WIN ® enterprises *Custom Embedded Solutions*

PL-80690

Networking Appliance

**Desktop Intel® Celeron® (codename Bay Trail) Network System,
Four Copper GbE, CF, SATA and mini-PCIe**

User's Manual

Version 1.0

User's Manual

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For more information on PL-80690 or other WIN Enterprises products, please visit our website: www.win-ent.com.

For technical support send inquiries to:

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Chapter 1. General Information

1.1 Introduction

The PL-80690 is an affordable cost effective desktop platform designed for network service applications. Built with Intel® Embedded IA components with warranty of longevity, the PL-80690 supports Intel® Celeron® Bay Trail-D, Bay Trail-I and Bay Trail-M low-voltage processors.

The platform supports onboard DDR3L memory chips with a maximum capacity of 2GB. In order to provide the best network performance and utilization. The standard device comes equipped with 4GB eMMC storage and interfaces including one 2.5" SATA HDD and CompactFlash™. For network security, the PL-80690 is equipped with 4 Copper GbE, USB2.0 ports, RJ-45 console port and an optional mini-card socket with LED indicators that monitor power, storage device activities for local system management, maintenance and diagnostics.

1.2 Specifications

Processor System	CPU	Intel® E3815 (Bay Trail-I) Processors
	BIOS	AMI UEFI BIOS
Memory	Technology	Onboard DDR3L memory.
	Capacity	Up to 2GB
Expansion	Expansion Slots	One mini-PCIe socket via PCI-E x1.(Option)
Ethernet	GbE Ethernet	Four Copper GbE ports, Intel I211, PCI-E x1
	LAN bypass	N/A
Storage	SATA HDD	One internal 2.5" SATA HDD bay
	Compact Flash Socket	one CompactFlash^{TM} Type II
I/O	USB	Two external USB2.0
	Serial	One RJ45 Console port (COM1)
Power Supply	Watt	40W power supply, AC to DC 12V
Mechanical and Environment	Form Factor	Desktop
	LED	Power LED HDD LED 4 pairs LEDs for 4 Ethernet ports Active/Link status
	Dimension（W x D x H）	232mm (W) x 153mm (D) x 44mm (H) (9.1W x 6" D x 1.7" H)
	Operating Temperature	Operating: 0 ~ 40℃ (32 ~ 104℉)
	Storage Temperature	-20 ~ 75℃ (-4 ~ 167℉)
	Humidity	10 ~ 85% relative humidity, non-operating, non-condensing
	Certifications	CE/FCC

1.3 Ordering Information

We offer some accessories for PL-80690 appliance for customer need.

PL-8069A	Desktop Intel Bay Trail E3815 Network System, 4x GbE, 1GB onboard DDR3 Memory, 4GB eMMC and SATA
PL-8069B	Desktop Intel Bay Trail E3815 Network System, 3x GbE, 1GB onboard DDR3 Memory, 4GB eMMC, SATA and mini-PCIe
PL-8069C	Desktop Intel Bay Trail E3815 Network System, 4x GbE, 1GB onboard DDR3 Memory, CF, SATA and mini-PCIe (via USB)
Optional	
DK	Cable development kit CB-CO5204-00 Cross over 2M CB-EC5200-00 Ethernet cat.5 cable 2M CB-RJDB91-00 RJ-45 to DB-9 cable 2M CB-IVGA01-00 VGA cable

1.4 Packaging

Please make sure that the following items have been included in the package before installation:

1. PL-80690 Appliance
2. Quick Installation Guide (Optional)
3. Cables (Optional)

If any item of above is missing or damaged, please contact your dealer or retailer from whom you purchased the PL-80690. Keep the box and carton for possible future shipment or storage. After you unpack the goods, inspect and make sure the product is intact. Do not plug the power adapter to the appliance if it appears damaged.

Note: Keep the PL-80690 in the original packaging until you start installation.

1.5 Precautions

Please make sure you properly ground yourself before handling the PL-80690 appliance or other system components. Electrostatic discharge can be easily damage the PL-80690 appliance.

Do not remove the anti-static packing until you are ready to install the PL-80690 appliance.

Ground yourself before removing any system component from its protective anti-static packaging. To ground yourself, grasp the expansion slot covers or other unpainted areas of the computer chassis.

Handle the PL-80690 appliance by its edges and avoid touching the components on it.

1.6 System Layout

PL-80690 Front Side

PL-80690 Rear Side
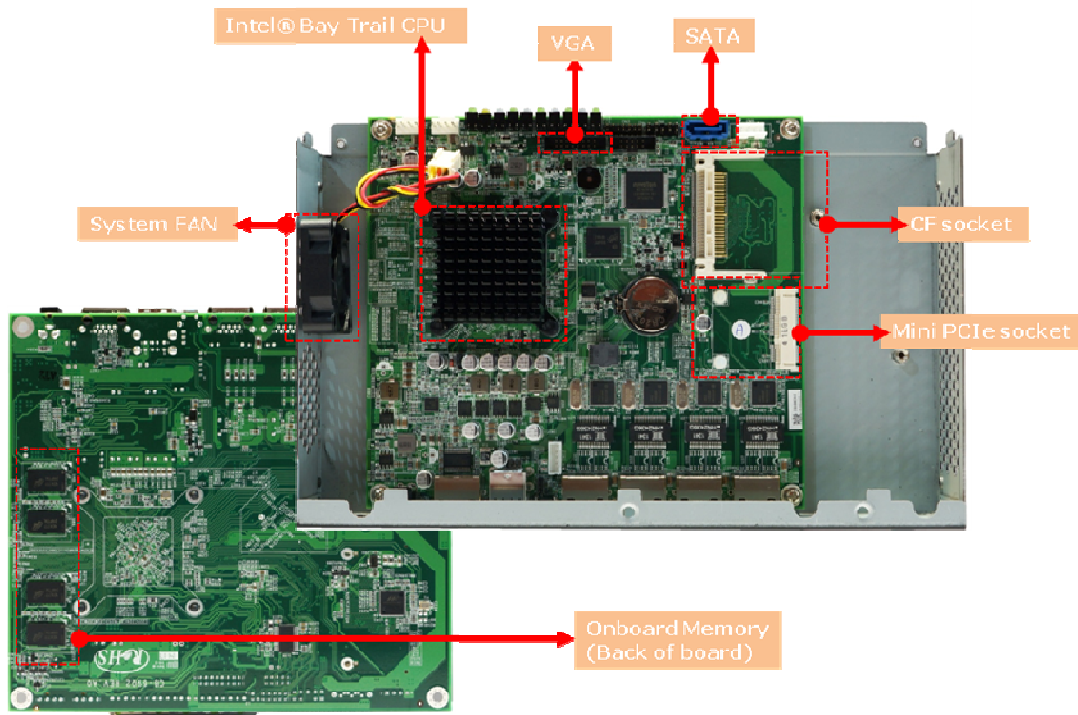
1.7 Board Dimensions
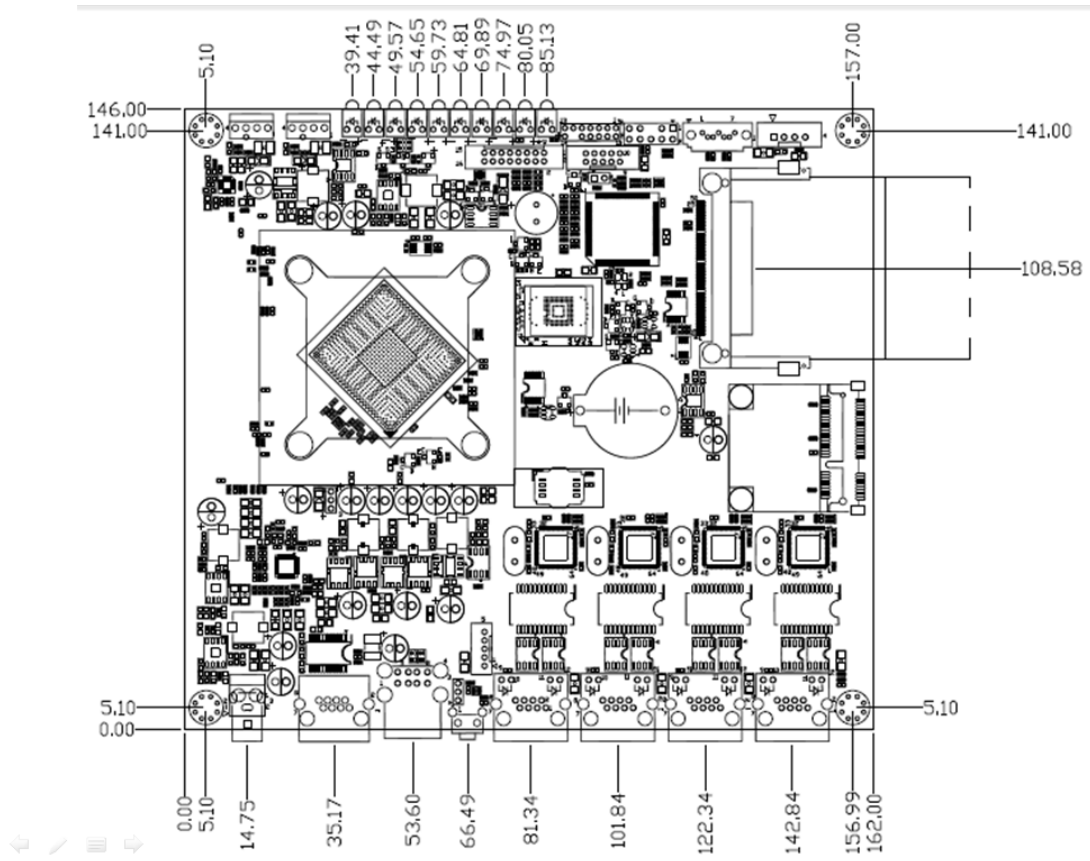
Chapter 2. Connector/Jumper Configurations

2.1 Connector/Jumper Location and Definitions
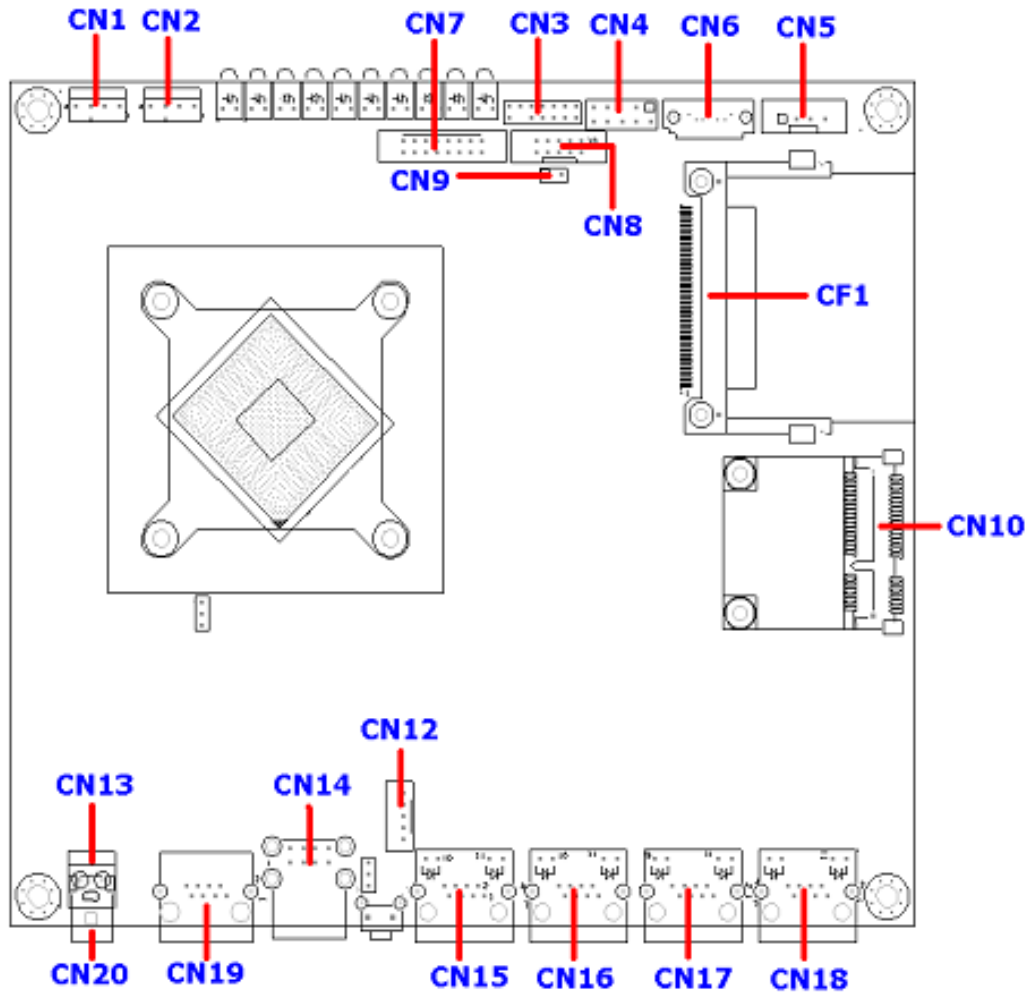
CB-6902 Connectors and Jumpers:

CN1	SYSTEM FAN
CN2	CPU FAN
CN3	LPC (Pin Header)
CN4	PS2 KB/MS Pin Header (Option)
CN5	SATA Power Connector
CN6	SATA Connector
CN7	VGA (Pin Header)
CN8	COM2 Pin Header (Option)
CN9	Debug GPIO(For Test Only)
CN10	MINI-PCIE
CN11	
CN12	USB Port 2 (Option)
CN13	Power Connector (Option)
CN14	USB Port 0/1
CN15	LAN1
CN16	LAN2
CN17	LAN3
CN18	LAN4
CN19	Console
CN20	DC Jack

2.2 Connector and Jumper Settings

CN1/CN2：System/CPU FAN
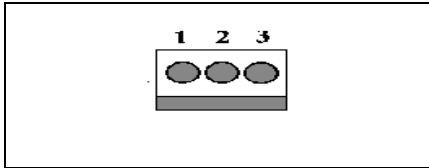
Pin	Define
1	Ground
2	+12V
3	Speed Detect

CN3：LPC (Pin Header)
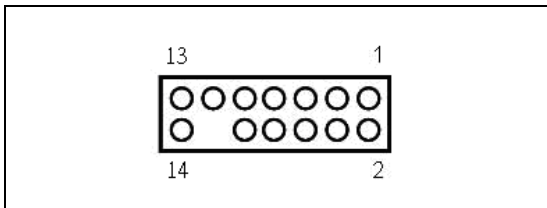
Pin	Define	Pin	Define
1	+3.3V	2	AD 0
3	AD1	4	AD 2
5	AD 3	6	Frame#
7	PCIERST#	8	+5V
9	CLOCK	10	PME#
11	GND	12	
13	SERIRQ	14	DRQ#
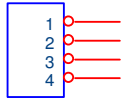
CN4：PS2 KB/MS Pin Header
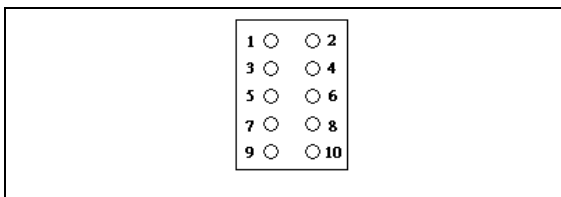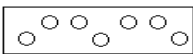
Pin	Define	Pin	Define
1	KCLK	2	MCLK
3	KDAT	4	MDAT
5	N/A	6	N/A
7	PS2_GND	8	PS2_GND

| 9 | PS2_VCC | 10 | PS2_VCC |
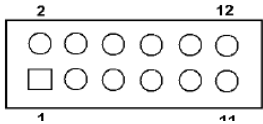
CN5：SATA PWR

Pin	Define
1	+12V
2	GND
3	GND
4	+5V

CN6：SATA Connector

Pin	Signal
1	Ground
2	TXP
3	TXN
4	Ground
5	RXN
6	RXP
7	Ground

CN7：VGA (Pin header)

Pin	Define	Pin	Define
1	RED	2	GREEN
3	BLUE	4	Reserved
5	GND	6	RED PTN
7	GREEN PTN	8	BLUE RTN
9	+5V	10	GND
11	Reserved	12	SDA
13	HSYNC	14	VSYNC
15	SCL	16	Reserved

CN8：COM2 pin header (Option)

Pin	Define	Pin	Define
1	DCD#	6	DSR#
2	RXD#	7	RTS#
3	TXD#	8	CTS#
4	DTR#	9	RI#2
5	Ground	10	N/A

CN10: MINI PCIE
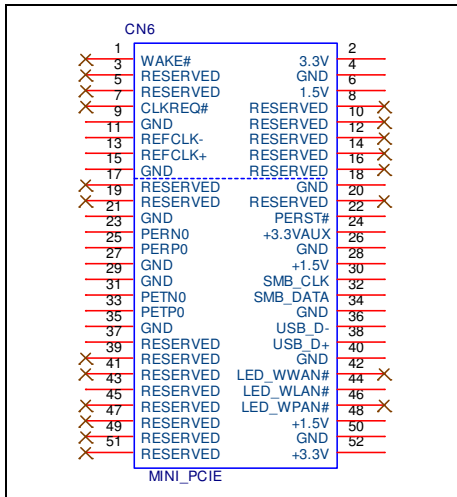
Pin	Define	Pin	Define
1	WAKE#	2	3.3V
3	Reserved	4	GND
5	Reserved	6	1.5V
7	CLKREQ#	8	Reserved
9	GND	10	Reserved
11	REFCLK-	12	Reserved
13	REFCLK+	14	Reserved
15	GND	16	Reserved
17	Reserved	18	GND
19	Reserved	20	Reserved
21	GND	22	PERST#
23	PERN0	24	+3.3VAUX

25	PERP0	26	GND
27	GND	28	+1.5V
29	GND	30	SMB_CLK
31	PETN0	32	SMB_DATA
33	PETP0	34	GND
35	GND	36	USB_D-
37	Reserved	38	USB_D+
39	Reserved	40	GND
41	Reserved	42	LED_WWAN#
43	Reserved	44	LED_WLAN#
45	Reserved	46	LED_WPAN#
47	Reserved	48	+1.5V
49	Reserved	50	GND
51	Reserved	52	+3.3V

CN14：USB (Port 0/1) Connector
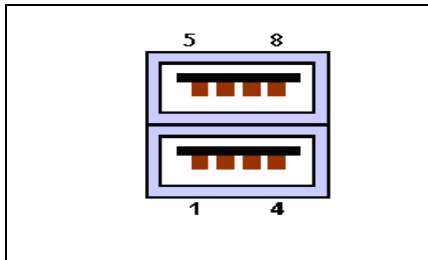
Pin	Define	Pin	Define
1	+5V	2	DATA0-
3	DATA0+	4	GND
5	+5V	6	DATA1-
7	DATA1+	8	GND

CN15~18：LAN RJ-45 Connector
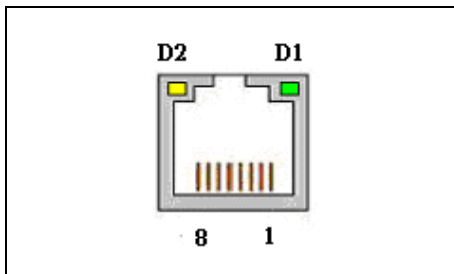
Pin	Define
1	TX+
2	TX-

3	RX+
4	Chassis Ground
5	Chassis Ground
6	RX-
7	Chassis Ground
8	Chassis Ground
D1: Speed indicated LED	
1 Gbps	GREEN
100 Mbps	YELLOW
D2 :Link/Activity LED	
Link	GREEN
Activity	BLINKING

CN19：COM1 (Console) Connector

RJ45	
Pin	**Define**
1	CTS#
2	DTR#
3	TXD#
4	GND
5	GND
6	RXD#
7	DSR#
8	RTS#

CN20： DC +12V Power Jack (2Pin)

Pin	Define	Pin	Define
1	+12V	2	GND

User's Manual

Jumper Settings
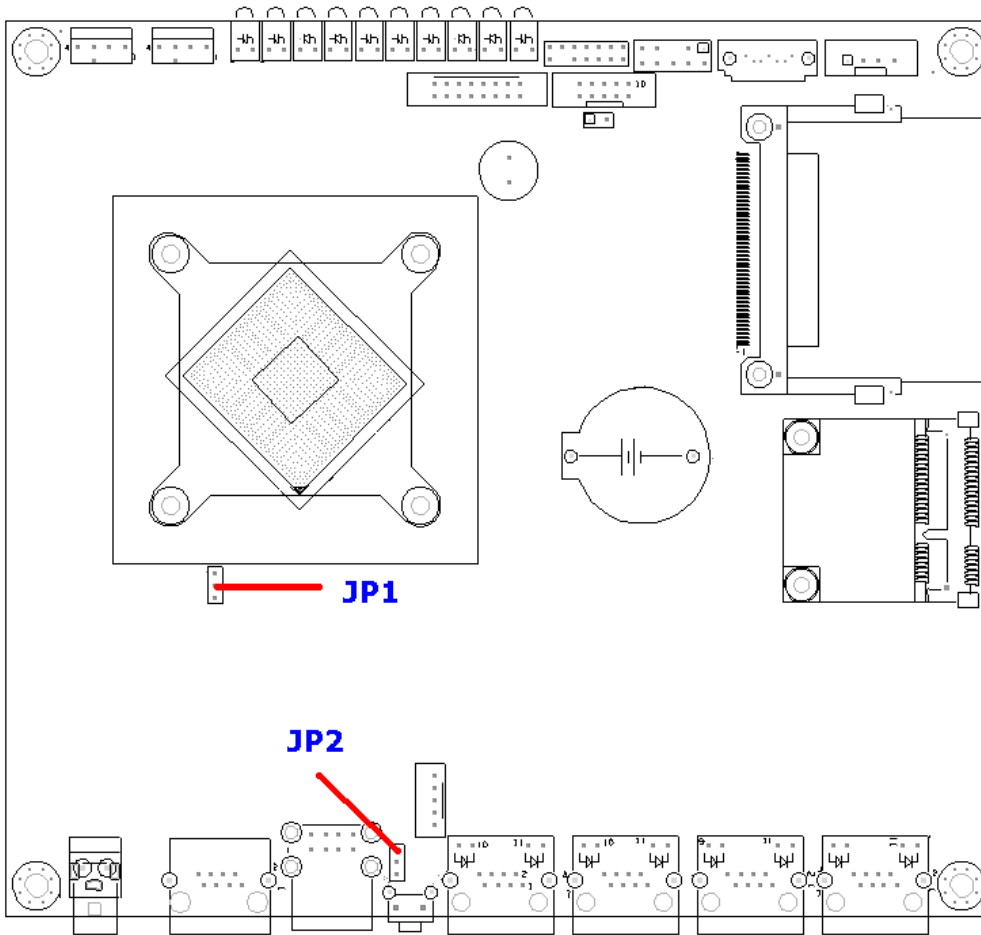
JP1：Clear CMOS

Pin		Setting
	1-2	Normal Operation
	2-3	Clear CMOS

JP2：Watching Dog Function Select

Pin		Setting
	1-2	For Reset
	2-3	For LAN Bypass

2.3 CompactFlash™ Card Socket Pin Define

CompactFlash™ card is a small removable mass storage device.　It can provide complete PCMCIA-ATA functionality and compatibility plus True IDE functionality compatible with ATA/ATAPI-4.

CompactFlash™ storage products are solid state form factor, it means they contain no moving parts.　Thus, they provide users with much greater protection of the data than conventional magnetic disk device.

Pin	Assignment	Pin	Assignment	Pin	Assignment	Pin	Assignment	Pin	Assignment
1	Ground	11	Ground	21	D00	31	D15	41	RESET
2	D03	12	Ground	22	D01	32	CS	42	ORDY
3	D04	13	VCC	23	D02	33	NC	43	DREG
4	D05	14	Ground	24	WP	34	IOR	44	DACK
5	D06	15	Ground	25	NC	35	IOW	45	LED
6	D07	16	Ground	26	NC	36	WE	46	BVD
7	CS	17	Ground	27	D11	37	RDY/BSY	47	D08
8	Ground	18	A02	28	D12	38	VCC	48	D09
9	Ground	19	A01	29	D13	39	SCSE	49	D10
10	Ground	20	A00	30	D14	40	NC	50	Ground
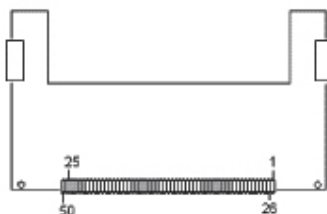
Chapter 3. BIOS Setup

The ROM chip of your PL-80690 board is configured with a customized Basic Input/Output System (BIOS) from AMI BIOS.   The BIOS is a set of permanently recorded program routines that give the system its fundamental operational characteristics.   It also tests the computer and determines how the computer reacts to instructions that are part of programs.

The BIOS is made up of code and programs that provide the device-level control for the major I/O devices in the system.   It contains a set of routines (called POST, for Power-On Self Test) that checks the system when you turn it on.   The BIOS also includes CMOS Setup program, so no disk-based setup program is required. CMOS RAM stores information for:

- Date and time
- Memory capacity of the appliance
- Type of display adapter installed
- Number and type of disk drives

The CMOS memory is maintained by a battery installed on the PL-80690 board. By using the battery, all memory in CMOS can be retained when the system power switch is turned off.   The system BIOS also enables an easy way to reload the CMOS data when you replace the battery, etc.

3.1 Quick Setup
In most cases, you can quickly configure the system by choosing the following main menu options:

1. Choose "Exit" ➔ "Load Optimal Defaults" from the main menu.   This loads the setup default values from the BIOS Features Setup and Chipset Features Setup screens.
2. Choose "Main" & "Advanced" from the main menu.   This option lets you configure the date and time, hard disk type, floppy disk drive type, primary display and more.
3. In the main menu, press F4 ("Save Changes and Exit") to save your changes and reboot the system.

3.2 Entering the BIOS Setup Utility
Use the BIOS Setup program to modify the system parameters to reflect the

options installed in your system and to customize your system. For example, you should run the Setup program after you:

- Receive an error code notification at startup
- Install another disk drive
- Use your system after not having used it for a long time
- Find the original setup missing
- Replace the battery
- Change to a different type of CPU
- Run the AMI Flash program to update the system BIOS

Run the BIOS Setup program after you turn on the system.   On-screen instructions explain how to use the program.

⇓ **Enter the BIOS Setup program's main menu as follows:**

1. Turn on or reboot the system.   After the BIOS performs a series of diagnostic checks, the following message appears:
   "Press DEL to enter SETUP"
2. Press the <DEL> key to enter BIOS Setup program.   The main menu appears:

```
Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
Main  Advanced  Chipset  Security  Boot  Save & Exit

BIOS Information                                          Set the Date. Use Tab
BIOS Vendor            American Megatrends                to switch between Date
Core Version           5.009                              elements.
Compliancy             UEFI 2.3; PI 1.2
Project Version        C6902006
Build Date and Time    06/23/2014 17:13:53

System Date            [Mon 06/23/2014]
System Time            [17:19:43]

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

            Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.
```

3. Choose a setup option with the arrow keys and press <Enter>.   See the following sections for a brief description of each setup option.

BIOS Information: Displays the BIOS related information.

System Date   [Day mm/dd/yyyy]:
This item allows you to set the system date.

SystemTime: [hour:min:sec]:
This item allows you to set the system time.

In the main menu, press F4 ("Save Changes and Exit") to save your changes and reboot the system.   Press F3 ("Optimized Defaults") to load the Optimal default configuration values of the menu. Pressing <ESC> anywhere in the program returns you to the main menu.

3.3 Menu Options
The main menu options of the BIOS Setup program are described in the following sections of this chapter.

Main: For changing the basic system configurations.

Advanced: For changing the advanced system settings.

Chipset: For changing the chipset settings.

Security: Use this menu to set User and Supervisor Passwords.

Boot: For changing the system boot configurations.

Save & Exit: For selecting the exit options and loading default settings.

3.4 Advanced Menu

The Advanced menu items allow you to change the settings for the CPU and other system devices.

⇓ **Use the Advanced Setup option as follows:**

1. Choose "Advanced" from the main menu.   The following screen appears:

```
        Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
         Main  Advanced  Chipset  Security  Boot  Save & Exit

    ▶ Platform Function                              Platform Function
    ▶ NCT6791D Super IO Configuration
    ▶ NCT6791D HW Monitor
    ▶ Serial Port Console Redirection
    ▶ CPU Configuration
    ▶ IDE Configuration
    ▶ Network Stack Configuration
    ▶ CSM Configuration
    ▶ USB Configuration

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

          Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.
```

2. Use the arrow keys to move between fields.   Modify the selected field using the PgUP/PgDN/+/- keys.   Some fields let you enter numeric values directly.

3. After you have finished with the Advanced setup, the <←> or <→> key to switch to other setup menu or press <F4> key to save the setting.

3.4.1 Platform Function
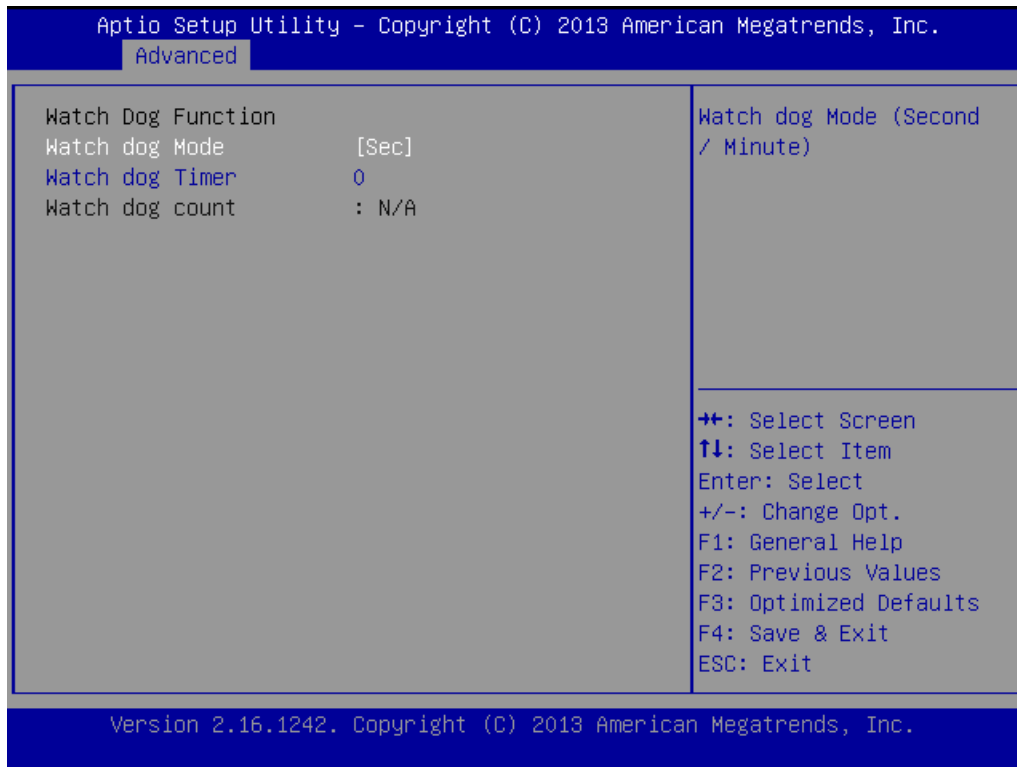
Watchdog™ Mode
Watchdog Mode（Sec/Min）.

Watchdog™ Timer
Set up Watchdog Timer.

3.4.2 NCT6791D Super IO Configuration

```
        Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
           Advanced

  NCT6791D Super IO Configuration                          Set Parameters of
                                                           Serial Port 1 (COMA)
  Super IO Chip            NCT6791D
▶ Serial Port 1 Configuration
▶ Serial Port 2 Configuration



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

        Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.
```

```
        Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
           Advanced

  Serial Port 1 Configuration                             Enable or Disable
                                                          Serial Port (COM)
  Serial Port              [Enabled]
  Device Settings          IO=3F8h; IRQ=4;

  Change Settings          [Auto]



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

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```

```
          Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
          Advanced

  Serial Port 2 Configuration                          Enable or Disable
                                                       Serial Port (COM)

  Serial Port               [Enabled]
  Device Settings           IO=2F8h; IRQ=3;

  Change Settings           [Auto]



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

          Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.
```

Serial Port 1/2 Configuration

Serial Port
Enable or Disable Serial Port (COM)

Change Settings
Select an optimal setting for Super IO device.

3.4.3 NCT6791D HW Monitor

```
          Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
            Advanced

    Pc Health Status

    CPU temperature           : +26 C
    System temperature        : +25 C
    System Fan Speed(CN2)      : N/A
    System Fan Speed(CN1)      : 6585 RPM
    CPU Vcore                  : +0.784 V
    +12 V                      : +12.144 V
    + 5 V                      : +5.060 V
    +3.3V                      : +3.320 V
    DDR3L                      : +1.368 V          →←: Select Screen
    +VGFX                      : +0.840 V          ↑↓: Select Item
    +1.05V                     : +1.048 V          Enter: Select
                                                   +/-: Change Opt.
                                                   F1: General Help
                                                   F2: Previous Values
                                                   F3: Optimized Defaults
                                                   F4: Save & Exit
                                                   ESC: Exit

          Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.
```

CPU Configuration

This sub menu shows the CPU-related information which is automatically detected by BIOS.

```
        Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
             Advanced

   CPU Configuration                                  Socket specific CPU
                                                      Information
 ▶ Socket 0 CPU Information

   CPU Speed                 1467 MHz
   64-bit                    Supported

   Limit CPUID Maximum       [Disabled]
   Execute Disable Bit       [Enabled]
   Hardware Prefetcher       [Enabled]
   Adjacent Cache Line P     [Enabled]              ↔: Select Screen
   Intel Virtualization      [Enabled]              ↑↓: Select Item
                                                    Enter: Select
                                                    +/-: Change Opt.
                                                    F1: General Help
                                                    F2: Previous Values
                                                    F3: Optimized Defaults
                                                    F4: Save & Exit
                                                    ESC: Exit

        Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.
```

3.4.4 IDE Configuration

This sub menu enables you to set or change the configurations for the IDE devices installed in the system.

```
        Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
             Advanced

   IDE Configuration                                  Enable / Disable Serial
                                                      ATA
   Serial-ATA (SATA)         [Enabled]

   SATA Speed Support        [Gen2]
   SATA ODD Port             [No ODD]
   SATA Mode                 [AHCI Mode]

   Serial-ATA Port 0         [Enabled]

   Serial-ATA Port 1         [Enabled]              ↔: Select Screen
                                                    ↑↓: Select Item
   SATA Port0                                        Enter: Select
   Not Present                                       +/-: Change Opt.
                                                    F1: General Help
   SATA Port1                                        F2: Previous Values
   Not Present                                       F3: Optimized Defaults
                                                    F4: Save & Exit
                                                    ESC: Exit

        Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.
```

3.4.5 USB Configuration

This sub menu allows you to change the USB-related features.

```
Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
   Advanced

USB Configuration                                    Enables Legacy USB
                                                     support. AUTO option
USB Module Version      8.11.01                      disables legacy support
                                                     if no USB devices are
USB Devices:                                         connected. DISABLE
      1 Drive, 1 Keyboard, 1 Hub                     option will keep USB
                                                     devices available only
Legacy USB Support       [Enabled]                   for EFI applications.
EHCI Hand-off            [Disabled]
USB Mass Storage Driv    [Enabled]
                                                     ──────────────────────
USB hardware delays a                                →←: Select Screen
USB transfer time-out    [20 sec]                    ↑↓: Select Item
Device reset time-out    [20 sec]                    Enter: Select
Device power-up delay    [Auto]                       +/-: Change Opt.
                                                     F1: General Help
Mass Storage Devices:                                F2: Previous Values
IBM-DARA-212000 0811     [Auto]                      F3: Optimized Defaults
                                                     F4: Save & Exit
                                                     ESC: Exit

        Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.
```

3.4.6 Hardware Health Configuration

This screen shows you the CPU core voltage, System voltage, System temperature and CPU temperature.

```
              Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
              Advanced

  Pc Health Status

  CPU temperature          : +26 C
  System temperature       : +25 C
  System Fan Speed(CN2)     : N/A
  System Fan Speed(CN1)     : 6585 RPM
  CPU Vcore                : +0.784 V
  +12 V                    : +12.144 V
  + 5 V                    : +5.060 V
  +3.3V                    : +3.320 V
  DDR3L                    : +1.368 V          ──────────────────────
  +VGFX                    : +0.840 V          ++: Select Screen
  +1.05V                   : +1.048 V          ↑↓: Select Item
                                               Enter: Select
                                               +/-: Change Opt.
                                               F1: General Help
                                               F2: Previous Values
                                               F3: Optimized Defaults
                                               F4: Save & Exit
                                               ESC: Exit

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```

System Temperature

Shows you the current system temperature.

CPU Temperature

These read-only fields show the functions of the hardware thermal sensor by
CPU thermal diode that monitors the chip blocks to ensure a stable system.

Vcore 12V / 5V / 3.3V

Show you the voltage of 12V / 5V / 3.3V and etc.

3.4.7 Console Redirection

```
           Aptio Setup Utility – Copyright (C) 2013 American Megatrends, Inc.
           Advanced

                                                               Console Redirection
                                                               Enable or Disable.
   Serial Port 1
   Console Redirection      [Enabled]
 ▶ Console Redirection Settings



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

           Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.
```
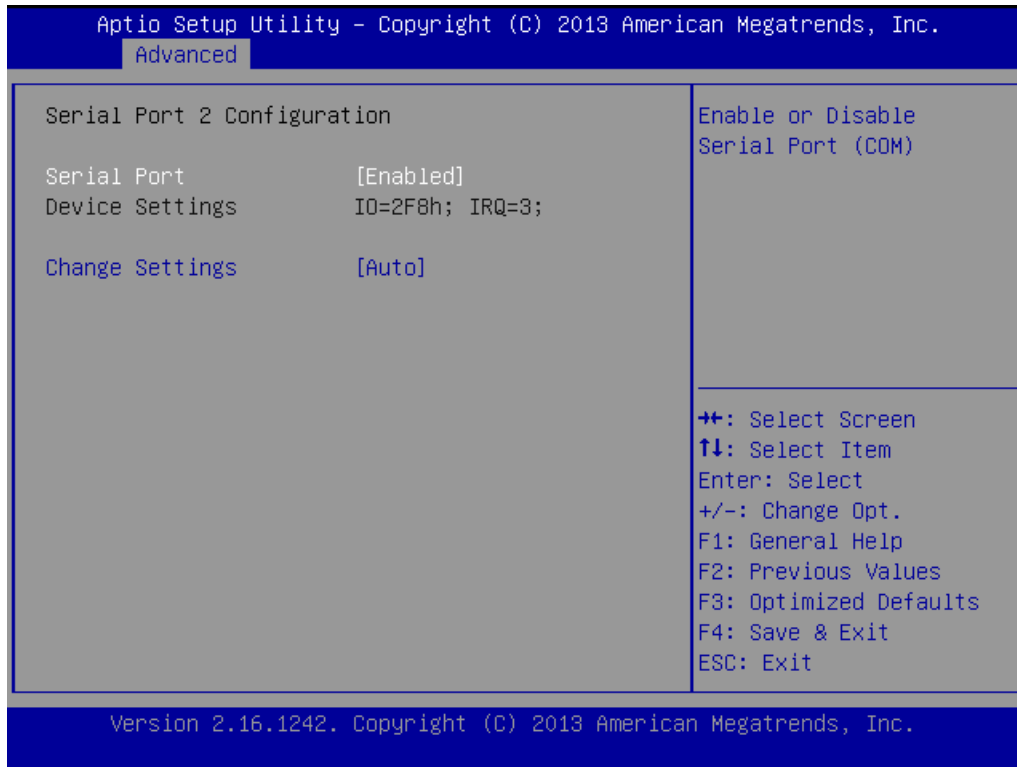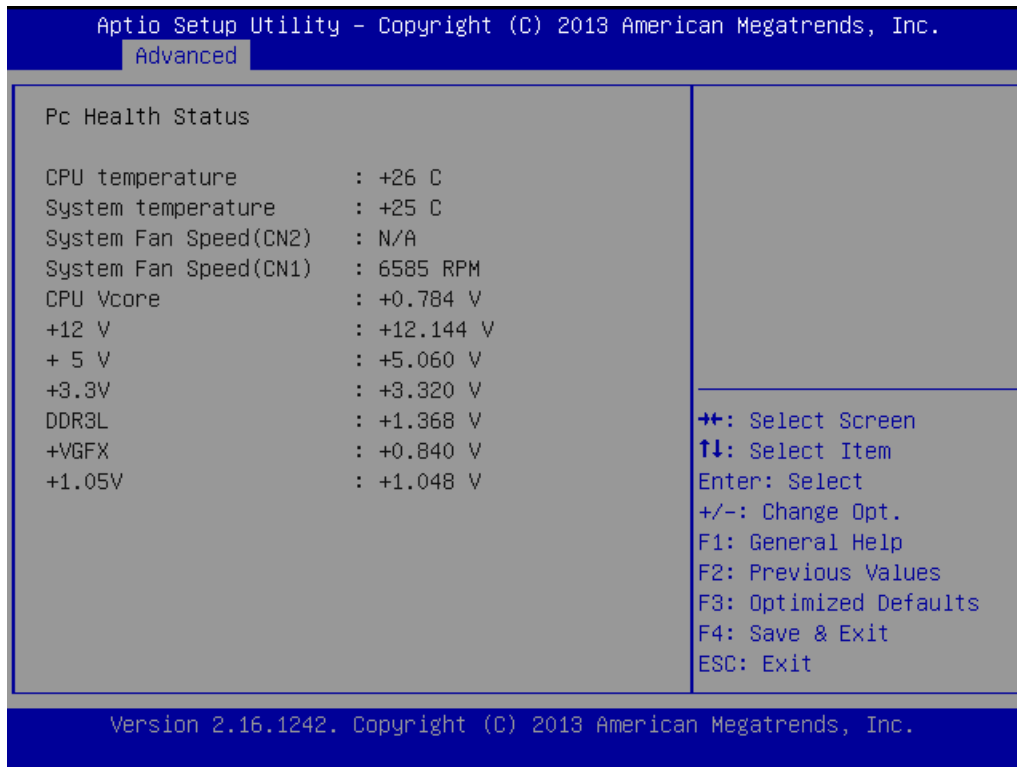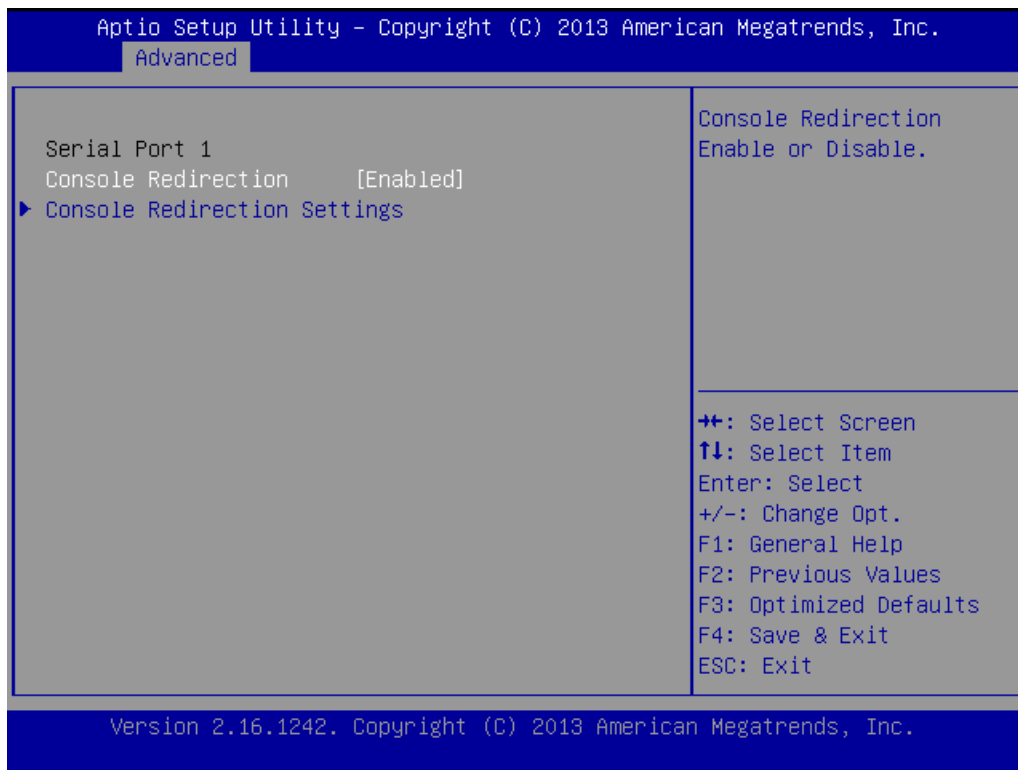
3.5 Boot Menu

⇩ **Use the Boot Setup option as follows:**

1. Choose "Boot" from the main menu.   The following screen appears:

```
  Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
   Main  Advanced  Chipset  Security  Boot  Save & Exit

  Boot Configuration                            Number of seconds to
  Setup Prompt Timeout      1                    wait for setup
  Bootup NumLock State      [On]                 activation key.
                                                 65535(0xFFFF) means
  Quiet Boot                [Disabled]           indefinite waiting.
  Fast Boot                 [Disabled]

  Boot mode select          [UEFI]
  Boot Option #1            [Hard Disk:UEFI: MMC...]
  Boot Option #2            [CD/DVD]
  Boot Option #3            [USB Hard Disk]      ↔: Select Screen
  Boot Option #4            [USB CD/DVD]         ↑↓: Select Item
  Boot Option #5            [USB Key:UEFI: IBM-D...]  Enter: Select
  Boot Option #6            [USB Floppy]         +/-: Change Opt.
  Boot Option #7            [Network]            F1: General Help
                                                 F2: Previous Values
  ▶ UEFI Hard Disk Drive BBS Priorities         F3: Optimized Defaults
  ▶ UEFI USB Key Drive BBS Priorities           F4: Save & Exit
                                                 ESC: Exit

       Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.
```

2. Move between items and select values by using the arrow keys. Modify the selected fields using the PnUP/PgDN Keys. For information on the various options, press <F1> key.

3. After you have finished with the Boot setup, press the <ESC> key to return to the main menu.

Setup Prompt Timeout

Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting.

Bootup NumLock State

Use this item to select the power-on state for the NumLock.

Quiet Boot

Enables or disables quiet boot option.

Fast Boot

Enables or disables fast boot option.

Boot Option Priorities

Sets the system boot priority order.

3.6 Security Menu

⇩ **Use the Security Setup option as follows:**

1. Choose "Security" from the main menu. The following screen appears:

```
          Aptio Setup Utility - Copyright (C) 2013 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 must be entered to
     boot or enter Setup. In Setup the User will
     have Administrator rights.
     The password length must be
     in the following range:                          →←: Select Screen
     Minimum length          3                        ↑↓: Select Item
     Maximum length          20                       Enter: Select
                                                       +/-: Change Opt.
                                                       F1: General Help
                                                       F2: Previous Values
     Administrator Password                            F3: Optimized Defaults
     User Password                                     F4: Save & Exit
                                                       ESC: Exit

          Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.
```

2. Move between items and select values by using the arrow keys.　 Modify the selected fields using the PgUP/PgDN keys. 　Please press the <F1> key for information on the various options.

3. After you have finished with the Security setup, press the <ESC> key to return to the main menu.

Administrator Password

This item indicates whether an administrator password has been set (installed or uninstalled).

3.7 Chipset Menu

⇩ **Use the Chipset Setup option as follows:**

1. Choose "Chipset Configuration" from the Advanced menu. The following screen appears.

```
         Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
          Main  Advanced  Chipset  Security  Boot  Save & Exit

       ▶ North Bridge                               North Bridge Parameters
       ▶ South Bridge




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

          Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.
```

```
        Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
                    Chipset

 ▶ Intel IGD Configuration                        Config Intel IGD
                                                  Settings.
   Memory Information

   Total Memory            1024 MB


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

        Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.
```

```
        Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
                    Chipset

   USB 2.0(EHCI) Support    [Enabled]             Control the USB EHCI
                                                  (USB 2.0) functions.
                                                  One EHCI controller
                                                  must always be enabled




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

        Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.
```

2. Move between items and select values by using the arrow keys.   Modify the selected field the PgUP/PgDN keys.   For information on the various options, press <F1> key.

After you have finished with the Chipset Setup, press the <ESC> key to return to the main menu.

3.8 Exit Menu
The item allows you to save or discard your changes to the BIOS items and load the optimal defaults or failsafe defaults for the BIOS items.
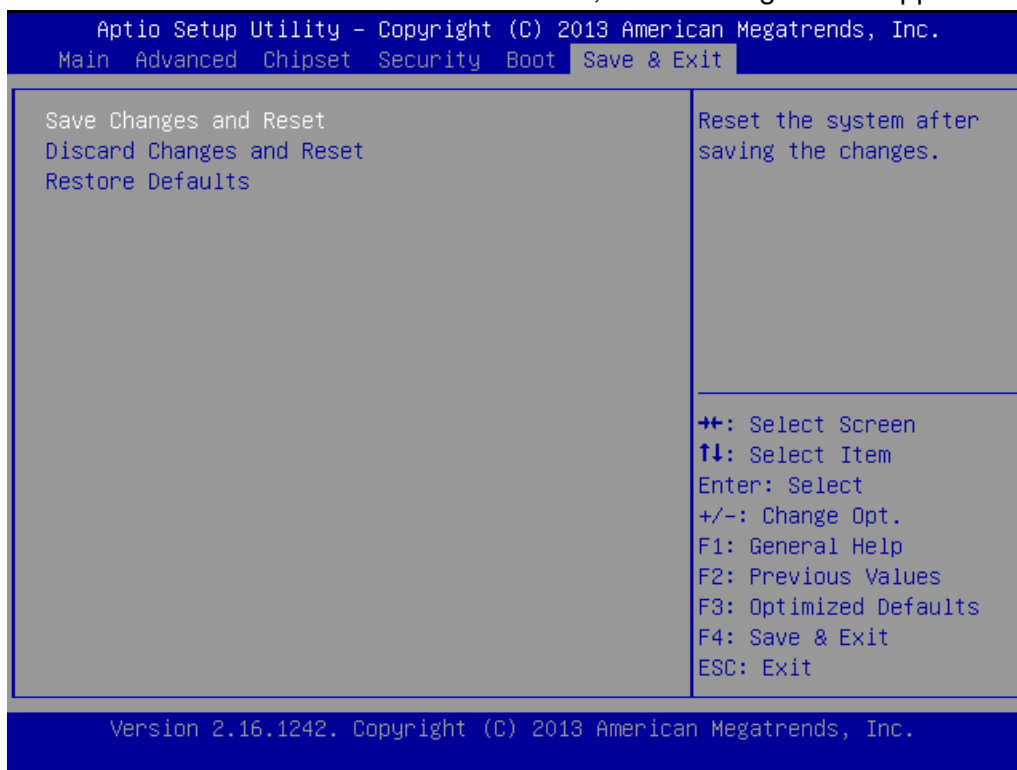
⇩ **Use the Exit option as follows:**

1. Choose "Save & Exit" from the main menu; the following screen appears.

```
        Aptio Setup Utility – Copyright (C) 2013 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 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.
```

2. Move between items and select values by using the arrow keys.   Modify the selected fields using the PgUP/PgDN keys.   For information on the various options, please press <F1> key.

3. Please press the <ESC> key to return the main menu after finishing with the Exit Options.

Save Changes and Reset:

Save changes of values to CMOS and reset the CMOS setup program. F10 key can be used for this operation.

Discard Changes and Reset:
Discard all CMOS changes and reset the CMOS setup program. ESC key can be used for this operation.

Chapter 4. Utility

Please install the GbE modules properly before you install the OS, driver or other software.

4.1 Operation System Supporting

PL-80690 can support Windows® and Linux® operation system as follows. Before installation, please check your OS version.   If your OS is not in the following list, please upgrade your OS version.

OS	Version
DOS	DOS 6.22
Windows®	Windows 7 Ultimate SP1x64
Linux®	Redhat Enterprose Linux 6.4

Appendix A: Programming the Watchdog™ Timer

The PL-80690 provides a Watchdog timer that resets the CPU or enables LAN bypass mode. This function ensures greater system reliability in industrial stand-alone and unmanned environments.

In order to enable the watchdog timer, you have to output the value of the watchdog timer interval to the controller. The value range is from 01H to FFH, and the related time watchdog timer interval is 1 sec to 255 sec.

Data	Timer interval
00	Disabled
01	1 sec
02	2 sec
*	*
*	*
FF	255 sec

If you want to disable the Watchdog timer, just set the timer interval value to 00H.

After setting the timer interval value, the Watchdog timer begins to count down. You have to refresh the Watchdog timer, so that the Watchdog timer will return to its initial value; otherwise, your system will reset after a time-out. The following program shows how to set the Watchdog timer:

ASSEMBLY LANGUAGE   DOS DEBUG

Program 1: Initializing the Watchdog controller

MOV DX,2EH	O 2E 87
MOV AL,87H	O 2E 87
OUT DX,AL	
OUT DX,AL	
MOV DX,2EH	O 2E 07
MOV AL,07H	O 2F 08
OUT DX,AL	
MOV DX,2FH	
MOV AL,08H	
OUT DX,AL	
MOV DX,2EH	O 2E 30
MOV AL,30H	O 2F 01
OUT DX,AL	
MOV DX,2FH	
MOV AL,01H	
OUT DX,AL	

Program 2: Writing a watchdog timer interval value

MOV DX,2EH ;Set timer interval value to xx seconds	O 2E F6
MOV AL,F6H	O 2F XX
OUT DX,AL	O 2E AA
MOV DX,2FH	
MOV AL,XXH ; Timer interval *** see note ***	
OUT DX,AL	
MOV DX,2EH	
MOV AL,AAH	
OUT DX,AL	

Program 3: Disable the watchdog timer

MOV DX,2EH	O 2E 87
MOV AL,87H	O 2E 87
OUT DX,AL	
OUT DX,AL	
MOV DX,2EH ;Set timer interval value to 0 seconds	O 2E F6
MOV AL,F6H	O 2F 00
OUT DX,AL	O 2E AA
MOV DX,2FH	
MOV AL,00H ; Timer interval 00H,(= disable)	
OUT DX,AL	
MOV DX,2EH	
MOV AL,AAH	
OUT DX,AL	

Note: This XX value range is from 01H to FFH, and the related Watchdog timer interval is 1 sec. to 255 sec. (as in the previous description).

Appendix B: Cable Development Kit

The PL-80690 offers some cables for development use.

DK001

Item & Description	Part No.	Qty
Ethernet Cat.5 Cable 2M/ RoHS	CB-EC5200-00	1
Cross Over 2M Color/ RoHS	CB-CO5202/4-00	1
RJ45 to DB9 2M Cable/ RoHS	CB-RJDB91-00	1
VGA CABLE (2mm) 15CM/ RoHS	CB-IVGA01-00	1

CB-EC5200-00   CB-CO5202/4-00   CB-RJDB91-00

CB-IVGA01-00

WIN enterprises Custom Embedded Solutions