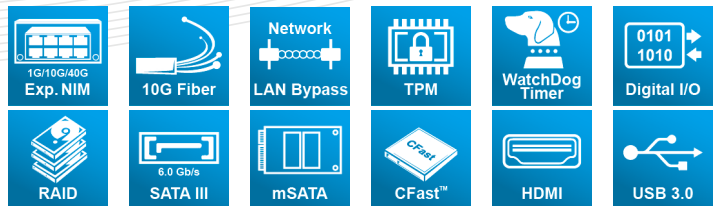# ANR-C236N1-K Series

Networking 1U Rackmount Server

- *Intel® C236 PCH*
- *Intel® Xeon® E3-1200 V6/Kabylake-S Embedded SKUs*
- *12x GbE Copper (4-pair bypass), 1x Mgmt. Port*
- *2x 10G Fiber (SFP+)*
- *1x Exp. NIM (1G/10G/40G, Fiber/Copper/LAN Bypass)*

1G/10G/40G Exp. NIM	10G Fiber	Network LAN Bypass	TPM	WatchDog Timer	Digital I/O
RAID	6.0 Gb/s SATA III	mSATA	CFast™	HDMI	USB 3.0

User Manual

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

Industrial & Embedded Solutions

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.

Ver: 100-002
Date: Sep. 15, 2017

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. Introduction

The ANR-C236N1-K series is a new product lines of Acrosser 2017. This rackmount server equips with the latest Intel® server chipset C236 PCH, supporting the latest Intel® Xeon® E3-1275 V6 server processor, and the 7th generation CPU Kabylake-S Core i7/i5/i3 series.

The ANR-C236N1-K series provides a more flexible server platform & system expansion versatility with 12x GbE copper LANs (4-pair bypass), 2x 10G fiber networks (SFP+) , expandable network interface modules (Exp. NIM),

Furthermore, in the system backup design, a set of two 2.5-inch hot-swappable HDD/ SSD for RAID0/1 and 1+1 redundant power supply units (RPSU) with AC-IN (100 ~ 240V) or DC-IN (48V), enabling reliable options for system recovery.

1.1. Models

This manual is applied to the following models:

1. ANR-C236N1-K2D0T
2. ANR-C236N1-K2D00
3. ANR-C236N1-K1D00

1.2. Specifications

System

Thermal Solution	• Smart Cooling Fans
CPU	• Intel® Xeon® E3-1275 v6 • Intel® Kabylake-S 7th Gen Core™ i7-7700 • Intel® Kabylake-S 7th Gen Core™ i5-7500 • Intel® Kabylake-S 7th Gen Core™ i3-7101E
System Memory	• 4x UDIMM DDR4-2400 (up to 64GB)
BIOS	• Support Console Re-direction • Support Bypass Setting

Status	Normal	Bypass
SYS (ON)	V	
SYS (OFF)		V
WDT (Timeout)		V
PWR (Lost)	Remained prior status	

• Support Boot from RJ45 LAN[1:12]

System Chipset	• Intel® PCH C236

Network Interface

Ethernet (on-board)	• 12 Copper, 0/2 SFP+, 0/1 Mgmt. • Intel® I210-AT, LAN[1:8] • Intel® I350-AM4, LAN[9:12] • Intel® X710-BM2 (10G Fiber), SFP+[1:2] • Mgmt. (via GbE LAN[1] Copper)
LAN bypass (4-pair)	• (1st LAN bypass) by LAN[5:6] • (2nd LAN bypass) by LAN[7:8] • (3rd LAN bypass) by LAN[9:10] • (4th LAN bypass) by LAN[11:12]

Storage

HDD Bay	• 2x 2.5" Hot-swappable (for RAID 0/1)
mSATA	• 1x mSATA Socket (Support full-size module)
CFast	• 1x CFast Socket

Others

Watchdog Timer	• Software Programmable 0 ~ 255 Secs.
Battery	• Lithium Battery, 3V 220mAH (CR2032)
Hardware Monitoring	• CPU Voltage • CPU & SYS Temperature • SYS FAN Speed
Security & Mgmt.	• On-board TPM 1.2 (default) / 2.0 (optional) • IPMI 2.0 Compliance • Chassis Intrusion Detection (default: Disable)
OS support	• Linux Kernel 4.4 or above, (64-bit)

Mechanical & Environment

Chassis Dimension	• 440 (W) x 44 (H) x 500 (D) mm
Operating Temperature	• 0 ~ 40°C (32 ~ 104°F)
Storage Temperature	• -20 ~ 80°C (-4 ~ 176°F)
Relative Humidity	• 0 ~ 90% @40°C, non-condensing
Power Supply Unit	• 1+1 ATX PSU　　　　　(250W~300W) • 1+Dummy ATX PSU　　(250W~300W) • Single ATX PSU　　　 (250W~300W)
Power Requirements	• ATX Circuit as AT Mode with Power Switch

Mechanical & Environment

Certification	• CE, FCC Class A, RoHS 2, cULus
Vibration Test	• IEC 60068-2-64, 5~500Hz, 3GRMS
Drop Test	• ISTA-2A 2006

1.3. Packing List

Check if the following items are included in the package.

	Item	Q'ty
☐	ANR-C236N1-K Series System	1
☐	SATA Cable	2
☐	Driver CD	1
☐	Console Cable (RJ45)	1
☐	Power Cord	2
☐	Rack Bracket	2
☐	Packing Box	1
☐	Screw Pack	1
☐	Heatsink Module (for Barebone)	1

1.4. Layout & Dimension

(Illustration model: ANR-C236N1-K2D0T)
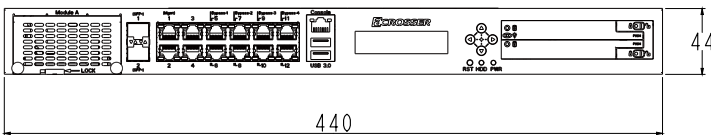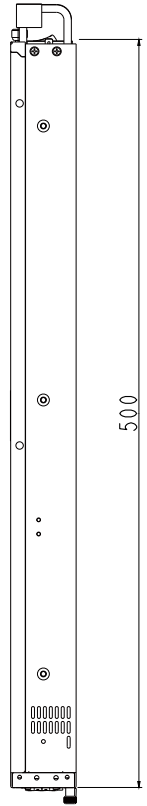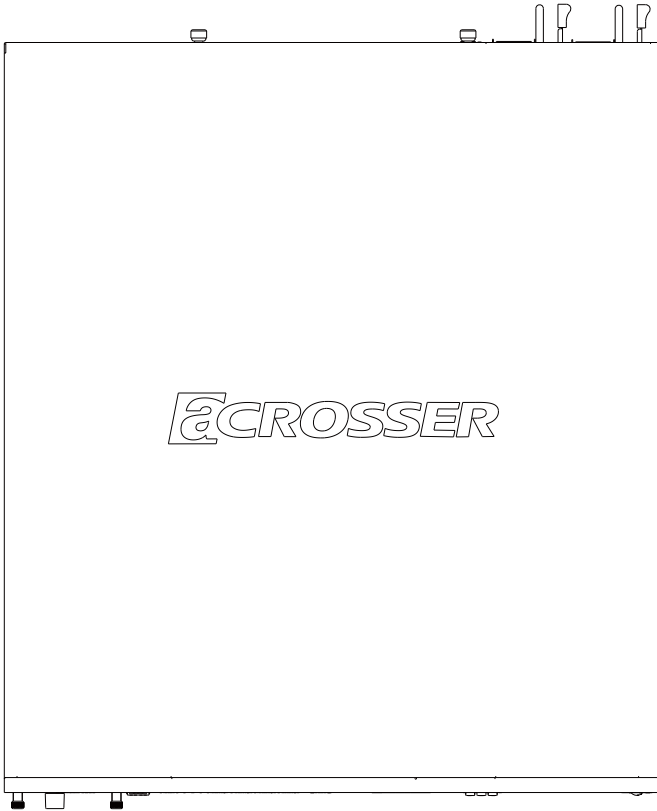
1.5. Front Panel
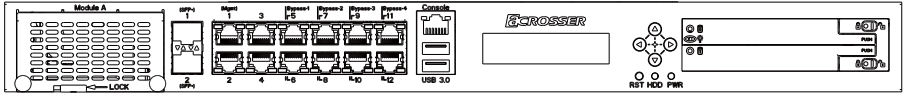
1.5.1. Module A: Network expansion module connector
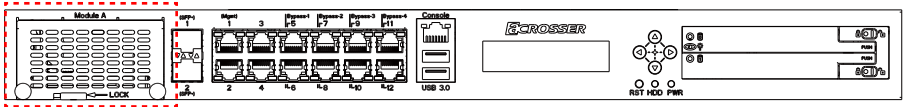
Available LAN Modules:

Note: *The model name, type number, or layout design of these options might change due to product revision.*

1. ACC-NM1Z1-01C8B: 1G Copper x8 (RJ-45 w/ 4-pair Bypass)
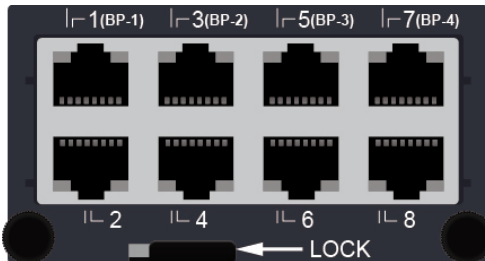
2. ACC-NM1Z1-01C8: 1G Copper x8 (RJ-45)
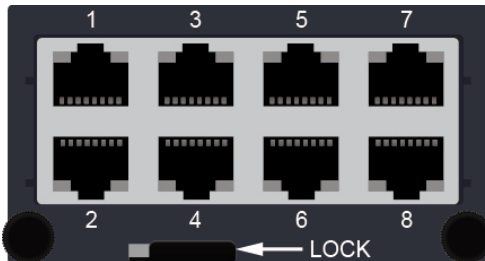
3. ACC-NM1Z1-01F8: 1G Fiber x8 (SFP)
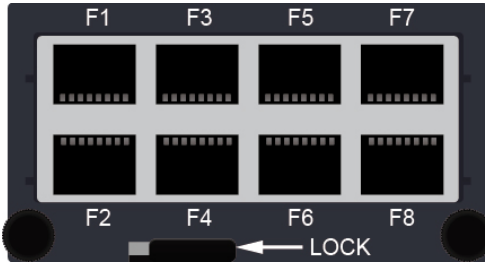
4. ACC-NM1Z1-01H8B: 1G Hybrid x8 (SFP + RJ-45 w/ 2-pair Bypass)
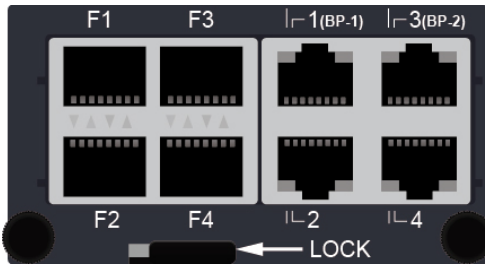
5. ACC-NM1Z1-01H8: 1G Hybrid x8 (SFP + RJ-45)
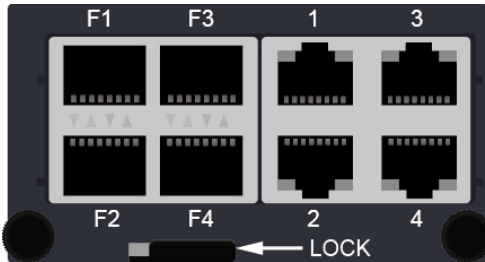
6. ACC-NM1Z1-10F2: 10G Fiber x2 (SFP+)
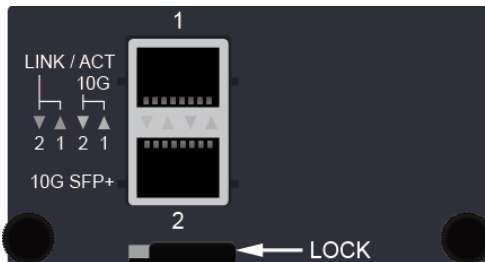
7. ACC-NM1Z1-10F4: 10G Fiber x4 (SFP+)
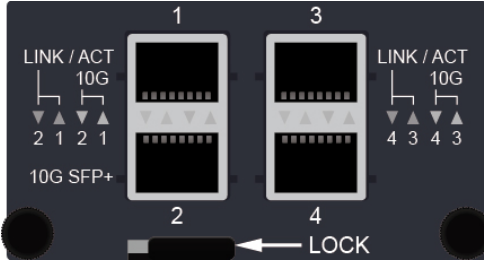
8. ACC-NM1Z1-40F1: 40G Fiber x1 (QSFP+)

9. ACC-NM1Z1-40F2: 40G Fiber x2 (QSFP+)
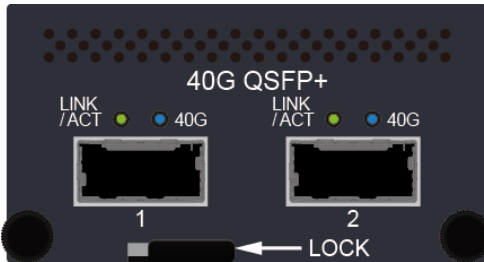
10. ACC-NM1Z1-01C4B: 1G Copper x4 (RJ-45 w/ 2-pair Bypass)
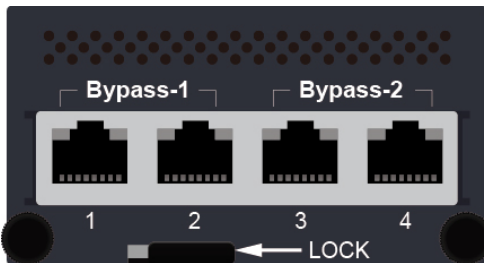
11. ACC-NM1Z1-01C4: 1G Copper x4 (RJ-45)
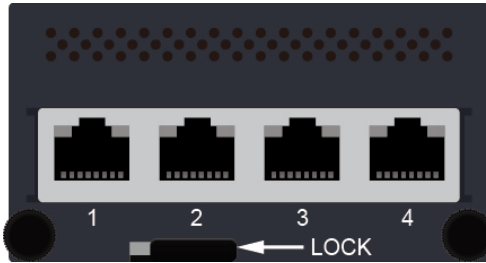
12. ACC-NM1Z1-01F4: 1G Fiber x4 (SFP)
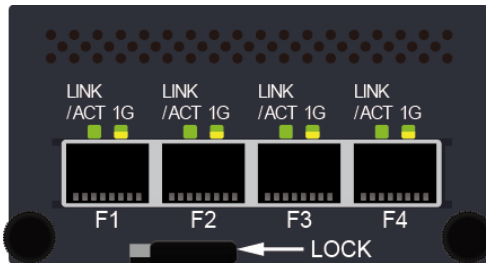
1.5.2. SFP+ 10GbE LAN Ports
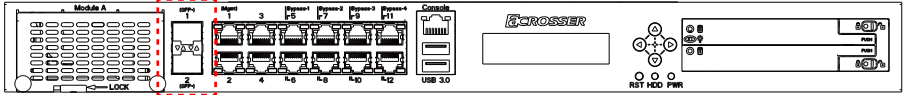
	LED	Light	Status
	Blue	Blue On	10Gbps
		Off	1Gbps or below

If this LAN port funtion fail after connected a 1GbE module, you may try the following steps:

Step 1: Remove the 1GbE module from the LAN port.

Step 2: Disable the LAN port function.

Step 3: Enable the LAN port function.

Or you may remove the 1GbE module from the LAN port and then restart the system.

1.5.3. RJ45 2x6 LAN Ports
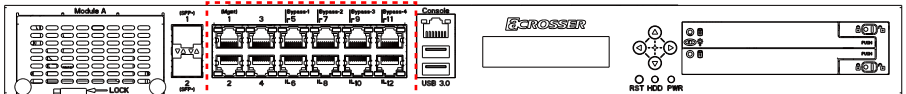
LED	Light	Status
Green/Yellow	Off	10Mbps
	Yellow On	100Mbps
	Green On	1000Mbps
Green	Green On	Link w/o Activity
	Green Blink	Link with Activity
	Off	No Link

1.5.4. Console / 2x USB 3.0
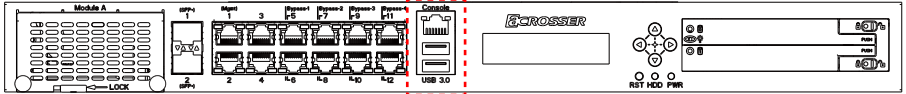
Pin #	Signal	Pin #	Signal
1	DCD#	2	RXD
3	TXD	4	DTR#
5	GND	6	DSR#
7	RTS#	8	CTS#
9	RI#		

1.5.5. LCM Display / Menu Buttons / Indicators
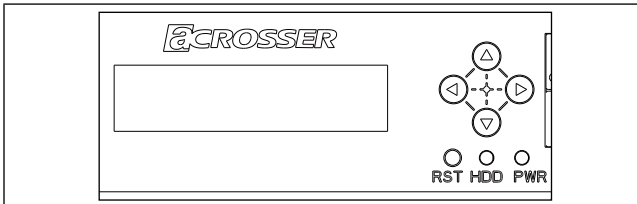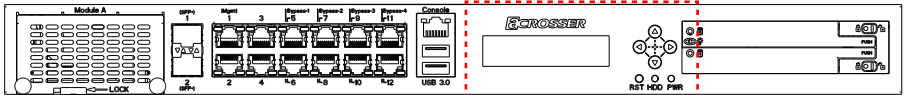
LCM Display	Graphic Mode: 100 x 16 Pixels
	Character Mode: 16-character x 2-line
Menu Buttons	LCM menu control buttons
RST	Reset button
HDD	HDD activity indicator
PWR	Power indicator

1.5.6. HDD Trays
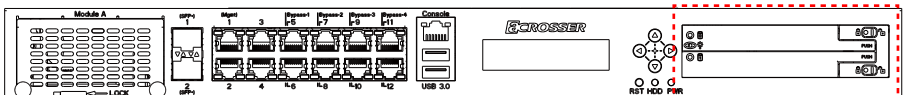
2x 2.5" HDD trays.

1.6.   Rear Panel
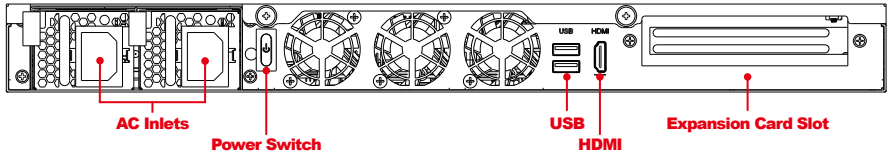
- **AC Inlets**

  Redundant AC power inlets.

- **Power Switch**

  Power on/off switch.

- **USB**

  2x USB 2.0 ports.

- **HDMI**

  HDMI connector.

- **Expansion Card Slot**

  PCI express card insert slot.

2. Installation

2.1. Rack Installaion

To mount this server into a 19-inch 4-post rack, you will need to purchase an optional slide-rail kit from Acrosser.

2.1.1. Required Tools

- 1x Phillips Screwdriver
- 1x 7mm 6-Point Hex Wrench

2.1.2. Slide-rail Kit Contents

The slide-rail kit is an optional 19-inch 4-post rack-mount accessory consist of:

- 2x Slide Rail Assemblies. A slide rail assembly can be installed on either the right or left side of the rack.
- 1x Screw Pack

Note: *The front-to-back rail spacing must be at least 671 mm (22.01 inches) and not more than 935.2 mm (30.68 inches) from the outside face of the front rail to the outside face of the back rail.*

2.1.3. Installing the Server Into a Rack with Slide-rail Kits

Step 1: Pull out each inner bracket from the slide-rail kits until it locks in the extended position. Push the slide-rail lock to release the inner bracket from the mounting bracket. Do the same to the other bracket.
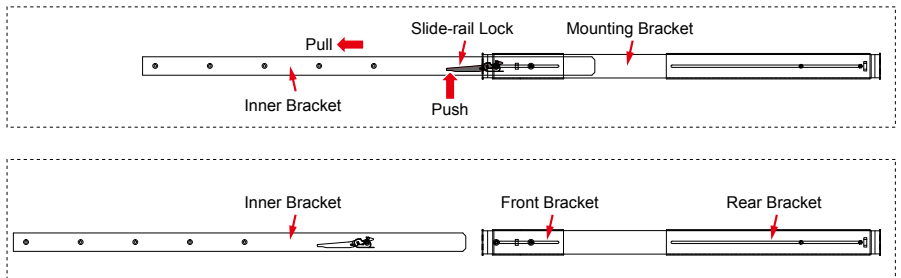
Step 2: Secure both left and right 1U mounting ears to the server's front panel chassis with your Phillips screwdriver.

Step 3: Secure both left and right inner brackets by three M4 or M5x5 screws to each of the server's left and right side with your Phillips screwdriver.
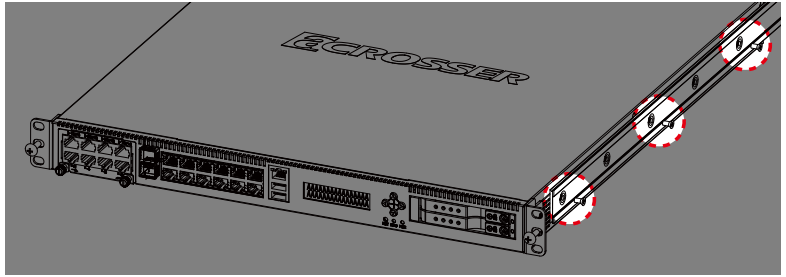
Step 4: Determine which rack hole numbers to use.
(a) If your rack has threaded mounting holes in the rack posts, determine whether the threads are metric or standard. Select the appropriate screws from the package included in the mounting kit.
(b) If your rack does not have threaded mounting holes, the mounting screws are secured with caged nuts.

Step 5: Loosely attach the front slide-rail to the front right rack-post using two screws into the upper and lower holes. Do not tighten the screws yet.

Step 6: Adjust the length of the slide-rail by sliding the rear bracket flange to reach the outside edge of the rear rack-post. Loosely attach the rear bracket to the rear right rack-post with two screws.

Step 7: Attach the second slide-rail to the left rack-post in a similar manner. Again, do not tighten the screws.
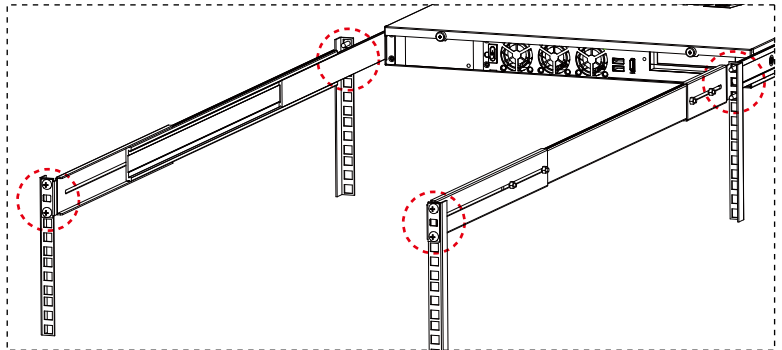
Step 8: Fully extend the front and rear brackets to where it reaches the rack-post. Now tighten the screws to lock the ends of the rails in place with your Phillips screwdriver.
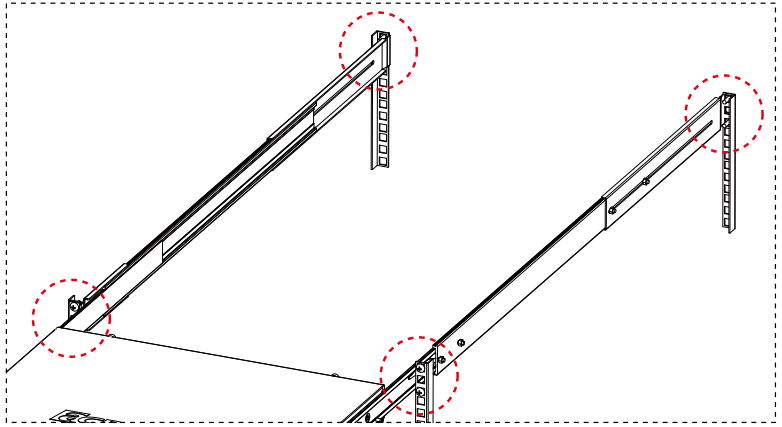
Step 9:   Tighten the four screws that fasten each of the front and rear brackets with your 6-point hex wrench.
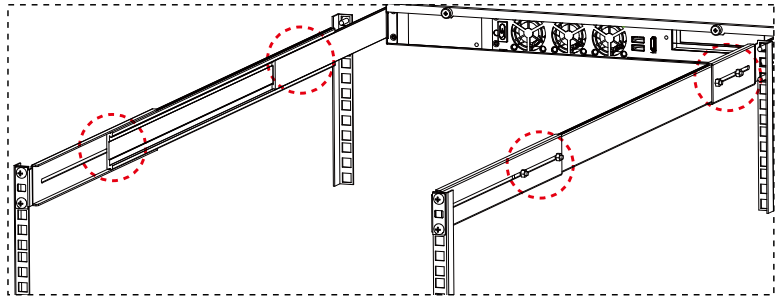
Step 10:   Slide the chassis all the way into the rack until the chassis mounting ears are against the front posts.

Step 11:   Tighten the chassis mounting ears to the rack posts each by using one screw into the middle hole.
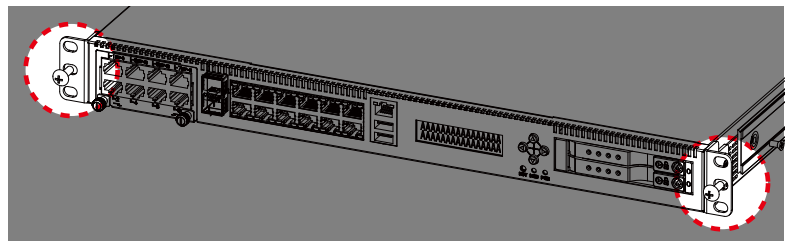
2.2. LAN Module Insertion

To install the LAN module into the ANR-C236N1-K system:

Step 1:   Remove the plate that originally covers the **Module A** slot on ANR-C236N1-K system.
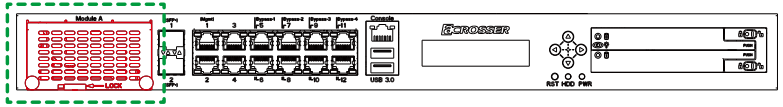
Step 2:   Insert the LAN module into the **Module A** slot on ANR-C236N1-K system.
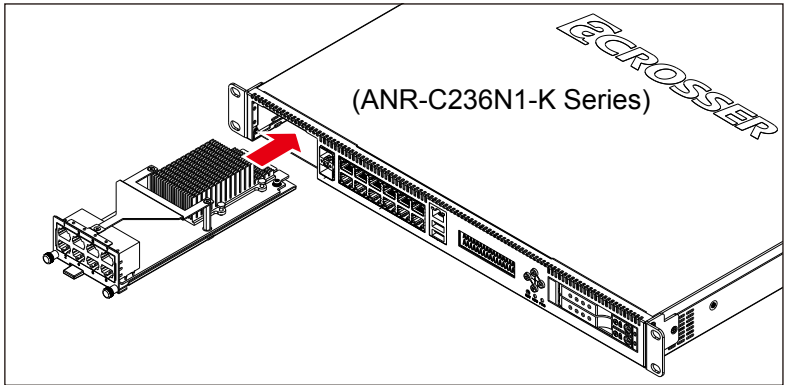
Step 3:   Push the locker left to lock the board into system.
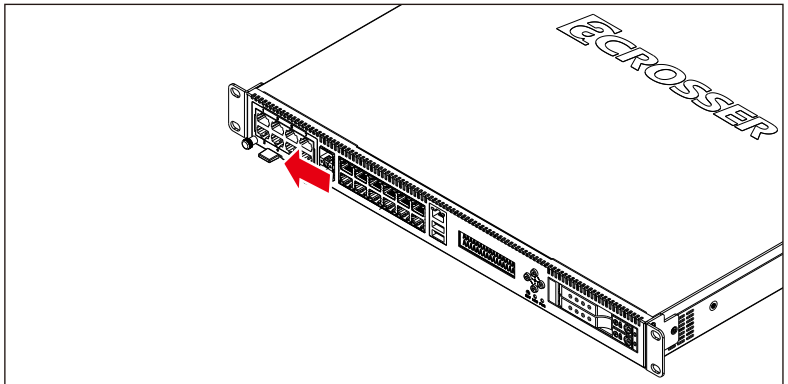
2.2.1. LAN Module Extraction

To uninstall the LAN module from the ANR-C236N1-K system:

Step 1: Push the locker right to loosen the board.
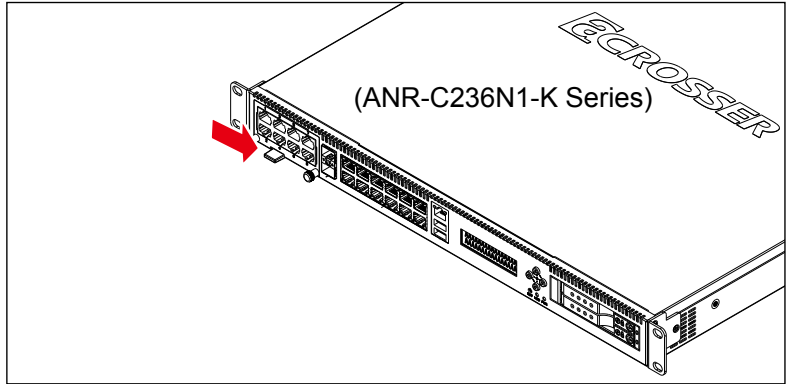
Step 2: Grab both knobs of the LAN module. Carefully pull the board out of the slot. Do not drop the board.
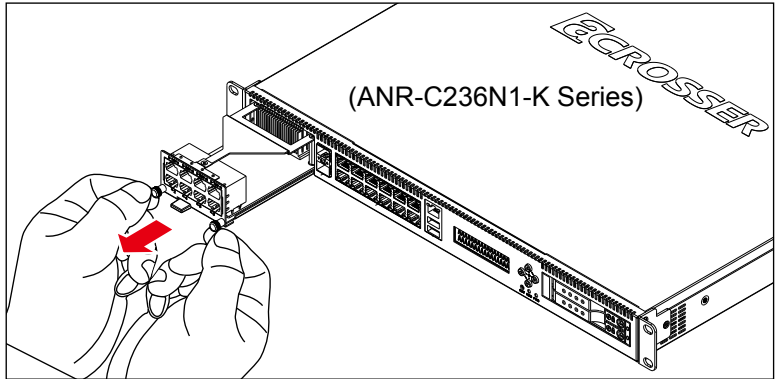
2.3. Hard Disk Insertion

To install your 2.5" HDD:
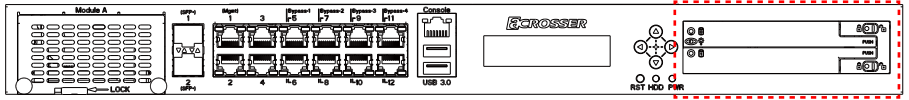
Step 1:   Push the latch right, a white circle appears. The door is unlocked.

(ANR-C236N1-K Series)
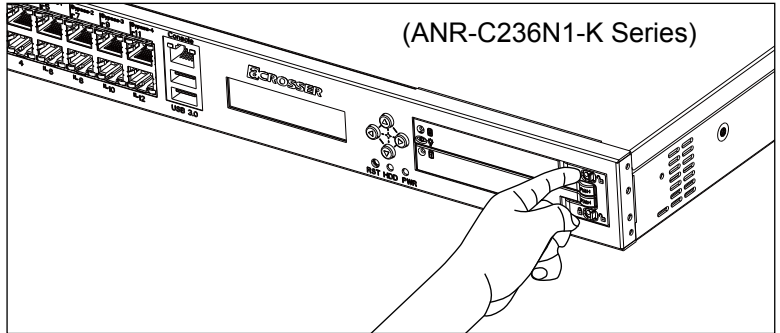
Step 2:   Push the door open.

(ANR-C236N1-K Series)
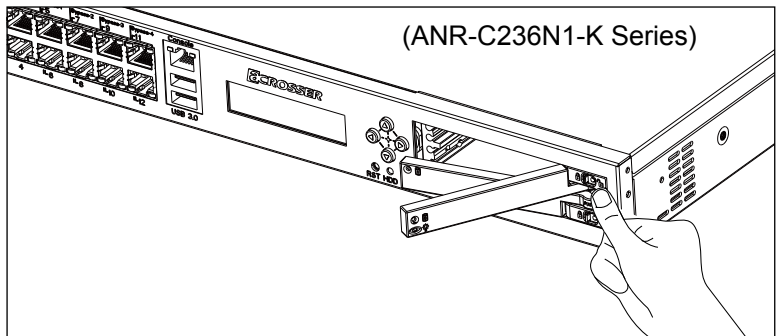
Step 3:   Insert your HDD into the tray. Close the door, the HDD will be slided into its position.

Step 4:   Push the latch left, a red circle appears. The door is locked.

2.4.   Riser Card Installation

To install your riser card:

Step 1:   Remove the top cover. Unscrew the two screws that were originally securing the holder plate to the **PCIEXP2** slot. And then unscrew the two screws that were originally securing a cover plate to the real panel.
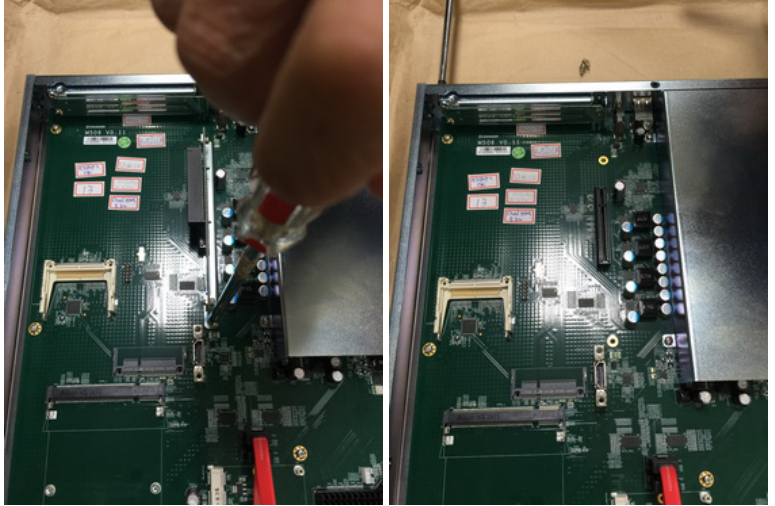
Step 2:   Unscrew the cover plate shield.

Note: *Keep these screws safely on your table.*

Step 2:   Secure your riser card with one screw to the cover plate.

Step 3:   Insert your riser card into the holder plate.
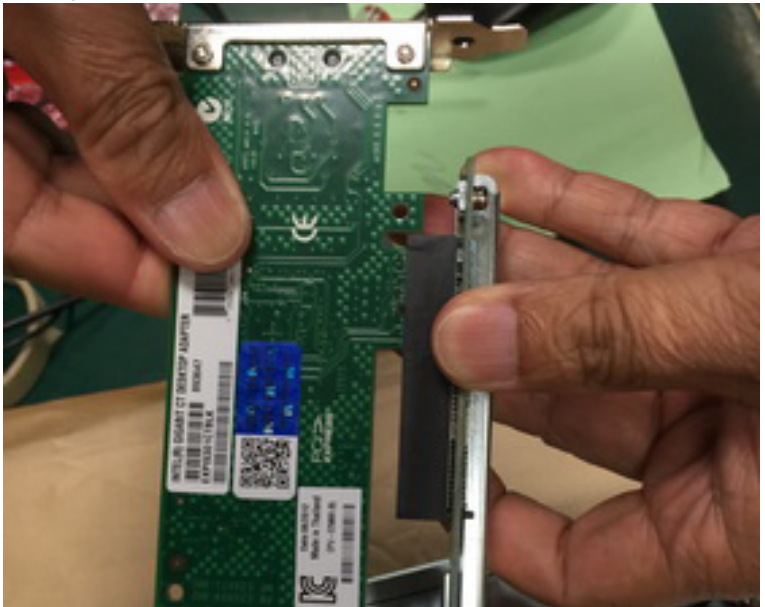
Step 4:   Firmly insert your riser card into the **PCIEXP2** slot on ANR-C236N1-K
          Series. Screw the holder plate with two screws to secure the riser card to
          the **PCIEXP2** slot.

Step 5: Screw the cover plate with two screws to secure the riser card to the real panel.

Step 6: Replace the top cover.

2.5. LCM Display
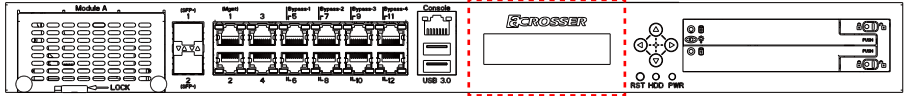
Graphic Mode: 100 x 16 Pixels

Character Mode: 16-character x 2-line

2.5.1. Board Layout (Model: ADB-LCM3Z1)
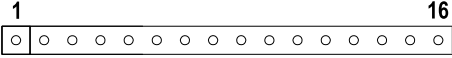
Top Side:
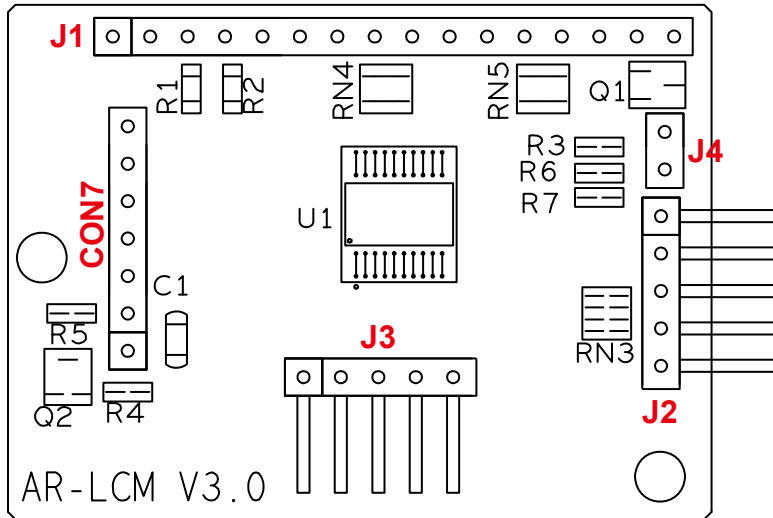
2.5.2. Connector Pin Definition

- **J1**
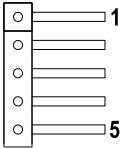
  LCM Module Connector

Pin #	Signal	Pin #	Signal
1	VSS:0V	**9**	DB2
2	VDD:5V	**10**	DB3
3	VEE	**11**	DB4
4	RS	**12**	DB5
5	R/W#	**13**	DB6
6	Chip Enable	**14**	DB7
7	DB0	**15**	BL VCC
8	DB1	**16**	BL CTL

- **J2**
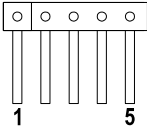
  Button In Connector

Pin #	Signal
1	GND
2	KEY0 (Up)
3	KEY1 (Right)
4	KEY2 (Left)
5	KEY3 (Down)

- **J3**

  PIC FW Update Connector

Pin #	Signal
1	+5V VCC
2	ICSP_DAT
3	ICSP_CLK
4	VPP
5	GND
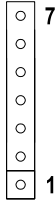
- **J4**

  H/W Strapping Connector

Pin 1, 2	Function
Short	Character Mode LCM
Open	Graphic Mode LCM

- **CON7**

  UART & Power In Connector

Pin #	Signal
1	POR (Reserved)
2	+5V VCCIN
3	RXD
4	TXD
5	CTS# (Reserved)
6	RTS# (Reserved)
7	GND

2.6. Menu Buttons / Indicators

- **Menu Buttons**

  LCM menu control buttons.

  ▲ Up

  ◄ Left   ► Right

  ▼ Down

- **RST**

  Reset button.

- **HDD**
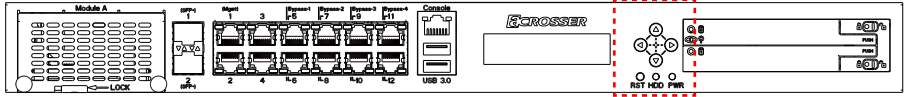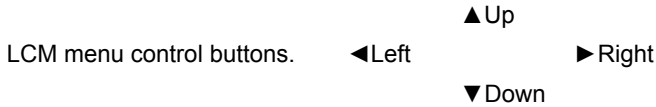
  HDD activity indicator.

- **PWR**

  Power indicator.

2.6.1. Board Layout (Model: ADB-FPIOZ1)

Top Side:
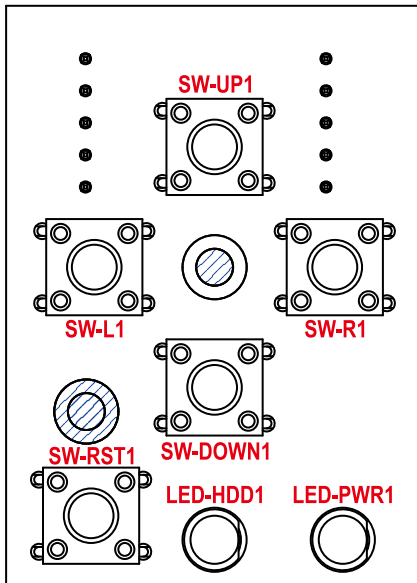
Bottom Side:
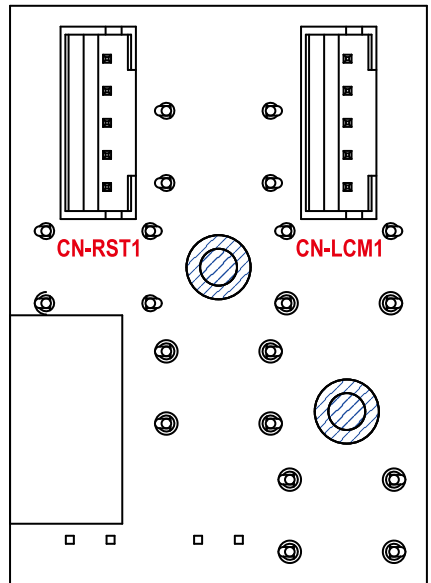
2.6.2. Connector/Button Pin Definition

- **CN_LCM1**

  Connect to LCM Module (ADB-LCM3Z1)

Pin #	Signal
1	GND
2	KEY0 (Up)
3	KEY1 (Right)
4	KEY2 (Left)
5	KEY3 (Down)
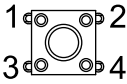
- **CN_RST1**

  Connect to M/B (AMB-C236N1)

Pin #	Signal
1	GND
2	SW-RST1 Pin1, Pin2
3	LED-PWR1+, LED-HDD1+
4	LED-PWR1- (Green)
5	LED-HDD1- (Yellow)
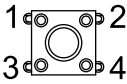
- **SW-RST1**

  Reset Button

Pin #	Signal
1, 2	CN-RST1 Pin2
3, 4	GND
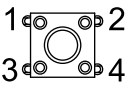
- **SW-UP1**

  KEY0 (Up) Button

Pin #	Signal
1, 2	CN-LCM1 Pin2
3, 4	GND
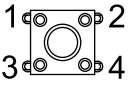
- **SW-R1**

KEY1 (Right) Button

Pin #	Signal
1, 2	CN-LCM1 Pin3
3, 4	GND
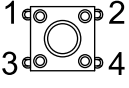
- **SW-L1**

KEY2 (Left) Button

Pin #	Signal
1, 2	CN-LCM1 Pin4
3, 4	GND

- **SW-DOWN1**

KEY3 (Down) Button

Pin #	Signal
1, 2	CN-LCM1 Pin5
3, 4	GND

3. BIOS Settings

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

- Main Setup
- Advanced Setup
- Chipset Setup
- Security Setup
- Boot Setup
- Save & Exit Setup

Once you enter the Award BIOS™ CMOS Setup Utility, the Main Menu will appear on the screen. Use the arrow keys to highlight the item and then use the <Pg Up> <Pg Dn> keys to select the value you want in each item.

3.1. Main Setup

The BIOS setup main menu includes some options. Use the [Up/Down] arrow key to highlight the option, and then press the <**Enter**> key to select the item and configure the functions.

```
        Aptio Setup Utility - Copyright (C) 2017 American Megatrends, Inc.
        Main  Advanced  Chipset  Security  Boot  Save & Exit

    BIOS Vendor                American Megatrends       Set the Date. Use Tab to
    Core Version               5.11                      switch between Date
    Compliancy                 UEFI 2.4; PI 1.3          elements.
    Project Version            M506 V100-001
    Build Date and Time        01/01/2017 11:22:33
    Access Level               Administrator

    Processor Information
    Name                       KabyLake DT
    Brand String               Intel(R) Gen Core™
                               i3-7101E
    Frequency                  3300 MHz
    Processor ID               506E3
    Stepping                   R0/S0/N0                  →←: Select Screen
    Number of Processors       2Core(s) / 2Thread(s)     ↑↓: Select Item
                                                         Enter: Select
    Total Memory               32768 MB                  +/-: Change Opt.
    Memory Frequency           2133 MHz                  F1: General Help
                                                         F2: Previous Values
    ME FW Version              11.0.10.1002              F3: Optimized Defaults
    ME Firmware SKU            Corporate SKU             F4: Save & Exit
                                                         ESC: Exit
    System Date                [Sun 01/01/2017]
    Ststem Time                [11:22:33]

        Version 2.18.1256. Copyright (C) 2017 American Megatrends, Inc.
```

Note: *Listed at the bottom of the menu are the control keys. If you need any help with the item fields, you can press <**F1**> key, and it will display the relevant information.*

- **System Date**
  Set the system date. Note that the 'Day' automatically changes when you set the date.

- **System Time**
  Set the system time.

3.2.   Advanced Setup

```
        Aptio Setup Utility - Copyright (C) 2017 American Megatrends, Inc.
     Main  Advanced  Chipset  Security  Boot  Save & Exit

    COM 1 Setting                                 SATA Device Options
    LCM Setting                                   Settings
  ► SATA Configuration
  ► W83627DHG HW Monitor
  ► Serial Port Console Redirection
  ► Lan Bypass Function
    TPM Clear Operation        [None]
    Chassis Function           [Disabled]
    Boot Lan Port Select       [Disable PXE]
    Boot Select                [UEFI]


                                                  →←: Select Screen
                                                  ↑↓: Select Item
                                                  Enter: Select
                                                  +/-: Change Opt.
                                                  F1: General Help
                                                  F2: Previous Values
                                                  F3: Optimized Defaults
                                                  F4: Save & Exit
                                                  ESC: Exit



        Version 2.18.1256. Copyright (C) 2017 American Megatrends, Inc.
```

- **TPM Clear Operation**
   Schedule an Operation for the Security Device.

- **Chassis Function**
  This item enables or disables the chassis open detection.

- **Boot Lan Port Select**
  Select Lan Port to Boot. The options are: [Disable PXE], [Lan Port 1], [Lan Port 2]... [Lan Port 12].

- **Boot Select**
  This option controls Legacy/UEFI boot.

3.2.1. SATA Configuration

SATA device options settings.

```
          Aptio Setup Utility - Copyright (C) 2017 American Megatrends, Inc.
            Advanced

     SATA Controller(s)            [Enabled]                Enable or disable SATA
     SATA Mode Selection           [AHCI]                   Device.

     Serial ATA Port 0             Empty
       Software Preserve           Unknown
       SATA 1                      [Enabled]
       Hot Plug                    [Disabled]
       SATA Device Type            [Hard Disk Driver]

     Serial ATA Port 1             Empty
       Software Preserve           Unknown
       SATA 2                      [Enabled]
       Hot Plug                    [Disabled]
       SATA Device Type            [Hard Disk Driver]       →←: Select Screen
                                                            ↑↓: Select Item
     Serial ATA Port 2             Empty                    Enter: Select
       Software Preserve           Unknown                  +/-: Change Opt.
       MSATA 1                     [Enabled]                F1: General Help
       Hot Plug                    [Disabled]               F2: Previous Values
       SATA Device Type            [Hard Disk Driver]       F3: Optimized Defaults
                                                            F4: Save & Exit
     Serial ATA Port 3             Empty                    ESC: Exit
       Software Preserve           Unknown
       CFAST 1                     [Enabled]
       Hot Plug                    [Disabled]
       SATA Device Type            [Hard Disk Driver]

          Version 2.18.1256. Copyright (C) 2017 American Megatrends, Inc.
```

- **SATA Controller(s)**
  Enable or disable SATA device.

- **SATA Mode Selection**
  Determines how SATA controller(s) operate.

- **SATA 1, SATA 2, MSATA 1, CFAST 1**
  Enable or disable SATA port.

- **Hot Plug**
  Designates this port as Hot Pluggable.

- **SATA Device Type**
  Identify the SATA port is connected to Solid State Drive or Hard Disk Drive.

3.2.2. W83627DHG HW Monitor

Dsiplay hardware monitor status.

```
        Aptio Setup Utility - Copyright (C) 2017 American Megatrends, Inc.
         Advanced

   PC Health Status                                    Enable or Disable Smart
                                                       Fan
   Smart Fan Function            [Enabled]
   System temperature           : +29°C
   CPU temperature              : +47°C
   SYSFAN1 Speed                : 6000 RPM
   SYSFAN2 Speed                : 6000 RPM
   SYSFAN3 Speed                : 6000 RPM
   VCORE                        : +1.056 V




                                                       →←: Select Screen
                                                       ↑↓: Select Item
                                                       Enter: Select
                                                       +/-: Change Opt.
                                                       F1: General Help
                                                       F2: Previous Values
                                                       F3: Optimized Defaults
                                                       F4: Save & Exit
                                                       ESC: Exit



         Version 2.18.1256. Copyright (C) 2017 American Megatrends, Inc.
```

- **Smart Fan Function**
  Enable or disable the smart fan function.

- **System temperature**
  This item displays the system temperature.

- **CPU temperature**
  This item displays the CPU temperature.

- **SYSFAN1 Speed**
  This item displays the System 1 Fan speed.

- **SYSFAN2 Speed**
  This item displays the System 2 Fan speed.

- **SYSFAN3 Speed**
  This item displays the System 3 Fan speed.

- **VCORE**
  This item displays the VCORE voltage.

3.2.3. Serial Port Console Redirection

Set serial port console redirection.

```
          Aptio Setup Utility - Copyright (C) 2017 American Megatrends, Inc.
         Advanced

    COM1                                              The settings specify how the
    Console Redirection          [Enabled]            host computer and the remote
  ▶ Console Redirection Settings                       computer (which the user is
                                                      using) will exchange data.
                                                      Both computers should have the
                                                      same or compatible setttings.




                                                      →←: Select Screen
                                                      ↑↓: Select Item
                                                      Enter: Select
                                                      +/-: Change Opt.
                                                      F1: General Help
                                                      F2: Previous Values
                                                      F3: Optimized Defaults
                                                      F4: Save & Exit
                                                      ESC: Exit



           Version 2.18.1256. Copyright (C) 2017 American Megatrends, Inc.
```

- **Console Redirection**
  Enable/Disable Consol Redirection.

- **Console Redirection Settings**
  The settings specify how the host computer and the remote computer (which the user is using) will exchange data. Both computers should have the same or compatible setttings.

3.2.4. Lan Bypass Function

```
         Aptio Setup Utility - Copyright (C) 2017 American Megatrends, Inc.
     Advanced

     PIC 1-1 POWER ON              [NORMAL]
     PIC 1-1 POWER OFF             [NORMAL]
     PIC 1-1 WATCH DOG TIMEOUT     [PASS]

     PIC 1-2 POWER ON              [NORMAL]
     PIC 1-2 POWER OFF             [NORMAL]
     PIC 1-2 WATCH DOG TIMEOUT     [PASS]

     PIC 1-3 POWER ON              [NORMAL]
     PIC 1-3 POWER OFF             [NORMAL]
     PIC 1-3 WATCH DOG TIMEOUT     [PASS]

     PIC 1-4 POWER ON              [NORMAL]
     PIC 1-4 POWER OFF             [NORMAL]        →←: Select Screen
     PIC 1-4 WATCH DOG TIMEOUT     [PASS]          ↑↓: Select Item
                                                   Enter: Select
                                                   +/-: Change Opt.
                                                   F1: General Help
                                                   F2: Previous Values
                                                   F3: Optimized Defaults
                                                   F4: Save & Exit
                                                   ESC: Exit


         Version 2.18.1256. Copyright (C) 2017 American Megatrends, Inc.
```

3.3.   Chipset Setup

```
         Aptio Setup Utility - Copyright (C) 2017 American Megatrends, Inc.
     Main  Advanced  Chipset  Security  Boot  Save & Exit

     DVMT Pre-Allocated            [32M]          Select DVMT 5.0
                                                  Pre-Allocated (Fixed)
                                                  Graphics Memory size
                                                  used by the Internal
                                                  Graphics Device.









                                                  →←: Select Screen
                                                  ↑↓: Select Item
                                                  Enter: Select
                                                  +/-: Change Opt.
                                                  F1: General Help
                                                  F2: Previous Values
                                                  F3: Optimized Defaults
                                                  F4: Save & Exit
                                                  ESC: Exit


         Version 2.18.1256. Copyright (C) 2017 American Megatrends, Inc.
```

- **DVMT Pre-Allocated**
  Select DVMT 5.0 Pre-Allocated (Fixed) Graphics Memory size used by the Internal Graphics Device.

3.4. Security Setup

```
         Aptio Setup Utility - Copyright (C) 2017 American Megatrends, Inc.
    Main  Advanced  Chipset  Security  Boot  Save & Exit

    Password Description                          Set Administrator
                                                  Password
    If ONLY the Administrator's password is set,
    then this only limits access to Setup and is
    only asked for when entering Setup.
    If ONLY the User's password is set, then this
    is a power on password and muste be entered to
    boot or enter Setup. In Setup the User will
    have Administrator rights.
    The password length must be
    in the following range:
    Minimum length          3
    Maximum length          20
                                                  →←: Select Screen
                                                  ↑↓: Select Item
    Administrator Password                        Enter: Select
                                                  +/-: Change Opt.
                                                  F1: General Help
                                                  F2: Previous Values
                                                  F3: Optimized Defaults
                                                  F4: Save & Exit
                                                  ESC: Exit


         Version 2.18.1256. Copyright (C) 2017 American Megatrends, Inc.
```

Once a password is effective, you have to enter the administrator password or user password before you access into the BIOS setup interface.

- **Administrator Password**
  This item allows you to configure an administrator Password. Press <Enter> to create a new password, type the password, then press <Enter> again, and then you will be require to type the password again for confirmation. At last, press <F4> then <Enter> to save and reboot the system to make the password effective.

  The administrator password allows you to make changes to all BIOS settings.

3.5. Boot Setup

```
        Aptio Setup Utility - Copyright (C) 2017 American Megatrends, Inc.
     Main  Advanced  Chipset  Security  Boot  Save & Exit

  Boot LOGO                      [Enabled]              Enables or disables
                                                        Quiet Boot option.
  Boot Option Priorities




                                                        →←: Select Screen
                                                        ↑↓: Select Item
                                                        Enter: Select
                                                        +/-: Change Opt.
                                                        F1: General Help
                                                        F2: Previous Values
                                                        F3: Optimized Defaults
                                                        F4: Save & Exit
                                                        ESC: Exit


        Version 2.18.1256. Copyright (C) 2017 American Megatrends, Inc.
```

- **BOOT LOGO**
  Enables or disables Quiet Boot option.

3.6. Save & Exit Setup

```
        Aptio Setup Utility - Copyright (C) 2017 American Megatrends, Inc.
     Main  Advanced  Chipset  Security  Boot  Save & Exit

  Save Changes and Reset                                Reset the system after
  Discard Changes and Reset                             saving the changes.
  Restore Defaults




                                                        →←: Select Screen
                                                        ↑↓: Select Item
                                                        Enter: Select
                                                        +/-: Change Opt.
                                                        F1: General Help
                                                        F2: Previous Values
                                                        F3: Optimized Defaults
                                                        F4: Save & Exit
                                                        ESC: Exit


        Version 2.18.1256. Copyright (C) 2017 American Megatrends, Inc.
```

- **Save Changes and Reset**
  Press <Enter> on this item and select [Yes]. This saves the changes to the CMOS and exits the

  BIOS Setup program. Select [No] or press <Esc> to return to the BIOS Setup Main Menu.

- **Discard Changes and Reset**
  Press <Enter> on this item and select [Yes]. This exits the BIOS Setup without saving any changes made in BIOS Setup to the CMOS. Select [No] or press <Enter> to return to the BIOS Setup Main Menu.

- **Restore Defaults**
  Press <Enter> on this item and select [Yes] to load the default settings of the BIOS. The BIOS default settings help the system to operate in optimum state. Always load the Optimized defaults after updating the BIOS or after clearing the CMOS values.

4. Software Installation and Programming Guide

4.1. Introduction

4.1.1. Environment

This test utility develop based on kernel 4.4 or above (Ubuntu 16.10 Server 64bit).

4.1.2. GPIO

The ANR-C236N1-K Series provides GPIO interface. Users can use the GPIO APIs to control GPO Pin.

4.1.3. Watchdog

The ANR-C236N1-K Series provides a Watchdog Timer. Users can use the Watchdog APIs to configure and to access the Watchdog timer. The Watchdog timer can be set to 1~255 seconds. Setting the timer to zero disables the timer. The remaining seconds of the timer to reboot can be read from the timer.

4.1.4. LAN Bypass Subsystem

Four pairs of LAN ports on ANR-C236N1-K implement the bypass function. Users can invoke the LAN Bypass APIs to control the bypass states of the LAN ports.

1. Get bypass firmware version.
2. Set bypass wdt.
3. Set bypass wdt action.
4. Get bypass wdt action.
5. Set bypass power on action.
6. Get bypass power on action.
7. Set bypass power off action.
8. Get bypass power off action.
9. Set bypass current action.
10. Get bypass current action.

4.1.5. LCD Control Module

The LCM (short for LCD Control Module) APIs provide interfaces to control the module. By invoking these APIs, programmers can implement the applications which have the functions listed below:

1. Clear LCM screen.
2. Turn on or off the cursor on the screen.
3. Move the cursor on the screen.
4. Turn on or off the backlight on the screen (LCD panel only).
5. Get the identification of the pressed key of the LCM.
6. Show the text on the screen (text mode only).
7. Get LCM PIC Version.
8. Back space on the screen.
9. Get the LCM mode (text or graphic).
10. Set cursor Position (Graphic mode only).
11. Get cursor Position (Graphic mode only).
12. Graphic write on LCM (Graphic mode only).

4.1.6. Power Supply Unit

The Power supply APIs provide two protocols, pmbus and i2c, to control the module. By invoking these APIs, programmers can implement the applications which have the functions listed below:

Pmbus:
1. Read vout 12v.
2. Read vout 3.3v.
3. Read vout 5v.
4. Get power supply unit status.

I2c:
1. Get power supply unit temperature.
2. Read vout 12v.
3. Read vout 3.3v.
4. Read vout 5v.
5. Get power supply unit fan status.
6. Get power supply unit status.

4.1.7. Chassis Opened

The chassis supply APIs provide to control the module. By invoking these APIs, programmers can implement the applications which have the functions listed below.

1. Get chassis opened status.
2. Set chassis opened (Enabled or Disabled).

4.2. File Descriptions

4.2.1. GPIO/Watchdog/LAN Bypass Subsystem/LCM

1. TestUtility.exe

The Watchdog, LAN Bypass Subsystem, Power Supply Unit, LCM Control Module and chassis open. Graphic user interface bin binary.

2. Libw83627.h

This file includes the declarations of the APIs and macro definitions.

3. Libw83627.a

The static library for linux.

4. Libw83627.so

The dynamic library for linux.

5. Install_driver

This file is linux shell script file. Run this file can help you install environment and modprobe driver on linux.

6. readme

Use this utility first. Please read the readme file first.

4.3. API List and Descriptions

4.3.1. GPIO

Syntax:	Get_gpi_status(int pin)
Description:	Get the status of GPIO input pins status.
Parameters:	This function fills in an integer variable as the parameter.
	The pin0 ~ pin3 is the status of the input pins.
Return Value:	1: HIGH, 0: LOW.

Syntax:	Get_gpo_status(int pin)
Description:	Get the status of GPIO output pins status.
Parameters:	This function fills in an integer variable as the parameter.
	The pin0 ~ pin3 is the status of the output pins.
Return Value:	1: HIGH, 0: LOW.

Syntax:	Set_gpo(int pin, int value)
Description:	Set the status of GPIO output value.
Parameters:	Set value 0 is Low, 1 is High
Return Value:	If the function sets the values successfully, it returns 0 or -1, any other returned value stands for error.

4.3.2. Watchdog

Syntax:	Void wdt_start(int _timevalue)
Description:	This function gets the watchdog timer register to the timevalue and starts to count down.
Parameters:	The parameter 'val' is the value to set to watchdog timer register. The range is 1 ~ 255.
Return Value:	This function returns the value of the time counter and returns it to the caller as an unsigned integer.

Syntax:	Int get_wdt_count(void)
Description:	This function reads the value of the watchdog time counter.
Parameters:	None.
Return Value:	This function returns the value of the time counter.

Syntax:	Void wdt_stop(void)
Description:	This function sets the watchdog timer stop.
Parameters:	None.
Return Value:	None.

4.3.3. LAN Bypass Subsystem

Syntax:	int get_bypass_firmware_ver(char *ver)
Description:	This function can get bypass firmware version and data to save in char pointer.
Parameters:	char pointer, this pointer to 7 character array.
Return Value:	0: Successful, -1: fail.

Syntax:	int set_bypass_wdt(int pair, int time)
Description:	This function can set which pair bypass Wdt timer.
Parameters:	pair: 1-4 , time: 1-255(sec), 0: stop.
Return Value:	0: Successful, -1: fail.

Syntax:	int set_bypass_wdt_action(int pair, int action)
Description:	This function can set which pair bypass Wdt time up action.
Parameters:	pair: 1-4, action: 0: bypass, 1: normal.
Return Value:	0: Successful, -1: fail.

Syntax:	int get_bypass_wdt_action(int pair)
Description:	This function can get which pair bypass Wdt time up action.
Parameters:	pair: 1-4.
Return Value:	0: bybpass, 1: normal, -1: fail.

Syntax:	int set_bypass_poweron_action(int pair, int action)
Description:	This function can set which pair bypass power on action.
Parameters:	pair: 1-4, action: 0: bypass, 1: normal.
Return Value:	0: Successful, -1: fail.

Syntax:	int get_bypass_poweron_action(int pair)
Description:	This function can get which pair bypass power on action.
Parameters:	pair: 1-4.
Return Value:	0: bybpass, 1: normal, -1: fail.

Syntax:	int set_bypass_poweroff_action(int pair, int action)
Description:	This function can set which pair bypass power off action.
Parameters:	pair: 1-4, action: 0: bypass, 1: normal.
Return Value:	0: Successful, -1: fail.

Syntax:	int get_bypass_poweroff_action(int pair)
Description:	This function can get which pair bypass power off action.
Parameters:	pair: 1-4.
Return Value:	0: bybpass, 1: normal, -1: fail.

Syntax:	int set_bypass_current_action(int pair, int action)
Description:	This function can set which pair bypass current action.
Parameters:	pair: 1-4, action: 0: bypass, 1: normal.
Return Value:	0: Successful, -1: fail.

Syntax:	int get_bypass_current_action(int pair)
Description:	This function can get which pair bypass current action.
Parameters:	pair: 1-4.
Return Value:	0: bybpass, 1: normal, -1: fail.

4.3.4. LCD Control Module

Syntax:	i32 clrscrLcm(void)
Description:	Clear the screen of the LCM.
Parameters:	None.
Return Value:	0 after the screen is cleared.

Syntax:	i32 cursorLcm(bool mode)
Description:	According to the argument 'mode', show the cursor on the LCM screen or eliminate the cursor on the LCM screen. The position of the cursor is unchanged. mode = true, show the cursor. mode = false, eliminate the cursor.
Parameters:	None.
Return Value:	0 after the cursor has been shown or eliminated.

Syntax:	i32 cursorActionLcm(i32 type)
Description:	According to the argument 'type', move the cursor to the indicated position. The displayed text is not altered.
	type = HOME, move the cursor to row 0, column 0.
	type = MOVERIGHT, move the cursor to the column which is to the right of its original position if the original column < 15.
	type = MOVELEFT, move the cursor to the column which is to the left of its original position if the original column > 0.
	type = MOVEBACK, move the cursor to the column which is to the left of its original position and delete the character at the new position if the original column > 0.
Parameters:	None.
Return Value:	0 after the cursor is moved.

Syntax:	i32 displayLcm(bool mode)
Description:	Show the text on the LCM screen or eliminate the text on the LCM screen. The content of the text is not altered.
	mode = true, show the text.
	mode = false, eliminate the text.
Parameters:	None.
Return Value:	0 after the text has been shown or eliminated.

Syntax:	i32 getKeyLcm(void)
Description:	Scan the LCM and return the identification of the pressed direction key.
Parameters:	None.
Return Value:	'UP' if the 'up' direction key is pressed.
	'RIGHT' if the 'right' direction key is pressed.
	'LEFT' if the 'left' direction key is pressed.
	'DOWN' if the 'down' direction key is pressed.
	'NONE' if none of the keys is pressed.

Syntax:	i32 getPositionLcm(i32 *row, i32 *column)
Description:	Get the position of the cursor and write the coordinate to the memory pointed at by arguments 'row' and 'column'.
Parameters:	None.
Return Value:	0 if the request for the coordinate has been served.

Syntax:	i32 setPositionLcm(i32 row, i32 column)
Description:	Set the position of the cursor according to the arguments 'row' and 'column'.
Parameters:	None.
Return Value:	0 after the position has been set.
	-1 if the argument 'row' or 'column' meets any of the following conditions:
	(1) row is not 0.
	(2) row is not 1.
	(3) column is less than 0.
	(4) column is greater than 15.

Syntax:	i32 showLcm(i32 length, u8 *info)
Description:	Start from the current position of the cursor; print the text pointed at by 'info' to the LCM screen. The number of characters to be printed is at most 'length'. If the remaining columns available for printing the text is less than 'length', the number of the characters to be printed is:
	16 – (column number of the current position of the cursor).
Parameters:	None.
Return Value:	0 after the text is printed.

Syntax:	i32 getLCMPICVER(unsigned char *ver)
Description:	This function can get LCM PIC Version.
Parameters:	lcm pic version will save the unsigned char pointer parameters.
Return Value:	None.

Syntax:	int setBacklight(int mode)
Description:	This function can set LCM backlight, but only support LCD panel, not support OLED panel.
Parameters:	mode: 0: Turn off backlight, 1: Turn on backlight
Return Value:	None.

4.3.5. Power Supply Unit (PMBUS)

Syntax:	float pmbus_read_vout_12V(void)
Description:	This function can get power supply unit Vout 12V.
Parameters:	None.
Return Value:	float Vout 12V

Syntax:	float pmbus_read_vout_3V3(void)
Description:	This function can get power supply unit Vout 3.3V.
Parameters:	None.
Return Value:	float Vout 3.3V

Syntax:	float pmbus_read_vout_5V(void)
Description:	This function can get power supply unit Vout 5V.
Parameters:	None.
Return Value:	float Vout 5V

Syntax:	int get_pmbus_psu_status(int psu)
Description:	This function can get which power supply unit status.
Parameters:	psu: 0-1
Return Value:	0: Good, 1: Fail

4.3.6. Pmbus Command Code Summary

Support Command Code Table:

Command Code	Command Name	Data Format	Number of Data Bytes
03h	CLEAR_FAULTS(1)	Send Byte	0
20h	VOUT_MODE	Read Byte	1
79h	STATUS_WORD	Read Word	2
7Ah	STATUS_VOUT	Read Byte	1
7Bh	STATUS_IOUT	Read Byte	1
7Dh	STATUS_TEMPERATURE	Read Byte	1
80h	STATUS_OF_3V3 And 5V	Read Byte	1
8Bh	READ_+12V_VOUT	Read VOUT Mode	2
8Ch	READ_+12V_IOUT	Read Linear	2

Command Code	Command Name	Data Format	Number of Data Bytes
8Dh	READ_TEMPERATURE_1 (2)	Read Linear	2
96h	READ_+12V_POUT	Read Linear	2
99h	MFR_ID	Read ASCII	6
9Ah	MFR_MODEL	Read ASCII	13
9Bh	MFR_REVSION	Read ASCII	2
9Eh	MFR_SERIAL	Read ASCII	12
A7h	MFR_POUT_MAX	Read Linear	2
A8h	MFR_TAMBIENT_MAX	Read Linear	2
B0h	PSU_STATUS	Read Byte	1
D1h	READ_TOTAL_POUT (3)	Read Linear	2
D2h	READ_3V3_VOUT	Read VOUT Mode	2
D3h	READ_3V3_IOUT	Read Linear	2
D4h	REDA_3V3_POUT	Read Linear	2
D5h	READ_5V_VOUT	Read VOUT Mode	2
D6h	READ_5V_IOUT	Read Linear	2
D7h	READ_5V_POUT	Read Linear	2
FBh	Buzzer_Mute (4)	R/W Byte	1

Note 1:   Status will retain the last occurrence. Latch defined as the status. Must be cleared through the 03h (CLEAR_FAULTS) command. Please See the following Table.

| Command	Status Name	Status action
79h	STATUS_WORD	Latch
7Ah	STATUS_VOUT	Latch
7Bh	STATUS_IOUT	Latch
7Dh	STATUS_TEMPERATURE	Latch
80h	STATUS_OF_3V3 And 5V	Latch
B0h	PSU_STATUS	Automatic recovery

Note 2:   READ_TEMPERATURE_1 should provide the PDB Inlet Ambient temperature.

Note 3:   Read Total Power command only at +12 V, 3V3, 5V total power.

Note 4:   Buzzer will alert when any PSU fault occurs. Write 0x20 command in PMBus will be able to mute buzzer alarm. When PSU goes back to normal state, the register will be set at 0x00.

Contents in 20h (VOUT_MODE) Command Code:

Mode	Bits [7:5]	Bits [4:0] (Parameter)
Linear	000b	Five bit two's complement exponent for the mantissa delivered as the data bytes for an output voltage related command.
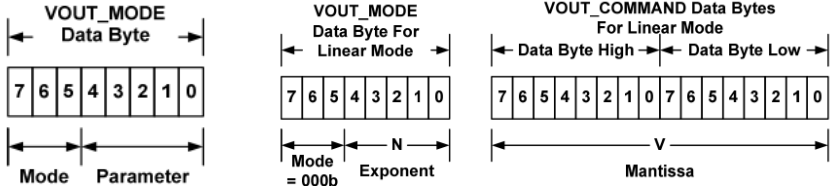
Note: *The Mode bits are set to 000b.*
The Voltage (ex.+12V_VOUT , 3V3_VOUT , 5V_VOUT), in volts, is calculated from the equation: **Voltage = V x 2^n**
Where:
Voltage is the parameter of interest in volts;
V is a 16 bit unsigned binary integer; and
N is a 5 bit two's complement binary integer.

Contents in 79h (STATUS_WORD) Command Code:

Byte	Bit Number	Status Bit Name	Meaning
Low	[7:0]	Reserved	Return=0
High	7	VOUT	+12V Output voltage warning has occurred = 1 ; Normal = 0
High	6	IOUT	+12V Output current warning has occurred = 1 ; Normal = 0
High	5	Reserved	Return=0
High	4	3V3/5V_VOUT&IOUT	3V3/5V Output voltage warning has occurred =1 ; Normal = 0
High	3	POWER_ GOOD#	The POWER_GOOD signal is OK = 1 ; FAIL = 0
High	[2:0]	Reserved	Return=0

Contents in 7Ah (STATUS_VOUT) Command Code:

Bit Number	Status Bit Name	Meaning
7	Reserved	Return=0
6	+12V_OV_WARNING	VOUT > 13.0V = 1 ; Normal = 0
5	+12V_UV_WARNING	VOUT < 11.0V = 1 ; Normal = 0
[4:0]	Reserved	Return=0

Contents in 7Bh (STATUS_IOUT) Command Code:

Bit Number	Status Bit Name	Meaning
[7:6]	Reserved	Return=0
5	+12V_OC_WARNING	+12V_IOUT > Max Current of 110%@1Sec = 1 ; Normal = 0
[4:0]	Reserved	Return=0

Contents in 7Dh (STATUS_TEMPERATURE) Command Code:

Bit Number	Status Bit Name	Meaning
[7:3]	Reserved	Return=0
3	AMBIENT_OT_FAULT	Ambient temperature >60°C = 1 ; Normal =0
2	AMBIENT_OT_WARNING	Ambient temperature >55°C = 1 ; Normal = 0
[1:0]	Reserved	Return=0

Contents in 80h (STATUS_OF_3V3 And 5V) Command Code:

Bit Number	Status Bit Name	Meaning
7	5V_OC_ FAULT	5V_IOUT > Max Current of 130%@ 1Sec = 1 ; Normal = 0
6	3V3_OC_FAULT	3V3_IOUT > Max Current of 130%@ 1Sec = 1 ; Normal = 0
5	5V_UV_WARNING	VOUT < 4.5V = 1 ; Normal = 0
4	3V3_UV_WARNING	VOUT < 3.0V = 1 ; Normal = 0
3	5V_OV_WARNING	VOUT > 5.5V = 1 ; Normal = 0
2	5V_OC_WARNING	5V_IOUT > Max Current of 110%@ 1Sec = 1 ; Normal = 0
1	3V3_OV_WARNING	VOUT > 3.6V = 1 ; Normal = 0
0	3V3_OC_WARNING	3V3_IOUT > Max Current of 110%@ 1Sec = 1 ; Normal = 0

Contents in B0h (PSU_STATUS) Command Code:

Bit Number	Status Bit Name	Meaning
[7:4]	Reserved	Return=0
3	PSU2 PRESENT	Module Plug OUT = 1 ; Module Plug IN = 0
2	PSU1 PRESENT	Module Plug OUT = 1 ; Module Plug IN = 0
1	PSU2 STATUS	FAIL = 1 ; OK = 0
0	PSU1 STATUS	FAIL = 1 ; OK = 0

MFR Meaning:

Command Code	Command Name	Meaning
99h	MFR_ID	ETASIS
9Ah	MFR_MODEL	EFRP-S2287HPM
9Bh	MFR_REVSION	A0 ~ Z9
9Eh	MFR_SERIAL	Code = 12 (ex. T201XXG00001)
A7h	MFR_POUT_MAX	280 (W)
A8h	MFR_TAMBIENT_MAX	40 (°C)

I^{2}C Address Set Table:

PDB MCU Device	4A
FRU Device (Option)	AC

4.3.7. Power Supply Unit (I^{2}C)

Syntax:	int get_i2c_psu_temperature(void)
Description:	This function can get power supply unit temperature.
Parameters:	None.
Return Value:	power supply temperature.

Syntax:	float get_i2c_psu_vout_3V3(void)
Description:	This function can get power supply unit Vout 3.3V.
Parameters:	None.
Return Value:	float Vout 3.3V.

Syntax:	float get_i2c_psu_vout_5V(void)
Description:	This function can get power supply unit Vout 5V.
Parameters:	None.
Return Value:	float Vout 5V.

Syntax:	float get_i2c_psu_vout_12V(void)
Description:	This function can get power supply unit Vout 12V.
Parameters:	None.
Return Value:	float Vout 12V.

Syntax:	int get_i2c_psu_fan_status(int fan)
Description:	This function can get which power supply fan status.
Parameters:	fan: 0-1.
Return Value:	0: Fail, 1: Good.

Syntax:	int get_i2c_psu_status(int psu)
Description:	This function can get which power supply status.
Parameters:	psu: 0-1.
Return Value:	0: Fail, 1: Good.

4.3.8. Application Notes for R1V2-5275V/I^{2}C

PS Fan Status Monitor:

The value can be obtained by reading CR92 which represents ps fan status.

Bit Number	Meaning
0	If bit 0=0 then ps1 fan fail else fan ok
1	If bit 1=0 then ps2 fan fail else fan ok

PS Status/present Monitor:

The value can be obtained by reading CR92 which represents ps status.

Bit Number	Meaning
0	If bit 0=0 then ps1 fail else ps1 ok
1	If bit 1=0 then ps2 fail else ps2 ok

Note 1: ***Bus address Select function:*** The Address is 5A.

Note 2: ***Temperature Measurement Function:*** The value can be obtained by reading CR14, 1LSB = 1 degree.

Note 3: ***Voltage Monitor Function:*** The VIN value can be obtained by reading CR10-12 which represents +3.3v, +5v, and +12v respectively, 1LSB = 0.0078125V
Example: (Please note that the value of 2, 6, and 11 were derived from component values.)
If CR10 = D7, then the +3.3V voltage = 0.0078125 * D7 * 2 = 3.359V
If CR11 = 6C, then the +5V voltage = 0.0078125 * 6C * 6 = 5.06V
If CR12 = 92, then the monitor +12V voltage = 0.0078125 * 92 * 11 = 12.5V

4.3.9. Chassis Opened

Syntax:	int get_chassis_open_status(void)
Description:	This function can get chassis status.
Parameters:	None.
Return Value:	0: Disabled, 1: Enabled.

Syntax:	void set_chassis_open(int value)
Description:	This function can set chassis opened.
Parameters:	0: Disabled, 1: Enabled.
Return Value:	None.

4.3.10. Notes

Syntax:	int libw83627_init(void)
Description:	use the watchdog, gpio function before, must be call this function first.
Parameters:	None.
Return Value:	0: Successful, -1: Fail

Syntax:	void lib_close(void)
Description:	if watchdog, gpio fuction not use on your program, please call this function.
Parameters:	None.
Return Value:	None.

Syntax:	void i2c_init(void)
Description:	use the psu(i2c), psu(pmbus), chassis, lan bypass, these function before, must be call this function first.
Parameters:	None.
Return Value:	None.

Syntax:	void i2c_close(void)
Description:	if the psu(i2c), psu(pmbus), chassis, lan bypass, these function not use on your program please call this function.
Parameters:	None.
Return Value:	None.

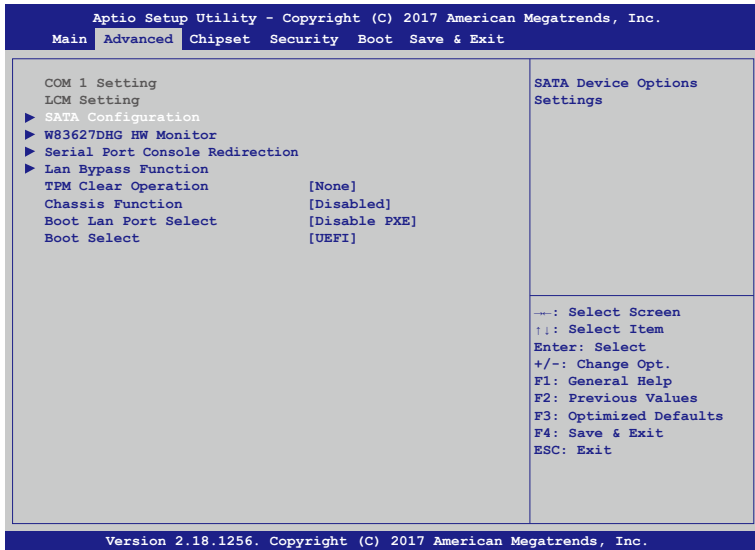| Syntax:	void CloseSerialPort(void)
Description:	if lcm function not use on your program, please call this function.
Parameters:	None.
Return Value:	None.

5.   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.

Q 2.   *How to enable the PXE function?*

- Enter BIOS setup **Advanced** menu, configure the **Boot Lan Port Select** option among [**Lan Port 1**], [**Lan Port 2**]... [**Lan Port 12**].
Reboot the system, the assigned Lan Port is ready to support the PXE boot.

```
         Aptio Setup Utility – Copyright (C) 2017 American Megatrends, Inc.
      Main  Advanced  Chipset   Security   Boot  Save & Exit

        COM 1 Setting                                    SATA Device Options
        LCM Setting                                      Settings
     ▶ SATA Configuration
     ▶ W83627DHG HW Monitor
     ▶ Serial Port Console Redirection
     ▶ Lan Bypass Function
       TPM Clear Operation          [None]
       Chassis Function             [Disabled]
       Boot Lan Port Select         [Disable PXE]
       Boot Select                  [UEFI]


                                                      →←: Select Screen
                                                      ↑↓: Select Item
                                                      Enter: Select
                                                      +/-: Change Opt.
                                                      F1: General Help
                                                      F2: Previous Values
                                                      F3: Optimized Defaults
                                                      F4: Save & Exit
                                                      ESC: Exit


         Version 2.18.1256. Copyright (C) 2017 American Megatrends, Inc.
```

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 Card): _____
- Operating System & Version (e.g. Windows 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 the following Acrosser contacts:

- Acrosser Local Sales Representative
- Acrosser Authorized Sales Channels
- Acrosser Inquiry --- http://www.acrosser.com/inquiry.html
- Acrosser FAX Number --- 886-2-29992887

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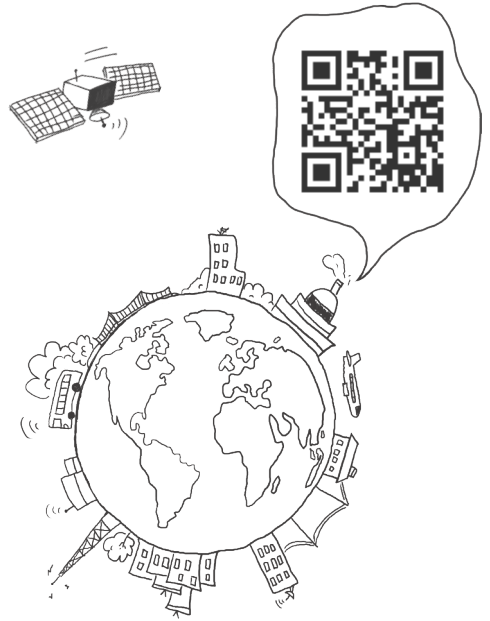
Acrosser Headquarters
241新北市三重區光復路一段61巷26號10樓
10F., No.26, Ln. 61, Sec. 1, Guangfu Rd.,
Sanchong Dist., New Taipei City 241, Taiwan
(R.O.C.)
TEL: +886-2-29999000
FAX: +886-2-29992887 / +886-2-29993960

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
深圳市福田区车公庙泰然九路21号
皇冠科技园3栋2楼 (邮编: 518040)
2F., 3rd Building, Crown Science Park, No. 21,
Tai-Ran 9th Rd., Che Gong Miao, Futian Dist.,
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.
11235 Knott Ave. Suite A, Cypress, CA 90630, USA
Toll Free: +1-866-401-9463
TEL: +1-714-903-1760
FAX: +1-714-903-5629