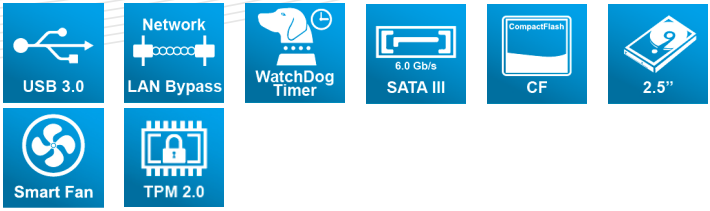
ANR-APL1N1FL-XX

Intel® Apollo Lake SoC Series Networking
1U Rack Mount Solution

6x GbE LANs with 3-pair Bypass



User Manual

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

Disclaimer

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

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

Copyright

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: 100-001
Date: Aug. 30, 2018

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. System Introduction

1.1. Specifications

System

Thermal Solution	• 1x Fanless Heatsink
CPU	• Intel® Apollo Lake SoC Celeron® J-Series CPU • Intel® Apollo Lake SoC Celeron® N-Series CPU • Intel® Apollo Lake SoC Celeron® E-Series CPU
System Memory	• 1x SO-DIMM DDR3L-1866 (up to 8GB)
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[1:6]
BIOS Function	• Support SSID

Network Interface

Ethernet Chip	• 6x GbE Copper • Intel® I210-AT (10/100/1000Mbps) LAN[1:6]
LAN Bypass (3-pair)	• (1st LAN bypass) by LAN[1:2] • (2nd LAN bypass) by LAN[3:4] • (3rd LAN bypass) by LAN[5:6]

Storage

SATA/mSATA	• 1x 2.5” Internal HDD Bay (default), or 1x mSATA Socket (full-size module) (reserved)
CF/CFast	• 1x CF Socket (default), or 1x CFast Socket (reserved)

Other Features

Watchdog Timer	• Software Programmable 0 ~ 255 seconds (0=Disable Timer)
Battery	• Lithium Battery, 3V 220mAH (CR2032)

Hardware Monitoring	• CPU Voltage • CPU Temperature • System Temperature • RTC Battery Voltage
Security	• TPM 2.0

Power Requirement

Power Supply	• 60W Open Frame Power Supply (AT mode)

Software

OS Support	• Windows 10 IoT Enterprise LTSB Entry, (64-bit) • Linux Kernel 4.4 & above, (64-bit)

Mechanical & Environment

Dimension	• 440mm (W) x 266mm(D) x 44mm(H)
Operating Temperature	• 0 ~ 40°C (32 ~ 104°F)
Storage Temperature	• -20 ~ 80°C (-4 ~ 176°F)
Relative Humidity	• 0 ~ 90% @40°C, non-condensing

EMC & Safety

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

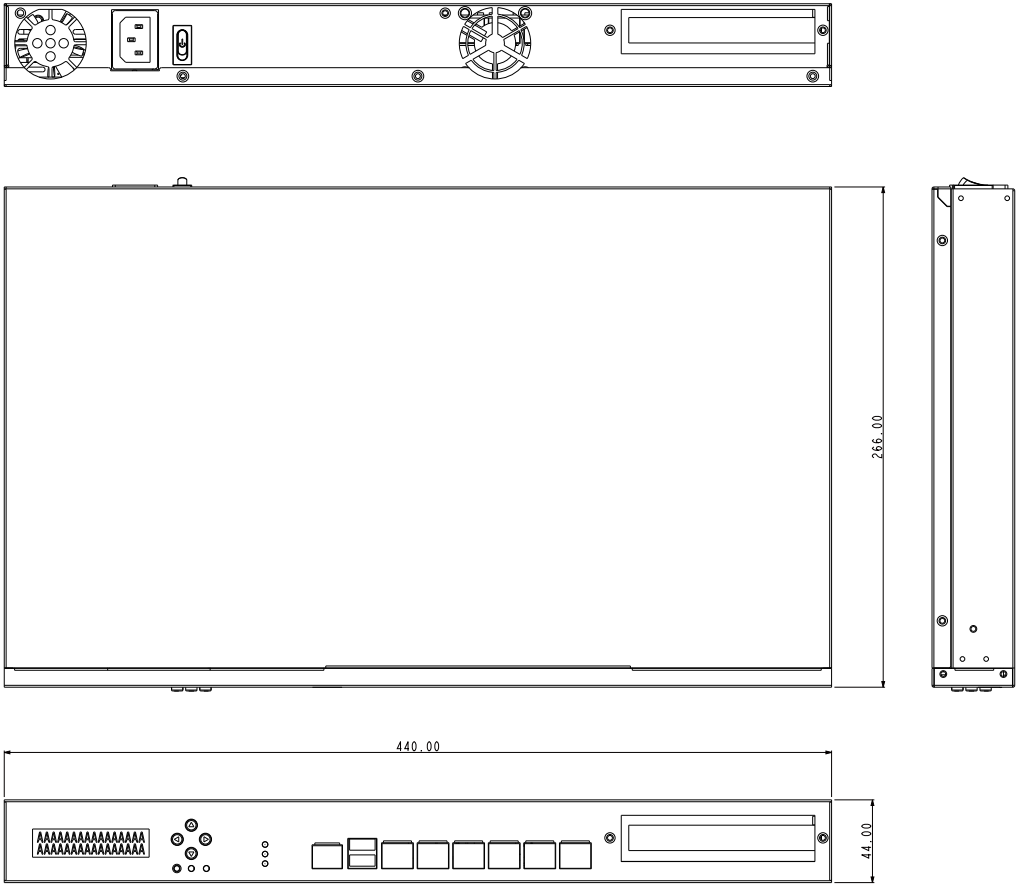
1.2. Package Contents

Check if the following items are included in the package.

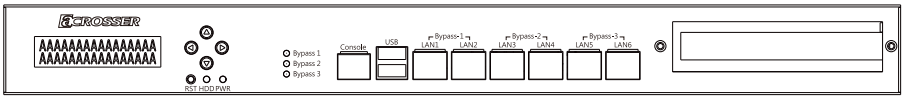
	Item	Q'ty
☐	ANR-APL1N1FL-XX Series System	1
☐	SATA Power Cable	1
☐	SATA Cable	1
☐	Driver CD	1
☐	Console Cable (RJ45)	1
☐	Rack Bracket	2
☐	Power Cord	1
☐	Box Packing	1

1.3. Dimensions

(Unit: mm)



1.4. Front Panel



- **LCM Display / Menu Buttons / Indicators**

LCM Display	Character Mode: 16-character x 2-line
Menu Buttons	LCM menu control buttons
RST	Reset button
HDD	HDD activity indicator
PWR	Power indicator

- **Bypass 1, Bypass 2, Bypass 3**

  Bypass LED. In-active: Green, Active: Red.

- **Console**

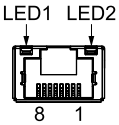
  COM1 connector.

- **USB**

  USB 3.0 connector.

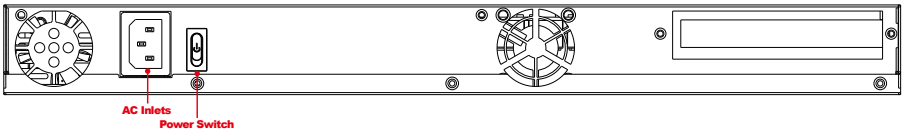
- **LAN1 ~ LAN6**

  LAN connectors.



LED	Light	Status
LED1	Green Blinking	Link w/ Act
	Green On	Link w/o Act
	Off	No Link
LED2	Off	10Mbps
	Orange On	100Mbps
	Green On	1000Mbps

1.5. Rear Panel



- **AC Inlets**
  AC power inlets.
- **Power Switch**
  Power on/off switch.

2. Components Assembly

2.1. 2.5” SATA SSD Installation

Step 1: Place the chassis on the table. Unscrew the 7 screws that fasten the top cover.

Step 2: Flip over to the bottom side. Remove the 4 screws that fastened the HDD holder.

Step 3: Open the top cover. Take out the HDD holder.

Step 4: Install your 2.5” HDD. Fasten with screws.

Step 5: On the bottom side, fasten the HDD holder with 4 screws.

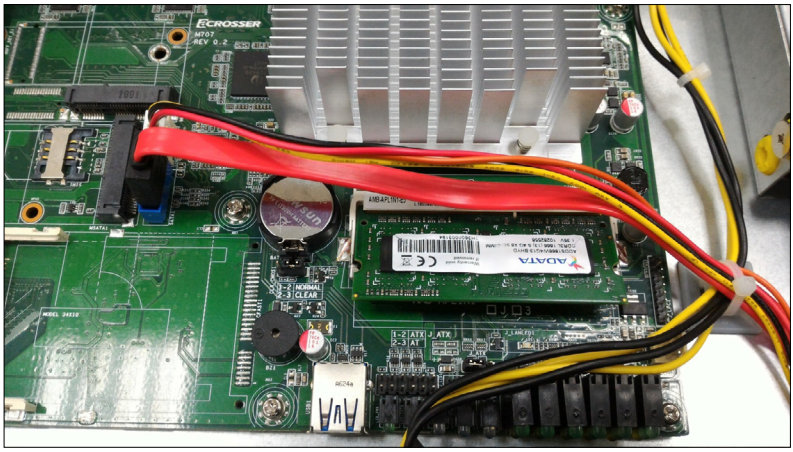
Step 6: Connect the HDD to mainboard with SATA cable and SATA power cable.

Step 7: Lock the top cover with screws.

2.2. DIMM Card Installation

Step 1: Place the chassis on the table. Unscrew the 7 screws that fasten the top cover.

Step 2: Install your DIMM card into the **DIMM** slot on the mainboard. Pay attention to its orientation, and do not scratch the contacts.



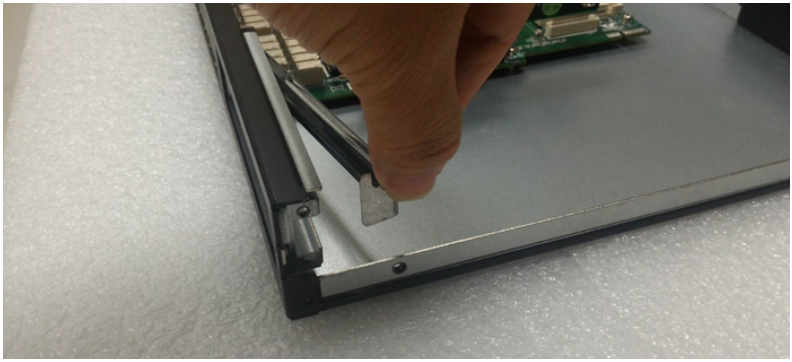
Step 3: Lock the top cover with screws.

2.3. PCIe Card Installation

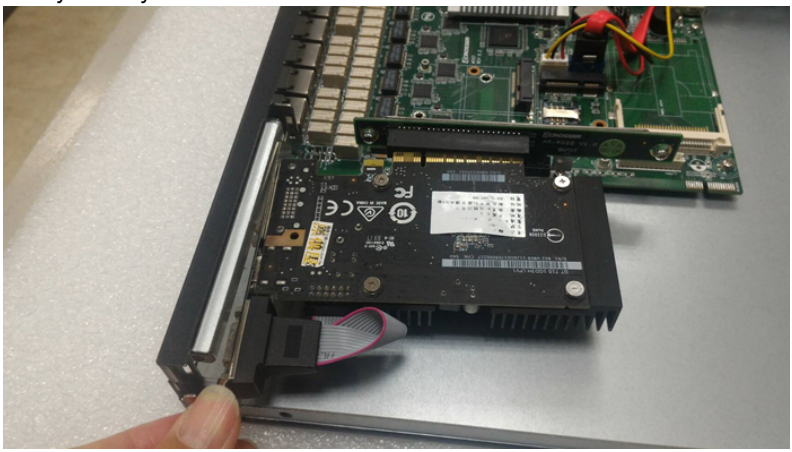
Step 1: Place the chassis on the table. Unscrew the 7 screws that fasten the top cover.

Step 2: Remove the screw that fastened the cover plate.

Step 3: Take out the cover plate.



Step 4: Firmly insert your PCIe card.



Step 5: Lock the cover plate with screw.

Step 6: Lock the top cover with screws.

3. BIOS Settings

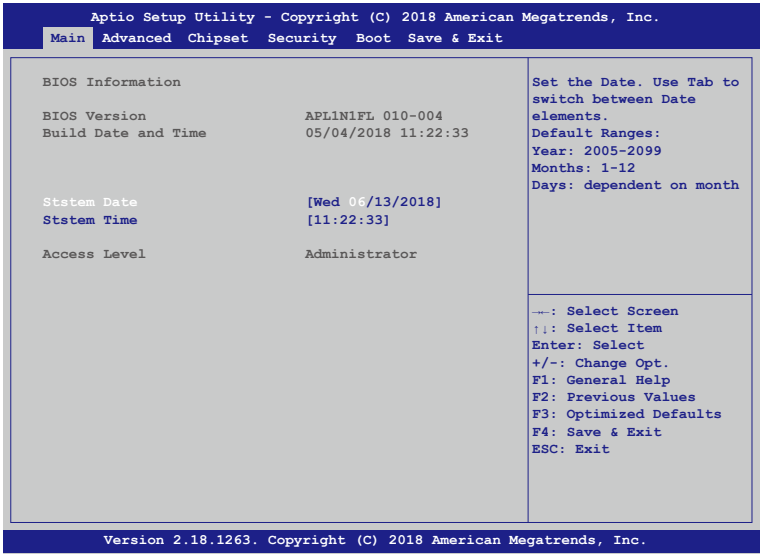
This chapter describes the BIOS menu displays and explains how to perform common tasks needed to get the system up and running. It also gives detailed explanation of the elements found in each of the BIOS menus. The following topics are covered:

- 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

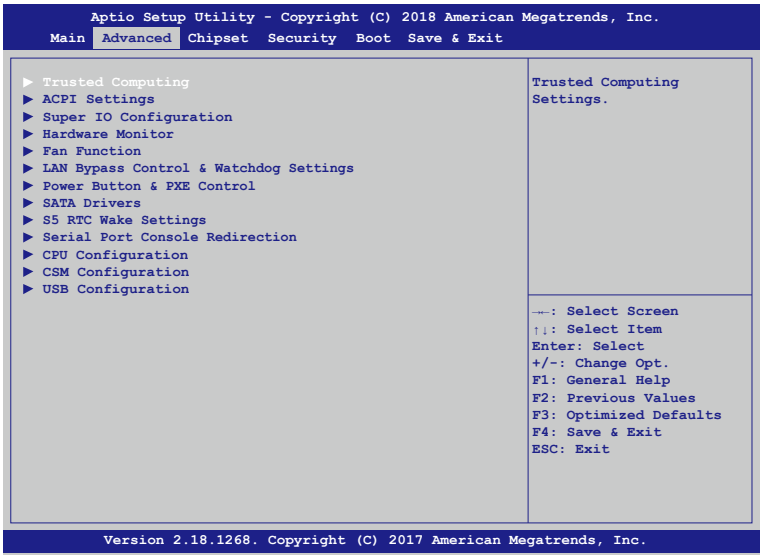
The BIOS setup main menu includes some options. Use the [Up/Down] arrow key to highlight the option, and then press the <**Enter**> key to select the item and configure the functions.



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. Use Tab to switch between Date elements.
- **System Time**
  Set the system time. Use Tab to switch between Time elements.

3.2. Advanced Setup

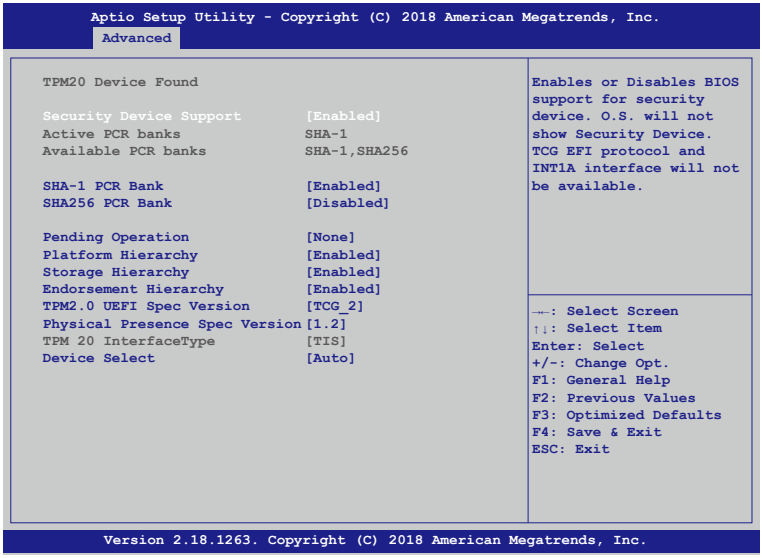


- **Trusted Computing**
  Trusted Computing Settings.
- **ACPI Settings**
  Set system ACPI parameters.
- **Super IO Configuration**
  System Super IO Chip Parameters.
- **Hardware Monitor**
  Monitor hardware status.
- **Fan Function**
  Fan function setting.
- **LAN Bypass Control & Watchdog Settings**
  LAN Bypass Control & Watchdog Settings
- **Power Button & PXE Control**
  Power Button & PXE Control
- **SATA Drivers**
  Select the SATA device configuration setup options.

- **S5 RTC Wake Settings**
  Enable system to wake from S5 using RTC alarm.
- **Serial Port Console Redirection**
  Set serial port console redirection.
- **CPU Configuration**
  CPU Configuration Parameters.
- **CSM Configuration**
  Compatibility Support Module Configuration. Enable/Disable Option ROM execution settings, etc.
- **USB Configuration**
  USB Configuration Parameters.

3.2.1. Trusted Computing

Set trusted computing settings

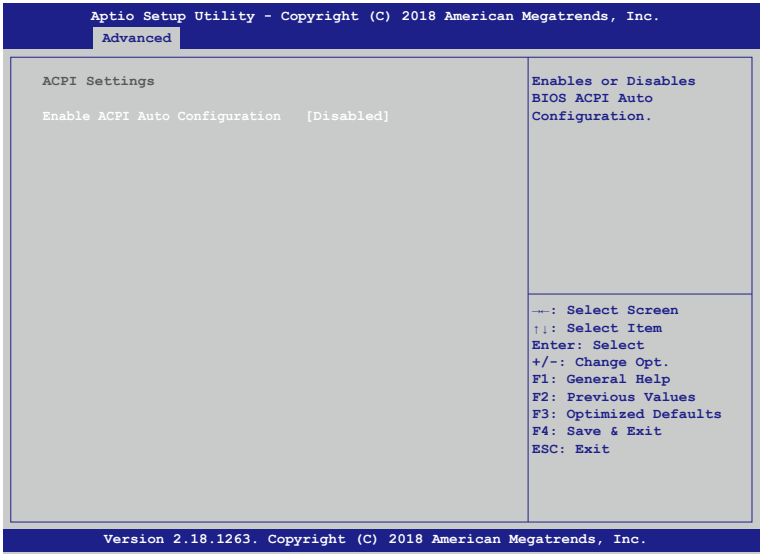


- **Security Device Support**
  Enables or Disables BIOS support for security device. O.S. will not show Security Device. TCG EFI protocol and INT1A interface will not be available.
- **SHA-1 PCR Bank**
  Enables or Disables SHA-1 PCR Bank.
- **SHA256 PCR Bank**
  Enables or Disables SHA256 PCR Bank.

- **Pending Operation**
  Schedule an Operation for the Security Device. NOTE: Your Computer will reboot during restart in order to change State of Security Device.
- **Platform Hierarchy**
  Enables or Disables Pateform Hierarchy.
- **Storage Hierarchy**
  Enables or Disables Storage Hierarchy.
- **Endorsement Hierarchy**
  Enables or Disables Endorsement Hierarchy.
- **TPM2.0 UEFI Spec Version**
  Select the TCG2 Spec Version Support,
  TCG_1_2: The Compatible mode for Win8/Win10.
  TCG_2: Support new TCG2 protocol and event format for Win10 or later.
- **Physical Presence Spec Version**
  Select to Tell O.S. to support PPI Spec Version 1.2 or 1.3. Note some HCK tests might not support 1.3.
- **Device Select**
  TPM 1.2 will restrict support to TPM 1.2 devices. TPM2.0 will restrict support to TPM 2.0 devices, Auto will support both with the default set to TPM2.0 devices if not found, TPM1.2 devices will be enumerated

3.2.2. ACPI Settings

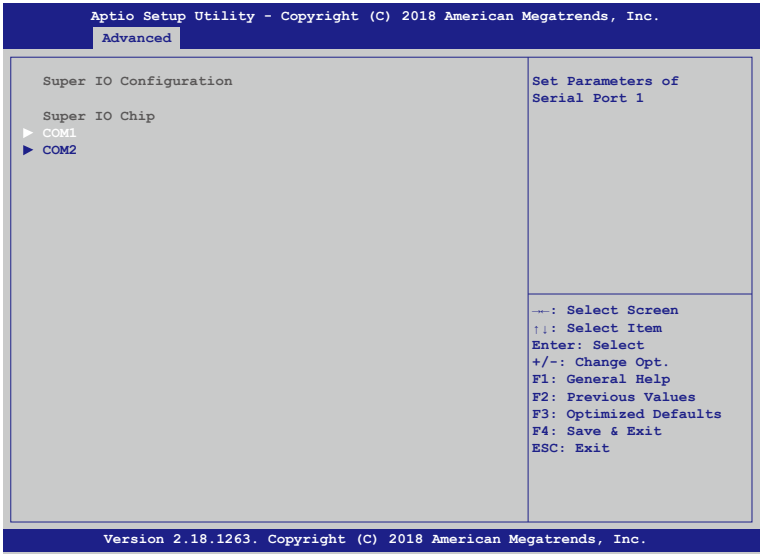
Set system ACPI parameters.



- **Enable ACPI Auto Configuration**
  Enables or Disables BIOS ACPI Auto Configuration.

3.2.3. Super IO Configuration

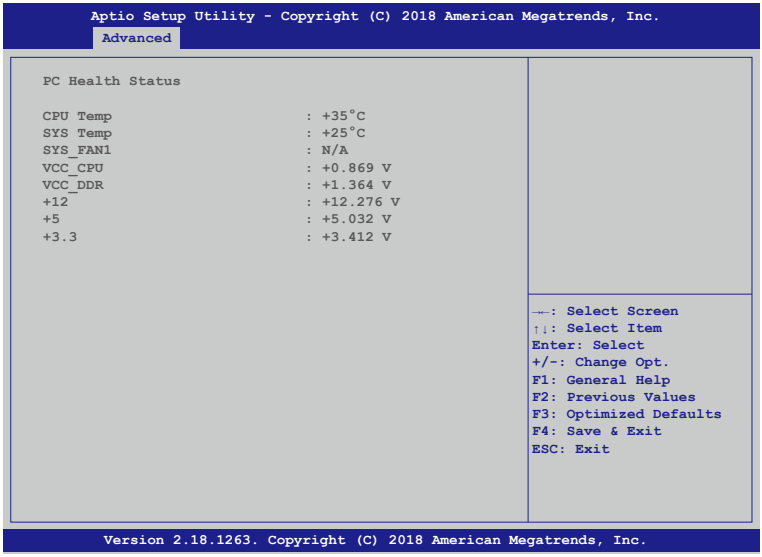
Set system super IO chip parameters.



- **COM1**
  Set Parameters of Serial Port 1.
- **COM2**
  Set Parameters of Serial Port 2.

3.2.4. Hardware Monitor

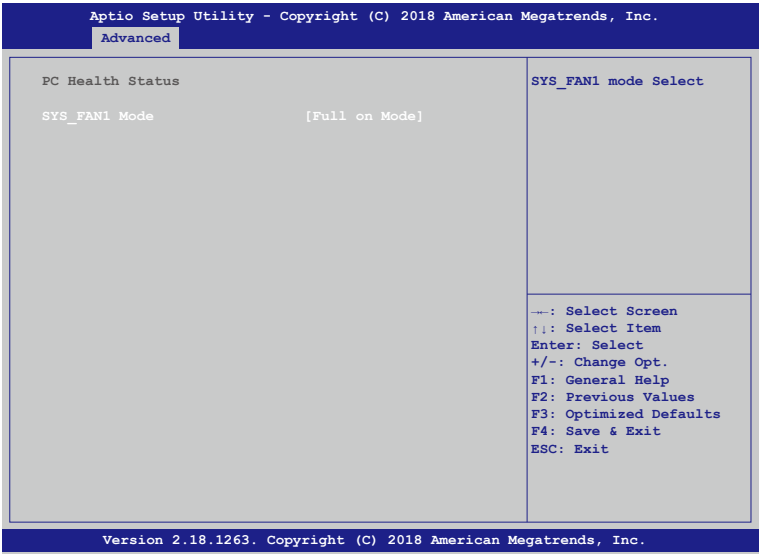
Dsiplay hardware monitor status.



- **CPU Temp**
  This item displays the CPU temperature.
- **SYS Temp**
  This item displays the system temperature.
- **VCC_CPU**
  This item displays the VCORE voltage.
- **VCC_DDR**
  This item displays the VDDR voltage.
- **+12V Voltage**
  This item displays the +12V voltage.
- **+5V Voltage**
  This item displays the +5V voltage.
- **+3.3V Voltage**
  This item displays the +3.3V voltage.

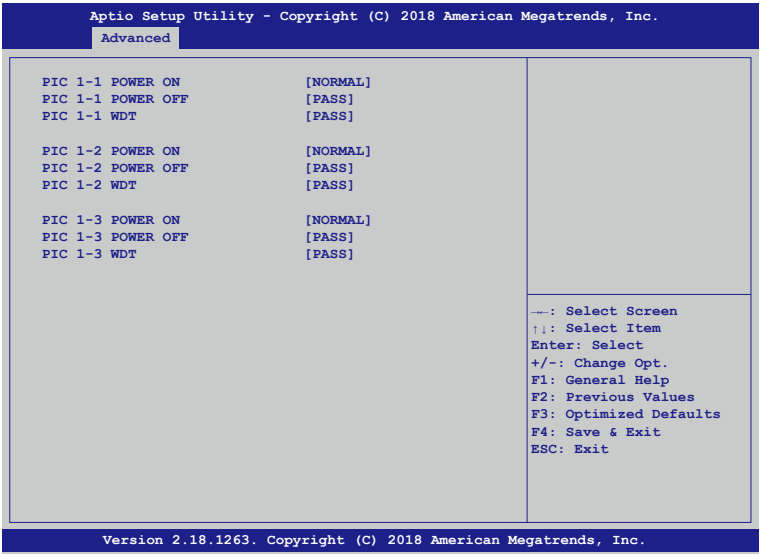
3.2.5. Hardware Monitor

Fan function setting.



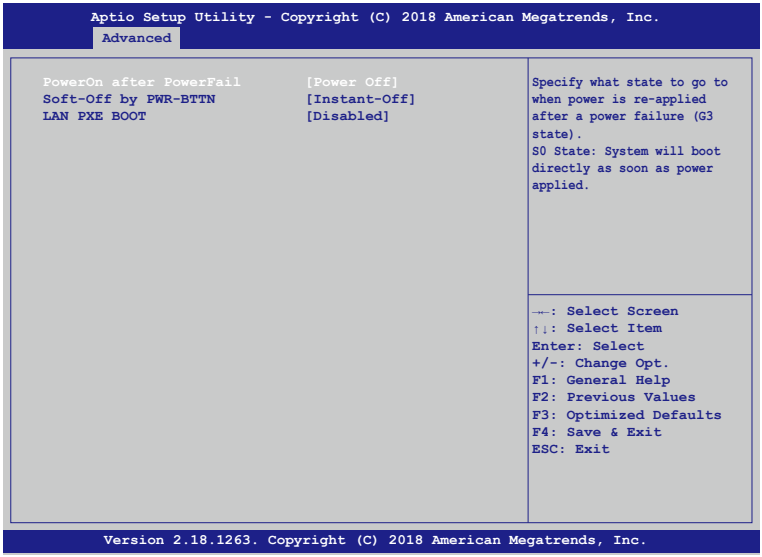
- **SYS_FAN1 Mode**
  This item selects the SYS_FAN1 mode.

3.2.6. LAN Bypass Control & Watchdog Settings



3.2.7. Power Button & PXE Control

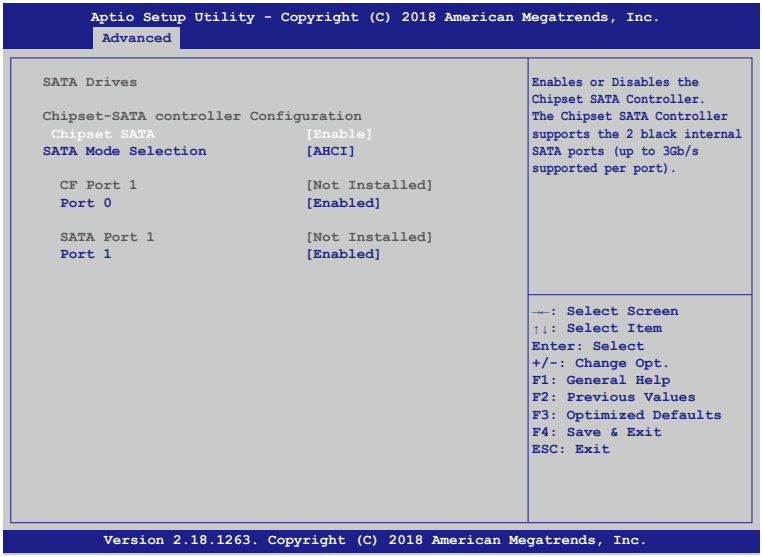
Set Power Button & PXE Control.



- **PowerOn after PowerFail**
  Specify what state to go to when power is re-applied after a power failure (G3 state).
  S0 State: System will boot directly as soon as power applied.
- **Soft-Off by PWR-BTTN**
  Select the delay between when you press the power button to when the system turns off.
- **LAN PXE BOOT**
  Enable/Disable UEFI LAN PXE BOOT.

3.2.8. SATA Drivers

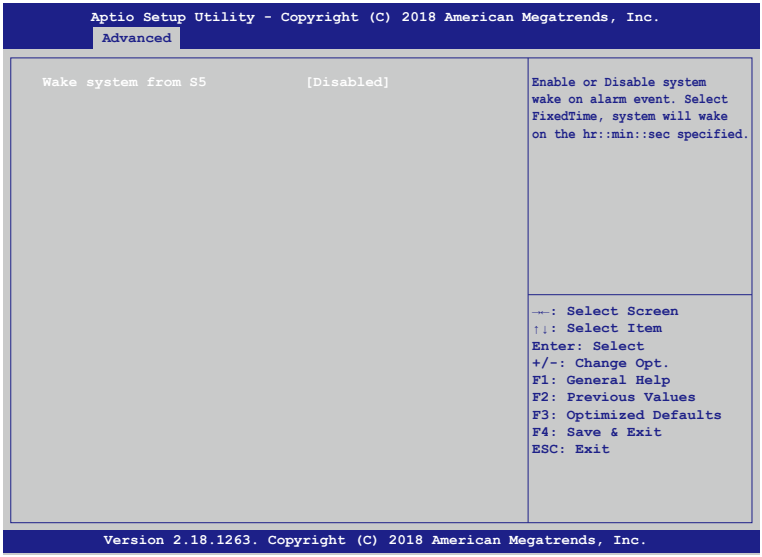
Select the SATA device configuration setup options.



- **Chipset SATA**
  Enables or Disables the Chipset SATA Controller.
- **SATA Mode Selection**
  Determines how SATA controller(s) operate.

3.2.9. S5 RTC Wake Settings

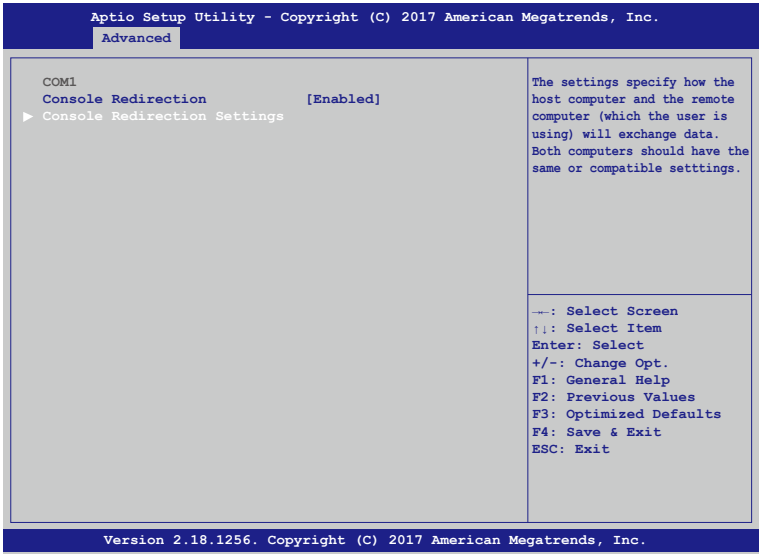
Enable system to wake from S5 using RTC alarm.



- **Wake system from S5**
  Enable or Disable system wake on alarm event.

3.2.10. Serial Port Console Redirection

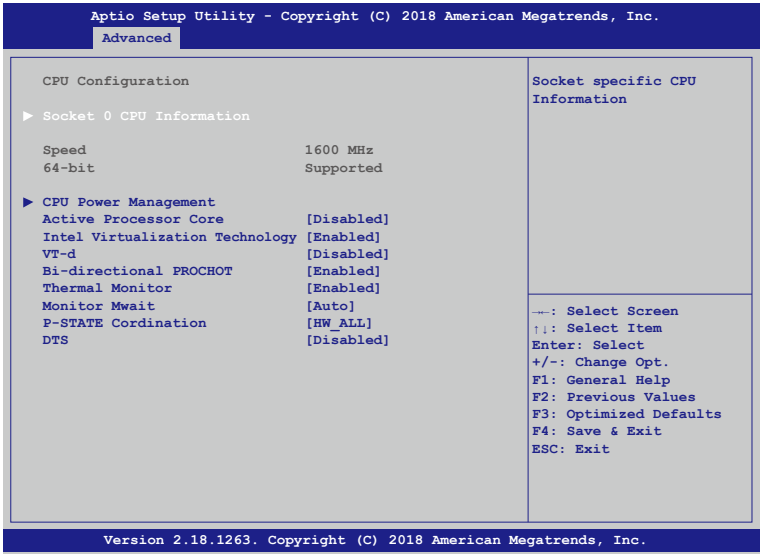
Set serial port console redirection.



- **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.

3.2.11. CPU Configuration

Set CPU configuration parameters.

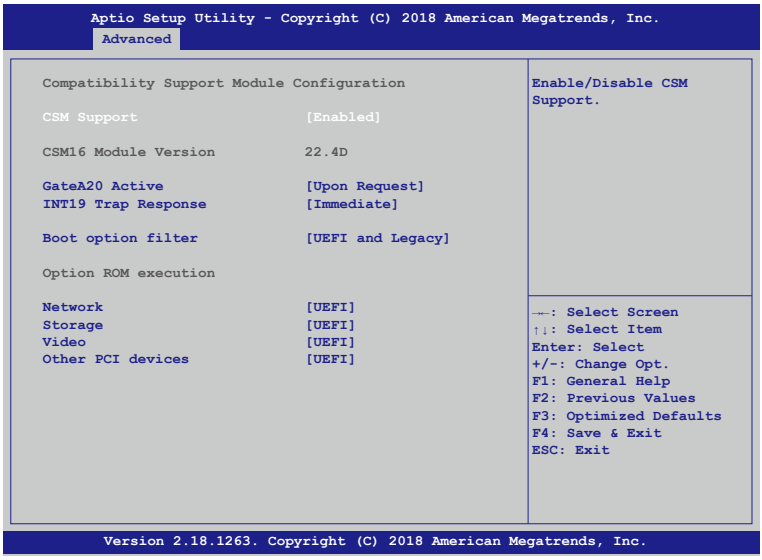


- **Socket 0 CPU Information**
  Socket specific CPU Information.
- **CPU Power Management**
  CPU Power Management options
- **Active Processor Core**
  Number of cores to enable in each processor package.
- **Intel Virtualization Technology**
  When enabled, a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology.
- **VT-d**
  Enable/Disable CPU VT-d.
- **Bi-directional PROCHOT**
  When a processor thermal sensor trips (either core), the PROCHOT# will be driven. If bi-direction is enabled, external agents can drive PROCHOT# to throttle the processor.
- **Thermal Monitor**
  Enable/Disable Thermal Monitor.
- **Monitor Mwait**
  Enable/Disable Monitor Mwait.

- **P-STATE Coordination**
  Change P-STATE Coordination type.
- **DTS**
  Enabled/Disable Digital Thermal Sensor.

3.2.12. CSM Configuration

Set CSM configuration parameters.

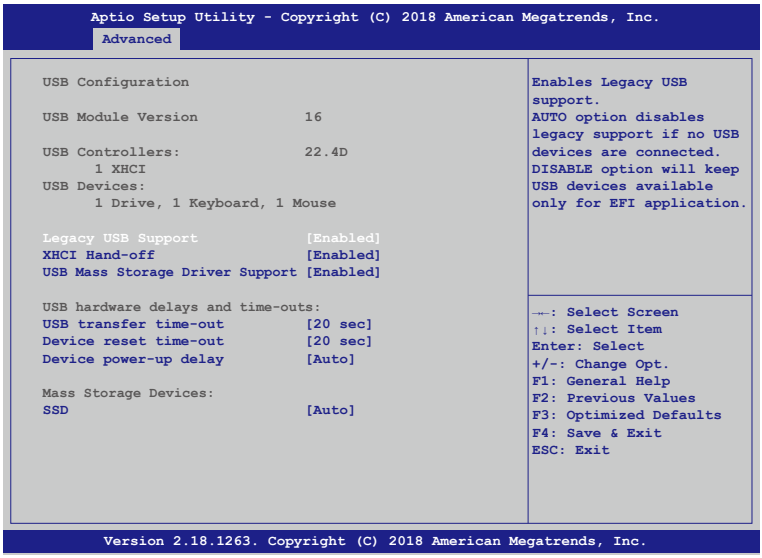


- **CSM Support**
  Enable/Disable CSM support.
- **GateA20 Active**
  [**UPON REQUEST**]: GA20 can be disabled using BIOS services.
  [**ALWAYS**]: Do not allow disabling GA20; this option is useful when any RT code is excuted above 1MB.
- **INT19 Trap Response**
  BIOS reaction on INT19 trapping by Option ROM.
  [**IMMEDIATE**]: Execute the trap right away.
  [**POSTONED**]: Execute the trap during legacy boot.
- **Boot option filter**
  This option controls Legacy/UEFI ROMs priority.
- **Network**
  Controls the execution of UEFI and Legacy PXE OpROM.

- **Storage**
  Controls the execution of UEFI and Legacy Storage OpROM.
- **Video**
  Controls the execution of UEFI and Legacy Video OpROM.
- **Other PCI devices**
  Determines OpROM execution policy for devices other than Network, Storage, or Video.

3.2.13. USB Configuration

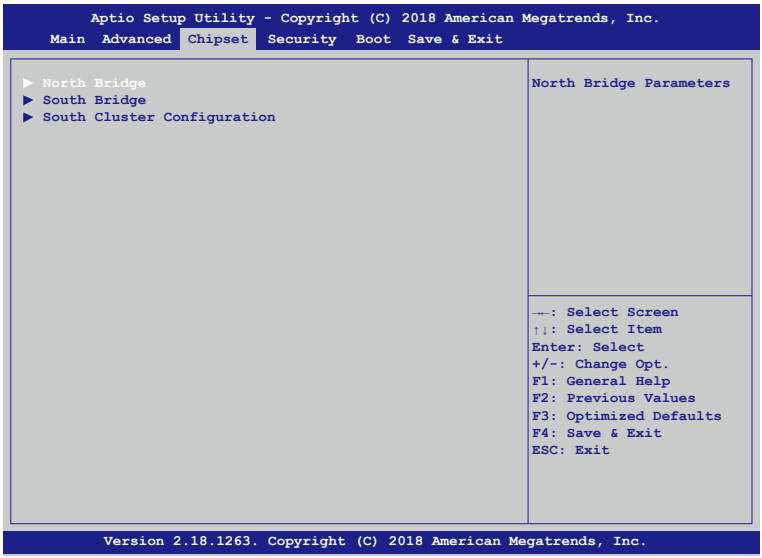
Set USB configuration parameters.



- **Legacy USB Support**
  Enables Legacy USB support. AUTO option disables legacy support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications.
- **XHCI Hand-off**
  This is a workaround for OSes without XHCI hand-off support. The XHCI ownership change should be claimed by XHCI driver.
- **USB Mass Storage Driver Support**
  Enable/Disable USB Mass Storage Driver Support.
- **USB transfer time-out**
  The time-out value for Control, Bulk, and Interrupt transfers.
- **Device reset time-out**
  USB mass storage device Start Unit command time-out.

- **Device power-up delay**
  Maximum time the device will take before it properly reports itself to the Host Controller. 'AUTO' uses default value: for a Root port it is 100ms, for a Hub port the delay is taken from Hub descriptor.
- **Mass Storage Devices**
  Mass storage device emulation type. 'AUTO' enumerates devices according to their media format. Optical drives are emulated as 'CDROM', drives with no media will be emulated according to a drive type.

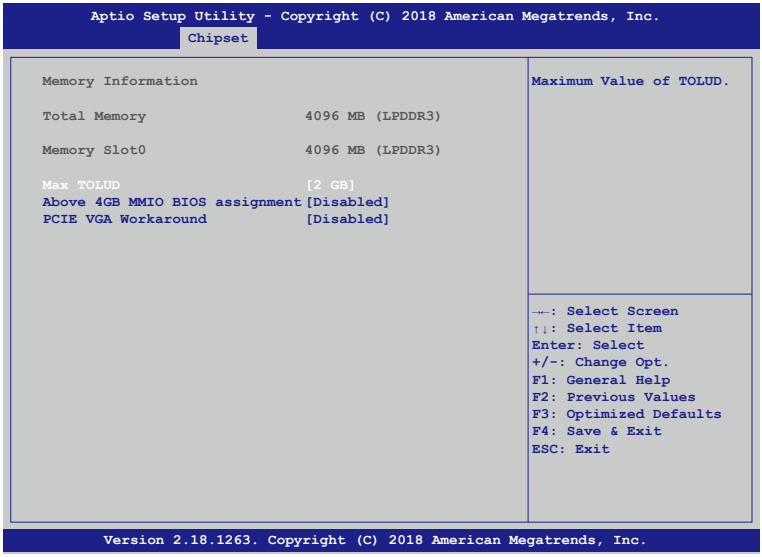
3.3. Chipset Setup



- **North Bridge**
  North Bridge Parameters.
- **South Bridge**
  South Bridge Parameters.
- **South Cluster Configuration**
  South Cluster Configuration.

3.3.1. North Bridge

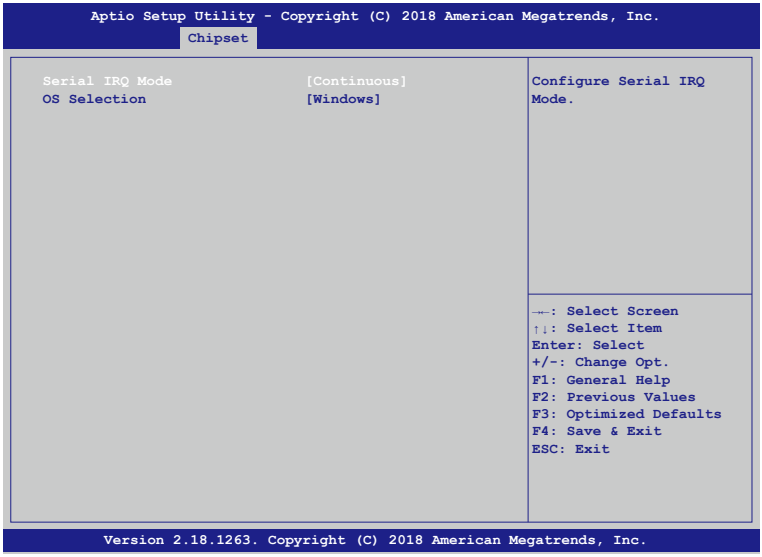
Set North Bridge configuration parameters.



- **Max TOLUD**
  Maximum Value of TOLUD.
- **Above 4GB MMIO BIOS assignment**
  Enable/Disable above 4GB MemoryMappedIO BIOS assignment. This is disabled automatically when Aperture size is set to 2048MB.
- **PCIE VGA Workaround**
  Enable it if your PCIe card cannot boot to DOS. This is for Test only.

3.3.2. South Bridge

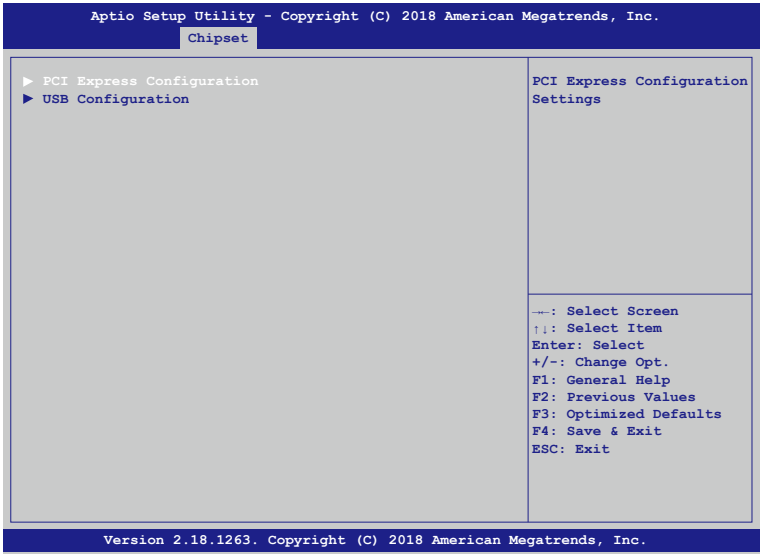
Set South Bridge configuration parameters.



- **Serial IRQ Mode**
  Configure Serial IRQ Mode.
- **OS Selection**
  Select the target OS.

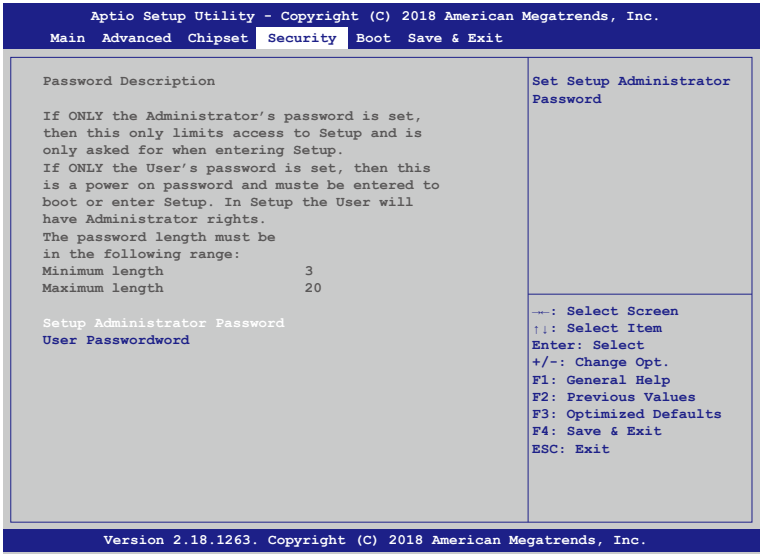
3.3.3. South Cluster Configuration

Set South Cluster configuration parameters.



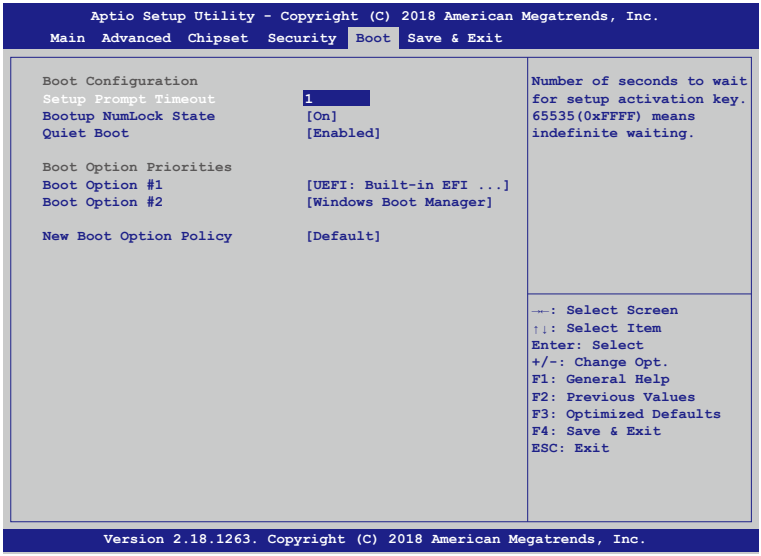
- **PCI Express Configuration**
  PCI Express Configuration Settings.
- **USB Configuration**
  USB Configuration Settings.

3.4. Security Setup



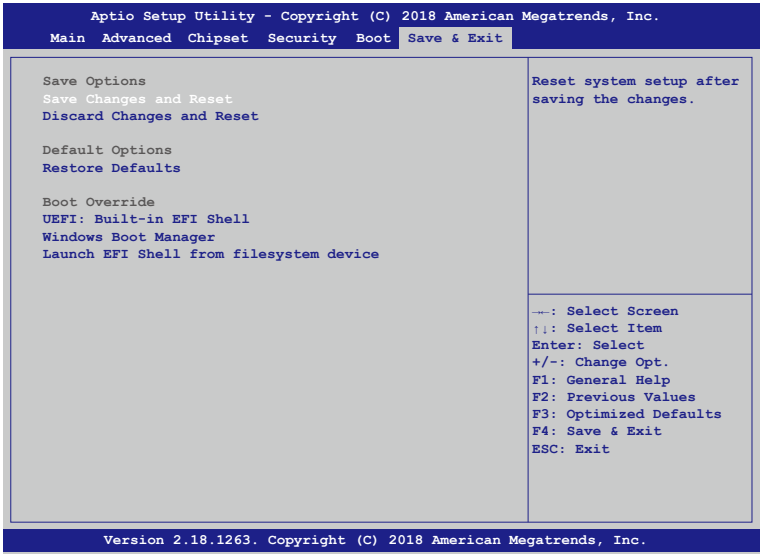
- **Setup Administrator Password**
  Set Setup Administrator Password.
- **User Password**
  Set User Password.

3.5. Boot Setup



- **Setup Prompt Timeout**
  Number of seconds to wait for setup activation key.
  65535(0xFFFF) means indefinite waiting.
- **Bootup NumLock State**
  Select the keyboard NumLock state.
- **Quiet Boot**
  Enables or disables Quiet Boot option.
- **Boot Option #1**
  Sets the system boot order.
- **Fast Boot**
  Enable or Disable FastBoot features.
  Most probes are skipped to reduce time cost during boot.
- **New Boot Option Policy**
  Controls the placement of newly detected UEFI boot optins.

3.6. Save & Exit Setup



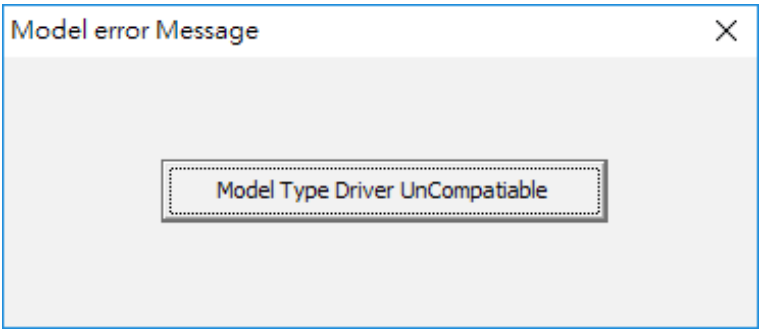
- **Save Changes and Reset**
  Reset system setup after saving the changes.
- **Discard Changes and Reset**
  Reset system setup without saving any changes.
- **Restore Defaults**
  Restore/Load Default values for all the setup options.
- **Launch EFI Shell from filesystem device**
  Attemps to Launch EFI Shell application (shell.efi) from one of the available filesystem devices.

4. Driver and Utility Installation

4.1. Driver CD Interface Introduction

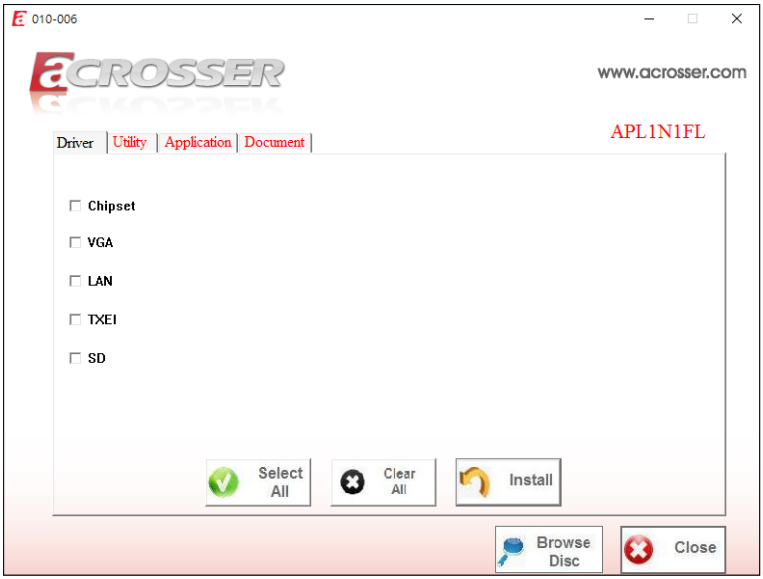
Acrosser provides a Driver CD compiled with all the drivers, utilities, applications and documents this product may need.

Put the Driver CD into your CD-ROM drive. The Driver CD will automatically detect the mainboard information to see if they are matched. The following error messages appear if you use an incorrect Driver CD version with your mainboard. Please find the correct Driver CD to proceed.

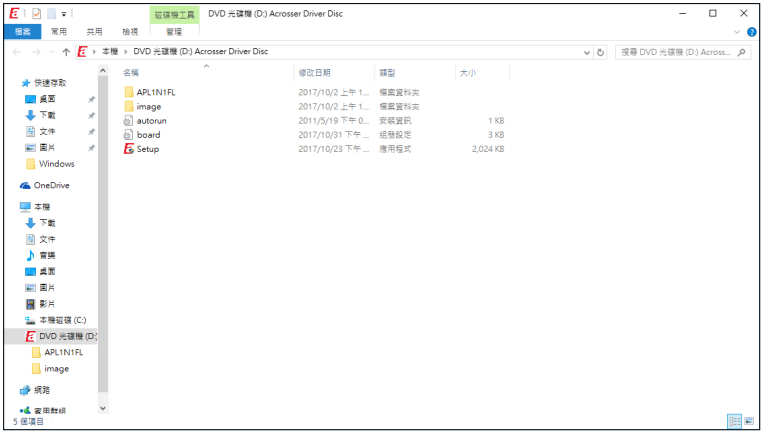


4.2. Windows Installation

Put the correct Driver CD of your mainboard into your CD-ROM drive. The following installation screen should appear.



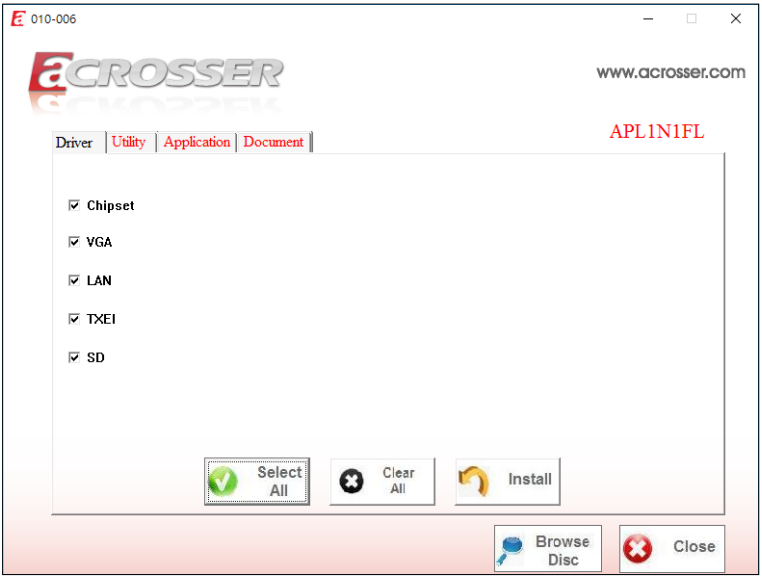
If not, enter the root folder of the Driver CD, run the excution file "**Setup.exe**".

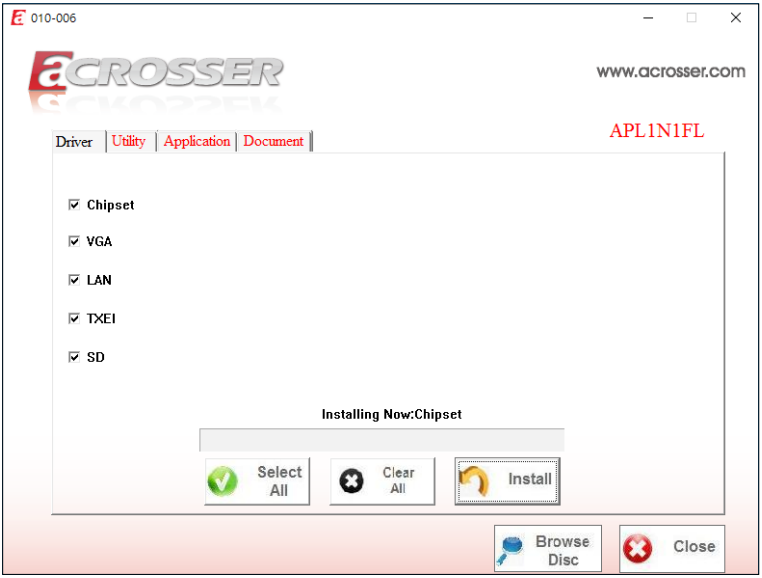


4.2.1. Driver Installation Page

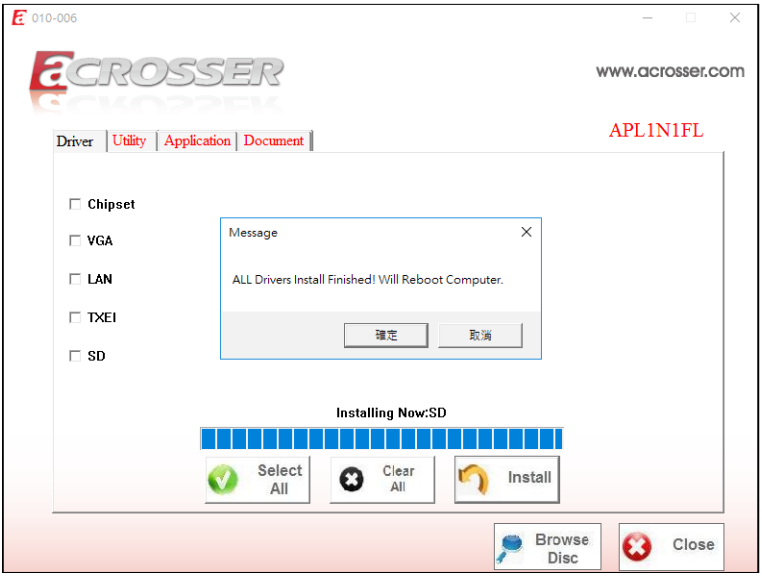
Step 1: Select the "**Driver**" tab.

Step 2: Click the "**Select All**" button to select all the driver checkboxes, and then click "**Install**" button to start installing all the selected drivers.





Step 3: The driver installation completed. The configuration will be valid after reboot.

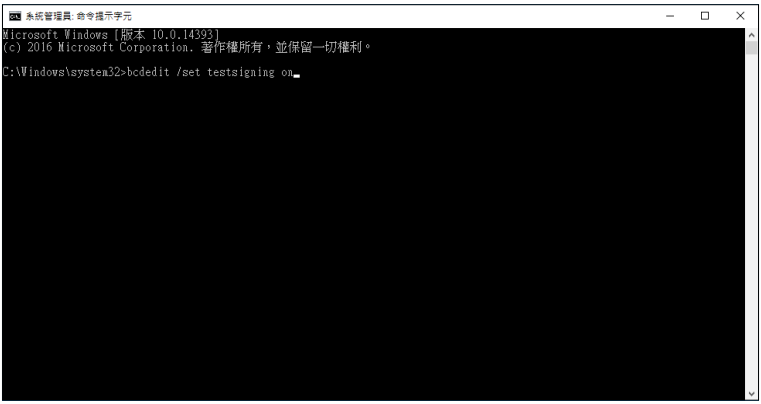


*Note: Select the "**Clear All**" button will clear all the selections, and then you can select the driver you want to install one by one, but the "**Chipset**" driver has to be installed before installing all the others.*

4.2.2. Utility Page

Before launching the utility, you should run the Windows test mode by running the command "**BCDEdit /set testsigning on**", and restart the system.

If you want to call this **AcrosserLib.dll** API file to initiate peripherals function, e.g. GPIO, PIC, or WatchDog, also run this command first, and restart the system.

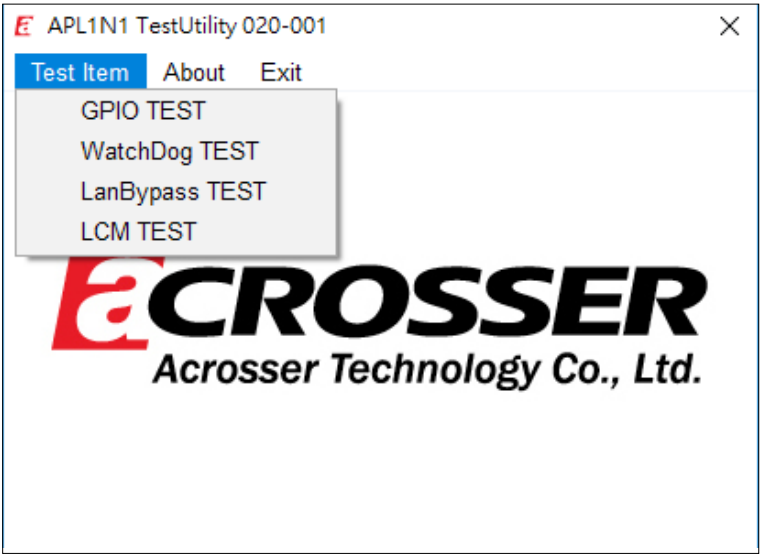


To shutdown the Windows test mode, run the command "**BCDEdit /set testsigning off**", and restart the system.

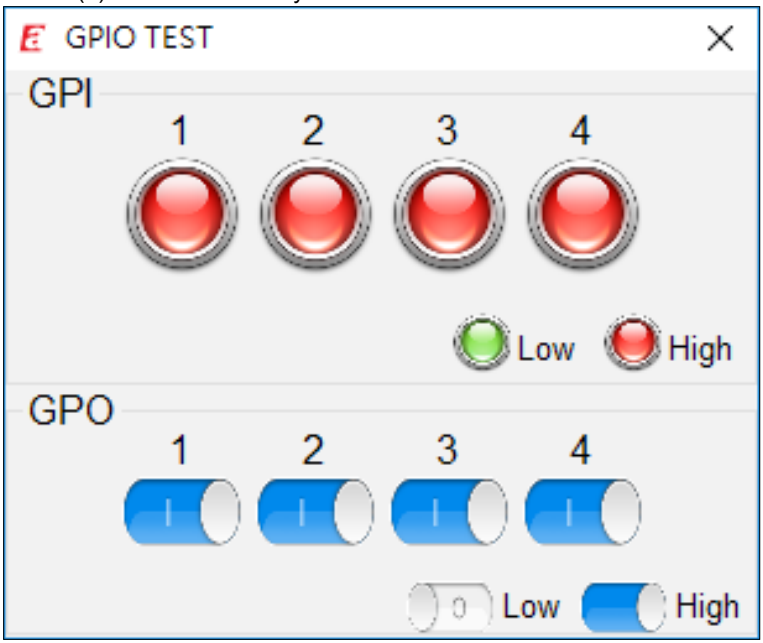
Step 1: Select the "**Utility**" tab. Click the "**Test Utility**" box.

Step 2: The “**Test Utility**” screen appears.

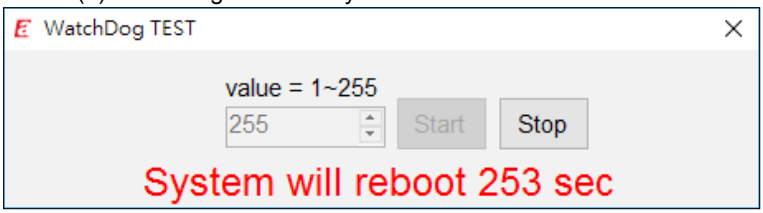
Click Test Item:



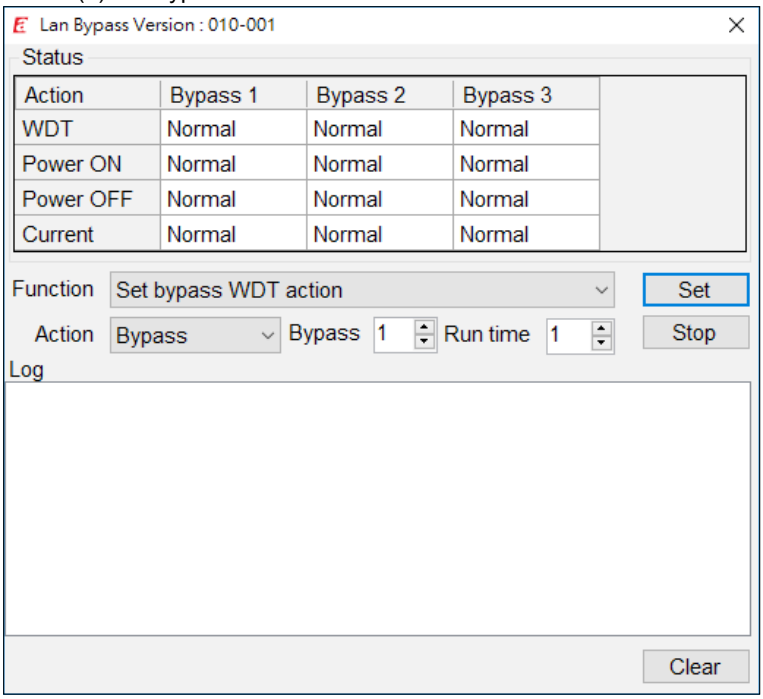
Select (1) GPIO TEST Utility:



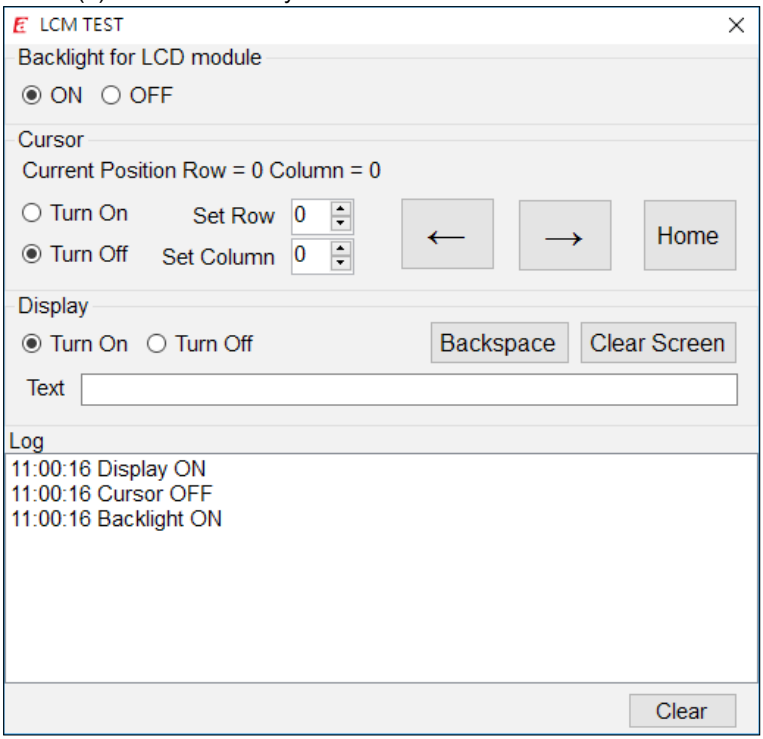
Select (2) WatchDog TEST Utility:



Select (3) LanBypass TEST:



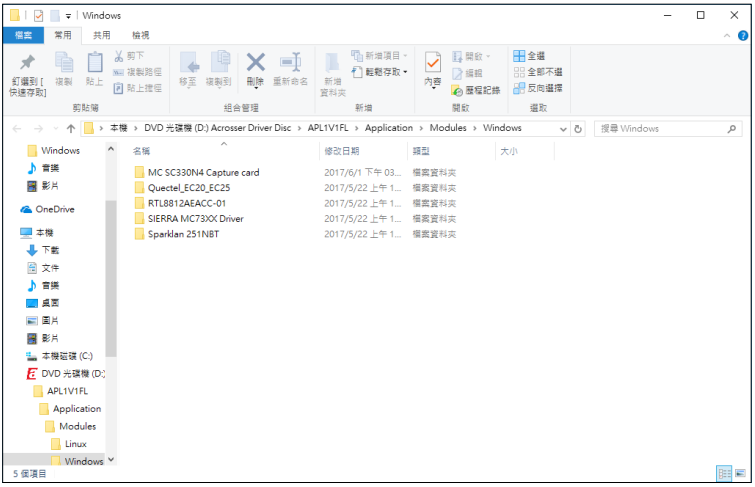
Select (4) LCM TEST Utility:



4.2.3. Application Installation Page

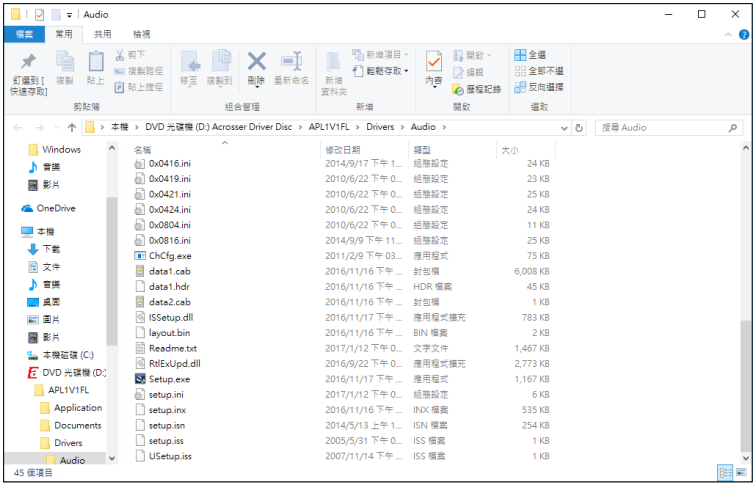
Step 1: Select the "**Application**" tab. Click the "**Drivers for Optional Modules**" box.

Step 2: Select the driver you want to install.



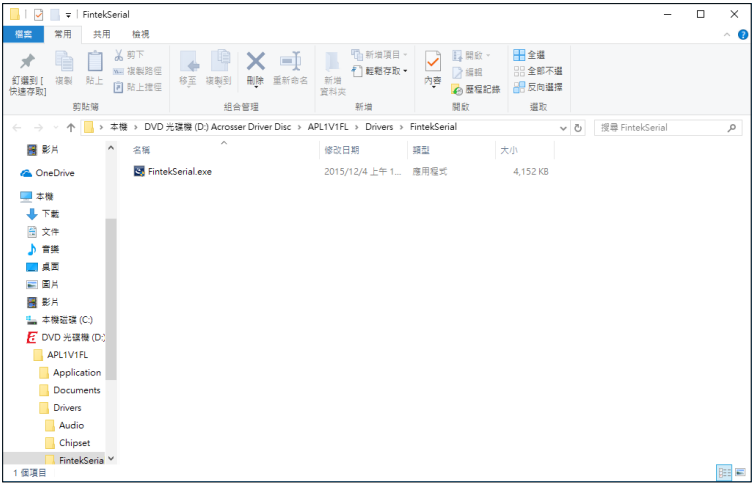
Step 3: Select the “**Application**” tab. Click the “**Audio Driver**” box.

Step 4: Click “**Setup.exe**” to install audio driver.



Step 5: Select the “**Application**” tab. Click the “**Fintek Serial**” box.

Step 6: Click “**FintekSerial.exe**” to install COM Port driver.

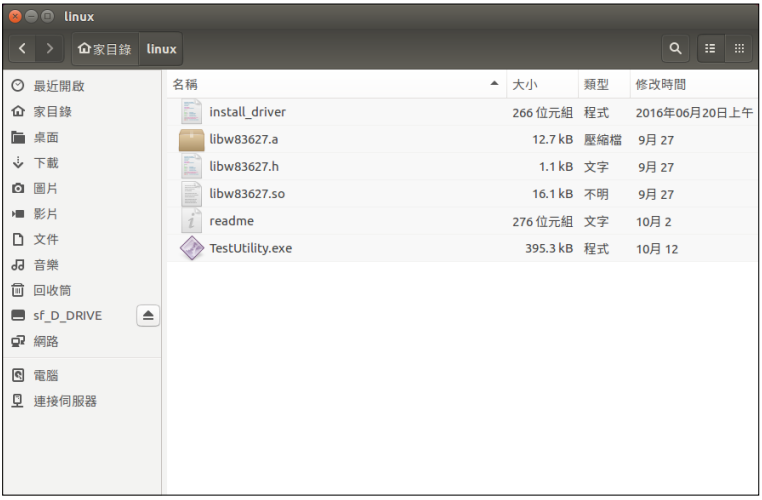


4.2.4. Document Page

The user manual is stored in the "**Document**" folder.

4.3. Linux Configuration

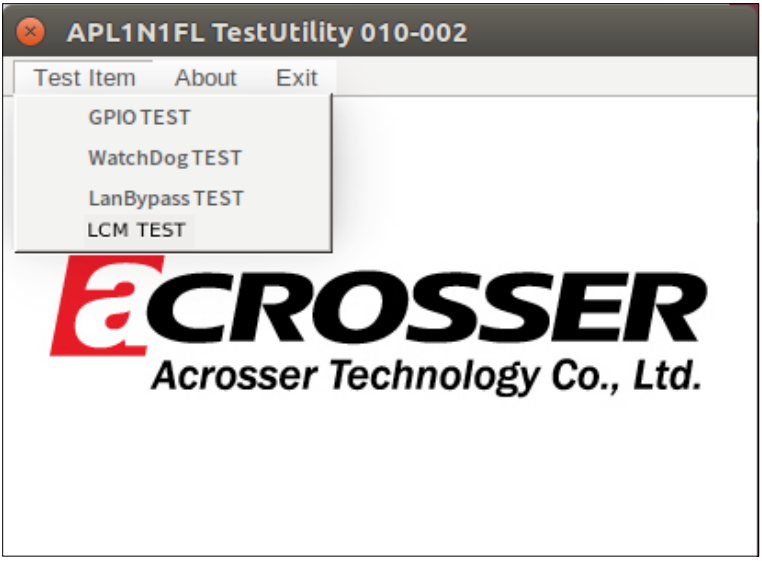
Step 1: Before running the shell script file install_driver to complete the utiltiy, make sure to have Internet access.



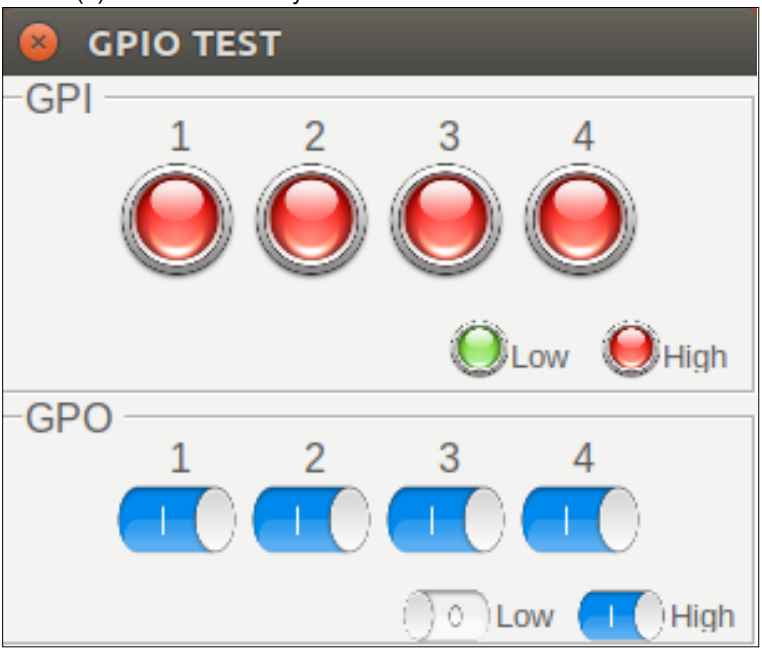
Run the **sudo mono TestUtility.exe**.

Step 2: The "**Test Utility**" screen appears.

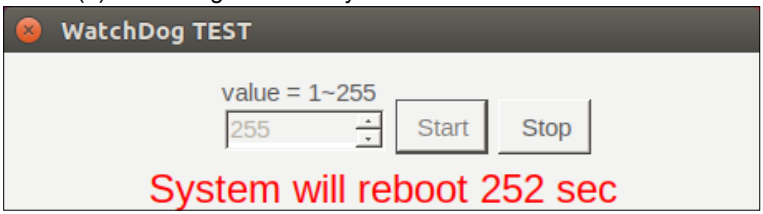
Click Test Item:



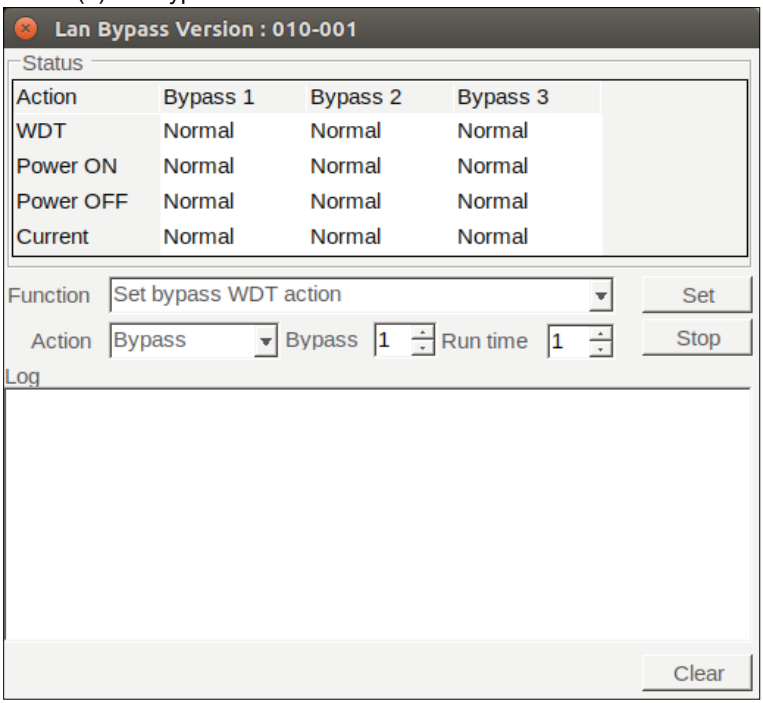
Select (1) GPIO TEST Utility:



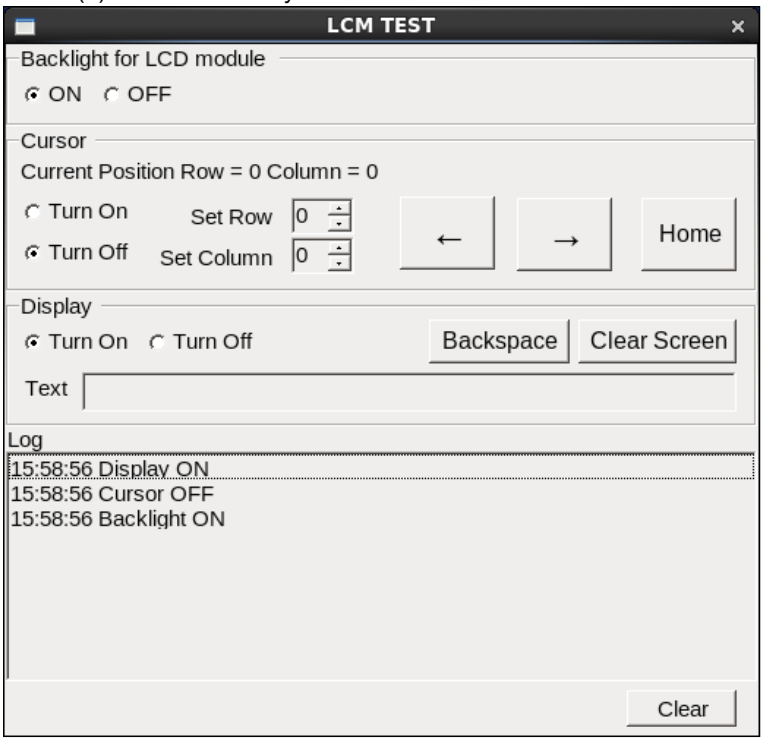
Select (2) WatchDog TEST Utility:



Select (3) LanBypass TEST:



Select (4) LCM TEST Utility:



5. Software Installation and Programming Guide

5.1. Introduction

5.1.1. Environment

This test utility develop based on kernel 4.4 above (Ubuntu 18.04 Desktop 64bit) and Window 10 iot 64bit.

5.1.2. GPIO

The ANR-APL1N1 provides GPIO interface. Users can use the GPIO APIs to control GPO Pin.

5.1.3. Watchdog

The ANR-APL1N1 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.

5.1.4. LAN Bypass Subsystem

Three pairs of LAN ports on ANR-APL1N1 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.

5.2. File Descriptions

5.2.1. GPIO/Watchdog/LAN Bypass Subsystem

1. TestUtility.exe

The Watchdog, LAN Bypass Subsystem, GPIO, and 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.

5.3. API List and Descriptions

5.3.1. 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.

5.3.2. 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.

5.3.3. 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: bypass, 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: bypass, 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: bypass, 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: bypass, 1: normal, -1: fail.

5.3.4. Notes

Syntax:	int libw83627_init(void)
Description:	Before using the watchdog, gpio functions, must call this function first.
Parameters:	None.
Return Value:	0: Successful, -1: fail.

Syntax:	void lib_close(void)
Description:	If watchdog and gpio fuctions are not used in your program, please call this function.
Parameters:	None.
Return Value:	None.

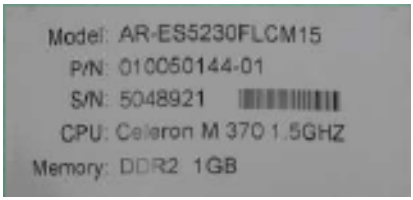
Syntax:	void i2c_init(void)
Description:	Before using psu(i2c), psu(pmbus), chassis, and lan bypass functions, must call this function first.
Parameters:	None.
Return Value:	None.

Syntax:	void i2c_close(void)
Description:	If psu(i2c), psu(pmbus), chassis, and lan bypass functions are not used in your program, please call this function.
Parameters:	None.
Return Value:	None.

6. FAQ

Q 1. Where is the serial number located on my system?

- The serial number (S/N) is an alpha-numeric character located on the bottom or side chassis.



(for reference only)

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