WTP-9K66

Industrial Panel PC

USER'S MANUAL

V1.0

Version Change History

Date	Version	Description	Remark
2026/5/29	1.0	First release	

Acknowledgments

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FCC Class B

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 18 of the FCC Rules.
These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential environment. This equipment generates, uses and can radiate radio frequency energy. If not installed and used in accordance with this user manual, it may cause harmful interference to radio communications.
Note that even when this equipment is installed and used in accordance with this user manual, there is still no guarantee that interference will not occur. If this equipment is believed to be causing harmful interference to radio or television reception, this can be determined by turning the equipment on and off. If interference is occurring, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and the receiver
- Connect the equipment to a power outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

Warning:

Any changes or modifications made to the equipment which are not expressly approved by the relevant standards authority could void your authority to operate the equipment.

To avoid risk of electric shock, this equipment must only be connected to a supply mains with protective earth.

Do not modify this equipment without authorization of the manufacturer.

Safety Instructions

Intended use
The WTP-9K66 is intended to serve as an industrial monitor which is designed for general purpose for industrial environment.

Intended User profile
The intended users are commercial and institutional personnel who require a stainless display for product presentation, food placement, equipment organization, or merchandise display. Typical user groups include:

- Retail operators
- Food service and hospitality personnel
- Exhibition and event setup staff
- Merchandising and visual display specialists
- Facility management and housekeeping personnel

Greeting & Setup
Thank you for purchasing the WTP-9K66 unit. We wish that this unit will be durable and reliable in providing your industrial application needs. Please follow the instructions below to ensure the unit continues to have high performance.

Unpacking
After opening the carton, there will be a industrial panel PC unit with an accessory box. Examine the contents to see if there are damages to the unit and if all accessories are present.

Setting up
Please read this manual carefully and remember to keep this manual for future reference.

Safety Instructions & Cleaning
The unit has undergone various tests in order to comply with safety standards. Inappropriate use of the open frame unit may be dangerous. Please remember to follow the instructions below to insure your safety during the installation and operating process.

Transporting & Placement of unit

1. When moving the unit on a cart; be very cautious. Quick stops, excessive forces and uneven surfaces may cause the cart to overturn thus risking the unit to fall to the ground.
2. If the industrial panel PC unit does fall to the ground, immediately turn the power off and disconnect cords. Then contact a service technician for repairs. Continual use of the unit may result cause a fire or electric shock. Also, do not repair the unit on your own.
3. Having two or more people transporting the display unit is recommended. In addition, when installing the unit by suspending it also requires two or more people.
4. Before suspending the unit, make sure the material used for suspension is sturdy and stable. If not properly suspended, the display unit may fall and cause serious injury to people standing nearby as well as to the unit itself.
5. If you wish to mount the display unit, remember to use only the mounting hardware recommended by the manufacturer.

Electrical and Power Source Related

1. This industrial panel PC unit must operate on a power source as shown on the specification label. If you are not sure what type of power supply used in the area, consult your dealer or local power supplier.
2. The power cords must not be damaged. Applied pressure, added heat, and tugging may damage the power cord.
3. The power cord must be routed properly when setup takes place. We advise that this aspect measure is to prevent people from stepping on the cords or while the unit is suspended to prevent flying objects from getting tangled with the unit.
4. For plug-in equipment, the power outlet socket must be located near the equipment and must be easily accessible.
5. Do not overload the AC outlets or extension cords. Electrical shocks or fires may occur from overloading.

6. Do not touch the power source during a thunderstorm.
7. If your hands are wet, do not touch the plug.
8. Use your thumb and index finger, grip firmly on the power cord to disconnect from the electrical socket. By pulling the power cord, may result in damaging it.
9. If the unit is not going to be in use for an extended period of time, remember to disconnect the unit.
10. The industrial panel PC unit uses voltage between 100-240VAC. Connect the unit to a power source with the same numerical value as shown. Please use only the power cord provided by the dealer to ensure safety and EMC compliance.

Various Factors of Environment

1. Do not insert objects into the openings.
2. Do not have liquids seep into the internal areas of the industrial panel PC unit.
3. Having liquids seep in or inserting objects into the unit may result in electric shocks from taking and/or short circuiting the internal parts.
4. Do not place the industrial panel PC unit in the presence of high moisture areas.
5. Do not install the industrial panel PC unit in a wet environment.
6. Do not place near unit near heat generating sources.
7. Do not place the unit in a location where it will come in contact with fumes or steam.
8. Remember to keep the industrial panel PC unit away from the presence of dust.
9. If water has flow in or seep in, immediately disconnect the open frame unit. Then contact a service technician for repairs.

Ventilation Spacing

1. Do not cover or block the openings on the top and back sides of the display unit. Inadequate ventilation may cause overheating thus reducing the lifespan of the unit.
2. Unless proper ventilation is present, do not place unit in an enclosed area; such as a built-in shelf. Keep a minimum distance of 10 cm between the display unit and wall.

Cleaning the unit

1. Remember to turn off the power source and to unplug the cord from the outlet before cleaning the unit.
2. Carefully dismount the unit or bring the unit down from suspension to clean.
3. Please use a dry soft cloth to clean the unit.
4. Take a dry cloth and wipe the unit dry. Remember to avoid having liquids seep into the internal components and areas of the industrial panel PC unit.

Error message / Troubleshooting

No power	1. Connect the AC adapter to the computer, and then plug it into an AC outlet. 2. Turn on the computer.

Servicing, Repairing, Maintenance & Safety Checks

1. If the unit is not functioning properly, observe the performance level of the display closely to determine what type of servicing is needed.
2. Do not attempt to repair the industrial panel PC unit on your own. Disassembling the cover exposes users' to high voltages and other dangerous conditions. Notify and request a qualified service technician for servicing the unit.

3. To avoid risk of electric shock, this equipment must only be connected to a supply mains with protective earth.

4. If any of the following situations occur turn the power source off and unplug the unit. Then contact a qualified service technician.

   (a) A liquid was spilled on the unit or objects have fallen into the unit.

   (b) The unit is soaked with liquids.

   (c) The unit is dropped or damaged.

   (d) If smoke or strange odor is flowing out of the operating unit.

   (e) If the power cord or plug is damaged.

   (f) When the functions of the unit are dysfunctional.

5. When replacement parts are needed for the industrial panel PC unit, make sure service technicians use replacement parts specified by the manufacturer, or those with the same characteristics and performance as the original parts. If unauthorized parts are used it may result in starting a fire, electrical shock and/or other dangers.

	EU-wide legislation, as implemented in each Member State, requires that waste electrical and electronic products carrying the mark (left) must be disposed of separately from normal household waste. This includes monitors and electrical accessories, such as signal cables or power cords. When you need to dispose of your display products, please follow the guidance of your local authority, or ask the shop where you purchased the product, or if applicable, follow any agreements made between yourself. The mark on electrical and electronic products only applies to the current European Union Member States.

Caution:

DO NOT LEAVE THIS EQUIPMENT IN AN UNCONTROLLED ENVIRONMENT WHERE THE STORAGE TEMPERATURE IS BELOW -20° C (-4° F) OR ABOVE 60° C (140° F). THIS MAY DAMAGE THE EQUIPMENT.

Contact information:

Wincomm Corporation
3F, No.14, Prosperity Road II, Science-Based Industrial Park,
Hsinchu, Taiwan 300, R.O.C
TEL: (886) 3 5780000
E-Mail: Sales_support@wincomm.com.tw

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Introduction

Product Description

The WTP-9K66 Industrial Panel PC is based on Intel Meteor Lake-U MCP processors

The high brightness LCD, Fanless solution, integrated multimedia functions and extensive expansion options make them the perfect platform upon which to build comprehensive lifestyle computing applications.

The WTP-9K66 includes all the features of a powerful computer into a slim and attractive chassis.

The WTP-9K66 is compact, Giga LAN and selectable WLAN network compatible PC with full safety and industrial approval and features to control a dedicated system with a wide variety of applications. Combining the WTP-9K66 into your system can achieve both cost-saving and efficient improvements.

Common applications and Electronic Industrial Record. The WTP-9K66 are definitely your perfect choices.

Package list

Before you begin installing your Industrial Station, please make sure that the following items have been shipped:

- The WTP-9K66 Industrial Panel PC unit
- User's manual, chipset drivers
- Power Adapter x 1 (type/model: LSU120A-108)
- Power cord –US type, or other type in UK, EU…etc.

Features

- 15 Intel® Core Ultra 125U Fanless Stainless Panel PC
- Bezel Free
- TPM 2.0 on Board
- IP66/69K Full Sealed with Anti-Corrosion Enclosure
- Support Intel® vPro Technology by CPU
- Optional IP67 M12 Stainless Connectors
- 100% Waterproof Guarantee
- CE, FCC, VCCI Class B Certified

Specifications

Hardware Specifications

Display	15” 350 nits 1024 x 768 TFT LCD 22” 250 nits 1920 x 1080 TFT LCD
CPU Support	Intel® Core™ Ultra processors (Meteor Lake-U) , 15 W
Disk Drive Space	1 x M.2 (Key M, 2242/2280) with PCIe Gen4 x4 for SSD 1 x M.2 (Key M, 2242) with PCIe Gen4 x4 for SSD
Expansion	1 x M.2 (Key E, 2230) with PCIe Gen4 x1, USB 2.0 and CNVi for Wireless 1 x M.2 (Key B, 3042/3052) with PCIe Gen4 x1, USB 3.2 Gen1, USB 2.0 and SIM for 4G/5G 1x SIM socket connected to M.2 key B
Serial port	COM1, COM2, COM3 (RS-232/422/485)
USB	External 2 x USB 3.2 Gen2 , 2 x USB 3.2 Gen2x2 (Type-C, 5V/3A, support DP 1.4a display output) Internal 4 x USB 2.0 (2 x 2.00mm pitch header)
TPM2.0	TPM2.0(on board IC)
External IO (M12)	USB 1 x M12 8pin for USB 1/2(USB2.0) COM 2 x M12 8pin for COM 1 & COM2 / RS-232/422/485 LAN 1 x M12 8pin for LAN 1 Power 1 x M12 5pin DC power connector Type C 2 X USB 3.2 Gen2 (Type-C, Support DP1.4a display output, Power output 5V/3A)

LCD Specifications

Panel Type	15”
Max. Resolution	1024x768 XGA
Contrast Ratio	800:1
Pixel Pitch (um)	0.297(H) × 0.297(V)
Luminance (cd/m2)	350
Viewing Angle	160°(H)
	160°(V)

Panel Type	22”
Max. Resolution	1920x1080 Full HD
Contrast Ratio	1000:1
Pixel Pitch (um)	248.25 (H)×248.25(V)
Luminance (cd/m2)	250
Viewing Angle	170°(H)
	160°(V)

Power Adapter Specifications

Power	Close-frame
MFR	Sinpro
Input Rating	AC 100 ~ 277 V, 47 ~ 63 Hz
Output Rating	DC 24V/5A (MAX 120W)
MTBF	100K hrs operation at 25°C
Classification	Power by Class I certified power adapter. No applied part.
Mode of operation	Continuous operation
System input rating	DC 24V, 75W

Mechanical Specifications

Architecture	Close-frame
Front Bezel	PCT touch screen or RES touch screen With stainless (304)
Color	Sliver
Mounting / Holder	VESA 100X100 mm

Dimension (WxHxD)	15” -379x303x58 (mm) 21.5” –550.1x341.7x58 mm(mm)
Net Weight	15” – 6.5 kg (w/o power adapter) 21.5” – 9.5 kg (w/o power adapter)
Packing Filler	PE

Environmental Specifications

Temperature	Operating:0°C to 50°C by SSD Storage, Transportation: -20°C to 60°C (-4°F ~140°F)
Vibration	Operating: 15g/0.53 oz, 11 ms, half sine wave Non-operating: 50g/1.76 oz, 11 ms, half sine wave
Shock	Operating: 5 ~ 17 Hz , Amplitude：0.117 ~ 500Hz , Acceleration：1.0G Non-operating:10~55Hz/0.15g, 55~500Hz/2.0g
Altitudes	Operational: up to 3000 m (9842 feet) Shipping: up to 12192 m (40000 feet)
Pressure	700 – 1060 hPa (Operation) 186 – 1060 hPa (Storage) 186 – 1060 hPa (Transportation)
EMI / Safety	CE / FCC / VCCI Class B
IP	IP66 front
Noise	Fanless

Touch Screen

P.cap Touch

Type	Full flat projective capacitive touch panel
Interface	Controller with USB interface, 5V
Hardness	>=7H
Light Transmission	>=86%
Life Time	100M times

Res touch

Type	Full flat resistive touch panel
Interface	Controller with USB interface, 5V
Hardness	≧3H

Light Transmission	80% ± 5%
Life Time	35M times

Getting Started

System Set Up

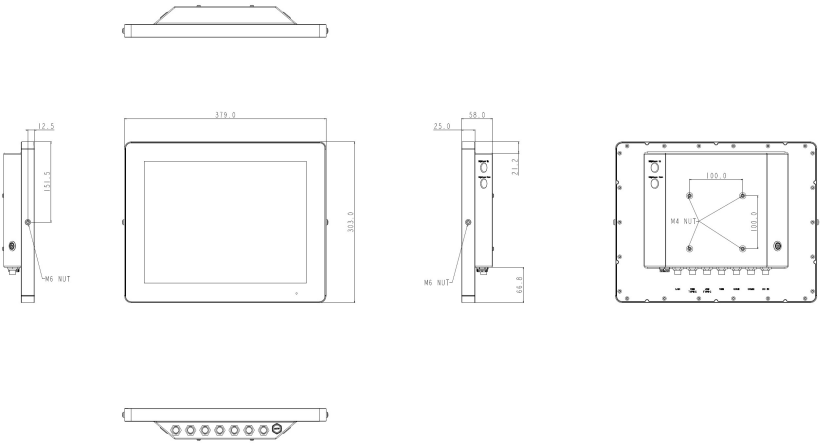
The following is a summary of the steps in setting up the system for use.

(1). You can fix the system to a mounting fixture using the screw holes on the sides of the system.
(2). Make any required external connections such as the display, keyboard, and LAN.
(3). Plug the appropriate end of the power cord into the power connector on the rear of the system and the plug to an electrical outlet.
(4). ***Waiting for 3 seconds*** then press the power switch on the front panel of the system once to turn on the system power.
(5). If necessary, run the BIOS SETUP programs to configure the system.

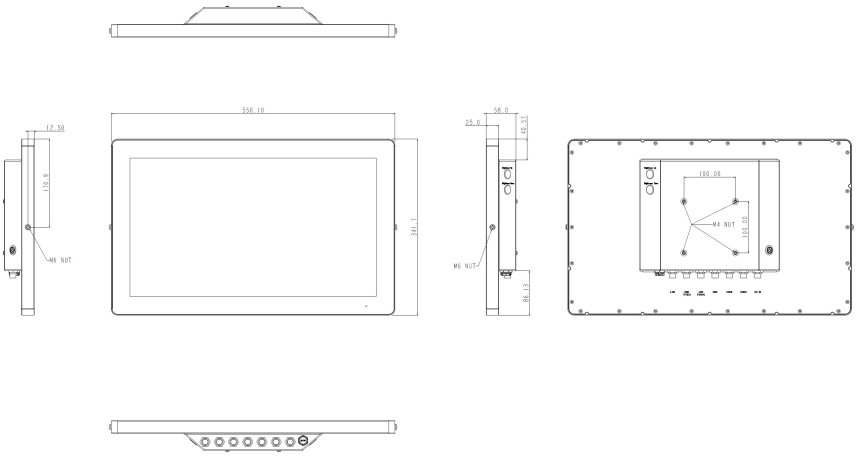
Caution:
In order to boot up system from USB-CD/DVD drive, please connect USB-CD/DVD drive, turn on computer power, keep on pressing "F11" key, go into BIOS quick boot menu, select "USB-CD ROM", WAIT FOR 20 SECONDS, then press enter, system OS will boot up from USB-CD/DVD drive directly.

Notice:
The installation is only to be carried out by manufacturer trained and authorized personnel.

Dimension WTP-9K66-15



Dimension WTP-9K66-22

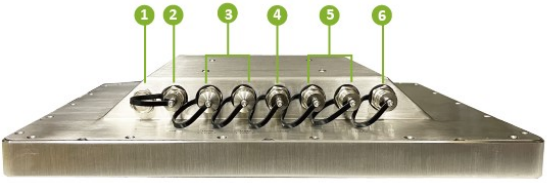


System View

Front View

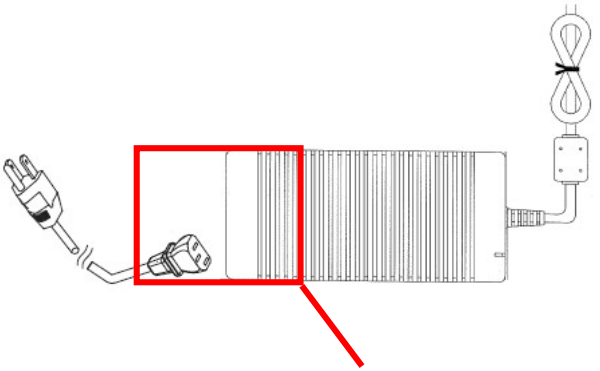
Back

I/O parts



1 Power on/off
2 LAN
3 USB Type-C
4 USB
5 COM x 2
6 DC-in

Disconnect Device



Unplug the power cord from the power adapter jack to disconnect the device.

Turn off the system:

Turning off WTP-9K66 properly is important for system reliability.
1. On the start menu, click "Shut down" and select "OK"

BIOS Setup

BIOS Introduction

The AMI BIOS (Basic Input / Output System) installed in your computer system's ROM supports Intel processors. The BIOS provides critical low-level support for a standard device such as disk drives, serial ports and parallel ports. It also adds virus and password protection as well as special support for detailed fine-tuning of the chipset controlling the entire system.

BIOS Setup

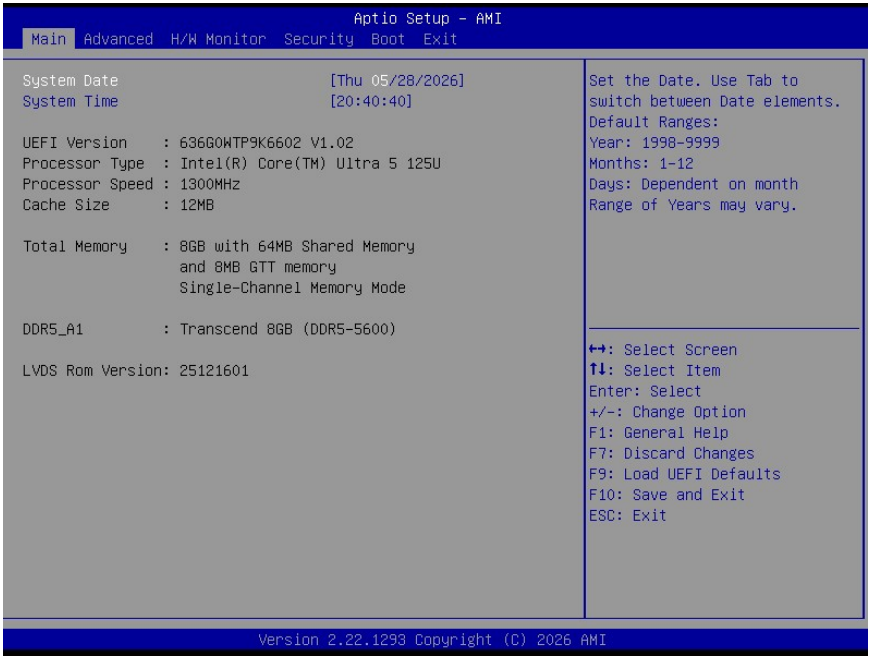
The AMI BIOS provides a Setup utility program for specifying the system configurations and settings. The BIOS ROM of the system stores the Setup utility. When you turn on the computer, the AMI BIOS is immediately activated. Pressing the <Del> key immediately allows you to enter the Setup utility. If you are a little bit late pressing the <Del> key, POST (Power On Self Test) will continue with its test routines, thus preventing you from invoking the Setup. If you still wish to enter Setup, restart the system by pressing the "Reset" button or simultaneously pressing the <Ctrl>, <Alt> and <Delete> keys. You can also restart by turning the system Off and back On again. The following message will appear on the screen:

Press <DEL> to Enter Setup

In general, you press the arrow keys to highlight items, <Enter> to select, the <PgUp> and <PgDn> keys to change entries, <F1> for help and <Esc> to quit.

When you enter the Setup utility, the Main Menu screen will appear on the screen. The Main Menu allows you to select from various setup functions and exit choices.

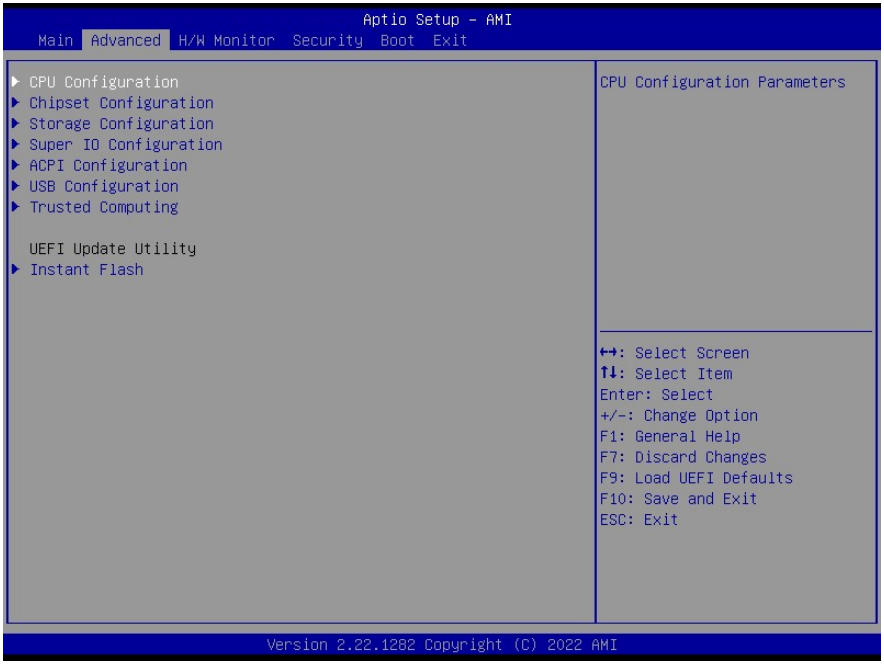
Main



System Date
Set the Date. Use Tab to switch between Date elements.
Default Ranges:
Year: 1998-9999
Months: 1-12
Days: Dependent on month
Range of Years may vary.

System Time
Set the Time. Use Tab to switch between Time elements.

Advanced



CPU Configuration

CPU Configuration parameters

Active Processor Cores

Select the number of cores to enable in each processor package.

CPU C States Support

Enable CPU C States Support for power saving. It is recommended to keep C3, C6 and C7 all enabled for better power saving.

Intel Virtualization Technology

Intel Virtualization Technology allows a platform to run multiple operating systems and applications in independent partitions, so that one computer system can function as multiple virtual systems.

Intel SpeedStep Technology

Allows more than two frequency ranges to be supported.

Intel Turbo Boost Technology

Intel Turbo Boost Technology enables the processor to run above its base operating frequency when the operating system requests the highest performance state.

CPU Thermal Throttling
Enable CPU internal thermal control mechanisms to keep the CPU from overheating.

Chipset Configuration
Configure Chipset settings

Above 4G Decoding
Enable/Disable above 4G MemoryMappedIO decoding
This is disabled automatically when Aperture Size is set to 2048MB.

VT-d
VT-d Capability

PCIE1 Link Speed
Configure PCIE Slot Link Speed.

Share Memory
Configure the size of memory that is allocated to the integrated graphics processor when the system boots up.

Render Standby
Check to enable render standby support.

Active LVDS
Enable: Enable the LVDS
Disable: Disable the LVDS

Panel Type Selection
Select Panel Type

Onboard LAN1
Enable or disable the onboard LAN1 network interface controller.

Onboard LAN2
Enable or disable the onboard LAN2 network interface controller.

Onboard HD Audio
Enable/disable onboard HD audio.

Restore on AC/Power Loss
Select the power state after a power failure. If [Power Off] is selected, the power will remain off when the power recovers. If [Power On] is selected, the system will start to boot up when the power recovers.

Storage Configuration
Configure Storage devices.

SATA Controllers(s)
Enables/disable the SATA controllers.

SATA Mode Selection

AHCI: Supports new features that improve performance.
Intel RST Premium(RAID):
Combine multiple disk drives into a logical unit.
Please press <CTRL - I> to enter RAID ROM during UEFI POST process.

SATA Aggressive Link Power Management

SATA Aggressive Link Power Management allows SATA devices to enter a low power state during periods of inactivity to save power. It is only supported by AHCI mode.

Hard Disk S.M.A.R.T

S.M.A.R.T stands for self-Monitoring, Analysis, and Reporting Technology, It is a monitoring system for computer hard disk drives to detect and report on various indicators of reliability.

SATA3_1:

M2M_1/SATA3_2:

Super IO Configuration

Configure Super IO Settings.

COM1

Enable or Disable COM1 IO=3F8h; IRQ=4;

COM2

Enable or Disable COM2 IO=2F8h; IRQ=3;

Type Select

Set COM TYPE.

COM3

Enable or Disable COM3 IO=3E8h; IRQ=7;

Type Select

Set COM TYPE.

COM4

Enable or Disable COM4 IO=2E8h; IRQ=7;

Type Select

Set COM TYPE.

WDT Timeout Reset

Enable/Disable Watch Dog Timer timeout to reset system.

ACPI Configuration

Configure ACPI Settings.

Suspend to RAM

It is recommended to select auto for ACPI S3 power saving.

PCIE Devices Power On

Allow the system to be waked up by a PCIE device and enable wake on LAN.

RTC Alarm Power On

Allow the system to be waked up by the real time clock alarm. Set it to By OS to let it be handled by your operating system.

USB Configuration

Configure the USB support.

USB Power Control

Always enabled: Enable USB power in S0/S3/S4/S5, Default setting: Enable USB power in S0/S3, disable USB power in S4/S5.

M.2 Key_B USB Function

Enable/Disable M.2 Key_B USB Function

Trusted Computing

Trusted Computing Settings.

Security Device Support

Enables or Disables BIOS support for security device. O.S. will not show Security Device. TCG EFI protocol and INT1A interface will not be available

SHA256 PCR Bank

Enable or Disable SHA256 PCR Bank

SHA384 PCR Bank

Enable or Disable SHA384 PCR Bank

SM3_256 PCR Bank

Enable or Disable SM3_256 PCR Bank

Pending operation

Schedule an Operation for the Security Device. NOTE: Your Computer will reboot during restart in order to change State of Security Device.

Platform Hierarchy

Enable or Disable Platform Hierarchy

Storage Hierarchy

Enable or Disable Storage Hierarchy

Endorsement Hierarchy

Enable or Disable Endorsement Hierarchy

TPM 2.0 UEFI Spec Version

Select the TCG2 Spec Version Support,
TCG_1_2: the Compatible mode for Win8/Win10,
TCG_2: Support new TCG2 protocol and event format for Win10 or later

Physical Presence Spec Version

Select to Tell O.S. to support PPI Spec Version 1.2 or 1.3. Note some HCK tests might not support 1.3.

TPM 2.0 InterfaceType

Select the Communication Interface to TPM 20 Device.

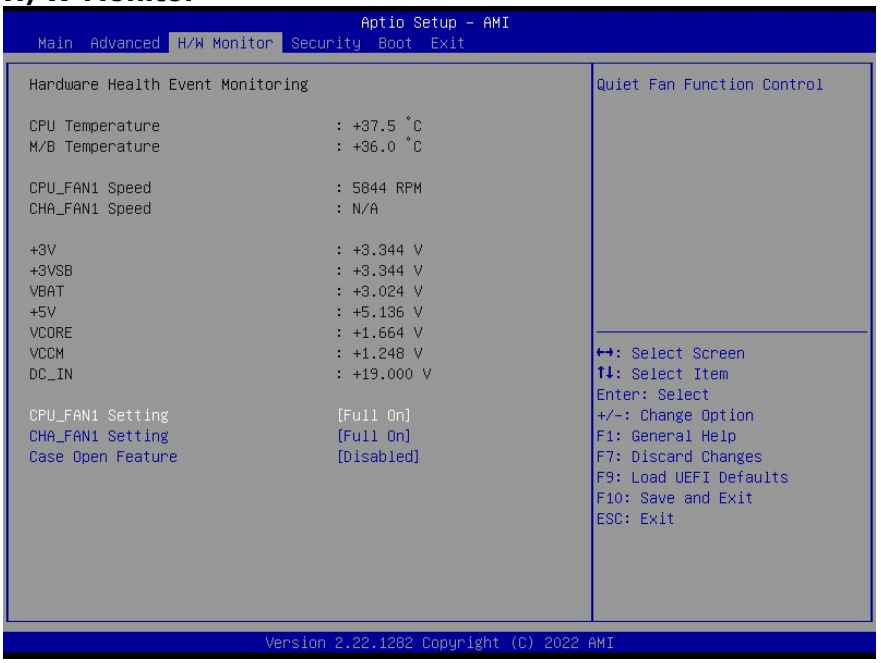
Device Select

TPM 1.2 will restrict support to TPM 1.2 devices, TPM 2.0 will restrict support to TPM 2.0 devices, Auto will support both with the default set to TPM 2.0 devices if not found, TPM 1.2 devices will be enumerated

Instant Flash

Save UEFI files in your USB storage device and run Instant Flash to update your UEFI. Please note that your USB storage device must be FAT32/16/12 file system.

H/W Monitor

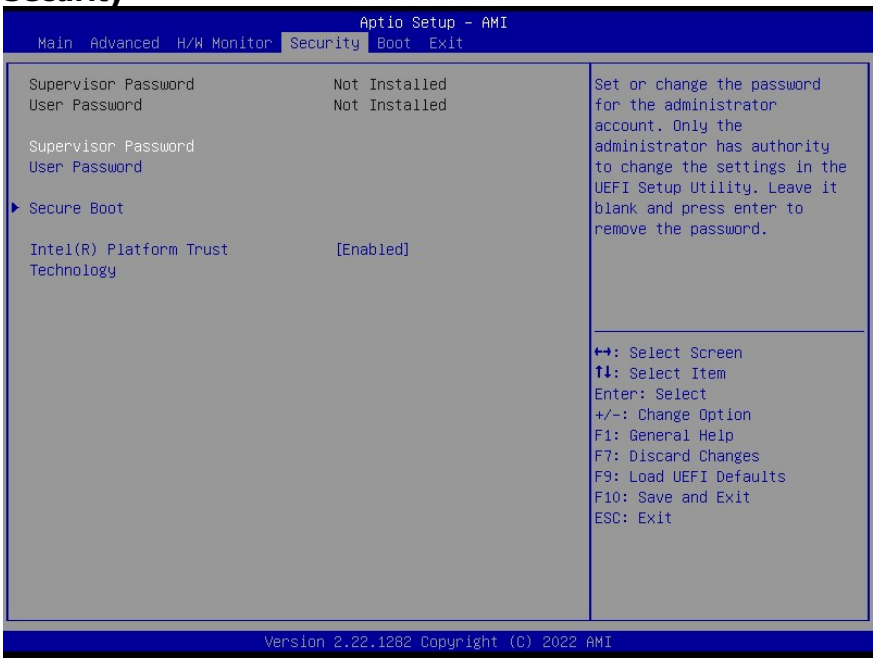


CPU_FAN1 Setting
Quiet Fan Function Control

CHA_FAN1 Setting
Quiet Fan Function Control

Case Open Feature
Enable or disable the feature of Case Open.

Security



Supervisor Password

Set or change the password for the administrator account. Only the administrator has authority to change the settings in the UEFI setup Utility. Leave it blank and press enter to remove the password

User Password

Set or change the password for the user account. Users are unable to change the settings in the UEFI Setup Utility. Leave it blank and press enter to remove the password.

Secure Boot

Secure Boot configuration

Secure Boot

Secure Boot feature is Active if Secure Boot is Enabled, Platform Key(PK) is enrolled and the System is in User mode. The mode change requires platform reset

Secure Boot Mode

Secure Boot mode options: Standard or Custom. In Custom mode, Secure Boot Policy variables can be configured by a

physically present user without full authentication

Install default Secure Boot keys

Please install default secure boot keys if it's the first time you use secure boot.

Clear Secure Boot keys

Force System to Setup Mode - clear all Secure Boot Variables. Change takes effect after reboot

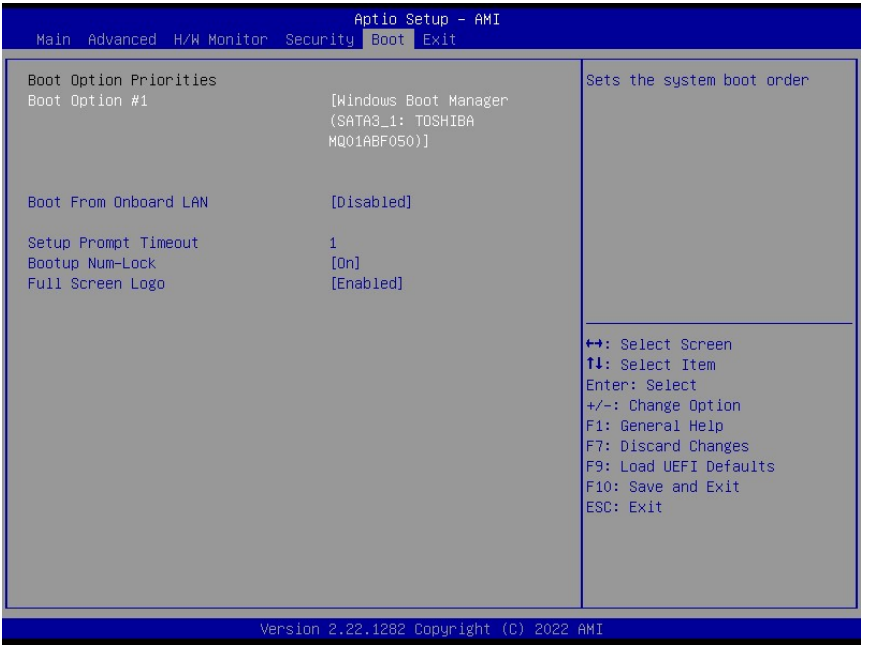
Key Management

Enables expert users to modify Secure Boot Policy variables without full authentication

Intel(R) Platform Trust Technology

Enabled/Disabled Intel PTT function,
Enabled: Enable Intel PTT in ME,
Disabled: Disable Intel PTT in ME, Use discrete TPM Module.

Boot



Boot Option #1
Sets the system boot order

Boot Option #2
Sets the system boot order

Boot Option #3
Sets the system boot order

Boot Option #4
Sets the system boot order

Boot From Onboard LAN
Boot From Onboard LAN

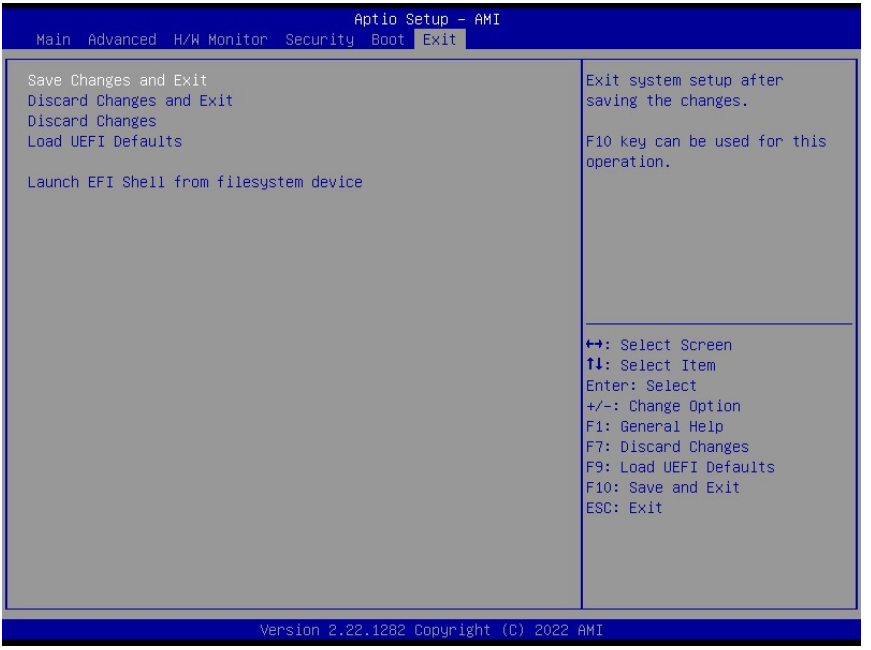
Setup Prompt Timeout
Configure the number of seconds to wait for the UEFI setup utility.

Bootup Num-Lock
Select whether Num Lock should be turned on or off when the

system boots up.

Full Screen Logo
Enable to display the boot logo or disable to show normal POST messages

Exit



Save Changes and Exit
Exit system setup after saving the changes.
F10 key can be used for this operation.

Discard Changes and Exit
Exit system setup without saving any changes.
ESC key can be used for this operation.

Discard Changes
Discard Changes done so far to any of the setup options.
F7 key can be used for this operation.

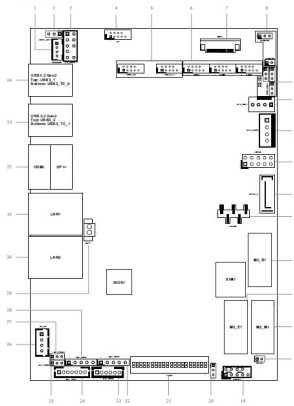
Load UEFI Defaults
Load UEFI Default values for all the setup questions.
F9 key can be used for this operation.

Launch EFI Shell from filesystem device
Copy shellx64.efi to the root directory to launch EFI Shell.

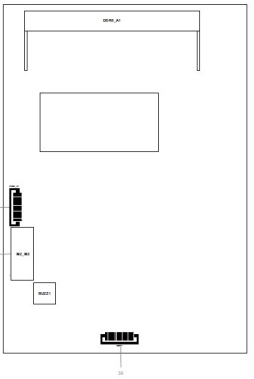
Appendix

A. Jumper settings and Connectors

Top:



Bottom:



Revision History

Date	Description
March 12, 2025	First Release

1 : 3W Audio AMP Output Wafer (SPEAKER1)

Pin	Signal Name
1	OUTLN
2	OUTLP
3	OUTRP
4	OUTRN

2 : Digital Input/Output Default Value Setting (JGPIO_SET1)
1-2 : +3V (Default)
2-3 : GND

3 : Front Panel Audio Header (HD_AUDIO1)

Pin	Signal Name	Signal Name	Pin
1	MIC1_L	AGND_A	2
3	MIC1_R	NA	4
5	LINE2_R_OUT	LINE1_JD	6
7	AGND_A		8
9	LINE2_L_OUT	LINE2_JD	10

4 : JP7
<Test CI1 (常開式)>
JP7: 68 (Short)
JP7: 24 (Connect to Case)

<Test CI2 (常開式)>
JP7: 24 (Open)
JP7: 68 (Connect to Case)

<AT_ATX_Mode>
JP7: 13 (Open) = ATX Mode (Default)
JP7: 13 (Short) = AT Mode

<Buzzer Header>
JP5: Buzzer
JP7: +5V

Pin	Signal Name	Signal Name	Pin
1	AT_ATX_Mode	CASEOPEN#_CI1	2
3	GND	GND	4
5	Buzzer	GND	6
7	+5V	CASEOPEN#_CI2	8
9	NA		10

5 : USB 2.0 Headers (USB2_5_6, USB2_3_4)

Pin	Signal Name	Signal Name	Pin
1	USB_PWR	USB_PWR	2
3	USB_D-	USB_D-	4
5	USB_D+	USB_D+	6
7	GND	GND	8
9	DUMMY		10

6 : COM Port Headers (COM3~5)
(RS232/422/485) *

* This motherboard supports RS232/422/485 on COM3, 4 and 5 ports. Please refer to the table below for the pin definition. In addition, COM3, 4 and 5 ports (RS232/422/485) can be adjusted in BIOS setup utility > Advanced Screen > Super IO Configuration. You may refer to our user manual for details.

COM3, 4 and 5 Ports Pin Definition

Pin	RS232	RS422	RS485
1	DCD	TX-	RTX-
2	RXD	TX+	RTX+
3	TXD	RX+	N/A
4	DTR	RX-	N/A
5	GND	GND	GND
6	DSR	N/A	N/A
7	RTS	N/A	N/A
8	CTS	N/A	N/A
9	PWR	PWR	PWR

7 : MIPI Connector (MIPI1)

Pin	Signal Name
1	+3V
2	I2C0_SDA_CAM_3V
3	I2C0_SCL_CAM_3V
4	GND
5	CAM_MCLK_3V
6	CAM_RST_PANDN_3V
7	GND
8	CSI_E_D0_DP
9	CSI_E_D0_DN
10	GND
11	CSI_E_CK_DP
12	CSI_E_CK_DN
13	GND
14	CSI_E_D1_DP
15	CSI_E_D1_DN
16	GND
17	CSI_E_D2_DP
18	CSI_E_D2_DN
19	GND
20	CSI_E_D3_DP
21	CSI_E_D3_DN
22	GND

8 : Clear CMOS Headers
CLRMOS1
1-2 : Normal (Default)
2-3 : Clear CMOS
CLRMOS2
Open : Normal (Default)
Short : Auto Clear CMOS (Power Off)

9 : COM Port Pin9 PWR Setting Jumpers
PWR_COM3 (For COM Port3)
PWR_COM4 (For COM Port4)
PWR_COM5 (For COM Port5)
1-2 : +5V (Default)
2-3 : +12V

10 : CPU FAN Connector (+12V) (CPU_FAN1)

Pin	Signal Name
1	GND
2	+12V
3	CPU_FAN_SPEED
4	FAN_SPED_CONTROL

11 : SATA Power Output Connector
(SATA_PWR1)

Pin	Signal Name
1	+5V
2	GND
3	GND
4	+12V

12 : Digital Input/Output Pin Header (JGPIO2)

Pin	Signal Name	Signal Name	Pin
1	GPP_S02_GPO_1_3V	GPP_C22_GPI_1_3V	2
3	GPP_S03_GPO_2_3V	GPP_C23_GPI_2_3V	4
5	GPP_S04_GPO_3_3V	GPP_B00_GPI_3_3V	6
7	GPP_S05_GPO_4_3V	GPP_D03_GPI_4_3V	8
9	DIO_PWR_+5V	GND	10

13 : SATA3 Connectors (SATA3_0)

Pin	Signal Name
1	GND
2	SATA_0_TX_DP_C
3	SATA_0_TX_DN_C
4	GND
5	SATA_0_RX_DN_C
6	SATA_0_RX_DP_C
7	GND

14 : JHDMI1(For HDMI-MIPI Card)

Pin	Signal Name
1	+5V
2	GND
3	GPP_V23
4	GPP_V22
5	GPP_C8

15 : M.2 Key-B Socket (M2_B1)

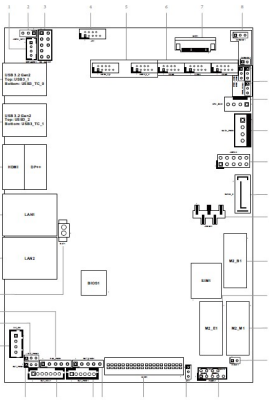
Pin	Signal Name	Signal Name	Pin
1	NA	+3.3V	2
3	GND	+3.3V	4
5	GND	FULL_Card_Power_off	6
7	USB_D+	W_DISABLE	8
9	USB_D-	WWAN_LED#	10
11	GND		
21	GND	NA	22
23	NA	NA	24
25	NA	NA	26
27	GND	NA	28
29	USB3_RX-	UIM_RESET	30
31	USB3_RX+	UIM_CLK	32
33	GND	UIM_DATA	34
35	USB3_TX-	UIM_PWR	36
37	USB3_TX+	NA	38
39	GND	SMB_CLK	40
41	PERst0	SMB_DATA	42
43	PETn0	NA	44
45	GND	NA	46
47	PETp0	NA	48
49	PETP0	PERST#0	50
51	GND	CLKREQ#0	52
53	PERCLK0-	NA	54
55	PERCLK0+	NA	56
57	GND	NA	58
59	NA	NA	60
61	NA	NA	62
63	NA	NA	64
65	NA	NA	66
67	NA	NA	68
69	PEDET	+3.3V	70
71	GND	+3.3V	72
73	GND	+3.3V	74
75	NA		

16 : DACC1
Open: no ACC
Short: ACC (Default)
• Auto clear CMOS when system boot improperly.

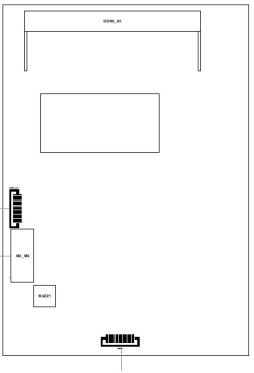
17 : System Panel Header (PANEL1)

Pin	Signal Name	Signal Name	Pin
1	HDLED+	PLED+	2
3	HDLED-	PLED-	4
5	GND	PWRBTN#	6
7	RESET#	GND	8
9	GND		10

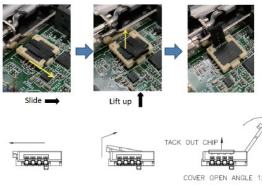
Top:



Bottom:



Installation of ROM Socket



* Do not apply force to the actuator cover after ic inserted.
* Do not apply force to actuator cover when it is opening over 120 degree, Otherwise, the actuator cover may be broken.

* The yellow dot (Pin1) on the ROM must be installed at pin1 position of the socket (white arrow area).
* Make sure the white dot on the ROM is installed outwards of the socket.
* For further details of how to install ROM, please refer to ASRI website.

Warning: If the installation does not follow as the picture, then it may cause severe damage to chipset & MB.

18 : M.2 Key-E Socket (M2_E1)

Pin	Signal Name	Signal Name	Pin
1	GND	+3.3V	2
3	USB_D+	+3.3V	4
5	USB_D-	NA	6
7	GND	NA	8
9	CNV_WDR_D1-	CNV_RF_RESET	10
11	CNV_WDR_D1+	NA	12
13	GND	MODEM_CLKREQ	14
15	CNV_WDR_D0-	NA	16
17	CNV_WDR_D0+	GND	18
19	GND	NA	20
21	CNV_WDR_CLK-	CNV_BRI_RSP	22
23	CNV_WDR_CLK+		
		CNV_BRI_DT	32
33	GND	CNV_RGI_RSP	34
35	PETp	CNV_BRI_DT	36
37	PETn	NA	38
39	GND	NA	40
41	PERp	NA	42
43	PERn	NA	44
45	GND	NA	46
47	REFCLKp	NA	48
49	REFCLKn	NA	50
51	GND	PERST0#	52
53	CLKREQ#	W_DISABLE1#	54
55	NA	W_DISABLE2#	56
57	GND	SMB_DATA	58
59	CNV_WT_D1-	SMB_CLK	60
61	CNV_WT_D1+	NA	62
63	GND	NA	64
65	CNV_WT_D0-	NA	66
67	CNV_WT_D0+	NA	68
69	NA	NA	70
71	CNV_WT_CLK-	+3.3V	72
73	CNV_WT_CLK+	+3.3V	74
75	GND		

M.2 Key-M Sockets
17 : M2_M1
36 : M2_M2 (on the back side)

Pin	Signal Name	Signal Name	Pin
1	GND	+3.3V	2
3	GND	+3.3V	4
5	PERn3	NA	6
7	PERp3	NA	8
9	GND	SATA_LED	10
11	PETn3	+3.3V	12
13	PETp3	+3.3V	14
15	GND	+3.3V	16
17	PERn2	+3.3V	18
19	PERp2	NA	20
21	GND	NA	22
23	PETn2	NA	24
25	PETp2	NA	26
27	GND	NA	28
29	PERn1	NA	30
31	PERp1	NA	32
33	GND	NA	34
35	PETn1	NA	36
37	PETp1	NA	38
39	GND	M2_M1_SMB_CLK M2_M2_NA	40
41	PERn0	M2_M1_SMB_DATA M2_M2_NA	42
43	PERp0	NA	44
45	GND	NA	46
47	PETn0	NA	48
49	PETp0	PERST1#	50
51	GND	CLKREQ#	52
53	REFCLKn	NA	54
55	REFCLKp	NA	56
57	GND	NA	58
67	NA	NA	68
69	PEDET	+3.3V	70
71	GND	+3.3V	72
73	GND	+3.3V	74
75	GND		

20 : Heater header (HT1)

Pin	Signal Name
1	Heater_PWR (5V/1A)
2	GND
3	NTC (Negative Temperature Coefficient) thermistors

* The 10k Ohm NTC thermistors is suggested.
* Deep mode is not supported when the preheat function is enabled.

21* : LVDS Panel Connector (LVDS1)

Pin	Signal Name	Signal Name	Pin
1	+LCDD	+LCDD	2
3	+3V	eDP_TBT_DRIVER	4
5	NA	LVD_A_DATA0#	6
7	LVD_A_DATA2	GND	8
9	LVD_A_DATA1#	LVD_A_DATA1	10
11	GND	LVD_A_DATA2#	12
13	LVD_A_DATA3	GND	14
15	LVD_A_DATA0#	LVD_A_DATA3	16
17	GND	LVD_A_CLK#	18
19	LVD_A_CLK	GND	20
21	LVD_B_DATA0#	LVD_B_DATA0	22
23	GND	LVD_B_DATA1#	24
25	LVD_B_DATA1	GND	26
27	LVD_B_DATA2#	LVD_B_DATA2	28
29	LVDD_EN	LVD_B_DATA3#	30
31	LVD_B_DATA3	GND	32
33	LVD_B_CLK#	LVD_B_CLK	34
35	GND	CON_LBKLT_EN	36
37	CON_LBKLT_CTL	+LCD_BLT_VCC	38
39	+LCD_BLT_VCC	+LCD_BLT_VCC	40

* eDP by pass mode pin definition (switch by BIOS)

Pin	Signal Name	Signal Name	Pin
1	LCD_VCC	LCD_VCC	2
3	NA	NA	4
5	NA	NA	6
7	NA	GND	8
9	EDP_TX0#	EDP_TX1	10
11	GND	EDP_TX1#	12
13	EDP_TX0	GND	14
15	NA	NA	16
17	GND	EDP_AUXN	18
19	EDP_AUXP	GND	20
21	NA	NA	22
23	GND	NA	24
25	NA	GND	26
27	NA	NA	28
29	DPLVDD_EN	NA	30
31	NA	GND	32
33	NA	NA	34
35	GND	CON_LBKLT_EN	36
37	CON_LBKLT_CTL	+LCD_BLT_VCC	38
39	LCD_BLT_VCC	LCD_BLT_VCC	40

22 : Backlight Power Select (LCD_BLT_VCC) (BKT_PWR1)

1-2: LCD_BLT_VCC: +5V (Default)
2-3: LCD_BLT_VCC: +12V
4-5: LCD_BLT_VCC: DC_IN

23 : Inverter Power Control Wafer (BLT_PWR1)

Pin	Signal Name
1	GND
2	GND
3	CON_LBKLT_CTL
4	CON_LBKLT_EN
5	+LCD_BLT_VCC
6	+LCD_BLT_VCC

24 : Backlight Volume Control (BLT_VOL1)

Pin	Signal Name
1	GPIO_VOL_UP
2	GPIO_VOL_DN
3	PWRON_
4	BLT_UP
5	BLT_DN
6	GND
7	GND

25 : Brightness Control Mode (BLT_PWM1)

1-2 : From eDP PWM to CON_LBKLT_CTL
2-3 : From LVDS PWM to CON_LBKLT_CTL (Default)

* Please set to 1-2 when adjusting brightness by Brightness Control bar under OS.
* Please set to 2-3 when adjusting brightness by BLT_VOL1.

26 : 4-pin DC-in PWR Connector (Input +12V~+36V) (DC_IN1)

Pin	Signal Name
1	GND
2	DC_Input
3	DC_Input
4	GND

27 : CON_LBKLT_CTL Voltage Level (BLT_PWM2)

1-2 : 3V Level (Default)
2-3 : 5V Level

28 : Panel Power Select (LCD_VCC) (PNL_PWR1)

1-2: LCD_VCC : +3V (Default)
2-3: LCD_VCC : +5V
4-5: LCD_VCC : +12V

29 : Battery Connector (BAT1)

Pin	Signal Name
1	BAT+
2	GND

30 : RJ45 LAN Port (LAN2)
31 : RJ45 LAN Port (LAN1)
33 : Top : DisplayPort (DP++) Bottom : HDMI Port (HDMI)
33 : Top : USB 3.2 Gen2 Port (USB3_2) Bottom : USB 3.2 Gen2 Type-C Port (USB3_TC_1)
34 : Top : USB 3.2 Gen2 Port (USB3_1) Bottom : USB 3.2 Gen2 Type-C Port (USB3_TC_0)

Back Side :

35 : ESPI Header (ESPI1)

Pin	Signal Name
1	GND
2	ESPI_CLK
3	GND
4	ESPI_CS0_N
5	ESPI_RESET_N
6	GND
7	+3V
8	ESPI_CS1_N
9	
10	
11	ESPI_IO0
12	ESPI_IO1
13	ESPI_IO2
14	ESPI_IO3
15	ESPI_ALERT1_N
16	+3VSB
17	G3_AT_GPIO#
18	+5VSB
19	ESPI_ALERT0_N
20	GND

38 : PCIE2_X1

Pin	Signal Name
1	+12V
2	+12V
3	PCIE2_X1_PERST#_3V
4	GND
5	CLK_GEN4_SRC5_DP
6	CLK_GEN4_SRC5_DN
7	GND
8	PCIE4_P4_TX_DP_C
9	PCIE4_P4_TX_DN_C
10	GND
11	PCIE4_P4_RX_DP
12	PCIE4_P4_RX_DN
13	GND
14	PCIE_X1_ SRCCLKREQ6#_3V
15	GND
16	+12V
17	+12V
18	+12V
19	+12V
20	+12V