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SECTION 1 INTRODUCTION

This chapter contains general information and detailed specifications of the Chapter 1 includes the following sections:

The

- **General Description**
- System Specification
- Dimensions
- I/O Outlets

1.1 **General Description**

Din-rail fanless embedded system is suitable for communications control and for protocol converter applications in critical environments. Built for rugged work environments, features an extra low power consumption Intel[®] ATOM[®] E3930(1.3GHz) processors supporting industrial temperature range of -40°C to +75°C. Its front accessible I/O cabling is very convenient for wiring and maintenance. offers a HDMI output, making it particularly well-suited for communication control, SCADA and industrial automation. Its compact size with Din-rail mounting allows for easy installation into control cabinet. Preinstalled with Linux, Windows[®] 10 embedded provides programmers with a friendly environment for developing application software at a lower cost.

is robust industrial-grade hardware design and adopts the advanced cooling system, besides, supporting the mSATA and SATA SSD (or HDD), which makes it especially suitable for field control & monitoring system solution for following markets:

Utility Industries (Water; Energy; Chemical Plant; Mining...)

Public Transportation Industries (Traffic/ Highway Control; Train/Bus Control...)

Homeland Security (Weather Monitoring/Alarm System...)

Checklist

- ✓ DDR thermal pad x1pcs
- ✓ Screws for Mini Card M2*5L x2pcs
- ✓ Screws for SSD/HDD M3*4L x4pcs
- ✓ SATA+Power HDD cable x1pcs
- ✓ HDMI BKT x1pcs

- ✓ Screws for HDMI M3*5L x1pcs
- ✓ DIO 2x6pin termninal block x2pcs
- ✓ COM 2x5pin termninal block x4pcs
- ✓ Din-rail Kit x1set
- ✓ Power 3 pin terminal block x 1pcs

Note: Please contact your local vendors if any damaged or missing items.

• Features

- Fanless design
- Wide temperature operation of -40°C +75°C
- Wide range 12–24V DC-in with terminal block
- Din-rail mounting
- Wall mounting (optional)
- 1 isolation 2K DO terminal block connector
- 1 isolation 2K DI terminal block connector
- 6 isolation 2K COM Ports support RS-232/422/485
- 3 10/100/1000 Base-T Ethernets with Magnetic Isolated Protection
- 2 Mini Card (1 support USB/SIM; 1 support USB/mSATA)
- Support one 2.5" SATA drive bay
- Passed CE with FCC testing
- Passed ATEX/C1D2 anti-explosive certificate

• Embedded O.S. Supported

not only supports Windows[®]10, but also supports embedded OS, such as Windows[®] 10 embedded and Linux package support. For storage device, supports one SATA SSD (or HDD) and one mSATA.

1.2 System Specifications

1.2.1 CPU

• Onboard Intel® ATOM® E3930 (1.3GHz)

1.2.2 BIOS

• AMI (American Megatrends Inc.) UEFI (Unified Extensible Firmware Interface) BIOS.

1.2.3 System Memory

- One DDR3L 204-pin SO-DIMM (1.35V) slot.
- Supports 1600/1866 MHz up to 8GB.

1.2.4 Display

• 1 x HDMI (up to 1920 x 1080 @60Hz)

1.2.5 Ethernet Ports

- LAN Chip: Intel Ethernet Controller I210-IT.
- LAN 1 ~3 support 10/100/1000 Base-T with 1.5KV magnetic isolated protection.

1.2.6 Storages

- 1 x 2.5" SATA drive bay.
- 1 x mSATA.

1.2.7 USB

• 2 x USB3.0

1.2.8 COM

- 6 ports terminal block support RS-232/422/485 which can be selected by BIOS with isolation 2KV protection.
- Supports Auto Flow Control in RS485 mode.

COM PORT 1~2



| Pin | RS232 | RS422 | RS485 |
|-----|-------|-------|-------|
| 1 | GND | GND | GND |
| 2 | RTS | RX- | N.C |
| 3 | ТΧ | RX+ | N.C |
| 4 | CTS | TX- | D- |
| 5 | RX | TX+ | D+ |
| 6 | DTR | N.C | N.C |
| 7 | DSR | N.C | N.C |
| 8 | DCD | N.C | N.C |
| 9 | RI | N.C | N.C |
| 10 | N.C | N.C | N.C |

COM PORT 3~6



| | Pin | RS232 | RS422 | RS485 |
|-----|-----|-------|-------|-------|
| | A1 | GND | GND | GND |
| | A2 | RTS | RX- | N.C |
| | A3 | ТΧ | RX+ | N.C |
| | A4 | CTS | TX- | D- |
| 0 0 | A5 | RX | TX+ | D+ |
| | B1 | GND | GND | GND |
| | B2 | RTS | RX- | N.C |
| 1 | B3 | ТΧ | RX+ | N.C |
| | B4 | CTS | TX- | D- |
| | B5 | RX | TX+ | D+ |

1.2.9 Power

• This product is intended to be supplied by a Listed Power Adapter or DC power source, rated minimum 24 Vdc, minimum 2.43 A, Tma = minimum 75 degree C, output complies with LPS/PS2.



1.2.10 WatchDog Timer (WDT)

• 1~255 seconds or minutes; up to 255 levels.

1.2.11 Digital I/O Connector and Pin Definition

• 8bit DI and 8bit DO with 2KV optical isolation

| Digital Input | | | | |
|---|---|--|--|--|
| Input Channels 8 source type | | | | |
| Input Voltage | 0 to 30VDC Input | | | |
| Digital Input Levels for | Logic level 0: Close to GND. | | | |
| Dry Contacts | Logic level 1: Open | | | |
| Digital Input Levels for | Logic level 0: +10V to +24V (DI To XIN_COM-). | | | |
| Wet Contacts | Logic level 1: +3V max. | | | |
| | Digital Output | | | |
| Output Channels 8 sink type | | | | |
| Output Current Max. 200 mA per channel, current sink type | | | | |
| External voltage 10 to 30VDC, open collector to 30V | | | | |

DIO



| Pin | DI | | |
|-----|--------------|--|--|
| 1 | External PWR | | |
| 2 | DI 8 | | |
| 3 | DI 9 | | |
| 4 | DI 10 | | |
| 5 | DI 11 | | |
| 6 | DIO_GND | | |
| 7 | External PWR | | |
| 8 | DI 12 | | |
| 9 | DI 13 | | |
| 10 | DI 14 | | |
| 11 | DI 15 | | |
| 12 | DIO_GND | | |



| Pin | DO | | |
|-----|------|--|--|
| 1 | COM+ | | |
| 2 | DO 0 | | |
| 3 | DO 1 | | |
| 4 | DO 2 | | |
| 5 | DO 3 | | |
| 6 | COM- | | |
| 7 | COM+ | | |
| 8 | DO 4 | | |
| 9 | DO 5 | | |
| 10 | DO 6 | | |
| 11 | DO 7 | | |
| 12 | COM- | | |

1.2.12 Restore BIOS Optimal Defaults (Clear CMOS)

• Press the tact switch can restore BIOS optimal defaults. (The buttom is next to the HDMI connector)





1.2.13 System LED

• There are showed the LED's indicators and functional descriptions.

| LED Name | Description | Color |
|----------|--|--------|
| ACT | Indicate the storge status and it is flashing when storge access. | Orange |
| PWR | Indicate the Power status. When the DC input is acceptable, the LED will ON. | Green |

1.2.14 Operation Temperature

• -40°C ~ +75°C

1.2.15 Storage Temperature

• -40°C ~ +85°C

1.2.16 Humidity

• 10% ~ 95% (non-condensation)

1.2.17 Weight

• 0.75 kg

1.2.18 Dimensions

• 66mm (2.60") (W) x110mm (4.33") (D) x155mm (6.10") (H)

1.2.19 System I/O Outlets

- One DC Power Input with terminal block.
- Five Antenna holes.
- One HDMI
- Two USB 3.0 connectors
- Three 10/100/1000 Base-T RJ-45 with 1.5KV magnetic isolated protection
- Four connectors with 2x5 pin terminal block for COM1~COM6
- Two connectors with 2x6 pin terminal block for DI and DO

1.3 Non-sparking low power equipment

The Robust Din-rail Fanless Embedded System (ATEX&CID2) is designed according to EN IEC 60079-0:2018 and EN IEC 60079-7:2015+A1:2018 will be used in Zone 2 and Class I Division 2 (CID2).

1.3.1 General information for use

Types of protection:

•

- (ATEX&CID2) is designed with type of protection "ec".
- UL 21 ATEX 2567X marking: II 3 G Ex ec IIC T4 Gc and Class I Div. 2 Groups ABCD T4
- Ambient temperature:-40°C ~+75°C
- The devices are for use in an area of not more than pollution degree 2 in accordance with EN/IEC 60664-1.
- All of fuses shall be soldered in place and the fuses are non-interchangeable.
- The equipment shall be installed in an enclosure that provides a minimum ingress protection of IP 54 in accordance with EN 60079-0, and accessible only by the use of tool. (WARNING - EXPLOSION HAZARD – Do not disconnect equipment unless power has been removed or the area is known to be non-hazardous.)
- This equipment is suitable for use in Class I, Division 2, Groups A, B, C, and D or nonhazardous locations only.

(WARNING - EXPLOSION HAZARD – Substitution of any components may impair suitability for Class I, Division 2.)

• After the Robust Din-rail Fanless Embedded System is mounted and fixed, the customer will make the whole system grounded, and the ground wire needs to meet the requirement of EN60079-0, besides, the cross-section area of the ground wire is at least 4mm².

The I/O ports of non-sparking equipment will be possible connected instruments or equipments as below examples:

- Four isolated Terminal Block connectors support RS232/RS422/RS485 (COM1~COM6) It will be possibled linked the temperature sensor, wet sensor, meters.
- Three Isolated 10/100/1000Mbps Ethernets It will be possible connected the wired network (HiNet/ NiLink/ Internet)
- Two Isolated DIO (8-IN/8-OUT) port with Magnetic Isolation Protectio It will be possible linked digital electronic power lemter.
- Two USB

| lt is | always | plugged-in | the | USB | housing | cover | (pls | refer | below | picture), | excepting |
|-------|---------|------------|-----|--------|-----------|-------|------|-------|-------|-----------|-----------|
| equi | pment m | aintenance | and | repair | situation | | þ | | | | |

It is used for maintenance and repair only, ex: accesse data by plugging in USB flash, or check data & remove wrong data by using USB type of keyboard/mouse.

• HDMI

It will be possible linked the monitoring and management equipment.

WARNING – EXPOSURE TO SOME CHEMICALS MAY DEGRADE THE SEALING PROPERTIES OF MATERIALS USED IN THE FOLLOWING DEVICES: Sealed Relay Device.

1.3.2 Field Installation

- Power Terminal Block suitable for 28-16 AWG (0.0804-1.318 mm²) wire size, torque value 1.7 lb-in (0.1921 Nm).
- COM Port Terminal Block suitable for 28-16 AWG (0.0804-1.318 mm²) wire size, torque value 1.7 lb-in (0.1921 Nm).
- DIO Terminal Block suitable for 28-16 AWG (0.0804-1.318 mm²) wire size, torque value 1.7 lb-in (0.1921 Nm).
- The equipment shall be installed by vertical way and set in an enclosure that provides a degree of protection not less than IP 54 in accordance with EN 60079-7 and accessible only by the use of a tool.
- Terminal blocks do not accommodate more than one individual conductor in a clamping point.



ICO300-83M (ATEX/C1D2) is installed in similar station enclosure

1.4 Dimensions



The following diagrams show you dimensions and outlines of the

Series User's Manual



1.5 I/O Outlets



The following figures show you I/O outlets on front view and top view of the

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SECTION 2 HARDWARE INSTALLATION

The is convenient for your various hardware configurations, such as Memory Module and Hard Disk Drive. The chapter 2 will show you how to install the hardware. It includes:

2.1 Installing the Memory Module

Step 1 Turn off the system.

Step 2 Loosen all screws of the cover and remove the cover from the system.



Step 3 Put the DDR thermal pad inside DDR socket. Install the memory module as below step(1:Insert the module to the socket; 2:Push down to lock the module)



Step 4 The memory module is locked by two latches on the sides. We strongly recommend using "LDC737" silicone on the two sides of the memory for good ability of vibration.

Step 5 Put the cover back, and fasten screws tightly to lock the chassis.

2.2 Installing the mSATA module

- Step 1 Turn off the system.
- Step 2 Loosen all screws of the cover and remove the cover from the system.



Step 3 Install the mSATA as below socket. Insert the module to the socket and fasten with the screw.



Step 4 Put the cover back to the system, and fasten screws tightly to lock the chassis.

2.3 Installing the Hard Disk Drive

- Step 1 Turn off the system.
- Step 2 Loosen all screws of the cover and remove the cover from the system.



Step 3 Loosen 4pcs screws of the HDD tray, and fix the HDD into tray with screws.



Step 4 Install the HDD tray back to the system cover. Connect the SATA cable between HDD and MB.



Step 5 Put the cover back to the system and fasten screws tightly to lock the chassis.

Installing Din-rail Mounting 2.4

Step 1

The provides Din-rail Mount for customers can install as below:

Prepare Din-rail Mount assembling components (screws and bracket) ready.



Step 2 Assembly the bracket to the system and fasten screws tight.



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SECTION 3 AMI UEFI BIOS UTILITY

The AMI UEFI BIOS provides users with a built-in Setup program to modify basic system configuration. All configured parameters are stored in a flash-backed-up to save the Setup information whenever the power is turned off.

3.1 Entering Setup

To enter the setup screens, follow the steps below:

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

3.2 The Main Menu

Once you enter the AMI BIOS Aptio Setup Utility, the Main Menu appears on the screen. In the Main Menu, there are several Setup functions and a couple of Exit options for your selection. Use Select Screen Keys (or Move Keys) to select the Setup Page you intend to configure then press <Enter> to accept or enter its sub-menu.

| Aptio Setup Utility – Main Advanced Chipset Security | Copyright (C) 2021 American Boot Save & Exit | Megatrends, Inc. |
|---|--|---|
| BIOS Information BIOS Version Build Date and Time System Date System Time | SBC8783M T008 01/28/2021 11:18:47 [Fri 08/09/2019] [01:00:05] | Set the Date. Use Tab to switch between Date elements. Default Ranges: Year: 2005–2099 Months: 1–12 Days: dependent on month |
| Access Level | Administrator | |
| | | <pre>++: Select Screen f↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults 54: Optimized Defaults</pre> |
| Version 2.18.1263. Co | pyright (C) 2021 Ame <u>rican M</u> | ESC: Exit egatrends, Inc. |

System Date

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

System Time

This item shows current time of your system with the format <hour> <minute> <second>. The ime is calculated based on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00.

3.3 Advanced Features

This Advanced section allows users to configure and improve your system, to set up some system features according to your preference. You can select any of the items in the left frame of the screen to go to the sub menus:

| Aptio Setup Utility — Copyright (C) 2021 American Main Advanced Chipset Security Boot Save & Exit | Megatrends, Inc. |
|--|--|
| <pre>> eMMC Information > CPU Configuration > SATA Configuration > USB Configuration > Hardware Monitor > F81804 Super ID Configuration > Trusted Computing > Device Configuration</pre> | Show the eMMC information. ++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit |
| Version 2.18.1263. Copyright (C) 2021 American Ma | egatrends, Inc. |

• eMMC Configuration

Scroll to this item and press <Enter> to view the eMMC Configuration informations.

| Aptio Setup Utility – (Advanced | Copyright (C) 2021 American | Megatrends, Inc. |
|--|-----------------------------|--|
| eMMC Information | | Select the eMMC max Speed |
| eMMC Model Name : N/A eMMC Available Size : N/A eMMC Max Speed | [HS400] | ailuwed. |
| | | |
| | | |
| | | ++: Select Screen |
| | | t∔: Select Item Enter: Select +/-: Change Ont |
| | | F1: General Help F2: Previous Values |
| | | F3. Optimized beradits F4: Save & Exit ESC: Exit |
| | | |
| Version 2.18 1263 _ Cor | uright (C) 2021 American Me | egatrends. Inc. |

• CPU Configuration

Scroll to this item and press <Enter> to view the CPU Configuration informations.

| Aptio Setup Utility — Advanced | Copyright (C) 2017 American | Megatrends, Inc. |
|---|---------------------------------------|---|
| CPU Configuration | 1.60687 | When enabled, a VMM can utilize the additional bardware canabilities provided |
| CPU Signature Microcode Patch Max CPU Speed | 506C9 1E 1600 MHz | by Vanderpool Technology |
| Min CPU Speed Processor Cores Intel HT Technology | 800 MHz 4 Not Supported | |
| Intel VT–x Technology 64–bit | Supported Supported | |
| L1 Data Cache L1 Code Cache L2 Cache | 24 kB x 4 32 kB x 4 1024 kB x 2 | ++: Select Screen 11: Select Item |
| L3 Cache | Not Present | Enter: Select +/-: Change Opt. |
| Intel Virtualization Technology | [Euapied] | F1: General Help F2: Previous Values F3: Optimized Defaults |
| | | F4: Save & Exit ESC: Exit |
| | | |
| Version 2.18.1263. Co | ppyright (C) 2017 American M | egatrends, Inc. |

• SATA Configuration

Scroll to this item and press <Enter> to view the SATA Configuration informations.

| Aptio Setup Utility Advanced | y – Copyright (C) 2021 Americ | can Megatrends, Inc. |
|-----------------------------------|------------------------------------|---|
| SATA Configuration | | Determines how SATA |
| SATA Mode Selection | [AHCI] | controller(s) operate. |
| SATA Port O(mSATA) SATA Port 1 | [Not Installed] [Not Installed] | |
| | | <pre> ++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre> |
| Version 2.18.1263. | . Copyright (C) 2021 Americar | n Megatrends, Inc. |

• USB Configuration

Scroll to this item and press <Enter> to view the USB Configuration information.

| Aptio Setup Utility - Advanced | - Copyright (C) 2017 American | Megatrends, Inc. |
|--|-------------------------------|--|
| USB Configuration | | Mass storage device emulation |
| USB Module Version | 16 | devices according to their media format. Optical drives |
| USB Controllers: 1 XHCI | | are emulated as 'CDROM', drives with no media will be |
| USB Devices: 1 Drive, 1 Keyboard, 1 Mouse | , 1 Hub | emulated according to a drive type. |
| Mass Storage Devices: USB 2.0 Flash Disk 0.00 | [Auto] | |
| | | |
| | | ↔: Select Screen ↑↓: Select Item |
| | | Enter: Select |
| | | F1: General Help |
| | | F3: Optimized Defaults |
| | | ESC: Exit |
| | | |
| | | |
| Version 2.18.1263. | Copyright (C) 2017 American M | egatrends, Inc. |

• H/W Monitor

Scroll to this item and press <Enter> to view the monitor hardware status.

| Aptio Set Advanced | up Utility – Copyright | (C) 2017 American | Megatrends, Inc. |
|---|--|--------------------|---|
| Pc Health Status | | | |
| CPU SYSTEM +3.3V +5V +3.3VSB +5VSB VBAT | : +46 ° : +34 ° : +3.344 : +5.024 : +3.312 : +6.120 : +3.024 | V V V V | <pre>++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre> |
| Version | 2.18.1263. Copyright (C |) 2017 American Me | egatrends, Inc. |

• F81804 Super IO Configuration

The default setting for all serial ports are RS232.

You can change the setting by selecting the value you want in each COM Port Type.

Supports RS422 & RS485 mode.

| Aptio Setup Utili Advanced | ty – Copyright (C) 2021 | American Megatrends, Inc. |
|---|-------------------------|---|
| F81804 Super IO Configuration | | Set Parameters of Serial Port |
| Super IO Chip Serial Port 1 Configuration Serial Port 2 Configuration | F81804 | |
| | | <pre>++: Select Screen 1↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre> |
| Version 2.18.126 | 3. Copyright (C) 2021 A | merican Megatrends, Inc. |



You can enable COM port High-speed mode to support higher speed com port buard rate.

| Aptio Setup Utility - Advanced | - Copyright (C) 2021 America | an Megatrends, Inc. |
|-----------------------------------|------------------------------|---|
| Serial Port 1 Configuration | | More detail in user manual. |
| Device Settings | IO=3F8h; IRQ=4; | 1800 14400 2400 19200 4800 38400 |
| Select Mode | [RS232] | 9600 76800 |
| High-speed mode | [Disable] | 28800 230400 38400 307200 57600 460800 115200 921600 ++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit |
| New-Jan 0 40 4000 - 0 | | Management Trans |

• Device Configuration

You can change the COM3~6 setting in this section.

| Aptio Setup Utility – Copyright (C) 2021 American Main <mark>Advanced</mark> Chipset Security Boot Save & Exit | Megatrends, Inc. |
|--|---|
| EMMC Information CPU Configuration SATA Configuration USB Configuration Hardware Monitor F81804 Super IO Configuration Trusted Computing Device Configuration | Device Configuration |
| | <pre>++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre> |
| Version 2.18.1263. Copyright (C) 2021 American Me | egatrends, Inc. |
| Aptio Setup Utility – Copyright (C) 2021 American Advanced | Megatrends, Inc. |
| ▶ Module Device Configuration | Module Device Configuration status |
| | |



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3.4 Chipset Feature

| Aptio Setup Utility – Copyright (C) 2016 American Main Advanced <mark>Chipset</mark> Security Boot Save & Exit | Megatrends, Inc. |
|---|---|
| North Bridge | North Bridge Parameters ++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit |
| Version 2.18.1263. Copyright (C) 2016 American Me | egatrends, Inc. |

| | Aptio Setup Utility – Cop Chipset | yright | : (C) 2016 America | n Megatrends, | Inc |
|--------------|--------------------------------------|--------|--------------------|------------------------------|-------------------|
| Memory Infor | nation | | | | |
| Total Memory | 81 | 92 MB | (LPDDR3) | | |
| Memory SlotO | 81 | 92 MB | (LPDDR3) | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | 14: Select S | creen item |
| | | | | +/-: Change | Opt. |
| | | | | F1: General F2: Previous | Help Values |
| | | | | F3: Optimize F4: Save & E | d Defaults Xit |
| | | | | ESC: Exit | |
| | | | | | |
| | | | | | |
| | Version 2.18.1263. Copyr | ight (| (C) 2016 American | Megatrends, In | ic. |

3.5 Security

The default setting for Administrator Password is "Not setting passwords".

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

You can set the password for both Administrator Password and User Password.

(Please refer below graphics.)



Note: The BIOS default has no password, when user created the password, please remember the password number, if users forget password the RMA is the only solution.

3.6 Boot Type

The default setting of boot mode is [UEFI],

UEFI - support to boot any UEFI-capable OS and option rom

Legacy - support to boot any legacy-capable OS and option rom

Compitable - customize boot mode of uefi/legacy of specific item

| Aptio Setup Utility – Main Advanced Chipset Security | Copyright (C) 2017 American Boot Save & Exit | Megatrends, Inc. |
|--|---|---|
| Main Advanced Chipset Security Boot Configuration Setup Prompt Timeout Bootup NumLock State Boot Mode Launch UEFI PXE OpROM policy LAN Boot Option Priorities Boot Option #1 Boot Option #2 Boot Option #3 | Boot Save & Exit [[On] [UEFI Mode] [Enabled] [LAN1] Boot Mode Legacy Mode Compatible .] .] | Select the boot mode. [UEFI Boot] Support to boot any UEFI-capable OS. [Legacy Boot] Support to boot non UEFI-capable OS that expects a legacy BIOS interface. [Compatible] Custom to control mix of legacy/uefi. ++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit |
| Version 2.18.1263. Co | pyright (C) 2017 American Mu | egatrends, Inc. |

The default setting boot from onboard LAN PxE Rom is [Disabled]

| Aptio Setup Utility – Main Advanced Chipset Security | Copyright (C) 2017 American Boot Save & Exit |) Megatrends, Inc. |
|--|---|---|
| Boot Configuration | | Launch UEFI PXE OpROM policy |
| Setup Prompt Timeout Bootup NumLock State | 1 [0n] | |
| Boot Mode Launch UEFI PXE OpROM policy | [UEFI Mode] [Disabled] | |
| Boot Option Priorities Boot Option #1 Boot Option #2 Boot Option #3 | [UEFI: USB 2.0 Flash] [UEFI: IP6 Intel(R)] [UEFI: IP4 Intel(R)] | |
| | | <pre>++: Select Screen f↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre> |
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The Boot Option Priorities can select by Boot Option #1, #2..., If user is using a USB Device.

| Aptio Setup Utility – Main Advanced Chipset Security | Copyright (C) 2017 American Boot Save & Exit | Megatrends, Inc. |
|---|---|---|
| Boot Configuration | | Sets the system boot order |
| Setup Prompt Timeout Bootup NumLock State | 1 [0n] | |
| Boot Mode Launch UEFI PXE OpROM policy LAN | [UEFI Mode] [Enabled] [LAN1] | |
| Boot Option Priorit Boot Option #1 Boot Option #2 Boot Option #3 UEFI: IP6 Intel UEFI: USB 2.0 F Disabled | Boot Option #1 (R) I210 Gigabit Network C (R) I210 Gigabit Network C Plash Disk 0.00 | onnection creen tem t +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit |
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3.7 Save & Exit

This section allows you to determine whether or not to accept your modifications. Type "Y" to quit the setup utility and save all changes. Type "N" to bring you back to the Previous Setup utility.

| Aptio Setup Utility – Copyright (C) 2016 America Main Advanced Chipset Security Boot Save & Exit | an Megatrends, Inc. |
|---|---|
| Save Options Save Changes and Exit Discard Changes and Exit | Exit system setup after saving the changes. |
| Save Changes and Reset Discard Changes and Reset | |
| Save Changes Discard Changes | |
| Default Options Restore Defaults Save as User Defaults | |
| Restore User Defaults | ++: Select Screen ↑↓: Select Item |
| BUUL UVENTILE PO: AXIONTEK Copp _ESA0320300MW | Enter: Select +/-: Change Ont |
| Windows Boot Manager (PO: AXIOMTEK CorpFSA032G300MW3T) | F1: General Help |
| UEFI: USB 2.0 Flash Disk 0.00 | F2: Previous Values |
| USB 2.0 Flash Disk 0.00 | F3: Optimized Defaults |
| | F4: Save & Exit ESC: Exit |
| | |
| | |
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Series User's Manual

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APPENDIX A WATCHDOG TIMER

About Watchdog Timer

After the system stops working for a while, it can be auto-reset by the watchdog timer. The integrated watchdog timer can be set up in the system reset mode by program.

How to Use Watchdog Timer

The following example enables configuration using debug tool.

Enable WDT

↓

Enable configuration:

| | O 2E 87 ;Un-lock super I/O |
|----------------------|---|
| | O 2E 87 |
| \downarrow | |
| Select logic device: | |
| | O 2E 07 |
| | O 2F 08 |
| \downarrow | |
| WDT device enable: | |
| | O 2E 30 |
| | O 2F 01 |
| \downarrow | |
| Set timer unit: | |
| | O 2E F0 |
| | O 2F 00 ; (00: Sec; 08:Minute) |
| \downarrow | |
| Set base timer: | |
| | O 2E F1 |
| | O 2F 0A ; Set reset time (where 0A (hex) = 10sec) |

| Disable WDT | |
|-----------------------|----------------------------|
| \downarrow | |
| Enable configuration: | |
| | O 2E 87 ;Un-lock super I/O |
| | O 2E 87 |
| \downarrow | |
| Select logic device: | |
| | O 2E 07 |
| | O 2F 08 |
| ↓ | |
| WDT device disable: | |
| | O 2E 30 |
| | O 2F 00 |
| | |