GOT5152T-845

All-in-One
15" XGA TFT Fanless Touch Panel
Computer with Intel® Celeron® Processor
N3060 onboard

User's Manual

RoHS

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CAUTION

Wrong type of batteries may cause explosion. It is recommended that users only replace with the same or equivalent type of batteries as suggested by the manufacturer once properly disposing of any used ones.

Safety Precautions

Before getting started, read the following important precautions.

1. Be sure to ground yourself to prevent static charge when installing the internal components. Use a grounding wrist strap and place all electronic components in any static-shielded devices. Most electronic components are sensitive to static electrical charge.

2. Disconnect the power cords from the GOT5152T-845 series prior to any installation. Be sure both the system and the external devices are turned off. Sudden surge of power could ruin sensitive components. Make sure the GOT5152T-845 series is properly grounded.

3. Do not open top cover of the system. If opening the cover for maintenance is a must, only a trained technician is allowed to do so. Integrated circuits on computer boards are sensitive to static electricity. To avoid damaging chips from electrostatic discharge, observe the following precautions:

● Before handling a board or integrated circuit, touch an unpainted portion of the system unit chassis for a few seconds. This will help to discharge any static electricity on a human body.

● When handling boards and components, wear a grounding wrist strap available from most electronic component stores.

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Section 1
Introduction

This Section contains general information and detailed specifications of the GOT5152T-845, including the following subsections:

● General Descriptions

● Specifications

● Dimensions and Outlines

● I/O Outlets

● Package List

1.1   General Descriptions

The GOT5152T-845 is a fanless and compact touch panel computer, equipped with a 15" TFT LCD display and an Intel® Celeron® Processor N3060 of low power consumption (with 2M cache, up to 2.48 GHz). It is compatible with Windows 7, Windows 8.x, and Windows embedded OS. In addition, this panel computer can house an mSATA for storage and two Mini card slots for wireless connection. Note that its excellent ID and friendly user interface have made it a professional yet easy-to-use panel computer. Overall, the GOT5152T-845 is ideal for space-limited applications in factory automation, machine making operating systems, building automation, just to name a few.

GOT5152T-845: A 15" TFT XGA Fanless Touch Panel Computer

● Reliable and stable design
The GOT5152T-845 adopts a fanless cooling system which makes it suitable for environments prone to vibration.

● Embedded O.S. supported
The GOT5152T-845 supports not only Windows 7, Windows 8.x, and Windows 10, but also embedded O.S. Regarding storage device, the GOT5152T-845 supports a 2.5" SATA and an mSATA.

● Industrial-grade product design
The GOT5152T-845 was adaptively designed to be used in different industrial environments.

● Standards
The front bezel has met the IP65/NEMA4 standards.

● Communications interfaces
To connect with other devices, the GOT5152T-845 also features several interfaces: USB, Ethernet, and RS-232/422/485.

1.2 Specifications

1.2.1 Main CPU Board

- **CPU**
  - Intel® Celeron® Processor N3060 (2M Cache, up to 2.48 GHz) onboard.

- **System Memory**
  - One 204-pin DDR3L-1600 SO-DIMM socket
  - Maximum memory up to 8 BG

- **BIOS**
  - America Megatrends BIOS

1.2.2 I/O System

- **Standard I/O**
  - One RS-232/422/485 port
  - One RS-232 port
  - Two USB 2.0 ports
  - Two USB 3.0 ports
  - One 8-bit DIO port (programmable, DB9)

- **Ethernet**
  - Two RJ45 Giga Ethernet ports (Intel i211AT)

- **Audio**
  - One Line out

- **Expansion**
  - One Mini-card slot (with SIM slot)
  - One Mini-card slot (mSATA supported as an option)

- **Storage**
  - One mSATA
  - One 2.5" SATA HDD

- **Power connector**
  - GOT5152T-845-J: 12 VDC with external 60W AC adapter and screw type connector;
  - GOT5152T-845-24VDC : 24 VDC with phoenix power connector

1.2.3 System Specifications

- **15" XGA (1024x768) LCD with LED backlight**
- **5 wired resistive touch**
- **Fanless heat dispensing design**
- **Disk drive housing:**
  - One 2.5" SATA drive
- **Net Weight**
  - 3.2 kg (7.05 lb)
- **Dimension (size of main body)**
  - 387.9 mm x 307.7 mm x 54.6mm
- **Operation temperature**
  - 0℃ to 50℃
- **Relative humidity**
  - 10% to 90% @ 40℃, -non-condensing
- **Vibration**
  - 2.0 G, 5 to 500 Hz, random for SSD
- **Power input**
  - 24 VDC with phoenix power connector or
  - External 60W AC adapter
    - — Power input: 100 to 240 VAC
    - — Power output: 12 VDC, Max. 5 A

NOTE   All specifications and images are subject to change without notice.

NOTE   It is recommended to use a wide-temperature HDD if the operating temperature is over 35℃.

1.3 Dimensions and Outlines

Diagram 1-1 shows the dimensions and outlines of the front panel of the GOT5152T-845.

Diagram 1-1 Front dimensions and outline of the GOT5152T-845

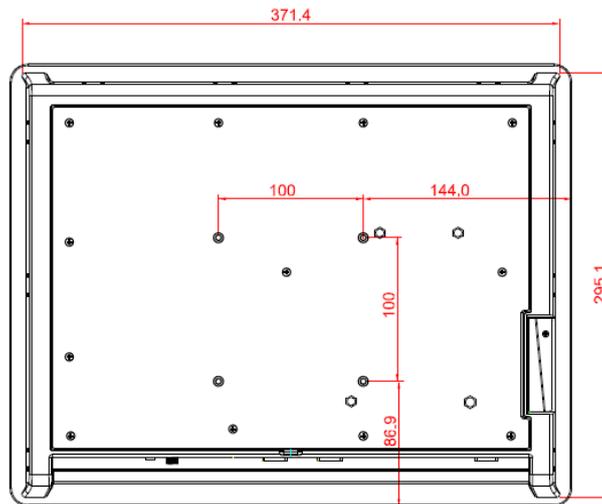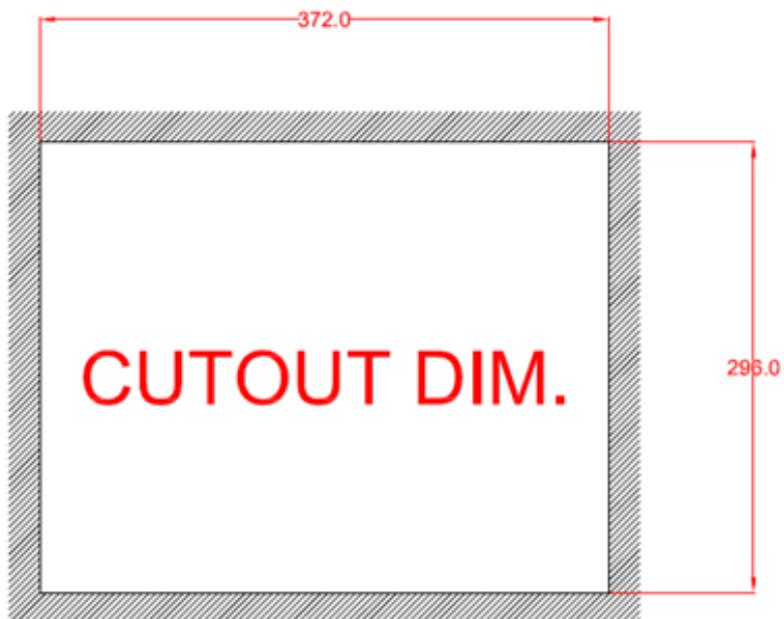**Diagram 1-2 Cutting-out dimensions of the GOT5152T-845**

Diagram 1-3 Dimensions and outline of the six facets the of the GOT5152T-845
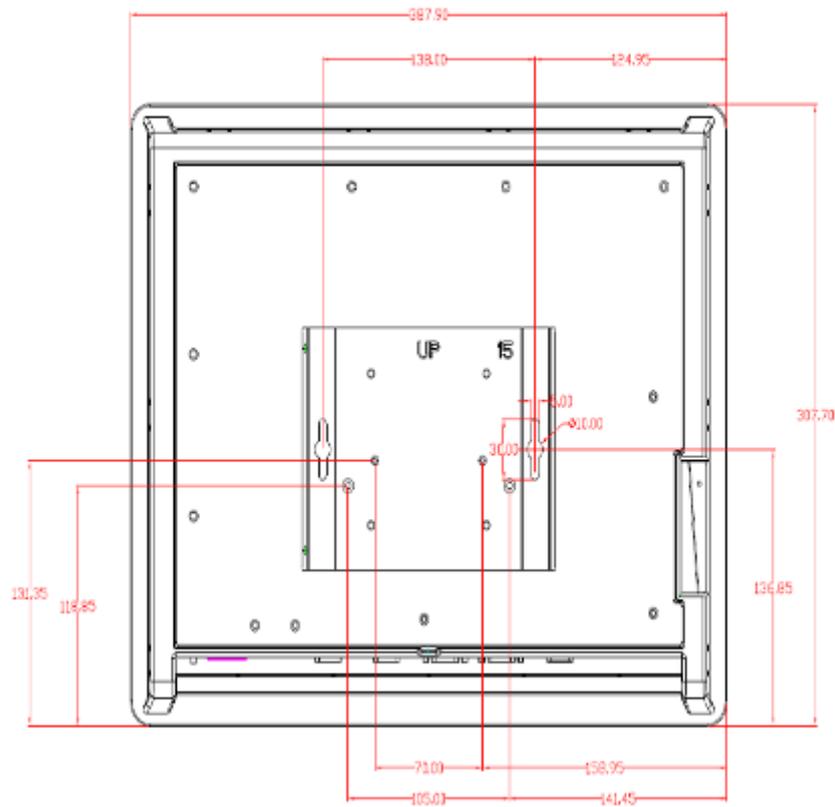
(1) The back side
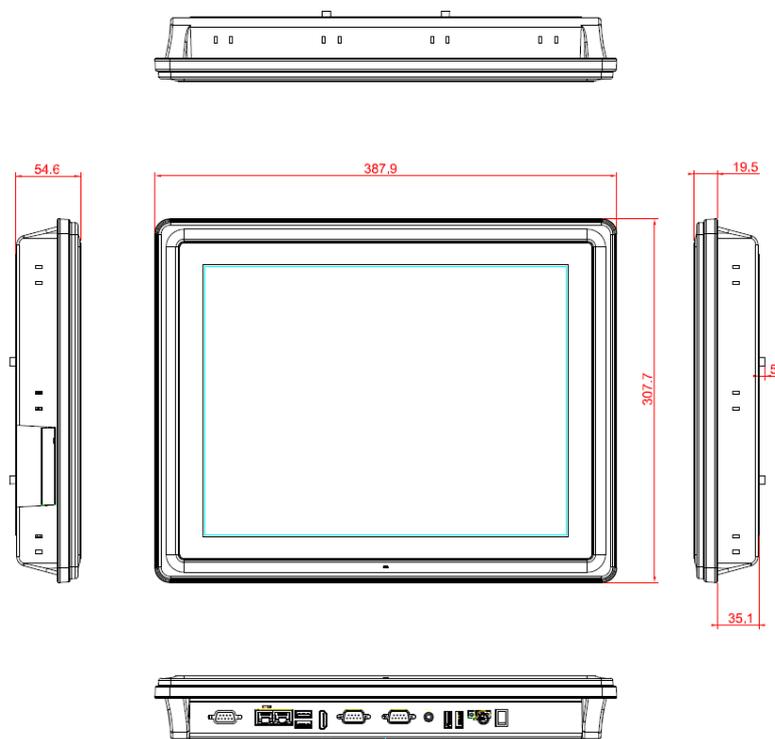
(2) The left and right sides; the top and bottom sides; and the front side

1.4 I/O Outlets

Please refer to Figures 1-1 and Table 1-1 for I/O locations at the bottom of the GOT5152T-845.

Figure 1-1 Bottom view of the GOT5152T-845
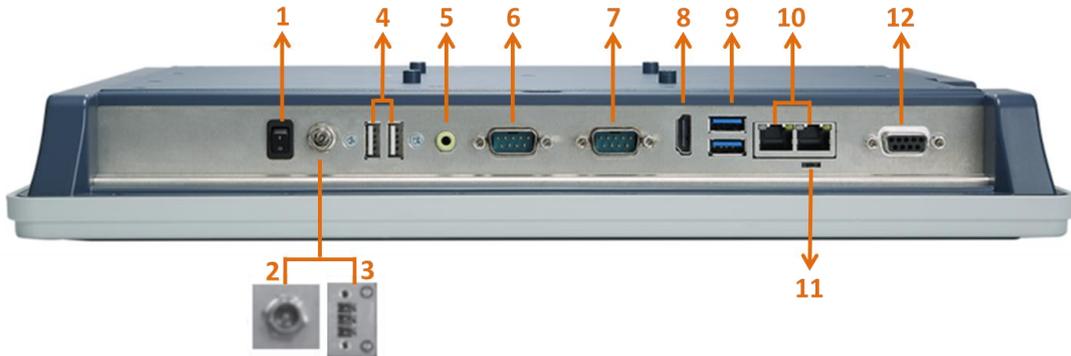
Table 1-1 Descriptions of I/O Functions at the bottom of the GOT5152T-845

No	Function	No	Function
1	Power switch (ATX)	7	COM 2 (RS-232)
2	Power Input connector (Screw)	8	HDMI
3	Power Input connector (Phoenix)	9	Dual USB 3.0 ports
4	Dual USB 2.0 ports	10	Ethernet (RJ-45)
5	Audio (Line-out)	11	AT/ATX selectable switch
6	COM 1 (RS-232/422/485)	12	8 x DIO ports (programmable, DB9)

1.5   Packing List

A complete bundled package should contain the following items:

- GOT5152T-845 x 1
- Driver CD x1
- HDD sponge x 4
- Phoenix connector x1 (for GOT5152T-845-24VDC)
- Power Adapter & power cord (for GOT5152T-845-J)

Please contact an Axiomtek distributor immediately if any of the above-mentioned items is missing.

CAUTION： ***There are four pieces of HDD sponge in the packing list at the time of shipment without HDD/SDD being pre-installed.***

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Section 2
Hardware and Installation

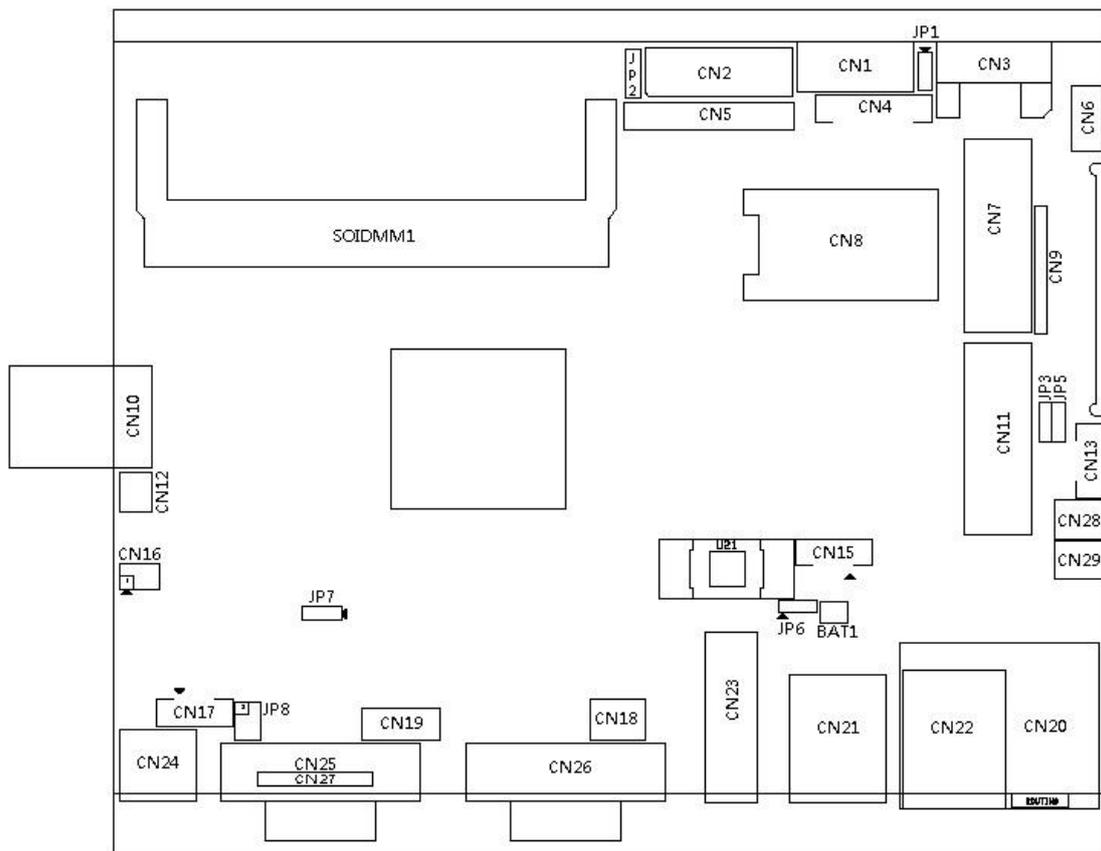The GOT5152T-845 provides rich I/O ports and flexible expansions for users to meet different demands. The Section is describing hardware installation, including the following subsections:

● Jumper and Connector Settings
● Port Definitions
● Hardware Installation
● Mounting Methods
● Connecting the Power Input

2.1   Jumper and Connector Settings

Diagram 2-1 Component Side of the Board

Diagram 2-2 Solder Side of the Board

2.1.1 Jumper Settings

Users can make proper jumper settings to configure the board **SBC87845** to suit the needs of their applications.

Table 2-1 shows the default jumper settings for the GOT5152T-845.

Table 2-1 Default jumper settings

Jumper	Description	Default Settings
JP1	★ OSD function: LCD ON/OFF OSD function: Touch ON/OFF	Short 1-2 Short 2-3
JP2	★ LVDS Panel Power : 3.3V LVDS Panel Power : 5V	Short 1-2 Short 2-3
JP3	★ ATX mode AT mode	Short 1-2 Short 2-3
JP5	Touch Controller: 4,8 WIRE ★ Touch Controller: 5 WIRE	Short 1-2 Short 2-3
JP6	★ Normal Clear CMOS	Short 1-2 Short 2-3
JP7	★ Internal Buzzer ENABLE Internal Buzzer DISABLE	Short 1-2 Short 2-3
JP8	★ COM1 normal mode COM1 pin1 with power :+5V COM1 pin9 with power :+12V	Short 3-5,4-6 Short 1-3,4-6 Short 3-5,2-4

NOTE: ★ shown above is for default setting.

2.1.2 Connector Settings

The connectors on the CPU Board allow the CPU Board to connect with other parts of the system. Ensure that all connectors are in place and firmly attached. Table2-2 lists the function of each connector on the Board SBC87845。

Table 2-2 Connector Settings

Connectors	Description
CN1	LVDS inverter connector
CN2	LVDS connector
CN3	SATA connector
CN4	OSD connector
CN6	HDD power connector
CN7,CN11	Full size min-PCIe connector
CN8	SIM card connector
CN9	DIO connector
CN10	Power connector
CN12	Power Button connector
CN13	Touch connector
CN16	LIN/MIC In connector
CN17	Speaker Out connector
CN18	System Fan connector
CN19	USB2.0 connector
CN20,CN22	RJ45 connector
CN21	USB3.0 connector
CN23	HDMI connector
CN24	Audio out connector
CN25,CN27	RS232/422/485 Port connector
CN26	RS232 Port connector
CN28,CN29	+5V Standby Power connector

LVDS inverter connector: CN1

Table 2-3 CN1 pin assignment

Pin	Description	Pin	Description
1	GND	5	Inverter ON-OFF
2	GND	6	+12V
3	GND	7	+12V
4	Backlight control	8	+12V

Diagram 2-3 CN1 pin mapping
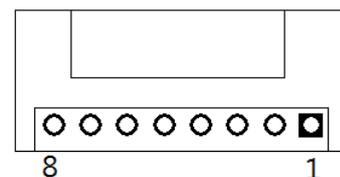
LVDS connector: CN2

Table 2-4 CN2 pin assignment

Pin	Description	Pin	Description
1	VCC	21	GND
2	VCC	22	GND
3	VCC	23	LVDSA_DATAN0
4	VCC	24	LVDSB_DATAN2
5	VCC	25	LVDSA_DATAP0
6	VCC	26	LVDSB_DATAP2
7	Resolution selection[0]	27	GND
8	Resolution selection[1]	28	GND
9	GND	29	LVDSA_DATAN1
10	GND	30	LVDSA_DATAN3
11	LVDSB_DATAN3	31	LVDSA_DATAP1
12	LVDSB_DATAN0	32	LVDSA_DATAP3
13	LVDSB_DATAP3	33	GND
14	LVDSB_DATAP0	34	GND
15	GND	35	LVDSA_DATAN2
16	GND	36	LVDSA_CLKN
17	LVDSB_CLKN	37	LVDSA_DATAP2
18	LVDSB_DATAN1	38	LVDSA_CLKP
19	LVDSB_CLKP	39	Resolution selection[2]
20	LVDSB_DATAP1	40	Resolution selection[3]

Diagram 2-4 CN2 pin mapping
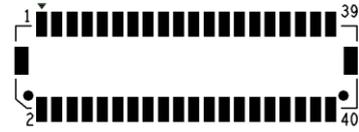
HDD power connector: CN6

Table 2-5 CN6 Pin Assignment

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

Diagram 2-5 CN6 pin mapping
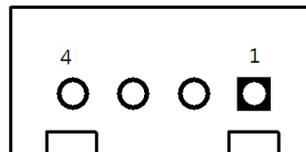
SIM card connector: CN8

Table 2-6 CN8 pin assignment

Pin	Description	Pin	Description
1	UIM PWR	5	GND
2	UIM RST	6	UIM VPP
3	UIM CLK	7	UIM DATA
4	NC	8	NC

Diagram 2-6 CN8 pin mapping
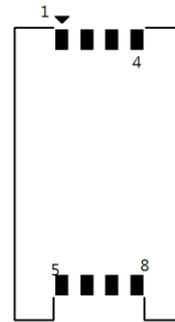
DIO connector: CN9

Table 2-7 CN9 pin assignment

Pin	Description
1	GPIO0
2	GPIO1
3	GPIO2
4	GPIO3
5	GPIO4
6	GND
7	GPIO5
8	GPIO6
9	+3.3V
10	GPIO7

Diagram 2-7 CN9 pin mapping

Power connector: CN10

Table 2-8 CN10 pin assignment

Pin	Description
1	DCIN (+12V)
2	DCIN (+12V)
3	GND
4	GND

Diagram 2-8 CN10 pin mapping
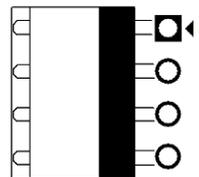
Power button connector: CN12

Table 2-9 CN12 pin assignment

Pin	Description	Pin	Description
1	GND	2	PWBTN

Diagram 2-9 CN12 pin mapping
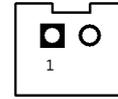
TOUCH connector: CN13

Table 2-11 CN13 pin assignment

Pin	Description
1	Sense
2	X+
3	X-
4	Y+
5	Y-

Diagram 2-10 CN13 pin mapping
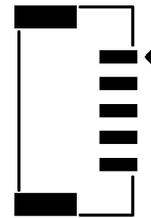
Lin/Mic In connector: CN16

Table 2-11 CN16 pin assignment

Pin	Description	Pin	Description
1	LIN IN R	2	GND
3	LIN IN L	4	GND
5	MIC IN	6	GND

Diagram 2-11 CN16 pin mapping
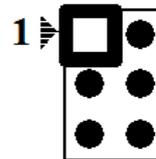
Speaker connector: CN17

Table 2-12 CN17 pin assignment

Pin	Description
1	SPKOUT_L-
2	SPKOUT_L+
3	SPKOUT_R-
4	SPKOUT_R+
5	GND

Diagram 2-12 CN17 pin mapping

System Fan connector: CN18

Table 2-13 CN18 pin assignment

Pin	Description
1	GND
2	+12V / Speed control output
3	Fan speed detect

Diagram 2-13 CN18 pin mapping
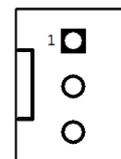
USB2.0 connector: CN19

Table 2-14 CN19 pin assignment

Pin	Description	Pin	Description
1	+5V	2	+5V
3	USB-	4	USB-
5	USB+	6	USB+
7	GND	8	GND
9	GND	10	GND

Diagram 2-14 CN19 pin mapping
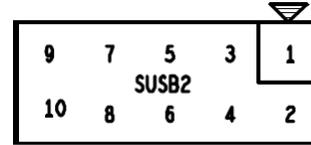
+5V Standby Power connector: CN28, CN29

Table 2-15 CN28/ 29 pin assignment

Pin	Description	Pin	Description
1	GND	2	+5V_SBY

Diagram 2-15 CN28/ 29 pin mapping
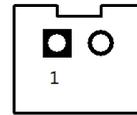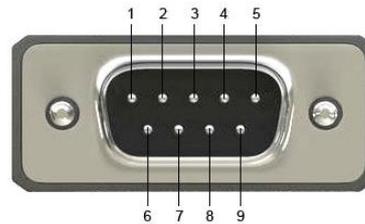
2.2   Port Definitions

2.2.1 COM Port

Table 2-16 shows the pin assignment for RS-232/ 422/ 485 port.

Table 2-16 COM port pin assignment

Pin	RS-232	RS-422	RS-485
1	DCD	TX-	Data-
2	RXD	TX+	Data+
3	TXD	RX+	No use
4	DTR	RX-	No use
5	GND	GND	GND
6	DSR	No use	No use
7	RTS	No use	No use
8	CTS	No use	No use
9	RI	No use	No use

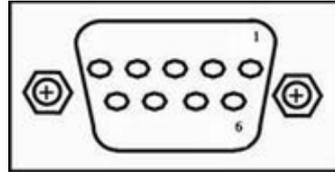**Diagram 2-16 Com port pin mapping**

2.2.2 DIO Port

A Dub 9 connector is set up as a DIO port on the I/O side of the GOT5152T-845. Please refer to detailed pin assignment list below in Table 2-17.

Table 2-17 COM port pin assignment   **Diagram 2-17 Com port pin mapping**

| Pin	Description
1	DIO0
2	DIO1
3	DIO2
4	DIO3
5	DIO4
6	DIO5
7	DIO6
8	DIO7
9	GND

2.2.3 Ethernet Port

The GOT5152T-845 is equipped with two high-performance Plug and Play Ethernet interfaces which are fully compliant with IEEE 802.3 standards and can be connected with a RJ-45 LAN connector.

Please refer to detailed pin assignment for the Ethernet ports below in Table 2-18.

Table 2-18 Ethernet port pin assignment   **Diagram 2-18 Ethernet port pin mapping**

| Pin	Description
1	TX+ (Data transmission positive
2	TX- (Data transmission negative)
3	Rx+(Data reception positive)
4	RJ45 termination
5	RJ45 termination
6	Rx- (Data reception negative)
7	RJ45 termination
8	RJ45 termination
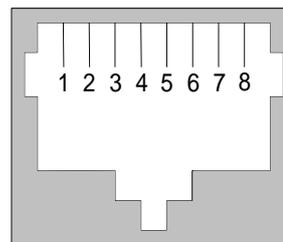
RJ-45

2.3   Hardware Installation

2.3.1 Installing a HDD

The GOT5152T-845 provides a convenient Hard Disk Drive (HDD) bracket for users to install a 2.5" SATA HDD. Please follow the steps:
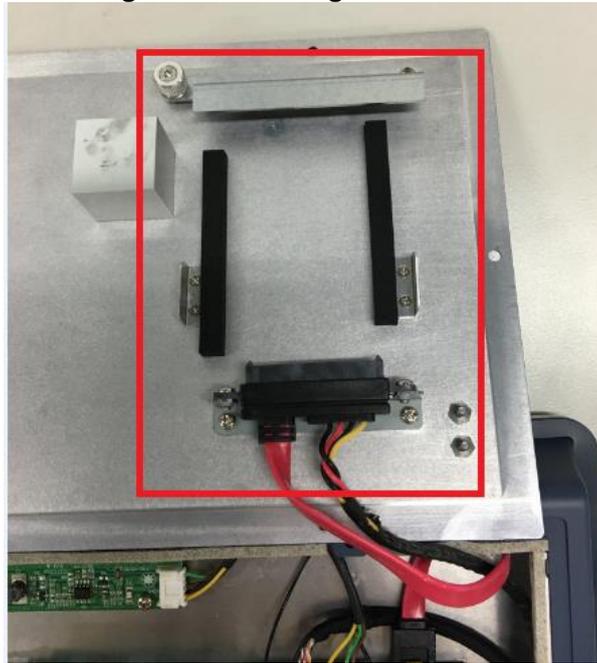.

Step 1   Unscrew all screws on the back cover to open the back cover (see Figure 2-1).

Figure 2-1 Un-screwing all screws on the back cover
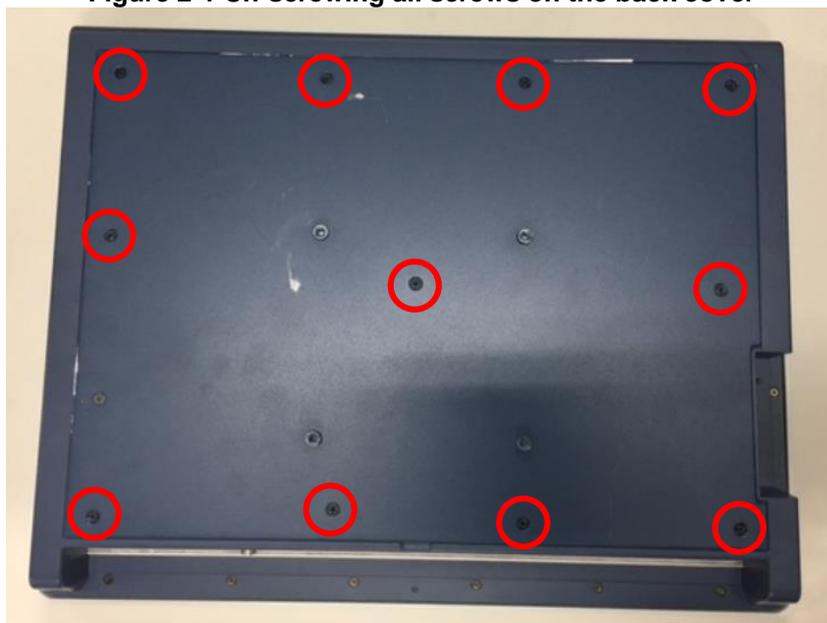
Step 2   **Locate the HDD slot on the back cover (see Figure 2-2).**

Figure 2-2 Locating the HDD slot

Step 3   Unscrew the thumbscrew (see Figure 2-3(a) and (b)).

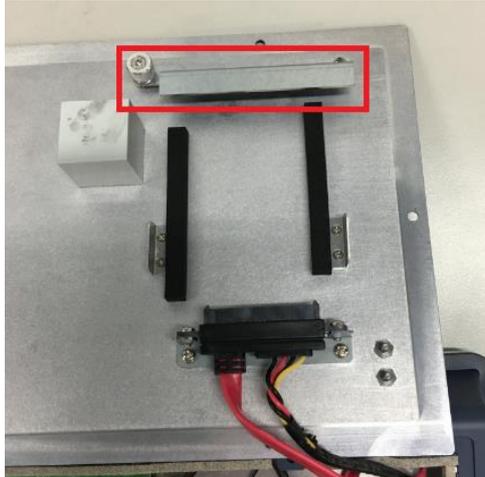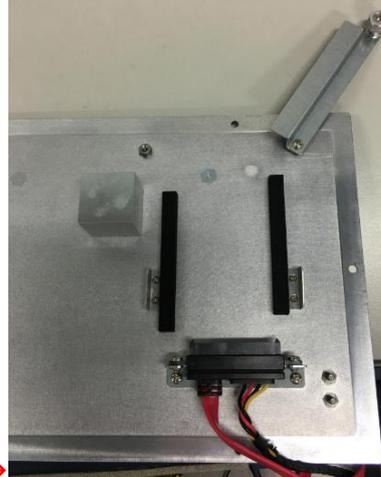**Figure 2-3(a) HDD slot (closed)**   **Figure 2-3(b) HDD slot (open)**

CAUTION：*If the thickness of a HDD is less than 9.5mm, please add sponges under the HDD.*

Step 4   Insert a 2.5" SATA HDD onto the right spot (see Figure 2-4).

Figure 2-4 Placing a HDD

Step 5   **Close up and screw the thumbscrew. Installation is completed (see Figure 2-5).**

Figure 2-5 Connecting the HDD Slot into the HDD

2.3.2 Installing a DRAM

The GOT5152T-845 provides one 204-pin DDR3L SODIMM socket that supports system memory up to 8GB. Please follow steps below to install a memory module:
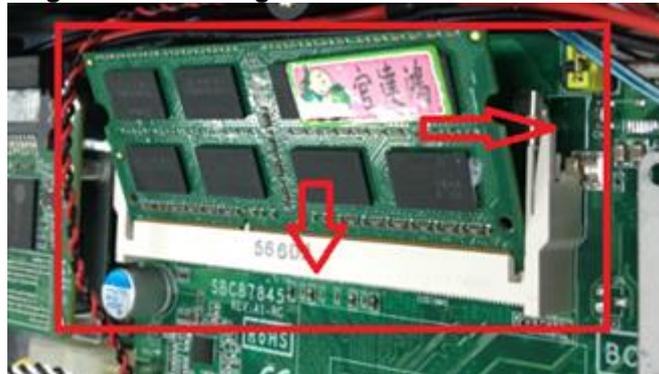
Step 1   **See Figure 2-6; Open the back cover and locate the DIMM socket on main board (Part No. SBC87845).**

Figure 2-6 Locating the DIMM socket

Step 2   **Insert a DRAM into the DIMM socket, and then push it down firmly until it is fully clipped into the socket (see Figure 2-7).**

Figure 2-7 Inserting a DRAM into the DIMM socket

Step 3 **The socket latches are levered upwards and clipped onto the edges of the DIMM socket (see Figure 2-8).**

Figure 2-8 Ensuring the position of the socket latches

2.3.3 Installing a Wireless LAN Card

The GOT5152T-845 comes with two Mini card slots for users to install wireless LAN cards. Either slot 1 or slot 2 can be used to install a wireless LAN card. Please refer to the following instructions and illustration for the installation of the wireless LAN card.
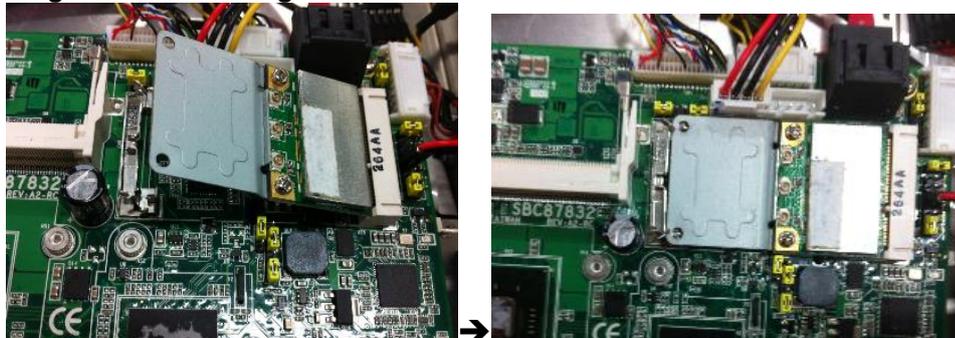
Step 1 **Open the back cover and locate the Mini Card slots (i.e. slot 1 and slot 2) on the main board (see Figure 2-9).**

Figure 2-9 Locating the Mini Card slots (slot 1 and slot 2)

Step 2 **Insert a wireless LAN card into one of the Mini Card slots. Screw tightly the card onto the main board (see Figure 2-10)**

Figure 2-10 Screwing the wireless LAN card onto the main board

Step 3   **Locate the built-in antenna cable and connect it to the wireless LAN card.
There are two connectors on the wireless LAN card. One is the main
connector whereas the other is the secondary connector. The main
connector on the wireless LAN card is the one to be connected to the
antenna cable (see Figure 2-11).**

**Figure 2-11 Locating and connecting the antenna cable**

2.3.4 Installing a mSATA Card

The GOT5152T-845 comes with one Mini Card slot for users to install mSATA cards. Please
choose slot 2 when installing an mSATA card and refer to the following instructions and
illustration:

Step 1   **Open the back cover and locate the Mini Card slots (i.e. slot 1 and slot 2) on
main board (see Figure 2-12).**

Figure 2-12 Locating the Mini Card slots (slot 1 and slot 2)
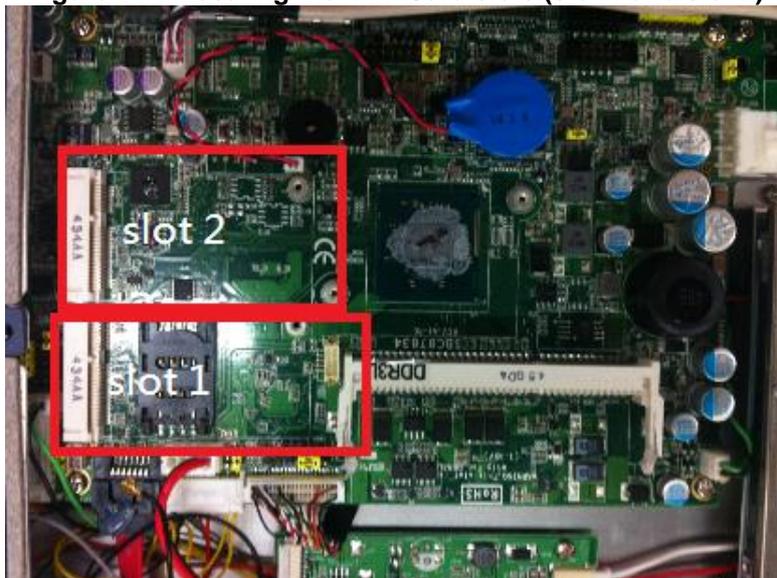
Step 2   Insert an mSATA card to slot 2. Screw it firmly onto the slot.

NOTE   The type of screws used for the Mini Card slots is M12.

2.4   Mounting Methods

There are four ways to install the GOT5152T-845, namely: panel/ wall/ desktop/ and VESA mount.

2.4.1 Panel Mount

A standard panel mount kit, including particular screws (see Diagram 2-19), is bundled with the system packing list, allowing users to mount the GOT5152T-845.

Simply fasten screws on the back cover of the GOT5152T-845 for panel mount. No extra back chassis is required.

Diagram 2-19 Panel mount kit and the mounting spots on the back cover of GOT5152T-845
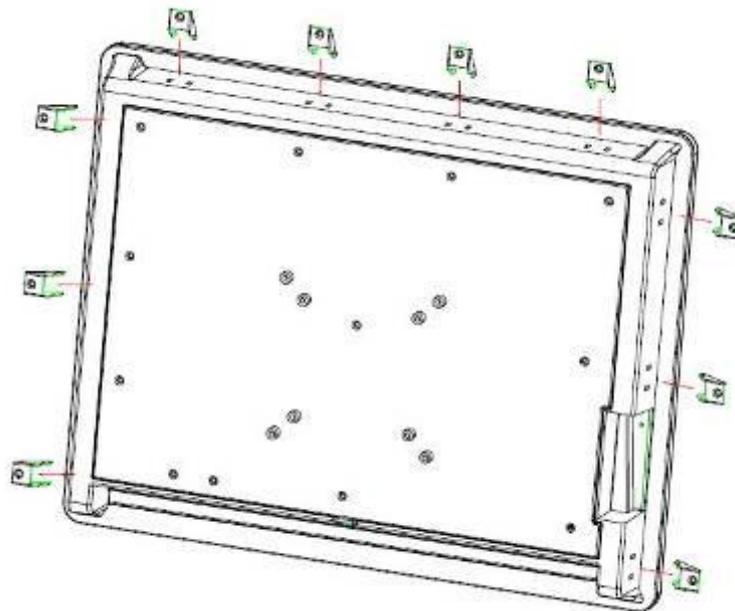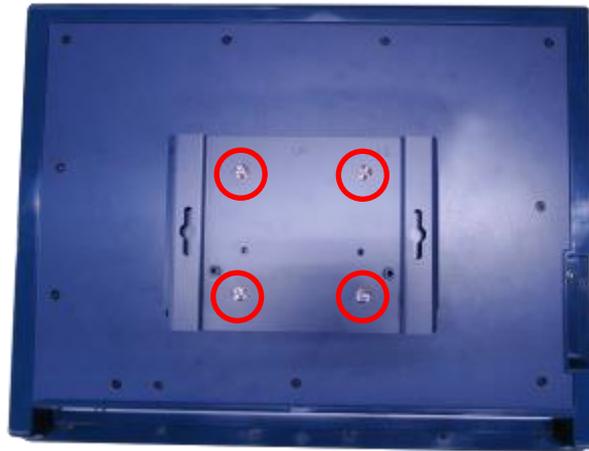
2.4.2 Wall Mount

When fixing the wall mount chassis on the back of the GOT5152T-845, users can mount the unit on the wall.

First locate the spots of screwing on the back chassis (see Figure 2-14) before applying it to the GOT5152T-845.

Figure 2-13 Locating the screwing spots on the back chassis for wall mount
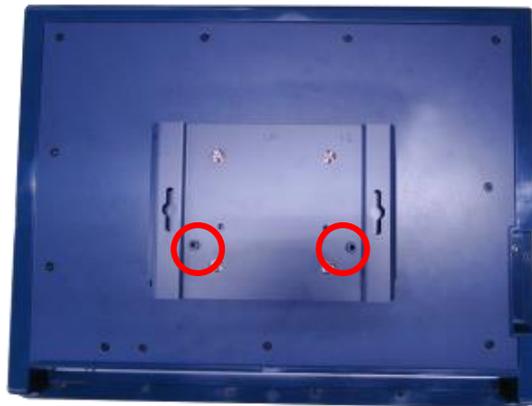
2.4.3 Desktop Mount

When fixing the desktop mount chassis on the back of the GOT5152T-845, users can mount the unit on the desk.

First locate the spots of screwing on the back chassis (see Figure 2-15) before applying it to the GOT5152T-845.

Please refer to the following steps when adopting the desktop mount for the GOT5152T-845:

Step 1   **Locate the screwing spots as marked on the back of the chassis (see Figure 2-15).**

Figure 2-14 Locating the screwing spots on the back chassis for desktop mount

Step 2   **Assemble the desktop stand to the back chassis, and fix them to the GOT5152T-8485 with screws (see Figure 2-16).**

Figure 2-15 Fixing the desktop stand and chassis to the GOT5152T-845

CAUTION：Please use recommended/suitable mounting apparatus to avoid risk of injury.

2.4.4 VESA Mount

When fixing the VESA mount chassis on the back of the GOT5152T-845, users can apply VESA mount to the unit.

First locate the spots of screwing on the back chassis (see Figure 2-16) before applying it to the GOT5152T-845.

Please refer to the following steps when adopting the VESA mount for the GOT5152T-845:

Step 1 **Locate the screwing spots as marked on the back of the chassis (see Figure 2-16).**

Figure 2-16 Locating the screwing spots on the back chassis for VESA mount

Step 2 **Assemble the VESA-ARM to the back chassis, and fix them to the GOT5152T-845 with screws (see Figure 2-18).**

Figure 2-17 Fixing the VESA-ARM stand and chassis to the GOT5152T-845

*CAUTION: Please use recommended/suitable mounting apparatus to avoid risk of injury.*

2.5   Connecting the Power Input

2.5.1 Phoenix-type Power Input

The GOT5152T-845 is equipped with a Phoenix-type power connector which adopts 24 VDC input. Please follow the signs   (see Diagram 2-20) on a power connector when connecting to a DC power source.

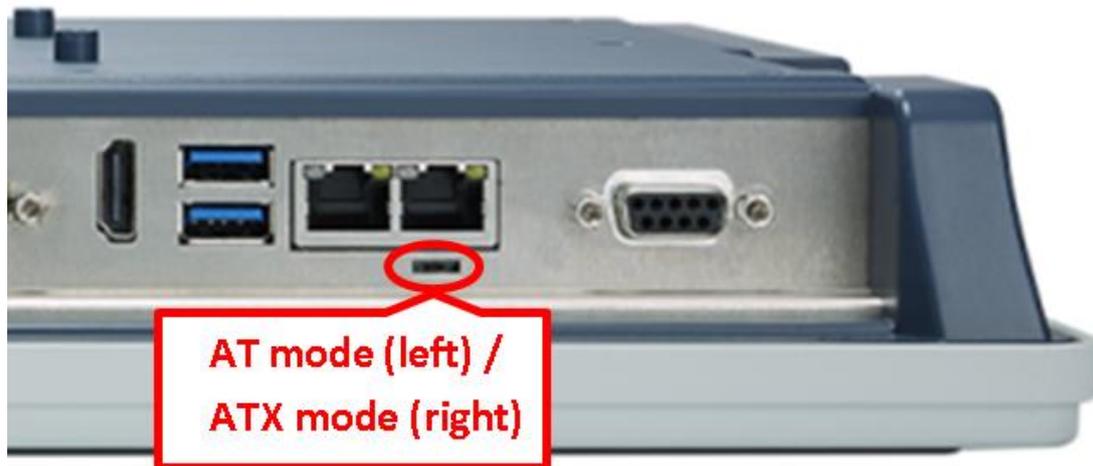**Diagram 2-20 Locating the positive and negative ends of the power connector**
+: Power positive   －:Power negative
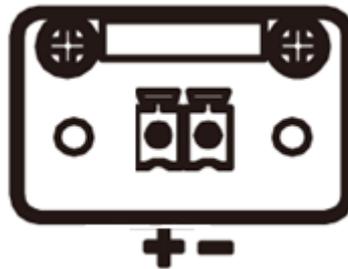
2.5.2 AT/ATX mode-selectable switch

The GOT5152T-845 comes with a switch for the selection of the AT/ATX mode. Users can adjust the power mode accordingly with ease.

Figure 2-18 Locating the AT/ATX mode-selection switch

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Section 3
AMI BIOS Setup Utility

This Section provides users with detailed descriptions about how to set up basic system configuration through the AMI BIOS setup utility.

3.1 Navigation Keys

The BIOS setup/utility uses a key-based navigation system called hot keys. Most of the hot keys for the BIOS setup utility can be used at any time during the setup navigation process. These keys include <F1>, <F2>, <F3>, <F4>, <Enter>, <ESC>, arrow keys, etc. (as listed in Table 3-1).

NOTE: Some of navigation keys may differ from one screen to another.

Table 3-1 Descriptions of hot keys

Hot Keys	Descriptions
<→> and <←> Left/Right	The <→> and <←> keys are used to select a setup screen.
<↑> and <↓> Up/Down	The <↑> and <↓> keys are used to select a setup screen or sub-screen.
<+> and <−> Plus/Minus	The <+> and <−> keys you are used to change the field value of a particular setup item.
<Tab>	The <Tab> key is used to select setup fields.
<F1>	The <F1> key is used to display the general help screen.
<F2>	The <F2> key is used to load previous values.
<F3>	The <F3> key is used to load optimized defaults.
<F4>	The <F4> key is used to save any changes made then exit the setup. Press the <F4> key to save any changes.
<Esc>	The <Esc> key is used to discard any changes made then exit the setup. Press the <Esc> key to exit the setup without saving your changes.
<Enter>	The <Enter> key is used to display or change the setup option listed for a particular setup item. The <Enter> key is also used to display the setup sub- screens.

## 3.2 Main Menu

Figure 3-1 Main menu
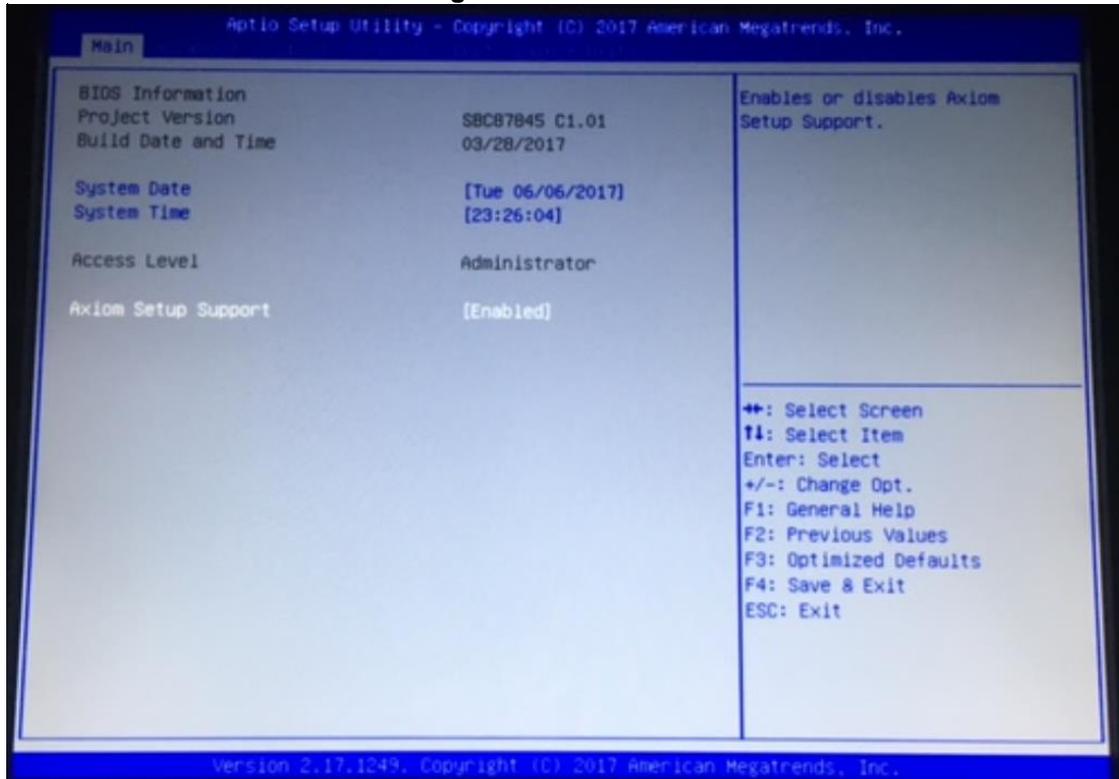
System Time/Date

Use this option to change the system time and date. Highlight *System Time* or *System Date* using the up/ down/ left and right arrow keys (see Figure 3-1).. Enter new values through the keyboard. Press the <Tab> key or the arrow keys to move between fields. The date entered must be in MM/DD/YY format. The time is entered in HH:MM:SS format.

3.3   Advanced Menu

Figure 3-2 Advanced Menu
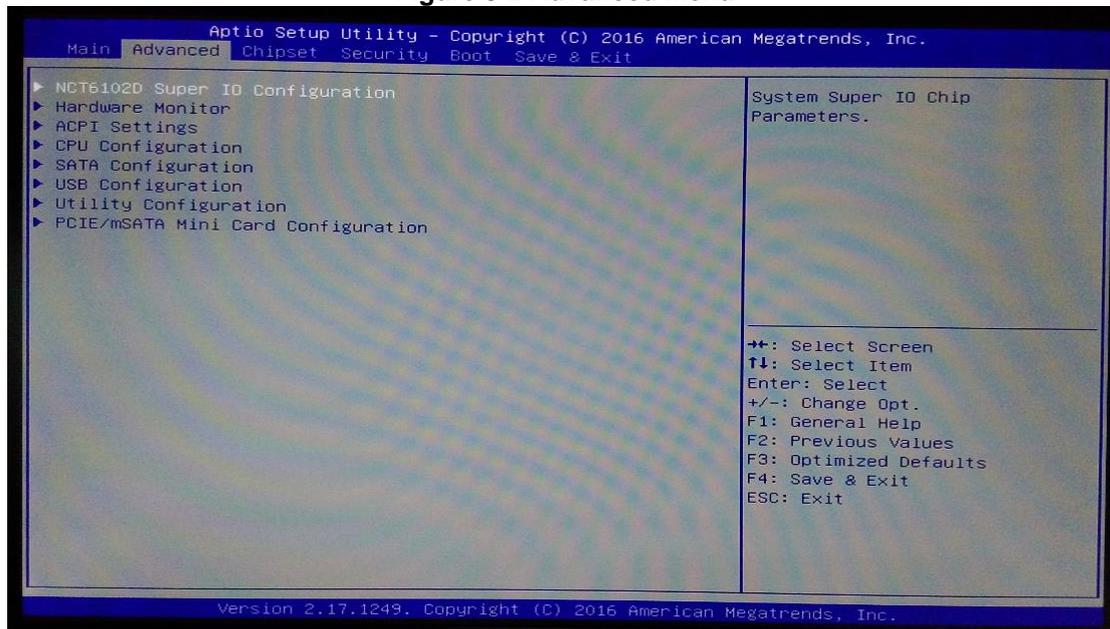
The Advanced menu allows users to set configurations of the CPU and other system devices. Select any item on the left to go to the sub-menus (as shown in Figure 3-2).

► *NCT6102D Super IO Configuration*
► *Hardware Monitor*
► *ACPI Settings*
► *CPU Configuration*
► *SATA Configuration*
► *USB Configuration*
► *Utility Configuration*
► *PCIE/mSATA Mini Card Configuration*

Simply highlight the item of choice, then press <Enter> to go to sub-menus for more specific options.

3.3.1 NCT6102D Super IO Configuration

The 'NCT6102D Super IO Configuration' page is to change the value of the Super IO Configuration. The description of the selected item will appear on the right side of the screen (as shown in Figure 3-3). For items marked with "►", please press <Enter> for further options (as shown in Figure 3-4).

Figure 3-3 Entering 'NCT6102D Super IO Configuration'
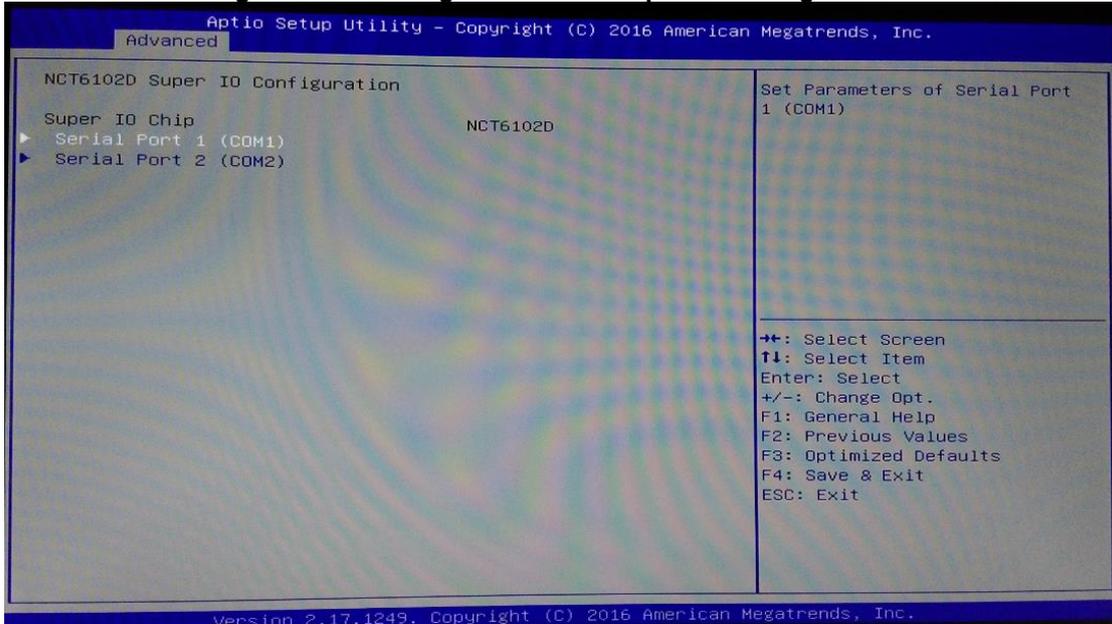
► **Serial Port 1 (COM1) / Serial Port 2 (COM2)**

Serial port

This option is used to enable or disable serial port COM1/COM2.

Device Setting

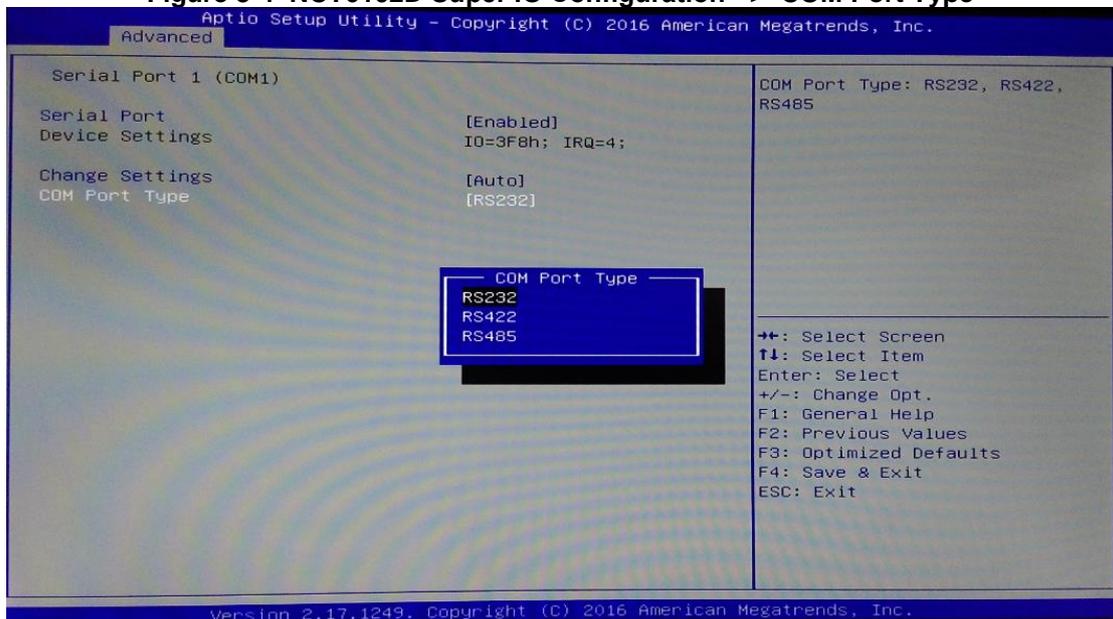This item specifies the base I/O port address and Interrupt Request (IRQ) address of serial port.

Optimal setting for Port 1 is [3F8/IRQ4].

Optimal setting for Port 2 is [2E8/IRQ3].

COM Port Type

This option is used to select COM Port Type: [RS-232] *or* [RS-422] *or* [RS-485].
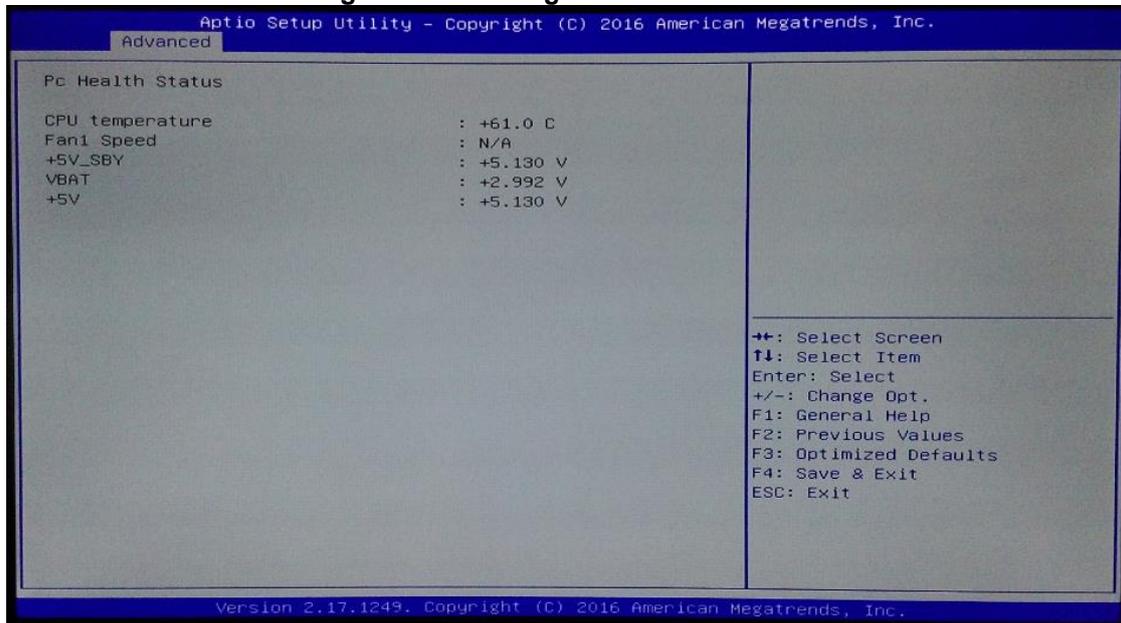
Figure 3-4 'NCT6102D Super IO Configuration' -> 'COM Port Type'

3.3.2 Hardware Monitor

Figure 3-5 shows a screen reflecting the 'PC Health Status' of the hardware in real time.

**Figure 3-5 Entering 'Hardware Monitor'**

3.3.3 ACPI Settings

This screen is used to select options of the ACPI Configuration, and change the value of the selected option. A description of the selected item appears on the right side of the screen.

ACPI Sleep State
This item allows users to select the *Advanced Configuration and Power Interface* (ACPI) state to be used for system suspension. There are two choices under this selection: [Suspend Disable] or [S3 (Suspend to RAM)] (as shown in Figure 3-6).
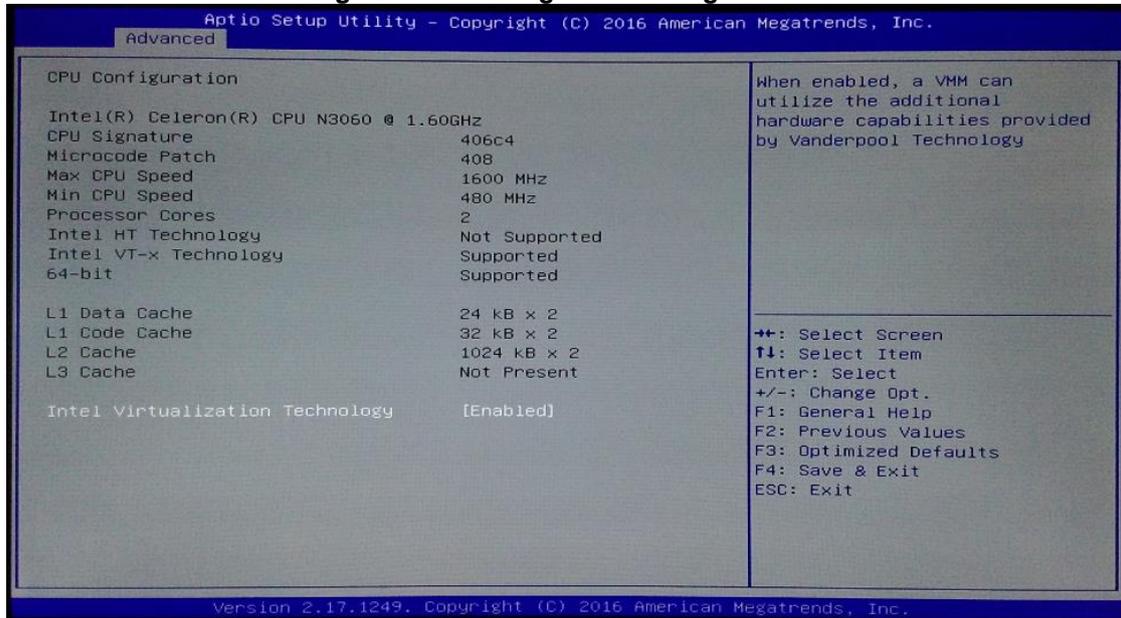
Figure 3-6 Entering 'ACPI Settings'
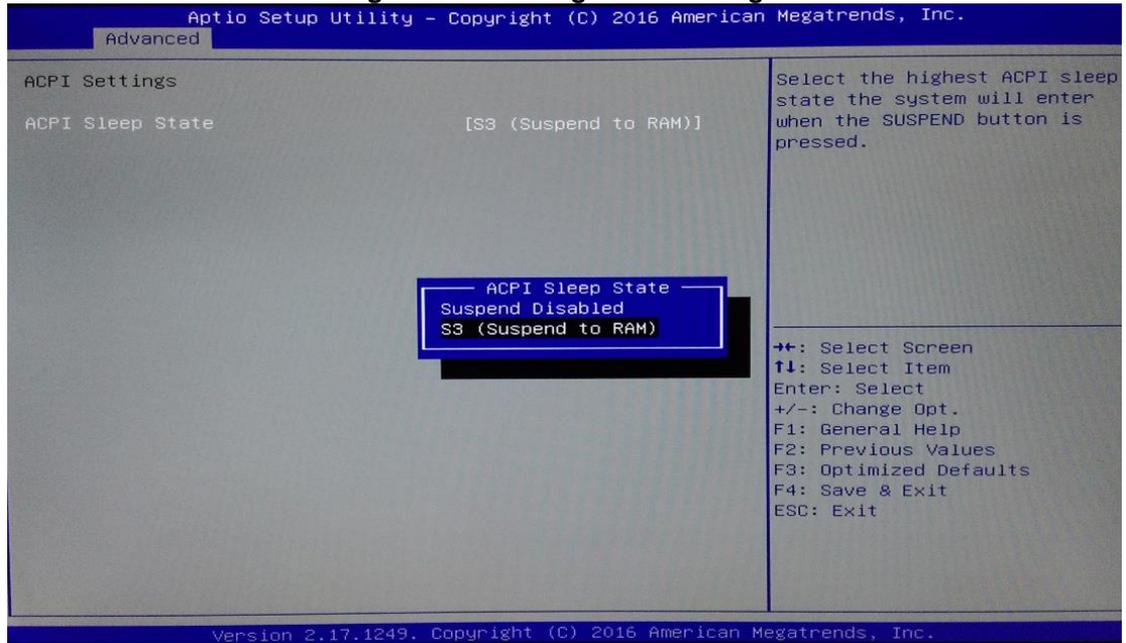
3.3.4 CPU Configuration

Figure 3-7 shows a page of CPU configuration with item *Intel Virtualization Technology* highlighted for [Enabled] or [Disabled].

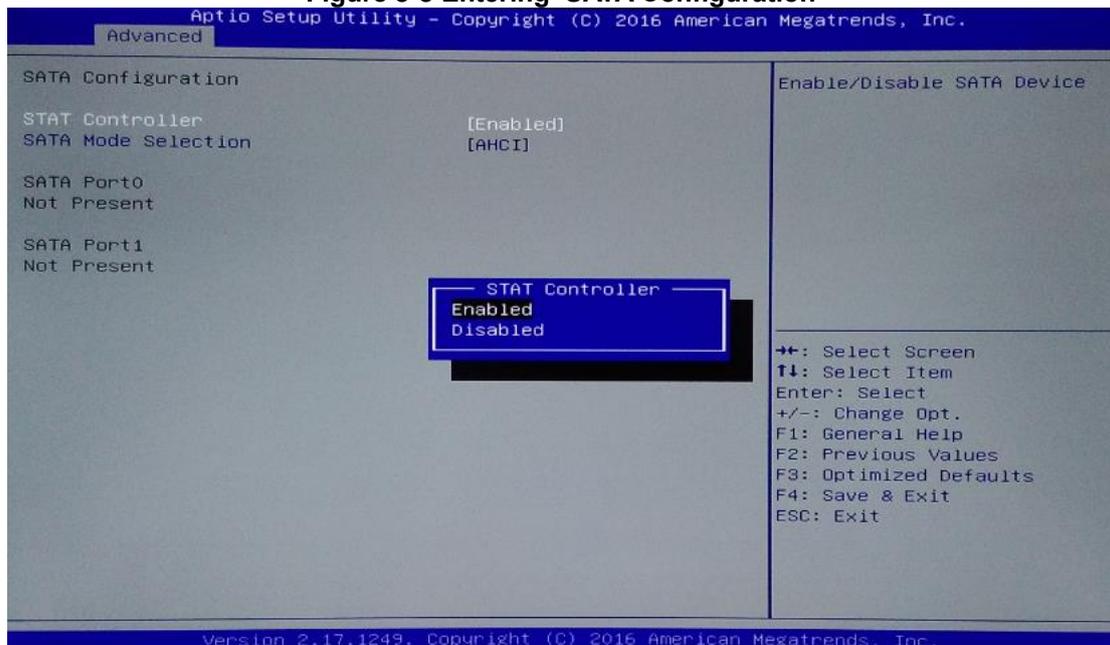**Figure 3-7 Entering 'CPU Configuration'**

3.3.5 SATA Configuration

This screen allows users to select options for SATA Configuration, and change the value of the selected option (see Figure 3-8).

SATA Controller
Highlight this item to set up SATA Controller to be [Enable] or [Disable].
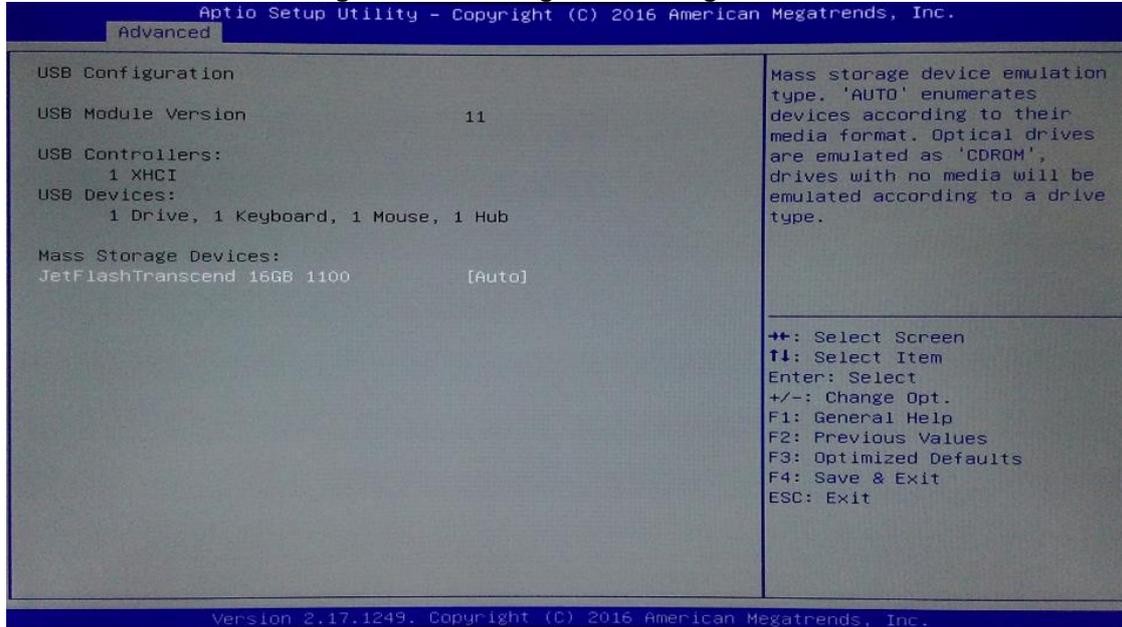
Figure 3-8 Entering 'SATA Configuration'

3.3.6 USB Configuration

Please see Figure 3-9 to see what items can be set up under the page of *USB Configuration*.

Figure 3-9 Entering 'USB Configuration'

3.3.7 Utility Configuration

Figure 3-10 shows the page once entering *Utility Configuration.*

Figure 3-10 Entering 'Utility Configuration'
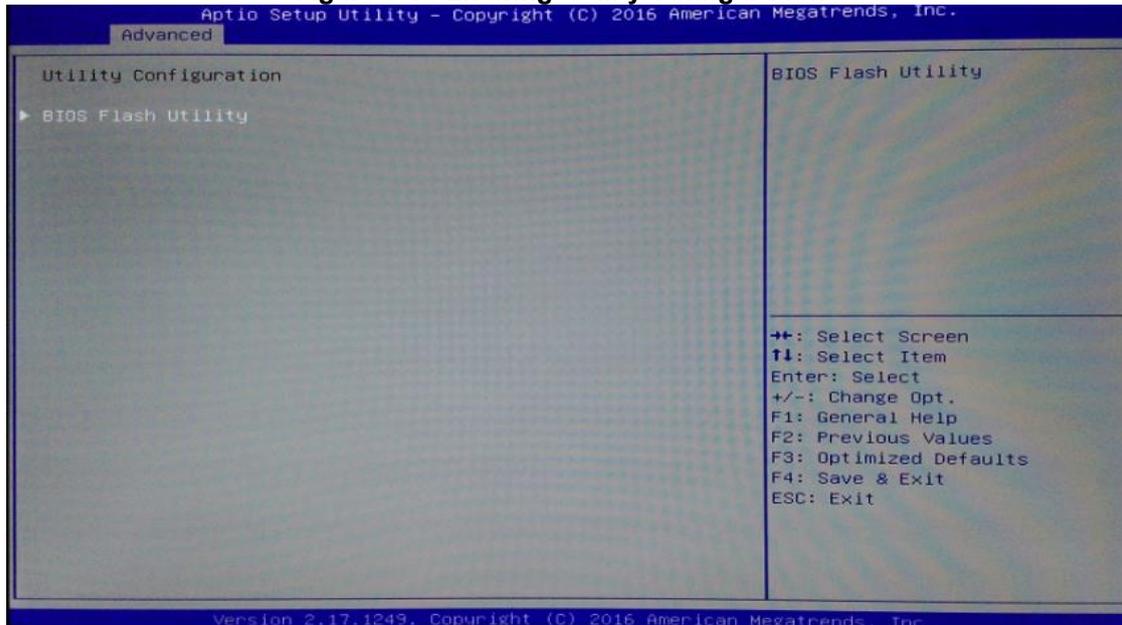
3.3.8 PCIE/mSATA Mini Card Configuration

Figure 3-11 shows the page once entering *PCIE/mSATA Mini Card Configuration.* There are two options to choose from [PCIE] and [mSATA].

Figure 3-11 Entering 'PCIE/mSATA Mini Card Configuration'
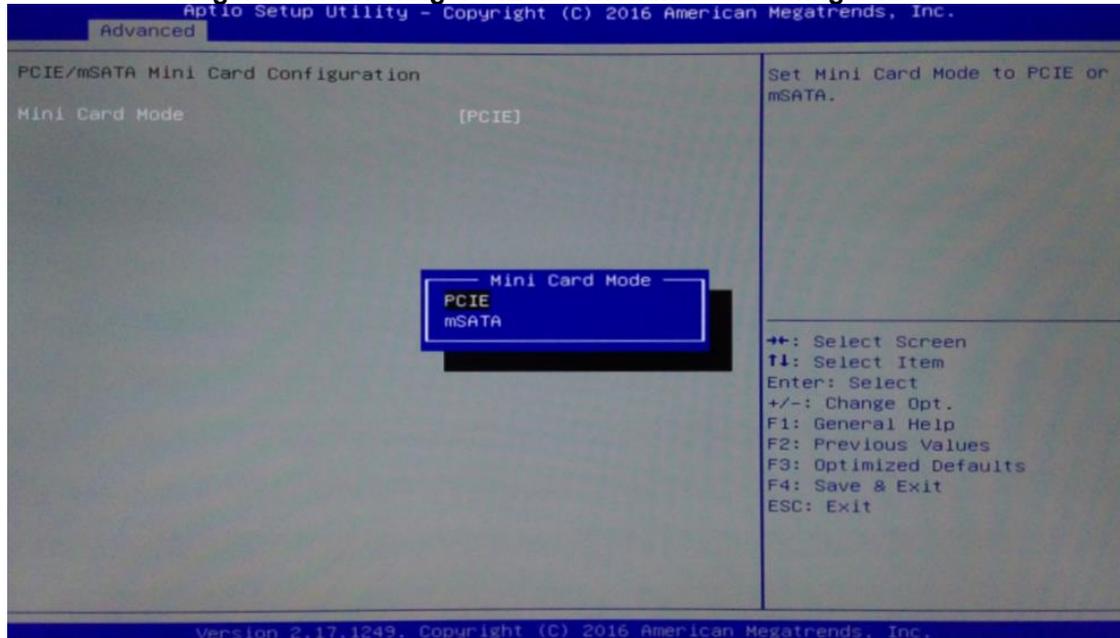
3.4 Chipset Menu

The Chipset menu gives memory information about the North Bridge and South Bridge (see Figure 3-12).

Figure 3-12 Chipset Menu
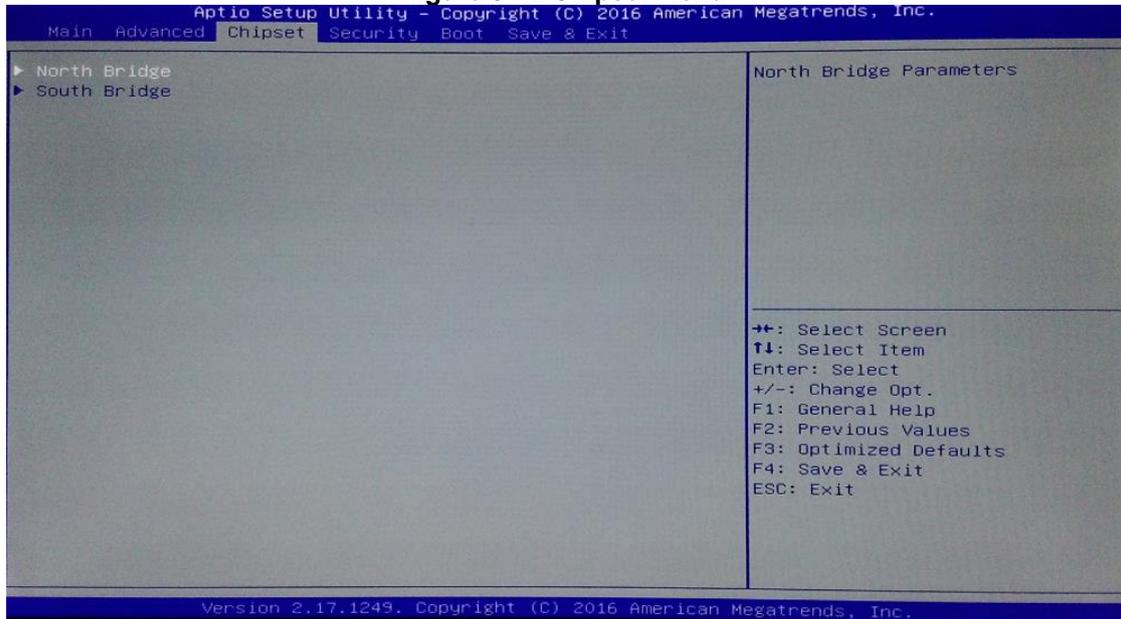
3.4.1 North Bridge

North Bridge memory information is shown in Figure 3-13.

Figure 3-13 Entering 'North Bridge'

AMI BIOS Setup Utility

3.4.2 South Bridge

South Bridge TXE information is shown in Figure 3-14.

Figure 3-14 Entering 'South Bridge'

3.5   Security Menu

Figure 3-15 Security Menu
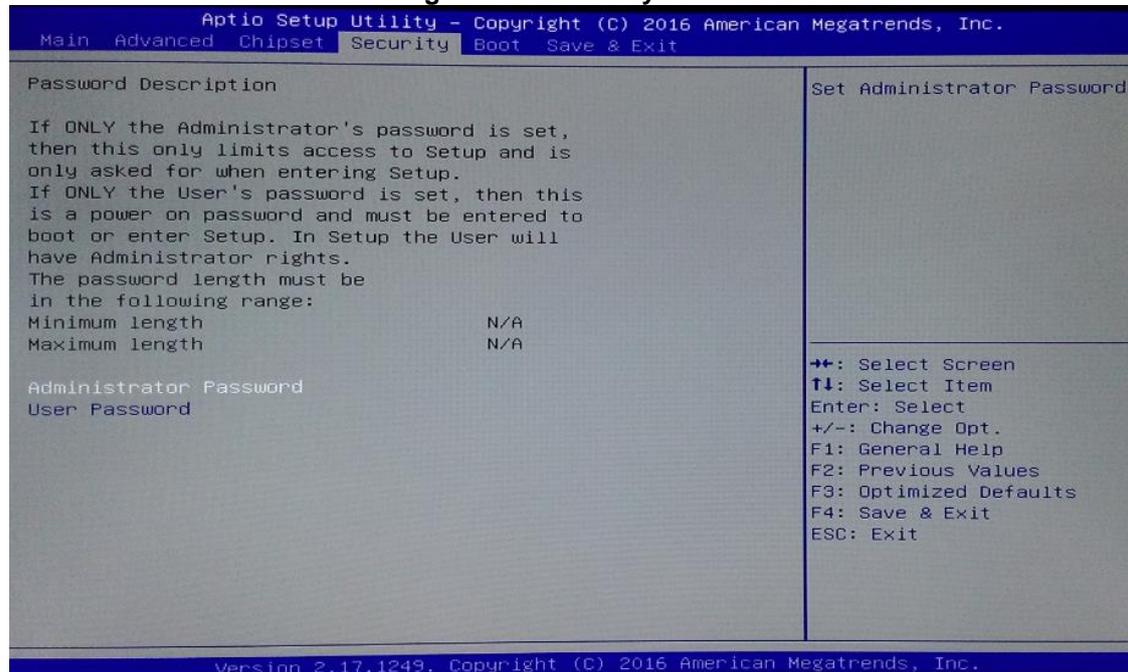
3.6   Boot Menu

The Boot menu allows users to change boot options of the system. Users can highlight any of the items on the left frame of the screen to go to any particular sub menus (as shown in Figure 3-16).
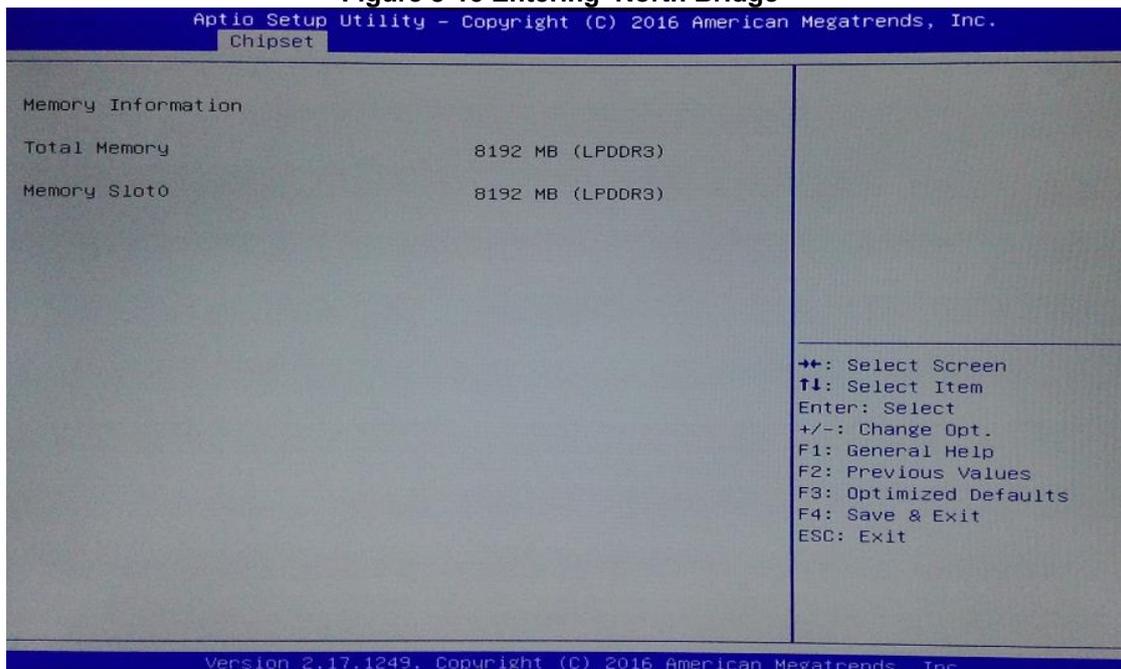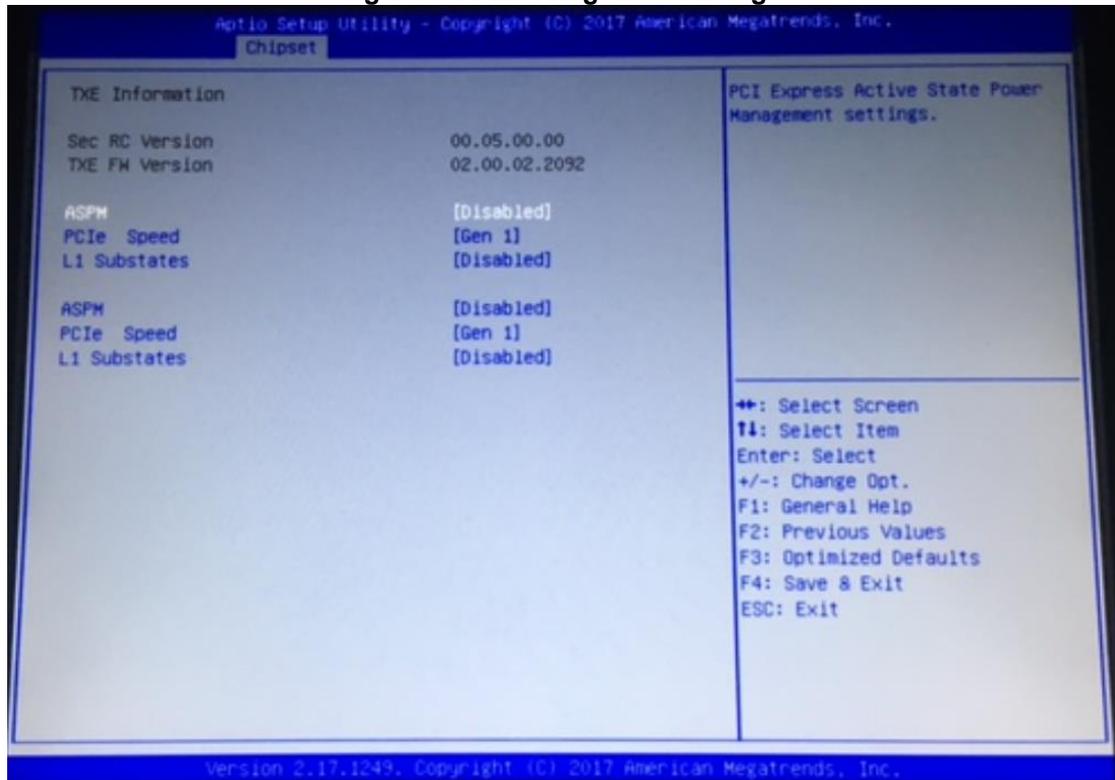
Figure 3-16 Boot Menu
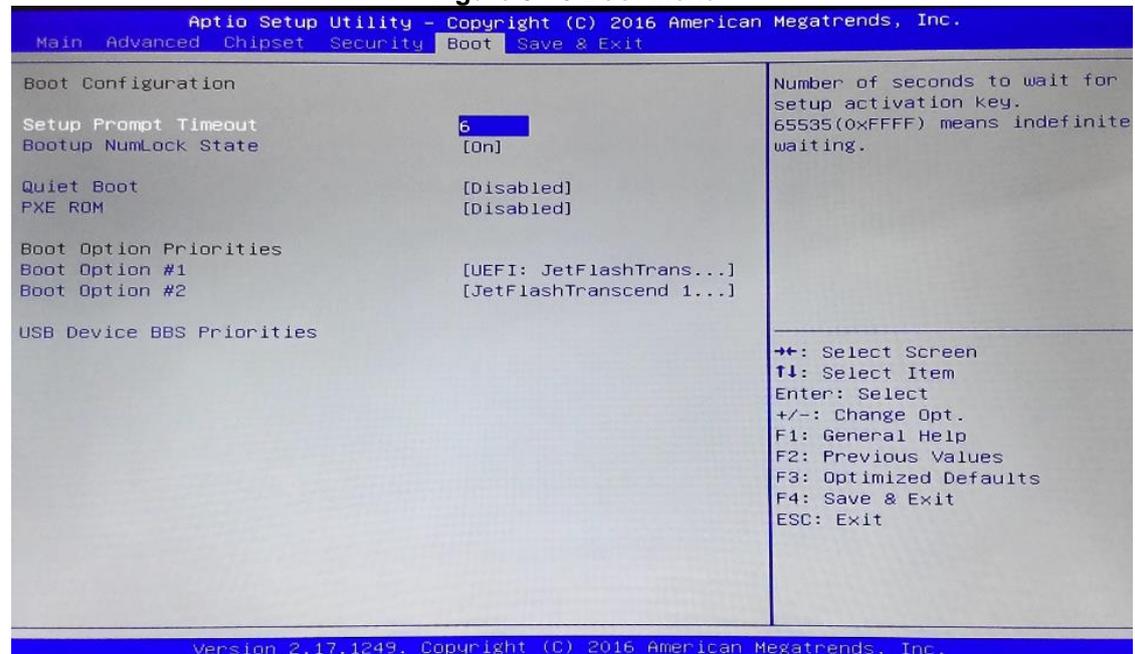
Setup Prompt Timeout
Enter a numeric value here as the length for timeout.

Bootup NumLock State
Use this item to select the power-on state for the NumLock. The default setting is [On].

Quiet Boot
Use this item to enable or disable the Quite Boot state. The default setting is [Disabled].

PXE ROM
Use this item to enable or disable the Pre-boot Execution Environment (PXE). The default setting is [Disabled].

Boot Option Priorities
Use this item to specify the overall boot order among the available devices.

3.7   Save & Exit Menu

Figure 3-17 Save & Exit Menu
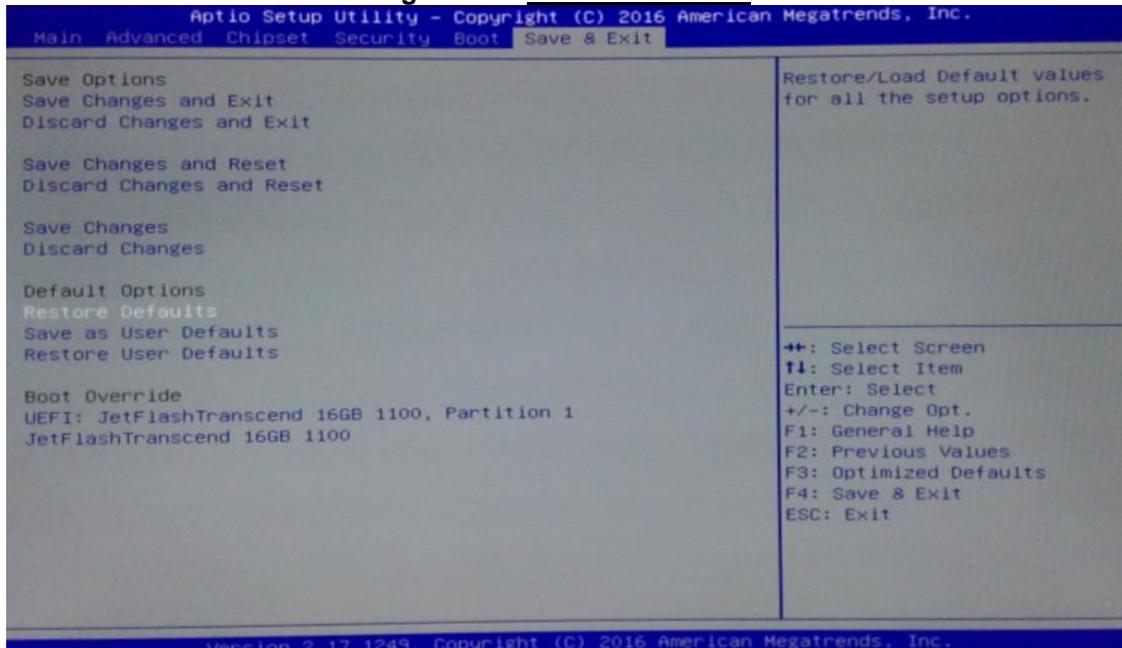
Section 4
Drivers and Installation

4.1   Installing System Drivers

The GOT5152T-845 is compatible with Windows 7, Windows 8/8.1, WES 7 and WE8S. To facilitate the installation of system drivers, please carefully read the instructions in this Section before any of such installation..

To work with Win 7

Step 1   Insert the Driver CD and select "\Drivers"; then select "Win 7", and enter into "Win 7" directory.

Figure 4-1 Folders of system drivers for Win 7
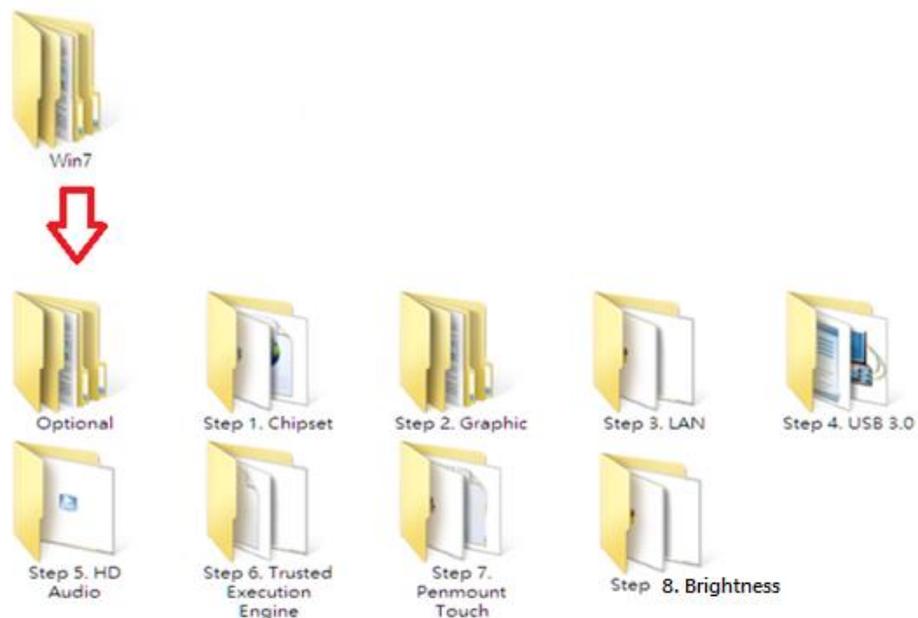
Step 2   Select all files and follow the installing procedure.

To work with Win 8/8.x

Step 1   Insert the Driver CD and select "\Drivers"; then select "Win 8.x", and enter into "Win 8.x" directory.

.

Figure 4-2 Folders of system drivers for Win 8.x

Step 2   Select all files and follow the installing procedure.

4.2   Installing Utility Drivers

4.2.1 Installing USB Drivers under Win 7

CAUTION : Please run the USB3.0 Utility before WIN 7 installation.

Step 1   Download and unzip the Windows 7 "USB 3.0" Creator utility to a temporary folder
under the Admin system.

Step 2   Connect the USB device containing the Windows 7 image to the Admin system.

Step 3   Right-click the file **Installer_Creator.exe** and select **Run as administrator**.

Step 4   Browse to the root of the USB drive.
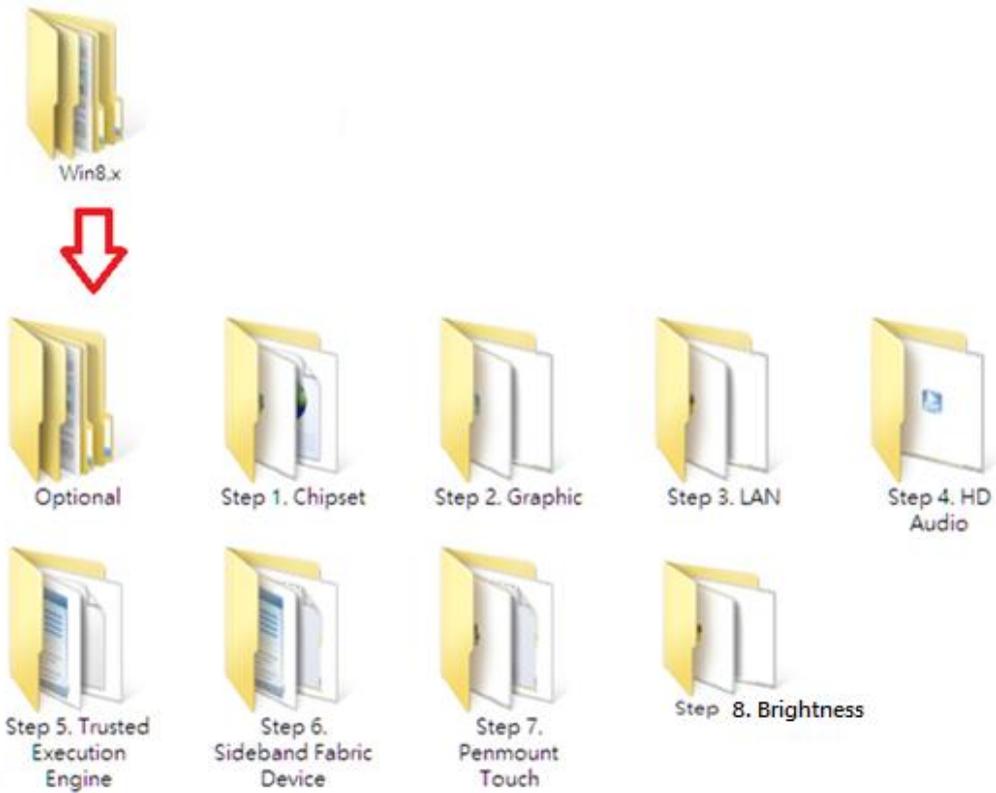
Step 5   Click **Create Image** to begin the creation process.

Step 6   Wait for the process to finish. It can take up to 15 minutes.

4.2.2   Installing Touch Screen Drivers under Windows 7/8.x

The GOT5152T-845 adopts a 5-wire analog resistive; the specifications and driver installation are listed below.

Table 4-1 Touch screen specifications

Touch Screen	5-wire Analog Resistive type
Touch Screen Controller	PenMount 6000 USB Touch Screen Controller IC
Communications	USB interface
Resolution	800 x 600 /1024 x 1024
Power Input	5V
Power Consumption	Active: 24.6mA / Idle Mode: 13.4mA

The GOT5152T-845 provides a touch screen driver for users to install under Windows 7/8.x. To facilitate installation of the touch screen driver, users please read the instructions in this subsection carefully before attempting to install.

Step 1   Insert the Driver CD and follow the path to select the "\Drivers\Step 7 – PenMount Touch".
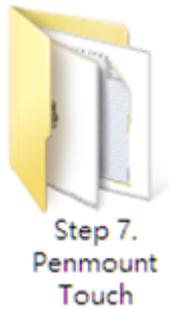
Step 2   Follow the installing procedure and click on OK.

Step 3   Click Start menu and select "PenMount Utilities"; then a "PenMount Control Panel" pops out.

Figure 4-3 PenMount Control Panel
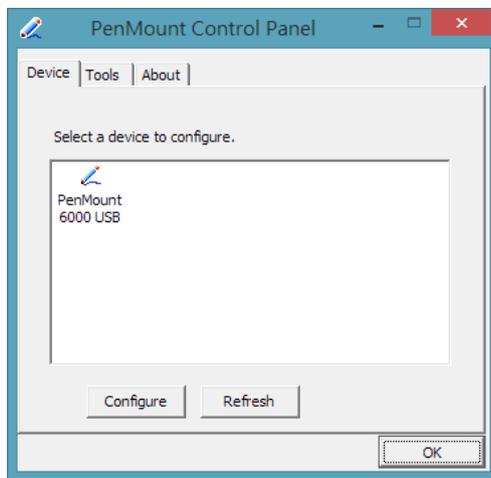
Step 4   Select the "Standard Calibrate" tab.

Figure 4-4 "Standard Calibrate"
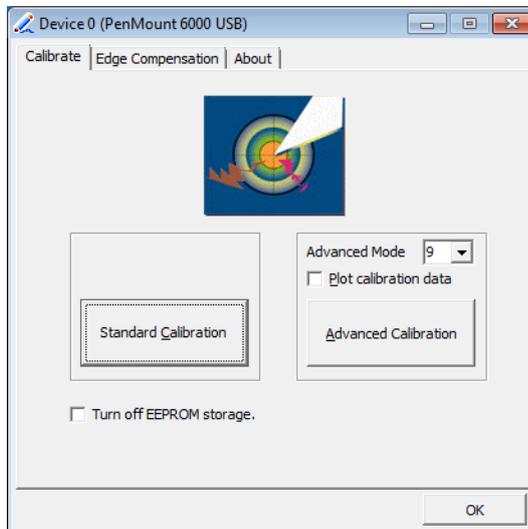
Step 5   Calibrations:

To adjust the display on the touch panel, click "Calibration" and follow the five points on screen for calibration.

Figure 4-5 Five-point Calibration
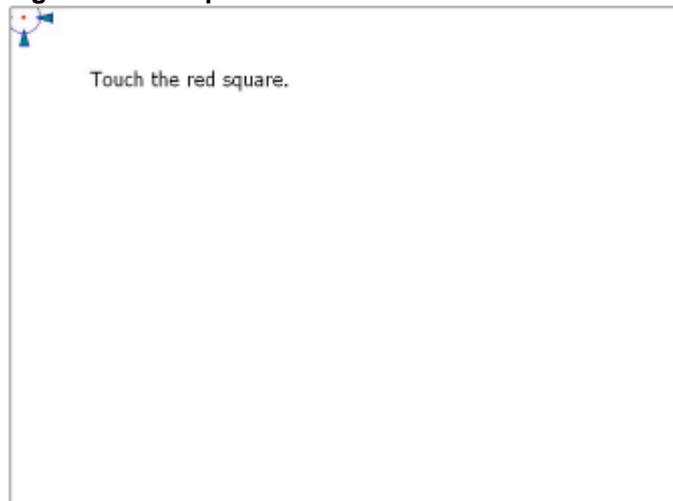
Step 6   Press OK.

4.3   Embedded O.S. and Devices

The GOT5152T-845 comes with WES 7 and WE8S embedded. The   onboard devices supported under the embedded operating systems are listed below.

- Onboard Multi I/O
- SATA HDD
- USB
- CRT/LCD display
- 10/100/1000 base-T Ethernet
- mSATA
- Onboard Audio
- Touch Screen

Appendix A
Watchdog Timer & DIO Programming

About Watchdog Timer

Software stability is major issue in most application. Some embedded systems are not watched by human for 24 hours. It is usually too slow to wait for someone to reboot when computer hangs. The systems need to be able to reset automatically when things go wrong. The watchdog timer gives us solution.

The watchdog timer is a counter that triggers a system reset when it counts down to zero from a preset value. The software starts counter with an initial value and must reset it periodically. If the counter ever reaches zero which means the software has crashed, the system will reboot.

How to Use Watchdog Timer

The I/O port base addresses of watchdog timer are 2E (hex) and 2F (hex). The 2E (hex) and 2F (hex) are address and data port respectively.

Assume that program A is put in a loop that must execute at least once every 10ms. Initialize watchdog timer with a value bigger than 10ms. If the software has no problems; watchdog timer will never expire because software will always restart the counter before it reaches zero.
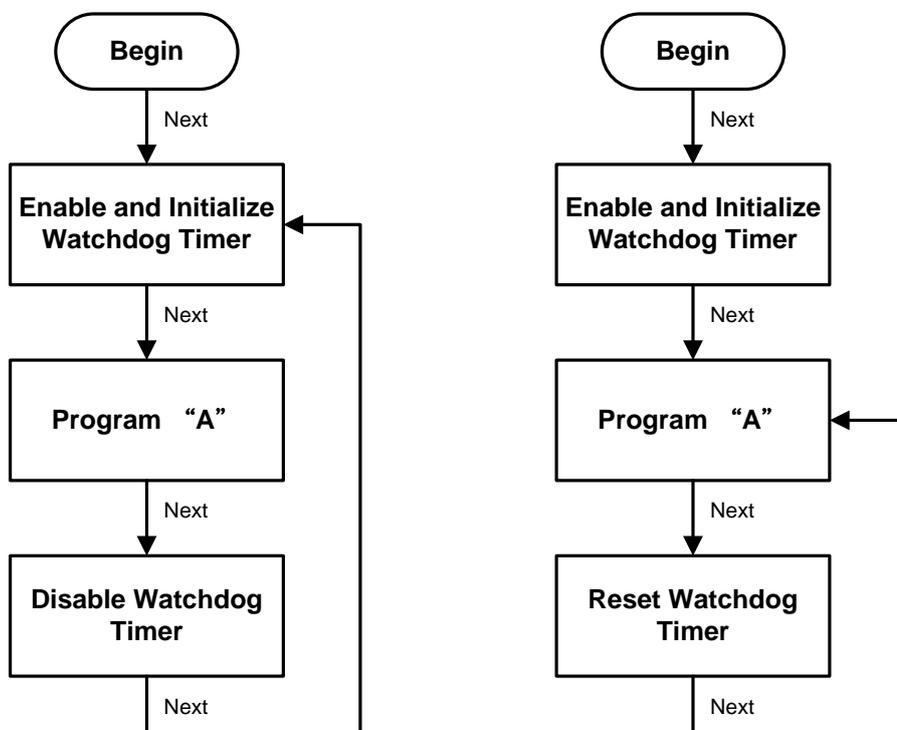
WDT Sample Program
Enable WDT
   1.Enable configuration
          -O 2E 87
           -O 2E 87

   2. Select Logic device:
          -O 2E 07
          -O 2F 08

   3. WDT Device Enable
          -O 2E 30
          -O 2F 01

   4. Set timer unit
          -O 2E F0
          -O 2F 00 ➜ (00: Sec; 08: Minute)

   5. Set base timer:
          -O 2E F1
          -O 2F 0A ➜Set Reset Time (Ex.0A:10 Sec)
Disable WDT
   1.Enable configuration
          -O 2E 87
           -O 2E 87

   2. Select Logic device:
          -O 2E 07
          -O 2F 08

   3. WDT Device Disable
          -O 2E 30
          -O 2F 00

How to Use DIO Software Programming

Digital I/O Software Programming
- I2C to GPIO PCA9554
- I2C address: 0b01000000.

Register 0 - Input Port register

This register is a read-only port. It reflects the incoming logic levels of the pins, regardless of whether the pin is defined as an input or an output by Register 3. Writes to this register have no effect.

The default 'X' is determined by the externally applied logic level, normally '1' when no external signal externally applied because of the internal pull-up resistors.

Table 4.   Register 0 - Input Port register bit description

Bit	Symbol	Access	Value	Description
7	I7	read only	X	determined by externally applied logic level
6	I6	read only	X	
5	I5	read only	X	
4	I4	read only	X	
3	I3	read only	X	
2	I2	read only	X	
1	I1	read only	X	
0	I0	read only	X	

Register 1 - Output Port register

This register reflects the outgoing logic levels of the pins defined as outputs by Register 3. Bit values in this register have no effect on pins defined as inputs. Reads from this register return the value that is in the flip-flop controlling the output selection, **not** the actual pin value.

Table 5.   Register 1 - Output Port register bit description
*Legend: * default value.*

Bit	Symbol	Access	Value	Description
7	O7	R	1*	reflects outgoing logic levels of pins defined as outputs by Register 3
6	O6	R	1*	
5	O5	R	1*	
4	O4	R	1*	
3	O3	R	1*	
2	O2	R	1*	
1	O1	R	1*	
0	O0	R	1*	

Register 2 - Polarity Inversion register

This register allows the user to invert the polarity of the Input Port register data. If a bit in this register is set (written with '1'), the corresponding Input Port data is inverted. If a bit in this register is cleared (written with a '0'), the Input Port data polarity is retained.

Table 6.   **Register 2 - Polarity Inversion register bit description**
*Legend: * default value.*

Bit	Symbol	Access	Value	Description
7	N7	R/W	0*	inverts polarity of Input Port register data
6	N6	R/W	0*	0 = Input Port register data retained (default value)
5	N5	R/W	0*	1 = Input Port register data inverted
4	N4	R/W	0*	
3	N3	R/W	0*	
2	N2	R/W	0*	
1	N1	R/W	0*	
0	N0	R/W	0*	

Register 3 - Configuration register

This register configures the directions of the I/O pins. If a bit in this register is set, the corresponding port pin is enabled as an input with high-impedance output driver. If a bit in this register is cleared, the corresponding port pin is enabled as an output. At reset, the I/Os are configured as inputs with a weak pull-up to V_{DD}.

Table 7.   **Register 3 - Configuration register bit description**
*Legend: * default value.*

Bit	Symbol	Access	Value	Description
7	C7	R/W	1*	configures the directions of the I/O pins
6	C6	R/W	1*	0 = corresponding port pin enabled as an output
5	C5	R/W	1*	1 = corresponding port pin configured as input (default value)
4	C4	R/W	1*	
3	C3	R/W	1*	
2	C2	R/W	1*	
1	C1	R/W	1*	
0	C0	R/W	1*	