: | nPort: Direction register value | | | |
| Return Value: | 0x00~0xFF (output mode: bit = 0 is Low, bit = 1 is High) | | | |

| Syntax: | void writePort(byte nPort, byte dbValue) |
|---------------|--|
| Description: | Set the status of GPIO data register |
| Parameters: | nPort: Direction register value |
| | dbValue: Data register value |
| Return Value: | None |



5.2.3. Watchdog

| Syntax: | void wdt_start(int nTime, byte nEvent) |
|---------------|---|
| Description: | This function sets the watchdog timer register to the value 'val' and starts to count down. The value could be 1 ~ 511. The unit is second. |
| Parameters: | nTime: The range is 1~511. |
| | nEvent: |
| | IRQ3 = 0x10 |
| | IRQ4 = 0x20 |
| | IRQ5 = 0x30 |
| | IRQ6 = 0x40 |
| | IRQ7 = 0x50 |
| | IRQ9 = 0x60 |
| | IRQ10 = 0x70 |
| | IRQ11 = 0x80 |
| | IRQ12 = 0x90 |
| | IRQ14 = 0xA0 |
| | IRQ15 = 0xB0 |
| | NMI = 0xC0 |
| | SYS_RESET = 0xD0 |
| Return Value: | None |

| Syntax: | void wdt_reset() | |
|---------------|------------------------------------|--|
| Description: | This function reset trigger timer. | |
| Parameters: | None | |
| Return Value: | None | |

| Syntax: | void wdt_disable() | |
|---------------|-----------------------------------|--|
| Description: | This function stop trigger timer. | |
| Parameters: | None | |
| Return Value: | None | |



5.2.4. I2C

| Syntax: | int i2c_read_byte(byte device_address, byte index, byte *data) | |
|---------------|--|--|
| Description: | This function get the i2c index data. The data value save to pointer data. | |
| Parameters: | None | |
| Return Value: | If this function works successfully, the function returns 0, any other value stands for error. | |
| | | |
| Syntax: | int i2c_write_byte(byte device_address, byte index, byte data) | |
| Description: | This function write the i2c index data. | |
| Parameters: | None | |
| Return Value: | If this function works successfully, the function returns 0, any other value stands for error. | |



6. FAQ

Q 1. Where can I find the serial number of this product?

• The serial number (S/N) is a label printed with alpha-numeric character. You can find the S/N label on the bottom of this product or on its packing box.



Technical Support Form

We deeply appreciate your purchase of Acrosser products. Please find the "**tech_form. doc**" file in our utility CD. If you have any questions or problems about Acrosser products, please fill in the following information. We will answer your questions in the shortest time possible.

Describe Your Info and Acrosser System Info

| Your Company Name: | |
|---|--|
| Your Contact Info: | Phone Number: |
| Your E-Mail Address: | |
| Your Company Address: | |
| Acrosser Model Name: | |
| Acrosser Serial Number: | |
| Describe System Configuration | |
| • CPU Type: | |
| Memory Size: | |
| • Storage Device (e.g. HDD, CF, or SSD): | |
| Additional Peripherals (e.g. Graphic Care | d): |
| Operating System & Version (e.g. Windo | ws 7 Embedded): |
| Special API or Driver: | |
| | (If yes, please provide it for debug.) |
| Running Applications: Others: | |
| Describe Your Problems or Questions | : |
| Send the above information to one of • Acrosser Local Sales Representative | the following Acrosser contacts: |
| Acrosser Authorized Sales Channels Acrosser Inquiry http://www.acrosser. Acrosser FAX Number 886-2-299928 | com/inquiry.html 87 |





Acrosser Headquarters

241新北市三重區光復路一段61巷26號10樓 10F., No.26, Ln. 61, Sec. 1, Guangfu Rd., Sanchong Dist., New Taipei City 241, Taiwan (R.O.C.) TEL: +886-2-29999000 FAX: +886-2-29992887 / +886-2-29993960

Acrosser Taichung Office

414台中市烏日區僑仁街8號10樓之1 10F.-1, No.8, Qiaoren St., Wuri Dist., Taichung City 414, Taiwan (R.O.C.) TEL: +886-4-2337-0715 FAX: +886-4-2337-3422

Acrosser China Subsidiary

深圳市欣扬通电子有限公司 深圳市福田区泰然八路安华工业区6号楼7层 706室 (邮编: 518040) Room 706, floor 7, building 6, Anhua Industrial Zone, Tairan 8th Road, Futian District, Shenzhen, China (Postal: 518040) TEL: +86-755-83542210 FAX: +86-755-83700087

Acrosser Nanjing Office

欣扬通电子有限公司 南京办事处
 江苏省南京市江宁区天元东路228号504室
 (邮编: 211100)
 Room 504, No. 228, Tian Yuan East Rd.,
 Jiang Ning Dist., Nanjing City, Jiangsu Province,
 China (Postal: 211100)
 Mobile: 13611932003
 TEL: +86-025-86137002
 FAX: +86-025-86137003

Acrosser Beijing Office

欣扬通电子有限公司 北京办事处 北京市昌平区沙河镇沙阳路巩华新村8号楼2单元 1403室 (邮编: 102206) Room 1403, Unit 2, Building 8, Gonghua Village, Shahe Town, Changping District, Beijing, China (Postal: 102206) Mobile: 13311317329

Acrosser USA Inc.

8351 Elm Ave. Suite 107, Rancho Cucamonga, CA91730, USA TEL: +1-909-476-0071 FAX: +1-909-466-9951