

GOT821A-TGL-WCD

**21.5" FHD TFT
Touch Panel Computer**

User's Manual

IP66, IP69K certification distinguishes the highest level of reliability.



USER'S MANUAL

www.axiomtek.com

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Safety Precautions

Before getting started, please read the following important safety precautions.

1. The GOT821A-TGL-WCD does not come equipped with an operating system. An operating system must be loaded first before installing any software into the computer.
2. 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.
3. Disconnect the power cord from the GOT821A-TGL-WCD before any installation. Be sure both the system and external devices are turned OFF. A sudden surge of power could ruin sensitive components that the GOT821A-TGL-WCD must be properly grounded.
4. The brightness of the flat panel display will be getting weaker because of frequent usage. However, the operating period varies depending on the application environment.
5. Turn OFF the system power before cleaning. Clean the system using a cloth only. Do not spray any liquid cleaner directly onto the screen. The GOT821A-TGL-WCD may come with a touchscreen. Although the touchscreen is chemical resistant, it is recommended that you spray the liquid cleaner on a cloth first before wiping the screen. In case your system comes without the touchscreen, you must follow the same procedure and not spray any cleaner on the flat panel directly.
6. Avoid using sharp objects to operate the touchscreen. Scratches on the touchscreen may cause malfunction or internal failure to the touchscreen.
7. The flat panel display is not susceptible to shock or vibration. When assembling the GOT821A-TGL-WCD, make sure it is securely installed.
8. Do not open the system's back cover. If opening the cover for maintenance is a must, only a trained technician can 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 your body.
 - When handling boards and components, wear a wrist-grounding strap, available from most electronic component stores.

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SECTION 1 Introduction

This chapter contains general information and detailed specifications of the GOT821A-TGL-WCD. Chapter 1 includes the following sections:

- General Description
- Specification
- Dimensions
- I/O Outlets
- Package List

1.1 General Description

The GOT821A-TGL-WCD is a fan-less and compact-size touch panel computer, equipped with a 21.5" FHD TFT LCD display and low power consumption Intel® Core™ Intel Core™ i5-1145G7E / Celeron® 6305E processor. The GOT821A-TGL-WCD supports Linux, Windows® 10/11 and Windows® 10/11 IoT embedded OSs. The panel computer provides M.2 Key E slot of 22 x 30mm size for extension. Its excellent ID and friendly user interface make it a professional yet easy-to-use panel computer. The GOT821A-TGL-WCD is an ideal for space-limited applications in factory automation, machine maker operating systems, building automation, and more.

- **GOT821A-TGL-WCD: 21.5" FHD TFT Fanless Touch Panel Computer**
 - **Reliable and Stable Design**

The GOT821A-TGL-WCD adopts a fanless cooling system, which makes it suitable for vibration environments, example for Marine and Crane.
 - **Embedded O.S. Supported**

The GOT821A-TGL-WCD is not only supports Windows® 10/11, but also supports embedded OS, such as Windows® 10/11 IoT embedded. For storage device, the GOT821A-TGL-WCD supports 2.5" SSD or 2.5" SATA HDD device.
 - **Industrial-grade Product Design**

The GOT821A-TGL-WCD has an incredible design to be used in different industrial environments.
- **The whole enclosure meets the IP66 standard.**
- **For connecting other devices, the GOT821A-TGL-WCD also features several interfaces: USB, Ethernet, and RS-232/422/485.**

1.2 Specifications

1.2.1 Main CPU Board

- **CPU**
 - Intel® Core™ i5-1145G7E 1.5 GHz / Celeron® 6305E1.8 GHz processor onboard (Tiger Lake)
- **System Memory**
 - One 260-pin DDR4-3200 SO-DIMM socket
 - Maximum memory up to 32GB
- **BIOS**
 - America Megatrends UEFI BIOS

1.2.2 I/O System

- **Standard I/O**
 - 2 x RS-232/422/485(default RS-232)
 - 4 x USB 2.0 (M12 A-coded connector x 2)
- **Ethernet**
 - One Intel® I225 NBASE-T Ethernet (M12 X-coded connector)
- **Expansion**
 - One M.2 Key E slot (dimension: 22 x 30mm)
 - Storage
 - One SATA interface

1.2.3 System Specification

- **21.5" FHD TFT LCD**
 - 21.5" FHD TFT LCD 400nits, resolution: 1920x1080
- **Heat Dispensing Design**
- **Disk drive housing:**
 - One 2.5" SATA drive (optional)
- **Net Weight**
 - 9.0kg (19.84 lb) / 12 kg (26.46 lb)
- **Dimension (Main Body Size)**
 - 552 mm (21.73") (W) x 55 mm (2.2") (D) x 338.4 mm (13.33") (H)
- **Operation Temperature**
 - -20°C to +50°C

- **Relative Humidity**
 - 10% to 95% @ 40°C, Non-Condensing
- **Vibration**
 - 5 to 500 Hz, 1.0 G, random for 2.5" SSD



Note

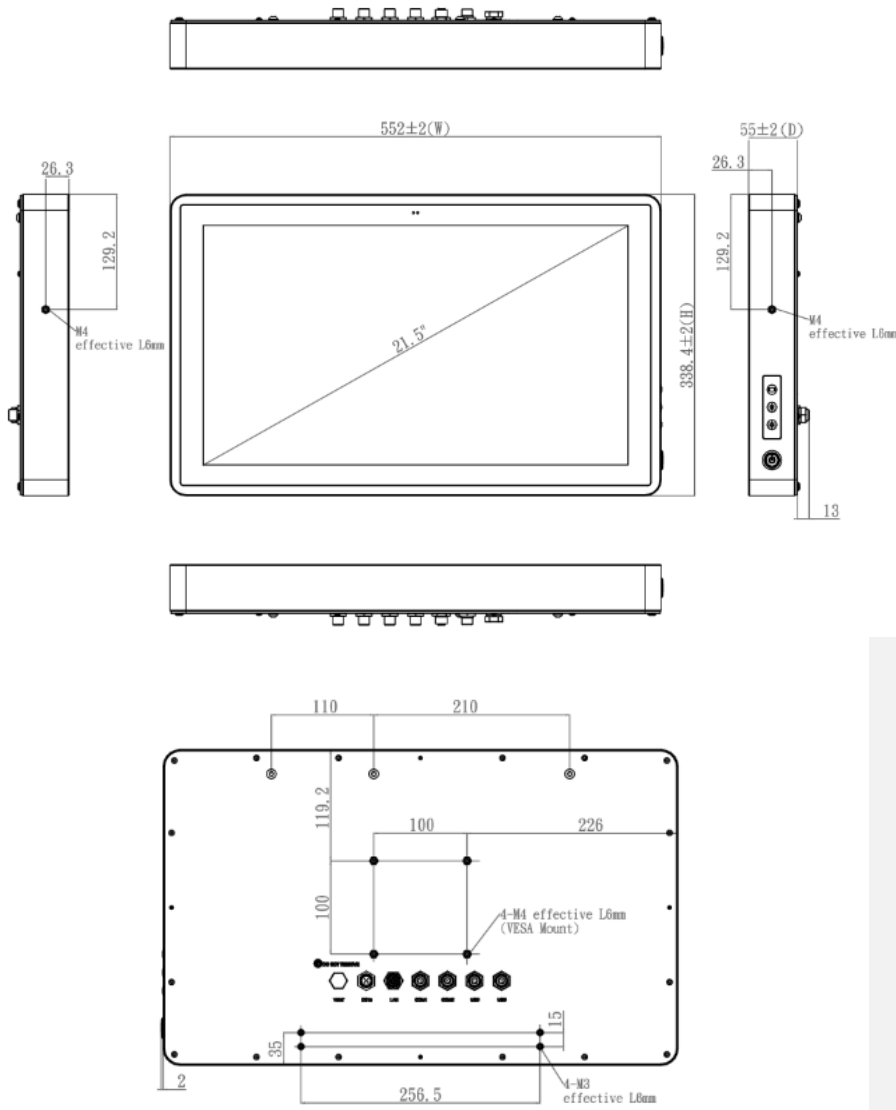
1. *All specifications and images are subject to change without notice.*
2. *The GOT821A-TGL-WCD is suited on serious environment; please choose the wide temperature DRAM and SSD.*
3. *If the operation temperature is higher than 45°C, the wide temperature SSD are recommended to be used on the device.*



Warning: *According the warrantee is adopting for the IP66 guarantee, please choose SSD and RAM by Axiomtek, also please kindly don't disassemble the system by yourself.*

1.3 Dimensions

This diagram shows you dimensions and outlines of the GOT821A-TGL-WCD.



1.4 I/O Outlets

Please refer to the following illustration for I/O locations of the GOT821A-TGL-WCD.



No	Function
1	Backlight ON/OFF
2	Brightness Adjust +/-
3	Power ON/OFF
4	Proximity(left) & light sensor(right) (optional)
5	DC Power Connector

6	2.5GbE M12 LAN
7	COM1 (RS-232/422/485, default RS-232)
8	COM2 (RS-232/422/485, default RS-232)
9	USB 2.0 x 2
10	USB 2.0 x 2



Note

Press the Brightness Adjust “+” & “-” at the same time to switch the hardware light Sensor Backlight Adjust ON/OFF.

1.5 Antenna Installation (Optional)

If you have the optional wireless module, you will find the antenna in the accessory box. The installation instructions are as follows:



1. If you add optional 2T2R WIFI module, the ANT1 is MAIN wifi antenna, the ANT2 is AUX wifi antenna.
2. If you add optional 2T2R WIFI module and UMTS/HSPA+ module, the ANT1 is MAIN antenna, the ANT2 is AUX antenna.
3. It is recommended that the ambient temperature does not exceed 45 degrees.

1.6 Package List

When you receive the GOT821A-TGL-WCD, the bundled package should contain the following items:

- **GOT821A-TGL-WCDx 1**
- **M12 Power input cable x1**

Option accessory

- **594B8122100E** **Water-proof COM cable (1.8 m)**
- **594B7102700E** **Water-proof LAN cable (1.8 m)**
- **594B8152820E** **Water-proof USB cable (1.8 m)**
- **50966224010E** **Adapter 24V 90W, M12 A-code 5P FSP090AAAN3**

If you cannot find the package or any items are missing, please contact Axiomtek distributors immediately.

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SECTION 2 System Configurations

The GOT821A-TGL-WCD provides rich I/O ports and flexible expansions for you to meet different demand. The chapter will show you how to install the hardware. It includes:

- I/O Pin Assignment
- Hard Disk and DRAM
- Wireless LAN Card (Optional)
- Water-proof cables (Optional)
- Hanging and VESA mounting (Optional)

2.1 I/O Pin Assignment

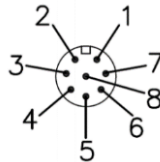
The GOT821A-TGL-WCD has two serial ports, COM1 and COM2 (RS-232/422/485, default RS-232), 4 USB ports(2x M12 dual port), Ethernet, and DC-in 12V~24V connector.

2.1.1 Serial Port Interface

The following table 1 shows you the pin assignments of this connector.

Table 1: 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



2.1.2 Ethernet

The GOT821A-TGL-WCD is equipped with a high-performance Plug and Play Ethernet interface, full compliant with IEEE 802.3 standard, and can be connected with a M12 LAN connector.

Please refer to detailed pin assignment list below:

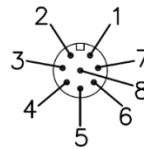
Pin	Signal
1	MDI0+
2	MDI0-
3	MDI1+
4	MDI2+
5	MDI2-
6	MDI1-
7	MDI3+
8	MDI3-



2.1.3 USB Port

The USB is a Universal Serial Bus (compliant with USB 2.0 (480Mbps)) connector on the rear I/O. It is commonly used for installing USB peripherals such as keyboard, mouse, scanner, etc.

Pin	Signal	Pin	Signal
1	USB VCC (+5V level)	5	USB VCC (+5V level)
2	USB #0_D-	6	USB #1_D-
3	USB #0_D+	7	USB #1_D+
4	GND	8	GND



2.1.4 DC Power Jack w/ M12 connector

Pin	Signal
1	+12 ~ 24V
2	+12 ~ 24V
3	GND
4	GND
5	Earth Ground



2.2 Water-proof Cables

GOT800 series uses specific M12 connector for water-proof. Therefore, you will order each cable base on application.


There are four kind cables of GOT800 series, by the optional, if you will apply the USB, COM or Ethernet then you can select a cable for the package.

The Power cable is included in the accessory box, when you will need the power adapter, also it can be selected by optional.

2.2.1 Power cable

Please follow pin assignment for the power input.



Pin	Signal
V+	DC 12V or 24V power input
	Earth Ground
GND	GND
GND	GND



2.2.2 Power adapter for GOT821A-TGL-WCD

If you order the power adapter, you should choose the power cord type for your location. The power adapter is 110-240V which is combined M12 connector.



2.2.3 COM port cable

There are two COM port cables which are combined M12 connector. Also, you can refer 2.1.1 for the Series port pin assignment.



2.2.4 USB cables

The USB cable is combined M12 connector for water-proof. It is extended two USB ports for application.



2.3 Mounting Method

The GOT821A-TGL-WCD support VESA mount.

2.3.1 VESA mounting

The GOT821A-TGL-WCD can accept VESA 100 with four M4 screws.



2.3.2 VESA-ARM Mounting

Step 1 Find out the 4 screws as marked on the back side of chassis.



Step 2 Assemble the VESA-ARM to the back side of the chassis, and fix the screws. (Below for reference)



Step 3 VESA mounting Installation completed.



SECTION 3

AMI BIOS Setup Utility

This chapter provides users with detailed description how to set up basic system configuration through the AMIBIOS8 BIOS setup utility.

3.1 Navigation Keys

The BIOS setup/utility uses a key-based navigation system called hot keys. Most of the BIOS setup utility hot keys can be used at any time during the setup navigation process.

These keys include <F1>, <F2>, <F3>, <F4>, <Enter>, <ESC>, <Arrow> keys, and so on.



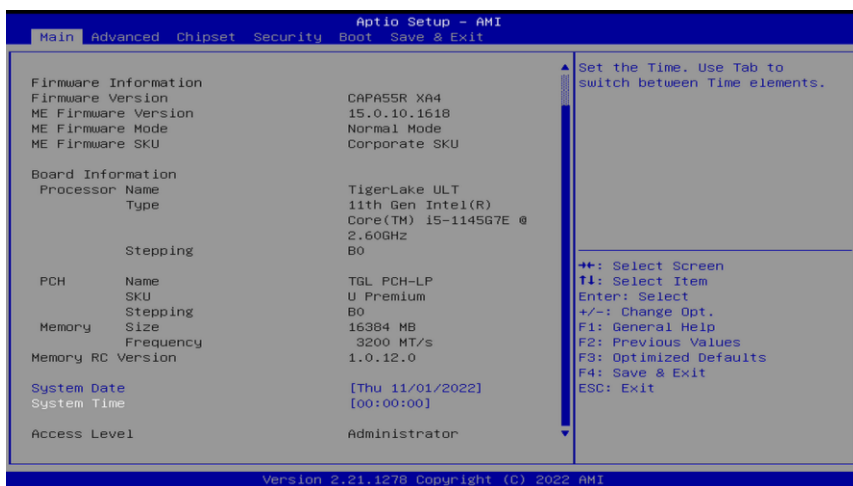
Some of navigation keys differ from one screen to another.

Note

← Left/Right	The Left and Right <Arrow> keys allow you to select a setup screen.
↑↓ Up/Down	The Up and Down <Arrow> keys allow you to select a setup screen or sub-screen.
+– Plus/Minus	The Plus and Minus <Arrow> keys allow you to change the field value of a particular setup item.
Tab	The <Tab> key allows you to select setup fields.
F1	The <F1> key allows you to display the General Help screen.
F2	The <F2> key allows you to load previous value
F3	The <F3> key allows you to Load Optimized Defaults.
F4	The <F4> key allows you to save any changes you have made and exit Setup. Press the <F4> key to save your changes.
Esc	The <Esc> key allows you to discard any changes you have made and exit the Setup. Press the <Esc> key to exit the setup without saving your changes.
Enter	The <Enter> key allows you to display or change the setup option listed for a particular setup item. The <Enter> key can also allow you to display the setup sub- screens.

3.2 Main Menu

When you first enter the setup utility, you will enter the Main setup screen. You can always return to the Main setup screen by selecting the Main tab. System Time/Date can be set up as described below. The Main BIOS setup screen is shown below.



BIOS and EC Information

Display BIOS and EC firmware information.

System Date/Time

Use this option to change the system time and date. Highlight System Time or System Date using the keys. Enter new values through the keyboard. Press the key or the keys to move between fields. The date must be entered in MM/DD/YY format. The time is entered in HH:MM:SS format.

Access Level

Display the access level of current user.

3.3 Advanced Menu

The Advanced menu allows users to set configuration of the CPU and other system devices. You can select any of the items in the left frame of the screen to go to the sub menus:

- Serial Port Configuration
- Hardware Monitor
- Trusted Computing
- CPU Configuration
- Storage Configuration
- AMT Configuration
- USB Configuration

For items marked with "▶", please press <Enter> for more options.



Serial Port Configuration

You can use this screen to select options for serial port configuration and change the value of the selected option. A description of the selected item appears on the right side of the screen. For items marked with. "▶", please press for more options.



Serial Port 1~2 Configuration

Use these items to set parameters related to serial port 1~2.

Serial Port 1 Configuration



Serial Port 1

Enable or disable serial port 1. The optimal setting for base I/O address is 248h and for interrupt request address is IRQ7.

COM Port Type

Use this item to set RS-232/422/485 communication mode and default set is RS-232.

Serial Port 2 Configuration



Serial Port 2

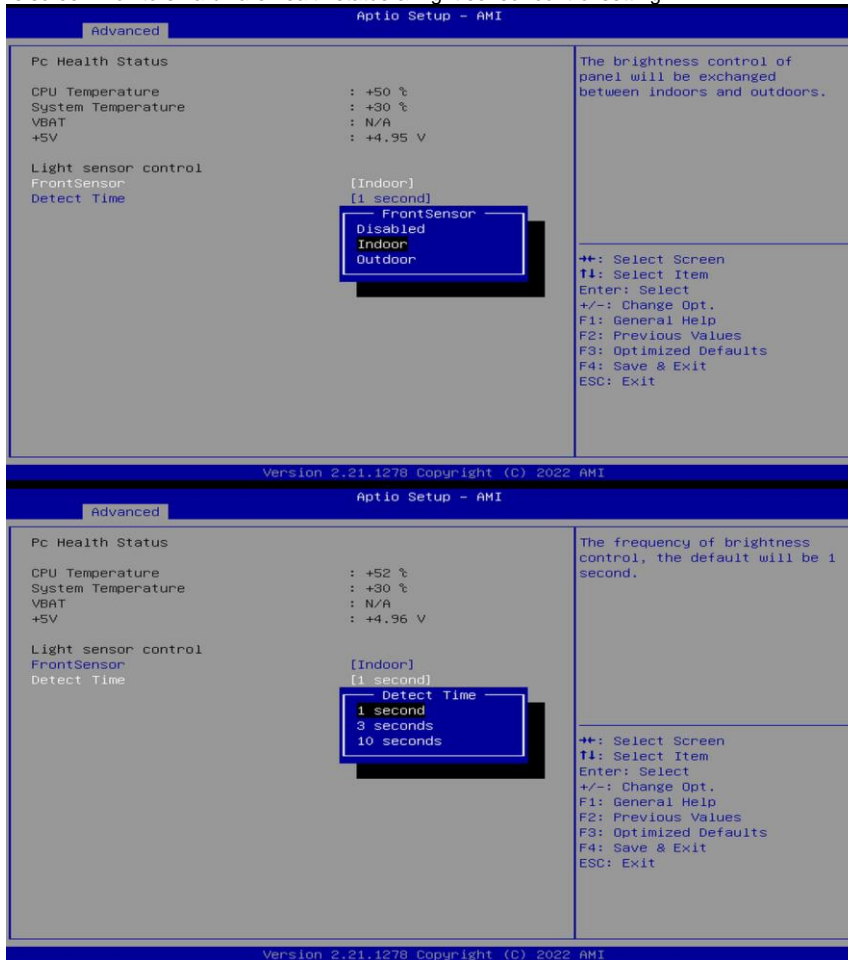
Enable or disable serial port 2. The optimal setting for base I/O address is 258h and for interrupt request address is IRQ6.

COM Port Type

Use this item to set RS-232/422/485 communication mode and default set is RS-232.

Hardware Monitor

This screen monitors hardware health status & Light sensor control setting



This screen displays the temperature of system and CPU, fan speed and system voltages (VBAT and +5V).

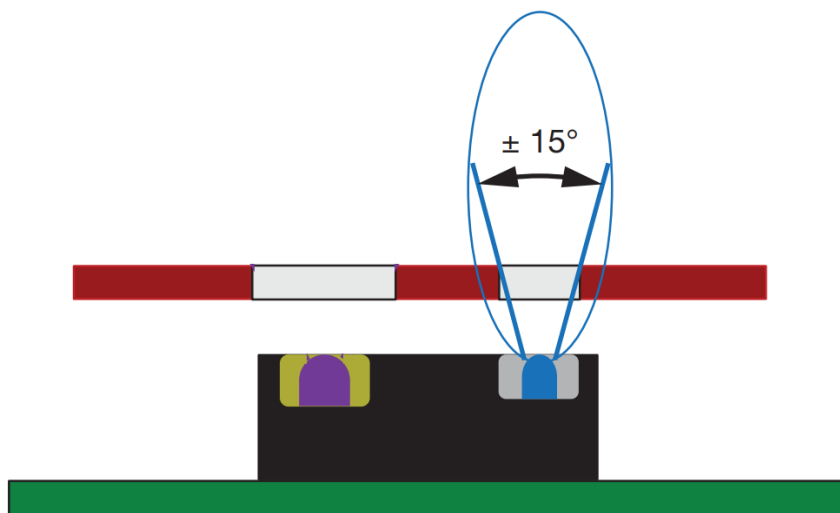
Light sensor (optional, default: Indoor), set indoor/outdoor & detection time according to user environment, light sensor is divided into ten levels, indoor maximum brightness 1000nits, outdoor maximum brightness 1500nits

After installing the operating system graphics card driver, the backlight adjustment function can be turned on. No functionality in other environments.

Note

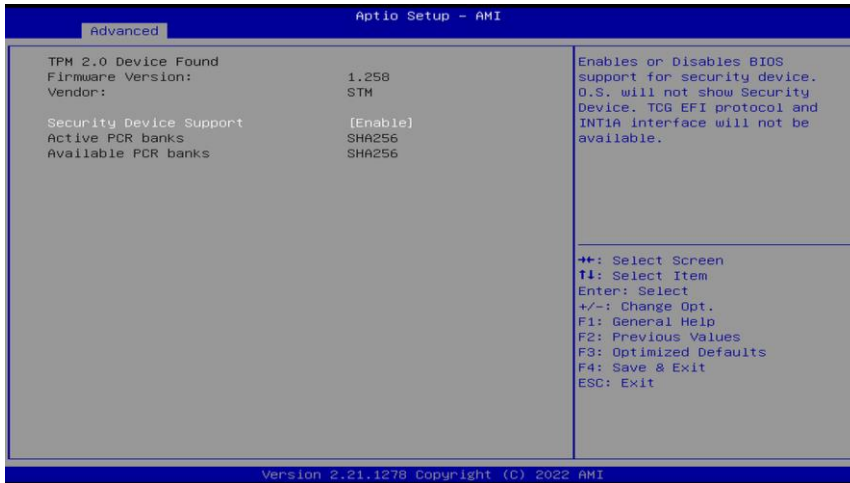


1. The light sensing (Left) angle is limited, only the front is 30 degrees horizontally and vertically.
2. Instantaneous sudden changes in brightness may cause temporary abnormality of the light sensing function.
3. The proximity sensor (Right) function by project to defined function



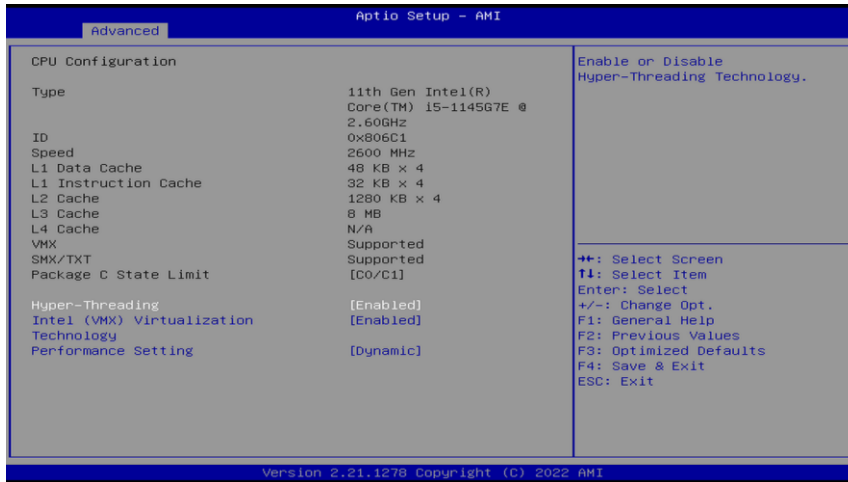
Trusted Computing

You can use this screen for TPM (Trusted Platform Module) configuration. It also shows current TPM status information.



CPU Configuration

This screen shows the CPU Configuration, and you can change the value of the selected option.



Hyper-Threading

Enable or disable Hyper-Threading Technology. When enabled, it allows a single physical processor to multitask as multiple logical processors. When disabled, only one thread per enabled core is enabled.

Intel (VMX) Virtualization Technology

Enable or disable Intel® Virtualization Technology. When enabled, a VMM (Virtual Machine Mode) can utilize the additional hardware capabilities. It allows a platform to run multiple operating systems and applications independently, hence enabling a computer system to work as several virtual systems.

Performance Setting (for CPU i5 SKU)

- Dynamic (Default): CPU TDP fixed in 16W.
- Maximum: (1) CPU TDP is unlimited but operating temperature will be lower than 30°C. (2) Power Supply must use 120W.

Storage Configuration

You can use this screen to select options for storage configuration, and change the value

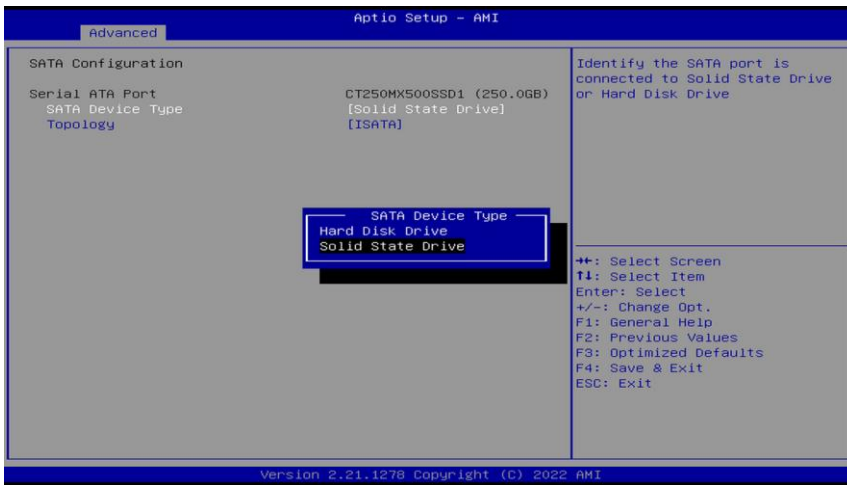
of the selected option. A description of the selected item appears on the right side of the

screen. For items marked with "▶", please press <Enter> for more options.



SATA Configuration

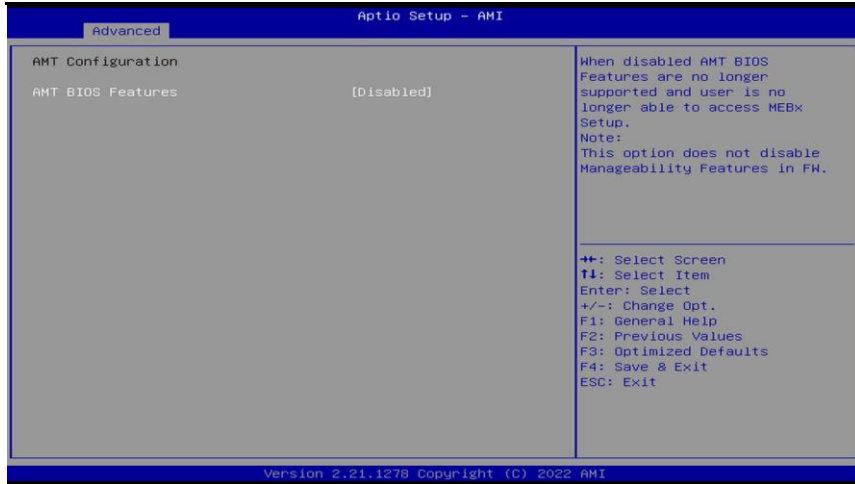
During system boot up, BIOS automatically detects the presence of SATA devices. In the SATA Configuration menu, you can see hardware currently installed in the SATA port.



已註解 [W1]: ●移除 NVMe

AMT Configuration

Use this screen to configure AMT parameters



AMT BIOS Features

Enable or disable Active Management Technology BIOS features.

USB Configuration



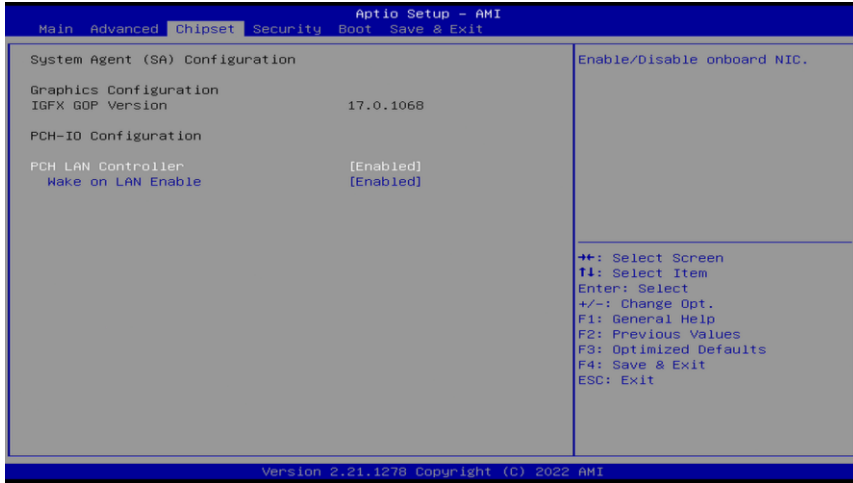
USB Devices

Display all detected USB devices.

3.4 Chipset Menu

The Chipset menu allows users to change the advanced chipset settings. You can select "System Agent (SA) Configuration in the left frame of the screen to go to the sub menus:

For items marked with "▶", please press for more options.



Graphics Configuration

Use this item to open graphics configuration sub screen.

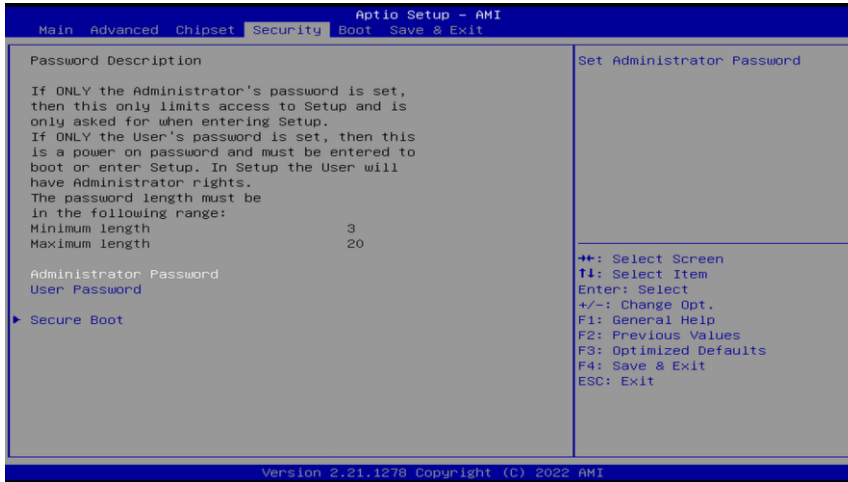
PCH LAN Controller

-Disabled: wake on LAN function disabled.

-Enabled: wake on LAN function enabled.

3.5 Security Menu

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



Setup Administrator Password

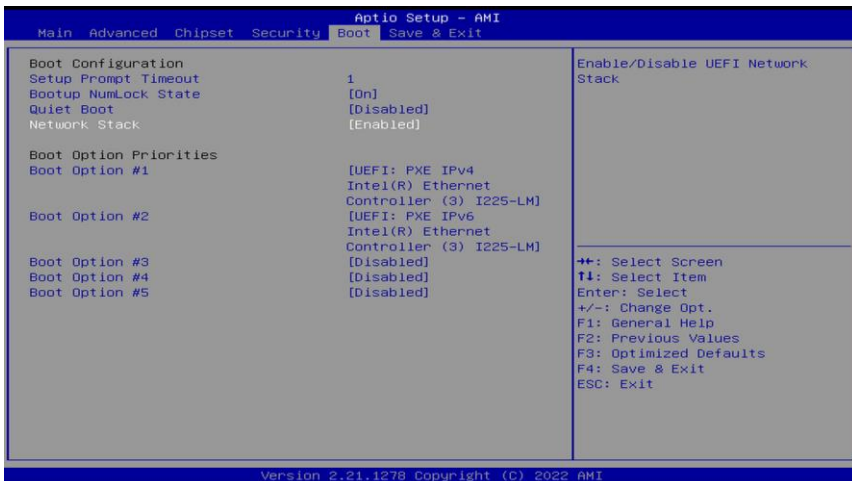
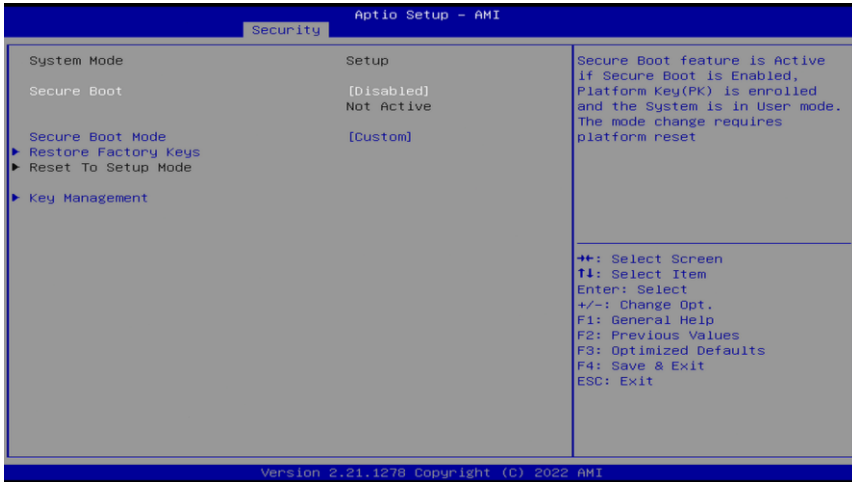
Use this item to set setup administrator password.

User Password

Use this item to set user password.

3.6 Boot Menu

The Boot menu allows users to change boot options of the system.



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 keyboard NumLock.

Quiet Boot

Select to display either POST output messages or a splash screen during boot-up.

Network Stack

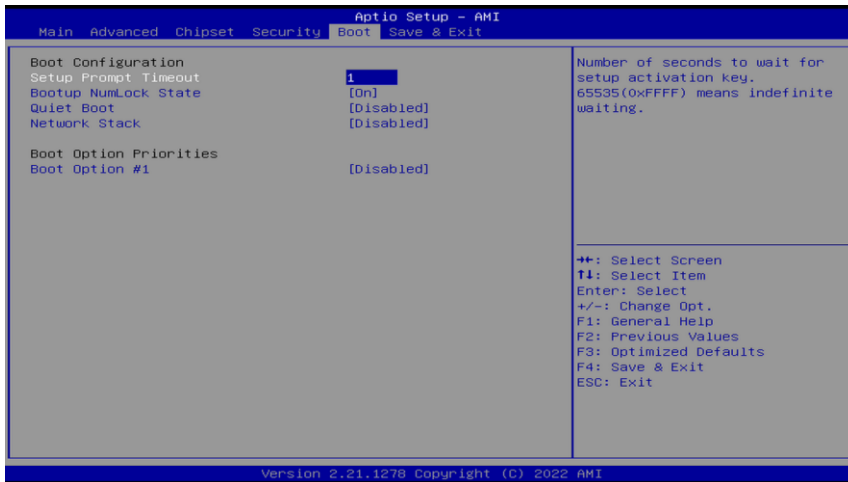
Enable or disable UEFI Network stack.

Boot Option Priorities [Boot Option #1, ...]

These are settings for boot priority. Specify the boot device priority sequence from the available devices.

Quiet Boot

Select to display either POST output messages or a splash screen during boot-up.



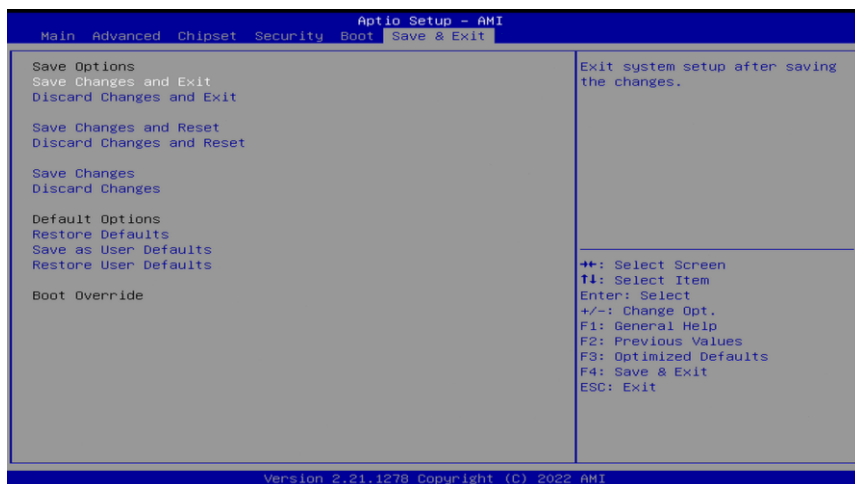
Boot Option Priorities

These are settings for boot priority. Specify the boot device priority sequence from the available devices.

Hard Drive BBS Priorities

These are settings for configuring the order for a specific device group. These options are only visible if at least one device for this group is present.

3.7 Save & Exit Menu



Save Changes and Exit

When you have completed the system configuration changes, select this option to leave Setup and return to Main Menu. Select Save Changes and Exit from the Save & Exit menu and press. Select Yes to save changes and exit.

Discard Changes and Exit

Select this option to quit Setup without making any permanent changes to the system configuration and return to Main Menu. Select Discard Changes and Exit from the Save & Exit menu and press. Select Yes to discard changes and exit.

Save Changes and Reset

When you have completed the system configuration changes, select this option to leave Setup and reboot the computer so the new system configuration parameters can take effect. Select Save Changes and Reset from the Save & Exit menu and press. Select Yes to save changes and reset.

Discard Changes and Reset

Select this option to quit Setup without making any permanent changes to the system configuration and reboot the computer. Select Discard Changes and Reset from the Save & Exit menu and press. Select Yes to discard changes and reset.

Save Changes

Select this option to save changes done so far. Select Save Changes from the Save & Exit menu and press. Select Yes to save changes.

Discard Changes

Select this option to discard changes done so far and load previous values. Select Discard Changes from the Save & Exit menu and press. Select Yes to discard changes.

Restore Defaults

It automatically sets all Setup options to a complete set of default settings when you select this option. Select Restore Defaults from the Save & Exit menu and press.

Save as User Defaults

Select this option to save system configuration changes done so far as User Defaults. Select Save as User Defaults from the Save & Exit menu and press.

Restore User Defaults

It automatically sets all Setup options to a complete set of User Defaults when you select this option. Select Restore User Defaults from the Save & Exit menu and press.

Boot Override

Select a drive to immediately boot that device regardless of the current boot order.

SECTION 4 Drivers Installation

4.1 System

GOT821A-TGL-WCD supports Windows 10/11-64. To facilitate the installation of system driver, please carefully read the instructions in this chapter before start installing.

1. Please download the following GOT821A-TGL-WCD driver from Axiomtek official website

Support->Downloads->select a product series->Search by Product Category

2. Please follow below Steps to install driver in GOT821A-TGL-WCD.

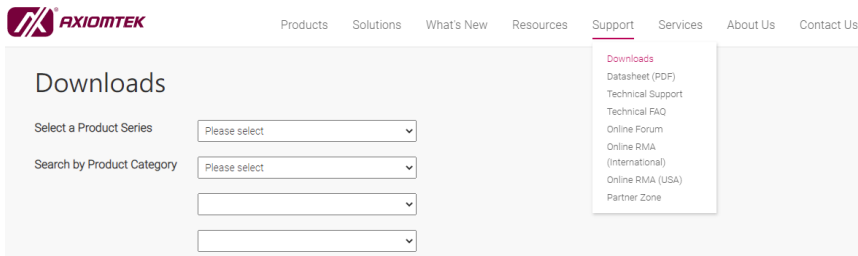
- Step 1. Chipset

- Step 2. LAN

- Step 3. ME

- Step 4. Serial IO

- Step 5. Graphics



4.2 Touch Screen

The GOT821A-TGL-WCD is designed based on the technology of projected capacitive multi-touch screen of which specifications are listed below

4.2.1 Specification

Touch Screen	Projected capacitive multi-touch
Communications	USB interface
Transparency	> 85%
Input Method	Finger or Cap.Stylus

4.3 Embedded O.S.

The GOT821A-TGL-WCD provides the Windows® 10/11 Embedded. The O.S. is supported devices which are listed below.

WES 10/11

Here are supported onboard devices:

- Onboard Multi I/O
- SATA HDD
- USB
- LCD display
- 2.5G base-T Ethernet
- Touch Screen